

ZONING FOR HEAT DISTRIBUTION: REBID

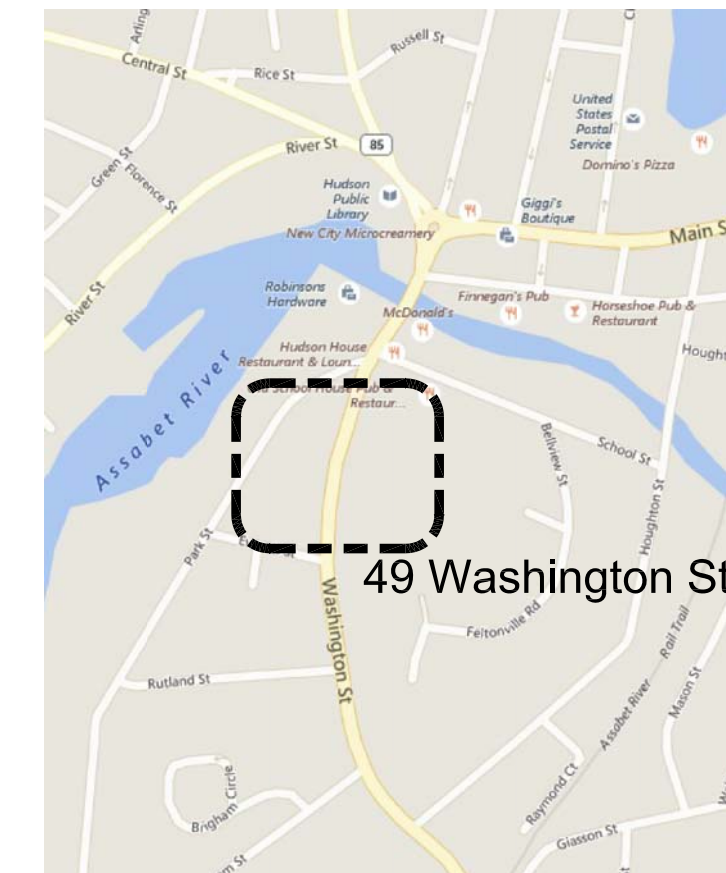
Hudson Housing Authority Hudson, MA

DHCD Project #: 141047

NOVEMBER 2, 2016
BID SET



49 Washington Street
(689-1)



Location Map

Drawing List

T1.00	COVER SHEET
M-0.1	MECHANICAL LEGEND AND NOTES
M-1.0	BASEMENT AND FIRST FLOOR MECHANICAL PLAN
M-1.1	SECOND FLOOR MECHANICAL PLAN

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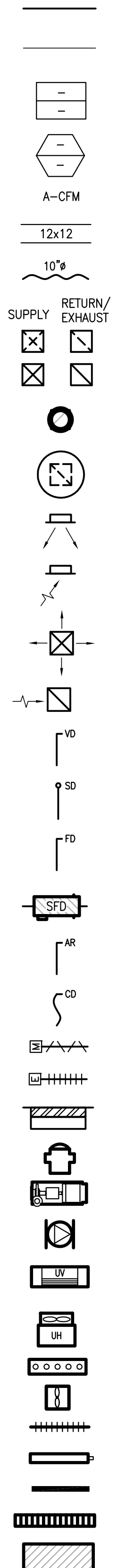
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MECHANICAL LEGEND

ABBREVIATIONS

- AFF ABOVE FINISH FLOOR
- AHU AIR HANDLING UNIT
- AS AIR SEPARATOR
- AWT AVERAGE WATER TEMPERATURE
- BTUH BRITISH THERMAL UNITS PER HOUR
- CAF COMBUSTION AIR FAN
- CFM CUBIC FEET PER MINUTE
- CH CABINET HEATER
- CHW CHILLED WATER
- CMU CONCRETE MASONRY UNIT
- CW COLD WATER
- DDC DIRECT DIGITAL CONTROL
- DHW DOMESTIC HOT WATER
- DT DELTA T
- DU DWELLING UNIT
- DX DIRECT EXPANSION
- EAT ENTERING AIR TEMPERATURE
- EC ELECTRICAL CONTRACTOR
- EF EXHAUST FAN
- EMS ENERGY MANAGEMENT SYSTEM
- ETR EXISTING TO REMAIN
- EWT ENTERING WATER TEMPERATURE
- EX EXPANSION TANK
- EWT ENTERING WATER TEMPERATURE
- FC FAN COIL
- FD FLOOR DRAIN
- FPC FIRE PROTECTION CONTRACTOR
- FPI FINS PER INCH
- FT FEET
- GAL GALLONS
- GC GENERAL CONTRACTOR
- GPM GALLONS PER MINUTE
- GVSM GALVANIZED SHEET METAL
- HW HOT WATER
- HWR HOT WATER RETURN
- HWS HOT WATER SUPPLY
- HX HEAT EXCHANGER
- IFP INTELLIGENT FIELD PANEL
- LAT LEAVING AIR TEMPERATURE
- LWT LEAVING WATER TEMPERATURE
- MAU MAKEUP AIR UNIT
- MC MECHANICAL CONTRACTOR
- NC NORMALLY CLOSED
- NEZV NON-ELECTRIC ZONE VALVE
- NO NORMALLY OPEN
- NTS NOT TO SCALE
- OA OUTSIDE AIR
- OAF OUTSIDE AIR FAN
- OBD OPPOSED BLADE DAMPER
- PC PLUMBING CONTRACTOR
- PROVIDE SUPPLY AND INSTALL
- PRV PRESSURE REDUCING VALVE
- RA RETURN AIR
- RC ROOFING CONTRACTOR
- RCP REFLECTED CEILING PLAN
- RTU ROOF TOP UNIT
- SA SUPPLY AIR
- SM GALVANIZED SHEET METAL
- SS STAINLESS STEEL
- T&P TEMPERATURE & PRESSURE
- TV TEMPERING VALVE
- TYP TYPICAL
- UH UNIT HEATER
- UOS UNLESS OTHERWISE SPECIFIED
- UV UNIT VENTILATOR
- VFD VARIABLE FREQUENCY DRIVE
- CONNECT TO EXISTING
- A AQUASTAT
- T THERMOSTAT
- S TEMPERATURE SENSOR
- HL HIGH LIMIT SENSOR
- H HUMIDISTAT
- P PRESSURE SENSOR
- CO CARBON MONOXIDE SENSOR
- CO2 CARBON DIOXIDE SENSOR
- SD SMOKE DETECTOR
- F FLOW METER
- OC OCCUPANCY SENSOR
- UC UNDERCUT DOOR
- VOLTAGE TRANSFORMER (120V/24V)
- REVISION TRIANGLE



- NEW WORK (BOLD LINE)
- EXISTING WORK (LIGHT OR SHADED LINE)
- EQUIPMENT TAG (SEE SCHEDULE) DOES NOT REQUIRE ELECTRICAL
- EQUIPMENT TAG (SEE SCHEDULE) REQUIRES ELECTRICAL POWER
- A-CFM DIFFUSER TAG
- SIZE SHOWN IS INTERIOR CLEAR DIMENSION. WHERE LINDER IS CALLED FOR, INCREASE TO ACCOMMODATE.
- FLEXDUCT, 4 FT MAX LENGTH
- DUCT DOWN
- DUCT UP
- ROOF-MOUNTED FAN
- ROOF MOUNTED EQUIPMENT
- SIDEWALL SUPPLY DIFFUSER
- SIDEWALL RETURN GRILLE
- CEILING SUPPLY DIFFUSER (4-WAY)
- RETURN/EXHAUST GRILLE
- VOLUME DAMPER
- SPLITTER DAMPER
- FIRE DAMPER
- COMBINATION SMOKE & FIRE DAMPER
- AUTOMATIC AIR FLOW REGULATOR
- CAPE BACKDRAFT DAMPER
- MOTORIZED DAMPER
- ELECTRIC HEATER
- EXTERIOR LOUVER & PLENUM
- AIR SEPARATOR
- BASE MOUNTED PUMP
- CIRCULATOR/PUMP
- UNIT VENTILATOR
- UNIT HEATER
- HYDRONIC COIL
- FAN
- BARE FIN TUBE ELEMENT
- RADIATOR
- BASEBOARD
- CAST IRON RADIATOR
- EQUIPMENT
- HCS COMBINATION HOT & CHILLED WATER SUPPLY PIPING
- HCR COMBINATION HOT & CHILLED WATER RETURN PIPING
- HWS HOT WATER SUPPLY PIPING
- HWR HOT WATER RETURN PIPING
- CHWS CHILLED WATER SUPPLY PIPING
- CHWR CHILLED WATER RETURN PIPING
- CDS CONDENSOR WATER SUPPLY PIPING
- CDR CONDENSOR WATER RETURN PIPING
- RL REFRIGERANT LIQUID LINE
- RS REFRIGERANT SUCTION LINE
- C CONDENSATE DRAIN PIPING
- PIPE ANCHOR
- PIPE GUIDE
- FLEX CONNECTOR
- DROP, PIPE DOWN
- RISER, PIPE UP
- AIR VENT W/ ISOLATION
- COIN VENT
- PRESSURE GAUGE
- THERMOMETER AND WELL
- TEMP AND/OR PRESSURE RELIEF VALVE
- VACUUM BREAKER
- HOSE BIBB W/ BRASS CAP & CHAIN
- BALL VALVE WITH HOSE THREAD, BRASS CAP AND CHAIN
- STRAINER WITH BALL VALVE W/ 3/4" HOSE CONNECTION, BRASS CAP AND CHAIN
- PeTe's PLUG 3" LONG
- PRESSURE REDUCING VALVE
- FLANGE
- UNION
- CHECK VALVE (SPRING)
- BALL VALVE
- BALANCING VALVE
- PRESSURE DIFFERENTIAL BYPASS
- MOTORIZED 4-WAY VALVE
- MOTORIZED 3-WAY VALVE
- MANUAL 3-WAY VALVE
- MOTORIZED 2-WAY VALVE
- COMBINATION VALVE
- NON-ELECTRIC ZONE VALVE

GENERAL MECHANICAL NOTES:

1. GENERAL CONDITIONS & SPECIFICATIONS: THE GENERAL CONDITIONS, AND SPECIFICATIONS ARE PART OF THIS WORK. IT IS THIS CONTRACTOR'S RESPONSIBILITY TO OBTAIN AND BE FAMILIAR WITH THESE CONDITIONS & SPECIFICATIONS.
2. CODES AND ORDINANCES: INSTALLATION OF THE SYSTEMS SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL FIRE PROTECTION ASSOCIATION, NATIONAL MECHANICAL CODE, AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND ORDINANCES.
3. REQUIREMENTS: OBTAIN AND PAY FOR ALL REQUIRED PERMITS, LICENSES AND CERTIFICATES.
4. DESIGN: EQUIPMENT AND ACCESSORIES NOT SPECIFICALLY DESCRIBED OR IDENTIFIED BY MANUFACTURER'S CATALOG NUMBERS SHALL BE DESIGNED IN CONFORMITY WITH ASME, IEEE, S.M.A.C.N.A. DESIGN MANUAL OR OTHER APPLICABLE TECHNICAL STANDARDS, SUITABLE FOR MAXIMUM REQUIRED WORKING PRESSURE AND SHALL HAVE NEAT AND FINISHED APPEARANCE.
5. INSTALLATION: ERECT EQUIPMENT IN NEAT AND WORKMANLIKE MANNER; INSTALL SO THAT CONNECTING AND DISCONNECTING OF PIPES, EQUIPMENT AND ACCESSORIES CAN BE MADE READILY AND SO THAT ALL PARTS ARE EASILY ACCESSIBLE FOR INSPECTION, OPERATION, MAINTENANCE AND REPAIR. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS' INSTRUCTIONS & REQUIREMENTS AND THE BEST STANDARD PRACTICE FOR THIS TYPE OF WORK.
6. BEST PRACTICE: IT IS NOT INTENDED THAT THE DRAWINGS SHALL SHOW EVERY FITTING, CONNECTION, OR APPLIANCE. THIS CONTRACTOR SHALL FURNISH ALL MATERIAL AND LABOR NECESSARY TO PROVIDE COMPLETE AND OPERATIONAL SYSTEMS IN ACCORDANCE WITH THE BEST PRACTICE OF THE TRADE.
7. EQUIPMENT LOCATION: THE M.C. SHALL VERIFY THE LOCATIONS AND MOUNTING HEIGHTS OF ALL EQUIPMENT AND MATERIALS, AND THE EXACT ROUTING OF ALL PIPES, WITH THE OWNER'S REPRESENTATIVE IN THE FIELD, PRIOR TO COMMENCING ANY WORK. ANY CONFLICTS WITH LOCATIONS, OR PROBLEMS ENCOUNTERED WITH ROUTING, SHALL BE PROMPTLY BROUGHT TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION.
8. MATERIALS: ALL MATERIALS, FIXTURES AND EQUIPMENT SHALL BE NEW WITHOUT IMPERFECTIONS AND SHALL BE DELIVERED, ERECTED, CONNECTED AND FINISHED IN EVERY DETAIL WHEREVER POSSIBLE, ALL TRIM, ACCESSORIES AND PARTS SHALL BE OF THE SAME MANUFACTURER AS THE RELATED EQUIPMENT AND FIXTURES.
9. DUCTWORK: ALL DUCTWORK SHALL BE INSTALLED IN ACCORDANCE WITH S.M.A.C.N.A. STANDARDS.
10. PLUMBING: ALL PLUMBING SHALL BE INSTALLED IN ACCORDANCE WITH COMMONWEALTH OF MASSACHUSETTS FUEL GAS AND PLUMBING CODE (248 CMR, NFPA 54).
11. ELECTRICAL: ALL ELECTRICAL SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND ALL LOCAL REQUIREMENTS. COORDINATE ELECTRICAL CHARACTERISTICS FOR ALL EQUIPMENT WITH E.C. BEFORE ORDERING EQUIPMENT.
12. CONTROLS: PERFORM A FUNCTIONAL CHECK OF ALL CONTROLS & SYSTEMS THAT WILL REMAIN & ARE AFFECTED BY THIS WORK. REPORT ANY DEFICIENCIES IN WRITING.
13. OBJECTIONABLE NOISE AND VIBRATIONS: MECHANICAL AND ELECTRICAL EQUIPMENT SHALL OPERATE WITHOUT OBJECTIONABLE NOISE AND VIBRATION, AS DETERMINED BY THE ENGINEER. CONTRACTOR SHALL SUPPLY ALL NECESSARY HARDWARE FOR NOISE AND VIBRATION ISOLATION.
14. GENERAL COORDINATION: EXAMINE ALL DRAWINGS AND OTHER SECTIONS OF THE SPECIFICATIONS FOR REQUIREMENTS WHICH AFFECT THE WORK OF THIS SECTION. COORDINATE WORK WITH THAT OF OTHER TRADES AFFECTING, OR AFFECTED BY, WORK OF THIS SECTION. COOPERATE WITH OTHER TRADES TO ENSURE THE STEADY PROGRESS OF THE WORK.
15. PROTECTION OF EQUIPMENT AND MATERIALS: RESPONSIBILITY FOR CARE AND PROTECTION OF ALL MATERIALS AND MECHANICAL WORK RESTS WITH THIS CONTRACTOR AT ALL TIMES UNTIL IT HAS BEEN APPROVED.
16. GUARANTEE: ALL NEW COMPONENTS OF THE INSTALLATION SHALL BE GUARANTEED IN WRITING BY THIS CONTRACTOR TO BE FREE FROM DEFECTS OF MANUFACTURE AND INSTALLATION FOR A PERIOD OF ONE YEAR FROM THE DATE OF WRITTEN ACCEPTANCE BY THE ENGINEER. ANY DEFECTS FOUND SHALL BE REPAIRED BY THE MECHANICAL CONTRACTOR AT THEIR OWN EXPENSE.
17. NOTIFICATION: THE M.C. SHALL NOTIFY THE ENGINEER UPON: (1) COMPLETION OF ALL ROUGH PIPING AND DUCT WORK, BEFORE CLOSURE OF ANY TRENCHES, OPEN WALL CAVITIES OR CHASES; AND (2) UPON "SUBSTANTIAL COMPLETION" OF ALL SYSTEMS INCLUDING OPERATIONAL SPACE CONDITIONING. AFTER "SUBSTANTIAL COMPLETION", THE ENGINEER WILL PREPARE A PUNCH LIST OF ITEMS TO BE CORRECTED. THE M.C. SHALL CORRECT ANY DEFICIENCIES FOUND PROMPTLY, AT HIS/HER OWN EXPENSE. PROVIDE ADVANCE NOTICE OF AT LEAST ONE WEEK TO SCHEDULE.
18. FINAL COMPLETION: THE WORK SHALL NOT BE CONSIDERED COMPLETE UNTIL THE PUNCH LIST IS COMPLETED TO THE SATISFACTION OF THE ENGINEER AND ALL FINAL INSPECTIONS HAVE BEEN COMPLETED.

ALTERNATE NO.2

PUMP SCHEDULE								REQUIRES ELECTRICAL	[1]
DWG ID	EQUIPMENT	MANUFACTURER	MODEL NO.	GPM	HEAD (FT)	HP	REMARKS	ELECT DATA	
P-1	SPACE HEAT CIRCULATOR	GRUNDFOS	ALPHA 15-55	9	10	0.06	VARIABLE SPEED, INTEGRAL CHECK VALVE	120V/1ø/60Hz	

[1] VERIFY ALL ELECTRICAL CHARACTERISTICS W/EC BEFORE ORDERING UNITS.

NO. DATE REVISION

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PROJECT NUMBER

DHCD # 141047

PROJECT

ZONING FOR HEAT DISTRIBUTION REBID

49 WASHINGTON ST (689-1)
HUDSON HOUSING AUTHORITY
HUDSON, MA

TITLE

MECHANICAL LEGEND & NOTES

DATE

11/02/16

SECTION

DRAWING NUMBER

M-0.1

MECHANICAL NOTES:

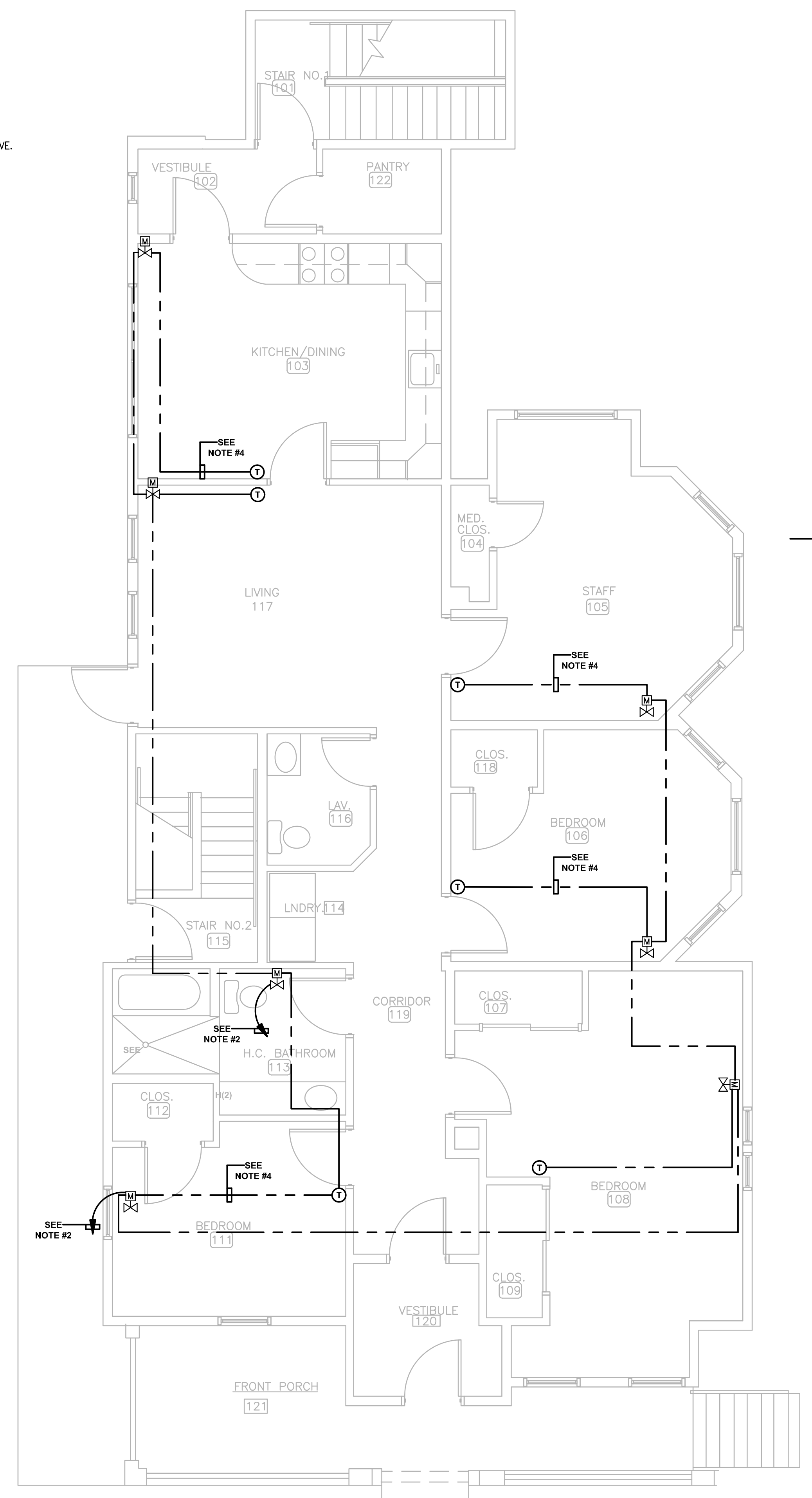
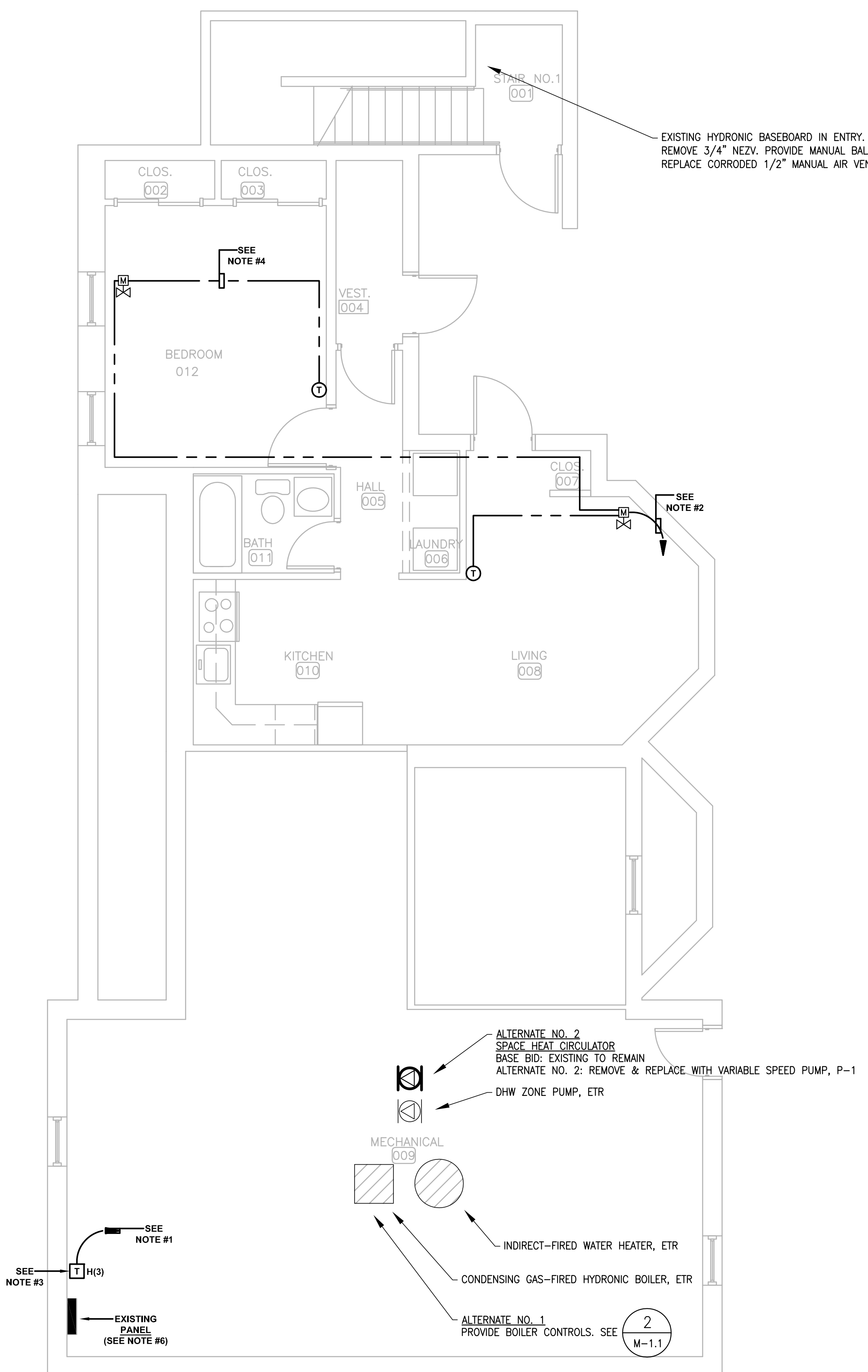
1. SEE SPECIFICATIONS AND DETAILS FOR FURTHER REQUIREMENTS.
2. INSTALL EQUIPMENT AND SYSTEMS PER CODE AND PER MANUFACTURER'S INSTRUCTIONS.
3. ALL DIMENSIONS AND LOCATIONS ARE APPROXIMATE. CONTRACTOR TO INSPECT AND VERIFY ALL INFORMATION IN FIELD AND INFORM THE ENGINEERS OF ANY DISCREPANCIES IN WRITING IMMEDIATELY.
4. EQUIPMENT, DUCTS AND PIPING MAY BE SHOWN DISPLACED FOR CLARITY.
5. GC TO PROVIDE REQUIRED FIRESTOPPING AND ACOUSTICAL SEALANT. MC TO PROVIDE GC WITH MARKED UP PLAN SHOWING PENETRATIONS.
6. MC TO SUPPLY ACCESS HATCHES. GC TO INSTALL.
7. CONCEAL ALL CONTROL WIRING FOR THERMOSTATS WITHIN WALLS. NO SURFACE MOUNTED RACEWAYS.

NOTES:

1. THE ELECTRICAL CONTRACTOR SHALL WIRE TO NEW CIRCUIT BREAKER LOCATED IN EXISTING BASEMENT PANELBOARD.
2. THE CONTRACTOR SHALL WIRE TO THE HEATING SYSTEM TRANSFORMER AT THE BASEMENT.
3. THE FINAL LOCATION OF THE HEATING SYSTEM TRANSFORMER AND THERMOSTAT SHALL BE DETERMINED BY THE CONTRACTOR AND ARCHITECT IN THE FIELD.
4. THERMOSTAT WIRING SHALL BE CONCEALED. THE CONTRACTOR SHALL FISH CABLE IN WALL TO ATTIC SPACE OR BASEMENT SO THAT THE WIRING IS CONCEALED.
5. THE MECHANICAL CONTRACTOR SHALL REMOVE THE EXISTING NON-ELECTRIC ZONE VALVE (NEZV) FROM WITHIN THE BASEBOARD ENCLOSURE. PROVIDE MOTORIZED 2-WAY ZONE VALVE AND RECONNECT TO EXISTING PIPING.
6. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL A 20 AMPERE 1-POLE CIRCUIT BREAKER IN EXISTING PANELBOARD FOR THE BUILDING HEATING SYSTEM TRANSFORMERS.

LEGEND

- HOMERUN. ARROWS DENOTES THE NUMBER OF CIRCUITS AND SLASH MARKS DENOTE THE NUMBER OF #12 CONDUCTORS IN RACEWAY OR CABLE ASSEMBLY.
- LOW VOLTAGE THERMOSTAT WIRING.
- T H(2) HEATING SYSTEM CONTROL TRANSFORMER. NUMERAL DENOTES THE NUMBER OF HEATING SYSTEM TRANSFORMERS AT A SINGLE LOCATION.
- ⊖ THERMOSTAT.
- ELECTRIC PANEL
- ⊗ MOTORIZED ZONE VALVE



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DHCD # 141047		
PROJECT		
ZONING FOR HEAT DISTRIBUTION REBID		
49 WASHINGTON ST (689-1) HUDSON HOUSING AUTHORITY HUDSON, MA		
TITLE		
BASEMENT & FIRST FLOOR MECHANICAL PLAN		
DATE	SECTION	DRAWING NUMBER
11/02/16		M-1.0

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

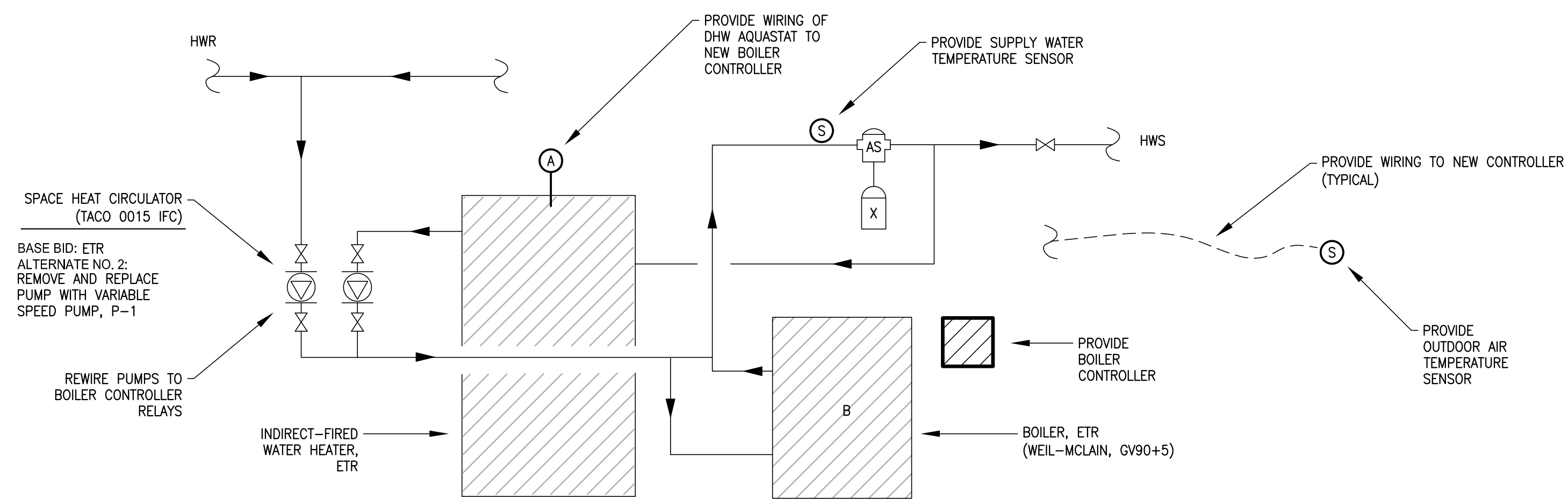
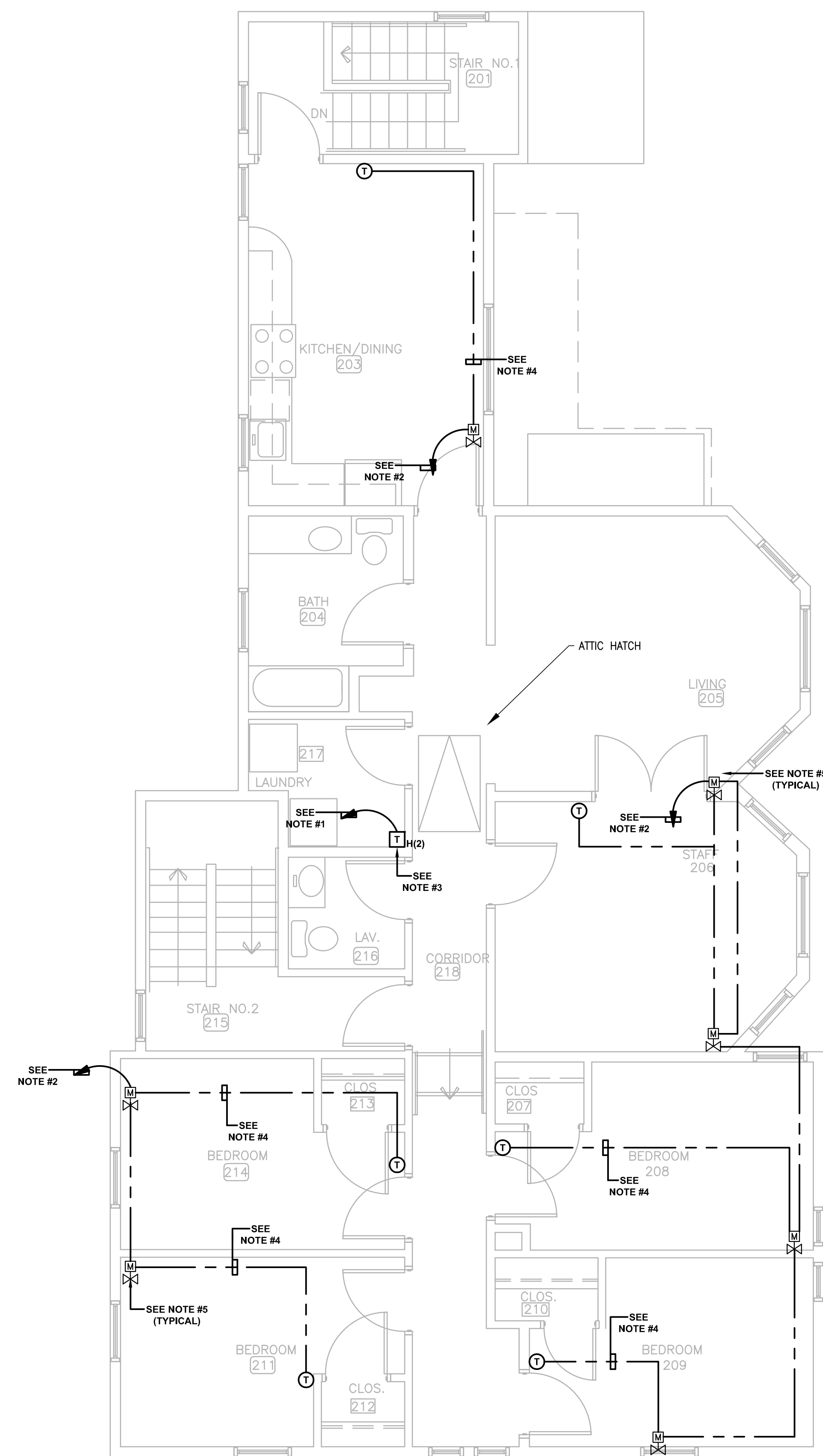
2 FIRST FLOOR MECHANICAL PLAN
SCALE: 1/4" = 1'-0"

MECHANICAL NOTES:

- SEE SPECIFICATIONS AND DETAILS FOR FURTHER REQUIREMENTS.
- INSTALL EQUIPMENT AND SYSTEMS PER CODE AND PER MANUFACTURER'S INSTRUCTIONS.
- ALL DIMENSIONS AND LOCATIONS ARE APPROXIMATE. CONTRACTOR TO INSPECT AND VERIFY ALL INFORMATION IN FIELD AND INFORM THE ENGINEERS OF ANY DISCREPANCIES IN WRITING IMMEDIATELY.
- EQUIPMENT, DUCTS AND PIPING MAY BE SHOWN DISPLACED FOR CLARITY.
- GC TO PROVIDE REQUIRED FIRESTOPPING AND ACOUSTICAL SEALANT. MC TO PROVIDE GC WITH MARKED UP PLAN SHOWING PENETRATIONS.
- MC TO SUPPLY ACCESS HATCHES. GC TO INSTALL.
- CONCEAL ALL CONTROL WIRING FOR THERMOSTATS WITHIN WALLS. NO SURFACE MOUNTED RACEWAYS.

NOTES:

- THE ELECTRICAL CONTRACTOR SHALL WIRE TO NEW CIRCUIT BREAKER LOCATED IN EXISTING BASEMENT PANELBOARD.
- THE CONTRACTOR SHALL WIRE TO THE HEATING SYSTEM TRANSFORMER AT THE SECOND FLOOR.
- THE FINAL LOCATION OF THE HEATING SYSTEM TRANSFORMER AND THERMOSTAT SHALL BE DETERMINED BY THE CONTRACTOR AND ARCHITECT IN THE FIELD.
- THERMOSTAT WIRING SHALL BE CONCEALED. THE CONTRACTOR SHALL FISH CABLE IN WALL TO ATTIC SPACE OR BASEMENT SO THAT THE WIRING IS CONCEALED.
- THE MECHANICAL CONTRACTOR SHALL REMOVE THE EXISTING NON-ELECTRIC ZONE VALVE (NEZV) FROM WITHIN THE BASEBOARD ENCLOSURE. PROVIDE MOTORIZED 2-WAY ZONE VALVE AND RECONNECT TO EXISTING PIPING.
- THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL A 20 AMPERE 1-POLE CIRCUIT BREAKER IN EXISTING PANELBOARD FOR THE BUILDING HEATING SYSTEM TRANSFORMERS.



NOTES:

REMOVE EXISTING TWO-ZONE CONTROLLER. PROVIDE TEKMAR 260 BOILER CONTROLLER. TEMPERATURE SENSOR WIRING, PROGRAMMING, AND STARTUP. CONTROLLER SHALL PROVIDE START/STOP SIGNAL TO EXISTING BOILER, OUTDOOR TEMPERATURE RESET OF SUPPLY WATER TEMPERATURE, DHW ZONE CONTROL INCLUDING BOILER RESET OVERRIDE, WARM WEATHER SHUT DOWN OF SPACE HEAT, AND PUMP CONTROL FOR TWO PUMPS.

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**49 WASHINGTON ST (689-1)
 HUDSON HOUSING AUTHORITY
 HUDSON, MA**

TITLE
SECOND FLOOR MECHANICAL PLAN

DATE SECTION DRAWING NUMBER
11/02/16 M-1.1

1 SECOND FLOOR MECHANICAL PLAN
 SCALE: 1/4" = 1'-0"

2 ALTERNATE NO. 1 - BOILER CONTROLS
 SCALE: NTS