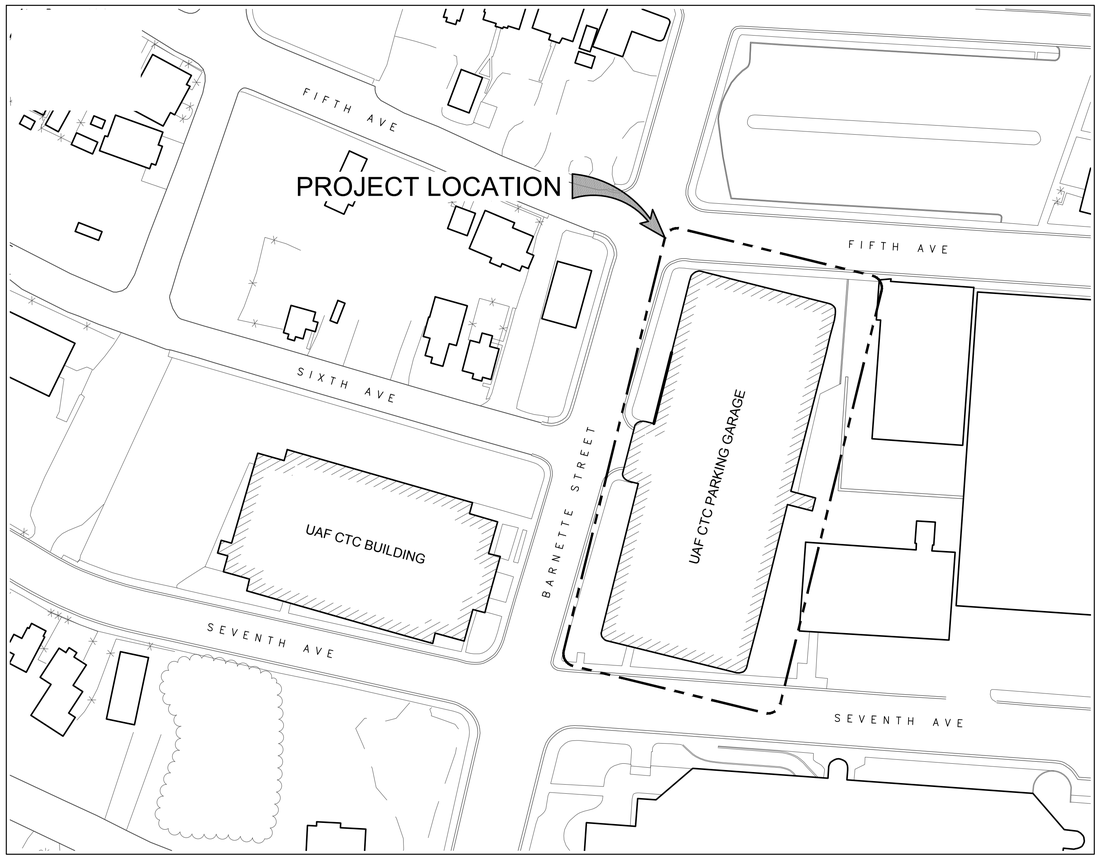
Sep 21, 2018-8:58:08 am

University of Alaska Fairbanks

UAF CTC BARNETTE PARKING GARAGE HEATING

PROJECT NUMBER D18032-CTCGH



PLAN NORTH

UAF COMUNITY & TECHNICAL COLLEGE DOWNTOWN LOCATION

DRAWING INDEX

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Consultant:

Stamp:

Project Phase:
RECORD DRAWINGS
Project Title:
UAF CTC BARNETTE PARKING GARAGE HEATING

Sheet Contents:
TITLE SHEET

DATE	REVISIONS:	BY:

DRAWN	AMK/RCL
CHECKED	JVK/PMB
DATE	SEPTEMBER 20, 2018
SCALE	0"——1"

Project Number:
D18032-CTCGH

SHEET NO.
T100
1 OF 6

RECORD DRAWING
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SEPTEMBER 20, 2018

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ABBREVIATIONS

ENGLISH UNITS

#	POUNDS/PSI
BHP	BRAKE HORSE POWER
BTUH	BRITISH THERMAL UNITS PER HOUR
CFM	CUBIC FEET PER MINUTE
F	DEGREES FAHRENHEIT
FPM	FEET PER MINUTE
FT	FEET
FT WG	FEET OF WATER GAUGE
GAL	GALLONS
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HP	HORSEPOWER
IN	INCH
IN WG	INCHES OF WATER GAUGE
KW	KILOWATT
LB	POUNDS
LF	LINEAR FOOT
MBH	ONE THOUSAND BTU PER HOUR
PSI	POUNDS PER SQUARE INCH
WG	WATER GAUGE

STANDARD ABBREVIATIONS

&	AND
@	AT
#	NUMBER
A	AIR
AFF	ABOVE FINISHED FLOOR
AGT	AVERAGE GLYCOL TEMPERATURE
AHU	AIR HANDLING UNIT
APD	AIR PRESSURE DROP
APPR	APPROVED
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
AUTO	AUTOMATIC
AV	ACID VENT
AW	ACID WASTE
BAL	BALANCING
BFF	BELOW FINISHED FLOOR
BFW	BOILER FEED WATER
C	COMMON
CA	COMPRESSED AIR
CAPAC	CAPACITY
CI	CAST IRON
CHWS(R)	CHILLED WATER SUPPLY AND RETURN
CLG	COOLING
CO	CLEAN OUT
COORD.	COORDINATE
CR	CONDENSATE RETURN
CUH	CABINET UNIT HEATER
Cv	VALVE COEFFICIENT
CW	COLD WATER
CWS(R)	CONDENSER WATER SUPPLY (RETURN)
DB	DECIBEL
DB	DRYBULB
DIA	DIAMETER
DN	DOWN
DWDI	DOUBLE WIDTH DOUBLE INLET
E	EXISTING
EA	EACH
EA(D)	EXHAUST AIR (DAMPER)
EAT	ENTERING AIR TEMP
EF	EXHAUST FAN
EG	EXHAUST GRILLE
EGT	ENTERING GLYCOL TEMP
ELEC	ELECTRICAL
ELEV	ELEVATOR
EQPM	EQUIPMENT
ESP	EXTERNAL STATIC PRESSURE
ETR	EXISTING TO REMAIN
EWT	ENTERING WATER TEMPERATURE
EXIST	EXISTING
FC	FORWARD CURVED
FCO	FLOOR CLEAN OUT
FD	FLOOR DRAIN
FTR	FINNED TUBE RADIATION
FLA	FULL LOAD AMPERAGE
FLEX	FLEXIBLE
GA	GAUGE
GCHWS(R)	GLYCOL CHILLED WATER SUPPLY (RETURN)
GHS(R)	GLYCOL HEATING SUPPLY (RETURN)
GI	GALVANIZED IRON
GT	GLYCOL TANK
GWB	GYPSUM WALL BOARD
H20	WATER
HB	HOSE BIBB
HPS	HIGH PRESSURE STEAM
HR	HOUR
HTG	HEATING
HW	HOT WATER
HWS(R)	HEATING WATER SUPPLY (RETURN)
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
INSUL	INSULATION
IPS	IRON PIPE SIZE
LAT	LEAVING AIR TEMPERATURE
LAV	LAVATORY
LGT	LEAVING GLYCOL TEMPERATURE
LPS	LOW PRESSURE STEAM
M	MINUTES
MAX	MAXIMUM
MECH	MECHANICAL
MIN	MINIMUM
MTR	MOTOR
NC	NORMALLY CLOSED OR NOISE CRITERIA
NG	NATURAL GAS
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NOM	NOMINAL
NPSH	NET PUMP SUCTION HEAD
NTS	NOT TO SCALE
OBVD	OPPOSED BLADE VOLUME DAMPER
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED OWNER INSTALLED
ORD	OVERFLOW ROOF DRAIN
ORL	OVERFLOW RAIN LEADER
OSA(D)	OUTSIDE AIR (DAMPER)
OSAT	OUTSIDE AIR TEMPERATURE
P&TRV	PRESSURE AND TEMPERATURE RELIEF VALVE
PD	PRESSURE DROP
PH	PHASE
PRDV	PRESSURE REDUCING VALVE
PRV	PRESSURE RELIEF VALVE
RA(D)	RETURN AIR (DAMPER)
RD	ROOF DRAIN
RHW	RECIRCULATED HOT WATER
RL	RAIN LEADER
RPM	REVOLUTIONS PER MINUTE
S	SECONDS
SG	SUPPLY GRILLE
SH	SHOWER
SIM	SIMILAR
SP	STATIC PRESSURE
SS	STAINLESS STEEL
ST	STEAM
SWSI	SINGLE WIDTH SINGLE INLET
TG	TRANSFER GRILLE
THW	TEMPERED HOT WATER
TP	TRAP PRIMER
TYP	TYPICAL
U	URINAL
UH	UNIT HEATER
V	VOLTS OR VENT
VAV	VARIABLE AIR VOLUME
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VOL	VOLUME
VTR	VENT THROUGH ROOF
W	WASTE
W/	WITH
W/O	WITHOUT
WB	WET BULB
WC	WATER CLOSET
WCO	WALL CLEAN OUT
WH	WATER HEATER
WHA	WATER HAMMER ARRESTOR

SYMBOLS LEGEND

PIPING SYMBOLS

- CONNECTION TO EXISTING
- DIRECTION OF FLOW
- PIPE CONNECTION
- ELBOW TURNED DOWN
- ELBOW TURNED UP
- TEE DOWN
- TEE TURNED UP
- UNION
- CHECK VALVE
- ISOLATION VALVE
- FLOOR DRAIN
- FLOOR CLEAN OUT
- PRESSURE RELIEF VALVE
- PRESSURE REDUCING VALVE
- STRAINER
- METER
- THERMOSTAT
- FINNED TUBE RADIATION
- CONVECTOR/CABINET UNIT HEATER
- PRESSURE GAUGE WITH ISOLATION VALVE
- ISOLATION VALVE WITH 5/8" HOSE END AND CAP
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- PIPE CAP
- AIR VENT WITH AIR VENT ISOLATION VALVE
- BALANCING VALVE
- THERMOSTATIC CONTROL VALVE W/ REMOTE SENSOR

OR

SYMBOL	ABBREV	SYSTEM
	W	WASTE
	V	VENT
	CW	COLD WATER
	HW	HOT WATER
	RHW	RECIRCULATED HOT WATER
	GHR & GHS	GLYCOL HEATING SUPPLY/RETURN
		EXISTING PIPING/DUCTWORK/ EQUIPMENT TO REMAIN
		EXISTING PIPING/DUCTWORK/ EQUIPMENT TO BE REMOVED

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UNIVERSITY OF ALASKA FAIRBANKS
FACILITIES SERVICES–DIVISION OF DESIGN AND CONSTRUCTION
SEPTEMBER 20, 2018

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Project Phase: RECORD DRAWINGS
Project Title: UAF CTC BARNETTE PARKING GARAGE HEATING

Sheet Contents: ABBREVIATIONS AND LEGENDS

DATE	REVISIONS:	BY:

DRAWN	AMK/RCL
CHECKED	PMB/JVK
DATE	SEPTEMBER 20, 2018
SCALE	0"——1"
Project Number:	D18032-CTCGH
SHEET NO.	M001

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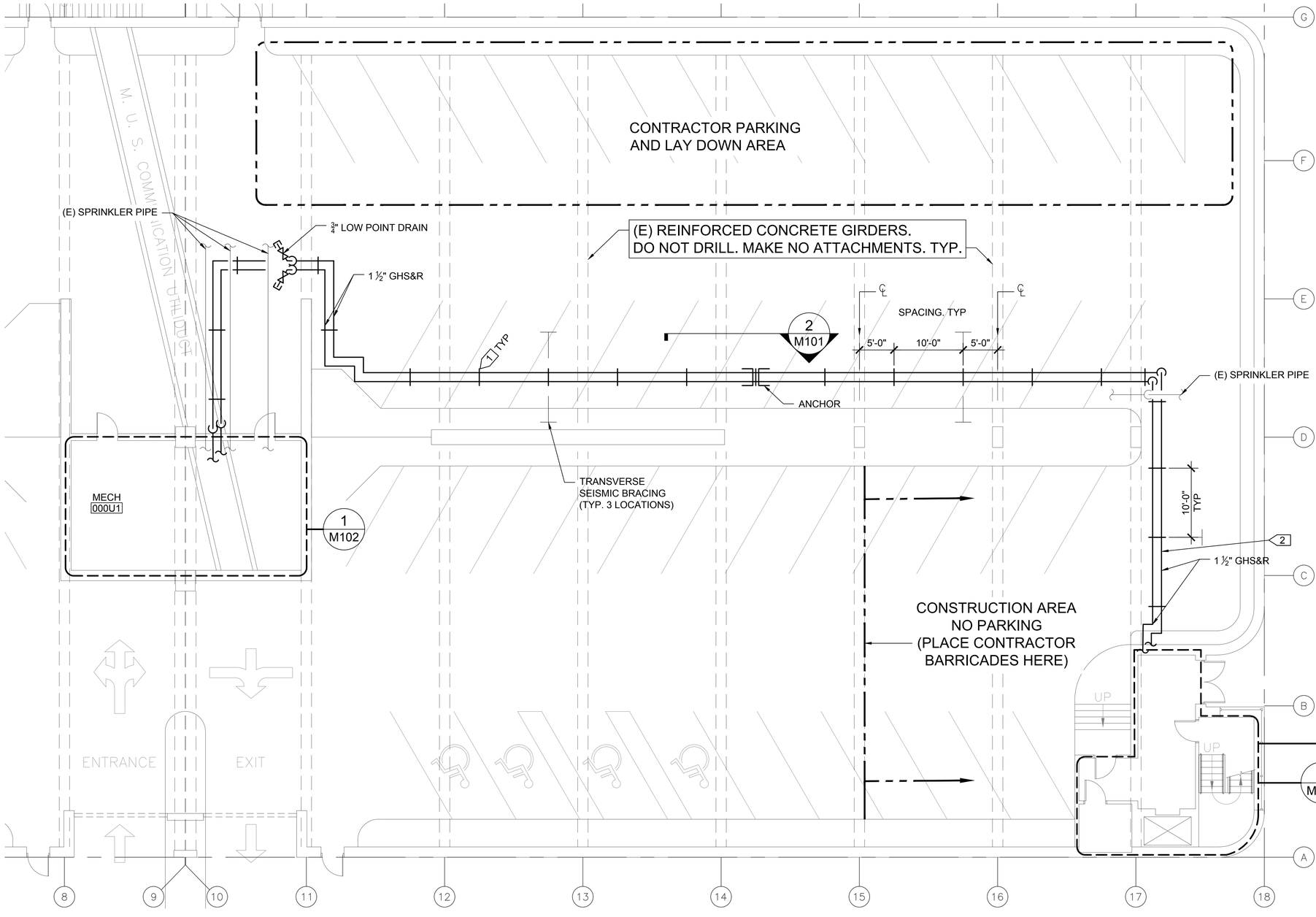


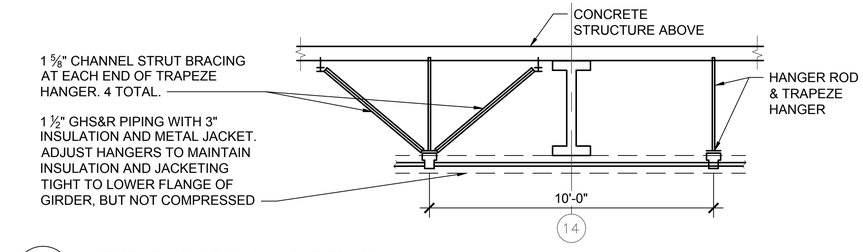
GENERAL SHEET NOTES:

1. DO NOT SCALE DRAWINGS.
2. PRIOR TO CONSTRUCTION FIELD VERIFY ALL DIMENSIONS.
3. DRAWINGS ARE SOMEWHAT DIAGRAMATIC AND DO NOT SHOW ALL OFFSETS, BRANCH PIPING, CONFLICTS, ETC.

SPECIFIC NOTES:

1. PROVIDE TRAPEZE HANGER.WITH 3/8" ROD ANCHORED TO CONCRETE DECK ABOVE. CLAMP PIPE DIRECTLY TO STRUT.
2. INSTALL NEW 1 ½" GHS&R PIPING AND INSULATION ASSEMBLY WITH BOTTOM HIGHER THAN BOTTOM OF ADJACENT CONCRETE GIRDER.

1 M101 — OVERALL PIPING PLAN
SCALE: 1/8" = 1'-0" @ 22X34



2 M101 — PIPE ANCHOR DETAIL
SCALE: NTS

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RECORD DRAWINGS
Project Title:
UAF CTC BARNETTE
PARKING GARAGE HEATING

Sheet Contents:
OVERALL PIPING PLAN

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M101
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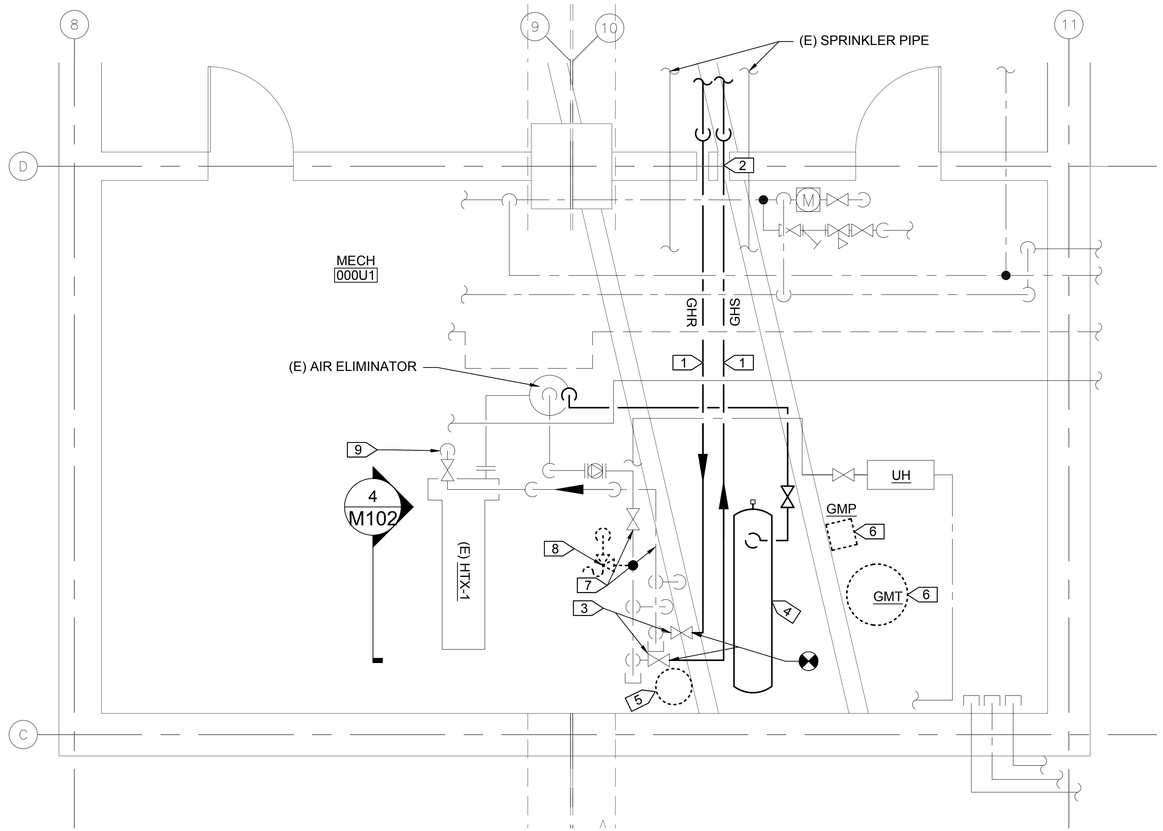
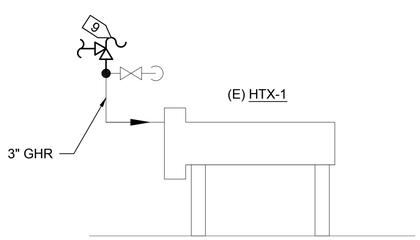


SPECIFIC NOTES:

1. 1½" GHS&R. COORDINATE ROUTING TO AVOID INTERFERENCE WITH NEW HEATING SYSTEM COMPRESSION TANK.
2. PIPE INSULATION AND FIRE CAULK.
3. (E) 1½" BALL VALVE ISOLATION.
4. COMPRESSION TANK, (OFCI). SEE 2/M102.
5. REMOVE (E) DIAPHRAGM EXPANSION TANK. SEE 3/M102.
6. REMOVE (E) GLYCOL MAKE-UP PUMP AND (E) GLYCOL MAKE-UP TANK. SEE 3/M102. SALVAGE GMT FOR NEW PRV LOCATION.
7. GLYCOL HEATING SUPPLY AND RETURN HEADERS ARE STACKED VERTICALLY, SHOWN OFFSET HERE FOR CLARITY.
8. (E) PRESSURE RELIEF VALVE. REMOVE AND PLUG/CAP AS CLOSE TO RETURN MANIFOLD AS POSSIBLE.
9. PROVIDE PRESSURE RELIEF VALVE. SIZE TO MATCH PRESSURE RELIEF VALVE REMOVED. PROVIDE THREAD-O-LET, WELDED TO ELBOW, SIZED TO RECEIVE PRV. PROVIDE DISCHARGE PIPING ROUTED TO SALVAGED & RELOCATED GMT. SIZE DISCHARGE PIPE TO MATCH PRV DISCHARGE

1 M102 MECH ROOM 000U1 NEW WORK PLAN

SCALE: 3/8" = 1'-0" @ 22X34



4 M102 HEAT TRANSFER UNIT DETAIL

SCALE: NTS

GENERAL SHEET NOTES:

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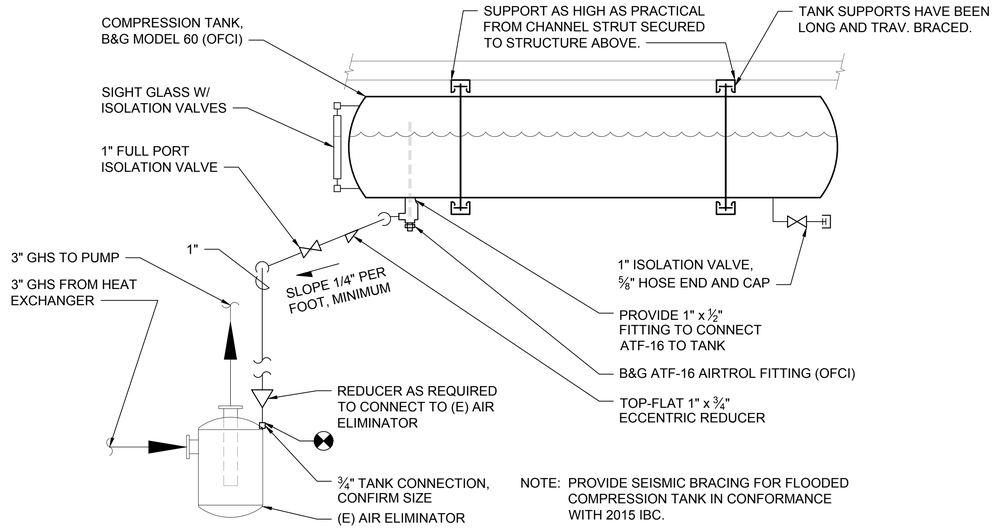
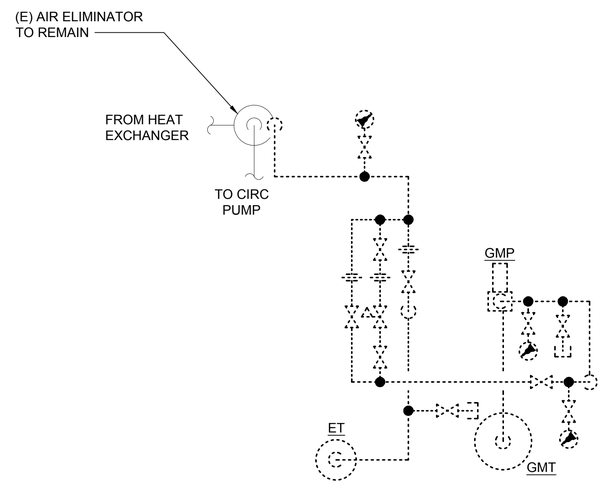


NOTE: PROVIDE SEISMIC BRACING FOR FLOODED COMPRESSION TANK IN CONFORMANCE WITH 2015 IBC.

2 M102 COMPRESSION TANK PIPING & INSTALLATION DETAIL

SCALE: NTS



3 M102 GLYCOL MAKE-UP & EXPANSION TANK DEMOLITION PLAN

SCALE: NTS

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Sheet Contents: MECH ROOM 000U1 PLAN AND DETAILS

DATE	REVISIONS:	BY:

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SHEET NO. M102
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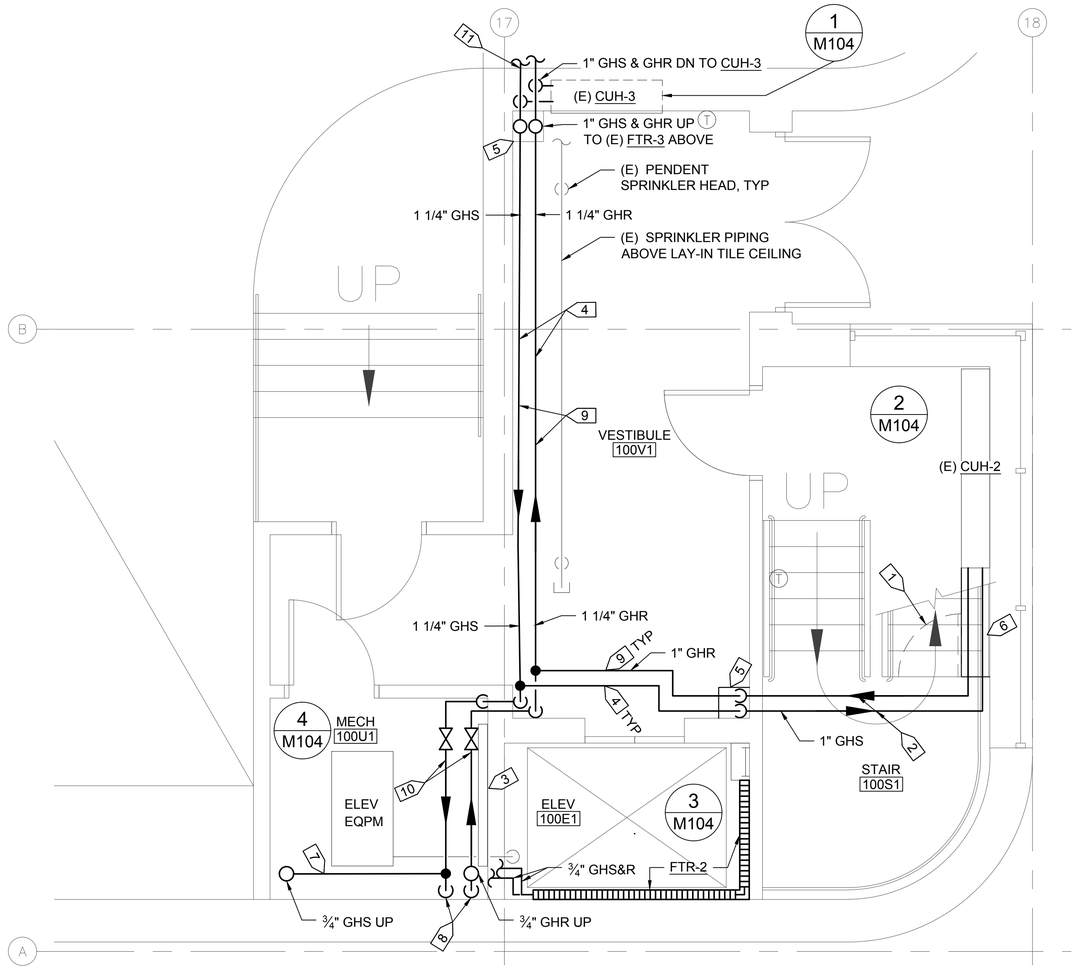

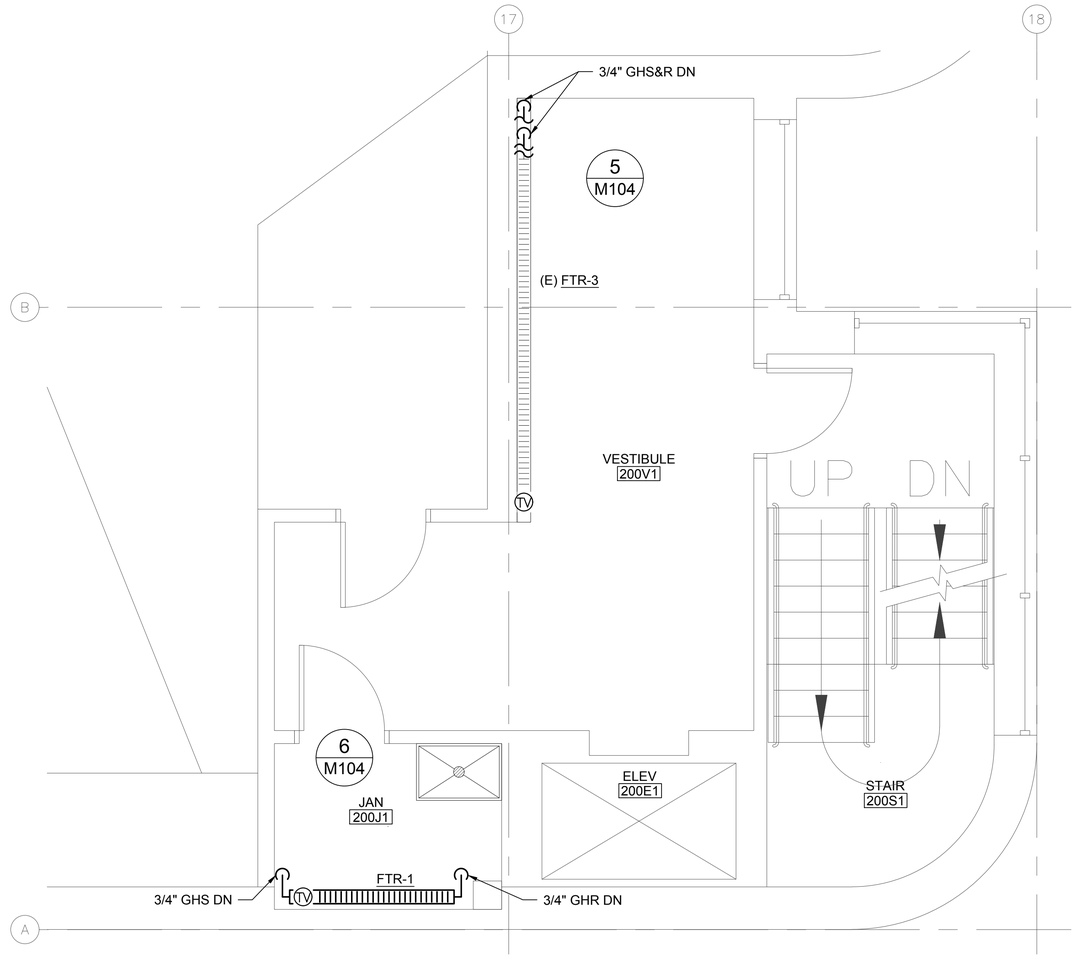

SPECIFIC NOTES:

1. (E) SECURITY GATE/FENCE. PENETRATE EXPANDED METAL WITH 3" HOLE. DO NOT CUT FRAMING METAL.
2. SUPPORT PIPING ON CHANNEL STRUT SECURED TO FLOOR.
3. (E) BUDERAS CONVECTOR TO REMAIN.
4. PROVIDE 1" PIPE INSULATION ABOVE SUSPENDED CEILING, TYP.
5. PIPE CHASE BY OTHERS.
6. PIPE ENCLOSURE BY OTHERS.
7. SUPPORT PIPING ON CHANNEL STRUT SECURED TO STRUCTURE ABOVE.
8. ¾" GHS&R DN TO (E) BUDERAS CONVECTOR AND (E) ELEVATOR PIT FTR.
9. SUPPORT PIPING ABOVE SUSPENDED CEILING FROM CHANNEL STRUT SECURED TO STRUCTURE ABOVE.
10. SUPPORT PIPING ON CHANNEL STRUT SECURED TO WALL. PIPING IS SHOWN OFFSET HERE FOR CLARITY.
11. PIPE INSULATION AND FIRE CAULK.

1 M103 FIRST FLOOR PLAN

SCALE: 3/8" = 1'-0" @ 22X34

SPECIFIC NOTES:

1. NOT USED

2 M103 SECOND FLOOR PLAN

SCALE: 3/8" = 1'-0" @ 22X34

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FINNED TUBE RADIATION SCHEDULE

SYMBOL	LOCATION	CAPACITY (BTU/L.F.)	FLUID TEMP IN/OUT (DEG F)	ENTERING AIR TEMP (DEG F)	CABINET HT. & STYLE	TOP OF CABINET MOUNTING HEIGHT AFF (IN)	BASIS OF DESIGN {1}	REMARKS
FTR-1	RM 200J1	826	180 / 160	65	4 ½" EXPANDED METAL	8	RITTLING EXO MODEL ¾C-4¼x4¼-40 SINGLE TIER	1. PERFORMANCE BASED ON 2 GPM FLOW
FTR-2	RM 100E1	1425	180 / 160	65	10 ½" EXPANDED METAL	14	RITTLING EXO MODEL ¾C-4¼x4¼-40 TWO TIER	1. PERFORMANCE BASED ON 2 GPM FLOW

SPECIFIC NOTES:

{1} SELECTION BASED ON 50% PROPYLENE GLYCOL / 50% WATER SOLUTION UNLESS NOTED OTHERWISE.

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Sheet Contents: FIRST AND SECOND FLOOR PLANS

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SHEET NO. M103
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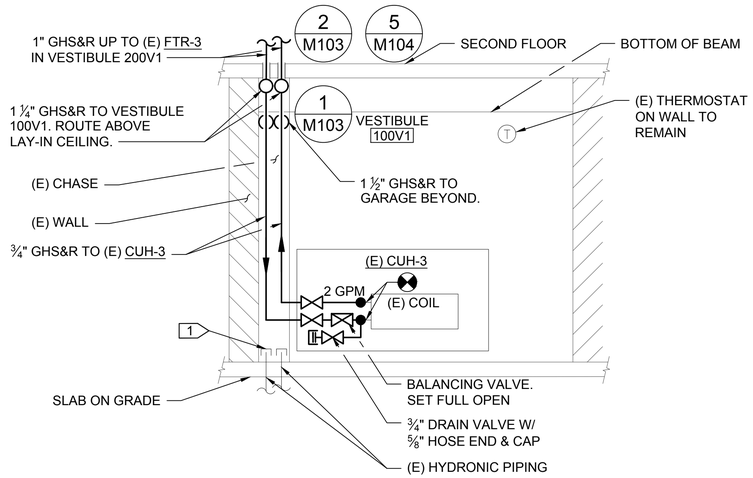
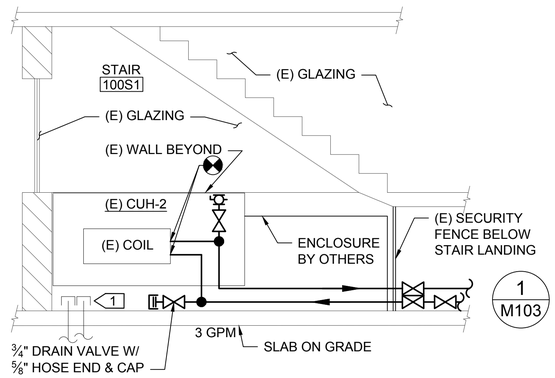


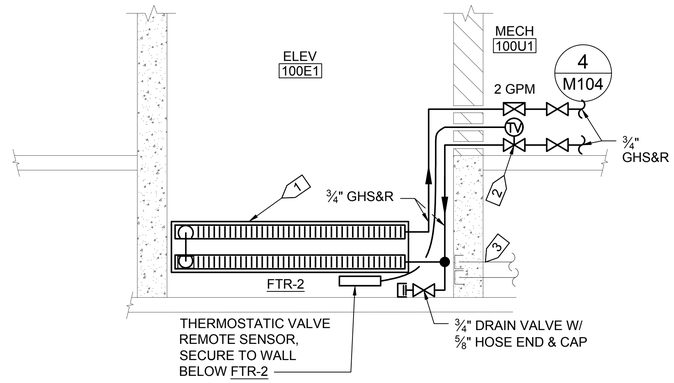
SPECIFIC NOTES:

1 REMOVE (E) HYDRONIC PIPING ABOVE FLOOR TO (E) FTR-3 ABOVE. CAP/PLUG PIPING AT SLAB.



SPECIFIC NOTES:

1 REMOVE (E) HYDRONIC PIPING ABOVE FLOOR TO (E) CUH-2. CAP/PLUG PIPING AT SLAB.



SPECIFIC NOTES:

1 SUPPORT FINNED TUBE RADIATION ENCLOSURE AND PIPING FROM ADJACENT WALL WITH MANUFACTURER BRACKETS.

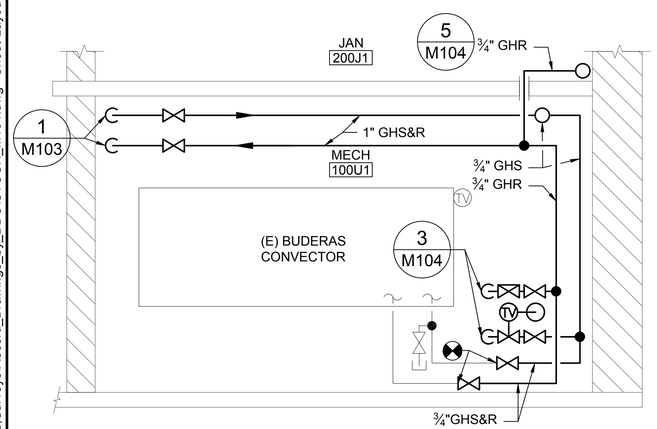
2 ¾" THERMOSTATIC CONTROL VALVE WITH REMOTE SENSOR

3 REMOVE (E) FINNED TUBE RADIATION, SUPPORTS, ETC. CAP/PLUG PIPING AT WALL PENETRATION.

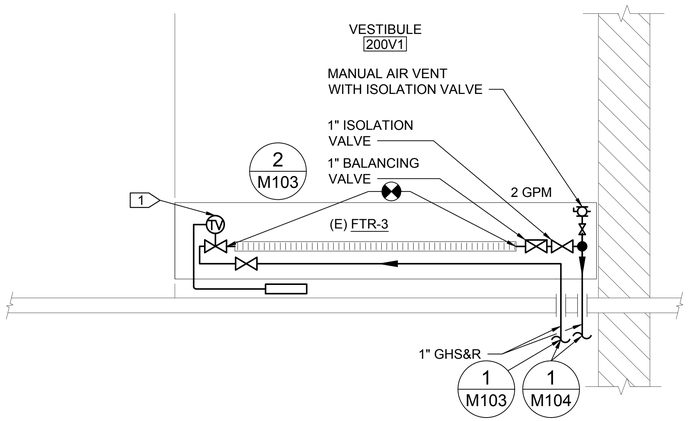
1 M104 CUH-3 PIPING DETAIL
SCALE: NTS

2 M104 CUH-2 PIPING DETAIL
SCALE: NTS

3 M104 ELEVATOR PIT FINNED TUBE RADIATION PIPING DETAIL
SCALE: NTS



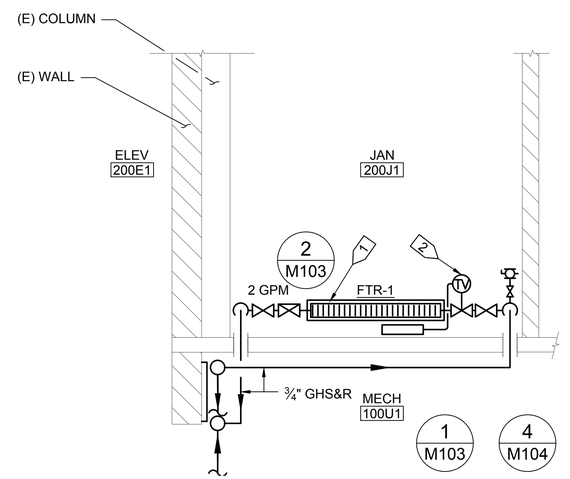
4 M104 MECH ROOM 100U1 PIPING DETAIL
SCALE: NTS



SPECIFIC NOTES:

1 ¾" THERMOSTATIC CONTROL VALVE WITH REMOTE SENSOR SECURED TO WALL BELOW (E) FTR-3.

5 M104 VESTIBULE 200V1 PIPING DETAIL
SCALE: NTS



SPECIFIC NOTES:

1 SUPPORT FINNED TUBE RADIATION ENCLOSURE AND PIPING FROM ADJACENT WALL WITH MANUFACTURER BRACKETS.

2 ½" THERMOSTATIC CONTROL VALVE WITH REMOTE SENSOR SECURED TO WALL BELOW FTR-1.

6 M104 JANITOR 200J1 PIPING DETAIL
SCALE: NTS

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SHEET NO. M104
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SPECIFICATIONS:

SECTION 23 02 00 - COMMON SUBMITTAL REQUIREMENTS

1. OWNER HAS PROVIDED FORMAT FOR ITEM DATA SHEETS AND SUBMITTAL REGISTER. REFER TO SCOPE OF WORK.
2. PROVIDE ONE ITEM DATA SHEET FOR EACH ITEM SUBMITTED.
3. SUBMITTAL INFORMATION IS REQUIRED FOR ALL MATERIAL AND EQUIPMENT INDICATED ON THE SUBMITTAL REGISTER, SPECIFIED OR INDICATED ON THE DRAWINGS.

SECTION 23 05 00 - COMMON WORK RESULTS

1. PROVIDE THE OWNER WITH A COMPLETE, OPERATING, TESTED SYSTEM.
2. THE DRAWINGS ARE SOMEWHAT DIAGRAMMATIC AND DO NOT ATTEMPT TO SHOW ALL OFFSETS OR FITTINGS REQUIRED FOR INSTALLATION OF THE MECHANICAL SYSTEM. FURNISH AND INSTALL PIPES WITH FITTINGS REQUIRED FOR COMPLETE AND PROPER INSTALLATION OF MECHANICAL SYSTEMS SPECIFIED OR REQUIRED UNDER THIS DIVISION.
3. DO NOT SCALE THE MECHANICAL DRAWINGS. VERIFY DIMENSIONS AS THE CONSTRUCTION PROGRESSES.
4. COORDINATE THE INSTALLATION OF THE MECHANICAL SYSTEMS WITH EXISTING CONDITIONS.
5. REPORT ANY ERRORS, DISCREPANCIES, OR AMBIGUITIES TO THE OWNER, WHO WILL ANSWER ALL QUESTIONS AND INTERPRET INTENDED MEANING OF THESE DOCUMENTS. ACCEPT OWNER INTERPRETATION AS FINAL.
6. PERFORM WORK IN A NEAT AND WORKMANLIKE MANNER WITH SKILLED CRAFTSMEN SPECIALIZING IN SAID WORK.
7. MAINTAIN CONSTRUCTION AREA IN CLEAN CONDITION. REMOVE TRASH DAILY. THOROUGHLY CLEAN CONSTRUCTION AREA PRIOR TO PROJECT COMPLETION.
8. REPLACE EXISTING MECHANICAL INSULATION THAT IS REMOVED TO ACCOMPLISH WORK WITH NEW INSULATION TO MATCH EXISTING.

SECTION 23 05 10 - COMMON WORK RESULTS FOR HVAC PIPING

1. DIELECTRIC PIPE TAPE: WESTAPE, CALPICO, 3M OR EQUAL. WHERE PLACED IN CONTACT WITH DISSIMILAR METAL OR CONCRETE, PROTECT COPPER PIPE WITH MINIMUM 2 WRAPS OF SELF-ADHESIVE DIELECTRIC PIPE TAPE.
2. TYPE 'M' HARD COPPER TUBING WITH WROUGHT COPPER SOLDER FITTINGS AND LEAD FREE SOLDER.
3. MECHANICAL CONNECTORS SUCH AS PROPRESS, SHARKBITE, ETC. ARE NOT ALLOWED.
4. DIELECTRIC FITTINGS ARE NOT ALLOWED.
5. AIR VENTS AND AIR VENT ISOLATION VALVES: MANUAL AIR VENTS - B&G NO. 4V OR EQUAL. AIR VENT ISOLATION VALVES - BRONZE BODY, TEFLON SEATS, VITON O-RING STEM SEAL, CHROME PLATED BALL, NON-BLOWOUT STEM. JOMAR T-82 MINI OR EQUAL. PROVIDE WHERE INDICATED.
6. BALANCING VALVES: B&G CIRCUIT SETTER PLUS, ARMSTRONG CBV, TACO ACCU-FLOW, T&A HYDRONICS, OR EQUAL. PROVIDE WHERE INDICATED.
7. THERMOSTATIC CONTROL VALVE WITH REMOTE SENSOR: CONFORMING TO ASHRAE / ANSI STANDARD 102-1983. DANFOSS RA-2000 OR EQUAL. VALVE MOUNTED DIAL WITH REMOTE SENSOR, CODE NO. 013G8252, WITH STRAIGHT OR SIDE MOUNT ANGLE VALVE AS REQUIRED. SIZE AS INDICATED. PROVIDE WHERE INDICATED.
8. FINNED TUBE RADIATION: SEE DRAWING M103, FINNED TUBE RADIATION SCHEDULE, FOR BASIS OF DESIGN OR EQUAL.
9. FIRESTOPPING: TO THE EXTENT POSSIBLE, UTILIZE THE PRODUCTS OF ONLY ONE MANUFACTURER. METALINES, DOW, STI, 3M, HILTI, OR EQUAL. WITH SUBMITTAL PROVIDE MANUFACTURER'S LISTED INSTALLATION INSTRUCTIONS FOR EACH SYSTEM USED. WHERE PIPING RISES FROM FIRST FLOOR TO SECOND FLOOR, UTILIZE EXISTING PIPE SLEEVES/PENETRATIONS, PACK WITH MINERAL WOOL AND APPLY FIRE STOPPING TO UPPER SIDE OF PENETRATION. WHERE PIPING PENETRATES COLD WALLS, FROM THE PARKING GARAGE INTO MECH RM AND FROM THE PARKING GARAGE INTO VESTIBULE 100V1, EXTEND WARM SIDE INSULATION FULL SIZE THROUGH THE WALL AND APPLY FIRESTOPPING. WHERE PIPING PENETRATES WARM WALLS IN THE STAIR TOWER AND ELEVATOR ROOMS RUN BARE PIPING THROUGH WALLS AND APPLY FIRESTOPPING.
10. MAKE ALL CONNECTIONS DIRECTLY TO EQUIPMENT. UNIONS ARE NEITHER REQUIRED, NOR DESIRED.
11. REAM PIPES THOROUGHLY AND CLEAN BEFORE INSTALLATION. MAKE EVERY ATTEMPT TO KEEP NEW AND EXISTING HYDRONIC PIPING CLEAN AND FREE OF FOREIGN MATERIALS AND DEBRIS.
12. OWNER WILL DRAIN AND REFILL HYDRONIC SYSTEM. NOTIFY OWNER OF NEED FOR HYDRONIC SYSTEM DRAIN AND REFILL MINIMUM THREE WORKING DAYS PRIOR TO WORK.
13. SYSTEM FLUSH WILL NOT BE REQUIRED.
14. PERFORM AIR PRESSURE TEST AT TWO TIMES SYSTEM NORMAL OPERATING PRESSURE, 60 PSI, FOR 12 HOURS WITH NO PRESSURE DROP. OWNER TO WITNESS TEST. CONTRACTOR WILL BE RESPONSIBLE FOR REPAIR OF ALL LEAKS IDENTIFIED IN NEW PIPING AND CONNECTIONS TO EXISTING.
15. OWNER WILL BALANCE HYDRONIC SYSTEM. SET ALL BALANCE VALVES TO FULL OPEN POSITION.

SECTION 23 05 23 - GENERAL DUTY VALVES

1. STANDARDIZE ON ONE MAKE OF VALVE. APOLLO, MILWAUKEE, NIBCO OR EQUAL.
2. PROVIDE BALL VALVES ONLY, GATE VALVES ARE NOT ALLOWED.
3. ISOLATION VALVES: ASME CLASS 125, FULL PORT, TWO PIECE, BRONZE BODY WITH BRASS INTERNALS, CHROME PLATED OR STAINLESS STEEL BALL, REINFORCED TEFLON SEATS AND SEALS, NON-BLOWOUT STEM. NIBCO S585-70 IS THE BASIS OF DESIGN.
4. PROVIDE WHERE INDICATED ON THE DRAWINGS.

SECTION 23 05 29 - HANGERS AND SUPPORTS

1. PROVIDE FACTORY STANDARD HANGERS AND SUPPORTS COMPLETE WITH NECESSARY INSERTS, BOLTS, NUTS, RODS, WASHERS, AND OTHER ACCESSORIES.
2. COPPER PIPE HANGERS: SWIVEL LOOP STYLE CARBON STEEL, EPOXY COATED, COPPER COLORED. TOLCO FIGURE 202 OR EQUAL.
3. HANGER ROD: ELECTRO-GALVANIZED CARBON STEEL. TOLCO FIGURE 100 OR EQUAL.
4. CHANNEL STRUT: ZINC PLATED ELECTROSTATICALLY. UNISTRUT, ERICO CADDY, POWER STRUT OR EQUAL.
5. PLACE HANGERS OR SUPPORTS IN DIRECT CONTACT WITH PIPE. SEE SPECIFICATION SECTION 23 07 00, INSULATION, TO ADDRESS INSULATION WHERE PENETRATED BY HANGERS OR SUPPORTS.
6. SUPPORT PIPING IN ACCORDANCE WITH 2015 UMC.

SECTION 23 05 53 - IDENTIFICATION

1. PIPE MARKERS: PRESSURE SENSITIVE IDENTIFICATION MARKERS SECURED WITH COLOR CODED TAPE INCORPORATING DIRECTION OF FLOW ARROWS. SETON NAME PLATE CORP., BRADY, BRIMAR OR EQUAL.
2. PROVIDE PIPE LABELING ON GLYCOL HEATING SUPPLY AND RETURN (GHS&R) COLORED AND LETTERED IN ACCORDANCE WITH ANSI A13.1 (“SCHEME FOR THE IDENTIFICATION OF PIPING SYSTEMS”).
3. PROVIDE PIPE LABELING SO THAT IT CAN BE EASILY READ FROM SIDE OR BELOW AND SECURED AT EACH END WITH TWO WRAPS OF “ARROWS ON A ROLL”.
4. LABEL ONLY THAT PIPING IN MECHANICAL ROOM 000U1 AND THE HEATED AREA OF THE SOUTHWEST STAIR TOWER. LABELING IS NOT REQUIRED ON METAL JACKETED HYDRONIC PIPING IN THE PARKING GARAGE COLD SPACE.

SECTION 23 07 00 - INSULATION

1. INSULATION THICKNESS: MECH ROOM 000U1 - 2 INCHES, PARKING GARAGE - 3 INCHES, ALL OTHER LOCATIONS - 1 INCH.
2. WHERE INSULATION JACKET IS CUT OR PENETRATED BY PIPE HANGERS OR SUPPORTS, OR WHERE INSULATION IS CUT AND EXPOSED, FILL VOIDS FLUSH TO VAPOR RETARDER JACKET WITH INSULATING CEMENT AND SEAL WITH THERMAL INSULATION COATING.
3. INSULATION: FIBERGLAS PIPE INSULATION: OWENS/CORNING FIBERGLASS 25 ASJ, JOHNS-MANVILLE MICRO-LOCK 650 WITH AP-T SELF-SEALING JACKET, KNAUF ASJ, OR EQUAL.
4. INSULATING CEMENT: MINERAL FIBER BASE WITH MAXIMUM OF 0.90 (BTU-INCH)/(SQUARE FOOT-HOUR-FAHRENHEIT) CONDUCTIVITY AT 200 DEGREES FAHRENHEIT MEAN TEMPERATURE.
5. THERMAL INSULATION COATING: WASHABLE, ABRASION RESISTANT COATING FOR THERMAL INSULATION. MINIMUM CONTINUOUS SERVICE RATING OF 180 DEGREES FAHRENHEIT. FOSTER #30-36 SEALFAS, MEI #11-02, OR EQUAL.
6. PREFORMED PLASTIC INSULATION COVERS AND INSERTS FOR WARM SPACES: PVC WITH FIBERGLASS INSERTS PROVIDED BY COVER MANUFACTURER. ACCEPTABLE MANUFACTURERS ARE JOHNS-MANVILLE ZESTON, FULLER SPEEDLINE, PROTO.
7. INSULATION JACKET FOR PARKING GARAGE: ALUMINUM JACKET - 0.016 INCH THICK, EMBOSSED. PROVIDE ALUMINUM JACKET OVER INSULATION WITH SEAMS LAPPED AND SEALED TO PROVIDE WATER TIGHT INSTALLATION. NOTCH JACKET CLOSELY WHERE PENETRATED BY HANGER RODS OR CHANNEL STRUT. SECURE WITH 1/2 INCH WIDE STAINLESS STEEL BANDS AT 9 INCH CENTERS. AT FITTING OR OTHER LOCATIONS WHERE BANDS CANNOT BE USED, SECURE JACKET WITH GALVANIZED ZINC PLATED SCREWS AT 4 INCH CENTERS ALONG SEAMS. FILL ANY VOIDS WITH INSULATING CEMENT.

RECORD DRAWING
THIS DRAWING HAS BEEN MODIFIED TO CONFORM TO AS-BUILT CONSTRUCTION CONDITION, ACCORDING TO RED-LINES OF THE CONSTRUCTION CONTRACTOR, XACTA CONSTRUCTION CO., AND UNIVERSITY REPRESENTATIVE.
UNIVERSITY OF ALASKA FAIRBANKS
FACILITIES SERVICES - DIVISION OF DESIGN AND CONSTRUCTION
SEPTEMBER 20, 2018

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Stamp:

Project Phase: RECORD DRAWINGS
Project Title: UAF CTC BARNETTE PARKING GARAGE HEATING

Sheet Contents: SPECIFICATIONS

DATE	REVISIONS:	BY:

DRAWN AMK
CHECKED JVK/PMB
DATE SEPTEMBER 20, 2018
SCALE 0"——1"
Project Number: D18032-CTCGH
SHEET NO. M105
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