

GENERAL PLUMBING NOTES	
1.	PROVIDE COMPLETE AND OPERATING SYSTEMS AS SPECIFIED AND INDICATED ON DRAWINGS. "PROVIDE" SHALL MEAN "FURNISH AND INSTALL" WHEN USED HEREIN.
2.	THESE DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC TO SHOW WORK SCOPE, NOT SHOP DRAWINGS SHOWING ALL CONDITIONS OF EXISTING WORK. CONTRACTOR MAY MODIFY TO SUIT CONDITIONS.
3.	WORK SHALL COMPLY WITH ALL LOCAL CODES AND ORDINANCES INCLUDING: HAWAII COUNTY PLUMBING CODE, 2018 UNIFORM PLUMBING CODE, HAWAII COUNTY BUILDING CODE, AND ALL OTHER APPLICABLE STANDARDS AND CODES.
4.	CONTRACTOR SHALL ARRANGE AND PAY FOR ALL PERMITS AND FEES.
5.	WORK SHALL BE COORDINATED WITH THE WORK OF OTHER TRADES. WORK SHALL BE GUARANTEED AGAINST DEFECTIVE WORKMANSHIP OR MATERIALS FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE OF THE PROJECT. WARRANTY WORK SHALL BE COMPLETED AT NO EXTRA CHARGE TO THE OWNERS. FURNISH MANUFACTURER'S PRODUCT WARRANTY CERTIFICATES IN A BINDER.
6.	MATERIALS AND EQUIPMENT SHALL BE NEW AND GUARANTEED FOR ONE YEAR FROM THE DATE OF ACCEPTANCE. MATERIALS AND EQUIPMENT SHALL BE AS SCHEDULED OR EQUAL, MEETING THE REQUIREMENTS OF THE SPECIFICATION. MATERIALS AND EQUIPMENT SHALL BE SUBMITTED TO THE ARCHITECT FOR APPROVAL PRIOR TO ORDER RELEASE.
7.	RECORD DRAWINGS, OPERATION MANUALS AND MAINTENANCE MANUALS SHALL BE SUBMITTED AS REQUIRED BY ARCHITECT UPON COMPLETION.
8.	DRAWINGS SHALL NOT BE SCALED.
9.	PENETRATIONS OF FIRE RATED WALLS OR FLOORS BY PIPE SHALL BE SEALED BY A FIRESTOPPING SYSTEM UL LISTED FOR THE APPLICATION. INSTALL PENETRATION SEAL MATERIALS IN ACCORDANCE WITH PRINTED INSTRUCTIONS OF THE UL FIRE RESISTANCE DIRECTORY AND MANUFACTURERS INSTRUCTIONS. FIRESTOPPING SYSTEM SHALL BE EQUAL TO 3M FIRE BARRIER. FIRESTOPPING MATERIAL SHALL BE CAULK OR PUTTY TYPE.
10.	EQUIPMENT SHALL BE SECURED AND INSTALLED PER MANUFACTURERS RECOMMENDATIONS AND APPLICABLE SECTIONS OF THE UNIFORM BUILDING CODE AND UNIFORM MECHANICAL CODE.
11.	EQUIPMENT SHALL BE IDENTIFIED WITH BAKELITE NAMEPLATES. COLOR CODING OF NAMEPLATES AND IDENTIFICATION INFORMATION SHALL BE COORDINATED WITH THE OWNER.
12.	ELECTRICAL CHARACTERISTICS OF EQUIPMENT SHALL BE VERIFIED WITH ELECTRICAL DRAWINGS PRIOR TO ORDER RELEASE. ADDITIONAL ELECTRICAL WORK RESULTING FROM EQUIPMENT SUBSTITUTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
13.	THE OWNER SHALL BE NOTIFIED IN WRITING OF SHUTDOWN OF UTILITIES REQUIRED BY THE EXECUTION OF THIS CONTRACT.
14.	INSPECTIONS: ARRANGE FOR INSPECTIONS BY ADMINISTRATIVE AUTHORITY.
15.	ELECTRICAL: CONFORM TO THE REQUIREMENTS OF ANSI, AND NATIONAL ELECTRICAL CODE. OBTAIN EQUIPMENT MANUFACTURER'S CONTROL WIRING DIAGRAMS FOR THE EQUIPMENT FURNISHED.
16.	FIELD INVESTIGATIONS: VISIT THE WORK-SITE AND BECOME FULLY AWARE OF ALL EXISTING CONDITIONS. INVESTIGATE THE CONTRACT DOCUMENTS AND MAKE PROPER PROVISIONS TO AVOID INTERFERENCES OR CONSTRUCTION DELAYS. EXISTING UTILITY LOCATIONS SHALL BE FIELD-VERIFIED. UNFORESEEN OBSTRUCTIONS OR LACK OF INVERT DEPTH SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.
17.	REQUIREMENTS: PERFORM WORK USING PERSONNEL SKILLED IN THE TRADE INVOLVED. PROVIDE COMPETENT SUPERVISION. FURNISH NEW EQUIPMENT, MATERIALS AND ACCESSORIES BEARING THE MANUFACTURER'S IDENTIFICATION AND CONFORMING TO THE RECOGNIZED COMMERCIAL STANDARDS. COORDINATE WITH OTHER TRADES FOR PIPE SLEEVES AND INSTALLATION OF EQUIPMENT SUPPORTS
18.	EQUIPMENT INSTALLATION: INSTALL EQUIPMENT IN THE SPACE ALLOTTED WITH SUFFICIENT CLEARANCE FOR PROPER OPERATION AND MAINTENANCE AND WITH SUFFICIENT HEAD CLEARANCE ACCORDING TO THE BUILDING CODE. WHERE EQUIPMENT DIFFERS IN ARRANGEMENT OR CONNECTIONS FROM THOSE SHOWN, PROVIDE ALL REQUIRED CHANGES IN PIPING, SUPPORTS AND APPURTENANCES. INSTALLED WORK SHALL BE PROTECTED DURING CONSTRUCTION AND CLEANED FOR FINAL INSPECTION. TOUCH-UP PAINT ALL RAW EDGES OF METAL EXPOSED TO WEATHER.
19.	PIPING: INSPECT FOR AND REMOVE ALL INTERIOR OBSTRUCTIONS AND BURRS BEFORE INSTALLATION. SLOPE DRAINS AT ¼" PER FOOT. PERFORATED STRAP AND WIRES ARE NOT ACCEPTABLE HANGERS.
20.	WATER LINES: PROTECT AGAINST ELECTROLYSIS WITH TWO LAYERS OF ANTI-CORROSION TAPE WHERE THEY CONTACT FERROUS METAL.
21.	PRESSURIZE ROUGH-IN WATER LINES TO 125 PSI FOR 3 HOURS AND INSPECT FOR LEAKS BEFORE BEING CLOSED UP. RETEST LINES AT 75 PSI AFTER FIXTURES ARE CONNECTED. TEST WASTE LINES TO HOLD 10' WATER HEAD FOR 15 MINUTES WITHOUT LOSS.
22.	FLUSH OUT AND DISINFECT WATER LINES WITH 50 PPM CHLORINE FOR 6 HOURS OR 100PPM FOR TWO UNLESS WAIVED BY THE OWNER IN WRITING. FLUSH PIPES UNTIL RESIDUAL IS DOWN TO 0.3 PPM.
23.	TEST ALL GAS LINES IN ACCORDANCE WITH METHODS DESCRIBED IN THE PLUMBING CODE. REPAIR ALL LEAKS AND REPEAT THE TEST UNTIL ALL LINES ARE LEAK FREE.
24.	INSTALL INSULATION SYSTEM IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS USING TRADESMAN SKILLED IN THIS TRADE AND APPROVED BY THE INSULATION MANUFACTURER. PROVIDE INSULATION PRODUCTS WITH A COMPOSITE (INSULATION, JACKET AND ADHESIVE) FIRE AND SMOKE HAZARD RATING AS TESTED UNDER ASTM E84, NFPA 255 AND UL 723, NOT EXCEEDING A FLAME SPREAD OF 25 AND SMOKE DEVELOPED OF 50.
25.	EXPANSION CLEARANCES: AT POINTS WHERE PIPE WILL MOVE DURING EXPANSION AND CONTRACTION (EXPANSION JOINTS, Z-BENDS, EXPANSION LOOPS AND ELLS), CLEARANCES BETWEEN THE PIPE AND ENCASED INSULATION SHALL BE SIZED TO PERMIT FULL PIPE MOVEMENT WITHOUT CRACKING OR DAMAGING INSULATION AND JACKET.

PLUMBING MATERIAL SPECIFICATIONS	
1.	PIPING: <div><div>A. WASTE AND VENT LINES: SCHEDULE 40 DRAIN, WASTE AND VENT PIPE SHALL BE ROCKY MOUNTAIN COLBY PIPE COMPANY PVC DWV CELLULAR CORE MANUFACTURED TO ASTM F-891 AND CERTIFIED BY A RECOGNIZED LISTING AGENCY, OR, ROCKY MOUNTAIN COLBY PIPE COMPANY ABS DWV CELLULAR CORE MANUFACTURED TO ASTM F-628 AND CERTIFIED BY A RECOGNIZED LISTING AGENCY. PVC JOINTS SHALL BE MADE-UP WITH WELD-ON PVC 705 MEDIUM BODIED, FAST SETTING, PVC CEMENT AND SUITABLE PRIMER. ABS JOINTS SHALL BE MADE-UP WITH WELD-ON ABS 733 MEDIUM BODIED, FAST SETTING, ABS CEMENT.</div><div>B. WATER LINES ABOVE GRADE: COPPER TYPE L, HARD TEMPER, WITH WROUGHT COPPER OR CAST BRONZE FITTINGS MADE UP WITH 95-5 SOLDER. ALL COPPER PIPING IN WALLS AND THRU FLOORS SHALL BE PROVIDED WITH IPS WELD-ON PIPE INSULATORS AT ALL WOOD CONTACT WITH THE COPPER PIPING. ALL WATER PIPING PENETRATIONS THROUGH FIRE RATED WALLS SHALL BE CAULKED WITH 3M FIRE RATED CAULKING. ALT: PEX PIPING WITH COPPER STUB-OUTS.</div><div>C. WATER LINES BELOW GRADE: COPPER TYPE K, SOFT TEMPER, WITH SILVER-SOLDER BRAZED JOINTS. ALT: CPVC PIPING WITH SOLVENT CEMENT JOINING METHOD.</div><div>D. GAS PIPING: SCHEDULE 40 GALVANIZED STEEL WITH GALVNIZED MALLEABLE IRON SCREWED FITTINGS. JOINTS MADE UP WITH APPROVED LUBRICANT FOR LPG SERVICE OR TEFLON TAPE. GAS CONNECTOR, REFRIGERANT QUALITY SOFT TEMPER COPPER TUBING, 3/8" O.D. UNDERGROUND GAS PIPING SHALL BE BLACK IRON WITH X-TRU COAT CORROSION PROTECTION.</div></div>
2.	PIPING INSULATION: INSULATION EXTERIOR SHALL BE CLEANABLE, GREASE-RESISTANT, NON-FLAKING AND NON-PEELING. PIPE INSULATION SHALL CONFORM WITH THE REFERENCED PUBLICATIONS AND THE SPECIFIED TEMPERATURE RANGES AND DENSITIES IN POUNDS PER CUBIC FOOT (PCF). INSULATION FOR FITTINGS AND FLANGES SHALL BE PRE-MOLDED, PRE-CUT OR JOB FABRICATED INSULATION OF THE SAME THICKNESS AND CONDUCTIVITY AS USED ON ADJACENT PIPING. <div><div>A. INTERIOR COLD WATER PIPING: INSULATE WITH ¾" RUBATEX OR APPROVED EQUAL.</div><div>B. INTERIOR HOT WATER PIPING: INSULATE WITH 1" FIBERGLASS INSULATION WITH INSULATION JACKET.</div><div>C. EXTERIOR HOT WATER PIPING: INSULATE WITH 1" PITTSBURGH CORNING FOAMGLAS INSULATION, WRAPPED WITH PIT WRAP AND MADE LIQUID TIGHT. FINISHED MADE LIQUID TIGHT JACKET, 0.2 MILS THICK, OR APPROVED EQUAL.</div></div>
3.	WALL CLEANOUT (WCO): ZURN CO-2411 PVC CLEANOUT BODY AND PLUG OR APPROVED EQUAL.
4.	CLEANOUT (FCO) ZURN CO-2400 PVC CLEANOUT BODY WITH THREADED CAST IRON PLUG, ADJUSTABLE SCORIATED NICKEL BRONZE TOP.
5.	BALL VALVES: BRASS BODY, NIBCO S-FP-600 OR APPROVED EQUAL.
6.	CHECK VALVES: HORIZONTAL SWING, 200 PSI CWP. NIBCO S-413-Y-LF OR APPROVED EQUAL.
7.	PRESSURE REDUCING VALVE: WATTS U5-Z3 OR APPROVED EQUAL.
8.	UNIONS: BRONZE BODY, 200 PSIG. PROVIDE DIELECTRIC UNIONS BETWEEN ALL FEROUS AND NON-FERROUS METALS IN ALL PIPING SYSTEMS. PROVIDE UNIONS AT POINTS OF CONNECTION TO ALL EQUIPMENT.
9.	PIPE SUPPORTS: SUPERSTRUT C-727-P, ADJUSTABLE RING HANGER, PLASTIC COATED.
10.	GAS COCKS: APPROVED FOR LPG SERVICE, BRONZE BODY, TEE OR LEVER HANDLE, 25 PSIG. MCDONALD 10552-10558.
11.	EXTERIOR HOSE BIBB: AQUOR V2+ WALL HYDRANT.

PLUMBING SYMBOLS	
	SANITARY LINE
	PLUMBING VENT
	COLD WATER LINE
	HOT WATER LINE
	HOT WATER RETURN LINE
	GAS LINE
	DEMOLITION
	PIPE RISER TO UPPER LEVEL CAPPED LINE
	PIPE ELBOW UP/DOWN
	PIPE BRANCH TOP CONNECTION
	PIPE BRANCH BOTTOM CONNECTION
	PIPE UNION
	BALL VALVE
	CHECK VALVE
	GATE VALVE
	PRESSURE REDUCING VALVE
	EMERGENCY GAS SHUT-OFF VALVE
	EQUIPMENT TAG

PLUMBING ABBREVIATIONS			
(E)	EXISTING	HZ	HERTZ
(D)	DEMOLITION	KW	KILOWATT
(N)	NEW	LAV	LAVATORY
(R)	RELOCATED	MANUF	MANUFACTURER
ABV	ABOVE	MAX	MAXIMUM
ADJ	ADJUSTABLE	MECH	MECHANICAL
AFF	ABOVE FINISHED FLOOR	MIN	MINIMUM
AFG	ABOVE FINISHED GRADE	MTD	MOUNTED
APPROX	APPROXIMATELY	NOM	NOMINAL
ARCH	ARCHITECT	NPSH	NET POSITIVE SUCTION HEAD
BLDG	BUILDING	PH	PHASE
BHP	BRAKE HORSEPOWER	PLMB	PLUMBING
BTU	BRITISH THERMAL UNITS	PRV	PRESSURE REDUCING VALVE
BV	BALL VALVE	QTY	QUANTITY
CAP	CAPACITY	RD	ROOF DRAIN
CLG	CEILING	REQ'D	REQUIRED
CONC	CONCRETE	RPPB	REDUCING PRESSURE BACKFLOW PREVENTOR
CONN	CONNECT		
CONT'N	CONTINUATION	RM	ROOM
CW	COLD WATER	S	SANITARY
DF	DRINKING FOUNTAIN	SD	SHOWER DRAIN
DN	DOWN	SHWR	SHOWER
EA	EACH	SS	SERVICE SINK
ELEC	ELECTRICAL	T&P	TEMPERATURE AND PRESSURE
EXIST	EXISTING	TDH	TOTAL DISCHARGE HEAD
FD	FLOOR DRAIN	TEMP	TEMPERATURE
FCO	FLOOR CLEANOUT	TP	TRAP PRIMER
FLR	FLOOR	TYP	TYPICAL
GAL	GALLONS	UR	URINAL
GPM	GALLONS PER MINUTE	V	VENT
HB	HOSE BIBB	VB	VACUUM BREAKER
FLEX	FLEXIBLE	VTR	VENT TO ROOF
FLR	FLOOR	W/	WITH
FT	FEET	WC	WATER CLOSET
HTR	HEATER	WCO	WALL CLEANOUT

WATER HEATER SCHEDULE						
UNIT NO.	LOCATION	TYPE	SUPPLY TEMP	FLOW @ 60 DEG TEMP RISE	ELECTRICAL	REMARKS
	GARAGE	SOLAR/ELECTRIC	140°	31.0 GPH	208V/1PH/60HZ 4500W	SUNEARTH MODEL SU120U-1 ELECTRIC STORAGE TANK FOR SOLAR WATER HEATING

WATER HEATER ENERGY FACTOR = 2.00

PUMP SCHEDULE							
UNIT NO.	DESCRIPTION	TYPE	FLOW (GPM)	TDH (FT)	MOTOR DATA		REMARKS
					HP	V/HZ/PH	
<div>CP 1</div>	HOT WATER CIRCULATOR	IN-LINE CIRCULATOR	2.0	10	1/25	115V/1PH/60HZ	GRUNFOS MODEL UP 15-42F OR APPROVED EQUAL
1. PROVIDE ACCESSORIES AND REQUIRED COMPONENTS FOR COMPLETE AND OPERABLE SYSTEM. PROVIDE WITH GRUNFOS UP 599388 PROGRAMMABLE TIMER AND AQUASTAT 595444, ¾" CLIP-ON							

REVIEWED BLDG DIV. - MECHANICAL	
ntanaka	01/03/2023
REVIEWER	DATE

ALL PLUMBING MATERIALS AND INSTALLATIONS SHALL COMPLY WITH THE LATEST AMENDED VERSION OF HAWAII COUNTY CODES CHAPTER 5, ADMINISTRATIVE CODE, AND CHAPTER 5F PLUMBING CODE

NIMR Y. TAMIMI

LICENSED PROFESSIONAL ENGINEER

Exp: 04/30/24

No: 7996-M

HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

SIGNATURE

GENERAL CONTRACTOR:

REVISIONS NO.	DESCRIPTION	DATE

**SINGLE FAMILY RESIDENCE  
LOT 22 NOHEA, PHASE 1**  
**TMK: 3-6-8-043-022**  
NOHEA AT MAUNA LANI, LLC  
16130 VENTURA BLVD, STE 510  
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CRAIG MONAGHAN, ARCHITECT  
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monaghan.craig@gmail.com

DATE : 05/13/22

SCALE : As indicated

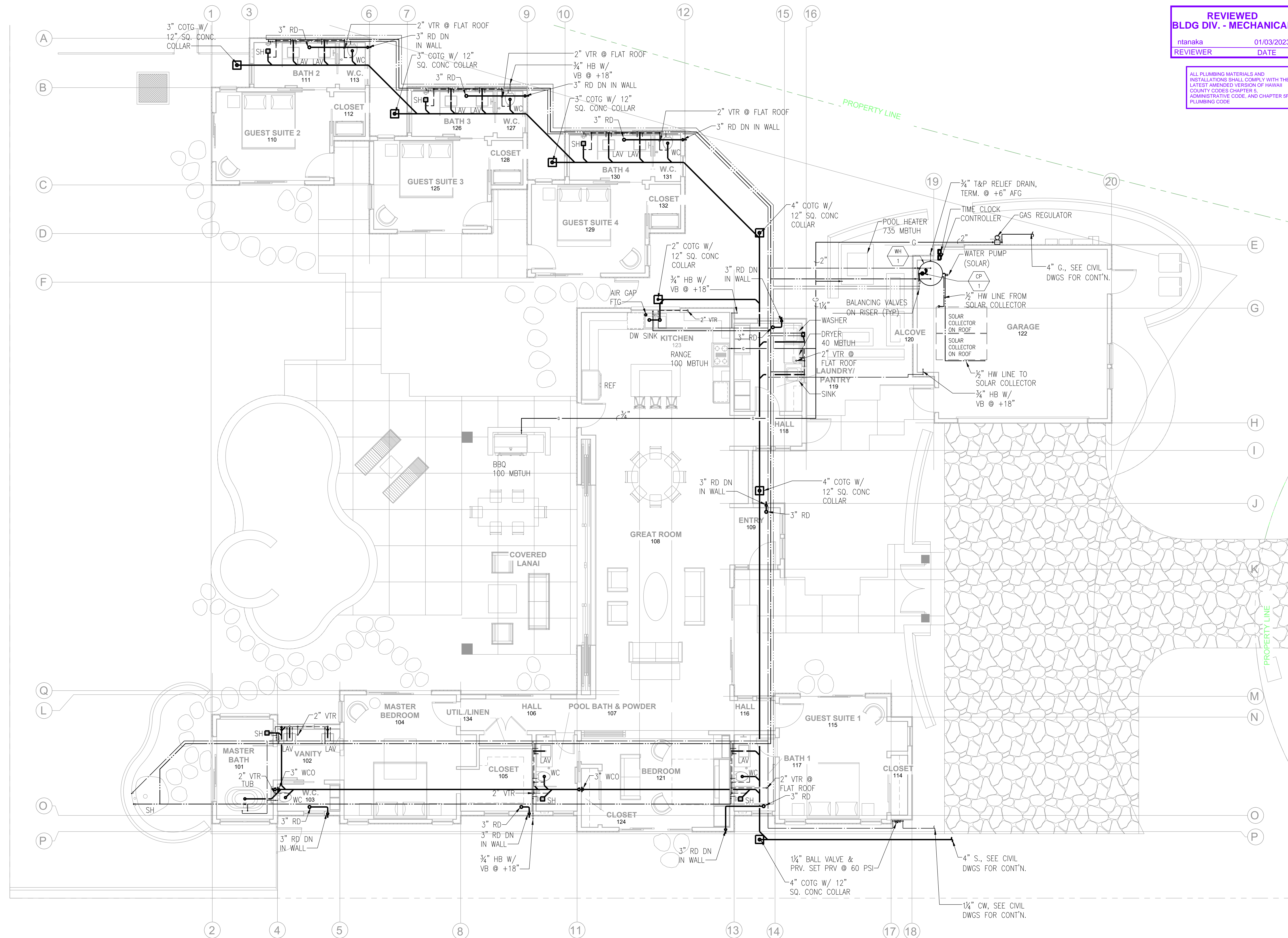
SHEET TITLE:

**PLUMBING  
SYMBOLS,  
ABBREVIATION,  
& SPECS**

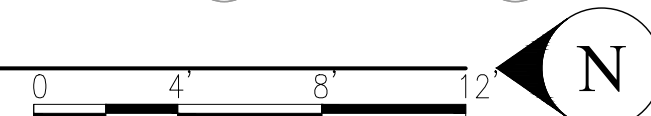
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P1.0





**PLUMBING PLAN**  
SCALE: 3/16" = 1'-0"



**REVIEWED**  
**BLDG DIV. - MECHANICAL**  
ntanaka 01/03/2023  
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**SINGLE FAMILY RESIDENCE**  
**LOT 22 NOHEA, PHASE 1**  
TMK: 3-6-8-043-022  
NOHEA AT MAUNA LANI, LLC  
16130 VENTURA BLVD. STE 510  
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CRAIG MONAGHAN, ARCHITECT  
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monaghan.craig@gmail.com

DATE 05/13/22

SCALE As indicated

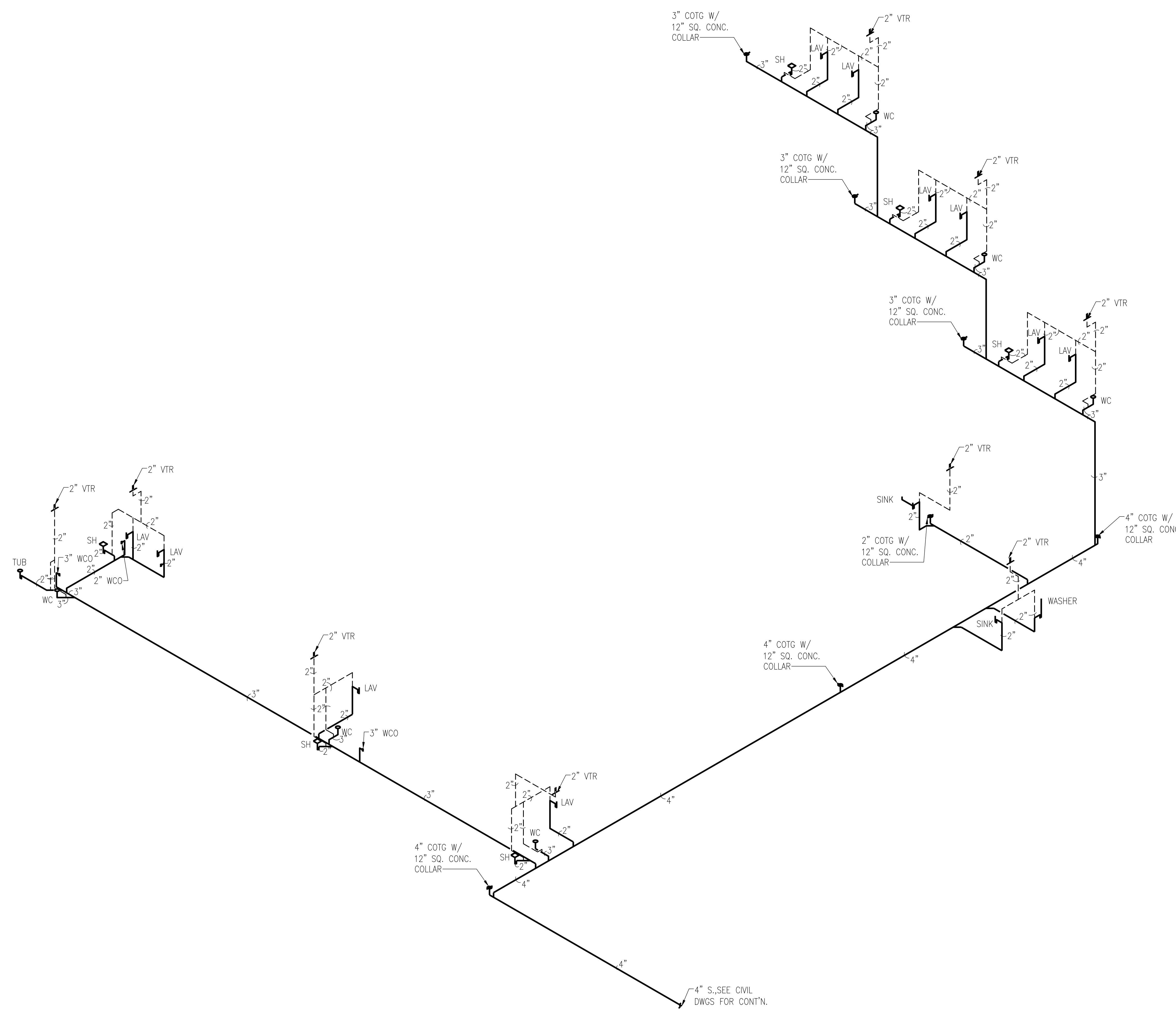
SHEET TITLE:

**LOT 22**  
**PLUMBING**  
**PLAN**

SHEET NUMBER:

**P2.0**





REVIEWED  
BLDG DIV. - MECHANICAL  
ntanaka 01/03/2023  
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PLUMBING CODE

NIIMR Y. TAMIMI

LICENSED  
PROFESSIONAL  
ENGINEER  
Exp. 04/30/24  
No. 7996-M

HAWAII, U.S.A.

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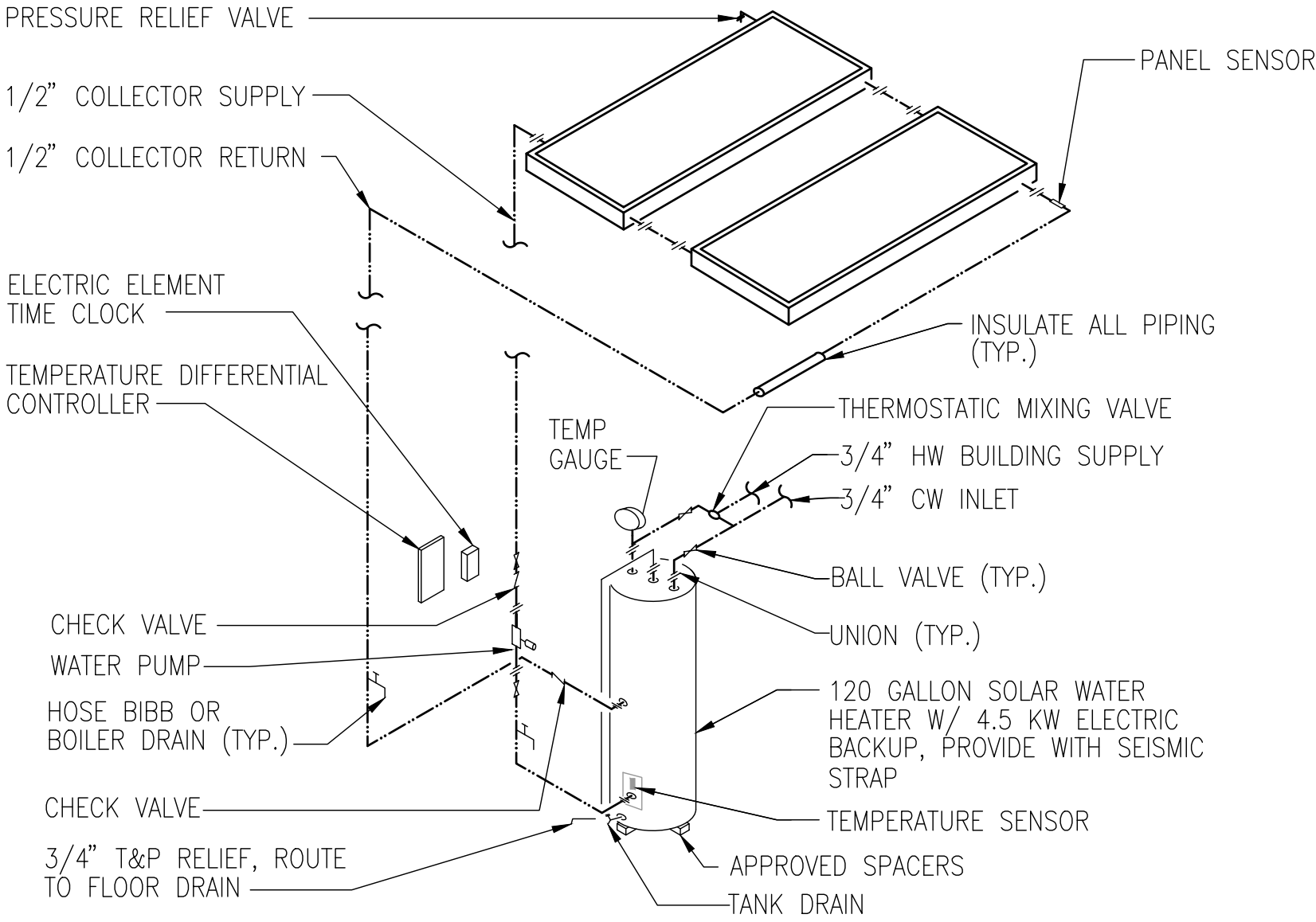
DATE  
05/13/22

SCALE  
As indicated

SHEET  
TITLE:  
SANITARY  
PIPING  
DIAGRAM

SHEET  
NUMBER:  
P3.0

PER UPC SECTION 608.5 AS AMENDED,  
RELIEF VALVES SHALL BE PROVIDED  
WITH A DRAIN



NOTE: DIAGRAM SHOWN IS FOR GENERAL SYSTEM ARRANGEMENT.  
CONTRACTOR SHALL MODIFY TO SUIT ACTUAL CONDITIONS,  
SEE WATER DIAGRAM FOR PIPE ROUTING.

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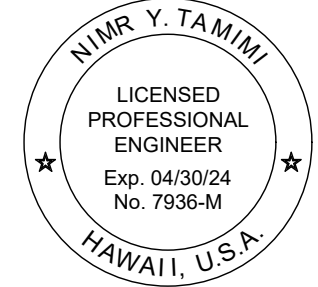
**SOLAR WATER SYSTEM SCHEMATIC**

NO SCALE

**REVIEWED  
BLDG DIV. - MECHANICAL**

ntanaka 01/03/2023  
REVIEWER DATE

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DATE: 05/13/22

SCALE: As indicated

SHEET TITLE:  
**WATER PIPING  
DIAGRAM**

SHEET NUMBER:

**P4.0**

1

**WATER PIPING DIAGRAM**

NO SCALE

