PLUMBING GENERAL NOTES

1. PLANS ARE SCHEMATIC IN NATURE. LAYOUT IS BASED ON BEST AVAILABLE INFORMATION. PRIOR TO SUBMITTING BID CONTRACTOR SHALL VISIT JOB SITE AND BECOME FULLY ACQUAINTED WITH EXISTING CONDITIONS OF PROJECT. NOTIFY ARCHITECT, ENGINEER AND/OR CONSTRUCTION MANAGER OF CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.

2. COORDINATE INSTALLATION OF PLUMBING SYSTEMS WITH OTHER TRADES TO ENSURE NEAT AND ORDERLY INSTALLATION.

3. FIELD MEASURE AND VERIFY FINAL PIPING LOCATIONS PRIOR TO FABRICATION AND MAKE ADJUSTMENTS AS REQUIRED. MAINTAIN MANUFACTURER'S RECOMMENDATIONS REGARDING SERVICE CLEARANCE AND PROPER AIRFLOW CLEARANCE AROUND EQUIPMENT.

4. COORDINATE ROUTING OF PLUMBING LINES, DRAINS AND FIXTURES WITH DUCTWORK, LIGHTS, ARCHITECTURAL CEILING AND STRUCTURAL ELEMENTS. PIPING SHALL RISE AND DROP, JOG OR OFFSET AS REQUIRED TO AVOID CONFLICTS. DUCTWORK SHALL TAKE PRECEDENCE OVER ALL PIPING. PROVIDE ADDITIONAL MANUAL AIR VENTS FOR PIPING WHERE REQUIRED FOR PIPING TO OFFSET.

5. NO PIPING SHALL PENETRATE STRUCTURAL MEMBERS.

6. WALL CLEANOUT TO BE AT LOCATIONS REQUIRED BY CODE AND ACCESS DOORS SHALL MATCH ADJACENT SURFACES AND VERIFIED IN FIELD.

7. MAINTAIN MINIMUM *10'-0"* CLEARANCE BETWEEN OUTSIDE AIR INTAKES AND EXHAUST/VENT TERMINATIONS.

8. DO NOT ROUTE PIPING ABOVE ELECTRICAL PANELS OR ELECTRICAL GEAR. COORDINATE ROUTING WITH OTHER TRADES.

9. ALL WALL CAPS SHALL BE PAINTED TO MATCH WALL. ROOF CAPS AND VENTS SHALL BE PAINTED, COLOR SELECTED BY CUSTOMER.

10. PROVIDE WCO AT BASE OF ALL WASTE STACKS INCLUDING LAVATORIES AND SINKS.

11. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS FOR ROUTING AND CONNECTION OF SANITARY SEWER / WATER / GAS SERVICES. COORDINATE WITH LOCAL UTILITIES AND AUTHORITIES WHERE AND AS REQUIRED.

12. REFER TO PLUMBING SCHEMATICS FOR PIPING RUN-OUT SIZES TO INDIVIDUAL PLUMBING FIXTURES.

13. CONTRACTOR SHALL VERIFY ALL CONNECTION REQUIREMENTS TO EQUIPMENT PROVIDED BY OTHERS WITH ACTUAL EQUIPMENT PROVIDED ON SITE.

14. REF. IPC CHAPTER 6, SEC. 601- SEC. 613 FOR WATER SUPPLY AND DISTRIBUTION CODES.

15. THE WATER SERVICE PIPE SHALL BE SIZED TO SUPPLY WATER TO THE STRUCTURE IN THE QUANTITIES AND AT THE PRESSURES REQUIRED IN IPC CODE. THE WATER SERVICE PIPE SHALL BE NOT LESS THAN 3/4" IN DIA. (IPC 603.1)

16. WHERE THE WATER SERVICE PIPING IS LOCATED IN THE SAME TRENCH W/ THE BUILDING SEWER, SUCH SEWER SHALL BE CONSTRUCTED OF MATERIALS LISTED IN *TABLE 702.2*. WHERE SEWER PIPING IS NOT CONSTRUCTED OF MATERIALS LISTED IN *TABLE 702.2*, THE WATER SERVICE PIPE AND THE BUILDING SEWER PIPE SHALL BE HORIZONTALLY SEPARATED BY NOT LESS THAN 5 FT., HORIZONTALLY FROM THE SEWER PIPE CENTERLINE ON BOTH SIDES OF SUCH CROSSING. THE SLEEVE SHALL BE OF PIPE MATERIALS LISTED IN *TABLES 605.3, 702.2 OR 702.3*. THE REQUIRED SEPARATION DISTANCE SHALL NOT APPLY WHERE THE BOTTOM OF THE WATER SERVICE PIPE, LOCATED WITHIN 5 FT. OF THE SEWER, IS NOT LESS THAN 12 INCHES ABOVE THE HIGHEST POINT OF THE TOP OF THE BUILDING (RE. IPC 603.2)

17. REF. *TABLE 604.3*; WATER DISTRIBUTION SYSTEM DESIGN CRITERIA REQ. CAPACITY AT FIXTURE SUPPLY PIPE OUTLETS

18. WATER HAMMER ARRESTORS REQUIRED @ WASHER VALVES

19. PROVIDE ANTI-SCALD VALVES ON SHOWER OR TUB/SHOWER COMBINATION VALVES

20. PROVIDE DIELECTRIC COUPLINGS AT ALL CONNECTIONS BETWEEN DISSIMILAR METALS

21. FREEZE PROTECT PIPES PER IPC 2603.5

VENTING:

REF. IPC: CHAPTER 9, SEC. 901 THROUGH 918.

1. HORIZONTAL VENT PIPING SHALL BE GRADED TO DRIP BACK TO THE SOIL OR WASTE PIPE BY GRAVITY.

2. PROVIDE SANITARY SEWER SYSTEM CLEANOUTS AS REQUIRED BY LOCAL CODES. ALL CLEANOUTS REQUIRED ARE NOT NECESSARILY SHOWN ON PLANS. CLEANOUTS TO BE AT A MINIMUM OF 100 FEET ON CENTER, AND AT THE BASE OF EACH WASTE STACK.

3. SOIL AND WASTE STACKS IN BUILDINGS HAVING MORE THAN 10 BRANCH INTERVALS SHALL BE PROVIDED W/ A RELIEF VENT AT EACH TENTH INTERVAL INSTALLED, BEGINNING W/ THE TOP FLOOR. (IPC: 908.1)

4. THE ONLY VERTICAL PIPE OF COMBINATION WASTE AND VENT SYSTEM SHALL BE THE CONNECTION BETWEEN FIXTURE DRAIN AND THE HORIZONTAL COMBINATION WASTE AND VENT PIPE. THE VERTICAL DISTANCE SHALL NOT EXCEED 6 FEET. (IPC: 915.2)

5. THE SLOPE OF A HORIZONTAL COMBINATION WASTE AND VENT PIPE SHALL NOT EXCEED 1/2 UNIT VERTICAL IN 12 UNITS HORIZONTAL (4% SLOPE) AND SHALL BE NOT LESS THAN THAT INDICATED IN *TABLE 704.1*. (IPC: 915.2.1)

6. THE SIZE OF A COMBINATION WASTE AND VENT PIPE SHALL BE NOT LESS THAN THAT INDICATED IN TABLE 915.2.2. THE HORIZONTAL LENGTH OF A COMBINATION WASTE AND VENT SYSTEM SHALL BE UNLIMITED (IPC: 915.2.2)

7. THE COMBINATION WASTE AND VENT SYSTEM SHALL BE PROVIDED WITH A DRY VENT CONNECTED AT ANY POINT WITHIN THE SYSTEM OR THE SYSTEM SHALL CONNECT TO A HORIZONTAL DRAIN THAT SERVES VENTED FIXTURES ON THE SAME FLOOR. COMBINATION WASTE AND VENT SYSTEMS CONNECTING TO BUILDING DRAINS RECEIVING ONLY THE DISCHARGE FROM ONE OR MORE STACKS SHALL BE PROVIDED WITH A DRY VENT. THE VENT CONNECTION TO THE COMBINATION WASTE AND VENT PIPE SHALL EXTEND VERTICALLY TO A POINT NOT LESS THAN 6 INCH ABOVE THE FLOOD LEVEL RIM OF THE HIGHEST FIXTURE BEING VENTED BEFORE OFFSETTING HORIZONTALLY (IPC: 915.2.3)

8. THE FIXTURE BRANCH OR FIXTURE DRAIN SHALL CONNECT TO THE COMBINATION WASTE AND VENT WITHIN A DISTANCE SPECIFIED IN *TABLE 909.1*. THE COMBINATION WASTE AND VENT PIPE SHALL BE CONSIDERED TO BE THE VENT FOR THE FIXTURE. (IPC: 915.2.5)

9. A DRAINAGE STACK SHALL SERVE AS A SINGLE-STACK VENT SYSTEM WHERE SIZED AND INSTALLED IN ACCORDANCE WITH *SEC. 917.2 - 917.5*. THE DRAINAGE STACK AND BRACH PIPING SHALL BE THE VENTS FOR THE DRAINAGE SYSTEM. THE DRAINAGE STACK SHALL HAVE A STACK VENT. (IPC 917.1)

10. STACK SIZE REF. IPC: TABLE 917.2

- FLOOR DRAINS:

1. SHALL CONFORM TO ASME A112.3.3, ASME A112.6.3 OR CSA B79. (IPC: 413.1)

2. FLOOR DRAINS SHALL HAVE REMOVABLE STRAINERS. THE FLOOR DRAIN SHALL BE CONSTRUCTED SO THAT THE DRAIN IS CAPABLE OF BEING CLEANED. READY ACCESS SHALL BE PROVIDED TO FLOOR DRAINS. (IPC: 413.2)

3. FLOOR DRAINS SHALL HAVE A DRAIN OUTLET NOT LESS THAN *2 INCHES* IN DIA. (IPC: 413.3)

4. ALL PATCHING SHALL BE STRUCTURAL AND AESTHETICALLY EQUAL TO THE SURFACE SURROUNDING THE AREA PATCHED. NO STRUCTURAL MEMBER SHALL BE CUT OR NOTCHED.

5. ALL PIPING SHALL BE CLEANED AND FLUSHED PRIOR TO SERVICE. DOMESTIC WATER PIPING SHALL BE STERILIZED.

6. ALL PIPING SHALL BE PROPERLY SUPPORTED, WITH PROVISIONS FOR HORIZONTAL BRACING AND EXPANSION/ CONTRACTION AS REQUIRED. FOR INSULATED PIPING, AT EACH SUPPORT LOCATION, PROVIDE SHEET METAL SHIELDS FOR PIPING 2" AND SMALLER (EXCEPT WHERE REQUIRED TO BE CLAMPED) AND CALCIUM SILICATE THERMAL INSERTS WITH SHEET METAL SHIELDS FOR PIPING LARGER THAN 2" AND FOR ALL SIZES OF INSULTED PIPING REQUIRED TO BE CLAMPED. PROVIDE SUPPLEMENTAL STEEL SUPPORTS AS REQUIRED FOR INSTALLATION OF ALL PLUMBING MATERIALS, EQUIPMENT, AND APPURTENANCES.

PLAN NOTES:

1. ENGINEER'S FIELD VERIFICATION SITE VISIT WAS A LIMITED, NON-DESTRUCTIVE, VISUAL OBSERVATION. SOME AREAS WERE NOT AVAILABLE TO BE VERIFIED, DUE TO LOCATION OF STRUCTURAL ELEMENTS, WALLS, LIGHTS, EQUIPMENT AND PEOPLE.

2. UNDERGROUND WASTE LINES SHALL BE FIELD VERIFIED FOR LOCATION, DEPTH, AND DIRECTION OF FLOW PRIOR TO COMMENCING WORK, MAKING CONNECTIONS OR DEMO. EXISTING LOCATIONS ARE ASSUMED BASED UPON LIMITED SITE OBSERVATION.

GENERAL CONTRACTOR SHALL NOTIFY PROJECT MANAGER ARCHITECT AND ENGINEER IMMEDIATELY IF MAJOR DISCREPANCIES ARE FOUND IN FIELD.

DOMESTIC PLUMBING

-WATER PIPING MATERIALS:

1 ALL BALL, GATE, GLOBE AND PLUG VALVES ON HOT AND COLD WATER DOMESTIC PLUMBING SHALL MEET NSF-61 FOR LEAD CONTENT ON ALL POTABLE HOT AND COLD APPLICATIONS.

2 THE STATED MATERIALS ARE PREFERRED, HOWEVER, CONTRACTOR MAY SUBMIT ON ALTERNATE MATERIALS AS ALLOWED IN CH. 6 OF THE LOCALLY ADOPTED EDITION OF THE IPC/UPC AND PER LOCAL CODES.

SANITARY WASTE AND VENT MATERIALS:

1. ALL MATERIALS ALLOWED FOR USE IN CHAPTER 7 OF THE UPC AND IPC CODES ARE ALLOWED.

WATER PIPING:

1 WATER SERVICE: PROVIDE METER, VALVES, BYPASS, AND REDUCED PRESSURE BACKFLOW PREVENTER AS REQUIRED, INSTALLED IN ACCORDANCE WITH THE LOCAL WATER AUTHORITY'S REGULATIONS.

2 RUN PIPING AS DIRECT AS POSSIBLE TO REQUIRED CONNECTIONS, AND SLOPE TO DRAIN VALVES AT LOW POINTS FOR COMPLETE DRAINING OF SYSTEM. LOCATE DRAIN VALVES AT ACCESSIBLE POINTS WITHIN THE SYSTEM.

SANITARY WASTE PIPING:

1 ALL SANITARY WASTE PIPING SHALL BE SLOPED AT A MIN. OF 1/4" PER FOOT.

INSULATION:

1. FURNISH AND INSTALL INSULATION FOR ALL PIPING SYSTEMS. ALL COLD PIPING AND EQUIPMENT INSULATION SHALL INCLUDE A VAPOR BARRIER.

2. INSULATE ALL EXPOSED WATER SUPPLY AND WASTE ON ALL LAVATORIES AND SINKS AS APPLICABLE.

3. INSULATE ALL HOT WATER RETURN LINES THROUGHOUT STRUCTURE

4. PROTECT ALL INSULATED PIPE AT POINT OF SUPPORT WITH A 360-DEGREE INSULATION INSERT.

BASIC MATERIALS AND METHODS:

1. FOR ALL REMOVED EQUIPMENT CONTRACTOR SHALL REMOVE ALL SUPPORTS, HANGERS, CONTROLS, PIPING, UTILITIES, ETC. AND DISPOSE OF PROPERLY

2. FOR ANY EQUIPMENT AND DEVICES BEING REMOVED TO BE REUSED, CONTRACTOR SHALL CLEAN AND REFINISH AS NEEDED TO MAKE LIKE NEW AND INSPECT FOR PROPER FUNCTION AND THAT THEY MEET CURRENT CODES.

3. THE MECHANICAL DRAWINGS INDICATE THE GENERAL DESIGN AND ARRANGEMENT OF PIPING, EQUIPMENT, SYSTEMS, ETC. INFORMATION SHOWN IS DIAGRAMMATIC IN CHARACTER AND DOES NOT INDICATE EVERY REQUIRED OFFSET, FITTING, ETC. TRADES TO COORDINATE AS REQ.

4. THE LOCATIONS OF THE ITEMS SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS THAT ARE NOT DEFINITELY FIXED BY DIMENSIONS ARE APPROXIMATE ONLY. THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS MUST BE DETERMINED BY THE PROJECT SITE CONDITIONS AND SHALL HAVE THE APPROVAL OF THE ENGINEER BEFORE BEING INSTALLED. DO NOT SCALE THE DRAWINGS, UNLESS NOTED OTHERWISE).

5. CONTRACTOR SHALL FIELD VERIFY LOCATIONS AND SIZES OF ALL EXISTING EQUIPMENT, DUCTWORK, PIPING, ELECTRICAL CONDUIT, STRUCTURAL MEMBERS, ETC., PRIOR TO BID. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY AND ALL DISCREPANCIES BETWEEN FIELD CONDITIONS AND CONTRACT DRAWINGS.

6. USE ADJUSTABLE PIPE HANGERS ON SUSPENDED PIPE. PROVIDE HANGERS TO SUPPORT THE SYSTEMS WITHOUT SAGGING. INCLUDE HANGERS AT EACH OFFSET OR CHANGE IN DIRECTION AND AT ENDS OF BRANCHES OVER FIVE FEET IN LENGTH. (AS APPLICABLE)

7. WHERE HORIZONTAL DUCTS AND PIPES PASS THROUGH WALLS AND VERTICAL DUCTS AND PIPES PASS THROUGH FLOORS OR ROOFS, SEAL OFF VOID BETWEEN OPENING AND DUCT OR PIPE AND SLEEVE, WITH AN APPROVED NON-COMBUSTIBLE MATERIAL.

8. PROVIDE DIELECTRIC UNIONS FOR CONNECTIONS BETWEEN DISSIMILAR METALS.

9. TEST PIPING AND DUCTWORK SYSTEMS PRIOR TO CONCEALMENT.

10. PROVIDE VIBRATION ISOLATION FOR ALL MECHANICAL EQUIPMENT TO PREVENT TRANSMISSION OF VIBRATION TO BUILDING STRUCTURE.

11. ALL VALVES SHALL BE INSTALLED SO THAT VALVE REMAINS IN SERVICE WHEN EQUIPMENT OR PIPING ON EQUIPMENT SIDE OF VALVE IS REMOVED.

12. ALL BALANCING VALVES AND BUTTERFLY VALVES SHALL BE PROVIDED WITH POSITION INDICATORS AND MAXIMUM ADJUSTABLE STOPS (MEMORY STOPS).

13. ALL VALVES (EXCEPT CONTROL VALVES) AND STRAINERS SHALL BE FULL SIZE OF PIPE BEFORE REDUCING SIZE TO MAKE CONNECTIONS TO EQUIPMENT AND CONTROLS.

14. INSTALL ALL PIPING WITHOUT FORCING OR SPRINGING.

15. ALL VALVES SHALL BE ADJUSTED FOR SMOOTH AND EASY OPERATION.

16. ALL CLEANOUTS SHALL BE FULL SIZE OF PIPE FOR PIPE SIZES 6 INCHES AND SMALLER AND SHALL BE 6 INCHES FOR PIPE SIZES LARGER THAN 6 INCHES.

17. PROVIDE ACCESS PANELS FOR INSTALLATION IN WALLS AND CEILINGS, WHERE REQUIRED, TO SERVICE DAMPERS, VALVES, SMOKE DETECTORS, AND OTHER CONCEALED MECHANICAL EQUIPMENT. ACCESS PANELS SHALL BE TURNED OVER TO GENERAL CONTRACTOR FOR INSTALLATION.

18. ALL OPENINGS IN FIREWALLS DUE TO DUCTWORK, PIPING, CONDUIT, ETC., SHALL BE FIRE STOPPED WITH A PRODUCT SIMILAR TO 3M OR APPROVED EQUAL. (AS APPLICABLE)

19. ALL AIR CONDITIONING CONDENSATE DRAIN LINES FROM EACH AIR HANDLING UNIT OR ROOFTOP UNIT SHALL BE PIPED FULL SIZE OF THE UNIT DRAIN OUTLET, WITH A P-TRAP, AND PIPED TO NEAREST DRAIN. PROVIDE A CONDENSATE PUMP IF REQUIRED. FIELD VERIFY.

20. ALL DUCTWORK AND PIPING SHALL CLEAR DOORS AND WINDOWS.

21. TUBS/SHOWERS SHALL BE PROVIDED WITH INDIVIDUAL CONTROL VALVES OF THE PRESSURE BALANCE OR THE THERMOSTATIC MIXING TYPE., THE WATER TEMPERATURE SHALL BE SET TO A MAXIMUM OF 120°F.

22. EACH HOSE BIB SHALL BE EQUIPPED WITH A BACK FLOW PREVENTION DEVICE ANTI-FREEZE/FROST PROOF HOSE BIB.

23. INSULATE WASTE LINES FOR SOUND CONTROL AND FREEZE PROTECTIONS

MECHANICAL IDENTIFICATION:

1. IDENTIFY PIPING, DUCTS AND VALVES ABOVE CEILINGS, AS WELL AS EXPOSED TO VIEW EXCEPT IN FINISHED AREAS. CONFORM TO ASME A13.1. (AS APPLICABLE)

2. CONTRACTOR TO LABEL APPLIANCES IN AN APPROVED MANNER THAT UNIQUELY IDENTIFIES THE APPLIANCE AND THE AREA IT SERVES. WHEN APPLIANCE IS REMOTELY LOCATED FROM SPACE IT SERVES.

IPC 607- HOT WATER SUPPLY SYSTEM:

IPC 607.1 WHERE REQUIRED:
- IN RESIDENTIAL OCCUPANCIES, HOT WATER SHALL BE SUPPLIED TO PLUMBING FIXTURES AND EQUIPMENT UTILIZED FOR BATHING, WASHING, CULINARY PURPOSES, CLEANSING, LAUNDRY OR BUILDING MAINTENANCE.

607.1.1 TEMPERATURE LIMITING MEANS:
- A THERMOSTAT CONTROL FOR A WATER HEATER SHALL NOT SERVE AS THE TEMPERATURE LIMITING MEANS FOR THE PURPOSES OF COMPLYING WITH THE REQUIREMENTS OF THIS CODE FOR MAXIMUM ALLOWABLE HOT OR TEMPERED WATER DELIVERY TEMPERATURE AT FIXTURES.

607.1.2 TEMPERED WATER TEMPERATURE CONTROL:
- TEMPERED WATER SHALL BE SUPPLIED THROUGH A WATER TEMPERATURE LIMITING DEVICE THAT CONFORMS TO ASSE 1070/ASME A112.1070/CSA B125.70 AND SHALL LIMIT THE TEMPERED WATER TO NOT GREATER THAN 110°F (43°C). THIS PROVISION SHALL NOT SUPERSEDE THE REQUIREMENT FOR PROTECTIVE SHOWER VALVES IN ACCORDANCE WITH *SECTION 410.3*.

607.3 THERMAL EXPANSION CONTROL:
- WHERE A STORAGE WATER HEATER IS SUPPLIED WITH COLD WATER THAT PASSES THROUGH A CHECK VALVE, PRESSURE REDUCING VALVE OR BACKFLOW PREVENTER, A THERMAL EXPANSION CONTROL DEVICE SHALL BE CONNECTED TO THE WATER HEATER COLD WATER SUPPLY PIPE AT A POINT THAT IS DOWNSTREAM OF ALL CHECK VALVES, PRESSURE REDUCING VALVES AND BACKFLOW PREVENTERS. THERMAL EXPANSION TANKS SHALL BE SIZED IN ACCORDANCE WITH THE TANK MANUFACTURER'S INSTRUCTIONS AND SHALL BE SIZED SUCH THAT THE PRESSURE IN THE WATER DISTRIBUTION SYSTEM SHALL NOT EXCEED THAT REQUIRED BY *SECTION 604.8*.

607.4 FLOW OF HOT WATER TO FIXTURES:
- FIXTURE FITTINGS, FAUCETS AND DIVERTERS SHALL BE INSTALLED AND ADJUSTED SO THAT THE FLOW OF HOT WATER FROM THE FITTINGS CORRESPONDS TO THE LEFT-HAND SIDE OF THE FIXTURE FITTING. EXCEPTION: SHOWER AND TUB/SHOWER MIXING VALVES CONFORMING TO ASSE 1016/ASME A112.1016/CSA B125.16 OR ASME A112.18.1/CSA B125.1, WHERE THE FLOW OF HOT WATER CORRESPONDS TO THE MARKINGS ON THE DEVICE.

SECTION 409 DISHWASHING MACHINES

409.2 WATER CONNECTION:
-THE WATER SUPPLY TO A DISHWASHING MACHINE SHALL BE PROTECTED AGAINST BACKFLOW BY AN AIR GAP THAT IS INTEGRAL WITH THE MACHINE

409.4 RESIDENTIAL DISHWASHER WASTE CONNECTION
- THE WASTE CONNECTION OF A RESIDENTIAL DISHWASHER SHALL CONNECT DIRECTLY TO A WYE BRANCH FITTING ON THE TAILPIECE OF THE KITCHEN SINK DIRECTLY TO THE DISHWASHER CONNECTION OF A FOOD-WASTE DISPOSER, OR THROUGH AN AIR BREAK TO A STANDPIPE. THE WASTE LINE OF A RESIDENTIAL DISHWASHER SHALL RISE AND BE SECURELY FASTENED TO THE UNDERSIDE OF THE SINK RIM OR COUNTER TOP.

SECTION 413 FLOOR AND TRENCH DRAINS

413.1 APPROVAL:
- FLOOR DRAINS SHALL CONFORM TO ASME A112.3.1, ASME A112.6.3 OR CSA B79. TRENCH DRAINS SHALL COMPLY WITH ASME A112.6.3.

413.2 FLOOR DRAINS:
- FLOOR DRAINS SHALL HAVE REMOVABLE STRAINERS. THE FLOOR DRAIN SHALL BE CONSTRUCTED SO THAT THE DRAIN IS CAPABLE OF BEING CLEANED. ACCESS SHALL BE PROVIDED TO THE DRAIN INLET. READY ACCESS SHALL BE PROVIDED TO FLOOR DRAINS. EXCEPTION: FLOOR DRAINS SERVING REFRIGERATED DISPLAY CASES SHALL BE PROVIDED WITH ACCESS.

413.3 SIZE OF FLOOR DRAINS:
- FLOOR DRAINS SHALL HAVE A DRAIN OUTLET NOT LESS THAN 2 INCHES IN DIAMETER.

LOCATION MAP

ABBREVIATIONS

ACT - ACOUSTIC CEILING TILE	ILO - IN LIEU OF
AD - AREA DRAIN	INSUL - INSULATED OR INSULATION
AFF - ABOVE FINISHED FLOOR	INT - INTERIOR
ALUM - ALUMINUM	LO - LOW
ANOD - ANODIZED	MAX - MAXIMUM
BSMT - BASEMENT	MO - MASONRY OPENING
BYND - BEYOND	MECH - MECHANICAL
BOT - BOTTOM	MEMBR - MEMBRANE
CIP - CAST IN PLACE	MIN - MINIMUM
CHNL - CHANNEL	MRGWB - MOISTURE-RESISTANT GYPSUM WALL BOARD
CJ - CONTROL JOINT	MTL - METAL
CLG - CEILING	NIC - NOT IN CONTACT
CLR - CLEAR	NO - NUMBER
CMU - CONCRETE MASONRY UNIT	NOM - NOMINAL
COL - COLUMN	OC - ON CENTER
COMPR - COMPRESSIBLE	OH - OVERHANG OR OPPOSITE HAND
CONC - CONCRETE	OPP - OPPOSITE OR OPPOSITE HAND
CONT - CONTINUOUS	OZ - OUNCE
CPT - CARPET	PCC - PRE CAST CONCRETE
CT - CERAMIC TILE	PLUMB - PLUMBING
CTYD - COURTYARD	PLYD - PLYWOOD
DBL - DOUBLE	PT - PRESSURE TREATED
DEMO - DEMOLISH OR DEMOLITION	PNT - PAINT OR PAINTED
DIA - DIAMETER	PVC - POLYVINYL CHLORIDE
DIM - DIMENSION	RBR - RUBBER
DIMS- DIMENSIONS	RCP - REFLECTED CEILING PLAN
DN - DOWN	RD - ROOF DRAIN
DR - DOOR	REQD - REQUIRED
DWG - DRAWING	RM - ROOM
EA - EACH	SIM - SIMILAR
EJ - EXPANSION JOINT	SPEC - SPECIFIED OR SPECIFICATION
EL - ELEVATION	SPK - SPRINKLER OR SPEAKER
ELEC - ELECTRICAL	SSTL - STAINLESS STEEL
ELEV - ELEVATOR OR ELEVATION	STC - SOUND TRANSMISSION COEFFICIENT
EP - ELECTRIC PANEL	STL - STEEL
EPDM - ETHYLENE PROPYLENE DIENE M-CLASS (ROOFING)	STRUCT - STRUCTURE OR STRUCTURAL
EQ - EQUAL	T&G - TONGUE AND GROOVE
EXIST - EXISTING	TELE - TELEPHONE
EXP JT - EXPANSION JOINT	TME - TO MATCH EXISTING
EXT - EXTERIOR	TO - TOP OF
FD - FLOOR DRAIN OR FIRE DEPT.	TOC - TOP OF CONCRETE
FEC - FIRE EXTINGUISHER CABINET	TOS - TOP OF STEEL
FIXT - FIXTURE	T/D - TELEPHONE/DATA
FLR - FLOOR	TYP - TYPICAL
FM - FILLED METAL	UNO - UNLESS NOTED OTHERWISE
FO - FACE OF	U/S - UNDERSIDE
FND - FOUNDATION	VIF - VERIFY IN FIELD
GA - GAUGE	VP - VISION PANEL
GALV - GALVANIZED	W/ - WITH
GWB - GYPSUM WALL BOARD	WD - WOOD
HC - HOLLOW CORE	
HI - HIGH	
HM - HOLLOW METAL	
HP - HIGH POINT	
HR - HOUR	
HVAC - HEATING, VENTILATING, AND AIR CONDITIONING	

SYMBOLS

PROPERTY LINE

CONCRETE

CROSS SECTION VIEW/ ELEVATION

RISER

VENT

HOT WATER LINE

COLD WATER LINE

WASTE LINE

GAS LINE

ROOF VENT

CLEANOUT

FLOW DIRECTION

SHUTOFF VALVE

BUILDING CONTRACTOR/HOME OWNER TO REVIEW AND VERIFY ALL DIMENSIONS, SPECS, AND CONNECTIONS BEFORE CONSTRUCTION BEGINS.

CLIMATE AND GEOGRAPHICAL DESIGN CRITERIA

ELEVATION FT.: 11126

RISK CATEGORY	SNOW DESIGN		WIND DESIGN			SUBJECT TO DAMAGE FROM			ICE BARRIER UNDER- LAYMENT REQUIRED	WINTER DESIGN TEMP.	FLOOD HAZARDS	AIR FREEZING INDEX	MEAN ANNUAL TEMP, F	SEISMIC DESIGN CATEGORY
	GROUND SNOW LOAD	ROOF SNOW LOAD PSF.	SPEED (Ultimate)	SP. WIND REGION	TOPOGRAPHIC EFFECT	WEATHERING	FROST LINE	TERMITE						
II	75 lbs	75 lbs	100 MPH	NO	NO	SEVERE	48 IN.	N-S	YES	-16° F	-	2000	40° F	B

SHEET SCHEDULE

DESIGN CRITERIA & CONDITIONS

PROJECT CITY: TELLURIDE
PROJECT COUNTY: SAN MIGUEL COUNTY
PROJECT ELEVATION: 11126 FT. ABOVE SEA LEVEL
ZONING DISTRICT: PARK (P)

APPLICABLE CODES:
- IRC-2018 INTERNATIONAL RESIDENTIAL CODE
- IBC-2018 INTERNATIONAL BUILDING CODE
- IECC-2018 INTERNATIONAL ENERGY CONSERVATION CODE
- IMC-2018 INTERNATIONAL MECHANICAL CODE
- IPC-2018 INTERNATIONAL PLUMBING CODE
- NEC-2020 NATIONAL ELECTRICAL CODE
- IFGC-2018 INTERNATIONAL FUEL GAS CODE

REFERENCES

EX. LOT AREA:

MAX BUILDING COVERAGE:
NO LIMITATIONS

MAXIMUM FLOOR AREA:
2500 SQ.FT PER DWELLING UNIT

MINIMUM FRONT YARD:
20'

MINIMUM SIDE YARD:
3'

REAR YEARD (MIN):
N/A

MAX HEIGHT (PRINCIPAL/ACCESSORY):
25'/16'

PROJECT DIRECTORY

OWNER:
FIRST/LAST NAME: JUSTIN MEYER
EMAIL: justin@rocketscience.cc

DESIGNER:
NAME COMPANY: Whisper Creek
1683 Highway 93 South
Hamilton, MT 59840
ph. 406.363.5680
fx. 406.363.6537
wcfxdesign@rmfh.com

ELECTRICAL & PLUMBING:
NAME COMPANY: ENGINEERING STUDIO DENVER
ADDRESS #1:1801 Wewatta St, 11th Floor
Denver, CO 80202
TELEPHONE: 720.612.7553
EMAIL: admin@esdenver.com

PROJECT DATA

EXISTING:

BUILDING HEIGHT:
- FT HIGHEST RIDGE (+/-) FROM TERRAIN

CONSTRUCTION TYPE:
TYPE V-B

OCCUPANCY TYPE: RESIDENTIAL R-3

FIRE PROTECTION:
-

GAS: -

SEWER: SEPTIC SYSTEM (OWTS)

WATER: PRIVATE WELL

COOLING:

HEATING: ELECTRIC GLYCOL HEATING

PROPOSED SQ. FT.:
1ST FLOOR SQ. FT.: 1836 SQ. FT.
WALKOUT BASEMENT SQ. FT.: 1612 SQ. FT.
TOTAL SQ. FT.: 3448 SQ. FT.

NUMBER OF STORIES: 2

NUMBER OF STORIES (ABOVE GROUND): 2

ATTACHED GARAGE: YES

ZONING ANALYSIS

SITE ADDRESS:
42 MARMOT WAY, TELLURIDE, CO

YEAR BUILT:

SUBDIVISION: TROUT LAKE-2030

ZONING: PARK (P)

PARCEL #:
482517102066

AIN #: R1040030066

LEGAL DESCRIPTION: SITE 66 TROUT LAKE

PROPERTY TYPE: RESIDENTIAL

Dustin Randle

Digitally signed by Dustin Randle
DN: C=US, E=dustin@esdenver.com, O=Engineering Studio Denver, CN=Dustin Randle
Date: 2023.01.25 14:03:59-07'00'

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JUSTIN MEYER- PLUMBING

42 Marmot Way, Ophir, CO
81426

DRAWN BY: JD

CHECKED BY: D.R.

REVISIONS:

No.	DESCRIPTION	DATE

ISSUE RECORD:

No.	DESCRIPTION	DATE

SCALE:

SHEET CONTENTS:
COVER SHEET & BUILDING NOTES

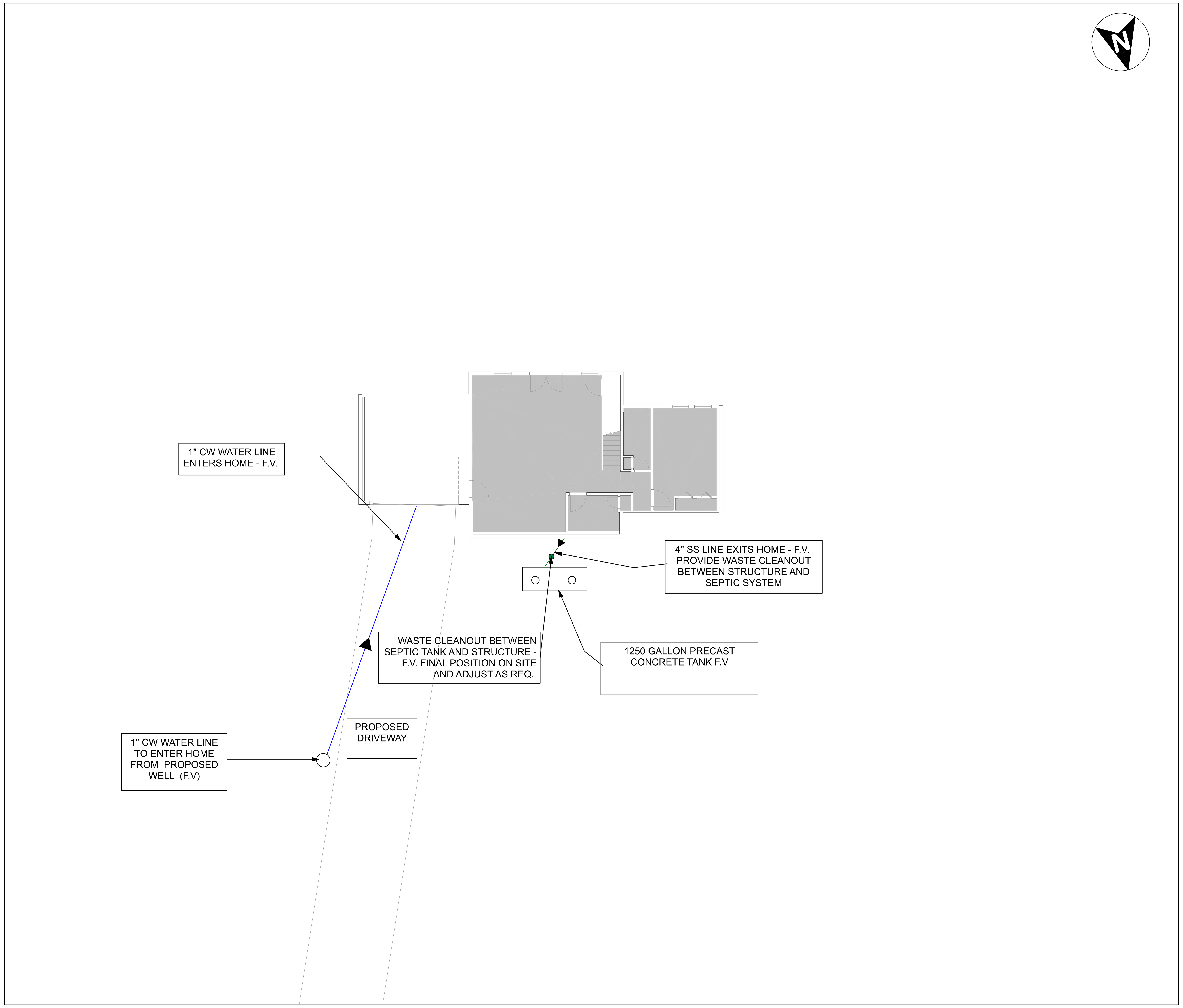
PROJECT NO.: 10305

DATE: 1/25/2023

DRAWING NO.:
P0.0

COLORADO LICENSED DUSTIN RANDLE 43420 PROFESSIONAL ENGINEER

FOR UTILITIES REFERENCE ONLY - REFER TO OFFICIAL SITE SURVEY AND FIELD VERIFY ALL UTILITIES



LOT LEGEND	
NAME	SYMBOL
(N) SANITARY SEWER LINE (SS)	green line
COLD WATER LINE (CW)	blue line
FLOW DIRECTION	▶

1 LOT UTILITIES

SCALE: NTS

ENGINEERING STUDIO DENVER

1801 WEWATTA ST, 11TH FLOOR
DENVER, CO 80202
720.612.7553
ADMIN@ESDENVER.COM

JUSTIN MEYER- PLUMBING

42 Marmot Way, Ophir, CO 81426

DRAWN BY: JD

CHECKED BY: D.R.

REVISIONS:

No.	DESCRIPTION	DATE
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△		
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△		

ISSUE RECORD:

No.	DESCRIPTION	DATE

SCALE:

SHEET CONTENTS:

PROJECT NO.: 10305

DATE: 1/25/2023

DRAWING NO.: **P0.1**

#10305 - 42 MARMOT WAY						1/4/2023
2018 IPC FIXTURE UNIT CALCULATIONS						
FIXTURE:	USE	Quantity	2018 IPC Water FU	2018 IPC Waste FU	TOTAL WATER F.U.	TOTAL WASTE F.U.
Lavatory	**Private**	**5**	**1.0**	**1**	5	5
Kitchen Sink (Domestic)	**Private**	**1**	**1.5**	**2**	1.5	2
Dish Washer (Domestic)	**Private**	**1**	**1.5**	**2**	1.5	2
2" Floor Drain (per IPC 709.4/709.1)	**All**	**1**	**-**	**2**	0	2
Shower Head (5.7 gpm or less)	**Private**	**3**	**1.5**	**2**	4.5	6
Automatic Clothes Washer, RESIDENTIAL (8lb)	**Private**	**1**	**1.5**	**2**	1.5	2
Water Closet, 1.6 gpf Gravity Tank	**Private**	**4**	**2.5**	**3**	10	12
TOTALS		16			**24** Water FU	**31** Waste FU
				Estimated Probable Peak Demand Table E103.3(3) =	21.4 GPM	
WASTE SIZING:				Irrigation Supplied on Separate Meter per ToCR Regulations =	0 GPM	
4 " **WASTE**				**TOTAL GPM =**	21.4 GPM	
				Minimum Tenant CW Pipe Size =	1" Service	
709.2 Fixtures Not Listed in Table 709.1	FIXTURE DRAIN OR TRAP SIZE (INCH)		**DRAINAGE FIXTURE UNIT VALUE**			

1. FIXTURES AND NEW EQUIPMENT SPECIFICATIONS TO BE VERIFIED BY OWNER BEFORE INSTALLATION OR PURCHASE. GENERAL CONTRACTOR, OWNER AND PLUMBER TO FIELD VERIFY ALL SPECS, SIZES, TYPES, BRANDS, CONNECTION SIZING AND LOCATIONS OF NEW AND RE-USED FIXTURES AND EQUIPMENT.
2. REFER TO MANUFACTURERS INSTALLATION INSTRUCTIONS FOR SPECIFIC SELECTED UNITS/FIXTURES TO BE INSTALLED PRIOR TO PURCHASE AND INSTALLATION.
3. ANY FIXTURE OR EQUIPMENT TO BE RE-USED IS TO BE CHECKED FOR PROPER AND CORRECT FUNCTION AND AS-NEW IN VISUAL INSPECTION. ANY MALFUNCTIONING OR TARNISHED BEYOND REPAIR SHALL BE DISCARDED AND REPLACED WITH NEW.

LEGENDS

PLUMBING LEGEND	
NAME	SYMBOL
COLD WATER LINE	
HOT WATER LINE	
FLOW DIRECTION	
SHUT-OFF VALVE	

WASTE LINE LEGEND	
NAME	SYMBOL
SANITARY SEWER (SS)	
VENT	
FLOW DIRECTION	
ROOF VENT	
CLEANOUT	

GENERAL PLUMBING NOTES

REF. IPC CHAPTER 6, SEC. 601- SEC. 613 FOR WATER SUPPLY AND DISTRIBUTION CODES.

-THE WATER SERVICE PIPE SHALL BE SIZED TO SUPPLY WATER TO THE STRUCTURE IN THE QUANTITIES AND AT THE PRESSURES REQUIRED IN IPC CODE. THE WATER SERVICE PIPE SHALL BE NOT LESS THAN 3/4" IN DIA. (IPC 603.1)

-WHERE THE WATER SERVICE PIPING IS LOCATED IN THE SAME TRENCH W/ THE BUILDING SEWER, SUCH SEWER SHALL BE CONSTRUCTED OF MATERIALS LISTED IN TABLE 702.2. WHERE SEWER PIPING IS NOT CONSTRUCTED OF MATERIALS LISTED IN TABLE 702.2, THE WATER SERVICE PIPE AND THE BUILDING SEWER PIPE SHALL BE HORIZONTALLY SEPARATED BY NOT LESS THAN 5 FT. HORIZONTALLY FROM THE SEWER PIPE CENTERLINE ON BOTH SIDES OF SUCH CROSSING. THE SLEEVE SHALL BE OF PIPE MATERIALS LISTED IN TABLES 605.3, 702.2 OR 702.3. THE REQUIRED SEPARATION DISTANCE SHALL NOT APPLY WHERE THE BOT. OF THE WATER SERVICE PIPE, LOCATED WITHIN 5 FT. OF THE SEWER, IS NOT LESS THAN 12 INCH. ABOVE THE HIGHEST POINT OF THE TOP OF THE BUILDING (IPC 603.2)

-REF. TABLE 604.3; WATER DISTRIBUTION SYSTEM DESIGN CRITERIA REQ. CAPACITY AT FIXTURE SUPPLY PIPE OUTLETS

-WATER HAMMER ARRESTORS REQUIRED @ WASHER VALVES

-PROVIDE ANTI-SCALD VALVES ON SHOWER OR TUB/SHOWER COMBINATION VALVES

-FREEZE PROTECT PIPES PER P2603.5

FLOOR DRAINS IPC: SEC 413

-FLOOR DRAINS SHALL CONFORM TO ASME A112.3.3, ASME A112.6.3 OR CSA B79. (IPC 413.1)

- FLOOR DRAINS SHALL HAVE REMOVABLE STRAINERS. THE FLOOR DRAIN SHALL BE CONSTRUCTED SO THAT THE DRAIN IS CAPABLE OF BEING CLEANED. ACCESS SHALL BE PROVIDED TO THE DRAIN INLET. READY ACCESS SHALL BE PROVIDED TO FLOOR DRAINS. (IPC 413.2)

- FLOOR DRAINS SHALL HAVE A DRAIN OUTLET NOT LESS THAN 2 INCHES IN DIAM. (IPC 413.3)

SHOWERS IPC: SEC. 421

-PREFABRICATED SHOWERS AND SHOWER COMPARTMENTS SHALL CONFORM TO ASME A112.19.2/CSA B45.1 OR CSA B45.5/IAPMO Z124. SHOWER VALVES FOR INDIVIDUAL SHOWERS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 412.3.(IPC 421.1)

-WASTE OUTLETS SERVING SHOWERS SHALL BE NOT LESS THAN 11/2 INCHES (38 MM) IN DIAMETER AND, FOR OTHER THAN WASTE OUTLETS IN BATHTUBS, SHALL HAVE REMOVABLE STRAINERS NOT LESS THAN 3 INCHES (76 MM) IN DIAMETER WITH STRAINER OPENINGS NOT LESS THAN 1/4 INCH (6.4 MM) IN LEAST DIMENSION. WHERE EACH SHOWER SPACE IS NOT PROVIDED WITH AN INDIVIDUAL WASTE OUTLET, THE WASTE OUTLET SHALL BE LOCATED, AND THE FLOOR PITCHED SO THAT WASTE FROM ONE SHOWER DOES NOT FLOW OVER THE FLOOR AREA SERVING ANOTHER SHOWER. WASTE OUTLETS SHALL BE FASTENED TO THE WASTE PIPE IN AN APPROVED MANNER. (IPC 421.3)

-SHOWER COMPARTMENTS SHALL BE NOT LESS THAN 900 SQUARE INCHES (0.58 M2) IN INTERIOR CROSSSECTIONAL AREA. SHOWER COMPARTMENTS SHALL BE NOT LESS THAN 30 INCHES (762 MM) IN LEAST DIMENSION AS MEASURED FROM THE FINISHED INTERIOR DIMENSION OF THE COMPARTMENT, EXCLUSIVE OF FIXTURE VALVES, SHOWERHEADS, SOAP DISHES AND SAFETY GRAB BARS OR RAILS. EXCEPT AS REQUIRED IN SECTION 404, THE MINIMUM REQUIRED AREA AND DIMENSION SHALL BE MEASURED FROM THE FINISHED INTERIOR DIMENSION AT A HEIGHT EQUAL TO THE TOP OF THE THRESHOLD AND AT A POINT TANGENT TO ITS CENTERLINE AND SHALL BE CONTINUED TO A HEIGHT NOT LESS THAN 70 INCHES (1778 MM) ABOVE THE SHOWER DRAIN OUTLET. (IPC 421.4)

-FLOOR SURFACES SHALL BE CONSTRUCTED OF IMPERVIOUS, NONCORROSIVE, NONABSORBENT AND WATERPROOF MATERIALS. (IPC 421.5)

- INSTALL WATERPROOF GYPSUM BOARD AT ALL WATER SPLASH AREAS AS APPROPRIEATE AND PER CODE

SINKS IPC: SEC 422

-SINKS SHALL CONFORM TO ASME A112.19.1/CSA B45.2, ASME A112.19.2/CSA B45.1, ASME A112.19.3/CSA B45.4 OR CSA B45.5/IAPMO Z124. (IPC 422.1)

-SINKS SHALL BE PROVIDED WITH WASTE OUTLETS HAVING A DIAMETER NOT LESS THAN 11/2 INCHES (38 MM). A STRAINER OR CROSSBAR SHALL BE PROVIDED TO RESTRICT THE CLEAR OPENING OF THE WASTE OUTLET. (IPC 422.2)

VENTING REF. IPC: CHAPTER 9, SEC. 901 THROUGH 918.

SECTION P3109 WASTE STACK VENT

P3109.1 WASTE STACK VENT PERMITTED

A WASTE STACK SHALL BE CONSIDERED A VENT FOR ALL OF THE FIXTURES DISCHARGING TO THE STACK WHERE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THIS SECTION.

P3109.2 STACK INSTALLATION

THE WASTE STACK SHALL BE VERTICAL. AND BOTH HORIZONTAL AND VERTICAL OFFSETS SHALL BE PROHIBITED BETWEEN THE LOWEST FIXTURE DRAIN CONNECTION AND THE HIGHEST FIXTURE DRAIN CONNECTION TO THE STACK. EVERY FIXTURE DRAIN SHALL CONNECT SEPARATELY TO THE WASTE STACK. THE STACK SHALL NOT RECEIVE THE DISCHARGE OF WATER CLOSETS OR URINALS.

P3109.3 STACK VENT

A STACK VENT SHALL BE INSTALLED FOR THE WASTE STACK. THE SIZE OF THE STACK VENT SHALL BE NOT LESS THAN THE SIZE OF THE WASTE STACK. OFFSETS SHALL BE PERMITTED IN THE STACK VENT AND SHALL BE LOCATED NOT LESS THAN 6 INCHES ABOVE THE FLOOD LEVEL OF THE HIGHEST FIXTURE, AND SHALL BE IN ACCORDANCE WITH SECTION P3104.5. THE STACK VENT SHALL BE PERMITTED TO CONNECT WITH OTHER STACK VENTS AND VENT STACKS IN ACCORDANCE W/ SECTION P3113.3.

P3109.4 WASTE STACK SIZE

THE WASTE STACK SHALL BE SIZED BASED ON THE TOTAL DISCHARGE TO THE STACK AND THE DISCHARGE WITHIN A BRANCH INTERVAL IN ACCORDANCE WITH TABLE P3109.4. THE WASTE STACK SHALL BE THE SAME SIZE THROUGHOUT THE LENGTH OF THE WASTE STACK.

-THE ONLY VERTICAL PIPE OF COMBINATION WASTE AND VENT SYSTEM SHALL BE THE CONNECTION BETWEEN FIXTURE DRAIN AND THE HORIZONTAL COMBINATION WASTE AND VENT PIPE. THE VERTICAL DISTANCE SHALL NOT EXCEED 8 FEET. (IPC 915.2)

-THE SLOPE OF A HORIZONTAL COMBINATION WASTE AND VENT PIPE SHALL NOT EXCEED 1/2 UNIT VERTICAL IN 12 UNITS HORIZONTAL (4% SLOPE) AND SHALL BE NOT LESS THAN THAT INDICATED IN TABLE 704.1. (IPC: 915.2.1)

-THE SIZE OF A COMBINATION WASTE AND VENT PIPE SHALL BE NOT LESS THAN THAT INDICATED IN TABLE 915.2.2. THE HORIZONTAL LENGTH OF A COMBINATION WASTE AND VENT SYSTEM SHALL BE UNLIMITED (IPC: 915.2.2)

-THE FIXTURE BRANCH OR FIXTURE DRAIN SHALL CONNECT TO THE COMBINATION WASTE AND VENT WITHIN A DISTANCE SPECIFIED IN TABLE 909.1. THE COMBINATION WASTE AND VENT PIPE SHALL BE CONSIDERED TO BE THE VENT FOR THE FIXTURE. (IPC: 915.2.5)

-A DRAINAGE STACK SHALL SERVE AS A SINGLE-STACK VENT SYSTEM WHERE SIZED AND INSTALLED IN ACCORDANCE WITH SEC. 917.2 - 917.9. THE DRAINAGE STACK AND BRACH PIPING SHALL BE THE VENTS FOR THE DRAINAGE SYSTEM. THE DRAINAGE STACK SHALL HAVE A STACK VENT. (IPC: 917.1)

-STACK SIZE REF. TABLE 917.2 IPC.

P3106.1: INDIVIDUAL VENT PERMITTED. EACH TRAP AND TRAPPED FIXTURE SHALL BE PERMITTED TO BE PROVIDED WITH AN INDIVIDUAL VENT. THE INDIVIDUAL VENT SHALL CONNECT TO THE FIXTURE DRAIN OF THE TRAP OR TRAPPED FIXTURE BEING VENTED

VENT CONNECTIONS AND GRADES REF IPC: SECTION 905

- THE VENT SYSTEM SERVING EACH BUILDING DRAIN SHALL HAVE NOT LESS THAN ONE VENT PIPE THAT EXTENDS TO THE OUTDOORS (IPC: 904.1) REF. IPC: 904.1.1 AND 904.1.2

- A VENT STACK OR STACK VENTS SHALL TERMINATE OUTDOORS TO THE OPEN AIR OR TO A STACK-TYPE AIR ADMITTANCE VALVE IN ACCORDANCE WITH SECTION 918 (IPC: 904.3)

- VENT STACKS SHALL CONNECT TO THE BASE OF THE DRAINAGE STACK. THE VENT STACK SHALL CONNECT AT OR BELOW THE LOWEST HORIZONTAL BRANCH. WHERE THE VENT STACK CONNECTS TO THE BUILDING DRAIN, THE CONNECTION SHALL BE LOCATED DOWNSTREAM OF THE DRAINAGE STACK AND WITHIN A DISTANCE OF 10 TIMES THE DIAMETER OF THE DRAINAGE STACK. (IPC 904.4)

CLEANOUTS AS REQUIRED (IPC SEC 708)

-CLEANOUTS SHALL BE PROVIDED FOR DRAINAGE PIPING IN ACCORDANCE WITH SECTIONS 708.1.1 THROUGH 708.1.11.

-CHANGES OF DIRECTION. CLEANOUTS SHALL BE INSTALLED AT EACH CHANGE OF DIRECTION GREATER THAN 45 DEGREES (0.79 RAD) IN THE BUILDING SEWER, BUILDING DRAIN AND HORIZONTAL WASTE OR SOIL LINES. (IPC: 708.3.3)

603.2 SEPARATION OF WATER SERVICE AND BUILDING SEWER

NEW ELECTRIC HOT WATER HEATER SCHEDULE										FLOW RATE GPM @ 55°F RISE	ELECTRICAL		MANUFACTURER/MODEL #	REMARKS
NUMBER	LABEL	QTY.	DESCRIPTION	LOCATION	FINISH	HW	CW	UEF	BTU/H		VOLT	WATT		
HW1	HW1	1	NEW ELECTRIC HOT WATER HEATER	BASEMENT-MECH	GREY	3/4"	3/4"	-	-	4.7 GAL./MIN	240V	36KW	Rheem Model #RETEX-36	1. DRAIN PER CODE

* REFER TO ORIGINAL MANUFACTURERS INSTALLATION INSTRUCTIONS FOR SPECIFIC HOT WATER UNIT SPECS. AND INSTALLATION SPECIFICATIONS.

ACCEPTABLE EQUALS WILL BE CONSIDERED

H/C WATER FIXTURE SCHEDULE - HOME TOTAL			
LABEL	FIXTURE	COUNT	HOT/COLD CONN.
SWR	SHOWER	3	1/2"-1/2"
DW	DISHWASHER	1	1/2" (HW)
WC	WATER CLOSET (TOILET)	4	1/2" (CW)
LAV	LAVATORY	5	1/2"-1/2"
KS	KITCHEN SINK	1	1/2"-1/2"
HWH	HOT WATER HEATER	1	1/2"-1/2"
CW	CLOTHES WASHER	1	1/2"-1/2"
REF	REFRIGERATOR	1	PER. MANUF.
TOTAL FIXTURE COUNT		17	

WASTE FIXTURE SCHEDULE - HOME TOTAL			
LABEL	FIXTURE	COUNT	SS. CONN.
SWR	SHOWER	3	2"
KS	KITCHEN SINK	1	2"
WC	WATER CLOSET (TOILET)	4	3"
LAV	LAVATORY	5	1.5"
FD	2" FLOOR DRAIN	1	2"
CW	CLOTHES WASHER	1	2"
DW	DISHWASHER	1	PER. MANUF.
TOTAL FIXTURE COUNT		16	

1 PLUMBING - SPECIFICATIONS AND FIXTURE UNIT CALCULATIONS

SCALE: NO SCALE

ESD ENGINEERING STUDIO DENVER

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JUSTIN MEYER- PLUMBING

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DRAWN BY: JD

CHECKED BY: D.R.

REVISIONS:

No.	DESCRIPTION	DATE

ISSUE RECORD:

No.	DESCRIPTION	DATE

SCALE:

SHEET CONTENTS:

PROJECT NO.: 10305

DATE: 1/25/2023

DRAWING NO.: **P0.2**

COLORADO LICENSED
DUSTIN RANDOLPH MEYER
38420
PROFESSIONAL ENGINEER

GENERAL NOTES

REF. IPC CHAPTER 6, SEC. 601- SEC. 613 FOR WATER SUPPLY AND DISTRIBUTION CODES.

- THE WATER SERVICE PIPE SHALL BE SIZED TO SUPPLY WATER TO THE STRUCTURE IN THE QUANTITIES AND AT THE PRESSURES REQUIRED IN IPC CODE. THE WATER SERVICE PIPE SHALL BE NOT LESS THAN 3/4" IN DIA. (IPC 603.1)

- REF. TABLE 604.3; WATER DISTRIBUTION SYSTEM DESIGN CRITERIA REQ. CAPACITY AT FIXTURE SUPPLY PIPE OUTLETS

- WATER HAMMER ARRESTORS REQUIRED @ WASHER VALVES

- FREEZE PROTECT PIPES PER P2603.5

FLOOR DRAINS IPC: SEC 413

- FLOOR DRAINS SHALL CONFORM TO ASME A112.3.3, ASME A112.6.3 OR CSA B79. (IPC: 413.1)

- FLOOR DRAINS SHALL HAVE REMOVABLE STRAINERS. THE FLOOR DRAIN SHALL BE CONSTRUCTED SO THAT THE DRAIN IS CAPABLE OF BEING CLEANED. ACCESS SHALL BE PROVIDED TO THE DRAIN INLET. READY ACCESS SHALL BE PROVIDED TO FLOOR DRAINS. (IPC 413.2)

- FLOOR DRAINS SHALL HAVE A DRAIN OUTLET NOT LESS THAN 2 INCHES IN DIAM. (IPC: 413.3)

SINKS IPC: SEC 422

-SINKS SHALL CONFORM TO ASME A112.19.1/CSA B45.2, ASME A112.19.2/ CSA B45.1, ASME A112.19.3/CSA B45.4 OR CSA B45.5/IAPMO Z124. (IPC: 422.1)

-SINKS SHALL BE PROVIDED WITH WASTE OUTLETS HAVING A DIAMETER NOT LESS THAN 1-1/2 INCHES. A STRAINER OR CROSSBAR SHALL BE PROVIDED TO RESTRICT THE CLEAR OPENING OF THE WASTE OUTLET. (IPC: 422.2)

HOT WATER HEATER: INSTALL PER IPC CH. 5

IPC SEC. 503.1 COLD WATER LINE VALVE:
- THE COLD WATER BRANCH LINE FROM THE MAIN WATER SUPPLY LINE TO EACH HOT WATER STORAGE TANK OR WATER HEATER SHALL BE PROVIDED WITH A VALVE, LOCATED NEAR THE EQUIPMENT AND SERVING ONLY THE HOT WATER STORAGE TANK OR WATER HEATER. THE VALVE SHALL NOT INTERFERE OR CAUSE A DISRUPTION OF THE COLD WATER SUPPLY TO THE REMAINDER OF THE COLD WATER SYSTEM. THE VALVE SHALL BE PROVIDED WITH ACCESS ON THE SAME FLOOR LEVEL AS THE WATER HEATER SERVED.

504.7 REQUIRED PAN WHERE A STORAGE TANK-TYPE WATER HEATER OR A HOT WATER STORAGE TANK IS INSTALLED IN A LOCATION WHERE WATER LEAKAGE FROM THE TANK WILL CAUSE DAMAGE, THE TANK SHALL BE INSTALLED IN A PAN CONSTRUCTED OF ONE OF THE FOLLOWING:

1 GALVANIZED STEEL OR ALUMINUM OF NOT LESS THAN 0.0236 INCH (0.6010 MM) IN THICKNESS.
2 PLASTIC NOT LESS THAN 0.036 IN. IN THICKNESS.
3 OTHER APPROVED MATERIALS.

A PLASTIC PAN SHALL NOT BE INSTALLED BENEATH A GAS-FIRED WATER HEATER. UNLESS THE PAN IS CONSTRUCTED OF MATERIAL HAVING A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE-DEVELOPED INDEX OF 450 OR LESS WHEN TESTED IN ACCORDANCE WITH ASTM E84 OR UL 723. EXCEPTION: REPLACEMENTS FOR WATER HEATERS THAT DID NOT HAVE A PAN PREVIOUSLY INSTALLED TO CODE IN EFFECT AT THE TIME OF THE ORIGINAL INSTALLATION.

504.7.1 PAN SIZE AND DRAIN:
- THE PAN SHALL BE NOT LESS THAN 1-1/2 IN. IN DEPTH AND SHALL BE OF SUFFICIENT SIZE AND SHAPE TO RECEIVE ALL DRIPPING OR CONDENSATE FROM THE TANK OR WATER HEATER. THE PAN SHALL BE DRAINED BY AN INDIRECT WASTE PIPE HAVING A DIAMETER OF NOT LESS THAN 3/4 IN. PIPING FOR SAFETY PAN DRAINS SHALL BE OF THOSE MATERIALS LISTED IN TABLE 605.4.

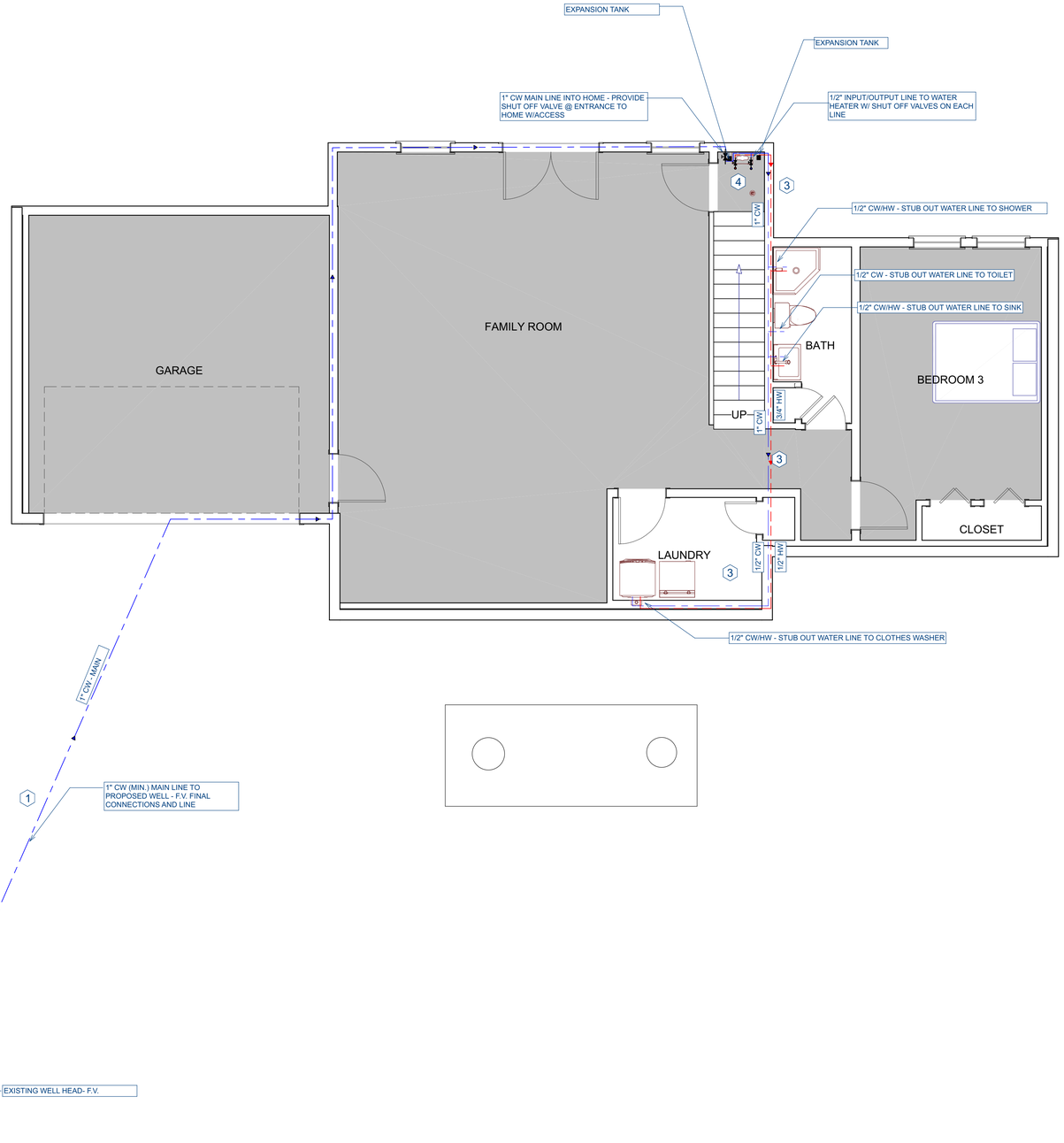
504.7.2 PAN DRAIN TERMINATION:
- THE PAN DRAIN SHALL EXTEND FULL SIZE AND TERMINATE OVER A SUITABLY LOCATED INDIRECT WASTE RECEPTOR OR FLOOR DRAIN OR EXTEND TO THE EXTERIOR OF THE BUILDING AND TERMINATE NOT LESS THAN 6 IN. AND NOT MORE THAN 24 IN. ABOVE THE ADJACENT GROUND SURFACE. WHERE A PAN DRAIN WAS NOT PREVIOUSLY INSTALLED, A PAN DRAIN SHALL NOT BE REQUIRED FOR A REPLACEMENT WATER HEATER INSTALLATION.

KEYED NOTES: (#)

1. NEW MAIN WATER LINE TO BE 1" CW (MIN.) ENTERS BASEMENT FROM ONSITE WELL ON SOUTH SIDE OF HOME - F.V.
2. CONTRACTOR TO FIELD VERIFY ALL NEW LINES, CONNECTION POINTS, LOCATIONS.
3. G.C. AND PLUMBER TO ENSURE ALL WATER LINES ARE FULLY INSULATED THROUGHOUT HOME TO PREVENT ANY FREEZING OF LINES.
4. ADD EXPANSION TANKS TO EACH SIDE OF HOT WATER HEATER UNIT (COLD LINE/HOT LINE)TO AID IN ANY FREEZE ISSUES.

PLUMBING LEGEND	
NAME	SYMBOL
COLD WATER LINE	
HOT WATER LINE	
FLOW DIRECTION	
SHUT-OFF VALVE	

ALL DRAWINGS ARE SCHEMATIC ONLY. FIELD VERIFY ALL EXISTING LOCATIONS OF FIXTURES ON SITE. GENERAL CONTRACTOR TO COORDINATE WITH OTHER TRADES AS NECESSARY AND TO FIELD VERIFY ALL NEW CONNECTIONS AND LINES



1 PLUMBING - H/C WATER LINES - WALKOUT BASEMENT

SCALE: 1/4"- 1 FT.

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DRAWN BY: JD
CHECKED BY: D.R.

REVISIONS:

No.	DESCRIPTION	DATE

ISSUE RECORD:

No.	DESCRIPTION	DATE

SCALE:

SHEET CONTENTS:

PROJECT NO.: 10305
DATE: 1/25/2023

DRAWING NO.: **P1.0**

COLORADO LICENSED
DUSTIN RANDOLPH
PROFESSIONAL ENGINEER
10/20

GENERAL NOTES

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HOT WATER HEATER: INSTALL PER IPC CH. 5

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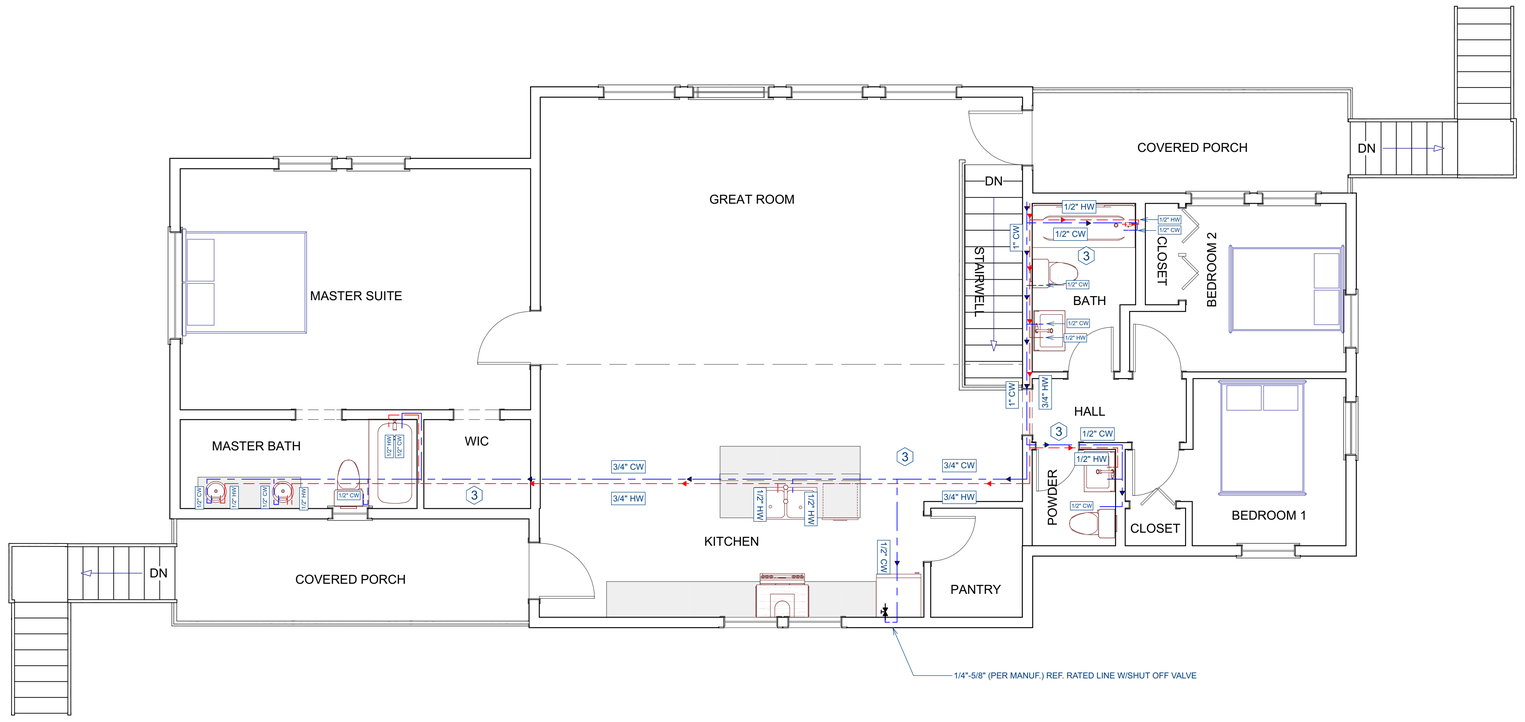
504.7.2 PAN DRAIN TERMINATION:
- THE PAN DRAIN SHALL EXTEND FULL SIZE AND TERMINATE OVER A SUITABLY LOCATED INDIRECT WASTE RECEPTOR OR FLOOR DRAIN OR EXTEND TO THE EXTERIOR OF THE BUILDING AND TERMINATE NOT LESS THAN 6 IN. AND NOT MORE THAN 24 IN. ABOVE THE ADJACENT GROUND SURFACE. WHERE A PAN DRAIN WAS NOT PREVIOUSLY INSTALLED, A PAN DRAIN SHALL NOT BE REQUIRED FOR A REPLACEMENT WATER HEATER INSTALLATION.

ALL DRAWINGS ARE SCHEMATIC ONLY. FIELD VERIFY ALL EXISTING LOCATIONS OF FIXTURES ON SITE. GENERAL CONTRACTOR TO COORDINATE WITH OTHER TRADES AS NECESSARY AND TO FIELD VERIFY ALL NEW CONNECTIONS AND LINES



KEYED NOTES: (#)

1. NEW MAIN WATER LINE TO BE 1" CW (MIN.) ENTERS BASEMENT FROM ONSITE WELL ON SOUTH SIDE OF HOME - F.V.
2. CONTRACTOR TO FIELD VERIFY ALL NEW LINES, CONNECTION POINTS, LOCATIONS.
3. G.C. AND PLUMBER TO ENSURE ALL WATER LINES ARE FULLY INSULATED THROUGHOUT HOME TO PREVENT ANY FREEZING OF LINES.
4. ADD EXPANSION TANKS TO EACH SIDE OF HOT WATER HEATER UNIT (COLD LINE/HOT LINE)TO AID IN ANY FREEZE ISSUES.

PLUMBING LEGEND	
NAME	SYMBOL
COLD WATER LINE	
HOT WATER LINE	
FLOW DIRECTION	
SHUT-OFF VALVE	

2 PLUMBING - H/C WATER LINES -MAIN FLOOR

SCALE: 1/4"- 1 FT.

ESD ENGINEERING STUDIO DENVER

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JUSTIN MEYER- PLUMBING

42 Marmot Way, Ophir, CO
81426

DRAWN BY: JD

CHECKED BY: D.R.

REVISIONS:

No.	DESCRIPTION	DATE

ISSUE RECORD:

No.	DESCRIPTION	DATE

SCALE:

SHEET CONTENTS:

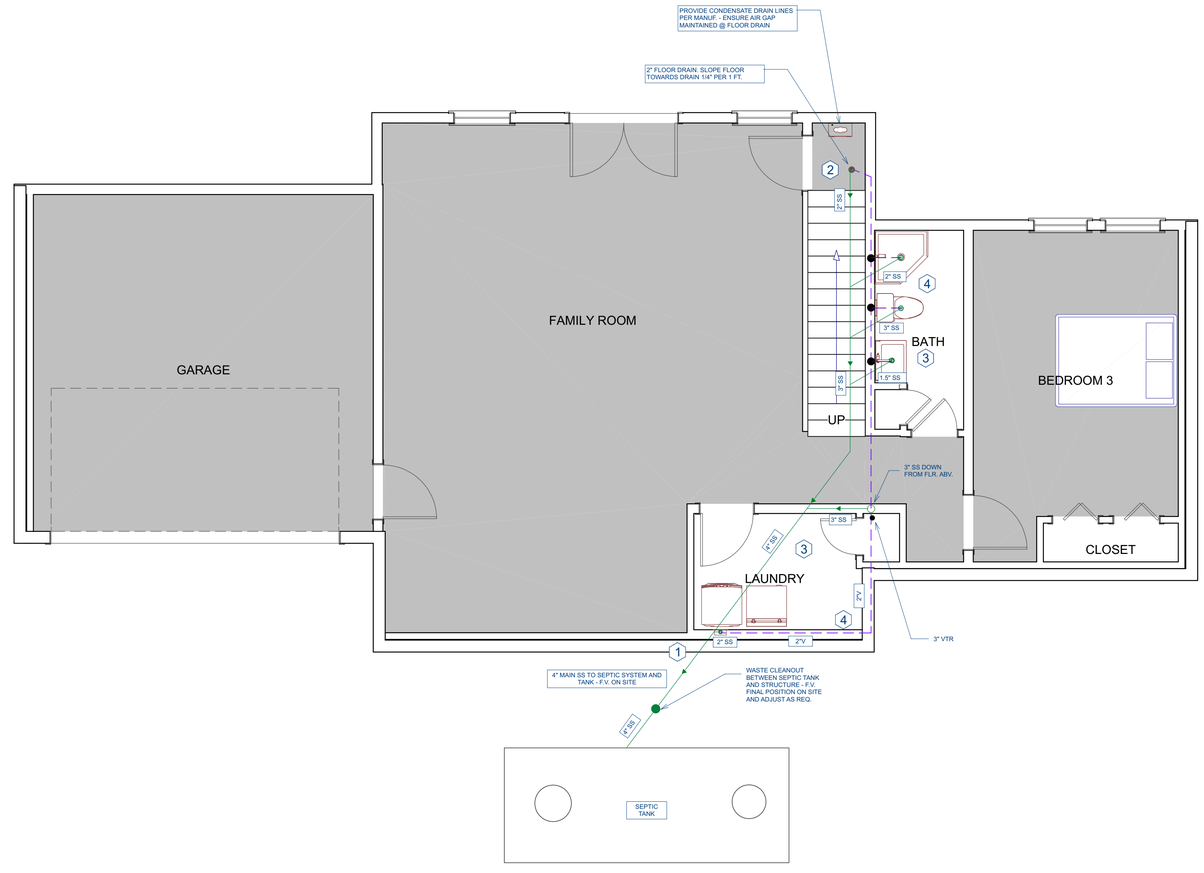
PROJECT NO.: 10305

DATE: 1/25/2023

DRAWING NO.: **P1.1**

COLORADO LICENSED
DUSTIN RANDOLPH MEYER
PROFESSIONAL ENGINEER
12/20

ALL DRAWINGS ARE SCHEMATIC ONLY. FIELD VERIFY ALL EXISTING LOCATIONS OF FIXTURES ON SITE. GENERAL CONTRACTOR TO COORDINATE WITH OTHER TRADES AS NECESSARY AND TO FIELD VERIFY ALL NEW CONNECTIONS AND LINES



KEYED NOTES:

1. 4" SS LOCATED IN BASEMENT TO REMAIN TO EXIT TO PROPOSED ONSITE WASTE-WATER TREATMENT SERVICE - F.V.
2. NEW FLOOR DRAIN (2" MIN.) TO BE INSTALLED WITHIN 6 FT. HOT WATER HEATER FOR DRAINAGE
3. CONTRACTOR TO FIELD VERIFY ALL NEW LINES, CONNECTION POINTS, LOCATIONS.
4. CONTRACTOR TO VERIFY ALL VENTING

WASTE LINE LEGEND	
NAME	SYMBOL
(E) WASTE LINE	
VENT	
FLOW DIRECTION	

3 PLUMBING - WASTE LINES - WALKOUT BASEMENT

SCALE: 1/4"- 1 FT.

PLUMBING NOTES:

IPC SEC. 606.1: LOCATION OF FULL-OPEN VALVES:

- FULL-OPEN VALVES SHALL BE INSTALLED IN THE FOLLOWING LOCATIONS:
1 ON THE BUILDING WATER SERVICE PIPE FROM THE PUBLIC WATER SUPPLY NEAR THE CURB.
2 ON THE WATER DISTRIBUTION SUPPLY PIPE AT THE ENTRANCE INTO THE STRUCTURE.
3 ON THE DISCHARGE SIDE OF EVERY WATER METER.
4 ON THE BASE OF EVERY WATER RISER PIPE IN OCCUPANCIES OTHER THAN MULTIPLE-FAMILY RESIDENTIAL OCCUPANCIES THAT ARE TWO STORIES OR LESS IN HEIGHT AND IN ONE- AND TWO-FAMILY RESIDENTIAL OCCUPANCIES.
5 ON THE TOP OF EVERY WATER DOWN-FEED PIPE IN OCCUPANCIES OTHER THAN ONE- AND TWO-FAMILY RESIDENTIAL OCCUPANCIES.
6 ON THE ENTRANCE TO EVERY WATER SUPPLY PIPE TO A DWELLING UNIT, EXCEPT WHERE SUPPLYING A SINGLE FIXTURE EQUIPPED WITH INDIVIDUAL STOPS.
7 ON THE WATER SUPPLY PIPE TO A GRAVITY OR PRESSURIZED WATER TANK.
8 ON THE WATER SUPPLY PIPE TO EVERY WATER HEATER.

IPC SEC. 606.2; LOCATION OF SHUTOFF VALVES:

- SHUTOFF VALVES SHALL BE INSTALLED IN THE FOLLOWING LOCATIONS:
1 ON THE FIXTURE SUPPLY TO EACH PLUMBING FIXTURE OTHER THAN BATHTUBS AND SHOWERS IN ONE- AND TWO-FAMILY RESIDENTIAL OCCUPANCIES, AND OTHER THAN IN INDIVIDUAL SLEEPING UNITS THAT ARE PROVIDED WITH UNIT SHUTOFF VALVES IN HOTELS, MOTELS, BOARDING HOUSES AND SIMILAR OCCUPANCIES.
2 ON THE WATER SUPPLY PIPE TO EACH SILLCOCK.
3 ON THE WATER SUPPLY PIPE TO EACH APPLIANCE OR MECHANICAL EQUIPMENT.

IPC SEC., 608.4 POTABLE WATER:

- HANDLING AND TREATMENT EQUIPMENT WATER PUMPS, FILTERS, SOFTENERS, TANKS AND OTHER APPLIANCES AND DEVICES THAT HANDLE OR TREAT POTABLE WATER TO BE SUPPLIED TO THE POTABLE WATER DISTRIBUTION SYSTEM SHALL BE LOCATED TO PREVENT CONTAMINATION FROM ENTERING THE APPLIANCES AND DEVICES.
OVERFLOW, RELIEF VALVE AND WASTE DISCHARGE PIPES FROM SUCH APPLIANCES AND DEVICES SHALL TERMINATE THROUGH AN AIR GAP.

608.5 WATER SERVICE PIPING WATER SERVICE PIPING SHALL BE PROTECTED IN ACCORDANCE WITH SECTIONS 603.2 AND 603.2.1.

608.16 PROTECTION OF POTABLE WATER OUTLETS:
- POTABLE WATER OPENINGS AND OUTLETS SHALL BE PROTECTED AGAINST BACKFLOW IN ACCORDANCE WITH SECTION 608.16.1, 608.16.2, 608.16.3, 608.16.4, 608.16.4.1 OR 608.16.4.2.

608.16.1 PROTECTION BY AIR GAP:
- OPENINGS AND OUTLETS SHALL BE PROTECTED BY AN AIR GAP BETWEEN THE OPENING AND THE FIXTURE FLOOD LEVEL RIM AS SPECIFIED IN TABLE 608.16.1. OPENINGS AND OUTLETS EQUIPPED FOR HOSE CONNECTION SHALL BE PROTECTED BY MEANS OTHER THAN AN AIR GAP.

TABLE 608.16.1

608.16.1 Protection by Air Gap

Openings and outlets shall be protected by an *air gap* between the opening and the fixture *flood level rim* as specified in Table 608.16.1. Openings and outlets equipped for hose connection shall be protected by means other than an *air gap*.

TABLE 608.16.1

MINIMUM REQUIRED AIR GAPS

FIXTURE	MINIMUM AIR GAP: Away from a wall[a] (inches)	MINIMUM AIR GAP: Close to a wall (inches)
Lavatories and other fixtures with effective openings not greater than 1/2 inch in diameter	1	1 1/2
Sinks, laundry trays, gooseneck back faucets and other fixtures with effective openings not greater than 3/4 inch in diameter	1 1/2	2 1/2
Over-rim bath fillers and other fixtures with effective openings not greater than 1 inch in diameter	2	3
Drinking water fountains, single orifice not greater than 7/16 inch in diameter or multiple orifices with a total area of 0.150 square inch (area of circle 7/16 inch in diameter)	1	1 1/2
Effective openings greater than 1 inch	Two times the diameter of the effective opening	Three times the diameter of the effective opening

For SI: 1 inch = 25.4 mm, 1 square inch = 645 mm^2.

a. Applicable where walls or obstructions are spaced from the nearest inside-edge of the spout opening a distance greater than three times the diameter of the *effective opening* for a single wall, or a distance greater than four times the diameter of the *effective opening* for two intersecting walls.

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DRAWN BY: JD

CHECKED BY: D.R.

REVISIONS:

No.	DESCRIPTION	DATE

ISSUE RECORD:

No.	DESCRIPTION	DATE

SCALE:

SHEET CONTENTS:

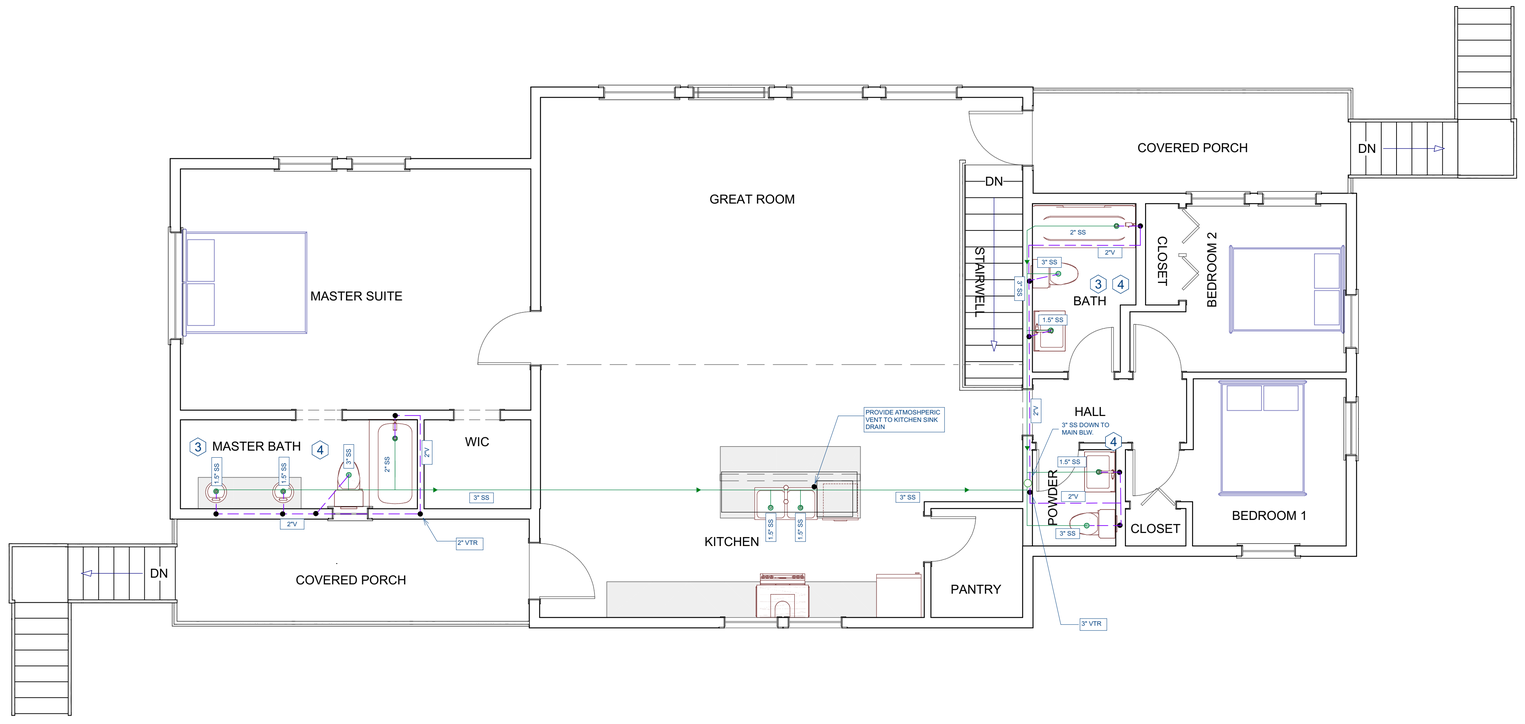
PROJECT NO.: 10305

DATE: 1/25/2023

DRAWING NO.: **P1.2**

COLORADO LICENSED
DUSTIN RANDOLPH REED
43420
PROFESSIONAL ENGINEER

ALL DRAWINGS ARE SCHEMATIC ONLY. FIELD VERIFY ALL EXISTING LOCATIONS OF FIXTURES ON SITE. GENERAL CONTRACTOR TO COORDINATE WITH OTHER TRADES AS NECESSARY AND TO FIELD VERIFY ALL NEW CONNECTIONS AND LINES



KEYED NOTES:

1. 4" SS LOCATED IN BASEMENT TO REMAIN TO EXIT TO PROPOSED ONSITE WASTE-WATER TREATMENT SERVICE - F.V.
2. NEW FLOOR DRAIN (2" MIN.) TO BE INSTALLED WITHIN 6 FT. HOT WATER HEATER FOR DRAINAGE
3. CONTRACTOR TO FIELD VERIFY ALL NEW LINES, CONNECTION POINTS, LOCATIONS.
4. CONTRACTOR TO VERIFY ALL VENTING

WASTE LINE LEGEND	
NAME	SYMBOL
(E) WASTE LINE	
VENT	
FLOW DIRECTION	

4 PLUMBING - WASTE LINES - MAIN FLOOR

SCALE: 1/4"- 1 FT.

PLUMBING NOTES:

IPC SEC. 606.1: LOCATION OF FULL-OPEN VALVES:

- FULL-OPEN VALVES SHALL BE INSTALLED IN THE FOLLOWING LOCATIONS:
1 ON THE BUILDING WATER SERVICE PIPE FROM THE PUBLIC WATER SUPPLY NEAR THE CURB.
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TABLE 608.16.1

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TABLE 608.16.1
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Over-rim bath fillers and other fixtures with effective openings not greater than 1 inch in diameter	2	3
Drinking water fountains, single orifice not greater than 7/16 inch in diameter or multiple orifices with a total area of 0.150 square inch (area of circle 7/16 inch in diameter)	1	1 1/2
Effective openings greater than 1 inch	Two times the diameter of the effective opening	Three times the diameter of the effective opening

For SI: 1 inch = 25.4 mm, 1 square inch = 645 mm^2.

a. Applicable where walls or obstructions are spaced from the nearest inside-edge of the spout opening a distance greater than three times the diameter of the *effective opening* for a single wall, or a distance greater than four times the diameter of the *effective opening* for two intersecting walls.

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DRAWN BY: JD

CHECKED BY: D.R.

REVISIONS:

No.	DESCRIPTION	DATE

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SHEET CONTENTS:

PROJECT NO.: 10305

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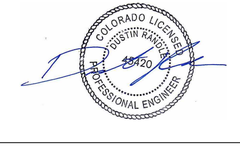
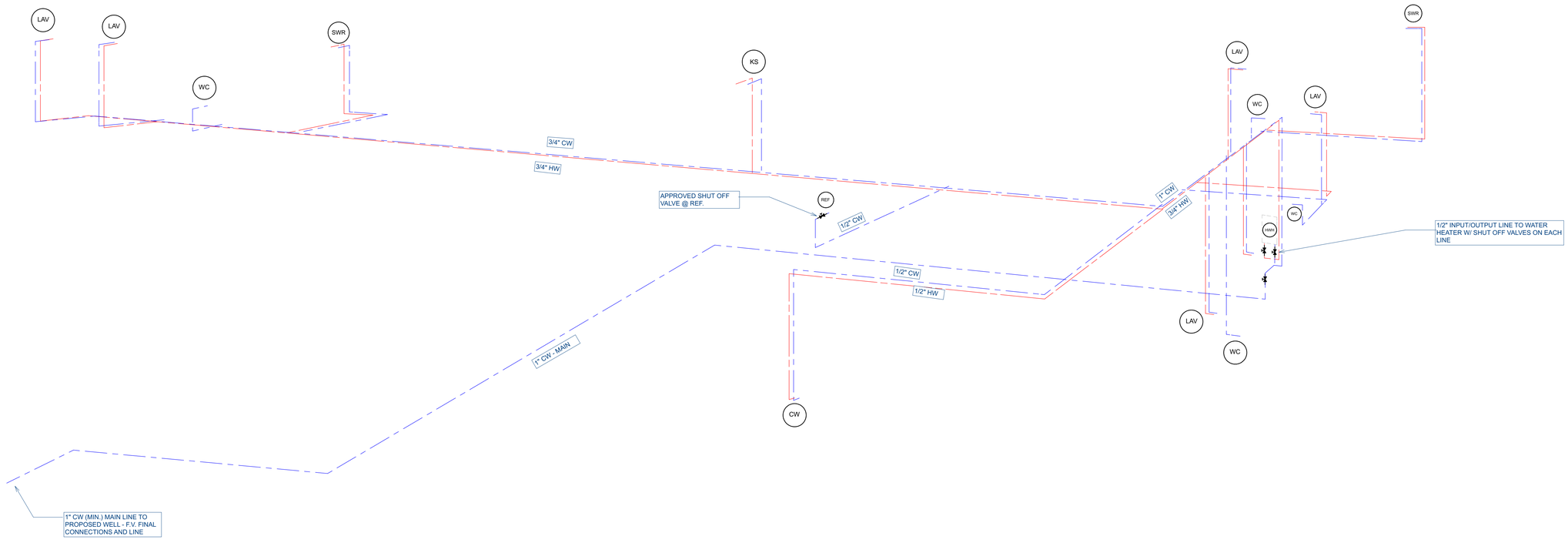
DRAWING NO.: **P1.3**



H/C WATER FIXTURE SCHEDULE - HOME TOTAL			
LABEL	FIXTURE	COUNT	HOT/COLD CONN.
SWR	SHOWER	3	1/2"-1/2"
DW	DISHWASHER	1	1/2" (HW)
WC	WATER CLOSET (TOILET)	4	1/2" (CW)
LAV	LAVATORY	5	1/2"-1/2"
KS	KITCHEN SINK	1	1/2"-1/2"
HWH	HOT WATER HEATER	1	1/2"-1/2"
CW	CLOTHES WASHER	1	1/2"-1/2"
REF	REFRIGERATOR	1	PER. MANUF.
TOTAL FIXTURE COUNT		17	

SOME FIXTURES AND OTHER HARDWARE REMOVED OR OMITTED FOR CLARITY



PLUMBING LEGEND	
NAME	SYMBOL
COLD WATER LINE	
HOT WATER LINE	
FLOW DIRECTION	
SHUT-OFF VALVE	

1 PLUMBING - H/C WATER LINES - ISO

SCALE: 1/4"- 1 FT.

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DRAWN BY: JD

CHECKED BY: D.R.

REVISIONS:

No.	DESCRIPTION	DATE

ISSUE RECORD:

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SCALE:

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PROJECT NO.: 10305

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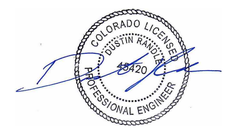
DRAWING NO.: **P2.0**



*CLEANOUTS - IPC CH.7; SEC. 708.1
CLEANOUTS REQUIRED:
- CLEANOUTS SHALL BE PROVIDED FOR DRAINAGE PIPING IN ACCORDANCE W/ SECTIONS 708.1.1 THROUGH 708.1.11.

BRANCH VENTS
*GC TO FIELD VERIFY SIZE AND LOCATIONS OF ALL VENTING AND PER CODE IPC: 906.2 & TABLE 710.1(2). ALSO IPC SEC. 907 THROUGH 918.

* INSTALL TRAPS PER IPC SEC. 709

GENERAL CONTRACTOR TO FIELD VERIFY WASTE LINE RISER AND VENTING LOCATIONS & ALL SIZES IN ACCORDANCE WITH THE IPC. COORDINATE WITH OTHER TRADES AS APPLICABLE AND NECESSARY. SCHEMATIC PLUMBING LAYOUTS CAN BE MODIFIED IN THE FIELD AS NECESSARY. IF LINES ARE MOVED, NOTIFY ENGINEER OF THE CHANGE.

710.1 Maximum Fixture Unit Load

The maximum number of *drainage fixture units* connected to a given size of *building sewer*, *building drain* or horizontal *branch* of the *building drain* shall be determined using Table 710.1(1). The maximum number of drainage fixture units connected to a given size of horizontal *branch* or vertical soil or waste *stack* shall be determined using Table 710.1(2).

TABLE 710.1(1)

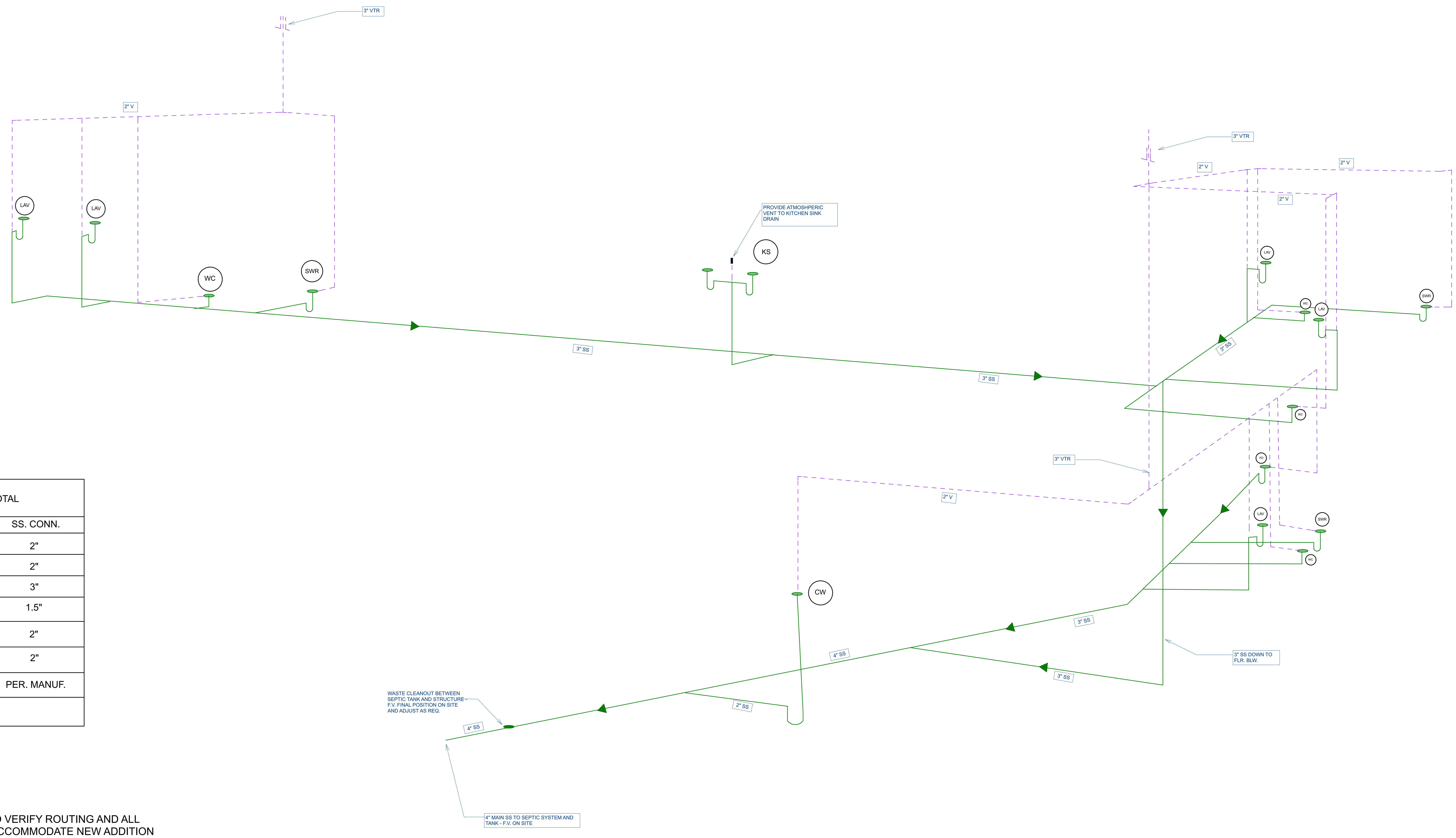
BUILDING DRAINS AND SEWERS

DIAMETER OF PIPE (inches)	MAXIMUM NUMBER OF DRAINAGE FIXTURE UNITS CONNECTED TO ANY PORTION OF THE BUILDING DRAIN OR THE BUILDING SEWER, INCLUDING BRANCHES OF THE BUILDING DRAIN[a] — Slope per foot: 1/16 inch	1/8 inch	1/4 inch	1/2 inch
1 1/4	—	—	1	1
1 1/2	—	—	3	3
2	—	—	21	26
2 1/2	—	—	24	31
3	—	36	42	50
4	—	180	216	250
5	—	390	480	575
6	—	700	840	1,000
8	1,400	1,600	1,920	2,300
10	2,500	2,900	3,500	4,200
12	3,900	4,600	5,600	6,700
15	7,000	8,300	10,000	12,000

For SI: 1 inch = 25.4 mm, 1 inch per foot = 83.3 mm/m.

a. The minimum size of any *building drain* serving a water closet shall be 3 inches.

SOME FIXTURES AND OTHER HARDWARE REMOVED OR OMITTED FOR CLARITY



WASTE FIXTURE SCHEDULE - HOME TOTAL

LABEL	FIXTURE	COUNT	SS. CONN.
SWR	SHOWER	3	2"
KS	KITCHEN SINK	1	2"
WC	WATER CLOSET (TOILET)	4	3"
LAV	LAVATORY	5	1.5"
FD	2" FLOOR DRAIN	1	2"
CW	CLOTHES WASHER	1	2"
DW	DISHWASHER	1	PER. MANUF.
TOTAL FIXTURE COUNT		16	

KEYED NOTES: #

1. F.V. ALL VENTING
2. EXISTING 4" MAIN SS LINE TO REMAIN. GC TO VERIFY ROUTING AND ALL CONNECTIONS. RELOCATE AS NEEDED TO ACCOMMODATE NEW ADDITION

WASTE LINE LEGEND

NAME	SYMBOL
SANITARY SEWER (SS)	
VENT	
FLOW DIRECTION	
ROOF VENT	
CLEANOUT	

2 PLUMBING - WASTE LINES - ISO

SCALE: 1/4"- 1 FT.

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JUSTIN MEYER- PLUMBING

42 Marmot Way, Ophir, CO 81426

DRAWN BY: JD
CHECKED BY: D.R.

REVISIONS:

No.	DESCRIPTION	DATE
△		
△		
△		
△		

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No.	DESCRIPTION	DATE

SCALE:

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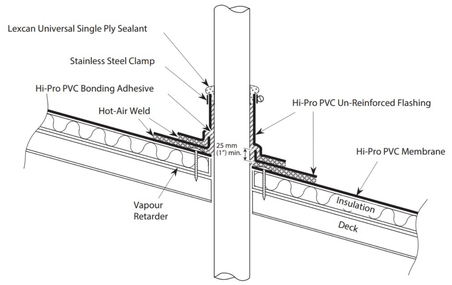
PROJECT NO.: 10305
DATE: 1/25/2023

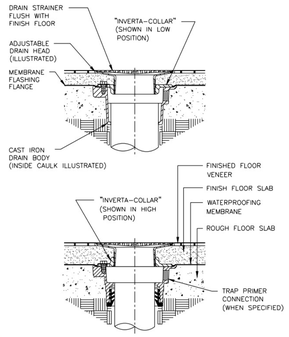
DRAWING NO.: **P2.1**

COLORADO LICENSED PROFESSIONAL ENGINEER JUSTIN RAHUL... 55420

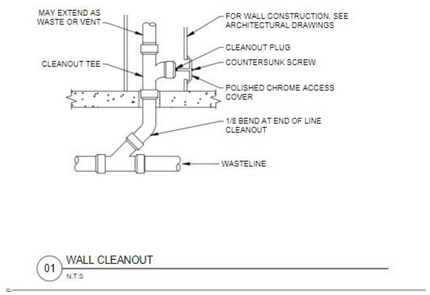


Comments: Pipe Flashing must extend minimum 200 mm (8") above roof flood level.

PIPING THROUGH ROOF (TYPICAL)

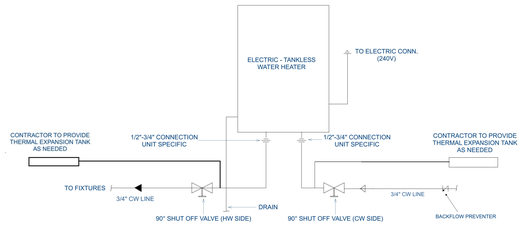


FLOOR DRAIN INSTALLATION (TYPICAL)

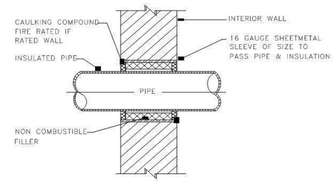


01 WALL CLEANOUT
N.T.S

WALL CLEANOUT (TYPICAL)

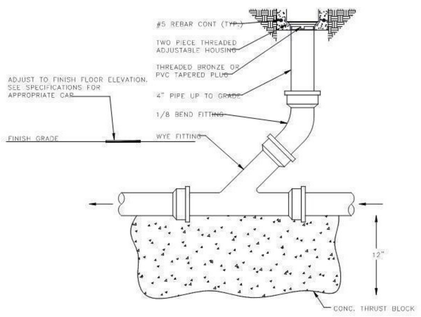


ELECTRIC TANKLESS WATER HEATER (TYPICAL)



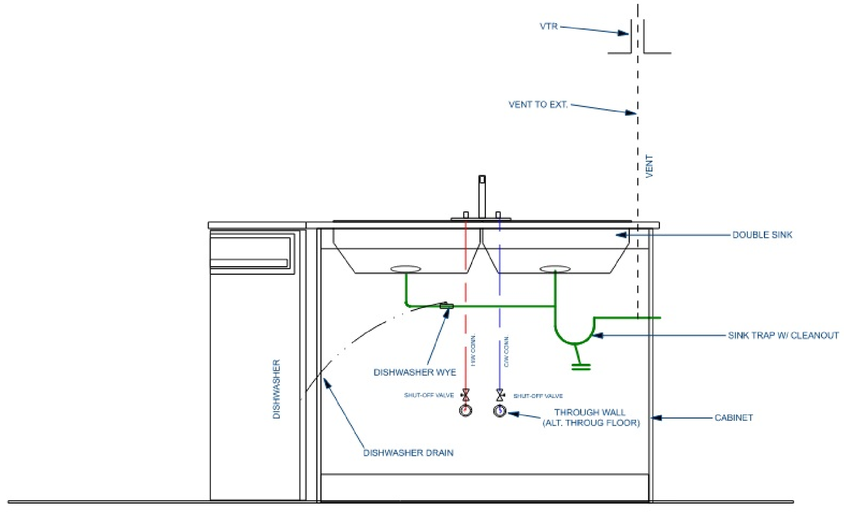
X PIPE PENETRATION THRU WALL DETAIL
SCALE: NTS

PIPE PENETRATION THRU WALL DETAIL (TYPICAL)



X 1-WAY GRADE CLEANOUT DETAIL
SCALE: NTS

1-WAY GRADE CLEANOUT DETAIL (TYPICAL)



DOUBLE SINK WITH DISHWASHER CONN. DETAIL (TYPICAL)

1 PLUMBING - DETAILS
SCALE: NO SCALE

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JUSTIN MEYER- PLUMBING

42 Marmot Way, Ophir, CO 81426

DRAWN BY: JD
CHECKED BY: D.R.

REVISIONS:

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DRAWING NO.: **P3.0**

COLORADO LICENSED
JUSTIN RANDOLPH MEYER
43420
PROFESSIONAL ENGINEER

Electrical Requirements

Ensure your home can accommodate the power supply and that you have enough space available in your breaker panel for this unit.

Model Modelo	kW kW	Amps Amperes	Volts Voltio	Breaker (AMPS) Disyuntor (Amperes)	Wire Gauge Req. Calibre requerido del cable	Weight Peso
RETEX-36	36	150	240	4 x 40 DP	4 x 8 AWG	17.4 LBS

Specifications

Dimensions: H 18.25 in, W 21.625 in, D 3.5 in

Dimensions

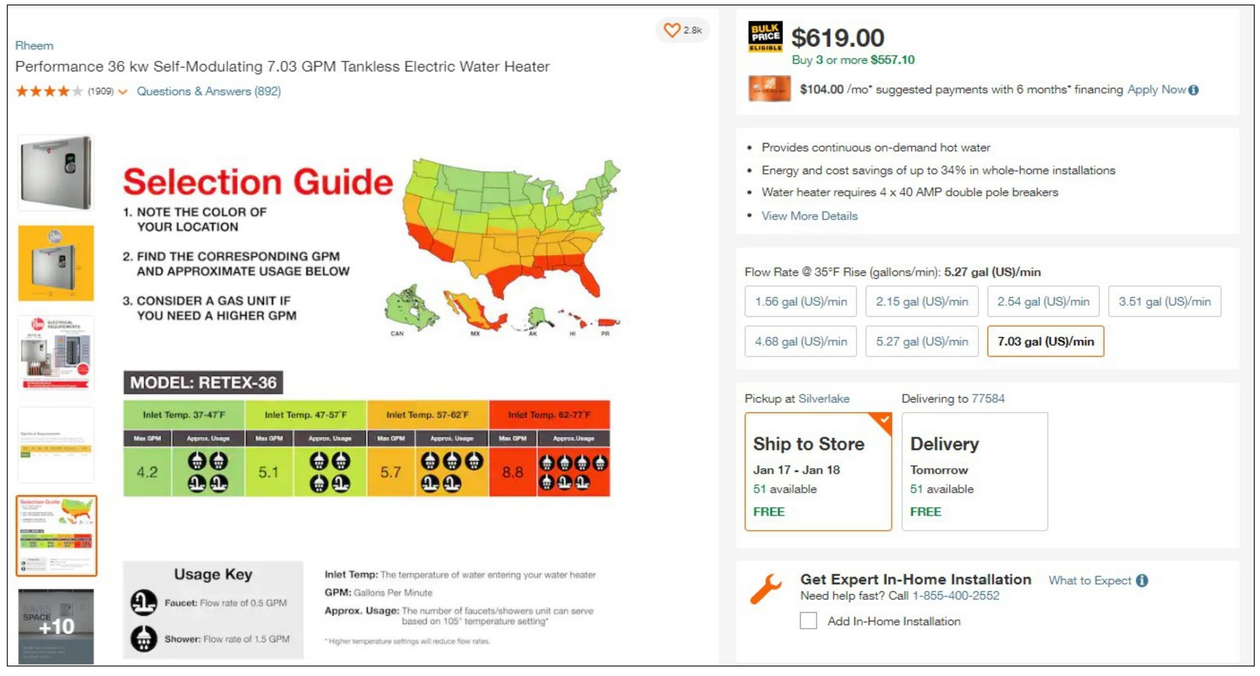
Product Depth (in.)	3.5 in	Product Height (in.)	18.25 in
Product Width (in.)	21.625 in	Water Connection Size (in.)	3/4 in NPT

Details

Amperage (amps)	150 A	Application Type	Residential
Electricity Phase	Single Phase	Finish Family	Gray
Flow Rate @ 35°F Rise (gallons/min)	7.03 gal (US)/min	Flow Rate @ 45°F Rise (gallons/min)	5.46 gal (US)/min
Flow Rate @ 55°F Rise (gallons/min)	4.47 gal (US)/min	Flow Rate @ 65°F Rise (gallons/min)	3.78 gal (US)/min
Fuel Type	Electric	Heat Exchanger Warranty	5 Year
Indoor/Outdoor	Indoor	Maximum Temperature (F)	140 °F
Minimum Activation Rate (gpm)	0.25	Minimum Temperature (F)	80 °F
Number of Elements	4	Number of Showers	1-3
Pack Size	1	Product Weight (lb.)	19 lb
Required Volt Connection	240 volt	Returnable	90-Day
Uniform Energy Factor	0	Water Heater Features	Wall Mounted
Wattage (watts)	36000 W		

Warranty / Certifications

Certifications and Listings	CSA Certified, ETL Listed, UL Listed	Labor Warranty	No Warranty
Part Warranty	1 Year		



1 HOT WATER HEATER - SPECS

SCALE: NO SCALE

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REVISIONS:

No.	DESCRIPTION	DATE

ISSUE RECORD:

No.	DESCRIPTION	DATE

SCALE:

SHEET CONTENTS:

PROJECT NO.: 10305
DATE: 1/25/2023

DRAWING NO.: P3.1