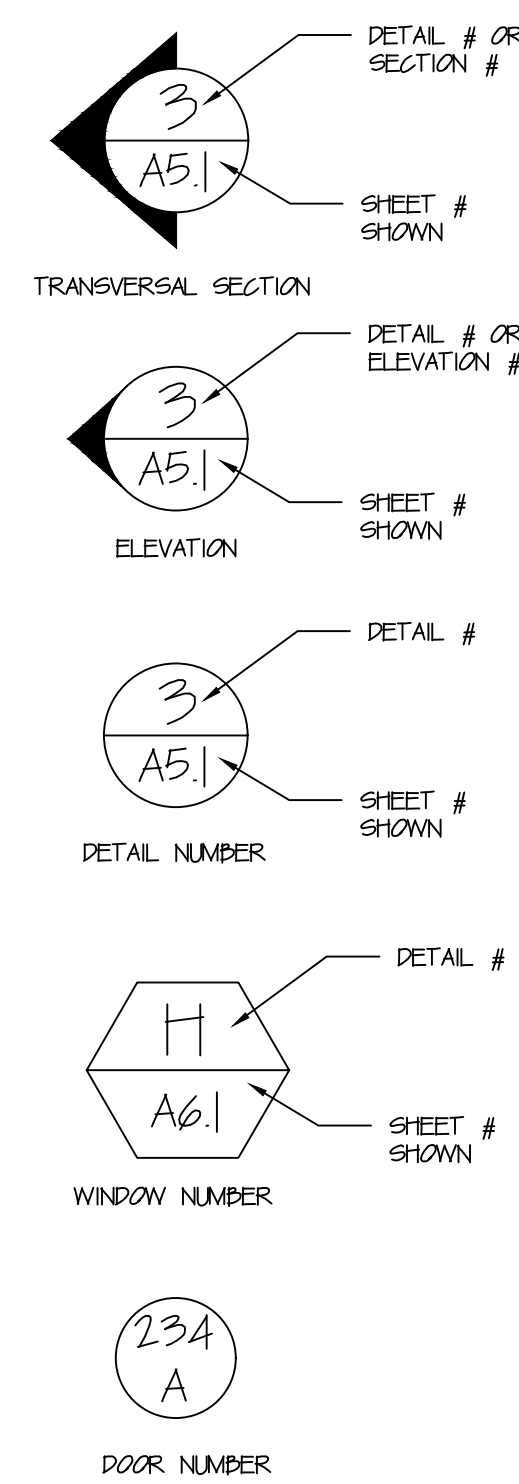


ABBREVIATIONS :

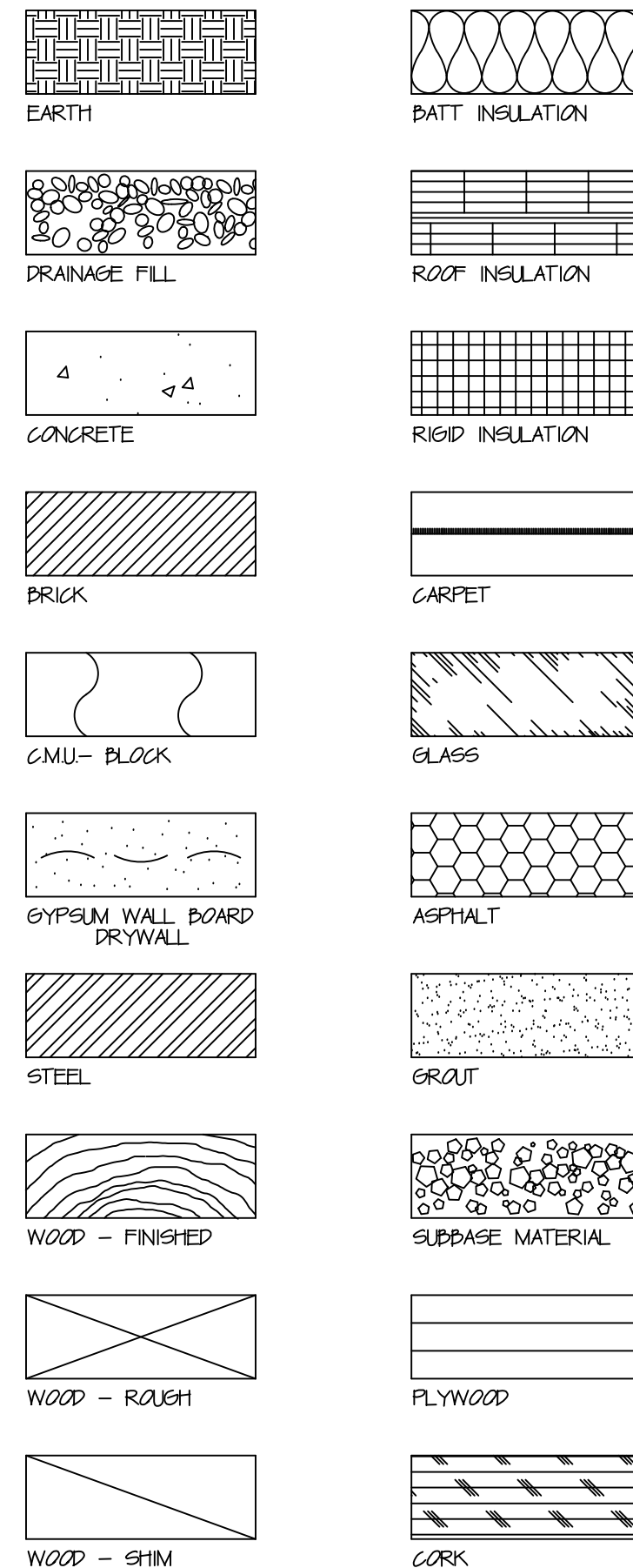
NOTE: THIS IS A MASTER LIST. ALL ABBREVIATIONS AND MATERIALS LISTED ARE NOT NECESSARILY PRESENT IN THIS PROJECT.

ACI AMERICAN CONCRETE INSTITUTE	INS INSULATION
AFF ABOVE FINISH FLOOR CONSTRUCTION	INT INTERIOR
AISC AMERICAN INSTITUTE OF STEEL	INV INVERT
AL ALUMINUM	KSI KIPS PER SQUARE INCH
ALT ALTERNATE	LAM LAMINATED
ARCH ARCHITECT/ ARCHITECTURAL	LAV LAVATORY
ASTM AMERICAN SOCIETY FOR TESTING AND MATERIALS	LDS LONG LEG HORIZONTAL
AWG AMERICAN WELDING SOCIETY	LLV LONG LEG VERTICAL
B/ BOTTOM OF	MAN MANUFACTURER
BL BUILDING LINE	MAS MASONRY
BLDG BUILDING	MATL MATERIAL
BLKS BLOCKING	MAX MAXIMUM
BRG BEARING	ME MECHANICAL CONTRACTOR
CD DATCH BASIN	MIN MINIMUM
CC CLEAR COVER	MISC MISCELLANEOUS
CE CERAMIC	MO MASONRY OPENING
CI CAST IRON	NO NOT IN CONTRACT
CJ CONTROL JOINT	NT NUMBER
CL CENTER LINE	OC ON CENTER
CMU CONCRETE MASONRY UNIT	OD OUTSIDE DIAMETER
CO CLEAN OUT	OH OVERHEAD
COL COLUMN	OFB OPENING
CONG CONCRETE	ONT OILY WASTE TREATMENT
CONST CONSTRUCTION	PC PLUMBING CONTRACTOR
CONT CONTINUOUS	POST POST
CONTR CONTRACTOR	PERM PERIMETER
OW COLD WATER	PL PLATE
DET DETAIL	PLAS PLASTIC
DIA DIAMETER	PLPB PLUMBING
DIM DIMENSION	PLYD PLYWOOD
DISP DISPENSOR	PSF POUNDS PER SQUARE FOOT
DW DRYWALL	PSI POUNDS PER SQUARE INCH
DWG DRAWING	PT PRESSURE TREATED
EC ELECTRICAL CONTRACTOR	PTN PARTITION
EJ EXPANSION JOINT	PVC POLYVINYL CHLORIDE
EL ELEVATION	QT QUARRY TILE
ENG ENGINEER	RD ROOF DRAIN
EP EPOXY PAINT	REG RECESSED
EPDM ETHYLENE PROPYLENE DIENE TERPOLYMER	RECT RECTANGLE
EXC EXCAVATE/ EXCAVATION	REINF REINFORCED
EXP EXPANSION	REQD REQUIRED
EXIST EXISTING	RESL RESILIENT
EXT EXTERIOR	RET RETAINING
EAW EACH WAY	RO ROUGH OPENING
FD FLOOR DRAIN	SCH SCHEDULE
FDN FOUNDATION	SDI STEEL DECK INSTITUTE
FES FIRE EXTINGUISHER CABINET	SECT SECTION
FIN FINISH	SM SIMILAR
FL FLOOR	SPEC SPECIFICATION
FTG FOOTING	SS STAINLESS STEEL
GALV GALVANIZED	SRR STANDING SEAM ROOF
GC GENERAL CONTRACTOR	STD STANDARD
GYP GYPSUM	STG STORAGE
GWB GYPSUM WALL BOARD	STRCT STRUCTURAL
HD HOSE END	SUSP SUSPENDED
HW HARDWARE	T/ TOP OF
HM HOLLOW METAL	TEL TELEPHONE
HORIZ HORIZONTAL	T&G TONGUE AND GROOVE
HRS HOT ROLLED STEEL	TYP TYPICAL
HT HEIGHT	UNO UNLESS NOTED OTHERWISE
HW HOT WATER	VCT VINYL COMPOSITION TILE
ID INSIDE DIAMETER	VEST VESTIBULE
	WCG WATER CLOSET
	WVF WELDED WIRE FABRIC

SYMBOLS :



MATERIAL DESIGNATIONS :



HVAC UPGRADES / REPLACEMENTS

VAILE ELEMENTARY SCHOOL

WESTVIEW ELEMENTARY SCHOOL

CHARLES ELEMENTARY SCHOOL

RICHMOND, INDIANA

OCTOBER, 2021

RICHMOND COMMUNITY SCHOOLS



SUPERINTENDENT OF SCHOOLS
DR. CURTIS WRIGHT

ASSISTANT SUPERINTENDENT
OF SCHOOLS
JENNIFER O'BRIEN

CHIEF FINANCIAL
OFFICER
KAREN SCALF

RICHMOND COMMUNITY SCHOOLS
BOARD OF TRUSTEES
RICHMOND, INDIANA

JOHN WEBER
JEFF SLIFER
NICOLE STULTS
KRISTEN BRUNTON
KEITH MOREY
AARON L. STEVENS
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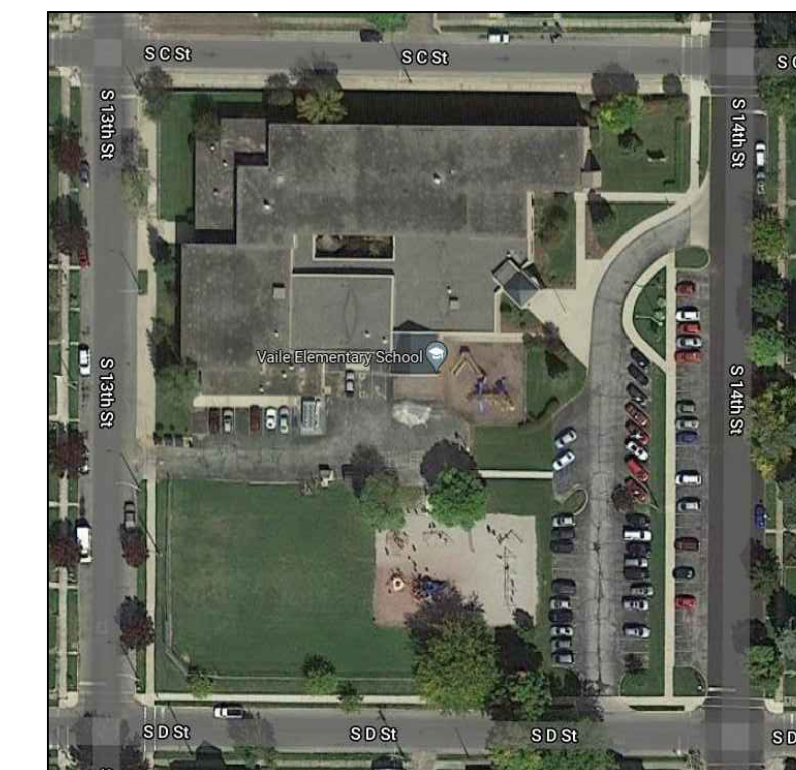
PRESIDENT
VICE PRESIDENT
SECRETARY
MEMBER
MEMBER
MEMBER
MEMBER

SHEET INDEX

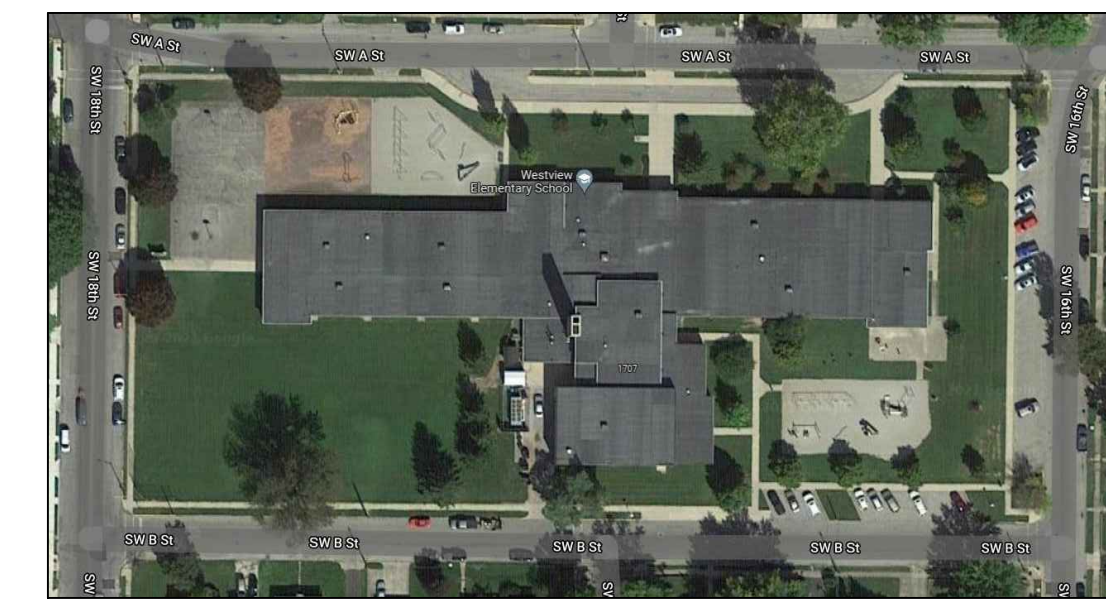
G1.1	VAILE LOWER LEVEL PLAN
G1.2	CHARLES LOWER LEVEL PLAN
G1.3	WESTVIEW LOWER LEVEL PLAN
G2.1	VAILE LOWER LEVEL MOISTURE ELIMINATION PLAN
G2.2	CHARLES LOWER LEVEL MOISTURE ELIMINATION PLAN
G3.1	MOISTURE ELIMINATION DETAILS
LAV	MECHANICAL NOTES, LEGENDS, AND SCHEDULES
MD1.1	VAILE LOWER LEVEL MECHANICAL DEMOLITION PLAN AND SECTIONS
MD1.2	CHARLES LOWER LEVEL MECHANICAL DEMOLITION PLAN AND SECTION
MD1.3	WESTVIEW LOWER LEVEL MECHANICAL DEMOLITION PLAN AND SECTIONS
MD2.1	BOILER REPLACEMENT ALTERNATES DEMOLITION PLANS
M1.1	VAILE LOWER LEVEL MECHANICAL PLAN AND SECTIONS
M1.2	CHARLES LOWER LEVEL MECHANICAL PLAN AND SECTION
M1.3	WESTVIEW LOWER LEVEL PLAN AND SECTIONS
M2.1	VAILE BOILER REPLACEMENT ALTERNATE MECHANICAL PLAN
M2.2	CHARLES BOILER REPLACEMENT ALTERNATE MECHANICAL PLAN
M3.1	VAILE HVAC CONTROLS AND ALTERNATE DUCT CLEANING PLAN
M3.2	CHARLES HVAC CONTROLS AND ALTERNATE DUCT CLEANING PLAN
M3.3	WESTVIEW HVAC CONTROLS AND ALTERNATE DUCT CLEANING PLAN
M4.1	MECHANICAL DETAILS
M4.2	BOILER REPLACEMENT ALTERNATE MECHANICAL DETAILS
E1.1	VAILE, CHARLES, WESTVIEW ELECTRICAL PLANS

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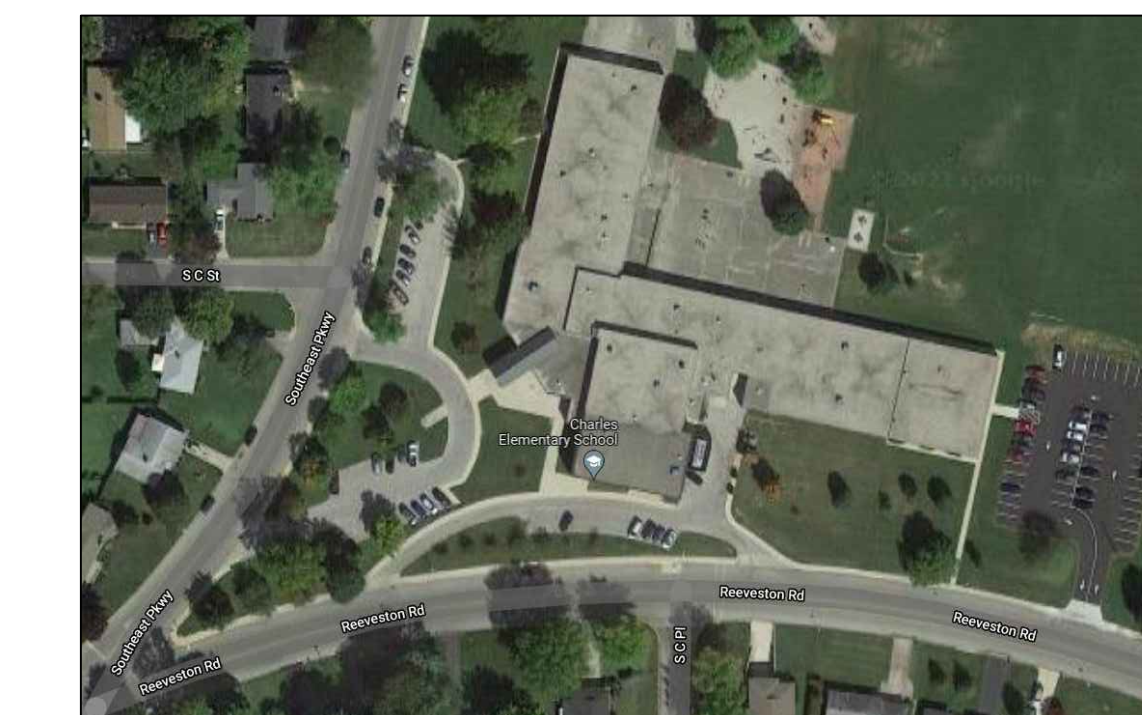
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HVAC UPGRADES
REPLACEMENTS
VAILE,
WESTVIEW
& CHARLES
ELEMENTARY
SCHOOLS
RICHMOND, INDIANA



VAILE ELEMENTARY SCHOOL
SITE LOCATION PLAN
NO SCALE:



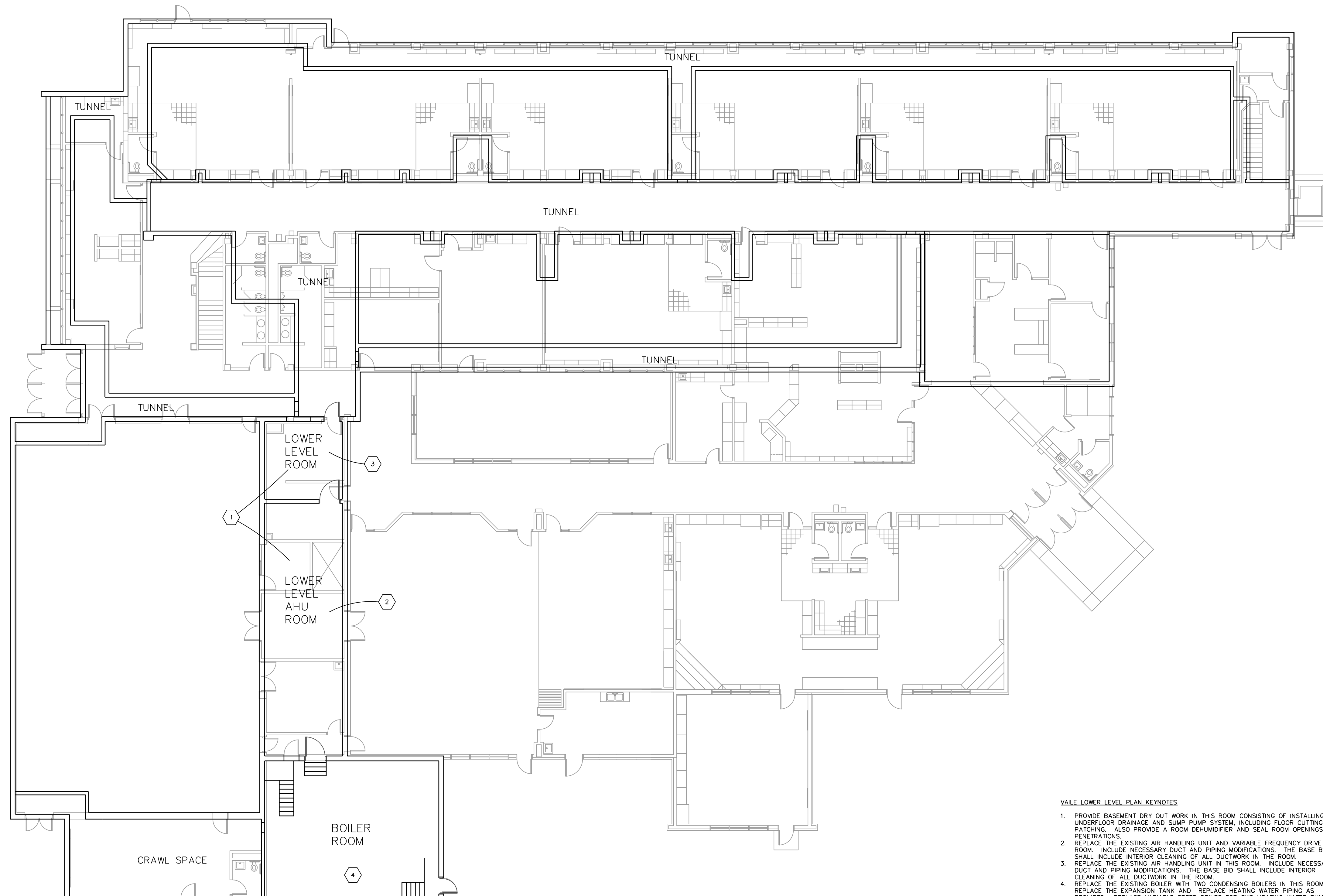
WESTVIEW ELEMENTARY SCHOOL
SITE LOCATION PLAN
NO SCALE:



CHARLES ELEMENTARY SCHOOL
SITE LOCATION PLAN
NO SCALE:

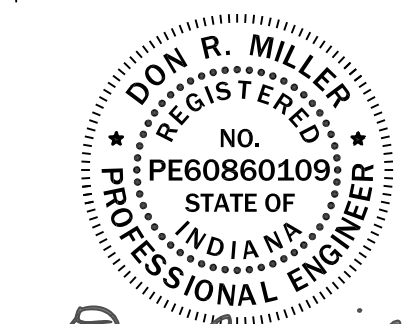
Project No..... 2115-1
Coordinator..... INERSTRÖDT
Designer..... INERSTRÖDT
Drawn..... G SOUTH
A RICE
Checked..... DAI
Date..... 10/19/2021

Revision: No. Date



LOWER LEVEL PLAN
 SCALE: 3/32" = 1'-0"
 North

- VAILE LOWER LEVEL PLAN KEYNOTES
1. PROVIDE BASEMENT DRY OUT WORK IN THIS ROOM CONSISTING OF INSTALLING AN UNDERFLOOR DRAINAGE AND SUMP PUMP SYSTEM, INCLUDING FLOOR CUTTING AND PATCHING. ALSO PROVIDE A ROOM DEHUMIDIFIER AND SEAL ROOM OPENINGS AND PENETRATIONS.
 2. REPLACE THE EXISTING AIR HANDLING UNIT AND VARIABLE FREQUENCY DRIVE IN THIS ROOM. INCLUDE NECESSARY DUCT AND PIPING MODIFICATIONS. THE BASE BID SHALL INCLUDE INTERIOR CLEANING OF ALL DUCTWORK IN THE ROOM.
 3. REPLACE THE EXISTING AIR HANDLING UNIT IN THIS ROOM. INCLUDE NECESSARY DUCT AND PIPING MODIFICATIONS. THE BASE BID SHALL INCLUDE INTERIOR CLEANING OF ALL DUCTWORK IN THE ROOM.
 4. REPLACE THE EXISTING BOILER WITH TWO CONDENSING BOILERS IN THIS ROOM. REPLACE THE EXPANSION TANK AND REPLACE HEATING WATER PIPING AS REQUIRED. REPLACE VARIABLE SPEED DRIVES FOR TWO HEATING WATER PUMPS. THIS WORK SHALL BE INCLUDED IN AN ALTERNATE BID AND NOT IN THE BASE BID.
 5. CLEAN ALL DUCTWORK THROUGHOUT THE BUILDING, ON ALL FLOORS. THIS WORK SHALL BE INCLUDED IN AN ALTERNATE AND NOT IN THE BASE BID, EXCEPT THAT CLEANING OF THE DUCTWORK IN THE LOWER LEVEL MECHANICAL ROOM SHALL BE INCLUDED IN THE BASE BID. THE DUCT CLEANING WORK SHALL INCLUDE SEALING OF ALL TEARS AND LOOSE TERMINATIONS IN EXISTING DUCT INSULATION VAPOR BARRIER, AND SHALL INCLUDE NOTIFYING THE OWNER OF ANY LOOSE EXISTING DUCT LINER DISCOVERED DURING THE CLEANING PROCESS.
 6. REFER TO OTHER DRAWINGS AND TO SPECIFICATIONS FOR THE FULL EXTENT OF REQUIRED WORK. REFER TO THE SUMMARY TECHNICAL SPECIFICATION SECTION IN THE PROJECT MANUAL FOR REQUIREMENTS AND LIMITATIONS THAT APPLY TO SCHEDULING OF VARIOUS PORTIONS OF THE WORK.



Don R. Miller
 Certified By

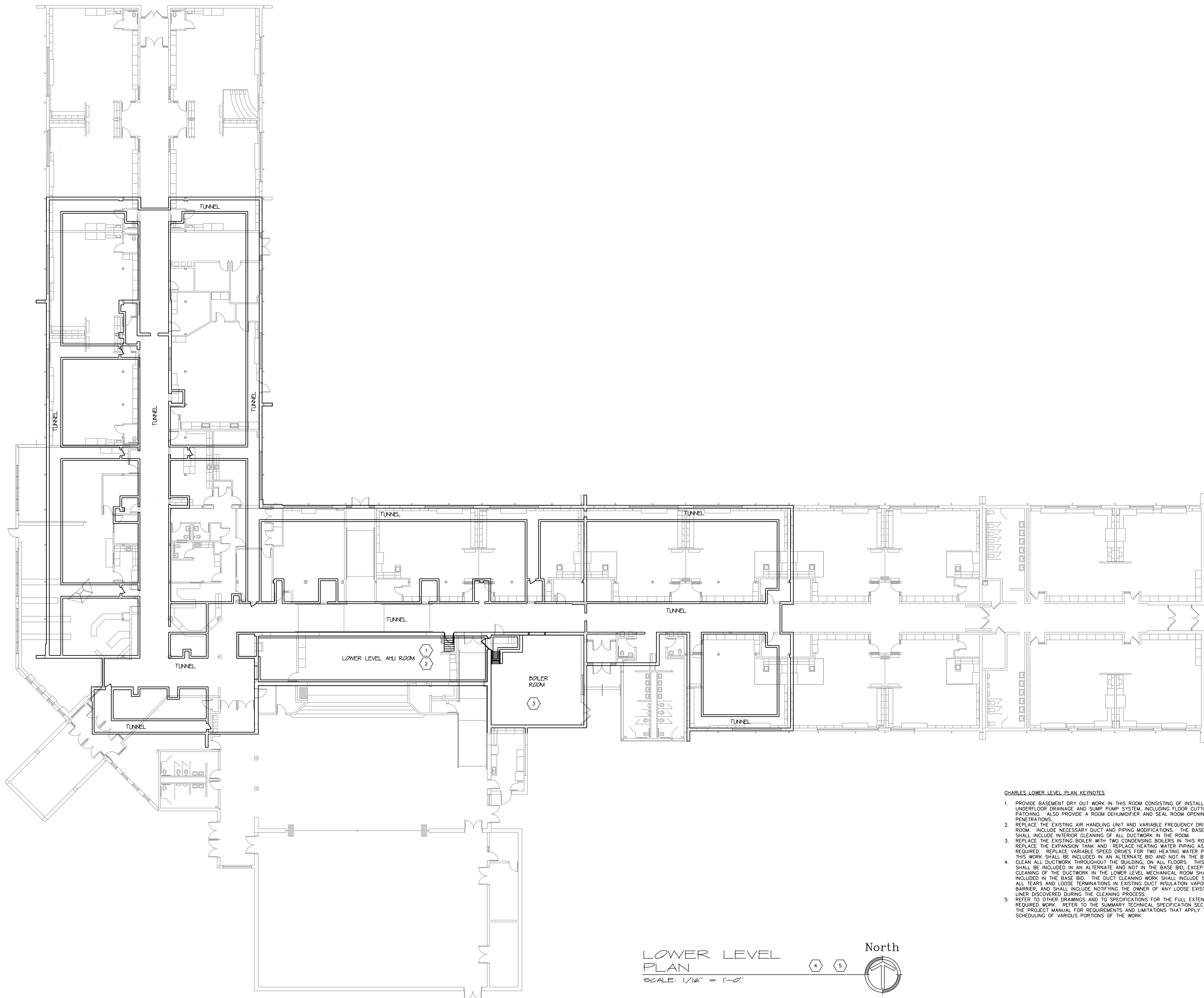
HVAC UPGRADES
 REPLACEMENTS

VAILE,
 WESTVIEW
 & CHARLES
 ELEMENTARY
 SCHOOLS

RICHMOND, INDIANA

Project No. 215-1
 Coordinator..... INDERSTRODT
 Designer..... D MILLER
 Drawn..... DAL
 Checked..... D MILLER
 Date..... 10/29/2021
 Revision: No. Date

VAILE LOWER
 LEVEL PLAN



LOWER LEVEL PLAN
 SCALE: 1/16" = 1'-0"
 North

CHARLES LOWER LEVEL PLAN KEYNOTES

1. PROVIDE BASEMENT DRY OUT WORK IN THIS ROOM CONSISTING OF INSTALLING AN UNDERFLOOR DRAINAGE AND SUMP PUMP SYSTEM, INCLUDING FLOOR CUTTING AND PATCHING. ALSO PROVIDE A ROOM DEHUMIDIFIER AND SEAL ROOM OPENINGS AND PENETRATIONS.
2. REPLACE THE EXISTING AIR HANDLING UNIT AND VARIABLE FREQUENCY DRIVE IN THIS ROOM. INCLUDE NECESSARY DUCT AND PIPING MODIFICATIONS. THE BASE BID SHALL INCLUDE INTERIOR CLEANING OF ALL DUCTWORK IN THE ROOM.
3. REPLACE THE EXISTING BOILER WITH TWO CONDENSING BOILERS IN THIS ROOM. REPLACE THE EXPANSION TANK AND REPLACE HEATING WATER PIPING AS REQUIRED. REPLACE VARIABLE SPEED DRIVES FOR TWO HEATING WATER PUMPS. THIS WORK SHALL BE INCLUDED IN AN ALTERNATE BID AND NOT IN THE BASE BID.
4. CLEAN ALL DUCTWORK THROUGHOUT THE BUILDING ON ALL FLOORS. THIS WORK SHALL BE INCLUDED IN AN ALTERNATE AND NOT IN THE BASE BID, EXCEPT THAT CLEANING OF THE DUCTWORK IN THE LOWER LEVEL MECHANICAL ROOM SHALL BE INCLUDED IN THE BASE BID. THE DUCT CLEANING WORK SHALL INCLUDE SEALING OF ALL TEARS AND LOOSE TERMINATIONS IN EXISTING DUCT INSULATION VAPOR BARRIER, AND SHALL INCLUDE NOTIFYING THE OWNER OF ANY LOOSE EXISTING DUCT LINER DISCOVERED DURING THE CLEANING PROCESS.
5. REFER TO OTHER DRAWINGS AND TO SPECIFICATIONS FOR THE FULL EXTENT OF REQUIRED WORK. REFER TO THE SUMMARY TECHNICAL SPECIFICATION SECTION IN THE PROJECT MANUAL FOR REQUIREMENTS AND LIMITATIONS THAT APPLY TO SCHEDULING OF VARIOUS PORTIONS OF THE WORK.

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HVAC UPGRADES
 REPLACEMENTS

VAILE,
 WESTVIEW
 & CHARLES
 ELEMENTARY
 SCHOOLS

RICHMOND, INDIANA

Project No..... 215-1
 Coordinator..... INDERSTRODT
 Designer..... D MILLER
 Drawn..... DAL

Checked..... D MILLER
 Date..... 10/29/2021

Revision: No. Date

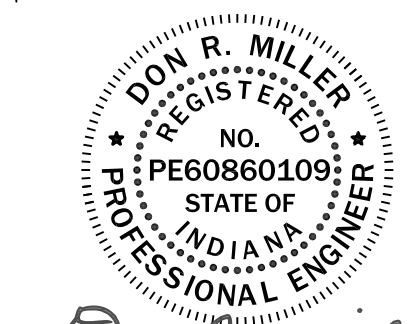
CHARLES
 LOWER LEVEL
 PLAN



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HVAC UPGRADES
REPLACEMENTS

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ELEMENTARY
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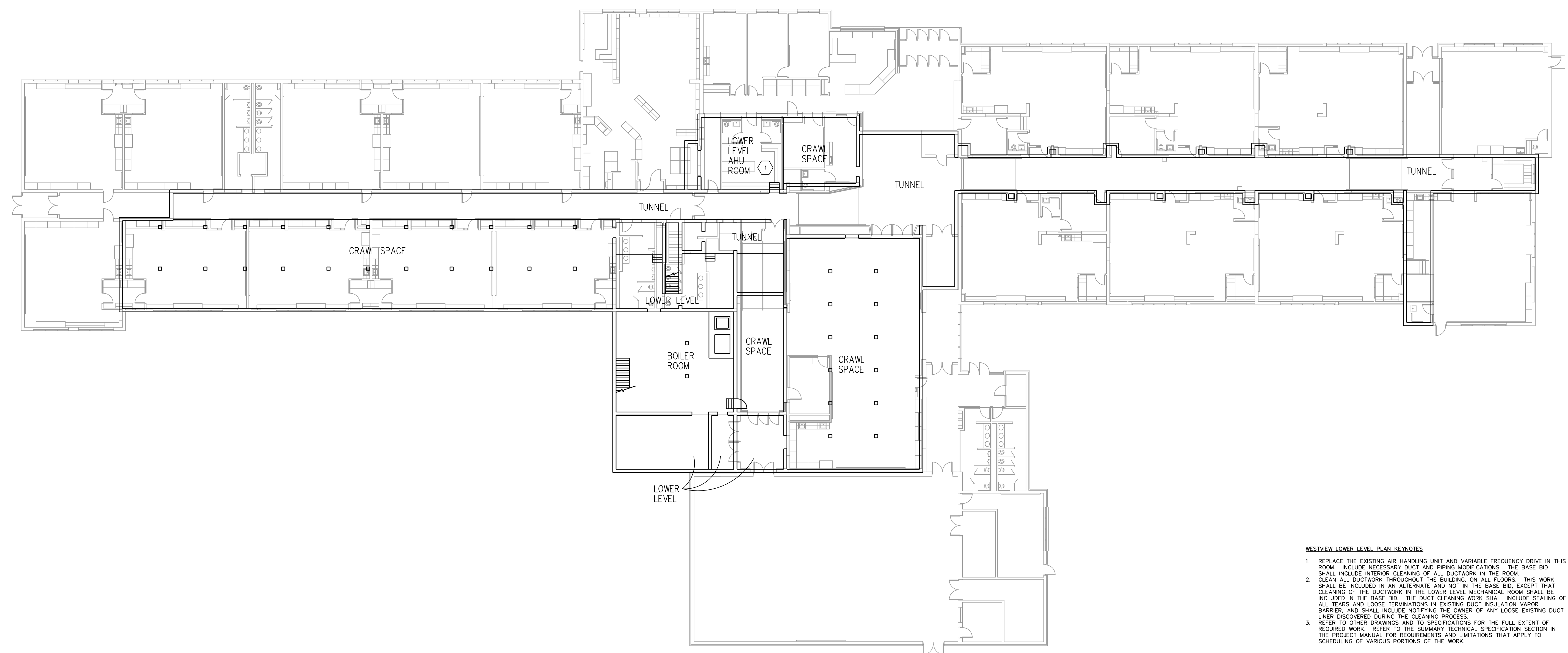
RICHMOND, INDIANA

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Drawn..... DAL

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WESTVIEW
LOWER LEVEL
PLAN

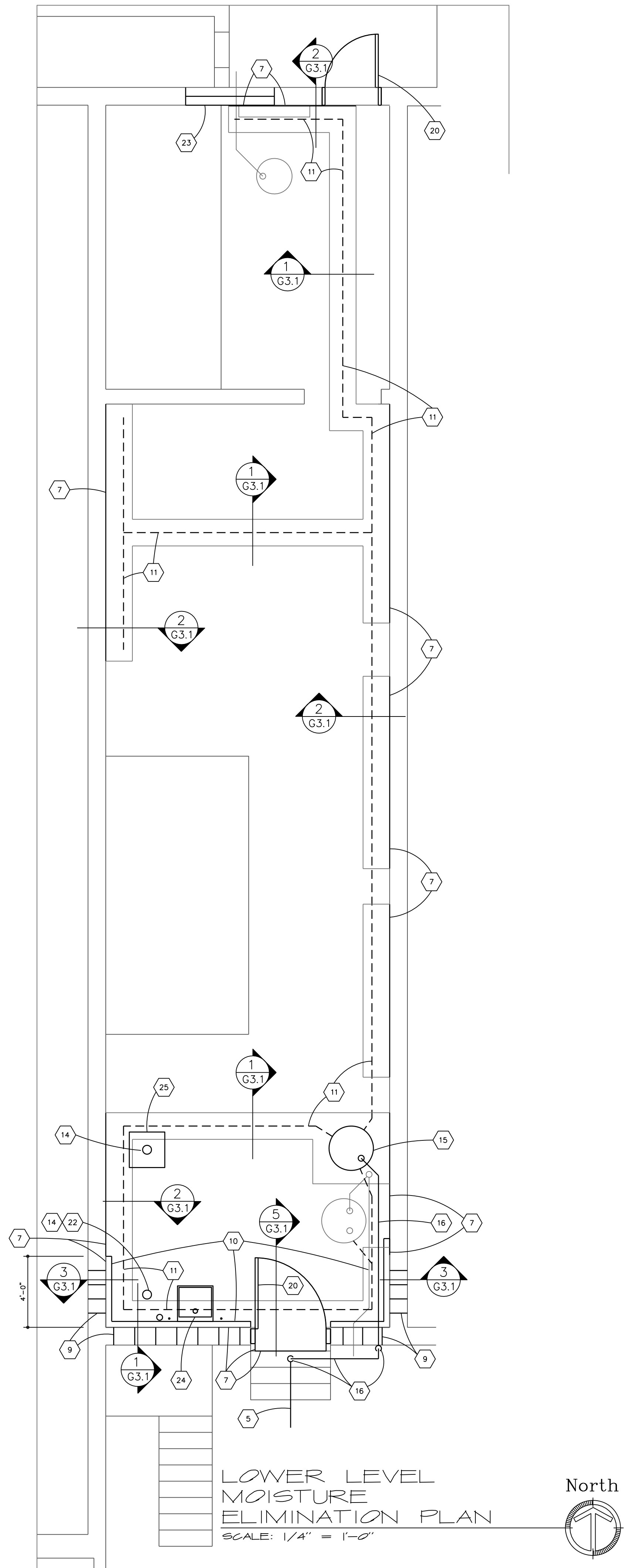
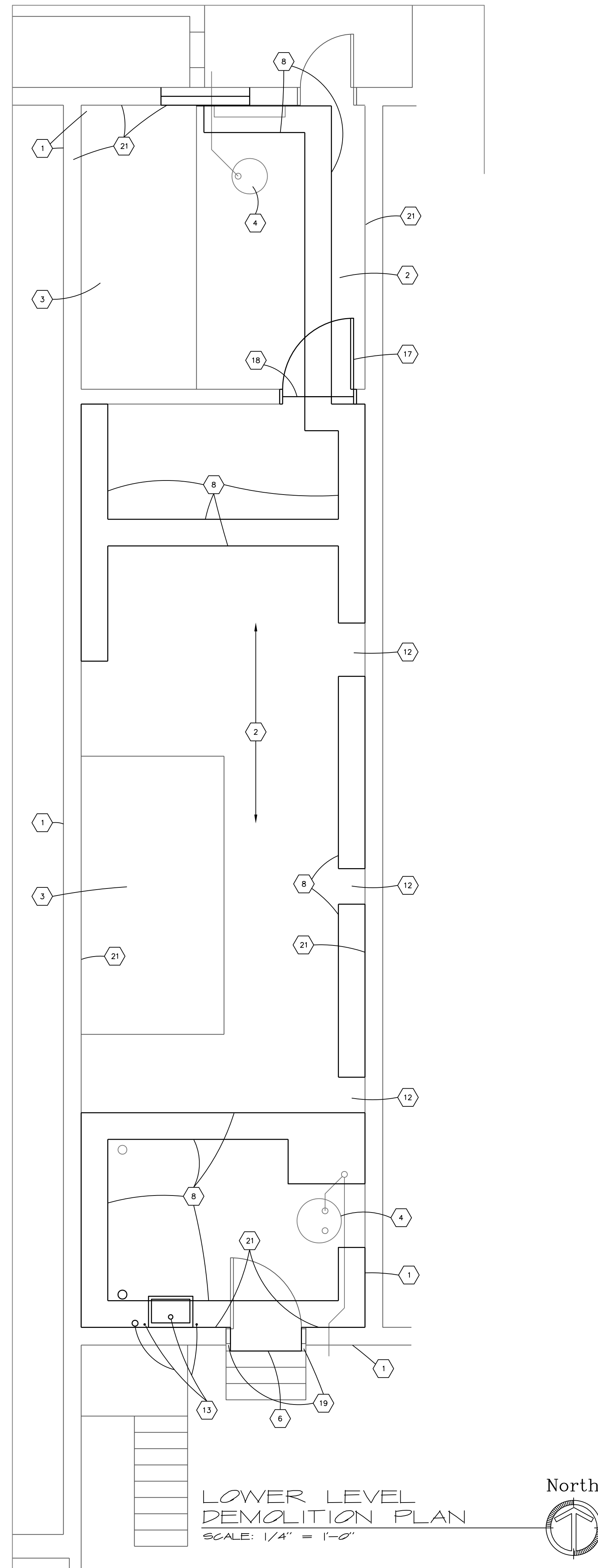


WESTVIEW LOWER LEVEL PLAN KEYNOTES

1. REPLACE THE EXISTING AIR HANDLING UNIT AND VARIABLE FREQUENCY DRIVE IN THIS ROOM. INCLUDE NECESSARY DUCT AND PIPING MODIFICATIONS. THE BASE BID SHALL INCLUDE INTERIOR CLEANING OF ALL DUCTWORK IN THE ROOM.
2. CLEAN ALL DUCTWORK THROUGHOUT THE BUILDING, ON ALL FLOORS. THIS WORK SHALL BE INCLUDED IN AN ALTERNATE AND NOT IN THE BASE BID, EXCEPT THAT CLEANING OF THE DUCTWORK IN THE LOWER LEVEL MECHANICAL ROOM SHALL BE INCLUDED IN THE BASE BID. THE DUCT CLEANING WORK SHALL INCLUDE SEALING OF ALL TEARS AND LOOSE TERMINATIONS IN EXISTING DUCT INSULATION VAPOR BARRIER, AND SHALL INCLUDE NOTIFYING THE OWNER OF ANY LOOSE EXISTING DUCT LINER DISCOVERED DURING THE CLEANING PROCESS.
3. REFER TO OTHER DRAWINGS AND TO SPECIFICATIONS FOR THE FULL EXTENT OF REQUIRED WORK. REFER TO THE SUMMARY TECHNICAL SPECIFICATION SECTION IN THE PROJECT MANUAL FOR REQUIREMENTS AND LIMITATIONS THAT APPLY TO SCHEDULING OF VARIOUS PORTIONS OF THE WORK.

LOWER LEVEL
PLAN
SCALE: 1/16" = 1'-0"

North



- VAILE MOISTURE ELIMINATION PLAN KEYNOTES**
- EXISTING CONCRETE WALL. CONTRACTOR SHALL FIELD VERIFY EXACT DIMENSIONS OF FOOTING EXTENSION BEYOND WALL.
 - EXISTING CONCRETE FLOOR.
 - EXISTING HOUSEKEEPING PAD.
 - EXISTING PUMP, BASIN, PIPING, AND ELECTRICAL SERVICE TO REMAIN.
 - EXISTING ROOF DRAIN PIPING NEAR ROOF.
 - EXTEND CONCRETE REPLACEMENT TO STEP.
 - PROVIDE DIMPLE DRAIN BOARD WITH DIMPLED SIDE AGAINST EXISTING CONCRETE, 1/2 INCH MINIMUM, 3/4 INCH MAXIMUM THICKNESS HIGH DENSITY POLYETHYLENE.
 - SAWCUT EXISTING CONCRETE FLOOR, FULL THICKNESS. REMOVE EXISTING CONCRETE TO ALLOW FOR INSTALLATION OF UNDERFLOOR DRAINAGE SYSTEM. PATCH FLOOR WITH NEW CONCRETE AFTER INSTALLATION OF UNDERFLOOR DRAINAGE SYSTEM. PROVIDE FLOOR CONCRETE TO MATCH EXISTING CONCRETE FLOOR THICKNESS, 4 INCHES MINIMUM.
 - DRILL 3/4 INCH HOLES 12 INCHES ON CENTER SLOPING UPWARD INTO THE WALL AT 1/2 INCH PER FOOT. ADJUST LOCATIONS OF HOLES BY AS MUCH AS 1-1/2 INCHES IF NECESSARY TO AVOID CONTACT OF DRILL BIT WITH EXISTING WALL REINFORCEMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND AVOIDING EXISTING REINFORCEMENT.
 - PROVIDE 4 INCH CONCRETE BLOCK PARTIAL HEIGHT WALL WITH 6 IN CONCRETE BLOCK CAP AND ENDS. PROVIDE GALVANIZED STEEL MASONRY TIES SECURED TO EXISTING CONCRETE WALL IN TOP MORTAR JOINT AT 24 INCHES ON CENTER.
 - PROVIDE 3 INCH PERFORATED SCHEDULE 40 PVC PIPE WITH 2 ROWS OF PERFORATIONS AT 120, EACH ROW 30 DEGREES DOWN FROM THE HORIZONTAL PIPE AXIS. PERFORATIONS SHALL BE 4 TO 6 INCHES ON CENTER AND 3/8 TO 1/2 INCHES DIAMETER.
 - LEAVE 2 FEET FLOOR WIDTH IN PLACE AND EXTEND PERFORATED PIPE, DRAINAGE FILL, AND FILTER FABRIC UNDER THE CONCRETE.
 - REPLACE SERVICE SINK TO MOUNT AGAINST CONCRETE BLOCK WALL SURFACE. EXTEND WATER SUPPLY, DRAIN AND VENT CONNECTING PIPING TO CLEAR THE PARTIAL HEIGHT BLOCK WALL.
 - EXISTING FLOOR DRAIN. CLEAN OUTLET PIPING FOR A DISTANCE OF 25 FEET. REPLACE STRAINER WITH HEAVY DUTY STAINLESS STEEL STRAINER DESIGNED TO FIT FLOOR DRAIN BODY OPENING.
 - PROVIDE SUMP PUMP AND BASIN.
 - EXTEND 2 INCH SUMP PUMP DISCHARGE PIPING TO ABOVE EXISTING ROOF DRAIN PIPING. CUT EXISTING ROOF DRAIN PIPING AND INSTALL A SHORT PIPE SECTION, A TEE, AND A SLEEVE, ALL DESIGNED FOR CONNECTING TO THE EXISTING TYPE AND SIZE OF PIPING. CONTRACTOR SHALL VERIFY EXISTING TYPE AND SIZE OF PIPING. ORIENT TEE SUCH THAT THE SUMP PUMP DISCHARGE PIPING WILL ENTER INTO THE TOP OF THE EXISTING ROOF DRAIN PIPING.
 - REMOVE DOOR.
 - REMOVE BOTTOM FRAME AT DOOR.
 - PATCH AND REPAIR THE LOWER 24 INCHES OF THE STEEL DOOR FRAME TO MATCH THE CONFIGURATION OF THE FRAME ABOVE THE PATCHED AREA.
 - CLEAN AND REMOVE ALL RUST FROM THE DOOR AND FRAME, AND PRIME, AND PAINT DOOR AND FRAME 2 COATS. PROVIDE WEATHERSTRIP ALL AROUND DOOR. PROVIDE SWEEP ON BOTTOM OF DOOR TO CREATE BOTTOM SEAL.
 - SEAL AROUND ALL ITEMS PENETRATING THROUGH THIS WALL.
 - RELOCATE FLOOR DRAIN AND EXTEND PIPING TO ALLOW FOR INSTALLATION OF THE UNDERFLOOR DRAINAGE SYSTEM.
 - INSTALL OPENING IN WALL WITH 8 INCH CONCRETE BLOCK AND MORTAR TO SEAL THE LOWER LEVEL ROOM FROM THE TUNNEL AREA.
 - PROVIDE HEAVY DUTY POLYPROPYLENE FLOOR-LEG MOUNTED LAUNDRY TUB, MUSTEE 23 X 25 OR APPROVED EQUAL, WITH CHICAGO FAUCET MODEL 897-RFC OR APPROVED EQUAL FAUCET HAVING ROUGH CHROME FINISH, VACUUM BREAKER, SPOUT PALM HOOK, 3/4 INCH HOSE THREAD OUTLET, WALL BRACE, AND NUMBER 369 HANDLES. MOUNT FAUCET ON NEW CONCRETE BLOCK. EXTEND WATER SERVICE PIPING FROM ABOVE DOWN INTO CONCRETE BLOCK FOR FAUCET SUPPLY.
 - CUT AND PATCH 24 INCHES SQUARE FLOOR AREA CENTERED ON EXISTING FLOOR DRAIN. LOWER FLOOR DRAIN 1 INCH AND SLOPE FLOOR PATCH CONCRETE DOWN EVENLY FROM PERIMETER CUT TO DRAIN.

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HVAC UPGRADES REPLACEMENTS

VAILE, WESTVIEW & CHARLES ELEMENTARY SCHOOLS

RICHMOND, INDIANA

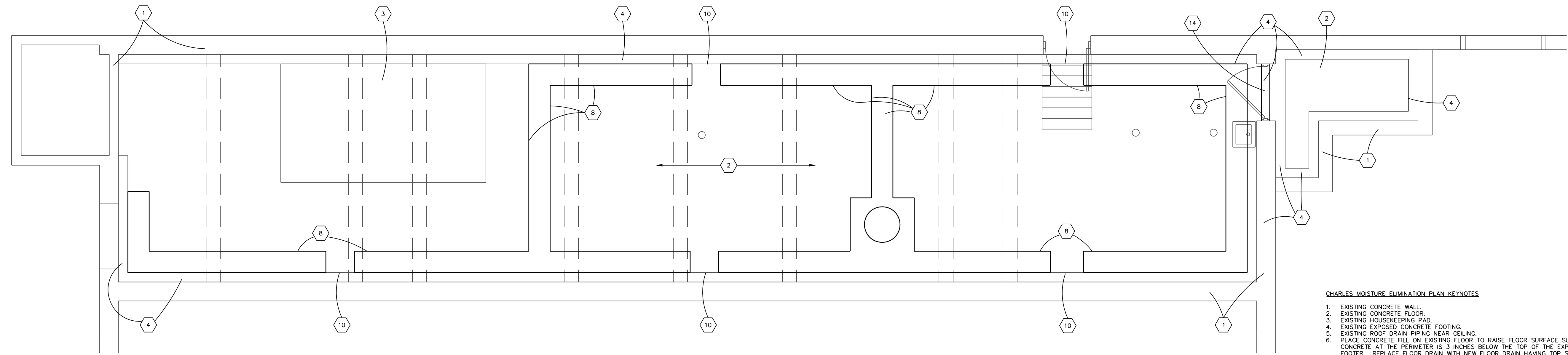
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 Coordinator..... INDERSTRODT
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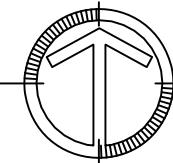
VAILE LOWER LEVEL MOISTURE ELIMINATION PLAN

drawing 021 of



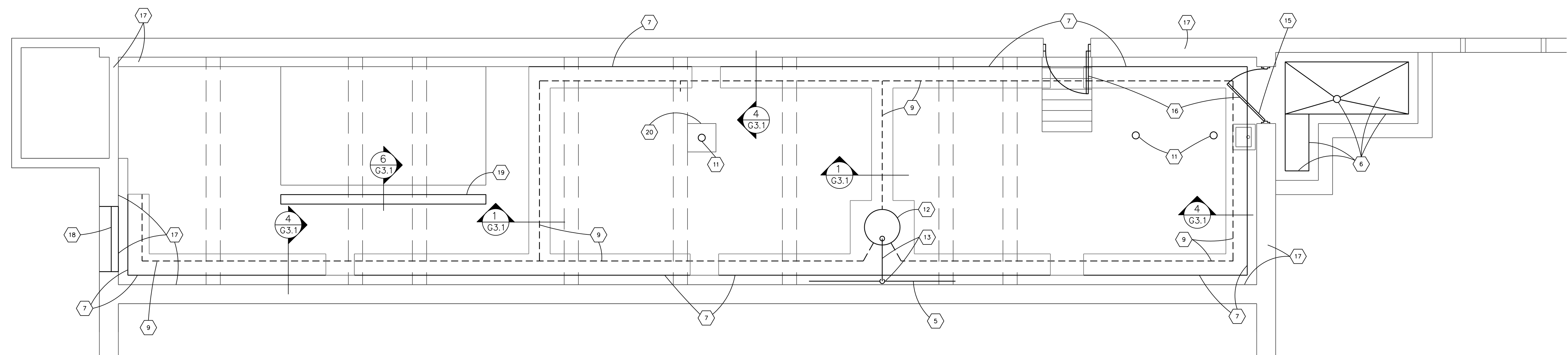
LOWER LEVEL
DEMOLITION PLAN
SCALE: 1/4" = 1'-0"

North



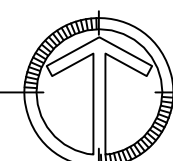
CHARLES MOISTURE ELIMINATION PLAN KEYNOTES

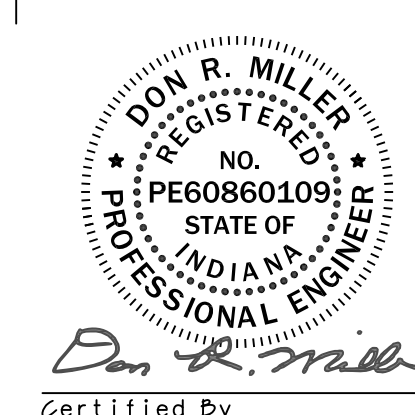
1. EXISTING CONCRETE WALL.
2. EXISTING CONCRETE FLOOR.
3. EXISTING HOUSEKEEPING PAD.
4. EXISTING EXPOSED CONCRETE FOOTING.
5. EXISTING ROOF DRAIN PIPING NEAR CEILING.
6. PLACE CONCRETE FILL ON EXISTING FLOOR TO RAISE FLOOR SURFACE SUCH THAT CONCRETE AT THE PERIMETER IS 3 INCHES BELOW THE TOP OF THE EXPOSED FOOTER. REPLACE FLOOR DRAIN WITH NEW FLOOR DRAIN HAVING TOP STRAINER 1 INCH LOWER THAN RAISED CONCRETE FLOOR AT PERIMETER. SLOPE FLOOR EVENLY FROM PERIMETER TO FLOOR DRAIN. SLOPE FLOOR CONCRETE SURFACE UNDER THE STAIRS UP TO BE 1 INCH BELOW THE TOP OF THE EXPOSED FOOTER AT THE SOUTH END OF THE STAIR OPEN WELL.
7. PROVIDE DIMPLE DRAIN BOARD WITH DIMPLED SIDE AGAINST EXISTING CONCRETE, 1/2 INCH MINIMUM, 3/4 INCH MAXIMUM THICKNESS HIGH DENSITY POLYETHYLENE.
8. SAWCUT EXISTING CONCRETE FLOOR, FULL THICKNESS. REMOVE EXISTING CONCRETE TO ALLOW FOR INSTALLATION OF UNDERFLOOR DRAINAGE SYSTEM. PATCH FLOOR WITH NEW CONCRETE AFTER INSTALLATION OF UNDERFLOOR DRAINAGE SYSTEM. PROVIDE FLOOR CONCRETE TO MATCH EXISTING CONCRETE FLOOR THICKNESS, 4 INCHES MINIMUM.
9. PROVIDE 3 INCH PERFORATED SCHEDULE 40 PVC PIPE WITH 2 ROWS OF PERFORATIONS AT 120, EACH ROW 30 DEGREES DOWN FROM THE HORIZONTAL PIPE AXIS. PERFORATIONS SHALL BE 4 TO 6 INCHES ON CENTER AND 3/8 TO 1/2 INCHES DIAMETER.
10. LEAVE 2 FEET FLOOR WIDTH IN PLACE, AND EXTEND PERFORATED PIPE, DRAINAGE FULL AND FILTER FABRIC UNDER THE CONCRETE.
11. EXISTING FLOOR DRAIN. CLEAN OUTLET PIPING FOR A DISTANCE OF 25 FEET. REPLACE STRAINER WITH HEAVY DUTY STAINLESS STEEL STRAINER DESIGNED TO FIT FLOOR DRAIN BODY OPENING.
12. PROVIDE SUMP PUMP AND BASIN.
13. EXTEND 2 INCH SUMP PUMP DISCHARGE PIPING TO ABOVE EXISTING ROOF DRAIN PIPING. CUT EXISTING ROOF DRAIN PIPING AND INSTALL A SHORT PIPE SECTION, A TEE AND A SLEEVE, ALL DESIGNED FOR CONNECTING TO THE EXISTING TYPE AND SIZE OF PIPING. CONTRACTOR SHALL VERIFY EXISTING TYPE AND SIZE OF PIPING. ORIENT TEE SUCH THAT THE SUMP PUMP DISCHARGE PIPING WILL ENTER INTO THE TOP OF THE EXISTING ROOF DRAIN PIPING.
14. REMOVE BOTTOM FRAME AT DOOR.
15. PATCH AND REPAIR THE LOWER 24 INCHES OF THE STEEL DOOR FRAME TO MATCH THE CONFIGURATION OF THE FRAME ABOVE THE PATCHED AREA.
16. CLEAN AND REMOVE ALL RUST FROM THE DOOR AND FRAME, AND PRIME, AND PAINT DOOR AND FRAME 2 COATS. PROVIDE WEATHERSTRIP ALL AROUND DOOR. PROVIDE SWEEP ON BOTTOM OF DOOR TO CREATE BOTTOM SEAL.
17. SEAL AROUND ALL ITEMS PENETRATING THROUGH THIS WALL.
18. INFILL OPENING IN WALL WITH 8 INCH CONCRETE BLOCK AND MORTAR TO SEAL THE LOWER LEVEL ROOM FROM THE TUNNEL AREA.
19. PROVIDE CONCRETE EXTENSION OF EXISTING HOUSEKEEPING PAD, SAME HEIGHT AS EXISTING, APPROXIMATELY 3-1/2 INCHES.
20. CUT AND PATCH 24 INCHES SQUARE FLOOR AREA CENTERED ON EXISTING FLOOR DRAIN. LOWER FLOOR DRAIN 1 INCH AND SLOPE FLOOR PATCH CONCRETE DOWN EVENLY FROM PERIMETER CUT TO DRAIN.



LOWER LEVEL
MOISTURE
ELIMINATION PLAN
SCALE: 1/4" = 1'-0"

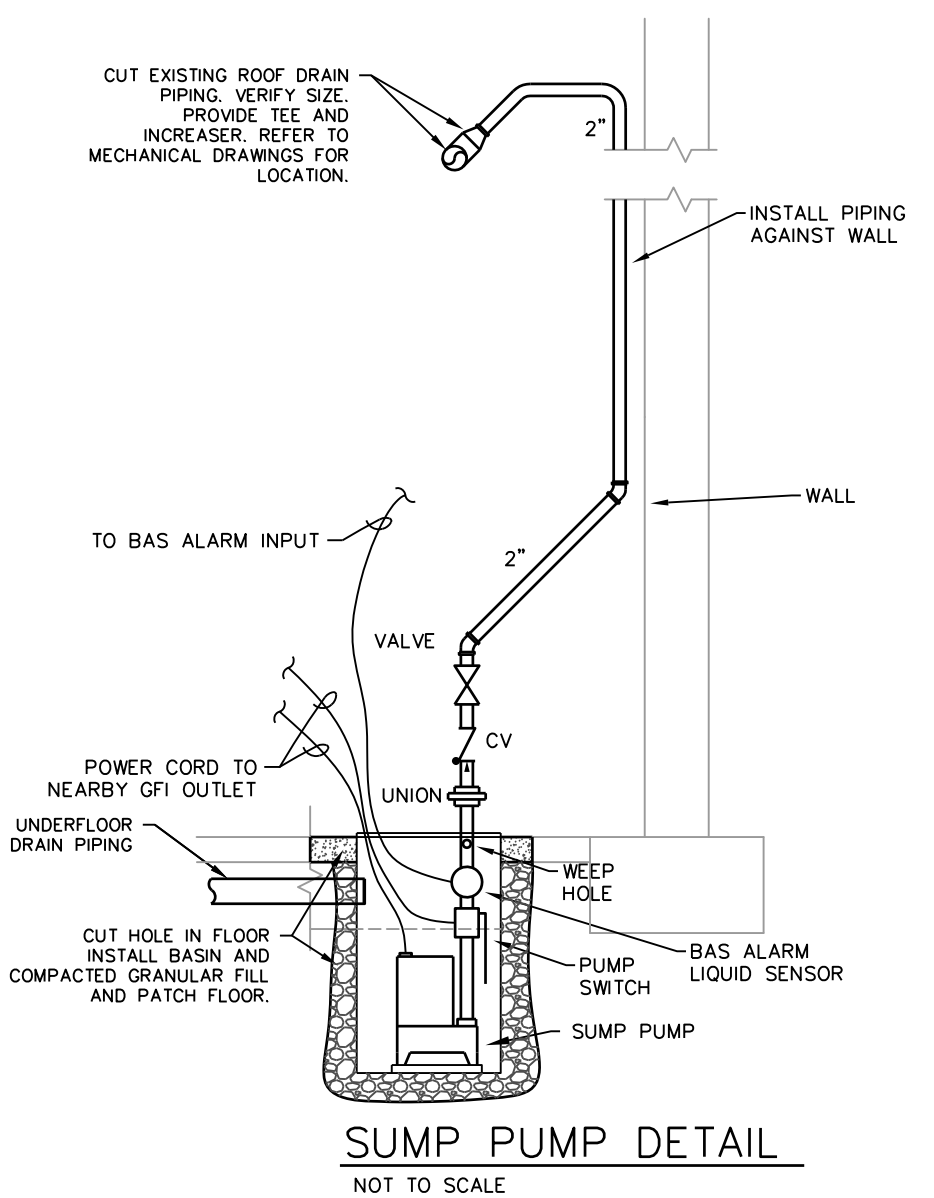
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Don R. Miller
Certified By

- MOISTURE ELIMINATION DETAILS KEYNOTES**
- EXISTING CONCRETE FOOTING. CONTRACTOR SHALL FIELD VERIFY EXACT DIMENSIONS.
 - EXISTING CONCRETE WALL.
 - EXISTING CONCRETE FLOOR.
 - PROVIDE WASHED GRAVEL OR STONE DRAINAGE FILL, 100 PERCENT PASSING A 1-1/2 INCH SIEVE AND LESS THAN 10 PERCENT PASSING A 1/2 INCH SIEVE.
 - PROVIDE GEOTEXTILE FILTER FABRIC, ACE ENVIRONMENTAL ROAD OR APPROVED EQUAL.
 - PROVIDE NUMBER 3 REINFORCING BARS 24 INCHES ON CENTER 2 INCHES CLEAR FROM CONCRETE SURFACES.
 - PROVIDE FLOOR CONCRETE TO MATCH EXISTING CONCRETE FLOOR THICKNESS, 4 INCHES MINIMUM.
 - PROVIDE DIMPLE DRAIN BOARD WITH DIMPLED SIDE AGAINST EXISTING CONCRETE, 1/2 INCH MINIMUM, 3/4 INCH MAXIMUM THICKNESS HIGH DENSITY POLYETHYLENE.
 - SAW-CUT EXISTING CONCRETE FLOOR, FULL THICKNESS. REMOVE EXISTING CONCRETE TO ALLOW FOR INSTALLATION OF UNDERFLOOR DRAINAGE SYSTEM.
 - DRILL 3/4 INCH HOLES 12 INCHES ON CENTER SLOPING UPWARD INTO THE WALL AT 1/2 INCH PER FOOT. ADJUST LOCATIONS OF HOLES BY AS MUCH AS 1-1/2 INCHES IF NECESSARY TO AVOID CONTACT OF DRILL BIT WITH EXISTING WALL REINFORCEMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND AVOIDING EXISTING REINFORCEMENT.
 - DRILL AND EPOXY SET REINFORCING BARS 3 INCHES INTO EXISTING CONCRETE USING HILT-HIT 200 SYSTEM OR APPROVED EQUAL.
 - PROVIDE 4 INCH CONCRETE BLOCK PARTIAL HEIGHT WALL WITH 6 INCH BLOCK CAP AND ENDS. PROVIDE GALVANIZED STEEL MASONRY TIES SECURED TO EXISTING CONCRETE WALL IN TOP MORTAR JOINT AT 24 INCHES ON CENTER.
 - FILL SPACE BETWEEN BLOCK AND DIMPLE DRAIN BOARD WITH MORTAR.
 - ALTERNATE EPOXY EMBEDMENT FROM SIDE TO SIDE, EVERY OTHER BAR.
 - PROVIDE CONTINUOUS NUMBER 3 REINFORCING BAR.
 - PROVIDE 3 INCH PERFORATED SCHEDULE 40 PVC PIPE WITH 2 ROWS OF PERFORATIONS AT 120, EACH ROW 30 DEGREES DOWN FROM THE HORIZONTAL PIPE AXIS. PERFORATIONS SHALL BE 4 TO 6 INCHES ON CENTER AND 3/8 TO 1/2 INCHES DIAMETER.
 - EXISTING CONCRETE STEP.
 - EXISTING CONCRETE HOUSEKEEPING PAD.
 - PROVIDE CONCRETE EXTENSION OF EXISTING HOUSEKEEPING PAD, SAME HEIGHT AS EXISTING, APPROXIMATELY 3-1/2 INCHES.



HVAC UPGRADES
REPLACEMENTS

VAILE,
WESTVIEW
& CHARLES
ELEMENTARY
SCHOOLS

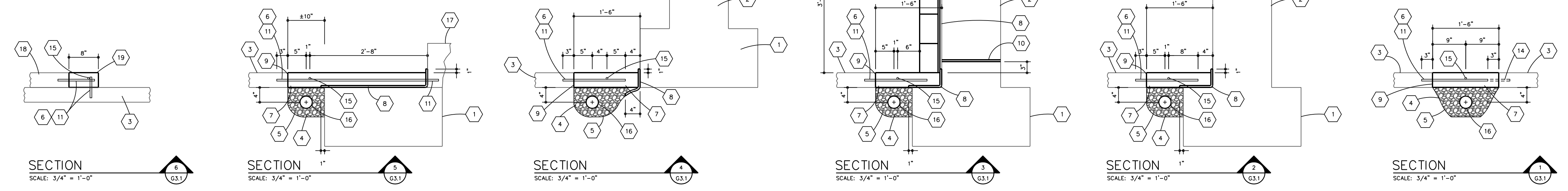
RICHMOND, INDIANA

Project No.... 215-1
Coordinator.... INDERSTRODT
Designer..... D MILLER
Drawn..... DAL

Checked..... D MILLER
Date..... 10/29/2021

Revision: No. Date

MOISTURE
ELIMINATION
DETAILS



NO.	TYPE	ARRANGEMENT	AIR HANDLING UNIT SCHEDULE														HEATING COIL-WATER										COOLING COIL-WATER																																	
			FAN				FILTERS		DAMPERS		PHYSICAL DATA (MAXIMUMS)				MFR/MODEL		NOTES		AT MAX. AIRFLOW		FACE VELOCITY				WATER		EWT		LWT		WATER		SENS. CAP.		TOTAL CAP.		EAT		LAT		FACE AREA		FACE VELOCITY		AIR		NO. OF ROWS		FIN TYPE		FIN SPACING		WATER FLOW		EWT		LWT		WATER	
			TYPE	MAX. AIR FLOW	MIN. AIR FLOW	EXTERNAL AIR FLOW	MOTOR DATA	TYPE	FACE AREA	AIR P.D. (MIDLIFE)	MINIMUM OUTSIDE AIR SETPOINT	ASSEMBLED UNIT	LARGEST COMPONENT	FACE AREA	FACE VELOCITY	AIR ΔP	NO. OF ROWS	FIN TYPE	FIN SPACING	WATER FLOW	EWT	LWT	WATER ΔP	SENS. CAP. MBH	TOTAL CAP. MBH	EAT ΔT	LAT ΔT	FACE AREA	FACE VELOCITY	AIR ΔP	NO. OF ROWS	FIN TYPE	FIN SPACING	WATER FLOW	EWT	LWT	WATER ΔP	SENS. CAP. MBH	TOTAL CAP. MBH	EAT ΔT	LAT ΔT	FACE AREA	FACE VELOCITY	AIR ΔP	NO. OF ROWS	FIN TYPE	FIN SPACING	WATER FLOW	EWT	LWT	WATER ΔP									
V-AHU-1	VAV	DRAW-THRU	CENTRIFUGAL	10,500	4550	3	VFD	208	3	20	2"	MERV 8	21	0.65	2100	11'-10"	6'-8"	4'-5"	4'-4"	6'-8"	4'-5"	TRANE SIZE 21	1,2	398	40	75	19.8	529	0.1	1	PF-H	95	34.1	180	157	2.8	375	534	84.4	68.5	52.0	51.9	20.8	505	0.9	8	DF-H	94	98	42	54	9								
V-AHU-2	C-V	DRAW-THRU	CENTRIFUGAL	5,000	5000	1.5	NONE	208	3	7.5	2"	MERV 8	9.5	0.65	900	13'-11"	5'-2"	3'-2"	3'-8"	5'-2"	3'-2"	TRANE SIZE 10	1,2,3,4	298	143	40	95	9.1	544	0.16	2	PF-H	95	27.5	180	158	0.7	173	240	84.4	68.5	53.0	52.9	9.9	501	0.8	6	DF-H	127	39	42	56	12							
C-AHU-1	VAV	DRAW-THRU	CENTRIFUGAL	10,500	4250	3.5	VFD	208	3	20	2"	MERV 8	21	0.65	1800	11'-10"	6'-8"	4'-5"	4'-4"	6'-8"	4'-5"	TRANE SIZE 21	1,2	398	40	75	19.8	529	0.1	1	PF-H	95	31.0	180	154	2.3	363	522	84.4	68.5			20.8	505	0.9	8	DF-H	74	89	42	54	7.6								
W-AHU-1	VAV	DRAW-THRU	CENTRIFUGAL	15,000	6,750	4.0	VFD	208	3	25	2"	MERV 8	30	0.65	2800	12'-7"	7'-10"	5'-2"	4'-8"	7'-10"	5'-2"	TRANE SIZE 30	1,2	569	40	84	28.6	523	0.13	1	PF-H	127	20	180	123	0.9	511	704	84.4	68.5	53.5	53.4	29.9	502	1.0	8	DF-H	129	79	42	61	5.3								

AIR HANDLING UNIT SCHEDULE NOTES

- HEATING COIL ALLOWS FOR 40 DEGREES F MIXED AIR TEMPERATURE AT MAXIMUM AIR FLOW.
- E.S.P. LISTED IS EXTERNAL STATIC PRESSURE AND DOES NOT INCLUDE ANY PRESSURE DROP ALLOWANCE FROM A POINT 1'-0" UPSTREAM OF THE MIXING/FILTER BOX TO 1'-0" DOWNSTREAM OF THE DISCHARGE UNIT CASING. TOTAL STATIC PRESSURE SHALL BE DETERMINED BY THE MANUFACTURER AND SHALL INCLUDE LOSS THRU WET COOLING COIL AND DIRTY FILTER ALLOWANCE OF 0.5" W.G.
- WHERE TWO VALUES ARE SHOWN FOR HEATING COIL, TOP VALUE IS FOR PREHEAT COIL AND BOTTOM VALUE IS FOR REHEAT COIL.
- THE OUTSIDE AND RETURN AIR DAMPERS SHALL HAVE A POSITION SETPOINT BALANCED TO ACHIEVE 900 CFM OUTDOOR AIRFLOW DURING OCCUPIED TIMES. THIS SHALL BE OVERRIDDEN TO INCREASE OUTDOOR AIRFLOW DURING ECONOMIZER OPERATION AND TO DECREASE AIRFLOW TO MAINTAIN ROOM CARBON DIOXIDE CONTENT AT 900 PPM.

BOILER SCHEDULE

MARK	MANUFACTURER*	MODEL	CAPACITY		FUEL DATA		G.P.M.	ELECTRICAL			REMARKS
			INPUT M.B.H.	OUTPUT M.B.H.	TYPE	PRESSURE		VOLTS	PHASE	HZ.	
V-B-1	CLEAVER BROOKS	CFC-E	2000	1880	GAS	7" W.C.	210	120	1	60	
V-B-2	CLEAVER BROOKS	CFC-E	2000	1880	GAS	7" W.C.	210	120	1	60	
C-B-1	CLEAVER BROOKS	CFC-E	2000	1880	GAS	7" W.C.	253	120	1	60	
C-B-2	CLEAVER BROOKS	CFC-E	2000	1880	GAS	7" W.C.	253	120	1	60	

SYMBOLS AND ABBREVIATIONS

A.F.F.	ABOVE FINISHED FLOOR		TRANSITION
A.H.U.	AIR HANDLING UNIT		AUTOMATIC CONTROL DAMPER
C.D.	CONDENSATE DRAIN		MANUAL BALANCING DAMPER
CFM	CUBIC FEET PER MINUTE		ELBOW TURNED UP (SUPPLY)
E.A.	EXHAUST AIR		ELBOW TURNED DOWN (SUPPLY)
H.V.A.C.	HEATING, VENTILATING & AIR CONDITIONING		ACOUSTICAL LINING (DIMENSIONS SHOWN ARE TO INSIDE CLEAR DIMENSIONS)
O.A.	OUTSIDE AIR		DUCT (SIZE IN INCHES, 1st FIGURE SIDE SHOWN)
R.A.	RETURN AIR		PIPE TURNED UP
S.A.	SUPPLY AIR		PIPE TURNED DOWN
			PIPE OUT TOP
			PIPE OUT BOTTOM
			STRAINER
			UNION
			VALVE
			CHECK VALVE (ARROW TOWARD DIRECTION OF FREE FLOW)
			BALANCING VALVE
			2-WAY TEMPERATURE CONTROL VALVE
			3-WAY TEMPERATURE CONTROL VALVE
			THERMOMETER
			PRESSURE GAUGE
HHS	HEATING HOT WATER SUPPLY		
HHR	HEATING HOT WATER RETURN		
CHWS	CHILLED WATER SUPPLY		
CHWR	CHILLED WATER RETURN		
FOS	FUEL OIL SUPPLY		
FOR	FUEL OIL RETURN		
C	CONDENSATE DRAIN		
PD	PERFORATED DRAIN		
PW	PUMPED WASTE		
DCW	COLD WATER PIPING		
DHW	HOT WATER PIPING (120° F.)		
DHR	HOT WATER RETURN PIPING (120° F.)		
G	GAS PIPING		

MECHANICAL SYSTEMS NOTES

- REFER TO THE SUMMARY TECHNICAL SPECIFICATION SECTION IN THE PROJECT MANUAL FOR REQUIREMENTS AND LIMITATIONS THAT APPLY TO SCHEDULING OF VARIOUS PORTIONS OF THE WORK.
- ALL ROOF CUTTING AND PATCHING SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EXISTING ROOFING SYSTEM MANUFACTURER IN A MANNER THAT WILL NOT VOID THEIR ROOFING WARRANTY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE ROOFING MANUFACTURER TO DETERMINE THE REQUIREMENTS.
- ALL ITEMS SHOWN ON DEMOLITION PLANS ARE EXISTING AND SHALL REMAIN IN PLACE UNLESS OTHERWISE INDICATED. DO NOT DAMAGE ITEMS TO REMAIN.
- HEATING FLUID IS WATER RANGING FROM 60 TO 200 DEGREES AND PRESSURES NOT GREATER THAN 60 PSI.
- COOLING FLUID IS A 25 PERCENT ETHYLENE GLYCOL/WATER SOLUTION RANGING FROM 40 TO 80 DEGREES AND PRESSURES NOT GREATER THAN 60 PSI.
- DRAIN HEATING AND COOLING FLUIDS FROM THE PIPING SYSTEMS ONLY TO THE EXTENT NECESSARY TO PERFORM THE WORK. REFILL PIPING SYSTEMS AT COMPLETION OF THE PIPING AND EQUIPMENT INSTALLATION, AFTER FLUSHING AND DRAINING THE FLUSH WATER.
- THE CONTRACTOR SHALL TEST COOLING FLUID TO DETERMINE THE ETHYLENE GLYCOL CONTENT PERCENTAGE BEFORE FLUSHING, AND SUBMIT A COPY OF THE RESULTS OF THIS TEST FOR APPROVAL. WHEN REFILLING THE COOLING PIPING SYSTEM, INJECT PURE ETHYLENE GLYCOL INTO THE SYSTEM TO THE EXTENT NECESSARY FOR THE REFILLED SYSTEM GLYCOL PERCENTAGE TO BE AT LEAST AS GREAT AS THE INITIAL PERCENTAGE. THE OWNER'S WATER TREATMENT AGENT WILL TEST AND VERIFY THE FINAL PERCENTAGE OF ETHYLENE GLYCOL CONTENT. IN THE EVENT THA THE CONTRACTOR DOES NOT SUBMIT THE INITIAL CONTENT FOR APPROVAL, IT WILL BE ASSUMED THAT THE INITIAL CONTENT WAS 25 PERCENT.
- ALL NEW HYDRONIC PIPING SHALL BE THOROUGHLY FLUSHED AND DRAINED BEFORE FINAL FILLING.
- THE OWNER SHALL RETAIN THE SERVICES OF A WATER TREATMENT COMPANY DIRECTLY. HYDRONIC SYSTEM WATER TREATMENT SHALL NOT BE INCLUDED IN THE CONSTRUCTION CONTRACT WORK. THE CONTRACTOR SHALL COORDINATE, SCHEDULE, AND ASSIST THE WATER TREATMENT COMPANY. CONTRACTOR ASSISTANCE SHALL INCLUDE THE FOLLOWING:
 - MEET WITH THE WATER TREATMENT COMPANY, THE OWNER, AND THE ENGINEER AT LEAST ONE MONTH PRIOR TO SCHEDULED COMMENCEMENT OF WATER TREATMENT WORK TO ENSURE A COMMON UNDERSTANDING OF THE WATER TREATMENT PROCESS BY ALL PARTIES.
 - MAKE CORRECTIONS AND ADJUSTMENTS AS IDENTIFIED BY THE WATER TREATMENT COMPANY FOR WORK THAT IS NOT IN ACCORDANCE WITH REQUIREMENTS OF THE CONTRACT DOCUMENTS OR IS NOT COMPLETE TO THE EXTENT NECESSARY FOR PERFORMING WATER TREATMENT WORK.
 - MANIPULATE THE HYDRONIC SYSTEM CENTRAL EQUIPMENT AS REQUESTED BY THE WATER TREATMENT COMPANY THROUGHOUT THE WATER TREATMENT PROCESS.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETE FLUSHING OF ALL NEW PIPING AND FOR CLEANING THE WATER FLOW PATHS IN ALL NEW CONNECTED EQUIPMENT AT LEAST ONE WEEK BEFORE WATER TREATMENT WORK IS SCHEDULED TO BEGIN.
 - WORK TO BE PERFORMED BY THE WATER TREATMENT COMPANY WILL INCLUDE INTRODUCTION OF WATER TREATMENT CHEMICALS.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING AND COORDINATING WITH THE WATER TREATMENT COMPANY, DELTA WATER MANAGEMENT GROUP, INC., USA ROBERTSON, TELEPHONE 317-852-8966.
- CLEAN ALL EXISTING FLOOR DRAINS TO IN ALL LOWER LEVEL AIR HANDLING UNIT ROOMS AND IN ALL BOILER ROOMS AND CLEAN THEIR OUTLET PIPING FOR AT LEAST 25 FEET.
- THE GAS PRESSURE AT THE BUILDING SERVICE ENTRANCE IS APPROXIMATELY 2 PSI.

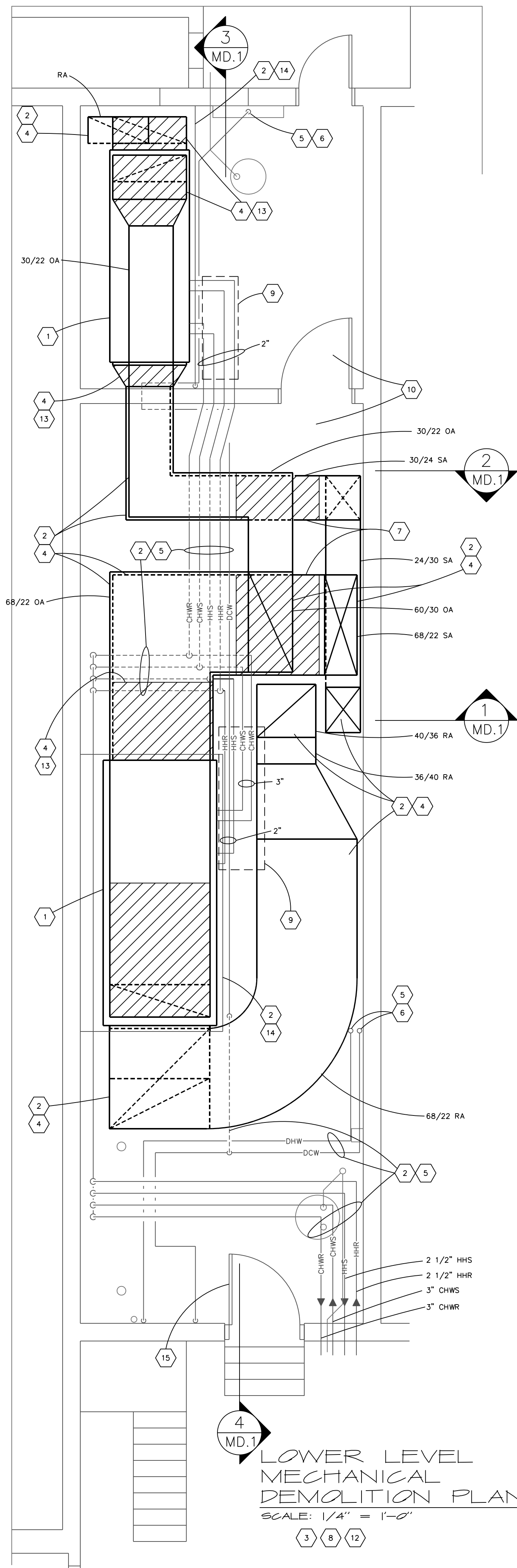
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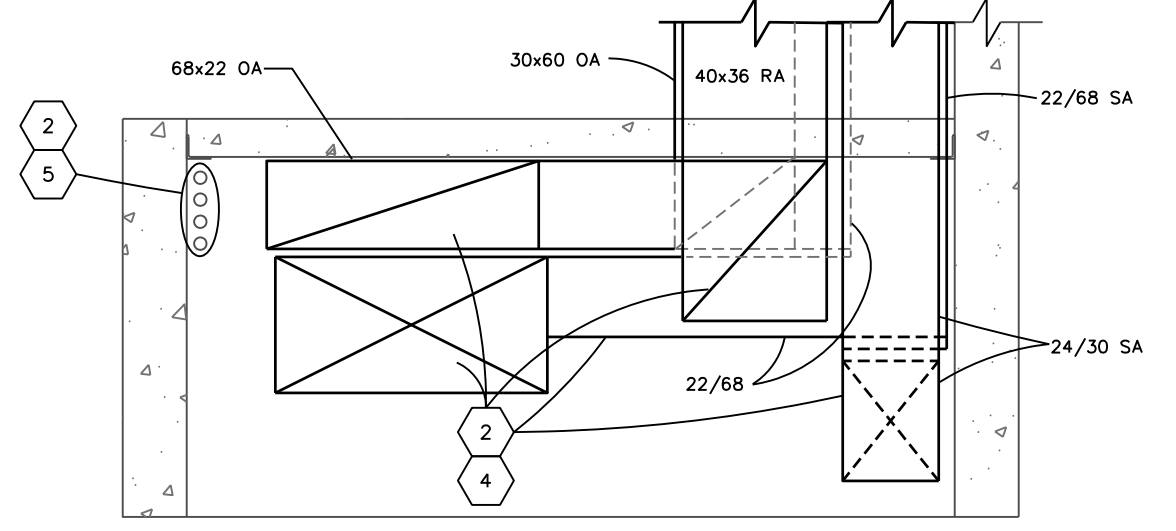
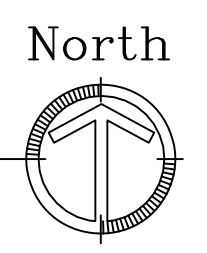
HVAC UPGRADES REPLACEMENTS
 VAILE, WESTVIEW & CHARLES ELEMENTARY SCHOOLS
 RICHMOND, INDIANA

Project No.: 215-1
 Coordinator: INDERSTRODT
 Designer: D MILLER
 Drawn: DAL
 Checked: D MILLER
 Date: 10/29/2021

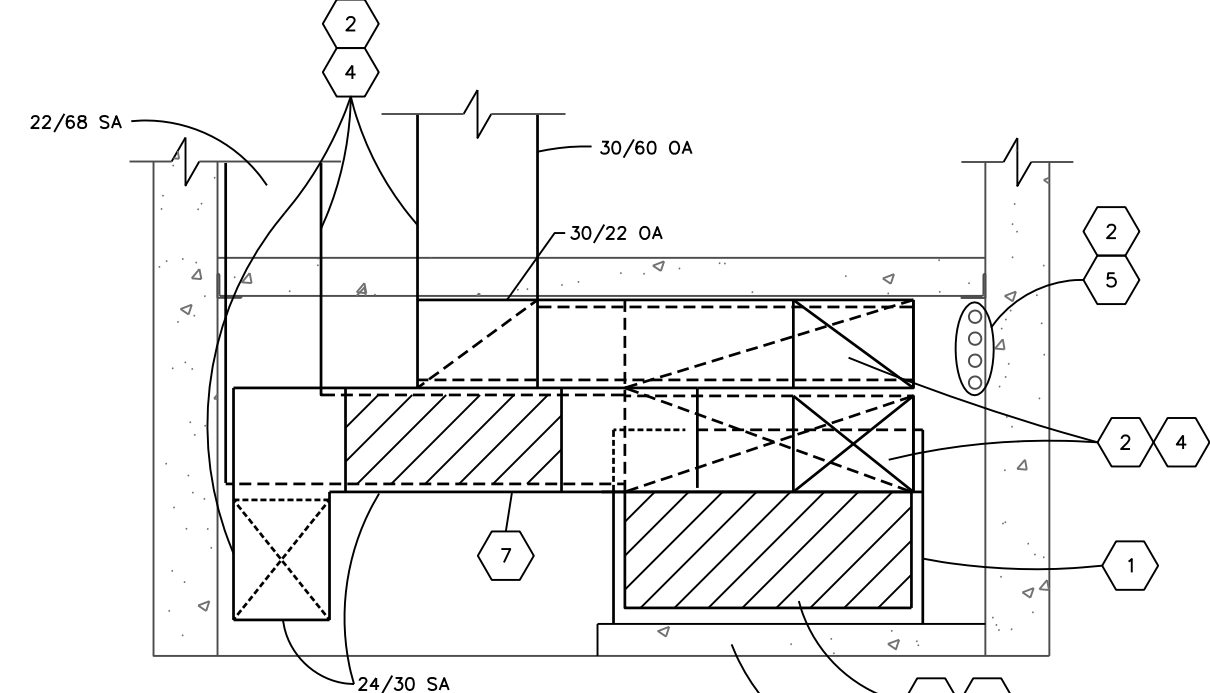
MECHANICAL NOTES, LEGENDS, AND SCHEDULES



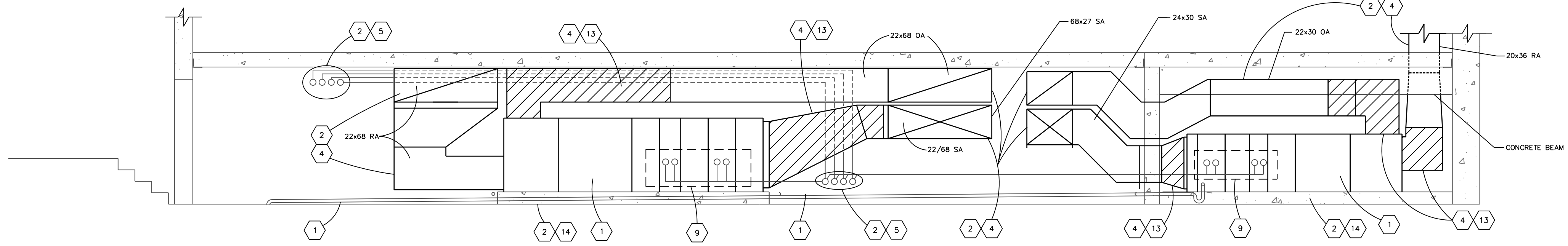
LOWER LEVEL MECHANICAL DEMOLITION PLAN
SCALE: 1/4" = 1'-0"



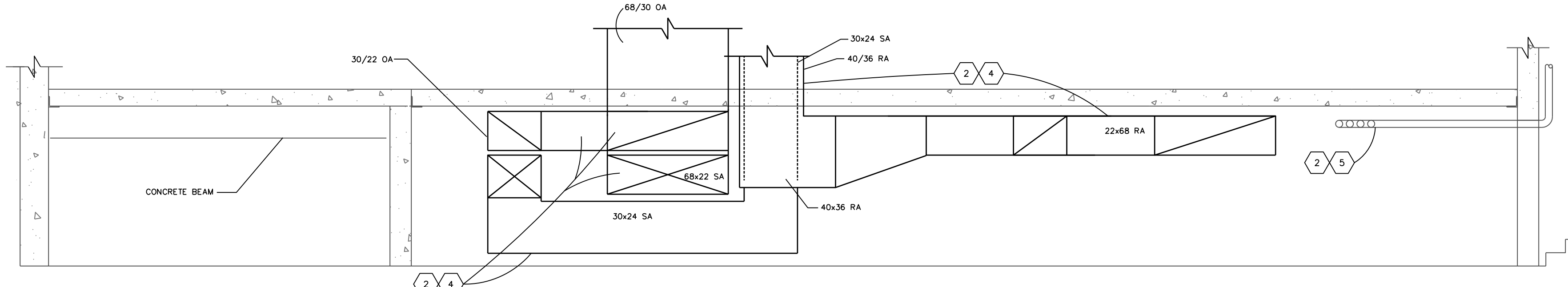
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SECTION 2
SCALE 1/4" = 1'-0"



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



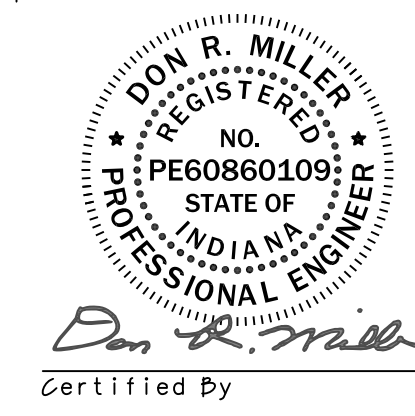
SECTION 4
SCALE 1/4" = 1'-0"

- VAILE MECHANICAL DEMOLITION PLAN KEYNOTES
1. REMOVE AIR HANDLING UNIT, ALL CONNECTED CONDENSATE DRAIN PIPING, AND ALL UNIT MOUNTED CONTROL COMPONENTS AND ASSOCIATED CONTROL WIRING AND TUBING BACK TO THE SIGNAL SOURCE.
 2. TO REMAIN.
 3. ALL ITEMS EXISTING IN THIS PLAN AREA SHALL REMAIN UNLESS OTHERWISE INDICATED.
 4. DUCTWORK.
 5. PIPING.
 6. UP THROUGH DECK ABOVE.
 7. TEMPORARILY REMOVE DUCTWORK FOR ACCESS AND REINSTALL BEFORE COMPLETION OF CONSTRUCTION.
 8. KEEP TEMPORARILY OPEN ENDS OF PIPES AND DUCTS PLUGGED OR COVERED AND SEALED AT ALL TIMES.
 9. REMOVE PIPING, FITTINGS, ACCESSORIES, AND CONTROL VALVES AND ALL CONNECTED CONTROL WIRING AND TUBING BACK TO THE SIGNAL SOURCE.
 10. INTERNALLY CLEAN ALL DUCTWORK IN THIS ROOM. ALL DUCTWORK HAS INTERNAL LINER. REPAIR ANY DAMAGED LINER.
 11. FLOOR DRAIN.
 12. ALL PIPE AND DUCT SIZES INDICATED ARE TAKEN FROM RECORD DRAWINGS AND ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY ALL SIZES WHERE EXISTING. DUCTS AND PIPES ARE INDICATED TO BE CONNECTED TO AND EXTENDED, THE CONTRACTOR SHALL PROVIDE EXTENSIONS SIZED TO MATCH EXISTING SIZES.
 13. REMOVE.
 14. CONCRETE HOUSEKEEPING PAD.
 15. THE CLEAR OPENING DIMENSIONS AT THIS DOOR ARE 46-3/4 INCHES WIDE AND 78-1/2 INCHES TALL.

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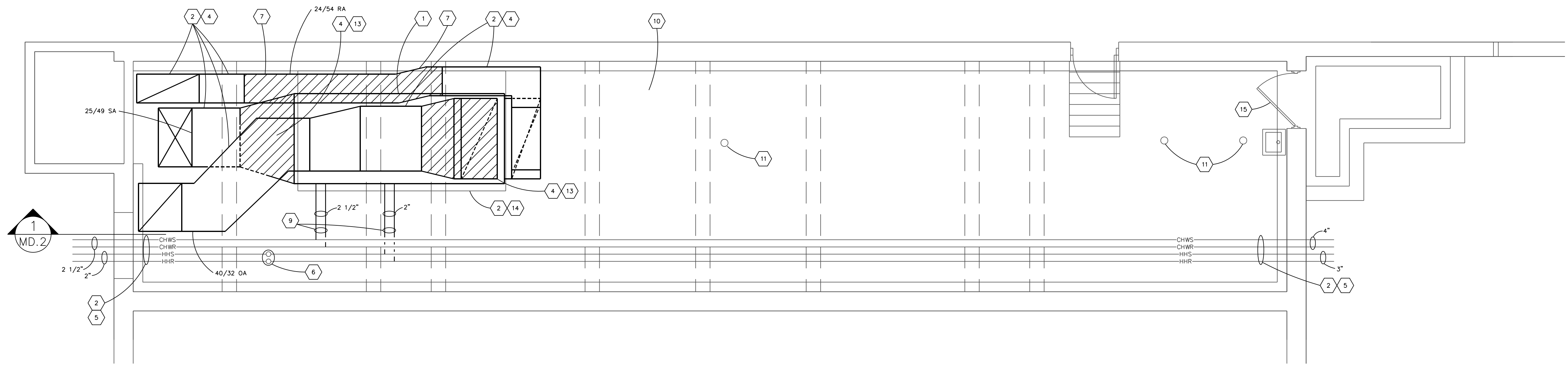
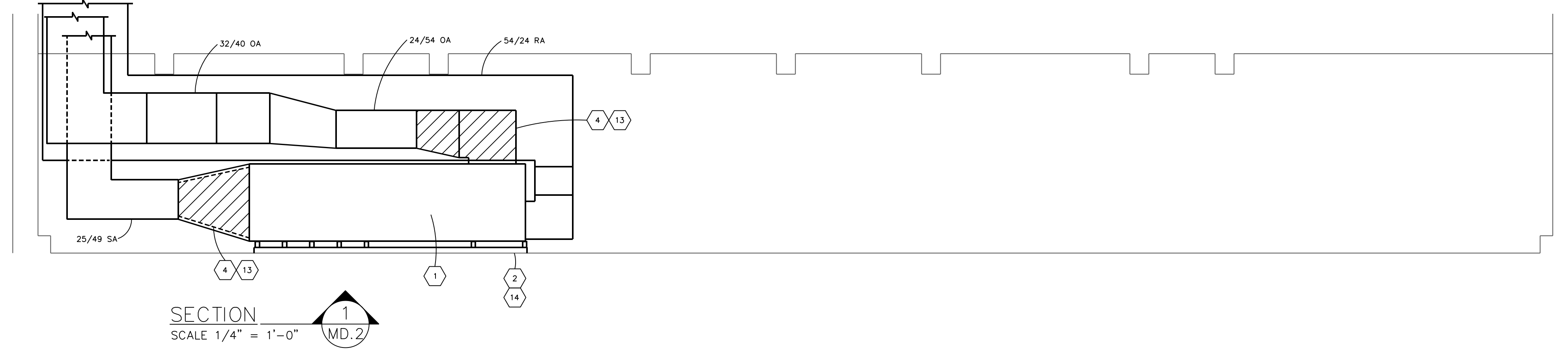
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Revision: No. Date

VAILE LOWER LEVEL MECHANICAL DEMOLITION PLAN AND SECTIONS

CHARLES MECHANICAL DEMOLITION PLAN KEYNOTES

1. REMOVE AIR HANDLING UNIT, ALL CONNECTED CONDENSATE DRAIN PIPING, AND ALL UNIT MOUNTED CONTROL COMPONENTS AND ASSOCIATED CONTROL WIRING AND TUBING BACK TO THE SIGNAL SOURCE.
2. TO REMAIN.
3. ALL ITEMS EXISTING IN THIS PLAN AREA SHALL REMAIN UNLESS OTHERWISE INDICATED.
4. DUCTWORK.
5. PIPING.
6. UP THROUGH DECK ABOVE.
7. REMOVE, REARRANGE, AND REINSTALL THIS DUCT LENGTH SUCH THAT THE HORIZONTAL DUCT OFFSET IS MOVED FROM THE EAST END OF THE DUCT LENGTH TO THE WEST END.
8. KEEP TEMPORARILY OPEN ENDS OF PIPES AND DUCTS PLUGGED OR COVERED AND SEALED AT ALL TIMES.
9. REMOVE PIPING, FITTINGS, ACCESSORIES, AND CONTROL VALVES AND ALL CONNECTED CONTROL WIRING AND TUBING BACK TO THE SIGNAL SOURCE.
10. INTERNALLY CLEAN ALL DUCTWORK IN THIS ROOM. ALL DUCTWORK HAS INTERNAL LINER. REPAIR ANY DAMAGED LINER.
11. FLOOR DRAIN.
12. ALL PIPE AND DUCT SIZES INDICATED ARE TAKEN FROM RECORD DRAWINGS AND ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY ALL SIZES. WHERE EXISTING DUCTS AND PIPES ARE INDICATED TO BE CONNECTED TO AND EXTENDED, THE CONTRACTOR SHALL PROVIDE EXTENSIONS SIZED TO MATCH EXISTING SIZES.
13. REMOVE.
14. CONCRETE HOUSEKEEPING PAD.
15. THE CLEAR OPENING DIMENSIONS AT THIS DOOR ARE 43 INCHES WIDE AND 82 INCHES TALL.



LOWER LEVEL MECHANICAL DEMOLITION PLAN
 SCALE: 1/4" = 1'-0"
 3 8 12
 North

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CHARLES LOWER LEVEL MECHANICAL DEMOLITION PLAN AND SECTION

BOILER REPLACEMENT ALTERNATES DEMOLITION PLANS KEYNOTES

1. NATURAL GAS SERVICE ENTRANCE TO REMAIN, 2 PSI DELIVERY PRESSURE.
2. WATER SERVICE ENTRANCE METER AND BACKFLOW PREVENTER TO REMAIN.
3. DOMESTIC WATER HEATER AND HOT WATER STORAGE TANK TO REMAIN.
4. ALL ITEMS IN THIS ROOM SHALL REMAIN UNLESS OTHERWISE INDICATED.
5. AUTOMATIC TEMPERATURE CONTROL AIR COMPRESSOR TO REMAIN.
6. AIR DRYER TO REMAIN.
7. REMOVE BOILER, ALL ACCESSORIES, AND ALL CONNECTED PIPING TO THE EXTENT INDICATED.
8. REMOVE OIL PUMP, ALL ACCESSORIES, AND ALL CONNECTED PIPING TO THE EXTENT INDICATED.
9. HEATING WATER PUMP TO REMAIN.
10. CHILLED WATER PUMP TO REMAIN.
11. REMOVE HEATING WATER SYSTEM EXPANSION TANK AND ALL CONNECTED PIPING AND ACCESSORIES.
12. AIR SEPARATOR TO REMAIN.
13. REMOVE HEATING WATER PUMP VARIABLE FREQUENCY DRIVE AND DRIVE DISCONNECT.
14. BUILDING AUTOMATION SYSTEM PANEL TO REMAIN.
15. EXISTING LOUVER TO REMAIN. REMOVE DAMPER, DAMPER OPERATOR, AND ALL CONTROL ACCESSORIES, TUBING, AND WIRING TO THE CONTROL SIGNAL SOURCE.
16. CHILLED WATER COOL FEED SYSTEM TO REMAIN.
17. REMOVE METAL FLUE AND PATCH ROOF OPENING.
18. REMOVE PIPING TO EXTENT INDICATED.
19. PLUG OR CAP OPENING IN PIPING TO REMAIN.
20. REFER TO ALTERNATES FOR ALL WORK SHOWN ON THIS DRAWING.
21. CONCRETE HOUSEKEEPING PAD TO REMAIN.
22. REMOVE CONCRETE RUNNER SUPPORTING BOILER.
23. CHILLED WATER SYSTEM EXPANSION TANK TO REMAIN.
24. HYDRONIC SYSTEM MAKE-UP WATER ASSEMBLY TO REMAIN.

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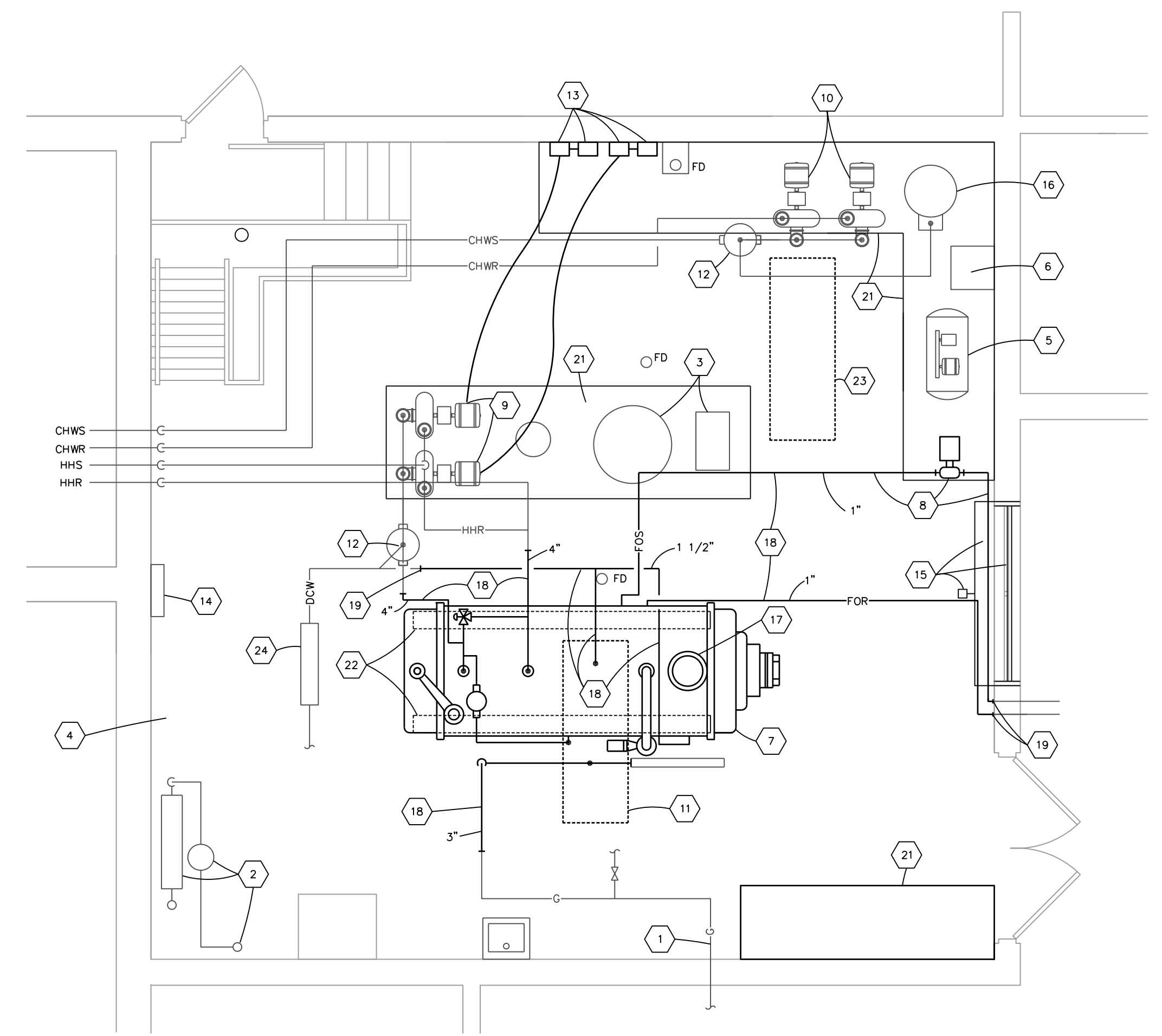
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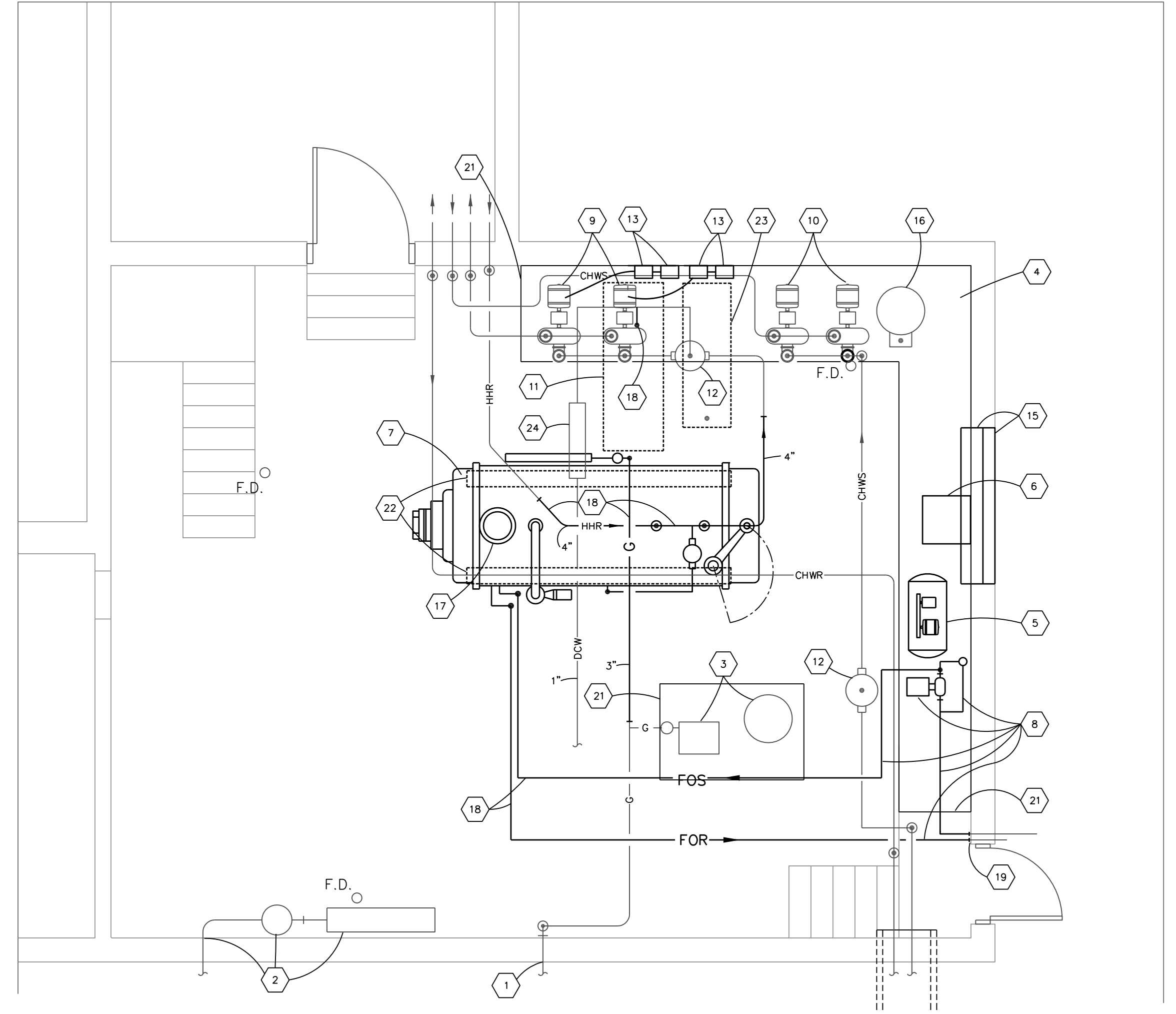
BOILER
REPLACEMENT
ALTERNATES
DEMOLITION
PLANS



CHARLES BOILER
ROOM MECHANICAL
DEMOLITION PLAN (20)

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

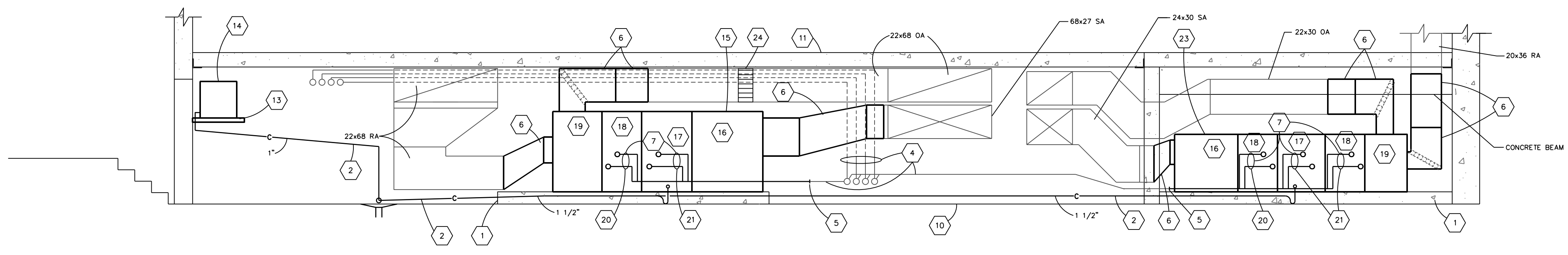
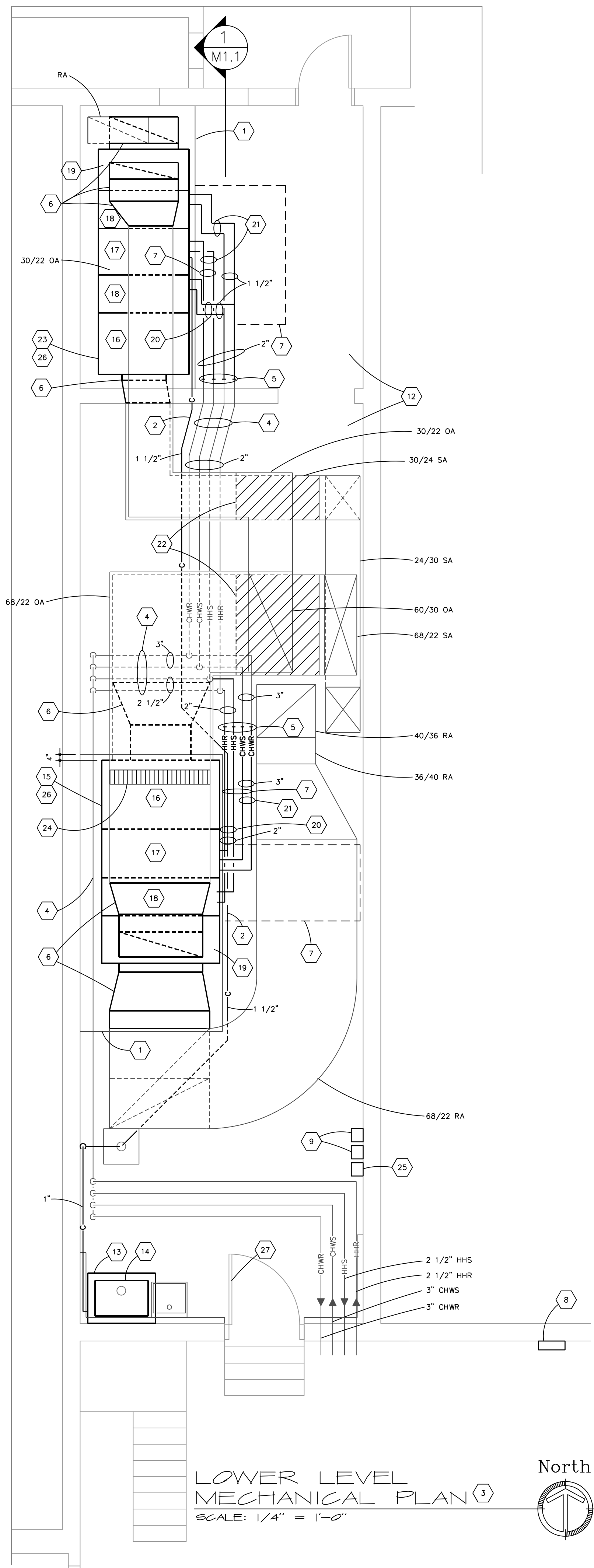
North



VAILE BOILER
ROOM MECHANICAL
DEMOLITION PLAN (20)

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

North



- VAILE LOWER LEVEL MECHANICAL PLAN KEYNOTES**
- EXISTING 8 INCHES TALL CONCRETE HOUSEKEEPING PAD.
 - PROVIDE CONDENSATE DRAIN PIPING TO FLOOR DRAIN INDICATED. PROVIDE TRAP AT CONNECTION TO EQUIPMENT CONFORMING TO EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
 - ALL EXISTING DUCTWORK ON THIS DRAWING CONTAINS 1 INCH THICK INTERNAL DUCT LINER. ALL NEW DUCTWORK SHALL HAVE 1 INCH THICK INTERNAL DUCT LINER. ALL NEW DUCT DIMENSIONS SHALL BE IDENTICAL TO CONNECTING DUCTS EXCEPT THAT WHERE DUCTS CONNECT TO AIR HANDLING UNITS, THE INSIDE CLEAR DIMENSION OF THE DUCT LINER SHALL MATCH THE CONNECTING OPENING SIZE.
 - EXISTING PIPING TO REMAIN.
 - CONNECT NEW PIPING TO EXISTING. PROVIDE NEW PIPING SAME SIZE AS EXISTING. EXISTING SIZE INDICATED IS APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY SIZE.
 - PROVIDE TRANSITION FROM EXISTING DUCT SIZE TO DUCT SIZE CONNECTING TO AIR HANDLING UNIT.
 - KEEP COIL FULL SPACE CLEAR. MOUNT ALL VALVES OUTSIDE OF COIL REMOVAL SPACE.
 - BAS CONTROL PANEL.
 - BAS MANUFACTURER SHALL PROVIDE VARIABLE FREQUENCY DRIVE AND DISCONNECT AND SHALL PROVIDE ALL CABLING AND COMPONENTS NECESSARY TO ACHIEVE SPECIFIED SEQUENCE OF OPERATION.
 - EXISTING CONCRETE FLOOR.
 - EXISTING CONCRETE DECK AND BEAMS ABOVE.
 - INTERNALLY CLEAN ALL EXISTING DUCTWORK IN THIS ROOM. ALL DUCTWORK HAS INTERNAL LINER. REPAIR ANY DAMAGED LINER.
 - MOUNT DEHUMIDIFIER ON SHELF 66 INCHES ABOVE FLOOR. SHELF SHALL BE 3 FEET LONG AND 2 FEET WIDE AND SHALL BE MOUNTED IN A MANNER TO SAFELY SUPPORT 500 POUNDS. SHELF MAY BE EITHER WALL BRACKET SUPPORTED OR SUSPENDED FROM THE FLOOR DECK ABOVE.
 - PROVIDE DUCTED DEHUMIDIFIER, APRILAIRE MODEL 1870 OR APPROVED EQUAL, 130 PINTS PER DAY, MINIMUM, 120 VOLTS, 8.3 AMPS, WITH CORD AND PLUG.
 - PROVIDE AIR HANDLING UNIT V-AHU-1.
 - FAN SECTION.
 - COOLING COIL SECTION.
 - HEATING COIL SECTION.
 - FILTER/MIXING SECTION.
 - PROVIDE 2-WAY CONTROL VALVE COIL CONNECTION. REFER TO REFER TO AIR HANDLER HYDRONIC COIL PIPING DIAGRAM.
 - PROVIDE 3-WAY CONTROL VALVE COIL CONNECTION. REFER TO REFER TO AIR HANDLER HYDRONIC COIL PIPING DIAGRAM.
 - TEMPORARILY REMOVE DUCTWORK FOR ACCESS AND REINSTALL BEFORE COMPLETION OF CONSTRUCTION.
 - PROVIDE AIR HANDLING UNIT V-AHU-2.
 - BAS MANUFACTURER SHALL FURNISH AIRFLOW MEASURING STATION FOR INSTALLATION IN EXISTING OUTSIDE AIR DUCT. REFER TO AIR HANDLING UNIT SCHEDULE FOR MINIMUM AIRFLOW SETPOINT. FIELD VERIFY DUCT SIZE BEFORE SUBMITTING AIRFLOW MEASURING STATION FOR APPROVAL. PROVIDE ALL CABLING AND COMPONENTS NECESSARY TO ACHIEVE SPECIFIED BAS INPUT.
 - BAS MANUFACTURER SHALL PROVIDE HIGH LIQUID LEVEL SENSOR IN SUMP BASIN. PROVIDE ALL CABLING AND COMPONENTS NECESSARY TO ACHIEVE SPECIFIED BAS INPUT.
 - BAS MANUFACTURER SHALL PROVIDE ALL SENSORS AND INPUT DEVICES AND ALL CONTROL VALVES AND DAMPER ACTUATORS AND ALL CABLING AND COMPONENTS NECESSARY TO ACHIEVE SPECIFIED SEQUENCE OF OPERATIONS.
 - ANY AIR HANDLING UNIT MODULES THAT WILL NOT FIT THROUGH THIS ACCESS OPENING INTO THE ROOM SHALL BE DISASSEMBLED AS NECESSARY FOR MANEUVERING INTO THE ROOM, AND THEN REASSEMBLED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE AIR HANDLING UNIT MANUFACTURER. REFER TO MECHANICAL DEMOLITION DRAWINGS FOR OPENING CLEAR DIMENSIONS. FIELD VERIFY.

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HVAC UPGRADES
REPLACEMENTS

VAILE,
WESTVIEW
& CHARLES
ELEMENTARY
SCHOOLS

RICHMOND, INDIANA

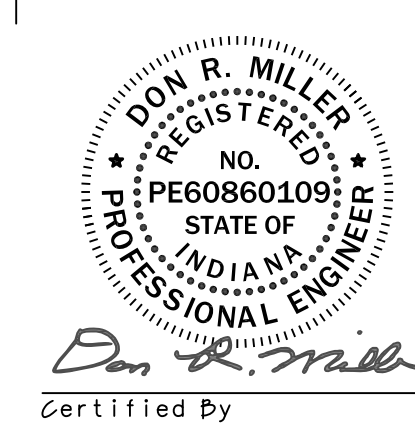
Project No..... 215-1
Coordinator..... INDERSTRODT
Designer..... P MILLER
Drawn..... DAL

Checked..... P MILLER
Date..... 10/19/2021

Revision: No. Date

VAILE LOWER LEVEL MECHANICAL PLAN AND SECTIONS

drawing MI.1
of



HVAC UPGRADES
REPLACEMENTS

VAILE,
WESTVIEW
& CHARLES
ELEMENTARY
SCHOOLS

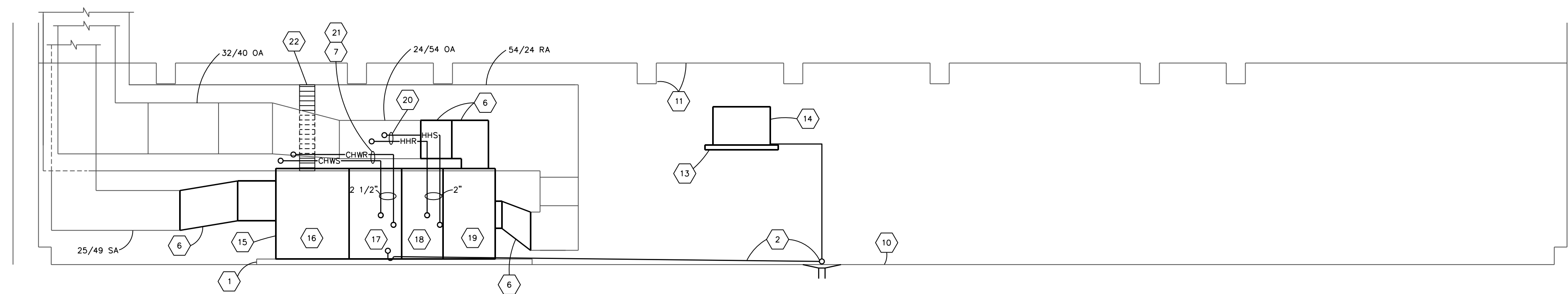
RICHMOND, INDIANA

Project No.... 215-1
Coordinator.... INDERSTRODT
Designer..... P MILLER
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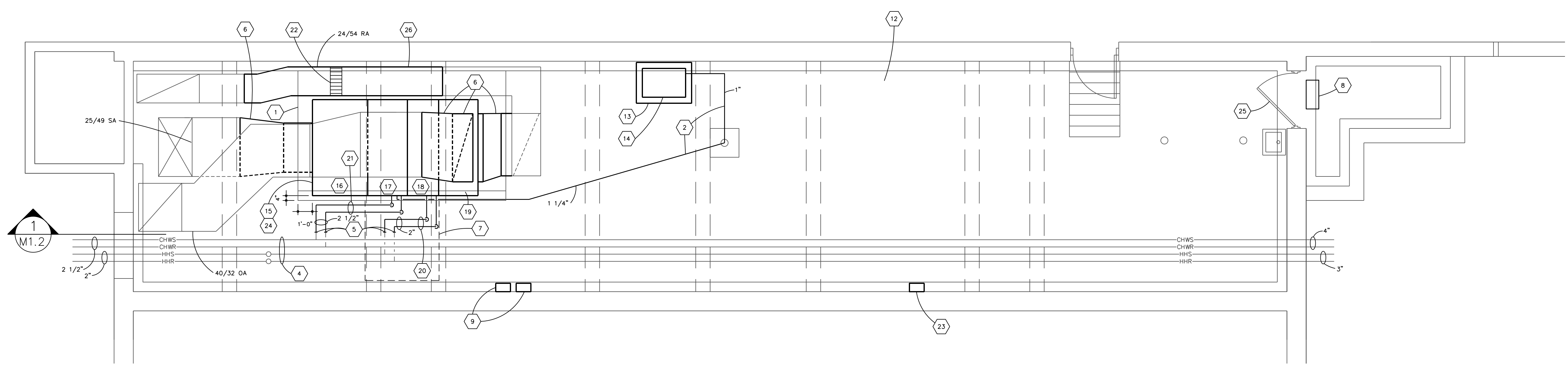
CHARLES
LOWER LEVEL
MECHANICAL
PLAN AND
SECTION

CHARLES LOWER LEVEL MECHANICAL PLAN KEYNOTES

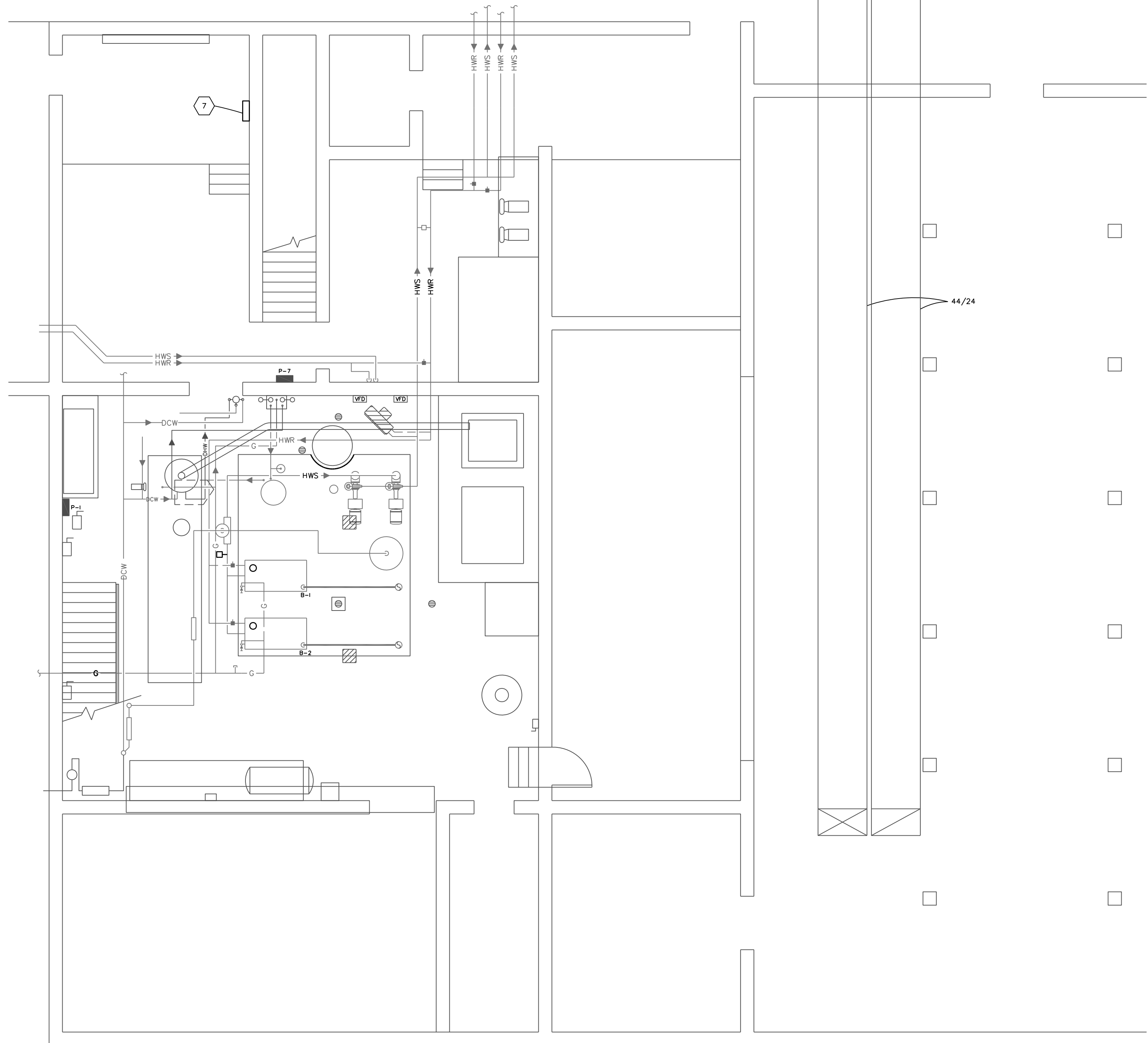
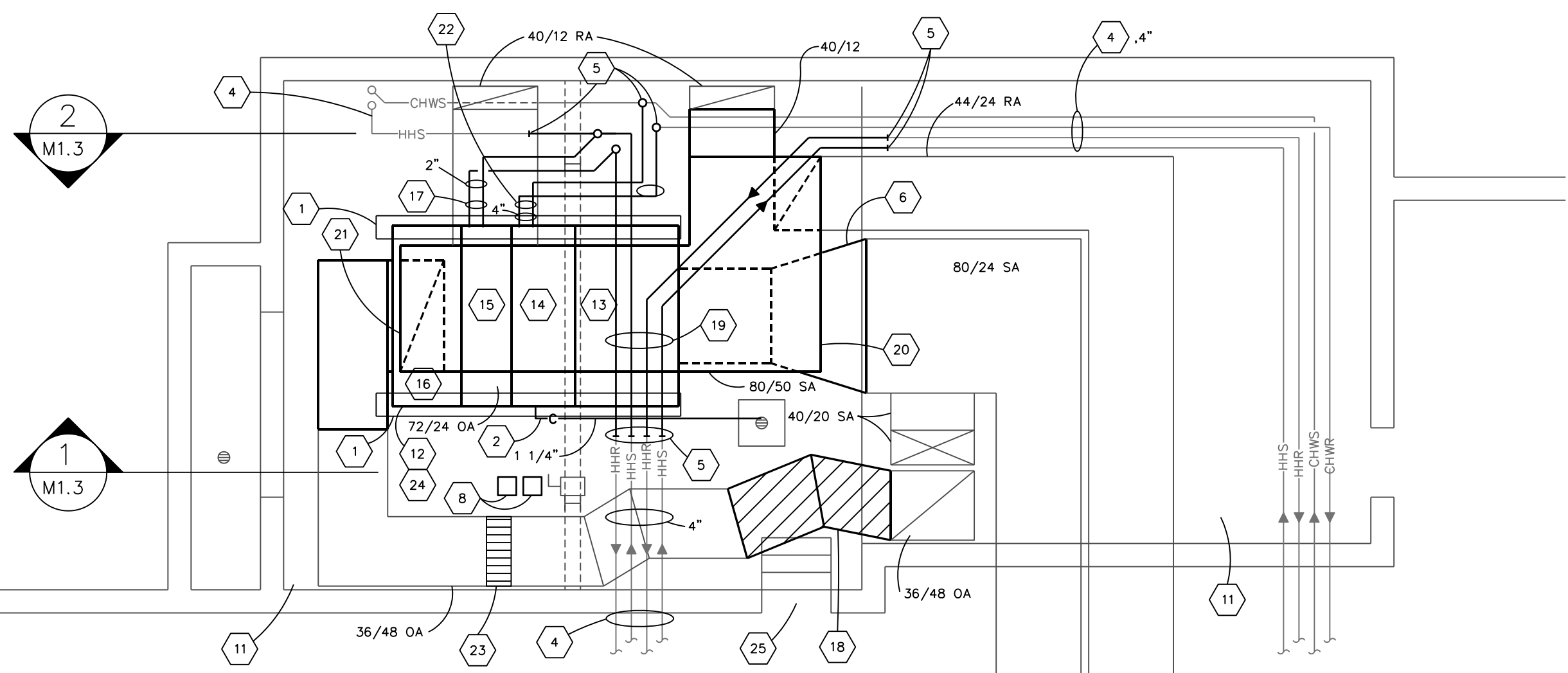
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- PROVIDE CONDENSATE DRAIN PIPING TO FLOOR DRAIN INDICATED. PROVIDE TRAP AT CONNECTION TO EQUIPMENT CONFORMING TO EQUIPMENT MANUFACTURER'S RECOMMENDATIONS. IF CONCRETE FLOOR IS TOO HIGH TO ALLOW MANUFACTURER'S RECOMMENDED TRAP HEIGHT, CUT OUT CONCRETE AS NECESSARY TO ACHIEVE RECOMMENDED TRAP DEPTH.
- ALL EXISTING DUCTWORK ON THIS DRAWING CONTAINS 1 INCH THICK INTERNAL DUCT LINER. ALL NEW DUCTWORK SHALL HAVE 1 INCH THICK INTERNAL DUCT LINER. ALL NEW DUCT DIMENSIONS SHALL BE IDENTICAL TO CONNECTING DUCTS EXCEPT THAT WHERE DUCTS CONNECT TO AIR HANDLING UNITS, THE INSIDE CLEAR DIMENSION OF THE DUCT LINER SHALL MATCH THE CONNECTING OPENING SIZE.
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- KEEP COIL PULL SPACE CLEAR. MOUNT ALL VALVES OUTSIDE OF COIL REMOVAL SPACE.
- BAS CONTROL PANEL ON WALL AT LANDING ABOVE.
- BAS MANUFACTURER SHALL PROVIDE VARIABLE FREQUENCY DRIVE AND DISCONNECT AND SHALL PROVIDE ALL CABLING AND COMPONENTS NECESSARY TO ACHIEVE SPECIFIED SEQUENCE OF OPERATION.
- EXISTING CONCRETE FLOOR.
- EXISTING CONCRETE DECK AND BEAMS ABOVE.
- INTERNALLY CLEAN ALL EXISTING DUCTWORK IN THIS ROOM. ALL DUCTWORK HAS INTERNAL LINER. REPAIR ANY DAMAGED LINER.
- MOUNT DEHUMIDIFIER ON SHELF 78 INCHES ABOVE FLOOR. SHELF SHALL BE 3 FEET LONG AND 2 FEET WIDE AND SHALL BE MOUNTED IN A MANNER TO SAFELY SUPPORT 500 POUNDS. SHELF MAY BE EITHER WALL BRACKET SUPPORTED OR SUSPENDED FROM THE FLOOR DECK ABOVE.
- PROVIDE DUCTED DEHUMIDIFIER, APRILAIRE MODEL 1870 OR APPROVED EQUAL, 130 PINTS PER DAY, MINIMUM, 120 VOLTS, 8.3 AMPS, WITH CORD AND PLUG.
- PROVIDE AIR HANDLING UNIT C-AHU-1.
- FAN SECTION.
- COOLING COIL SECTION.
- HEATING COIL SECTION.
- PROVIDE 2-WAY CONTROL VALVE COIL CONNECTION. REFER TO REFER TO AIR HANDLER HYDRONIC COIL PIPING DIAGRAM.
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- REMOVE, REARRANGE, AND REINSTALL THIS DUCT LENGTH SUCH THAT THE HORIZONTAL DUCT OFFSET IS MOVED FROM THE EAST END OF THE DUCT LENGTH TO THE WEST END.



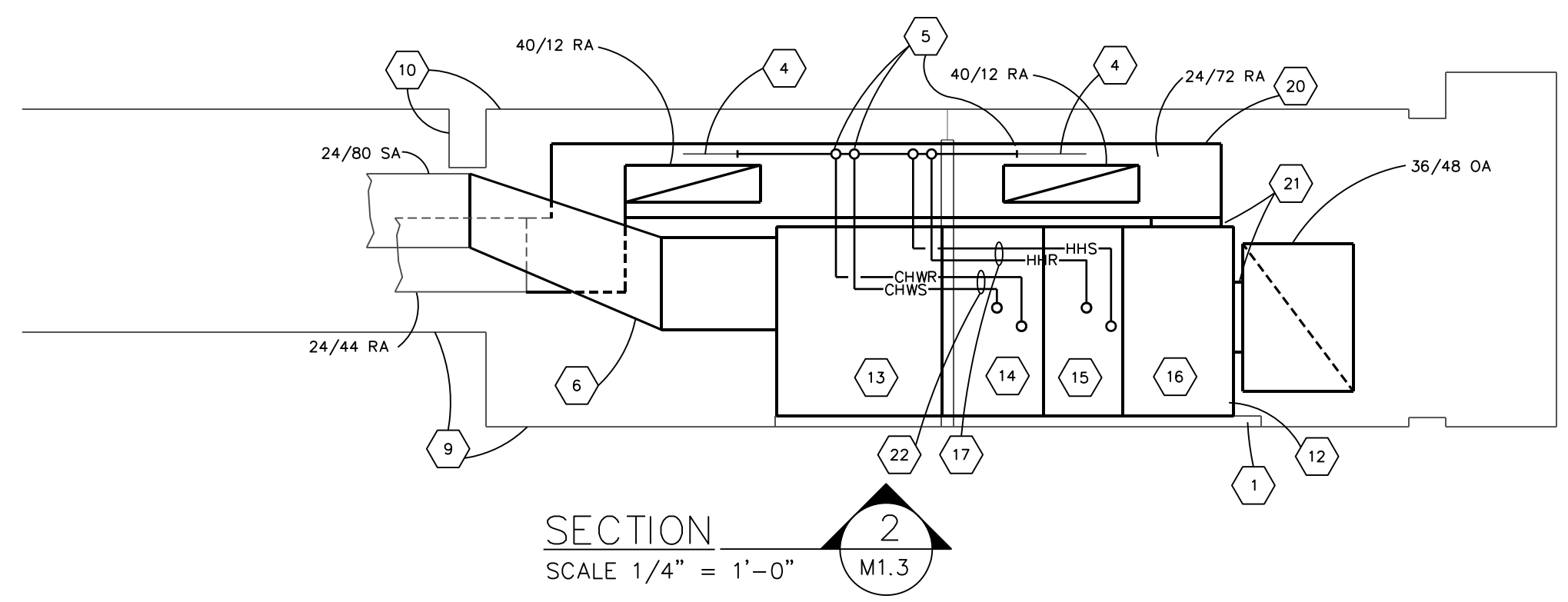
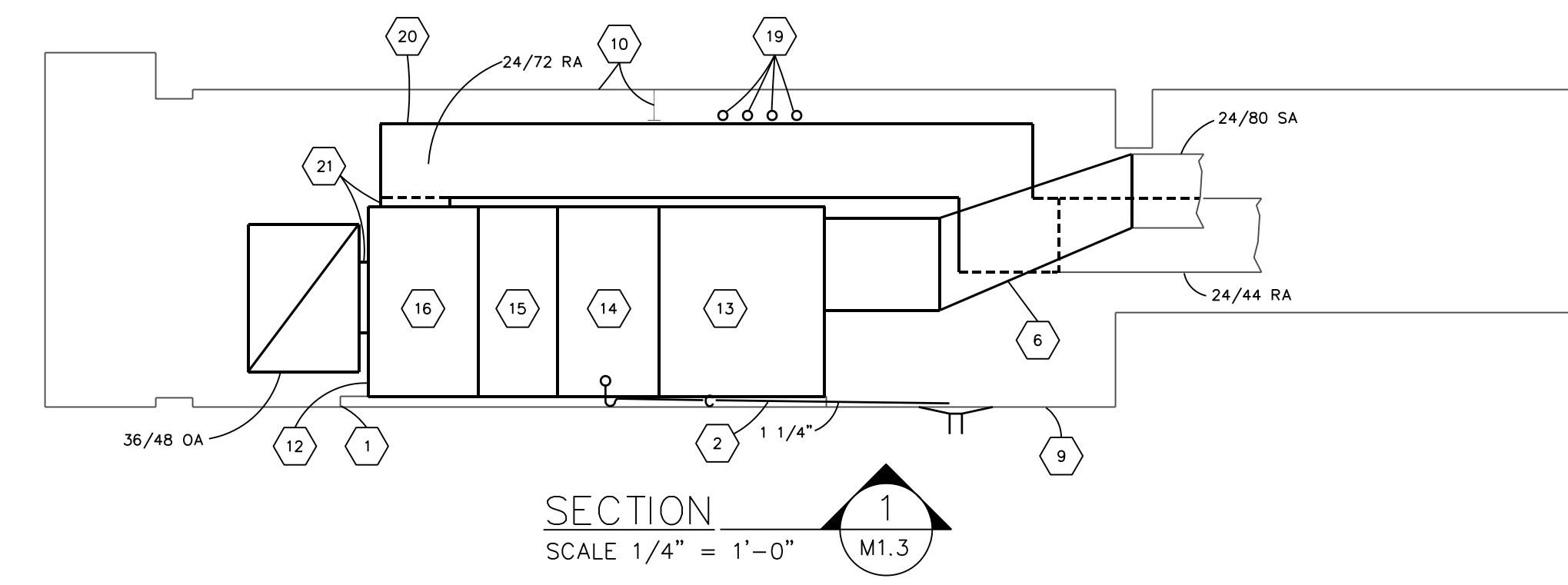
SECTION 1
SCALE 1/4" = 1'-0" M1.2



LOWER LEVEL
MECHANICAL PLAN 3
SCALE: 1/4" = 1'-0"
North



LOWER LEVEL MECHANICAL PLAN
SCALE: 3/16" = 1'-0"
North



- WESTVIEW LOWER LEVEL MECHANICAL PLAN KEYNOTES**
- EXISTING 3-1/2 INCHES TALL CONCRETE AHU SUPPORT RUNNER TO REMAIN. PROVIDE CONDENSATE DRAIN PIPING TO FLOOR DRAIN INDICATED. PROVIDE TRAP AT CONNECTION TO EQUIPMENT CONFORMING TO EQUIPMENT MANUFACTURER'S RECOMMENDATIONS. IF CONCRETE FLOOR IS TOO HIGH TO ALLOW MANUFACTURER'S RECOMMENDED TRAP HEIGHT, CUT OUT CONCRETE AS NECESSARY TO ACHIEVE RECOMMENDED TRAP DEPTH.
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 - EXISTING CONCRETE FLOOR.
 - EXISTING CONCRETE DECK AND BEAMS ABOVE.
 - INTERNALLY CLEAN ALL EXISTING DUCTWORK IN THIS ROOM. ALL DUCTWORK HAS INTERNAL LINER. REPAIR ANY DAMAGED LINER.
 - PROVIDE AIR HANDLING UNIT W-AHU-1.
 - FAN SECTION.
 - COOLING COIL SECTION.
 - HEATING COIL SECTION.
 - PROVIDE 2-WAY CONTROL VALVE COIL CONNECTION. REFER TO REFER TO AIR HANDLER HYDRONIC COIL PIPING DIAGRAM. LOCATE ALL PIPING, VALVES AND ACCESSORIES FOR BEST ACCESS AND TO ALLOW ACCESS BEYOND THE COIL CONNECTIONS.
 - TEMPORARILY REMOVE DUCTWORK FOR ACCESS AND REINSTALL BEFORE COMPLETION OF CONSTRUCTION.
 - PROVIDE OFFSET FITTING AT CONNECTION TO EXISTING TO RAISE PIPE TO CLEAR NEW RETURN DUCT.
 - PROVIDE 88 X 24 OUTSIDE DIMENSION DUCT WITH 1 INCH THICK DUCT LINER.
 - PROVIDE 3 INCH LONG LINED DUCT CONNECTED FROM AIR HANDLING UNIT CONNECTION TO ADJACENT DUCT. INSIDE CLEAR OPENING SIZE SHALL MATCH THE UNIT OPENING DIMENSIONS.
 - PROVIDE 3-WAY CONTROL VALVE COIL CONNECTION. REFER TO REFER TO AIR HANDLER HYDRONIC COIL PIPING DIAGRAM. LOCATE ALL PIPING, VALVES AND ACCESSORIES FOR BEST ACCESS AND TO ALLOW ACCESS BEYOND THE COIL CONNECTIONS.
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VAILLE,
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RICHMOND, INDIANA

Project No.: 215-1
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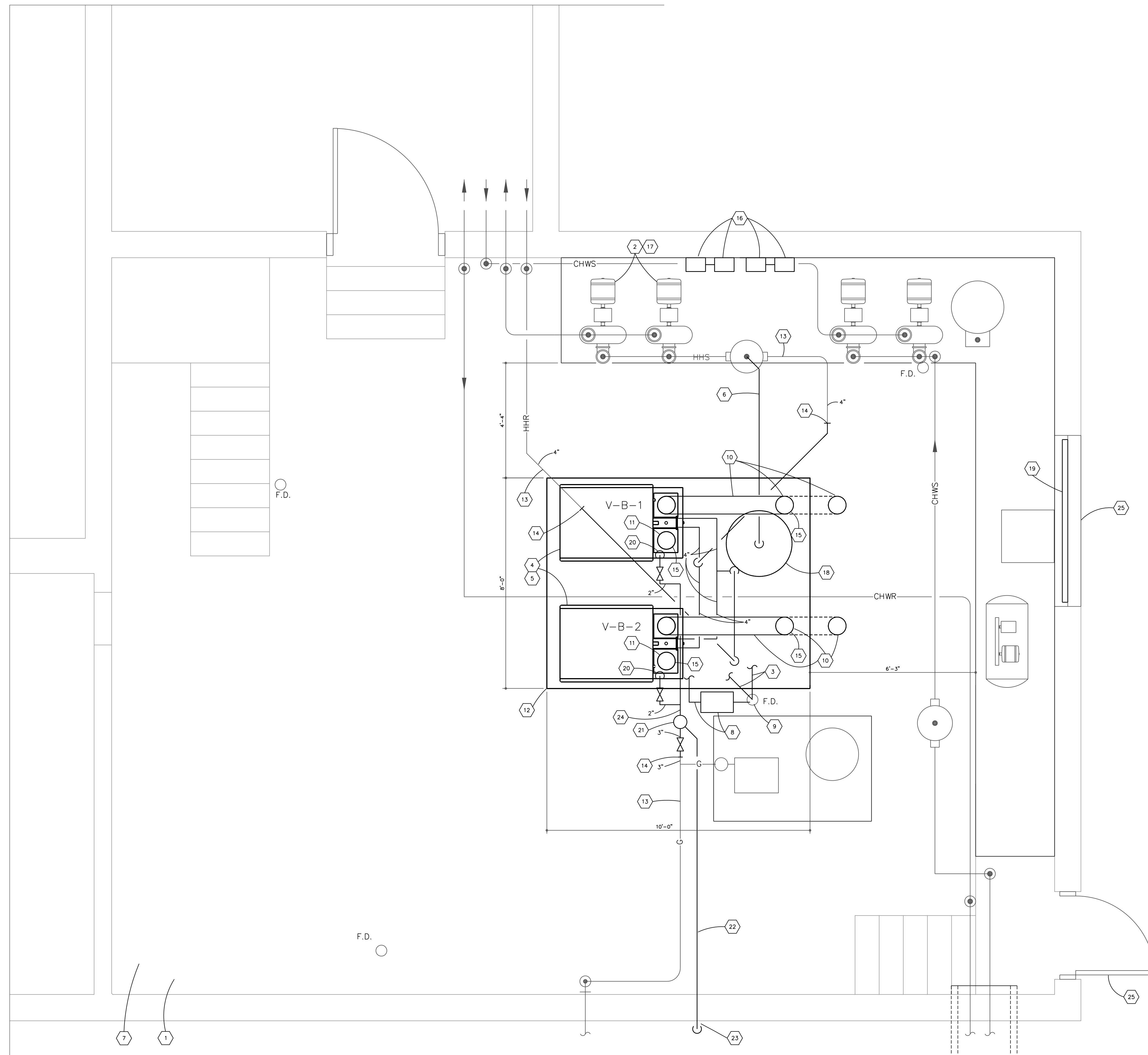
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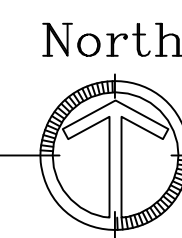
WESTVIEW
LOWER LEVEL
PLAN AND
SECTIONS

VAILE BOILER ROOM MECHANICAL PLAN KEYNOTES

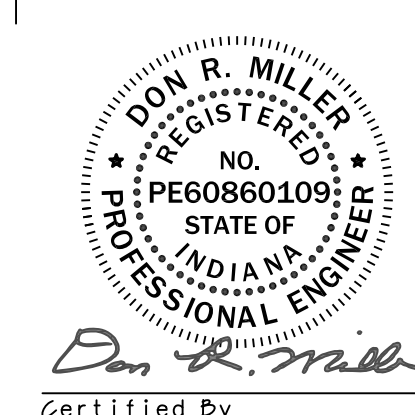
1. INSTALL ALL HORIZONTAL PIPING, RACEWAYS, AND BOILER COMBUSTION AIR AND EXHAUST IN THE BOILER ROOM EXPOSED OVERHEAD, AT LEAST 10 FEET CLEAR ABOVE THE FLOOR UNLESS OTHERWISE INDICATED. DRAIN AND PRESSURE RELIEF PIPING MAY BE INSTALLED NEAR FLOOR LEVEL IF INSTALLED WITHIN 6 INCHES OF BOILER HOUSEKEEPING PAD.
2. EXISTING TO REMAIN IN SERVICE.
3. PROVIDE OUTLET PIPING FROM PRESSURE RELIEF VALVE FURNISHED BY BOILER MANUFACTURER, OUTLET PIPING SAME SIZE AS VALVE OUTLET. SET RELIEF VALVE AT 50 PSIG.
4. PROVIDE CONDENSING BOILER WITH INTEGRAL MASTER-SLAVE, LEAD-LAG PROGRAMMABLE CONTROL SYSTEM HAVING PROVISION FOR SUPPLY WATER TEMPERATURE CONTROL BASED ON HEATING DEMAND IN CONJUNCTION WITH OUTDOOR TEMPERATURE.
5. REFER TO HEATING WATER PIPING SCHEMATIC FOR PIPING SYSTEM VALVES AND ACCESSORIES.
6. PROVIDE 1 INCH PIPING FROM HEATING WATER PIPING SYSTEM TO EXPANSION TANK INSTALLED AND CONNECTED AS RECOMMENDED BY THE BOILER MANUFACTURER.
7. REFER TO ALTERNATES FOR ALL WORK INDICATED IN THIS ROOM.
8. PROVIDE COMBINED TRAP AND ACID NEUTRALIZATION KIT, FURNISHED BY THE BOILER MANUFACTURER TO SERVE TWO BOILERS. PROVIDE 1-1/2 INCH MINIMUM CPVC CONDENSATE DRAIN PIPING TO COMBINED TRAP AND ACID NEUTRALIZATION ASSEMBLY AND THEN TO FLOOR DRAIN. INSTALLATION SHALL COMPLY WITH THE BOILER MANUFACTURER'S RECOMMENDATIONS.
9. TERMINATE ALL PIPES WITH 2 INCH AIR GAP ABOVE FLOOR DRAIN WITH 90 DEGREE ELBOW TURNED DOWN.
10. PROVIDE SCHEDULE 40 PVC COMBUSTION AIR PIPING SIZED, INSTALLED, AND TERMINATED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE BOILER MANUFACTURER. TURN OUTDOOR TERMINATION DOWN WITH 90 DEGREE ELBOW AND PROVIDE 1/2 MESH ALUMINUM BIRD SCREEN AT TERMINATION OPENING. OFFSET PIPING FROM LOCATIONS INDICATES AS NECESSARY TO AVOID OBSTRUCTIONS. CUT AND PATCH ROOF AND PROVIDE PENETRATION ACCESSORIES TO MEET THE BOILER AND ROOFING MANUFACTURERS' RECOMMENDATIONS.
11. PROVIDE EXHAUST AIR PIPING SIZED, INSTALLED, AND TERMINATED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE BOILER MANUFACTURER. TYPE OF PIPE SHALL COMPLY WITH THE BOILER MANUFACTURER'S WRITTEN RECOMMENDATIONS FOR SYSTEMS SUBJECT TO SIGNIFICANT CONDENSATION. SUBMIT MANUFACTURER'S RECOMMENDATIONS FOR APPROVAL BEFORE ORDERING PIPING. TERMINATE WITH MANUFACTURER FURNISHED FLUE GAS VENT OUTLET ASSEMBLY. OFFSET PIPING FROM LOCATIONS INDICATES AS NECESSARY TO AVOID OBSTRUCTIONS. CUT AND PATCH ROOF AND PROVIDE PENETRATION ACCESSORIES TO MEET THE BOILER AND ROOFING MANUFACTURERS' RECOMMENDATIONS.
12. PROVIDE 3-1/2 INCHES TALL CONCRETE HOUSEKEEPING PAD, SIZED AND LOCATED AS INDICATED.
13. EXISTING PIPING.
14. CONNECT NEW PIPING TO EXISTING. PROVIDE NEW PIPING SAME SIZE AS EXISTING. EXISTING SIZE INDICATED IS APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY SIZE.
15. ROOF CUTTING, PATCHING, FLASHING, AND SEALING SHALL BE PERFORMED AS DIRECTED BY THE EXISTING ROOFING SYSTEM MANUFACTURER TO SO THAT THEIR ROOF WARRANTY IS NOT IMPACTED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY THE ROOFING SYSTEM MANUFACTURER AND TO OBTAIN AND SUBMIT THEIR INSTALLATION REQUIREMENTS FOR APPROVAL.
16. PROVIDE VARIABLE FREQUENCY DRIVE AND DISCONNECT TO REPLACE EXISTING AND MATCHED TO THE CONNECTED EXISTING HEATING WATER PUMP.
17. EXISTING BASE-MOUNTED CIRCULATING PUMP, 210 GPM AT 90 FEET HEAD, 208 VOLTS, 3 PHASE, 10 HP, BELL & GOSSETT MODEL E-1510-2EB.
18. PROVIDE 135 GALLON MINIMUM, ASME LABELED BLADDER TYPE EXPANSION TANK, WESSELLS MODEL NLAP-560 OR APPROVED EQUAL.
19. PROVIDE INSULATED SANDWICH PANEL SECURED TO THE INSIDE OF THE LOUVER FRAME AND SEALED TO THE WALL. PANEL SHALL HAVE 0.040 INCH MINIMUM THICKNESS EXTERNAL ALUMINUM SHEET FACING AND R-4 MINIMUM INSULATION BOARD CORE.
20. PROVIDE NATURAL GAS CONNECTION TO 2,000 MBH NATURAL GAS FIRED HEATING BOILER.
21. PROVIDE NATURAL GAS PRESSURE REGULATOR, 2 PSI INLET PRESSURE, 7 INCHES WG OUTLET PRESSURE, 4,000 CFH CAPACITY. CONNECT VENT PORT TO VENT PIPING TO OUTSIDE. VERIFY INLET PRESSURE WITH NATURAL GAS PROVIDER BEFORE ORDERING. THE PRESSURE REGULATOR AND ADJUST MODEL SELECTION TO MATCH ACTUAL INLET PRESSURE.
22. PROVIDE GAS VENT PIPING, SIZED AS RECOMMENDED BY THE REGULATOR MANUFACTURER. TERMINATE OUTSIDE OF BUILDING AT LOCATION SHOWN WITH RAIN CAP AND SCREENED OPENINGS. PAINT EXTERIOR PIPING. OWNER TO SPECIFY COLOR.
23. FLASH AND SEAL WALL PENETRATION.
24. PAINT NEW PIPING TO MATCH EXISTING.
25. CLEAR DOOR OPENING WIDTH IS 35 INCHES. IF THE SUBMITTED AND APPROVED BOILER WON'T FIT THROUGH THIS OPENING, TEMPORARILY REMOVE AND REINSTALL A PORTION OF THE EXISTING COMBUSTION AIR LOUVER FOR BOILER ACCESS INTO THE BUILDING.



BOILER ROOM MECHANICAL PLAN
SCALE: 1/2" = 1'-0"



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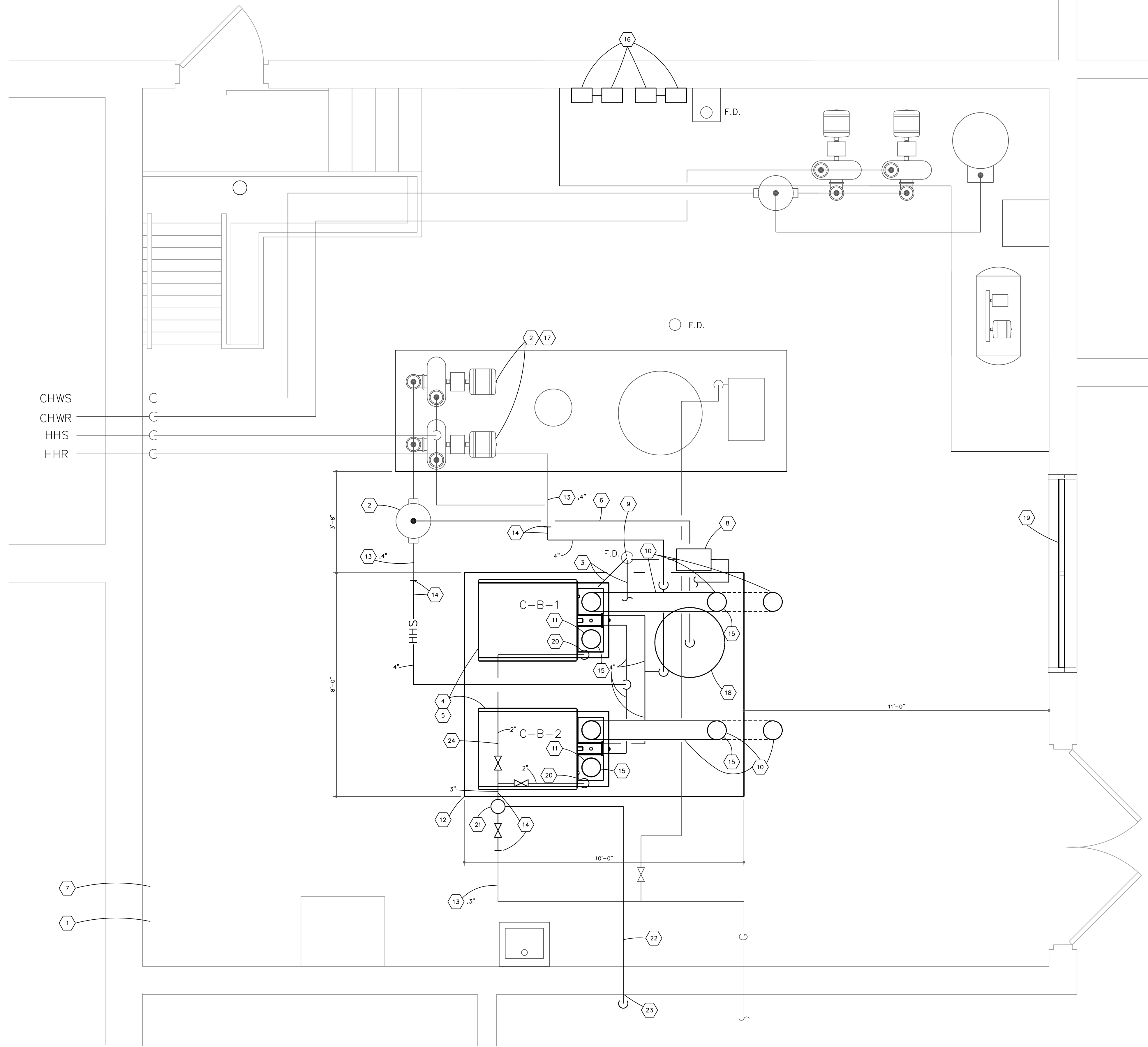
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Coordinator..... INDERSTRODT
Designer..... D MILLER
Drawn..... DAL
Checked..... D MILLER
Date..... 10/29/2021
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VAILE BOILER REPLACEMENT ALTERNATE MECHANICAL PLAN

CHARLES BOILER ROOM MECHANICAL PLAN KEYNOTES

1. INSTALL ALL HORIZONTAL PIPING, RACEWAYS, AND BOILER COMBUSTION AIR AND EXHAUST IN THE BOILER ROOM EXPOSED OVERHEAD, AT LEAST 10 FEET CLEAR ABOVE THE FLOOR UNLESS OTHERWISE INDICATED. DRAIN AND PRESSURE RELIEF PIPING MAY BE INSTALLED NEAR FLOOR LEVEL IF INSTALLED WITHIN 6 INCHES OF BOILER HOUSEKEEPING PAD.
2. EXISTING TO REMAIN IN SERVICE.
3. PROVIDE OUTLET PIPING FROM PRESSURE RELIEF VALVE FURNISHED BY BOILER MANUFACTURER, OUTLET PIPING SAME SIZE AS VALVE OUTLET. SET RELIEF VALVE AT 20 PSIG.
4. PROVIDE CONDENSING BOILER WITH INTEGRAL MASTER-SLAVE, LEAD-LAG PROGRAMMABLE CONTROL SYSTEM HAVING PROVISION FOR SUPPLY WATER TEMPERATURE CONTROL BASED ON HEATING DEMAND IN CONJUNCTION WITH OUTDOOR TEMPERATURE.
5. REFER TO HEATING WATER PIPING SCHEMATIC FOR PIPING SYSTEM VALVES AND ACCESSORIES.
6. PROVIDE 1 INCH PIPING FROM HEATING WATER PIPING SYSTEM TO EXPANSION TANK INSTALLED AND CONNECTED AS RECOMMENDED BY THE BOILER MANUFACTURER. REFER TO ALTERNATES FOR ALL WORK INDICATED IN THIS ROOM.
7. PROVIDE COMBINED TRAP AND ACID NEUTRALIZATION KIT, FURNISHED BY THE BOILER MANUFACTURER TO SERVE TWO BOILERS. PROVIDE 1-1/2 INCH MINIMUM CPVC CONDENSATE DRAIN PIPING TO COMBINED TRAP AND ACID NEUTRALIZATION ASSEMBLY AND THEN TO FLOOR DRAIN. INSTALLATION SHALL COMPLY WITH THE BOILER MANUFACTURER'S RECOMMENDATIONS.
8. TERMINATE ALL PIPES WITH 2 INCH AIR GAP ABOVE FLOOR DRAIN WITH 90 DEGREE ELBOW TURNED DOWN.
9. PROVIDE SCHEDULE 40 PVC COMBUSTION AIR PIPING SIZED, INSTALLED, AND TERMINATED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE BOILER MANUFACTURER. TURN OUTDOOR TERMINATION DOWN WITH 90 DEGREE ELBOW AND PROVIDE 1/2 MESH ALUMINUM BIRD SCREEN AT TERMINATION OPENING. OFFSET PIPING FROM LOCATIONS INDICATES AS NECESSARY TO AVOID OBSTRUCTIONS. CUT AND PATCH ROOF AND PROVIDE PENETRATION ACCESSORIES TO MEET THE BOILER AND ROOFING MANUFACTURERS' RECOMMENDATIONS.
10. PROVIDE EXHAUST AIR PIPING SIZED, INSTALLED, AND TERMINATED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE BOILER MANUFACTURER. TYPE OF PIPE SHALL COMPLY WITH THE BOILER MANUFACTURER'S WRITTEN RECOMMENDATIONS FOR SYSTEMS SUBJECT TO SIGNIFICANT CONDENSATION. SUBMIT MANUFACTURER'S RECOMMENDATIONS FOR APPROVAL BEFORE ORDERING PIPING. TERMINATE WITH MANUFACTURER FURNISHED FLUE GAS VENT OUTLET ASSEMBLY. OFFSET PIPING FROM LOCATIONS INDICATES AS NECESSARY TO AVOID OBSTRUCTIONS. CUT AND PATCH ROOF AND PROVIDE PENETRATION ACCESSORIES TO MEET THE BOILER AND ROOFING MANUFACTURERS' RECOMMENDATIONS.
11. PROVIDE 5-1/2 INCHES TALL CONCRETE HOUSEKEEPING PAD, SIZED AND LOCATED AS INDICATED.
12. EXISTING PIPING.
13. CONNECT NEW PIPING TO EXISTING. PROVIDE NEW PIPING SAME SIZE AS EXISTING. EXISTING SIZE INDICATED IS APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY SIZE.
14. ROOF CUTTING, PATCHING, FLASHING, AND SEALING SHALL BE PERFORMED AS DIRECTED BY THE EXISTING ROOFING SYSTEM MANUFACTURER TO SO THAT THEIR ROOF WARRANTY IS NOT IMPACTED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY THE ROOFING SYSTEM MANUFACTURER AND TO OBTAIN AND SUBMIT THEIR INSTALLATION REQUIREMENTS FOR APPROVAL.
15. PROVIDE VARIABLE FREQUENCY DRIVE AND DISCONNECT TO REPLACE EXISTING AND MATCHED TO THE CONNECTED EXISTING HEATING WATER PUMP.
16. EXISTING BASE-MOUNTED CIRCULATING PUMP, 253 GPM AT 85 FEET HEAD, 208 VOLTS, 3 PHASE, 10 HP, BELL & GOSSETT MODEL E-1510-ZEB.
17. PROVIDE 135 GALLON MINIMUM, ASME LABELED BLADDER TYPE EXPANSION TANK, WESSELLS MODEL NLAP-560 OR APPROVED EQUAL.
18. PROVIDE INSULATED SANDWICH PANEL SECURED TO THE INSIDE OF THE LOUVER FRAME AND SEALED TO THE WALL. PANEL SHALL HAVE 0.040 INCH MINIMUM THICKNESS EXTERNAL ALUMINUM SHEET FACING AND R-4 MINIMUM INSULATION BOARD CORE.
19. PROVIDE NATURAL GAS CONNECTION TO 2,000 MBH NATURAL GAS FIRED HEATING BOILER.
20. PROVIDE NATURAL GAS PRESSURE REGULATOR, 2 PSI INLET PRESSURE, 7 INCHES WG OUTLET PRESSURE, 4,000 CFH CAPACITY. CONNECT VENT PORT TO VENT PIPING TO OUTSIDE. VERIFY INLET PRESSURE WITH NATURAL GAS PROVIDER BEFORE ORDERING THE PRESSURE REGULATOR AND ADJUST MODEL SELECTION TO MATCH ACTUAL INLET PRESSURE.
21. PROVIDE GAS VENT PIPING, SIZED AS RECOMMENDED BY THE REGULATOR MANUFACTURER. TERMINATE OUTSIDE OF BUILDING AT LOCATION SHOWN WITH RAIN CAP AND SCREENED OPENINGS. PAINT EXTERIOR PIPING. OWNER TO SPECIFY COLOR.
22. FLASH AND SEAL WALL PENETRATION.
23. PAINT NEW PIPING TO MATCH EXISTING.
24. PAINT NEW PIPING TO MATCH EXISTING.

CHWS
CHWR
HHS
HHR

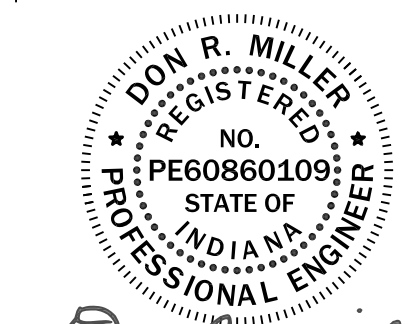


BOILER ROOM MECHANICAL PLAN
SCALE: 1/4" = 1'-0"



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HVAC UPGRADES
REPLACEMENTS

VAILE,
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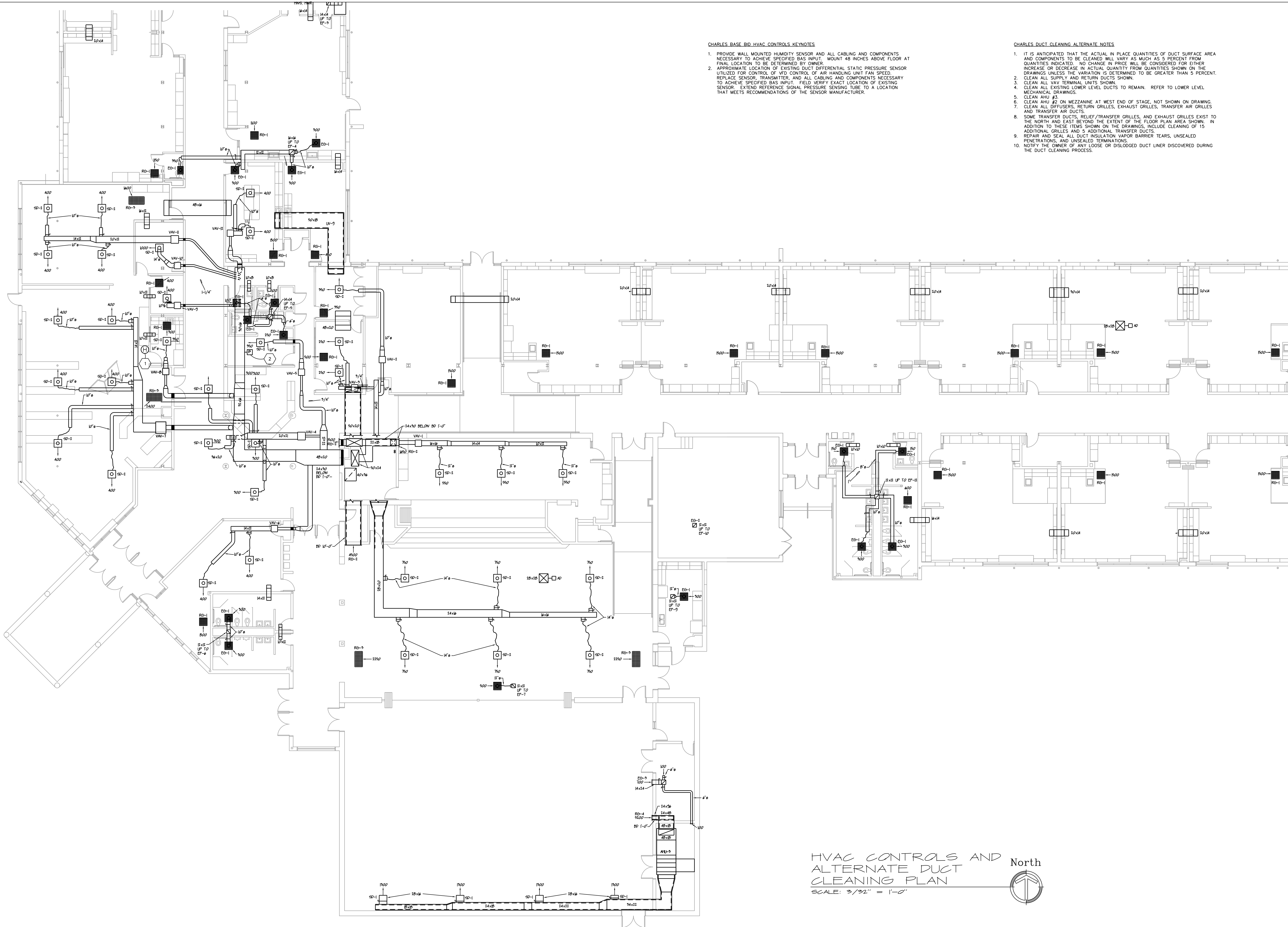
RICHMOND, INDIANA

Project No.... 215-1
Coordinator.... INDERSTRODT
Designer..... D MILLER
Drawn..... DAL

Checked..... D MILLER
Date..... 10/29/2021

Revision: No. Date

CHARLES
BOILER
REPLACEMENT
ALTERNATE
MECHANICAL
PLAN



CHARLES BASE BID HVAC CONTROLS KEYNOTES

1. PROVIDE WALL MOUNTED HUMIDITY SENSOR AND ALL CABLING AND COMPONENTS NECESSARY TO ACHIEVE SPECIFIED BAS INPUT. MOUNT 48 INCHES ABOVE FLOOR AT FINAL LOCATION TO BE DETERMINED BY OWNER.
2. APPROXIMATE LOCATION OF EXISTING DUCT DIFFERENTIAL STATIC PRESSURE SENSOR UTILIZED FOR CONTROL OF VFD CONTROL OF AIR HANDLING UNIT FAN SPEED. REPLACE SENSOR, TRANSMITTER, AND ALL CABLING AND COMPONENTS NECESSARY TO ACHIEVE SPECIFIED BAS INPUT. FIELD VERIFY EXACT LOCATION OF EXISTING SENSOR. EXTEND REFERENCE SIGNAL PRESSURE SENSING TUBE TO A LOCATION THAT MEETS RECOMMENDATIONS OF THE SENSOR MANUFACTURER.

CHARLES DUCT CLEANING ALTERNATE NOTES

1. IT IS ANTICIPATED THAT THE ACTUAL IN PLACE QUANTITIES OF DUCT SURFACE AREA AND COMPONENTS TO BE CLEANED WILL VARY AS MUCH AS 5 PERCENT FROM QUANTITIES INDICATED. NO CHANGE IN PRICE WILL BE CONSIDERED FOR EITHER INCREASE OR DECREASE IN ACTUAL QUANTITY FROM QUANTITIES SHOWN ON THE DRAWINGS UNLESS THE VARIATION IS DETERMINED TO BE GREATER THAN 5 PERCENT.
2. CLEAN ALL SUPPLY AND RETURN DUCTS SHOWN.
3. CLEAN ALL VAV TERMINAL UNITS SHOWN.
4. CLEAN ALL EXISTING LOWER LEVEL DUCTS TO REMAIN. REFER TO LOWER LEVEL MECHANICAL DRAWINGS.
5. CLEAN AHU #3.
6. CLEAN AHU #2 ON MEZZANINE AT WEST END OF STAGE, NOT SHOWN ON DRAWING.
7. CLEAN ALL DIFFUSERS, RETURN GRILLES, EXHAUST GRILLES, TRANSFER AIR GRILLES AND TRANSFER AIR DUCTS.
8. SOME TRANSFER DUCTS, RELIEF/TRANSFER GRILLES, AND EXHAUST GRILLES EXIST TO THE NORTH AND EAST BEYOND THE EXTENT OF THE FLOOR PLAN AREA SHOWN. IN ADDITION TO THESE ITEMS SHOWN ON THE DRAWINGS, INCLUDE CLEANING OF 15 ADDITIONAL GRILLES AND 5 ADDITIONAL TRANSFER DUCTS.
9. REPAIR AND SEAL ALL DUCT INSULATION VAPOR BARRIER TEARS, UNSEALED PENETRATIONS, AND UNSEALED TERMINATIONS.
10. NOTIFY THE OWNER OF ANY LOOSE OR DISLOGGED DUCT LINER DISCOVERED DURING THE DUCT CLEANING PROCESS.

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RICHMOND, INDIANA

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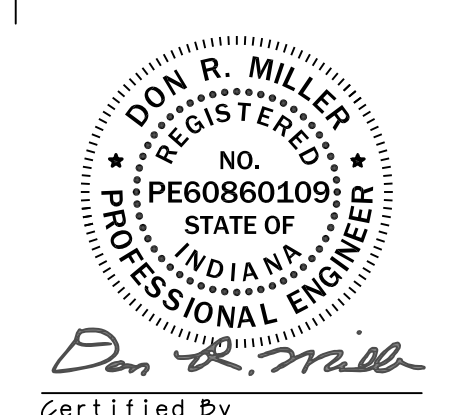
Revision:
 No. Date

CHARLES HVAC
 CONTROLS AND
 ALTERNATE DUCT
 CLEANING PLAN

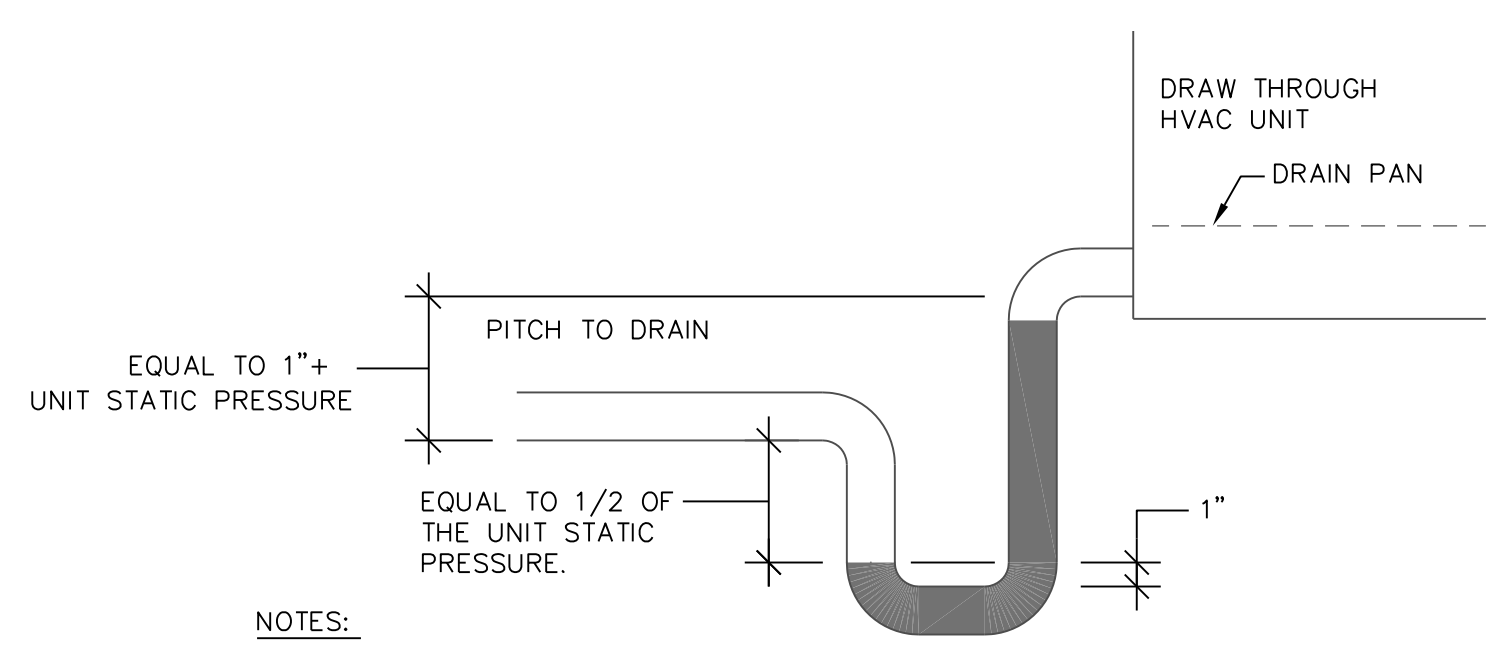
HVAC CONTROLS AND
 ALTERNATE DUCT
 CLEANING PLAN

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

North

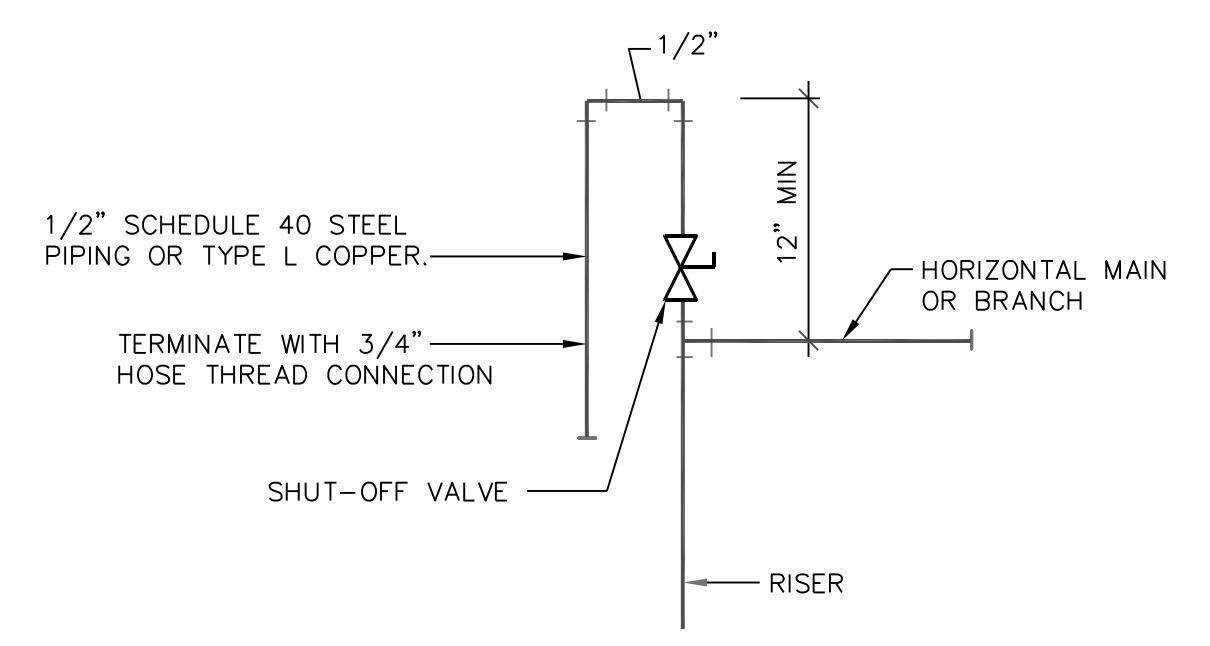


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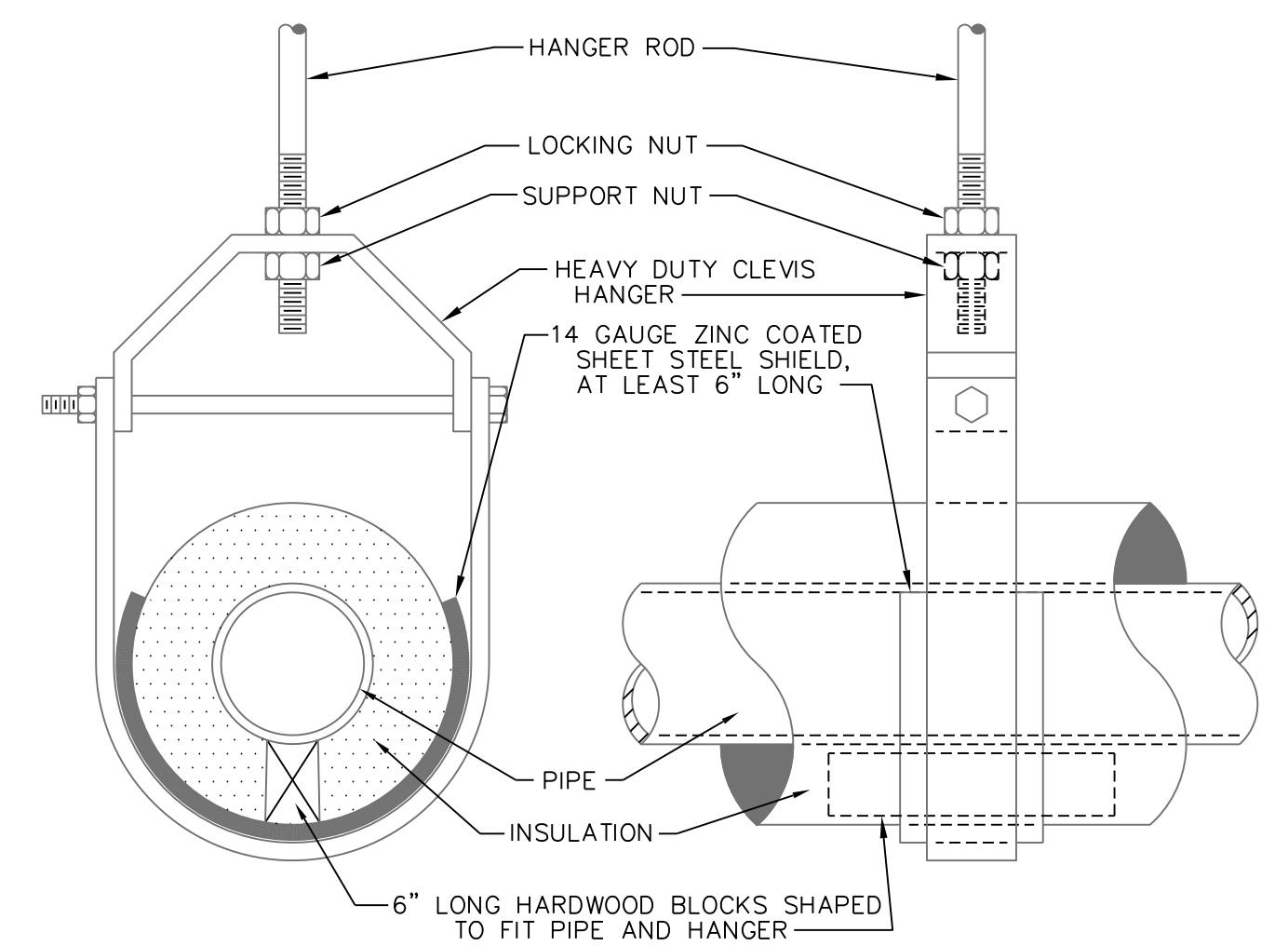


- NOTES:
1. SEE PLANS FOR PIPE SIZES.
2. CUT OUT CONCRETE FLOOR IF NECESSARY TO ACHIEVE REQUIRED TRAP DEPTH.

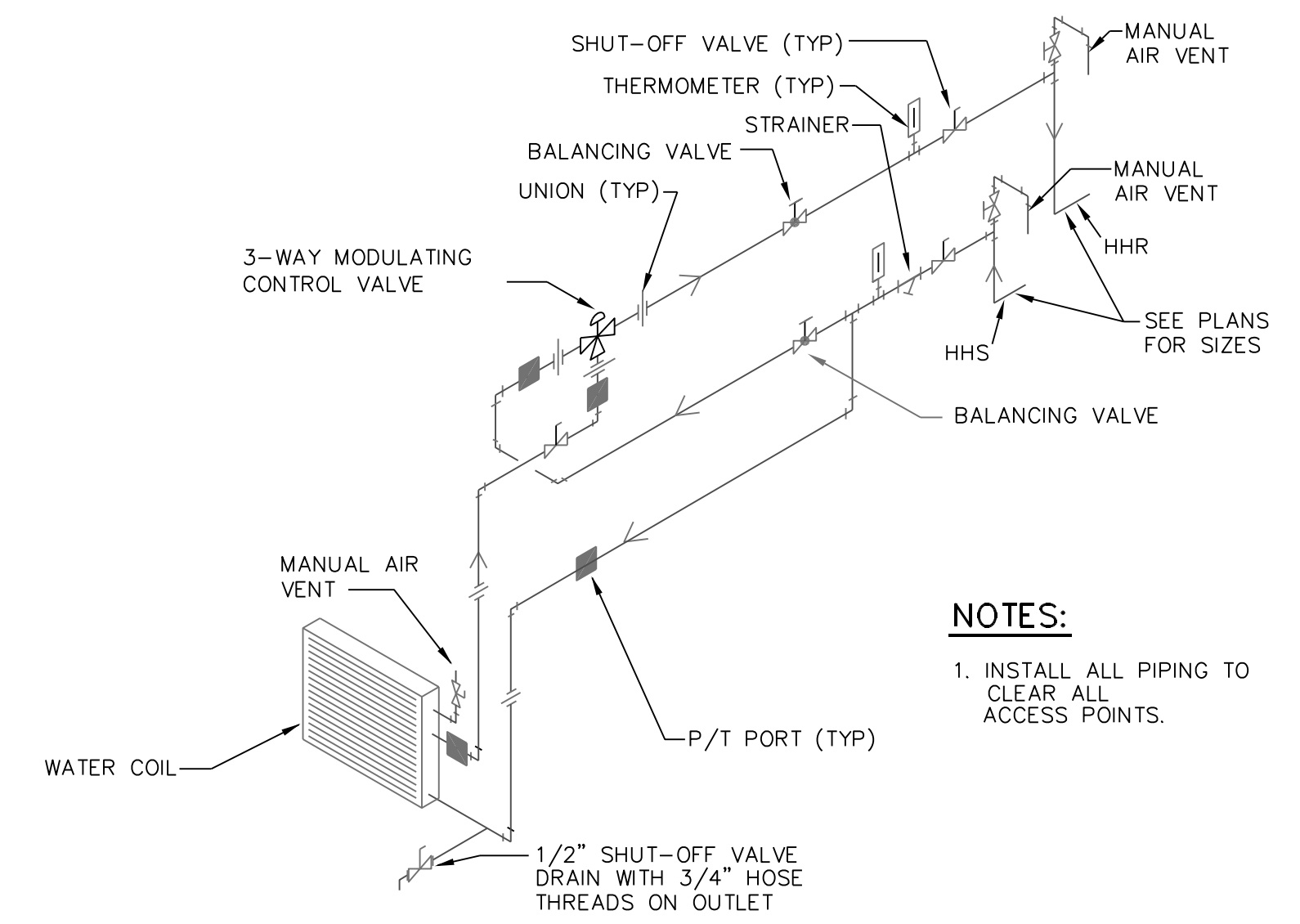
1 CONDENSATE TRAP PIPING DIAGRAM
NO SCALE



10 MANUAL AIR VENT DIAGRAM
NO SCALE

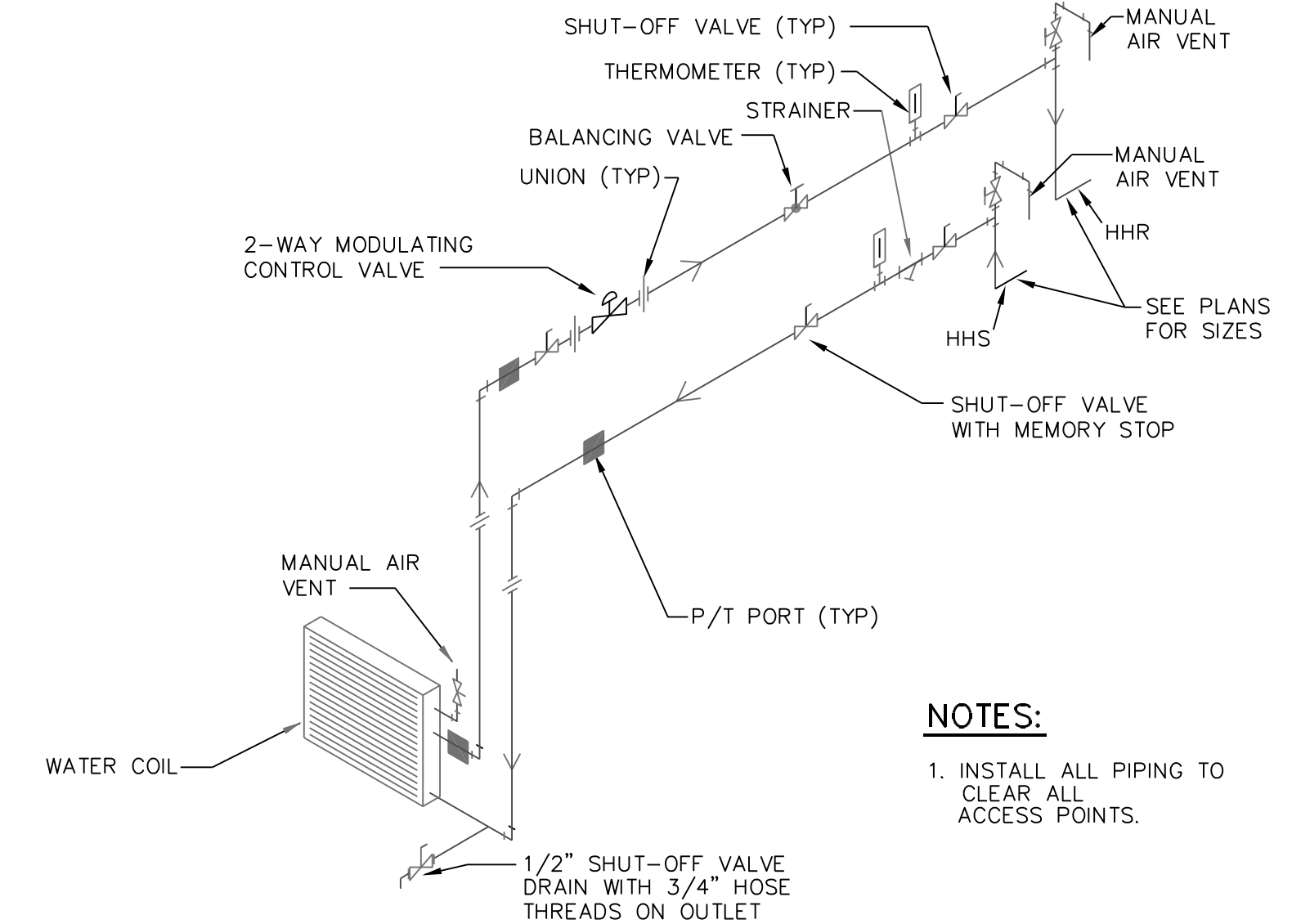


13 PIPE HANGERS (6" AND SMALLER)
NO SCALE



- NOTES:
1. INSTALL ALL PIPING TO CLEAR ALL ACCESS POINTS.

17 AIR HANDLER HYDRONIC COIL PIPING DIAGRAM 3-WAY CONTROL VALVE
NO SCALE



- NOTES:
1. INSTALL ALL PIPING TO CLEAR ALL ACCESS POINTS.

18 AIR HANDLER HYDRONIC COIL PIPING DIAGRAM 2-WAY CONTROL VALVE
NO SCALE

HVAC UPGRADES
REPLACEMENTS

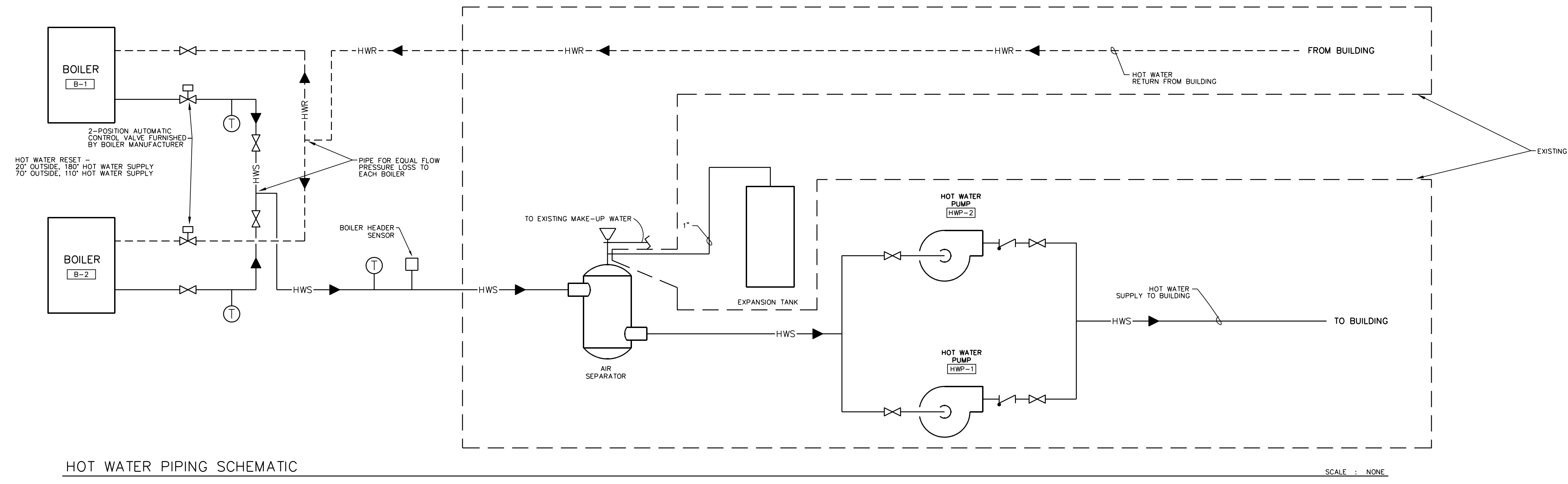
VAILE,
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& CHARLES
ELEMENTARY
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RICHMOND, INDIANA

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Coordinator.... INDERSTRODT
Designer..... P MILLER
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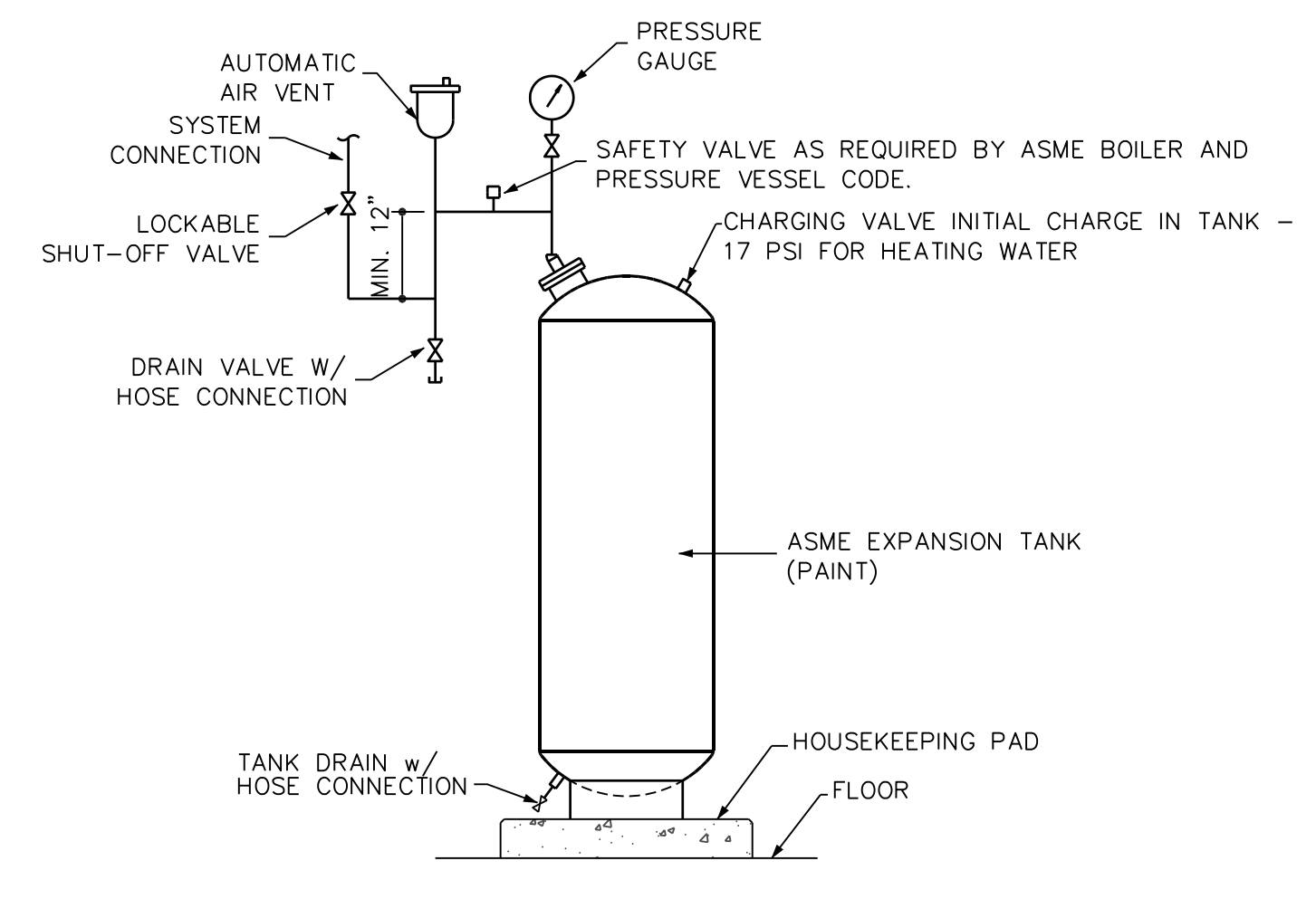
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MECHANICAL
DETAILS



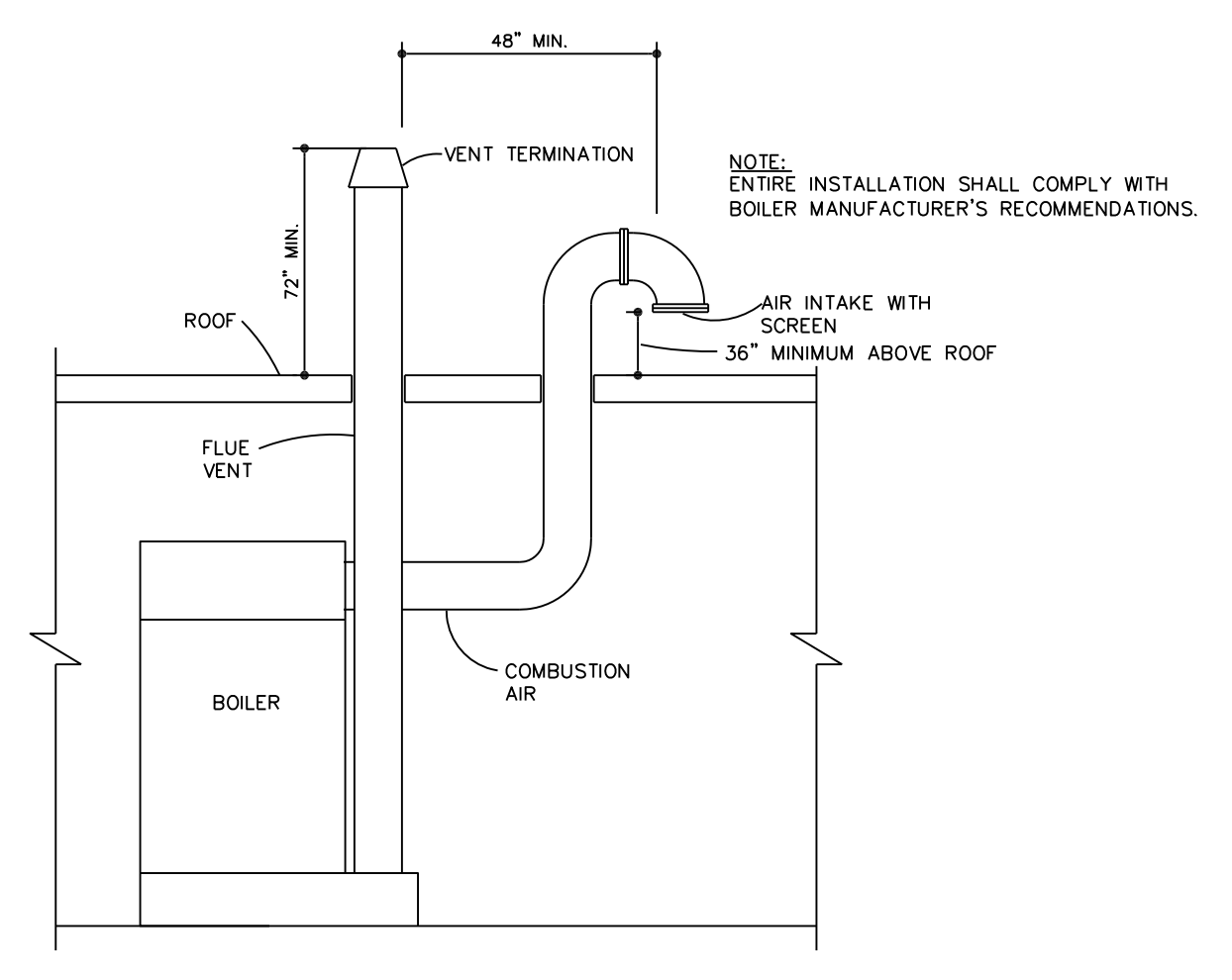
HOT WATER PIPING SCHEMATIC

SCALE : NONE



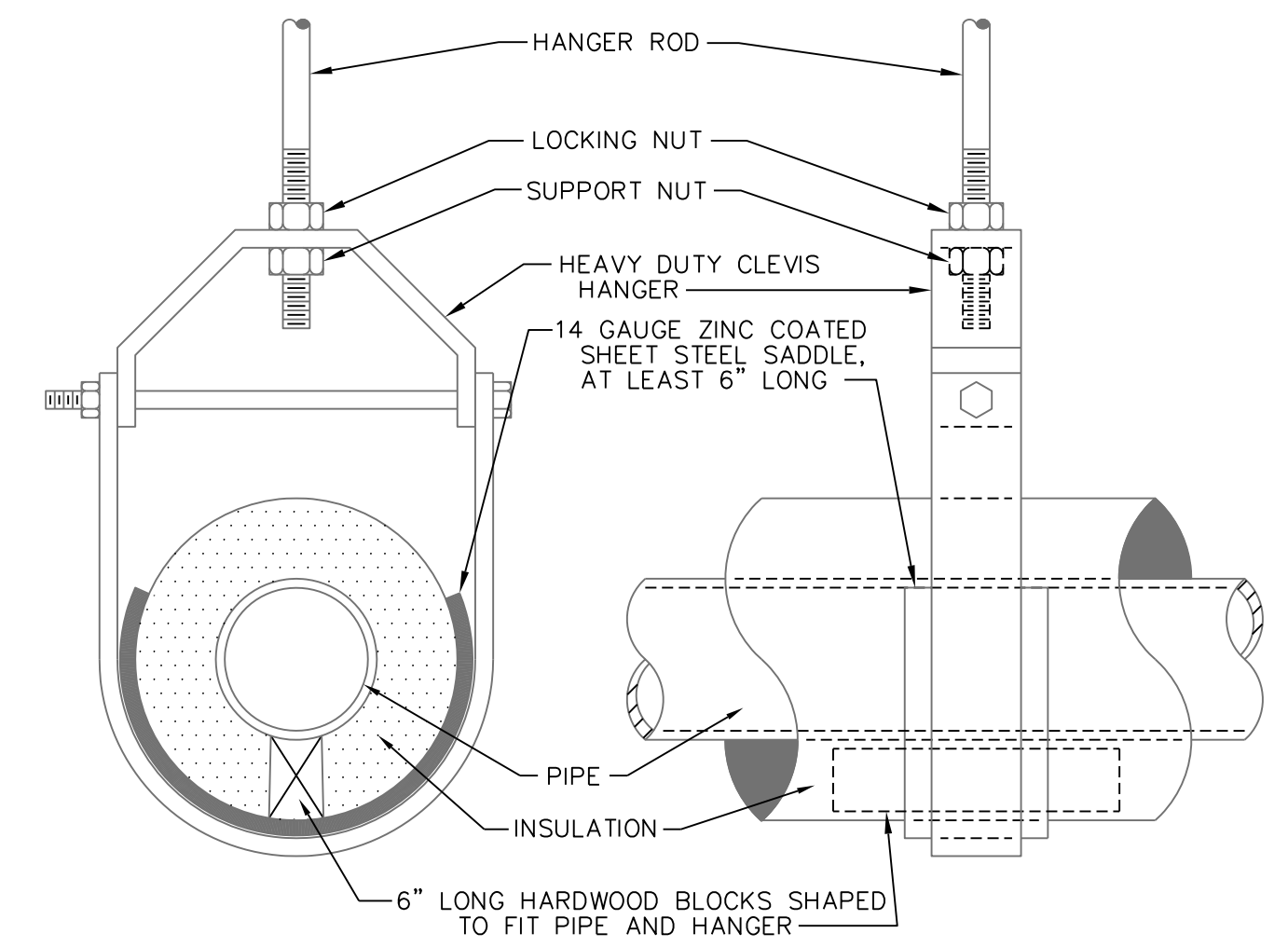
5 TYPICAL EXPANSION TANK DETAIL

NOT TO SCALE



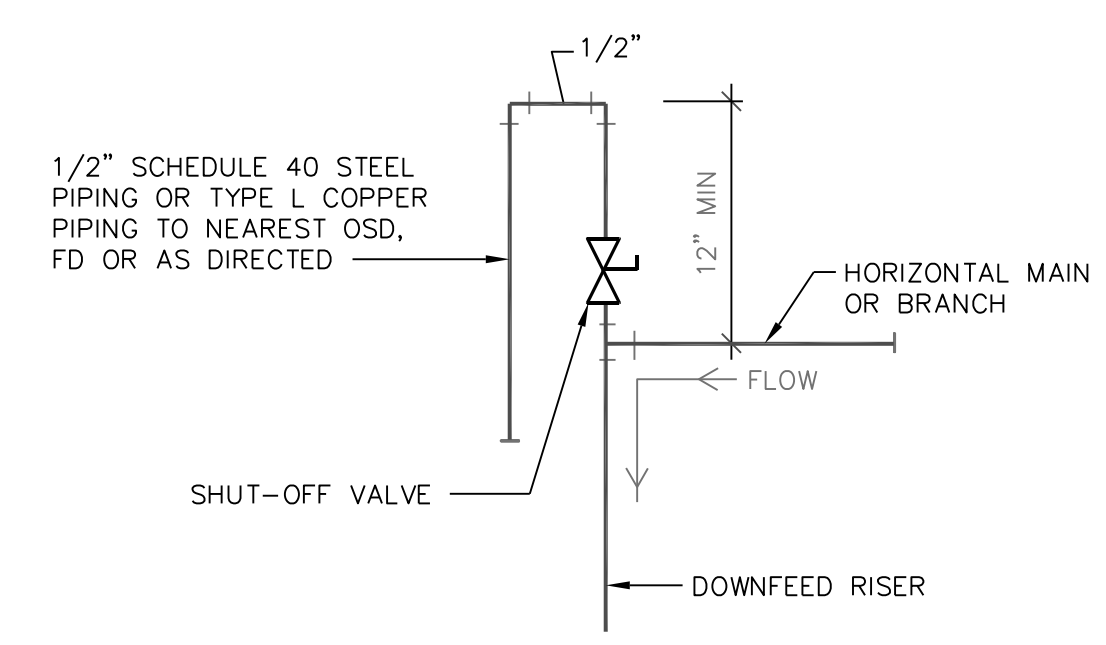
BOILER COMBUSTION AIR AND FLUE VENT DETAIL

NO SCALE



13 PIPE HANGERS (6" AND SMALLER)

NO SCALE



10 MANUAL AIR VENT DIAGRAM

NO SCALE

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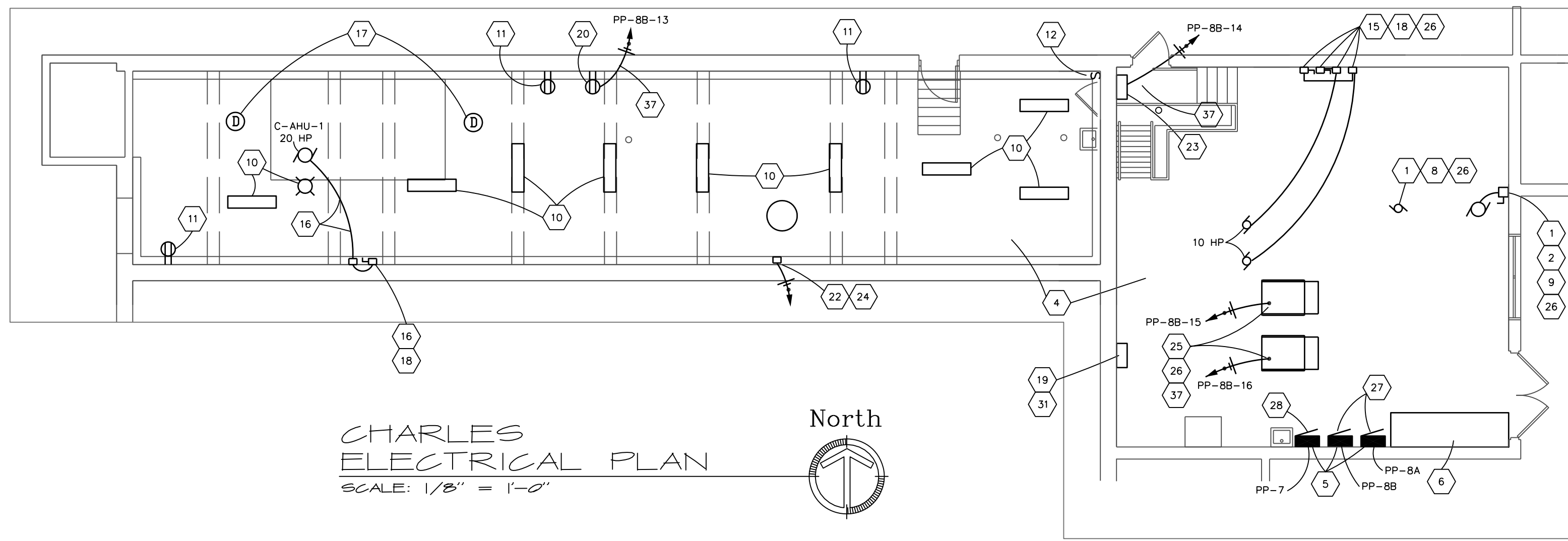
RICHMOND, INDIANA

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BOILER
 REPLACEMENT
 ALTERNATE
 MECHANICAL
 DETAILS



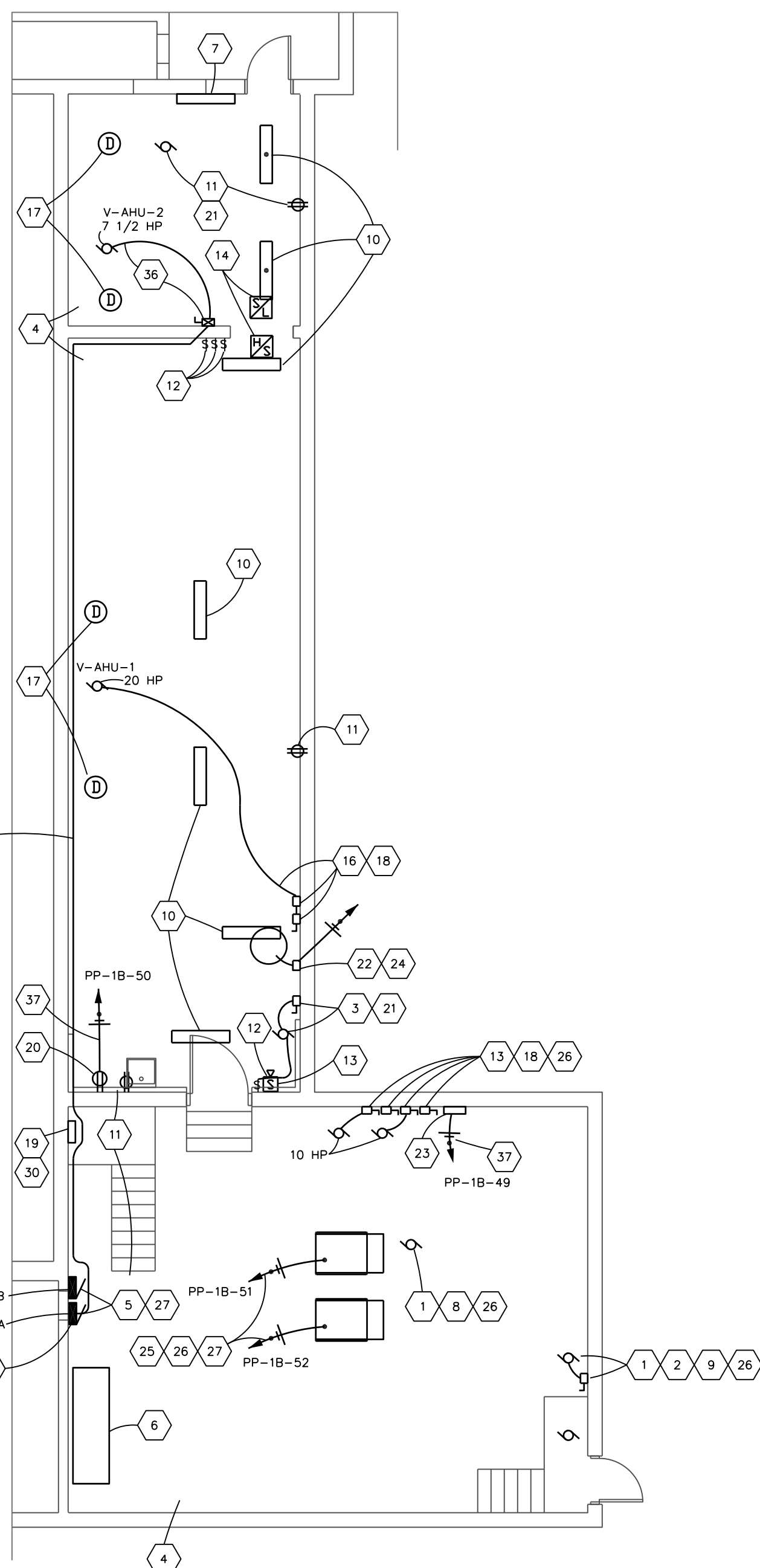
CHARLES
ELECTRICAL PLAN
SCALE: 1/8" = 1'-0"

ELECTRICAL ABBREVIATIONS

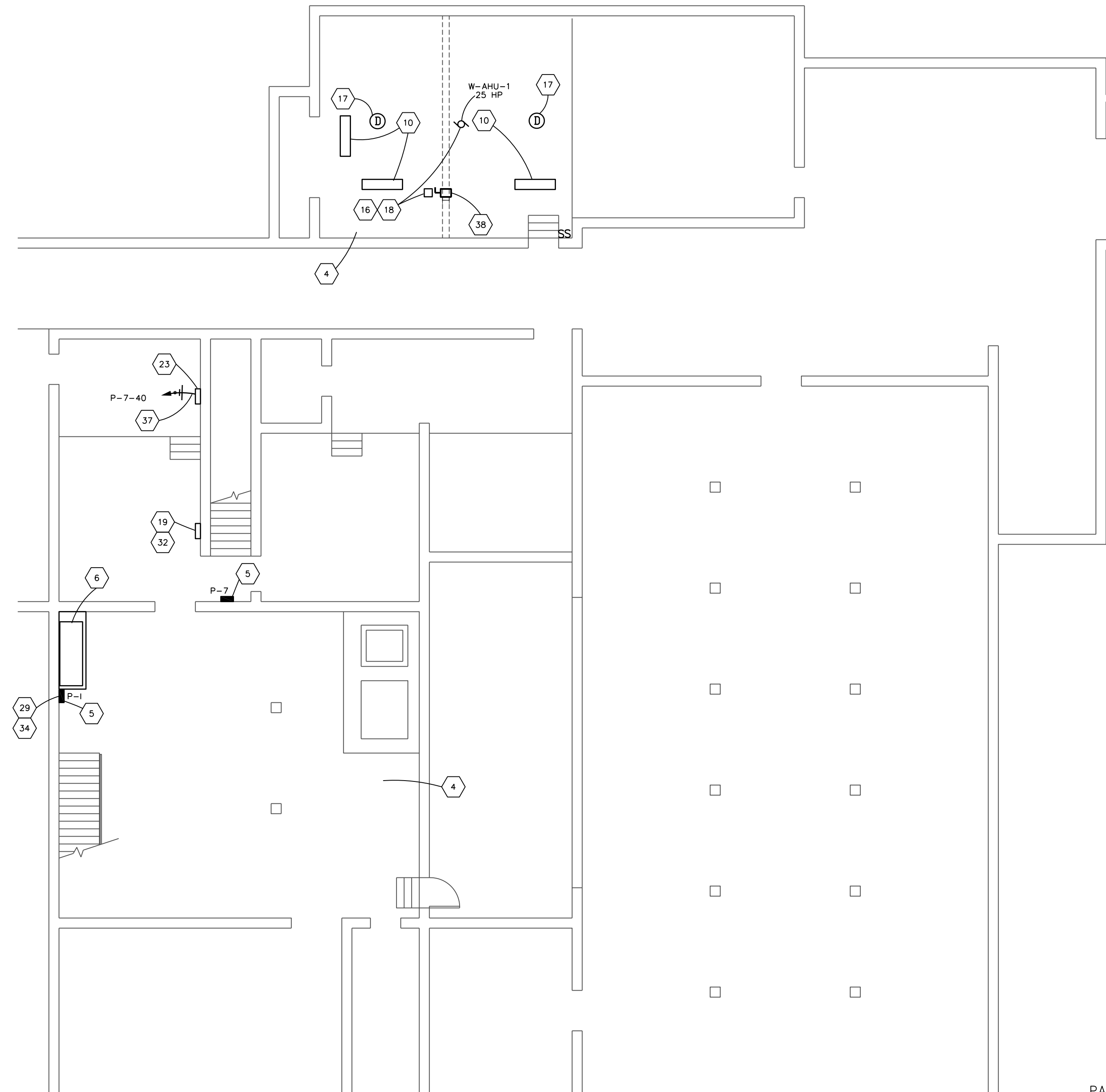
- A/E ----- ARCHITECT/ENGINEER.
- NEC ----- NATIONAL ELECTRIC CODE.
- F.A.C.P. ----- FIRE ALARM CONTROL PANEL.
- EM ----- EMERGENCY.
- EF ----- EXHAUST FAN.
- UH ----- UNIT HEATER.
- W.P. ----- WEATHER PROOF.
- A.F.F. ----- ABOVE FINISH FLOOR.
- GFCI ----- GROUND FAULT CIRCUIT INTERRUPTER.
- C/T ----- CURRENT TRANSFORMER.
- HP ----- HORSE POWER.

ELECTRICAL PLAN KEYNOTES

1. REMOVE ALL CONDUCTORS AND NON-EMBEDDED RACEWAYS CONNECTED TO EQUIPMENT TO BE REMOVED.
2. REMOVE, DISCONNECT OR CONTROLLER.
3. DISCONNECT OR CONTROLLER AND FEEDER TO REMAIN.
4. ALL EXISTING ELECTRICAL DEVICES, FIXTURES, EQUIPMENT, AND WIRING IN THIS ROOM SHALL REMAIN UNLESS NOTED OTHERWISE.
5. EXISTING PANELBOARD TO REMAIN, 208Y/120 VOLTS, 3 PHASE, 4 WIRE.
6. EXISTING SERVICE SWITCHBOARD TO REMAIN, 208Y/120 VOLTS, 2,000 AMPS, 3 PHASE, 4 WIRE.
7. EXISTING SPICE/PULL BOX TO REMAIN.
8. EXISTING BOILER TO BE REMOVED.
9. EXISTING OIL PUMP TO BE REMOVED.
10. EXISTING LIGHTING FIXTURE TO REMAIN.
11. EXISTING RECEPTACLE TO REMAIN.
12. EXISTING SWITCH TO REMAIN.
13. EXISTING SPEAKER TO REMAIN.
14. EXISTING FIRE ALARM NOTIFICATION DEVICE TO REMAIN.
15. PROVIDE ELECTRICAL CONNECTION TO EXISTING PUMP TO REMAIN.
16. PROVIDE ELECTRICAL CONNECTION TO AIR HANDLING UNIT TO BE REPLACED.
17. REPLACE EXISTING DUCT MOUNTED SMOKE DETECTOR WITH NEW DETECTOR MEETING ALL COMPATIBILITY REQUIREMENTS OF THE EXISTING FIRE ALARM SYSTEM MANUFACTURER, IN RACEWAY. EXTEND LOW VOLTAGE WIRING IN ACCORDANCE WITH FIRE ALARM MANUFACTURERS RECOMMENDATIONS.
18. REPLACE EXISTING VARIABLE FREQUENCY DRIVE AND DRIVE DISCONNECT WITH NEW, HORSEPOWER AS INDICATED, 208 VOLTS, 3 PHASE. CONNECT POWER WIRING TO THE VFD DISCONNECT SWITCH. PROVIDE WIRING FROM THE DISCONNECT SWITCH TO THE VFD AND FROM THE VFD TO THE EQUIPMENT CONNECTION. RECONNECT EXISTING CONTROL SIGNAL WIRING. TURN IN EXISTING DRIVE TO OWNER FOR SALVAGE.
19. EXISTING FIRE ALARM CONTROL PANEL TO REMAIN.
20. PROVIDE DUPLEX RECEPTACLE MOUNTED WITH TOP 48 INCHES ABOVE FLOOR FOR NEW DEHUMIDIFIER.
21. EXISTING POWER SOURCE FOR EXISTING SEWAGE OR SUMP PUMP SEWAGE PUMP CONTROLLER.
22. PROVIDE WIRING FROM SUMP PUMP CONTROLLER AUXILIARY ALARM CONTACT TO BAS SYSTEM TO REPORT HIGH WATER ALARM CONDITION.
23. PROVIDE POWER WIRING TO NEW BAS CONTROL PANEL.
24. PROVIDE POWER WIRING TO SUMP PUMP CONTROLLER.
25. PROVIDE POWER WIRING TO BOILER.
26. REFER TO ALTERNATES.
27. CUTLER HAMMER MODEL PRL2A, 400 AMPS.
28. CUTLER HAMMER MODEL PRL1A, 225 AMPS.
29. SIEMENS MODEL 53C42ML400FTS, 400 AMPS.
30. EDWARDS MODEL 10.
31. EDWARDS MODEL EST-2.
32. PYROTRONICS MODEL MXL-10.
33. REPLACE CIRCUIT 19-21-23 EXISTING 30 AMP CIRCUIT BREAKER SERVING V-AHU-2 WITH A NEW 50 AMP CIRCUIT BREAKER.
34. REPLACE CIRCUIT 1-3-5 EXISTING 100 AMP CIRCUIT BREAKER SERVING V-AHU-2 WITH A NEW 125 AMP CIRCUIT BREAKER.
35. REMOVE THE EXISTING POWER CIRCUIT CONDUCTORS SERVING V-AHU-2 FROM THEIR CONDUIT AND PULL THREE NEW NUMBER 6 AWG THHN/THWN COPPER CONDUCTORS PLUS ONE NUMBER 10 AWG COPPER GROUNDING CONDUCTOR THROUGH THE CONDUIT AND TERMINATE TO THE NEW CIRCUIT BREAKER IN PANEL PP-1A AND TO THE NEW COMBINATION CONTROLLER.
36. PROVIDE NEW 60 AMP RATED COMBINATION CONTROLLER FOR V-AHU-2. THE CONTROLLER SHALL HAVE ALL FEATURES NECESSARY TO ENABLE THE BAS SYSTEM TO PERFORM ALL OF ITS SPECIFIED FUNCTIONS. COORDINATE WITH THE BAS SYSTEM MANUFACTURER TO DETERMINE ALL REQUIRED FEATURES.
37. PROVIDE BRANCH CIRCUIT TO PANELBOARD INDICATED AND PROVIDE A 20 AMP SINGLE POLE CIRCUIT BREAKER IN THE PANELBOARD TO POWER THIS CIRCUIT.
38. CONVERT THIS DISCONNECT SWITCH TO A JUNCTION BOX. REMOVE ALL INTERNAL COMPONENTS EXCEPT FOR WIRING. EXTEND AND SPICE ALL CONDUCTORS AS NECESSARY FOR ALL IN SERVICE ELECTRICAL CIRCUITS TO REMAIN ACTIVE. REMOVE ANY LOW VOLTAGE WIRING FROM WITHIN THE BOX AND PROVIDE SEPARATE EXTERNAL JUNCTION BOXES AS NECESSARY FOR EXTENDING AND TERMINATING ALL LOW VOLTAGE WIRING TO REMAIN IN SERVICE.



VAILE
ELECTRICAL PLAN
SCALE: 1/8" = 1'-0"



WESTVIEW
ELECTRICAL PLAN
SCALE: 1/8" = 1'-0"

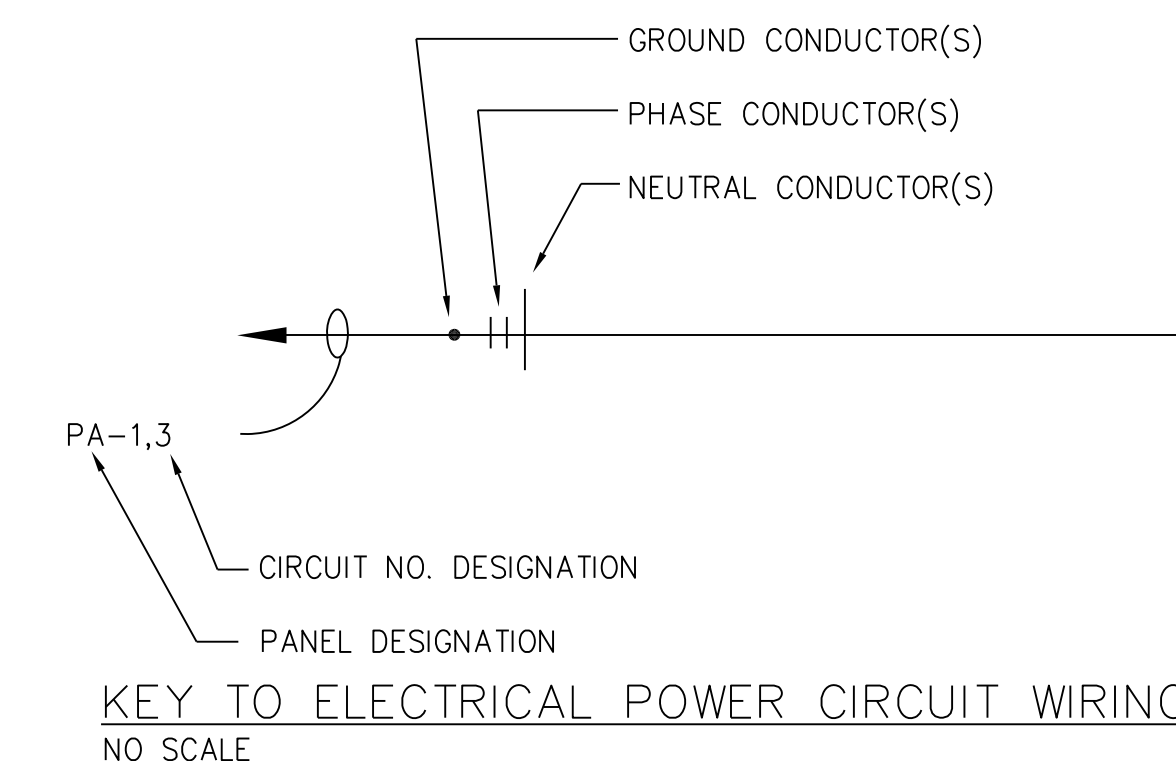
ELECTRICAL LEGEND

- 120 VOLT, 20 AMP DUPLEX RECEPTACLE. MOUNT 48" ABOVE FLOOR EXCEPT WHERE OTHERWISE INDICATED.
- ELECTRIC MOTOR PROVIDED WITH EQUIPMENT
- PROVIDE WALL MOUNTED ENCLOSED DEAD FRONT FUSED SWITCH, WEATHERPROOF IF EXTERIOR. ELECTRICAL RATINGS AND MOUNTING HEIGHT SHALL MEET NEC REQUIREMENTS.
- GFCI
GROUND FAULT CIRCUIT INTERRUPTER DEVICE.
- SURFACE MOUNTED ELECTRICAL PANELBOARD MOUNTED WITH UPPERMOST SWITCH 5'-6" ABOVE FLOOR.
- NATIONAL ELECTRICAL CODE.
- DUCT SMOKE DETECTOR.

GENERAL ELECTRICAL NOTES

1. REFER TO THE SUMMARY TECHNICAL SPECIFICATION SECTION IN THE PROJECT MANUAL FOR REQUIREMENTS AND LIMITATIONS THAT APPLY TO SCHEDULING OF VARIOUS PORTIONS OF THE WORK.
2. ALL ITEMS SHOWN ON DEMOLITION PLANS ARE EXISTING AND SHALL REMAIN IN PLACE UNLESS OTHERWISE INDICATED. DO NOT DAMAGE ITEMS TO REMAIN.
3. MINIMUM ACCEPTABLE CONDUCTOR SIZES PROTECTED BY PANELBOARD CIRCUIT BREAKERS OR FUSES SHALL BE AS FOLLOWS:

BREAKER TRIP AMPS	CONDUCTOR SIZE, AWG
15	#12
20	#12
30	#10
40	#8
50	#6
60	#4
75	#3
90	#2
4. PROVIDE LARGER CONDUCTORS WHERE INDICATED.
5. ALL SINGLE POLE CIRCUITS SHALL HAVE ALL NEUTRAL CONDUCTORS COUNTED AS CURRENT CARRYING CONDUCTORS.
6. ALL COMMUNICATIONS AND SIGNAL SYSTEMS WIRING OPERATING AT LESS THAN 30 VOLTS SHALL BE INSTALLED IN RACEWAYS AS SPECIFIED FOR ELECTRICAL WIRING.
7. IN PANELBOARD WHERE CONNECTIONS ARE ADDED OR DELETED, PROVIDE A NEW, ACCURATE, TYPED PANELBOARD DIRECTORY AT COMPLETION OF CONSTRUCTION. PERMANENTLY MARK THE BACK OF ALL NEW RECEPTACLE COVER PLATES TO INDICATE THE POWER SOURCE PANELBOARD AND CIRCUIT BREAKER NUMBER.
8. WHERE NEW CIRCUIT BREAKERS ARE INSTALLED IN EXISTING PANELBOARDS, THE CIRCUIT BREAKERS SHALL BE UL LISTED FOR INSTALLATION IN THE PANELBOARD BRAND AND MODEL IN WHICH THEY ARE INSTALLED.
9. DUCT DETECTORS SHALL BE INTELLIGENT/ADDRESSABLE DETECTORS AND EACH DETECTOR SHALL HAVE ONE INTELLIGENT/ADDRESSABLE FAN SHUTDOWN RELAY MODULE. DETECTORS AND MODULES SHALL BE FULLY COMPATIBLE WITH THE EXISTING FIRE ALARM SYSTEM AND SHALL HAVE CABLING PROVIDED TO AND CONNECTED TO THE NEAREST EXISTING ADDRESSABLE LOOP. WITHIN 100 FEET OF THE DETECTOR. CABLING AND TERMINATIONS SHALL MEET THE REQUIREMENTS OF THE EXISTING FIRE ALARM SYSTEM MANUFACTURER. ALL DETECTORS, MODULES, CABLING, AND TERMINATIONS SHALL BE COORDINATED WITH NEW ERA TECHNOLOGY, 8940 VINCENTS CIRCLE, INDIANAPOLIS, INDIANA 46288, JIM MCCUTCHEAN, CELL PHONE 317-765-2754, EMAIL JIM.MCCUTCHEAN@NEWERATECH.COM.

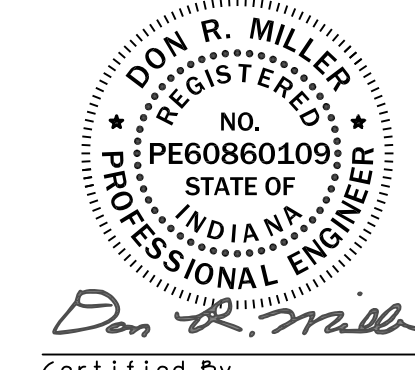


KEY TO ELECTRICAL POWER CIRCUIT WIRING
NO SCALE

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VAILE, CHARLES,
WESTVIEW
ELECTRICAL
PLANS

drawing
E.I.
of