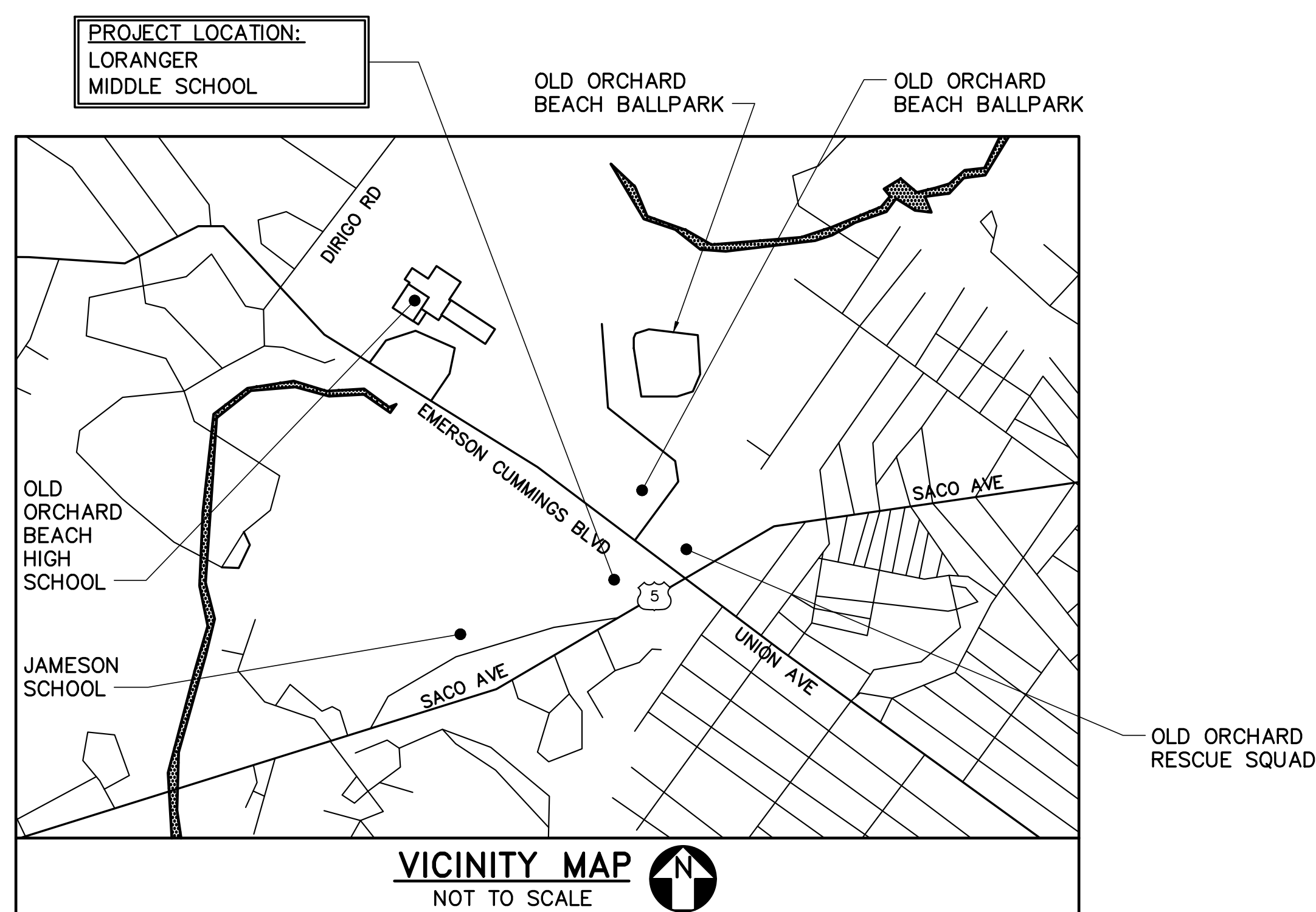
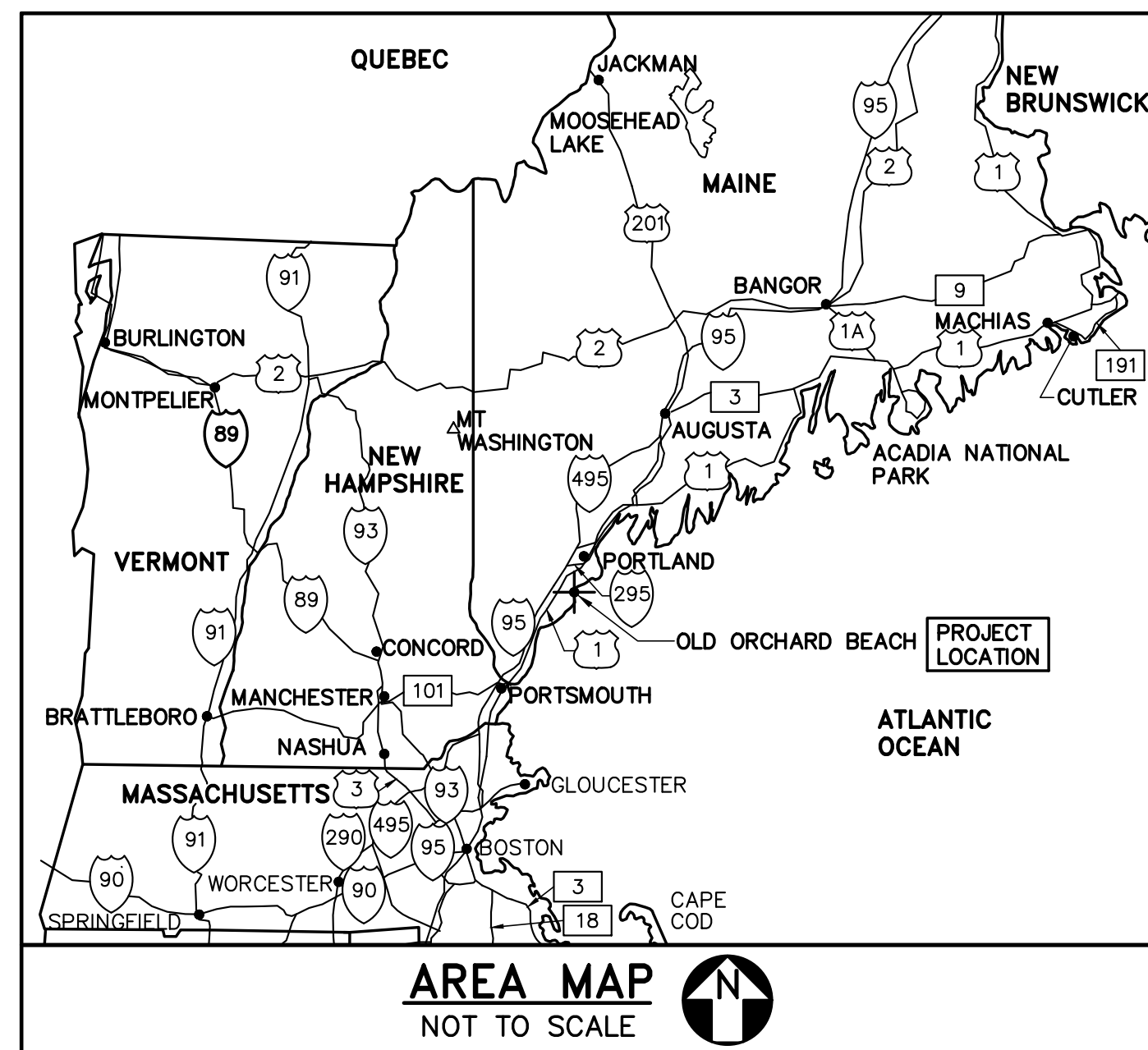


# BOILER REPLACEMENT LORANGER MIDDLE SCHOOL

## REGIONAL SCHOOL UNIT 23 OLD ORCHARD BEACH, MAINE



### GENERAL CONSTRUCTION NOTES

1. THE CONTRACTOR WILL FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO COMMENCING WORK. REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO COMMENCING WORK.
2. ALL WORK INCLUDED IN THIS CONTRACT WILL CONFORM TO ALL STATE, NATIONAL AND OTHER CODES AND ORDINANCES WHICH ARE APPLICABLE TO THIS PROJECT.
3. WORK FROM GIVEN DIMENSIONS AND LARGE SCALE DETAILS ONLY. DO NOT SCALE DRAWINGS.
4. AT THE END OF EACH WORKING DAY, THE CONSTRUCTION SITE WILL BE LEFT IN A NEAT, CLEAN AND SAFE CONDITION.
5. THE CONTRACTOR WILL DISPOSE OF AND/OR RECYCLE ANY CONSTRUCTION DEBRIS FROM THE PROJECT AS REQUIRED BY THE STATE OF MAINE. THE CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING DISPOSAL PERMITS WHICH ARE REQUIRED. CONSTRUCTION DEBRIS FROM THE PROJECT WILL BE DISPOSED OF IN A STATE APPROVED LANDFILL.
6. ALL WORK WILL BE PROVIDED IN COMPLIANCE WITH THAT INDUSTRY'S STANDARDS AND PERFORMED IN A WORKMANLIKE PROFESSIONAL MANNER.
7. CARE WILL BE TAKEN BY THE CONTRACTOR TO PROTECT EXISTING SYSTEMS AND SURFACES TO REMAIN. DAMAGE RESULTING FROM THE CONTRACTOR'S OPERATIONS WILL BE REPAIRED OR REPLACED AS APPROVED BY THE OWNER AT NO ADDITIONAL COST.
8. THE CONTRACTOR WILL PROVIDE TEMPORARY PROTECTION FROM THE WEATHER (TARPAULINS) AS REQUIRED TO PROTECT BUILDING INTERIOR AND EXPOSED STRUCTURE.
9. THE CONTRACTOR WILL PROVIDE BARRICADES AT WORK AREAS TO PREVENT PERSONNEL FROM ENTERING AREAS OF WORK. PROVIDE COVERED WALKWAYS WHEN WORKING OVER PEDESTRIAN PATHS.
10. THE CONTRACTOR WILL COORDINATE AND REROUTE SCHOOL PERSONNEL AND GENERAL PUBLIC AROUND WORKS AREAS. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING BUILDING EGRESS ROUTES WITHIN THE WORK AREA.

### LIST OF DRAWINGS

DWG NO	SHEET	DRAWING TITLE
1 OF 4	G-001	COVER SHEET
2 OF 4	AE101	BOILER ROOM WALL RE-FRAMING
3 OF 4	M-001	MECHANICAL LEGENDS, ABBREVIATIONS, DETAILS AND SCHEDULES
4 OF 4	M-101	BOILER ROOM MECHANICAL PLANS

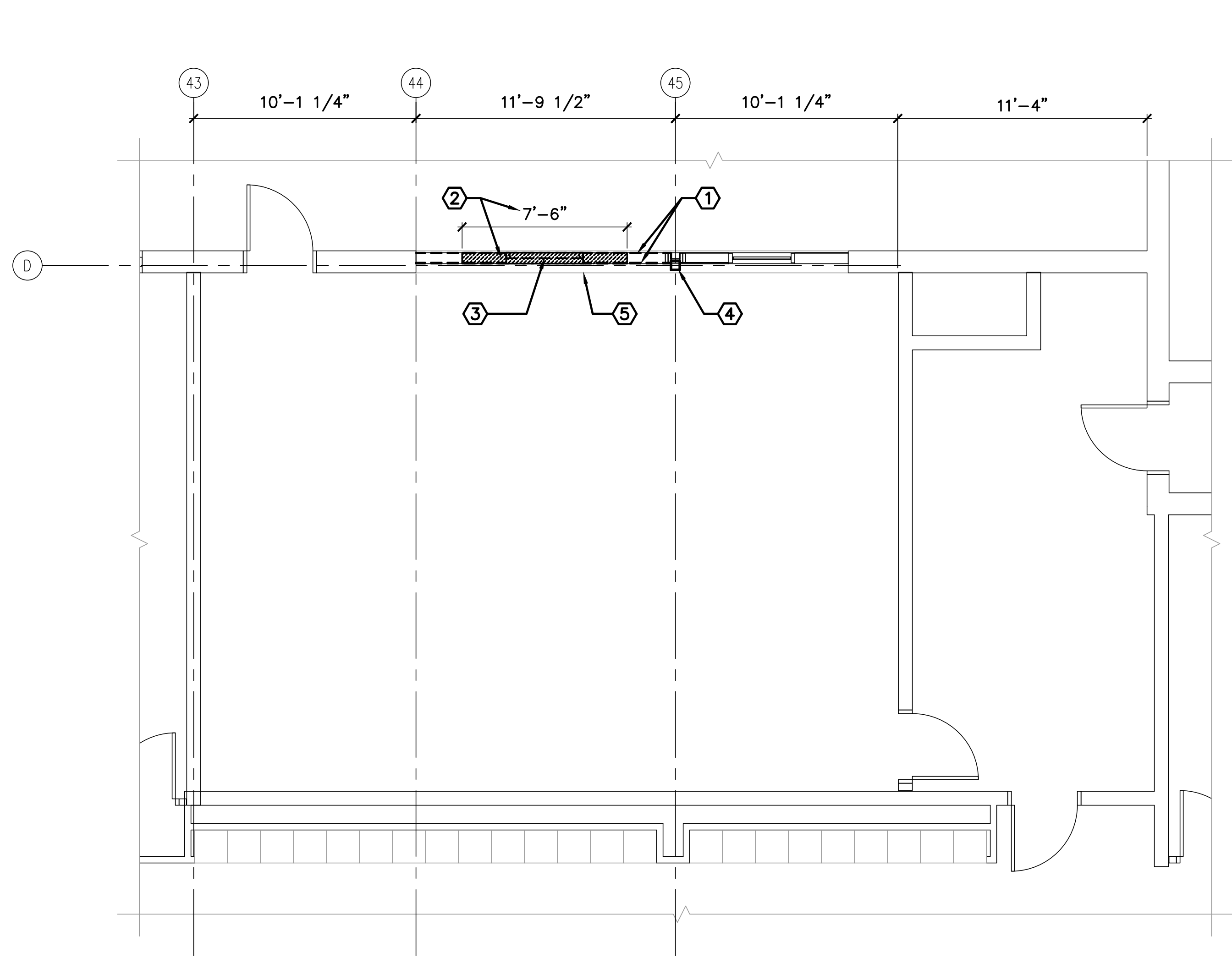
### ABBREVIATIONS

±	PLUS/MINUS	MIN	MINIMUM
&	AND	MIR	MIRROR
⊙	AT	N	NORTH
BD	BOARD	NIC	NOT IN CONTRACT
BL	BORROWED LITE	NO, #	NUMBER
CL	CENTERLINE	NTS	NOT TO SCALE
CLG	CEILING	OC	ON CENTER
CPT	CARPET	PL LAM ,PLAM	PLASTIC LAMINATE
CT	CERAMIC TILE	PLYWD	PLYWOOD
DIA ∅	DIAMETER	PNT	PAINT
DWG	DRAWING	RCP	REFLECTED CEILING PLAN
ELEV	ELEVATION	RM	ROOM
EXIST	EXISTING	SAT	SUSPENDED ACOUSTICAL TILE
GYP BD	GYPSON BOARD	SCH	SCHEDULE
HM	HOLLOW METAL	SIM	SIMILAR
LT	LIGHT	TYP	TYPICAL
MAX	MAXIMUM	UL	UNDERWRITERS LABORATORY
MDF	MEDIUM DENSITY FIBER BOARD	W/ WD	WITH WOOD
MFR	MANUFACTURER		
MFRS	MANUFACTURER'S		

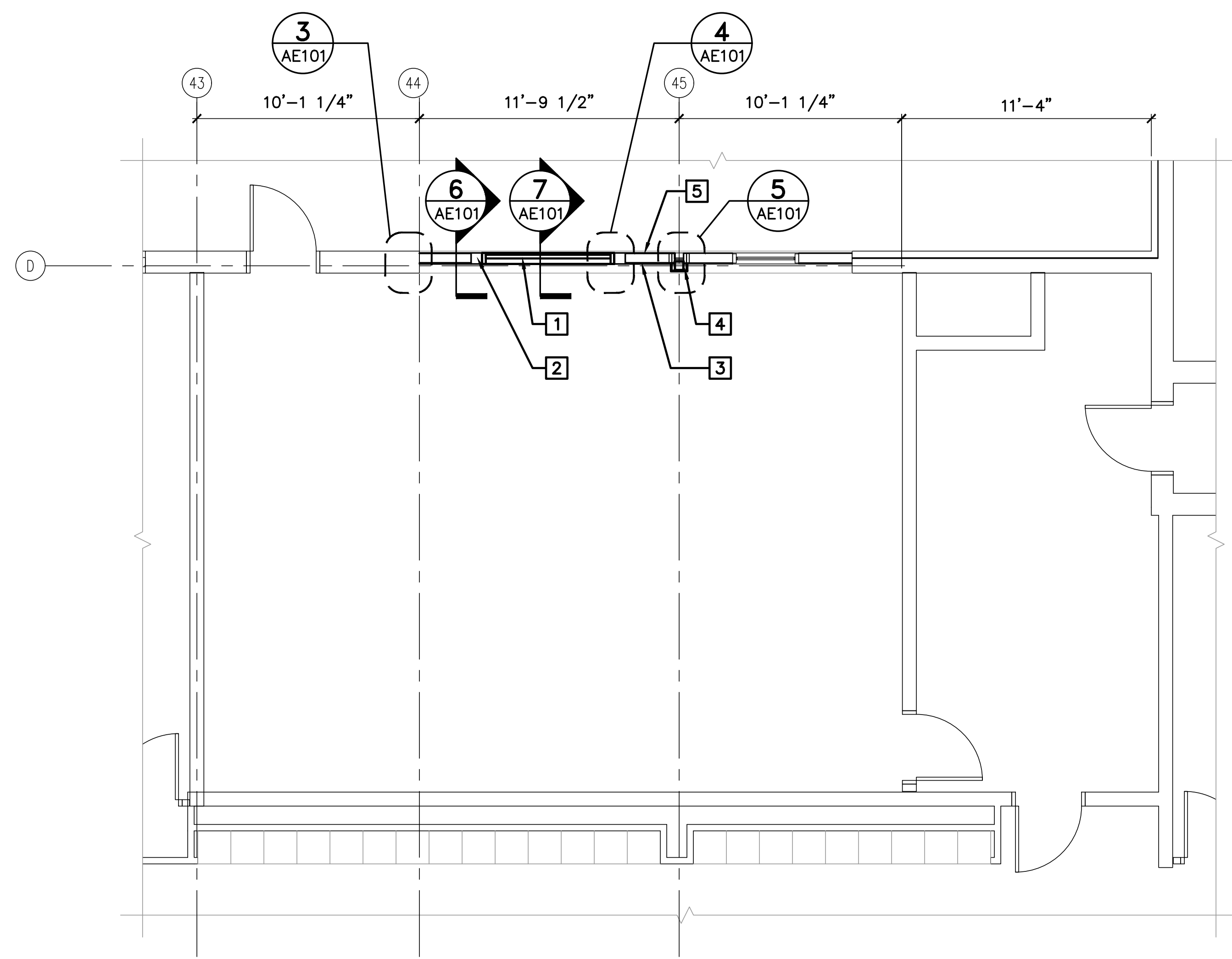
### LEGEND

	DETAIL NUMBER SHEET WHERE DETAIL IS DRAWN SHEETS WHERE DETAIL IS TAKEN
	INDICATES DIRECTION OF CUTTING PLANE WALL SECTION OR ELEVATION NUMBER SHEET WHERE WALL SECTION OR ELEVATION IS DRAWN SHEETS WHERE WALL SECTION OR ELEVATION IS TAKEN
	DETAIL NUMBER SHEET WHERE DETAIL IS DRAWN
	KEYNOTE
	REMOVE OR DEMO ITEM
	PROVIDE OR INSTALL ITEM
	EXISTING ITEM

STATE OF MAINE PUBLIC SCHOOL PROJECT			
TITLE: LORANGER MIDDLE SCHOOL BOILER REPLACEMENT			
LOCATION: OLD ORCHARD BEACH, MAINE			
TITLE: THIS DRAWING COVER SHEET			
DRAWN BY: SRW		DRAWING NO. G-001	
CHECKED BY: MSA		SHEET NO. 1 OF 4	
NO.	DATE	DESCRIPTION	BY
REVISIONS			
DATE: 05/12/26		207.283.0193	



**1 BOILER ROOM REMOVALS PLAN**  
AE101/ SCALE: 1/4"=1'-0"

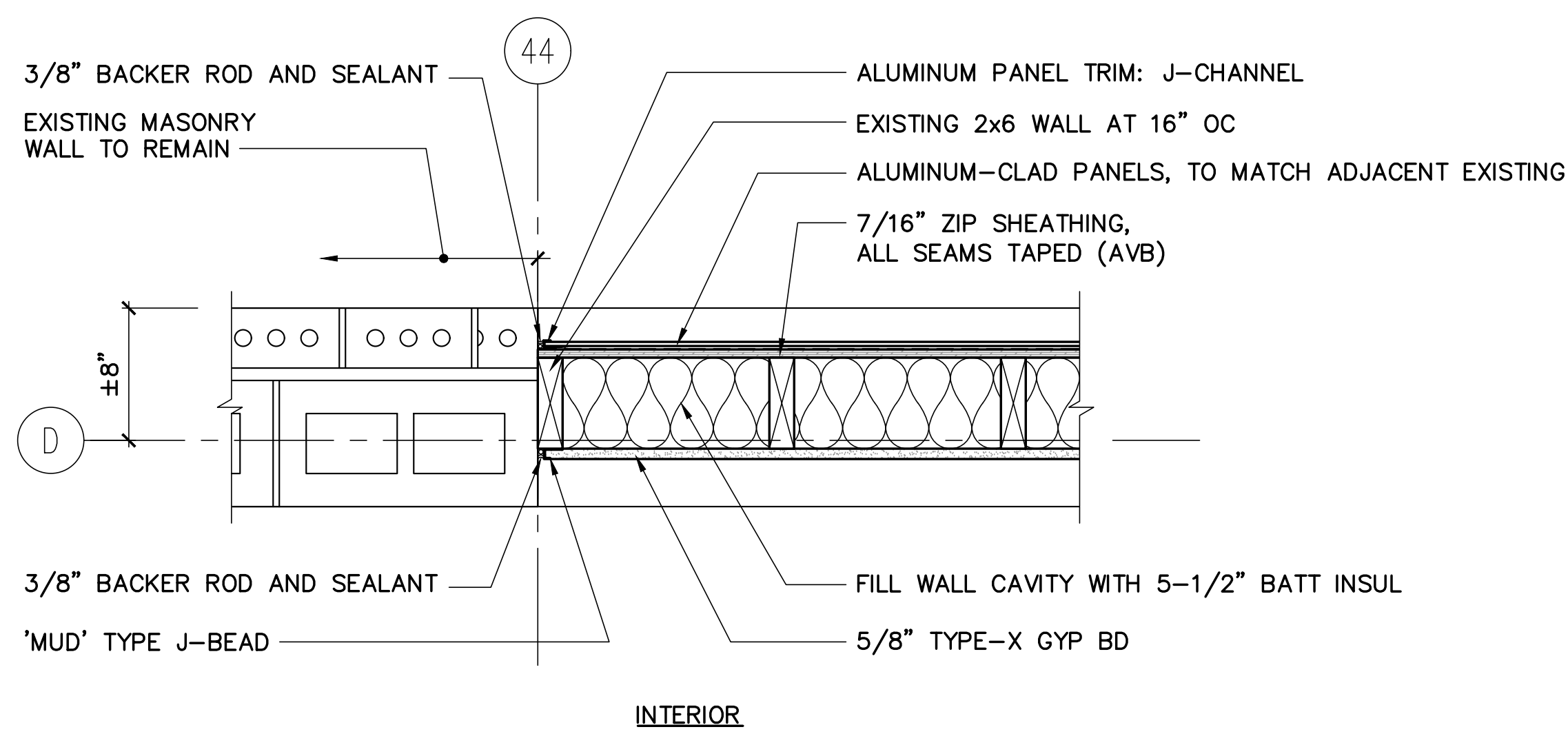


**2 PROPOSED BOILER ROOM PLAN**  
AE101/ SCALE: 1/4"=1'-0"

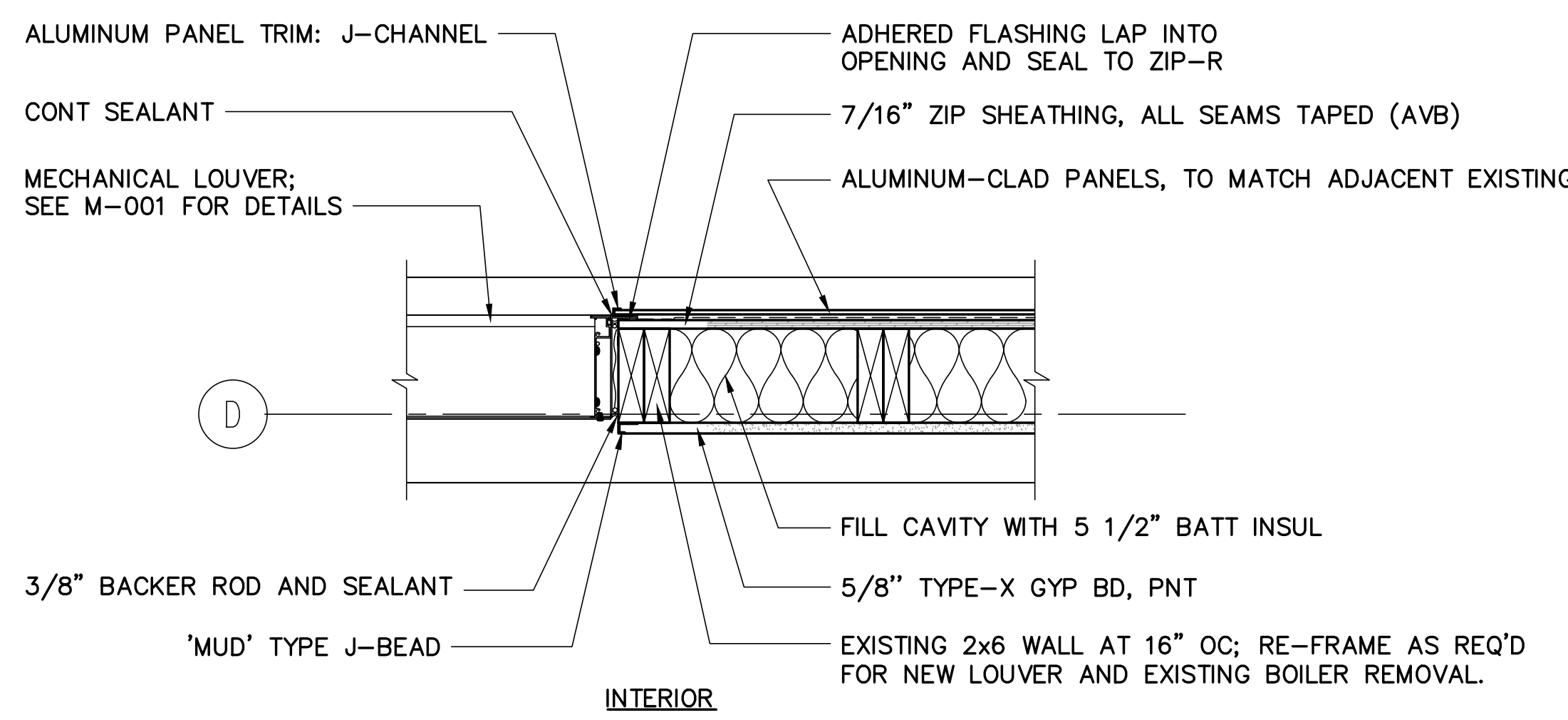
**GENERAL NOTES**  
1. ALUMINUM PANEL TRIM TO BE INSTALLED WITH GASKET TAPE AND ALUMINUM TRIM PROFILES PER MANUFACTURER INSTRUCTION

- REMOVALS PLAN KEYNOTES**
- ① REMOVE INTERIOR AND EXTERIOR WALL FINISH AT BASEMENT LEVEL
  - ② REMOVE PORTION OF EXISTING FRAMING AS REQUIRED TO REMOVE EXISTING BOILER. GC TO PROVIDE TEMPORARY SHORING AND FRAMING AS REQUIRED
  - ③ REMOVE COMBUSTION AIR INLET LOUVER
  - ④ REMOVE EXISTING INTERIOR FINISH AROUND EXISTING COLUMN
  - ⑤ RELOCATE EXISTING BOILER CUT-OFF SWITCH AND ASSOCIATED CONDUIT DURING CONSTRUCTION TO AVOID DAMAGE. RE-INSTALL ONCE WORK IS COMPLETE.

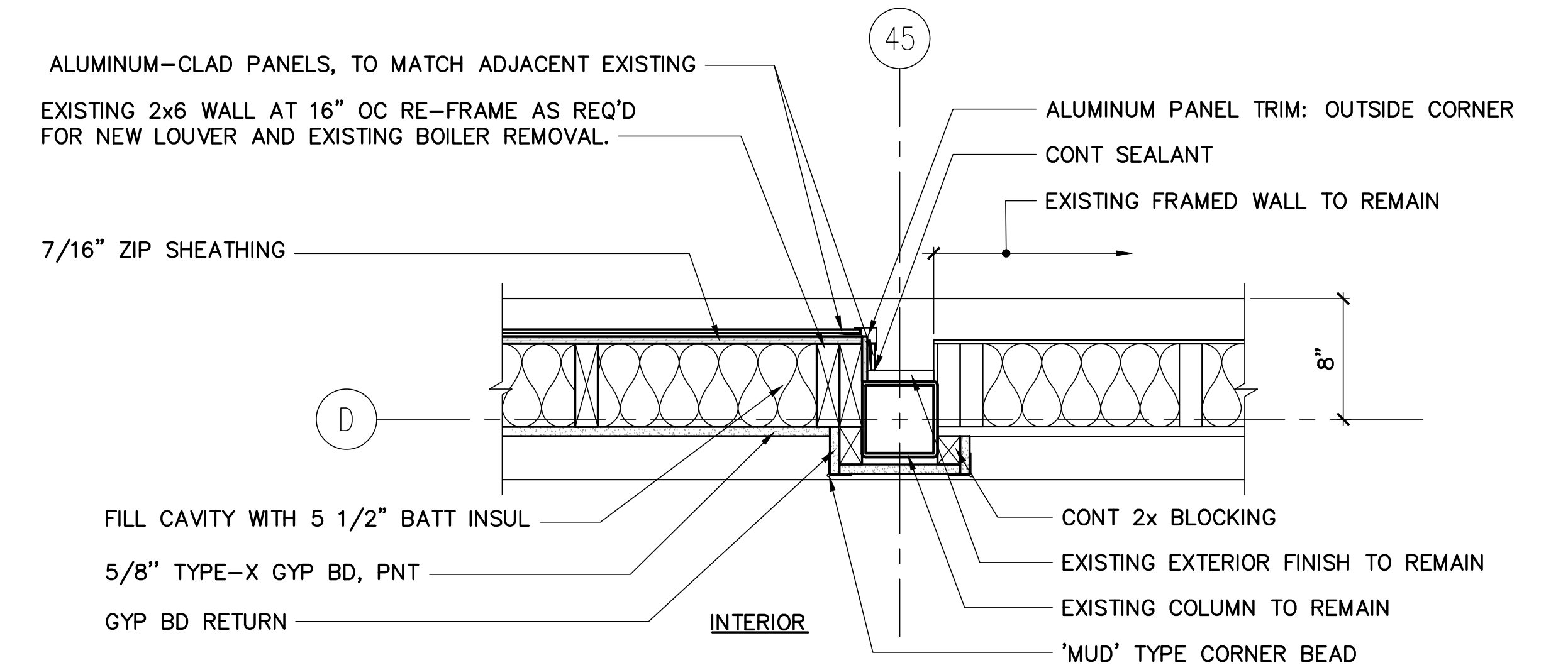
- PROPOSED PLAN KEYNOTES**
- ① MECHANICAL LOUVER; SEE SHEET M001 FOR DETAILS
  - ② INSTALL INFILL FRAMING AS REQUIRED
  - ③ INSTALL 5/8" TYPE-X GYP BD INTERIOR WALL FINISH
  - ④ INSTALL BLOCKING AND 5/8" TYPE-X GYP BD WRAP AROUND EXISTING COLUMN
  - ⑤ INSTALL ALUMINUM CLAD EXTERIOR PANELS TO MATCH EXISTING ADJACENT PER MANUFACTURERS INSTRUCTIONS, BASIS OF DESIGN: CAP-INDUSTRIES 1/4" ALCLAD PANELS



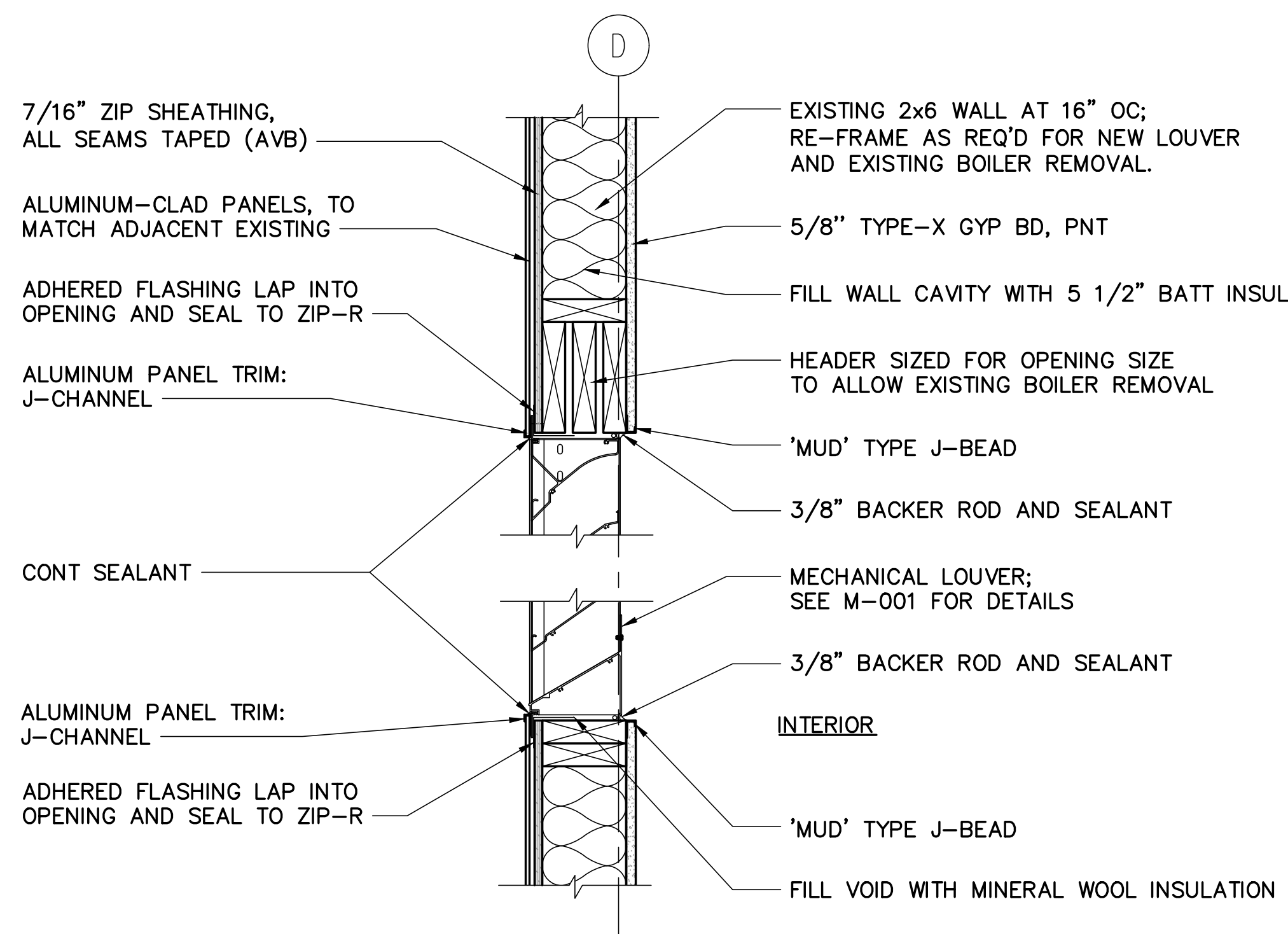
**3 LOUVER WALL MEETS EXISTING MASONRY WALL PLAN DETAIL**  
AE101/ SCALE: 1 1/2"=1'-0"



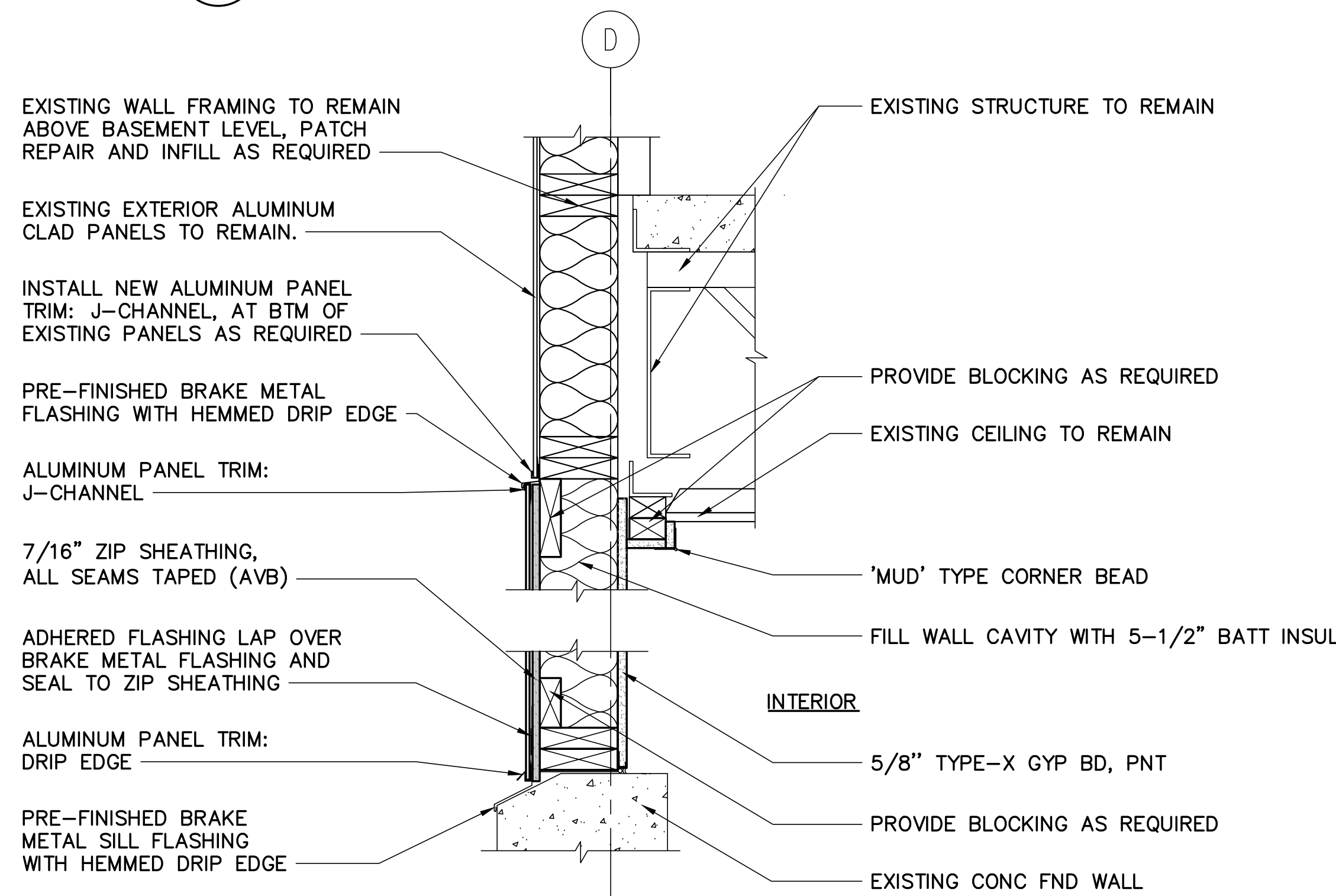
**4 MECHANICAL LOUVER JAMB DETAIL**  
AE101/ SCALE: 1 1/2"=1'-0"



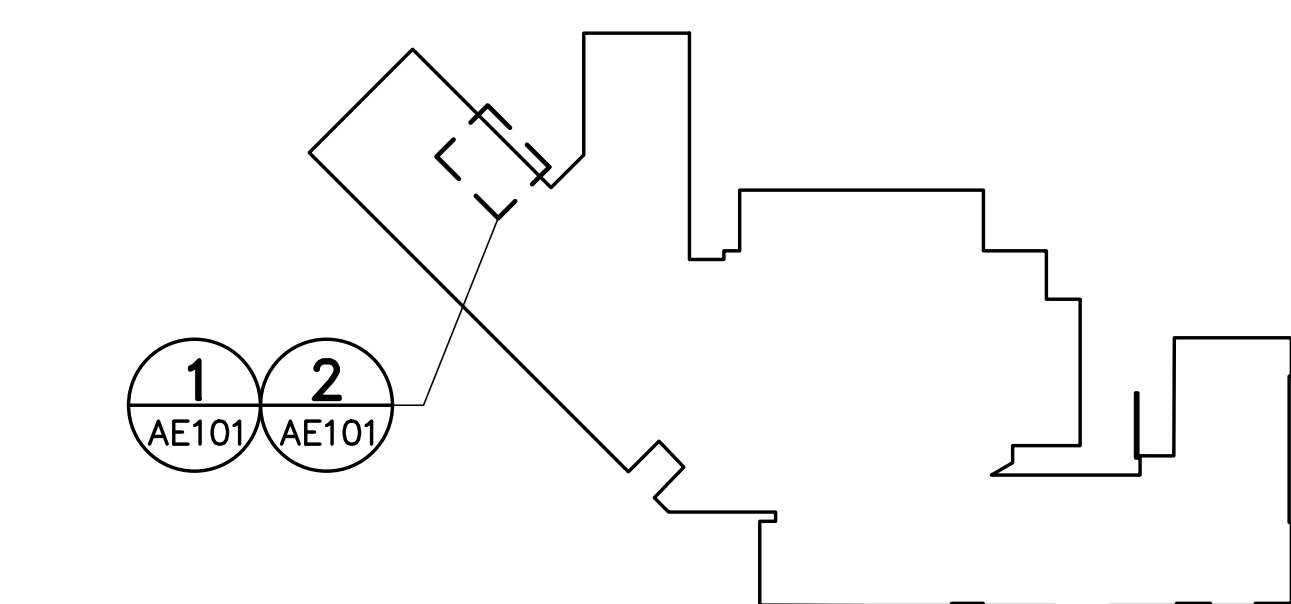
**5 LOUVER WALL MEETS EXISTING STEEL COLUMN PLAN DETAIL**  
AE101/ SCALE: 1 1/2"=1'-0"



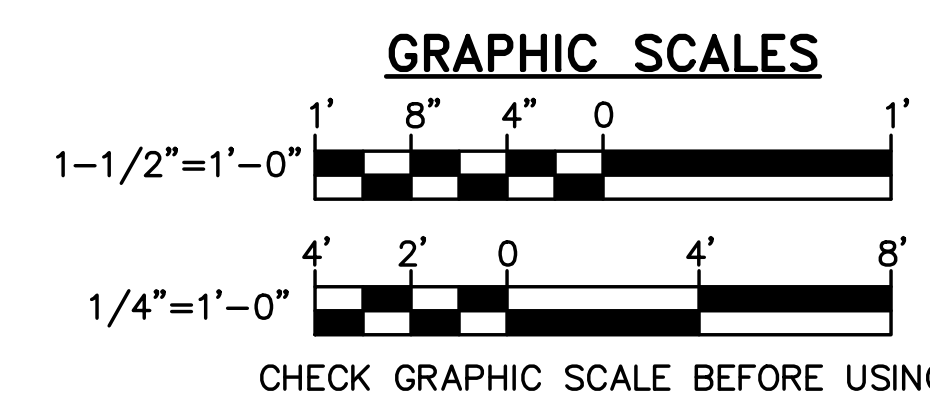
**6 MECH LOUVER HEAD/SILL DETAIL**  
AE101/ SCALE: 1 1/2"=1'-0"



**7 WALL SECTION DETAIL**  
AE101/ SCALE: 1 1/2"=1'-0"



**KEYPLAN**  
SCALE: NOT TO SCALE  
PLAN NORTH



<b>STATE OF MAINE PUBLIC SCHOOL PROJECT</b> TITLE: LORANGER MIDDLE SCHOOL BOILER REPLACEMENT LOCATION: OLD ORCHARD BEACH, MAINE TITLE THIS SHEET: BOILER ROOM WALL RE-FRAMING				DRAWING NO. <b>AE101</b> SHEET NO. <b>2 of 4</b>
NO.	DATE	DESCRIPTION	BY	NO.
REVISIONS				

**MECHANICAL SYMBOLS LEGEND**

<b>ANNOTATION</b>			
	SYMBOL PER ABBREVIATION LIST		
	EQUIPMENT SEQUENCE NUMBER		
	KEYNOTE		
	DIRECTION OF AIR FLOW		
	CONNECT TO EXISTING		
	DUCTWORK		
	DUCT		
	EQUIPMENT		
	PROPELLER FAN		
	PUMP		
	CONTROLS AND METERING		
	WALL MOUNTED TEMPERATURE SENSOR (REFER TO CONTROL DIAGRAMS FOR VARYING SPECIFIC REQUIREMENTS)		
	FLUID TEMPERATURE SENSOR IN WELL		
	FLUID PRESSURE SENSOR IN WELL		
	START/STOP CONTROLLER		
	CURRENT SENSOR		
	END SWITCH		
	THERMAL SWITCH		
	MANUAL SWITCH		

**MECHANICAL LINE TYPE LEGEND**

	REMOVE ITEMS
	EXIST ITEMS TO REMAIN
	PROVIDE ITEMS
	FOS FUEL OIL SUPPLY
	FOR FUEL OIL RETURN
	HWS HOT WATER SUPPLY
	HWR HOT WATER RETURN
	MU MAKEUP WATER
	CONTROL WIRING

	PIPING
	ELBOW DOWN
	PIPE TEE UP OR UP AND DOWN
	ELBOW UP OR UP AND DOWN
	PIPE TEE DOWN
	STRAINER
	BALL VALVE
	BUTTERFLY VALVE
	GATE VALVE
	PRESSURE GAGE WITH STOPVALVE IN WELL
	CHECK VALVE
	CHECK VALVE, SPRING TYPE
	REDUCED PRESSURE ZONE BACKFLOW PREVENTER
	GATE, ANGLE VALVE
	CALIBRATED BALANCING VALVE WITH POSITIVE SHUTOFF
	PIPE PITCH DOWN
	PRESSURE RELIEF VALVE
	3-WAY PNEUMATIC CONTROL VALVE
	PRESSURE REDUCING VALVE
	CAP
	UNION
	CONCENTRIC PIPE REDUCER/INCREASER
	OS&Y GATE VALVE
	THERMOMETER IN WELL
	AIR VENT, AUTOMATIC
	MANUAL FLOAT VENT
	VACUUM BREAKER
	FLEXIBLE CONNECTOR
	AIR SEPARATOR
	FUSEABLE LINK OIL SHUT OFF VALVE
	HOSE BIBB WITH CAP & CHAIN
	BALL VALVE IN VERTICAL
	AIR GAP FITTING

**MECHANICAL ABBREVIATIONS**

AFF	ABOVE FINISHED FLOOR	IN	INCHES
APD	AIR PRESSURE DROP	KW	KILOWATT
AS	AIR SEPARATOR, AIRSCOOP, AIRFLOW SWITCH	L	LOUVER
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	LAT	LEAVING AIR TEMPERATURE
B	BOILER	LBS	POUNDS
BFP	BACKFLOW PREVENTER	LFT	LEAVING FLUID TEMPERATURE
BHP	BRAKE HORSEPOWER	LWT	LEAVING WATER TEMPERATURE
BLDG	BUILDING	MAX	MAXIMUM
BOD	BASIS OF DESIGN	MBH	1000 BTU PER HOUR
CFM	CUBIC FEET/MINUTE	MCA	MINIMUM CIRCUIT AMPERES
C	CENTERLINE	MECH	MECHANICAL
CW	COLD WATER	MFR	MANUFACTURER
D	DEPTH, DAMPER, DRAIN	MIN	MINIMUM
DB	DRY BULB	MOCPP	MAXIMUM OVERCURRENT PROTECTION
DDC	DRY DIGITAL CONTROLS	N/A	NOT APPLICABLE
DEG	DEGREES	NAT	NATURAL
DHWR	DOMESTIC HOT WATER RETURN	NC	NOISE CRITERIA, NORMALLY CLOSED
DN	DRAIN	NO	NUMBER, NORMALLY OPEN
DWG	DRAWING	NTS	NOT TO SCALE
E	EXISTING, EXHAUST	P	PUMP, PITCH, OR PRESSURE
EA	EXHAUST AIR, EACH	PH	PHASE
EF	EXHAUST FAN	PRV	PRESSURE REDUCING VALVE
EFF	EFFICIENCY	PSI	POUNDS PER SQUARE INCH
ELEV	ELEVATION, ELEVATOR	PSIG	POUNDS PER SQUARE INCH GAGE
EQUIP	EQUIPMENT	QTY	QUANTITY
EWT	ENTERING WATER TEMPERATURE	R	RADIUS, RETURN
EXIST	EXISTING	REQ'D	REQUIRED
EXT	EXPANSION TANK	RF	RETURN FAN
F	DEGREES FAHRENHEIT	RLA	RUNNING LOAD AMPERES
FC	FLEX CONNECTOR	RM	ROOM
FD	FLOOR DRAIN	RPM	REVOLUTIONS PER MINUTE
FF	FINISH FLOOR	RPZ	REDUCED PRESSURE ZONE
FLA	FULL LOAD AMPS	SF	SQUARE FOOT
FOR	FUEL OIL RETURN	SIM	SIMILAR
FOS	FUEL OIL SUPPLY	SO	SQUARE
FT	FOOT/FEET	S/S	START/STOP
GAL	GALLONS	T	THERMOSTAT
GPM	GALLONS PER MINUTE	TEMP	TEMPERATURE
HP	HORSEPOWER	TSP	TOTAL STATIC PRESSURE
HVAC	HEATING, VENTING AND AIR CONDITIONING (UNIT)	TYP	TYPICAL
IBR	HYDRONIC INSTITUTE OF BOILER AND RADIATOR MANUFACTURERS	UL	UNDERWRITERS LABORATORIES
		V	VENT, VALVE, VOLTS
		W	WITH
		WC	WATER COLUMN
		WG	WATER GAUGE
		WPD	WATER PRESSURE DROP

LOUVER SCHEDULE								
UNIT NO	SERVES	TYPE	DIMENSIONS			MIN FREE AREA SQUARE FT	BASIS OF DESIGN	NOTES
			LENGTH	HEIGHT	DEPTH			
L-1	BOILER COMB. AIR	FIXED	60"	48"	6"	11.6	GREENHECK ESD635	1, 2

NOTES:

- PROVIDE LOUVER WITH FACTORY FINISH (70% KYNAR PVDF/100% FLUOROPOLYMER) IN A MANUFACTURER'S CUSTOM COLOR OPTION SELECTED BY OWNER.
- PROVIDE THERMALLY BROKEN FRAME AND BLADE INSULATED LOW LEAKAGE MOTOR OPERATED DAMPER COMPATIBLY SIZED TO PERMIT FULL USE OF THE LOUVER OPENING. BASIS OF DESIGN (BOD): GREENHECK MODEL ICD-45.

BACKFLOW PREVENTER SCHEDULE								
UNIT NO	LOCATION	SYSTEM SERVED	TYPE	SIZE	DESIGN FLOW (GPM)	MAX WPD @ DESIGN (PSI)	BASIS OF DESIGN	NOTES

NOTES:

- PROVIDE BACKFLOW PREVENTER WITH MANUFACTURER'S ISOLATION BALL VALVES.
- PROVIDE BACKFLOW PREVENTER WITH MANUFACTURER'S AIR VENT AND FULL SIZE TYPE L COPPER TUBE DRAIN PIPE THAT EXTENDS TO EXISTING FLOOR DRAIN.

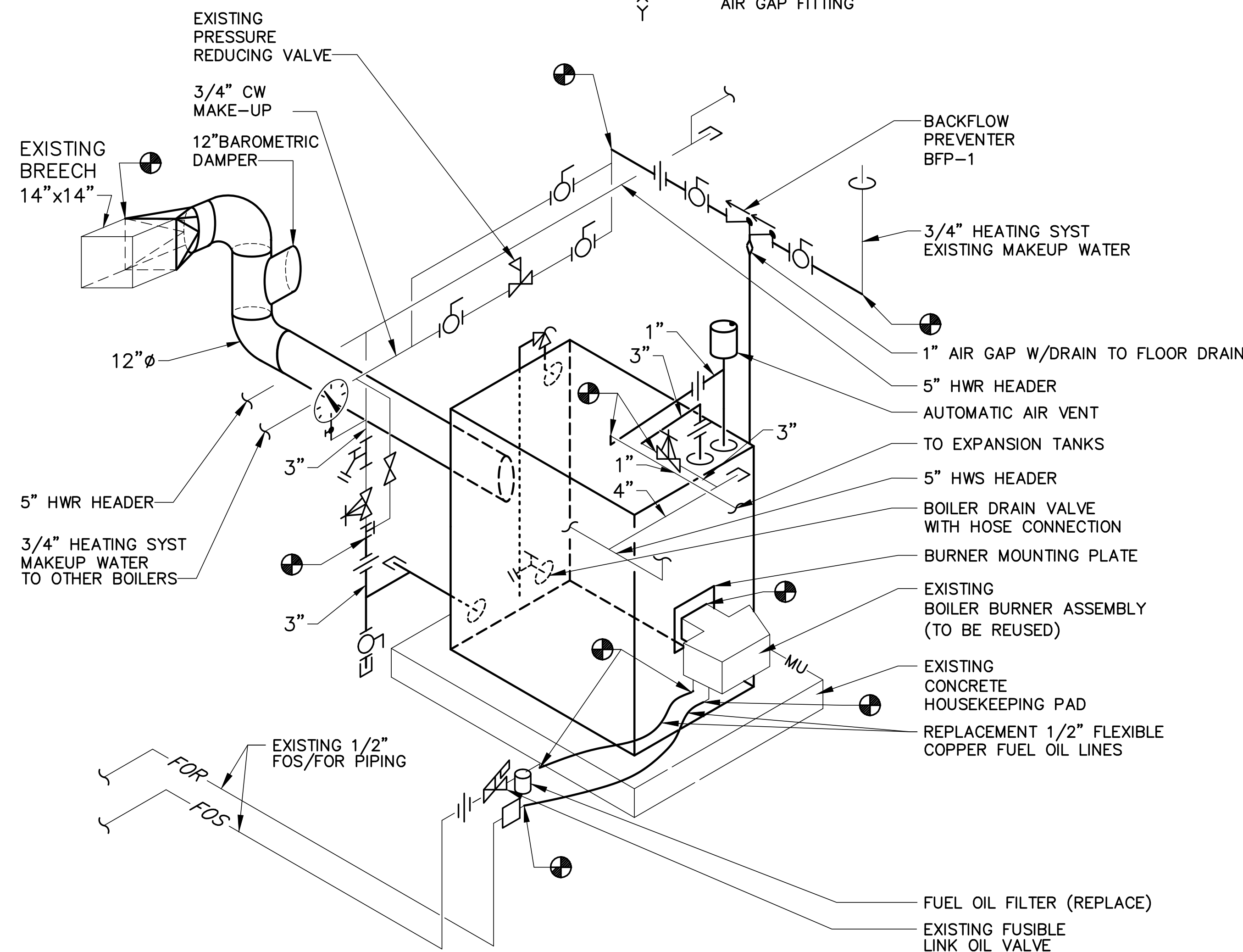
BOILER ROOM HEATING HOT WATER BOILER SCHEDULE									
UNIT NO	FUEL	GPH	NET IBR RATING MBH	THERMAL EFFICIENCY	FLUE SIZE	EXISTING BURNER HP	VOLTS/PHASE	BASIS OF DESIGN	NOTES

NOTES:

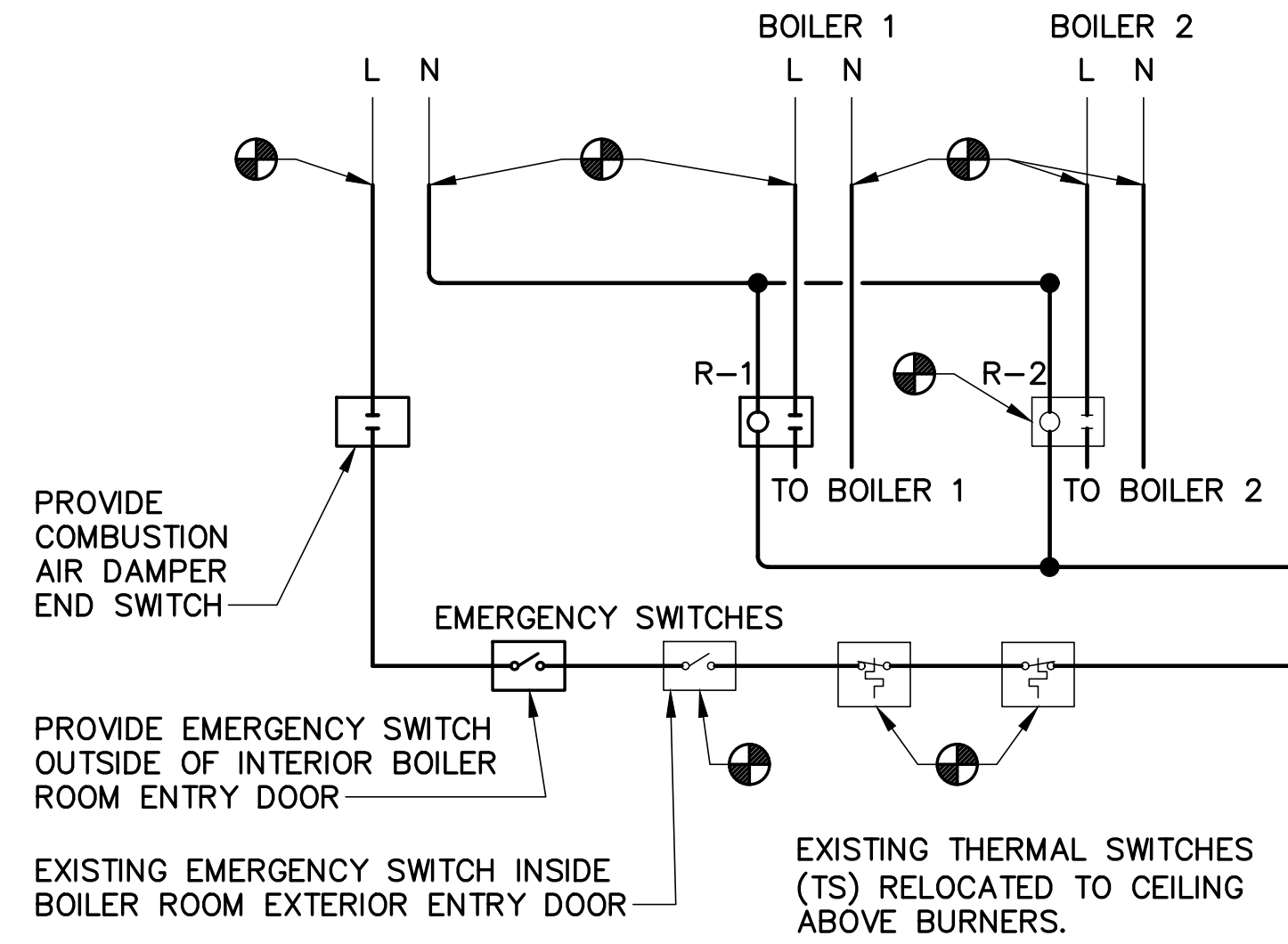
- EXISTING BOILER BURNER TO BE REUSED: CARLIN COMBUSTION CONTROLS TECHNOLOGY, BURNER MODEL 801CRD (FIRING RANGE 11.4-19.8 GPH); CARLIN COMBUSTION TECHNOLOGY IGNITOR MODEL 41000 ELECTRICAL CONTROLS INPUT: 120V, 60HZ, 40VA; OUTPUT: 19KV PEAK, 35 MA. CARLIN PRO-X MODEL 70200 UNIVERSAL OIL PRIMARY CONTROL.
- PROVIDE BURNER MOUNTING PLATE FOR USE WITH EXISTING BURNER TO BE REUSED. BOD: CARLIN MODEL 801CRD-W
- PROVIDE AIR TUBE KIT WITH WELDED FLANGE, (AIR TUBE, FLANGE AND COMBUSTION HEAD ASSEMBLY) COMPATIBLE WITH EXISTING BURNER ASSEMBLY AND REPLACEMENT BOILER. BOD: CARLIN, MODEL 49445KIT
- PROVIDE LOW WATER CUTOFF CONTROL ASSEMBLY.
- PROVIDE HIGH LIMIT AQUASTAT CONTROL. BOD: HONEYWELL MODEL L4006E1117 CSD-1
- PROVIDE PROPERLY SIZED BAROMETRIC DAMPER FOR BOILER BREECH, AND PROPERLY SIZED WATER PRESSURE SAFTEY RELIEF VALVE.

**GENERAL NOTES**

- THE TOTAL BOILER 1 INSTALLATION MUST BE BROUGHT INTO COMPLIANCE WITH THE REQUIREMENTS OF NFPA 31 AND ALL OTHER RULES OF THE MAINE FUEL BOARD BEFORE REPLACEMENT BOILER 1 IS FIRED. PRIOR TO LEAVING THE INSTALLATION UNSUPERVISED, THE LICENSED OIL BURNER TECHNICIAN MUST OBSERVE, INSPECT, AND TEST THE EQUIPMENT TO ENSURE THAT THE INSTALLATION IS OPERATING SAFELY AND PROPERLY AND MEETS ALL APPLICABLE RULES OF THE BOARD.
- ENSURE THE REUSED AND ADDED BURNER WIRING INCLUDES THE FOLLOWING:
  - PROPERLY RATED FUSE OR BREAKER
  - PROPERLY RATED WIRING
  - PROPERLY INSTALLED AND LOCATED EMERGENCY SWITCHES
  - PROPERLY INSTALLED AND LOCATED THERMAL ELECTRIC SWITCHES
  - PROPERLY INSTALLED AND LOCATED SERVICE SWITCH; AND
  - PROPERLY INSTALLED AND LOCATED LOW WATER CUT-OFFS
  - PROPERLY INSTALLED HIGH TEMPERATURE LIMIT AQUASTAT CONTROLS.
- A COMBUSTION EFFICIENCY TEST ON THE REPLACEMENT BOILER MUST BE CONDUCTED, AND A COPY OF THE TEST RESULTS MUST BE POSTED ON-SITE.
- ALL PIPING AND SAFETY CONTROLS ON DOMESTIC WATER CONNECTIONS TO BOILERS MUST BE MADE IN ACCORDANCE WITH THE RULES OF THE PLUMBERS' EXAMINING BOARD, ESTABLISHED BY TITLE 5, SECTION 12004-A, SUBSECTION 32 OF THE MAINE REVISED STATUTES.
- A THERMAL CUT-OFF SWITCH MUST BE WIRED INTO THE BURNER CIRCUIT TO SHUT OFF THE BURNER IN THE EVENT OF A FIRE AT THE UNIT. THE THERMAL CUT-OFF MUST BE PLACED (RELOCATED) AT THE POINT DIRECTLY ABOVE THE UNIT TO BE FIRED WITH THERMAL ELEMENT POINTED DOWNWARDS. REFER TO BOILER WIRING DIAGRAM 3/M-001 FOR WIRING DETAILS.
- A SERVICE DISCONNECT SWITCH FOR CONTROL OF THE BURNER WHILE OBSERVING THE FLAME MUST BE PLACED AT THE UNIT, WITHIN ARM'S REACH OF THE TECHNICIAN.
- THE EXISTING BOILER CHIMNEY HAS BEEN INSPECTED, AS REQUIRED WHEN REPLACING A BOILER, IN ACCORDANCE WITH MAINE FUEL BOARD REGULATIONS. A REPORT IS AVAILABLE FROM THE SCHOOL DISTRICT.
- HWS/R PIPING: 3" AND SMALLER - ASTM A53/A53M, WELDED OR SEAMLESS BLACK STEEL, GRADE B, SCHEDULE 40, WITH MALLEABLE-IRON THREADED FITTINGS; 4" AND LARGER - ASTM A53/A53M, WELDED OR SEAMLESS BLACK STEEL, GRADE B, SCHEDULE 40 STEEL WITH WELDED CONNECTIONS. HWS/R PIPING INSULATION: 2" WALL, PREFORMED FIBERGLASS PIPE INSULATION WITH FACTORY APPLIED ASJ JACKET.
- BOILER BREECH EXHAUST DUCT MATERIAL: WELDED CARBON STEEL. MATCH MATERIAL AND GAUGE OF EXISTING BOILER BREECH EXHAUST.
- DOMESTIC WATER PIPING: TYPE L NO LEAD COMPLIANT COPPER TUBE WITH THREADED OR SOLDERED COPPER FITTINGS.



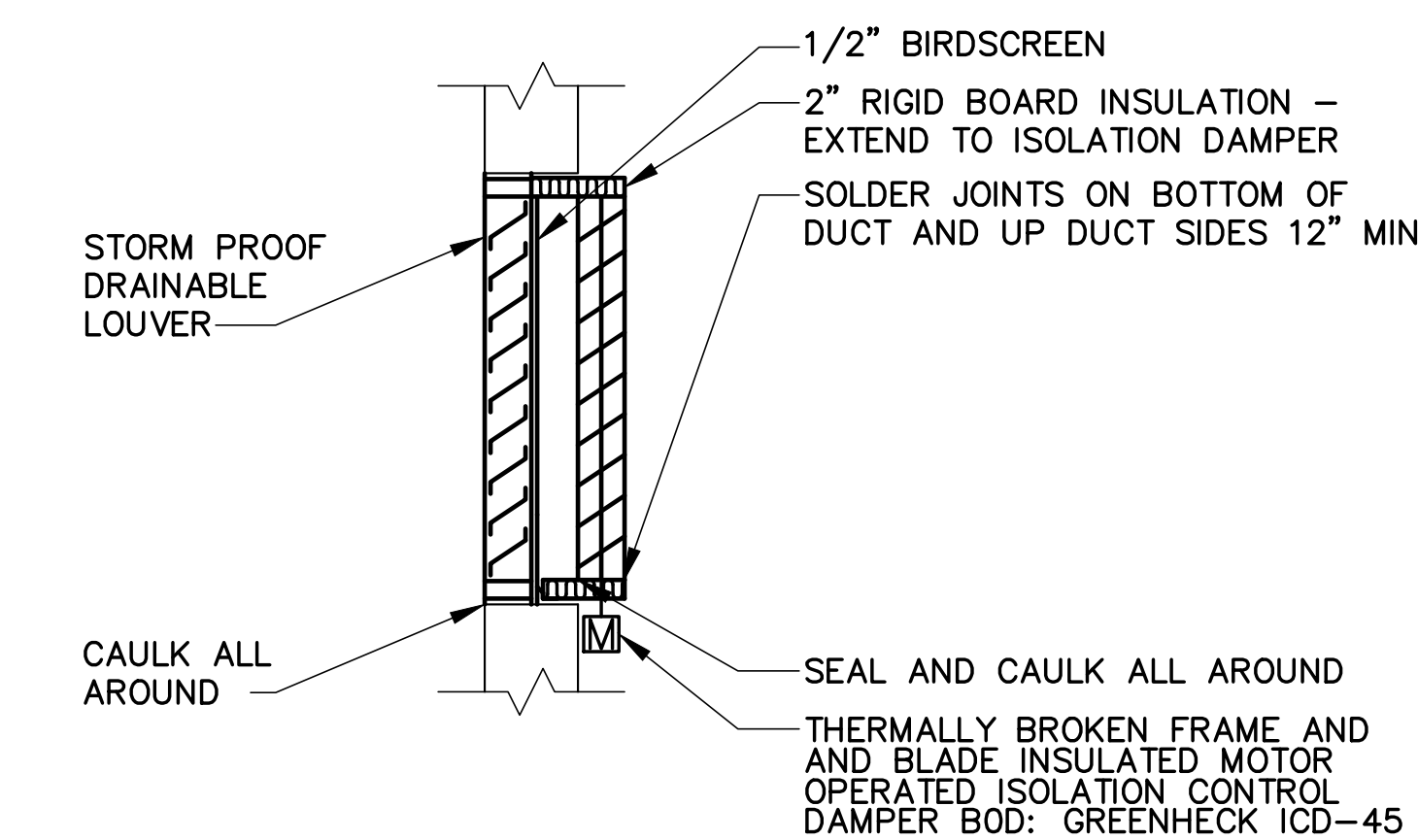
**1 OIL FIRED BOILER PIPING SCHEMATIC**  
M-001 SCALE: NOT TO SCALE



- BOILER WIRING DIAGRAM NOTES:**
- VERIFY IN FIELD EXISTING BOILER WIRING AND MODIFY TO COMPLY WITH WIRING DIAGRAM AND MAINE FUEL BOARD REQUIREMENTS.
  - THE EMERGENCY SWITCHES AND THE THERMAL CUTOFF SWITCHES MUST BE WIRED IN SERIES THROUGH INDIVIDUAL UNIT RELAYS SO THAT, IF THE EMERGENCY SWITCH IS OPENED, ALL HEATING EQUIPMENT IN THE ROOM WILL BE RENDERED INOPERABLE. PROVIDE THE ADDITIONAL SWITCH INDICATED AND MAKE ANY NECESSARY CHANGES TO THE EXISTING CONFIGURATION TO FUNCTION IN THE MANNER SHOWN ABOVE, INCLUDING RELOCATION OF THE THERMAL SWITCHES TO THE CEILING.
  - A SERVICE DISCONNECT SWITCH FOR CONTROL OF THE BURNER WHILE OBSERVING THE FLAME MUST BE PLACED ON THE BOILER UNIT WITHIN ARMS REACH OF THE TECHNICIAN.
  - THE BOILER(S) MUST NOT OPERATE WITHOUT THE COMBUSTION AIR DAMPER FULLY OPEN. THE DAMPER END SWITCH MUST BE CONNECTED TO A BLADE OF THE DAMPER, NOT THE DAMPER ACTUATOR.

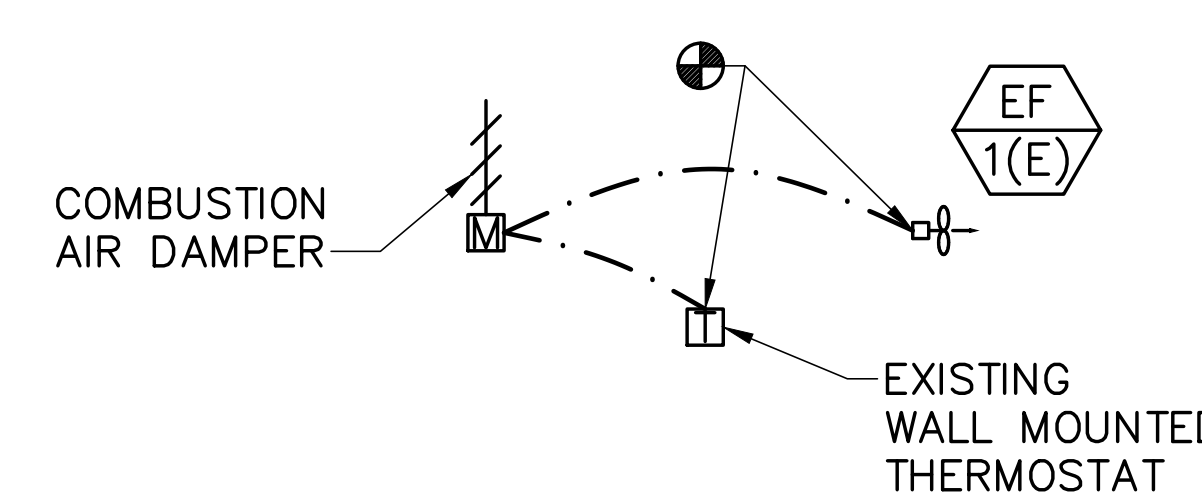
**3 BOILER WIRING DIAGRAM**

M-101 M-001 SCALE: NOT TO SCALE



**2 LOUVER CONNECTION DETAIL**

M-101 M-001 SCALE: NOT TO SCALE

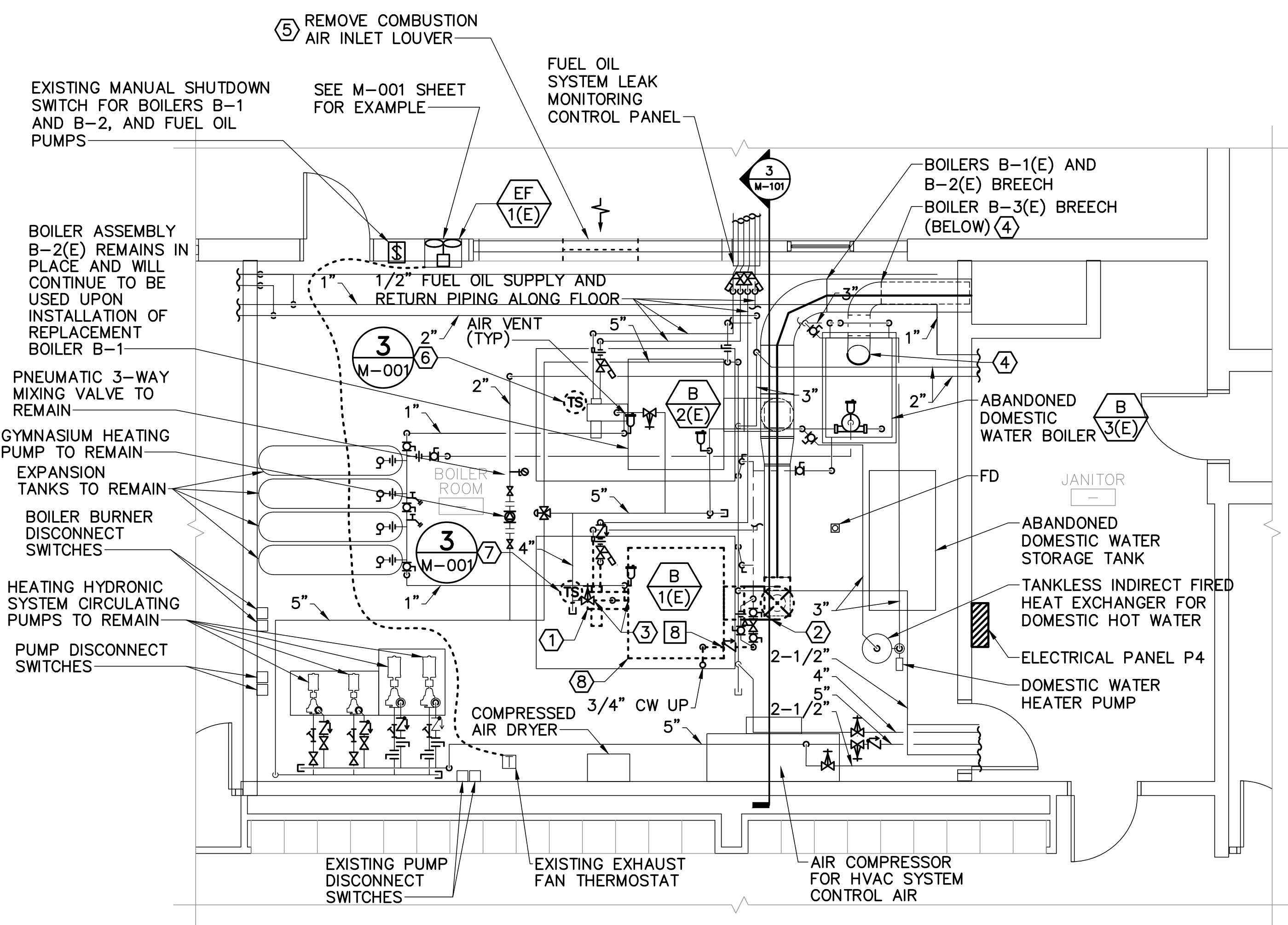


WHENEVER THE BOILER ROOM TEMPERATURE RISES ABOVE 85 DEGREES F (ADJUSTABLE), THE OUTSIDE AIR LOUVER COMBUSTION AIR DAMPER MUST OPEN FULLY AND THE WALL EXHAUST FAN MUST RUN. OTHERWISE, THE WALL EXHAUST FAN MUST REMAIN OFF; AND THE COMBUSTION AIR DAMPER MUST BE CLOSED, UNLESS IT IS OPEN FOR BOILER OPERATION.

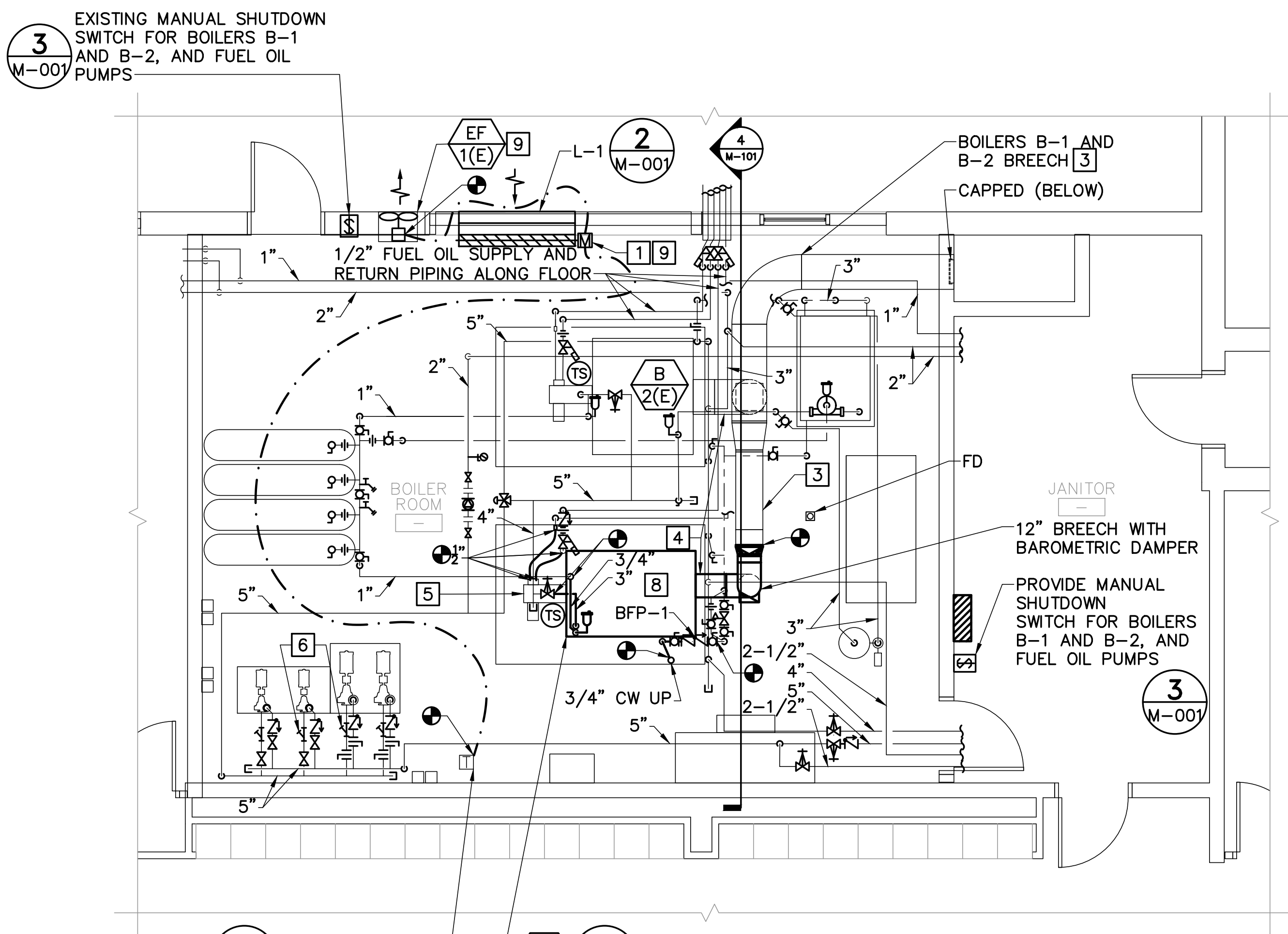
**4 BOILER ROOM EXHAUST FAN SEQUENCE OF OPERATION**

M-101 M-001 SCALE: NOT TO SCALE

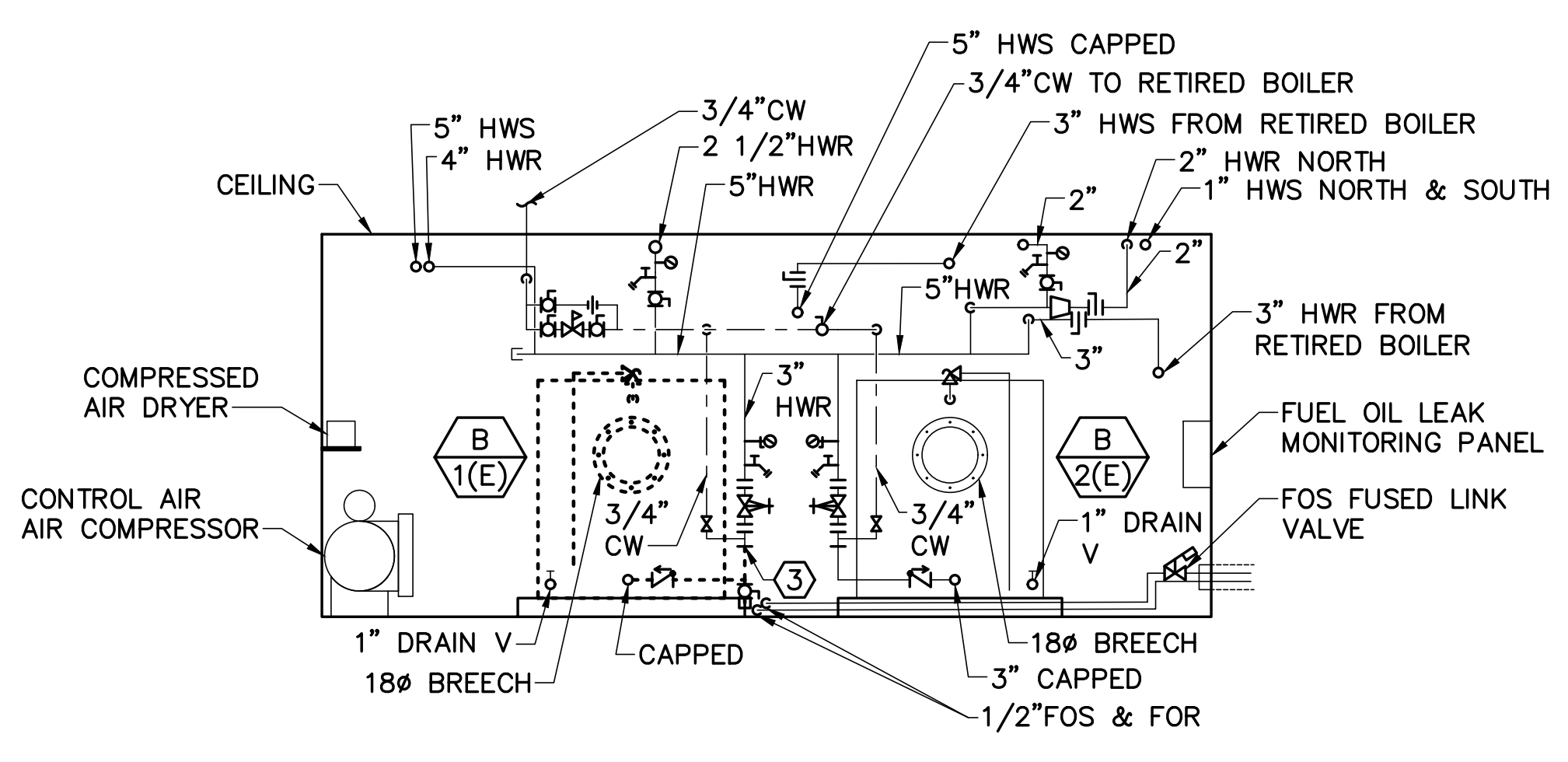
STATE OF MAINE PUBLIC SCHOOL PROJECT			
TITLE: LORANGER MIDDLE SCHOOL BOILER REPLACEMENT			
LOCATION: OLD ORCHARD BEACH, MAINE			
TITLE (REVISED): MECHANICAL LEGENDS, ABBREVIATIONS, DETAILS AND SCHEDULES			
DRAWN BY: SOL		DRAWING NO. M-001	
CHECKED BY: RNC		SHEET NO. 2 OF 4	
NO.	DATE	DESCRIPTION	BY
REVISIONS			
			DATE: 05/13/26



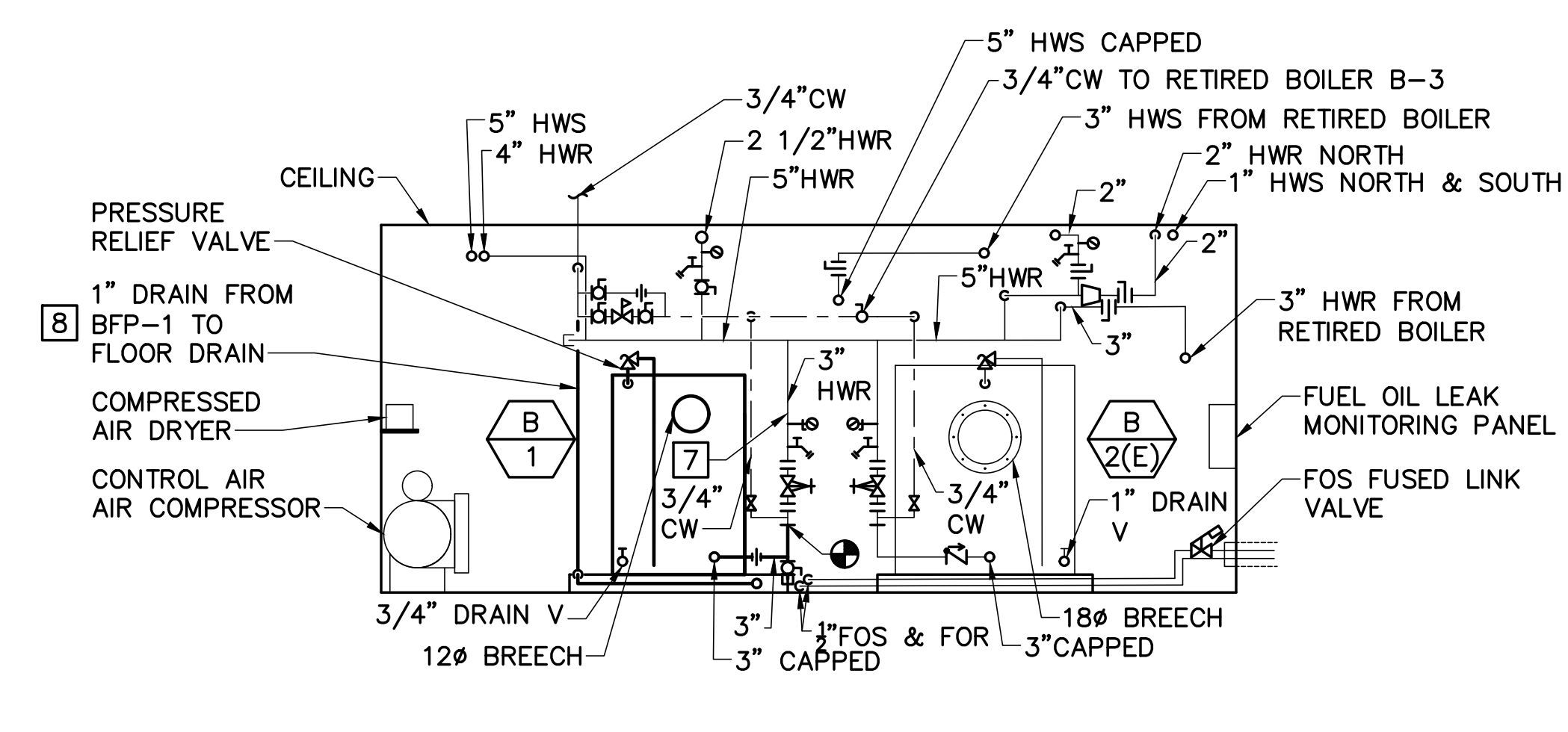
**1 BOILER ROOM MECHANICAL REMOVALS PLAN**  
M-101 SCALE: 1/4"=1'-0"



**2 BOILER ROOM MECHANICAL PLAN**  
M-101 SCALE: 1/4"=1'-0"



**3 BOILER ROOM MECHANICAL REMOVALS SECTION**  
M-101 SCALE: 1/4"=1'-0"



**4 BOILER ROOM MECHANICAL SECTION**  
M-101 SCALE: 1/4"=1'-0"

**GENERAL NOTES**

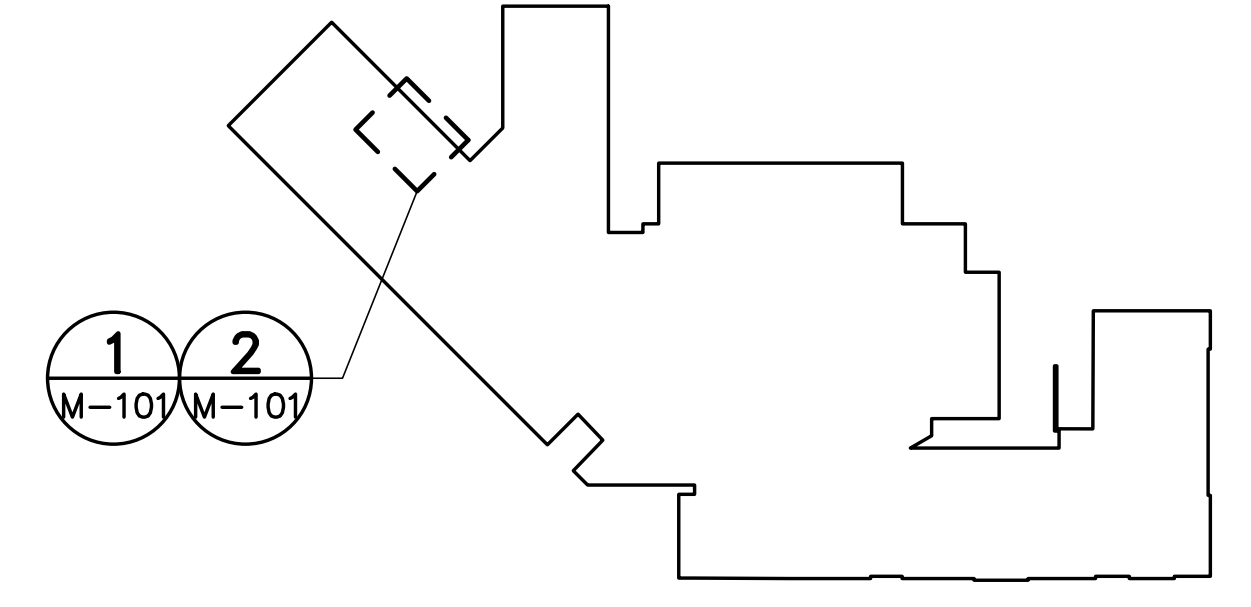
1. SEE M-001 FOR MECHANICAL LEGENDS, ABBREVIATIONS, AND GENERAL NOTES.

**REMOVALS KEYNOTES**

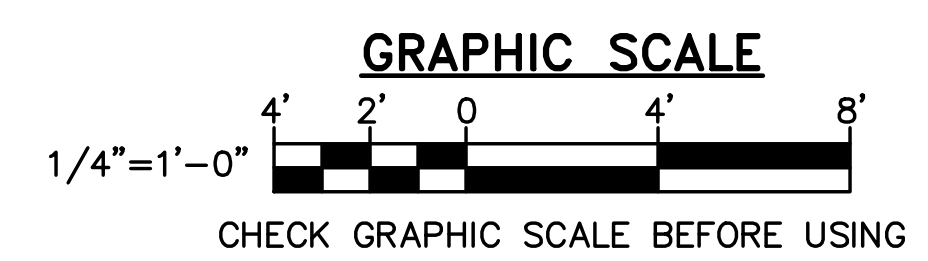
1. TEMPORARILY REMOVE AND STORE EXISTING OIL BURNER ASSEMBLY. REFER TO HEATING HOT WATER BOILER SCHEDULE FOR BURNER DATA AND BOILER CONTROLS FOR REUSE WITH THE REPLACEMENT BOILER REFER TO HEATING HOT WATER BOILER SCHEDULE FOR BURNER DATA.
2. DISCONNECT BOILER BREECH FROM BOILER B2, CUT AND REMOVE PORTION OF EXISTING BREECH IN PREPARATION FOR CONNECTING THE REPLACEMENT BOILER BREECH. PROVIDE TEMPORARY COVER TO BREECH OPENING AFTER PORTION OF BREECH REMOVAL UNTIL REPLACEMENT BOILER BREECH CONNECTION IS PROVIDED.
3. DISCONNECT BOILER B1(E) SUPPLY AND RETURN PIPING AND REMOVE PORTIONS OF BRANCHES AS SHOWN. THE REMAINING PORTIONS OF BOILER SUPPLY AND RETURN BRANCH PIPING ARE TO BE REUSED WITH THE REPLACEMENT BOILER.
4. DISCONNECT BREECH FROM ABANDONED BOILER (B3) EXHAUST OUTLET, CUT BREECH AT CHIMNEY FACE AND REMOVE. CAP OPENING TO CHIMNEY WITH A METAL COVER AND AIR AND WATER TIGHT SEAL.
5. REMOVE COMBUSTION AIR LOUVER. SEE ARCHITECTURAL DRAWING AE101 FOR BOILER ROOM WALL PANEL REMOVAL DETAILS.
6. RELOCATE EXISTING THERMAL ELECTRIC CUT-OFF SWITCH AT BOILER B-2(E) AT BOILER CABINET HEIGHT (ABOVE BURNER ASSEMBLY) TO BOILER ROOM CEILING ABOVE THE FRONT OF BOILER B-1. PROVIDE GALVANIZED METAL CONDUIT FOR WIRING TO THE THERMAL ELECTRIC CUT-OFF SWITCH. THE INSTALLATION MUST COMPLY WITH CURRENT MAINE FUEL BOARD REQUIREMENTS.
7. DISCONNECT THERMAL ELECTRIC CUT-OFF SWITCH AND SHUT-OFF SWITCH AT BOILER B-1(E) FOR REUSE WITH THE REPLACEMENT BOILER. LOCATE THE THERMAL ELECTRIC CUT-OFF SWITCH AT CEILING OVER THE FRONT OF REPLACEMENT BOILER B-1. PROVIDE GALVANIZED METAL CONDUIT FOR WIRING TO THE THERMAL ELECTRIC CUT-OFF SWITCH. THE INSTALLATION MUST COMPLY WITH CURRENT MAINE FUEL BOARD REQUIREMENTS.
8. REMOVE BOILER AND ASSOCIATED ANCILLARY EQUIPMENT, UNLESS OTHERWISE NOTED (I.E., FUEL OIL BURNER ASSEMBLY TO BE REUSED).

**KEYNOTES**

1. PROVIDE A LOW LEAKAGE MOTOR OPERATED DAMPER WITH INSULATED BLADES THERMALLY BROKEN FROM INSULATED FRAME, SIZED TO FULLY SEAL OFF LOUVER OPENING WHEN CLOSED. BOILER BURNER MOTORS FOR BOTH BOILER B-1 AND B-2(E) MUST BE INTERLOCKED WITH THE MOTOR OPERATED DAMPER TO OPERATE ONLY WHEN THE DAMPER IS FULLY OPEN. REFER TO LOUVER SCHEDULE FOR DAMPER DATA.
2. PROVIDE BASIS OF DESIGN BOILER OR OWNER APPROVED EQUAL BOILER. A PORTION OF THE (NON-MASONRY) BOILER ROOM EXTERIOR WALL PANEL CONTAINING THE EXISTING COMBUSTION AIR LOUVER WILL BE REMOVED TO PERMIT THE TRANSFER OF THE ASSEMBLED REPLACEMENT BOILER INTO THE BOILER ROOM. REFER TO ARCHITECTURAL DRAWING (UNDER DEVELOPMENT) FOR WALL PANEL REMOVAL AND REPLACEMENT DETAILS. SECURE BOILER TO EXISTING CONCRETE EQUIPMENT PAD IN A MANNER CONSISTENT WITH THE BOILER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
3. PROVIDE UL LISTED 2" THICK, FSK (FOIL) FACED, RIGID STONE WOOL BOARD INSULATION TO EXISTING BREECH RECTANGULAR DUCTWORK, SECURED WITH WELDED STAINLESS STEEL LACING ANCHORS AND SPEED CLIPS.
4. PROVIDE UL LISTED 2" THICK FSK (FOIL) FACED, FLEXIBLE STONE WOOL BLANKET INSULATION TO EXISTING AND REPLACEMENT ROUND BREECH DUCTWORK, SECURED WITH WELDED STAINLESS STEEL LACING ANCHORS AND SPEED CLIPS.
5. RE-INSTALL TEMPORARILY STORED FUEL OIL BURNER ASSEMBLY AND BOILER CONTROLS ONTO REPLACEMENT BOILER B-1 WITH THE PROPER BOILER ADAPTOR PLATE. PROVIDE ANY PIPING EXTENSIONS AND FITTINGS NECESSARY TO RECONNECT IT TO THE BOILER AND EXISTING FUEL PIPING SYSTEM. REINSTALL THERMAL SWITCH TO FUNCTION AS REQUIRED BY MAINE FUEL BOARD REGULATIONS. REFER TO 3/M-001 SCHEMATIC FOR WIRING AND THERMAL SWITCH PLACEMENT DETAILS. PROVIDE A BURNER SERVICE DISCONNECT SWITCH WITHIN ARMS REACH OF THE BURNER, AS REQUIRED BY MAINE FUEL BOARD REGULATIONS. PROVIDE REPLACEMENT HIGH LIMIT HEATING WATER AQUASTAT CONTROL.
6. AFTER REPLACEMENT BOILER INSTALLATION, BUT BEFORE BOILER START-UP, TEMPORARILY REPLACE EXISTING PUMP STRAINER SCREEN MESH WITH FINE STRAINER SCREEN MESH. CIRCULATE HYDRONIC HEATING SYSTEM FLUID USING ONE PUMP FROM EACH PUMP SET WITH THE REPLACED FINE STRAINER SCREENS FOR 15-30 MINUTES. STOP PUMPS, CLEAN STRAINER, AND REPEAT CYCLE UNTIL THE STRAINER SCREEN IS CLEAR OF FINE PARTICLES. THEN REINSTALL ORIGINAL STRAINER SCREEN MESHES.
7. PROVIDE INSULATION ON HWR BOILER BRANCH PIPE FROM HWR MAIN TO BOILER CONNECTION.
8. REPLACE EXISTING CHECK VALVE ON HYDRONIC SYSTEM MAKE UP WATER SUPPLY WITH BACKFLOW PREVENTER BFP-1, SEE BACK FLOW PREVENTER SCHEDULE FOR DETAILS.
9. PROVIDE REVISED EXHAUST FAN CONTROL AS INDICATED IN 41 M-001 BOILER ROOM EXHAUST FAN SEQUENCE OF OPERATION



**KEYPLAN**  
SCALE: NOT TO SCALE  
PLAN NORTH



STATE OF MAINE PUBLIC SCHOOL PROJECT		DRAWING NO. M-101	
TITLE: LORANGER MIDDLE SCHOOL BOILER REPLACEMENT		SHEET NO. 4 OF 4	
LOCATION: OLD ORCHARD BEACH, MAINE		DATE: 05/13/26	
TITLE AND DATE: BOILER ROOM MECHANICAL PLANS		DRAWN BY: SOL	
NO. DATE DESCRIPTION BY NO.		CHECKED BY: RNC	
REVISIONS		DATE: 05/13/26	