

PLUMBING SPECIFICATIONS

Provide all plumbing items indicated on the drawings, described herein or otherwise required for a complete and proper installation, including:

A. Plumbing fixtures, fittings and equipment.

B. Hot and cold water systems.

C. Drain waste and vent piping systems.

D. Indirect waste piping, including oil valves, traps, piping and accessories for all equipment. Size per equipment requirements.

Comply with all applicable codes, standards and ordinances, including requirements of the Georgia State Minimum Standard Plumbing Code (2012 International Plumbing Code with all Georgia State Amendments) and the Georgia Accessibility Code.

The contractor should not attempt to precisely scale dimensions from these drawings to obtain construction dimensions and clearance. The contractor shall verify all actual dimensions and clearances. Although these plans are diagrammatic in nature, they shall be followed as closely as site conditions, new construction, and work by other trades shall permit. Deviations from these drawings, which are required to conform to the available space or to actual building construction, shall be made at no additional cost to the owner.

The submission of a bid or proposal will be construed a evidence that the contractor has familiarized himself with the plans and building site. Claims made subsequent to the proposal for materials and/or labor due to difficulties encountered will not be recognized unless these difficulties could not have been foreseen, even though proper examination had been made.

Fabrication or ordering of any material or equipment prior to verification of site conditions shall be done at the contractor's risk.

All equipment and material shall be new and of first quality. Equipment and material shall be the same or equal to the basis of design listed on these drawings.

Coordinate with all trades and verify all equipment rough-in items and locations with the equipment supplier or contractor. All re-work and corrections required due to lack of coordination shall be the contractor's responsibility, and done at no cost to the owner.

Submit shop drawings and material data submittals to the engineer for approval before installation. No substitutions shall be allowed without prior approval by the engineer. Product data for piping, insulation, valves, specialties and all fixtures and equipment scheduled and specified here.

All equipment and flue materials shall be U.L. listed.

Installation shall comply with manufacturer requirements including all clearances recommended for proper operation of service. All serviceable parts shall be readily accessible.

Sanitary drain and vent piping shall be ASTM D2665 schedule 40 PVC with solvent welded fittings made to ASTM D3311 patterns. Slope at 1/8 inch per foot continuously toward public sewer. All aboveground piping shall be adequately supported. Install underground, PVC plastic drainage piping according to ASTM D2321.

All above ground domestic water distribution piping shall be ASTM D 2846, SDR11, schedule 40 CPVC with socket fittings. All piping shall be adequately supported. Disinfect all domestic water piping after installation. All underground domestic water distribution piping shall be ASTM D 1785 schedule 40 PVC with ASTM D 2466 PVC socket fittings.

Insulate all domestic water piping with Owens Corning type ASJ/SSL-II heavy density fiber glass with all service jacket: 1/2" for run outs up to 12', 1" for other piping 2" or less in diameter. Insulation shall have a flame spread rating not to exceed 25 and a smoke density not to exceed 50 when tested in accordance with U.B.C. standard 42-1. Provide mastic on all joints and exposed ends of insulation.

Natural gas piping shall be ASTM A53; Type E or S; Grade B; Schedule 40; black steel with malleable iron threaded fitting per ASME 16.3 Class 150. Piping located in concealed locations shall have fittings listed for use in concealed locations. Flexible connectors shall comply be ANSI Z21.24 of copper alloy. Gas stops shall have bronze body with AGA stamp and bronze plug with lever handle. Valves shall be ASME B16.33 with IAS-listed bronze body. Coordinate connection of gas service and installation of meter with gas utility company. All piping shall be adequately supported. Prime & paint all outdoor piping.

Compressed air piping shall be ASTM A53/A53M, schedule 40 black steel pipe. ASME B16.3, malleable iron, or ASTM A234/A234M, wrought steel welding type fittings. threaded or welded to ASME B31.1 joints.

Valves for CPVC domestic water piping:

- A. Ball: Spears CPVC True Union.
- B. Check: Spears CPVC True Union.

Air piping valves:

- A. Gate valves: MSS SP-80, class 125, bronze body, bronze trim, rising stem, handwheel, inside screw, solid wedge disc, solder ends.
- B. Ball valves: MSS SP-110, class 150, 400 PSI CWP, bronze, two piece body, chrome plated brass ball, regular port, teflon seats and stuffing box ring, blow-out proof stem, lever handle with balancing stops, solder ends with union.

Fixture tailpieces, wall escutcheon, and traps for lavatories and sinks shall be brass tubing, semi-cast, or cast iron: All brass tubing shall be 17 gage, chrome plated. Exemption: If the fixture tailpieces and traps are located in cabinets, the tailpiece & trap shall be schedule 40 PVC. Grid drains for public lavatories. Basket strainers for break room sinks.

Water Hammer Arresters shall comply with standard ASSE 1010, metal bellows type or copper piston type.

Urinal Supports shall be type I, urinal carrier with fixture support plates and coupling with seal and fixture bolts and hardware matching fixture for wall-mounting, urinal-type fixture. Include steel uprights with feet. For accessible- fixture support include rectangular steel uprights. Lavatory Supports shall be type II, lavatory carrier with concealed arms and tie rod for wall-mounting, lavatory-type fixture. Include steel uprights with feet. For accessible- fixture support include rectangular steel uprights. Plate type wall hangers for water coolers.

Provide ADA Supply and Drain Protective Shielding Guards on ADA fixtures that piping is exposed. Supply and Drain Protective Shielding Guards shall comply with ICC A117.1 and Americans with Disabilities Act (ADA) requirements. Manufactured plastic wraps shall cover hot and cold water supplies, trap, and drain piping.

All pipe hangers, clamps and channels shall be adequately sized to carry pipe loads and prevent sagging.

All other materials not specifically described but required for a complete and proper installation of work of this section, shall be new, first quality of their respective kinds, and as selected by the contractor subject to acceptance by the engineer.

Lay out the plumbing system in careful coordination with the drawings, determining proper elevations for all components of the system and using only the minimum number of bends to produce a satisfactorily functioning system. Follow the general layout shown on the drawings in all cases except where other work may interfere. Unless shown otherwise, lay out all pipes to fall within partition, wall floor, or roof cavities, and to not require furring other than as shown on the drawings.

Do not cut into or reduce the size of any load-carrying member without the prior approval of the architect. Install all pipes to clear all beams and obstructions.

Extend all plumbing vents above roof to parapet height.

Permanently close and make weatherproof any openings or penetrations of the building envelope made for plumbing systems. All wall and floor penetrations shall be sleeved. All exterior wall or foundation wall penetrations shall use a mechanical seal.

Coordinate all roof penetrations with architectural plans and building and roofing trades.

Provide shut-off balls valves and unions at all water connections to equipment and appliances. Provide chrome plate brass stops and rigid chrome plated brass supplies at all fixtures.

Isolate all dissimilar metals with "EPCO" dielectric unions, except for brass or bronze valves with steel pipe.

Protect the potable water supply against backflow and siphonage from equipment, fixtures, etc., using approved backflow and anti-siphon devices.

Thoroughly clean all piping and equipment. Removing all dirt, rust, oil, and plaster.

Test Sanitary and storm drainage piping by plugging all openings and filling with water to a height equal to a 10 foot head. Allow to stand one hour or longer as required. Repair leaking joints and then re-test.

No work shall be covered until it has been inspected and accepted by the local authority and the engineer.

Test water lines at 100 PSIG. Retain for 24 hours, repair all leaks and retest.

The entire system shall be warranted for a period of one (1) year beginning with Owner's acceptance of the work. All labor and materials necessary to repair or replace the system, or portions thereof, during that time shall be warranted for a period of one (1) year from the repair or replacement.

Install piping in concealed locations, unless otherwise indicated and except in equipment rooms, and service areas. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal. Install piping to permit valve servicing. Install piping at indicated slopes. Install piping free of sags and bends. Install fittings for changes in direction and branch connections. Install piping to allow application of insulation. Select system components with pressure rating equal to or greater than system operating pressure. Install escutcheons for penetrations of walls, ceilings, and floors. Verify final equipment locations for roughing-in.

Confirm that millwork is constructed with adequate provision for the installation of counter top lavatories and sinks.

Seal fixtures to wall and floor surfaces with sealant, color to match fixture.

All vents thru roof (VTR) shall be offset a minimum of 10'-0" from all outside air intakes.

Install line size gate valve and check valve on air compressor discharge. Install takeoffs to outlets from top of main, with shut off valve after take off. slope take off piping to outlets. Prior to initial operation, clean and test compressed air piping in accordance with ASME B31.1.

Provide Plastic Pipe Markers on all aboveground plumbing piping that Comply with ASME A13.1. Minimum information indicating flow direction arrow and identification of fluid being conveyed. Install labeling on pipe at intervals of not more than 20 feet and at least once in each room.

Approved manufactures: (Items submitted shall be approved by architect and engineer. Architect and engineer reserve the right to reject any item substituted for basis of design item for any reason.)

China Fixtures: American Standard, Kohler, Toto, Zurn

Faucets: Delta, T&S Brass, Chicago Faucets, Zurn, Kohler, Grohe, Moen, Speakman, Symmons

Supplies & Traps: Engineered Brass CO., McGuire, Charlotte Pipe, Brasscraft, IPS, Watts, Zurn

Flush Valves: Sloan, Delany, Zurn

Floor Drains & Cleanouts: Zurn, Jay R Smith, Proset, Watts, Mifab, Wade, Josam, Sioux Chief

Water Heaters: A.O. Smith, Lochinar, Bradford White, State, Vaughn

Toilet Seats: Bemis, Centoco, Church Seats, Olsonite, Beneke, Zurn

Stainless Steel Sinks: Dayton, Elkay, Just, Kohler, Moen, Sterling, Just

ADA Protective Shielding Pipe Covers: Engineered Brass, McGuire, Plumberex, TRUEBRO, Zurn

Fixture Supports: MIFAB, Jay R. Smith, Wade, Watts, Zurn

Mixing Valves: Armstrong, Leonard, Powers, Symmons

Hose Bibbs: MIFAB, Jay R. Smith, Wade, Watts, Woodford, Zurn

Expansion Tanks: AMTROL, State, Watts, Wilkins

Water Hammer Arresters: AMTROL, Josam, MIFAB, PPP, Sioux Chief, Jay R. Smith, Wade, Watts, Zurn

Outlet Boxes: Acorn, IPS, Oatey

CPVC Valves: American , NIBCO, Spears

Water Coolers: Elkay, Oasis, Haws

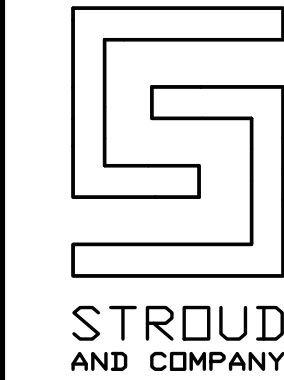
Mop Sinks: Stern Williams, Acorn, Fiat

FIXTURE AND EQUIPMENT SCHEDULE									
#	FIXTURE TYPE	WASTE		WATER SUPPLY		WATER FIX. CONN.		MODEL NUMBER	
		BELOW FLOOR	FIXTURE CONN.	COLD	HOT	COLD	HOT		
WC1	FLUSH VALVE WATER CLOSET	4"	4"	1"		1"		KOHLER K-4406 WATER CLOSET. ZURN Z6000AV-HET-YK FLUSH VALVE. CENTOCO 630ST SEAT	
WC2	FLUSH VALVE ADA WATER CLOSET	4"	4"	1"		1"		KOHLER K-4405 WATER CLOSET. ZURN Z6000AV-HET-YK FLUSH VALVE. CENTOCO 630ST SEAT	
UR	ADA URINAL	2"	2"	3/4"		3/4"		KOHLER K-4904-ET URINAL. ZURN Z6003AV-EWS-YK FLUSH VALVE.	
LAV1	ADA UNDERMOUNT LAVATORY	2"	1-1/4"	1/2"	1/2"	1/2"	1/2"	KOHLER K-2210 LAVATORY. MOEN 84551 FAUCET.	
LAV2	ADA WALL HUNG LAVATORY	2"	1-1/4"	1/2"	1/2"	3/8"	3/8"	KOHLER K-2005 LAVATORY. MOEN L84533 FAUCET.	
SNK	TWO COMPARTMENT SINK	2"	1-1/2"	1/2"	1/2"	1/2"	1/2"	DAYTON DSE23322 SINK. MOEN 5995 FAUCET.	
MOP	MOP SINK	3"	3"	1/2"	1/2"	1/2"	1/2"	STERN WILLIAMS WTB-2424 SINK, T-10-VB FAUCET, T-35 HOSE & WALL HOOK, T-40 MOP HANGER, BP PANELS.	
SS	SERVICE SINK	2"	2"	1/2"	1/2"	1/2"	1/2"	KOHLER K-6716 SINK. ZURN Z841M1-RC FAUCET	
EW	ELECTRIC WATER COOLER	2"	1-1/2"	1/2"		3/8"		ELKAY EZSTL8C.	
EYE	EYEWASH	2"	1-1/4"	1/2"	1/2"	1/2"	1/2"	GUARDIAN G1750P-TMV	
OB	OUTLET BOX WITH WATER HAMMER ARRESTOR			1/2"		1/2"		WATER TITE W9701 HA	
WCO	WALL CLEANOUT	3"	3"					BRASS PLUG WITH ROUND STAINLESS STEEL COVER	
FD	FLOOR DRAIN	3"	3"					ZURN FD-2211 WITH WATERLESS TRAP PRIMER.	
FS	FLOOR SINK	4"	4"					ZURN FD2378	
TD	TRENCH DRAIN	4"	4"					20'-0" LONG ZURN Z806	
HB	HOSE BIBB			3/4"		3/4"		ZURN Z1349-VB	
MV	MIXING VALVE			3/4"	3/4"	3/4"	3/4"	LEONARD TM-20-LF-E-RF	
HD	HUB DRAIN	2"	2"					PVC HUB DRAIN WITH WATERLESS TRAP PRIMER.	
AAV	AIR ADMITTANCE VALVE	2"	2"					STUDOR MINI VENT	

WATER HEATER & TANK SCHEDULE						
MARK	MANUFACTURER	MODEL NUMBER	TYPE	GPH @100' RISE	GALLON	KW
WH	BRADFORD WHITE	W-1-40L6DS	RESIDENTIAL ELECTRIC	19	40	4.5
ET	ZURN/WILKINS	XT-8	EXPANSION TANK		2.1	

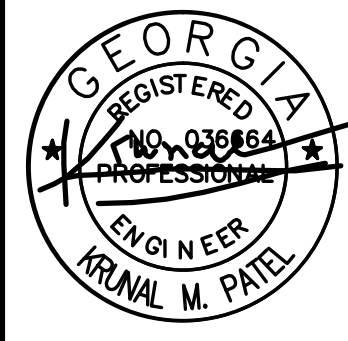
CONTRACTOR SHALL CONSULT THE ELECTRICAL DOCUMENTS FOR VOLTAGE AND PHASE

LEGEND			
	BALL VALVE		COLD WATER
	CHECK VALVE		HOT WATER
	PIPE UP		VENT
	PIPE DOWN		SEWER
	PDI UNIT		COMPRESSED AIR
	FINISHED FLOOR ELEVATION		NATURAL GAS
(TYP)	TYPICAL	VTR	VENT THRU ROOF
N.T.S.	NOT TO SCALE	CW	COLD WATER
		HW	HOT WATER



NEW FACILITY BUILDOUT FOR
CHEM – AQUA
ENGINEERED EQUIPMENT SOLUTIONS
580 JOE TAMPLIN INDUSTRIAL BLVD.
MACON, GEORGIA

DRAWN BY: JWK
CHECKED BY: KMP
DATE: 06-01-15



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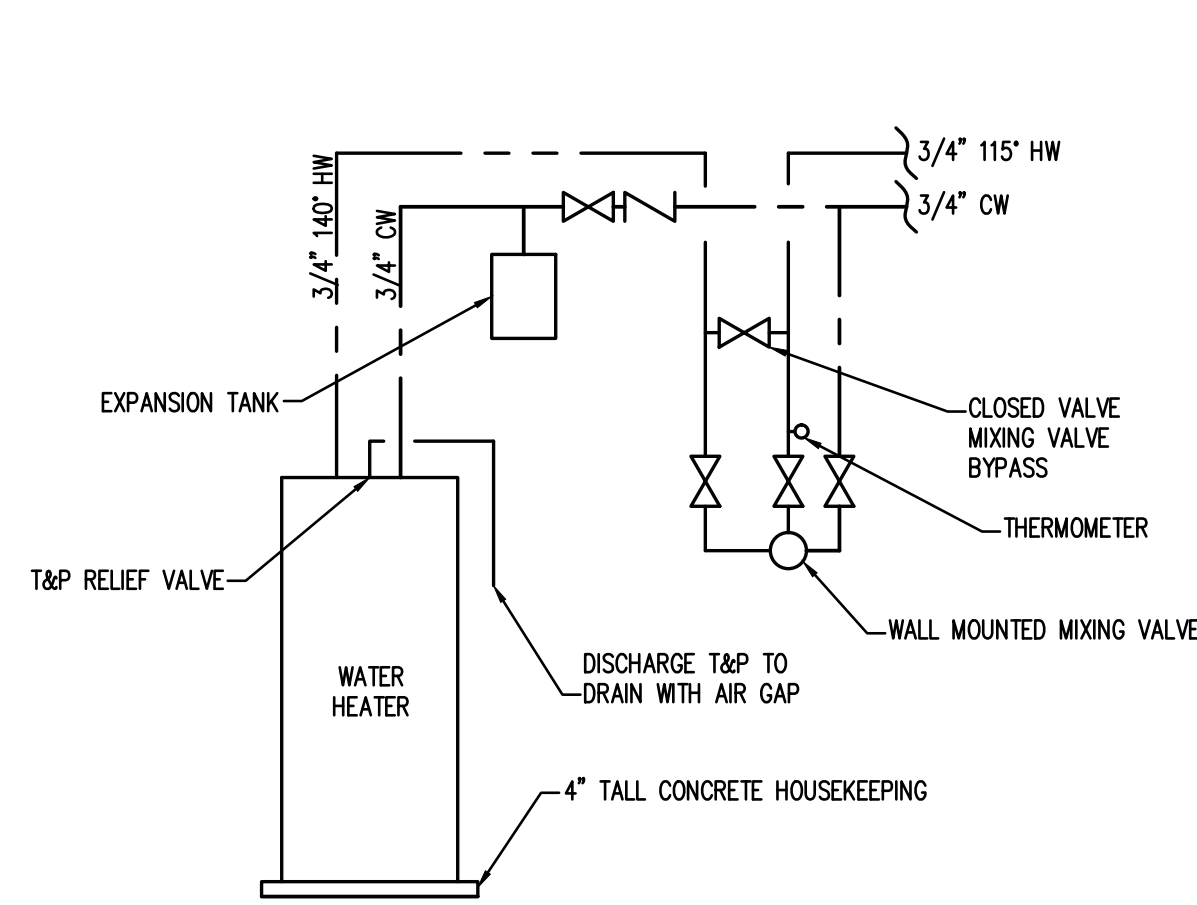
REVISIONS

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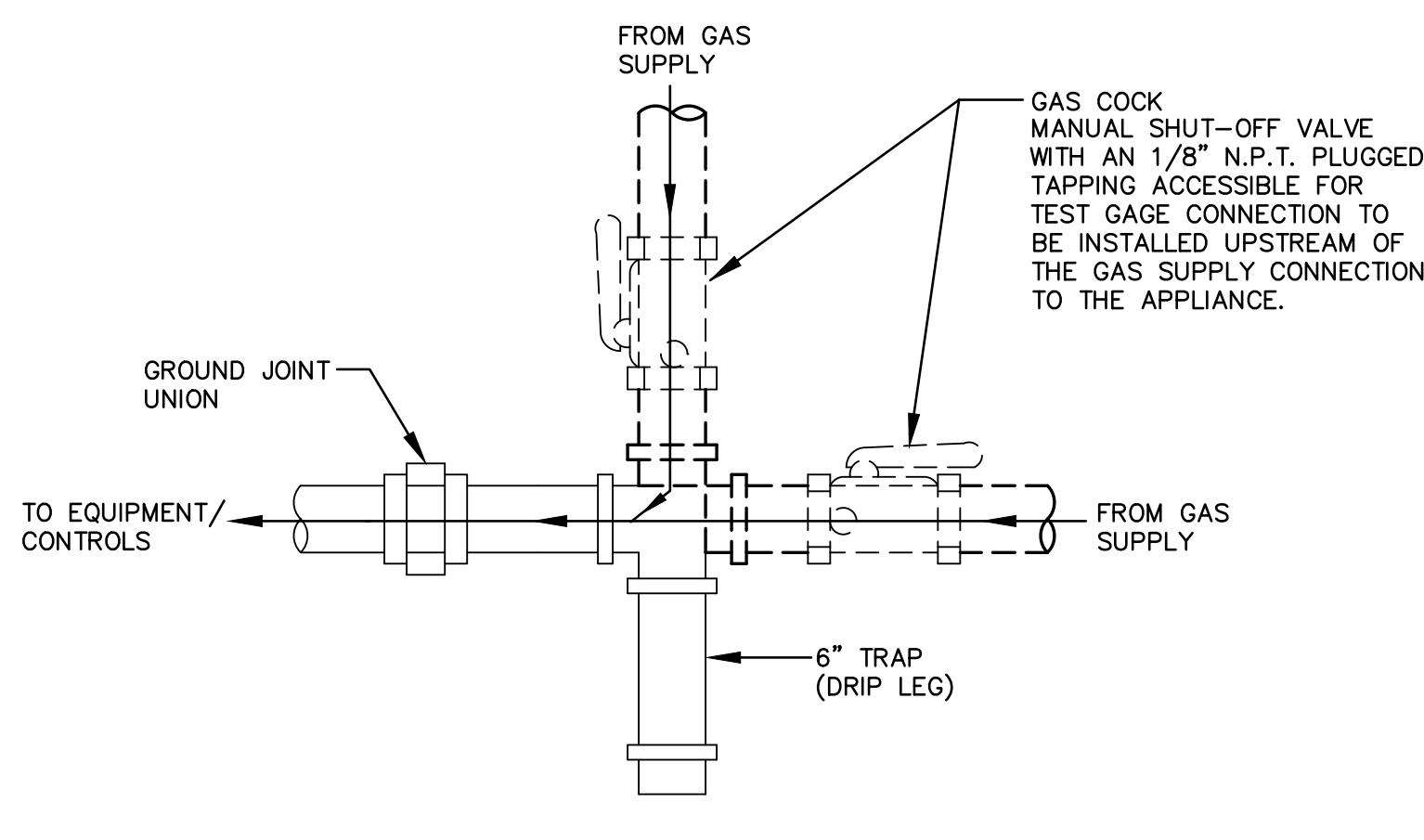
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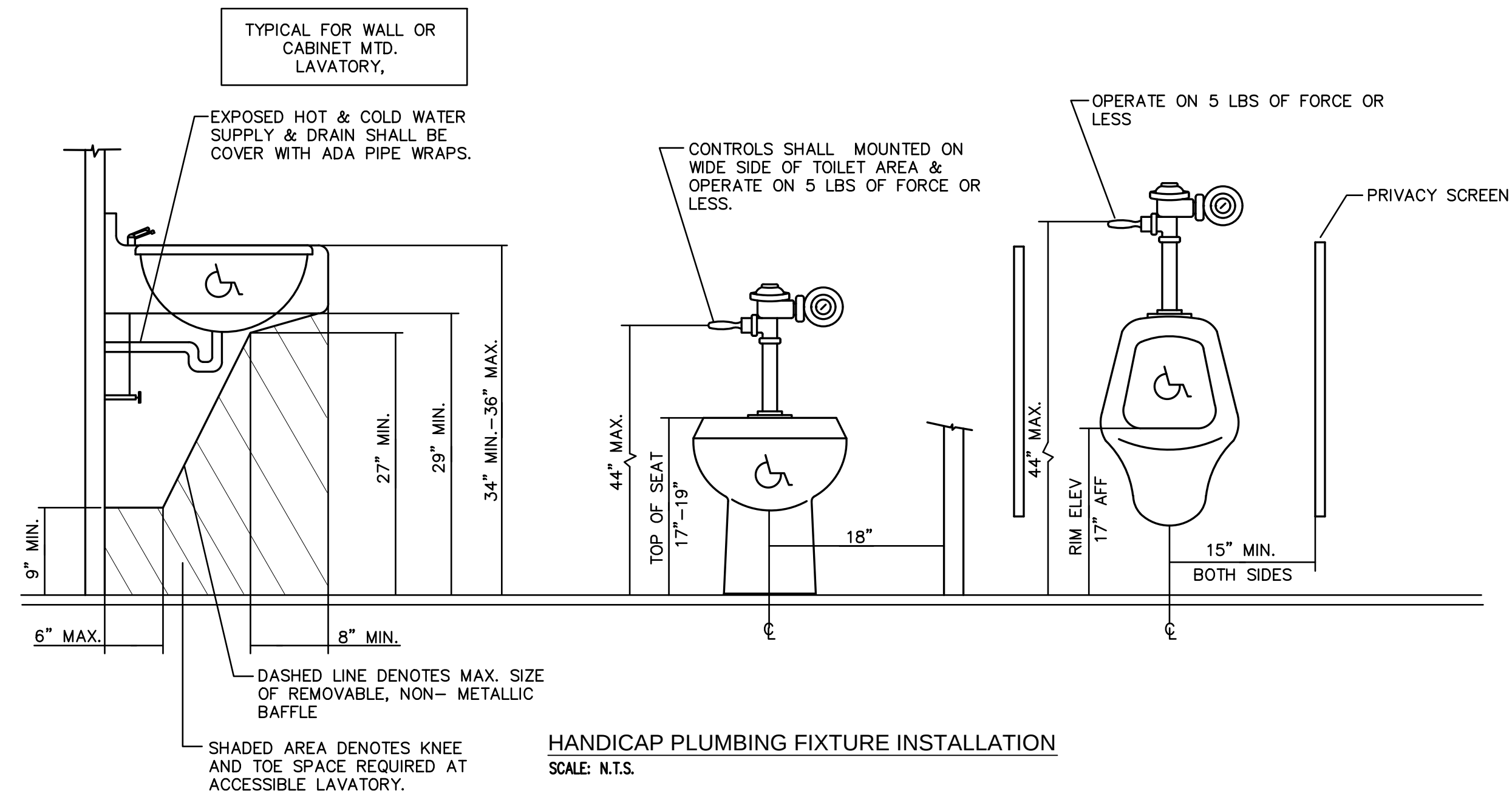
169 New Street
Macon, GA 31201
(478)741-4632
T.E. project #15-026



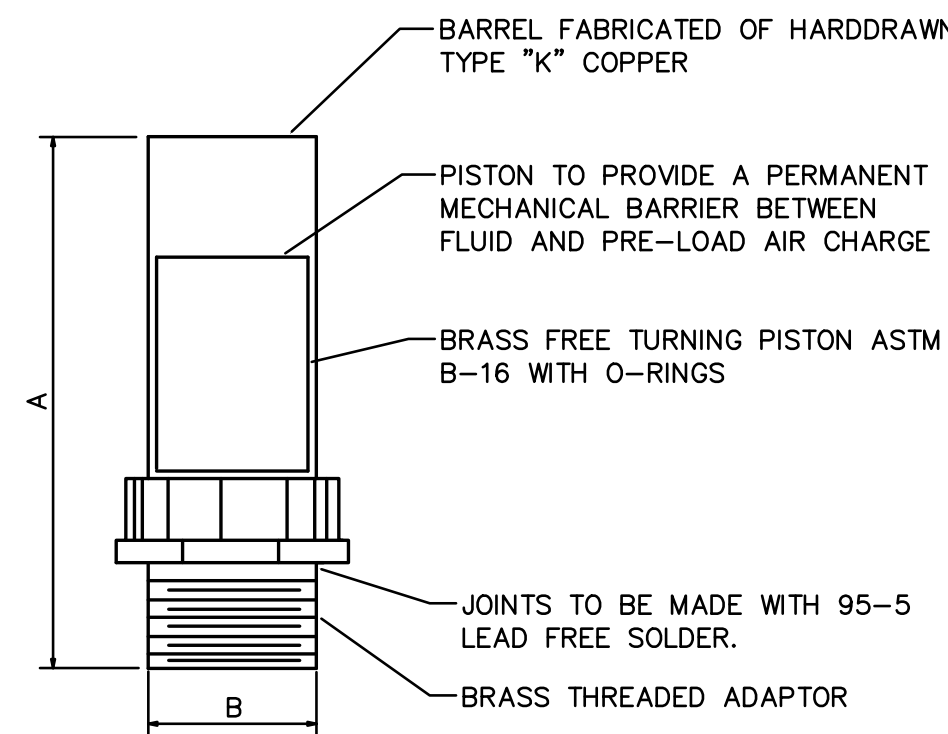
WATER HEATER PIPING SCHEMATIC
SCALE: N.T.S.



GAS CONNECTION TO EQUIPMENT DETAIL
SCALE: N.T.S.



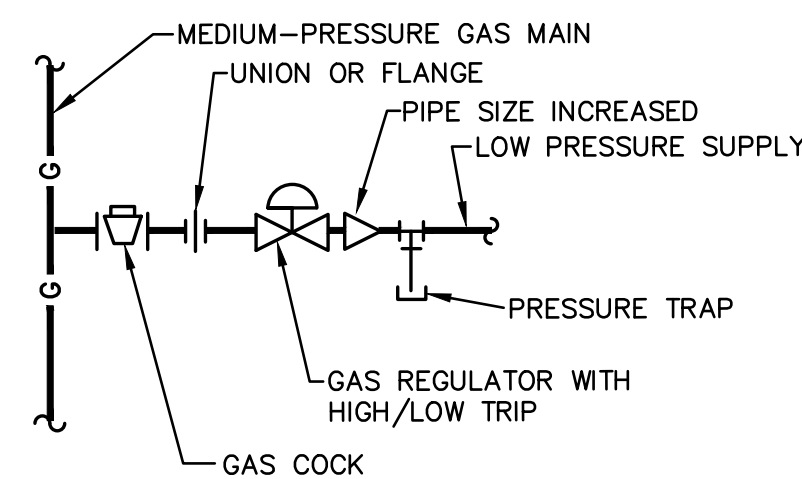
HANDICAP PLUMBING FIXTURE INSTALLATION
SCALE: N.T.S.



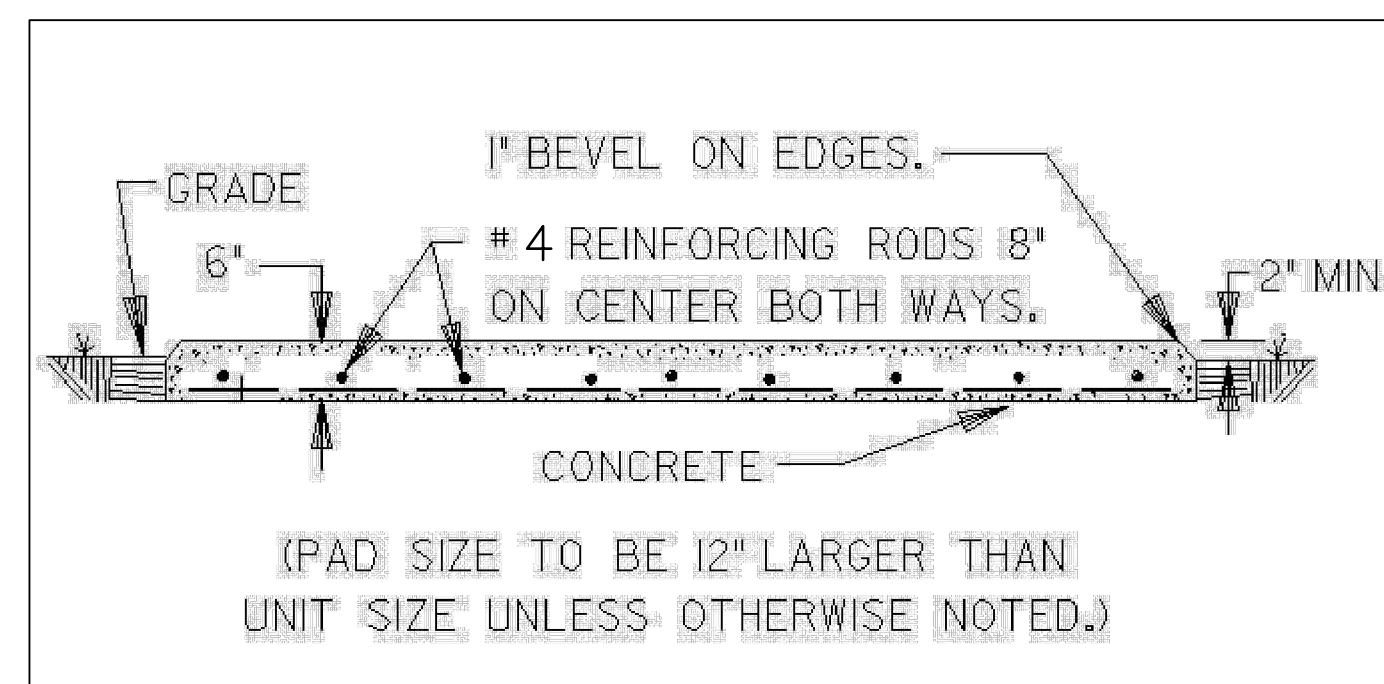
PPP SIZE	P.D.I. SYMBOL	FIXTURE UNIT RATINGS	A SIZE	B SIZE
1/2"	A	1 - 11	5"	1 1/2"
3/4"	B	12 - 32	5"	3/4"
1"	C	33 - 60	7"	1"
1-1/4"	D	61 - 113	7"	1-1/4"
1-1/2"	E	114 - 154	9"	1-1/2"
2"	F	155 - 330	9"	2"

NOTE: SEE WATER RISER DIAGRAMS FOR LOCATIONS OF SHOCK ABSORBERS.

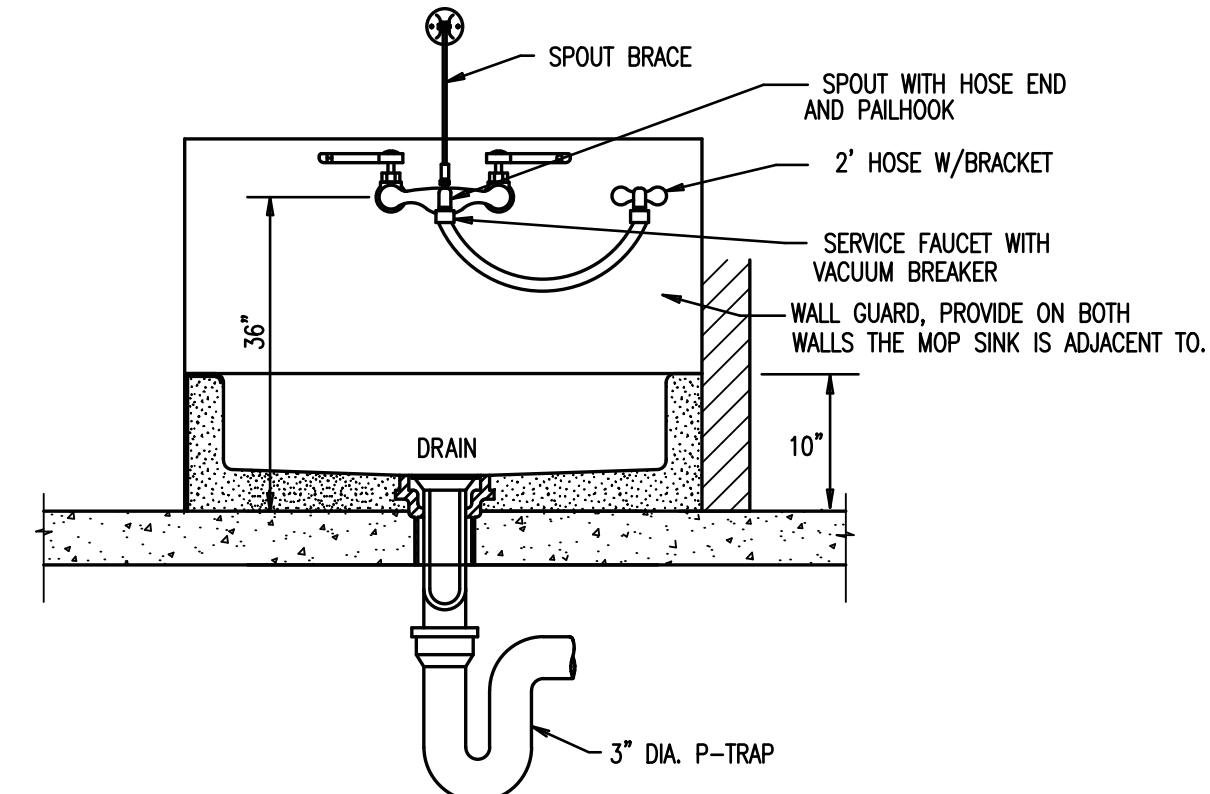
WATER HAMMER ARRESTOR DETAIL
SCALE: N.T.S.



MEDIUM TO LOW PRESSURE GAS REGULATOR DETAIL
SCALE: N.T.S.

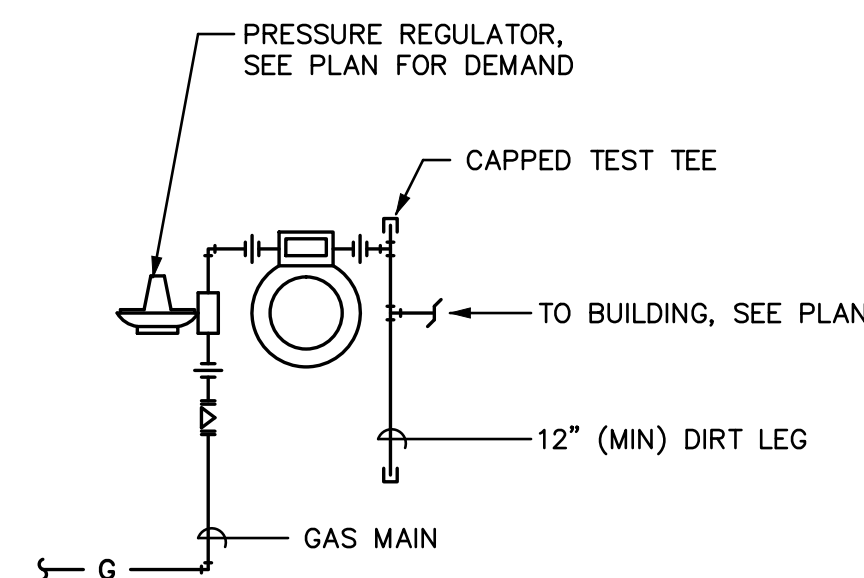


AIR COMPRESSOR CONCRETE PAD DETAIL
SCALE: N.T.S.

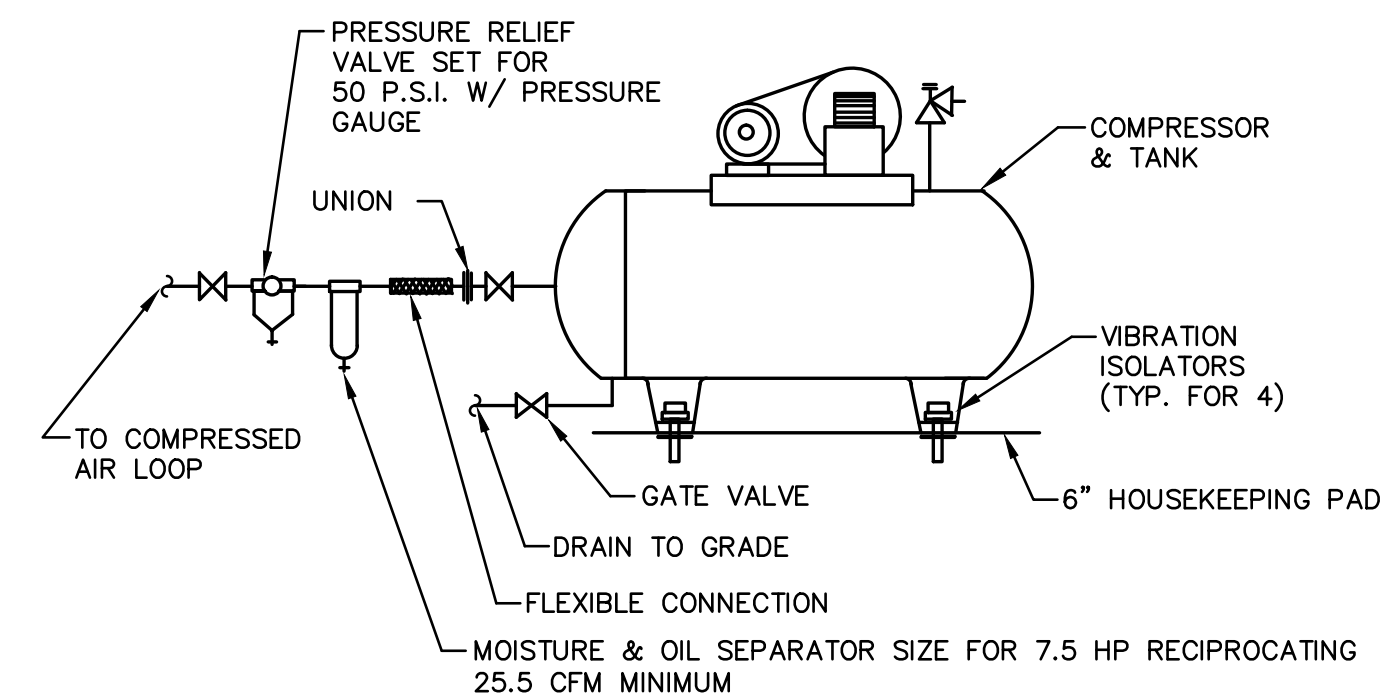


MOP SINK DETAIL

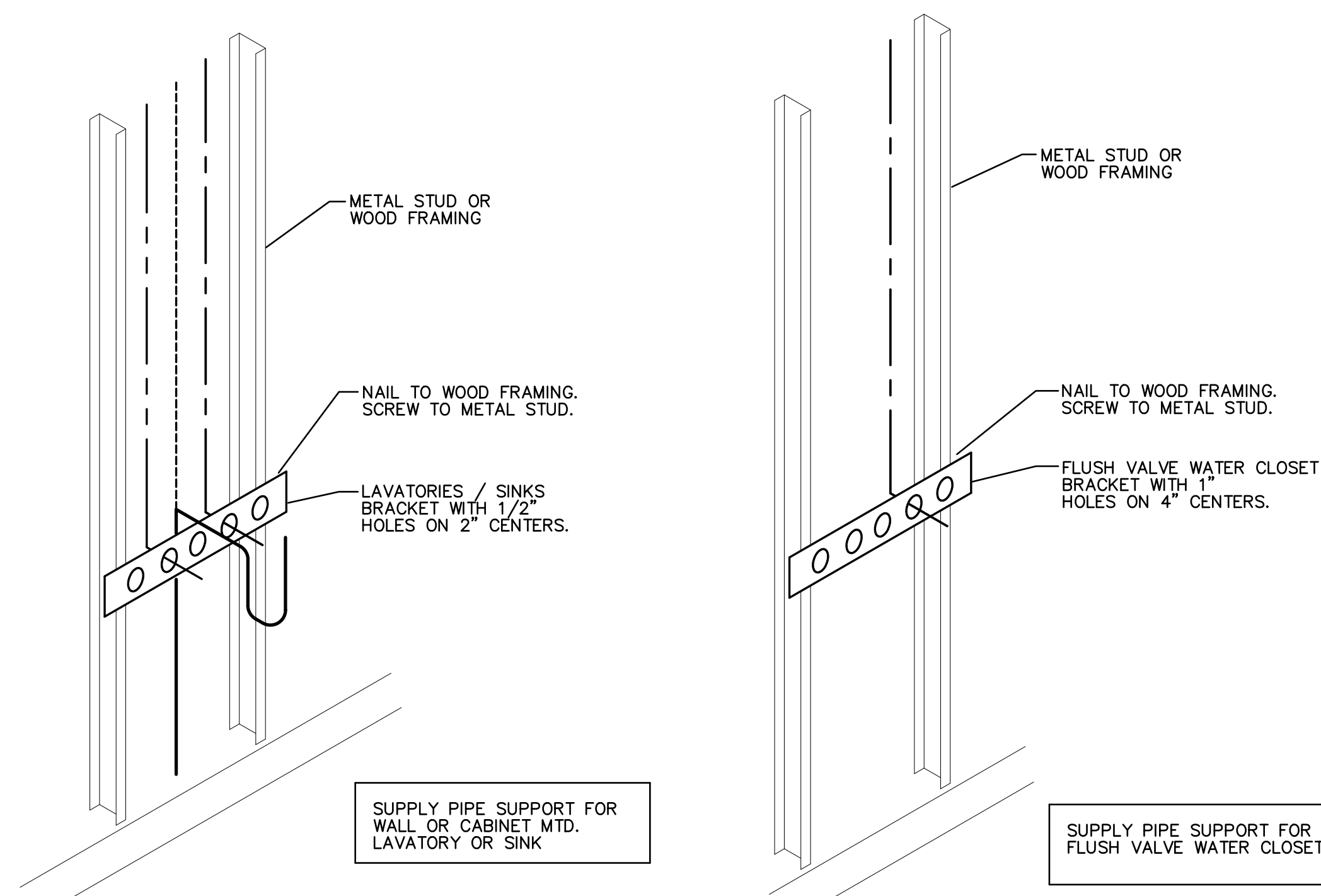
NOTE:
GAS METER & REGULATOR SHALL BE BY THE LOCAL GAS COMPANY. PAINT NATURAL GAS PIPING THAT IS EXPOSED.



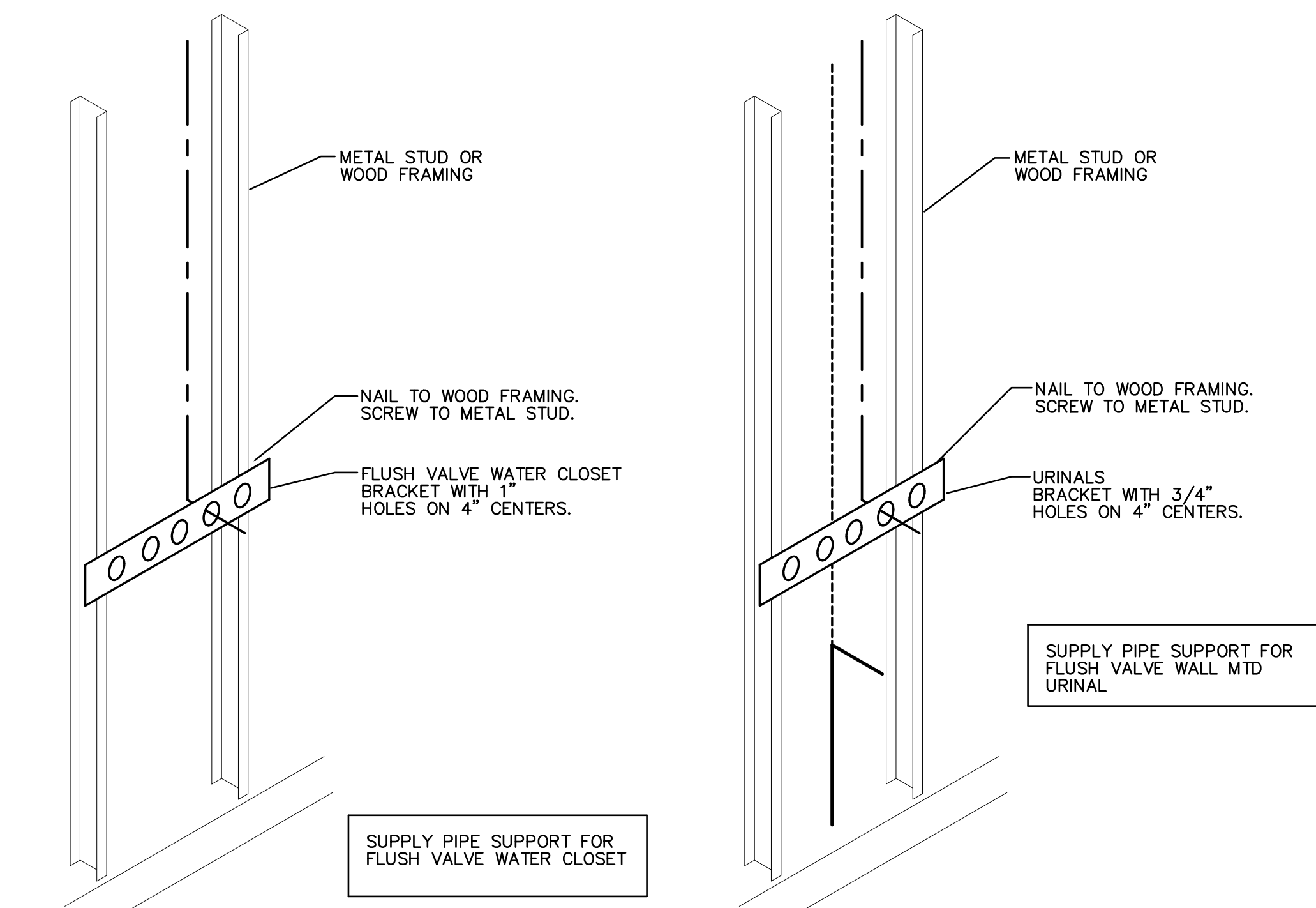
GAS METER DETAIL
SCALE: N.T.S.



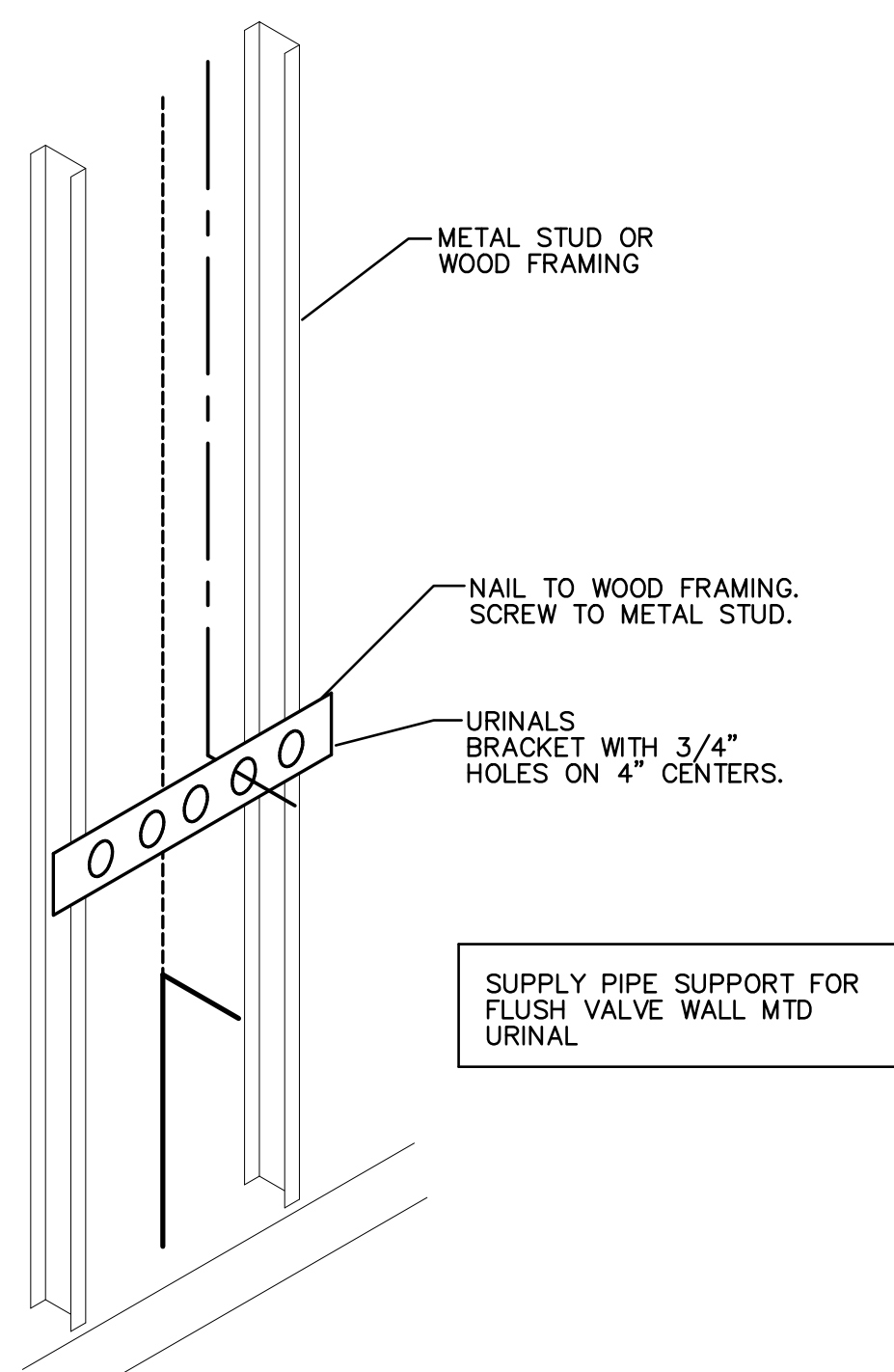
AIR COMPRESSOR DETAIL
SCALE: N.T.S.



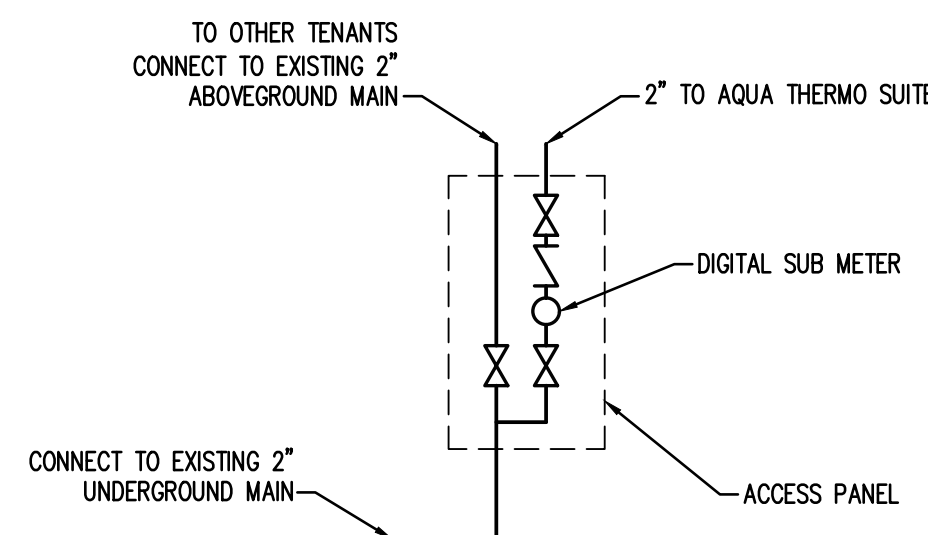
LAV./SINK PIPE SUPPORT DETAIL
SCALE: N.T.S.



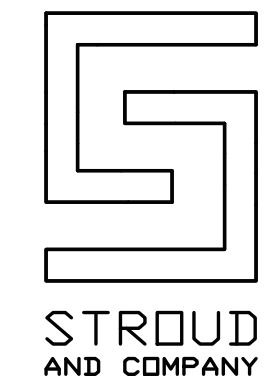
WATER CLOSET PIPE SUPPORT DETAIL
SCALE: N.T.S.



URINAL PIPE SUPPORT DETAIL
SCALE: N.T.S.



WATER SUB METER DETAIL
SCALE: N.T.S.



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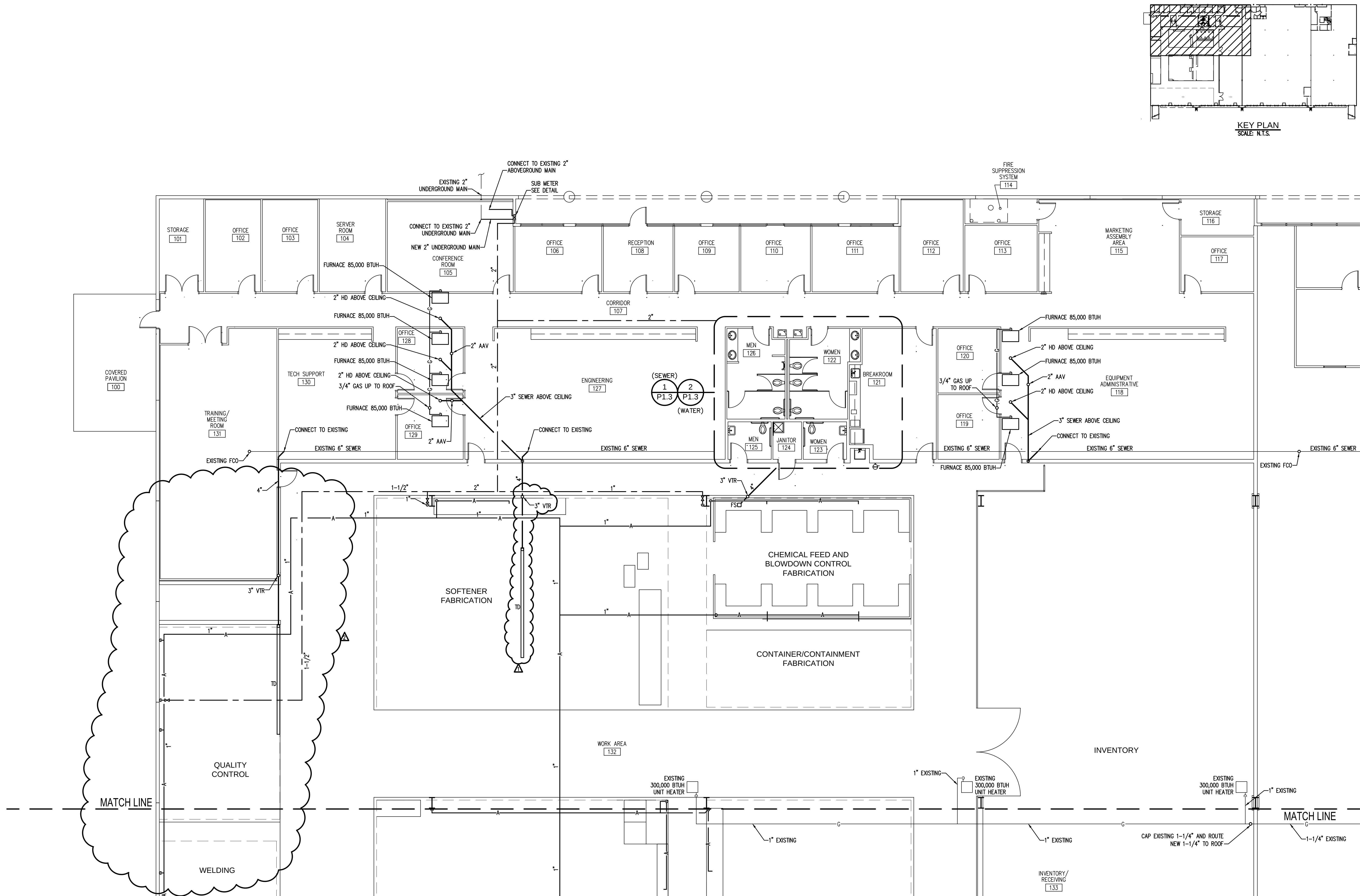
REVISIONS

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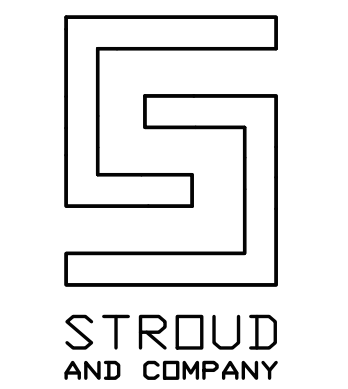


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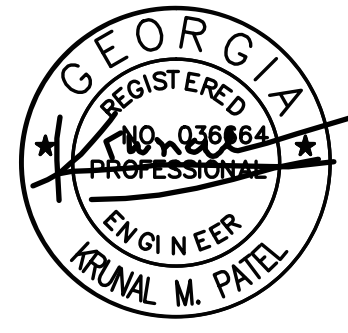
1 AREA "A" PLUMBING PLAN
SCALE: 1/8"=1'-0"

TOTAL ENGINEERS
169 New Street
Macon, GA 31201
(478)741-4632
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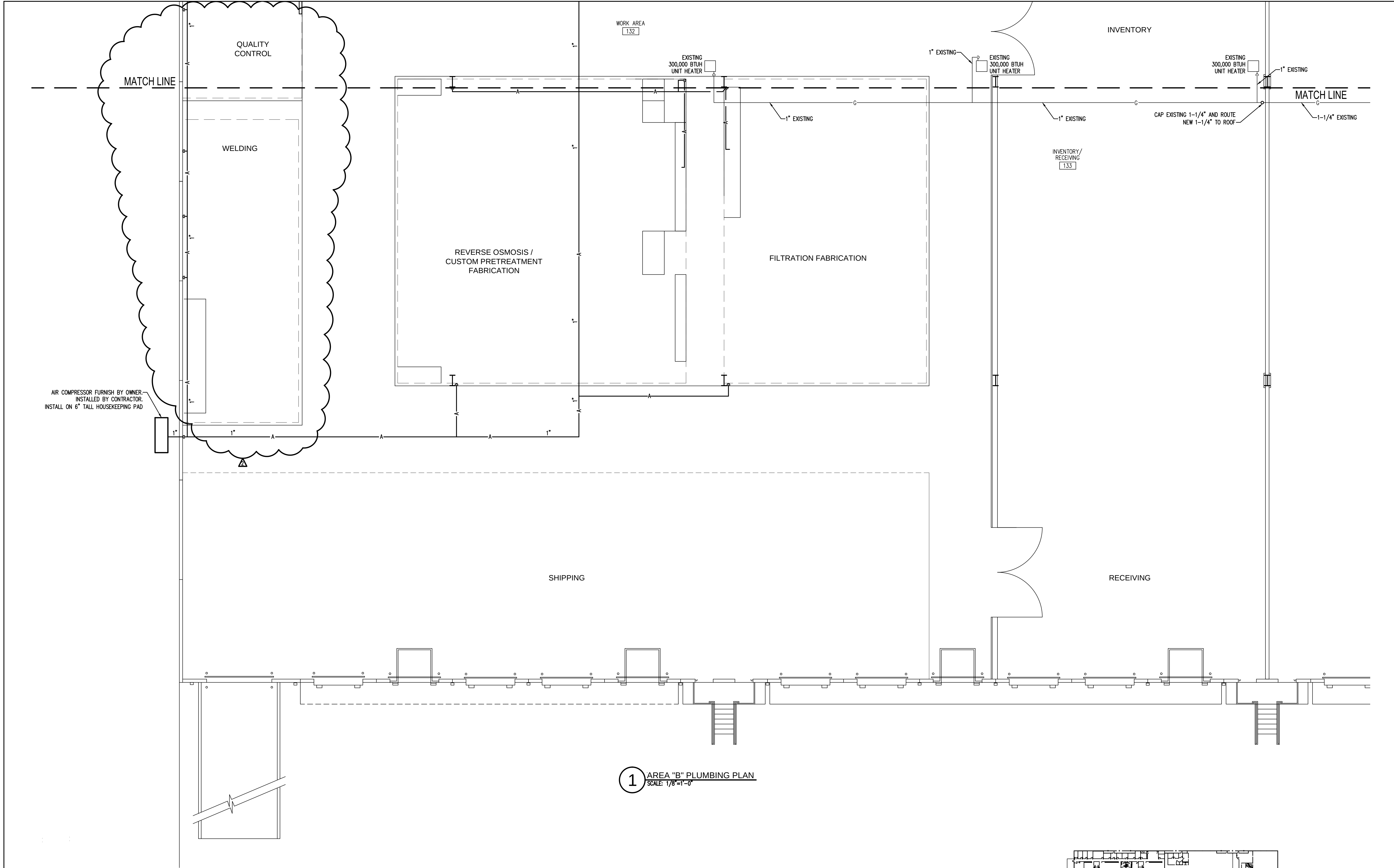


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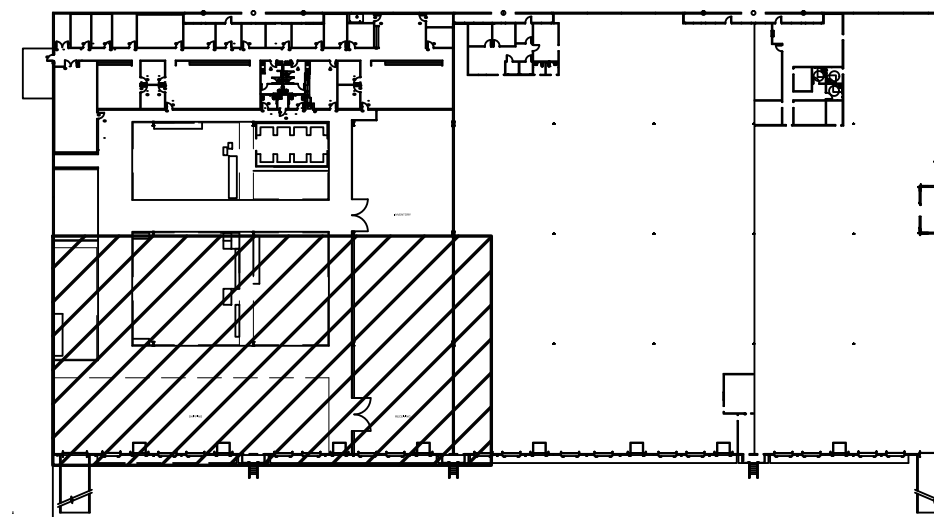
REVISIONS	
Δ	06-03-15 SOFTENER TD
Δ	07-27-15 CMU WALL

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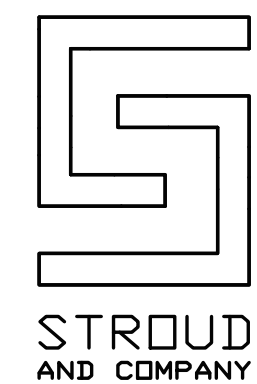
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1 AREA "B" PLUMBING PLAN
SCALE: 1/8"=1'-0"



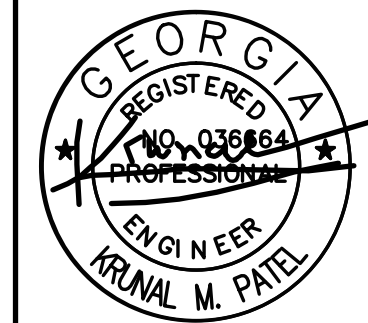
KEY PLAN
SCALE: N.T.S.



STROUD
AND COMPANY

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580 JOE TAMPLIN INDUSTRIAL BLVD.
MACON, GEORGIA

DRAWN BY:	JWK
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DATE:	06-01-15



GEORGIA
REGISTERED
PROFESSIONAL
ENGINEER
KUNAL M. PATEL

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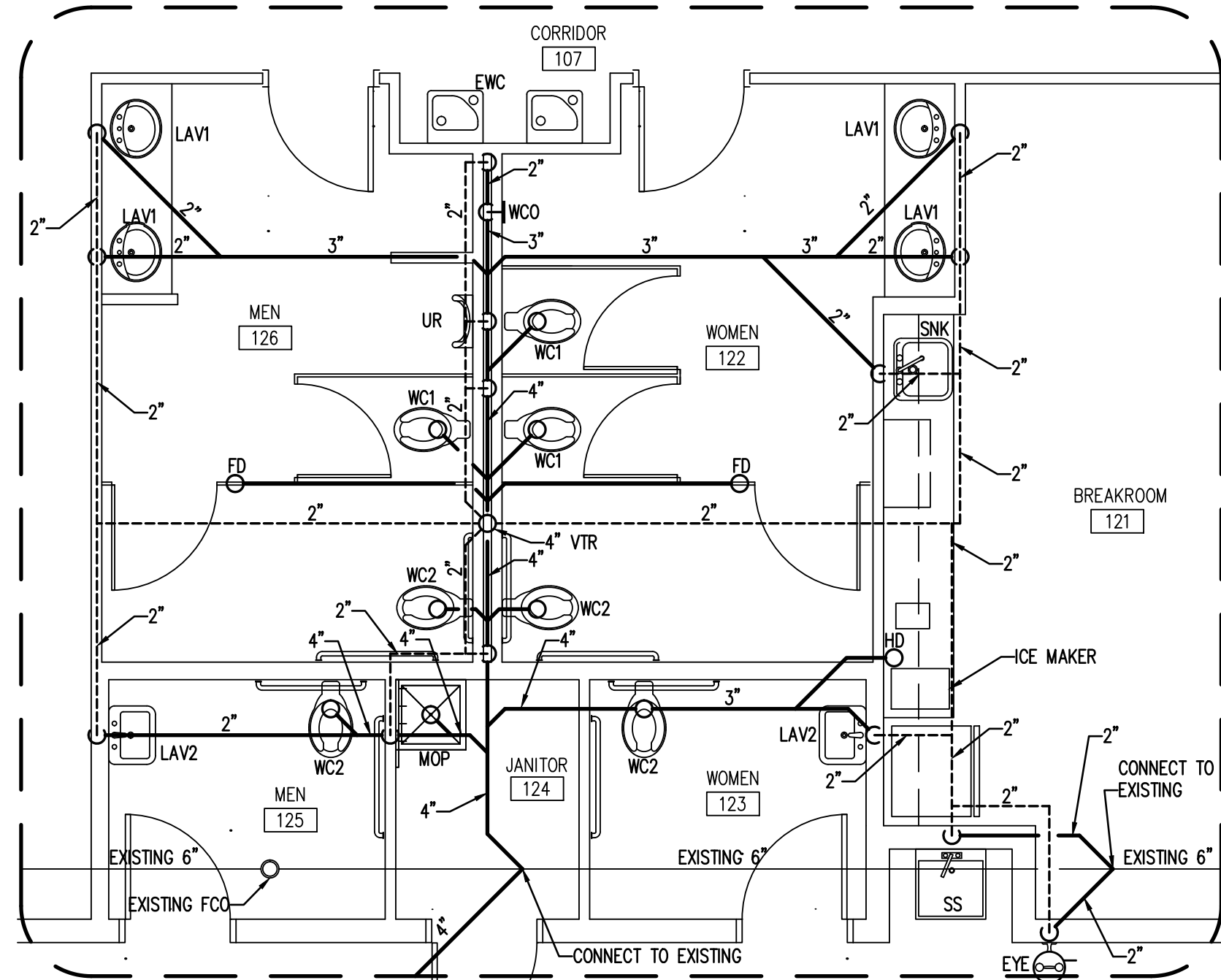
REVISIONS	
Δ	06-03-15 SOFTENER TO
Δ	07-27-15 CMU WALL

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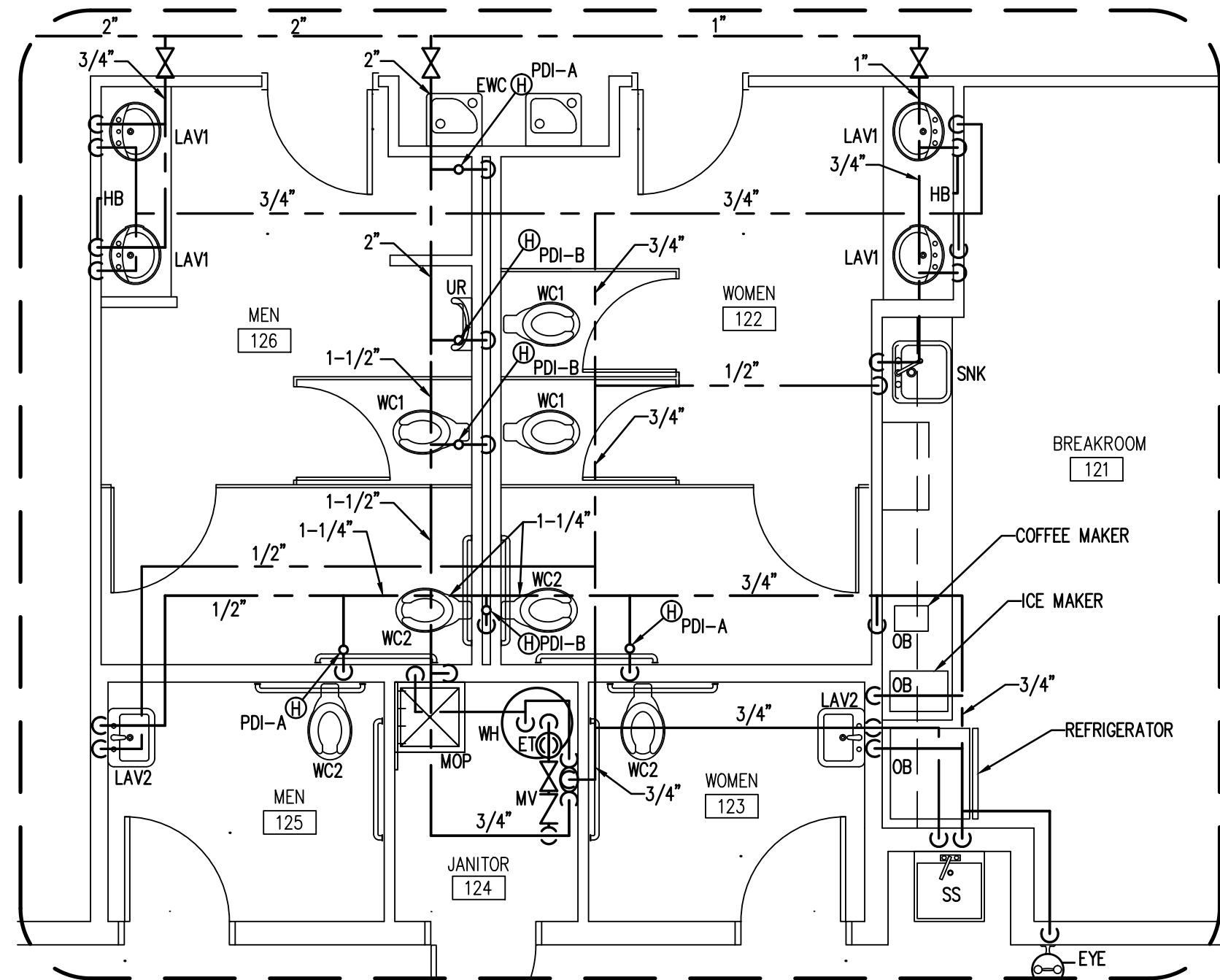
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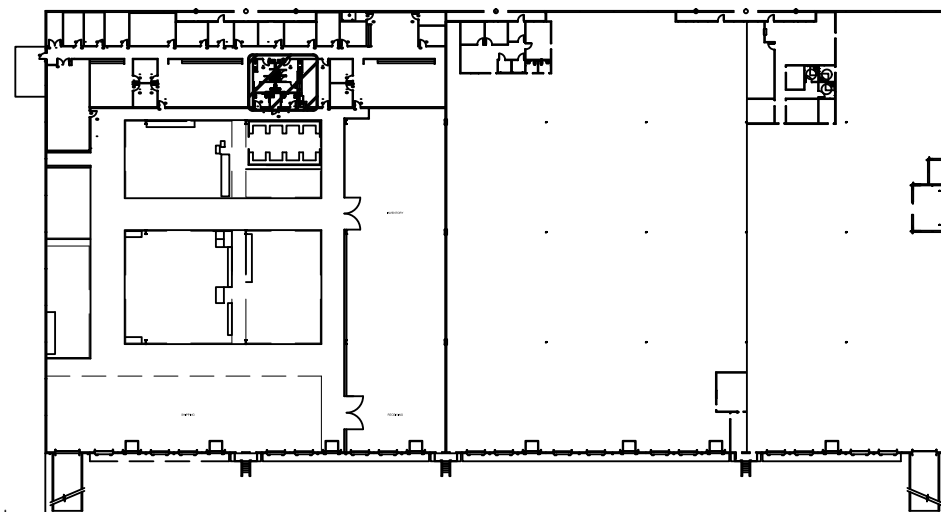
TOTAL
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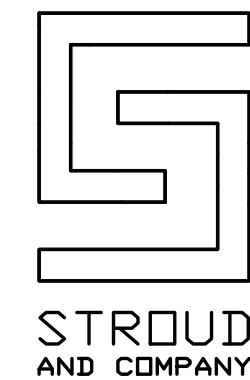
1 ENLARGED PLUMBING PLAN - SEWER
SCALE: 1/4"=1'-0"



2 ENLARGED PLUMBING PLAN - WATER
SCALE: 1/4"=1'-0"

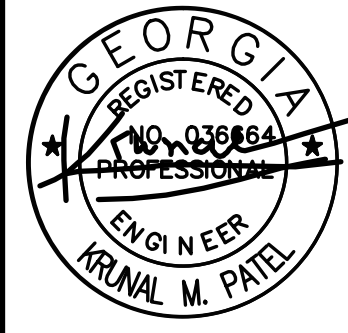


KEY PLAN
SCALE: N.T.S.



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JWK	KMP	06-01-15



ADAMS and DAY
ARCHITECTS, A.I.A., P.C.
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PHONE: (478) 746 - 1167

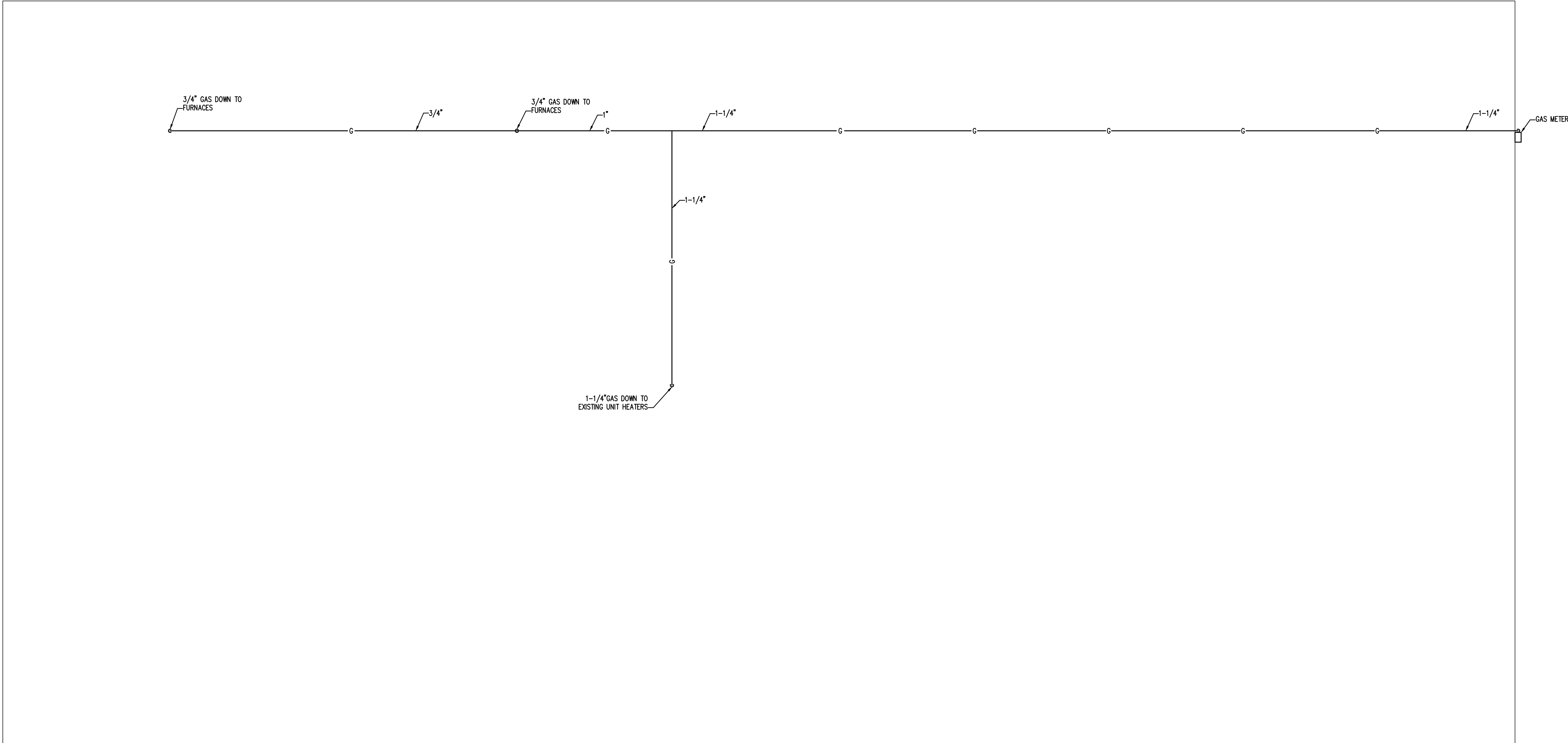
REVISIONS

DRAWING NO.

P1.3

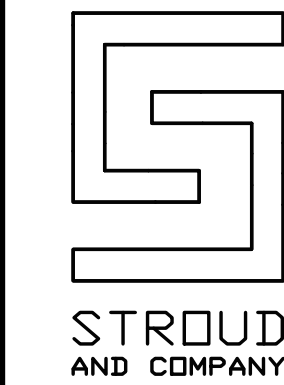


169 New Street
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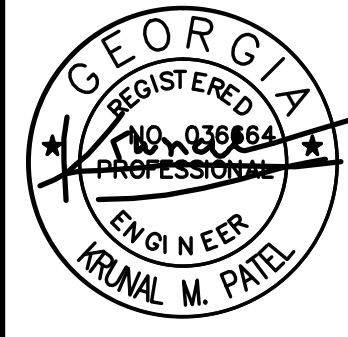
TOTAL GAS LOAD IS 1,495,000
BTUH. NATURAL GAS SYSTEM
PRESSURES WITHIN BUILDING:
PRIMARY PRESSURE IS 2 PSIG, AND
IS REDUCED TO SECONDARY
PRESSURE OF 0.5 PSIG AT
INDIVIDUAL POINTS OF USE.

1 OVERALL PLUMBING ROOF PLAN
SCALE: 1/16"=1'-0"



NEW FACILITY BUILDOUT FOR
CHEM - AQUA
ENGINEERED EQUIPMENT SOLUTIONS
580 JOE TAMPLIN INDUSTRIAL BLVD.
MACON, GEORGIA

DRAWN BY:	CHECKED BY:	DATE:
JWK	KMP	06-01-15



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REVISIONS

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P2.1



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