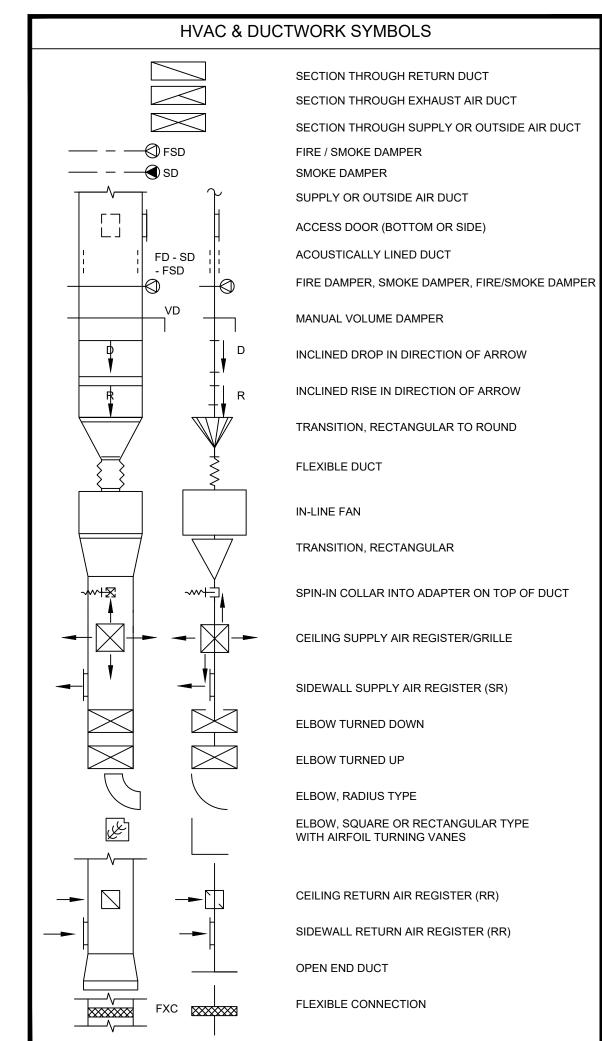
		MECHANICAL	ELEMENTS / VALVING		
		<b>A</b> .			
	EXISTING EQUIPMENT OR PIPE TO BE REMOVED.		RELIEF/SAFETY VALVE	A	ANCHOR
— <del>—</del> —	GATE VALVE		GAS COCK	<u></u>	GUIDE
— <del> </del>	GLOBE VALVE		AUTOMATIC FILL VALVE	EJ_	EXPANSION JOINT
₹	PLUG VALVE	н <del>&gt;</del> МV	MANUAL AIR VENT	FS FS	FLOW SWITCH
——————————————————————————————————————	BUTTERFLY VALVE	AV 🛆	AUTOMATIC AIR VENT (EXTEND		TEMPERATURE TRANSMITTER
<u> —</u> ф	BALL VALVE		DISCHARGE TO DRAIN)	PT/PS	PRESSURE TRANSMITTER OR
	SWING CHECK VALVE		FLOW METER-VENTURI	<b>Д</b> тн	PRESSURE SWITCH
<b>—</b>	LIFT CHECK VALVE		FLOW METER-ORIFICE	<del>T</del>	THERMOMETER
<u> </u>	GATE VALVE, ANGLE	<del></del>	DIRECTION OF FLOW		GAUGE WITH GAUGE COCK
	GLOBE VALVE, ANGLE	R D	DIRECTION OF PITCH-RISE OR DROP	$\Diamond$	& SYPHON (STEAM)
		<del></del>	STRAINER		AQUASTAT
	DIAPHRAGM VALVE		STRAINER WITH BLOW OFF VALVE		GAS PRESSURE REGULATOR
	BALANCING VALVE	<i>▼</i>	PIPE RISING UP		FLOAT OPERATED CONTROL VALVE
CBV	CIRCUIT SETTING BALANCING VALVE	<del></del>	PIPE DROPPING DOWN	Τ	O
	THREE WAY CONTROL VALVE		CONCENTRIC REDUCER	<b>─</b>	STEAM TRAP
	TWO WAY CONTROL VALVE		ECCENTRIC REDUCER		EXPANSION LOOP
S			UNION - SCREWED OR FLANGED	<b>P</b> ↓VB	VACUUM BREAKER
PPV	SOLENOID VALVE	<del></del>	STEAM LEAK DETECTOR	T	THERMOSTAT
PRV 60 PSI	PRESSURE REDUCING VALVE (PRV)	FSD	FIRE SMOKE DAMPER		DIGITAL SENSOR
TPV		<u>©</u>	CARBON MONOXIDE	(S)	
	TEMPERATURE/PRESSURE RELIEF VALVE	(CD)	CARBON DIOXIDE	🔾 or 📮	PUMP
AIR VENT   AIR VENT	HYDRAULIC SEPARATOR	<b>⊢</b>	AIR SEPARATOR	(HXX)	HEAT EXCHANGER
宁 		'			



L	LINE DESIGNATION SYMBOLS
CHWR	— CHILLED WATER RETURN
CHWS	— CHILLED WATER SUPPLY
CA	COMPRESSED AIR
CR	CONDENSER WATER RETURN
cs	CONDENSER WATER SUPPLY
D	— DRAIN
HPR	HEAT PUMP RETURN
HPS	HEAT PUMP SUPPLY
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
G	— NATURAL GAS
RH	REFRIGERANT HIGH PRESSURE VAPOR
R	REFRIGERANT LIQUID AND VAPOR LINE
RS	REFRIGERANT SUCTION / VAPOR
SMR	— SNOWMELT RETURN
SMS	— SNOWMELT SUPPLY
v	VENT PIPING

ITEM	FURNISHED	SET	POWER WIRED	CONTRO WIRED
EQUIPMENT	23	23	26	
COMBINATION MAGNETIC MOTOR STARTERS, MAGNETIC MOTOR STARTERS, VFD'S AND CONTACTORS	23(1)	26	26(2)	23
	20(1)		20(2)	
FUSED AND UNFUSED DISCONNECT SWITCHES, THERMAL OVERLOAD SWITCHES AND HEATERS, MANUAL MOTOR				
STARTERS	26	26	26	
MANUAL-OPERATING AND MULTI-SPEED SWITCHES	23	26	26	26
CONTROLS, RELAYS, TRANSFORMERS	23	23	26	23
THERMOSTATS (LOW VOLTAGE) AND TIME SWITCHES	23	23	26	23
THERMOSTATS (LINE VOLTAGE)	23	23	26	26
TEMPERATURE CONTROL PANELS	23	23	26	23
MOTOR AND SOLENOID VALVES, DAMPER MOTORS, PE & EP				
SWITCHES	23	23(2)		23(2)
PUSH-BUTTON STATIONS AND PILOT LIGHTS	23	23(2)		23(2)
HEATING, COOLING, VENTILATION AND AIR				
CONDITIONING CONTROLS	23	23	26	23
EXHAUST FAN SWITCHES	23	26	26	23(2)

IF ITEM IS FOR LINE VOLTAGE, SET IN PLACE AND CONNECT UNDER DIVISION 26. WHERE FACTORY MOUNTED ON EQUIPMENT OR ATTACHED TO PIPING OR DUCTS AND USING LINE VOLTAGE FURNISH AND SET UNDER DIVISION 23, CONNECT UNDER DIVISION 26.

<u>AB</u> BI	REVIATIONS:				
44"	MOUNTING HEIGHT ABOVE	DIFF	DIFFERENTIAL	HR	HOUR
	ED FLOOR TO CENTER OF DEVICE	DISCH	DISCHARGE	HT	HEIGHT
A	AMPS	DIV	DIVISION	HTR	HEATER
A.D.	ACCESS DOOR	DN	DOWN	HWR	HEATING WATER RETURN
AAV ABV	AIR ADMITTANCE VALVE ABOVE	DS	DUCT SILENCER	HWS	HEATING WATER SUPPLY
AC	AIR CONDITIONING UNIT	DWG	DRAWING	HX	HEAT EXCHANGER
AC	ABOVE COUNTER	DX	DIRECT EXPANSION	HZ	HERTZ
AD	AREA DRAIN (SEE SYMBOLS)	(E)	EXISTING	ID	INSIDE DIAMETER
	ABOVE FINISHED CEILING	EA	EXHAUST AIR GRILLE/REGISTER	IG INI	ISOLATED GROUND
	ABOVE FINISHED GRADE	EAT EC	ENTERING AIR TEMPERATURE ELECTRICAL CONTRACTOR	IN INV	INCHES
AIC	AMPERE INTERRUPTING	ECC	ECCENTRIC		JUNCTION BOX
CAPAC	ITY	EF	EXHAUST FAN	K	KELVIN
A.F.F.	ABOVE FINISHED FLOOR	EFF	EFFICIENCY	KW	KILOWATT
AHU	AIR HANDLING UNIT	EL	ELEVATION	KVA	KILO VOLT - AMPS
	ALUMINUM	ELEC	ELECTRIC	L	LENGTH
AP	ACCESS PANEL OR DOOR	ELEV	ELEVATOR	LAT	LEAVING AIR TEMPERATURE
ATS	AUTOMATIC TRANSFER SWITCH	EM	EMERGENCY FUNCTION	LV	LAVATORY
AVC	AUDIO / VIDEO	ENT	ENTERING	LB	POUND
AVG AWG	AVERAGE AMERICAN WIRE GAGE	EMT	ELECTRIC METALLIC TUBE	LD	LINEAR DIFFUSER
BAS	BUILDING AUTOMATION SYSTEM	EQ	EQUAL	LF	LINEAR FEET
BB	BASEBOARD	EQUIP	EQUIPMENT	LIN	LINEAR
BD	BACK DRAFT DAMPER	EQUIV	EQUIVALENT	LIQ	LIQUID
BFP	BACK FLOW PREVENTOR	ES	END SWITCH	LM	LUMEN
BL	BOILER	ESP	EXTERNAL STATIC PRESSURE	LRA	LOCKED ROTOR AMPS
	BUILDING	ET	EXPANSION TANK	LV	LOUVER
BLW	BELOW	EWC	ELECTRIC WATER COOLER	LVG	LEAVING
вов	BOTTOM OF BEAM	EWT	ENTERING WATER ERATURE	LWT	LEAVING WATER TEMPERATURE
BOD	BOTTOM OF DUCT	EX	EXHAUST	MBH	THOUSANDS OF BTU PER HOUR
ВОР	BOTTOM OF PIPE	EXPAN		MC	MECHANICAL CONTRACTOR
BSMT	BASEMENT	EXT	EXTERNAL	MCA	MINIMUM CIRCUIT AMPACITY
BTU	BRITISH THERMAL UNIT	F	DEGREES FAHRENHEIT	MCB MD	MAIN CIRCUIT BREAKER MOTORIZED DAMPER
С	CHILLER	FA	FREE AREA	MDP	MAIN DISTRIBUTION PANEL
CAP	CAPACITY	FC	FAN COIL UNIT	MED	MEDIUM
СВ	CIRCUIT BREAKER	FC	FOOTCANDLE	MFR	MANUFACTURER
CBV	CIRCUIT BALANCING VALVE	FCV	FLOW CONTROL VALVE	MIN	MINIMUM
CCT	CORRELATED COLOR RATURE	FD	FIRE DAMPER	MISC	MISCELLANEOUS
CKT	CIRCUIT	FD	FLOOR DRAIN	MLO	MAIN LUG ONLY
	CUBIC FEET PER HOUR	FIN	FINISHED	MOCP	MAXIMUM OVERCURRENT
	CUBIC FEET PER MINUTE	FLA	FULL LOAD AMPS	PROTE	CTION
	CHILLED WATER RETURN	FLEX	FLEXIBLE	MTD	MOUNTED
	CHILLED WATER SUPPLY	FLR	FLOOR	MUA	MAKE-UP AIR UNIT
CI	CAST IRON	FOB	FLAT ON BOTTOM	N	NEUTRAL
CL	CENTER LINE	FOT	FLAT ON TOP	NC	NORMALLY CLOSED
CLG	CEILING	FP	FIRE PROTECTION	NEG	NEGATIVE
CMU	CONCRETE MASONRY UNIT	FP	FIRE PUMP	NIC	NOT IN CONTRACT
СО	CLEAN OUT	FPM	FEET PER MINUTE	NL NOT S	NIGHT / SECURITY LIGHT - DO WITCH
COL	COLUMN	FPS FS	FEET PER SECOND FLOW SWITCH	NO	NORMALLY OPEN
COMP	COMPRESSOR	FSD	FIRE/SMOKE DAMPER	NOM	NOMINAL
CONC	CONCRETE	FSD FT	FEET	NTS	NOT TO SCALE
COND	CONDENSATE	FXC	FLEXIBLE CONNECTION	OA	OUTSIDE AIR
CONN	CONNECTION	GND	GROUND	OBD	OPPOSED BLADE DAMPER
	CONTINUATION	GA	GAUGE	OC	ON CENTER
CONTR	R CONTRACTOR	GAL	GALLON	OCC	OCCUPIED
CRI	COLOR RENDERING INDEX		GALVANIZED	OCP	OVER CURRENT PROTECTION
СТ	COOLING TOWER	GEC	GROUND ELECTRODE	OD	OUTSIDE DIAMETER
CT	CURRENT TRANSFORMER	COND	JCTOR	OL	OVERLOAD
CU	CORDER		GFI GROUND FAULT CIRCUIT RUPTER	ORD	OVERFLOW ROOF DRAIN
CU	COPPER			OZ	OUNCE
	CABINET UNIT HEATER	GC GPH	GENERAL CONTRACTOR GALLONS PER HOUR	PBD	PARALLEL BLADE DAMPER
CWB	CONDENSED WATER RETURN	GPH GPM	GALLONS PER HOUR GALLONS PER MINUTE	PD	PRESSURE DROP
	CONDENSER WATER RETURN CONDENSER WATER SUPPLY	GRS/LI		PH	PHASE
		GRS/LI H 20	WATER	POS	POSITIVE PRESSURE
DB	DRY BULB DEPARTMENT	HB	HOSE BIBB	POS	POINT OF SALES
DEPT	DRINKING FOUNTAIN	HD	HEAD (SEE SCHEDULES)	PRV	PRESSURE REDUCING VALVE
DIA	DIAMETER	HP	HEAT PUMP	PS pei	PRESSURE SWITCH
	DIAGRAM	HP	HORSEPOWER	PSI	POUNDS PER SQUARE INCH

**SUBSTITUTIONS:** 

A. SUBSTITUTIONS: SUBSTITUTION OF SPECIFIED EQUIPMENT WILL BE ALLOWED THROUGH A PRIOR APPROVAL PROCESS INITIATED BY THE CONTRACTOR. CONTRACTOR SHALL SUBMIT INTENDED SUBSTITUTION AT LEAST FIVE DAYS PRIOR TO BID FOR APPROVAL FROM ENGINEER. SUBMITTAL SHALL INCLUDE CAPACITIES, DIMENSIONS AND OPERATING INSTRUCTIONS FOR EACH PIECE OF EQUIPMENT. SUBSTITUTION SHALL OCCUR AT NO COST TO THE OWNER. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF APPROVED SUBSTITUTION AND SHALL INCUR ALL COSTS ASSOCIATED WITH THE SUBSTITUTION INCLUDING STRUCTURAL MODIFICATIONS, SPACE LAYOUT AND REDESIGN COSTS. SEE ALSO DIVISION I GENERAL REQUIREMENTS. EXAMINATION OF SITE, DRAWINGS, SPECIFICATIONS:

A. EXAMINE CAREFULLY THE SITE AND CONDITIONS OF THE SITE. PROVIDE ALL NECESSARY EQUIPMENT AND LABOR TO INSTALL A COMPLETE WORKING SYSTEM WITHIN THE SITE CONDITIONS.

B. EXAMINE THE DRAWINGS AND SPECIFICATIONS AND 5 DAYS PRIOR TO BIDDING REPORT ANY ERRORS, OMISSIONS, INCONSISTENCIES, AND CONFLICTS TO THE ENGINEER TO BE REMEDIED IN AN ADDENDUM TO THE PROJECT PRIOR TO

C. DRAWINGS ARE DIAGRAMMATIC AND CATALOG NUMBERS GIVEN ARE FOR REFERENCE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE CAPACITY OF THE EQUIPMENT MEETS THE DRAWING REQUIREMENTS AND SHALL NOT DIMENSION FROM THE MECHANICAL, PLUMBING, OR PIPING

D. THE LATEST ADOPTED VERSIONS OF THE INTERNATIONAL BUILDING CODES SHALL BE USED AS REQUIRED. THIS WILL ALSO INCLUDE THE LATEST ADOPTED VERSIONS OF THE MECHANICAL, PLUMBING AND ENERGY CONSERVATION CODES. ALL METHODS AND MATERIALS REQUIRED BY THESE CODES SHALL BE REQUIRED BY THESE SPECIFICATIONS UNLESS INDICATED OTHERWISE. OTHER APPLICABLE LOCAL CODES AND ORDINANCES SHALL BE AS REQUIRED AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO BE KNOWLEDGEABLE OF THESE REQUIREMENTS.

E. WHERE INSTALLATION PROCEDURES OR ANY PART THEREOF ARE REQUIRED TO BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL BEING INSTALLED, PRINTED COPIES OF THESE RECOMMENDATIONS SHALL BE FURNISHED TO THE ENGINEER PRIOR TO INSTALLATION. INSTALLATION OF THE ITEM WILL NOT BE ALLOWED TO PROCEED UNTIL THE RECOMMENDATIONS ARE RECEIVED. FAILURE TO FURNISH THESE RECOMMENDATIONS CAN BE CAUSE FOR REJECTION OF THE MATERIAL.

PT PRESSURE TRANSMITTER

PTAC PACKAGED TERMINAL AIR

RA RETURN AIR GRILLE / REGISTER RCP REFLECTED CEILING PLAN

PVC POLYVINYL CHLORIDE

CONDITIONER

PV PLUG VALVE

QTY QUANTITY

RD ROOF DRAIN REL RELIEF

REQD REQUIRED RF RETURN FAN

RM ROOM

RATING

SC SHORT CIRCUIT

SCH SCHEDULE SD SMOKE DAMPER SEF SMOKE EXHAUST FAN

SF SUPPLY FAN SH SENSIBLE HEAT SH SHOWER

SP STATIC PRESSURE

SPEC SPECIFICATION

SQ SQUARE SS STAINLESS STEEL SS SAFETY SHOWER STD STANDARD

STL STEEL SYS SYSTEM TEMP TEMPERATURE

TYP TYPICAL TX TRANSFORMER UC UNDERCUT DOOR UH UNIT HEATER

UR URINAL V VOLTS

VA VALVE

VOLT VOLTAGE

W WIDTH W WATTS

W/ WITH W/O WITHOUT WB WET BULB WC WATER COLUMN WC WATER CLOSET WG WATER GAUGE WP WEATHERPROOF

SPD SURGE PROTECTION DEVICE

TR TRANSFER GRILLE / REGISTER

TT TEMPERATURE TRANSMITTER TTB TELECOMMUNICATIONS TERMINAL BACKBOARD

UNO UNLESS NOTED OTHERWISE

VAV VARIABLE AIR VOLUME UNIT VFD VARIABLE FREQUENCY DRIVE

VTR VENT THROUGH ROOF

WPIU WEATHERPROOF IN-USE WSR WITHSTAND RATING XFMR TRANSFORMER

VRF VARIABLE REFRIGERANT FLOW

UNOCC UNOCCUPIED

VA VOLT AMPERE

TR TAMPER RESISTANT

RH RELATIVE HUMIDITY RHC REHEAT COIL RLA RATED LOAD AMPS

RPM REVOLUTIONS PER MINUTE SA SUPPLY AIR GRILLE / REGISTER

SCA SHORT CIRCUIT AVAILABLE SCCR SHORT CIRCUIT CURRENT

ulting Electric

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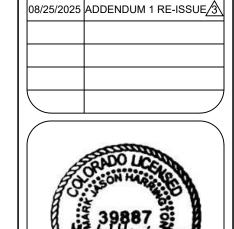
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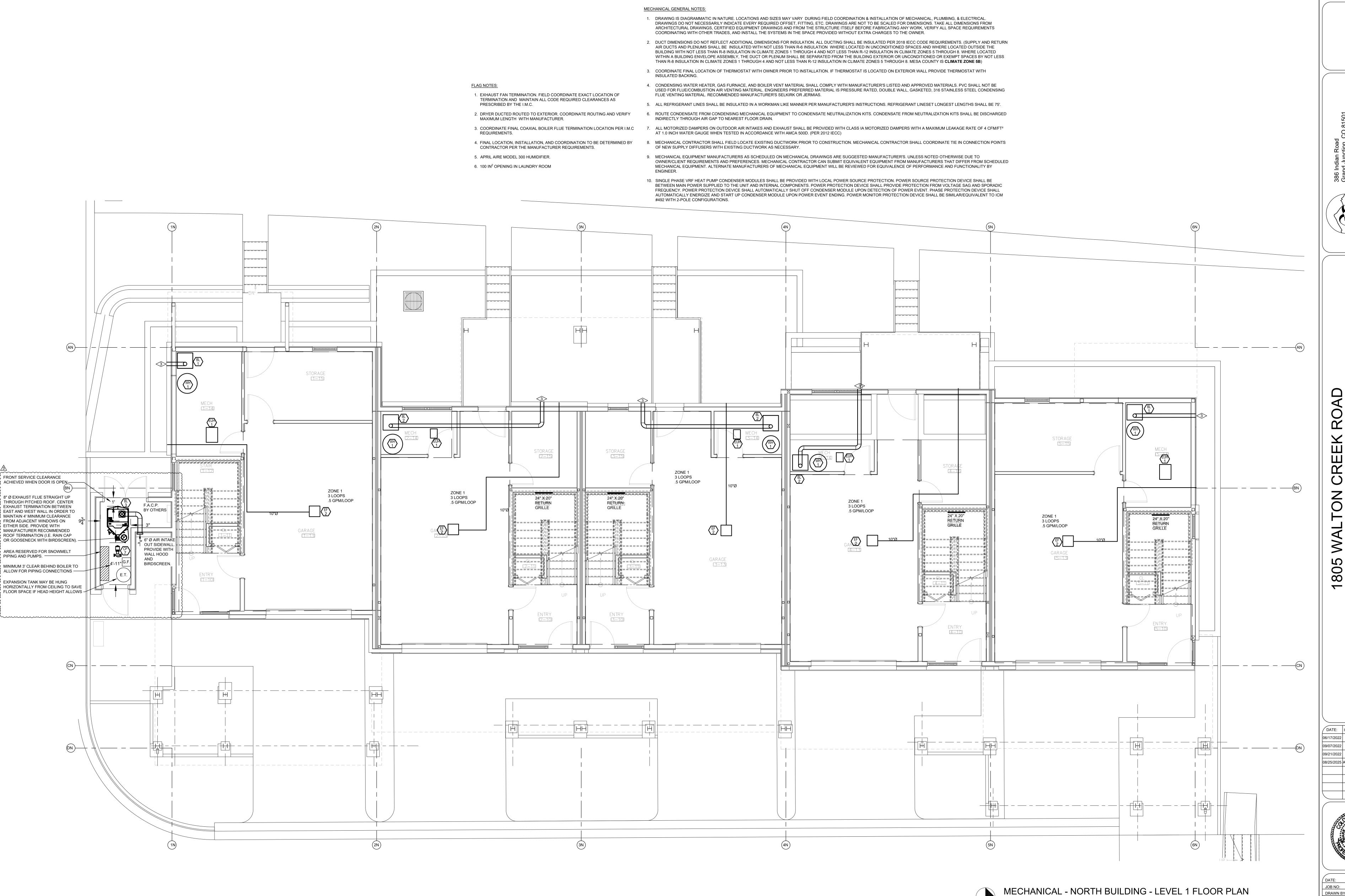
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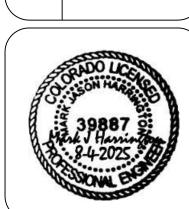
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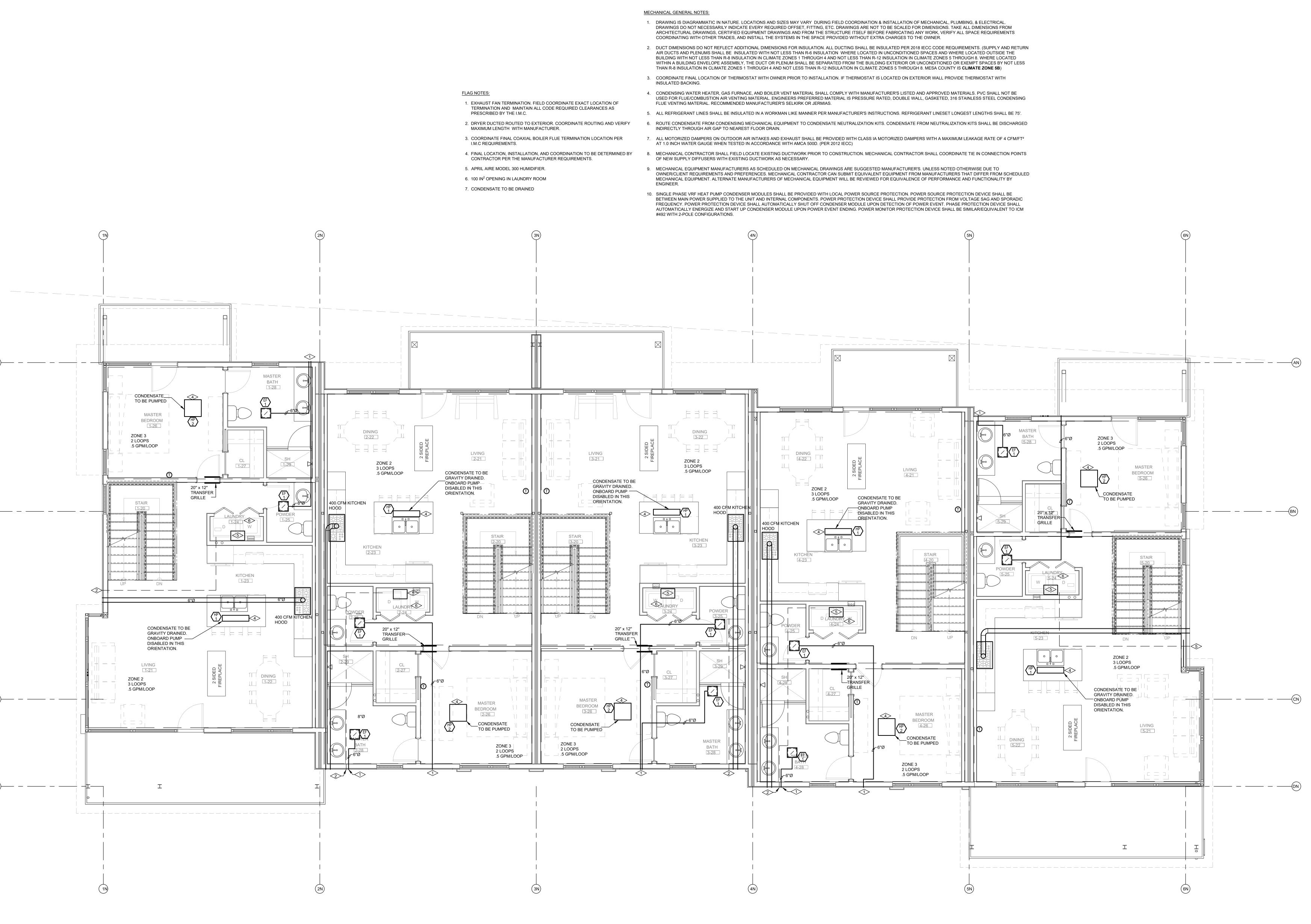


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Grand Junction, CO 81501
Phone: (970) 241-8709

onsulting Engineers, Inc

5 WALTON CREEK RO

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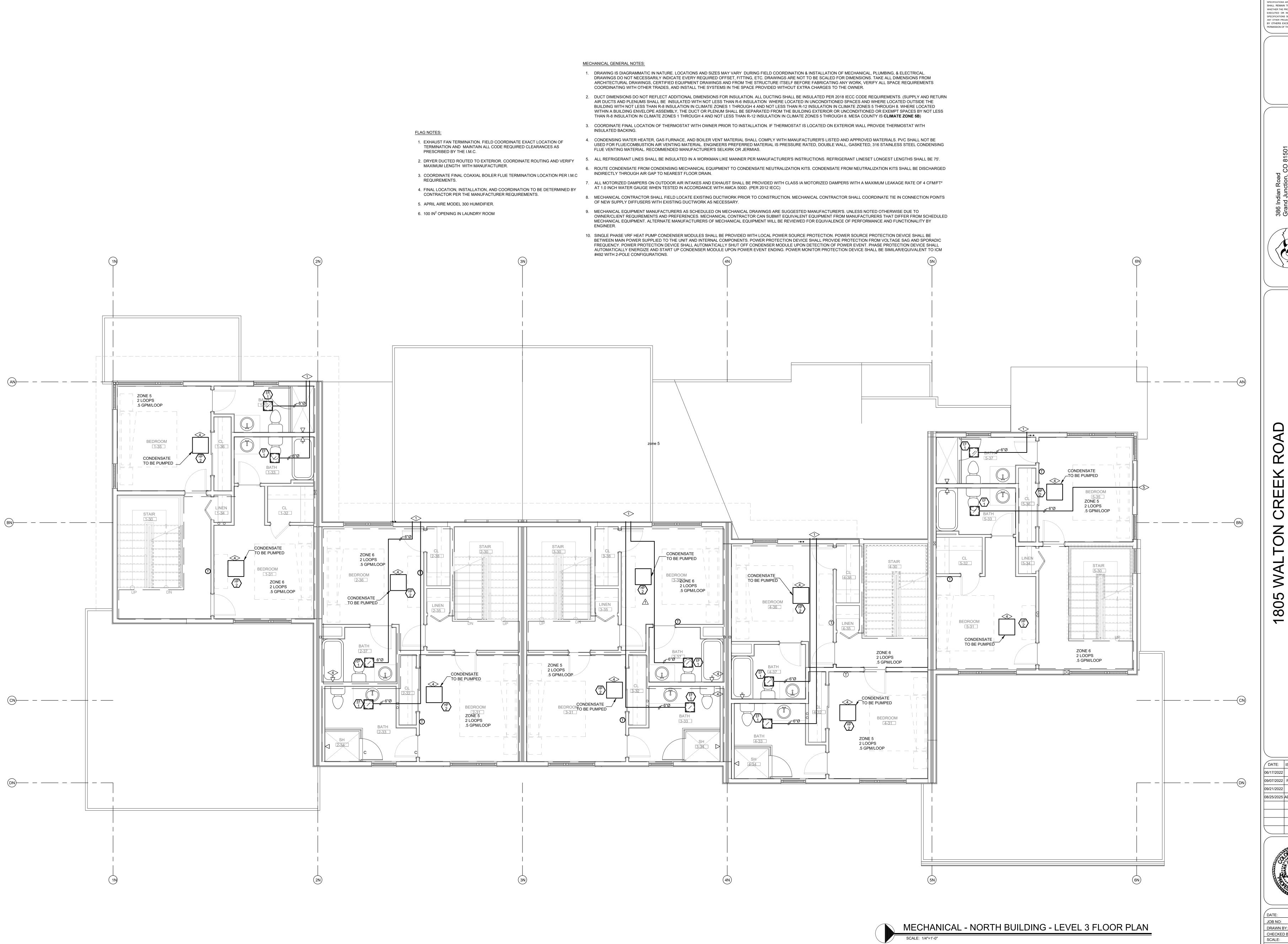
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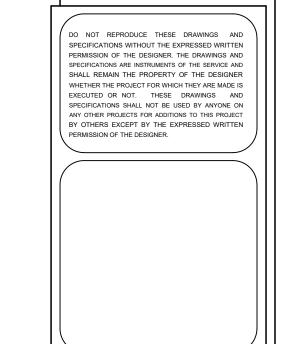
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M1-4

MECHANICAL - NORTH BUILDING - LEVEL 3 FLOOR PLAN

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

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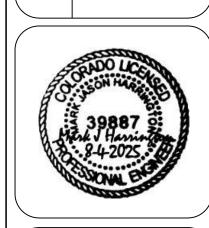
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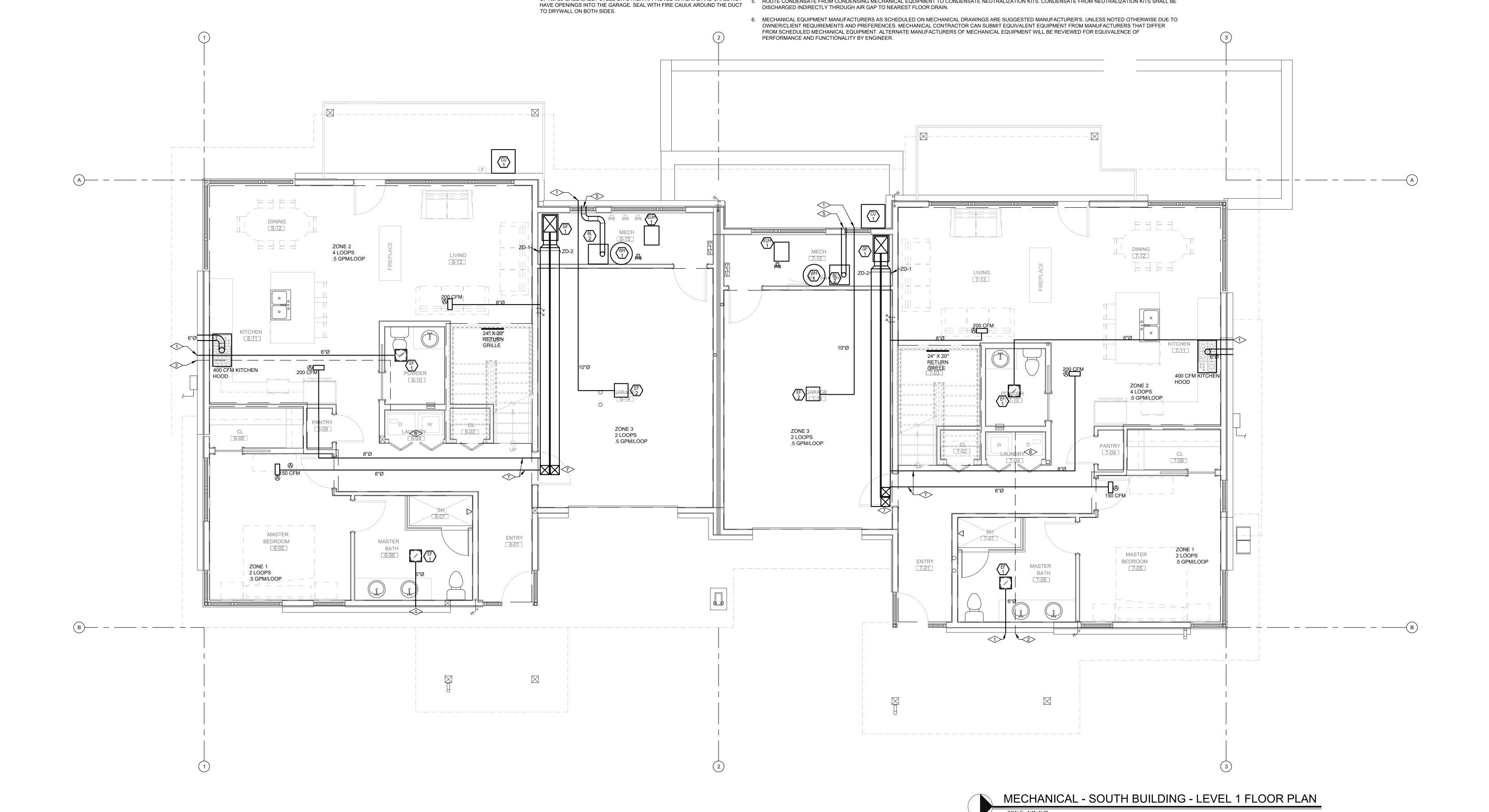
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MECHANICAL GENERAL NOTES:

WITH INSULATED BACKING.

ZONES 5 THROUGH 8. ROUTT IS CLIMATE ZONE 7)

OF No. 26 GAGE SHEET STEEL OR OTHER APPROVED MATERIAL AND SHALL NOT

5. ROUTE CONDENSATE FROM CONDENSING MECHANICAL EQUIPMENT TO CONDENSATE NEUTRALIZATION KITS. CONDENSATE FROM NEUTRALIZATION KITS SHALL BE

1. DRAWING IS DIAGRAMMATIC IN NATURE. LOCATIONS AND SIZES MAY VARY DURING FIELD COORDINATION & INSTALLATION OF MECHANICAL, PLUMBING, &

ELECTRICAL. DRAWINGS DO NOT NECESSARILY INDICATE EVERY REQUIRED OFFSET, FITTING, ETC. DRAWINGS ARE NOT TO BE SCALED FOR DIMENSIONS. TAKE ALL

DIMENSIONS FROM ARCHITECTURAL DRAWINGS, CERTIFIED EQUIPMENT DRAWINGS AND FROM THE STRUCTURE ITSELF BEFORE FABRICATING ANY WORK, VERIFY

ALL SPACE REQUIREMENTS COORDINATING WITH OTHER TRADES, AND INSTALL THE SYSTEMS IN THE SPACE PROVIDED WITHOUT EXTRA CHARGES TO THE OWNER.

2. DUCT DIMENSIONS DO NOT REFLECT ADDITIONAL DIMENSIONS FOR INSULATION. ALL DUCTING SHALL BE INSULATED PER 2018 IECC CODE REQUIREMENTS. (SUPPLY

5 THROUGH 8. WHERE LOCATED WITHIN A BUILDING ENVELOPE ASSEMBLY, THE DUCT OR PLENUM SHALL BE SEPARATED FROM THE BUILDING EXTERIOR OR UNCONDITIONED OR EXEMPT SPACES BY NOT LESS THAN R-8 INSULATION IN CLIMATE ZONES 1 THROUGH 4 AND NOT LESS THAN R-12 INSULATION IN CLIMATE

3. COORDINATE FINAL LOCATION OF THERMOSTAT WITH OWNER PRIOR TO INSTALLATION. IF THERMOSTAT IS LOCATED ON EXTERIOR WALL PROVIDE THERMOSTAT

4. CONDENSING WATER HEATER, GAS FURNACE, AND BOILER VENT MATERIAL SHALL COMPLY WITH MANUFACTURER'S LISTED AND APPROVED MATERIALS.

AND RETURN AIR DUCTS AND PLENUMS SHALL BE INSULATED WITH NOT LESS THAN R-6 INSULATION WHERE LOCATED IN UNCONDITIONED SPACES AND WHERE LOCATED OUTSIDE THE BUILDING WITH NOT LESS THAN R-8 INSULATION IN CLIMATE ZONES 1 THROUGH 4 AND NOT LESS THAN R-12 INSULATION IN CLIMATE ZONES

FLAG NOTES:

PRESCRIBED BY THE I.M.C.

REQUIREMENTS.

MAXIMUM LENGTH WITH MANUFACTURER.

4. ZONE DAMPER 2 - SERVES UPSTAIRS BEDROOM.

6. 100 IN<sup>2</sup> OPENING IN LAUNDRY ROOM.

1. EXHAUST FAN TERMINATION. FIELD COORDINATE EXACT LOCATION OF

TERMINATION AND MAINTAIN ALL CODE REQUIRED CLEARANCES AS

2. DRYER DUCTED ROUTED TO EXTERIOR. COORDINATE ROUTING AND VERIFY

3. ZONE DAMPER 1 - SERVES KITCHEN/LIVING AND MASTER BEDROOM/BATHROOM.

5. COORDINATE FINAL COAXIAL BOILER FLUE TERMINATION LOCATION PER I.M.C

7. DUCTS PENETRATING WALL AND CEILING OF GARAGE SHALL BE CONSTRUCTED

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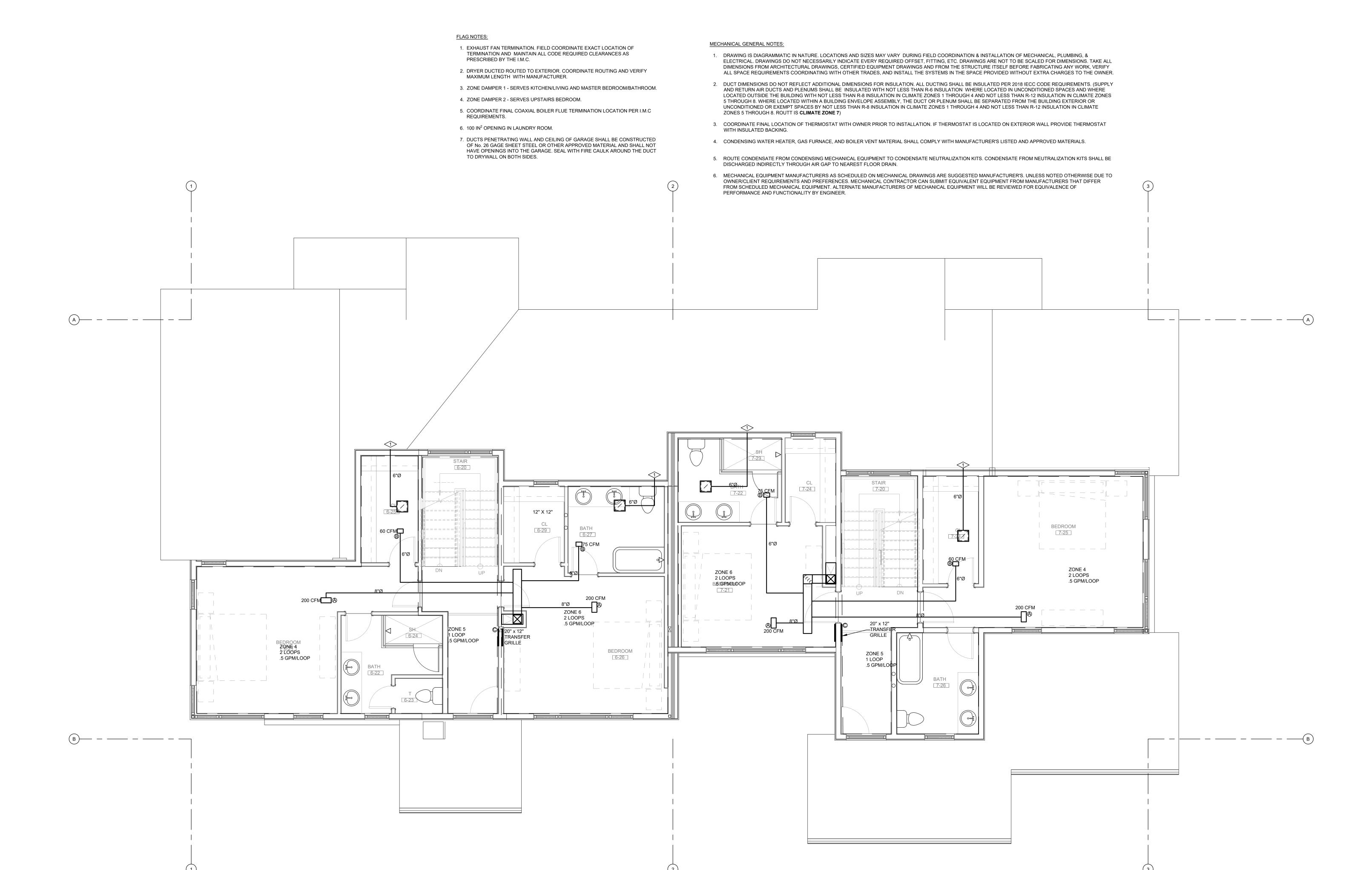
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MECHANICAL - SOUTH BUILDING - LEVEL 2 FLOOR PLAN



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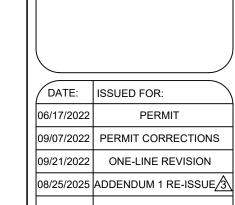


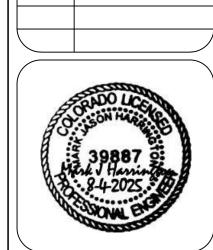


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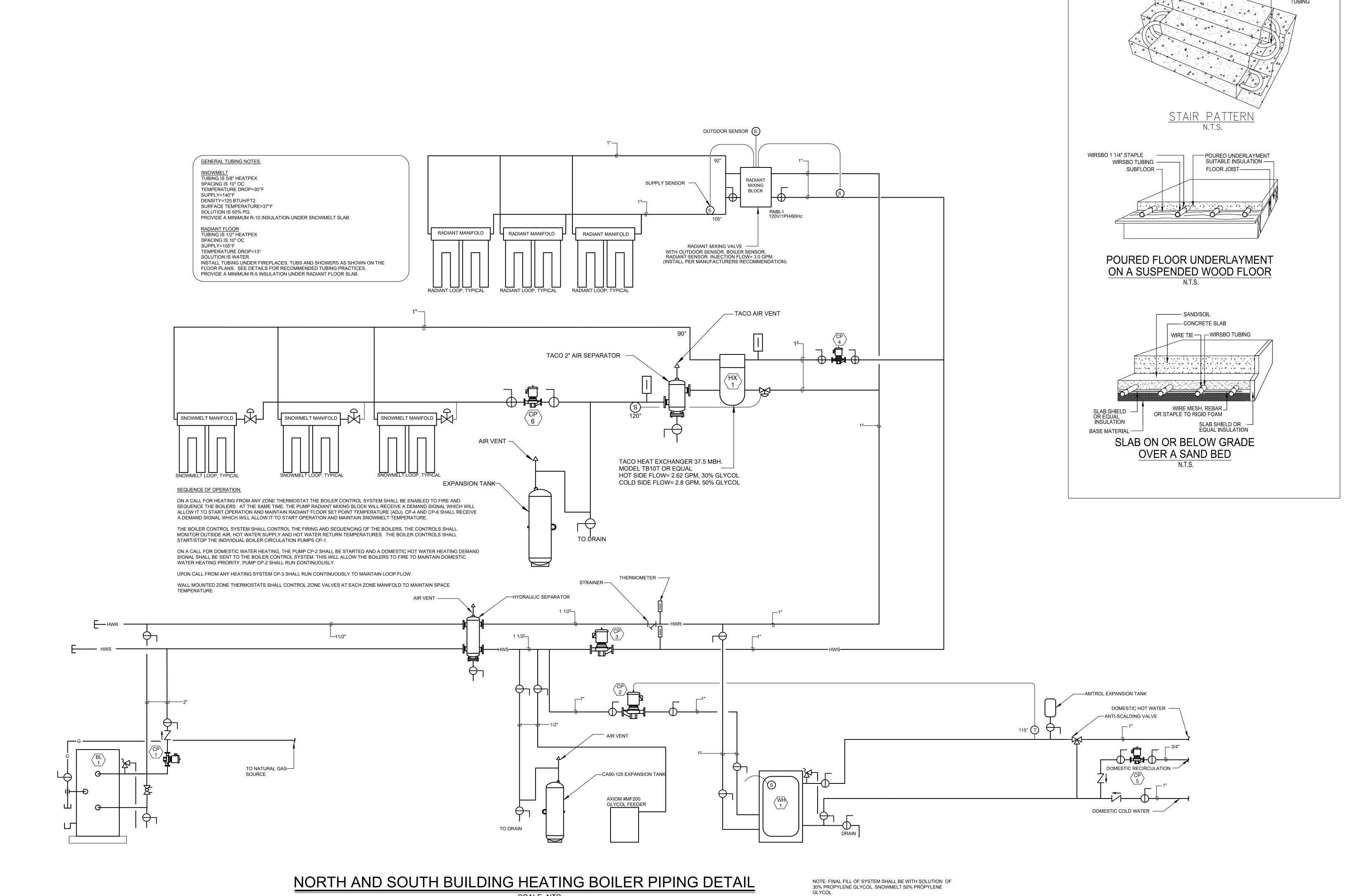
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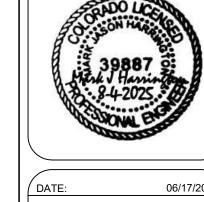
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TO NATURAL GAS—

SOURCE

08/25/2025 ADDENDUM 1 RE-ISSUE 3



DRAWN BY: CHECKED BY: SCALE: SHEET NUMBER:

SNOWMELT BOILER PIPING DETAIL SCALE: NTS

AIR VENT

TACO EXPANSION TANK

AXIOM GLYCOL FEEDER

MODEL DMF300

GENERAL SNOWMELT PIPING AND CONTROL NOTES:

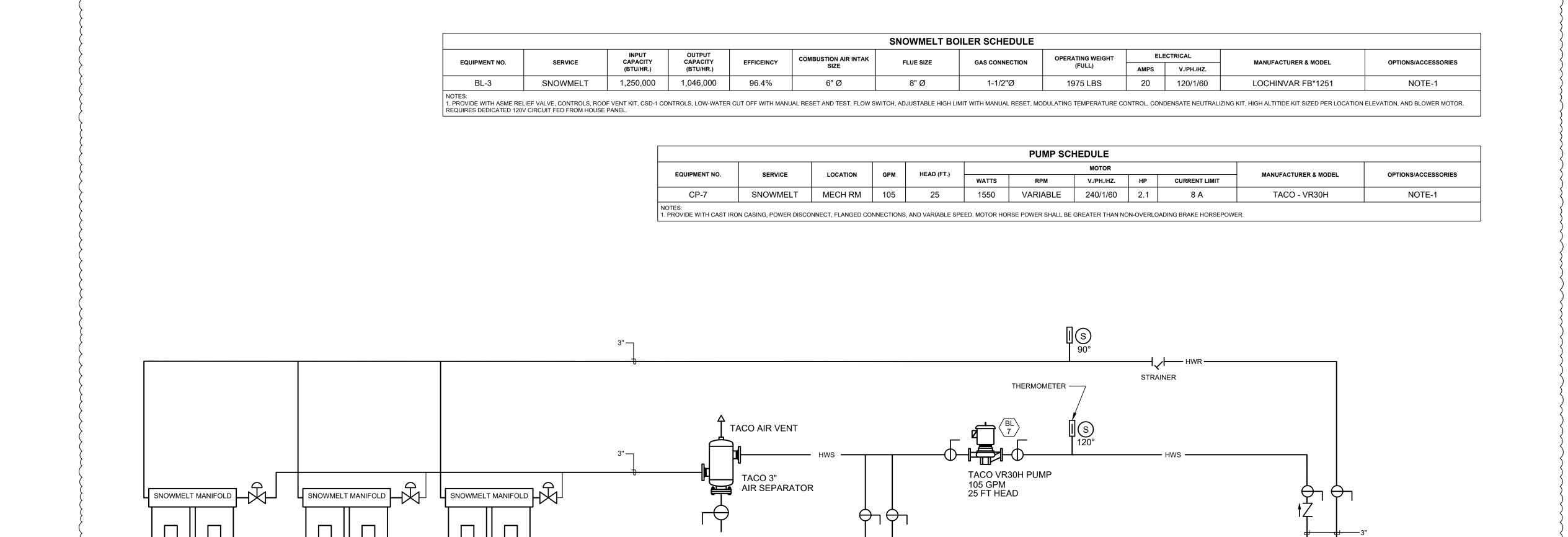
1. SNOWMELT BOILER TO BE CONTROLLED USING A TEKMAR 654 SNOWMELT

SNOW/ICE SENSOR ON NORTH SIDE OF NEAREST BUILDING.

THROUGH BOILER IS ESTIMATED TO BE BETWEEN 95-105 GPM. 3. FINAL FILL OF SYSTEM (INCLUDING GLYCOL FEEDER) TO BE 50% P.G.

CONTROLLER AND TEKMAR 095 SNOW/ICE SENSOR (OR SIMILAR). LOCATE

BOILER TO BE PIPED IN FULL FLOW ORIENTATION. ESTIMATED FLOW RATE



# "APPROVED EQUAL" BY THE ENGINEER OR ARCHITECT.

PAY ANY AND ALL FEES. SHOP DRAWINGS A. SUBMIT MATERIAL LIST AND SHOP DRAWINGS FOR MAJOR EQUIPMENT

A. THE CONTRACTOR SHALL SECURE ALL PERMITS OR APPLICATIONS AND

### TO THE ARCHITECT/ENGINEER FOR APPROVAL. THE CONTRACTOR SHALL SUBMIT FIVE SETS OF SHOP DRAWINGS AND THEY SHALL BE CLEARLY

# 4. FLEXIBLE DUCT WORK

A. FLEXIBLE TYPE DUCT SHALL BE OF TWO ELEMENT SPIRAL CONSTRUCTION COMPOSED OF A CORROSION RESISTANT METAL SUPPORTING SPIRAL AND COATED FABRIC WITH A MINERAL BASE. FLEXIBLE DUCT CONNECTORS SHALL BE LISTED BY U.L., CLASS 1 DUCTS, AND SHALL HAVE A FLAME SPREAD RATING NOT EXCEEDING 25 AND A SMOKE DEVELOPED RATING NOT EXCEEDING 50. B. USE OF FLEXIBLE DUCTWORK SHALL BE LIMITED TO NO MORE THAN

### 6 LINEAR FEET PER RUN. C. CONTRACTOR SHALL BE CAREFUL SO AS NOT TO KINK OR COLLAPSE FLEXIBLE DUCT.

## 5. REFRIGERANT

A. PIPING CONTRACTOR SHALL PROVIDE AND INSTALL REFRIGERANT PIPING IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND IN SUCH A WAY AS TO BE INCONSPICUOUS AND FREE FROM ANY

### POSSIBLE CONDENSATION. B. INSULATE REFRIGERANT LINES WITH ARMOUR-FLEX TYPE INSULATION, SHALL BE TYPE "K" COPPER TUBING, WITH WROUGHT COPPER SOLDER TYPE FITTINGS SUITABLE FOR CONNECTION WITH SILVER SOLDER.

A. THE DUCTWORK SHALL BE CONSTRUCTED IN ACCORDANCE

- WITH THE "SMACNA" APPLICABLE MANUALS. B. ALL DUCTWORK SHALL BE THE LOW VELOCITY TYPE, UNLESS SPECIFIED
- C. CONTRACTOR SHALL PROVIDE AND INSTALL APPROVED FIRE DAMPERS AND ACCESS PANELS IN ANY AND ALL DUCTWORK WHICH PENETRATES A HORIZONTAL OR VERTICAL FIRE PARTITION, OR AS
- OTHERWISE SHOWN ON DRAWINGS. D. ALL BRANCH DUCTS TO HAVE VOLUME DAMPERS, SMOOTH TURN RADIUS DUCTWORK OR TURNING VANES SHALL BE USED THROUGHOUT WHERE FLOW EXCEEDS 150 CFM.
- E. ALL DUCT JOINTS TO BE SEALED IN ACCORDANCE WITH "SMACNA" STANDARDS AND ACCEPTED GOOD PRACTICE. F. ALL DUCT DIMENSIONS SHOWN ARE NET INSIDE VALUES.DIMENSIONS MAY BE CHANGED SO LONG AS THE NET FREE FACE AREA IS MAINTAINED.
- G. ALL CONCEALED DUCTWORK SHALL BE INSULATED WITH 1-1/2" FIBERGLASS INSULATING BLANKET WITH ALUMINUM FOIL FACING. H. ALL SUPPLY AND RETURN DUCTWORK 15 FEET DOWNSTREAM OF THE HVAC UNIT SHALL BE INTERNALLY LINED WITH A 1/2" ACOUSTICAL DUCT LINER UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- 7. DRAINAGE PIPING A. (CONDENSATE) SHALL BE SCHEDULE 40 PVC PIPE WITH SOLVENT JOINTS. PITCH HORIZONTAL LINES 1" IN 10'-0". CONDENSATE DRAINS SHALL BE
- ROUTED TO FLOOR DRAIN, ROOF DRAIN OR INDIRECT WASTE DRAIN. 8. HVAC CONTROLS
- A. CONTRACTOR TO SUPPLY AND INSTALL ALL CONTROL WIRING AND
- THERMOSTATS AS REQUIRED.
- A. CONTRACTOR TO COORDINATE WITH ELECTRICAL CONTRACTOR FOR
- LOCATION OF WIRING FOR EACH HVAC UNIT. 10. PIPE SUPPORTS

### A. ALL PIPE SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE IN A NEAT AND WORKMANLIKE MANNER. THE USE OF WIRE OR METAL STRAP TO

SUPPORT PIPES WILL NOT BE PERMITTED. SPACING OF PIPE SUPPORTS SHALL NOT EXCEED 8 FEET FOR ALL PIPING. PLASTIC PIPING TO BE SUPPORTED EVERY 4 FEET.

A. PIPING SHALL BE SCHEDULE 40 BLACK STEEL PIPE WITH MALLEABLE IRON WHERE GAS PIPE CONNECTS TO EQUIPMENT, IT SHALL BE PROVIDED WITH A DRIP LEG THE FULL SIZE OF THE RUNOUT, A 100% SHUT-OFF VALVE AND A UNION. GAS PIPING CONTAINING PRESSURE GREATER THAN 9" W.G. SHALL BE SCHEDULE 40 BLACK STEEL PIPE WITH WELDED JOINTS.

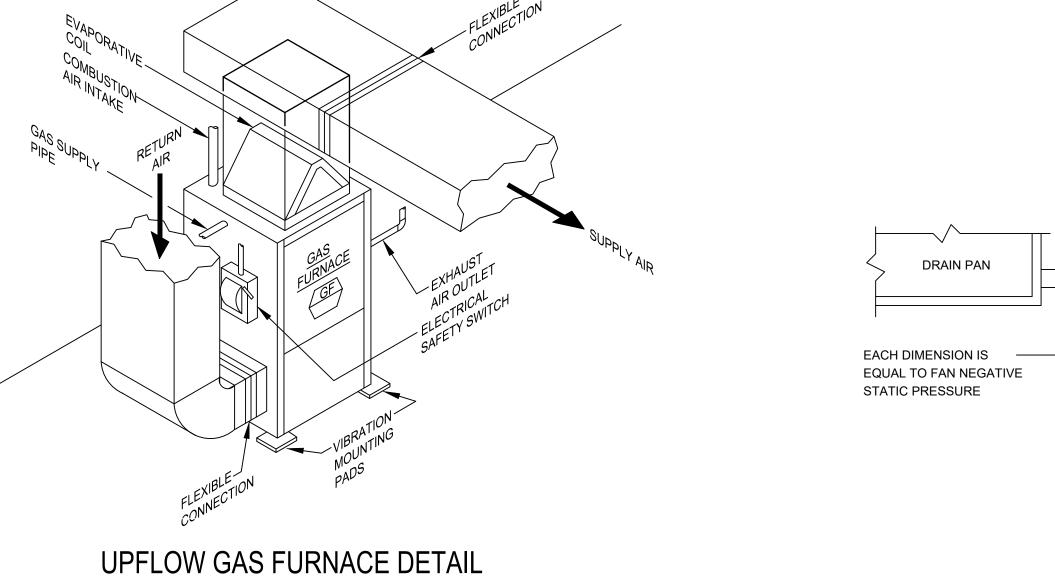
- A. ALL EXTERIOR OPENINGS TO BE PROPERLY CAULKED AND SEALED WITH A SEALANT OF HIGH QUALITY AND LONG LIFE, TO PREVENT INFILTRATION OF OUTSIDE AIR INTO CONDITIONED SPACE.
- B. DO NOT SCALE THIS DRAWING FOR EXACT DIMENSIONS. VERIFY ALL FIGURES, CONDITIONS, AND DIMENSIONS AT THE JOB SITE. THE MECHANICAL PLANS ARE INTENDED TO BE DIAGRAMMATIC AND ARE BASED

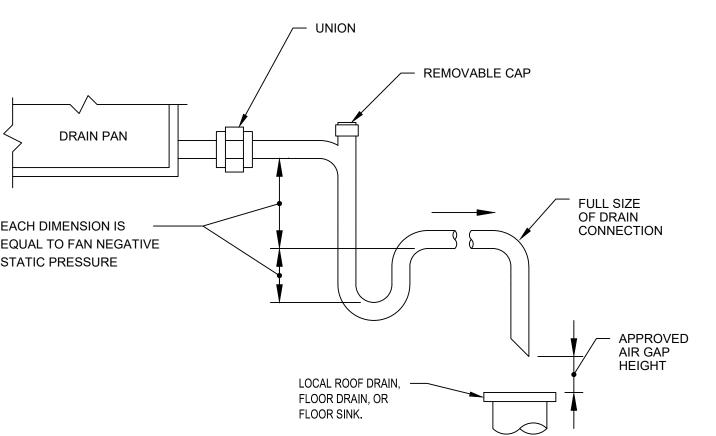
COORDINATE INSTALLATION OF ALL ROOF FLASHING AT ROOF PENETRATION.

- ON ONE MANUFACTURE'S EQUIPMENT. THEY ARE NOT INTENDED TO SHOW EVERY ITEM IN ITS EXACT LOCATION, THE EXACT DIMENSIONS, OR ALL THE DETAILS OF THE EQUIPMENT.
- E. THE CONTRACTOR SHALL VERIFY THE ACTUAL DIMENSIONS OF THE EQUIPMENT PROPOSED TO ENSURE THAT THE EQUIPMENT WILL FIT IN THE AVAILABLE
- D. PEX TUBING, IF PEX TUBING IS USED AS AN APPROVED ALTERNATE FOR APPLICATIONS WHERE METALLIC PIPING IS THE BASIS OF DESIGN. THE PEX MANUFACTURER SHALL SUBMIT SHOP DRAWINGS CLEARLY INDICATING THAT THE DESIGN HAS BEEN ANALYZED AND MODIFIED, AS REQUIRED TO MAINTAIN SCHEDULED HYDRONIC SYSTEM PARAMETERS. ANY DESIGN RESULTING IN INCREASED SYSTEM PRESSURE DROP AS A RESULT OF IMPROPER PEX SIZING OR DESIGN SHALL NOT BE PERMITTED.
- 13. TESTING AND BALANCING A. THE HVAC SYSTEM SHALL BE TESTED AND AND BALANCED BY AN INDEPENDENT AGENCY, UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER.
- A SEALED TYPE WRITTEN REPORT SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER FOR REVIEW AND APPROVAL.
- A. MATERIALS, EQUIPMENT AND INSTALLATION SHALL BE GUARANTEED FOR A PERIOD OF ONE(1) YEAR FROM DATE OF ACCEPTANCE. DEFECTS WHICH APPEAR DURING THAT PERIOD SHALL BE CORRECTED AT THIS CONTRACTOR'S
- B. FOR THE SAME PERIOD, THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO PREMISES CAUSED BY DEFECTS IN WORKMANSHIP OR IN THE WORK OR EQUIPMENT FURNISHED AND/OR INSTALLED BY HIM.

							G	AS FURNACE S	CHEDULE						
EQUIPMENT				E.S.P.	COOLING		HEATIN	G				CTRICA	L		
NO.	SERVICE	SUPPLY AIR (CFM)	OUTSIDE AIR (CFM)	(IN WG.)	NOMINAL MBH	GAS CFH	MBH INPUT	мвн оитрит	EFFICIENCY A.F.U.E	FAN HP	V/PH/HZ	MCA	МОСР	MANUFACTURER & MODEL	OPTIONS/ACCESSORIES
GF-1	HOUSE	1,200	75		24	37.5	30	28.8	96%	1/2	115/1/60	8.6	15	DAIKIN - DM96TN 0303ANA	NOTE-1
NOTES: 1. PROGRAM	IMABLE THE	RMOSTAT, AND HIGH	ALTITUDE KIT SIZED PE	ER LOCATIO	N ELEVATIO	N.									

				C	ONDENSING UNI	T SCHEDU	JLE			
EQUIPMENT	SERVICE	NOMINAL COOLING ELECTRIC MANUFACTURER & MODEL		OPTIONS/ACESSORIES						
NO.	SERVICE	CAPACITY (TON)	LIQUID	VAPOR	V/PH/HZ	MOP (A)	MCA (A)	MANUFACTURER & MODEL	OF HONS/ACESSORIES	
CU-1	HOUSE	24,000	3/8"	3/4"	208/230/1/60	30	17.6	DAIKIN - DX14SA 0241B	NOTE -1	
NOTES: 1. PROVIDE LINE	SET RECOM	MENDED BY MANU	IFACTURE	R. POWER I	DISCONNECT, HEA	TED DRAIN	PAN, 18" S	TAND, WIND BAFFLES.		



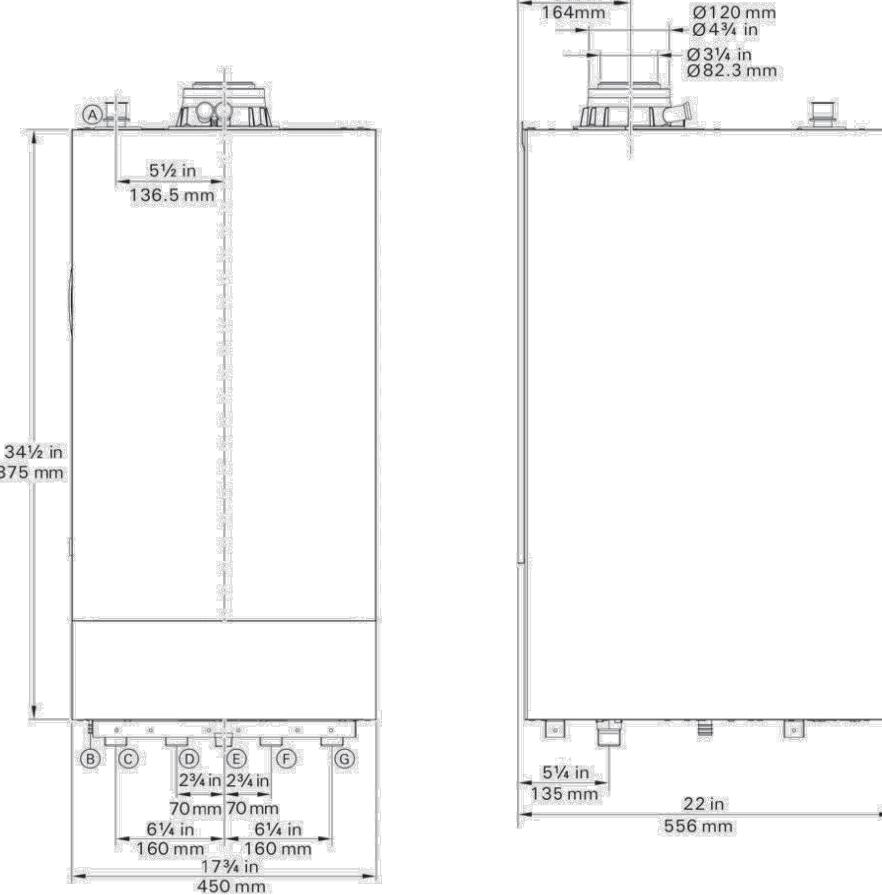


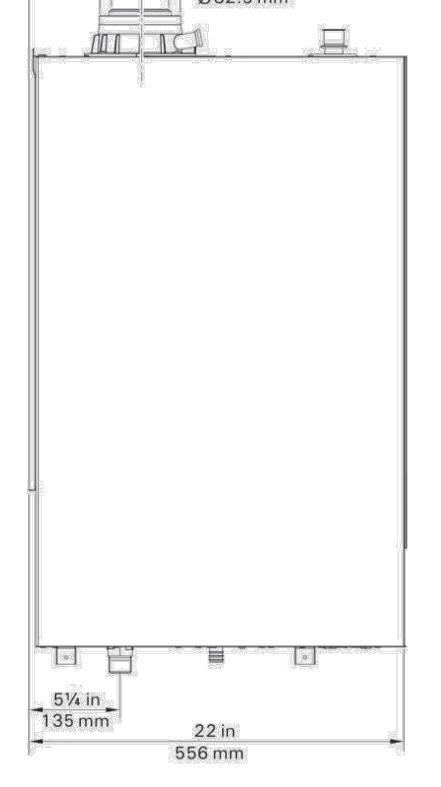
FLEXIBLE

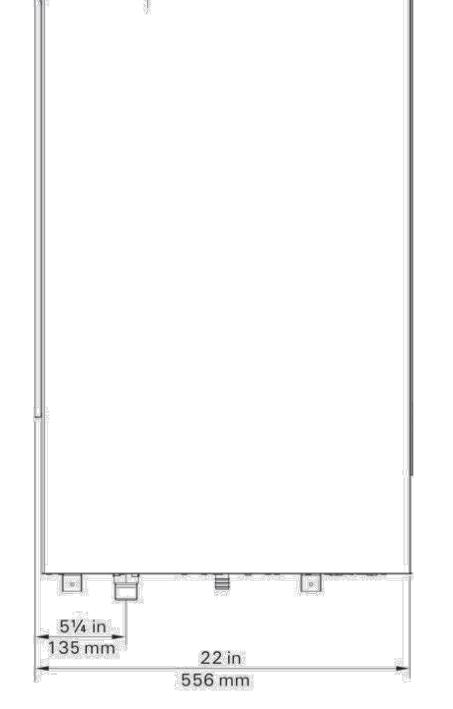
CONNECTION —

AND WALL CAP

CONDENSATE DRAIN DETAIL







Front view Side view

A Safety valve, pressure gauge connection

- (B) Condensate drain
- © Heating system supply D DHW tank heating supply
- E Fuel gas connection
- F DHW tank heating return G Heating system return

# GAS FIRED WALL-MOUNTED CONDENSING BOILER

	VRF AIR COOLED CONDENSING UNIT SCHEDULE											
EQUIPMENT	SERVICE	NOMINAL HEATING	NOMINAL COOLING	REFRIG	. PIPING	E	LECTRIC		MANUFACTURER & MODEL	OPTIONS/ACESSORIES		
NO.	SERVICE	CAPACITY (BTU/h)		LIQUID	VAPOR	V/PH/HZ	MOP (A)	MCA (A)	MANOT ACTORER & MODEL	OF HONO/AGESSORIES		
CU-1	TOWNHOUSE	54,000	48,000	3/8	5/8	208-230/1/60	30	29.8	FUJITSU-AOU48RLAVM4	NOTE - 1		
NOTES:												

1. PROVIDE LINE SET AS RECOMMENDED BY MANUFACTURER, POWER DISCONNECT, THERMOSTAT, AND HEATED DRAIN PAN.

					INDOO	R VRF UN	IT EQUIPME	NT SCHEDUL	.E		
EQUIPMENT NO.	SERVICE	NOMINAL COOLING CAPACITY	NOMINAL HEATING CAPACITY	CFM	I -	ANT PIPING IETER	ELEC	CTRICAL	MANUFACTURER & MODEL	OPTIONS/ACCESSORIES	
					LIQUID	SUCTION	MCA (AMPS)	V./PH./HZ.			
HP-1	KITCHEN/LIVING	18,000	20,000	554	1/4"	1/2"	0.76	208-230/1/60	FUJITSU-ARUL18LAV2	NOTE-1	
HP-2	BEDROOMS	9,500	10,900	324	1/4"	3/8"	0.51	208-230/1/60	FUJITSU-AUUA9TLAV2	NOTE-1	

1. PROVIDE WITH POWER DISCONNECT, LINESET RECOMMENDED BY MANUFACTURER. PROVIDE CONDENSATE OVERFLOW SWITCH.

INDIRECT WATER HEATER SCHEDULE											
EQUIPMENT NO. CAPACITY RECOVERY @100 DEG F. RISE BTU PER HR. BOILER CONNECTION WATER CONNECTION MANUFACTURER & MODEL OPTIONS/ACCESSORIES											
WH-1	79		169,000	1"	1''	VIESSMANN - 300-V EVIB-79	NOTE-1				
NOTES: 1. DRAIN PAN PIPEI	111111111111111111111111111111111111111										

HEATER. PROVIDE HIGH ALTITUDE KIT SIZED PER LOCATION ELEVATION.
EXHAUST FAN SCHEDULE

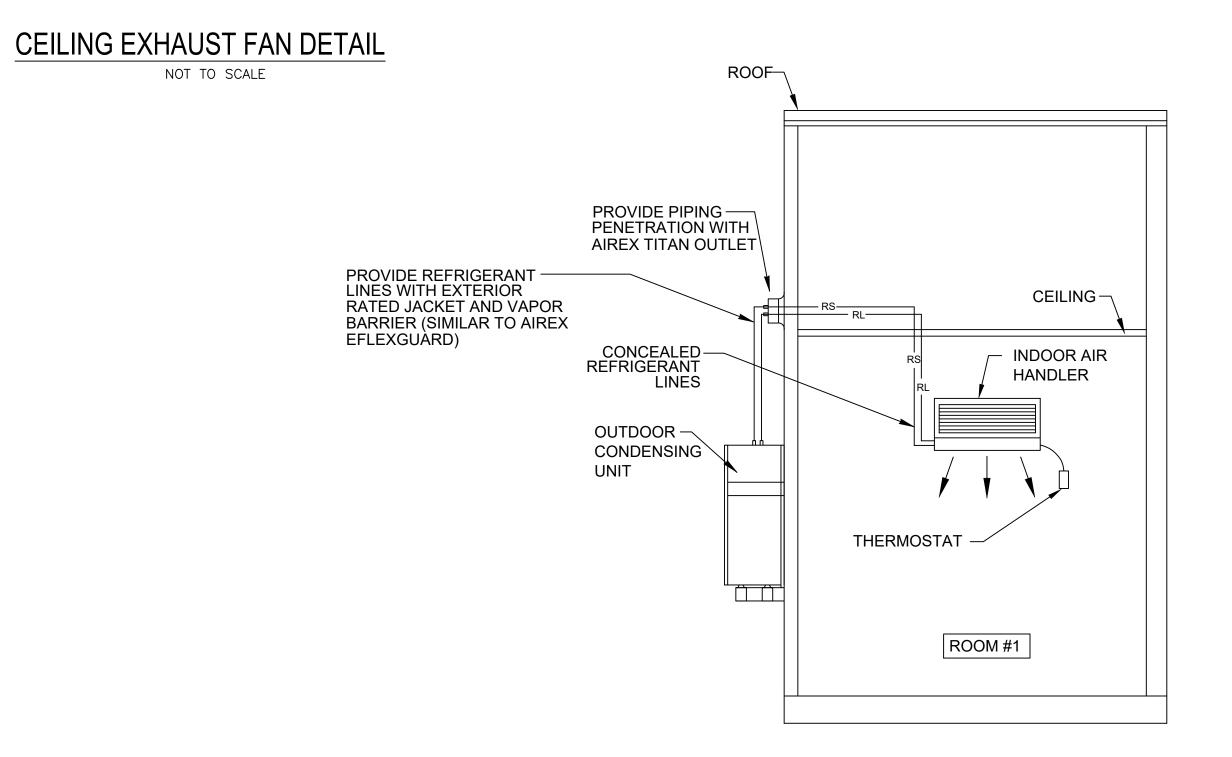
EXHAUST FAN SCHEDULE											
SERVICE	LOCATION	ON CFM EXTERNAL STATIC PRESS (IN. MOTOR			OCATION CEM EXTERNAL STATIC PRESS (IN. MOTOR			MANUEACTURER & MOREI	OPTIONS/ACCESSORIES		
SERVICE	LOCATION	CFIVI	W.G.)	WATTS	HP	RPM	VOLT/PH/HZ	MANUFACTURER & MODEL	OF HONS/ACCESSORIES		
BATHROOM	CEILING	50/110	0.25	7.20	-		120/1/60	PANASONIC - FV0511VQ1	NOTE-1		
GARAGE	CELING	290	0.1	64.00	-		120/1/60	PANASONIC - FV30VQ3	NOTE-2		
		BATHROOM CEILING	BATHROOM CEILING 50/110	SERVICELOCATIONCFMEXTERNAL STATIC PRESS (IN. W.G.)BATHROOMCEILING50/1100.25	SERVICE         LOCATION         CFM         EXTERNAL STATIC PRESS (IN. W.G.)         WATTS           BATHROOM         CEILING         50/110         0.25         7.20	SERVICE         LOCATION         CFM         EXTERNAL STATIC PRESS (IN. W.G.)         WATTS         HP           BATHROOM         CEILING         50/110         0.25         7.20         -	SERVICE         LOCATION         CFM         EXTERNAL STATIC PRESS (IN. W.G.)         WATTS         HP         RPM           BATHROOM         CEILING         50/110         0.25         7.20         -         -	SERVICE         LOCATION         CFM         EXTERNAL STATIC PRESS (IN. W.G.)         WATTS         HP         RPM         VOLT/PH/HZ           BATHROOM         CEILING         50/110         0.25         7.20         -         120/1/60	SERVICE         LOCATION         CFM         EXTERNAL STATIC PRESS (IN. W.G.)         WATTS         HP         RPM         VOLT/PH/HZ         MANUFACTURER & MODEL           BATHROOM         CEILING         50/110         0.25         7.20         -         120/1/60         PANASONIC - FV0511VQ1		

1. PROVIDE WITH CEILING FRAME, DUCT CONNECTIONS, AND BACK DRAFT DAMPER. EXHAUST FAN TO OPERATE CONTINUOUSLY ON LOW AND SWITCH TO HIGH WHEN OCCUPIED. 2. PROVIDE WITH CEILING FRAME, DUCT CONNECTIONS, AND BACK DRAFT DAMPER.EXHAUST FAN TO OPERATE WHILE SPACE IS OCCUPIED. FAN TO CONTINUE OPERATE FOR TIME AFTER SPACE IS UNOCCUPIED.

EQUIPMENT NO.	SERVICE	CFM	HP	RPM	BTU/HR	KW	FULL LOAD AMPS (FLA)	V/PH/HZ	MANUFACTURER & MODEL	OPTIONS/ACCESSORIES
EUH-1	MECH ROOM	175	-	700	5,120	1.5	12.5	120/1/60	RAYWALL - E338D-RP	NOTE-1

o.	
OVIDE SURFACE MOUNTING KIT, TAMPER PROOF INTEGRAL THERMOSTAT, COORDINATE COLOR WITH ARCHITECT.	
	_

GRILLE-REGISTER-DIFFUSER SCHEDULE									
EQUIPMENT NO.	SIZE	MODEL	MANUFACTURER	FINISH	OPTIONS/ACCESSORIES				
A	12" X 6"	540/640	PRICE	WHITE	NOTE -1				
В	7" X 5"	540/640	PRICE	WHITE	NOTE -1				
С	20" X 12"	600	KRUEGER	WHITE	NOTE -1				
NOTES: COORDIN	NATE ALL MO	DUNTING TY	PES WITH CEILING	<del></del>					



MOUNT FAN FROM

- CEILING EXHAUST REGISTER

MODEL RA

NOT TO SCALE

STRUCTURE ABOVE

WITH METAL STRAPS

& VIBRATION ISOLATION

DUCTLESS SPLIT-SYSTEM WITH SINGLE AIR HANDLING UNITS DETAIL

SPECIFICATIONS WITHOUT THE EXPRESSED WRITTEN SPECIFICATIONS ARE INSTRUMENTS OF THE SERVICE AND SHALL REMAIN THE PROPERTY OF THE DESIGNER WHETHER THE PROJECT FOR WHICH THEY ARE MADE IS SPECIFICATIONS SHALL NOT BE USED BY ANYONE ON ANY OTHER PROJECTS FOR ADDITIONS TO THIS PROJECT
BY OTHERS EXCEPT BY THE EXPRESSED WRITTEN

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DATE: ISSUED FOR: 06/17/2022 PERMIT 09/07/2022 PERMIT CORRECTIONS 09/21/2022 ONE-LINE REVISION 08/25/2025 ADDENDUM 1 RE-ISSUE/3\



DRAWN BY: CHECKED BY: SHEET NUMBER:

M2-3

PLUMBING	G PIPE DESIGNATIONS
LINE TYPE	DESCRIPTION
140	_ HIGH TEMPERATURE (140°) WATER PIPE
	COLD WATER PIPE (CW)
CA	COMPRESSED AIR
DC	DECONTAMINATION PIPING
DER-	DEIONIZED WATER RETURN
DES-	DEIONIZED WATER SUPPLY
DIS	<ul> <li>DISTILLED WATER SUPPLY</li> </ul>
DIR	DISTILLED WATER RETURN
CD	- EQUIPMENT CONDENSATE DRAIN
——— FP ———	- FIRE MAIN
GW	- GREASE WASTE PIPE
HE	- HELIUM
HPS	HIGH PRESSURE STEAM
HPC	HIGH PRESSURE CONDENSATE
	HOT WATER RECIRCULATION (HWR)
	HOT WATER PIPE (HW)
——— H2 ———	- HYDROGEN
LPC	- LOW PRESSURE CONDENSATE
LPS	- LOW PRESSURE STEAM
MA	- MEDICAL AIR
G	- NATURAL GAS PIPE
N2	- NITROGEN
N2O	- NITROUS OXIDE
ORD-	OVERFLOW STORM WATER PIPE
O2 —	- OXYGEN
PG	PROPANE GAS
——— RD ———	ROOF DRAIN PIPE
	- SOIL OR WASTE PIPE
S/O	- SOIL / OIL WASTE PIPE
TWR-	TOWER WATER RETURN
TWS	TOWER WATER SUPPLY
VAC	- VACUUM
	- VENT PIPE (V)

	PLUMBING ELEM	MENTS / VALVING	
LINE TYPE	DESCRIPTION	LINE TYPE	DESCRIPTION
PRV			PIPE RISING UP
#	PRESSURE REDUCING VALVE (PRV) GATE VALVE	——————————————————————————————————————	PIPE DROPPING DOWN UNION - SCREWED OR FLANGED
	GLOBE VALVE		PRESSURE TRANSMITTER OR PRESSURE SWITCH
₹	PLUG VALVE	Џ тн/ті	THERMOMETER/TEMPERATURE
——————————————————————————————————————	BUTTERFLY VALVE	PI/GA	INDICATOR GAUGE WITH GAUGE COCK/ PRESSURE INDICATOR
	BALL VALVE	-MMM-	BACKFLOW PREVENTOR (REDUCED ZONE)
	SWING CHECK VALVE	₩ <u>₩</u> ₩	BACKFLOW PREVENTOR (DOUBLE CHECK VALVE ASSEMBLY)
	LIFT CHECK VALVE	<del>SA</del>	WATER HAMMER ARRESTER
	GATE VALVE, ANGLE		CIRCUIT SETTING
\ \_\_\	GLOBE VALVE, ANGLE	НВ Н	HOSE BIBB
TPV 📈	TEMPERATURE AND PRESSURE RELIEF VALVE	RD 🔘	ROOF DRAIN
	RELIEF/SAFETY VALVE	FD (	FLOOR DRAIN
	GAS COCK	AD	AREA DRAIN
	GAS PRESSURE REGULATOR		FLOOR CLEAN OUT
	STRAINER	FS	FLOOR SINK
	STRAINER WITH BLOW OFF VALVE	cog	CLEAN OUT TO GRADE
WH	WATER HEATER	<u>CO</u>	WALL CLEAN OUT
—(M)—	WATER METER	<del>     </del>	FLEXIBLE-CONNECTION
	PRESSURE GAGE		CHECK VALVE
	TEMPERATURE GAGE		VACUUM BREAKER

### RESPONSIBLE DIVISION:

ITEM	FURNISHED	SET	POWER WIRED	CONTRO WIRED
EQUIPMENT	23	23	26	
COMBINATION MAGNETIC MOTOR STARTERS, MAGNETIC MOTOR STARTERS, VFD'S AND CONTACTORS	23(1)	26	26(2)	23
FUSED AND UNFUSED DISCONNECT SWITCHES, THERMAL OVERLOAD SWITCHES AND HEATERS, MANUAL MOTOR STARTERS	26	26	26	
MANUAL-OPERATING AND MULTI-SPEED SWITCHES	23	26	26	26
CONTROLS, RELAYS, TRANSFORMERS	23	23	26	23
THERMOSTATS (LOW VOLTAGE) AND TIME SWITCHES	23	23	26	23
THERMOSTATS (LINE VOLTAGE)	23	23	26	26
TEMPERATURE CONTROL PANELS	23	23	26	23
MOTOR AND SOLENOID VALVES, DAMPER MOTORS, PE & EP SWITCHES	23	23(2)		23(2)
PUSH-BUTTON STATIONS AND PILOT LIGHTS	23	23(2)		23(2)
HEATING, COOLING, VENTILATION AND AIR CONDITIONING CONTROLS	23	23	26	23
EXHAUST FAN SWITCHES	23	26	26	23(2)

- SUBSCRIPT FOOTNOTES:
  1. MOTOR STARTER TO INCLUDE CONTROL TRANSFORMER, HOA SWITCH, (1) NO AND (1)NC AUXILIARY CONTACT, AND "ON" AND "OFF" PILOT LIGHTS.
- 2. IF ITEM IS FOR LINE VOLTAGE, SET IN PLACE AND CONNECT UNDER DIVISION 26. WHERE FACTORY MOUNTED ON EQUIPMENT OR ATTACHED TO PIPING OR DUCTS AND USING LINE VOLTAGE FURNISH AND SET UNDER DIVISION 23, CONNECT UNDER DIVISION 26.

### SUBSTITUTIONS:

A. SUBSTITUTIONS: SUBSTITUTION OF SPECIFIED EQUIPMENT WILL BE ALLOWED THROUGH A PRIOR APPROVAL PROCESS INITIATED BY THE CONTRACTOR. CONTRACTOR SHALL SUBMIT INTENDED SUBSTITUTION AT LEAST FIVE DAYS PRIOR TO BID FOR APPROVAL FROM ENGINEER. SUBMITTAL SHALL INCLUDE CAPACITIES, DIMENSIONS AND OPERATING INSTRUCTIONS FOR EACH PIECE OF EQUIPMENT. SUBSTITUTION SHALL OCCUR AT NO COST TO THE OWNER. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF APPROVED SUBSTITUTION AND SHALL INCUR ALL COSTS ASSOCIATED WITH THE SUBSTITUTION INCLUDING STRUCTURAL MODIFICATIONS, SPACE LAYOUT AND REDESIGN COSTS. SEE ALSO DIVISION I GENERAL REQUIREMENTS. EXAMINATION OF SITE, DRAWINGS, SPECIFICATIONS:

A. EXAMINE CAREFULLY THE SITE AND CONDITIONS OF THE SITE. PROVIDE ALL NECESSARY EQUIPMENT AND LABOR TO INSTALL A COMPLETE WORKING SYSTEM WITHIN THE SITE CONDITIONS.

B. EXAMINE THE DRAWINGS AND SPECIFICATIONS AND 5 DAYS PRIOR TO BIDDING REPORT ANY ERRORS, OMISSIONS, INCONSISTENCIES, AND CONFLICTS TO THE ENGINEER TO BE REMEDIED IN AN ADDENDUM TO THE PROJECT PRIOR TO

C. DRAWINGS ARE DIAGRAMMATIC AND CATALOG NUMBERS GIVEN ARE FOR REFERENCE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE CAPACITY OF THE EQUIPMENT MEETS THE DRAWING REQUIREMENTS AND SHALL NOT DIMENSION FROM THE MECHANICAL, PLUMBING, OR PIPING

D. THE LATEST ADOPTED VERSIONS OF THE INTERNATIONAL BUILDING CODES SHALL BE USED AS REQUIRED. THIS WILL ALSO INCLUDE THE LATEST ADOPTED VERSIONS OF THE MECHANICAL, PLUMBING AND ENERGY CONSERVATION CODES. ALL METHODS AND MATERIALS REQUIRED BY THESE CODES SHALL BE REQUIRED BY THESE SPECIFICATIONS UNLESS INDICATED OTHERWISE. OTHER APPLICABLE LOCAL CODES AND ORDINANCES SHALL BE AS REQUIRED AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO BE KNOWLEDGEABLE OF THESE REQUIREMENTS.

E. WHERE INSTALLATION PROCEDURES OR ANY PART THEREOF ARE REQUIRED TO BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL BEING INSTALLED, PRINTED COPIES OF THESE RECOMMENDATIONS SHALL BE FURNISHED TO THE ENGINEER PRIOR TO INSTALLATION. INSTALLATION OF THE ITEM WILL NOT BE ALLOWED TO PROCEED UNTIL THE RECOMMENDATIONS ARE RECEIVED. FAILURE TO FURNISH THESE RECOMMENDATIONS CAN BE CAUSE FOR REJECTION OF THE MATERIAL.

WSR WITHSTAND RATING

XFMR TRANSFORMER

PSI POUNDS PER SQUARE INCH

### ARREVIATIONS:

DIA DIAMETER

DIAG DIAGRAM

HP HEAT PUMP

HP HORSEPOWER

4.4"	MOUNTING HEIGHT ADOME	DIEE	DIFFERENTIAL		110115	<b>D.T.</b>	
	MOUNTING HEIGHT ABOVE ED FLOOR TO CENTER OF DEVICE		DIFFERENTIAL	HR	HOUR	PT	PRESSURE TRANSMITTER
A	AMPS		DISCHARGE	HT	HEIGHT		PACKAGED TERMINAL AIR ITIONER
	ACCESS DOOR	DIV	DIVISION	HTR	HEATER	PV	PLUG VALVE
	AIR ADMITTANCE VALVE	DN	DOWN		HEATING WATER RETURN	PVC	POLYVINYL CHLORIDE
	ABOVE	DS	DUCT SILENCER	HWS	HEATING WATER SUPPLY	QTY	QUANTITY
	AIR CONDITIONING UNIT	DWG	DRAWING	HX	HEAT EXCHANGER		
AC		DX	DIRECT EXPANSION	HZ	HERTZ	RA	RETURN AIR GRILLE / REGISTE
AC	ABOVE COUNTER	(E)	EXISTING	ID	INSIDE DIAMETER	RCP	REFLECTED CEILING PLAN
	AREA DRAIN (SEE SYMBOLS)	EA	EXHAUST AIR GRILLE/REGISTER	IG	ISOLATED GROUND	RD	ROOF DRAIN
	ABOVE FINISHED CEILING	EAT	ENTERING AIR TEMPERATURE	IN	INCHES	REL	RELIEF
A.F.G.	ABOVE FINISHED GRADE	EC	ELECTRICAL CONTRACTOR	INV	INVERT		REQUIRED
AIC CAPAC	AMPERE INTERRUPTING	ECC	ECCENTRIC	JBOX	JUNCTION BOX	RF	RETURN FAN
		EF	EXHAUST FAN	K	KELVIN	RH	RELATIVE HUMIDITY
	ABOVE FINISHED FLOOR	EFF	EFFICIENCY	KW	KILOWATT	RHC	REHEAT COIL
	AIR HANDLING UNIT	EL	ELEVATION	KVA	KILO VOLT - AMPS	RLA	RATED LOAD AMPS
	ALUMINUM	ELEC	ELECTRIC	L	LENGTH	RM	ROOM
AP	ACCESS PANEL OR DOOR	ELEV	ELEVATOR	LAT	LEAVING AIR TEMPERATURE	RPM	REVOLUTIONS PER MINUTE
ATS	AUTOMATIC TRANSFER SWITCH	EM	EMERGENCY FUNCTION	LV	LAVATORY	SA	SUPPLY AIR GRILLE / REGISTE
AV	AUDIO / VIDEO	ENT	ENTERING	LB	POUND	SC	SHORT CIRCUIT
AVG	AVERAGE	EMT	ELECTRIC METALLIC TUBE	LD	LINEAR DIFFUSER	SCA	SHORT CIRCUIT AVAILABLE
AWG	AMERICAN WIRE GAGE			LF	LINEAR FEET	SCCR	SHORT CIRCUIT CURRENT
BAS	BUILDING AUTOMATION SYSTEM	EQ	EQUAL			RATIN	
ВВ	BASEBOARD		EQUIPMENT	LIN	LINEAR	SCH	SCHEDULE
BD	BACK DRAFT DAMPER		EQUIVALENT	LIQ	LIQUID	SD	SMOKE DAMPER
BFP	BACK FLOW PREVENTOR	ES	END SWITCH	LM	LUMEN	SEF	SMOKE EXHAUST FAN
3L	BOILER	ESP	EXTERNAL STATIC PRESSURE	LRA	LOCKED ROTOR AMPS	SF	SUPPLY FAN
	BUILDING	ET	EXPANSION TANK	LV	LOUVER	SH	SENSIBLE HEAT
	BELOW	EWC	ELECTRIC WATER COOLER	LVG	LEAVING	SH	SHOWER
	BOTTOM OF BEAM	EWT	ENTERING WATER	LWT	LEAVING WATER TEMPERATURE	SP	STATIC PRESSURE
		TEMPI	ERATURE	MBH	THOUSANDS OF BTU PER HOUR		
	BOTTOM OF DUCT	EX	EXHAUST	MC	MECHANICAL CONTRACTOR	SPD	SURGE PROTECTION DEVICE
	BOTTOM OF PIPE	EXPAN	N EXPANSION	MCA	MINIMUM CIRCUIT AMPACITY		SPECIFICATION
BSMT	BASEMENT	EXT	EXTERNAL	MCB	MAIN CIRCUIT BREAKER	SQ	SQUARE
BTU	BRITISH THERMAL UNIT	F	DEGREES FAHRENHEIT	MD	MOTORIZED DAMPER	SS	STAINLESS STEEL
С	CHILLER	FA	FREE AREA	MDP	MAIN DISTRIBUTION PANEL	SS	SAFETY SHOWER
CAP	CAPACITY	FC	FAN COIL UNIT			STD	STANDARD
СВ	CIRCUIT BREAKER	FC	FOOTCANDLE	MED	MEDIUM	STL	STEEL
CBV	CIRCUIT BALANCING VALVE	FCV	FLOW CONTROL VALVE	MFR	MANUFACTURER	SYS	SYSTEM
ССТ	CORRELATED COLOR	FD	FIRE DAMPER	MIN	MINIMUM	TEMP	TEMPERATURE
TEMPE	RATURE			MISC	MISCELLANEOUS	TR	TRANSFER GRILLE / REGISTER
CKT	CIRCUIT	FD	FLOOR DRAIN	MLO	MAIN LUG ONLY	TR	TAMPER RESISTANT
CFH	CUBIC FEET PER HOUR	FIN	FINISHED		MAXIMUM OVERCURRENT	TT	TEMPERATURE TRANSMITTER
CFM	CUBIC FEET PER MINUTE	FLA	FULL LOAD AMPS		ECTION	TTB	TELECOMMUNICATIONS
CHWR	CHILLED WATER RETURN	FLEX	FLEXIBLE	MTD	MOUNTED		NAL BACKBOARD
	CHILLED WATER SUPPLY	FLR	FLOOR	MUA	MAKE-UP AIR UNIT	TYP	TYPICAL
CI	CAST IRON	FOB	FLAT ON BOTTOM	N	NEUTRAL	TX	TRANSFORMER
		FOT	FLAT ON TOP	NC	NORMALLY CLOSED	UC	UNDERCUT DOOR
	CENTER LINE	FP	FIRE PROTECTION	NEG	NEGATIVE		
	CEILING	FP	FIRE PUMP	NIC	NOT IN CONTRACT	UH	UNIT HEATER
	CONCRETE MASONRY UNIT	FPM	FEET PER MINUTE	NL	NIGHT / SECURITY LIGHT - DO	UNO	UNLESS NOTED OTHERWISE
	CLEAN OUT	FPS	FEET PER SECOND	NOT S	WITCH	UNOC	
	COLUMN	FS	FLOW SWITCH	NO	NORMALLY OPEN	UR	URINAL
COMP	COMPRESSOR	FSD	FIRE/SMOKE DAMPER	NOM	NOMINAL	V	VOLTS
CONC	CONCRETE	FT	FEET	NTS	NOT TO SCALE	VA	VOLT AMPERE
COND	CONDENSATE	FXC	FLEXIBLE CONNECTION	OA	OUTSIDE AIR	VA	VALVE
CONN	CONNECTION			OBD	OPPOSED BLADE DAMPER	VAV	VARIABLE AIR VOLUME UNIT
CONT	CONTINUATION	GND	GROUND	OC	ON CENTER	VFD	VARIABLE FREQUENCY DRIVE
CONTR	R CONTRACTOR	GA	GAUGE	occ	OCCUPIED	VRF	VARIABLE REFRIGERANT FLO
	COLOR RENDERING INDEX	GAL	GALLON	OCP	OVER CURRENT PROTECTION		VOLTAGE
CT	COOLING TOWER		GALVANIZED			VTR	VENT THROUGH ROOF
CT	CURRENT TRANSFORMER		GROUND ELECTRODE	OD	OUTSIDE DIAMETER	W	WIDTH
			UCTOR	OL	OVERLOAD	W	WATTS
CU	CONDENSING UNIT		GFI GROUND FAULT CIRCUIT	ORD	OVERFLOW ROOF DRAIN		
	COPPER		RUPTER	OZ	OUNCE	W/	WITH
	CABINET UNIT HEATER	GC	GENERAL CONTRACTOR	PBD	PARALLEL BLADE DAMPER	W/O	WITHOUT
CVB	CONSTANT VOLUME BOX	GPH	GALLONS PER HOUR	PD	PRESSURE DROP	WB	WET BULB
CWR	CONDENSER WATER RETURN	GPM	GALLONS PER MINUTE	PH	PHASE	WC	WATER COLUMN
CWS	CONDENSER WATER SUPPLY	GRS/L	B GRAINS PER POUND	POS	POSITIVE PRESSURE	WC	WATER CLOSET
DВ	DRY BULB	H 2O	WATER	POS	POINT OF SALES	WG	WATER GAUGE
DEPT	DEPARTMENT	НВ	HOSE BIBB	PRV	PRESSURE REDUCING VALVE	WP	WEATHERPROOF
DF	DRINKING FOUNTAIN	HD	HEAD (SEE SCHEDULES)	PS PS	PRESSURE SWITCH	WPIU	WEATHERPROOF IN-USE
	DIAMETER	HP	HEAT PUMP	PSI PSI	POLINDS PER SOLIARE INCH		WITHSTAND RATING
-10							

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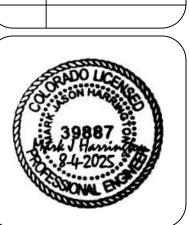
ısulting Engine( I & Electrical Engine



CREEK 80 **—** 

DATE: ISSUED FOR:

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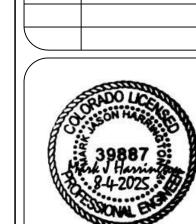


ALTON CREEK ROAD

80

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6/17/2022 PERMIT

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06/17/2022 PERMIT
09/07/2022 PERMIT CORRECTIONS
09/21/2022 ONE-LINE REVISION
08/25/2025 ADDENDUM 1 RE-ISSUE



DATE: 06/17/2022

JOB NO: 21-270

DRAWN BY: BCE

CHECKED BY: BCE

SCALE: AS SHOWE

SHEET NUMBER:

PLUMBING GENERAL NOTES:

FLAG NOTES:

1. WASTE FROM FLOORS ABOVE

3. WASTE DOWN TO BELOW.

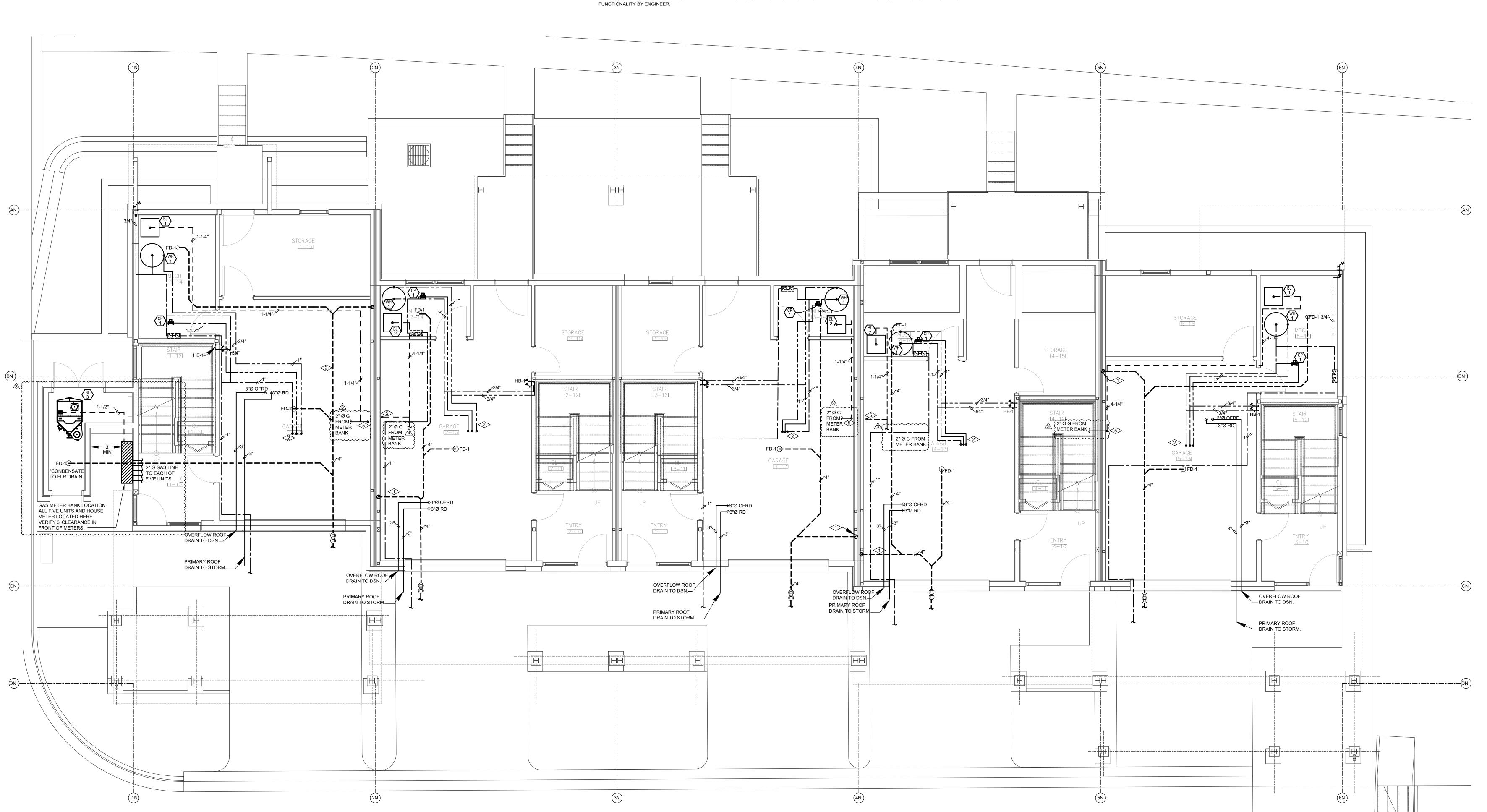
5. GAS LINE UP TO FLOOR ABOVE.

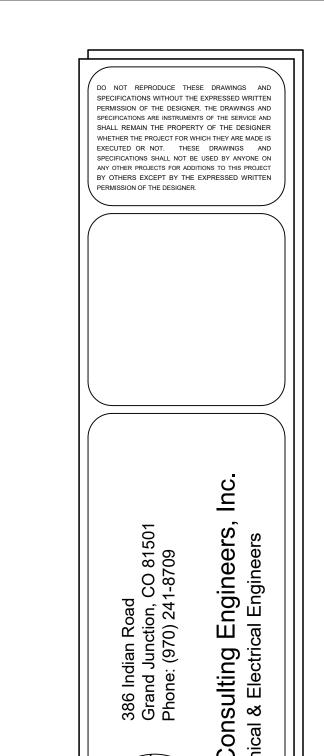
2. COLD, HOT, AND RECIRC PIPES TO FLOORS ABOVE.

4. COLD, HOT AND RECIRC PIPES FROM FLOOR BELOW

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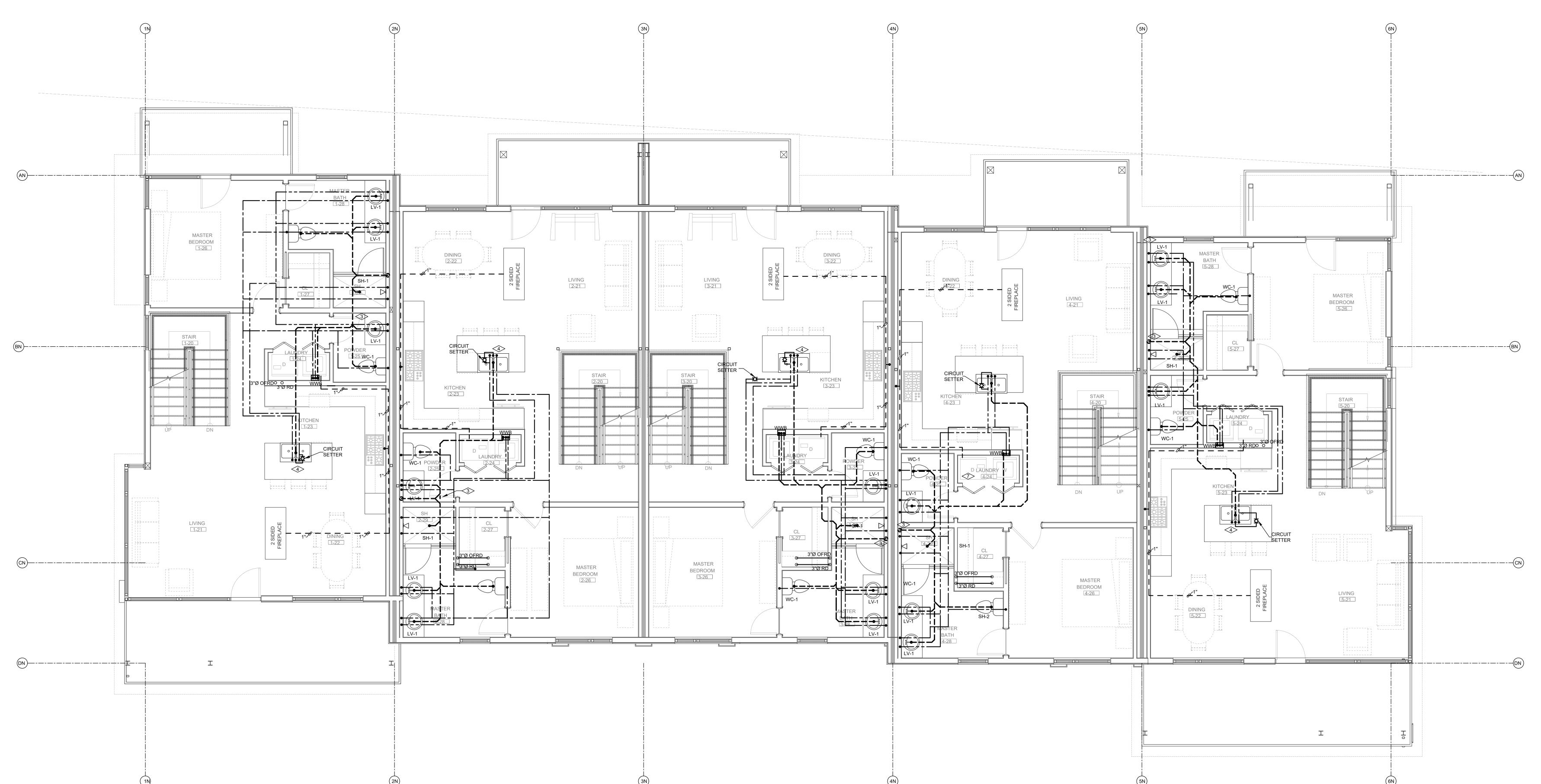
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PLUMBING - NORTH BUILDING - LEVEL 2 FLOOR PLAN

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

09/07/2022 PERMIT CORRECTIONS
09/21/2022 ONE-LINE REVISION
08/25/2025 ADDENDUM 1 RE-ISSUE

DATE: ISSUED FOR:



| DATE: 06/17/2
| JOB NO: 21| DRAWN BY: B
| CHECKED BY: B
| SCALE: AS SHO

2" ROOF DRAIN

FROM RH-1.

BEDROOM 2-31

BEDROOM 3-31

2" ROOF DRAIN FROM RH-1.

BEDROOM 4-31

805

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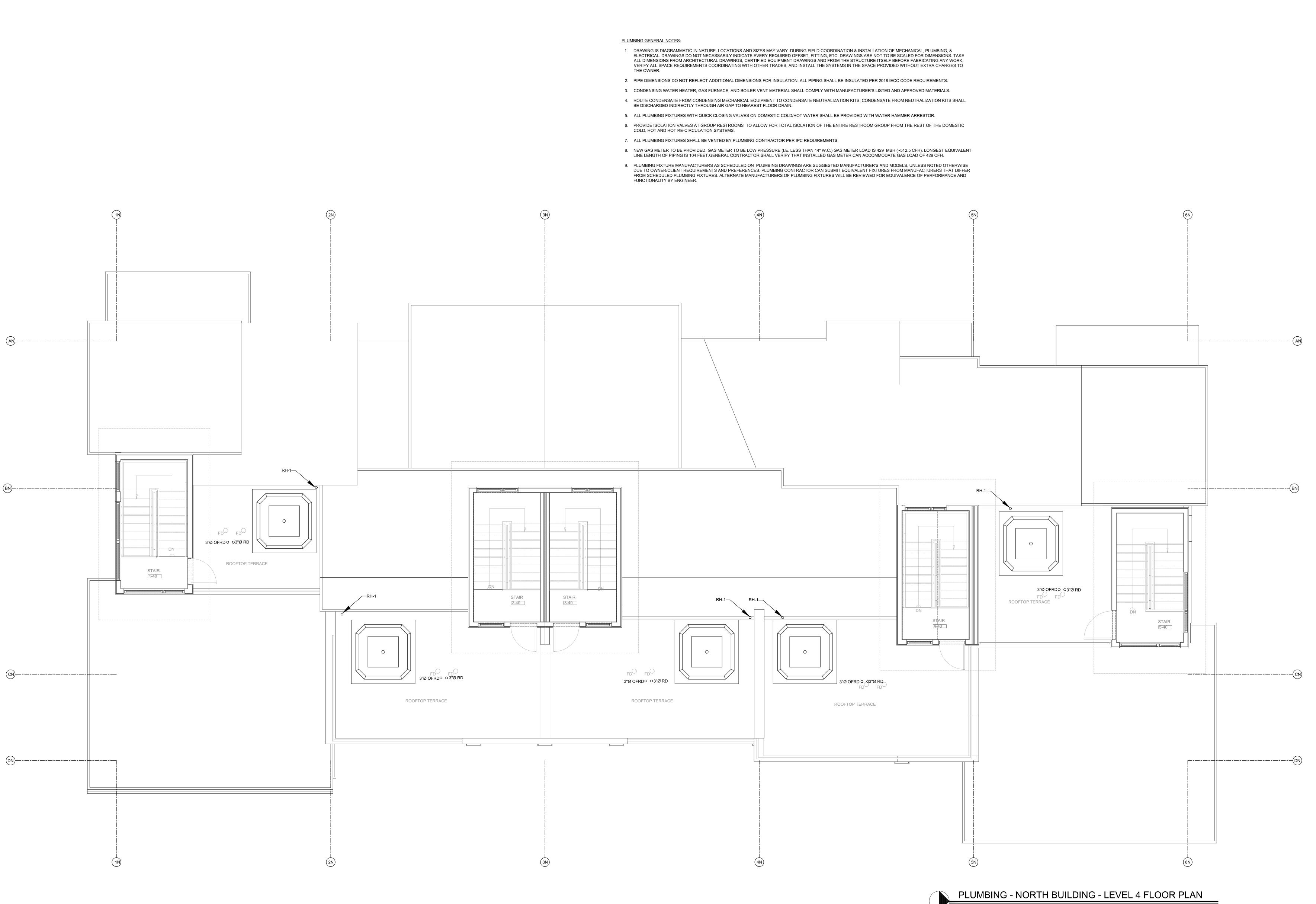
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DRAWN BY: CHECKED BY: SHEET NUMBER:

PLUMBING - NORTH BUILDING - LEVEL 3 FLOOR PLAN



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386 Indian Road Grand Junction, CO 81501 Phone: (970) 241-8709

38 General Cons

1805 WALTON CREEK ROA

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09/21/2022 ONE-LINE REVISION

08/25/2025 ADDENDUM 1 RE-ISSUE



DATE: 06/17/2 JOB NO: 21

JOB NO: 21.

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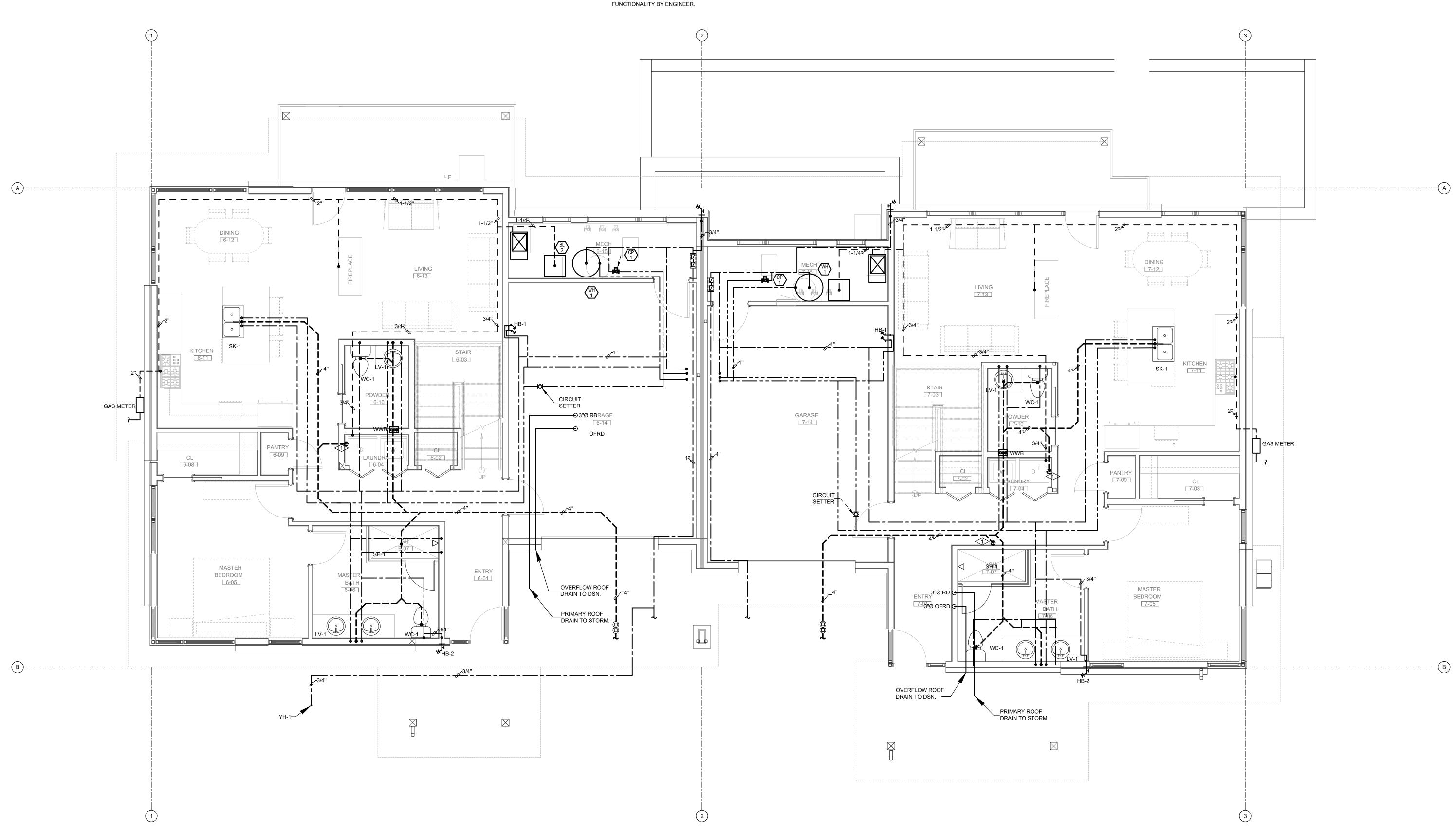
PLUMBING GENERAL NOTES:

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4. COLD, HOT AND RECIRC PIPES FROM FLOOR BELOW

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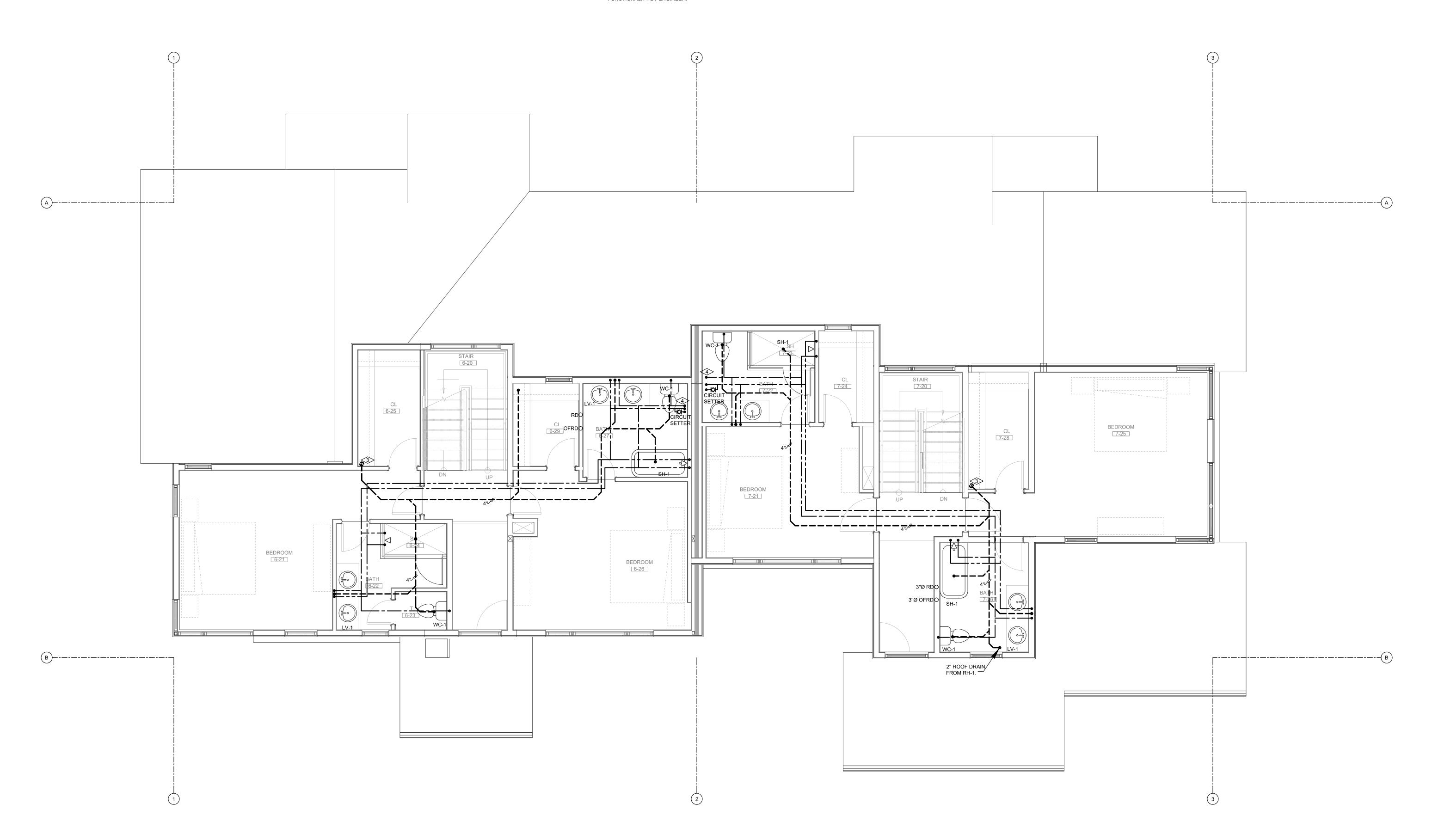
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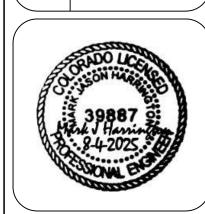


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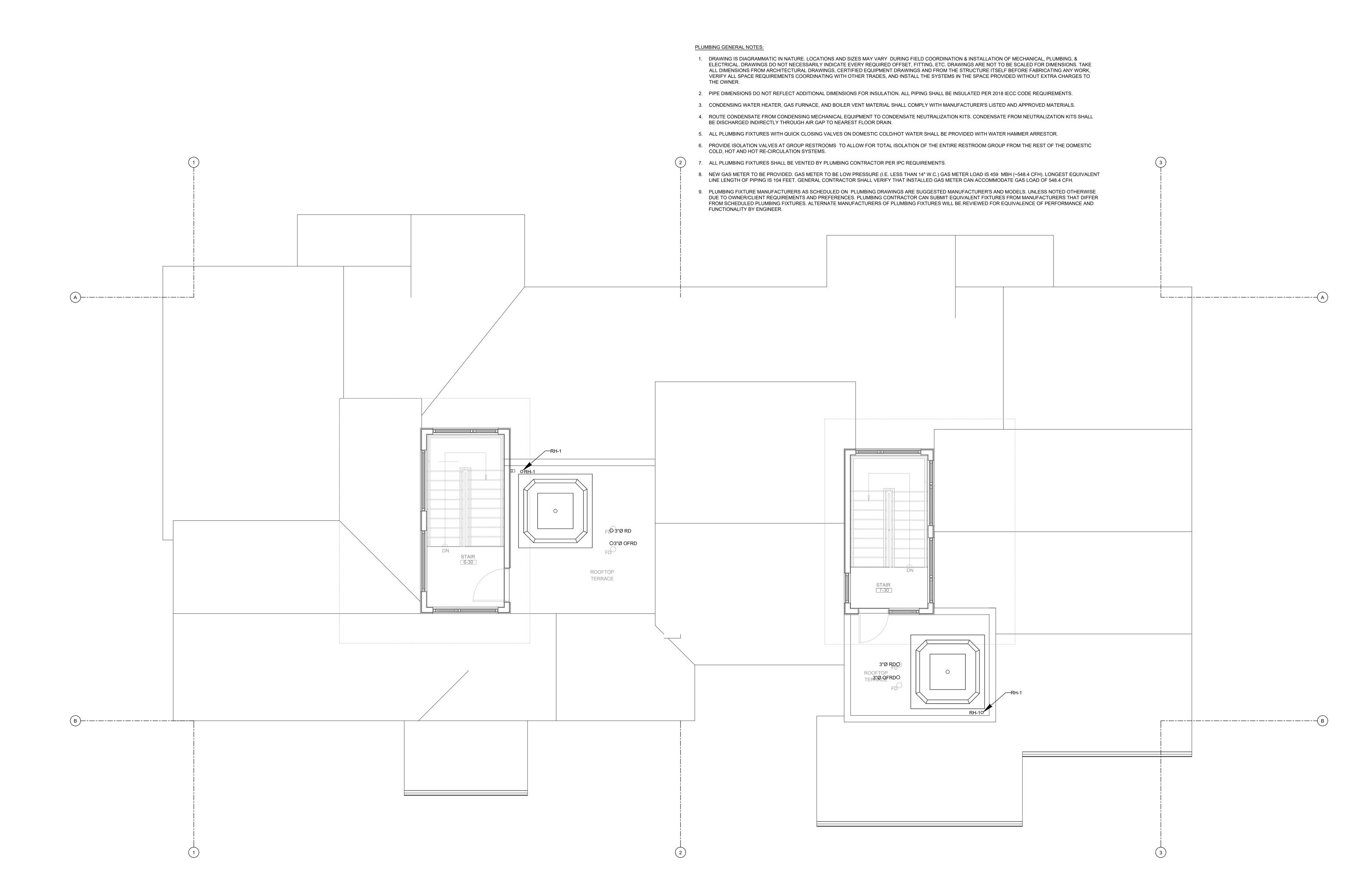
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DRAWN BY: CHECKED BY: SHEET NUMBER:

PLUMBING - SOUTH BUILDING - LEVEL 3 FLOOR PLAN



1. SCOPE OF WORK

2. PERMITS

3. SHOP DRAWINGS

A. THE CONTRACTOR IS RESPONSIBLE FOR ALL WORK, MATERIALS, AND LABOR TO SATISFY A COMPLETE WORKING SYSTEM WHETHER SPECIFIED OR IMPLIED.

B. ALL WORK IS TO BE PREFORMED IN STRICT COMPLIANCE WITH THE INTERNATIONAL PLUMBING CODE (LATEST EDITION), ALL LOCAL CODES AND ALL

OTHER REGULATION GOVERNING WORK OF THIS NATURE.

C. THE CONTRACTOR SHALL, BEFORE SUBMITTING ANY PROPOSAL, EXAMINE THE PROPOSED SITE AND SHALL DETERMINE FOR HIMSELF THE CONDITIONS THAT MAY AFFECT THE WORK. NO ALLOWANCE SHALL BE MADE IF THE CONTRACTOR FAILS TO MAKE SUCH EXAMINATIONS.

D. ALL EQUIPMENT AND MATERIALS SHALL BE AS SPECIFIED OR "APPROVED AS EQUAL" BY THE ENGINEER OR ARCHITECT.

A. THE CONTRACTOR SHALL SECURE ALL PERMITS OR APPLICATIONS AND PAY ANY AND ALL FEES.

A. SUBMIT MATERIAL LIST AND SHOP DRAWINGS FOR MAJOR EQUIPMENT TO THE ARCHITECT/ENGINEER FOR APPROVAL. THE CONTRACTOR SHALL SUBMIT FIVE SETS OF SHOP DRAWINGS AND THEY SHALL BE CLEARLY LABELED.

4. DOMESTIC WATER SUPPLY PIPING

A. UNDERGROUND: PROVIDE TYPE "K" SOFT DRAWN COPPER TUBING WITH BRAZED CONNECTIONS.

B. ABOVE GROUND: PROVIDE TYPE "L" HARD DRAWN COPPER TUBING WITH 125 PSI SOLDER JOINTS, COPPER OR BRASS FITTINGS. ALL SOLDER TO BE "NO LEAD" TYPE.

C. ALL HOT WATER PIPING TO BE INSULATED WITH 1" FIBERGLASS INSULATION. D. ALL COLD WATER PIPING TO BE INSULATED WITH  $\frac{1}{2}$ " FOAM INSULATION.

5. SANITARY/STORM DRAINAGE AND VENT PIPINGA. ABOVE GRADE:

-2" BELOW: SCHEDULE 40 GALV. STEEL PIPE WITH SCREWED ENDS OR SOLID CORE SCHEDULE 40 PVC WITH SOLVENT JOINTS OR DWV COPPER WITH SOLDER JOINTS. ALL SOLDER TO BE "NO LEAD" TYPE.

-3" AND ABOVE: SERVICE WT. CAST IRON WITH NO-HUB OR BELL AND SPIGOT JOINTS; OR SOLID CORE SCHEDULE 40 PVC WITH SOLVENT JOINTS.

B. BELOW GRADE: SERVICE WT. CAST IRON WITH NO-HUB OR BELL AND SPIGOT JOINTS; OR SOLID CORE SCHEDULE 40 PVC WITH SOLVENT JOINTS.C. PVC PIPING SHALL NOT BE USED IN AIR PLENUM CEILINGS AND SHALL NOT CROSS FIRE RATED WALLS, CEILINGS, OR FLOORS.

D. DRAINAGE PIPING SHALL BE RUN AS STRAIGHT AS POSSIBLE AND SHALL HAVE LONG TURN FITTINGS.

E. DRAINAGE PIPING 3" SIZE AND SMALLER SHALL RUN AT A UNIFORM GRADE OF AT LEAST  $\frac{1}{4}$ " PER FOOT. AND PIPING LARGER THAN 3" SHALL BE RUN AT A GRADE

OF NO LESS THAN  $\frac{1}{8}$ " PER FOOT. F. ALL VENT PIPING SHALL BE SLOPED TO DRAIN BACK TO FIXTURES.

G. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER FLASHING OF THE VENT PIPING RUN THROUGH THE ROOF.

7. PIPE SUPPORTS

A. ABOVE GRADE: ALL PIPE SHALL BE SUPPORTED FROM THE BUILDING

H. PVC USED TO BE SOLID CORE TYPE SCHEDULE 40 PVC.

PERFORATED METAL TO SUPPORT PIPES WILL NOT BE PERMITTED. SPACING OF PIPE SUPPORTS SHALL BE A S SPECIFIED IN INTERNATIONAL PLUMBING CODE (LATEST EDITION).

B. BELOW GRADE: EARTH SHALL BE EXCAVATED TO A MINIMUM DEPTH WITH AN EVEN SURFACE TO INSURE SOLID BEARING OF PIPE FOR ITS ENTIRE LENGTH.

STRUCTURE IN A NEAT AND WORKMANLIKE MANNER. THE USE OF WIRE AND

-INTERIOR: THE PIPE SHALL BE INSTALLED (UNLESS OTHERWISE SPECIFIED) A MINIMUM OF 4 INCHES BELOW THE BOTTOM OF THE SLAB AND SHALL NOT BE IN ANY DIRECT CONTACT WITH THE CONCRETE AT ANY POINT.

-EXTERIOR: THE WATER PIPE SHALL HAVE A MINIMUM OF 60" OF COVER AND THE SANITARY WASTE PIPE SHALL HAVE A MINIMUM OF 24" OF COVER.

8. MISCELLANEOUS

A. COORDINATE INSTALLATION OF ALL ROOFS FLASHING AT ROOF PENETRATIONS.

B. DO NOT SCALE THIS DRAWING FOR EXACT DIMENSIONS. VERIFY ALL FIGURES, CONDITIONS AND DIMENSIONS AT THE JOB SITE.

C. THE PLUMBING PLANS ARE INTENDED TO BE DIAGRAMMATIC AND ARE BASED ON ONE MANUFACTURER'S EQUIPMENT. THEY ARE NOT INTENDED TO SHOW EVERY ITEM IN ITS EXACT LOCATION. THE EXACT DIMENSIONS OR ALL THE DETAILS OF THE EQUIPMENT. THE CONTRACTOR SHALL VERIFY THE ACTUAL DIMENSIONS OF THE EQUIPMENT PROPOSED TO ENSURE THAT THE EQUIPMENT WILL FIT THE AVAILABLE SPACE.

9. TESTING

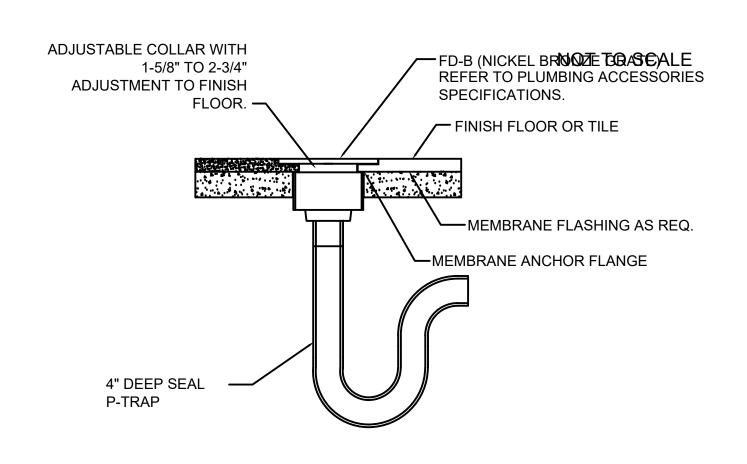
A. PLUMBING SYSTEM SHALL BE FLOW AND PRESSURE TESTED IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE (LATEST EDITION).

10 GUARANTEE

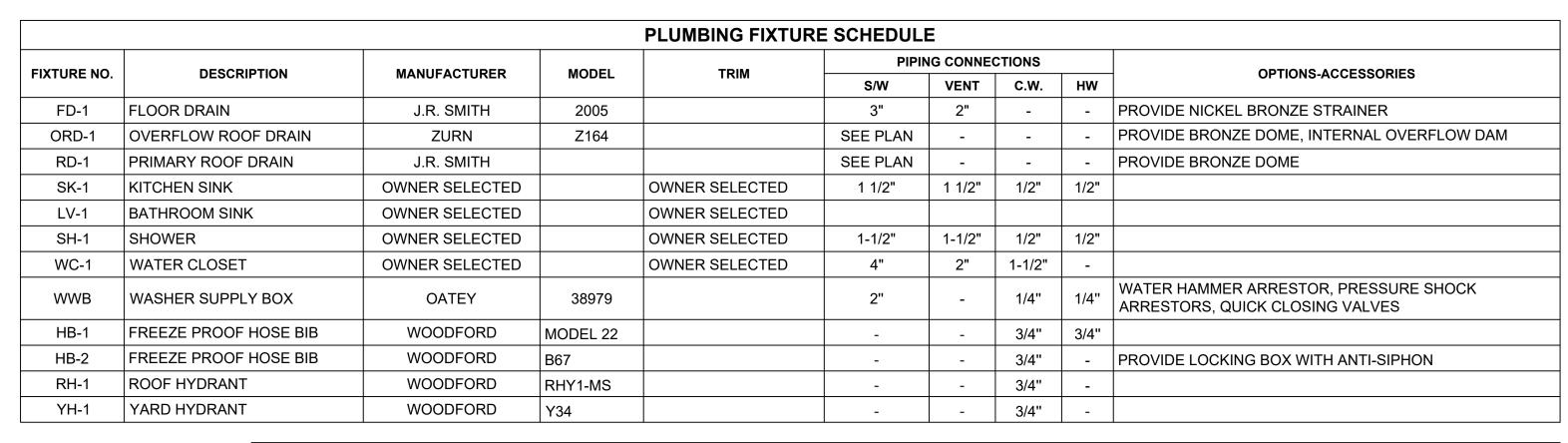
A. MATERIALS, EQUIPMENT AND INSTALLATION SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM DATE OF ACCEPTANCE. DEFECTS WHICH APPEAR DURING THAT PERIOD SHALL BE CORRECTED AT THIS CONTRACTORS EXPENSE.

B. FOR THE SAME PERIOD THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO PREMISES CAUSED BY DEFECTS IN WORKMANSHIP OR IN

THE WORK OR EQUIPMENT FURNISHED AND/OR INSTALLED BY HIM.

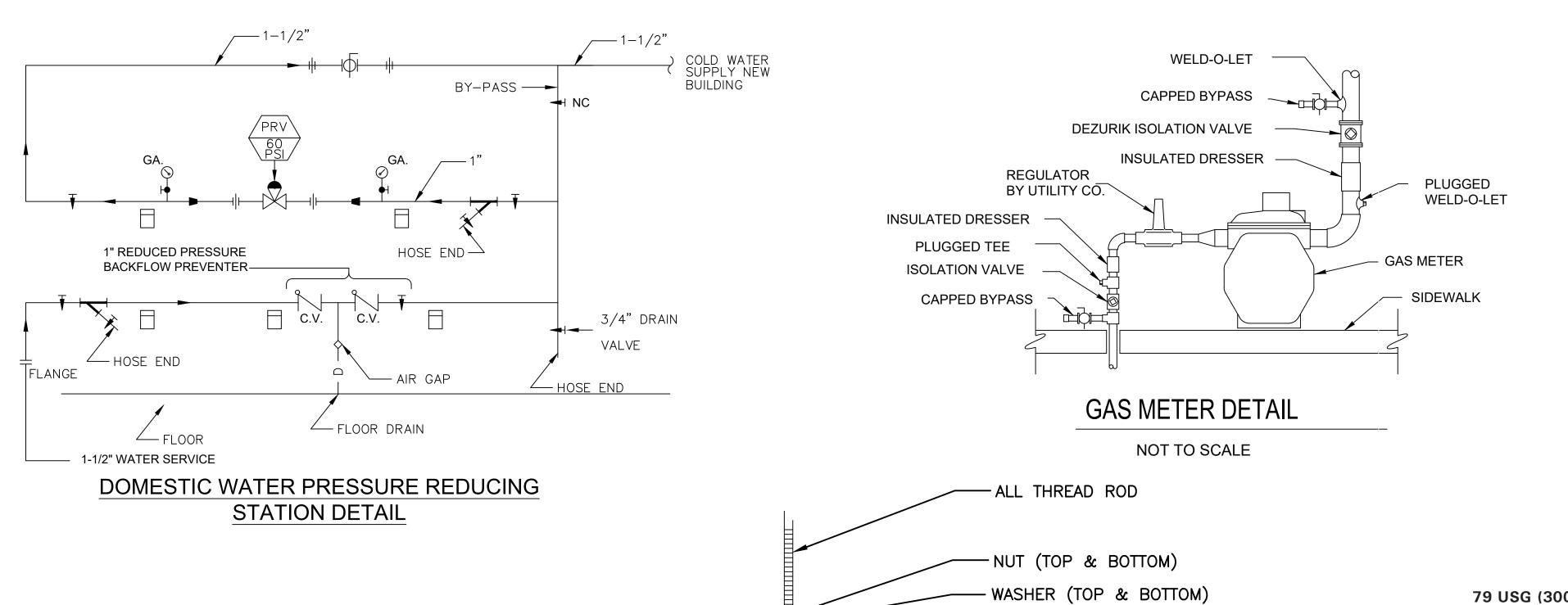


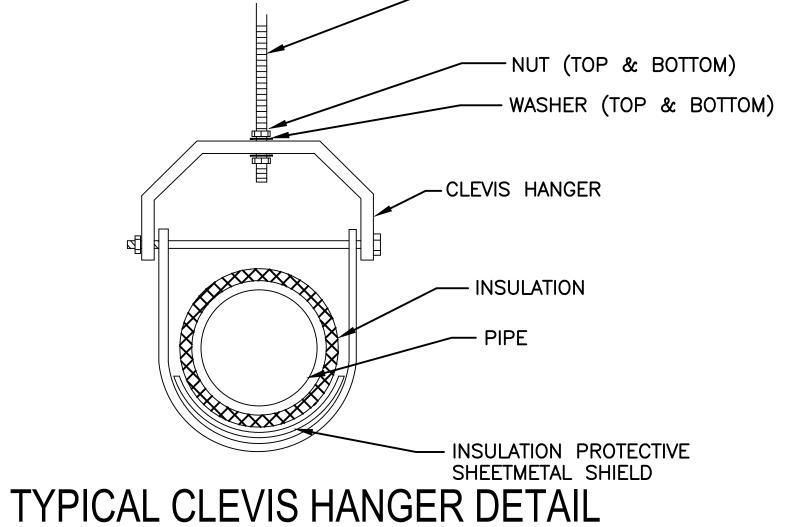
# MECHANICAL AREA FLOOR DRAIN NOT TO SCALE

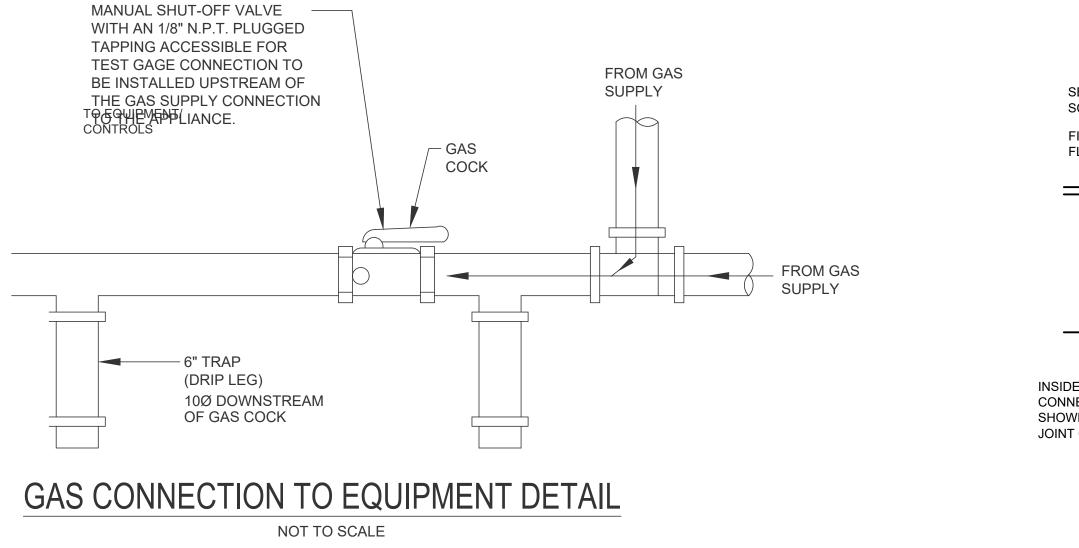


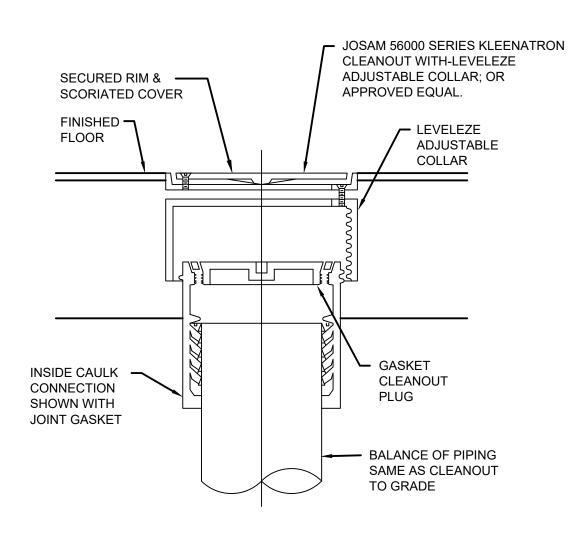
	INDIRECT WATER HEATER SCHEDULE									
EQUIPMENT NO.	CAPACITY	RECOVERY @100 DEG F. RISE	BTU PER HR.	BOILER CONNECTION	WATER CONNECTION	MANUFACTURER & MODEL	OPTIONS/ACCESSORIES			
WH-1	79		169,000	1"	1"	VIESSMANN - 300-V EVIB-79	NOTE-1			
NOTES:	NOTES:									

1. DRAIN PAN PIPED TO NEAREST FLOOR DRAIN. BRAID FLEXIBLE STAINLESS STEEL HOSES TO DOMESTIC COLD AND HOT WATER CONNECTIONS, ISOLATION VALVES ON ALL CONNECTIONS TO WATER HEATER. PROVIDE HIGH ALTITUDE KIT SIZED PER LOCATION ELEVATION.









Ø4 in. (Ø100mm)

FLOOR CLEANOUT DETAIL

NOT TO SCALE

00 L) Tank	Dimensions					
IO	Model		EVIB			
DHW M	Storage capacity	USG (L)	79 (300)			
RT TS BWS	a b c d e f g h i	in. (mm)	261/4 (668) 28 (706) 681/2 (1740) 141/4 (362) 3 (77) 13 (327) 341/2 (876) 44 (1116) 631/4 (1607)			
BWR g DCW/D   f	Legend  DHW Domestic Hot Water Retuined BWR Boiler Water Retuined BWS Boiler Water Support TPV Temperature and D Drain	rn ut Opening oly	Valve			

WATER HEATER DETAIL

DCW Domestic Cold Water

RT DHW Recirculation Tapping

NOT TO SCALE

temperature controller and thermometer sensor.

TS Clamp for tank temperature sensor or

DATE: ISSUED FOR:

06/17/2022 PERMIT

09/07/2022 PERMIT CORRECTIONS

09/21/2022 ONE-LINE REVISION

08/25/2025 ADDENDUM 1 RE-ISSUE

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DO NOT REPRODUCE THESE DRAWINGS AND SPECIFICATIONS WITHOUT THE EXPRESSED WRITTEN

SPECIFICATIONS ARE INSTRUMENTS OF THE SERVICE AND SHALL REMAIN THE PROPERTY OF THE DESIGNER

WHETHER THE PROJECT FOR WHICH THEY ARE MADE IS

SPECIFICATIONS SHALL NOT BE USED BY ANYONE ON ANY OTHER PROJECTS FOR ADDITIONS TO THIS PROJECT BY OTHERS EXCEPT BY THE EXPRESSED WRITTEN



DATE: 06/17/2022

JOB NO: 21-276

DRAWN BY: BCE

CHECKED BY: BCE

SCALE: AS SHOWN

SHEET NUMBER:

P2-1

P2-1