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Roanoke
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## PLUMBING GENERAL NOTES

1. ALL WORK, METHODS AND INSTALLATIONS INVOLVED IN THE PLUMBING DESIGN SHALL BE IN ACCORDANCE WITH THE CITY BUILDING CODE, INSPECTION REGULATIONS AND ALL OTHER OFFICIALS HAVING JURISDICTION.
2. ALL SANITARY PIPING 3" AND LARGER ROUTED AT 1/8" SLOPE PER FOOT UNLESS OTHERWISE NOTED. ALL PIPE LESS THAN 3" SHALL BE ROUTED AT 1/4" SLOPE PER FOOT.
3. EACH VENT SHALL TERMINATE VERTICALLY NOT LESS THAN 6" ABOVE ROOF, MAINTAIN MINIMUM 10'-0" DISTANCE BETWEEN VENT TERMINALS THROUGH ROOF AND ALL FRESH AIR INTAKES, AND A MINIMUM 5'-0" FROM ANY EXTERIOR WALL.
4. CONTRACTOR TO FIELD VERIFY AS NECESSARY THE EXACT ROUTING AND SIZES OF ALL PIPING.
5. PROVIDE A TWO-WAY CLEANOUT AT CIVIL'S POINT OF CONNECTION.
6. CONTRACTOR SHALL COORDINATE ROUTING OF PIPING BELOW SLAB WITH COLUMN FOOTINGS, GRADE BEAMS, UNDERGROUND PLUMBING AND ELECTRICAL UTILITIES, AND OTHER SUB-SURFACE BUILDING ELEMENTS.
7. CONTRACTOR SHALL COORDINATE ROUTING OF PIPING IN CEILING SPACES WITH MECHANICAL AND ELECTRICAL EQUIPMENT, DUCTWORK AND CONDUIT. SHOULD A CONFLICT OCCUR THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER PRIOR TO INSTALLING AN ALTERNATE PIPING PLAN.
8. COORDINATE ALL FIXTURE AND EQUIPMENT LOCATIONS AND CONNECTION REQUIREMENTS WITH LATEST ARCHITECTURAL DRAWINGS AND SPECIFICATIONS PRIOR TO ANY ROUGH-INS.
9. DO NOT ROUGH-IN FROM THESE DRAWINGS. REFER TO LATEST ARCHITECTURAL DRAWINGS FOR DIMENSIONED LOCATIONS.
10. PRIOR TO BEGINNING CONSTRUCTION, COORDINATE BUILDING BACKFLOW PREVENTION REQUIREMENTS WITH THE LOCAL AUTHORITY HAVING JURISDICTION AND PROVIDE AS DIRECTED.
11. WITHIN THE EXISTING BUILDING, EXISTING WATER, WASTE AND VENT SERVICES ARE TO BE MODIFIED AS REQUIRED AND REUSED FOR THE INSTALLATION OF NEW AND/OR RELOCATED PLUMBING FIXTURES. REFER TO PLUMBING FLOOR PLANS FOR POINTS OF CONNECTION.
12. WITHIN THE EXISTING BUILDING, SAWCUT AND REMOVE EXISTING FLOOR SLAB AS REQUIRED TO PROVIDE NEW AND/OR RELOCATED PLUMBING FIXTURES, CLEANOUTS, AND UNDERSLAB WASTE AND VENT PIPING. PATCH AND REFINISH FLOOR TO MATCH EXISTING.
13. IN AREAS WHERE THE FLOOR SLAB IS REMOVED, CONTRACTOR SHALL ALSO REMOVE UNDERSLAB WASTE AND VENT PIPING WHICH SERVES FIXTURES DESIGNATED FOR REMOVAL. PRIOR TO ANY REMOVAL, FIELD VERIFY THAT LINES TO BE REMOVED DO NOT SERVE ANY EXISTING FIXTURES TO REMAIN OR NEW FIXTURES TO BE INSTALLED.
14. IN AREAS WHERE THE FLOOR SLAB IS NOT REMOVED, CONTRACTOR SHALL ABANDON IN PLACE ANY UNDERSLAB WASTE AND VENT PIPING NO LONGER NEEDED, UNLESS THE PIPING MUST BE REMOVED TO ACCOMMODATE NEW CONSTRUCTION. IF NEW WORK DOES NOT NECESSITATE THEIR REMOVAL, CUT AND PLUG SUCH LINES BELOW SLAB, AND PATCH FLOOR TO MATCH EXISTING.
15. FIELD VERIFY EXACT LOCATION, SIZE, DEPTH, DIRECTION OF FLOW, CAPACITY, PIPE MATERIAL AND CONDITION OF EXISTING WASTE PIPING PRIOR TO BEGINNING CONSTRUCTION. ENSURE THAT PROPER CONNECTIONS TO AND EXTENSION OF SUCH UTILITIES CAN BE MADE.
16. WASTE LINES TO BE RE-USED OR RECONNECTED TO SHALL BE THOROUGHLY RODDED OUT AND FLUSHED TO ENSURE THEY ARE FREE FROM BLOCKAGES.
17. CONTRACTOR TO COORDINATE ALL REMODEL WORK WITH THE WORK OF OTHER TRADES TO AVOID CONFLICTS AND TO MINIMIZE INTERRUPTION OF SERVICES.
18. THE PROPER INSTALLATION OF NEW FIXTURES AND THE PROPER CONTINUED OPERATION OF EXISTING FIXTURES TO REMAIN SHALL DETERMINE THE EXTENT AND NATURE OF PLUMBING REMODEL WORK.
19. RESTORE FIXTURES TO MANUFACTURER'S ORIGINAL CONDITION. THIS SHALL INCLUDE RESTORATION OF ALL FIXTURES PARTS READILY AND NON-READILY ACCESSIBLE COMPONENTS, INCLUDING ALL HARDWARE AND SEALS AS REQUIRED FOR SATISFACTORY OPERATION AND COMPLETENESS. THIS ALSO SHALL INCLUDE CLEANING THE EXTERIOR OF ALL EXPOSED PIPING TO LIKE NEW CONDITION AND PAINTING OF VITREOUS CHINA EXPOSED SURFACES AS NEEDED TO RESTORE TO ORIGINAL MANUFACTURERS CONDITION. THE CONTRACTOR MAY OPT TO REPLACE ANY FIXTURE OR PIPING WITH A LIKE APPROVED/SUBMITTED ITEM.
20. CONTRACTOR SHALL CHECK ALL LOCATIONS, MEASUREMENTS, DEPTHS, AND REPORT ANY DISCREPANCIES FOR CORRECTION BEFORE DEMOLITION.
21. CONTRACTOR TO MAKE FINAL CONNECTION TO FOOD SERVICE EQUIPMENT. COORDINATION SIZE AND LOCATION OF ALL CONNECTIONS WITH EQUIPMENT PROVIDER. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF EQUIPMENT.
22. CONTRACTOR SHALL INSTALL PRESSURE REDUCING VALVES FOR KITCHEN EQUIPMENT AS NEEDED. REFER TO MANUFACTURER'S INSTALLATION GUIDE FOR REQUIREMENTS.
23. CONTRACTOR SHALL INSTALL WATER HAMMER ARRESTORS (WHA) AS NEEDED FOR KITCHEN EQUIPMENT. REFER TO MANUFACTURER'S INSTALLATION GUIDE FOR REQUIREMENTS.
24. CONTRACTOR SHALL VERIFY GAS LOAD ON KITCHEN EQUIPMENT. IF THERE ARE ANY DISCREPANCIES WITH THE KITCHEN EQUIPMENT, CONTRACTOR SHALL SUBMIT GAS LOAD VALUE(S) OF KITCHEN EQUIPMENT TO DESIGNER PRIOR TO BEGINNING CONSTRUCTION.

## PLUMBING PIPING LEGEND

| SYMBOLS | DESCRIPTION |
|---|---|
| | SANITARY OR WASTE PIPING (SAN) |
| GW | GREASE WASTE PIPING (GW) |
| SD | STORM DRAIN PIPING (SD) |
| SSD | SUB-SOIL DRAIN OR FOOTING DRAIN (SSD) |
| PW | PUMPED WASTE (PW) |
| CD | CONDENSATE DRAIN PIPING (CD) |
| | VENT PIPING (V) |
| | GREASE WASTE VENT PIPING (GWV) |
| | COLD WATER PIPING (CW) |
| | HOT WATER PIPING (HW) |
| | HOT WATER RETURN PIPING (HWR) |
| G | NATURAL GAS PIPING (G) |
| GV | GAS VENT PIPING (GV) |
| | FLOW DIRECTIONAL ARROW |
| | SHUT-OFF VALVE |
| BV | BALANCING VALVE (BV) |
| SV | SOLENOID VALVE (SV) |
| | BALL VALVE |
| | BUTTERFLY VALVE |
| | LUBRICATED PACKED PLUG STOP STOP COCK (PC) |
| | HORIZONTAL SWING CHECK |
| | UNION |
| | STRAINER |
| | REDUCER OR INCREASER |
| | ECCENTRIC REDUCER |
| RPBFP | REDUCED PRESSURE BACKFLOW PREVENTER (RPBFP) |
| | PIPING DOWN |
| | RISE OR DROP PIPING |
| | PIPING UP -OR- PIPING UP & DOWN |
| | CAP ON END OF PIPE |
| CO | CLEANOUT (WALL OR CEILING) (CO) |
| FCO | FLOOR CLEANOUT (FCO) |
| ECO | EXTERIOR CLEANOUT WITH 18"x18"x4" CONCRETE PAD (ECO) |
| | TWO-WAY CLEANOUT (PROVIDE 18"x24"x4" CONCRETE PAD OUTSIDE) |
| PRV | PRESSURE REDUCING VALVE (PRV) |
| | BRANCH CONNECTION OUT OF TOP |
| | BRANCH CONNECTION OUT OF BOTTOM |
| | BRANCH CONNECTION OUT OF SIDE |
| | WYE & 1/8TH BEND BRANCH CONNECTION |
| | WYE BRANCH CONNECTION |
| | HOSE BIBB |
| | GAS PRESSURE REGULATOR |
| | TEST COCK |
| | GAS METER |
| M | FLOW METER |
| | WALL HYDRANT |
| | ROOF DRAIN |
| 0 | REFER TO DEMOLITION NOTE |
| ⟨0⟩ | REFER TO KEYED NOTE |
| FS | FLOOR SINK (FS) |
| FD | FLOOR DRAIN (FD) |
| FD | FLOOR DRAIN WITH P-TRAP (FD) |
| FD | FLOOR DRAIN WITH P-TRAP AT 45° ANGLE (FD) |
| HD | HUB DRAIN (HD) |
| A | SHOCK ABSORBER |
| (E) | EXISTING |
| (N) | NEW |
| VTR | VENT THRU ROOF |
| B.F.F. | BELOW FINISHED FLOOR |
| A.F.F. | ABOVE FINISHED FLOOR |
| | DEMOLISH TO THIS POINT |
| | NEW CONNECTION |
| IE=100.00' | INVERT ELEVATION |
| 1 | DELTA CHANGE SYMBOL |
| P 1 4" VTR | RISER FLAG |

## PLUMBING CONNECTION SCHEDULE

| MARK | DESCRIPTION | BASIS OF DESIGN MANUFACTURER | BASIS OF DESIGN MODEL NO. | CW DIAMETER (INCHES) | HW DIAMETER (INCHES) | SS DIAMETER (INCHES) | GW DIAMETER (INCHES) | V DIAMETER (INCHES) | GWV DIAMETER (INCHES) | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| DRAINAGE FIXTURE (CO, FD, FS, HD, TD) | | | | | | | | | | |
| ECO | EXTERIOR CLEANOUT | ZURN | Z1400-BZ1 | - | - | - | - | - | - | |
| FCO | FLOOR CLEANOUT | ZURN | Z1400-BZ1 | - | - | - | - | - | - | |
| FD-1 | FLOOR DRAIN, GENERAL | ZURN | Z415-BZ1 | - | - | 3 | - | 1-1/2 | - | 1 |
| FD-2 | FLOOR DRAIN, MECHANICAL | ZURN | Z415-BZ1 | - | - | 4 | - | 2 | - | 1 |
| FS-1 | FLOOR SINK | ZURN | Z1750 | - | - | - | 4 | - | 2 | 1 |
| HD-1 | HUB DRAIN | ZURN | Z1870 | - | - | - | 2 | - | 2 | 1 |
| WCO | WALL CLEANOUT | ZURN | Z1446 | - | - | - | - | - | - | |
| DRINKING FOUNTAIN (EWC) | | | | | | | | | | |
| EWC-1 | DRINKING FOUNTAIN | ELKAY "EZH20" | EZS8WSLK | 1/2 | - | 2 | - | 1-1/2 | - | 2 |
| GREASE WASTE INTERCEPTOR (GWI) | | | | | | | | | | |
| GWI-1 | GREASE WASTE INTERCEPTOR | SCHIER | GB-1000 | - | - | - | 4 | - | 2 | 3 |
| HYDRANTS (HB, RH, WH) | | | | | | | | | | |
| RH-1 | ROOF HYDRANT, NON-FREEZE | ZURN | Z1388XL | 3/4 | - | - | - | - | - | |
| WH-1 | WALL HYDRANT, NON-FREEZE | ZURN | Z1300 | 3/4 | - | - | - | - | - | |
| LAVATORY (L) | | | | | | | | | | |
| L-1 | LAVATORY, WALL MOUNTED | AMERICAN STANDARD / CHICAGO FAUCET | 0355.012 / 420-ABCP | 1/2 | 1/2 | 2 | - | 2 | - | 4,5 |
| L-1A | LAVATORY, WALL MOUNTED (A.D.A. COMPLIANT) | AMERICAN STANDARD / CHICAGO FAUCET | 0355.012 / 420-ABCP | 1/2 | 1/2 | 2 | - | 2 | - | 4,5 |
| MOP SINK (MS) | | | | | | | | | | |
| MS-1 | MOP SINK | AMERICAN STANDARD / CHICAGO FAUCET | 1247741.020 / 897-RCF | 1/2 | 1/2 | 3 | - | 1-1/2 | - | |
| SHOWER (SH) | | | | | | | | | | |
| SH-1 | SHOWER | AQUATIC / CHICAGO FAUCET | 13636FHARF L/R / 1907-TK600CP | 1/2 | 1/2 | 2 | - | - | - | 6 |
| SH-1A | SHOWER (A.D.A COMPLAINT) | AQUATIC / CHICAGO FAUCET | 1363BFC2P / SH-PB1-11-034 | 1/2 | 1/2 | 2 | - | - | - | 6, 7 |
| SINK (HS, SK) | | | | | | | | | | |
| SK-1 | SINK, DROP-IN | ELKAY "CELEBRITY" / ELKAY | BCR15 / LK2477CR | 1/2 | 1/2 | 2 | - | 1-1/2 | - | 4, 8 |
| SK-2 | SINK | AMERICAN STANDARD / CHICAGO FAUCET | 0476.028 / 420-ABCP | 1/2 | 1/2 | 2 | - | 1-1/2 | - | 4 |
| SK-3 | 3-COMPARTMENT SINK | REGENCY / T&S | 600S3141612X / B-0133-ADF12 | 3/4 | 3/4 | - | 2 | - | - | |
| SK-4 | HAND SINK | REGENCY | 600HS17 | 1/2 | 1/2 | 2 | - | 1-1/2 | - | 4, 9 |
| VALVE BOX (VB) | | | | | | | | | | |
| VB-1 | VALVE BOX, COFFEE MACHINE CONNECTION | SIOUX CHIEF "OXBOX" | 696R SERIES | 1/2 | - | - | - | - | - | 10 |
| VB-2 | VALVE BOX, KITCHEN EQUIPMENT | SIOUX CHIEF "OXBOX" | 696R SERIES | 3/4 | - | - | - | - | - | 10 |
| VB-3 | VALVE BOX, KITCHEN EQUIPMENT | SIOUX CHIEF "OXBOX" | 696R SERIES | - | 3/4 | - | - | - | - | 11 |
| VB-4 | VALVE BOX, WASHING MACHINE | SIOUX CHIEF | 698R SERIES | 1/2 | 1/2 | 2 | - | 1-1/2 | - | 12 |
| WATER CLOSET (WC) | | | | | | | | | | |
| WC-1 | WATER CLOSET, TANK TYPE | AMERICAN STANDARD / CHURCH | 3379.128 / 9500SSCT. | 3/4 | - | 4 | - | 2 | - | |
| WC-1A | WATER CLOSET, TANK TYPE (A.D.A. COMPLIANT) | AMERICAN STANDARD / CHURCH | 3379.128 / 9500SSCT. | 3/4 | - | 4 | - | 2 | - | 13 |

REMARKS
1 PROVIDE TRAP INSERT COMPLYING WITH ASSE 1072.
2 PROVIDE CANE TOUCH SKIRT TO COMPLY WITH ADA GUIDELINES.
3 PROVIDE SCHIER RISER (FCR2) FOR GREASE WASTE INTERCEPTOR.
4 PROVIDE ASSE 1070 THERMOSTATIC MIXING VALVE UNDER FIXTURE AND SET TO 105°F. VALVE MUST BE CAPABLE OF SUPPLYING REQUIRED FLOW OF FIXTURE(S) BEING SERVED.
5 IF LAVATORY IS LOCATED IN CLIENT RESTROOMS 127, 128 OR 129, CONTRACTOR SHALL EXTEND COLD WATER PIPING DOWN TO SERVE A TAMPER RESISTANT HOSE BIBB LOCATED BELOW LAVATORY.
6 PROVIDE ASSE 1016 THERMOSTATIC MIXING VALVE FOR FIXTURE AND SET TO 110°F. REFER TO ARCHITECTURAL DRAWINGS FOR FIXTURE MOUNTING HEIGHTS AND REQUIREMENTS.
7 CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR ADA FIXTURE MOUNTING HEIGHTS AND REQUIREMENTS AND COORDINATE SHOWER HEAD AND VALVE WITH GRABS BARS.
8 PROVIDE 2" DRAIN FITTING STAINLESS STEEL BODY STRAINER BASKET AND OFFSET TAILPIECE.
9 FAUCET IS SUPPLIED WITH SINK.
10 PROVIDE WHA FOR COLD WATER CONNECTION. MOUNT UTILITY BOXES FOR FIXTURE SUPPLY CONNECTION IN WALL AND 18" MINIMUM A.F.F. CONTRACTOR SHALL COORDINATE WHA BASED ON FIXTURE MANUFACTURER'S RECOMMENDATIONS.
11 PROVIDE WHA FOR HOT WATER CONNECTION. MOUNT UTILITY BOX FOR FIXTURE SUPPLY CONNECTION IN WALL AND 18" MINIMUM A.F.F. CONTRACTOR SHALL COORDINATE WHA BASED ON FIXTURE MANUFACTURER'S RECOMMENDATIONS.
12 PROVIDE WHA FOR HW AND CW CONNECTIONS. MOUNT UTILITY BOX FOR FIXTURE SUPPLY CONNECTIONS IN WALL AND 18" MINIMUM A.F.F. CONTRACTOR SHALL COORDINATE WHA BASED ON FIXTURE MANUFACTURER'S RECOMMENDATIONS.
13 FOR ADA COMPLAINT FIXTURES, CONTROLS MUST BE LOCATED ON THE OPEN SIDE OF THE FIXTURE.

## PIPE ACCESSORY SCHEDULE

| MARK | DESCRIPTION | BASIS OF DESIGN MANUFACTURER | BASIS OF DESIGN MODEL NO. | CAPACITY (GPM) | MIN. FLOW (GPM) | MAX PRESSURE DROP (PSIG) | SIZE (INCHES) |
|---|---|---|---|---|---|---|---|
| BFP-1 | REDUCED PRESSURE BACKFLOW PREVENTER | WATTS | LF909M1-QT-S-FS | 200 | - | 10 | 2 |
| BV-1 | BALANCING VALVE | WATTS | LFCSM-61-S | 1 | - | 1 | 3/4 |
| BV-2 | BALANCING VALVE | WATTS | LFCSM-61-S | 1 | - | 1 | 3/4 |
| BV-3 | BALANCING VALVE | WATTS | LFCSM-61-S | 1 | - | 1 | 3/4 |

## SHOCK ARRESTOR SCHEDULE

| P.D.I. SYMBOLS: | FIXTURE UNITS: | THREADED CONNECTION | CERTIFICATION |
|---|---|---|---|
| AA | 1 - 4 | 1/2" | ASSE 1010 |
| A | 5 - 11 | 1/2" | ASSE 1010 |
| B | 12 - 32 | 3/4" | ASSE 1010 |
| C | 33 - 60 | 1" | ASSE 1010 |
| D | 61 - 113 | 1" | ASSE 1010 |
| E | 114 - 154 | 1" | ASSE 1010 |
| F | 155 - 330 | 1" | ASSE 1010 |

## GAS WATER HEATER SCHEDULE

| MARK | BASIS OF DESIGN MANUFACTURER | BASIS OF DESIGN MODEL | STORAGE CAPACITY (GAL) | BTU/HR. INPUT | WH GALS. PER HR. RECOVERY RATE 88°F RISE | STORED WATER TEMP (°F) | ELECTRICAL CHAR. V | P | HZ | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| GWH-1 | A.O. SMITH | BTHL-250(A) | 250 | 250,000 | 324 | 140 | 120 | 1 | 60 | 1, 2 |

REMARKS
1 INDIVIDUA HORIZONTAL CONCENTRIC FLUE VENT FOR EACH WATER HEATER. PROVIDE CONCENTRIC VENT KIT PER MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR SHALL COORDINATE FLUE LOCATION THROUGH SIDE WALL AND PIPE ROUTING IN CEILING SPACES WITH ALL OTHER DISCIPLES PRIOR TO CONSTRUCTION.
2 PROVIDE HOUSEKEEPING PAD. CONTRACTOR SHALL COORDINATE WITH STRUCTURAL REQUIREMENTS.
3 PROVIDE ACID NEUTRALIZING TANK KIT PER MANUFACTURER'S RECOMMENDATIONS.

## EXPANSION TANK SCHEDULE

| MARK | BASIS OF DESIGN MANUFACTURER | BASIS OF DESIGN MODEL | DESCRIPTION | MAX WORK PRESSURE (PSI) | TANK VOLUME (GAL) | MAX. ACCEPT. (GAL) | DIAMETER (INCHES) |
|---|---|---|---|---|---|---|---|
| ET-1 | WATTS | DETA-20 | HOT WATER EXPANSION TANK | 150 | 8 | 5.3 | 12 |

REMARKS
1 PROVIDE ASME POTABLE WATER EXPANSION TANK ON THE COLD WATER SUPPLY LINE, DOWNSTREAM OF THE CHECK VALVE.
2 PROVIDE HOUSEKEEPING PAD. CONTRACTOR SHALL COORDINATE WITH STRUCTURAL REQUIREMENTS.
3 PROVIDE UNION CONNECTION.

## CIRCULATION PUMP SCHEDULE

| MARK | BASIS OF DESIGN MANUFACTURER | BASIS OF DESIGN MODEL | DESCRIPTION | TYPE | FLOW (GPM) | HEAD (FT) | POWER (HP) | ELECTRICAL CHAR. V | P | F | MAX RPM |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CP-1 | TACO | 007E SERIES | CIRCULATION PUMP | INLINE BRONZE | 1 | 2 | 1/25 | 120 | 1 | 60 | 4830 |
| CP-2 | TACO | 007E SERIES | CIRCULATION PUMP | INLINE BRONZE | 2 | 7 | 1/25 | 120 | 1 | 60 | 4830 |

## THERMOSTATIC MIXING VALVE SCHEDULE

| MARK | BASIS OF DESIGN MANUFACTURER | BASIS OF DESIGN MODEL | TEMP. IN (DEG. F) | TEMP. OUT (DEG. F) | MIN. FLOW (GPM) | DESIGN FLOW (GPM) | THERMOMETER | UNION CONNECTION | PRESSURE DROP (PSIG) |
|---|---|---|---|---|---|---|---|---|---|
| TMV-1 | LEONARD | TM-420B-LF-DT | 140 | 130 | 1 | 13 | YES | YES | 10 |

REMARKS
1 MAKE WATER CONNECTIONS TO THERMOSTATIC MIXING VALVE(S) IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
2 REFER TO PLANS FOR ALL PIPE SIZES. PROVIDE INCREASERS/DECREASERS AND/OR VALVES AS REQUIRED.
3 PROVIDE UNION CONNECTIONS AND OUTLET THERMOMETER UNLESS INDICATED OTHERWISE.
4 REFER TO PLANS FOR ALL EQUIPMENT LOCATIONS.
5 ALL THERMOSTATIC MIXING VALVES MUST BE LEAD FREE.
6 MOUNT MIXING VALVE A T 48"-60"A.F.F. UNLESS NOTED OTHERWISE ON PLANS.

## SUMP PUMP SCHEDULE

| MARK | BASIS OF DESIGN MANUFACTURER | BASIS OF DESIGN MODEL | DESCRIPTION | TYPE | FLOW (GPM) | HEAD (FT) | POWER (HP) | ELECTRICAL CHAR. V | P | F | RPM |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SP-1 | STANCOR | SE-50 | ELEVATOR SUMP PUMP | SIMPLEX SUBMERSIBLE | 50 | 12 | 0.50 | 115 | 1 | 60 | 3450 |

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THOMAS S. WARD IV
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PROFESSIONAL ENGINEER

50+ Years RAM HOUSE #iamramfam

LIONBERGER CONSTRUCTION

**RAM HOUSE**
ALTERATIONS & ADDITION
PLUMBING LEGEND, GENERAL NOTES AND SCHEDULES
410 ELM AVE
ROANOKE CITY, VIRGINIA

| | |
|---|---|
| DRAWN BY | JER |
| DESIGNED BY | JER |
| CHECKED BY | JDW |
| DATE | 02/14/2025 |
| SCALE | 12" = 1'-0" |
| REVISIONS | |

P0.01
PROJECT NO 03230086.00

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Project No: 2550-00213-00

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# PLUMBING SPECIFICATIONS

## GENERAL

A. PERFORM WORK IN ACCORDANCE WITH APPLICABLE STATUTES, ORDINANCES, CODES AND REGULATIONS OF GOVERNMENTAL AUTHORITIES HAVING JURISDICTION.

B. OBTAIN ALL PERMITS REQUIRED.

C. CONTRACT DRAWINGS ARE DIAGRAMMATIC ONLY AND DO NOT GIVE FULLY DIMENSIONED LOCATIONS OF VARIOUS ELEMENTS OF WORK. DETERMINE EXACT LOCATIONS FROM FIELD MEASUREMENTS.

D. GUARANTEE WORK FOR 1 YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION OF THE PROJECT. DURING THAT PERIOD MAKE GOOD ANY FAULTS OR IMPERFECTIONS THAT MAY ARISE DUE TO DEFECTS OR OMISSIONS IN MATERIAL, EQUIPMENT OR WORKMANSHIP. AT THE OWNER'S OPTION, REPLACEMENT OF FAILED PARTS OR EQUIPMENT SHALL BE PROVIDED.

E. PROVIDE FINISHES TO MATCH APPROVED SAMPLES. ALL EXPOSED FINISHES SHALL BE APPROVED BY THE ARCHITECT. SUBMIT COLOR SAMPLES AS REQUIRED.

F. PROVIDE EQUIPMENT HOUSEKEEPING PADS UNDER ALL FLOOR MOUNTED AND GROUND MOUNTED PLUMBING EQUIPMENT, AND AS SHOWN ON THE DRAWINGS. CONCRETE PADS ARE TO BE 4" THICK UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

G. PROVIDE NAMEPLATES WITH 1/2" HIGH LETTERS AND FASTENED WITH EPOXY OR SCREWS.

H. MAINTAIN QUALITY CONTROL OVER SUPERVISION, SUBCONTRACTORS, SUPPLIERS, MANUFACTURERS, PRODUCTS, SERVICES, SITE CONDITIONS AND WORKMANSHIP TO PRODUCE WORK IN ACCORDANCE WITH CONTRACT DOCUMENTS.

I. COMPLY WITH INDUSTRY STANDARDS EXCEPT WHEN MORE RESTRICTIVE TOLERANCES OR SPECIFIED REQUIREMENTS INDICATE MORE RIGID STANDARDS OR MORE PRECISE WORKMANSHIP.

J. PERFORM WORK BY PERSONS QUALIFIED TO PRODUCE WORKMANSHIP OF SPECIFIED QUALITY.

K. SECURE PRODUCTS IN PLACE WITH POSITIVE ANCHORAGE DEVICES DESIGNED AND SIZED TO WITHSTAND STRESSES, VIBRATION, AND RACKING. UNDER NO CONDITIONS SHALL MATERIAL OR EQUIPMENT BE SUSPENDED FROM STRUCTURAL BRIDGING

L. COMPLY WITH INSTRUCTIONS IN FULL DETAIL, INCLUDING EACH STEP IN SEQUENCE. SHOULD INSTRUCTION CONFLICT WITH CONTRACT DOCUMENTS, REQUEST CLARIFICATION FROM ARCHITECT/ENGINEER BEFORE PROCESSING.

## EARTHWORK

A. EXCAVATE AND BACKFILL FOR PIPE TRENCHES FOR UNDERGROUND PIPING, AND EXCAVATE FOR STRUCTURES INSTALLED AS PART OF MECHANICAL WORK.

B. REMOVE EXCESS EXCAVATION MATERIAL OR MATERIAL UNSUITABLE FOR BACKFILL. EXCESS MATERIAL CAN BE SPREAD ON GRADE, OR SHALL BE REMOVED FROM SITE AS DIRECTED BY THE OWNER/ARCHITECT.

## PLUMBING ALTERATIONS

A. INSPECT AND SERVICE EXISTING EQUIPMENT, FIXTURES AND MATERIALS THAT ARE TO REMAIN OR TO BE REUSED.

B. DISPOSAL OF EQUIPMENT, FIXTURES, MATERIALS, OR HOUSEKEEPING PADS TO BE ABANDONED. PRIOR TO DISPOSAL, THE CONTRACTOR SHALL VERIFY WITH THE OWNER WHAT IS TO BE SALVAGED BY THE OWNER AND WHAT IS TO BECOME THE PROPERTY OF THE CONTRACTOR.

C. HANDLING OF EQUIPMENT AND MATERIALS TO BE REMOVED.

D. INSPECTION: EXISTING MATERIALS AND EQUIPMENT INDICATED ON THE DRAWINGS OR IN THE SPECIFICATIONS TO BE REUSED SHALL BE INSPECTED FOR DAMAGE OR MISSING PARTS. CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER, IN WRITING ACCORDINGLY. IF USING MATERIALS SPECIFIED OR SHOWN ON THE DRAWING VOIDS OR DIMINISHES THE WARRANTY OR OPERATION OF REMAINING EQUIPMENT OR SYSTEMS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER, IN WRITING. DEMOLITION DRAWINGS ARE BASED ON CASUAL FIELD OBSERVATION, AND WHEN AVAILABLE, EXISTING RECORD DOCUMENTS. REPORT DISCREPANCIES TO ARCHITECT BEFORE DISTURBING EXISTING INSTALLATION, AND IMMEDIATELY AFTER SUCH DISCREPANCIES ARE DISCOVERED.

E. APPLICATION: EXISTING MATERIALS AND EQUIPMENT INDICATED ON THE DRAWINGS OR IN THE SPECIFICATIONS TO BE REUSED SHALL BE CLEANED AND RECONDITIONED, INCLUDING CLEANING OF PIPING SYSTEMS AND HVAC COILS PRIOR TO INSTALLATION AND REUSE. MATERIAL AND EQUIPMENT REMOVED THAT IS NOT TO BE SALVAGED FOR OWNER'S USE OR FOR REUSE ON THE PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND BE REMOVED FROM THE SITE. MATERIAL OR EQUIPMENT SALVAGED FOR OWNER'S USE SHALL BE CAREFULLY HANDLED AND STORED WHERE DIRECTED BY THE OWNER OR THE ARCHITECT/ENGINEER. RELOCATE MATERIAL AND / OR EQUIPMENT AS DIRECTED BY OWNER. MATERIALS AND EQUIPMENT NOT INDICATED TO BE REMOVED OR ABANDONED SHALL BE RECONNECTED TO THE NEW SYSTEM. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL WALK AREAS TO BE RENOVATED WITH OWNER TO IDENTIFY AND DOCUMENT ITEMS TO BE SALVAGED FOR OWNER'S USE.

F. SEQUENCE AND SCHEDULE: COORDINATE UTILITY SERVICE OUTAGES WITH UTILITY COMPANY, ARCHITECT AND OWNER. REMOVE CONCRETE HOUSEKEEPING PAD WHERE MATERIALS OR EQUIPMENT HAVE BEEN REMOVED.

## PLUMBING FIXTURES AND FIXTURES CARRIERS:

A. ACCEPTABLE MANUFACTURERS:
   A. VITREOUS CHINA FIXTURES: AMERICAN STANDARD, ELJER, KOHLER, TOTO, ZURN.
   B. PLUMBING FAUCETS: AMERICAN STANDARD, CHICAGO, T&S BRASS, ZURN, SYMMONS, MOEN COMMERCIAL HD
   C. SUPPORTS AND CARRIERS: ZURN, J.R. SMITH, WADE, JOSAM, WATTS/ANCON, MIFAB
   D. FLUSH VALVES: SLOAN, ZURN, MOEN COMMERCIAL HD
   E. SUPPLIES, STOPS AND CHROME PLATED TUBULAR BRASS: MCGUIRE, KOHLER, CHICAGO, ZURN, BRASSCRAFT
   F. WATER CLOSET SEATS: BENEKE, CHURCH, OLSONITE, BEMIS, CENTOCO
   G. ELECTRIC DRINKING FOUNTAINS: HALSEY TAYLOR, ELKAY, OASIS, HAWS, ACORN AQUA
   H. FLOOR DRAINS/SINKS: ZURN J.R. SMITH, JOSAM, WADE, WATTS/ANCON, SIOUX CHIEF, MIFAB
   I. CLEANOUTS: ZURN, J.R. SMITH, JOSAM, WADE, WATTS/ANCON, MIFAB
   J. STAINLESS STEEL SINKS: ELKAY, JUST MANUFACTURING
   K. MOP SINKS: CRANE FIAT, STERN WILLIAMS, ACORN, CECO
   L. THERMOSTATIC MIXING VALVES: LAWLER, SYMMONS, POWERS, HOLBY
   M. HOSE BIBS: CHICAGO, JOSAM, WOODFORD, ZURN J.R. SMITH, WADE
   N. WALL/ROOF HYDRANTS: WOODFORD, MIFAB, ZURN, J.R. SMITH, JOSAM, WADE

B. INSTALLATION:
   1. INSTALLATION SHALL BE ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
   2. PROVIDE NECESSARY STOPS, VALVE, TRAPS, UNIONS, VENTS, COLD WATER, HOT WATER, SANITARY, ETC. FOR A COMPLETE INSTALLATION.
   3. REMOVE PIPING AND SERVICES ROUGHED-IN INCORRECTLY AND INSTALL CORRECTLY, WITHOUT COST.
   4. EXPOSED PIPING, FITTINGS AND APPURTENANCES SHALL BE CHROME-PLATED BRASS.
   5. PROVIDE ISOLATION VALVES IN DOMESTIC WATER LINES TO ISOLATE ALL EQUIPMENT, RESTROOMS, HOSE BIBBS, AND WHERE SHOWN ON DRAWINGS.

## DOMESTIC WATER PIPING AND APPURTENANCES

A. FURNISH AND INSTALL DOMESTIC HOT AND COLD WATER PIPING.

B. BELOW SLAB ON GRADE PIPING. FURNISH ASTM B 88 AND ANSI/NSF STANDARD 61 COLD DRAWN, TYPE K COPPER WATER TUBE. RUN CONTINUOUS WITH NO JOINTS UNDER THE FLOOR SLAB. PROVIDE COPPER PIPE CORROSION PROTECTION AS SPECIFIED IN THIS SECTION.

C. ABOVE SLAB PIPING. PROVIDE SEAMLESS ASTM B 88 AND ANSI/NSF STANDARD 61 TYPE L COPPER WATER TUBE WITH WROUGHT COPPER AND BRONZE SOLDER-JOINT, ANSI B16.22. SOLDER MATERIAL SHALL BE 95-5 (LEAD FREE) (TIN-ANTIMONY-GRADE 95TA) ASTM 32.

A. WATER HAMMER ARRESTORS: PROVIDE PISTON TYPE HYDRAULIC ENGINEERED/MANUFACTURED WATER HAMMER ARRESTORS IN COLD AND HOT WATER SUPPLY LINES IN CHASES OR WALLS TO EACH FIXTURE BRANCH OR BATTERY OF FIXTURES SERVING QUICK CLOSING VALVES OF ELECTRICAL, PNEUMATIC, SPRING LOADED TYPE, OR QUICK HAND CLOSURE VALVES ON FIXTURE TRIM. PROVIDE WATER HAMMER ARRESTORS AT THE END OF THE BRANCH LINE BETWEEN THE LAST TWO FIXTURES SERVED. PROVIDE PRECISION PLUMBING PRODUCTS, INC., OR EQUAL. SIZE UNITS ACCORDING TO WATER HAMMER ARRESTOR'S STANDARD PDI WH-201; REFER TO SCHEDULE ON DRAWINGS.

B. AIR CHAMBERS: PROVIDE A MINIMUM 18-INCH LONG AIR CHAMBER, OF THE SAME SIZE AND CONNECTING PIPE MATERIAL AT EACH SINGLE LAVATORY, SINK, DRINKING FOUNTAIN OR FIXTURE THAT DOES NOT HAVE A QUICK-CLOSING VALVE OR ELECTRICAL, PNEUMATIC, SPRING LOADED TYPE, OR FLUSH VALVE. AIR CHAMBERS TO BE USED FOR REMOTE FIXTURES AND NOT MIXED WITH WATER HAMMER ARRESTORS AT GROUP TOILETS.

C. TESTING: TEST UNDER A COLD WATER HYDROSTATIC PRESSURE OF NOT LESS THAN 50 PSI. THIS PRESSURE SHALL BE HELD FOR NOT LESS THAN 15 MINUTES AND CAREFULLY CHECK FOR LEAKS. REPAIR LEAKS AND RETEST SYSTEM UNTIL PROVEN WATERTIGHT. USE ONLY POTABLE WATER FOR THE TEST. PERFORM THE TEST BEFORE FIXTURES, FAUCETS, TRIM OR FINAL CONNECTIONS ARE MADE TO EQUIPMENT.

D. COPPER PIPE CORROSION PROTECTION: CORROSION PROTECT COPPER TUBE PIPING SYSTEMS: IN THE BUILDING SLAB.

E. COVER COPPER TUBING PIPING SYSTEM WITH: "TAPECOAT" TC PRIMER. EXTEND THE CORROSION PROTECTION 2 INCHES ABOVE CONCRETE SLAB ON GRADE.

F. STERILIZE THE WATER SYSTEM WITH SOLUTION CONTAINING NOT LESS THAN 50PPM AVAILABLE CHLORINE. ALLOW CHLORINATING SOLUTION TO REMAIN IN SYSTEM FOR PERIOD OF 8 HOURS (MINIMUM). HAVE VALVES AND FAUCETS OPENED AND CLOSED SEVERAL TIMES DURING THE PERIOD. AFTER STERILIZATION, FLUSH THE SOLUTION FROM THE SYSTEM WITH CLEAN WATER UNTIL RESIDUAL CHLORINE CONTENT IS LESS THAN 0.2 PARTS PER MILLION.

## SOIL, WASTE AND SANITARY DRAIN PIPING, VENT PIPING AND APPURTENANCES

A. ABOVE SLAB PIPE: NO-HUB CAST IRON SOIL PIPE AND FITTINGS SHALL CONFORM TO CISPI 301 AND ASTM A888. PIPE SHALL CONFORM TO ASTM A74. NO-HUB COUPLINGS SHALL CONFORM TO CISPI 310. RUBBER GASKETS FOR CAST IRON SOIL PIPE AND FITTINGS SHALL CONFORM TO ASTM C564.

B. BELOW SLAB ON GRADE PIPING: SCHEDULE 40 PVC PLASTIC PIPE AND DWV FITTINGS. SOLVENT WELDED DWV JOINTS SHALL CONFORM TO IAPMO INSTALLATION STANDARD IS-9. PIPE AND FITTINGS SHALL CONFORM TO ASTM D 1784, ASTM D 1785, ASTM D 2665, ASTM D 3311 AND NPS STANDARD 14 & 61.

C. BELOW SLAB ON GRADE PIPING FOR GREASY WASTE: SCHEDULE 40 PVC PLASTIC PIPE AND DWV FITTINGS WITH SOLVENT WELDED DWV JOINTS SHALL CONFORM TO ASTM D3311 AND BE PRODUCED TO DIMENSIONS SPECIFIED IN ASTM F2818, NSF INTERNATIONAL, UPC, IAPMO IGS 210 AND INTERNATIONAL PLUMBING CODE. SOLVENT CEMENT, HEAVY BODY; MUSTARD YELLOW COLOR, AS TESTED BY ASTM F2618/ASTM F493. MANUFACTURER - SPEARS.

D. VENT PIPE AND FITTINGS: ABOVE SLAB PIPE: NO-HUB CAST IRON SOIL PIPE AND FITTINGS SHALL CONFORM TO CISPI 301 AND ASTM A888, PIPE SHALL CONFORM TO ASTM A74, NO-HUB COUPLINGS SHALL CONFORM TO CISPI 310, RUBBER GASKETS FOR CAST IRON SOIL PIPE AND FITTINGS SHALL CONFORM TO ASTM C564.

E. BELOW SLAB ON GRADE PIPING: SAME AS DRAIN PIPE AND FITTINGS LISTED ABOVE.

F. ABOVE SLAB PIPE: DRAINAGE-WASTE-VENT COPPER PIPE AND FITTINGS FOR WASTE STUB-OUTS FOR ALL FIXTURE LOCATIONS.

G. TESTING: BELOW SLAB ON GRADE AND ALL FLOORS IN MULTI-STORY BUILDINGS: TEST PIPE BELOW SLAB ON GRADE BEFORE BACKFILLING AND CONNECTING TO CITY SEWERS. MAINTAIN NOT LESS THAN 10 FOOT OF HYDROSTATIC HEAD FOR 1 HOUR WITHOUT A LEAK.

H. RODDING SEWERS: ALL SANITARY SOIL AND WASTE LINES, BOTH IN THE BUILDING AND OUT, SHALL BE RODDED OUT AND FLUSHED OUT AFTER COMPLETION OF CONSTRUCTION AND PRIOR TO FINISH FLOOR BEING INSTALLED. ALL WORK MUST BE COMPLETED PRIOR TO SUBSTANTIAL COMPLETION. ALL FLOOR DRAINS AND CLEANOUT LOCATIONS MUST BE INCLUDED IN THIS WORK.

I. PIPING TO BE INSULATED:
   a. MAKE-UP WATER
   b. HORIZONTAL SANITARY DRAIN PIPING THAT RECEIVES CONDENSATE.
   c. EXPOSED TO VIEW STORM DRAINAGE SYSTEM INCLUDING ROOF AND OVERFLOW DRAIN BODIES, VERTICAL PIPING FROM DRAIN BODY AND ALL HORIZONTAL RAIN LEADERS TO FIRST ELBOW TURNING.

## DOMESTIC WATER INSULATION

A. ELASTOMERIC INSULATION: INSULATION MATERIAL SHALL BE 1-1/2" FLEXIBLE, CLOSED-CELL ELASTIC INSULATION IN TUBULAR OR SHEET FORM. MATERIAL SHALL HAVE A FLAME SPREAD RATING OF 25 OR LESS AND A SMOKE DEVELOPED RATING OF 50 OR LESS WHEN TESTED IN ACCORDANCE WITH ASTM E84, LATEST REVISION.

B. FIBERGLASS INSULATION: 1-1/2" THICK HEAVY DENSITY, DUAL TEMPERATURE FIBERGLASS INSULATION WITH FACTORY APPLIED, ALL SERVICE, REINFORCED VAPOR BARRIER JACKET HAVING INTEGRAL LAMINATED VAPOR BARRIER, PROVIDE WITH A FACTORY APPLIED PRESSURE SENSITIVE TAPE CLOSURE SYSTEM AND MATCHING BUTT STRIPS.

C. FIRE BARRIER PLENUM WRAP - A HIGH TEMPERATURE INSULATION BLANKET SPECIFICALLY DESIGNED TO PROVIDE A SINGLE LAYER, FLEXIBLE ENCLOSURE AROUND COMBUSTIBLE ITEMS LOCATED WITHIN FIRE RATED RETURN AIR PLENUMS.
   a. FIRE BARRIER PLENUM WRAP INSULATION - TOTALLY ENCAPSULATED WITH FOIL FACING, SINGLE LAYER FIRE PROTECTION, PLENUM PROTECTION SYSTEM UL910. ACCEPTABLE MANUFACTURERS: FYREWRAP 0.5 PLENUM INSULATION OR 3M FIRE BARRIER PLENUM WRAP 5A.

D. COVER ALL HOT & COLD WATER PIPING WITH INSULATION BY SLITTING TUBULAR SECTIONS OR SLIDING UN-SLIT SECTIONS OVER THE OPEN ENDS OF PIPING OR TUBING. SEAMS AND BUTT JOINTS SHALL BE ADHERED AND SEALED USING ADHESIVE.

E. ALL FITTINGS SHALL BE INSULATED WITH THE SAME INSULATION THICKNESS AS THE ADJACENT PIPING. ALL SEAMS AND MITERED JOINTS SHALL BE ADHERED WITH ADHESIVE.

F. INSULATION APPLICATIONS:
   a. INDOOR CONCEALED: ELASTOMERIC
   b. INDOOR EXPOSED: FIBERGLASS
   c. OUTDOOR: ELASTIMERIC WITH TWO COATS OF EITHER WB OR SB ARMAFLEX FINISH OR FOSTER 30-64 ELASTOMER FOAM COATING. ALL SEAMS SHALL BE LOCATED ON THE LOWER HALF OF THE PIPE.

## GAS PIPING

A. FURNISH AND INSTALL STEEL GAS PIPE INSIDE BUILDINGS, INCLUDING THE SUPPLY LINE FROM THE METER, SERVICE LINES TO GAS EQUIPMENT AND APPLIANCES, TERMINATION OF THE SERVICE LINE WITH A PLUG VALVE, DRIP LEG, AND FINAL CONNECTION TO EQUIPMENT AND APPLIANCES WITH UNIONS.

B. COORDINATE SERVICE LINE FROM UTILITY MAIN AND EXTEND TO METER. COORDINATE INSTALLATION OF THE SERVICE LINE AND METER WITH GAS COMPANY.

C. EXTEND STEEL GAS PIPING FROM METER TO INSIDE THE BUILDING TO ALL FIXTURES, APPLIANCES AND EQUIPMENT REQUIRING GAS.

D. INSTALLATION STANDARDS: INSTALL GAS PIPING IN ACCORDANCE WITH RECOMMENDATIONS OF THE NATIONAL FIRE PROTECTION ASSOCIATION.

E. PIPE SHALL BE SCHEDULE 40 ASTM A 53 BLACK STEEL PIPE WITH FACTORY FABRICATED SOCKET WELD FITTINGS.

F. DRIP LEGS: INSTALL A CAPPED DRIP LEG 6" LONG AT THE BASE OF EACH VERTICAL RISE.

G. WELD ALL GAS PIPING ABOVE GRADE INSIDE THE BUILDING.

H. TEST GAS PRESSURE AS REQUIRED BY CODE, BUT MINIMUM PRESSURE SHALL NOT BE LESS THAN 1.5 TIMES THE PROPOSED WORKING PRESSURE AND NOT LESS THAN 3 PSI. TEST DURATION SHALL NOT BE LESS THAN 30 MINUTES FOR EACH 500 CUBIC FEET OF PIPE VOLUME, NO LESS THAN 10 MINUTES.

I. GAS PIPE ON WALL TO ROOF AND GAS PIPE ON ROOF SHALL BE PROTECTED FROM RUST, BY PAINTING.

## GAS FIRED WATER HEATER

A. ACCEPTABLE MANUFACTURERS: LOCHINVAR, STATE, RHEEM/RUUD, A.O. SMITH

B. PROVIDE GAS-FIRED WATER HEATERS WITH BURNER, RECOVERY RATINGS, AND STORAGE CAPACITIES AS SCHEDULED ON DRAWINGS.

C. PROVIDE AT EACH HEATER AN AUTOMATIC TEMPERATURE AND PRESSURE RELIEF VALVE WITH RATING MATCHING OR EXCEEDING THE ENERGY INPUT RATE. PIPE VALVE "FULL SIZE" TO EXTERIOR.

D. INSTALL WATER HEATER IN GALVANIZED DRAIN PAN PIPED TO FLOOR DRAIN LOCATED NEXT TO WATER HEATER IN BASEMENT, REFER TO PLANS FOR LOCATION. PROVIDE 3" OUTLET CONNECTION.

E. PROVIDE TYPE B HEATER FLUE OF SIZE RECOMMENDED BY MANUFACTURER. EXTEND FLUE FROM DIVERTER THROUGH SIDEWALL & TERMINATE WITH VACUUM CAP. PROVIDE FLASHING AT SIDEWALL PENETRATION.

F. PROVIDE APPROVED DIELECTRIC COUPLINGS AT ALL COLD WATER AND HOT WATER CONNECTION TO STORAGE TANK, AND AT PRESSURE AND TEMPERATURE RELIEF VALVE CONNECTION.

## DOMESTIC WATER PUMPS

A. SELECT PUMPS CONSERVATIVELY FOR SCHEDULED CONDITIONS. FURNISH PUMPS THAT HAVE REASONABLY HIGH EFFICIENCIES, WITH PEAK EFFICIENCY AT OR NEAR RATED CONDITIONS.

B. IF THE PUMPS PROPOSED ARE NOT CONSIDERED SUITABLE, SUBMIT MANUFACTURER'S DATA ON OTHER PUMPS FOR REVIEW.

C. SCHEDULED DESIGN FLOW, DESIGN HEAD, PUMP EFFICIENCY, AND MOTOR HORSEPOWER ARE THE MINIMUM ACCEPTABLE.

D. THE PUMP CURVE SHALL RISE CONTINUOUSLY FROM MAXIMUM FLOW TO CUT-OFF.

E. PUMP SIZE & TYPE: PROVIDE MOTOR-DRIVEN PUMPS OF THE TYPE AND SPEED SCHEDULED. SELECT PUMPS THAT ARE NOT OVERLOADED THROUGHOUT THE ENTIRE RANGE OF PUMP OPERATION. PROVIDE PUMP CONNECTION SIZES AS INDICATED. SUBMIT COPIES OF MANUFACTURER'S PERFORMANCE CURVES, AS SHOP DRAWINGS ON EACH PUMP. CLEARLY MARK THE CURVES FOR EACH PUMP TO INDICATE THE DIAMETER OF THE IMPELLER AND THE SELECTION POINT.

F. CERTIFIED DATA: SUBMIT FACTORY CERTIFIED PUMP CURVES SHOWING PUMP PERFORMANCE CHARACTERISTICS WITH PUMP AND SYSTEM OPERATING POINTS PLOTTED. CURVES SHALL INCLUDE AS A MINIMUM, FLOW (GALLONS PER MINUTE), HEAD (FEET OF WATER), ALL AVAILABLE IMPELLER DIAMETERS (INCHES), EFFICIENCY (PERCENT), NET POSITIVE SUCTION HEAD REQUIRED (FEET OF WATER), BRAKE HORSEPOWER, PUMP SIZE AND PUMP MODEL. SHOW PUMP CURVES WITH SYSTEM CURVE PLOTTED.

G. DOMESTIC HOT WATER CIRCULATING PUMPS: SHALL BE CONSTRUCTION OF WET-ROTOR, IN-LINE, SINGLE STAGE, BRONZE HOUSINGS WITH 1/2" AND 3/4" SWEAT CONNECTIONS, STAINLESS STEEL HOUSING WITH UNION THREADED CONNECTIONS, INTEGRATED CHECK VALVE INSIDE UNION FITTING ON A SWEAT PUMP HOUSING, BUILT-IN 5-FOOT, 115 VOLT AC LINE CORD WITH NEMA 3 PRONG MALE PLUG OR LINE CORD, BUILT-IN TIMER, AQUASTAT THERMOSTATIC CONTROL.

H. SUBMERSIBLE SUMP PUMP AND SEWAGE EJECTORS: PUMP SHALL BE CONSTRUCTED OF HERMETICALLY SEALED MOTOR, POSITIVE ACTION AIR OPERATED DIAPHRAGM SWITCH (HIGH WATER ALARM CONTACT), AND A HOUSING AND BASE CAST IRON CONSTRUCTION.
   a. IN THE EVENT OF A HIGH WATER ALARM, ENERGIZE A PULSING 2" DIAMETER RED SIGNAL LIGHT WITH GRAPHIC "SUMP PUMP HIGH WATER ALARM". PROVIDE AN ALARM TERMINAL CABINET.
   b. TEST THE SUMP PUMP PACKAGE BY OPERATION OF THE COMPLETED SYSTEM THROUGH FOUR CYCLES OF OPERATIONS: FILL THE SUMP TO OPERATIONAL LEVELS; VISUALLY CHECK LEVEL CONTROLS; PUMP OPERATION; VERIFY ABSENCE OF PIPING LEAKS, SUMP LEAKS, EXCESSIVE NOISE, AND EXCESSIVE VIBRATION; VERIFY ALARMS; VERIFY PUMP CAPACITY.
   c. SUMP PUMP PACKAGE CAPACITY SHALL BE SCHEDULED.
   d. ACCEPTABLE MANUFACTURERS: HYDROMATIC; LITTLE GIANT PUMP CO., WEIL, GOULDS, GRUNDFOS, CRANE (BARNES) AIR PUMPS, EBARA.

INSTALLATION

1. INSTALL THE PUMPS IN ACCORDANCE WITH MANUFACTURER'S "INSTALLATION, START-UP AND SERVICE INSTRUCTIONS". PROVIDE ACCESS SPACE AROUND PUMPS FOR SERVICE. LUBRICATE PUMPS PRIOR TO START-UP.
2. INSTALL HOT WATER CIRCULATOR HORIZONTALLY, PROPERLY SUPPORTED TO WALL, IN AN ACCESSIBLE LOCATION FOR TESTING AND MAINTENANCE AT A HEIGHT NOT TO EXCEED 60" ABOVE FINISHED FLOOR.
3. PROVIDE A LINE SIZE ISOLATION VALVE AND STRAINER ON THE PUMP SUCTION AND A LINE SIZE SILENT CHECK VALVE AND BALANCING VALVE ON THE PUMP DISCHARGE.
4. SUPPORT PIPING ADJACENT TO THE PUMP SUCH THAT NO WEIGHT IS CARRIED ON THE PUMP CASING. DECREASE FROM PIPE SIZE WITH ECCENTRIC REDUCER ON SUCTION SIDE AND CONCENTRIC INCREASER ON DISCHARGE SIDE.
5. REFER TO PUMP DETAIL ON THE CONTRACT DRAWINGS FOR PIPING ACCESSORIES TO BE PROVIDED.

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LIONBERGER CONSTRUCTION

**RAM HOUSE**
ALTERATIONS & ADDITION
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ROANOKE CITY, VIRGINIA

| | |
|---|---|
| DRAWN BY | JER |
| DESIGNED BY | JER |
| CHECKED BY | JDW |
| DATE | 02/14/2025 |
| SCALE | 12" = 1'-0" |
| REVISIONS | |

P0.02
PROJECT NO 03230086.00

Salas O'Brien
salasobrien.com 540-952-9651
Project No: 2550-00213-00
Roanoke
119 Norfolk Avenue, Suite 310
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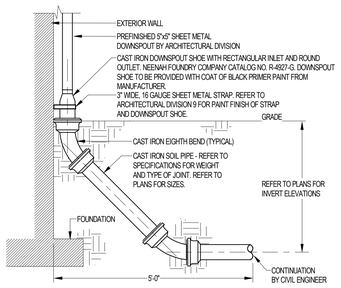
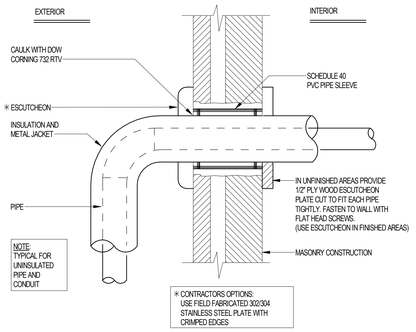
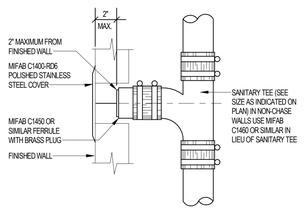


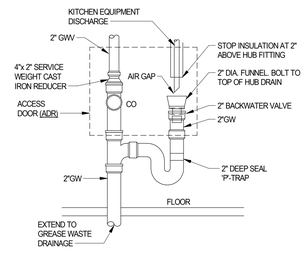

## 18 DOWNSPOUT SHOE CONNECTION
Scale: NONE



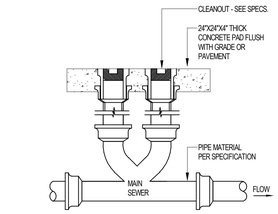

## 17 EXTERIOR WALL PENETRATION
Scale: NONE



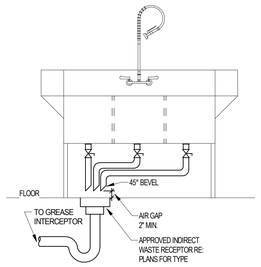

## 16 WALL CLEANOUT
Scale: NONE



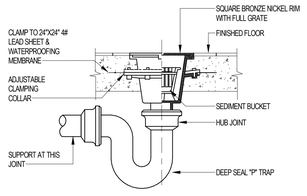

## 15 HUB DRAIN
Scale: NONE




## 14 TWO-WAY EXTERIOR CLEANOUT
Scale: NONE

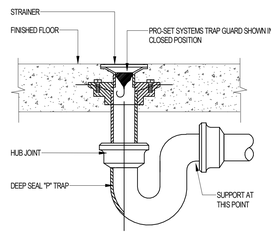



## 13 THREE COMPARTMENT SINK
Scale: NONE



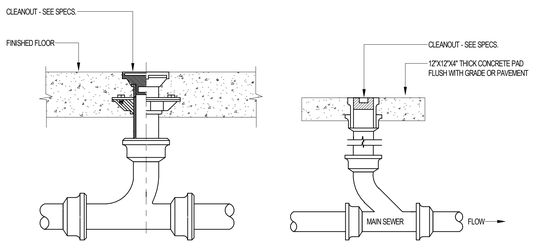

NOTES:
1. TRAP GUARD SHALL COMPLY WITH ASSE 1072 REQUIREMENTS.
2. TRAP GUARD SHALL BE FACTORY FITTED TO MATCH EACH FLOOR SINK BY SIZE, MODEL, AND MANUFACTURER.
3. CONTACT LOCAL REP OR MANUFACTURER FOR CORRECT MODEL NUMBER.
4. INSTALLATION OF TRAP GUARD TO BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
5. INSERT TRAP GUARD ONLY AFTER FINAL RODDING OF DRAINS. INSTALL TRAP GUARD WITH CLEAR SILICONE CAULK FOR GAS TIGHT SEAL. FOR DRAIN RODDING AFTER INSTALLATION, INSERT SEWER TAPE THROUGH LIGHTLY GREASED 1-1/2" PVC PIPE TO PROTECT TRAP GUARD.

## 12 FLOOR SINK W/ TRAP SEAL PROTECTION
Scale: NONE



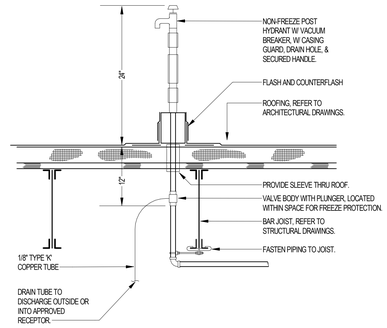

NOTES:
1. TRAP GUARD SHALL COMPLY WITH ASSE 1072 REQUIREMENTS.
2. TRAP GUARD SHALL BE FACTORY FITTED TO MATCH EACH FLOOR DRAIN BY SIZE, MODEL, AND MANUFACTURER.
3. CONTACT LOCAL REP OR MANUFACTURER FOR CORRECT MODEL NUMBER.
4. INSTALLATION OF TRAP GUARD TO BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
5. INSERT TRAP GUARD ONLY AFTER FINAL RODDING OF DRAINS. INSTALL TRAP GUARD WITH CLEAR SILICONE CAULK FOR GAS TIGHT SEAL. FOR DRAIN RODDING AFTER INSTALLATION, INSERT SEWER TAPE THROUGH LIGHTLY GREASED 1-1/2" PVC PIPE TO PROTECT TRAP GUARD.

## 11 FLOOR DRAIN W/ TRAP SEAL PROTECTION
Scale: NONE

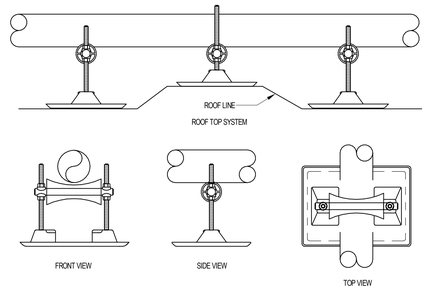



## 10 FLOOR CLEANOUT
Scale: NONE

## 9 EXTERIOR CLEANOUT
Scale: NONE

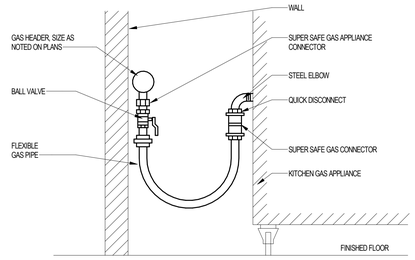



## 8 POST HYDRANT THRU ROOF DETAIL
Scale: NONE

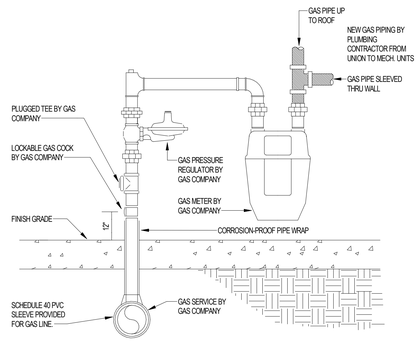



MIRO: MODEL 4-RAH
BASE 7.37" x 10.9"
MAX. PIPE CLEARANCE 6"

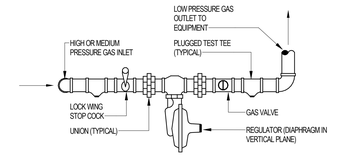
## 7 GAS SUPPORT ON ROOF
Scale: NONE




## 6 KITCHEN EQUIPMENT GAS PIPING
Scale: NONE

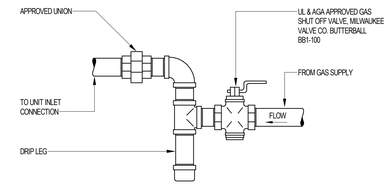



## 5 GAS SERVICE DETAIL
Scale: NONE

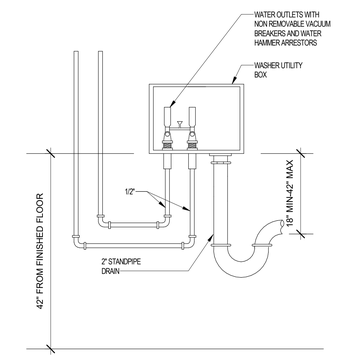



NOTE: REFERENCE DRAWINGS FOR PIPE SIZES.

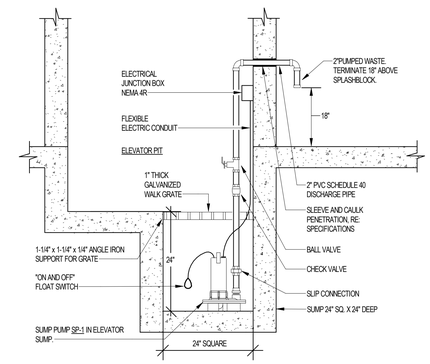
## 4 GAS PRESSURE REGULATOR PIPING
Scale: NONE




## 3 GAS CONNECTION
Scale: NONE




## 2 WASHER VALVE BOX DETAIL
Scale: NO SCALE




## 1 ELEVATOR SUMP PUMP PIT - PUMPED WASTE
Scale: NONE

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02/14/2025
THOMAS S. WARD IV
Lic. No. 058606
PROFESSIONAL ENGINEER

50+ Years RAM HOUSE #ramramfam

LIONBERGER CONSTRUCTION

**RAM HOUSE**
ALTERATIONS & ADDITION
PLUMBING DETAILS
410 ELM AVE.
ROANOKE CITY, VIRGINIA

| | |
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P0.03
PROJECT NO 03230086.00

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Project No: 2550-00213-00

Roanoke
119 Norfolk Avenue, Suite 310
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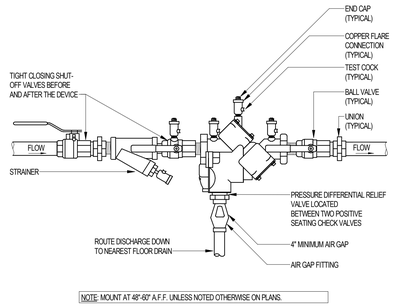
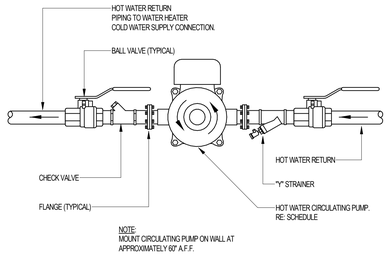


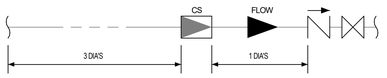

NOTE: MOUNT AT 48"-60" A.F.F. UNLESS NOTED OTHERWISE ON PLANS.

## 6 REDUCED PRESSURE ZONE BACKFLOW PREVENTER
Scale: NONE




NOTE:
MOUNT CIRCULATING PUMP ON WALL AT APPROXIMATELY 60" A.F.F.

## 4 HOT WATER CIRCULATING PUMP PIPING
Scale: NONE

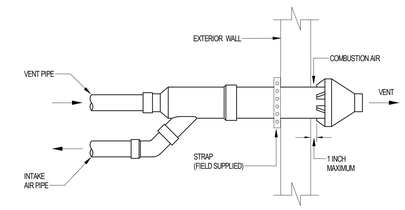



NOTE:

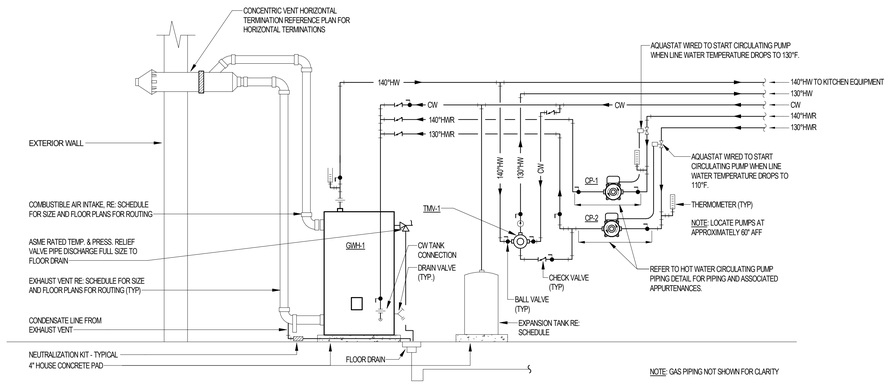
1. THERE SHALL BE UNINTERRUPTED STRAIGHT PIPE 1 DIAMETER OF PIPE DOWNSTREAM AND 3 DIAMETERS OF PIPE UPSTREAM FROM EACH CIRCUIT SETTER. BALANCE VALVE SHALL BE ADJUSTED TO PROVIDE G.P.M. INDICATED AT EACH C.S.
2. THE ENTIRE CIRCUIT SETTER SHALL BE INSULATED WITH REMOVABLE SECTIONS OF PIPE INSULATION SIZED TO OVERLAP THE CONNECTED PIPE INSULATION. INSULATION SHALL OVERLAP 3 INCHES.

## 3 HOT WATER CIRCUIT SETTER
Scale: NONE

NOTE:
SECURING STRAP MUST BE FIELD INSTALLED TO PREVENT MOVEMENT OF TERMINATION KIT IN SIDEWALL.




## 2 WATER HEATER SIDEWALL VENT TERMINATION
Scale: NONE




## 1 DOMESTIC GAS WATER HEATER PIPING
Scale: NONE

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NOT FOR CONSTRUCTION

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**RAM HOUSE**
ALTERATIONS & ADDITION
PLUMBING DETAILS
410 ELM AVE
ROANOKE CITY, VIRGINIA

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P0.04
PROJECT NO 03230086.00

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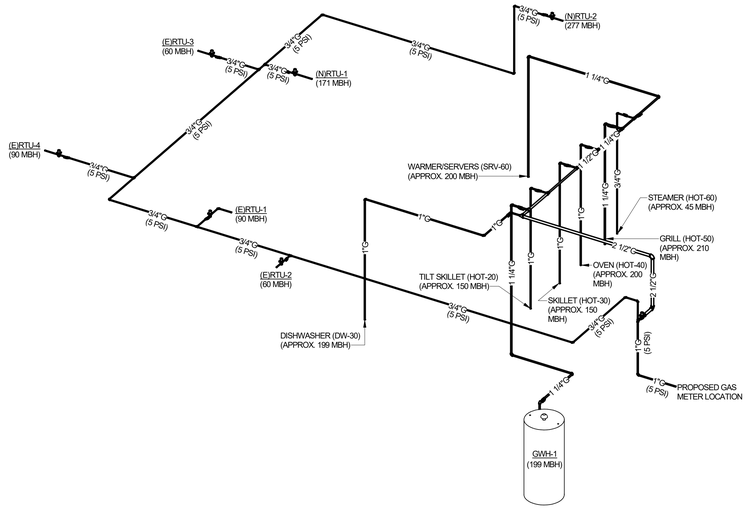
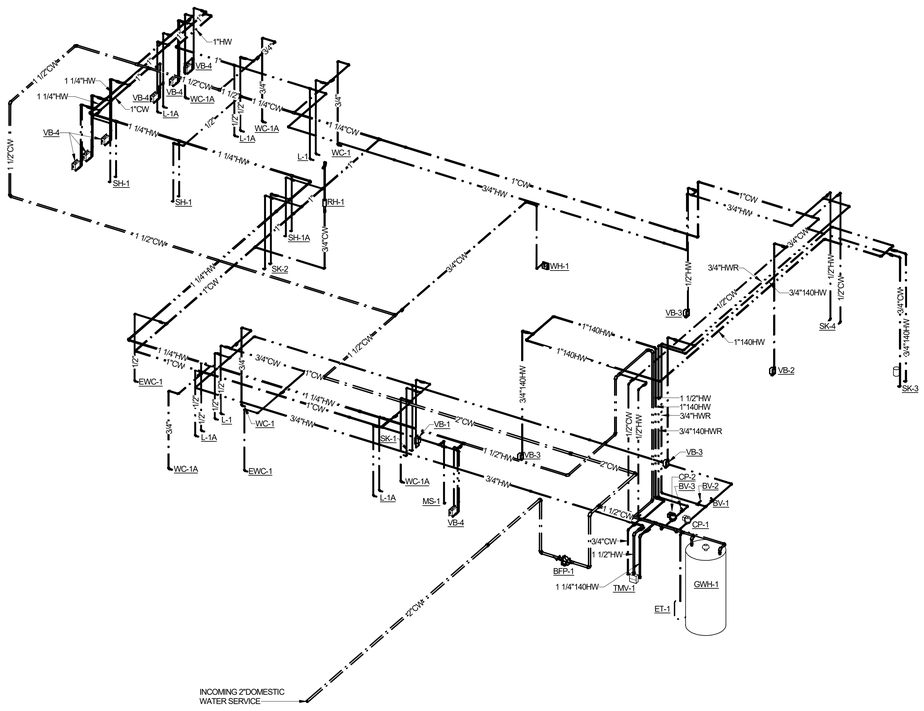
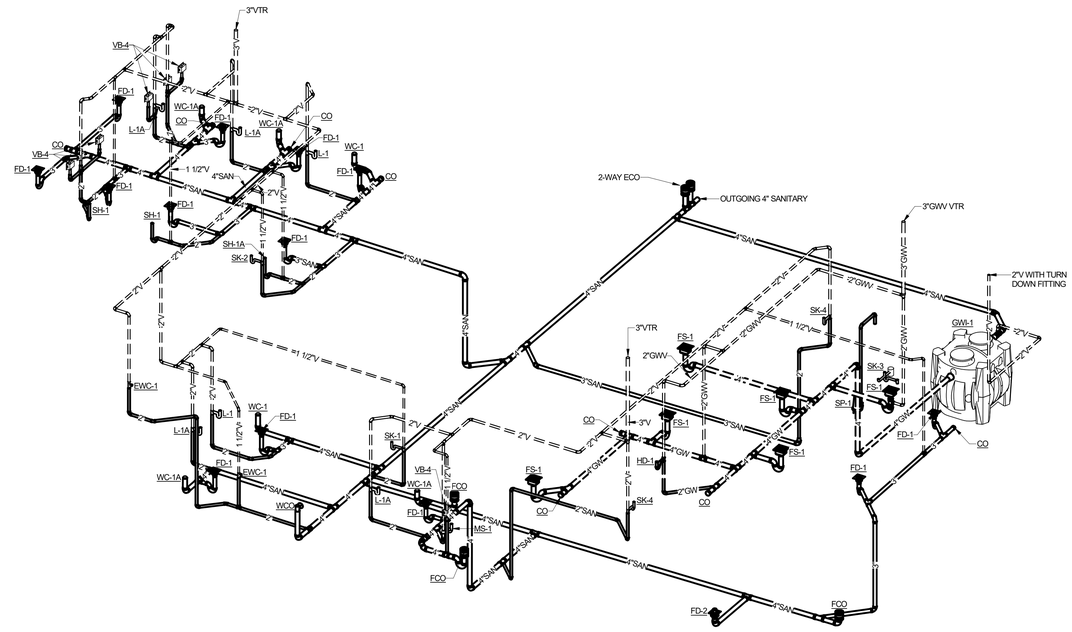



3 **PLUMBING RISER - GAS**
Scale: NONE




2 **PLUMBING RISER - DOMESTIC WATER**
Scale: NONE




1 **PLUMBING RISER - WASTE AND VENT**
Scale: NONE

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02/14/2025
THOMAS S. WARD IV
Lic. No. 058606
PROFESSIONAL ENGINEER

50 Years
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LIONBERGER CONSTRUCTION

**RAM HOUSE**
ALTERATIONS & ADDITION
PLUMBING RISER DIAGRAMS
410 ELM AVE
ROANOKE CITY, VIRGINIA

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PROJECT NO 03230086.00

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Project No: 2550-00213-00

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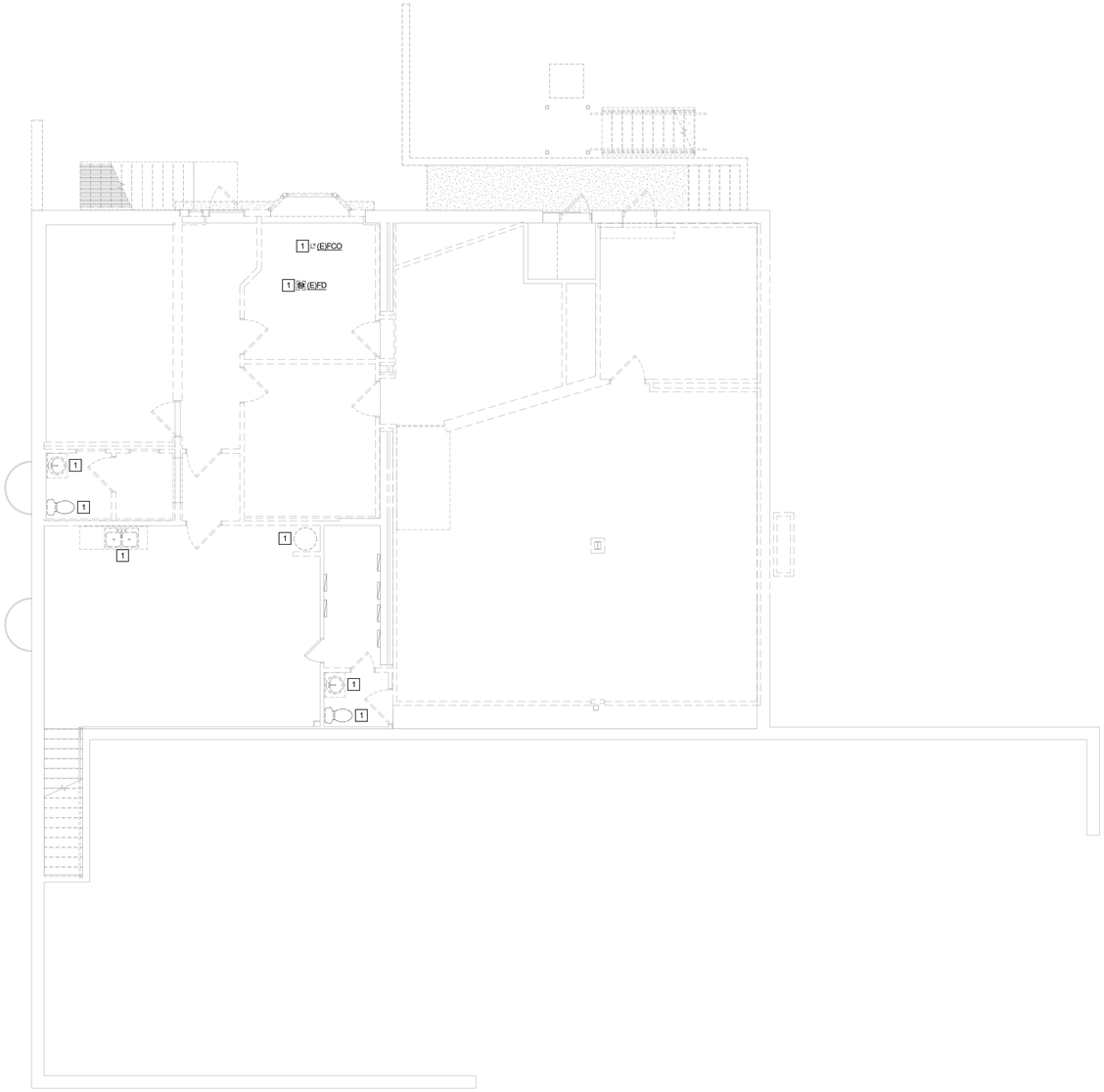
## DEMOLITION NOTES:

1. CONTRACTOR SHALL REMOVE EXISTING PLUMBING FIXTURE AND ALL RELATED PIPING AND APPURTENANCES WITHIN WALL, BELOW FLOOR AND ABOVE CEILING. CONTRACTOR SHALL PATCH WALL, FLOOR AND CEILING TO MATCH EXISTING CONDITIONS.




1 **LOWER LEVEL DEMOLITION PLAN - PLUMBING**
Scale: 3/16" = 1'-0"

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LIONBERGER CONSTRUCTION

**RAM HOUSE**
ALTERATIONS & ADDITION
410 ELM AVE
ROANOKE CITY, VIRGINIA

LOWER LEVEL DEMOLITION PLAN - PLUMBING

| | |
|---|---|
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| DESIGNED BY | JER |
| CHECKED BY | JDW |
| DATE | 02/14/2025 |
| SCALE | As indicated |
| REVISIONS | |

PD1.01
PROJECT NO 03230086.00

Salas O'Brien
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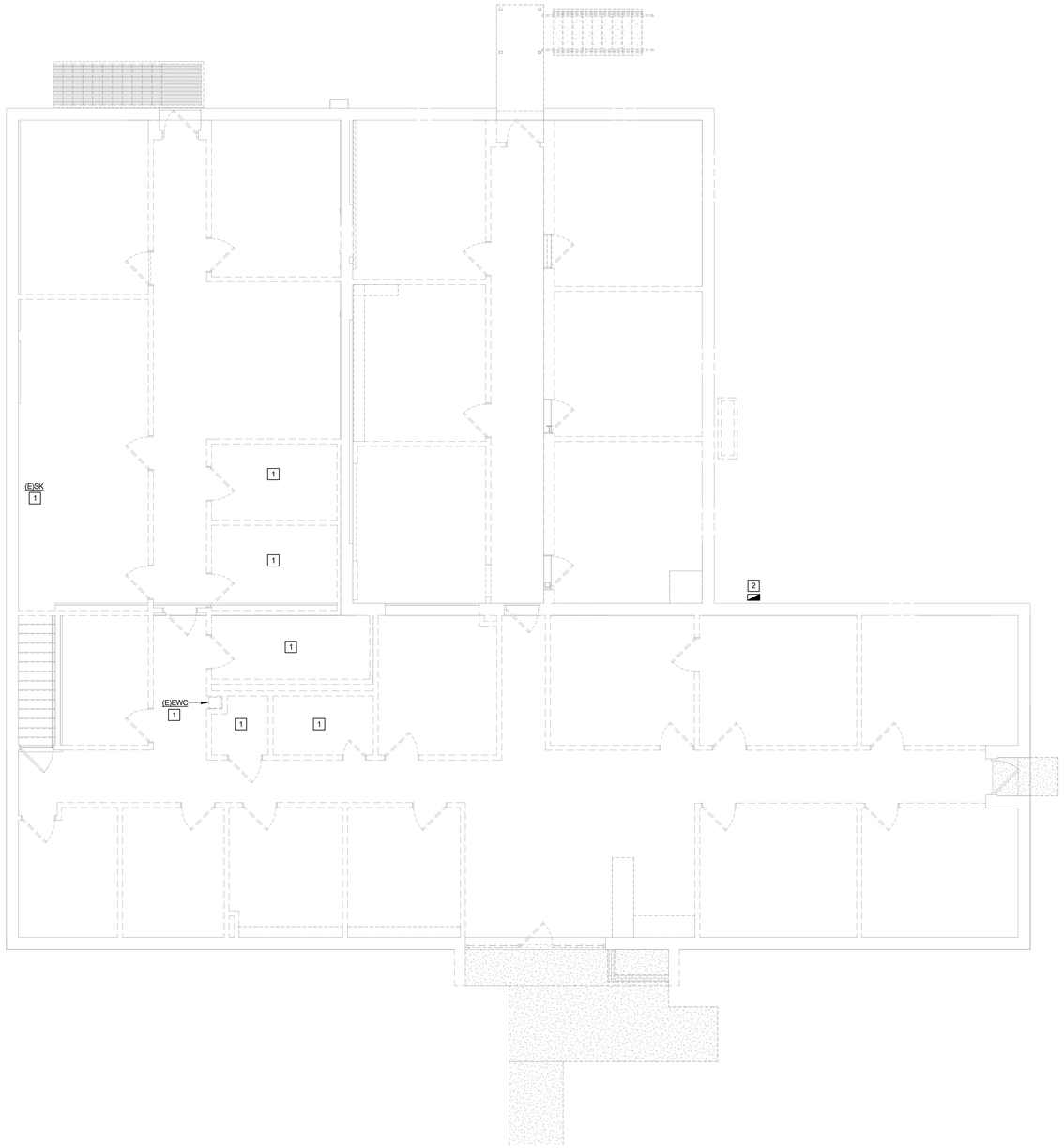
Project No: 2550-00213-00

Roanoke
119 Norfolk Avenue, Suite 310
Roanoke, Virginia 24011

## DEMOLITION NOTES:

1. CONTRACTOR SHALL FIELD VERIFY FOR EXISTING PLUMBING FIXTURE(S). IF PLUMBING FIXTURE IS FOUND, REMOVE THE EXISTING PLUMBING FIXTURE AND ALL RELATED PIPING AND APPURTENANCES WITHIN WALL BELOW FLOOR AND ABOVE CEILING. CONTRACTOR SHALL PATCH WALL, FLOOR AND CEILING TO MATCH EXISTING CONDITIONS.
2. EXISTING GAS METER AND ALL RELATED PIPING TO BE REMOVED. CONTRACTOR TO FIELD VERIFY AND COORDINATE PIPING WITH THE LOCAL GAS SUPPLIER TO NEW LOCATION IN NEW WORK CONSTRUCTION.




1 **MAIN LEVEL DEMOLITION PLAN - PLUMBING**
Scale: 3/16" = 1'-0"

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**RAM HOUSE**
ALTERATIONS & ADDITION
MAIN LEVEL DEMOLITION PLAN - PLUMBING
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ROANOKE CITY, VIRGINIA

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PD1.02
PROJECT NO 03230086.00

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Project No: 2550-00213-00

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Roanoke, Virginia 24011

## DEMOLITION NOTES:

1. CONTRACTOR SHALL REMOVE ALL EXISTING GAS PIPING AND ANY RELATED APPURTENANCES ON THE ROOF. FIELD VERIFY EXACT LOCATIONS.


1 **ROOF DEMOLITION PLAN - PLUMBING**
Scale: 3/16" = 1'-0"

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PROFESSIONAL ENGINEER

50+ Years
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**RAM HOUSE**
ALTERATIONS & ADDITION
ROOF DEMOLITION PLAN - PLUMBING
410 ELM AVE
ROANOKE CITY, VIRGINIA

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PD1.03
PROJECT NO 03230086.00

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Project No: 2550-00213-00

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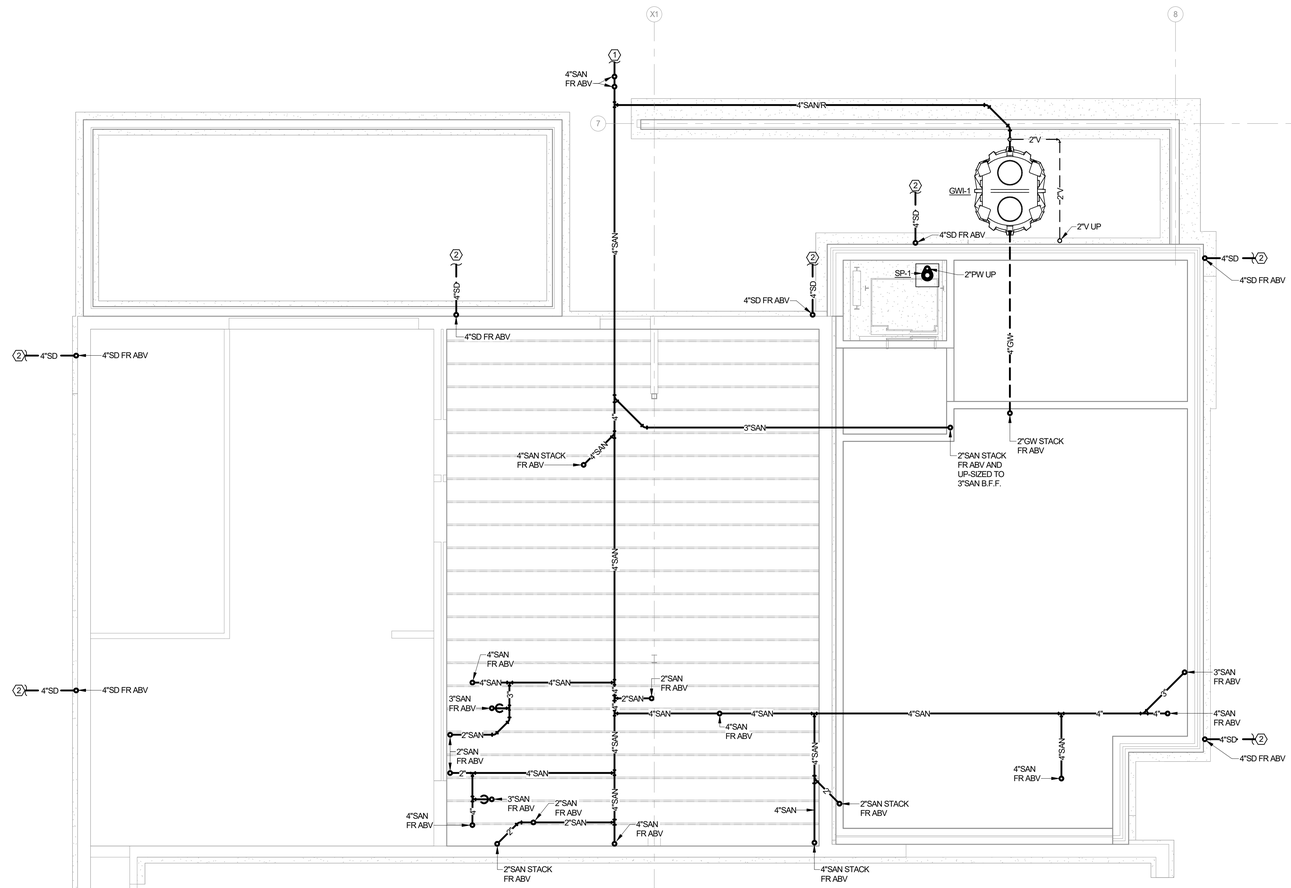
119 Norfolk Avenue, Suite 310
Roanoke, Virginia 24011

## PLAN NOTES:

1. 4"SAN (INVERT = 2'-5" BELOW GRADE). REFER TO CIVIL DRAWINGS FOR PIPE CONTINUATION.
2. 4"STORM DRAINAGE BELOW GRADE. PROVIDE MINIMUM 3'-0" COVER. REFER TO CIVIL DRAWINGS FOR PIPE CONTINUATION.




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

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50 Years RAM HOUSE #iamramfam

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**RAM HOUSE**
ALTERATIONS & ADDITION
UNDERSLAB PLAN - PLUMBING
410 ELM AVE.
ROANOKE CITY, VIRGINIA

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P1.00
PROJECT NO 03230086.00

Salas O'Brien
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Project No: 2550-00213-00

Roanoke
119 Norfolk Avenue, Suite 310
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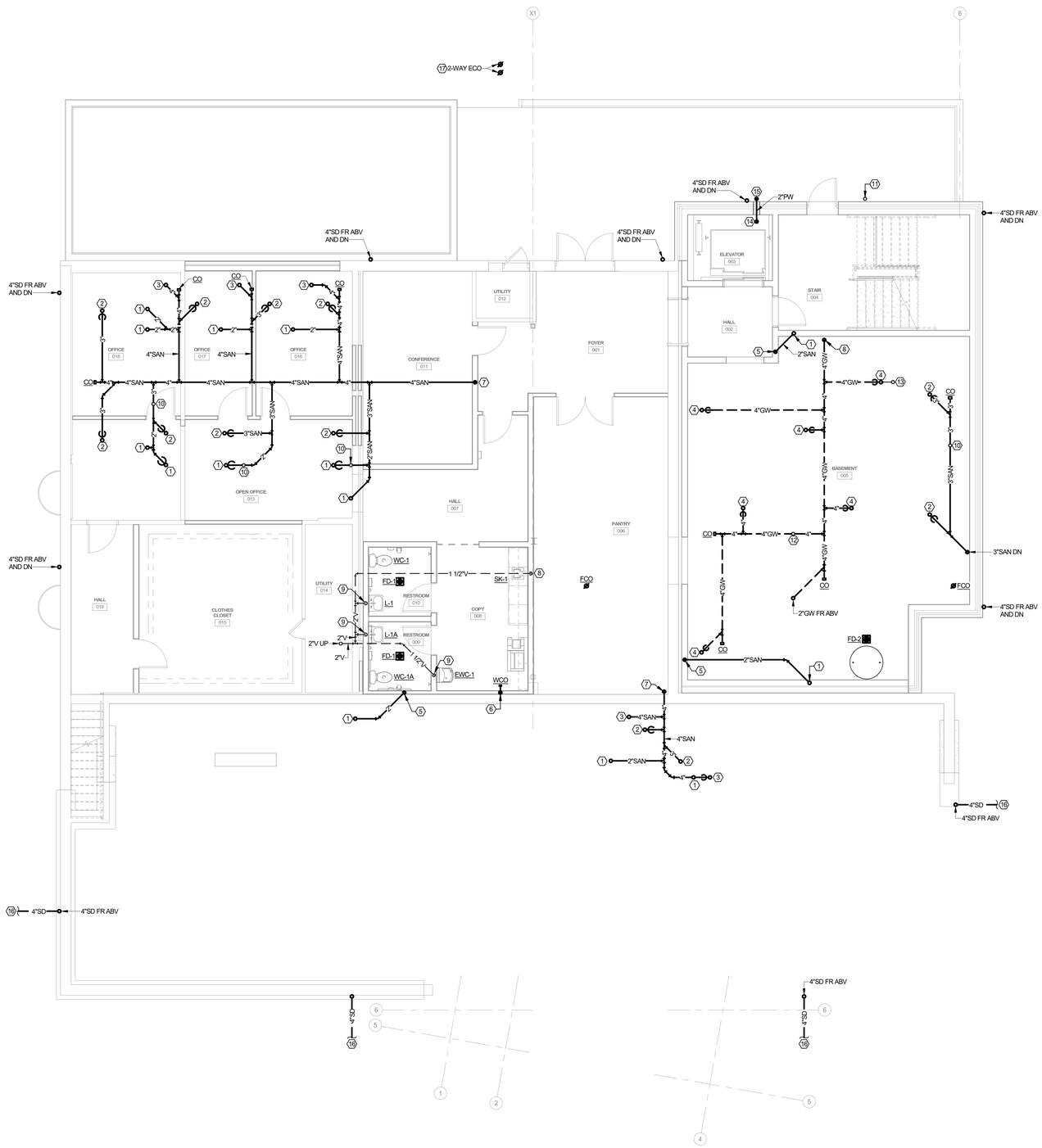
## PLAN NOTES:

1. 2" SANITARY FROM ABOVE.
2. 3" SANITARY FROM ABOVE.
3. 4" SANITARY FROM ABOVE.
4. 4" GREASE WASTE FROM ABOVE.
5. 2" SANITARY WASTE DOWN TO B.F.F.
6. 3" SANITARY WASTE DOWN TO B.F.F.
7. 4" SANITARY WASTE DOWN TO B.F.F.
8. 4"GREASE WASTE DOWN TO B.F.F.
9. 2" SANITARY WASTE, 1-1/2" VENT.
10. 1-1/2" VENT UP.
11. 2" VENT FROM BELOW, TERMINATE 10'-0" ABOVE GRADE WITH TURN DOWN FITTING.
12. 2" GREASE WASTE VENT UP.
13. 2"GREASE WASTE VENT 45 DEG. OFFSET UP.
14. 2" PUMPED WASTE FROM BELOW.
15. 2" PUMPED WASTE SLEEVED THRU WALL AND DISCHARGE 18" ABOVE SPLASH BLOCK. REFER TO SHEET P0.03 FOR DETAIL.
16. 4"STORM DRAINAGE BELOW GRADE. PROVIDE MINIMUM 3'-0" COVER. REFER TO CIVIL DRAWINGS FOR PIPE CONTINUATION.
17. 2-WAY ECO. REFER TO SHEET P-0.03 FOR 2-WAY ECO DETAIL.




### 1 LOWER LEVEL FLOOR PLAN - WASTE AND VENT
Scale: 3/16" = 1'-0"

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**RAM HOUSE**
ALTERATIONS & ADDITION
LOWER LEVEL FLOOR PLAN - WASTE AND VENT
410 ELM AVE
ROANOKE CITY, VIRGINIA

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| DATE | 02/14/2025 |
| SCALE | As indicated |
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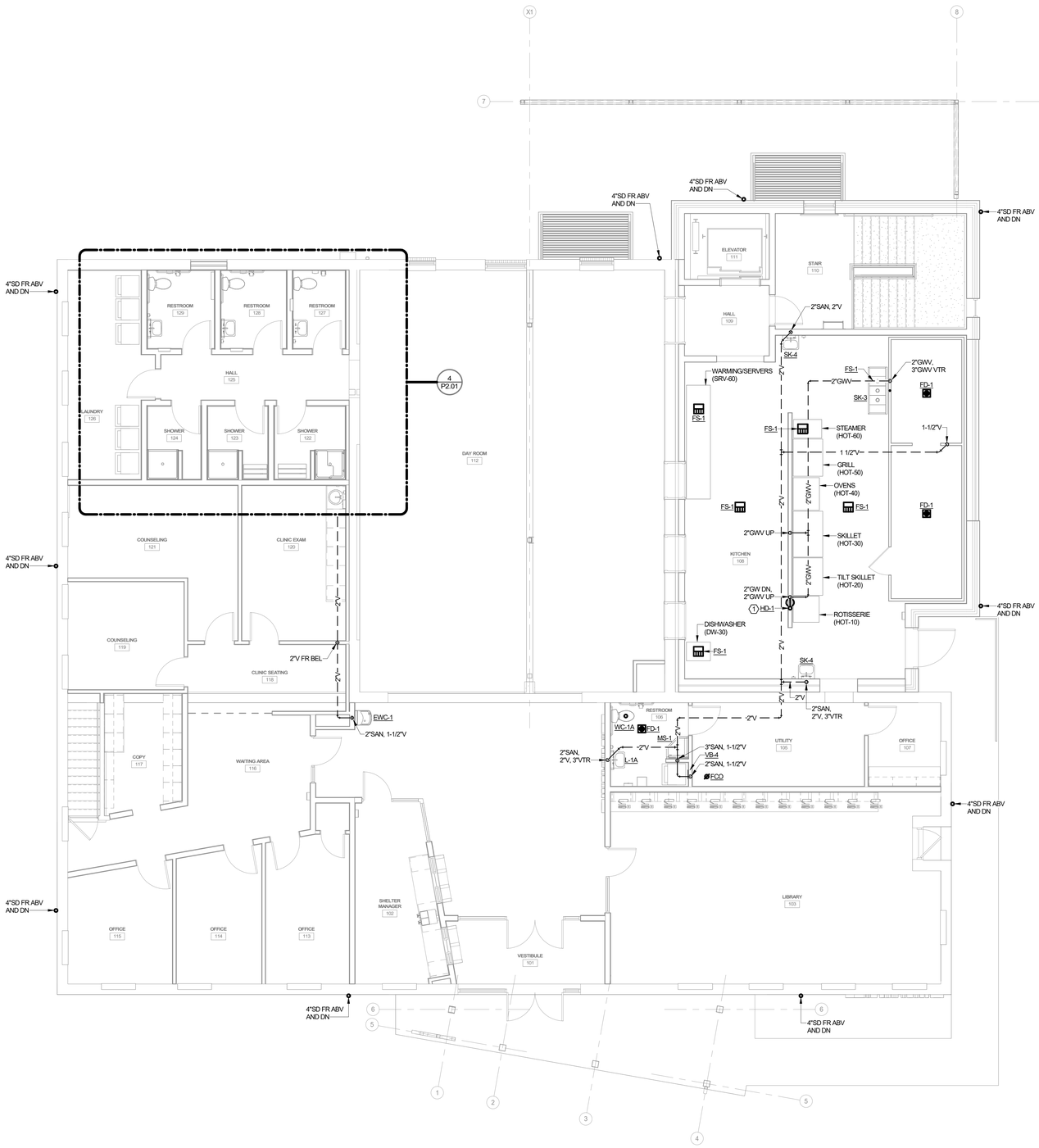
PROJECT NO 03230086.00




## 1 MAIN LEVEL FLOOR PLAN - WASTE AND VENT

Scale: 3/16" = 1'-0"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## PLAN NOTES:

1. CONTRACTOR SHALL PROVIDE 12" X 12" ACCESS DOOR FOR HUB DRAIN (HD-1). REFER TO SHEET P0.03 FOR HUB DRAIN DETAIL.
2. 2" VENT FROM BELOW, TERMINATE 10'-0" ABOVE GRADE WITH A TURN DOWN


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LIONBERGER CONSTRUCTION

**RAM HOUSE**
ALTERATIONS & ADDITION
MAIN LEVEL FLOOR PLAN - WASTE AND VENT PLAN
410 ELM AVE
ROANOKE CITY, VIRGINIA

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P1.02
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Project No: 2550-00213-00

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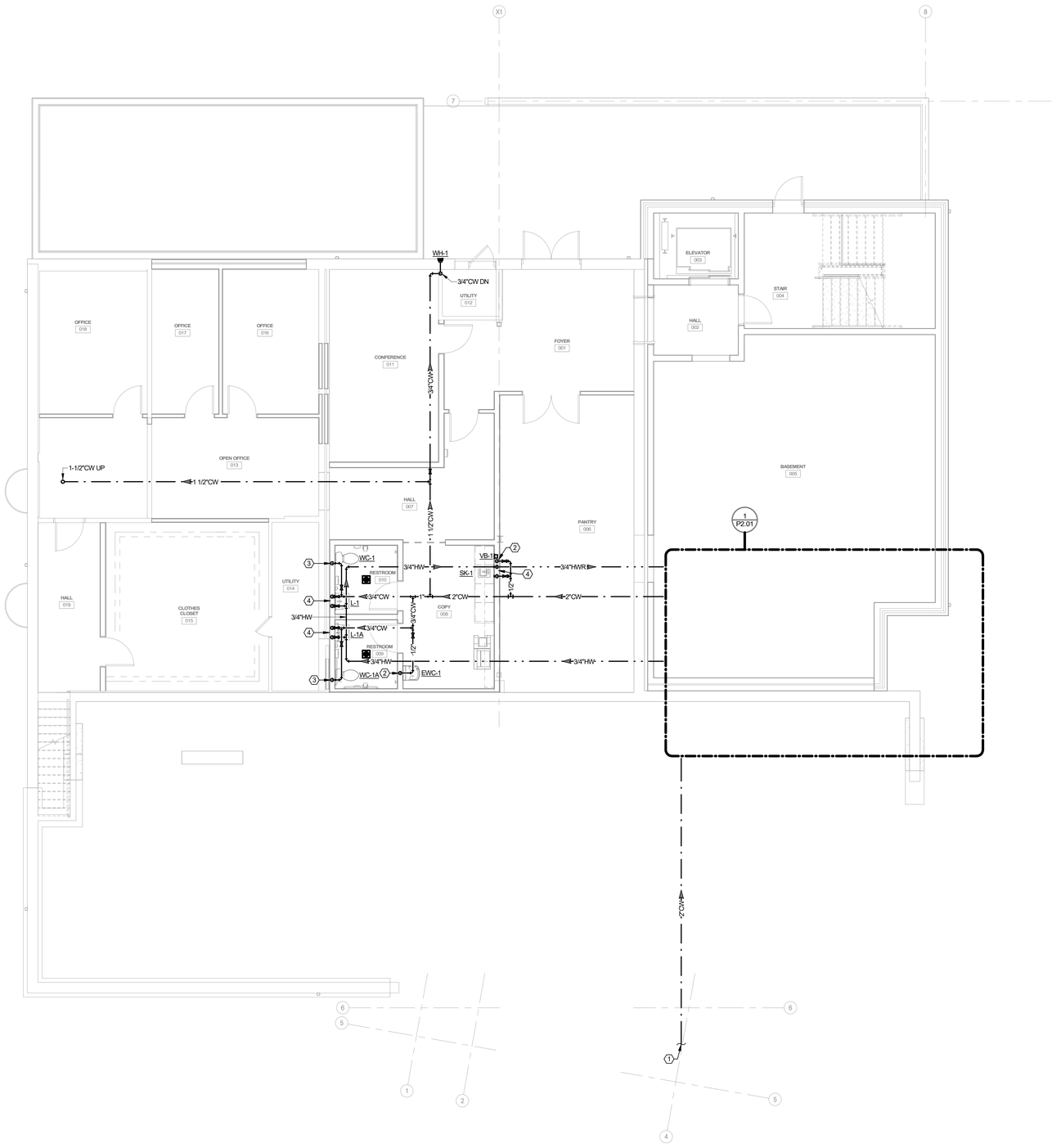
Roanoke, Virginia 24011

## PLAN NOTES:

1. 2" DOMESTIC WATER SERVICE BELOW GRADE (MINIMUM 3'-0" COVER). REFER TO CIVIL DRAWINGS FOR PIPE CONTINUATION.
2. 1/2" COLD WATER DOWN TO SERVE FIXTURE.
3. 3/4" COLD WATER DOWN TO SERVE FIXTURE.
4. 1/2" HOT AND COLD WATER DOWN TO SERVE FIXTURE.




1 **LOWER LEVEL FLOOR PLAN - DOMESTIC WATER**
Scale: 3/16" = 1'-0"

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**RAM HOUSE**
ALTERATIONS & ADDITION
LOWER LEVEL FLOOR PLAN - DOMESTIC WATER
410 ELM AVE
ROANOKE CITY, VIRGINIA

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P1.11
PROJECT NO 03230086.00

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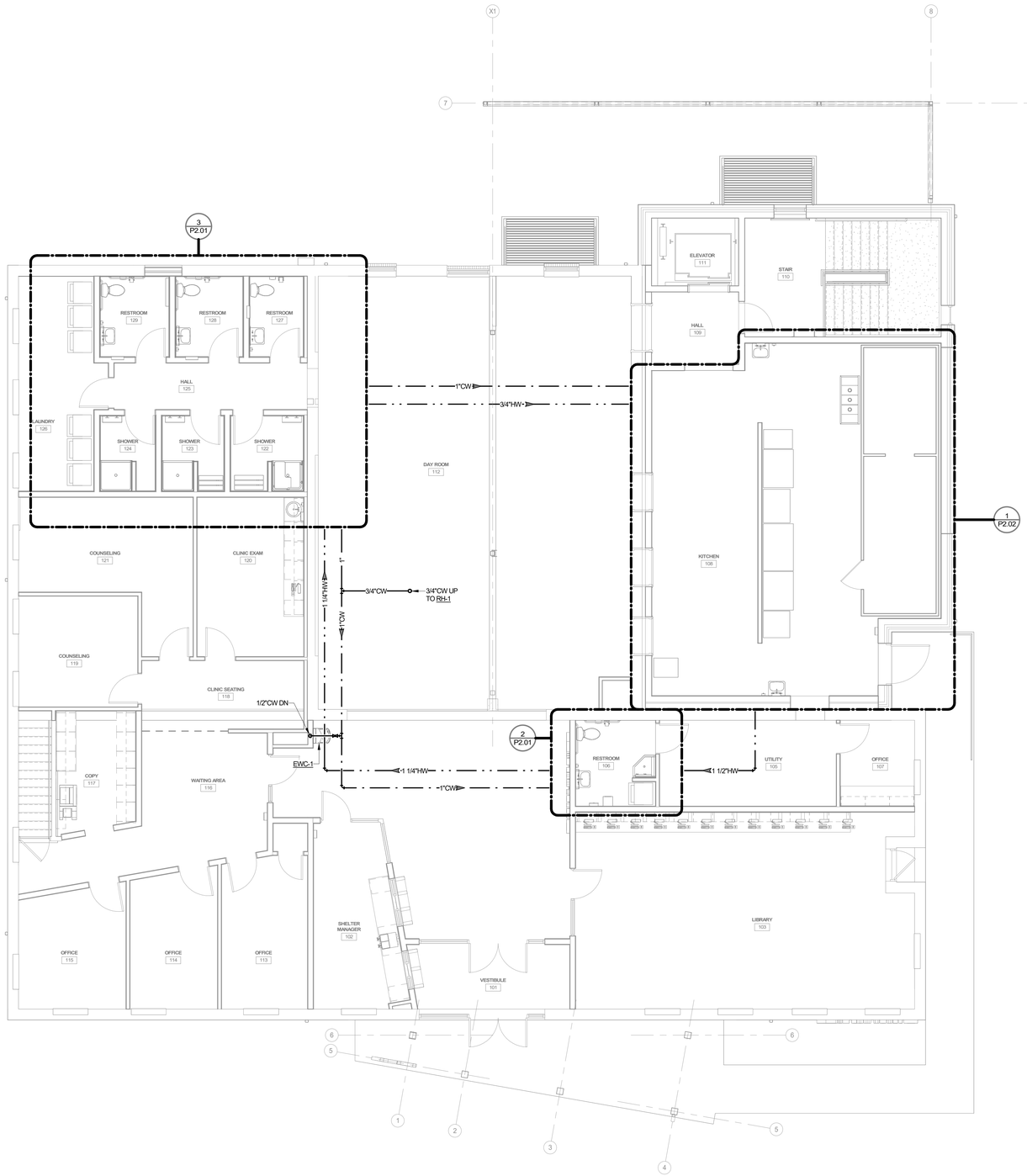


## 1 MAIN LEVEL FLOOR PLAN - DOMESTIC WATER
Scale: 3/16" = 1'-0"

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COMMONWEALTH OF VIRGINIA
02/14/2025
THOMAS S. WARD IV
Lic. No. 058606
PROFESSIONAL ENGINEER

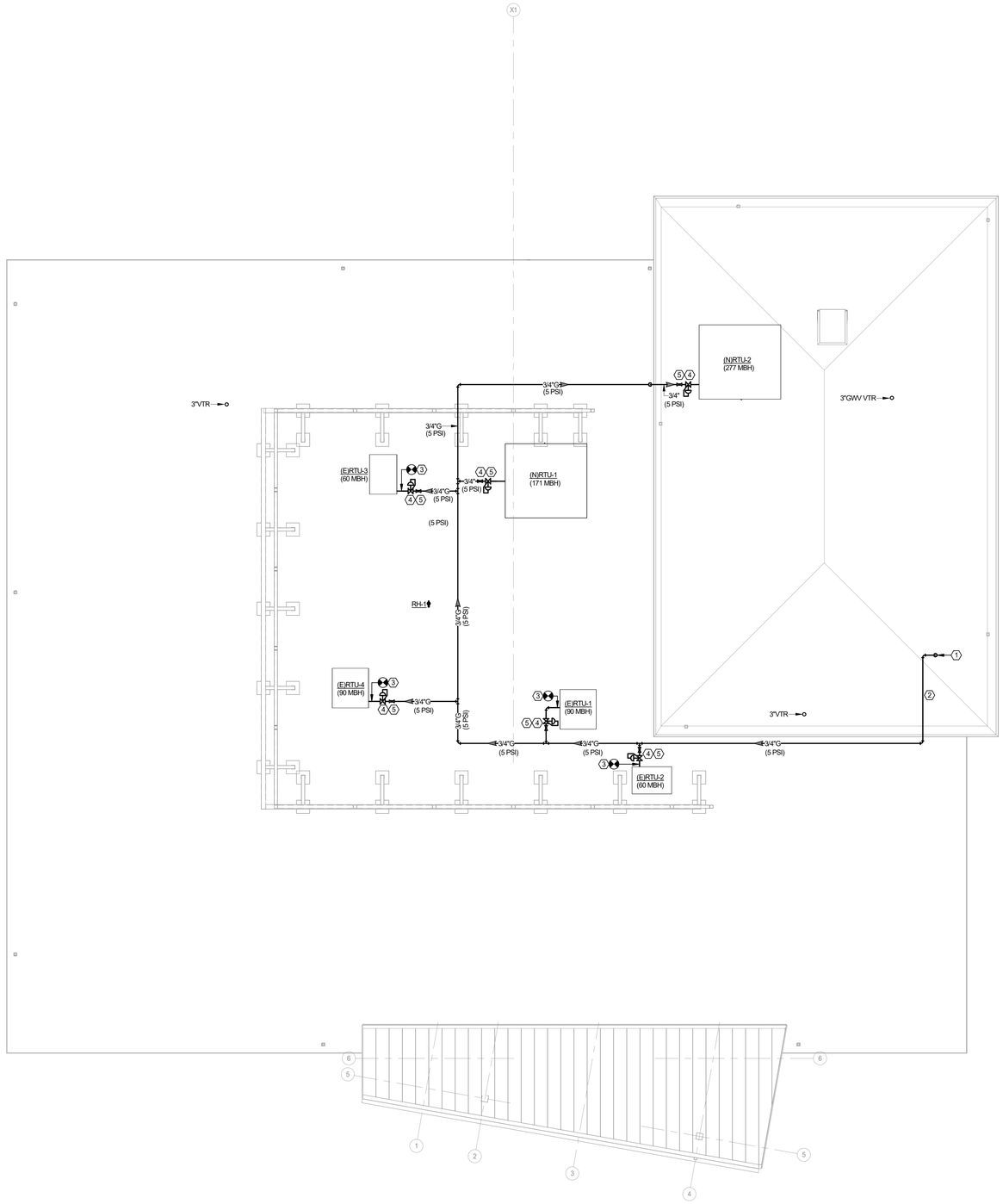
50+ Years
RAM HOUSE
#iamramfam

LIONBERGER CONSTRUCTION

**RAM HOUSE**
ALTERATIONS & ADDITION
MAIN LEVEL FLOOR PLAN - DOMESTIC WATER
410 ELM AVE
ROANOKE CITY, VIRGINIA

| | |
|---|---|
| DRAWN BY | JER |
| DESIGNED BY | JER |
| CHECKED BY | JDW |
| DATE | 02/14/2025 |
| SCALE | 3/16" = 1'-0" |
| REVISIONS | |

P1.12
PROJECT NO 03230086.00






## 1 ROOF PLAN - PLUMBING
Scale: 3/16" = 1'-0"


**Salas O'Brien**
salasobrien.com 540-952-9651
Project No: 2550-00213-00

Roanoke
119 Norfolk Avenue, Suite 310
Roanoke, Virginia 24011


## PLAN NOTES:

1. 3/4"G FR.BEL. ROUTED UNDER NEW ADDITION ROOF.
2. 3/4"G. ROUTED UNDER NEW ADDITION ROOF AND TIGHT ALONG EXTERIOR WALL.
3. NEW 3/4" GAS PIPE CONNECT TO EXISTING MECHANICAL UNIT. REFER TO SHEET P0.03 FOR GAS CONNECTION DETAIL.
4. PROVIDE GAS SHUT OFF VALVE AND PRESSURE REGULATOR AT MECHANICAL UNIT CONNECTION. REGULATOR SHALL BE SIZED AND INSTALLED TO REDUCE GAS PRESSURE FROM 5 PSI TO 7-14 IN W.C. CONTRACTOR TO COORDINATE GAS DELIVERY PRESSURE TO MECHANICAL EQUIPMENT PER MANUFACTURER'S REQUIREMENTS.
5. CONTRACTOR TO VENT GAS PRESSURE REGULATOR PER MANUFACTURER'S REQUIREMENTS AND IN ACCORDANCE WITH LOCAL BUILDING AND FUEL GAS CODE.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ALTERATIONS & ADDITION
ROOF PLAN - PLUMBING
410 ELM AVE
ROANOKE CITY, VIRGINIA

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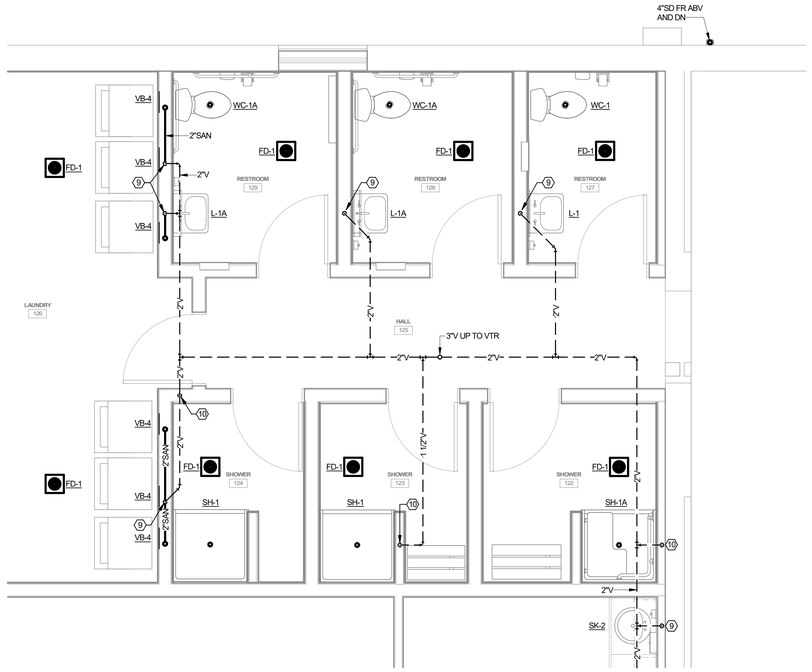
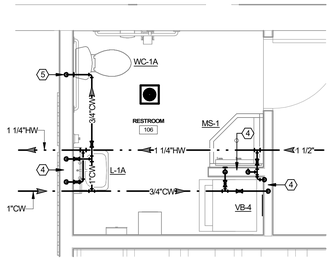
| SCALE | As indicated |
| REVISIONS | |

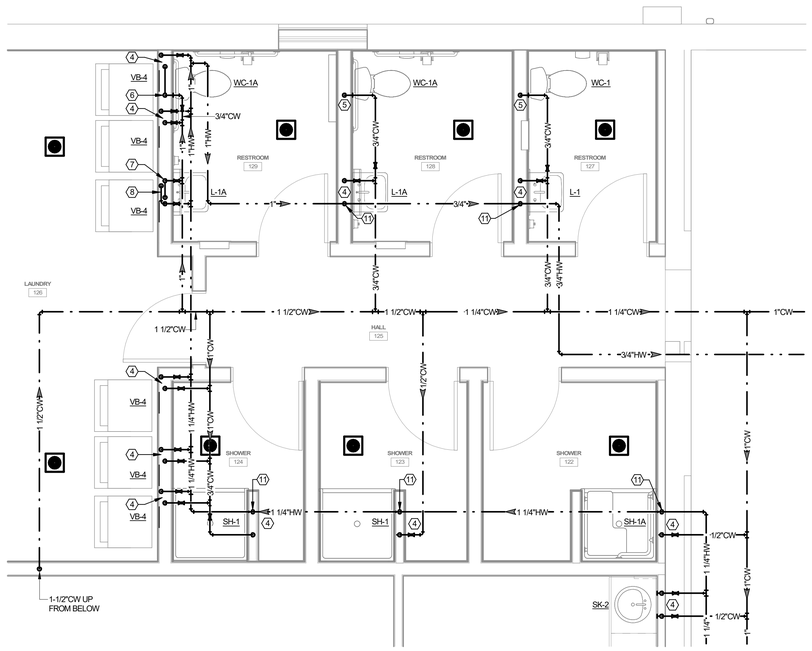
P1.31
PROJECT NO 03230086.00



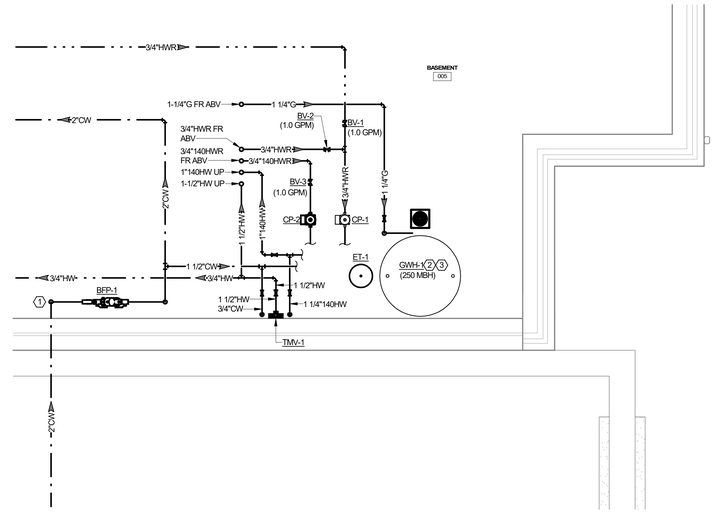

## 4 ENLARGED PLUMBING PLAN - RESTROOMS - WASTE AND VENT
Scale: 3/8" = 1'-0"




## 2 ENLARGED PLUMBING PLAN - RM 106 - DOMESTIC WATER
Scale: 3/8" = 1'-0"




## 3 ENLARGED PLUMBING PLAN - RESTROOMS - DOMESTIC WATER
Scale: 3/8" = 1'-0"




## 1 ENLARGED PLUMBING PLAN - ROOM 005 - DOMESTIC WATER AND GAS
Scale: 3/8" = 1'-0"

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salasobrien.com 540-952-9651
Project No: 2550-00213-00

Roanoke
119 Norfolk Avenue, Suite 310
Roanoke, Virginia 24011

## PLAN NOTES:

1. CONTRACTOR TO COORDINATE DOMESTIC SERVICE MAIN TO ENTER THE BUILDING ON THE LOWER LEVEL AND DROP DOWN TO SERVE BFP-1. REFER TO SHEET P0.05 FOR DOMESTIC RISER.
2. FOR PIPE CONTINUATION, REFER TO SHEET P0.04 FOR WATER HEATER CONNECTION DETAILS.
3. CONTRACTOR SHALL ROUTE AND SIZE WATER HEATER COMBUSTION AND EXHAUST DUCT PER MANUFACTURER APPROVED CONCENTRIC HORIZONTAL TERMINATION SIDE WALL CAP. REFER TO SHEET P0.03 FOR SIDE WALL VENT TERMINATION DETAIL.
4. 1/2" HOT AND COLD WATER DOWN TO SERVE FIXTURE.
5. 3/4" COLD WATER DOWN TO SERVE FIXTURE.
6. 3/4" COLD WATER DOWN, 1/2" COLD WATER TEE OFF TO SERVE WASHING MACHINE BOX AND 3/4" DOWN TO SERVE WATER CLOSET.
7. 3/4" COLD WATER DOWN, 1/2" COLD WATER TEE OFF TO SERVE WASHING MACHINE BOX AND 1/2" DOWN TO SERVE LAVATORY.
8. 3/4" HOT WATER DOWN, 1/2" HOT WATER TEE OFF TO SERVE WASHING MACHINE BOX AND 1/2" DOWN TO SERVE LAVATORY.
9. 2"SAN DOWN, 1-1/2" VENT UP.
10. 1-1/2" VENT UP.
11. CONTRACTOR SHALL PROVIDE SHUT OFF VALVE IN THE VERTICAL FOR HOT WATER PIPING. HOT WATER SHUT OFF VALVE SHALL BE INSTALLED WITHIN 12" OF COLD WATER SHUT OFF VALVE.

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LIONBERGER CONSTRUCTION

# RAM HOUSE
ALTERATIONS & ADDITION
ENLARGED PLUMBING PLANS
410 ELM AVE
ROANOKE CITY, VIRGINIA

| | |
|---|---|
| DRAWN BY | JER |
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| CHECKED BY | JDW |
| DATE | 02/14/2025 |
| SCALE | As indicated |
| REVISIONS | |

P2.01
PROJECT NO 03230086.00

Salas O'Brien
salasobrien.com 540-952-9651
Project No: 2550-00213-00

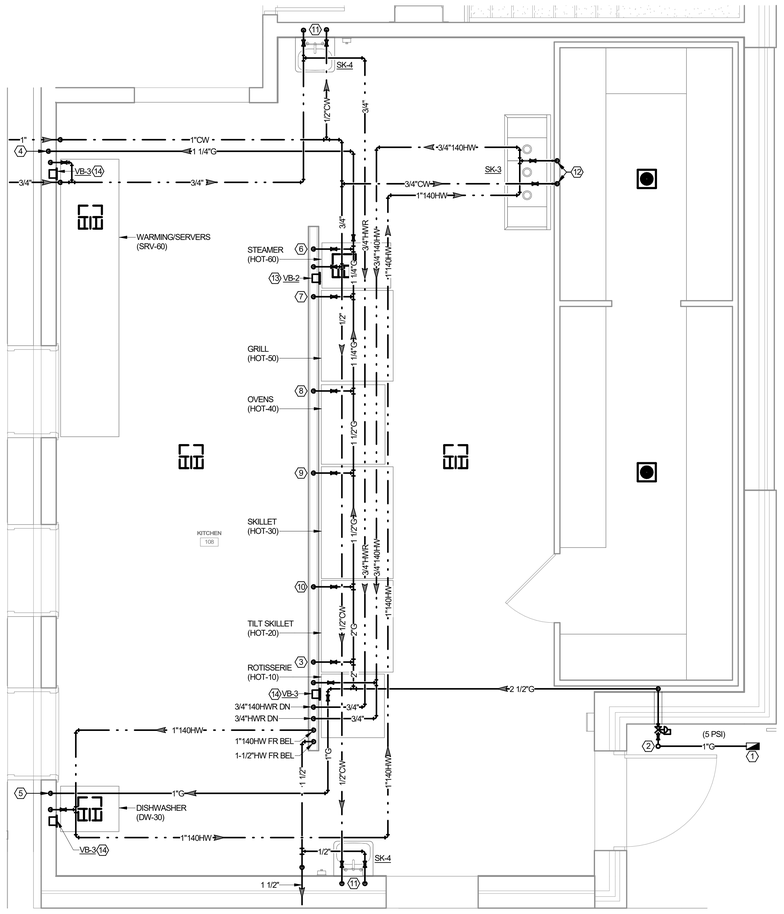
Roanoke
119 Norfolk Avenue, Suite 310
Roanoke, Virginia 24011

## GENERAL NOTES:

1. CONTRACTOR SHALL INSTALL PRESSURE REDUCING VALVES FOR KITCHEN EQUIPMENT AS NEEDED. REFER TO MANUFACTURER'S INSTALLATION GUIDE FOR REQUIREMENTS.
2. CONTRACTOR SHALL INSTALL WATER HAMMER ARRESTORS (WHA) AS NEEDED FOR KITCHEN EQUIPMENT. REFER TO MANUFACTURER'S INSTALLATION GUIDE FOR REQUIREMENTS.
3. CONTRACTOR SHALL VERIFY GAS LOAD ON KITCHEN EQUIPMENT. IF THERE ARE ANY DISCREPANCIES WITH THE KITCHEN EQUIPMENT, CONTRACTOR SHALL SUBMIT GAS LOAD VALUE(S) OF KITCHEN EQUIPMENT TO DESIGNER PRIOR TO BEGINNING CONSTRUCTION.

## PLAN NOTES:

1. INCOMING 1"GAS (5 PSI). PROPOSED GAS METER LOCATION, APPROX. CONNECTED LOAD = 2152 MBH. CONTRACTOR TO COORDINATE DELIVERY PRESSURE OFF 5 PSI WITH LOCAL GAS SUPPLIER.
2. 3/4"GAS (5 PSI) UP TO ROOF WITH 2"GAS TEE OFF SLEEVED TH-ROUGH WALL TO SERVE GAS-FIRED EQUIPMENT INSIDE THE BUILDING (APPROX. CONNECTED LOAD = 1404 MBH). CONTRACTOR SHALL INSTALL GAS PRESSURE REGULATOR AND SHUT OFF VALVE ON THE EXTERIOR WALL SIDE OF THE PIPE ENTERING THE BUILDING. REGULATOR SHALL BE INSTALLED AND SIZED TO REDUCE GAS PRESSURE FROM 5 PSI TO 7-14 IN W.C.
3. 1-14"G DOWN TO LOWER LEVEL.
4. 1-1/4"G DOWN TO SERVE WARMERS/SERVERS (APPROX. CONNECTED LOAD = 200 MBH). REFER TO PLUMBING SHEET P0.03 FOR KITCHEN EQUIPMENT GAS CONNECTION DETAIL.
5. 1"G DOWN TO SERVE DISHWASHER (APPROX. CONNECTED LOAD = 196 MBH). REFER TO PLUMBING SHEET P0.03 FOR KITCHEN EQUIPMENT GAS CONNECTION DETAIL.
6. 3/4"G DOWN TO SERVE STEAMER (APPROX. CONNECTED LOAD = 45 MBH). REFER TO PLUMBING SHEET P0.03 FOR KITCHEN EQUIPMENT GAS CONNECTION DETAIL.
7. 1-1/4"G DOWN TO SERVE GRILL (APPROX. CONNECTED LOAD = 210 MBH). REFER TO PLUMBING SHEET P0.03 FOR KITCHEN EQUIPMENT GAS CONNECTION DETAIL.
8. 1"G DOWN TO SERVE OVEN (APPROX. CONNECTED LOAD = 200 MBH). REFER TO PLUMBING SHEET P0.03 FOR KITCHEN EQUIPMENT GAS CONNECTION DETAIL.
9. 1"G DOWN TO SERVE SKILLET (APPROX. CONNECTED LOAD = 150 MBH). REFER TO PLUMBING SHEET P0.03 FOR KITCHEN EQUIPMENT GAS CONNECTION DETAIL.
10. 1"G DOWN TO SERVE TILT SKILLET (APPROX. CONNECTED LOAD = 150 MBH). REFER TO PLUMBING SHEET P0.03 FOR KITCHEN EQUIPMENT GAS CONNECTION DETAIL.
11. 1/2" HOT AND COLD WATER DOWN TO SERVE PLUMBING FIXTURE.
12. 3/4" HOT AND COLD WATER DOWN TO SERVE PLUMBING FIXTURE.
13. 3/4" COLD WATER CONNECTION (VB- 2) TO SERVE KITCHEN EQUIPMENT.
14. 3/4" HOT WATER CONNECTION (VB- 3) TO SERVE KITCHEN EQUIPMENT.




1 **ENLARGED PLUMBING PLAN - KITCHEN - DOMESTIC WATER AND GAS**
Scale: 3/8" = 1'-0"

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P2.02
PROJECT NO 03230086.00