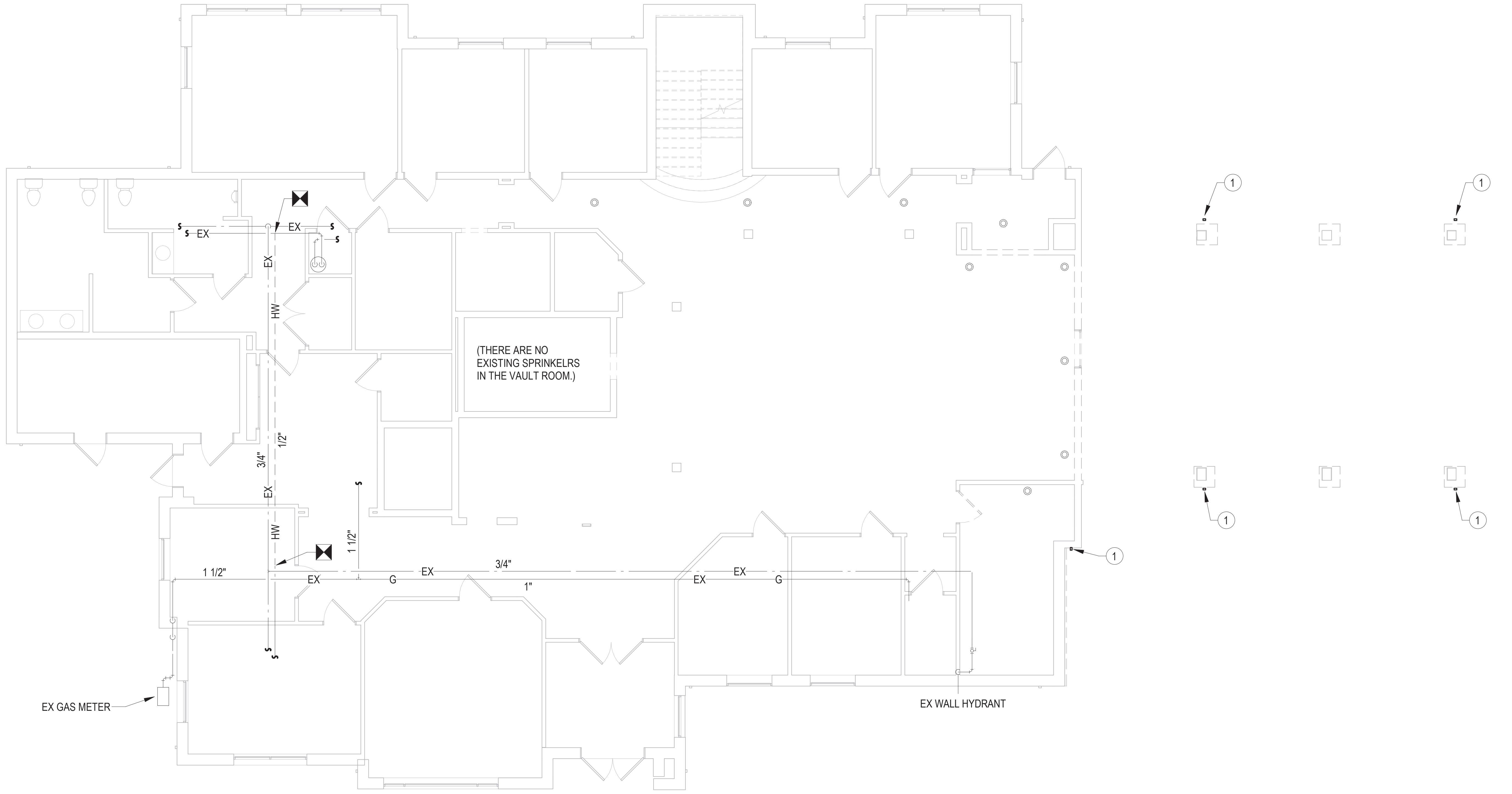

FIRST FLOOR DEMOLITION PLAN - PLUMBING

SCALE: 1/8" = 1'-0"

DEMOLITION NOTES THIS SHEET: ○

1. AFTER EXISTING DOWNSPOUT IS REMOVED, REMOVE EXISTING DOWNSPOUT BOOT TO BELOW GRADE, CAP AND ABANDON IN PLACE. COORDINATE WITH SITE CONTRACTOR.

AGENCY APPROVAL

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COMMONWEALTH OF VIRGINIA
7/11/2025
RODNEY D. FANNING
Lic. No. 034568
PROFESSIONAL ENGINEER

REVISIONS	DATE

FIRST FLOOR DEMOLITION PLAN - PLUMBING

RENOVATIONS TO

NRV REGIONAL COMMISSION OFFICE

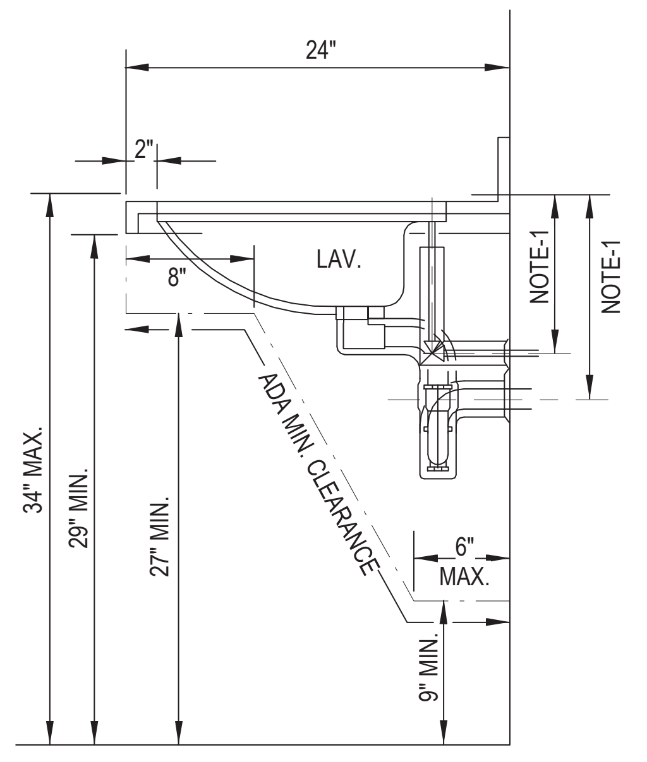
2950 MARKET ST NE, CHRISTIANSBURG, VIRGINIA

NRVRC
new river valley regional commission

DATE	07.11.2025
SCALE	AS NOTED
DRAWN	MGW
JOB	2423
IFB #	XXXX
PROJECT CODE	XX-XXXX
SHEET	

FORMATTED FOR
A 24" X 36" PRINT

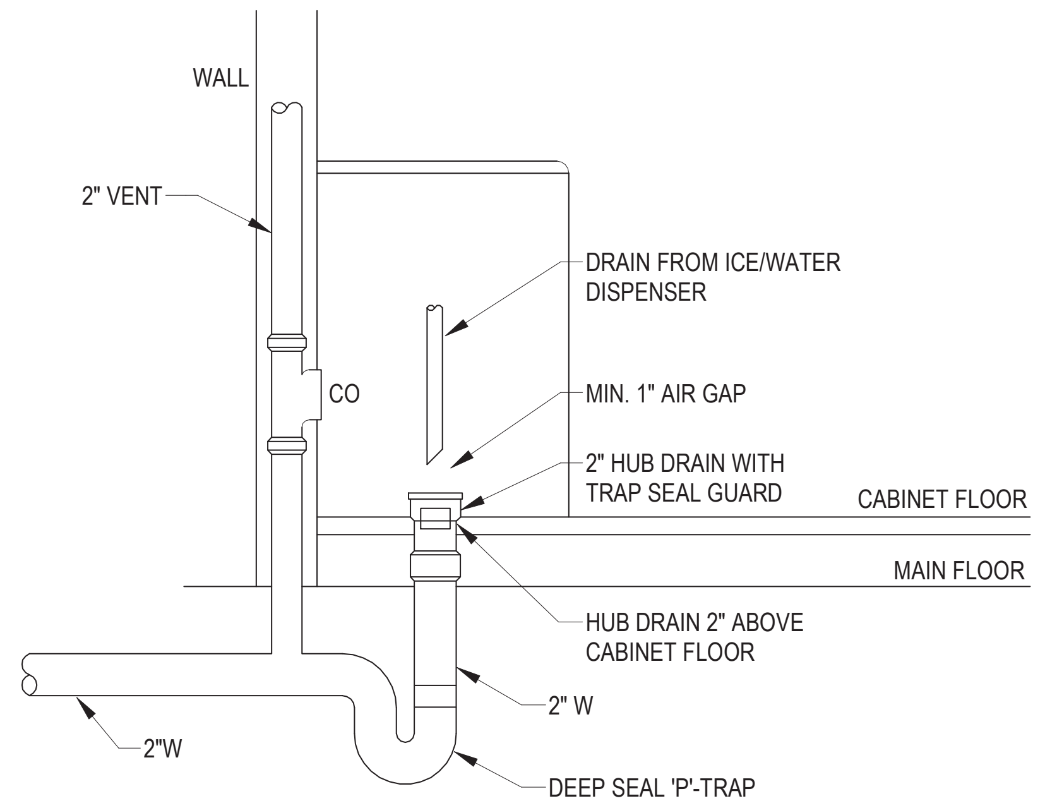
PD1.1



NOTE-1:
AS REQUIRED TO MAINTAIN ADA CLEARANCE.

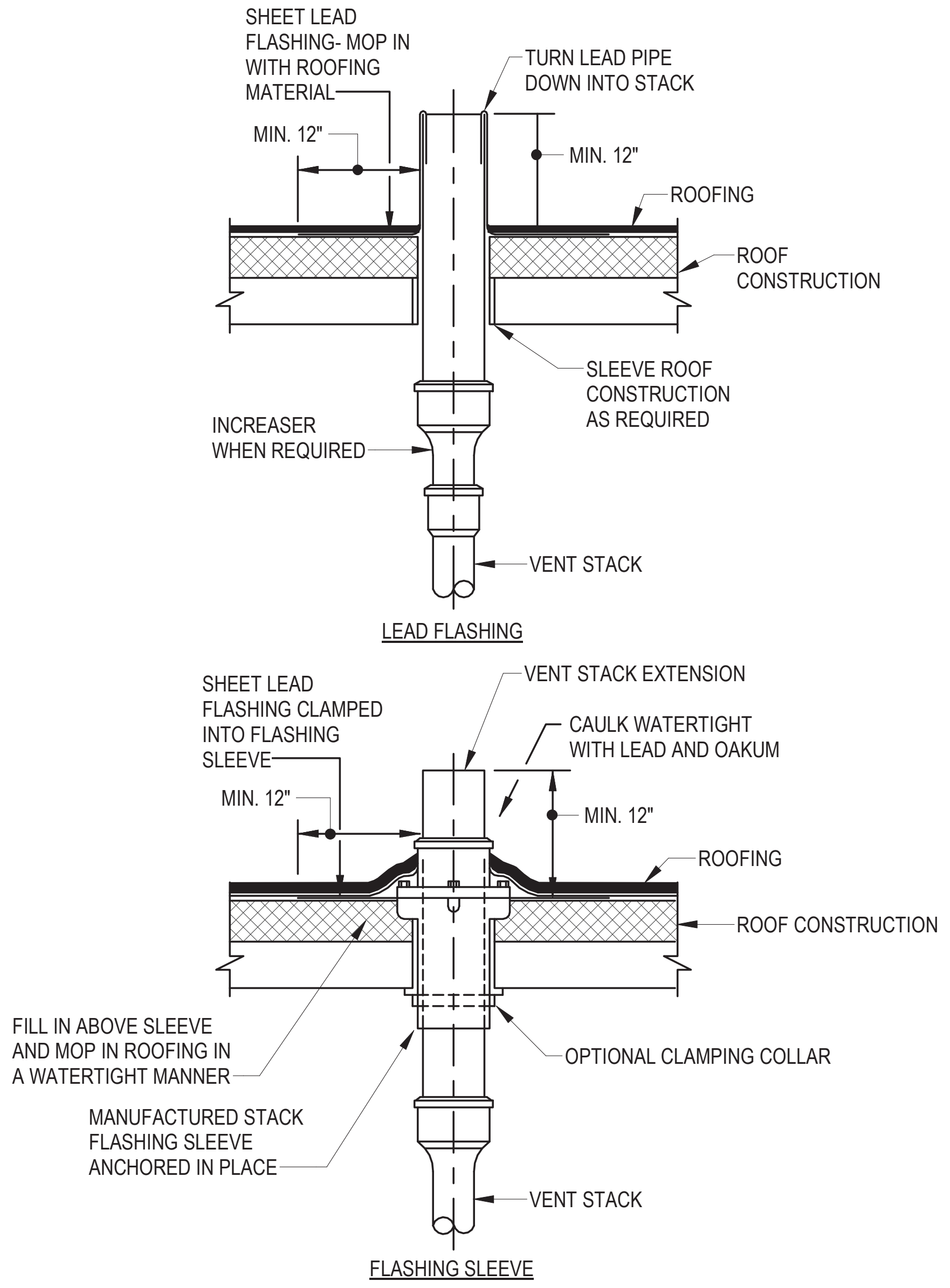
HANDICAPPED LAVATORY INSTALLATION ADA REQUIREMENTS COUNTER UNDER MOUNT

NO SCALE



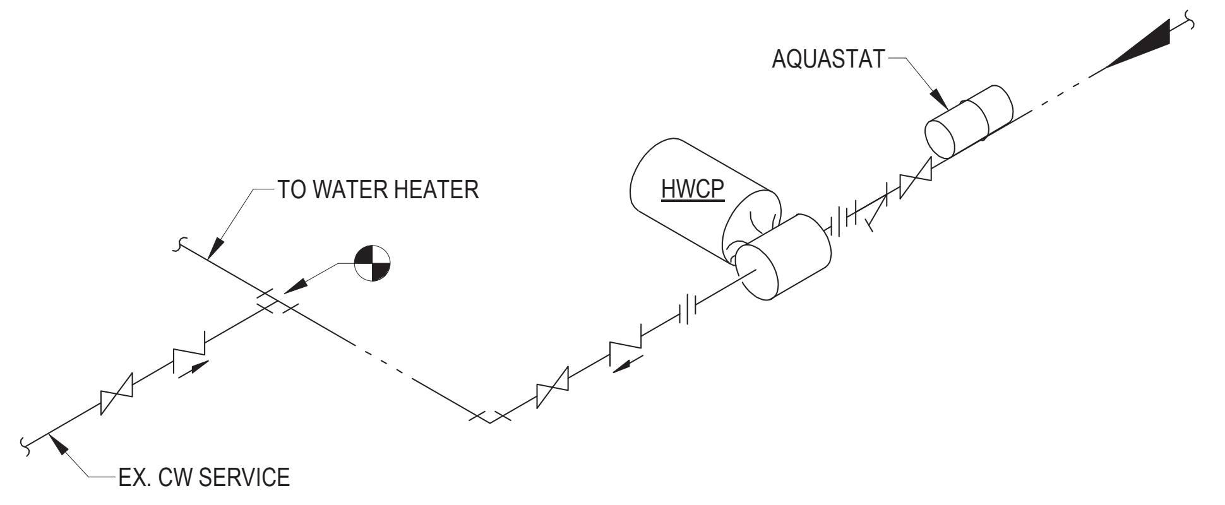
ICE/WATER DISPENSER HUB DRAIN DETAIL

NO SCALE



VENT THRU ROOF DETAIL

NO SCALE
SEE ARCHITECTURAL ROOF PLAN.



HWCP CIRCULATING PUMP CONNECTIONS DETAIL

NO SCALE

FIXTURE CONNECTION SCHEDULE

MARK	FIXTURE	WASTE	VENT	COLD	HOT	REMARKS
WC	WATER CLOSET (FLUSH TANK)	4"	2"	1"	-	FLOOR MOUNTED, HANDICAPPED#
L	LAVATORY	1 1/4"	1 1/2"	1/2"	1/2"	WALL MOUNTED, HANDICAPPED# 34" FINISH FLOOR TO RIM
SK	SINK (SINGLE COMPARTMENT)	1 1/2"	1 1/2"	1/2"	1/2"	COUNTER TOP, HANDICAPPED#
EWC	ELECTRIC WATER COOLER (HI/LOW)	1 1/4"	1 1/2"	1/2"	-	WALL MOUNTED, HANDICAPPED# LOW UNIT 36" FF TO SPOUT OUTLET
IM	ICE MAKER BOX	-	-	1/2"	-	

INSTALLATION SHALL MEET AMERICANS WITH DISABILITIES ACT (ADA) ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES.

PLUMBING GENERAL NOTES:

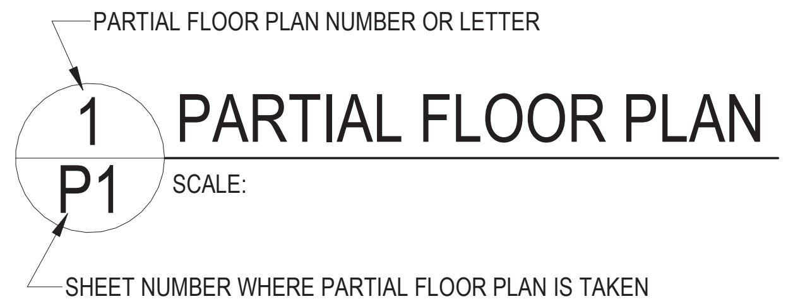
1. SEE SITE PLAN SHEET FOR THE EXTENT OF ALL PIPING LEAVING AND ENTERING BUILDING.
2. MAKE PIPING CONNECTIONS AS REQUIRED TO ALL FIXTURES AND EQUIPMENT EVEN THOUGH ALL BRANCH MAINS, ELBOWS AND CONNECTIONS ARE NOT SHOWN.
3. CHECK WITH ARCHITECTURAL WORKING DRAWINGS BEFORE ROUGHING-IN PLUMBING FIXTURES.
4. SLOPES AND INVERT ELEVATIONS OF SEWERS, MANHOLES, ETC., SHALL BE ESTABLISHED AND VERIFIED BY CONTRACTOR BEFORE ANY PIPING IS INSTALLED IN ORDER THAT PROPER SLOPES WILL BE MAINTAINED AND NECESSARY INVERT ELEVATIONS OBTAINED.
5. ALL PIPES SHALL BE COORDINATED WITH OTHER NEW AND EXISTING DUCTS, PIPES, LIGHTS, STRUCTURAL SYSTEM, CEILING SUPPORTS AND FRAMING BEFORE INSTALLATION. MINOR PIPE OFFSETS SHALL BE PROVIDED AS REQUIRED. MEASUREMENTS FOR VERTICAL CLEARANCES SHALL BE TAKEN AT THE JOB SITE BEFORE INSTALLATION OF ANY PIPING.
    6. WASTE PIPE BELOW FLOOR, VENT PIPING ABOVE CEILING, PIPING OFFSET FOR CLARITY.
6. DOMESTIC WATER PIPING SHALL BE INSTALLED ABOVE CEILINGS UNLESS NOTED OTHERWISE. DOMESTIC WATER PIPING SHOWN IN PIPE CHASE WALLS SHALL BE INSTALLED IN CHASE SPACE, PIPING OFFSET FOR CLARITY.
7. DOMESTIC WATER PIPING SHALL NOT BE INSTALLED IN LOCATIONS SUBJECT TO FREEZING OR SPACES EXTERIOR TO BUILDING INSULATION.
8. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED INSTRUCTIONS.
9. MATERIALS AND INSTALLATION SHALL COMPLY WITH LOCAL CODES. APPLICABLE PROVISIONS OF LATEST EDITION OF NATIONAL FIRE PROTECTION ASSOCIATION, LOCAL UTILITY REGULATIONS AND GOVERNMENTAL DEPARTMENTS HAVING JURISDICTION.
10. WHERE PIPE CONNECTIONS ARE SHOWN CONNECTING TO EXISTING, CONTRACTOR SHALL DETERMINE EXACT LOCATIONS AND CONNECTION SIZES PRIOR TO INSTALLATION.
11. CONTRACTOR SHALL MAKE ARRANGEMENTS WITH ATMOS ENERGY FOR MODIFICATIONS TO EXISTING GAS SERVICE AND GAS METER, AND INCLUDE ALL CHARGES FOR THIS WORK IN THE CONTRACT.
12. LIMITS OF CONTRACT: DOMESTIC WATER SERVICE, SANITARY AND STORM WATER PIPING SHALL BE EXTENDED UNDER THIS SECTION OF THE SPECIFICATIONS TO POINTS 5'-0" BEYOND THE BUILDING LINES, UNLESS OTHERWISE INDICATED ON THE DRAWINGS, WHERE THE PIPES SHALL BE CAPPED OR PLUGGED AND LEFT READY FOR CONNECTION AND EXTENSION BY OTHERS, AND THE LOCATIONS MARKED WITH A STAKE OR OTHER APPROVED MEANS.
13. TANK-MOUNTED FLUSH OPERATOR ON INDICATED HANDICAPPED WATER CLOSETS SHALL BE PROVIDED ON THE RIGHT SIDE OF TANK WHEN FACING THE PLUMBING FIXTURE. DOMESTIC COLD WATER SUPPLY RUNOUT SHALL BE LOCATED TO ACCOMMODATE MODIFICATION IF REQUIRED BY FIXTURE MANUFACTURER. SEE DRAWINGS FOR WATER CLOSETS TO BE MODIFIED.
14. INFORMATION ON EXISTING PLUMBING SHOWN WAS OBTAINED FROM PLANS DATED SEPT. 12, 2012. THE CONTRACTOR SHALL ADJUST WORK AS REQUIRED TO SUIT ACTUAL LOCATIONS IF DIFFERENT FROM CONTRACT DOCUMENTS.
15. RETURN AIR PLENUM NOTE: ALL MATERIALS LOCATED IN THE RETURN AIR PLENUMS SHALL MEET THE REQUIREMENTS OF THE INTERNATIONAL MECHANICAL CODE, SECTION 602.2.1.
16. PIPING SHALL NOT BE INSTALLED ABOVE ELECTRICAL PANELS. COORDINATE INSTALLATION OF PIPES WITH ELECTRICAL PANELS WHEN SHOWN NEAR PANELS OR OVER ELECTRICAL ROOMS.

SPRINKLER SYSTEM NOTES AND SPECIFICATIONS:

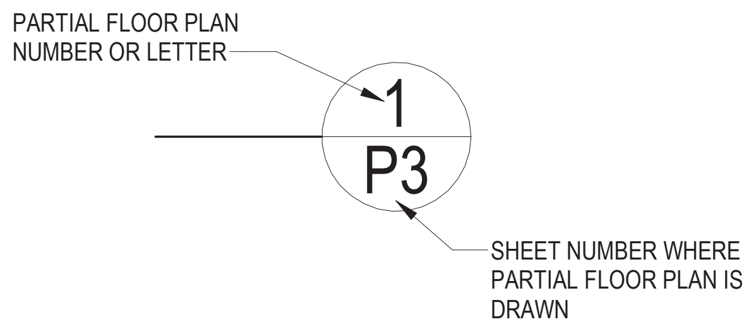
1. THE EXISTING SPRINKLER SYSTEM IN THE RENOVATED AREAS SHALL BE MODIFIED AS REQUIRED TO PROVIDE FULL SPRINKLER COVERAGE IN ACCORDANCE WITH NFPA 13-2019 AND THE 2021 VIRGINIA CONSTRUCTION CODE.
2. INSTALLATION SHALL BE ACCOMPLISHED BY A CONTRACTOR WHO IS DULY LICENSED AND ACCREDITED IN THE INSTALLATION OF AUTOMATIC SPRINKLER SYSTEMS AND FIRE PROTECTION EQUIPMENT FOR THE PAST THREE YEARS.
3. EXISTING SPRINKLER HEADS SHALL BE REMOVED IN THE AREAS OF RENOVATION, OR RELOCATED AS INDICATED ON THE PLANS AND AS PERMITTED BY NFPA 13-2019 SECTION 29.3. NEW SPRINKLER HEADS SHALL BE RECESSED PENDENT IN FINISHED CEILINGS, AND UPRIGHT IN SPACES OPEN TO STRUCTURE.
4. PIPING SHALL BE FERROUS PIPING (WELDED AND SEAMLESS), ASTM A795, ASTM A53 OR ASTM A153 IN ACCORDANCE WITH NFPA 13-2019.
5. CONTRACTOR SHALL COORDINATE THE LOCATIONS OF ALL SPRINKLERS AND SPRINKLER PIPING WITH OTHER NEW AND EXISTING PIPES, DUCTS, LIGHTS, EQUIPMENT, CONDUIT, STRUCTURAL SYSTEMS, CEILING SUPPORTS, AND FRAMING BEFORE INSTALLATION. SPRINKLER PIPING SHALL NOT BE INSTALLED WHERE ITS LOCATION INHIBITS EQUIPMENT FILTER AND MAINTENANCE ACCESS OR INFRINGES UPON CLEARANCE DICTATED BY THE NATIONAL ELECTRIC CODE. ALL SPRINKLERS TO BE CENTERED IN CEILING TILES - "CENTER OF TILE."
6. THE SPRINKLER SYSTEM IN CORRIDORS, OFFICES, AND SIMILAR SPACES SHALL LIGHT HAZARD DESIGNED TO PROVIDE 0.10 GPM/SQ. FT. OVER 1500 SQ. FT. PLUS A 100 GPM HOSE ALLOWANCE. THE SYSTEM SHALL BE WET USING 155 DEG. F. SPRINKLER HEADS AND COVER NO MORE THAN 225 SQ. FT. PER HEAD.
7. THE SPRINKLER SYSTEM IN STORAGE ROOMS, FILE ROOMS, MECHANICAL ROOMS AND SIMILAR SPACES SHALL BE ORDINARY HAZARD GROUP 2 DESIGNED TO PROVIDE 0.15 GPM/SQ. FT. OVER 1500 SQ. FT. PLUS A 250 GPM HOSE ALLOWANCE. THE SYSTEM SHALL BE WET USING 155 DEG. F. SPRINKLER HEADS AND COVER NO MORE THAN 130 SQ. FT. PER HEAD.
8. PROVIDE FIRESTOPPING AT ALL LOCATIONS WHERE PIPES PENETRATE RATED WALL ASSEMBLIES.
9. THE EXISTING SPRINKLER SYSTEM SERVING AREAS NOT BEING RENOVATED MUST BE MAINTAINED DURING CONSTRUCTION.

PLUMBING LEGEND

ABOVE	ABV	
ABOVE FINISHED FLOOR	AFF	
ACCESS DOOR	ADR	
BELOW	BEL	
BETWEEN	BET	
CEILING	CLG	
CHECK VALVE		
CIRCUIT SETTER		CS(GPM)
CLEANOUT IN VERTICAL OR FLUSH WITH FLOOR	CO	CO
DIAMETER	DIA	
DIRECTION OF FLOW		
DIRECTION OF SLOPE DOWN		
DOMESTIC COLD WATER PIPE, NEW	CW	
EXISTING TO REMAIN	CW	EX
EXISTING TO BE REMOVED	CW	CW
DOMESTIC HOT WATER PIPE, NEW	HW	
EXISTING TO REMAIN	HW	EX
EXISTING TO BE REMOVED	HW	HW
DOMESTIC HOT WATER CIRCULATING PIPE, NEW	HWR	
EXISTING TO REMAIN	HWR	EX
EXISTING TO BE REMOVED	HWR	HWR
DOWN	DN	
DOWNSPOUT BOOT	DS	
DRAIN PIPE	D	D
EXISTING	EX	
EXISTING, REMOVE FROM THIS POINT		
FLOOR	FL	
FROM	FR	
GAS COCK		
BALL VALVE		
BALL VALVE (IN VERTICAL)		
HOT WATER CIRCULATING PUMP	HWCP	
HOT AND COLD WATER	H&CW	
INLET WITH P-TRAP		
LAVATORY	L	
NATURAL GAS PIPE, NEW	G	G
EXISTING TO REMAIN	G	EX G
EXISTING TO BE REMOVED	G	G
NEW CONNECTED TO EXISTING		
NORMALLY CLOSED	NC	
NORMALLY OPEN	NO	
PIPING INDICATION WITH RESPECT TO WATER FLOW		
BOTTOM TAKEOFF		
SIDE CONNECTION		
CONNECTION (BOTTOM,TEE OR TOP)		
TOP TAKEOFF		
TURN DOWN OR FROM BELOW		
TURN UP OR DOWN		
TURN UP OR FROM ABOVE		
SHOCK ABSORBER	SA	
SINK	SK	
SPRINKLER HEAD, EXISTING TO BE REMOVED		
SPRINKLER HEAD, EXISTING RECESSED PENDENT		
SPRINKLER HEAD, NEW RECESSED PENDANT		
SPRINKLER PIPE	SPR	SPR
UNION		
VENT PIPE, NEW	V	
EXISTING TO REMAIN	V	EX
EXISTING TO BE REMOVED	V	V
VENT THRU ROOF	VTR	
WASTE PIPE	W	
EXISTING TO REMAIN	W	EX W
EXISTING TO BE REMOVED	W	W
WATER CLOSET	WC	



PLAN TITLE



PLAN SYMBOL

PARTIAL FLOOR PLAN IDENTIFICATION

AGENCY APPROVAL

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design | community | environment

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CONSULTANT

7/11/2025
RODNEY D. FANNING
Lic. No. 034568

REVISIONS	DATE

PLUMBING LEGEND, DETAILS AND NOTES

RENOVATIONS TO

NRV REGIONAL COMMISSION OFFICE

2950 MARKET ST NE, CHRISTIANSBURG, VIRGINIA

NRVRC
new river valley regional commission

DATE	07.11.2025
SCALE	AS NOTED
DRAWN	MGW
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SHEET	P0.1

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PLUMBING SYSTEMS NOTES AND SPECIFICATIONS

PLUMBING SYSTEMS NOTES & SPECIFICATIONS

1. CODES, STANDARDS AND REGULATIONS: MATERIALS, EQUIPMENT, INSTALLATION, DISINFECTION AND TESTING SHALL BE IN COMPLIANCE WITH, BUT NOT LIMITED TO, THE FOLLOWING CODES AND STANDARDS:
   - A. LOCAL CODES OR ORDINANCES.
   - B. VIRGINIA CONSTRUCTION CODE (VCC).
   - C. PIPING, FITTINGS, PUMP SYSTEMS, EQUIPMENT AND FIXTURES THAT ARE CONNECTED TO POTABLE WATER SYSTEM SHALL MEET THE 1996 SAFE WATER DRINKING ACT AND THE 2011 REDUCTION OF LEAD IN DRINKING WATER ACT, AND WHERE APPLICABLE SHALL MEET NSF STANDARD 61 AND SHALL BE LABELED AND CERTIFIED.
2. SHOP DRAWINGS: FURNISH ELECTRONIC FILES OF PLUMBING MATERIALS AND EQUIPMENT TO ARCHITECT FOR REVIEW.
3. DESCRIPTION OF WORK:
   - A. THE WORK INCLUDES PROVIDING A COMPLETE PLUMBING SYSTEM INCLUDING, BUT NOT NECESSARILY RESTRICTED TO, THE FOLLOWING:
     - (1) SANITARY SEWER SYSTEM TO A POINT FIVE FEET AWAY FROM EXTERIOR BUILDING WALLS.
     - (2) ADDITIONS AND MODIFICATIONS TO THE EXISTING DOMESTIC WATER SYSTEM WITHIN THE BUILDING.
     - (3) RAIN CONDUCTOR SYSTEM TO A POINT FIVE FEET AWAY FROM EXTERIOR BUILDING WALLS.
     - (4) ADDITIONS AND MODIFICATIONS TO THE EXISTING NATURAL GAS PIPING SYSTEM.
     - (5) INSTALLATION AND CONNECTIONS TO EQUIPMENT FURNISHED BY OWNER.
     - (6) CONNECTIONS TO FIXTURES AND EQUIPMENT PROVIDED UNDER OTHER SECTIONS OF THESE SPECIFICATIONS.
     - (7) MISCELLANEOUS WORK AS DESCRIBED HEREIN, AS SHOWN ON DRAWINGS, AND AS REQUIRED FOR A COMPLETE SYSTEM.
4. VISITING THE SITE: EACH CONTRACTOR SHALL BE RESPONSIBLE FOR VISITING THE SITE BEFORE BIDDING THE JOB TO FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS TO BE MET IN THE EXECUTION OF THE WORK UNDER THIS CONTRACT. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR ANY CHANGES WHICH MAY BE REQUIRED TO MAKE BECAUSE OF SITE CONDITIONS.
5. PIPE AND EQUIPMENT SUPPORTS, PIPE SLEEVES AND WALL CEILING PLATES:
   - A. PROVIDE IN ACCORDANCE WITH THE VIRGINIA CONSTRUCTION CODE.
   - B. PIPE SLEEVES:
     - (1) PROVIDE SLEEVES FOR PIPING AND CONDUIT PASSING THROUGH CONCRETE FLOOR SLABS AND CONCRETE, MASONRY, TILE, AND GYPSUM WALL CONSTRUCTION. SLEEVES SHALL NOT BE PROVIDED FOR PIPING AND CONDUIT RUNNING EMBEDDED IN CONCRETE OR SLAB ON GRADE, EXCEPT THAT COPPER PIPING SHALL REQUIRE SLEEVES THROUGH SLABS ON GRADE. SLEEVES THROUGH STRUCTURAL MEMBERS SHALL BE ONLY AS DIRECTED BY ARCHITECT. IN INTERIOR WALL, PROVIDE 1/4 INCH SPACE ALL AROUND BETWEEN SLEEVE AND CONDUIT, PIPING, OR INSULATION OF PIPING.
     - (2) SLEEVES PLACED IN EXTERIOR WALLS BELOW GRADE SHALL BE O.Z. GEDNEY TYPE 'FSK' OR EQUAL, THUNDERLINE 'LINK SEAL', OR EQUAL SLEEVE ASSEMBLIES SIZED FOR THE PIPE OR CONDUIT ENCOUNTERED, EXCEPT FOR CAST IRON PIPING. SLEEVE ASSEMBLY SHALL PROVIDE WATERTIGHT SEAL AND ELECTRICAL INSULATION TO REDUCE CATHODIC REACTION. WHEN A SLEEVE PASSES THROUGH A WALL BELOW A CONCRETE SLAB ON GRADE, THE SEALING ASSEMBLY SHALL BE ON THE OUTSIDE OF THE WALL. WHEN A SLEEVE PASSES THROUGH A WALL INTO A CRAWL SPACE OR THE BUILDING INTERIOR, THE SEALING ASSEMBLY SHALL BE IN THE CRAWL SPACE OR INTERIOR OF THE BUILDING. PROVIDE SLEEVE ASSEMBLY FOR COPPER PIPING THROUGH SLAB ON GRADE, WITH SEALING ASSEMBLY LOCATED ON INTERIOR SIDE OF FLOOR SLAB. WHERE CAST IRON PIPES PASS THROUGH AN EXTERIOR WALL BELOW GRADE, PROVIDE AN IRON-PIPE SLEEVE TWO (2) PIPE SIZES GREATER THAN PIPE PASSING THROUGH. CAULK BETWEEN PIPE AND SLEEVE WITH A RUBBER-BASED COMPOUND. WHERE SLEEVES ARE LOCATED THROUGH FIRE-RATED WALLS AND FLOOR/CEILING ASSEMBLIES, PROVIDE SLEEVES AND PROTECT THE PENETRATION IN ACCORDANCE WITH UNDERWRITER'S LABORATORIES, INC., FIRE RESISTANCE DIRECTORY, VOLUME II, RATINGS FOR THROUGH FIRESTOP PENETRATIONS.
     - (3) SLEEVES SHALL BE CONSTRUCTED OF 20 GAGE GALVANIZED SHEET STEEL WITH LOCK SEAM JOINTS FOR ALL SLEEVES SET IN CONCRETE FLOOR SLABS TERMINATING FLUSH WITH THE FLOOR. ALL OTHER SLEEVES SHALL BE CONSTRUCTED OF GALVANIZED STEEL PIPE UNLESS OTHERWISE INDICATED.
6. SOIL, WASTE AND VENT AND RAIN CONDUCTOR PIPING :
   - A. CAST IRON SOIL PIPE AND FITTING: PIPE SHALL BE BELL AND SPIGOT, MODIFIED HUB, OR PLAIN END (NO-HUB) AS REQUIRED BY SELECTED JOINTING METHOD. PIPE AND FITTINGS SHALL BE LISTED BY NSF INTERNATIONAL, IAPMO, ICC OR OTHER THIRD PARTY ORGANIZATION THAT IS ACCREDITED AS AN ANSI-GUIDE 65 ORGANIZATION AS LISTED ON WWW.ANSI.ORG.
     - (1) MATERIAL (PIPE AND FITTINGS): ASTM A888, ASTM A74 OR CISPI 301, SERVICE WEIGHT.
     - (2) RAIN CONDUCTOR PIPING MATERIAL (PIPE & FITTINGS): ASTM A888, SPECIFICATION FOR HUBLESS SOIL PIPE & FITTINGS.
     - (3) JOINTS: PROVIDE ANY ONE OF THE FOLLOWING TYPES TO SUIT PIPE FURNISHED.
       - a. MECHANICAL, COMPRESSION-TYPE (ASTM C564) MOLDED NEOPRENE GASKET. GASKETS SHALL SUIT CLASS OF PIPE BEING JOINTED. DUAL-SERVICE GASKETS WILL NOT BE ACCEPTED.
       - b. MECHANICAL: MECHANICAL JOINT COUPLING (ASTM C564 AND ASTM C1277) SHALL BE HEAVY DUTY AND SHALL CONSIST OF A STAINLESS STEEL COUPLING AND NEOPRENE GASKETS (ASTM C564) (CSA CAN/CSA-B602). DO NOT INSTALL BELOW GRADE.
     - (4) COATING: PROVIDE A HEAVY COAT OF ASPHALT OR BITUMASTIC PAINT ON PIPE BURIED IN EARTH OR INSTALLED IN CINDERS OR CONCRETE CONSTRUCTION.
     - (5) CAST IRON SOIL PIPE MARKINGS: ALL CAST IRON SOIL PIPE SHALL BE CLEARLY MARKED WITH THE MANUFACTURER'S NAME, COUNTRY OF ORIGIN, EIGHT-DIGIT DATE CODE, PIPE DIAMETER AND LENGTH, RELEVANT ASTM STANDARD AND REGISTERED TRADEMARK OF THE THIRD PARTY CERTIFIER.
     - (6) MATERIAL TEST REPORTS: SUPPLIER OF CAST IRON SOIL PIPE SHALL BE ABLE TO SUPPLY MATERIAL TEST REPORTS IN ACCORDANCE WITH THE RELEVANT ASTM STANDARD AND SHALL INCLUDE TESTING AND ANALYSIS ON RADIOACTIVITY, DIMENSIONAL CHARACTERISTICS, TENSILE STRENGTH AND CHEMICAL/METALLURGICAL CONTENT. SUPPLIERS SHALL ALSO SUPPLY MSDS SHEETS ON ALL COATINGS.
   - B. PLASTIC PIPE: MAY BE USED FOR PIPING ABOVE GROUND AND BELOW GROUND, SANITARY FORCED MAIN ABOVE AND BELOW GROUND. FOAM CORE PIPING IS NOT ACCEPTABLE. ALL PLASTIC PIPE, FITTINGS AND COMPONENTS SHALL BE THIRD PARTY CERTIFIED TO NSF 14. (PVC SHALL NOT BE USED IN RETURN AIR PLENUMS.)
     - (1) PIPE: PVC SCHEDULE 40 DWV, ASTM D 2665.
     - (2) FITTINGS: PVC SCHEDULE 40 ASTM D3311 FITTINGS FOR SOLVENT JOINTS.
     - (3) JOINTS: ASTM F656 PURPLE PRIMER, SOLVENT ASTM D2564 (NOT PURPLE IN COLOR) COMPLYING WITH SCAQMD RULE #1168, JOINTS MADE IN ACCORDANCE WITH ASTM D2855.
7. INTERIOR DOMESTIC WATER PIPING :
   - A. ALL INTERIOR AND EXTERIOR COPPER TUBING SHALL BE CERTIFIED TUBE (NOT STANDARD TUBE OR STREAMLINE TUBE) MEETING ALL CHEMICAL, MECHANICAL AND DIMENSIONAL REQUIREMENTS OF THE APPLICABLE ASTM STANDARDS.
   - B. COPPER TUBE AND FITTINGS:
     - (1) TUBE: ASTM B88: ABOVE GROUND FLOOR, TYPE L, HARD DRAWN.
     - (2) FITTINGS: WROUGHT COPPER, ASME B16.22 OR CAST COPPER ALLOY ASME B16.18.
     - (3) JOINTS: ABOVE GROUND FLOOR, ASTM B32 LEAD FREE SOLDER, ASTM B813 LEAD FREE FLUX. LEAD FREE SHALL MEAN LESS THAN 0.2 PERCENT LEAD.
8. INTERIOR GAS PIPING: (NATURAL GAS)
   - A. PIPE: BLACK STEEL, ASTM A 53 GRADE B OR A 106, SCHEDULE 40.
   - B. NIPPLES: STEEL, ASTM A733, SCHEDULE 40.
   - C. FITTINGS, 2 INCHES AND SMALLER: MALLEABLE IRON, ASME B16.3. (THREADED)
   - D. JOINTS: THREADED ENDS (ASME B1.20.1). PIPE-JOINT COMPOUND OR TAPE APPLIED TO MALE THREADS ONLY; WELDED. DO NOT USE GAS FITTERS CEMENT, EXCEPT ON OUTLET CAPS.
   - E. GAS PIPING INSTALLED IN CONCEALED LOCATIONS SHALL NOT HAVE UNIONS, TUBING FITTINGS OR RUNNING THREADS.
9. EXTERIOR ABOVE GROUND GAS PIPING (NATURAL GAS)
   - A. PIPE: BLACK STEEL, ASTM A 53 GRADE B, OR A 106, SCHEDULE 40.
   - B. FITTINGS: STEEL SCHEDULE 40, MALLEABLE IRON, ASME B16.3 (THREADED, 2 INCHES AND SMALLER).
   - C. JOINTS: THREADED ENDS (ASME B1.20.1). PIPE-JOINT COMPOUND OR TAPE APPLIED TO MALE THREADS ONLY; WELDED. DO NOT USE GAS FITTERS CEMENT.
   - D. EXPOSED GAS PIPING SHALL BE COATED, WRAPPED OR PROTECTED AS REQUIRED AND APPROVED BY LOCAL BUILDING INSPECTOR.
10. VALVES: (DOMESTIC WATER)
    - A. BALL VALVES: VALVES 2 1/2 INCH AND SMALLER SHALL BE RATED 150 PSI SWP AND 600 PSI NON-SHOCK WOG AND SHALL HAVE 2 PIECE CAST BRONZE BODIES, TFE SEATS, FULL PORT, SEPARATE PACKNUT WITH ADJUSTABLE STEM PACKING, ANTI-BLOWOUT STEMS AND CHROME-PLATED BRASS/BRONZE BALL. VALVE ENDS SHALL HAVE FULL DEPTH ANSI THREADS OR EXTENDED SOLDER CONNECTIONS AND BE MANUFACTURED TO COMPLY WITH MSS-SP110. [NIBCO T585-80-LF (THREADED); S585-80-LF (SOLDER)]

      NOTE: WHERE PIPING IS INSULATED, BALL VALVES SHALL BE EQUIPPED WITH 2" EXTENDED HANDLES OF NON-THERMAL CONDUCTIVE MATERIAL. ALSO, PROVIDE A PROTECTIVE SLEEVE THAT ALLOWS OPERATION OF THE VALVE WITHOUT BREAKING THE VAPOR SEAL OR DISTURBING THE INSULATION. MEMORY STOPS, WHICH ARE FULLY ADJUSTABLE AFTER INSULATION IS APPLIED, SHALL BE INCLUDED. [NIBCO T585/70NS (THREADED); S585-0NS (SOLDER)]
    - B. CHECK VALVES: VALVES 2-1/2 INCH AND SMALLER SHALL BE Y-PATTERN SWING-TYPE MANUFACTURED IN ACCORDANCE WITH MSS-SP80, CLASS 125, BRONZE ASTM B-62 BODY WITH TFE SEAT DISC. WHERE HIGHER OPERATING PRESSURES APPROACH 150 PSI, CLASS 150 VALVES OF LIKE CONSTRUCTION SHALL BE USED. VALVE ENDS SHALL BE THREADED OR SOLDER-TYPE. [CLASS 125 NIBCO T413-Y (THREADED); S413-Y (SOLDER); CLASS 150 NIBCO T433-Y (THREADED); S433-Y (SOLDER)]
    - E. WATER HAMMER ARRESTORS: JOSAM "ABSORBOTRON" 75000 SERIES, SMITH 5000 SERIES "HYDROTROLS", ZURN Z1700 "SHOKTROLS", WADE "SHOKSTOP", OR EQUAL, BELLOWS TYPE, LEAD-FREE, STAINLESS STEEL. (SA-A MAX. 11 SFU; SA-B MAX. 32 SFU). PROVIDE ON BOTH HOT AND COLD WATER BRANCHES. JOB FABRICATED AIR CHAMBERS WILL NOT BE PERMITTED. O-RING TYPE SHOCK ABSORBERS WILL NOT BE ACCEPTED. (ASME/ANSI A112.26.1 OR ASSE 1010)
    - F. LAVATORY TEMPERING VALVES: PROVIDE WATTS MODEL SERIES LFUSG-B-M2 UNDER-SINK GUARDIAN ASSE 1070 THERMOSTATIC TEMPERING VALVE FOR SINGLE LAVATORY. PROVIDE AT ALL LAVATORY LOCATIONS). SET VALVE FOR MINIMUM 105 DEG. F., MAXIMUM 109 DEG. F.
    - G. BALANCING VALVES SHALL BE CIRCUIT SETTERS AS MANUFACTURED BY BELL AND GOSSETT, WATTS OR EQUAL, AND SHALL BE A BALANCING VALVE OF ALL BRONZE CONSTRUCTION. VALVE SHALL HAVE PRESSURE TAPS WITH BUILT-IN CHECK VALVES TO DETERMINE PRESSURE DROP ACROSS VALVE. THE PRESSURE DROP AND THE SETTING OF THE VALVE SHALL DETERMINE THE ACTUAL SYSTEM FLOW RATE REQUIREMENT. VALVE SHALL BE FURNISHED WITH ADJUSTABLE MEMORY STOP AND PREFORMED POLYURETHANE INSULATION SUITABLE FOR USE ON DOMESTIC HOT WATER AND COLD WATER SYSTEMS. UNIT TO BE SUITABLE FOR 125 PSI WORKING PRESSURE AT 250 DEG. F. OPERATING TEMPERATURE.
11. VALVES: (NATURAL GAS)
    - A. GENERAL: EACH ITEM SHALL HAVE THREADED OR FLANGED, CONNECTIONS AS APPLICABLE TO MATCH JOINTS SPECIFIED FOR ITS RESPECTIVE SERVICE.
    - B. GAS VALVES 4 INCHES AND SMALLER: BRONZE TWO PIECE BALL VALVE, CHROME PLATED BALL, AGA & UNDERWRITERS LABORATORIES LISTED.
12. BACKFLOW PREVENTERS:
    - A. PROVIDE BACKFLOW PREVENTION DEVICES AT ALL LOCATIONS SHOWN OR SPECIFIED. DEVICE SHALL BE SAME SIZE AS LINE IN WHICH INSTALLED. LISTED BELOW IS A LIST OF CONNECTION TO THE POTABLE WATER SYSTEM THAT SHALL BE PROTECTED AGAINST BACKFLOW OR BACK SIPHONAGE:
      - (1) HOSE VACUUM BREAKER TYPE (ASSE 1011; CSA CAN/CSA-B64.2):
        - a. WATTS NO. LF8A, LF8AC (CHROME FINISHED) OR EQUAL, LEAD FREE, WITH NON-REMOVABLE FEATURE. HOSE BIBBS AND SINKS WITH THREADED OUTLETS
      - (1) ATMOSPHERIC VACUUM BREAKER (ASSE 1001; CSA CAN/CSA-B64.1): WATTS NO. 288AC (1/2 INCH THRU 1 INCH) 288A (1/4 INCH THRU 3 INCH) OR EQUAL. UNIT SHALL NOT BE SUBJECT TO BACK-PRESSURE AND SHALL BE INSTALLED ON DISCHARGE SIDE OF THE LAST CONTROL VALVE.
        - a. DOMESTIC DISHWASHERS (IF WASHER UNIT CONFORMS TO ASSE 1006, ATMOSPHERIC VACUUM BREAKER IS NOT REQUIRED).
      - (1) INTERMEDIATE ATMOSPHERIC VENT CONTINUOUS PRESSURE TYPE (ASSE 1024; CSA CAN/CSA-B64.6): WATTS NO. LF7R LEAD-FREE OR EQUAL.
        - a. ICE MACHINE
        - b. WATER FILTRATION
      - (1) CONTINUOUS OR INTERMITTENT PRESSURE DUAL CHECK VALVE (ASSE 1022): WATTS NO. SD-3 OR EQUAL.
        - a. CARBONATED BEVERAGE DISPENSER
        - b. COFFEE AND TEA DISPENSERS
13. STRAINERS:
    - A. INSTALL ON INLET OF REDUCED PRESSURE ZONE AND DOUBLE CHECK BACKFLOW PREVENTERS, SUCTION SIDE OF PUMPS AND WHERE SHOWN ON DRAWINGS. STRAINER ELEMENT SHALL BE REMOVABLE WITHOUT DISCONNECTION PIPING. SUITABLE FOR 125 PSI WORKING PRESSURE. PROVIDE WITH BRONZE OR STAINLESS STEEL SCREEN WITH VALVED AND CAPPED BLOW-OFF OUTLET.
      - (1) WATER: 3 INCH OR LARGER BASKET WITH 20 MESH SCREEN LINER; 2-1/2 INCH AND SMALLER, 20 MESH SCREEN.
      - (2) BODY: 3 INCH OR SMALLER, BRASS OR BRONZE; 4 INCH AND LARGER, CAST IRON WITH FDA APPROVED EPOXY COATING SUITABLE FOR POTABLE WATER.
14. PLUMBING FIXTURES:
    - A. GENERAL: FIXTURES EQUAL TO THOSE AS HEREINAFTER SPECIFIED SHALL BE FURNISHED AND INSTALLED COMPLETE WITH ALL SUPPLIES, WASTE AND VENT CONNECTIONS, ALL FITTINGS, ALL NECESSARY HANGERS AND SUPPORTS, BOLT CAPS, FAUCETS, VALVES AND TRAPS. ALL TRIM SHALL BE BRASS WITH POLISHED CHROMIUM PLATED FINISH WITH CHROME SETSCREW ESCUTCHEON AT WALL, EXCEPT FIXTURE SUPPLY PIPES MAY BE CHROMIUM PLATED COPPER WITH CHROME SETSCREW ESCUTCHEONS AT WALL. TRAPS SHALL BE (17 GAUGE) CAST BRASS WITH CLEANOUT PLUG. ALL FIXTURES SHALL BE WHITE. HANDICAPPED LAVATORIES AND SINKS SHALL HAVE BOTH WATER SUPPLIES AND TRAP INSULATED AND WRAPPED WITH HANDY-SHIELD (BY PLUMBEREX), HANDI LAV-GUARD (BY TRUEBRO) OR PROWRAP (BY MCGUIRE). (WHERE BELOW DECK MIXING VALVE OR ELECTRONIC FAUCET ARE SPECIFIED, PROVIDE ZURN MODEL Z6900-V9 VANDAL GUARD ENCLOSURE OR EQUAL BY TRUEBRO.) COLOR SHALL BE WHITE AND FASTENERS SHALL REMAIN OUT OF SIGHT. ALL STANDARD LAVATORIES AND SINKS THAT SHARE A COUNTER WITH A HANDICAPPED LAVATORY OR SINK SHALL HAVE BOTH WATER SUPPLIES AND TRAP INSULATED AND WRAPPED.
    - B. PROVIDE LOCK-SHIELD, LOOSE-KEY OR SCREW DRIVER PATTERN POLISHED CHROMIUM PLATED ANGLE STOPS, WITH EACH SINK FAUCET, LAVATORY FAUCET OR TANK TYPE PLUMBING FIXTURE. STOP AND ESCUTCHEON ASSEMBLY FOR TANK TYPE WATER CLOSET SUPPLIES SHALL BE EQUAL TO SIOUX CHIEF MODEL 699-B-MR OR -PR SERIES, 1/2 INCH CONNECTIONS, WITH MODEL 699-RF WHITE FIRE RATED ESCUTCHEON. FAUCETS FOR SERVICE SINKS OR MOP SINK, FLUSH VALVES AND SHOWER VALVES SHALL BE FURNISHED WITH INTEGRAL STOPS. ALL ELECTRIC WATER COOLERS AND DRINKING FOUNTAINS SHALL HAVE A DI-ELECTRIC FITTING ON THE WATER SUPPLY AND PVC TRAP ON WASTE.
    - C. FIXTURES:

DESIGNATION	STANDARD FIXTURE TYPE
IM	ICE MAKER OUTLET BOX: GUY GRAY OR EQUAL ICE MAKER SUPPLY CONNECTION BOX, MODEL BIM875, 20-GAUGE GALVANIZED STEEL BOX AND FACEPLATE, 1/4 TURN BALL VALVE AND HAMMER ARRESTOR. INSTALL WITH BOTTOM OF BOX MAXIMUM 24 INCHES ABOVE FINISHED FLOOR.

DESIGNATION	HANDICAPPED FIXTURE TYPE (ADA)
WC	WATER CLOSET: AMERICAN STANDARD CHAMPION PRO 211BA.014 (LEFT HANDLE), 211BA.105 (RIGHT HANDLE), 1.28 GPF WATER-SAVING, VITREOUS CHINA, ELONGATED SIPHON ACTION BOWL, 16-1/2 INCHES HIGH, CLOSE-COUPLED TANK, 4-INCH FLUSH VALVE, BEMIS #1655SSCT OR EQUAL WHITE EXTRA HEAVY DUTY SOLID PLASTIC OPEN FRONT SEAT WITHOUT COVER, SELF-SUSTAINING CHECK HINGE.
L	LAVATORY: AMERICAN STANDARD OVALYN 0497.300 UNDERCOUNTER MOUNTED LAVATORY, 19 INCH X 15-3/8 INCH WITH BUILT-IN OVERFLOW, VITREOUS CHINA, STANDARD "TOWN SQUARE S" MODEL 7566.801, 8 INCH CENTER, 0.5 GPM AT 60 PSI ROSETTA SPRAY NON-AERATED DEVICE, LEVER HANDLES, BRUSHED NICKEL FINISH, POP-UP DRAIN. MOUNT TOP SURFACE OF COUNTERTOP AT 34 INCHES ABOVE FINISHED FLOOR AND LAVATORY INSTALLED 2 INCHES BACK FROM FRONT EDGE OF COUNTERTOP.
SK	SINK: ELKAY ECTSRAD332260, 33 INCH X 22 INCH DOUBLE COMPARTMENT, UNDERMOUNT, 18 GAGE, 6 INCH DEEP BOWL, POLISHED SATIN FINISH, TYPE 304 STAINLESS STEEL WITH PROFLO PFXC4512 FAUCET WITH RETRACTABLE SPRAY AND HOSE, BRUSHED NICKEL FINISH, SINGLE LEVER HANDLE, 1.8 GPM AT 60.0 PSI DISCHARGE, ELKAY LKAD-35 STRAINER AND LKAD0S OFFSET TAILPIECE IN EACH COMPARTMENT.
EWC	ELECTRIC WATER COOLER/BOTTLE FILLING STATION (ARI 1010): ELKAY EZSTLG8WSSK BOTTLE FILLING STATION AND BI-LEVEL ADA NON-FILTERED REFRIGERATED COOLER, LEAD-FREE, FRONT AND SIDE PUSHBARS, BOTTLE FILLING STATION WITH SENSOR FOR TOUCHLESS ACTIVATION AND 1.1 GPM FILL, SHUT OFF TIMER, AIR COOLED, HERMETICALLY SEALED REFRIGERATION SYSTEM, FLEX GUARD SAFETY BUBBLER, MINIMUM CAPACITY 7.8 GPH OF 50 DEG. F. WATER AT 90 DEG. F. AMBIENT, 80 DEG. F. INLET WATER, STAINLESS STEEL BASIN, CABINET COLOR AS SELECTED BY ARCHITECT, 115 VOLT, 60 HZ, 6 AMPS. PROVIDE COORDINATED EWC CARRIER SIMILAR TO JOSAM SERIES 17560-WCBL WITH DOUBLE HANGER PLATES, DOUBLE BEARING PLATES, ADJUSTABLE SUPPORTING RODS, STRUCTURAL UPRIGHTS, WELDED FEET AND CHROME-PLATED TRIM. MOUNT UNIT ON WALL SO LOW SIDE SPOUT OUTLET IS 36 INCHES ABOVE FINISHED FLOOR.
IM	ICE MAKER OUTLET BOX: GUY GRAY OR EQUAL ICE MAKER SUPPLY CONNECTION BOX, MODEL BIM875AB, 20-GAUGE GALVANIZED STEEL BOX AND FACEPLATE, 1/4 TURN BALL VALVE AND HAMMER ARRESTOR. INSTALL WITH BOTTOM OF BOX MAXIMUM 24 INCHES ABOVE FINISHED FLOOR.

15. CLEANOUTS:
    - A. SAME SIZE AS PIPE SERVED UP TO 4 INCHES. CLEANOUTS SHALL BE EASILY ACCESSIBLE. ALL CLEANOUT PLUGS SHALL BE BRONZE, SET IN GRAPHITE GREASE. (ASTM A74, ASME A112.3.1, ASME A112.36.2M) COVERS SHALL BE SET FLUSH WITH FINISHED FLOOR OR WALL. PROVIDE CARPET MARKERS IN ALL CARPETED AREAS.
      - (1) BASE OF VERTICAL STACKS: JOSAM 58600-COT, SMITH 4530, ZURN Z-1446 WITH STAINLESS STEEL WALL COVER. LOCATED 24 INCHES ABOVE FLOOR.
      - (2) FLOORS: FLOOR CLEANOUTS SHALL HAVE CAST IRON BODY, BRONZE PLUG, AND ABS OR CAST IRON FRAME WITH ROUND OR SQUARE ADJUSTABLE HEAVY-DUTY SCORIATED SECURED NICKEL BRONZE TOP.
        - a. LIGHT TRAFFIC FLOORS: JOSAM SERIES 55000 CAST IRON FLOOR CLEANOUT WITH SECURED ROUND OR SQUARE COVERS OF SATIN BRONZE FOR FINISHED CONCRETE FLOORS AND SATIN FINISH NIKALOY ELSEWHERE.
        - b. FOR VINYL FLOOR: MIFAB C1100-RFC, JAY R. SMITH 2051-XP CAST IRON FLOOR CLEANOUT WITH COVER PLATE OF SATIN BRONZE FOR FINISHED CONCRETE FLOORS AND OF NICKEL BRASS ELSEWHERE, WITH MEMBRANE CLAMP.
      - (3) EXTERIOR CLEANOUTS: JOSAM SERIES 55000-X CAST IRON FLOOR CLEANOUT WITH CAST IRON SECURED TRACTOR COVER.
16. DOWNSPOUT BOOTS:
    - A. DOWNSPOUT BOOT: NEENAH FOUNDRY MODEL R-4929-O1C, RECTANGULAR OFFSET WITH CLEANOUT, CAST IRON, WITH BOLTING LUGS, OF SIZE TO FIT STORM SEWER PIPE AND METAL CONDUCTOR.
17. INSULATION:
    - A. ALL DOMESTIC WATER PIPING SHALL BE INSULATED. INSULATION SHALL BE JOHNS MANVILLE, OWENS CORNING, OR ARMSTRONG. ALL MATERIALS AND PVC TYPE FITTING COVERS USED SHALL HAVE COMPOSITE FLAME_SPREAD RATING NOT EXCEEDING 25 AND A SMOKE_DEVELOPED RATING NOT EXCEEDING 50, AS TESTED UNDER PROCEDURE ASTM E_84, NFPA 90A AND 90B.
    - B. PIPING INSULATION: FIBERGLASS INSULATION SHALL BE 1 INCH THICK AND SHALL HAVE A MAXIMUM THERMAL CONDUCTIVITY (K) FACTOR OF 27.0 PER INCH OF THICKNESS AT A MEAN TEMPERATURE OF 75 DEG. F. FIBERGLASS INSULATION SHALL HAVE A WHITE KRAFT BONDED TO ALUMINUM FOIL, REINFORCED WITH FIBERGLASS YARN JACKET, LAP JOINTS, TAPE AND SEAL.
18. HOT WATER CIRCULATING PUMP:
    - A. PUMP SHALL BE EQUAL TO B & G BOOSTER SERIES, ALL BRONZE, LINE-MOUNTED UNIT SUITABLE FOR PUMPING WATER AT 210 DEG. F.
    - B. PUMPS SHALL BE OF THE HORIZONTAL, OIL-LUBRICATED TYPE, SPECIFICALLY DESIGNED FOR QUIET OPERATION, SUITABLE FOR 125 LB. WORKING PRESSURE.
    - C. PUMPS SHALL HAVE A GROUND AND POLISHED STEEL SHAFT WITH A HARDENED INTEGRAL THRUST COLLAR AND SHALL BE SUPPORTED BY TWO HORIZONTAL SLEEVE BEARINGS DESIGNED TO CIRCULATE OIL. PUMPS SHALL BE EQUIPPED WITH A MECHANICAL SEAL WITH CARBON SEAL FACE ROTATING AGAINST A CERAMIC SEAT.
    - D. MOTOR SHALL BE OF THE OPEN, DRIP-PROOF, SLEEVE-BEARING, QUIET-OPERATING, RUBBER-MOUNTED CONSTRUCTION. MOTORS SHALL HAVE BUILT-IN THERMAL OVERLOAD PROTECTORS.
    - E. HWCP SHALL BE BELL & GOSSETT MODEL SERIES 100, OR APPROVED EQUAL WITH A CAPACITY OF 6 GPM AT 8 FEET HEAD WHEN DIRECTLY DRIVEN THROUGH A SELF-ALIGNING FLEXIBLE COUPLING BY AN OIL-LUBRICATED 1/12 HP MOTOR, 115 VOLTS, 60 CYCLE, 1 PHASE.
    - F. PUMP MOTOR SHALL BE NON-OVERLOADING AT ANY POINT ON THE HEAD-CAPACITY CURVE.
    - G. PROVIDE SUITABLE DISCONNECT SWITCH, TYPE AS REQUIRED BY NEC AND LOCAL CODE.
    - H. PROVIDE IMMERSION AQUASTAT FOR EACH PUMP TO ENERGIZED PUMP WHEN RETURN WATER TEMPERATURE DROPS BELOW ITS SETTING.
19. FIRE-STOPPING:
    - A. PIPE PENETRATIONS OF RATED WALLS, FLOORS, AND FLOOR-CEILING ASSEMBLIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH UNDERWRITER'S LABORATORIES, INC., FIRE RESISTANCE DIRECTORY, VOLUME II, HOURLY RATINGS FOR THROUGH FIRESTOP PENETRATIONS. THE CONTRACTOR SHALL PROVIDE U.L. FIRESTOP PENETRATIONS ACCORDING TO THE PARTICULAR WALL, FLOOR, OR FLOOR-CEILING ASSEMBLY RATING, CONSTRUCTION TYPE, PIPE MATERIAL, PIPE SIZE, INSULATION REQUIREMENTS, SLEEVE REQUIREMENTS, AND THE CONTRACTOR'S CHOICE OF FIRESTOP PRODUCTS AS LISTED BY U.L. REFER TO THE ARCHITECTURAL DRAWINGS FOR THE WALL, FLOOR, OR FLOOR-CEILING ASSEMBLY CONSTRUCTION TYPES AND RATINGS.
20. INSTALLATION:
    - A. GENERAL:
      - (1) SUSPENDED HORIZONTAL PIPING SHALL BE SUPPORTED BY ADJUSTABLE WROUGHT STEEL CLEVIS HANGERS. WHERE SUPPORTS BEAR ON COPPER PIPE, THEY SHALL BE COPPER PLATED. WHERE SUPPORTS BEAR ON INSULATED PIPING, PROVIDE INSULATION SHIELD. CHAIN, STRAP, WIRE OR OTHER MAKESHIFT DEVICES WILL NOT BE PERMITTED AS HANGERS OR SUPPORTS.
      - (2) INSTALL BRANCH PIPING FOR WATER, WASTE AND GAS, FROM THE RESPECTIVE PIPING SYSTEMS AND CONNECT TO ALL FIXTURES, VALVES, COCKS, OUTLETS AND EQUIPMENT, INCLUDING THOSE FURNISHED BY THE OWNER OR SPECIFIED IN OTHER SECTIONS OF THESE SPECIFICATIONS.
      - (3) INSTALL TRIM AND FITTINGS PROVIDED WITH CASEWORK AND CABINETS, INCLUDING THOSE FURNISHED BY THE OWNER, BUT NOT INSTALLED AT POINT OF FABRICATION.
      - (4) WELDED JOINTS SHALL BE FUSION WELDED BY QUALIFIED WELDERS IN ACCORDANCE WITH ANSI B31.1 SECTION 6, UNLESS OTHERWISE REQUIRED. MITERING OR NOTCHING PIPE TO FORM ELBOWS AND TEES, AND DRILLING OR PUNCHING TO MAKE CONNECTIONS WILL NOT BE PERMITTED.
      - (5) COMPRESSION GASKET JOINTS FOR CAST IRON SEWER PIPE SHALL BE MADE WITH NEOPRENE COMPRESSION GASKETS CONFORMING TO ASTM C564.
      - (6) NO-HUB JOINTS FOR CAST IRON PIPES SHALL BE MADE WITH NEOPRENE GASKETS (ASTM C564) AND STAINLESS STEEL CLAMPS CONFORMING TO ASTM C564 AND ASTM C1277.
      - (7) MECHANICAL JOINTS ELASTOMERIC SEALING SLEEVE FOR CAST IRON PIPE SHALL BE IN ACCORDANCE WITH ASTM C564.
      - (8) SOLVENT CEMENT FOR PVC PIPING SHALL BE HANDLED IN ACCORDANCE WITH ASTM F402.
      - (9) PLASTIC PIPE SHALL NOT BE LOCATED IN RETURN AIR CEILING PLENUMS.
      - (10) PLASTIC PIPE SHALL NOT PENETRATE A FIRE ASSEMBLY OR SMOKESTOP.
      - (11) PROVIDE CHROME PLATED ESCUTCHEONS AT ALL LOCATIONS WHERE PIPING PENETRATES FLOORS, WALLS AND CEILINGS IN EXPOSED LOCATIONS, EXCEPT IN MECHANICAL ROOMS.
      - (12) WHERE SUPPORTS BEAR ON INSULATED PIPING, PROVIDE INSULATION SHIELDS.
    - B. PIPING SHALL CONFORM TO THE FOLLOWING:
      - (1) WASTE PIPING:
        - a. SLOPE SOIL, WASTE AND VENT PIPING AS FOLLOWS:

PIPE SIZE	MINIMUM PITCH
SOIL, WASTE AND VENT	
2-1/2 INCH & SMALLER	1/4" TO THE FOOT
3 INCH & LARGER	1/8" TO THE FOOT

        - b. CHANGES IN DIRECTION OF PIPING SHALL BE MADE WITH FITTINGS.
        - c. CONTRACTOR IS CAUTIONED TO VERIFY INVERT OF SANITARY SEWER AND TO COORDINATE INVERTS OF NEW WORK TO SUIT CONDITIONS ENCOUNTERED.
        - d. SANITARY SEWER SHALL BE PROVIDED COMPLETE WITH ALL PLUMBING FIXTURES, DRAINS, ETC., PROPERLY CONNECTED AND VENTED IN ACCORDANCE WITH THE APPLICABLE CODES. ALL VENTS THROUGH THE ROOF SHALL EXTEND TWELVE INCHES ABOVE THE ROOF.
      - (2) DOMESTIC WATER:
        - a. GRADE ALL LINES TO FACILITATE DRAINAGE. PROVIDE HOSED-END DRAIN VALVES AT LOCATIONS INDICATED ON THE DRAWINGS. ALL UNNECESSARY TRAPS IN CIRCULATING LINES SHALL BE AVOIDED.
        - b. CONNECT BRANCH LINES AT BOTTOM OF MAIN SERVING FIXTURES BELOW AND PITCH DOWN SO THAT MAIN MAY BE DRAINED THROUGH FIXTURE. CONNECT BRANCH LINES TO TOP OF MAIN SERVING ONLY FIXTURES LOCATED ON FLOOR ABOVE.
      - (3) GAS:
        - a. INSTALL GAS PIPING WITH PLUGGED DRIP POCKETS AT LOW POINTS AND AHEAD OF THE CONNECTION TO EACH PIECE OF EQUIPMENT. PLUGS SHALL BE MINIMUM 2 INCHES ABOVE FLOOR OR ROOF SURFACE. ENTIRE GAS PIPING INSTALLATION SHALL BE IN ACCORDANCE WITH REQUIREMENTS OF VIRGINIA CONSTRUCTION CODE.
        - b. MINIMUM SLOPE SHALL BE 1/4 INCH PER FIFTEEN FEET IN DIRECTION OPPOSITE FLOW.
        - c. SHUT-OFF COCK SHALL BE PROVIDED AT EACH BURNER, IF NOT PROVIDED WITH THE RESPECTIVE EQUIPMENT.
    - C. BONDING OF GAS PIPING: ALL METAL GAS PIPING ATTACHED TO THE BUILDING SHALL BE BONDED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT EDITION OF NFPA 70, ARTICLE 250.104(B) AND SECTION 26 05 26 OF THE ELECTRICAL SPECIFICATIONS.
21. IDENTIFICATION OF PIPES AND VALVES:
    - A. PIPES SHALL BE IDENTIFIED USING PRE-PRINTED MARKERS SIZED APPROPRIATELY FOR THE PIPES BEING IDENTIFIED (SHOP DRAWINGS REQUIRED). MARKERS SHALL BE SETON "SETMARK" TYPE OR APPROVED EQUAL OR EQUIVALENT STENCIL. PIPE IDENTIFICATION SHALL MEET THE MOST CURRENT EDITION OF ANSI SPECIFICATION A13.1. APPLY A MINIMUM OF TWO COMPLETE WRAPS OF TAPE AT EACH END OF PRE-PRINTED PIPE MARKERS EQUAL TO SETON STYLE #AR OR APPROVED EQUAL. MARKERS SHALL BE LOCATED CLOSE TO VALVES OR FLANGES AND ADJACENT TO CHANGES IN DIRECTION, BRANCHES AND WHERE PIPES PASS THROUGH WALLS OR FLOORS, AND AT MAXIMUM INTERVALS OF 15 FEET ON STRAIGHT RUNS. PROVIDE A COLOR CODE CHART, FRAMED WITH GLASS FRONT, INDICATING PIPING SERVICE AND COLOR CODE SCHEDULE. POST IN MECHANICAL ROOM WHERE DIRECTED BY OWNER.
    - B. COLOR CODE SCHEDULE

COLOR BANDING CODE

NUMBER	COLOR	CATALOG NUMBER
1	ORANGE	NO. F65 E 36
2	BLUE	NO. F65 L 3
3	BROWN	NO. F65 N 11
4	RED	NO. F65 R 1
5	BLACK	NO. F65 B 1
6	YELLOW	NO. F65 Y 48
7	GREEN	NO. F65 G 40

    - C. PIPE SHALL BE IDENTIFIED WITH FLOW ARROWS AS DESCRIBED BELOW
      - (1) ARROWS SHALL BE STENCIL TYPE.
      - (2) ARROWS SHALL BE READABLE FROM FLOOR.
      - (3) ARROWS SHALL BE INSTALLED EVERY 15'-0" MAXIMUM.
      - (4) ARROWS SHALL BE PAINTED ON PIPES.
    - D. IDENTIFICATION OF VALVES: PROPERLY MARK SERVICE AND CONTROL VALVES. VALVE MARKERS SHALL BE METAL TAGS WITH DESIGNATIONS STAMPED THEREON OR LAMINATED ENGRAVED PLASTIC CHAINED WITH JACK CHAINS (NOT BEADED CHAINS) TO THEIR RESPECTIVE VALVES. IDENTIFICATION SYMBOLS OR DESIGNATIONS SHALL BE THE SAME AS SHOWN ON THE CONTRACT DOCUMENTS.
    - E. VALVE LOCATIONS ABOVE ACOUSTIC TILE CEILINGS: PROVIDE COLORED BRASS PUSH-PINS COMPLETE WITH A MINIMUM 1/2" SHANK AND 5/8" DIAMETER HEAD. PIN HEAD COLOR SHALL BE BLUE OR COLOR AS SELECTED BY ARCHITECT OR OWNER. LOCATE PUSH-PINS DIRECTLY BELOW ALL SCHEDULED PLUMBING EQUIPMENT.
22. PROTECTION OF ELECTRICAL EQUIPMENT:
    - A. PLUMBING AND SPRINKLER PIPING SHALL NOT BE INSTALLED DIRECTLY OVER ELECTRICAL PANELBOARDS, SWITCHBOARDS OR MOTOR CONTROL CENTERS, UNLESS THE PIPE IS A MINIMUM OF 6 FEET ABOVE THE ELECTRICAL EQUIPMENT OR ABOVE A STRUCTURAL CEILING (CONCRETE CAP OR SIMILAR). IF COMPLIANCE WITH THIS REQUIREMENT IS NOT POSSIBLE, NOTIFY THE ENGINEER IMMEDIATELY. IF THE PIPING IS DIRECTLY ABOVE AND AT LEAST 6 FEET ABOVE THE ELECTRICAL EQUIPMENT, PROVIDE A GALVANIZED STEEL DRAIN PAN INSTALLED DIRECTLY UNDER THE PIPING. DRAIN PAN SHALL HAVE MINIMUM 2 INCH HIGH SIDES WITH A DRAIN PIPE CONNECTION AT THE LOWEST POINT AND SHALL BE FULL WIDTH OF THE ELECTRICAL EQUIPMENT BEING PROTECTED. EXTEND DRAIN PIPE TO EXTERIOR OR TO NEAREST FLOOR DRAIN.
23. PROTECTION OF PLASTIC PIPE:
    - A. ALL PLASTIC PIPING SHALL BE INSTALLED WITH SUFFICIENT DISTANCE AND/OR INSULATION RELATIVE TO RECESSED LIGHT FIXTURES IN ACCORDANCE WITH PLASTICS PIPE INSTITUTE (PPI) TECHNICAL NOTE 56 "INSTALLATION OF PLASTIC PRESSURE PIPING MATERIALS NEAR IC-RATED AND NON-IC-RATED RECESSED LIGHTING FIXTURES".
24. TESTS:
    - A. GENERAL: CONTRACTOR SHALL PROVIDE ALL INSTRUMENTS, MATERIALS, AND LABOR REQUIRED. TESTS SHALL BE MADE IN THE PRESENCE OF THE OWNER OR AUTHORITY HAVING JURISDICTION, OR AS OTHERWISE DIRECTED BY, THE ARCHITECT, WHO SHALL BE GIVEN FIVE (5) DAYS NOTICE BY THIS CONTRACTOR OF HIS READINESS TO PERFORM SUCH TESTS. ANY LEAKS THAT DEVELOP DURING THE TESTS SHALL BE REPAIRED BY REMAKING THE JOINT OR REPLACING PIPE AND FITTINGS. TEMPORARY CAULKING WILL NOT BE PERMITTED. NO PIPING SHALL BE INSULATED OR CONCEALED UNTIL IT HAS BEEN TESTED, WITH RESULTS ACCEPTABLE TO THEARCHITECT. AIR TESTING WILL BE ACCEPTABLE WHERE PERMITTED BY THE VIRGINIA CONSTRUCTION CODE. DO NOT PERFORM AIR TESTING ON SYSTEMS WHERE PLASTIC PIPING IS INSTALLED. TEST SYSTEMS EITHER IN ITS ENTIRETY OR IN SECTIONS.
    - B. SOIL, WASTE AND VENT SYSTEMS: CONDUCT TESTS BEFORE TRENCHES ARE BACKFILLED OR FIXTURES ARE CONNECTED. CONDUCT WATER TEST AS DIRECTED IN ACCORDANCE WITH THE VIRGINIA CONSTRUCTION CODE AND THIS SPECIFICATION.
      - (1) WATER TEST: IF ENTIRE SYSTEM IS TESTED, TIGHTLY CLOSE ALL OPENINGS IN PIPES EXCEPT HIGHEST OPENING AND FILL SYSTEM WITH WATER TO POINT OF OVERFLOW. IF SYSTEM IS TESTED IN SECTIONS, TIGHTLY PLUG EACH OPENING EXCEPT HIGHEST OPENING OF SECTION UNDER TEST, FILL EACH SECTION WITH WATER AND TEST WITH AT LEAST 10-FOOT HEAD OF WATER. IN TESTING SUCCESSIVE SECTIONS, TEST AT LEAST UPPER 10 FEET OF NEXT PRECEDING SECTION SO THAT EACH JOINT OR PIPE EXCEPT UPPERMOST 10-FOOT HEAD OF WATER. KEEP WATER IN SYSTEM, OR IN PORTION UNDER TEST, FOR AT LEAST 15 MINUTES BEFORE INSPECTION STARTS. SYSTEM SHALL THEN BE TIGHT AT ALL JOINTS.
    - C. POTABLE WATER SYSTEM: TEST AFTER INSTALLATION OF PIPING BUT BEFORE PIPING IS CONCEALED, BEFORE COVERING IS APPLIED AND BEFORE PLUMBING FIXTURES ARE CONNECTED. FILL SYSTEMS WITH WATER AND MAINTAIN HYDROSTATIC PRESSURE OF 125 PSIG OR AT 50 PERCENT HIGHER THAN ACTUAL OPERATING PRESSURE WHICH EVER IS GREATER FOR ONE HOUR DURING INSPECTION AND PROVE TIGHT WITHOUT ANY LOSS OF PRESSURE.
    - D. GAS SYSTEM: GAS PIPING SHALL BE TESTED AND INSPECTED IN ACCORDANCE WITH VIRGINIA CONSTRUCTION CODE.
    - E. OPTIONAL TESTS FOR CONNECTIONS TO EXISTING SYSTEMS: AFTER INSTALLATION OF PIPING AND CONNECTING TO EXISTING SYSTEMS, AND WHERE HEREIN BEFORE SPECIFIED TESTS ARE IMPRACTICAL, TEST ALL NEW PIPING UNDER ACTUAL OPERATING CONDITIONS AND PROVE TIGHT TO THE SATISFACTION OF THE ARCHITECT.
25. DISINFECTION: AFTER TESTS HAVE BEEN SUCCESSIVELY COMPLETED, THOROUGHLY FLUSH AND DISINFECT THE NEW PORTION OF THE INTERIOR DOMESTIC WATER DISTRIBUTION SYSTEM IN ACCORDANCE WITH THE VIRGINIA CONSTRUCTION CODE.
26. CLEANING:
    - A. REMOVE TRASH, PLASTER, DUST, PAINT SPOTS AND ALL FOREIGN MATTER FROM INSIDE AND OUTSIDE OF ALL FIXTURES AND EQUIPMENT.
    - B. THE CONTRACTOR SHALL CHECK EACH LENGTH OF PIPE BEFORE IT IS PUT IN PLACE TO MAKE CERTAIN THERE IS NOT FOREIGN MATERIAL (STONES, SAND, ETC.) IN THE SYSTEMS. PROVIDE TEMPORARY BYPASS AROUND EQUIPMENT IF OR AS REQUIRED. ALL PLUMBING PIPES SHALL BE THOROUGHLY FLUSHED WITH WATER TO REMOVE CONSTRUCTION DEBRIS BEFORE FINAL CONNECTIONS ARE MADE TO EQUIPMENT AND FIXTURES.
27. REPORTS: REPORT OF CLEANING, STERILIZING AND TESTING: CONTRACTOR SHALL VERIFY IN WRITING BEFORE COMPLETION OF THE JOB THAT ALL SPECIFIED CLEANING PROCEDURES, TESTS AND STERILIZING HAVE BEEN PERFORMED, WITH RESULTS AS SPECIFIED OR AS REQUIRED BY CODES.

AGENCY APPROVAL

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CONSULTANT

7/11/2025
RODNEY D. FANNING
Lic. No. 034568

REVISIONS	DATE

PLUMBING SPECIFICATIONS

RENOVATIONS TO

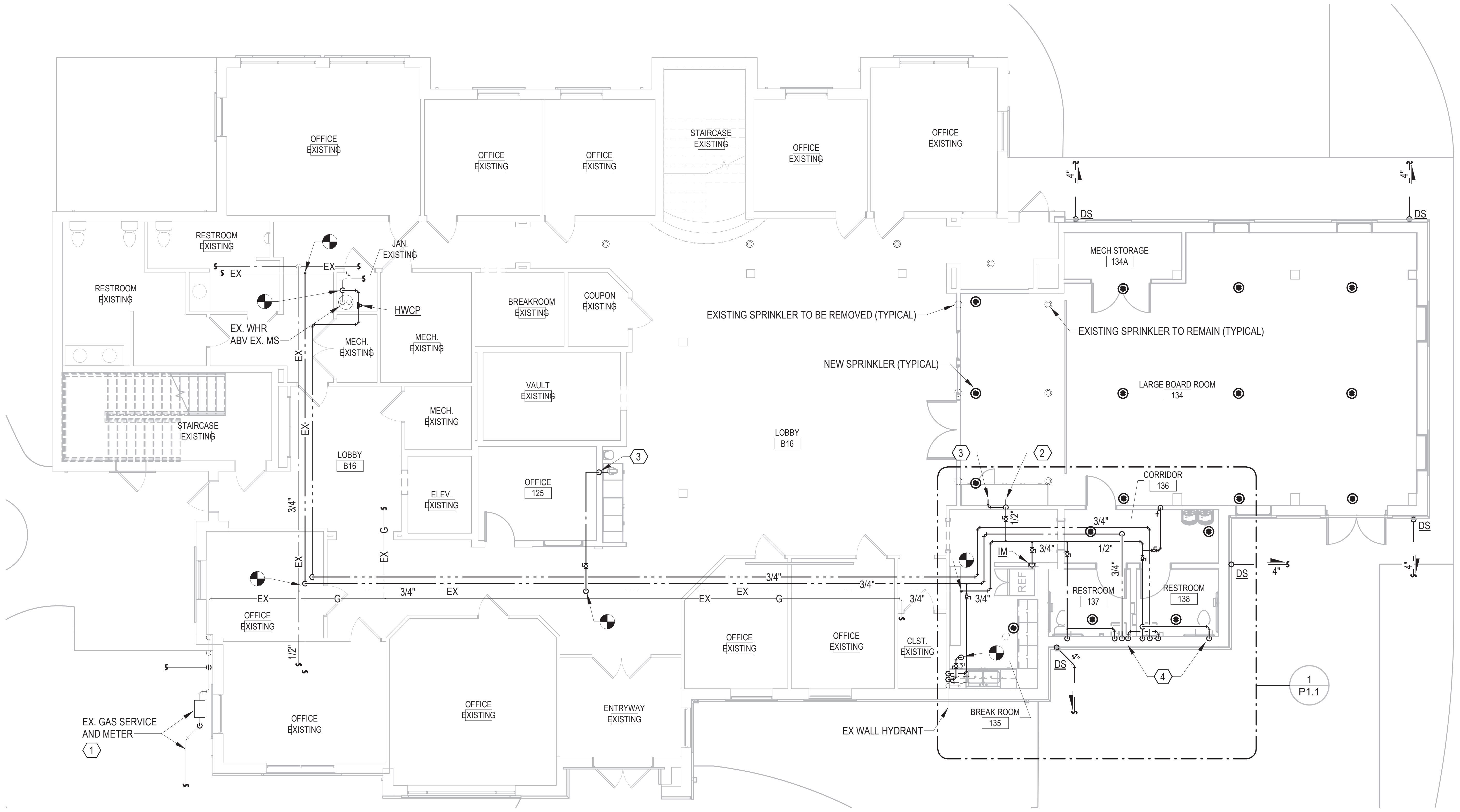
NRV REGIONAL COMMISSION OFFICE

2950 MARKET ST NE, CHRISTIANSBURG, VIRGINIA

NRVRC
new river valley regional commission

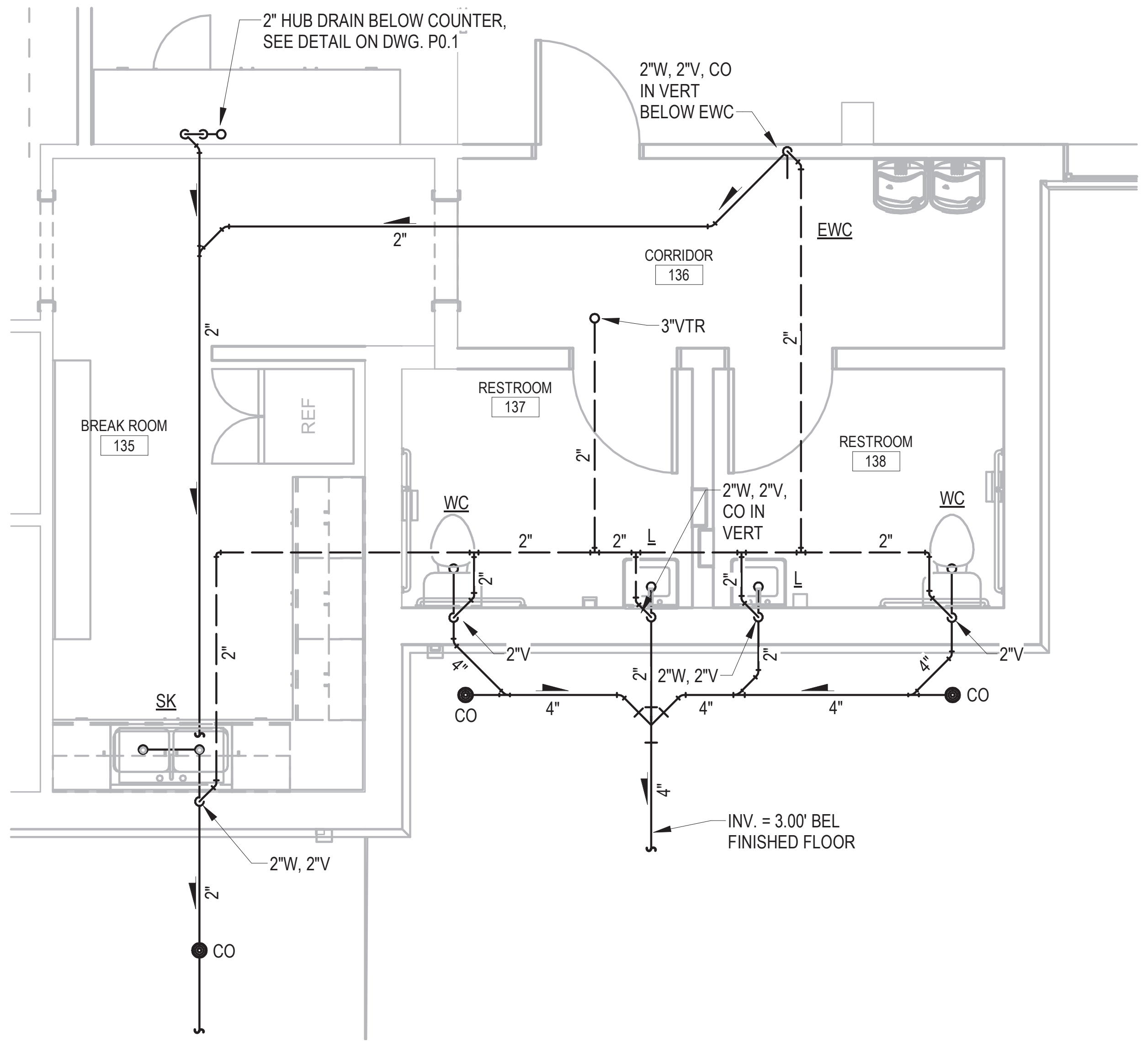
DATE	07.11.2025
SCALE	AS NOTED
DRAWN	MGW
JOB	2423
IFB #	XXXX
PROJECT CODE	XX-XXXX
SHEET	P0.2

FORMATTED FOR
A 24" X 36" PRINT



FIRST FLOOR PLAN - PLUMBING

SCALE: 1/8" = 1'-0"



BATHROOM B29, B30, KITCHENETTE B63 - SANITARY

1 P1.1 P1.1

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

PLAN NOTES THIS SHEET: ⬡

1. COORDINATE WITH ATMOS ENERGY COMPANY FOR ALL REQUIRED MODIFICATIONS TO EXISTING GAS SERVICE.
2. 1/2"CW DN IN WALL, EXTEND AND CONNECT TO COUTERTOP ICE AND WATER DISPENSER.
3. 1/2"CW DN IN WALL, EXTEND AND CONNECT TO COUNTERTOP COFFEE BREWER.
4. ALL DOMESTIC WTER PIPING INSTALLED IN EXTERIOR WALLS SHALL BE INSTALLED INSIDE THE HEATED ENVELOPE OF THE BUILDING, ON THE INTERIOR SIDE OF INSULATION.

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REVISIONS	DATE

FIRST FLOOR PLANS - PLUMBING

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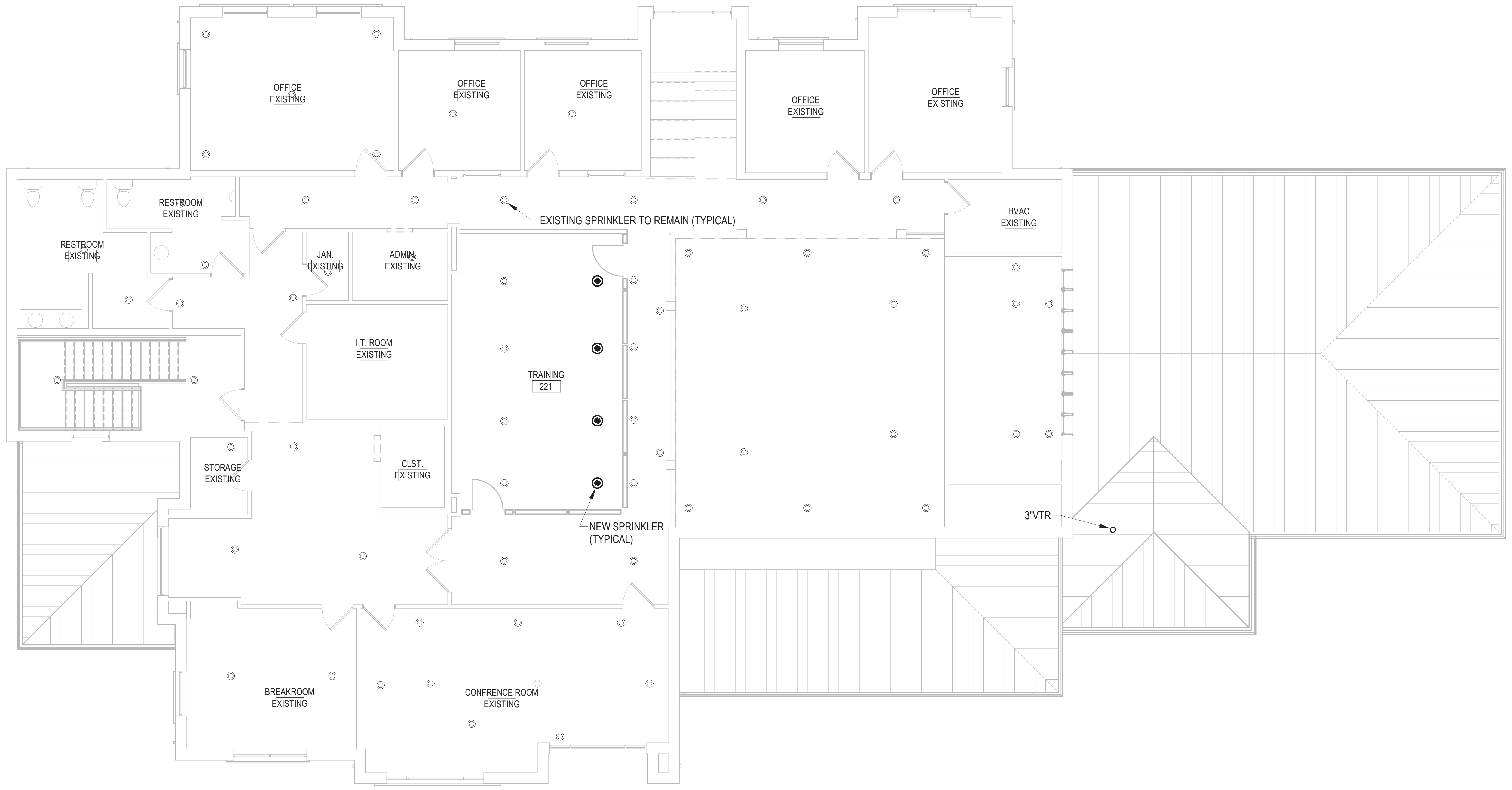

SECOND FLOOR PLAN - PLUMBING

SCALE: 1/8" = 1'-0"

AGENCY APPROVAL

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Lic. No. 034568
PROFESSIONAL ENGINEER

REVISIONS	DATE

SECOND FLOOR PLAN - PLUMBING

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