

MPHA CEDAR HIGH BOILER REPLACEMENT

MINNEAPOLIS, MINNESOTA

ISG PROJECT # 24-30497

PROJECT GENERAL NOTES

- A. ALL WORK SHALL CONFORM TO THE CONTRACT DOCUMENTS, WHICH INCLUDE, BUT ARE NOT LIMITED TO, THE OWNER - CONTRACTOR AGREEMENT, THE PROJECT MANUAL (WHICH INCLUDES GENERAL AND SUPPLEMENTARY CONDITIONS AND SPECIFICATIONS), DRAWINGS OF ALL DISCIPLINES AND ALL ADDENDA, MODIFICATIONS AND CLARIFICATIONS ISSUED BY THE ARCHITECT / ENGINEER.
- B. CONTRACT DOCUMENTS SHALL BE ISSUED TO ALL SUBCONTRACTORS BY THE GENERAL CONTRACTOR IN COMPLETE SETS IN ORDER TO ACHIEVE THE FULL EXTENT AND COMPLETE COORDINATION OF ALL WORK. CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND CORRELATING QUANTITIES AND DIMENSIONS.
- C. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES OR CONDITIONS REQUIRING INFORMATION OR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
- D. FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY ARCHITECT / ENGINEER OF ANY DISCREPANCIES OR CONDITIONS REQUIRING INFORMATION OR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
- E. DETAILS SHOWN ARE INTENDED TO BE INDICATIVE OF THE PROFILES AND TYPE OF DETAILING REQUIRED THROUGHOUT THE WORK. DETAILS NOT SHOWN ARE SIMILAR IN CHARACTER TO DETAILS SHOWN. WHERE SPECIFIC DIMENSIONS, DETAILS OR DESIGN INTENT CANNOT BE DETERMINED, NOTIFY ARCHITECT / ENGINEER BEFORE PROCEEDING WITH THE WORK.
- F. ALL MANUFACTURED ARTICLES, MATERIALS AND EQUIPMENT SHALL BE APPLIED, INSTALLED, CONNECTED, ERECTED, CLEANED AND CONDITIONED ACCORDING TO MANUFACTURERS' INSTRUCTIONS. IN CASE OF DISCREPANCIES BETWEEN MANUFACTURERS' INSTRUCTIONS AND THE CONTRACT DOCUMENTS, NOTIFY ARCHITECT / ENGINEER BEFORE PROCEEDING WITH THE WORK.
- G. LARGE-SCALE, MORE SPECIFIC DETAILS TAKE PRECEDENCE OVER SMALLER-SCALE, LESS SPECIFIC DETAILS AND INFORMATION. MORE STRINGENT REQUIREMENTS FOR CODE, PRODUCTS AND INSTALLATION TAKE PRECEDENCE OVER LESS STRINGENT REQUIREMENTS. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES OR CONDITIONS REQUIRING INFORMATION OR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
- H. PROVIDE CONTINUOUS SEALANT AROUND ALL MATERIALS AT ALL INTERIOR AND EXTERIOR WALL PENETRATIONS. REFER TO SPECIFICATIONS FOR APPROPRIATE SEALANT.
- I. ALL DISSIMILAR METALS SHALL BE EFFECTIVELY ISOLATED FROM EACH OTHER TO AVOID GALVANIC CORROSION.
- J. SEAL ALL OPENINGS IN WALLS, FLOORS, CEILINGS, AND ROOFS, AROUND DUCTS, PIPES, VENTS, TRAPS, CONDUIT AND ALL OTHER PENETRATIONS WITH FIRE STOPPING AS SPECIFIED AND REQUIRED BY CODES. IF FIRE STOPPING IS NOT REQUIRED AT PENETRATIONS PER CODE, SEAL WITH CONTINUOUS SEALANT.
- K. PROVIDE TEMPORARY WALLS, ENCLOSURES, DUST SHIELDS AND WALK-OFF MATS AS REQUIRED TO SEPARATE DEMOLITION AND CONSTRUCTION FROM EXISTING BUILDING.
- L. PROVIDE BRACING AND SHORING AS REQUIRED TO PROTECT EXISTING STRUCTURE TO REMAIN. PROVIDE SECURE AND WEATHERPROOF ENCLOSURE OF TEMPORARY OPENINGS IN EXTERIOR WALLS. PROTECT ALL BUILDING COMPONENTS FROM DAMAGE DURING DEMOLITION AND CONSTRUCTION.
- M. RESTORE ALL EXISTING AREAS AFFECTED BY DEMOLITION AND RELATED NEW CONSTRUCTION TO THEIR ORIGINAL CONDITION, INCLUDING BUT NOT LIMITED TO WALLS, FLOORS, AND CEILINGS AND THEIR ASSOCIATED FINISHES.
- N. PROVIDE SOLID WALL BACKING WITH METAL OR FIRE-RETARDANT WOOD BLOCKING BEHIND DOOR HARDWARE SUCH AS WALL STOPS, BUMPERS, HOLD OPENS, ETC. AND AT ALL ITEMS REQUIRING FASTENING THROUGH GYP BD. TO BLOCKING.
- O. RENDERED IMAGES MAY NOT BE AN ACCURATE REPRESENTATION OF BUILDING CONDITIONS, REFER TO PLANS AND DETAILS CONTAINED WITHIN FOR SCOPE OF WORK.

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I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

BRANDON VILAND

 DATE 03/15/2024 LIC. NO. 53688

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.

David F. Selinsky

 DATE 03/15/2024 LIC. NO. 20483

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PROJECT

MPHA CEDAR HIGH BOILER REPLACEMENT

MINNEAPOLIS MINNESOTA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	24-30497
FILE NAME	30497 Arch R22
DRAWN BY	NVW
DESIGNED BY	NVW
REVIEWED BY	DFS
ORIGINAL ISSUE DATE	MM/DD/YY
CLIENT PROJECT NO.	

TITLE SHEET, SHEET INDEX, PROJECT GENERAL NOTES

SHEET
G1-10

PROJECT INDEX:

OWNER:
 MINNEAPOLIS PUBLIC HOUSING AUTHORITY
 TIM PILGRIM
 1001 WASHINGTON AVENUE
 MINNEAPOLIS, MINNESOTA 55401
 PHONE # 612-221-7927

PROJECT ADDRESS:
 CEDAR HIGH APARTMENTS - 630
 630 CEDAR AVENUE
 MINNEAPOLIS, MINNESOTA 55454

MANAGING OFFICE:

 BLOOMINGTON OFFICE
 7900 INTERNATIONAL DRIVE
 INTERNATIONAL PLAZA
 SUITE 550
 BLOOMINGTON, MINNESOTA 55425
 PHONE: 952.426.0699
 PROJECT MANAGER: CHAD MARTIN
 EMAIL: CHAD.MARTIN@ISGINC.COM

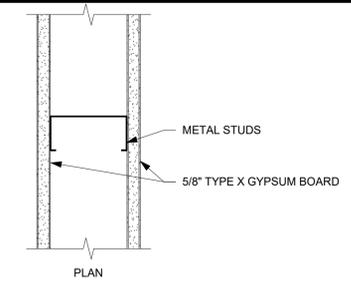


DOOR SCHEDULE								
MARK	ROOM NAME	WIDTH	HEIGHT	DOOR TYPE	DOOR MATERIAL	FRAME TYPE	FRAME MATERIAL	COMMENTS
100	PENTHOUSE	3'-0"	7'-0"	FL	HOLLOW METAL	1	HOLLOW METAL	NO LOCKS REQUIRED. PANIC HARDWARD ONLY. CLOSER, HINGES, SEALS, FLOOR DOOR STOP

CCRPS CONSTRUCTION CAPABLE OF RESISTING THE PASSAGE OF SMOKE

FIRE WALLS, FIRE BARRIERS, FIRE PARTITIONS, SMOKE BARRIERS AND SMOKE PARTITIONS OR ANY OTHER WALL REQUIRED TO HAVE PROTECTED OPENINGS OR PENETRATIONS SHALL BE EFFECTIVELY AND PERMANENTLY IDENTIFIED WITH SIGNS OR STENCILING. SUCH IDENTIFICATION SHALL:

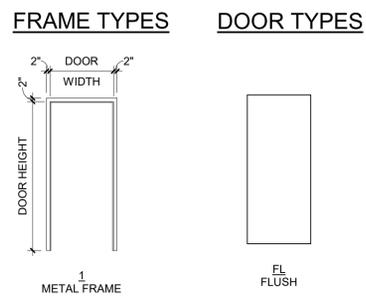
- BE LOCATED IN ACCESSIBLE CONCEALED FLOOR, FLOOR-CEILING OR ATTIC SPACES
- BE LOCATED WITHIN 15 FEET OF THE END OF EACH WALL AND AT INTERVALS NOT EXCEEDING 30 FEET MEASURED HORIZONTALLY ALONG THE WALL OR PARTITION, AND INCLUDE LETTERING NOT LESS THAN 3 INCHES IN HEIGHT WITH A MINIMUM 3/8" STROKE IN A CONTRASTING COLOR INCORPORATING THE SUGGESTED WORDING "FIRE AND/OR SMOKE BARRIER - PROTECT ALL OPENINGS" OR OTHER SIMILAR WORDING.



WALL LEGEND	
	EXISTING CONSTRUCTION TO REMAIN
	DEMOLITION
	NEW CONSTRUCTION

SHEET NOTES

- ALL NEW INTERIOR PARTITION WALLS SHALL BE WALL TYPE A3, UNLESS OTHERWISE NOTED.
- FIELD VERIFY ALL DIMENSIONS



WALL TYPE	STUD DESIGNATION	SPACING	MAX. HEIGHT (5 PSF, L/240)	SOUND TRANSMISSION (STC)	FIRE RATING / UL DESIGN
A3	3625125-30	16"	15'-6"		CCRPS

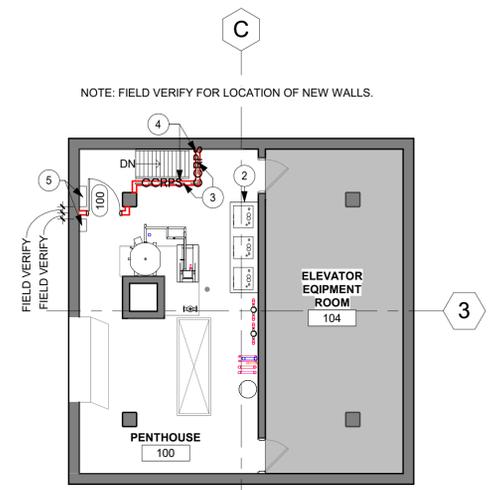
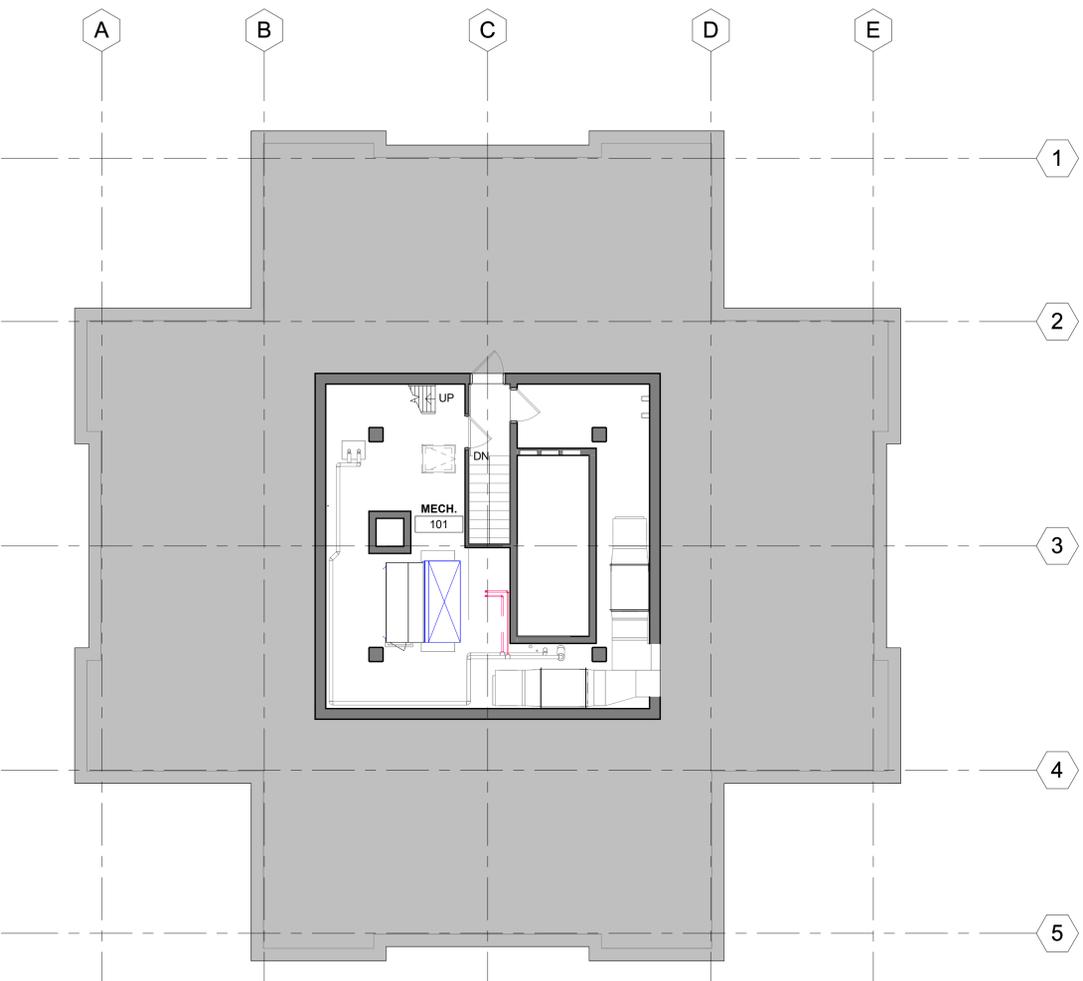
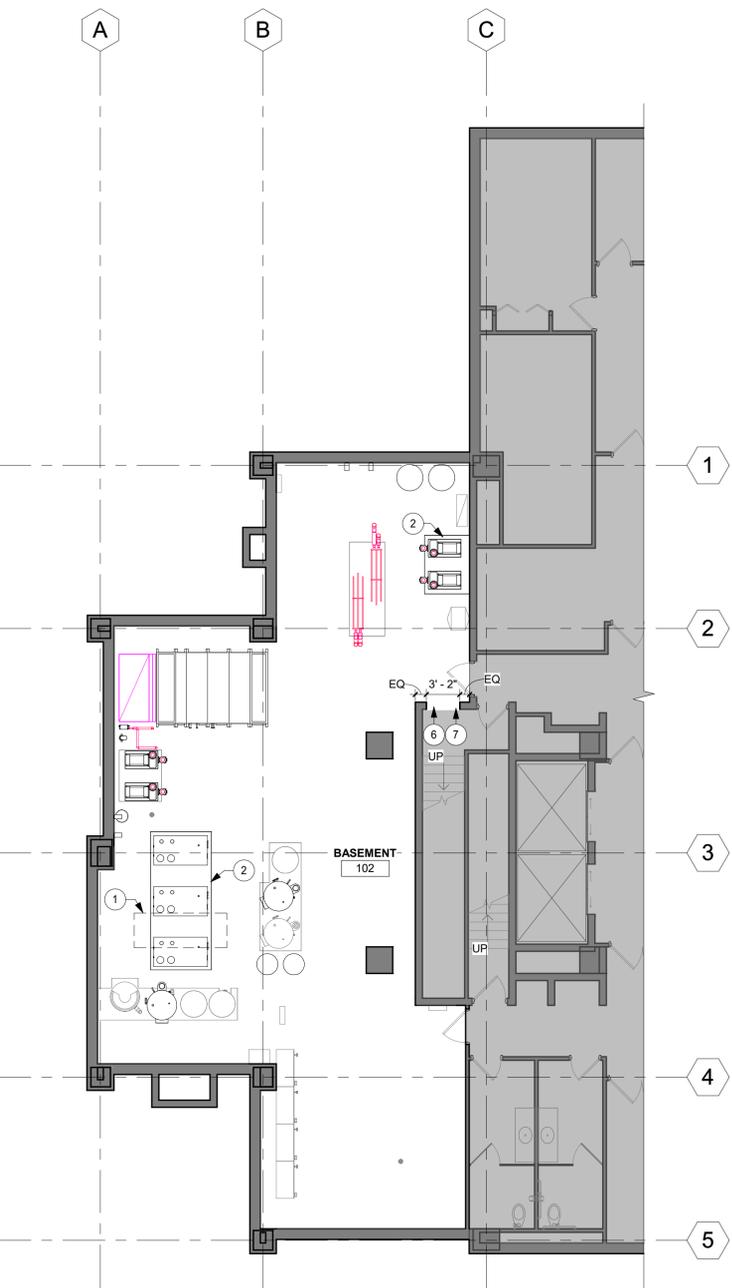
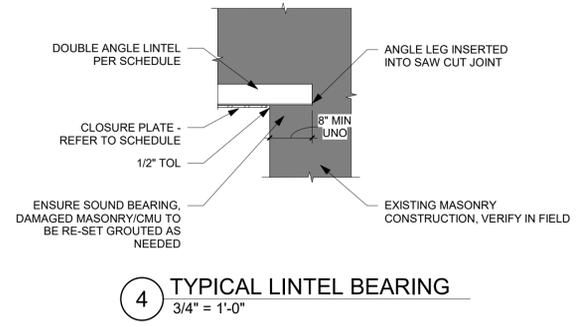
NOTES:

KEYNOTE LEGEND	
1	DEMO MECHANICAL PAD
2	NEW MECHANICAL PAD
3	REMOVE EXISTING STEEL PIPE HANDRAIL
4	ALIGN WALL WITH EDGE OF CONCRETE FLOOR OPENING. FIELD VERIFY EXACT LOCATION OF FLOOR OPENING.
5	EXISTING ITEM, FIELD VERIFY FOR EXACT LOCATION
6	CREATE 3'-2" X 7'-0" OPENING IN THE WALL FOR CONSTRUCTION. CREATE KNOCKOUT PANEL AFTER CONSTRUCTION IS COMPLETE. REFER TO DETAIL 4/A-21 AND LINTEL SCHEDULE.
7	AFTER CONSTRUCTION, INFILL WITH A3 WALL TYPE.

LINTEL SCHEDULE			
TYPE	MATERIAL	CONFIGURATION	REMARKS
L1	a. (2) L4X4X5/16 W/ BOTTOM PLATE b. PL 1/4" X "W" X CONTINUOUS		<ul style="list-style-type: none"> BOTTOM PLATE TO END 1/4" SHORT OF MASONRY ON BOTH ENDS EXTEND REINFORCING 8" BEYOND CLEAR OPENING EACH SIDE TYPICAL AT EXISTING MASONRY WITH OPENINGS AS INDICATED ON PLANS WALL CONSTRUCTION ASSUMED COMBINATION TO BE HOLLOW CMU.

NOTES:

- MINIMUM BEARING FOR ALL LINTELS SHALL BE 8" EACH END UNLESS OTHERWISE NOTED.
- REFER TO ARCHITECTURAL & MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF WALL OPENINGS.
- GALVANIZE ALL STEEL LINTELS AT EXTERIOR WALLS.
- FOR MASONRY LINTELS GROUT ALL CORES SOLID, CONTINUE VERTICAL WALL REINFORCEMENTS (AND SPACING) AT ALL LINTELS.
- SOLID MASONRY "BOND BEAM" LINTELS AND ITS GROUTED COURSES SHALL NOT BE PENETRATED UNLESS APPROVED BY ENGINEER.
- BRICK SHALL NOT OVERHANG THE EDGE OF LINTELS GREATER THAN 1/3 THE WIDTH OF BRICK (1 3/16" FOR STANDARD 3 5/8" WIDTH BRICK.)
- FOR LINTELS REQUIRED AT OPENINGS DIFFERENT THAN ABOVE, CONTACT STRUCTURAL ENGINEER.
- FOR ALL LINTELS IN EXISTING WALLS, REMOVE EXISTING CMU/BRICK/HOLLOW CLAY TILE/STONE AS REQUIRED FOR LINTEL INSTALLATION. SHORE EXISTING CMU/BRICK/HOLLOW CLAY TILE/STONE PATCH CMU/BRICK AS REQUIRED.
- ALL OPENING DIMENSIONS SHALL BE REFERENCED FROM MECHANICAL DOCUMENTS. REVIEW MECHANICAL DOCUMENTS TO ENSURE ANY AND ALL REQUIRED OPENINGS ARE ACCOUNTED FOR.
- CONTRACTOR SHALL COMPLETE ALL NECESSARY FIELD VERIFICATIONS TO DETERMINE LINTEL/PLATE SIZING AND INSTALLATION.



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BRANDON VILAND
DATE: 03/15/2024 LIC. NO. 53688

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PROJECT

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MINNEAPOLIS MINNESOTA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO. 24-30497
FILE NAME 30497 Arch R22
DRAWN BY NWW
DESIGNED BY NWW
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CLIENT PROJECT NO.

TITLE

BASEMENT, MECH AND PENTHOUSE FLOOR PLANS

SHEET

A1-21



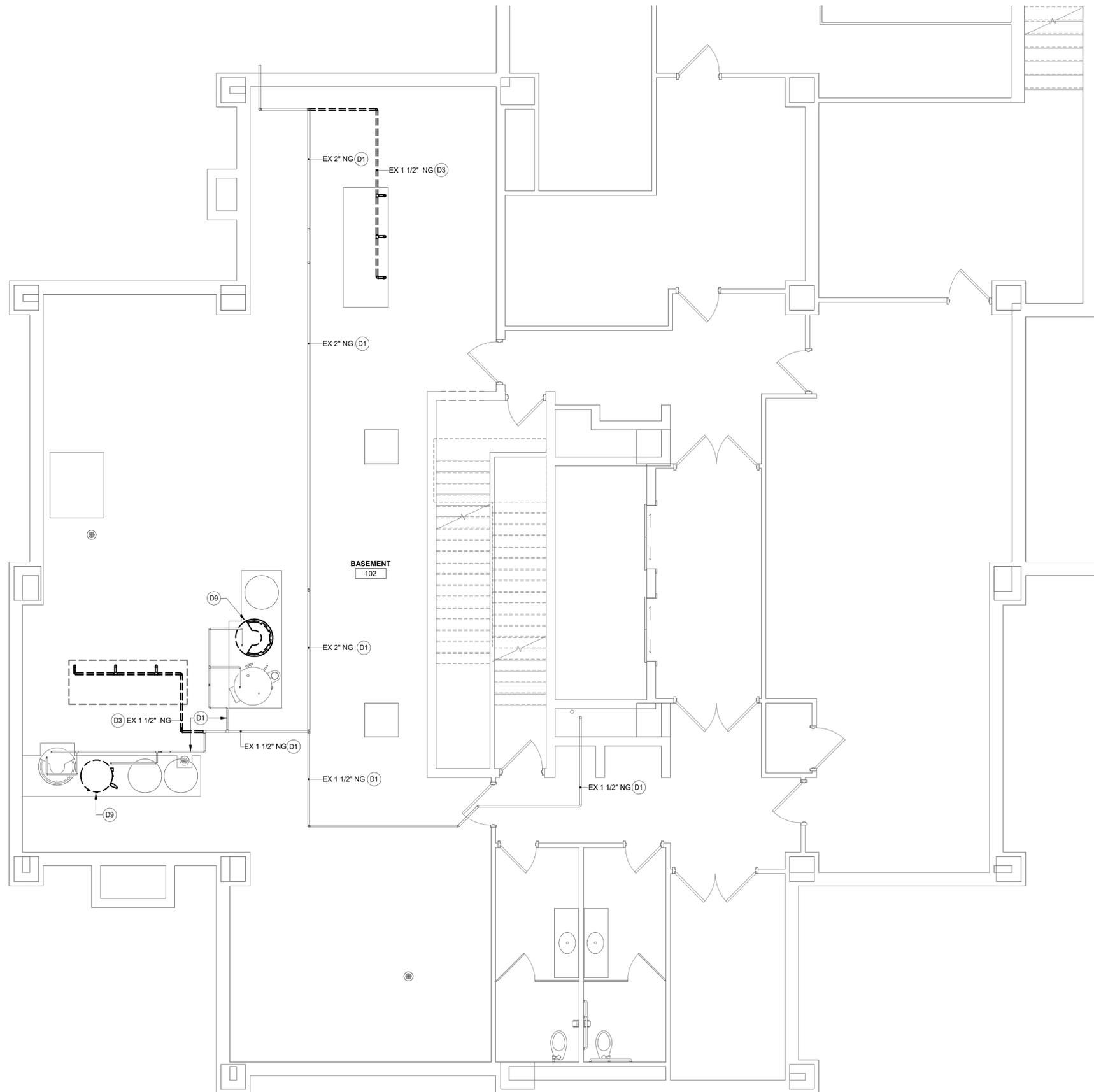


GENERAL DEMOLITION NOTES

1. FIELD VERIFY ALL SITE CONDITIONS BEFORE STARTING CONSTRUCTION.
2. PIPING AND EQUIPMENT TO BE DEMOLISHED IS SHOWN ON PLANS WITH BOLD AND DASHED LINES.
3. ALL EXISTING DUCTWORK, PIPING, EQUIPMENT, ETC. INDICATED ON PLANS ARE BASED ON INFORMATION FROM CONSTRUCTION DOCUMENTS AND FIELD VERIFICATION OF EXISTING BUILDING.
4. WHERE PIPES ARE REMOVED, ALSO REMOVE ALL VALVES, INSULATION, HANGERS, SUPPORTS, AND OTHER ASSOCIATED COMPONENTS.
5. WHERE PIPES ARE REMOVED AND NOT RE-CONNECTED, REMOVE PIPE BACK TO NEXT BRANCH THAT IS TO REMAIN. INSTALL CAPS OR PLUGS ON OPENINGS. INSULATE AND PAINT DISTURBED PIPE SAME AS SPECIFIED FOR NEW WORK.
6. WHERE PIPES PASS THROUGH FLOOR SLABS, SAW-CUT SLAB AND REMOVE CONCRETE TO MINIMUM EXTENT NECESSARY TO GAIN ACCESS TO BELOW SLAB. REMOVE PIPE DOWN TO HORIZONTAL PIPING BELOW FLOOR.
7. PATCH EXISTING ROOFS, WALLS, AND FLOORS DISTURBED BY DEMOLITION. RESTORE TO MATCH CONDITION OF ORIGINAL SURROUNDING SURFACES PER SATISFACTION OF OWNER.

KEYNOTE LEGEND

D1	EXISTING TO REMAIN.
D3	DEMOLISH PIPING, HANGERS, SUPPORTS, AND ACCESSORIES IN THEIR ENTIRETY.
D9	DEMOLISH WATER HEATER. PREPARE PIPING FOR NEW CONNECTION TO NEW WATER HEATER.



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CHAD R. MARTIN

DATE 03/15/2024 LIC. NO. 45471

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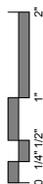
PROJECT NO. 24-30497
 FILE NAME
 DRAWN BY GSJ
 DESIGNED BY GSJ
 REVIEWED BY CRM
 ORIGINAL ISSUE DATE 03/15/2024
 CLIENT PROJECT NO.

TITLE BASEMENT PLUMBING DEMOLITION PLAN

SHEET

P1-10

1 BASEMENT PLUMBING DEMOLITION PLAN
 1/4" = 1'-0"





GENERAL DEMOLITION NOTES

1. FIELD VERIFY ALL SITE CONDITIONS BEFORE STARTING CONSTRUCTION.
2. PIPING AND EQUIPMENT TO BE DEMOLISHED IS SHOWN ON PLANS WITH BOLD AND DASHED LINES.
3. ALL EXISTING DUCTWORK, PIPING, EQUIPMENT, ETC. INDICATED ON PLANS ARE BASED ON INFORMATION FROM CONSTRUCTION DOCUMENTS AND FIELD VERIFICATION OF EXISTING BUILDING.
4. WHERE PIPES ARE REMOVED, ALSO REMOVE ALL VALVES, INSULATION, HANGERS, SUPPORTS, AND OTHER ASSOCIATED COMPONENTS.
5. WHERE PIPES ARE REMOVED AND NOT RE-CONNECTED, REMOVE PIPE BACK TO NEXT BRANCH THAT IS TO REMAIN. INSTALL CAPS OR PLUGS ON OPENINGS. INSULATE AND PAINT DISTURBED PIPE SAME AS SPECIFIED FOR NEW WORK.
6. WHERE PIPES PASS THROUGH FLOOR SLABS, SAW-CUT SLAB AND REMOVE CONCRETE TO MINIMUM EXTENT NECESSARY TO GAIN ACCESS TO BELOW SLAB. REMOVE PIPE DOWN TO HORIZONTAL PIPING BELOW FLOOR.
7. PATCH EXISTING ROOFS, WALLS, AND FLOORS DISTURBED BY DEMOLITION. RESTORE TO MATCH CONDITION OF ORIGINAL SURROUNDING SURFACES PER SATISFACTION OF OWNER.

KEYNOTE LEGEND

D1	EXISTING TO REMAIN.
D3	DEMOLISH PIPING, HANGERS, SUPPORTS, AND ACCESSORIES IN THEIR ENTIRETY.
D11	DEMOLISH WATER HEATER AND ALL ASSOCIATED PIPING, ACCESSORIES, AND CONTROLS.
D12	DEMOLISH HOT WATER STORAGE TANK, DISCONNECT ALL PIPING, SUPPORTS, AND ACCESSORIES.

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CHAD R. MARTIN

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MINNEAPOLIS MN

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FILE NAME

DRAWN BY GSJ

DESIGNED BY GSJ

REVIEWED BY CRM

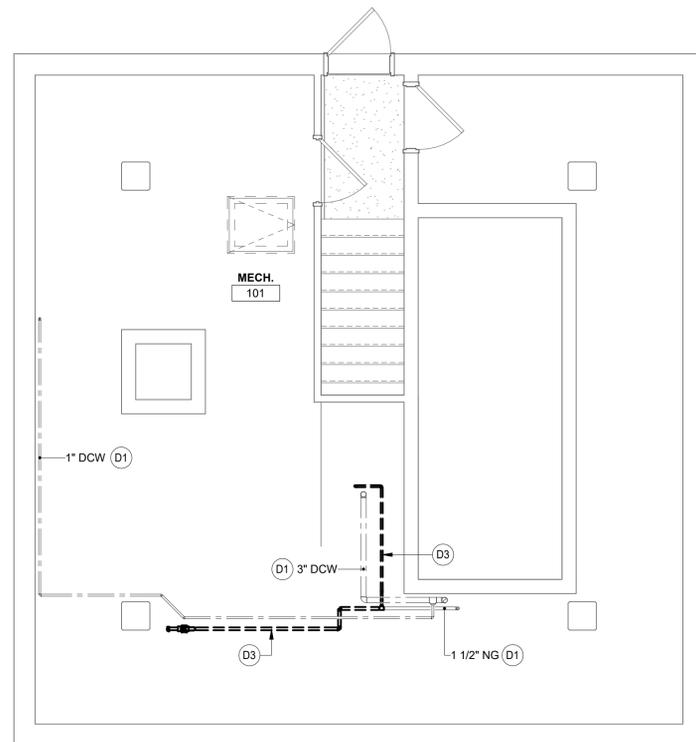
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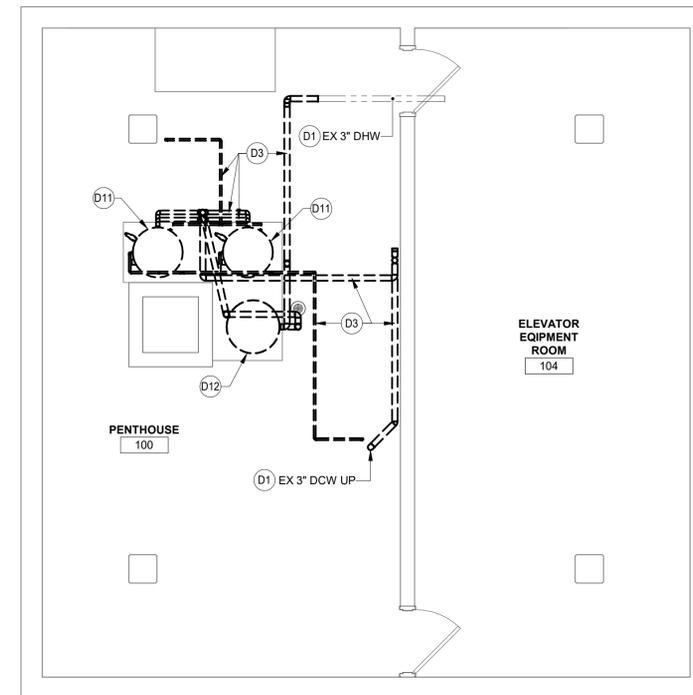
TITLE PENTHOUSE PLUMBING DEMOLITION PLANS

SHEET

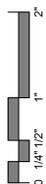
P1-11



1 LOWER PENTHOUSE PLUMBING DEMOLITION PLAN
1/4" = 1'-0"



2 UPPER PENTHOUSE PLUMBING DEMOLITION PLAN
1/4" = 1'-0"



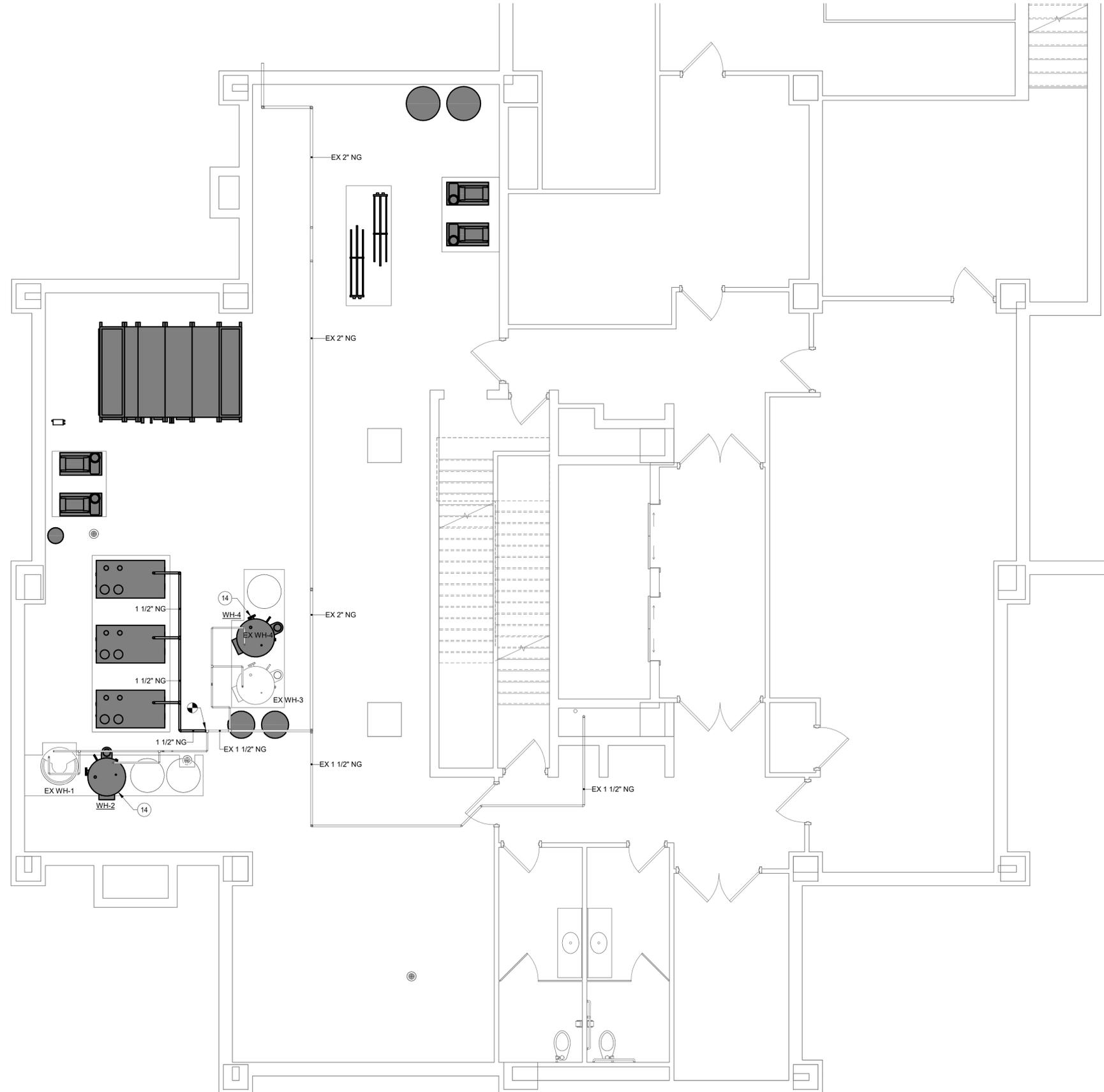


GENERAL NOTES

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2. ALL EXISTING DUCTWORK, PIPING, EQUIPMENT, ETC. INDICATED ON PLANS ARE BASED ON INFORMATION FROM CONSTRUCTION DOCUMENTS AND FIELD VERIFICATION OF EXISTING BUILDING.
3. COORDINATE INSTALLATION OF ALL NEW DUCTWORK, PIPING, EQUIPMENT, ETC. WITH OTHER TRADES.
4. ACCURATE AND LEGIBLE RECORD (AS-BUILT) DRAWINGS SHALL BE MAINTAINED AT THE JOB SITE, AND BE SUBMITTED PRIOR TO FINAL PAYMENT.

KEYNOTE LEGEND

- | | |
|----|---|
| 14 | PROVIDE NEW WATER HEATER, RECONNECT TO EXISTING COLD WATER, HOT WATER AND GAS PIPING. |
|----|---|



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MINNEAPOLIS MN

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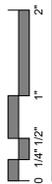
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 DRAWN BY GSJ
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TITLE

BASEMENT PLUMBING PLAN

SHEET
P2-10

1 BASEMENT PLUMBING PLAN
 1/4" = 1'-0"





GENERAL NOTES

1. FIELD VERIFY ALL SITE CONDITIONS BEFORE STARTING CONSTRUCTION.
2. ALL EXISTING DUCTWORK, PIPING, EQUIPMENT, ETC. INDICATED ON PLANS ARE BASED ON INFORMATION FROM CONSTRUCTION DOCUMENTS AND FIELD VERIFICATION OF EXISTING BUILDING.
3. COORDINATE INSTALLATION OF ALL NEW DUCTWORK, PIPING, EQUIPMENT, ETC. WITH OTHER TRADES.
4. ACCURATE AND LEGIBLE RECORD (AS-BUILT) DRAWINGS SHALL BE MAINTAINED AT THE JOB SITE, AND BE SUBMITTED PRIOR TO FINAL PAYMENT.

KEYNOTE LEGEND

15 PROVIDE NEW WATER HEATER.

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MINNEAPOLIS MN

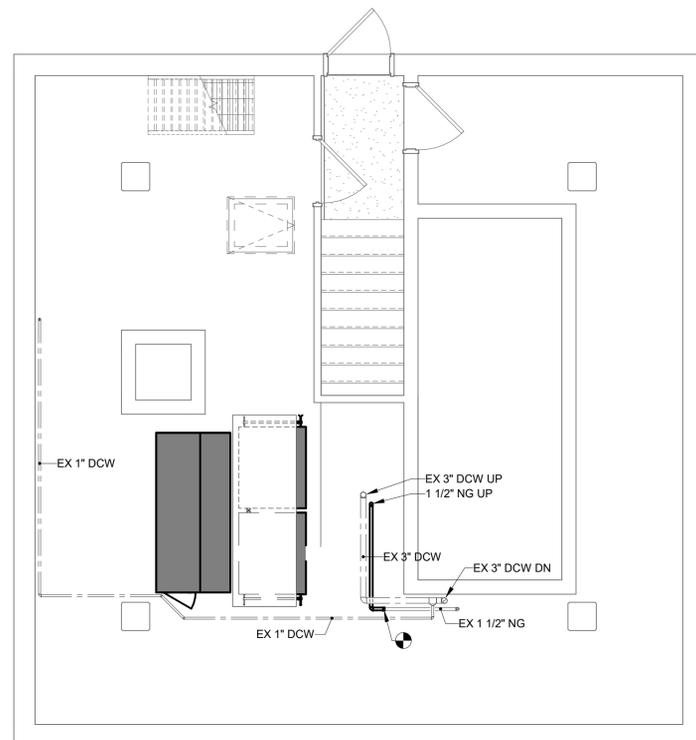
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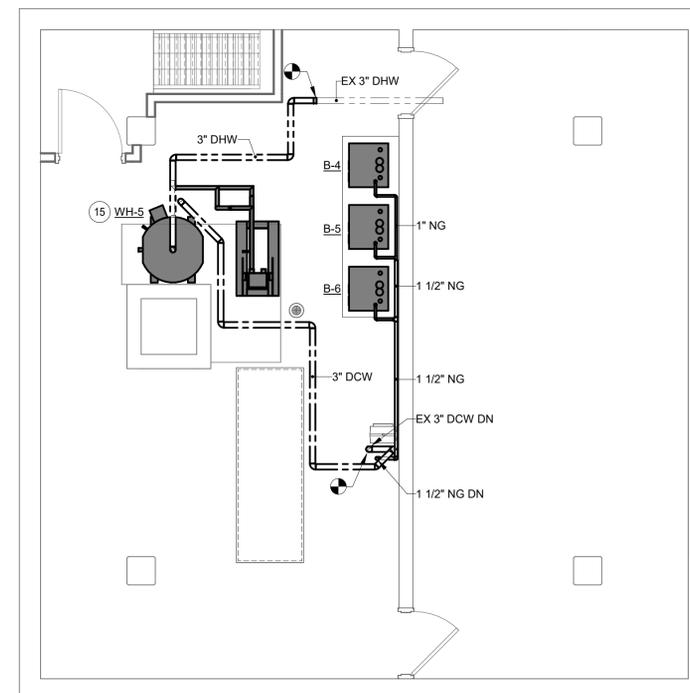
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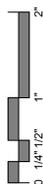
SHEET
P2-11



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2 UPPER PENTHOUSE PLUMBING PLAN
1/4" = 1'-0"



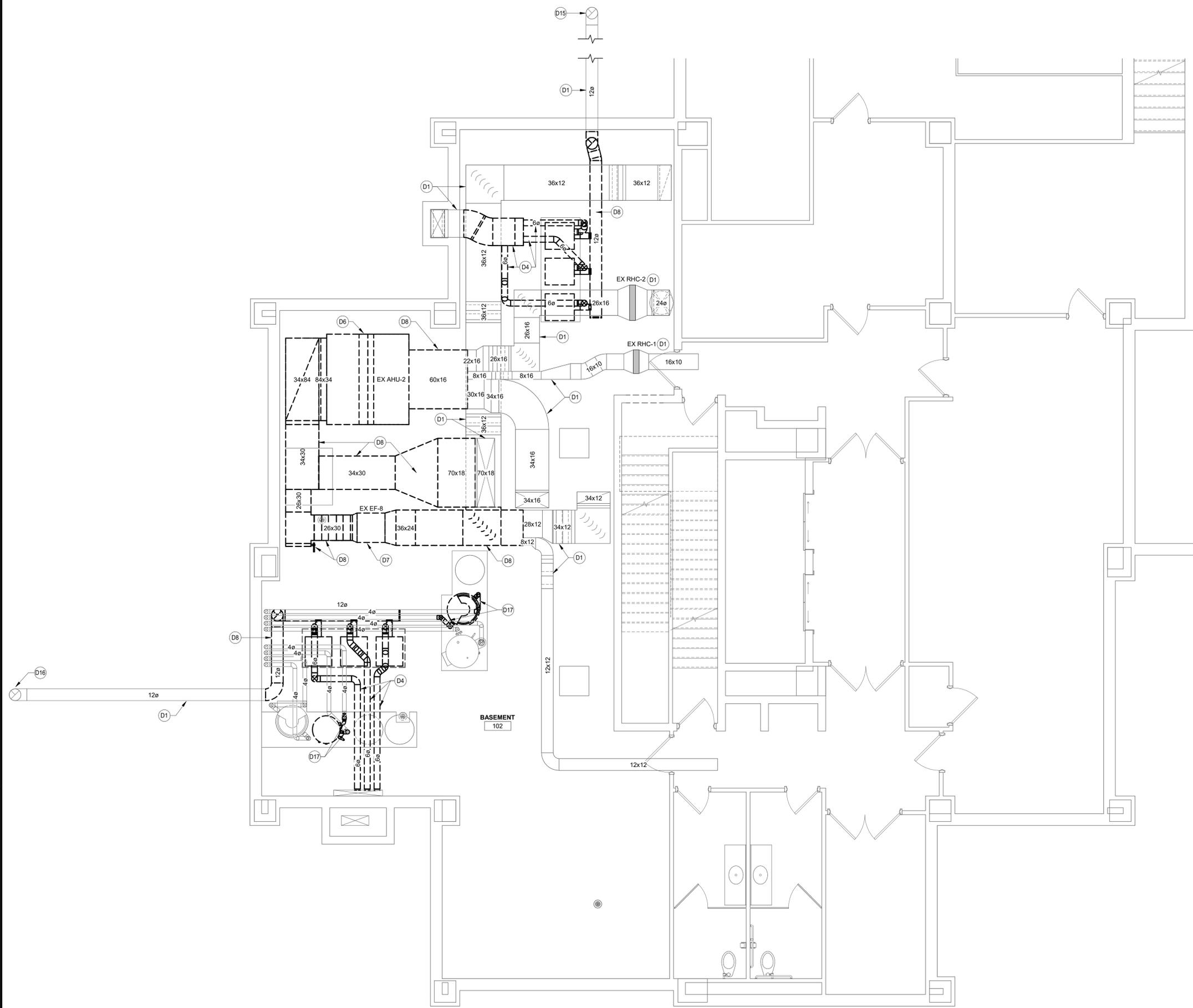


GENERAL DEMOLITION NOTES

1. FIELD VERIFY ALL SITE CONDITIONS BEFORE STARTING CONSTRUCTION.
2. PIPING AND EQUIPMENT TO BE DEMOLISHED IS SHOWN ON PLANS WITH BOLD AND DASHED LINES.
3. ALL EXISTING DUCTWORK, PIPING, EQUIPMENT, ETC. INDICATED ON PLANS ARE BASED ON INFORMATION FROM CONSTRUCTION DOCUMENTS AND FIELD VERIFICATION OF EXISTING BUILDING.
4. WHERE PIPES ARE REMOVED, ALSO REMOVE ALL VALVES, INSULATION, HANGERS, SUPPORTS, AND OTHER ASSOCIATED COMPONENTS.
5. WHERE PIPES ARE REMOVED AND NOT RE-CONNECTED, REMOVE PIPE BACK TO NEXT BRANCH THAT IS TO REMAIN. INSTALL CAPS OR PLUGS ON OPENINGS. INSULATE AND PAINT DISTURBED PIPE SAME AS SPECIFIED FOR NEW WORK.
6. WHERE PIPES PASS THROUGH FLOOR SLABS, SAW-CUT SLAB AND REMOVE CONCRETE TO MINIMUM EXTENT NECESSARY TO GAIN ACCESS TO BELOW SLAB. REMOVE PIPE DOWN TO HORIZONTAL PIPING BELOW FLOOR.
7. PATCH EXISTING ROOFS, WALLS, AND FLOORS DISTURBED BY DEMOLITION. RESTORE TO MATCH CONDITION OF ORIGINAL SURROUNDING SURFACES PER SATISFACTION OF OWNER.

KEYNOTE LEGEND

D1	EXISTING TO REMAIN.
D4	DEMOLISH VENTING, HANGERS, SUPPORTS, AND ACCESSORIES IN THEIR ENTIRETY.
D6	DEMOLISH AIR HANDLING UNIT.
D7	DEMOLISH EXHAUST FAN. PREPARE EXISTING DUCTWORK FOR CONNECTION TO NEW FAN AS INDICATED ON NEW PLAN SHEETS.
D8	DEMOLISH DUCTWORK AND DUCT ACCESSORIES BACK TO INDICATED LOCATION. PREPARE EXISTING DUCTWORK FOR CONNECTION TO NEW DUCTWORK AS INDICATED ON NEW PLAN SHEETS.
D15	REMOVE FAN ABOVE. PREPARE DUCTWORK FOR NEW CURB CAP.
D16	REMOVE FAN ABOVE. PREPARE FOR CONNECTION TO NEW FAN.
D17	REMOVE EXHAUST AND INTAKE DUCTS AS REQUIRED TO REMOVE EXISTING AND INSTALL NEW WATER HEATER.



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CHAD R. MARTIN

DATE 03/15/2024 LIC. NO. 45471

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PROJECT

MPHA CEDAR HIGH BOILER REPLACEMENT

MINNEAPOLIS MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	24-30497
FILE NAME	
DRAWN BY	GSJ
DESIGNED BY	GSJ
REVIEWED BY	CRM
ORIGINAL ISSUE DATE	03/15/2024
CLIENT PROJECT NO.	

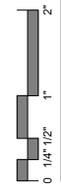
TITLE

BASEMENT HVAC DEMOLITION PLAN

SHEET

M1-10

1 BASEMENT HVAC DEMOLITION PLAN
 1/4" = 1'-0"



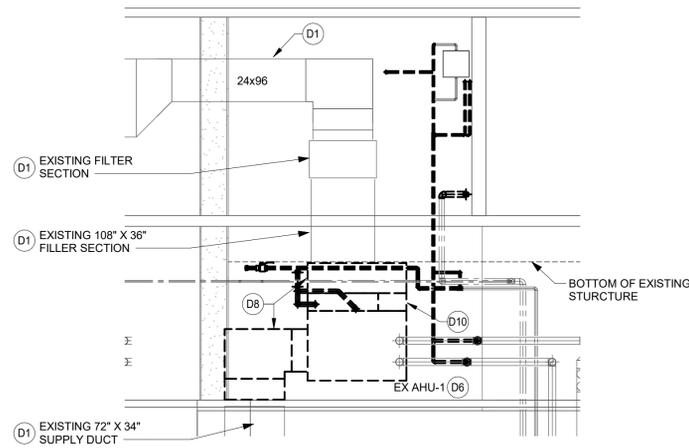


GENERAL DEMOLITION NOTES

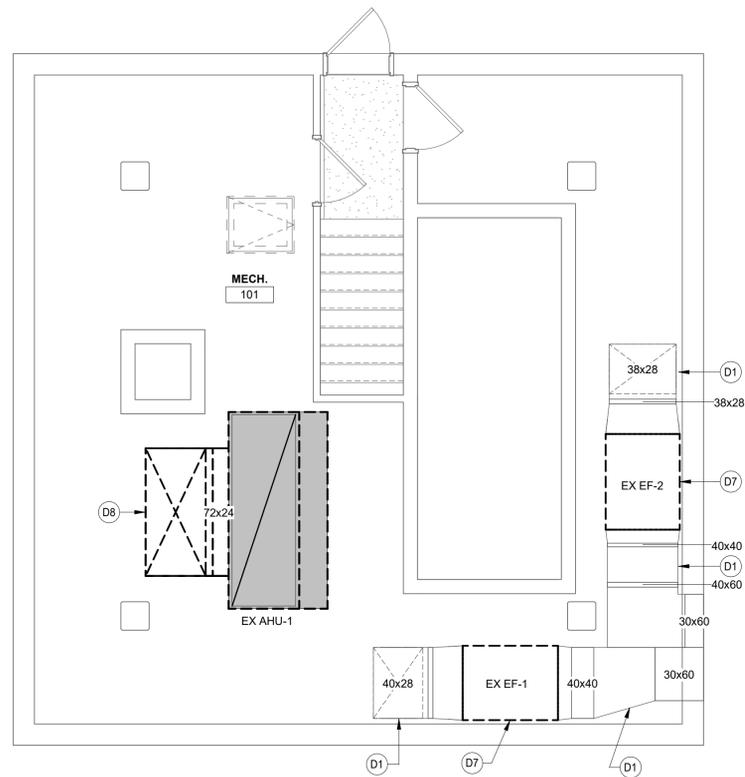
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KEYNOTE LEGEND

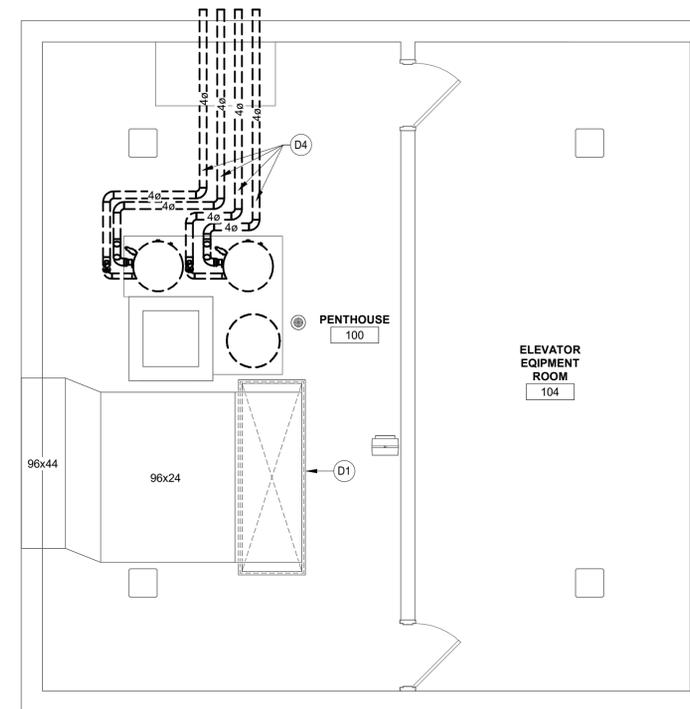
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D8	DEMOLISH DUCTWORK AND DUCT ACCESSORIES BACK TO INDICATED LOCATION. PREPARE EXISTING DUCTWORK FOR CONNECTION TO NEW DUCTWORK AS INDICATED ON NEW PLAN SHEETS.
D10	DEMOLISH COIL AND PREPARE FOR NEW HOT WATER COIL. REMOVE PIPING, SUPPORTS, AND ACCESSORIES. REMOVE ANY FACE AND BYPASS DAMPERS.



3 DEMOLITION ELEVATION AT AHU-1
1/4" = 1'-0"



1 LOWER PENTHOUSE HVAC DEMOLITION PLAN
1/4" = 1'-0"



2 UPPER PENTHOUSE HVAC DEMOLITION PLAN
1/4" = 1'-0"

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PROJECT

MPHA CEDAR HIGH BOILER REPLACEMENT

MINNEAPOLIS MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO. 24-30497

FILE NAME

DRAWN BY GSJ

DESIGNED BY GSJ

REVIEWED BY CRM

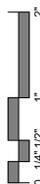
ORIGINAL ISSUE DATE 03/15/2024

CLIENT PROJECT NO.

TITLE PENTHOUSE HVAC DEMOLITION PLANS

SHEET

M1-11



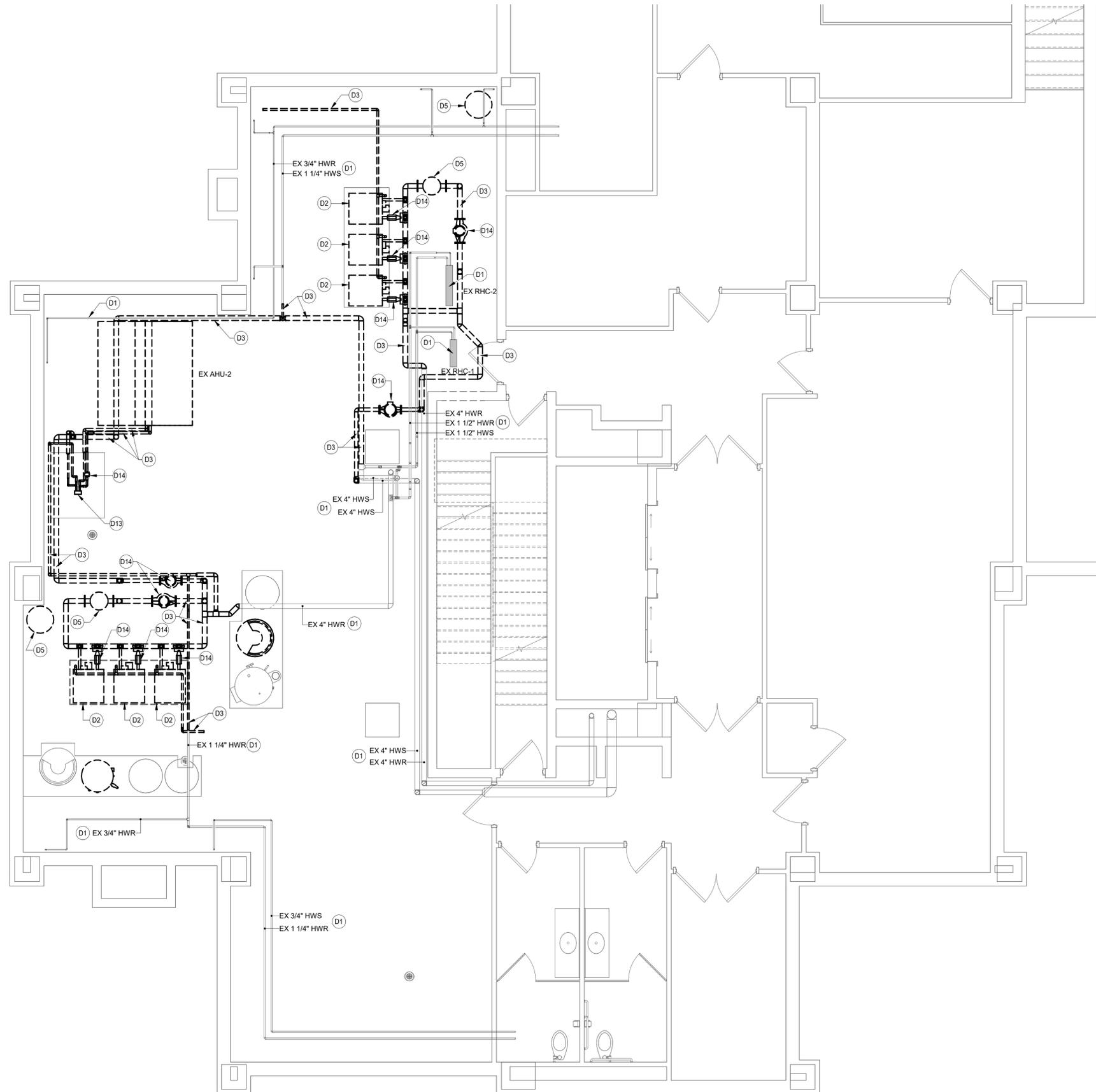


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KEYNOTE LEGEND

D1	EXISTING TO REMAIN.
D2	DEMOLISH BOILERS, DISCONNECT AND REMOVE ALL PIPING, SUPPORTS, CONTROLS, ETC.
D3	DEMOLISH PIPING, HANGERS, SUPPORTS, AND ACCESSORIES IN THEIR ENTIRETY.
D5	DEMOLISH EXPANSION TANKS, AIR SEPERATOR, AND ALL ASSOCIATED VALVING AND ACCESSORIES.
D13	DEMOLISH HEAT EXCHANGERS AND ALL ASSOCIATED PIPING AND ACCESSORIES.
D14	DEMOLISH PUMP AND ALL ASSOCIATED PIPING, VALVING AND ACCESSORIES.



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MPHA CEDAR HIGH BOILER REPLACEMENT

MINNEAPOLIS MN

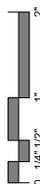
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PROJECT NO. 24-30497
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 DRAWN BY GSJ
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 CLIENT PROJECT NO.

TITLE BASEMENT HYDRONIC DEMOLITION PLAN

SHEET
M1-20

1 BASEMENT HYDRONIC DEMOLITION PLAN
 1/4" = 1'-0"





GENERAL DEMOLITION NOTES

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KEYNOTE LEGEND

D1	EXISTING TO REMAIN.
D3	DEMOLISH PIPING, HANGERS, SUPPORTS, AND ACCESSORIES IN THEIR ENTIRETY.
D13	DEMOLISH HEAT EXCHANGERS AND ALL ASSOCIATED PIPING AND ACCESSORIES.
D14	DEMOLISH PUMP AND ALL ASSOCIATED PIPING, VALVING AND ACCESSORIES.

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PROJECT

MPHA CEDAR HIGH BOILER REPLACEMENT

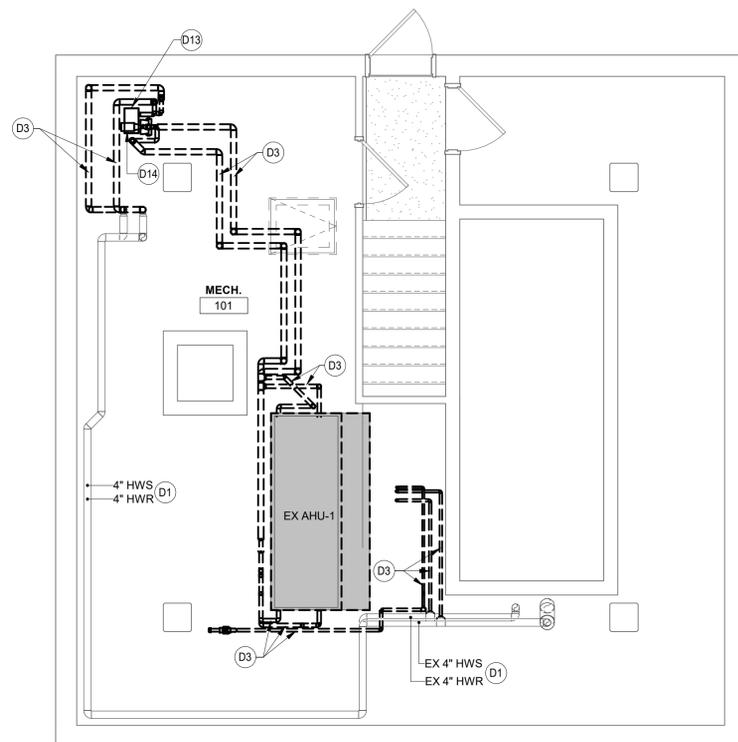
MINNEAPOLIS MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

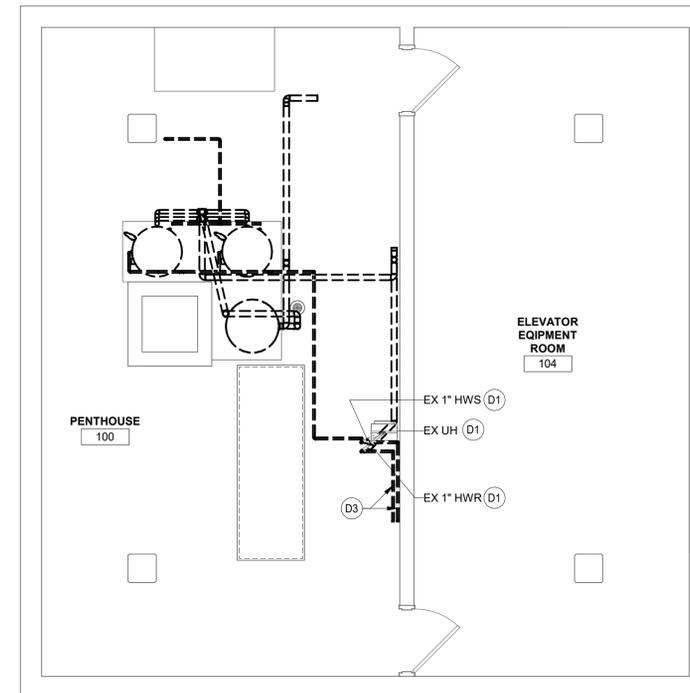
PROJECT NO. 24-30497
 FILE NAME
 DRAWN BY GSJ
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 CLIENT PROJECT NO.

TITLE PENTHOUSE HYDRONIC DEMOLITION PLANS

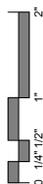
SHEET
M1-21



1 LOWER PENTHOUSE HYDRONIC DEMOLITION PLAN
1/4" = 1'-0"



2 UPPER PENTHOUSE HYDRONIC DEMOLITION PLAN
1/4" = 1'-0"



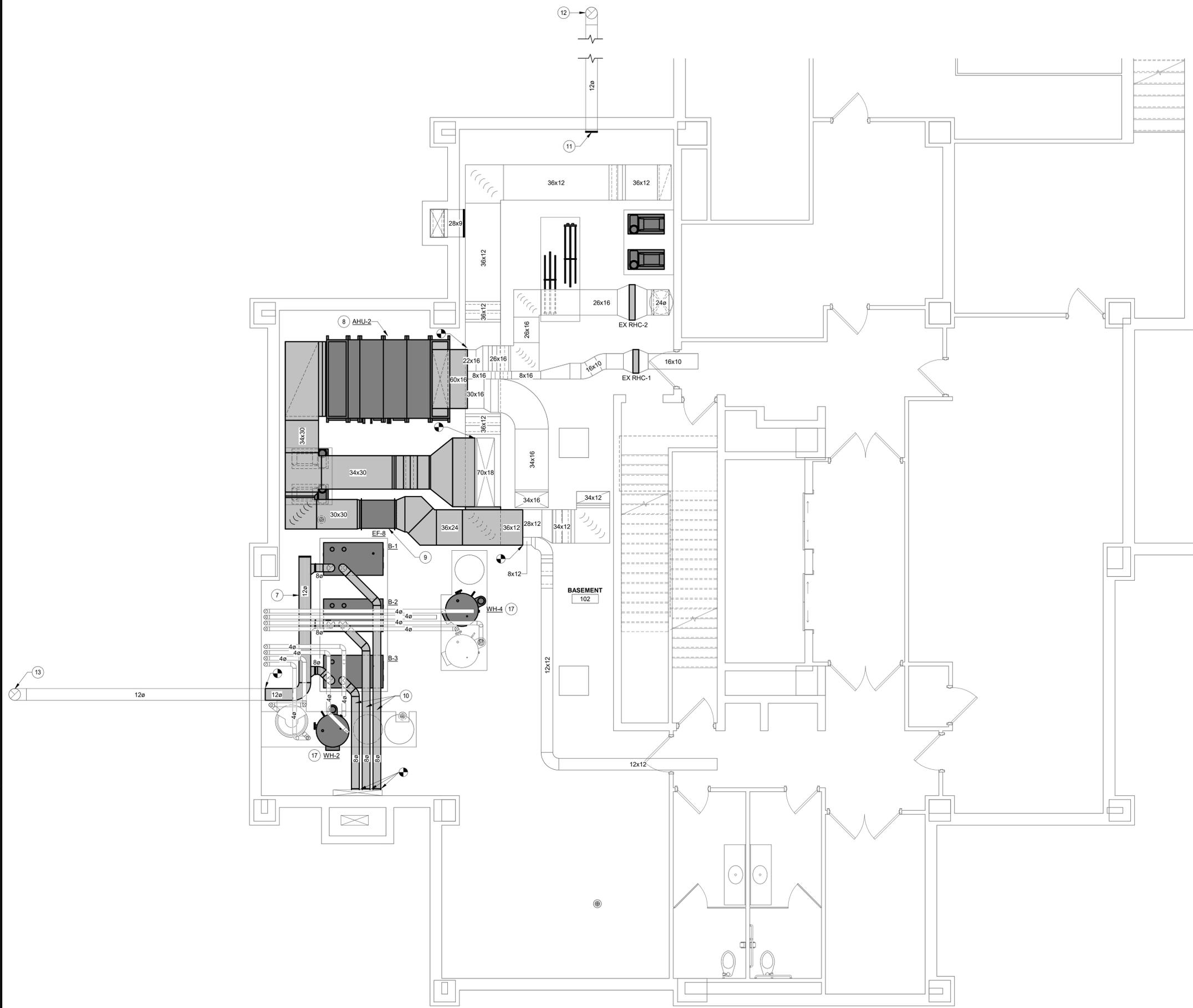


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3. COORDINATE INSTALLATION OF ALL NEW DUCTWORK, PIPING, EQUIPMENT, ETC. WITH OTHER TRADES.
4. ACCURATE AND LEGIBLE RECORD (AS-BUILT) DRAWINGS SHALL BE MAINTAINED AT THE JOB SITE, AND BE SUBMITTED PRIOR TO FINAL PAYMENT.

KEYNOTE LEGEND

7	PROVIDE NEW DOUBLE WALL, AL29-4C BOILER VENTING. SIZE INDICATED ON PLANS. SLOPE BACK TO BOILERS.
8	PROVIDE NEW AIR HANDLING UNIT.
9	PROVIDE NEW FAN. PREPARE DUCTWORK FOR NEW FAN BY REMOVING AND REPLACING SECTIONS OF DUCTWORK UPSTREAM AND DOWNSTREAM OF THE COIL AS REQUIRED INCLUDING REPLACING / REPAIRING INSULATION.
10	PROVIDE NEW PVC SEALED COMBUSTION PIPE. SIZE INDICATED ON PLANS.
11	CAP DUCT.
12	PROVIDE INSULATED CURB CAP AND SEAL WEATHER TIGHT.
13	PROVIDE NEW VENT EXHAUST FAN PER SPEC SECTION 23 5113. REPLACE CURB AND FLASHING AS REQUIRED.
17	NEW WATER HEATER. CONNECT TO EXISTING EXHAUST AND INTAKE DUCTS.



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MPHA CEDAR HIGH BOILER REPLACEMENT

MINNEAPOLIS MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO. 24-30497
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TITLE

BASEMENT HVAC PLAN

SHEET

M2-10



1 BASEMENT HVAC PLAN
 1/4" = 1'-0"





AHU REFURBISHMENT NOTES

AHU-1 NOTES:

- DISASSEMBLE UNIT AND DUCT AS REQUIRED TO REMOVE EXPOSED TO AIRSTREAM FIBERGLASS INSULATION. INSPECT ALL INTERIOR COMPONENTS INCLUDING FILTER RACK, COILS, ETC. THOROUGHLY CLEAN INTERIOR SURFACES AND PRESSURE WASH COILS. SEAL JOINTS WITH HIGH PRESSURE DUCT SEALANT AS REQUIRED AND REPAIR ANY DEFICIENCIES IN UNIT HOUSING.
- APPLY ANTI-MICROBIAL COATING TO ENTIRE EXTERIOR SURFACE OF AHU INCLUDING COIL AND FAN SUPPORTS. THE COATING SHALL MEET STATE REGULATED TVOC REQUIREMENTS AND BE SUITABLE FOR HVAC AIRSTREAM APPLICATIONS. SUBMIT MSDS SHEET.
- AFTER COATING HAS BEEN APPLIED AND CURED, APPLY 3/4" THICK CLOSED CELL INSULATION TO ENTIRE INTERIOR SURFACE OF UNIT.

BAS NOTES:

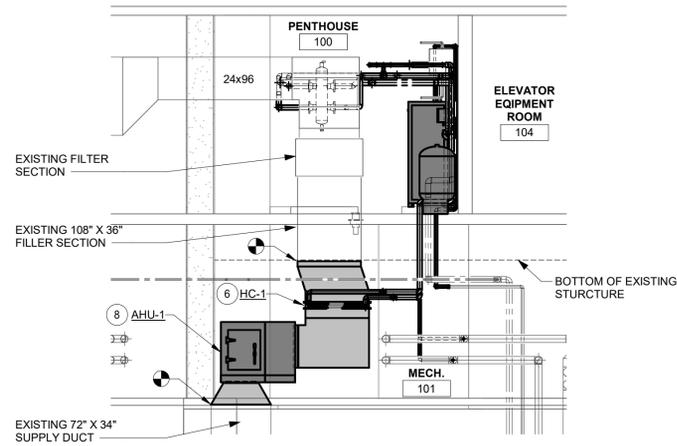
- PROVIDE SUPPLY FAN SPEED ENABLE/DISABLE (DO), SF COMMAND (AO) AND SF STATUS (AI) - FREQUENCY AND AMP DRAW.
- UNIT IS INTENDED TO MAINTAIN EXISTING SEQUENCES OF OPERATION AND OPERATE AS A CONSTANT AIR VOLUME UNIT. VFD SHOULD BE USED FOR BALANCING AND DIAGNOSTICS.
- VERIFY OPERATION OF EXISTING DEVICES (SENSORS AND ACTUATORS) AND EXISTING SEQUENCES.

GENERAL NOTES

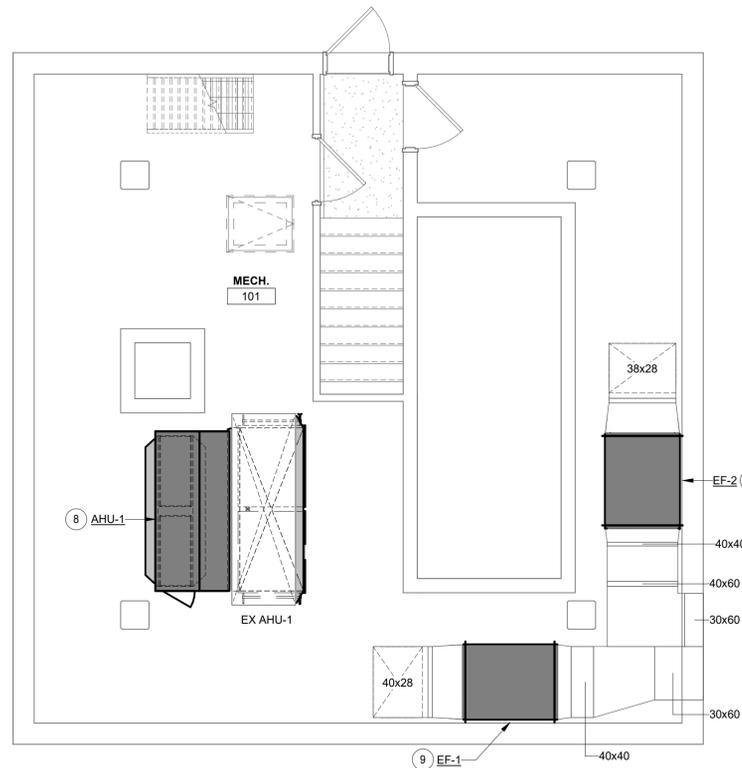
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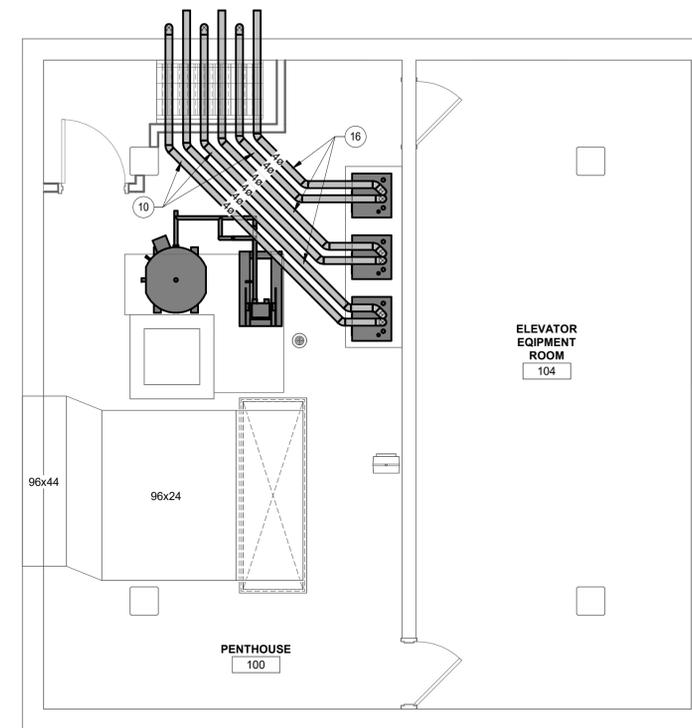
6	NEW HOT WATER COIL AND COIL PUMP. COORDINATE COIL PIPING AND COIL PUMP INSTALLATION WITH ACCESS DOORS. REFER TO DETAILS AND SCHEMATIC. INSTALL NEW COIL WITH SAFING AS REQUIRED TO ENSURE NO AIR BYPASS.
8	PROVIDE NEW AIR HANDLING UNIT.
9	PROVIDE NEW FAN. PREPARE DUCTWORK FOR NEW FAN BY REMOVING AND REPLACING SECTIONS OF DUCTWORK UPSTREAM AND DOWNSTREAM OF THE COIL AS REQUIRED INCLUDING REPLACING / REPAIRING INSULATION.
10	PROVIDE NEW PVC SEALED COMBUSTION PIPE. SIZE INDICATED ON PLANS.
16	PROVIDE NEW CPVC BOILER VENTING. SIZE INDICATED ON PLANS. SLOPE BACK TO BOILERS.



3 ELEVATION AT AHU-1
1/4" = 1'-0"



1 LOWER PENTHOUSE HVAC PLAN
1/4" = 1'-0"



2 UPPER PENTHOUSE HVAC PLAN
1/4" = 1'-0"

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PROJECT

MPHA CEDAR HIGH BOILER REPLACEMENT

MINNEAPOLIS MN

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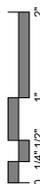
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TITLE

PENTHOUSE HVAC PLANS

SHEET

M2-11



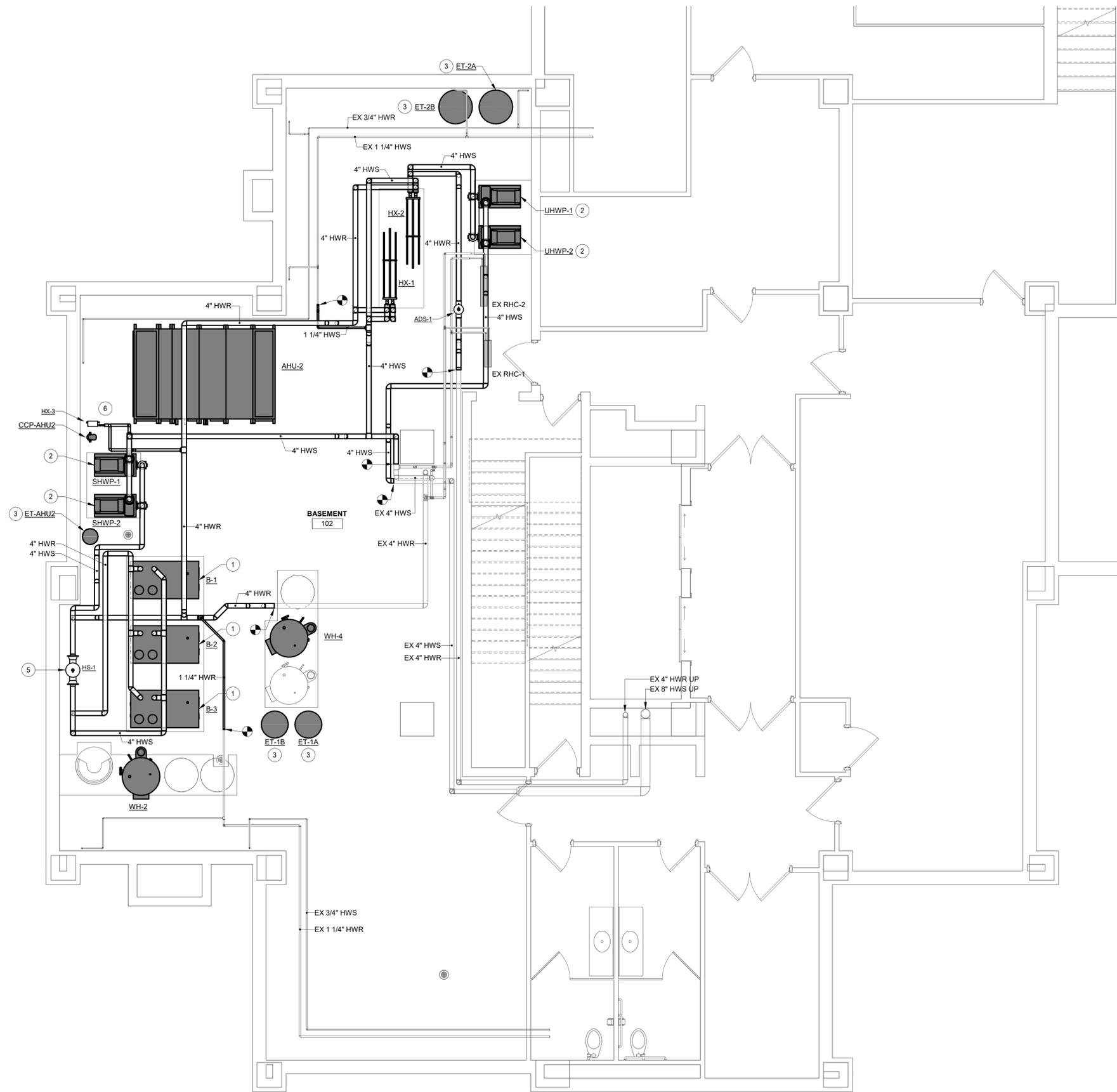


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KEYNOTE LEGEND

- | | |
|---|--|
| 1 | PROVIDE NEW BOILER AND INSTALL ON EXPANDED HOUSEKEEPING PAD. PROVIDE NEW PIPING, SUPPORTS, VENTING, AND ACCESSORIES REQUIRED FOR NEW SCOPE OF WORK. REFER TO BOILER PIPING SCHEMATIC AND GAS PIPING SCHEMATIC. |
| 2 | PROVIDE NEW BASE MOUNTED PUMP WITH SUCTION DIFFUSER AND NECESSARY VALVING. REFER TO BOILER PIPING SCHEMATIC. PROVIDE NECESSARY CLEARANCES FOR VFDS AND ALLOW ROOM TO REMOVE STRAINER PORTION OF SUCTION DIFFUSER. MODIFY EXISTING HOUSE KEEPING PAD AS NEEDED FOR NEW PUMPS AND INERTIA BASES. |
| 3 | PROVIDE NEW EXPANSION TANKS, AIR SEPARATOR, AND ALL ASSOCIATED VALVING AND ACCESSORIES. REFER TO SCHEMATIC. |
| 5 | PROVIDE HYDRAULIC SEPARATOR. REFER TO SCHEMATIC. |
| 6 | NEW HOT WATER COIL AND COIL PUMP. COORDINATE COIL PIPING AND COIL PUMP INSTALLATION WITH ACCESS DOORS. REFER TO DETAILS AND SCHEMATIC. INSTALL NEW COIL WITH SAFING AS REQUIRED TO ENSURE NO AIR BYPASS. |



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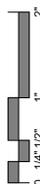
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SHEET

M2-20

1 BASEMENT HYDRONIC PLAN
1/4" = 1'-0"





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CHAD MARTIN

DATE 03/15/2024 LIC. NO. 45471

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PROJECT

**MPHA
CEDAR HIGH
BOILER
REPLACEMENT**

MINNEAPOLIS MN

REVISION SCHEDULE

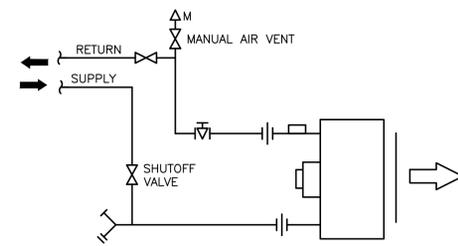
DATE	DESCRIPTION	BY

PROJECT NO. 24-30497
 FILE NAME
 DRAWN BY CRM
 DESIGNED BY CRM
 REVIEWED BY CRM
 ORIGINAL ISSUE DATE 03/15/2024
 CLIENT PROJECT NO.

TITLE
**HYDRONIC
SYSTEM
SCHEMATIC
DIAGRAMS**

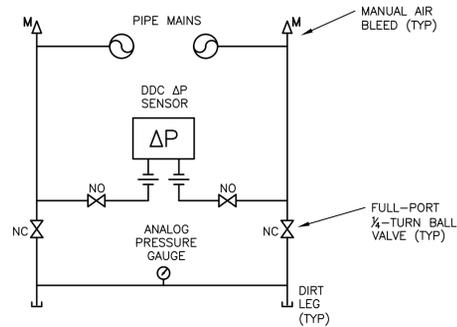
SHEET
M4-11

TO BE UPDATED BY
ADDENDUM



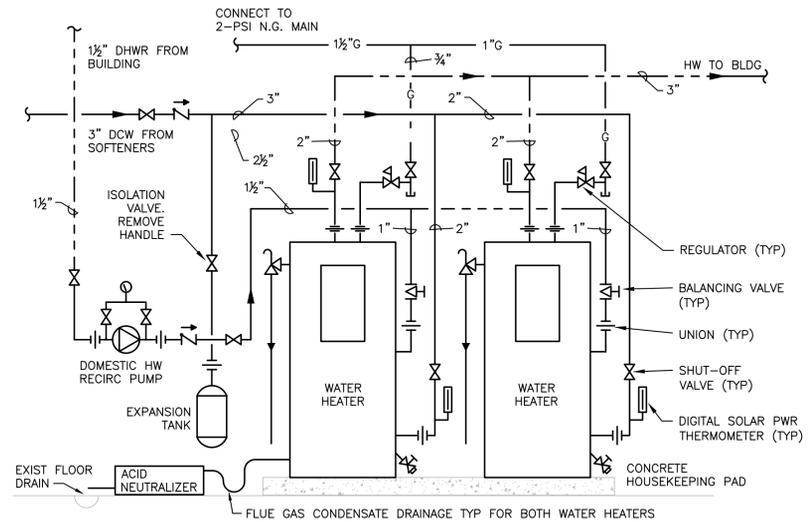
NOTES:
 1. PROVIDE CLEARANCE FROM OBSTRUCTIONS (WALL, ETC.) TO ALLOW FOR REMOVAL OF MOTOR WITH UNIT HEATER IN PLACE.
 2. ENSURE CLEAR AIRFLOW PATH.
 3. TEMP CONTROLS CONTRACTOR SHALL CYCLE FAN TO MAINTAIN SPACE TEMPERATURE.

1
 M4-12 **HORIZ. HOT WATER UNIT HEATER PIPING DETAIL**
 SCALE: NONE



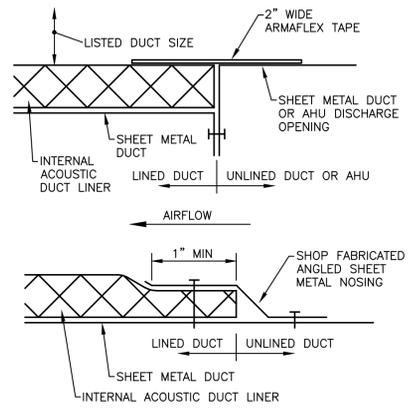
NOTES:
 1. CONNECT ASSEMBLY TO VERTICAL MAINS OR SIDE OF HORIZONTAL MAINS.
 2. ALL PIPE SIZES SHALL BE 1/2".

2
 M4-12 **HYDRONIC SYSTEM DIFFERENTIAL PRESSURE SENSOR PIPING DETAIL**
 SCALE: NONE

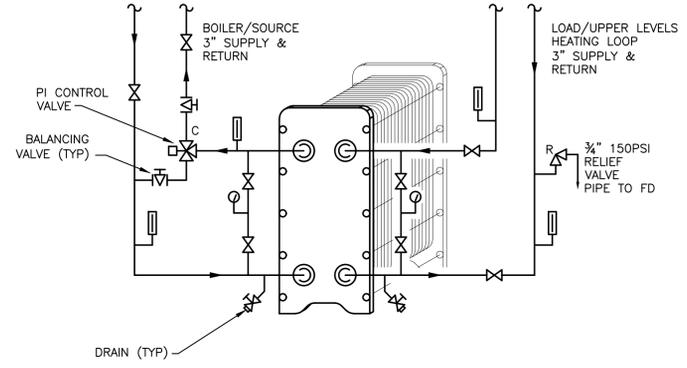


NOTES:
 1. ARRANGE PLUMBING AROUND & TO/FROM WATER HEATERS SUCH THAT HEATER CONTROL PANELS ARE STILL EASILY ACCESSIBLE AND UNOBSTRUCTED. OBSERVE AND ENSURE ALL OTHER MANUFACTURER RECOMMENDED SERVICE CLEARANCES. ENSURE PUMP AND COMPRESSION TANK ARE BOTH ACCESSIBLE FOR MAINTENANCE AND REPLACEMENT.
 2. PIPE HEATER CONDENSATE DRAIN TO NEAREST FLOOR DRAIN. DO NOT RUN DRAIN PIPING ACROSS WALKWAYS. FURNISH WATER HEATERS WITH INDIVIDUAL ACID NEUTRALIZATION KIT, BY MANUFACTURER.
 3. PIPE P&T RELIEF VALVES TO NEAREST FLOOR DRAIN. DO NOT RUN DRAIN PIPING ACROSS WALKWAYS. ENSURE PROPER AIR GAP.
 4. MANIFOLD HEATERS IN EQUAL LENGTH REVERSE RETURN ARRANGEMENT AS SHOWN OR PROVIDE BALANCING DEVICES TO ENSURE EQUAL WATER FLOW THROUGH EACH HEATER. BRANCH PIPING TO WATER HEATERS SHALL BE SIZED PER CONNECTIONS ON HEATERS FOR DHW & DCW.
 5. PUMP MAY BE MOUNTED ON EITHER SIDE OF HEATERS.
 6. NEW HEATERS TO BE PIPED PER THIS DETAIL REGARDLESS OF LOCATION.

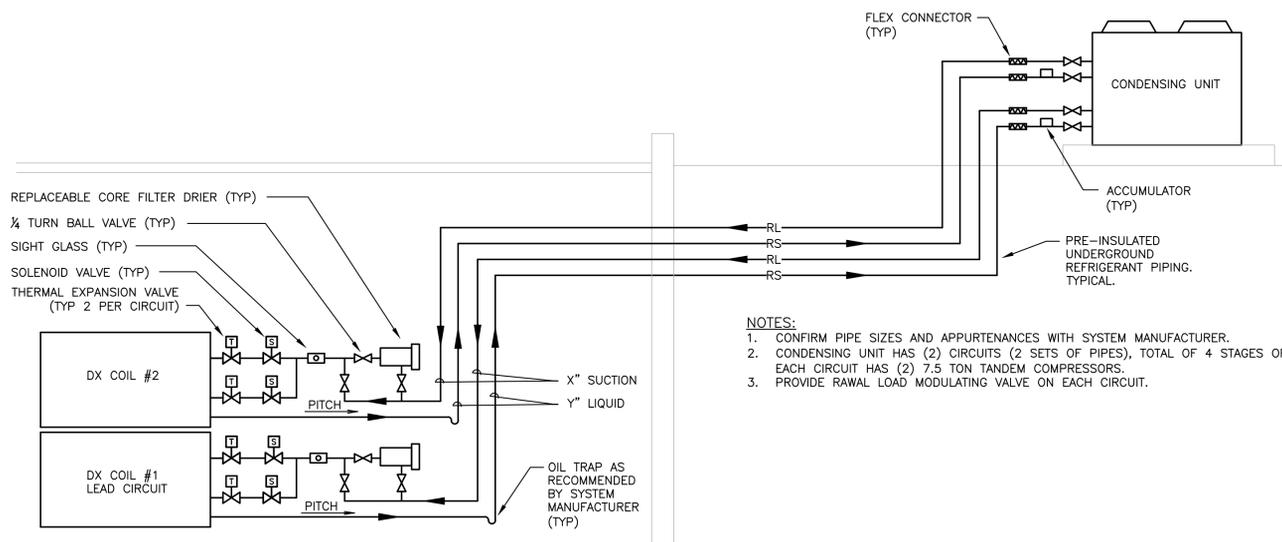
5
 M4-12 **DOMESTIC WATER HEATERS PLUMBING SCHEMATIC**
 NO SCALE



3
 M4-12 **DUCT LINER TERMINATION DETAILS**
 SCALE: NONE



4
 M4-12 **PLATE AND FRAME HEAT EXCHANGER DETAIL**
 SCALE: NONE



NOTES:
 1. CONFIRM PIPE SIZES AND APPURTENANCES WITH SYSTEM MANUFACTURER.
 2. CONDENSING UNIT HAS (2) CIRCUITS (2 SETS OF PIPES), TOTAL OF 4 STAGES OF COOLING. EACH CIRCUIT HAS (2) 7.5 TON TANDEM COMPRESSORS.
 3. PROVIDE RAWAL LOAD MODULATING VALVE ON EACH CIRCUIT.

6
 M4-12 **SPLIT SYSTEM REFRIGERATION PIPING DETAIL**
 SCALE: NONE

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PROJECT

MPHA CEDAR HIGH BOILER REPLACEMENT

MINNEAPOLIS MN

REVISION SCHEDULE		
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TITLE

MECHANICAL DETAILS

SHEET



AIR COOLED CONDENSING UNIT SCHEDULE											
TAG NO.	UNIT SERVED	NOM. TONS	CIRCUITS	STAGES/COMPRESSORS	COMP TYPE	CAPACITY BTUH	EER	VOLTS/PH	ELECTRICAL	MFR. AND MODEL	SCCR (KA)
CU-2	AHU-2	35	2	4	SCROLL	395,324	11.3	208/3	33.1 kW	DAIKIN RCS035D	65

HYDRONIC SEPARATOR SCHEDULE										
LABEL	TYPE	LOCATION	SERVICE	MAXIMUM OPERATING PRESSURE (PSI)	FLOW (GPM)	PRESS. DROP (FT HD)	FLUID	LINE CONNECTIONS SIZE (INCHES)	MFG. NO.	
ADS-1	INLINE COALESCING AIR/DIRT	BASEMENT BOILER ROOM	UPPER HEATING WATER SYSTEM	150	138	1.5	WATER	4" FLANGED	TACO 4904AD-150	
HS-1	INLINE COALESCING 4-PIPE HYDRAULIC/AIR SEPARATOR	BASEMENT BOILER ROOM	LOWER HEATING WATER SYSTEM	75	300	-	WATER	5" FLANGED	SPIROVENT QUAD VDX 500 FA	
HS-2	INLINE COALESCING 4-PIPE HYDRAULIC/AIR SEPARATOR	PENTHOUSE	PENTHOUSE HEATING WATER SYSTEM	50	70	-	35% P.G.	3" FLANGED	SPIROVENT QUAD VDX 300 FA	
AS-AHU2	INLINE COALESCING CAST BRASS AIR SEPARATOR W/ INTEGRAL VENT	BASEMENT BOILER ROOM	AHU-2 HEATING COIL LOOP	50	29	-	35% P.G.	2" THREADED	TACO 49-200	

AHU-2

Location: BASEMENT MECH ROOM
 Service: BASEMENT AND FIRST FLOOR COMMONS
 Type: MODULAR INDOOR CENTRAL STATION AHU
 Basis of Design: DAIKIN VISION

Min OA for Ventilation 6000 CFM
 Total Unit SA flow 8400 CFM

Supply Fans

Fan Type	ECM Plenum Fan Array
NUMBER OF FANS	2
Air Flow TOTAL/EA (CFM)	8400 / 4200
ESP/TSP (inH ₂ O)	1.5/3.2
HP PER FAN	4.8
Fan RPM (Design/Max)	1989 / 2260
Drive	DIRECT

DX Coils

CFM	8400
EAT DB/WB (°F)	81.0 68.0
LAT DB/WB (°F)	55.8 54.3
Face Velocity (FPM)	501
Max Air ΔP (inH ₂ O)	0.85
Refrigerant	R-410a
SUCTION TEMP (°F)	45.0
Sensible Capacity (MBH)	359.3
Total Capacity (MBH)	231.5
Rows	6
Fins Per Inch	10
Circuits	2

Filtration

2" Pleated 65% (MERV 11)

Electrical

Volts/Phase/Hz	208/3/60
Starter	ECMs By MFR
Disconnect	BY MFR
FLA	20.2

NOTES:

- INCLUDE DIRTY FILTER PD ALLOWANCE IN INTERNAL STATIC PRESSURE CALCULATIONS.
- INCLUDE INLET & OUTLET PD IN INTERNAL UNIT STATIC PRESSURE CALCS.
- UNIT SHALL CONSIST OF:
 - MIXING BOX WITH TOP OA INLET, BACK RA INLET.
 - FILTER RACK SECTION
 - ACCESS SECTION
 - PRE-HEAT COIL SECTION
 - DX COOLING COIL SECTION
 - ECM FAN ARRAY SECTION WITH ACCESS
 - DISCHARGE PLENUM SECTION WITH PERFORATED LINER AND TOP DUCT CONNECTION
- WIRE FANS TO SINGLE JUNCTION BOX FOR CONTROL AND SINGLE POINT POWER CONNECTION.

Glycol Pre-Heat Hot Water Coil

CFM	8400
Heating Capacity MBH	431.3
EAT/LAT (°F)	18 65
Face Velocity (FPM)	516
Fluid	35% P.G
Air ΔP (inH ₂ O)	0.17
GPM	29
Water Pressure Drop (Ft H ₂ O)	8.4
Water Velocity (ft/sec)	3.5
EWT/LWT (°F)	150 118
Rows	1
Fins Per Inch	18

AHU-1

Location: MECHANICAL PENTHOUSE
 Service: APARTMENT UNIT CORRIDOR MAKE-UP AIR
 Type: CUSTOM FULL KNOCKDOWN, FANS AND CABINET

Supply Fans

Fan Type	ECM Plenum Fan Array
NUMBER OF FANS	4
Air Flow TOTAL/EA (CFM)	14,000 / 3500
TSP (inH ₂ O)	3.5
HP PER FAN	5
Fan RPM (Design/Max)	4045 / 4194
Drive	DIRECT

Electrical

Volts/Phase/Hz	208/3/60
Starter	ECMs By MFR
Disconnect	BY DIV 26
MCA/MOP (AMPS)	23.5 / 25

ALL WIRING FIELD PROVIDED BY DIV 26

WATER-TO-WATER HEAT EXCHANGER SCHEDULE

LABEL	LOCATION	TYPE	SOURCE/HOT SIDE				COLD/LOAD SIDE				OPERATING PRESSURE (PSIG)	HEAT EXCHANGED (MBH)	NUMBER OF PLATES/MAXIMUM NUMBER OF PLATES	MFCR/MODEL No.	NOTES		
			FLUID TYPE	TEMP IN (DEG F)	TEMP OUT (DEG F)	MAXIMUM PRESSURE DROP (PSI)	GPM	FLUID TYPE	TEMP IN (DEG F)	TEMP OUT (DEG F)						MAXIMUM PRESSURE DROP (PSI)	GPM
HX-1	BOILER ROOM	PLATE & FRAME	WATER	180	150	15	115	WATER	160	133	12	130	250	1,690	88/250	TACO PF22-88	1
HX-2	BOILER ROOM	PLATE & FRAME	WATER	180	150	15	115	WATER	160	133	12	130	250	1,690	88/250	TACO PF22-88	1
HX-3	BOILER ROOM	BRAZED PLATE	WATER	160	150	15	29	PROP GYL 30%	150	120	12	29	150	1,690	BRAZED FLT	TACO TB80x90	

NOTES:
 1. SIZED AS SCHEDULED FOR SINGLE OPERATION, FULLY REDUNDANT. UNITS SHALL NORMALLY OPERATE WITH FLOW THROUGH BOTH HX FOR GREATER DELTA T AND MAXIMUM CAPACITY. UNITS SHALL BE ASME RATED AND SUITABLE FOR UP TO 100PSI DIFFERENTIAL BETWEEN LOAD AND SOURCE.

PUMP SCHEDULE

GENERAL			MECHANICAL										ELECTRICAL				
LABEL	LOCATION	SERVICE	TYPE	SYSTEM	FLUID	FLOW (GPM)	HEAD (FT)	MIN EFF. (%)	MOTOR SPEED (RPM)	BASIS OF DESIGN MANUFACTURER & MODEL	DUTY POINT (BHP)	MOTOR HP	VOLTAGE & PHASE	MOTOR CONTROL	STARTER	DISCONNECT	NOTES
PHWP-1	MECHANICAL PENTHOUSE	PENTHOUSE HEATING AND DOMESTIC WATER HEATER	VERTICAL IN-LINE CLOSE COUPLED	HEATING WATER	150°F 40% P.G. SOLUTION	73	37	63%	3954	GRUNDFOS TPE3 50-150 3x200-240V	1.1	1½	208/3	BY MFR	INTEGRAL VFD	BY DIV 26	1, 2, 4, 7
PHWP-2	MECHANICAL PENTHOUSE	PENTHOUSE HEATING AND DOMESTIC WATER HEATER	VERTICAL IN-LINE CLOSE COUPLED	HEATING WATER	150°F 40% P.G. SOLUTION	73	37	63%	3954	GRUNDFOS TPE3 50-150 3x200-240V	1.1	1½	208/3	BY MFR	INTEGRAL VFD	BY DIV 26	1, 2, 4, 7
SHWP-1	BASEMENT BOILER ROOM	HOT WATER HEATING SECONDARY LOOP	BASE MOUNTED END-SUCTION	HEATING WATER	160-180°F TREATED WATER	350	60	73.5%	1775	GRUNDFOS/PACO LCS 25957	7.2	7.5	208/3	BY TCC	VFD BY DIV 26	INTEGRAL TO VFD	1, 2, 4, 5
SHWP-2	BASEMENT BOILER ROOM	HOT WATER HEATING SECONDARY LOOP	BASE MOUNTED END-SUCTION	HEATING WATER	160-180°F TREATED WATER	350	60	73.5%	1775	GRUNDFOS/PACO LCS 25957	7.2	7.5	208/3	BY TCC	VFD BY DIV 26	INTEGRAL TO VFD	1, 2, 4, 5
UHPW-1	BASEMENT BOILER ROOM	HOT WATER HEATING UPPER LEVELS LOOP	BASE MOUNTED END-SUCTION	HEATING WATER	160°F TREATED WATER	138	120	56.6%	3530	GRUNDFOS/PACO LCS 10707	7.4	7.5	208/3	BY TCC	VFD BY DIV 26	INTEGRAL TO VFD	1, 2, 4, 5
UHPW-2	BASEMENT BOILER ROOM	HOT WATER HEATING UPPER LEVELS LOOP	BASE MOUNTED END-SUCTION	HEATING WATER	160°F TREATED WATER	138	120	56.6%	3530	GRUNDFOS/PACO LCS 10707	7.4	7.5	208/3	BY TCC	VFD BY DIV 26	INTEGRAL TO VFD	1, 2, 4, 5
CCP-AHU2	BASEMENT BOILER ROOM	AHU-2 COIL CIRCULATION GLYCOL LOOP	IN-LINE CLOSE COUPLED	HEATING WATER	150°F 40% P.G. SOLUTION	33	30	-	3689	GRUNDFOS MAGNA 3 40-120	0.54	0.6	208/1	BY MFR	ECM BY MFR	INTEGRAL TO VFD	1, 7

NOTES:
 1. PUMPS SHALL BE FURNISHED ASSEMBLED FROM THE FACTORY. LOCAL ASSEMBLY NOT ACCEPTABLE.
 2. DESIGNED FOR TWO PUMPS TO BE OPERATED LEAD/STANDBY OR PARALLEL IN EXTREME CASES.
 3. NSF, LEAD FREE, ALL BRONZE, CONSTRUCTION SUITABLE FOR POTABLE WATER.
 4. MAXIMIZE IMPELLER SIZE WITHIN NON-OVERLOADING MOTOR CURVE.
 5. VFD FURNISHED, INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR (DIV 26).
 6. FURNISH PUMP WITH AQUASTAT, CYCLE TO MAINTAIN LOOP TEMP OF NO LESS THAN 110°F (ADJUSTABLE)
 7. INTEGRAL VARIABLE SPEED DRIVE OR INVERTER CONTROLLER WITH LOGIC FOR INTEGRATED DIFFERENTIAL PRESSURE OR TEMPERATURE CONTROL. CASCADE CONTROL WIRED AND CONFIGURED BY DIV26 (FACTORY REP) FOR DIFFERENTIAL PRESSURE CONTROL.

DUCT HEATING COIL SCHEDULE

TAG	SERVICE	FACE DIMENSIONS (FL" X FH")	ROWS	FPF	AIR SIDE			WATER SIDE				CAPACITY (MBH)	MFG. NO.	NOTES:		
					CFM	TEMPERATURES (°F) ENTERING LEAVING	PRESSURE DROP (IN. W.G.)	GPM	FLUID VELOCITY (FPS)	TEMPERATURES (°F) ENTERING LEAVING	PRESSURE DROP (FT)				SUPPLY & RETURN RUNOUT PIPE SIZES	
AHU1-HCA	BUILDING VENTILATION/MAU	52 x 33	4	99	7000	-15 75	0.38	35% P.G.	30	3.9	150 80	9.73	2"	683	TRANE TYPE 'WP'	PROVIDE ACCESS PANEL UP STREAM OF COIL PROVIDE COIL SAFING BETWEEN U-BEND END TO END ARRANGEMENT.
AHU1-HCB	BUILDING VENTILATION/MAU	52 x 33	4	99	7000	-15 75	0.38	35% P.G.	30	3.9	150 80	9.73	2"	683	TRANE TYPE 'WP'	

MISC FAN SCHEDULE

LABEL	FAN TYPE	BASIS-OF-DESIGN MFR & MODEL NO.	SERVICE / AIR CLASS	CFM	WHEEL DIA (IN.)	SP (IN. WC)	FAN RPM	MIN MECH EFFICIENCY	MOTOR				CONTROL	NOTES	
									HP	BHP	STARTER	DISCONNECT			
EF-1	DIRECT DRIVE, MIXED FLOW IN-LINE FAN	COOK QMX 180 D17	BUILDING EXHAUST RISERS	7200	18	0.65	1650	56%	3	1.9	VFD	INTEGRAL TO VFD	208/60/3	VIA BAS, RUN PER SCHEDULE, INTERLOCK WITH MAKE-UP AIR UNIT AHU-1	1, 2, 4
EF-2	DIRECT DRIVE, MIXED FLOW IN-LINE FAN	COOK QMX 165 D17	BUILDING EXHAUST RISERS	6000	18	0.65	1725	58%	2	1.5	VFD	INTEGRAL TO VFD	208/60/3	VIA BAS, RUN PER SCHEDULE, INTERLOCK WITH MAKE-UP AIR UNIT AHU-1	1, 2, 4
RF-1	DIRECT DRIVE, MIXED FLOW IN-LINE FAN	COOK QMX 165 D17	AHU-2 RETURN/RELIEF	6000	18	0.65	1725	58%	2	1.5	VFD	INTEGRAL TO VFD	208/60/3	VIA BAS, RUN PER SCHEDULE, INTERLOCK WITH AHU-2	1, 3, 4

BOILER SCHEDULE

LABEL	MANUFACTURER/MODEL	LOCATION	FUEL	MAX INPUT (MBH)	MIN INPUT (MBH)	MAX WATER FLOW (GPM)	TURNDOWN RATIO	ELECTRICAL				RELEIF VALVE(S) (PSI)	TOTAL WATER CAPACITY (GAL)	NOTES
								V/HZ/PH	FLA	MCA	MOP			
B-1	RIELLO ARRAY AR 2000	BASEMENT BOILER ROOM	NATURAL GAS	2000 (4x500)	100	<130	20:1	208/60/1	15.5	16	20	75	35	AL29-4C VENTING (8"ø) CELLULAR CORE PVC INTAKE (8"ø)
B-2	RIELLO ARRAY AR 2000	BASEMENT BOILER ROOM	NATURAL GAS	2000 (4x500)	100	<130	20:1	208/60/1	15.5	16	20	75	35	AL29-4C VENTING (8"ø) CELLULAR CORE PVC INTAKE (8"ø)
B-3	RIELLO ARRAY AR 2000	BASEMENT BOILER ROOM	NATURAL GAS	2000 (4x500)	100	<130	20:1	208/60/1	15.5	16	20	75	35	AL29-4C VENTING (8"ø) CELLULAR CORE PVC INTAKE (8"ø)
B-4	RIELLO ARRAY SE 500	MECH PENTHOUSE	NATURAL GAS	500	100	20	5:1	120/60/1	7.5	-	20	75	4.5	FACTORY CONCENTRIC CPVC OR PP VENT AND INTAKE
B-5	RIELLO ARRAY SE 500	MECH PENTHOUSE	NATURAL GAS	500	100	20	5:1	120/60/1	7.5	-	20	75	4.5	FACTORY CONCENTRIC CPVC OR PP VENT AND INTAKE
B-6	RIELLO ARRAY SE 500	MECH PENTHOUSE	NATURAL GAS	500	100	20	5:1	120/60/1	7.5	-	20	75	4.5	FACTORY CONCENTRIC CPVC OR PP VENT AND INTAKE

NOTES:

- BOILERS B-1, B-2, AND B-3 SHALL BE ON ONE CASCADE CONTROL CHAIN. FURNISH WITH FACTORY BAGNET INTERFACE.
- BOILERS B-4, B-5, AND B-6 SHALL BE ON A SEPARATE CASCADE CONTROL CIRCUIT. FURNISH WITH FACTORY BAGNET INTERFACE.
- FURNISH ALL BOILERS WITH FACTORY ACID NEUTRALIZATION KIT.

EXPANSION TANK SCHEDULE

LABEL	TYPE	TANK VOL (GAL)	MIN ACCEPTANCE VOL (GAL)	SYSTEM CONN. SIZE (")	PRECHARGE PRESS (PSIG)	SYSTEM	MFG/MODEL
ET-1A	VERTICAL ASME BLADDER EXPANSION TANK	132	132	½" NPT	55-60*	HEATING HOT WATER BASEMENT BOILER SYSTEM, FLOORS 1-13	TACO CA500-125
ET-1B	VERTICAL ASME BLADDER EXPANSION TANK	132	132	½" NPT	55-60*	HEATING HOT WATER BASEMENT BOILER SYSTEM, FLOORS 1-13	TACO CA500-125
ET-2A	VERTICAL ASME BLADDER EXPANSION TANK	158	158	½" NPT	120*	HEATING HOT WATER FLOORS 13-25	TACO CA600-175
ET-2B	VERTICAL ASME BLADDER EXPANSION TANK	158	158	½" NPT	120*	HEATING HOT WATER FLOORS 13-25	TACO CA600-175
ET-3	VERTICAL ASME BLADDER EXPANSION TANK	34	19	¾" NPT	12	GLYCOL HEATING WATER PENTHOUSE BOILER SYSTEM	TACO CBX130-125
ET-AHU2	VERTICAL ASME DIAPHRAGM EXPANSION TANK	8	5	¾" NPT	12	GLYCOL HEATING WATER AHU-2 HEATING COIL LOOP	TACO CX30-125

* FIELD VERIFY PRECHARGE PRESSURES WITH ACTUAL NECESSARY FOR 10PSI AT TOP OF SYSTEM

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MINNEAPOLIS MN

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MECHANICAL SCHEDULES

SHEET

M5-11



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TITLE

**HVAC
CONTROLS**

SHEET

M6-11

TO BE UPDATED BY
ADDENDUM



SHEET NOTES

1. ALL EXISTING ELECTRICAL EQUIPMENT INDICATED ON PLANS ARE BASED ON INFORMATION FROM CONSTRUCTION DOCUMENTS AND FIELD OBSERVATION OF THE EXISTING BUILDING.
2. ALL EXISTING DEVICES SHOWN ON DEMOLITION PLANS AND ASSOCIATED WIRES ARE TO BE DEMOLISHED BACK TO SOURCE OF POWER, UNLESS NOTED OTHERWISE.
3. CONTRACTOR SHALL REMOVE ALL ABANDONED CABLING BACK TO SOURCE OF POWER.
4. CONTRACTOR IS RESPONSIBLE FOR RECONNECTION OF ANY EXISTING ACTIVE CIRCUITS AND/OR SPECIAL SYSTEM CABLES INTERRUPTED BY DEMOLITION AS REQUIRED TO KEEP OPERABLE.
5. ELECTRICAL PANELBOARDS AND SERVICE GEAR ARE TO REMAIN. PANELBOARDS ARE SHOWN FOR REFERENCE AND COORDINATION TO MAINTAIN CLEARANCES AROUND EQUIPMENT.
6. PROVIDE BLANK PLATES FOR EXISTING RECESSED BOX LOCATIONS WHERE A NEW DEVICE IS NOT INSTALLED. ALL ABANDONED SURFACE RACEWAY SHALL BE REMOVED AND PATCHED/PAINTED TO MATCH ADJACENT SURFACE.
7. COORDINATE DEMOLITION OF ANY CONTROL CIRCUITS WITH TEMPERATURE CONTROLS CONTRACTOR.

ELECTRICAL KEYNOTE LEGEND

- | | |
|----|--|
| 1 | CONTRACTOR TO DISCONNECT EXISTING PUMP TO BE REMOVED BY OTHERS. CONTRACTOR TO DEMOLISH ANY/ALL DISCONNECTS, RACEWAYS, AND CONDUCTORS TO SOURCE (TYPICAL). |
| 2 | EXISTING PANEL TO REMAIN. |
| 3 | CONTRACTOR TO SALVAGE EXISTING VFD TO OWNER. |
| 4 | EXISTING DISCONNECT AND STARTER TO BE DEMOLISHED. |
| 5 | CONTRACTOR TO CLEAN EXISTING SWITCHGEAR. |
| 7 | CONTRACTOR TO DISCONNECT EXISTING MECHANICAL EQUIPMENT TO BE REMOVED BY OTHERS. CIRCUIT TO REMAIN. PROTECT ALL CONDUCTORS. |
| 12 | CONTRACTOR TO DISCONNECT EXISTING EXHAUST FAN TO BE REMOVED BY OTHERS. CONTRACTOR TO DEMOLISH ANY/ALL DISCONNECTS, RACEWAYS, AND CONDUCTORS TO SOURCE (TYPICAL). |
| 14 | CONTRACTOR TO DISCONNECT EXISTING AIR HANDLING UNIT TO BE REMOVED BY OTHERS. CONTRACTOR TO DEMOLISH ANY/ALL DISCONNECTS, RACEWAYS, AND CONDUCTORS TO SOURCE (TYPICAL). |
| 15 | CONTRACTOR TO DISCONNECT EXISTING BOILER TO BE REMOVED BY OTHERS. CONTRACTOR TO DEMOLISH ANY/ALL DISCONNECTS, RACEWAYS, AND CONDUCTORS TO SOURCE (TYPICAL). |
| 23 | CONTRACTOR TO DISCONNECT AND DEMOLISH EXISTING GENERAL LIGHTING FIXTURES IN THE BOILER ROOM. CONTROLS AND CIRCUIT TO REMAIN. |
| 25 | EXISTING FIRE ALARM TO BE RELOCATED 3 FEET TO PLAN EAST. REFER TO BASEMENT POWER PLANS. COORDINATE LOCATION WITH MECHANICAL CONTRACTOR. |

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CASEY G. LARSEN

Casey G. Larsen

DATE 03/15/2024 LIC. NO. 55939

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DATE LIC. NO.

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PROJECT

MPHA CEDAR HIGH BOILER REPLACEMENT

MINNEAPOLIS MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO. 24-30497
 FILE NAME 30497 Elec R22.rvt
 DRAWN BY BJM
 DESIGNED BY BJM
 REVIEWED BY CGL
 ORIGINAL ISSUE DATE 03/15/24
 CLIENT PROJECT NO.

TITLE

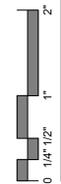
BASEMENT DEMOLITION PLANS

SHEET

E1-10

2 BASEMENT DEMOLITION PLAN - NORTH EXHAUST
1/4" = 1'-0"

1 BASEMENT DEMOLITION PLAN
1/4" = 1'-0"



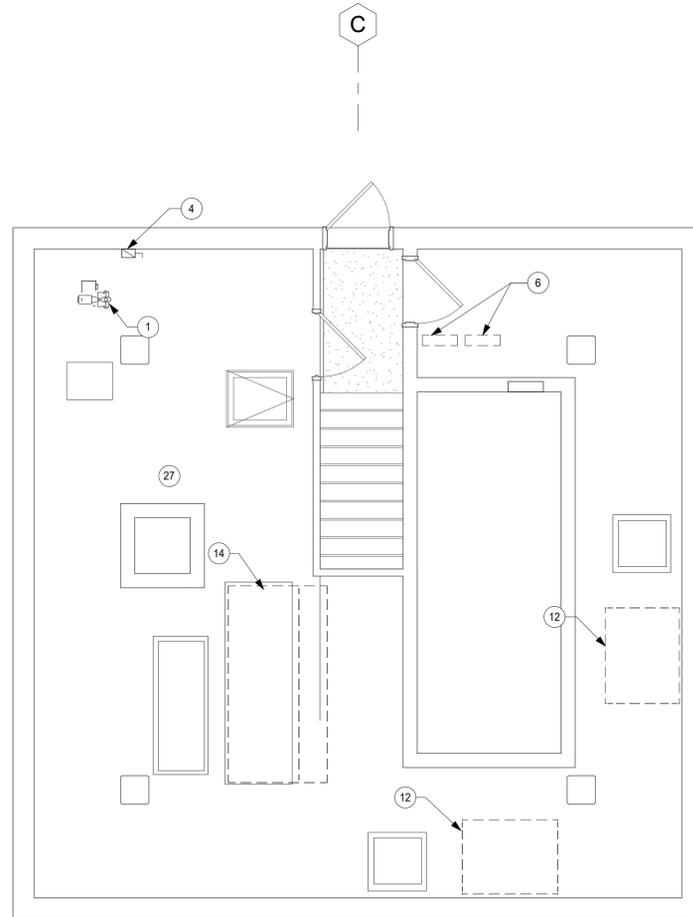


SHEET NOTES

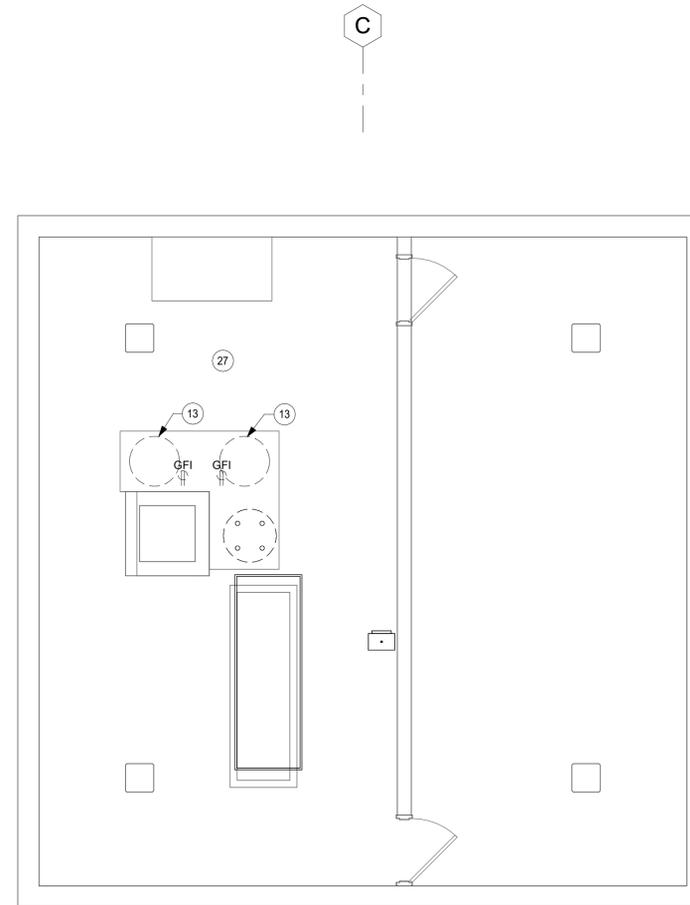
1. ALL EXISTING ELECTRICAL EQUIPMENT INDICATED ON PLANS ARE BASED ON INFORMATION FROM CONSTRUCTION DOCUMENTS AND FIELD OBSERVATION OF THE EXISTING BUILDING.
2. ALL EXISTING DEVICES SHOWN ON DEMOLITION PLANS AND ASSOCIATED WIRES ARE TO BE DEMOLISHED BACK TO SOURCE OF POWER, UNLESS NOTED OTHERWISE.
3. CONTRACTOR SHALL REMOVE ALL ABANDONED CABLING BACK TO SOURCE OF POWER.
4. CONTRACTOR IS RESPONSIBLE FOR RECONNECTION OF ANY EXISTING ACTIVE CIRCUITS AND/OR SPECIAL SYSTEM CABLES INTERRUPTED BY DEMOLITION AS REQUIRED TO KEEP OPERABLE.
5. ELECTRICAL PANELBOARDS AND SERVICE GEAR ARE TO REMAIN. PANELBOARDS ARE SHOWN FOR REFERENCE AND COORDINATION TO MAINTAIN CLEARANCES AROUND EQUIPMENT.
6. PROVIDE BLANK PLATES FOR EXISTING RECESSED BOX LOCATIONS WHERE A NEW DEVICE IS NOT INSTALLED. ALL ABANDONED SURFACE RACEWAY SHALL BE REMOVED AND PATCHED/PAINTED TO MATCH ADJACENT SURFACE.
7. COORDINATE DEMOLITION OF ANY CONTROL CIRCUITS WITH TEMPERATURE CONTROLS CONTRACTOR.

ELECTRICAL KEYNOTE LEGEND

- | | |
|----|--|
| 1 | CONTRACTOR TO DISCONNECT EXISTING PUMP TO BE REMOVED BY OTHERS. CONTRACTOR TO DEMOLISH ANY/ALL DISCONNECTS, RACEWAYS, AND CONDUCTORS TO SOURCE (TYPICAL). |
| 4 | EXISTING DISCONNECT AND STARTER TO BE DEMOLISHED. |
| 6 | EXISTING PANEL TO BE DEMOLISHED. ALL CIRCUITS TO REMAIN UNLESS OTHERWISE NOTED. PROTECT ALL CONDUCTORS UNLESS OTHERWISE NOTED. |
| 12 | CONTRACTOR TO DISCONNECT EXISTING EXHAUST FAN TO BE REMOVED BY OTHERS. CONTRACTOR TO DEMOLISH ANY/ALL DISCONNECTS, RACEWAYS, AND CONDUCTORS TO SOURCE (TYPICAL). |
| 13 | CONTRACTOR TO DISCONNECT EXISTING WATER HEATER TO BE REMOVED BY OTHERS. CONTRACTOR TO DEMOLISH ANY/ALL DISCONNECTS, RACEWAYS, AND CONDUCTORS TO SOURCE (TYPICAL). |
| 14 | CONTRACTOR TO DISCONNECT EXISTING AIR HANDLING UNIT TO BE REMOVED BY OTHERS. CONTRACTOR TO DEMOLISH ANY/ALL DISCONNECTS, RACEWAYS, AND CONDUCTORS TO SOURCE (TYPICAL). |
| 27 | CONTRACTOR TO DISCONNECT AND DEMOLISH EXISTING GENERAL LIGHTING FIXTURES IN THE PENTHOUSE. CONTROLS AND CIRCUIT TO REMAIN. |



1 LOWER PENTHOUSE ELECTRICAL DEMOLITION PLAN
1/4" = 1'-0"



2 UPPER PENTHOUSE ELECTRICAL DEMOLITION PLAN
1/4" = 1'-0"

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CASEY G. LARSEN
Casey G. Larsen
DATE 03/15/2024 LIC. NO. 55939

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PROJECT

MPHA CEDAR HIGH BOILER REPLACEMENT

MINNEAPOLIS MN

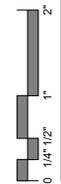
REVISION SCHEDULE		
DATE	DESCRIPTION	BY

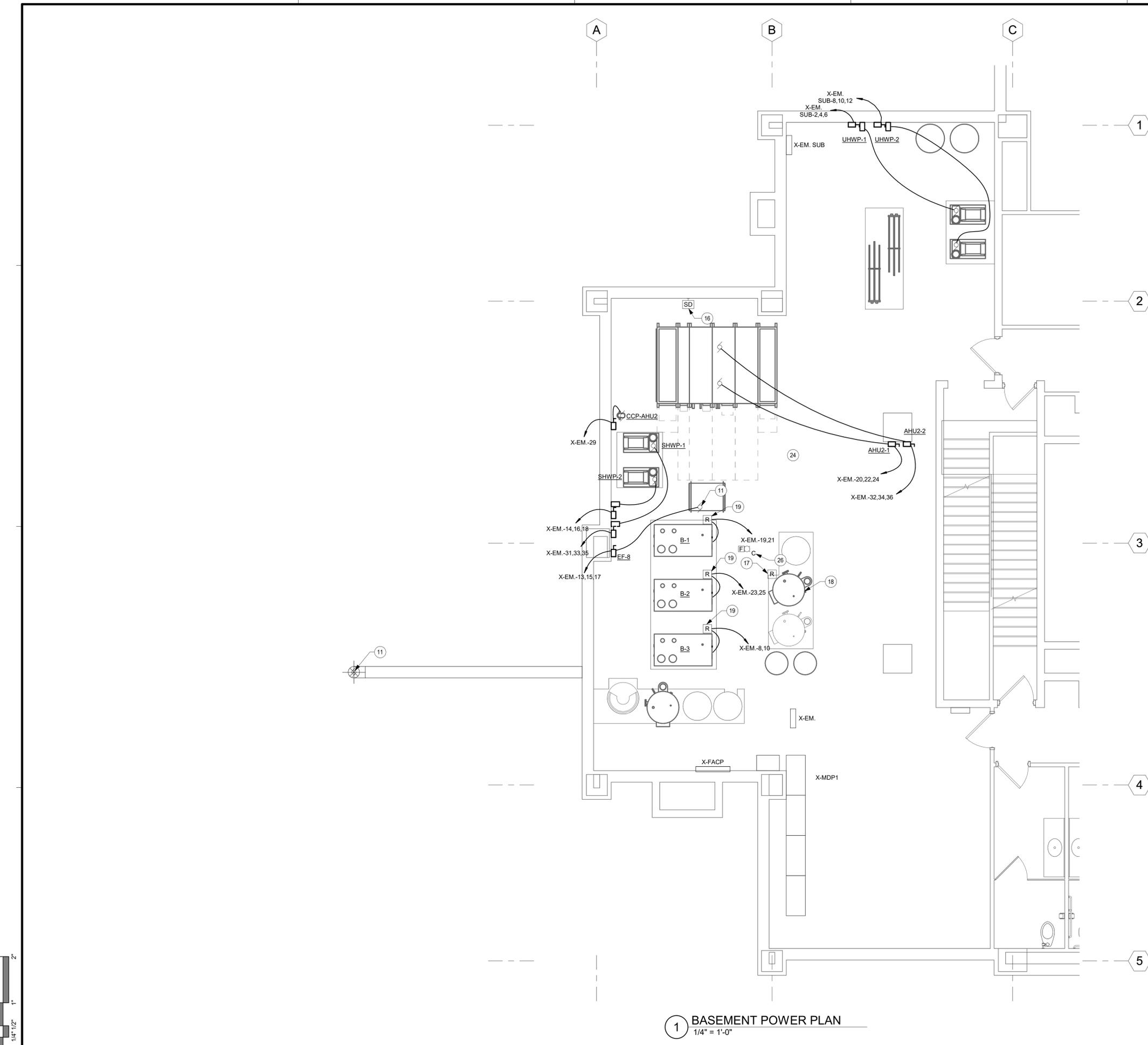
PROJECT NO. 24-30497
FILE NAME 30497 Elec R22.rvt
DRAWN BY BJM
DESIGNED BY BJM
REVIEWED BY CGL
ORIGINAL ISSUE DATE 03/15/24
CLIENT PROJECT NO.

TITLE PENTHOUSE ELECTRICAL DEMOLITION PLANS

SHEET

E1-11





SHEET NOTES

- ALL EXISTING ELECTRICAL EQUIPMENT INDICATED ON PLANS ARE BASED ON INFORMATION FROM CONSTRUCTION DOCUMENTS AND FIELD OBSERVATION OF THE EXISTING BUILDING.
- "X" = INDICATES EXISTING DEVICE TO REMAIN.
- MAINTAIN FIRE RATING OF ALL WALLS AND FLOORS. PROVIDE FIRE PROOFING FOR ALL WALL AND FLOOR PENETRATIONS PER CODE.
- COORDINATE WORK WITH OTHER TRADES.
- CIRCUIT NUMBERS ARE USED FOR DESIGN INTENT TO EXISTING PANELBOARDS. ELECTRICAL CONTRACTOR SHALL VERIFY EXACT CIRCUIT NUMBERS IN THE FIELD.

ELECTRICAL KEYNOTE LEGEND

- CONTRACTOR TO CONNECT MECHANICAL CONTRACTOR FURNISHED EXHAUST FAN TO EXISTING CIRCUIT. INTERCEPT AND EXTEND CONDUCTORS AS NEEDED.
- PROVIDE CIRCUIT FROM DUCT SMOKE DETECTOR TO EXISTING ANNUNCIATOR PANEL X-FACP. PROVIDE CIRCUIT FROM DUCT SMOKE DETECTOR TO AIR HANDLING UNIT SHUTDOWN. COORDINATE POSITION OF DUCT SMOKE DETECTOR WITH MECHANICAL CONTRACTOR AND FIRE MARSHALL.
- PROVIDE FORM "C" RELAY FOR WATER HEATER SHUTDOWN. CONTRACTOR SHALL CONFIRM COIL VOLTAGE AND TIE IN TO EXISTING BOILER SHUTDOWN SYSTEM. CONTRACTOR SHALL TEST CIRCUITS TO ENSURE SHUT DOWN OR KILL POWER TO THE BURNER AND GAS VALVES VIA EPO.
- CONTRACTOR TO CONNECT MECHANICAL CONTRACTOR FURNISHED WATER HEATER TO EXISTING CIRCUIT. INTERCEPT AND EXTEND CONDUCTORS AS NEEDED.
- PROVIDE TWO (2) POLE FORM "C" RELAY FOR BOILER SHUTDOWN. CONTRACTOR SHALL CONFIRM COIL VOLTAGE AND TIE IN TO EXISTING BOILER SHUTDOWN SYSTEM. CONTRACTOR SHALL TEST CIRCUITS TO ENSURE SHUT DOWN OR KILL POWER TO THE BURNER AND GAS VALVES VIA EPO.
- PROVIDE (13) METALUX 4-37SL-FDL-UNV-L840-CD-1 FIXTURES FOR GENERAL LIGHTING AND (5) METALUX 4-37SL-FDL-UNV-L840-CD-1-EL-14W FIXTURES FOR GENERAL AND EGRESS LIGHTING IN THE BOILER ROOM. PROVIDE AYC-CHAIN/SET-U CHAIN HANGERS FOR EACH FIXTURE. EACH METALUX 4-37SL-FDL-UNV-L840-CD-1-EL-14W FIXTURE SHALL BE WIRED WITH (1) SWITCHED HOT FOR GENERAL LIGHTING AND (1) UNSWITCHED HOT FOR EMERGENCY LIGHTING. COORDINATE ALL LIGHT FIXTURE POSITIONS AND MOUNTING HEIGHTS WITH MECHANICAL CONTRACTOR.
- RELOCATED FIRE ALARM.



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PROJECT

MPHA CEDAR HIGH BOILER REPLACEMENT

MINNEAPOLIS MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO. 24-30497

FILE NAME 30497 Elec R22.rvt

DRAWN BY BJM

DESIGNED BY BJM

REVIEWED BY CGL

ORIGINAL ISSUE DATE 03/15/24

CLIENT PROJECT NO.

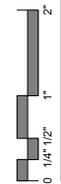
TITLE

BASEMENT POWER PLANS

SHEET

E2-10

1 BASEMENT POWER PLAN
1/4" = 1'-0"



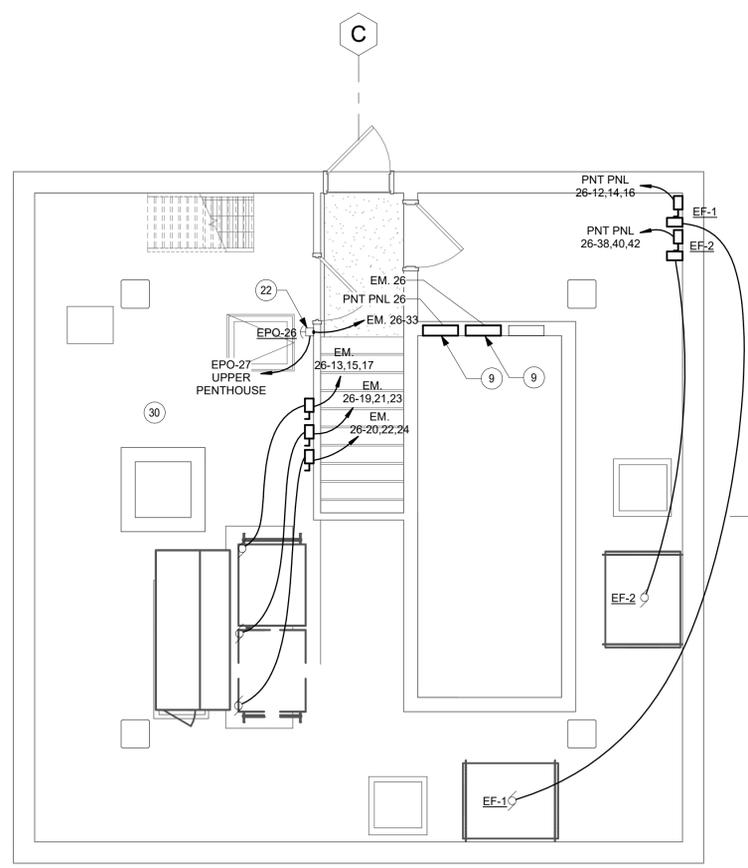


SHEET NOTES

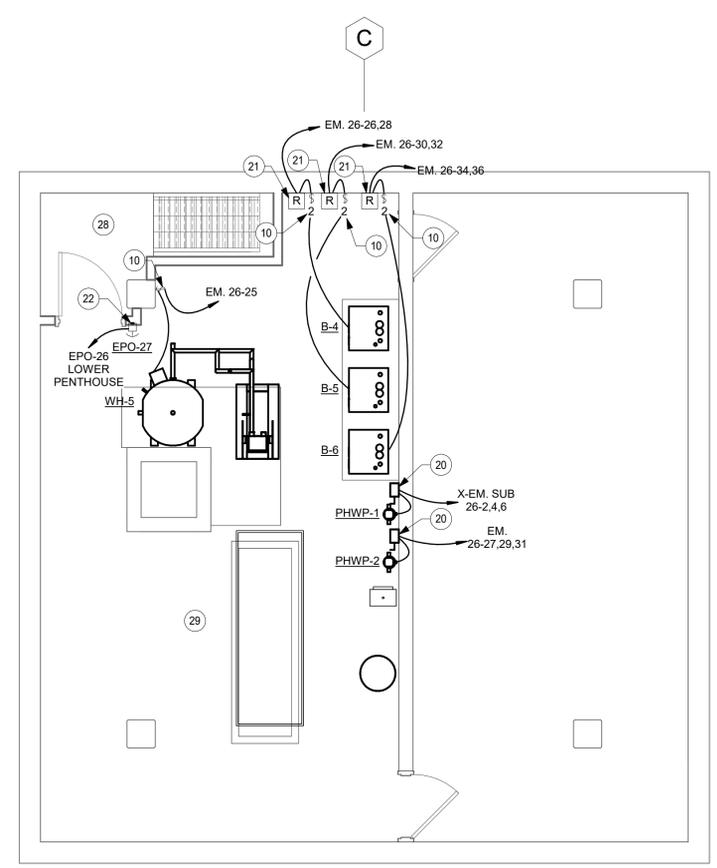
- ALL EXISTING ELECTRICAL EQUIPMENT INDICATED ON PLANS ARE BASED ON INFORMATION FROM CONSTRUCTION DOCUMENTS AND FIELD OBSERVATION OF THE EXISTING BUILDING.
- "X" = INDICATES EXISTING DEVICE TO REMAIN.
- MAINTAIN FIRE RATING OF ALL WALLS AND FLOORS. PROVIDE FIRE PROOFING FOR ALL WALL AND FLOOR PENETRATIONS PER CODE.
- COORDINATE WORK WITH OTHER TRADES.
- CIRCUIT NUMBERS ARE USED FOR DESIGN INTENT TO EXISTING PANELBOARDS. ELECTRICAL CONTRACTOR SHALL VERIFY EXACT CIRCUIT NUMBERS IN THE FIELD.

ELECTRICAL KEYNOTE LEGEND

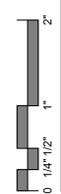
- CONTRACTOR TO PROVIDE QO PANEL. CONTRACTOR SHALL CLEAN EXISTING ALUMINUM FEEDER CONDUCTORS AND APPLY ANTI-OXIDANT. CONTRACTOR SHALL PROVIDE HYDRAULICALLY CRIMPED COPPER PIGTAIL FOR TERMINATION TO PANEL.
- PROVIDE SWITCH LOCKOUT FACEPLATE. CONTRACTOR SHALL COORDINATE WITH MECHANICAL CONTRACTOR TO POSITION DISCONNECTS IN AN ACCESSIBLE POSITION THAT SHALL NOT INTERFERE WITH MAINTENANCE OF MECHANICAL EQUIPMENT.
- CONTRACTOR SHALL COORDINATE WITH MECHANICAL CONTRACTOR TO POSITION DISCONNECTS IN AN ACCESSIBLE POSITION THAT SHALL NOT INTERFERE WITH MAINTENANCE OF MECHANICAL EQUIPMENT.
- PROVIDE TWO (2) POLE FORM "C" RELAY FOR BOILER SHUTDOWN. CONTRACTOR SHALL CONFIRM COIL VOLTAGE AND TIE INTO EPO-26 PENTHOUSE BOILER SHUTDOWN. CONTRACTOR SHALL TEST CIRCUITS TO ENSURE SHUT DOWN OR KILL POWER TO THE BURNER AND GAS VALVES VIA EPO.
- PENTHOUSE BOILER EPO - PROVIDE AMERICAN GAS SAFETY HSGSEGOTW, OR EQUAL. EMERGENCY POWER OFF (EPO) SWITCH WITH AUDIBLE ALARM COVER AND ILLUMINATED SWITCH AT 66". PROVIDE CIRCUIT FROM PANEL EM_26 WITH (2) #12'S PLUS (1) #12 G IN 1/2 EMT. REFER TO EM_26 PANEL SCHEDULE. EPOs SHALL BE CONNECTED IN SERIES. TEST CIRCUITS TO ENSURE THEY SHUT DOWN VIA EPO CONTACT OR KILL POWER TO THE BURNER AND GAS VALVES.
- PROVIDE (1) METALUX 4-37SL-FDL-UNV-L840-CD-1-EL14W FIXTURES FOR GENERAL AND EGRESS LIGHTING ON THE UPPER PENTHOUSE STAIRS. PROVIDE AYC-CHAIN/SET-U CHAIN HANGERS FOR EACH FIXTURE.
- PROVIDE (4) METALUX 4-37SL-FDL-UNV-L840-CD-1 FIXTURES FOR GENERAL LIGHTING AND (2) METALUX 4-37SL-FDL-UNV-L840-CD-1-EL14W FIXTURES FOR GENERAL AND EGRESS LIGHTING IN THE UPPER PENTHOUSE. PROVIDE AYC-CHAIN/SET-U CHAIN HANGERS FOR EACH FIXTURE. EACH METALUX 4-37SL-FDL-UNV-L840-CD-1-EL14W FIXTURE SHALL BE WIRED WITH (1) SWITCHED HOT FOR GENERAL LIGHTING AND (1) UNSWITCHED HOT FOR EMERGENCY LIGHTING. COORDINATE ALL LIGHT FIXTURE POSITIONS AND MOUNTING HEIGHTS WITH MECHANICAL CONTRACTOR.
- PROVIDE (6) METALUX 4-37SL-FDL-UNV-L840-CD-1 FIXTURES FOR GENERAL LIGHTING AND (2) METALUX 4-37SL-FDL-UNV-L840-CD-1-EL14W FIXTURES FOR GENERAL AND EGRESS LIGHTING IN THE LOWER PENTHOUSE. PROVIDE AYC-CHAIN/SET-U CHAIN HANGERS FOR EACH FIXTURE. EACH METALUX 4-37SL-FDL-UNV-L840-CD-1-EL14W FIXTURE SHALL BE WIRED WITH (1) SWITCHED HOT FOR GENERAL LIGHTING AND (3) UNSWITCHED HOT FOR EMERGENCY LIGHTING. COORDINATE ALL LIGHT FIXTURE POSITIONS AND MOUNTING HEIGHTS WITH MECHANICAL CONTRACTOR.



1 LOWER PENTHOUSE POWER PLAN
1/4" = 1'-0"



2 UPPER PENTHOUSE POWER PLAN
1/4" = 1'-0"



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Casey G. Larsen
DATE 03/15/2024 LIC. NO. 55939

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PROJECT

MPHA CEDAR HIGH BOILER REPLACEMENT

MINNEAPOLIS MN

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	24-30497
FILE NAME	30497 Elect R22.rvt
DRAWN BY	BJM
DESIGNED BY	BJM
REVIEWED BY	CGL
ORIGINAL ISSUE DATE	03/15/24
CLIENT PROJECT NO.	

TITLE

PENTHOUSE POWER PLANS

SHEET

E2-12



Existing Panel: X-EM.

Location: Boiler Room-1 1-1
Supply From: X-ATS
Mounting: Surface
Enclosure: Type 1

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

A.I.C. Rating: 10 kAIC
Mains Type: MCB
Mains Rating: 250 A
MCB Rating: 250 A

Notes:
SIEMENS P1X
RELEABLE ANY REMAINING UNUSED BREAKERS AS SPARE.

Note	CKT	Circuit Description	Trip	Pole	A	B	C	Pole	Trip	Circuit Description	CKT	Note	
	1				0	0					2		
1	3	DOMESTIC WATER PUMP #2	20 A	3		0	0		3	30 A	SUPPLY UNIT #2	4	
	5						0	0				6	
	7				0	1612			2	20 A	BOILER 3 (B-3)	8	
1	9	DOMESTIC WATER PUMP #1	20 A	3		0	1612		1	20 A	SPARE	10	
	11						0	0				12	
	13				1678	2906			3	35 A	HOT WATER PUMP SHWP-2 VFD	14	
2	15	EXHAUST FAN 8 (EF-8)	20 A	3		1678	2906		1	20 A	SPARE	16	
	17						1678	2906				18	
3	19	BOILER 1 (B-1)	20 A	2	1612	2006			3	30 A	AIR HANDLING UNIT 2 (AHU-2) FAN 1	20	
	21					1612	2006		1	20 A	DOOR ENTRY PANEL	22	
3	23	BOILER 2 (B-2)	20 A	2	1612	0			1	20 A	LIGHTS - BOILER ROOM	24	
	25								1	20 A	AIR DRYER	26	
3	27	SPARE	20 A	1		0	0		3	30 A	AIR HANDLING UNIT 2 (AHU-2) FAN 2	28	
3	29	AHU-2 HEAT EX. CCP-AHU2	20 A	1				1373	0	1	20 A	EXHAUST - LOWER FLOORS	30
	31				2906	2006			3	30 A	TEKMAR, CONTROL PUMP 8	32	
3	33	HOT WATER PUMP SHWP-1 VFD	35 A	3		2906	2006		1	20 A	BLANK	34	
	35						2906	2006				36	
	37				5813	0			1	20 A	EXHAUST FAN 2 VFD (EF-2 VFD)	38	
1	39	X-EM. SUB	100 A	3		5813	0		1	20 A	BLANK	40	
	41						5813	--	1	--	BLANK	42	
					Total Load:	22151 VA	20539 VA	20300 VA					
					Total Amps:	185 A	171 A	169 A					

NOTE:
*1 DENOTES EXISTING CIRCUIT *2 DENOTES NEW CIRCUIT UTILIZING EXISTING BREAKER *3 DENOTES NEW CIRCUIT AND BREAKER
*4 DENOTES CIRCUIT TO BE RELABELLED AS SPARE

Existing Panel: X-EM. SUB

Location: Boiler Room-1 1-1
Supply From: X-EM.
Mounting: Surface
Enclosure: Type 1

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

A.I.C. Rating: 10 kAIC
Mains Type: MLO
Mains Rating: 250 A
MCB Rating: 100 A

Notes:
SIEMENS P1X
RELEABLE ANY REMAINING UNUSED BREAKERS AS SPARE.

Note	CKT	Circuit Description	Trip	Pole	A	B	C	Pole	Trip	Circuit Description	CKT	Note
4	1	BOILER #1 - UPPER...	20 A	1	0	2906			3	35 A	HOT WATER PUMP UHWP-1 VFD	2
4	3	BOILER #2 - UPPER...	20 A	1		0	2906		1	--	BLANK	4
4	5	BOILER #3 - UPPER...	20 A	1			0	2906	1	--	BLANK	6
	7				0	2906			3	35 A	HOT WATER PUMP UHWP-2 VFD	8
4	9	PUMP #1 - UPPER FLOORS	20 A	3		0	2906		1	--	BLANK	10
	11						0	2906	1	--	BLANK	12
4	13	PUMP #2 - UPPER FLOORS	20 A	3		0	--		1	--	BLANK	14
	15						0	--	1	--	BLANK	16
	17							0	--	1	--	18
	19				0	0			3	20 A	PUMP #6 - (VFD) UPPER FLOORS	20
4	21	PUMP #3 - UPPER FLOORS	20 A	3		0	0		1	20 A	PUMP #7 - (VFD) UPPER FLOORS	22
	23						0	0	3	20 A	BLANK	24
1	25	SPARE	20 A	1	0	0			2	20 A	BLANK	26
1	27	SPARE	20 A	1		0	0		2	20 A	BLANK	28
1	29	SPARE	20 A	1			0	0	2	20 A	BLANK	30
					Total Load:	5813 VA	5813 VA	5813 VA				
					Total Amps:	48 A	48 A	48 A				

NOTE:
*1 DENOTES EXISTING CIRCUIT *2 DENOTES NEW CIRCUIT UTILIZING EXISTING BREAKER *3 DENOTES NEW CIRCUIT AND BREAKER
*4 DENOTES CIRCUIT TO BE RELABELLED AS SPARE

Existing Panel: X-EM. SUB 26

Location: Space 82
Supply From: EM. 26
Mounting: Surface
Enclosure: Type 1

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

A.I.C. Rating: 10 kAIC
Mains Type: MLO
Mains Rating: 100 A
MCB Rating: 100 A

Notes:
SIEMENS P1X
RELEABLE ANY REMAINING UNUSED BREAKERS AS SPARE.

Note	CKT	Circuit Description	Trip	Pole	A	B	C	Pole	Trip	Circuit Description	CKT	Note
	1				1921	793						2
1	3	CIRC PUMP #1	20 A	3		1921	793		3	20 A	PHWP-1	4
	5						1921	793				6
1	7	UNIT HEATER 27TH FLOOR	20 A	1	1040	1040			1	20 A	PENTHOUSE LTS	8
1	9	ELEV RM RECEP	20 A	1		1040	1040		1	20 A	PENTHOUSE LTS	10
1	11	ELEV RM LTS	20 A	1			1040	1040	1	20 A	MECH RM LIGHTS/MISC.	12
	13	SPARE	20 A	1	0	0			3	30 A	BLOWER MOTOR	14
	15	BLANK	--	1		--	0		1	--	BLANK	16
	17	BLANK	--	1			--	0	1	--	BLANK	18
					Total Load:	4794 VA	4794 VA	4794 VA				
					Total Amps:	40 A	40 A	40 A				

NOTE:
*1 DENOTES EXISTING CIRCUIT *2 DENOTES NEW CIRCUIT UTILIZING EXISTING BREAKER *3 DENOTES NEW CIRCUIT AND BREAKER
*4 DENOTES CIRCUIT TO BE RELABELLED AS SPARE

Panel: PNT PNL 26

Location: Space 82
Supply From: MDP1
Mounting: Surface
Enclosure: Type 1

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

A.I.C. Rating: 10 kAIC
Mains Type: MLO
Mains Rating: 225 A
MCB Rating: 225 A

Notes:
CONTRACTOR TO CONFIRM ALL EXISTING LOADS.
EXISTING LOADS TRANSFERRED FROM EXISTING FDP PANEL.

Note	CKT	Circuit Description	Trip	Pole	A	B	C	Pole	Trip	Circuit Description	CKT	Note	
	1	BLANK	--	1	--	--			1	--	BLANK	2	
	3	BLANK	--	1		--	0		1	20 A	SPARE	4	
	5	BLANK	--	1			--	0	1	20 A	EXISTING	6	
	7	SPARE	20 A	1	0	0			1	20 A	EXISTING	8	
	9	SPARE	20 A	1			0	0	1	20 A	EXISTING	10	
	11	SPARE	20 A	1				0	793			12	
1	13	EXISTING	20 A	1	0	793			3	20 A	EXHAUST FAN 1 VFD (EF-1 VFD)	14	
	15					0	793					16	
1	17	EXISTING	40 A	3				0	0	3	20 A	SPARE	18
	19				0	0						20	
	21					0	0					22	
	23	SPARE	20 A	3				0	0	3	60 A	EXISTING	24
	25				0	0						26	
	27	BLANK	--	1		--	0		1	--	BLANK	28	
	29	BLANK	--	1			--	0	1	20 A	EXISTING	30	
1	31	EXISTING	30 A	2	0	--			1	--	BLANK	32	
	33					0	--		1	--	BLANK	34	
	35						0	--	1	--	BLANK	36	
1	37	EXISTING	30 A	2	0	793			3	20 A	EXHAUST FAN 2 VFD (EF-2 VFD)	38	
	39					0	793					40	
1	41	EXISTING	30 A	2				0	793			42	
					Total Load:	1585 VA	1585 VA	1585 VA					
					Total Amps:	13 A	13 A	13 A					

NOTE:
*1 DENOTES EXISTING CIRCUIT TO BE RECONNECTED

Panel: EM. 26

Location: Space 82
Supply From: X-ATS
Mounting: Surface
Enclosure: Type 1

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

A.I.C. Rating: 10 kAIC
Mains Type: MLO
Mains Rating: 225 A
MCB Rating: 225 A

Notes:
CONTRACTOR TO CONFIRM ALL EXISTING LOADS.
EXISTING LOADS TRANSFERRED FROM EXISTING FDP PANEL.

Note	CKT	Circuit Description	Trip	Pole	A	B	C	Pole	Trip	Circuit Description	CKT	Note	
1	1	AIRCRAFT WARNING...	20 A	1	500	1040			1	20 A	CORR LTS & RCP 25TH FL	2	
1	3	ELEV LTS #2	15 A	1		500	500		1	20 A	STAIR & EXIT LTS 25TH FL	4	
1	5	ELEV LTS #1	15 A	1			1040	500	1	20 A	CORR LTS & RCP 24TH FL	6	
1	7	SMOKE DAMPER	20 A	1	500	500			1	20 A	STAIR & EXIT LTS 24TH FL	8	
	9						2080	500	1	20 A	ELEV SMK DAMP CTRL	10	
1	11	SWING STAGE RECEP	30 A	2				2080	2080	2	30 A	SWING STAGE RECEP	12
	13				2006	2080			2	30 A	SWING STAGE RECEP	14	
	15	AHU-1 FAN 1	30 A	3			2006	2080	2	30 A	SWING STAGE RECEP	16	
	17							2006	2080	2	30 A	SWING STAGE RECEP	18
	19				2006	2006			3	30 A	AHU-1 FAN 3	20	
21	AHU-1 FAN 2	30 A	3			2006	2006		3	30 A	AHU-1 FAN 3	22	
	23							2006	2006			24	
25	PENTHOUSE WATER HTR	20 A	1	1920	780				2	20 A	PENTHOUSE BOILER 1 (B-P1)	26	
	27					793	780					28	
29	PHWP-2	20 A	3					793	780	2	20 A	PENTHOUSE BOILER 2 (B-P2)	30
	31				793	780						32	
33	PENTHOUSE BLR EPO-26/27	20 A	1			0	780		2	20 A	PENTHOUSE BOILER 3 (B-P3)	34	
	35	BLANK	--	1			--	780	1	--	BLANK	36	
	37				0	--			1	--	BLANK	38	
1	39	EM. SUB 26	70 A	3			0	--	1	--	BLANK	40	
	41							0	--	1	--	BLANK	42
					Total Load:	19703 VA	18823 VA	20943 VA					
					Total Amps:	165 A	157 A	176 A					

NOTE:
*1 DENOTES EXISTING CIRCUIT TO BE RECONNECTED

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

CASEY G. LARSEN

Casey G. Larsen

DATE 03/15/2024 LIC. NO. 55939

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.

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PROJECT

**MPHA
CEDAR HIGH
BOILER
REPLACEMENT**

MINNEAPOLIS MN

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO. 24-30497
FILE NAME 30497 Elec R22.rvt
DRAWN BY BJM
DESIGNED BY BJM
REVIEWED BY CGL
ORIGINAL ISSUE DATE 03/15/24
CLIENT PROJECT NO.

TITLE

**PANELBOARDS
SCHEDULES**

SHEET

E5-11

