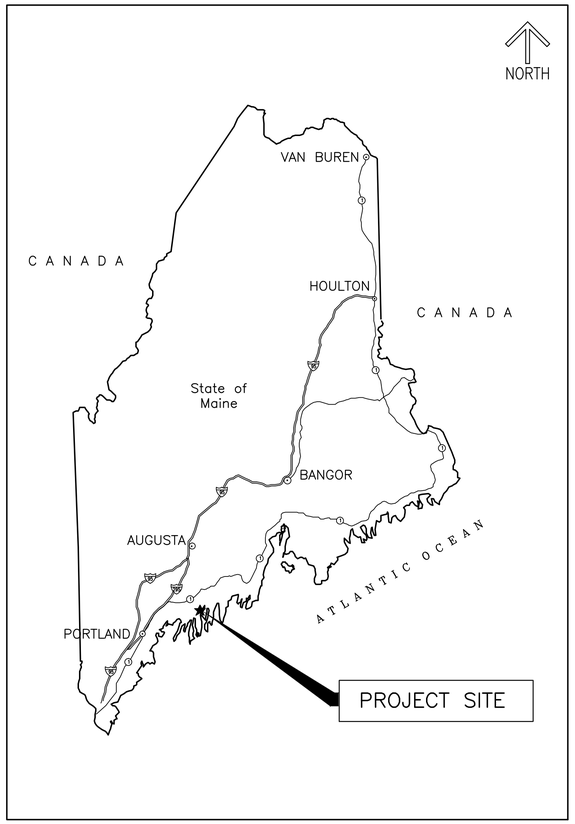
# PORTLAND HOUSING AUTHORITY

Portland, Maine

ISSUED FOR BID

## RIVERTON PARK BOILER REPLACEMENTS:
## BUILDING NOs 1,2,3,4,7,9,11,20




VICINITY MAP

SCALE: N.T.S.

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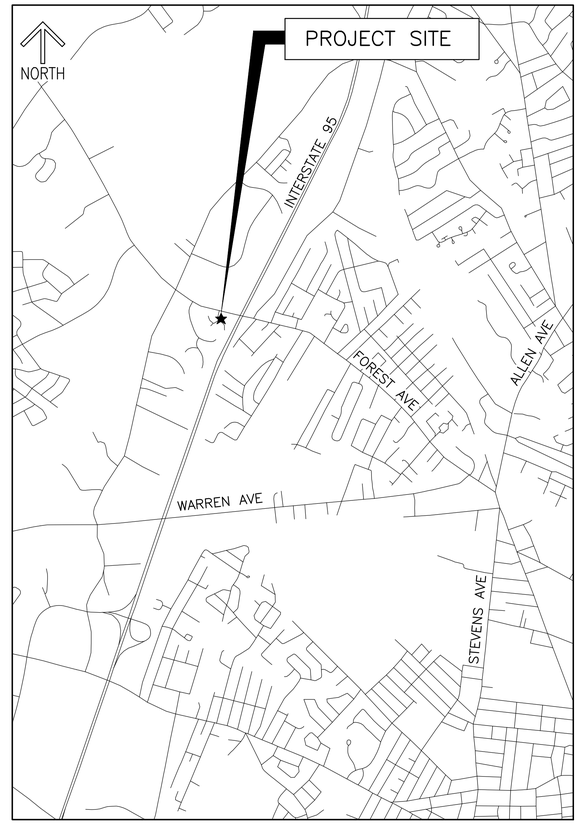


LOCATION MAP

SCALE: N.T.S.

| REV | DESCRIPTION | DWN | APP | DATE |
|---|---|---|---|---|
| 1 | ISSUED FOR CONSTRUCTION | CSS | ERP | 9-8-15 |
| 0 | ISSUED FOR BID | CSS | ERP | 4-8-15 |

PORTLAND HOUSING AUTHORITY
PORTLAND, MAINE

RIVERTON BOILER REPLACEMENTS
BUILDING NOs 1,2,3,4,7,9,11,20

COVER SHEET

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SIZE: ANSI D
DATE: 9-8-15
DES BY: ERP
DWN BY: CSS
CKD BY: MIF

PROJECT NO. 218.011.001

SHEET 1 OF 18

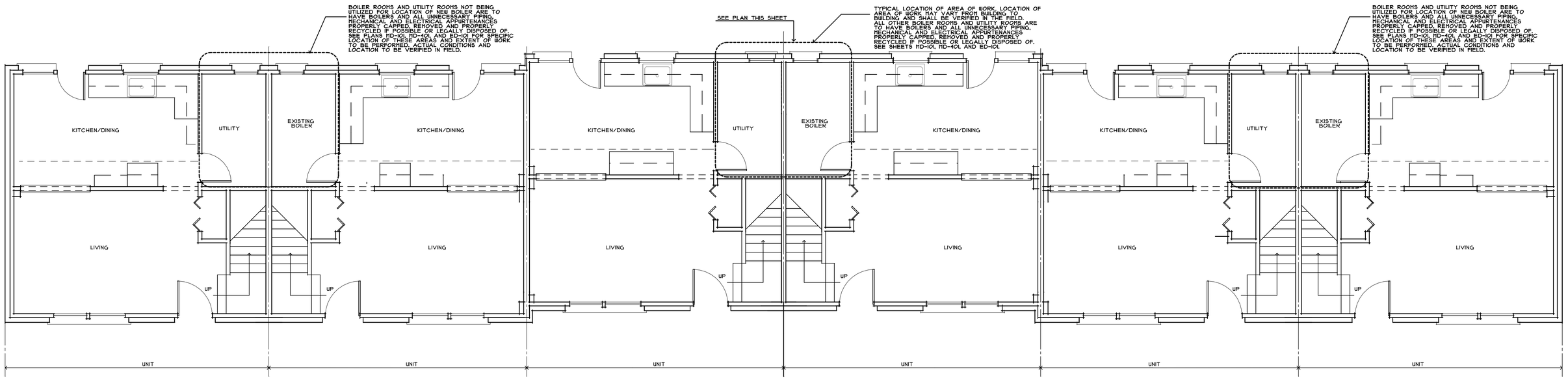
DRAWING NO. G-001

project title

# HEATING SYSTEM MODIFICATIONS RIVERTON PARK

## PORTLAND HOUSING AUTHORITY

14 BAXTER BOULEVARD
PORTLAND, MAINE

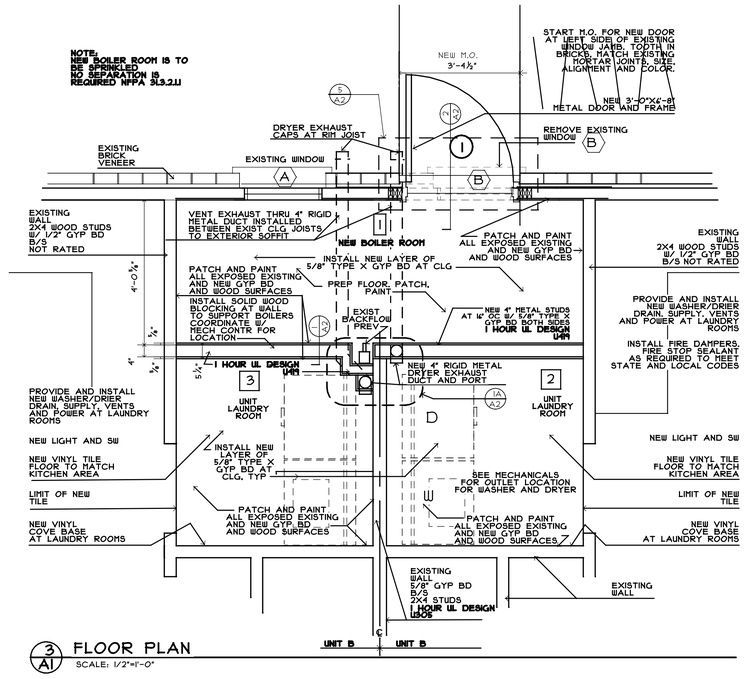



## EXISTING FIRST FLOOR PLAN BUILDING TYPE 'A'

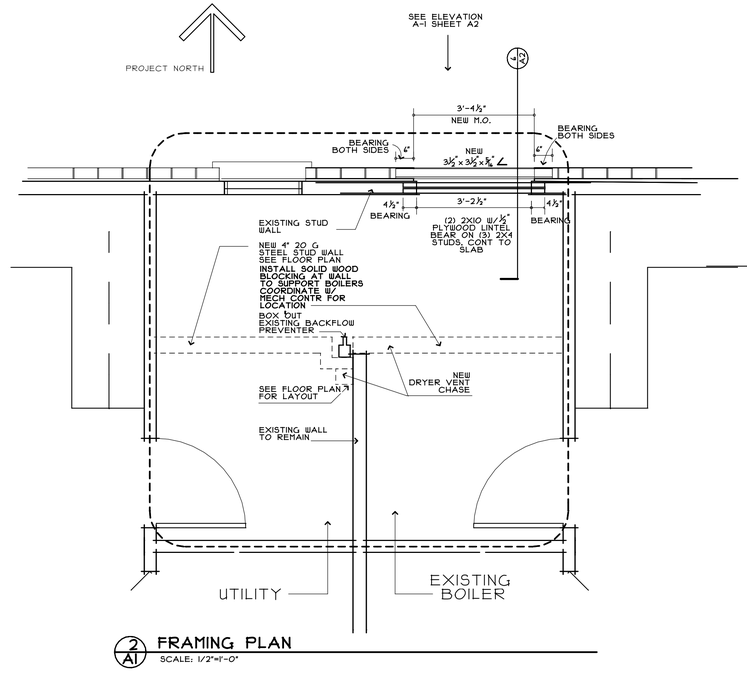
SCALE: 1/4"=1'-0"

BUILDINGS 1, 2, 3, 4, 7, 9, 11, 20

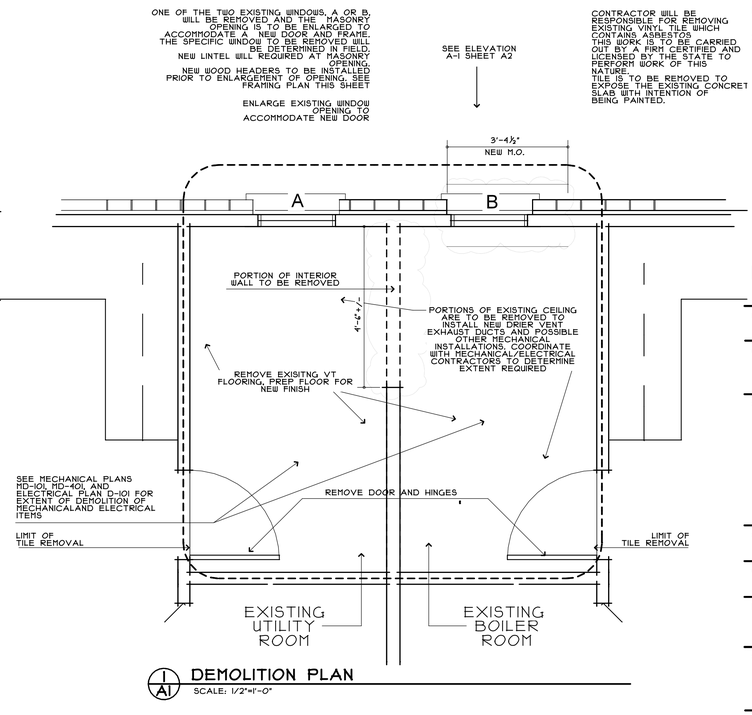
ACTUAL UNITS MAY VARY IN CERTAIN MECHANICAL AND ARCHITECTURAL COMPONENTS. VERIFY ACTUAL CONDITIONS IN FIELD




3/A1 FLOOR PLAN
SCALE: 1/2"=1'-0"




2/A1 FRAMING PLAN
SCALE: 1/2"=1'-0"




1/A1 DEMOLITION PLAN
SCALE: 1/2"=1'-0"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ISSUED

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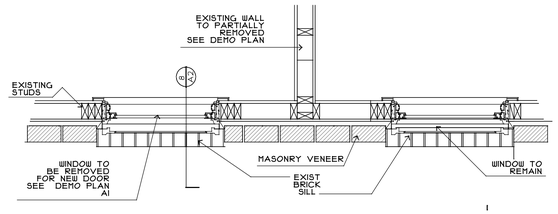
DEMOLITION PLANS
FRAMING PLAN
FLOOR PLAN

scale
AS NOTED

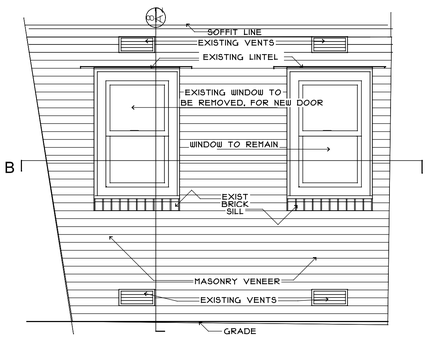
drawn by
SMT

project number
1215

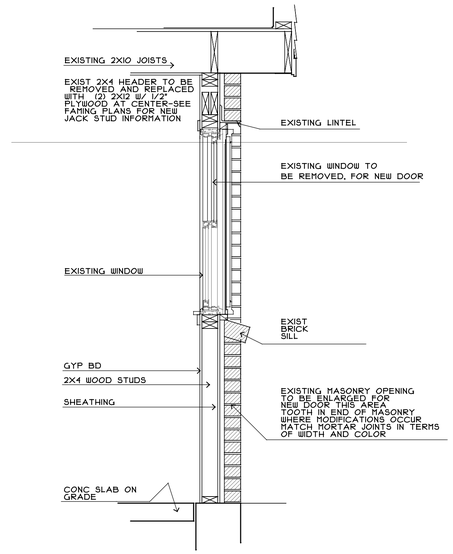
sheet number
A-1



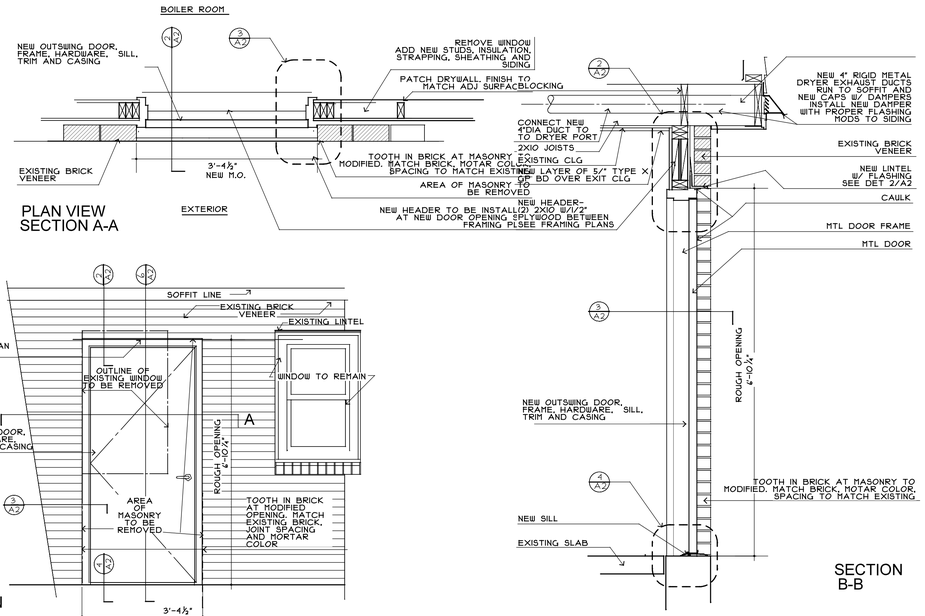

## EXISTING PLAN
## SECTION B-B




## 7/A2 EXISTING REAR ELEVATION
SCALE: 1/2" =1'-0"




## 8/A2 SECTION THRU EXISTING WINDOW
SCALE: 3/4" =1'-0"




PLAN VIEW
SECTION A-A

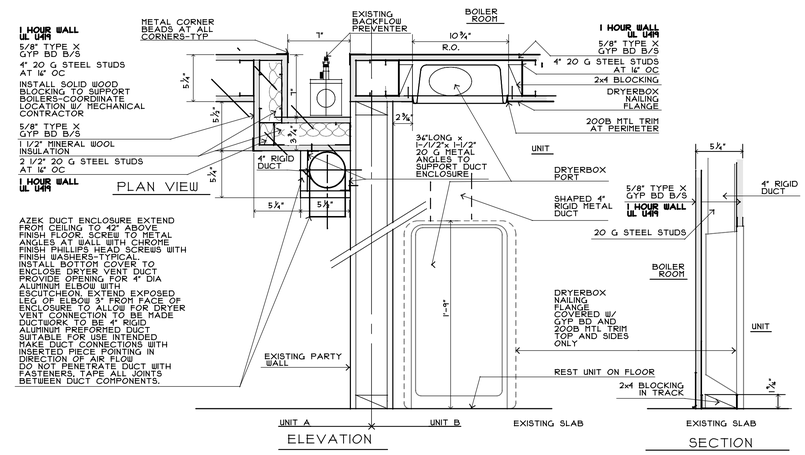
SECTION
B-B



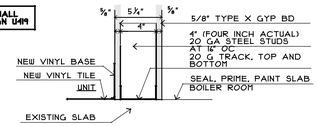

ELEVATION

## 5/A2 ELEVATION AT REAR DOOR
SCALE: 1/2"=1'-0"

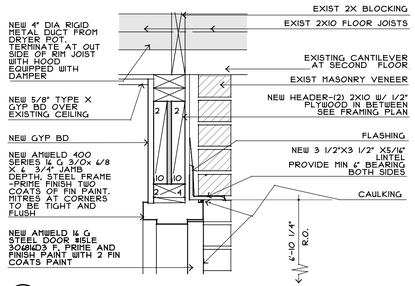
## 6/A2 SECTION THRU WALL AT NEW DOOR
SCALE: 3/4"=1'-0"



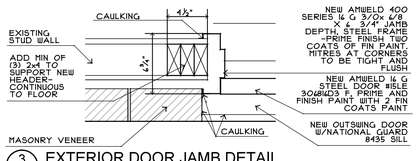

## 1A/A2 DRYER PORT DETAIL
SCALE: 1 1/2"=1'-0"



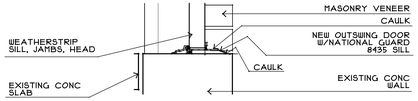

## 1/A2 NEW WALL SECTION
SCALE: 1 1/2"=1'-0"




## 2/A2 EXTERIOR DOOR HEAD DETAIL
SCALE: 1 1/2"=1'-0"




## 3/A2 EXTERIOR DOOR JAMB DETAIL
SCALE: 1 1/2"=1'-0"




## 4/A2 EXTERIOR DOOR SILL DETAIL
SCALE: 1 1/2"=1'-0"

GENERAL NOTES
CONTRACTOR TO FIELD VERIFY ALL MEASUREMENTS AND EXISTING CONDITIONS.
CONTRACTOR SHALL PAY FOR ALL FEES AND OBTAIN ALL NECESSARY PERMITS.
THE TERMS, 'SUPPLY', 'FURNISH', 'PROVIDE', ARE TO MEAN, SUPPLY AND INSTALL.
SHOULD THE BIDDER FIND ANY DISCREPANCIES IN, OR OMISSIONS FROM THE DRAWINGS, OR SHOULD THERE BE ANY DOUBT AS TO THEIR MEANING, BIDDER IS TO NOTIFY THE ARCHITECT IN WRITING A MINIMUM OF 10 DAYS BEFORE SUBMITTING BID. CLARIFICATION AND DRAWINGS SHALL BE ADJUSTED AS THE SITUATION REQUIRES.
FIGURE DIMENSIONS SHALL SUPERSEDE SCALE MEASUREMENTS. LARGE SCALE DETAILS SHALL TAKE PRECEDENCE OVER SMALL AND MEASUREMENTS MUST BE VERIFIED AT THE SITE. THE MORE SPECIFIC DESCRIPTION OF THE WORK TAKES PRECEDENCE OVER THE MORE GENERAL. THE MOST RECENT DRAWINGS, ADDENDA, OR AGREEMENTS TAKE PRIORITY. NO ALTERATIONS SHALL BE MADE IN THE DRAWINGS EXCEPT BY THE ARCHITECT.
IN CASE OF ANY CONFLICT OR INCONSISTENCY BETWEEN THE DRAWINGS AND OTHER DOCUMENTS, THE ARCHITECTS INTERPRETATION SHALL GOVERN.
ANY DISCREPANCY BETWEEN FIGURES AND DRAWING SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ARCHITECT, WHOSE DECISION SHALL BE CONCLUSIVE.
IT IS THE UNDERSTANDING THAT THE WORK SHOWN ON THE DRAWINGS AND CALLED OUT ELSEWHERE WILL RESULT IN A COMPLETE,THOROUGH, AND FINISHED PROJECT FOR THE USE INTENDED.
WORK SHALL BE CARRIED OUT BY INDIVIDUALS EXPERIENCED IN THE VARIOUS AREAS OF WORK THAT THEY WILL BE PERFORMING.
WORK SHALL BE PERFORMED IN A MANNER THAT IS EQUAL TO INDUSTRY STANDARDS.
CONTRACTORS ARE TO STORE, USE AND INSTALL ALL PRODUCTS, MATERIALS AND ITEMS IN SUCH A WAY THAT FOLLOWS THE VARIOUS MANUFACTURERS' SPECIFICATIONS AND INSTALLATION REQUIREMENTS.
CONTRACTOR TO FURNISH AND INSTALL ALL LABOR MATERIALS,EQUIPMENT, LEGAL DISPOSAL OF ALL DEBRIS, AND ALL RELATED SERVICES INCIDENTAL TO THE RENOVATIONS AND ADDITION DEPICTED ON THE PLANS.

REMOVE WORK AS SHOWN ON PLANS
PROVIDE ADEQUATE BRACING WHEN WORK INVOLVES STRUCTURAL MODIFICATIONS.
REMOVE WALLS, FRAMING, ETC. TO COMPLETE FINAL LAYOUT AS NOTED ON DRAWINGS.
REMOVE EXCESS MATERIALS FROM SITE AND DISPOSE OF PROPERLY
HAZARDOUS MATERIALS TO BE REMOVED BY CONTRACTORS LICENSED TO PERFORM THIS TYPE OF WORK.
MATERIAL TO BE DISPOSED OF IN A LEGAL AND SAFE MANNER

WORK TO INCLUDE, BUT IS NOT LIMITED TO, THE FOLLOWING:
DEMOLITION, EXCAVATION, CONCRETE WORK, LANDSCAPING AND GRADING, CARPENTRY, SIDING, ROOFING, INSULATION, DRYWALL, PAINTING, FLOORING, CABINETRY, ELECTRICAL, PLUMBING INCLUDING DESIGN AND MODIFICATION OF THE EXISTING HEATING SYSTEM TO SERVICE THE RENOVATED SPACE
.

## ROOM FINISH SCHEDULE

| ROOM NO. | ROOM NAME | WALLS NORTH: 5/8" GYP BD | NORTH: MR GYP BD | NORTH: PAINT | NORTH: 1/2" GYP BD | NORTH: PATCH-REPAIR | EAST: 5/8" GYP BD | EAST: MR GYP BD | EAST: PAINT | EAST: 1/2" GYP BD | EAST: PATCH-REPAIR | SOUTH: 5/8" GYP BD | SOUTH: MR GYP BD | SOUTH: PAINT | SOUTH: 1/2" GYP BD | SOUTH: PATCH-REPAIR | WEST: 5/8" GYP BD | WEST: MR GYP BD | WEST: PAINT | WEST: 1/2" GYP BD | WEST: PATCH-REPAIR | BASE: VINYL | BASE: WOOD | BASE: EXISTING | BASE: PAINT | FLOOR: SHEET VINYL | FLOOR: CARPET | FLOOR: VINYL TILE | FLOOR: PATCH CONC | FLOOR: PAINT | FLOOR: CARPET | CEILING: 5/8" GYP BD | CEILING: MR GYP BD | CEILING: SAT | CEILING: PATCH-REPAIR | CEILING: PAINT | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1ST FLOOR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UNIT TYPE 'A' | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | BOILER ROOM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | UNIT X LAUNDRY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | UNIT Y LAUNDRY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

GENERAL NOTES:
METAL DOOR AND FRAME TO BE PRIMED AND PAINTED
PROVIDE PRIMER PLUS TWO COATS OF RUSTOLEUM GLOSS ALKYD PAINT AT METAL DOOR AND FRAME
REPAIR ALL DAMAGED DRYWALL SURFACES TO MATCH ADJACENT SURFACES IN TERMS OF MATERIALS AND FINISH- TYPICAL
SEE PLAN FOR LOCATION OF 1/2" AND 5/8" GB
ALL WALLS , CLGS, WOOD TRIM TO BE PAINTED ONE PRIMER, 2 FIN COATS TYP
USE PRIMER PLUS TWO COATS OF SHERWIN WILLIAMS HIGH PERFORMANCE ACRYLIC PAINT AT ALL DRYWALL SURFACES.
PROPERLY PREPARE FLOORS AS REQUIRED TO ACCEPT NEW PERFORMANCE FINISH AS INDICATED
PRIME PREPARED CONCRETE FLOORS WITH ONE COAT SHERWIN WILLIAMS ALL SURFACE ENAMEL LATEX PRIMER; FINISH WITH TWO COATS SHERWIN WILLIAMS PORCH AND FLOOR ENAMEL. APPLY ACCORDING TO MFRS RECOMMENDATIONS

## DOOR SCHEDULE

| MARK | LOCATION | TYPE | SIZE | THICKNESS | MATERIAL | MANUFACTURER | FRAME | SILL | TRIM | HARDWARE | FINISH | MFR | MODEL NO. | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | FIRST FLOOR BOILER ROOM | SMOOTH, FLUSH | 3'-0"x 6'-8" | 1 3/4" | STEEL | AMWELD W. GA. 1SLE 30X8ND3 D3 F B-LABEL | STEEL-AMWELD 400 SERIES 14 GA 30/08 6/4 3/4"JAMB DEPTH 20 MIN | NATIONAL GUARD THERMAL BARRIER THRESHOLD #8435 STEEL MODEL 8435 | INTERIOR WOOD EXTERIOR PAINTED METAL FRAME | CLASSROOM LOCKSET 1.5 PR 4.5x4.5 HINGES | 626 US26D | SCHLAGE STANLEY | D-SERIES RHODES (626) F86179 | OUTSWING DOOR DOOR, SWEEP AND WEATHERSTRIP, PAINT DOOR. COORDINATE W/OWNER REGARDING KEYING COMPARABILITY REQUIREMENTS IVES DOOR STOP F6436 24D PIN OUTSWING THRESHOLD DUR-O-MATIC SC80 ALUM FIN CLOSER. IVES DOOR STOP F6436 24D PIN RMD RATED HARDWARE B-LABEL |

## ACCESSORIES

| ITEM | LOCATION | MANUFACTURER | MODEL NO. | NOTES |
|---|---|---|---|---|
| RECESSED CLOTHES DRYER VENT BOX | UNIT LAUNDRY ROOM | IN-O-VATE TECHNOLOGIES 810 SATURN ST, JUPITER, FL | 350 | |

project title

# HEATING SYSTEM MODIFICATIONS RIVERTON PARK

PORTLAND HOUSING AUTHORITY
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PORTLAND, MAINE

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ISSUED

revisions

date
SEPTEMBER, 2015

sheet title
SECTIONS
DETAILS
SCHEDULES

scale
AS NOTED

drawn by
SMT

project number
1215

sheet number
A-2

## ABBREVIATIONS

| | |
|---|---|
| @ | AT |
| A | AMP, COMPRESSED AIR |
| ABV | ABOVE |
| AC | AIR–CONDITIONING |
| ACH | AIR CHANGES PER HOUR |
| AD | ACCESS DOOR |
| ADA | AMERICANS WITH DISABILITIES ACT |
| AF | AIR FILTER, AIR FLOW |
| AFF | ABOVE FINISHED FLOOR |
| AFM | AIR FLOW MEASURING STATION |
| AHU | AIR–HANDLING UNIT |
| AL | ACOUSTICAL LINER |
| AMB | AMBIENT |
| AP | ACCESS PANEL |
| APD | AIR PRESSURE DROP |
| APPROX | APPROXIMATELY |
| AS | AIR SEPARATOR |
| ASME | AMERICAN SOCIETY OF MECHANICAL ENGINEERS |
| ATC | AUTOMATIC TEMPERATURE CONTROL |
| ATT | ACOUSTICAL ATTENUATOR |
| AV | AUTOMATIC VENT |
| B | BOILER |
| BA | BREATHING AIR |
| BDD | BACKDRAFT DAMPER |
| BHP | BRAKE HORSEPOWER |
| BLDG | BUILDING |
| BOT | BOTTOM |
| BTUH | BTU PER HOUR |
| C | CENTERLINE, CONVECTOR, CELSIUS |
| CA | COMPRESSED AIR |
| CAP | CAPACITY |
| CD | CONDENSATE DRAIN |
| CF | CIRCULATING FAN |
| CFM | CUBIC FEET PER MINUTE |
| CH | CHILLER |
| CHWP | CHILLED WATER PUMP |
| CHWR | CHILLED WATER RETURN |
| CHWS | CHILLED WATER SUPPLY |
| CLG | CEILING |
| CO | CLEAN OUT/CARBON MONOXIDE |
| COL | COLUMN |
| CONC | CONCRETE |
| COND | CONDENSATE |
| CONN | CONNECTION |
| CONT | CONTINUATION |
| CONV | CONVECTOR |
| CP | CONTROL PANEL, CONDENSATE PUMP |
| CR | CONDENSATE RETURN |
| CSEA | CONFINED SPACE EXHAUST AIR |
| CU | CONDENSING UNIT |
| CUH | CABINET UNIT HEATER |
| CW | COLD WATER |
| CWR | COLD WATER RETURN |
| CWS | COLD WATER SUPPLY |
| CV | CONTROL VALVE |
| D | DRAIN |
| dB | DECIBLES |
| DB | DRY BULB |
| DDC | DIRECT DIGITAL CONTROL |
| DEG | DEGREE |
| ⌀ DIA | DIAMETER |
| DIFF | DIFFERENTIAL |
| DHWH | DOMESTIC HW HEATER |
| DISCH | DISCHARGE |
| DN | DOWN |
| DOM | DOMESTIC |
| DP,DPS | DIFFERENTIAL–PRESSURE SENSOR |
| DTWR | DUAL TEMPERATURE WATER RETURN |
| DTWS | DUAL TEMPERATURE WATER SUPPLY |
| DWG | DRAWING |
| EA | EACH, EXHAUST AIR |
| EAT | ENTERING AIR TEMPERATURE |
| EC | ELECTRICAL CONTRACTOR |
| EDR | EQUIVALENT DIRECT RADIATION |
| EF | EXHAUST FAN |
| EFF | EFFICIENCY |
| EGT | ENTERING GLYCOL TEMPERATURE |
| ELEC | ELECTRIC |
| ELEV | ELEVATION |
| ENT | ENTERING |
| EPDM | ETHYLENE PROPYLENE DIENE MEMBRANE |
| EQUIP | EQUIPMENT |
| ERV | ENERGY RECOVERY VENTILATOR |
| ESP | EXTERNAL STATIC PRESSURE |
| ET | EXPANSION TANK |
| EVAP | EVAPORATOR |
| EWC | ELECTRIC WATER COOLER |
| EWT | ENTERING WATER TEMPERATURE |
| EXH, E | EXHAUST |
| EXIST | EXISTING |
| EXP | EXPANSION |
| EXT | EXPANSION TANK |
| F | FAN, DEGREES FAHRENHEIT |
| FA | FRESH AIR |
| FAI | FRESH AIR INTAKE |
| FC | FLEX CONNECTOR, FORWARD CURVED |
| FCO | FLOOR CLEANOUT |
| FCU | FAN COIL UNIT |
| FD | FIRE DAMPER, FLOOR DRAIN |
| FF | FINISH FLOOR |
| FIX | FIXTURE |
| FLA | FULL LOAD AMPS |
| FLR | FLOOR |
| FOB | FLAT ON BOTTOM |
| FOR | FUEL OIL RETURN |
| FOS | FUEL OIL SUPPLY |
| FOT | FLAT ON TOP |
| FS | FLOW SWITCH |
| FSD | FIRE/SMOKE DAMPER |
| FTR,FR | FIN TUBE RADIATION |
| GA | GAUGE |
| GAL | GALLONS |
| GALV | GALVANIZED |
| GMU | GLYCOL MAKE–UP UNIT |
| GC | GENERAL CONTRACTOR |
| GP | GLYCOL PUMP |
| GPH | GALLONS PER HOUR |
| GPM | GALLONS PER MINUTE |
| GR | GLYCOL RETURN |
| GRH | GRAVITY RELIEF HOOD |
| GS | GLYCOL SUPPLY |
| GSM | GALVANIZED SHEET METAL |
| GYP | GYPSUM WALLBOARD |
| HC | HEATING COIL |
| HG | MERCURY |
| HHWR | HEATING HOT WATER RETURN |
| HHWS | HEATING HOT WATER SUPPLY |
| HP | HORSEPOWER, HIGH PRESSURE |
| HR | HOUR |
| HT | HEIGHT |
| HV | HEATING AND VENTILATING UNIT |
| HVAC | HEATING, VENTILATING AND AIR CONDITIONING (UNIT) |
| HW | HOT WATER |
| HWC | HOT WATER COIL |
| HWR | HOT WATER RETURN |
| HWS | HOT WATER SUPPLY |
| HX | HEAT EXCHANGER |
| HZ | HERTZ |
| IBR | HYDRONICS INSTITUTE |
| ICU | INTENSIVE CARE UNIT |
| ID | INSIDE DIAMETER |
| IN | INCHES |
| INDIR | INDIRECT WASTE |
| IU | INDOOR UNIT |
| KW | KILOWATT |
| L | LENGTH, LOUVER |
| LAT | LEAVING AIR TEMPERATURE |
| LB | POUND |
| LD | LINEAR DIFFUSER |
| LDB | LEAVING DRY BULB |
| LF | LINEAR FEET |
| LG | LONG |
| LGT | LEAVING GLYCOL TEMPERATURE |
| LOC | LOCATION/ LOCATED |
| LPS | LOW PRESSURE STEAM |
| LRA | LOCKED ROTOR AMPS |
| L/S | LITERS PER SECOND |
| LVG | LEAVING |
| LWB | LEAVING WET BULB |
| LWT | LEAVING WATER TEMPERATURE |
| MANUF | MANUFACTURER |
| MAX | MAXIMUM |
| MAX PD | MAXIMUM PRESSURE DROP |
| MBH | 1000 BTU PER HOUR |
| MBU | 1000 BTU |
| MC | MECHANICAL CONTRACTOR |
| MCA | MAXIMUM CIRCUIT AMPS |
| MCC | MOTOR CONTROL CENTER |
| MD | MOTORIZED DAMPER |
| MECH | MECHANICAL |
| MEZZ | MEZZANINE |
| MFG | MANUFACTURER |
| MIN | MINIMUM, MINUTES |
| m | METER |
| $m^2$ | METER SQUARED |
| mm | MILLIMETER |
| MNTD | MOUNTED |
| MUA | MAKE–UP–AIR |
| MUW | MAKE–UP–WATER |
| N/A | NOT APPLICABLE |
| NC | NORMALLY CLOSED, NOISE CRITERIA |
| NFPA | NATIONAL FIRE PROTECTION ASSOCIATION |
| NIC | NOT IN CONTRACT |
| NIS | NOT IN SCOPE |
| NO | NORMALLY OPEN, NUMBER |
| NO2 | NITROGEN DIOXIDE |
| NTS | NOT TO SCALE |
| OA | OUTSIDE AIR |
| OAI | OUTSIDE AIR INTAKE |
| OAT | OUTSIDE AIR TEMPERATURE |
| OBD | OPPOSED BLADE DAMPER |
| OC | ON CENTER |
| OD | OUTSIDE DIAMETER |
| OED | OPEN ENDED DUCT |
| OSV | OIL SAFETY VALVE |
| OUT | OUTSIDE AIR TEMPERATURE |
| P | PUMP, PITCH |
| PA | PASCAL |
| PC | PLUMBING CONTRACTOR |
| PD | PRESSURE DROP |
| PH | PHASE |
| PLMB | PLUMBING |
| PRESS | PRESSURE |
| PRV | PRESSURE REDUCING VALVE |
| PSI | POUNDS PER SQUARE INCH |
| PSIG | POUNDS PER SQUARE INCH GAUGE |
| PT | PRESSURE TREATED |
| PTS | COMBINATION PRECIPITATION OA TEMPERATURE SENSOR |
| PVC | POLY VINYL CHLORIDE |
| QTY | QUANTITY |
| R | RADIUS, RETURN |
| RA | RETURN AIR |
| RAD | RADIATOR |
| RAF, RF | RETURN AIR FAN |
| RAT | RETURN AIR TEMPERATURE |
| REL | RELIEF |
| REQ'D | REQUIRED |
| RET, R | RETURN |
| RH | RELATIVE HUMIDITY |
| RL | REFRIGERANT LIQUID |
| RM | ROOM |
| RPM | REVOLUTIONS PER MINUTE |
| RS | REFRIGERANT SUCTION |
| RTU | ROOFTOP UNIT |
| S | SUPPLY DIFFUSER |
| SA | SUPPLY AIR |
| SCR | SCREEN |
| SD | SMOKE DAMPER |
| SF | SQUARE FOOT |
| SIM | SIMILAR |
| SMACNA | SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION |
| SOV | SHUT OFF VALVE |
| SP | STATIC PRESSURE |
| SPH | STATIC PRESSURE HIGH LIMIT |
| SPL | STATIC PRESSURE LOW LIMIT |
| SPS | STATIC PRESSURE SENSOR |
| SQ | SQUARE |
| SRV | SAFETY RELIEF VALVE |
| SS | STAINLESS STEEL |
| STL | STEEL |
| STM | STEAM |
| SUP, S | SUPPLY |
| T | TEMPERATURE SENSOR, THERMOSTAT |
| TC | TOTAL COOLING |
| TEMP | TEMPERATURE |
| TG | TRANSFER GRILLE |
| TSP | TOTAL STATIC PRESSURE |
| TYP | TYPICAL |
| UH | UNIT HEATER |
| UL | UNDERWRITERS LABORATORY |
| V | VENT |
| VAV | VARIABLE AIR VOLUME |
| VD | VOLUME DAMPER |
| VEL | VELOCITY |
| VFD | VARIABLE FREQUENCY DRIVE |
| VIF | VERIFY IN FIELD |
| VTR | VENT THRU ROOF |
| W | WIDTH, WATT |
| W/ | WITH |
| WB | WET–BULB |
| WC | WATER COLUMN |
| WCO | WALL CLEAN OUT |
| WEA | WELDING EXHAUST AIR |
| WF | WALL FAN |
| WG | WATER GAUGE |
| WH | WATER HEATER |
| WMS | WIRE MESH SCREEN |
| WPD | WATER PRESSURE DROP |
| WT | WEIGHT |

## MECHANICAL SYMBOLS

- SECTION NUMBER / DRAWING WHERE SECTION IS REFERENCED / DRAWING WHERE SECTION IS DRAWN
- DETAIL NUMBER / DRAWING WHERE DETAIL IS REFERENCED / DRAWING WHERE DETAIL IS DRAWN
- H / 2 — SYMBOL PER ABBREVIATION LIST / EQUIPMENT SEQUENCE NUMBER
- S–1 / 100 — DIFFUSER, REGISTER OR GRILLE SEQUENCE NUMBER / CFM
- 2.2 — GPM SETTING FOR BALANCING VALVE
- 1 — DEMOLITION KEYED NOTE (NUMBER)
- 1 — KEYED NOTE (NUMBER)
- A — REVISION (LETTER OR NUMBER)
- RETURN OR EXHAUST GRILLE, REGISTER
- SUPPLY DIFFUSER, REGISTER, GRILLE
- AD — ACCESS DOOR
- UNIT HEATER
- PROPELLER FAN
- CIRCULATING FAN
- ROOFTOP EXHAUST FAN
- DIRECTION OF AIR FLOW
- DIRECTION OF AIR FLOW EXHAUST
- DOOR LOUVER
- VOLUME DAMPER
- FD — FIRE DAMPER
- M — MOTORIZED DAMPER, PARALLEL BLADE
- M — MOTORZED DAMPER, OPPOSED BLADE
- FD — FIRE DAMPER
- SD — SMOKE DAMPER
- T — THERMOSTAT
- H — HUMIDITY SENSOR
- G — CO & NO2 GAS SENSOR
- S — FAN OVERRIDE SWITCH
- SQUARE ELBOW WITH TURNING VANES
- FLEXIBLE DUCT
- FLEXIBLE CONNECTOR
- DISCONNECT
- S — STARTER/DISCONNECT
- PUMP
- DP — DIFFERENTIAL PRESSURE CONTROLLER
- PS — PRESSURE SENSOR
- T — TEMPERATURE SENSOR
- CEILING SUPPLY DIFFUSER W/ DIRECTION SHOWN BY ARROWS
- DUCT TRANSITION FROM RECTANGULAR TO ROUND
- CONNECT TO EXISTING
- INLINE CENTRIFUGAL FAN

## PIPING SYMBOLS

- BALANCING VALVE
- COMBINATION FLOW MEASURING/ BALANCING VALVE (CIRCUIT SETTER)
- BUTTERFLY VALVE
- GATE VALVE
- LUBRICATED PLUG VALVE
- BALL VALVE
- BALL VALVE IN VERTICAL
- PLUG VALVE
- CHECK VALVE
- PRESSURE REDUCING VALVE
- TWO–WAY AUTOMATIC CONTROL VALVE
- SAFETY RELIEF VALVE
- THREE–WAY AUTOMATIC CONTROL VALVE
- STRAINER W/BALL DRAIN VALVE, HOSE BIB AND CAP
- UNION OR FLANGE AS DICTATED BY PIPE SIZE
- PIPE TEE FROM TOP
- PIPE TEE FROM BOTTOM
- PIPE RISE
- PIPE DROP
- END CAP
- PRESSURE GAUGE W/BALL VALVE (GATE VALVE AND SIPHON FOR STEAM)
- THERMOMETER TEMPERATURE/PRESSURE WELL
- "PETE'S PLUG"
- AUTOMATIC AIR VENT WITH ISOLATION VALVE
- MANUAL AIR VENT
- REDUCER (ECCENTRIC–FOB OR FOT)
- REDUCER (CONCENTRIC)
- FLEXIBLE PIPE CONNECTION
- VIBRATION ISOLATOR
- DIRT LEG
- DIRECTION OF FLOW OF PIPE
- UP — PIPE PITCH UP IN DIRECTION OF FLOW
- DN — PIPE PITCH DOWN IN DIRECTION OF FLOW
- FUSOMATIC VALVE
- M — FLOW MEASURING STATION

## GENERAL NOTES

1. PERFORM ALL WORK IN ACCORDANCE WITH LATEST VERSIONS OF APPLICABLE FEDERAL, STATE, AND LOCAL CODES, REGULATIONS, AND ORDINANCES AS WELL AS BUILDING OWNER REQUIREMENTS AND MANUFACTURER RECOMMENDATIONS. CODES AND STANDARDS INCLUDE, INTERNATIONAL MECHANICAL CODE, MAINE UNIFORM ENERGY & BUILDING CODE, MAINE STATE PLUMBING CODE AND NFPA.
2. CONTRACTOR SHALL MAKE ARRANGEMENTS TO VISIT THE SITE PRIOR TO BIDDING TO DETERMINE PRE–EXISTING CONDITIONS AND ALL WORK NECESSARY FOR THE PROJECT.
3. DRAWINGS ARE DIAGRAMMATIC; OFFSETS, OBSTRUCTIONS, AND EXISTING CONFIGURATIONS AND CONSTRAINTS MUST BE FIELD VERIFIED.
4. IT IS THE INTENT OF THESE CONTRACT DOCUMENTS TO PROVIDE SYSTEMS THAT ARE FULLY TESTED AND OPERATIONAL. ANY COMPONENTS OR LABOR NOT MENTIONED IN THE CONTRACT DOCUMENTS BUT REQUIRED FOR FUNCTIONING SYSTEMS SHALL BE PROVIDED. THE CONTRACTOR SHALL REFER TO THE ENGINEER FOR RESOLUTION BEFORE START OF ANY WORK THAT APPEARS TO HAVE DISCREPANCIES OR IF THERE IS ANY QUESTION OF INTENT.
5. CONTRACTOR SHALL NOTIFY THE OWNER OF ANY UTILITY OUTAGES AT LEAST TWO WEEKS PRIOR TO THE PROPOSED OUTAGE. CONTRACTOR SHALL ENSURE THAT A BUILDING DOMESTIC HOT WATER SYSTEM IS NOT INOPERABLE FOR LONGER THAN A 24–HOUR PERIOD.
6. TEMPORARY HEAT SHALL BE SUPPLIED AS NEEDED TO MAINTAIN THE BUILDINGS ABOVE 68 DEG F AT ALL TIMES DURING CONSTRUCTION.
7. THE CONTRACTOR SHALL HOLD A LICENSE TO PERFORM THE WORK AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION. APPLY FOR AND OBTAIN ALL REQUIRED PERMITS AND INSPECTIONS AND PAY FEES AND CHARGES, INCLUDING SERVICE CHARGES.
8. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS OF NEW 1–HR FIRE–RATED BARRIERS. PROVIDE FIRE CAULKING RATED FOR 1–HR FIRE RESISTANCE AT ALL PENETRATIONS.
9. THE CONTRACTOR SHALL KEEP ALL CONSTRUCTION AREAS CLEAN AND FREE OF ACCUMULATION OF WASTE MATERIAL OR DEBRIS RELATED TO THIS PROJECT. OCCUPIED AREAS MUST MAINTAIN A CLEAN ENVIRONMENT AND THE CONTRACTOR MUST ADHERE TO THE OWNER'S REGULATIONS REGARDING PROCEDURES ON THE PREMISES.
10. ITEMS AND MATERIALS INDICATED FOR REMOVAL OR DEMOLITION SHALL BE DISPOSED OF OFF–SITE IN A LEGAL MANNER.
11. WORK SHALL BE COORDINATED WITH TRADES INVOLVED.
12. VERIFY EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. FIELD VERIFY AND COORDINATE ALL DIMENSIONS BEFORE FABRICATION.
13. INSTALL WORK SO THAT ALL NEW ITEMS ARE OPERABLE AND SERVICEABLE. DO NOT OBSTRUCT EXISTING EQUIPMENT OR COMPONENTS THAT REQUIRE SERVICE. MAINTAIN ALL MANUFACTURER RECOMMENDED CLEARANCES.
14. INSTALL EQUIPMENT AND PIPING TO FACILITATE EQUIPMENT ACCESS AS REQUIRED BY EQUIPMENT MANUFACTURER.
15. COORDINATE ELECTRICAL POWER REQUIREMENTS FOR ALL MOTORS.
16. PROVIDE REQUIRED SUPPORTS, ANGLES, HANGERS, RODS, BASES, BRACES, AND ALL OTHER ITEMS AS NEEDED TO PROPERLY SUPPORT THE CONTRACT WORK.
17. ALL WORK SHALL BE PERFORMED IN A MANNER THAT IS EQUAL TO INDUSTRY STANDARDS.
18. INSTRUCT DESIGNATED MAINTENANCE PERSONNEL ON PROPER OPERATION AND CARE OF THE NEW SYSTEMS AND EQUIPMENT.
19. CONTRACTOR SHALL WARRANTY WORKMANSHIP AND MATERIALS FOR A PERIOD OF NOT LESS THAN ONE YEAR FROM THE DATE OF PROJECT COMPLETION.

## DUCTWORK SYMBOLS

- BULLHEAD TEE (VD, VD)
- TAKE–OFF SUPPLY (VD)
- EXHAUST/RETURN (VD)
- RADIUS ELBOW
- SQUARE ELBOW W/TURNING VANES
- OFFSET
- CEILING DIFFUSER OR GRILLE W/ FLEXIBLE DUCT (VD)
- SPLIT TAKE–OFF W/ BRANCH DAMPERS SUPPLY (VD)
- BULLHEAD SPLIT (VD, VD)
- RETURN/EXHAUST DUCT UP
- RETURN/EXHAUST DUCT DOWN
- RISE(R) OR DROP(D)
- SUPPLY DUCT UP
- SUPPLY DUCT DOWN

## MECHANICAL LINETYPE LEGEND

- EXISTING ITEMS TO REMAIN
- ITEMS TO BE PROVIDED
- ITEMS TO BE REMOVED
- HIDDEN ITEMS
- CONTROL WIRING
- FUTURE TO BE INSTALLED UNDER SEPARATE CONTRACT

NOTE:
GENERAL NOTES, ABBREVIATIONS AND SYMBOLS APPLY TO MECHANICAL DRAWINGS MARKED M#. HOWEVER, ALL ABBREVIATIONS AND SYMBOLS MAY NOT BE APPLICABLE TO THIS PARTICULAR PROJECT. THEY ARE PROVIDED FOR GENERAL REFERENCE ONLY.

STATE OF MAINE — EMILY PINYARD No.12126 — LICENSED PROFESSIONAL ENGINEER
9-8-15

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PORTLAND HOUSING AUTHORITY
PORTLAND, MAINE

RIVERTON BOILER REPLACEMENTS
BUILDING NOs 1,2,3,4,7,9,11,20

MECHANICAL GENERAL NOTES, LEGEND, AND ABBREVIATIONS

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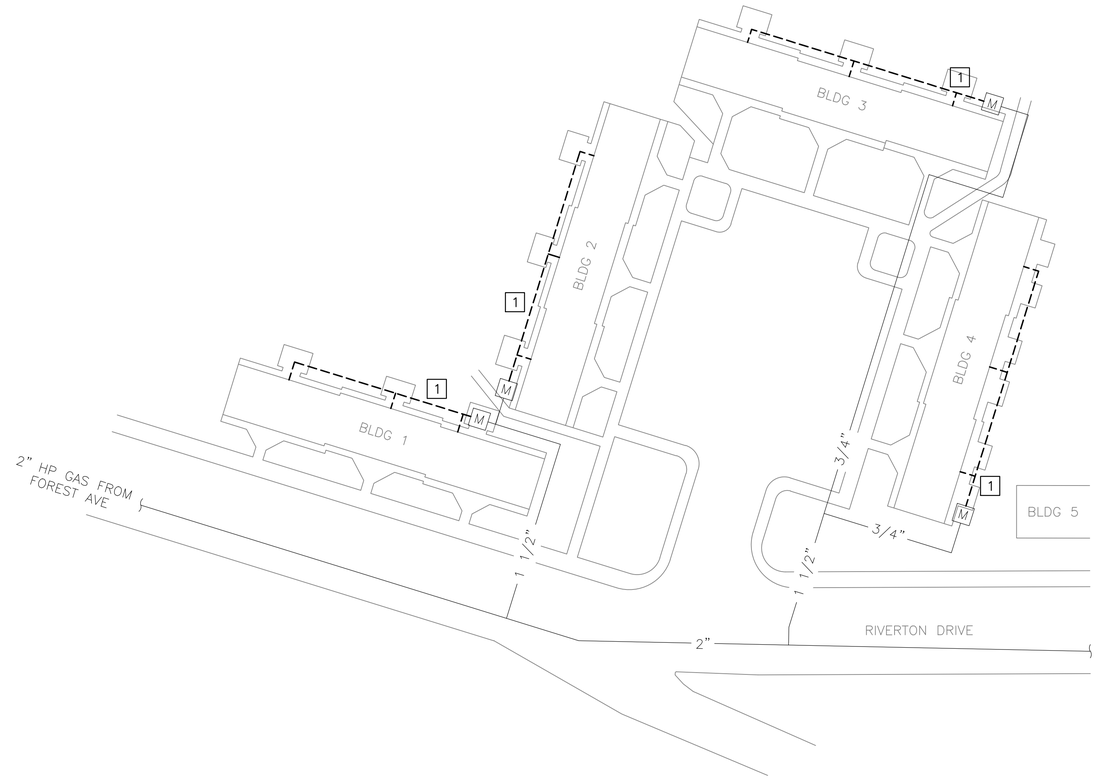
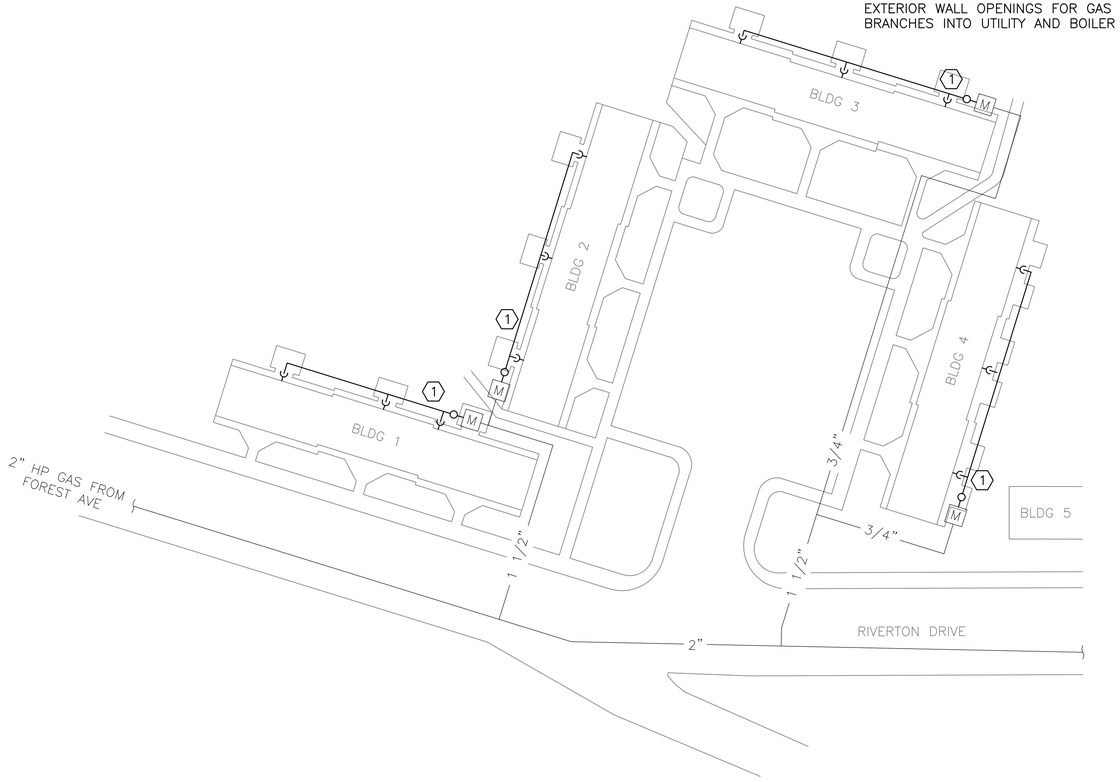
PROJECT NO. 218.011.001
SHEET 4 OF 18
DRAWING NO. M-001




## MECHANICAL SITE DEMOLITION PLAN

SCALE: 1" = 30'




## MECHANICAL SITE PLAN

SCALE: 1" = 30'

0 30' 60'
Scale: 1" = 30'-0"

NOTES:

1. SEE SHEET M-001 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.
2. SCOPE OF WORK REPRESENTED IS TYPICAL FOR BUILDINGS 1,2,3,4.
3. COORDINATE WITH UNITIL ON GAS METER AND REGULATOR REPLACEMENTS.
4. COMMUNICATE TO PHA AND SCHEDULE ANY REQUIRED GAS OUTAGES.
5. GAS SUPPLY PRESSURE TO BUILDING SHALL BE A MINIMUM OF 6-INCH W.C.

DEMOLITION KEYED NOTES:

[1] REMOVE ALL EXTERIOR NATURAL GAS PIPING DOWNSTREAM OF UNITIL METER. COLD PATCH OPENINGS IN PAVED WALKWAYS.

KEYED NOTES:

⟨1⟩ REPLACE ALL EXTERIOR NATURAL GAS PIPING DOWNSTREAM OF UNITIL METER PER NFPA 54 STANDARDS. ROUTE 2" PIPE MAIN ABOVEGROUND, ALONG ROOF SOFFIT SIMILAR TO OTHER RIVERTON BUILDINGS WITH GAS PIPE REPLACEMENTS. UTILIZE EXISTING EXTERIOR WALL OPENINGS FOR GAS BRANCHES INTO UTILITY AND BOILER ROOMS.

STATE OF MAINE
EMILY PINYARD
No. 12126
LICENSED PROFESSIONAL ENGINEER
9-8-15

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PORTLAND, MAINE

RIVERTON BOILER REPLACEMENTS
BUILDING NOs 1,2,3,4,7,9,11,20

MECHANICAL SITE PLANS



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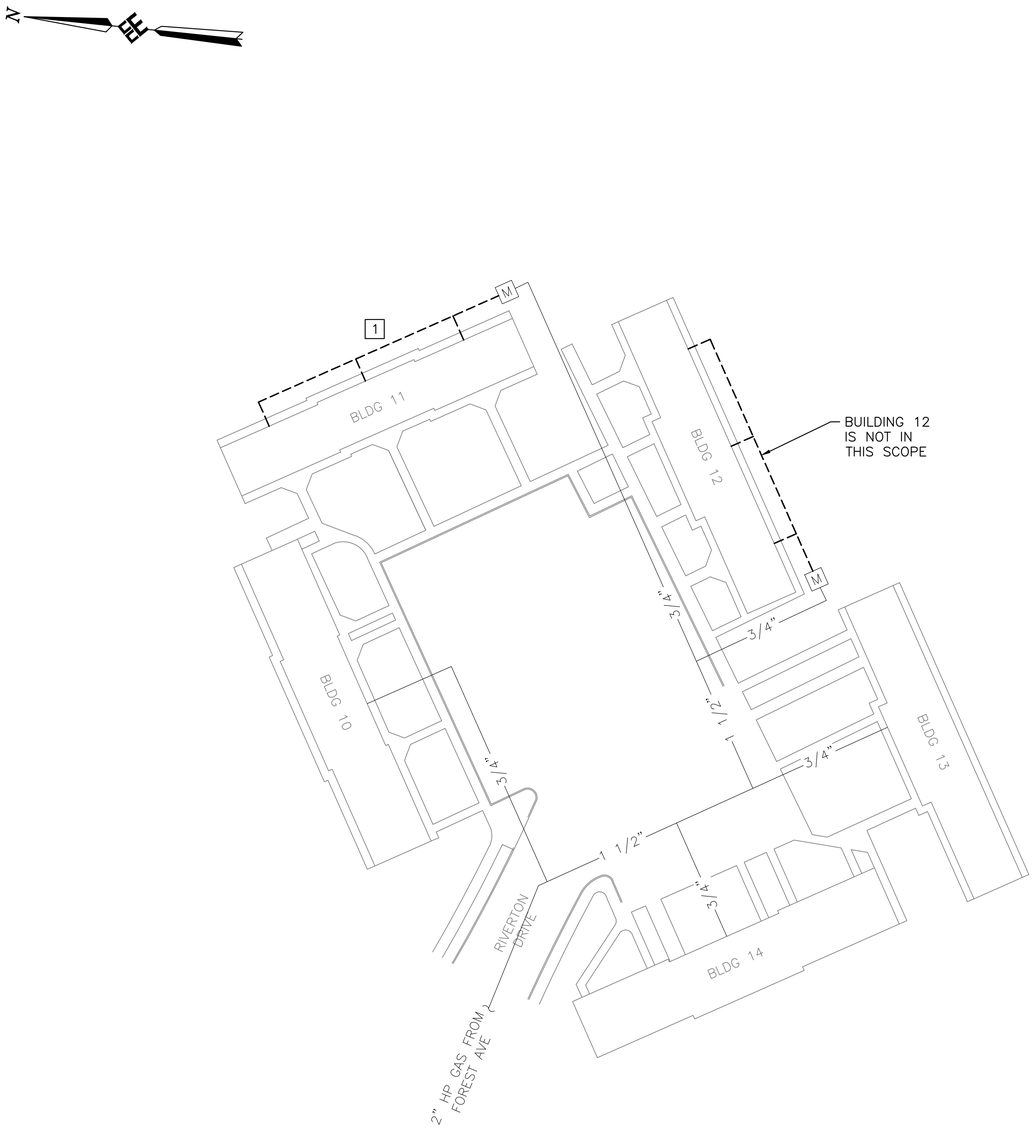
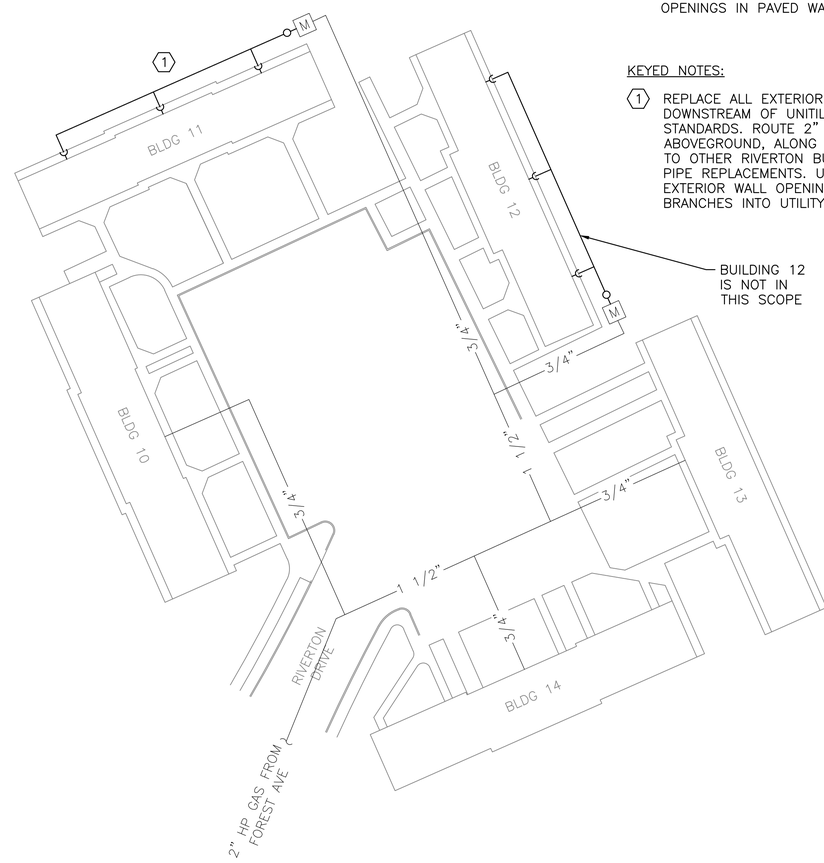
SHEET 5 OF 18

DRAWING NO. MS-101




## MECHANICAL SITE DEMOLITION PLAN

SCALE: 1" = 30'




## MECHANICAL SITE PLAN

SCALE: 1" = 30'

0 30' 60'
Scale: 1" = 30'-0"

NOTES:

1. SEE SHEET M-001 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.
2. SCOPE OF WORK REPRESENTED IS FOR BUILDING 11 ONLY.
3. COORDINATE WITH UNITIL ON GAS METER AND REGULATOR REPLACEMENTS.
4. COMMUNICATE TO PHA AND SCHEDULE ANY REQUIRED GAS OUTAGES.
5. GAS SUPPLY PRESSURE TO BUILDING SHALL BE A MINIMUM OF 6-INCH W.C.

DEMOLITION KEYED NOTES:

[1] REMOVE ALL EXTERIOR NATURAL GAS PIPING DOWNSTREAM OF UNITIL METER. COLD PATCH OPENINGS IN PAVED WALKWAYS.

KEYED NOTES:

(1) REPLACE ALL EXTERIOR NATURAL GAS PIPING DOWNSTREAM OF UNITIL METER PER NFPA 54 STANDARDS. ROUTE 2" PIPE MAIN ABOVEGROUND, ALONG ROOF SOFFIT SIMILAR TO OTHER RIVERTON BUILDINGS WITH GAS PIPE REPLACEMENTS. UTILIZE EXISTING EXTERIOR WALL OPENINGS FOR GAS BRANCHES INTO UTILITY AND BOILER ROOMS.

STATE OF MAINE
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MECHANICAL SITE PLANS



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PROJECT NO. 218.011.001

SHEET 6 OF 18

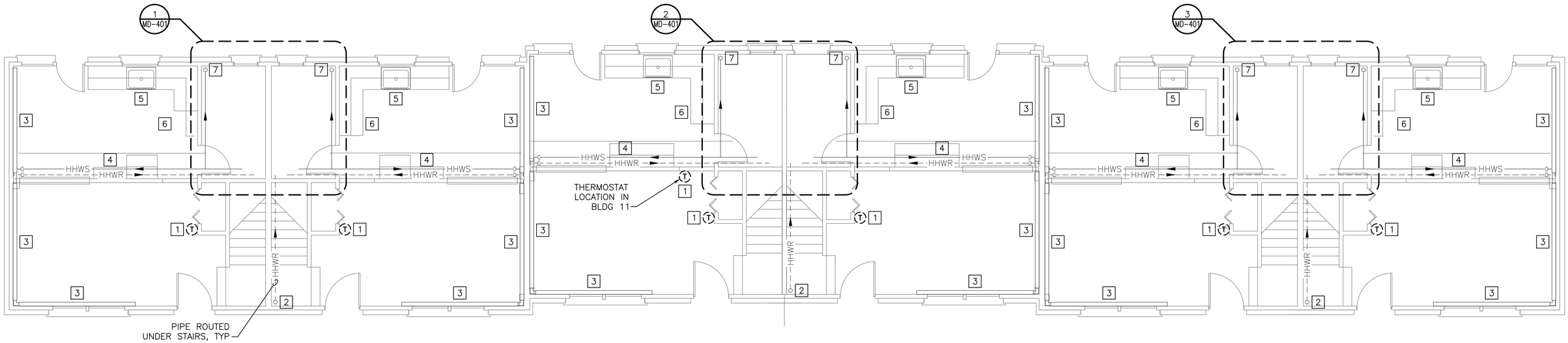
DRAWING NO. MS-102

NOTES:

1. SEE SHEET M-001 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.
2. SCOPE OF WORK REPRESENTED IS TYPICAL FOR BUILDINGS 1,2,3,4,7,9,11,20.
3. EXISTING HHWS&R MAINS SHOWN OUTSIDE OF UTILITY ROOMS ARE IN AN EXISTING SOFFIT AT THE CEILING.

DEMOLITION KEYED NOTES:

1. REMOVE THERMOSTAT AND LEAVE WIRING IN PLACE, IF COMPATIBLE WITH NEW CONTROLLER.
2. HHWR RISER FROM SECOND FLOOR TO REMAIN.
3. HOT WATER BASEBOARD RADIATOR TO REMAIN.
4. HHWS&R PIPES TO REMAIN WITHIN SOFFIT.
5. KITCHEN SINK TO REMAIN.
6. GAS STOVE TO REMAIN.
7. HHWS RISER TO SECOND FLOOR TO REMAIN.




## MECHANICAL DEMOLITION PLAN

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

PLANS REPRESENT A TYPICAL BUILDING CONFIGURATION. NOT ALL BUILDINGS ARE COMPLETELY IDENTICAL. FIELD VERIFY ALL CONDITIONS PRIOR TO PERFORMING ANY WORK.

PLAN NORTH

NOTE: TRUE NORTH VARIES FOR EACH BLDG

0 2' 4' 8'
Scale: 1/4" = 1'-0"

STATE OF MAINE
EMILY PINYARD
No.12126
LICENSED PROFESSIONAL ENGINEER
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PORTLAND HOUSING AUTHORITY
PORTLAND, MAINE

RIVERTON BOILER REPLACEMENTS
BUILDING NOs 1,2,3,4,7,9,11,20

MECHANICAL DEMOLITION PLAN

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PROJECT NO. 218.011.001

SHEET 7 OF 18

DRAWING NO. MD-101

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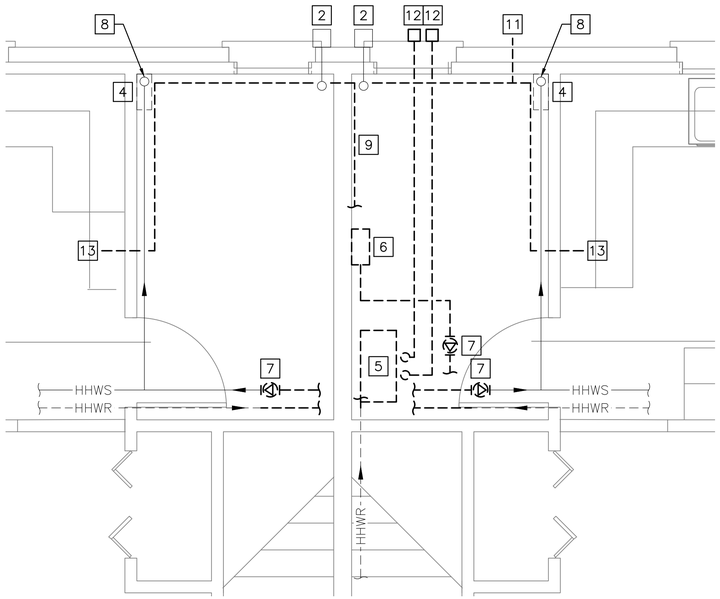
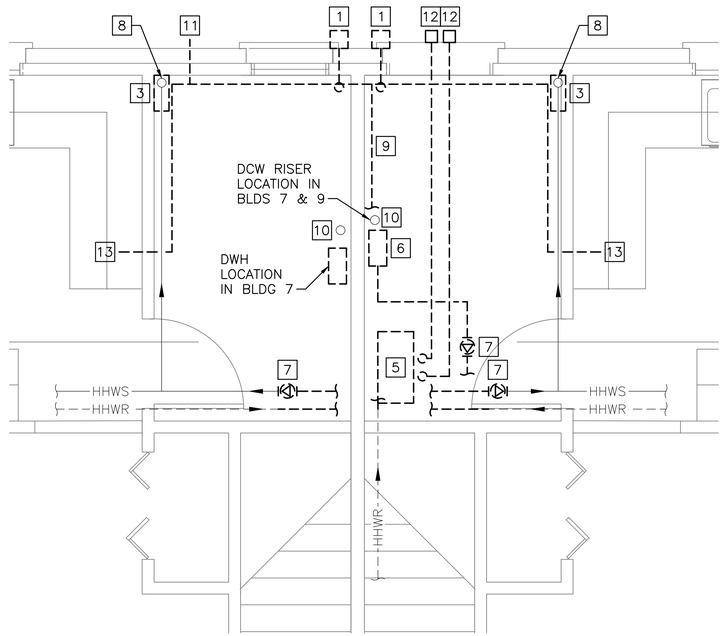
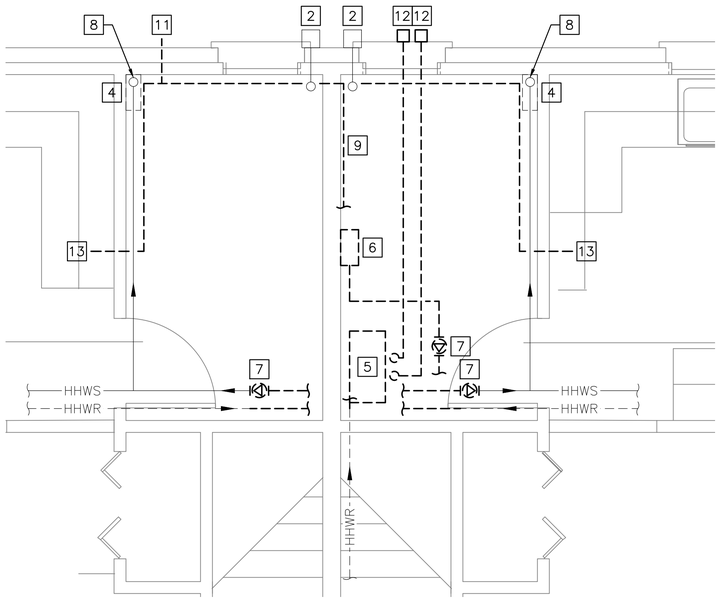



1 MD-401 PART PLAN
SCALE: 1/2" = 1'-0" REF. DWG. = MD-101




2 MD-401 PART PLAN
SCALE: 1/2" = 1'-0" REF. DWG. = MD-101




3 MD-401 PART PLAN
SCALE: 1/2" = 1'-0" REF. DWG. = MD-101

NOTES:

1. SEE SHEET M-001 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.
2. SCOPE OF WORK REPRESENTED IS TYPICAL FOR BUILDINGS 1,2,3,4,7,9,11,20.
3. INSPECT AND PRESSURE TEST ALL EXISTING TO REMAIN LOW PRESSURE NATURAL GAS PIPING. REPAIR ANY LEAKS AND REPLACE ANY DAMAGED OR CORRODED OR NFPA 54 NONCOMPLIANT SECTIONS OF PIPING. PAINT ALL NEW AND EXISTING TO REMAIN PIPING FOR CORROSION RESISTANCE.
4. FOR BIDDING PURPOSES, ASSUME COMPLETE REPLACEMENT OF INTERIOR NATURAL GAS PIPING AND PROVIDE OWNER CREDITS FOR ANY GAS PIPING THAT IS FOUND TO BE SUFFICIENT FOR RE-USE.

DEMOLITION KEYED NOTES:

1. REMOVE DRYER VENT AND WALL CAP.
2. DRYER VENT AND WALL CAP TO REMAIN.
3. REMOVE CLOTHES WASHER WATER HOOKUPS AND INDIRECT DRAIN BACK TO MAINS & CAP.
4. CLOTHES WASHER HOOKUPS TO REMAIN.
5. REMOVE BOILER AND ASSOCIATED BRANCH PIPING & CONTROLS. BOILER CONDENSATE DRAIN PIPE PENETRATES FLOOR SLAB. PATCH DRAIN PIPE OPENING WITH CONCRETE AFTER REMOVAL (APPROX 1"ø X 6" DEEP)
6. REMOVE TANKLESS DOMESTIC WATER HEATER AND ASSOCIATED BRANCH PIPING & CONTROLS.
7. REMOVE PUMP AND CONTROLS.
8. HHWS RISER UP TO SECOND FLOOR HW BASEBOARD TO REMAIN.
9. 3/4" NATURAL GAS SUPPLY PIPING TO BOILER TO BE REMOVED.
10. 2" DCW SERVICE AND BACKFLOW PREVENTER TO REMAIN.
11. 1" NATURAL GAS ENTRANCE. ACTUAL LOCATION VARIES – CONFIRM IN FIELD.
12. REMOVE BOILER FLUE AND COMBUSTION AIR INTAKE & WALL CAPS.
13. 3/4" GAS SUPPLY PIPING TO STOVE TO BE REMOVED.

PLANS REPRESENT A TYPICAL BUILDING CONFIGURATION. NOT ALL BUILDINGS ARE COMPLETELY IDENTICAL. FIELD VERIFY ALL CONDITIONS PRIOR TO PERFORMING ANY WORK.

PLAN NORTH

NOTE: TRUE NORTH VARIES FOR EACH BLDG

0 1' 2' 4'
Scale: 1/2" = 1'-0"

STATE OF MAINE
EMILY PINYARD No. 12126
LICENSED PROFESSIONAL ENGINEER
9-8-15

| REV | DESCRIPTION | DWN | APP | DATE |
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PORTLAND HOUSING AUTHORITY
PORTLAND, MAINE

RIVERTON BOILER REPLACEMENTS
BUILDING NOs 1,2,3,4,7,9,11,20

MECHANICAL DEMOLITION PART PLANS

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PROJECT NO. 218.011.001

SHEET 8 OF 18

DRAWING NO. MD-401

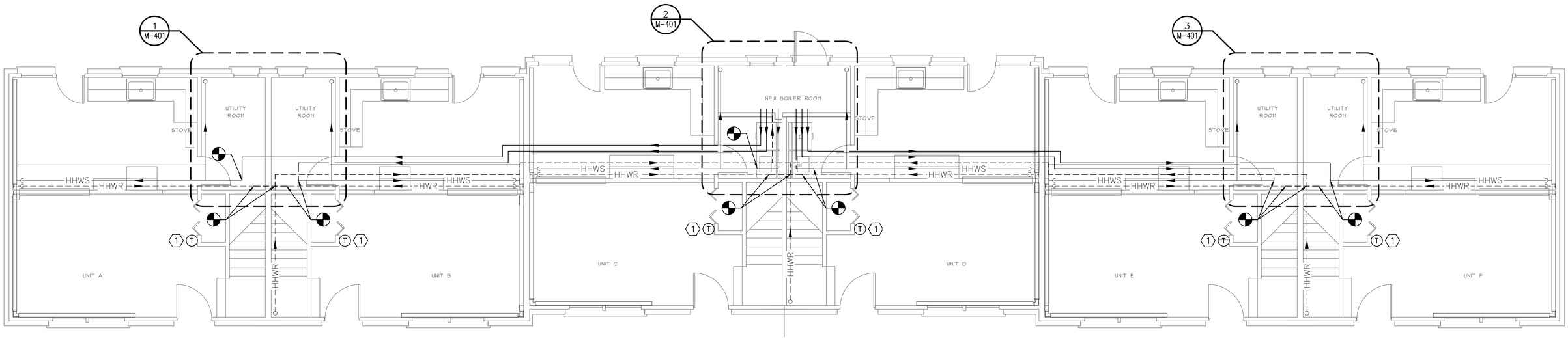
x:\218 portland housing authority\218.011.001 - riverton boiler replacements\Drawings\Phase 1\Sheets\MD-401.dwg - 9/9/2015 8:50 AM - CRAIG SMITH

NOTES:

1. SEE SHEET M-001 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.
2. SCOPE OF WORK REPRESENTED IS TYPICAL FOR BUILDINGS 1,2,3,47,9,11,20.
3. CONSTRUCT NEW SOFFIT TO CONTAIN NEW HOT WATER PIPING OUTSIDE OF UTILITY SPACES OR ROUTE NEW PIPING THROUGH EXISTING SOFFIT IF FEASIBLE.

KEYED NOTES:

(1) PROVIDE NEW THERMOSTAT TIED TO NEW ZONE CONTROLLER.




# MECHANICAL FIRST FLOOR PLAN – HEATING HOT WATER

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

PLANS REPRESENT A TYPICAL BUILDING CONFIGURATION. NOT ALL BUILDINGS ARE COMPLETELY IDENTICAL. FIELD VERIFY ALL CONDITIONS PRIOR TO PERFORMING ANY WORK.

PLAN NORTH

NOTE: TRUE NORTH VARIES FOR EACH BLDG

0 2' 4' 8'
Scale: 1/4" = 1'-0"

STATE OF MAINE
EMILY PINYARD
No. 12126
A LICENSED PROFESSIONAL ENGINEER
9-8-15

| REV | DESCRIPTION | DWN | APP | DATE |
|---|---|---|---|---|
| 1 | ISSUED FOR CONSTRUCTION | CSS | ERP | 9-8-15 |
| 0 | ISSUED FOR BID | CSS | ERP | 4-8-15 |

PORTLAND HOUSING AUTHORITY
PORTLAND, MAINE

RIVERTON BOILER REPLACEMENTS
BUILDING NOs 1,2,3,4,7,9,11,20

MECHANICAL FIRST FLOOR PLAN - HEATING HOT WATER



Colby Company engineering
47A York Street
Portland, Maine 04101
207.553.7753
colbycoengineering.com

SIZE: ANSI D
DATE: 9-8-15
DES BY: ERP
DWN BY: CSS
CKD BY: MIF

PROJECT NO. 218.011.001

SHEET 9 OF 18

DRAWING NO. M-101

NOTES:

1. SEE SHEET M–001 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.
2. SCOPE OF WORK REPRESENTED IS TYPICAL FOR BUILDINGS 1,2,3,4,7,9,11,20.

KEYED NOTES:

(1) EXISTING 2" DCW ENTRANCE WITH VERTICAL BACKFLOW PREVENTER TO REMAIN.

(2) NEW WASHER HOOKUPS – DCW, DHW AND INDIRECT DRAIN & VENT.

(3) NEW DRYER VENT WALL CAP.

(4) NEW HARD DUCTED DRYER VENT TO EXTEND THROUGH NEW BOILER ROOM WALL. CONNECT FLEXIBLE DRYER VENT TO END OF HARD DUCT INSIDE TENANT UTILITY ROOM.

(5) NEW BOILER ROOM SPRINKLER HEAD, K–5.6 ORIFICE, 200 DEG F TEMPERATURE RATED. PROVIDE ALARM BELL ON OUTSIDE OF BOILER ROOM.

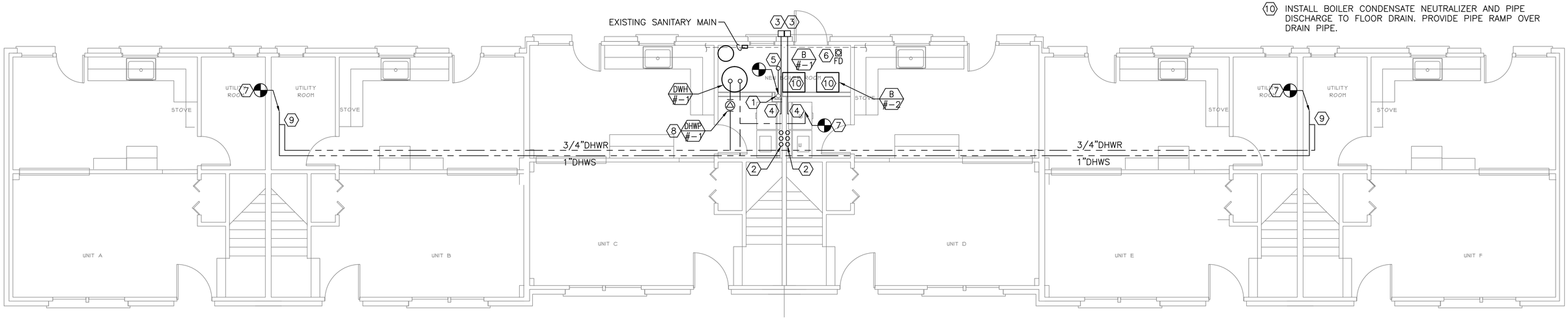
(6) NEW BOILER ROOM FLOOR DRAIN SHALL TIE INTO EXISTING SANITARY MAIN BELOW SLAB. CUT AND PATCH CONCRETE SLAB.

(7) CONNECT NEW DHWS MAINS TO EXISTING–TO–REMAIN DHWS MAINS.

(8) DHWR PUMP SHOWN OUTSIDE OF BOILER ROOM FOR CLARITY BUT WILL BE INSTALLED INSIDE BOILER ROOM.

(9) PROVIDE BALANCING VALVE AT END OF DHWR LINE.

(10) INSTALL BOILER CONDENSATE NEUTRALIZER AND PIPE DISCHARGE TO FLOOR DRAIN. PROVIDE PIPE RAMP OVER DRAIN PIPE.




## MECHANICAL FIRST FLOOR PLAN – PLUMBING

SCALE: 1/4" = 1'–0"

PLANS REPRESENT A TYPICAL BUILDING CONFIGURATION. NOT ALL BUILDINGS ARE COMPLETELY IDENTICAL. FIELD VERIFY ALL CONDITIONS PRIOR TO PERFORMING ANY WORK.

PLAN NORTH

NOTE: TRUE NORTH VARIES FOR EACH BLDG

0 2' 4' 8'
Scale: 1/4" = 1'–0"

STATE OF MAINE
EMILY PINYARD
No. 12126
LICENSED PROFESSIONAL ENGINEER
9-8-15

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PORTLAND HOUSING AUTHORITY
PORTLAND, MAINE

RIVERTON BOILER REPLACEMENTS
BUILDING NOs 1,2,3,4,7,9,11,20

MECHANICAL FIRST FLOOR PLAN - PLUMBING



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SIZE: ANSI D
DATE: 9-8-15
DES BY: ERP
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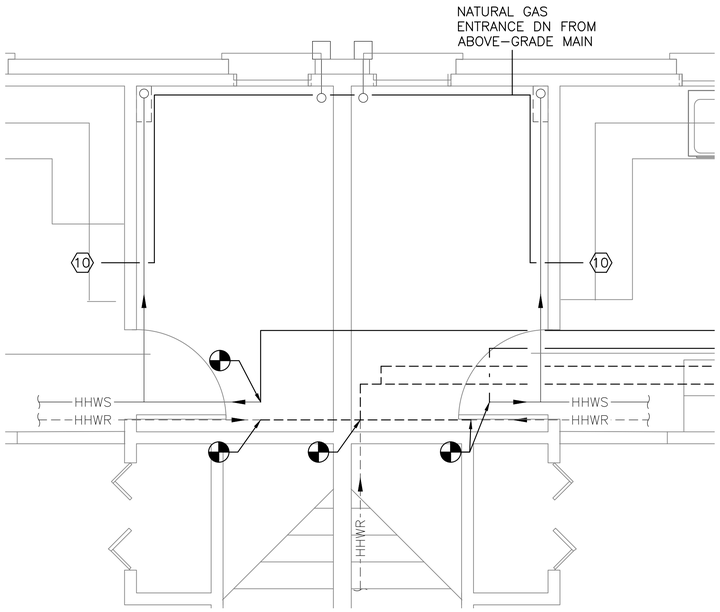
CKD BY: MIF

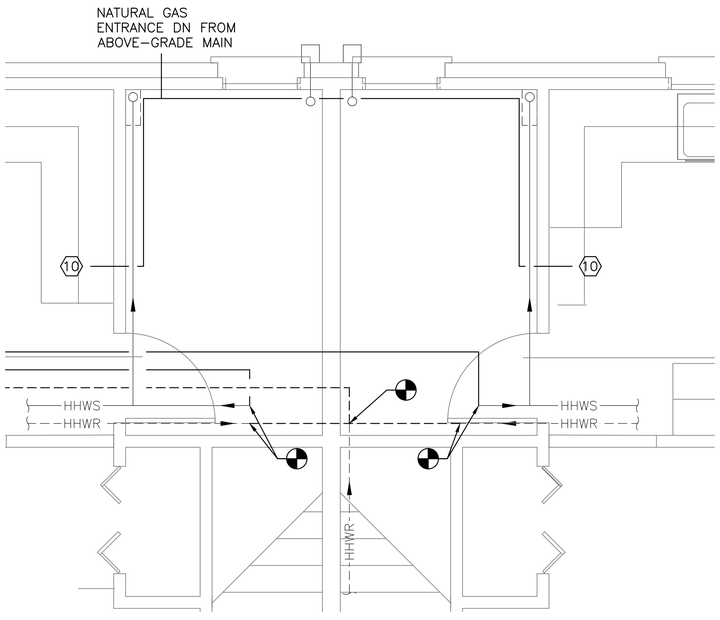
PROJECT NO. 218.011.001

SHEET 10 OF 18

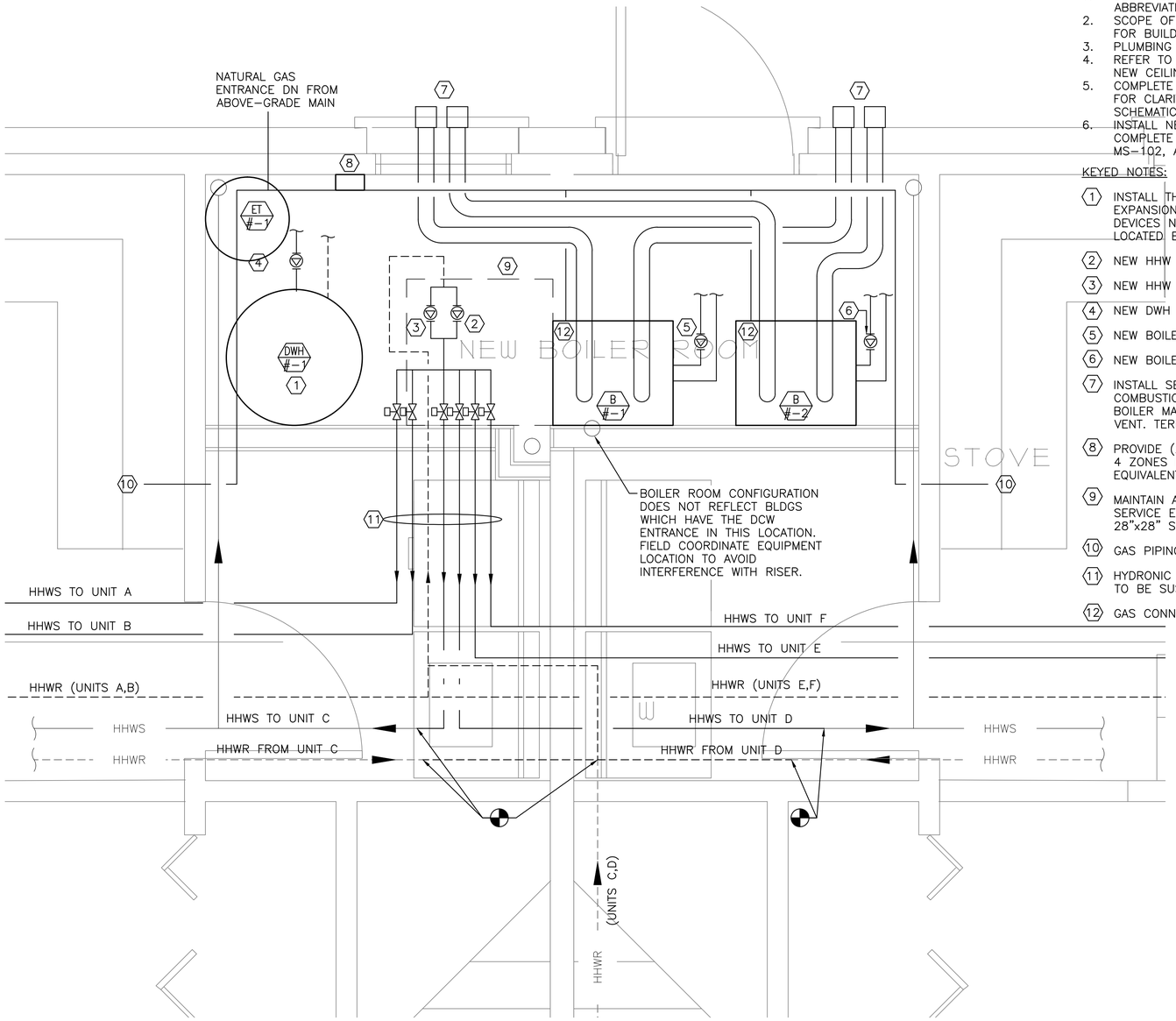
DRAWING NO. M-102




1 M-401 PART PLAN
SCALE: 1/2" = 1'-0" REF. DWG. = MD-101




3 M-401 PART PLAN
SCALE: 1/2" = 1'-0" REF. DWG. = MD-101




2 M-401 PART PLAN
SCALE: 1" = 1'-0" REF. DWG. = MD-101

NOTES:

1. SEE SHEET M-001 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.
2. SCOPE OF WORK REPRESENTED IS TYPICAL FOR BUILDINGS 1,2,3,4,7,9,11,20.
3. PLUMBING WORK IS SHOWN ON M-102.
4. REFER TO ARCHITECTURAL DRAWINGS FOR NEW CEILING DETAILS.
5. COMPLETE HYDRONIC PIPING IS NOT SHOWN FOR CLARITY. SEE M-502 FOR PIPE SCHEMATIC.
6. INSTALL NEW GAS PIPING AS NEEDED FOR A COMPLETE INSTALLATION. REFER TO MS-101, MS-102, AND MD-401.

KEYED NOTES:

(1) INSTALL THERMOSTATIC MIXING VALVE AND EXPANSION TANK FOR DHW (ET-#-2). DEVICES NOT SHOWN FOR CLARITY, TO BE LOCATED BY CONTRACTOR IN FIELD.

(2) NEW HHW CIRCULATING PUMP, HWP-#-1.

(3) NEW HHW CIRCULATING PUMP, HWP-#-2.

(4) NEW DWH CIRCULATING PUMP, HWP-#-3.

(5) NEW BOILER CIRCULATING PUMP, BP-#-1.

(6) NEW BOILER CIRCULATING PUMP, BP-#-2.

(7) INSTALL SEPARATE 3-INCH BOILER COMBUSTION AIR INTAKES AND VENTS OR A BOILER MANUFACTURER-SUPPLIED CONCENTRIC VENT. TERMINATE AT WALL WITH CAP.

(8) PROVIDE (2) TEKMAR ZONE CONTROL PANELS, 4 ZONES EACH. TEKMAR 313 CONTROLLER OR EQUIVALENT.

(9) MAINTAIN ADEQUATE CLEARANCE TO DCW SERVICE ENTRANCE, BFP AND VALVES. 28"x28" SHOWN.

(10) GAS PIPING TO EXISTING GAS RANGES.

(11) HYDRONIC PIPING, ZONE VALVES, AND PUMPS TO BE SUSPENDED FROM CEILING.

(12) GAS CONNECTION TO NEW BOILER.

PLANS REPRESENT A TYPICAL BUILDING CONFIGURATION. NOT ALL BUILDINGS ARE COMPLETELY IDENTICAL. FIELD VERIFY ALL CONDITIONS PRIOR TO PERFORMING ANY WORK.

PLAN NORTH

NOTE: TRUE NORTH VARIES FOR EACH BLDG

0 1' 2' 4'
Scale: 1/2" = 1'-0"

STATE OF MAINE
EMILY PINYARD No.12126
LICENSED PROFESSIONAL ENGINEER
9-8-15

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PORTLAND HOUSING AUTHORITY
PORTLAND, MAINE

RIVERTON BOILER REPLACEMENTS
BUILDING NOs 1,2,3,4,7,9,11,20

MECHANICAL PART PLANS



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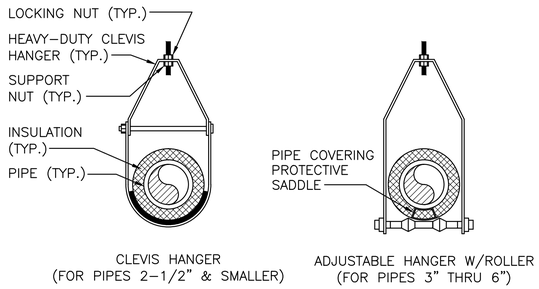
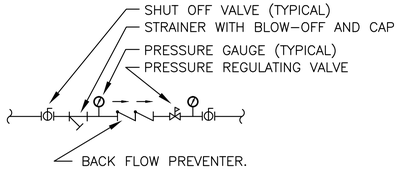
PROJECT NO. 218.011.001
SHEET 11 OF 18

DRAWING NO. M-401




## PIPE HANGER ATTACHMENTS DETAIL

SCALE: NTS



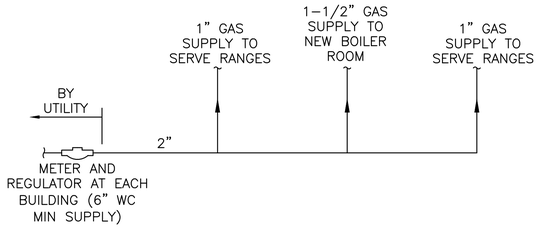

- USE INTERMEDIATE VENT (ASSE 1012) ON NON HAZARDOUS SYSTEMS WITH 1/2" AND 3/4" FILL PIPING
- USE DOUBLE CHECK (ASSE 1015) ON NON HAZARDOUS SYSTEMS WITH 1" AND LARGER FILL PIPING

## TYPICAL MAKE–UP WATER CONNECTION DETAIL

NOT TO SCALE

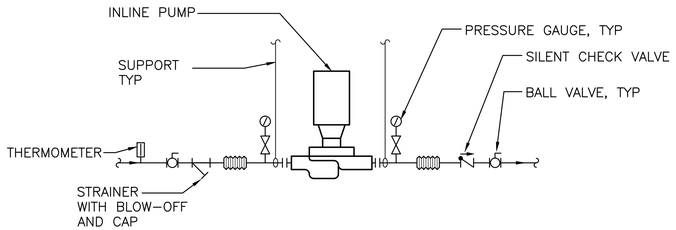
NOTES:

1. SEE SHEET M–001 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.
2. SCOPE OF WORK REPRESENTED IS TYPICAL FOR BUILDINGS 1,2,3,4,7,9,11,20.




## TYPICAL BUILDING GAS DIAGRAM

NOT TO SCALE

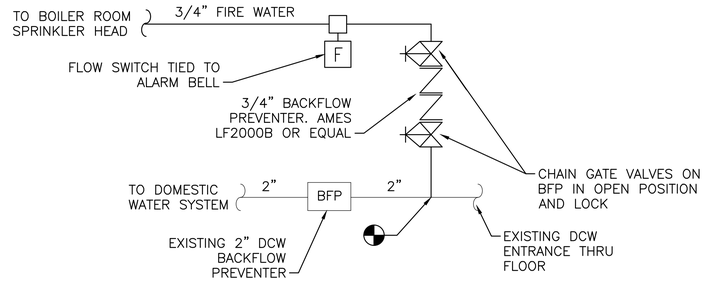



NOTES:

1. VALVES SHALL BE SAME SIZE AS PIPE.
2. PROVIDE SPRING VIBRATION ISOLATORS FOR PUMP & PIPE WITHIN 20 FT. OF PUMP.

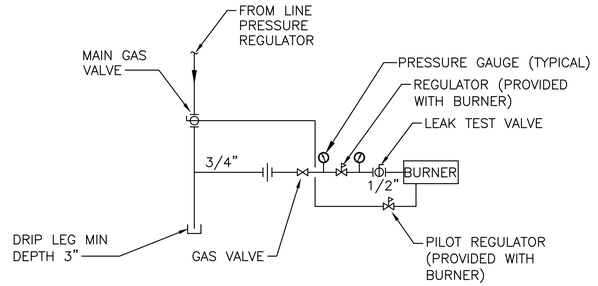
## INLINE PUMP PIPING SCHEMATIC

SCALE: NTS



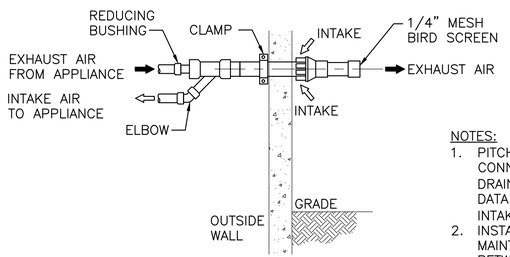

## FIRE/DOMESTIC WATER RISER DIAGRAM – LIMITED AREA

SCALE: NTS




## TYPICAL GAS TRAIN ARRANGEMENT

NOT TO SCALE




NOTES:

1. PITCH 1/4" PER FOOT TOWARDS BOILER. CONNECT TO INTEGRAL CONDENSATE DRAIN. CONFIRM WITH MANUFACTURER'S DATA FOR EXACT DETAILS ON APPLIANCE INTAKE/EXHAUST VENTING REQUIREMENTS.
2. INSTALL BOILER VENTING PER NFPA 54. MAINTAIN MINIMUM NFPA 54 CLEARANCES BETWEEN VENT TERMINATION AND BUILDING OPENINGS.

## CONCENTRIC WALL TERMINATION DETAIL

NOT TO SCALE

STATE OF MAINE
EMILY PINYARD No. 12126
LICENSED PROFESSIONAL ENGINEER
9-8-15

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|---|---|---|---|---|
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PORTLAND HOUSING AUTHORITY
PORTLAND, MAINE

RIVERTON BOILER REPLACEMENTS
BUILDING NOs 1,2,3,4,7,9,11,20

MECHANICAL DETAILS



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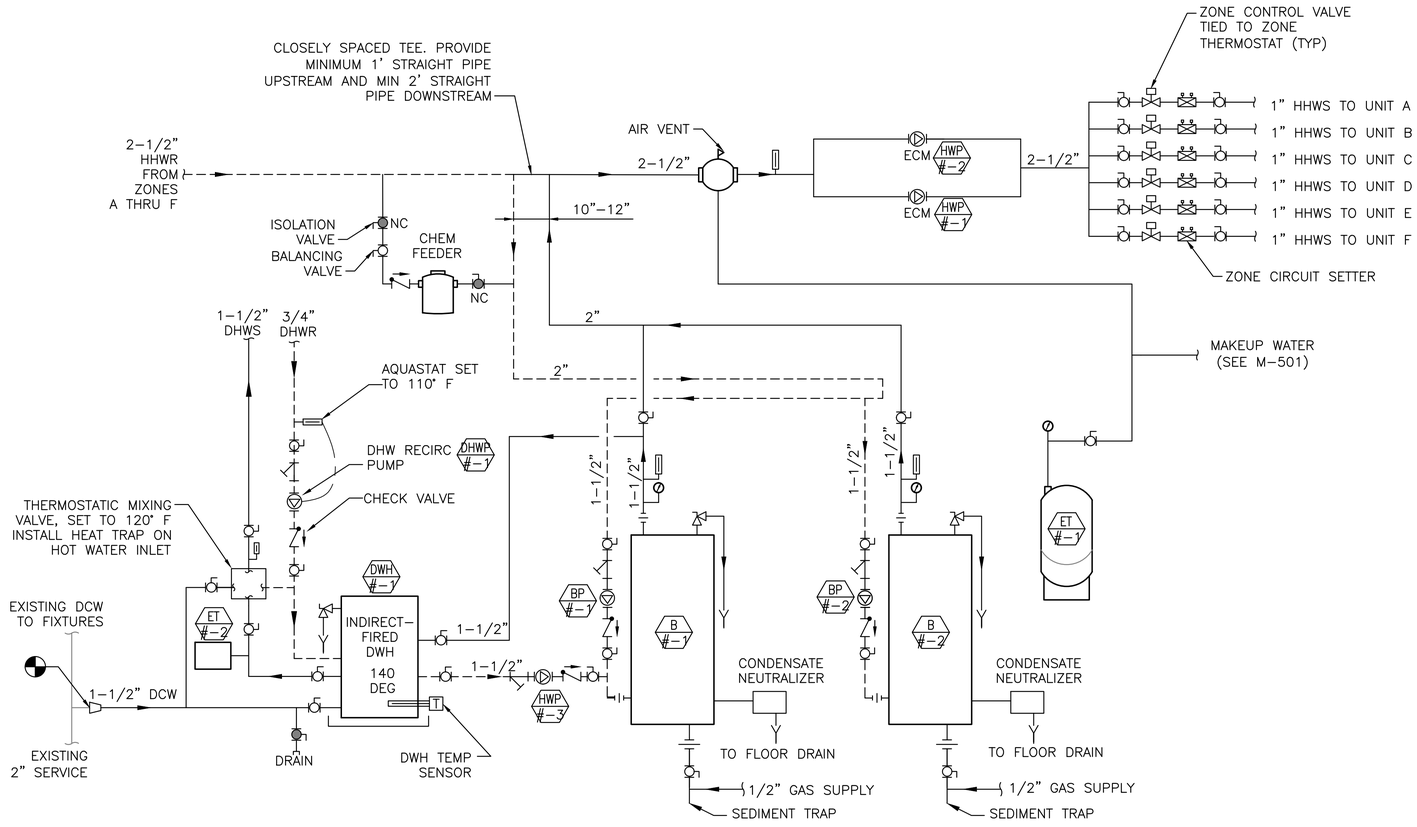
PROJECT NO. 218.011.001

SHEET 12 OF 18

DRAWING NO. M-501




## HEATING & DOMESTIC HOT WATER SCHEMATIC

SCALE: NTS

NOTES:

1. SEE SHEET M-001 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.
2. SCOPE OF WORK REPRESENTED IS TYPICAL FOR BUILDINGS 1,2,3,4,7,9,11,20.
3. CONTRACTOR SHALL FLUSH ALL EXISTING HYDRONIC PIPING AND PROVIDE WATER TREATMENT PER BOILER MANUFACTURER'S INSTRUCTIONS.

BUILDING MANAGEMENT SYSTEM:

1. CONTROLLERS SHALL BE STAND-ALONE AND INSTALLED IN THE BOILER ROOMS.
2. ALARMS SHALL BE LOCAL.

HEATING HOT WATER SYSTEM SEQUENCE OF OPERATIONS

1. WHEN OA TEMPERATURE IS BELOW 68 DEG F AND THERE IS A CALL FOR HEATING AT ONE OR MORE ZONE THERMOSTATS, THE LEAD SPACE HEATING PUMP SHALL BE ENERGIZED AND THE ZONE THERMOSTAT(S) CALLING FOR HEAT SHALL BE OPENED.
2. BOILERS SHALL CASCADE ON AND OFF IN ORDER TO MAINTAIN SUPPLY WATER SETPOINT. BOILER SUPPLY WATER SETPOINT SHALL VARY BASED ON AN OA TEMPERATURE RESET SCHEDULE PROGRAMMED INTO THE BOILER CONTROLLERS. SEE BOILER SPECIFICATION 235216 FOR DETAILS.
3. WHEN THE SPACE TEMPERATURE IS SATISFIED IN A UNIT, THE ASSOCIATED ZONE VALVE SHALL CLOSE.

DOMESTIC HOT WATER SYSTEM SEQUENCE OF OPERATIONS

1. A DIRECT ACTING AQUASTAT SET AT 140 DEGREES F AT THE INDIRECT WATER HEATER STARTS THE BOILER WATER CIRCULATING PUMP SERVING THE INDIRECT HEATER (HWP-#-3) ON A CALL FOR HEATING. THE BOILER TEMPERATURE GOES INTO DOMESTIC PRIORITY WHEN THE AQUASTAT IS CALLING FOR HEATING.
2. THE DOMESTIC HOT WATER CIRCULATION PUMP (DHWP-#-1) SHALL BE ENERGIZED WHEN THE DOMESTIC WATER RETURN PIPE TEMPERATURE REACHES 110 DEG F (ADJUSTABLE) AND SHALL DE-ENERGIZE WHEN THE DHWR TEMPERATURE REACHES 115 DEG F (ADJUSTABLE).

STATE OF MAINE
EMILY PINYARD
No.12126
REGISTERED PROFESSIONAL ENGINEER
9-8-15

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PORTLAND HOUSING AUTHORITY
PORTLAND, MAINE

RIVERTON BOILER REPLACEMENTS
BUILDING NOs 1,2,3,4,7,9,11,20

MECHANICAL SCHEMATICS



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colbycoengineering.com

| | |
|---|---|
| SIZE: | ANSI D |
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| CKD BY: | MIF |

PROJECT NO. 218.011.001

SHEET 13 OF 18

DRAWING NO. M-502

## WALL–MOUNTED CONDENSING BOILER SCHEDULE

| UNIT NO | BLDG NOs (#) | SERVICE | FUEL | INPUT (MBH) | HEATING CAPACITY (MBH) | LWT (°F) | DELTA T (°F) | AFUE (%) | VENT CONNECTION (IN/OUT) | SUPP/RET CONN | GAS CONNECTION | MANUFACTURER AND MODEL ⟨1⟩ | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B–#–1 | 1,2,3,4,7,9,11,20 | HHW/DHW | NAT GAS | 199 | 185 | 160 | 20 | 95 | 3" | 1 1/2" | 1/2" | LOCHINVAR KNIGHT WHN199 | 1,2 |
| B–#–2 | 1,2,3,4,7,9,11,20 | HHW/DHW | NAT GAS | 199 | 185 | 160 | 20 | 95 | 3" | 1 1/2" | 1/2" | LOCHINVAR KNIGHT WHN199 | 1,2 |

NOTES:
1. PROVIDE MANUFACTURER'S CONDENSATE NEUTRALIZER.
2. PROVIDE MANUFACTURER'S BACNET COMPATIBLE CONTROLLER.

## EXPANSION TANK SCHEDULE

| UNIT NO | BLDG NOs (#) | SERVICE | TYPE | MIN PRESS (PSIG) | MAX OPER PRESS (PSIG) | TANK VOL (GALS) | TANK ACCEPT VOL (GALS) | DIA (IN) | HEIGHT (IN) | SHIP WEIGHT (LBS) | MANUFACTURER AND MODEL ⟨1⟩ | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ET–#–1 | 1,2,3,4,7,9,11,20 | HHW | BLADDER | 40 | 150 | 15 | 10 | 16 | 24 | 64 | WATTS DETA–30 | 1 |
| ET–#–2 | 1,2,3,4,7,9,11,20 | DHW | BLADDER | 40 | 150 | 3.5 | 2.1 | 10 | 14 | 22 | WATTS DETA–5 | |

NOTES:
1. PROVIDE 4–INCH HOUSEKEEPING PAD FOR EXPANSION TANK.

## INDIRECT–FIRED DOMESTIC WATER HEATER SCHEDULE

| UNIT NO | BLDG NOs (#) | TYPE | TOTAL STORAGE (GAL) | 1ST HR RECOVERY (GPH) | BOILER WATER FLOW RATE (GPM) | BOILER FLUID | BOILER EWT (°F) | HEAT EX PD (FT) | STORAGE TEMP (°F) | MANUFACTURER AND MODEL ⟨1⟩ | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DWH–#–1 | 1,2,3,4,7,9,11,20 | STAINLESS STEEL | 80 | 330 | 12 | WATER | 180 | 9.1 | 140 | HTP SUPERSTOR ULTRA SSU–80 | 1 |

NOTES:
1. PROVIDE 4–INCH HOUSEKEEPING PAD FOR WATER HEATER.

## CIRCULATOR PUMP SCHEDULE

| UNIT NO | BLDG NOs (#) | SERVICE | TYPE | FLUID | GPM | HEAD (FT) | MOTOR SIZE | V/PH/HZ | MANUFACTURER AND MODEL ⟨1⟩ | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| HWP–#–1 | 1,2,3,4,7,9,11,20 | HHW | INLINE CIRCULATOR | WATER | 30 | 25 | 1/2 HP | 230/1/60 | B&G ECOCIRC XL 55–45 | 1 |
| HWP–#–2 | 1,2,3,4,7,9,11,20 | HHW | INLINE CIRCULATOR | WATER | 30 | 25 | 1/2 HP | 230/1/60 | B&G ECOCIRC XL 55–45 | 1 |
| HWP–#–3 | 1,2,3,4,7,9,11,20 | DWH | INLINE CIRCULATOR | WATER | 12 | 15 | 270 WATTS | 120/1/60 | B&G NRF–45 #103404 | 2 |
| DHWP–#–1 | 1,2,3,4,7,9,11,20 | DHWR | INLINE CIRCULATOR | WATER | 6 | 8 | 125 WATTS | 120/1/60 | B&G NBF–33 #103351LF | 3 |
| BP–#–1 | 1,2,3,4,7,9,11,20 | B–1 | INLINE CIRCULATOR | WATER | 20 | 50 | | 120/1/60 | GRUNDFOS UPS–26–99FC | 4 |
| BP–#–2 | 1,2,3,4,7,9,11,20 | B–2 | INLINE CIRCULATOR | WATER | 20 | 50 | | 120/1/60 | GRUNDFOS UPS–26–99FC | 4 |

NOTES:
1. PUMP SHALL HAVE ECM DRIVE.
2. PUMP SHALL HAVE A 3–SPEED MOTOR.
3. PUMP SHALL BE BRONZE AND LISTED FOR POTABLE WATER.
4. PUMP SHALL BE SUPPLIED BY BOILER MANUFACTURER.

## AIR SEPARATOR SCHEDULE

| UNIT NO | BLDG NOs (#) | SERVICE | SIZE (IN) | FLOW (GPM) | MANUFACTURER AND MODEL ⟨1⟩ | NOTES |
|---|---|---|---|---|---|---|
| AS–#–1 | 1,2,3,4,7,9,11,20 | HHW | 2–1/2 | 30 | B&G IAS–2–1/2 | – |

NOTES:
1.

NOTES:

1. SEE SHEET M–001 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.
2. SCOPE OF WORK REPRESENTED IS TYPICAL FOR BUILDINGS 1,2,3,4,7,9,11,20.

## KEYED NOTE:

⟨1⟩ MANUFACTURERS NAME AND MODEL NUMBER ARE USED FOR DESCRIPTIVE PURPOSES ONLY AND ARE INTENDED TO INDICATE THE STANDARD OF MATERIAL OR ARTICLES REQUIRED. DESIGN IS PREDICATED AROUND LISTED MANUFACTURERS AS NOTED ON SCHEDULES AND IS NOT INTENDED TO LIMIT THE CONTRACTOR TO ONE MANUFACTURER.

STATE OF MAINE
EMILY PINYARD
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LICENSED
PROFESSIONAL ENGINEER
9-8-15

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PORTLAND HOUSING AUTHORITY
PORTLAND, MAINE

RIVERTON BOILER REPLACEMENTS
BUILDING NOs 1,2,3,4,7,9,11,20

MECHANICAL SCHEDULES



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SIZE: ANSI D
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PROJECT NO. 218.011.001

SHEET 14 OF 18

DRAWING NO. M-601

## LEGEND

- 60 □ (4) — NON-FUSED SAFETY SWITCH; NEMA ENCLOSURE; AMPERE RATING
- (4) F 60AS 40AF — FUSED SAFETY SWITCH, TOP NUMBER INDICATES SWITCH AMPERE RATING, LOWER NUMBER INDICATES FUSE RATING; NEMA ENCLOSURE
- E — DUPLEX RECEPTACLE, NEMA 5-20R; E – INSTALLED ON EMERGENCY CIRCUIT; IG – ISOLATED GROUND; S – SWITCHED RECEPTACLE
- WP — GFCI DUPLEX RECEPTACLE, NEMA 5-20R; WEATHER PROOF
- POWER RECEPTACLE, 240 VOLT NEMA CONFIGURATION AS NOTED
- PANELBOARD, NORMAL POWER
- J — JUNCTION BOX
- M OL — MANUAL MOTOR STARTER, TOGGLE OPERATED, SINGLE PHASE. 1,2 OR 3 POLE AS REQUIRED; OVERLOAD PROTECTION
- DOWN LIGHT
- HOME RUN
- $S_a$ — SINGLE POLE TOGGLE SWITCH; INDICATES CONTROLLED FIXTURE
- $S_3$ — 3-WAY TOGGLE SWITCH
- TEL — TELEPHONE SERVICE ENTRANCE CABINET
- P — SMOKE DETECTOR. CEILING MOUNTED; A – AUXILIARY CONTACT; AS – AIR SAMPLING; P – PHOTOELECTRIC SMOKE; E – WIRED FOR ELEVATOR RECALL; BT – BEAM TRANSMITTER; BR – BEAM RECEIVER
- CO — GAS DETECTOR; CO – CARBON MONOXIDE; CO2 – CARBON DIOXIDE; NO2 – NITROGEN DIOXIDE

## LINE TYPES

- EXISTING
- NEW
- DEMOLITION
- MATCHLINE
- PART PLAN OUTLINE

## ABBREVIATIONS

| | |
|---|---|
| AMP | AMPERE |
| AFF | ABOVE FINISHED FLOOR |
| AFG | ABOVE FINISHED GRADE |
| AHJ | AUTHORITY HAVING JURISDICTION |
| AIC | AMPERE INTERRUPTING CAPACITY |
| AWG | AMERICAN WIRE GAUGE |
| BFG | BELOW FINISHED GRADE |
| BLDG | BUILDING |
| BOS | BOTTOM OF STEEL |
| C | CONDUIT |
| CATV | CABLE TELEVISION |
| CB | CIRCUIT BREAKER |
| CCTV | CLOSED CIRCUIT TELEVISION |
| CPT | CONTROL POWER TRANSFORMER |
| CT | CURRENT TRANSFORMER |
| CU | COPPER |
| DACT | DIGITAL ALARM COMMUNICATOR TRANSMITTER |
| DB | DIRECT BURIED |
| DISC | DISCONNECT |
| DN | DOWN |
| EMT | ELECTRICAL METALLIC TUBING |
| EWC | ELECTRIC WATER COOLER |
| EWH | ELECTRIC WATER HEATER |
| EQP | EQUIPMENT |
| EXIST | EXISTING |
| FAA | FIRE ALARM ANNUNCIATOR |
| FACP | FIRE ALARM CONTROL PANEL |
| FBO | FURNISHED BY OTHERS |
| FLR | FLOOR |
| FWE | FURNISHED WITH EQUIPMENT |
| FU | FUSE |
| G | GROUND |
| GEN | GENERATOR |
| GFCI | GROUND FAULT CIRCUIT INTERRUPT |
| CLG | CEILING |
| GND | GROUND |
| HP | HORSEPOWER |
| HTR | HEATER |
| IG | ISOLATED GROUND |
| IMC | INTERMEDIATE METAL CONDUIT |
| K | KILO |
| KCMIL | THOUSAND CIRCULAR MILS |
| KV | KILOVOLT |
| KVA | KILOVOLT-AMPERE |
| KVAR | KILOVOLT-AMPERE REACTIVE |
| KW | KILOWATT |
| KWH | KILOWATT-HOUR |
| LA | LIGHTNING ARRESTER |
| LTG | LIGHTING |
| MC | METAL CLAD |
| MCB | MAIN CIRCUIT BREAKER |
| MFR | MANUFACTURER |
| MI | MINERAL INSULATED |
| MLO | MAIN LUG ONLY |
| MNS | MASS NOTIFICATION SYSTEM |
| MTD | MOUNTED |
| MV | MEDIUM VOLTAGE |
| NC | NORMALLY CLOSED |
| NEC | NATIONAL ELECTRICAL CODE |
| NEG | NEGATIVE |
| NEUT | NEUTRAL |
| NIC | NOT IN CONTRACT |
| NO | NORMALLY OPEN |
| NTS | NOT TO SCALE |
| PF | POWER FACTOR |
| PH | PHASE |
| PVC | POLYVINYL CHLORIDE |
| RM | ROOM |
| RSC | RIGID STEEL CONDUIT |
| RTD | RESISTANCE TEMPERATURE DETECTOR |
| SN | SOLID NEUTRAL |
| SPD | SURGE PROTECTIVE DEVICE |
| STP | SHIELDED TWISTED PAIR |
| STT | SHIELDED TWISTED TRIPLET |
| SWBD | SWITCHBOARD |
| SWGR | SWITCHGEAR |
| TOS | TOP OF STEEL |
| TANSF | TRANSFORMER |
| V | VOLT |
| VA | VOLT-AMPERE |
| VAR | VOLT-AMPERE REACTIVE |
| WM | WATT METER |
| WP | WEATHER PROOF |
| XFMR | TRANSFORMER |
| XP | EXPLOSION PROOF |

## GENERAL NOTES

1. ALL GENERAL NOTES, SYMBOL LISTS AND DETAILS ARE TO BE CONSIDERED AS APPLICABLE TO ALL ELECTRICAL DRAWINGS FOR THIS PROJECT. SYMBOLS AND ABBREVIATIONS SHOWN ON THIS SHEET ARE FOR REFERENCE ONLY AND DO NOT INDICATE THEIR INCORPORATION IN THE DESIGN.
2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH NFPA-70, NATIONAL ELECTRICAL CODE (NEC) 2014.
3. REMOVE ALL ELECTRICAL EQUIPMENT COMPLETELY WHERE INDICATED. REMOVE ALL CIRCUIT CONDUCTORS, SWITCHES, LIGHTING FIXTURES AND MISCELLANEOUS APPLIANCES BACK TO ENERGIZING SOURCE OR JUNCTION BOX WHERE MULTIPLE EQUIPMENT IS POWERED.
4. ALL CONDUCTOR MATERIAL, INCLUDING WIRING, PANELBOARD BUSES, TRANSFORMER WINDINGS, AND GROUNDING SHALL BE COPPER. ALUMINUM CONDUCTORS SHALL NOT BE ALLOWED.
5. UNLESS OTHERWISE NOTED, WIRING SHALL BE 2#12 AWG CONDUCTORS AND #12 GND. HOME RUNS FED FROM 20A-1P CIRCUITS IN EXCESS OF 100 FEET SHALL BE #10 AWG.
6. LIGHTING TOGGLE SWITCHES SHALL BE COMMERCIAL SPECIFICATION GRADE 277/120 VOLT, SIDE WIRED AND PROVIDED WITH GROUNDING SCREW. LEVITON, PASS AND SEYMOUR OR APPROVED EQUAL. COORDINATE COLOR WITH OWNER.
7. CONVENIENCE RECEPTACLES SHALL BE COMMERCIAL SPECIFICATION GRADE GROUNDING TYPE NEMA 5-20R, SIDE WIRED. LEVITON, PASS AND SEYMOUR OR APPROVED EQUAL.
8. ALL EQUIPMENT DISCONNECTS AND MANUAL MOTOR STARTERS ARE PROVIDED BY ELECTRICAL CONTRACTOR UNLESS NOTED AS FURNISHED WITH EQUIPMENT (FWE). MOUNT ALL DISCONNECTS AND MOTOR STARTERS IN AN ACCESSIBLE LOCATION WITHIN SIGHT OF THE LOAD SERVED.
9. UNLESS OTHERWISE NOTED CONVENIENCE RECEPTACLES SHALL BE MOUNTED 18-INCHES AFF AND LIGHTING TOGGLE SWITCHES 48-INCHES AFF.
10. ALL PENETRATIONS THROUGH FLOORS, RATED WALLS AND PARTITIONS SHALL BE SEALED WITH UL APPROVED FIRE SEALANT MATERIAL TO MAINTAIN THE RATING OF SEPARATION.
11. EQUIPMENT CONNECTIONS ARE SHOWN FOR BASIS-OF-DESIGN PRODUCTS. CONTRACTOR SHALL COORDINATE ALL EQUIPMENT CONNECTIONS – INCLUDING DISCONNECTING MEANS, OVERCURRENT PROTECTION, AND WIRE SIZING – WITH SELECTED MANUFACTURER'S RECOMMENDED INSTRUCTIONS.
12. CONTRACTOR SHALL PROVIDE ALL MOUNTING HARDWARE NECESSARY FOR A COMPLETE INSTALLATION. MOUNT EQUIPMENT AND ROUTE CONDUIT SO AS NOT TO INTERFERE WITH OPERATIONS SUCH AS OVERHEAD DOORS, DOOR SWINGS, ETC.
13. MANUFACTURERS NAME AND MODEL NUMBERS ARE USED THROUGHOUT THE PROJECT FOR DESCRIPTIVE PURPOSES ONLY AND ARE INTENDED TO INDICATE THE STANDARD OF MATERIAL OR ARTICLES REQUIRED. DESIGN IS PREDICATED AROUND LISTED MANUFACTURERS AS NOTED ON SCHEDULES AND NOTES AND IS NOT INTENDED TO LIMIT THE CONTRACTOR TO ONE MANUFACTURER.

## LOADCENTER REPLACEMENT SCOPE

1. ALL EXISTING FEDERAL PACIFIC LOADCENTERS ARE TO BE REPLACED. EXISTING FEDERAL PACIFIC LOADCENTERS ARE MODEL NUMBER LX108-16.
2. NEW LOADCENTERS SHALL BE HOMELINE HOM12L125GC OR APPROVED EQUAL.
3. ALL APARTMENTS UNLESS OTHERWISE NOTED BELOW HAVE A FEDERAL PACIFIC LOADCENTER THAT SHALL BE REPLACED. THE FOLLOWING APARTMENTS DO NOT REQUIRE A REPLACEMENT LOADCENTER:
   - BUILDING 1 – UNIT A
   - BUILDING 1 – UNIT B
   - BUILDING 2 – UNIT E
   - BUILDING 3 – UNIT C
   - BUILDING 4 – UNIT D
   - BUILDING 7 – UNIT D

STATE OF MAINE — JASON M. BEAULIEU No. 13441 — REGISTERED PROFESSIONAL ENGINEER — 9-8-15

| REV | DESCRIPTION | DWN | APP | DATE |
|---|---|---|---|---|
| 1 | ISSUED FOR CONSTRUCTION | JMB | MRL | 9-8-15 |
| 0 | ISSUED FOR BID | JMB | MRL | 4-8-15 |

PORTLAND HOUSING AUTHORITY
PORTLAND, MAINE

RIVERTON BOILER REPLACEMENTS
BUILDING NOs 1,2,3,4,7,9,11,20

ELECTRICAL LEGEND, GENERAL NOTES, AND ABBREVIATIONS



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Portland, Maine 04101
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SIZE: ANSI D
DATE: 9-8-15
DES BY: JMB
DWN BY: JMB
CKD BY: BCT

PROJECT NO. 218.011.001

SHEET 15 OF 18

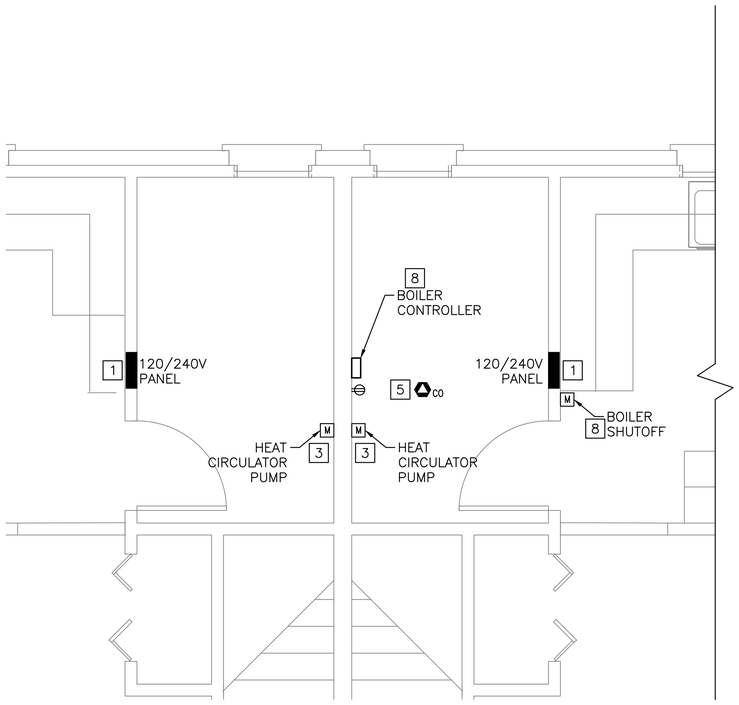
DRAWING NO. E-001

NOTES:

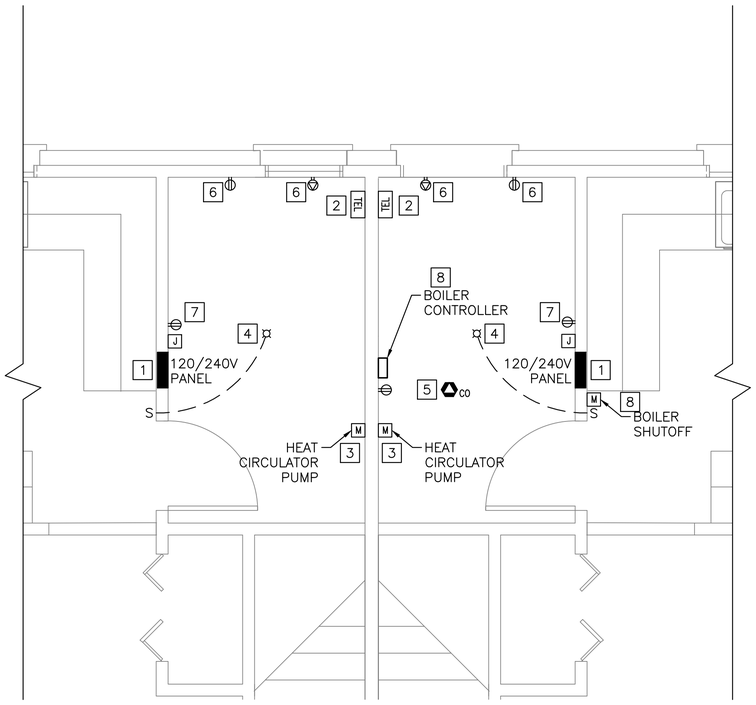
1. SEE SHEET E–001 FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES.
2. SCOPE OF WORK REPRESENTED IS TYPICAL FOR BUILDINGS 1,2,3,4,7,9,11,20.
3. HEATING SYSTEM CIRCUITS ARE FED FROM "HOUSE" PANEL, LOCATED ON EXTERIOR OF BUILDING NEAR METER BANK. METER BANK LOCATION VARIES FROM BUILDING TO BUILDING. GENERALLY, METER BANK IS LOCATED AT NORTH WEST OR NORTH EAST CORNER OF BUILDING.

DEMOLITION KEYED NOTES:

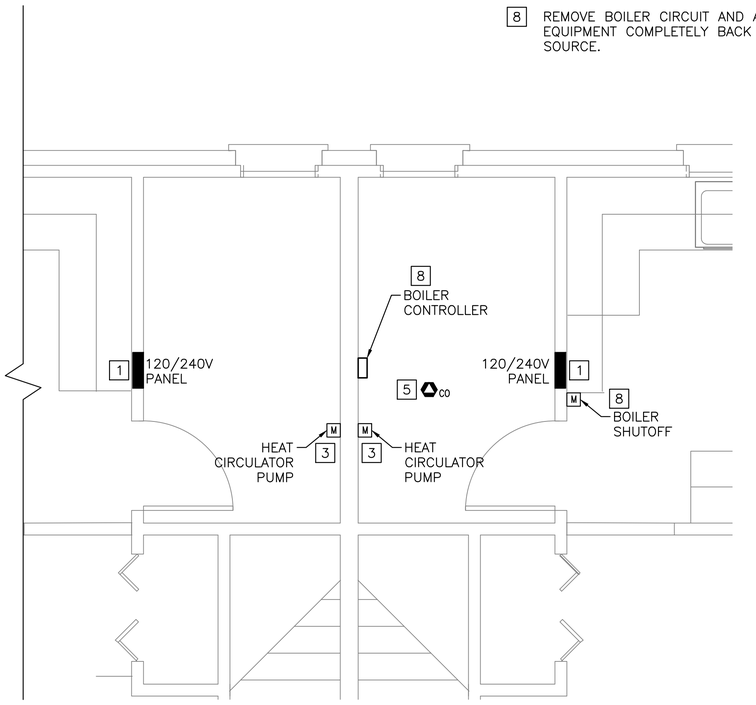
1. REPLACE ALL FEDERAL PACIFIC PANELBAORDS. REFER TO SHEET E–601 FOR PANELBOARD REPLACEMENT SCHEDULE.
2. RELOCATE TELEPHONE SERVICE ENTRANCE TO ALLOW FOR PARTITION REMOVAL. SEE SHEET E–101 FOR NEW LOCATION.
3. REMOVE CIRCULATION PUMP MANUAL MOTOR STARTER AND CIRCULATION PUMP CIRCUIT COMPLETELY BACK TO ENERGIZING SOURCE.
4. RELOCATE LIGHT FIXTURE TO ALLOW FOR NEW PARTITION. SEE SHEET E–101 FOR NEW LOCATION.
5. REMOVE CARBON MONOXIDE DETECTOR.
6. RELOCATE WASH AND DRYER RECEPTACLE TO NEW WASHER/DRYER ROOM. SEE SHEET E–101 FOR NEW LOCATION.
7. RELOCATE RECEPTACLE TO BE INSIDE WASHER DRYER ROOM.
8. REMOVE BOILER CIRCUIT AND ALL ASSOCIATED EQUIPMENT COMPLETELY BACK TO ENERGIZING SOURCE.



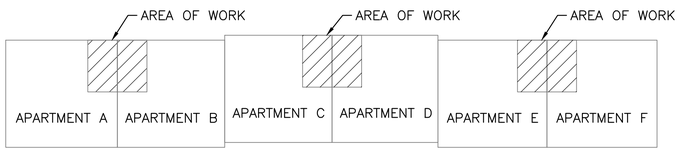

A ED-101 UNIT A & B PART PLAN
SCALE: 1/2" = 1'–0" REF. DWG. = MD–101




B ED-101 UNIT C & D PART PLAN
SCALE: 1/2" = 1'–0" REF. DWG. = MD–101




C ED-101 UNIT E & F PART PLAN
SCALE: 1/2" = 1'–0" REF. DWG. = MD–101




KEY PLAN
SCALE: NTS

PLANS REPRESENT A TYPICAL BUILDING CONFIGURATION. NOT ALL BUILDINGS ARE COMPLETELY IDENTICAL. FIELD VERIFY ALL CONDITIONS PRIOR TO PERFORMING ANY WORK.

PLAN NORTH

NOTE: TRUE NORTH VARIES FOR EACH BLDG

0 1' 2' 4'
Scale: 1/2" = 1'–0"

STATE OF MAINE
JASON M. BEAULIEU
No. 13441
REGISTERED PROFESSIONAL ENGINEER
9-8-15

| REV | DESCRIPTION | DWN | APP | DATE |
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PORTLAND HOUSING AUTHORITY
PORTLAND, MAINE

RIVERTON BOILER REPLACEMENTS
BUILDING NOs 1,2,3,4,7,9,11,20

ELECTRICAL DEMOLITION PLAN

PLEASE NOTE: THIS DOCUMENT MAY NOT ACCURATELY REPRESENT THE FINAL DOCUMENT. ONLY AN ENGINEER, ARCHITECT OR SURVEYOR SIGNED, SEALED AND DATED PAPER COPY, PROVIDED BY THIS OFFICE, MAY BE UTILIZED FOR BIDDING OR CONSTRUCTION PURPOSES.


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SIZE: ANSI D
DATE: 9-8-15
DES BY: JMB
DWN BY: JMB
CKD BY: MRL

PROJECT NO. 218.011.001
SHEET 16 OF 18

DRAWING NO. ED-101

x:\218 portland housing authority\218.011.001 - riverton boiler replacements\Drawings\Phase 1\Sheets\ED-101.dwg - 9/9/2015 8:51 AM - CRAIG SMITH

NOTES:

1. SEE SHEET E–001 FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES.
2. SCOPE OF WORK REPRESENTED IS TYPICAL FOR BUILDINGS 1,2,3,4,7,9,11,20.
3. HOUSE PANELBOARD LOCATED ON EXTERIOR OF BUILDING NEAR METER BANK. METER BANK LOCATION VARIES FROM BUILDING TO BUILDING. GENERALLY, METER BANK IS LOCATED AT NORTH WEST OR NORTH EAST CORNER OF BUILDING. ROUTE NEW CONDUIT ON EXTERIOR OF BUILDING.

KEYED NOTES:

(1) RELOCATE TELEPHONE SERVICE ENTRANCE. SEE SHEET ED–101 FOR EXISTING LOCATION.

(2) RELOCATE LIGHT FIXTURE TO NEW WASHER/DRYER ROOM. SEE SHEET ED–101 FOR EXISTING LOCATION.

(3) RELOCATE WASHER AND DRYER RECEPTACLES TO NEW WASHER/DRYER ROOM. SEE SHEET ED–101 FOR EXISTING LOCATIONS.

(4) PROVIDE NEW UTILITY LIGHT FIXTURE AND CONVENIENCE RECEPTACLE. PROVIDE 120V 20A–1P CIRCUIT FROM SPACE IN HOUSE PANELBOARD FOR LIGHT AND RECEPTACLE.

(5) PROVIDE 120V 20A–1P CIRCUIT FROM A SPARE IN HOUSE PANELBOARD FOR EACH BOILER AND BOILER PUMP PAIR. PROVIDE BOILER SHUT OFF SWITCH FOR EACH BOILER ON WALL NEAR EXIT. PROVIDE TOGGLE SWITCH DISCONNECT FOR BOILER PUMP.

KEYED NOTES CONTINUED:

(6) PROVIDE POWER TO BOILER PUMPS THROUGH BOILER INTEGRATED CONTROL PANEL.

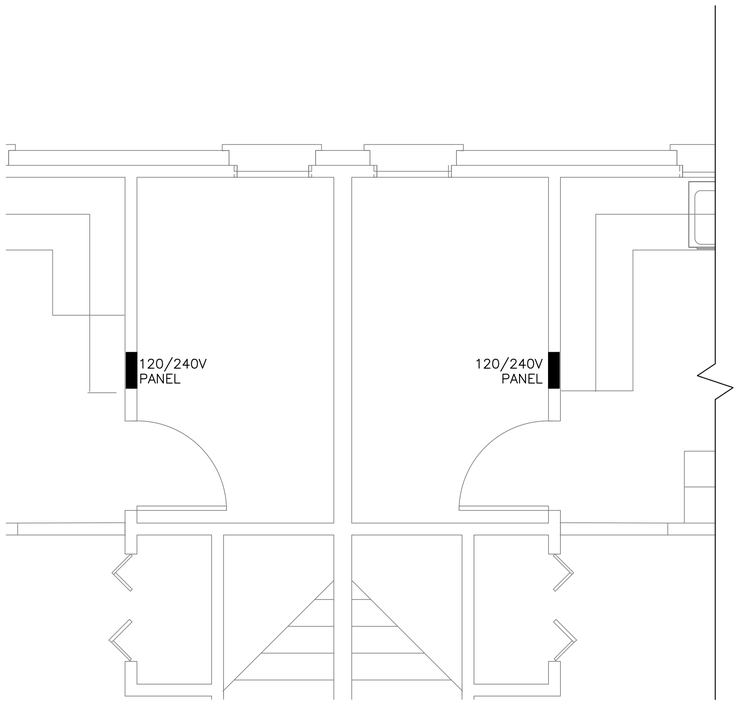
(7) PROVIDE 240V 20A–2P CIRCUIT FROM SPACE IN HOUSE PANELBOARD FOR HEATING HOT WATER CIRCULATOR PUMPS. PROVIDE TOGGLE SWITCH DISCONNECT FOR EACH PUMP.

(8) PROVIDE 120V 20A–1P CIRCUIT FROM SPACE IN HOUSE PANELBOARD FOR DOMESTIC HOT WATER CIRCULATOR PUMP. PROVIDE TOGGLE SWITCH DISCONNECT.

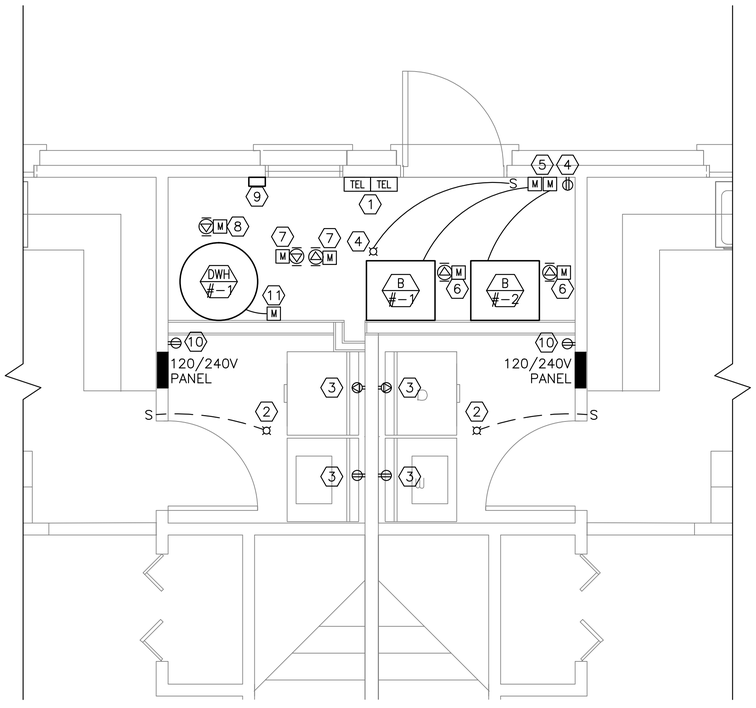
(9) PROVIDE 120V 20A–1P CIRCUIT FROM SPACE IN HOUSE PANELBOARD FOR ZONE CONTROLLERS.

(10) RELOCATE RECEPTACLE TO BE INSIDE WASHER/DRYER ROOM.

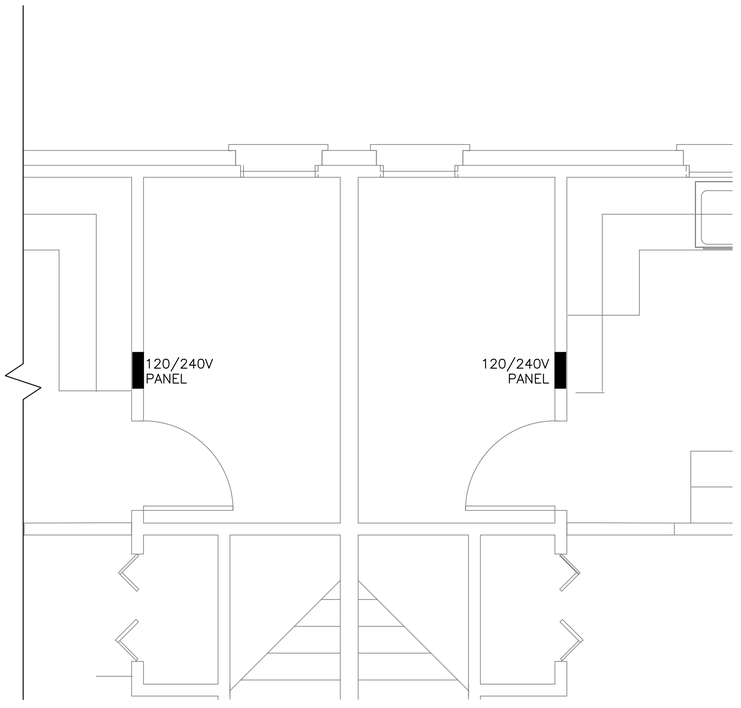
(11) PROVIDE 120V 20A–1P CIRCUIT FROM A SPARE IN HOUSE PANELBOARD FOR DOMESTIC WATER HEATER.



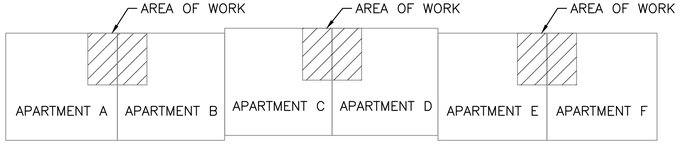

A E-101 UNIT A & B PART PLAN
SCALE: 1/2" = 1'–0" REF. DWG. = MD–101




B E-101 UNIT C & D PART PLAN
SCALE: 1/2" = 1'–0" REF. DWG. = MD–101

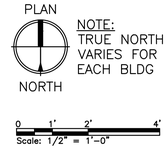



C E-101 UNIT E & F PART PLAN
SCALE: 1/2" = 1'–0" REF. DWG. = MD–101




KEY PLAN
SCALE: NTS

PLANS REPRESENT A TYPICAL BUILDING CONFIGURATION. NOT ALL BUILDINGS ARE COMPLETELY IDENTICAL. FIELD VERIFY ALL CONDITIONS PRIOR TO PERFORMING ANY WORK.




STATE OF MAINE
JASON M. BEAULIEU
No. 13441
LICENSED PROFESSIONAL ENGINEER
9-8-15

| REV | DESCRIPTION | DWN | APP | DATE |
|---|---|---|---|---|
| 1 | ISSUED FOR CONSTRUCTION | JMB | MRL | 9-8-15 |
| 0 | ISSUED FOR BID | JMB | MRL | 4-8-15 |

PORTLAND HOUSING AUTHORITY
PORTLAND, MAINE

RIVERTON BOILER REPLACEMENTS
BUILDING NOs 1,2,3,4,7,9,11,20

ELECTRICAL PLAN



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Portland, Maine 04101
207.553.7753
colbycoengineering.com

SIZE: ANSI D
DATE: 9-8-15
DES BY: JMB
DWN BY: JMB
CKD BY: MRL

PROJECT NO. 218.011.001
SHEET 17 OF 18
DRAWING NO. E-101

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PANELBOARD NO: | TYPICAL PANEL | | | SC RATING: | 10 KAIC | | | | | | | | | |
| PANELBOARD TYPE: | HOMELINE LOAD CENTER HOM12L125GC | | | MOUNTING: | FLUSH | | | | | 125 AMP MAIN LUGS | | | | |
| PANEL LOCATION: | SEE PLANS | | | VOLTAGE: | 120/240V, SINGLE PHASE | | | | | 125 AMP BUS | | | | |

| CKT NO. | TRIP AMPS | NO. POLES | WIRE / CONDUIT | GND. WIRE | LOAD SERVED | LOAD VA | ϕ | LOAD VA | LOAD SERVED | WIRE / CONDUIT | GND. WIRE | NO. POLES | TRIP AMPS | CKT NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 20 | 1 | – | – | KITCHEN COUNTER OUTLETS (NOTE 1) | | A | | LIGHTS (NOTE 1) | – | – | 1 | 15 | 2 |
| 3 | 20 | 1 | – | – | KITCHEN COUNTER OUTLETS (NOTE 1) | | B | | KITCHEN LIGHTS (NOTE 1) | – | – | 1 | 15 | 4 |
| 5 | 20 | 1 | – | – | LIVING ROOM OUTLETS (NOTE 1) | | A | | CLOTHES WASHER (NOTE 1) | – | – | 1 | 20 | 6 |
| 7 | 20 | 1 | – | – | LAUNDRY OUTLETS (NOTE 1) | | B | | DRYER | – | – | 2 | 30 | 8 |
| 9 | 15 | 1 | – | – | UPSTAIRS BEDROOM AND BATH (NOTE 1) | | A | | | | | | | 10 |
| 11 | | | | | | | B | | | | | | | 12 |

NOTES:
1. PROVIDE ARC–FAULT CIRCUIT–INTERRUPTER CIRCUIT BREAKER.
2. ALL LOADS SHOWN ARE EXISTING LOADS TO BE RECONNECTED.

## TYPICAL PANEL SCHEDULE

SCALE: NTS

STATE OF MAINE
JASON M. BEAULIEU
No. 13441
REGISTERED PROFESSIONAL ENGINEER
9-8-15

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PORTLAND HOUSING AUTHORITY
PORTLAND, MAINE

RIVERTON BOILER REPLACEMENTS
BUILDING NOs 1,2,3,4,7,9,11,20

ELECTRICAL SCHEDULES



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SIZE: ANSI D
DATE: 9-8-15
DES BY: JMB
DWN BY: JMB
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PROJECT NO. 218.011.001

SHEET 18 OF 18

DRAWING NO. E-601