#### **ABBREVIATIONS** ABV ABOVE AIR CONDITIONING AREA DRAIN ADDENDUM ADD ABOVE FINISHED FLOOR AFUE ANNUAL FUEL UTILIZATION EFFICIENCY ALTERNATE ACCESS PANEL ARCH ARCHITECT/ARCHITECTURAL BELOW FINISHED FLOOR BFF BLW BTU BRITISH THERMAL UNITS BRITISH THERMAL UNITS PER HOUR CAP CAPACITY CB CATCH BASIN **CUBIC FEET PER MINUTE** CLG CEILING CO **CLEAN OUT** CW COLD WATER DEGREE DRY BULB DIAMETER DBP DOMESTIC WATER BOOSTER PUMP DCP DOMESTIC WATER CIRCULATING PUMP DISTILLED WATER DW EAT **ENTERING AIR TEMPERATURE** ELEC ELECTRICAL **EQUIPMENT** EQUIP **EWC** ELECTRIC WATER COOLER **ENTERING WATER TEMPERATURE** E/A EXHAUST AIR **EXIST** EXISTING **EXPANSION TANK** DEGREES FAHRENHEIT FCO FLOOR CLEAN OUT FLOOR DRAIN FDC FIRE DEPARTMENT CONNECTION FLOOR FIRE PUMP FEET PER MINUTE FLOOR SINK FOOT/FEET GALLON GAL GPM **GALLONS PER MINUTE** GAS-FIRED **GENERAL CONTRACTOR GREASE INTERCEPTOR** GW **GREASE WASTE** HOSE BIB HORSE POWER HEATING HTR HEATER HW **HOT WATER** HYD HYDRANT INDIRECT INCH INVERT LOW PRESSURE LEAVING WATER TEMPERATURE MAX MILMIXAM ONE THOUSAND BTU PER HOUR MD MOTORIZED DAMPER MECH MECHANICAL MFR **MANUFACTURER** MIN MINIMUM MISCELLANEOUS MTR MOTOR NOT IN CONTRACT NUMBER NOT TO SCALE OXYGEN OVERFLOW ROOF DRAIN PRESSURE DROP PIV POST INDICATOR VALVE PLBG PLUMBING PRESSURE PRESS PRESSURE REDUCING VALVE PRV POUNDS PER SQUARE INCH PWR POWER RD **ROOF DRAIN** RECESSED REDUCER RED ROOM RPM REVOLUTIONS PER MINUTE RAIN WATER SQUARE FOOT SUPPLY AIR SANITARY SQUARE FOOT SURFACE MOUNT STANDPIPE SUMP PUMP

STM

TDR

TYP

UG

VAC

VTR

WCO

**TEMP** 

STEAM

TYPICAL

VACUUM

WASTE

TRENCH DRAIN

**TEMPERATURE** 

UNDERGROUND

WALL CLEAN OUT

WALL HYDRANT

VENT THROUGH ROOF

2"	NOMINAL PIPE SIZE
	ABOVE GROUND PIPING
	BELOW ASSOCIATED LEVEL PIPIN ——PIPE SLOPE (WHEN APPLICABLE)
———(E)———	EXISTING PIPE TO REMAIN
	PIPE TO BE DEMOLISHED
—CW— - — - — -	DOMESTIC COLD WATER
—NPW———	HARD COLD WATER
—HW· — — —	HOT WATER
-HW 140°	HOT WATER 140°
-HW-R	HOT WATER RECIRCULATION
-HW-R 140°	HOT WATER RECIRCULATION 140
SS	SANITARY SEWER
V	SANITARY VENT
WV	SANITARY WET VENT
CWV	COMBINATION WASTE & VENT
CD	CONDENSATE DRAINAGE
ID	INDIRECT WASTE
GW	GREASE WASTE
GV	GREASE VENT
———PD———	PUMP DISCHARGE
SD	STORM DRAINAGE
PD	PUMP DISCHARGE
ST	SIPHONIC PRIMARY
——ST SEC——	SIPHONIC SECONDARY
CA	COMPRESSED AIR
G	NATURAL GAS
LP	PROPANE GAS
o <del></del>	PIPE RISE / DROP

### PIPE ACCESSORY NOTES

•—	—4" FCO	CLEAN OUT
	-2" BACKWATER	SWING CHECK
ightharpoons	–2" CHECK	CHECK VALVE
Sa	–2" CHECK	ALTERNATE CHECK VALVE
	–2" BALANCE	BALANCING VALVE
	–2" CIRC	CIRCUIT SETTER
<b>↓</b>	–2" GATE	GATE VALVE
	–2" QUICK	QUICK OPENING VALVE
іф—	-2" S/O	BALL VALVE
	–2" STRAIN	FLUID STRAINER
<u>S</u>	-1" GAS-CNTRL	EMERGENCY GAS SHUTOFF
1₹	−1" PLUG	PLUG VALVE
□	-1" GAS COCK	GAS SHUTOFF COCK
	-1" REG	GAS REGULATOR
T/P	—1" T/V	THERMOSTATIC VALVE
₫—	-PRIMER	TRAP PRIMER
M	-2" M-CNTRL	ELEC. CONTROL VALVE
	-TMV-T/P	MIXING VALVE
EM ✓	<u>TMV-EM</u>	EMERGENCY MIXER
Ď	2" PRV	PRESSURE REDUCING VALVE
W-	–2" METER	WATER METER

# PLUMBING FIXTURE NOTES

(R)-----1 1/2" METER

	,	
FLOOR D	O" FD-1	— DESIGN SIZE — IDENTITY TYPE
	2" FD-3	FLOOR DRAIN W/ DEEP SEAL TRAF
	(3" AD-1)	AREA DRAIN (NO TRAP)
	6" DD-1	DECK DRAIN
	(3" HD-1	HUB DRAIN (FUNNEL TYPE)
0	3" FS-4	FLOOR SINK
0-	8" SD-12	STORM DRAIN
0	6" SD-1 2000 SF	COMBINATION DRAIN —RAINFALL SURFACE AREA

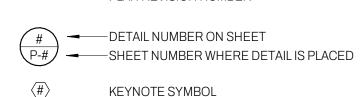
IRRIGATION METER

DOUBLE CHECK VALVE

REDUCED PRESSURE ZONE

# **GENERAL PLAN SYMBOLS**

PLAN REVISION NUMBER



CONTINUATION SYMBOL

POINT WHERE NEW CONNECTS TO EXISTING



ROOM NAME / NUMBER

AREA BEING DEMOLISHED AREA NOT IN CONTRACT

#### CONNECTION TO EXISTING PLUMBING SYSTEMS

- A. INSTALLATION OF WORK AND NEW CONNECTION TO EXISTING PLUMBING LINES SHALL BE MADE AT TIME WHICH WILL NOT INTERFERE OR INTERRUPT THE NORMAL BUILDING OPERATION.
- B. FIELD VERIFY ALL NEW WATER, WASTE, AND VENT PIPING CONNECTIONS AND PROVIDE NEW CONNECTIONS AS REQUIRED FOR PROPERLY OPERATING SYSTEMS.
- C. CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE LOCATION OF EXISTING BELOW GRADE WASTE PIPING AND REFLECT ANY DEVIATION GREATER THAN 1'-0" FROM THIS PLAN ON THE AS-BUILT DRAWINGS.
- D. EXACT LOCATIONS, SIZE, AND ELEVATION OF EXISTING PIPING SHALL BE FIELD VERIFIED BEFORE START OF ANY WORK. ACTUAL FIELD CONDITIONS MAY REQUIRE ADJUSTMENT OR MODIFICATION TO PROPOSED ROUGHING, LAYOUT, AND ROUTING OF PIPING, INCLUDING POINT OF CONNECTION TO EXISTING WORK OF ADEQUATE SIZE TO ACCOMMODATE NEW WORK.
- E. ALL FIXTURES SHALL BE PROTECTED DURING CONSTRUCTION FROM ANY DAMAGE. REFINISHED FIXTURES WILL NOT BE ACCEPTABLE UNDER ANY CONDITIONS.
- F. PROVIDE NECESSARY ADJUSTMENT OF NEW INSTALLATION DUE TO INTERFERENCE WITH BUILDING CONDITIONS, INCLUDING WORK OF
- G. PIPING MATERIAL, VALVES, PIPE SUPPORTS, PIPE COVERING, ETC. USED IN THE INSTALLATION OF WORK OF THIS CONTRACT SHALL BE NEW AND SHALL MATCH EXISTING, PROVIDING SAME MEETS ALL APPLICABLE BUILDING AND PLUMBING CODES.
- H. PROVIDE NEW PLUMBING ROUGHING WITH CONNECTIONS NECESSARY OR REQUIRED FOR PROPER FUNCTION OF PLUMBING EQUIPMENT.
- I. EXISTING PIPING SHALL BE MODIFIED AND/OR REMOVED TO POINT THAT WOULD ACCOMMODATE CONNECTION OF NEW (WATER AND WASTE) PLUMBING ROUGHING.
- J. ROUTING OF NEW PIPING AND POINT OF CONNECTION TO EXISTING PIPING IS BASED ON ASSUMPTION THAT PIPING IS AT LOCATION SHOWN ON PLAN.
- K. PROVIDE NECESSARY TEST TO DETERMINE TIGHTNESS OF EXISTING AND NEW PLUMBING PIPING SYSTEMS. ALL LEAKS AND OPEN OUTLETS FOUND DURING TEST SHALL BE REPAIRED. CAPPED OR PLUGGED. PERFORM ADDITIONAL TEST UNTIL IT IS DETERMINED THAT THE PLUMBING PIPING SYSTEMS IS WATER TIGHT.
- . CAP AND PLUG OF INACTIVE SANITARY PIPING SHALL BE TO POINT OF CONNECTIONS TO ACTIVE LINES. NO DEAD END SHALL BE PROVIDED.
- M. ALL OPENINGS, HOLES, ETC; MADE FOR THE REMOVAL OF PLUMBING PIPING, FIXTURES, ETC; SHALL BE PATCHED WITH MATERIAL TO MATCH EXISTING.
- N. IF FIELD CONDITION FINDS THAT EXISTING SANITARY, VENT, AND DOMESTIC WATER LINES CAN BE UTILIZED, CONNECT NEW SANITARY, VENT, AND DOMESTIC WATER LINES TO EXISTING. MAKE NECESSARY ADJUSTMENTS TO ACCOMMODATE NEW SANITARY, VENT AND DOMESTIC WATER LINES.

#### PLUMBING GENERAL NOTES

- A. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CURRENT EDITION OF ALL APPLICABLE CODES LOCAL CODES AS APPLIED BY THE AUTHORITY HAVING JURISDICTION.
- B. DO NOT SCALE DRAWINGS. VERIFY DIMENSIONS IN FIELD PRIOR TO COMMENCEMENT OF WORK. THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL LAYOUT OF PLUMBING SYSTEMS.
- C. CONTRACTOR SHALL REVIEW ARCHITECTURAL, STRUCTURAL, MECHANICAL AND OTHER DRAWINGS PRIOR TO BID AND SHALL COORDINATE ALL TRADES TO PROVIDE A COMPLETE PRODUCT TO AVOID CONFLICTS BETWEEN THE TRADES. AND TO DETERMINE WHICH TRADE IS TO PERFORM THE NECESSARY WORK. RESOLVE ALL OUESTIONS OR CONFLICTS WITH THE ENGINEER BEFORE ANY EQUIPMENT IS ORDERED, MATERIALS FABRICATED OR SYSTEMS INSTALLED. CONSULT THE ARCHITECT'S DRAWINGS FOR ALL GRADE AND FINISH FLOOR ELEVATIONS.
- D. COORDINATE WITH MECHANICAL AND ELECTRICAL CONTRACTORS TO ENSURE PROPER CLEARANCE ABOVE ELECTRICAL SWITCHBOARDS, SWITCHGEAR, PANELBOARD, AND MOTOR CONTROL CENTERS WHERE REQUIRED.
- E. CONTRACTOR SHALL GUARANTEE THE INSTALLATION AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP WHICH MAY OCCUR UNDER NORMAL USAGE FOR A PERIOD OF ONE YEAR AFTER OWNER'S ACCEPTANCE. DEFECTS SHALL BE PROMPTLY REMEDIED WITHOUT COST TO THE OWNER.
- F. CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS. FEES. INSPECTION AND TESTS. CONTRACTOR SHALL OBTAIN PERMIT AND APPROVED SUBMITTALS PRIOR TO COMMENCEMENT OF WORK OR ORDERING EQUIPMENT. PLUMBING CONTRACTOR SHALL BE PRESENT FOR ALL INSPECTIONS OF HIS WORK BY REGULATORY AUTHORITIES.
- G. CONTRACTOR SHALL PROVIDE RECORD DRAWINGS TO THE BUILDING OWNER AND ARCHITECT. DRAWINGS SHALL INCLUDE ALL ADDENDUM ITEMS, CHANGE ORDERS, ALTERATIONS, REPOUTING, ETC.
- H. CONTRACTOR SHALL PROVIDE INSURANCE FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF THE WORK.
- I. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR ALL EQUIPMENT AT ONE TIME, INDEXED IN A NEAT AND ORDERLY MANNER. PARTIAL SUBMITTALS WILL NOT BE ACCEPTED. PLUMBING CONTRACTOR SHALL NOT ORDER ANY EQUIPMENT WITHOUT APPROVAL FROM PLUMBING ENGINEER, ARCHITECT, OWNER, AND INTERIOR DESIGNER (IF APPLICABLE).
- J. CONTRACTOR SHALL PROVIDE ACCESS PANELS FOR ALL CONCEALED VALVES. ACCESS PANELS IN RATED WALLS OR CEILINGS MUST MAINTAIN THE SAME RATING AND MUST MATCH THE FINISH OF THE WALL OR CEILING IN WHICH IS INSTALLED.
- K. TRENCHING, BACKFILL AND CONCRETE WORK ASSOCIATED WITH PLUMBING SHALL BE PERFORMED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATIONS.
- L. LAYOUT PIPES TO FALL (CONCEALED) WITHIN PARTITION WALL OR CHASES. NOTIFY ARCHITECT IF ADDITIONAL WALL SPACE IS REQUIRED. COORDINATE PIPE DROP WITH FOOTINGS, STRUCTURAL STEEL, FIRE RATED WALLS, WHICH MAY FALL BELOW PARTITION WALL OR CHASE. MAKE NECESSARY ADJUSTMENT TO PIPING TO AVOID CONFLICT WITH BUILDING OBSTRUCTIONS. CONSULT WITH ARCHITECT AND CONTRACT DOCUMENTS FOR LOCATION OF ALL RATED WALLS, CEILINGS, FLOORS AND ROOF. FURNISH AND INSTALL APPROPRIATE AND APPROVED FIRE BARRIER AT ALL PENETRATIONS. INSTALLATION SHALL BE PER MANUFACTURES SPECIFICATIONS.
- M. CONTRACTOR SHALL PROVIDE PIPE HANGERS FOR ALL PIPING. HANGER RODS AND DEVICES SHALL BE USED FOR SUPPORT OF ALL PIPING. MAKESHIFT DEVICES WILL NOT BE ACCEPTABLE. HANGER DEVICES SHALL BE SIZED TO FIT AROUND INSULATION. PROVIDE GALVANIZED STEEL SADDLES AS REQUIRED. PIPING SUPPORT SPACING SHALL COMPLY WITH LOCAL CODE REQUIREMENTS. NON-METALLIC PIPES SHALL BE PADDED WITH 1/8" THICK RUBBER, NEOPRENE, OR SOFT RESILIENT CLOTH.
- N. SANITARY, VENT PIPING AND DOMESTIC WATER PIPING SHALL BE TESTED IN ACCORDANCE WITH LOCAL PLUMBING CODE.
- O. DIELECTRIC COUPLINGS ARE REQUIRED BETWEEN ALL DISSIMILAR METAL IN PIPING AND EQUIPMENT CONNECTIONS.
- P. PITCH UNDERFLOOR SANITARY WASTE PIPING AT 1/4" PER FOOT, UNLESS NOTED OTHERWISE.
- Q. WASTE AND VENT PIPING BELOW FLOOR AND THROUGH FLOOR SHALL BE 2" MINIMUM.
- R. PROVIDE CLEANOUTS IN ACCESSIBLE LOCATION AT THE BASE OF ALL PLUMBING RISERS. CLEANOUTS SHALL BE INSTALLED PER CODE REQUIREMENTS.
- S. FIELD VERIFY LOCATION AND INVERTS OF SITE UTILITIES PRIOR TO INSTALLATION.
- T. ROUTE DOMESTIC WATER, SANITARY SEWER, AND STORM SEWER SERVICES TO SITE UTILITIES 5'-0" FROM BUILDING UNLESS NOTED OTHERWISE. REFER TO CIVIL PLANS.
- U. ALL VENTS THRU ROOF SHALL BE MINIMUM OF TEN FEET FROM ANY FRESH AIR INTAKE
- V. PENETRATIONS OF RATED ASSEMBLIES SHALL BE FIRE STOPPED. FIRE STOPPING SHALL BE AN APPROVED MATERIAL AS PRESCRIBED IN STATE. FIRE MARSHALL AND SHALL BE U.L. LISTED.
- W. PROVIDE FLASHING AND/OR COUNTER FLASHING OF ALL EXTERIOR PENETRATIONS.
- X. HANDICAPPED USE PLUMBING FIXTURES SHALL BE MOUNTED AT REQUIRED HEIGHTS AND WITH ALL RELATED ACCESSORIES AS REQUIRED BY THE ADMINISTRATIVE AUTHORITIES.
- Y. PITCH UNDERFLOOR STORM PIPING 3" AND GREATER AT 1/8" PER FOOT, UNLESS NOTED OTHERWISE. PITCH ALL OTHER STORM PIPING AT 1/4" PER FOOT UNLESS OTHERWISE NOTED.

#### PLUMBING SHEET INDEX

P-010.0D PLUMBING - DEMOLITION PLAN

P-020.00 PLUMBING - SITE PLAN

P-100.00 PLUMBING - FLOOR PLANS - DWV P-200.00 PLUMBING - FLOOR PLANS - DOMESTIC WATER

P-201.01 PLUMBING - ENLARGED PLAN

P-201.02 PLUMBING - ROOF PLAN

P-001.00 PLUMBING LEGEND, SYMBOLS, AND ABBREVIATIONS

P-002.00 PLUMBING SPECIFICATIONS

P-003.00 PLUMBING SPECIFICATIONS P-501.00 PLUMBING SCHEDULES

P-601.00 PLUMBING DETAILS

P-701.00 PLUMBING - RISER DIAGRAM

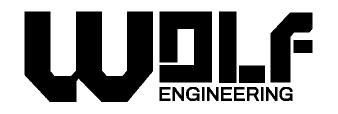
MARIN ARCHITECTS

> 57W 38TH ST LVL 10 NEW YORK NY 10018 212 463 8480 INFO@ MARINARCHITECTS.COM

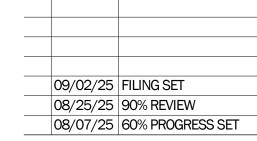
Contractor CTS Builders

Structural Engineer Penn Fusion Engineering

MEP Engineering Wolf Engineering



P.O. BOX 38 | DALTON, GA 30722



NO COPIES, TRANSMISSIONS, REPRODUCTIONS, OR ELECTRONIC REVISIONS OF ANY PORTIONS OF THESE DRAWINGS IN WHOLE OR IN PART BE MADE WITHOUT THE EXPRESS WRITTEN PERMISSION OF MARIN ARCHITECTS. ALL DESIGNS INDICATED IN THESE DRAWINGS ARE PROPERTY OF MARIN ARCHITECTS. ALL COPYRIGHTS RESERVED

KEY PLAN

AREA OF WORK

CLIENT:

PROJECT NAME:

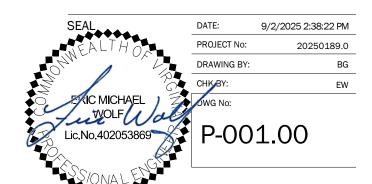
US FOODS MEZZANINE RENOVATION

PROJECT ADDRESS:

40 S FORT LEWIS BLVD SALEM, VA 24153

DWG TITLE:

PLUMBING LEGEND, SYMBOLS, AND ABBREVIATIONS



#### 1.1 DESCRIPTION OF WORK

PART 1 - GENERAL

- A. THIS PROJECT SHALL INCLUDE GENERAL ADMINISTRATIVE AND PROCEDURAL REQUIREMENTS FOR THE INSTALLATION OF PLUMBING SYSTEMS.
- B. WHEN USED IN THESE SPECIFICATIONS THE TERM "PROVIDE' IS DEFINED TO MEAN TO EQUIPMENT, ETC.

#### 1.2 APPLICABLE STANDARDS

- APPLICABILITY OF STANDARDS: EXCEPT WHERE THE CONTRACT DOCUMENTS INCLUDE MORE STRINGENT REQUIREMENTS, APPLICABLE CONSTRUCTION INDUSTRY STANDARDS HAVE THE SAME FORCE AND EFFECT AS IF BOUND OR COPIED DIRECTLY INTO THE CONTRACT DOCUMENTS. SUCH STANDARDS ARE
- MADE A PART OF THE CONTRACT DOCUMENTS BY REFERENCE. CONFLICTING REQUIREMENTS: WHERE COMPLIANCE WITH TWO OR MORE STANDARDS IS SPECIFIED, AND THE STANDARDS ESTABLISH DIFFERENT OF CONFLICTING REQUIREMENTS FOR MINIMUM QUANTITIES OR QUALITY LEVELS, REFER REQUIREMENTS THAT ARE DIFFERENT, BUT APPARENTLY EQUAL, AND UNCERTAINTIES TO THE ARCHITECT FOR A DECISION BEFORE PROCEEDING.
- C. PUBLICATION DATES: WHERE THE DATE OF ISSUE OF A REFERENCED STANDARD IS NOT SPECIFIED, COMPLY WITH THE STANDARD IN EFFECT AS OF DATE OF CONTRACT DOCUMENTS.
- D. COMPLY WITH THE REQUIREMENTS OF APPLICABLE LOCAL PLUMBING, MECHANICAL, FIRE PROTECTION, AND BUILDING CODES.

#### 1.3 CONSTRUCTION PERMITS AND INSPECTIONS

CONTRACTOR SHALL FILE FOR AND OBTAIN ALL REQUIRED PERMITS AND LICENSES, AND PAY ALL RELATED INSPECTION AND PERMITTING FEES, AS REQUIRED FOR THE EXECUTION OF THE CONTRACT. ARRANGE FOR NECESSARY INSPECTIONS REQUIRED BY CITY, COUNTY, STATE AND OTHER AUTHORITIES HAVING JURISDICTION IN A TIMELY MANNER AND AS REQUIRED OVER THE COMPLETE COURSE OF CONSTRUCTION. DELIVER INSPECTION CERTIFICATES AND WRITTEN APPROVAL NOTICES TO THE OWNER AT CONTRACT CLOSEOUT. THOSE ITEMS AND SYSTEMS DEEMED CRITICAL OR REQUIRED TO OBTAIN A COMPLETED CERTIFICATE OF OCCUPANCY SHALL TAKE PRIORITY OVER NON-CRITICAL ITEMS.

# 1.4 WORKMANSHIP AND QUALIFICATIONS

ALL EQUIPMENT, MATERIALS, SPECIALTIES, ETC., SHALL BE INSTALLED AND CONNECTED IN ACCORDANCE WITH THE BEST ENGINEERING PRACTICE AND STANDARDS FOR THIS TYPE WORK. UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE DRAWINGS. THE RECOMMENDATIONS AND INSTRUCTIONS OF THE MANUFACTURER SHALL BE FOLLOWED FOR INSTALLING THE WORK.

PRIOR TO THE PERFORMANCE OF ANY WORK OR INSTALLATION OF ANY MATERIALS, OBTAIN APPROVAL FROM THE ARCHITECT BY SUBMITTING SHOP DRAWINGS AND DATA SHEETS.

B. SUBMITTAL OF SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES WILL BE

- ACCEPTED ONLY WHEN SUBMITTED BY THE CONTRACTOR. DATA SUBMITTED FROM SUBCONTRACTORS AND MATERIAL SUPPLIERS DIRECTLY TO THE ENGINEER OF RECORD WILL NOT BE PROCESSED ANY ITEM WITH A TAG NUMBER MUST BE SUBMITTED FOR REVIEW. SUBMITTALS
- SHALL PROVIDE ALL PERTINENT DATA AND INFORMATION NECESSARY TO EVALUATE EACH ITEM. IN ADDITION TO THE REQUIREMENTS OUTLINED IN THE SPECIFIC DIVISION 22 SECTIONS, ALL SUBMITTALS MUST INDICATE THE APPLICABLE SPECIFICATION SECTION NUMBER AND EQUIPMENT TAG NUMBER.
- ARCHITECT'S REVIEW OF SHOP DRAWINGS DOES NOT RELEASE CONTRACTOR FROM RESPONSIBILITY OF COORDINATING HIS WORK AT JOBSITE AND TAKING FIELD MEASUREMENTS. IN CASES WHERE INTERFERENCES BECOME APPARENT, THE CONTRACTOR SHALL NOTIFY ARCHITECT SO THAT SUCH INTERFERENCES MAY BE RESOLVED PRIOR TO PROCEEDING WITH SHOP WORK. NO CLAIM WILL BE ALLOWED FOR WORK THAT MIGHT HAVE TO BE MOVED OR REPLACED BASED ON A CLAIM THAT WORK WAS PLACED IN ACCORDANCE WITH DIMENSIONS SHOWN ON AN APPROVED SHOP DRAWING.

#### 1.6 CONSTRUCTION DOCUMENTS

- THE DRAWINGS FOR MECHANICAL WORK ARE IN PART DIAGRAMMATIC, INTENDED TO CONVEY THE SCOPE OF WORK AND INDICATE GENERAL ARRANGEMENT AND APPROXIMATE SIZES AND LOCATIONS OF EQUIPMENT AND MATERIALS. WHERE JOB CONDITIONS REQUIRE REASONABLE CHANGES IN INDICATED LOCATIONS AND ARRANGEMENT, THE CONTRACTOR SHALL MAKE SUCH CHANGES AS DIRECTED
- BY THE ENGINEER, WITHOUT ADDITIONAL COST TO THE OWNER. BECAUSE OF THE SCALE OF THE DRAWINGS, CERTAIN BASIC ITEMS SUCH AS PIPE FITTINGS, ACCESS PANELS, SLEEVES, ETC. MAY NOT BE SHOWN; BUT WHERE SUCH ITEMS ARE REQUIRED BY THE NATURE OF THE WORK. THEY SHALL BE FURNISHED AND INSTALLED. ROUGH-IN DIMENSIONS AND LOCATIONS SHALL BE VERIFIED WITH THE SUPPLIER OF ALL EQUIPMENT FURNISHED BY OTHER TRADES,
- OR BY THE OWNER, PRIOR TO THE TIME OF ROUGH-IN. EQUIPMENT SPECIFICATIONS MAY NOT DEAL INDIVIDUALLY WITH MINUTE ITEMS REQUIRED SUCH AS COMPONENTS, PART, CONTROLS AND DEVICES WHICH MAY BE REQUIRED TO MEET THE EQUIPMENT WARRANTIES. WHERE SUCH ITEMS ARE REQUIRED, THEY SHALL BE INCLUDED BY THE SUPPLIER OF THE EQUIPMENT, WHETHER OR NOT SPECIFICALLY CALLED FOR.
- D. THE DRAWINGS AND THE SPECIFICATIONS ARE COOPERATIVE AND
- SUPPLEMENTARY. IT IS THE INTENT OF BOTH SAID DRAWINGS AND SPECIFICATIONS TO COVER ALL MECHANICAL REQUIREMENTS IN THEIR ENTIRETY AS NEARLY AS POSSIBLE. THE CONTRACTOR SHALL CLOSELY CHECK THE DRAWINGS AND SPECIFICATIONS FOR ANY OBVIOUS ERRORS OR OMISSIONS AND BRING ANY SUCH CONDITION TO THE ATTENTION OF THE ENGINEER PRIOR TO THE RECEIPT OF BID, IN ORDER TO PERMIT CLARIFICATION BY MEANS OF A MAILED ADDENDUM. IF THERE ARE NO QUESTIONS PRIOR TO THE BID PROPOSAL DATE, IT SHALL BE UNDERSTOOD THAT THE DRAWINGS AND SPECIFICATIONS ARE COMPLETE AND CORRECT, AND THAT THE INTENT OF SAID DOCUMENTS WILL BE COMPLIED WITH, AND THE INSTALLATION TO BE COMPLETE IN ALL RESPECTS, ACCORDING TO SAID INTENT. IF THERE IS A CONFLICT BETWEEN THE DRAWINGS AND SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT SHALL GOVERN, IF NOT CLARIFIED IN WRITING BY THE ENGINEER.
- THE CONTRACTOR SHALL LOCATE ALL EQUIPMENT WHICH MUST BE SERVICED, OPERATED OR MAINTAINED IN FULL ACCESSIBLE POSITIONS. MINOR DEVIATIONS FROM THE CONTRACT DRAWINGS MAY BE MADE TO ALLOW FOR BETTER ACCESSIBILITY, BUT CHANGES OF MAGNITUDE, OR WHICH INVOLVE EXTRA COST, SHALL NOT BE MADE WITHOUT APPROVAL. AMPLE SPACE SHALL BE ALLOWED FOR REMOVAL OF ALL PARTS THAT MAY REQUIRE REPLACEMENT OR SERVICE IN THE

#### 1.7 PRE-BID SITE VISIT

PERSONALLY INSPECT THE SITE OF THE PROPOSED WORK AND BECOME FULLY INFORMED OF CONDITIONS UNDER WHICH THE WORK IS TO BE DONE. FAILURE TO DO SO WILL NOT BE CONSIDERED SUFFICIENT JUSTIFICATION TO REQUEST OR OBTAIN EXTRA COMPENSATION OVER AND ABOVE THE CONTRACT PRICE.

#### PART 2 - PRODUCTS

#### 2.1 DESIGN BASIS

- A. THE PRODUCTS/MATERIALS SPECIFICALLY NAMED IN THE SPECIFICATION AND/OR ON THE DRAWINGS ARE THE BASIS OF DESIGN. THE ARCHITECT AND/OR OWNER'S REPRESENTATIVE RESERVES THE RIGHT TO REJECT PRODUCT/MATERIALS, EVEN IF FROM OTHER ACCEPTABLE MANUFACTURERS, IF IT IS FELT THEY DO NOT MEET THE INTENT OF THE SPECIFICATION.
- THE ARCHITECT RESERVES THE SOLE RIGHT FOR THE APPROVAL OF PROPOSED MATERIAL FOR EQUIPMENT, AND THE PHRASE, APPROVED EQUIVALENT", USED IN THESE SPECIFICATIONS, OR ON THE DRAWINGS, SHALL BE INTERPRETED TO
- MEAN AN EQUIVALENT APPROVED BY THE ARCHITECT C. ALL CHANGES REQUIRED BY ALTERNATE EQUIPMENT SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER; AND ALL COSTS INCURRED BY OTHER TRADES, PUBLIC UTILITIES OR THE OWNER, AS A RESULT OF THE USE OF SUCH EQUIPMENT,
- SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR D. THE CONTRACTOR SHALL IDENTIFY THE DIFFERENCES IN ALTERNATE MATERIAL OR EQUIPMENT AS COMPARED TO THAT SPECIFIED, AND SHALL INDICATE THE

BENEFITS TO THE PROJECT AS A RESULT OF SELECTING THE ALTERNATIVE.

THE ENGINEER RESERVES THE RIGHT TO REFUSE APPROVAL OF EQUIPMENT WHICH DOES NOT MEET THE SPECIFICATION, IN HIS OPINION, OR OF EQUIPMENT FOR WHICH NO LOCAL EXPERIENCE OF SATISFACTORY SERVICE IS AVAILABLE. THE ENGINEER FURTHER RESERVES THE RIGHT TO REJECT EQUIPMENT FOR WHICH MAINTENANCE SERVICE AND THE AVAILABILITY OF REPLACEMENT PARTS IS QUESTIONABLE.

#### PART 3 - EXECUTION

#### 3.1 MECHANICAL INSTALLATIONS

A. GENERAL: SEQUENCE, COORDINATE, AND INTEGRATE THE VARIOUS ELEMENTS

ELEMENTS OF MECHANICAL SYSTEMS, MATERIALS, AND EQUIPMENT. COORDINATE MECHANICAL SYSTEMS, EQUIPMENT, AND MATERIALS INSTALLATION WITH OTHER BUILDING COMPONENTS. VERIFY ALL DIMENSIONS BY FIELD MEASUREMENTS. VERIFY FINAL LOCATIONS FOR ROUGH-INS WITH FIELD MEASUREMENTS AND WITH THE REQUIREMENTS OF THE ACTUAL EQUIPMENT TO BE CONNECTED.

- CUTTING AND PATCHING A. CUT, REMOVE AND LEGALLY DISPOSE OF SELECTED MECHANICAL EQUIPMENT, COMPONENTS, AND MATERIALS AS INDICATED, INCLUDING BUT NOT LIMITED TO REMOVAL OF MECHANICAL PIPING, HEATING UNITS, PLUMBING FIXTURES AND TRIM, AND OTHER MECHANICAL ITEMS MADE OBSOLETE BY THE NEW WORK. MAINTAIN SERVICES TO AREAS OUTSIDE DEMOLITION LIMITS. WHEN SERVICES
- MUST BE INTERRUPTED, INSTALL TEMPORARY SERVICES FOR AFFECTED AREAS. B. PROTECT THE STRUCTURE, FURNISHINGS, FINISHES, AND ADJACENT MATERIALS NOT INDICATED OR SCHEDULED TO BE REMOVED. C. PROVIDE AND MAINTAIN TEMPORARY PARTITIONS OR DUST BARRIERS ADEQUATE
- TO PREVENT THE SPREAD OF DUST AND DIRT TO ADJACENT AREAS. D. PATCH EXISTING FINISHED SURFACES AND BUILDING COMPONENTS USING NEW MATERIALS MATCHING EXISTING MATERIALS AND EXPERIENCED INSTALLERS. INSTALLERS' QUALIFICATIONS REFER TO THE MATERIALS AND METHODS REQUIRED FOR THE SURFACE AND BUILDING COMPONENTS BEING PATCHED.

- A. FACTORY PAINTED EQUIPMENT THAT HAS BEEN SCRATCHED OR MARRED SHALL BE REPAINTED TO MATCH ORIGINAL FACTORY COLOR. B. ALL UNINSULATED BLACK FERROUS METAL ITEMS EXPOSED TO SIGHT SUCH AS EQUIPMENT HANGERS, PIPING, FRAMES AND SUPPORTS NOT PROVIDED WITH FACTORY PRIME COAT, SHALL BE CLEANED AND PAINTED WITH ONE COAT OF RUST INHIBITING PRIMER. IN ADDITION, SUCH ITEMS IN FINISHED SPACES SHALL ALSO BE PAINTED WITH TWO COATS OF FINISH PAINT IN A COLOR TO MATCH ADJACENT SURFACES OR AS OTHERWISE SELECTED BY THE ARCHITECT.
- 3.4 PERFORMANCE
- A. ALL EQUIPMENT AND SYSTEMS SHALL BE PROTECTED AGAINST FREEZING, FLOODING, CORROSION, AND OTHER FORMS OF DAMAGE PRIOR TO ACCEPTANCE BY THE OWNER. B. DESIGN AND FABRICATION FEATURES OR PROVEN METHODS NOT SPECIFICALLY

COVERED BY THIS SPECIFICATION SHALL BE SPECIFICALLY STATED AND

DOCUMENTED IN THE PROPOSAL C. LABOR SHALL BE FURNISHED FOR ASSEMBLING ALL PIECES OF EQUIPMENT WHICH, DUE TO SHIPPING LIMITATIONS, HAVE COMPONENTS WHICH ARRIVE ON THE JOBSITE DISASSEMBLED.

#### 3.5 OPERATING AND MAINTENANCE INSTRUCTIONS

ARRANGE FOR EACH INSTALLER OF EQUIPMENT THAT REQUIRES REGULAR MAINTENANCE TO MEET WITH THE OWNER'S PERSONNEL TO PROVIDE INSTRUCTION IN PROPER OPERATION AND MAINTENANCE. IF INSTALLERS ARE NOT EXPERIENCED IN PROCEDURES, PROVIDE INSTRUCTION BY MANUFACTURER'S REPRESENTATIVES.

A. PRIOR TO FINAL ACCEPTANCE, ALL SYSTEMS SHALL BE OPERATED TO TEST PERFORMANCE TO THE SATISFACTION OF THE ENGINEER. B. DEFECTS DEMONSTRATED BY INSPECTIONS AND TESTS SHALL BE CORRECTED TO THE SATISFACTION OF THE ENGINEER AT THE SUBCONTRACTOR'S EXPENSE.

#### 3.7 CLEANING OF SYSTEMS AND PREMISES

- A. BEFORE THE SYSTEMS ARE TESTED AND BALANCED, DUCTS AND EQUIPMENT SHALL BE THOROUGHLY CLEANED SO THAT NO DIRT, DUST OR OTHER FOREIGN MATTER WILL BE DEPOSITED IN OR CARRIED THROUGH THE SYSTEM. B. AIR HANDLING UNITS SHALL NOT BE OPERATED WITHOUT FILTERS IN PLACE. ALL AIR FILTERS SHALL BE REPLACED AFTER COMPLETION OF CONSTRUCTION AND
- PRIOR TO AIR BALANCING. IF AIR-HANDLING SYSTEMS ARE USED FOR TEMPORARY HEATING OR COOLING, THE AIR FILTERS SHALL BE CHANGED A MINIMUM OF EVERY C. WATER AND STEAM SYSTEMS SHALL BE THOROUGHLY FLUSHED AND CLEANED OF
- ANY AND ALL DELETERIOUS MATERIALS BEFORE THE SYSTEMS ARE PLACED IN OPERATION.
- D. ALL EQUIPMENT SHALL BE THOROUGHLY CLEANED OF DIRT AND DEBRIS AT THE COMPLETION OF THE PROJECT AND PRIOR TO ACCEPTANCE BY THE OWNER.

- A. GUARDS, BARRICADES, LIGHTS, SERVICES, ETC., NECESSARY FOR THE PROTECTION OF PERSONS AND PROPERTY SHALL BE FURNISHED AND MAINTAINED.
- B. EXISTING WORK SUCH AS PAVEMENTS, LAWNS, SIDEWALKS, FLOORS, CURBS, AND OTHER STRUCTURES AND UTILITIES WHICH ARE DAMAGED OR DISTURBED DUE TO MAKING CONNECTIONS OR ANY PHASE OF OPERATIONS SHALL BE RESTORED TO THE SATISFACTION OF THE OWNER AND THE GOVERNING AUTHORITIES.

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE DEMOLITION AND INSTALLATION OF THIS WORK. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY BEARING ON THE SAFETY OF PERSONS OR PROPERTY OR THEIR PROTECTION FROM DAMAGE, INJURY, OR
- B. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IDENTIFICATION AND PREVENTION OF UNSAFE CONDITIONS IN REGARD TO DEMOLITION, CONSTRUCTION, HAZARDOUS MATERIALS, AND EQUIPMENT USAGE CONTRACTOR SHALL COMPLY WITH ALL OSHA, ENVIRONMENTAL PROTECTION AGENCY, AND LOCAL AUTHORITY REQUIREMENTS.
- C. THE CONTRACTOR SHALL ERECT AND MAINTAIN, AS REQUIRED BY EXISTING CONDITION AND PROGRESS OF THE WORK, ALL REASONABLE SAFEGUARDS FOR SAFETY AND PROTECTION, INCLUDING POSTING DANGER SIGNS AND OTHER WARNINGS AGAINST HAZARDS, PROMULGATION SAFETY REGULATIONS AND NOTIFYING OWNERS AND USERS OF ADJACENT UTILITIES.
- D. REMOVE DEBRIS, RUBBISH AND OTHER MATERIALS RESULTING FROM DEMOLITION OPERATIONS FROM BUILDING SITE. TRANSPORT AND LEGALLY DISPOSE OF MATERIALS OFF SITE.
- E. IF HAZARDOUS MATERIALS ARE ENCOUNTERED DURING DEMOLITION OPERATIONS, COMPLY WITH APPLICABLE REGULATIONS, LAWS, AND ORDINANCES CONCERNING REMOVAL, HANDLING AND PROTECTION AGAINST EXPOSURE OR ENVIRONMENTAL POLLUTION.

#### SECTION 220510 - BASIC PLUMBING MATERIALS AND METHODS

# PART 1 - GENERAL

#### 1.1 DESCRIPTION OF WORK A. THIS PROJECT SHALL INCLUDE PIPING MATERIALS AND INSTALLATION COMMON TO

MOST PLUMBING SYSTEMS, INCLUDING DIELECTRIC FITTINGS, SLEEVES, ESCUTCHEONS; AND GROUT. 1.2 QUALITY ASSURANCE

## WELDING: WELDING PROCESSES AND OPERATORS SHALL BE CERTIFIED

ACCORDING TO APPLICABLE SECTIONS OF AWS D1.1, "STRUCTURAL WELDING CODE--STEEL" AND ASME BOILER AND PRESSURE VESSEL CODE: SECTION IX, "WELDING AND BRAZING QUALIFICATIONS."

- ARRANGE FOR PIPE SPACES, CHASES, SLOTS, AND OPENINGS IN BUILDING STRUCTURE DURING PROGRESS OF CONSTRUCTION, TO ALLOW FOR MECHANICAL INSTALLATIONS.
- COORDINATE INSTALLATION OF REQUIRED SUPPORTING DEVICES AND SET SLEEVES IN POURED-IN-PLACE CONCRETE AND OTHER STRUCTURAL COMPONENTS AS THEY ARE CONSTRUCTED.

#### PART 2 - PRODUCTS

#### JOINING MATERIALS

- A. REFER TO INDIVIDUAL DIVISION 22 PIPING SECTIONS FOR SPECIAL JOINING MATERIALS NOT LISTED BELOW.
- PIPE-FLANGE GASKET MATERIALS: SUITABLE FOR CHEMICAL AND THERMAL CONDITIONS OF PIPING SYSTEM CONTENTS. ASME B16.21, NONMETALLIC, FLAT, ASBESTOS-FREE, 1/8-INCH MAXIMUM THICKNESS UNLESS THICKNESS OR SPECIFIC MATERIAL IS INDICATED. FULL-FACE TYPE FOR FLAT-FACE, CLASS 125, CAST-IRON AND CAST-BRONZE FLANGES. NARROW-FACE TYPE FOR RAISED-FACE, CLASS 250, CAST-IRON AND STEEL FLANGES.
- C. FLANGE BOLTS AND NUTS: ASME B18.2.1, CARBON STEEL, UNLESS OTHERWISE

- D. PLASTIC, PIPE-FLANGE GASKET, BOLTS, AND NUTS: TYPE AND MATERIAL RECOMMENDED BY PIPING SYSTEM MANUFACTURER, UNLESS OTHERWISE
- E. SOLDER FILLER METALS: ASTM B 32, LEAD-FREE ALLOYS. INCLUDE WATER-FLUSHABLE FLUX ACCORDING TO ASTM B 813.
- F. BRAZING FILLER METALS: AWS A5.8, BCUP SERIES, COPPER-PHOSPHORUS ALLOYS FOR GENERAL-DUTY BRAZING, UNLESS OTHERWISE INDICATED; AND AWS A5.8, BAG1, SILVER ALLOY FOR REFRIGERANT PIPING, UNLESS OTHERWISE INDICATED. G. WELDING FILLER METALS: COMPLY WITH AWS D10.12 FOR WELDING MATERIALS

APPROPRIATE FOR WALL THICKNESS AND CHEMICAL ANALYSIS OF STEEL PIPE

BEING WELDED. H. SOLVENT CEMENTS FOR JOINING PLASTIC PIPING: ABS PIPING: ASTM D 2235

4. PVC TO ABS PIPING TRANSITION: ASTM D 3138.

CPVC PIPING: ASTM F 493. PVC PIPING: ASTM D 2564. INCLUDE PRIMER ACCORDING TO ASTM F 656.

#### 2.2 DIELECTRIC FITTINGS

A. DESCRIPTION: COMBINATION FITTING OF COPPER ALLOY AND FERROUS MATERIALS WITH THREADED, SOLDER-JOINT, PLAIN, OR WELD-NECK END CONNECTIONS THAT MATCH PIPING SYSTEM MATERIALS. FITTING MAY BE EITHER UNION, FLANGE, COUPLING OR NIPPLE TYPE, AS APPROPRIATE.

- A. GALVANIZED-STEEL SHEET: 0.0239-INCH MINIMUM THICKNESS; ROUND TUBE CLOSED WITH WELDED LONGITUDINAL JOINT.
- B. STEEL PIPE: ASTM A 53, TYPE E, GRADE B, SCHEDULE 40, GALVANIZED, PLAIN C. CAST IRON: CAST OR FABRICATED "WALL PIPE" EQUIVALENT TO DUCTILE-IRON PRESSURE PIPE, WITH PLAIN ENDS AND INTEGRAL WATERSTOP, UNLESS

# 2.4 ESCUTCHEONS

PART 3 - EXECUTION

OTHERWISE INDICATED.

A. DESCRIPTION: MANUFACTURED WALL AND CEILING ESCUTCHEONS AND FLOOR PLATES, WITH AN ID TO CLOSELY FIT AROUND PIPE, TUBE, AND INSULATION OF INSULATED PIPING AND AN OD THAT COMPLETELY COVERS OPENING. B. SPLIT-PLATE, STAMPED-STEEL TYPE: WITH CONCEALED HINGE, SET SCREW OR SPRING CLIPS, AND CHROME-PLATED FINISH.

#### C. SPLIT-CASTING, FLOOR-PLATE TYPE: CAST BRASS WITH CONCEALED HINGE AND SET SCREW.

#### 3.1 PLUMBING DEMOLITION

- A. DISCONNECT, DEMOLISH, AND REMOVE MECHANICAL SYSTEMS, EQUIPMENT, AND COMPONENTS INDICATED TO BE REMOVED.
- B. IF PIPE, INSULATION, OR EQUIPMENT TO REMAIN IS DAMAGED IN APPEARANCE OR IS UNSERVICEABLE, REMOVE DAMAGED OR UNSERVICEABLE PORTIONS AND REPLACE WITH NEW PRODUCTS OF EQUAL CAPACITY AND QUALITY.

#### 3.2 PIPING SYSTEMS - COMMON REQUIREMENTS

- A. DRAWING PLANS, SCHEMATICS, AND DIAGRAMS INDICATE GENERAL LOCATION AND ARRANGEMENT OF PIPING SYSTEMS. INDICATED LOCATIONS AND ARRANGEMENTS WERE USED TO SIZE PIPE AND CALCULATE FRICTION LOSS. EXPANSION, PUMP SIZING, AND OTHER DESIGN CONSIDERATIONS. INSTALL PIPING AS INDICATED UNLESS DEVIATIONS TO LAYOUT ARE APPROVED ON COORDINATION DRAWINGS.
- B. INSTALL PIPING IN CONCEALED LOCATIONS, EXCEPT IN EQUIPMENT ROOMS, SERVICE AREAS, AND AS OTHERWISE INDICATED.
- C. INSTALL PIPING AT RIGHT ANGLES OR PARALLEL TO BUILDING WALLS. DIAGONAL RUNS ARE PROHIBITED UNLESS SPECIFICALLY INDICATED OTHERWISE. D. INSTALL PIPING ABOVE ACCESSIBLE CEILINGS TO ALLOW SUFFICIENT SPACE FOR
- CEILING PANEL REMOVAL.
- INSTALL PIPING TO PERMIT VALVE SERVICING.
- F. INSTALL PIPING AT INDICATED SLOPES PER CODE. G. INSTALL FITTINGS FOR CHANGES IN DIRECTION AND BRANCH CONNECTIONS.
- H. INSTALL PIPING TO ALLOW APPLICATION OF INSULATION. I. INSTALL ESCUTCHEONS FOR ALL PIPE PENETRATIONS, BOTH NEW AND EXISTING,
- THROUGH WALLS, CEILINGS, AND FLOORS. J. INSTALL SLEEVES FOR ALL PIPES PASSING THROUGH WALLS, FLOORS AND ROOF SLABS. SLEEVES ARE NOT REQUIRED FOR CORE-DRILLED HOLES. K. INSTALL DIELECTRIC ADAPTERS BETWEEN FERROUS AND NON-FERROUS PIPING
- OR EQUIPMENT CONNECTIONS. L. FIRE-BARRIER PENETRATIONS: MAINTAIN INDICATED FIRE RATING OF WALLS. PARTITIONS, CEILINGS, AND FLOORS AT PIPE PENETRATIONS. SEAL PIPE

# SECTION 220529 - HANGERS AND SUPPORTS

#### PART 1 - GENERAL

# 1.1 DESCRIPTION OF WORK

A. THIS PROJECT SHALL INCLUDE HANGERS AND SUPPORTS FOR PLUMBING SYSTEM PIPING AND EQUIPMENT, INCLUDING: HORIZONTAL-PIPING HANGERS AND SUPPORTS: VERTICAL PIPING CLAMPS: HANGER ROD ATTACHMENTS: BUILDING ATTACHMENTS; SADDLES AND SHIELDS; MISCELLANEOUS MATERIALS; AND **EQUIPMENT SUPPORTS.** 

#### 1.2 QUALITY ASSURANCE

- A. WELDING: WELDING PROCESSES AND OPERATORS SHALL BE CERTIFIED IN ACCORDANCE WITH APPLICABLE SECTION OF AWS D1.1 AND ASME BOILER AND PRESSURE VESSEL CODE
- B. ENGINEERING RESPONSIBILITY: CALCULATIONS FOR EACH MULTIPLE PIPE SUPPORT, TRAPEZE HANGER, AND SEISMIC RESTRAINT SHALL BE PREPARED BY A QUALIFIED PROFESSIONAL ENGINEER.

## PART 2 - PRODUCTS

# 2.1 MANUFACTURERS

A. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PIPE HANGERS AND RELATED DEVICES SHALL BE AS MANUFACTURED BY GRINNELL, OR APPROVED EQUIVALENT, UNLESS SPECIFICALLY NOTED ON THE DRAWINGS.

#### 2.2 MANUFACTURED UNITS

A. UNLESS SPECIFICALLY NOTED DIFFERENTLY ON THE DRAWINGS, PIPING SHALL BE SUPPORTED WITH GALVANIZED STEEL CLEVIS HANGERS WITH GALVANIZED HANGER RODS AND TYPE 28, 29, OR 30 BEAM CLAMP. B. PROVIDE MSS TYPE 39 THERMAL HANGER SADDLE INSERTS FOR HOT PIPING AND

# PART 3 - EXECUTION

INSTALLATION OF HANGERS AND SUPPORTS A. INSTALL HANGERS, SUPPORTS, CLAMPS AND ATTACHMENTS TO SUPPORT PIPING PROPERLY FROM BUILDING STRUCTURE. COMPLY WITH THE REQUIREMENTS OF MSS SP-69 AND SP-89, APPLICABLE CODES, LIMITATIONS OF THE BUILDING STRUCTURAL ELEMENTS, AND STANDARD INDUSTRY PRACTICES. INSTALL

MSS TYPE 40 THERMAL HANGER SHIELDS FOR COLD PIPING.

- HANGERS AND SUPPORTS COMPLETE WITH NECESSARY INSERTS, BOLTS, RODS, NUTS, WASHERS, AND OTHER ACCESSORIES. B. PROVIDE SEISMIC BRACING IN CONFORMANCE WITH SPECIFIED SEISMIC DESIGN C. BUILDING ATTACHMENTS: INSTALL BUILDING ATTACHMENTS WITHIN CONCRETE
- OR TO STRUCTURAL STEEL; SPACE ATTACHMENTS WITHIN MAXIMUM PIPING SPAN LENGTH INDICATED IN MSS SP-69; INSTALL ADDITIONAL ATTACHMENTS AT CONCENTRATED LOADS, INCLUDING VALVES, FLANGES, GUIDES, STRAINERS, EXPANSION JOINTS, AND AT CHANGES IN DIRECTION OF PIPING; AT BAR-JOISTS, ATTACH TO THE TOP CORD OF THE JOIST, OR ATTACH TO THE BOTTOM CORD AT
- D. INSTALL HANGERS AND SUPPORTS TO ALLOW CONTROLLED MOVEMENT OF PIPING SYSTEMS, TO PERMIT FREEDOM OF MOVEMENT BETWEEN PIPE ANCHORS, AND TO FACILITATE ACTION OF EXPANSION JOINTS, EXPANSION LOOPS, EXPANSION BENDS AND SIMILAR UNITS.

#### 3.2 EQUIPMENT BASES AND SUPPORTS

A. FABRICATE STRUCTURAL STEEL STANDS TO SUSPEND EQUIPMENT FROM STRUCTURE ABOVE OR SUPPORT EQUIPMENT FROM FLOOR.

E. SUPPORT VERTICAL PIPE AND DUCT RISERS AT EVERY FLOOR.

#### 3.3 ADJUSTING AND CLEANING HANGER ADJUSTMENT: ADJUST HANGERS TO DISTRIBUTE LOADS EQUALLY ON

ATTACHMENTS AND TO ACHIEVE INDICATED SLOPE OF PIPE. B. TOUCH-UP PAINTING: IMMEDIATELY AFTER ERECTION OF ANCHORS AND SUPPORTS, CLEAN FIELD WELDS AND ABRADED AREAS OF SHOP PAINT AND PAINT

EXPOSED AREAS WITH SAME MATERIAL AS USED FOR SHOP PAINTING TO COMPLY WITH SSPC-PA-1 REQUIREMENTS FOR TOUCH-UP OF FIELD-PAINTED SURFACES. C. FOR GALVANIZED SURFACES: CLEAN WELDS, BOLTED CONNECTIONS, ABRADED

AREAS AND APPLY GALVANIZING REPAIR PAINT TO COMPLY WITH ASTM A 780.

#### SECTION 220553 - PLUMBING IDENTIFICATION

#### PART 1 - GENERAL

#### 1.1 DESCRIPTION OF WORK

- A. THIS PROJECT SHALL INCLUDE IDENTIFICATION DEVICES SPECIFIED IN THIS SECTION INCLUDING PLASTIC PIPE MARKERS, PLASTIC TAPE, ENGRAVED PLASTIC-LAMINATE SIGNS, AND VALVE TAGS.
- B. CODES AND STANDARDS: COMPLY WITH ANSI A13.1 FOR LETTERING SIZE, LENGTH OF COLOR FIELD, COLORS, AND VIEWING ANGLES OF IDENTIFICATION DEVICES.

#### PART 2 - PRODUCTS

#### 2.1 ACCEPTABLE MANUFACTURERS

A. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE MECHANICAL IDENTIFICATION MATERIALS AS MANUFACTURED BY ALLEN SYSTEMS, INC., BRADY (W.H.) CO.; SIGNMARK DIV., SETON NAME PLATE CORP., OR APPROVED

#### 2.2 PLUMBING IDENTIFICATION MATERIALS

A. GENERAL: PROVIDE MANUFACTURER'S STANDARD PRODUCTS OF CATEGORIES AND TYPES REQUIRED FOR EACH APPLICATION AS REFERENCED IN OTHER DIVISION 15 SECTIONS. WHERE MORE THAN SINGLE TYPE IS SPECIFIED FOR APPLICATION, SELECTION IS INSTALLER'S OPTION, BUT PROVIDE SINGLE SELECTION FOR EACH PRODUCT CATEGORY.

#### PART 3 - EXECUTION

#### 3.1 PIPING SYSTEM IDENTIFICATION

- A. GENERAL: INSTALL PIPE MARKERS ON EACH SYSTEM INDICATED TO RECEIVE IDENTIFICATION, AND INCLUDE ARROWS TO SHOW NORMAL DIRECTION OF FLOW. INSTALL ON PIPE INSULATION SEGMENT WHERE REQUIRED FOR HOT NON-INSULATED PIPES.
- B. LOCATE PIPE MARKERS AND COLOR BANDS AS FOLLOWS WHEREVER PIPING IS EXPOSED TO VIEW IN OCCUPIED SPACES, MACHINE ROOMS, ACCESSIBLE MAINTENANCE SPACES (SHAFTS, TUNNELS, PLENUMS) AND EXTERIOR NON-CONCEALED LOCATIONS.
- 1. NEAR EACH VALVE AND CONTROL DEVICE. NEAR EACH BRANCH, EXCLUDING SHORT TAKE-OFFS FOR FIXTURES AND
- TERMINAL UNITS; MARK EACH PIPE AT BRANCH, WHERE THERE COULD BE QUESTION OF FLOW PATTERN. 3. NEAR LOCATIONS WHERE PIPES PASS THROUGH WALLS OR FLOORS/CEILINGS, OR ENTER NON-ACCESSIBLE ENCLOSURES.
- 4. AT ACCESS DOORS, MANHOLES AND SIMILAR ACCESS POINTS WHICH PERMIT VIEW OF CONCEALED PIPING. 5. NEAR MAJOR EQUIPMENT ITEMS AND OTHER POINTS OF ORIGINATION AND TERMINATION.
- 6. SPACED INTERMEDIATELY AT MAXIMUM SPACING OF 50' ALONG EACH PIPING RUN, EXCEPT REDUCE SPACING TO 25' IN CONGESTED AREAS OF PIPING AND EQUIPMENT.

# INTERMEDIATELY SPACED MARKERS.

3.2 PLUMBING EQUIPMENT IDENTIFICATION A. GENERAL: INSTALL ENGRAVED PLASTIC LAMINATE SIGN OR PLASTIC EQUIPMENT MARKER ON OR NEAR EACH MAJOR ITEM OF MECHANICAL EQUIPMENT AND EACH OPERATIONAL DEVICE, AS SPECIFIED HEREIN IF NOT OTHERWISE SPECIFIED FOR EACH ITEM OR DEVICE.

7. ON PIPING ABOVE REMOVABLE ACOUSTICAL CEILINGS, EXCEPT OMIT

- B. LETTERING SIZE: MINIMUM 1/4" HIGH LETTERING FOR NAME OF UNIT WHERE VIEWING DISTANCE IS LESS THAN 2'-0", 1/2" HIGH FOR DISTANCES UP TO 6'-0", AND PROPORTIONATELY LARGER LETTERING FOR GREATER DISTANCES. PROVIDE SECONDARY LETTERING 2/3 TO 3/4 OF SIZE OF PRINCIPAL LETTERING. C. TEXT OF SIGNS: IN ADDITION TO NAME OF IDENTIFIED UNIT, PROVIDE LETTERING
- TO DISTINGUISH BETWEEN MULTIPLE UNITS, INFORM OPERATOR OF OPERATIONAL REOUIREMENTS. INDICATE SAFETY AND EMERGENCY PRECAUTIONS. AND WARN OF HAZARDS AND IMPROPER OPERATIONS. D. IN ADDITION TO THE PLASTIC SIGN, INSTALL PRESSURE SENSITIVE LABEL DESCRIBED IN PART 2 ABOVE ON EACH PIECE OF MECHANICAL EQUIPMENT.

THOROUGHLY CLEAN EQUIPMENT SURFACE PER LABEL MANUFACTURERS

# INSTRUCTIONS PRIOR TO INSTALLING LABEL.

# SECTION 220700 - PLUMBING INSULATION

PART 2 - PRODUCTS

#### PART 1 - GENERAL 1.1 DESCRIPTION OF WORK

A. THIS PROJECT SHALL INCLUDE MECHANICAL INSULATION FOR PIPE AND EQUIPMENT AS INDICATED ON DRAWINGS AND SCHEDULES, AND BY REQUIREMENTS OF THIS SECTION.

#### 1.2 QUALITY ASSURANCE

#### A. PROVIDE COMPOSITE MECHANICAL INSULATION (INSULATION, JACKETS. COVERINGS, SEALERS, MASTICS AND ADHESIVES) WITH FLAME-SPREAD INDEX OF 25 OR LESS, AND SMOKE-DEVELOPED INDEX OF 50 OR LESS, AS TESTED BY ASTM E 84 (NFPA 255) METHOD.

#### MANUFACTURED BY ONE OF THE FOLLOWING: ARMSTRONG WORLD INDUSTRIES, INC.; CERTAINTEED CORP.; KNAUF FIBER GLASS GMBH.; OWENS-CORNING

2.1 ACCEPTABLE MANUFACTURERS

#### FIBERGLAS CORP.

A. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS

- 2.2 PIPING INSULATION MATERIALS FIBERGLASS PIPING INSULATION (TYPE FG): ASTM C 547; 'K' VALUE OF 0.24 AT 75 DEGREES F; NONCOMBUSTIBLE. B. FLEXIBLE UNICELLULAR PIPING INSULATION (TYPE UC): ASTM C 534; FLEXIBLE,
- ELECTROMETRIC; 'K' VALUE OF 0.27 AT 75 DEGREES F., WATER VAPOR PERMEABILITY = 0.1 PERM, DENSITY 4.5 LB/FT3. C. JACKETS FOR PIPING INSULATION: ASTM C 921, TYPE I (VAPOR BARRIER) FOR PIPING WITH TEMPERATURES BELOW AMBIENT, TYPE II FOR PIPING WITH TEMPERATURES ABOVE AMBIENT. TYPE I MAY BE USED FOR ALL PIPING AT
- INSTALLERS OPTION. 1. ENCASE PIPEFITTING INSULATION WITH ONE-PIECE PREMOLDED PVC FITTING COVERS, FASTENED AS PER MANUFACTURER'S RECOMMENDATIONS. 2. ENCASE EXTERIOR PIPING INSULATION WITH ALUMINUM JACKET WITH
- WEATHER-PROOF CONSTRUCTION. D. STAPLES, BANDS, WIRES, ADHESIVES, SEALERS AND PROTECTIVE FINISHES: AS RECOMMENDED BY INSULATION MANUFACTURER FOR APPLICATIONS INDICATED. USE STAINLESS STEEL STAPLES IF REQUIRED FOR PIPING BELOW AMBIENT

# PART 3 - EXECUTION

#### 3.1 PIPE INSULATION APPLICATION SCHEDULE A. INSULATE PLUMBING AND HVAC PIPE ACCORDING TO THE FOLLOWING SCHEDULE.

TEMP RANGE SERVICE INSULTYPE PIPE SIZE

TEMP RANGE	SERVICE	INSULATION TYPE	PIPE SIZE	INSULATION THICKNESS
COLD	POTABLE COLD WATER;	FG	1-1/2" & LESS	1/2"
40°F - 60°F	AC CONDENSATE	UC	OVER 1-1/2"	1"
HOT	POTABLE HOT WATER	FG	1-1/2" & LESS	1"
105 <sup>o</sup> F - 140 <sup>o</sup> F		UC	OVER 2"	1-1/2"
0-39 <sup>o</sup> F	LOW TEMP REFRIGERANT	FG UC	LESS 1" 1" - 8" OVER 8"	1/2" 1" 1-1/2"

B. OMIT INSULATION ON CHROME-PLATED EXPOSED PIPING (EXCEPT FOR HANDICAPPED FIXTURES), AIR CHAMBERS, UNIONS, STRAINERS, CHECK VALVES, BALANCE COCKS, FLOW REGULATORS, DRAIN LINES FROM WATER COOLERS, DRAINAGE PIPING LOCATED IN CRAWL SPACES OR TUNNELS, BURIED PIPING, FIRE

PROTECTION PIPING, PRE-INSULATED EQUIPMENT, HOT PIPING WITHIN RADIATION ENCLOSURES OR UNIT CABINETS, AND COLD PIPING WITHIN UNIT

CABINETS PROVIDED PIPING IS LOCATED OVER DRAIN PAN. C. INSTALL INSULATION PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS, AND IN ACCORDANCE WITH RECOGNIZED INDUSTRY

## SECTION 221000 - VALVES

MANUFACTURERS

## PART 1 - GENERAL

#### 1.1 DESCRIPTION OF WORK A. THIS SECTION INCLUDES GENERAL DUTY VALVES AND STRAINERS COMMON TO

MOST PLUMBING PIPING SYSTEMS. SPECIAL PURPOSE VALVES AND STRAINERS ARE SPECIFIED IN INDIVIDUAL PIPING SYSTEM SPECIFICATIONS. 1.2 QUALITY ASSURANCE

#### A. COMPLY WITH ASME B31.9 FOR BUILDING SERVICES PIPING AND ASME B31.1 FOR POWER PIPING. COMPLY WITH APPLICABLE SECTIONS OF MSS STANDARD

# PART 2 - PRODUCTS

#### A. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS FROM ONE OF THE MANUFACTURERS LISTED IN THIS SPECIFICATION FOR EACH

2.2 VALVE FEATURES A. PRESSURE AND TEMPERATURE RATINGS: AS REQUIRED TO SUIT SYSTEM PRESSURES AND TEMPERATURES.

#### B. SIZES: SAME SIZE AS UPSTREAM PIPE, UNLESS OTHERWISE INDICATED. C. EXTENDED STEMS: WHERE INSULATION IS INDICATED OR SPECIFIED, PROVIDE

VALVE TYPE OR STRAINER TYPE, OR APPROVED EQUIVALENT

GATE VALVES A. SUBJECT TO COMPLIANCE WITH THE TECHNICAL REQUIREMENTS, SELECT MANUFACTURER FROM THE FOLLOWING: CRANE, GRINNELL, HAMMOND,

EXTENDED STEMS ARRANGED TO RECEIVE INSULATION.

#### NIBCO, OR STOCKHAM. B. GA-1 GATE VALVES, 2-INCH AND SMALLER: MSS SP-80; CLASS 150, BODY AND UNION BONNET OF ASTM B 62 CAST BRONZE; WITH THREADED ENDS, SOLID DISC, COPPER-SILICON ALLOY STEM, BRASS PACKING GLAND, "TEFLON"

- IMPREGNATED PACKING, AND MALLEABLE IRON HANDWHEEL A. SUBJECT TO COMPLIANCE WITH THE TECHNICAL REQUIREMENTS, SELECT MANUFACTURER FROM THE FOLLOWING: CRANE, GRINNELL, HAMMOND,
- NIBCO, OR STOCKHAM. B. BL-1 BALL VALVES, 1 INCH AND SMALLER: RATED FOR 150 PSI SATURATED STEAM PRESSURE, 400 PSI WOG PRESSURE; TWO-PIECE CONSTRUCTION; WITH BRONZE BODY CONFORMING TO ASTM B 62, STANDARD (OR REGULAR) PORT, CHROME-PLATED BRASS BALL, REPLACEABLE "TEFLON" OR "TFE" SEATS AND SEALS, BLOWOUT-PROOF STEM, AND VINYL-COVERED STEEL HANDLE. PROVIDE SOLDER OR THREADED ENDS FOR CONDENSER WATER, CHILLED WATER, AND DOMESTIC HOT AND COLD WATER SERVICE; THREADED ENDS
- FOR HEATING HOT WATER AND LOW-PRESSURE STEAM. C. BL-2 BALL VALVES, 1-1/4-INCH TO 2-INCH: RATED FOR 150 PSI SATURATED STEAM PRESSURE, 400 PSI WOG PRESSURE; WITH BRONZE BODY CONFORMING TO ASTM B 62, CONVENTIONAL PORT, CHROME-PLATED BRASS BALL, REPLACEABLE "TEFLON" OR "TFE" SEATS AND SEALS, BLOWOUT PROOF STEM, AND VINYL-COVERED STEEL HANDLE. PROVIDE SOLDER OR THREADED ENDS FOR CONDENSER WATER, CHILLED WATER, AND DOMESTIC HOT AND COLD WATER SERVICE; THREADED ENDS FOR HEATING HOT WATER AND LOW-

# A. SUBJECT TO COMPLIANCE WITH THE TECHNICAL REQUIREMENTS, SELECT

PRESSURE STEAM.

- MANUFACTURER FROM THE FOLLOWING: CRANE, GRINNELL, HAMMOND, NIBCO, OR STOCKHAM. B. GL-1 GLOBE VALVES, 2 INCHES AND SMALLER: RATED FOR 150# STEAM, 300#
- WOG. CONSTRUCTION SHALL BE PER MSS SP-80; BODY AND SCREWED BONNET OF ASTM B 62 CAST BRONZE; WITH THREADED OR SOLDER ENDS, BRASS OR REPLACEABLE COMPOSITION DISC, COPPER-SILICON ALLOY STEM, BRASS PACKING GLAND, "TEFLON" IMPREGNATED PACKING, AND MALLEABLE IRON HANDWHEEL

#### 2.6 BUTTERFLY VALVES A. SUBJECT TO COMPLIANCE WITH THE TECHNICAL REQUIREMENTS, SELECT MANUFACTURER FROM THE FOLLOWING: CENTER LINE, CRANE, GRINNELL

KEYSTONE, NIBCO, OR WATTS. FOR GROOVED CONNECTIONS, USE VICTAULIC. B. BF-1 BUTTERFLY VALVES. 2-1/2-INCH AND LARGER: MSS SP-67: RATED AT 200 PSI; CAST-IRON BODY CONFORMING TO ASTM A 126, CLASS B. VALVES SHALL BE RATED FOR -40 TO 250 OF PROVIDE VALVES WITH FIELD REPLACEABLE EPDM SLEEVE, NICKEL-PLATED DUCTILE IRON DISC (EXCEPT ALUMINUM BRONZE DISC FOR VALVES INSTALLED IN CONDENSER WATER PIPING), STAINLESS STEEL STEM, AND EPDM O-RING STEM SEALS. PROVIDE LEVER OPERATORS WITH LOCKS FOR SIZES 2 THROUGH 6 INCHES AND GEAR OPERATORS WITH POSITION INDICATOR FOR SIZES 8 THROUGH 24 INCHES. PROVIDE LUG TYPE BODY, BUBBLE-TIGHT SHUT-OFF (WITHOUT NEED FOR DOWNSTREAM FLANGE), SUITABLE FOR DEAD END SERVICE. BODY AND STEM SHALL BE THROUGH STEM DESIGN. STEM SHALL EXTENDED A MINIMUM OF 2 INCHES BEYOND THE FLANGE OUTER DIAMETER TO ALLOW FOR INSULATION OF THE VALVE. FOR

VALVES INSTALLED MORE THAN 12'AFF, PROVIDE CHAIN OR CABLE OPERATOR

# FOR ACTUATION AT FLOOR LEVEL.

2.8 PLUG VALVES

2.7 CHECK VALVES A. SUBJECT TO COMPLIANCE WITH THE TECHNICAL REQUIREMENTS, SELECT CHECK VALVE MANUFACTURER FROM THE FOLLOWING: CRANE, GRINNELL, HAMMOND, NIBCO, OR STOCKHAM. FOR GROOVED CONNECTIONS, USE

#### B. CK-1 CHECK VALVES, THROUGH 2 INCH: RATED FOR 150# STEAM, 300# WOG. CONSTRUCTION SHALL BE CAST-BRONZE BODY AND CAP CONFORMING TO ASTM B 62; BRONZE DISC; AND HAVING THREADED OR SOLDER ENDS.

- A. SUBJECT TO COMPLIANCE WITH THE TECHNICAL REQUIREMENTS, SELECT MANUFACTURER FROM THE FOLLOWING, OR APPROVED EQUIVALENT: LUNKENHEIMER, POWELL, DEZURICK, HOMESTEAD, MUELLER. B. PL-1 PLUG VALVES, 2 INCHES AND SMALLER: SCREWED END PLUG VALVE W/ RESILIENT SEATS AND BUBBLE-TIGHT SHUTOFF. VALVE, WHERE APPLICABLE. SHALL CARRY A UL LISTING FOR SHUTOFF SERVICE OF NATURAL GAS AND FUEI OILS. VALVE SHALL BE RATED FOR 175# WOG AT TEMPERATURES UP TO 180 °F.
- BRONZE, RESILIENT PLUG SEAL SHALL BE HYCAR OR PETROLEUM HYCAR AS REQUIRED FOR SERVICE. C. PL-2 PLUG VALVES, 2-1/2 INCHES AND LARGER: FLANGED END PLUG VALVE W/ RESILIENT SEATS AND BUBBLE-TIGHT SHUTOFF. VALVE, WHERE APPLICABLE, SHALL CARRY A UL LISTING FOR SHUTOFF SERVICE OF NATURAL GAS AND FUEL OILS. VALVE SHALL BE RATED FOR 175# WOG AT TEMPERATURES UP TO 180 °F. VALVE BODY SHALL BE CAST IRON ANSI OR MSS RATED, PLUG SHALL BE

VALVE BODY SHALL BE CAST IRON ANSI OR MSS RATED, PLUG SHALL BE

BRONZE, RESILIENT PLUG SEAL SHALL BE HYCAR OR PETROLEUM HYCAR AS

D. PL-3 PLUG VALVES, SCREWED END LUBRICATED PLUG COCK FOR 1/2# OR LESS

NATURAL GAS: UL AND AGA APPROVED FOR THE SERVICE WITH 150# WOG

#### BRASS BODY, BRASS PLUG WITH SQUARE HEAD AND SCREWED ENDS. PART 3 - EXECUTION

#### 3.1 VALVE ENDS SELECTION

REQUIRED FOR SERVICE.

- A. SELECT VALVES WITH THE FOLLOWING ENDS OR TYPES OF PIPE/TUBE CONNECTIONS: .. COPPER TUBE SIZE, 2-INCH AND SMALLER: SOLDER ENDS, OR PRESS-FI ENDS, COMPATIBLE WITH PIPING SYSTEM SPECIFIED IN OTHER DIVISION 22
- 2. STEEL PIPE SIZES, 2-INCH AND SMALLER: THREADED ENDS.
- VALVE APPLICATION SCHEDULE A. SELECT VALVES ACCORDING TO THE FOLLOWING SCHEDULE: VALVES 2 INCHES AND SMALLER.

57W 38TH ST LVL 10 NEW YORK NY 10018

212 463 8480 INFO@ MARINARCHITECTS.COM

Contractor

CTS Builders

Structural Engineer

MEP Engineering

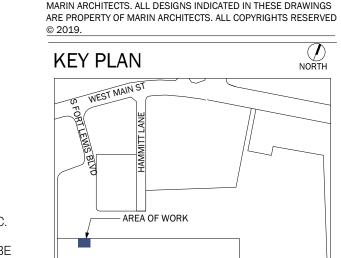
Wolf Engineering

Penn Fusion Engineering

P.O. BOX 38 | DALTON, GA 30722

# 09/02/25 | FILING SET

08/25/25 90% REVIEW 08/07/25 | 60% PROGRESS SET NO COPIES, TRANSMISSIONS, REPRODUCTIONS, OR ELECTRONIC REVISIONS OF ANY PORTIONS OF THESE DRAWINGS IN WHOLE OR IN PART BE MADE WITHOUT THE EXPRESS WRITTEN PERMISSION OF



CLIENT:

# PROJECT NAME:

PROJECT ADDRESS:

40 S FORT LEWIS BLVD SALEM, VA 24153

9/2/2025 2:38:23 PM 20250189.0

O FAIC MICHAEL LuwolfWal Lic.No.402053869

MEZZANINE RENOVATION

DWG TITLE:

PLUMBING SPECIFICATIONS

09/02/2025

#### SECTION 221116 - DOMESTIC WATER PIPING

#### PART 1 - GENERAL

1.1 DESCRIPTION OF WORK THIS PROJECT SHALL COVER THE INSTALLATION OF DOMESTIC WATER PIPING AND RELATED APPURTENANCES SUCH AS WATER

#### 1.2 QUALITY ASSURANCE

A. STANDARDS: PRODUCTS AND INSTALLATION SHALL CONFORM TO APPLICABLE PORTIONS OF THE AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI), AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM), FEDERAL SPECIFICATIONS (FED. SPEC.), PLUMBING AND DRAINAGE INSTITUTE (PDI), AND LOCAL CODES.

#### PART 2 - PRODUCTS

#### 2.1 PIPING AND FITTINGS

- UNDERGROUND WATER SERVICE PIPING (4" AND LARGER) SHALL BE: CLASS 50 DUCTILE IRON PIPE, AWW C151, WITH HUB AND SPIGOT, PUSH ON JOINTS, AWWA C11, AND CLASS 50 OR GREATER MECHANICAL JOINT DUCTILE IRON FITTINGS, AWWA C110, ALL CEMENT LINED PER AWWA C104.
- B. UNDERGROUND WATER SERVICE PIPING (2-1/2" AND SMALLER) FROM 5'-0" OUTSIDE OF BUILDING TO 1'-0" ABOVE FINISHED FLOOR SHALL BE: TYPE "K" SOFT COPPER TUBING, ASTM B88, WITH SOLDERED JOINTS AND WROUGHT COPPER, ANSI B16.22, OR CAST BRONZE, ANSI B16.18, SOCKET FITTINGS.
- ABOVE GROUND WATER PIPING SHALL BE: TYPE "L" HARD DRAWN COPPER TUBING, ASTM B88, WITH SOLDERED JOINTS AND WROUGHT COPPER, ANSI B16.22, OR CAST BRONZE, ANSI B16.18, SOCKET FITTINGS.
- D. UNDERGROUND WATER PIPING TO TRAP PRIMER LINES SHALL BE: TYPE "L" SOFT DRAWN COPPER TUBING, ASTM B88, WITH SOLDERED JOINTS AND SOCKET FITTINGS (NO FITTINGS BELOW FLOOR).

#### 2.2 WATER HAMMER ARRESTORS

WATER HAMMER ARRESTORS SHALL HAVE A STAINLESS STEEL CASING. FLEXIBLE MECHANICAL BELLOWS, PRESSURIZED INERT GAS CHAMBER, AND CERTIFICATION STAMP AS CONFORMING TO PDI WH-201.

- 2.3 BACKFLOW PREVENTER BACKFLOW PREVENTER SHALL BE THE SAME SIZE AS THE PIPE ON WHICH IT IS INSTALLED UNLESS NOTED OTHERWISE ON THE DRAWINGS.
- BACKFLOW PREVENTER SHALL BE THE REDUCED PRESSURE ZONE TYPE WITH INTERMEDIATE ATMOSPHERIC VENT, CONSISTING OF SHUTOFF VALVES ON THE INLET AND OUTLET AND STRAINER ON THE INLET. ASSEMBLIES SHALL INCLUDE TEST COCKS AND SHALL COMPLY WITH THE REQUIREMENTS OF ASSE STANDARD 1013. BACKFLOW PREVENTER 3" AND SMALLER SHALL HAVE BRONZE BODY WITH THREADED ENDS.

#### 2.4 TRAP PRIMERS MECHANICAL TRAP PRIMERS SHALL BE AUTOMATIC TYPE WITH CAST BRONZE BODY, REMOVABLE VALVE MECHANISM, INTEGRAL VACUUM BREAKER, AND 1/2 " DIAMETER SOCKET TUBE ENDS.

#### PART 3. - EXECUTION

# INSTALLATION

- PROVIDE A UNION OR FLANGE AT ALL PIPING CONNECTIONS TO EQUIPMENT. PIPE CONNECTIONS TO EQUIPMENT SHALL BE MADE SO THAT NO STRAIN IS PLACED ON THE EQUIPMENT. PIPE SHALL BE SUPPORTED INDEPENDENT OF THE EQUIPMENT. B. CHANGES IN PIPE SIZE SHALL BE MADE WITH REDUCING FITTINGS. NO BUSHINGS WILL BE ALLOWED.
- INSTALL WATER HAMMER ARRESTORS WITHIN THE CHASE ON THE COLD-WATER BRANCH LINES AS INDICATED ON THE DRAWINGS. ALL WATER HAMMER ARRESTORS SHALL HAVE A WALL ACCESS PANEL ADJACENT TO THE SHOCK ABSORBER FOR REPAIR PURPOSES
- D. THE ATMOSPHERIC RELIEF FROM BACKFLOW PREVENTER SHALL BE PIPED THROUGH A FIXED AIR GAP TO A FLOOR DRAIN
- UNDERGROUND PIPING FROM TRAP PRIMER TO FLOOR DRAINS SHALL BE INSTALLED WITHOUT FITTINGS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE FITTING OF MATERIALS AND EQUIPMENT, SHALL PERFORM ALL DIMENSIONAL LAYOUT OF THE WORK AND SHALL ESTABLISH LINES AND GRADES. INSTALL PIPE LINES TO CONFORM TO CONDITIONS, OFF-SETTING TO CLEAR STRUCTURAL MEMBERS AND DUCTS. RUN PIPING PARALLEL TO OR AT RIGHT ANGLES TO BUILDING WALLS WITH EACH HORIZONTAL LINE AT MAXIMUM.
- G. PIPE FOUND TO BE DAMAGED BY HANDLING SHALL BE REMOVED FROM THE JOB SITE TO PREVENT MISTAKEN USE.

#### HANGERS AND SUPPORTS

A. INSTALL HANGERS FOR HORIZONTAL PIPING WITH THE FOLLOWING MAXIMUM SPACING AND MINIMUM ROD SIZES:

NOM. PIPE SIZE	STEEL PIPE MAX SPAN	COPPER TUBE MAX SPAN	MIN. ROD DIAMETER
UP TO 3/4"	7'	5'	3/8"
1"	7'	6'	3/8"
1-1/4"	7'	7'	3/8"
1-1/2"	9'	8'	3/8"
2"	10'	8'	3/8"
2-1/2"	11'	9'	1/2"
3"	12'	10'	1/2"
4"	14'	12'	5/8" (1/2" COPPER)

#### 3.3 INSTALLATION OF PIPING SPECIALTIES

- INSTALL BACKFLOW PREVENTER AT EACH CONNECTION TO MECHANICAL EQUIPMENT AND SYSTEMS IN COMPLIANCE WITH THE PLUMBING CODE AND AUTHORITY HAVING JURISDICTION. LOCATE IN SAME ROOM AS EQUIPMENT BEING CONNECTED. INSTALL AIR GAP FITTING AND PIPE RELIEF OUTLET DRAIN WITHOUT
- VALVES TO NEAREST FLOOR DRAIN. INSTALL PRESSURE-REGULATING VALVES WITH INLET AND OUTLET SHUTOFF VALVES AND BALANCE COCK BYPASS. INSTALL PRESSURE GAUGE ON VALVE

## 3.4 ADJUSTING

ADJUST AND BALANCE ALL WATER SYSTEMS TO OBTAIN OPERATING FLOWS AT ALL FIXTURES AND WATER USING EQUIPMENT. ALSO ADJUST AND BALANCE THE HOT WATER CIRCULATION FROM ALL PORTIONS OF THE BUILDING.

#### 3.5 FIELD QUALITY CONTROL

- INSPECTIONS: ARRANGE FOR INSPECTION BY THE PLUMBING OFFICIAL TO OBSERVE THE REQUIRED TESTS AND TO ENSURE COMPLIANCE WITH THE REQUIREMENTS OF THE PLUMBING CODE. PREPARE INSPECTION REPORTS SIGNED BY THE PLUMBING OFFICIAL.
- B. FILL AND STERILIZE THE SYSTEM AS REQUIRED BY THE LOCAL WATER UTILITY AND THE LOCAL CODE AUTHORITIES.

#### SECTION 221316 - DRAINAGE AND VENT SYSTEMS

#### PART 1 - GENERAL

#### 1.1 DESCRIPTION OF WORK

A. THIS PROJECT SHALL COVER THE INSTALLATION OF DRAINAGE AND VENT SYSTEMS INCLUDING PIPING, DRAINAGE ACCESSORIES, TRAPS, AND FLOOR

#### PART 2 - PRODUCTS

SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE DRAINAGE AND VENT SYSTEM PRODUCTS BY ONE OF THE MANUFACTURERS LISTED IN THIS SPECIFICATION OR ON THE DRAWING.

- 2.2 PIPE AND FITTINGS ABOVE GROUND SANITARY WASTE AND VENT PIPING (2-1/2" AND LARGER) SHALL BE SERVICE WEIGHT CAST IRON SOIL PIPE AND FITTINGS, ASTM A74, WITH NO-HUB
- NEOPRENE COUPLINGS CONFORMING TO CISPI STANDARD 310 B. ALL WASTE PIPING 2 " AND SMALLER SHALL BE TYPE " DWV " HARD DRAWN COPPER TUBING, ASTM B88, WITH SOLDERED JOINTS AND WROUGHT COPPER,
- ANSI B16.22, OR CAST BRONZE, ANSI B16.18, SOCKET FITTINGS. C. BELOW GROUND SANITARY WASTE AND VENT PIPING (ALL SIZES) SHALL BE ONE
- 1. SERVICE WEIGHT, COATED, CAST IRON SOIL PIPE AND FITTINGS, ASTM A74, WITH GASKETED MODIFIED HUB AND SPIGOT JOINTS, ASTM C564.

SOLID WALL PVC PIPE, ASTM D 2665, WITH PVC SOCKET TYPE FITTINGS. USE PVC SOLVENT CEMENT THAT HAS A VOC CONTENT OF 510 G/L OR LESS AND ADHESIVE PRIMER THAT HAS A VOC CONTENT OF 510 G/L OR LESS. D. PVC PIPE AND FITTINGS MAY BE USED ABOVE GROUND IN BUILDINGS WITH NON-

# PLENUM RETURN IF APPROVED BY THE LOCAL AHJ.

#### A. TRAPS OTHER THAN FURNISHED AS PART OF PLUMBING FIXTURE, SHALL BE OF THE SAME MATERIAL AND SIZE AS THE PIPE INTO WHICH THEY DISCHARGE, UNLESS SPECIFIED OTHERWISE HEREINAFTER. WHERE NOT UNDERGROUND, TRAPS SHALL BE PROVIDED WITH CLEANOUTS PLUGS ON BOTTOM.

A. CAST IRON BODY WITH FLASHING FLANGE AND DEEP SEAL SIZED P-TRAP. DRAINS SHALL BE EQUIPPED WITH ADJUSTABLE STRAINER AS FOLLOWS; 6" ROUND ROUGH BRONZE IN MECHANICAL ROOMS; 6" SQUARE POLISHED BRONZE IN FINISHED FLOORS; 8" ROUND WITH FUNNEL TOP FOR CONDENSATE DRAINAGE.

#### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. MAKE CHANGES IN DIRECTION FOR DRAINAGE AND VENT PIPING USING APPROPRIATE 45 DEGREE WYES, HALF-WYES, OR LONG SWEEP QUARTER, SIXTH, EIGHTH, OR SIXTEENTH BENDS. INSTALL UNDERGROUND BUILDING DRAINS TO CONFORM WITH THE PLUMBING CODE, AND IN ACCORDANCE WITH THE CAST IRON
- SOIL PIPE INSTITUTE ENGINEERING MANUAL. B. INSTALL CLEANOUTS IN ABOVE AND BELOW GROUND PIPING AND BUILDING DRAIN PIPING AS INDICATED, AND AS REQUIRED BY PLUMBING CODE, AT EACH CHANGE IN DIRECTION OF PIPING GREATER THAN 45 DEGREES; AT MINIMUM INTERVALS OF 50' FOR PIPING 4" AND SMALLER AND 100' FOR LARGER PIPING; AT BASE OF EACH VERTICAL SOIL OR WASTE STACK. INSTALL FLOOR AND WALL CLEANOUTS COVERS FOR CONCEALED PIPING, TYPES AS INDICATED.

C. INSTALL HANGERS FOR ABOVE GROUND PIPE AT THE FOLLOWING INTERVALS:

٥.	INOTALL INTOLLION OF CARDOVE CITE	701 <b>1</b> 0111111111111111111111111111111111	ELOWING INTERVA
	PIPE MATERIAL	MAX HORIZONTAL SPACING	MAX VERTICAL SPACING
	CAST IRON PIPE - ALL SIZES	5'	15'
	COPPER TUBING 1-1/4" & SMALLER	6'	10'
	COPPER TUBING 1-1/2" & LARGER	10'	10'
	PVC - ALL SIZES	4'	10'

#### 3.2 FIELD QUALITY CONTROL

A. TEST DRAINAGE AND VENT SYSTEM IN ACCORDANCE WITH THE PROCEDURES OF THE AUTHORITY HAVING JURISDICTION.

# SECTION 223300 - WATER HEATERS

#### PART 1 - GENERAL

#### 1.1 DESCRIPTION OF WORK A. THIS PROJECT SHALL INCLUDE ELECTRIC DOMESTIC WATER HEATERS AS

INDICATED ON DRAWINGS AND SCHEDULES, AND BY REQUIREMENTS OF THIS SECTION.

A. CODES AND STANDARDS: CONSTRUCT WATER HEATERS IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF UL, NEC, AND ASHRAE STANDARDS.

#### PART 2 - PRODUCTS

#### 2.3 COMMERCIAL GAS WATER HEATERS

- A. GENERAL: PROVIDE COMMERCIAL GAS WATER HEATERS OF SIZES, CAPACITIES, AND NATURAL GAS CHARACTERISTICS AS INDICATED ON DRAWINGS. B. HEATER: WORKING PRESSURE OF 150 PSI; FIBER GLASS LINING ON INTERNAL SURFACES EXPOSED TO WATER.
- HEATING ELEMENTS: NATURAL GAS FIRED.
- D. SAFETY CONTROLS: AUTOMATIC WATER THERMOSTAT WITH ADJUSTABLE TEMPERATURE RANGE, AUTOMATIC RESET HIGH TEMPERATURE LIMITING THERMOSTAT, GAS PRESSURE REGULATOR, MULTI-RIBBON OR TUBULAR BURNER. 100% SAFETY SHUT-OFF PILOT AND THERMOCOUPLE, FLUE BAFFLE, AND DRAFT
- E. JACKET: EQUIP WITH FULL SIZE CONTROL COMPARTMENTS WITH FRONT PANEL OPENING. INSULATE TANK WITH VERMIN-PROOF GLASS FIBER INSULATION. PROVIDE OUTER STEEL JACKET WITH BONDERIZED UNDERCOAT AND BAKED ENAMEL FINISH.
- ACCESSORIES: PROVIDE BRASS DRAIN VALVE: 3/4" TEMPERATURE AND PRESSURE RELIEF VALVE; ASME TANK CONSTRUCTION FOR 150 PSI WORKING PRESSURE; AND 4" X 6" HAND HOLE CLEANOUTS.
- G. CONTROLS: ADJUSTABLE IMMERSION THERMOSTAT. H. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE COMMERCIAL GAS WATER HEATERS AS MANUFACTURED BY RHEEM WATER HEATER DIV, RUUD WATER HEATER DIV, SMITH CORP (A.O.), STATE INDUSTRIES, INC., OR APPROVED

# PART 3 - EXECUTION

#### 3.1 INSTALLATION OF WATER HEATERS

- A. INSTALL WATER HEATERS IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. INSTALL UNITS PLUMB AND LEVEL, FIRMLY ANCHORED IN LOCATIONS INDICATED, AND MAINTAIN MANUFACTURER'S RECOMMENDED
- CLEARANCES. B. CONNECT HOT AND COLD WATER PIPING TO UNITS WITH SHUTOFF VALVES AND UNIONS. EXTEND RELIEF VALVE DISCHARGE TO CLOSEST FLOOR DRAIN, OR AS
- C. PROVIDE THERMOMETERS ON INLET AND OUTLET PIPING OF TANK-TYPE WATER

#### SECTION 224000 - PLUMBING FIXTURES

#### PART 1-GENERAL

## 1.1 DESCRIPTION OF WORK

A. THIS SECTION INCLUDES PLUMBING FIXTURES AND TRIM, FITTINGS, AND ACCESSORIES, APPLIANCES, APPURTENANCES, EQUIPMENT, AND SUPPORTS ASSOCIATED WITH PLUMBING FIXTURES.

#### 1.2 QUALITY ASSURANCE

A. REGULATORY REQUIREMENTS: COMPLY WITH REQUIREMENTS OF ANSI STANDARD A117.1, "BUILDINGS AND FACILITIES -- PROVIDING ACCESSIBILITY AND USABILITY FOR PHYSICALLY HANDICAPPED PEOPLE," AND PUBLIC LAW 90-480, "ARCHITECTURAL BARRIERS ACT," WITH RESPECT TO PLUMBING FIXTURES FOR THE PHYSICALLY HANDICAPPED.

#### PART 2 - PRODUCTS

## 2.1 MANUFACTURERS

- A. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE THE PRODUCTS AS SCHEDULED, OR APPROVED EQUIVALENT.
- B. CROSS REFERENCE OTHER DISCIPLINES FOR ACCURACY AND NOTIFY ENGINEER OF RECORD IS DIFFERENT.

#### 2.2 GENERAL REQUIREMENTS

POTABLE WATER SYSTEMS: PROVIDE PLUMBING FITTINGS AND FAUCETS THAT COMPLY WITH NSF 61 AND NSF 372 FOR MAXIMUM LEAD CONTENT; LABEL PIPE AND FITTINGS.

# 2.3 REGULATORY REQUIREMENTS

- A. COMPLY WITH APPLICABLE CODES FOR INSTALLATION OF PLUMBING SYSTEMS
- B. COMPLY WITH UL REQUIREMENTS.
- C. PERFORM WORK IN ACCORDANCE WITH LOCAL HEALTH DEPARTMENT REGULATIONS.
- D. PROVIDE CERTIFICATE OF COMPLIANCE FROM AUTHORITY HAVING JURISDICTION INDICATING APPROVAL OF INSTALLATION.

#### 2.4 UNDER-LAVATORY PIPE SUPPLY COVERS

- A. GENERAL: INSULATE EXPOSED DRAINAGE PIPING INCLUDING HOT, COLD AND TEMPERED WATER SUPPLIES UNDER LAVATORIES OR SINKS PER ADA STANDARDS.
- CONSTRUCTION: 1/8 INCH (3.2 MM) PVC WITH ANTIMICROBIAL. ANTIFUNGAL AND UV RESISTANT PROPERTIES.
- A. COMPLY WITH ASME A112.18.9 FOR COVERS ON ACCESSIBLE LAVATORY PIPING. B. COMPLY WITH ICC A117.1.

#### PART 3 - EXECUTION

## 3.1 EXAMINATION

- A. EXAMINE ROUGHING-IN FOR WATER SOIL AND FOR WASTE PIPING SYSTEMS AND SUPPORTS TO VERIFY ACTUAL LOCATIONS AND SIZES OF PIPING CONNECTIONS AND THAT LOCATIONS AND TYPES OF SUPPORTS MATCH THOSE INDICATED. BEFORE PLUMBING FIXTURE INSTALLATION. USE MANUFACTURER'S ROUGHING-IN DATA IF ROUGHING-IN DATA ARE NOT
- B. EXAMINE WALLS, FLOORS, AND CABINETS FOR SUITABLE CONDITIONS
- WHERE FIXTURES ARE TO BE INSTALLED. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

#### 3.2 INSTALLATION A. INSTALL EACH FIXTURE WITH TRAP, EASILY REMOVABLE FOR SERVICING

- AND CLEANING.
- B. INSTALL COMPONENTS LEVEL AND PLUMB.

#### 3.3 INTERFACE WITH WORK OF OTHER SECTIONS REVIEW MILLWORK SHOP DRAWINGS. CONFIRM LOCATION AND SIZE OF

FIXTURES AND OPENINGS BEFORE ROUGH-IN AND INSTALLATION. CLEANING A. CLEAN PLUMBING FIXTURES AND EQUIPMENT.

# MARIN

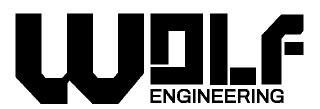
57W 38TH ST LVL 10 NEW YORK NY 10018 212 463 8480 INFO@ MARINARCHITECTS.COM

Contractor

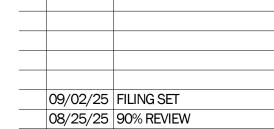
CTS Builders

Structural Engineer Penn Fusion Engineering

MEP Engineering Wolf Engineering



P.O. BOX 38 | DALTON, GA 30722



NO COPIES, TRANSMISSIONS, REPRODUCTIONS, OR ELECTRONIC REVISIONS OF ANY PORTIONS OF THESE DRAWINGS IN WHOLE OR IN PART BE MADE WITHOUT THE EXPRESS WRITTEN PERMISSION OF MARIN ARCHITECTS. ALL DESIGNS INDICATED IN THESE DRAWINGS ARE PROPERTY OF MARIN ARCHITECTS. ALL COPYRIGHTS RESERVED

**KEY PLAN** - AREA OF WORK

CLIENT:

PROJECT NAME:

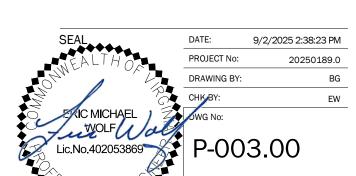
# US FOODS MEZZANINE RENOVATION

PROJECT ADDRESS:

40 S FORT LEWIS BLVD SALEM, VA 24153

DWG TITLE:

PLUMBING SPECIFICATIONS



#### **GENERAL NOTES**

- A. IT IS THE RESPONSIBILITY OF THE GENERAL AND PLUMBING CONTRACTOR TO FULLY INSPECT THE SITE PRIOR TO COMMENCEMENT.
- B. VERIFY ALL EXISTING CONDITIONS INCLUDING LOCATION OF ALL STRUCTURAL ELEMENTS, BAR JOISTS, COLUMNS, ETC. AND COORDINATE PIPING SYSTEMS AND LOCATIONS ACCORDINGLY.



57W 38TH ST LVL 10 NEW YORK NY 10018 212 463 8480 INFO@ MARINARCHITECTS.COM

#### **KEY NOTES**

1. DEMOLISH ALL ASSOCIATED PIPING AND ASSOCIATED APPARATUS BACK TO SOURCE.

2. EXISTING SANITARY SEWER PIPING TO BE RELOCATED TO UNDER NEW MEZZANINE LEVEL AS REQUIRED. ALL STORM WATER PIPING SHALL SLOPE AT 1/4" PER FOOT. EXTEND AND MODIFY PIPING AND ASSOCIATED APPARATUS AS REQUIRED. COORDINATE EXACT LOCATION IN THE FIELD.

3. EXISTING STORM WATER PIPING TO BE RELOCATED UNDER NEW MEZZANINE LEVEL AS REQUIRED. ALL STORM WATER PIPING SHALL BE INSTALLED SUCH THAT THE SLOPE IS 1/4" PER FOOT. COORDINATE EXACT LOCATION IN THE FIELD, AND MODIFY PIPING AND ASSOCIATED APPARATUS AS REQUIRED.

4. EXISTING DOMESTIC WATER/SANITARY SEWER TO RESTROOMS OUT OF SCOPE.

5. DEMOLISH FIXTURES, EXISTING DOMESTIC WATER SUPPLY PIPING AND SANITARY SEWER PIPING TO SERVE NEW FIXTURES DURING NEW

MARIN ARCHITECTS

Contractor CTS Builders

Structural Engineer

Penn Fusion Engineering

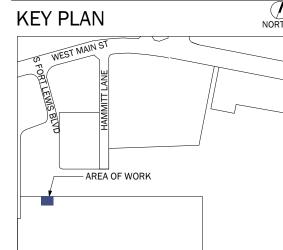
MEP Engineering Wolf Engineering

P.O. BOX 38 | DALTON, GA 30722

09/02/25 FILING SET 08/25/25 90% REVIEW

08/07/25 | 60% PROGRESS SET NO COPIES, TRANSMISSIONS, REPRODUCTIONS, OR ELECTRONIC REVISIONS OF ANY PORTIONS OF THESE DRAWINGS IN WHOLE OR IN

PART BE MADE WITHOUT THE EXPRESS WRITTEN PERMISSION OF MARIN ARCHITECTS. ALL DESIGNS INDICATED IN THESE DRAWINGS ARE PROPERTY OF MARIN ARCHITECTS. ALL COPYRIGHTS RESERVED © 2019.



CLIENT:

PROJECT NAME:

US FOODS MEZZANINE RENOVATION

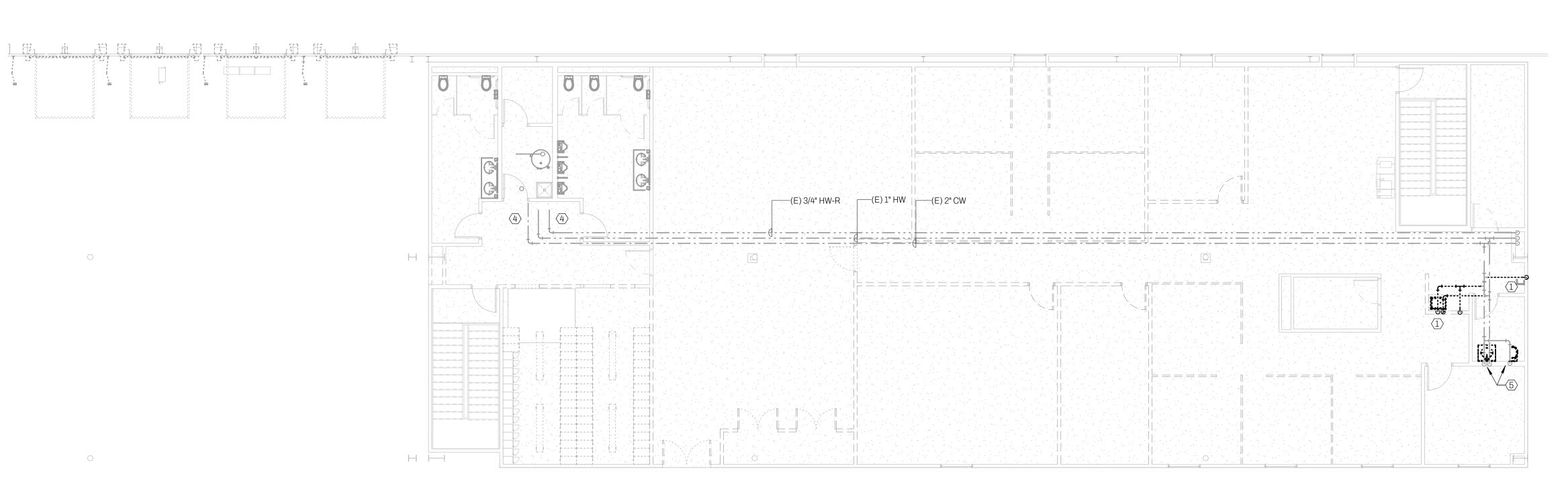
PROJECT ADDRESS:

40 S FORT LEWIS BLVD SALEM, VA 24153

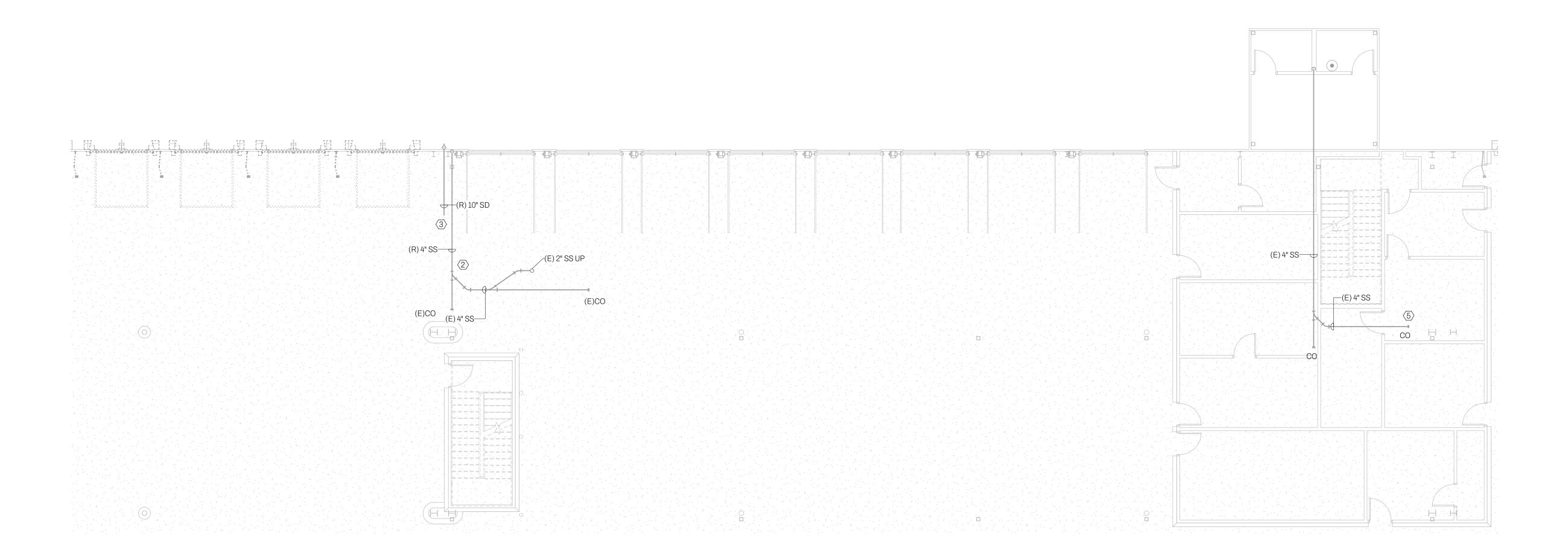
DWG TITLE:

PLUMBING - DEMOLITION PLAN









#### **GENERAL NOTES**

- A. IT IS THE RESPONSIBILITY OF THE GENERAL AND PLUMBING CONTRACTOR TO FULLY INSPECT THE SITE PRIOR TO COMMENCEMENT.
- B. VERIFY ALL EXISTING CONDITIONS INCLUDING LOCATION OF ALL STRUCTURAL ELEMENTS, BAR JOISTS, COLUMNS, ETC. AND COORDINATE PIPING SYSTEMS AND LOCATIONS ACCORDINGLY.

# KEY NOTES

2

- DEMOLISH ALL PLUMBING BACK TO SOURCE COMPLETE, INCLUDING ALL SANITARY SEWER AND VENT PIPING, DOMESTIC WATER PIPING, NATURAL GAS PIPING, AND ALL ASSOCIATED APPARATUS.
- 2. OUT OF SCOPE/NOT IN CONTRACT.
- 3. AREA OF SCOPE. REFER TO SHEETS WITHIN THIS SET FOR ADDITIONAL INFORMATION.

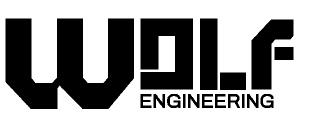
MARIN ARCHITECTS

> 57W 38TH ST LVL 10 NEW YORK NY 10018 212 463 8480 INFO@ MARINARCHITECTS.COM

Contractor CTS Builders

Structural Engineer
Penn Fusion Engineering

MEP Engineering
Wolf Engineering



P.O. BOX 38 | DALTON, GA 30722

09/02/25 FILING SET 08/25/25 90% REVIEW

08/07/25 60% PROGRESS SET

NO COPIES, TRANSMISSIONS, REPRODUCTIONS, OR ELECTRONIC REVISIONS OF ANY PORTIONS OF THESE DRAWINGS IN WHOLE OR IN PART BE MADE WITHOUT THE EXPRESS WRITTEN PERMISSION OF MARIN ARCHITECTS. ALL DESIGNS INDICATED IN THESE DRAWINGS ARE PROPERTY OF MARIN ARCHITECTS. ALL COPYRIGHTS RESERVED

ARE PROPERTY OF MARIN ARCHITECTS. ALL COPYRIGHTS F
© 2019.

KEY PLAN

NOR

AREA OF WORK

CLIENT:

PROJECT NAME:

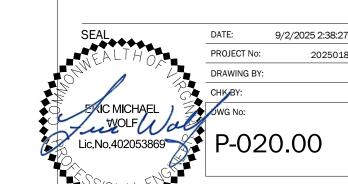
US FOODS
MEZZANINE RENOVATION

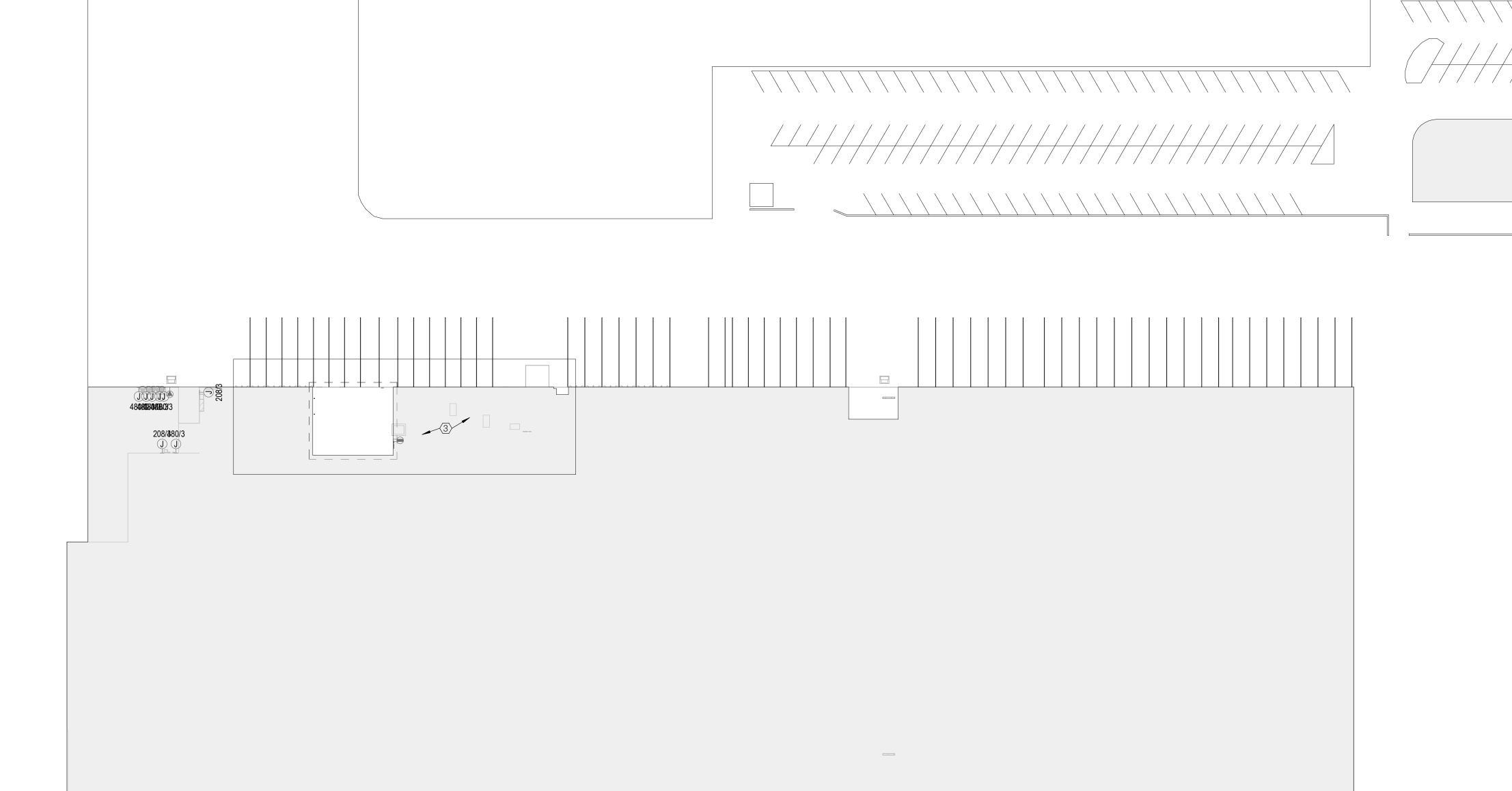
PROJECT ADDRESS:

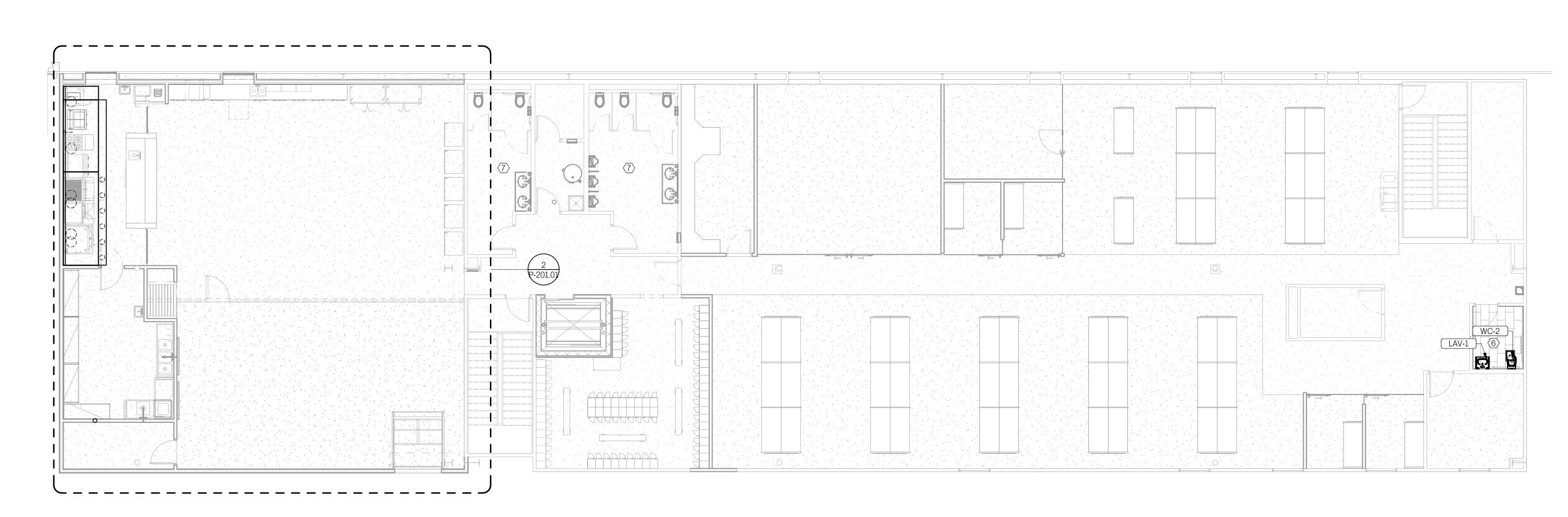
40 S FORT LEWIS BLVD SALEM, VA 24153

DWG TITLE:

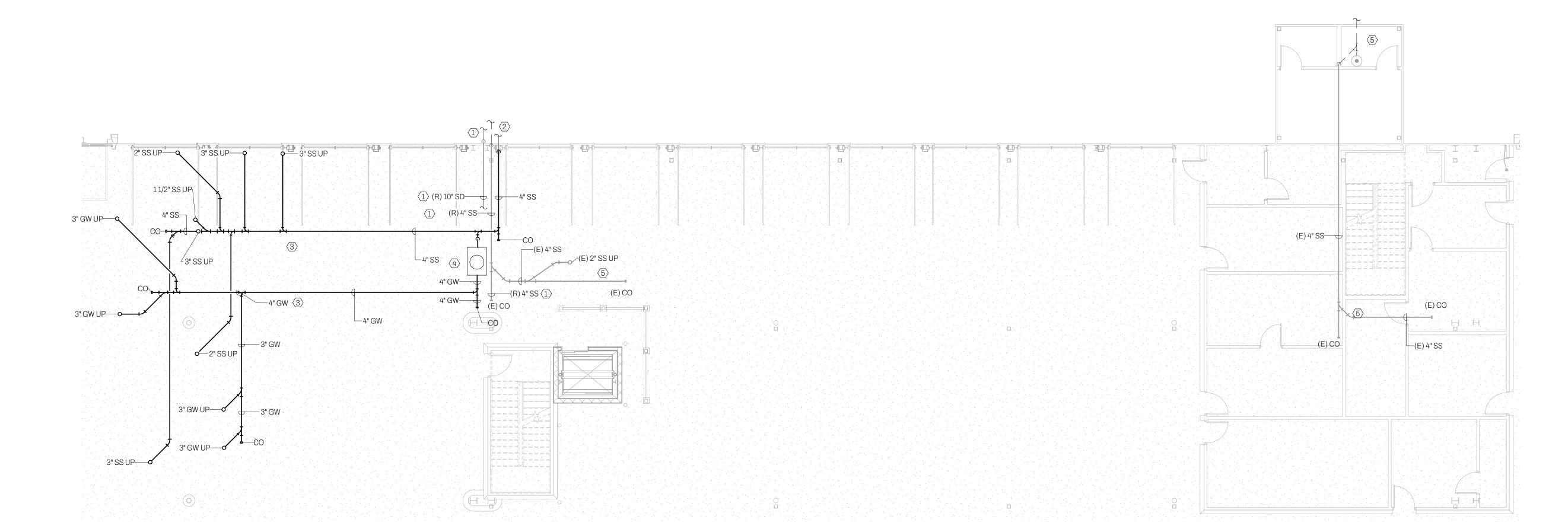
PLUMBING - SITE PLAN











# P-100.00 1/8" = 1'-0"

#### **GENERAL NOTES**

- A. IT IS THE RESPONSIBILITY OF THE GENERAL AND PLUMBING CONTRACTOR TO FULLY INSPECT THE SITE PRIOR TO COMMENCEMENT.
- B. VERIFY ALL EXISTING CONDITIONS INCLUDING LOCATION OF ALL STRUCTURAL ELEMENTS, BAR JOISTS, COLUMNS, ETC. AND COORDINATE PIPING SYSTEMS AND LOCATIONS ACCORDINGLY.
- C. REFER TO ENLARGED PLANS FOR ADDITIONAL INFORMATION.

#### **KEY NOTES**

- 1. RELOCATE SANITARY SEWER PIPING PLAN EAST OF MEZZANINE'S I-BEAM. FIELD COORDINATE EXACT LOCATION.
- 2. PROVIDE NEW 4" SANITARY SEWER PIPING TO SERVE MEZZANINE.
- 3. ROUTE NEW SANITARY AND GREASE WASTE PIPING TIGHT TO STRUCTURE ABOVE.
- 4. PROVIDE NEW 75GPM GREASE INTERCEPTOR SUSPENDED TIGHT TO STRUCTURE ABOVE. REFER TO SHEET P201.01 FOR ADDITIONAL
- 5. EXISTING SANITARY SEWER AND VENT PIPING SERVING RESTROOMS OUT OF SCOPE.
- 6. LOCATE EXISTING SANITARY SEWER AND VENT PIPING. EXTEND AND MODIFY AS REQUIRED TO SERVE NEW FIXTURES.
- 7. FIXTURES OUT OF SCOPE/EXISTING TO REMAIN.



57W 38TH ST LVL 10 NEW YORK NY 10018 212 463 8480 INFO@ MARINARCHITECTS.COM

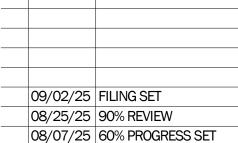
Contractor CTS Builders

Structural Engineer Penn Fusion Engineering

MEP Engineering
Wolf Engineering

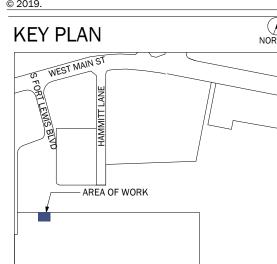


P.O. BOX 38 | DALTON, GA 30722



NO COPIES, TRANSMISSIONS, REPRODUCTIONS, OR ELECTRONIC

REVISIONS OF ANY PORTIONS OF THESE DRAWINGS IN WHOLE OR IN PART BE MADE WITHOUT THE EXPRESS WRITTEN PERMISSION OF MARIN ARCHITECTS. ALL DESIGNS INDICATED IN THESE DRAWINGS ARE PROPERTY OF MARIN ARCHITECTS. ALL COPYRIGHTS RESERVED



CLIENT:

PROJECT NAME:

US FOODS MEZZANINE RENOVATION

PROJECT ADDRESS:

40 S FORT LEWIS BLVD SALEM, VA 24153

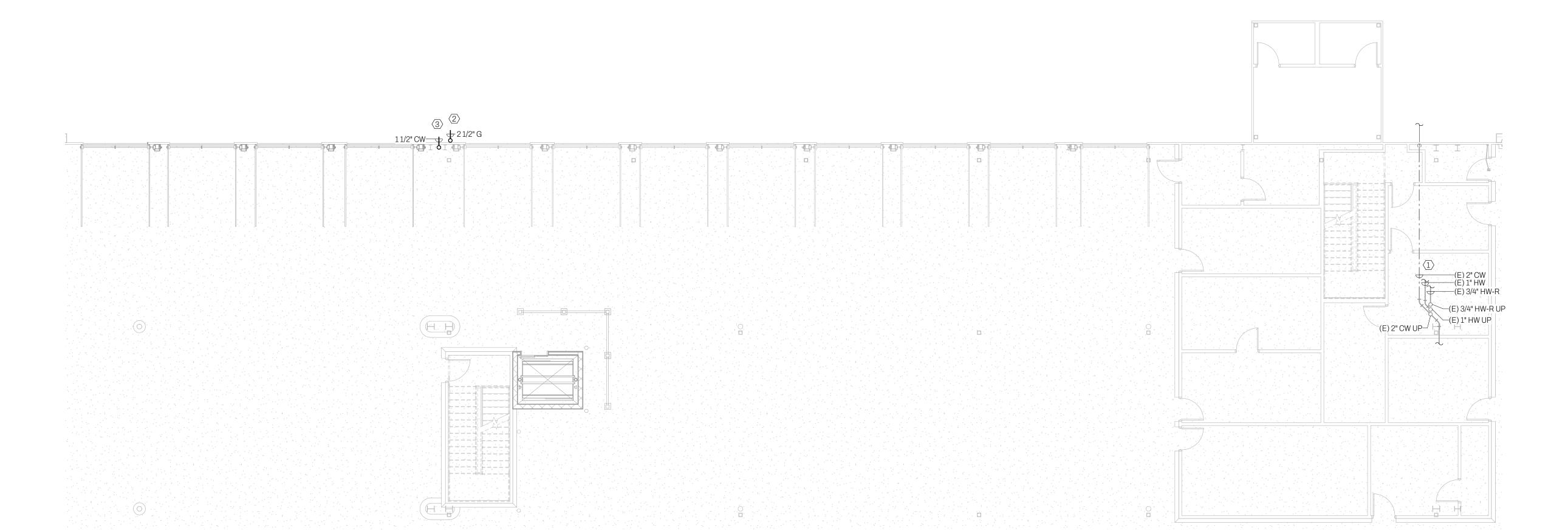
DWG TITLE:

PLUMBING - FLOOR PLANS - DWV



# 

# 2 PLUMBING - MEZZANINE PLAN - DOMESTIC WATER P-200.00 1/8" = 1'-0"



# PLUMBING - GROUND FLOOR PLAN - DOMESTIC WATER R-200.00 1/8" = 1'-0"

#### **GENERAL NOTES**

- A. IT IS THE RESPONSIBILITY OF THE GENERAL AND PLUMBING CONTRACTOR TO FULLY INSPECT THE SITE PRIOR TO COMMENCEMENT.
- B. VERIFY ALL EXISTING CONDITIONS INCLUDING LOCATION OF ALL STRUCTURAL ELEMENTS, BAR JOISTS, COLUMNS, ETC. AND COORDINATE PIPING SYSTEMS AND LOCATIONS ACCORDINGLY.
- C. REFER TO ENLARGED PLANS FOR ADDITIONAL INFORMATION.

# MARIN ARCHITECTS

## KEY NOTES

- 1. LOCATE CONTINUATION OF EXISTING DOMESTIC HOT WATER, DOMESTIC COLD WATER, AND HOT WATER RETURN PIPING.
- 2. PROVIDE NEW 2-1/2" NATURAL GAS PIPING INTO SPACE TO SERVE MEZZANINE. UPGRADE METER AS REQUIRED FOR ADDITIONAL LOAD (REFER TO SHEET P201.01). COORDINATE NEEDS WITH UTILITIES.
- 3. PROVIDE NEW 1-1/2" DOMESTIC WATER PIPING TO SERVE MEZZANINE. UPGRADE METER AND RPZ ASSEMBLY AS REQUIRED. COORDINATE WITH UTILITIES. REFER TO SHEET P201.01 FOR ADDITIONAL INFORMATION.
- 4. EXISTING FIXTURE(S) AND DOMESTIC WATER PIPING TO REMAIN (OUT OF SCOPE).
- 5. EXISTING NATURAL GAS PIPING, REGULATOR, AND SHUTOFF TO WATER HEATER.
- 6. LOCATE AND REPLACE EXISTING FIXTUERS WITH NEW. INSPECT AND REPAIR/REPLACE EXISTING PIPING CONNECTIONS AS REQUIRED.

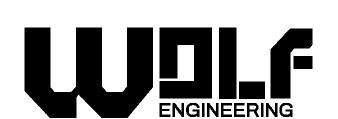
57W 38TH ST LVL 10 NEW YORK NY 10018 212 463 8480 INFO@ MARINARCHITECTS.COM

Contractor CTS Builders

Structural Engineer

Penn Fusion Engineering

MEP Engineering
Wolf Engineering



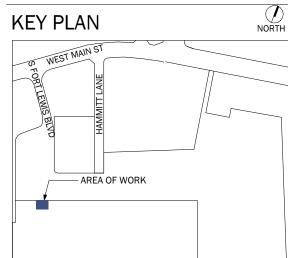
P.O. BOX 38 | DALTON, GA 30722

09/02/25 FILING SET 08/25/25 90% REVIEW

08/07/25 60% PROGRESS SET

NO COPIES, TRANSMISSIONS, REPRODUCTIONS, OR ELECTRONIC REVISIONS OF ANY PORTIONS OF THESE DRAWINGS IN WHOLE OR IN PART BE MADE WITHOUT THE EXPRESS WRITTEN PERMISSION OF MARIN ARCHITECTS. ALL DESIGNS INDICATED IN THESE DRAWINGS

REVISIONS OF ANY PORTIONS OF THESE DRAWINGS IN WHOLE OR IN PART BE MADE WITHOUT THE EXPRESS WRITTEN PERMISSION OF MARIN ARCHITECTS. ALL DESIGNS INDICATED IN THESE DRAWINGS ARE PROPERTY OF MARIN ARCHITECTS. ALL COPYRIGHTS RESERVED © 2019.



CLIENT:

PROJECT NAME:

US FOODS
MEZZANINE RENOVATION

PROJECT ADDRESS:

40 S FORT LEWIS BLVD SALEM, VA 24153

DWG TITLE:

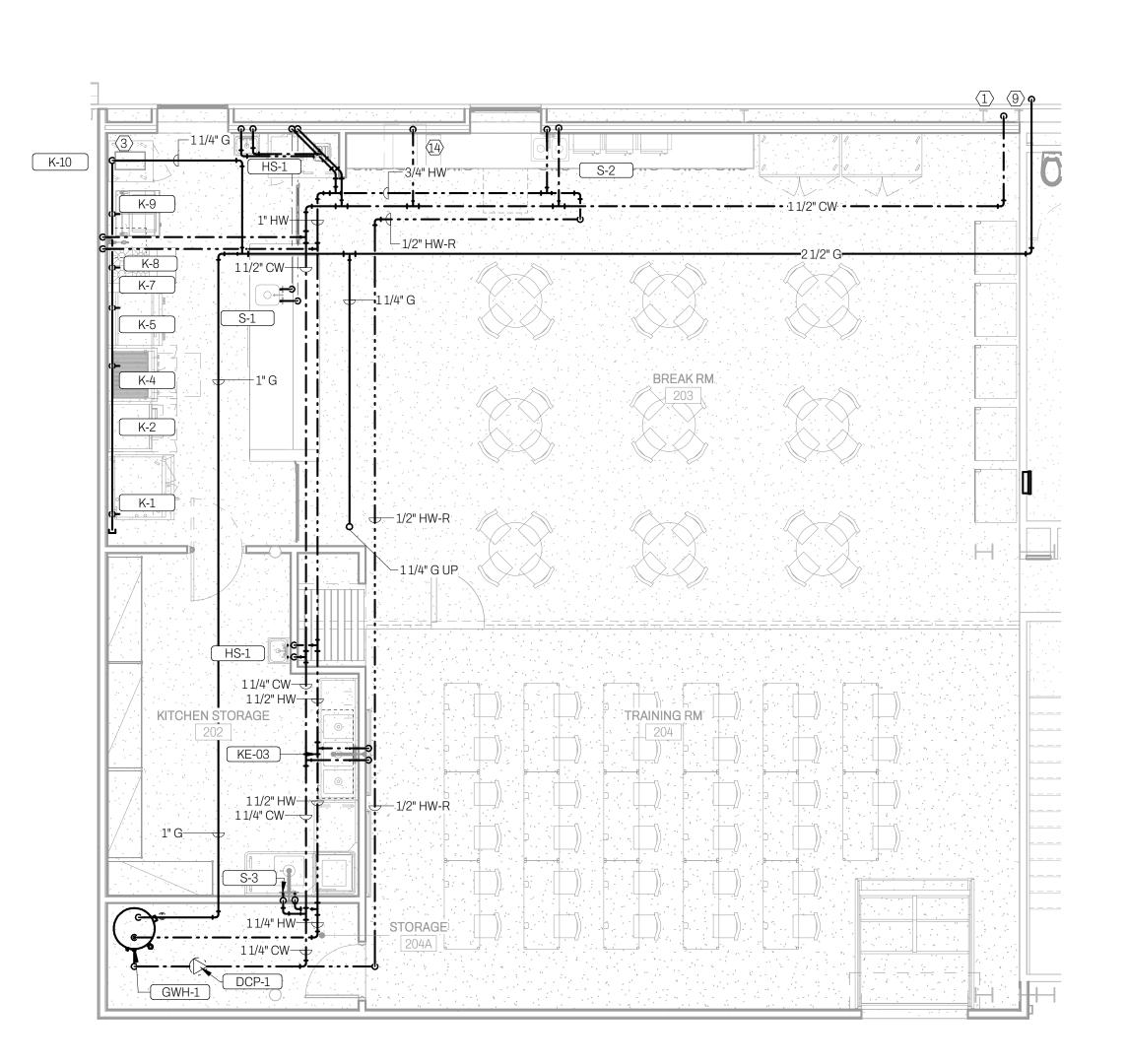
PLUMBING - FLOOR PLANS - DOMESTIC WATER



GAS LOAD SUMMARY	<b>/</b> :				
EQUIPMENT MARK:	EQUIPMENT		QUANTITY:	GAS CONNECTION SIZE	BTU
WH-1	WATER HEATER	REFER TO P-501.00	1	1-1/4"	199,900
RTU-5	ROOFTOP UNIT	REFER TO M-501.00	1		349,291
RTU-4	ROOFTOP UNIT	REFER TO M-501.00	1		180,000
K1	COMBI OVEN STEAMER	ALTO-SHAAM VMC-F4E	1	3/4"	98,000
K4	CHARBOILER	VULCAN VACB36	1	3/4"	108,000
K5	COUNTER GRIDDLE	VULCAN MSA36	1	3/4"	81,000
K7	4 BURNER RANGE	VULCAN 24 S-4B	1	3/4"	120,000
K9	FRYER	FRYER	1	3/4"	140,000
				TOTAL	1,276,191

GREAST INTERCEPTOR SIZING (2021 IPC SECTION 1003.3.5) - METHOD - PDI G101													
EQUIPMENT: QUANTITY: DIMENSIONS: GALLONS (EACH) (CUB. INCH/231) GALLONS (TOTAL) DRAINAGE LOAD (GALLONS X.75) FLOW RATE (2 MINUTE)													
3 COMP SINK 1 54X16X14 53 53 39.75 39.75 19.88													
PREP SINK	2	16X16X12	13.3	26.6	19.95	19.95	9.98						
					TOTAL FLOW RATE:	59.7	29.85						
					PDI=FLOW RATE:	75	35						
	GREASE CAPACITY: 100 75												
GREASE INT	ERCEPTOR SE	LECTION : SCHIE	R GB-75 GREAT BAS	SIN - RATING - 75GPM	WITH 125 GALLON CAP	ACITY							

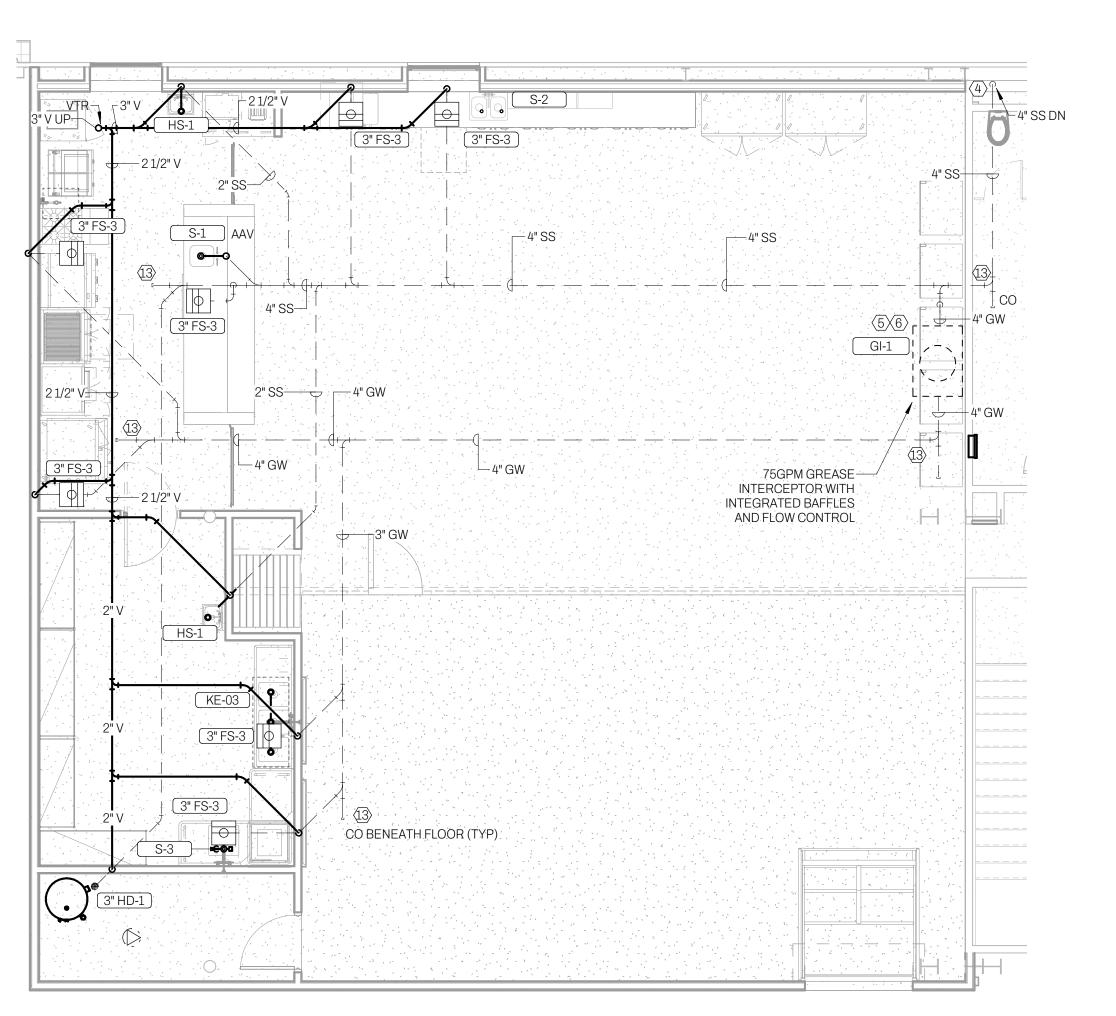
GREASE INTERCEPTOR DIMENSIONS: 42.75" TALL, 33" WIDE, 47" LONG. SUSPENDED SUPPORT WEIGHT - 1172LBS



GAS SIZED PER TABLE 402.4(2) - LESS THAN 2PSI, .5 IN. WC, .6 SPECIFIC GRAVITY

LONGEST RUN: 106', EQUIVALENT LENGTH = 160'

NATURAL GAS PIPING SIZE: 2.5"



#### **GENERAL NOTES**

- A. IT IS THE RESPONSIBILITY OF THE GENERAL AND PLUMBING CONTRACTOR TO FULLY INSPECT THE SITE PRIOR TO COMMENCEMENT.
- B. VERIFY ALL EXISTING CONDITIONS INCLUDING LOCATION OF ALL STRUCTURAL ELEMENTS, BAR JOISTS, COLUMNS, ETC. AND COORDINATE PIPING SYSTEMS AND LOCATIONS ACCORDINGLY.



#### **KEY NOTES**

1. PROVIDE NEW 1-1/2" DOMESTIC WATER SUPPLY PIPING TO SPACE. FIELD VERIFY EXISTING METER, RPZ, AND CONNECTION LOCATION.

2. PROVIDE 1-1/4" NATURAL GAS PIPING RISER WITH SHUTOFF DOWN TO HORIZONTAL MANIFOLD BEHIND EQUIPMENT. UTILIZE INDIVIDUAL TAKEOFFS, DRIP LEGS, AND SHUTOFFS TO EACH PIECE OF EQUIPMENT. REFER TO OWNER SELECTIONS AND ARCH SCHEDULES FOR EQUIPMENT INSTALLATION INSTRUCTIONS.

3. PROVIDE 1/2" DOMESTIC HOT AND COLD WATER PIPING BELOW MEZZANINE LEVEL'S FLOOR TO SINK AS REFLECTED ON THIS SHEET.

4. PROVIDE NEW 4" SANITARY SEWER PIPING AS REFLECTED ON THIS SHEET. FIELD VERIFY EXACT LOCATION. ALL SANITARY SEWER PIPING SHALL SLOPE AT A MINIMUM OF 1/8" PER FOOT.

5. SUSPENDED HYDROMECHANICAL GREASE INTERCEPTOR BELOW FLOOR. COORDINATE MOUNTING LOCATION AND DETAILS WITH STRUCTURAL.

6. ROUTE 4" GREASE WASTE PIPING INTO NEW 4" SANITARY SEWER PIPING. ALL GREASE WASTE PIPING SHALL SLOPE AT 1/4" PER FOOT.

7. PROVIDE APOLLO 4NLF-444-44 OR EQUAL TO SERVE OVEN/STEAMER EQUIPMENT.

8. PROVIDE APOLLO 4NLF-333-33 OR EQUAL TO SERVE 1/2" COLD WATER SUPPLY TO KITCHEN EQUIPMENT.

9. PROVIDE NEW 2-1/2" NATURAL GAS PIPING TO SERVE SPACE. COORDINATE METERING AND NEEDS WITH UTILITY COMPANY.

10. ROUTE 1-1/4" NATURAL GAS PIPING UP, THRU ROOF TO SERVE UNITS ABOVE. PIPING TO SERVE RTU-4 AND (R)RTU-01.

11. PROVIDE NEW WATER HEATER AS SCHEDULED ON SHEET P-501.00, ROUTE DISCHARGE TO HUB DRAIN IN ROOM, WITH CODE REQUIRED AIR GAP.

12. ROUTE INDIVIDUAL WASTE PIPING FROM SINK BASIN(S) TO FLOOR SINK, AIR GAP SHALL BE 2X DIAMETER OF DISCHARGE PIPING.

13. PROVIDE GREASE WASTE AND SANITARY SEWER PIPING AND CLEANOUTS BELOW FLOOR'S STRUCTURE. REFER TO SHEET P100 FOR ADDITIONAL INFORMATION.

14. PROVIDE 1/2" DOMESTIC WATER PIPING DOWN WALL TO SERVE ICE MAKER. COORDINATE EXACT LOCATION AND EQUIPMENT REQUIREMENTS WITH OWNER/ARCH.

57W 38TH ST LVL 10 NEW YORK NY 10018 212 463 8480 INFO@ MARINARCHITECTS.COM

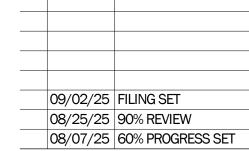
Contractor CTS Builders

Structural Engineer
Penn Fusion Engineering

MEP Engineering

Wolf Engineering

P.O. BOX 38 | DALTON, GA 30722



NO COPIES, TRANSMISSIONS, REPRODUCTIONS, OR ELECTRONIC REVISIONS OF ANY PORTIONS OF THESE DRAWINGS IN WHOLE OR IN PART BE MADE WITHOUT THE EXPRESS WRITTEN PERMISSION OF MARIN ARCHITECTS. ALL DESIGNS INDICATED IN THESE DRAWINGS

REPROPERTY OF MARIN ARCHITECTS. ALL COPYRIGHTS RESERVED
© 2019.

KEY PLAN

NORTH

AREA OF WORK

CLIENT:

PROJECT NAME:

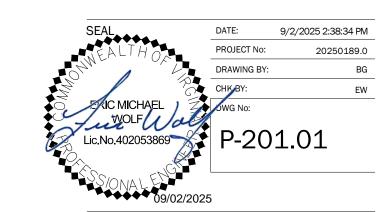
US FOODS
MEZZANINE RENOVATION

PROJECT ADDRESS:

40 S FORT LEWIS BLVD SALEM, VA 24153

DWG TITLE:

PLUMBING - ENLARGED PLAN





# 349,291 BTU

# P-201.02 1/8" = 1'-0"

#### **GENERAL NOTES**

**KEY NOTES** 

- A. IT IS THE RESPONSIBILITY OF THE GENERAL AND PLUMBING CONTRACTOR TO FULLY INSPECT THE SITE PRIOR TO COMMENCEMENT.
- B. VERIFY ALL EXISTING CONDITIONS INCLUDING LOCATION OF ALL STRUCTURAL ELEMENTS, BAR JOISTS, COLUMNS, ETC. AND COORDINATE PIPING SYSTEMS AND LOCATIONS ACCORDINGLY.

2. PROVID SHUTOFF, DIRT LEGS, AND ALL ASSOCIATED APPARATUS TO

3. FIXTURES/EQUIPMENT EXISTING TO REMAIN/OUT OF SCOPE.

C. REFER TO ENLARGED PLANS FOR ADDITIONAL INFORMATION.

CONNECT NEW AND RELOCATED EQUIPMENT.

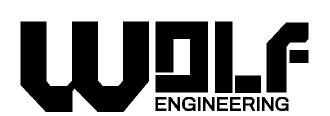
# MARIN ARCHITECTS

57W 38TH ST LVL 10 NEW YORK NY 10018 212 463 8480 INFO@ MARINARCHITECTS.COM

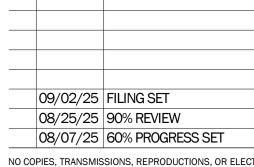
Contractor CTS Builders PROVIDE 1-1/2" NATURAL GAS PIPING UP THRU ROOF TO SERVE UNITS AS SHOWN.

Structural Engineer
Penn Fusion Engineering

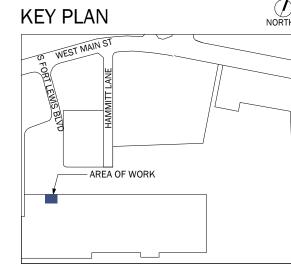
MEP Engineering
Wolf Engineering



P.O. BOX 38 | DALTON, GA 30722



NO COPIES, TRANSMISSIONS, REPRODUCTIONS, OR ELECTRONIC REVISIONS OF ANY PORTIONS OF THESE DRAWINGS IN WHOLE OR IN PART BE MADE WITHOUT THE EXPRESS WRITTEN PERMISSION OF MARIN ARCHITECTS. ALL DESIGNS INDICATED IN THESE DRAWINGS ARE PROPERTY OF MARIN ARCHITECTS. ALL COPYRIGHTS RESERVED © 2019.



CLIENT:

PROJECT NAME:

US FOODS MEZZANINE RENOVATION

PROJECT ADDRESS:

40 S FORT LEWIS BLVD SALEM, VA 24153

DWG TITLE:

PLUMBING - ROOF PLAN



# MARIN ARCHITECTS

57W 38TH ST LVL 10 NEW YORK NY 10018 212 463 8480 INFO@ MARINARCHITECTS.COM

Contractor
CTS Builders

Structural Engineer
Penn Fusion Engineering

MEP Engineering
Wolf Engineering

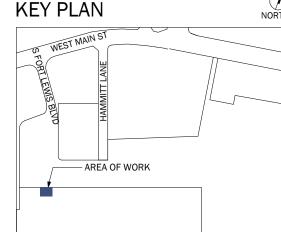
P.O. BOX 38 | DALTON, GA 30722

09/02/25 FILING SET 08/25/25 90% REVIEW 08/07/25 | 60% PROGRESS SET

NO COPIES, TRANSMISSIONS, REPRODUCTIONS, OR ELECTRONIC REVISIONS OF ANY PORTIONS OF THESE DRAWINGS IN WHOLE OR IN PART BE MADE WITHOUT THE EXPRESS WRITTEN PERMISSION OF MARIN ARCHITECTS. ALL DESIGNS INDICATED IN THESE DRAWINGS ARE PROPERTY OF MARIN ARCHITECTS. ALL COPYRIGHTS RESERVED

**KEY PLAN** 

© 2019.



PROJECT NAME: US FOODS MEZZANINE RENOVATION

PROJECT ADDRESS:

40 S FORT LEWIS BLVD SALEM, VA 24153

DWG TITLE:

PLUMBING SCHEDULES

SEAL	DATE:	9/2/2025 2:38:
MEALTHON	PROJECT No:	20250
	DRAWING BY:	
	CHK BY:	
SIC MICHAEL Z	OWG No:	
Lic.No.402053869	P-50	1.00
SONN ES		

			WA	STE		DON	MESTIC WA	TER	
MARK	DESCRIPTION	QTY	DFU	TOTAL DFU	CWFU	TOTAL CWFU	HWFU	TOTAL HWFU	TOTAI WSFL
FS-3	FLOOR SINK	7	4	28		0		0	0
HD-1	HUB DRAIN	1	4	4		0		0	0
HS-1	SINK	2	2	4	1	2	1	2	2.8
K-8	POT FILLING FAUCET	1	0	0	3	3	3	3	4
KE-03	COMMERCIAL SINK	1	3	3	3	3	3	3	4
S-1	SINK	1	2	2	1	1	1	1	1.4
S-2	SINK	1	2	2	1.125	1.125	1.125	1.125	1.5
S-3	SINK	1	2	2	1	1	1	1	1.4
OTALS				45		11.125		11.125	15.1

	KITCHEN EQUIPMENT SCHEDULE												
MADIC	CONNECTION SIZES												
MARK	MANUFACTURER	MODEL CW HW WASTE VENT GAS				VENT	GAS	PRODUCT SPECIFICATION					
K-8	BY OTHERS	BY OTHERS	1/2"	1/2"	0"			DUAL LEVER SWIVEL FAUCET WITH 12" SPOUT. ONE AERO MODEL NO. S-17 BASKET ASSEMBLY, P-TRAP, TAILPIECES, SUPPLIES AND STOPS.					
KE-03	BY OTHERS	BY OTHERS	1/2"	1/2"	2"		0"	THREE COMPARTMENT, 16 GAUGE. DUAL LEVER SWIVEL FAUCET WITH 18" SWING SPOUT. THREE AERO MODEL NO. S-20 TWIST TYPE LEVERWASTE, AERO MODEL NO. S-22 3 COMPARTMENT CONTINUOUS WASTE, SUPPLIES AND STOPS.					

	GAS-FIRED WATER HEATER SCHEDULE														
MANUFACTURER		PRODUCT	DOMESTIC	TEMP.	НОТ	RECOVERY	STORAGE		G	AS BURNER		ELECT	RICAL	NOTES	
MARK	MANUFACTURER	MODEL	TYPE	PIPING SIZE	RISE	SETPOINT	CAPACITY	CAPACITY	TYPE	INPUT RATING	OUTPUT RATING	EFFICIENCY	VOLTAGE	PHASE	NOTES
GWH-1	AO SMITH	DTU 100	STORAGE	1 1/2"	100 °F	140 °F	235 GPH	06.041	NG	199,900 BTU/H	194,000 BTU/H	97%	120 V	1	PROVIDE ASSE 1017 COMPLIANT MIXING
	AO SMITH	ITH BTH-199 STO	STURAGE	1 1/2	100 F	140 F	230 GPH	96 GAL	ING	199,900 B10/H	194,000 BTU/H	9/%	120 V		VALVE; POWERS SERIES LFSH OR EQUAL.

			DOMESTIC	CIRCUL	ATOR	PUMP SC	HEDULE					
IDENTITY	MANUICACTURER	MODEL	MATERIAL	PUMP DESIGN		DESIGN	CONNECTIONS		MOTOR		ELECTRICAL	
IDENTITY	MANUFACTURER	MODEL	MATERIAL	FLOW	HEAD	PIPE SIZE	SUCTION	DISCHARGE	POWER	FLA	VOLTAGE	PHASE
DCP-1	BELL & GOSSETT	ECOCIRC E3-6V	BRASS	3.0 GPM	6.0 FT	1/2"	1/2"	1/2"	28 W	1.0 A	120 V	1

							PLUMBING FIXTURE SCHEDULE
MARK	MANUFACTURER	MODEL	CONNECTION SIZES			S	
WARK			CW	HW	WASTE	VENT	PRODUCT SPECIFICATION
FS-3	WATTS	FS-730			3"		12" SQUARE X 6" DEEP SANITARY FLOOR SINK WITH WHITE PORCELAIN ENAMEL COATED INTERIOR, LOOSE SET PORCELAIN ENAMEL COATED CAST IRON GRATE, ALUMINUM DOME BOTTOM STRAINER, AND NO HUB OUTLET.
HD-1	WATTS	FD-100-DD			3"		EPOXY COATED CAST IRON FLOOR DRAIN WITH ANCHOR FLANGE, REVERSIBLE CLAMPING COLLAR WITH PRIMARY & SECONDARY WEEPHOLES ADJUSTABLE CAST IRON HUB FUNNEL, AND NO HUB OUTLET.
HS-1	ELKAY	EHS-18X	1/2"	1/2"	2"	2"	SINGLE COMPARTMENT, WALL HUNG, 18 GAUGE, WITH STRAINER AND FAUCET INCLUDED, P-TRAP, TAILPIECES, SUPPLIES AND STOPS. PROVID WITH HAWS MODEL NO. 7620 FAUCET MOUNTED EYEWASH AXION EYEPOD.
LAV-1	AMERICAN STANDARD	LUCERNE	1/2"	1/2"	1 1/2"	2"	WALL HUNG LAVATORY WITH BACKSPLASH, FAUCET HOLES ON 4" CENTERS. DECK-MOUNTED FAUCET WITH SENSOR, WATER TURBINE POWER WITH VANDAL RESISTANT SPRAY, EXTERNAL ASSE 1070 COMPLIANT THERMOSTATIC MIXING VALVE, GRID DRAIN, LOOSE KEY ANGLE STOPS AN SUPPLIES. INSULATE WATER AND WASTE WITH INSULATION KIT.
S-1	ELKAY	LRAD221955-3	1/2"	1/2"	11/2"	2"	SINGLE COMPARTMENT, ADA COMPLIANT, SELF-RIMMING, 18 GAUGE. SINGLE LEVER SWIVEL FAUCET. ONE ELKAY MODEL NO. LK35 BASKET STRAINER, P-TRAP, TAILPIECES, SUPPLIES AND STOPS. INSULATE WATER AND WASTE TO MEET ADA REQUIREMENTS.
S-2	ELKAY	LRAD291855	1/2"	1/2"	1 1/2"	2"	TWO COMPARTMENT, 16 GAUGE. DUAL LEVER SWIVEL FAUCET WITH 14" SPOUT. TWO AERO MODEL NO. S-17 BASKET ASSEMBLY, P-TRAP, TAILPIECES, SUPPLIES AND STOPS.
S-3	ELKAY	LRAD221955-3	1/2"	1/2"	1 1/2"	2"	SINGLE COMPARTMENT, ADA COMPLIANT, SELF-RIMMING, 18 GAUGE. SINGLE LEVER SWIVEL FAUCET. ONE ELKAY MODEL NO. LK35 BASKET STRAINER, P-TRAP, TAILPIECES, SUPPLIES AND STOPS. INSULATE WATER AND WASTE TO MEET ADA REQUIREMENTS.
WC-2	AMERICAN STANDARD	MADERA	1"		4"	2"	ELONGATED FLOOR MOUNTED WATER CLOSET, 1-1/2" TOP SPUD, WITH CHURCH 295CT ELONGATED OPEN FRONT SEAT. SOLAR POWERED SENSOR ACTIVATED FLUSHOMETER.

1. PROVIDE HYDROTOL 1" WATER HAMMER ARRESTOR, JR SMITH 5030, AS NEEDED.
2. PROVIDE 1/2" CONNECTION PRIME RITE TRAP PRIMER, PPP MP-500, AS NEEDED.

REMARKS:

3. ANY SUBSTITUTIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND OWNER PRIOR TO BID AND CONSTRUCTION.

4. ALL PLUMBING FIXTURES TO BE SUPPLIED AND INSTALLED BY THE GENERAL CONTRACTOR.

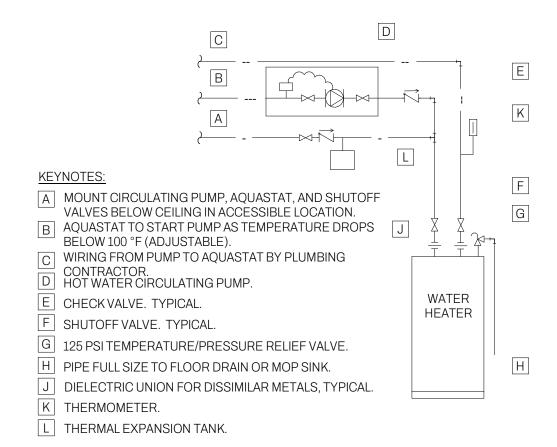
5. ALL PLUMBING FIXTURES AND ACCESSORIES SHALL COMPLY WITH THE LATEST ADA (AMERICANS WITH DISABILITIES ACT) STANDARDS FOR ACCESSIBLE DESIGN.

HYDROMECHANICAL GREASE INTERCEPTOR SCHEDULE												
MARK	MANUFACTURER	LOCATION	FLOW RATE	RATING	LIQUID CAPACITY	WEIGHT	OP. WEIGHT	DIMENSIONS	REMARKS			
GI-1	SCHIER	SUSPENDED	75GPM	861LBS	125 GALLONS	190 LBS	1170 LBS	43"TX33"WX47"L	ALL			
	MDV0											

1. UNIT CONTAINS INTEGRATED BAFFLES AND FLOW CONTROL DEVICE CONFORMING TO TYPE D ASME STANDARDS, WITH 25% KITCHEN SOLIDS CAPACITY.
2. UNIT SHALL CONTAIN MANUFACTURER'S TRIPLE OUTLET FOR REMOTE PUMPOUT SERVICE.
3. PROVIDE UNIT WITH MANUFACTURER'S TRAFFIC COVER.
4. STRUCTURAL TO COORDINATE INSTALLATION LOCATION, ACCESS, AND SUPPORTS.

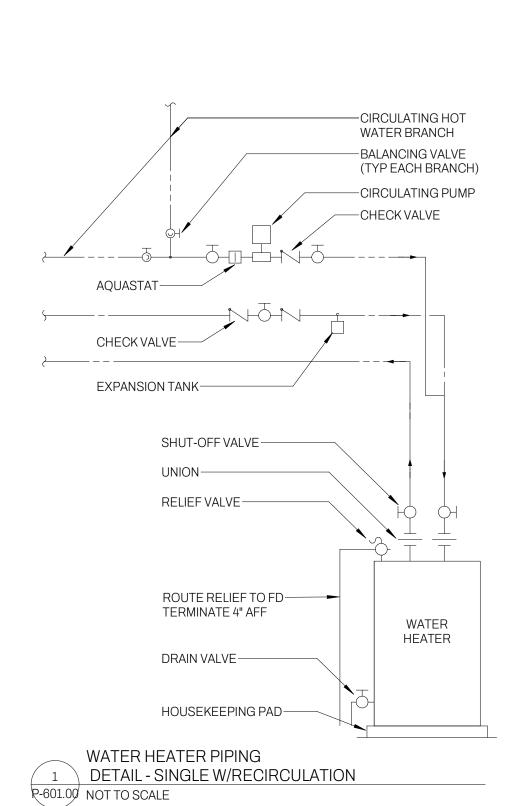
# VARIES AS REQUIRED BY PIPE INVERT PROVIDE PLUG AT THIS HUB IF PIPE DOES NOT CARRY THRU

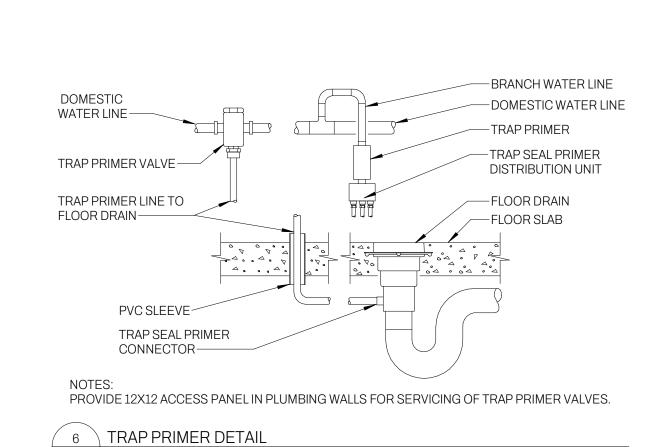


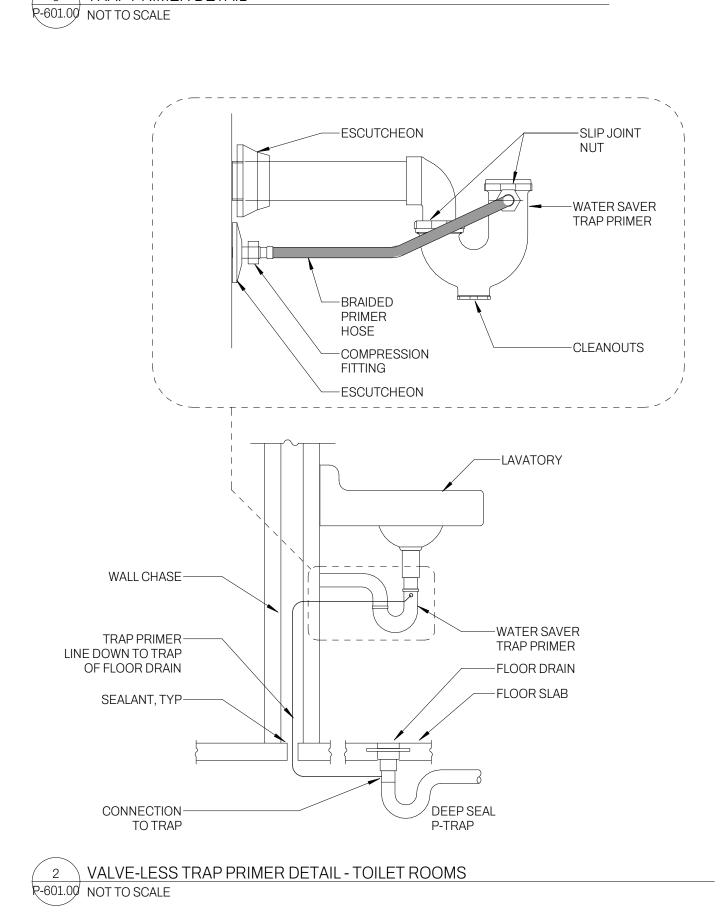


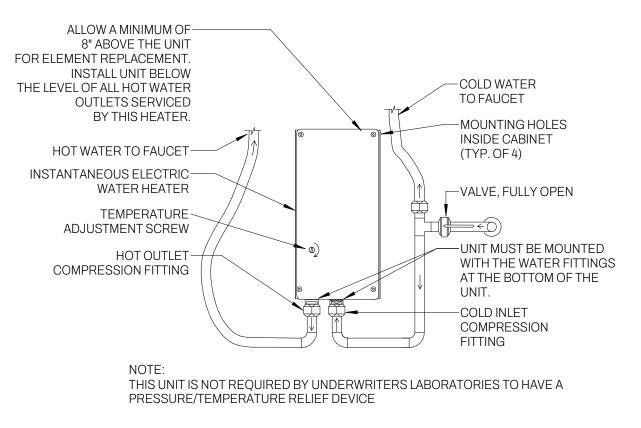
FLOOR OR PLATFORM MOUNTED

5 HOT WATER CIRCULATING PUMP PIPING DETAIL
P-601.00 NOT TO SCALE

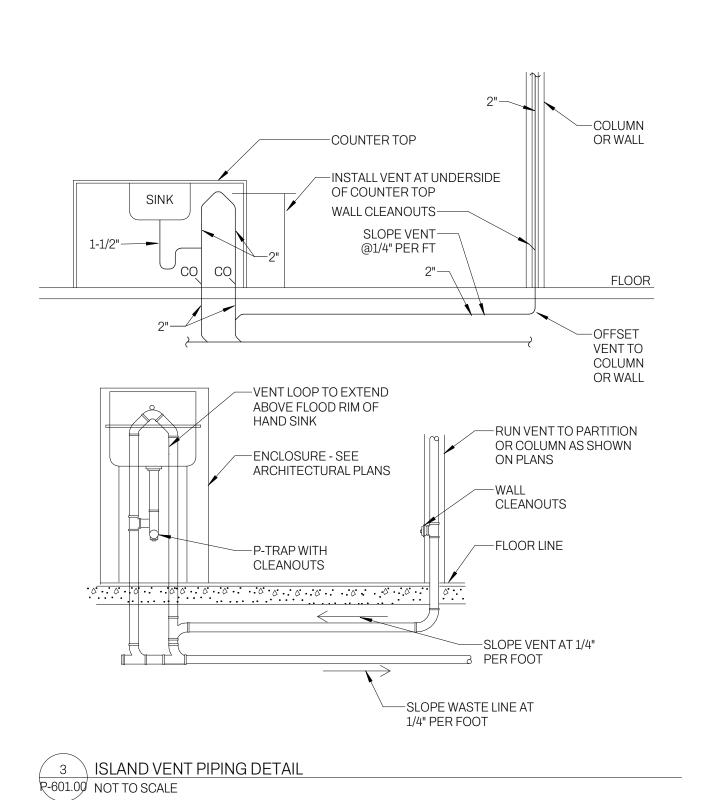


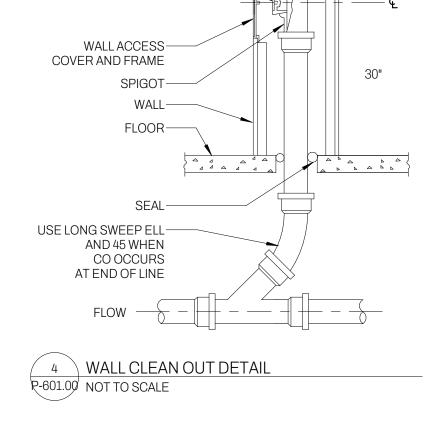












-HOLD HORIZONTAL DRAIN,

VENT AND WATER PIPING

IN FOOD SERVICE MIN 6"

ABOVE FLOOR TO ALLOW

COVERING THICKNESS

FLOOR CLEANING

-FINISHED FLOOR,

**VERIFY FLOOR** 

—INTERNAL DOME

STRAINER

-HALF GRATE

2" AIR GAP—

8 FLOOR SINK P-601.00 NOT TO SCALE

CLEANOUTS-

PLUG

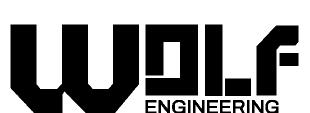
# MARIN ARCHITECTS

57W 38TH ST LVL 10 NEW YORK NY 10018 212 463 8480 INFO@ MARINARCHITECTS.COM

Contractor
CTS Builders

Structural Engineer
Penn Fusion Engineering

MEP Engineering
Wolf Engineering







CLIENT:

PROJECT NAME:

US FOODS

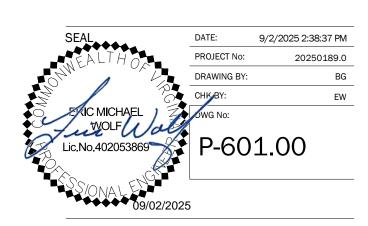
MEZZANINE RENOVATION

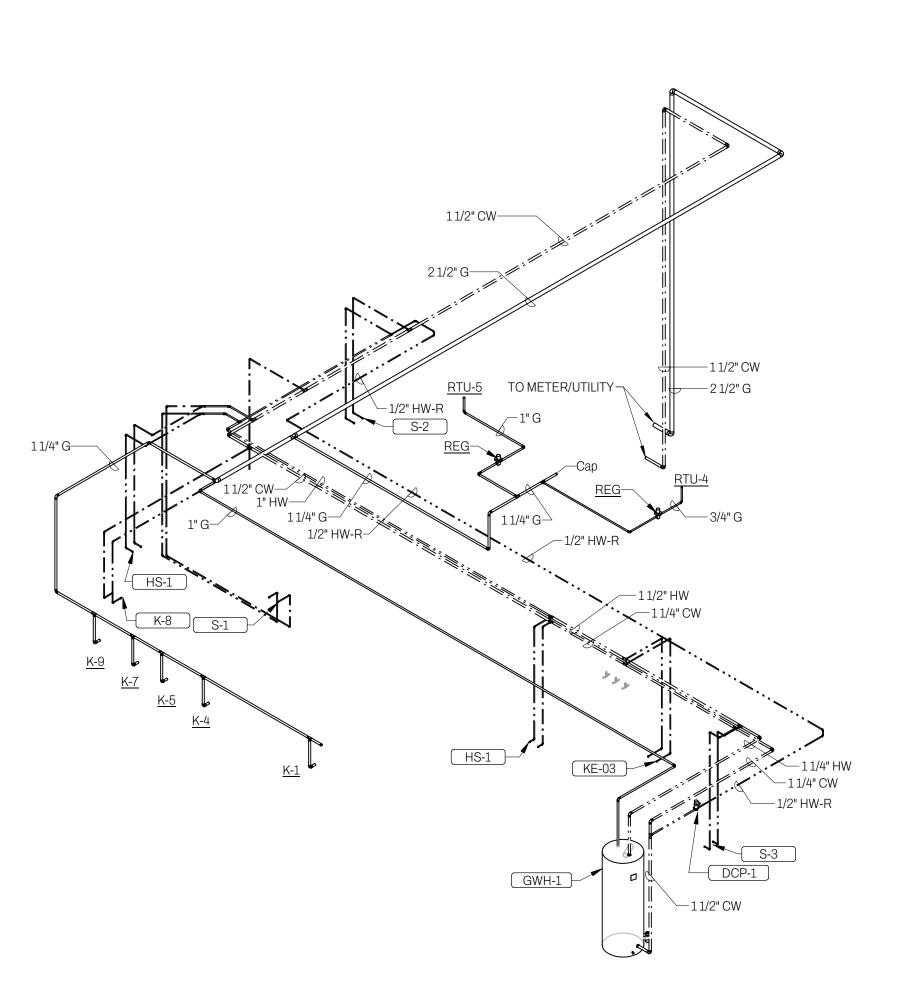
PROJECT ADDRESS:

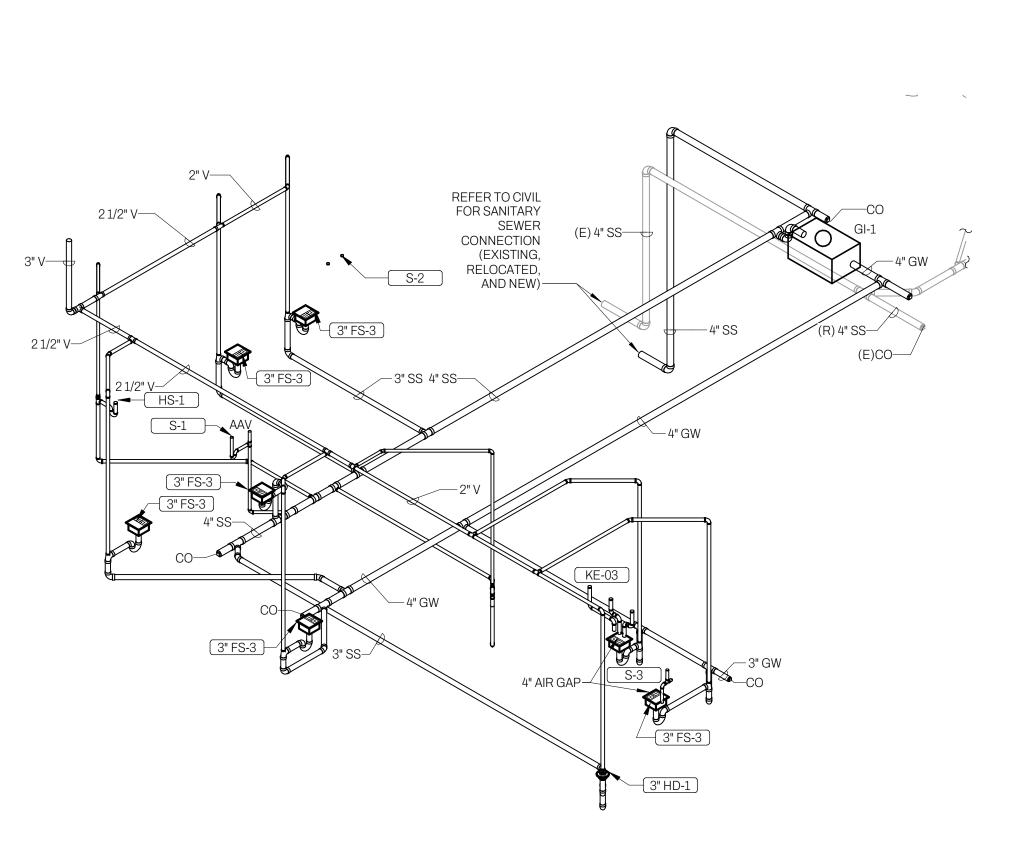
40 S FORT LEWIS BLVD SALEM, VA 24153

DWG TITLE:

PLUMBING DETAILS









PLUMBING - DOMESTIC WATER AND NATURAL GAS RISER DIAGRA

#### **GENERAL NOTES**

- A. IT IS THE RESPONSIBILITY OF THE GENERAL AND PLUMBING CONTRACTOR TO FULLY INSPECT THE SITE PRIOR TO COMMENCEMENT.
- B. VERIFY ALL EXISTING CONDITIONS INCLUDING LOCATION OF ALL STRUCTURAL ELEMENTS, BAR JOISTS, COLUMNS, ETC. AND COORDINATE PIPING SYSTEMS AND LOCATIONS ACCORDINGLY.

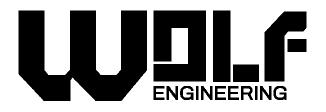


57W 38TH ST LVL 10 NEW YORK NY 10018 212 463 8480 INFO@ MARINARCHITECTS.COM

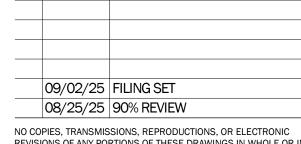
Contractor
CTS Builders

Structural Engineer
Penn Fusion Engineering

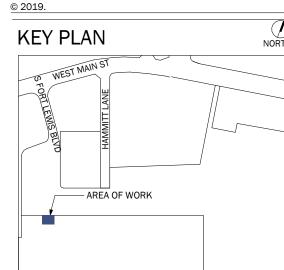
MEP Engineering
Wolf Engineering



P.O. BOX 38 | DALTON, GA 30722



NO COPIES, TRANSMISSIONS, REPRODUCTIONS, OR ELECTRONIC REVISIONS OF ANY PORTIONS OF THESE DRAWINGS IN WHOLE OR IN PART BE MADE WITHOUT THE EXPRESS WRITTEN PERMISSION OF MARIN ARCHITECTS. ALL DESIGNS INDICATED IN THESE DRAWINGS ARE PROPERTY OF MARIN ARCHITECTS. ALL COPYRIGHTS RESERVED © 2019.



CLIENT:

PROJECT NAME:

US FOODS
MEZZANINE RENOVATION

PROJECT ADDRESS:

40 S FORT LEWIS BLVD SALEM, VA 24153

DWG TITLE:

PLUMBING - RISER DIAGRAM

