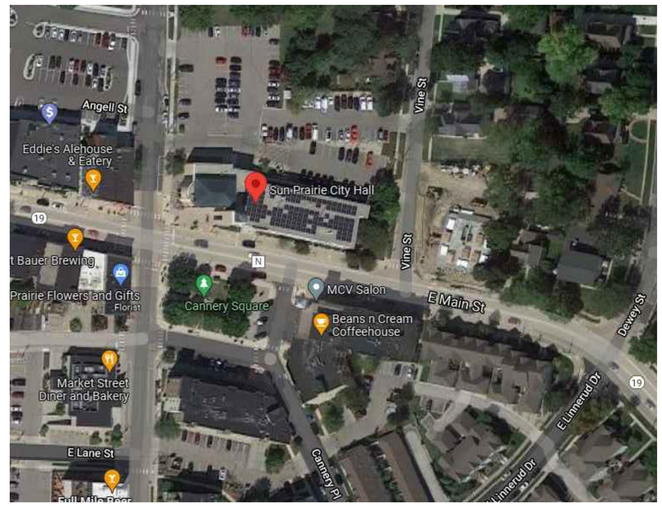
City of Sun Prairie

City Hall Heat Pump Unit Replacement



PROJECT LOCATION - CITY HALL

Sun Prairie City Hall
300 E Main St., Sun Prairie, WI 53590

OWNER:
CITY OF SUN PRAIRIE
300 E MAIN ST
SUN PRAIRIE, WI 53590

CONTACT:
ADAM SCHLEICHER, PE, PLS
608-825-1170

HVAC:
JDR ENGINEERING, INC.
5525 NOBEL DR., STE 110
MADISON, WI 53711

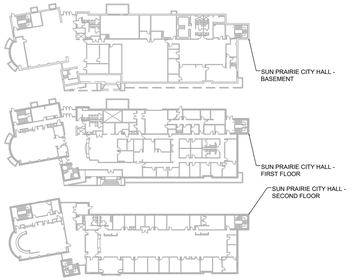
CONTACT:
JAMES VANDER ZANDEN, PE
608-277-1728

ELECTRICAL:
JDR ENGINEERING, INC.
5525 NOBEL DR., STE 110
MADISON, WI 53711

CONTACT:
MIKE KLUBERTANZ, DE
608-277-1728

DRAWING INDEX

DRAWING NO.	DRAWING TITLE
MECHANICAL AND ELECTRICAL	
T000	COVER SHEET AND SHEET INDEX
ME000	SYMBOLS, ABBREVIATIONS, & SCHEDULES
ME100	CITY HALL DEMOLITION AND NEW WORK BASEMENT PLAN
ME101	CITY HALL DEMOLITION AND NEW WORK FIRST FLOOR PLAN
ME104	CITY HALL DEMOLITION AND NEW WORK SECOND FLOOR PLAN



PROJECT KEYPLAN - CITY HALL

JDR ENGINEERING, INC.
5525 NOBEL DRIVE
SUITE 110
MADISON, WI 53711
PH: 608.277.1728 FAX: 608.271.7046
JDR PROJECT NO. 21.0251

CONSULTANTS

ISSUED

REVISIONS / ADDENDA

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-
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PROJECT # :	21.0251
DRAWN :	HJM
CHECKED :	JRV
DATE :	09/01/2022
PHASE :	BD

PROJECT

CITY OF SUN PRAIRIE
CITY HALL HEAT PUMP
UNIT REPLACEMENT

COVER SHEET AND
SHEET INDEX

T000

JDR ENGINEERING, INC.
5525 NOBEL DRIVE
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MADISON, WI 53711
PH: 608.277.1728 FAX: 608.271.7046
JDR PROJECT NO. 210251

GENERAL HVAC NOTES:

1. ALL WORK TO BE DONE IN COMPLIANCE WITH ALL STATE AND LOCAL CODES AND ALL MANUFACTURER'S INSTRUCTIONS.
2. ALL DUCTWORK AND CONDUIT SHALL RUN STRAIGHT AND TRUE AND SHALL BE INSTALLED IN A WORKMANLIKE MANNER.
3. ALL DUCTWORK THAT REQUIRES INSULATION SHALL CONFORM WITH ALL APPLICABLE CODES. DIMENSIONS LISTED ARE INSIDE FREE AREAS.
4. COORDINATE ALL EQUIPMENT INSTALLATION WITH EXISTING CONDITIONS.
5. REMOVE EXISTING HVAC EQUIPMENT AND DUCTWORK NOTED FOR REMOVAL COMPLETE.
6. ALL DUCTWORK WHICH OPERATES AT STATIC PRESSURES FROM 0.25 INCHES TO 2 INCHES WATER COLUMN INCLUSIVE AND IS LOCATED OUTSIDE OF THE CONDITIONED SPACE OR IN RETURN PLENUMS SHALL BE SEALED IN ACCORDANCE WITH SEAL CLASS C AS DEFINED IN THE SMACNA HVAC DUCT LEAKAGE TEST MANUAL.
7. ALL EQUIPMENT IS TO BE PROVIDED COMPLETE WITH OPERATION & MAINTENANCE MANUALS AND SYSTEM SCHEMATICS.
8. ALL EQUIPMENT TO MEET UL REQUIREMENTS.
9. ALL LOW-VOLTAGE WIRING BY HVAC CONTRACTOR PER NATIONAL ELECTRIC CODE.
10. ALL SUPPLY & RETURN DUCT IN CONCEALED AREAS ABOVE THE CEILING TO BE GALVANIZED SHEET METAL.
11. HVAC CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF EXISTING DUCT ROUTING AND EQUIPMENT LOCATIONS AND CLEARANCES ON JOB SITE.

END OF HVAC GEN NOTES.

GENERAL ELECTRICAL NOTES:

1. ALL WORK TO BE DONE IN COMPLIANCE WITH ALL STATE AND LOCAL CODES AND ALL MANUFACTURER'S INSTRUCTIONS.
2. ALL CONDUIT SHALL RUN STRAIGHT AND TRUE AND SHALL BE INSTALLED IN A WORKMANLIKE MANNER.
3. ALL ELECTRICAL WORK SHALL COMPLY WITH ALL EXISTING BUILDING STANDARDS AND MINIMUM REQUIREMENTS.
4. ALL ELECTRICAL WORK SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE AND ALL LOCAL AND STATE CODES.
5. ALL CONDUCTORS SHALL BE COPPER.
6. ALL WIRING SHALL BE ROUTED IN EMT CONDUIT AT A MINIMUM.
7. ALL EQUIPMENT SHALL BE LABELED TO MATCH THE BUILDING STANDARDS.
8. ALL ELECTRICAL BOXES SHALL BE LABELED WITH THE PANEL AND CIRCUIT NUMBER(S) TO MATCH THE BUILDING STANDARDS.
9. FIELD VERIFY ALL ELECTRICAL REQUIREMENTS WITH EXISTING CONDITIONS.

END OF ELEC GEN NOTES.

WATER COOLED HEAT PUMP UNIT SCHEDULE - CITY HALL

SYSTEM	HEAT PUMP UNIT		FILTER TYPE	SUPPLY AIR (CFM)	COOLING CAPACITY (KBTU/H)		HEATING CAPACTIY (KBTU/H)	ELECTRICAL REQUIREMENTS				REMARKS
	MFGR	MODEL NUMBER			TOTAL	SENSIBLE		VOLT	PHASE	MCA (AMPS)	MCOP (AMPS)	
HPU-L-1	CARRIER	50PCH018	MERV 13	800	18.5	13.6	21.8	285	1	9	15	(1) (2) (3)
HPU-L-2	CARRIER	50PCH024	MERV 13	950	25.4	19.3	30.6	285	1	13	20	(1) (2) (3)
HPU-L-3	CARRIER	50PCH018	MERV 13	600	18.5	13.6	21.8	285	1	9	15	(1) (2) (3)
HPU-L-4	CARRIER	50PCH036	MERV 13	1215	35.8	27.2	41.5	285	1	18	25	(1) (2) (3)
HPU-L-5	CARRIER	50PCH018	MERV 13	800	18.5	13.6	21.8	285	1	9	15	(1) (2) (3)
HPU-L-6	CARRIER	50PCH024	MERV 13	800	25.4	19.3	30.6	285	1	13	20	(1) (2) (3)
HPU-L-9	CARRIER	50PCH036	MERV 13	1000	35.8	27.2	41.5	285	1	18	25	(1) (2) (3)
HPU-L-10	CARRIER	50PCH024	MERV 13	800	25.4	19.3	30.6	285	1	13	20	(1) (2) (3)
HPU-1-3	CARRIER	50PCH048	MERV 13	1750	47.0	35.5	59.0	460	3	11	15	(1) (2) (3)
HPU-1-4	CARRIER	50PCH042	MERV 13	1655	42.0	30.8	50.0	460	3	9	15	(1) (2) (3)
HPU-1-5	CARRIER	50PCH024	MERV 13	900	25.4	19.3	30.6	285	1	13	20	(1) (2) (3)
HPU-1-6	CARRIER	50PCH042	MERV 13	1220	42.0	30.8	50.0	460	3	9	15	(1) (2) (3)
HPU-1-7	CARRIER	50PCH024	MERV 13	915	25.4	19.3	30.6	285	1	13	20	(1) (2) (3)
HPU-1-9	CARRIER	50PCH030	MERV 13	1140	30.5	20.9	39.0	285	1	15	25	(1) (2) (3)
HPU-2-3	CARRIER	50PCH024	MERV 13	725	25.4	19.3	30.6	285	1	13	20	(1) (2) (3)
HPU-2-4	CARRIER	50PCH042	MERV 13	1185	42.0	30.8	50.0	460	3	9	15	(1) (2) (3)
HPU-2-6	CARRIER	50PCH060	MERV 13	1760	57.8	44.0	63.6	460	3	13	20	(1) (2) (3)
HPU-2-7	CARRIER	50PCH030	MERV 13	985	30.5	20.9	39.0	285	1	15	25	(1) (2) (3)
HPU-2-8	CARRIER	50PCH060	MERV 13	2020	57.8	44.0	63.6	460	3	13	20	(1) (2) (3)
HPU-2-9	CARRIER	50PCH042	MERV 13	1190	42.0	30.8	50.0	460	3	9	15	(1) (2) (3)
HPU-2-10	CARRIER	50PCH042	MERV 13	1420	42.0	30.8	50.0	460	3	9	15	(1) (2) (3)

KEYED NOTES:

(1) PROVIDE NEW UNIT WITH INTEGRAL AUTOMATIC CONDENSOR WATER ISOLATION VALVE.
(2) CONTRACTOR SHALL VERIFY EXISTING ELECTRICAL CONNECTION (VOLTS, PHASE) PRIOR TO ORDERING UNIT.
(3) HEAT PUMP UNIT SHALL BE SET TO FAN SPEED THAT AT A MINIMUM PROVIDES THE SCHEDULED AIRFLOW.

ABBREVIATIONS

AD	ACCESS DOOR
ADJ	ADJUSTABLE
A/E	ARCHITECT/ENGINEER
AHU	AIR HANDLING UNIT
AL	ALUMINUM
AMP	AMPERE
AUTO	AUTOMATIC
BLDG	BUILDING
BSMT	BASEMENT
BTU	BRITISH THERMAL UNIT
CFM	CUBIC FEET PER MINUTE
CONTR	CONTRACTOR
CRU	COMPUTER ROOM UNIT
DEPT	DEPARTMENT
DWG	DRAWING
E	EXISTING
EC	ELECTRICAL CONTRACTOR
ELEC	ELECTRICAL
EQUIP	EQUIPMENT
ETR	EXISTING TO REMAIN
EXT	EXTERIOR OR EXTERNAL
F	FURNACE
°F	DEGREES FAHRENHEIT
FCU	FAN COIL UNIT
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE
FPM	FEET PER MINUTE
FT	FOOT OR FEET
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
HC	HEATING CONTRACTOR
HG	MERCURY
HGT	HEIGHT
HP	HORSEPOWER
HPU	HEAT PUMP UNIT
HR	HOUR
HVAC	HEATING VENTILATING AND AIR CONDITIONING
HWY	HIGHWAY
HZ	HERTZ
IN	INCH
KW	KILOWATT
LBS	POUNDS
MAX	MAXIMUM
MBH	1000 BRITISH THERMAL UNITS/HOUR
MCA	MINIMUM CIRCUIT AMPS
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL
MFS	MAXIMUM FUSE SIZE
MIN	MINIMUM
MOCP	MAXIMUM OVERCURRENT PROTECTION
MTD	MOUNTED
NIC	NOT IN CONTRACT
NPBI	NEEDLE POINT BI-POLAR IONIZATION
NTS	NOT TO SCALE
PLBG	PLUMBING
POC	POINT OF CONNECTION
PRELIM	PRELIMINARY
PRESS	PRESSURE
PSI	POUNDS PER SQUARE INCH
RA	RETURN AIR
REQD	REQUIRED
RPM	REVOLUTIONS PER MINUTE
S	SUPPLY
SA	SUPPLY AIR
SF	SUPPLY FAN
TEMP	TEMPORARY
TFA	TO FLOOR ABOVE
TFB	TO FLOOR BELOW
TYP	TYPICAL
VD	VOLUME DAMPER
VDT	VERTICAL DRAW THRU
VEL	VELOCITY
VERT	VERTICAL

DUCTWORK SYSTEMS

- 20/12 — DUCT SIZE, (FIRST FIGURE IS SIDE SHOWN)
- 12" Ø — ROUND DUCT
- FLEXIBLE CONNECTION
- DUCT TRANSITION (DOUBLE LINE)
- DUCT TRANSITION (RECT. TO ROUND)
- DUCT TRANSITION (SINGLE LINE)
- HIDDEN DUCTWORK
- MANUAL VOLUME DAMPER
- ROOF VENTILATOR OR HOOD ON ROOF ABOVE
- ROOF VENTILATOR OR HOOD ON ROOF
- DUCT CAP
- END OF DUCT
- EXISTING EXISTING NEW NEW — POSITIVE PRESSURE DUCT SECTION
- POSITIVE PRESSURE DUCT (DOWN OR AWAY)
- EXISTING EXISTING NEW NEW — NEGATIVE PRESSURE DUCT SECTION
- NEGATIVE PRESSURE DUCT (DOWN OR AWAY)
- EXISTING NEW — POINT OF NEW CONNECTION (PIPE OR DUCT)
- SQUARE FEET
- ELEVATION SYMBOL

ELECTRICAL SYSTEMS

- ELECTRICAL PANEL

GENERAL SYMBOLS

- EXISTING TO REMAIN (DUCTWORK, PIPING, & EQUIPMENT)
- EXISTING TO BE REMOVED (DUCTWORK, PIPING, & EQUIPMENT)
- NEW DUCTWORK/PIPING/EQUIPMENT
- NEW EQUIPMENT

PLENUM NOTE:
RETURN AIR CEILING PLENUMS ARE UTILIZED ON THIS PROJECT IN CITY HALL. DURING THE COURSE OF CONSTRUCTION, THE CONTRACTOR SHALL ASCERTAIN THAT ALL ROOMS TO WHICH AIR IS SUPPLIED, HAVE RETURN AIR PATHS BACK TO AND THRU THE CEILING PLENUM. ANY SPACES OBSERVED WHICH DO NOT HAVE SUCH OPENINGS SHALL BE REPORTED TO A/E IMMEDIATELY FOR RESOLUTION. PIPING AND DUCTWORK SHALL BE INSTALLED IN SUCH A MANNER SO AS NOT TO BLOCK THE RETURN AIR PATH, RETURN AIR OPENINGS TO SHAFTS & INTAKE DUCTWORK. ALL MATERIALS IN PLENUMS SHALL BE PLENUM RATED NON-COMBUSTIBLE MATERIALS.

CONSULTANTS

ISSUED

REVISIONS / ADDENDA

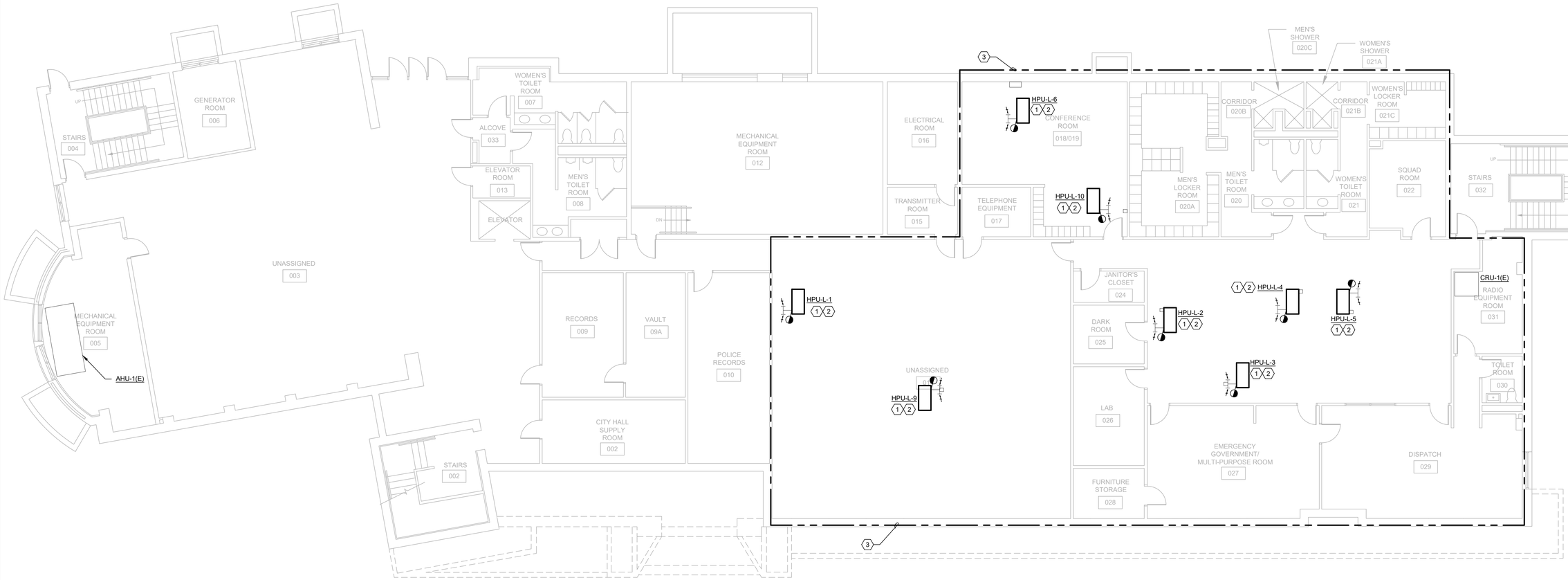
PROJECT # :	21.0251
DRAWN :	HJM
CHECKED :	JRV
DATE :	09/01/2022
PHASE :	BD

PROJECT

CITY OF SUN PRAIRIE
CITY HALL HEAT PUMP UNIT REPLACEMENT

SYMBOLS, ABBREVIATIONS, & SCHEDULES

ME000



1 ME100 CITY HALL DEMOLITION AND NEW WORK BASEMENT PLAN

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

NORTH

KEYED NOTES:

1. REMOVE EXISTING HEAT PUMP UNIT AS SHOWN. SAVE EXISTING SUPPLY AND RETURN DUCTWORK, AND EXISTING CONDENSER WATER CONNECTIONS FOR REUSE BY NEW UNIT. SAVE EXISTING CONTROLS INTEGRATION MODULE AND ROOM THERMOSTAT FOR REUSE. SAVE EXISTING ELECTRICAL CONNECTION FOR REUSE.
2. PROVIDE AND INSTALL NEW HEAT PUMP UNIT AS SCHEDULED IN LOCATION SHOWN. NEW UNITS SHALL BE ADAPTED TO EXISTING SUPPLY AND RETURN DUCTWORK, AND SHALL BE CONNECTED TO THE EXISTING CONDENSER WATER CONNECTIONS. NEW UNIT SHALL BE INTEGRATED INTO THE EXISTING CONTROLS SYSTEM USING THE EXISTING CONTROLS INTEGRATION MODULE. NEW UNIT SHALL BE FED FROM EXISTING ELECTRICAL CONNECTIONS.
3. EXISTING AREA SHOWN IS PART OF THE POLICE DEPARTMENT. CONTRACTOR SHALL COORDINATE ACCESS TO THIS AREA WITH OWNER 5 BUSINESS DAYS PRIOR TO PERFORMING WORK TO ENABLE ESCORTS TO BE ARRANGED. AS AN ALTERNATIVE, THE CONTRACTOR CAN SUBMIT THOSE EXPECTED TO PERFORM WORK IN THIS AREA TO A BACKGROUND CHECK TO ENABLE THOSE WORKERS TO WORK WITHOUT AN ESCORT.

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JDR PROJECT NO. 210251

CONSULTANTS

ISSUED

REVISIONS / ADDENDA

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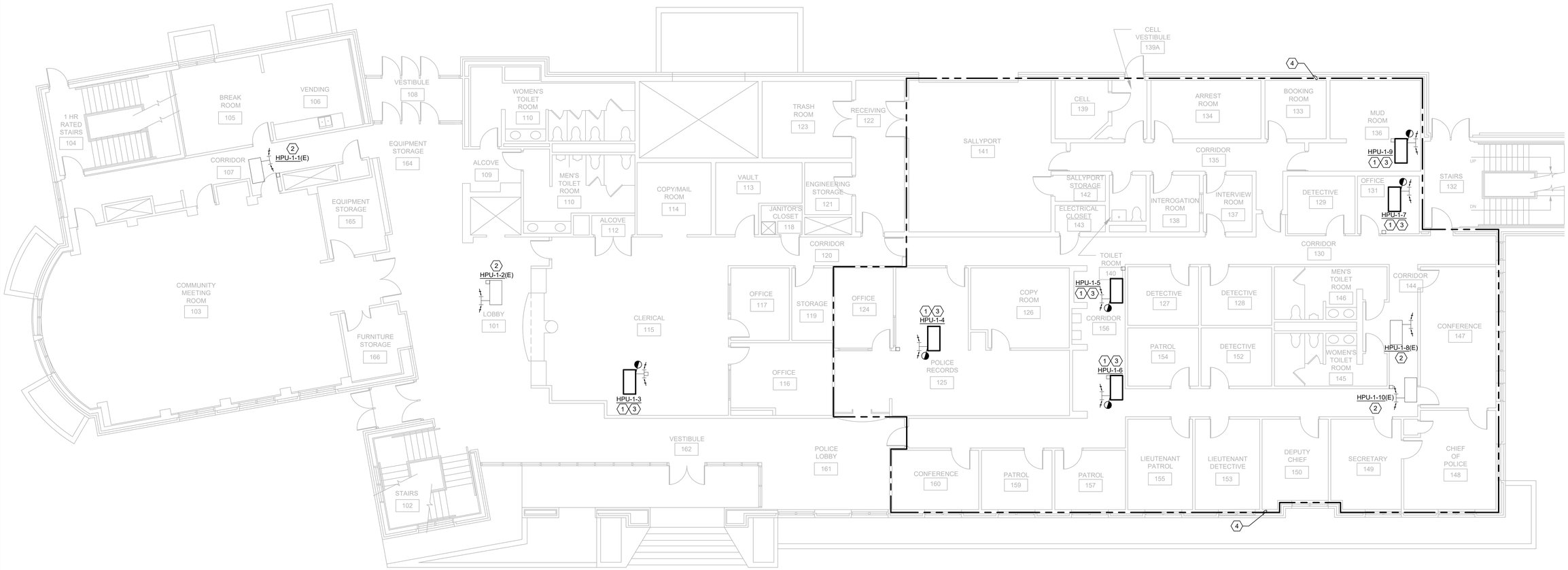
PROJECT # :	21.0251
DRAWN :	HJM
CHECKED :	JRV
DATE :	09/01/2022
PHASE :	BD

PROJECT

CITY OF SUN PRAIRIE
CITY HALL HEAT PUMP
UNIT REPLACEMENT

CITY HALL DEMOLITION
AND NEW WORK
BASEMENT PLAN

ME100



1 ME101 CITY HALL DEMOLITION AND NEW WORK FIRST FLOOR PLAN

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

NORTH

KEYED NOTES:

1. REMOVE EXISTING HEAT PUMP UNIT AS SHOWN. SAVE EXISTING SUPPLY AND RETURN DUCTWORK, AND EXISTING CONDENSER WATER CONNECTIONS FOR REUSE BY NEW UNIT. SAVE EXISTING CONTROLS INTEGRATION MODULE AND ROOM THERMOSTAT FOR REUSE. SAVE EXISTING ELECTRICAL CONNECTION FOR REUSE.
2. EXISTING HEAT PUMP UNIT IS EXCLUDED FROM PROJECT SCOPE.
3. PROVIDE AND INSTALL NEW HEAT PUMP UNIT AS SCHEDULED IN LOCATION SHOWN. NEW UNITS SHALL BE ADAPTED TO EXISTING SUPPLY AND RETURN DUCTWORK, AND SHALL BE CONNECTED TO THE EXISTING CONDENSER WATER CONNECTIONS. NEW UNIT SHALL BE INTEGRATED INTO THE EXISTING CONTROLS SYSTEM USING THE EXISTING CONTROLS INTEGRATION MODULE. NEW UNIT SHALL BE FED FROM EXISTING ELECTRICAL CONNECTIONS.
4. EXISTING AREA SHOWN IS PART OF THE POLICE DEPARTMENT. CONTRACTOR SHALL COORDINATE ACCESS TO THIS AREA WITH OWNER 5 BUSINESS DAYS PRIOR TO PERFORMING WORK TO ENABLE ESCORTS TO BE ARRANGED. AS AN ALTERNATIVE, THE CONTRACTOR CAN SUBMIT THOSE EXPECTED TO PERFORM WORK IN THIS AREA TO A BACKGROUND CHECK TO ENABLE THOSE WORKERS TO WORK WITHOUT AN ESCORT.

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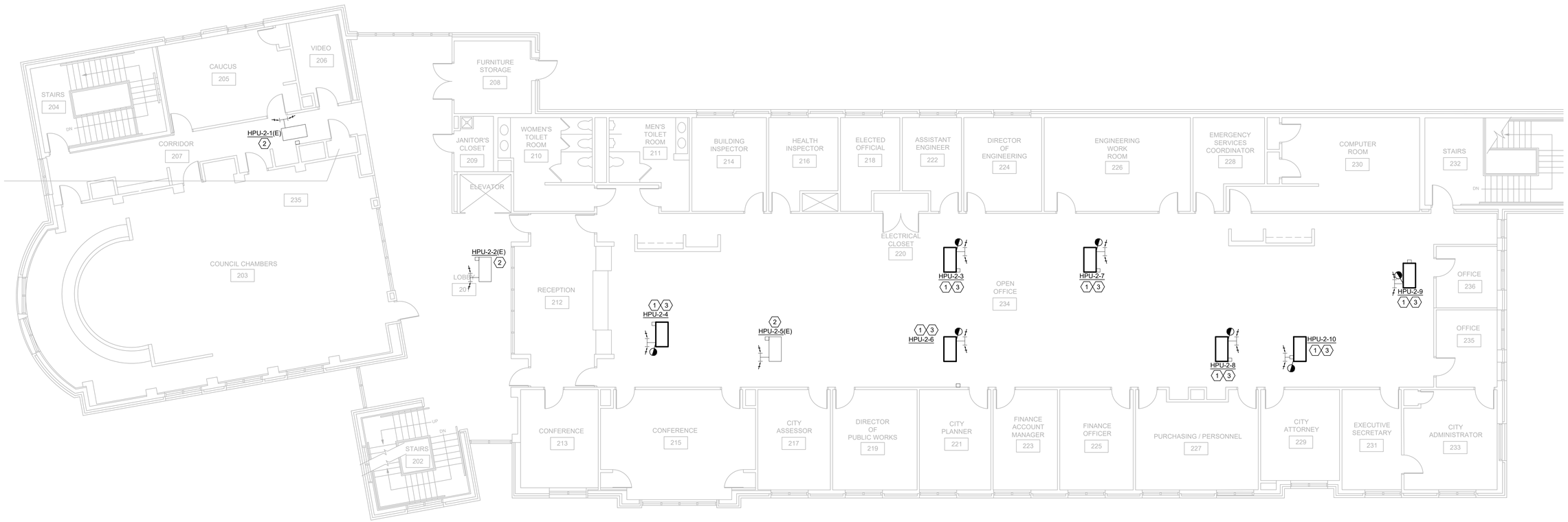
CITY OF SUN PRAIRIE
CITY HALL HEAT PUMP
UNIT REPLACEMENT

CITY HALL DEMOLITION
AND NEW WORK
FIRST FLOOR PLAN

ME101



1 ME102 CITY HALL DEMOLITION AND NEW WORK SECOND FLOOR PLAN

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

NORTH

KEYED NOTES:

1. REMOVE EXISTING HEAT PUMP UNIT AS SHOWN. SAVE EXISTING SUPPLY AND RETURN DUCTWORK, AND EXISTING CONDENSER WATER CONNECTIONS FOR REUSE BY NEW UNIT. SAVE EXISTING CONTROLS INTEGRATION MODULE AND ROOM THERMOSTAT FOR REUSE. SAVE EXISTING ELECTRICAL CONNECTION FOR REUSE.
2. EXISTING HEAT PUMP UNIT IS EXCLUDED FROM PROJECT SCOPE.
3. PROVIDE AND INSTALL NEW HEAT PUMP UNIT AS SCHEDULED IN LOCATION SHOWN. NEW UNITS SHALL BE ADAPTED TO EXISTING SUPPLY AND RETURN DUCTWORK, AND SHALL BE CONNECTED TO THE EXISTING CONDENSER WATER CONNECTIONS. NEW UNIT SHALL BE INTEGRATED INTO THE EXISTING CONTROLS SYSTEM USING THE EXISTING CONTROLS INTEGRATION MODULE. NEW UNIT SHALL BE FED FROM EXISTING ELECTRICAL CONNECTIONS.

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PROJECT

CITY OF SUN PRAIRIE
CITY HALL HEAT PUMP
UNIT REPLACEMENT

CITY HALL DEMOLITION
AND NEW WORK
SECOND FLOOR PLAN

ME102