EXTERIOR LUMINAIRE SCHEDULE

KEY	LAMP	DESCRIPTION	CEIL'G (DEPTH)	DIM	MANUFACTURER/#	VOLT
PP1	LED 2700K 5500LM 51W	LED AREA POLE FIXTURE, P1 PERFORMANCE, FORWARD THROW DISTRIBUTION, HOUSESIDE SHIELD, FULL CUTOFF	POLE (20'-0" AFG)	0-10V	DSX1-LED-P1-27K-80CRI-TFTM-HS	120V
PP2	LED 2700K 6600LM 51W	LED AREA POLE FIXTURE, P1 PERFORMANCE, FORWARD THROW DISTRIBUTION, FULL CUTOFF	POLE (20'-0" AFG)	0-10V	DSX1-LED-P1-27K-80CRI-TFTM	120V
EW1	LED 2700K 1400LM 12.51W	WALL MOUNTED LED AREA FIXTURE, P1 PERFORMANCE, FORWARD THROW DISTRIBUTION, HOUSESIDE SHIELD, FULL CUTOFF	WALL (12'-0" AFG)	0-10V	DSXW1-LED-P1-27K-80CRI-TFTM-HS	120V
EW2	LED 2700K 1200LM 10W	WALL MOUNTED LED AREA FIXTURE, P1 PERFORMANCE, VISUAL COMFORT FORWARD DISTRIBUTION, FULL CUTOFF	WALL (12'-0" AFG)	0-10V	WDGE2-LED-P1-27K-80CRI-VF	120V
LT-10	LED 2700K 1600LM 16.8W	12" DIAMETER LED DECORATIVE WALL SCONCE, COORDINATE BLACK FINISH WITH ARCHITECT	WALL	0-10V	BARN LIGHT ELECTRIC MARATHON NAUTICAL LED	120V
LT-11	LED 3000K 1500LM 13W	8" LED DECORATIVE WALL SCONCE, COORDINATE FINISH WITH ARCHTIECT, FULL CUTOFF	WALL	TRIAC /ELV	SONNEMAN MEZZA CUPOLA LED SCONCE 7472.74-WL	120V

NOTES: *NOTIFY ENGINEER OF ANY DISCREPANCIES BETWEEN MODEL NUMBERS AND DESCRIPTIONS PRIOR TO ORDERING
*VERIFY CEILING INSULATION W/ GC AND NOTIFY ENGINEER OF ANY IC RATING CONFLICTS PRIOR TO ORDERING

GENERAL NOTES

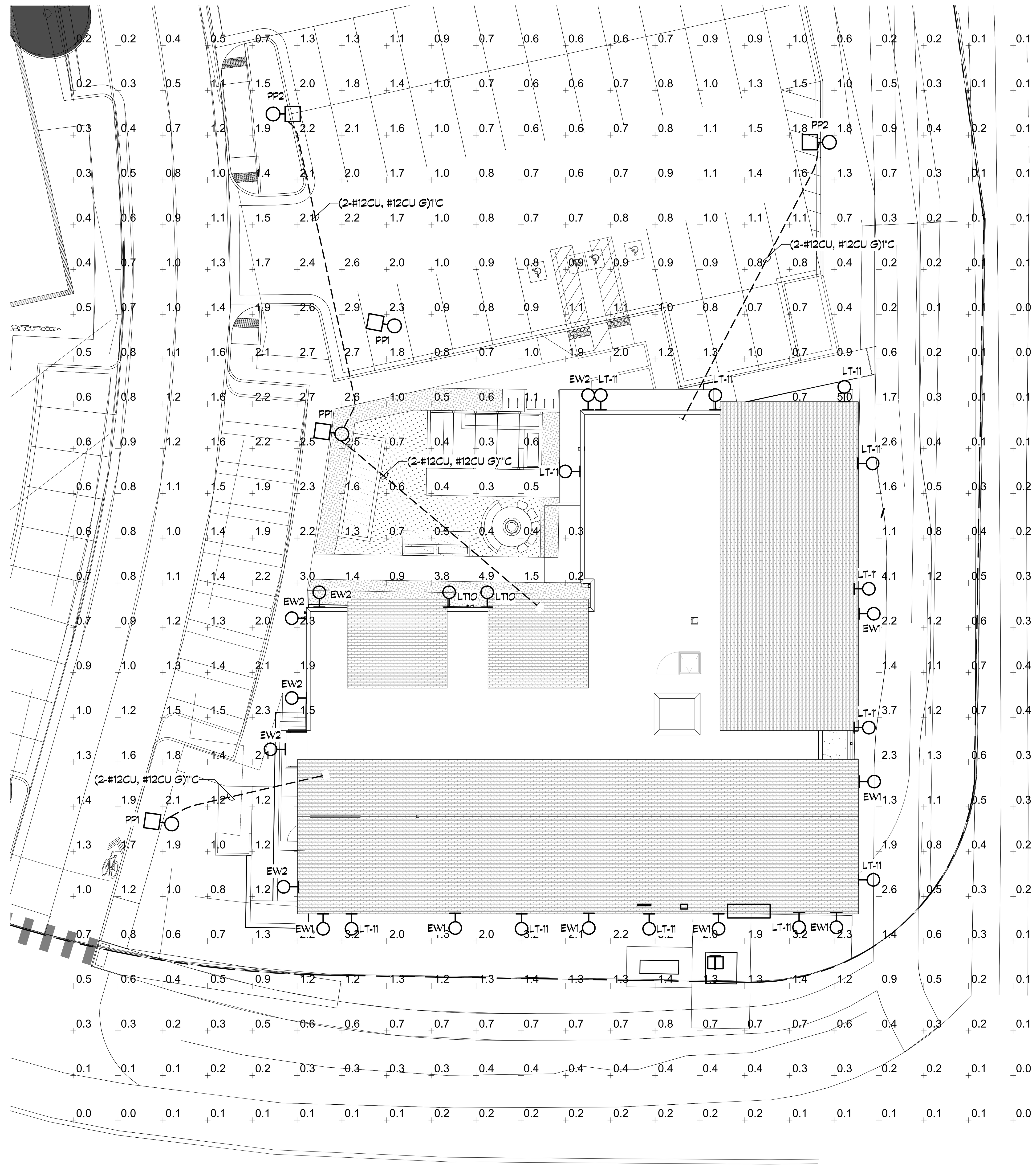
A. ANY PROPOSED LIGHT FIXTURES ARE TO INSTALLED ON PRIVATE PROPERTY, ADJACENT TO THE PUBLIC RIGHT OF WAY. LIGHT FIXTURES SHALL BE ORIENTED IN SUCH A MANNER OR LIMITED IN LUMEN OUTPUT TO PREVENT GLARE PROBLEMS AND SHALL NOT EXCEED NATIONAL I.E.S. LIGHTING STANDARDS FOR DISABILITY GLARE.

B. ALL FIXTURES SHALL BE FULL CUT-OFF, DARK SKY COMPLIANT. RE: EXTERIOR LUMINAIRE SCHEDULE AND ATTACHED CUTSHEETS FOR ADDITIONAL INFORMATION.

C. ALL EXTERIOR LIGHTING FIXTURES TO BE CONTROLLED VIA TIMECLOCK AND/OR PHOTO SENSORS. RE: ONE LINE DIAGRAM FOR ADDITIONAL INFORMATION.

D. REFER TO ATTACHED COMCHECK COMPLIANCE DOCUMENTATION FOR ALLOWED/INSTALLED WATTAGE OF PROPOSED EXTERIOR LIGHTING FIXTURES.

E. VERIFY POLE HEIGHT REQUIRED AT EACH LOCATION WITH BASE HEIGHT AND SURROUNDING GRADE. ELEVATION PROVIDED IN LUMINAIRE SCHEDULE IS HEIGHT OF FIXTURE TO ADJACENT GRADE.



SITE PHOTOMETRIC
1/16" = 1'-0"

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

OWNER
MAY REIGLER PROPERTIES
2201 Wisconsin Ave NW Suite 200
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www.mayriegler.com

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K A S A
KEVIN & ASAKO SPERRY ARCHITECTURE
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LANDSCAPE ARCHITECT

STRUCTURAL ENGINEER
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T: 303.444.6038

INTERIOR DESIGNER:
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1600 Wynkoop St., Suite 100
Denver, CO 80202
T: 303.892.7062

PROJECT LOCATION
STEAMBOAT BASECAMP AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

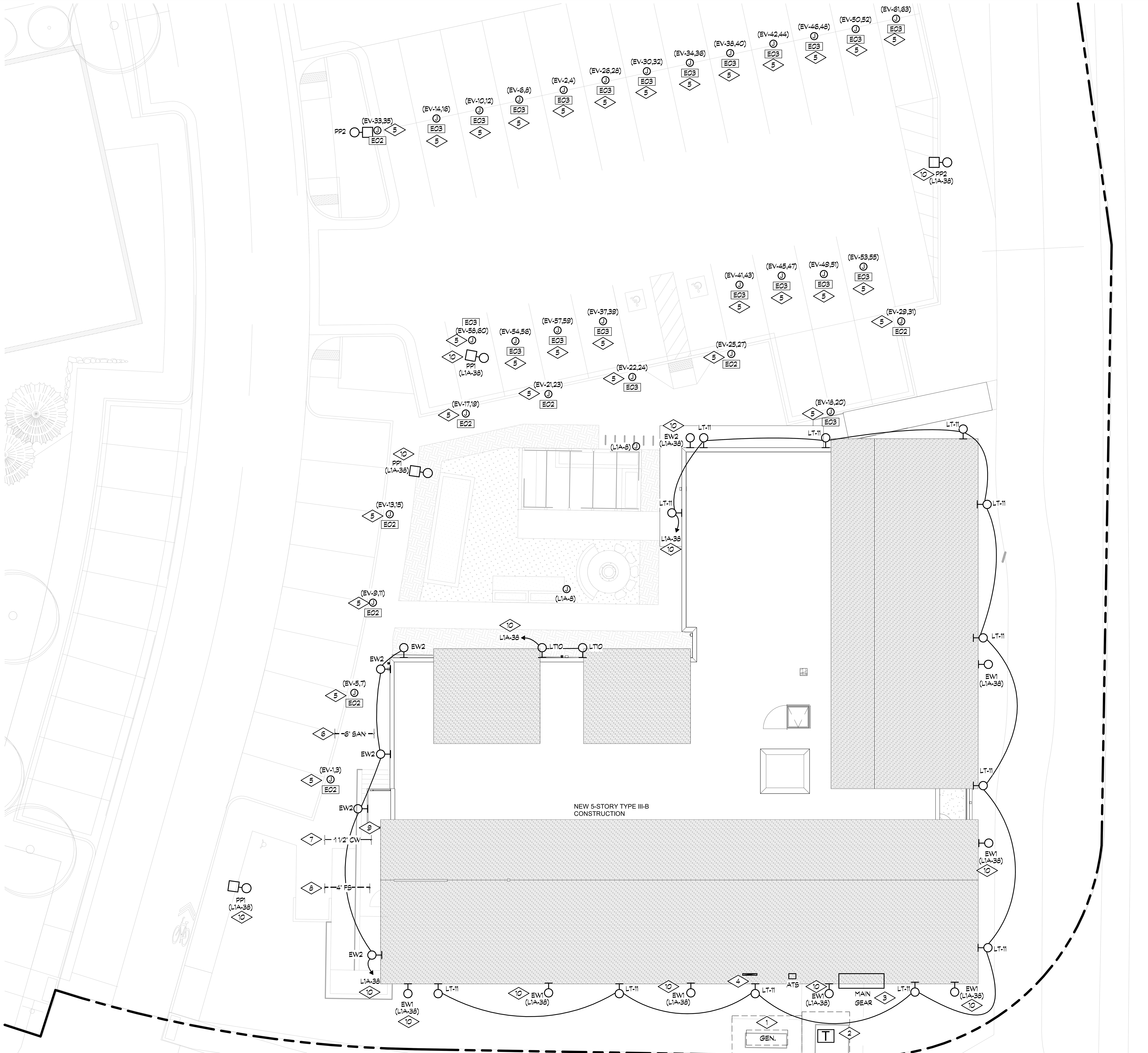
DRAWING TITLE
SITE PHOTOMETRIC

SEAL
COLORADO LICENSED PROFESSIONAL ENGINEER 38983 03/13/2026

DATE: 03.13.2026
DRAWN BY: Author
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO:
MEP0100

3/13/2026 8:49:03 AM



MEP SITE PLAN
1" = 10'-0"

DETAIL NOTES THIS SHEET

1. PROPOSED LOCATION FOR DIESEL GENERATOR. COORDINATE EXACT LOCATION IN FIELD. MAINTAIN ALL REQUIRED CLEARANCES.
2. PROPOSED LOCATION OF NEW UTILITY PROVIDED TRANSFORMER, FIELD VERIFY EXACT LOCATION AND INSTALLATION REQUIREMENTS WITH LOCAL UTILITY PROVIDER. PROVIDE BOLLARDS AS REQUIRED TO PROTECT ELECTRICAL GEAR PER UTILITY STANDARDS. MAINTAIN ALL REQUIRED CLEARANCES.
3. BUILDING ELECTRICAL SERVICE ENTRANCE LOCATION. PROVIDE REQUIRED CLEARANCES PER NEC. COORDINATE LOCATION, GEAR HEIGHT AND INSTALLATION SPECIFICS WITH G.C. AND ARCHITECT. PROVIDE BOLLARDS AS REQUIRED TO PROTECT ELECTRICAL GEAR PER UTILITY STANDARDS, COORDINATE BOLLARD PLACEMENT AND INSTALLATION REQUIREMENTS WITH G.C. RE: ONE LINE DRAWING FOR ADDITIONAL INFORMATION.
4. APPROXIMATE LOCATION OF TELE/COM PEDESTAL(S). COORDINATE EXACT LOCATION AND REQUIREMENTS WITH TECHNOLOGY DRAWINGS.
5. COORDINATE LOCATIONS FOR EV READY/CAPABLE SPACES WITH ARCHITECT/OWNER. EV ELECTRICAL DEVICES SHOWN FOR CIRCUITING AND COORDINATION. PROVIDE BOLLARDS AS REQUIRED TO PROTECT ELECTRICAL EQUIPMENT.
6. EXTEND AND CONNECT NEW SANITARY WASTE TO CIVIL POINT OF CONNECTION (POC) IN AREA SHOWN. PROVIDE 2-WAY CLEANOUT AT SANITARY WASTE/SEWER JUNCTION AT EXTERIOR OF BUILDING. FIELD VERIFY EXACT LOCATION AND INVERT ELEVATION AT POINT OF CONNECTION.
7. EXTEND AND CONNECT NEW DOMESTIC COLD WATER PIPING TO CIVIL POC. FIELD VERIFY EXACT LOCATION AND CONNECTION. BASIS OF DESIGN IS INTERIOR METER WITH 1-1/2" TAP/METER ASSEMBLY.
8. EXTEND AND CONNECT NEW FIRE PROTECTION PIPING TO CIVIL POC. FIELD VERIFY EXACT LOCATION AND CONNECTION. COORDINATE FIRE RISER ROOM LOCATION WITH G.C. COORDINATE FDC LOCATION WITH AHJ. SPRINKLER DESIGN TO BE PERFORMED BY NFPA CERTIFIED DESIGNER, SHOP DRAWINGS BY DEFERRED SUBMITTAL.
9. COORDINATE WITH LOCAL UTILITY COMPANY FOR 7"W.C. GAS SERVICE. FIELD VERIFY EXACT METER PLACEMENT WITH UTILITY PROVIDER, NOTIFY ENGINEER IF METER IS RELOCATED FROM LOCATION SHOWN. REGULATORS MUST BE INSTALLED AT APPLIANCES PRIOR TO GAS BEING TURNED ON.
10. EXTERIOR LIGHTING TO BE CONTROLLED VIA TIMECLOCK. COORDINATE HOURS OF OPERATION WITH OWNER/ARCHITECT.

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

OWNER

MAY REIGLER PROPERTIES
2201 Wisconsin Ave NW Suite 200
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INTERIOR DESIGNER:

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Denver, CO 80202
T: 303.892.7062

PROJECT LOCATION

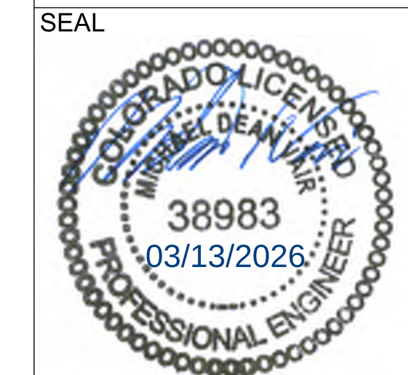
STEAMBOAT BASECAMP AREA 1B RESIDENTIAL

1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

MEP SITE PLAN

SEAL



DATE: 03.13.2026
DRAWN BY: Author
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO:
MEP0101

3/13/2026 8:49:06 AM

PANEL 1-BED

SUPPLY FROM: MDP — VOLTS: 120/208 Single — A.I.C. RATING: REFER TO ONE-LINE
MOUNTING: RECESSED — PHASES: 1 — MAINS TYPE: MLO
ENCLOSURE: NEMA 1 — WIRES: 3 — MAINS RATINGS: 150 A

CIRCUIT DESCRIPTION	LT	TRIP	P	BT		A		B			BT	P	TRIP	LT	CIRCUIT DESCRIPTION
BEDROOM #1 RECEPTS	ND	15	1	A	1	0	0			2	AG	1	20	ND	KITCHEN RECEPTS
BEDROOM #2 RECEPTS/SPARE	ND	15	1	A	3			0	0	4	AG	1	20	ND	KITCHEN RECEPTS
BEDROOM #3 RECEPTS/SPARE	ND	15	1	A	5	0	0			6	AG	1	20	ND	DISH / DISPOSAL
LIVING RM RECEPTS	ND	15	1	A	7			0	0	8	AG	1	20	ND	MICRO / HOOD
LIVING RM RECEPTS/SPARE	ND	15	1	A	9	0	0			10	AG	1	20	ND	REFRIG / ISLAND RECEPTS
BATHROOM GFCI	ND	20	1	AG	11			0	0	12	AG	1	20	ND	WASHING MACHINE
LIGHTING, EF	ND	15	1	A	13	0	0			14	A	1	15	ND	DATA/TELECOM
LIGHTING/SMOKE/CO	L; ND	15	1	A	15			0	0	16	G	2	50	ND	RANGE
EXTERIOR GFCI	ND	20	1	G	17	0	0			18					
DRYER	ND	30	2	G	19			0	0	20	S	2	25	ND	PTAC
					21	0	0			22					
SPACE	--	--	1		23			--	0	24	A	2	20	ND	BB
SPACE	--	--	1		25	--	0			26					
SPD	--	20	2		27			0	--	28		1	--	--	SPACE
					29	0	--			30		1	--	--	SPACE

TOTAL LOAD: 11.73 kVA 11.73 kVA

TOTAL AMPS: 113 A 113 A

LOAD TYPE		CONN.LOAD	DEMAND FACT.	EST. DEMAND	BREAKER TYPE		PANEL TOTALS
LIGHTING -	L	0 kVA	0%	0 kVA	STANDARD -	S	
ELECT. VEHICLE -	EV	0 kVA	0%	0 kVA	AFCI/GFCI -	AG	
RECEPTACLE -	R	0 kVA	0%	0 kVA	GFCI -	G	TOTAL CONN. LOAD: 23.45 kVA
MOTOR -	M	0 kVA	0%	0 kVA	AFCI -	A	TOTAL EST. DEMAND: 23.45 kVA
KITCHEN -	K	0 kVA	0%	0 kVA	HANDLE TIE -	T	TOTAL CONN.: 113 A
OTHER -	O	0 kVA	0%	0 kVA	HANDLE BLOCK -	H	TOTAL EST. DEMAND: 113 A
EXISTING -	E	0 kVA	0%	0 kVA	SHUNT TRIP -	ST	
NEC-220.82-	ND	23.45 kVA	100%	23.45 kVA	LOCKOUT -	L	

NOTES: THE INDIVIDUAL LOADS ARE NOT SHOWN AND BREAKERS ARE FOR SIZNG AND CIRCUITING PURPOSES. THE DEMAND LOAD SHOWN IS PER NEC 220.82. 10KW + 40% OF (1) LAUNDRY CIRCUIT, (2) APPLIANCE CIRCUITS, 3W/SF FOR GENERAL LIGHT & RECEPTACLES, FIXED APPLIANCE & OTHER MOTOR LOADS. PLUS 100% OF LARGEST OF HEATING / COOLING LOADS.

PANEL 2-BED

SUPPLY FROM: MDP — VOLTS: 120/208 Single — A.I.C. RATING: REFER TO ONE-LINE
MOUNTING: RECESSED — PHASES: 1 — MAINS TYPE: MLO
ENCLOSURE: NEMA 1 — WIRES: 3 — MAINS RATINGS: 150 A

CIRCUIT DESCRIPTION	LT	TRIP	P	BT		A		C			BT	P	TRIP	LT	CIRCUIT DESCRIPTION
BEDROOM #1 RECEPTS	ND	15	1	A	1	0	0			2	AG	1	20	ND	KITCHEN RECEPTS
BEDROOM #2 RECEPTS	ND	15	1	A	3			0	0	4	AG	1	20	ND	KITCHEN RECEPTS
SPARE	--	20	1		5	0	0			6	AG	1	20	ND	DISH / DISPOSAL
LIVING RM RECEPTS	ND	15	1	A	7			0	0	8	AG	1	20	ND	MICRO / HOOD
LIVING RM RECEPTS/SPARE	ND	15	1	A	9	0	0			10	AG	1	20	ND	REFRIG / ISLAND RECEPTS
BATHROOM GFCI	ND	20	1	AG	11			0	0	12	AG	1	20	ND	WASHING MACHINE
LIGHTING, EF	ND	15	1	A	13	0	0			14	A	1	15	ND	DATA/TELECOM
LIGHTING/SMOKE/CO	ND	20	1	A	15			0	0	16	G	2	50	ND	RANGE
EXTERIOR GFCI	ND	20	1	G	17	0	0			18					
DRYER	ND	30	2	G	19			0	0	20	S	2	25	ND	PTAC
					21	0	0			22					
SPACE	--	--	1		23			--	0	24	A	2	20	ND	BB
SPACE	--	--	1		25	--	0			26					
SPD	--	20	2		27			0	--	28		1	--	--	SPACE
					29	0	--			30		1	--	--	SPACE

TOTAL LOAD: 12.5 kVA 12.5 kVA

TOTAL AMPS: 120 A 120 A

LOAD TYPE		CONN.LOAD	DEMAND FACT.	EST. DEMAND	BREAKER TYPE		PANEL TOTALS
LIGHTING -	L	0 kVA	0%	0 kVA	STANDARD -	S	
ELECT. VEHICLE -	EV	0 kVA	0%	0 kVA	AFCI/GFCI -	AG	
RECEPTACLE -	R	0 kVA	0%	0 kVA	GFCI -	G	TOTAL CONN. LOAD: 24.99 kVA
MOTOR -	M	0 kVA	0%	0 kVA	AFCI -	A	TOTAL EST. DEMAND: 24.99 kVA
KITCHEN -	K	0 kVA	0%	0 kVA	HANDLE TIE -	T	TOTAL CONN.: 120 A
OTHER -	O	0 kVA	0%	0 kVA	HANDLE BLOCK -	H	TOTAL EST. DEMAND: 120 A
EXISTING -	E	0 kVA	0%	0 kVA	SHUNT TRIP -	ST	
NEC-220.82-	ND	24.99 kVA	100%	24.99 kVA	LOCKOUT -	L	

NOTES: THE INDIVIDUAL LOADS ARE NOT SHOWN AND BREAKERS ARE FOR SIZNG AND CIRCUITING PURPOSES. THE DEMAND LOAD SHOWN IS PER NEC 220.82. 10KW + 40% OF (1) LAUNDRY CIRCUIT, (2) APPLIANCE CIRCUITS, 3W/SF FOR GENERAL LIGHT & RECEPTACLES, FIXED APPLIANCE & OTHER MOTOR LOADS. PLUS 100% OF LARGEST OF HEATING / COOLING LOADS.

ELECTRICAL GENERAL NOTES - UNITS

A. REPLACE MINI-HORN WITH HORN/STROBE IN ACCESSIBLE UNITS.

B. PROVIDE ARC-FAULT CIRCUIT INTERRUPTER PROTECTION FOR RECEPTACLES, LIGHTS, SMOKE DETECTORS, ETC. IN RESIDENCE PER NEC 210.12.

C. ALL DWELLING UNIT RECEPTACLES LISTED PER NEC 406.12 SHALL BE TAMPER RESISTANT TYPE.

D. ELECTRICAL BOXES INSTALLED IN FIRE-RATED WALLS AND PARTITIONS MUST COMPLY WITH THE REQUIREMENTS OF IBC 714.3.2. IF STEEL BOXES ARE USED IN FIRE RATED WALLS, BOX OPENINGS SHALL NOT BE LARGER THAN 16 SQ. IN. WITH A TOTAL AREA OF SUCH OPENINGS IN THE WALL NOT EXCEEDING 100 SQ. IN. FOR ANY 100 SQ. FT. OF WALL AREA.

E. OUTLET BOXES ON THE OPPOSITE SIDES OF THE FIRE RATED WALLS SHALL BE SEPARATED BY A MINIMUM OF 24" HORIZONTALLY, UNLESS FIRE BLOCKING METHODS LISTED IN IBC 714.3.2 ARE EMPLOYED.

F. CIRCUITS SHOWN ON THE ELECTRICAL UNIT PLANS SHALL BE WIRED TO THE TYPICAL UNIT PANEL UNLESS OTHERWISE STATED ON THE PLANS.

G. ELECTRICAL FIXTURES AND DEVICES MAY BE OFFSET ON THE PLANS FOR GRAPHICAL CLARITY. COORDINATE EXACT LOCATIONS WITH THE ARCHITECT/OWNER PRIOR TO ROUGH-IN.

H. ALL ABOVE COUNTER RECEPTACLES ARE TO BE INSTALLED AT 42" A.F.F.

I. GFCI PROTECTION TO BE PROVIDED AT PANEL, UNLESS SPECIFICALLY NOTED TO BE PROTECTED LOCALLY ON DRAWINGS.

J. RESIDENTIAL SURGE PROTECTION TO BE PROVIDE AT PANEL PER NEC 230.67.

K. PROVIDE SMOKE / CARBON MONOXIDE DETECTORS IN ALL RESIDENTIAL UNITS PER LOCAL FIRE DEPARTMENT REQUIREMENTS.

ELECTRICAL DETAIL NOTES - UNITS

NOTE: THESE NOTES ARE TYPICAL FOR ALL UNIT PLANS, NOT ALL NOTES MAY APPEAR ON EVERY UNIT TYPE.

1. UNIT TELEPHONE/CABLE TERMINAL; FIELD VERIFY LOCATION AND MOUNTING HEIGHT ON WALL WITH TELECOM SERVICE PROVIDER. COORDINATE LOCATION WITH CLOSET SHELVING, LOCATE DUPLEX RECEPTACLE BELOW TERMINAL FOR CONNECTION OF TELECOM EQUIPMENT. RE: TELEPHONE/CABLE DETAIL FOR ADDITIONAL INFORMATION.
2. TYPICAL UNIT ELECTRICAL PANEL, COORDINATE PANEL MOUNTING HEIGHT WITH ADA REQUIREMENTS (IN ACCESSIBLE UNITS). MAINTAIN MINIMUM CLEARANCE TO FRONT OF PANEL AS REQUIRED PER NEC, NO PIPING, DUCTWORK OR OTHER TRADES WORK TO BE ROUTED OVER PANEL. ALL WORK IN THIS AREA TO BE COORDINATED WITH G.C. AND E.C.
3. PROVIDE RECEPTACLE WITH HALF SWITCHED PORT. TOP RECEPTACLE IS TO BE SWITCHED PORTION FOR GARBAGE DISPOSAL OPERATION. POWER CONNECTION FOR DISHWASHER, DISPOSAL AND DISPOSAL SWITCH LOCATED BELOW COUNTERTOP IN BASE CABINET. FIELD VERIFY DISPOSAL SWITCH LOCATION WITH OWNER PRIOR TO ROUGH-IN.
4. BATHROOM VENTILATION FAN CONTROL VIA AIR CYCLER SMART EXHAUST SWITCH, PROGRAM PER VENTILATION SCHEDULE FOR UNIT TYPE. COORDINATE WIRING WITH M.C.
5. EXTERIOR LUMINAIRE, SWITCH AND EXTERIOR WEATHER PROOF RECEPTACLE TO BE PROVIDED AT BALCONY.
6. ADD ALTERNATE: PROVIDE ADDITIONAL PRICING TO INCLUDE FAN RATED CEILING JUNCTION BOX AND 2 GANG WALL SWITCH. 1 SWITCH FOR FAN/OVERHEAD LIGHTING AND 1 SWITCH FOR FAN BLADE OPERATION.

RESIDENTIAL ELECTRICAL LEGEND

	MECHANICAL EQUIPMENT; WIRE TO PANEL PER MECHANICAL EQUIPMENT SCHEDULE ON SCHEDULES AND DETAILS SHEET.
MICRO/ HOOD	(2-#12) COORDINATE HOOD REQUIREMENTS W/ ARCHITECT. (COMBINATION HOOD MICROWAVE UNIT)
RANGE	208/1, (2-#6) SPECIAL PURPOSE OUTLET. COORDINATE CONFIGURATION W/ ARCHITECT.
DRYER	208/1, (2-#10) SPECIAL PURPOSE OUTLET. COORDINATE CONFIGURATION W/ ARCHITECT.
	DATA & TELEPHONE
	CABLE TELEVISION
	SMOKE DETECTOR (LOCAL ONLY); INTERWIRED W/BATTERY BACKUP
	COMBINATION CARBON MONOXIDE / SMOKE DETECTOR (LOCAL ONLY); INTERWIRED W/BATTERY BACKUP
M	MINI HORN
S	HORN/STROBE
	DOOR BELL (NUTONE PB-18LWH, 101T, LB-12WW)

MECHANICAL GENERAL NOTES - UNITS

A. FLEX DUCT MAY NOT BE USED IN EXPOSED LOCATIONS. WHERE CONCEALED, FLEX DUCT RUNS NO LONGER THAN 2', REFER TO SPECIFICATIONS.

B. GRILLES, REGISTERS & DIFFUSERS & EXPOSED DUCTWORK TO MATCH ADJACENT CEILING/STRUCTURE COLOR. WHERE CEILING IS LIGHT COLOR, MAINTAIN WHITE GRD'S. WHERE CEILING/STRUCTURE IS METAL FINISH OR DARK, PAINT GRD'S TO MATCH. REFER TO ARCH PLANS FOR FINISHES.

C. ROUTE ALL EXHAUST DUCTWORK ABOVE FIRE-RATED CEILING BETWEEN AND THRU TRUSSES UNLESS OTHERWISE NOTED. AVOID SOLID STRUCTURAL BEAMS. IN ATTIC SPACE, INSULATE PER SPECIFICATIONS.

D. INSTALL RADIATION DAMPER AT ALL CEILING PENETRATIONS. DAMPER TO BE UL-LISTED FOR RATED ASSEMBLY BEING PENETRATED.

E. VERIFY LOCATIONS AND RATING OF ALL RATED ASSEMBLIES WITH GC AND ARCHITECT DURING CONSTRUCTION. PROTECT PENETRATIONS PER UL INSTRUCTIONS.

F. RANGE HOOD IS RECIRCULATING AND BY ARCHITECT. PROVIDE ACCESSIBLE CONTROLS IN ADA TYPE-A RANGE HOOD.

G. PROVIDE 1.25" UNDERCUT AT ALL BEDROOM DOORS.

H. OUTSIDE AIR INTAKE ON PTHP TO BE CLOSED OFF. VENTILATION PROVIDED BY VF-1 IN EACH UNIT. SEE VENTILATION CALCULATION, THIS SHEET.

MECHANICAL DETAIL NOTES - UNITS

NOTE: THESE NOTES ARE TYPICAL FOR ALL UNIT PLANS, ALL NOTES MAY NOT APPEAR ON EVERY UNIT TYPE PLAN.

1. MOUNT BATHROOM VENTILATION FAN IN CEILING & ROUTE 4"Ø THRU OPEN WEB TRUSSES. PROVIDE BACKDRAFT DAMPER AT TERMINATION. SET FAN VENTILATION TIMER PER TABLE FOR UNIT TYPE, VENTILATION SWITCH TO BE AIR CYCLER SMART EXHAUST, COORDINATE WIRING WITH E.C.
2. MOUNT KITCHEN VENTILATION FAN IN CEILING OR SIDEWALL, ROUTE EXHAUST DUCT THRU OPEN WEB TRUSSES AND TERMINATE IN WALL CAP WITH BACKDRAFT DAMPER. FAN TO OPERATE VIA MANUAL SWITCH IN KITCHEN, COORDINATE WIRING WITH E.C.
3. 4"Ø DRYER VENT FROM DRYER BOX (IN-O-VATE TECH OR EQUIV.) ROUTE BEHIND DRYER IN WALL UP THRU TOP PLATE AND THRU OPEN WEB TRUSSES TO EXTERIOR WALL WITH BACKDRAFT DAMPER AT TERMINATION. ALL HORIZONTAL TURNS TO BE "LONG TURN" ELL'S (IN-O-VATE TECHNOLOGIES OR EQUIV.) INSTALL VENT PER MANUFACTURER'S REQUIREMENTS. VENT NOT TO EXCEED X' TOTAL LENGTH W/ (Y) 90° ELBOWS. REFER TO PLANS FOR LENGTH AND ELBOW QUANTITIES FOR EACH UNIT. PROVIDE PERMANENT LABEL "DRYER MUST BE APPROVED FOR X' W/ (Y) ELBOW BY MANUFACTURER." WHERE THRU UNCONDITIONED SPACE, INSULATE WITH R-8 DUCTWRAP. WHERE DRYER BOX IS SHOWN ON SIDE OF W/D CLOSET, DRYER TO BE CONVERTED TO SIDE VENT. COORDINATE WITH G.C.
4. PROVIDE 1" DOOR UNDERCUT AND 14"x8" "R2" TRANSFER GRILLES ABOVE LAUNDRY ROOM DOOR FOR A MINIMUM TOTAL OF 100 SQ.IN. FREE AREA. COMPLY WITH WASHER AND DRYER MANUFACTURER'S INSTALLATION REQUIREMENTS. COORDINATE WITH ARCHITECT PRIOR TO INSTALLATION. PROVIDE (2) GRILLES - ONE GRILLE ON EITHER SIDE OF WALL.
5. SEE ENVIRONMENTAL EXHAUST WALL TERMINATION DETAIL ON SHEET M0601. TERMINATIONS MUST BE 3'-0" MINIMUM FROM ANY BUILDING OPENINGS. SEE ARCHITECTURAL ELEVATIONS FOR TERMINATION LOCATION.
6. MOUNT BATHROOM EXHAUST FAN IN CEILING & ROUTE 4"Ø THRU OPEN WEB TRUSSES. WALL SWITCH CONTROL. COORDINATE WIRING WITH E.C.
7. ROUTE EXHAUST/DRYER UP INTO ATTIC SPACE, ELBOW NORTH AND TERMINATE IN WALL. SEE SHEET M0161 FOR CONTINUATION.
8. ROUTE EXHAUST/DRYER UP IN CHASE ABOVE, ELBOW AND TERMINATE IN WALL. SEE SHEET M0161 FOR CONTINUATION.
9. GROUND LEVEL UNIT ONLY: DO NOT INSTALL PTHP DUE TO GRADE/SITE RESTRICTIONS. INSTALL ELECTRIC BASEBOARD AS SHOWN AND USE T'STAT LOCATION SHOWN FOR MAIN LIVING AREA.

RESIDENTIAL UNIT VENTILATION CALCULATION (FOR BUILDINGS OVER 3 STORIES)

UNIT TYPE	UNIT AREA (SF)	UNIT BEDRM QTY	CEILING HEIGHT (FT)	VENTILATION RATE (CFM) ASHRAE 62.2	IMC 0.35 ACH	IMC 15 CFM/P	VF-1 QTY PER UNIT	VF-1 RUN TIME PER FAN (MIN/HR)
1A	944	2	9.00	51	50	45	1	39
1B	898	2	9.00	50	48	45	1	38
2A	559	1	9.00	32	30	30	1	24
2B	560	1	9.00	32	30	30	1	24
3A	403	1	9.00	28	22	30	1	23
3B	403	1	9.00	28	22	30	1	23
4	364	1	9.00	26	20	30	1	23
5	380	1	9.00	27	20	30	1	23
6	331	1	9.00	25	18	30	1	23
7	532	1	9.00	31	28	30	1	24
8A	607	1	9.00	34	32	30	1	26
8B	609	1	9.00	34	32	30	1	26
9	297	1	9.00	24	16	30	1	23
10	746	2	9.00	45	40	45	1	34
11A	1007	2	9.00	53	53	45	1	40
11B	940	2	9.00	51	50	45	1	39
11C	847	2	9.00	48	45	45	1	36
12A	586	1	9.00	33	31	30	1	25
12B	586	1	9.00	33	31	30	1	25
13	415	1	9.00	28	22	30	1	23
14	494	1	9.00	30	26	30	1	23

NOTES:
1. BASED ON VF-1 AIRFLOW RATE OF 80 CFM
2. ASHRAE CALCULATION BASED ON ASHRAE 62.2-2013 EQUATION BELOW.
VENTILATION RATE = 0.03 X AREA + 7.5(BEDROOMS +1)

PLUMBING GENERAL NOTES - UNITS

A. WATER, SEWER, GAS AND ELECTRICAL CONDUITS MUST FIT WITHIN WALLS. CONFLICTS WITH OTHER TRADES MUST BE COORDINATED OR WORK WILL BE REDONE.

B. COORDINATE ALL EQUIPMENT LOCATIONS, PIPE ROUTING, AND EXACT LOCATIONS WITH LIGHTS, HVAC, STRUCTURE, AND ALL OTHER TRADES PRIOR TO BEGINNING WORK.

C. REFER TO SCHEDULES, DIAGRAMS, AND ISOMETRIC DIAGRAMS FOR ALL PIPE SIZES NOT SHOWN ON PLANS.

D. COORDIANATE EXACT FIXTURE ROUGH-IN LOCATIONS , DIMENSIONS AND ELEVATIONS WITH ARCHITECTURAL DRAWINGS.

E. ACCESIBLE AND ADAPTABLE UNITS SHALL HAVE ADA FIXTURES AND MEET ALL APPLICABLE ADA STANDARDS AND REQUIREMENTS. COORDINATE FIXTURE SELECTION AND ROUGH-IN LOCATIONS WITH ARCHITECT / OWNER / GC.

PLUMBING DETAIL NOTES - UNITS

NOTE: THESE NOTES ARE TYPICAL FOR ALL UNIT PLANS, NOT ALL NOTES MAY APPEAR ON EVERY UNIT TYPE.

1. ROUTE 1/2" DOMESTIC HOT WATER IN CASEWORK FROM SINK TO DISHWASHER CONNECTION. PROVIDE DEDICATED ISOLATION VALVE WITH SHOCK ARRESTOR ON WATER SUPPLY. ROUTE WASTE PIPING FROM DISHWASHER TO 2" HD IN CASEWORK, CONNECT VIA 1" AIRGAP AND SECURE DISHWASHER DISCHARGE HOSE TO HUB DRAIN.
2. WALLBOX FOR REFRIGERATOR ICE MAKER CONNECTION, PROVIDE WITH SHUTOFF VALVE AND SHOCK ARRESTOR. PROVIDE FIRE RATED ICE MAKER BOX WHERE LOCATED WITHIN FIRE RATED WALL, COORDINATE WITH ARCH. MAKE CONNECTION TO REFRIGERATOR PER MANUFACTURER'S INSTRUCTIONS.
3. NO PIPING SHALL BE ROUTED OVER ELECTRICAL PANEL, COORDINATE EXACT PIPE ROUTING IN FIELD TO AVOID ROUTING PIPING OVER PANEL.
4. USE PEX PIPING FOR CW/HW DISTRIBUTION IN APARTMENT. COORDINATE EXACT LOCATION OF PEX MANIFOLD INSIDE THE APARTMENT IN FIELD.
5. STACKED WASHER/DRYER TO HAVE TWO BOX SETUP WITH SEPARATE WALL BOX FOR SUPPLIES AND DRAIN. PROVIDE WATER HAMMER ARRESTORS ON SUPPLY VALVES, LOCATE DRAIN BOX IN ADJACENT WALL FROM SUPPLY BOX, FIELD COORDINATE EXACT LOCATION AND WASHER BOX REQUIREMENTS WITH GENERAL CONTRACTOR. COORDINATE WASHER BOX LOCATIONS WITH DRYER DUCT VENT (IN WALL STYLE). RE: DIAGRAM FOR ADDITIONAL INFORMATION.

PLUMBING FIXTURE PIPE SIZES

KEY	HW	CW	WASTE SIZE	VENT SIZE
HWC, WC	-	1/2"	3"	2"
L-1, L-2, L-3	1/2"	1/2"	2"	1-1/2"
KS-1, KS-2	1/2"	1/2"	2"	1-1/2"
BT	1/2"	1/2"	2"	1-1/2"
SH	1/2"	1/2"	2"	1-1/2"
SS	1/2"	1/2"	3"	2"
RB	-	1/2"	-	-
FHB	-	1/2"	-	-
WU	1/2"	1/2"	2"	1-1/2"
2" FD/S	-	-	2"	1-1/2"
3" FD/S	-	-	3"	2"
4" FD/S	-	-	4"	2"

ALL PIPE SIZES AS INDICATED EXCEPT WHERE NOTED.
FOR BACK TO BACK CONDITIONS, LARGEST DRAIN & VENT SIZE APPLIES.

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

OWNER
MAY REIGLER PROPERTIES
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PROJECT LOCATION
STEAMBOAT BASECAMP AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

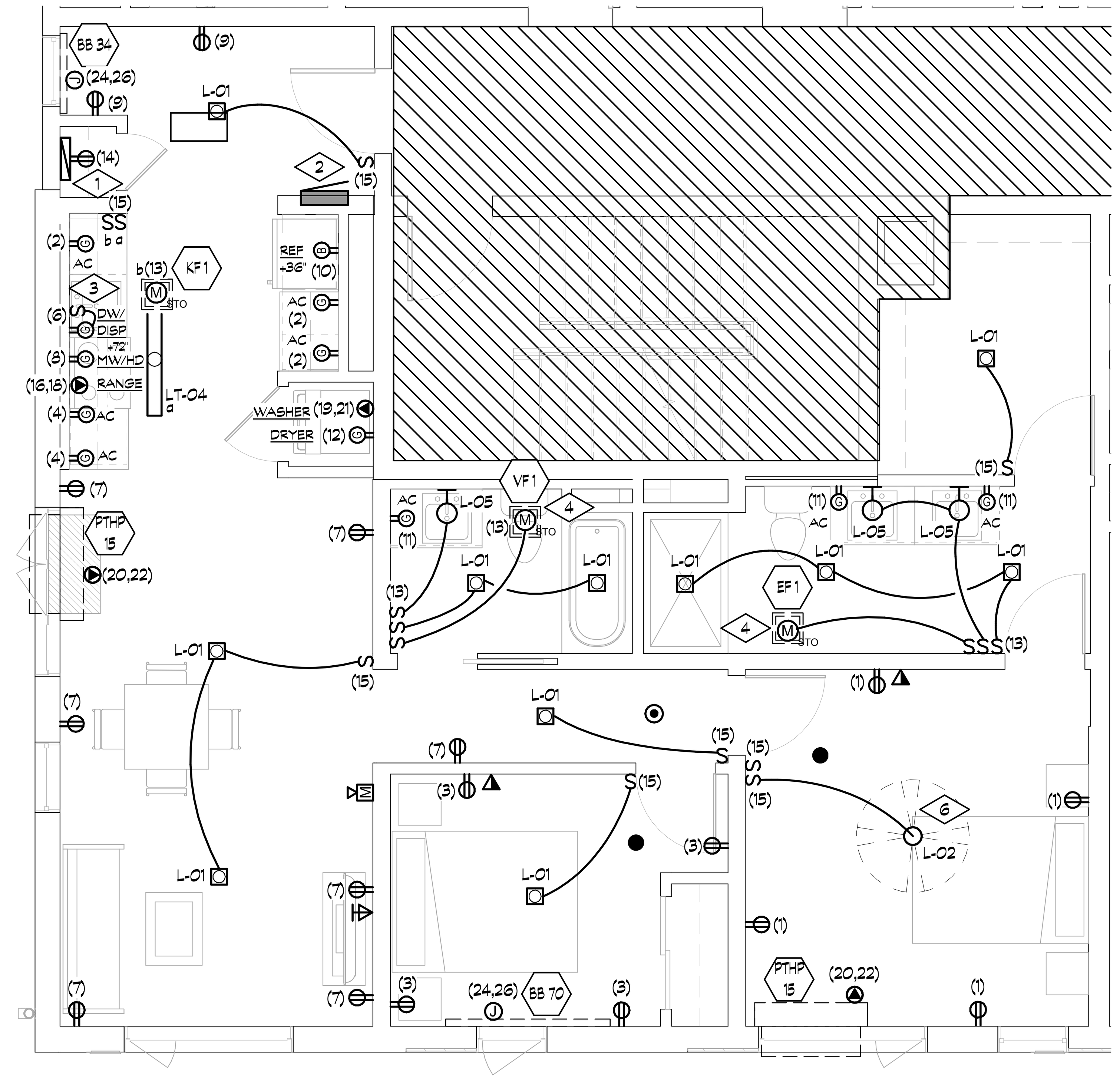
DRAWING TITLE
UNIT PLAN NOTES AND DETAILS

SEAL
COLORADO LICENSED PROFESSIONAL ENGINEER
MICHAEL DEAN VAIR
38983
03/13/2026

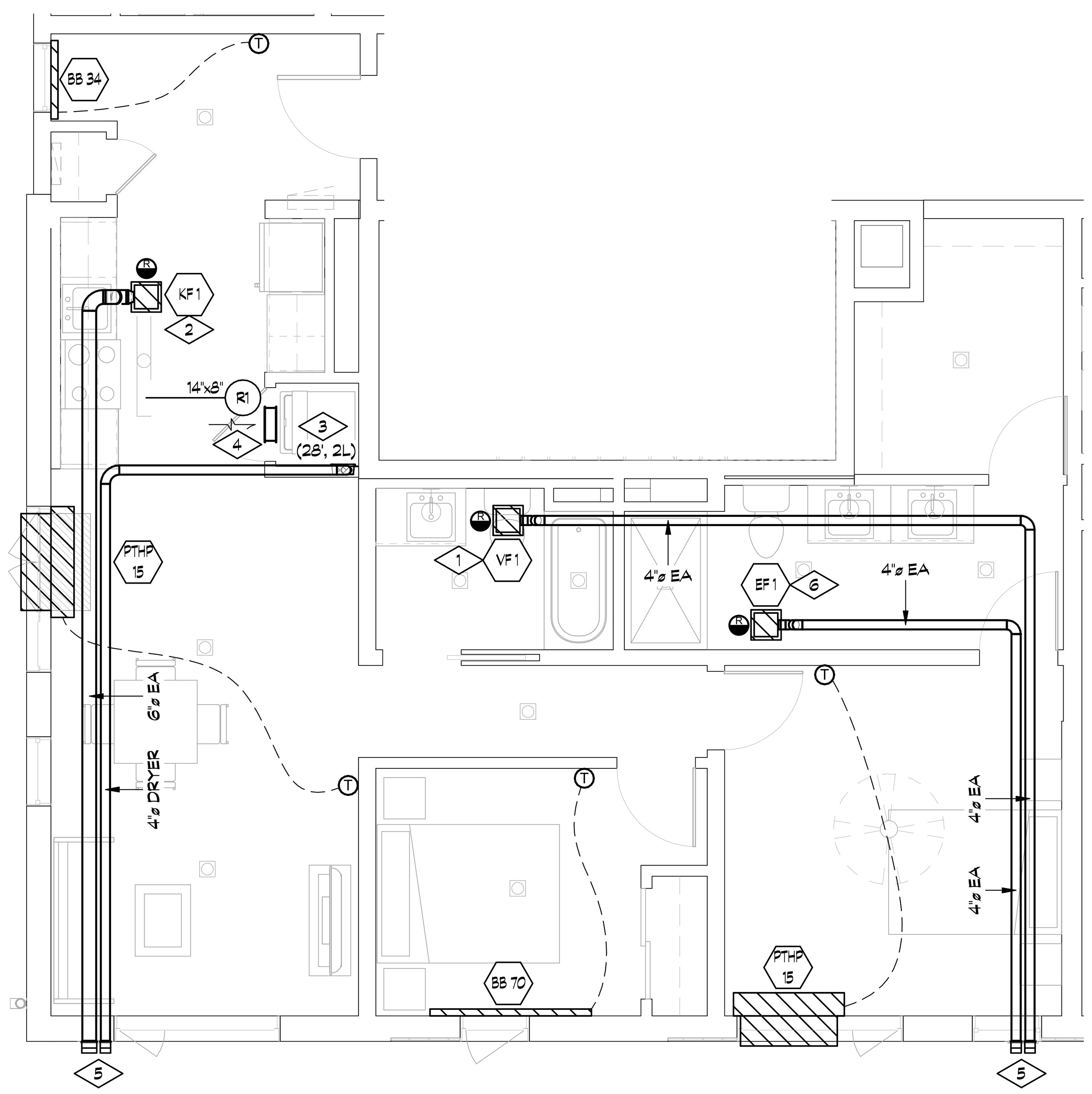
DATE: 03.13.2026
DRAWN BY: Author
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO:
MEP0400

3/13/2026 8:49:07 AM



3 ELECTRICAL PLAN - TYPE 1A
1/4" = 1'-0"



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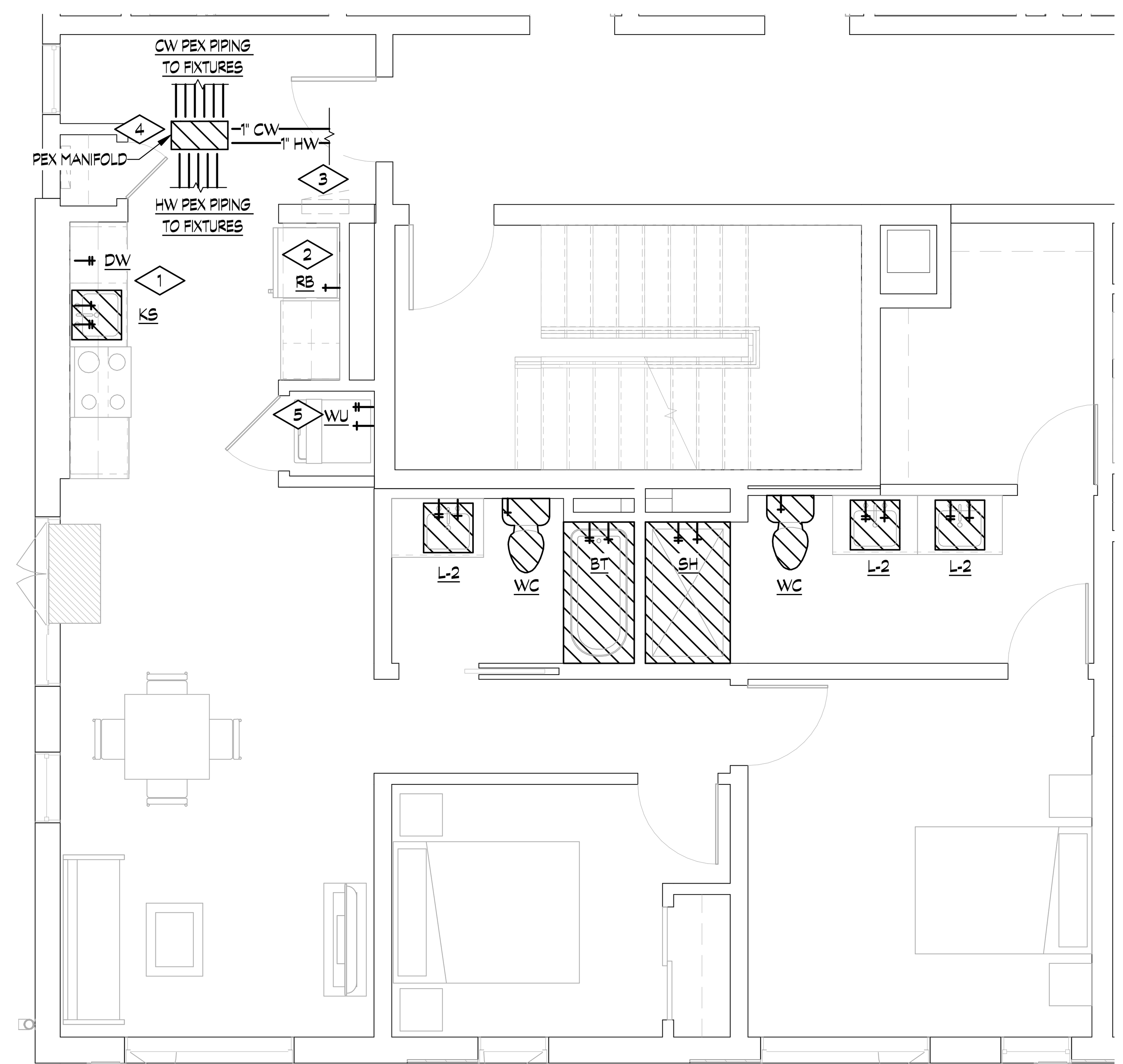

1 PLUMBING PLAN - TYPE 1A
1/4" = 1'-0"

3/13/2026 8:49:09 AM

APPROVAL STAMPS:

No.	Date	Description

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL

1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

MEP UNIT PLANS - TYPE 1A

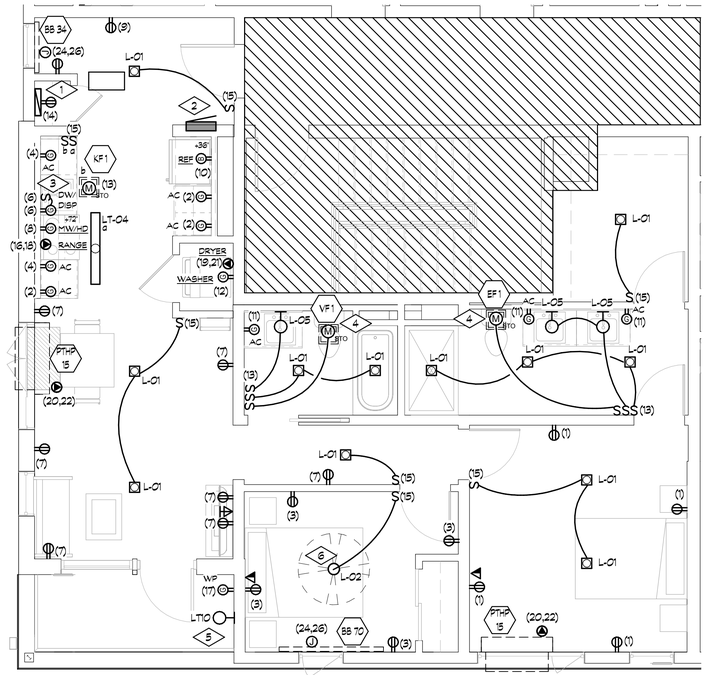
SEAL

COLORADO LICENSED PROFESSIONAL ENGINEER 38983 03/13/2026

DATE: 03.13.2026
DRAWN BY: BEC
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO:

MEP0401



3 ELECTRICAL PLAN - TYPE 1B
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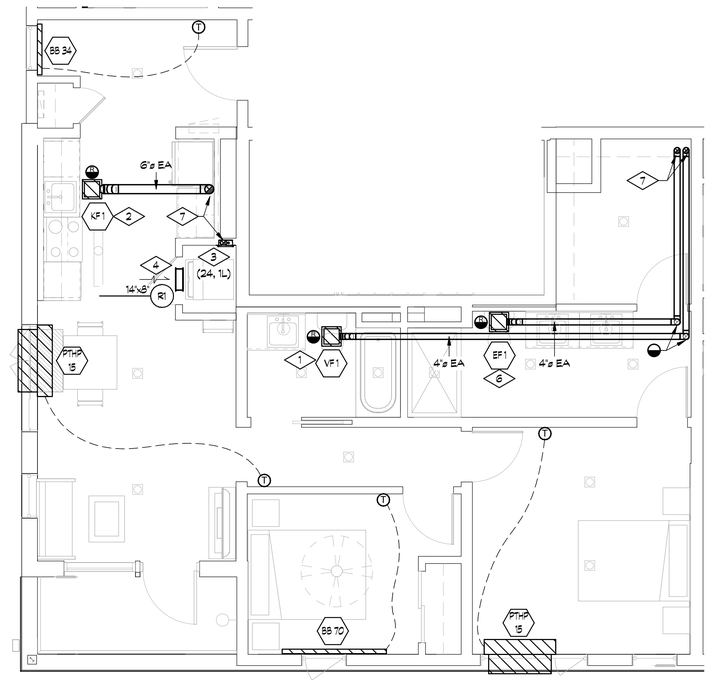

2 HVAC PLAN - TYPE 1B
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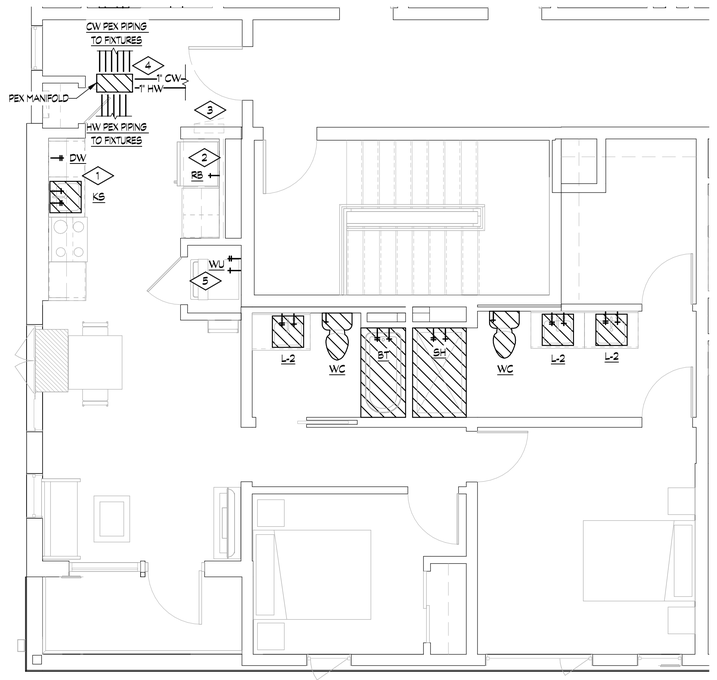

1 PLUMBING PLAN - TYPE 1B
1/4" = 1'-0"

3/13/2026 8:49:11 AM

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL

1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

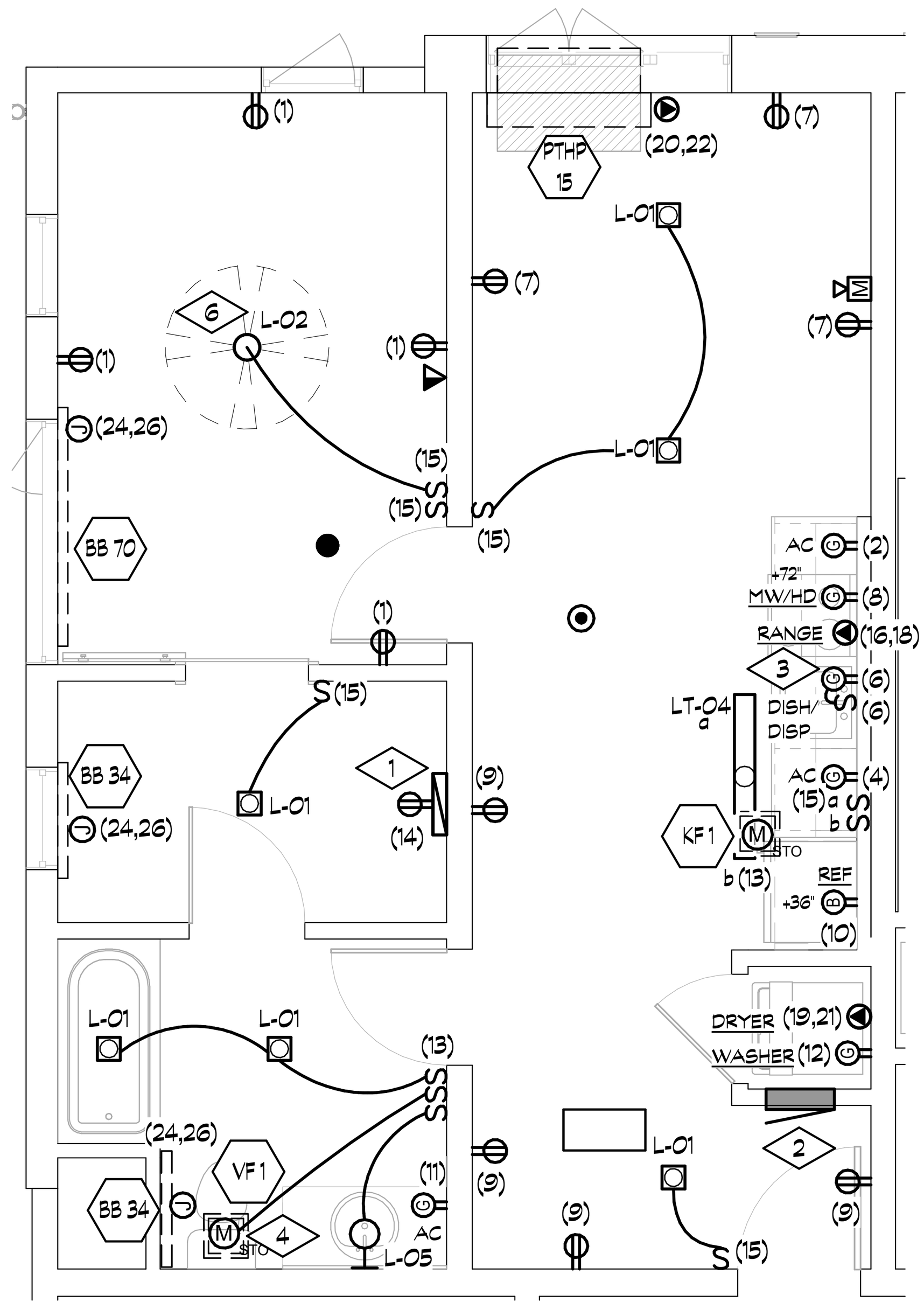
DRAWING TITLE

MEP UNIT PLANS - TYPE 1B

SEAL

DATE: 03.13.2026
DRAWN BY: BEC
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO:
MEP0402



6 ELECTRICAL PLAN - TYPE 2B
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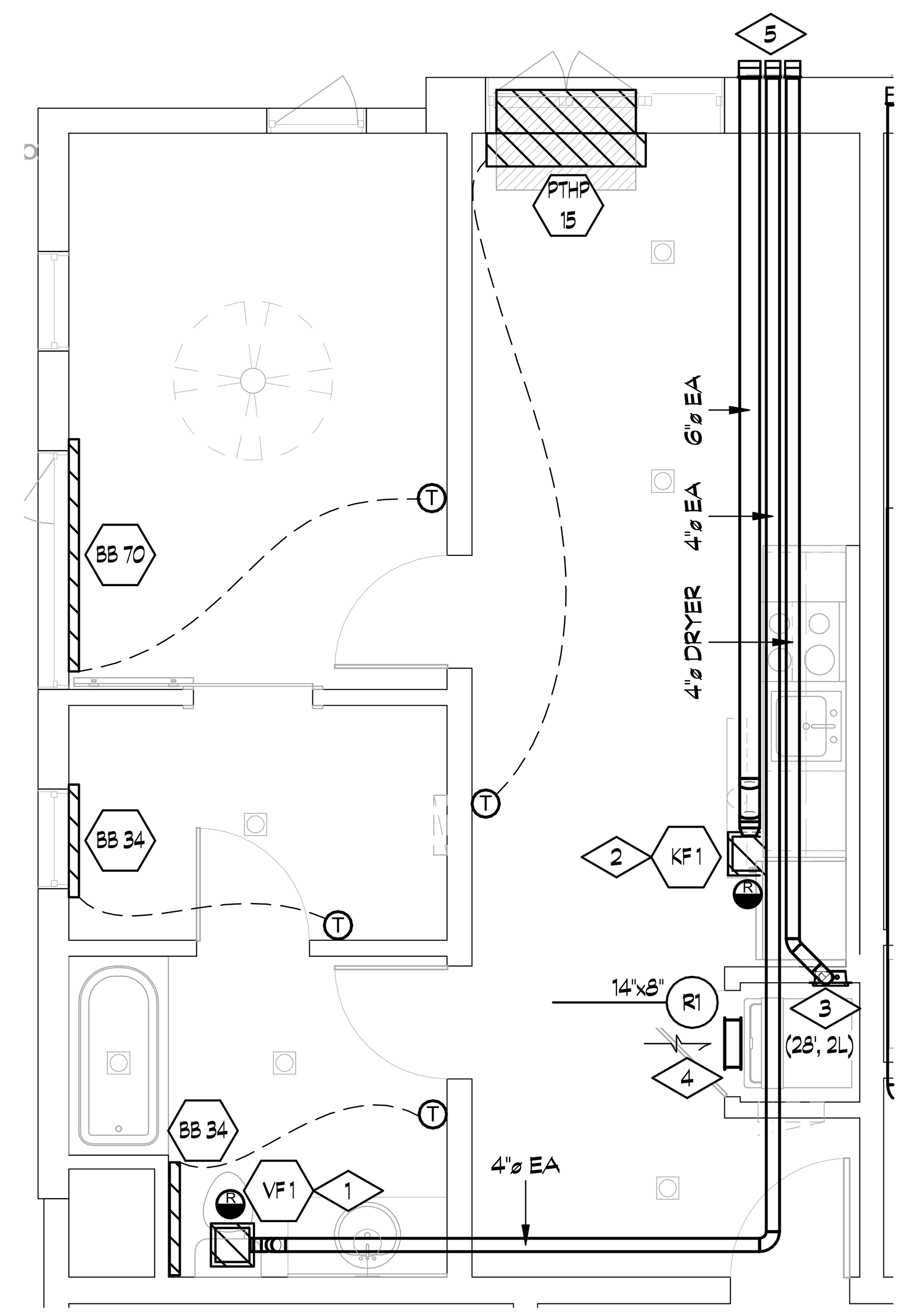
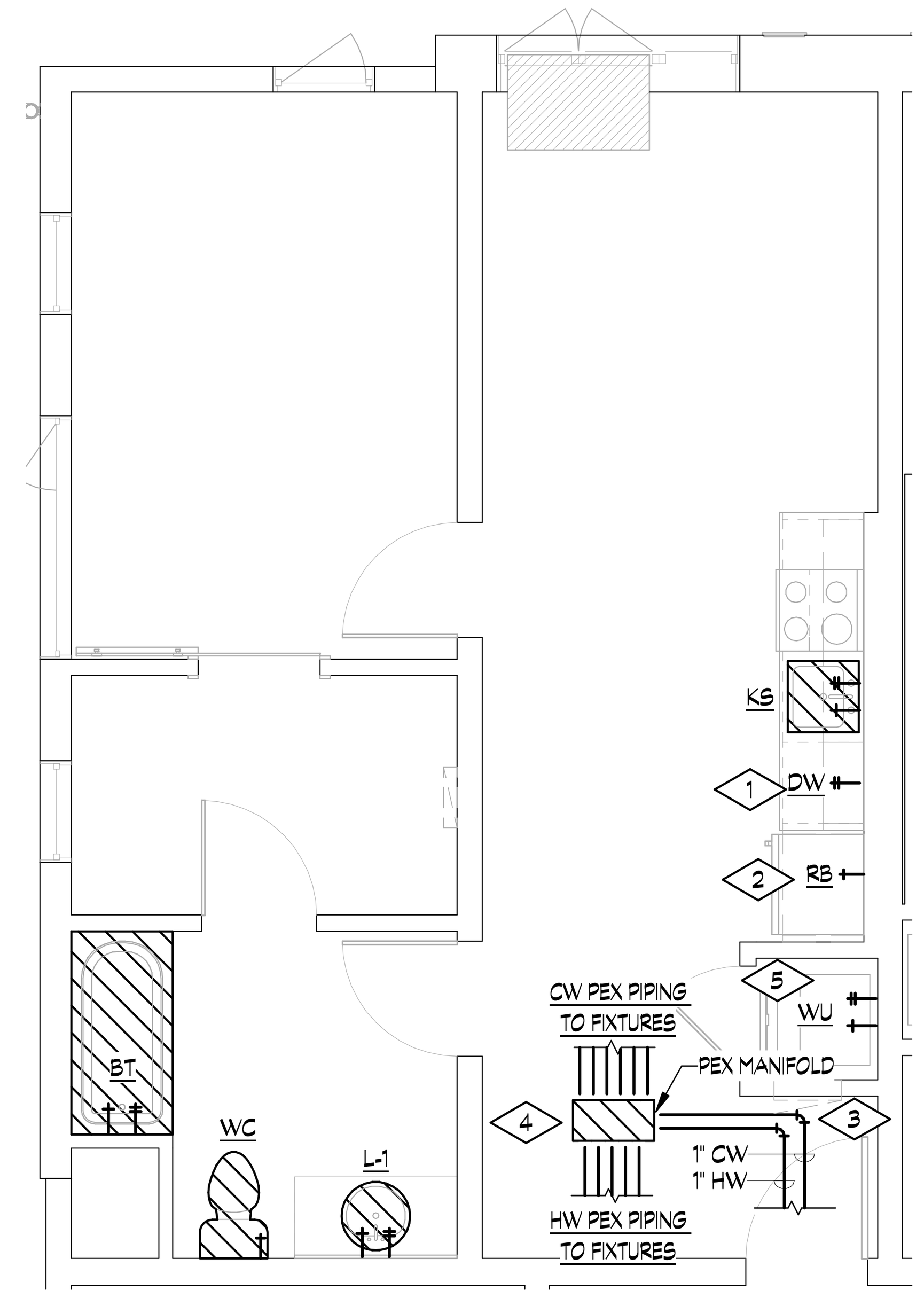
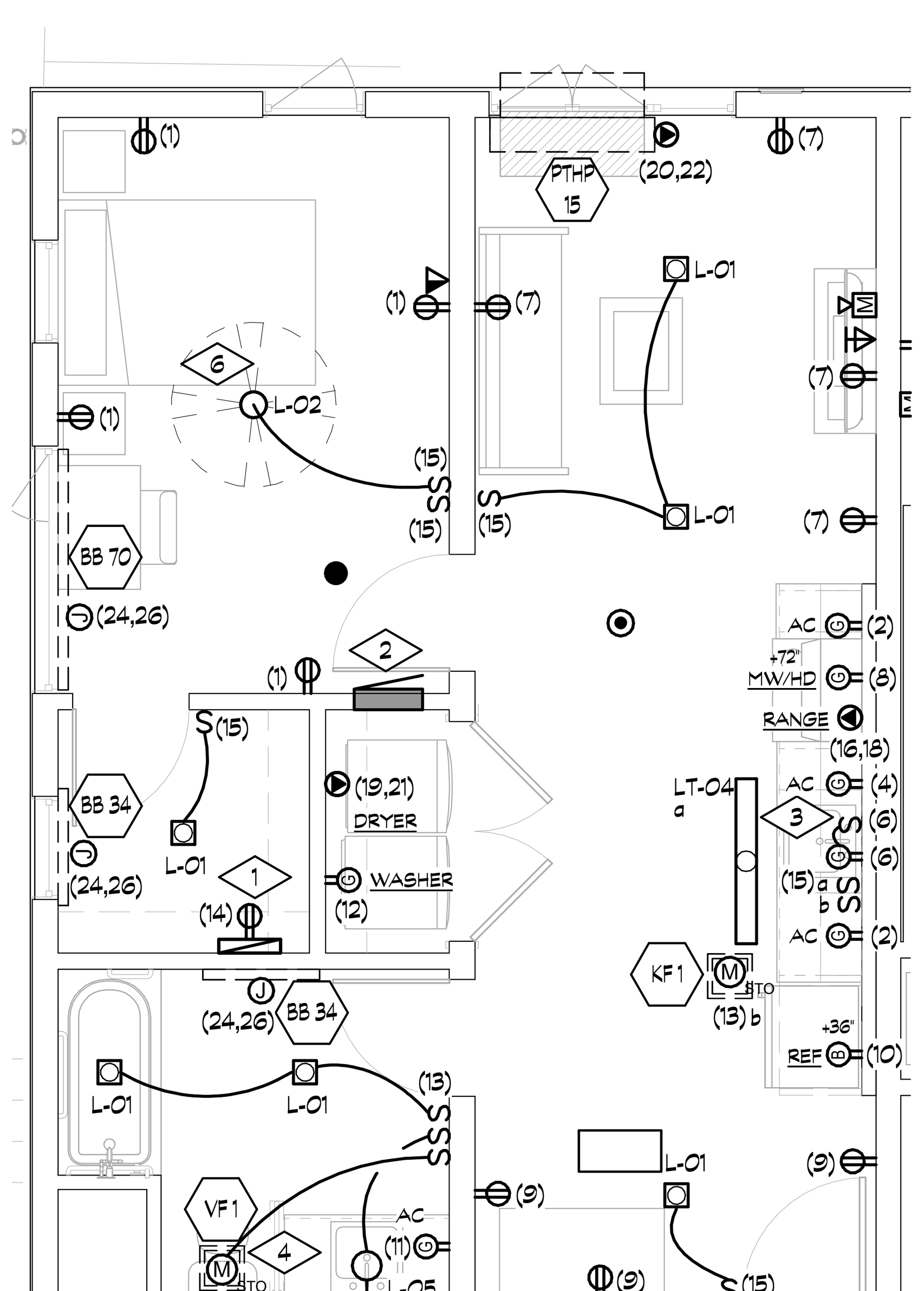


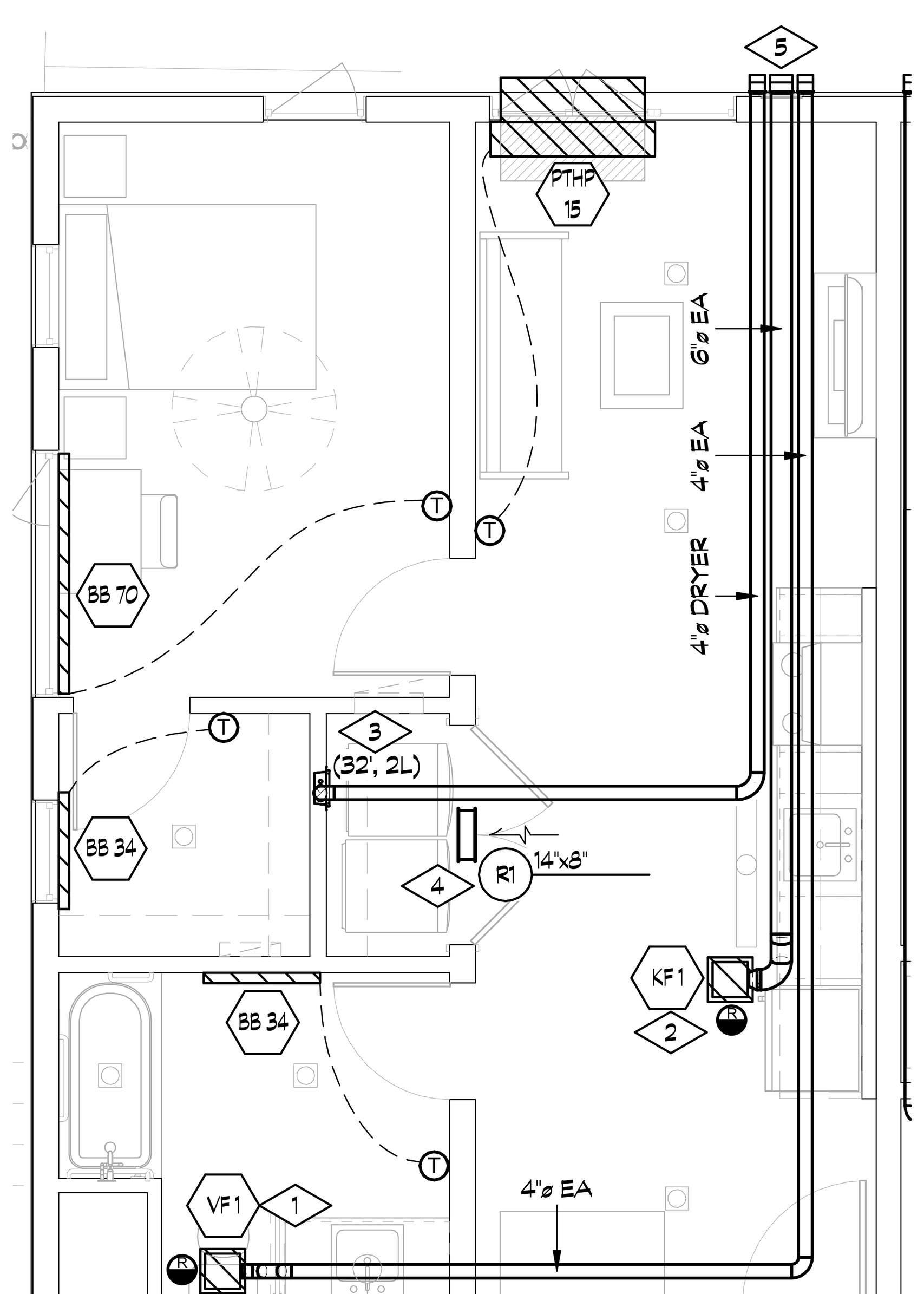
5 HVAC PLAN - TYPE 2B
1/4" = 1'-0"



4 PLUMBING PLAN - TYPE 2B
1/4" = 1'-0"



3 ELECTRICAL PLAN - TYPE 2A (ADA)
1/4" = 1'-0"



2 HVAC PLAN - TYPE 2A (ADA)
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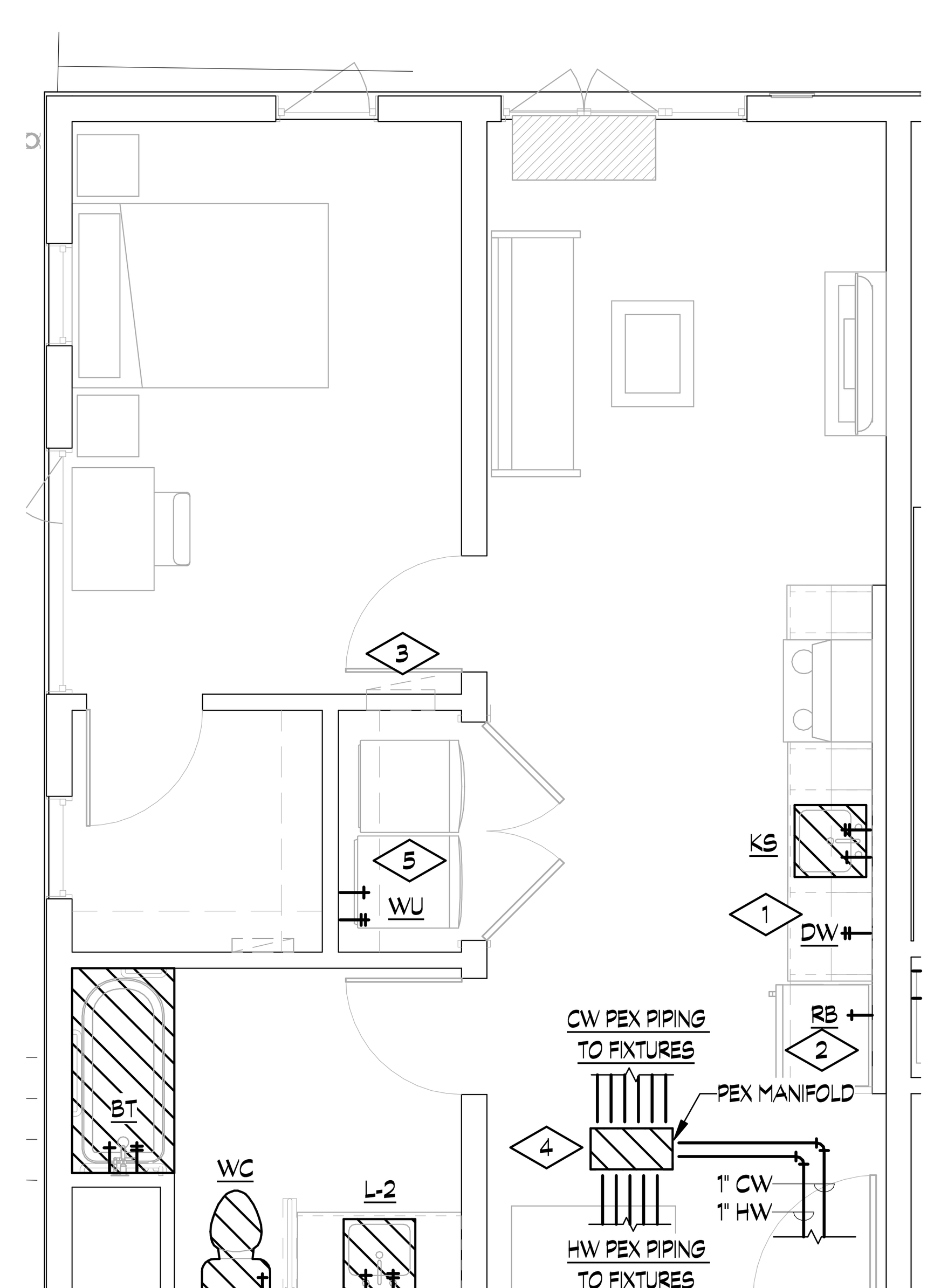

1 PLUMBING PLAN - TYPE 2A (ADA)
1/4" = 1'-0"

3/13/2026 8:49:15 AM

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

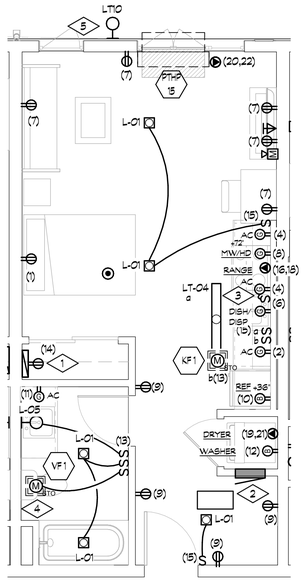
MEP UNIT PLANS - TYPE 2A (ADA) & 2B

SEAL

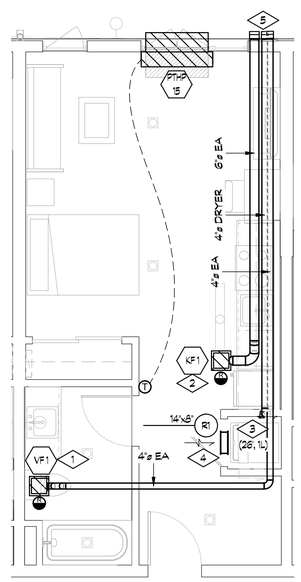
COLORADO LICENSED PROFESSIONAL ENGINEER 38983 03/13/2026

DATE: 03.13.2026
DRAWN BY: BEC
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO:
MEP0403



6 ELECTRICAL PLAN - TYPE 3B
1/4" = 1'-0"



5 HVAC PLAN - TYPE 3B
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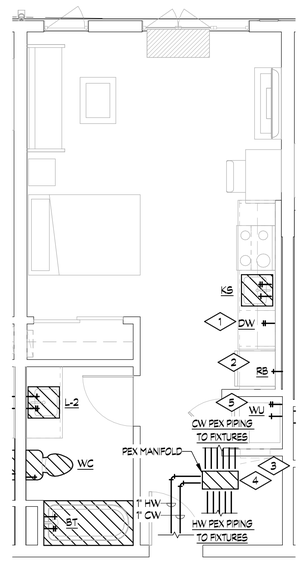

4 PLUMBING PLAN - TYPE 3B
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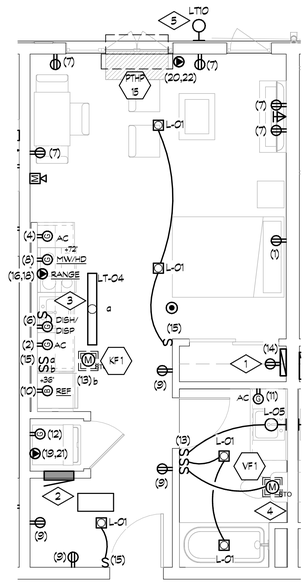
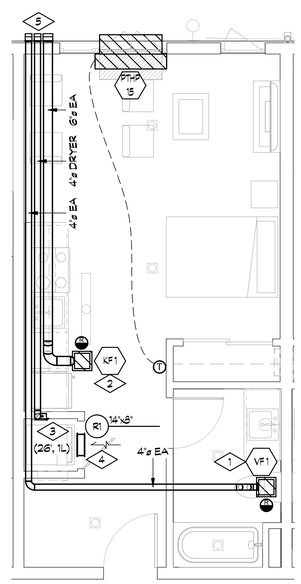
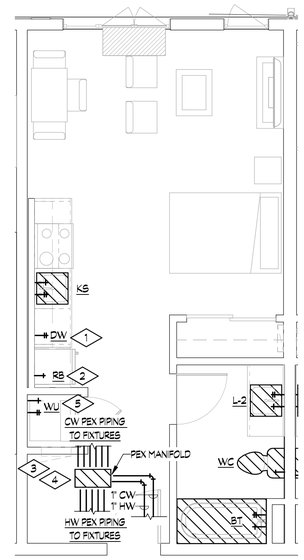


3 ELECTRICAL PLAN - TYPE 3A
1/4" = 1'-0"



2 HVAC PLAN - TYPE 3A
1/4" = 1'-0"



1 PLUMBING PLAN - TYPE 3A
1/4" = 1'-0"

3/13/2026 8:49:20 AM

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

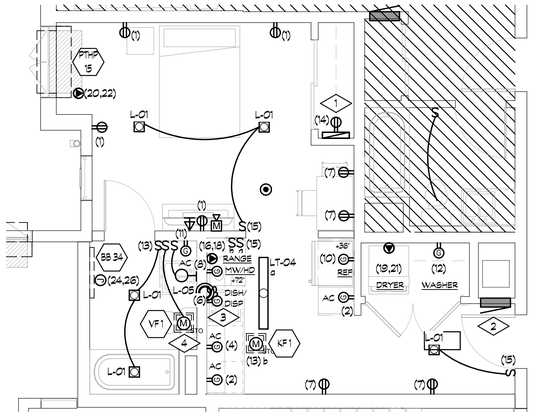
MEP UNIT PLANS - TYPE 3A & 3B

SEAL

COLORADO LICENSED PROFESSIONAL ENGINEER
38983
03/13/2026

DATE: 03.13.2026
DRAWN BY: BEC
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO:
MEP0404



6 ELECTRICAL PLAN - TYPE 5
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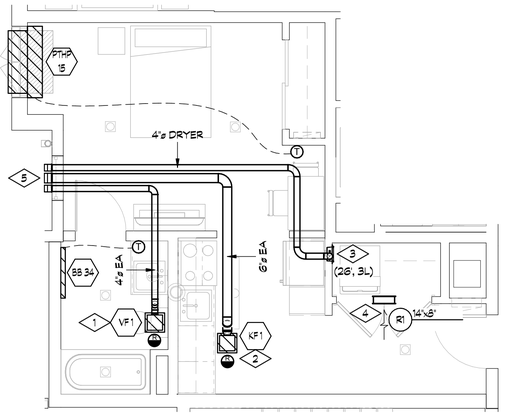
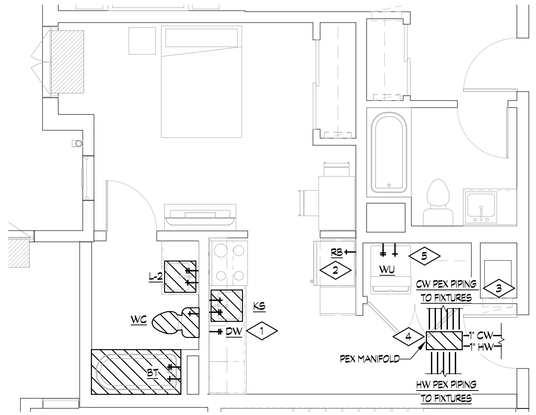
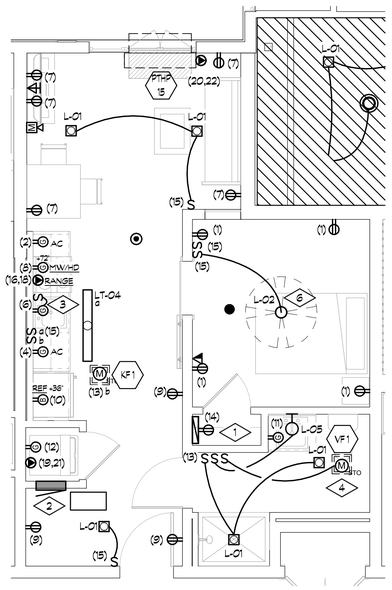


5 HVAC PLAN - TYPE 5
1/4" = 1'-0"



4 PLUMBING PLAN - TYPE 5
1/4" = 1'-0"



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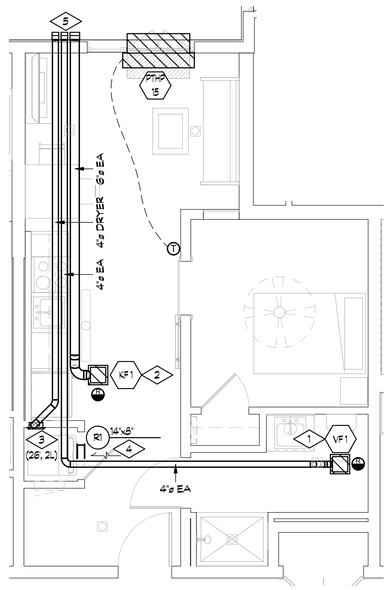

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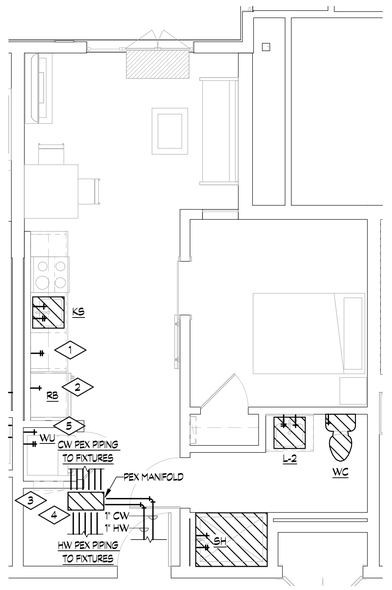

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1/4" = 1'-0"

3/13/2026 8:49:25 AM

APPROVAL STAMPS:

No.	Date	Description

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INTERIOR DESIGNER:

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

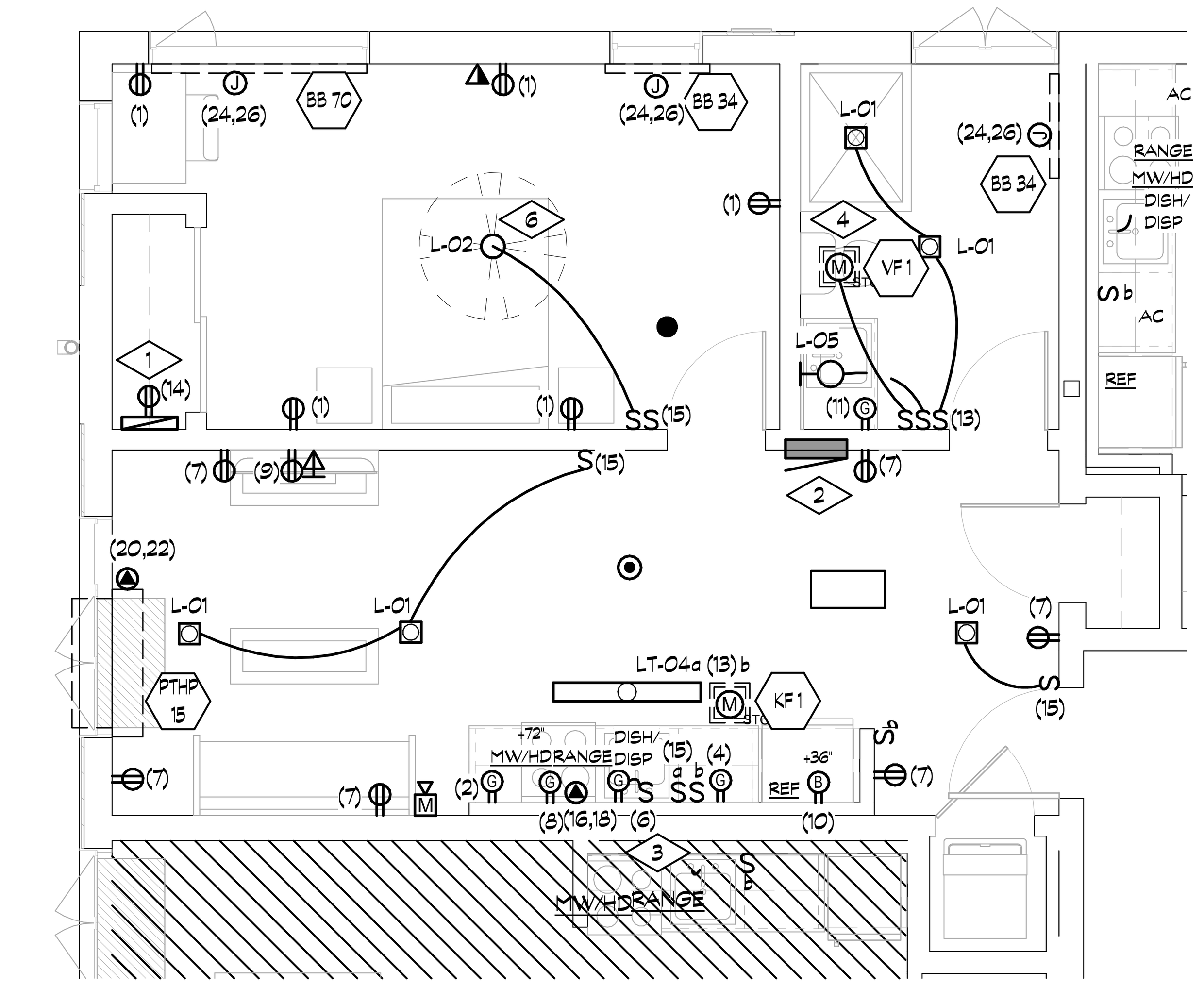
MEP UNIT PLANS - TYPE 4 & 5

SEAL

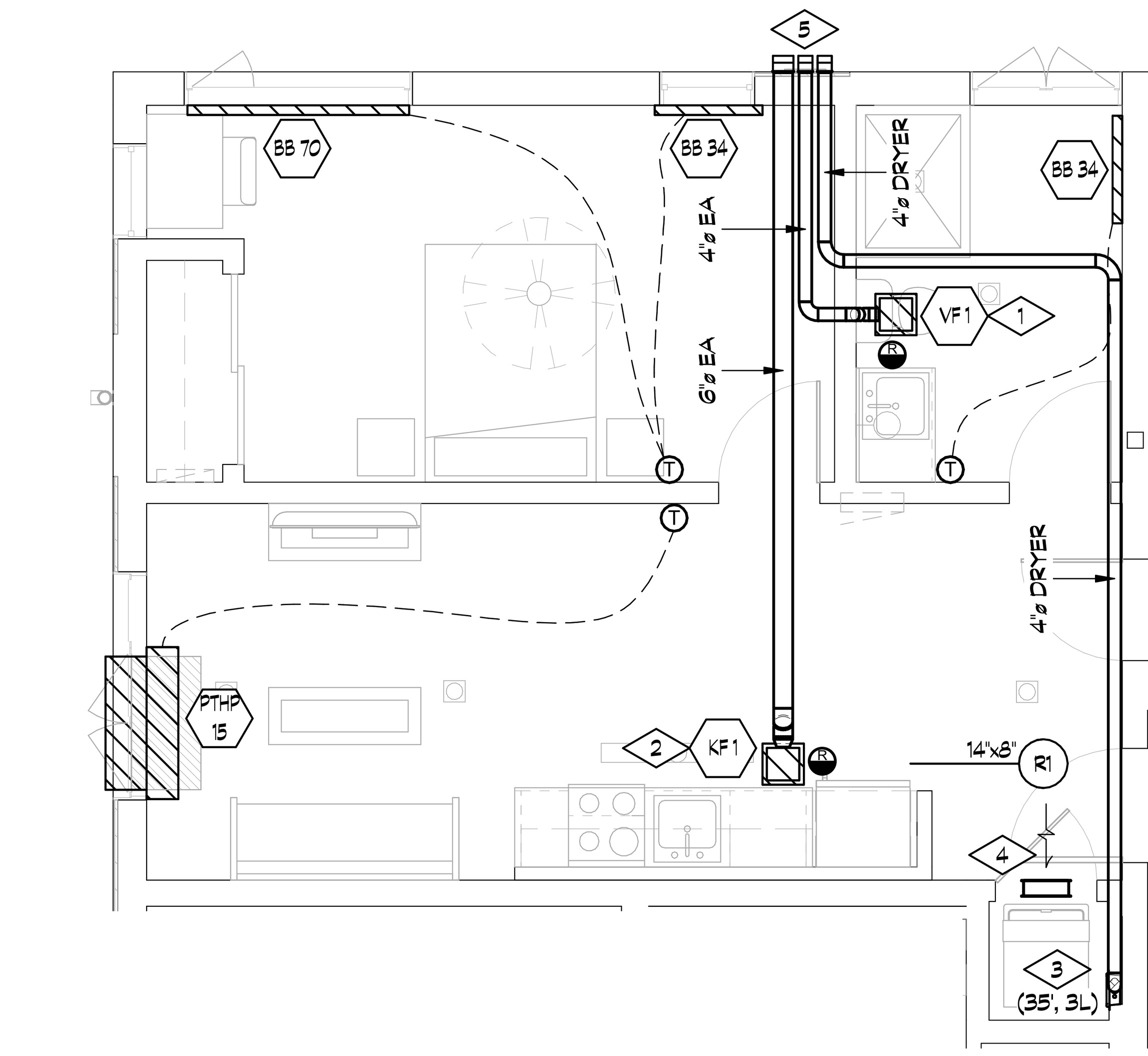
COLORADO LICENSED PROFESSIONAL ENGINEER 38983 03/13/2026

DATE: 03.13.2026
DRAWN BY: BEC
CHECKED BY: MV
PROJECT NO: 25135

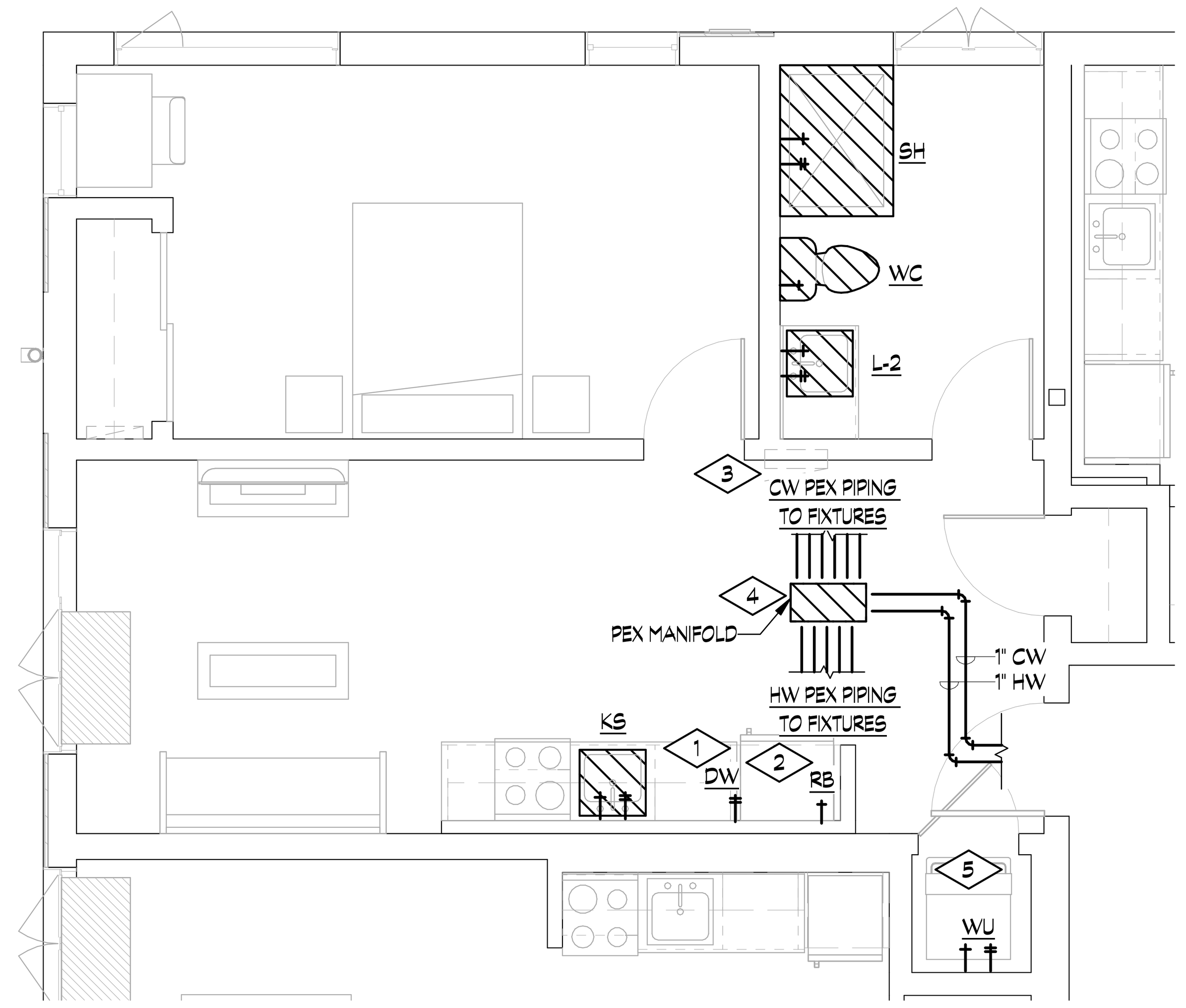
DRAWING NO:
MEP0405



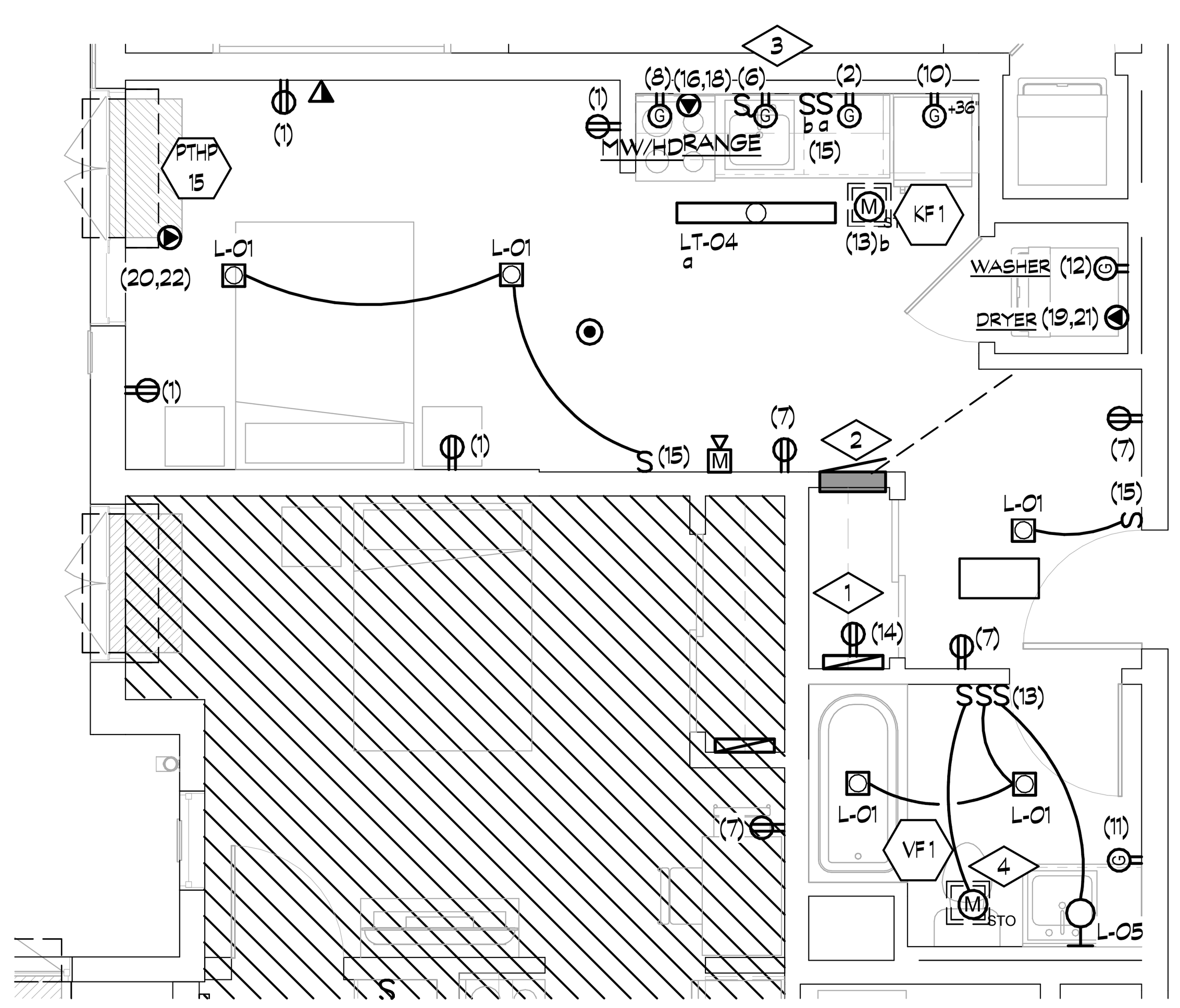
6 ELECTRICAL PLAN - TYPE 7
1/4" = 1'-0"



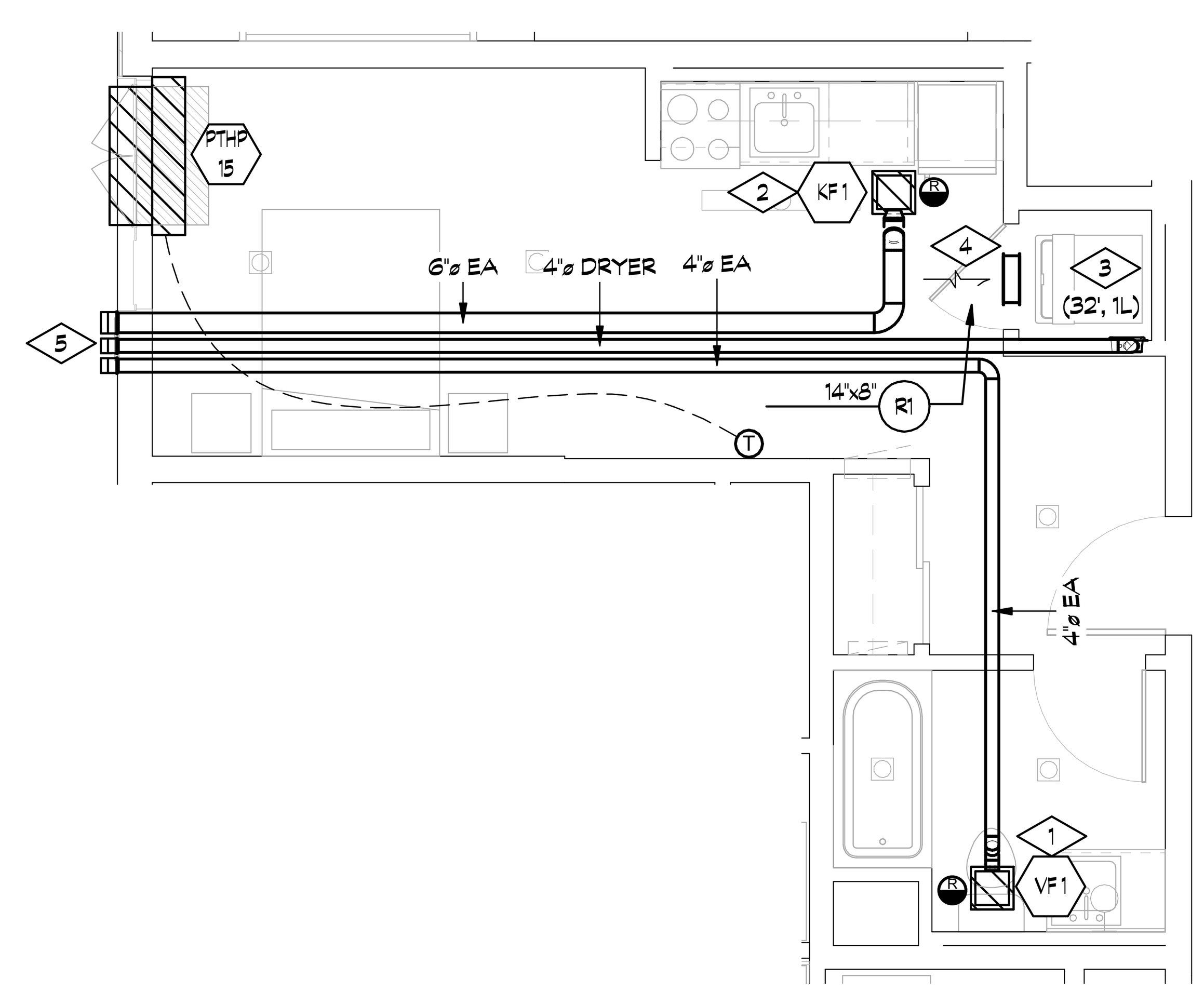
5 HVAC PLAN - TYPE 7
1/4" = 1'-0"



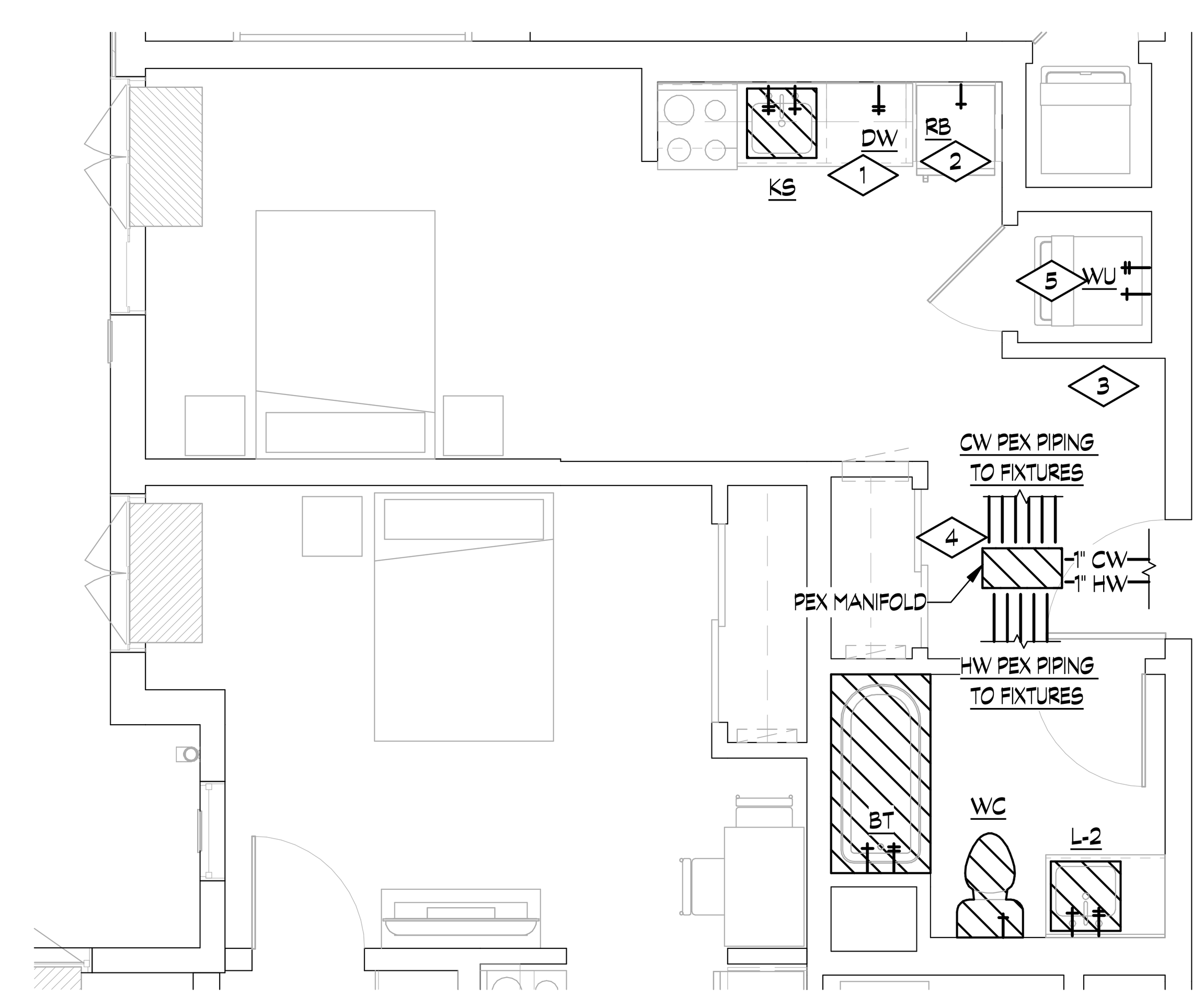
4 PLUMBING PLAN - TYPE 7
1/4" = 1'-0"



3 ELECTRICAL PLAN - TYPE 6
1/4" = 1'-0"



2 HVAC PLAN - TYPE 6
1/4" = 1'-0"



1 PLUMBING PLAN - TYPE 6
1/4" = 1'-0"

3/13/2026 8:49:29 AM

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

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INTERIOR DESIGNER:

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

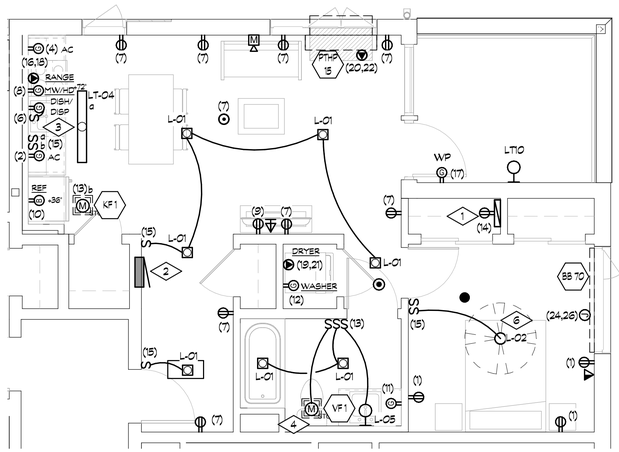
MEP UNIT PLANS - TYPE 6 & 7

SEAL

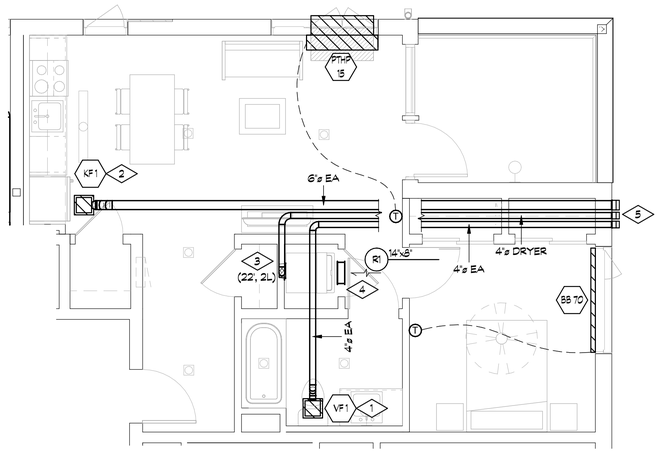
COLORADO LICENSED PROFESSIONAL ENGINEER 38983 03/13/2026

DATE: 03.13.2026
DRAWN BY: BEC
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO:
MEP0406

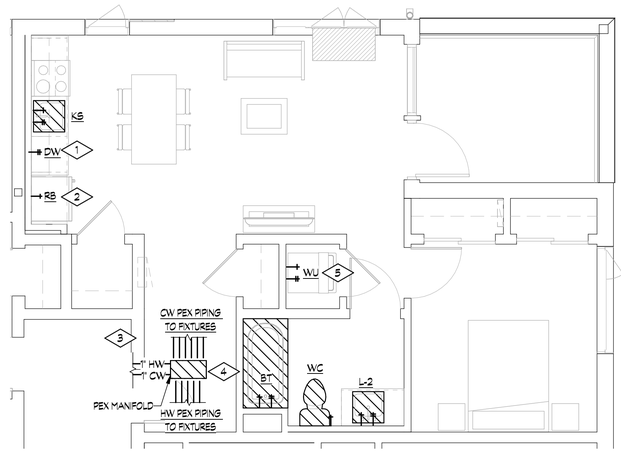


6 ELECTRICAL PLAN - TYPE 8B
1/4" = 1'-0"

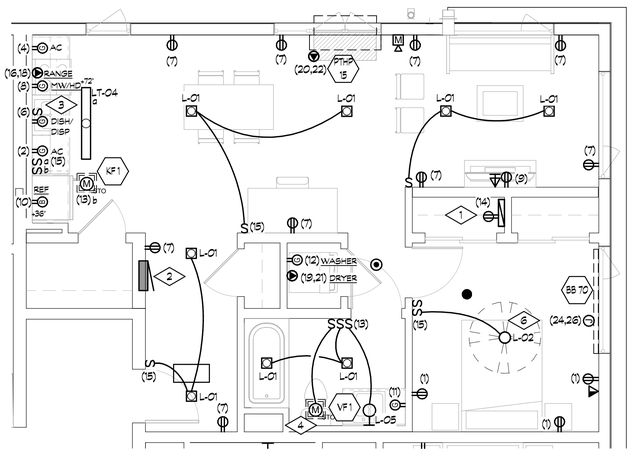


5 HVAC PLAN - TYPE 8B
1/4" = 1'-0"

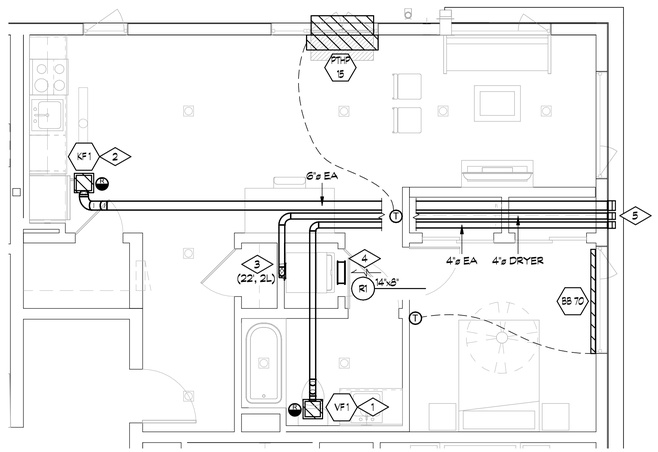
NOTE: SEE VIEW #1 ON SHEET MEP0413 FOR 5TH LEVEL PLAN



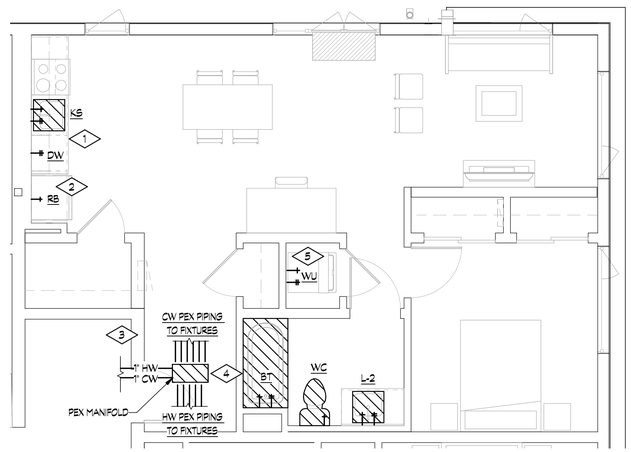
4 PLUMBING PLAN - TYPE 8B
1/4" = 1'-0"



3 ELECTRICAL PLAN - TYPE 8A
1/4" = 1'-0"



2 HVAC PLAN - TYPE 8A
1/4" = 1'-0"



1 PLUMBING PLAN - TYPE 8A
1/4" = 1'-0"

3/13/2026 8:49:34 AM

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

OWNER

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

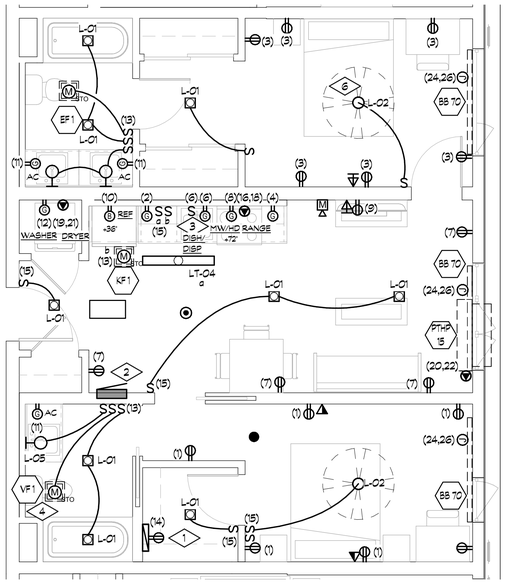
MEP UNIT PLANS - TYPE 8A & 8B

SEAL

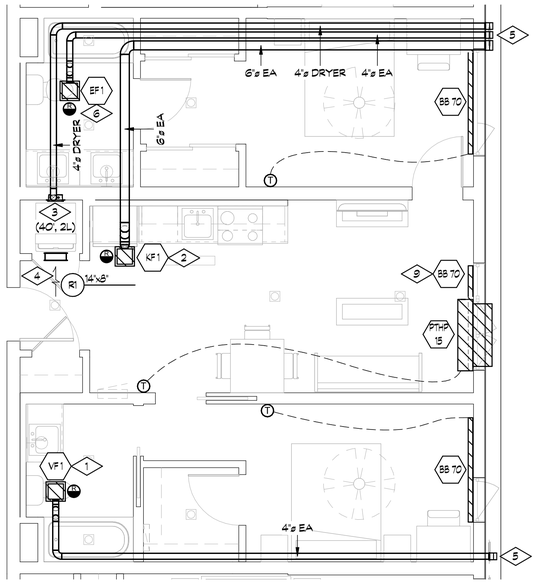
COLORADO LICENSED PROFESSIONAL ENGINEER 38983 03/13/2026

DATE: 03.13.2026
DRAWN BY: BEC
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO: **MEP0407**

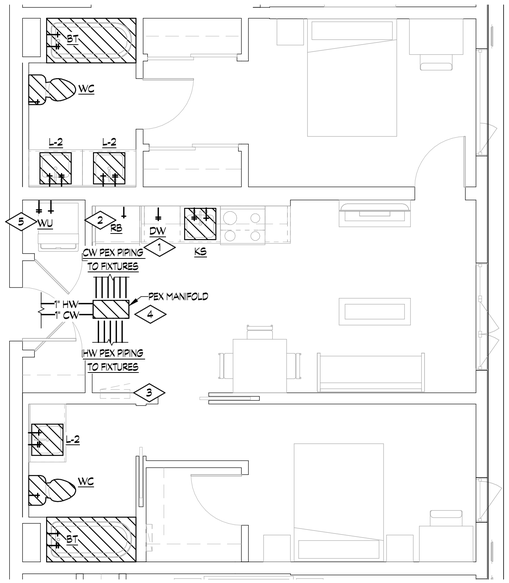


6 ELECTRICAL PLAN - TYPE 10
1/4" = 1'-0"

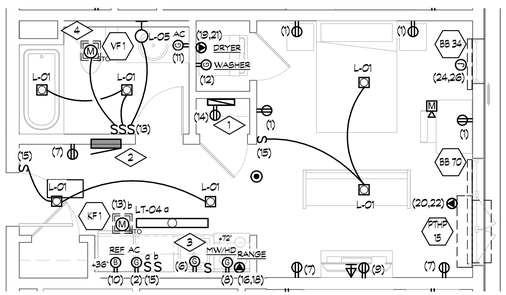


5 HVAC PLAN - TYPE 10
1/4" = 1'-0"

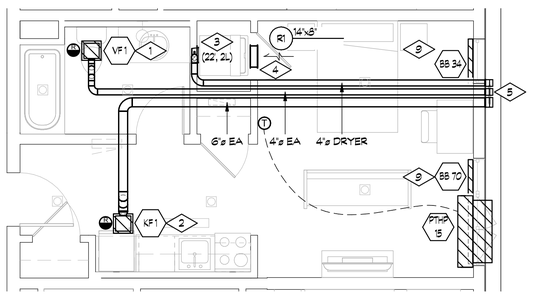
NOTE: SEE VIEW #3 ON SHEET MEP0413 FOR 5TH LEVEL PLAN



4 PLUMBING PLAN - TYPE 10
1/4" = 1'-0"

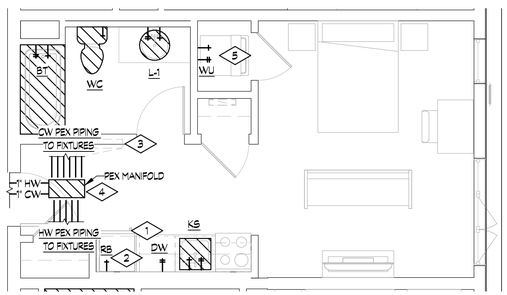


3 ELECTRICAL PLAN - TYPE 9
1/4" = 1'-0"



2 HVAC PLAN - TYPE 9
1/4" = 1'-0"

NOTE: SEE VIEW #2 ON SHEET MEP0413 FOR 5TH LEVEL PLAN



1 PLUMBING PLAN - TYPE 9
1/4" = 1'-0"

3/13/2026 8:49:39 AM

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

OWNER

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INTERIOR DESIGNER:

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

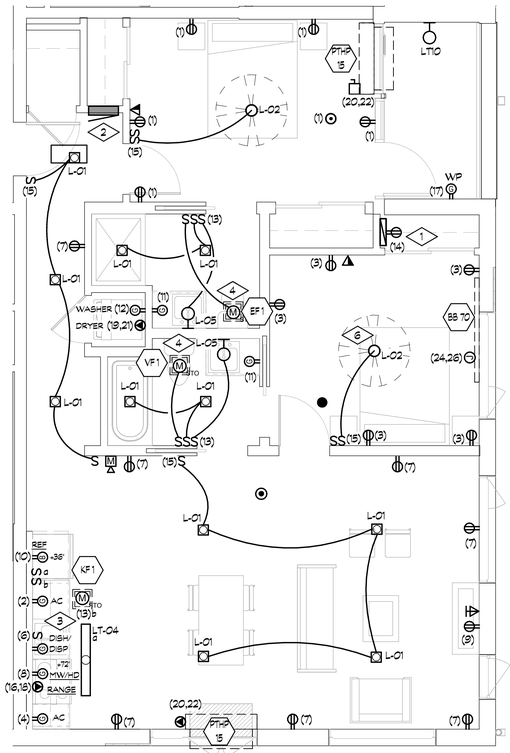
MEP UNIT PLANS - TYPE 9 & 10

SEAL

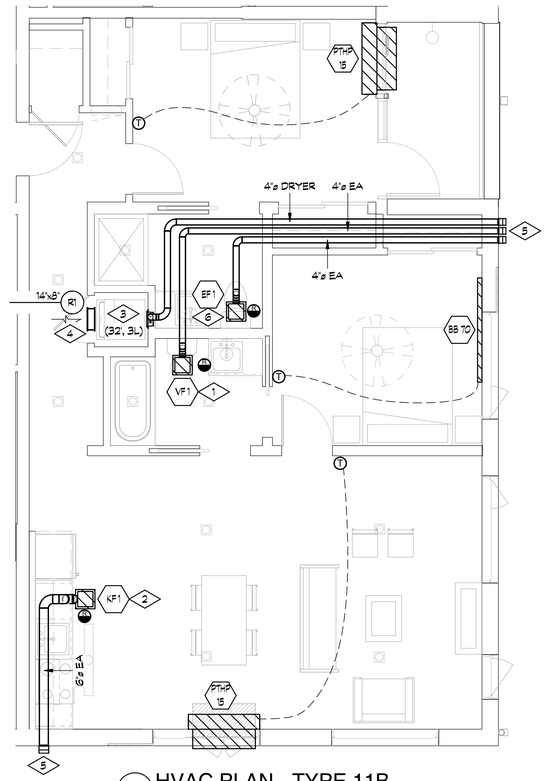
COLORADO LICENSED MECHANICAL ENGINEER 38983 03/13/2026 PROFESSIONAL ENGINEER

DATE: 03.13.2026
DRAWN BY: BEC
CHECKED BY: MV
PROJECT NO: 25135

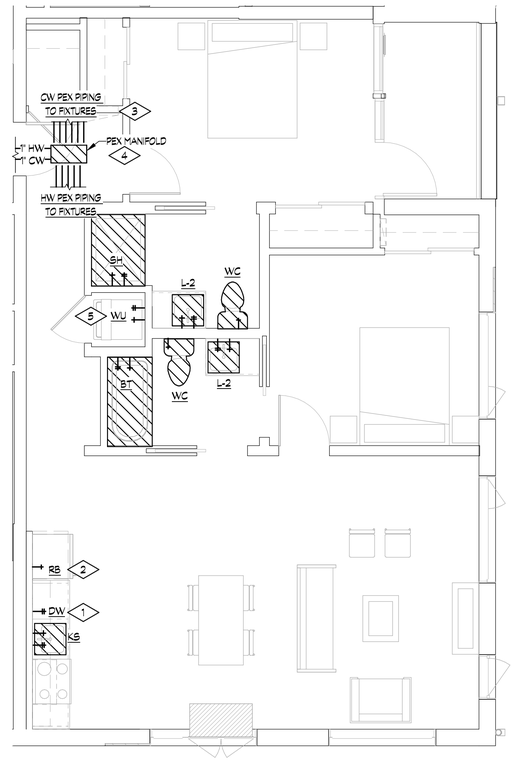
DRAWING NO:
MEP0408



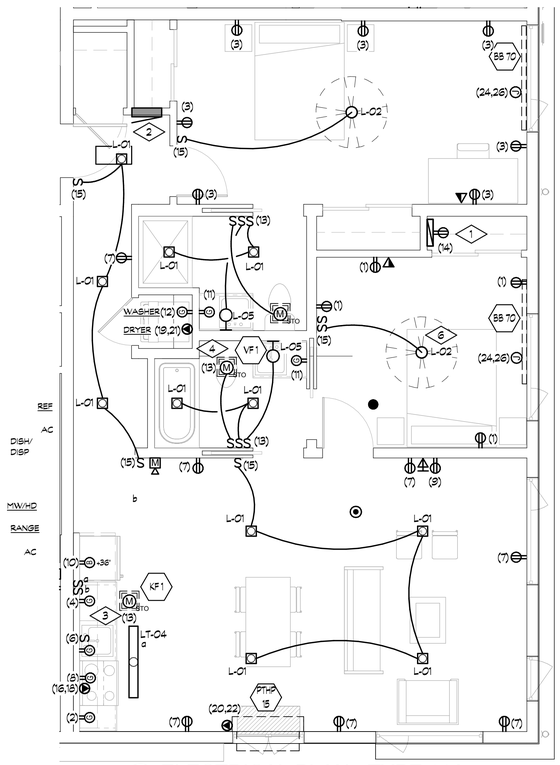
4 6 ELECTRICAL PLAN - TYPE 11B
1/4" = 1'-0"



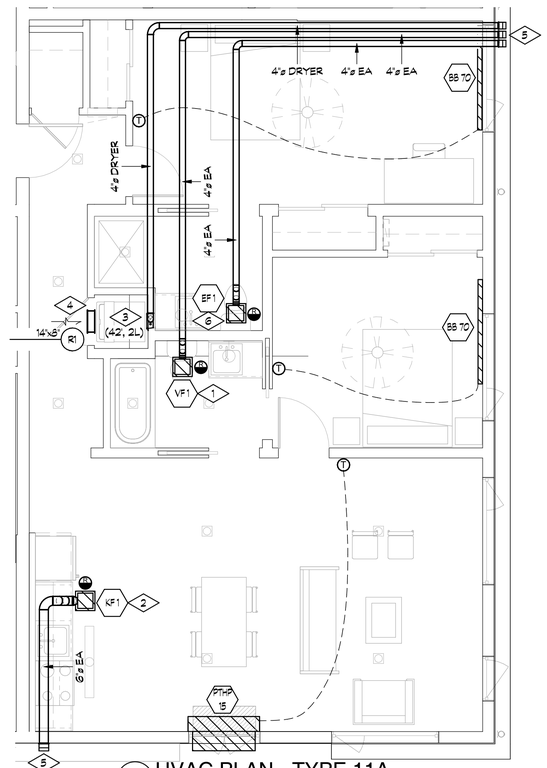
5 HVAC PLAN - TYPE 11B
1/4" = 1'-0"



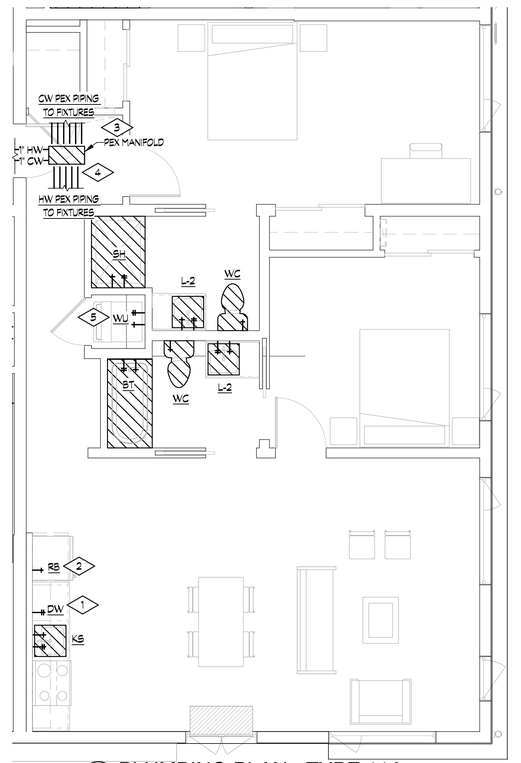
4 PLUMBING PLAN - TYPE 11B
1/4" = 1'-0"



3 ELECTRICAL PLAN - TYPE 11A
1/4" = 1'-0"



2 HVAC PLAN - TYPE 11A
1/4" = 1'-0"



1 PLUMBING PLAN - TYPE 11A
1/4" = 1'-0"

3/13/2026 8:49:43 AM

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

OWNER

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

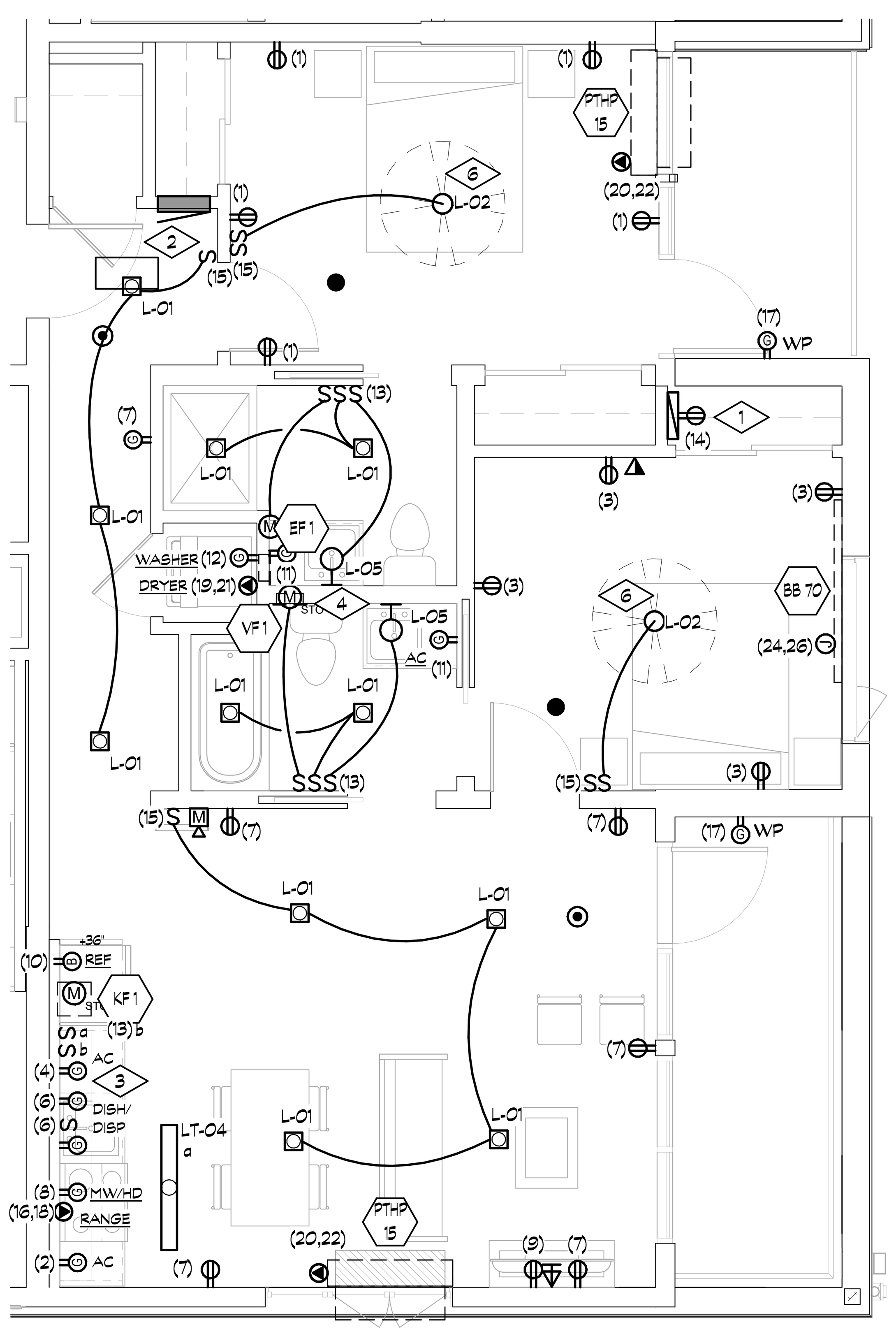
MEP UNIT PLANS - TYPE 11A & 11B

SEAL

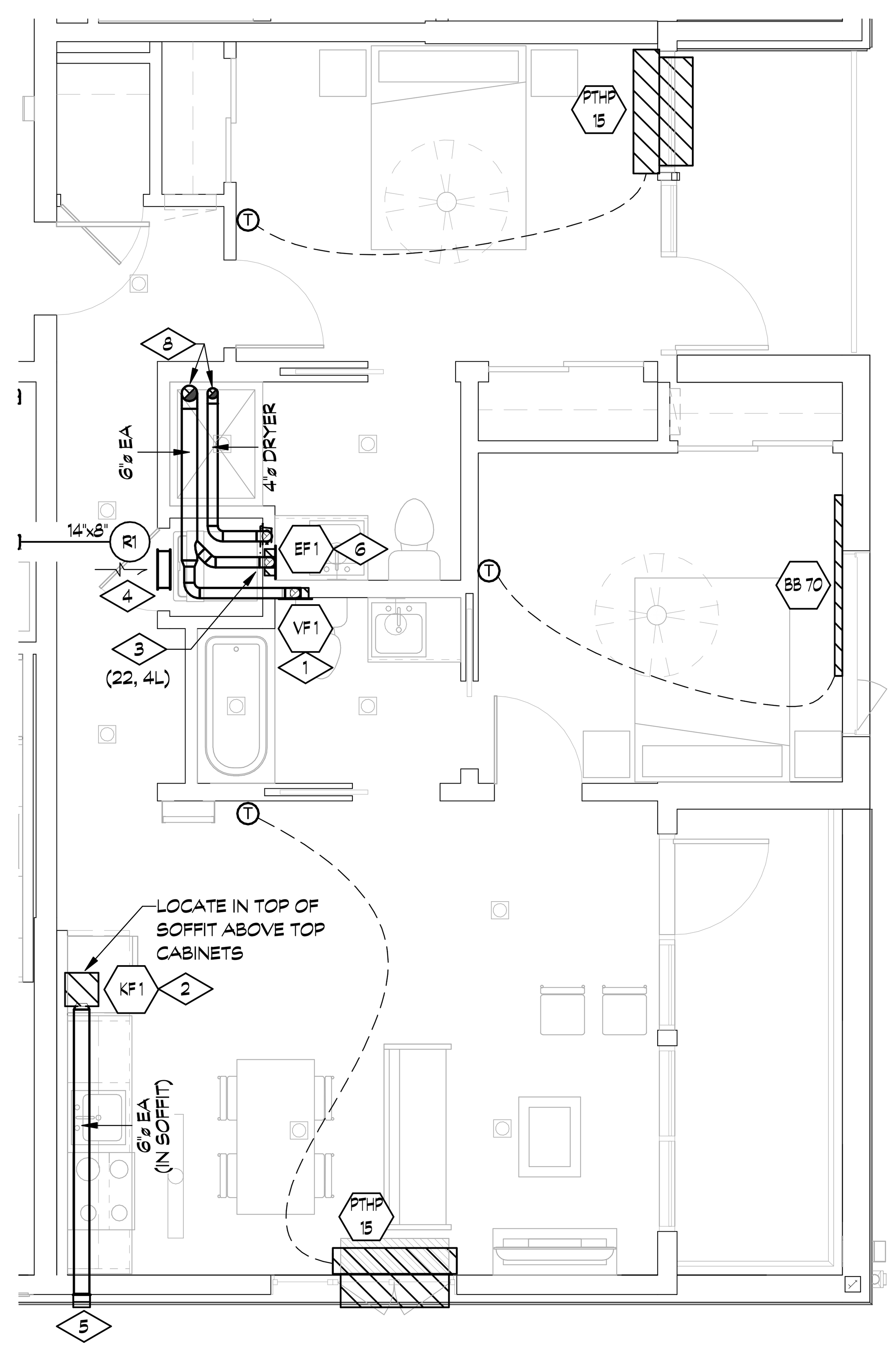
COLORADO LICENSED PROFESSIONAL ENGINEER
38983
03/13/2026

DATE: 03.13.2026
DRAWN BY: BEC
CHECKED BY: MV
PROJECT NO: 25135

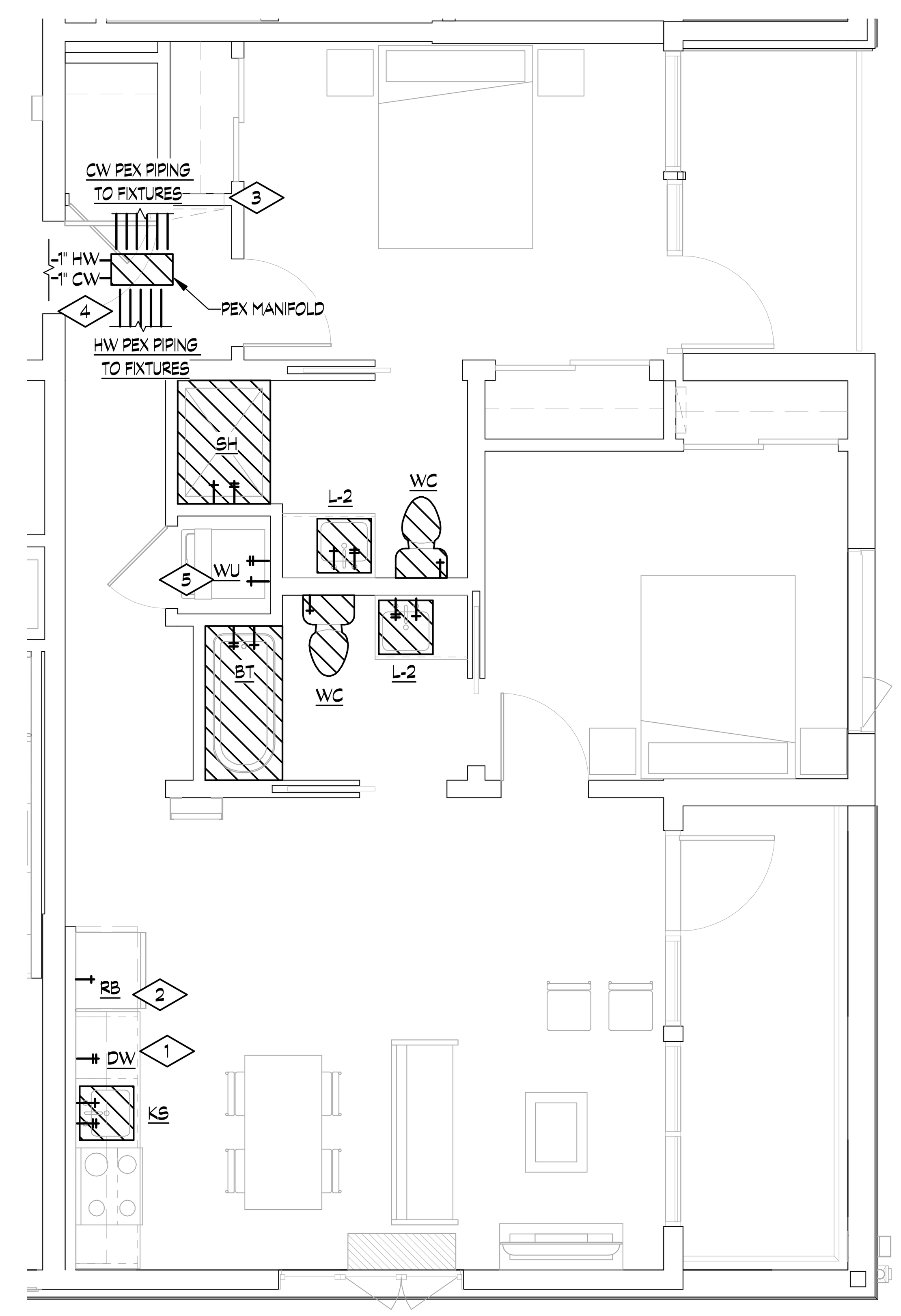
DRAWING NO:
MEP0409



6 ELECTRICAL PLAN - TYPE 11C
1/4" = 1'-0"



5 HVAC PLAN - TYPE 11C
1/4" = 1'-0"



4 PLUMBING PLAN - TYPE 11C
1/4" = 1'-0"

3/13/2026 8:49:45 AM

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

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INTERIOR DESIGNER:

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T: 303.892.7062

PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL

1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

MEP UNIT PLANS - TYPE 11C

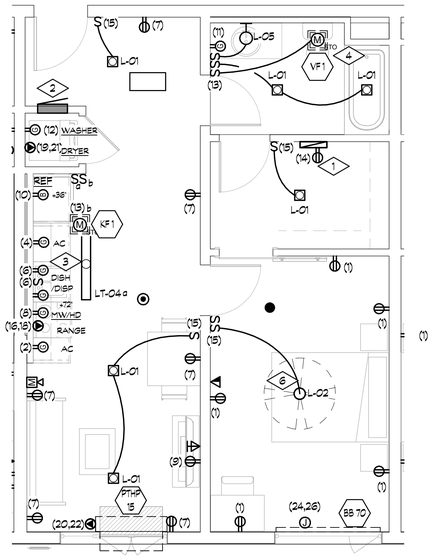
SEAL

COLORADO LICENSED PROFESSIONAL ENGINEER
38983
03/13/2026

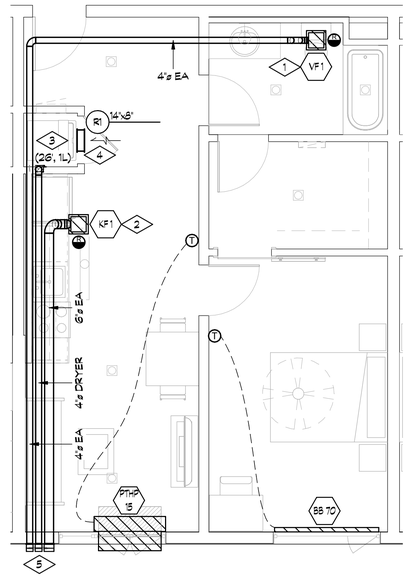
DATE: 03.13.2026
DRAWN BY: BEC
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO:

MEP0410

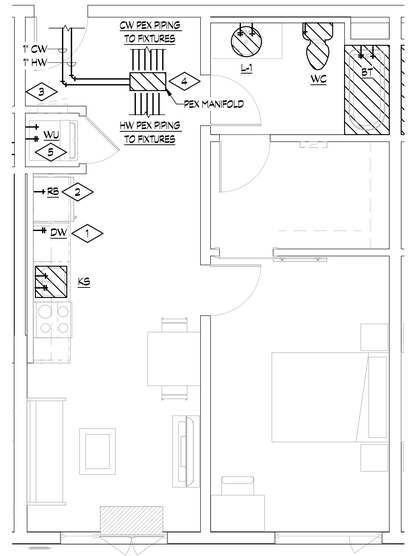


6 ELECTRICAL PLAN - TYPE 12B
1/4" = 1'-0"

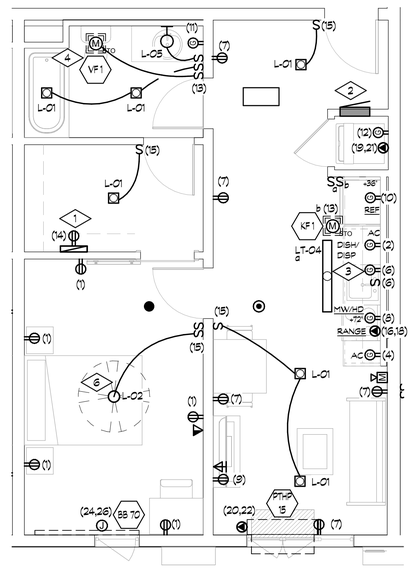


5 HVAC PLAN - TYPE 12B
1/4" = 1'-0"

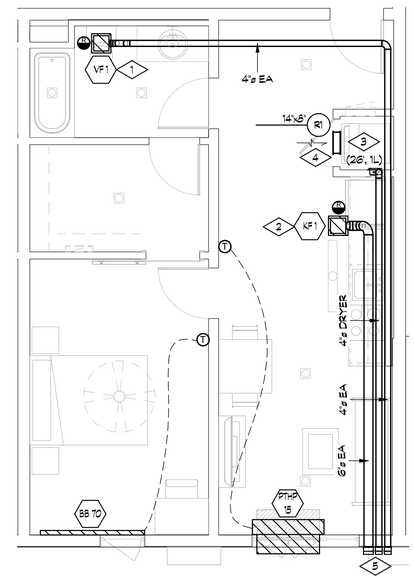
NOTE: SEE VIEW #5 ON SHEET MEP0413 FOR 5TH LEVEL PLAN



4 PLUMBING PLAN - TYPE 12B
1/4" = 1'-0"

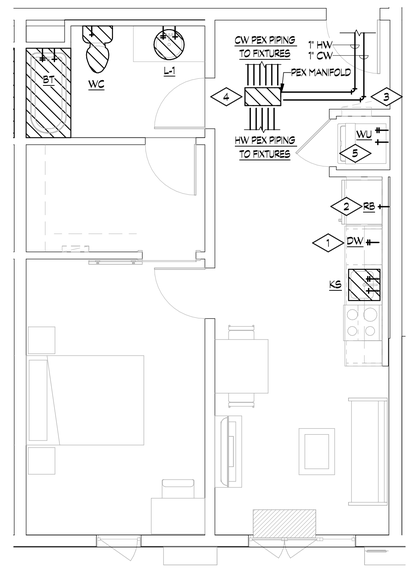


3 ELECTRICAL PLAN - TYPE 12A
1/4" = 1'-0"



2 HVAC PLAN - TYPE 12A
1/4" = 1'-0"

NOTE: SEE VIEW #4 ON SHEET MEP0413 FOR 5TH LEVEL PLAN



1 PLUMBING PLAN - TYPE 12A
1/4" = 1'-0"

3/13/2026 8:49:50 AM

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

OWNER

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INTERIOR DESIGNER:

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL

1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

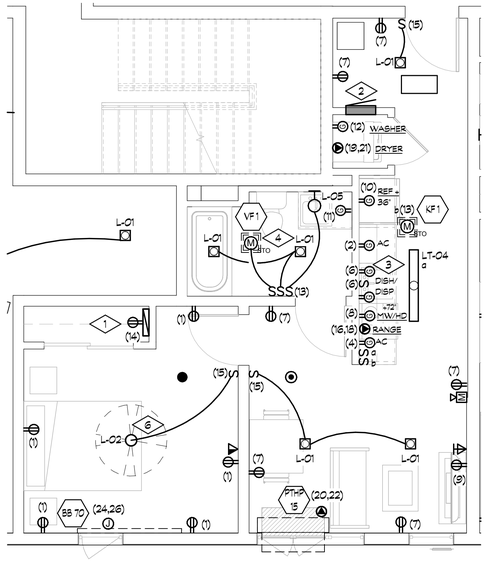
MEP UNIT PLANS - TYPE 12A & 12B

SEAL

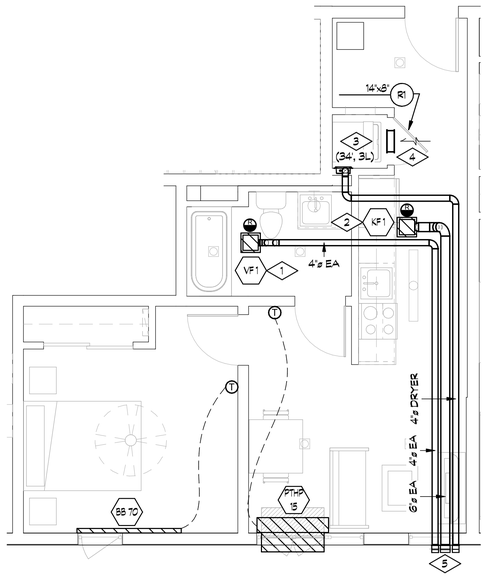
COLORADO LICENSED PROFESSIONAL ENGINEER
38983
03/13/2026
PROFESSIONAL ENGINEER

DATE: 03.13.2026
DRAWN BY: BEC
CHECKED BY: MV
PROJECT NO: 25135

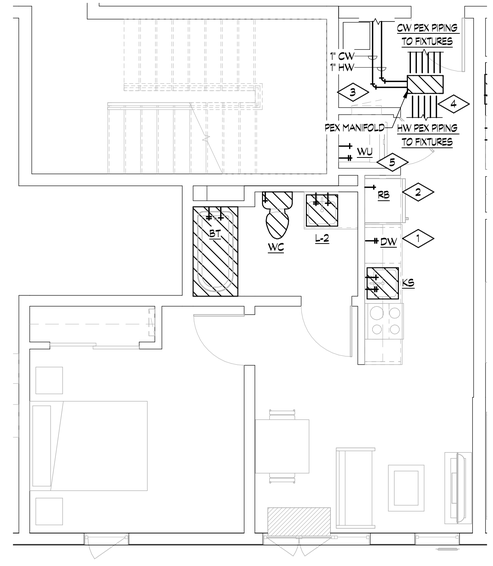
DRAWING NO:
MEP0411



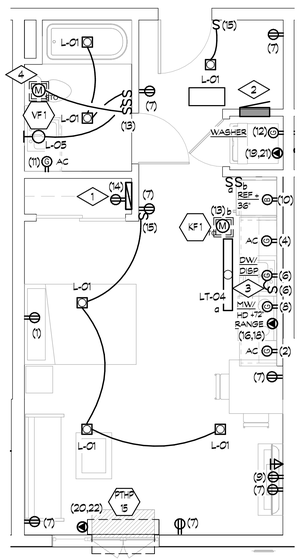
6 ELECTRICAL PLAN - TYPE 14
1/4" = 1'-0"



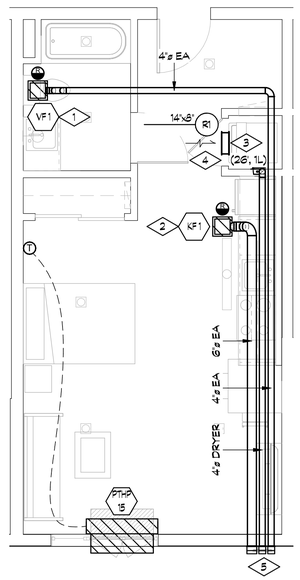
5 HVAC PLAN - TYPE 14
1/4" = 1'-0"



4 PLUMBING PLAN - TYPE 14
1/4" = 1'-0"

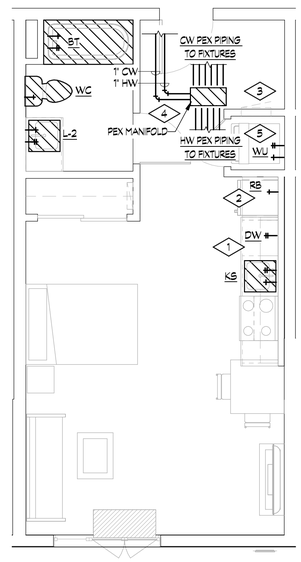


3 ELECTRICAL PLAN - TYPE 13
1/4" = 1'-0"



2 HVAC PLAN - TYPE 13
1/4" = 1'-0"

NOTE: SEE VIEW #6 ON SHEET MEP0413 FOR 5TH LEVEL PLAN



1 PLUMBING PLAN - TYPE 13
1/4" = 1'-0"

3/13/2026 8:49:55 AM

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

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INTERIOR DESIGNER:

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

MEP UNIT PLANS - TYPE 13 & 14

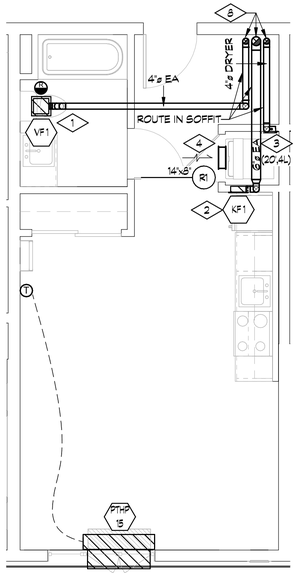
SEAL

COLORADO LICENSED PROFESSIONAL ENGINEER
38983
03/13/2026

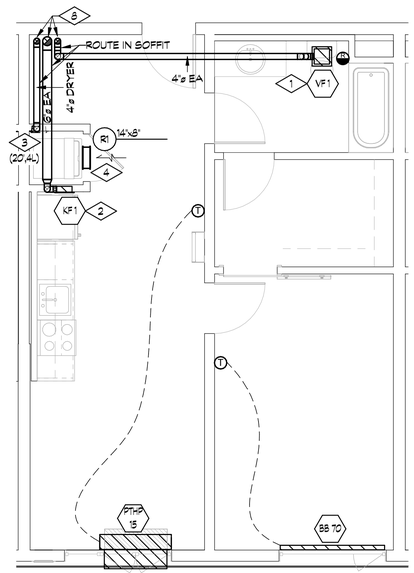
DATE: 03.13.2026
DRAWN BY: BEC
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO:

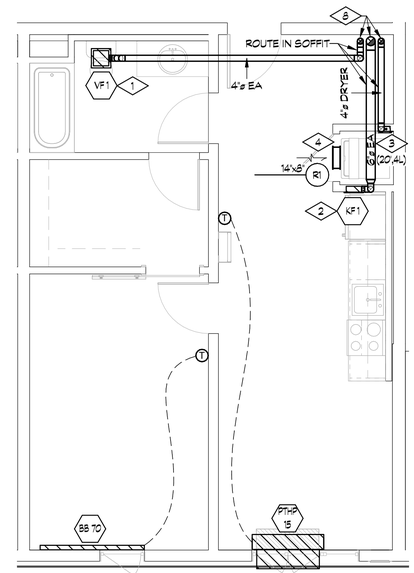
MEP0412



6 HVAC PLAN - TYPE 13 - 5TH LEVEL
1/4" = 1'-0"

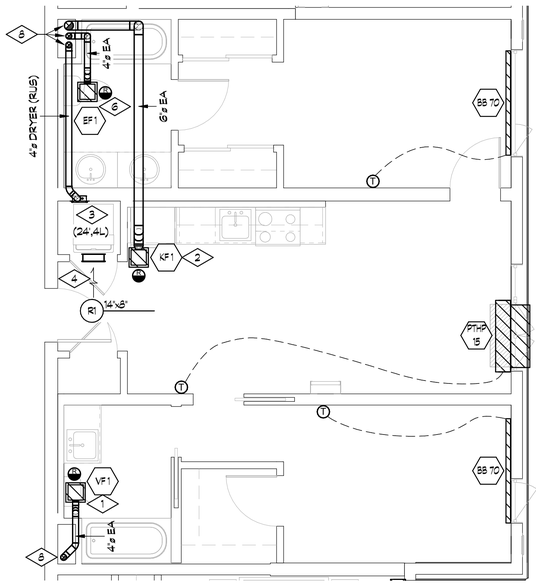


5 HVAC PLAN - TYPE 12B - 5TH LEVEL
1/4" = 1'-0"

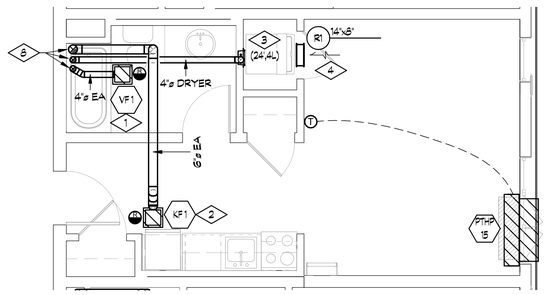


4 HVAC PLAN - TYPE 12A - 5TH LEVEL
1/4" = 1'-0"

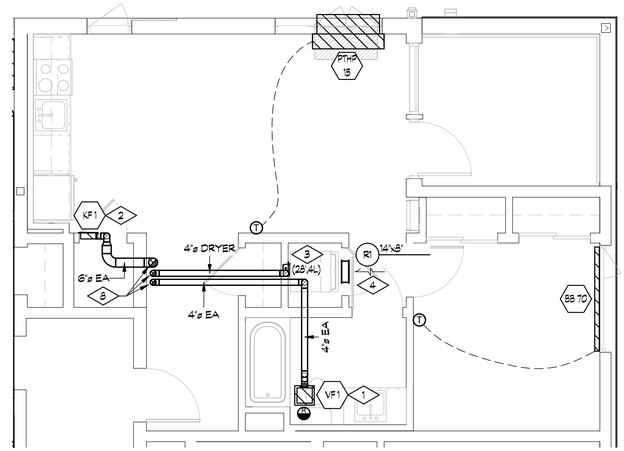
THESE PLANS REFLECT THE DUCTWORK FOR THE 5TH FLOOR UNITS WITH MEZZANINES ONLY. PLUMBING AND ELECTRICAL REMAIN THE SAME.



3 HVAC PLAN - TYPE 10 - 5TH LEVEL
1/4" = 1'-0"



2 HVAC PLAN - TYPE 9 - 5TH LEVEL
1/4" = 1'-0"



1 HVAC PLAN - TYPE 8B - 5TH LEVEL
1/4" = 1'-0"

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

MEP UNIT PLANS - 5TH LEVEL HVAC TYPE 8B, 9, 10, 12A, 12B, & 13

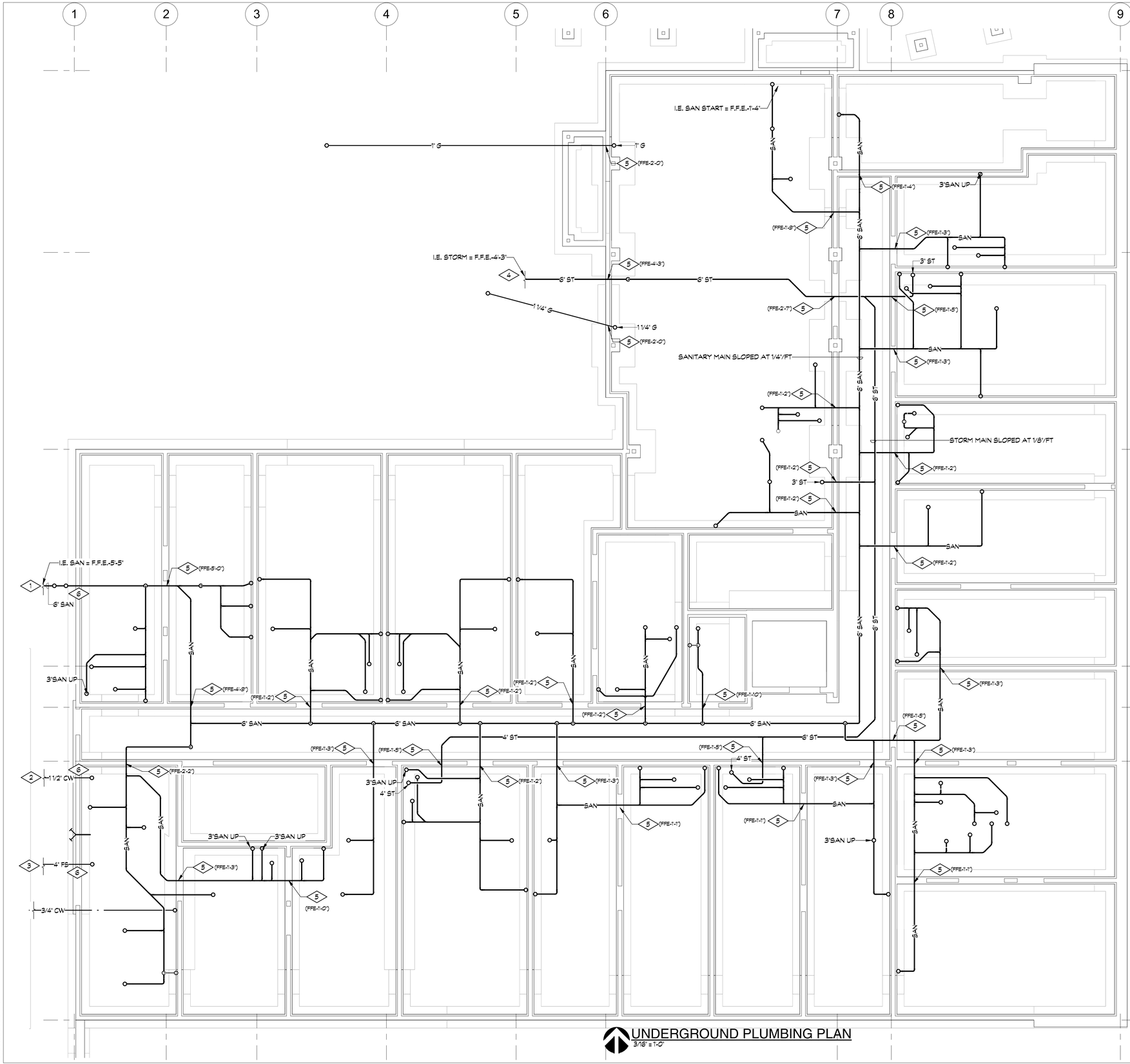
SEAL

COLORADO LICENSED PROFESSIONAL ENGINEER
38983
03/13/2026

DATE: 03.13.2026
DRAWN BY: MO
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO:
MEP0413

3/13/2026 8:49:59 AM



UNDERGROUND PLUMBING PLAN
3/16" = 1'-0"

3/13/2026 8:50:01 AM

GENERAL NOTES

A. IN THE CASE OF A DISCREPANCY BETWEEN GENERAL NOTES, DETAIL NOTES, SPECIFICATION, OR GRAPHICAL DEPICTIONS, IT IS THE CONTRACTOR'S RESPONSIBILITY TO CLARIFY DESIGN INTENT WITH ENGINEER.

B. REFER TO SCHEDULES, DIAGRAMS AND ISOMETRIC DIAGRAMS FOR ALL PIPE SIZES NOT SHOWN ON PLAN.

C. FIELD COORDINATE ALL EQUIPMENT LOCATIONS AND PIPE ROUTINGS WITH ALL STRUCTURAL, HVAC, LIGHTS AND ALL OTHER DISCIPLINES PRIOR TO BEGINNING WORK.

D. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ANY AND ALL CUTTING AND PATCHING AS REQUIRED TO ACCOMMODATE THEIR WORK, COORDINATE LOCATIONS WITH GENERAL CONTRACTOR.

E. PLUMBING CONTRACTOR TO COORDINATE ROUGH-IN DIMENSIONS AND ELEVATIONS WITH ARCHITECTURAL DRAWINGS.

F. WATER, SEWER, GAS AND ELECTRICAL CONDUITS MUST FIT WITHIN WALLS. CONFLICTS WITH OTHER TRADES MUST BE COORDINATED OR WORK WILL BE REDONE.

G. COORDINATE ALL ACCESS PANEL LOCATIONS FOR VALVES, SHOCK ARRESTORS, AIR ADMITTANCE VALVES AND ALL OTHER PLUMBING COMPONENTS INVOLVING ACCESS WITH ARCHITECT.

H. NOT ALL ISOLATION VALVES SHOWN ON PLANS. PROVIDE ISOLATION VALVES ON ALL DOMESTIC WATER BRANCH PIPING. COORDINATE ANY AND ALL ACCESS PANELS WITH ARCHITECT.

I. EQUIPMENT GAS CONNECTION SIZE PER PLANS OR SAME AS APPLIANCE SIZE, WHICHEVER IS LARGER. TRANSITION DOWNSTREAM OF ALL SHUTOFFS AND REGULATORS AS CLOSE TO APPLIANCE AS POSSIBLE WHEN PLANS CALL FOR LARGER THAN APPLIANCE.

J. EXPOSED SEWER PIPING (TRAPS & INDIRECT DRAINS) MUST BE COPPER. RE: PROJECT SPECS.

DETAIL NOTES THIS SHEET

1. EXTEND AND CONNECT NEW SANITARY WASTE TO CIVIL POINT OF CONNECTION (POC) IN AREA SHOWN. PROVIDE 2-WAY CLEANOUT AT SANITARY WASTE/SEWER JUNCTION AT EXTERIOR OF BUILDING. FIELD VERIFY EXACT LOCATION AND INVERT ELEVATION AT POINT OF CONNECTION.

2. EXTEND AND CONNECT NEW DOMESTIC COLD WATER PIPING TO CIVIL POC. FIELD VERIFY EXACT LOCATION AND CONNECTION. BASIS OF DESIGN IS INTERIOR METER WITH 1-1/2" TAP/METER ASSEMBLY WITH INCREASE IN SERVICE SIZE TO 2" AT A POINT 50' DOWNSTREAM OF METER TO BUILDING RPZ, AND UPSIZED TO 3" PIPE DOWNSTREAM OF RPZ. SEE DETAIL ON P0501.

3. EXTEND AND CONNECT NEW FIRE PROTECTION PIPING TO CIVIL POC. FIELD VERIFY EXACT LOCATION AND CONNECTION. COORDINATE FIRE RISER ROOM LOCATION WITH G.C. COORDINATE FDC LOCATION WITH AHJ. SPRINKLER DESIGN TO BE PERFORMED BY NFPA CERTIFIED DESIGNER, SHOP DRAWINGS BY DEFERRED SUBMITTAL.

4. EXTEND AND CONNECT NEW STORM DRAINAGE TO CIVIL POINT OF CONNECTION (POC) IN AREA SHOWN. FIELD VERIFY EXACT LOCATION AND INVERT ELEVATION AT POINT OF CONNECTION.

5. STRUCTURAL FOUNDATION WALL PENETRATION AT LOCATION SHOWN, INVERT ELEVATION NOTED. RE: STRUCTURAL PLANS FOR DETAILS.

6. PIPE ROUTED BELOW STRUCTURAL FOOTER, MAINTAIN MINIMUM 6" CLEAR BETWEEN UNDERSIDE OF FOOTER AND TOP OF PIPE. RE: STRUCTURAL PLANS FOR DETAILS.

APPROVAL STAMPS:

No.	Date	Description

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL

1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

UNDERGROUND PLUMBING PLAN

SEAL

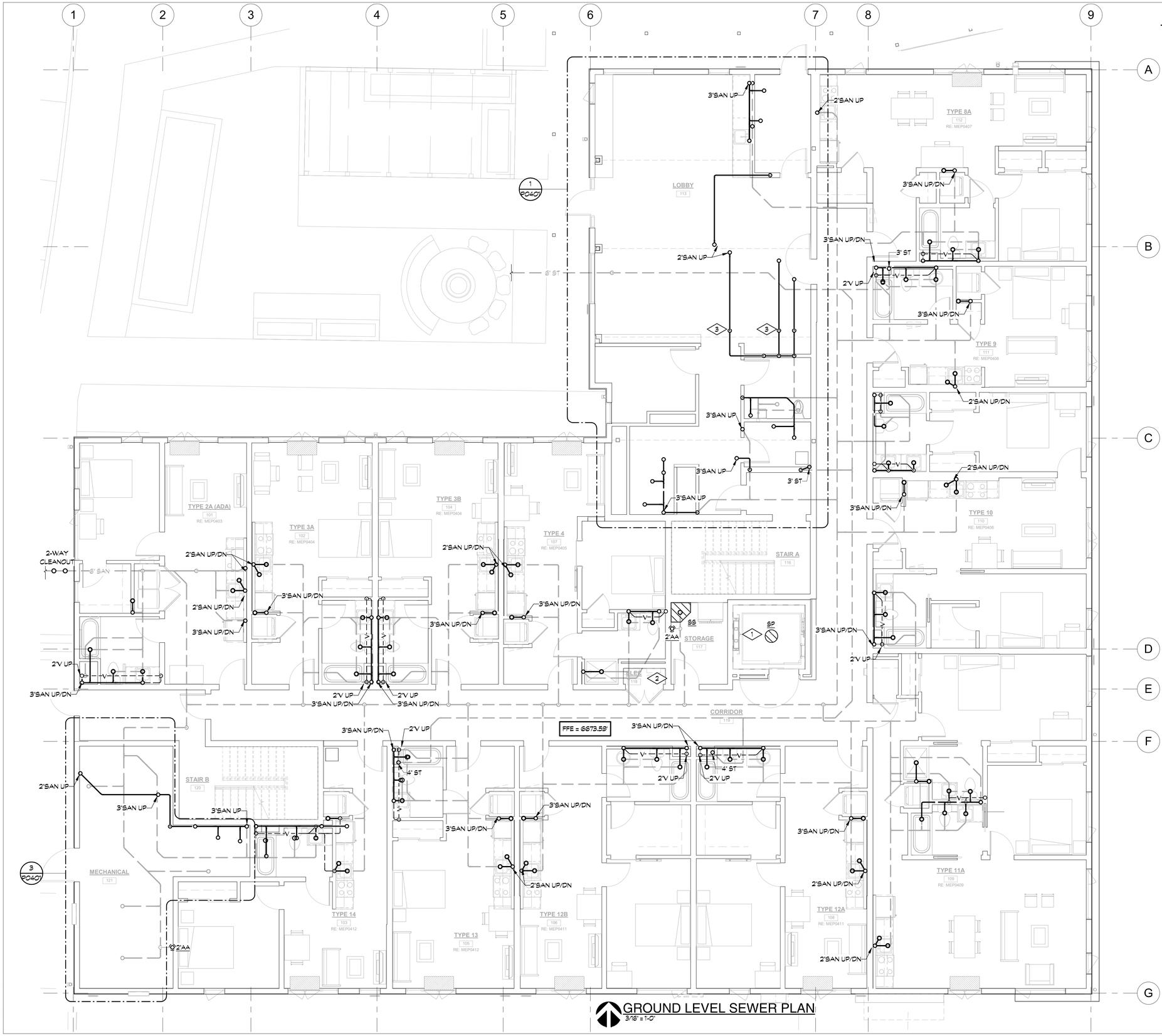
COLORADO LICENSED
CHARLES DEAN WARD
38983
03/13/2026
PROFESSIONAL ENGINEER

DATE: 03.13.2026
DRAWN BY: TB
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO: **P0200**

DETAIL NOTES THIS SHEET

1. ELEVATOR SUMP PUMP ROUTED TO CEILING AND OVER TO INDIRECT TO MOP SINK.
2. NO PIPING SHALL BE ROUTED OVER ELECTRICAL ROOM, COORDINATE ALL PIPING ROUTING IN THIS AREA TO AVOID ELECTRICAL ROOM.
3. ROUTE SANITARY PIPING BELOW STRUCTURAL BEAM IN AREA SHOWN.



GROUND LEVEL SEWER PLAN
3/16" = 1'-0"

3/13/2026 8:50:06 AM

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

GROUND LEVEL SEWER PLAN

SEAL

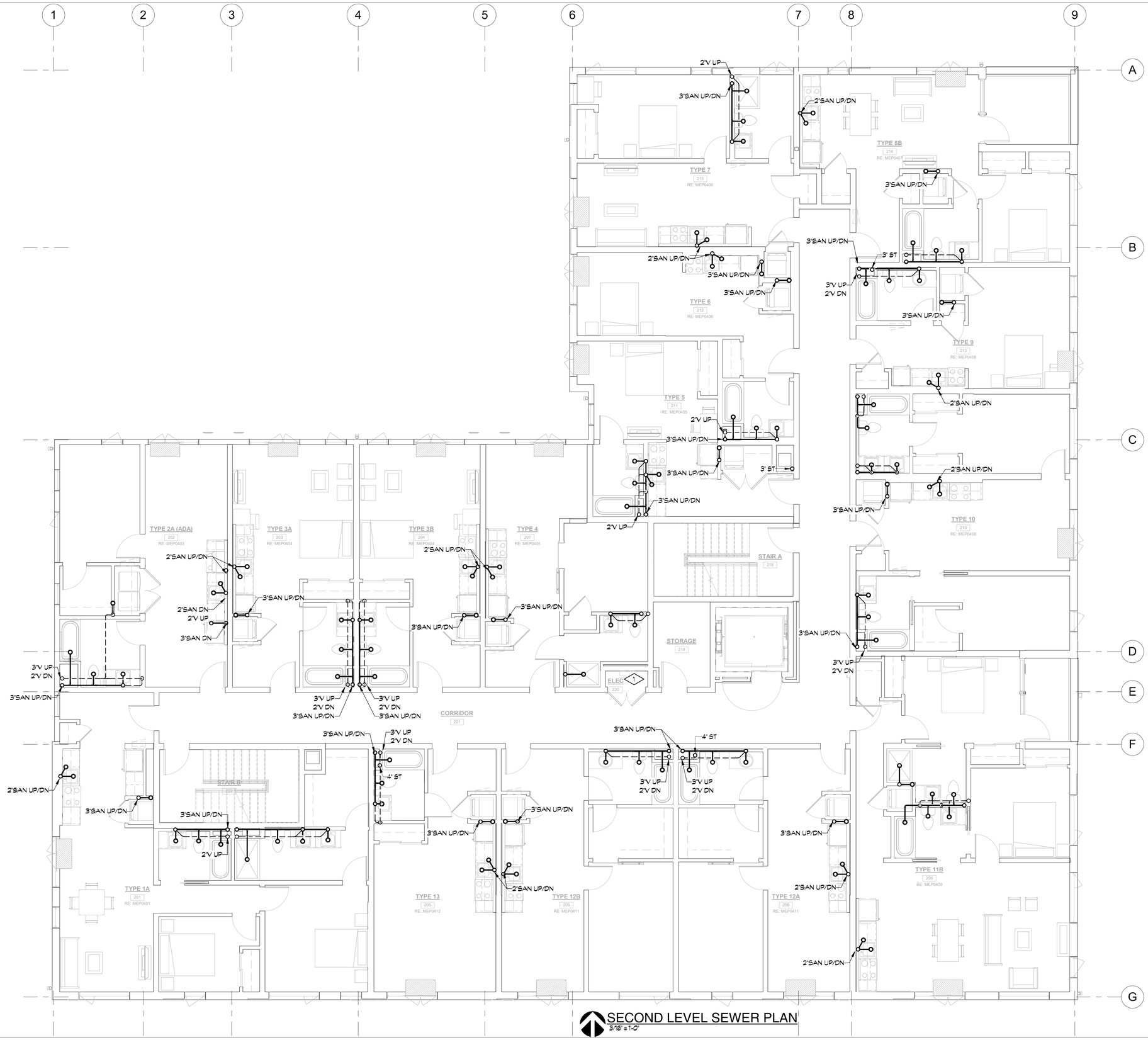
COLORADO LICENSED PROFESSIONAL ENGINEER 38983 03/13/2026

DATE: 03.13.2026
DRAWN BY: TB
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO: **P0201**

DETAIL NOTES THIS SHEET

1. NO PIPING SHALL BE ROUTED OVER ELECTRICAL ROOM, COORDINATE ALL PIPING ROUTING IN THIS AREA TO AVOID ELECTRICAL ROOM.



SECOND LEVEL SEWER PLAN
3/16" = 1'-0"

3/13/2026 8:50:09 AM

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

SECOND LEVEL SEWER PLAN

SEAL

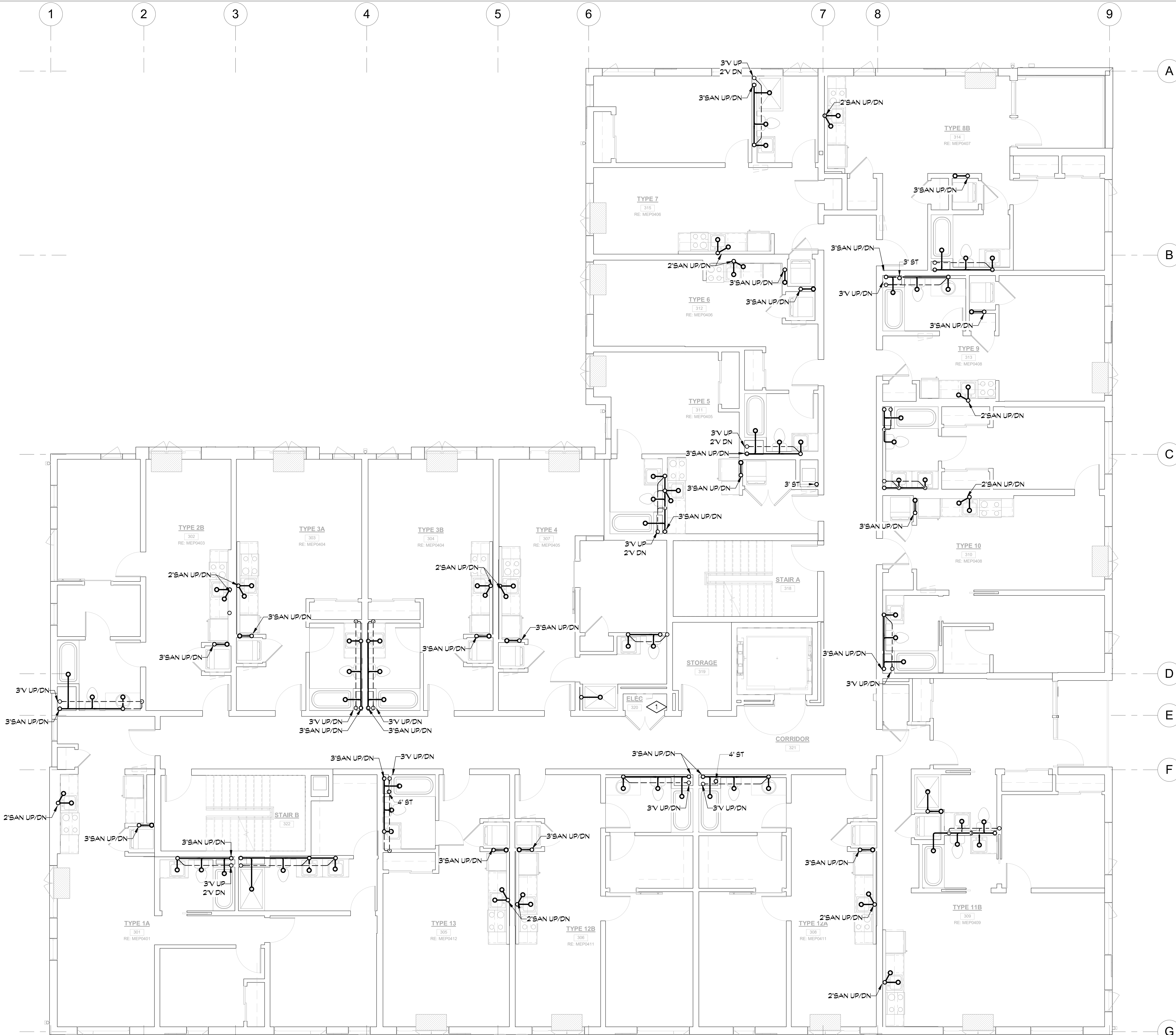
COLORADO LICENSED
38983
03/13/2026
PROFESSIONAL ENGINEER

DATE: 03.13.2026
DRAWN BY: TB
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO:
P0202

DETAIL NOTES THIS SHEET

1. NO PIPING SHALL BE ROUTED OVER ELECTRICAL ROOM, COORDINATE ALL PIPING ROUTING IN THIS AREA TO AVOID ELECTRICAL ROOM.



THIRD LEVEL SEWER PLAN

3/16" = 1'-0"

3/13/2026 8:50:13 AM

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

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ARCHITECT

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL

1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

THIRD LEVEL SEWER PLAN

SEAL

COLORADO LICENSED PROFESSIONAL ENGINEER 38983 03/13/2026

DATE: 03.13.2026

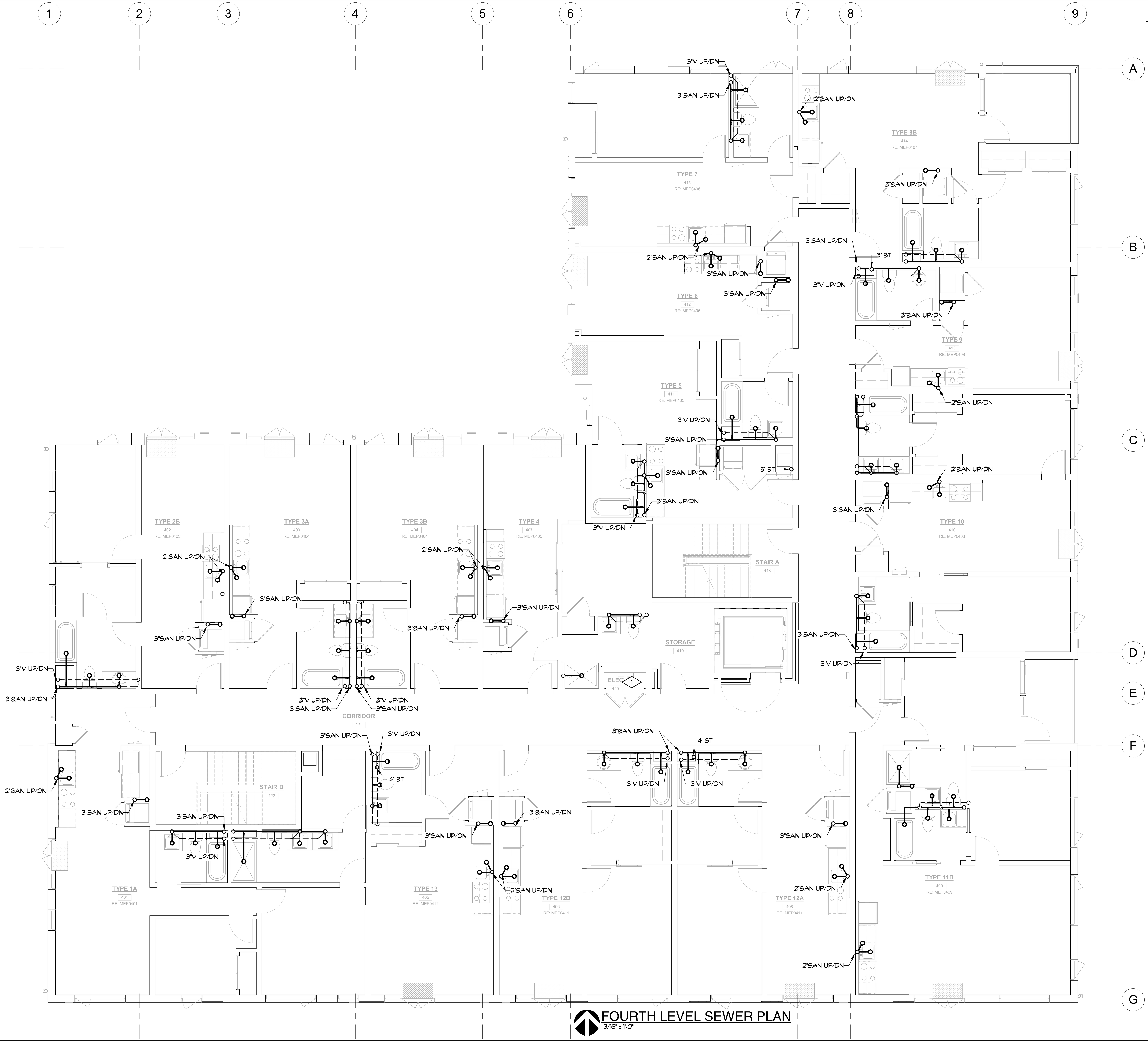
DRAWN BY: TB

CHECKED BY: MV

PROJECT NO: 25135

DRAWING NO:

P0203



FOURTH LEVEL SEWER PLAN
3/16" = 1'-0"

DETAIL NOTES THIS SHEET

1. NO PIPING SHALL BE ROUTED OVER ELECTRICAL ROOM, COORDINATE ALL PIPING ROUTING IN THIS AREA TO AVOID ELECTRICAL ROOM.

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

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T: 303.444.6038

INTERIOR DESIGNER:

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T: 303.892.7062

PROJECT LOCATION

STEAMBOAT BASECAMP
AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

FOURTH LEVEL SEWER PLAN

SEAL

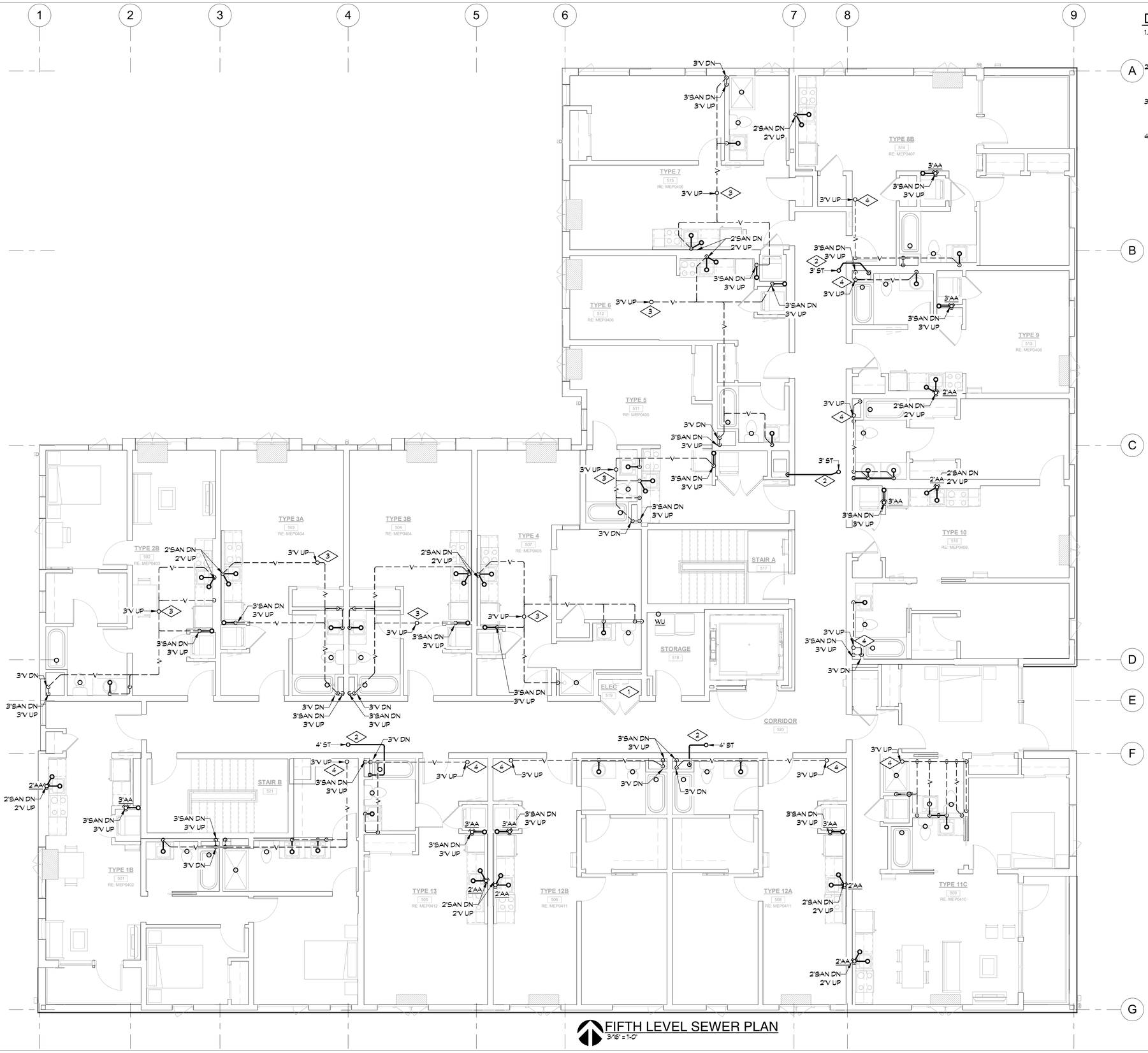
COLORADO LICENSED PROFESSIONAL ENGINEER 38983 03/13/2026

DATE: 03.13.2026
DRAWN BY: TB
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO:

P0204

3/13/2026 8:50:17 AM



FIFTH LEVEL SEWER PLAN
3/16" = 1'-0"

DETAIL NOTES THIS SHEET

1. NO PIPING SHALL BE ROUTED OVER ELECTRICAL ROOM, COORDINATE ALL PIPING ROUTING IN THIS AREA TO AVOID ELECTRICAL ROOM.
2. STORM PIPING UP TO ROOF DRAIN ABOVE. SEE MECHANICAL ROOF PLAN ON SHEET M0206 FOR CONTINUATION.
3. 3" VENT UP TO VTR IN APPROXIMATE LOCATION SHOWN, SEE MECHANICAL ROOF PLAN ON SHEET M0206 FOR CONTINUATION.
4. 3" VENT UP TO SIDEWALL PLUMBING VENT IN APPROXIMATE LOCATION SHOWN, SEE MECHANICAL ROOF PLAN ON SHEET M0206 FOR CONTINUATION.

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

FIFTH LEVEL SEWER PLAN

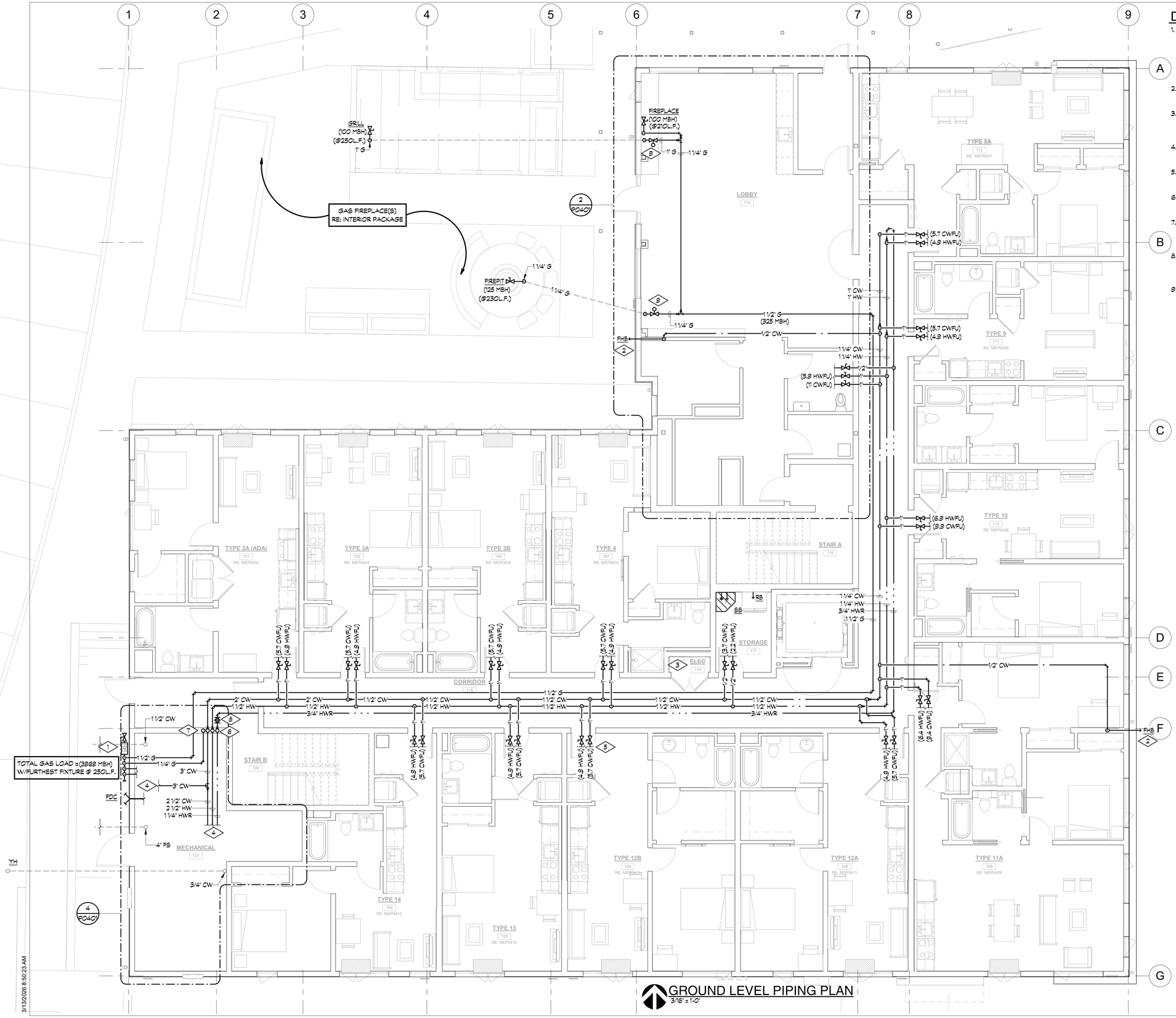
SEAL

COLORADO LICENSED PROFESSIONAL ENGINEER 38983 03/13/2026

DATE: 03.13.2026
DRAWN BY: TB
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO: **P0205**

3/13/2026 8:50:20 AM



GROUND LEVEL PIPING PLAN
3/16" = 1'-0"

3/13/2026 8:50:23 AM

DETAIL NOTES THIS SHEET

1. COORDINATE WITH LOCAL UTILITY COMPANY FOR 7W.C. GAS SERVICE. FIELD VERIFY EXACT METER PLACEMENT WITH UTILITY PROVIDER, NOTIFY ENGINEER IF METER IS RELOCATED FROM LOCATION SHOWN. REGULATORS MUST BE INSTALLED AT APPLIANCES PRIOR TO GAS BEING TURNED ON.
2. COORDINATE MOUNTING ELEVATION FOR WALL HYDRANT WITH G.C. AND ARCHITECT.
3. NO PIPING SHALL BE ROUTED OVER ELECTRICAL ROOM, COORDINATE ALL PIPING ROUTING IN THIS AREA TO AVOID ELECTRICAL ROOM.
4. SEE ENLARGED MECHANICAL PIPING PLAN AND CENTRAL HOT WATER PIPING DETAIL.
5. HOT&COLD WATER PIPING TO SERVE INDIVIDUAL UNITS. SEE UNIT PLUMBING PLANS FOR CONTINUATION. TYPICAL.
6. HOT, COLD & HOT WATER RECIRCULATION RISERS - SEE WATER RISER DETAIL ON SHEET P0901.
7. GAS PIPING UP TO SERVE ROOFTOP UNITS. SEE MECHANICAL ROOF PLAN ON SHEET M0206 FOR CONTINUATION.
8. PROVIDE SELF-ACTING THERMOSTATIC RECIRCULATION VALVE, CIRCUITSOLVER CS-3/4-115 IN ACCESSIBLE LOCATION.
9. GAS ZONE VALVE BOX, ROUTE GAS PIPING TO FIREPIT. PROVIDE ISOLATION VALVE WITH ACCESS IN WALL. PROVIDE TIMER SWITCH ON FIREPIT, COORDINATE TIMER SWITCH REQUIREMENTS AND LOCATION WITH ELECTRICAL CONTRACTOR.

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

OWNER

MAY REIGLER PROPERTIES
2201 Wisconsin Ave NW Suite 200
Washington, DC 20007
www.mayriegler.com

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T: 970.871.9494

LANDSCAPE ARCHITECT

STRUCTURAL ENGINEER

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M.E.P. ENGINEERS

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INTERIOR DESIGNER:

JOHNSON NATHAN STROHE
1600 Wynkoop St., Suite 100
Denver, CO 80202
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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

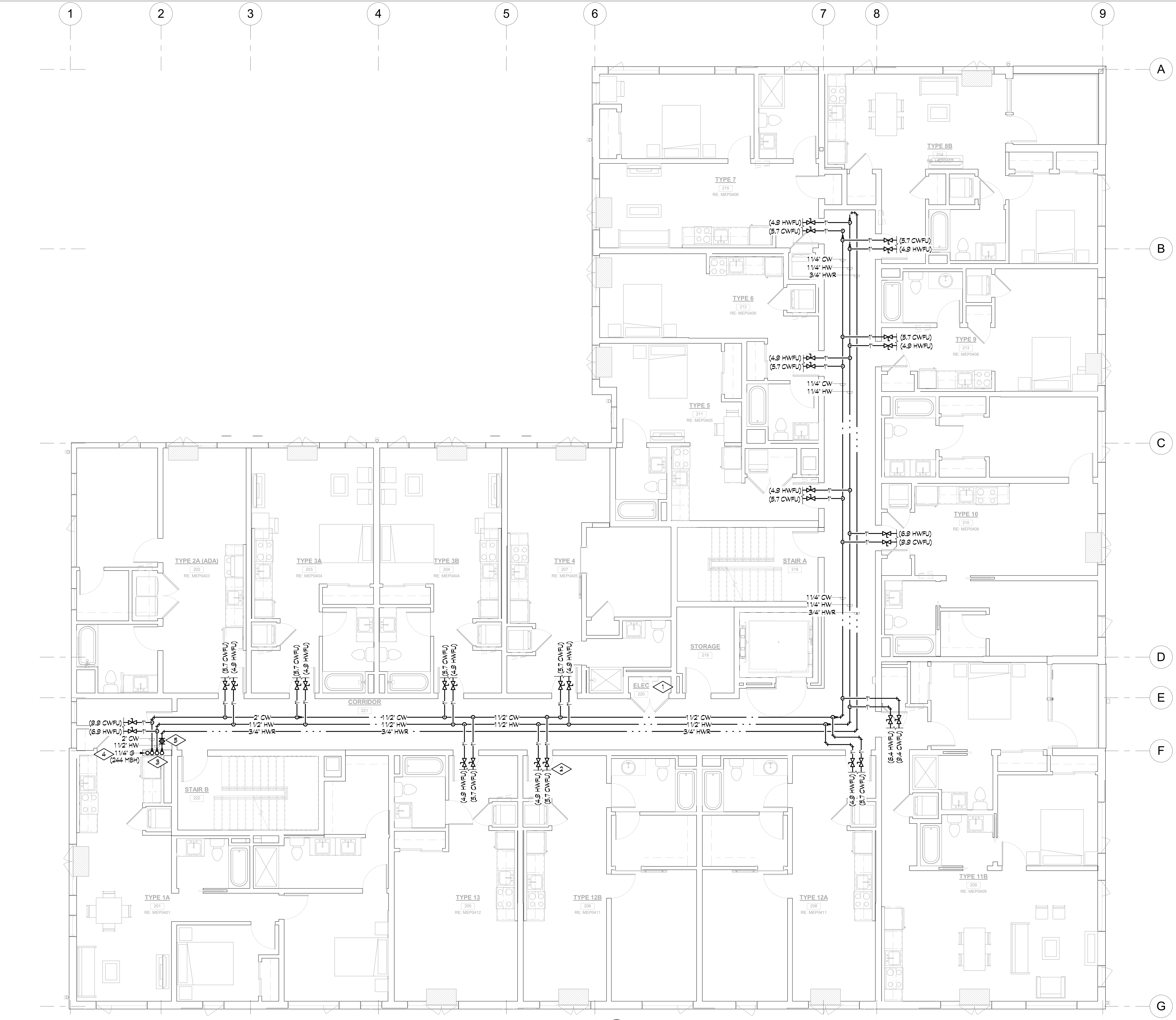
GROUND LEVEL PIPING PLAN

SEAL

COLORADO LICENSED PROFESSIONAL ENGINEER 38983 03/13/2026

DATE: 03.13.2026
DRAWN BY: TB
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO: **P0211**



SECOND LEVEL PIPING PLAN
3/16" = 1'-0"

DETAIL NOTES THIS SHEET

1. NO PIPING SHALL BE ROUTED OVER ELECTRICAL ROOM, COORDINATE ALL PIPING ROUTING IN THIS AREA TO AVOID ELECTRICAL ROOM.
2. HOT&COLD WATER PIPING TO SERVE INDIVIDUAL UNITS. SEE UNIT PLUMBING PLANS FOR CONTINUATION. TYPICAL.
3. HOT, COLD & HOT WATER RECIRCULATION RISERS - SEE WATER RISER DETAIL ON SHEET P0901.
4. GAS PIPING UP TO SERVE ROOFTOP UNITS. SEE MECHANICAL ROOF PLAN ON SHEET M0206 FOR CONTINUATION.
5. PROVIDE SELF-ACTING THERMOSTATIC RECIRCULATION VALVE, CIRCUITSOLVER CS-3/4-115 IN ACCESSIBLE LOCATION.

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

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INTERIOR DESIGNER:

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL

1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

SECOND LEVEL PIPING PLAN

SEAL

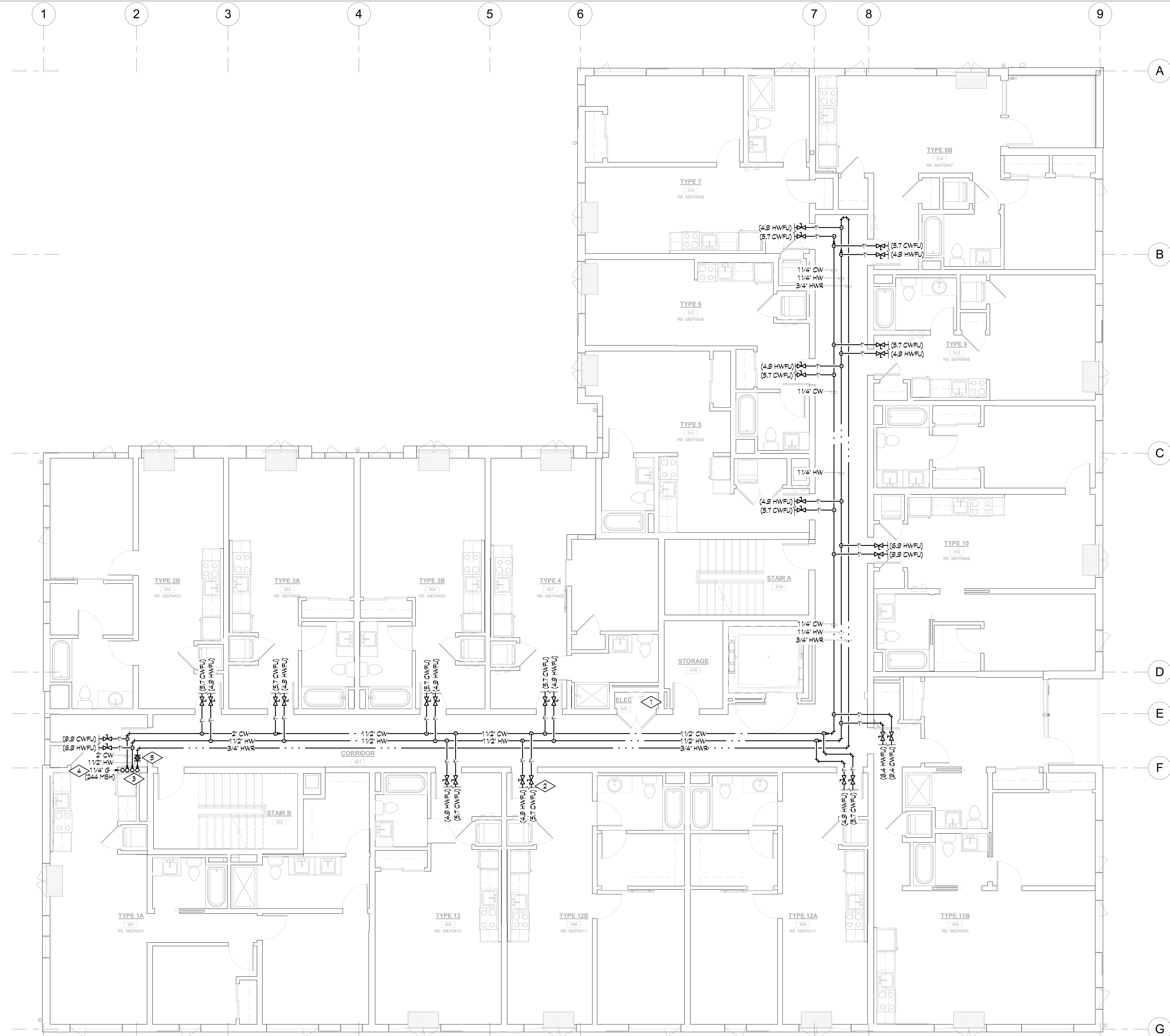
COLORADO LICENSED PROFESSIONAL ENGINEER
MICHAEL DEAN VAIR
38983
03/13/2026

DATE:	03.13.2026
DRAWN BY:	TB
CHECKED BY:	MV
PROJECT NO:	25135

DRAWING NO:

P0212

3/13/2026 8:50:26 AM



THIRD LEVEL PIPNG PLAN

3/16" = 1'-0"

DETAIL NOTES THIS SHEET

1. NO PIPING SHALL BE ROUTED OVER ELECTRICAL ROOM, COORDINATE ALL PIPING ROUTING IN THIS AREA TO AVOID ELECTRICAL ROOM.
2. HOT&COLD WATER PIPING TO SERVE INDIVIDUAL UNITS. SEE UNIT PLUMBING PLANS FOR CONTINUATION. TYPICAL.
3. HOT, COLD & HOT WATER RECIRCULATION RISERS - SEE WATER RISER DETAIL ON SHEET P0901.
4. GAS PIPING UP TO SERVE ROOFTOP UNITS. SEE MECHANICAL ROOF PLAN ON SHEET M0206 FOR CONTINUATION.
5. PROVIDE SELF-ACTING THERMOSTATIC RECIRCULATION VALVE, CIRCUITSOLVER CS-3/4-115 IN ACCESSIBLE LOCATION.

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

THIRD LEVEL PIPING PLAN

SEAL

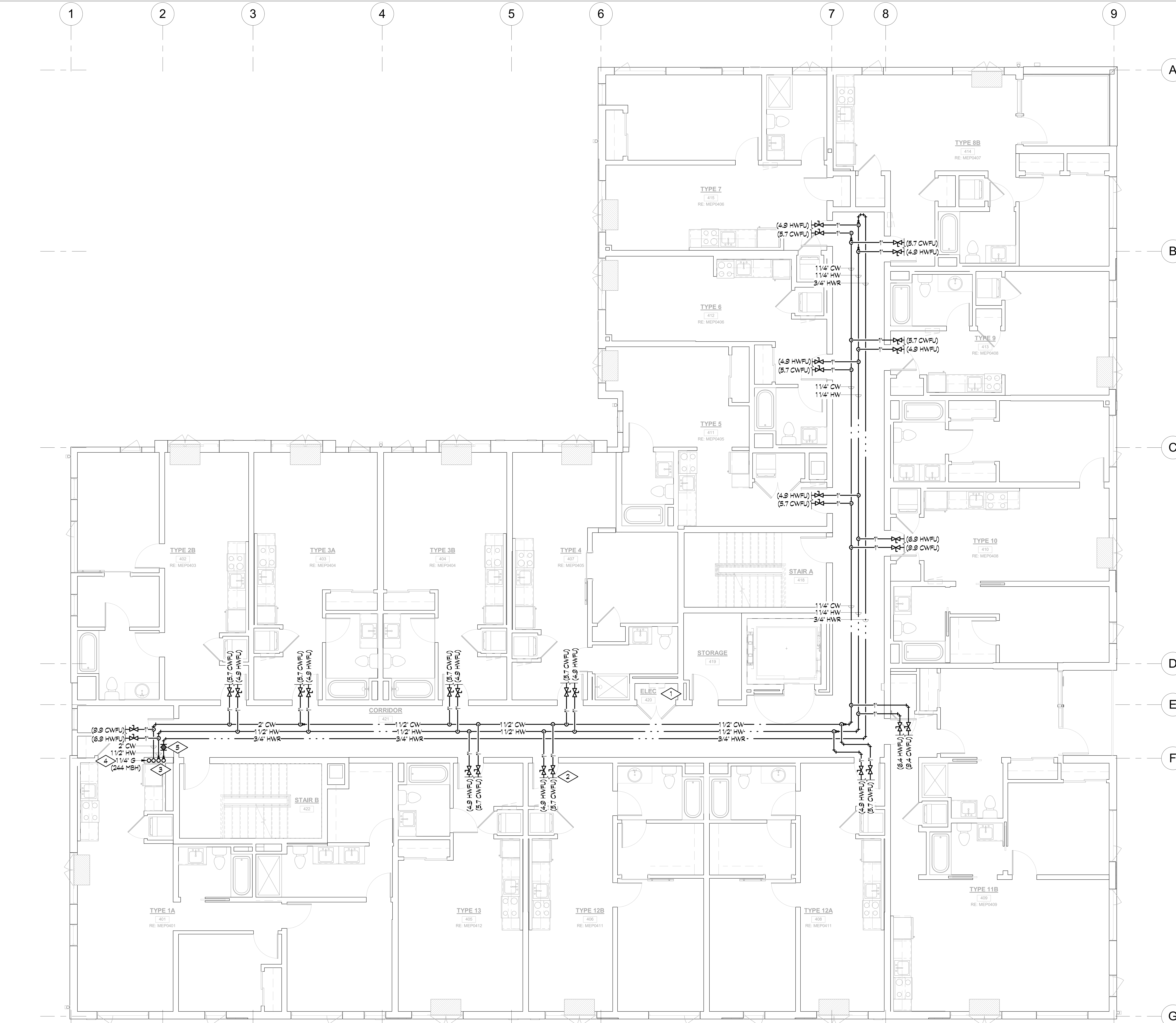
COLORADO LICENSED PROFESSIONAL ENGINEER 38983 03/13/2026

DATE: 03.13.2026
DRAWN BY: TB
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO:

P0213

3/13/2026 8:50:28 AM



FOURTH LEVEL PIPING PLAN
3/16" = 1'-0"

DETAIL NOTES THIS SHEET

1. NO PIPING SHALL BE ROUTED OVER ELECTRICAL ROOM, COORDINATE ALL PIPING ROUTING IN THIS AREA TO AVOID ELECTRICAL ROOM.
2. HOT/COLD WATER PIPING TO SERVE INDIVIDUAL UNITS. SEE UNIT PLUMBING PLANS FOR CONTINUATION, TYPICAL.
3. HOT, COLD & HOT WATER RECIRCULATION RISERS - SEE WATER RISER DETAIL ON SHEET P0801.
4. GAS PIPING UP TO SERVE ROOFTOP UNITS. SEE MECHANICAL ROOF PLAN ON SHEET M0206 FOR CONTINUATION.
5. PROVIDE SELF-ACTING THERMOSTATIC RECIRCULATION VALVE, CIRCUITSOLVER CS-3/4-115 IN ACCESSIBLE LOCATION.

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

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PROJECT LOCATION
STEAMBOAT BASECAMP AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

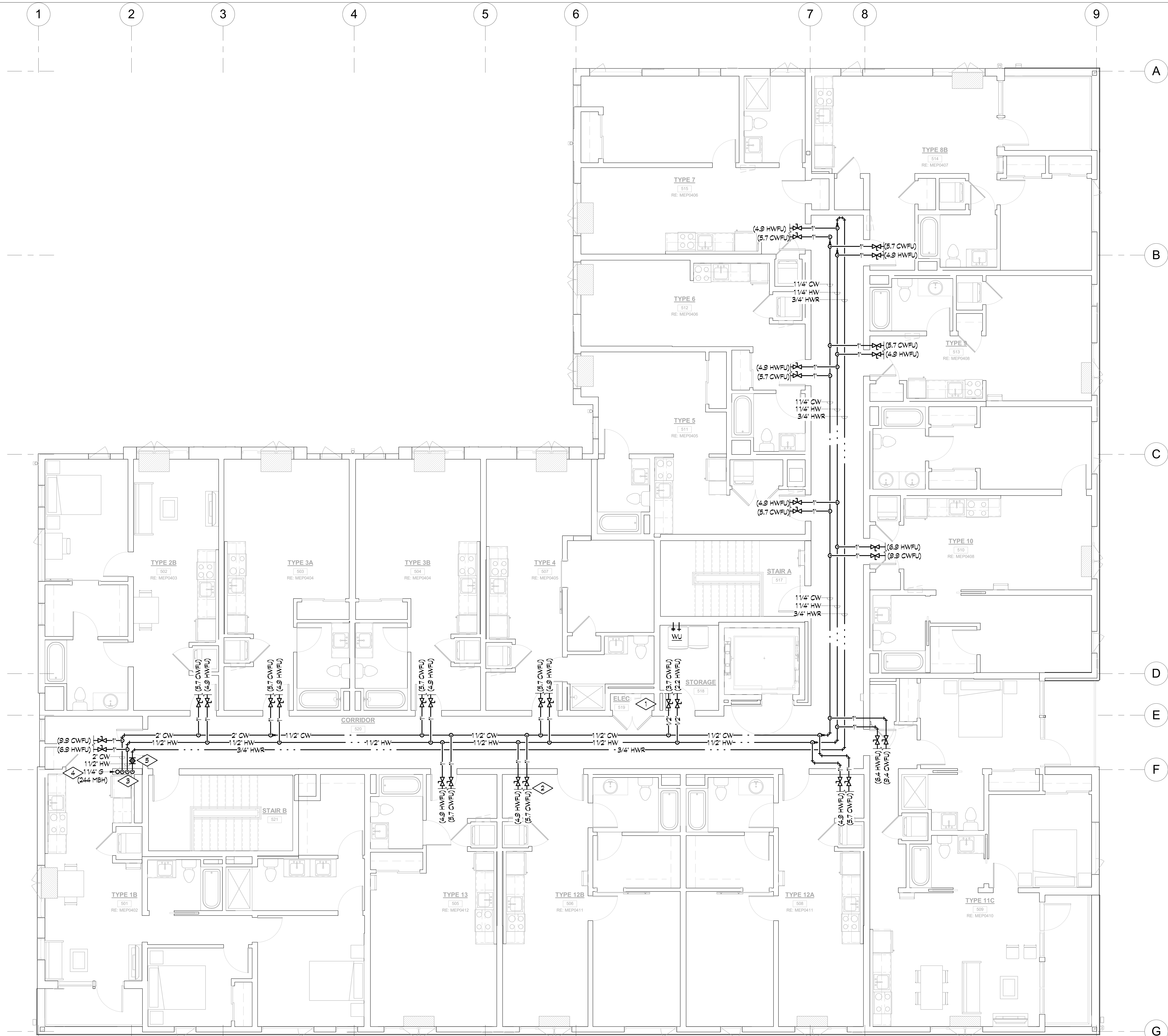
DRAWING TITLE
FOURTH FLOOR PIPING PLAN

SEAL
COLORADO LICENSED PROFESSIONAL ENGINEER 38983 03/13/2026

DATE: 03.13.2026
DRAWN BY: TB
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO:
P0214

3/13/2026 8:50:31 AM



FIFTH LEVEL PIPING PLAN
3/16" = 1'-0"

DETAIL NOTES THIS SHEET

1. NO PIPING SHALL BE ROUTED OVER ELECTRICAL ROOM, COORDINATE ALL PIPING ROUTING IN THIS AREA TO AVOID ELECTRICAL ROOM.
2. HOT&COLD WATER PIPING TO SERVE INDIVIDUAL UNITS. SEE UNIT PLUMBING PLANS FOR CONTINUATION. TYPICAL.
3. HOT, COLD & HOT WATER RECIRCULATION RISERS - SEE WATER RISER DETAIL ON SHEET P0901.
4. GAS PIPING UP TO SERVE ROOFTOP UNITS. SEE MECHANICAL ROOF PLAN ON SHEET M0206 FOR CONTINUATION.
5. PROVIDE SELF-ACTING THERMOSTATIC RECIRCULATION VALVE, CIRCUITSOLVER CS-3/4-115 IN ACCESSIBLE LOCATION.

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

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INTERIOR DESIGNER:

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

FIFTH LEVEL PIPING PLAN

SEAL

COLORADO LICENSED PROFESSIONAL ENGINEER 38983 03/13/2026

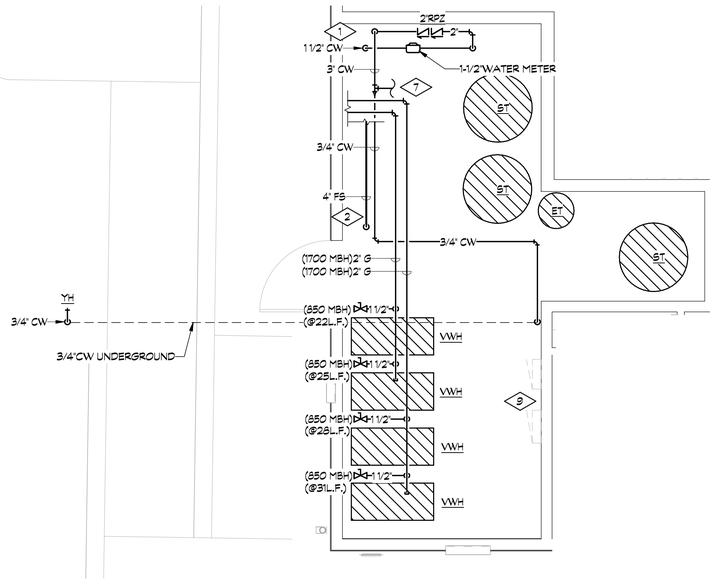
DATE: 03.13.2026
DRAWN BY: TB
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO:
P0215

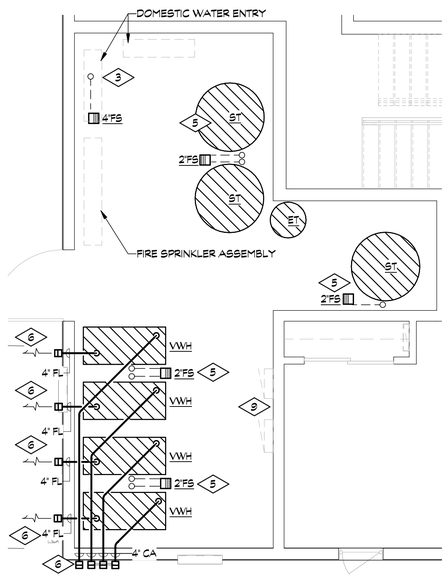
3/13/2026 8:50:33 AM

DETAIL NOTES THIS SHEET

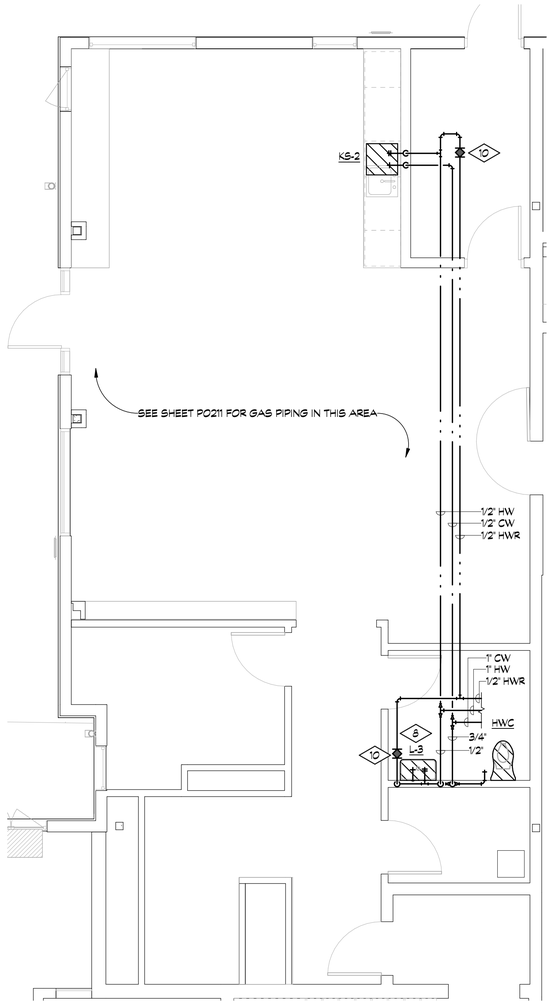
1. EXTEND AND CONNECT NEW DOMESTIC COLD WATER PIPING TO CIVIL POC. FIELD VERIFY EXACT LOCATION AND CONNECTION. BASIS OF DESIGN IS EXTERIOR METER PIT WITH 2" TAP/METER ASSEMBLY WITH INCREASE IN SERVICE SIZE TO 3" AT A POINT 50' DOWNSTREAM OF METER FULL LENGTH TO BUILDING WATER ENTRY.
2. EXTEND AND CONNECT NEW FIRE PROTECTION PIPING TO CIVIL POC. FIELD VERIFY EXACT LOCATION AND CONNECTION. COORDINATE FIRE RISER ROOM LOCATION WITH G.C. COORDINATE FDC LOCATION WITH AHJ. SPRINKLER DESIGN TO BE PERFORMED BY NFPA CERTIFIED DESIGNER, SHOP DRAWINGS BY DEFERRED SUBMITTAL.
3. ROUTE DRAIN FROM RPZ TO FLOOR SINK IN WATER ENTRY, DRAIN SIZE EQUAL TO RPZ SIZE.
4. ROUTE INDIRECT WASTE FROM EQUIPMENT TO SINK TAILPIECE.
5. ROUTE INDIRECT WASTE FROM EQUIPMENT TO FLOOR DRAIN/SINK.
6. FLUE & COMBUSTION AIR FROM WATER HEATERS OUT THROUGH EXTERIOR WALL. PIPING TO BE SCHEDULE 40 PVC OR CPVC, ROUTED AND TERMINATED PER MANUFACTURER'S REQUIREMENTS.
7. SEE CENTRAL HOT WATER PIPING DIAGRAM ON SHEET P0901 FOR DETAILS IN THIS AREA.
8. PROVIDE ASSE 1016, MIXING VALVE (WATTS USG-B) AND CHECK VALVE ON EACH WATER LINE. ADJUST VALVE TO PROVIDE 110°F WATER FOR HAND SINK. LOCATE IN ACCESSIBLE LOCATION BELOW SINK. SEE POINT OF USE DETAIL ON SHEET P0801.
9. NO PIPING SHALL BE ROUTED OVER ELECTRICAL PANEL, COORDINATE EXACT PIPE ROUTING IN FIELD TO AVOID ROUTING PIPING OVER PANEL.
10. PROVIDE SELF-ACTING THERMOSTATIC RECIRCULATION VALVE, CIRCUITSOLVER CS-1/2-115 IN ACCESSIBLE LOCATION.



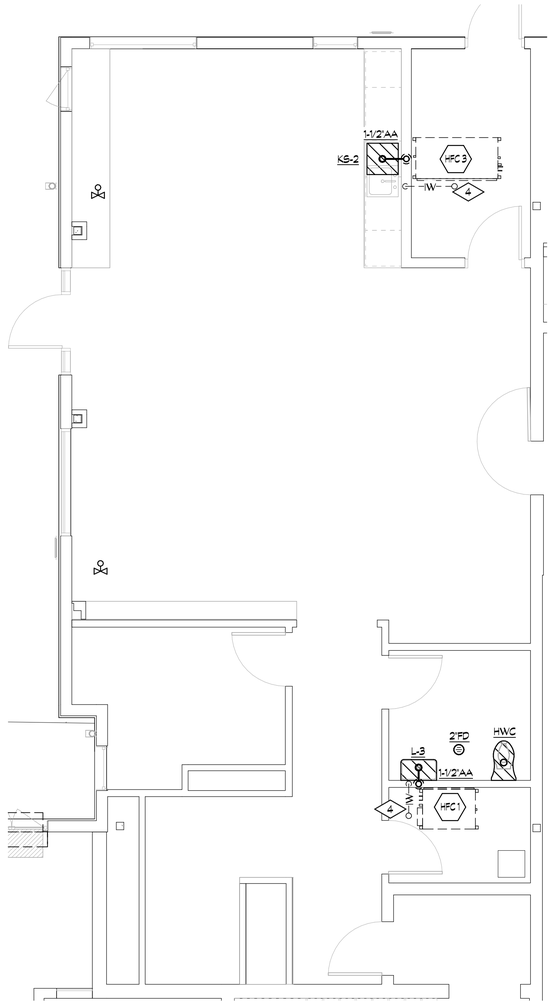
4 ENLARGED MECHANICAL ROOM PIPING PLAN
1/4" = 1'-0"



3 ENLARGED MECHANICAL ROOM SEWER PLAN
1/4" = 1'-0"



2 ENLARGED LOBBY PIPING PLAN
1/4" = 1'-0"



1 ENLARGED LOBBY SEWER PLAN
1/4" = 1'-0"

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

OWNER

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INTERIOR DESIGNER:

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

ENLARGED PLUMBING PLANS

SEAL

COLORADO LICENSED PROFESSIONAL ENGINEER 38983 03/13/2026

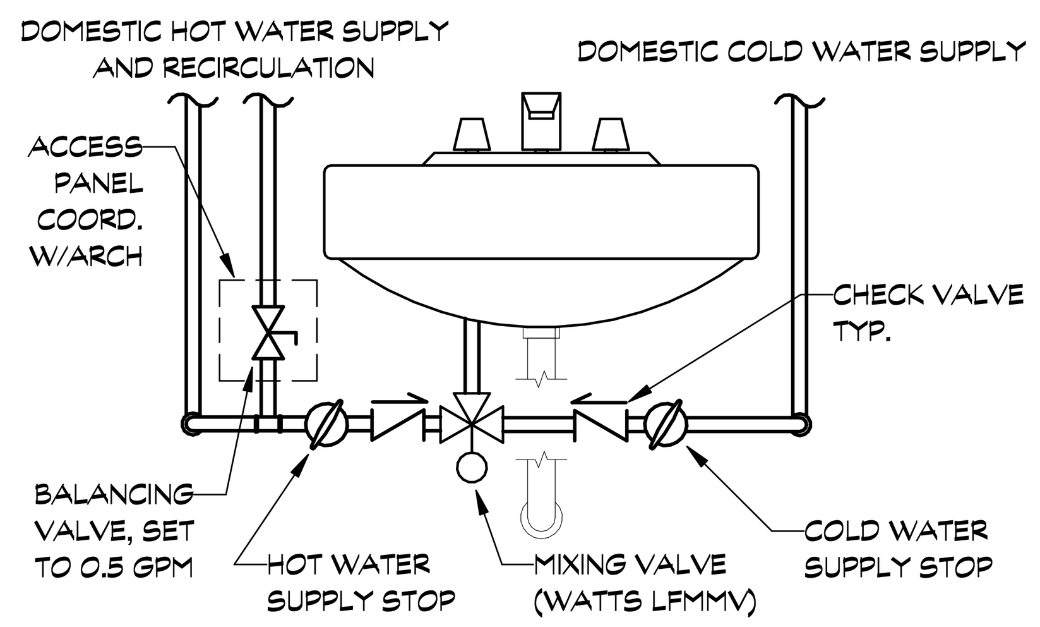
DATE: 03.13.2026
DRAWN BY: TB
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO: **P0401**

3/13/2026 8:50:36 AM

LEGEND

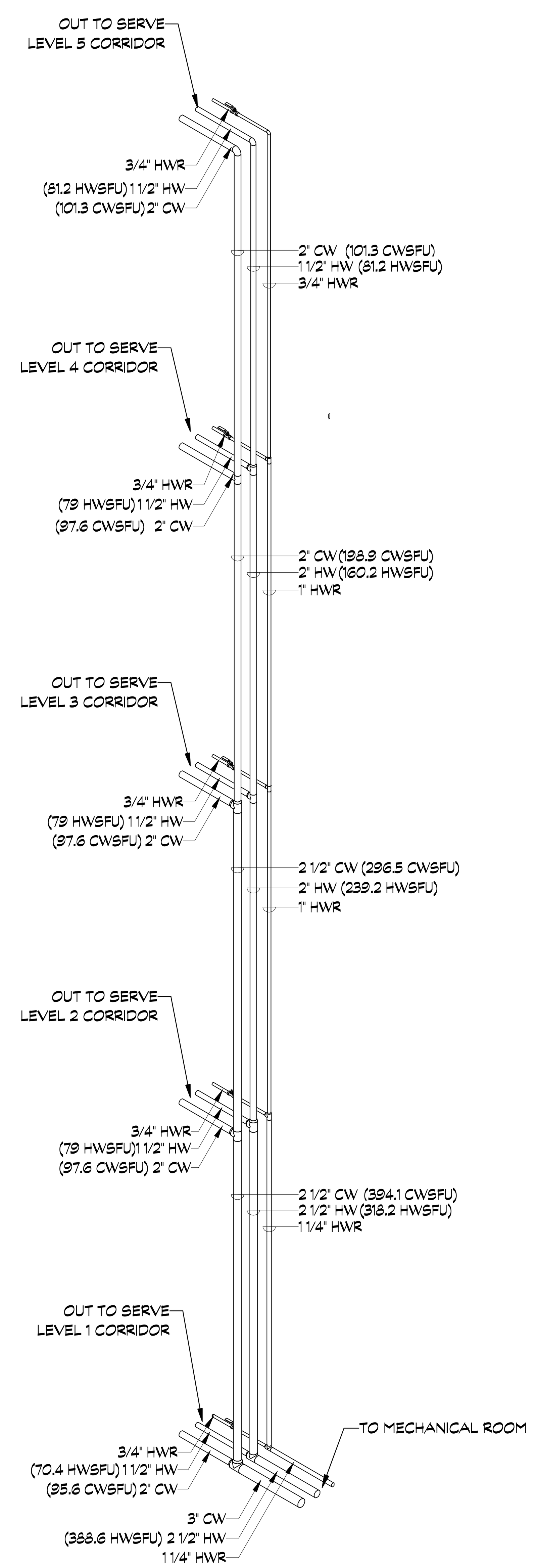
—ST—	STORM - ABOVE FLOOR
-ST-	STORM - BELOW FLOOR
	SANITARY - ABOVE FLOOR
	SANITARY - BELOW FLOOR
—GI—	SANITARY TO GREASE
—CV—	CIRCUIT VENT
—CW&V—	COMBINATION WASTE AND VENT
—WV—	WET VENT
—V—	SANITARY VENT
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	DOM. HOT WATER, RECIRCULATING
—G—	GAS
—FS—	FIRE SPRINKLER
—HWS—	HOT WATER SUPPLY
—HWR—	HOT WATER RETURN
—CWS—	CHILLED WATER SUPPLY
—CWR—	CHILLED WATER RETURN
—C—	CONDENSATE
—S—	STEAM
	PLUMBING POINT OF CONNECTION
	RISER UP
	RISER DOWN
	BALL VALVE
	BUTTERFLY VALVE
	GATE VALVE
	GAS COCK (GAS ONLY)
	BALANCING COCK
	CIRCUIT SETTER
	CHECK VALVE
	PRESSURE REDUCING VALVE
	HOSE BIBB/SILL COCK
	FLOOR DRAIN
	FLOOR SINK
	ROOF DRAIN
	UNION
	FLEXIBLE CONNECTOR
	THERMOMETER
	PRESSURE GAUGE
	STRAINER
	FIRE DEPARTMENT CONNECTION
	WATER METER
GAS	GAS METER
	MECHANICAL EQUIPMENT
	DETAIL NOTE
	KITCHEN / MEDICAL EQUIPMENT
—A—	COMPRESSED AIR
—MED—	MEDICAL AIR
—VAC—	VACUUM
—O2—	OXYGEN
—N2O—	NITROUS OXIDE
(E)	EXISTING TO REMAIN
(ER)	EXISTING TO BE REPLACED
(ED)	EXISTING TO BE DEMOLISHED
NC	NORMALLY CLOSED



- FIELD COORDINATE BALANCING VALVE LOCATION AND ACCESS PANEL WITH GENERAL CONTRACTOR AND CASEWORK
- MAKE CONNECTION WITHIN 2'0" OF FIXTURE FOR COMPLIANCE OF 2021 IECC SECTION C404.5 FOR PUBLIC LAVATORY FAUCETS
- SHOWN AS SINGLE FIXTURE INSTALLATION, CONFIRM IN FIELD
- SHOWN AS SINGLE FAUCET SUPPLY, PROVIDE ADDITIONAL CW SUPPLY WHEN FAUCET REQUIRES

NTS

MIXING VALVE DIAGRAM (IECC 2021) 4

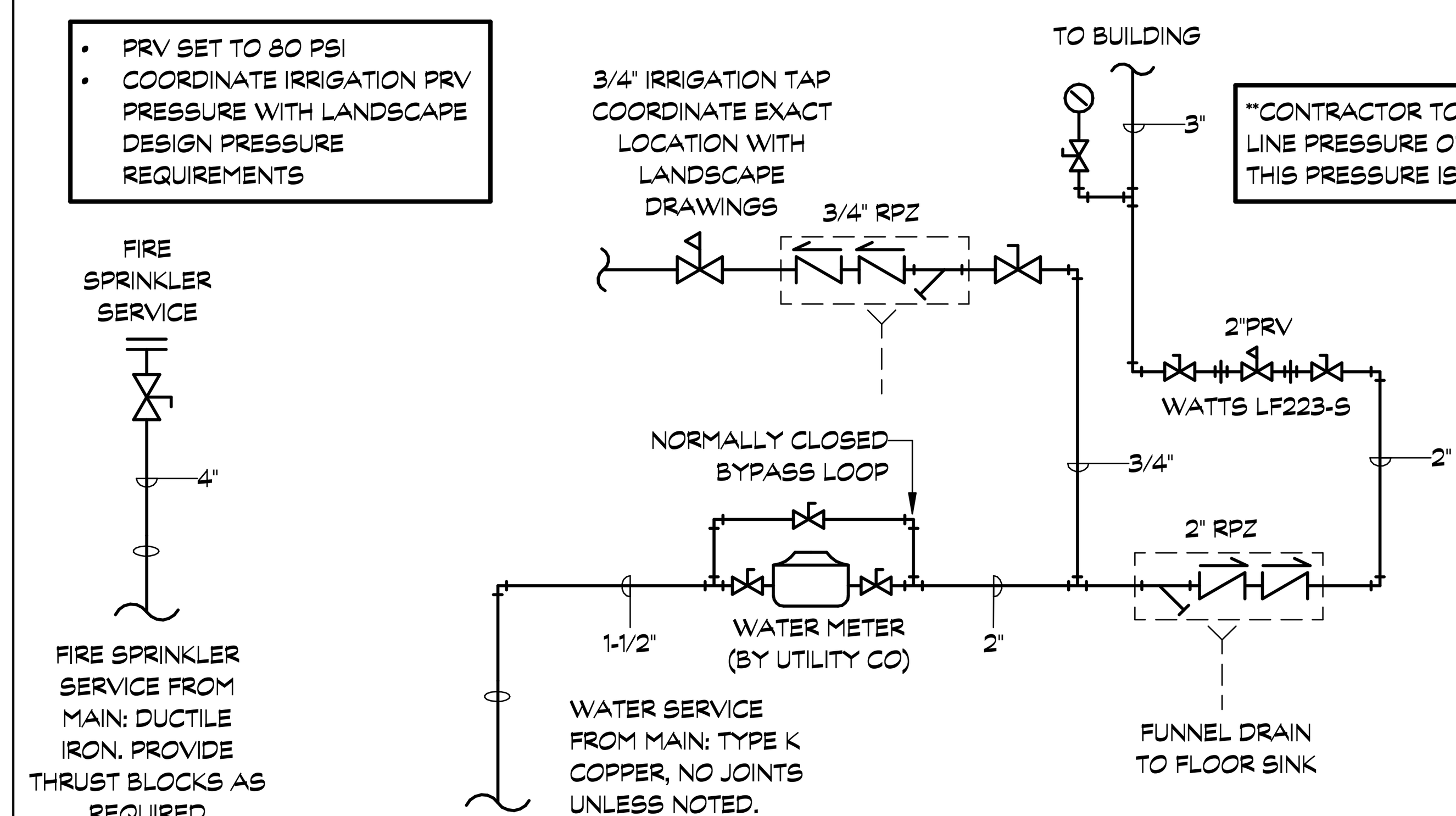


NTS

WATER RISER DIAGRAM 2

- PRV SET TO 80 PSI
- COORDINATE IRRIGATION PRV PRESSURE WITH LANDSCAPE DESIGN PRESSURE REQUIREMENTS

"CONTRACTOR TO VERIFY MINIMUM SERVICE LINE PRESSURE OF 75PSI. NOTIFY ENGINEER IF THIS PRESSURE IS NOT AVAILABLE"



RPZ SIZE	RELIEF GPM
3/4"	31
1"	35
1-1/2"	75
2"	155
3"	230

FD SIZE	CAP. GPM
2"	55
3"	112
4"	170
5"	350
6"	450

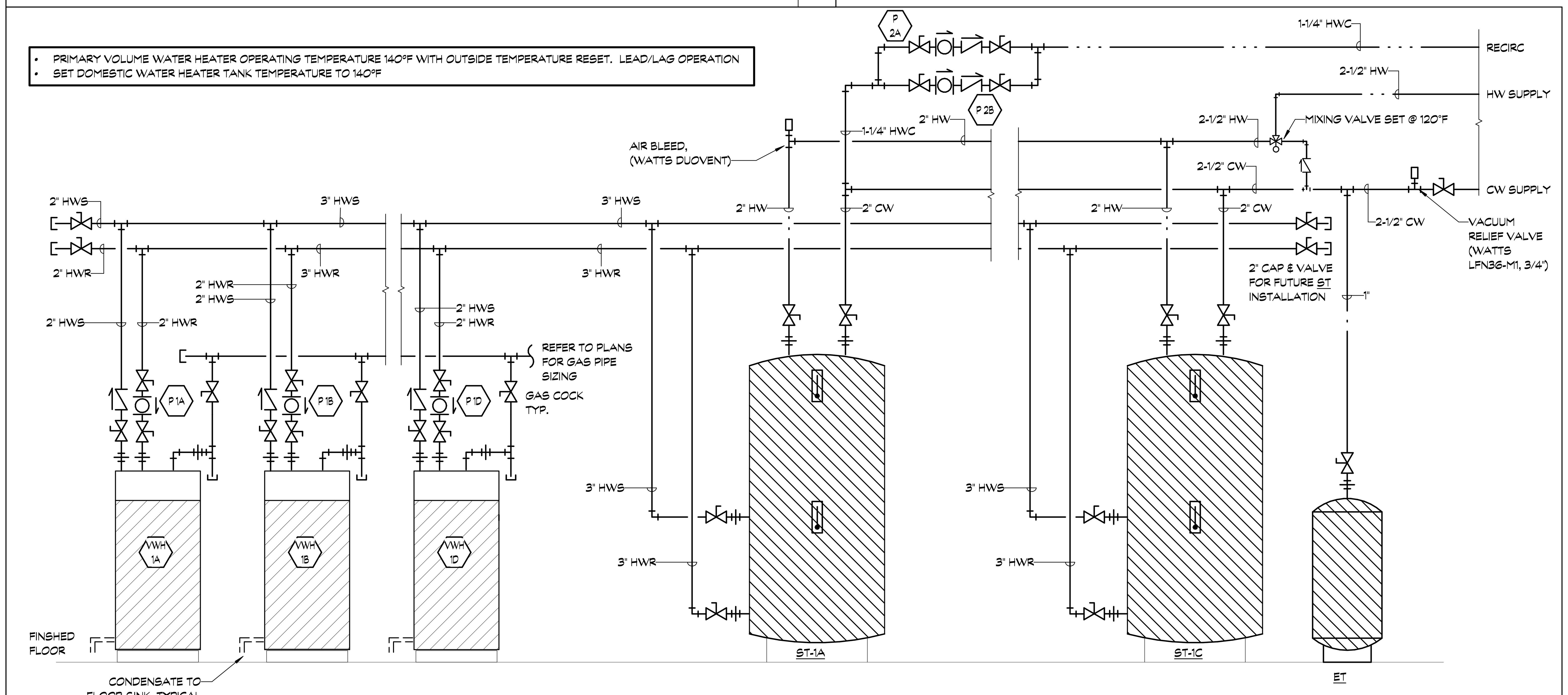
NTS

COLD WATER PIPING DIAGRAM 3

PLUMBING FIXTURE SCHEDULE

KEY	DESCRIPTION	FITTINGS/ACCESSORIES	PWR	VOLT	MANUFACTURER/CATALOG #
WC	WATER CLOSET, TANK TYPE, FLOOR MOUNTED, SIPHON JET, ELONGATED BOWL, 1.28 GPF	HEAVY DUTY TOILET SEAT W/LID, STAINLESS STEEL HINGES	-	-	RE: ARCH PLANS - SHEET A1008
HWC	HANDICAP WATER CLOSET, TANK TYPE, FLOOR MOUNTED, SIPHON JET, ELONGATED BOWL, 1.28 GPF	HEAVY DUTY TOILET SEAT W/LID, STAINLESS STEEL HINGES	-	-	RE: ARCH PLANS - SHEET A1008
L-1	COUNTERTOP LAVATORY, OVAL	WATER SENSE LISTED FAUCET, INSULATED DRAIN PIPING	-	-	RE: ARCH PLANS - SHEET A1008
L-2	COUNTERTOP LAVATORY, RECTANGULAR	WATER SENSE LISTED FAUCET, INSULATED DRAIN PIPING	-	-	RE: ARCH PLANS - SHEET A1008
L-3	WALL HUNG LAVATORY, ADA	WATER SENSE LISTED FAUCET, INSULATED DRAIN PIPING	-	-	RE: ARCH PLANS - SHEET A1008
KS	SINGLE COMPARTMENT KITCHEN SINK, DISPOSAL, DISH MACH. AIR GAP ADA	1.5 GPM AERATOR, INSULATED DRAIN PIPING	1/2 HP	120/1	RE: ARCH PLANS - SHEET A1008
KS-2	LOBBY BAR SINK		-	-	RE: ARCH PLANS - SHEET A1008
BT	BATHTUB FOR RESIDENTIAL UNITS	WATER SENSE LISTED SHOWER HEAD	-	-	RE: ARCH PLANS - SHEET A1008
SH	SHOWER FOR RESIDENTIAL UNITS	WATER SENSE LISTED SHOWER HEAD	-	-	RE: ARCH PLANS - SHEET A1008
FD	FLOOR DRAIN, ADJUSTABLE CAST IRON SUMP	ROUND NIKALOY STRAINER, INLINE TRAP SEAL	-	-	JOSAM 30000A SURE SEAL
FS	FLOOR SINK, PORCELAIN ENAMELLED, 12"x12"x8"	HALF GRATE, CHLORALLOY MEMBRANE (EXCEPT IN SLAB ON GRADE)	-	-	JOSAM 49340A SURE SEAL
HD	HUB DRAIN, FUNNEL INLET, CAST IRON	CAST IRON P TRAP	-	-	
RD	ROOF DRAIN, ADJUSTABLE CAST IRON SUMP EXTENSION, DECK CLAMP/RECEIVER	POLYPROPYLENE DOME STRAINER	-	-	JOSAM 21500-AE
CO	FLOOR CLEANOUT, CAST IRON HOUSING	ROUND NIKALOY TOP (SUBSTITUTE SQUARE TOP (1-SQ) IN TILED AREAS, CARPET MARKER (-14) IN CARPETED AREAS)	-	-	JOSAM 55000-1
WCO	WALL CLEANOUT	STAINLESS STEEL ACCESS COVER (JOSAM 58600)	-	-	JOSAM 58910-19
SS	SERVICE SINK, FLOOR MOUNTED MOLDED STONE 24"X24"X10"	FAUCET WITH VAC.BREAKER,INTEGRAL CHECK VALVES AND SUPPLY STOPS, FLAT SST STRAINER	-	-	FIAT MSB2424 CHICAGO FAUCET 897-CCP
RPZ	REDUCED PRESSURE BACKFLOW PREVENTER	STRAINER, SHUTOFF VALVES, AIR GAP	-	-	WATTS 009QTS, 909AG
FHB	FREEZE PROOF WALL HYDRANT , TEE KEY HANDLE W/ HINGED DOOR	VACUUM BREAKER	-	-	WOODFORD MODEL B65
YH	FREEZELESS YARD HYDRANT. 36" BURRIAL DEPTH	VACUUM BREAKER	-	-	WOODFORD MODEL Y30
RB	REFRIGERATOR ICE MAKER WALL BOX	SHOCK ARRESTOR, QUARTER TURN VALVE	-	-	SIOUX CHIEF 696-G1010WF
WU	SUPPLY & DRAIN UNIT FOR AUTOMATIC WASHER TOP OR BOTTOM SUPPLY AS REQUIRED	INLINE HOSE WATER HAMMER ARRESTOR	-	-	SIOUX CHIEF 696-2313WF
AA	AIR ADMITANCE VALVE	LOCATE UNDER SINK	-	-	STUDOR VENT MINI-VENT
VWH - 1A/B/C/D	GAS FIRED VOLUME WATER HEATER, POWER/DIRECT VENT 850MBH, 5:1 TURNDOWN, 973 GPH @ 100°F RISE	P&T RELIEF	-	-	LAARS NEOTHERM NTV-850
ST-1A/B/C	HOT WATER STORAGE TANK, JACKETED AND INSULATED VERTICAL TANK, 430 GALLON CAPACITY, ASME RATED, 46" DIAMETER		-	-	RHEEM ST430A
ET	DIAPHRAGM EXPANSION TANK, 53 GALLONS, 35 GALLON ACCEPTACLE, ASME RATED		-	-	AMTROL ST-80V-C
P1 A/B/C/D	WATER HEATER RECIRC PUMP, CAST IRON HOUSING, STAINLESS IMPELLER, CANNED ROTOR, INTEGRAL CHECK VALVE, 68 GPM @ 26'H		3/4 HP	208/1	GRUNDFOS TP 40-160/2B (WATER HEATER PUMP)
P2 A/B	WATER HEATER RECIRC PUMP, CAST IRON HOUSING, STAINLESS IMPELLER, CANNED ROTOR, INTEGRAL CHECK VALVE, 10 GPM @ 14'H, PUMP SPEED TO VARY WITH PRESSURE		260 W	208/1	GRUNDFOS MAGNA1 40-80 GFN (MAIN CIRC)
SP	SIMPLEX SUBMERSIBLE SUMP PUMP, DIAPHRAGM SWITCH, 50GPM @ 20'H, 1/2 HP, 120V	PANEL & HIGH LEVEL ALARM, GATE & CHECK VALVES, DISCRIMINATING LIQUID SENSOR FOR OIL DETECTION	1/2 HP	120/1	WEIL 1411-09DL (ELECTRIC TRACTION ELEVATOR)
NOTES:	PC IS RESPONSIBLE FOR ALL ANCILLARY EQUIPMENT AND FITTINGS (STOPS, FLEXIBLE TUBING, ESCUCHEONS, ETC.) NEEDED TO CONNECT FIXTURES				

- PRIMARY VOLUME WATER HEATER OPERATING TEMPERATURE 140°F WITH OUTSIDE TEMPERATURE RESET. LEAD/LAG OPERATION
- SET DOMESTIC WATER HEATER TANK TEMPERATURE TO 140°F



NTS

CENTRAL HOT WATER PIPING DIAGRAM 1

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

OWNER

MAY REIGLER PROPERTIES
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INTERIOR DESIGNER:

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PROJECT LOCATION

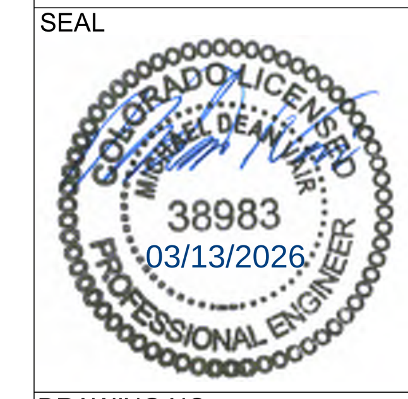
STEAMBOAT BASECAMP AREA 1B RESIDENTIAL

1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

PLUMBING DETAILS & SCHEDULES

SEAL

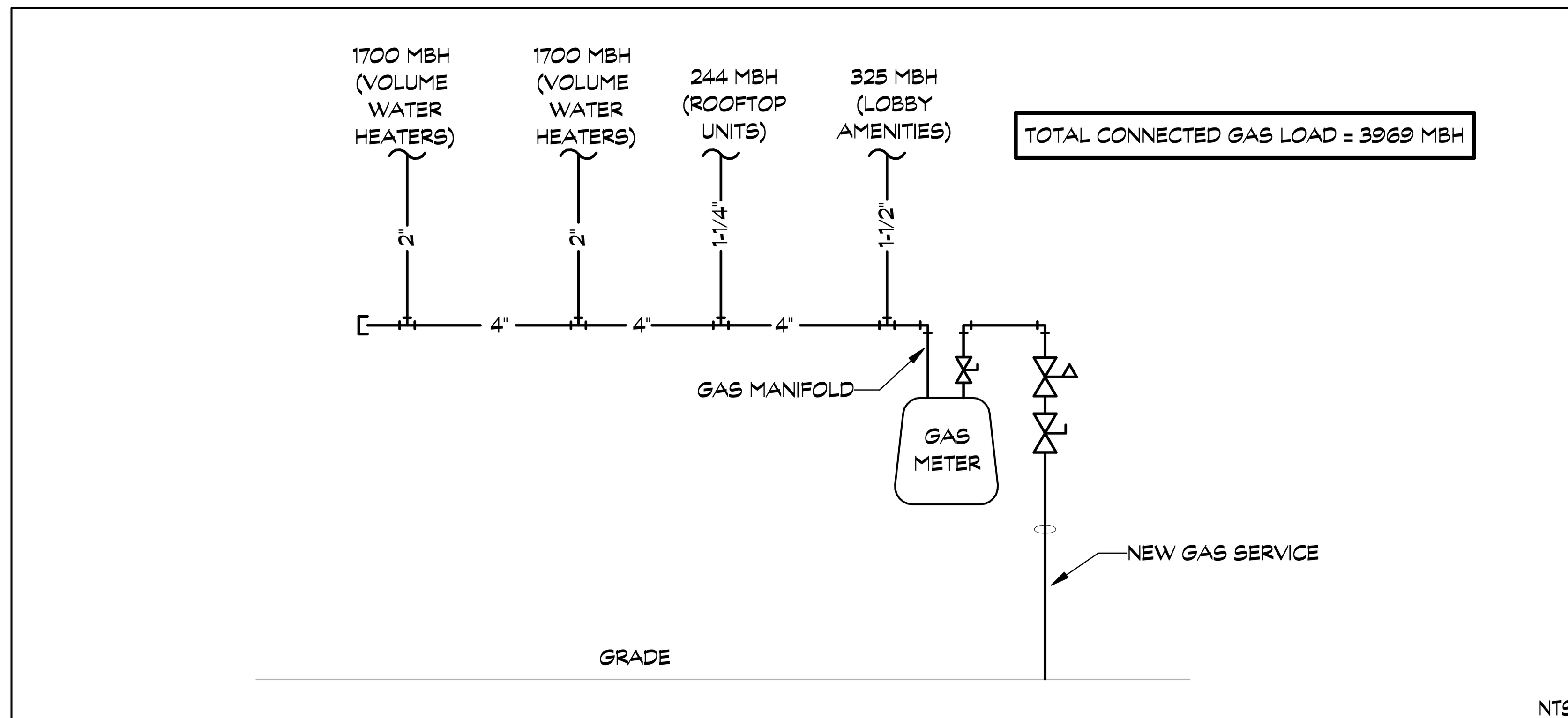


DATE: 03.13.2026
DRAWN BY: TB
CHECKED BY: MV
PROJECT NO: 25135

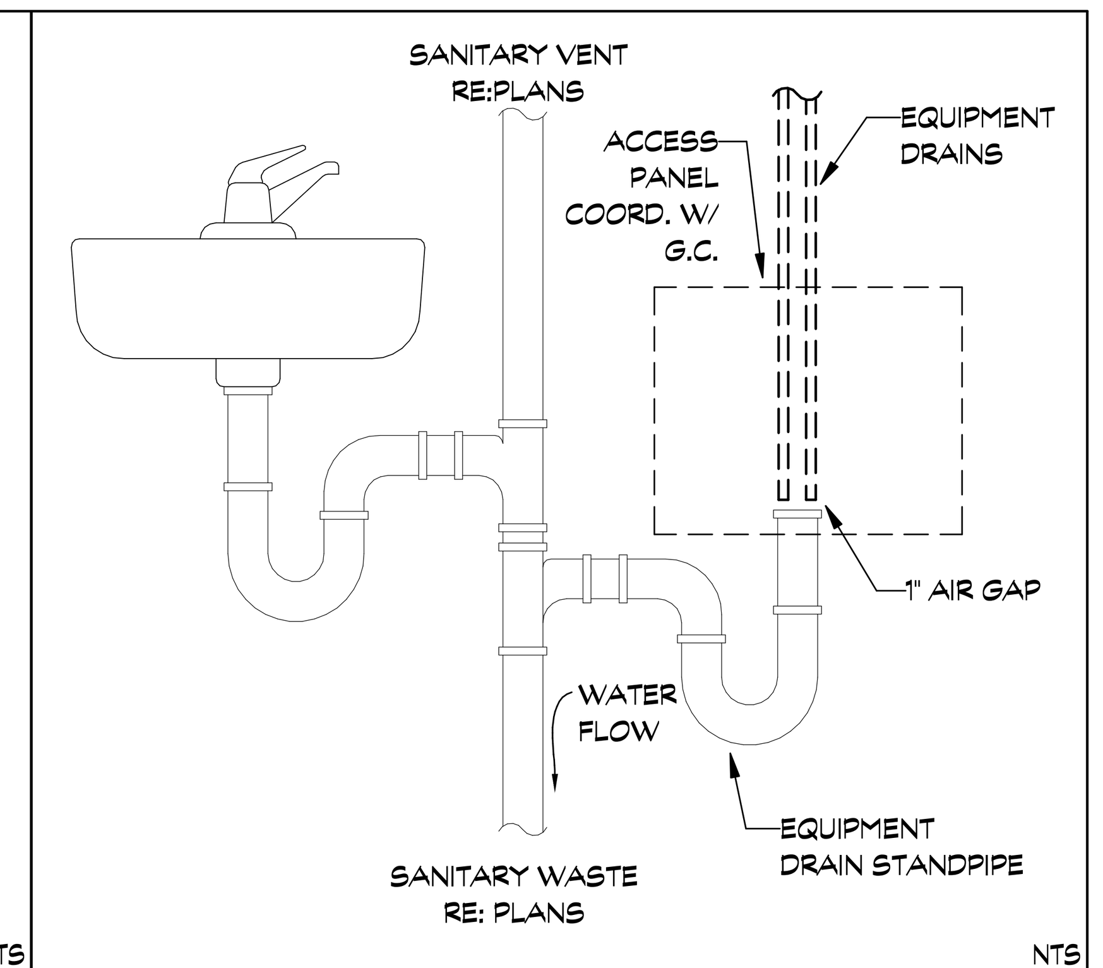
DRAWING NO:

P0901

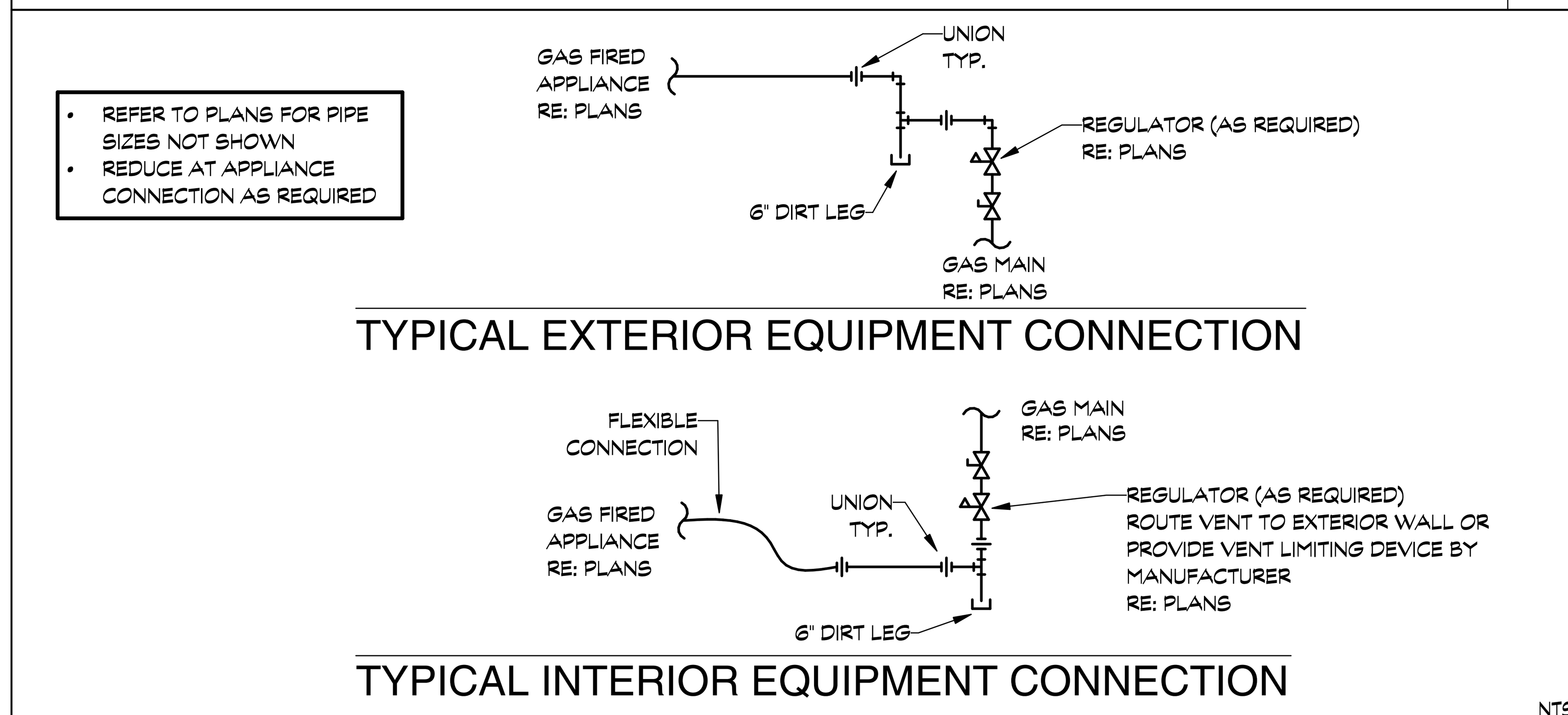
3/13/2026 8:50:37 AM



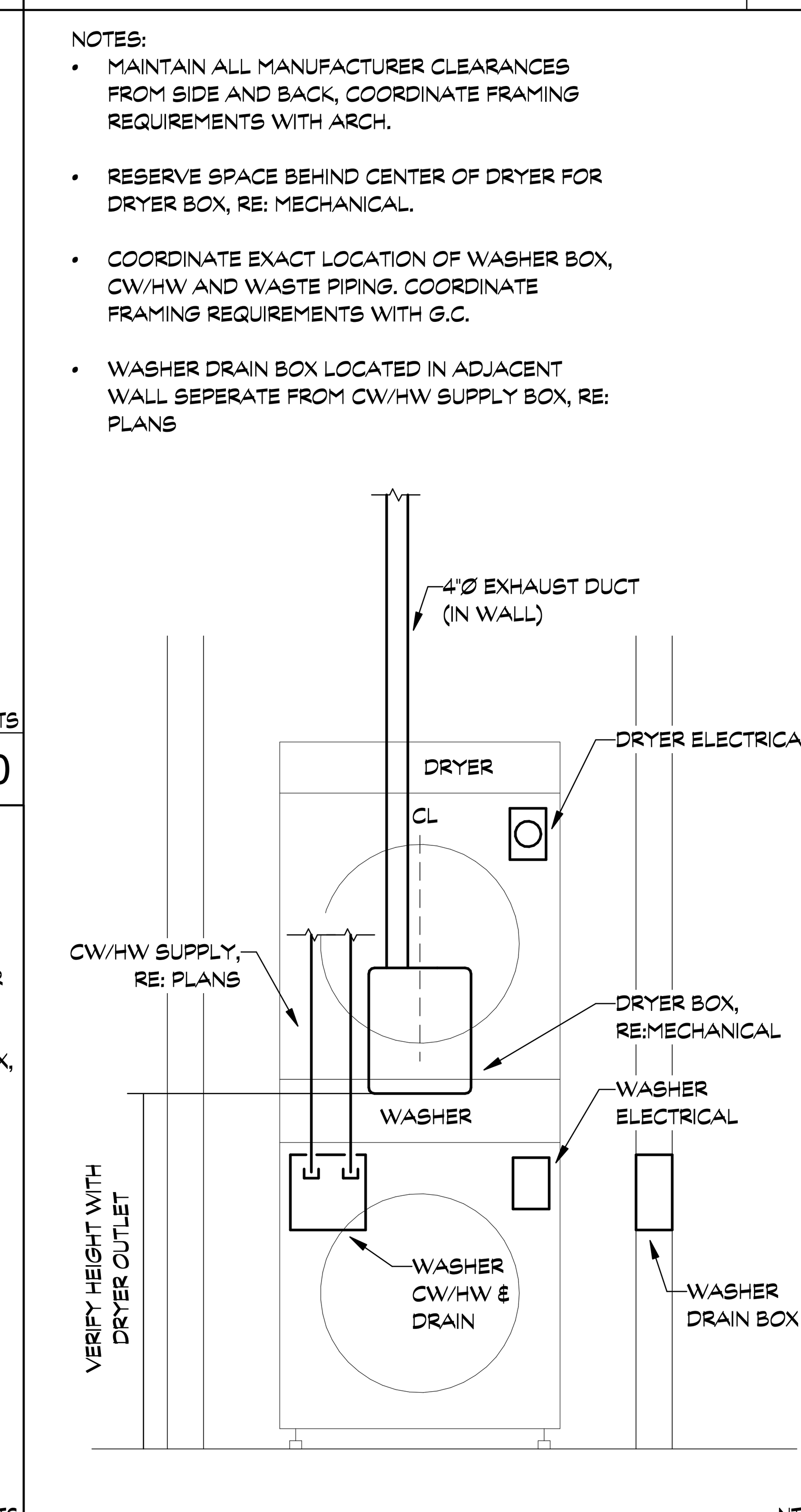
GAS MANIFOLD AND METER DIAGRAM 12



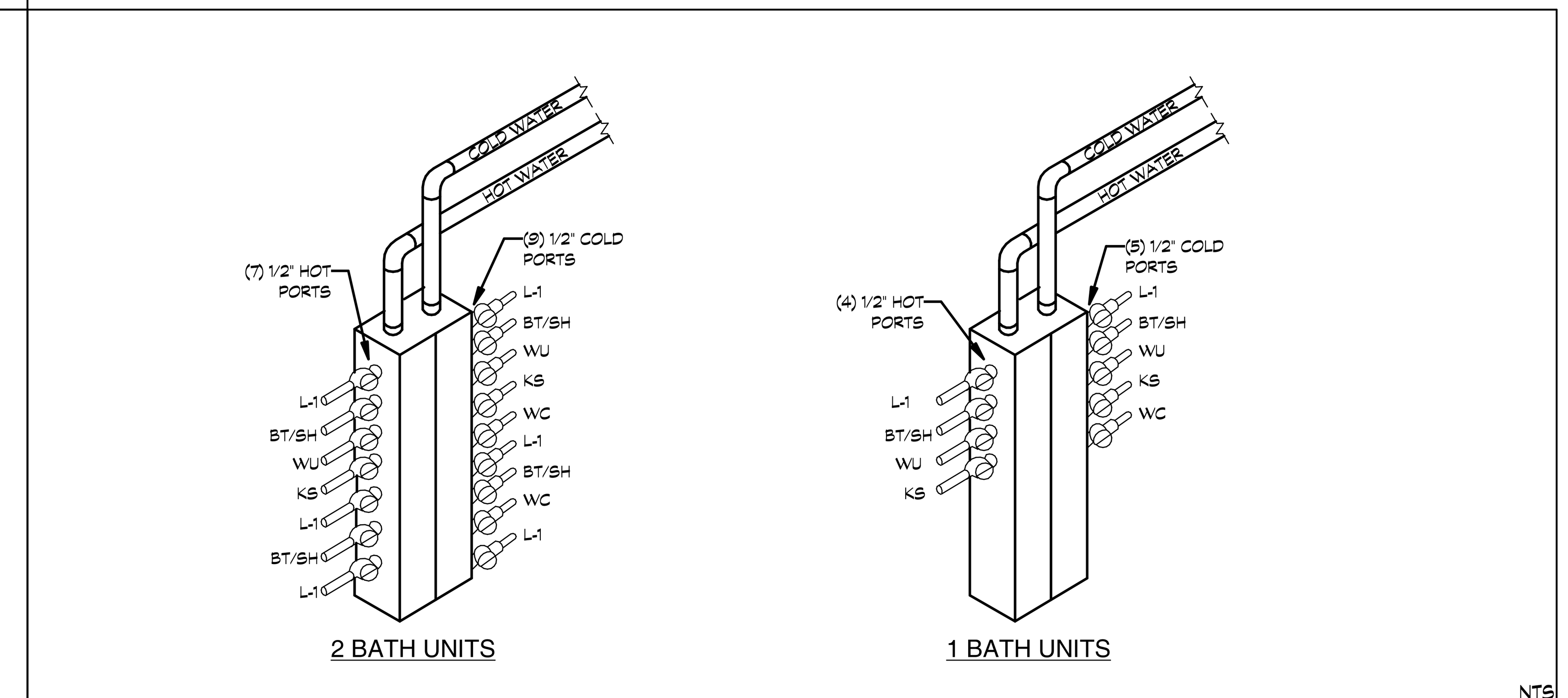
EQUIPMENT DRAIN DIAGRAM 11



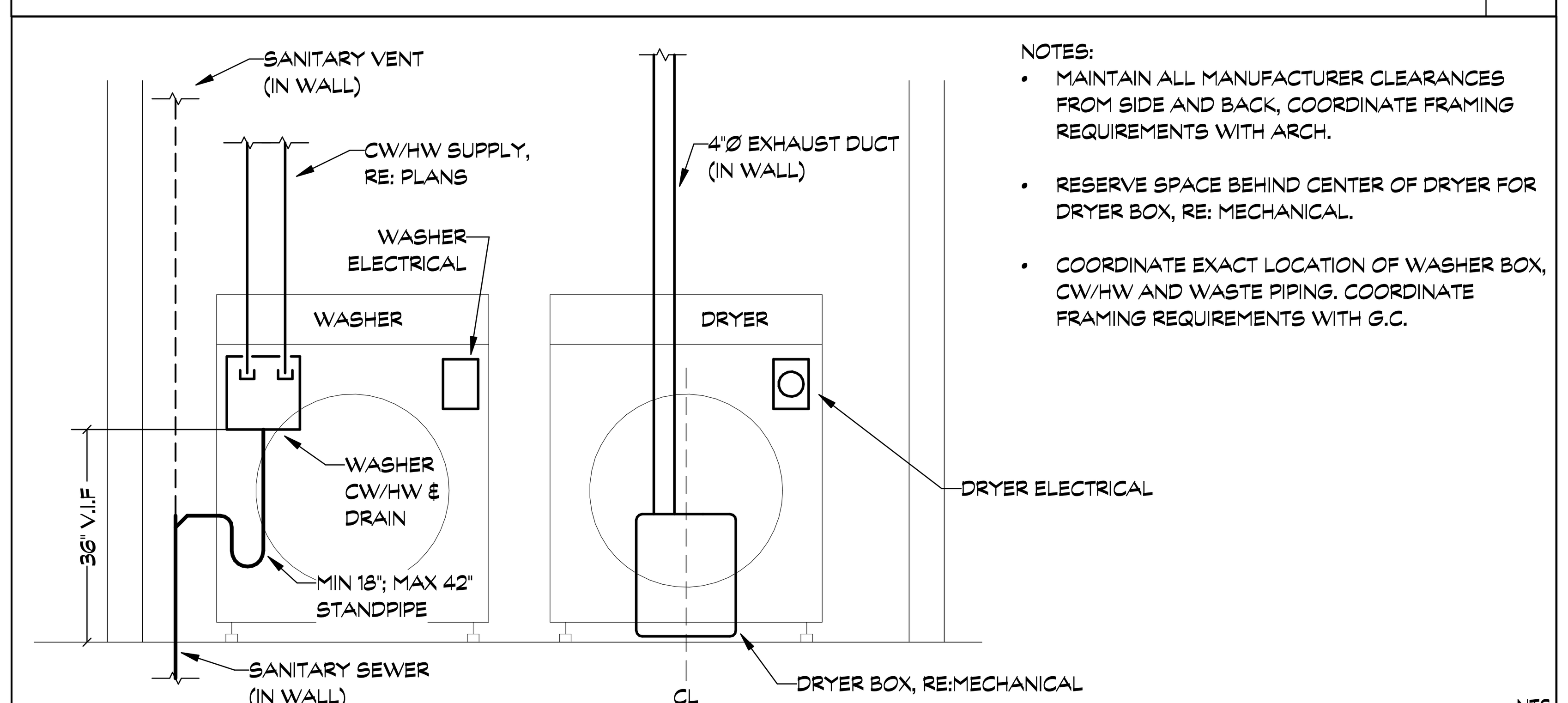
GAS EQUIPMENT CONNECTION DIAGRAM 10



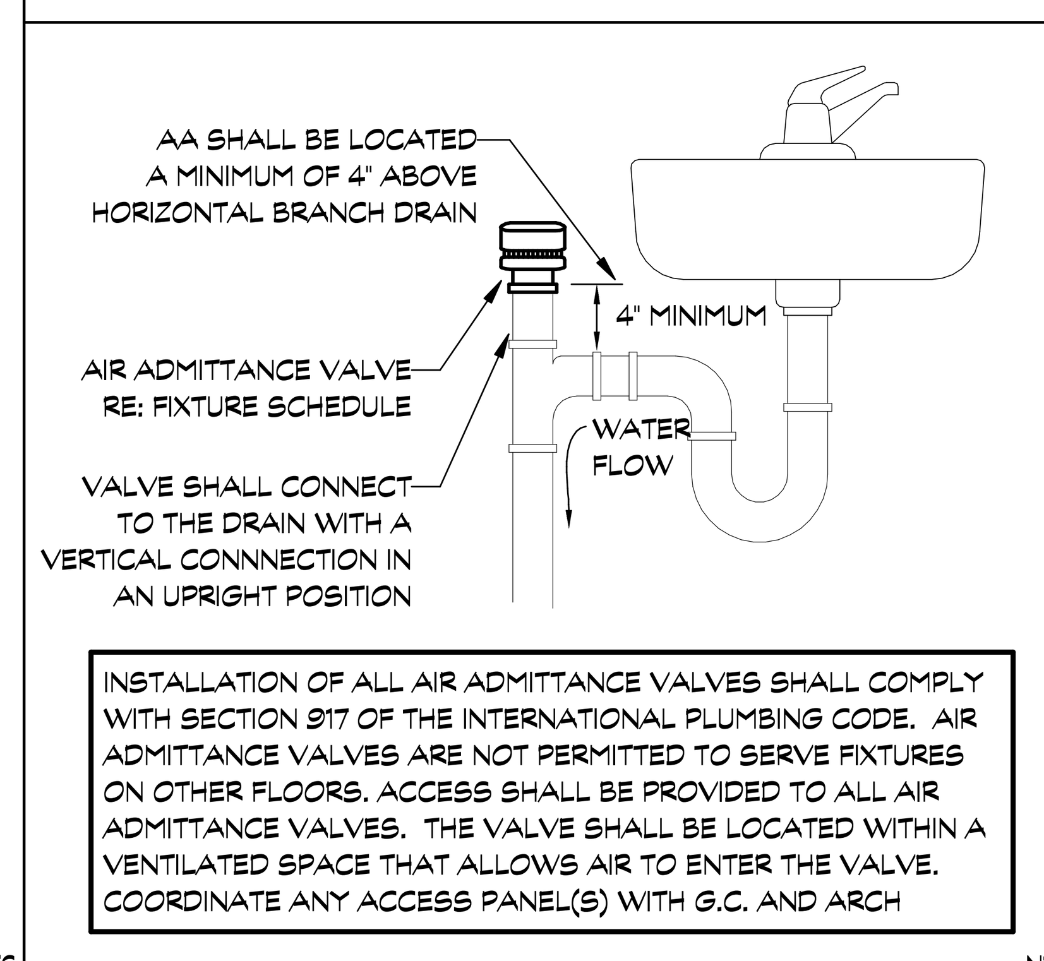
WASHER/DRYER DIAGRAM (STACKED) 7



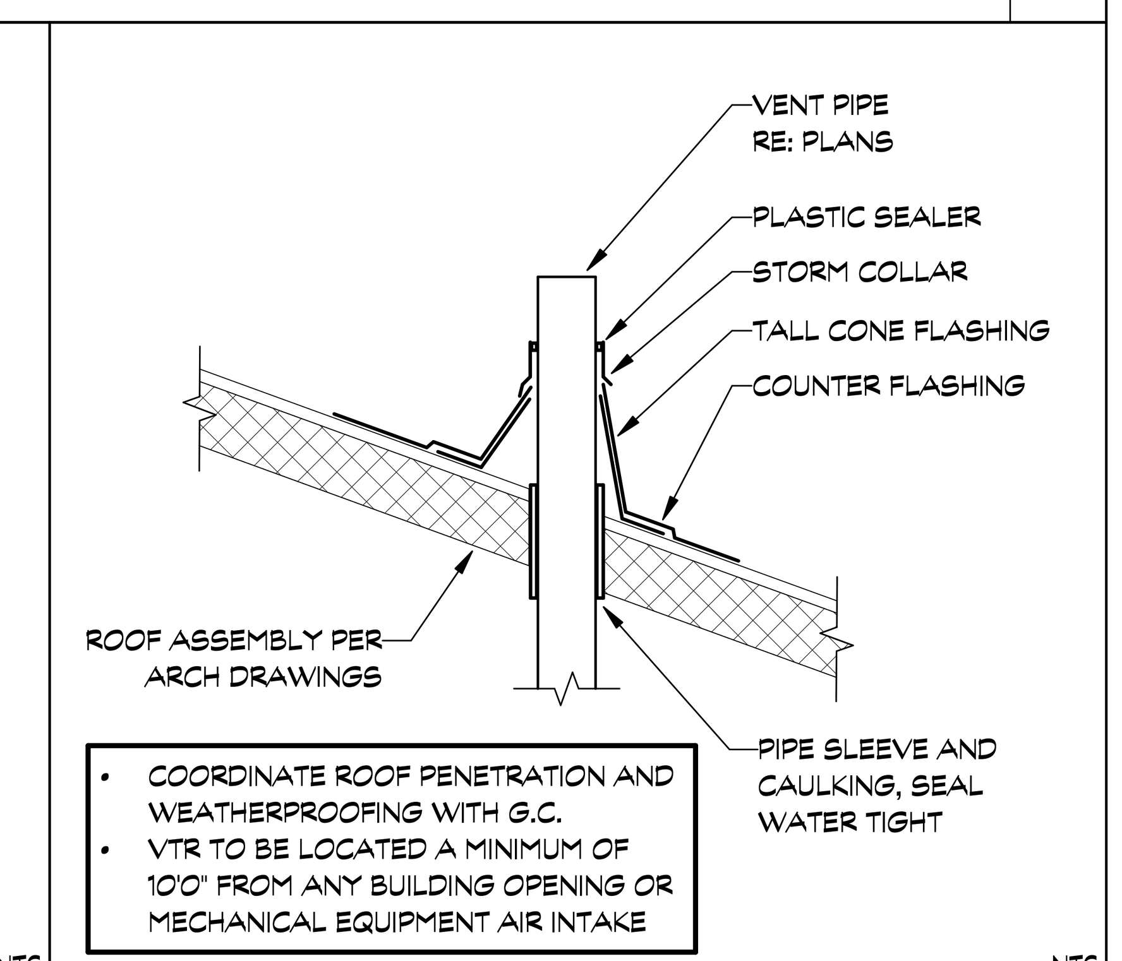
PEX MANIFOLD DIAGRAM 9



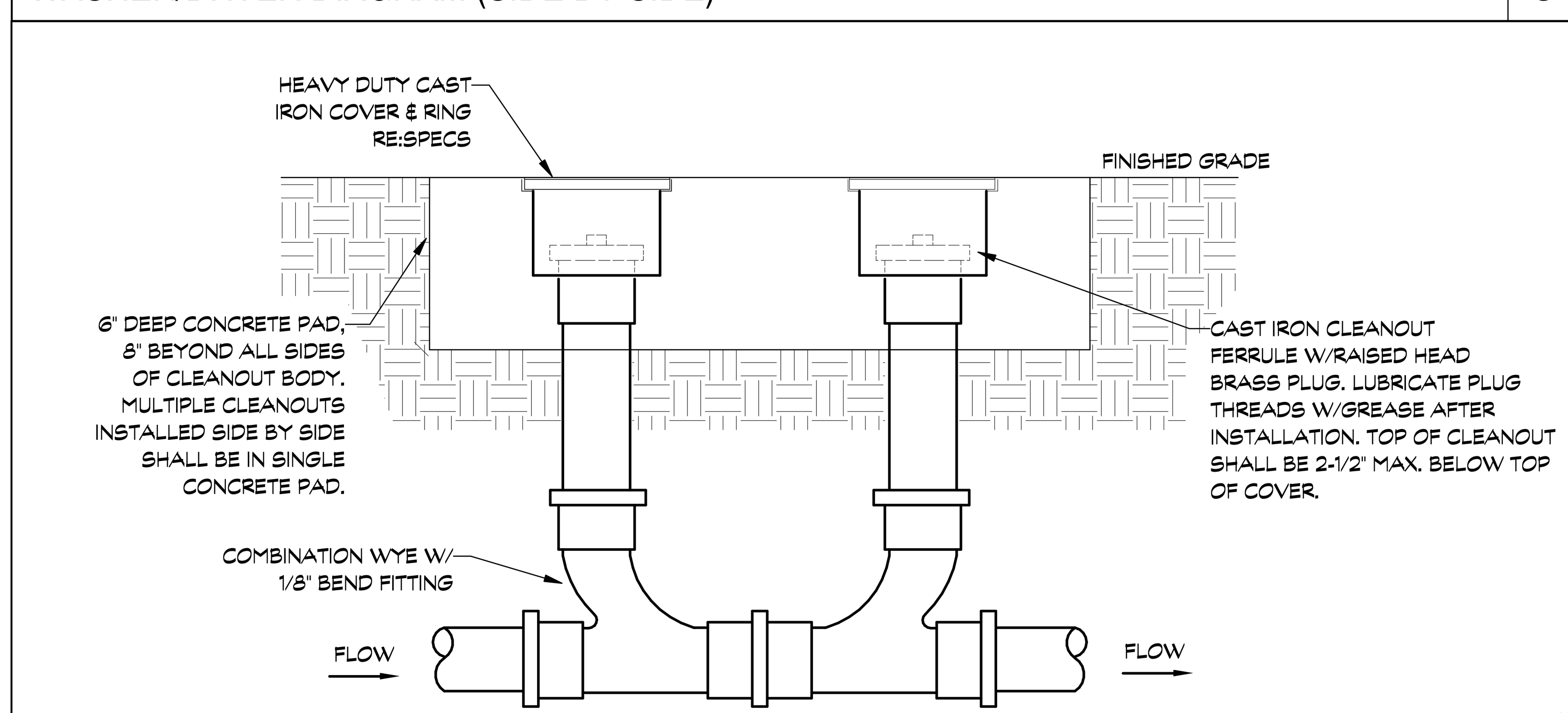
WASHER/DRYER DIAGRAM (SIDE BY SIDE) 8



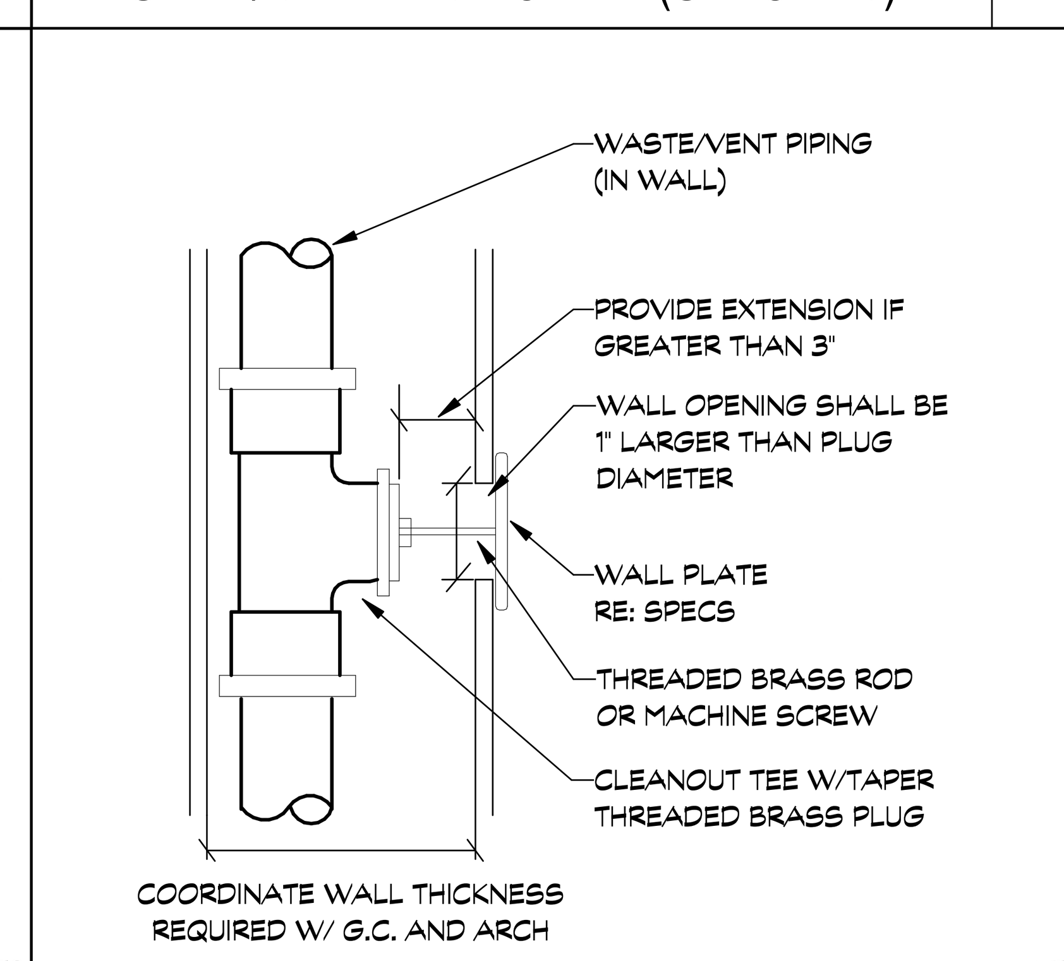
AIR ADMITTANCE VALVE DIAGRAM 6



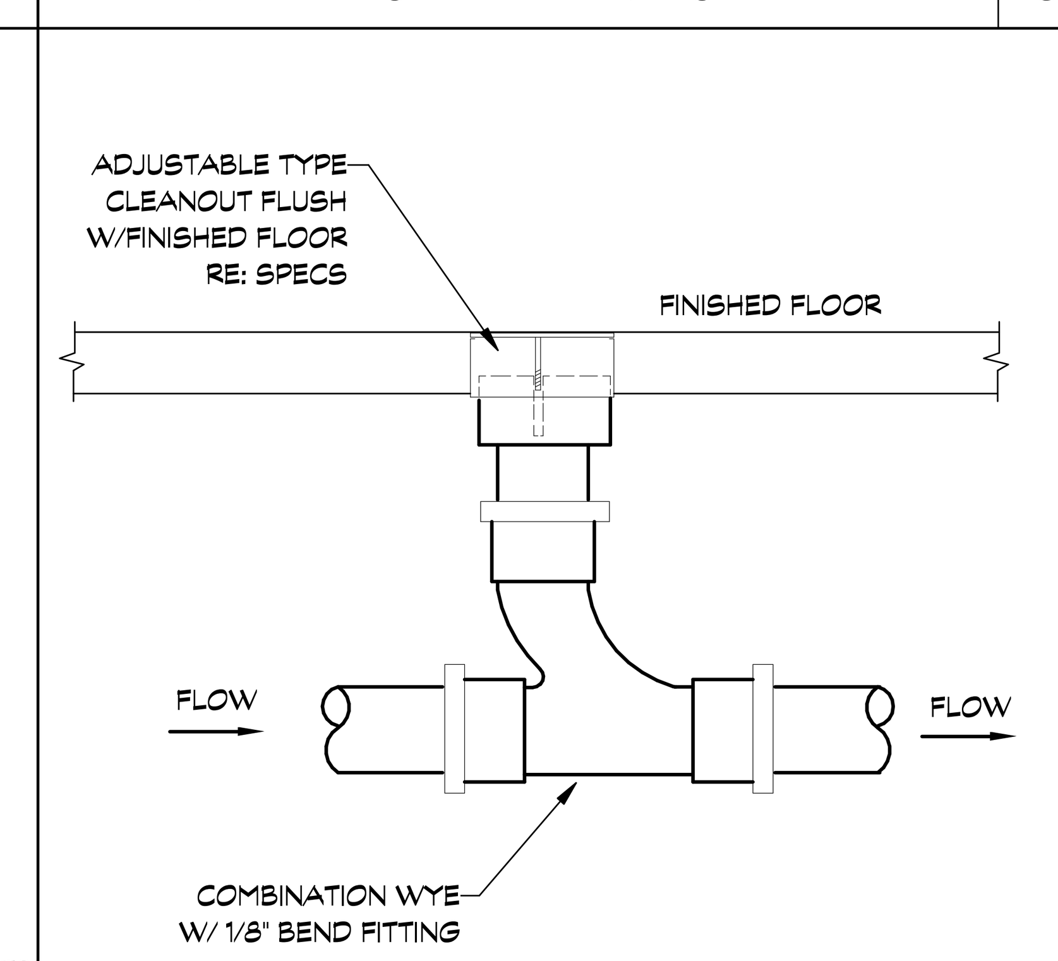
VENT THRU ROOF (VTR) DIAGRAM 5



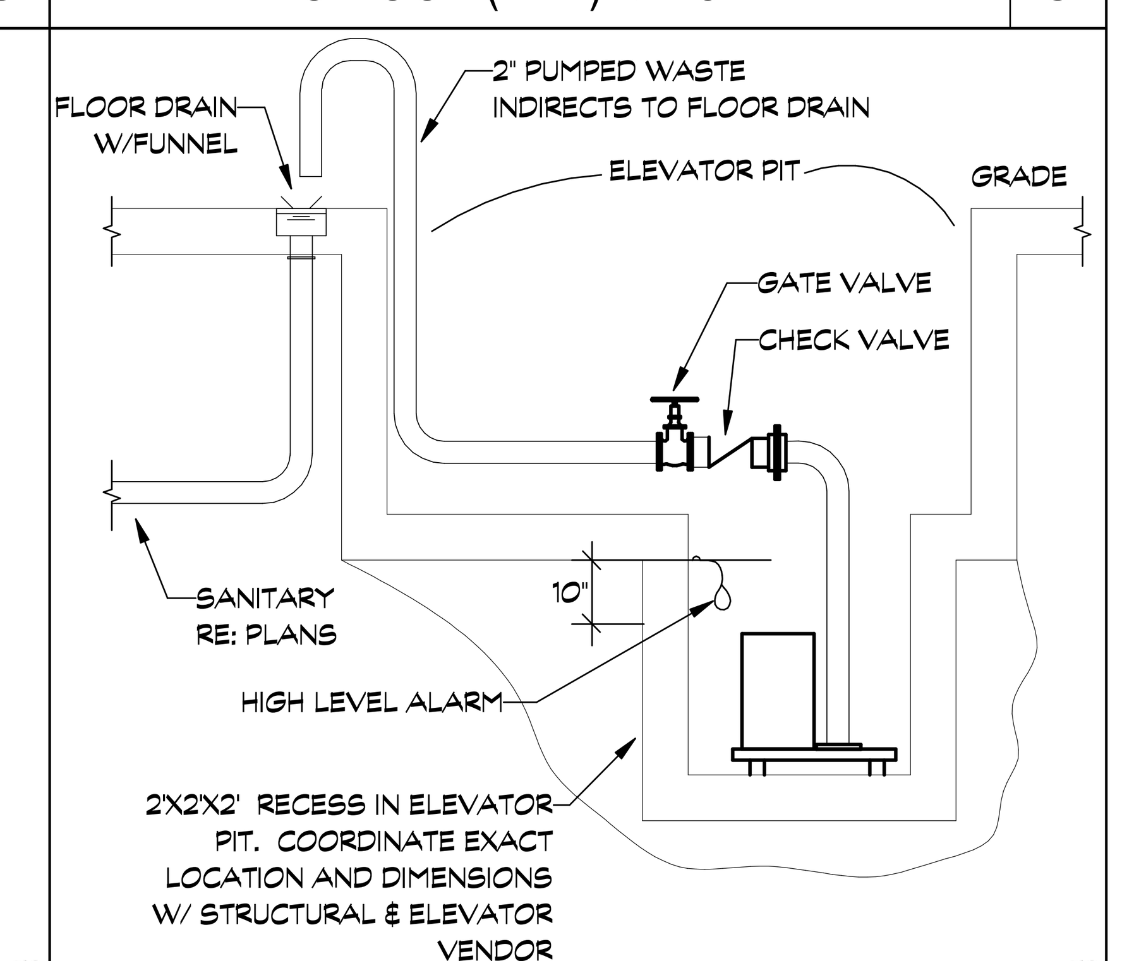
TWO-WAY CLEANOUT DIAGRAM 4



WALL CLEANOUT DIAGRAM 3



FLOOR CLEANOUT DIAGRAM 2



ELEVATOR SUMP PUMP DIAGRAM 1

APPROVAL STAMPS:

No.	Date	Description

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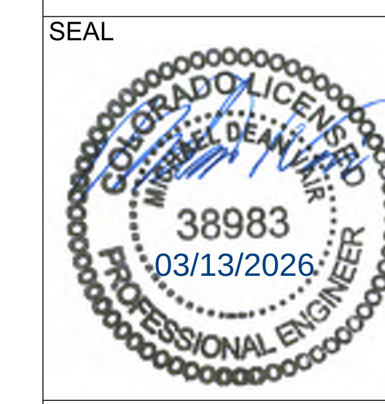
PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

PLUMBING DETAILS

SEAL



DATE: 03.13.2026
DRAWN BY: TB
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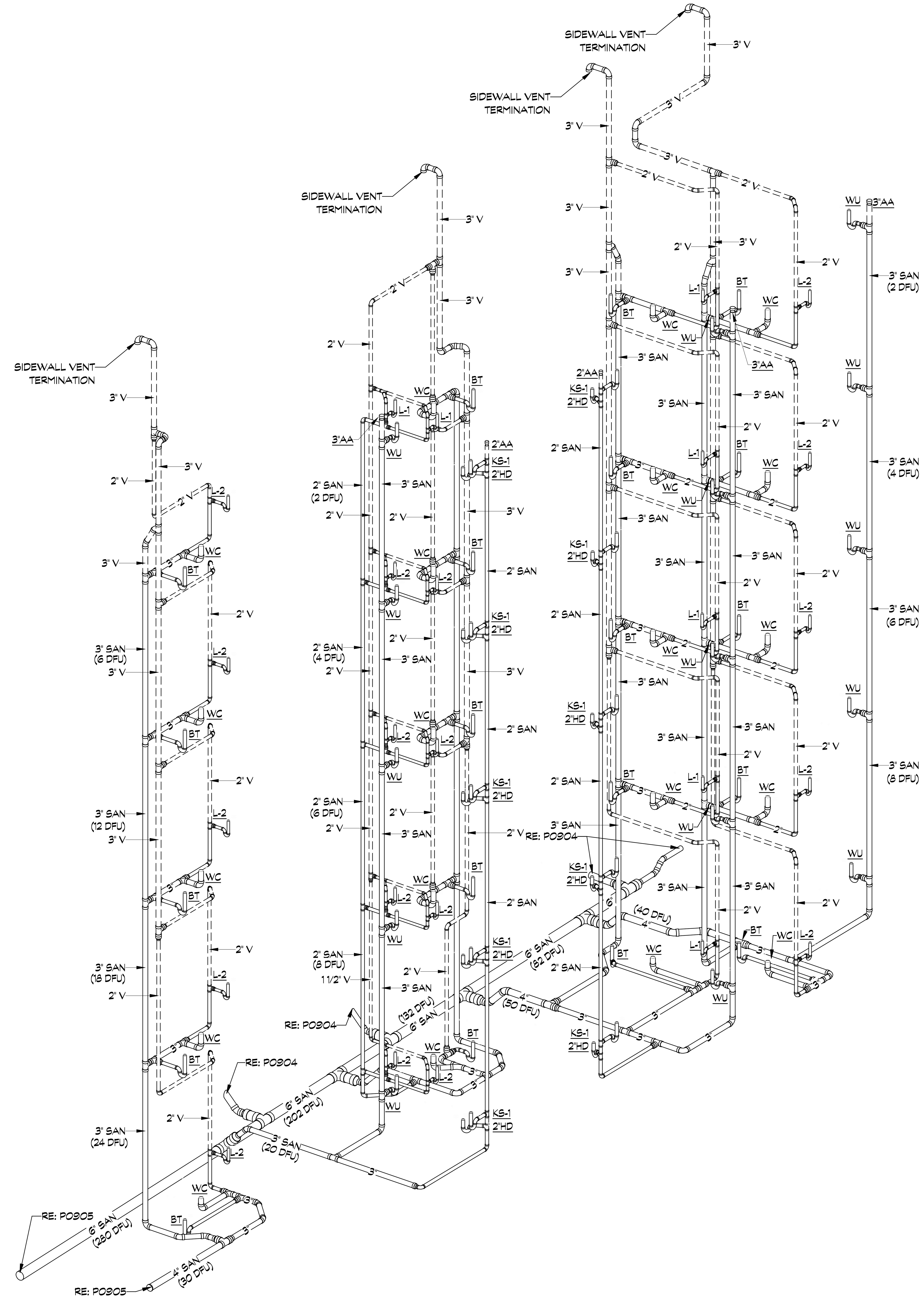
PROJECT NO: 25135

DRAWING NO:
P0902

3/13/2026 8:50:38 AM



1 DW&V ISOMETRIC - NORTHEAST

PLUMBING FIXTURE PIPE SIZES		
KEY	WASTE SIZE	VENT SIZE
HWC, WC	3"	2"
L-1, L-2, L-3	2"	1-1/2"
KS-1, KS-2	2"	1-1/2"
BT	2"	1-1/2"
SH	2"	1-1/2"
SS	3"	2"
WU	2"	1-1/2"
2" FD/S	2"	1-1/2"
3" FD/S	3"	2"
4" FD/S	4"	2"

ALL PIPE SIZES AS INDICATED EXCEPT WHERE NOTED.

FOR BACK TO BACK CONDITIONS, LARGEST DRAIN & VENT SIZE APPLIES.

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL

1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

DW&V ISOMETRIC - NORTHEAST

SEAL

COLORADO LICENSED PROFESSIONAL ENGINEER 38983 03/13/2026

DATE: 03.13.2026
DRAWN BY: TB
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO:

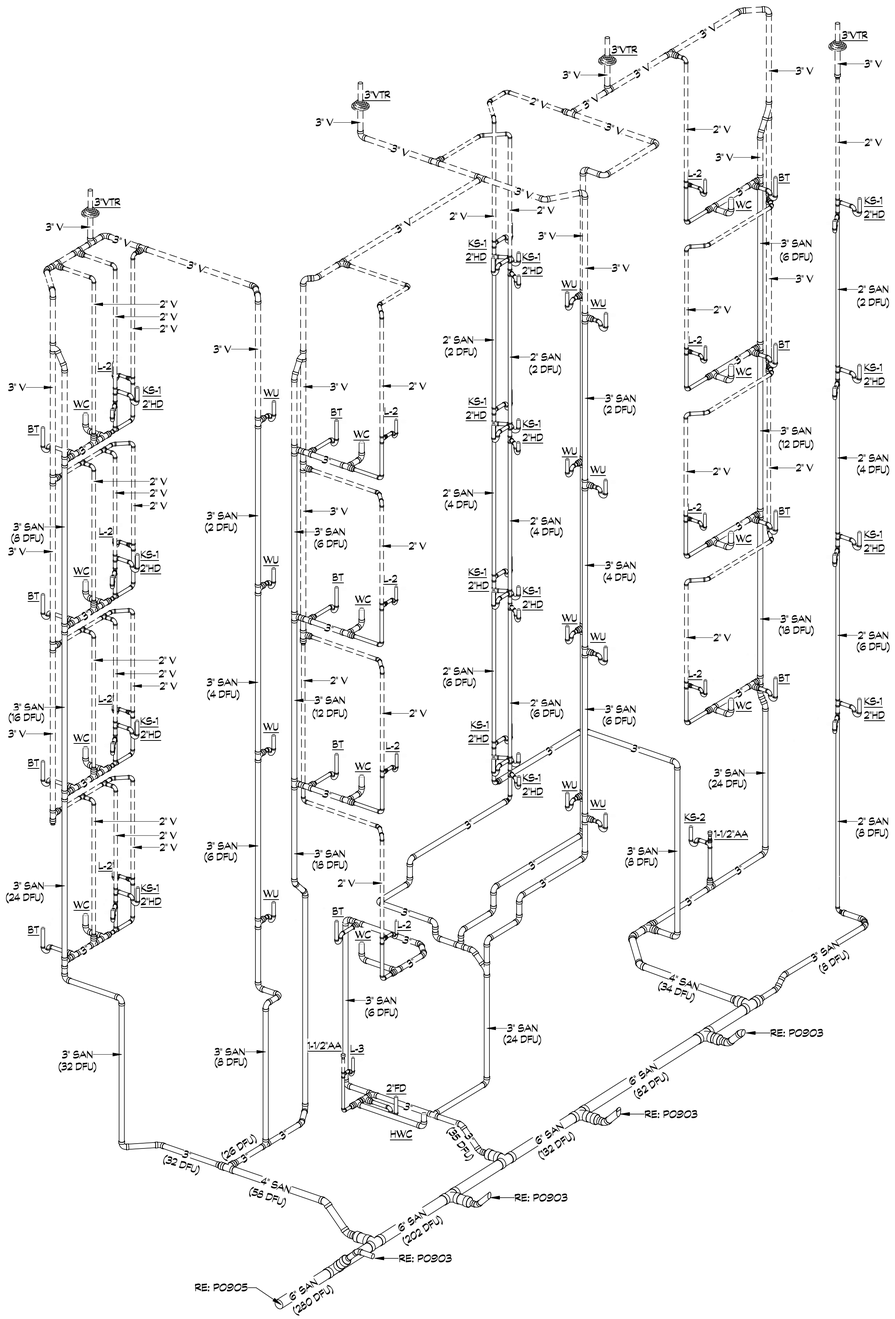
P0903

3/13/2026 8:50:42 AM

PLUMBING FIXTURE PIPE SIZES		
KEY	WASTE SIZE	VENT SIZE
HWC, WC	3"	2"
L-1, L-2, L-3	2"	1-1/2"
KS-1, KS-2	2"	1-1/2"
BT	2"	1-1/2"
SH	2"	1-1/2"
SS	3"	2"
WU	2"	1-1/2"
2" FD/S	2"	1-1/2"
3" FD/S	3"	2"
4" FD/S	4"	2"

ALL PIPE SIZES AS INDICATED EXCEPT WHERE NOTED.

FOR BACK TO BACK CONDITIONS, LARGEST DRAIN & VENT SIZE APPLIES.



1 DW&V ISOMETRIC - NORTHWEST

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

OWNER

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL

1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

DW&V ISOMETRIC - NORTHWEST

SEAL

COLORADO LICENSED PROFESSIONAL ENGINEER 38983 03/13/2026

DATE: 03.13.2026
DRAWN BY: TB
CHECKED BY: MV
PROJECT NO: 25135

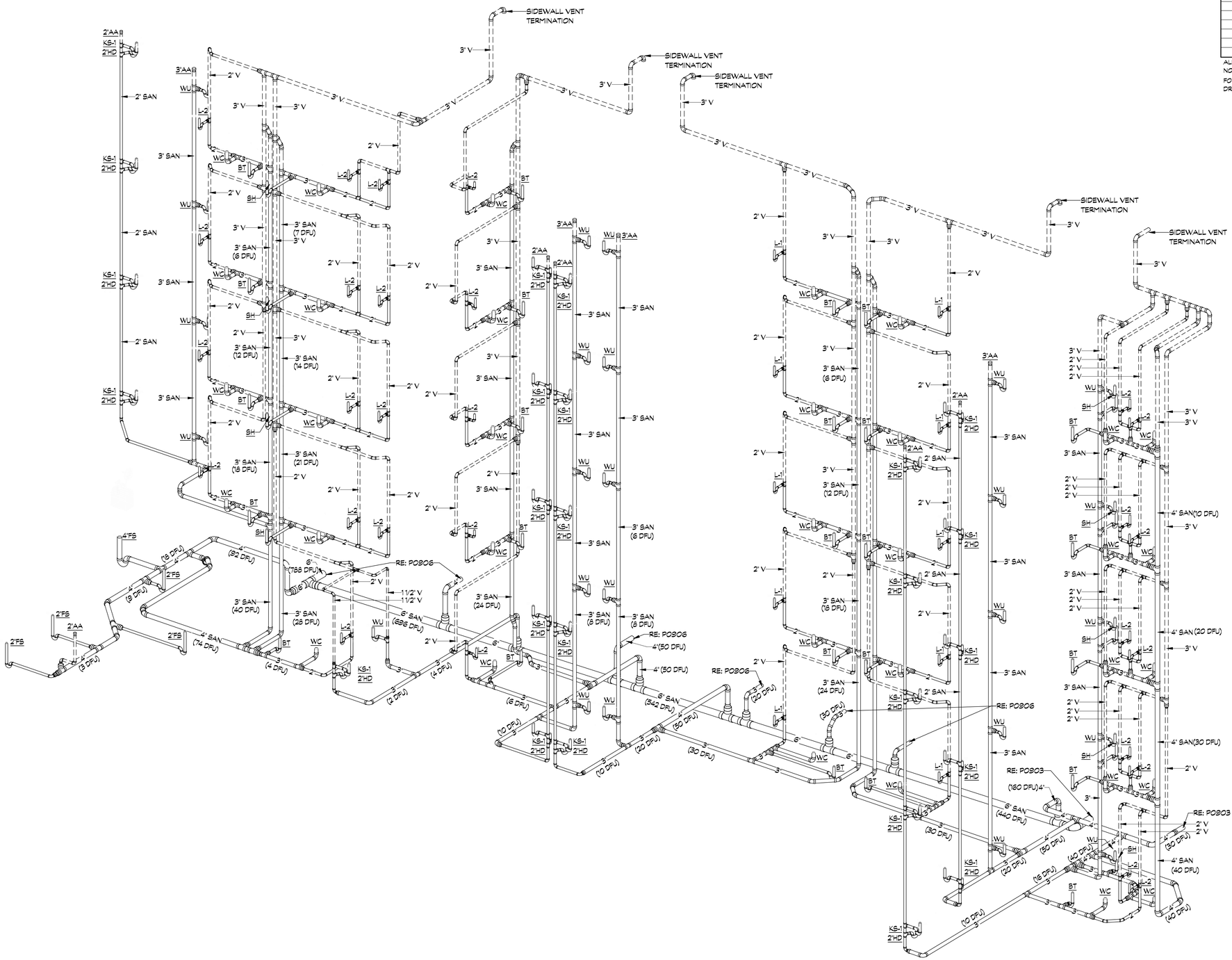
DRAWING NO: **P0904**

3/13/2026 8:50:45 AM

PLUMBING FIXTURE PIPE SIZES		
KEY	WASTE SIZE	VENT SIZE
HWC, WC	3"	2"
L-1, L-2, L-3	2"	1-1/2"
KS-1, KS-2	2"	1-1/2"
BT	2"	1-1/2"
SH	2"	1-1/2"
SS	3"	2"
WU	2"	1-1/2"
2" FD/S	2"	1-1/2"
3" FD/S	3"	2"
4" FD/S	4"	2"

ALL PIPE SIZES AS INDICATED EXCEPT WHERE NOTED.

FOR BACK TO BACK CONDITIONS, LARGEST DRAIN & VENT SIZE APPLIES.



1 DW&V ISOMETRIC - SOUTHEAST

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

OWNER

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INTERIOR DESIGNER:

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Denver, CO 80202
T: 303.892.7062

PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

DW&V ISOMETRIC - SOUTHEAST

SEAL

COLORADO LICENSED — MICHAEL DEAN WARD — 38983 — 03/13/2026 — PROFESSIONAL ENGINEER

DATE: 03.13.2026
DRAWN BY: TB
CHECKED BY: MV
PROJECT NO: 25135

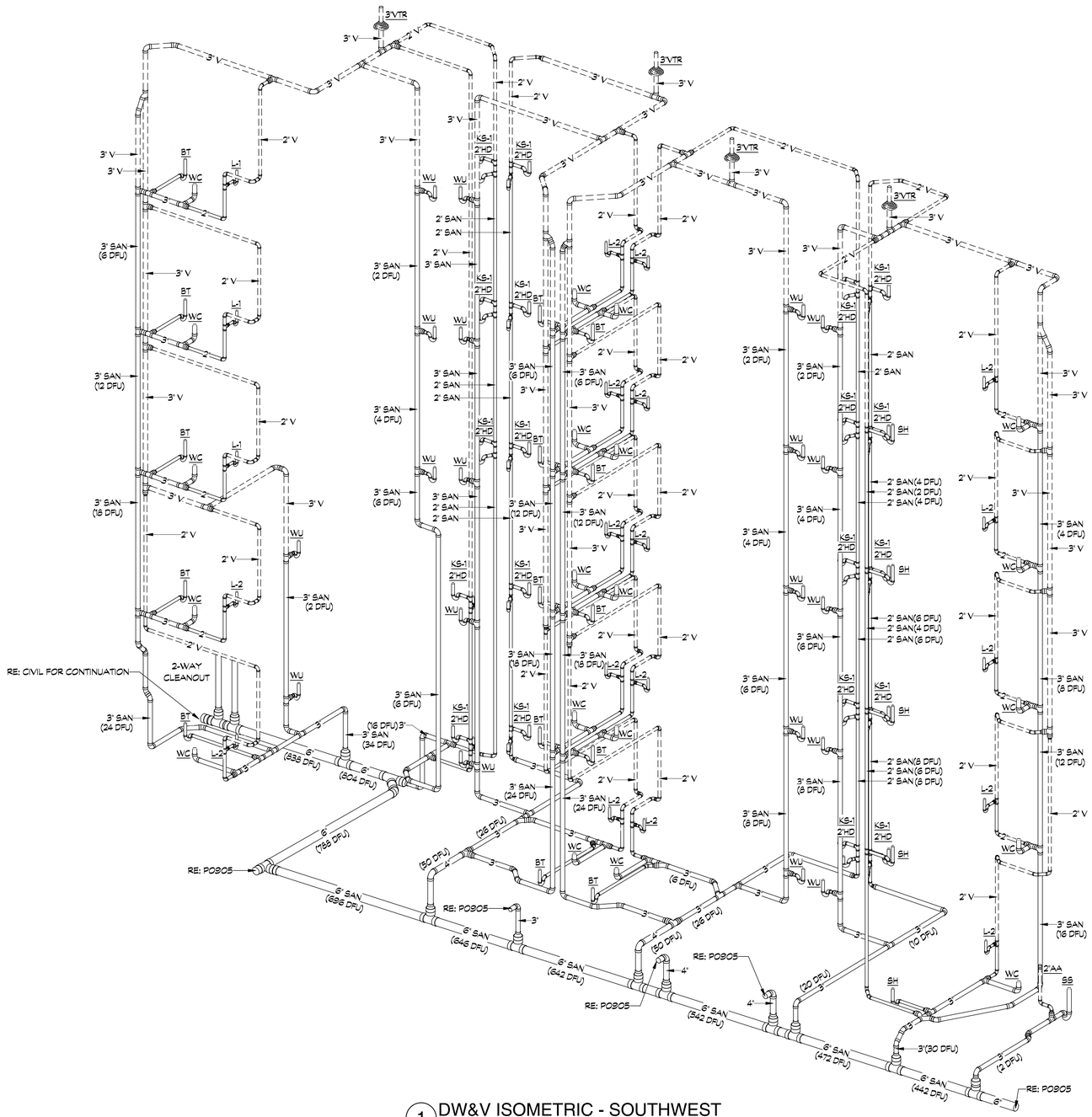
DRAWING NO: **P0905**

3/13/2026 8:50:51 AM

PLUMBING FIXTURE PIPE SIZES		
KEY	WASTE SIZE	VENT SIZE
HWC, WC	3"	2"
L-1, L-2, L-3	2"	1-1/2"
KS-1, KS-2	2"	1-1/2"
BT	2"	1-1/2"
SH	2"	1-1/2"
SS	3"	2"
WU	2"	1-1/2"
2" FD/S	2"	1-1/2"
3" FD/S	3"	2"
4" FD/S	4"	2"

ALL PIPE SIZES AS INDICATED EXCEPT WHERE NOTED.

FOR BACK TO BACK CONDITIONS, LARGEST DRAIN & VENT SIZE APPLIES.



1 DW&V ISOMETRIC - SOUTHWEST

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

OWNER

MAY REIGLER PROPERTIES
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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

DW&V ISOMETRIC - SOUTHWEST

SEAL

COLORADO LICENSED PROFESSIONAL ENGINEER
38983
03/13/2026

DATE: 03.13.2026
DRAWN BY: TB
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO: **P0906**

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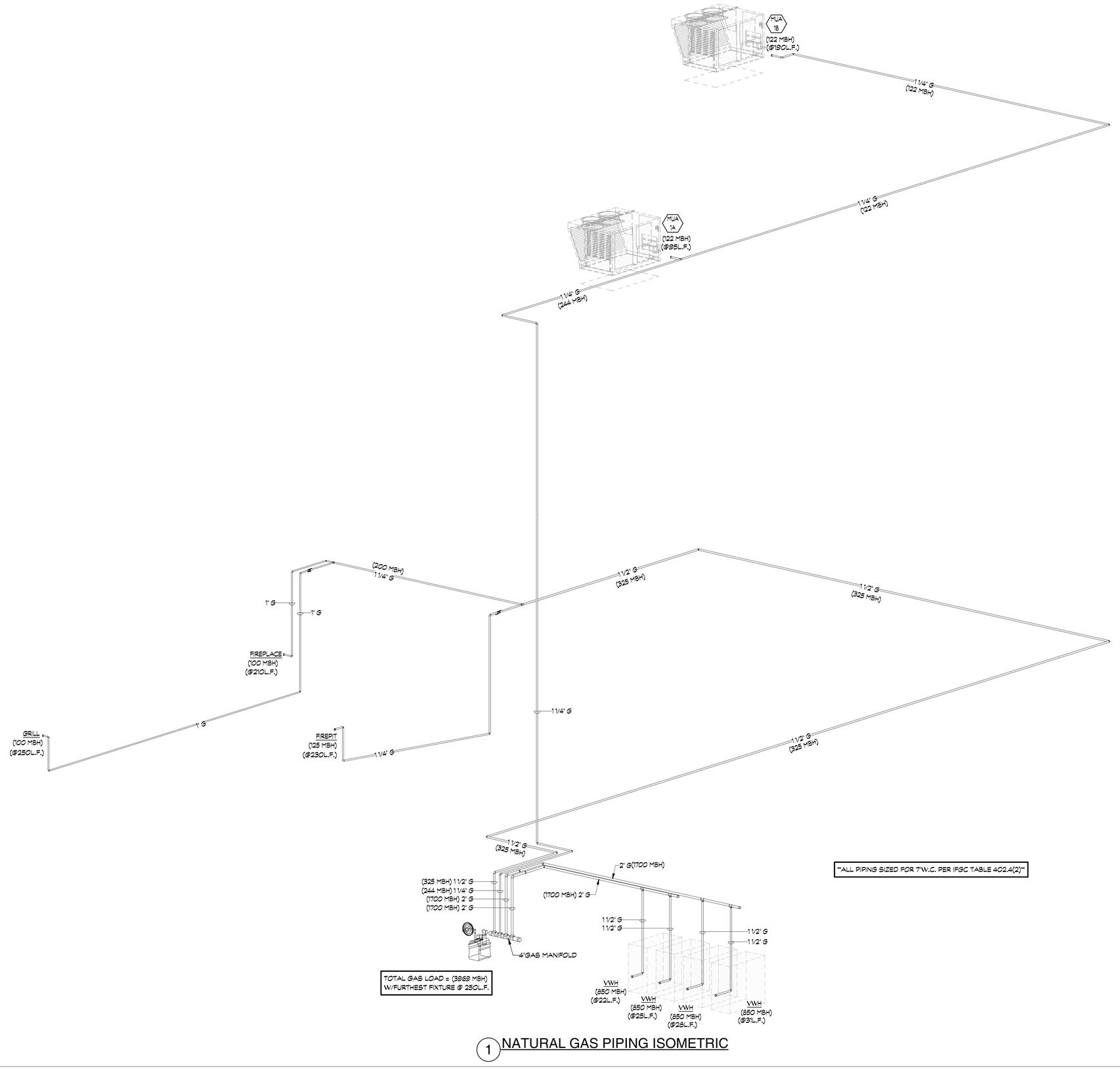

1 NATURAL GAS PIPING ISOMETRIC

3/13/2026 8:50:57 AM

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL

1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

GAS ISOMETRIC

SEAL

COLORADO LICENSED
38983
03/13/2026
PROFESSIONAL ENGINEER

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DIVISION 21 - FIRE SUPPRESSION

SECTION 21 00 00 - COMMON WORK RESULTS FOR FIRE SUPPRESSION

1.01 WORK INCLUDED

A. The work included by this division of the specifications includes furnishing all labor, materials, equipment, and services, including minor items omitted but necessary to construct and install the complete systems described by the Contract Documents and specified below. "Contractor" refers to the Fire Sprinkler Contractor. The general conditions of the specifications apply and are included in this part of this section.

1. Fire sprinkler systems

1.02 SEE SECTION 22 05 00 FOR BASIC MATERIALS AND METHODS

SECTION 21 13 00 - FIRE SUPPRESSION SPRINKLER SYSTEM

2.01 WORK INCLUDED

A. Provide complete automatic fire protection systems, including but not limited to inside piping, sprinkler heads, valves, hangers and supports, sleeves, fire department connections and accessories, fire hose cabinets, valves. Entire installation shall be as required by the local authorities. Consult with local authorities to determine all local requirements before submitting a bid.

1. The sprinkler system(s) shall be as follows: Wet system throughout.

B. Secure and pay for all necessary permits and certificates of inspection, and present to Owner with the signed certificates of final inspection.

C. Coordinate this work with all other trades so as to have a minimum of interference. INSTALLATION SHALL NOT BEGIN UNTIL DUCTWORK IS INSTALLED OR WRITTEN AUTHORIZATION IS MADE BY THE OWNER.

D. Accomplish all necessary cutting and patching for installation of piping and equipment, and provide all cutting as directed by Architect. Where necessary to cut chases in walls, reinforce walls as directed. After work is installed, patch holes to match original finish.

E. The system design including pipe sizing and location, configuration of branches and head connections, shall accommodate the installation of up/down heads in all areas which may or may not have a dropped ceiling.

F. RELATED WORK: Basic materials and methods: Section 22 05 00.

2.02 QUALITY ASSURANCE

A. Sprinkler equipment and installation to be approved by local fire authority.

B. Provide a complete automatic fire protection system as required. System shall be complete in all respects and in accordance with all applicable codes, ordinances, International Building Code, and NFPA Volume 2, Section 13 and NFPA Volume 2, Section 14.

C. The system shall be installed by a firm regularly engaged in the design and installation of automatic sprinkler systems in accordance with the requirements of the National Board of Fire Underwriters. Architect may require evidence to support the above qualifications and may reject any proposed installer who cannot show suitable experience.

D. All materials and equipment used in the installation of the sprinkler system shall be as approved in the Underwriters' Laboratories' list of inspected fire protection equipment and materials, or the Factory Mutual Laboratories' list of approved equipment and fire protection devices involving fire hazard, and shall be the latest product of the manufacturer.

2.03 SUBMITTALS

A. Submit shop drawings showing proposed layout of Fire Protection System, showing actual equipment to be used, complete with such dimensions as are required to accurately install the system, drawn to a minimum scale of 1/8" equals 1'0". Drawings shall be approved by Underwriters and local authority before submission to Architect and Engineer (four copies).

B. Shop drawings shall show all proposed routing of piping. Piping shall be installed to clear all other items of equipment and Architectural and Structural components within the building. Show all details required to make a complete installation from the shop drawings. After approval of drawings has been obtained, install the system exactly as shown. Obtain approval from Architect/Engineer to make any changes from shop drawings.

C. Shop drawings shall clearly show any piping that will not be concealed in the building structure

3.01 ACCEPTABLE MANUFACTURER'S

A. Equipment shall be by Grinnell, Viking, Star, Reliable, Globe, Crocker-Standards, Central, Potter-Roemer, or approved substitute.

3.02 INTERIOR FIRE SERVICE PLUMBING

A. Pipe shall be schedule 40, black seamless steel, ASTM A120, ASTM 53. Pipe 2" or larger may be schedule 10, grooved black steel pipe. Fittings may be style 74 or 75 "Victaulic" mechanical coupling system for 300 PSI working pressure.

B. Fittings and joints shall be as follows:

1. 2" and larger : Welded with standard weight fittings or "Victaulic" fittings.
2. 1-1/2" and smaller : Screwed with 150 lb. malleable iron fittings.

3.03 FIRE DEPARTMENT SIAMESE CONNECTION

A. Provide a cast brass flush wall mounted fire department connection, adequately sized for the application with threads, fittings, etc acceptable to the local fire department. Connection shall include drop clapper, pin lug hose thread swivels, pin lug plugs and chain. The connection shall be labelled as directed by the local Fire Department. All components shall be chrome-plated.

3.04 WATER FLOW ALARMS

A. Water flow indicator shall be electric, vane-type detector with two sets of normally open contacts and a time retard to prevent false alarms.

3.05 AUTOMATIC SPRINKLERS

A. Sprinklers shall have temperature ratings as required by NFPA Standard No. 13 for the sprinkler location. Verify exact head types in finished areas with Architect. Provide specific head types as follows. The following are catalog numbers of Grinnell.

1. Finished areas (ceiling): Semi-recessed, polished chrome pendant heads. Heads shall be Model A with recessed closure.
2. Finished areas (wall):Exposed sidewall (Universal Model A).
3. Unfinished areas (ceiling): Exposed pendant or upright head, as required by the application (Universal Model A).
4. Areas exposed to freezing temperatures: Dry pendant (Model F 960).

B. Provide steel sprinkler guards on heads, which are exposed to physical damage.

3.06 TAMPER SWITCH

A. Provide an electric supervisory monitor switch at the required valves. Grinnell Model F640 or as required.

3.07 HORN/LIGHT

A. Provide an electric combination horn/light, suitable for exterior application, rated for the appropriate voltage.

3.08 PIPING INSTALLATION

A. All piping shall be concealed wherever possible. Exceptions must be clearly marked on shop drawings and shall not be installed until approved by Architect.

B. If exposed, piping shall be installed in the most direct, straight, and least obtrusive manner possible, and as close to walls and ceilings as is consistent with good workmanship.

C. Install piping graded to low points and in manner to make it possible to test and empty entire system.

D. Pipe and fittings shall be inspected for soundness and cleaned of all dirt and other foreign matter prior to being installed. All damaged pipe and fittings shall be rejected. Heads shall be covered, and system shall be ready for painting.

E. Protect open pipe ends whenever work is suspended during construction, to prevent foreign bodies entering and lodging therein. Use cast iron or malleable iron caps, or other methods as approved by the Architect

3.09 VALVE IDENTIFICATION

A. Drain valves, test valves, and control valves shall be identified with a stamped metal tag indicating their use.

3.10 TESTING

A. A 1" inspector's test connection shall be installed at the farthest and most remote location in the system with discharge running to the exterior of the building.

B. All piping and equipment shall be tested and proved tight under a hydrostatic pressure of 150% of the main pressure or 200 psig, whichever is larger. The test shall be conducted for a six-hour continuous period, with not be more than 2 pounds of pressure loss during this period in any part of the system. Any leaks found shall be repaired and the pressure test repeated.

C. All tests shall be performed in the presence of the Architect or authorized representative of the Owner.

3.11 FLUSHING

A. Flush piping system thoroughly with clear water to placing automatic sprinkler system in operation.

3.12 SPRINKLER CABINET

A. Provide a reserve sprinkler cabinet with at least six spare sprinkler heads or a minimum of two of each type used for systems with less than 300 heads total. Cabinet shall be equipped with two special sprinkler wrenches. Cabinet shall be a labeled, metal, wall-mounted type with red enamel finish and a rigid hinged and locked door. Two keys shall be provided.

DIVISION 22 - PLUMBING

SECTION 22 05 00 - COMMON WORK RESULTS FOR PLUMBING

1.01 WORK INCLUDED

A. The work included by this division of the specifications includes furnishing all labor, materials, equipment, and services, including minor items omitted but necessary to construct and install the complete systems described by the Contract Documents and specified below. "Contractor" refers to the Mechanical Contractor. The general conditions of the specifications apply and are included in this part of this section.

1. Gas piping system
2. Domestic hot and cold water systems
3. Interior sanitary sewer system
4. Interior storm sewer system and discharge

1.02 CODES AND REGULATIONS

A. Comply with state and local codes, and utility company regulations. Final interpretations will be made by the local inspection authority. The Contractor to verify the governance of the following Codes, including any local amendments and supplementary codes such as the Codes of the National Fire Protection Association:

1. Building Code: 2021 International Building Code
2. Plumbing Code: 2021 International Plumbing Code
3. Mechanical Code: 2021 International Mechanical Code
4. Fire Code: 2021 International Fire Code
5. Gas Code: 2021 International Fuel Gas Code
6. Energy Code: 2021 International Energy Conservation Code
7. Electrical Code 2023 National Electrical Code

1.03 EQUIPMENT AND MATERIALS STANDARDS

A. Equipment and materials shall be new, UL-listed for the use intended, and free from damage or defect. They shall comply with the latest industry standards.

1.04 CONTRACT DRAWINGS

A. Illustrate the general design and extent of performance required. All dimensions and locations shall be taken from the Architectural drawings. Consult with Architectural plans and locate all ceiling equipment where indicated on reflected ceiling plans

1.05 SHOP DRAWINGS

A. Submit products data and/or shop drawings as required by the Architect for the following:

1. Insulation
2. Valves
3. Plumbing fixtures and appurtenances.
4. Pumps

B. Quality of specific equipment is established by manufacturer's catalog number. Alterations caused by any Substitution shall be accomplished at no additional expense to the Owner.

C. Manufacturers not listed may submit for acceptance as an "approved equivalent." Requests for an "equivalent" means "approved equivalent". Four copies of such submittal must be received by the Engineer seven (7) working days prior to bid date.

1.06 WARRANTY

A. The Contractor shall be responsible for the successful operation of mechanical systems, equipment, and materials installed under this Contract for a period of one year from the date of final acceptance. Defective equipment or materials shall be repaired or replaced at no expense to the Owner. Provide four complete service and maintenance calls spaced at equal intervals during the warranty period.

1.07 PRODUCT HANDLING AND CLEAN UP

A. Equipment shall be left clean and undamaged, to the satisfaction of the Owner. The General Conditions take precedence.

1.08 CUTTING AND REPAIRING

A. The contractor shall be responsible for all cutting, drilling, welding, and repair required for his portion of the work. Coordinate with the Architect. The General Conditions take precedence.

1.09 OPERATING AND MAINTENANCE DATA

A. Provide the Owner with operating and maintenance instructions (four copies) required for operation of all mechanical systems. Bind the written instructions in a notebook. The General Conditions take precedence. The manuals shall include the following items:

1. Operating manual and spare parts list for each piece of equipment.
2. Preventive maintenance schedule for lubricating and checking each piece of equipment.
3. Instructions on who to call for service during the warranty period.

1.10 PERMITS

A. The contractor shall pay for all fees, taxes, secure permits, licenses, and inspections required for the project.

1.11 TEMPORARY SERVICES

A. Provide temporary water service for construction, as required by the General Contractor.

1.12 COORDINATION

A. Coordinate outlet device and equipment locations with the Architectural Plans and work of other trades. Locate on horizontal and vertical lines to avoid interference and to provide functional use of all equipment. Verify electrical power characteristics before ordering equipment.

B. Electrical work performed by this contractor will conform to the standards of Division 26-28. Mechanical equipment motors and controls shall be furnished, set in place, and wired according with the following schedule unless otherwise noted or specified. MC = Division 21-23 EC = Division 26-28

Item	Furn By	Set By	Power Wiring	Control Wiring
Combination starters	MC	EC	EC	MC
Equipment motors	MC	MC	EC	--
Motor starters & O.L. relays	MC	EC	EC	MC
Disconnect switches	EC	EC	EC	MC
Thermal overload heaters (1)	EC	EC	EC	--
Variable Speed Drives	MC	EC	EC	MC
Control relays/transformers	MC	MC	EC	MC
Temperature control panels	MC	MC	EC	MC
Temp. Controls conduit/wiring	MC	MC	--	MC
Actuator and solenoid wiring	MC	MC	--	MC
Pushbuttons & pilot lights	MC	MC	--	MC
Room thermostats	MC	MC	--	MC
Thermostats: line voltage	EC	EC	EC	--

C. The general guideline for the division between control (by MC) wiring and power wiring (by EC) is that power wiring carries the current which energizes a motor, control wiring does not. Control wiring may be 120V, which would be the responsibility of the MC. Control motors are wired by the MC.

D. Examine the site and become aware of existing conditions, utilities, and other issues affecting the satisfactory completion of the project.

1.13 DELIVERY, STORAGE, HANDLING

A. Provide necessary hauling and hoisting equipment. Protect the materials of this Division before, during, and after installation.

1.14 AS-BUILT DRAWINGS

A. Keep a current set of "as-built" drawings on site. Upon completion of the work, furnish engineer with a reproducible prints showing the "as-built" installation.

1.15 PROJECT/SITE CONDITIONS

A. Visit the site to become familiar with location and the various conditions affecting the work, including existing utilities.

1.16 PLAN VERIFICATION

A. After completion of the bidding and selection process, prior to awarding the contract, the contractor must review and verify the contract documents in their entirety, including those of other trades. At this time, discrepancies, conflicts, omissions, etc in the contract documents must be documented. Alterations to the contract will be made at that time to include such items, as well other modifications which might be made by the Owner. After award of the contract, change orders caused by discrepancies, conflicts, omissions in the contract documents will not be allowed.

2.01 EXPANSION JOINTS, GUIDES, AND ANCHORS

A. Provide expansion joints or loops, guides, and anchors in piping to allow for expansion and contractions. Expansion joints shall be bellows type.

2.02 VALVES

A. Gate valves 2" and smaller shall be cast bronze, rising stem, solid disc, 200 PSI WOG

B. Ball valves 2" and smaller shall be cast bronze, full port, stainless steel ball, teflon sets, 400 PSI WOG.

C. Butterfly valves 2" and smaller shall be cast bronze, stainless steel disc, surrounding fluorelastomer seal, 350 PSI WOG.

D. Check valves shall be horizontal, swing-cast bronze, bronze disc, 200 PSI WOG.

E. Valves shall be domestically manufactured by Milwaukee, Powell, Nibco, or equivalent.

2.03 RELIEF VALVES

A. Relief valves shall be all-bronze A.S.M.E. rated valves with external test levers, sized in accordance with the instructions of the appropriate manufacturer. Pipe discharge outside or to floor drain where possible and per code. Valves shall be manufactured by Watts or equivalent.

2.04 FLEXIBLE CONNECTORS

A. Connectors in piping shall be made with molded teflon or neoprene and nylon bellows, metal reinforcing rings, flanged ends and control rods, suitable for 40F to 200F temperature range and 125 lbs. pressure. Alternative shall be stainless steel inner hose with braided exterior sleeve for steel pipe or bronze inner hose with braided exterior sleeve for copper piping. Metra-flex Company, or equivalent.

2.05 SPECIALTIES

A. P/T Plugs: 1/4" diameter, brass with Nordel core, Sisco or equivalent.

B. Pressure Gauges: 4 1/2" dial type, aluminum housing. Ashcroft 1010 or equivalent.

C. Thermometers: 7" red reading mercury type. Palmer Instruments or equivalent.

2.06 ELECTRICAL

A. Lugs: Lugs for wiring connections shall be rated for copper and aluminum, and shall have a minimum rating of 75C.

B. Electric motors shall be rated for the appropriate application: wet location (TEFC); submersible; explosion proof, VFD's, etc.

2.07 ACCESS PANELS

A. The Mechanical Contractor shall furnish and install access panels where required for access to equipment. Access panels shall be adequately sized, of a type approved by the Architect and shall be fire or smoke-rated as required.

2.08 EXCAVATION AND BACKFILLING

A. Provide excavating and backfilling for Mechanical Work. Backfill in 12" layers, mechanically tamp to 95% proctor standards. Protect according to OSHA standards. The General Conditions take precedence. Verify the location of underground utilities before excavation; the contractor is responsible for any damage to underground utilities. Restore existing paving, curbs, sod, bushes, etc to match surroundings.

2.09 START-UP PROCEDURES

A. Follow manufacturer's recommended procedures in starting up the equipment; damage caused during start-up shall be replaced at no expense to the owner.

2.10 PIPING INSTALLATION

A. Install piping plumb and straight, parallel with walls and partitions. Conceal piping within structure whenever practical. Provide drain valves at all low points, vents at all high points, to allow complete drainage.

B. Material and methods per ASME, ASTM, ASA, AWS, and National Plumbing Code Handbook

C. Provide unions or flanges in piping connections to each valve, device, or item of equipment. Install each union or flange to permit the removal of parts and equipment for inspection or cleaning, without disconnecting any piping, except unions or flanges. Provide dielectric unions at locations with dissimilar materials.

D. Piping on the roof will be supported above the roof on roof pads. The pads shall be approximately 6"Wide by 6" high by the length as required. They shall be made of recycled rubber, rated for 500lbs/ft loading each. The pads will have galvanized steel "C" channel attached to the top, which can accommodate pipe clamps to secure the piping. This configuration of individual piping pads may be expanded to include two pads supporting a trapeze style support where multiple pipes are racked together. The pads are C-series manufactured by Cooper B-line, Erico, or approved equivalent.

2.11 HANGERS AND SUPPORTS

A. Support piping and equipment from the structure to prevent sagging, pocketing, swaying, and vibrations, and arranged to provide for expansion and contraction. Brackets, clamps, and hangers shall be steel, except copper hangers will be used with copper piping. Hangers supporting vibrating equipment shall be provided with spring isolators. Chain, perforated iron or wire hangers are not permitted. Hangers will be of a type acceptable to the Engineer, and shall have a capacity and spacing as required by code.

2.12 SLEEVES AND PLATES

A. Provide sleeves and inserts for all mechanical piping. The contractor shall be responsible for the cost of cutting and patching required for piping where sleeves and inserts were not installed or where incorrectly located. Sheetrock joint compound may be used to seal openings in non-rated walls(insulation to be continuous through walls.

B. Drill holes as required for the installation of hangers required for the mechanical work.

C. Where sleeves are placed in exterior walls below grade, the space between the pipe or conduit and the sleeves shall be made completely water-tight.

D. Seal all piping passing through fire-rated construction with approved material to maintain air-tight, fire-rated integrity, with a U.L. listed assembly compatible with the wall or floor assembly being penetrated.

2.13 PIPING TESTING

A. All piping systems shall be tested and witnessed by the Owner prior to concealment. Protect equipment and fixtures or equipment, isolating them during the test. DWV system shall be sealed and hold water without leaks for 24 hours. Domestic water and hydronic piping shall be air tested at 150 PSIG; natural gas piping shall be air tested at 30 PSIG. Air tests shall be held for one hour without loss of pressure.

2.14 CLEANING AND STERILIZATION

A. After testing, water piping systems shall be filled, operated for a sufficient length of time to completely remove all foreign material, and flushed.

B. Sterilize the domestic hot and cold water piping in accordance with the local health authority standards. Flush the systems with clear water until the residual chlorine content is equal to that of clear water.

C. Where there is no water treatment contractor sterilize piping system with chlorine for 24 hours to 50 PPM. Completely flush to less than 1 PPM. Local health authority standards take precedence.

2.15 FLEXIBLE PIPE CONNECTIONS

A. Provide flexible pipe connection suitable to connect to adjoining piping as specified for pipe joints. Use sized pipe units. Install flexible pipe connectors on pipes connected to equipment supported by vibration isolation.

2.16 PIPE IDENTIFICATION

A. After completion of the piping or insulation, paint stenciled descriptive abbreviations, including directional arrows, on piping at equipment and approximately every 25'.

SECTION 22 07 00 - PLUMBING INSULATION

1.01 QUALITY ASSURANCE

A. All insulation shall have a composite rating (insulation, jacket and adhesives) not exceeding flame spread 25 and smoke developed 50.

2.01 PIPE INSULATION FOR PIPING ABOVE GRADE

A. Insulation shall be closed-cell, elastomeric pipe insulation having a conductivity of 0.27 at 75 °F mean, with thicknesses as follows:

Pipe Sizes	<1"	1" to 1½"	> 1½"
Dom. cold piping	1/2"	1/2"	1"
Roof drain sumps, & horiz. leaders	1/2"	1/2"	1"
Dom. hot & recirc. Piping	1-1/2"	1-1/2"	1-1/2"

B. Insulation shall be Armacell "Armaflex" or equivalent by Johns-Mansville, Owens-Corning.

C. Buried piping insulation will be sleeved with PVC or HDPE pipe sleeve or encased in concrete. Sleeve and insulation will be sealed weathertight and installed per manufacturers instructions.

D. Exterior piping insulation will be painted with a white solvent based alkyd finish (Armaflex AB or equivalent), including all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturers instructions. Where exposed to physical damage, exterior piping insulation will be covered with aluminum jacket, including all fittings, valves, etc.

E. All interior underground water (domestic and hydronic) piping shall be insulated with 1" Armaflex, except where noted.

2.02 PIPE INSULATION FOR PIPING BELOW GRADE

A. Insulation shall be closed-cell, elastomeric pipe insulation having a conductivity of 0.27 at 75F mean, with thicknesses as follows:

Pipe Sizes	<1"	1" to 1½"	> 1½"
Dom. cold piping	1/2"	1/2"	1"
Dom. hot & recirc. Piping	1"	1"	1"

B. Insulation shall be Armacell "Armaflex" or equivalent by Johns-Mansville, Owens-Corning.

C. Exterior piping insulation will be painted with a white solvent based alkyd finish (Armaflex AB or equivalent), including all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturers instructions. Where exposed to physical damage, exterior piping insulation will be covered with aluminum jacket, including all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturers instructions.

D. All interior underground water (domestic and hydronic) piping shall be insulated with 1" Armaflex, except where noted.

3.01 PIPE(ELASTOMERIC)

A. Insulation shall be solid slip-on installed prior to connection. Butt joints shall be sealed with manufacturer's adhesive. Where slit seams must be installed, seal the seam with manufacturer's adhesive. Fittings shall be insulated with meter-cut pieces of insulation according to manufacturer's instructions, or insulated with similar sheet insulation installed according to manufacturer's instructions.

B. Provide wood blocks and metal hanger shields at support strap locations on horizontal pipe runs. Insulation will not be interrupted for supports, etc.

SECTION 22 10 00 - PLUMBING

1.01 WATER SERVICE

A. Consult with local authorities to provide water service. Provide meter pit, meter yokes, valves, RPZ valves, PRV valves, etc. for complete installation. Connect to a point 5' from building. Coordinate exact point of connection with site contractor before bidding.

1.02 SANITARY SEWER CONNECTION

A. Consult with local authorities and connect to sewer main as required. Connect to a point 5' from building. Coordinate exact point of connection with site contractor before bidding.

2.01 DOMESTIC WATER SYSTEM PIPING

A. Domestic cold, hot, and recirculating hot water piping may be either copper, or PEX, as noted below:

1. Copper piping:
   a. Above grade, piping shall be Type L, hard-drawn copper tubing with wrought copper fittings. Solder shall be lead-free.
   b. Below grade, piping shall be Type K, soft-drawn copper tubing with fittings only where specifically allowed by the architect. Where required, the fittings will be wrought copper. Solder shall be 95/5 tin/antimony, except underground, where it will be silver solder.
2. PEX Tubing:
   a. Tubing shall be cross-linked polyethylene using the Engel method of cross-linking. The tubing shall be rated for 80PSI at 200F, and shall be manufactured according to ASTM F 876 and ASTM F 877.
   b. Fittings shall be APR(brass) "Pro-pex" style or equivalent. Manifolds may be copper, brass, or plastic, with balancing controls.
   c. Stub outs to be copper with brass shutoff valves. Stub outs to be properly secured to wall.
   d. Tubing in return air plenums, or other areas designed as air handling plenums, shall be installed to a flame rating of 25/50 according to ASTM E84, whether by spacing, insulation or other approved method.
   e. Tubing shall be as manufactured by Wirsbo or equivalent.

2.02 SOIL, WASTE, AND STORM PIPING

A. Soil, waste, and vent piping, and storm piping shall be schedule 40 solid core PVC conforming to ASTM D2665 and ASTM D1785 with solvent joints conforming to ASTMD2855, except as noted below. PVC buried below slab shall be installed in conformance with ASTM D2321:

1. Hubless(No Hub), cast iron soil pipe conforming to CISPI 301 with stainless steel no-hub couplings conforming to CISPI 310 shall be used in return air plenums and other areas designed as air handling plenums, or where specifically required by local code. All cast iron soil pipe and fittings shall be marked with the collective trademark of the Cast Iron Soil Pipe Institute and be listed by the NSF International.
2. Epoxy Coated Hubless(No Hub), cast iron soil pipe conforming to CISPI 301 with stainless steel no-hub couplings conforming to CISPI 310 shall be used in commercial kitchens to a point approximately 20' downstream of drains serving dishmachines.

B. Soil, waste, and storm piping below grade 5' beyond the building may be PVC SDR 35, installed in conformance with ASTM 3034 and utilizing push-on joints.

C. Storm water piping shall be same as soil and waste piping when concealed and galvanized schedule 40 steel pipe when exposed to physical damage. Fittings shall be cast iron, drainage type.

2.03 PLUMBING FIXTURES AND TRIM

A. Provide plumbing fixtures as specified on the plans. Provide carriers, trim, bolts, caps, etc according to the manufacturer's instructions and as required for a complete installation. All fittings and appurtenances (p-traps, connections, etc) shall be brass; chrome plated brass where visible.

B. Provide carriers for wall hung or mounted fixtures such as water closets, lavatories, urinals, sinks, etc. The carriers shall be designed to fit in the wall structure available, and shall transmit the load to the floor. Fixtures will not be supported by the wall structure unless specifically indicated.

2.04 GAS PIPING

A. Above grade in accessible locations, gas piping shall be schedule 40, black iron pipe with threaded fittings. Fittings shall be made of malleable iron. Gas piping run in return plenums, where allowed by local code, shall have welded joints.

B. Regulators shall be Maxitrol, or equivalent, of size and capacity as required.

2.05 GAS WATER HEATER(SEALED COMBUSTION)

A. Water heater shall be as specified on the plans. Heaters shall be approved and listed by the American Gas Association as self-contained, vented water heaters. The tank shall be heavy-gauge, welded steel, glass-lined, foam insulated to conform to ASHRAE 90.1b-1992. The heater shall be rated for 150 PSI and shall have a five-year warranty. The power burner shall be sealed combustion, submerged with spiral internal flue. The controls shall be electronic microprocessor based with digital display and shall include high-limit control and safety shut off. The heater shall include two (2) magnesium anodes and a pressure and temperature relief valve. The heater will be furnished with integral heat traps. Where required by local code, provide ASME certification.

B. Water heater shall be provided with R 14 insulation. Where factory insulation does not meet insulation requirements, provide aftermarket insulated jacket as required to meet requirements.

C. Where flue is run thru uninsulated, unconditioned spaces (attics, crawlspaces, etc.), insulate the flue with R8 equivalent insulation.

D. The water heaters shall be manufactured by A.O. Smith, State, Polaris, Ruud or Bradford-White.

2.06 CONDENSATE NEUTRALIZER

A. Neutralizer shall be inline type made from corrosion resistant material with replaceable neutralization media. Neutralizer shall be of appropriate size and type for appliance served.

B. Manufacturer shall be Dayton, Axiom, or equivalent.

2.07 DOMESTIC RECIRCULATING PUMP

A. Pump shall be 2800 rpm, in-line, centrifugal oil-lubricated, sleeve-bearing pump with flanged piping connections, bronze body, plastic impeller, and having mechanical seals. Motors shall be non-overloading, open drip-proof type.

B. The pump shall be furnished with an automatic timer kit.

C. Manufacturer shall be Bell and Gossett, Paco, Taco, or approved equivalent.

3.01 DOMESTIC WATER SYSTEM

A. Provide drip cocks so that the entire system may be drained. Provide manual air vents at high points in the system where air may be trapped. Provide stops for all fixtures and appliances. Provide a full size ball valve on each branch serving a hose bib.

B. Provide swing or swivel joints on connections as required to prevent noise or vibration of the piping. Provide fixture stops at all fixtures, hose bibbs, wall hydrants, and Owner-furnished fixtures. Run all piping on warm side of building insulation. Pipe insulation is not considered freeze protection. Provide water hammer arrestors where required. Locate to be accessible or provide access panel.

3.02 SOIL, WASTE, AND STORM WATER PIPING

A. Lay piping true to line and grade so that sewer will have smooth and uniform invert throughout its length. Verify elevations of existing sewer before starting work.

B. Install a clean-out at the base of each soil stack, at the base of each interior rain-water conductor, at each change in direction, at intervals not over 50 feet interior of building, and every 100 feet exterior to building and elsewhere as shown on the drawings or required by Code. Make clean-outs same size as pipe service, except they need be no larger than 4". Set tops and covers flush with floors and walls. Wall covers shall be round polished stainless steel with centered stainless steel securing screw (Josam 58710). Floor cleanouts shall be flush, cast iron, ABS plug with Nikalloy cover(Josam 56000). Provide floor clamps at each floor for uniform support of stacks.

C. The entire drain waste and vent, and storm sewer systems shall be watertight and odorproof, including sealing of floor drains and sinks, closet rings, etc.

3.03 WATER HEATER INSTALLATION

A. Install water heaters per manufacturer's instructions. Provide 24 gauge, galvanized steel drain pan, piped with minimum ¾" drain, piped to an approved receptor with indirect waste connection per code.

B. Route the P/T relief valve full sized to approved receptor and discharge per code. Provide expansion device, tank or valve, as required by code, and allowed by the local jurisdiction.

C. Flue and combustion air ducts shall be provided by the mechanical contractor, unless otherwise noted. Where sealed combustion water heaters are used, the Plumbing Contractor shall install PVC flue and combustion air piping. This piping will be of the size and type recommended by the manufacturer, and use factory recommended discharge/intake fittings as shown on the plans.

D. Condensing water heaters shall utilize an inline condensate neutralizer. Provide PVC drain from water heater and/or flue with a minimum ½" drain, piped to an approved receptor with indirect waste connection per code. Verify installation details with manufacturer.

3.04 PLUMBING FIXTURES AND TRIM

A. Furnish and install a vacuum breaker at each hot and cold water service outlet to which a hose can be attached, including janitor's faucets.

B. Provide chrome-plated rigid or flexible supplies to fixtures with stops, reducers, and escutcheons. Insulate stops and supplies at handicapped sinks with Truebro lav guard or equivalent. Bag type covers are not allowed.

C. Provide chrome plated brass P-traps with slip fittings for all exposed drains. Insulate P-traps at handicapped sinks with Truebro lav guard or equivalent. Bag type covers are not allowed.

D. Flush valve handles, and flush tank handles, on handicapped water closets shall be located on the wide side of the stall for convenient access and as required by code.

E. Provide a flexible elastomeric sheet for flashing around all shower drains, roof drains, floor drains, floor sinks, etc except for slabs on grade. The membrane shall be a minimum 0.40 inch thick, made of chlorinated polyethylene, installed per manufacturer's instructions. The flashing membrane for roof drains, floor drains, etc shall be a minimum of 2'x2'. The flashing membrane for shower pans, service sink pans, etc shall have "pigs ear" folds in the corners, extending the membrane up at least 3" above the drain. The membranes shall be manufactured by Chloralloy or equivalent.

F. Mount fixtures the following heights above finished floor:

1. Water closet : 14"-15" to top of bowl rim; Handicapped, 18" to top of bowl rim.
2. Urinal: 24" to top of bowl rim; Handicapped, 17" to top of bowl rim.
3. Lavatory: 31" to top of basin rim; Handicapped , 32" to top of basin rim.
4. Drinking fountain : 40" to top of basin rim; Handicapped , 36" to spout.
5. Water closet flush valves : Standard, 11" minimum above bowl rim. Locate flush valves on "wide" side of handicapped toilets.
6. Floor drains : In finished areas, ¼" - ½" below finished floor. In mechanical rooms and other unfinished areas, install at least 1" below floor, except where it would be a stumble hazard.

G. Rough-in fixture piping connections in accordance with the following table of minimum sizes or as required for particular fixtures.

	HW	CW	Waste	Vent
Lavatories	1/2"	1/2"	1-1/2"	1-1/4"
Service sink	1/2"	1/2"	2"	1-1/2"
Drinking fountain	--	1/2"	1-1/4"	1-1/4"
Water closet (Valve)	--	1"	3"	2"
Water Closet (tank)	--	1/2"	3"	2"
Urinals	--	3/4"	2"	1-1/2"
Floor drains	--	--	2"	1-1/2"
Hose bibs	--	3/4"	--	--
Wash Mach Unit	1/2"	1/2"	2"	1-1/2"
Kitchen equipment	SEE SCHEDULE & PLANS			
Medical equipment	SEE SCHEDULE & PLANS			
Owner furnished equipment	SEE SCHEDULE & PLANS			

3.05 GAS PIPING

A. Gas distribution system is based on a 7" W.C. natural gas pressure except where noted on plans. Provide all gas-fired equipment with gas pressure regulators or special orifices as required to operate at 5000 ft. elevation. Provide a gas cock and drip leg at each appliance.

B. Gas piping on roof shall be secured to uv resistant Polyethylene foam block; Erico "Pipe Pier". Provide rubberized sheet under pipe support.

C. Piping exposed outside shall be painted with an exterior type latex paint which matches the adjacent roof or wall.

D. Appliance connection piping to be per plans or same as appliance size, whichever is larger. Transition downstream of all shutoffs and regulators as close to appliance as possible when plans call for larger than appliance.

3.06 KITCHEN

A. Provide final connections to all kitchen equipment in accordance with manufacturer's instructions. Provide stops or shut-off valves for hot and cold water connection; plug cocks or quick- connect couplings for gas appliances. Indirect wastes shall be DWV copper, except at soda machines where plastic pipe shall be used.

3/13/2026 8:50:57 AM

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

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INTERIOR DESIGNER:

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T: 303.892.7062

PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

PLUMBING SPECIFICATIONS

SEAL

COLORADO LICENSED PROFESSIONAL ENGINEER 38983 03/13/2026 PROFESSIONAL ENGINEER

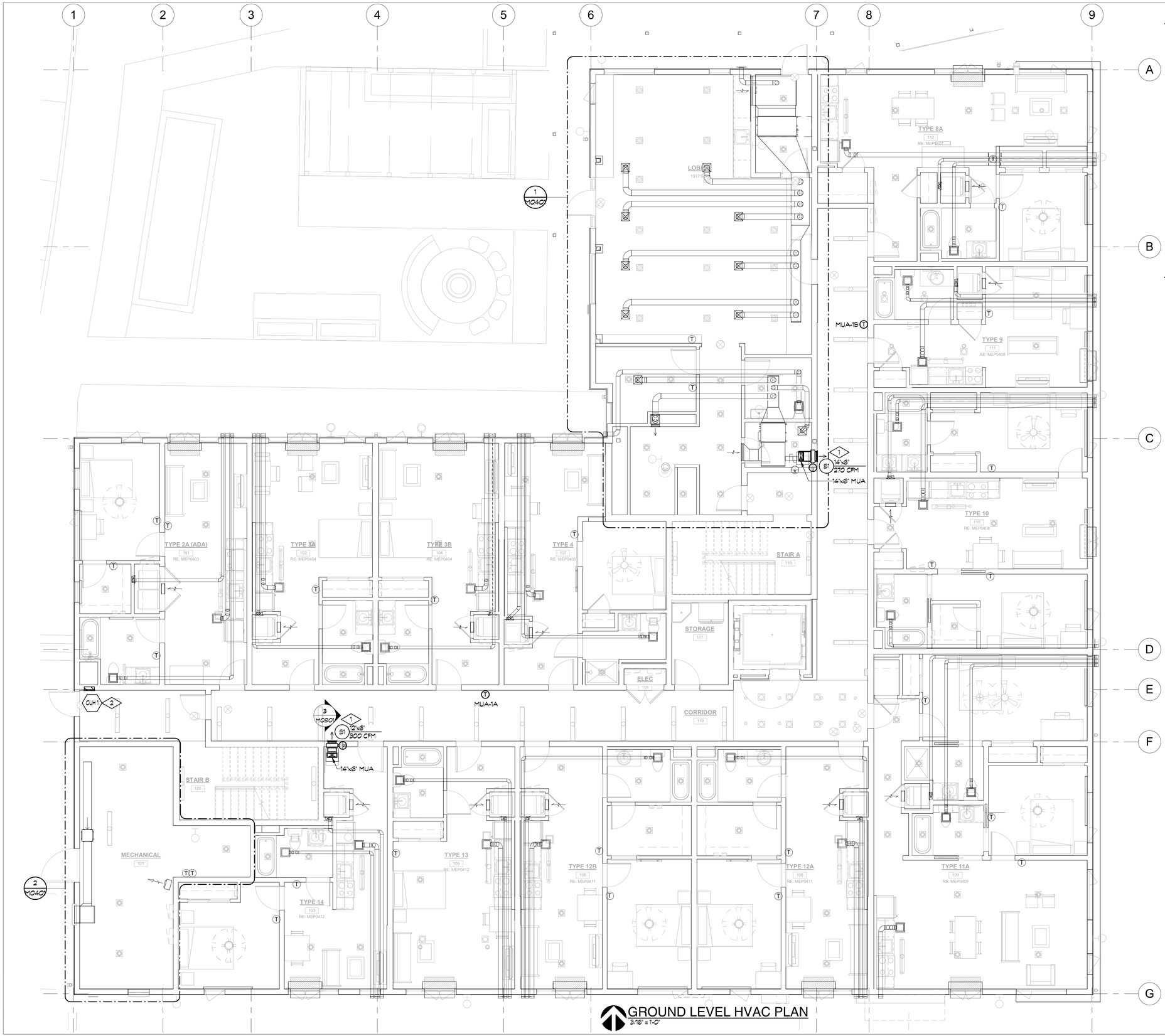
DATE: 03.13.2026

DRAWN BY: TB

CHECKED BY: MV

PROJECT NO: 25135

DRAWING NO: **P1000**



GROUND LEVEL HVAC PLAN
3/16" = 1'-0"

GENERAL NOTES

A. IN THE CASE OF A DISCREPANCY BETWEEN GENERAL NOTES, DETAIL NOTES, SPECIFICATION, OR GRAPHICAL DEPICTIONS, IT IS THE CONTRACTOR'S RESPONSIBILITY TO CLARIFY DESIGN INTENT WITH ENGINEER.

B. FLEX DUCT MAY NOT BE USED IN EXPOSED LOCATIONS. WHERE CONCEALED, FLEX DUCT RUNS NO LONGER THAN 2', REFER TO SPECIFICATIONS.

C. GRILLES, REGISTERS & DIFFUSERS & EXPOSED DUCTWORK TO MATCH ADJACENT CEILING/STRUCTURE COLOR. WHERE CEILING IS LIGHT COLOR, MAINTAIN WHITE GRDS. WHERE CEILING/STRUCTURE IS METAL FINISH OR DARK, PAINT GRDS TO MATCH. REFER TO ARCH PLANS FOR FINISHES.

D. ANY UNDIMENSIONED DUCTWORK CONNECTED DIRECTLY TO AN AIR HANDLER TO BE SIZED TO MATCH DUCT CONNECTION OF EQUIPMENT.

E. MAINTAIN 10' CLEARANCE FROM MECHANICAL EQUIPMENT TO EDGE OF ROOF IF PARAPET / RAILING IS LESS THAN 42" HIGH. IF CLEARANCE IS NOT POSSIBLE COORDINATE W/ GC TO PROVIDE ARREST/RESTRAINT ANCHOR PER ANSI Z359.1.

F. MECHANICAL SYSTEM IS REQUIRED TO BE COMMISSIONED PER IECC C408.2.

DETAIL NOTES THIS SHEET

1. REFER TO MUA SUPPLY STACK SECTION ON SHEET M0801. PROVIDE FIRE/SMOKE DAMPER AT SHAFT PENETRATIONS.

2. VESTIBULE CUH-1 TO BE LIMITED TO 60°F SETPOINT TO COMPLY WITH 2021 IECC.

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

GROUND LEVEL HVAC PLAN

SEAL

COLORADO LICENSED PROFESSIONAL ENGINEER 38983 03/13/2026

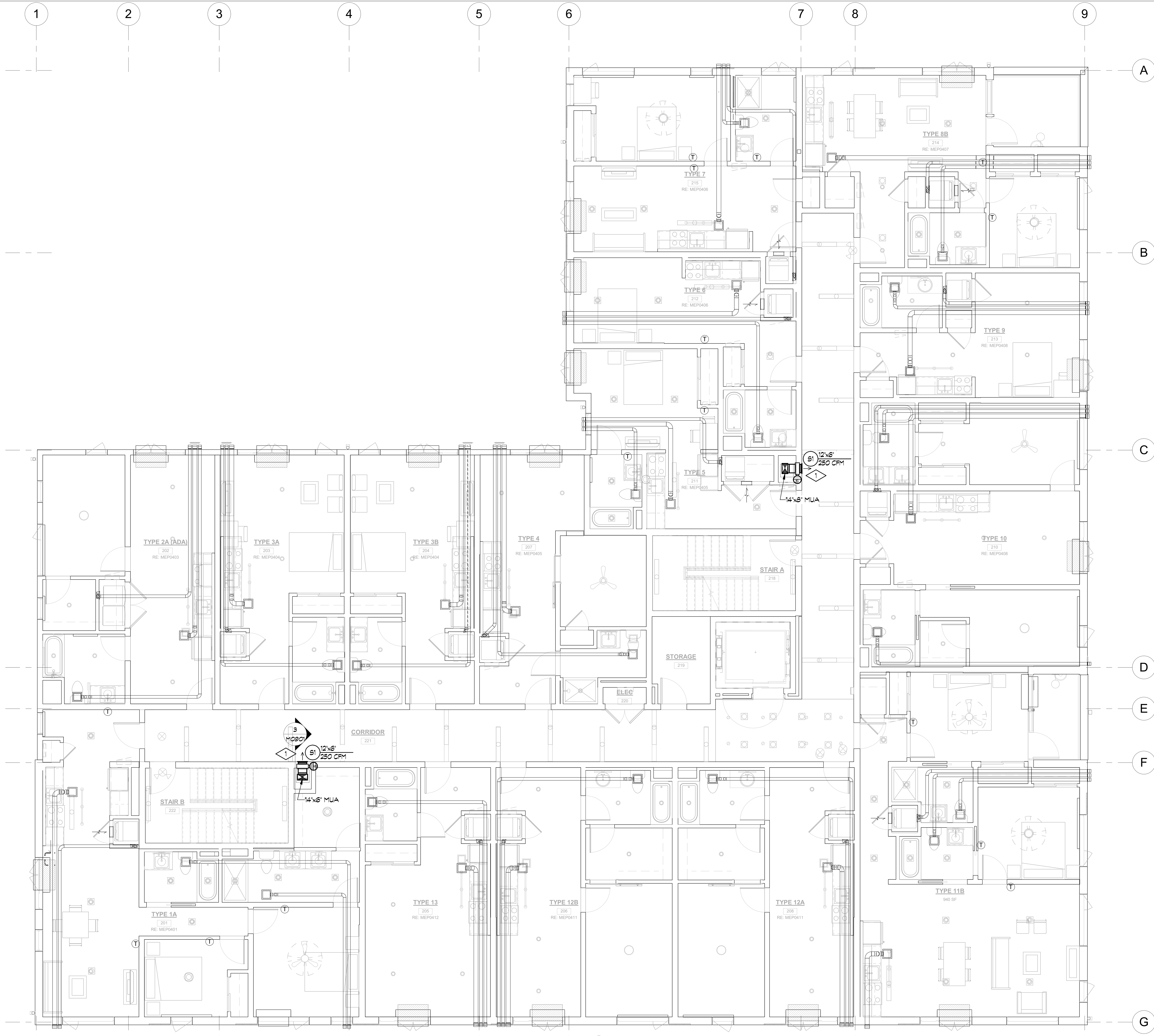
DATE: 03.13.2026
DRAWN BY: MO
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO: **M0201**

3/13/2026 8:51:01 AM

DETAIL NOTES THIS SHEET

1. REFER TO MUA SUPPLY STACK SECTION ON SHEET M0301. PROVIDE FIRE/SMOKE DAMPER AT SHAFT PENETRATION.



SECOND LEVEL HVAC PLAN

3/16" = 1'-0"

3/13/2026 8:51:04 AM

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL

1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

SECOND LEVEL HVAC PLAN

SEAL

COLORADO LICENSED PROFESSIONAL ENGINEER 38983 03/13/2026

DATE: 03.13.2026

DRAWN BY: MO

CHECKED BY: MV

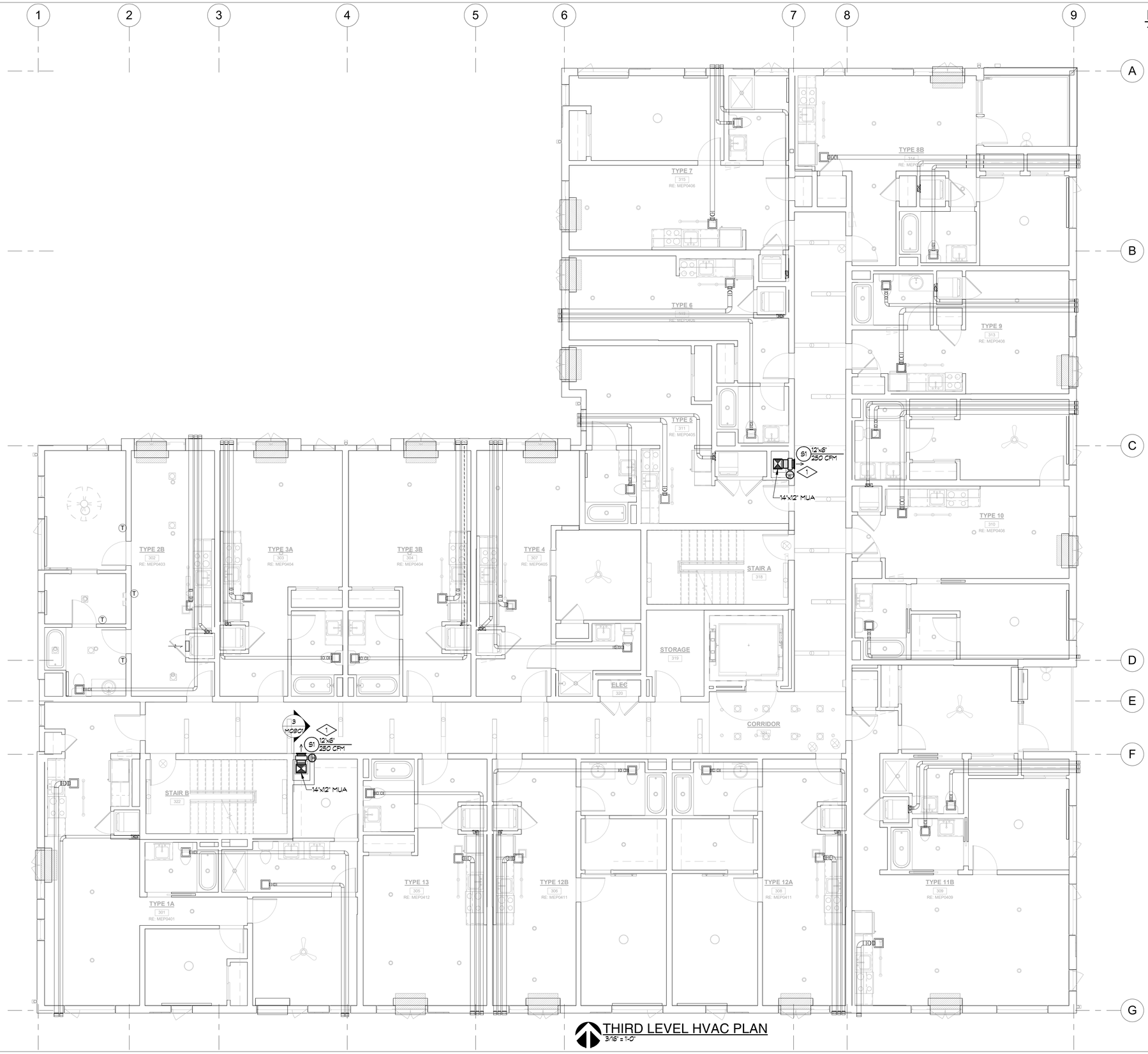
PROJECT NO: 25135

DRAWING NO:

M0202

DETAIL NOTES THIS SHEET

1. REFER TO MUA SUPPLY STACK SECTION ON SHEET M0801. PROVIDE FIRE/SMOKE DAMPER AT SHAFT PENETRATION.



THIRD LEVEL HVAC PLAN
3/16" = 1'-0"

3/13/2026 8:51:07 AM

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL

1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

THIRD LEVEL HVAC PLAN

SEAL

COLORADO LICENSED
MICHAEL VARNER
38983
03/13/2026
PROFESSIONAL ENGINEER

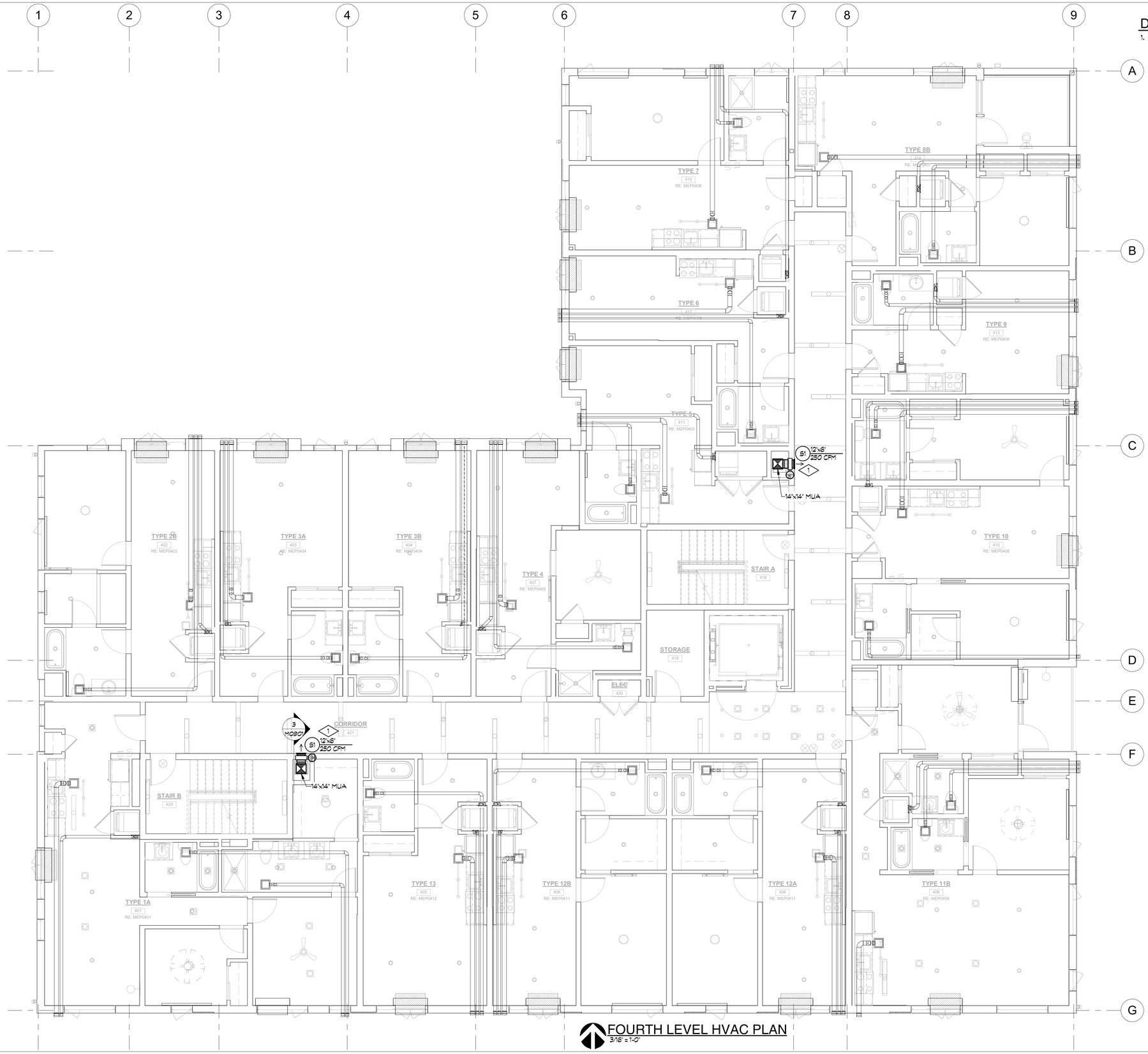
DATE: 03.13.2026
DRAWN BY: MO
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO:

M0203

DETAIL NOTES THIS SHEET

1. REFER TO MUA SUPPLY STACK SECTION ON SHEET M0801. PROVIDE FIRE/SMOKE DAMPER AT SHAFT PENETRATION.



FOURTH LEVEL HVAC PLAN
3/16" = 1'-0"

3/13/2026 8:51:11 AM

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL

1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

FOURTH LEVEL HVAC PLAN

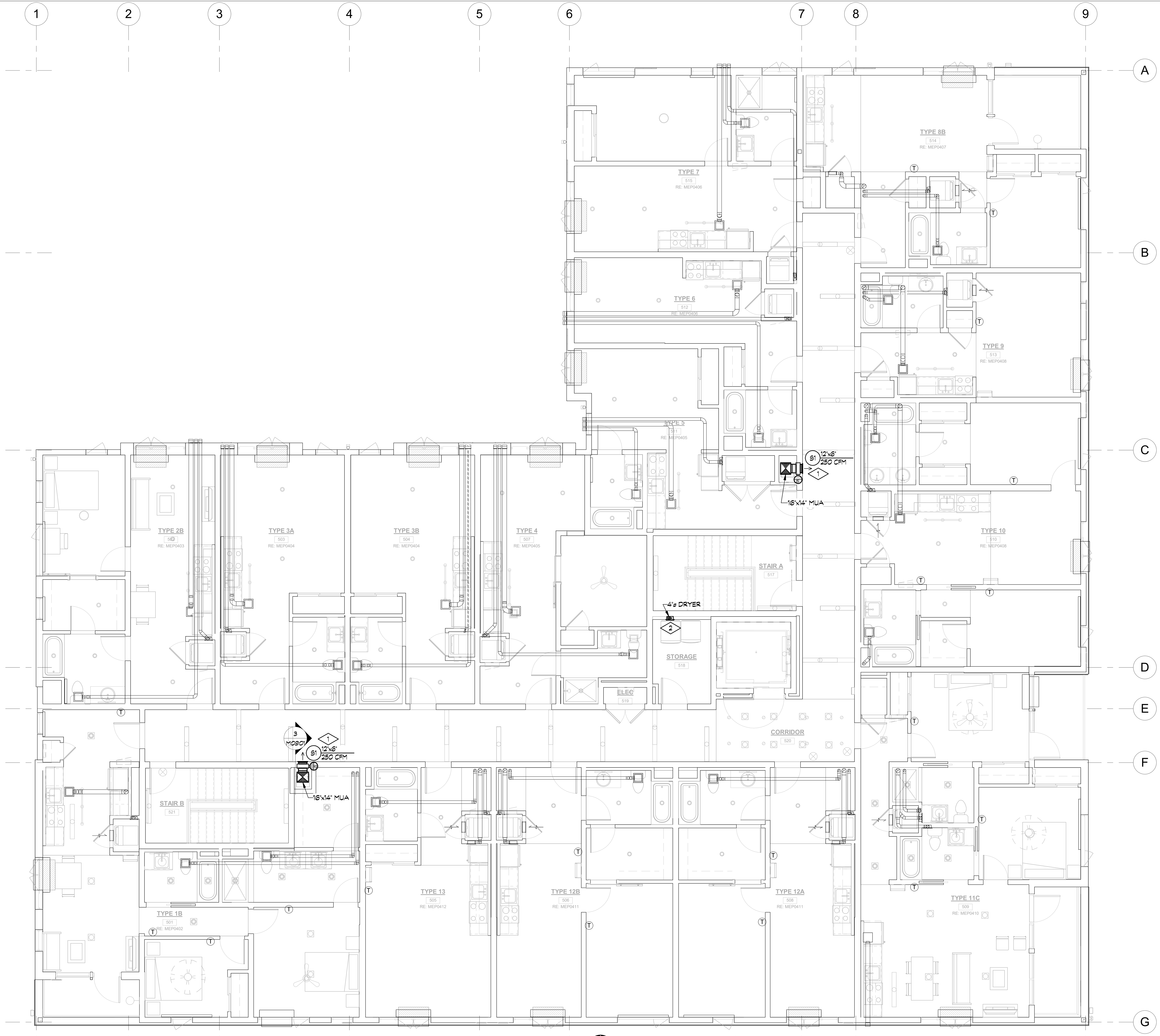
SEAL

COLORADO LICENSED
38983
03/13/2026
PROFESSIONAL ENGINEER

DATE: 03.13.2026
DRAWN BY: MO
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO:

M0204



FIFTH LEVEL HVAC PLAN

3/16" = 1'-0"

DETAIL NOTES THIS SHEET

1. REFER TO MUA SUPPLY STACK SECTION ON SHEET M0301. PROVIDE FIRE/SMOKE DAMPER AT SHAFT PENETRATION.
2. INSTALL DRYER BOX (IN-O-VATE TECH OR EQUIV.) IN FURRED WALL. ROUTE 4"Ø DRYER VENT FROM DRYER BOX UP THROUGH TOP PLATE AND ROOF. INSULATE WITH R-8 DUCTWRAP WHEN LOCATED WITHIN UNCONDITIONED SPACE. COORDINATE WITH G.C.

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

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ARCHITECT

KASA

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

FIFTH LEVEL HVAC PLAN

SEAL

COLORADO LICENSED PROFESSIONAL ENGINEER 38983 03/13/2026

DATE: 03.13.2026
DRAWN BY: MO
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO:
M0205

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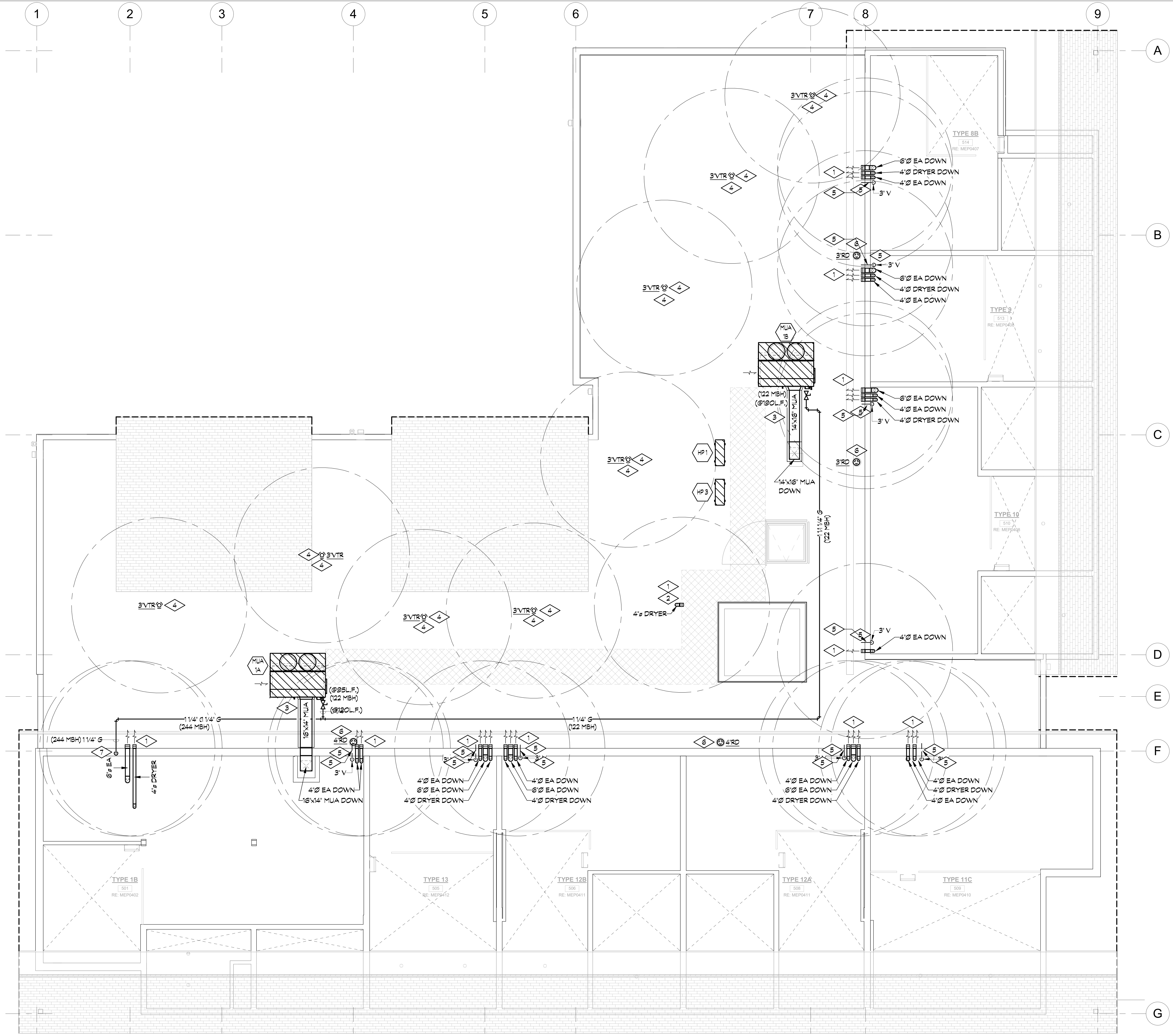

MEZZANINE LEVEL MECHANICAL PLAN

3/16" = 1'-0"

DETAIL NOTES THIS SHEET

1. ENVIRONMENTAL EXHAUST TERMINATION. MAINTAIN 3'-0" CLEARANCE TO OPERABLE BUILDING OPENINGS AND 10'-0" CLEARANCE TO MECHANICAL AIR INTAKES.
2. PROVIDE TALL ROOF JACK DRYER VENT TERMINATION WITH BACKDRAFT DAMPER.
3. EXTERIOR DUCTWORK INSULATED PER SPECIFICATIONS. SEE SHEET M0901.
4. 3" VTR IN APPROXIMATE LOCATION SHOWN, VTR TERMINATION TO BE A MINIMUM OF 10'-0" FROM ANY BUILDING OPENING OR MECHANICAL EQUIPMENT AIR INTAKE. COORDINATE EXACT LOCATION AND ROOF PENETRATION WITH G.C.
5. 3" SIDEWALL PLUMBING VENT IN APPROXIMATE LOCATION SHOWN, TERMINATION TO BE A MINIMUM OF 10'-0" FROM ANY BUILDING OPENING OR MECHANICAL EQUIPMENT AIR INTAKE. COORDINATE EXACT LOCATION AND WALL PENETRATION WITH G.C.
6. PROVIDE HEAT TRACE FOR SNOWMELT ON ROOF DRAINS. REFER TO ELECTRICAL PLANS.
7. GAS PIPE DOWN TO MECHANICAL ROOM, SEE SHEET P0215 FOR CONTINUATION.

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

OWNER

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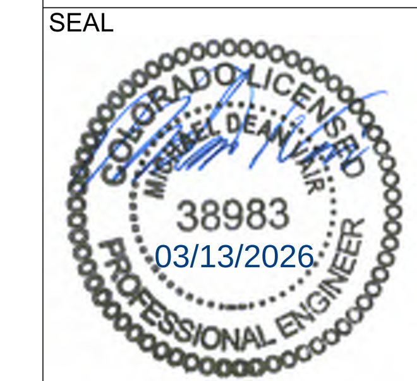
PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

MEZZANINE LEVEL MECHANICAL PLAN

SEAL



DATE: 03.13.2026
DRAWN BY: MO
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO:
M0206

3/13/2026 8:51:16 AM

COM*check* Software Version COMcheckWeb

Mechanical Compliance Certificate

Project Information

Energy Code:	2021 IECC
Project Title:	25135 - Steamboat Basecamp 2
Location:	Steamboat Springs, Colorado
Climate Zone:	7
Project Type:	New Construction

Construction Site:
1901 Curve Plaza
Steamboat Springs, Colorado 80487

Owner/Agent:

Designer/Contractor:
Boulder Engineering Co
1717 15th Street
Boulder, Colorado 80302
303-444-6038

Additional Efficiency Package(s)

Credits: 10.0 Required 11.5 Proposed
10% heating efficiency improvement, 0.0 credit
10% cooling efficiency improvement, 1.5 credit
Efficient fossil fuel water heater, 10.0 credit

Mechanical Systems List

Quantity **System Type & Description**

1 HFC/HP-1 (Single Zone):
Split System Heat Pump
Heating Mode: Capacity = 15 kBtu/h,
Proposed Efficiency = 9.50 HSPF2, Required Efficiency = 7.50 HSPF2
Cooling Mode: Capacity = 12 kBtu/h,
Proposed Efficiency = 17.00 SEER2, Required Efficiency = 14.30 SEER2
Proposed Part Load Efficiency = 0.00 , Required Part Load Efficiency = 0.00
Fan System: HFC-1 -- Compliance (Motor nameplate HP and fan efficiency method) : Passes

Fans:
FAN 1 Supply, Constant Volume, 425 CFM, 0.2 motor nameplate hp, 0.00 fan energy index , fan exception: Single fan < 1 HP or < 0.89 kW

1 HFC/HP-3 (Single Zone):
Split System Heat Pump
Heating Mode: Capacity = 40 kBtu/h,
Proposed Efficiency = 9.30 HSPF2, Required Efficiency = 7.50 HSPF2
Cooling Mode: Capacity = 36 kBtu/h,
Proposed Efficiency = 21.70 SEER2, Required Efficiency = 14.30 SEER2
Proposed Part Load Efficiency = 0.00 , Required Part Load Efficiency = 0.00
Fan System: HFC-3 -- Compliance (Motor nameplate HP and fan efficiency method) : Passes

Fans:
FAN 2 Supply, Constant Volume, 1200 CFM, 0.5 motor nameplate hp, 0.00 fan energy index , fan exception: Single fan < 1 HP or < 0.89 kW

2 MUA-1 (Single Zone):
Heating: 1 each - Central Furnace, Gas, Capacity = 150 kBtu/h
Proposed Efficiency = 81.00% Et, Required Efficiency: 80.00 % Et or 80% AFUE
Cooling: 1 each - DX DOAS (Dehumidification), Capacity = 63 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 6.12 ISMRE, Required Efficiency = 4.00 ISMRE
Proposed Part Load Efficiency = 0.00 , Required Part Load Efficiency = 0.00
Fan System: MUA-1 -- Compliance (Motor nameplate HP and fan efficiency method) : Passes

Fans:
FAN 3 Supply, Constant Volume, 1300 CFM, 1.5 motor nameplate hp, 0.00 fan energy index , fan exception: Part of code listed equipment

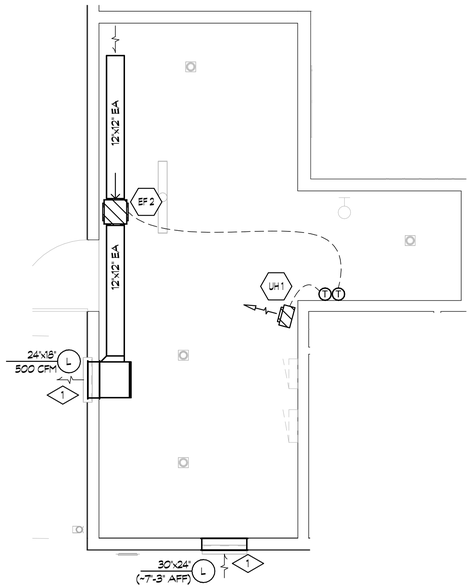
Quantity **System Type & Description**

3 VWH/ST:
Gas Storage Water Heater, Capacity: 430 gallons, Input Rating: 850 kBtu/h w/ Circulation Pump
Proposed Efficiency: 96.00 % Et, Required Efficiency: 80.00 % Et

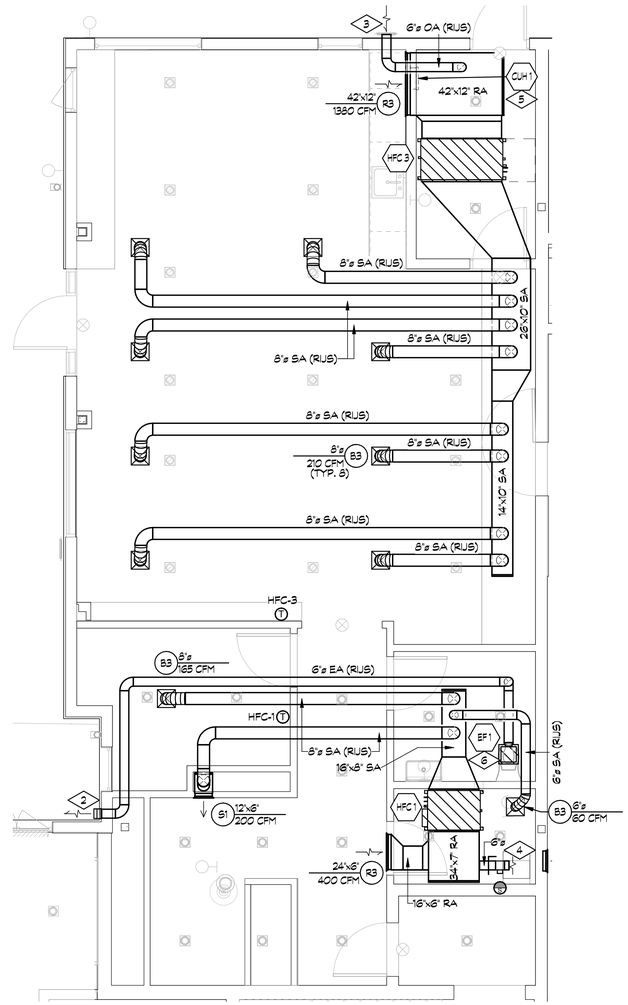
Mechanical Compliance Statement

Compliance Statement: The proposed mechanical design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2021 IECC requirements in COM*check* Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Michael Vair, PE — Name - Title
Signature
3/11/2026 — Date



2 ENLARGED MECHANICAL ROOM HVAC PLAN
1/4" = 1'-0"



1 ENLARGED LOBBY HVAC PLAN
1/4" = 1'-0"

DETAIL NOTES THIS SHEET

1. REFER TO ARCHITECTURAL ELEVATIONS FOR LOUVER LOCATIONS.
2. TERMINATE ENVIRONMENTAL EXHAUST WITH 'XVENT' MODEL GSEB-BR WALL CAP. TERMINATION MUST BE 3'-0" MINIMUM FROM ANY BUILDING OPENINGS. SEE ARCHITECTURAL ELEVATIONS FOR TERMINATION LOCATION.
3. TERMINATE OUTSIDE AIR INTAKE WITH 'XVENT' MODEL GSEB-BR WALL CAP. BALANCE TO AIRFLOW SHOWN IN VENTILATION CALCULATION ON SHEET M0601. SEE ARCHITECTURAL ELEVATIONS FOR TERMINATION LOCATION.
4. CONNECT 6"Ø OA DUCT TO MUA SUPPLY AIR DUCT. BALANCE TO 30 CFM PER VENTILATION CALCULATION ON SHEET M0601. PROVIDE FIRE DAMPER AT SHAFT PENETRATION.
5. VESTIBULE CUH-1 TO BE LIMITED TO 60°F SETPOINT TO COMPLY WITH 2021 IECC.
6. EF-1 TO OPERATE WITH ROOM LIGHT SWITCH. REFER TO ELECTRICAL PLANS.

APPROVAL STAMPS:

No.	Date	Description

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PROJECT LOCATION
STEAMBOAT BASECAMP AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE
ENLARGED MECHANICAL PLANS & COMCHECK

SEAL
COLORADO LICENSED PROFESSIONAL ENGINEER
38983
03/13/2026

DATE: 03.13.2026
DRAWN BY: MO
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO: **M0401**

3/13/2026 8:51:20 AM

VENTILATION (IMC-2021)

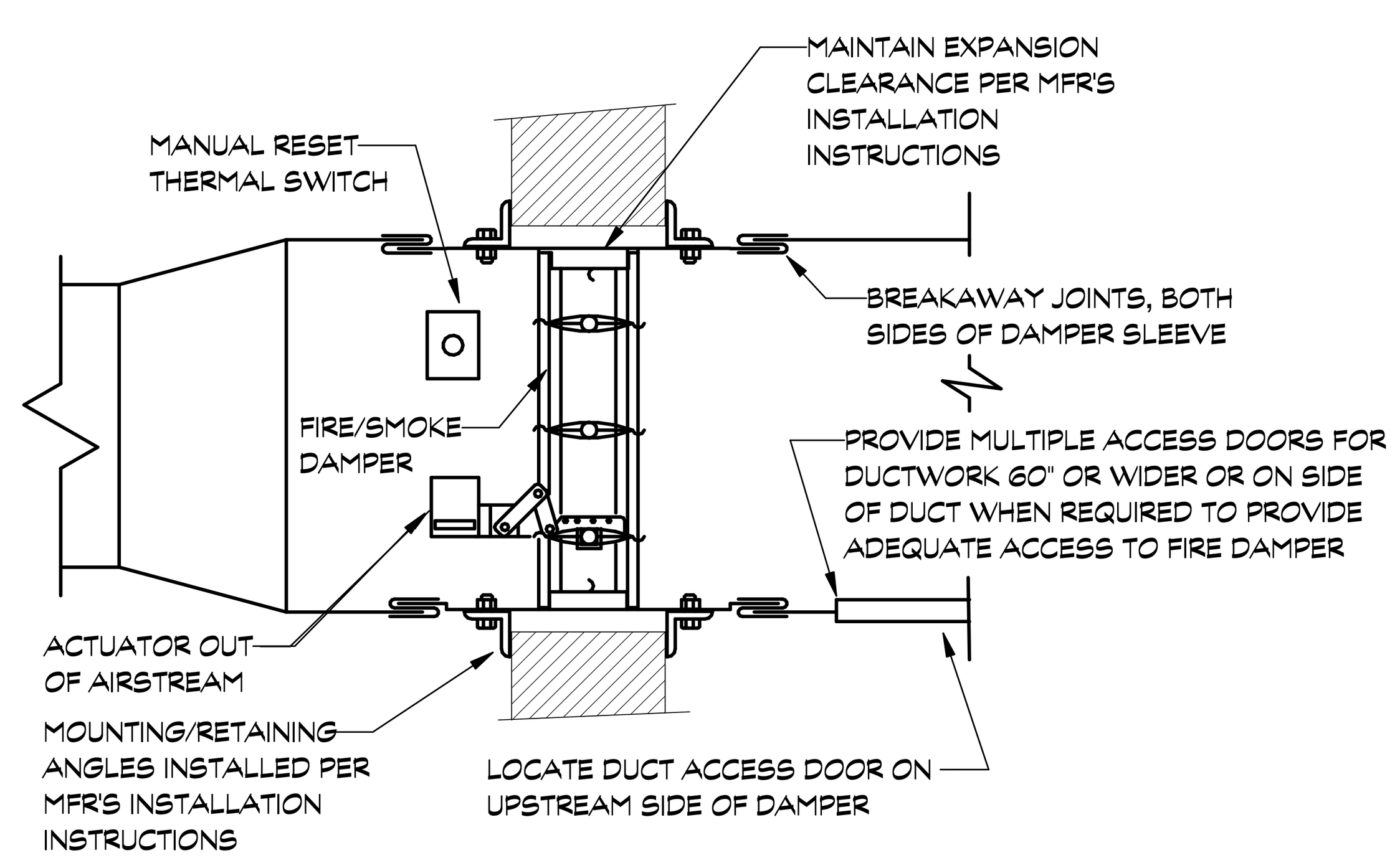
SPACE NAME	SPACE TYPE	SQ FT	PEOPLE	CFM/P	CFM/ SF	Voz	Ez	Vdz	Vbz	Evz
MUA-1A										
1 ST FLOOR CORRIDOR	CORRIDORS	483	0	0	0.06	36	0.8	300	29	0.98
2ND FLOOR CORRIDOR	CORRIDORS	441	0	0	0.06	33	0.8	250	26	0.97
3RD FLOOR CORRIDOR	CORRIDORS	441	0	0	0.06	33	0.8	250	26	0.97
4TH FLOOR CORRIDOR	CORRIDORS	441	0	0	0.06	33	0.8	250	26	0.97
5TH FLOOR CORRIDOR	CORRIDORS	432	0	0	0.06	32	0.8	250	26	0.97
						Vot	%OA	Vps	Vou	Ev
	SYSTEM TOTAL	2238	0			138	11%	1300	134	0.97
MUA-1B										
1 ST FLOOR CORRIDOR	CORRIDORS	483	0	0	0.06	36	0.8	270	29	0.97
2ND FLOOR CORRIDOR	CORRIDORS	441	0	0	0.06	33	0.8	250	26	0.97
3RD FLOOR CORRIDOR	CORRIDORS	441	0	0	0.06	33	0.8	250	26	0.97
4TH FLOOR CORRIDOR	CORRIDORS	441	0	0	0.06	33	0.8	250	26	0.97
5TH FLOOR CORRIDOR	CORRIDORS	432	0	0	0.06	32	0.8	250	26	0.97
						Vot	%OA	Vps	Vou	Ev
	SYSTEM TOTAL	2238	0			139	11%	1270	134	0.97
HFC-1										
OFFICE	OFFICE SPACE	91	1	5	0.06	13	0.8	165	10	0.98
CORRIDOR	CORRIDORS	169	0	0	0.06	13	0.8	200	10	1.00
STORAGE	STORAGE ROOMS	42	0	0	0.12	6	0.8	60	5	0.96
						Vot	%OA	Vps	Vou	Ev
	SYSTEM TOTAL	302	1			27	6%	425	26	0.96
						30 CFM OF OA PROVIDE BY MUA-1B				
HFC-3										
LOBBY	MAIN ENTRY LOBBIES	750	8	5	0.06	106	0.8	1200	85	0.98
						Vot	%OA	Vps	Vou	Ev
	SYSTEM TOTAL	750	8			87	7%	1200	85	0.98

* RESTROOM AIR IS TRANSFERRED AND THEREFORE IS NOT INCLUDED IN THE TOTAL REQUIRED OSA QUANTITY.

NOTE: SYSTEM TOTAL IS CALCULATED USING PEAK POPULATION AND VENTILATION EFFICIENCIES AND IS THEREFORE NOT A SUM OF ALL ZONES SERVED. CALCULATION IS BASED ON ASHRAE APPENDIX A TO CALCULATE Ev FOR MULTI-ZONE.

NOTE: BALANCE AIR HANDLERS AND ROOF TOP UNITS TO AIRFLOW NOTED ON PLANS OR SYSTEM MINIMUM WHICHEVER IS GREATER.

- Ez ZONE AIR EFFECTIVENESS
- Vdz ZONE DESIGN SUPPLY
- Vbz UNCORRECTED OA TO BREATHING AREA
- Voz ADJUSTED OA REQUIRED TO ZONE
- Evz ZONE VENTILATION EFFICIENCY (APP A)
- Vps PRIMARY SYSTEM AIR FLOW
- Vou UNCORRECTED OA
- Vot MIN OA REQUIRED FOR SYSTEM
- Ev SYSTEM VENTILATION EFFICIENCY



NOTES:
1. INSTALL ASSEMBLY IN STRICT ACCORDANCE WITH MFR'S INSTRUCTIONS.
2. PROVIDE AND INSTALL ADDITIONAL STEEL MULLIONS FOR MULTIPLE FIRE/SMOKE DAMPER ASSEMBLIES.
3. PROVIDE DUCT TRANSITIONS BETWEEN DAMPER AND DUCT.
4. PROVIDE RED IDENTIFICATION PAINT ON EXTERIOR OF DAMPER ASSEMBLY.

NTS

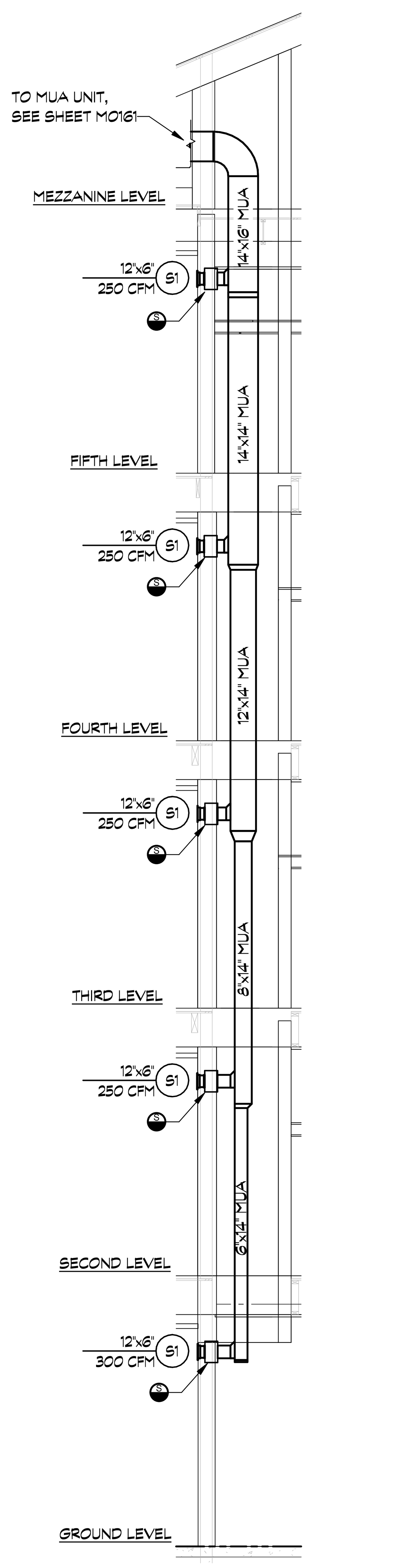
FIRE/SMOKE DAMPER INSTALLATION DIAGRAM — 4

HVAC SCHEDULE

KEY	UNIT TYPE	DESCRIPTION	HEAT'G	COOL'G	FLOW	PRES.	WEIGHT	PWR	VOLT	MANUFACTURER/CAT. #
PTHP 15	PACKAGED TERMINAL HEAT PUMP	WALL MOUNTED HEAT PUMP, LOW AMBIENT HEATING TO -0°F, 3.9 KW ELECTRIC STRIP HEAT, 16.3 SEER2	9 MBH (@5°F)	14.2 MBH	525 CFM	0"	120 LBS	25 MCA	208/1	GE AZVS15DR
KF 1	KITCHEN EXHAUST FAN	SINGLE SPEED VENTILATION/ EXHAUST FAN, BACKDRAFT DAMPER, DC MOTOR, RADIATION DAMPER AS NOTED, 4" OVAL TO 3"Ø ROUND ADAPTER (FV-VS43R), ENERGY STAR, 1.3 SONES	-	-	100 CFM	0.25"		1 A	120/1	PANASONIC FV-05-10VS1
VF 1	VENTILATION EXHAUST FAN	SINGLE SPEED VENTILATION/ EXHAUST FAN, BACKDRAFT DAMPER, DC MOTOR, RADIATION DAMPER, ENERGY STAR, VERTICAL, INTERMITTENT OPERATION, 4" OVAL TO 3"Ø ROUND ADAPTER (FV-VS43R), 0.8 SONES	-	-	80 CFM	0.25"		1 A	120/1	PANASONIC FV-05-10VS1, AIR CYCLER SMART EXHAUST SWITCH
EF 1	CEILING EXHAUST FAN	BACK DRAFT DAMPER, 1127 RPM, RADIATION DAMPER AS NOTED, ENERGY STAR RATED	-	-	75 CFM	0.25"	-	23 W	120/1	PANASONIC FV-0511VQ1
EF 2	INLINE FAN	DIRECT DRIVE, GALVANIZED CABINET, CENTRIFUGAL BACKWARD INCLINE WHEEL, 1627 RPM, VARIABLE SPEED FAN, TEMP BASED CONTROL (CLG)	-	-	200-500 CFM	0.3	40 LBS	3.5 MCA	120/1	GREENHECK SQ-90-VG
HFC 1	HORIZONTAL FAN COIL UNIT	LOW PROFILE, DUCTED HEAT PUMP FAN COIL, WIRED PROGRAMMABLE T-STAT, ECM MOTOR, 1" CABINET INSULATION, CONDENSATE PUMP, POWER FED FROM HP-1	9.0 MBH (@-13°F)	1 TON (NOM)	425 CFM	0.6"	60 LBS	3.5 MCA	208/1	MITSUBISHI PEAD-AA12NL (OFFICES)
HP 1	HEAT PUMP CONDENSING UNIT	AIR COOLED, INVERTER DRIVEN, HYPER HEAT DOWN TO -13°F, WIND BAFFLES, 18" SINGLE FAN STAND, 17.0 SEER2, 9.5 HSPF2, TO BE PAIRED WITH HFC-1	9.0 MBH (@-13°F)	1 TON (NOM)	-	-	120 LBS	25 MCA	208/1	MITSUBISHI SUZ-AA12NLHZ (OFFICES)
HFC 3	HORIZONTAL FAN COIL UNIT	LOW PROFILE, DUCTED HEAT PUMP FAN COIL, WIRED PROGRAMMABLE T-STAT, ECM MOTOR, 1" CABINET INSULATION, CONDENSATE PUMP, POWER FED FROM HP-3	31.0 MBH (@-13°F)	3 TON (NOM)	1200 CFM	0.6"	85 LBS	3.5 MCA	208/1	MITSUBISHI PEAD-AA36NL (LOBBY)
HP 3	HEAT PUMP CONDENSING UNIT	AIR COOLED, INVERTER DRIVEN, HYPER HEAT DOWN TO 0°F, WIND BAFFLES, 18" DUAL FAN STAND, 21.7 SEER2, 9.3 HSPF2, TO BE PAIRED WITH HFC-3	31.0 MBH (@-13°F)	3 TON (NOM)	-	-	240 LBS	29 MCA	208/1	MITSUBISHI PUZ-AK36NLHZ (LOBBY)
MUA 1 A/B	MAKE UP AIR UNIT	INDIRECT FIRED, 81% EFF., DX COOLED, SIDE DISCHARGE, 6:1 TURNDOWN, STAINLESS BURNER & HEAT EXCHANGER, ROOF CURB, 2" FILTERS, FREEZESTAT, CORRIDOR UNIT CONTROLS	150 MBH	63.9 MBH	1300 CFM	0.5"	1350 LBS	27.8 MCA	208/3	CAPTIVEAIRE CAS-HVAC1-I.150-15-5T-DOAS
CUH	ELECTRIC CABINET WALL HEATER	FLUSH MOUNTED, 14 GAUGE COVER. INTEGRAL DISCONNECT, LOW VOLTAGE RELAY FOR REMOTE T-STAT	4KW					19.2 A	208/1	QMARK AWH-4408 LFK-SFC
BB 34	ELECTRIC BASEBOARD	HYDRONIC FILLED ELECTRIC BASEBOARD HEATER, HIGH TEMP SAFETY LIMIT, REMOTE 24V T'STAT, UL LISTED, 34" LENGTH, WHITE	750W					3.6 A	208/1	QMARK HBB758
BB 70	ELECTRIC BASEBOARD	HYDRONIC FILLED ELECTRIC BASEBOARD HEATER, HIGH TEMP SAFETY LIMIT, REMOTE 24V T'STAT, UL LISTED, 70" LENGTH, WHITE	1500W					7.2 A	208/1	QMARK HBB1508
NOTES:	* M.C. IS RESPONSIBLE FOR ALL ANCILLARY EQUIPMENT AND DUCTWORK NEEDED TO CONNECT EQUIPMENT. IT IS THE CONTRACTORS RESPONSIBILITY TO COORDINATE ELECTRICAL CHANGES DUE TO EQUIPMENT SUBSTITUTIONS WITH EC.									

LEGEND

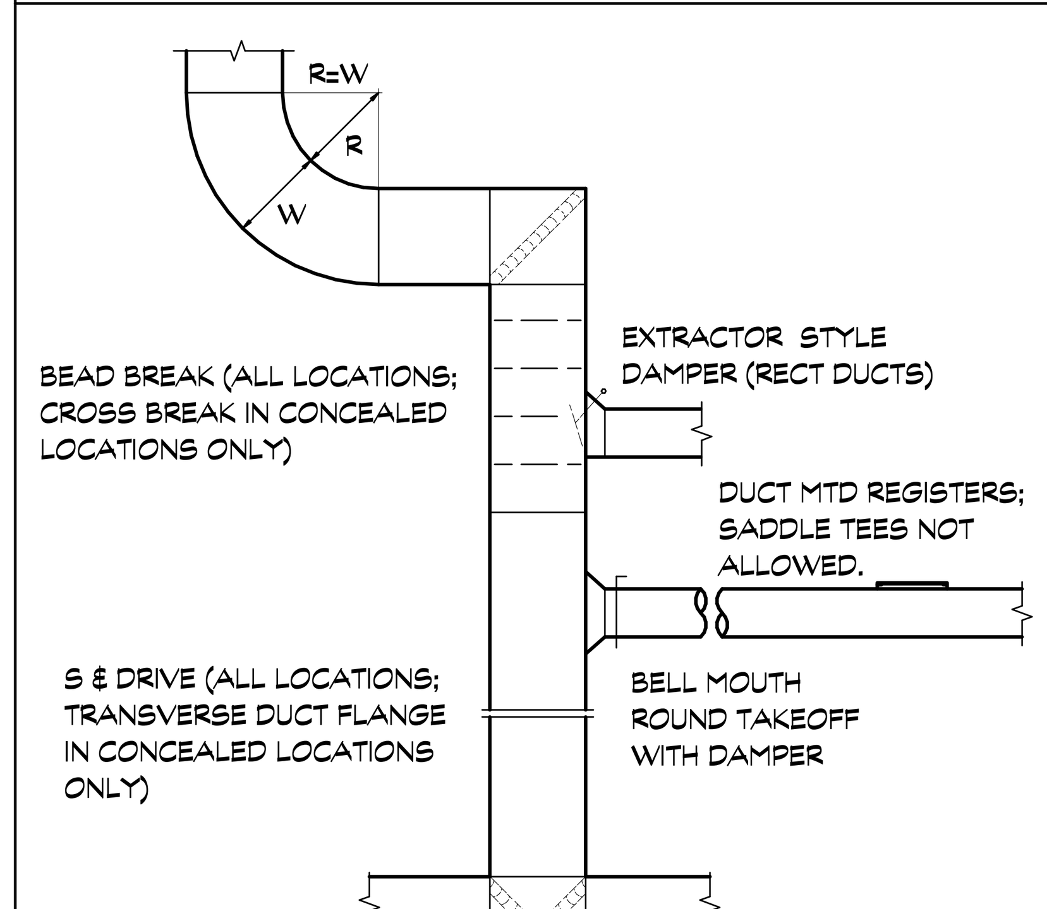
- DUCT (INSIDE DIM. SIDE SHOWN INSIDE DIM. SIDE NOT SHOWN)
- SUPPLY DUCT (SECTION)
- RETURN DUCT (SECTION)
- EXHAUST DUCT (SECTION)
- FLEXIBLE DUCT
- FLEXIBLE CONNECTOR
- TURNING VANES
- SUPPLY DIFFUSER (ARROWS INDICATE DISTRIBUTION)
- RETURN REGISTER / GRILLE
- MECHANICAL POINT OF CONNECTION
- FIRE DAMPER
- RADIATION DAMPER
- SMOKE AND FIRE DAMPER
- THERMOSTAT
- MANUAL BALANCING DAMPER
- MOTORIZED BALANCING DAMPER
- —HWS— HOT WATER SUPPLY
- —HWR— HOT WATER RETURN
- —CWS— CHILLED WATER SUPPLY
- —CWR— CHILLED WATER RETURN
- — C — CONDENSATE
- — S — STEAM
- GRILLE / REGISTER / DIFFUSER
- MECHANICAL EQUIPMENT
- DETAIL NOTE
- KITCHEN / MEDICAL EQUIPMENT
- SA SUPPLY AIR
- OA OUTSIDE AIR
- MA MIXED AIR
- RA RETURN AIR
- EA EXHAUST AIR
- AD ACCESS DOOR
- OBD OPPOSED BLADE DAMPER
- RIJS ROUTE IN JOIST SPACE
- (E) EXISTING TO REMAIN
- (ER) EXISTING TO BE REPLACED
- (ED) EXISTING TO BE DEMOLISHED
- DUCT DETECTOR
- REMOTE INDICATING LIGHT



NOTE: DUCT SIZING TYPICAL FOR BOTH MUA RISERS

1/4" = 1'-0"

MUA DUCT RISER DETAIL — 3



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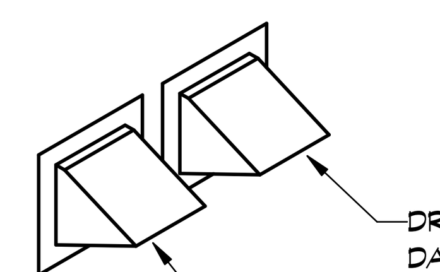
LOW PRESSURE DUCT CONNECTIONS — 2



XVENT EXHAUST BOX FOR ALL SIDEWALL TERMINATIONS

- * MODEL THEB-446-BR FOR ALL 4"/4"/6" TRIPLE TERMINATIONS
- * MODEL DHEB-64-BR FOR ALL 4" & 6" SIDE BY SIDE
- * MODEL 4SEB-BR FOR SINGLE 4" TERMINATIONS
- * MODEL 6SEB-BR FOR SINGLE 6" TERMINATIONS

NTS

EXHAUST & DRYER VENT DETAIL — 1

GRILLE REGISTER DIFFUSER SCHEDULE

KEY	DESCRIPTION	CEIL'G	ACCESSORIES	MANUFACTURER/CAT #
B3	SQUARE CEILING DIFFUSER: 1'X1' LOUVERED FACE, ROUND NECK, DIRECTIONS OF THROW PER PLAN, WHITE	GYP		TITUS TDC/1
L	WALL LOUVER, HEAVY GAUGE ALUMINUM, 37.5 DEG DRAINABLE BLADE		1/2" BIRDSCREEN	GREENHECK ESD-435
R1	RETURN GRILLE, 20 DEGREE FIXED BLADE, WHITE PARALLEL TO LONG DIMENSION	GYP		HART & COOLEY 650
R3	RETURN GRILLE, 30 DEGREE FIXED BLADE, FRONT BLADES PARALLEL TO LONG DIMENSION, WHITE	GYP		TITUS 25RL
S1	DOUBLE DEFLECTION SUPPLY REGISTER, FRONT BLADES PARALLEL TO SHORT DIMENSION, WHITE	GYP/ GRID	OB DAMPER	TITUS 272
NOTES:	COORDINATE DIFFUSER LOCATIONS WITH LIGHTS AND OTHER CEILING ELEMENTS			

APPROVAL STAMPS:

No.	Date	Description

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INTERIOR DESIGNER:

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL

1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

MECHANICAL DETAILS & SCHEDULES

SEAL

COLORADO LICENSED PROFESSIONAL ENGINEER MICHAEL DEAN VAIR 38983 03/13/2026

DATE: 03.13.2026

DRAWN BY: MO

CHECKED BY: MV

PROJECT NO: 25135

DRAWING NO:

M0901

3/13/2026 8:51:22 AM

DIVISION 23 - HEATING, VENTILATING, AND AIR-CONDITIONING

SECTION 23 05 00 - COMMON WORK RESULTS FOR HVAC

1.01 WORK INCLUDED

A. The work included by this division of the specifications includes furnishing all labor, materials, equipment, and services, including minor items omitted but necessary to construct and install the complete systems described by the Contract Documents and specified below. "Contractor" refers to the Mechanical Contractor. The general conditions of the specifications apply and are included in this part of this section.

1. Heating, ventilating and air conditioning systems
2. Temperature control system
3. Kitchen supply and exhaust

1.02 CODES AND REGULATIONS

A. Comply with state and local codes, and utility company regulations. Final interpretations will be made by the local inspection authority. The Contractor to verify the governance of the following Codes, including any local amendments and supplementary codes such as the Codes of the National Fire Protection Association:

1. Building Code: 2021 International Building Code
2. Plumbing Code: 2021 International Plumbing Code
3. Mechanical Code: 2021 International Mechanical Code
4. Fire Code: 2021 International Fire Code
5. Gas Code: 2021 International Fuel Gas Code
6. Energy Code: 2021 International Energy Conservation Code
7. Electrical Code 2023 National Electrical Code

1.03 EQUIPMENT AND MATERIALS STANDARDS

A. Equipment and materials shall be new, UL-listed for the use intended, and free from damage or defect. They shall comply with the latest industry standards.

1.04 CONTRACT DRAWINGS

A. Illustrate the general design and extent of performance required. All dimensions and locations shall be taken from the Architectural drawings. Consult with Architectural plans and locate all ceiling equipment where indicated on reflected ceiling plans

1.05 SHOP DRAWINGS

A. Submit products data and/or shop drawings as required by the Architect for the following:

1. Insulation
2. Air handling equipment
3. Grilles, registers, diffusers, louvers
4. Fire dampers
5. Temperature controls, systems, and components

B. Quality of specific equipment is established by manufacturer's catalog number. Alterations caused by any Substitution shall be accomplished at no additional expense to the Owner.

C. Manufacturers not listed may submit for acceptance as an "approved equivalent." Requests for an "equivalent" means "approved equivalent". Four copies of such submittal must be received by the Engineer seven (7) working days prior to bid date.

1.06 WARRANTY

A. The Contractor shall be responsible for the successful operation of mechanical systems, equipment, and materials installed under this Contract for a period of one year from the date of final acceptance. Defective equipment or materials shall be repaired or replaced at no expense to the Owner. Provide four complete service and maintenance calls spaced at equal intervals during the warranty period.

1.07 PRODUCT HANDLING AND CLEAN UP

A. Equipment shall be left clean and undamaged, to the satisfaction of the Owner. The General Conditions take precedence.

B. HVAC equipment shall not be used during construction as a means to heat or cool the space, unless specific approval is given by the owner. If such equipment is used, it must be completely cleaned and repaired as necessary. Cleaning involves replacing all filters; cleaning all coils and heat exchangers; inspecting fans, plenums, and ductwork and cleaning as directed by the owner.

1.08 CUTTING AND REPAIRING

A. The contractor shall be responsible for all cutting, drilling, welding, and repair required for his portion of the work. Coordinate with the Architect. The General Conditions take precedence.

1.09 OPERATING AND MAINTENANCE DATA

A. Provide the Owner with operating and maintenance instructions (four copies) required for operation of all mechanical systems. Bind the written instructions in a notebook. The General Conditions take precedence. The manuals shall include the following items:

1. Operating manual and spare parts list for each piece of equipment.
2. Preventive maintenance schedule for lubricating and checking each piece of equipment.
3. Instructions on who to call for service during the warranty period.

1.10 PERMITS

A. The contractor shall pay for all fees, taxes, secure permits, licenses, and inspections required for the project.

1.11 TEMPORARY SERVICES

A. Provide temporary water service for construction, as required by the General Contractor.

1.12 COORDINATION

A. Coordinate outlet device and equipment locations with the Architectural Plans and work of other trades. Locate on horizontal and vertical lines to avoid interference and to provide functional use of all equipment. Verify electrical power characteristics before ordering equipment.

B. Electrical work performed by this contractor will conform to the standards of Division 26-28. Mechanical equipment motors and controls shall be furnished, set in place, and wired according with the following schedule unless otherwise noted or specified. MC = Division 21-23 EC = Division 26-28

Item	Furn By	Set By	Power Wiring	Control Wiring
Combination starters	MC	EC	EC	MC
Equipment motors	MC	MC	EC	--
Motor starters & O.L. relays	MC	EC	EC	MC
Disconnect switches	EC	EC	EC	MC
Thermal overload heaters (1)	EC	EC	EC	--
Variable Speed Drives	MC	EC	EC	MC
Control relays/transformers	MC	MC	EC	MC
Temperature control panels	MC	MC	EC	MC
Temp. Controls conduit/wiring	MC	MC	--	MC
Actuator and solenoid wiring	MC	MC	--	MC
Pushbuttons & pilot lights	MC	MC	--	MC
Room thermostats	MC	MC	--	MC
Thermostats: line voltage	EC	EC	EC	--

C. The general guideline for the division between control (by MC) wiring and power wiring (by EC) is that power wiring carries the current which energizes a motor, control wiring does not. Control wiring may be 120V, which would be the responsibility of the MC. Control motors are wired by the MC.

D. Examine the site and become aware of existing conditions, utilities, and other issues affecting the satisfactory completion of the project.

1.13 DELIVERY, STORAGE, HANDLING

A. Provide necessary hauling and hoisting equipment. Protect the materials of this Division before, during, and after installation.

1.14 AS-BUILT DRAWINGS

A. Keep a current set of "as-built" drawings on site. Upon completion of the work, furnish engineer with a reproducible prints showing the "as-built" installation.

1.15 PROJECT/SITE CONDITIONS

A. Visit the site to become familiar with location and the various conditions affecting the work, including existing utilities.

1.16 PLAN VERIFICATION

A. After completion of the bidding and selection process, prior to awarding the contract, the contractor must review and verify the contract documents in their entirety, including those of other trades. At this time, discrepancies, conflicts, omissions, etc in the contract documents must be documented. Alterations to the contract will be made at that time to include such items, as well other modifications which might be made by the Owner. After award of the contract, change orders caused by discrepancies, conflicts, omissions in the contract documents will not be allowed.

2.01 EXPANSION JOINTS, GUIDES, AND ANCHORS

A. Provide expansion joints or loops, guides, and anchors in piping to allow for expansion and contractions. Expansion joints shall be bellows type.

2.02 ELECTRICAL

A. Lugs: Lugs for wiring connections shall be rated for copper and aluminum, nad shall have a minimum rating of 75C.

B. Electric motors shall be rated for the appropriate application: wet location (TEFC); submersible; explosion proof, VFD's, etc.

2.03 ACCESS PANELS

A. The Mechanical Contractor shall furnish and General Contractor shall install access panels where required for access to equipment. The Mechanical Contractor shall include the cost of installation in his bid. Access panels shall be adequately sized, of a type approved by the Architect and shall be fire or smoke-rated as required.

3.01 START-UP PROCEDURES

A. Follow manufacturer's recommended procedures in starting up the equipment; damage caused during start-up shall be replaced at no expense to the owner.

3.02 HANGERS AND SUPPORTS

A. Support equipment from the structure to prevent sagging, pocketing, swaying, and vibrations, and arranged to provide for expansion and contraction. Brackets, clamps, and hangers shall be steel, except copper hangers will be used with copper piping. Hangers supporting vibrating equipment shall be provided with spring isolators. Chain, perforated iron or wire hangers are not permitted. Hangers will be of a type acceptable to the Engineer, and shall have a capacity and spacing as required by code.

3.03 LOW EMITTING MATERIALS

A. All sealants & adhesives required for the installation of mechanical & plumbing system within the building envelope shall meet the requirements for low emitting materials as set for in the South Coast Air Quality Management District (SCAQMD) Rule #1168 (or LEED new construction requirements), which includes but is not limited to:

1. Metal to Metal adhesive: VOC limit of 30g/L.
2. Fiberglass adhesive: VOC limit of 80g/L.
3. Multipurpose construction adhesive: VOC limit of 70 g/L.

SECTION 23 05 93-TESTING, ADJUSTING, AND BALANCING

1.01 GENERAL

A. Balancing shall be done by an independent firm specializing solely in the discipline of balancing air and water systems, and a member of NEBB.. Firms desiring to furnish services for this project shall submit for written approval during bidding. All air and hydronic systems shall be balanced using applicable proportionate procedure.

A. (Air) Before adjustments are made, check the system for such items as dirty filters, duct and damper leakage, vibrations, etc. All diffusers, duct sections, etc shall be adjusted to deliver design quantities within 5%. Air quantities shall be tested simulating filters being 50% loaded. Adjust/replace sheaves and belts as required to achieve design air quantities. Replace thermal motor overloads as required.

2.02 REPORT

A. After all adjustments are made, a detail written report shall be prepared and submitted for approval. Final acceptance of the project will not be made until a satisfactory report is received and field verified. The report shall detail the test equipment and balancing procedures being used; the general status of the system being tested including equipment details; provide data sheets indicating the required and actual CFM of all outlets and inlets.

SECTION 23 07 00 - INSULATION

1.01 QUALITY ASSURANCE

A. All insulation shall have a composite rating (insulation, jacket and adhesives) not exceeding flame spread 25 and smoke developed 50.

2.01 PIPE INSULATION FOR PIPING ABOVE GRADE

A. Insulation shall be closed-cell, elastomeric pipe insulation having a conductivity of 0.27 at 75 °F mean, with thicknesses as follows:

Pipe Sizes	1/2" - 1-1/2"	>1-1/2"
Refrigeration Lines	1"	1"

B. Insulation shall be Armacell "Armaflex" or equivalent by Johns-Mansville, Owens-Corning.

C. Exterior piping insulation will be painted with a white solvent based alkyd finish(Armaflex AB or equivalent), including all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturers instructions. Where exposed to physical damage, exterior piping insulation will be covered with aluminum jacket, including all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturers instructions.

D. All interior underground water(domestic and hydronic) piping shall be insulated with 1” Armaflex, except where noted.

2.02 PIPE INSULATION FOR PIPING BELOW GRADE

A. Insulation shall be closed-cell, elastomeric pipe insulation having a conductivity of 0.27 at 75 °F mean, with thicknesses as follows:

Pipe Sizes	1/2" - 1-1/2”	>1-1/2"
Refrigeration Lines	1"	1"

B. Insulation shall be Armacell "Armaflex" or equivalent by Johns-Mansville, Owens-Corning.

C. Exterior piping insulation will be painted with a white solvent based alkyd finish(Armaflex AB or equivalent), including all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturers instructions. Where exposed to physical damage, exterior piping insulation will be covered with aluminum jacket, including all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturers instructions.

D. All interior underground water(domestic and hydronic) piping shall be insulated with 1” Armaflex, except where noted.

2.03 REFRIGERANT PIPE INSULATION

A. Insulation shall be 1” thick, closed-cell, elastomeric pipe insulation having a conductivity of 0.27 at 75 °F mean:

B. Exterior piping insulation will be painted with a white solvent based alkyd finish(Armaflex AB or equivalent), including all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturers instructions. Where exposed to physical damage, exterior piping insulation will be covered with aluminum jacket, including all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturers instructions.

C. Insulation shall be Armacell "Armaflex" or equivalent by Johns-Mansville, Owens-Corning.

2.04 DUCT INSULATION, WRAP

A. Duct wrap insulation shall be flexible fiberglass insulation, 1 pcf, with factory-applied, reinforced, aluminum foil vapor barrier. Insulation shall have a K-factor of .25 at 75 °F mean.

B. Duct wrap shall be installed as follows or as shown on the plans:

1. Supply air ducts(heated space): 1-1/2”
2. Supply air ducts(unheated space): 2”

C. Wrap shall be Johns-Manville "Microlite" or equivalent by Owens-Corning, Certaineed or Knauf.

D. At the contractor's option, the above specified duct wrap may be replaced with duct liner or equal or greater thickness.

2.05 DUCT LINER

A. Duct liner shall be 1-1/2 lb density (3.0lb for exterior ducts), constructed of glass fiber liner. The air stream surface is coated with black-coated mat surface. Liner shall have a "K" value of 0.24/inch at 75F mean.

B. Duct liner shall be installed as follows or as shown on the plans:

1. Exterior supply, return, or make up air ducts: 3”
2. Return air ducts(within 15' of fan): 1/2"
3. Outside air intakes within space: 1”
4. Treated make up air within space: (not insulated)

C. Liner shall be Johns-Manville "Linacoustic" or equivalent by Owens-Corning, Certaineed or Knauf.

2.06 EXTERIOR DUCT INSULATION, BOARD

A. Duct insulation shall be ridge polystyrene board insulation. Insulation shall have a K-factor no greater than .23 at 75 °F mean.

B. Duct board shall be installed as follows or as shown on the plans:

1. Supply, return, or make up air ducts air ducts(exterior): 2” 3”

C. Cover insulation board with metal jacket, secure with screws or bands. Seal jacket weather tight with silicone caulk.

D. Or at the contractors discretion: cover insulation with a self-adhering weather proof membrane. Polyguard or equiv. Install per manufacturer's recommendations.

3.01 PIPE(ELASTOMERIC)

A. Insulation shall be solid slip-on installed prior to connection. Butt joints shall be sealed with manufacturer's adhesive. Where slit seams must be installed, seal the seam with manufacturer's adhesive. Fittings shall be insulated with meter-cut pieces of insulation according to manufacturer's instructions, or insulated with similar sheet insulation installed according to manufacturer's instructions.

B. Provide wood blocks and metal hanger shields at support strap locations on horizontal pipe runs. Insulation will not be interrupted for supports, etc.

3.02 DUCT WRAP

A. Wrap the fiberglass blanket around the ductwork with 2" overlapping flanges stapled at 6" on center. Strip the lap of insulation and staple the facing directly to the overlapped foil. Secure the insulation to the ductwork with 18-gauge galvanized wire at 12" on center. On ducts larger than 48", use mechanical fasteners on the bottom of the duct.

B. Tape all joints with 3" wide foil reinforced kraft tape. Tape all pin penetrations or punctures in the facing.

3.03 ACOUSTIC DUCT LINER

A. Liner shall be secured to all duct surfaces by pressing into wet adhesive, applied to 100% of the duct surface. In addition, liner shall be held in place with insulpins welded to duct and with clips slipped over the pins. Insulpins shall be located per SMACNA Standards. Liner shall be lapped and compressed in all four corners of the duct. Both upstream and downstream transverse edges shall be coated with adhesive, coated a minimum of 1" over the edge in all places.

SECTION 23 09 00 - AUTOMATIC TEMPERATURE CONTROLS

1.01 SCOPE

A. Furnish, install, and place in operation a complete system of automatic temperature controls. The temperature control contractor may be the mechanical contractor or approved sub-contractor.

B. Acceptable automatic temperature control equipment manufacturer's shall be Honeywell, Johnson Controls, or controls furnished by the specific equipment manufacturer.

C. The control system shall include all components and appurtenances necessary to provide a complete system. All wiring for automatic temperature controls, regardless of voltage shall be the responsibility of the ATC Contractor. 120VAC work shall be installed in conformance with requirements of Division 16. The Temperature Control Contractor shall coordinate all electrical work associated with his installation with the Electrical Contractor. Power wiring for all equipment, shall be the responsibility of the Electrical Contractor.

1.02 QUALITY ASSURANCE

A. Upon completion of the work, instruct the building operating personnel and provide two (2) complete sets of operating and maintenance instruction booklets.

B. Submit copies of complete temperature control diagrams with written "sequence of control" and factory-printed specification data sheets covering each control device proposed to be used, prior to installation of any equipment or part or system.

1.03 SERVICE AND GUARANTEE

A. The Contractor shall guarantee the control system installed under this section of the specification to be free from defects in workmanship and material under normal use, and agrees to provide service for one (1) year after acceptance by the Engineer or of beneficial occupancy of the building. Any defects in workmanship or material during this time shall be corrected at no charge to the Owner.

2.01 THERMOSTATS

A. HVAC unit thermostats shall be low-voltage, seven day programmable, heating/cooling type with fan on-auto switch, Wifi capable, 10 hour program retention, 5-degree deadband, automatic optimized start / start control w/ 2-degree adjustment, manual override with automatic 2 hour reset. Units shall be Honeywell TH8000 or equivalent.

3.01 SEQUENCE OF OPERATION

A. HVAC units shall each be controlled by a heating/cooling thermostat.

1. Occupied Mode - Fan (On), Heating (68F), Cooling (75F)
2. Unoccupied Mode - Fan (Auto), Heating (55F), Cooling (85F).
3. Unoccupied setpoint to reset every 2 hours during unoccupied schedule to comply with IECC C403.4.2.2 or via occupancy sensor.
4. Verify unoccupied and occupied schedule and set points with user.

B. Heat Pump Electric Heat Lockout - disable electric resistance backup heat when outdoor air temperature is greater than 32F.

C. Toilet exhaust fans shall be controlled with associated lights.

D. Activation of a duct detector shall shut down its respective HVAC unit.

SECTION 23 30 00 - HVAC AIR DISTRIBUTION SYSTEMS

1.01 DUCTWORK

A. General All ductwork shall be constructed strictly according to the latest ASHRAE, SMACNA, and IMC standards. Duct sizes shown are inside clear dimensions; maintain sizes inside lining for lined ducts.

B. Sheet Metal:

1. Sheet metal shall be constructed of coated galvanized steel of lock-forming grade conforming to ASTM Standards A-653/A653M and A-924. Reinforcement shall be constructed of galvanized steel.
2. Duct thickness shall conform to the above standards. Where there is a discrepancy, the greater thickness shall apply. Reinforcement, joint type, spacing and thicknesses may be varied at the contractors discretion, in conformance with the above standards, except where specifically noted. Transfer ducts across rated corridors shall be 26 gauge, or as required by Code.
3. Round ductwork exposed to the public will be galvanized steel, spiral wound, maintaining in a clean, shiny appearance, and not utilizing visible sealing material. Concealed round ductwork may spiral wound, or snap lock type galvanized steel ductwork.
4. Sealing: All longitudinal and transverse joints in ductwork shall be sealed with Mon-Eco Industries Eco Duct Seal 44-50 or equivalent as follows:
   a. Main supply ductwork shall be sealed to SMACNA Class B Standards(3”W.G. or less).
   b. Return, exhaust, and supply ductwork shall be sealed to SMACNA Class B Standards(3”W.G. or less).
   c. Return, exhaust, and supply ductwork downstream of coils and VAV boxes shall be sealed to SMACNA Class C. (2”W.G. or less).
5. Location: Sheet metal may be used throughout the project.

C. Flexible Ductwork (Polymer Liner):

1. Flexible ductwork shall be constructed of a spring steel helix supporting a plastic core. It shall be insulated with 1" fiberglass having a density of 1 lb./cu.ft. The insulation is sheathed in an copolymer vapor barrier jacket.
2. The duct shall be rated at 10" w.g., and a maximum velocity of 4000 fpm. The duct shall be listed in conformance with UL Standard 181, Class 1.
3. Flexible duct shall be limited to a maximum length of 2', as a means of connecting boxes, diffusers, etc. to the duct system. Uninsulated flexduct may be used where the adjacent ductwork is uninsulated or unlined.
4. Flexduct shall be manufactured by Hart & Cooley, Clevaflex or equivalent.

1.02 DUCT ACCESS DOORS

A. Where motorized dampers, fire dampers, control equipment, etc. are installed in ducts, and for cleaning ductwork, access doors shall be provided in the ducts, made air-tight with gasketed edges. Use Ventlok, or equal, sponge rubber or felt gasketing material. The doors shall be double-wall construction with 1" of rigid insulation fill and shall be attached to the duct with cam latches. Omit access door insulation and double-wall construction if ducts are not specified to be insulated. Access doors shall be constructed of the same materials as the ductwork.

B. Provide access panels where required for access to the "Duct Access Doors." If these access panels are placed in fire-rated walls or ceiling or floor, then the access panel shall have the same rating.

1.03 FLEXIBLE CONNECTIONS

A. All supply and exhaust fans and other air handling units with inlet and outlet duct or casing connections shall have a flexible connector in each connection. Connector shall be made of at least one layer of Ventglas, two-side, neoprene-coated, heavy glass fabric, Underwriters' approved and labeled as manufactured by Ventfabrics, Inc.

2.01 GRILLES, REGISTERS, AND DIFFUSERS

A. Provide grilles, registers, and diffusers of the size and type shown on the plans. Grilles, registers, and diffusers shall be made of steel with a baked white enamel finish, or extruded aluminum with clear finish, as indicated for each grille, register, or diffuser. Secure GRD's to structure where connected by flex ductwork, or where required by local code. Paint ductwork visible behind GRD's flat black. G R D's shall be manufactured by Titus, Price, Metallaire, or equivalent.

2.02 CEILING RADIATION DAMPERS

A. Provide approved ceiling radiation dampers in ducts wherever they pass into fire-rated walls, floors, and ceiling enclosures and in any other locations required by code. All ceiling radiation dampers shall be U.L. approved and labeled for 1 hour rating unless otherwise indicated on drawings. Dampers shall be fabricated of galvanized steel and shall be of such design and length as to function as a wall-mounting sleeve, which shall be part of the fire damper. Frames shall be secured, bolted construction. Damper shall be dynamic rated and tested per UL555C. Dampers shall be Metal-Fab, Ruskin, United Sheet Metal, National Controlled Air, Louvers and Dampers, Inc., or approved equivalent. Dampers shall be Type B unless otherwise indicated.

2.03 FIRE DAMPERS

A. Provide approved fire dampers in ducts wherever they pass through fire-rated walls, floors, and shaft enclosures and in any other locations required by code. All fire dampers shall be U.L. approved and labeled for 1-1/2 hour rating unless otherwise indicated on drawings. Dampers shall be fabricated of galvanized steel and shall be of such design and length as to function as a wall-mounting sleeve, which shall be part of the fire damper. Frames shall be secured, bolted construction. Damper sleeves shall be secured in wall with 2" x 1" x No. 14-gauge retaining-angle irons on the top, both sides and bottom of wall sleeve, and on each side of the fire wall. Dampers shall be Ruskin, United Sheet Metal, National Controlled Air, Louvers and Dampers, Inc., or approved equivalent. Dampers shall be Type B unless otherwise indicated.

2.04 COMBINATION SMOKE/FIRE DAMPERS

A. Each combination smoke/fire damper shall be 1-1/2 hour rated under U.L. Std 555, and a leakage rated smoke damper under U.L. Std.555S. U.L. linkage rating shall apply to all damper sizes; elevated temperature ratings shall apply to operators as well as dampers.

B. The damper shall have a fusible link and electric operator. damper and operator shall be supplied as a single entity.

C. Dampers shall be controlled by an adjacent duct or area detector, as appropriate to the situation. Installation shall include mounting of damper and detector, interconnecting wiring, etc. If there is a central building fire alarm system, the detector and interlock wiring will be provided by the electrical contractor. It is the responsibility of the mechanical contractor to assure that the damper operator is compatible with the fire alarm system; any modifications, transformers, relays, etc caused by incompatibility, will be the responsibility of the mechanical contractor.

D. Damper shall be a class II leakage rated damper, maximum 6"WC and 4,000 FPM, at 250F temperature: Ruskin FSD60 or equivalent

E. Damper shall be a class III leakage rated damper, maximum 2.5"WC and 1,500 FPM, at 250F temperature: Ruskin FSD35 or equivalent.

F. Dampers shall be manufactured by Prefco, Ruskin, National Controlled Air or equivalent.

G. Dampers shall be approved and listed by the State of California Fire Marshal. Provide State Fire Marshal with approval numbers before installation

2.05 DUCT DETECTORS

A. Duct smoke detectors shall be solid state photo-electric type. Detector shall include air sampling chamber with sampling tubes extending through the width of the air duct. LED Alarm status indicating lights shall be visible on the front of the detector. Key controller test and reset switches plus an easily accessible test jack shall be provided. They shall include alarm relay contacts (DPDT) capable of handling loads of up to five (5) amperes at 210 VAC or 28 VDC resistive. Unit shall have self-contained power supply requiring 120/220/240V power. Detector shall include a remote indicating light/test switch (this may be deleted if the unit is clearly visible and readily accessible). Provide necessary interlocks with air handlers, smoke dampers, etc as required by the local fire department, including relays, transformers, etc. Detectors Shall be listed by Underwriters' Laboratories for use in air conditioning and ventilating duct systems in compliance with the National Fire Protection Association and Underwriters' Laboratories, Standard UL 167.

2.06 EXHAUST FAN, CEILING

A. The ceiling exhaust fan shall have a steel housing with a galvanized or baked enamel finish. An automatic back-draft damper shall be located within the duct connector and have cushioned stops. The fan wheels shall be balanced centrifugal and shall operate at less than 1200 rpm. Fans shall bear the AMCA certified rating seal and the U.L. label. The entire fan, motor, and wheel assembly shall be removable without disturbing the housing. Fan motors shall be grounded and mounted on vibration isolators. Fans shall be Penn Zephyr, Greenheck, Cook Gemini, or approved equivalent.

2.07 EXHAUST FAN, ROOF (UPBLAST)

A. The roof-mounted exhaust fans shall have a spun aluminum housing with up-discharge outlet. The fan wheels shall be dynamically balanced, aluminum, centrifugal BI. The motor shall be belt-drive, open drip-proof type, mounted internally on vibration isolators. Fans shall bear the AMCA certified ratings seal and the U.L. labels for rating under L.L. Std. 762. Fans shall be controlled as scheduled in Section 23 09 00 Controls. Provide grease trough where shown. Fans shall be Greenheck, Penn, Cook, Acme, Ilg, Carnes, or approved equivalent.

2.08 EXHAUST FAN, UTILITY SET

A. Fan shall be centrifugal, belt-driven, SWSI with non-overloading backward-inclined air foil, aluminum wheel. The housing shall be continuously-welded steel with drain connection. Configure for vertical discharge. Bearings shall be permanently lubricated, sealed ball bearing pillow blocks. Motor and sheaves will be protected in a weatherproof enclosure. Construction shall be non-sparking, listed for use with a Class I kitchen hood. Fan shall be mounted on spring vibration isolators. Assembly will be mounted on a roof curb with galvanized sheetmetal cap, with ½” lip all around. Fans shall be manufactured by Acme, Greenheck, Penn Ventilator, Supreme, or equivalent.

2.09 EXHAUST FAN, ROOF

A. The roof-mounted exhaust fans shall have a spun-aluminum housing. The fan wheels shall be dynamically balanced, aluminum, centrifugal BI. The motor shall be belt-drive, open drip-proof type, mounted internally on vibration isolators. Fans shall bear the AMCA certified ratings seal and the U.L. labels for rating under U.L. Std. 762. Fans shall be controlled as scheduled in Section 23 09 00 Controls. Fans shall be Greenheck, Penn, Cook, Acme, Ilg, Carnes, or approved equivalent.

2.10 EXHAUST FAN, INLINE

A. The inline exhaust fan shall have a steel housing with a galvanized or baked enamel finish. An automatic back-draft damper shall be located within the duct connector and have cushioned stops. The fan wheels shall be balanced centrifugal and shall operate at less than 1200 rpm. Fans shall bear the AMCA certified rating seal and the U.L. label. The entire fan, motor, and wheel assembly shall be removable without disturbing the housing. Fan motors shall be grounded and mounted on vibration isolators. Fans shall be Penn, Greenheck, Cook, or approved equivalent.

2.11 EXHAUST FAN, PROPELLER

A. Provide sidewall mounted, belt drive, axial fan where shown. Propeller shall be constructed of fabricated steel, securely attached to fan shaft, and statically and dynamically balanced. Motors shall be permanently lubricated, heavy duty type. Shaft shall be polished steel, mounted in permanently lubricated, sealed ball bearing pillow blocks, rated in excess of 100,000 hours. Drive shall be sized for 150 percent of driven horsepower. Pulleys shall be cast iron, keyed to shaft. Motor sheaves shall be adjustable. Drive frame and panel shall be galvanized or painted steel with a deep formed inlet venturi. Frames shall be bolted or welded steel construction. The fan shall bear AMCA Certified sound and performance ratings.. Provide a sleeve or collar to attach fan to wall, and flex connection to ductwork. Provide access panels or removable duct section to allow maintenance and repair of fan. Provide 1/4” birdscreen, motorized damper, and wall louver on discharge. The fans shall be manufactured by Greenheck, Penn Ventilator, Hartzell, Trane, Cook, Acme, or equivalent.

2.12 AIR INTAKE AND DISCHARGE LOUVERS

A. Exterior stationary louvers shall be anodized aluminum 4" blades on 2-7/8" centers at 30 deg with return bends. Louvers shall be weatherproof. Set in frame, secure, and caulk into opening. Provide galvanized steel 1/2", 19-gauge wire mesh behind louver. Size per the plans.

B. Approved manufacturer's shall be Louvers and Dampers, Airstream, Dowco, Ruskin, or Titus.

2.13 AIR FILTERS

A. Provide air filters where shown on the drawings. Filters shall be rigid, throw-away type, constructed of pleated fiber materials with metal mesh support maze across both faces of the media. Thickness will be 2”, unless 1” is the maximum thickness allowable. Filters shall have a UL listing of Class II and an average 30%(MERV 8) efficiency rating of ASHRAE Std. 52-76. Filters shall be Farr 30-30 or approved equivalent by Air Filters, Inc., Eco-Air, Cambridge, or American Air Filter.

2.14 MAKE-UP AIR UNIT (INDIRECT FIRED)

A. Provide a roof-mounted, natural gas, natural draft, down discharge, indirect fired make-up air unit, as shown on the plans. Housing shall be aluminized steel with painted enamel, and down discharge plenum.

B. Blower shall be centrifugal type with forward curved DWDI wheel, dynamically balanced. The drive sheave shall be adjustable. Motor shall be 1800 RPM, open drip-proof type. Bearings shall be permanently lubricated.

C. Furnace(s) shall be type 409 stainless steel. Burners shall be aluminized steel. Gas train shall consist of main gas cock, pressure regulator, and solenoid valve; pilot gas cock, pressure regulator, and solenoid valve. Provide spark ignition, high limit and control transformer. Main gas valve shall be modulating type, down to 30%.

D. Unit will have a factory furnished curb.

E. Unit will have a free-standing evaporative cooling section with 12” thick “munters fill” media, pump, float, fill/drain kit, and mesh intake screen. Intake section shall have a birdscreen and extended surface 2" filter. Unit intake will be a factory provided intake cowling.

F. Unit will have DX cooling section as shown on the drawings. The DX coil shall be furnished by the same manufacturer, designed to be compatible with the make-up air unit and condensing unit. The system will utilize a thermal expansion valve.

G. Intake section shall have a birdscreen and extended surface 2" filter. Unit intake will be a factory provided intake cowling.

H. Provide a remote control module, recessed mounted. The module will contain "burner on" and "blower on" indicating lamps. It will also contain a "heat-vent-cool" mode switch. The leaving air temperature control dial shall be mounted on the control module. The room override thermostat shall be mounted as shown on the drawings.

I. Provide a fill and drain kit, complete with all valves, sensors and controls.

J. Make-up air unit shall be CAS series, manufactured by Captive Air or equivalent by Modine, Greenheck, or Reznor.

2.15 HVAC UNITS(HEATPUMP)

A. Furnish and install DX heat pump heating / cooling rooftop units with electric backup as shown on the drawings. The cabinet shall be 20 gauge galvanized with 1" thick, 1-1/2 lb. density insulation, baked acrylic enamel finish. Evaporator coil will have a condensate drain pan with PVC trap. Unit will use 2" thick throw-away filters.

B. The primary heating / cooling section shall consist of a hermetic scroll compressor(s) with five year warranty, condenser fan and motor, evaporator coil. Units with multiple compressors will have separate refrigeration circuits. The unit shall be furnished with a DOE approved/unit listed operating charge, thermal expansion valve, Hi-Low pressure control, accumulator dryer and all necessary relays and starters. Provide a float in the condensate pan, interlocked with the blower, where required by the local jurisdiction.

C. The blower shall be a belt driven, forward curved, centrifugal fan, with oversize motor and drive kit. Blower controls shall be through a time delay blower relay. Single stage heating and cooling shall be available by means of the necessary controls, valves, and relays.

D. Provide a factory furnished hail guard.

E. Provide a low ambient kit for operation down to 30F.

F. Provide lockable refrigerant caps on all access ports.

G. Provide a 14” high, galvanized steel factory roof curb; mount unit perfectly level. Provide an automatic setback thermostat with fan on/auto switch as specified in Section 23 09 00.

H. The roof opening beneath the unit will be closed up and sealed tight; caulk or silicone duct penetrations.

I. Unit shall be manufactured by Lennox, Trane, Carrier, or York. Alternate manufacturer's will be accepted if heating and cooling efficiencies meet or exceed that of the specified product.

2.16 FAN COIL UNIT(HYDRONIC HEAT/DX COOLING):

A. Provide a low profile, horizontal mounted air handler consisting of a cabinet, blower, hydronic heating coil, DX coil, air filter, pump and controls as shown on the plans and specified below. The unit will be rated for use at 5,000' elevation.

B. The casing shall be designed for indoor installation, insulated with 1/2" insulation, and integral hinged access door with self-retained screws. The unit shall be completely factory assembled.

C. The fan shall consist of two forward curved DWDI centrifugal fans on a common shaft using one blower. It shall be dynamically balanced with vibration isolators. The blower shall be two speed(high cool; low-heat).

D. Refrigerant coil shall be copper with aluminum fins mechanically bonded to the tubes. The coil section is completely insulated and has a drain pan.

E. The hydronic flow control module includes pump, control, check valve, and air valve. There is also a HW freeze coil sensor.

F. The unit shall have a filter rack with 1" pleated filters. Access to filters shall be through the hinged access door.

G. The unit will be furnished with electrical disconnect and all electrical connections.

H. The air handler shall be manufactured by First Company, Aquetherm, Apollo or equivalent.

2.17 CONDENSING UNIT

A. Provide a DX cooling coil and condensing unit to be used in conjunction with the furnace(s) specified above, and as shown on the drawings. SEER shall be 15.0 or greater. The condenser shall consist of a hermetic scroll compressor(s) with five year warranty, vertical discharge direct drive condenser fan and motor, and copper condenser coil with aluminum fins.

B. The compressor shall have high-low pressure control, 5 minute anti-short circuit timer, and crankcase heat. The unit shall be furnished with an R-410A operating charge, Hi-Low pressure control, filter-dryer and all necessary relays and starters. The cabinet shall be 18 gauge galvanized with baked acrylic enamel finish. The compressor shall be pre-charged.

C. Single stage cooling shall be available by means of the necessary controls, valves, and relays. Refrigeration system shall use an expansion valve for refrigerant flow control.

D. Provide a factory furnished hail guard.

E. Provide a low ambient kit for operation down to 30F.

F. Provide lockable refrigerant caps on all access ports.

G. Unit shall be manufactured by Lennox, Trane, Carrier, or York. Alternate manufacturer's will be accepted if heating and cooling efficiencies meet or exceed that of the specified product.

2.18 CONDENSING UNITS(VARIABLE REFRIGERANT FLOW)

A. Provide DX heating and cooling condensing units to be used in conjunction with air handler(s) as shown on the drawings. The condenser shall consist of a hermetic scroll compressor(s) with five year warranty, condenser fan and motor, copper condenser coil with aluminum fins.

B. The compressor shall be inverter driven, resulting in variable frequency performance. The unit shall be furnished with an R-410 operating charge, Hi-Low pressure control, filter-dryer and all necessary relays and starters. The cabinet shall be 18 gauge galvanized with baked acrylic enamel finish.

C. The unit shall be capable of operating in heating mode with 70% capacity at -13F.

D. Provide a factory furnished 18” stand.

E. Provide a factory furnished hail guard.

F. Provide a low ambient kit for operation down to -20F.

G. Provide lockable refrigerant caps on all access ports.

H. Unit shall be manufactured by Mitsubishi, LG or Daikin.

2.19 INDOOR AIR HANDLERS(WALL, CEILING, OR DUCTED)

A. The air conditioning system shall be a DX cooling system using a wall, ceiling or ducted air handler with central remote condenser(s) System efficiency shall meet or exceed 16.0 EER.

B. The unit shall have a manufacturer's warranty for a period of one (1) year from date of installation. The compressor shall have a warranty of six (6) years from date of installation.

C. The indoor unit shall be factory assembled, wired and run tested. Contained within the unit shall be all factory wiring, piping, control circuit board and fan motor. The unit shall have a self-diagnostic function, 3-minute time delay mechanism, an auto restart function, an emergency operation function and a test run switch. Indoor unit and refrigerant pipes will be charged with dry air instead of R22 before shipment from the factory. The cabinet panel shall have provisions for a field installed filtered outside air intake. Branch ducting shall be allowed from cabinet. The evaporator fan shall be two speed and shall be statically and dynamically balanced, with permanently lubricated bearings. The auto air swing vanes shall automatically swing up and down. Return air shall be filtered by means of a long-life filter to provide approximately 2,500 hours of use in a normal office environment before cleaning.

D. The evaporator coil shall be copper with aluminum fins with inner grooves. All tube joints shall be brazed with phoscopper or silver alloy. The coils shall be pressure tested at the factory. A condensate pan and drain shall be provided under the coil. The condensate pump shall be able to raise drain water 33 inches above the condensate pan.

E. The controller shall consist of an On-Off switch, Cool/Dry-Fan selector, Thermostat setting, Timer Mode, High-Low fan speed, Auto Vane selector, Test Run switching and Check Mode switching. Temperature changes shall be by 2°F increments. The control system shall consist of two interconnected microprocessors. Wiring between the indoor unit and controller shall have no splices. Manufacturer shall provide 2 conductor 18 Ga. stranded wire for connection to remote controller. Microprocessor located in the indoor unit shall have the capability of sensing return air temperature and indoor coil temperature, receiving and processing commands from the wired controller, providing emergency operation and controlling the outdoor unit. Normal operation of the remote controller provides individual system control in which one remote controller and one indoor unit are installed in the same room. The system shall be capable of automatic restart after power failure. The system shall include self-diagnostics including total hours of compressor run time. The microprocessor within the wall mounted remote controller shall provide automatic cooling, display set point and room temperature, 24 hour on/off timer, automatic operation function display, and check mode for memory of most recent problem. Control system shall control the continued operation of the air sweep louvers, as well as provide on/off and system/mode function switching.

3.01 DUCTWORK

A. Provide duct system, connections, air balancing dampers (opposed blade dampers where the take-off is in inaccessible ceiling), dampers, duct turns, housing, hinged sheet metal doors, and necessary removable access doors for the complete supply, return, and exhaust systems. Provide access doors in ductwork wherever required for observation and maintenance of dampers.

B. Duct workmanship. Ductwork shall be constructed and erected in a workmanlike manner. Ducts shall be straight and smooth on the inside with neatly finished joints, air-tight, and free from vibration. The internal ends of slip joints shall be made in the direction of the air flow. The ducts shall be securely attached to the building construction in an approved manner. Changes in dimensions and shape of the ducts shall be gradual. Duct sizes fall within the limiting dimensions indicated on the drawings unless otherwise approved.

C. Duct turns. 90° elbows up to 18" wide and 45° elbows shall consist of an inside radius of not less than half the width of the duct, or be furnished with air foil type duct vanes with 2-1/4" blade spacing. Shop fabricated duct vanes shall conform to details of the Sheet Metal and Air Conditioning Contractors National Association manual.

D. All dimensions shown on drawing are inside dimensions. Contractor shall make allowances for internal lining where called for on drawings or elsewhere in this specification.

E. All junctions, bends, turns, or elbows in all ducts shall have a large radius (centerline radius equal to 1-1/2 times duct width) in the throat in order to minimize the frictional resistance. No short radius turn or junction will be allowed unless turning blades of approved design are provided. Single vane-turning vanes shall be provided for all square turns.

F. Galvanized or aluminum angle iron strips shall be installed at points where ducts penetrate walls to close off the space between the wall opening and the duct.

G. All fittings shall be tack welded on 3" centers and sealed with neoprene sealer to ensure that they do not leak more than 1% when transverse joints are sealed. Areas where galvanize has been burned off shall be painted. Branch takeoffs of main shall be 45 degree "wye" type where possible. Conical takeoffs allowed where "wye" won't fit. Paint the inside of ducts flat black, where visible through grilles, registers or diffusers.

H. Fittings for round or oval spiral wound ductwork shall be installed per the manufacturer's instructions.

3.02 ROOFTOP UNITS(HVAC, MUA, COND, ETC)

A. Mount rooftop units on 14” H curbs or as noted. Units will be mounted level. Where unit does not completely cover curb, provide galvanized metal cap for weatherproof seal.

B. For units with compressors (including HVAC units, condensing units, kitchen condensing units, etc) install at least two layers of ½” gypboard layered with R13 batt insulation for sound attenuation within the roofcurb, beneath the compressor section. Where curbs have been provided over concrete pads, this is not required.

C. For units with condensate drains, provide full size PVC traps. Route discharge so condensate freely drains away from unit.

D. For units with water and/or drain connections, route up within unit or curb where possible.

E. The roof opening beneath the unit will be closed up and sealed tight; caulk or silicone duct penetrations.

F. Provide flat working surface adjacent to unit, as required by code, including handrails, access doors, etc.

G. Label all units per the plans, or as directed by the Owner, using spray paint and 3” high stencils, or as directed by the building owner.

3.03 AIR FILTERS

A. Provide three complete sets of pleated, 30% efficient filters: construction phase, replacement just prior to balancing, and replacement set to the Owner.

B. Air handlers are not intended to be used during construction for heating or cooling. The construction set is intended to protect the equipment during initial startup and preliminary testing.

C. Filters shall be installed in factory-assembled filter banks. Enclosure shall be provided with access doors, gaskets to provide air-tight seal, and duct or equipment connections.

D. Filters shall be manufactured by Farr or American Air Filter.

3.04 CONDENSATE DRAIN

A. Provide condensate drain & overflow piping or provide condensate drain piping & overflow float in condensate pan, interlocked with the blower. Size condensate piping as noted on plans, or to match equipment drain outlet size, whichever is larger.

3.05 DUCTWORK TESTING

A. If leakage in excess of 5% of the system design flow is indicated after a balance and adjustment, reseal to eliminate excess leakage. Replace defective material or workmanship at the Contractor's expense and test until the same has met the approval of the Engineer.

B. All ductwork operating at static pressure in excess of 3” W.G. and exterior ductwork shall be leak-tested per SMACNA standards.

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

OWNER

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INTERIOR DESIGNER:

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PROJECT LOCATION

STEAMBOAT BASECAMP
AREA 1B RESIDENTIAL

1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

MECHANICAL
SPECIFICATIONS

SEAL

COLORADO LICENSED PROFESSIONAL ENGINEER
MICHAEL DEAN VAIR
38983
03/13/2026

DATE: 03.13.2026
DRAWN BY: MO
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO:

M1000

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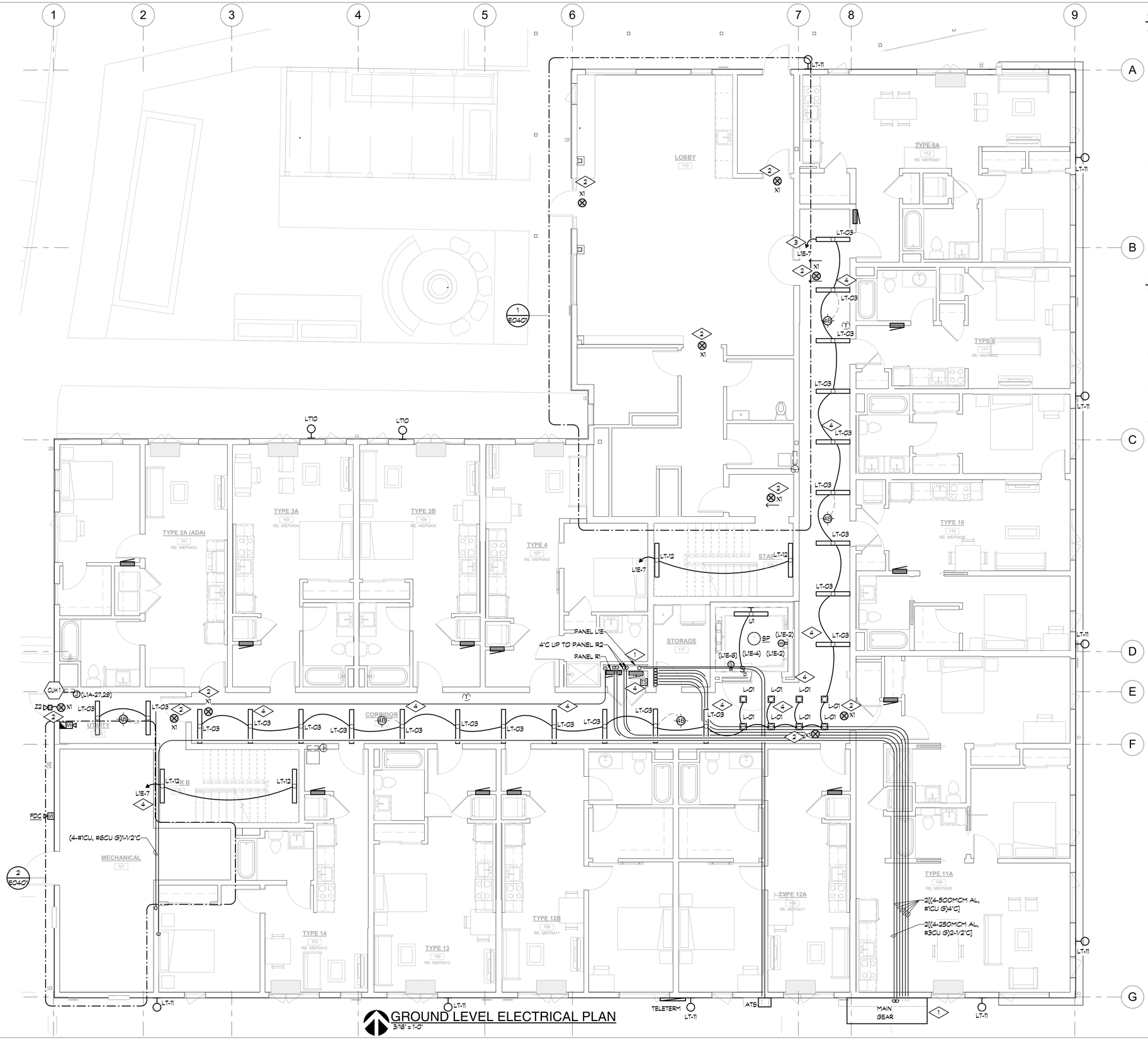

GENERAL NOTES

A. IN THE CASE OF A DISCREPANCY BETWEEN GENERAL NOTES, DETAIL NOTES, SPECIFICATION, OR GRAPHICAL DEPICTIONS, IT IS THE CONTRACTORS RESPONSIBILITY TO CLARIFY DESIGN INTENT WITH ENGINEER.

B. ELECTRICAL CONDUITS, WATER, SEWER AND GAS LINES MUST FIT WITHIN WALLS. CONFLICTS WITH OTHER TRADES MUST BE COORDINATED OR WORK WILL BE REDONE.

C. GFCI PROTECTION: BASIS OF DESIGN IS GFCI PROTECTION PROVIDED AT PANEL. EC MAY PROVIDE ALTERNATE PRICING WHERE PERMITTED BY CODE TO PROVIDE DOWNSTREAM GFCI PROTECTION OF DEVICES WITH A SINGLE GFCI RECEPTACLE. (DEDICATED NEUTRAL SHALL BE PROVIDED FOR GFCI BREAKERS).

D. PROVIDE TAMPER RESISTANT RECEPTACLES IN THE FOLLOWING AREAS PER NEC 406.12.
   a. DWELLING UNITS, GUEST ROOMS, DORMITORY UNITS.

E. COORDINATE ALL DEVICE AND FIXTURE LOCATIONS WITH FURNITURE, EQUIPMENT, MILLWORK AND MECHANICAL SYSTEM (DUCTWORK) LAYOUT PRIOR TO ROUGH-IN.

F. ALL EXTERIOR ELECTRICAL COMPONENTS SHALL MEET ALL NEC INSTALLATION AND LABELING REQUIREMENTS FOR WET LOCATIONS.

DETAIL NOTES THIS SHEET

1. PROPOSED ELECTRICAL SERVICE/GEAR. FIELD VERIFY EXACT LOCATION, MAINTAIN REQUIRED CLEARANCES PER NEC.
2. EXTEND EMERGENCY/EXIT LIGHTING TO AN UNSWITCHED LIGHTING CIRCUIT SERVING THE AREA.
3. LIGHTING IN THIS AREA CONTROLLED VIA OCCUPANCY SENSOR DIMMED TO 50%. HALLWAYS AND STAIRS ARE ALWAYS ON.
4. PROPOSED LOCATION FOR LIGHTING CONTROL PANEL. PROVIDE DEDUCT ALTERNATE PRICING FOR ASTRONOMICAL TIMECLOCK (INTERMATIC ET8215C OR EQUIVALENT).
5. LIGHTING TO BE ON GENERATOR WHEN THE POWER IS TURNED OFF.

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

GROUND LEVEL ELECTRICAL PLAN

SEAL

COLORADO LICENSED MICHAEL DEAN VARD 38983 03/13/2026 PROFESSIONAL ENGINEER

DATE: 03.13.2026
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CHECKED BY: MV
PROJECT NO: 25135

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SECOND LEVEL ELECTRICAL PLAN

3/16" = 1'-0"

DETAIL NOTES THIS SHEET

1. PROPOSED ELECTRICAL SERVICE/GEAR. FIELD VERIFY EXACT LOCATION, MAINTAIN REQUIRED CLEARANCES PER NEC.
2. EXTEND EMERGENCY/EXIT LIGHTING TO AN UNSWITCHED LIGHTING CIRCUIT SERVING THE AREA.
3. LIGHTING IN THIS AREA CONTROLLED VIA OCCUPANCY SENSOR DIMMED TO 50%. HALLWAYS AND STAIRS ARE ALWAYS ON.
4. LIGHTING TO BE ON GENERATOR WHEN THE POWER IS TURNED OFF.

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL

1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

SECOND LEVEL ELECTRICAL PLAN

SEAL

COLORADO LICENSED PROFESSIONAL ENGINEER MICHAEL DEAN VAIR 38983 03/13/2026

DATE: 03.13.2026

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CHECKED BY: MV

PROJECT NO: 25135

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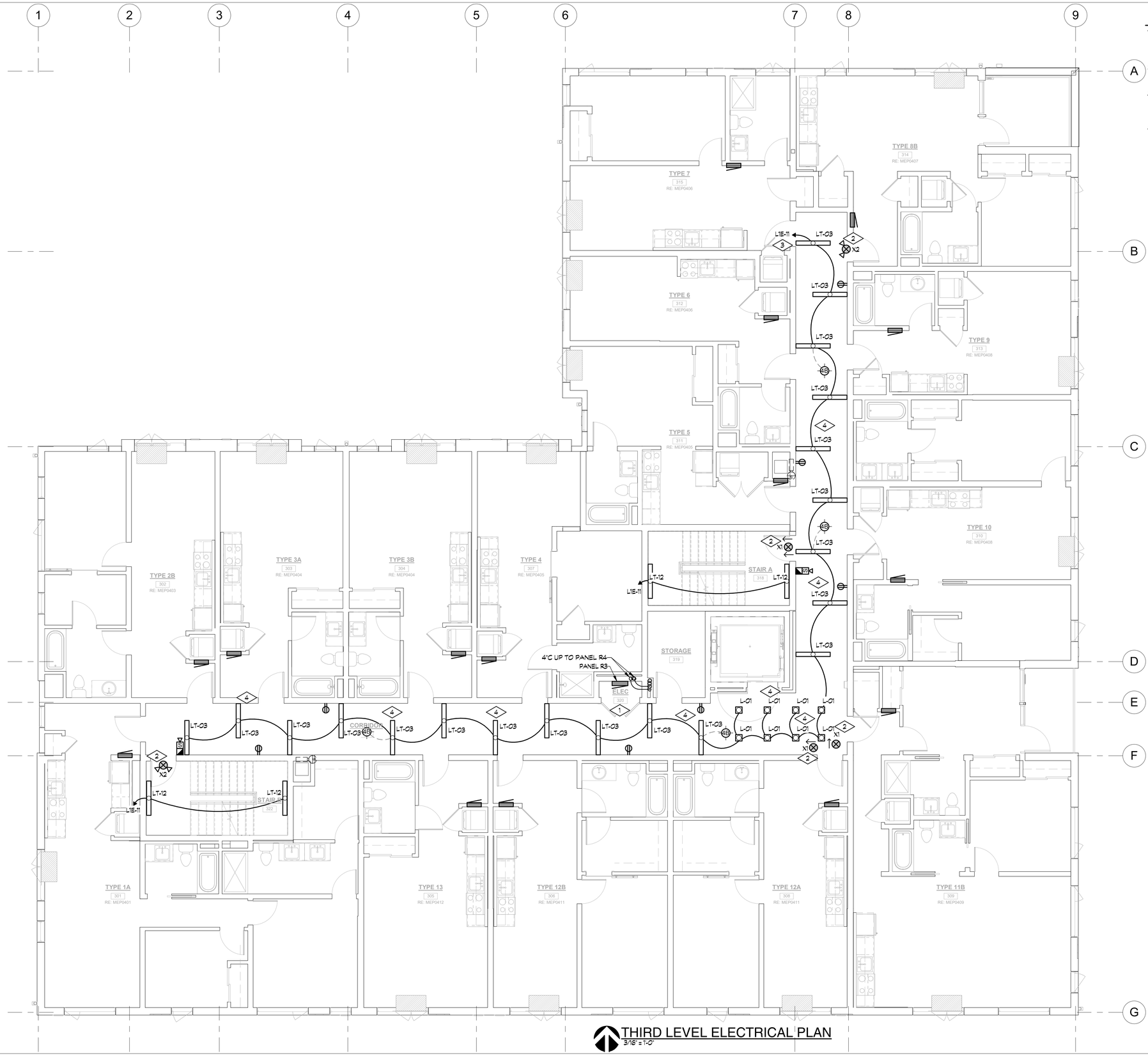

THIRD LEVEL ELECTRICAL PLAN
3/16" = 1'-0"

DETAIL NOTES THIS SHEET

1. PROPOSED ELECTRICAL SERVICE/GEAR. FIELD VERIFY EXACT LOCATION, MAINTAIN REQUIRED CLEARANCES PER NEC.
2. EXTEND EMERGENCY/EXIT LIGHTING TO AN UNSWITCHED LIGHTING CIRCUIT SERVING THE AREA.
3. LIGHTING IN THIS AREA CONTROLLED VIA OCCUPANCY SENSOR DIMMED TO 50%. HALLWAYS AND STAIRS ARE ALWAYS ON.
4. LIGHTING TO BE ON GENERATOR WHEN THE POWER IS TURNED OFF.

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL

1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

THIRD LEVEL ELECTRICAL PLAN

SEAL

COLORADO LICENSED MICHAEL DEAN VOLK 38983 03/13/2026 PROFESSIONAL ENGINEER

DATE: 03.13.2026
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CHECKED BY: MV
PROJECT NO: 25135

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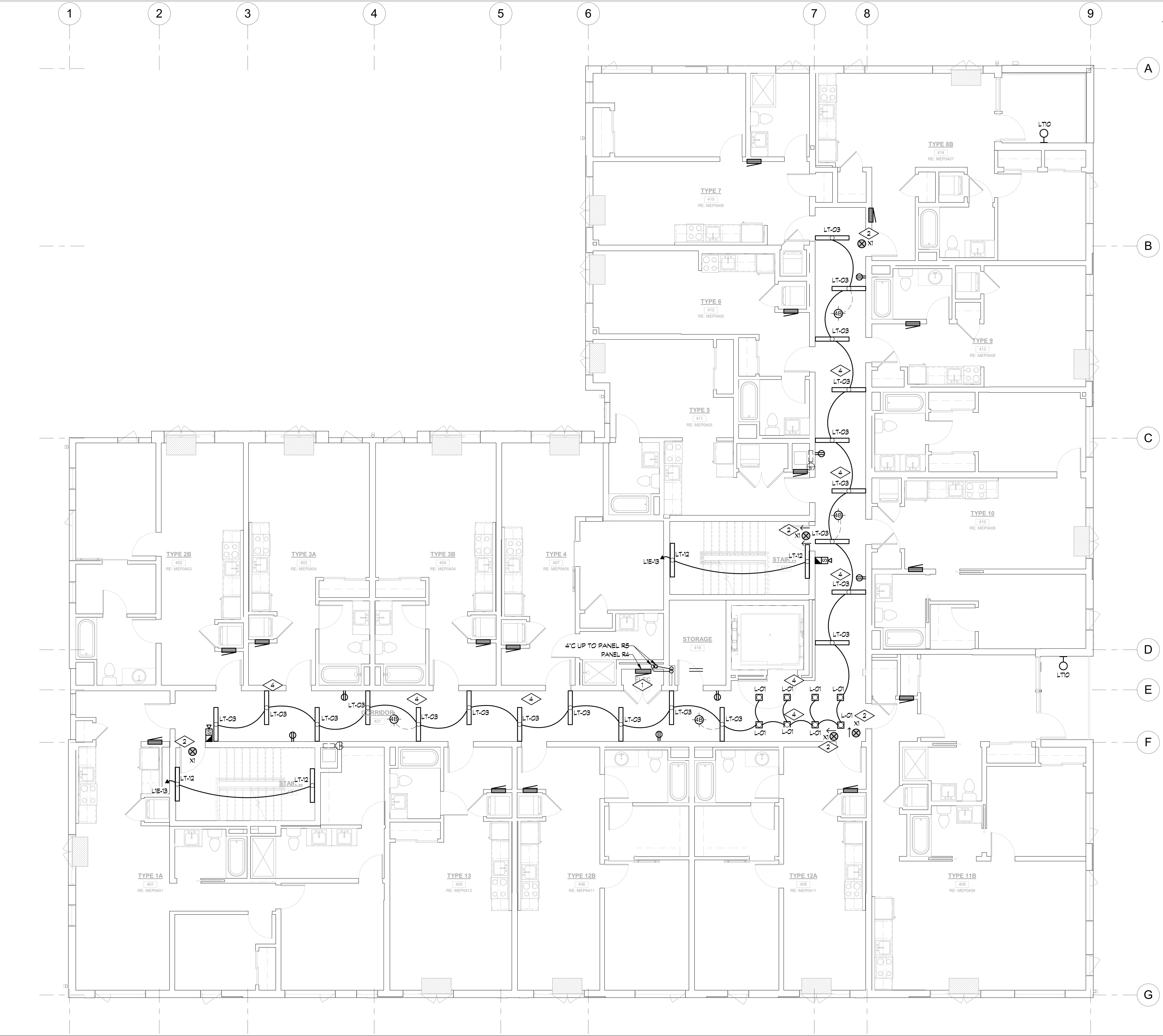

DETAIL NOTES THIS SHEET

1. PROPOSED ELECTRICAL SERVICE/GEAR. FIELD VERIFY EXACT LOCATION, MAINTAIN REQUIRED CLEARANCES PER NEC.
2. EXTEND EMERGENCY/EXIT LIGHTING TO AN UNSWITCHED LIGHTING CIRCUIT SERVING THE AREA.
3. LIGHTING IN THIS AREA CONTROLLED VIA OCCUPANCY SENSOR DIMMED TO 50%. HALLWAYS AND STAIRS ARE ALWAYS ON.
4. LIGHTING TO BE ON GENERATOR WHEN THE POWER IS TURNED OFF.

APPROVAL STAMPS:

No.	Date	Description

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PROJECT LOCATION

STEAMBOAT BASECAMP
AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

FOURTH LEVEL
ELECTRICAL PLAN

SEAL

COLORADO LICENSED PROFESSIONAL ENGINEER 38983 03/13/2026

DATE: 03.13.2026
DRAWN BY: OD/SG
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO:

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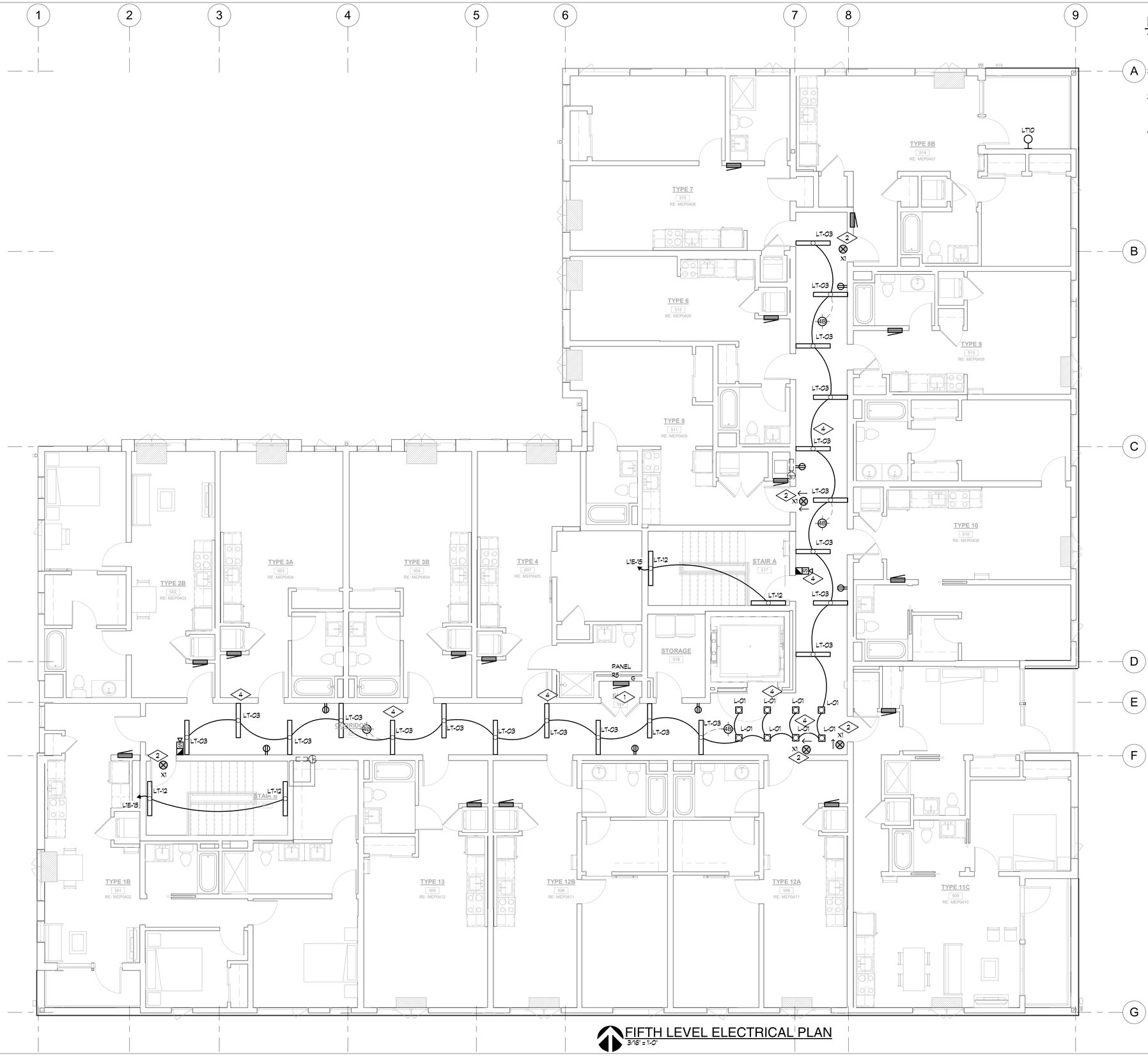

FIFTH LEVEL ELECTRICAL PLAN
3/16" = 1'-0"

DETAIL NOTES THIS SHEET

1. PROPOSED ELECTRICAL SERVICE/GEAR. FIELD VERIFY EXACT LOCATION, MAINTAIN REQUIRED CLEARANCES PER NEC.
2. EXTEND EMERGENCY/EXIT LIGHTING TO AN UNSWITCHED LIGHTING CIRCUIT SERVING THE AREA.
3. LIGHTING IN THIS AREA CONTROLLED VIA OCCUPANCY SENSOR DIMMED TO 50%. HALLWAYS AND STAIRS ARE ALWAYS ON.
4. LIGHTING TO BE ON GENERATOR WHEN THE POWER IS TURNED OFF.

APPROVAL STAMPS:

No.	Date	Description

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INTERIOR DESIGNER:

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

FIFTH LEVEL ELECTRICAL PLAN

SEAL

COLORADO LICENSED MICHAEL DEAN IVARD 38983 03/13/2026 PROFESSIONAL ENGINEER

DATE: 03.13.2026
DRAWN BY: OD/SG
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO: **E0205**

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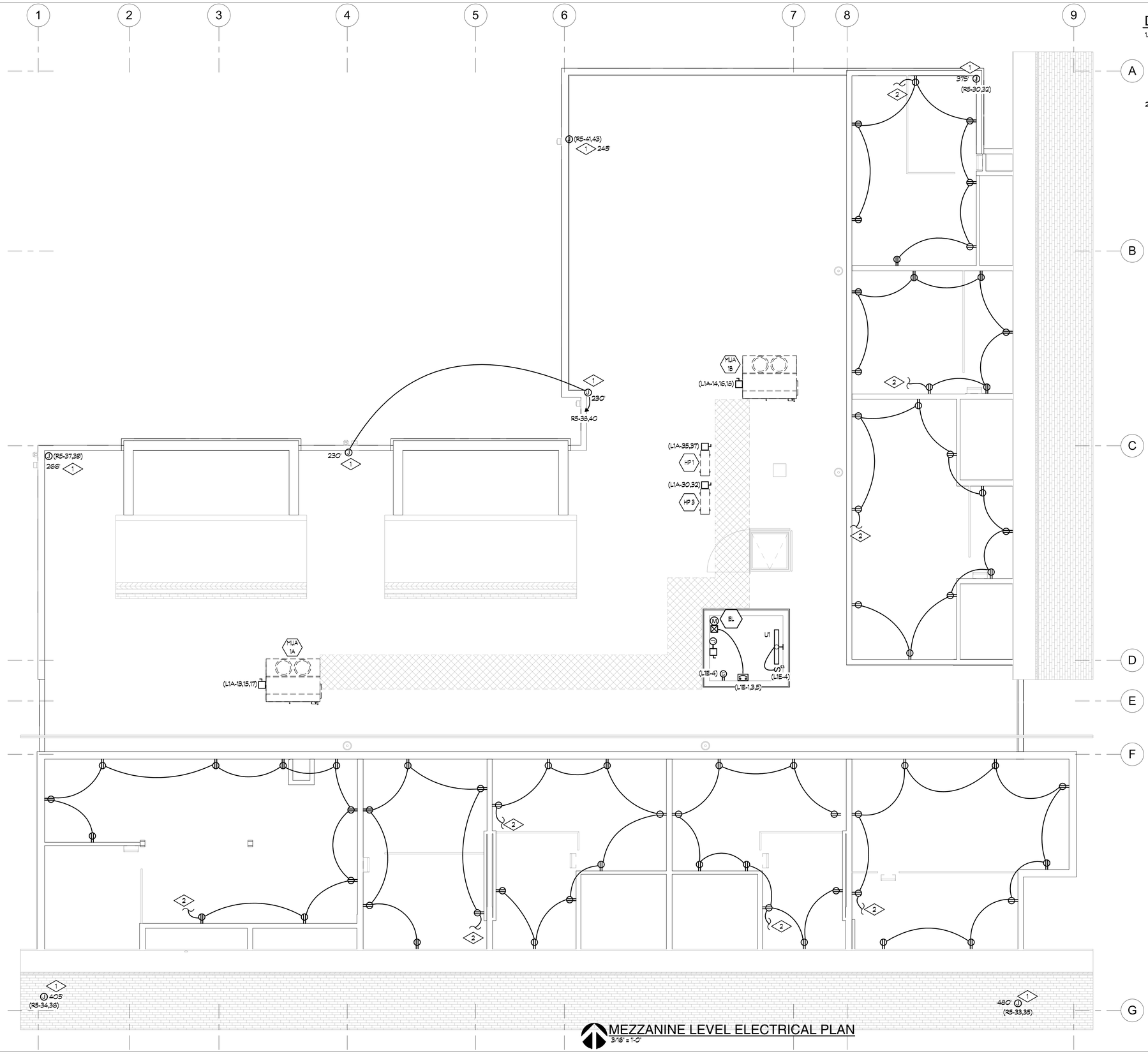

DETAIL NOTES THIS SHEET

1. PROVIDE HEAT TRACE (WARMUP SR-5W OR EQUIVALENT). CONTRACTOR TO PROVIDE A COMPLETE SYSTEM INCLUDING CONTROLS, TRANSFORMERS, PIPE STRAP, END SEAL KIT, GLASS TAPE, ECT. PROVIDE ONE CONTROLLER WITH TEMPERATURE SENSORS PER CIRCUIT. TOTAL HEAT TRACE ESTIMATED DISTANCE = 2231FT. REFER TO DETAIL ON SHEET E0903 FOR FURTHER INFORMATION.
2. WIRE ALL THE RECEPTACLES IN THE MEZZANINE AREA TO UNIT PANEL.

MEZZANINE LEVEL ELECTRICAL PLAN

3/16" = 1'-0"

3/13/2026 8:51:33 AM

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL

1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

MEZZANINE LEVEL ELECTRICAL PLAN

SEAL

COLORADO LICENSED PROFESSIONAL ENGINEER 38983 03/13/2026

DATE: 03.13.2026
DRAWN BY: OD/SG
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO:

E0206

LUMINAIRE SCHEDULE

KEY	LAMP	DESCRIPTION	CEIL'G (DEPTH)	DIM	MANUFACTURER/#	VOLT
L01	10.5W LED 3000K 800 LUM	4" PUCK STYLE DOWNLIGHT	SURFACE		JUNO / JSBT 4IN 30K 80CRI WL MW	120
L02	18.5W LED 3000K 2000 LUM	FAN/LIGHT COMBO	PENDANT		SWANSON 44	120
LT03	20W LED 3000K 2000 LUM	4'-0" FLUSH LINEAR	FLUSH		NULITE / RG2-05-L30-U-FRL-4	120
LT03 (ALT)	40W LED 3400K 2000 LUM	4'-0" FLUSH LINEAR	FLUSH		SPITZER / LAR 44 CC	120
L04	(3) 10W LED 3000K 3000 LUM	KITCHEN TRACK	TRACK		WAC / HT4-BK / HLE-BK / H-2010-930-BK	120
L05	18W LED 3000K 1500 LUM	BATHROOM VANITY	WALL		KUZCO - AKARI / VL18532	120
L07	12W LED 3000K 1200 LUM	DECORATIVE PENDANT	PENDANT		FOSCARINI / APLOMB LARGE PENDANT	120
L08	10W LED 2700K 1000 LUM	RESTROOM VANITY - GLOBE SCONCE	WALL		CEDAR & MOSS / ELLA SCONCE	120
LT12	38W LED 3000K 5000 LUM	4'-0" LONG DIE FORMED LINEAR W/ INTEGRAL CCC	SURFACE / WALL		LITHONIA LIGHTING / CBS L48 5000LM MVOLT MINO ZT 30K 80CRI	120
S1	32W LED 3000K 5000 LUM	4'-0" LONG DIE FORMED INDUSTRIAL STRIP W/ DROP ROUND/SQUARE LENS	SURFACE		LITHONIA LIGHTING / CLX L48 5000LM HEF RDL GZ10 30K 80CRI NE9XX	120
U1	LED, 61W, 12000 LUMENS, 4000K	ELEVATOR PIT LIGHT, MOUNT (1) AT BOTTOM OF PIT AND (1) AT TOP OF HOISTWAY. 0-10V DIMMING, PROVIDE STANDALONE DIMMER AT BOTTOM OF HOISTWAY, SURFACE MOUNT WITH 120° DIFFUSED LENS	WALL		GE ABV3 0 12 T 47 1D Q V SM K Q W	120/277
X1	FURN	EXIT SIGN, GREEN LED EDGE LIT FACE, UNIVERSAL MOUNTING, 90 MIN BATTERY PACK, FINISH BY ARCHITECT	UNIVERSAL		EELP / EDS-(MOUNTING)-1GC-(TRIM)-(OPTIONS)	120
Z2	FURN	DIE CAST EMERGENCY LIGHTING UNIT, WET LOCATION, COLD WEATHER	WALL		EELP / OWEL-(OUTPUT)-EM-(FINISH)-CW-(OPTIONS)	120

NOTES: *NOTIFY ENGINEER OF ANY DISCREPANCIES BETWEEN MODEL NUMBERS AND DESCRIPTIONS PRIOR TO ORDERING
*VERIFY CEILING INSULATION W/ GC AND NOTIFY ENGINEER OF ANY IC RATING CONFLICTS PRIOR TO ORDERING

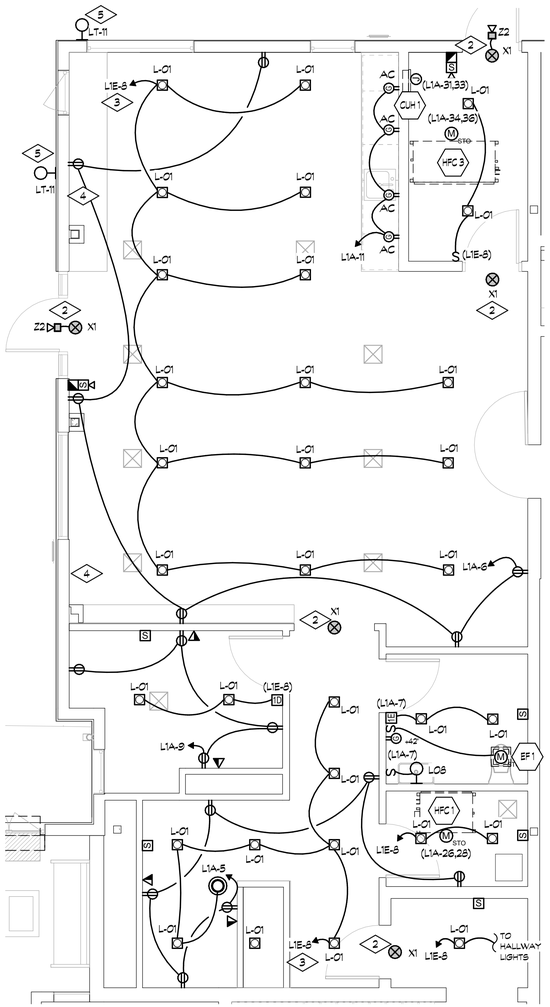
MECHANICAL EQUIPMENT

KEY	DESCRIPTION	LOAD	VOLT	CIRCUIT	CONNECTION	REMARKS
PTHP 9	PACKAGED TERMINAL HEAT PUMP	21.5 MCA	208/1	(2-#10,#10G) 1/2"C	30/2; 25 FRN	
PTHP 13	PACKAGED TERMINAL HEAT PUMP	26.4 MCA	208/1	(2-#10,#10G) 1/2"C	30/2; 30 FRN	
PTHP 18	PACKAGED TERMINAL HEAT PUMP	26.4 MCA	208/1	(2-#10,#10G) 1/2"C	30/2; 30 FRN	
PTHP 15	PACKAGED TERMINAL HEAT PUMP	25 MCA	208/1	(2-#10,#10G) 1/2"C	30/2; 25 FRN	
KF 1	KITCHEN EXHAUST FAN	1 A	208/1	(2-#12,#12G) 1/2"C	THERMAL O.L.	
VF 1	VENTILATION EXHAUST FAN	1 A	208/1	(2-#12,#12G) 1/2"C	THERMAL O.L.	
EF 1	CEILING EXHAUST FAN	23 W	120/1	(2-#12,#12G) 1/2"C	THERMAL O.L.	
EF 2	INLINE FAN	3.5 MCA	120/1	(2-#12,#12G) 1/2"C	THERMAL O.L.	
HFC 1	HORIZONTAL FAN COIL UNIT	3.5 MCA	208/1	(2-#12,#12G) 1/2"C	THERMAL O.L.	
HP 1	HEAT PUMP CONDENSING UNIT	25 MCA	208/1	(2-#10,#10G) 1/2"C	30/2; 25 FRN	
HFC 3	HORIZONTAL FAN COIL UNIT	3.5 MCA	208/1	(2-#12,#12G) 1/2"C	THERMAL O.L.	
HP 3	HEAT PUMP CONDENSING UNIT	29 MCA	208/1	(2-#10,#10G) 1/2"C	30/2; 30 FRN	
MUA 1 A/B	MAKE UP AIR UNIT	27.8 MCA	208/3	(3-#10,#10G) 1/2"C	30/3; 30 FRN	
CUH	ELECTRIC CABINET WALL HEATER	16.7 A	208/1	(2-#10,#10G) 1/2"C	J-BOX	
BB 34	ELECTRIC BASEBOARD	3.1 A	208/1	(2-#12,#12G) 1/2"C	J-BOX	
BB 70	ELECTRIC BASEBOARD	6.3 A	208/1	(2-#12,#12G) 1/2"C	J-BOX	
P1 A/B/C/D	WATER HEATER RECIRC PUMP	760 W	208/1	(2-#12,#12G) 1/2"C	30/2; 6 FRN	
P2 A/B	WATER HEATER RECIRC PUMP	760 W	208/1	(2-#12,#12G) 1/2"C	30/2; 6 FRN	
SP	SUBMERSIBLE SUMP PUMP	12.3 MCA	120/1	(2-#12,#12G) 1/2"C	5-20R	

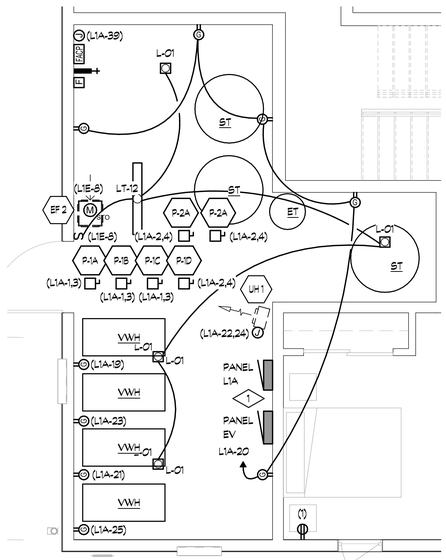
NOTES: *TEMPERATURE RATING OF ALL DEVICES COULD NOT BE VERIFIED, THEREFORE WIRE IS SIZED BASED ON 60C PER NEC 110.14(C)(1)(a)

DETAIL NOTES THIS SHEET

1. PROPOSED ELECTRICAL SERVICE/GEAR. FIELD VERIFY EXACT LOCATION, MAINTAIN REQUIRED CLEARANCES PER NEC.
2. EXTEND EMERGENCY/EXIT LIGHTING TO AN UNSWITCHED LIGHTING CIRCUIT SERVING THE AREA.
3. LIGHTING IN THIS AREA CONTROLLED VIA OCCUPANCY SENSOR, DIMMED TO 50%.
4. COORDINATE WIRING OF SOLENOID VALVES FOR FIRE PIT AND GAS GRILL WITH PLUMBING CONTRACTOR.
5. SEE SITE PLAN FOR MORE INFORMATION ON EXTERIOR LIGHTING.



1 ENLARGED LOBBY ELECTRICAL PLAN
1/4" = 1'-0"



2 ENLARGED MECHANICAL ROOM ELECTRICAL PLAN
1/4" = 1'-0"

COMcheck Software Version COMcheckWeb

Interior Lighting Compliance Certificate

Project Information

Energy Code: 2021 IECC
Project Title: 25135 - Steamboat Basecamp 2
Project Type: New Construction

Construction Site:
1901 Curve Plaza
Steamboat Springs, Colorado 80487

Owner/Agent:

Designer/Contractor:
Boulder Engineering Co
1717 15th Street
Boulder, Colorado 80302
303-444-6038

Additional Efficiency Package(s)

Credits: 10.0 Required 0.0 Proposed

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts
1-MECHANICAL (Common Space Types:Electrical/Mechanical)	392	0.43	169
2-LOBBY (Common Space Types:Lobby - General)	1317	0.84	1106
3-CORRIDOR (Common Space Types:Corridor/Transition >=8 ft wide)	4216	0.41	1729
4-STAIRWELL (Common Space Types:Stairwell)	1520	0.49	745
		Total Allowed Watts =	3748

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	E (C X D)
1-MECHANICAL (Common Space Types:Electrical/Mechanical)				
LED: L-01: DOWNLIGHT: Other:	1	4	10	42
LED: S1: STRIP LIGHT: Other:	1	1	42	42
2-LOBBY (Common Space Types:Lobby - General)				
LED: L-01: DOWNLIGHT: Other:	1	30	10	315
LED: L-08: VANITY: Other:	1	1	10	10
LED: L-07: PENDANT: Other:	1	1	12	12
3-CORRIDOR (Common Space Types:Corridor/Transition >=8 ft wide)				
LED: LT-03: STRIP LIGHTS: Other:	1	60	20	1200
LED: L-01: DOWNLIGHT: Other:	1	40	10	420
4-STAIRWELL (Common Space Types:Stairwell)				
LED: LT-12: STRIP LIGHT: Other:	1	20	20	400
LED: LT-03: STRIP LIGHT: Other:	1	2	20	40
		Total Proposed Watts =		2481

Project Title: 25135 - Steamboat Basecamp 2
Data filename:
Report date: 03/12/26
Page 1 of 6

Interior Lighting PASSES: Design 34% better than code

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2021 IECC requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Michael Vair, PE — Name - Title
Signature
3/12/2026 — Date

3/13/2026 8:51:37 AM

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

OWNER

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2201 Wisconsin Ave NW Suite 200
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INTERIOR DESIGNER:

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

ENLARGED ELECTRICAL PLANS

SEAL

COLORADO LICENSED — MICHAEL DEAN VAIR — 38983 — 03/13/2026 — PROFESSIONAL ENGINEER

DATE: 03.13.2026
DRAWN BY: OD/SG
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO: **E0401**

LEGEND

- MAIN DISTRIBUTION CENTER
- PANELBOARD
- ELECTRIC SERVICE METER
- CT — CURRENT TRANSFORMER
- T — TRANSFORMER
- SPD — SURGE PROTECTION DEVICE
- CONCEALED CIRCUIT
- UNDERFLOOR / UNDERGROUND CIRCUIT
- EXPOSED CIRCUIT
- WM — WIREMOLD (SURFACE WIREWAY)
- PM — PLUGMOLD
- P-3 — HOMERUN TO PANELBOARD(ONE ARROW / CKT, PNL & CKT #'S SHOWN)
- (44,46) — CIRCUIT NUMBER(S) FOR SPECIFIED PANEL
- CONDUIT TURNS UP
- CONDUIT TURNS DOWN
- J J — JUNCTION BOX / CARD READER
- PORCELAIN LAMP HOLDER (PC; PULL CHAIN)
- LIGHT FIXTURE; SURFACE MOUNTED
- RECESSED LIGHT FIXTURE
- WALL MOUNTED LIGHT FIXTURE
- EXIT LIGHT; DIRECTIONAL ARROW
- BATTERY PACK
- SURFACE FLUORESCENT FIXTURE
- RECESSED FLUORESCENT FIXTURE
- SINGLE OUTLET; C-CLOCK (+70')
- DUPLEX RECEPTACLE (IG: ISOLATED GROUND)
- CEILING DUPLEX RECEPTACLE
- DUPLEX RECEPTACLE - GFCI
- DUPLEX RECEPTACLE - GFCI BREAKER
- DUPLEX RECEPTACLE - TAMPER RESIST
- SPLIT WIRE DUPLEX
- QUADRAPLEX (DOUBLE DUPLEX)
- COMB. SWITCH / RECEPTACLE
- FLOOR MOUNTED RECEPTACLE
- SPECIAL PURPOSE (AS NOTED)
- TELEVISION OUTLET
- MOTOR OUTLET (ets - switched thermal overload)
- TELEPHONE TERMINAL
- TELEPHONE OUTLET
- FLOOR MTD. TELEPHONE OUTLET
- COMPUTER OUTLET
- COMB. TELE/COMPUTER OUTLET
- TOGGLE SWITCH (s-switching, 2-2 pole, 3-3 way, 4-4 way, p-pilot light, k-keyed, to-thermal overload, t-timer)
- WALL MOUNTED LIGHTING CONTROL DEVICE RE: LIGHTING CONTROL DEVICE SCHEDULE
- CEILING MOUNTED LIGHTING CONTROL DEVICE RE: LIGHTING CONTROL DEVICE SCHEDULE
- THERMOSTAT
- TS — TIME SWITCH
- PE — PHOTOCELL
- PUSH-BUTTON STATION
- SAFETY SWITCH
- MOTOR STARTER /LIGHTING CONTACTOR
- COMBINATION MOTOR STARTER
- R — RELAY
- FACP — FIRE ALARM CONTROL PANEL
- ANNUNCIATOR
- PULL STATION
- HORN
- HL — HORN / LIGHT COMBINATION
- HS — HORN / STROBE
- S — STROBE
- BELL
- OS & Y VALVE
- F — FLOW SWITCH
- ROOM DETECTOR (SMOKE)
- $\bullet_T$ — ROOM DETECTOR (THERMAL)
- DUCT DETECTOR
- REMOTE INDICATING LIGHT / TEST SWITCH
- DOOR HOLDER
- CHIME
- FUSED SWITCH
- CIRCUIT BREAKER
- GROUND CONNECTOR
- MECHANICAL EQUIPMENT
- DETAIL NOTE
- KITCHEN / MEDICAL EQUIPMENT
- (E) — EXISTING TO REMAIN
- (ER) — EXISTING TO BE RELOCATED
- (ED) — EXISTING TO BE DEMOLISHED

LIGHTING CONTROL DEVICE SCHEDULE

KEY	MODE	DESCRIPTION	MOUNTING	MANUFACTURER/#	VOLT
1D	VACANCY	WALL SWITCH, VACANCY SENSOR, DUAL TECHNOLOGY, 0-10V DIMMING, 20' RANGE	WALL MOUNT	ACUITY WSX PDT D SA XX	120
1E	OCCUPANCY	WALL SWITCH, OCCUPANCY SENSOR, 2-POLE, DUAL TECHNOLOGY, 20' RANGE, MINIMUM FAN RUNTIME (ASHRT) FOR ASHRAE 62.2	WALL MOUNT	ACUITY WSX PDT 2P FAN ASRT XX	120
4B	VACANCY / PHOTOCELL	CEILING SENSOR, DUAL TECHNOLOGY, EXTENDED RANGE (24' @ 9' AFF), 360° COVERAGE PATTERN, PHOTOCELL WITH DIMMING, LOW VOLTAGE AUXILIARY RELAY (POWERPACK REQUIRED; nPP16 D)	CEILING	ACUITY nCM PDT 10 ADCX AR RJB	LOW

NOTES: *NOTIFY ENGINEER OF ANY DISCREPANCIES BETWEEN MODEL NUMBERS AND DESCRIPTIONS PRIOR TO ORDERING
*VERIFY DIMMING COMPATIBILITY W/ LIGHT FIXTURES AND NOTIFY ENGINEER OF ANY CONFLICTS PRIOR TO ORDERING

EV ELECTRICAL EQUIPMENT

KEY	DESCRIPTION	LOAD	VOLT	CIRCUIT	CONNECTION	REMARKS
EC2	EV READY	40 MCA	208/1	(2-#3,#10G) 1"PVC	J-BOX	
EC3	EV CAPABLE	40 MCA	208/1	(FULL STRING) 1"PVC	J-BOX	

NOTES: *COORDINATE ALL ROUGH-IN HEIGHTS AND LOCATIONS WITH KITCHEN VENDOR AND/OR OWNER.

ONE LINE DETAIL NOTES

1. PROVIDE INTEGRATED SURGE PROTECTION DEVICE, TYPE 1 OR 2. MINIMUM RATING OF 80kA, RECOMMEND 200kA PER PHASE.

BUILDING RESIDENTIAL LOAD CALCS BASED UPON NEC 220.84

Number of Units				74	
Total square footage				41,610	
(1) Appliance and Laundry Circuits					
148	Appliance Circuits	@	1,500 VA	=	222,000 VA
74	Laundry Circuits	@	1,500 VA	=	111,000 VA
SUB-TOTAL				=	333,000 VA
(2) Gen Lighting and Gen Use Receptacles					
41810	Sq Ft @ 3 Watts/sq ft			=	124,830 VA
(3) Appliances					
74	Clothes Dryer	@	5,000 VA	=	370,000 VA
74	Range	@	8,000 VA	=	592,000 VA
74	Dishwasher	@	1,200 VA	=	88,800 VA
74	Disposer	@	1,180 VA	=	87,320 VA
74	Range Hood/ Microwave	@	1,200 VA	=	88,800 VA
74	Refrigerator/Freezer	@	500 VA	=	37,000 VA
SUB-TOTAL				=	1,263,920 VA
(4) Other Motor or Low P. F. Loads					
94	Bath Exhaust Fan	@	230 VA	=	21,620 VA
74	Kitchen Exhaust Fan	@	230 VA	=	17,020 VA
SUB-TOTAL				=	38,640 VA
(5) Plus 100% Larger of Heating/Cooling Load					
74	PTHP	@	4,845 VA	=	365,930 VA
22	BB-34	@	750 VA	=	16,500 VA
55	BB-70	@	1,500 VA	=	82,500 VA
SUB-TOTAL				=	464,930 VA
TOTAL OF ALL LOADS					
Total Load				=	2,225,320 VA
Multy Family Demand Factor (220-84)					0.23
GRAND TOTAL LOAD				=	511,824 VA
				(@208/3)	1422.4 A

LARGEST UNIT RESIDENTIAL LOAD CALCS BASED UPON NEC 220.82

Total square footage				1,157	
(1) Appliance and Laundry Circuits					
2	Appliance Circuits	@	1,500 VA	=	3,000 VA
1	Laundry Circuits	@	1,500 VA	=	1,500 VA
SUB-TOTAL				=	4,500 VA
(2) Gen Lighting and Gen Use Receptacles					
1157	Sq Ft @ 3 Watts/sq ft			=	3,471 VA
(3) Appliances					
1	Clothes Dryer	@	5,000 VA	=	5,000 VA
1	Range	@	8,000 VA	=	8,000 VA
1	Dishwasher	@	1,200 VA	=	1,200 VA
1	Disposer	@	1,180 VA	=	1,180 VA
1	Range Hood/ Microwave	@	1,200 VA	=	1,200 VA
1	Refrigerator/Freezer	@	500 VA	=	500 VA
SUB-TOTAL				=	17,080 VA
(4) Other Motor or Low P. F. Loads					
2	Bath Exhaust Fan	@	230 VA	=	460 VA
1	Kitchen Exhaust Fan	@	230 VA	=	230 VA
SUB-TOTAL				=	690 VA
(5) Total of "General" Loads [(1)+(2)+(3)+(4)]				=	25,741 VA
First	10,000	@	100%	=	10,000 VA
Remainder	15,741	@	40%	=	6,296 VA
SUB-TOTAL					16,296 VA
(C) Plus 100% Larger of Heating/Cooling Load					
1	PTHP	@	4,845 VA	=	4,845 VA
1	BB-34	@	750 VA	=	750 VA
2	BB-70	@	1,500 VA	=	3,000 VA
SUB-TOTAL				=	8,695 VA
TOTAL OF ALL LOADS					
"Other" Loads				=	16,296 VA
Heating / Cooling Load				=	8,695 VA
GRAND TOTAL LOAD				=	24,991 VA
				(@208/1)	120.2 A

BUILDING LOAD SUMMARY

VOLTS: 120/208 Wye **PHASE:** 3 **WIRES:** 4
NOTE: ALL EXISTING METER CALCULATED AT 125% PER NEC 220.87

CKT	CIRCUIT DESCRIPTION	Load	AMPS
1	L1E	26.7 kVA	74.2 A
2	R1	437.1 kVA	1,213.4 A
3	R2	483.7 kVA	1,342.7 A
4	R3	481.0 kVA	1,335.1 A
5	R4	481.0 kVA	1,335.1 A
6	R5	501.6 kVA	1,392.2 A
7	EV	59.9 kVA	166.3 A
8	SPACE - FUTURE SOLAR	--	--

TOTAL CONNECTED: 2471.0 kVA

LOAD TYPE		CONN. LOAD	DEMAND FACT.	EST. DEMAND
LIGHTING -	L	5.83 kVA	125%	7.29 kVA
ELECT. VEHICLE -	EV	59.8 kVA	125%	74.88 kVA
RECEPTACLE -	R	5.04 kVA	100%	5.04 kVA
MOTOR -	M	64.52 kVA	108%	69.57 kVA
KITCHEN -	K	0 kVA	0%	0 kVA
OTHER -	O	20.43 kVA	100%	20.43 kVA
EXISTING -	E	0 kVA	0%	0 kVA
NEC-220.84-	NC	2,315.28 kVA	23%	532.51 kVA
TOTAL DEMAND:				709.72 kVA/1,970 A

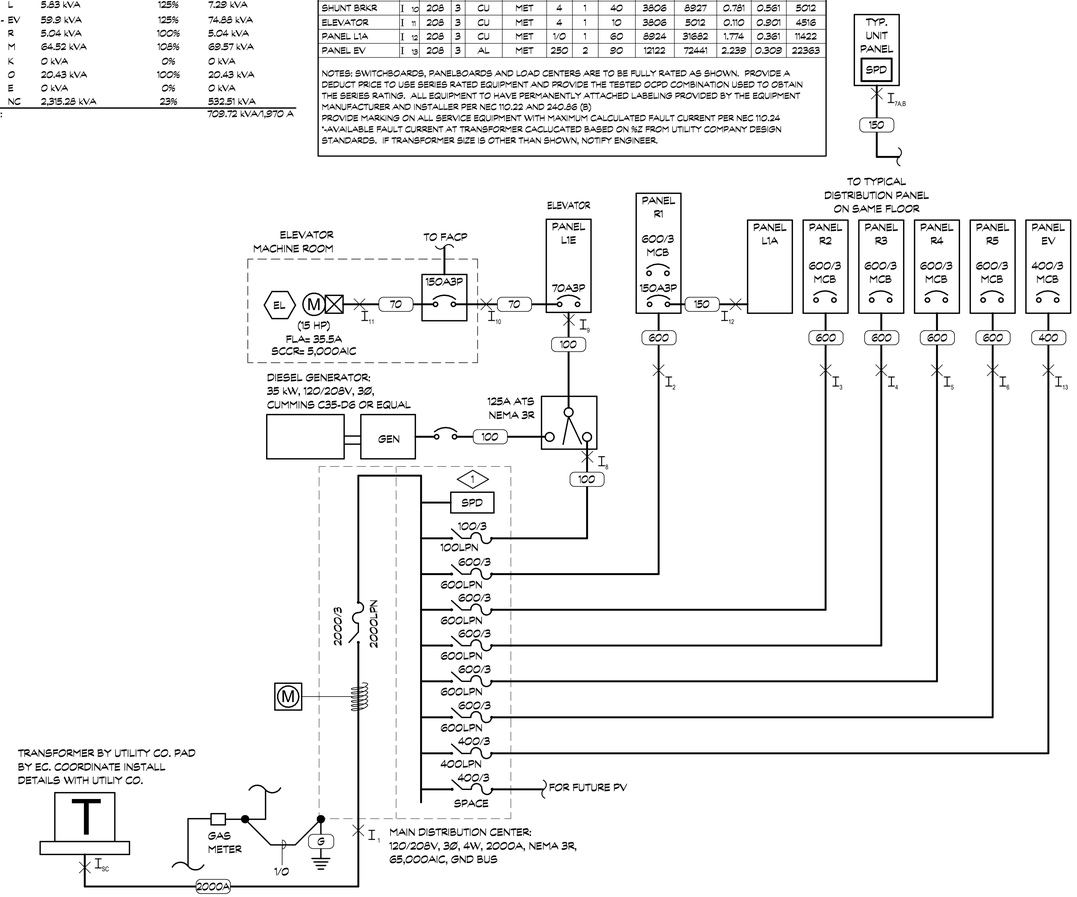
SHORT CIRCUIT CALCULATION

LOCATION		SECONDARY VOLTAGE				Ø	kVA	%Z-*	Isc AVAIL.		*M*	Isc FAULT
TRANS	I sc	208				3	500	1.8	1388		55.6	77100
LOCATION		VOLT.	Ø	WIRE TYPE	CONDUIT TYPE	WIRE SIZE	#OF RUNS	LENGTH	"C" VALUE	Isc AVAIL.	*F*	*M*	Isc FAULT
MDC	I 1	208	3	AL	NON	500	7	15	21390	77100	0.064	0.940	72441
PANEL R1	I 2	208	3	AL	MET	500	2	80	18755	72441	1.257	0.437	31682
PANEL R2	I 3	208	3	AL	MET	500	2	85	18755	72441	1.367	0.422	30606
PANEL R3	I 4	208	3	AL	MET	500	2	95	18755	72441	1.528	0.386	28659
PANEL R4	I 5	208	3	AL	MET	500	2	105	18755	72441	1.688	0.372	26944
PANEL R5	I 6	208	3	AL	MET	500	2	115	18755	72441	1.848	0.351	25424
UNIT PNL < 65	I 7a	208	1	CU	MET	1/0	1	60	8924	31682	2.048	0.325	10324
UNIT PNL > 65	I 7b	208	1	CU	MET	1/0	1	65	8924	31682	2.219	0.311	9843
ATS	I 8	208	3	AL	MET	3	1	10	2345	72441	2.048	0.326	23781
PANEL L1E	I 9	208	3	CU	MET	3	1	40	4760	23781	1.664	0.375	8927
SHUNT BRKR	I 10	208	3	CU	MET	4	1	40	3806	8927	0.781	0.561	5012
ELEVATOR	I 11	208	3	CU	MET	4	1	10	3806	5012	0.110	0.901	4516
PANEL L1A	I 12	208	3	CU	MET	1/0	1	60	8924	31682	1.774	0.361	11422
PANEL EV	I 13	208	3	AL	MET	250	2	90	12122	72441	2.239	0.309	22363

NOTES: SWITCHBOARDS, PANELBOARDS AND LOAD CENTERS ARE TO BE FULLY RATED AS SHOWN. PROVIDE A DEDUCT PRICE TO USE SERIES RATED EQUIPMENT AND PROVIDE THE TESTED OCPD COMBINATION USED TO OBTAIN THE SERIES RATING. ALL EQUIPMENT TO HAVE PERMANENTLY ATTACHED LABELING PROVIDED BY THE EQUIPMENT MANUFACTURER AND INSTALLER PER NEC 110.22 AND 240.86 (B)
PROVIDE MARKING ON ALL SERVICE EQUIPMENT WITH MAXIMUM CALCULATED FAULT CURRENT PER NEC 110.24
*AVAILABLE FAULT CURRENT AT TRANSFORMER CACLUCATED BASED ON %Z FROM UTILITY COMPANY DESIGN STANDARDS. IF TRANSFORMER SIZE IS OTHER THAN SHOWN, NOTIFY ENGINEER.

WIRING LEGEND

70	(4-#4 CU, #5 CU G)1-1/4"C
100	(4-#3 CU, #5 CU G)1-1/4"C
150	(3-1/0 CU, #6 CU G)2"C
400	2[(4-250CM AL, #3 CU G)2-1/2"C]
600	2[(4-500CM AL, #1 CU G)4"C]
2000A	7[(4-500CM AL)4"C]
G	(3/0 CU)3/4"C TO BLDG STEEL, COLD WATER PIPE, CONCRETE ENCASED ELECTRODE; 2[(#6CU)1/2"C] TO DRIVEN GROUND RODS NOT LESS THAN 6'0 APART



NTS

ELECTRICAL ONE LINE DIAGRAM | 1

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

OWNER
MAY REIGLER PROPERTIES
2201 Wisconsin Ave NW Suite 200
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LANDSCAPE ARCHITECT

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INTERIOR DESIGNER:
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PROJECT LOCATION
STEAMBOAT BASECAMP AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE
ELECTRICAL DETAILS & SCHEDULES

SEAL
COLORADO LICENSED PROFESSIONAL ENGINEER 38983 03/13/2026 PROFESSIONAL ENGINEER

DATE: 03.13.2026
DRAWN BY: OD
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO: **E0901**

3/13/2026 8:51:39 AM

PANEL L1A

SUPPLY FROM: R1 VOLTS: 120/208 Wye A.I.C. RATING: 22,000AIC
MOUNTING: RECESSED PHASES: 3 MAINS TYPE: MLO
ENCLOSURE: NEMA 1 WIRES: 4 MAINS RATINGS: 150 A

CIRCUIT DESCRIPTION	LT	TRIP	P	BT		A		B		C			BT	P	TRIP	LT	CIRCUIT DESCRIPTION
P-1A	M	20	2	S	1	1140	1140					2	S	2	20	M	P-1D
					3			1140	1140			4					
LOBBY OFF & PKG RCPTS	R	20	1	S	5					1080	1080	6	S	1	20	R	GEN RECEPTS - LOBBY
LOBBY RESTROOM	R; L;...	20	1	G	7	670	360					8	S	1	20	L	LIGHTING
LOBBY OFFICE RECEPTS	R	20	1	S	9			720	0			10		1	20	--	SPARE
COUNTER RECEPTS - LOBBY	R	20	1	G	11					720	0	12		1	20	--	SPARE
MUA-1A	M	30	3	S	13	2671	2671					14	S	3	30	M	MUA-1B
					15			2671	2671			16					
					17					2671	2671	18					
VWH850	O	20	1	G	19	600	900					20	G	1	20	R	MECH RM RECEPTS
VWH850	O	20	1	G	21			600	2000			22	S	2	25	M	MECH RM UH-1
VWH850	O	20	1	G	23					600	2000	24					
VWH850	O	20	1	G	25	600	291					26	S	2	20	M	HFC-1
FLR 1 CUH-1	M	25	2	S	27			2000	291			28					
					29					2000	2413	30	S	2	30	M	HP-3
LOBBY CUH-1	M	25	2	S	31	2000	2413					32					
					33			2000	291			34	S	2	20	M	HFC-3
HP-1	M	25	2	S	35					2080	291	36					
					37	2080	406					38	S	1	20	L	SITE LIGHTING
FACP	O	20	1	S	39			180	0			40	S	1	20	--	SPARE
SPARE	--	20	1	S	41					0	0	42	S	1	20	--	SPARE

TOTAL LOAD: 17.94 kVA 15.7 kVA 17.61 kVA

TOTAL AMPS: 152 A 131 A 149 A

LOAD TYPE		CONN.LOAD	DEMAND FACT.	EST. DEMAND	BREAKER TYPE		PANEL TOTALS
LIGHTING -	L	1.16 kVA	125%	1.45 kVA	STANDARD -	S	
ELECT. VEHICLE -	EV	0 kVA	0%	0 kVA	AFCI/GFCI -	AG	
RECEPTACLE -	R	4.68 kVA	100%	4.68 kVA	GFCI -	G	TOTAL CONN. LOAD: 51.25 kVA
MOTOR -	M	42.84 kVA	105%	44.84 kVA	AFCI -	A	TOTAL EST. DEMAND: 53.54 kVA
KITCHEN -	K	0 kVA	0%	0 kVA	HANDLE TIE -	T	TOTAL CONN.: 142 A
OTHER -	O	2.58 kVA	100%	2.58 kVA	HANDLE BLOCK -	H	TOTAL EST. DEMAND: 149 A
EXISTING -	E	0 kVA	0%	0 kVA	SHUNT TRIP -	ST	
NEC-220.84-	NC	0 kVA	0%	0 kVA	LOCKOUT -	L	

PANEL R4

SUPPLY FROM: BUILDING VOLTS: 120/208 Wye A.I.C. RATING: 65,000AIC
MOUNTING: SURFACE PHASES: 3 MAINS TYPE: MCB
ENCLOSURE: NEMA 1 WIRES: 4 MAINS RATINGS: 600 A

CIRCUIT DESCRIPTION	LT	TRIP	P	BT		A		B		C			BT	P	TRIP	LT	CIRCUIT DESCRIPTION
UNIT 403	NC	150	2	S	1	15850	15850					2	S	2	150	NC	UNIT 414
					3			15850	15850			4					
UNIT 402	NC	150	2	S	5					15850	15850	6	S	2	150	NC	UNIT 413
					7	15850	15850					8					
UNIT 401	NC	150	2	S	9			17220	17220			10	S	2	150	NC	UNIT 409
					11					17220	17220	12					
UNIT 404	NC	150	2	S	13	15850	15850					14	S	2	150	NC	UNIT 410
					15			15850	15850			16					
UNIT 407	NC	150	2	S	17					15850	15850	18	S	2	150	NC	UNIT 406
					19	15850	15850					20					
UNIT 411	NC	150	2	S	21			15850	15850			22	S	2	150	NC	UNIT 408
					23					15850	15850	24					
UNIT 412	NC	150	2	S	25	15850	15850					26	S	2	150	NC	UNIT 405
					27			15850	15850			28					
UNIT 415	NC	150	2	S	29					15850	--	30		1	--	--	SPACE
					31	15850	--					32		1	--	--	SPACE
SPACE	--	--	1		33			--	--			34		1	--	--	SPACE
SPACE	--	--	1		35					--	--	36		1	--	--	SPACE
SPACE	--	--	1		37	--	--					38		1	--	--	SPACE
SPACE	--	--	1		39			--	--			40		1	--	--	SPACE
SPACE	--	--	1		41					--	0	42	S	1	15	--	LEVITON SUBMETER

TOTAL LOAD: 174.35 kVA 161.24 kVA 145.39 kVA

TOTAL AMPS: 1,473 A 1,364 A 1,212 A

LOAD TYPE		CONN.LOAD	DEMAND FACT.	EST. DEMAND	BREAKER TYPE		PANEL TOTALS
LIGHTING -	L	0 kVA	0%	0 kVA	STANDARD -	S	
ELECT. VEHICLE -	EV	0 kVA	0%	0 kVA	AFCI/GFCI -	AG	
RECEPTACLE -	R	0 kVA	0%	0 kVA	GFCI -	G	TOTAL CONN. LOAD: 480.98 kVA
MOTOR -	M	0 kVA	0%	0 kVA	AFCI -	A	TOTAL EST. DEMAND: 192.39 kVA
KITCHEN -	K	0 kVA	0%	0 kVA	HANDLE TIE -	T	TOTAL CONN.: 1,335 A
OTHER -	O	0 kVA	0%	0 kVA	HANDLE BLOCK -	H	TOTAL EST. DEMAND: 534 A
EXISTING -	E	0 kVA	0%	0 kVA	SHUNT TRIP -	ST	
NEC-220.84-	NC	480.98 kVA	40%	192.39 kVA	LOCKOUT -	L	

PANEL R1

SUPPLY FROM: BUILDING VOLTS: 120/208 Wye A.I.C. RATING: 65,000AIC
MOUNTING: SURFACE PHASES: 3 MAINS TYPE: MCB
ENCLOSURE: NEMA 1 WIRES: 4 MAINS RATINGS: 600 A

CIRCUIT DESCRIPTION	LT	TRIP	P	BT		A		B		C			BT	P	TRIP	LT	CIRCUIT DESCRIPTION
UNIT 101	NC	150	2	S	1	15850	15850					2	S	2	150	NC	UNIT 102
					3			15850	15850			4					
UNIT 103	NC	150	2	S	5					15850	15850	6	S	2	150	NC	UNIT 104
					7	15850	15850					8					
UNIT 105	NC	150	2	S	9			15850	15850			10	S	2	150	NC	UNIT 112
					11					15850	15850	12					
UNIT 107	NC	150	2	S	13	15850	17220					14	S	2	150	NC	UNIT 110
					15			15850	17220			16					
UNIT 111	NC	150	2	S	17					15850	15850	18	S	2	150	NC	UNIT 108
					19	15850	15850					20					
UNIT 109	NC	150	2	S	21			17220	15850			22	S	2	150	NC	UNIT 106
					23					17220	15850	24					
SPARE	--	20	1		25	0	--					26		1	--	--	SPACE
SPARE	--	20	1		27			0	--			28		1	--	--	SPACE
SPARE	--	20	1		29					0	--	30		1	--	--	SPACE
SPARE	--	20	1		31	0	--					32		1	--	--	SPACE
SPARE	--	20	1		33			0	--			34		1	--	--	SPACE
SPARE	--	20	1		35					0	--	36		1	--	--	SPACE
PANEL L1A	S; R; L; O;...	150	3	S	37	17942	--					38		1	--	--	SPACE
					39			15704	--			40		1	--	--	SPACE
					41					17606	0	42	S	1	15	--	LEVITON SUBMETER

TOTAL LOAD: 146.11 kVA 145.24 kVA 145.78 kVA

TOTAL AMPS: 1,218 A 1,210 A 1,215 A

LOAD TYPE		CONN.LOAD	DEMAND FACT.	EST. DEMAND	BREAKER TYPE		PANEL TOTALS
LIGHTING -	L	1.16 kVA	125%	1.45 kVA	STANDARD -	S	
ELECT. VEHICLE -	EV	0 kVA	0%	0 kVA	AFCI/GFCI -	AG	
RECEPTACLE -	R	4.68 kVA	100%	4.68 kVA	GFCI -	G	TOTAL CONN. LOAD: 437.13 kVA
MOTOR -	M	42.84 kVA	105%	44.84 kVA	AFCI -	A	TOTAL EST. DEMAND: 211.75 kVA
KITCHEN -	K	0 kVA	0%	0 kVA	HANDLE TIE -	T	TOTAL CONN.: 1,213 A
OTHER -	O	2.58 kVA	100%	2.58 kVA	HANDLE BLOCK -	H	TOTAL EST. DEMAND: 588 A
EXISTING -	E	0 kVA	0%	0 kVA	SHUNT TRIP -	ST	
NEC-220.84-	NC	385.88 kVA	41%	158.21 kVA	LOCKOUT -	L	

PANEL EV

SUPPLY FROM: BUILDING VOLTS: 120/208 Wye A.I.C. RATING: 65,000AIC
MOUNTING: SURFACE PHASES: 3 MAINS TYPE: MCB
ENCLOSURE: NEMA 1 WIRES: 4 MAINS RATINGS: 400 A

CIRCUIT DESCRIPTION	LT	TRIP	P	BT		A		B		C			BT	P	TRIP	LT	CIRCUIT DESCRIPTION
EV READY	EV	40	2	S	1	3328	0					2	S	2	40	EV	EV CAPABLE
					3			3328	0			4					
EV READY	EV	40	2	S	5					3328	0	6	S	2	40	EV	EV CAPABLE
					7	3328	0					8					
EV READY	EV	40	2	S	9			3328	0			10	S	2	40	EV	EV CAPABLE
					11					3328	0	12					
EV READY	EV	40	2	S	13	3328	0					14	S	2	40	EV	EV CAPABLE
					15			3328	0			16					
EV READY	EV	40	2	S	17					3328	0	18	S	2	40	EV	EV CAPABLE
					19	3328	0					20					
EV READY	EV	40	2	S	21			3328	0			22	S	2	40	EV	EV CAPABLE
					23					3328	0	24					
EV READY	EV	40	2	S	25	3328	0					26	S	2	40	EV	EV CAPABLE
					27			3328	0			28					
EV READY	EV	40	2	S	29					3328	0	30	S	2	40	EV	EV CAPABLE
					31	3328	0					32					
EV READY	EV	40	2	S	33			3328	0			34	S	2	40	EV	EV CAPABLE
					35					3328	0	36					
EV CAPABLE	EV	40	2	S	37	0	0					38	S	2	40	EV	EV CAPABLE
					39			0	0			40					
EV CAPABLE	EV	40	2	S	41					0	0	42	S	2	40	EV	EV CAPABLE
					43	0	0					44					
EV CAPABLE	EV	40	2	S	45			0	0			46	S	2	40	EV	EV CAPABLE
					47					0	0	48					
EV CAPABLE	EV	40	2	S	49	0	0					50	S	2	40	EV	EV CAPABLE
					51			0	0			52					
EV CAPABLE	EV	40	2	S	53					0	0	54	S	2	40	EV	EV CAPABLE
					55	0	0					56					
EV CAPABLE	EV	40	2	S	57			0	0			58	S	2	40	EV	EV CAPABLE
					59					0	0	60					
EV CAPABLE	EV	40	2	S	61	0	--					62		1	--	--	SPACE
					63			0	--			64		1	--	--	SPACE
SPARE	--	20	1	S	65					0	--	66		1	--	--	SPACE
SPARE	--	20	1	S	67	0	--					68		1	--	--	SPACE
SPARE	--	20	1	S	69			0	--			70		1	--	--	SPACE
SPARE	--	20	1	S	71					0	--	72		1	--	--	SPACE
SPARE	--	20	1	S	73	0	--					74		1	--	--	SPACE
SPARE	--	20	1	S	75			0	--			76		1	--	--	SPACE
SPARE	--	20	1	S	77					0	--	78		1	--	--	SPACE
SPARE	--	20	1	S	79	0	--					80		1	--	--	SPACE
SPARE	--	20	1	S	81			0	--			82		1	--	--	SPACE
SPARE	--	20	1	S	83					0	--	84		1	--	--	SPACE

TOTAL LOAD: 19.97 kVA 19.97 kVA 19.97 kVA

TOTAL AMPS: 166 A 166 A 166 A

LOAD TYPE		CONN.LOAD	DEMAND FACT.	EST. DEMAND	BREAKER TYPE		PANEL TOTALS
LIGHTING -	L	0 kVA	0%	0 kVA	STANDARD -	S	
ELECT. VEHICLE -	EV	59.9 kVA	125%	74.88 kVA	AFCI/GFCI -	AG	
RECEPTACLE -	R	0 kVA	0%	0 kVA	GFCI -	G	TOTAL CONN. LOAD: 59.9 kVA
MOTOR -	M	0 kVA	0%	0 kVA	AFCI -	A	TOTAL EST. DEMAND: 74.88 kVA
KITCHEN -	K	0 kVA	0%	0 kVA	HANDLE TIE -	T	TOTAL CONN.: 166 A
OTHER -	O	0 kVA	0%	0 kVA	HANDLE BLOCK -	H	TOTAL EST. DEMAND: 208 A
EXISTING -	E	0 kVA	0%	0 kVA	SHUNT TRIP -	ST	
NEC-220.84-	NC	0 kVA	0%	0 kVA	LOCKOUT -	L	

PANEL R5

SUPPLY FROM: BUILDING VOLTS: 120/208 Wye A.I.C. RATING: 65,000AIC
MOUNTING: SURFACE PHASES: 3 MAINS TYPE: MCB
ENCLOSURE: NEMA 1 WIRES: 4 MAINS RATINGS: 600 A

CIRCUIT DESCRIPTION	LT	TRIP	P	BT		A		B		C			BT	P	TRIP	LT	CIRCUIT DESCRIPTION
UNIT 503	NC	150	2	S	1	15850	15850					2	S	2	150	NC	UNIT 514
					3			15850	15850			4					
UNIT 502	NC	150	2	S	5					15850	15850	6	S	2	150	NC	UNIT 510
					7	15850	15850					8					
UNIT 501	NC	150	2	S	9			17220	17220			10	S	2	150	NC	UNIT 513
					11					17220	17220	12					
UNIT 504	NC	150	2	S	13	15850	17220					14	S	2	150	NC	UNIT 509
					15			15850	17220			16					
UNIT507	NC	150	2	S	17					15850	15850	18	S	2	150	NC	UNIT 508
					19	15850	15850					20					
UNIT 511	NC	150	2	S	21			15850	15850			22	S	2	150	NC	UNIT 506
					23					15850	15850	24					
UNIT 512	NC	150	2	S	25	15850	15850					26	S	2	150	NC	UNIT 505
					27			15850	15850			28					
UNIT 515	NC	150	2	S	29					15850	1500	30	S	2	25	O	HEAT TRACE
					31	15850	1500					32					
HEAT TRACE	O	25	2	S	33			1920	1620			34	S	2	25	O	HEAT TRACE
					35					1920	1620	36					
HEAT TRACE	O	20	2	S	37	1064	1840					38	S	2	25	O	HEAT TRACE
					39			1064	1840			40					
HEAT TRACE	O	20	2	S	41					980	--	42		1	--	--	SPACE
					43	980	--					44		1	--	--	SPACE
SPACE	--	--	1		45			--	--			46		1	--	--	SPACE
SPACE	--	--	1		47					--	--	48		1	--	--	SPACE
SPACE	--	--	1		49	--	--					50		1	--	--	SPACE
SPACE	--	--	1		51			--	--			52		1	--	--	SPACE
SPACE	--	--	1		53					--	0	54	S	1	15	--	LEVITON SUBMETER

TOTAL LOAD: 181.1 kVA 169.05 kVA 151.41 kVA

TOTAL AMPS: 1,532 A 1,431 A 1,262 A

LOAD TYPE		CONN.LOAD	DEMAND FACT.	EST. DEMAND	BREAKER TYPE		PANEL TOTALS
LIGHTING -	L	0 kVA	0%	0 kVA	STANDARD -	S	
ELECT. VEHICLE -	EV	0 kVA	0%	0 kVA	AFCI/GFCI -	AG	
RECEPTACLE -	R	0 kVA	0%	0 kVA	GFCI -	G	TOTAL CONN. LOAD: 501.57 kVA
MOTOR -	M	0 kVA	0%	0 kVA	AFCI -	A	TOTAL EST. DEMAND: 211.34 kVA
KITCHEN -	K	0 kVA	0%	0 kVA	HANDLE TIE -	T	TOTAL CONN.: 1,392 A
OTHER -	O	17.85 kVA	100%	17.85 kVA	HANDLE BLOCK -	H	TOTAL EST. DEMAND: 587 A
EXISTING -	E	0 kVA	0%	0 kVA	SHUNT TRIP -	ST	
NEC-220.84-	NC	483.72 kVA	40%	193.49 kVA	LOCKOUT -	L	

PANEL L1E

SUPPLY FROM: BUILDING VOLTS: 120/208 Wye A.I.C. RATING: 10,000AIC
MOUNTING: RECESSED PHASES: 3 MAINS TYPE: MLO
ENCLOSURE: NEMA 1 WIRES: 4 MAINS RATINGS: 100 A

CIRCUIT DESCRIPTION	LT	TRIP	P	BT		A		B		C			BT	P	TRIP	LT	CIRCUIT DESCRIPTION
ELEVATOR	M	70	3	S	1	6725	1176					2	G	1	20	M	ELEV SUMP
					3			6725	200			4	S	1	20	R; L	ELEV PIT LTG
					5					6725	180	6	G	1	20	R	ELEV RECEPT
LEVEL 1 HALL LIGHTING	L	20	1	S	7	846	1026					8	S	1	20	L; M	GND LVL LTG
LEVEL 2 HALL LIGHTING	L	20	1	S	9			20	760			10	S	1	20	L	STAIRCASE LIGHTING
LEVEL 3 HALL LIGHTING	L	20	1	S	11					780	0	12		1	20	--	SPARE
LEVEL 4 HALL LIGHTING	L	20	1	S	13	780	0					14		1	20	--	SPARE
LEVEL 5 HALL LIGHTING	L	20	1	S	15			780	0			16		1	20	--	SPARE
SPARE	--	20	1		17					0	0	18		1	20	--	SPARE
SPARE	--	20	1		19	0	0					20		1	20	--	SPARE
SPARE	--	20	1		21			0	0			22		1	20	--	SPARE
SPARE	--	20	1		23					0	0	24		1	20	--	SPARE
SPARE	--	20	1		25	0	0					26		1	20	--	SPARE
SPARE	--	20	1		27			0	0			28		1	20	--	SPARE
SPARE	--	20	1		29					0	0	30		1	20	--	SPARE

TOTAL LOAD: 10.55 kVA 8.48 kVA 7.68 kVA

TOTAL AMPS: 89 A 72 A 64 A

LOAD TYPE		CONN.LOAD	DEMAND FACT.	EST. DEMAND	BREAKER TYPE		PANEL TOTALS
LIGHTING -	L	4.68 kVA	125%	5.85 kVA	STANDARD -	S	
ELECT. VEHICLE -	EV	0 kVA	0%	0 kVA	AFCI/GFCI -	AG	
RECEPTACLE -	R	0.36 kVA	100%	0.36 kVA	GFCI -	G	TOTAL CONN. LOAD: 26.72 kVA
MOTOR -	M	21.69 kVA	123%	26.73 kVA	AFCI -	A	TOTAL EST. DEMAND: 32.94 kVA
KITCHEN -	K	0 kVA	0%	0 kVA	HANDLE TIE -	T	TOTAL CONN.: 74 A
OTHER -	O	0 kVA	0%	0 kVA	HANDLE BLOCK -	H	TOTAL EST. DEMAND: 91 A
EXISTING -	E	0 kVA	0%	0 kVA	SHUNT TRIP -	ST	
NEC-220.84-	NC	0 kVA	0%	0 kVA	LOCKOUT -	L	

PANEL R2

SUPPLY FROM: BUILDING VOLTS: 120/208 Wye A.I.C. RATING: 65,000AIC
MOUNTING: SURFACE PHASES: 3 MAINS TYPE: MCB
ENCLOSURE: NEMA 1 WIRES: 4 MAINS RATINGS: 600 A

CIRCUIT DESCRIPTION	LT	TRIP	P	BT		A		B		C			BT	P	TRIP	LT	CIRCUIT DESCRIPTION
UNIT 203	NC	150	2	S	1	15850	15850					2	S	2	150	NC	UNIT 214
					3			15850	15850			4					
UNIT 202	NC	150	2	S	5					15850	15850	6	S	2	150	NC	UNIT 213
					7	15850	15850					8					
UNIT 201	NC	150	2	S	9			17220	17220			10	S	2	150	NC	UNIT 210
					11					17220	17220	12					
UNIT 204	NC	150	2	S	13	15850	15850					14	S	2	150	NC	UNIT 208
					15			15850	15850			16					
UNIT 211	NC	150	2	S	17					15850	15850	18	S	2	150	NC	UNIT 207
					19	15850	15850					20					
UNIT 209	NC	150	2	S	21			17220	15850			22	S	2	150	NC	UNIT 206
					23					17220	15850	24					
UNIT 212	NC	150	2	S	25	15850	15850					26	S	2	150	NC	UNIT 205
					27			15850	15850			28					
UNIT 215	NC	150	2	S	29					15850	--	30		1	--	--	SPACE
					31	15850	--					32		1	--	--	SPACE
SPACE	--	--	1		33			--	--			34		1	--	--	SPACE
SPACE	--	--	1		35					--	--	36		1	--	--	SPACE
SPACE	--	--	1		37	--	--					38		1	--	--	SPACE
SPACE	--	--	1		39			--	--			40		1	--	--	SPACE
SPACE	--	--	1		41					--	0	42	S	1	15	--	LEVITON SUBMETER

TOTAL LOAD: 174.35 kVA 162.61 kVA 146.76 kVA

TOTAL AMPS: 1,473 A 1,375 A 1,223 A

LOAD TYPE		CONN.LOAD	DEMAND FACT.	EST. DEMAND	BREAKER TYPE		PANEL TOTALS
LIGHTING -	L	0 kVA	0%	0 kVA	STANDARD -	S	
ELECT. VEHICLE -	EV	0 kVA	0%	0 kVA	AFCI/GFCI -	AG	
RECEPTACLE -	R	0 kVA	0%	0 kVA	GFCI -	G	TOTAL CONN. LOAD: 483.72 kVA
MOTOR -	M	0 kVA	0%	0 kVA	AFCI -	A	TOTAL EST. DEMAND: 193.49 kVA
KITCHEN -	K	0 kVA	0%	0 kVA	HANDLE TIE -	T	TOTAL CONN.: 1,343 A
OTHER -	O	0 kVA	0%	0 kVA	HANDLE BLOCK -	H	TOTAL EST. DEMAND: 537 A
EXISTING -	E	0 kVA	0%	0 kVA	SHUNT TRIP -	ST	
NEC-220.84-	NC	483.72 kVA	40%	193.49 kVA	LOCKOUT -	L	

PANEL R3

SUPPLY FROM: BUILDING VOLTS: 120/208 Wye A.I.C. RATING: 65,000AIC
MOUNTING: SURFACE PHASES: 3 MAINS TYPE: MCB
ENCLOSURE: NEMA 1 WIRES: 4 MAINS RATINGS: 600 A

CIRCUIT DESCRIPTION	LT	TRIP	P	BT		A		B		C			BT	P	TRIP	LT	CIRCUIT DESCRIPTION
UNIT 303	NC	150	2	S	1	15850	15850					2	S	2	150	NC	UNIT 314
					3			15850	15850			4					
UNIT 302	NC	150	2	S	5					15850	15850	6	S	2	150	NC	UNIT 313
					7	15850	15850					8					
UNIT 301	NC	150	2	S	9			17220	17220			10	S	2	150	NC	UNIT 309
					11					17220	17220	12					
UNIT 304	NC	150	2	S	13	15850	15850					14	S	2	150	NC	UNIT 310
					15			15850	15850			16					
UNIT 307	NC	150	2	S	17					15850	15850	18	S	2	150	NC	UNIT 308
					19	15850	15850					20					
UNIT 311	NC	150	2	S	21			15850	15850			22	S	2	150	NC	UNIT 306
					23					15850	15850	24					
UNIT 312	NC	150	2	S	25	15850	15850					26	S	2	150	NC	UNIT 305
					27			15850	15850			28					
UNIT 315	NC	150	2	S	29					15850	--	30		1	--	--	SPACE
					31	15850	--					32		1	--	--	SPACE
SPACE	--	--	1		33			--	--			34		1	--	--	SPACE
SPACE	--	--	1		35					--	--	36		1	--	--	SPACE
SPACE	--	--	1		37	--	--					38		1	--	--	SPACE
SPACE	--	--	1		39			--	--			40		1	--	--	SPACE
SPACE	--	--	1		41					--	0	42	S	1	15	--	LEVITON SUBMETER

TOTAL LOAD: 174.35 kVA 161.24 kVA 145.39 kVA

TOTAL AMPS: 1,473 A 1,364 A 1,212 A

LOAD TYPE		CONN.LOAD	DEMAND FACT.	EST. DEMAND	BREAKER TYPE		PANEL TOTALS
LIGHTING -	L	0 kVA	0%	0 kVA	STANDARD -	S	
ELECT. VEHICLE -	EV	0 kVA	0%	0 kVA	AFCI/GFCI -	AG	
RECEPTACLE -	R	0 kVA	0%	0 kVA	GFCI -	G	TOTAL CONN. LOAD: 480.98 kVA
MOTOR -	M	0 kVA	0%	0 kVA	AFCI -	A	TOTAL EST. DEMAND: 192.39 kVA
KITCHEN -	K	0 kVA	0%	0 kVA	HANDLE TIE -	T	TOTAL CONN.: 1,335 A
OTHER -	O	0 kVA	0%	0 kVA	HANDLE BLOCK -	H	TOTAL EST. DEMAND: 534 A
EXISTING -	E	0 kVA	0%	0 kVA	SHUNT TRIP -	ST	
NEC-220.84-	NC	480.98 kVA	40%	192.39 kVA	LOCKOUT -	L	

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

OWNER

MAY REIGLER PROPERTIES
2201 Wisconsin Ave NW Suite 200
Washington, DC 20007
www.mayriegler.com

ARCHITECT

KEVIN & ASAKO SPERRY ARCHITECTURE
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LANDSCAPE ARCHITECT

STRUCTURAL ENGINEER

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M.E.P. ENGINEERS

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INTERIOR DESIGNER:

JOHNSON NATHAN STROHE
1600 Wynkoop St., Suite 100
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PROJECT LOCATION

STEAMBOAT BASECAMP
AREA 1B RESIDENTIAL

1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

ELECTRICAL PANEL SCHEDULES

SEAL

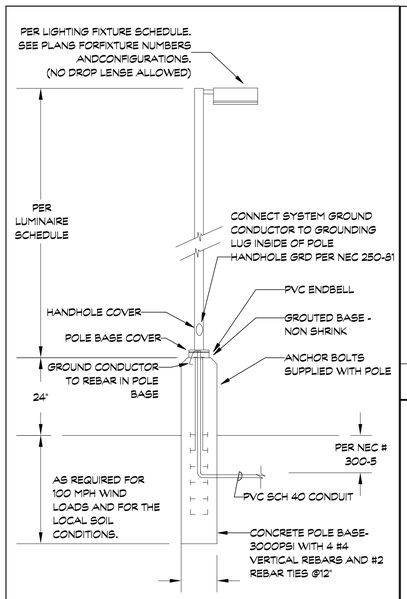
MICHAEL DEAN VAIR
38983
03/13/2026

DATE: 03.13.2026
DRAWN BY: OD
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO:

E0902

3/13/2026 8:51:41 AM

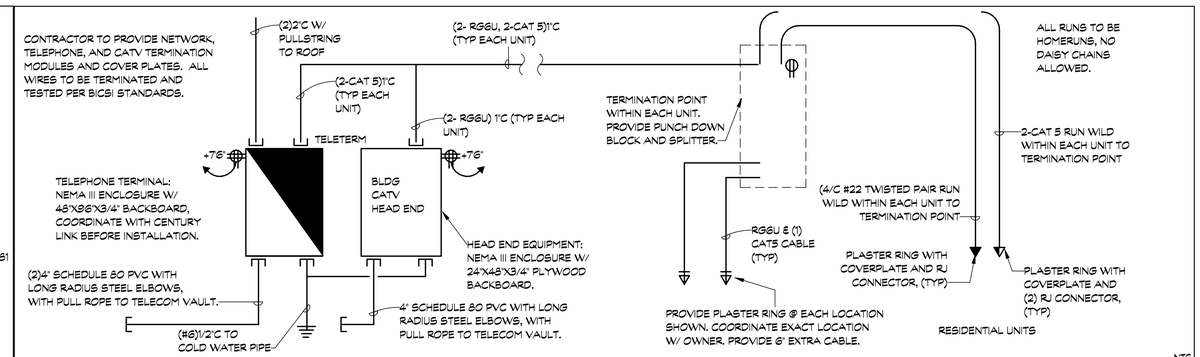


*** (WHERE REQUIRED BY LOCAL CODES, THE CONDUIT STUBBED ABOVE THE CONCRETE BASE SHALL BE GRC TYPE CONDUIT WITH A METAL BUSHING)

*** THE EXACT LOCATIONS OF ALL BASES SHALL BE DETERMINED FROM THE ARCHITECTURAL AND CIVIL DRAWINGS. INCLUDING THE TOP OF THE POLE BASE ELEVATIONS.

NTS

LIGHT POLE DETAIL — 5



NTS

TELEPHONE ONE LINE —

FIRE ALARM WIRING LEGEND

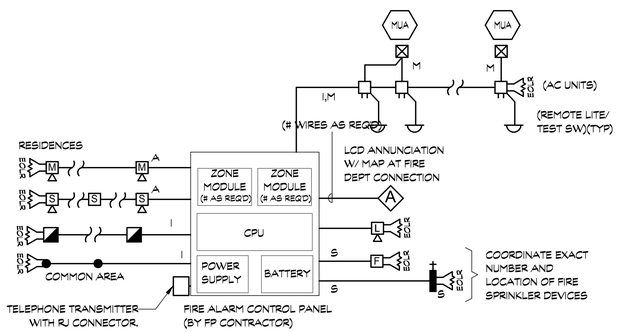
I INITIATING CIRCUIT
A ALARM CIRCUIT
S SUPERVISORY CIRCUIT
M MECHANICAL INTERLOCK CIRCUIT

FIRE ALARM ZONE SCHEDULE

1. SPRINKLER
2. ROOFTOP UNITS
3. TAMPER SWITCH, TROUBLE ALARM
4. PULL STATIONS: FACP
5. SPARE

FIRE ALARM NOTES

1. FIRE ALARM PANEL WITH AUTO DIALER, BATTERIES, ETC BY ELECTRICAL CONTRACTOR. WIRE UP ANCILLARY EQUIPMENT TO THIS PANEL AS REQUIRED BY LOCAL CODE.
2. THERE IS ONE FACP TO SERVE ENTIRE BUILDING. COORDINATE NUMBER AND LOCATION OF FLOW, TAMPER, ETC, W/ LOCAL FIRE DEPARTMENT.
3. COORDINATE ANNUNCIATORS, MAPS AND AREA INDICATORS W/ FIRE DEPARTMENT.
4. RESIDENTIAL DETECTORS ARE LOCAL ONLY AND DO NOT INITIATE SYSTEM ALARM. THEY SHALL BE PROVIDED W/ BATTERY BACKUP. PROVIDE RELAY TO SIGNAL MAIN FACP FOR LOW FREQUENCY (520HZ) SOUNDERS TO ALERT LOCAL ONLY UPON LOCAL DETECTION WHERE REQUIRED BY LOCAL AHJ.



NTS

FIRE ALARM ONE LINE DIAGRAM — 2

EGAUGE GENERAL NOTES

A. NO DAISY CHAIN OPTION; PROVIDE AND COORDINATE LOCATION OF LEVITON DATA ACQUISITION SERVER.

B. UNSHIELDED RJ45 PLUGS ONLY (CAT V OR CAT VI CABLE).

C. LABEL CT WITH CT IDENTIFIER AND CT NAME. DO NOT COVER CT FACTORY APPLIED NAMEPLATE OR DIRECTION INFORMATION.

D. PROVIDE CONNECTION OF LEVITON DATA ACQUISITION SERVER TO OWNER NETWORK FOR RECORDING AND INTERNET SERVICE.

E. CONFIRM WIRE SETS USED PRIOR TO COMPLETING EQUIPMENT ORDER. CONFIRM CONDUCTORS WILL PHYSICALLY FIT WITHIN CTS USED.

F. UTILIZE SPLIT CORE CTS; CTS SHALL BE APPLIED IN THE PROPER DIRECTION/ ORIENTATION.

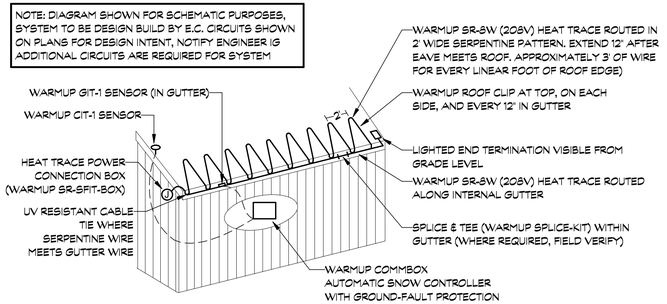
G. VERIFY DISTRIBUTION PANEL HAS ADEQUATE PHYSICAL SPACE FOR CTS TO BE APPLIED SAFELY.

H. VERIFY PHASE CIRCUIT IS CONNECTED AND PROGRAMMED FOR POWER CALCULATIONS USING ASSOCIATED METER VOLTAGE INPUT (L1 = PHASE A, L2 = PHASE).

NTS

UNIT PANEL METER — 1

NOTE: DIAGRAM SHOWN FOR SCHEMATIC PURPOSES, SYSTEM TO BE DESIGN BUILD BY E.C. CIRCUITS SHOWN ON PLANS FOR DESIGN INTENT, NOTIFY ENGINEER IG ADDITIONAL CIRCUITS ARE REQUIRED FOR SYSTEM



NTS

SNOW MELT SYSTEM DIAGRAM — 3

3/13/2026 8:51:41 AM

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

OWNER

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PROJECT LOCATION

STEAMBOAT BASECAMP AREA 1B RESIDENTIAL
1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

ELECTRICAL DETAILS & SCHEDULES

SEAL

COLORADO LICENSED MICHAEL VINCENT 38983 03/13/2026 PROFESSIONAL ENGINEER

DATE: 03.13.2026
DRAWN BY: OD
CHECKED BY: MV
PROJECT NO: 25135

DRAWING NO: **E0903**

DIVISION 26 - ELECTRICAL

SECTION 26 01 00 - GENERAL PROVISIONS

1.01 WORK INCLUDED:

A. The work included by this division of the specifications includes furnishing all labor, materials, equipment, and services, including minor items omitted but necessary to construct and install the complete systems described by the Contract Documents and specified below. "Contractor" refers to the Electrical Contractor. The general conditions of the specifications apply and are included in this part of this section.

1. Power Distribution System
2. Interior and Exterior Lighting System
3. Telephone Raceway System
4. Data Raceway System
5. Fire Alarm System
6. Emergency Lighting System
7. Electric Heating System

1.02 CODES AND REGULATIONS:

A. Comply with state and local codes, and utility company regulations. Final interpretations will be made by the local inspection authority. The Contractor to verify the governance of the following Codes, including any local amendments and supplementary codes such as the Codes of the National Fire Protection Association:

1. Building Code: 2021 International Building Code
2. Plumbing Code: 2021 International Plumbing Code
3. Mechanical Code: 2021 International Mechanical Code
4. Fire Code: 2021 International Fire Code
5. Gas Code: 2021 International Fuel Gas Code
6. Energy Code: 2021 International Energy Conservation Code
7. Electrical Code 2023 National Electrical Code

1.03 EQUIPMENT AND MATERIALS STANDARDS:

A. Equipment and materials shall be new, UL-listed for the use intended, and free from damage or defect. They shall comply with the latest industry standards.

1.04 CONTRACT DRAWINGS:

A. Illustrate the general design and extent of performance required. All dimensions and locations shall be taken from the Architectural drawings. Consult with Architectural plans and locate all ceiling equipment where indicated on reflected ceiling plans.

1.05 SHOP DRAWINGS

A. Submit products data and/or shop drawings as required by the Architect for the following:

1. Switches, dimmers, receptacles and coverplates
2. Switchboards, Panelboards/Loadcenters
3. Disconnect switches
4. Fuses
5. Light fixtures
6. Light poles
7. Fire alarm system and equipment

B. Quality of specific equipment is established by manufacturer's catalog number. Alterations caused by any Substitution shall be accomplished at no additional expense to the Owner

C. Manufacturers not listed may submit for acceptance as an "approved equivalent." Requests for an "equivalent" means "approved equivalent". Four copies of such submittal must be received by the Engineer seven (7) working days prior to bid date.

1.06 WARRANTY:

A. The contractor shall be responsible for the successful operation of electrical systems, equipment, and materials installed under this Contract for a period of one year from the date of final acceptance. Defective equipment or materials shall be repaired or replaced at no expense to the Owner.

1.07 PRODUCT HANDLING AND CLEAN UP:

A. Equipment shall be left clean and undamaged, to the satisfaction of the Owner. The General Conditions take precedence.

1.08 CUTTING AND REPAIRING:

A. The contractor shall be responsible for all cutting, drilling, welding, and repair required for his portion of the work. Coordinate with the Architect. The General Conditions take precedence.

1.09 OPERATING AND MAINTENANCE DATA:

A. Provide the Owner with operating and maintenance instructions(four copies) required for operation of all electrical systems. Bind the written instructions in a notebook. The General Conditions take precedence.

1.10 PERMITS:

A. The contractor shall pay for all fees, taxes, secure permits, licenses, and inspections required for the project.

1.11 TEMPORARY SERVICES:

A. Provide temporary power and lighting as required by the General Contractor, in accordance with OSHA and N.E.C. standards.

1.12 COORDINATION

A. Coordinate outlet device and equipment locations with the Architectural Plans and work of other trades. Locate on horizontal and vertical lines to avoid interference and to provide functional use of all equipment. Verify electrical power characteristics before ordering fixtures, equipment, etc.

B. Mechanical work performed by this contractor will conform to the standards of Division 21-23. Mechanical equipment motors and controls shall be furnished, set in place, and wired according with the following schedule unless otherwise noted or specified. MC = Division 21-23 EC = Division 26-28

Item	Furn By	Set By	Power Wiring	Control Wiring
Combination starters	MC	EC	EC	MC
Equipment motors	MC	MC	EC	--
Motor starters & O.L. relays	MC	EC	EC	MC
Disconnect switches	EC	EC	EC	MC
Thermal overload heaters (1)	EC	EC	EC	--
Variable Speed Drives	MC	EC	EC	MC
Control relays/transformers	MC	MC	EC	MC
Temperature control panels	MC	MC	EC	MC
Temp. Controls conduit/wiring	MC	MC	--	MC
Actuator and solenoid wiring	MC	MC	--	MC
Pushbuttons & pilot lights	MC	MC	--	MC
Room thermostats	MC	MC	--	MC
Thermostats: line voltage	EC	EC	EC	--

C. The general guideline for the division between control(by MC) wiring and power wiring(by EC) is that power wiring carries the current which energizes a motor, control wiring does not. Control wiring may be 120V, which would be the responsibility of the MC. Control motors are wired by the MC.

D. Examine the site and become aware of existing conditions, utilities, and other issues affecting the satisfactory completion of the project.

1.13 DELIVERY, STORAGE, HANDLING:

A. Provide necessary hauling and hoisting equipment. Protect the materials of this Division before, during, and after installation.

1.14 AS-BUILT DRAWINGS:

A. Keep a current set of "as-built" drawings on site. Upon completion of the work, furnish engineer with a reproducible prints showing the "as-built" installation.

1.15 PROJECT/SITE CONDITIONS:

A. Visit the site to become familiar with location and the various conditions affecting the work, including existing utilities.

2.01 ACCESS PANELS:

A. The electrical Contractor shall furnish and General Contractor shall install access panels where required for access to equipment. The electrical Contractor shall include the cost of installation in his bid. Access panels shall be adequately sized, of a type approved by the Architect and shall be fire or smoke-rated as required.

3.01 EXCAVATION AND BACKFILLING:

A. Verify the location of underground utilities before excavation; the contractor is responsible for any damage to underground utilities. Provide excavating and backfilling for electrical work. Backfill in 12" layers, mechanically tamp to 95% proctor standards. Protect according to OSHA standards. The General Conditions take precedence.

B. Provide marker tape 12” above exterior underground service conduits(power, telephone, television).

3.02 START-UP PROCEDURES:

A. Follow manufacturer's recommended procedures in starting up the equipment; damage caused during start-up shall be replaced at no expense to the owner.

3.03 HANGERS AND SUPPORTS:

A. Support conduit and equipment from the structure to prevent sagging, pocketing, swaying, and vibrations, and arranged to provide for expansion and contraction. Brackets, clamps, and hangers shall be steel or copper of a type, acceptable to the Engineer. Chain, perforated iron or wire hangers are not permitted.

B. Conduit on the roof will be supported above the roof on roof pads. The pads shall be approximately 6”Wide by 6” high by the length as required. They shall be made of recycled rubber, rated for 500lbs/ft loading each. The pads will have galvanized steel “C” channel attached to the top, which can accommodate pipe clamps to secure the conduit. This configuration of individual piping pads may be expanded to include two pads supporting a trapeze style support where multiple conduits are racked together. The pads are C-series manufactured by Cooper B-line or approved equivalent.

3.04 SLEEVES AND PLATES

A. Provide sleeves and inserts for all conduit. The contractor shall be responsible for the cost of cutting and patching required for piping where sleeves and inserts were not installed or where incorrectly located. Sheetrock joint compound may be used to seal openings in non-rated walls(insulation to be continuous through walls.

B. Drill holes as required for the installation of hangers required for the mechanical work.

C. Where sleeves are placed in exterior walls below grade, the space between the pipe or conduit and the sleeves shall be made completely water-tight.

D. Seal all piping passing through fire-rated construction with approved material to maintain air-tight, fire-rated integrity, with a U.L. listed assembly compatible with the wall or floor assembly being penetrated.

SECTION 26 05 00 - COMMON WORK RESULTS FOR ELECTRICAL

1.01 GENERAL:

A. Provide complete systems of conductors and raceways using conduit and/or cable assemblies appropriate to the function and location, and specifically approved in chapter three of the N.E.C..

2.01 CONDUIT:

A. The following raceways are approved for use on this project, where approved by the N.E.C.:

1. EMT: Electrical metallic tubing, galvanized
2. GRC: Rigid steel conduit, galvanized
3. PVC: Polyvinyl chloride conduit, schedule 40
4. IMC: Intermediate metal conduit, galvanized

2.02 CABLE ASSEMBLIES:

A. The following cable assemblies may be used in the power distribution system in concealed locations, where approved by the N.E.C.:

1. MC: Metal clad cable
2. NM/NMC: Non-metallic sheathed cable
3. SE/SER: Service entrance cable (From MDC to residences)

2.03 BOXES:

A. Provide galvanized steel outlet and junction boxes, except where otherwise indicated. Boxes shall be a minimum 4" square or octagonal, depth as required. Provide weather-proof type cast boxes with gasket and cast coverplate for exterior outlets or wet locations. Outlet boxes shall be of the proper type and design for the fixture or device to be installed. Through the wall boxes are not permitted. Provide plaster or tile rings for all flush outlets installed where required. Boxes shall be manufactured by Raco, Steel City, National or equivalent.

B. Interior floor boxes shall be non-metallic or cast steel in concrete or slab on grade installations, and shall be rated for the use. Floor boxes above grade shall be non-metallic or stamped steel, rated for the use. Multi-gang boxes shall be used where specified. Coverplates shall be polished brass with 'flip lids' for receptacles and connectors. Provide carpet flanges where appropriate.

2.04 CONDUCTORS:

A. Provide a complete set of power conductors, rated 600 volts, of the quantity, size and type required for the function.

1. Conductors shall be copper, except where specifically noted. Conductors shall be solid for wire sizes No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
2. Aluminum conductors will be accepted only where specifically indicated by the Contract Documents. Aluminum conductors must be terminated according to the manufacturers instructions, including use of proper joint compound, use with aluminum rated lugs, and proper torqueing of the lugs.

2.05 INSULATION:

A. Provide wire with the following minimum insulation standards:

1. Branch circuits, panelboard feeders, service entrance conductors: THWN-2, XHHW(90C). The conductors shall be applied using the 75C rating.
2. Connections to fixture ballasts, and wiring runs in or through fixture wiring channels: Insulations listed in table 402.5 of the N.E.C., except for wiring made with asbestos.
3. Cord connections: Cords listed in table 400.4 of the N.E.C., except for wiring made with asbestos.

2.06 LUGS:

A. Lugs for all equipment will be rated for the use. Lugs will be suitable for copper or aluminum conductors, rated for 75C.

2.07 SWITCHES AND RECEPTACLES:

A. Provide specification grade devices throughout. Switches and duplex receptacles may be commercial grade. Devices shall be manufactured by Hubbell, Leviton, General Electric, Bryant, Slater, Pass & Seymour, Inc., Sierra, or Arrow-Hart.

B. Except where noted, plates shall be plastic, color to match the devices with matching screws for receptacles, switches, telephone, and TV outlets. Provide blank coverplates for unused outlets. Coverplates for multi-gang boxes shall be sized for the box it covers.

C. Devices and their coverplates colors shall be coordinated with Architect and Owner. In mechanical rooms, etc, the coverplates may be galvanized steel

2.08 DIMMERS:

A. Incandescent dimmers shall be the linear slide-type with aluminum fins. Dimmers shall be Lutron Nova series or equivalent.

B. Fluorescent dimmers shall be the linear slide-type with aluminum fins. The dimmers shall be closely coordinated with the ballast type of the specific fixture being controlled and must be field coordinated before ordering. Dimmers shall be Lutron Nova series or equivalent.

C. LED dimmers must be selected by, or specifically approved by, the specific fixture manufacturer or supplier. Slide type dimmers are preferred where available.

D. When switches and dimmers are located side by side, switches shall have identical appearance as dimmers. Dimmers shall in no case have heat fins removed or modified.

E. Dimmers shall be manufactured by Lutron, Hunt, Prescolite, or equivalent

3.01 WIRING:

A. The drawings are schematic in nature; alternative wiring paths, different conduit fill, etc, installed in conformance with the N.E.C. are allowed. Conductors must be derated per code.

B. Branch circuits shall use minimum No. 12 AWG wiring for branch circuits, protected by 20 ampere circuit breakers. Control wiring may be No. 14 minimum. If distance from panel to first outlet is 75 feet or greater (for 120-volt circuits) or 150 feet or greater (for 277-volt circuits), provide No. 10 AWG.

C. Use PVC in earth or in slabs in contact with earth. Outside the building, install a minimum of 30" below finished grade.

D. Where mechanical damage occur, use galvanized rigid steel or intermediate metal conduit.

E. Electric metallic tubing may be used in all applications, except where prohibited by code or otherwise noted.

F. Do not install exposed conduit in areas open to the public. Exposed conduit may be installed at surface-mounted equipment and other locations acceptable to the Architect. Run exposed conduit parallel to, and at right angles with, the building lines.

G. Direct burial wiring shall not be used.

H. Use flexible metallic conduit for connections to motors, fixtures, or other equipment where vibration is encountered. Provide sealtite flexible metallic conduit in wet areas such as kitchens, equipment rooms, on roofs, etc.

I. Provide a ground wire in non-metallic conduit and flexible conduit. Ground wires shall be increased in size where circuit wiring is increased for voltage drop.

J. Circuits fed through AFCI breakers shall have separate neutrals with no cross or ground connections; wiring shall be installed per the breaker manufacturers instructions.

K. Multi-wire branch circuits shall utilize handle ties on breakers, or other grouped disconnecting means per NEC 210.4(B).

3.02 OUTLET BOXES, DEVICES AND FITTINGS:

A. Install receptacle and telephone outlets 18" to center-line above floor in general locations; install at switch height where shown in combination; install 46"to center-line in mechanical equipment rooms.

B. Install receptacles vertically, ground pole down.

C. Install switch outlets 46" to center-line above floor on latch side of door. Verify door swing prior to installation. Use gang boxes for multiple-device installation as required.

D. Install outlets shown on the drawings "back-to-back" with a minimum of 6" lateral separation between them.

SECTION 26 20 00 - SERVICE AND DISTRIBUTION

1.01 SERVICE ENTRANCE:

A. Power will be available from the secondary side of transformer(s) provided by the utility company. This service shall be 120/208 volt, 3 phase, 4 wire, 60 hertz A.C. for normal power and lighting requirements. General arrangement of the service equipment is shown on the drawings. Load balance the entire system to within 15% per phase.

1.02 GROUNDING:

A. Provide a complete grounding system in accordance with Section 250 of the N.E.C.

B. Supplemental electrode to be installed unless resistance of 25 ohms to earth can be documented.

2.01 PANELBOARDS:

A. Provide circuit breaker-type panelboards as detailed on the drawings. Provide separate ground bus. Provide fronts with door and latch with locks keyed alike. Install panels 6'6" above finished floor to top of trim. Where panels are mounted side by side, align tops of panels. Mount a typed directory, identifying each circuit, in a directory frame. Provide typed source label identifying source of power for each panel. Install trims and doors with primer coats in finished areas. Provide one spare 3/4" conduit for each 3 unused poles in flush-mounted panelboards; extend from to an accessible point above a hung ceiling; cap and identify.

B. Breakers shall be full width, thermal magnetic, bolt-on type. Provide multi-pole breakers with common trip and single operating handle; handle ties are acceptable for multi-wire branch circuits.

1. Breakers serving residential projects shall be AFCI breakers per NEC 210.12.
2. Breakers serving restaurant kitchens and bars, or where required by code, shall be GFCI breakers. GFCI receptacles may be used only where the receptacles are not located behind equipment.
3. HACR breakers shall be used for HVAC equipment in accordance with the equipment manufacturer.
4. HID breakers shall be used where HID or fluorescent fixtures are normally panel switched.

C. Surge protective device shall be integral and either type 1 or 2 d with minimum rating of 80kA.

D. Lugs on mains and branch breakers shall be rated for 75C or 60C, copper or aluminum wiring.

E. Panelboards(240VAC) shall be Square D type NQOD or equivalent by I.T.E., G.E., or Cutler Hammer.

2.02 LOADCENTERS:

A. Provide circuit breaker-type loadcenters as detailed on the drawings. Provide separate ground bus. Provide fronts with door and latch with locks keyed alike. Install panels 6'6" above finished floor to top of trim. Where panels are mounted side by side, align tops of panels. Mount a typed directory, identifying each circuit, in a directory frame. Provide typed source label identifying source of power for each panel. Install trims and doors with primer coats in finished areas. Provide one spare 3/4" conduit for each 3 unused poles in flush-mounted loadcenters; extend from to an accessible point above a hung ceiling; cap and identify.

B. Breakers shall be full width, thermal magnetic, plug-in type. Provide multi-pole breakers with common trip and single operating handle; handle ties are acceptable for multi-wire branch circuits.

1. Breakers serving residential projects shall be AFCI breakers per NEC 210.12.
2. Breakers serving restaurant kitchens and bars, or where required by code, shall be GFCI breakers. GFCI receptacles may be used only where the receptacles are not located behind equipment.
3. HACR breakers shall be used for HVAC equipment in accordance with the equipment manufacturer.
4. HID breakers shall be used where HID or fluorescent fixtures are normally panel switched.

C. Surge protective device shall be integral and either type 1 or 2 d with minimum rating of 80kA.

D. Lugs on mains and branch breakers shall be rated for 75C or 60C, copper or aluminum wiring.

E. Load centers shall be Square D type QO or equivalent by I.T.E., G.E., or Cutler Hammer.

2.03 FUSIBLE DISTRIBUTION SWITCHGEAR:

A. Provide free-standing, floor-mounted, fusible type switchboard as shown on the plans.

B. Switchboard shall be 90" high, depth as indicated, constructed so rear sections align, with internal components removable from the front.

C. Buses shall be copper or tin-plated aluminum, braced for short- circuit currents of 100,000 RMS symmetrical amperes. Horizontal bars shall be tape-wrapped and insulated. Maximum temperature rise shall be 55C over 25C ambient. Provide full length and sized horizontal busses, including neutral and ground. Vertical sections shall be fully bussed. All lugs shall be rated for 75C or 60C copper or aluminum wiring.

D. Manufacturers shall be General Electric "AV line" with QMR construction or equivalent by Square D, I.T.E., or Westinghouse.

2.04 FUSIBLE DISTRIBUTION PANELBOARD:

A. Provide wall hung fusible type panelboard as shown on the plans.

B. Rear sections shall constructed with internal components removable from the front.

C. Buses shall be copper or tin-plated aluminum, braced for short- circuit currents of 100,000 RMS symmetrical amperes. Horizontal bars shall be tape-wrapped and insulated. Maximum temperature rise shall be 55C over 25C ambient. Provide full length and sized busses, including neutral and ground. Vertical sections shall be fully bussed. All lugs shall be rated for 75C or 60C copper or aluminum wiring.

D. Manufacturers shall be Square D type QMD construction or equivalent by General Electric, I.T.E., or Westinghouse.

2.05 CURRENT TRANSFORMER CABINETS:

A. Provide current transformer cabinets, including interior lugs and bussing, as required to accommodate the requirements of the utility company. The cabinets shall be U.L. listed, weatherproof as required. All lugs shall be rated for 75C or 60C wiring.

2.06 METER STACK:

A. Provide wall mounted modular meter stacks where shown on the plans. The unit shall be NEMA 3(NEMA 1), made of galvanized steel. The incoming section shall use a fused switch.

B. The busses shall be copper or tin-plated aluminum, braced for short-circuit currents of 65,000AIC symmetrical amperes. Vertical sections shall be fully bussed top to bottom. Provide full length and sized horizontal busses, including neutral and ground. All lugs shall be rated for 75C or 60C copper or aluminum wiring.

C. Meter stack shall accommodate both single phase and three phase, 100Amp and 200Amp meters and breakers. Additional sections shall be capable of simple connection.

D. The meter stack shall be manufactured by American Midwest Power (AMP), Square D, G.E., Westinghouse ITE or equivalent.

2.07 SAFETY SWITCHES:

A. Provide normal duty, enclosed, fusible and non-fusible safety switches as indicated on the plans. All lugs shall be rated for 75C or 60C copper or aluminum wiring. Provide enclosures suitable for the surrounding area and conditions. Label switches for feeder or motor supplied. The switches shall be manufactured by Square D, I.T.E., G.E., Cutler Hammer, or equivalent.

2.08 FUSES:

A. Provide power fuses of the time-delay type unless otherwise indicated. Fuses shall be manufactured by Bussman, Gould Shawmut, or equivalent. Provide one (1) complete set of fuses for fuse-holding devices, sized according to the motor and/or conductor to be protected. Provide a hinged cover cabinet for storage of spare fuses: three spare fuses of each fuse size.

3.01 WIRING FOR EQUIPMENT:

A. Provide branch circuits, feeders, junction boxes, disconnect switches, etc as required for a complete system; make power connections to motors and controls for heating, ventilating, air conditioning, plumbing, owner furnished and fire protection equipment as required.

B. Kitchen equipment. Refer to the Kitchen Equipment Contractor's drawings for final sizing, locations, and rough-in heights. The Electrical Contractor shall provide final circuits and connections to kitchen electrical equipment. Sealtite conduit and fittings shall be used on runs inside refrigerated bases and at dish tables.

C. Provide connections to hood fire suppression system(s). The electrical contractor is responsible for wiring the interlock controls for hood related air handling equipment, including low voltage interlocks, and interlocks within building HVAC equipment where required.

SECTION 26 50 00 - LIGHTING

1.01 RECESSED LED:

A. Recessed LED luminaires shall be pre-wired. Openings shall be neatly made so they are completely concealed after the trim is installed. Luminaires installed in a grid ceiling shall be supported by the framing system, not by ceiling panels. Install metal plaster frames in plaster ceilings. Fixtures shall have thermal protection where required by the N.E.C. and local codes.

1.02 EXTERIOR LIGHTING FIXTURES:

A. Provide weather-proof luminaires for mounting as shown. Provide lamps of size and wattage as indicated on the drawings. Provide underground wiring to exterior lighting as shown on the drawings.

2.01 INTERIOR LIGHTING FIXTURES:

A. Securely support and anchor fixtures and outlet boxes. Where lighting fixtures are installed in a lay-in grid ceiling system, secure fixtures to tees by installing earthquake clips at each corner of the fixture. Provide supports required, including structural members if needed. Provide separate junction boxes and wire to recessed fixtures in flexible conduit with Type AF wire, unless acceptable pre-wired fixtures are used. Conceal openings cut in ceilings for recessed fixtures with fixture trim installed. Coordinate installation of recessed fixtures with ceiling installer.

2.02 EXTERIOR LIGHTING FIXTURES:

A. Exterior lighting fixtures, raceways, equipment, etc. shall be weather-proof and suitable for temperatures down to -20F.

B. Ballast type, lamp wattage, and rated voltage shall be as indicated on the plans. Each ballast shall be of the separate- component type, capable of reliable lamp starting down to -20F, and shall have a minimum power factor of .90.

2.03 LAMPS:

A. Incandescent and LED replacement lamps shall be rated at 130V. H.I.D. and fluorescent lamps shall be as specified on plans with ballasts as specified in the following specifications. Lamp codes listed are ANSI. All lamps shall be Sylvania, General Electric, or approved equivalent.

B. In porcelain keyless fixtures, provide medium base, self ballasted, A-line shape, fluorescent lamps, GE FLE15/2/A21 or equivalent.

2.04 DRIVERS:

A. LED drivers shall be electronic-type, labeled as compliant with radio frequency interference (RFI) requirements of FCC Title 47 Part 15, and comply with NEMA SSL 1 “Electronic Drivers for LED Devices, Arrays, or Systems”. LED drivers shall have a sound rating of “A”, have a minimum efficiency of 85%, and be rated for a THD of less than 20 percent at all input voltages.

B. Dimmable LED drivers shall be 0-10V type. Dimmable LED drivers shall be capable of dimming without LED strobing or flicker across their full dimming range.

C. Ballasts and drivers shall be rated for the ambient temperatures in which they are located. Outdoor fixtures shall be equipped with ballasts or drivers rated for reliable starting to -20 degrees F. Indoor fixtures located in areas with direct sunlight or above normal ambient temperatures shall have ballasts or drivers rated at 65 degrees C minimum.

2.05 POLES AND STANDARDS:

A. Each pole shall contain a hand-hole at the base, with an accessible ground lug capable of accepting up to #4 AWG stranded wire. Pole shall be furnished complete with base, anchor bolts, template, and other hardware necessary for the pole/luminaire and/or pole/base connections.

B. Concrete pole bases shall be provided by the General Contractor. The Electrical Contractor shall be responsible for the coordination of conduit and anchor bolts. An anchor bolt template shall be furnished to the Architect within 30 days of the signing of the Contract. Provide conduit in and out to a point 5' beyond the base.

C. The entire assembly (base, pole, brackets, luminaires) shall be designed to withstand 100 MPH winds.

2.06 INDOOR LIGHTING CONTROLS:

A. Provide combination daylight, timeclock and occupancy, lighting control system as shown on drawings. Include power packs, sensors, controllers, transformers, relays, wiring, etc. as required.

B. Sequence of operations:

1. Daylight control areas(All perimeter offices within 15' of exterior windows):
    a. Lights will be turned on with occupancy detection.
    b. Daylight sensors will dim fixtures to maintain 50 foot candles on working surface of desk.
    c. Lights will be turned off after 10 minutes with no occupancy detection.
2. Occupancy control areas(All enclosed interior areas):
    a. Lights will be turned on with occupancy detection.
    b. Lights will be turned off after 10 minutes with no occupancy detection.
3. Vacancy control areas(All enclosed interior areas):
    a. Lights will be turned manual by occupant.
    b. Lights will be turned off after 10 minutes with no occupancy detection.
4. Timeclock control areas (Areas not required to have vacancy / occupancy control):
    a. Provide astronomical time switch, lighting control system as shown on drawings. Include contactors, time switches, transformers, selector switches, relays, wiring, etc. as required.
    b. Set time clock(s) to operate contacts as scheduled hours by Owner.
    c. Time clock shall be astronomical seven-day programable type. Provide contacts as shown on plans. Time clock(s) shall be readily adjustable with the following features:
    1)Program backup
    2)Program capable of seven individual day types per wek.
    3)Holiday mode
    4)Manual override switch with maximum 2-hour limit.
    5)Manual override switch shall control a maximum of 5,000SF.
5. Egress path control areas (Corridors, Stairs, Vestibules, and similar spaces)
    a. During Timeclock on mode
    1)Ceiling/wall occupancy control, Lights will be turned on with occupancy detection
    2)Lights will be dimmed to 50 percent or less after 10 minutes with no occupancy detection.
    b. During Timeclock off mode
    1)Lights will be turned on with occupancy detection.
    2)Lights will be turned off after 10 minutes with no occupancy detection.

2.07 OUTDOOR LIGHTING CONTROLS:

A. Provide astronomical time switch, lighting control system as shown on drawings. Include contactors, time switches, transformers, selector switches, relays, wiring, etc. as required.

B. Set time clock(s) to operate contacts as scheduled hours by Owner.

C. Time clock shall be astronomical seven-day programable type. Provide contacts as shown on plans. Time clock shall be readily adjustable.

DIVISION 27 - COMMUNICATIONS

SECTION 27 20 00 - COMPUTER SYSTEM

1.01 DESCRIPTION:

A. Provide a complete system of raceways, pull boxes, outlet boxes, and terminals. Raceways shall form a complete path up walls and across inaccessible ceilings. Computer wiring may be run wild above accessible ceiling.

2.01 CONDUIT:

A. Conduit in the building shall be galvanized EMT, with plastic bushings on ends which are not terminated in a box.

2.02 WALL OUTLETS:

A. Wall outlets shall be 4" square pressed steel boxes, with single gang plaster ring. Connectors and coverplates are to be provided by the computer system installer.

B. Provide an alternate price for plaster rings at outlet location, and pullstrings in wall up to accessible ceiling, in lieu of conduit and boxes.

2.03 WIRING:

A. Wiring shall be provided by the computer system installer. Wiring run wild in air plenums shall be teflon coated or similarly rated for the application.

3.01 EXECUTION:

A. Provide pull strings in all conduit.

B. Field verify all computer outlet locations. Final locations and heights shall be as designated by the Architect or Owner's representative.

SECTION 27 30 00 - TELEPHONE SYSTEM

1.01 DESCRIPTION:

A. Provide a complete system of raceways, pull boxes, outlet boxes, and terminals. Raceways shall form a complete path up walls and across inaccessible ceilings. Telephone wiring may be run wild above accessible ceiling.

B. System will include exterior underground conduit routed to a point of connection(usually a pedestal or a power pole) as directed by the telephone company. Exterior conduit shall be sized and installed as directed by the telephone company.

2.01 CONDUIT:

A. Conduit in the building shall be galvanized EMT, with plastic bushings on ends which are not terminated in a box. Exterior underground conduit shall be schedule 40 PVC with solvent joints.

B. Wall outlets shall be 4" square pressed steel boxes, with single gang plaster ring. Connectors and coverplates are to be provided by the telephone system installer.

C. Provide an alternate price for plaster rings at outlet location, and pullstrings in wall up to accessible ceiling, in lieu of conduit and boxes.

2.02 TERMINALS:

A. Telephone terminals shall be constructed of 1/2" thick, fire resistant, interior finish plywood, painted white, sized as shown or required. Provide power and ground connection as required or shown on the plans.

2.03 WIRING:

A. Wiring shall be provided by the telephone system installer. Wiring run in air plenums shall be teflon coated or similarly rated for the application.

3.01 EXECUTION:

A. Provide pull strings in all conduit.

B. Exterior underground conduit shall use long radius, sweep ells. These elbows shall be schedule 80 PVC, or PVC coated GRC conduit.

C. Field verify all telephone outlet locations. Final locations and heights shall be as designated by the Architect or Owner's representative.

DIVISION 28 - ELECTRONIC SAFETY AND SECURITY

SECTION 28 10 00 - SECURITY ALARM SYSTEM

1.01 DESCRIPTION:

A. Provide a complete door security alarm system to audibly and visually annunciate door entry/exit at a master control panel. The door alarms may be individually reset at the master control panel as well as by-passed during certain hours of the day.

2.01 ANNUNCIATOR PANEL:

A. The annunciator panel shall be comprised of (3) 4 door modules each with individual door reset/bypass pushbuttons with associated LED's. The annunciator shall contain a common call placed LED, and alarm tone speaker, momentary action tone silencing push button. The tone silencing circuitry shall automatically reset after the alarm is reset. Each button cap shall be marked with the door identity. The panel shall be constructed of anodized aluminum, supplied with a recessed mounting frame.

2.02 CONTROL UNIT:

A. The control unit shall include a volume control and be configured for pulsating alarm signal. A power supply shall be provided in conjunction with the control unit.

2.03 DOOR CONTACTS:

A. Door contacts shall be normally closed mechanical door contacts.

2.04 WIRING:

A. Wiring shall be low voltage 18 AWG, run per the manufacturers instructions. Wiring may be run wild above accessible ceilings, in raceways in inaccessible locations.

2.05 MANUFACTURER:

A. The equipment shall be manufactured by Auth-Florence, Dukane or approved equivalent.

3.01 EXECUTION:

A. Install the security alarm system in accordance with the manufacturers instructions.

SECTION 28 30 00 - FIRE ALARM SYSTEM

1.01 GENERAL:

A. Provide an electronically-operated, double-supervised, closed-circuit, addressable type fire alarm system consisting of a control unit, manual-pull stations, alarm signals, automatic smoke and heat detectors, sprinkler monitor modules, and control relays as required, located as shown on the drawings and wired in accordance with the manufacturer's instructions to make a complete and workable system as hereinafter described.

B. Add, remove, move or change devices as required to provide a fire alarm system meeting the requirements of the authority having jurisdiction.

C. Provide equipment manufactured by Simplex Time Recorder Company (System 4000), or equivalent by Fire Lite, Notifier, or Silent Knight.

1.02 CODES AND REGULATIONS:

A. Fire Alarm system shall comply with NFPA 72(2013 edition).

2.01 CONTROL PANEL:

A. The control panel shall be modular with solid state, microprocessor based electronics. Panel shall contain an 80-character LCD display to indicate panel status. The panel shall include initiation device circuits, alarm indicating appliance circuit, supervised annunciator circuits, automatic battery charger and standby batteries.

B. The fire alarm control panel shall be Simplex Series 4010 or equivalent.

2.02 ANNUNCIATOR:

A. The annunciator shall be flush mounted and back lit using LED lights for power on, trouble and alarm indication. Remote annunciator shall have an 80-character LCD display. Units may be stacked within one enclosure to accommodate the proper number of zones. The annunciator shall include trouble silence, alarm silence, and system reset switches. The remote annunciator shall be electrically supervised from the control panel.

B. The annunciator shall be Simplex 4602 Series or equivalent.

2.03 MANUAL PULL STATIONS:

A. Manual pull stations shall be double action type made of red lexan with raised white letter; activation shall require two separate and distinct actions. Reset shall require a key common to the control panel.

B. Pull stations shall be Simplex 4099-series or equivalent.

2.04 SMOKE DETECTORS:

A. Smoke Detectors shall be a dual-chamber, photoelectric type detectors, complete with flashing status-indicating LED for visual supervision. When the detector is actuated, the flashing LED will latch on steady and at full brilliance. The detector may be reset by actuating the control panel reset switch.

B. The detectors shall be Simplex 4098 Series or equivalent.

2.05 AUTOMATIC HEAT DETECTORS:

A. Automatic heat detectors shall be combination rate-of-rise and fixed-temperature type. When the fixed temperature portion is activated, the units shall be non-restorable and give visual evidence of the operation.

B. The detectors shall be Simplex 4098 Series or equivalent.

2.06 DUCT SMOKE DETECTORS:

A. Duct smoke detectors shall be solid-state photoelectric type and shall operate on the light scattering principle. Detector construction shall be of the split type, a mounting base with twist-lock detecting head. Removal of the detector head shall interrupt the supervisory circuit. Detector shall be compatible with normally open fire alarm detection devices. Detector shall have an alarm LED visible through a transparent front cover.

B. The detectors shall be Simplex 4098 Series or equivalent.

2.07 ALARM HORN/ STROBE:

A. Alarm horn/ strobe shall be combination devices. They shall be polarized and operated by 24VDC. Each horn shall include separate wire lead for in/out wiring. The strobe shall be a xenon flashtube. The lexan lens shall be pyramidal in shape. The units shall have panel module and wiring installed to operate strobes independently when horns are turned off.

B. The alarms shall be Simplex 4903 Series or equivalent.

2.08 ALARM STROBE:

A. Alarm strobe shall be a xenon flashtube. The lexan lens shall be pyramidal in shape.

B. The alarms shall be Simplex 4904 Series or equivalent.

2.09 DOOR HOLDERS:

A. Door Holders shall be low voltage magnetic type with a minimum holding force of 25 lbs. The holders will be flush mounted wherever possible. Coordinate the exact location, voltage, etc with the door supplier to assure compatibility if the holders are provided by others.

B. The holders shall be Simplex 2088 Series or equivalent.

2.10 REMOTE ALARM INDICATORS:

A. Remote alarm indicators shall be provided for detectors, which are concealed above ceilings or in locked rooms. The indicators shall include test station switch for detectors above ceilings or in areas difficult to access. The remote alarm or remote alarm/test stations shall be Simplex series 2098 or equivalent.

2.11 AUTODIALER:

A. Install and wire an auto dialer unit for communication to a central station over leased phone wires. Field coordinate exact details with the Owner or Owner's representative.

2.12 MONITOR MODULE:

A. Provide an addressable monitor module for supervision of waterflow and tamper switches.

B. Simplex IAM or equivalent.

2.13 WIRING:

A. Provide a complete system of raceways, pull boxes, and outlet boxes. Raceways shall form a complete path up walls and across inaccessible ceilings. Wiring may be run wild above accessible ceilings.

3.01 INITIATION:

A. Upon the operation of any manual pull station or automatic initiating device (smoke detector, sprinkler flow switch, etc.):

1. Sound a continuous, audible and visible alarm in the entire building
2. Provide description of alarm condition via LCD display at FACP and remote annunciator.
3. In addition, provide controls and wiring required for the following functions:
    a. Shut down all air handling units, except exhaust fans.
    b. Send a signal to a remote monitoring station.

3.02 SYSTEM REPRESENTATIVE:

A. All system representative shall be an authorized engineered systems distributor located within a 50 mile radius of the project.

3.03 REMOTE INDICATING LIGHTS:

A. Remote indicating lights shall be provided for existing detectors obscured from view in locked rooms.

3.04 COMPONENT PROTECTION:

A. Provide a wire guard over any detector or horn in an area susceptible to physical damage.

3.05 FLOW AND TAMPER SWITCHES:

A. Wire all flow switches and tamper switches installed by the fire sprinkler contractor to monitor modules. Determine exact quantity and location before bidding and include the costs of any wiring and conduit.

3.06 HORN LIGHT:

A. Wire the exterior fire protection horn light where shown on the plans or as required by the Fire Department

3/13/2026 8:51:42 AM

APPROVAL STAMPS:

No.	Date	Description

SUBMISSIONS & REVISIONS

OWNER

MAY REIGLER PROPERTIES
2201 Wisconsin Ave NW Suite 200
Washington, DC 20007
www.mayriegler.com

ARCHITECT

KASA

KEVIN & ASAKO SPERRY ARCHITECTURE
3318 N. Columbus Street
Arlington, VA 22207
T.312.636.3248 / 312.636.4252
www.kasa-arch.com

GENERAL CONTRACTOR

DENEUVE CONSTRUCTION
2344 Spruce Street
Boulder, CO 80302
T: 303.444.6633

CIVIL ENGINEER

LANDMARK ENGINEERING
141 9th Street, PO Box 774943
Steamboat Springs, CO 80477
T: 970.871.9494

LANDSCAPE ARCHITECT

STRUCTURAL ENGINEER

KL&A ENGINEERS & BUILDERS
1717 Washington Ave.
Golden, CO 80401
T: 303.384.9910

M.E.P. ENGINEERS

BOULDER ENGINEERING
1717 15th Street
Boulder, CO 80302
T: 303.444.6038

INTERIOR DESIGNER:

JOHNSON NATHAN STROHE
1600 Wynkoop St., Suite 100
Denver, CO 80202
T: 303.892.7062

PROJECT LOCATION

STEAMBOAT BASECAMP
AREA 1B RESIDENTIAL

1901 CURVE PLAZA
STEAMBOAT SPRINGS, CO 80487

DRAWING TITLE

ELECTRICAL SPECIFICATIONS

SEAL

COLORADO LICENSED PROFESSIONAL ENGINEER
MICHAEL DEAN VAIR
38983
03/13/2026

DATE: 03.13.2026

DRAWN BY: OD

CHECKED BY: MV

PROJECT NO: 25135

DRAWING NO:

E1000