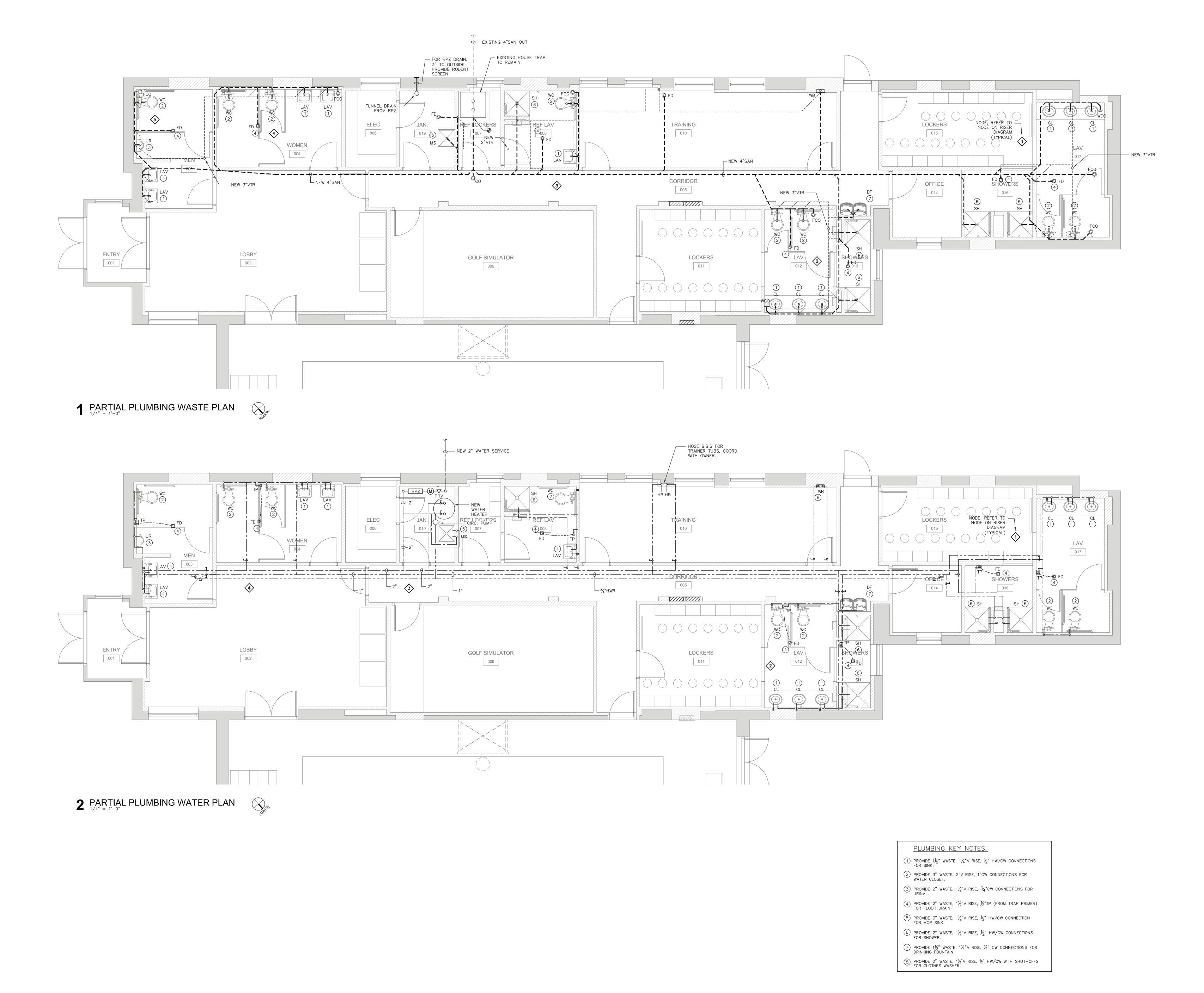


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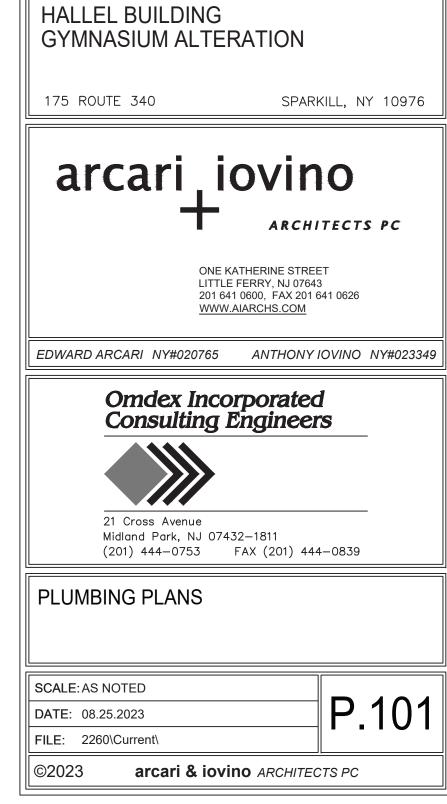
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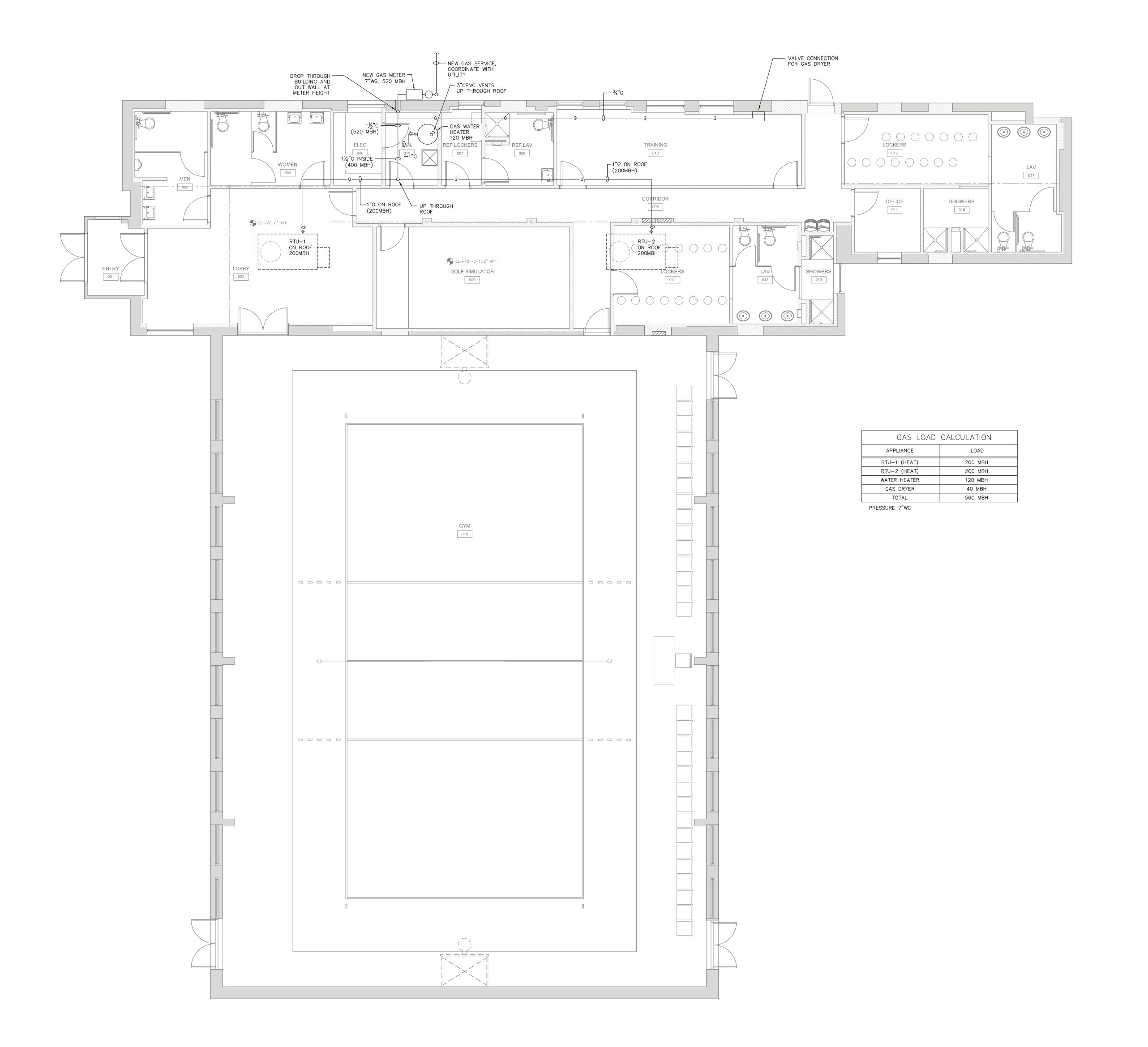
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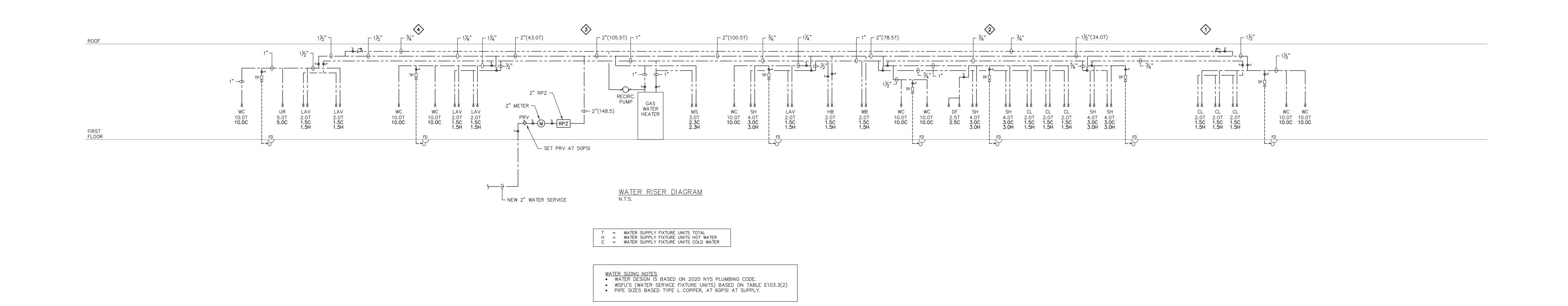


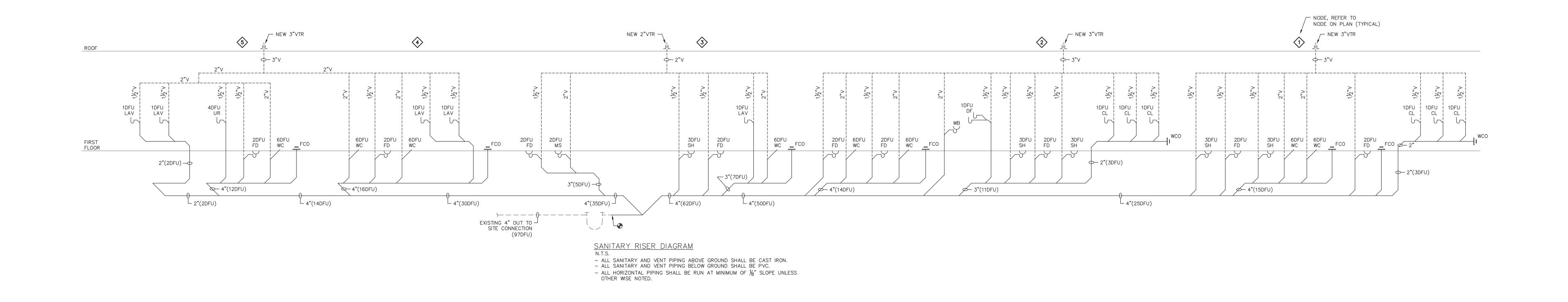


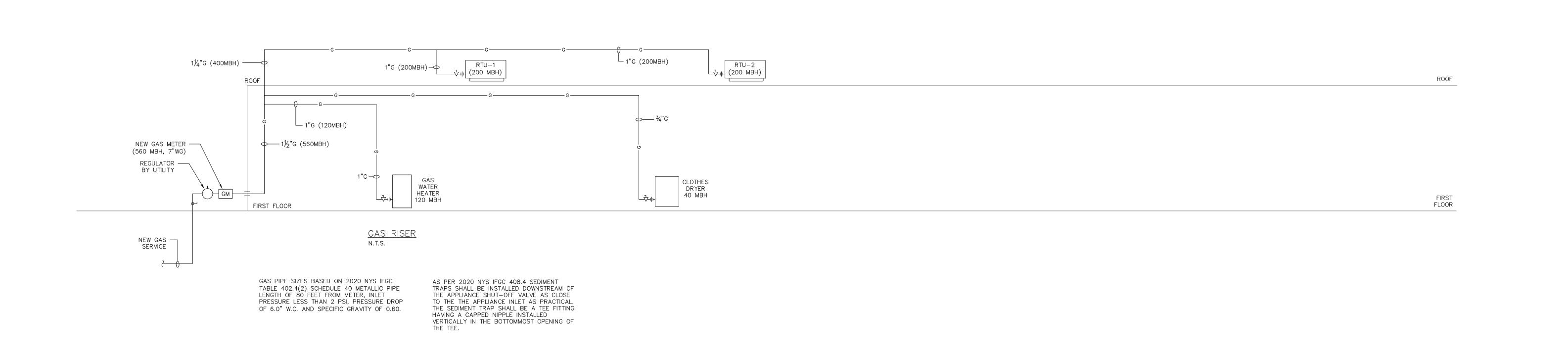
175 ROUTE 340 SPARKILL, NY 10976 ARCHITECTS PC ONE KATHERINE STREET LITTLE FERRY, NJ 07643 201 641 0600, FAX 201 641 0626 WWW.AIARCHS.COM EDWARD ARCARI NY#020765 ANTHONY IOVINO NY#023349 Omdex Incorporated Consulting Engineers 21 Cross Avenue Midland Park, NJ 07432-1811 (201) 444-0753 FAX (201) 444-0839 PLUMBING GAS PLAN SCALE: AS NOTED DATE: 08.25.2023

09.14.23 ISSUED FOR BID 08.25.23 FOR PERMIT HALLEL BUILDING GYMNASIUM ALTERATION

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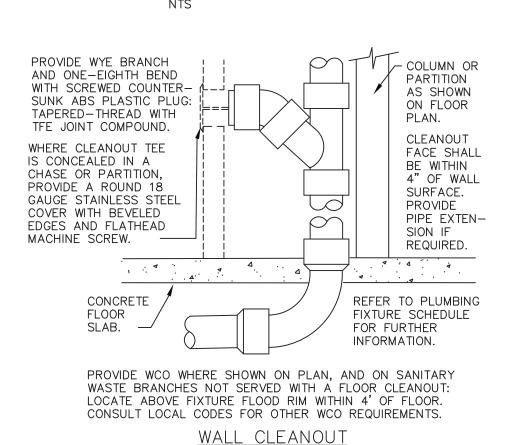
PROVIDE ROUND SECURED NICKEL BRONZE ADJUSTABLE TOP WITH "CO" CAST IN COVER. PROVIDE CLEANOUT TOP WITH VARIATIONS SUITABLE FOR FLOOR COVERING (CARPET MARKER, RECESSED FOR TILE, SCORIATED FOR UNFINISHED FLOORS). PROVIDE BRONZE PLUG IN CAST IRON BODY. MEMBRANE CLAMP FLOOR SLAB ON GRADE AS REQUIRED FOR SAME SIZE AS SEWER DEPTH OF SEWER UP TO 4" MAXIMUM. HUB AND SPIGOT -LONG SWEEP ELBOW AT CAST IRON PIPE END OR TURN OF RUN. BELOW FLOOR. SANITARY OR STORM
SEWER LINE

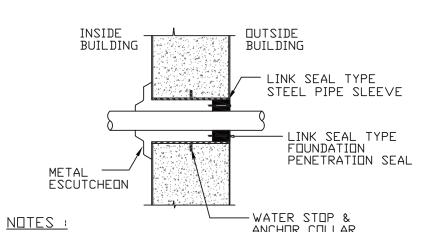
COMBINATION WYE AND
EIGHTH BEND IN RUN.
ENTER TOP OF PIPE.

DIRECTION
OF FLOW LOCATE AT BUILDING EXIT, AT ENDS OF RUNS, AT TURNS OF PIPE GREATER THAN 45 DEGREES, AT 50' INTERVALS ON STRAIGHT RUNS, AND WHERE SHOWN ON PLANS. PROVIDE BACKFILL PER ARCHITECTURAL SPECIFICATIONS.

LOCATE CLEANOUTS WHERE THERE IS 18" CLEAR AROUND.

CONSULT LOCAL CODES FOR OTHER FCO REQUIREMENTS.

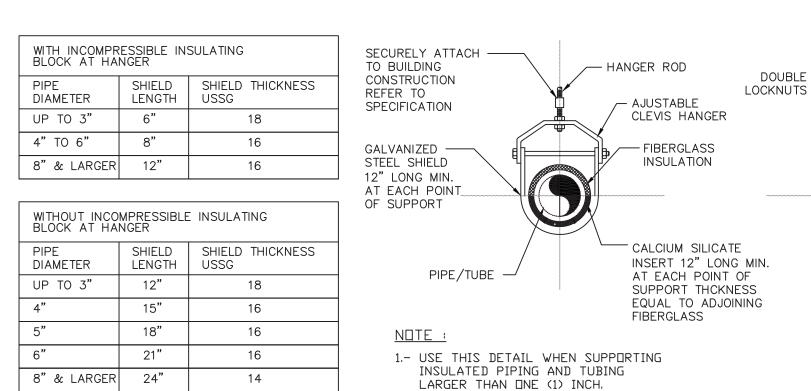




ANCHOR COLLAR 1.- USE FOR ALL PIPING EXCEPT 3.- FOR GAS PIPING REFER TO GAS GAS PIPING PENETRATING COMPANY REQUIREMENTS.

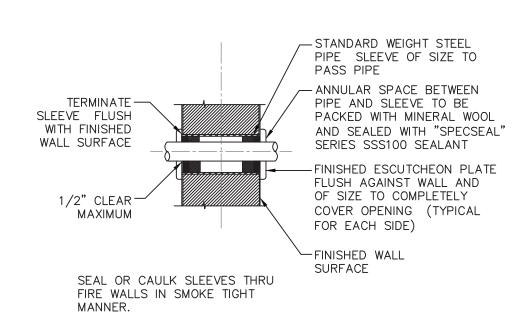
FOUNDATION WALL. 4.- COORDINATE WITH STRUCTURAL AND 2.- FOR SLEEVE DIAMETER USE ARCHITECTURAL DRAWINGS. MANUFACTURERS SIZE RECOMENDATIONS.

PIPE PENETRATION — FOUNDATION WALL BELOW GRADE NOT TO SCALE

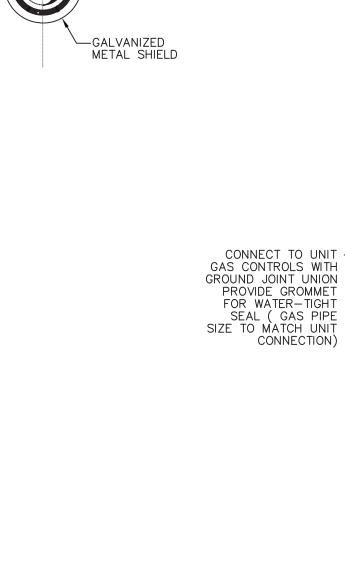


ADJUSTABLE CLEVIS PIPE SUPPORT HANGER, ROD & INSERT SHALL BE DIPPED IN ZINC CHROMATE PRIMER PRIOR TO INSTALLATION NOT TO SCALE

> TYPICAL INSULATED PIPE SUPPORT NOT TO SCALE



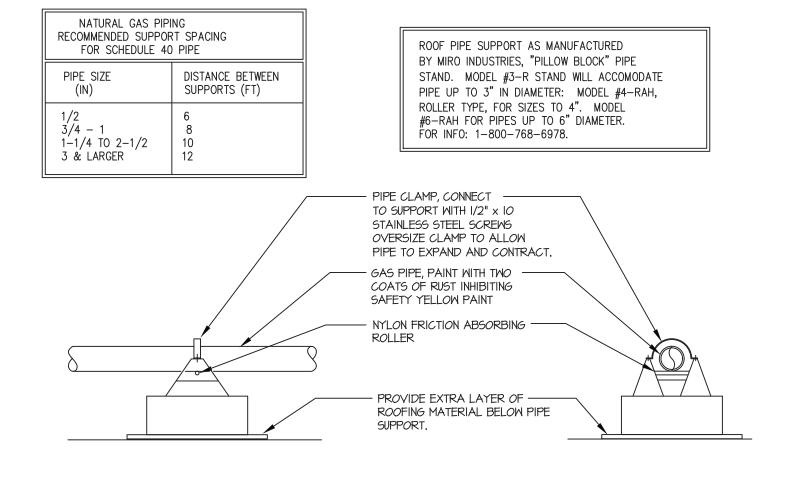
DETAIL OF PIPE PENETRATING THRU FIRE RATED WALL/FLOOR/CEILING



---THREADED ROD

CLEVIS HANGER

INSULATION



FLUE _

NEW GAS COCK WITH PLUGGED 1/8" NPT TEST GAUGE CONNECTION

- PAD/GRADE

<u> TYPICAL GAS PIPING CONNECTION</u>

CONTRACTOR SHALL VERIFY ALL MECHANICAL GAS FIRED EQUIPMENT CONNECTION LOCATIONS IN THE FIELD PRIOR TO

INSTALLING ANY GAS PIPE MAINS OR BRANCHES.

NEW HVAC UNIT GAS PIPING CONNECTION

EQUIPMENT

-GAS PIPING RUN ON ROOF

GAS LINES, SIZE

SHUT-OFF -

EXTEND 6

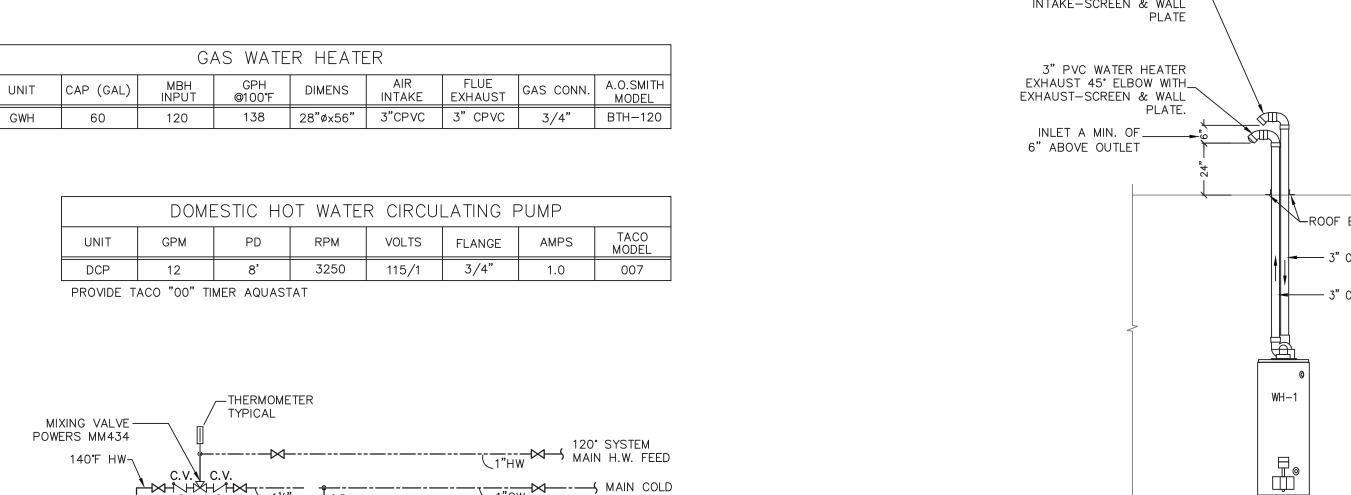
HVAC UNIT

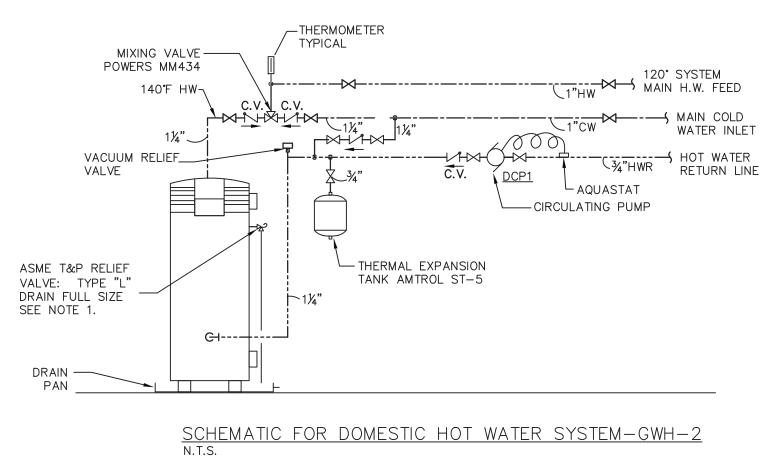
NEW DIRT POCKET-

COCK

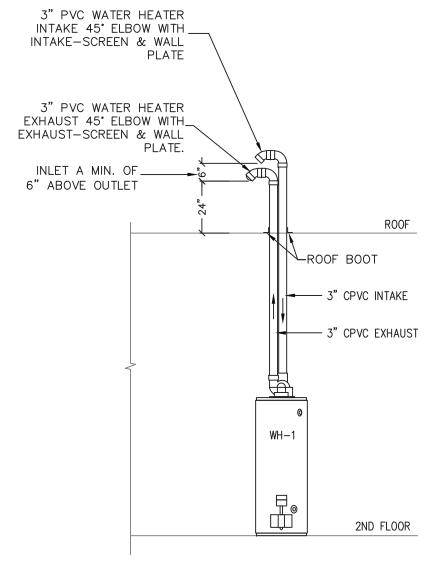
AS PER PLANS 7

ROOFGAS PIPE SUPPORT DETAIL

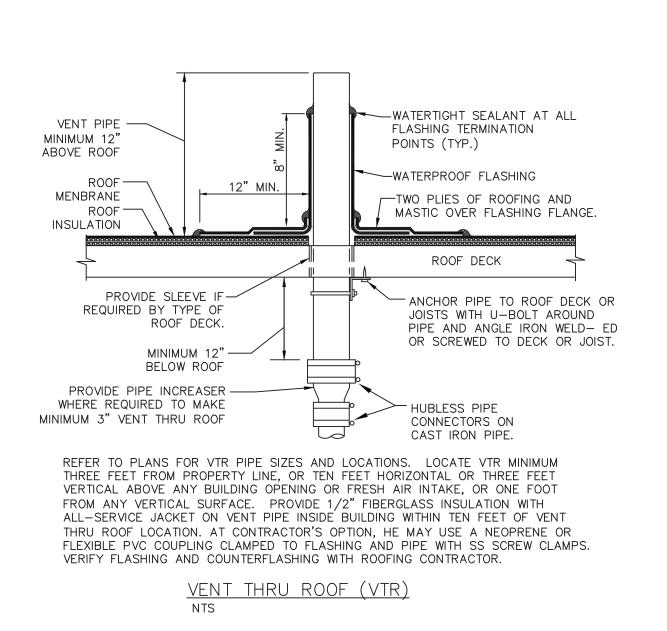


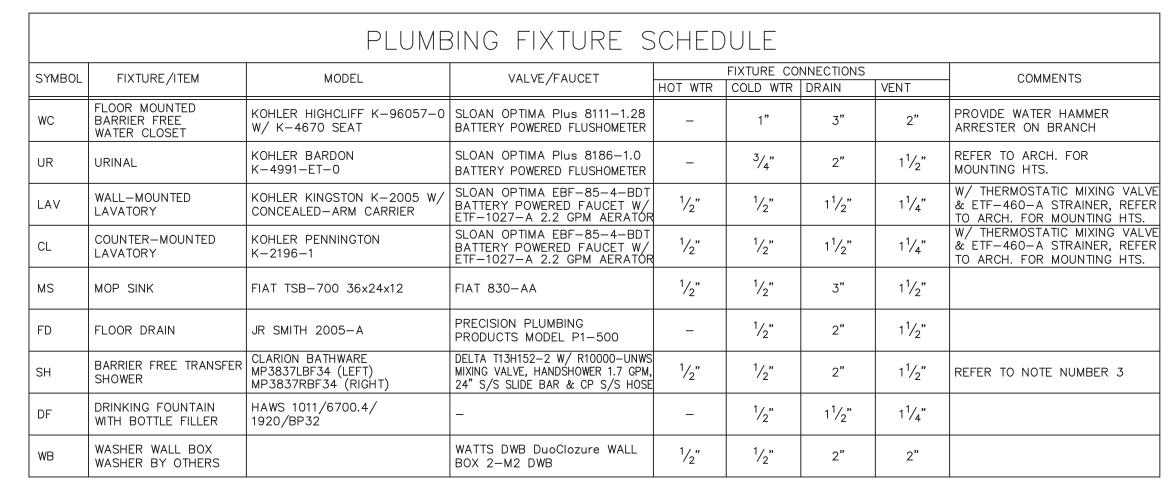


NOTE:		COLD WATER LINE
1. T & P RELIEF VALVE PIPING SHAL	VALVE PIPING SHALL	HOT WATER LINE
	FLOOR DRAIN	HOT WATER RETURN LINE



WATER HEATER FLUE THRU ROOF DETAIL





NOTES:
1. COORDINATE ALL COLORS & FINISHES_WITH ARCHITECT_

PROVIDE McGUIRE PRO-WRAP INSULATING KIT ON TRAPS AND DOMESTIC WATER SUPPLIES TO ALL LAVATORIES. PROVIDE THE FOLLOWING CLARION BATHWARE TRANSFER SHOWER ACCESSORIES:

A. #503218 GRAB BAR #400-33.5"-SDL FOLDING SEAT

BRASS DRAIN

#CR-59 1/4 CURTAIN ROD CURTAIN

G. COLLAPSIBLE THRESHOLD KIT 2.5a

PLUMBING GENERAL NOTES:

. RUN HOT AND COLD WATER LINES DOWN IN WALLS OR CHASES -BRANCH TO FIXTURES AS REQUIRED.

. ALL DOMESTIC WATER LINES ABOVE GROUND, TYPE "L" COPPER UNLESS NOTED OTHERWISE.

INSULATE ALL HOT AND COLD WATER PIPING ABOVE GROUND AND CEILINGS WITH 1" THICK FIBERGLASS INSULATION FOR PIPES UP TO 11/2" AND 11/2" THICK FIBERGLASS INSULATION FOR PIPES 2" AND UP. PROVIDE WITH A FACTORY APPLIED VAPOR BARRIER UNLESS NOTED

CONTRACTOR SHALL COORDINATE ALL WORK WITH THE LOCAL CODE OFFICIAL PRIOR TO EXECUTION OF ANY WORK OR PURCHASE OF ANY

INSTALL PIPING AFTER DUCTWORK HAS BEEN PLACED.

COORDINATE ALL WORK WITH THAT OF OTHER TRADES; ELECTRICAL, ETC. DRAWINGS ARE DIAGRAMMATIC AND SHOW GENERAL ARRANGEMENT OF

8. PROVIDE WATER HAMMER ARRESTORS. NO SITE BUILT ARRESTORS ARE ALLOWED. 9. PROVIDE ALL REQUIRED CUTTING AND TRENCHING OF EXISTING FLOOR.

BACKFILL AND PATCH FLOOR TO MATCH EXISTING. 10. EXACT LOCATIONS OF ITEMS NOTED AS BEING EXISTING SHALL BE VERIFIED IN THE FIELD.

11. APPROXIMATE LOCATIONS OF EXISTING HW, CW, HWR, VENTS, WASTE, GAS, AND STORM WATER PIPING IN CEILING. WHERE REQUIRED IN ORDER TO ACCOMMODATE NEW WORK, RAISE OR LOWER OR RELOCATE PIPING

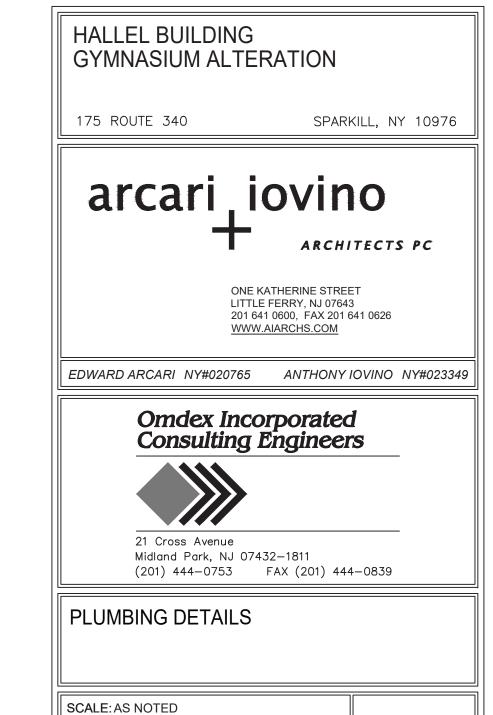
TO SUIT NEW CONDITIONS. 12. MINOR DETAILS NOT USUALLY SHOWN OR SPECIFIED, BUT NECESSARY FOR PROPER CONSTRUCTION OF ANY PART OF THE WORK SHALL BE

INCLUDED AS IF THEY WERE INDICATED ON THE DRAWINGS.

PLUMBING LEGEND 4" SAN ROUGHING IN FLOOR cw ----- COLD WATER PIPING E CW ------ EXISTING COLD WATER PIPING HW ----- HOT WATER PIPING E HW ---- EXISTING HOT WATER PIPING SAN ---- NEW SAN PIPING E SAN ---- EXISTING SAN PIPING ----- VENT PIPING EXISTING VENT PIPING NEW GAS PIPING EG —————— EXISTING GAS PIPING DENOTES EXISTING VALVE CLEAN OUT (FLOOR MOUNTED) CLEAN OUT (WALL MOUNTED) NEW CONNECTION TO EXISTING ELBOW UP ELBOW DOWN

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1.1 GENERAL CONDITIONS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections apply to work specified in this Section; consult them in detail for

B. Manufacturers referenced in the technical specifications are for the purpose of establishing a standard of quality.

1.2 CODES AND STANDARDS

A. All workmanship and material shall conform to the rules and regulations of the current editions of the regulating agencies listed below and regulations of the local utility companies. These rules, regulations and codes shall govern as a minimum standard. In the event of conflict with the Contract drawings or specifications requiring workmanship or material of a higher quality than required by the above-mentioned rules, regulations and codes, the most stringent shall apply.

ADA - Americans with Disabilities Act 2020 NYS Building Code 2020 NYS Fuel Gas Code 2020 NYS Mechanical Code 2020 NYS Plumbing Code 2020 NYS Energy Conservation Code

NFPA - National Fire Protection Association

AMCA - Air Movement and Control Association, Inc. SMACNA - Sheet Metal and Air Conditioning Contractors National Association, Inc.

ASHRAE - American Society of Heating, Refrigerating, and Air-Conditioning Engineers IPCEA - Insulated Power Cables Engineers Association NEC - National Electrical Code of the NFPA NEMA - National Electric Manufacturers Association National Board of Fire Underwriters AABC - Associated Air Balance Council ARI - Air Conditioning and Refrigeration Institute UL - Underwriter's Labs. Local Utility Requirements PDI Plumbing and Drainage Institute

ASSE American Society of Sanitary Engineering

ASTM American Society for Testing Materials

The Owner's Insurance Underwriter

During this work, this Contractor shall be responsible for maintaining safety among persons in his employ in accordance with the standards set by the OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970. The Engineer shall be held harmless for any accident, injury, or any other incident resulting from non-conformance with these or any other standards.

1.3 QUALITY ASSURANCE

A. The Contractor shall use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of these Sections.

B. Without additional cost to the Owner, the Contractor shall provide such other labor and materials as are required to complete the work of this Section in accordance with the requirements of governmental agencies having jurisdiction, regardless of whether such materials and associated labor are called for elsewhere in these Contract Documents.

C. Engineering Drawings are symbolic and diagrammatic in nature and are intended to show only the For exact locations and dimensions, the Contractor shall review all Drawings provided; including, Architectural and Structural Drawings, Reflected Ceiling Plans, Plumbing, Fire Protection, Electrical and HVAC Drawings to confirm all requirements. It is the Contractor's responsibility to confirm that all equipment will fit. Any discrepancies or inconsistencies are to be reported immediately to the Architect and the Engineer for clarification. No extras or allowances will be made for such items after bid submission.

D. Examination of the site shall be made by the Contractor, who shall compare it with the Drawings and Specifications and who shall satisfy himself as to the conditions under which the work is to be performed. No allowance shall subsequently be made for any extra expense incurred due to failure or neglect to make such examination.

E. During the execution of work under this Contract the Contractor shall be responsible for protecting any equipment or structures in the work and adjacent areas.

F. Secure and pay for required authorizations from governmental agencies having jurisdiction.

G. All Work shall be guaranteed to be free from leaks or defects. Any defective materials or workmanship as well as damage to the work of all trades resulting from the same shall be replaced or repaired as directed for the duration of stipulated guarantee periods.

H. COORDINATION: Each Contractor shall be responsible for coordinating their work with that of all other trades. No installation shall take place without approval of onsite entity (General Contractor, Construction Manager, etc.) responsible for coordination. Any work installed without approval and which interferes with the work of other trades that have been approved shall be removed and replaced at the Contractor's expense.

I. EXPOSED PIPING: There shall be no exposed piping of any sort; plumbing, fire protection, whether implied by the MEP drawings or not, unless expressly approved by the Architect.

1.4 SUBMITTALS

A. Comply with pertinent provisions of General Documents.

B. PRODUCT DATA: Within the designated time period after the Contractor has received the Owner's Notice to Proceed, submit: 1. Materials list of items proposed to be provided under this Section with sources of supply and

manufacture. 2. Manufacturer's specifications, catalog cuts, and other data needed to prove compliance with the specified requirements. 3. Product substitutions are to be requested in writing, within 20 calendar days of the Notice to

Proceed (NTP). At the time of submission of cuts for review for all substitutions, clearly indicate Specification Section, provide complete information on the original product and the proposed product for approval, and all deviations.

a. Any substitutions requested by a contractor are to include all costs for related changes by other contractors. It is the responsibility of the contractor requesting the change to coordinate with any other trade impacted by the substitution.

1. When so requested by the Engineer, promptly provide samples of items scheduled to be exposed in

the final structure 2. When specifically so requested by the Contractor and authorized by the Engineer, authorized samples will be returned to the Contractor for installation on the Work.

D. Shop Drawings: 1. PLUMBING: Before fabrication or purchase of any equipment or controls, prepare and submit for review, shop drawings of layout and design of the complete hot and cold domestic water piping

systems, vents, sanitary and storm piping systems, and equipment, for approval before starting any work, at a scale not smaller than 1/4" = 1'-0". Include all access provisions, etc. Coordinate all of the above with all other trades. 2. Clearly identify by circle and by note "DEVIATION" and by note "INTERFERENCE", in large bold lettering, and deviations from Drawings and Specifications and any potential or unresolved interference

condition and assume full responsibility for failure to do so. 3. Submittal shall confirm fabrication and installation is in accordance with recommendations and

4. For mandatory coordination of all work, including that which penetrates structural members, consult General Conditions.

E. Corrections or comments made on shop drawings and submittals during review do not relieve the Contractor from compliance with requirements of the drawings and specifications. This check will only be for review of general conformance with the design concept of the project and general compliance with the information given in the contract documents. The Contractor shall be responsible for; confirming and correlating all quantities and dimensions, selecting fabrication process and techniques of construction, coordinating his work with that of all other trades, and performing his work in a safe and satisfactory manner.

F. STERILIZATION CERTIFICATE: Upon completion of water line sterilization, deliver two copies of an acceptable "Certificate of Performance" to the Engineer.

G. MANUALS: Upon completion of the work of this Section, the Contractor shall deliver to the Architect four copies of an operation and maintenance manual compiled in accordance with the provisions of General Conditions, and these Specifications. Include within each manual a copy of the Project Record Documents showing all work of the

2. Include detailed operating and maintenance instructions.

applicable instructions.

H. AS-BUILT DRAWINGS: concurrent with the progress of the work, the Contractor shall maintain a set of as-built record sepia drawings noting in red all changes in the work. Upon completion of the work this sepia set is to be turned over to the Owner for his records.

I. All required permits, fees and inspections shall be arranged and paid for by the Contractor. The Contractor shall present to the Owner, properly signed, all required certificates of final inspection and approval before the work will be accepted as complete

1.5 TRENCHING AND BACKFILLING

A. Perform trenching, backfilling and compaction in strict accordance with applicable codes and

B. Cut bottom of trenches to grade. Make trenches 12" wider than the greatest dimension of the pipe.

C. Bedding and backfilling: 1. Install piping promptly after trenching. Keep trenches open as short a time as practicable. 2. Under the building, install pipes on a 6" bed of damp compacted sand. Backfill to bottom of slab with damp sand, compacted in 6" layers.

within 12" of finish grade with damp sand, compacted. Backfill remainder with native soil placed in 6" layers, then compacted. 4. Do not backfill until installation has been authorized and until Project Record Documents have been properly annotated.

3. Outside the building, install underground piping on a 6" bed of damp sand, compacted. Backfill to

1.7 GAS EQUIPMENT SEISMIC CONNECTIONS

Final connection of gas piping to any equipment subject to vibration or movement shall utilize flexible stainless steel high BTU application gas connectors with PVC coating, Dormont Series 40, 50 or 60 by Dormont Mfg. Co., Export, PA or authorized equivalent.

1.8 SMOKE DETECTORS

Where applicable, duct smoke detectors shall be installed in the return ductwork only in accordance with 1996 International Mechanical BOCA Code Section 606.

1.9 INTUMESCENT FIRE BARRIER PLASTIC PIPE CAULKING

A. Provide where plastic pipe penetrates a rated wall, intumescent-type sealant complying with UL Fire Resistance Directory and ULC Volume 3 Fire Resistance Ratings, UL classified for use with PVC, CPVC, CCPVC, ABS, CCABS, PVDF, PP, PB and FRPP, HILTI FS-ONE or authorized equal.

1.10 INSTRUCTION

A. After all work is completed, the Contractor shall instruct employees designated by the Owner in the proper operation and maintenance of the equipment and systems installed under this Contract.

1.11 GUARANTEE

The Contractor shall guarantee his work for a period of one year after date of completion as witnessed by receipt of final payment. The Contractor shall promptly repair and make good any damage to the work of any other Contractor, during that period, that may be caused by defective materials or workmanship. Any defects in materials and workmanship shall be corrected by the Contractor without further expense to the Owner. He shall deliver to the Architect or Owner said written guarantee upon receipt of final payment.

1.12 DEBRIS REMOVAL

Routinely remove, in an orderly and efficient manner, (and cart away and dispose of, by legal means, off the site and premises), all debris related to work of this Section; worksite and staging areas shall be kept clear of all debris on a daily basis; permit no debris accumulation which poses any threat to life, safety or property. Non-conformance with the foregoing Contract requirements will be subject to all remedies established by the Project General Conditions.

END OF SECTION

SECTION 15400 PLUMBING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. WORK INCLUDED: Provide all labor, materials, equipment, paint, tools, and management services for proper and complete execution of all Plumbing work. Without restricting the generality of the foregoing, the following items of work are included: 1. Remove existing fixtures and cap and seal piping.

2. Provide all new domestic water piping for new fixtures from existing sources. 3. Complete new drain, waste and vent systems; connections including escutcheons,

connections, cleanouts and connection to building sanitary. 4. Purchase, installation and connection/piping of Plumbing Fixtures as specified on the drawings, with fittings, dielectric fittings, stops and traps, in the locations and quantities shown on the Drawings.

5. Insulation of hot and cold water piping, as well as exposed P-traps and drain piping.

6. Perform all cutting & patching, and fire caulking/sealing for plumbing installation.

7. Plumbing Contractor shall be responsible for coordination of all work with all other trades to

avoid conflicts. 8. Temporary water service as required to perform the Work.

9. Sleeves for pipes passing through walls and partitions. 10. Perform cleaning and protection of your work.

11. Access doors where required in walls and ceilings for installation by appropriate surface Contractor.

12. Seismic provisions, as required by code, for ALL plumbing systems and components.

13. Removal of all debris and rubbish related to this work.

Gas piping from existing gas service to new rooftop units.

15. Complete compressed air piping system, including all piping, fittings, hangers required. Provide connections to owner provide air compressor equipment including dryer

2.1 PLUMBING FIXTURES

PART 2 - PRODUCTS

A. Provide plumbing fixtures as shown on the Drawings with all hangers, supports and stops as required by code for a complete installation.

B. Provide handicapped flush valves to wide side of stalls as required by code.

2.2 SERVICE CONNECTIONS/METERS

A. Provide all water and sanitary utility connections.

B. Provide and install meters and pressure regulators if not provided by local utilities.

C. Coordinate all work with local utilities.

D. Provide controls and control wiring if applicable, coordinate with Electrical Contractor.

2.3 MATERIALS

A. All materials entering into this work shall be new and shall be of the best of their respective kinds and shall be installed in a neat and workmanlike manner. The Contractor shall be entirely responsible for all apparatus, equipment, and appurtenances furnished by him or his Sub-Contractors in connection with this work and special care shall be taken to protect all parts thereof in such manner as may be necessary or as directed. This protection shall include covers, crating, sheds, or other means to prevent dirt, plaster, grit or other foreign substances from entering piping, fixtures or equipment. Special care shall be taken to keep all open ends of pipes, etc. closed while in storage or during installation. The Contractor shall be responsible for and shall make good any damages without additional cost.

B. SOIL, VENT AND WASTE PIPING 1. All above ground sanitary piping shall be cast iron "No Hub" pipe (Cast Iron Soil Pipe Standard 301), with neoprene gasket, stainless steel band, and clamp (Cast Iron Soil Pipe

2. All below ground sanitary piping shall be PVC.

C. GALVANIZED OR BLACK STEEL PIPE

Provide standard weight complying with ASTM-A-12.

2. Provide Service weight fittings complying with ASTM-A-126 or ASTM-A-197.

D. COPPER HOT AND COLD WATER DOMESTIC SERVICE Provide type L complying with ASTM-B-88.

Fittings shall be 150 psi rated cast brass soldered type. Soldered joints shall be made with a LEAD FREE SOLDER.

4. All under-slab copper piping shall be soft, type K with NO JOINTS.

E. DIELECTRIC PIPE FITTINGS 1. Provide at all connections between dissimilar metals (e.g. steel, copper, iron), nylon insulator, Buna-N gasket, maximum temperature 210° F, 250 psig pressure rating, conforming to ANSI B16.39, B2.1 and B1.201 and Federal Specification WWU-531E and WWU-516B.

1. Provide black steel, schedule 40, minimum 150 PSI, screwed malleable iron fittings,

ASTM-A-120, (Standards are in 2015 International Fuel Gas Code). 2. Provide seismic restraints for all piping hangers longer than 12". All seismic restraints shall be in accordance with 2015 International Fuel Gas Code.

3. Construction must meet International Fuel Gas Code, American Gas Association, OSHA, UL and all other local and applicable codes. 4. Above ground gas piping 5" and larger, shall be Schedule 40 seamless steel pipe with steel

G. COMPRESSED AIR PIPING 1. Type "K" or "L" copper tube, ASTM B88, drawn, with wrought copper fittings conforming to ANSI

2. Unions: Factory-fabricated bronze assembly, for 1725-kPa (250 psi) minimum working pressure at 82 deg C (180 deg F).

welding fittings. Piping and fitting shall comply with gas company standards.

5. Above ground gas piping 4" and smaller shall be Schedule 40 seamless steel pipe and

3. Solder: ASTM B32, 50/50, special alloy, lead free, with non_corrosive flux. No purging with nitrogen is required. 4. Silver Brazing Alloy: AWS A5.8, Classification BCuP.

2.4 VALVE AND PIPING IDENTIFICATION

A. Identify piping with pipe identification labels.

5. Apply piping identification in accordance with ANSI A13.1

galvanized threaded malleable iron fittings.

B. Valves shall be designated by distinguishing numbers and/or letters on required chart(s) and/or diagram(s).

2.5 VALVES

A. GATE VALVES: Provide solid wedge disc, rising stem, 200# WOG; non-rising stem valves may be used only where there is insufficient clearance.

1. 3" and smaller, rising stem: Provide Crane #428, bronze, screwed. 2. 3" and smaller, non-rising stem: Provide Crane #438, bronze, screwed.

2. 2-1/2" and larger: Provide Crane #359, iron body, flanged, 200# WOG.

3. 4" and larger: Provide Crane #465-1/2, IBBM, flanged, non-rising stem.

B. GLOBE VALVES: Provide replaceable composition disc suitable for 200° F water: 1. 2" and smaller: Provide Crane #7, bronze, screwed.

1. 3" and smaller: Provide Crane #37, bronze, screwed, Y-pattern, 200# WOG, swing check type. 2. 4" and larger: provide Crane #373, IBBM, flanged, 200# WOG.

STRAINERS: Provide Y-pattern, 200# WOG, 20 mesh monel screen: 3" and smaller: Provide Crane #988-1/2, screwed.

E. PARTITION STOP VALVES: Provide Chicago Faucet #1771, loose key type.

F. BALANCING COCKS: Provide DeZurick #400.

3. Provide cleanout plugs of extra heavy bronze.

2. 4" and larger: Provide Crane #989-1/2, flanged.

G. CLEANOUTS: Provide cleanouts on all soil, waste and roof drain lines, at ends of all lines, at all changes in direction exceeding 45 degrees, where leaving the building, and not over 50 ft. apart at all horizontal or vertical runs.

 Floors: a. Provide Smith #4023 or Josam #8330 with round nickel-bronze top in finished room floors. b. Provide Smith #4223 or Josam #8090-CAL with round cast iron top in unfinished room floors.

c. Provide "flush-with-floor" type cleanouts, with adjustable watertight covers and integral anchoring

flange with clamping collar where waterproofing membrane is used. Finished walls: a. Provide Smith #4532 or Josam #8790-4 with round chrome plated or stainless steel access plate and screw.

H. VENT LINES: Where small vent lines pass through roof structures, provide pipe increasers as required by local code.

2.6 PIPE HANGERS

A. WATER PIPING

1. Provide VMC (Vibration Mountings & Controls Inc.) Series SH spring flex hangers with appropriate split ring or trapeze type connectors.

2. Provide seismic restraints for all hangers longer than 12" as required by code.

2.7 INSULATION A. ALL horizontal roof drain lines are to be insulated with 1" thick Owens-Corning Fiberglas

"25ASJ/SSL". B. Insulate all hot and cold water piping above ground and ceilings with 1" thick Owens-Corning Fiberglas "25asi/ssl" insulation for pipes up to $1\frac{1}{2}$ " and $1\frac{1}{2}$ " thick fiberglass insulation for pipes 2" and

C. For exposed water piping and drains in lavatories, provide "Handy Shield" or authorized equal prefabricated insulation.

up. Provide with a factory applied vapor barrier unless noted otherwise.

2.8 SLEEVES

A. Where pipes pass through concrete, masonry, or stud walls, provide "Sperzel" rustproof

2.9 WATER HAMMER ARRESTORS

"Crete-Sleeve" of the size required.

A. Provide water hammer arrestors on hot and cold water lines, Smith Hydrotrol 5000 series. Install in upright position at all quick closing valves, solenoids, isolated plumbing fixtures, and

supply headers at plumbing fixture groups. Locate and size in accordance with Plumbing and Drainage Institute Standard WH-201.

3. Install water hammer arrestors behind access panels.

that no plumbing equipment is left in an inaccessible location.

2.10 FLOOR DRAINS

A. Provide 3 inch of the size, type and location shown on the Drawings, and connect to cast iron "P" traps. All floor drains shall include trap primer option.

2.11 ACCESS DOORS

A. Access panels in ceramic tile, gypsum wallboard, or other finished surface, required for access to valves, etc. on plumbing lines, will be furnished by this Contractor and installed by the Contractor for the

applicable surface. B. It shall be the Plumbing Contractor's responsibility to take a count of all such panels required, transmit this information to the respective Contractor and see that they are installed where required, so

2.12 OTHER MATERIALS

A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the authorization of the Engineer.

B. Provide flashing and counter-flashing for all vent piping extended to exterior.

PART 3 - EXECUTION

3.1 TEMPORARY POWER AND LIGHTING

A. It is the Contractor's responsibility to run power from point of availability as provided in the Electrical Contract, to the point of use. Provide local temporary lighting as required for performance of the work in this section.

3.2 EXISTING CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.3 PREPARATION

A. Coordination: 1. Coordinate as necessary with other Sections to assure proper and adequate provision in the

work of those Sections for interface with the work of this Section. 2. Coordinate the installation of items with the schedule for work of other trades to prevent unnecessary delays in the total work.

B. Data indicated on the Drawings and in these Specifications intended to convey the Engineer's

intentions only, as such their accuracy is not warranted. The exact locations, distances, levels, and other conditions will be governed by actual construction and the Drawings and Specifications should be used only for guidance in such regard.

. Where devices are not specifically located on the Drawings, locate as determined in the field by the Engineer. Where devices are installed without such specific direction, relocate as directed by the Engineer, at no additional cost to the Owner.

3.4 INSTALLATION OF PIPING AND EQUIPMENT

1. Thoroughly clean items before installation. Cap pipe openings to exclude dirt until fixtures are installed and final connections have been made.

2. Cut pipe accurately, and work into place without springing or forcing, properly clearing windows, doors, and other openings. Excessive cutting or other weakening of the building will not be permitted.

fixtures. Tape all finished surfaces to prevent damage during construction. 4. Make changes in directions with fittings; make changes in main sizes with eccentric reducing fittings. Unless otherwise noted, install water supply and return piping with straight side of

3. Show no tool marks or threads on exposed plated, polished, or enameled connections from

eccentric fittings at top of the pipe. 5. All drainage piping shall be run as straight as possible. Run horizontal sanitary and storm drainage piping at a uniform grade of 1/8" per ft. unless otherwise noted. Make change in direction of drainage piping by appropriate use of 45° wyes, long turn tee wyes, long sweep quarter, sixth, eight, or sixteenth bends except where space conditions require, short turn

sanitary tees may be used on vertical lines only. 6. Provide sufficient swing joints, ball joints, expansion loops, and devices necessary for a flexible 7. Support piping independently at pumps, coils, tanks, and similar locations, so that weight of

pipe will not be supported by the equipment. 8. Securely bolt all equipment, isolators, hangers, and similar items in place. 9. Support each item independently from other pipes. Do not use wire for hanging or strapping

10. Provide complete dielectric insulating couplings between ferrous and non-ferrous metals. 11. Provide union and shut off valves suitably located to facilitate maintenance and removal of equipment and apparatus, and

12. All water piping shall be concentrated and run as direct as possible but parallel to construction

13. Water supply pipes throughout the building shall be located within the building in such a

and ABOVE CEILING in all finished rooms. Water supply lines to wall hung fixtures, or to fixtures set near or against the wall shall be stubbed through the wall and not up through the

manner as to provide thorough protection from freezing. 14. All water piping shall be run level and generally free of traps and unnecessary bends arranged to conform to the building requirements and to suit the necessities of clearances for other mechanical and electrical work.

15. All piping shall have reducing or increasing fittings where any change in the pipe sizes occur. No bushings of any nature will be allowed. 16. No valve stems shall be installed below the centerline of the piping it serves. 17. Run vent piping with elbows at changes of direction or grade to drain out condensation.

18. Cleanouts shall be provided where required by code. Cleanouts shall be installed at all

changes in direction, at the base of all leaders and where shown on the Drawings.

19. Underground cleanouts shall be extended to the finished floor with long radius fittings.

B. CHASES, SLOTS, AND OPENINGS 1. Chases, slots and openings in floor, walls, or partitions will be built in by each Contractor in his respective material as shown on the drawings and as directed as the work progresses. This Contractor shall familiarize himself with the size of chases, slots, and openings to be provided by other Contractors, to receive his work and shall see that they are properly located and of proper size. This Contractor shall provide all chase access doors for installation by Drywall or Masonry Contractor. If these chases have to be cut after walls are built he shall provide same as required. This Contractor shall install his work sufficiently in advance of the building

unnecessary cutting of construction work. 2. He shall not cut any chases or any structural members without first securing the approval of the Architect and Engineer. C. EQUIPMENT ACCESS: Install piping, equipment, and accessories to permit access for

maintenance. Relocate items as necessary to provide such access, and without additional cost to

construction to permit his work to be built into walls, floors, and partitions to eliminate

the Owner.

3.5 PIPE JOINTS

A. COPPER TUBING

1. Cut square, remove burrs, and clean inside of female fitting to a bright finish. a. Apply solder flux with brush to tubing. b. Remove internal parts of solder-end valves prior to soldering.

2. Provide dielectric unions at points of connection of copper tubing to ferrous piping and equipment.

3. For joining copper tubing, use: a. Water piping 3" and smaller: 95-5 solder.

b. Water piping larger than 3": Sil-fos" brazing. 4. Use only LEAD-FREE SOLDER.

B. SCREWED PIPING

 Deburr cuts. a. Do not ream exceeding internal diameter of the pipe. b. Thread to requirements of ANSI B2.1.

2. Use teflon tape on male thread prior to joining other services.

C. LEAKY JOINTS

 Remake with new material. 2. Remove leaking section and/or fitting as directed.

3. Do not use thread cement or sealant to tighten joints. 3.6 PIPE SUPPORTS

1" and greater

A. Support suspended piping with clevis or trapeze hangers and rods.

B. Space hangers and support for horizontal steel pipes according to the following schedule: Maximum spacing on centers: <u>Pipe size:</u> 3/4" and smaller:

C. Space hangers and supports for horizontal copper tubing according to the following schedule:

1 1/4" and smaller: 6'-0" 1-1/2" and over 10'-0"

D. Cast Iron Soil Pipe: at 5 foot intervals and behind every hub.

12'-0"

E. Space hangers and supports for horizontal PVC pipe six feet maximum for all sizes.

above ceilings or support it from building structures above ceilings.

Maximum spacing on centers:

F. Provide sway bracing on hangers longer than 18".

I. Arrange pipe supports to prevent excessive deflection, and to avoid excessive bending stress.

G. Support vertical piping with riser clamps secured to the piping and resting on the building structure.

H. Provide insulation continuous through hangers and rollers. Protect insulation by galvanized steel

J. It is the option of the Contractor to fasten piping directly to walls above ceilings, support from walls

K. MATERIALS

1. All hangers and supports shall be as manufactured by the F & S Company as follows: a. All bare horizontal piping shall be hung with fig. #86 or Fig. #86F adjustable galvanized steel

b. All insulated horizontal piping shall be hung with Fig. #86S adjustable galvanized steel clevis

c. All hangers, clamps and anchors for copper pipe shall be copper clad.

d. Beam clamps and C clamps shall have steel retaining clips. e. All vertical lines shall be supported by means of authorized galvanized steel clamps.

L. Support gas piping on roof with pre-fabricated pillow block pipestands, one piece molded plastic with rounded base edges vented to prevent condensate buildup, round cradle with roller in Teflon base, by Miro Industries, sized to fit individual pipe diameters.

3.7 SLEEVES AND OPENINGS

A. Provide sleeves for each pipe passing through walls, partitions, floors and ceilings.

1. For uninsulated pipe, provide sleeves two pipe sizes larger than the pipe passing through, or provide a minimum of 1/2" clearance between inside and outside of the pipe. 2. For insulated pipe, provide sleeves of adequate size to accommodate the full thickness of pipe

B. FINISH AND ESCUTCHEONS

1. Smooth up rough edges around sleeves with plaster or spackling compound.

2. Provide 1" wide chrome or nickel plated escutcheons on all pipes exposed to view where passing through walls, floors, partitions, ceilings, and similar locations.

a. Size the escutcheons to fit pipe and a covering. b. Hold escutcheons in place with set screws.

covering, with clearance for packing and caulking.

C. Provide all cutting and patching, and fire caulking/sealing. Caulk the space between sleeve and pipe or pipe covering, using a non-combustible, permanently plastic, waterproof, non-staining compound which leaves a smooth finished appearance, or pack with noncombustible cotton, rope, or fiberglass to within 1/2" of both wall faces.

3.8 CLEANOUTS

A. Secure the Architect's approval of locations for cleanouts in finished areas prior to installation.

B. Provide cleanouts of same nominal size as the pipes they serve; except where cleanouts are required in pipes 4" and larger, provide 4" cleanouts.

C. Make cleanouts accessible. After pressure tests are made and authorized, thoroughly graphite the

D. Provide cleanouts every 50' on 5" pipe and under, and every 100' on 6" pipe and larger.

3.9 VALVES

A. Provide valves in water and gas systems. Locate and arrange so as to give complete regulation of apparatus, equipment, and fixtures.

B. Provide valves in at least the following locations:

2. On both sides of all apparatus and equipment. 3. For shutoff of risers and branch mains.

5. Where shown on the Drawings.

4. For flushing and sterilizing the system.

6. At all low points of each water system.

C. Locate valves for easy accessibility and maintenance.

connections, against possible back-siphonage.

48 hours prior to start of the disinfecting process.

D. Identify all valves with brass, die stamped identification tags.

3.10 BACKFLOW PREVENTION

1. In branches and/or headers of water piping servicing a group of fixtures.

A. General: Provide backflow preventers for domestic water system.

B. Protect plumbing fixtures, faucets with hose connections, and other equipment having plumbing

C. Arrange for testing of backflow devices as required by the governmental agencies having

D. For flush valves, provide diaphragm type, complete with authorized vacuum breaker provided by

the manufacturer of the valve. 3.11 DISINFECTION AND STERILIZATION OF WATER SYSTEMS

A. DISINFECT HOT AND COLD WATER SYSTEMS 1. The domestic water system shall be filled with a water solution containing 200 parts per million of available chlorine and allowed to stand for 1 hour before thoroughly flushing and returning to

2. Perform disinfecting under the Engineer's observation. Notify the Construction Manager at least

system capacity, disinfectant used, time and rate of disinfectant applied, and resultant residuals in ppm at completion. B. When disinfecting operation is completed, and after final flushing, secure analysis by laboratory authorized by Engineer, based on water samples from the system, showing test negative for

3. Upon completion of disinfecting, secure and submit the Certificate of Performance, stating

the control sample. C. If analysis results are not satisfactory, repeat the disinfection procedures and retest until specified

A. Provide personnel and equipment, and arrange for and pay the costs of, all required tests and

the tests until the specified standards are achieved at no extra cost to Owner.

coli-aerogene organisms. Provide a total plate count of less than 100 bacteria per cc, or equal to

standards are achieved.

3.12 OTHER TESTING AND ADJUSTING

inspections required by governmental agencies having jurisdiction. B. Where tests show materials or workmanship deficient, replace or repair as necessary, and repeat

C. Adjust the system to optimum standards of operation. D. TESTING OF SANITARY DRAINAGE SYSTEM 1. Upon completion of all rough plumbing, wastes and vents, this Contractor shall test same to roof. The entire new drainage system must be tested by the Plumbing Contractor who shall close the end of the house drain, all vertical lines and branches, to fixtures to points above the finished floors and beyond the finished face of the walls and partitions. If the drain or any part of the system is to be tested separately, there must be a head of water at least 10 feet above all parts

for all parts including all joints and connections in at least one test. E. TESTING OF WATER PIPING 1. All water piping shall be thoroughly flushed to remove all foreign material after the roughing-in is completed. After the fixtures have been connected, the supply line shall be flushed again.

2. Piping shall be hydrostatically tested at a pressure of 150 psi. Test pressure shall be maintained

for a period of 4 hours with a pressure drop not to exceed 5 psi. This test shall be made before

4. Water heaters shall be tested and checked to determine that they operate in compliance with the

of the work so tested, held for a minimum of one (1) hour, and special provision must be made

fixtures are connected. The test shall be repeated at 60 psi after the fixtures have been connected. During the tests, all valves shall be carefully checked for leakage around the stem. 3. Relief and regulating valves shall be set and checked to see that they operate properly. Relief valves shall be tested to determine that they open at the proper pressure and temperature.

1. Testing of gas piping system shall comply with the Fuel Gas Code section 406.

specifications. All controls shall be properly adjusted.

leaking fittings in the line will not be permitted.

G. GENERAL REQUIREMENTS FOR TESTING 1. Should a leak occur during any test, the system shall be drained, the leaking fitting removed, the pipe thoroughly cleaned, and new fittings installed according to these specifications. Reheating

2. All defects disclosed as the result of tests shall be remedied and defective work or material shall be replaced and tests repeated.

3. All tests shall be performed as required and until satisfactory results are achieved, and no pipe shall be concealed until authorized by the Architect. 4. Expense involved in making a separate test or tests shall be paid for by the PC when it is required to separately test any of the plumbing system so as to advance the progress of the construction work. Any test made will not be construed as an acceptance of any material so tested or will it affect the guarantee of the work. All leaks which appear because of these tests shall be repaired by the Plumbing Contractor.

before any backfilling.

All testing shall be completed before insulation is applied, and underground piping shall be tested

END OF SECTION

F. TESTING GAS PIPING

09.14.23 ISSUED FOR BID 08.25.23 FOR PERMIT

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PLUMBING SPECIFICATIONS

Midland Park, NJ 07432-1811

SCALE: AS NOTED DATE: 08.25.2023

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