GENERAL MECHANICAL NOTES:

1. CONTRACTOR(S) SHALL PROVIDE ALL ITEMS, ARTICLES, EQUIPMENT, TOOLS, APPLIANCES, MATERIALS AND METHODS REQUIRED FOR COMPLETED SYSTEMS.
2. PROVIDE ALL LABOR, SCAFFOLDING, SUPPORTS, SUPERVISION AND INCIDENTALS REQUIRED TO MODIFY AND/OR INSTALL THE SYSTEMS COMPLETE.
3. CONTRACTOR(S) SHALL LOCATE AND PROTECT THE OWNER'S EQUIPMENT, PIPING AND UTILITIES SCHEDULED TO REMAIN FROM DAMAGE DURING CONSTRUCTION.
4. ALL WORK SHALL BE EXECUTED IN A THOROUGHLY SUBSTANTIAL AND CRAFTSMAN LIKE MANNER BY SKILLED MECHANICS IN THE VARIOUS TRADES INVOLVED. FOLLOW MANUFACTURERS' INSTRUCTIONS FOR INSTALLING, CONNECTING AND ADJUSTING ALL EQUIPMENT.
5. CONTRACTOR(S) SHALL FIELD VERIFY ALL DIMENSIONS OF EXISTING ELEMENTS, EQUIPMENT, AND OTHER CONDITIONS HAVING A BEARING ON THE WORK. CONTRACTOR(S) SHALL COORDINATE WITH OTHER TRADES TO ELIMINATE ANY INTERFERENCES WITH LIGHTING FIXTURES, DUCTWORK, PIPING, ETC.
6. CONTRACTOR(S) SHALL PERFORM ALL VERIFICATIONS, OBSERVATIONS, TESTS, AND EXAMINATIONS OF THE WORK PRIOR TO THE ORDERING OF ANY EQUIPMENT AND THE ACTUAL CONSTRUCTION.
7. CONTRACTOR(S) SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER CONTRACT.
8. CONTRACTOR(S) SHALL FURNISH AND INSTALL ALL MATERIALS AS REQUIRED FOR COMPLETE SYSTEMS, INCLUDING ALL PARTS OBVIOUSLY OR REASONABLY INCIDENTAL TO A COMPLETE INSTALLATION, WHETHER SPECIFICALLY INDICATED OR NOT.
9. FOLLOW MANUFACTURERS' INSTRUCTIONS FOR INSTALLING, CONNECTING AND ADJUSTING ALL EQUIPMENT.
10. DRAWINGS ARE NOT TO BE SCALED. DRAWINGS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY.
11. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS OTHERWISE NOTED. SPACING BETWEEN EQUIPMENT IS REQUIRED CLEARANCE. THEREFORE, IT IS CRITICAL TO FIELD VERIFY DIMENSIONS. SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, EXISTING CONDITIONS AND/OR DESIGN INTENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE OWNER PRIOR TO PROCEEDING WITH THE WORK.
12. DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN. MINOR MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK.
13. DRAWINGS ARE DIAGRAMMATIC ONLY, FINAL ROUTING OF DUCTWORK AND EQUIPMENT LOCATIONS SHALL BE DETERMINED IN THE FIELD. ADDITIONAL OFFSETS, ELBOWS, ETC., SHALL BE PROVIDED AND INSTALLED WITHOUT ADDITIONAL COST TO THE OWNER.
14. THE MC SHALL FURNISH TO THE GC ALL INFORMATION REQUIRED FOR SETTING OF WALL, ROOF, AND PARTITION OPENINGS FOR MECHANICAL WORK. THIS INFORMATION SHALL BE FURNISHED IN A TIMELY MANNER SUCH THAT CONSTRUCTION SCHEDULE IS NOT JEOPARDIZED.
15. THE TEMPERATURE CONTROL CONTRACTOR SHALL COORDINATE THERMOSTAT/TEMPERATURE SENSOR LOCATIONS WITH ARCHITECTURAL PLANS AND/OR THE OWNER. THERMOSTATS SHALL BE INSTALLED 48-INCHES ABOVE FINISHED FLOORS UNLESS OTHERWISE NOTED.
16. ALL PIPING AND DUCTS IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN A FURRED CHASE OR ABOVE THE CEILING, UNLESS NOTED OTHERWISE.
17. ACCESS PANELS IN CEILINGS AND WALLS ARE REQUIRED FOR ALL VALVES, TRAPS, DAMPERS, CLEANOUTS, CONTROLS, ETC.
18. DIMENSIONS SHOWN ON DRAWINGS FOR DUCTWORK ARE INSIDE CLEAR. FIELD VERIFY ALL DIMENSIONS BEFORE FABRICATING DUCTWORK.
19. ALL DUCTWORK SHALL BE SEALED AND TESTED FOR LEAKS PRIOR TO COVERING WORK.
20. CONTRACTOR SHALL INSTALL ALL BALANCING DEVICES NECESSARY TO ACHIEVE PROPER ADJUSTING AND BALANCING OF MECHANICAL SYSTEMS.
21. PROVIDE FLEXIBLE CONNECTOR AT ALL DUCTWORK CONNECTIONS TO AIR HANDLING EQUIPMENT.
22. INSTALL ALL DUCTWORK AND PIPING AS HIGH ABOVE FINISH FLOOR AS CONDITIONS PERMIT. FURNISH & INSTALL OFFSETS, ELBOWS, ETC., TO RECESS PIPING & DUCTWORK BETWEEN STRUCTURAL TEE'S WHERE POSSIBLE.

TYPICAL ABBREVIATIONS

AC	AIR CONDITIONING UNIT	HV	HEATING AND VENTILATING UNIT
AFF	ABOVE FINISH FLOOR	HW	HOT WATER
AFC	ABOVE FINISH CEILING	HWS	HOW WATER SUPPLY
AHU	AIR HANDLING UNIT	HWR	HOW WATER RETURN
AD	ACCESS DOOR	LAV	LAVATORY
AS	AIR SEPARATOR	LD	LINEAR CEILING DIFFUSER
BOD	BOTTOM OF DUCT	LBS/HR	POUNDS PER HOUR
BOT	BOTTOM	MW	MAKE-UP WATER
BP	BOILER PUMP	MAX.	MAXIMUM
CA	COMBUSTION AIR	MIN.	MINIMUM
CBV	CIRCUIT BALANCING VALVE	MSK	MOP SINK
CO	CLEAN OUT	NOM.	NOMINAL
CP	CONDENSATE PUMP	OA	OUTDOOR AIR
CU	CONDENSING UNIT	P	PUMP(HVAC CIRCULATOR)
CH	CABINET HEATER	PRV	PRESSURE REDUCING VALVE
DF	DRINKING FOUNTAIN	RA	RETURN AIR
DCWS	DOMESTIC COLD WATER SUPPLY	RF	RETURN FAN
DHWS	DOMESTIC HOT WATER SUPPLY	RH	RELATIVE HUMIDITY
DHWR	DOMESTIC HOT WATER RETURN	S&R	SUPPLY AND RETURN
DN	DOWN	SA	SUPPLY AIR
DW	DISHWASHER	SD	SMOKE DAMPER
EA	EXHAUST AIR	SK	SINK
EDH	ELECTRIC DUCT HEATER	SP	STATIC PRESSURE
EER	ENERGY EFFICIENCY RATIO	SUSP. CLG.	SUSPENDED CEILING
EF	EXHAUST FAN	S.S.	STAINLESS STEEL
ERV	ENERGY RECOVERY VENTILATOR	UH	UNIT HEATER
ET	EXPANSION TANK	UV	UNIIT VENTILATOR
EUH	ELECTRIC UNIT HEATER	VD	VOLUME DAMPER
(E)	EXISTING	UR	URINAL
FC.	FLEXIBLE CONNECTION	VFD	VARIABLE FREQUENCY DRIVE
FCU	FAN COIL UNIT	S.G.	SUCTION GUIDE
FL.	FLOOR	T.D.V.	TRIPLE DUTY VALVE
FD	FIRE DAMPER	N.C.	NORMALLY CLOSED
FTR	FIN TUBE RADIATION	N.O.	NORMALLY OPEN
GF	GLYCOL FEEDER	WC	WATER CLOSET
HC	HEATING COIL		
HP	HORSEPOWER		

MECHANICAL LEGEND:

- 26x12 — NEW RECTANGULAR DUCTWORK
- 10Ø — NEW ROUND DUCTWORK
- NEW FLEXIBLE DUCTWORK
- T — THERMOSTAT
- SUPPLY DIFFUSER
- RETURN DIFFUSER
- EXHAUST DIFFUSER
- MAKE-UP DUCT RISER
- SUPPLY DUCT RISER
- RETURN DUCT RISER
- EXHAUST DUCT RISER
- TURNING VANES
- VOLUME DAMPER
- M — MOTORIZED DAMPER
- AD — ACCESS DOOR
  - FURNISHED BY MC
  - FOR INSTALLATION BY GC

MECHANICAL PIPING LEGEND:

- DIRECTION OF FLOW
- PIPE TURNING DOWN
- PIPE TURNING UP
- TOP TAKE OFF
- BOTTOM TAKE OFF
- BALL VALVE
- CHECK VALVE
- UNION
- HWS — HOT WATER SUPPLY PIPING
- HWR — HOT WATER RETURN PIPING
- C — CONDENSATE PIPING
- R — REFRIGERANT PIPING
- GHWS — GLYCOL HOT WATER SUPPLY PIPING
- GHWR — GLYCOL HOT WATER RETURN PIPING

1

CONVECTOR SCHEDULE - RADIANT HEAT PANEL

TAG	SERVICE	MANUF.	MODEL NO.	MOUNTING	DEPTH (IN.)	HEIGHT (IN.)	LENGTH	GPM	BTUH/LF	AWT	REMARKS
RHP-1-1	109 CORRIDOR	RUNTAL	RF-3	WALL	1 5/8"	8 5/8"	3 ft	1.0	690	160	
RHP-1-2	111 TOILET	RUNTAL	RF-3	WALL	1 5/8"	8 5/8"	3 ft	1.0	690	160	
RHP-1-3	112 TOILET	RUNTAL	RF-3	WALL	1 5/8"	8 5/8"	3 ft	1.0	690	160	
RHP-1-4	113 TOILET	RUNTAL	RF-3	WALL	1 5/8"	8 5/8"	2 ft	1.0	690	160	
RHP-2-1	207 MEN	RUNTAL	RF-3	WALL	1 5/8"	8 5/8"	3 ft	1.0	690	160	
RHP-2-2	205 WOMEN	RUNTAL	RF-3	WALL	1 5/8"	8 5/8"	3 ft	1.0	690	160	

NOTES:
1. COLOR TO BE SELECTED BY ARCHITECT (FOR BIDDING PURPOSES FIGURE PREMIUM COLOR).
2. PROVIDE HORIZONTAL PIPE TRIM AS REQ'D TO CONCEAL ALL PIPING
   a. TRIM PANELS MUST BE PROVIDED BY RHP MANUF. AND SHALL EXACTLY MATCH STYLE, COLOR AND TYPE OF RADIANT HEAT PANEL.
3. CONTRACTOR SHALL DETERMINE REQ'D PIPING CONNECTION.
4. FURNISH WITH INTEGRAL AIR VENT.
5. PROVIDE WALL BRACKET FOR MOUNTING PER MANUF'S REQUIREMENTS.

MECHANICAL KEYED EQUIPMENT LEGEND:

- VRF X — VARIABLE REFRIGERANT FLOW UNIT
- CU X — CONDENSING UNIT
- EF X — EXHAUST FAN
- HRV X — HEAT RECOVERY VENTILATOR
- UH X — HYDRONIC UNIT HEATER
- CH X — HYDRONIC CABINET HEATER
- HRB X — VRF HEAT RECOVERY BOX
- CF X — CEILING FAN
- HR X — HOSE REEL
- P X — HYDRONIC PUMP
- BLR X — BOILER
- ET X — EXPANSION TANK
- AS X — AIR SEPARATOR
- HX X — PLATE & FRAME HEAT EXCHANGER
- BF X — CHEMICAL BAG FILTER
- LV X — LOUVER
- HR X — MOTORIZED HOSE REEL
- ERV X — AIR TO AIR ENERGY RECOVERY VENTILATOR
- KEF X — KITCHEN EXHAUST FAN
- BP X — BOOSTER PUMP
- MAU X — MAKE-UP AIR UNIT
- HWC X — HOT WATER COIL
- RHP X — RADIANT HEAT PANEL
- FT X — FIN TUBE RADIATION
- HMF X — IN-SLAB INDOOR HEATING MANIFOLD
- SMF X — IN-SLAB OUTDOOR HEATING MANIFOLD
- ED-x / XXX CFM — EXHAUST AIR DIFFUSER
- RD-x / XXX CFM — RETURN AIR DIFFUSER
- RG-x / XXX CFM — RETURN AIR GRILLE
- SD-x / XXX CFM — SUPPLY AIR DIFFUSER
- SG-x / XXX CFM — SUPPLY AIR GRILLE
- LD-x / XXX CFM — SUPPLY AIR LINEAR DIFFUSER

APPLICABLE CODES:

2020 BUILDING CODE OF NEW YORK STATE
2020 MECHANICAL CODE OF NEW YORK STATE
2020 ENERGY CONSERVATION CONSTRUCTION CODE OF NEW YORK STATE

DATE: 06/21/2023
DRAWN BY: AOS
SCALE: N.T.S.
REVIEWED BY: TJH
PROJECT NO.: 20-2006
FILE:

HESNOR ENGINEERING ASSOCIATES
WWW.HESNOR.COM
KEYSTONE ASSOCIATES
DELAWARE ENGINEERING, D.P.C.
WWW.DELAWAREENGINEERING.COM

REVISIONS

NO.	DATE	DESCRIPTION
1	08/04/2023	ADDENDUM #1

PORT EWEN FIRE DEPARTMENT, ULSTER, NEW YORK

MECHANICAL COVER SHEET

SHEET: M000

BID PLANS

VRF FAN COIL SCHEDULE

TAG	SERVICE	MANUF.	MODEL NO.	TYPE	CFM	EXT. S.P. (IN. W.C.)	NOMINAL TONS	RATED CAPACITY			ELECTRIC		WEIGHT (LBS.)	REMARKS
								COOLING		HEATING (MBH)	AMPS	SYSTEM		
								TOTAL (MBH)	SENSIBLE (MBH)					
VRF-1-1	114 COMMUNITY ROOM	LENNOX	VMDB036H4-3P	DUCTED	1,200	0.60	3.0	31,353	21,724	35,595	5.0	208/1/60	124	SEE NOTES
VRF-1-2	114 COMMUNITY ROOM	LENNOX	VMDB048H4-3P	DUCTED	1,370	0.60	4.0	41,804	28,966	45,764	5.0	208/1/60	124	SEE NOTES
VRF-1-3	120 CHEIF'S OFFICE	LENNOX	VMDB007H4-3P	DUCTED	220	0.32	0.5	6,096	4,224	6,780	1.25	208/1/60	51	SEE NOTES
VRF-1-4	118 READY ROOM	LENNOX	VMDB015H4-3P	DUCTED	450	0.60	1.25	13,064	9,051	14,407	3.13	208/1/60	100	SEE NOTES
VRF-1-5	122 KITCHEN	LENNOX	VWMC030H4-3P	WALL MOUNT	700	-	2.5	26,127	18,006	28,200	0.65	208/1/60	38	SEE NOTES
VRF-2-1	219 GENERAL OFFICE	LENNOX	VMDB018H4-3P	DUCTED	480	0.6	1.5	15,677	10,862	18,343	3.13	208/1/60	100	SEE NOTES
VRF-2-2	223 COMMON AREA	LENNOX	VMDB030H4-3P	DUCTED	780	0.60	2.5	26,127	18,104	29,698	5.0	208/1/60	100	SEE NOTES
VRF-2-3	203 CORRIDOR	LENNOX	VHIB048H4-3P	DUCTED	1,429	0.80	4.0	41,804	28,966	47,167	7.6	208/1/60	166	SEE NOTES
VRF-2-4	200 CHIEF'S OFFICE	LENNOX	VMDB007H4-3P	DUCTED	220	0.32	0.5	6,096	4,224	6,780	1.25	208/1/60	51	SEE NOTES

NOTES:
1. REFER TO DETAILS AND MANUF.'S RECOMMENDATION OF REFRIGERANT PIPE SIZING AND FITTINGS.
2. PROVIDE W/ CONDENSATE PUMP.
3. PROVIDE W/ 7-DAY PROGRAMMABLE THERMOSTAT.

VRF CONDENSING UNIT SCHEDULE

TAG	SERVICE	MANUF.	MODEL NO.	RATED CAPACITY		REFRIG.	EER	ELECTRIC		WEIGHT (LBS.)	REMARKS
				COOLING CAPACITY (MBH)	HEATING CAPACITY (MBH)			MCA	SYSTEM		
CU-1	OUTSIDE	LENNOX	VRB120L4M-3Y	116,854	128,266	R410A	12.3	82.6	208/3/60	1,093	SEE NOTES
CU-2	OUTSIDE	LENNOX	VRB096LM-3Y	88,500	102,195	R410A	12.7	75	208/3/60	1,093	SEE NOTES

NOTES:
1. UNIT SHALL BE MOUNTED ON PRE-FABRICATED EQUIPMENT SUPPORTS (24" HIGH EQUIPMENT RAILS) WITH NEOPRENE RUBBER ISOLATION PADS.
2. PROVIDE WITH AIR GUIDE AND HAIL GUARD KITS FOR LOW AMBIENT OPERATION.

RATED CAPACITY BASED ON:
HEATING - INDOOR: 70.0°F (DB), OUTDOOR: -4.0°F (DB) & 4.4°F (WB)
COOLING - INDOOR: 75.0°F (DB) & 62.0°F (WB), OUTDOOR: 91.0°F (DB)

HEAT RECOVERY VENTILATOR SCHEDULE

TAG	SERVICE	MANUF.	MODEL NO.	SUPPLY FAN		EXHAUST FAN		WEIGHT (LBS.)	SUMMER				WINTER		ELECTRIC			REMARKS
				CFM	EXT. SP. (IN. W.C.)	CFM	EXT. SP. (IN. W.C.)		EAT (DB °F)	EAT (WB °F)	LAT (DB °F)	LAT (WB °F)	EAT (DB °F)	LAT (DB °F)	MCA	MOP	SYSTEM	
HRV-1	APPARATUS BAY	RENEWAIRE	EV450JIN--S11E----GNTF--L	400	0.75	400	0.75	199	90.0	71.0	79.0	66.4	-7.0	49.3	10.1	15	120/1/60	SEE NOTES

NOTES:
1. PROVIDE W/ MERV-8 FILTERS.

VRF HEAT RECOVERY BOX SCHEDULE

TAG	SERVICE	MANUF.	MODEL NO.	TYPE	REFRIG.	PORTS	ELECTRIC		WEIGHT (LBS.)	REMARKS
						NO. / MAX	MCA	SYSTEM		
HRB-1-1	107 MECHANICAL	LENNOX	V8MSBB06-3P	HEAT RECOVERY	R-410A	5/6	0.4	208/1/60	84	
HRB-2-1	217 RECORD FILES	LENNOX	V8MSBB04-3P	HEAT RECOVERY	R-410A	4/4	0.4	208/1/60	84	

EXHAUST FAN SCHEDULE

TAG	MANUF.	MODEL NO.	TYPE	CFM	DRIVE	EXT. SP. (IN)	RPM	WEIGHT (LBS)	ELECTRIC		REMARKS
									FLA	SYSTEM	
EF-1-1	COOK	30XLPH	WALL	5800	BELT	0.40	791	301	7.8	208/3/60	SEE NOTES
EF-1-2	COOK	GCVF-180	CEILING	150	DIRECT	0.75	1349	17	1.2	115/1/60	SEE NOTES
EF-1-3	COOK	100 SQN28DO60VF	IN-LINE	230	DIRECT	0.75	2611	70	4.4	115/1/60	SEE NOTES
EF-1-4	COOK	GCVF-180	CEILING	150	DIRECT	0.75	1349	17	1.2	115/1/60	SEE NOTES
EF-1-5	COOK	GCVF-700	CEILING	300	DIRECT	0.75	1498	37	4.4	115/1/60	SEE NOTES
EF-1-6	COOK	GCVF-700	CEILING	225	DIRECT	0.75	1498	37	4.4	115/1/60	SEE NOTES
EF-1-7	COOK	GCVF-700	CEILING	225	DIRECT	0.75	1498	37	4.4	115/1/60	SEE NOTES
EF-1-8	COOK	GCVF-180	CEILING	150	DIRECT	0.75	1349	17	1.2	115/1/60	SEE NOTES
EF-2-1	COOK	GCVF-180	CEILING	150	DIRECT	0.75	1349	17	1.2	115/1/60	SEE NOTES

NOTES:
1. PROVIDE WITH THE FOLLOWING OPTIONS:
   - INTEGRAL BACKDRAFT DAMPER.
   - WHITE ALUMINUM GRILLE (CEILING MOUNTED).

** - DAMPERS SHALL HAVE AN AIR LEAKAGE RATE OF NOT GREATER THAN 20 CFM/SQFT WHERE NOT LESS THAN 24" IN EITHER DIMENSION AND 40 CFM/SQFT WHERE LESS THAN 24" IN EITHER DIMENSION. THE RATE OF AIR LEAKAGE SHALL BE DETERMINED AT 1.0" W.C. WHEN TESTED IN ACCORDANCE WITH AMCA 500D FOR SUCH PURPOSE. THE DAMPERS SHALL BE LABELED BY AN APPROVED AGENCY.

DIFFUSER AND GRILLE SCHEDULE

TAG	MODEL NO.	MANUF.	NECK SIZE	LENGTH	FACE SIZE	MOUNTING TYPE	MATERIAL	DAMPER	REMARKS
ED-1	UNI2	NAILOR	6"ø	-	24"x24"	LAY-IN	ALUMINUM	VOLUME DAMPER	SEE NOTES
ED-2	UNI2	NAILOR	8"ø	-	24"x24"	LAY-IN	ALUMINUM	VOLUME DAMPER	SEE NOTES
EG	6155H-O	NAILOR	12"x10"	-	12"x10"	SURFACE	STEEL		SEE NOTES
EG-1	6155H-O	NAILOR	10" x 6"	-	10" x 6"	SURFACE	STEEL		SEE NOTES
EG-2	6155H-O	NAILOR	12" x 12"	-	12"x12"	SURFACE	STEEL		SEE NOTES
LD-1	5310(I)-1219	NAILOR	8"ø	48"		LAY-IN	STEEL	VOLUME DAMPER	SEE NOTES
LD-2	5310(I)-1219	NAILOR	10"ø	48"		LAY-IN	STEEL	VOLUME DAMPER	SEE NOTES
RD-1	UNI2	NAILOR	6"ø	-	24"x24"	LAY-IN	STEEL	VOLUME DAMPER	SEE NOTES
RD-2	UNI2	NAILOR	8"ø	-	24"x24"	LAY-IN	STEEL	VOLUME DAMPER	SEE NOTES
RD-4	UNI2	NAILOR	12"ø	-	24"x24"	LAY-IN	STEEL	VOLUME DAMPER	SEE NOTES
RD-5	UNI2	NAILOR	14"ø	-	24"x24"	LAY-IN	STEEL	VOLUME DAMPER	SEE NOTES
RG-1	6155H-O	NAILOR	16" x 8"	-	16" x 8"	SURFACE	STEEL	INTEGRAL DAMPER	SEE NOTES
SD-1	UNI2	NAILOR	6"ø	-	24"x24"	LAY-IN	STEEL	VOLUME DAMPER	SEE NOTES
SD-2	UNI2	NAILOR	8"ø	-	24"x24"	LAY-IN	STEEL	VOLUME DAMPER	SEE NOTES
SD-3	UNI2	NAILOR	10"ø	-	24"x24"	LAY-IN	STEEL	VOLUME DAMPER	SEE NOTES
SG-1	51DH-O	NAILOR	8" x 6"	-	8" x 6"	SURFACE	STEEL	INTEGRAL DAMPER	SEE NOTES
SG-2	51DH-O	NAILOR	14"x12"	-	24"x24"	SURFACE	STEEL	VOLUME DAMPER	SEE NOTES
SG-3	51DH-O	NAILOR	60" x 60"	-	60" x 60"	SURFACE	STEEL	INTEGRAL DAMPER	SEE NOTES

NOTES:
1. ARCHITECT TO SELECT COLOR.
2. PROVIDE AUXILIARY FRAME AS REQUIRED FOR SURFACE MOUNTING.
3. PROVIDE SQUARE TO ROUND ADAPTER WHERE REQUIRED.

HYDRONIC UNIT HEATER SCHEDULE

TAG	SERVICE	MANUF.	MODEL NO.	SIZE	CFM	BTUH	GPM	EWT (°F)	LWT (°F)	WPD (FT)	ELECTRIC		REMARKS
											HP	SYSTEM	
UH-1-4	107 MECHANICAL	MODINE	HSB/HC 18L	12-3/8"(H) x 13"(W) x 11" (D)	230	8,700	1.2	180	140	0.1	1/60	120/1/60	SEE NOTES
UH-2-1	201 MEZZANINE STORAGE	MODINE	HSB/HC 18L	12-3/8"(H) x 13"(W) x 11" (D)	230	8,700	1.2	180	140	0.1	1/60	120/1/60	SEE NOTES

NOTES:
1. VERTICAL MOUNT. PROVIDE WITH WALL-MOUNTING BRACKET.
2. FURNISH WITH LINE-VOLTAGE THERMOSTAT (WALL-MOUNTED).
3. PROVIDE WITH INTEGRAL DISCONNECT.

DUCT INSULATION SCHEDULE

SERVICE	TEMP. RANGE (°F)	LOCATION	TYPE	DUCT SIZE	THICKNESS	JACKET	REMARKS
SUPPLY AIR DUCTWORK	55 - 95	ALL	MFB	ALL	R-6	NONE	
OUTDOOR AIR DUCTWORK	55 - 95	ALL	MFB	ALL	R-6	NONE	
GREASE DUCTWORK	- SEE NOTE 2 -						

NOTES:
1. SEE SECTION 23 07 13.

2. WRAP WITH APPROVED FIELD-APPLIED GREASE DUCT ENCLOSURE MATERIAL IN ACCORDANCE WITH ASTM E 2336. ENCLOSURE MATERIALS SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S INSTALLATION INSTRUCTIONS TO PROVIDE AND MAINTAIN FIRE-RATED ENCLUSURE THROUGHOUT ENTIRE LENGTH AND MEET CLEARANCE REQUIREMENTS FROM COMUSTIBLE MATERIALS.
   SEE SECTION 23 51 01 FOR ADDITIONAL INFORMATION.

TYPE:
MFB - MINERAL FIBER BLANKET

HYDRONIC CABINET HEATER SCHEDULE

TAG	SERVICE	MANUF.	MODEL NO.	OUTPUT (BTU/H)	MOUNTING	DEPTH (IN)	WIDTH (IN)	LENGTH (IN)	GPM	EFT (°F)	LFT (°F)	WPD (FT)	ELECTRIC		REMARKS
													MCA	SYSTEM	
CH-1-1	108 CORRIDOR	BEACON MORRIS	RC-1200-U2	16,400	CEILING RECESS	9-1/2	25	35	0.9	180	140	1.5	0.8	120/1/60	SEE NOTES
CH-1-2	126 LOBBY	BEACON MORRIS	RC-1200-U2	16,400	CEILING RECESS	9-1/2	25	35	0.9	180	140	1.5	0.8	120/1/60	SEE NOTES
CH-1-3	S1 STAIR-1	BEACON MORRIS	RC-1200-U2	16,400	WALL/RECESS	9-1/2	25	35	0.9	180	140	1.5	0.8	120/1/60	SEE NOTES
CH-1-4	S2 STAIR-2	BEACON MORRIS	RC-1200-U2	16,400	WALL/RECESS	9-1/2	25	35	0.9	180	140	1.5	0.8	120/1/60	SEE NOTES

NOTES:
1. PROVIDE DISCONNECT FOR INSTALLATION BY EC.
2. PROVIDE WITH W120 RECESSED KIT & LOW TEMP AQUASTAT.
3. SHALL BE SUITABLE FOR USE WITH PROPYLENE GLYCOL/WATER SYSTEMS.
4. PROVIDE HANGING BRACKET AND INSTALL PER MANUF'S REQUIREMENTS.

LOUVER SCHEDULE

TAG	SERVICE	MANUF.	MODEL NO.	DIMENSIONS		MATERIAL	MOTORIZED DAMPER	REMARKS
				WIDTH	HEIGHT			
LV-1	106 STORAGE	NAILOR	LE-23	16"	12"	ALUMINUM	YES	SEE NOTES
LV-2	107 MECHANICAL	NAILOR	LE-23	28"	16"	ALUMINUM	YES	SEE NOTES
LV-3	105 SCBA	NAILOR	LE-23	66"	16"	ALUMINUM	YES	SEE NOTES
LV-4	HRV-1 EA	NAILOR	LE-23	16"	16"	ALUMINUM	YES	SEE NOTES
LV-5	HRV-1 OA	NAILOR	LE-23	16"	16"	ALUMINUM	YES	SEE NOTES
LV-6	100 APPARATUS BAY OA	NAILOR	LE-23	60"	60"	ALUMINUM	YES	SEE NOTES
LV-7	215 DRESS UNIFORM	NAILOR	LE-23	16"	16"	ALUMINUM	YES	SEE NOTES
LV-8	ERV-1 OA	NAILOR	LE-23	28"	24"	ALUMINUM	YES	SEE NOTES
LV-8	MUA-1 OA	NAILOR	LE-23	36"	30"	ALUMINUM	YES	SEE NOTES
LV-9	ERV-1 EA	NAILOR	LE-23	28"	24"	ALUMINUM	YES	SEE NOTES

NOTE:
1. ALL LOUVERS SHALL BE PROVIDED WITH THE FOLLOWING FEATURES:
   - TAMCO 9000 BF MOTORIZED DAMPER
     - SHALL BE CLASS 1 AND HAVE AN AIR LEAKAGE RATE OF NOT GREATER THAN 4 CFM/SQFT OF DAMPER SURFACE AREA @ 1.0" W.C. AND SHALL BE LABELED BY AN APPROVED AGENCY WHEN TESTED IN ACCORDANCE WITH AMCA 500D FOR SUCH PURPOSE.
     - ACTUATOR(s) SHALL BE FURNISHED BY MC, INSTALLED BY CONTROLS CONTRACTOR.
   - INSULATED BOX CONSTRUCTION
   - BIRD SCREEN
2. VERIFY EXACT DIMENSIONS WITH STRUCTURAL AND ARCHITECTURAL DRAWINGS PRIOR TO ORDERING.
3. FINISH TO BE SELECTED BY ARCHITECT. FOR BIDDING PURPOSES, FIGURE PREMIUM COLOR.

BID PLANS

DATE: 06/21/2023
DRAWN BY: AOS
SCALE: 1/8" = 1' - 0"
REVIEWED BY: TJH
PROJECT NO.: 20-2006
FILE:

HESNOR ENGINEERING ASSOCIATES
WWW.HESNOR.COM
KEYSTONE ASSOCIATES ARCHITECTS, ENGINEERS & SURVEYORS, LLC
DELAWARE ENGINEERING, D.P.C. CIVIL AND ENVIRONMENTAL CONSULTANTS
WWW.DELAWAREENGINEERING.COM

REVISIONS

NO.	DATE	DESCRIPTION

PORT EWEN FIRE DEPARTMENT, ULSTER, NEW YORK

MECHANICAL SCHEDULES

SHEET: M001

PLATE & FRAME HEAT EXCHANGER SCHEDULE

TAG	SERVICE	MANUF.	MODEL NO.	HEAT EXCHANGED (kBTU/H)	HOT SIDE (100% H2O)					COLD SIDE (40% PG / 60% H2O)					REMARKS
					FLUID	FLUID FLOW (GPM)	EFT (°F)	LFT (°F)	P.D. (PSI)	FLUID	FLUID FLOW (GPM)	EFT (°F)	LFT (°F)	P.D. (PSI)	
HX-1	BLR-1	TACO	~~TB107x24~~ AQ2L-FG	~~120~~ 650	HW	~~6~~ 33.5	180	140	~~8~~ 2.9	HGW	~~7~~ 34.9	135	175	~~8~~ 3.7	NOTE 1

NOTES:
1. PROVIDE WITH THE FOLLOWING OPTIONS:
   - FLANGED CONNECTIONS

FLUID:
HGW: 40% PROPYLENE GLYCOL / 60% WATER
HW: 100% WATER

AIR SEPARATOR SCHEDULE

TAG	SERVICE	MANUF.	MODEL NO.	FLUID	MOUNTING	CONNECTION	PIPE SIZE (IN.)	WEIGHT (LBS)	REMARKS
AS-1	BLR-1	TACO	~~49-150~~ 49-200	~~HW~~ HGW	IN-LINE	THREADED	~~1 1/2"~~ 2"	30	NOTE 1
AS-2	BLR-2	TACO	~~49-150~~ 49-200	~~HW~~ HGW	IN-LINE	THREADED	~~1 1/2"~~ 2"	30	NOTE 1

NOTES:
1. WRAP WITH R-12.5 INSULATION

FLUID:
HGW: 40% PROPYLENE GLYCOL / 60% WATER
HW: 100% WATER

AIR-TO-AIR ENERGY RECOVERY VENTILATOR SCHEDULE

TAG	MANUF.	MODEL NO.	AIRFLOWS			FAN EXTERNAL S.P.		COOLING				HOT WATER COIL					HEAT RECOVERY CONDITIONS				ELECTRICAL			REMARKS
			SUPPLY (CFM)	EXHAUST (CFM)	O.A. (CFM)	SUPPLY (IN. W.C.)	EXHAUST (IN. W.C.)	EAT (DB/WB °F)	LAT (DBWB °F)	TOTAL (MBH)	SENSIBLE (MBH)	EAT (DB/WB °F)	LAT (DBWB °F)	FLUID	GPM	TOTAL (MBH)	WINTER		SUMMER		SYSTEM	MCA	MOP	
																	EAT (DB °F)	LAT (DB °F)	EAT (DB/WB °F)	LAT (DB/WB °F)				
ERV-1	AAON	CFA-007-A-A-2-DA00H	2,390	1,300	2,390	1.00	1.00	83.05 / 66.20	57.83 / 56.29	74.72	68.25	24.5 / 21.5	93.3 / 56.6	GHW	~~7.0~~ 11	193.8	-7.0	24.54	90.0 / 71.0	83.05 / 66.20	230/3/60	28	45	SEE NOTES

NOTES:
1. PROVIDE WITH THE FOLLOWING OPTIONS:
   - 120V CONVENIENCE OUTLET, GFI, FACTORY WIRED
   - HOT GAS RE-HEAT, MODULATING
   - OUTDOOR AIR RAIN HOOD
   - SINGLE-POINT ELECTRICAL CONNECTION
   - FUSIBLE DISCONNECT
   - PREMIUM EFFICIENCY MOTORS
   - FACTORY MOUNTED ADJUSTABLE SPEED DRIVE (ASD) ON SUPPLY FAN MOTOR AND EXHAUST FAN MOTOR.
   - DUAL WALL CONSTRUCTION
   - RECIRCULATION/BYPASS DAMPER FOR UNOCCUPIED MODE
   - INSULATED BLADE OUTSIDE & EXHAUST AIR DAMPERS
   - ENERGY RECOVERY WHEEL
   - DIGITAL SCROLL COMPRESSOR ON THE LEAD CIRCUIT
   - START/STOP FROST PROTECTION
   - 4 STAGE STAINLESS STEEL LP GAS HEAT
   - 2-INCH MERV-8 AND 4-INCH MERV-12 FILTERS
   - MAKE-UP AIR CONTROLLER
2. W/ VIBRATION ISOLATION SUPPORT RAILS UNDER LONG SIDES OF UNIT.

GHW: 40% PROPYLENE GLYCOL / 60% WATER

UNIT

CONDENSING UNIT SCHEDULE

TAG	MANUF.	MODEL NO.	SERVICE	CAPACITY (TONS)	REFRIG.	EER	ELECTRIC		WEIGHT (LBS)	REMARKS
							MCA	SYSTEM		
CU-3	AAON	CFA-003-A-A-8-DA00H	OUTSIDE	36,600	R410A	12	17	208/1/60	397	SEE NOTES

NOTES:
1. PROVIDE WITH THE FOLLOWING OPTIONS:
   - VIBRATION ISOLATION
   - 120V CONVENIENCE OUTLET

STARTER TYPE:
PCU - PACKAGED CONTROL UNIT INTEGRAL TO EQUIPMENT. SINGLE POINT ELECTRICAL CONNECTION.

MAKE-UP AIR UNIT SCHEDULE

TAG	MANUF.	MODEL NO.	SUPPLY AIR (CFM)	OUTSIDE AIR (CFM)	E.S.P.	WEIGHT (LBS.)	HOT WATER COIL								ELECTRICAL			REMARKS
							TOTAL (MBH)	SENSIBLE (MBH)	EAT DB (°F)	LAT DB (°F)	EFT (°F)	LFT (°F)	FLUID	FLUID FLOW RATE (GAL/MIN)	MCA	MOP	SYSTEM	
MAU-1	CAPTIVEAIRE	AI-16Z	1,900	1,900	0.5	530	~~100.7~~ 165	100.7	~~6.0~~ 0	~~55.0~~ 80	~~160.0~~ 175	~~152.0~~ 135	GHW	~~24.2~~ 9.1	7.8	15	208/3/60	SEE NOTES

NOTES:
1. MOTORIZED BACKDRAFT DAMPER FOR A1-D HOUSING - SHALL MEET AMCA CLASS 1A RATING
2. SEPARATE 120V WIRING PACKAGE (REQUIRED AND USED ONLY FOR DCV OR PREWIRE WITH VFD) - THREE PHASE ONLY.
3. W/ VIBRATION ISOLATION SUPPORT RAILS UNDER LONG SIDES OF UNIT.
4. 2 YEAR PARTS WARRANTY

GHW: 40% PROPYLENE GLYCOL / 60% WATER

EXPANSION TANK SCHEDULE

TAG	SERVICE	MANUF.	MODEL NO.	FLUID	MOUNTING	TANK VOLUME (GAL.)	PRESSURE (PSIG)	WEIGHT (LBS)	REMARKS
ET-1	BLR-1	TACO	~~CA-300-125~~ CA-500-125	HW	FLOOR	~~79~~ 132	125	~~320~~ 420	NOTE 1
ET-2	BLR-2	TACO	~~CX-30-125~~ CA-450-125	HGW	FLOOR	~~8~~ 119	125	~~45~~ 400	NOTE 1

NOTES:
1. WRAP WITH R-12.5 INSULATION

FLUID:
HGW: 40% PROPYLENE GLYCOL / 60% WATER
HW: 100% WATER

BOILER SCHEDULE

TAG	SERVICE	MANUF.	MODEL NO.	FUEL		FLUID	INPUT MBH (MAX.)	OUTPUT MBH (MAX.)	EFFICIENCY	REMARKS
				FUEL	SUPPLY PRESSURE RANGE (IN W.C.)					
BLR-1	107 MECHANICAL	LOCHINVAR	~~KBXB0400N~~ KBX1000N	NG	8 - 14	HW	~~399~~ 999	~~387~~ 969	97%	SEE NOTES
BLR-2	107 MECHANICAL	LOCHINVAR	~~KBXB0400N~~ KBX1000N	NG	8 - 14	HW	~~399~~ 999	~~387~~ 969	97%	SEE NOTES

NOTES:
1. FURNISH WITH THE FOLLOWING OPTIONS:
   - SINGLE POINT ELECTRICAL CONNECTION
   - MANUF. PROVIDE LOOSE BOILER PUMP (BP-x)
   - FLOW SWITCH
   - HIGH AND LOW PRESSURE SWITCHES
   - LOW WATER CUT-OFF WITH MANUAL RESET AND TEST
   - PRESSURE AND TEMPERATURE GAUGES
   - HIGH EXHAUST PRESSURE SWITCH
   - HIGH LIMIT THERMOSTAT, MANUAL RESET

FLUID:
HW: 100% WATER

HYDRONIC PUMP SCHEDULE

TAG	SERVICE	MANUF.	MODEL NO.	TYPE	FLUID	GPM	HEAD (FT.)	RPM	VFD	ELECTRIC		REMARKS
										HP	SYSTEM	
~~BP-1~~	~~107 MECHANICAL~~	~~TACO~~	~~VR15~~	~~A~~	~~HW~~	~~20~~	~~20~~	~~3,250~~	~~YES~~	~~2/3~~	~~208/1/60~~	BY BOILER MANUF.
~~BP-2~~	~~107 MECHANICAL~~	~~TACO~~	~~VR15~~	~~A~~	~~HW~~	~~20~~	~~20~~	~~3,250~~	~~YES~~	~~2/3~~	~~208/1/60~~	BY BOILER MANUF.
~~P-1~~	~~107 MECHANICAL~~	~~TACO~~	~~1915~~	~~A~~	~~GHW~~	~~13~~	~~35~~	~~1,760~~	~~NO~~	~~3/4~~	~~120/1/60~~	BY BOILER MANUF.
P-1A	107 MECHANICAL	TACO	~~VR15~~ 1919	A	HW	~~25~~ 50	~~30~~ 45	~~3,250~~ 1,760	YES	~~2/3~~ 1.5	~~208/1/60~~ 208/3/60	
P-1B	107 MECHANICAL	TACO	~~VR15~~ 1919	A	HW	~~25~~ 50	~~30~~ 45	~~3,250~~ 1,760	YES	~~2/3~~ 1.5	~~208/1/60~~ 208/3/60	
P-2A	107 MECHANICAL	TACO	~~0034-E~~ 1915	A	~~GHW~~ HGW	~~7~~ 36	~~25~~ 30	~~3,250~~ 1,760	YES	~~1/5~~ 3/4	~~120/1/60~~ 208/3/60	
P-2B	107 MECHANICAL	TACO	~~0034-E~~ 1915	A	~~GHW~~ HGW	~~7~~ 36	~~25~~ 30	~~3,250~~ 1,760	YES	~~1/5~~ 3/4	~~120/1/60~~ 208/3/60	
P-L1	~~100 APPARATUS BAY~~	TACO	~~2420~~ IL0011	A	HW	~~7~~ 6	~~25~~ 20	~~3,450~~ 3,250	NO	~~1/10~~ 1/8	120/1/60	
P-L2	~~100 APPARATUS BAY~~	TACO	~~2410~~ IL0011	A	HW	~~6~~ 8	20	~~3,450~~ 3,250	NO	~~1/10~~ 1/8	120/1/60	
P-L3	~~100 APPARATUS BAY~~	TACO	~~2410~~ IL0011	A	HW	~~4~~ 8	20	~~3,450~~ 3,250	NO	~~1/10~~ 1/8	120/1/60	
P-L4	~~101 VINTAGE BAY~~	TACO	~~2410~~ IL009	A	HW	4	20	~~3,450~~ 3,250	NO	~~1/10~~ 1/8	120/1/60	
P-L5	~~127 LOBBY~~	TACO	~~2420~~ IL008	A	~~HW~~ HGW	~~7~~ 2	~~25~~ 10	~~3,450~~ 3,250	NO	~~1/10~~ 1/25	120/1/60	
P-L6	~~100 APPARATUS BAY~~	TACO	~~2420~~ 1915	A	~~HW~~ HGW	~~7~~ 26	~~25~~ 40	~~3,450~~ 1,760	NO	~~1/10~~ 1	~~120/1/60~~ 208/3/60	

NOTES:
A: INLINE

VFD FURNISHED INTEGRAL TO PUMP

HOT WATER COIL SCHEDULE

TAG	MANUF.	MODEL NO.	UNIT WIDTH	UNIT HEIGHT	CFM	BTUH	MAX APD (IN. W.C.)	EAT (°F)	LAT (°F)	MAX WPD (FT.)	GPM	EFT (°F)	LFT (°F)	ROWS	FPI	REMARKS
HWC-1	NORTEK	Z-8-A-2-B-12-12	12"	12"	400 CFM	18,745	0.11	50.0	91.6	0.4	2.2	180.0	160.0	2	8	SEE NOTES

FLUID:
GHW: 40% PROPYLENE GLYCOL / 60% WATER

KITCHEN EXHAUST FAN SCHEDULE

TAG	MANUF.	MODEL NO.	TYPE	CFM	DRIVE	EXT. SP. (IN)	RPM	WEIGHT (LBS)	ELECTRIC		REMARKS
									HP (MOTOR)	SYSTEM	
KEF-1	CAPTIVEAIRE	DU180HFA	UPBLAST	2,250	DIRECT	1.25	1118	177	1.5	208/3/60	SEE NOTES

PIPE AND EQUIPMENT INSULATION SCHEDULE

SERVICE	TEMP. RANGE (°F)	LOCATION	TYPE	PIPE SIZE	THICKNESS	JACKET	REMARKS
HWS&R	~~55~~ 180-140	ALL	FG	1/2" - 1-1/4"	1-1/2"	~~YES - NOTE 2~~ NO	SEE NOTES
				1-1/2" - 2-1/2"	2"		
				3"	2-1/2"		
GHWS&R	~~55~~ 180-140	ALL	FG	1/2" - 1-1/4"	1-1/2"	~~YES - NOTE 2~~ NO	SEE NOTES
				1-1/2" - 2-1/2"	2"		
				3"	2-1/2"		
COLD CONDENSATE	55	ALL	FG	ALL	1/2"	YES - NOTE 2	SEE NOTES
REFRIGERANT	~~55~~ -	ALL	~~FG~~ CCE	ALL	~~1/2"~~ 1"	YES - NOTE 2	SEE NOTES
EXPANSION TANK	~~55~~ 180-140	ALL	FG	~~ALL~~ -	~~1/2"~~ R-12.5	YES - ~~NOTE 2~~ PVC	SEE NOTES
AIR SEPARATOR	~~55~~ 180-140	ALL	FG	~~ALL~~ -	~~1/2"~~ R-12.5	YES - ~~NOTE 2~~ PVC	SEE NOTES

NOTES:
1. SEE SECTION 23 07 19.
2. ALL EXTERIOR PIPING (INCLUDING IN ROOFTOP MECHANICAL ROOMS) SHALL BE FITTING WITH AN ALUMINUM JACKET (SEE SPECIFICATION FOR DETAILS).

TYPE:
FG - FIBROUS GLASS INSULATION
CCE - ARMAFLEX CLOSED CELL ELASTOMER
PVC - PVC JACKET/COVER

VEHICLE EXTRACTION SCHEDULE

MANUF.	MODEL	NUMBER OF BAYS	HOSES	EF
NEDERMAN	MAGNA - TRACK HS	6	6"Ø @ 600 CFM EACH	10 HP 3,600 CFM @ 7" ESP. MODEL: NCF 80-20

NOTES:
1. PROVIDE WITH:
   A. AUTO START CONTROL PANEL WITH RECEIVER.
   B. LOW-LEVEL EXHAUST NOZZLES (1-PER BOX)
   C. ENTRANCE, MIDDLE AND END STRUT ASSEMBLIES.
2. COODRINATE INSTALLATION WITH FIRE DEPARTMENT AND VEHICLE EXHAUST VENDOR, PRIOR TO ANY EQUIPMENT ORDERS.

CHEMICAL BAG FILTER SCHEDULE

TAG	SERVICE	MANUF.	MODEL NO.	FLUID	DIAMETER	HEIGHT	FILTER	WEIGHT (LBS)	REMARKS
BF-1	BLR-1	ROSEDALE	NC08-30-2P-1-1/2P-150-S-B-PB	HW	8-5/8"	45"	BAG		NOTE 1

NOTES:
1. EACH BAG FILTER:
   - PROVIDE WITH (20) TWENTY POLYPROPYLENE BAG FILTERS, 5-MICRON (MODEL: PO-5-G2RPO).

FLUID:
HW: 100% WATER

DATE: 06/21/2023
DRAWN BY: AOS
SCALE: N.T.S.
REVIEWED BY: TJH
PROJECT NO.: 20-2006
FILE:

HESNOR ENGINEERING ASSOCIATES
WWW.HESNOR.COM

KEYSTONE ASSOCIATES
ARCHITECTS, ENGINEERS & SURVEYORS, LLP
WWW.KEYSTONEASSOCIATES.COM

DELAWARE ENGINEERING, D.P.C.
ENGINEERING, LAND SURVEYING & LANDSCAPING
WWW.DELAWAREENGINEERING.COM

REVISIONS

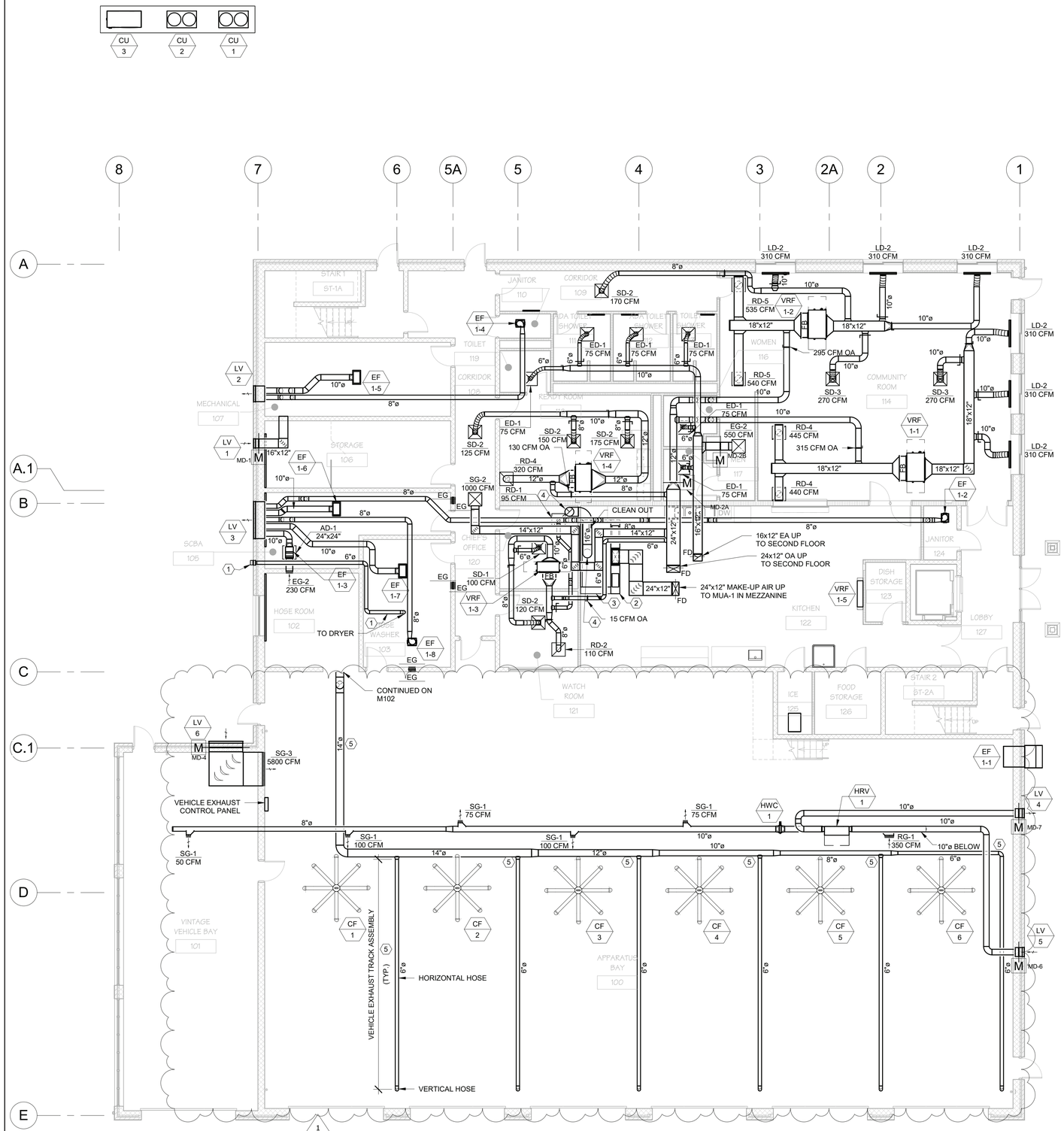
NO.	DATE	DESCRIPTION
1	08/04/2023	ADDENDUM #1

PORT EWEN FIRE DEPARTMENT, ULSTER, NEW YORK

MECHANICAL SCHEDULES

BID PLANS

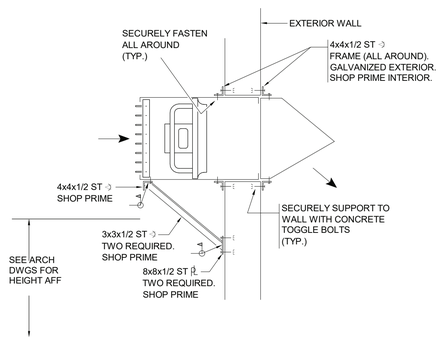
SHEET: M002



1

KEYED NOTES

1. CLOTHES DRYER EXHAUST (4"ø):
   - DUCT SHALL BE CONSTRUCTED OF MIN. 26 GAGE RIGID METAL, HAVING SMOOTH INTERIOR SURFACES WITH JOINTS RUNNING IN THE DIRECTION OF AIRFLOW. SHALL NOT BE CONNECTED WITH SHEET-METAL SCREWS OR FASTENING MEANS WHICH EXTEND INTO THE DUCT.
   - TERMINATE WITH WALL CAP (BROAN MODEL WC650 OR EQUAL) WITH ALUMINUM PIPE AND COLLAR. TRANSITION DUCTWORK AS REQUIRED. CAP SHALL BE PRIMED AND PAINTED. ARCHITECT SHALL SELECT COLOR.
   - TERMINATION SHALL BE A MINIMUM OF 3-FEET FR. ANY OPERABLE WINDOW. FIELD DETERMINE EXACT LOCATION.
2. HOOD SUPPLY PLENUM
   - FURNISHED AND INSTALLED BY KITCHEN VENDOR. MECHANICAL CONTRACTOR TO MAKE DUCT TRANSITION TO HOOD AS REQ'D.
3. EXHAUST HOOD
   - FURNISHED AND INSTALLED BY KITCHEN VENDOR.
4. 16"ø GREASE DUCT FROM HOOD BELOW TO KEF-1 ON ROOF ABOVE. TRANSITION AS REQUIRED FOR CONNECTIOS. SEE SECTION 23 51 01.
5. VEHICLE EXTRACTION EXHAUST SYSTEM
   - MC TO PROVIDE A COMPLETE SAFE WORKING SYSTEM. SHALL INCLUDE DUCT, HOSES, FAN, CONTROL, ETC.
   - SEE SECTION 23 30 00 FOR INFO.
   - DUCTWORK SHALL BE SPIRAL G-90 GALVENIZED MIN. 22-GAUGE. DESIGNED FOR 4-INCHES NEGATIVE PRESSURE.
   - SUPPORT SYSTEM PER MANUF'S REQUIREMENTS AND STRUCTURAL DETAILS.



WALL LOUVERED EXHAUST FAN DETAIL

DATE: 06/21/2023
DRAWN BY: AOS
SCALE: 1/8" = 1' - 0"
REVIEWED BY: TJH
PROJECT NO.: 20-2006
FILE:

HESNOR ENGINEERING ASSOCIATES
WWW.HESNOR.COM
KEYSTONE ASSOCIATES
ARCHITECTS, ENGINEERS & SURVEYORS, LLC
WWW.KEYSTONEASSOC.COM
DELAWARE ENGINEERING, D.P.C.
SOIL AND FOUNDATION ENGINEERS & CONSULTANTS
WWW.DELAWAREENGINEERING.COM

REVISIONS

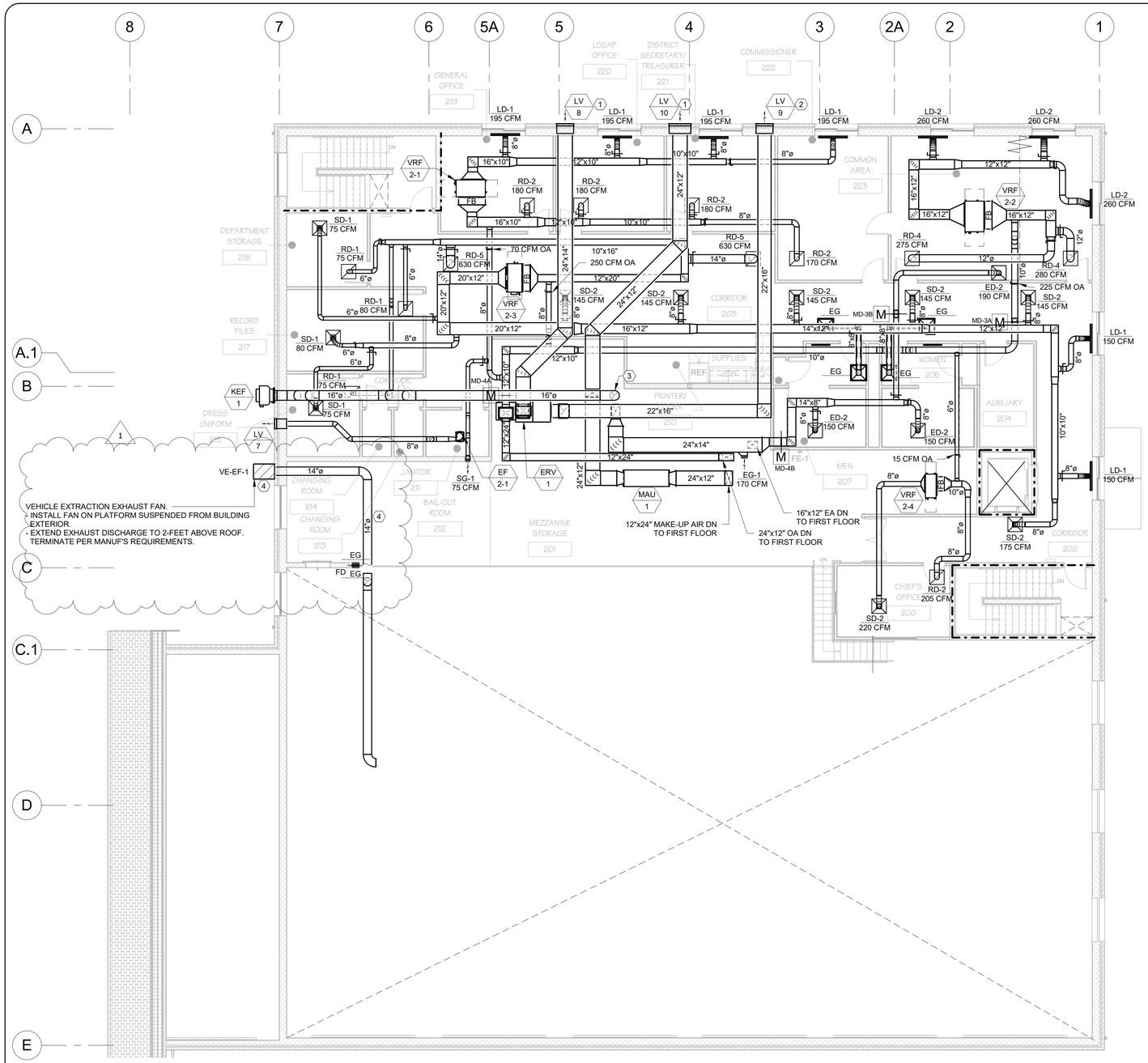
NO.	DATE	DESCRIPTION
1	08/04/2023	ADDENDUM #1

PORT EWEN FIRE DEPARTMENT, ULSTER, NEW YORK

HVAC PLAN - FIRST FLOOR

BID PLANS

SHEET: M101



1

KEYED NOTES

1. INTAKE SHALL BE NO CLOSER THAN 10-FEET HORIZONTALLY FROM ANY EXHAUST, PARKING, VENTS, ETC.
   - BRING ANY CONCERNS TO ENGINEER'S ATTENTION.
2. EXHAUST SHALL BE NO CLOSER THAN 3-FEET FROM ANY OPERABLE OPENINGS.
   - BRING ANY CONCERNS TO ENGINEER'S ATTENTION.
3. 16"ø GREASE DUCT FROM HOOD BELOW TO KEF-1. TRANSITION AS REQUIRED FOR CONNECTIOS. SEE SECTION 23 51 01.
4. VEHICLE EXTRACTION EXHAUST SYSTEM
   - MC TO PROVIDE A COMPLETE SAFE WORKING SYSTEM. SHALL INCLUDE DUCT, HOSES, FAN, CONTROL, ETC.
   - SEE SECTION 23 30 00 FOR INFO.
   - DUCTWORK SHALL BE SPIRAL G-90 GALVENIZED MIN. 22-GAUGE. DESIGNED FOR 4-INCHES NEGATIVE PRESSURE.
   - SUPPORT SYSTEM PER MANUF'S REQUIREMENTS AND STRUCTURAL DETAILS.

DATE: 06/21/2023
DRAWN BY: AOS
SCALE: 1/8" = 1' - 0"
REVIEWED BY: TJH
PROJECT NO.: 20-2006
FILE:

HESNOR ENGINEERING ASSOCIATES WWW.HESNOR.COM

KEYSTONE ASSOCIATES ARCHITECTS, ENGINEERS & SURVEYORS, LLC WWW.KEYSTONEASSOCIATES.COM

DELAWARE ENGINEERING, D.P.C. MECHANICAL, PLUMBING & FIRE PROTECTION ENGINEERS WWW.DELAWAREENGINEERING.COM

REVISIONS

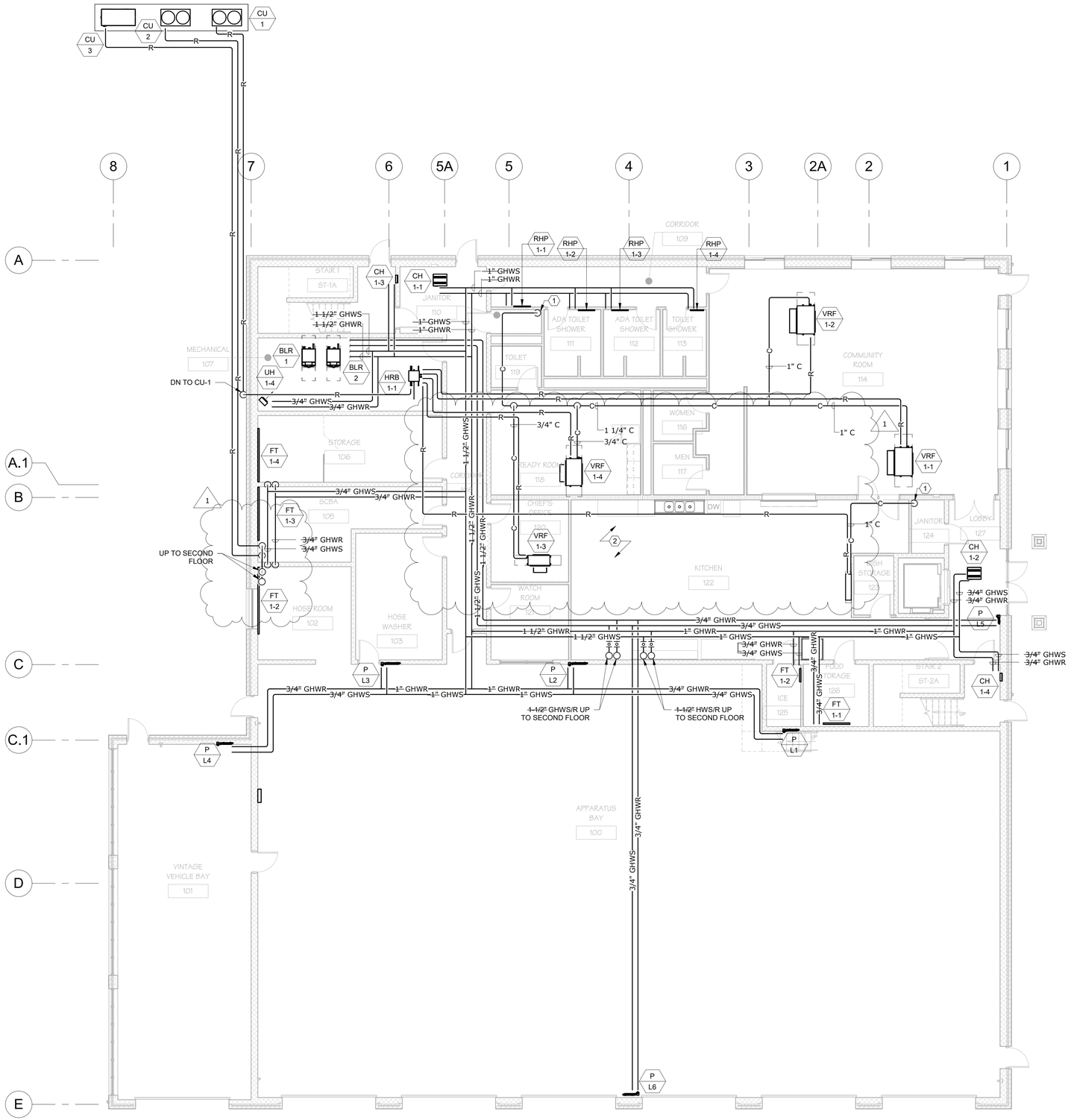
NO.	DATE	DESCRIPTION
1	08/04/2023	ADDENDUM #1

PORT EWEN FIRE DEPARTMENT, ULSTER, NEW YORK

HVAC PLAN - SECOND FLOOR

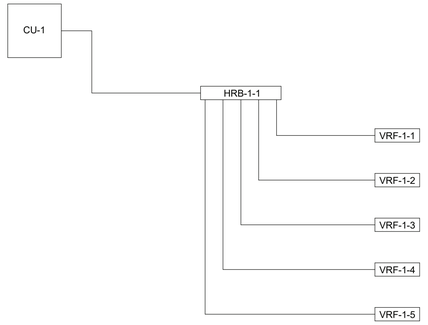
SHEET: M102

BID PLANS



CONDENSATE PIPING

1. INSTALL NEW CONDENSATE PIPING SYSTEM FOR ALL NEW FURNACES, VRF FAN COILS AND HEAT RECOVERY BOX. PIPING SHALL BE TYPE L COPPER. CONTRACTOR SHALL BE RESPONSIBLE FOR PIPING ELEVATIONS.
2. PRIOR TO ORDERING ANY EQUIPMENT:
   - CONTRACTOR SHALL WALK SITE WITH OWNER'S REP AND ENGINEER TO "PROVE" INSTALLATION OF NEW CONDENSATE PIPING SYSTEM.



FIRST FLOOR VRF REFRIGERANT PIPING ONE-LINE DIAGRAM

GENERAL NOTE
SEE DWG M601 FOR HOT WATER ONE-LINE DIAGRAM

KEYED NOTES

1. EXTEND CONDENSATE DOWN TO JAN SINK. TERMINATE W/ AIR GAP. INSTALL VERTICAL CONDENSATE PIPE EXPOSED AND TIGHT TO WALL. VERTICAL EXPOSED PIPE SHALL BE SUPPORTED AT 3 EQUAL INTERVALS (MIN.).
2. SEE HW ONE LINE DIAGRAM, DWG M601 FOR PIPING SIZING AND ADDITIONAL INFORMATION.

DATE: 06/21/2023
DRAWN BY: AOS
SCALE: 1/8" = 1' - 0"
REVIEWED BY: TJH
PROJECT NO.: 20-2006
FILE:

HESNOR ENGINEERING ASSOCIATES
WWW.HESNOR.COM

KEYSTONE ASSOCIATES
ARCHITECTS, ENGINEERS AND PLANNERS, LLC
WWW.KEYSTONEASSOCIATES.COM

DELAWARE ENGINEERING, D.P.C.
CIVIL AND ENVIRONMENTAL CONSULTANTS
WWW.DELAWAREENGINEERING.COM

REVISIONS

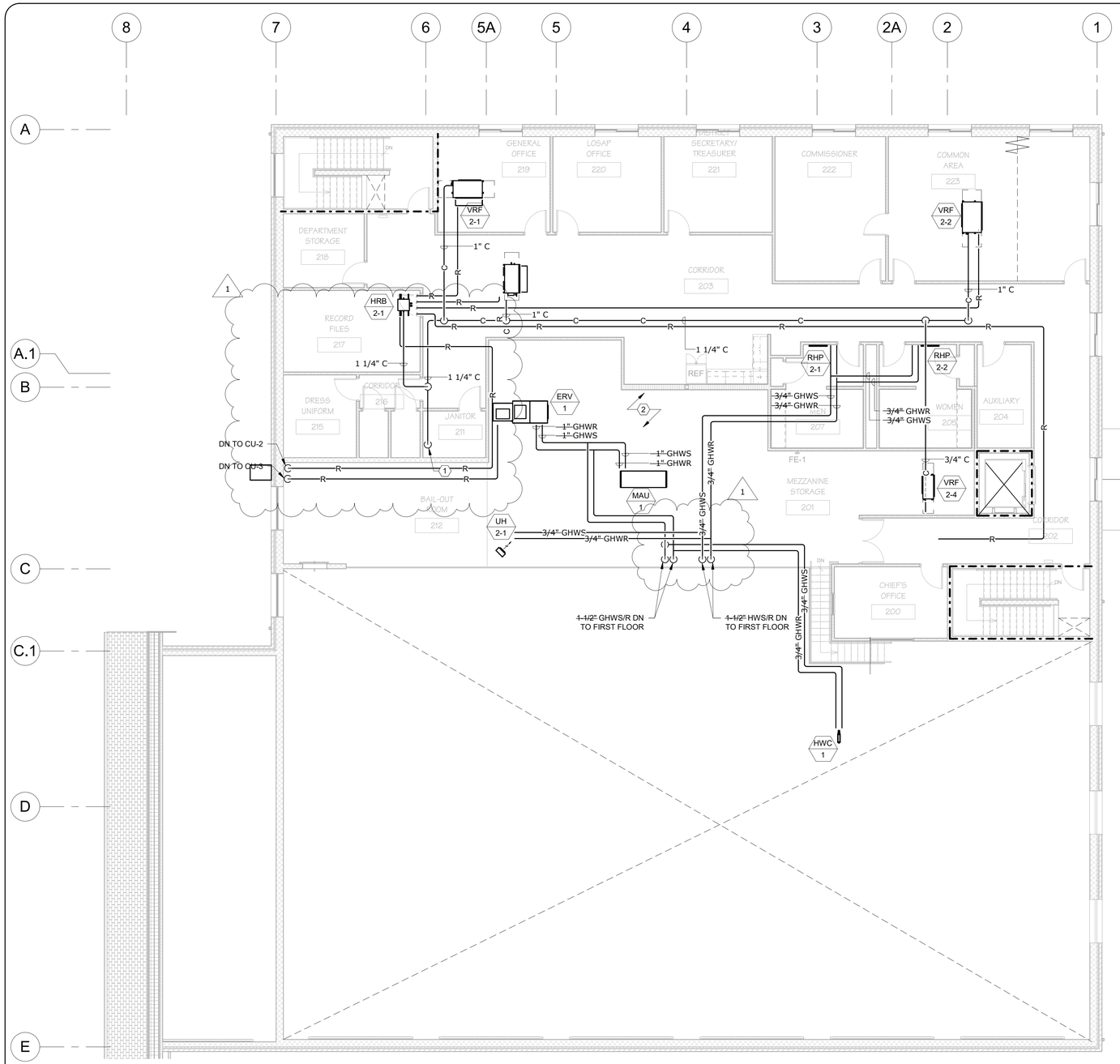
NO.	DATE	DESCRIPTION
1	08/04/2023	ADDENDUM #1

PORT EWEN FIRE DEPARTMENT, ULSTER, NEW YORK

PIPING PLAN - FIRST FLOOR

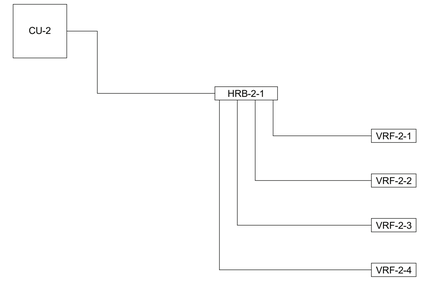
BID PLANS

SHEET: M201



CONDENSATE PIPING

1. INSTALL NEW CONDENSATE PIPING SYSTEM FOR ALL NEW FURNACES, VRF FAN COILS AND HEAT RECOVERY BOX. PIPING SHALL BE TYPE L COPPER. CONTRACTOR SHALL BE RESPONSIBLE FOR PIPING ELEVATIONS.
2. PRIOR TO ORDERING ANY EQUIPMENT:
   - CONTRACTOR SHALL WALK SITE WITH OWNER'S REP AND ENGINEER TO "PROVE" INSTALLATION OF NEW CONDENSATE PIPING SYSTEM.
3. SEE DIVISION 15 PART 15.4.9 ON SHEET M-601 FOR ADDITIONAL INFORMATION.



SECOND FLOOR VRF REFRIGERANT PIPING ONE-LINE DIAGRAM

KEYED NOTES

1. EXTEND CONDENSATE DOWN TO JAN SINK. TERMINATE W/ AIR GAP. INSTALL VERTICAL CONDENSATE PIPE EXPOSED AND TIGHT TO WALL. VERTICAL EXPOSED PIPE SHALL BE SUPPORTED AT 3 EQUAL INTERVALS (MIN.).
2. SEE HW ONE LINE DIAGRAM, DWG M601 FOR PIPING SIZING AND ADDITIONAL INFORMATION.

DATE: 06/21/2023
DRAWN BY: AOS
SCALE: 1/8" = 1'- 0"
REVIEWED BY: TJH
PROJECT NO.: 20-2006
FILE:

HESNOR ENGINEERING ASSOCIATES
WWW.HESNOR.COM
KEYSTONE ASSOCIATES ARCHITECTS, ENGINEERS AND PLANNERS, LLC
WWW.KEYSTONEASSOCIATES.COM
DELAWARE ENGINEERING, D.P.C. CIVIL AND ENVIRONMENTAL CONSULTANTS
WWW.DELAWAREENGINEERING.COM

REVISIONS

NO.	DATE	DESCRIPTION
1	08/04/2023	ADDENDUM #1

PORT EWEN FIRE DEPARTMENT, ULSTER, NEW YORK

PIPING PLAN - SECOND FLOOR

SHEET: M202

BID PLANS

T-OA OUTSIDE AIR TEMP.

WATTS MODEL: LF-009
3/4" DCWS
RPZ
N.C.
PRV
WATTS MODEL: LF-223
BY MC
EXTEND TO FL. DRAIN

CONDENSATE TRAP. INSTALL CONDENSATE PIPE/TUBING IN ACCORDANCE WITH MANUF'S INSTRUCTIONS. (TYP.)

WATER — 40% PROPYLENE GLYCOL

- PIPING SHALL BE 3/4-INCH CROSS-LINKED POLYETHYLENE (PEX) WITH OXYGEN BARRIER AT 9-INCHES ON CENTER. (TYP. OF SNOWMELT LOOPS)

TYPICAL MANIFOLD:
- SHALL BE STAINLESS STEEL MANIFOLD KIT WITH FULL ISOLATION AND BALANCE VALVE FOR EACH CIRCUIT.
- SIZE: 1-1/2" (UNLESS OTHERWISE NOTED).

TYPICAL CIRCUIT PIPING:
- SHOWN SCHEMATICALLY ONLY. CIRCUIT QUANTITIES AND LENGTHS ARE FOR BIDDING PURPOSES ONLY. FINAL QUANTITIES AND LENGTHS MAY VARY. FINAL CIRCUIT QUANTITIES AND LENGTHS SHALL BE SUBMITTED AS PART OF CONTRACTOR's SHOP DRAWING SUBMITTAL AND SHALL BE AS PREPARED BY RADIANT SYSTEM VENDOR USING VENDOR's SOFTWARE AND THE FINAL BUILDING PLANS.

- PIPING SHALL BE 3/4-INCH CROSS-LINKED POLYETHYLENE (PEX) WITH OXYGEN BARRIER AT 12-INCHES ON CENTER. (TYP.)

LOOP L-6 — 245,000 BTUH
1,475 SF
SNOW MELT
26 GPM
7-CIRCUITS
C-1 299 FT.
C-2 282 FT.
C-3 290 FT.
C-4 278 FT.
C-5 287 FT.
C-6 288 FT.
C-7 289 FT.

LOOP L-5 — 15,000 BTUH
75 SF
SNOW MELT
2 GPM
1-CIRCUIT
C-1 107 FT.

LOOP L-2 — 80,114 BTUH
2,425 SF
APPARATUS ROOM
8 GPM
9-CIRCUITS
C-1 293 FT.
C-2 277 FT.
C-3 264 FT.
C-4 272 FT.
C-5 261 FT.
C-6 274 FT.
C-7 261 FT.
C-8 277 FT.
C-9 260 FT.

LOOP L-1 — 65,000 BTUH
1,960 SF
APPARATUS ROOM
6 GPM
7-CIRCUITS
C-1 277 FT.
C-2 279 FT.
C-3 277 FT.
C-4 276 FT.
C-5 280 FT.
C-6 271 FT.
C-7 280 FT.

LOOP L-3 — 80,000 BTUH
2,450 SF
VINTAGE VEHICLE BAY
8 GPM
9-CIRCUITS
C-1 268 FT.
C-2 272 FT.
C-3 268 FT.
C-4 270 FT.
C-5 270 FT.
C-6 269 FT.
C-7 268 FT.
C-8 268 FT.
C-9 270 FT.

LOOP L-4 — 34,000 BTUH
1,050 SF
APPARATUS ROOM
4 GPM
4-CIRCUITS
C-1 263 FT.
C-2 260 FT.
C-3 257 FT.
C-4 299 FT.

BID PLANS

DATE: 06/21/2023
DRAWN BY: AOS
SCALE: N.T.S.
REVIEWED BY: TJH
PROJECT NO.: 20-2006
FILE:

HESNOR ENGINEERING ASSOCIATES — WWW.HESNOR.COM
KEYSTONE ASSOCIATES ARCHITECTS & ENGINEERS — WWW.KEYSTONE.COM
DELAWARE ENGINEERING, D.P.C. CIVIL AND ENVIRONMENTAL ENGINEERING — WWW.DELAWAREENGINEERING.COM

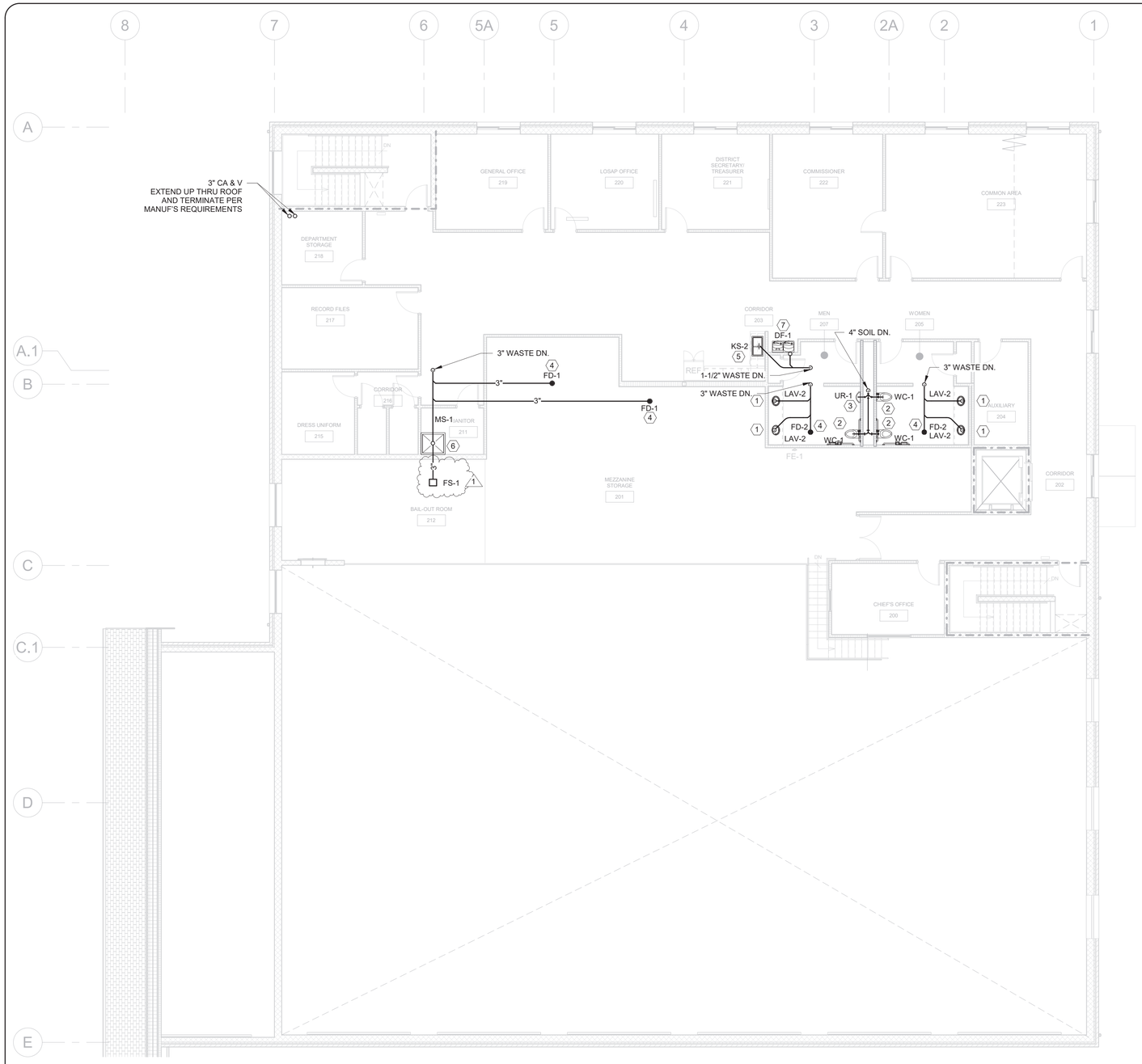
REVISIONS

NO.	DATE	DESCRIPTION
1	08/04/2023	ADDENDUM #1 NEW DRAWING ISSUED

PORT EWEN FIRE DEPARTMENT, ULSTER, NEW YORK

HW ONE-LINE DIAGRAM

SHEET: M601



KEYED NOTES

1. 1-1/2" WASTE TO LAVATORY. (TYP.)
2. 3" SOIL TO WATER CLOSET. (TYP.)
3. 2" SOIL WASTE TO URINAL. (TYP.)
4. 3" WASTE TO FLOOR DRAIN. (TYP.)
5. 1-1/2" WASTE TO KITCHEN SINK.
6. 3" WASTE TO MOP SINK.
7. 1-1/2" WASTE TO DRINKING FOUNTAIN.

DATE: 06/21/2023
DRAWN BY: AOS
SCALE: 1/8" = 1' - 0"
REVIEWED BY: TJH
PROJECT NO.: 20-2006
FILE:

HESNOR ENGINEERING ASSOCIATES
WWW.HESNOR.COM

KEYSTONE ASSOCIATES
ARCHITECTS, ENGINEERS AND SURVEYORS, LLP
WWW.KEYSTONEASSOCIATES.COM

DELAWARE ENGINEERING, D.P.C.
DELAWARE ENGINEERING & LAND SURVEYING
WWW.DELAWAREENGINEERING.COM

REVISIONS

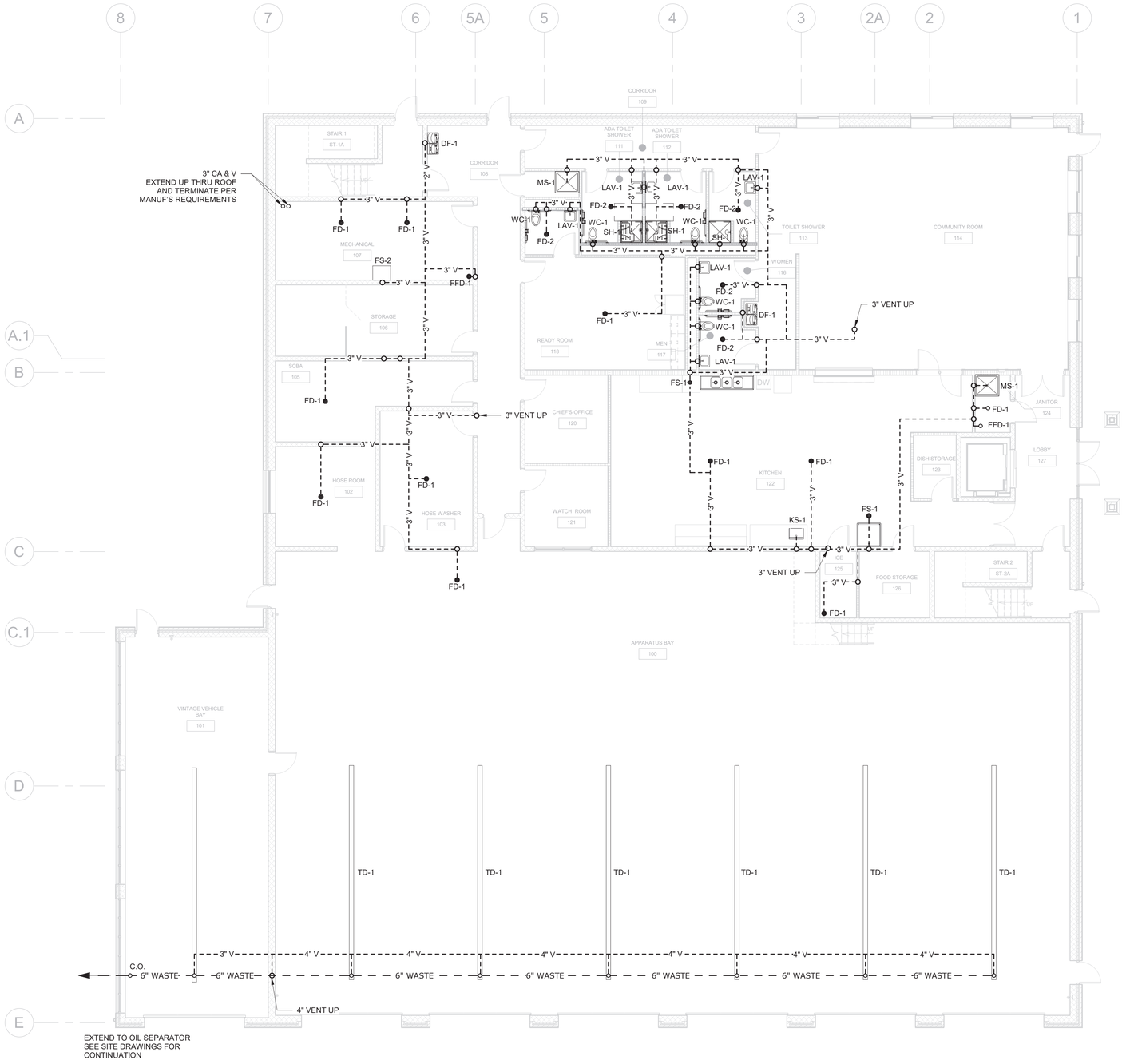
NO.	DATE	DESCRIPTION
1	08/04/2023	ADDENDUM #1

PORT EWEN FIRE
DEPARTMENT, ULSTER, NEW YORK

D.W.V. SECOND FLOOR PLAN

SHEET: P104

BID PLANS



1 VENTING - FIRST FLOOR PLAN
1/8" = 1'-0"

DATE: 06/21/2023
DRAWN BY: AOS
SCALE: 1/8" = 1' - 0"
REVIEWED BY: TJH
PROJECT NO.: 20-2006
FILE:

HESNOR ENGINEERING ASSOCIATES
WWW.HESNOR.COM

KEYSTONE ASSOCIATES
ARCHITECTS, ENGINEERS AND SURVEYORS, LLC
WWW.KEYSTONEASSOC.COM

DELAWARE ENGINEERING, D.P.C.
DELAWARE ENGINEERING, D.P.C.
WWW.DELAWAREENGINEERING.COM

REVISIONS

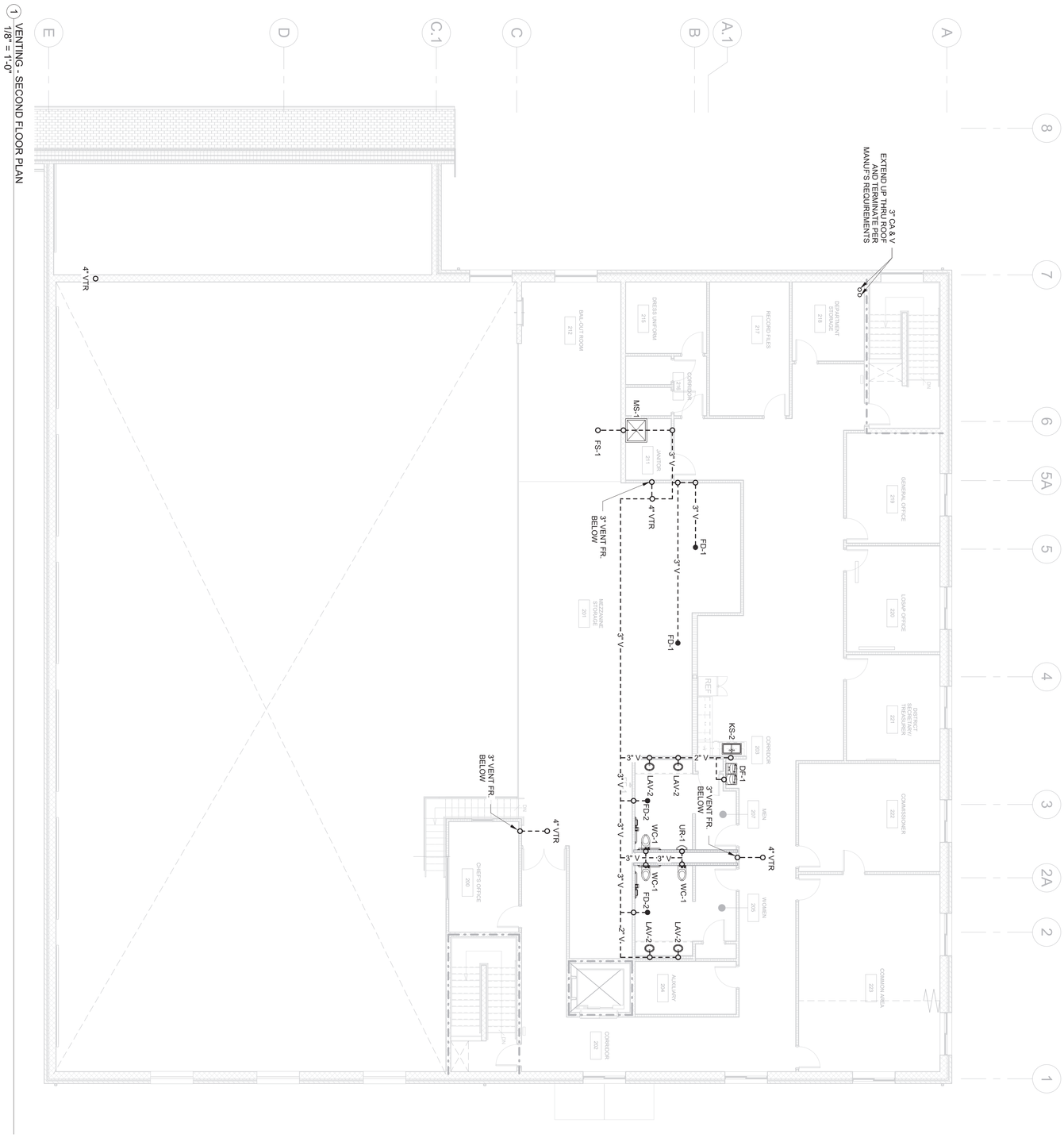
NO.	DATE	DESCRIPTION
1	08/04/2023	ADDENDUM #1 NEW DRAWING ISSUED

PORT EWEN FIRE
DEPARTMENT, ULSTER, NEW
YORK

VENTING FIRST FLOOR PLAN

SHEET:
P105

BID PLANS



1 VENTING - SECOND FLOOR PLAN
1/8" = 1'-0"

BID PLANS

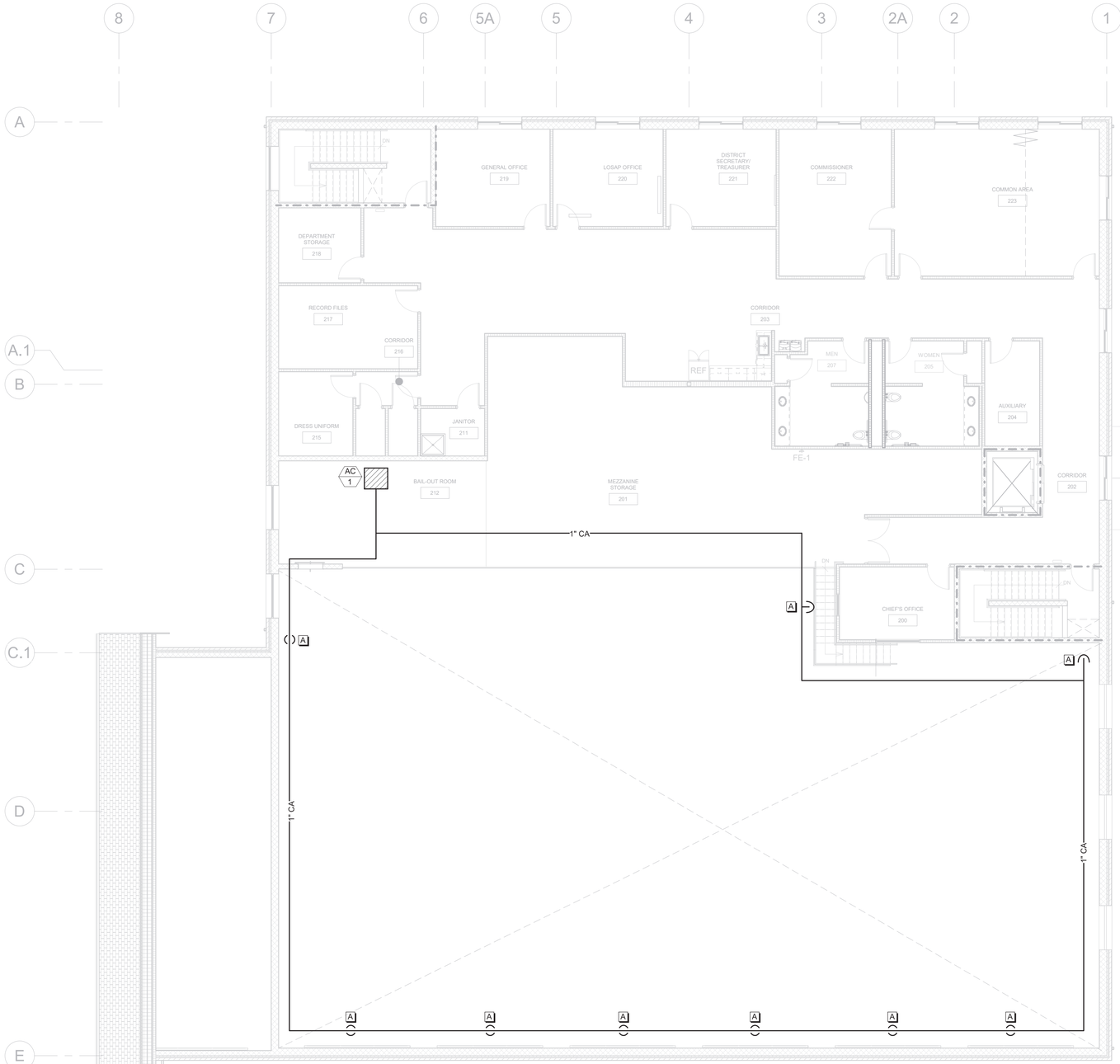
SHEET:						
P106	VENTING SECOND FLOOR PLAN	PORT EWEN FIRE DEPARTMENT, ULSTER, NEW YORK	REVISIONS			
			NO.	DATE	DESCRIPTION	
			1	08/04/2023	ADDENDUM #1 NEW DRAWING ISSUED	

DELAWARE ENGINEERING, D.P.C.
CIVIL AND ENVIRONMENTAL ENGINEERING
WWW.DELAWAREENGINEERING.COM

KEYSTONE ASSOCIATES
ARCHITECTS, ENGINEERS AND SURVEYORS, LLC
WWW.KEYSTONEAR.COM

HESNOR
ENGINEERING ASSOCIATES
WWW.HESNOR.COM

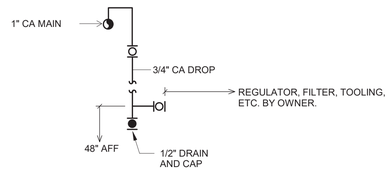
DATE: 06/21/2023
DRAWN BY: AOS
SCALE: 1/8" = 1' - 0"
REVIEWED BY: TJH
PROJECT NO.: 20-2006
FILE:



1 COMPRESSED AIR PIPING PLAN
1/8" = 1'-0"

KEYED NOTE: THIS SHEET

A 3/4" CA DROP.
-EXTEND DN. WALL AND TERMINATE AT 48-INCHES AFF.
-SECURELY INSTALL TIGHT TO INTERIOR WALL SYSTEM.



TYPICAL AIR COMPRESSOR INSTALLATION

AIR COMPRESSOR SCHEDULE

TAG	MANUF.	MODEL No.	TYPE	TANK SIZE (GAL)	MAX PRESSURE (PSIG)	CFM @ 90 PSI	MOTOR HP	SYSTEM	DIMENSIONS	OPERATING WEIGHT (LBS)	REMARKS
AC-1	INGERSOLL RAND	2475N7.5	TWO STAGE RECIPROCATING	80	175	24.3	7.5	208/1/60	38"Øx69"(H)	611	SEE NOTES

NOTES:
1. ASME – RATED
2. PROVIDE WITH THE FOLLOWING OPTIONS:
   - ELECTRONIC TIME DRAIN
   - INTEGRAL SAFETY RELIEF VALVE
   - SEQUENCER PANEL
   - VIBRATION ISOLATOR PADS
   - AIR FILTER (QUIET INTAKE)
   - AIR-COOLED AFTERCOOLER
   - MAGNETIC STARTER

BID PLANS

DATE: 06/21/2023
DRAWN BY: AOS
SCALE: 1/8" = 1' - 0"
REVIEWED BY: TJH
PROJECT NO.: 20-2006
FILE:

HESNOR ENGINEERING ASSOCIATES
WWW.HESNOR.COM
KEYSTONE ASSOCIATES ARCHITECTS, ENGINEERS AND LAND SURVEYORS, LLC
WWW.KEYSTONEASSOCIATES.COM
DELAWARE ENGINEERING, D.P.C. CIVIL AND ENVIRONMENTAL CONSULTANTS
WWW.DELAWAREENGINEERING.COM

REVISIONS

NO.	DATE	DESCRIPTION
1	08/04/2023	ADDENDUM #1 NEW DRAWING ISSUED

PORT EWEN FIRE DEPARTMENT, ULSTER, NEW YORK

COMPRESSED AIR PIPING PLAN

SHEET: P107