



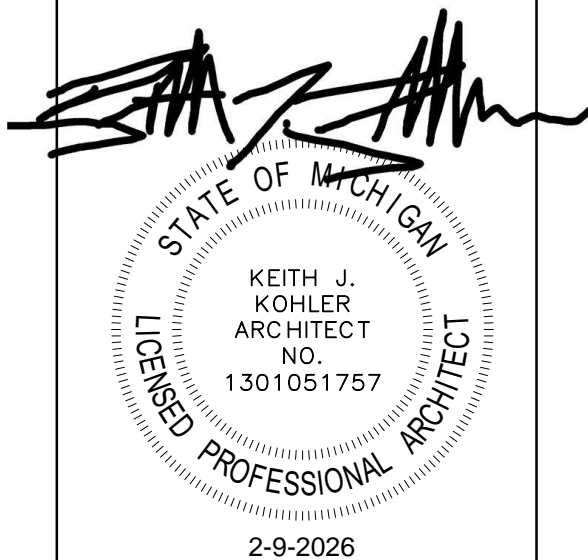
# BOILER REPLACEMENT & RELATED WORK AT ORCHARD CENTER HIGH SCHOOL

1750 OAK STREET, MONROE, MICHIGAN 48161



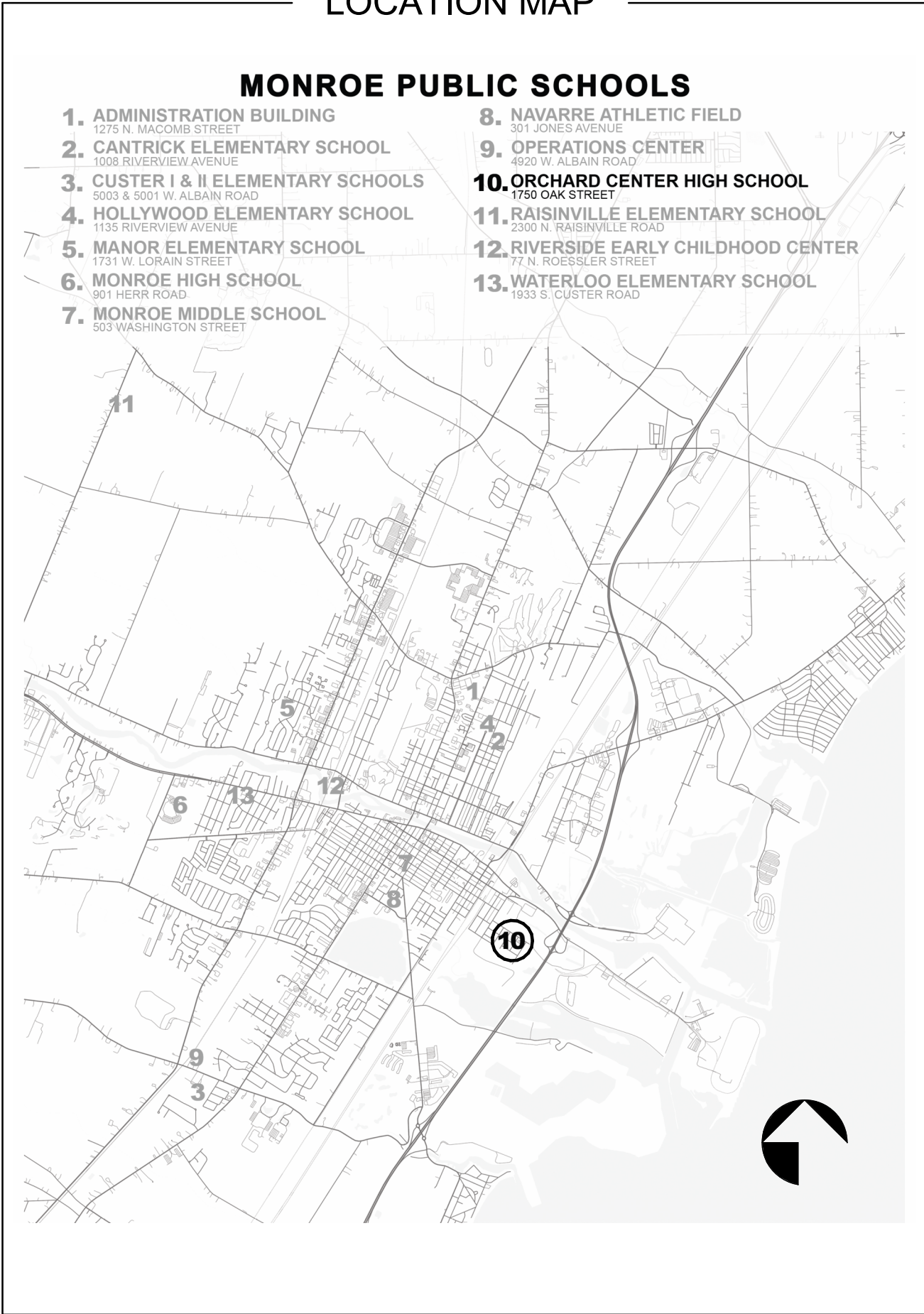
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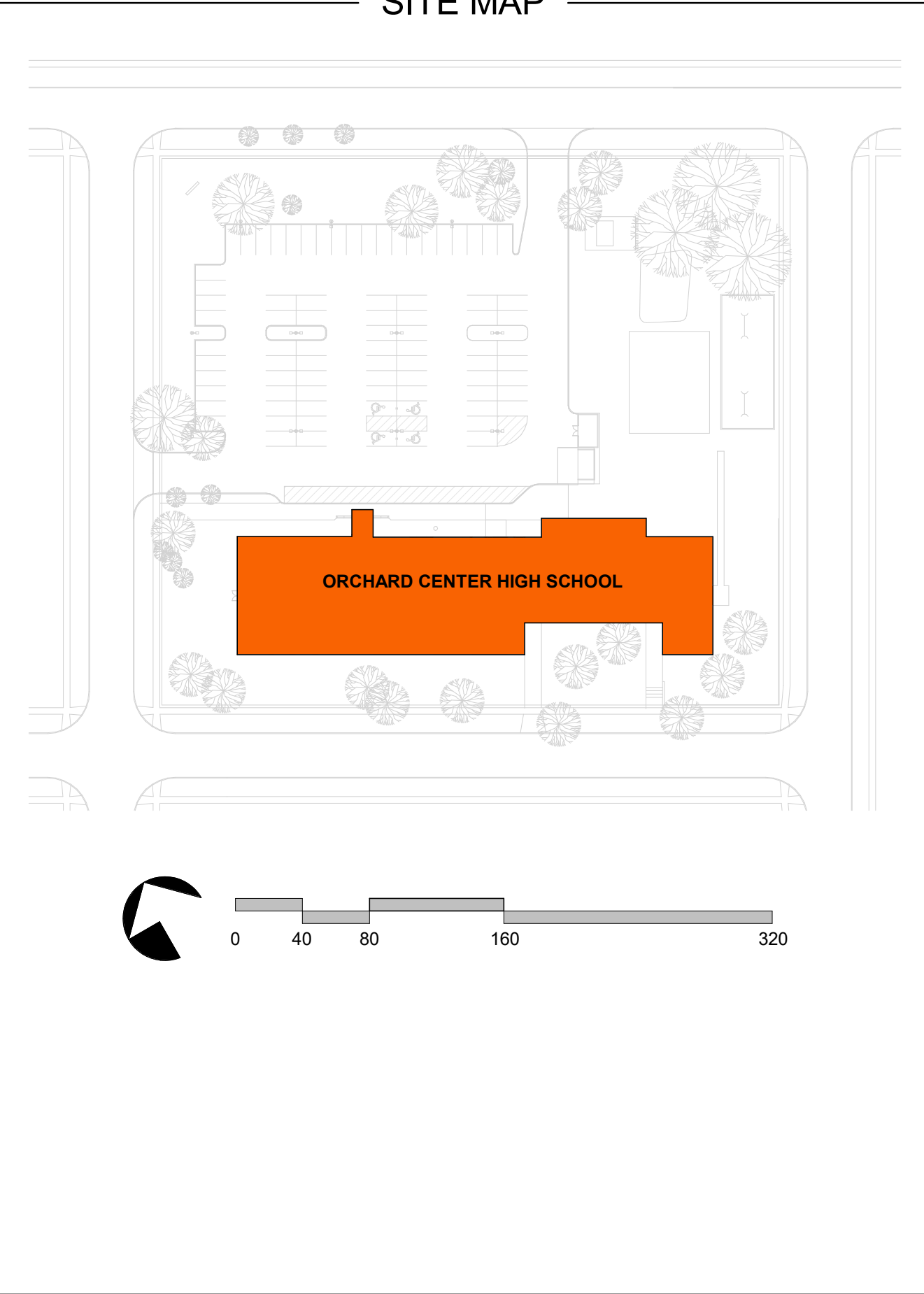


DATE	DESCRIPTION
02.09.2026	BIDDING & STATE REVIEW

## LOCATION MAP



## SITE MAP



## PROJECT DIRECTORY

**OWNER:**  
MONROE PUBLIC SCHOOLS  
1275 N. MACOMB STREET  
MONROE, MICHIGAN 48162

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## PROJECT DESCRIPTION

### PROJECT NARRATIVE:

WORK INCLUDES BUT IS NOT LIMITED TO THE INSTALLATION OF NEW BOILERS. MINOR MECHANICAL, ELECTRICAL AND PLUMBING MODIFICATIONS TO BE COMPLETED TO TIE NEW BOILERS INTO EXISTING SYSTEM. CONCRETE SLAB WORK, WALLS AND FLOOR PATCHING, PAINTING, DOOR AND FRAME RECONFIGURATION, DOOR HARDWARE UPDATES, LIGHTING UPDATES, ROOFING, AND OTHER RELATED ITEMS WILL BE PART OF THIS WORK.

### ALTERNATE #1:

INCLUDES BUT IS NOT LIMITED TO THE WORK ASSOCIATED WITH THE INSTALLATION OF GAS FIRED DOMESTIC WATER HEATER.

## DRAWING INDEX

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**BOILER REPLACEMENT & RELATED WORK**

**ORCHARD CENTER HIGH SCHOOL**

1750 OAK STREET, MONROE, MICHIGAN 48161

**MONROE PUBLIC SCHOOLS**

1275 NORTH MACOMB STREET, MONROE, MICHIGAN 48162

AT

FOR

JOB # 26102

TITLE SHEET

T0.00



ABBREVIATIONS

"	INCHES	GFI	GROUND FAULT INTERRUPTED	RTU	ROOF TOP UNIT
#	POUND/NUMBER	GL	GLASS	S	SOUTH
%	PERCENT	GYP.	GYPSUM BOARD	S.F.	STOREFRONT
&	AND	BD.		SAN.	SANITARY
'	FEET	HB	HOSE BIBB	SCHED	SHCEDEUED
/	PER	HC	HANDICAP ACCESSIBLE	SD	STORM DRAIN / SMOKE DETECTOR
<	ANGLE	HDW	HARDWARE	SECT.	SECTION
@	AT	HDWD	HARDWOOD	SGT	STRUCTURAL GLAZED TILE
©	COPYRIGHT	HM	HOLLOW METAL	SHT	SHEET
°	DEGREE	HORIZ	HORIZONTAL	SHWR	SHOWER
±	PLUS/MINUS	HR	HOUR	SIM.	SIMILAR
∅	DIAMETER	HSS	HOLLOW STEEL SECTION	SP.	SPACES
		HT	HEIGHT	SPEC	SPECIFICATION
A.C.	AIR CONDITIONING	HVAC	HEATING / VENTILATING / AIR CONDITIONING	SQ.	SQUARE
ACT	ACOUSTICAL CEILING TILE			SS	STAINLESS STEEL
ADD	ADDITIONAL / ADDENDUM			STD	STANDARD
ADJ	ADJACENT			STL	STEEL
AFF	ABOVE FINISHED FLOOR			STO.	STORAGE
AHU	AIR HANDLING UNIT			STRUC	STRUCTURAL
ALT	ALTERNATE			SUSP.	SUSPENDED
ALUM	ALUMINUM			SYM.	SYMMETRICAL
ANOD	ANODIZED				
APPRO	APPROXIMATE				
X		JAN	JANITOR	T.	TOILET
ARCH	ARCHITECTURAL	JST.	JOIST	T.G	TEMPERED GLASS
AUTO	AUTOMATIC	JT	JOINT	T.O.	TOP OF
				T.O.C.	TOP OF CONCRETE
B.O.	BOTTOM OF			T.S.	TUBE STEEL
B.PL.	BASE PLATE	k	KIP (1000 lbs)	T.V.	TELEVISION
BD	BOARD	K.D	KNOCK DOWN	TECH	TECHNICAL
BLDG	BUILDING	KIT	KITCHEN	TELE	TELEPHONE
BLK	BLOCK	KW	KILOWATT	TEMP	TEMPERATURE
BLKG	BLOCKING			THRU	THROUGH
BOT	BOTTOM			TRANS	TRANSITION
BTW	BETWEEN			TYP.	TYPICAL
				U.N.O.	UNLESS NOTED OTHERWISE
C.G	CORNER GUARD			UL	UNDERWRITERS LABORATORIES, INC.
C.I.	CAST IRON			UNF	UNFINISHED
C.I.P.	CAST-IN-PLACE			UR	URINAL
C.J.	CONTROL JOINT				
C.L.	CENTERLINE				
C.O.	CLEAN OUT				
CL	CLOSET				
CLG	CEILING				
CLKG	CAULKING				
CLR	CLEAR				
CLRM	CLASSROOM				
CMU	CONCRETE MASONRY UNIT				
COL	COLUMN				
CONC	CONCRETE				
COORD	COORDINATE				
CORR	CORRIDOR				
CPT	CARPET				
CT	CERAMIC TILE				
D.F.	DRINKING FOUNTAIN				
D.L.	DEAD LOAD				
D.O.	DOOR OPENING				
DEG	DEGREE				
DEPT	DEPARTMENT				
DIA	DIAMETER				
DIM	DIMENSION				
DIV	DIVISION				
DN	DOWN				
DR	DOOR				
DS	DOWNSPOUT				
DTL	DETAIL				
DWG	DRAWING				
E	EAST				
E.J.	EXPANSION JOINT				
E.S.	EACH SIDE				
EA.	EACH				
EIFS	EXTERIOR INSULATION AND FINISH SYSTEM				
EL.	ELEVATION				
ELEC	ELECTRICAL				
ELEV.	ELEVATOR				
EPDM	ETHYLENE PROPYLENE DIENE MONOMER				
EQ	EQUAL				
EQUIP	EQUIPMENT				
EXIST	EXISTING				
EXP	EXPANSION				
EXT	EXTERIOR				
F.A.	FIRE ALARM				
F.D.	FLOOR DRIAN				
F.E.	FIRE EXTINGUISHER				
F.E.C.	FIRE EXTINGUISHER CABINET				
F.HYD.	FIRE HYDRANT				
F.O.	FACE OF				
F.R	FIRE RATED				
F.R.P.	FIBER-REINFORCED PLASTIC				
F.R.T.	FIRE RETARDANT TREATED				
FDC	FIRE DEPARMENT CONNECTION				
FF	FINISH FLOOR				
FIN.	FINISH				
FIXT	FIXTURE				
FLASH	FLASHING				
FLR	FLOORING				
FRMG	FRAMING				
FT	FOOT / FEET				
FTG	FOOTING				
FURR	FURRING				
G	GAS				
G.B.	GRADE BEAM				
G.C.	GENERAL CONTRACTOR				
G.R.	GUARDRAIL				
GA	GAUGE				
GALV	GALVENIZED				
GB	GRAB BAR				
GEN	GENERATOR				

SYMBOLS LEGEND

**BUILDING SECTION CUT**

DETAIL NUMBER

SHEET SECTION IS SHOWN ON

**WALL SECTION CUT**

DETAIL NUMBER

SHEET SECTION IS SHOWN ON

**DETAIL SECTION CUT**

DETAIL NUMBER

SHEET SECTION IS SHOWN ON

**EXTERIOR ELEVATIONS**

DETAIL NUMBER

SHEET ELEVATION IS SHOWN ON

**INTERIOR ELEVATIONS**

DETAIL NUMBER

SHEET ELEVATION IS SHOWN ON

**REVISIONS**

REVISION TAG & BUBBLE

**ENLARGED PLAN/DETAIL**

DETAIL NUMBER

BOARDER OF ENLARGED AREA

SHEET SECTION IS SHOWN ON

**DRAWING TAGS**

101	DOOR TAG
11	WINDOW TAG
11	WALL TAG
X	SITE KEYNOTE
X	CONSTRUCTION KEYNOTE
X	DEMOLITION KEYNOTE
X	CEILING KEYNOTE
X	ROOF KEYNOTE
SLOPE RATIO	SLOPE TAG
TRUE NORTH ARROW	
ROOM NAME 101	TYP. ROOM TAG W/ NUMBER

GENERAL NOTES

- ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH APPLICABLE SECTIONS OF THE FEDERAL, STATE AND LOCAL BUILDING CODES, ZONING ORDINANCE, HEALTH AND FIRE REGULATIONS AS ADOPTED BY THE LOCAL GOVERNING BUILDING AUTHORITY.
- CONTRACTOR SHALL OBTAIN AND PAY FOR ALL NECESSARY BUILDING PERMITS FROM ALL GOVERNING AGENCIES INCLUDING THE CITY / TOWNSHIP AND SUBMIT FOR THEIR USE ANY CERTIFICATES OF INSURANCE, BONDS, ESCROW ACCOUNTS, LICENSES, PAY ALL FEES, OBTAIN ALL APPROVALS, ETC. ALL AS MAY BE REQUIRED TO COMPLETE THIS PROJECT
- CONTRACTOR SHALL RETAIN THE SERVICES OF AN APPROVED THIRD PARTY AGENCY TO PERFORM ALL SPECIAL INSPECTIONS AND TESTING AS REQUIRED BY THE LOCAL GOVERNING BUILDING CODE, GOVERNING BUILDING AUTHORITY, OR AS CALLED OUT IN THESE CONSTRUCTION DOCUMENTS. NOTIFY OWNER / ARCHITECT, IMMEDIATELY, OF ANY FAILED TESTS OR INSPECTIONS AND PROVIDE OWNER WITH ALL WRITTEN REPORTS AND TEST RESULTS AT PROJECT COMPLETION.
- CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS BEFORE PROCEEDING WITH THE WORK. IF ANY DIFFERENCES ARE FOUND, THE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY, IN WRITING FOR CLARIFICATION PRIOR TO PROCESSING WITH WORK.
- THESE DOCUMENTS ARE DEVELOPED TO PROVIDE THE CONTRACTOR WITH A WORKING KNOWLEDGE OF THE SYSTEMS AND MATERIALS TO BE INSTALLED, AND THE SCOPE OF WORK, WHERE THESE DOCUMENTS ARE IN CONFLICT WITH THE JOB CONDITIONS, OR STANDARD DETAILS OR SPECIFICATIONS OF THE MANUFACTURED COMPONENT, OR AFFECT THE GUARANTEE, THEY SHALL BE MODIFIED AS REQUIRED BY THE CONTRACTOR AND APPROVED BY THE ARCHITECT.
- PROVIDE AND MAINTAIN SUITABLE TEMPORARY FENCES, BARRICADES, LIGHTS, WARNINGS, ETC., FOR PROTECTION OF PUBLIC AND OTHERS HAVING ACCESS TO THE SITE. CONTRACTOR SHALL KEEP CLEAN AND ADEQUATELY PROTECT ALL STREETS, DRIVES, WALKS, BLDGS, ETC., FROM DAMAGE DUE TO ANY ITEM INVOLVED WITH THIS WORK. ANY DAMAGED WORK SHALL BE REPLACED / REPAIRED AT CONTRACTORS EXPENSE.
- CONTRACTOR SHALL RELY ON WRITTEN DIMENSIONS (DO NOT SCALE DRAWINGS), WHERE NONE ARE PRESENT OR IN CONFLICT WITH WRITTEN, FIELD MEASURE AND/OR OR NOTIFY ARCHITECT FOR CLARIFICATION.
- SHOULD THE CONTRACT DOCUMENTS DISAGREE (DRAWINGS AND SPECIFICATIONS), THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT FOR CLARIFICATION BEFORE PROCEEDING. THE BETTER QUALITY OR LARGER QUANTITY OF WORK SHALL BE INCLUDED IN THE BID AND UNLESS OTHERWISE ORDERED IN WRITING, SHALL BE FURNISHED BY THE CONTRACTOR.
- THE CONTRACTOR SHALL EXAMINE ALL DRAWINGS, SPECIFICATIONS AND ALL OTHER DATA OR INSTRUCTIONS PERTAINING TO THE WORK. BEFORE COMMENCING PHYSICAL WORK, THE CONTRACTOR SHALL LOCATE ALL GENERAL REFERENCE POINTS AND TAKE SUCH ACTION AS IS NECESSARY TO PREVENT THEIR DESTRUCTION; LAY OUT HIS WORK AND BE RESPONSIBLE FOR ALL LINES, ELEVATIONS AND MEASUREMENTS OF BUILDINGS, GRADING, PAVING, UTILITIES AND OTHER WORK EXECUTED BY HIM UNDER THE CONTRACT. HE MUST EXERCISE PROPER PRECAUTIONS TO VERIFY FIGURES SHOWN ON DRAWINGS BEFORE LAYING OUT WORK.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, HIS SUB-CONTRACTOR AND/OR SUPPLIER TO WORK FROM A FULL SET OF CONTRACT DOCUMENTS FOR BOTH THE WORK TO BE COMPLETED AND IN PREPARATION OF THE SHOP DRAWINGS, SO THAT EACH PART OR COMPONENT WILL WORK WITH THOSE PARTS AS FURNISHED OR FABRICATED BY OTHERS, AND THE ASSEMBLED WHOLE WORKS TOGETHER AS INTENDED.
- MATERIALS - SHALL BE NEW. SECONDS OR DAMAGED MATERIALS WILL BE REJECTED BY THE ARCHITECT, WHO RESERVES THE RIGHT TO DISAPPROVE AND REJECT ANY MATERIALS PROPOSED OR INSTALLED, WHICH IN HIS OPINION FAIL TO MEET QUALITY STANDARDS SPECIFIED.
- THE ARCHITECT SHALL HAVE NO RESPONSIBILITY FOR THE DISCOVERY, PRESENCE, HANDLING, REMOVAL OR DISPOSAL OF, OR EXPOSURE OF PERSONS TO ASBESTOS AND HAZARDOUS MATERIALS IN ANY FORM FOR THE PROJECT.
- AS-BUILTS - THE CONTRACTOR SHALL KEEP AN ACCURATE RECORD OF ALL DEVIATIONS FROM THE CONTRACT DRAWINGS AND SPECIFICATIONS. HE SHALL NEATLY AND CORRECTLY DRAFT (NO FREEHAND) ANY DEVIATIONS ON THE DRAWINGS AFFECTED AND SHALL KEEP DRAWINGS AVAILABLE FOR INSPECTION. GIVE TO THE ARCHITECT AT COMPLETION.
- CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE VARIOUS TRADE ITEMS WITHIN THE SPACE ABOVE ALL CEILINGS (INCLUDING, BUT NOT LIMITED TO: STRUCTURAL MEMBERS, MECHANICAL DUCTS AND INSULATION, CONDUITS, RACEWAYS, SPRINKLER SYSTEM, LIGHT FIXTURES, CEILING SYSTEM, AND ANY SPECIAL STRUCTURAL SUPPORTS REQUIRED) AND SHALL BE RESPONSIBLE FOR MAINTAINING THE FINISH CEILING HEIGHT ABOVE THE FINISHED FLOOR INDICATED IN THE DRAWINGS AND THE FINISH SCHEDULE. (CEILING HEIGHT DIMENSIONS ARE TO THE FINISH SURFACE OF THE CEILING).
- IN AREAS OF NEW WORK, ACCESS PANELS SHALL BE PROVIDED AND INSTALLED WHEREVER REQUIRED BY CODE OR FOR THE PROPER OPERATION OR MAINTENANCE OF MECHANICAL OR ELECTRICAL EQUIPMENT (I.E. TERMINAL BOXES, VALVES, DAMPERS, ETC.), WHETHER OR NOT INDICATED ON THE DRAWINGS. CONTRACTOR SHALL COORDINATE SIZE, LOCATION, AND TYPE OF ACCESS PANEL WITH OTHER CONTRACTORS WORK AND RECEIVE APPROVAL OF THE ARCHITECT. ACCESS PANEL SHALL NOT BE LOCATED, FRAMED OR INSTALLED WITHOUT EXPRESSED APPROVAL OF THE ARCHITECT.
- ALL DUCT PENETRATION THROUGH PARTITIONS AND CEILINGS SHALL BE PROVIDED WITH NECESSARY FRAMED OPENINGS, BRACING, AND FIRE DAMPERS AS REQUIRED BY CODE.
- THE ARCHITECT SHALL BE CONSULTED IN ALL CASES WHERE CUTTING INTO AN EXISTING STRUCTURAL PORTION OF ANY BUILDING PRIOR TO PROCEEDING WITH WORK.
- SIZE OF MECHANICAL AND ELECTRICAL EQUIPMENT PADS AND BASES ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY DIMENSIONS WITH RESPECTIVE EQUIPMENT MANUFACTURER.



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DATE	DESCRIPTION
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**BOILER REPLACEMENT & RELATED WORK**

**ORCHARD CENTER HIGH SCHOOL**

1750 OAK STREET, MONROE, MICHIGAN 48161

**MONROE PUBLIC SCHOOLS**

1275 NORTH MACOMB STREET, MONROE, MICHIGAN 48162

AT

FOR

JOB # 26102

ABBREVIATIONS,  
LEGENDS, SYMBOLS

T1.00



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**CODE COMPLIANCE PLAN**  
SCALE: 1" = 10'-0"

## ORCHARD CENTER HIGH SCHOOL

1750 Oak Street, Monroe, MI

### BUILDING CODE REVIEW

PROJECT DESCRIPTION	EXISTING SCHOOL BUILDING - BOILER REPLACEMENT & RELATED WORK		
BUILDING CODE:	2021 MICHIGAN BUILDING CODE 2021 MICHIGAN REHABILITATION CODE 2021 MICHIGAN MECHANICAL CODE 2021 MICHIGAN PLUMBING CODE 2021 MICHIGAN ENERGY CODE 2023 NATIONAL ELECTRICAL CODE (NEC) 2012 NFPA 101 LIFE SAFETY CODE 2016 SCHOOL FIRE SAFETY RULES 1991 / 2010 ADA STANDARDS		
BUILDING AREA:	EXISTING BUILDING (GROSS)	= 18,917 S.F.	
BUILDING OCCUPANCY TYPE:	(SEC. 305.1)	<b>EDUCATIONAL GROUP E</b>	
CONSTRUCTION TYPE:	(SEC. 602.5, TABLE 601)	<b>TYPE IIB NS</b>	Note: type (V-ht @ Multi-Purpose Room)
ALLOWABLE AREA:	(TABLE 506.2)	12,000 S.F.	
INCREASE ALLOWABLE:	(SEC. 506.2.1)	N.R.	
ALLOWABLE HEIGHTS:	(TABLE 504.3)	55'	
ALLOWABLE NUMBER OF STORIES:	(TABLE 504.4)	2	
HEIGHT MODIFICATION:	(SEC. 504.3)	N.A.	
FIRE RESISTIVE CONSTRUCTION:			
STRUCTURAL FRAMING:	(TABLE 601)	0	
BEARING WALLS:			
EXTERIOR:	(TABLE 601.602)	0	(NFPA 101, TABLE A.8.2.1.2) 0
INTERIOR:	(TABLE 601)	0	(NFPA 101, TABLE A.8.2.1.2) 0
NON-BEARING WALLS:			
EXTERIOR:	(TABLE 601.602)	1 HR. <=5'	(NFPA 5000, TABLE 7.3.2.1) 1 HR. < 3'
INTERIOR:	(TABLE 601)	0	(NFPA 101, TABLE A.8.2.1.2) 0
FLOOR CONSTRUCTION:	(TABLE 601)	0	(NFPA 101, TABLE A.8.2.1.2) 0
ROOF CONSTRUCTION:	(TABLE 601)	0	(NFPA 101, TABLE A.8.2.1.2) 0
FIRE WALLS:	(SEC. 706, TABLE 706.4)	2 HR. (AREA SEPARATION)	
FIRE BARRIER:			
INT. EXIT STAIR/RAMP:	(SEC. 1023.2)	N/A	
EXIT ACCESS STAIR:	(SEC. 713.4)	N/A	
EXIT PASSAGEWAY:	(SEC. 708)	N/A	
HORIZ. EXIT (REFUGE AREA):	(SEC. 1028.1)	N/A	
ATRIUM:	(SEC. 404.6)	N/A	
INCIDENTAL USES:	(TABLE 509)	N/A	
CONTROL AREA:	(SEC. 414.2.4)	N/A	
SEPARATED OCCUPANCIES:	(SEC. 508.4, TABLE 508.4)	N/A	
FIRE AREAS:	(SEC. 707.3.10)	2 HR.	
EXT. DOORS + WINDOWS:	(TABLE 705.8)	NO LIMIT > 30FT. FIRE SEPARATION	
FIRE PARTITIONS:			
CORRIDOR WALLS:	(SEC. 708, SEC. 1020.1) (NFPA 101, SEC 15.3.6) (SEC. 709.4)	1 HR. W/O SPRINKLER SYSTEM AND > 30 PEOPLE 1/2 HR. W/O SPRINKLER SYSTEMS N/A	
SMOKE BARRIERS:			
OPENING PROTECTIVES:			
CORRIDOR DOORS:	(TABLE 716.5)	20 MIN. IN (1) HR. WALLS	
CORRIDOR OPENINGS:	(TABLE 716.5)	45 MIN.	
DRAFTSTOPPING:	(SEC. 718)	REQUIRED IF COMBUSTIBLE CONSTRUCTION IN FLOOR / CEILING	
FIRE BLOCKING:	(SEC. 718)	REQUIRED IF COMBUSTIBLE CONSTRUCTION IN WALLS	
FIRE SPRINKLERS:	(SEC. 901.7, SEC. 903.2.3)	REQUIRED IF FIRE AREA > 12,000 S.F. (BETWEEN FIRE SEPARATION)	
FIRE ALARMS:	(SEC. 907.2.3)	REQUIRED IN GROUP E OCCUPANCY WITH > 50 OCCUPANTS (NEW BUILDINGS AND STRUCTURES)	
FIRE EXTINGUISHERS:	(SEC. 906)		
PLATFORMS / STAGES:	(SEC. 410.4, 410.7)	EXISTING	

<b>MEANS OF EGRESS:</b>		
EGRESS CAPACITY	NFPA 101, SEC 7.3.1.1.2)	WHERE MORE THAN ONE MEANS OF EGRESS IS REQUIRED, THE MEANS OF EGRESS SHALL BE OF SUCH WIDTH AND CAPACITY THAT THE LOSS OF ANY ONE MEANS OF EGRESS LEAVES AVAILABLE NOT LESS THAN 50% OF THE REQUIRED CAPACITY.
WIDTH OF EGRESS:	(SEC. 1005) (NFPA 101, TABLE 7.3.3.1)	STAIRS = 0.3' / OCCUPANT (W/O SPRINKLERS) OTHER = 0.2' / OCCUPANT (W/O SPRINKLERS)
NUMBER OF EGRESS:	(NFPA 101, SEC 7.4.1.2)	MIN. 3 FOR 500-1000 OCC. LOAD MIN. 4 FOR 1000+ OCC. LOAD
CORRIDOR WIDTH:	(TABLE 1020.2)	44" MIN.; AREAS OF OCCUPANT LOAD < 50 PEOPLE = 36" MIN.; AREAS OF OCCUPANT LOAD > 100 PEOPLE = 72" MIN.
DOORS:	(SEC. 1010) (SEC. 1005.7)	MIN. 34" WIDE EXIT (36" WIDE FOR ADA) DOORS IN ANY POSITION CANNOT REDUCE REQUIRED WIDTH BY MORE THAN 7" MAX. HANDRAIL PROJECTION PER SIDE = 1-1/2"
EXIT ACCESS:	(SEC. 1016)	MAX. 1 INTERVENING SPACE
TRAVEL DISTANCE:	(TABLE 1017.2) (NFPA 101, TABLE A.7.6)	200' MAX. WITHOUT SPRINKLERS
DEAD-END CORRIDORS:	(SEC. 1020.4) (NFPA 101, TABLE A.7.6)	DEAD-END CORRIDORS IN ANY AREA SHALL NOT EXCEED 20 FT.
ELEVATOR/CONVEY SYSTEMS:	(SEC. 1009.2.1) (SEC. 3001.2)	N/A ELEVATORS REQUIRED TO BE ACCESSIBLE OR SERVE ACCESSIBLE MEANS OF EGRESS SHALL COMPLY WITH SEC. 1009 AND 1109.7

FIRE RATED WALLS LEGEND	
	1 HOUR FIRE RATED BARRIER 1 HOUR FIRE RATED PARTITION
	2 HOUR FIRE RATED WALL

NOTE: CONTRACTOR SHALL STENCIL PAINT FIRE WALLS ABOVE ACCESSIBLE CEILINGS PER IBC 703.7

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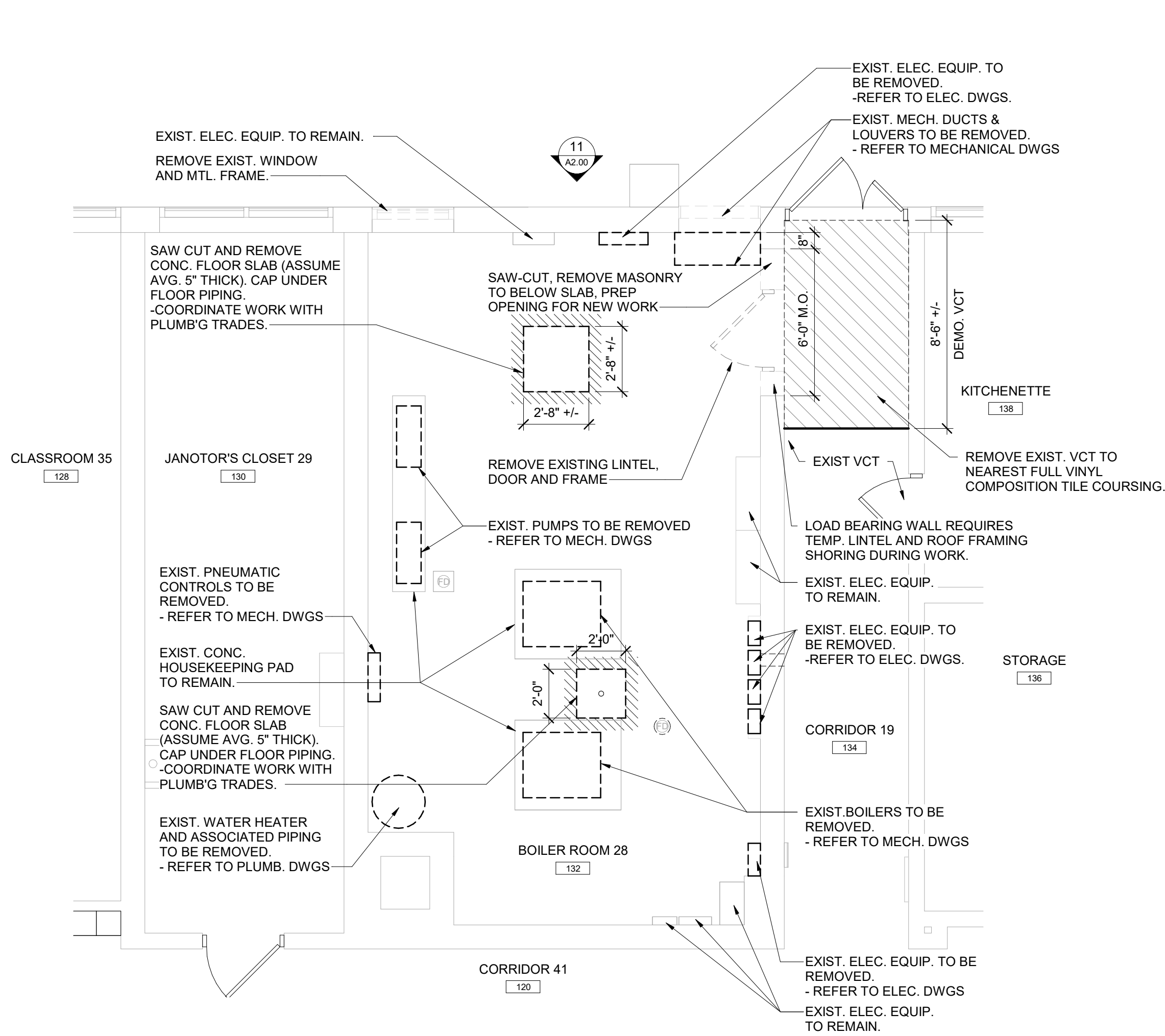
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JOB # 26102

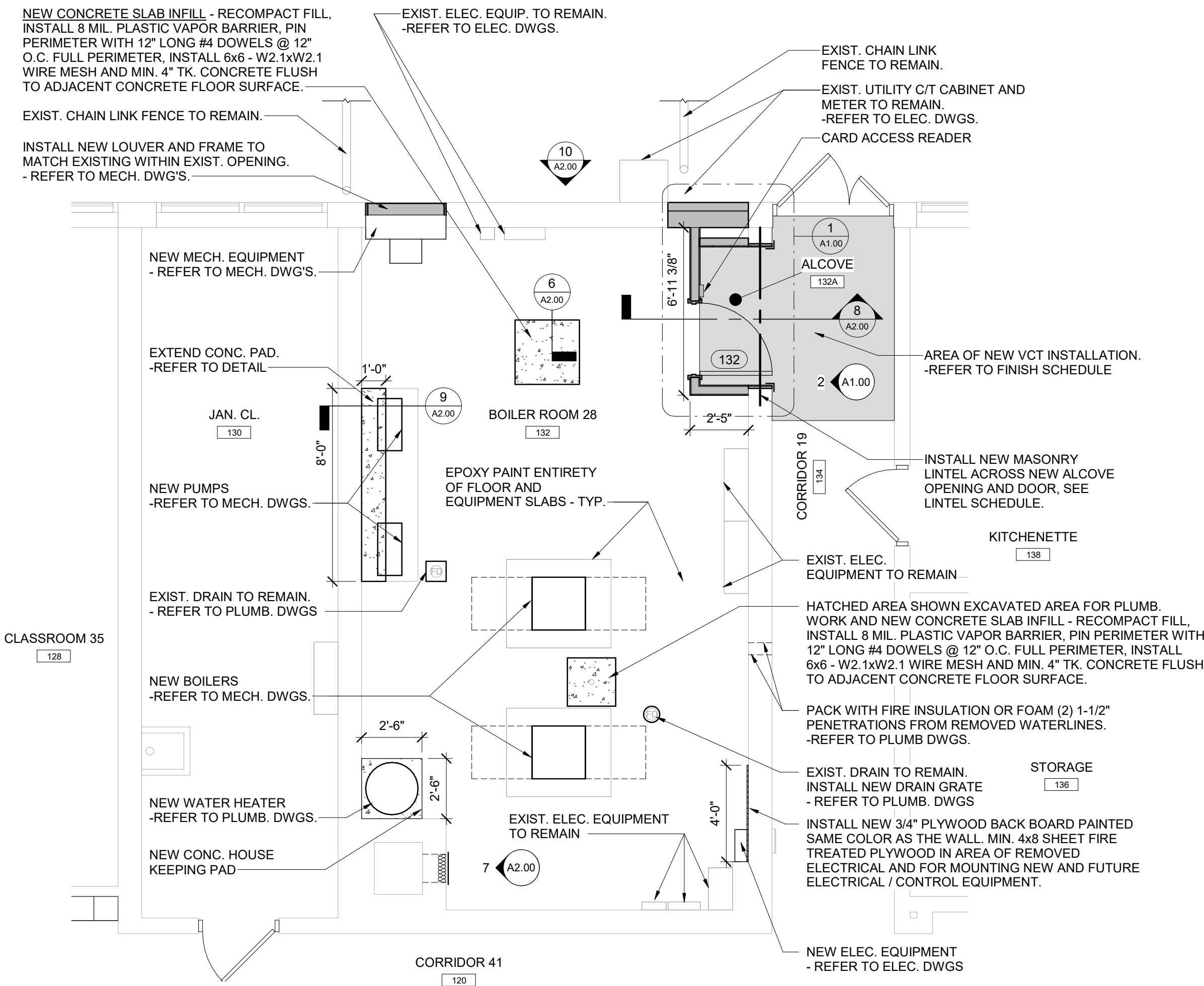
CODE COMPLIANCE  
PLAN

LS1.00





**FIRST FLOOR PLAN - DEMO**  
SCALE: 1/4" = 1'-0"



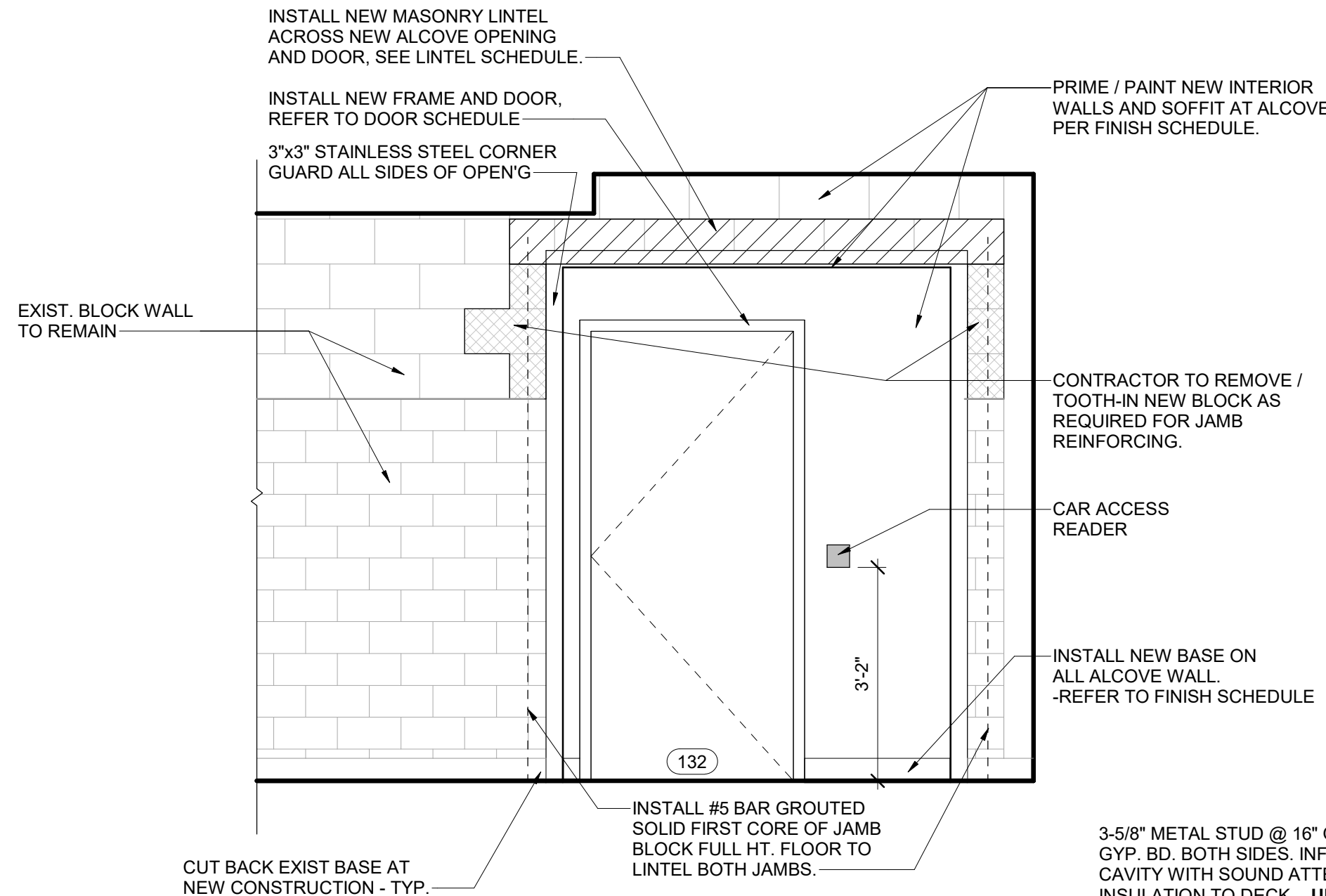
**FIRST FLOOR PLAN - NEW**  
SCALE: 1/4" = 1'-0"

**GENERAL DEMOLITION / PROTECTION NOTES:**

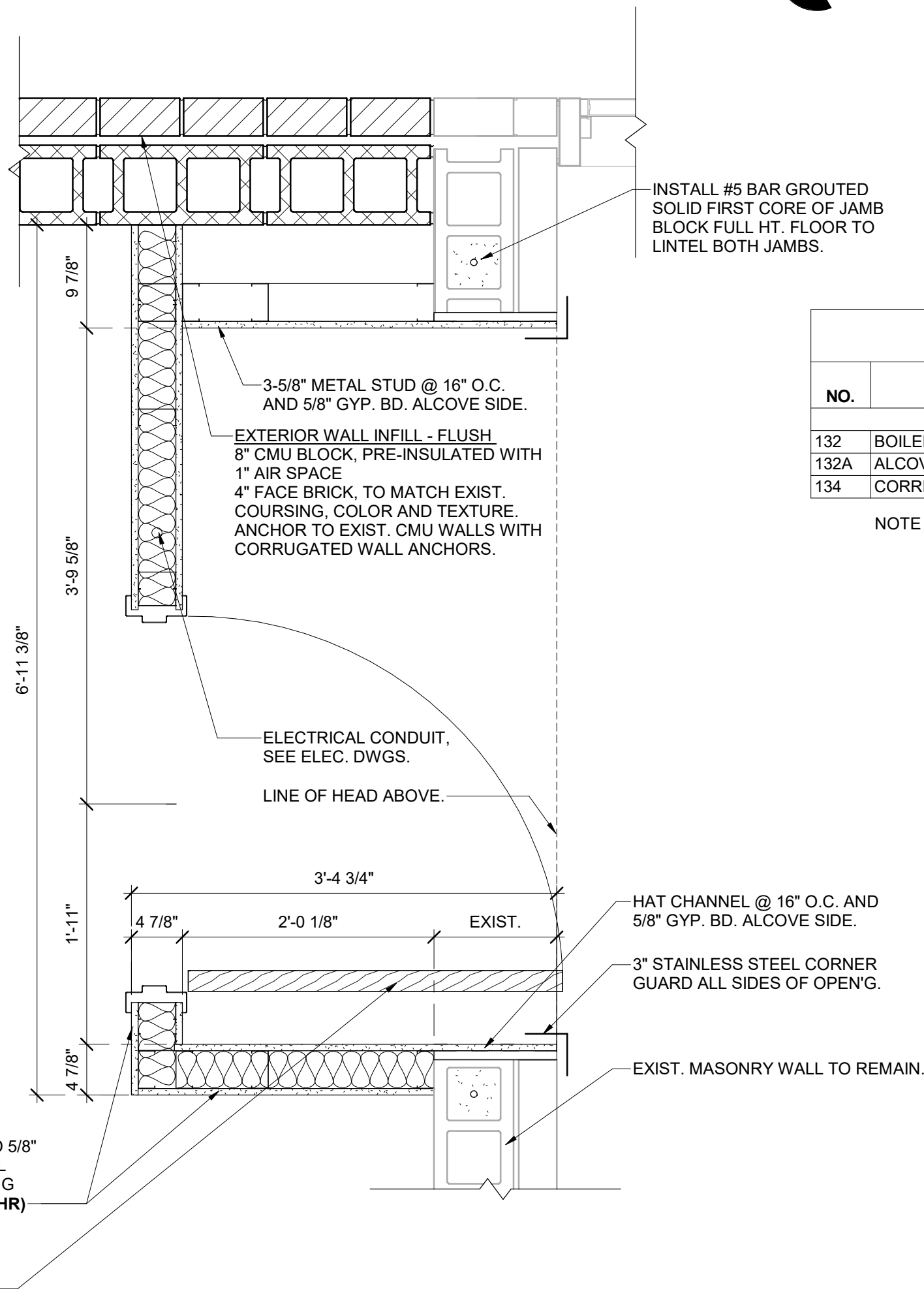
- COORDINATE ALL DEMOLITION WITH THE OWNER'S HAZARDOUS MATERIAL ABATEMENT DOCUMENTS AND SCOPE.
- CONTRACTOR TO PROTECT ALL AREAS ADJACENT TO CONSTRUCTION AND COMMON POINTS OF TRAVEL TO AND FROM CONSTRUCTION AREAS. PROTECTION IN THESE AREAS TO INCLUDE AIR QUALITY, WALK SURFACES, EQUIPMENT, FURNISHINGS, BUILDING OCCUPANTS, ETC. FROM DUST / DEBRIS, EXCESSIVE NOISE, WEAR, OR DAMAGE OF ANY KIND. PRIOR TO ANY PHYSICAL WORK, THE CONTRACTOR MUST HAVE A WRITTEN PLAN FOR PROTECTION APPROVED BY THE ARCHITECT.
- AREA OF HIGH REPLACEMENT VALUE OR MORE LIKELY FOR DAMAGE ARE TO HAVE ADDED PROTECTION (I.E. GYM FLOORS, ROOFING, ETC.)
- ANY WORK UNDER THE CONTRACT THAT WILL INTERRUPT THE OWNER'S ACTIVITIES SHALL BE COORDINATED WITH THE OWNER'S REPRESENTATIVE.
- ALL DEMOLITION WORK REQUIRED IS NOT LIMITED TO THAT INDICATED ON PLAN. THE INTENT IS TO REMOVE ALL MECHANICAL, ELECTRICAL, AND ARCHITECTURAL ITEMS AS NECESSARY TO FACILITATE NEW CONSTRUCTION.
- PRIOR TO COMMENCEMENT OF DEMOLITION WORK, CONTRACTOR IS TO INSPECT ALL AREAS IN WHICH WORK WILL BE PERFORMED. DOCUMENT EXISTING CONDITIONS OF STRUCTURE, SURFACES, EQUIPMENT OR SURROUNDING AREAS WHICH COULD BE MISCONSTRUED AS DAMAGE RESULTING FROM DEMOLITION WORK AND FILE WITH ARCHITECT.
- NOTIFY ARCHITECT IF ANY EXISTING ITEM THAT CONFLICTS WITH THE INTENDED FINAL PRODUCT IS NOT SPECIFICALLY CALLED OUT. DEMOLITION CONTRACTOR TO NOTIFY ARCHITECT OF ANY DISCREPANCIES IN THE DOCUMENTS & FIELD CONDITIONS BEFORE PROCEEDING WITH DEMOLITION AND / OR CONSTRUCTION.
- ALL DEMOLITION WORK, UNLESS OTHERWISE NOTED IN THE PROJECT MANUAL, DRAWINGS OR DIRECTED BY OWNER SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE. ALL DEBRIS CAUSED BY DEMOLITION AND CONSTRUCTION SHALL BE CLEARED AND REMOVED FROM THE SITE. DEBRIS STORAGE SHALL NOT INFRINGE ON CLEAR PATH OF EGRESS.
- PROTECT EXISTING STRUCTURES, FINISHES, UTILITIES AND OTHER ITEMS SCHEDULED TO REMAIN. AREAS THAT ARE DAMAGED BY SELECTIVE DEMOLITION SHALL BE PATCHED AND REPAIRED AND FINISHED OR REPLACED TO MATCH EXISTING ADJACENT SURFACES.
- PROVIDE SHORING, BRACING OR SUPPORT TO PREVENT MOVEMENT, SETTLEMENT, DAMAGE OR COLLAPSE OF STRUCTURE OR ANY OTHER ITEMS TO REMAIN WITHIN AND/OR AROUND DEMOLITION CONTRACT LIMITS.
- SHOULD HIDDEN FIELD CONDITIONS REQUIRE MODIFICATIONS TO THE LAYOUT, THE CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT.
- STRIP EXIST. FLOORS IN AREA TO RECEIVE NEW FLOOR FINISHES. FOLLOW MANUFACTURERS RECOMMENDATIONS FOR INSTALLATION OF FINISH MATERIAL ON EXIST. SUBSTRATES.
- AFTER DEMOLITION IS COMPLETE PATCH AND REPAIR EXIST. SURFACES TO REMAIN, AS REQUIRED FOR NEW FINISHES.

**PLAN LEGEND**

----	DEMO WALLS AS NOTED ON PLAN
=====	NEW WALLS AS NOTED ON PLAN
---	EXISTING WALLS AS NOTED ON PLAN
ROOM NAME 0000	NEW ROOM NAME AND NUMBERS
(101)	DOOR TAG - SEE DOOR & HARDWARE SCHEDULE



**2 CORRIDOR 19**  
SCALE: 1/2" = 1'-0"



**1 DOOR ALCOVE DETAIL**  
SCALE: 1" = 1'-0"

ROOM FINISH SCHEDULE													
NO.	ROOM NAME	MATERIAL						FINISH					
		FLOOR	BASE	NORTH	EAST	SOUTH	WEST	FLOOR	BASE	NORTH	EAST	SOUTH	WEST
132	BOILER ROOM 28	XC	-	XC	XC	XC	XC	EPOXY	-	PT-1	PT-1	PT-1	PT-1
132A	ALCOVE	XC	-	GB	XC	GB	GB	VCT	RB	PT-2	-	PT-2	PT-2
134	CORRIDOR 19	XC	-	XC	XC	-	XC	XACT	VCT	RB	-	PT-2	-

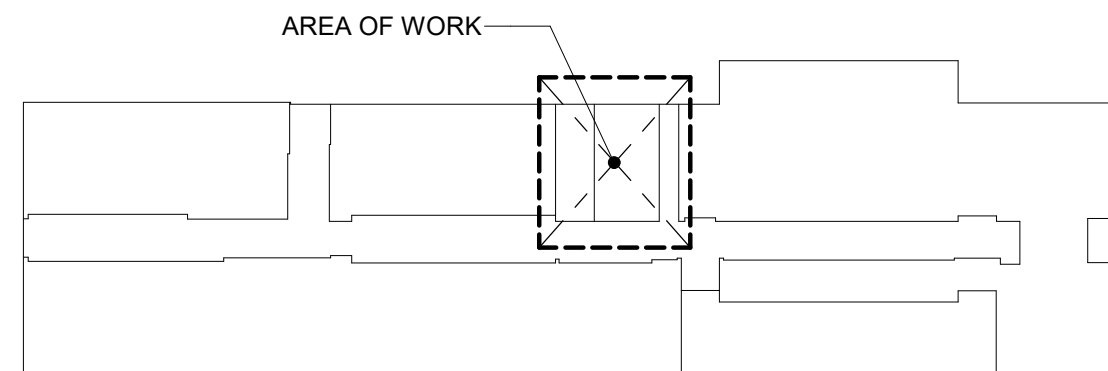
NOTE #1 - FLOORING LIMITED TO AREA SHOWN ON PLAN @ NEW ALCOVE. WALL PAINTING FROM CORNER TO CORNER ABOVE XTG. SPECTRAGLAZE BLOCK.

MATERIAL FINISH SCHEDULE							
MATERIAL	TAG	MANUFACTURER	STYLE	COLOR	MODEL NO.	SIZE	COMMENTS
PAINT	EPOXY	EUCLID CHEMICAL CO.	-	GRAY	-	-	FLOOR FINISH
	PT-1	SHERWIN WILLIAMS	-	SITE WHITE	SW7070	-	WALL PAINT
	PT-2	SHERWIN WILLIAMS	-	XX	SWXXXX	-	CORRIDOR WALL PAINT
VINYL COMPOSITION TILE	VCT	ARMSTRONG FLOORING	-	-	-	12" x 12"	CORRIDOR FLOOR FINISH
RUBBER BASE	RB	ARMSTRONG	-	-	-	-	-

NOTE: THIS SCHEDULE PROVIDES ALL NEW MATERIALS / FINISHES FOR BASES OF DESIGN. REFER TO SPECIFICATIONS TO ADDITIONAL INFORMATION.

**MATERIAL TAG LEGEND:**

ACT	ACOUSTICAL CL'G TILE
C	CONCRETE SLAB
EPOXY	FLOOR PAINT
GB	GYPSON BOARD
PLAM-1	PLASTIC LAMINATE
PT-1	INTERIOR WALL PAINT
RB	RUBBER WALL BASE
VCT	VINYL COMPOSITION TILE



**KEY PLAN**  
SCALE: 1" = 50'-0"





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DESCRIPTION BIDDING & STATE REVIEW

BOILER REPLACEMENT & RELATED WORK

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MONROE PUBLIC SCHOOLS

1275 NORTH MACOMB STREET, MONROE, MICHIGAN 48162

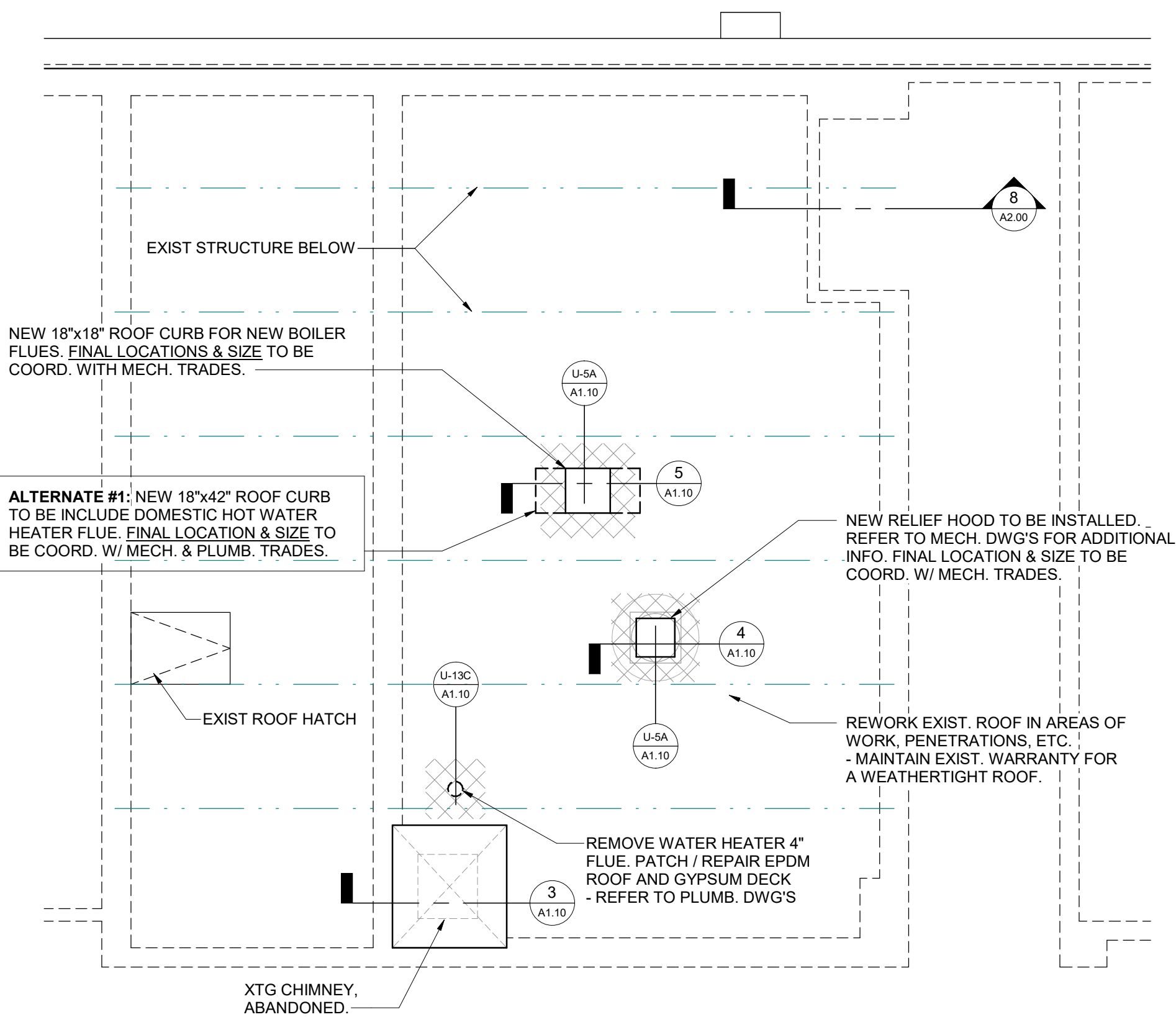
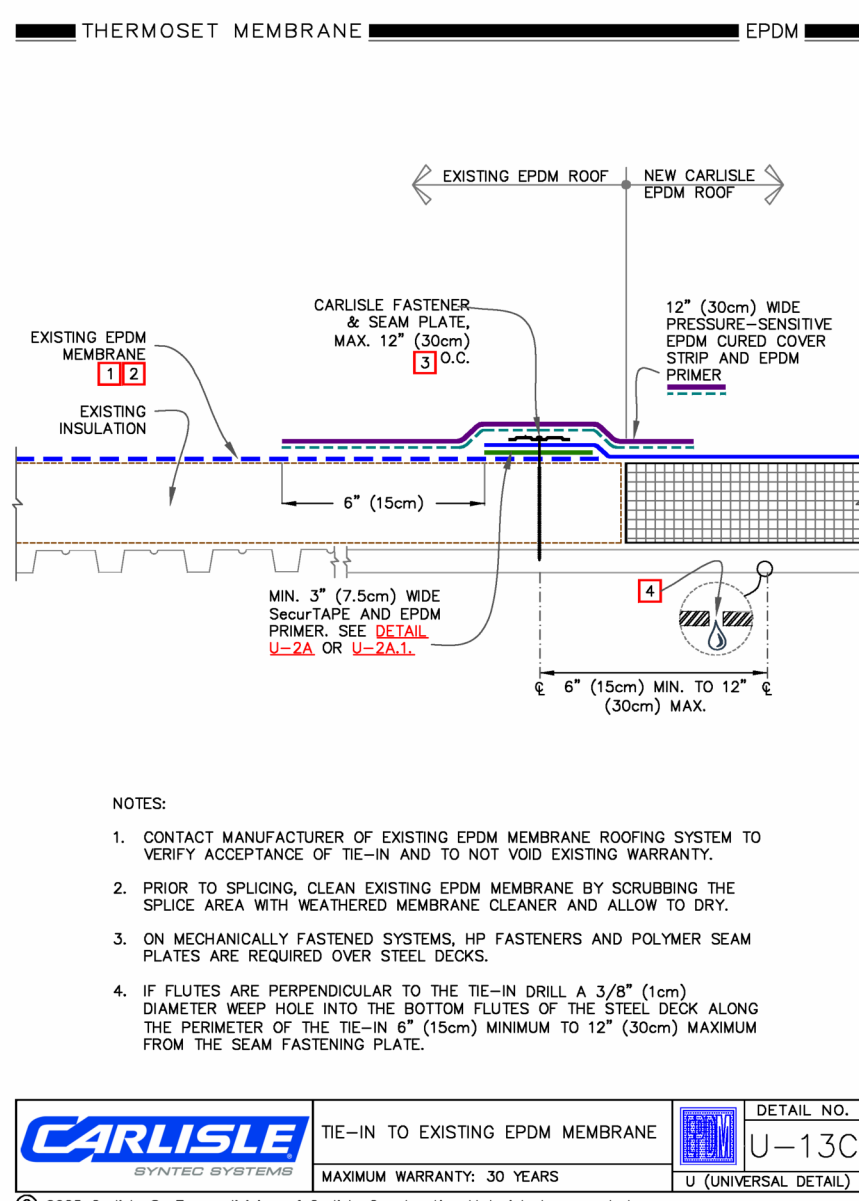
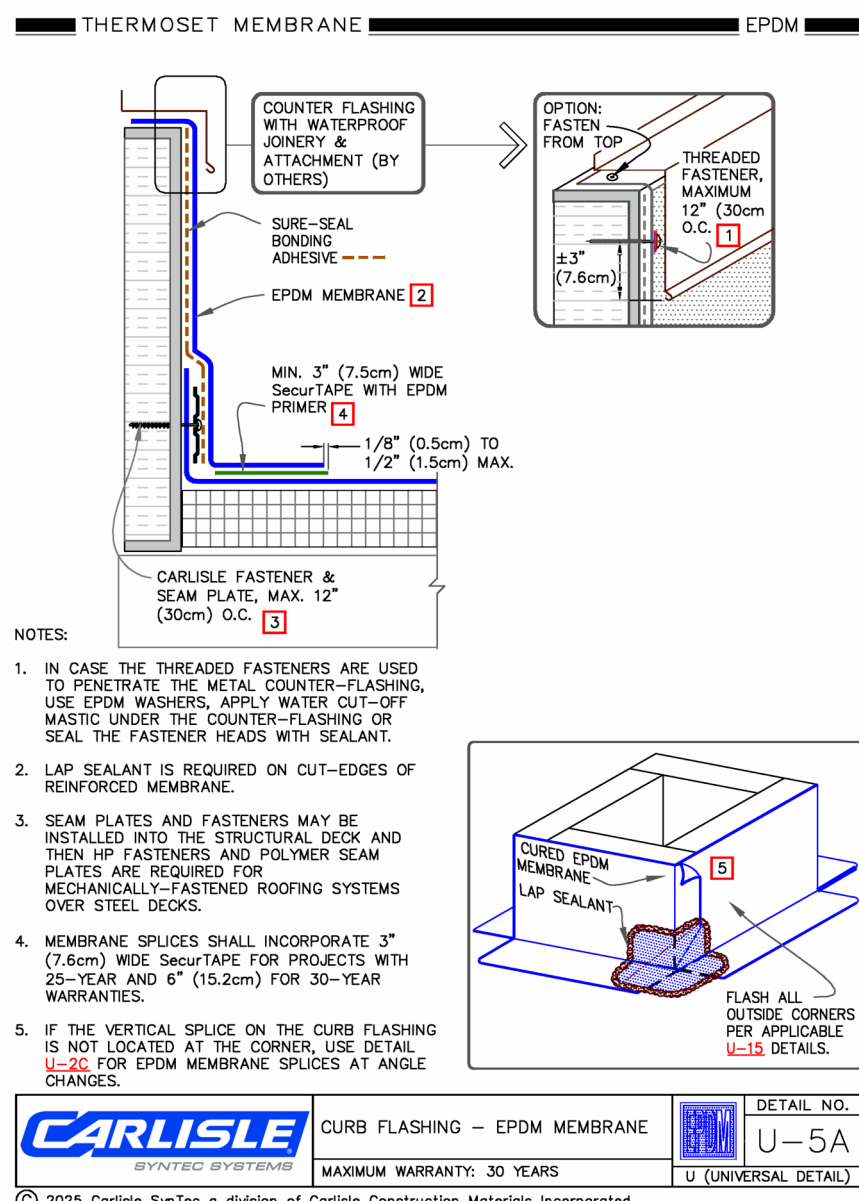
AT

FOR

JOB # 26102

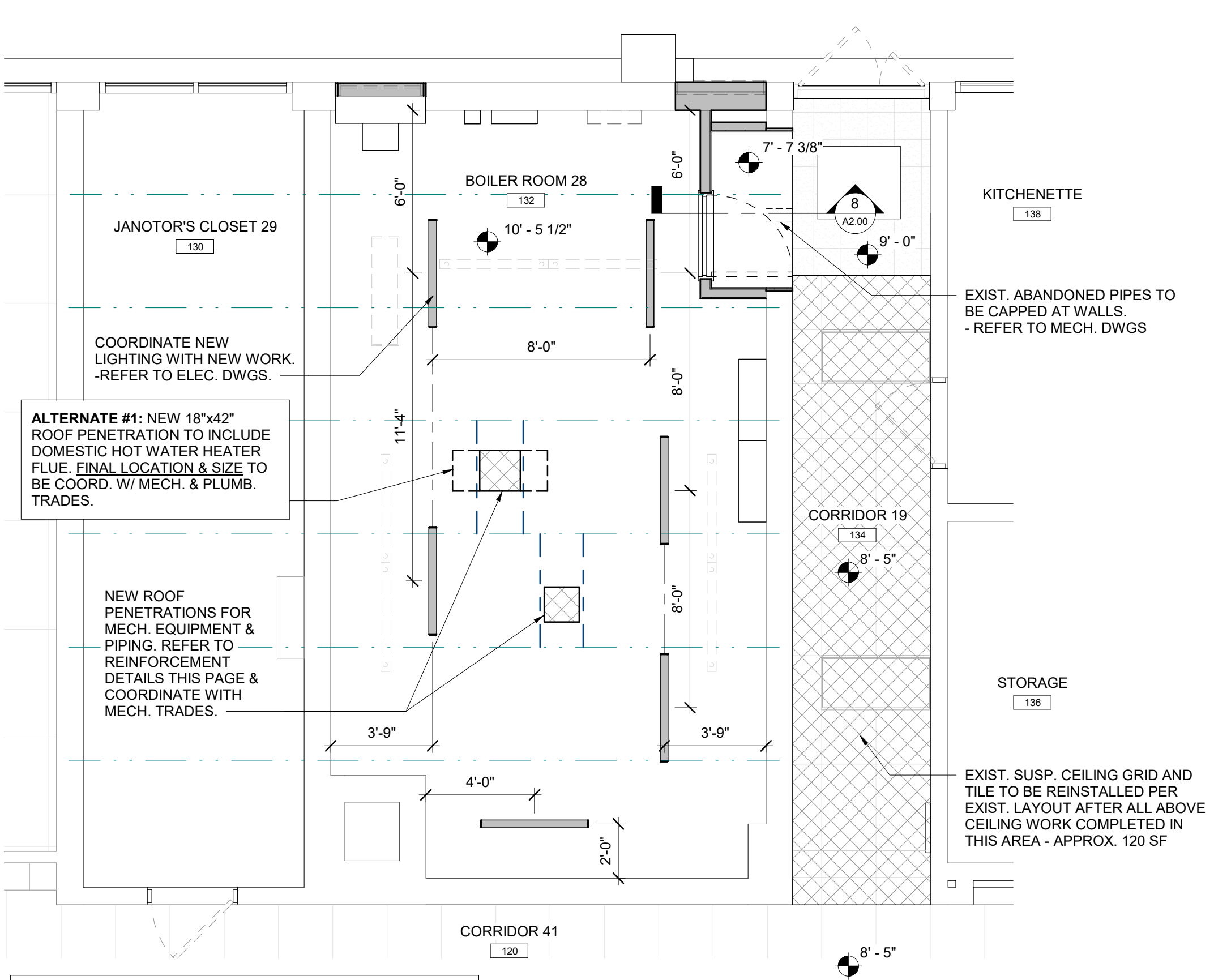
REFLECTED CEILING PLAN

A1.10

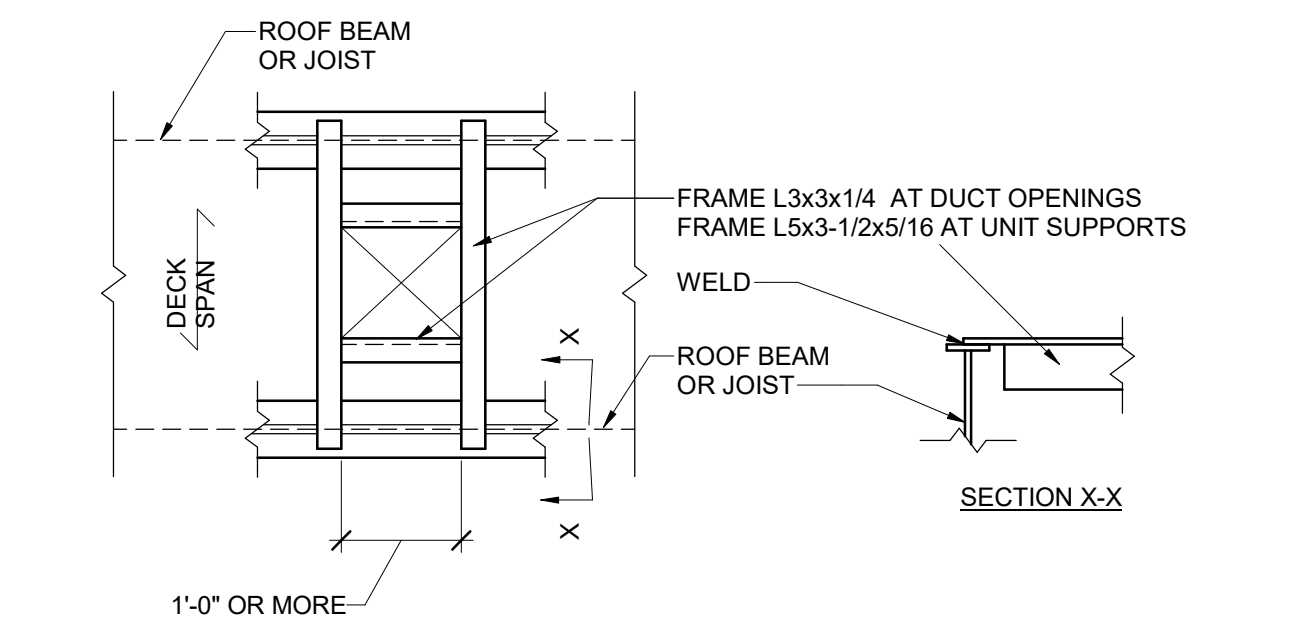


**ROOF WARRANTY INFO:**  
EXISTING CARLISLE, FULLY ADHERED EPDM ROOF INSTALLED 2017. CARLISLE ROOF WARRANTY #CMD 1221893 ON 3.5" RIGID INSULATION ON 1/2" FORM ON 2" GYPSUM ROOF DECK ON 1/2" FORM BOARD. ALL MODIFICATIONS TO ROOF MUST BE MADE BY A CARLISLE AUTHORIZED INSTALLER TO MAINTAIN ROOF WARRANTY.

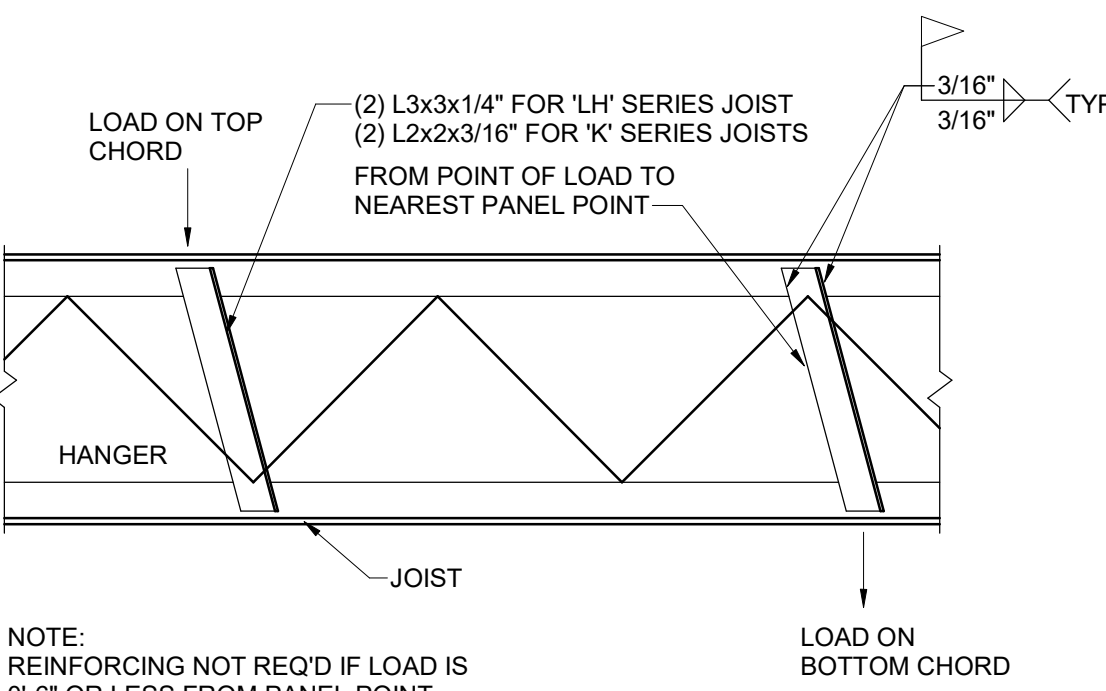
**ROOF PLAN**  
SCALE: 1/4" = 1'-0"



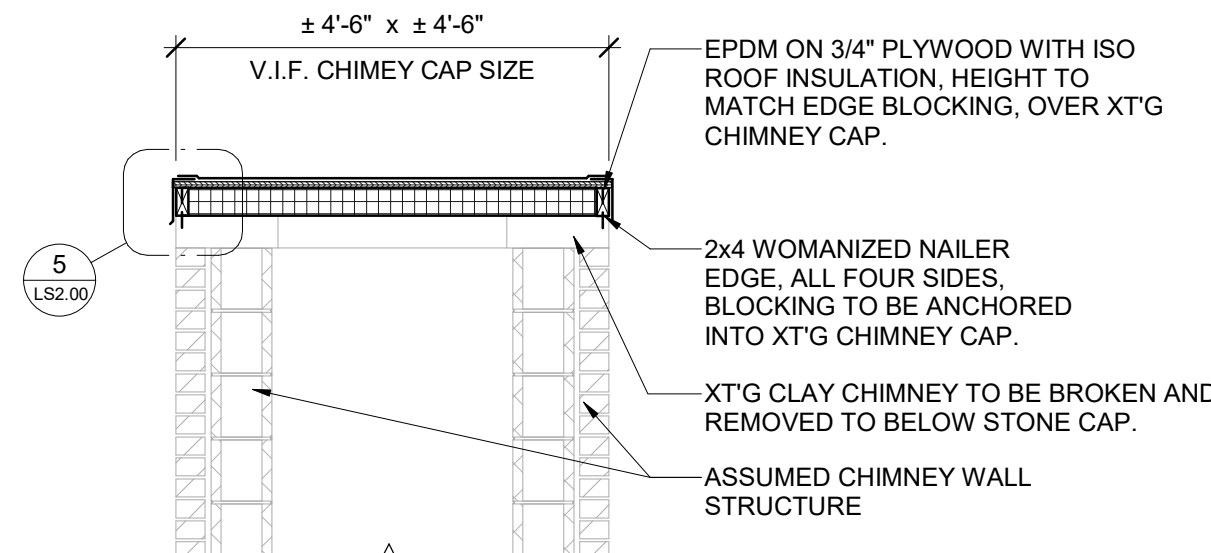
**FIRST FLOOR PLAN - RCP**  
SCALE: 1/4" = 1'-0"



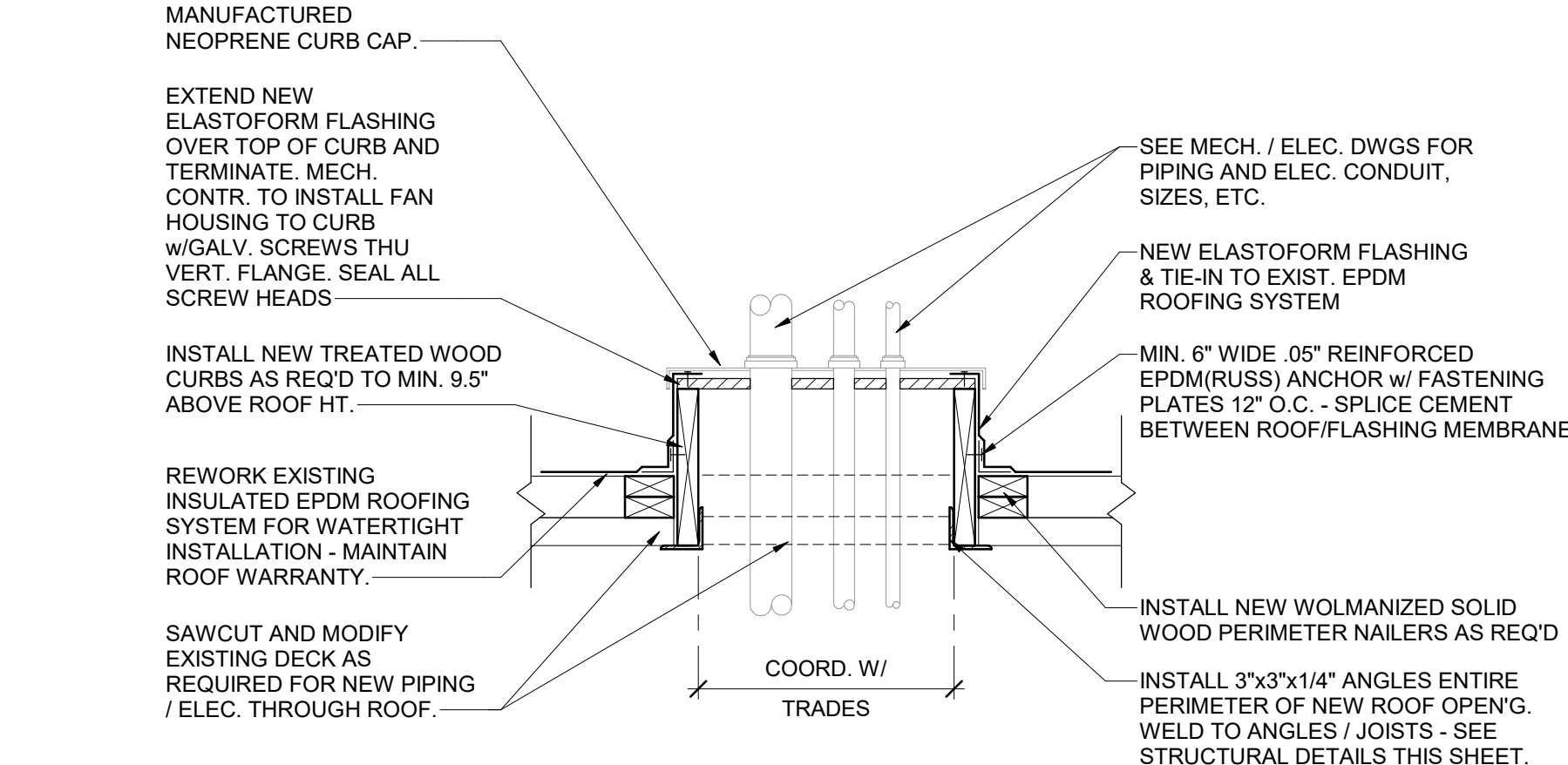
**TYP. ROOF OPENING REINFORCEMENT**  
SCALE: 3/4" = 1'-0"



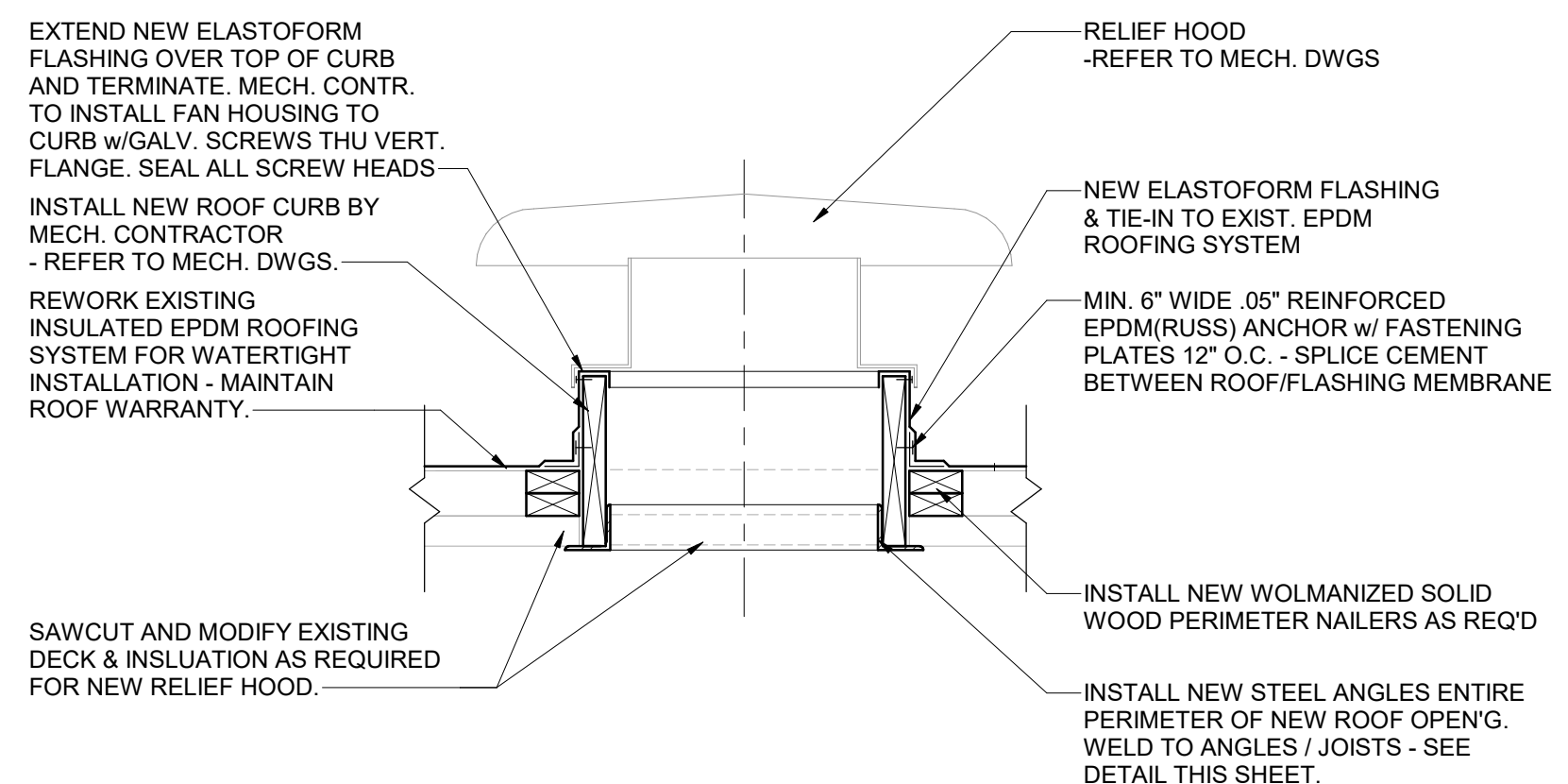
**TYP. JOIST REINFORCEMENT**  
SCALE: 3/4" = 1'-0"



**ROOF CAP DETAIL**  
SCALE: 1/2" = 1'-0"



**ROOF PIPING / ELEC/ CURB DETAIL**  
SCALE: 1" = 1'-0"



**NEW CURB FOR RELIEF HOOD**  
SCALE: 1" = 1'-0"

**KEY PLAN**  
SCALE: 1" = 50'-0"



MATERIAL STRENGTHS AND STRUCTURAL NOTES

MISCELLANEOUS

1. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS, INTERFERENCES AND CONDITIONS PRIOR TO STARTING FABRICATION OR CONSTRUCTION AND REPORT ANY DISCREPANCIES TO THE ARCHITECT.
2. STRUCTURAL DESIGN LOAD DATA:
- FLOOR LOAD
- COMMERCIAL:
- CONCRETE - 100 PSF. L.L. + 40 PSF. D.L.  
WOOD - 100 PSF. L.L. + 25 PSF. D.L.
- RESIDENTIAL:
- 40 PSF. L.L. + 20 PSF. D.L.  
DEFLECTION = L/480
- ROOF LOAD
- ROOF/SNOW LOAD:
- GROUND SNOW LOAD: PG = 25 PSF. L.L.  
FLAT ROOF SNOW LOAD: PF = 30 PSF. L.L.  
ROOF DEAD LOAD: 15 PSF.  
SNOW EXPOSURE FACTOR: CE = 0.7  
SNOW LOAD IMPORTANCE FACTOR: I = 1.0
- WIND LOAD
- BASIC WIND SPEED: 115 MPH  
WIND LOAD IMPORTANCE FACTOR: I = 1.0  
WIND EXPOSURE: B
- SEISMIC IMPORTANCE
3. ROOFING SHALL BE MINIMUM 15# FELT WITH MINIMUM 235#/SQ. CLASS 'A' SHINGLES AND GALVANIZED NAILS. ALL EAVES TO HAVE ICE-GUARD BARRIER FROM EAVE TO MINIMUM 2 FEET INSIDE WARM/INTERIOR SIDE OF WALL MEASURED HORIZONTALLY.
4. SUBMIT (4) SETS (OR 1 SET ELECTRONIC) OF SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION.

CONCRETE

1. CONFORM TO LATEST EDITION OF FOLLOWING STANDARDS:
- STANDARD SPECIFICATIONS FOR STRUCTURAL CONCRETE, ACI 301.  
COLD WEATHER CONCRETING, ACI 308R.  
HOT WEATHER CONCRETING, ACI 305R.  
DETAILS AND DETAILING OF CONCRETE REINFORCEMENT, ACI 315.  
GUIDE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION, ACI 302.1R.
2. PLACING REINFORCING BARS, CRSI.
- CONCRETE COMPRESSIVE STRENGTH, UNLESS INDICATED:
- GENERAL USE: 3,000 PSI  
SLAB-ON-GRADE: 3,500 PSI  
COLUMNS: 4,000 PSI
- CONCRETE EXPOSED TO WEATHER SHALL HAVE 4% - 6% AIR ENTRAINED.
3. REINFORCEMENT:
- BARS: ASTM A615, GRADE 60.  
WELDED WIRE FABRIC (WWF): ASTM A185.
4. SLABS ON GRADE OR SLABS ON JOIST:
- CLEAR CONCRETE COVER ON REINFORCEMENT UNLESS NOTED: 3"  
CONCRETE DEPOSITED AGAINST GROUND: 1-1/2" FOR #5 & SMALLER  
FORMED SURFACES EXPOSED TO WEATHER OR EARTH: 2" FOR #6 BARS & LARGER
- ALL OTHER SURFACES:
- SLABS, WALLS AND JOISTS: 3/4"  
BEAMS, GIRDERS & COLUMNS: 1-1/2"
5. CHAMFER EXPOSED EDGES 3/4" X 45 DEGREES.

WOOD

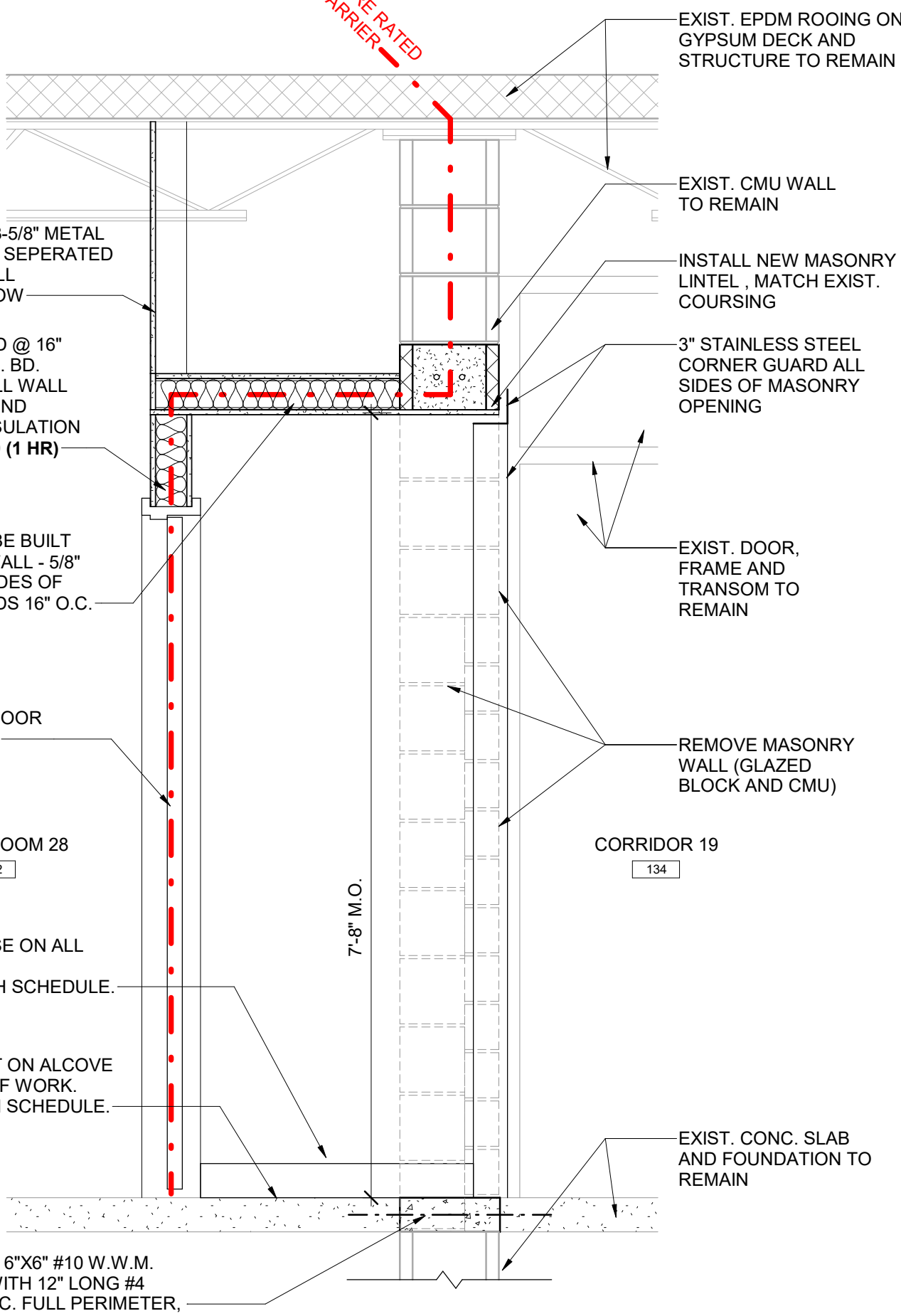
1. ALL WOOD MATERIALS INCLUDING FRAMING SHALL BE SIZED, BRACED, ANCHORED, ASSEMBLED, ETC. IN ACCORDANCE WITH THE REQUIREMENTS OF THE MICHIGAN BUILDING CODE. RAFTER/JOISTS SHALL BE 1000 PSI BENDING, KILN DRIED, #2 GRADE OR BETTER. STUDS SHALL BE STUD GRADE. ALL PLATES ON CONCRETE OR WITHIN 6" OF EXTERIOR GRADE SHALL BE TREATED. ALL WOOD EXPOSED TO EXTERIOR ELEMENTS SHALL BE TREATED UNLESS NOTED OTHERWISE.
2. ROOF SHEATHING SHALL BE 5/8" THICK SQUARE EDGE CDX PLYWOOD OR 5/8" OSB BOARD (ORIENTED STRAND BOARD). EXTERIOR WALL SHEATHING TO BE EITHER 1/2" CDX PLYWOOD OR 7/16" OSB BOARD (ORIENTED STRAND BOARD) WITH SQUARE EDGE. ATTIC WALKWAYS TO BE 3/4" CDX GRADE-6 PLY. PROVIDE AND INSTALL GALVANIZED PLYWOOD CLIPS ON ALL ROOF SHEATHING EVEN IF NOT REQUIRED BY CODE WHEN FRAMING MEMBERS ARE 24" O.C.
3. ANCHORS FOR FRAMING SHALL BE PER MICHIGAN BUILDING CODE REQUIREMENTS FOR PARTICULAR APPLICATION, AS WELL AS RECOMMENDED BY THE LUMBER MANUFACTURER AND AMERICAN PLYWOOD ASSOCIATION. SCREWS FOR INTERIOR WOOD SUB-FLOORING SHALL BE TEMPERED PHILLIPS HEAD, SELF-TAPPING DECK SCREWS - BLUED FINISH. ALL METAL SUPPORTS/FASTENERS AND ANCHORS, INCLUDING TRUSSES AND FASTENERS THAT COME IN CONTACT WITH THE TREATED WOOD SHALL BE CORROSION RESISTANT SUCH AS STAINLESS STEEL, EPOXY COATED STEEL, AND AS APPROVED BY THE TREATED WOOD MANUFACTURER. MANUFACTURERS FOR HANGERS, BRACKETS, CLIPS, ETC. SHALL BE SIMPSON; KANT-SAG OR APPROVED EQUAL. THE FOLLOWING MODEL NUMBERS REFER TO SIMPSON:
- TRUSSES/RAFTERS TO WALL = AS DIRECTED BY TRUSS MFR. - OR - H2 5T, 18 GA.  
COLUMN TO FOOTING = EMBED IN CONCRETE #EPB66 - 12" - HDG. SET 1/2" ABOVE CONCRETE.  
JOISTS TO BEAM PLATE = TWISTED STRAP ANCHOR #H 2.5A - 18 GA.  
JOIST TOP FLANGE HANGER = AS DIRECTED BY JOIST MFR. - OR - #ITS X SIZE OF JOIST, 18 GA.  
POST CAP = #BC6  
CORNER POST CAP = LCE4
4. EXTERIOR ANCHORS - BOLTS AND SCREWS FOR ANCHORING TREATED FRAMING TO POSTS SHALL BE STAINLESS OR EPOXY COATED STEEL 1/2" DIAMETER MINIMUM THRU BOLTS AND NUTS WITH WASHERS BOTH SIDES -H. PRE-DRILL MEMBERS AS REQUIRED, TO ELIMINATE SPLITTING OF WOOD.
5. ENGINEERED WOOD STRUCTURAL COMPONENTS SHALL BE AS ENGINEERED AND MANUFACTURED BY THE SAME COMPANY THROUGHOUT PROJECT AND MEET OR EXCEED ALL APPLICABLE CODE REQUIREMENTS AND DESIGN LOADS/CONDITIONS AS HEREIN SPECIFIED. FLOOR AND CEILING JOISTS TO BE AS MANUFACTURED BY TRUS-JOIST MACMILLAN, REDBUILT, NORDIC JOISTS, OR APPROVED EQUAL AND INSTALLED PER MANUFACTURERS RECOMMENDATIONS. FINAL MEMBER DESIGN AS PROVIDED BY MFR. / STRUCTURAL DESIGNER FOR REVIEW. TYPICAL OF ALL L.V.L. MEMBERS: E = 2.0 MINIMUM OF TWO BOLTS PER BOARD WIDTH PER POST, DECKING, RAILINGS, PICKETS AND ALL OTHER MEMBERS SHALL BE ANCHORED WITH APPROVED STAINLESS OR EPOXY COATED STEEL DECK SCREWS - MINIMUM OF (2) SCREWS PER BOARD WIDTH PER JOISTS. SCREWS SHALL PENETRATE INTO SUBSTRATE MINIMUM OF 1" TO 1-1/4" DEPT.

STRUCTURAL STEEL

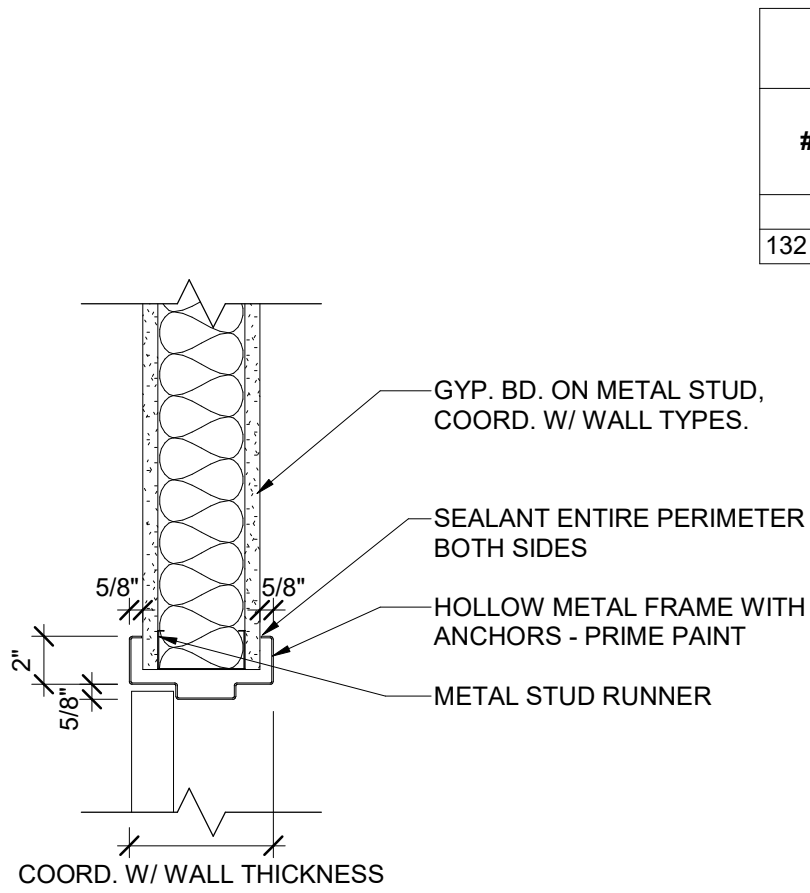
1. CONFORM TO LATEST EDITION OF FOLLOWING STANDARDS:
- SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS - ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN, AISC.  
SPECIFICATION FOR ALLOWABLE STRESS DESIGN OF SINGLE-ANGLE MEMBERS, AISC.  
SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS, RCSC.  
CODE OF STANDARD PRACTICE, AISC.
2. STRUCTURAL STEEL MATERIALS:
- WIDE FLANGE SHAPES: ASTM A992  
ANGLES, CHANNELS, PLATES AND BARS: ASTM A36  
STRUCTURAL TUBING: ASTM A500, GRADE B  
STRUCTURAL PIPE: ASTM A53, GRADE B, TYPE E OR S.  
HIGH STRENGTH BOLTS: ASTM A325  
ANCHOR BOLTS: ASTM A307 OR A36
3. STEEL FABRICATOR TO DESIGN BEAM CONNECTIONS FOR REACTIONS INDICATED, OR WHERE REACTIONS ARE NOT INDICATED, FOR ONE-HALF OF TOTAL UNIFORM LOAD CAPACITY OF A SIMPLE BEAM FOR GIVEN SPAN AS SPECIFIED IN LATEST EDITION OF AISC MANUAL OF STEEL CONSTRUCTION, DESIGN CONNECTIONS OF BRACING MEMBERS FOR MEMBER FORCES INDICATED, OR WHERE MEMBER FORCES ARE NOT INDICATED, FOR THE FULL TENSILE AND COMPRESSIVE CAPACITIES OF THE BRACING MEMBER.
4. MAKE BOLTED FIELD CONNECTIONS WITH HIGH STRENGTH BOLTS, UNLESS NOTED OTHERWISE. MAKE SHOP CONNECTIONS BY WELDING OR HIGH STRENGTH BOLTING.
5. UNLESS INDICATED, CLEAN STRUCTURAL STEEL IN ACCORDANCE WITH SSPC SP-1 AND SHOP PRIMER. PRIMER SHALL BE COMPATIBLE WITH SPECIFIED FINISHES. DO NOT PRIME TOP FLANGE SURFACE OF COMPOSITE BEAMS OR SURFACES, WHICH RECEIVE SPRAY-ON FIREPROOFING.
6. GALVANIZING SHALL CONFORM TO ASTM A123. GALVANIZING OF BOLTS, NUTS, AND OTHER HARDWARE SHALL CONFORM TO ASTM A153.

LINTEL SCHEDULE			
MASONRY OPENING	STRUCTURAL STEEL MEMBER	BLOCK CORE REINFORCING	BEARING EACH END
UP TO 4'-0"	1-L 3-1/2"X3-1/2"X5/16"	1-#5	4"
4'-0" TO 6'-0"	1-L 5X3-1/2"X5/16" LLV	1-#5	6"
6'-0" TO 8'-6"	1-L 6X3-1/2" X 3/8" LLV	1-#6	8"

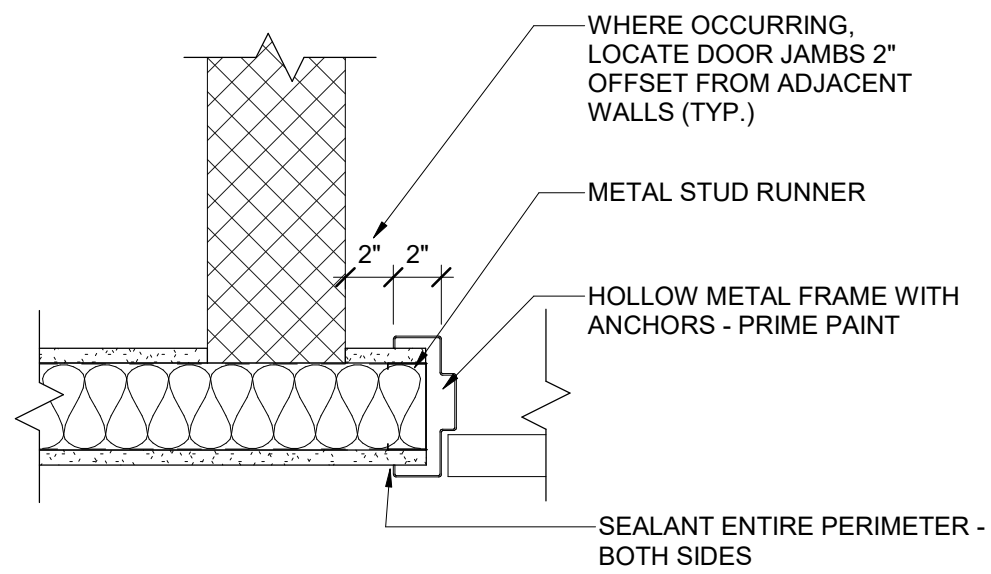
- A. UNLESS OTHERWISE NOTED PROVIDE LINTELS OVER ALL OPENINGS IN MASONRY WALLS ACCORDING TO THIS SCHEDULE.
- B. LINTELS/REINFORCING ARE SCHEDULED FOR EACH 4" OF WALL THICKNESS.



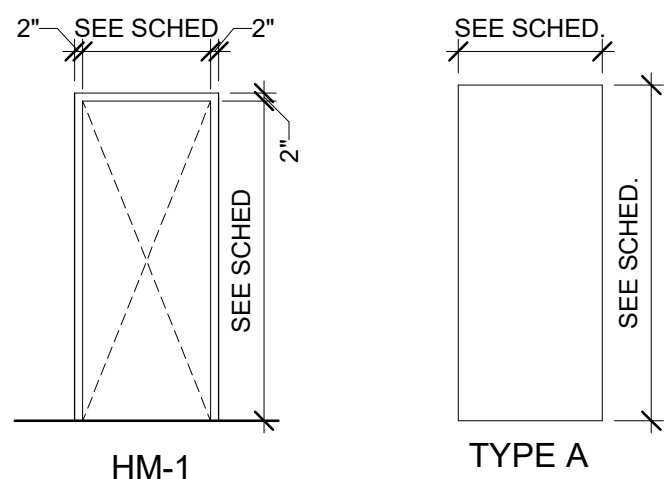
8 ALCOVE SECTION  
SCALE: 3/4" = 1'-0"



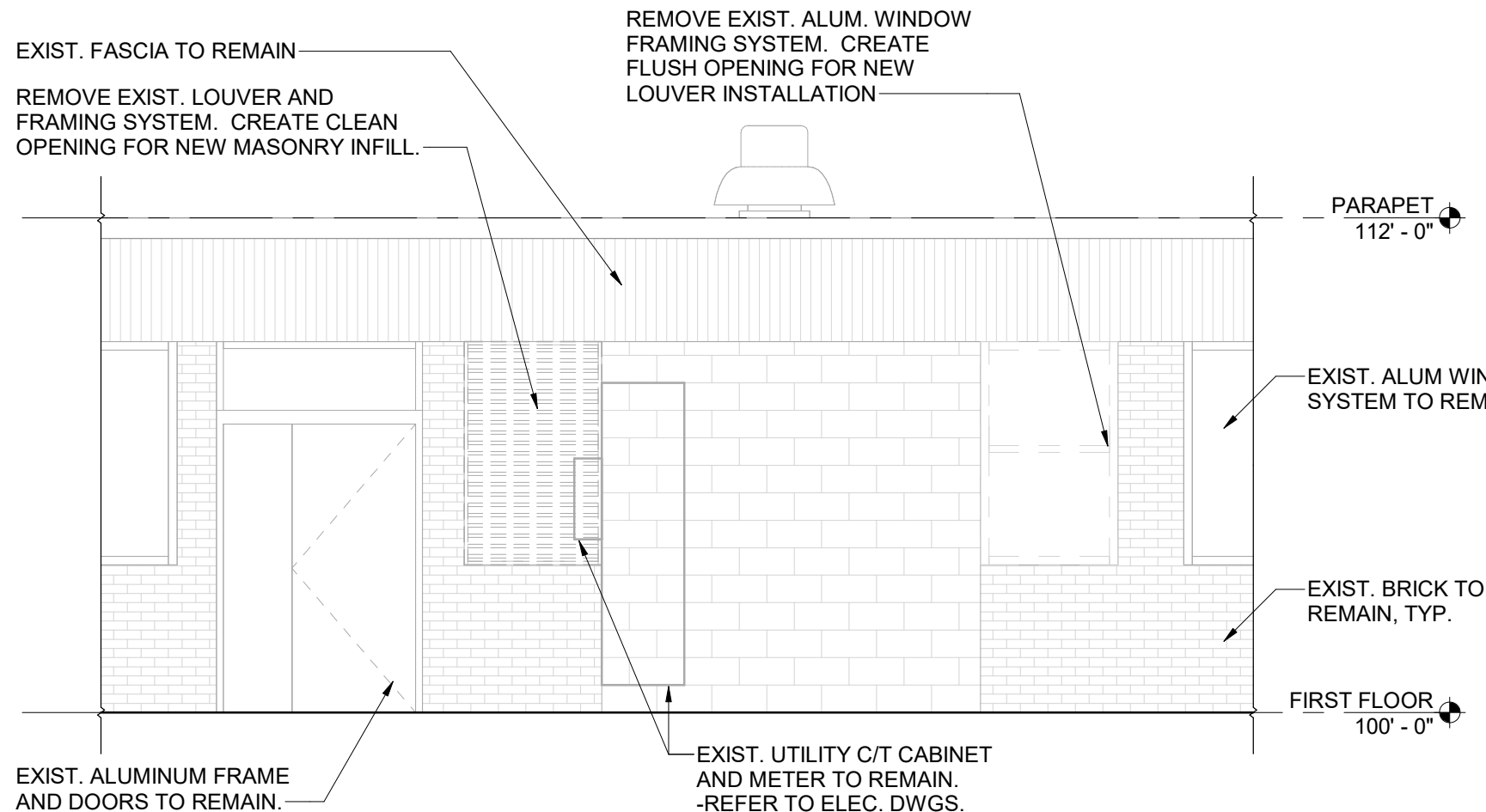
TYP. HM HEAD @ STUDS  
SCALE: 1 1/2" = 1'-0"



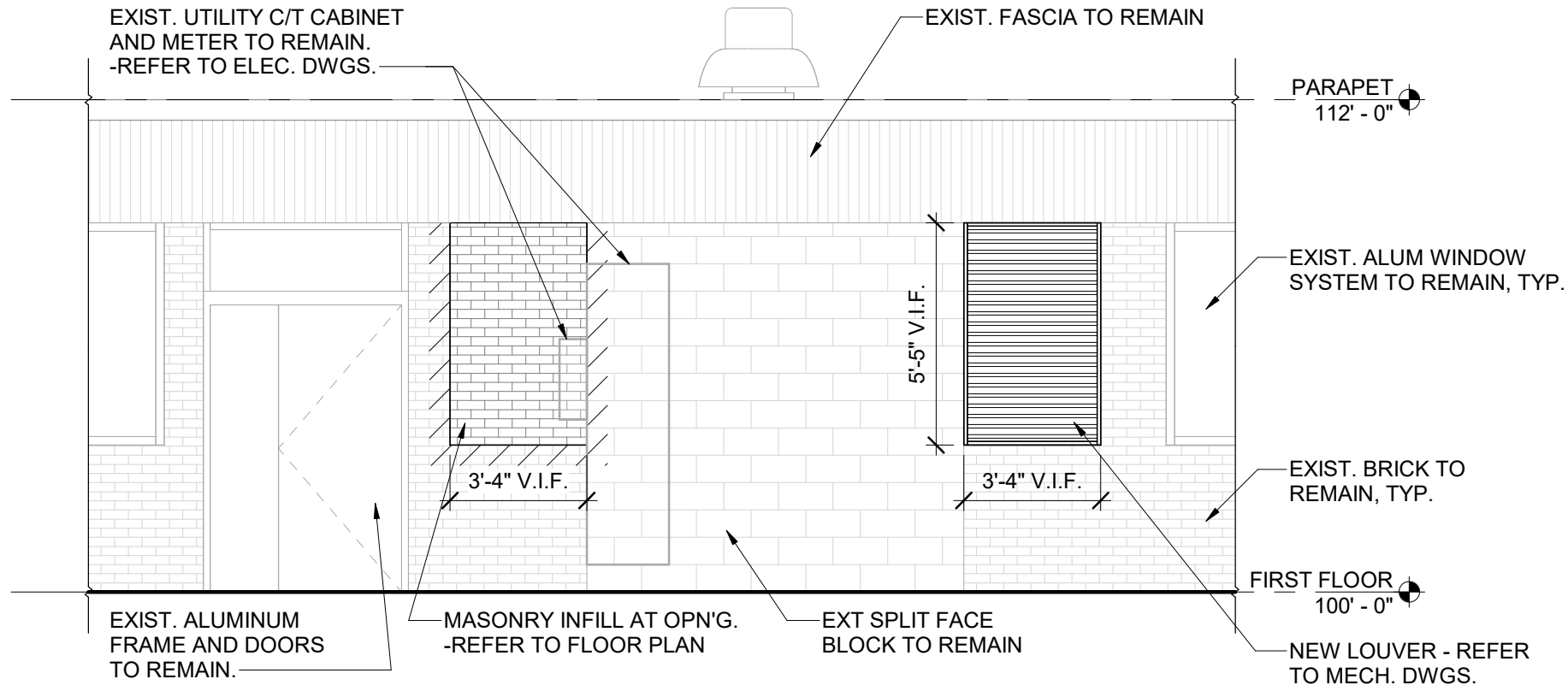
TYP. HM JAMB CONDITION  
SCALE: 1 1/2" = 1'-0"



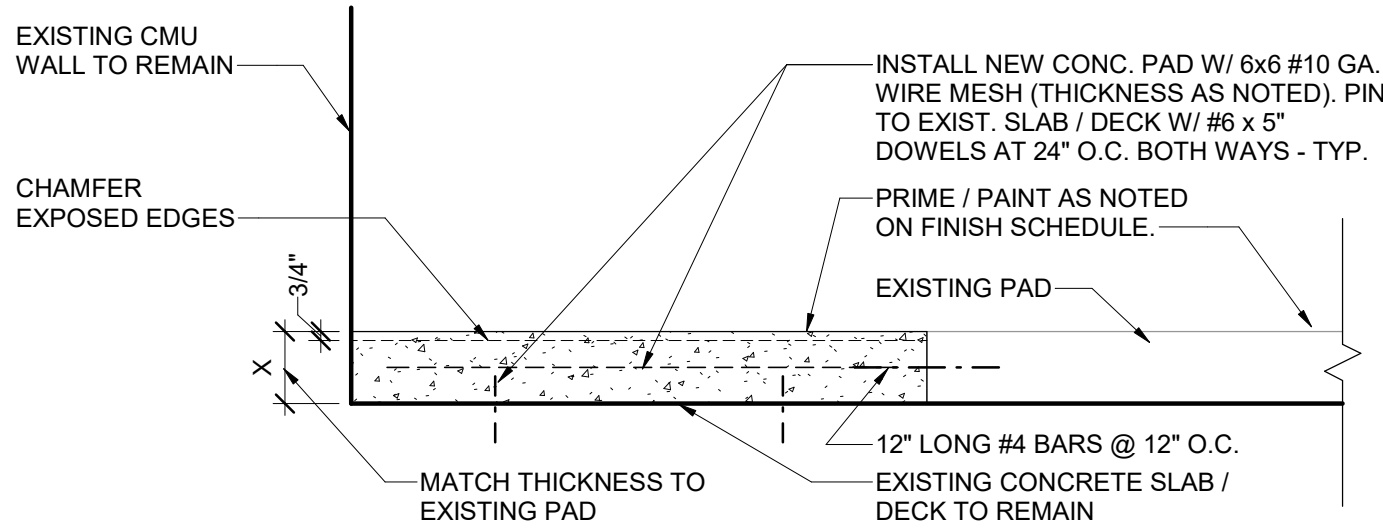
DOOR & FRAME ELEVATION  
SCALE: 1/4" = 1'-0"



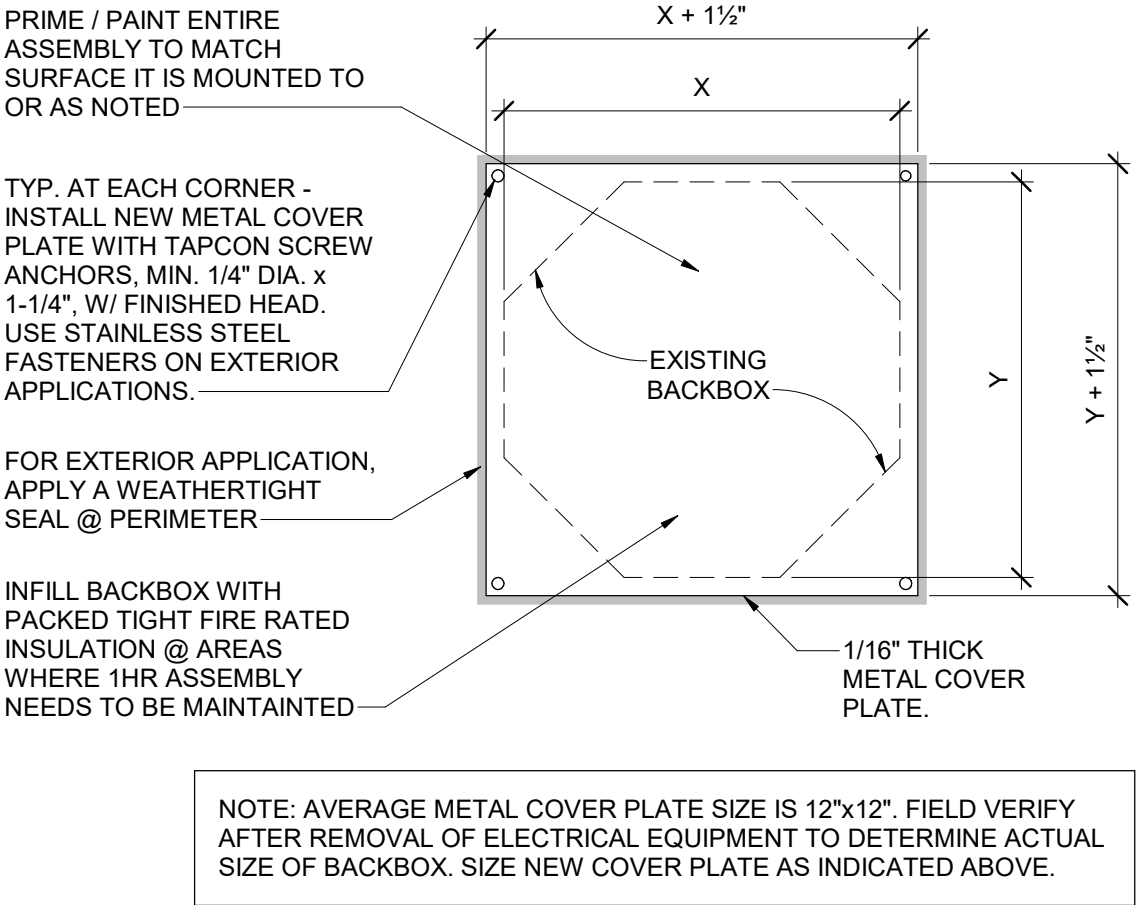
11 EXTERIOR ELEVATION - DEMO  
SCALE: 1/4" = 1'-0"



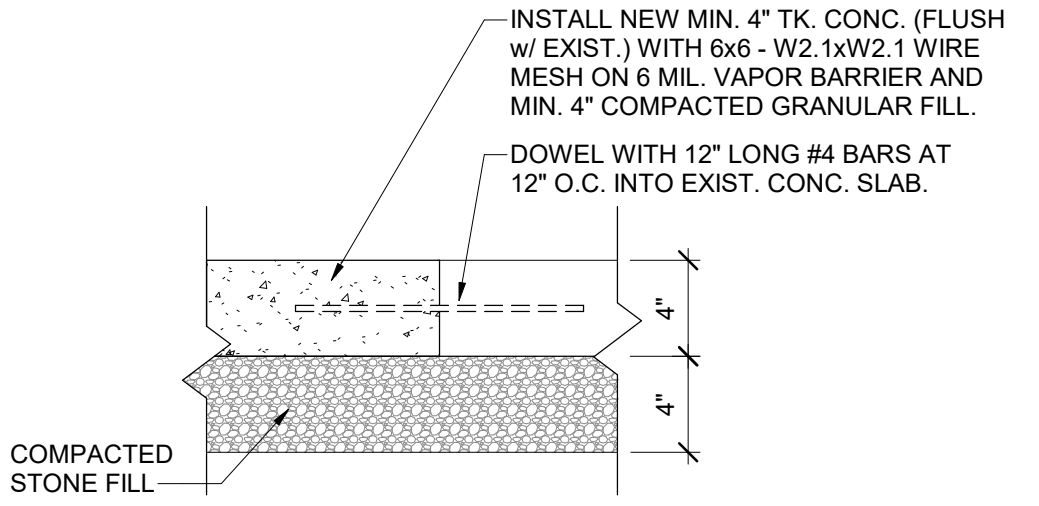
10 EXTERIOR ELEVATION - NEW  
SCALE: 1/4" = 1'-0"



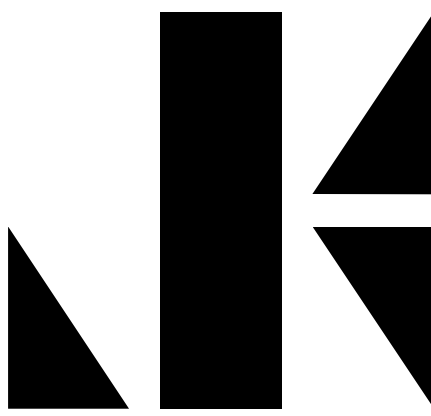
9 CONC. PAD EXTENSION  
SCALE: 3/4" = 1'-0"



7 TYP. COVER PLATE  
SCALE: 1 1/2" = 1'-0"



6 TYP. SLAB INFILL  
SCALE: 1 1/2" = 1'-0"



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ORCHARD CENTER HIGH SCHOOL

1750 OAK STREET, MONROE, MICHIGAN 48161

MONROE PUBLIC SCHOOLS

1275 NORTH MACOMB STREET, MONROE, MICHIGAN 48162

AT

FOR

JOB # 26102

DETAILS

A2.00



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PIPE MATERIAL CONSTRUCTION & INSULATION SCHEDULE (REFER TO SPECIFICATIONS SECTION 232113 FOR ADDITIONAL REQUIREMENTS.)					
SERVICE DESCRIPTIONS	ABBREVIATION	PIPING MATERIAL	MEANS OF CONNECT	FITTINGS	INSULATION
HEATING HOT WATER	HWS & HWR	2" & SMALLER: TYPE K, L OR M HARD COPPER	SOLDER •	WROUGHT	PIPE LESS THAN 1 1/2" INSULATE WITH A MINIMUM 1 1/2" FIBERGLASS PIPE 1 1/2" & LARGER INSULATE WITH 2" FIBERGLASS
		OR 2" & SMALLER: SCHEDULE 40 BLACK STEEL, ASTM A53-5-A=ERW	THREAD & • COUPLE OR WELD	150 PSIG	
		2-1/2" & LARGER: SCHEDULE 40 BLACK STEEL, ASTM A53-5-A=ERW	WELD •	SCHEDULE 40	
		OR 2-1/2" TO 4" TYPE L OR M HARD COPPER	SOLDER •	WROUGHT	
CONDENSATE DRAIN LINES	CDL	2" & SMALLER: TYPE L HARD COPPER	THREAD & COUPLE	WROUGHT	3/4" FIBERGLASS
*PROGRESS FITTINGS OR MECHANICAL FITTINGS ARE NOT ACCEPTABLE.					

PUMP SCHEDULE												(REFER TO SPECIFICATIONS SECTION 232123) FOR ADDITIONAL REQUIREMENTS.				
TAG #	LOCATION		SERVICE	TYPE	FLUID	GPM	HEAD PRESS. (FT.)	IMPELLER DIAMETER (IN.)	INLET SIZE (IN.)	OUTLET SIZE (IN.)	MOTOR DATA			BELL & GOSSETT MODEL	REMARKS	
	DWG	ROOM									HP	RPM	VOLT/PH			
OC-HWP-1	M2.01	BOILER	HEATING WATER	END SUCTION	WATER	100	50	10.625	3	2	3	1,200	208/3	E-1532-2EB	1 THRU 5	
OC-HWP-2	M2.01	BOILER	HEATING WATER	END SUCTION	WATER	100	50	10.625	3	2	3	1,200	208/3	E-1532-2EB	1 THRU 5	
OC-HWS-3	M2.01	BOILER	DWH INDIRECT TANK	INLINE	WATER	14	10	3.375	1-1/4	1-1/4	1/4	1,800	115/1	E-90-1.25AAB	1, 2, 3, 6	
REMARKS: 1. PROVIDE TAPPED CONNECTIONS IN FLANGES FOR INSTALLATION OF PRESSURE GAUGES. 2. PROVIDE GUARD OVER EXPOSED ROTATING COUPLINGS. 3. PUMP SHALL NOT OVERLOAD MOTOR AT ANY POINT ON HEAD CAPACITY CURVE. 4. FURNISH PUMP WITH END SUCTION DIFFUSER. 5. PROVIDE PUMP WITH INVERTER DUTY MOTOR. 6. <b>BASE DESIGN ONLY.</b> IN ALTERNATE OHS-M1, THIS PUMP SHALL NOT BE INSTALLED.																

HOT WATER BOILER SCHEDULE																							(REFER TO SPECIFICATIONS SECTION 235216) FOR ADDITIONAL REQUIREMENTS.	
TAG #	LOCATION		THERMAL EFFICIENCY	FUEL	GAS PIPE CONN. SIZE	GAS PRESSURE		MBH INPUT	MBH OUTPUT	TURN DOWN	EWT (°F)	LWT (°F)	DESIGN GPM	MAX GPM	FLUID TYPE	MAX WPD (FT)	WATER VOLUME (GAL)	INLET SIZE	OUTLET SIZE	ELECTRICAL		APPROX. WEIGHT	MAKE/ MODEL	REMARKS
	DWG	ROOM				MIN.	MAX.													FLA	VOLTAGE			
OC-B-1	M2.01	BOILER ROOM	97.7	NATURAL GAS	1"	4"	14"	500	489	10:1	160	180	49	105	WATER	4.8	11.9	2"	2"	6	120	560	LOCHINVAR FTX500N	1, 2, & 3
OC-B-2	M2.01	BOILER ROOM	97.7	NATURAL GAS	1"	4"	14"	500	489	10:1	160	180	49	105	WATER	4.8	11.9	2"	2"	6	120	560	LOCHINVAR FTX500N	1, 2, & 3
REMARKS:																								
1. FURNISH BOILER WITH MODULATING FIRING CONTROL, STAINLESS STEEL BURNERS, DIAGNOSTIC CONTROL PANEL, LOW WATER CUT-OFF, FLOW SWITCH, OUTDOOR RESET, MANUFACTURER-APPROVED CONCENTRIC TERMINATIONS FOR ROOFTOP COMBUSTION AIR AND VENT PIPING, CONDENSATE TRAP AND CONDENSATE NEUTRALIZATION KIT.																								
2. FURNISH BOILER WITH THE PIPING INSTALLATION PROCEDURES ILLUSTRATED BY THE FLOW DIAGRAM ON DRAWING M1.03 AND IN ACCORDANCE WITH MANUFACTURER INSTRUCTIONS.																								
3. FURNISH BOILER WITH BACNET MSTP NETWORK CARD; COORDINATE WITH TEMPERATURE CONTROL CONTRACTOR.																								

LOUVER SCHEDULE														(REFER TO SPECIFICATIONS SECTION 233700 FOR ADDITIONAL REQUIREMENTS.)
TAG #	DWG #	AREA SERVED	SERVICE	OVERALL SIZE ("W"x"H)	# OF PANELS	CFM	MAX. VELOCITY (FPM)	MIN. FREE AREA (SQ. FT.)	MAX PRESS. DROP (IN. W.C.)	DEPTH (IN.)	BLADE STYLE	FRAME/BLADE THICKNESS (IN.)	APPROX. MOUNTING ELEVATION TO BOTTOM (A.F.F.)	REMARKS
OC-L-1	M2.01	BOILER ROOM	INTAKE	40x60	1	500	55	9.02	0.001	6	FIXED DRAINABLE	0.081/0.081	3'-3"	1 THRU 5
REMARKS: 1. BASIS OF DESIGN - 6" GREENHECK MODEL 603. 2. FURNISH LOUVER WITH BIRD SCREEN INSTALLED ON INTERIOR SIDE OF LOUVER. 3. FURNISH LOUVER WITH 70% KYNAR FINISH. COLOR SHALL BE SELECTED BY THE ARCHITECT FROM MANUFACTURER'S STANDARD COLOR CHART. 4. FURNISH LOUVER WITH MOTORIZED DAMPER. 5. LOUVER SHALL REPLACE EXISTING WINDOW. MATCH HEIGHT OF EXISTING WALL OPENING.														

FAN SCHEDULE (REFER TO SPECIFICATIONS SECTION 233423 FOR ADDITIONAL REQUIREMENTS.)															
TAG #	DWG #	AREA SERVED	SERVICE	CFM	ESP (IN. W.C.)	FAN RPM	DRIVE TYPE	DISCT BY FAN MANF'T	BIRD SCREEN BY FAN MANF'T	BACK DRAFT DMPR BY FAN MANF'T	MAX. SOUND LEVEL (SONES)	FAN ELECT DATA		MEANS OF CONTROL	APPROX. WEIGHT (LBS)
												WATTS	VOLTS/ PHASE		GREENHECK MODEL
OC-SF-1	M2.01	BOILER ROOM	VENTILATION	500	0.375	1,296	DIRECT	NO	YES	YES	1.4	140	115/1	A	40
MEANS OF CONTROL: FAN SHALL SEQUENCE IN CONJUNCTION WITH... A ...WALL MOUNTED THERMOSTAT (T-STAY & CONTROL WIRING BY TEMPERATURE CONTROL CONTRACTOR; POWER WIRING BY ELECTRICAL CONTRACTOR)															
REMARKS: 1. FURNISH DUCTWORK CONNECTING TO FAN IN ACCORDANCE WITH THE "DUCTWORK MATERIAL CONSTRUCTION SCHEDULE" FOUND ON THIS DRAWING. 2. FURNISH FAN WITH INTEGRAL GRAVITY BACKDRAFT DAMPER. 3. FURNISH FAN MOTOR WITH THERMAL OVERLOADS. 4. FURNISH FAN WITH VARIGREEN, ECM MOTOR AND VARIGREEN HOA CONTROLLER FOR SOFT START AND BALANCING. COORDINATE CONTROLS WITH T.C.C.															

ELECTRIC UNIT HEATER SCHEDULE (REFER TO SPECIFICATIONS SECTION 238200 FOR ADDITIONAL REQUIREMENTS.)												
TAG #	DWG #	TYPE	MTG. TYPE	AREA SERVED	CFM	TEMP. RISE (°F)	HEATER AMPS	HEATER KW	MOUNT. HEIGHT (FT)	VOLTS/ PHASE	APPROX. WEIGHT (LBS)	MARKEL MODEL
OC-UH-1	M2.01	FAN-FORCED UNIT HEATER	CEILING	BOILER ROOM	400	26	16	3.3	9'-0"	208/1	25	F1F5103N
REMARKS: 1. HEATER SHALL BE FURNISHED WITH UL LISTINGS 2. FURNISH HEATER WITH AUTOMATIC HIGH-LIMIT CUTOUT OVERLOAD PROTECTION AND AUTOMATIC RESET. 3. FURNISH UNIT WITH CEILING MOUNTED BRACKET. 4. FURNISH UNIT WITH WALL MOUNTED DISCONNECT SWITCH. 5. FURNISH HEATER WITH FOUR-WAY ADJUSTABLE LOUVERS. 6. SUSPEND HEATER FROM STRUCTURE ABOVE WITH ALL THREADED ROD AND ANGLE IRON.												

VFD SCHEDULE (REFER TO SPECIFICATIONS SECTION 230934 FOR ADDITIONAL REQUIREMENTS.)				
ITEM	LOCATION OF VFD		ELECTRICAL DATA	
	DWG	ROOM	HP	VOLTAGE/PH
PUMP OC-HWP-1 OC-VFD-1	M2.01	BOILER ROOM	3	208/3
PUMP OC-HWP-2 OC-VFD-2	M2.01	BOILER ROOM	3	208/3
REMARKS: 1. HVAC CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION OF VFD'S INCLUDING ANY MISCELLANEOUS STEEL UNISTRUT NECESSARY TO SUPPORT VFD'S INDEPENDENT OF EQUIPMENT SERVED.				

NATURAL GAS CALCULATION	
EQUIPMENT	LOAD (CFH)
EXISTING BOILER OC-B-E1 (REMOVED)	550
EXISTING BOILER OC-B-E1 (REMOVED)	550
EXISTING GAS-FIRED WATER HEATER (REMOVED)	75.1
BOILER OC-B-1	500
BOILER OC-B-2	500
GAS-FIRED WATER HEATER OC-DWH-1	150
TOTAL REMOVED	-1,175.1
TOTAL ADDED	1,150

ALTERNATE	
ALTERNATE OHS-M1: STATE THE AMOUNT TO BE ADDED TO OR SUBTRACTED FROM THE BASE BID TO FURNISH ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY FOR THE FOLLOWING:	
1.	OMISSION OF THE INSTALLATION OF INDIRECT WATER HEATER PIPING AND CIRCULATION PUMP OC-HWS-3 AS WELL AS ASSOCIATED TEMPERATURE CONTROLS..
2.	OMISSION OF THE DEMOLITION OF NATURAL GAS PIPING DISTRIBUTION TO EXISTING GAS-FIRED DOMESTIC WATER HEATER.
3.	INSTALLATION OF N.G. CONNECTION TO DOMESTIC GAS-FIRED WATER HEATER, 1" GAS PIPING AS SHOWN ON PLANS, NEW GAS PRESSURE REGULATOR, AND TEMPERATURE CONTROLS.

HVAC DRAWING LIST		
DWG NO.	TITLE	FILE NO.
M1.01	GENERAL NOTES, LEGEND, & SCHEDULES	26003130M1.01.dwg
M1.02	SCHEDULES & DETAILS	26003130M1.02.dwg
M1.03	FLOW DIAGRAM	26003130M1.03.dwg
M2.01	HVAC PLAN BASE BID	26003130M2.01.dwg
M2.01A	HVAC PLAN ALTERNATE OHS-M1	26003130M2.01A.dwg
M6.02	TEMPERATURE CONTROLS	26003130M6.02.dwg
M6.01	TEMPERATURE CONTROLS	26003130M6.01.dwg

THIS ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED USING A DIGITAL SIGNATURE AND DATE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED, AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

GENERAL PROJECT NOTES	
1.01. <b>CONTRACT DRAWINGS:</b> IN GENERAL, DRAWINGS ARE SCHEMATIC IN NATURE AND ARE INTENDED AS A GUIDE TO THE CONTRACTOR, BUT DO NOT NECESSARILY SHOW ALL DETAILS, OFFSETS, ETC. ALL DRAWINGS SHALL BE THOROUGHLY INSPECTED BY THE CONTRACTOR. THE CONTRACTOR'S WORK SHALL CONFORM TO THE INFORMATION CONTAINED IN THIS SPECIFICATION AND/OR AS INDICATED IN THE LATEST REVISION OF THE DRAWINGS REFERRED TO THEREIN. THE CONTRACTOR SHALL CONSULT WITH THE ENGINEER REGARDING ALL QUESTIONS, UPON WHICH HE MAY BE IN DOUBT, BEFORE PROCEEDING WITH FABRICATION OF PARTS AFFECTED. AT HIS OWN EXPENSE, THE CONTRACTOR SHALL PREPARE ALL ADDITIONAL DETAIL OR FIELD INSTALLATION DRAWINGS NECESSARY. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS INDICATED ON THE ENGINEER'S LAYOUT DRAWINGS AND DETERMINE IF ANY CHANGES ARE REQUIRED IN CONDUITS, PIPING RUNS, DRAINS, ETC., TO AVOID INTERFERENCE. MAJOR CHANGES SHALL NOT BE MADE WITHOUT THE APPROVAL OF THE ENGINEER. WHILE THE DRAWINGS SHALL BE ADHERED TO AS CLOSELY AS POSSIBLE, THE CONTRACTOR HAS THE RIGHT TO VARY THE RUN OF CONDUITS, PIPING AND/OR DUCTS DURING PROGRESS OF THE WORK AS MAY BE FOUND NECESSARY OR DESIRABLE TO AVOID INTERFERENCES. MAJOR REVISIONS SHALL BE VERIFIED WITH THE ENGEER.	
1.02. <b>VERIFICATION:</b> A. BEFORE RUNNING ANY CONDUITS, DUCTS, PIPING, ETC., WITHIN THE BUILDING, THIS CONTRACTOR SHALL ASSURE HIMSELF THAT THESE MATERIALS CAN BE INSTALLED AS CONTEMPLATED, WITHOUT TRAPPING OR INTERFERING WITH COLUMNS, BEAMS, PIPING, FIXTURES, ETC. ANY NECESSARY MAJOR DEVIATION SHALL BE REFERRED TO THE ENGINEER FOR CHECKING, SUBMIT FOR REVIEW. IF, BY NECESSITY, OPENINGS, SUPPORTING STEEL, FIELD BUILT CURBS, ELECTRICAL DATA, SPACE REQUIREMENTS, ETC., WERE DESIGNED AROUND SPECIFIC PARAMETERS. WHEN THE CONTRACTOR DETERMINES THE MAKE OF EQUIPMENT TO BE PROVIDED FOR THE JOB, IT SHALL BE HIS RESPONSIBILITY TO VERIFY AND COORDINATE UNIT DIMENSIONS WITH THE GENERAL CONTRACTOR AND ALL OTHER INTERESTED CONTRACTORS ON THE JOB. IT SHALL ALSO BECOME THE CONTRACTOR'S RESPONSIBILITY TO CHANGE AS NECESSARY, THROUGH THE ENGINEER, ALL REQUIRED DIMENSIONS SO THAT OPENINGS, SUPPORTING STEEL, CURBS, ELECTRICAL DATA, ETC. WILL FIT THE EQUIPMENT SUPPLIED. ANY ADDITIONAL COST WILL BE THE SOLE RESPONSIBILITY OF THIS CONTRACTOR. IN ADDITION, ELECTRICAL POWER, INTERLOCK AND CONTROL DIAGRAMS, AND PIPING ARRANGEMENTS WERE DESIGNED AROUND ONE SPECIFIC MANUFACTURER. IF ADDITIONAL WIRING, PIPING CONTROLS, ETC., ARE REQUIRED FOR OTHER EQUIPMENT, THIS CONTRACTOR SHALL INCLUDE THE COST OF THE SAME IN HIS PRICE. B. ALL MEASUREMENTS, THE EXACT DETERMINATION OF RELATIVE ELEVATIONS OR LOCATIONS, THE ASCERTAINING OF ACCURACY OF ALL GIVEN ELEVATIONS AND DIMENSIONS AND THE ASCERTAINING OF ALL NECESSARY ADDITIONAL INFORMATION TO INSURE THE PROPER FIT AND COORDINATION OF ALL CONDUIT EQUIPMENT, DUCTS, AND PIPING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.	
1.03. <b>GUARANTEE:</b> THE CONTRACTOR GUARANTEES, BY HIS ACCEPTANCE OF THE CONTRACT, THAT ALL WORK WILL BE FREE FROM DEFECTS IN WORKMANSHIP AND/OR MATERIALS, FOR A PERIOD OF ONE YEAR FOLLOWING PROJECT COMPLETION UNLESS NOTED OTHERWISE, AND THAT ALL APPARATUS WILL DEVELOP CAPACITIES AND CHARACTERISTICS SPECIFIED. SHOULD ANY DEFECTS IN WORKMANSHIP AND/OR MATERIALS REQUIRE REDESIGN OF ANY PART OF THE ELECTRICAL, MECHANICAL, PLUMBING OR ARCHITECTURAL LAYOUT, ALL SUCH REDESIGN AND ALL NEW DRAWINGS AND DETAILING REQUIRED THEREOF SHALL, WITH THE APPROVAL OF THE ARCHITECT, BE PREPARED BY THE CONTRACTOR AT HIS OWN EXPENSE. WHERE SUCH APPROVED DEVIATION REQUIRES A DIFFERENT QUANTITY AND ARRANGEMENT OF DUCTWORK, PIPING, WIRING, CONDUIT AND/OR EQUIPMENT FROM THAT SPECIFIED OR DETAILED ON THE DRAWINGS, WITH THE APPROVAL OF THE ARCHITECT, THE CONTRACTOR SHALL FURNISH AND INSTALL ALL SUCH MATERIALS AND/OR EQUIPMENT REQUIRED BY THE SYSTEM AT NO ADDITIONAL COST TO THE OWNER.	
1.04. <b>SUBMITTALS:</b> AFTER RECEIVING APPROVAL OF EQUIPMENT MANUFACTURERS, AND PRIOR TO DELIVERY OF ANY MATERIAL TO THE JOB SITE AND SUFFICIENTLY IN ADVANCE OF THE REQUIREMENTS TO ALLOW ARCHITECT AMPLIE TIME FOR CHECKING, SUBMIT FOR REVIEW DETAILED DIMENSIONED DRAWINGS AND/OR EQUIPMENT CUT SHEETS SHOWING CONSTRUCTION SIZE, ARRANGEMENT, OPERATING CLEARANCES, ALL SCHEDULED PERFORMANCE CHARACTERISTICS AND CAPACITIES OF MATERIAL AND EQUIPMENT. SHOP DRAWINGS SHALL SHOW THE RATINGS OF ITEMS AND SYSTEMS AND HOW THE COMPONENTS OF ITEMS AND SYSTEMS ARE ASSEMBLED, FUNCTION TOGETHER AND HOW THEY WILL BE INSTALLED ON THE PROJECT. DATA AND SHOP DRAWINGS FOR COMPONENT PARTS OF AN ITEM OR SYSTEM SHALL BE COORDINATED AND SUBMITTED AS A UNIT. SHOP DRAWINGS SHALL CLEARLY HIGHLIGHT, ENCIRCLE, OR OTHERWISE CLEARLY IDENTIFY ALL DEVIATIONS FROM THE CONTRACT DOCUMENTS. PRIOR TO SUBMITTING, CONTRACTOR SHALL THOROUGHLY REVIEW EACH SUBMITTAL AND CHECK FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS, AND MARK EACH SUBMITTAL WITH APPROVAL STAMP TO SHOW THAT SUBMITTALS HAVE BEEN REVIEWED AND APPROVED BY THE CONTRACTOR. FAILURE OF CONTRACTOR TO COMPLETELY FULLY WITH THIS SECTION WILL RESULT IN REJECTION OF SUBMITTAL. A. APPROVAL STAMP: STAMP EACH SUBMITTAL WITH A UNIFORM, APPROVAL STAMP. STAMP SHALL INCLUDE PROJECT NAME, LOCATION, SPECIFICATION SECTION, NAME OF REVIEWER, DATE OF CONTRACTOR'S APPROVAL, AND STATEMENT CERTIFYING THAT SUBMITTAL HAS BEEN REVIEWED, CHECKED, AND APPROVED FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS.	
1.05. <b>CONNECTIONS TO EXISTING WORK:</b> PLAN THE INSTALLATION OF NEW WORK AND CONNECTIONS TO EXISTING WORK TO INSURE MINIMUM INTERFERENCE WITH THE REGULAR OPERATION OF THE EXISTING FACILITIES. SUBMIT TO THE ARCHITECT, FOR HIS APPROVAL, A PROGRESS SCHEDULE INDICATING ALL NECESSARY TEMPORARY SHUTDOWNS OF EXISTING SERVICES. ALL SHUTDOWNS SHALL BE MADE AT SUCH TIMES AS WILL NOT INTERFERE WITH REGULAR OPERATION OF THE EXISTING FACILITIES AND ONLY AFTER WRITTEN APPROVAL FROM THE ARCHITECT.	
1.06. <b>NEW WORK:</b> UNLESS OTHERWISE NOTED, ALL WORK INDICATED THROUGHOUT THESE DRAWINGS SHALL BE CONSIDERED AS NEW WORK AND SHALL BE INCLUDED AS AN INTEGRAL PART OF THIS CONTRACT.	
1.07. <b>DUCTWORK CONSTRUCTION:</b> ALL DUCTWORK SHALL BE CONSTRUCTED FOR THE STATIC PRESSURE CLASSIFICATION INDICATED IN THE "DUCTWORK MATERIAL CONSTRUCTION SCHEDULE." FURNISH TURNING VANES IN ALL SUPPLY AIR RECTANGULAR DUCTWORK ELBOWS AND T-SPLITS (REGARDLESS OF APPROPRIATE DETAIL FOR ADDITIONAL REQUIREMENTS). THE GENERATOR OF THE ROUTING SHALL BE DETERMINED BY THE JOB SITE CONDITIONS AND SHALL BE COORDINATED WITH ALL OTHER CONSTRUCTION TRADES.	
1.08. <b>PERMITS AND CODES:</b> CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH PERMITS, TAXES AND INSURANCE. ALL WORK SHALL BE INSTALLED IN COMPLETE CONFORMITY WITH LOCAL CODES AND ORDINANCES AS WELL AS THE FOLLOWING: <div><div>1. NFPA 90</div><div>2. BSC 2021</div><div>3. MMC 2021</div><div>4. LOCAL CODES &amp; ORDINANCES</div><div>5. ASHRAE</div><div>6. ANSI</div><div>7. ASTM</div><div>8. UL</div><div>9. NEC</div><div>10. AMCA</div><div>11. SMACNA</div></div>	

DUCTWORK MATERIAL CONSTRUCTION & INSULATION SCHEDULE (REFER TO SPECIFICATIONS SECTION 233100 FOR ADDITIONAL REQUIREMENTS.)					
SYSTEM EQUIPMENT	DUCTWORK SERVICE	DUCTWORK PRESSURE CLASS ("W.C.)	SMACNA SEAL CLASS	DUCTWORK CONSTRUCTION	INSULATION
SUPPLY FAN OC-SF-1	SUPPLY AIR	+ 2.0	C	RECTANGULAR DUCTWORK: GALVANIZED SHEET METAL	USE 1-1/2 INCH RIGID FIBERGLASS BOARD INSULATION WITH A MINIMUM INSTALLED R-VALUE OF 4.
REMARKS: 1. ALL DUCT SIZES INDICATED ON DRAWINGS REPRESENT INTERNAL NET DIMENSIONS. 2. DUCTWORK CONSTRUCTION, INCLUDING SHEET METAL GAUGES AND SEAM CONSTRUCTION METHODS, SHALL BE IN ACCORDANCE WITH SMACNA STANDARDS. 3. DUCTWORK ELBOWS, TRANSITIONS, ETC. SHALL BE FABRICATED IN ACCORDANCE WITH DETAIL "E" ON DRAWING M1.02. 4. REFER TO SPECIFICATION MANUAL FOR ADDITIONAL DUCTWORK CONSTRUCTION REQUIREMENTS.					

GRAVITY RELIEF HOOD SCHEDULE (REFER TO SPECIFICATIONS SECTION 233700 FOR ADDITIONAL REQUIREMENTS.)							
TAG #	DWG #	SERVICE	CFM	ROOF OPENING (INCHES)	MAX THRU-ROOF VELOCITY (FPM)	MAX PRESS. DROP (°W)	MIN FREE AREA (SQ FT)
OC-RH-1	M2.01	RELIEF	500	20.5x20.5	273	0.01	1.83
REMARKS: 1. FURNISH UNIT WITH 1" FIBERGLASS HOOD INSULATION. 2. FURNISH INTAKE HOOD WITH BIRD SCREEN. 3. FURNISH UNIT WITH MOTORIZED DAMPER. 4. FURNISH UNIT WITH ROOF CURB WITH DAMPER TRAY. ROOF CURB SHALL BE FURNISHED BY M.C. AND INSTALLED BY G.C.							

MECHANICAL LEGEND	
	EXISTING DUCTWORK/EQUIPMENT TO REMAIN AS IS
	EXISTING DUCTWORK/EQUIPMENT TO REMAIN AS IS
	EXISTING DUCTWORK/EQUIPMENT TO BE REMOVED
	NEW DUCTWORK/EQUIPMENT
	NEW DUCTWORK/EQUIPMENT
	CONDENSATE PIPING
	HOT WATER SUPPLY PIPING
	HOT WATER RETURN PIPING
	REFRIGERANT PIPING
	SHUTOFF VALVE
	THREE-WAY CONTROL VALVE
	TWO-WAY CONTROL VALVE
	UNION
	CAP
	REDUCER
	FLOW DIRECTION
	PIPING ELBOW DOWN
	PIPING ELBOW UP
	PIPING TEE DOWN
	PIPING TEE UP
	STRAINER WITH BLOWDOWN
	FLEXIBLE CONNECTION
	PRESSURE GAUGE WITH STOP-COCK
	PRESSURE GAUGE
	THERMOMETER
	AUTOMATIC AIR VENT
	MANUAL AIR VENT
	CHECK VALVE
	RELIEF VALVE
	TRIPLE-DUTY VALVE
	DIFFERENTIAL PRESSURE VALVE
E.C.	ELECTRICAL CONTRACTOR
F.C.	FLEXIBLE CONNECTION
G.C.	GENERAL CONTRACTOR
M.C.	MECHANICAL CONTRACTOR
P.C.	PLUMBING CONTRACTOR
T.C.C.	TEMPERATURE CONTROL CONTRACTOR
A.F.F.	ABOVE FINISHED FLOOR
B/E.L.	BOTTOM ELEVATION
E.A.	EXHAUST AIR
S.A.	SUPPLY AIR
Ø	ROUND DUCTWORK
cfm	CUBIC FEET PER MINUTE
W.M.S.	REMOVABLE WIRE MESH SCREEN (1/2" X 1/2" FABRIC)
B.O.D.	BOTTOM OF DUCT
	DETAIL TAG NUMBER
	DRAWING REFERENCE NUMBER
	THERMOSTAT
	EXISTING THERMOSTAT
	DRAWING KEY NOTE
	CONNECTION OF NEW TO EXISTING



# KOHLER

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- 1

COMBUSTION AIR INTAKE AND FLUE PIPING. SIZE AND INSTALL PER MANUFACTURER'S WRITTEN INSTRUCTIONS. FIELD VERIFY EXACT ROUTING. REFER TO SPECIFICATION SECTION 235100.

2

BOILER

3

EXISTING EQUIPMENT PAD

4

SUPPLY LINE (REFER TO PLANS FOR SIZE)

5

RETURN LINE (REFER TO PLANS FOR SIZE)

6

SHUT OFF VALVE

7

CONCENTRIC REDUCER

8

UNION

9

DRAIN PORT

10

PRESSURE GAUGE

11

STRAINER

12

THERMOMETER

13

FLOW SWITCH

14

TEMPERATURE, PRESSURE RELIEF VALVE

15

MANUFACTURER'S PROVIDED CONDENSATE NEUTRALIZATION KIT

16

EXTEND CONDENSATE TO FLOOR DRAIN.

17

MANUFACTURER'S PROVIDED CONDENSATE TRAP.

18

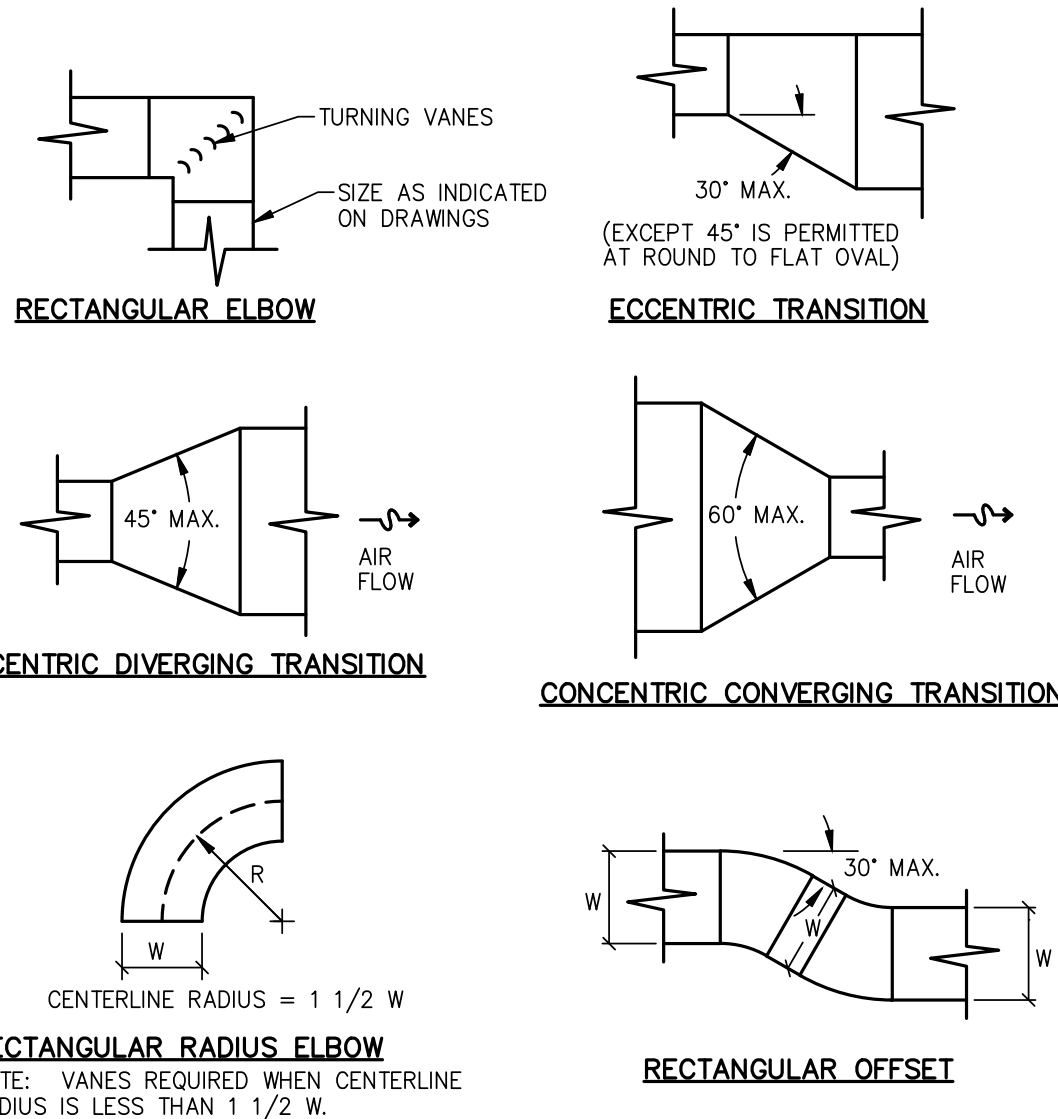
SIZE AND INSTALL CONDENSATE LINE PER MANUFACTURER'S WRITTEN INSTRUCTIONS. CONDENSATE DRAIN UPSTREAM OF NEUTRALIZER SHALL BE CONSTRUCTED OF PVC OR CPVC. REFER TO SPECIFICATION SECTION 232113.

19

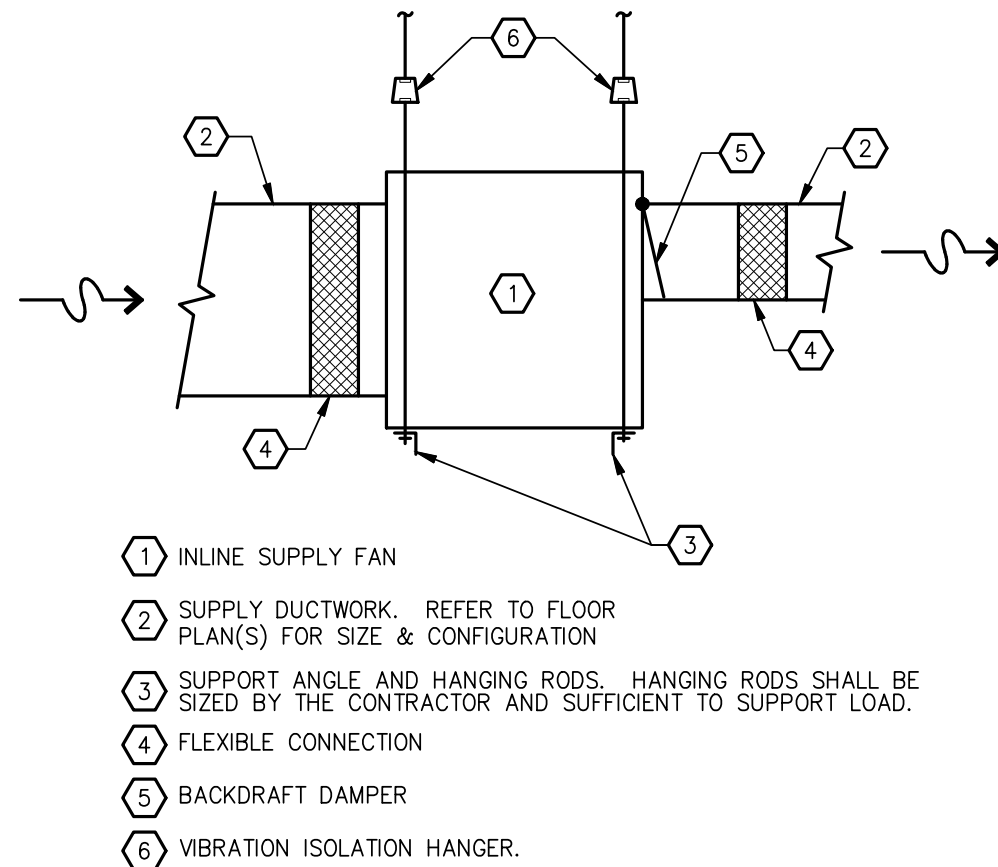
VACUUM BREAK

NOTE: ALL SUPPLY, RETURN AND BYPASS PIPING AND ASSOCIATED VALVES, ETC. INDICATED IN THIS DETAIL SHALL BE INSTALLED FULL SIZE FOR EACH BOILER.

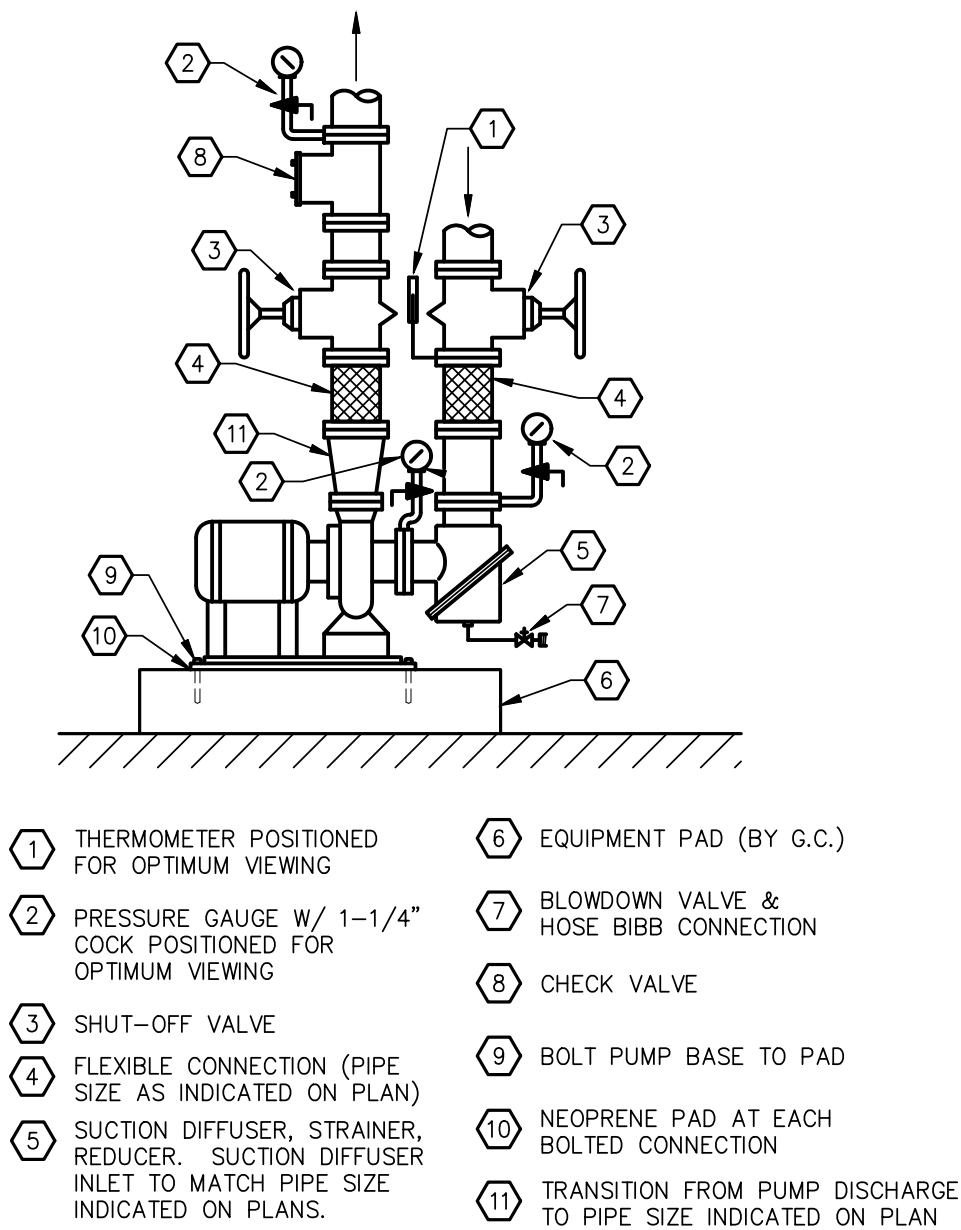
**A** BOILER PIPING DETAIL (OC-B-1 & 2)



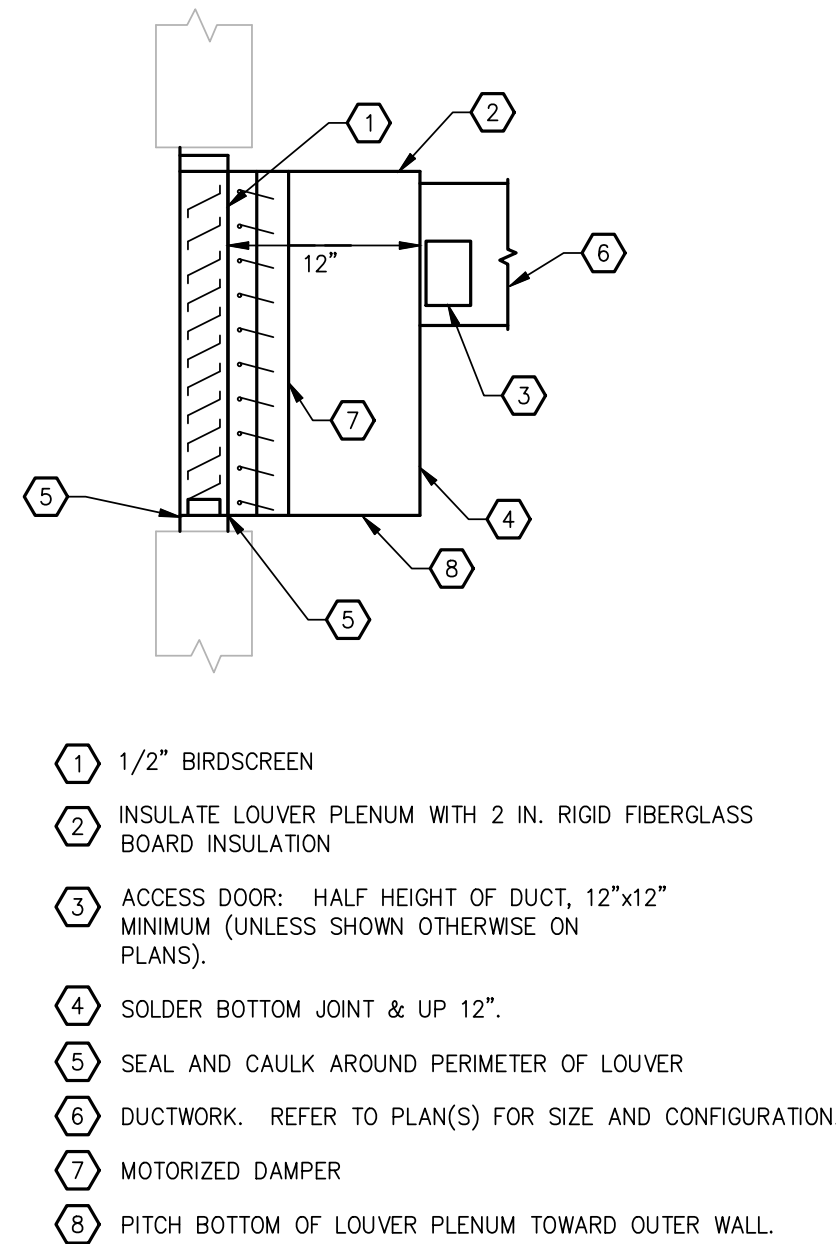
**E** DUCTWORK TRANSITION DETAILS



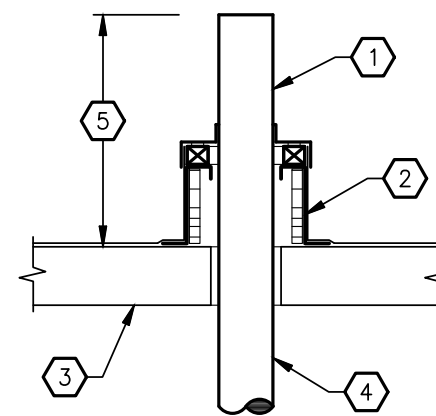
**F** INLINE SUPPLY FAN (OC-L-1)



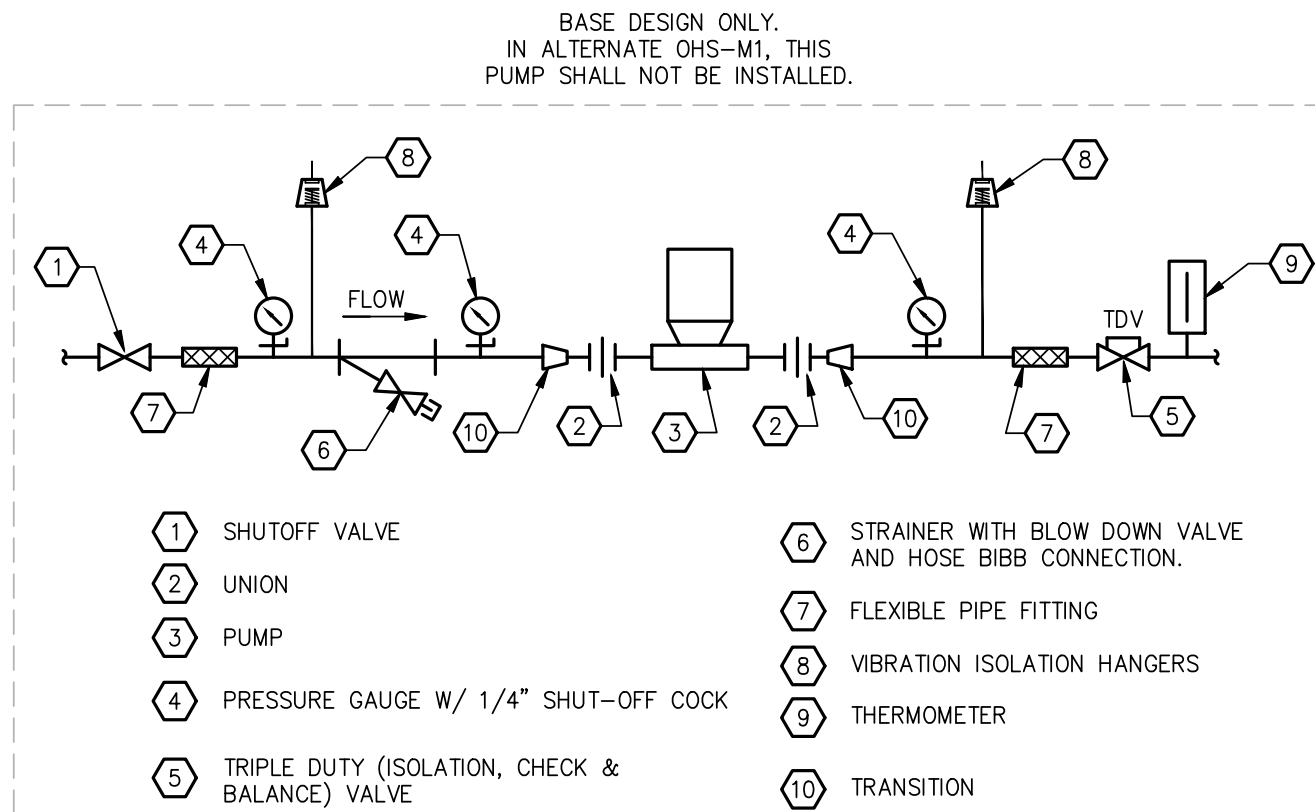
**B** END SUCTION PUMP DETAIL (OC-HWP-1 & 2)



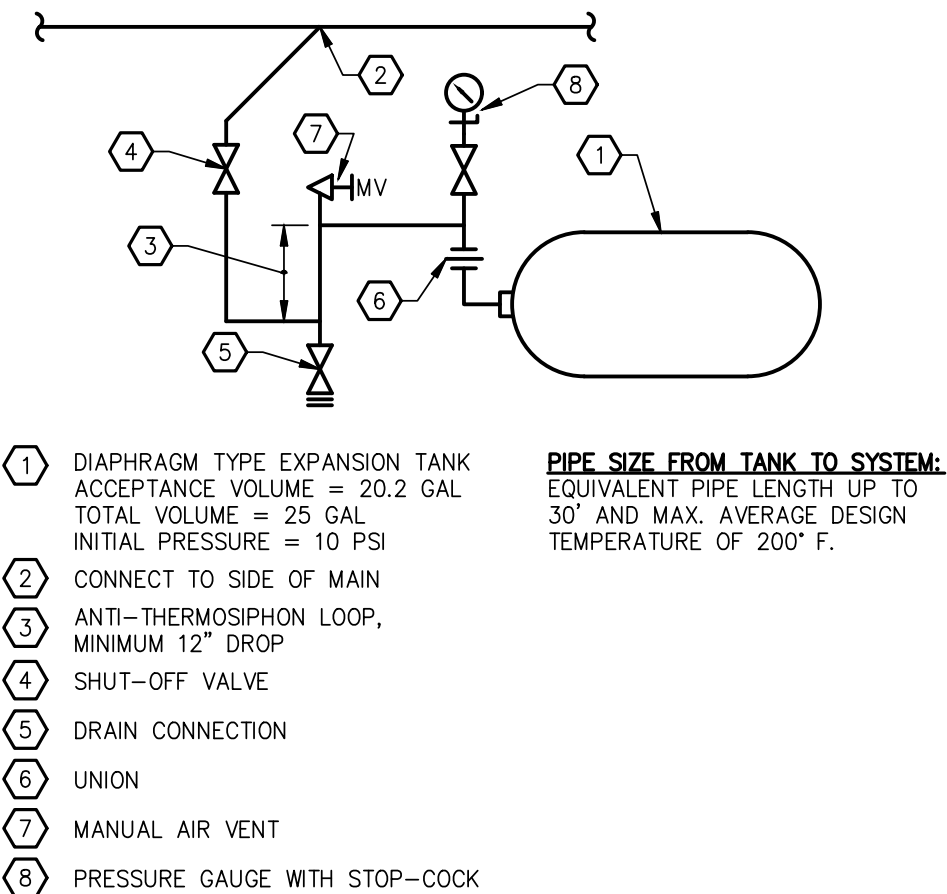
**G** LOUVER DETAIL (OC-L-1)



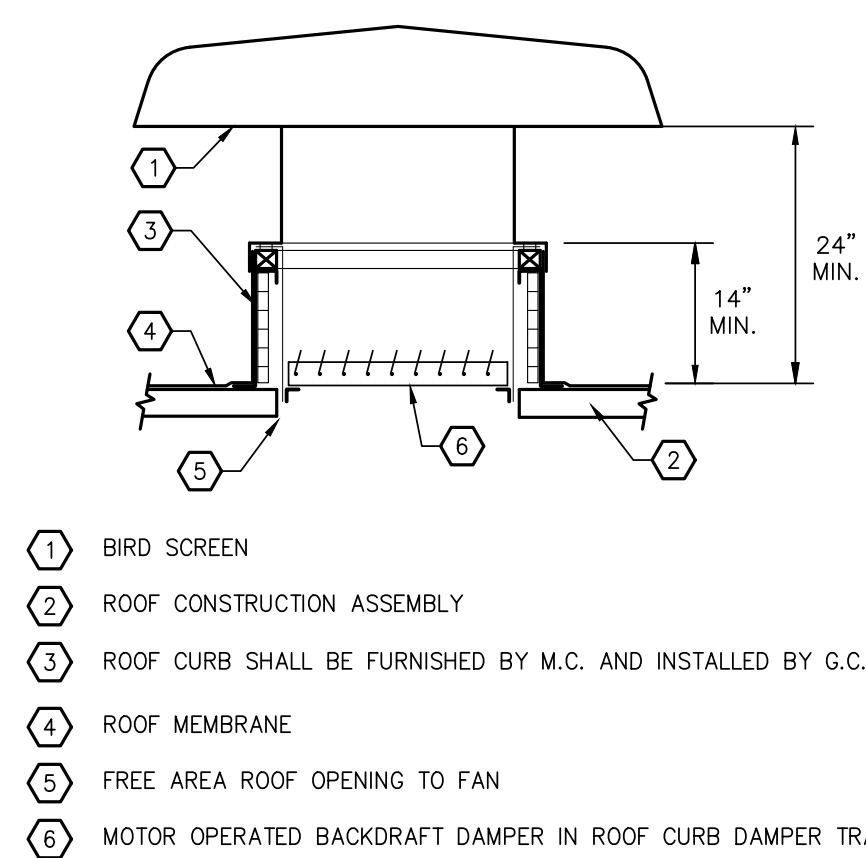
**L** FLUE THRU ROOF DETAIL



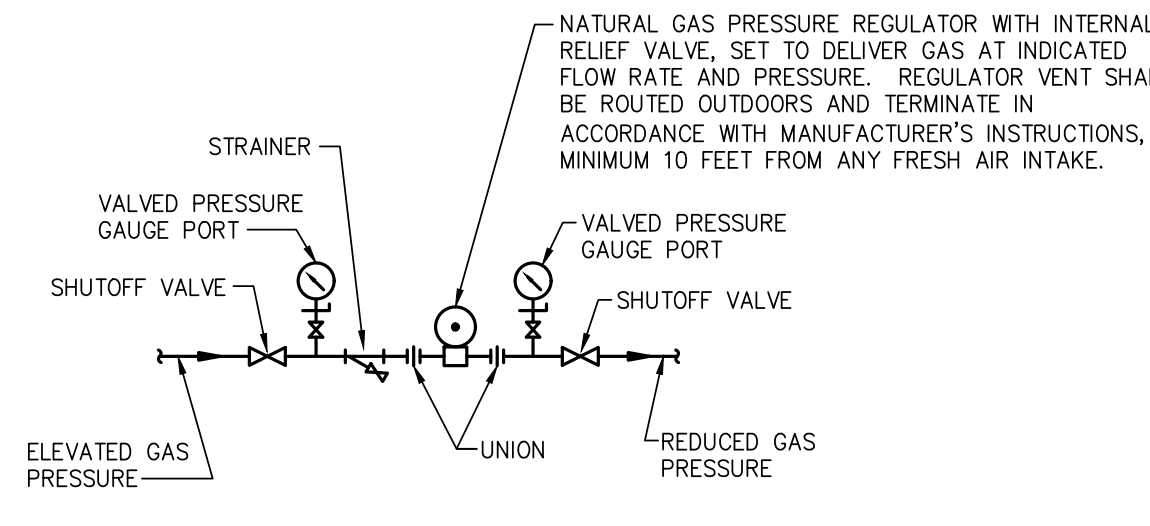
**C** VERTICAL IN-LINE PUMP WITH HORIZONTAL PIPING DETAIL (OC-HWS-3)



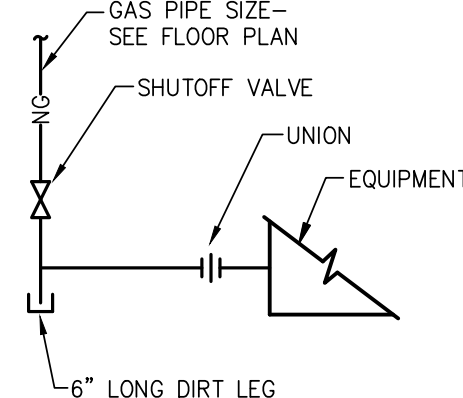
**D** TYPICAL DIAPHRAGM EXPANSION TANK PIPING DETAIL



**H** RELIEF HOOD DETAIL (OC-RH-1)



**J** NATURAL GAS PRESSURE REGULATOR DETAIL



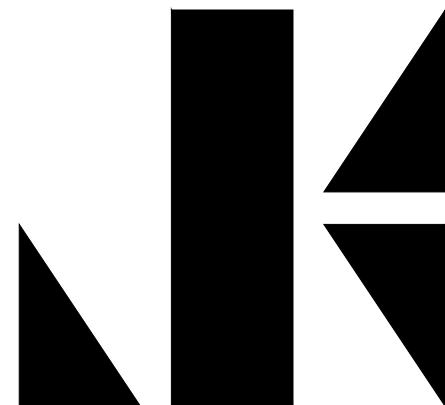
**K** GAS CONNECTION DETAIL

CONTRACTOR RESPONSIBILITY MATRIX					
WORK	FURNISHED BY...	INSTALLED BY...	LOW VOLT. WIRING BY...	LINE POWER BY...	REMARKS
TCS LOW VOLTAGE & COMMUNICATION WIRING	T.C.C.	T.C.C.	T.C.C.	NOT APPLICABLE	
TCS CONDUIT & RACEWAYS	T.C.C.	T.C.C.	T.C.C.	NOT APPLICABLE	
TCS CURRENT SWITCHES	T.C.C.	T.C.C.	T.C.C.	T.C.C.	
TCS RELAYS	T.C.C.	T.C.C.	T.C.C.	T.C.C.	
TCS NODES, EQUIPMENT, HOUSINGS, ENCLOSURES & PANELS	T.C.C.	T.C.C.	T.C.C.	NOT APPLICABLE	
PRESSURE DIFFERENTIAL SWITCH	T.C.C.	M.C.	T.C.C.	NOT APPLICABLE	
TCS INTERFACE WITH BOILER CONTROLS	T.C.C.	T.C.C.	T.C.C.	T.C.C.	
BOILER CONTROLS INTERFACE WITH TCS	VIA BOILER MANUFACTURER	T.C.C.	T.C.C.	T.C.C.	
VARIABLE FREQUENCY DRIVES	T.C.C.	M.C.	T.C.C.	E.C.	1
UNIT HEATER CONTROLS	UNIT MOUNTED BY M.C.; OTHERWISE, T.C.C.	UNIT MOUNTED BY M.C.; OTHERWISE, T.C.C.	T.C.C.	T.C.C.	
DUCT MOUNTED MOTORIZED DAMPERS	T.C.C.	M.C.	T.C.C.	T.C.C.	
MOTORIZED DAMPERS INTEGRAL TO EQUIPMENT	M.C.	T.C.C.	T.C.C.	T.C.C.	
MOTORIZED DAMPER OPERATORS	T.C.C.	T.C.C.	T.C.C.	T.C.C.	
MOTORIZED VALVES & VALVE OPERATORS	T.C.C.	M.C.	T.C.C.	NOT APPLICABLE	
MANUAL VALVES	M.C.	M.C.	NOT APPLICABLE	NOT APPLICABLE	
PIPE INSERTION DEVICES & TAPS INCLUDING THERMOWELLS, FLOW & PRESSURE STATIONS	T.C.C.	M.C.	T.C.C.	T.C.C.	
REMARKS: 1. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL LINE-SIDE POWER TO VFD AND LOAD SIDE POWER CONNECTIONS BETWEEN VFD AND ASSOCIATED MOTOR.					
KEY: E.C. ELECTRICAL CONTRACTOR M.C. MECHANICAL CONTRACTOR T.C.C. TEMPERATURE CONTROL SYSTEM CONTRACTOR T.C.U. MFR. TEMPERATURE CONTROL SYSTEM CONTRACTOR MANUFACTURER T.C.S. TEMPERATURE CONTROL SYSTEM LINE POWER ≥ 110 VOLTS LOW VOLT ≤ 100 VOLTS					

ALTERNATE

ALTERNATE OHS-M1: STATE THE AMOUNT TO BE ADDED TO OR SUBTRACTED FROM THE BASE BID TO FURNISH ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY FOR THE FOLLOWING:

- OMISSION OF THE INSTALLATION OF INDIRECT WATER HEATER PIPING AND CIRCULATION PUMP OC-HWS-3 AS WELL AS ASSOCIATED TEMPERATURE CONTROLS.
- OMISSION OF THE DEMOLITION OF NATURAL GAS PIPING DISTRIBUTION TO EXISTING GAS-FIRED DOMESTIC WATER HEATER.
- INSTALLATION OF N.G. CONNECTION TO DOMESTIC GAS-FIRED WATER HEATER, 1-1/4" GAS PIPING AS SHOWN ON PLANS, NEW GAS PRESSURE REGULATOR, AND TEMPERATURE CONTROLS.

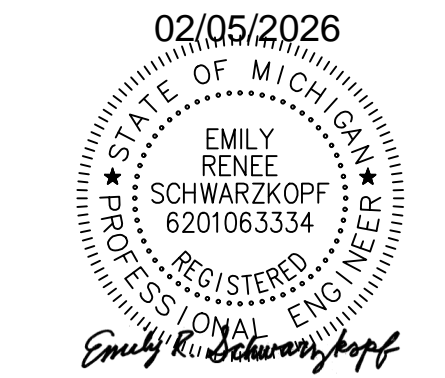


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MONROE PUBLIC SCHOOLS

1275 N. MACOMB STREET, MONROE, MICHIGAN 48162

JOB # 26102

SCHEDULES  
AND  
DETAILS

M1.02

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# Mechanical Compliance Certificate

## Project Information

Energy Code: 2021 IECC  
Project Title: Orchard Center High School Boiler Replacement  
Location: Monroe, Michigan  
Climate Zone: 5a  
Project Type: Alteration

Construction Site: Owner/Agent: Designer/Contractor:

## Mechanical Systems List

Quantity	Component	Description
<strong>HVAC Systems</strong>		
1	Unit Heater OC-UH-1 (Single Zone w/ PerimeterSystem):	Heating: 1 each - Unit Heater (Heating Equip), Electric, Capacity = 11 kBtu/h No minimum efficiency requirement applies Fan System: OC-UH-1   Boiler Room -- Compliance (Motor nameplate HP and fan efficiency method) : Passes  Fans: OC-UH-1 Supply, Constant Volume, 400 CFM, 0.0 motor nameplate hp, 0.00 fan energy index , fan exception: Single fan < 1 HP or < 0.89 kW
<strong>HVAC Plants</strong>		
2	Boilers OC-B-1 and OC-B-2:	Heating: Hot Water Boiler, Capacity 500 kBtu/h. Gas Proposed Efficiency: 97.80 % Et, Required Efficiency: 80.00 % Et

## Mechanical Compliance Statement

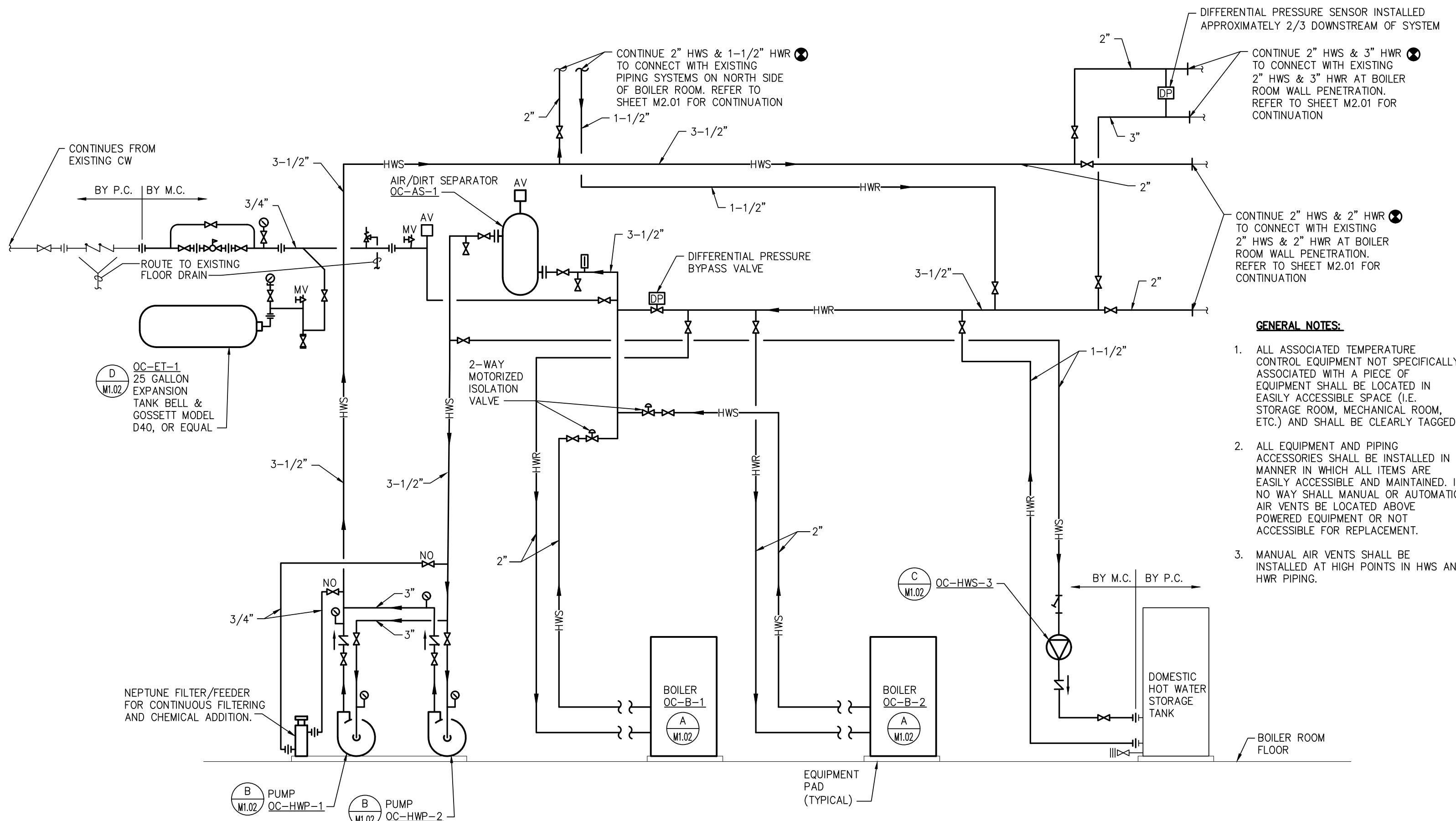
**Compliance Statement:** The proposed mechanical design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2021 IECC requirements in COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Emily R. Schwarzkopf - Mechanical Engineer *Emily R. Schwarzkopf* 02/04/2026

Name - Title Signature Date

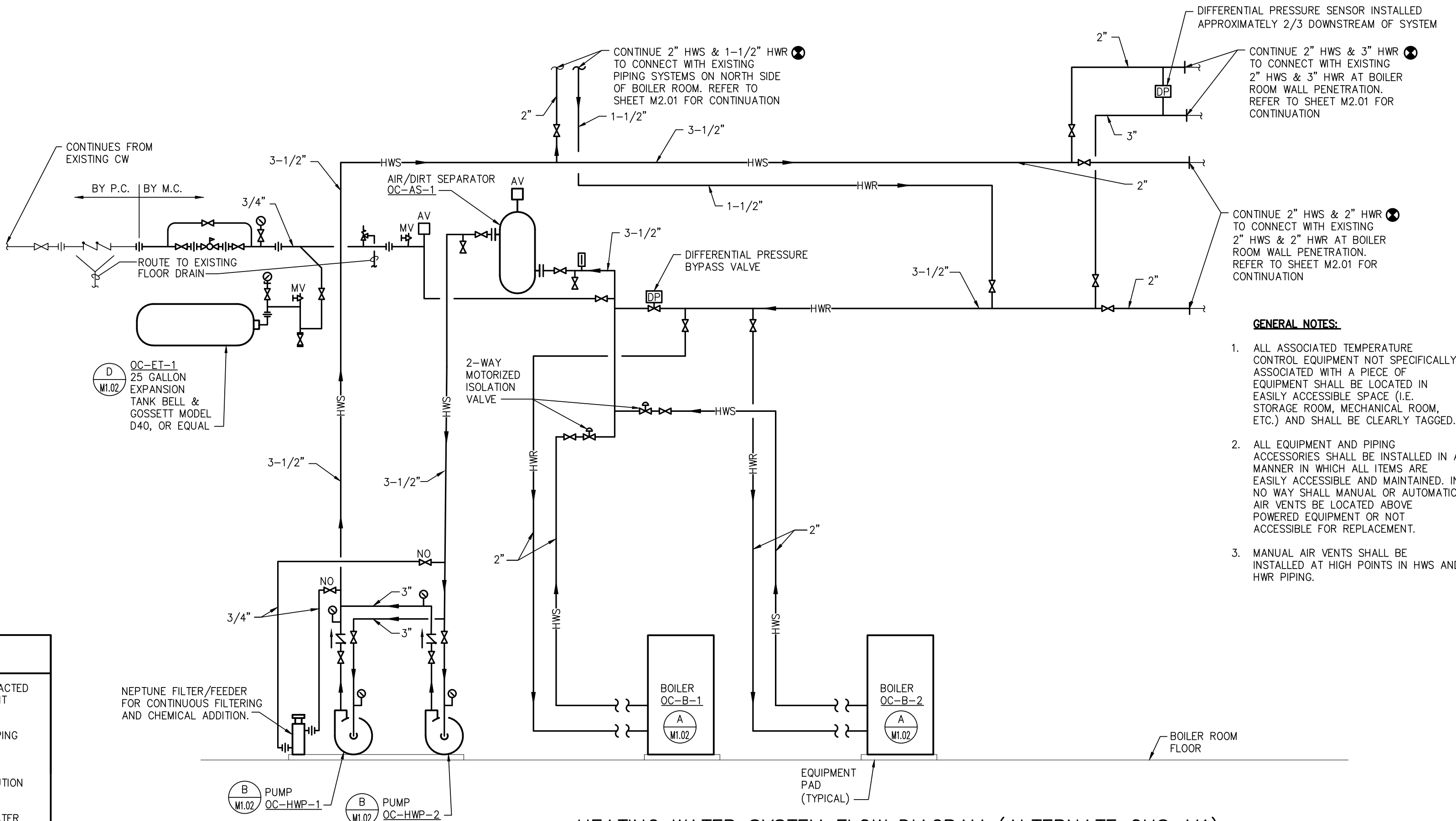
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HEATING WATER SYSTEM FLOW DIAGRAM (BASE DESIGN)

SCALE: NONE



HEATING WATER SYSTEM FLOW DIAGRAM (ALTERNATE OHS-M1)

SCALE: NONE

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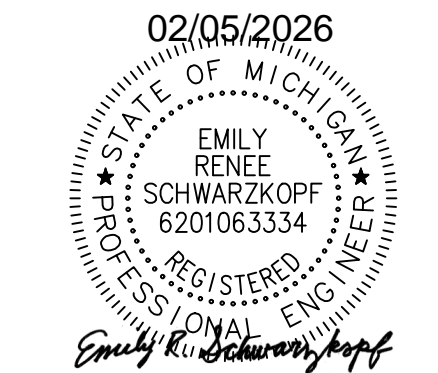
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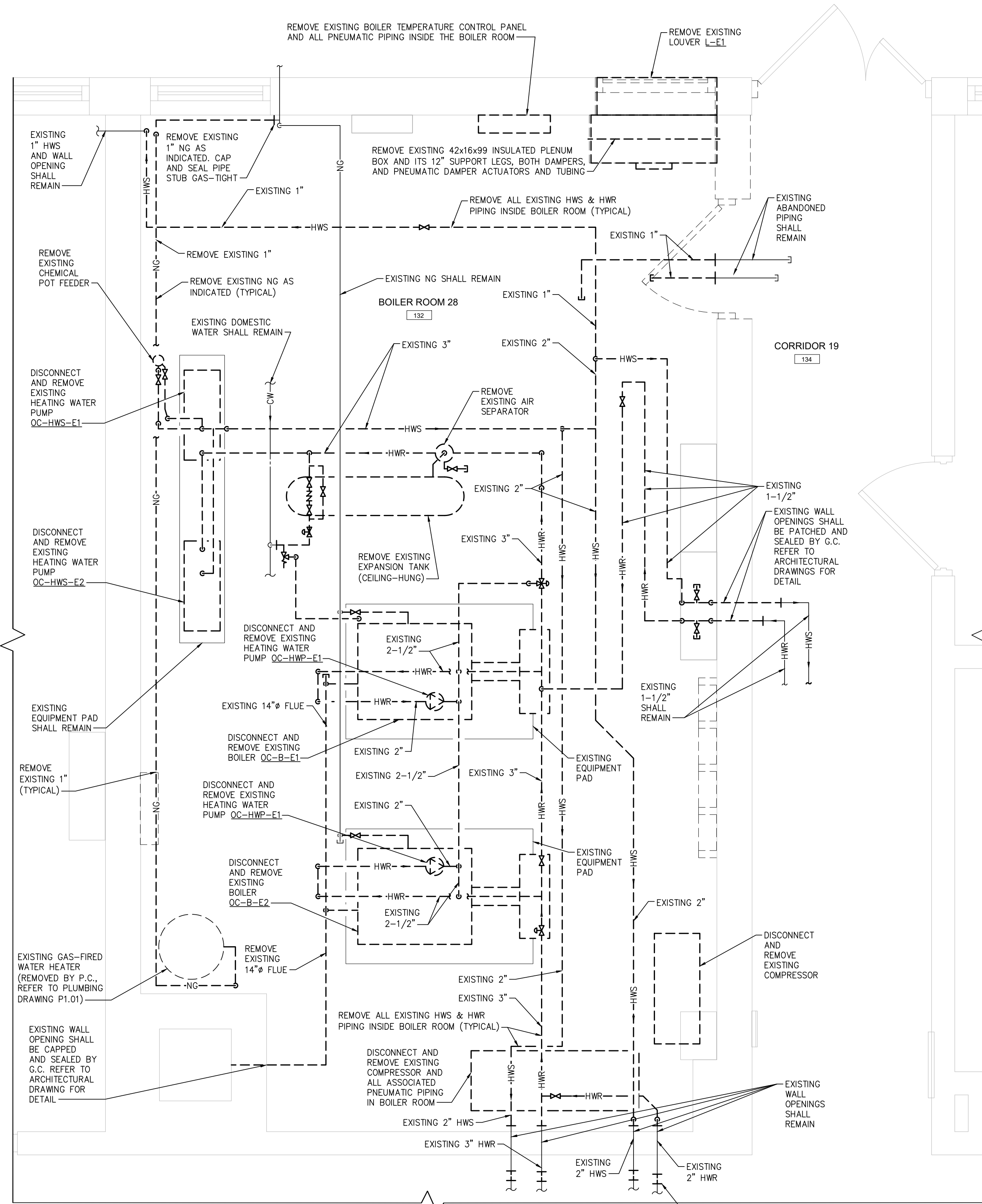
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FLOW  
DIAGRAM

M1.03



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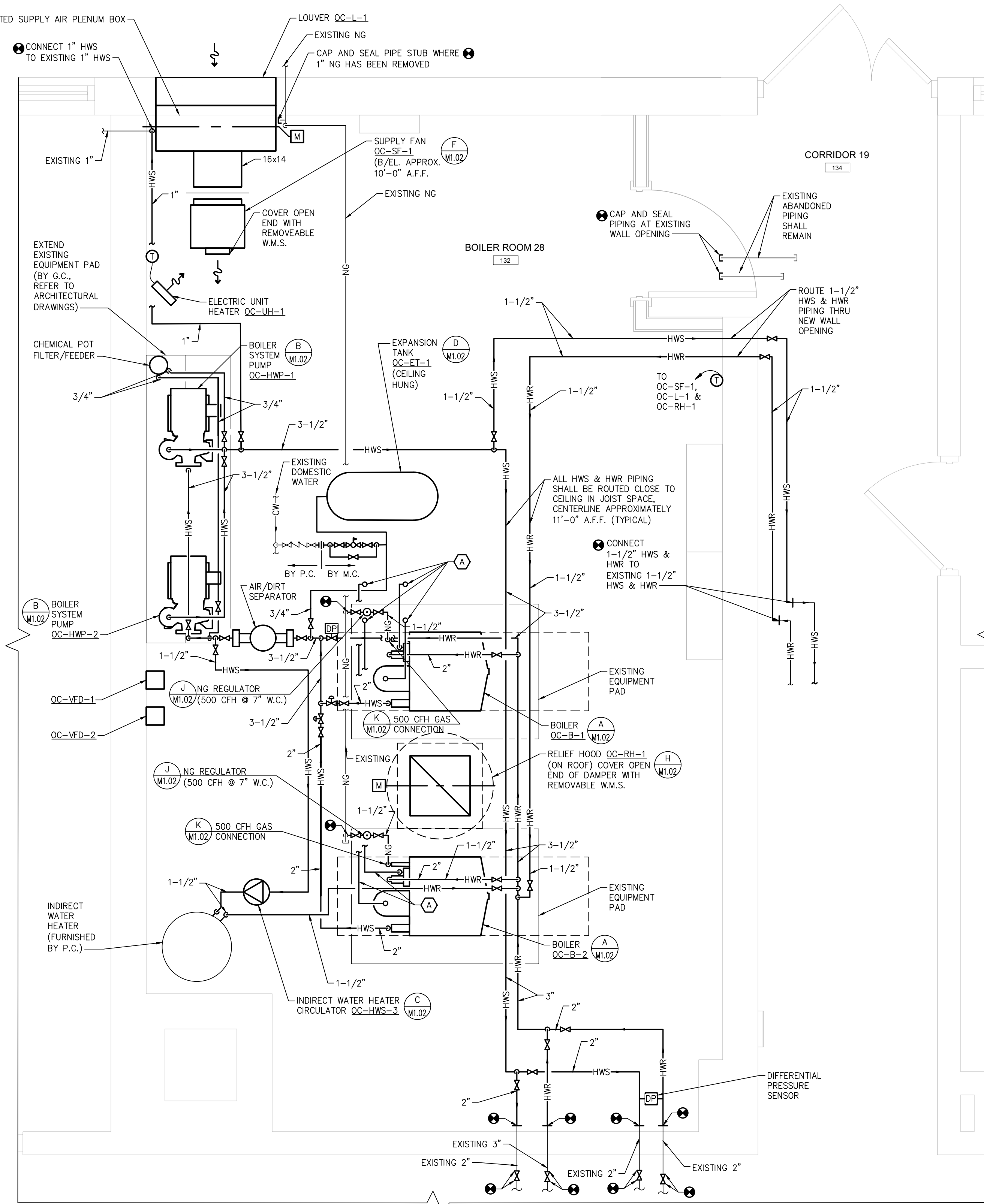
HVAC DEMOLITION PLAN - BASE BID

SCALE: 1/2" = 1'-0"

GENERAL NOTES:

- REFER TO DIVISION 23 SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- REFER TO DRAWINGS M1.01, M1.02, AND M1.03 FOR SCHEDULES, DETAILS AND PIPING FLOW DIAGRAMS.
- PIPE PENETRATIONS THRU ALL FIRE RATED WALLS SHALL BE SEALED BY THE MECHANICAL CONTRACTOR, TO PREVENT SPREAD OF FIRE AND SMOKE AND INGRESS OF MOISTURE.
- PROVIDE ALL HANGERS, SUPPORTS AND MISCELLANEOUS STEEL REQUIRED FOR THE PROPER INSTALLATION OF ALL PIPE AND EQUIPMENT.
- MAINTAIN REQUIRED MANUFACTURERS' CLEARANCES ON ALL EQUIPMENT. AT NO POINT SHALL HYDRONIC PIPING BE ROUTED OVER ELECTRICAL EQUIPMENT OR BELOW ELECTRICAL LIGHTING FIXTURES.
- PREP AND PAINT ALL BARE METAL.
- ALL PNEUMATIC PIPING AND PNEUMATIC CONTROLS IN THE BOILER ROOM SHALL BE REMOVED.
- EXISTING TEMPERATURE CONTROL SYSTEM SHALL BE EXPANDED AS REQUIRED TO INCLUDE ALL NEW EQUIPMENT INDICATED ON THESE DRAWINGS. ALL EQUIPMENT REMOVED SHALL HAVE ALL ASSOCIATED GRAPHICS REMOVED FROM CONTROL SYSTEM.
- ALL ASSOCIATED TEMPERATURE CONTROL EQUIPMENT NOT SPECIFICALLY ASSOCIATED WITH A PIECE OF EQUIPMENT SHALL BE LOCATED IN EASILY ACCESSIBLE SPACE (I.E. STORAGE ROOM, MECHANICAL ROOM, ETC.) AND SHALL BE CLEARLY TAGGED.
- ALL EQUIPMENT AND PIPING ACCESSORIES SHALL BE INSTALLED IN A MANNER IN WHICH ALL ITEMS ARE EASILY ACCESSIBLE AND MAINTAINED. IN NO WAY SHALL MANUAL OR AUTOMATIC AIR VENTS BE LOCATED ABOVE POWERED EQUIPMENT.
- ALL EXISTING CONDITIONS SHALL BE FIELD VERIFIED.
- ALL ROOF MOUNTED EQUIPMENT REQUIRING SERVICE SHALL BE LOCATED A MINIMUM OF 10'-0" FROM THE EDGE OF ROOF.
- ROOF CURBS SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR AND INSTALLED BY THE GENERAL CONTRACTOR. REFER TO ARCHITECTURAL DRAWINGS FOR ROOF CONSTRUCTION.
- COORDINATE DUCTWORK, PIPING AND EQUIPMENT LOCATIONS WITH ALL OTHER TRADES.

40"Wx60"Hx12"D INSULATED SUPPLY AIR PLENUM BOX



HVAC PLAN - BASE BID

SCALE: 1/2" = 1'-0"

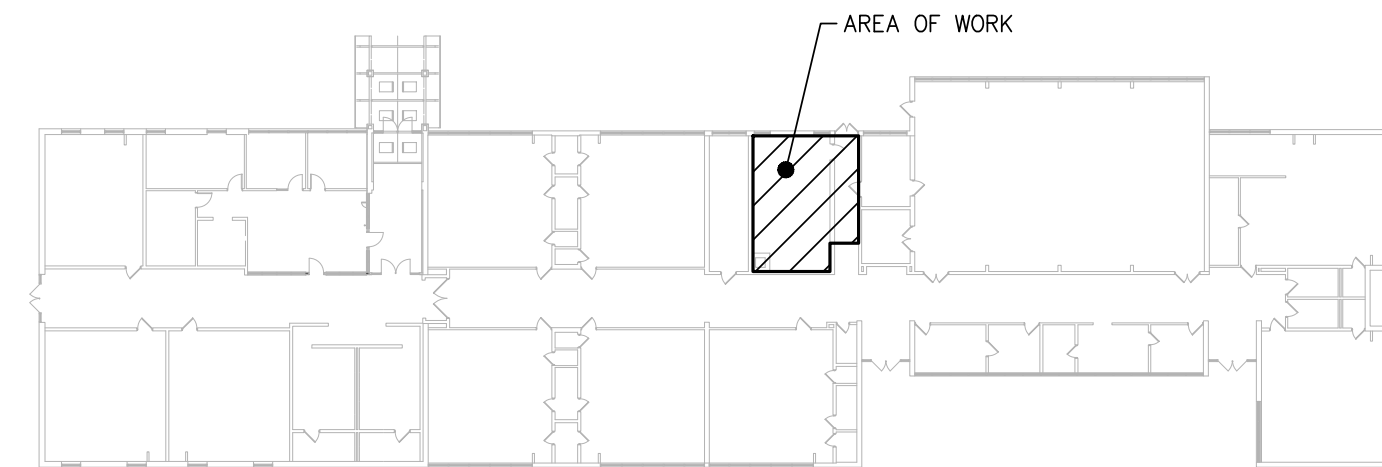
PLAN NOTES:

- (A) ROUTE FLUE AND COMBUSTION AIR INTAKE UP THRU ROOF AND TERMINATE WITH MANUFACTURER-APPROVED ROOF TERMINATIONS. SIZE AND INSTALL IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS. REFER TO DETAIL "L" ON DRAWING M1.03 FOR FLUE ROOF CURB DETAIL.

ALTERNATE

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KEY PLAN  
NOT TO SCALE

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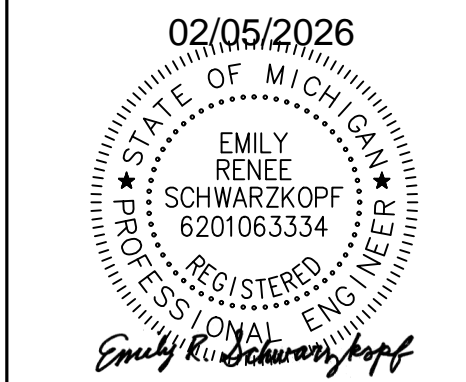
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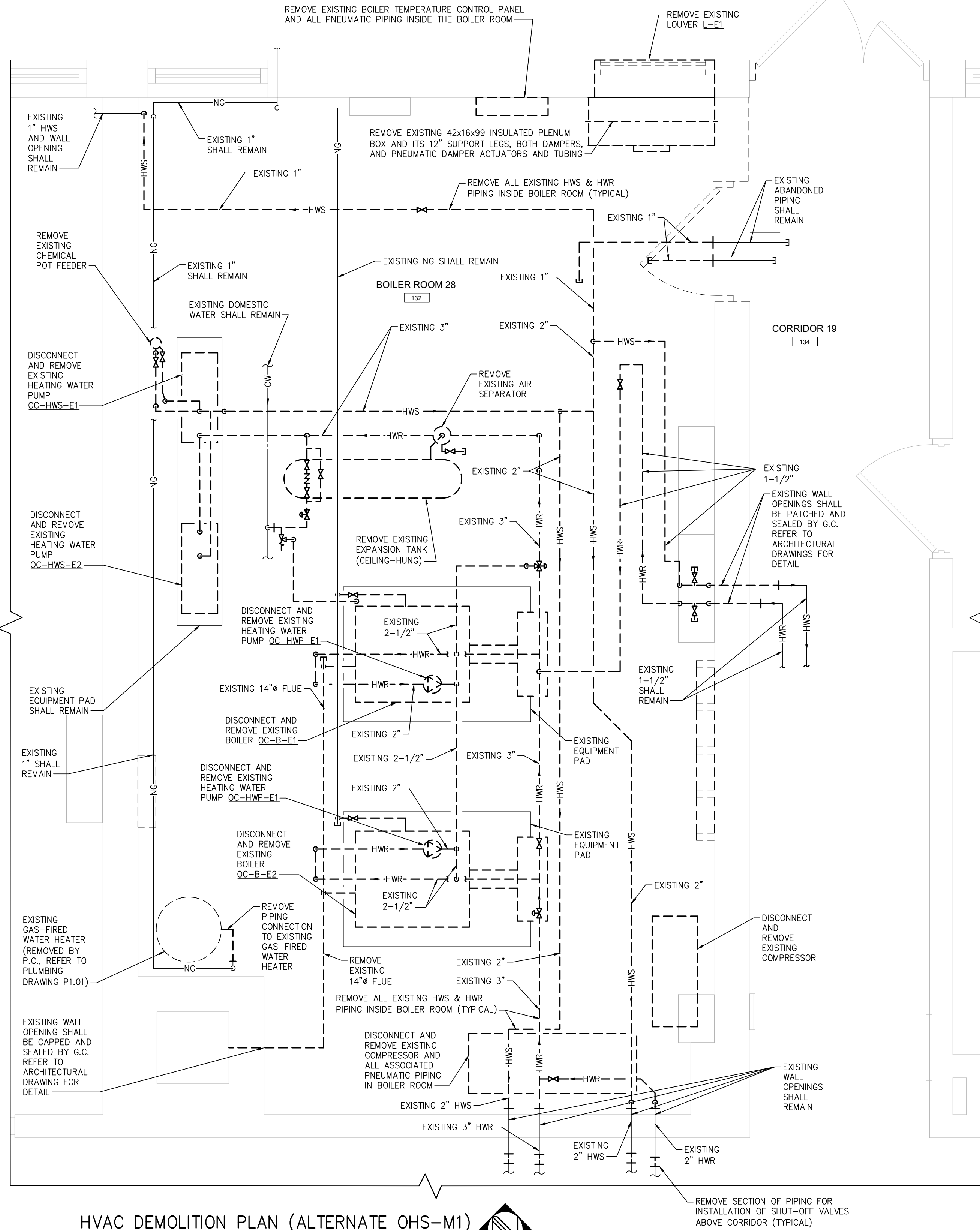
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HVAC  
PLAN  
BASE BID

M2.01



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HVAC DEMOLITION PLAN (ALTERNATE OHS-M1)

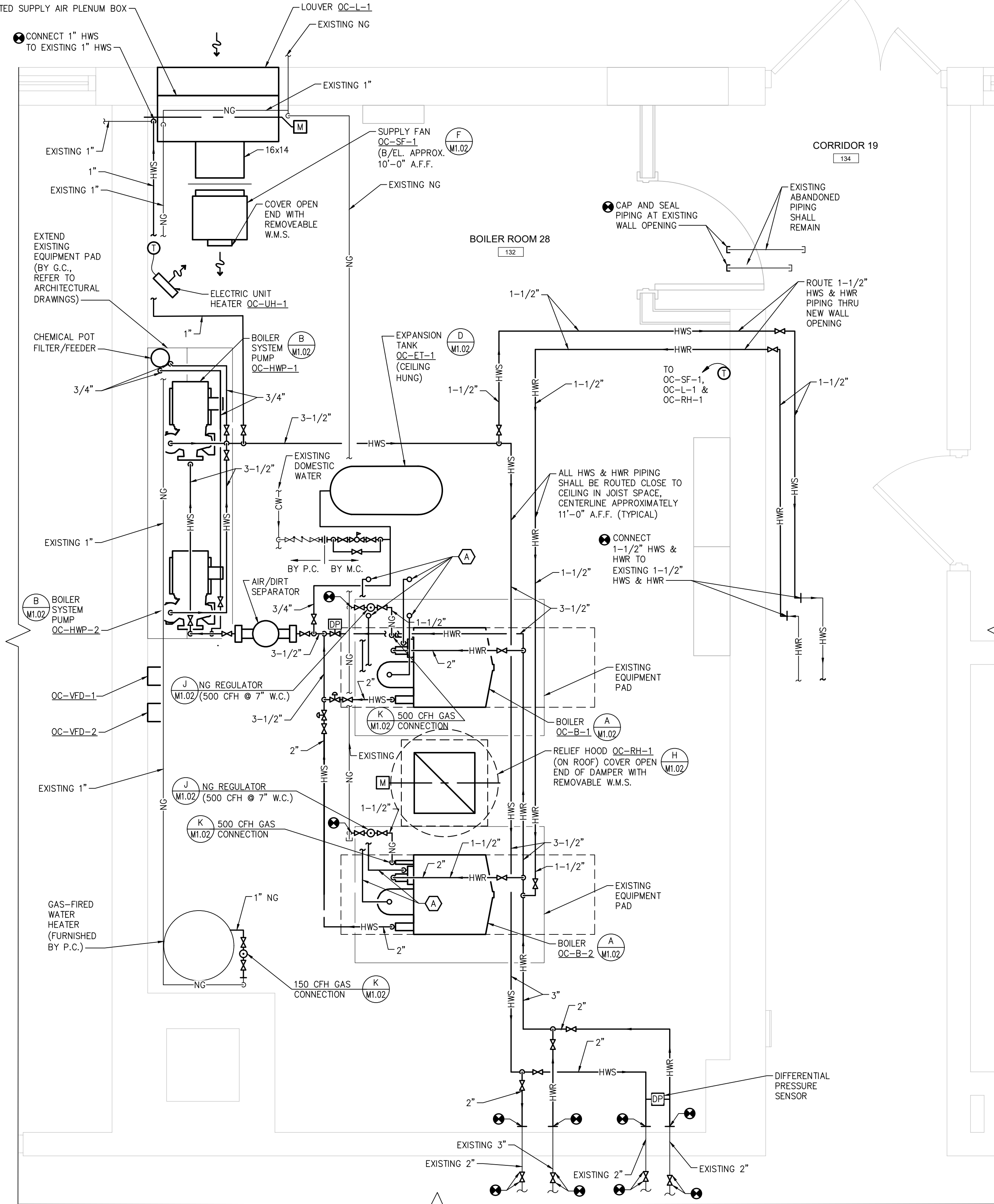
SCALE: 1/2" = 1'-0"



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- EXISTING TEMPERATURE CONTROL SYSTEM SHALL BE EXPANDED AS REQUIRED TO INCLUDE ALL NEW EQUIPMENT INDICATED ON THESE DRAWINGS. ALL EQUIPMENT REMOVED SHALL HAVE ALL ASSOCIATED GRAPHICS REMOVED FROM CONTROL SYSTEM.
- ALL ASSOCIATED TEMPERATURE CONTROL EQUIPMENT NOT SPECIFICALLY ASSOCIATED WITH A PIECE OF EQUIPMENT SHALL BE LOCATED IN EASILY ACCESSIBLE SPACE (I.E. STORAGE ROOM, MECHANICAL ROOM, ETC.) AND SHALL BE CLEARLY TAGGED.
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HVAC PLAN (ALTERNATE OHS-M1)

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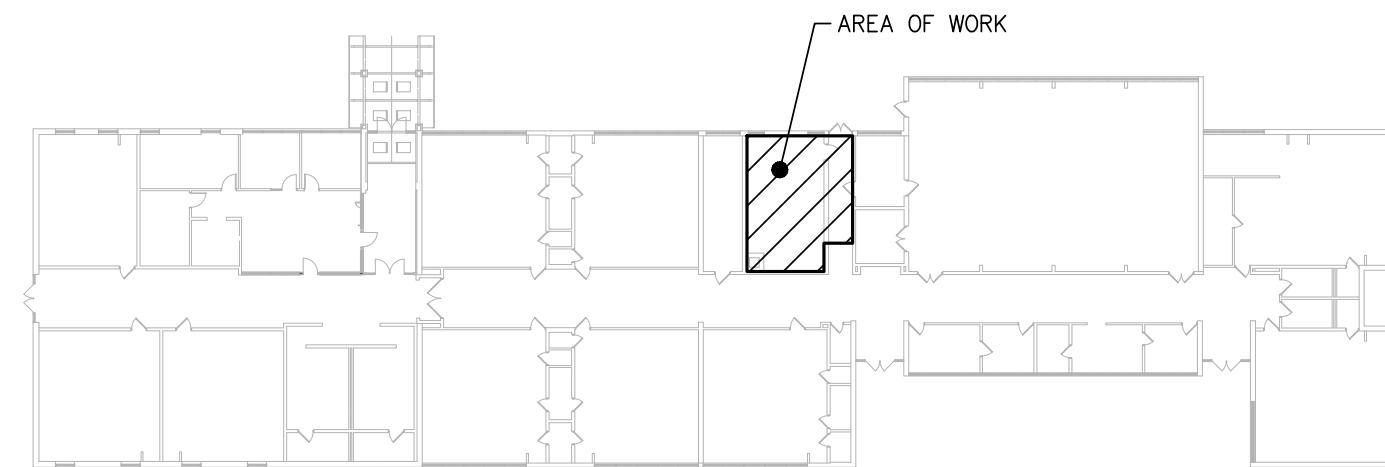
PLAN NOTES:

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ALTERNATE

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KEY PLAN  
NOT TO SCALE



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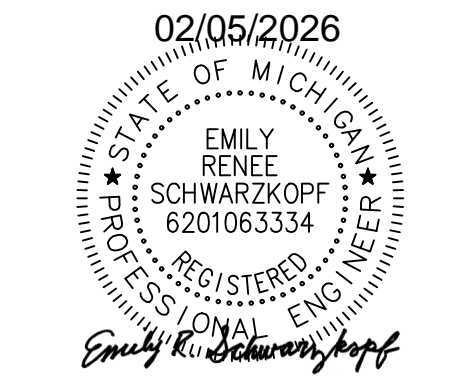
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HVAC PLAN  
ALTERNATE  
OHS-M1

M2.01A



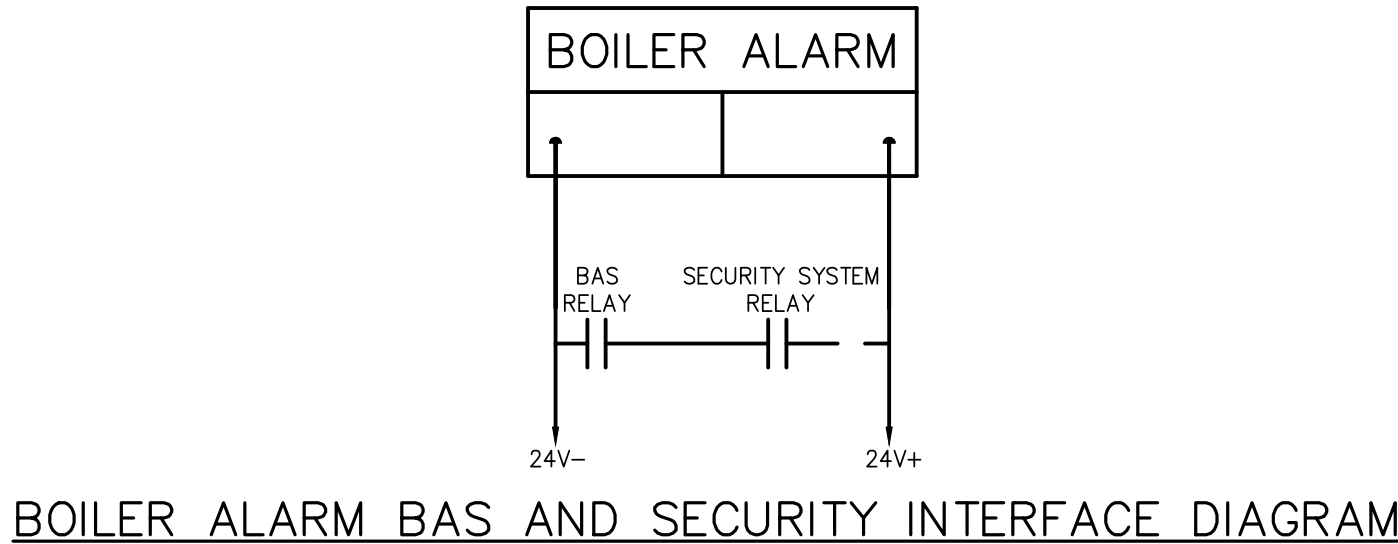
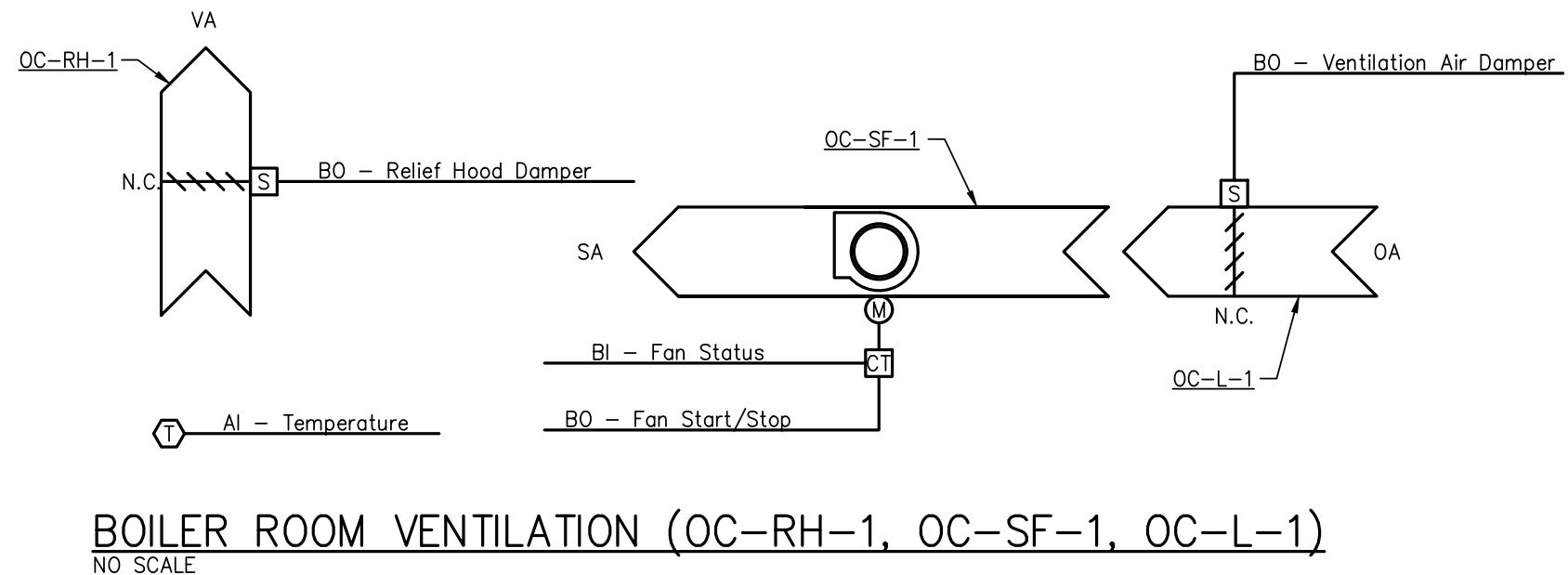
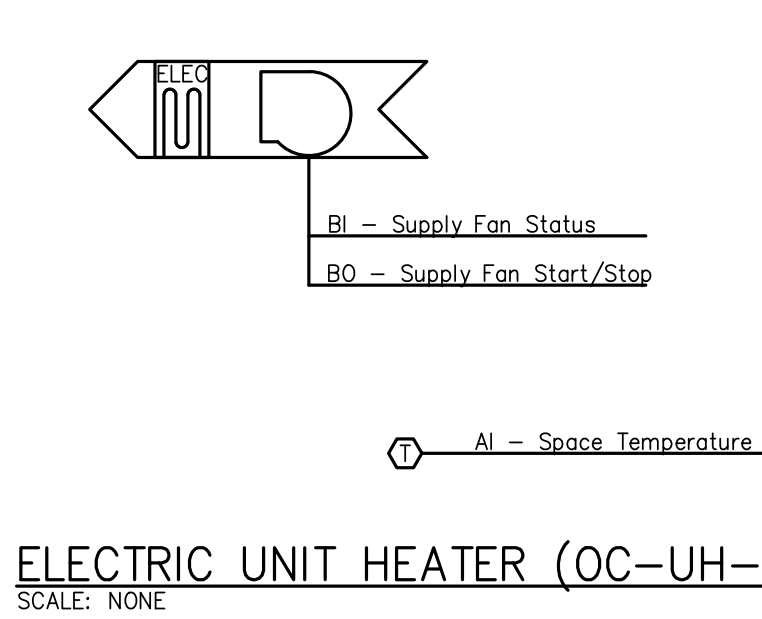
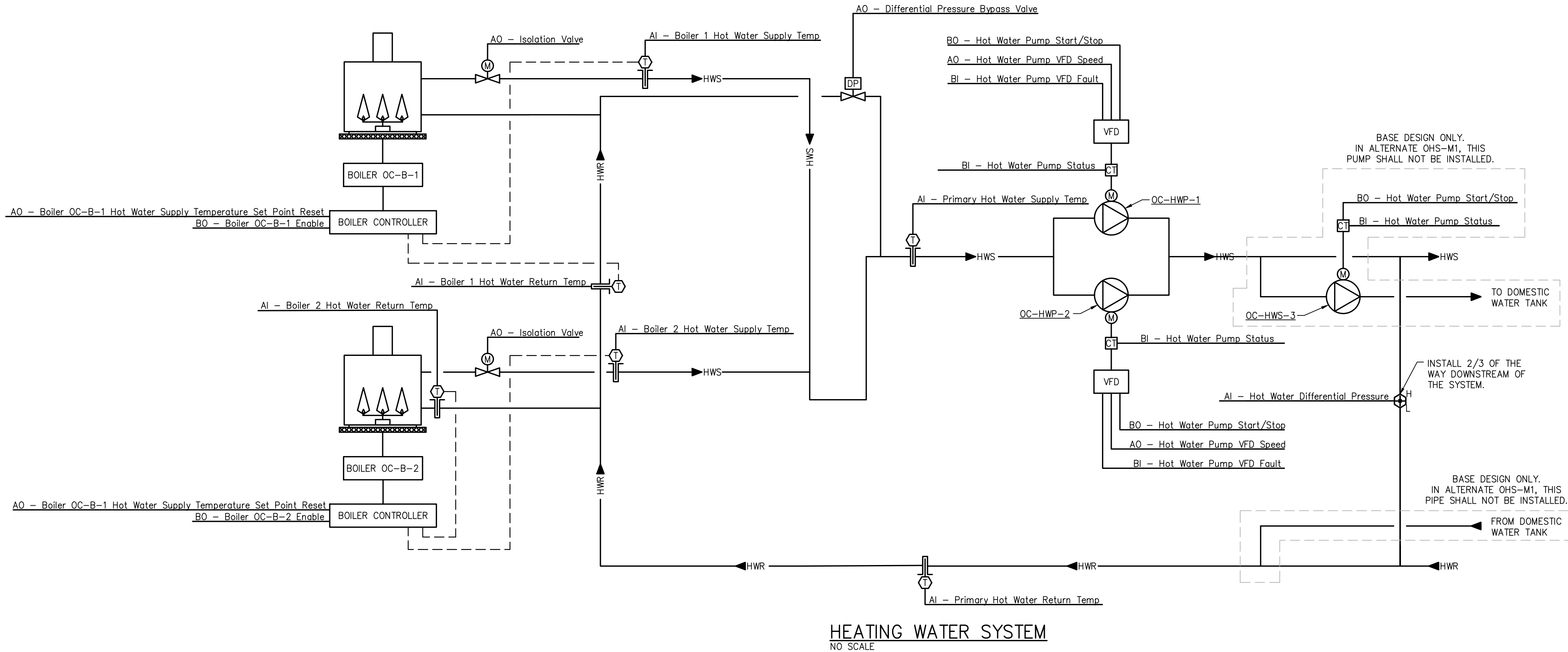




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TEMPERATURE CONTROL SYSTEM POINT LIST											
SYSTEM POINT DESCRIPTION											
	HARDWARE POINTS				SOFTWARE POINTS					SHOW ON GRAPHIC	
UNIT HEATER (OC-UH-1)	AI	AO	BI	BO	AV	BV	LOOP	SCHED	TREND	ALARM	
ZONE SETPOINT ADJUST	X										X
FAN STATUS			X						X		X
FAN START/STOP				X					X		X
ZONE TEMPERATURE					X				X		X
HEATING SETPOINT					X				X		X
SCHEDULE								X			
LOW ZONE TEMPERATURE										X	X
FAN FAILURE										X	
FAN IN HAND										X	
FAN RUNTIME EXCEEDED										X	

TEMPERATURE CONTROL SYSTEM POINT LIST											
SYSTEM POINT DESCRIPTION											
	HARDWARE POINTS				SOFTWARE POINTS					SHOW ON GRAPHIC	
BOILER ROOM VENTILATION (OC-SF-1, OC-L-1 & OC-RH-1)	AI	AO	BI	BO	AV	BV	LOOP	SCHED	TREND	ALARM	
SUPPLY FAN OC-SF-1 STATUS			X						X		X
SUPPLY FAN OC-SF-1 START/STOP				X					X		X
RELIEF HOOD OC-RH-1 DAMPER				X					X		X
LOUVER OC-L-1 DAMPER				X					X		X
SUPPLY FAN OC-SF-1 DAMPER				X					X		X
COOLING SETPOINT					X				X		X
ZONE TEMPERATURE					X				X		X
HIGH ZONE TEMPERATURE										X	
FAN FAILURE										X	
FAN IN HAND										X	
FAN RUNTIME EXCEEDED										X	



1. TEMPERATURE CONTROLS CONTRACTOR SHALL PROVIDE ALL NECESSARY ITEMS TO ALLOW OWNERS SECURITY SYSTEM TO TIE INTO BOILER ALARM.
2. TEMPERATURE CONTROL CONTRACTOR SHALL HIRE DIRECT OWNERS SECURITY CONTRACTOR TO PROVIDE FINAL INTERLOCK FROM RELAY TO THEIR CONTROL SYSTEM PANEL.
3. SECURITY CONTRACTOR CONTACT IS: NICK WERT AT HABITECH 419-205-1147

ALTERNATE	
<b>ALTERNATE OHS-M1:</b> STATE THE AMOUNT TO BE ADDED TO OR SUBTRACTED FROM THE BASE BID TO FURNISH ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY FOR THE FOLLOWING:	
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2.	OMISSION OF THE DEMOLITION OF NATURAL GAS PIPING DISTRIBUTION TO EXISTING GAS-FIRED DOMESTIC WATER HEATER.
3.	INSTALLATION OF N.G. CONNECTION TO DOMESTIC GAS-FIRED WATER HEATER, 1" GAS PIPING AS SHOWN ON PLANS, NEW GAS PRESSURE REGULATOR, AND TEMPERATURE CONTROLS.

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02/05/2026

STATE OF MICHIGAN

EMILY RENEE SCHWARZKOPF  
6201063334

REGISTERED PROFESSIONAL ENGINEER

Emily R. Schwarzkopf

DATE	DESCRIPTION
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**BOILER REPLACEMENT & RELATED WORK**

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TEMPERATURE  
CONTROLS

M6.02



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PLUMBING GENERAL NOTES

PART 1 GENERAL

1.01 PURPOSE

THESE OUTLINE SPECIFICATIONS ARE NOT INTENDED TO COVER ALL NECESSARY ITEMS, BUT TO SERVE AS A GUIDE TO FURNISH AND INSTALL A COMPLETE PLUMBING SYSTEM AS DESCRIBED HEREIN.

1.02 SCOPE OF WORK

FURNISH AND INSTALL THE PLUMBING SYSTEMS AS SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN. THIS SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING.

- A. EXCAVATION AND BACKFILL REQUIRED FOR THE INSTALLATION OF THE PLUMBING SYSTEMS.
- B. CUTTING AND PATCHING REQUIRED FOR THE INSTALLATION OF THE PLUMBING SYSTEMS.
- C. REMOVALS AS REQUIRED AND/OR AS INDICATED.
- D. DOMESTIC WATER SYSTEM INCLUDING PIPING TO ALL FIXTURES OR EQUIPMENT, VALVES, WATER HEATER, CIRCULATING PUMPS, ETC.
- E. INSULATION FOR PIPING.
- F. SANITARY WASTE AND VENT PIPING SYSTEM INCLUDING PIPING TO ALL FIXTURES OR EQUIPMENT AS INDICATED.
- G. FIRE STOP INCLUDING SLEEVES THRU RATED WALLS AND FLOORS.
- H. ALL VALVES, FITTINGS, HANGERS, SLEEVES, ESCUTCHEON PLATES, ANCHORS, GUIDES, ETC., REQUIRED FOR THE PLUMBING SYSTEM INSTALLATION.
- I. CHLORINATION, TESTING, ADJUSTMENT AND CLEANING OF ALL SYSTEMS AND EQUIPMENT.
- J. TEST THE SANITARY PIPING SYSTEM HYDROSTATICALLY AFTER INSTALLATION TO 10 FT. OF HEAD (4.3 PSI MAXIMUM). TESTING WITH COMPRESSED AIR OR GAS MAY RESULT IN INJURY OR DEATH.
- K. INSTRUCTION OF OWNERS' PERSONNEL AND OPERATING MANUALS FOR ALL EQUIPMENT.
- L. PERMITS, APPLICATIONS, TESTS AND ANY OTHER FEES RELATED TO THIS WORK.

1.03 CONTRACT DRAWINGS

IN GENERAL, DRAWINGS ARE SCHEMATIC IN NATURE AND ARE INTENDED AS A GUIDE TO THE CONTRACTOR, BUT DO NOT NECESSARILY SHOW ALL DETAILS, OFFSETS, ETC. DRAWINGS ARE TO BE THOROUGHLY INSPECTED. THE CONTRACTOR'S WORK SHALL CONFORM TO THE INFORMATION CONTAINED IN THIS SPECIFICATION AND/OR AS INDICATED IN THE LATEST REVISION OF THE DRAWINGS REFERRED TO THEREIN. THE CONTRACTOR SHALL CONSULT WITH THE ENGINEER REGARDING ALL QUESTIONS ON WHICH HE MAY BE IN DOUBT BEFORE PROCEEDING WITH FABRICATION OF PARTS AFFECTED. THE CONTRACTOR SHALL PREPARE ALL ADDITIONAL DETAIL OR FIELD INSTALLATION DRAWINGS NECESSARY AT HIS OWN EXPENSE. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS INDICATED ON THE ENGINEER'S LAYOUT DRAWINGS AND DETERMINE IF ANY CHANGES ARE REQUIRED IN PIPING RUNS, DRAINS, ETC., TO AVOID INTERFERENCE. MAJOR CHANGES SHALL NOT BE MADE WITHOUT THE APPROVAL OF THE ENGINEER. WHILE THE DRAWINGS ARE TO BE ADHERED TO AS CLOSELY AS POSSIBLE, THE CONTRACTOR HAS THE RIGHT TO VARY THE RUN OF CONDUITS, PIPING AND/OR DUCTS DURING PROGRESS OF THE WORK AS MAY BE FOUND NECESSARY OR DESIRABLE TO AVOID INTERFERENCES. MAJOR REVISIONS SHALL BE VERIFIED WITH THE ENGINEER.

1.04 VERIFICATION

BEFORE RUNNING ANY PIPING, ETC., WITHIN THE BUILDING, THIS CONTRACTOR SHALL ASSURE HIMSELF THAT THEY CAN BE INSTALLED AS CONTEMPLATED WITHOUT TRAPPING OR INTERFERING WITH COLUMNS, BEAMS, PIPING, FIXTURES, ETC. ANY NECESSARY MAJOR DEVIATION SHALL BE REFERRED TO THE ENGINEER FOR ADJUSTMENT BEFORE LINES ARE RUN, AT NO INCREASE IN CONTRACT PRICE. OF NECESSITY, OPENINGS, SUPPORTING STEEL, FIELD-BUILT CURBS, SPACE REQUIREMENTS, ETC., WERE DESIGNED AROUND SPECIFIC PARAMETERS. WHEN THE CONTRACTOR DETERMINES THE MAKE OF EQUIPMENT TO BE PROVIDED FOR THE JOB, IT SHALL BE HIS RESPONSIBILITY TO VERIFY AND COORDINATE UNIT DIMENSIONS WITH THE GENERAL CONTRACTOR AND ALL OTHER INTERESTED CONTRACTORS ON THE JOB. IT SHALL ALSO BECOME THE CONTRACTOR'S RESPONSIBILITY TO CHANGE AS NECESSARY, THROUGH THE ENGINEER, ALL REQUIRED DIMENSIONS SO THAT OPENINGS, SUPPORTING STEEL, CURBS, ELECTRICAL DATA, ETC., WILL FIT THE EQUIPMENT SUPPLIED. ANY ADDITIONAL COST WILL BE THE SOLE RESPONSIBILITY OF THIS CONTRACTOR. IN ADDITION, ELECTRICAL POWER, INTERLOCK AND CONTROL DIAGRAMS AND PIPING ARRANGEMENTS WERE DESIGNED AROUND ONE SPECIFIC MANUFACTURER. IF ADDITIONAL WIRING, PIPING CONTROLS, ETC., IS REQUIRED FOR OTHER EQUIPMENT, THIS CONTRACTOR SHALL INCLUDE THE COST OF THE SAME IN HIS PRICE. DIMENSIONS, ELEVATIONS AND RELATIVE LOCATIONS OF EXISTING EQUIPMENT, SEWERS, PIPES, DUCTS, CONDUITS, ETC., IN PLACE AS SHOWN ON THE DRAWINGS, ARE TAKEN FROM AS-BUILT AND RECORD DRAWINGS AND ARE DEEMED RELIABLE ONLY INsofar AS GENERAL LAYOUT IS CONCERNED. SUCH DIMENSIONS SHALL NOT BE USED FOR LAYOUT DRAWINGS OR DETAILING OF COMPONENTS. THE RESPONSIBILITY FOR CHECKING IN PLACE ITEMS WILL BE THE CONTRACTORS. ALL MEASUREMENTS, THE EXACT DETERMINATION OF RELATIVE ELEVATIONS OR LOCATIONS, THE ASCERTAINING OF ACCURACY OF ALL GIVEN ELEVATIONS AND DIMENSIONS AND THE OBTAINING OF ALL NECESSARY ADDITIONAL INFORMATION TO INSURE THE PROPER FIT AND COORDINATION OF ALL CONDUIT EQUIPMENT, DUCTS, AND PIPING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

1.05 CONNECTIONS TO EXISTING WORK

PLAN THE INSTALLATION OF NEW WORK AND CONNECTIONS TO EXISTING WORK TO INSURE MINIMUM INTERFERENCE WITH THE REGULAR OPERATION OF THE EXISTING FACILITIES. SUBMIT TO THE ARCHITECT, FOR HIS APPROVAL, A PROGRESS SCHEDULE INDICATING ALL NECESSARY TEMPORARY SHUTDOWNS OF EXISTING SERVICES. ALL SHUTDOWNS SHALL BE MADE AT SUCH TIMES AS WILL NOT INTERFERE WITH REGULAR OPERATION OF THE EXISTING FACILITIES AND ONLY AFTER WRITTEN APPROVAL FROM THE ARCHITECT.

1.06 NEW WORK

UNLESS OTHERWISE NOTED, ALL WORK INDICATED THROUGHOUT THESE DRAWINGS SHALL BE CONSIDERED TO BE NEW WORK AND SHALL BE INCLUDED AS AN INTEGRAL PART OF THIS CONTRACT.

1.07 REFERENCED STANDARDS

2021 MICHIGAN PLUMBING CODE  
2021 MICHIGAN BUILDING CODE  
2021 MICHIGAN ENERGY CODE

1.08 ALTERNATES

- A. REQUIREMENTS:
  - 1. SUBMIT ALTERNATE WITH A FULL DESCRIPTION OF THE PROPOSED ALTERNATE AND THE EFFECT ON ADJACENT OR RELATED COMPONENTS.
  - 2. ALTERNATE QUOTED ON BID FORMS WILL BE REVIEWED AND ACCEPTED AT THE OWNER'S OPTION. ACCEPTED ALTERNATE WILL BE IDENTIFIED IN THE OWNER-CONTRACTOR AGREEMENT.
  - 3. COORDINATE AND MODIFY AS NECESSARY RELATED WORK IN ORDER TO INTEGRATE THE WORK OF EACH ALTERNATE.
- B. ALTERNATE OC-P-1:
  - 1. STATE THE AMOUNT TO BE ADDED TO THE BASE BID TO FURNISH ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY FOR THE COMPLETE INSTALLATION OF GAS-FIRED DOMESTIC WATER HEATER OC-DWH-1, IN LIEU OF INDIRECT DOMESTIC WATER HEATER OC-IWH-1. REFER TO DETAILS 'A' AND 'B' ON SHEET P2.01 FOR COMPLETE SCOPE AND ADDITIONAL INFORMATION.

PART 2 EXECUTION

- A. ALL EQUIPMENT INSTALLATION PROCEDURES SHALL BE BASED ON FUNDAMENTAL ENGINEERING AND CONSTRUCTION PRINCIPLES IN CONFORMANCE WITH ALL APPLICABLE CODES, STANDARDS AND ORDINANCES.
- B. THE PLUMBING CONTRACTOR SHALL INSTALL ALL PLUMBING EQUIPMENT IN CONFORMANCE WITH MANUFACTURER ISSUED INSTRUCTIONS AND RECOMMENDATIONS.
- C. THE PLUMBING CONTRACTOR SHALL NOT KNOWINGLY INSTALL WORK THAT IS IN ERROR.
- D. PROVIDE TWO (2) YEAR WARRANTY ON ALL LABOR AND MATERIALS UNLESS NOTED OTHERWISE.
- E. THE PLUMBING CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS AND FEES REQUIRED FOR HIS WORK.
- F. THE PLUMBING CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS OF HIS COMPLETED WORK.
- G. THE SYSTEMS REPRESENTED IN THESE CONTRACT DOCUMENTS HAVE THE INTENT OF PROVIDING ENERGY-EFFICIENT, SAFETY AND COMFORT FOR THE PROPOSED FACILITY.
- H. THE PLUMBING CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL OTHER TRADES ON THE PROJECT.
- I. COORDINATE ALL PIPING TO AVOID REQUIRED OVERHEAD CLEARANCES PERTAINING TO ELECTRICAL PANELS AND EQUIPMENT.
- J. ALL MATERIALS AND EQUIPMENT INSTALLED SHALL FULLY COMPLY WITH THE SAFE DRINKING WATER ACT OF 1974, INCLUDING PUBLIC LAW 111-380, COMMONLY REFERRED TO AS THE "NO LEAD LAW".
- K. PROCEDURES FOR FLUSHING AND DISINFECTION
  - 1. PROCEDURES SHALL MEET THE REQUIREMENTS OF AWWA C651 AND C652 AS WELL AS ALL APPLICABLE LOCAL REGULATIONS.
  - 2. DISINFECTION AND FLUSHING SHALL BE COMPLETED WITHIN THREE WEEKS PRIOR TO WHOLE OR PARTIAL BENEFICIAL OCCUPANCY. IF BENEFICIAL OCCUPANCY OF ANY PART OF THE BUILDING IS DELAYED MORE THAN TWO WEEKS BUT LESS THAN FOUR WEEKS AFTER DISINFECTION, FLUSHING OF ALL FIXTURES SHALL AGAIN BE COMPLETED. IF BENEFICIAL OCCUPANCY OF ANY PART OF THE BUILDING IS DELAYED FOUR WEEKS OR MORE AFTER DISINFECTION, THE NEED FOR DISINFECTION AND FLUSHING SHALL BE DETERMINED BY A RISK ASSESSMENT CONDUCTED BY THE WATER PROGRAM TEAM / OWNER.
  - 3. CONFIRMATION THAT THE BUILDING WATER SYSTEM PERFORMANCE MEETS DESIGN PERFORMANCE PARAMETERS INDICATED IN THE CONTRACT DOCUMENTS.
- L. PIPING SHALL BE SUPPORTED AT THE FOLLOWING MAXIMUM INTERVAL SPACING:

MATERIAL	HORIZ. (FT.)	VERT. (FT.)
CAST IRON	5	15
CAST IRON (10 FT. LENGTHS)	10	15
COPPER PIPE	12	10
PVC	4	10
STEEL	12	15

PLUMBING LEGEND

---	DOMESTIC COLD WATER PIPING (CW)
---	EXISTING DOMESTIC COLD WATER PIPING
---	DOMESTIC HOT WATER PIPING (HW)
---	EXISTING DOMESTIC HOT WATER PIPING
---	DOMESTIC HOT WATER RETURN PIPING (HWR)
---	EXISTING DOMESTIC HOT WATER RETURN PIPING
---	SANITARY VENT PIPING
---	EXISTING SANITARY VENT PIPING
---	SANITARY PIPING BELOW FLOOR
---	EXISTING SANITARY PIPING BELOW FLOOR
---	SANITARY PIPING ABOVE FLOOR
---	CONDENSATE DRAIN
---	EXISTING CONDENSATE DRAIN
---	FLOW DIRECTION
----	PIPING DEMOLITION
----	FLOOR CLEANOUT
----	CLEANOUT TO GRADE
----	WALL CLEANOUT
----	ABOVE FINISHED FLOOR
----	FINISHED FLOOR ELEVATION
----	INVERT ELEVATION
----	P.L.C. PLUMBING CONTRACTOR
----	G.C. GENERAL CONTRACTOR
----	CONNECTION OF NEW TO EXISTING
----	UNION
----	SHUTOFF VALVE
----	CHECK VALVE
----	3-WAY MIXING VALVE
----	PIPING ELBOW DOWN
----	PIPING ELBOW UP
----	PIPING TEE DOWN
----	PIPING TEE UP



Mechanical Compliance Certificate

Project Information

Energy Code:	2021 IECC
Project Title:	Orchard Center High School
Location:	Monroe, Michigan
Climate Zone:	5A
Project Type:	Alteration

Construction Site:	Owner/Agent:	Designer/Contractor:
1750 Oak Street Monroe, Michigan 48161	Kohler Architecture Monroe, Michigan 48161 (734) 242-6880	Michael White Kleinfelder Inc. Perryburg, Ohio 43551 419891 mwhite@kleinfelder.com

Mechanical Systems List

Quantity	Component	Description
Water Heaters		
1	Domestic Water Heater OC-DWH-1:	Gas Storage Water Heater, Capacity: 80 gallons, Input Rating: 150 kBtu/h w/ Circulation Pump Proposed Efficiency: 96.00 % Et, Required Efficiency: 80.00 % Et

Mechanical Compliance Statement

Compliance Statement: The proposed mechanical design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2021 IECC requirements in COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Michael P. White - Plumbing Designer 02/05/2026

Name - Title Signature Date

Report Title: Orchard Center High School

Report Date: 2/5/26, 12:43 PM

2 of 6



KOHLER ARCHITECTURE

1110 WEST FRONT STREET  
MONROE, MICHIGAN 48161  
WWW.KOHLERARCHITECT.NET

MAKE  
Things Better+



Mechanical, Electrical, Plumbing, Fire Protection  
5201 Levis Commons Blvd, Suite 5201  
Perryburg, OH 43551 | 419.352.7537



DATE	DESCRIPTION
02.09.2026	BIDDING & STATE REVIEW

BOILER REPLACEMENT & RELATED WORK

ORCHARD CENTER HIGH SCHOOL

1750 OAK STREET, MONROE, MICHIGAN 48161

MONROE PUBLIC SCHOOLS

1275 N. MACOMB STREET, MONROE, MICHIGAN 48162

AT FOR

JOB # 26102

PLUMBING  
SPECIFICATIONS

P1.01

PLUMBING DRAWING LIST

DWG NO.	TITLE	FILE NO.
P1.01	PLUMBING SPECIFICATIONS	26003130P1.01.dwg
P2.01	PLUMBING PLANS AND DETAILS	26003130P2.01.dwg

THIS ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED USING A DIGITAL SIGNATURE AND DATE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED, AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.







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## COMcheck Software Version COMcheckWeb Interior Lighting Compliance Certificate

### Project Information

Energy Code: 2021 IECC  
Project Title: BOILER REPLACEMENT - OCHS  
Project Type: Alteration

Construction Site: 1750 OAK ST.  
Monroe, Michigan 48161  
Owner/Agent: Designer/Contractor:

### Allowed Interior Lighting Power

A Area Category	B Floor Area (ft <sup>2</sup> )	C Allowed Watts / ft <sup>2</sup>	D Allowed Watts
1-Common Space Types:Electrical/Mechanical	422	0.43	181
Total Allowed Watts =			181

### Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Watt. (C X D)	E (C X D)
Common Space Types: Electrical/Mechanical (422 sq.ft.) LED: TYPE 'A': 4FT. STRIP FIXTURE: Other:	1	6	28	168
Total Proposed Watts =			168	

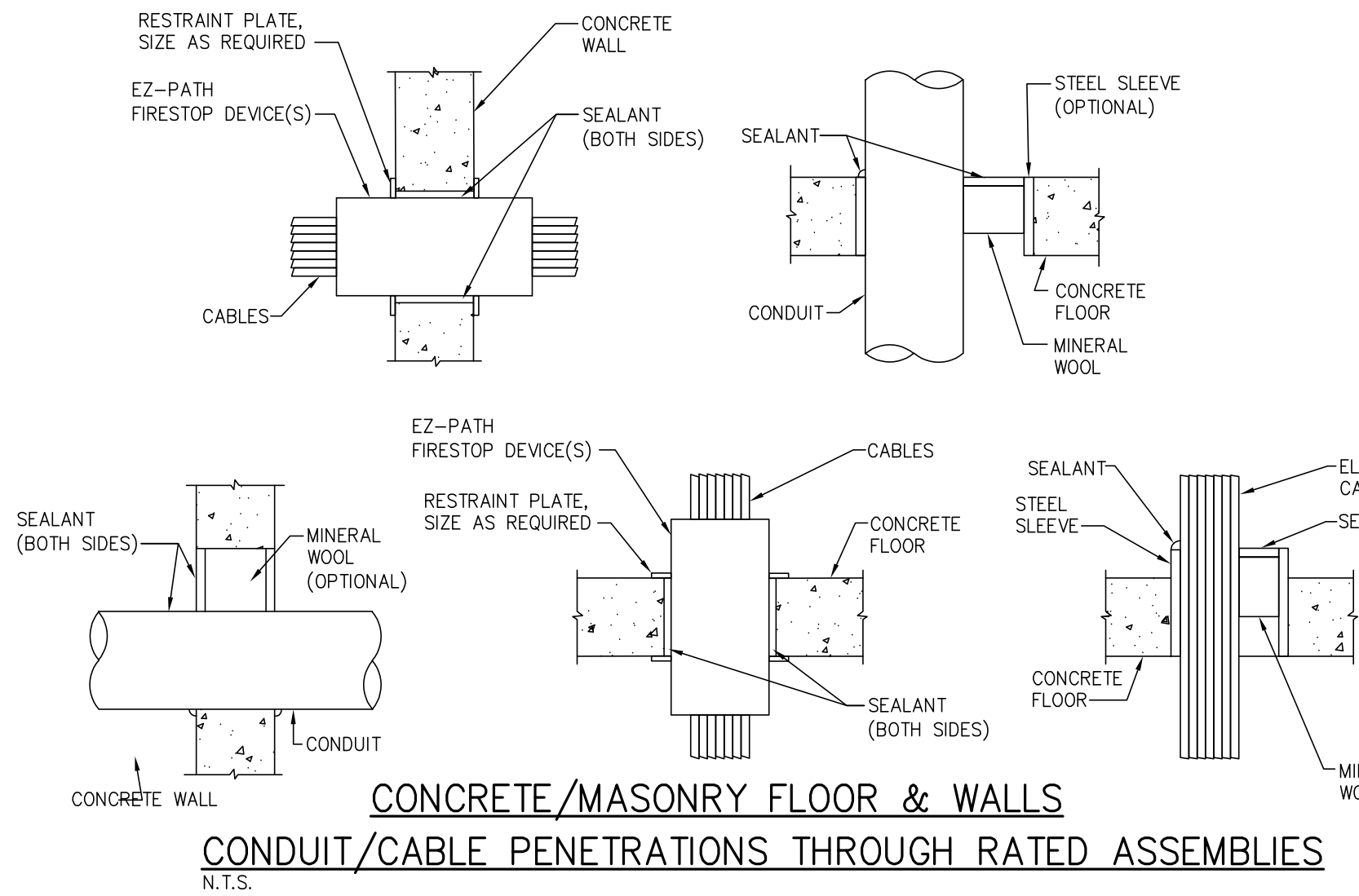
### Interior Lighting PASSES

#### Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2021 IECC requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Nicolas Bruno - Electrical Designer  
Name - Title Signature Date 02/04/2026

Project Title: BOILER REPLACEMENT - OCHS  
Data filename: Report date: 02/04/26  
Page 1 of 5



CONCRETE/MASONRY FLOOR & WALLS  
CONDUIT/CABLE PENETRATIONS THROUGH RATED ASSEMBLIES  
N.T.S.

#### GENERAL NOTES

- CABLE AND CONDUIT PENETRATION DETAILS ARE BASED ON A U.L. LISTED FIRE RATED ASSEMBLY (MINIMUM) UTILIZING STI FIRE STOP PRODUCTS. MANUFACTURERS SHALL BE STI, HILTI, 3M OR APPROVED EQUAL. REFER TO MANUFACTURER'S SPECIFICATIONS AND INSTALLATION DETAILS FOR EXACT INSTALLATION METHODS.
- PACKING AND SEALANT DEPTHS SHALL BE PER MANUFACTURER'S SPECIFICATIONS FOR U.L. ASSEMBLY RATING COMPLIANCE.
- ALL FIRE STOP LOCATIONS SHALL BE LABELED AT POINT OF PENETRATION. LABEL SHALL IDENTIFY FIRE STOPPING MATERIAL, U.L. LISTING NUMBER AND HOUR RATING OF WALL/FLOOR

### FIXTURE SCHEDULE

MARK	LAMP CATEGORY	LAMP QTY/TYPE	VOLTS	DESCRIPTION	MFR. AND CATALOG SERIES	VA
A	LED	28W 4,014 LUMENS 4000K	120	4" LED STRIP, CHAIN MOUNTED, ROUND SEMI-FROSTED LENS, WHITE STEEL HOUSING, ELECTRIC DRIVER, 0-10V DIMMING, E.C. SHALL CHAIN MOUNT AT A MINIMUM OF 8'-0"	COOPER #45NLED-LD5-40SL-LN-UNV-L840-CD-1-AYC-CHAIN/SET REV OR APPROVED EQUAL BY LITHONIA, CREE, ETC.	35
DA	FLUOR	2-40W-R5	120	DISCONNECT AND REMOVE EXISTING 4" SUSPENDED STRIP FIXTURE AND BALLAST. EXISTING BRANCH CIRCUITS SHALL BE REMOVED BACK TO SOURCE.		100
E	LED	INCLUDED	120	COMBINATION EXIT/EGRESS LIGHT, WALL OR CEILING MOUNTED, SINGLE OR DOUBLE FACE AS REQUIRED, 6-INCH GREEN LETTERS IN WHITE STENCIL FACE, POLYCARBONATE HOUSING, ARROWS AS SHOWN, WITH TWO HI-INTENSITY ADJUSTABLE FLOOD LIGHT HEADS, UNIVERSAL MOUNTING CANOPY WITH BUILT-IN 90 MINUTE EXTRA CAPACITY BATTERY BACKUP AND OUTDOOR WEATHER PROOF REMOTE FLOODLIGHT HEAD WHERE SHOWN ON PLAN. M.H. 8'0" UNO	LITHONIA #LHQM LED-G-HO-M6-REV REMOTE HEAD ERE-W-T-SQ-M12 OR APPROVED EQUAL BY PHILLIPS, CREE, ETC.	10
EM	LED	2-5.3W INCLUDED	120	EMERGENCY EGRESS LIGHT, THERMOPLASTIC HOUSING, WHITE FINISH, LITHIUM IRON PHOSPHATE BATTERY, 90 MIN. BATTERY BACK-UP, M.H. 8'0" UNO	LITHONIA #ELMRE-SP1100L-T-REV OR APPROVED EQUAL BY PHILLIPS, CREE, ETC.	10

### PROJECT COORDINATION SCOPE:

- A SEPARATE FIRE ALARM REPLACEMENT PROJECT IS BEING PERFORMED SIMULTANEOUSLY WITH THIS BOILER PROJECT UNDER TWO (2) SEPARATE PERMITS. FULL COORDINATION BETWEEN ALL TRADES IS REQUIRED TO ENSURE UNINTERRUPTED SYSTEM OPERATION AND CODE COMPLIANCE. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL FIRE ALARM, SECURITY, AND LOW-VOLTAGE SYSTEM INTERFACES AND SHALL CONTACT AND HIRE THE FOLLOWING VENDORS FOR ALL SYSTEM TIE-INS, TESTING, PROGRAMMING, AND COORDINATION.
- GENERAL TRADES SHALL BE RESPONSIBLE FOR ALL PATCHING, REPAIR, AND RESTORATION OF WALLS, CEILINGS, FLOORS, AND FINISHES IMPACTED BY THE BOILER PROJECT. THIS INCLUDES CUTTING, PATCHING, PAINTING, AND SURFACE RESTORATION NECESSARY TO RETURN AFFECTED AREAS TO EXISTING CONDITIONS. GENERAL TRADES SHALL ALSO PROVIDE CEILING ACCESS POINTS AND ANY OTHER MISCELLANEOUS CONSTRUCTION ITEMS REQUIRED TO SUPPORT THE WORK.
- START UP TESTS, INITIAL SYSTEM PROGRAMMING AND DATA BASE ENTRIES SHALL BE PROVIDED BY RED LETTER & HABITEC SECURITY THROUGH THE ELECTRICAL CONTRACTOR. ALL FUNCTIONS SHALL BE DEMONSTRATED TO THE SATISFACTION OF THE OWNER'S DESIGNATED SYSTEM ADMINISTRATOR. AT PROJECT COMPLETION, RED LETTER & HABITEC SECURITY SHALL PROVIDE A LETTER INDICATING THAT ALL PARTS AND FUNCTIONS ARE OPERATING PROPERLY, TURN OVER TO OWNER ALL SOFTWARE LICENSING, PROVIDE RECOMMENDED MAINTENANCE AND INSPECTION SCHEDULES FOR EACH YEAR OF OPERATION, AND PROVIDE WRITTEN WARRANTY FOR EQUIPMENT AND SYSTEM FUNCTIONALITY FOR A PERIOD OF TWO YEARS. DOOR ACCESS SYSTEM TRAINING FOR THE OWNER SHALL BE PROVIDED.
- CONTACT INFORMATION: **CONTACT AND HIRE RED LETTER (888) 564-5488. CONTACT AND HIRE HABITEC SECURITY, NICK WERT (419) 205-1147.**

### ACCESS CONTROLS SYSTEM SCOPE:

REFERENCE LEGEND FOR MORE INFORMATION TO ACCOMMODATE THE INSTALLATION OF NEW COMPONENTS TO CONNECT TO EXISTING SYSTEMS WITHOUT DISRUPTING THE NEW BUILDING FINISHES, COORDINATE THE EXACT LOCATION OF ITEMS WITH THE OWNER PRIOR TO ROUGH-IN. COMPONENTS SHALL MATCH EXISTING MANUFACTURER.

- ELECTRICAL CONTRACTOR: COORDINATE WITH OWNER'S ACCESS CONTROLS CONTRACTOR (RED LETTER) AND OWNER'S SECURITY CONTRACTOR (HABITEC SECURITY) BEFORE DISCONNECTION OF EXISTING ITEMS NOTED ON PLANS, BOXES, CONDUITS, SURFACE MOUNTED RACEWAY, INSTALL POWER SUPPLIES/ACCESS CONTROLLER, ACCESS HARDWARE, A.D.A. HARDWARE, AND CONNECT TO 120V POWER. **ELECTRICAL CONTRACTOR TO HIRE RED LETTER** TO FURNISH AND INSTALL CARD READERS, FURNISH POWER SUPPLIES/ACCESS CONTROLLER, LOW-VOLTAGE ACCESS CABLE TO ALL ITEMS, CONNECTION TO EXISTING ACCESS CONTROL SYSTEMS AND FIRE ALARM PANEL OUTPUT FOR AUTOMATIC DOOR UNLOCK CONTROL TO DEDICATED DOORS, AND TESTING/PROGRAMMING. **ELECTRICAL CONTRACTOR TO HIRE HABITEC SECURITY** FOR TIE-IN WITH THE EXISTING INTRUSION SYSTEM AND COORDINATION ON CONNECTION TO EXISTING ACCESS CONTROL SYSTEMS AND TESTING/PROGRAMMING.
- GENERAL TRADES: RESPONSIBLE FOR DOORS/FRAMES, FURNISH DOOR/ACCESS HARDWARE, A.D.A. HARDWARE, CEILING ACCESS POINTS, CONSTRUCTION ITEMS, ETC. AND COORDINATION WITH RED LETTER FOR A.D.A. OPERATOR FUNCTION SETTINGS.
- START UP TESTS, INITIAL SYSTEM PROGRAMMING AND DATA BASE ENTRIES SHALL BE PROVIDED BY RED LETTER & HABITEC SECURITY THROUGH THE ELECTRICAL CONTRACTOR. ALL FUNCTIONS SHALL BE DEMONSTRATED TO THE SATISFACTION OF THE OWNER'S DESIGNATED SYSTEM ADMINISTRATOR. AT PROJECT COMPLETION, RED LETTER & HABITEC SECURITY SHALL PROVIDE A LETTER INDICATING THAT ALL PARTS AND FUNCTIONS ARE OPERATING PROPERLY, TURN OVER TO OWNER ALL SOFTWARE LICENSING, PROVIDE RECOMMENDED MAINTENANCE AND INSPECTION SCHEDULES FOR EACH YEAR OF OPERATION, AND PROVIDE WRITTEN WARRANTY FOR EQUIPMENT AND SYSTEM FUNCTIONALITY FOR A PERIOD OF TWO YEARS. DOOR ACCESS SYSTEM TRAINING FOR THE OWNER SHALL BE PROVIDED.
- CONTACT INFORMATION: **CONTACT AND HIRE RED LETTER (888) 564-5488. CONTACT AND HIRE HABITEC SECURITY, NICK WERT (419) 205-1147.**

### M.P.S. CABLING STANDARDS

BRAND	PART NUMBER	DESCRIPTION	PURPOSE
ICC	IC1078F6BL	BLUE CAT6 KEYSTONE	KEYSTONE FOR DATA PORT DEVICES
ICC	IC1078F6RD	YELLOW CAT6 KEYSTONE	KEYSTONE FOR MISC. DATA PORT
ICC	IC1078F6YL	RED CAT6 KEYSTONE	KEYSTONE FOR AI PHONE SERVICES
ICC	IC1078F6ABL	BLUE CAT6A KEYSTONE	KEYSTONE FOR DATA PORT DEVICES
ICC		CLASSIC CONFIGURABLE FACEPLATES WITH STATION ID (IVORY)	WALL PLATES FOR DATA PORTS
ICC	ICMPP48C61	48 PORT HIGH-DENSITY PATCH PANEL, FEED THROUGH COUPLERS	PATCH BAY FOR DATA PORTS IN DATA CABINET
		LIGHT BLUE CABLING FIBEROPTIC MULTIMODE	FIBER OPTIC NETWORK SERVICES
		DARK GRAY CABLING	16-GAUGE CABLING FOR HABITEC SECURITY
		RED CABLING	CABLING FOR FIRE ALARM
		WHITE CABLING	CABLING FOR ACCESS CONTROL
		BEIGE CABLING	CABLING FOR HVAC / BOILER SERVICES
		CAT 6 550 MHZ PLENUM YELLOW	DATA CABLE FOR ALL CAT6 PORTS
		CAT5E 350 MHZ PLENUM BLUE	DATA CABLE FOR ALL PORTS TELCO DEVICES
		CAT 6A 23 AWG. 4 PAIR SOLID RISER WHITE	
		CAT6A PATCH CABLE - 1FT (RED, BLUE, YELLOW)	PATCH CABLE FOR PORTS WITH DATA CABINET

- ALL CABLING INSTALLED MUST BE OF CMP (PLENUM) GRADE. THIS IS TO KEEP WITH STANDARDS IN PLACE WITH DISTRICT-WIDE CABLING.
- ALL DATA CABLING INSTALLED MUST BE CERTIFIED, TESTED AND CERTIFICATION PROVIDED TO OWNER AT THE END OF THE PROJECT.
- ALL DATA CABLING MUST BE LABELED IN ACCORDANCE TO THE DISTRICT STANDARD (RACK LETTER + PORT NUMBER).
- CONTRACTOR SHALL COORDINATE WITH ALL M.P.S. DISTRICT I.T. STANDARDS FOR BRAND, TYPE, PART NUMBER, ETC.

Digitally signed by Nicole L. Winhoven-Kamm  
DN: C=US, E=nkamm@kleinfelder.com,  
O=Kleinfelder, OU=Kleinfelder,  
CN=Nicole L. Winhoven-Kamm  
Date: 2026.02.05 11:30:56-05'00'

Nicole L. Winhoven-Kamm

### ELECTRICAL DRAWING LIST

DWG NO.	TITLE	FILE NO.
E1.01	ELECTRICAL FIXTURE SCHEDULE, DETAILS AND CODE COMPLIANCE	26003130E1.01.dwg
E1.02	ELECTRICAL LEGEND, SINGLE-LINE & PANEL SCHEDULES	26003130E1.02.dwg
E2.01	BOILER ROOM LIGHTING AND POWER PLANS	26003130E2.01.dwg

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### BOILER REPLACEMENT & RELATED WORK

#### ORCHARD CENTER HIGH SCHOOL

1750 OAK STREET, MONROE, MICHIGAN 48161

#### MONROE PUBLIC SCHOOLS

1275 N. MACOMB STREET, MONROE, MICHIGAN 48162

AT

FOR

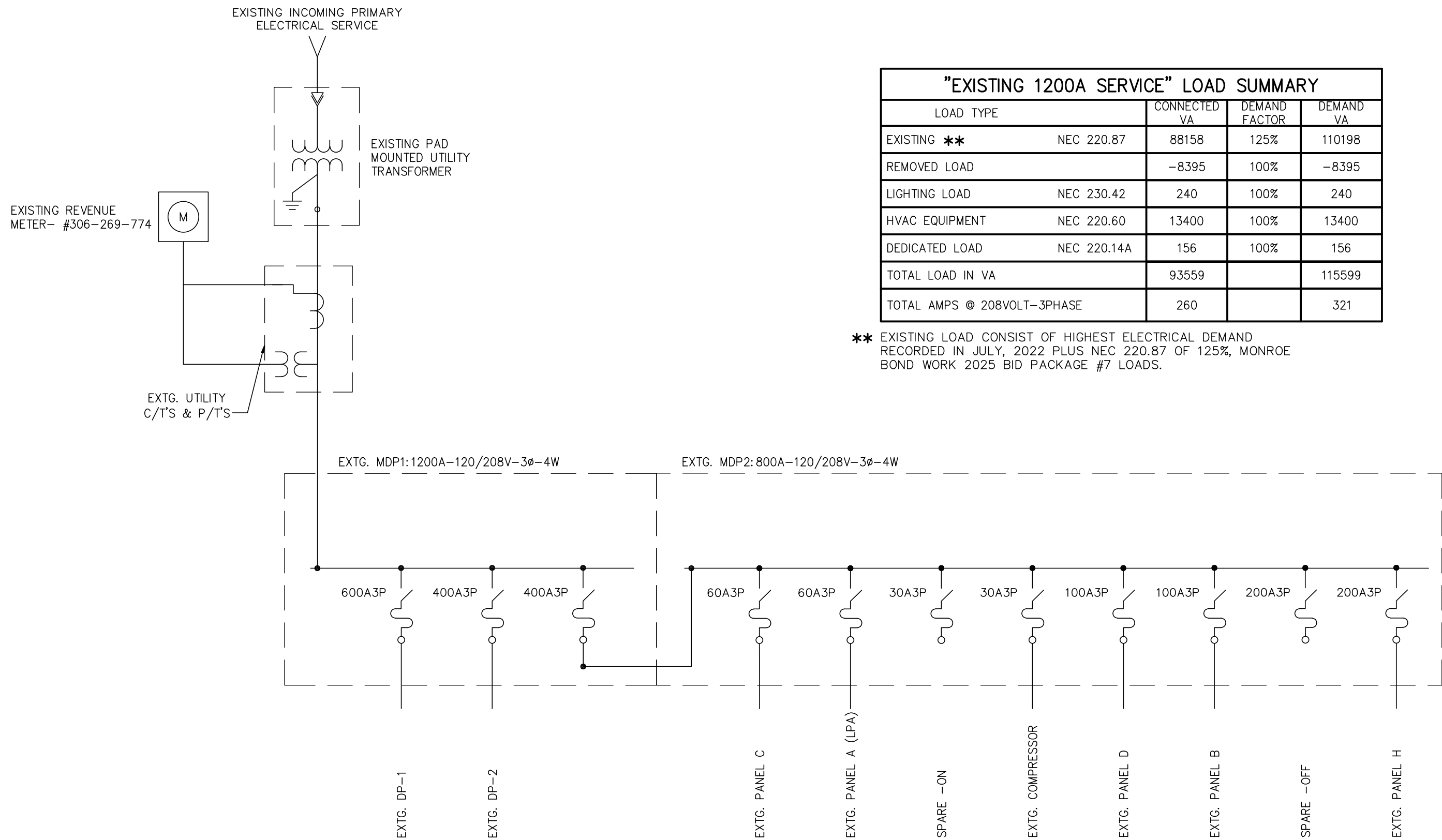
JOB # 26102

ELECTRICAL FIXTURE  
SCHEDULE, DETAILS &  
CODE COMPLIANCE

# E1.01



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EXISTING SINGLE LINE DIAGRAM  
N.T.S.

"EXISTING 1200A SERVICE" LOAD SUMMARY				
LOAD TYPE	CONNECTED VA	DEMAND FACTOR	DEMAND VA	
EXISTING **	NEC 220.87	88158	125%	110198
REMOVED LOAD		-8395	100%	-8395
LIGHTING LOAD	NEC 230.42	240	100%	240
HVAC EQUIPMENT	NEC 220.60	13400	100%	13400
DEDICATED LOAD	NEC 220.14A	156	100%	156
TOTAL LOAD IN VA		93559		115599
TOTAL AMPS @ 208VOLT-3PHASE		260		321

\*\* EXISTING LOAD CONSIST OF HIGHEST ELECTRICAL DEMAND RECORDED IN JULY, 2022 PLUS NEC 220.87 OF 125% MONROE BOND WORK 2025 BID PACKAGE #7 LOADS.

(EXISTING CIRCUITING)											
PANELBOARD SCHEDULE											
PANEL: <u>LP-H</u>			NOTES: EXISTING SIEMENS PANEL								
MAINS: <u>250A M.L.O.</u>			<input type="checkbox"/> GFCI BREAKER			<input type="checkbox"/> ARC FAULT			<input type="checkbox"/> KAIC RATING		
VOLTS: <u>120/208V-3Ø-4W-SN</u>			<input type="checkbox"/> 30 MILLIAMP EQUIPMENT GROUND FAULT TRIP			<input type="checkbox"/> SWITCHED NEUTRAL			<input type="checkbox"/> NON-CONSEQUENT LOAD		
MOUNTING: <u>SURFACE</u>			<input type="checkbox"/> SHUNT TRIP			<input type="checkbox"/> MOTOR OPERATED			<input type="checkbox"/> RELAY CONTROLLED		
	LOAD DESCRIPTION	NOTES	VOLT AMPS	C.B. AMP P	A	B	C	C.B. P AMP	VOLT AMPS	NOTES	LOAD DESCRIPTION
1	CIRCULATION PUMP 1		580	20 3	2080			3 20	1500		PARKING LOT LIGHTING
3	-		580	20 3		2080		3 20	1500	-	4
5	-		580	20 3			2080	3 20	1500	-	6
7	CIRCULATION PUMP 2		580	20 3	1580			2 20	1000		PARKING LOT LIGHTING
9	-		580	20 3		1580		2 20	1000	-	10
11	-		580	20 3			785	1 20	205		HOT WATER CIRC PUMP
13	BOILER 2 DISC.		1705	20 1	2205			1 20	500		FIRE ALARM
15	BOILER 1 DISC.		1705	20 1		2505		1 20	800		UNKNOWN
17	PNEUMATIC CONTROL PNL		500	20 1			1700	1 20	1200		OUTLET SIGN
19	BOILER PUMP 1		300	20 1	1100			1 20	800		UNKNOWN
21	BOILER PUMP 2		300	20 1		1100		1 20	800		UNKNOWN
23	EXHAUST FAN STARTER		800	20 1			1600	1 20	800		UNKNOWN
25	BATH FANS STARTER		800	20 1	2300			2 30	1500		UNKNOWN
27	AIR COMPRESSOR		1500	20 2		3000		2 30	1500	-	28
29	-		1500	20 2			2300	1 20	800		UNKNOWN
31	NETWORK 8000 PANEL		500	20 1	1300			1 20	800		UNKNOWN
33	LIGHTING CONTACTOR		500	20 1		2000		3 20	1500		UNKNOWN
35	LIGHTING CONTACTOR		500	20 1			2000	3 20	1500	-	36
37	LIGHTING CONTACTOR		500	20 1	2000			3 20	1500	-	38
39	SPACE		0			0			0		SPACE
41	SPACE		0				0		0		SPACE
<input type="checkbox"/>	HANDLE TIE				12565		10465				
<input type="radio"/>	HANDLE LOCK				BALANCE						
					107%	104%	89%				
TOTAL LOAD:			35295			TOTAL AMPS:			98.0		

(NEW CIRCUITING)											
1 PANELBOARD SCHEDULE											
PANEL: <u>LP-H</u>			NOTES: EXISTING SIEMENS PANEL								
MAINS: <u>250A M.L.O.</u>			<input type="checkbox"/> GFCI BREAKER			<input type="checkbox"/> ARC FAULT			<input type="checkbox"/> KAIC RATING		
VOLTS: <u>120/208V-3ø-4W-SN</u>			<input type="checkbox"/> 30 MILLIAMP EQUIPMENT GROUND FAULT TRIP			<input type="checkbox"/> SWITCHED NEUTRAL			<input type="checkbox"/> NON-CONSEQUENT LOAD		
MOUNTING: <u>SURFACE</u>			<input type="checkbox"/> SHUNT TRIP			<input type="checkbox"/> MOTOR OPERATED			<input type="checkbox"/> RELAY CONTROLLED		
	LOAD DESCRIPTION	NOTES	VOLT AMPS	C.B. AMP P	A	B	C	C.B. AMP P	VOLT AMPS	NOTES	LOAD DESCRIPTION
1	<b>OC-HWP-1</b>		<b>1272</b>	<b>20 3</b>	<b>2772</b>			<b>3 20</b>	<b>1500</b>		PARKING LOT LIGHTING
3	-		<b>1272</b>	<b>20 3</b>		2772		<b>3 20</b>			2
5	-		<b>1272</b>	<b>20 3</b>			2772	<b>3 20</b>	<b>1500</b>		-
7	<b>OC-HWP-2</b>		<b>1272</b>	<b>20 3</b>	<b>2272</b>			<b>2 20</b>	<b>1000</b>		PARKING LOT LIGHTING
9	-		<b>1272</b>	<b>20 3</b>		2272		<b>2 20</b>	<b>1000</b>		-
11	-		<b>1272</b>	<b>20 3</b>			1428	<b>1 20</b>	<b>156</b>		<b>OC-HOT WATER CP</b>
13	<b>OC-B-2</b>		<b>720</b>	<b>15 1</b>	1220			<b>1 20</b>	<b>500</b>		FIRE ALARM
15	<b>OC-B-1</b>		<b>720</b>	<b>15 1</b>		1520		<b>1 20</b>	<b>800</b>		UNKNOWN
17	PNEUMATIC CONTROL PNL		500	20 1			1700	<b>1 20</b>	<b>1200</b>		OUTLET SIGN
19	<b>OC-HWS-3</b>		<b>700</b>	<b>20 1</b>	1500			<b>1 20</b>	<b>800</b>		UNKNOWN
21	<b>OC-SF-1</b>		<b>300</b>	<b>20 1</b>		1100		<b>1 20</b>	<b>800</b>		UNKNOWN
23	EXHAUST FAN STARTER		800	20 1			1600	<b>1 20</b>	<b>800</b>		UNKNOWN
25	BATH FANS STARTER		800	20 1	2300			<b>2 30</b>	<b>1500</b>		UNKNOWN
27	AIR COMPRESSOR		1500	20 2		3000		<b>2 30</b>	<b>1500</b>		-
29	-		1500	20 2			2300	<b>1 20</b>	<b>800</b>		UNKNOWN
31	NETWORK 8000 PANEL		500	20 1	1300			<b>1 20</b>	<b>800</b>		UNKNOWN
33	LIGHTING CONTACTOR		500	20 1		2000		<b>3 20</b>	<b>1500</b>		UNKNOWN
35	LIGHTING CONTACTOR		500	20 1			2000	<b>3 20</b>	<b>1500</b>		-
37	LIGHTING CONTACTOR		500	20 1	2000			<b>3 20</b>	<b>1500</b>		-
39	<b>OC-UH-1</b>		<b>1664</b>	<b>20 2</b>		1904		<b>1 20</b>	<b>240</b>		<b>BOILER ROOM LIGHTING</b>
41	-		<b>1664</b>	<b>20 2</b>			2464	<b>1 15</b>	<b>800</b>		<b>OC-DWH-1</b>
<input type="checkbox"/> HANDLE TIE						13364	14568	14264			
<input type="radio"/> HANDLE LOCK						BALANCE					
						95%	104%	101%			
TOTAL LOAD:			42196			TOTAL AMPS:			117.2		

PANEL SCHEDULE NOTES

- UPDATE PANEL DIRECTORY AT COMPLETION OF PROJECT.
- REMOVE EXISTING ITEM INCLUDING ASSOCIATED CONDUIT AND WIRING NO LONGER IN SERVICE. EXISTING BREAKER SHALL REMAIN AND BE RE-USED OR BECOME A SPARE. NEW BRANCH CIRCUITS SHALL BE IN DEDICATED RACEWAYS AS PER THE SPECIFICATIONS. FIELD VERIFY CIRCUIT DESIGNATIONS ASSOCIATED WITH RENOVATIONS AND FIELD VERIFY LOAD FOR ANY CIRCUIT MODIFIED OR EXTENDED AS PART OF THIS PROJECT.
- UTILIZE EXISTING BREAKER FOR NEW BRANCH CIRCUIT INDICATED.
- FURNISH AND INSTALL NEW CIRCUIT BREAKER SIZED AS INDICATED TO MATCH EXISTING IN AVAILABLE SPACE. NEW BREAKER TO MATCH EXISTING IN TYPE, STYLE, MANUFACTURER, AND AIC RATING.
- REMOVE EXISTING ITEM INCLUDING ASSOCIATED CONDUIT AND WIRING NO LONGER IN SERVICE. EXISTING BREAKER SHALL BE REMOVED AND TURNED OVER TO OWNER FOR ATTIC STOCK. NEW BRANCH CIRCUITS SHALL BE IN DEDICATED RACEWAYS AS PER THE SPECIFICATIONS. FIELD VERIFY CIRCUIT DESIGNATIONS ASSOCIATED WITH RENOVATIONS AND FIELD VERIFY LOAD FOR ANY CIRCUIT MODIFIED OR EXTENDED AS PART OF THIS PROJECT.

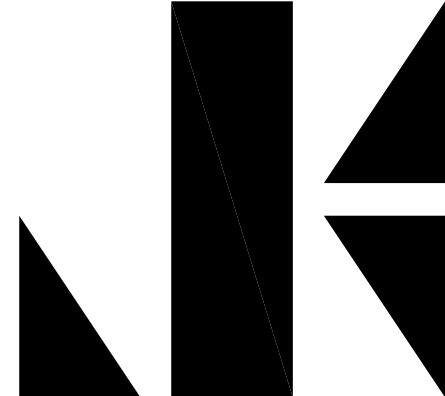
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BRANCH CIRCUIT CONDUCTOR SIZING CHART		
MAX. CIRCUIT LENGTH TO FARTHEST OUTLET	CIRCUIT VOLTAGE	MINIMUM BRANCH CIRCUIT SIZE.
100 FEET	120	#12 AWG
165 FEET	120	#10 AWG
265 FEET	120	#8 AWG
400 FEET	120	#6 AWG
250 FEET	277	#12 AWG
400 FEET	277	#10 AWG
550 FEET	277	#8 AWG
750 FEET	277	#6 AWG

ALTERNATE

ALTERNATE OC-E1: STATE THE AMOUNT TO BE ADDED/SUBTRACTED TO THE BASE BID TO FURNISH ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY FOR THE COMPLETE INSTALLATION OF THE FOLLOWING.

- ELECTRICAL WORK ASSOCIATED WITH THE GAS-FIRED DOMESTIC WATER HEATER (OC-DWH-1) WITH THE DETAILS INDICATED ON THE DESIGN DOCUMENTS.
- OMISSION OF ALL ELECTRICAL WORK ASSOCIATED WITH THE INLINE PUMP (OC-HWS-3)



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DATE: 02.09.2026  
DESCRIPTION: BIDDING & STATE REVIEW

BOILER REPLACEMENT & RELATED WORK

**ORCHARD CENTER HIGH SCHOOL**  
1750 OAK STREET, MONROE, MICHIGAN 48161  
**MONROE PUBLIC SCHOOLS**  
1275 N. MACOMB STREET, MONROE, MICHIGAN 48162

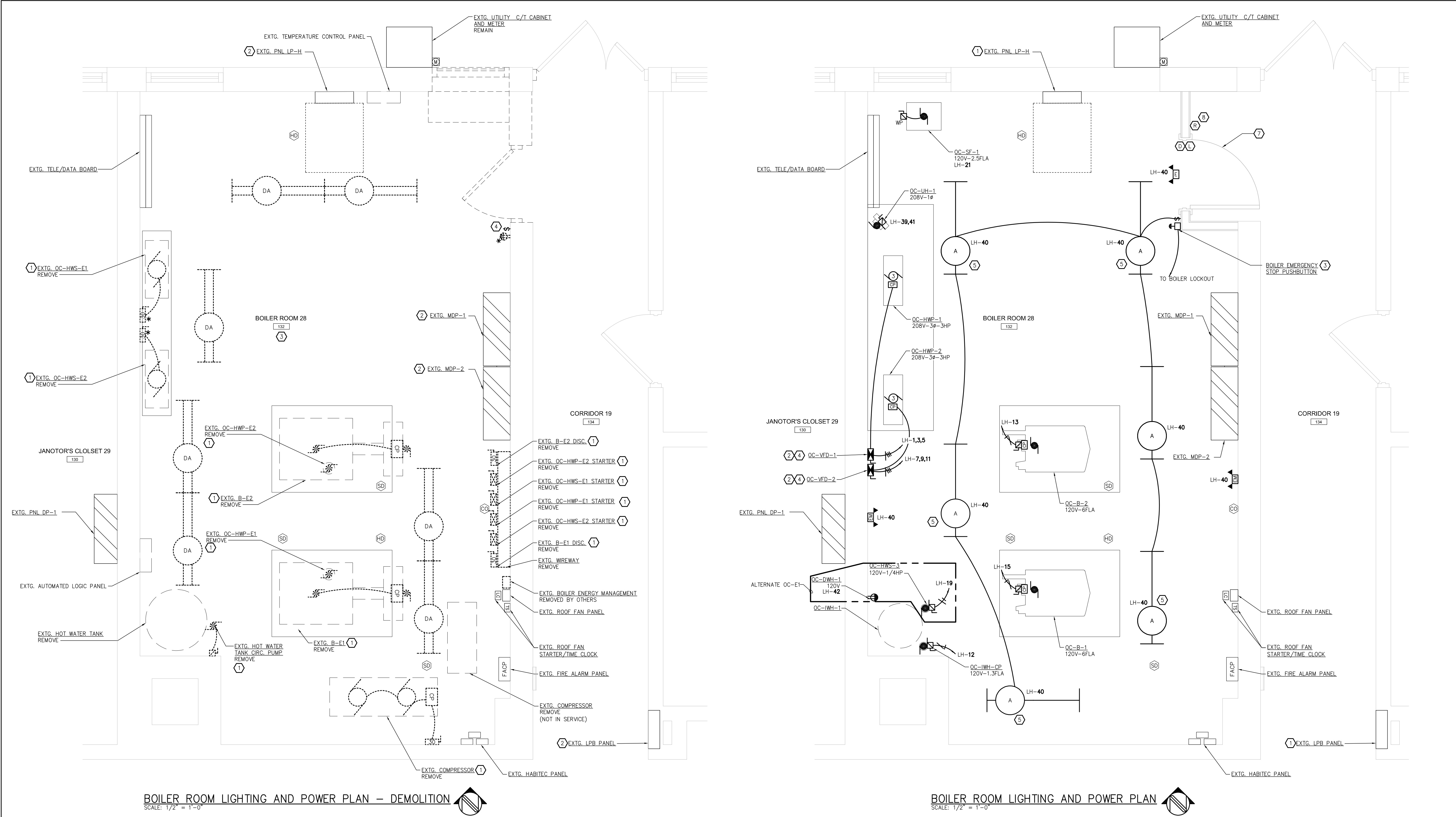
JOB # 26102

ELECTRICAL LEGEND  
SINGLE-LINE &  
PANEL SCHEDULES

E1.02



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BOILER ROOM LIGHTING AND POWER PLAN – DEMOLITION  
SCALE: 1/2" = 1'-0"

PLAN NOTES

- DISCONNECT EXISTING ELECTRICAL CONNECTIONS TO ACCOMMODATE REMOVAL OF MECHANICAL EQUIPMENT BY OTHERS. COORDINATE WITH M.C. BEFORE COMMENCEMENT OF WORK. EXISTING BRANCH CIRCUITS SHALL BE REMOVED BACK TO SOURCE. ASSUMED SOURCE IS EXISTING PANEL **LP-H**.
- REFERENCE SHEET E1.02 FOR MORE INFORMATION.
- FIELD VERIFY EXISTING LIGHTING BRANCH CIRCUITS THAT SHALL BE REMOVED BACK TO SOURCE. ASSUMED SOURCE IS EXISTING PANEL **LPB**.
- DISCONNECT AND REMOVE INDICATED LIGHTING CONTROLS. REMOVE ALL ASSOCIATED CABLING BACK TO SOURCE. EXISTING BACKBOX SHALL BE REMOVED TO ACCOMMODATE FOR NEW ARCHITECTURAL WALL.

GENERAL NOTES

- COORDINATE WITH MECHANICAL DRAWINGS AND CONTRACTOR FOR PROJECT SCOPE AND SEQUENCE OF CONSTRUCTION **BEFORE** COMMENCING ANY WORK.
- WHERE ACCESSIBLE CEILINGS ARE PRESENT, WIRING MAY BE RUN IN METAL RACEWAYS ONLY TO ABOVE ACCESSIBLE CEILINGS, WITH OPEN CABLING IN ACCESSIBLE CEILING AND PROPERLY SUPPORTED AS PER THE SPECIFICATIONS. WIRING IN AIR HANDLING PLENUMS SHALL BE PLENUM RATED AS REQUIRED. ALL WIRING RUN IN METAL RACEWAYS, SHALL BE IN RACEWAYS SEPARATE FROM ALL OTHER WIRING, UNLESS NOTED OTHERWISE.
- SEAL ALL PENETRATIONS THRU FIRE RATED ASSEMBLIES WITH APPROVED FIRE-STOPPING MATERIALS. REFER TO SPECIFICATIONS FOR FURTHER DETAILS AND SEE ARCHITECTURAL SHEET LS1.00 FOR RATED ASSEMBLY LOCATIONS.
- PATCH AND PAINT SHALL BE COVERED BY GENERAL TRADES. ALL RACEWAYS SHALL MATCH WALL FINISH. COORDINATE WITH ARCHITECT.
- A SEPARATE FIRE ALARM REPLACEMENT PROJECT IS BEING PERFORMED SIMULTANEOUSLY WITH THIS BOILER PROJECT UNDER TWO (2) SEPARATE PERMITS. FULL COORDINATION BETWEEN ALL TRADES IS REQUIRED TO ENSURE UNINTERRUPTED SYSTEM OPERATION AND CODE COMPLIANCE.

ALTERNATE

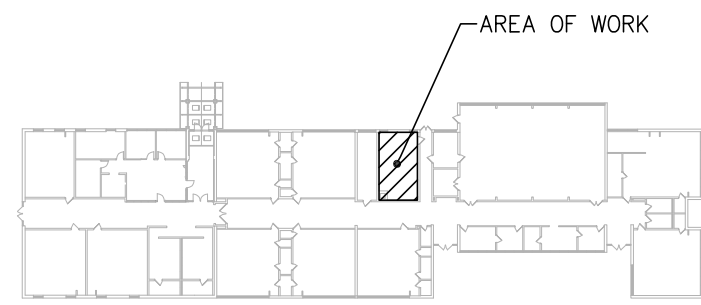
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BOILER ROOM LIGHTING AND POWER PLAN  
SCALE: 1/2" = 1'-0"

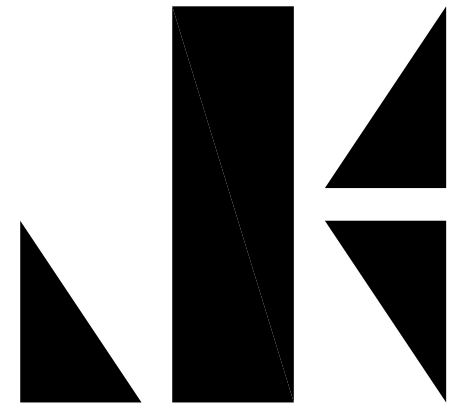
PLAN NOTES

- REFERENCE SHEET E1.02 FOR MORE INFORMATION.
- VFD LINE AND LOAD CONDUCTORS SHALL **NOT** BE ROUTED IN THE SAME RACEWAY. PROVIDE ENGRAVED LABEL AT VFD TO MATCH MOTOR AND PANEL LABELING.
- PER THE REQUIREMENTS OF THE MICHIGAN BOILER CODE, EMERGENCY STOP PUSHBUTTON SHALL BE AT THE BOILER ROOM DOOR FOR EMERGENCY POWER SHUT-OFF OF BOTH OC-B-1 AND OC-B-2. PROVIDE AND INSTALL NECESSARY CONDUIT, WIRING AND RELAYS TO EACH PIECE OF EQUIPMENT FOR THE E-STOP PUSHBUTTON TO DE-ENERGIZES THE BOTH BOILERS. ADD RED NAMEPLATE ON E-STOP PANEL "EMERGENCY BOILER DISCONNECT". PUSHBUTTON M.H. AT 6'0" AFF TO TOP.
- 3 $\phi$ 10 + #10C - 1/2°C
- MOUNT LIGHTING FIXTURE AT 8'-0" A.F.F. COORDINATE WITH MECHANICAL CONTRACTOR PRIOR TO INSTALLATION TO ENSURE PROPER CLEARANCE WITH REGARDS TO MECHANICAL EQUIPMENT AND NEW DUCTWORK.
- NOT USED
- DOOR WILL BE LOCKED AT ALL TIMES. CARD READER ACCESS. **DOOR SHALL UNLOCK AUTOMATICALLY DURING FIRE ALARM AND POWER LOSS (FAIL-SAFE FROM CONTROLLER)**. LOCK OUT OF DOORS CAN BE OVERRIDDEN DURING FIRE DRILLS OR OTHER EVENTS. COORDINATE WITH DOOR INSTALLER AND SUPPLIER FOR EXACT ROUGH-IN REQUIREMENTS FOR ALL ELECTRICAL COMPONENTS.
- REFERENCE ARCHITECTURAL DRAWINGS FOR LOCATION AND MOUNTING HEIGHT FOR DEVICES NOTED.



KEY PLAN  
NO SCALE

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AT FOR

JOB # **26102**

BOILER ROOM  
LIGHTING AND POWER  
PLANS  
**E2.01**