Underground Hot Water Loop Replacement at Bolduc Correctional Center

516 Cushing Road
Warren, ME

Issued For Bid/Construction
April 10, 2014

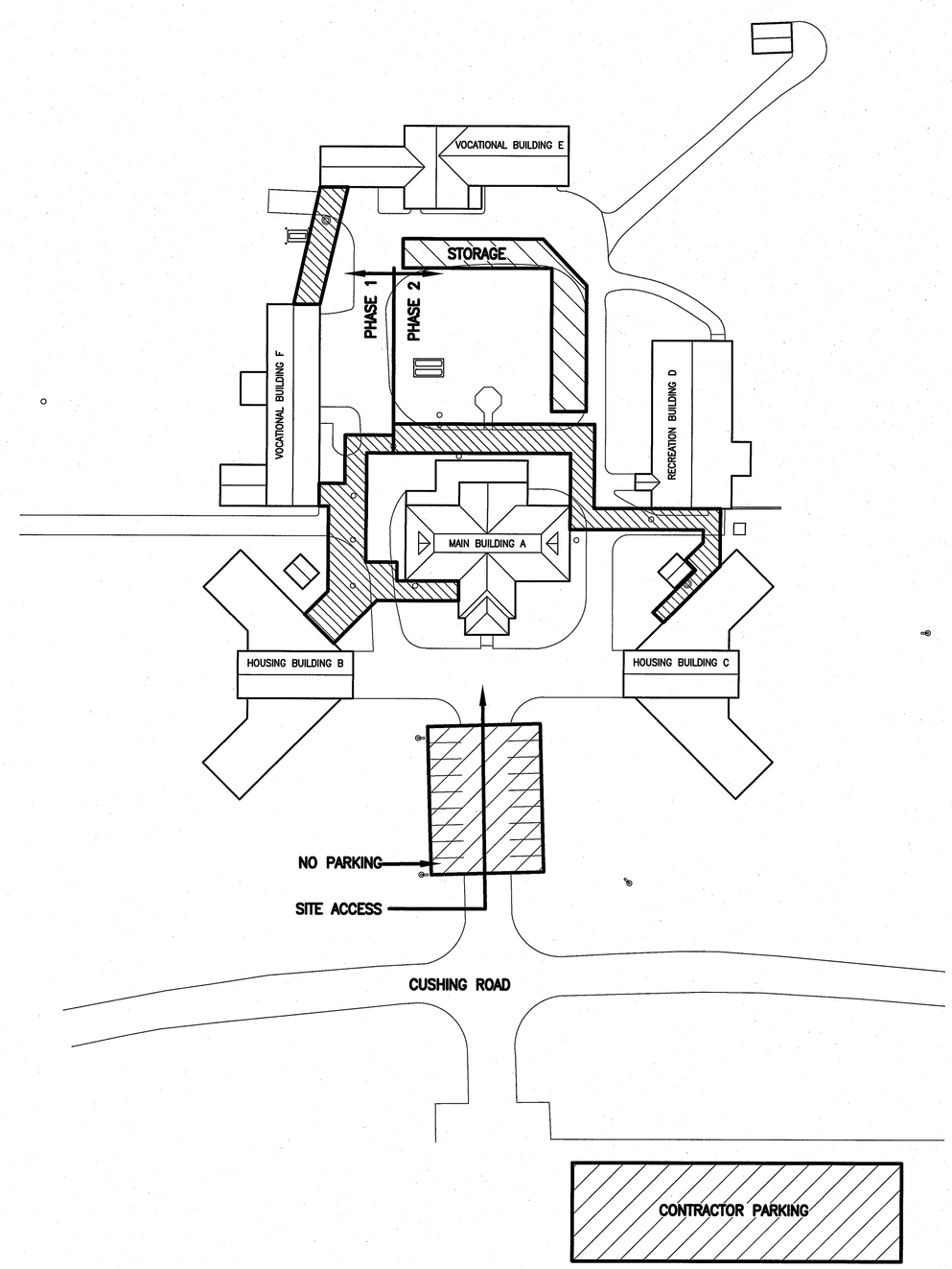
SYMBOL LEGEND

- A00 / AE000 — BUILDING SECTION
- A00 / AE000 — WALL SECTION
- A00 / AE000 — DETAIL
- A00 / AE000 — EXTERIOR ELEVATION
- A / A00 / AE000 / B / C / D — INTERIOR ELEVATION
- LEVEL LINE
- B — CIRCLE NOTE
- B / X — WINDOW TAG X= GLAZING TYPE
- B / X — PARTITION TAG X= PARTIAL WALL HEIGHT UNO
- 402 — DOOR TAG
- MAIN LOBBY / A402 — ROOM NAME / ROOM NAME / ROOM NUMBER
- S — BACKER ROD & SEALANT CONTINUOUS UNLESS NOTED OTHERWISE
- A — COLUMN BUBBLE AND CENTER LINE

GRID NO.	TITLE
SCALE	REFERENCE SHEET

ABBREVIATIONS

AC, A/C	AIR CONDITIONING
ACCU	AIR CONDITIONING CONDENSER UNIT
ACPLAS	ACOUSTICAL PLASTER
ACT	ACOUSTIC CEILING TILE
AFF	ABOVE FINISHED FLOOR
AP	ACCESS PANEL
BCE	BOTTOM CHORD EXTENSION
BD	BOARD
BEJ	BUILDING EXPANSION JOINT
BLP	BORROWED LIGHT PANEL
BO	BOTTOM OF
BOF	BOTTOM OF FOOTING
BOS	BOTTOM OF STEEL
BS	BOTH SIDES
BSE	BRICK SHELF ELEVATION
C	CHANNEL
CB	CATCH BASIN; CHALKBOARD
CEM BD	CEMENTITIOUS BACKER BOARD
CFM	CUBIC FEET PER MINUTE
CIP	CAST IN PLACE
CJ	CONTROL JOINT; CONSTRUCTION JOINT
CMU	CONCRETE MASONRY UNIT
CT	CERAMIC TILE
CUH	CABINET UNIT HEATER
COL	COLUMN GRID LINE
CONT	CONTINUOUS
DF	DRINKING FOUNTAIN
DR	DISPLAY RAIL
DW	DISHWASHER
EF	EXHAUST FAN; EACH FACE
EJ	EXPANSION JOINT
EPDM	ETHYLENE PROPYLENE DIENE MONOMER
EW	EACH WAY
EWC	ELECTRIC WATER COOLER
FB	FLAT BAR
FBO	FURNISHED BY OTHERS
FCO	FLOOR CLEAN-OUT
FCU	FAN COIL UNIT
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FF	FINISHED FLOOR; FAR FACE
FO	FRAMED OPENING
FRP	FIBERGLASS REINFORCED PLASTIC
FS	FLOOR SINK
GB	GRAB BAR
GC	GENERAL CONTRACTOR
GDT	GYPSUM DROP-IN TILE
GRD	BUILDING GRID LINE
GV	GRAVITY VENT
GWB	GYPSUM WALL BOARD
H	HORIZONTAL
HC	HANDICAPPED; HOLLOW CORE
HM	HOLLOW METAL
HP	HIGH POINT
HRU	HEAT RECOVERY UNIT
H&V	HEATING AND VENTILATING
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
IF	INSIDE FACE
IJ	ISOLATION JOINT
IMP	IMPACT RESISTANT
INSUL	INSULATION
INV	INVERT
JS	JOIST SUBSTITUTE
L	ANGLE
LINO	SHEET LINOLEUM
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LP	LOW POINT
MB	MARKER BOARD
MDO	MEDIUM DENSITY OVERLAY
MO	MASONRY OPENING
MR	MOISTURE-RESISTANT
MUA	MAKE-UP AIR
N	NOSING
NIC	NOT IN CONTRACT
NS	NEAR SIDE
NTS	NOT TO SCALE
OC	ON CENTER
OF	OUTSIDE FACE
OH	OPPOSITE HAND; OVERHEAD
PA	PUBLIC ADDRESS
PAF	POWDER-ACTUATED FASTENER
PDU	POOL DEHUMIDIFICATION UNIT
PEFS	PRECOMPRESSED EXPANDABLE FOAM SEALER
PL	PLATE
PLAM	PLASTIC LAMINATE
PLF	POUNDS PER LINEAR FOOT
PP	POWER PANEL
PHC	PRECAST HOLLOW CORE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE-TREATED
PVC	POLYVINYL CHLORIDE
R	RISER; RADIUS
RB	RESILIENT BASE
RD	ROOF DRAIN
RO	ROUGH OPENING
RR	RUB-RAIL
RTU	ROOFTOP UNIT (HVAC)
SACT	SUSPENDED ACOUSTIC TILE CEILING
SC	SOLID CORE
SF	SQUARE FOOT; SUPPLY FAN
SK	SHEAR KEY
SN	SANITARY NAPKIN (DISPENSER)
SP	SPECIAL
SS	STAINLESS STEEL
STL	STEEL
T	TREAD
TB	TACKBOARD
T&B	TOP AND BOTTOM
TBM	TEMPORARY BENCHMARK
TCE	TOP CHORD EXTENSION
TJ	TIE JOIST
TO	TOP OF
TOC	TOP OF CONCRETE
TOF	TOP OF FOOTING
TOHC	TOP OF HOLLOW CORE
TOM	TOP OF MASONRY
TOP	TOP OF PIER
TOS	TOP OF STEEL; TOP OF SLAB
TOW	TOP OF WALL
TP	TOILET PAPER (DISPENSER)
TS	
UH	UNIT HEATER
UNO	UNLESS NOTED OTHERWISE
V	VENT PIPE; VERTICAL
VB	VAPOR BARRIER
VCT	VINYL COMPOSITION TILE
VP	VISION PANEL
VTR	VENT THROUGH THE ROOF
W/	WITH
WC	WATER CLOSER
WF	WIDE FLANGE
WH	WATER HEATER
W/O	WITHOUT
WP	WORKING POINT
WS	WEB STIFFENER
WWF	WELDED WIRE FABRIC



A9	BUILDING KEY PLAN
1" = 50'	

PROJECT NORTH — MAG. NORTH

DRAWING LIST

G-001	TITLE SHEET
M-001	MECHANICAL LEGEND AND ABBREVIATIONS
M-002	MECHANICAL SPECIFICATIONS AND DETAILS
MD001	PHASING AND DEMOLITION PLAN
MP100	NEW WORK PLAN
MP101	ENLARGED PLANS SHEET 1
MP102	ENLARGED PLANS SHEET 2

REV.	DESCRIPTION	DATE
0	ISSUED FOR BID/CONSTRUCTION	4-10-14

ISSUED FOR BID/CONSTRUCTION
4-10-14

CURRENT ISSUE STATUS:

STATE OF MAINE — RONNIE M. WILLEY NO. 11029 — LICENSED — 4/10/14

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BOLDUC CORRECTIONAL FACILITY
HOT WATER LOOP REPLACEMENT
WARREN, MAINE

TITLE SHEET
SHEET TITLE:

SCALE:	AS NOTED	DATE:	4-10-14
PROJECT MANAGER:	DJM	GRAPHIC SCALE:	0" 1"
JOB CAP/DRAWN:	DJM		
A/E OF RECORD:	DJM	SHEET No.	
SMRT CAD FILE:	G-001-13103	G-001	
PROJECT No.	13103		

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AIR DISTRIBUTION SYMBOLS

- 12x16 — RECTANGULAR DUCT. (FIRST NUMBER IS SIDE SHOWN) DIMENSIONS IN INCHES
- 12"ø — 12 INCH ROUND DUCT
- MD — MOTORIZED DAMPER
- FLEXIBLE DUCT
- DUCT FLEXIBLE CONNECTOR (FC)
- D R — DUCT DROPS AND RISES IN DIRECTION OF AIR FLOW
- RETURN DUCT TURNED UP OR DOWN (DASHED)
- SUPPLY DUCT TURNED UP OR DOWN (DASHED)
- EXHAUST DUCT TURNED UP OR DOWN (DASHED)
- ACOUSTICAL LINING (DUCT DIM. FOR NET FREE AREA)
- ROUND DUCT ELBOW DOWN
- ROUND DUCT ELBOW UP
- SQUARE TO ROUND TRANSITION
- CAP (DUCT AND/OR PIPE)
- INDICATES DUCT, PIPING, EQUIPMENT TO BE REMOVED.
- EA — EXHAUST AIR
- RA — RETURN AIR
- SA — SUPPLY AIR
- VOLUME DAMPER
- FIRE DAMPER
- SMOKE DAMPER — TAG NO.
- COMBINATION SMOKE/FIRE DAMPER — TAG NO.
- RECTANGULAR ELBOW W/TURNING VANES
- DIRECTION OF AIR FLOW (IN)
- DIRECTION OF AIR FLOW (OUT)
- H — HUMIDISTAT OR HUMIDITY SENSOR
- T — THERMOSTAT (T'STAT) OR TEMP. SENSOR
- SD — SMOKE DETECTOR
- S-3 — DIFFUSER, REGISTER OR GRILLE TAG
- 300 — CFM AIR FLOW
- TYP. 3 — QUANTITY
- FTR-2 — FINNED TUBE TAG
- 20 — LENGTH OF FINNED ELEMENT
- A1 — DETAIL NO.
- MH401 — SHEET NO. WHERE DETAIL IS LOCATED
- CUH — EQUIPMENT TAG
- 2 — EQUIPMENT NO.

PIPING SYMBOLS

- UNION
- FLANGE
- PIPE ANCHOR
- PIPE GUIDE OR SLEEVES
- PIPE ELBOW TURNED DOWN
- PIPE ELBOW TURNED UP
- PIPING TEE–DOWN
- PIPING TEE–UP
- PIPE RISER
- FCO — FLOOR CLEAN OUT
- CO — CLEAN OUT
- WCO — WALL CLEAN OUT
- PIPE PITCHES DOWN
- GENERIC VALVE, SEE SPECIFICATIONS FOR TYPE
- GATE VALVE
- BALL VALVE
- BUTTERFLY VALVE (MANUAL)
- 2–WAY CONTROL VALVE
- 3–WAY CONTROL VALVE
- BALANCING VALVE (CIRCUIT SETTER)
- CHECK VALVE
- PLUG VALVE
- GLOBE VALVE
- NEEDLE VALVE
- BACK FLOW PREVENTER
- SOLENOID VALVE
- PRESSURE REDUCING OR REGULATING VALVE
- PRESSURE RELIEF VALVE
- STRAINER
- STRAINER W/BLOWDOWN
- MANUAL AIR VENT
- AUTOMATIC AIR VENT
- PS — PRESSURE SWITCH
- FS — FLOW SWITCH
- PG — PRESSURE GAUGE AND COCK
- THERMOMETER AND WELL
- TEMPERATURE & PRESSURE TAP (PETE'S PLUG)
- HOSE END DRAIN VALVE WITH CAP
- ORIFICE FLOWMETER
- FLEXIBLE PIPE CONNECTOR
- EXPANSION JOINT
- F&T — STEAM TRAP (FLOAT AND THERMOSTATIC INDICATED T.T. THERMOSTAT, B.T. BUCKET TRAP, T.D. THERMODYNAMIC TRAP)
- CONCENTRIC REDUCER/INCREASER
- ECCENTRIC REDUCER/INCREASER
- HB — HOSE BIBB
- WH — WALL HYDRANT
- DIRECTION OF FLOW
- FIRE DEPARTMENT CONNECTION
- PUMP
- WATER HAMMER SUPPRESSER
- FINNED TUBE BASEBOARD
- H — HUMIDIFIER
- DP — DIFFERENTIAL PRESSURE TRANSMITTER
- SPRINKLER HEAD
- GAS TURRET
- MEDICAL OXYGEN OUTLET
- MEDICAL VACUUM INLET
- MEDICAL AIR OUTLET
- NITROUS OXIDE OUTLET
- PIPE ELBOW TURNED DOWN – VALVE IN VERTICAL
- PIPE ELBOW TURNED UP – VALVE IN VERTICAL

ABBREVIATIONS

AAV	AUTOMATIC AIR VENT
ACC	AIR COOLED CONDENSER
ACU	AIR CONDITIONING UNIT
ACV	AUTOMATIC CONTROL VALVE
AD	ACCESS DOOR
AE	ACID EXHAUST
AFF	ABOVE FINISHED FLOOR
AFMS	AIR FLOW MEASURING STATION
AHU	AIR HANDLING UNIT
ATC	AUTOMATIC TEMPERATURE CONTROL
AV	AIR VENT
BA	BREATHING COMPRESSED AIR
BB	BASEBOARD
BDD	BACKDRAFT DAMPER
BG	BLAST GATE
BFP	BACKFLOW PREVENTER
BLDG	BUILDING
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BTU	BRITISH THERMAL UNIT
CBD	COUNTER BALANCED DAMPER
CD	CEILING DIFFUSER
CFF	CAPPED FOR FUTURE
CFM	CUBIC FEET PER MINUTE
CLG	CEILING
CO	CLEANOUT
CONT	CONTINUATION
COORD	COORDINATE
CP	CONDENSATE PUMP & RECEIVER
CT	COOLING TOWER
CTE	CONNECT TO EXISTING
CU	COPPER
CUH	CABINET UNIT HEATER
CV	CONTROL VALVE
CW	COLD WATER
CW–P	CITY WATER–PROCESS
DC	DOUBLE CONTAINED
DDC	DIRECT DIGITAL CONTROL
DIA	DIAMETER
DIC	DOWN IN CHASE
DIW	DOWN IN WALL
DN	DOWN
DS	DOWNSPOUT
DT	DROP AND TRANSITION
DWG	DRAWING
DWH	DOMESTIC WATER HEATER
EA	EXHAUST AIR
EF	EXHAUST FAN
ENC	ENCLOSURE
ER	EXHAUST REGISTER
(E)	EXISTING
EXIST.	EXISTING
FBO	FURNISHED BY OWNER
FBP	FACE AND BYPASS
FC	FLEXIBLE CONNECTION
FCO	FLOOR CLEANOUT
FD–#	FLOOR DRAIN TAG
FD	FIRE DAMPER
FG	FIBERGLASS
F & T	FLOAT AND THERMOSTATIC
FO	FLAT OVAL
FRHB	FREEZE RESISTANT HOSE BIBB
FTR	FINNED TUBE RADIATION
FS	FLOW SWITCH
GC	GENERAL CONTRACTOR
GPM	GALLONS PER MINUTE
H	HUMIDIFIER
HB	HOSE BIB
HRU	HEAT RECOVERY UNIT
HTR	HEATER
H & V	HEATING AND VENTILATION
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
HW	HOT WATER
HX	HEAT EXCHANGER
IN WG	INCHES WATER GAUGE
LD	LINED DUCT
MAU	MAKE UP AIR UNIT
MAX	MAXIMUM
MBH	1000 BTU/HR.
ME	MECHANICAL ENGINEER
MFR	MANUFACTURER
MIN	MINIMUM
MD	MOTOR OPERATED DAMPER
MPV	MULTI–PURPOSE VALVE
MTD	MOUNTED
MUA	MAKE UP AIR
NPW	NON–POTABLE WATER
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
OED	OPEN ENDED DUCT
P–#	PLUMBING FIXTURE TAG
PEA	ALKALI EXHAUST
PEH	HEAT EXHAUST
PAE	PROCESS ACID EXHAUST
PHE	PROCESS HEAT EXHAUST
PSE	PROCESS SOLVENT EXHAUST
PP	POLY–PROPYLENE
PPE	PRE PURCHASED EQUIPMENT
PRS	PRESSURE REDUCING STATION
PRV	PRESSURE REDUCING VALVE
PVD	PNEUMATIC VOLUME DAMPER
(R)	REMOVE
RA	RETURN AIR
(REL.)	RELOCATED
RD	ROOF DRAIN
RF	RETURN FAN
RG	RETURN GRILLE
RHC	REHEAT COIL
RM	ROOM
RPZ	REDUCED PRESSURE ZONE BFP
RR	RETURN REGISTER
RV	RELIEF VALVE
SA	SUPPLY AIR
SCV	SELF CONTAINED VALVE
SD	SMOKE DETECTOR
SF	SUPPLY FAN
SG	SUPPLY GRILLE
SR	SUPPLY REGISTER
SS	STAINLESS STEEL
TE	TEMPERATURIZED ELEMENT (SENSOR)
TG	TRANSFER GRILLE
TOD	TOP OF DUCT
TOP	TOP OF PIPE
TTS	TIGHT TO STEEL
TV	TURNING VANE(S)
TYP	TYPICAL
UH	UNIT HEATER
UIC	UP IN CHASE
UIW	UP IN WALL
UV	UNIT VENTILATOR
VAV	VARIABLE AIR VOLUME BOX
VB	VACUUM BREAKER
VTR	VENT THRU ROOF
VD	MANUAL VOLUME DAMPER
VCFF	VALVED AND CAPPED FOR FUTURE
VFD	VARIABLE FREQUENCY DRIVE
VOC	VOLATILE ORGANIC COMPOUNDS
W/	WITH
WCO	WALL CLEANOUT
WH	WALL HYDRANT

PIPING SYSTEMS

10:1 HF	10:1 HF
AV	ACID VENT
AD	ACID DRAIN
AD	ACID DRAIN (BELOW SLAB)
BA	BREATHING AIR
CD	CONDENSATE DRAIN
CDA	COMPRESSED DRY AIR
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
CWS	CONDENSER WATER SUPPLY
CWR	CONDENSER WATER RETURN
DB	DISTRIBUTION VALVE BOX
DIS	DEIONIZED WATER SUPPLY
DIR	DEIONIZED WATER RETURN
EKCD	EKC DRAIN
ESEW	EYEWASH
FCS	FREE COOLING SUPPLY
FCR	FREE COOLING RETURN
FOS	FUEL OIL SUPPLY
FOR	FUEL OIL RETURN
FOV	FUEL OIL VENT
GCR	GRAVITY STEAM CONDENSATE RETURN
GLY	GLYCOL
GV	GAS VENT
H	HYDROGEN
H2O2	HYDROGEN PEROXIDE
HCR	HOT/ CHILLED WATER RETURN
HCS	HOT/ CHILLED WATER SUPPLY
HCV	HOUSE CLEAN VACUUM
HG	HOT GAS
HPS	HIGH PRESSURE STEAM
HPR	HIGH PRESSURE CONDENSATE RETURN
HWS	HOT WATER SUPPLY
HWR	HOT WATER RETURN
IAD	ISOPROPYL ALCOHOL DRAIN
LP	LIQUID PROPANE GAS
HLP	HIGH PRESSURE LIQUID PROPANE GAS
LPS	LOW PRESSURE STEAM
LPR	LOW PRESSURE RETURN
MA	MEDICAL AIR
MPS	MEDIUM PRESSURE STEAM
MPR	MEDIUM PRESSURE RETURN
MV	MEDICAL VACUUM
N2NP	NON–PROCESS NITROGEN
N2	PROCESS NITROGEN
NG	NATURAL GAS
HNG	HIGH PRESSURE NATURAL GAS
NO2	NITROUS OXIDE
NEG. SOLV.	NEGATIVE SOLVENT DRAIN
NPW	NON POTABLE COLD WATER
O2	OXYGEN
OFA	OIL FREE COMPRESSED AIR
PCWR	PROCESS COOLING WATER RETURN
PC	PUMPED STEAM CONDENSATE
PD	PUMPED DISCHARGE
POS. SOLV.	POSITIVE SOLVENT DRAIN
PW	POTABLE WATER
R	RELIEF LINE
RL	REFRIGERANT LIQUID
RS	REFRIGERANT SUCTION
SLD	MIXED SOLVENT DRAIN
SV	SOLVENT
SP	SPRINKLER
TW	TEMPERED WATER
TWS	TEMPERED CHILLED WATER SUPPLY
TWR	TEMPERED CHILLED WATER RETURN
VAC	PLANT VACUUM
ZB	ZONE VALVE BOX
TEMP	DOMESTIC HOT WATER (TEMP °F)
TEMP	RECIRC. DOMESTIC HOT WATER (TEMP °F)
CW	DOMESTIC COLD WATER
HW	DOMESTIC HOT WATER (120° F)
RHW	RECIRCULATED DOMESTIC HOT WATER (120° F)
S, W or KW	S SANITARY, W WASTE & KW KITCHEN WASTE
S, W or KW	S SANITARY, W WASTE & KW KITCHEN WASTE (EXIST.)
S, W or KW	S SANITARY, W WASTE & KW KITCHEN WASTE (BELOW SLAB)
S, W or KW	S SANITARY, W WASTE & KW KITCHEN WASTE (BELOW SLAB–EXIST.)
SD	SD STORM DRAIN
SD	SD STORM DRAIN (EXIST.)
SD	SD STORM DRAIN (BELOW SLAB)
SD	SD STORM DRAIN (BELOW SLAB–EXIST.)
V	V SANITARY VENT
V	V SANITARY VENT (EXIST.)
V	V SANITARY VENT (BELOW SLAB)
V	V SANITARY VENT (BELOW SLAB–EXIST.)

GENERAL NOTE

1. ALL GENERAL NOTES, SYMBOL LISTS, AND DETAILS ARE TO BE CONSIDERED AS APPLICABLE TO ALL HVAC AND PLUMBING DRAWINGS FOR THIS PROJECT. SYMBOLS AND ABBREVIATIONS SHOWN ON THIS SHEET ARE FOR REFERENCE ONLY AND DO NOT INDICATE THEIR INCORPORATION INTO THE DESIGN.

REV.	DESCRIPTION	DATE
0	ISSUED FOR BID/CONSTRUCTION	4–10–14

ISSUED FOR BID/CONSTRUCTION
4–10–14

CURRENT ISSUE STATUS:

STATE OF MAINE — RONNIE M. WILLEY NO. 11029 — LICENSED PROFESSIONAL ENGINEER — 4/10/14

SMRT
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BOLDUC CORRECTIONAL FACILITY
HOT WATER LOOP REPLACEMENT
WARREN, MAINE

MECHANICAL LEGEND AND ABBREVIATIONS
SHEET TITLE:

SCALE:	AS NOTED	DATE:	4–10–14
PROJECT MANAGER:	DJM	GRAPHIC SCALE:	0" 1"
JOB CAP/DRAWN:	DJM		
A/E OF RECORD:	RMW	SHEET No.	
SMRT CAD FILE:	M–001–13103	M–001	
PROJECT No.	13103		

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GENERAL NOTES:

1. INTENT OF PROJECT IS FOR NEW MATERIALS AND COMPONENTS TO REPLACE EXISTING. ALL MATERIALS SHALL BE APPROVED BY BOLDUC CORRECTIONAL.
2. REVIEW PROTOCOL AND PROCEDURES WITH BOLDUC CORRECTIONAL PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING BOLDUC CORRECTIONAL PROTOCOL AND PROCEDURES BY ITS EMPLOYEES AND SUB-CONTRACTORS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS IN THE FIELD PRIOR TO ANY DEMOLITION OR NEW INSTALLATION.
4. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE INTERNATIONAL BUILDING CODE AND ANY AND ALL OTHER APPLICABLE FEDERAL, STATE, AND LOCAL ORDINANCES.
5. THE CONTRACTOR SHALL VERIFY SHUTDOWN AND ISOLATION VALVE LOCATIONS. THE CONTRACTOR SHALL COORDINATE ALL SHUTDOWN WORK WITH THE PROJECT COORDINATOR FOR BOLDUC CORRECTIONAL.
6. THE CONTRACTOR SHALL VISIT THE SITE, BECOME FAMILIAR WITH THE EXISTING FIELD CONDITIONS, AND MAKE HIS OWN ESTIMATE OF THE DIFFICULTIES IN EXECUTING THE WORK PRIOR TO SUBMITTING ITS BID. NO COMPENSATION WILL BE AWARDED TO THE CONTRACTOR BASED ON A CLAIM OF LACK OF KNOWLEDGE OF EXISTING FIELD CONDITIONS.
7. THE CONTRACTOR SHALL REPORT ALL CHANGES IN THE WORK TO OWNER.
8. PIPING AND EQUIPMENT ARE NOT COMPLETELY DETAILED, THE INFORMATION ON THE DIAGRAMS AND ELEVATIONS PROVIDED ON THE DRAWINGS ARE APPROXIMATE. THE DISTRIBUTION IS INTENDED AS A GENERAL ROUTING ONLY, BUT DOES ILLUSTRATE THE DESIRED LOCATION. THE CONTRACTOR SHALL AVOID INTERFERENCES WITH OTHER EQUIPMENT AND THE WORK OF OTHER DISCIPLINES.
9. NOT ALL VALVES, INSTRUMENTS AND CONTROLS ARE SHOWN IN THE PLAN VIEWS. INSTALL PIPING AND VALVES AS SHOWN ON PIPING AND INSTRUMENTATION DIAGRAMS AND DETAILS.
10. PIPING AND SUPPORTS SHALL NOT INTERFERE WITH EQUIPMENT MAINTENANCE ACCESS OR PULL SPACE.
11. DRAWINGS OF REVISED PIPING ARRANGEMENTS SHALL BE SUBMITTED IF ITEMS ARE NOT SHOWN ON THE DRAWINGS. REVISIONS SHALL BE SUBJECT TO REVIEW AND APPROVAL BY THE ENGINEER PRIOR TO COMMENCEMENT OF THE CHANGES.
12. MECHANICAL CONTRACTOR SHALL PROVIDE ALL SUPPLEMENTARY STRUCTURAL SUPPORTS, ANGLE IRON, PLATES, ROD, ETC. AS NECESSARY FOR PROPER INSTALLATION OF PIPING, EQUIPMENT, AND ACCESSORIES.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR SIZING SUPPORTS, UNISTRUT RACKS, TRAPEZE STEEL, PIPE SUPPORT COMPONENTS, ETC.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL DAMAGE MADE BY ITS FIRM ON NEW OR EXISTING EQUIPMENT INSTALLED OR RELOCATED BY HIM UNDER THIS CONTRACT. THIS SHALL INCLUDE ALL TOUCH-UP PAINTING.
15. THE CONTRACTOR SHALL RETURN AS-BUILT DRAWINGS TO OWNER.
16. CONTRACTOR TO PROVIDE ALL MATERIALS NEEDED FOR CONSTRUCTION UNLESS OTHERWISE NOTED OR DIRECTED.
17. DIELECTRIC UNIONS SHALL BE INSTALLED BETWEEN DISSIMILAR METALS IN SOLDERED AND THREADED PIPING SYSTEMS AND INSULATED FLANGES FOR WELDING SYSTEMS.
18. CONTRACTOR TO LABEL ALL NEW PIPING EVERY 10 FEET. LABELING TO INCLUDE DIRECTION OF FLOW AS WELL AS DESCRIPTION OF CONTENTS. LABELING SHALL BE COLOR/SIZE ACCORDING TO OSHA SPECIFICATIONS.
19. PRIOR TO CONNECTING TO ANY EXISTING PIPING, CONFIRM TIE-IN LOCATIONS WITH BOLDUC CORRECTIONAL PROJECT MANAGER AND SITE SUPERVISOR.
    A. PROVIDE HANGERS, SUPPORTS, AND INSERTS CONFORMING TO:
       - MSS SP-58
       - MSS SP-69
       - ANSI B31.9
    B. PROVIDE PIPE HANGERS, SUPPORTS, AND ACCESSORIES WHICH:
       - PERMIT VERTICAL ADJUSTMENT AFTER INSTALLATION OF PIPING.
       - ARE DESIGNED FOR SUPPORT OF PIPING AND CONTENTS UNDER ALL CONDITIONS OF OPERATION INCLUDING TESTING.
       - WILL NOT CRUSH, INDENT, OR OTHERWISE DAMAGE PIPE, PIPE INSULATION, OR JACKETING.
    C. PROVIDE COMPLETE HANGER AND SUPPORT ASSEMBLIES, INCLUDING CLAMPS, RODS, WASHERS, NUTS, TURNBUCKLES, AND LOCKING DEVICES, CONSTRUCTED FOR COMPATIBILITY WITH ITEMS SUPPORTED AND SUPPORTING STRUCTURE.
    D. PROVIDE ALL SIMILAR SUPPORT COMPONENTS BY SAME MANUFACTURER.
    E. PROVIDE OVERSIZED CLEVIS AND/OR ROLLER HANGERS TO FIT ON OUTSIDE OF INSULATED PIPING.
    F. PROVIDE INSULATION PROTECTORS AT SUPPORT POINTS FOR ALL INSULATED UNJACKETED PIPING.
    G. SPECIAL REQUIREMENTS: ALL COMPONENTS SHALL BE SUITABLY SIZED FOR THE LOAD SUPPORTED.
20. SYSTEM CLEANING AND TESTING PROCEDURES SHALL BE SUBMITTED TO AND APPROVED BY OWNER.
21. CONTRACTOR SHALL SEAL ALL WALL AND FLOOR PENETRATIONS TO PROVIDE LEAK TIGHT CLEAN SPACE.

SCOPE OF WORK

THIS PROJECT INCLUDES THE INSTALLATION OF NEW UNDERGROUND HOT WATER SUPPLY AND HOT WATER RETURN PIPING. THE NEW UNDERGROUND PIPE IS TO REPLACE EXISTING PIPING THAT IS TO BE ABANDONED IN PLACE. SELECTIVE, PARTIAL REMOVAL OF THE EXISTING PIPING WILL OCCUR AT THE SERVICE ENTRANCE TO EACH BUILDING.

SUBMITTALS

1. PRODUCT DATA: SUBMIT MANUFACTURERS PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.
2. OPERATION AND MAINTENANCE DATA: SUBMIT MANUFACTURERS OPERATION AND MAINTENANCE DATA, INCLUDING OPERATION INSTRUCTIONS, LIST OF SPARE PARTS AND MAINTENANCE SCHEDULE.

OPERATION AND MAINTENANCE DATA

1. COMMENCE PREPARATION OF THE OPERATING AND MAINTENANCE (O&M) MANUALS IMMEDIATELY UPON RECEIPT OF "APPROVED" OR "APPROVED AS NOTED" SHOP DRAWINGS AND SUBMIT EACH SECTION WITHIN ONE MONTH. THE FINAL SUBMISSION SHALL BE NO LATER THAN TWO MONTHS PRIOR TO THE PROJECTED DATE OF SUBSTANTIAL COMPLETION OF THE PROJECT.
2. THE MANUAL SHALL CONSIST OF (3) SETS OF MANUALS AND INCLUDE (3) SETS OF CDS, WHICH SHALL CONTAIN THE SCANNED CONTENT OF THE ENTIRE MANUAL. THE MANUAL SHALL HIGHLIGHT THE ACTUAL EQUIPMENT USED AND NOT BE A MASTER CATALOG OF ALL SIMILAR PRODUCTS OF THE MANUFACTURER.

WARRANTIES

1. SUBMIT MANUFACTURER'S STANDARD REPLACEMENT WARRANTIES FOR MATERIAL AND EQUIPMENT FURNISHED UNDER THIS SECTION. SUCH WARRANTIES SHALL BE IN ADDITION TO AND NOT IN LIEU OF ALL LIABILITIES WHICH THE MANUFACTURER AND THE HVAC SUBCONTRACTOR MAY HAVE BY LAW OR BY PROVISIONS OF THE CONTRACT DOCUMENTS.
2. ALL MATERIALS, EQUIPMENT AND WORK FURNISHED UNDER THIS SECTION SHALL BE GUARANTEED AGAINST ALL DEFECTS IN MATERIALS AND WORKMANSHIP FOR A MINIMUM PERIOD OF ONE YEAR COMMENCING WITH THE DATE OF SUBSTANTIAL COMPLETION. WHERE INDIVIDUAL EQUIPMENT SECTIONS SPECIFY LONGER WARRANTEES, PROVIDE THE LONGER WARRANTEE. ANY FAILURE DUE TO DEFECTIVE MATERIAL, EQUIPMENT OR WORKMANSHIP WHICH MAY DEVELOP, SHALL BE CORRECTED AT NO EXPENSE TO THE OWNER INCLUDING ALL DAMAGE TO AREAS, MATERIALS AND OTHER SYSTEMS RESULTING FROM SUCH FAILURES.

INTERPRETATION OF DRAWINGS AND SPECIFICATIONS

1. IT IS THE INTENTION OF THE SPECIFICATIONS AND DRAWINGS TO CALL FOR COMPLETE, FINISHED WORK, TESTED AND READY FOR CONTINUOUS OPERATION. ANY APPARATUS, APPLIANCE, MATERIAL OR WORK NOT SHOWN ON THE DRAWINGS, BUT MENTIONED IN THE SPECIFICATIONS OR VICE VERSA, OR ANY INCIDENTAL ACCESSORIES NECESSARY TO MAKE THE WORK COMPLETE IN ALL RESPECTS AND READY FOR OPERATION, EVEN IF NOT PARTICULARLY SPECIFIED, SHALL BE PROVIDED BY THE HVAC SUBCONTRACTOR OR HIS/HER SUB SUBCONTRACTORS, WITHOUT ADDITIONAL EXPENSE TO THE OWNER.
2. THE DRAWINGS ARE GENERALLY DIAGRAMMATIC. THE LOCATIONS OF ALL ITEMS THAT ARE NOT DEFINITELY FIXED, DIMENSIONS ARE APPROXIMATE ONLY. THE EXACT LOCATIONS MUST BE DETERMINED AT THE SITE AND SHALL HAVE THE APPROVAL OF THE ARCHITECT BEFORE BEING INSTALLED. THE HVAC SUBCONTRACTOR SHALL FOLLOW DRAWINGS, INCLUDING SHOP DRAWINGS, IN LAYING OUT WORK AND SHALL CHECK THE DRAWINGS OF OTHER TRADES TO VERIFY SPACES IN WHICH WORK WILL BE INSTALLED. MAINTAIN MAXIMUM HEADROOM AND SPACE CONDITIONS. WHERE SPACE CONDITIONS APPEAR INADEQUATE, NOTIFY THE ARCHITECT BEFORE PROCEEDING WITH THE INSTALLATION. THE HVAC SUBCONTRACTOR SHALL, WITHOUT EXTRA CHARGE, MAKE REASONABLE MODIFICATIONS IN THE LAYOUT AS NEEDED TO PREVENT CONFLICT WITH WORK OF OTHER TRADES OR FOR PROPER EXECUTION OF THE WORK.
3. SIZES OF PIPES AND ROUTING ARE SHOWN, BUT IT IS NOT INTENDED TO SHOW EVERY OFFSET AND FITTING, NOR EVERY STRUCTURAL DIFFICULTY THAT MAY BE ENCOUNTERED. TO CARRY OUT THE INTENT AND PURPOSE OF THE DRAWINGS, ALL NECESSARY PARTS TO MAKE COMPLETE APPROVED WORKING SYSTEMS READY FOR USE, SHALL BE FURNISHED WITHOUT EXTRA CHARGE.

INSPECTION OF SITE CONDITIONS

1. PRIOR TO SUBMISSION OF BID, VISIT THE SITE AND REVIEW THE RELATED CONSTRUCTION DOCUMENTS TO DETERMINE THE CONDITIONS UNDER WHICH THE WORK HAS TO BE PERFORMED. SEND A REPORT, IN WRITING, TO THE DESIGN BUILD CONTRACTOR'S REPRESENTATIVE, NOTING ANY CONDITIONS WHICH MIGHT ADVERSELY AFFECT THE WORK OF THIS SECTION OF THE SPECIFICATIONS.

SPECIFICATION:

DEMOLITION AND REMOVAL:

A. THE EXISTING FACILITY WILL CONTINUE TO OPERATE DURING ALL PHASES OF THE DEMOLITION WORK AND SUBSEQUENT CONSTRUCTION. NO INTERRUPTION OF THE SYSTEMS WILL BE PERMITTED WITHOUT PRIOR APPROVAL OF THE OWNER'S REPRESENTATIVE.
B. SUBMIT PROPOSED METHODS FOR THE SELECTIVE DEMOLITION WORK TO THE OWNERS REPRESENTATIVE FOR REVIEW PRIOR TO THE START OF THE WORK.
C. PERFORM ALL DEMOLITION WHILE ENSURING MINIMUM INTERFERENCE WITH ADJACENT OCCUPIED AREAS.
D. MECHANICAL CONTRACTOR TO IDENTIFY, MAKE SAFE, CUT LOOSE AND CAP ALL EXISTING EQUIPMENT, COMPONENTS, DEVICES, ACCESSORIES AND DISTRIBUTION SYSTEMS AS INDICATED ON THE DRAWINGS.
E. COORDINATE WITH THE CONTRACTOR AND SUBCONTRACTORS TO PROVIDE DISCONNECTION PRIOR TO EQUIPMENT REMOVAL.
F. WHERE SECTIONS OF A SYSTEM ARE TO BE REMOVED AND THE SYSTEM SERVES OTHER AREAS OF THE BUILDING THAT ARE OUTSIDE THE SCOPE OF THE WORK, PERFORM THE FOLLOWING:
   1. COORDINATE THE TEMPORARY SHUT DOWN OF THE SYSTEM WITH THE OWNER'S REPRESENTATIVE.
   2. INSTALL SUPPORTS IN THE REMAINING ACTIVE SECTIONS OF THE SYSTEM AS REQUIRED BY THE REMOVAL OF NEARBY SUPPORTS ASSOCIATED WITH THE DEMOLITION.
   3. ISOLATE THE SYSTEM.
   4. CAP THE REMAINING SYSTEM SECTION, LEAVING THE REMAINDER OF THE SYSTEM ACTIVE.
G. ALL EQUIPMENT, ETC., NOT TURNED OVER TO THE OWNER SHALL BE PUT INTO THE GENERAL CONTRACTOR'S DUMPSTERS; BECOME THE PROPERTY OF THE CONTRACTOR, AND SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR.
H. PROVIDE TEMPORARY SHORING OR BRACING DURING THE DEMOLITION WORK TO PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF THE SYSTEM OR ADJACENT SYSTEMS DUE TO THE WORK.
I. PROMPTLY REPAIR ANY DAMAGE CAUSED TO ADJACENT FACILITIES OR AREAS THAT ARE DESIGNATED TO REMAIN AT NO ADDITIONAL COST TO THE OWNER.

MATERIALS FOR INSTALLATION:

SUPPLEMENTARY STEEL, CHANNELS AND SUPPORTS

1. PROVIDE ALL SUPPLEMENTARY STEEL, FACTORY FABRICATED CHANNELS AND SUPPORTS REQUIRED FOR PROPER INSTALLATION, MOUNTING AND SUPPORT OF ALL SYSTEMS PROVIDED UNDER THIS SECTION OF THE SPECIFICATION.
2. SUPPLEMENTARY STEEL AND FACTORY FABRICATED CHANNELS SHALL BE FIRMLY CONNECTED TO BUILDING CONSTRUCTION.
3. THE TYPE AND SIZE OF THE SUPPORTING CHANNELS AND SUPPLEMENTARY STEEL PROVIDED UNDER THIS SECTION OF THE SPECIFICATIONS SHALL BE DETERMINED BY THE SUBCONTRACTOR AND SHALL BE OF SUFFICIENT STRENGTH AND SIZE TO ALLOW ONLY A MINIMUM DEFLECTION IN CONFORMANCE WITH THE MANUFACTURER'S REQUIREMENTS FOR LOADING.
4. ALL SUPPLEMENTARY STEEL AND FACTORY FABRICATED CHANNELS SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER PARALLEL TO THE WALLS, FLOORS AND CEILING CONSTRUCTION. ALL TURNS SHALL BE MADE WITH 90 DEGREE AND 45 DEGREE FITTINGS, AS REQUIRED TO SUIT THE CONSTRUCTION AND INSTALLATION CONDITIONS.
5. ALL SUPPLEMENTARY STEEL INCLUDING FACTORY FABRICATED CHANNELS, SUPPORTS AND FITTINGS SHALL BE GALVANIZED STEEL, ALUMINUM, OR STAINLESS STEEL WHERE EXPOSED OR SUBJECT TO RUST PRODUCING ATMOSPHERE AND SHALL BE MANUFACTURED BY UNISTRUT, H-STRUT, POWERSTRUT, ERICO OR APPROVED EQUAL.

HYDRONIC PIPING

1. PROVIDE ALL PIPING COMPLETE WITH FITTINGS, VALVES, HANGERS, SUPPORTS, GUIDES, SLEEVES, AND ACCESSORIES.
2. ALL PRESSURIZED PIPING TO BE TESTED HYDROSTATICALLY TO 150 PSI OR 150% OF OPERATING PRESSURE, WHICHEVER IS GREATER, BUT NEVER EXCEED TEST PRESSURE ANSI B16.1 BASIS. TEST DURATION TO BE 2 HOURS WITH NO PRESSURE CHANGE CORRECTED FOR TEMPERATURE CHANGE.
3. REPAIR OR REPLACE LEAKS OR DEFECTS WITHOUT ADDITIONAL COST.
4. PROVIDE DIELECTRIC NIPPLES WHERE DISSIMILAR METALS ARE TO BE JOINED. DIELECTRIC UNIONS ARE NOT ACCEPTABLE.
5. PROVIDE ADEQUATE SUPPORT FOR PIPE AND CONTENTS TO PREVENT SAGGING, VIBRATION, OR SWAYING AND ALLOW FOR EXPANSION AND CONTRACTION. PROVIDE SUPPLEMENTAL STEEL AS REQUIRED WHERE STRUCTURE CANNOT SUPPORT POINT LOADS.
6. PROVIDE CONTINUOUS 1" FIBERGLASS INSULATION FOR ALL HEATING HOT WATER PIPING.
7. ALL INSULATION SHALL HAVE COMPOSITE FIRE AND SMOKE HAZARD RATINGS THAT SHALL NOT EXCEED A FLAME SPREAD OF 25 AND A SMOKE DEVELOPED RATING OF 50.
8. MODIFICATIONS TO EXISTING INDOOR HYDRONIC PIPING SHALL BE SCH 40 STEEL PIPING, IN ACCORDANCE WITH ASTM A53 WITH WELDED AND FLANGED JOINTS.
9. INSPECTIONS AND TESTS SHALL BE PERFORMED ON THE PIPING INSTALLATION AS REQUIRED BY CODE.
10. REPAIR ALL INDOOR HOT WATER PIPING INSULATION WITH 1" THICK FIBERGLASS PIPE INSULATION WITH FSK JACKET.
11. NEW ISOLATION VALVES LOCATED IN MANHOLES SHALL BE STAINLESS STEEL BALL VALVES. BASIS OF DESIGN: APOLLO 87A-100 SERIES OR APPROVED EQUAL.
12. PIPE FLANGE GASKET MATERIALS: SUITABLE FOR CHEMICAL AND THERMAL CONDITIONS OF PIPING SYSTEM CONTENTS.
    A. ASME B16.21, NONMETALLIC, FLAT, ASBESTOS-FREE, 1/8-INCH THICK:
       a. FULL FACE TYPE: FOR FLAT-FACE, CLASS 125, CAST-IRON AND CAST BRONZE FLANGES
       b. NARROW FACE TYPE: FOR RAISED FACE, CLASS 250, CAST-IRON AND STEEL FLANGES.

UNDERGROUND PRE-INSULATED PIPING

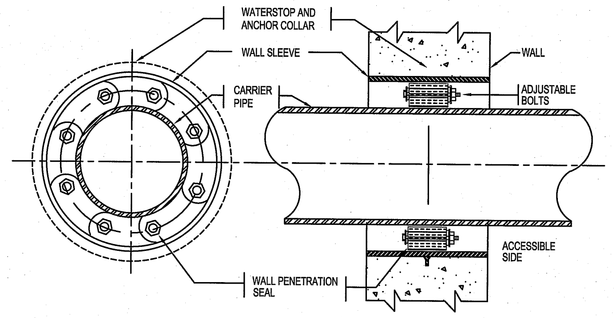
1. PRE-INSULATEED PEX PIPING SHALL BE EQUAL TO PEXFLEX BY URECON, OR APPROVED EQUAL.
2. ASSOCIATED JOINTS AND INSULATION OF JOINTS, FITTINGS AND ACCESSORIES SHALL BE PER MANUFACTURERS RECOMMENDATIONS.
3. THE CARRIER PIPE SHALL BE MADE OF CROSS LINKED POLYETHYLENE (PEX). THE PRODUCT SHALL BE MANUFACTURED IN ACCORDANCE TO ISO 9001 STANDARDS.
4. INSULATION: THE PIPE SHALL BE PRE-INSULATED WITH SEMI-FLEXIBLE POLYURETHANE FOAM. INSULATION SHALL HAVE A THERMAL CONDUCTIVITY OF LESS THAN 0.013 BTU/HR-FT-F. A FOIL BARRIER SHALL BE INCORPORATED TO AVOID THE MIGRATION OF CELL GASES BETWEEN THE INSULATION AND THE OUTER JACKET. THE OUTER JACK SHALL BE LOW DENSITY POLYETHYLENE
5. JOINTS AND FITTINGS INSULATION: PRE-FORMED POLYURETHANE INSULATION COVERS WITH FIELD APPLIED WATERPROOF SEAL. INSULATION THICKNESS TO MATCH PIPE INSULATION, K-FACTOR 0.19 BTU/FT-HR-F.
6. PIPE CONNECTIONS: TOP QUALITY BRASS COMPRESSION OR PRESSFIT FITTINGS.
7. THE UNDERGROUND PIPING SHALL BE INSTALLED A MINIMUM OF 4 FEET BELOW GRADE.
8. PIPING SHALL HAVE A MINIMUM EXPECTED SERVICE LIFE OF 30 YEARS AND COME WITH A 25 YEAR WARRANTY.
9. THE PRE-INSULATED PEX PIPING SHALL NOT REQUIRE THE INSTALLATION OF EXPANSION JOINTS.

MECHANICAL IDENTIFICATION

1. LABELING SHALL APPEAR AT INTERVALS OF NOT MORE THAN 10 FEET AND AT LEAST ONCE IN EACH ROOM AND EACH STORY TRAVERSED BY THE PIPING SYSTEM. ALL PIPING SHALL BE CLEARLY IDENTIFIED SPECIFICALLY FOR TYPE OF SERVICE WITH COILED PLASTIC PIPE MARKERS AND FLOW DIRECTION ARROWS.
2. MARKING TAPE: THE MECHANICAL CONTRACTOR SHALL PROVIDE ALUMINUM MARKING TAPE LABELED "CAUTION HOT WATER PIPING." THE TAPE SHALL BE INSTALLED APPROXIMATELY 24 INCHES ABOVE THE CROWN OF THE HORIZONTAL HOT WATER PIPES AND EXTEND THE ENTIRE LENGTH OF ALL HORIZONTAL HOT WATER PIPES. THE TAPE SHALL BE TERMINATED INSIDE THE MECHANICAL ROOM AT THE BUILDING WALLS.

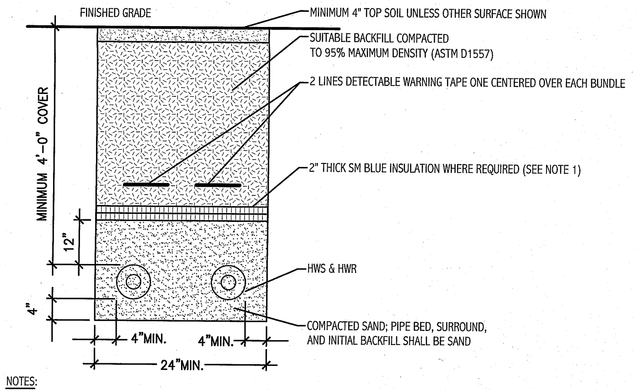
PHASING REQUIREMENTS:

1. ALL INSTALLATIONS SHALL BE COMPLETED IN A MANNER TO MINIMIZE DOWN TIME. HOT WATER SUPPLY TO ANY BUILDING SHALL NOT BE DOWN FOR MORE THAN THE HOURS MANDATED BY POLICY. COORDINATE ALL DOWN TIMES WITH OWNER.
2. INSTALL ISOLATION VALVES IN MAN HOLE SEPARATING PHASE 1 AND PHASE 2 TO MEET PHASING REQUIREMENTS. EXISTING SYSTEM IS TO REMAIN ACTIVE UNTIL FINAL CONNECTIONS ARE BEING MADE.



M15 | PIPE PENETRATION DETAIL

NOT TO SCALE

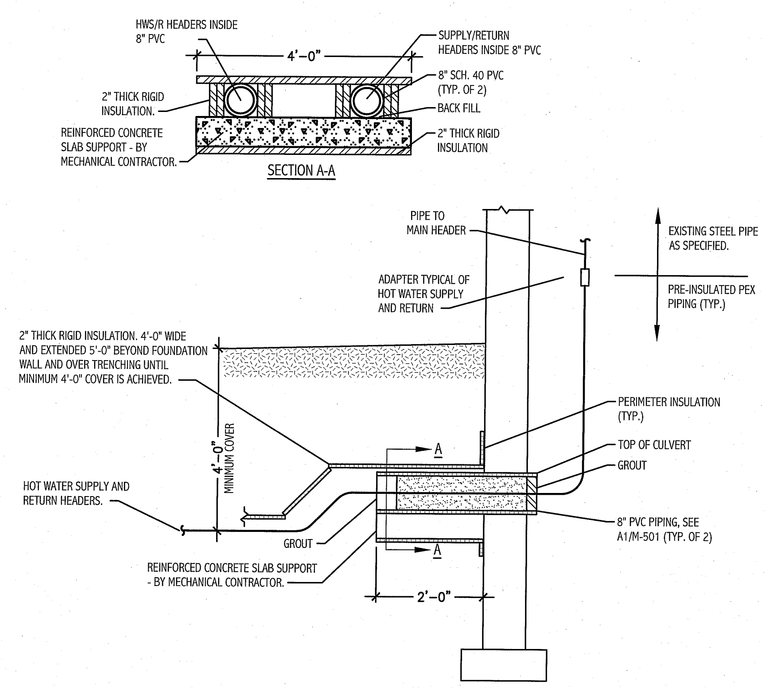


NOTES:

1. WHERE MINIMUM 4'-0" COVER CANNOT BE MAINTAINED, PROVIDE INSULATION OVER PIPING AS SHOWN.
2. SUITABLE BACKFILL SHALL COMPRISE EITHER ON-SITE EXCAVATED MATERIAL THAT CONFORMS TO THE REQUIREMENTS OF THE "SATISFACTORY BORROW" DEFINITION BELOW, OR IMPORTED MATERIAL THAT MEETS MDOT SPECIFICATION 703.19: GRANULAR BORROW WITH A MAXIMUM PARTICLE SIZE OF 3 INCHES.
3. SATISFACTORY BORROW SHALL MEET ASTM D2487 SOIL CLASSIFICATION GROUPS GW, GP, GMd, SW, SP, SMd, OR A COMBINATION THEREOF. BORROW SHALL BE FREE OF ROCK FRAGMENTS LARGER THAN 3 INCHES, DEBRIS, WASTE, FROZEN MATERIAL, VEGETATION, AND OTHER DELETERIOUS MATTER.

G15 | PIPE TRENCH DETAIL

NOT TO SCALE



A10 | FOUNDATION SLEEVE DETAIL

NOT TO SCALE

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STATE OF MAINE — RONNIE M. WILLEY — NO. 11029 — LICENSED — PROFESSIONAL ENGINEER — 4/10/14

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BOLDUC CORRECTIONAL FACILITY
HOT WATER LOOP REPLACEMENT
WARREN, MAINE

MECHANICAL SPECIFICATIONS AND DETAILS

SHEET TITLE:

SCALE:	AS NOTED	DATE:	4-10-14
PROJECT MANAGER:	DJM	GRAPHIC SCALE:	0" 1"
JOB CAP/DRAWN:	DJM		
A/E OF RECORD:	RMW	SHEET No.	
SMRT CAD FILE:	M-002-13103		M-002
PROJECT No.	13103		

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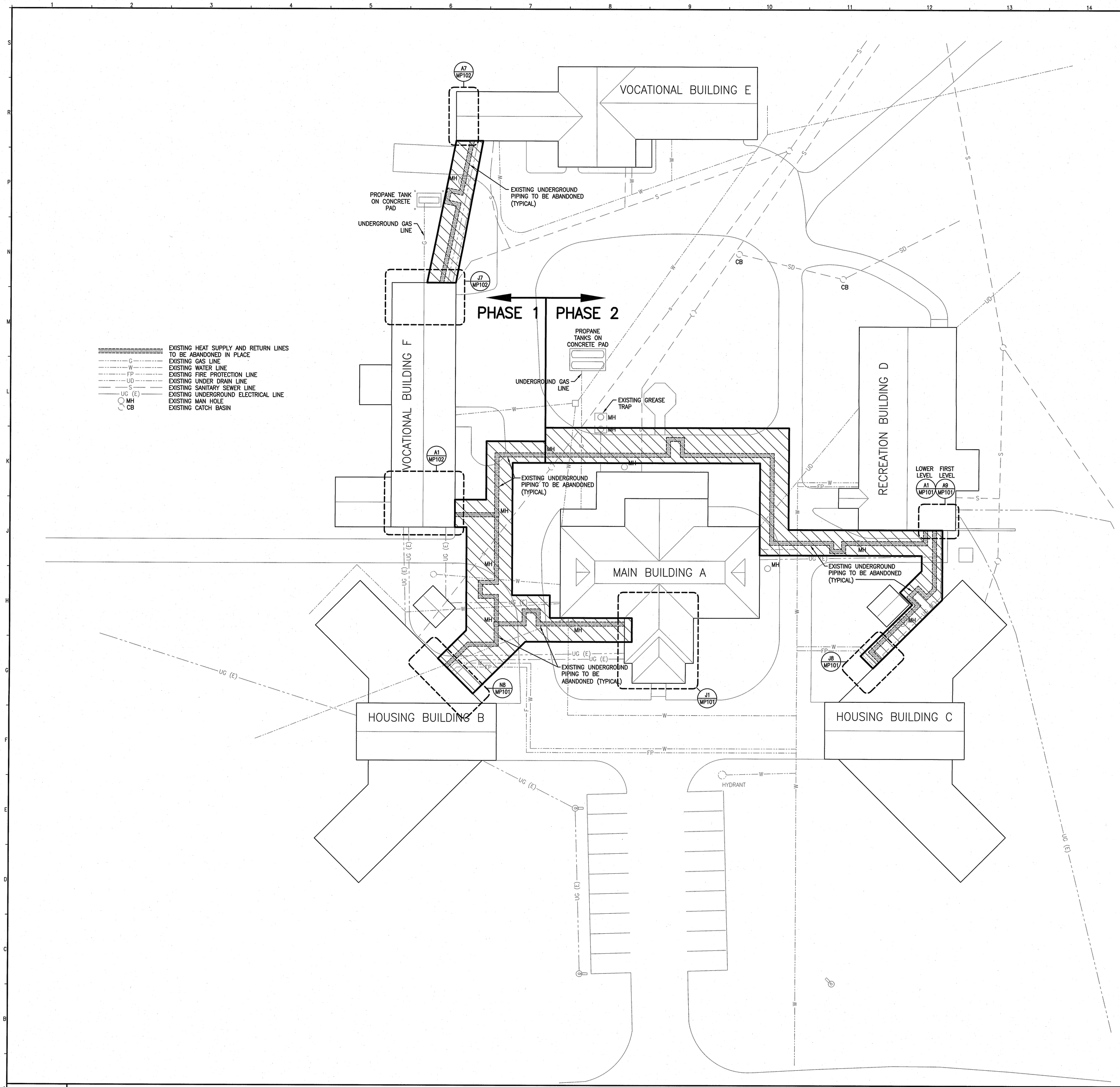

SITE CONSTRUCTION NOTES

SCOPE OF WORK

1. THE SCOPE OF SITEWORK FOR THIS PROJECT INCLUDES PROTECTION OF EXISTING STRUCTURES AND UTILITIES, EXCAVATION FOR REPLACEMENT OF EXISTING HOT WATER PIPING AND ACCESSORY STRUCTURES, BACKFILL AND REINSTATEMENT OF DISTURBED AREAS OF THE SITE TO MATCH EXISTING CONDITIONS. THE EXISTING CONDITIONS SHOWN ON THE PROJECT DRAWINGS ARE TAKEN FROM RECORD DRAWINGS AND HISTORICAL INFORMATION. THE CONTRACTOR SHALL REVIEW THE DRAWINGS AND SITE CONDITIONS PRIOR TO THE START OF WORK AND CONTACT THE PROJECT ARCHITECT IMMEDIATELY IF DISCREPANCIES ARE FOUND.
2. THE CONTRACTOR SHOULD NOTE THAT AT MANY LOCATIONS THE EXISTING HOT WATER LINES THAT SERVE THE FACILITY WILL BE DIRECTLY ADJACENT TO THE NEW PIPING, AND MAY BE INSTALLED AT A HIGHER ELEVATION THAN THE NEW WORK. THE EXISTING SYSTEM MUST BE KEPT IN OPERATION TO SERVE THE FACILITY UNTIL THE NEW WORK IS COMPLETE AND COMMISSIONED. THIS WILL REQUIRE THE CONTRACTOR TO PROTECT THE EXISTING PIPING WHILE EXCAVATING IN THE IMMEDIATE VICINITY TO INSTALL NEW PIPING AT THE SPECIFIED DEPTH. THE CONTRACTOR SHALL PLAN AND EXECUTE THE WORK IN A MANNER THAT ALLOWS FOR THE PROTECTION OF EXISTING PIPING AND CONTINUED FUNCTION OF THE EXISTING SYSTEM THROUGHOUT THE WORK PERIOD.

UNDERGROUND UTILITY LOCATION

1. EXISTING UNDERGROUND UTILITIES HAVE BEEN LOCATED FROM HISTORICAL RECORDS AND PREVIOUS DESIGN DRAWINGS. NO GUARANTEE IS MADE THAT THE UTILITIES SHOWN WILL BE FOUND IN THE LOCATIONS INDICATED, OR THAT THE INFORMATION SHOWN IS COMPLETE. INFORMATION ON EXISTING UTILITY LOCATIONS IS PROVIDED FOR REFERENCE ONLY AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING EXISTING UTILITY LOCATIONS AND DEPTHS AND COORDINATING THE WORK ACCORDINGLY.
2. THE CONTRACTOR SHALL UNDERTAKE TEST PITS AT THE SITE AND ENGAGE PRIVATE UTILITY DETECTION SERVICE, AS NECESSARY TO ACCURATELY IDENTIFY UTILITIES IN ORDER TO EFFICIENTLY PLAN AND COMPLETE THE WORK.

PROTECTION OF EXISTING STRUCTURES AND UTILITIES

1. THE CONTRACTOR SHALL PROTECT EXISTING STRUCTURES AND UTILITIES ADJACENT TO THE WORK. ANY DAMAGE TO EXISTING STRUCTURES, ROADS, SIDEWALKS, UTILITIES, OR OTHER SITE FEATURES CAUSED BY THE WORK SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE OWNER.
2. ANY UTILITY REPAIRS, OR RE-CONFIGURATION REQUIRED AS PART OF THIS PROJECT SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE AUTHORITY HAVING JURISDICTION.
3. TEMPORARY WORKS, SUPPORT AND PROTECTION OF STRUCTURES ARE THE RESPONSIBILITY OF THE CONTRACTOR AND THE COSTS SHALL BE CONSIDERED INCIDENTAL THE OVERALL PROJECT SUM.
4. NO EXISTING UTILITY SERVICES SHALL BE INTERRUPTED DURING THE COURSE OF THE WORK WITHOUT THE PRIOR WRITTEN PERMISSION OF THE OWNER. A MINIMUM OF TWO WORKING DAYS NOTICE SHALL BE PROVIDED TO THE OWNER FOR ANY PLANNED UTILITY INTERRUPTION.
5. BACKFILL MATERIALS AROUND UTILITIES DISTURBED BY THE CONSTRUCTION WORK SHALL BE REPLACED WITH SIMILAR MATERIALS AT NO ADDITIONAL COST TO THE OWNER.

WORK METHOD

1. ALL WORK SHALL BE UNDERTAKEN IN STRICT ACCORDANCE WITH LOCAL, STATE AND FEDERAL SAFETY STANDARDS.
2. OPEN EXCAVATIONS AND WORK AREAS SHALL BE CLEARLY DELINEATED AND FENCED, AS NECESSARY TO PREVENT UNAUTHORIZED ACCESS
3. DRIVEWAYS, WALKWAYS AND ENTRANCES SERVING PREMISES SHALL BE KEPT CLEAR AND AVAILABLE TO OWNER, OWNER'S EMPLOYEES, AND EMERGENCY VEHICLES, AS NECESSARY TO MAINTAIN THE FUNCTION OF THE FACILITY. COORDINATE ALL WORK WITH OWNER TO ENSURE THAT ADEQUATE ACCESS AND CIRCULATION IS MAINTAINED AT ALL TIMES.
4. DE-WATERING, IF NECESSARY SHALL BE UNDERTAKEN IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL STANDARDS. NO DISCHARGE OF SEDIMENT LADEN RUNOFF TO SURFACE WATERS, OR THE PIPED STORM DRAIN SYSTEM AT THE SITE SHALL BE ALLOWED.
5. SOIL EROSION AND SEDIMENT CONTROL, BEST MANAGEMENT PRACTICES (BMPS) SHALL BE INSTALLED AND MAINTAINED AS NECESSARY TO PROTECT DOWNSTREAM RESOURCES AND CONFORM TO LOCAL, STATE AND FEDERAL REGULATIONS. SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INCLUDED IN THE CONTRACT SUM.

REINSTATEMENT OF DISTURBED AREAS

1. ALL DISTURBED PAVEMENT AREAS, ROADS AND SIDEWALKS SHALL BE REINSTATED TO MATCH EXISTING GRADES, MATERIALS AND DEPTHS.
2. BASE AND SUBBASE GRAVELS SHALL CONFORM TO MAINE DOT SPECIFICATION 703.06 FOR TYPE 'A' AGGREGATE AND 703.06 FOR TYPE 'D' AGGREGATE, RESPECTIVELY. ALL MATERIAL SHALL BE PLACED AND COMPACTED TO 95% MAXIMUM DRY DENSITY AS DETERMINED BY ASTM-D1557.
3. IN PAVED ROADS AREAS A MINIMUM OF 3-INCHES OF PAVEMENT (2" BINDER COURSE OF 19mm HMA AND 1.5" OF 9.5mm HMA), SIX INCHES OF TYPE 'A' BASE AGGREGATE AND FIFTEEN INCHES OF TYPE 'D' AGGREGATE IS REQUIRED FOR REPAIR AREAS WHERE THE CURRENT SECTION IS LESS THAN THIS.
4. EXISTING PAVEMENT SHALL BE SAWCUT AT LEAST TWELVE INCHES INTO SOUND MATERIAL TO PROVIDE A CLEAN, STRAIGHT EDGE BETWEEN EXISTING SOUND SURFACE MATERIAL AND THE REPAIRED AREA.
5. TACK COAT SHALL BE APPLIED TO VERTICAL REPAIR EDGES PRIOR TO CONSTRUCTION OF THE ASPHALT PATCH.
6. A SMOOTH TRANSITION SHALL BE PROVIDED BETWEEN REPAIR WORKS AND EXISTING PAVEMENT. ALL NEW PAVEMENT AND SIDEWALK WORK SHALL CONFORM TO A SURFACE TOLERANCE OF ONE-EIGHTH INCH (1/8") AS MEASURED WITH A TEN FOOT STRAIGHT EDGE.
7. ALL REINSTATED AREAS SHALL BE GRADED TO PITCH UNIFORMLY TO ENSURE POSITIVE DRAINAGE.
8. WHERE CURBING IS DISTURBED IT SHALL BE REMOVED, STORED AND REPLACED. CURBING DAMAGED DURING CONSTRUCTION SHALL BE REPLACED WITH SIMILAR MATERIALS AT NO COST TO THE OWNER.
9. ALL DISTURBED GRASS AREAS SHALL BE REINSTATED WITH A MINIMUM OF SIX INCHES OF CLEAN, SCREENED TOPSOIL, SEEDED WITH A NATIVE GRASS SEED MIX AND COVERED WITH STRAW MULCH FOR STABILIZATION.

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NO. 11029
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BOLDUC CORRECTIONAL FACILITY
HOT WATER LOOP REPLACEMENT
WARREN, MAINE

PHASING AND DEMOLITION PLAN
SHEET TITLE:

SCALE:	AS NOTED	DATE:	4-10-14
PROJECT MANAGER:	DJM	GRAPHIC SCALE:	0" 1"
JOB CAP/DRAWN:	DJM		
A/E OF RECORD:	RMW	SHEET No.	MD100
SMRT CAD FILE:	MD100-13103		
PROJECT No.	13103		

PROJECT NORTH
MAG NORTH

A1 SITE PLAN
1" = 20'

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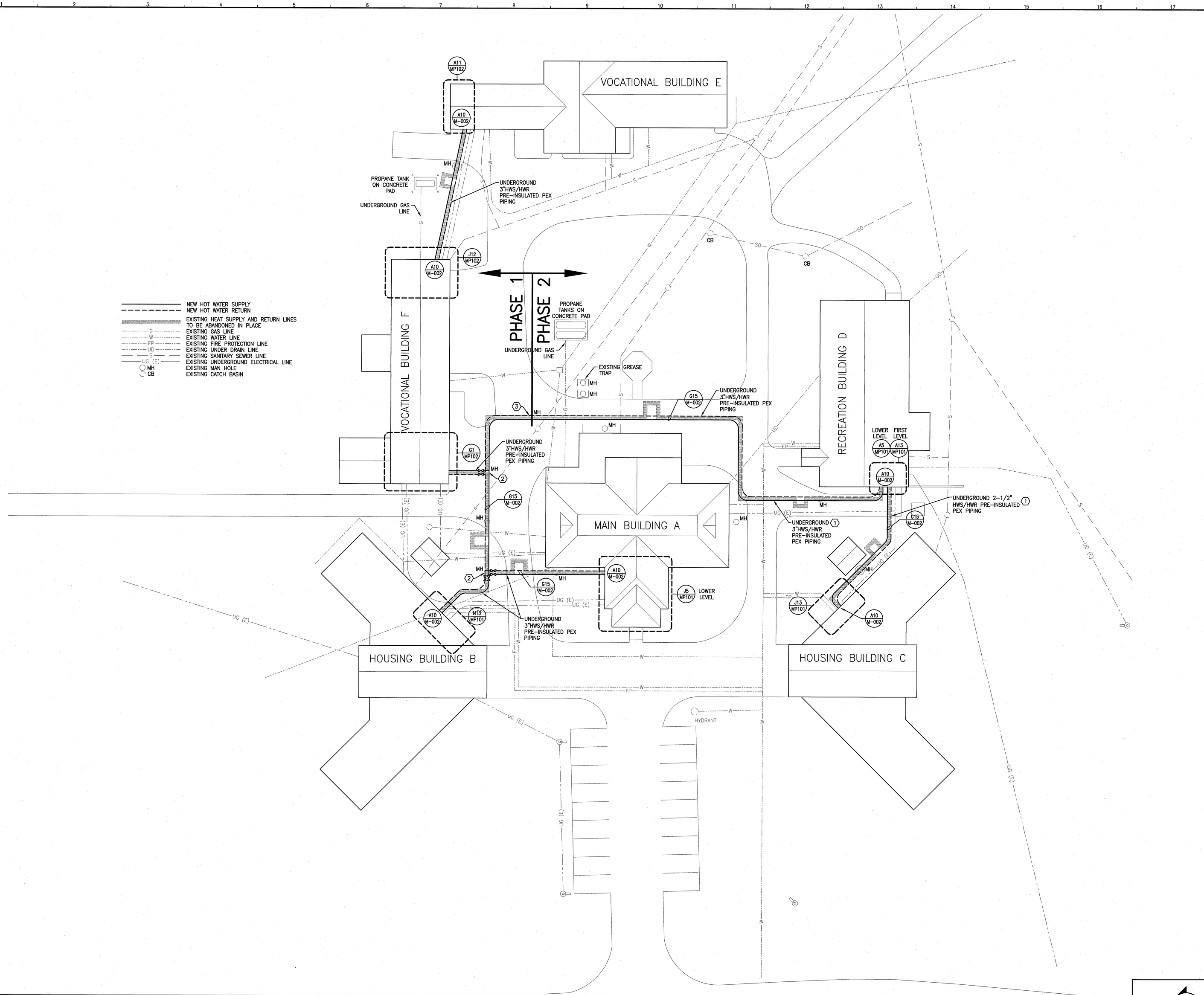

KEYED NOTES:

1. UNDERGROUND PIPING SHALL BE PRE-INSULATED PEX PIPING TO BE URECON "PEX FLEX" OR APPROVED EQUAL INSULATION OF ASSOCIATED JOINTS, FITTINGS, AND ACCESSORIES SHALL BE PER MANUFACTURERS RECOMMENDATIONS.
2. PROVIDE BRASS TEE FITTING INSIDE MANHOLES FOR BRANCH TAKE-OFFS. PROVIDE WITH ISOLATION VALVES AND INSULATION KIT.
3. PHASE 1 TO TERMINATE AT MANHOLE IN LOCATION SHOWN. PROVIDE ISOLATION VALVES AND TERMINATION ADAPTOR COUPLING TO ALLOW FOR TRANSITION FROM PEX TO STEEL. SEE SCHEMATICS A14, C14 AND F14 ON MP102.

REV.	DESCRIPTION	DATE
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BOLDUC CORRECTIONAL FACILITY
HOT WATER LOOP REPLACEMENT

WARREN, MAINE

SHEET TITLE:
NEW WORK PLAN

SCALE:	AS NOTED	DATE:	4-10-14
PROJECT MANAGER:	DJM	GRAPHIC SCALE:	0" 1"
JOB CAP/DRAWN:	DJM		
A/E OF RECORD:	RMW	SHEET No.	
SMRT CAD FILE:	MP100-13103		MP100
PROJECT No.	13103		

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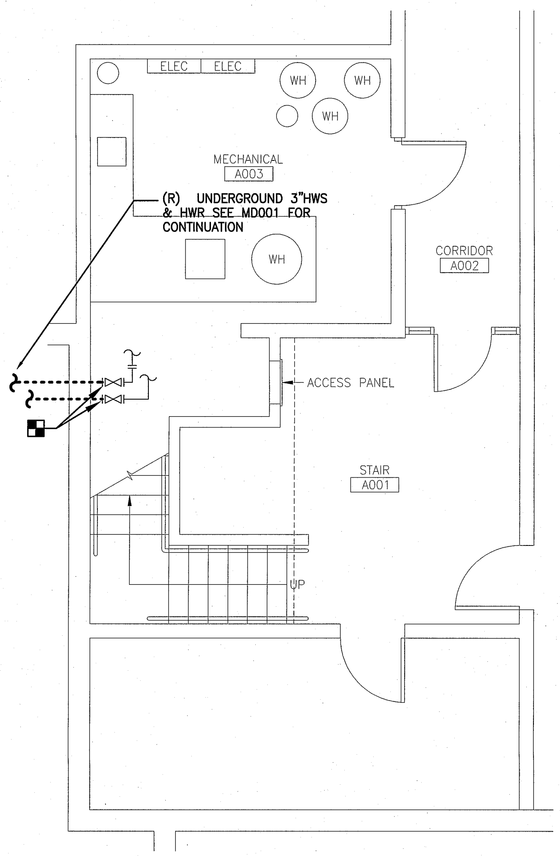
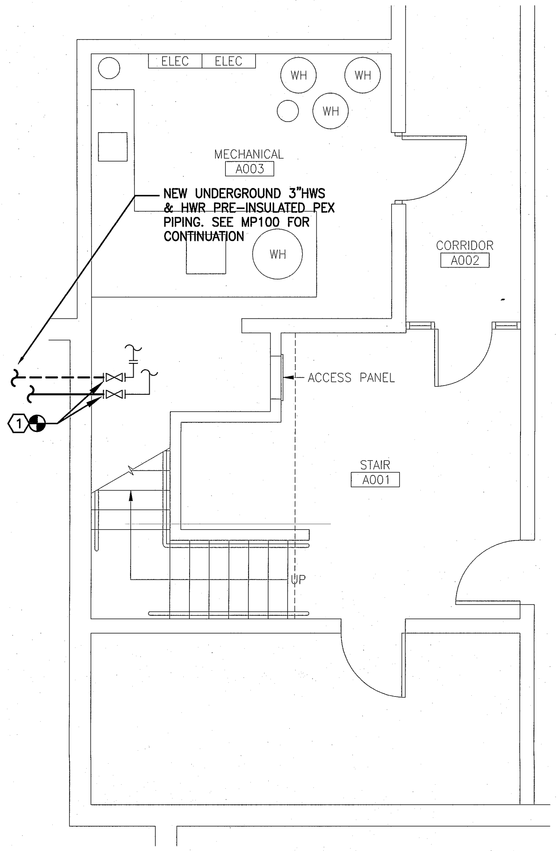
PROJECT NORTH
MAG NORTH

A1	SITE PLAN
1" = 20'	



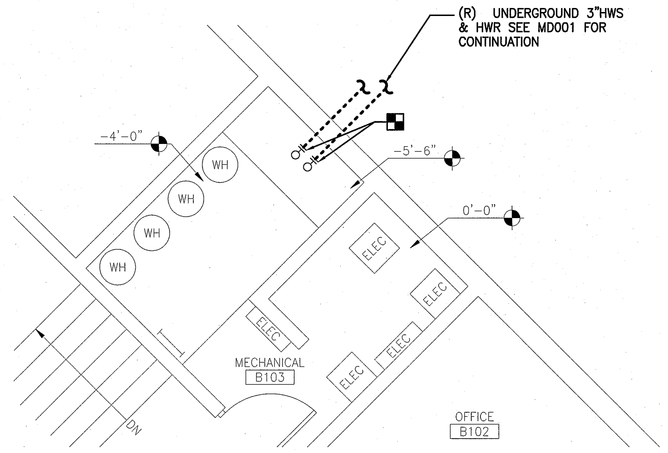
J1 BUILDING A LOWER LEVEL DEMO

1/4" = 1'-0"



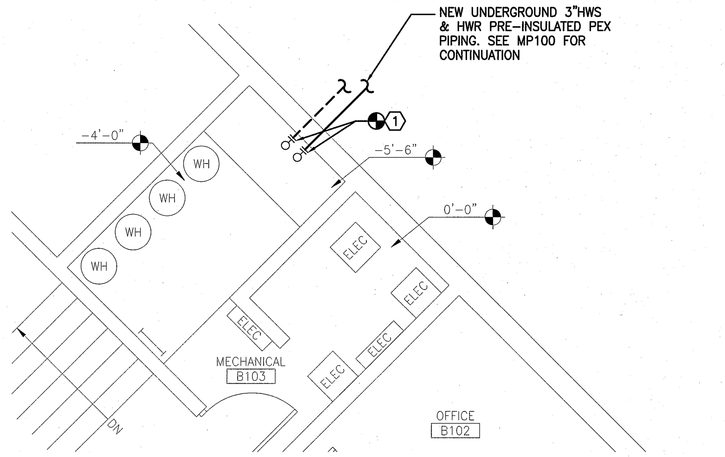
J5 BUILDING A LOWER LEVEL NEW

1/4" = 1'-0"



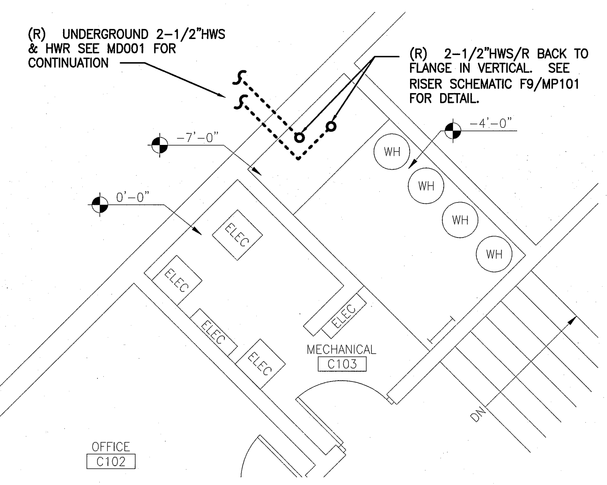
N8 BUILDING B DEMO

1/4" = 1'-0"



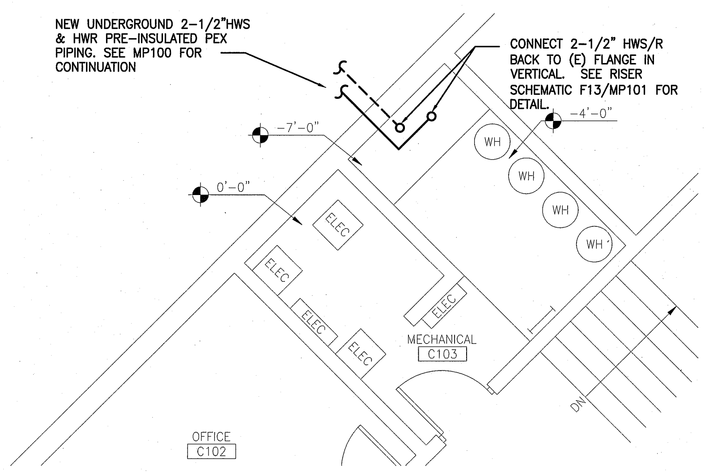
N13 BUILDING B NEW

1/4" = 1'-0"



J8 BUILDING C DEMO

1/4" = 1'-0"

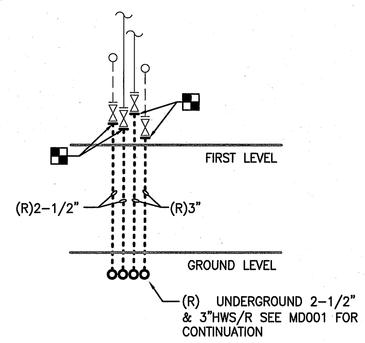


J13 BUILDING C NEW

1/4" = 1'-0"

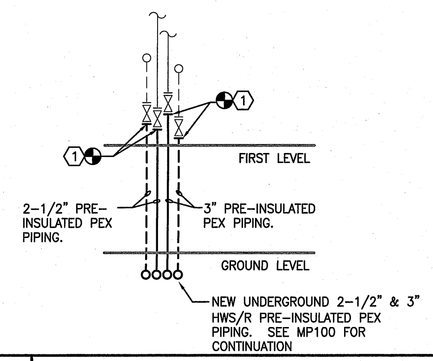
KEYED NOTES:

1. PROVIDE TERMINATION ADAPTOR COUPLING TO ALLOW FOR TRANSITION FROM PEX TO STEEL.



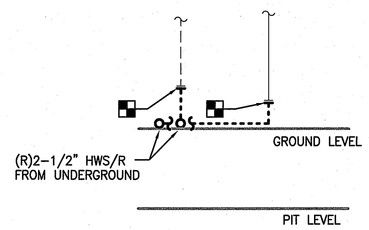
F1 BUILDING D DEMO RISER SCHEMATIC

NOT TO SCALE



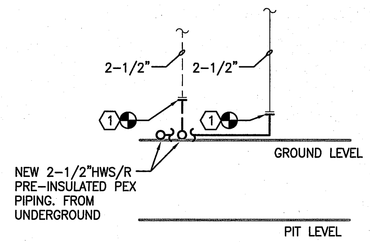
F5 BUILDING D NEW RISER SCHEMATIC

NOT TO SCALE



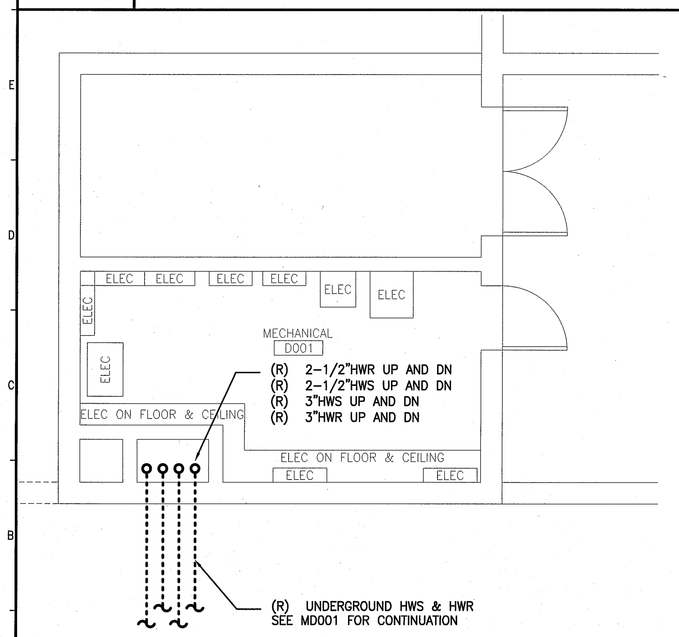
F9 BUILDING C DEMO RISER SCHEMATIC

NOT TO SCALE



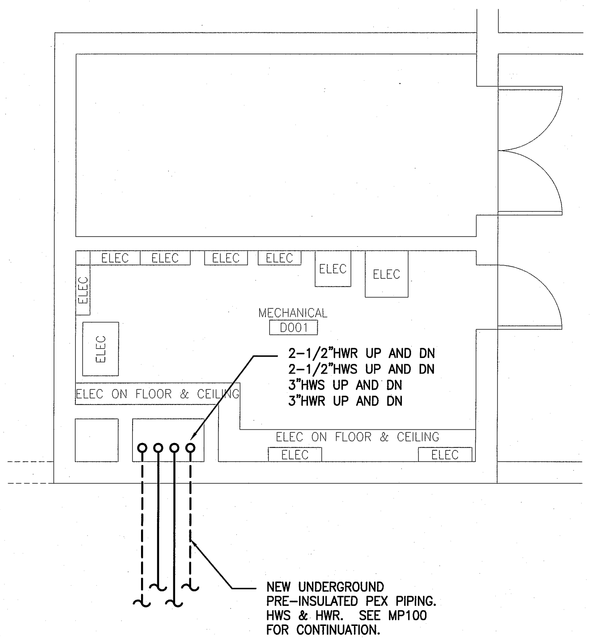
F13 BUILDING C NEW RISER SCHEMATIC

NOT TO SCALE



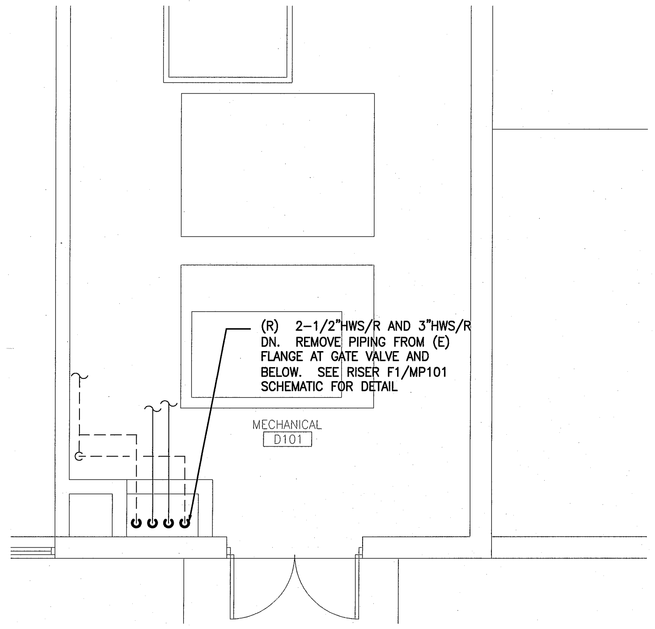
A1 BUILDING D LOWER LEVEL DEMO

1/4" = 1'-0"



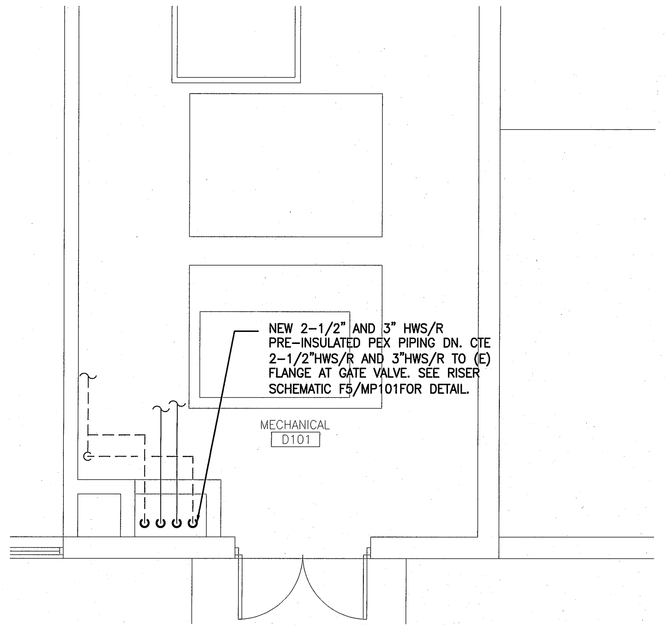
A5 BUILDING D LOWER LEVEL NEW

1/4" = 1'-0"



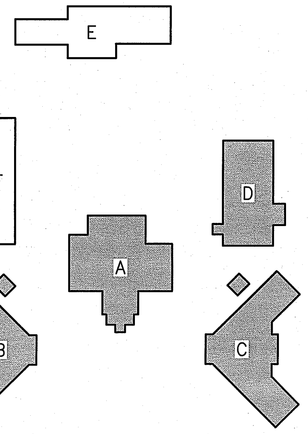
A9 BUILDING D FIRST LEVEL DEMO

1/4" = 1'-0"



A13 BUILDING D FIRST LEVEL NEW

1/4" = 1'-0"



F17 KEY PLAN

NOT TO SCALE

REV.	DESCRIPTION	DATE
0	ISSUED FOR BID/CONSTRUCTION	4-10-14

ISSUED FOR BID/CONSTRUCTION
4-10-14

CURRENT ISSUE STATUS:

STATE OF MAINE
RONNIE M. WILLEY
NO. 11029
LICENSED
PROFESSIONAL ENGINEER

7/8/14

SMRT
ARCHITECTURE
ENGINEERING
PLANNING
INTERIOR DESIGN
COMMISSIONING
144 Fore Street/P.O. Box 618
Portland, Maine 04104
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BOLDUC CORRECTIONAL FACILITY
HOT WATER LOOP REPLACEMENT
WARREN, MAINE

ENLARGED PLANS
SHEET 1
SHEET TITLE:

SCALE:	AS NOTED	DATE:	4-10-14
PROJECT MANAGER:	DJM	GRAPHIC SCALE:	0" 1"
JOB CAP/DRAWN:	DJM		
A/E OF RECORD:	RMW	SHEET No.	MP101
SMRT CAD FILE:	MP101-13103		
PROJECT No.	13103		

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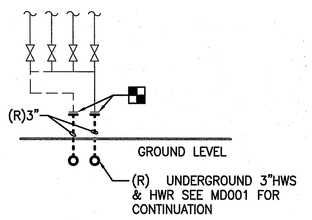
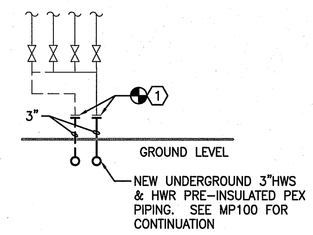
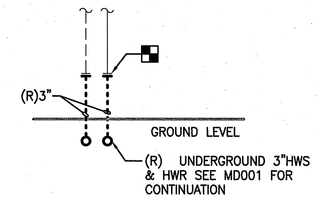


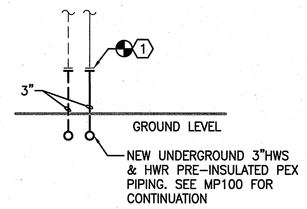
N1	BUILDING F WEST END DEMO RISER SCHEMATIC
NOT TO SCALE	



N5	BUILDING F WEST END NEW RISER SCHEMATIC
NOT TO SCALE	



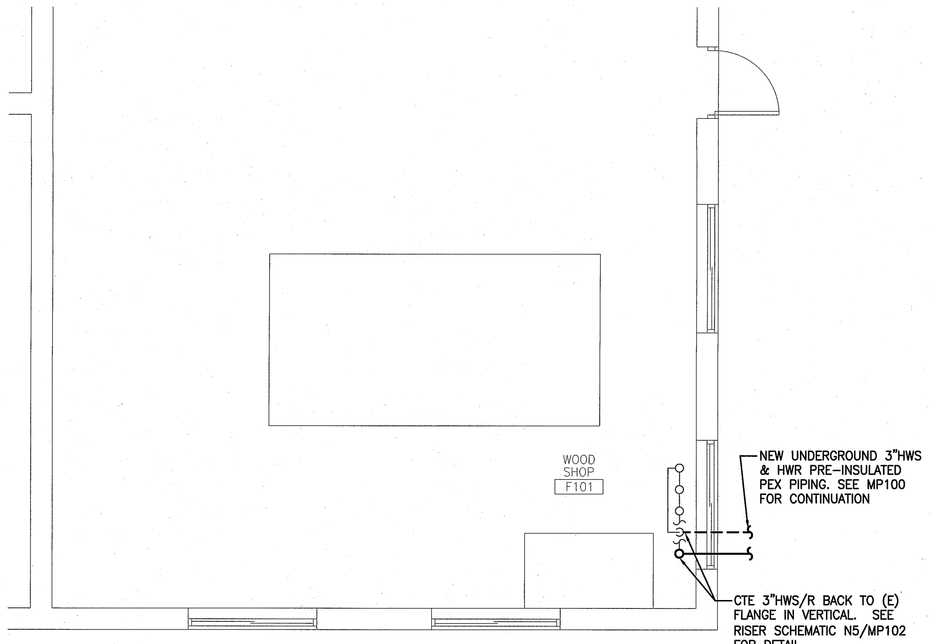
N10	BUILDING F EAST END DEMO RISER SCHEMATIC
NOT TO SCALE	



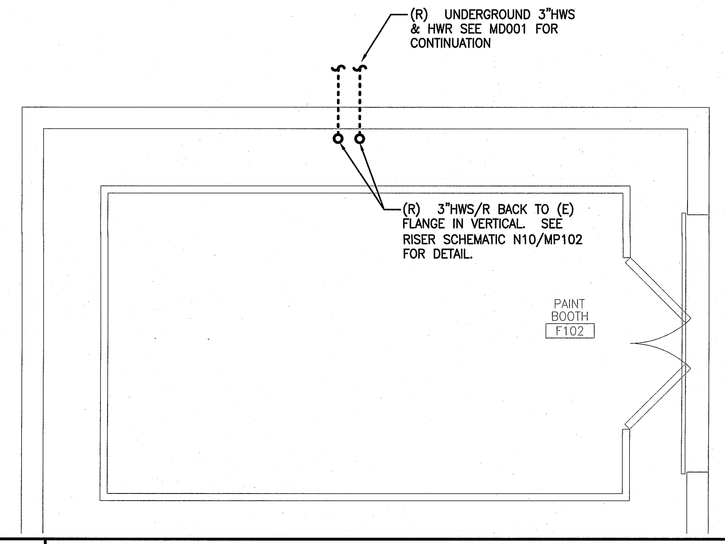
N14	BUILDING F EAST END NEW RISER SCHEMATIC
NOT TO SCALE	

KEYED NOTES:

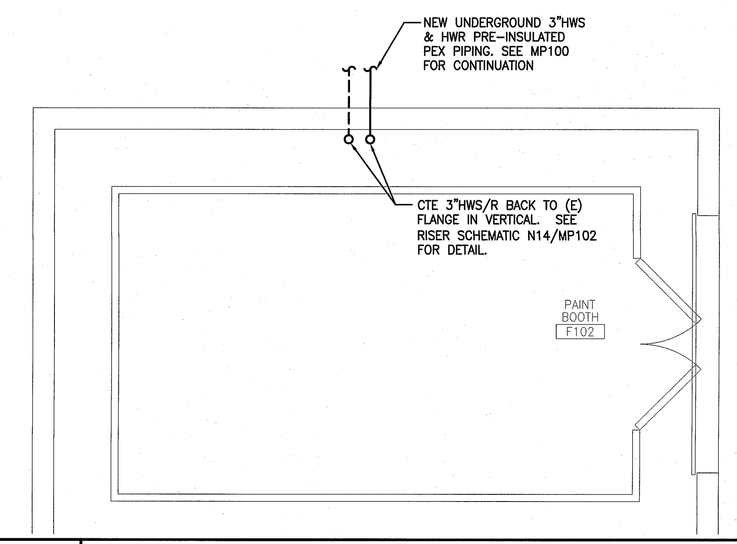
1. PROVIDE TERMINATION ADAPTOR COUPLING TO ALLOW FOR TRANSITION FROM PEX TO STEEL.



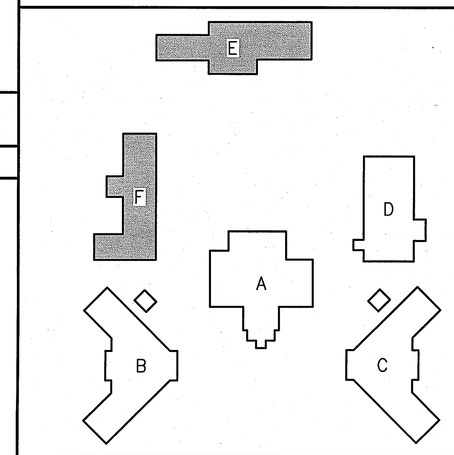
G1	BUILDING F WEST END NEW
1/4" = 1'-0"	

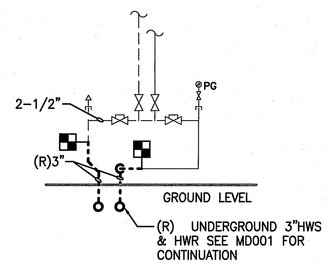


J7	BUILDING F EAST END DEMO
1/4" = 1'-0"	

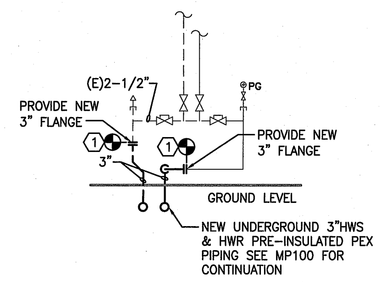


J12	BUILDING F EAST END NEW
1/4" = 1'-0"	

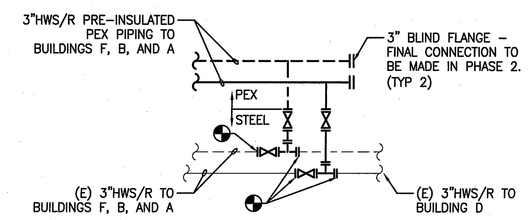




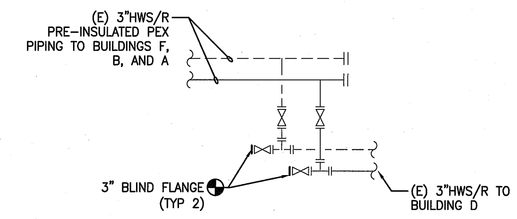
F7	BUILDING E DEMO RISER SCHEMATIC
NOT TO SCALE	



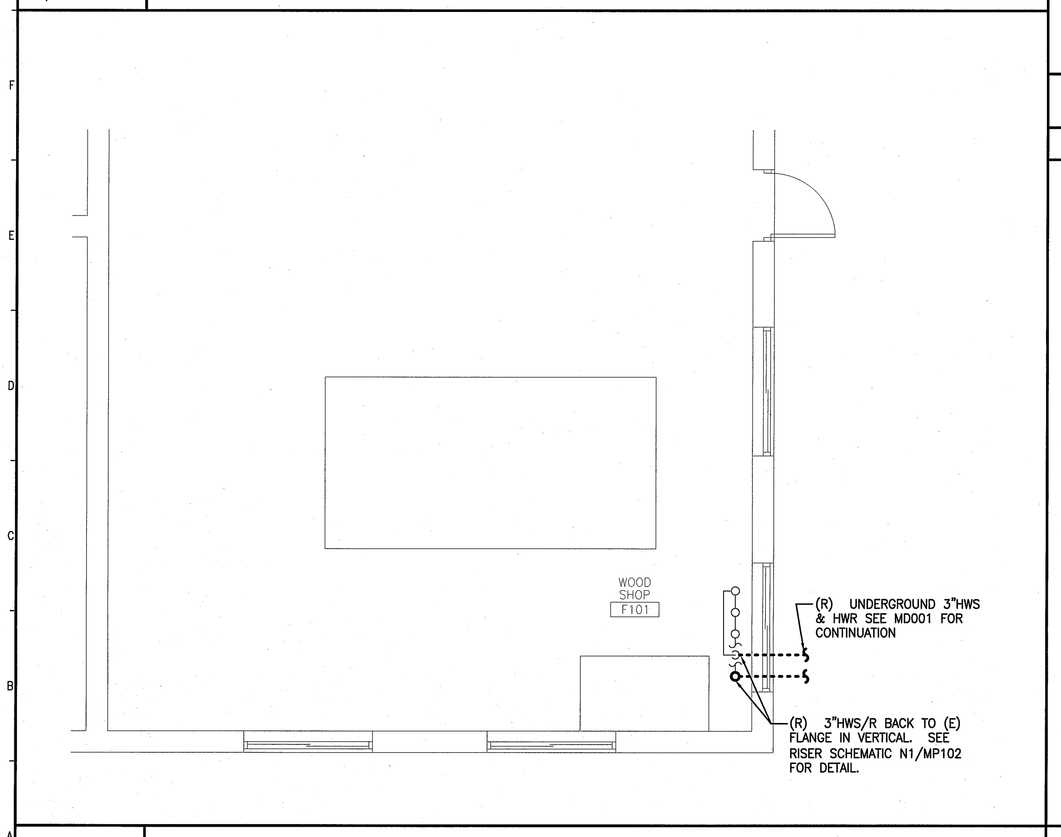
F11	BUILDING E NEW RISER SCHEMATIC
NOT TO SCALE	



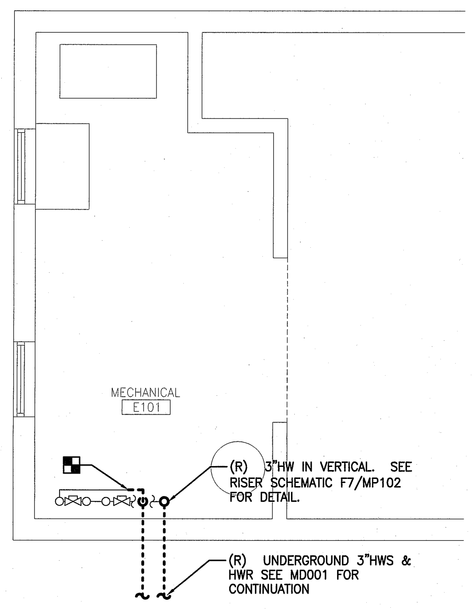
F14	MANHOLE PIPING SCHEMATIC
NOT TO SCALE	PHASE 1



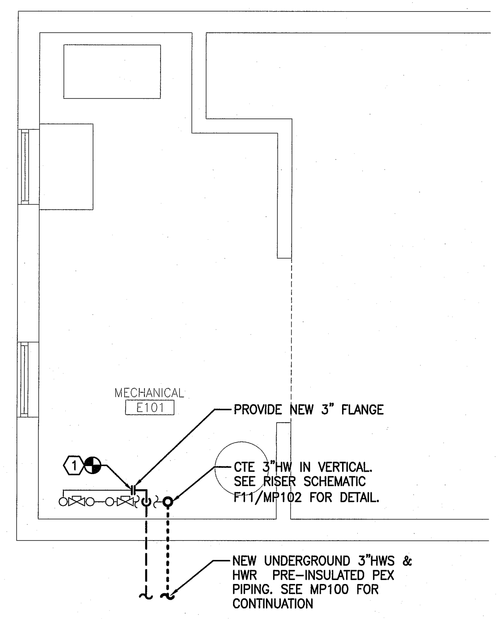
C14	MANHOLE PIPING SCHEMATIC
NOT TO SCALE	AT COMPLETION OF PHASE 1



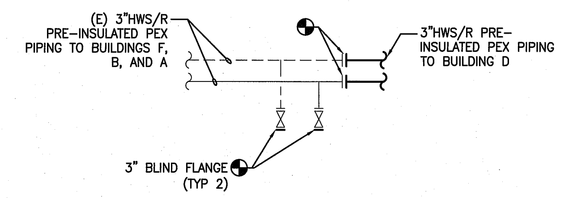
A1	BUILDING F WEST END DEMO
1/4" = 1'-0"	



A7	BUILDING E DEMO
1/4" = 1'-0"	



A11	BUILDING E NEW
1/4" = 1'-0"	



A14	MANHOLE PIPING SCHEMATIC
NOT TO SCALE	AT COMPLETION OF PHASE 2

F17	KEY PLAN
NOT TO SCALE	

REV.	DESCRIPTION	DATE
0	ISSUED FOR BID/CONSTRUCTION	4-10-14

ISSUED FOR BID/CONSTRUCTION
4-10-14

CURRENT ISSUE STATUS:

STATE OF MAINE
RONNIE M. WILLEY
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LICENSED
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4/10/14

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BOLDUC CORRECTIONAL FACILITY
HOT WATER LOOP REPLACEMENT
WARREN, MAINE

ENLARGED PLANS
SHEET 2
SHEET TITLE:

SCALE:	AS NOTED	DATE:	4-10-14
PROJECT MANAGER:	DJM	GRAPHIC SCALE:	0" 1"
JOB CAP/DRAWN:	DJM		
A/E OF RECORD:	RMW	SHEET No.	MP102
SMRT CAD FILE:	MP102-13103		
PROJECT No.	13103		

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