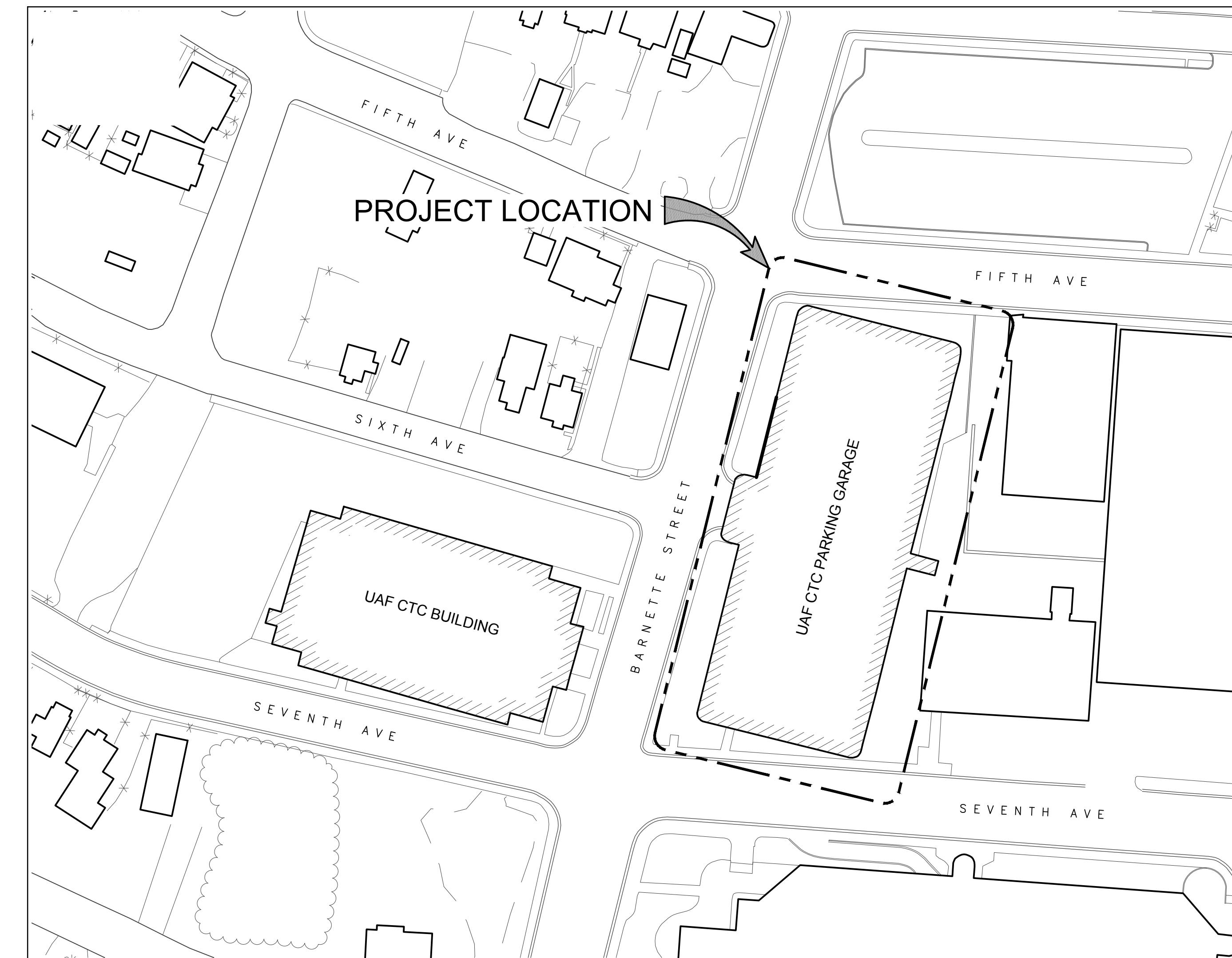


University of Alaska Fairbanks

UAF CTC BARNETTE PARKING

GARAGE HEATING

PROJECT NUMBER D18032-CTCGH



UAF COMMUNITY & TECHNICAL COLLEGE DOWNTOWN LOCATION



DRAWING INDEX

T100	TITLE SHEET
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M101	OVERALL PIPING PLAN
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M103	FIRST AND SECOND FLOOR PLANS
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RECORD DRAWING
THE DRAWING HAS BEEN MODIFIED TO CONFORM TO
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RE-SLINES OF THE CONSTRUCTION CONTRACTOR.
XACTA CONSTRUCTION CO. AND UNIVERSITY
OF ALASKA FAIRBANKS
REFFERRED TO AS THE CONTRACTOR
UNIVERSITY OF ALASKA FAIRBANKS
FACILITIES SERVICES-DIVISION OF DESIGN
AND CONSTRUCTION
SEPTEMBER 20, 2018

Project Number:
D18032-CTCGH
SHEET NO.
T100
1 OF 6

Stamp:

Consultant:

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

Sheet Contents:

TITLE SHEET
DATE REVISIONS: BY:

DRAWN AMK/RCL
CHECKED JV/K/PMB
DATE SEPTEMBER 20, 2018
SCALE 0" - 1"

ABBREVIATIONS

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

SYMBOLS LEGEND

PIPING SYMBOLS

	CONNECTION TO EXISTING	SYMBOL	ABBREV	SYSTEM
	DIRECTION OF FLOW	_____	W	WASTE
	PIPE CONNECTION	— — —	V	VENT
	ELBOW TURNED DOWN	— — —	CW	COLD WATER
	ELBOW TURNED UP	— — —	HW	HOT WATER
	TEE DOWN	— — —	RHW	RECIRCULATED HOT WATER
	TEE TURNED UP	— — —	GHR & GHS	GLYCOL HEATING SUPPLY/RETURN
	UNION	-----		EXISTING PIPING/DUCTWORK/EQUIPMENT TO REMAIN
	CHECK VALVE	— — —		EXISTING PIPING/DUCTWORK/EQUIPMENT TO BE REMOVED
	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	— — —		

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

Project Number:
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M001
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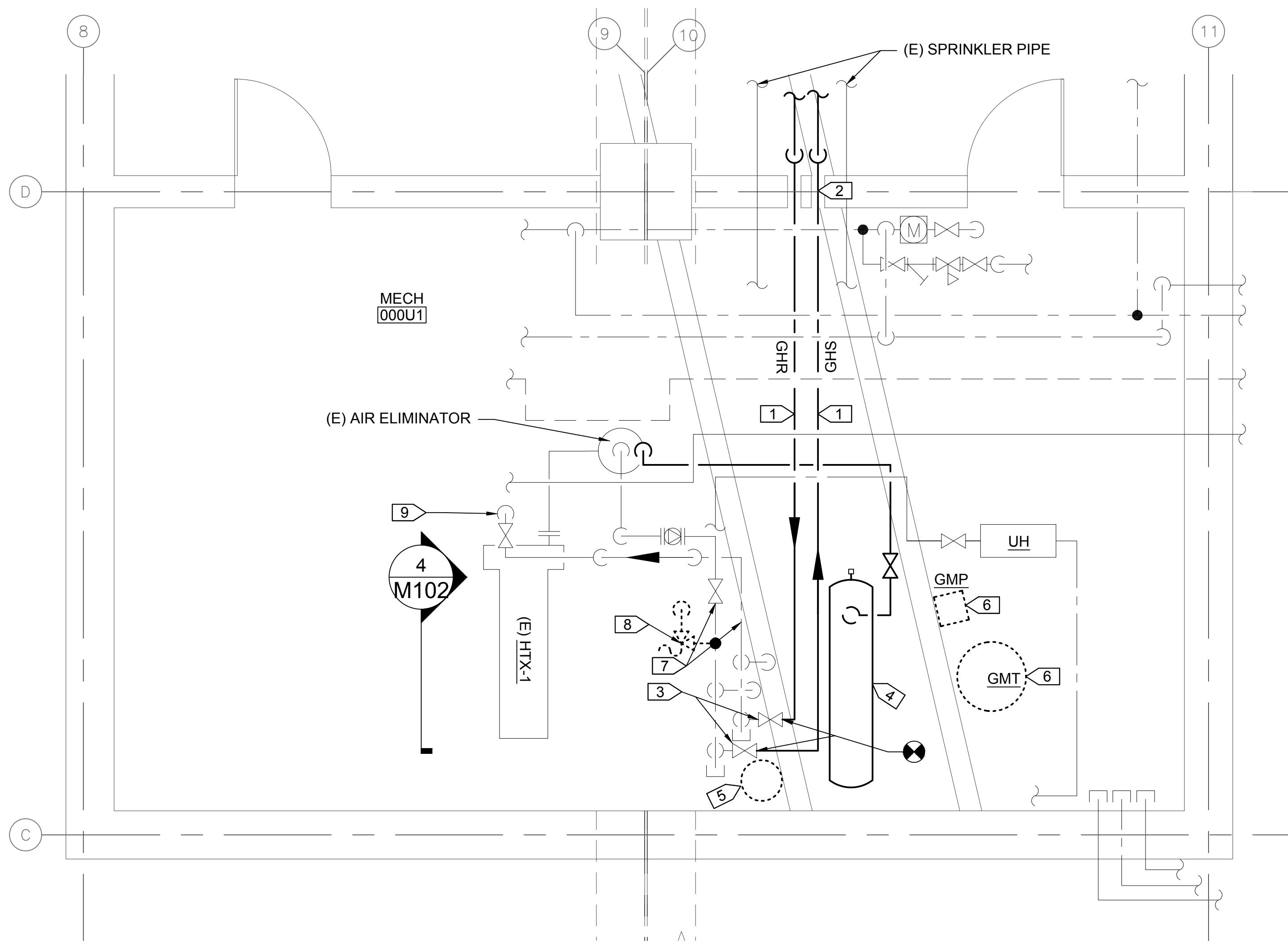
UAF CTC BARNETTE
PARKING GARAGE HEATING

Sheet Contents:
ABBREVIATIONS AND
LEGENDS

DATE REVISIONS: BY:
DRAWN AMK/RCL
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DATE SEPTEMBER 20, 2018
SCALE 0" - 1"

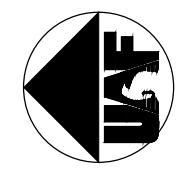
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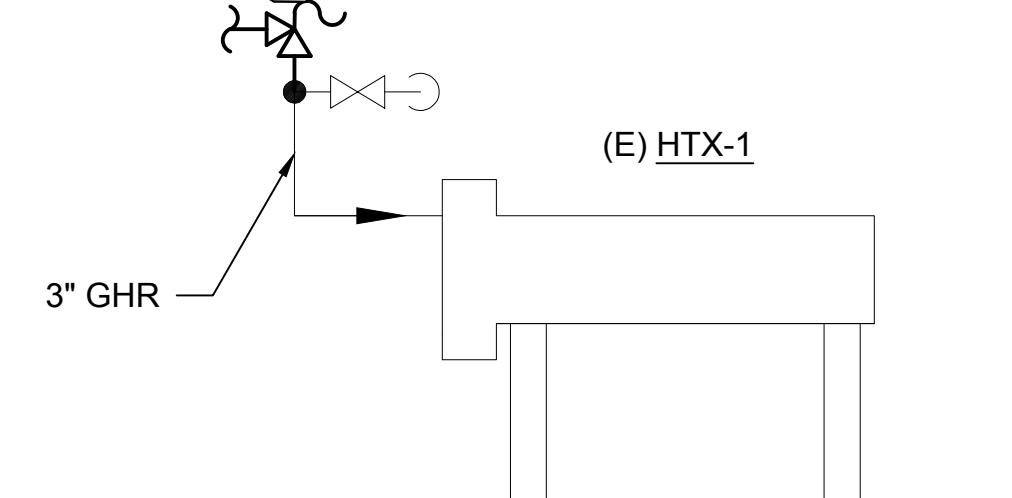
SPECIFIC NOTES:

- 1 1 1/2" GHS&R. COORDINATE ROUTING TO AVOID INTERFERENCE WITH NEW HEATING SYSTEM COMPRESSION TANK.
- 2 PIPE INSULATION AND FIRE CAULK.
- 3 (E) 1 1/2" 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



MECH ROOM 000U1 NEW WORK PLAN

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



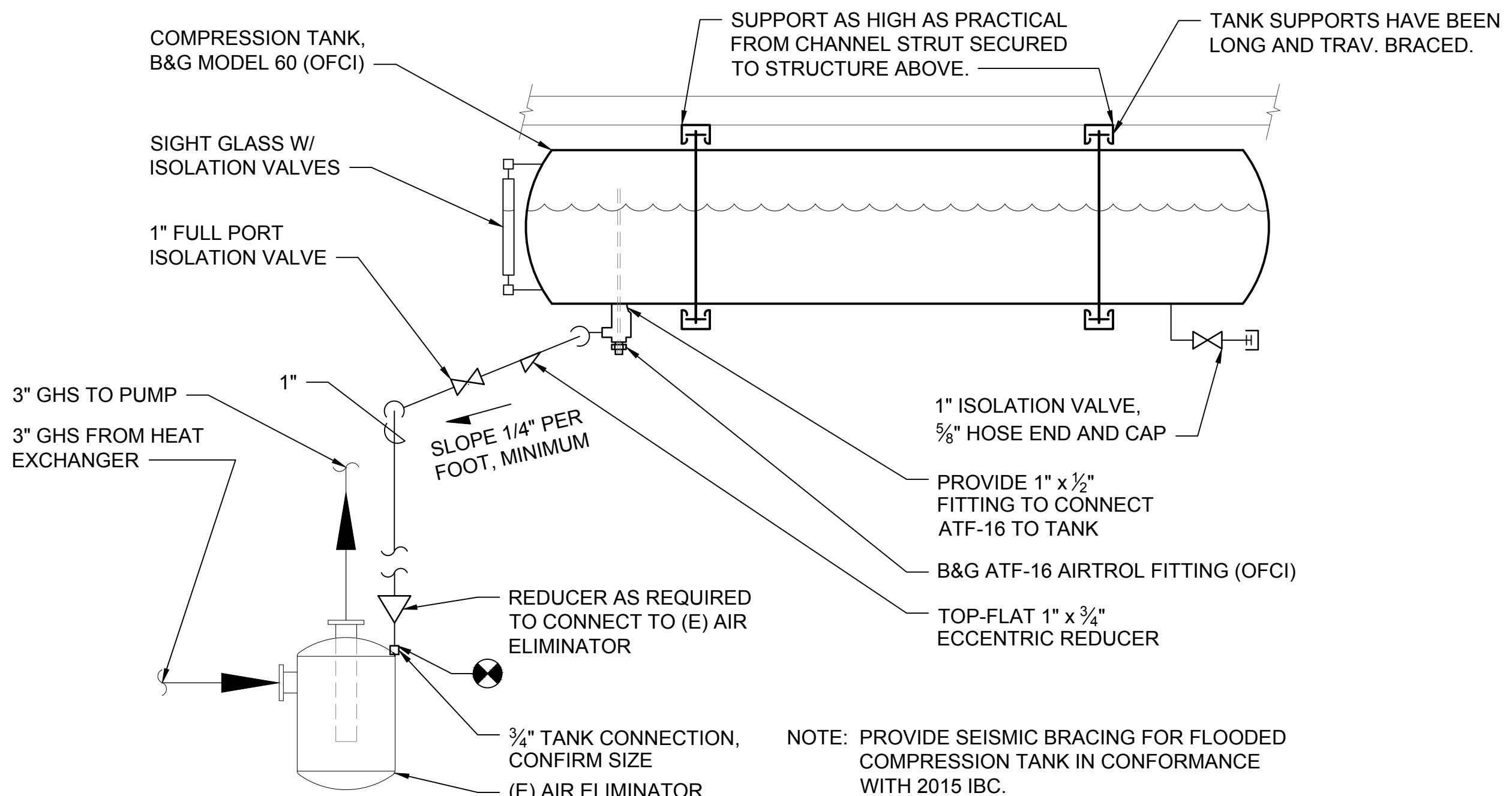
HEAT TRANSFER UNIT DETAIL

SCALE: NTS



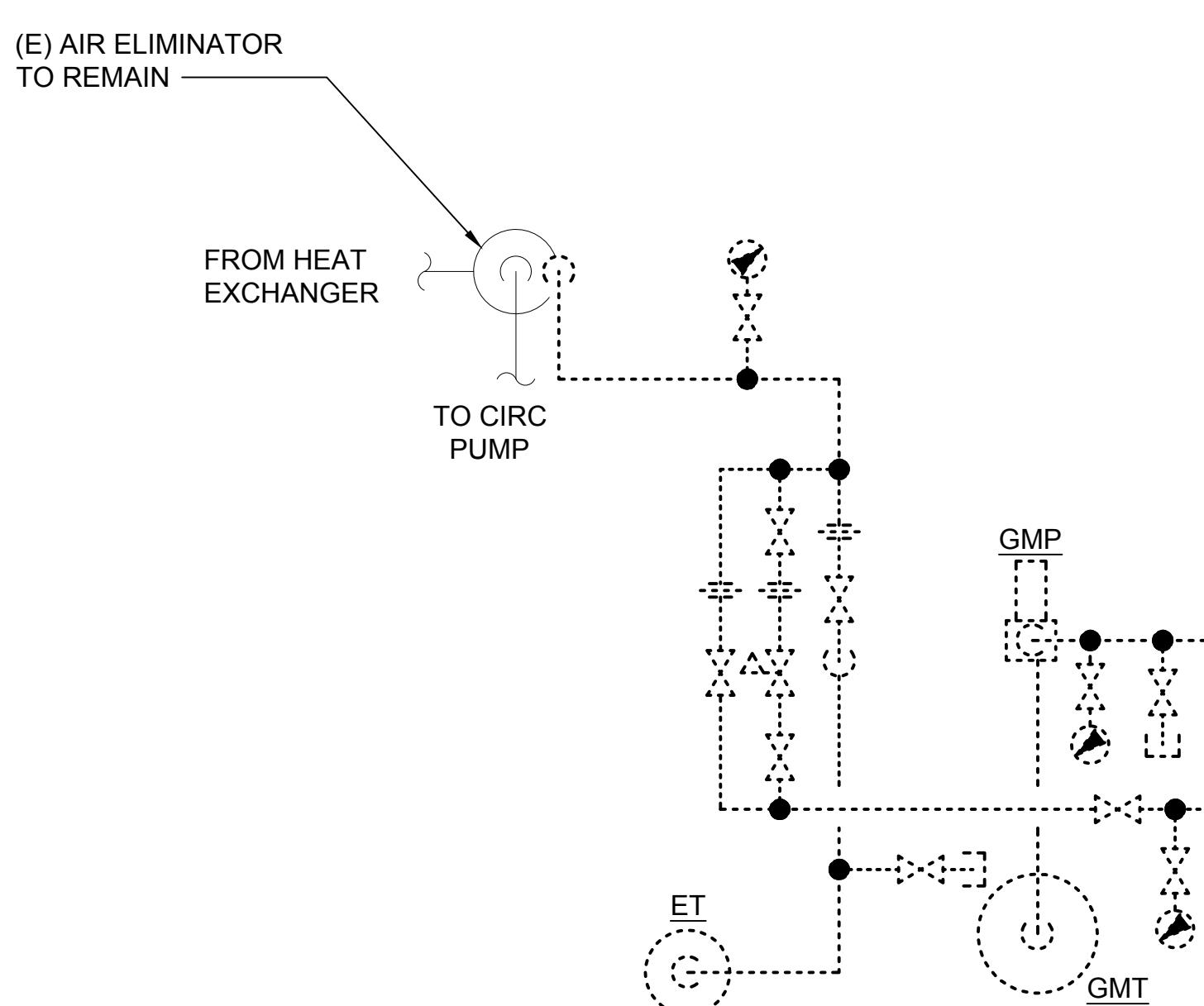
GENERAL SHEET NOTES:

- 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.



COMPRESSION TANK PIPING & INSTALLATION DETAIL

2 M102 SCALE: NTS



GLYCOL MAKE-UP & EXPANSION TANK DEMOLITION PLAN

3 M102 SCALE: NTS



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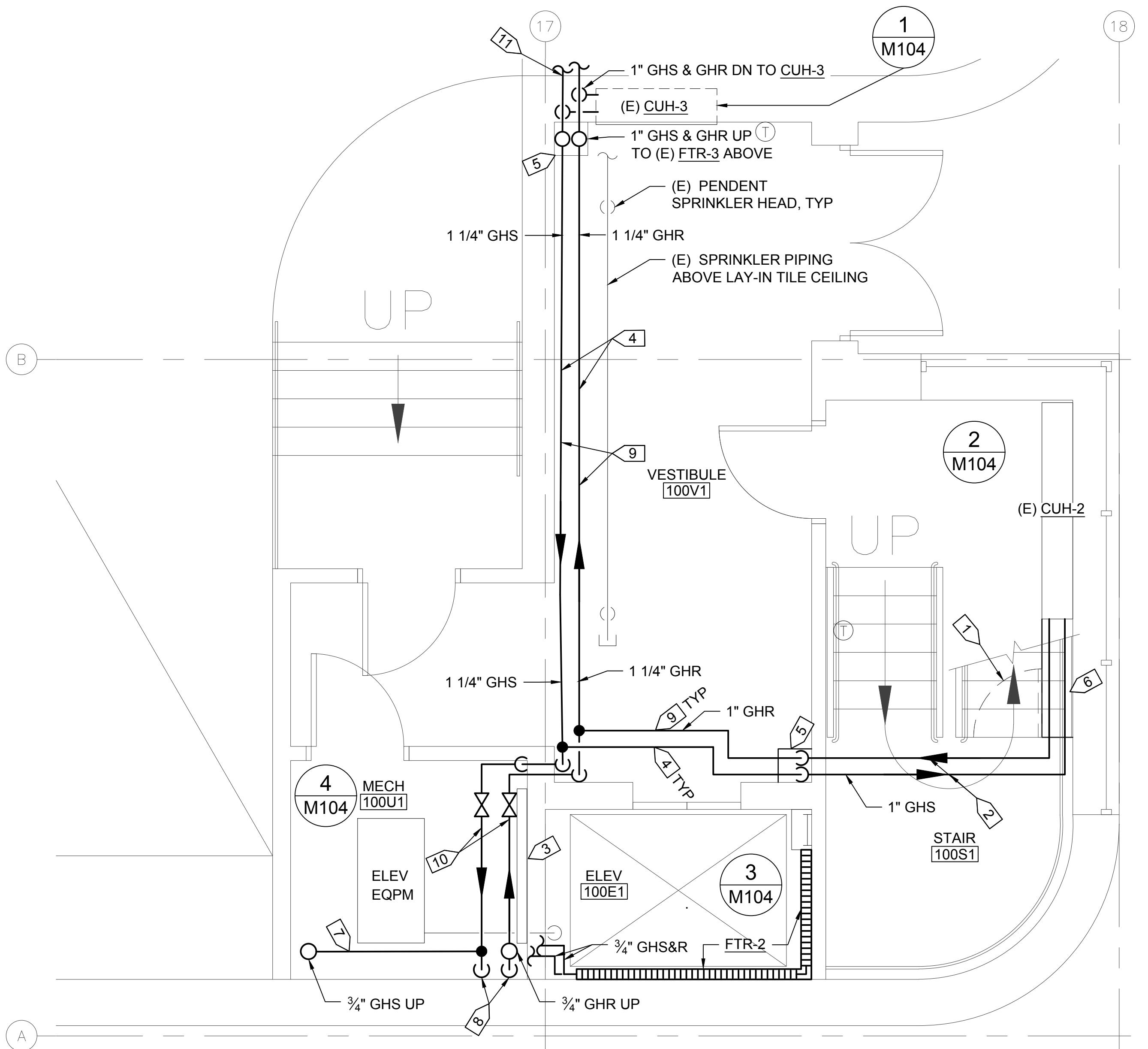
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PARKING GARAGE HEATING

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Project Title:

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MECH ROOM 000U1
PLAN AND DETAILS
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SCALE: 0" - 1"
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M102
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SPECIFIC NOTES:

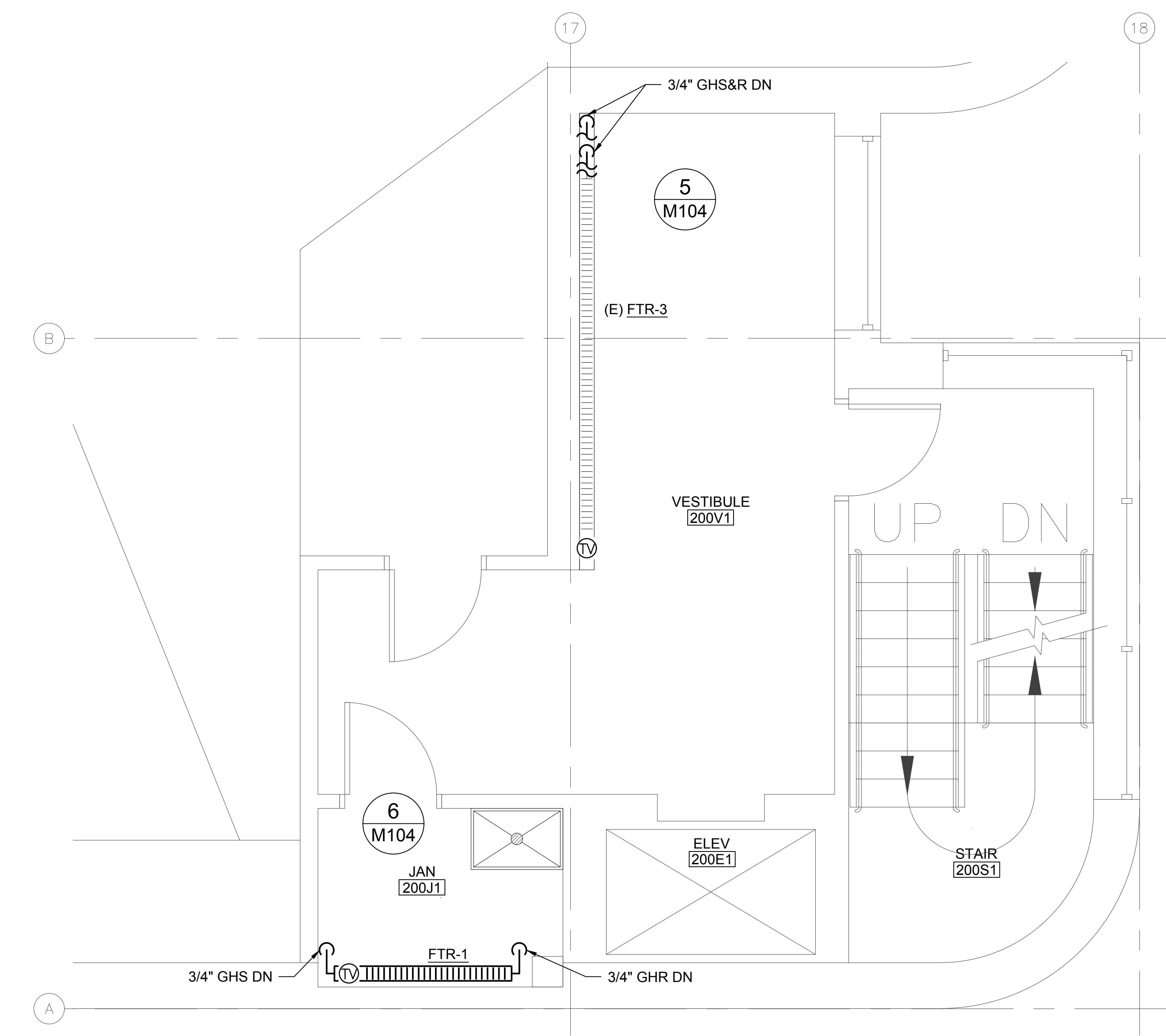
- 1 (E) SECURITY GATE/FENCE. PENETRATE EXPANDED METAL WITH 3" HOLE. DO NOT CUT FRAMING METAL.
- 2 SUPPORT PIPING ON CHANNEL STRUT SECURED TO FLOOR.
- 3 (E) BUDERAS CONVECTOR TO REMAIN.
- 4 PROVIDE 1" PIPE INSULATION ABOVE SUSPENDED CEILING, TYP.
- 5 PIPE CHASE BY OTHERS.
- 6 PIPE ENCLOSURE BY OTHERS.
- 7 SUPPORT PIPING ON CHANNEL STRUT SECURED TO STRUCTURE ABOVE.
- 8 3/4" 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



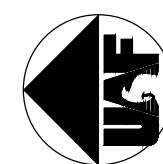
SPECIFIC NOTES:

- 1 NOT USED

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UNIVERSITY OF ALASKA FAIRBANKS
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SEPTEMBER 20, 2018

Project Phase: RECORD DRAWINGS

Project Title: UAF CTC BARNETTE PARKING GARAGE HEATING



2
M103

SECOND FLOOR PLAN

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

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 1/2" EXPANDED METAL	8	RITTLING EXO MODEL 3/4C-4 1/4x4 1/4-40 SINGLE TIER	1. PERFORMANCE BASED ON 2 GPM FLOW
FTR-2	RM 100E1	1425	180 / 160	65	10 1/2" EXPANDED METAL	14	RITTLING EXO MODEL 3/4C-4 1/4x4 1/4-40 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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M103
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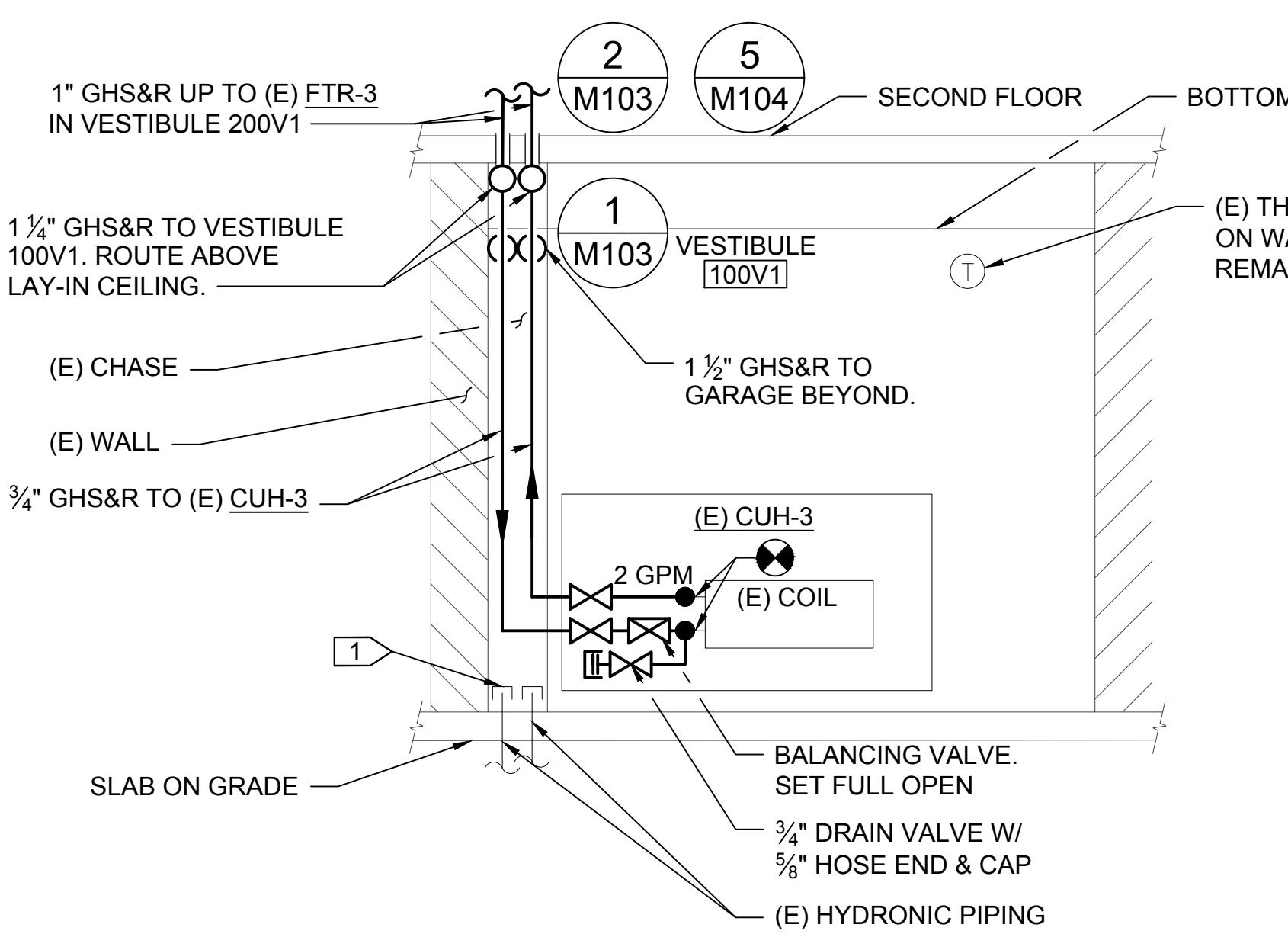


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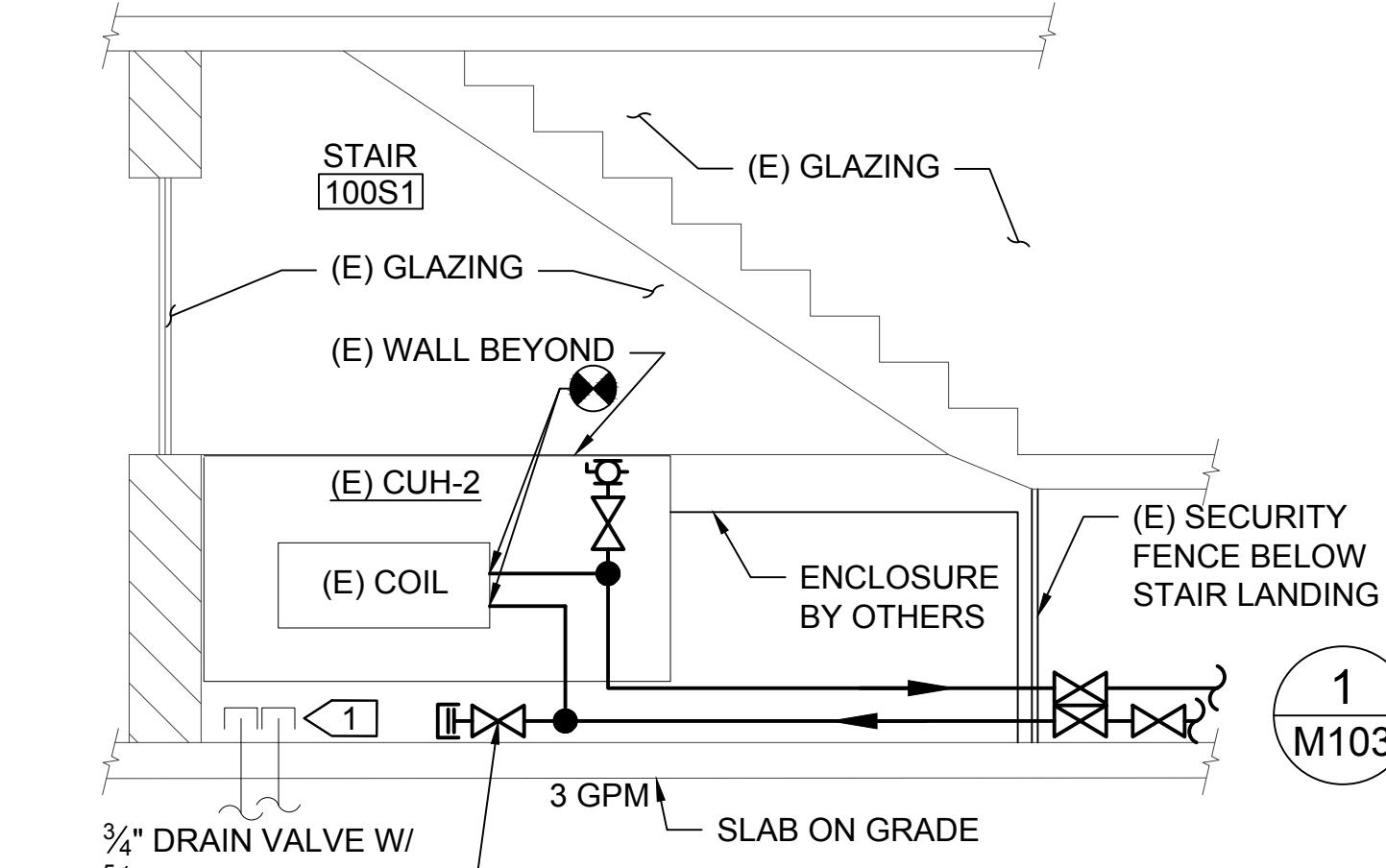
UAF CTC BARNETTE PARKING GARAGE HEATING



SPECIFIC NOTES:

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

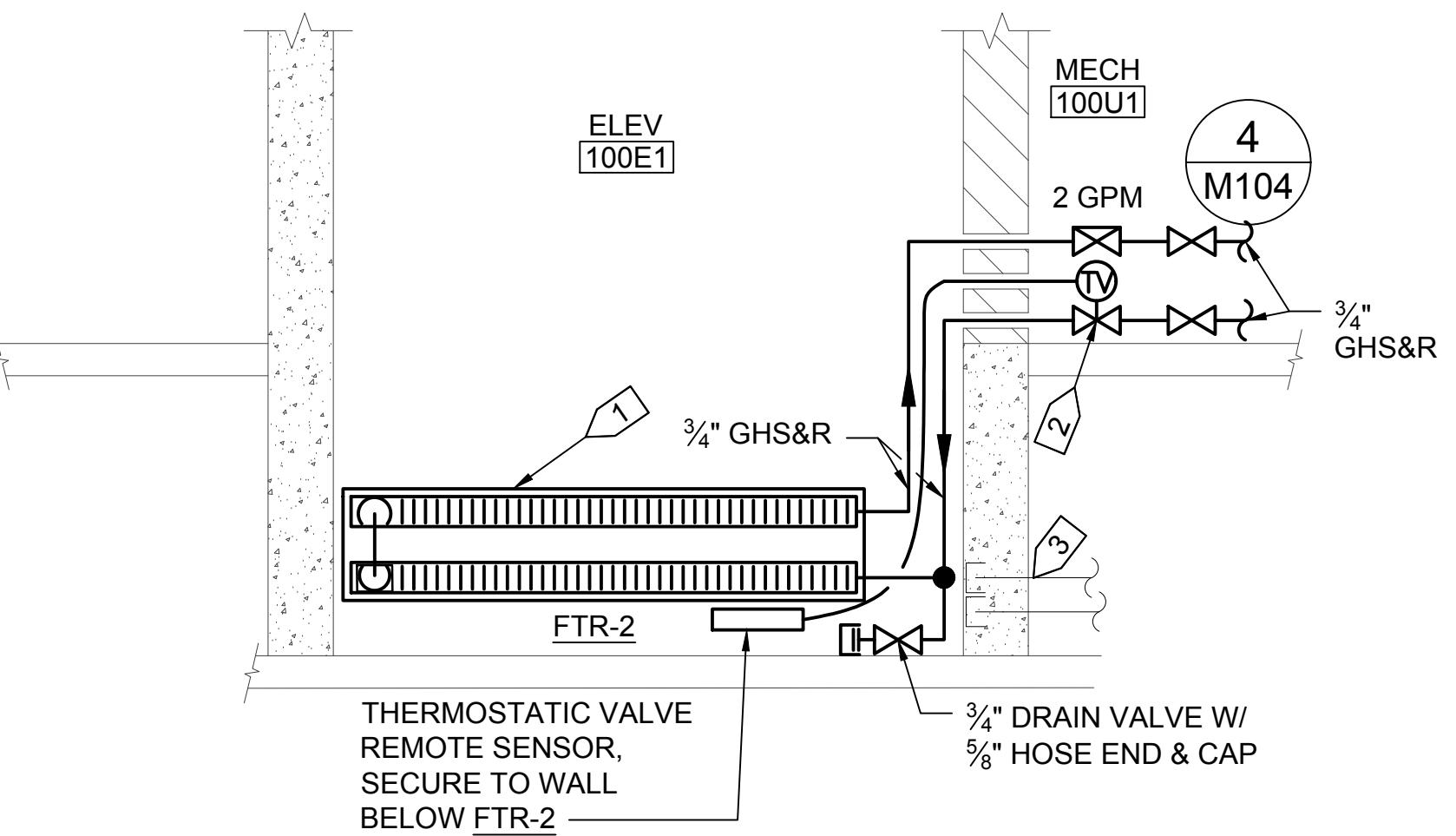
1
1 M104
CUH-3 PIPING DETAIL
SCALE: NTS



SPECIFIC NOTES:

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

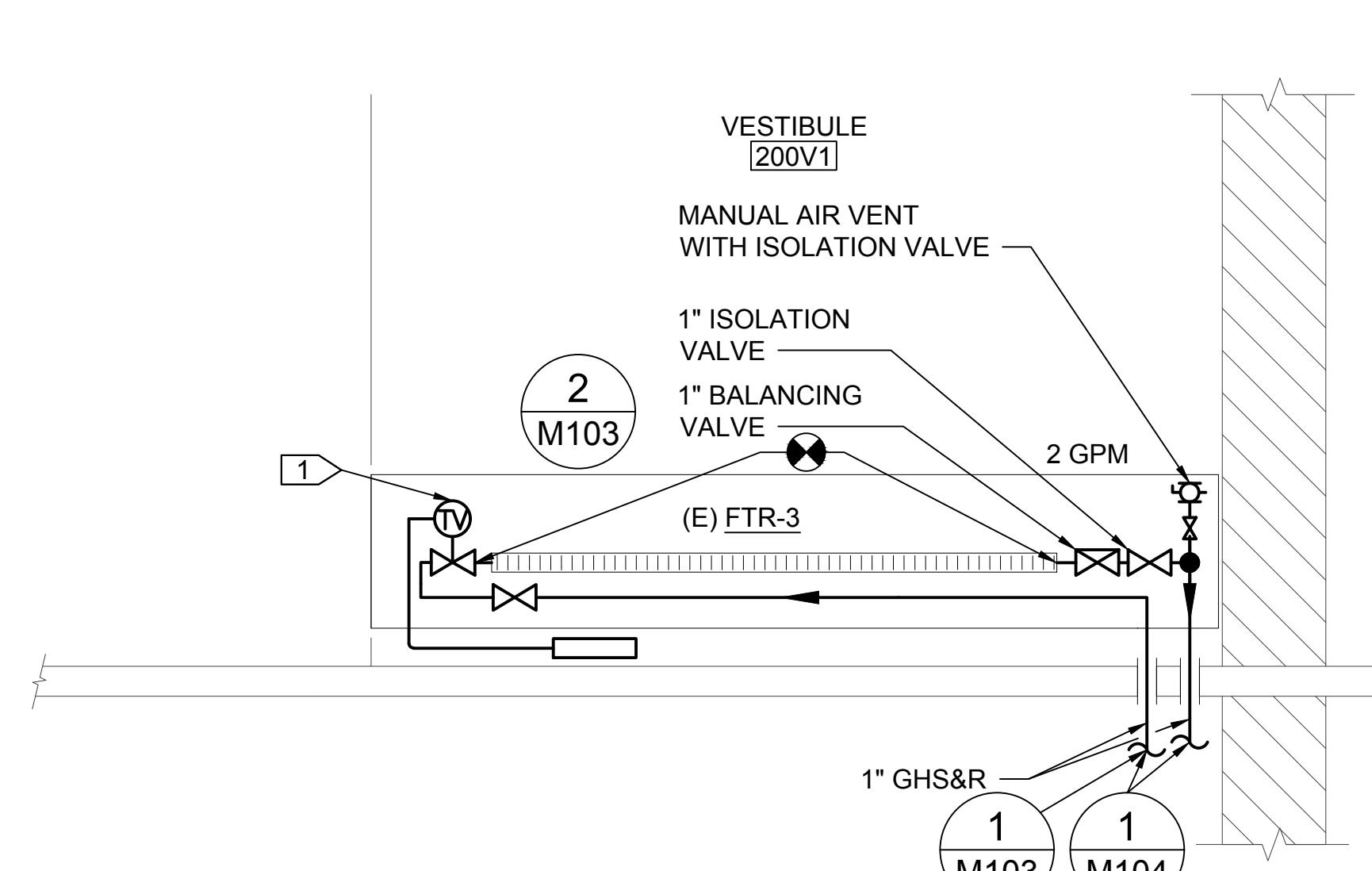
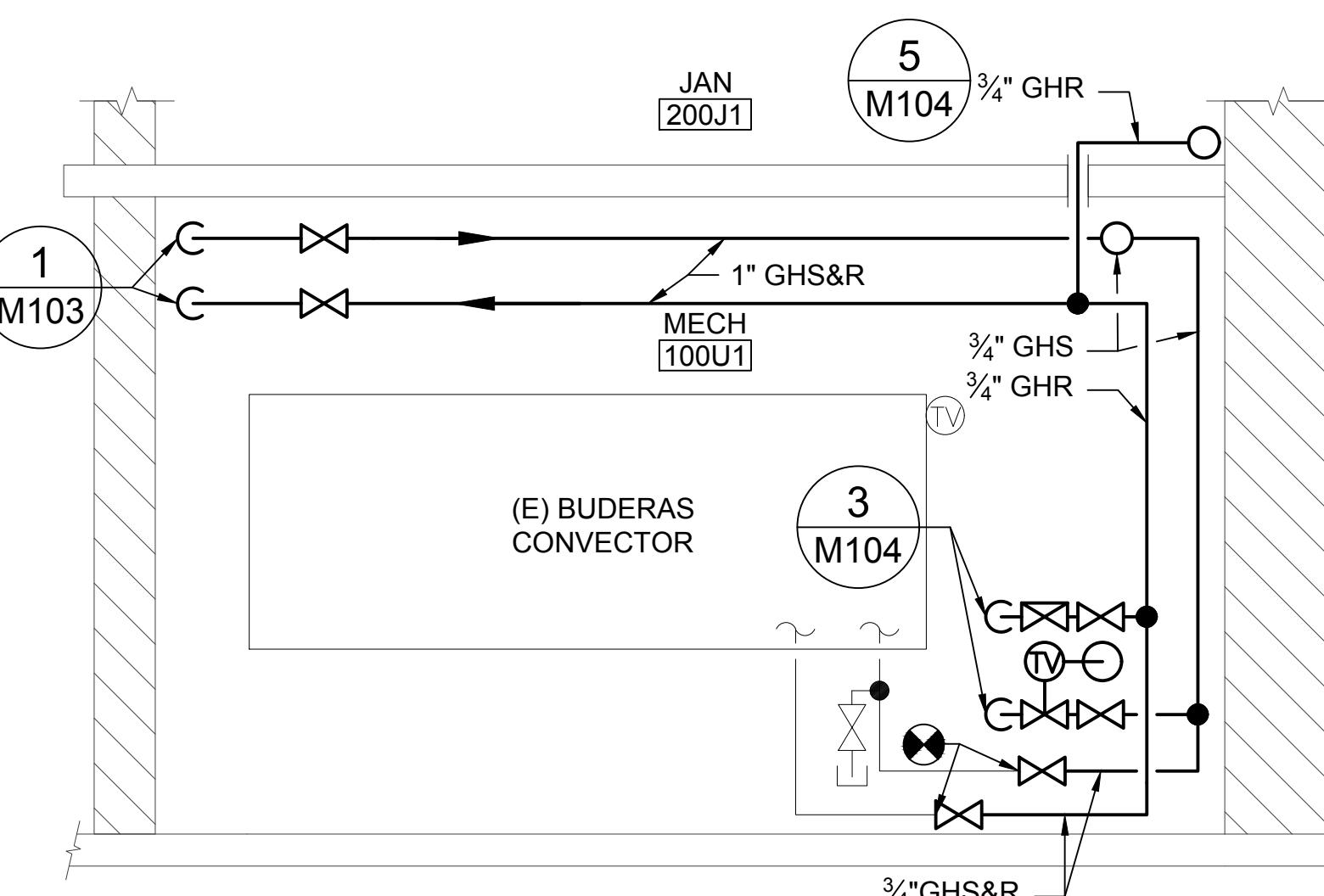
2
2 M104
CUH-2 PIPING DETAIL
SCALE: NTS



SPECIFIC NOTES:

- 1 SUPPORT FINNED TUBE RADIATION ENCLOSURE AND PIPING FROM ADJACENT WALL WITH MANUFACTURER BRACKETS.
- 2 3/4" THERMOSTATIC CONTROL VALVE WITH REMOTE SENSOR
- 3 REMOVE (E) FINNED TUBE RADIATION, SUPPORTS, ETC. CAP/PLUG PIPING AT WALL PENETRATION.

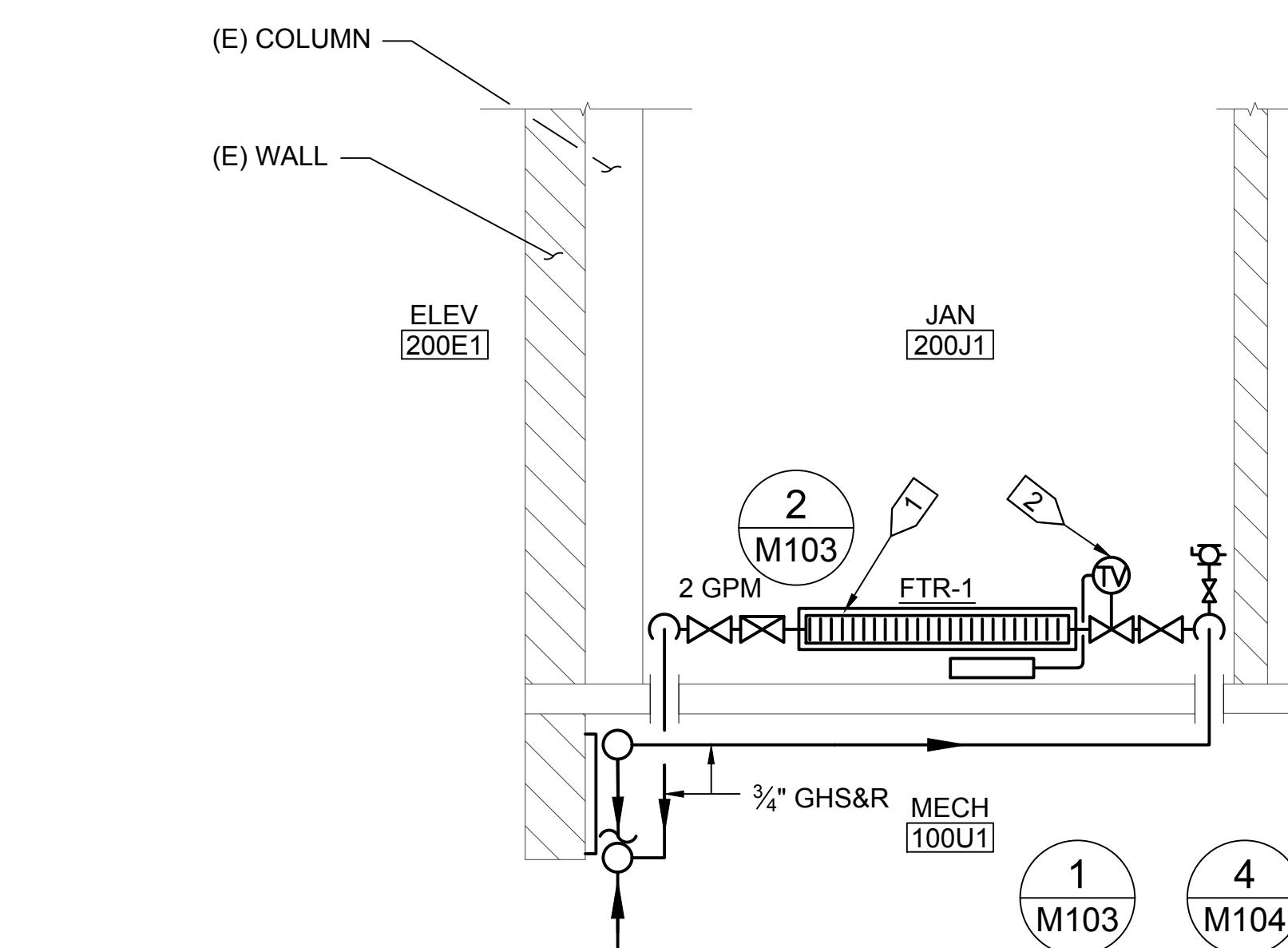
3
3 M104
ELEVATOR PIT FINNED TUBE RADIATION PIPING DETAIL
SCALE: NTS



SPECIFIC NOTES:

- 1 3/4" THERMOSTATIC CONTROL VALVE WITH REMOTE SENSOR SECURED TO WALL BELOW (E) FTR-3.

5
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 1/2" THERMOSTATIC CONTROL VALVE WITH REMOTE SENSOR SECURED TO WALL BELOW FTR-1.

6
6 M104
JANITOR 200J1 PIPING DETAIL
SCALE: NTS

Project Phase:

RECORD DRAWINGS

Project Title:

Sheet Content:

DETAILS

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0"

1"

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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, TEFLOON 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.
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.

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 TEFLOON 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.



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Consultant:

Stamp:

Project Phase:
RECORD DRAWINGS
Project Title:

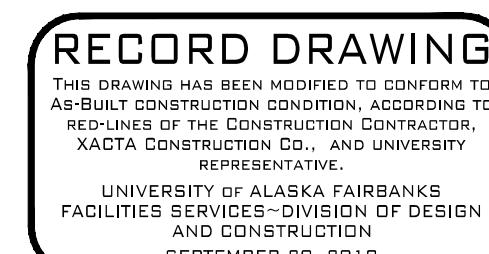
Sheet Contents:
SPECIFICATIONS

DATE	REVISIONS:	BY:

DRAWN	AMK
CHECKED	JVK/PMB
DATE	SEPTEMBER 20, 2018
SCALE	0" - 1"
Project Number:	D18032-CTCGH

SHEET NO.

M105
6 OF 6



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