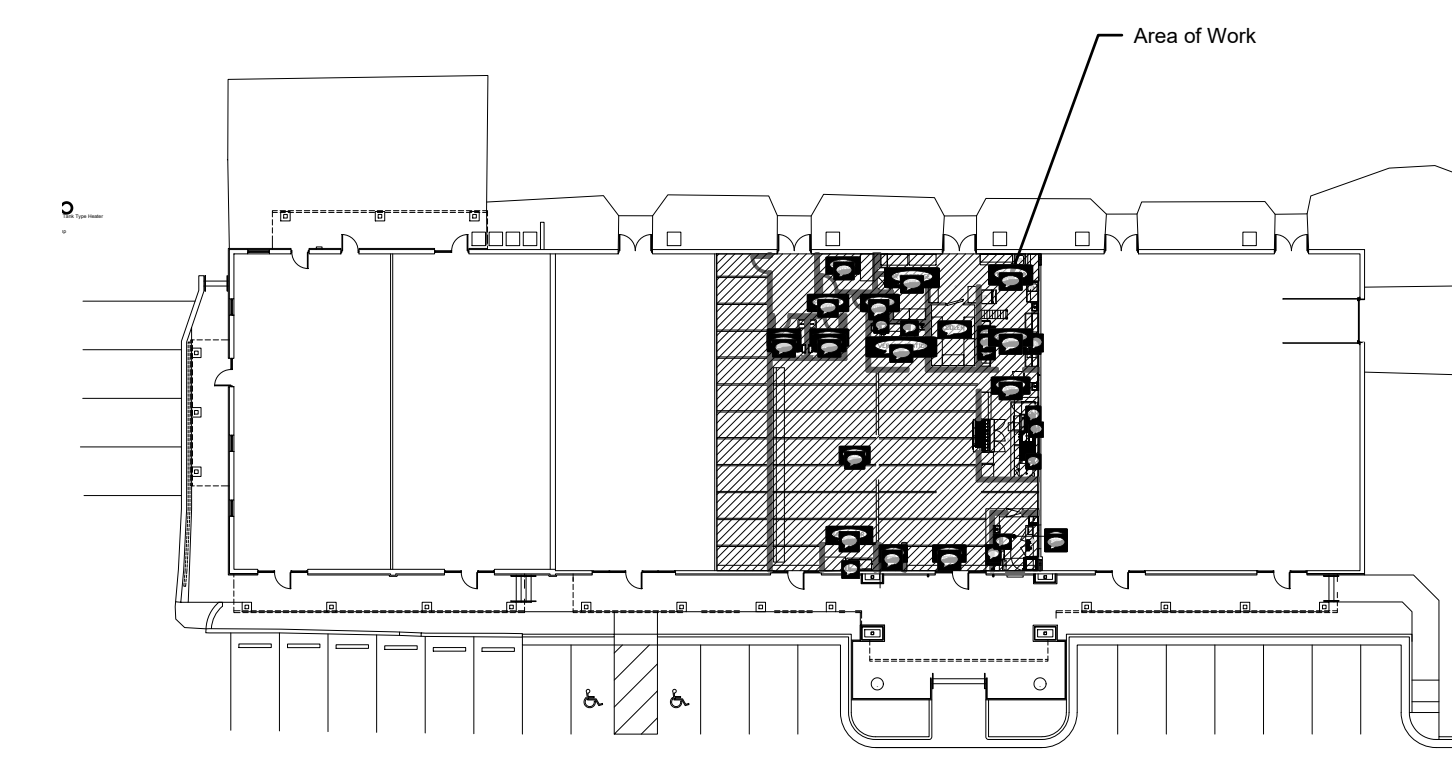


1 Floor Plan - Waste & Vent
Scale: 3/16" = 1' - 0"



2 Key Plan
Scale: None

Demolition Note:

The existing locations shown on the demolition plan to be removed or relocated are for reference only and shall be field verified by contractor prior to beginning work. Any items required to be relocated or removed shall be included in contractor's cost, whether shown on this plan or not. Unless noted otherwise, where a fixture or device is noted to be demolished, the work shall include removing all associated piping, fittings, hangers, insulation etc. and shall include all patch, repair, paint or refinishing necessary to restore the location to match the surroundings. The contractor may reuse any existing piping, fittings, valves etc. where they have been inspected and are determined to be acceptable to the owner and/or are in like-new condition.

Renovation Notes:

- Contractor shall visit site to verify existing conditions.
- See architectural for scope of demolition work. Cap and/or plug all waste/vent lines installed during shell that will not be used for flup. Confirm all capped piping will be concealed and/or will not conflict with new layout. Ensure that all waste lines being removed are plugged such that no sewer or gases will escape sanitary system.
- Contractor shall camera the existing under slab sewer piping prior to cutting concrete. Engineer shall be contacted if the existing lines are not in the location shown on plans or are not in proper working order.
- All new piping shall be concealed in walls, above ceiling, or below slab where possible. Otherwise, contractor shall run water lines as close to structure as possible and coordinate routing with other trades.
- Any slab cutting for plumbing access requires soil compaction, vapor barrier and embedded #4 rebar dowels no less than 18" on center.
- Contractor shall reconnect any existing fixtures/piping to remain where the existing piping or surrounding area is affected by the new or demolition work by other trades.

General Notes:

- Existing building water piping is copper. Contractor shall provide Type 1 annealed copper piping with 95/5 solder joints.
- Existing building S.W. & V are PVC. Contractor shall provide PVC Schedule 40 DWV (conforming to ASTM D2665) fittings for S.W. & V indicated on plans.
- Contractor may run 3" waste pipe at 1/8" slope where 2 1/2" or smaller would be acceptable for the DFUs but not allow for the proper code required 1/4" sloping and fit in the given space.
- Contractor shall include all fittings, extensions, etc necessary to connect all plumbing equipment (including equipment furnished by others).

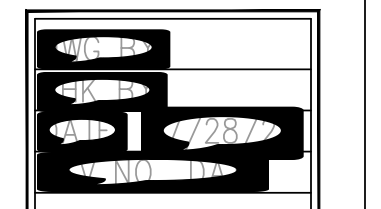
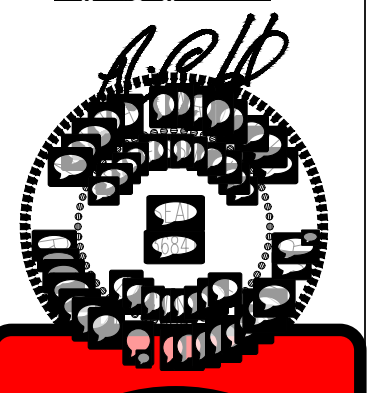
Plan Notes: (All notes not used on all sheets)

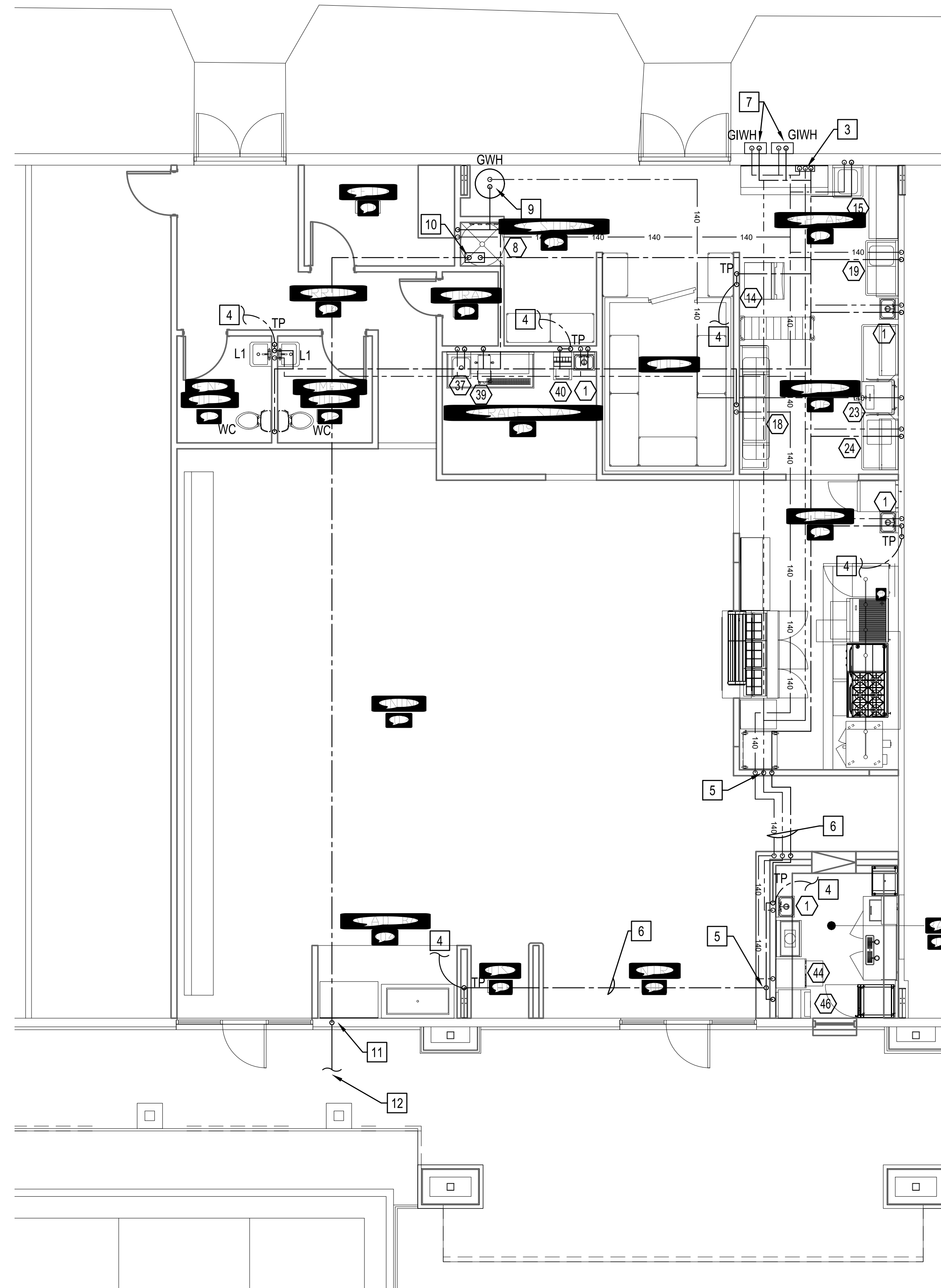
- Extend and connect to existing waste as indicated.
- Extend and connect to existing vent as indicated.
- Provide new master tempering valve, Watts # LFN170 up high on wall. Provide check valve on the 140°F hot water and the cold water incoming supplies. Hot water exiting mixing valve to be set at 120°F.
- Provide Trap Primer for floor drain, hub drain, and/or floor sink. Provide distribution box as necessary.
- Route CW & HW down wall and below slab to half height wall at bar.
- Route Type 'K' soft copper below slab.
- Provide 2 new gas instantaneous hot water heaters. Plumbing Contractor shall provide piping, offsets, and fittings required for the installation; and a complete and working system. Water heater and all piping must be installed to meet ADA clearance requirements. See riser diagram and "Gas Tankless Water Heater Detail" for additional information.
- New Trappzila TZ-600, rated for 75 GPM, with a grease retention of 635 pounds. See interceptor details for more information. Provide extension collar if necessary for invert. Foot traffic rated.
- Provide new gas tank type water heater on stand, with safety pan, and expansion tank. Mounted on stand such that drain pan is above edge of mop sink. Safety pan shall discharge into mop sink, indirect. See riser diagram and "Gas Tank Type Water Heater Detail" for additional information.
- Install Hyfab eMVPi-1LX21 booster pump on platform above mop sink to increase water pressure to 70 psi. Coordinate exact location and mounting with general contractor and other trades. Install pump per manufacturer's installation instructions and clearances.
- Route new 1" water line up within wall and continue through ceiling space to booster pump above mop sink.
- Continue new 1" water line across site to existing water meter and connect 1" line to existing 3/4" water meter.

Wall Ratings and Types Legend

See architectural sheets for more information on ratings and additional rated constructions including structure where applicable. Protect all rated constructions as required.

Existing Wall to Remain	_____
New Wall being Constructed	_____
One Hour Fire Barrier	-----
Existing Wall being Demolished	-----





1 Floor Plan - Water
Scale: 3/16" = 1' - 0"

Demolition Note:

The existing locations shown on the demolition plan to be removed or relocated are for reference only and shall be field verified by contractor prior to beginning work. Any items required to be relocated or removed shall be included in contractor's cost, whether shown on this plan or not. Unless noted otherwise, where a fixture or device is noted to be demolished, the work shall include removing all associated piping, fittings, hangers, insulation etc. and shall include all patch, repair, paint or refinishing necessary to restore the location to match the surroundings. The contractor may reuse any existing piping, fittings, valves etc. where they have been inspected and are determined to be acceptable to the owner and/or are in like-new condition.

Renovation Notes:

- Contractor shall visit site to verify existing conditions.
- See architectural for scope of demolition work. Cap and/or plug all waste/vent lines installed during shell that will not be used for fitup. Confirm all capped piping will be concealed and/or will not conflict with new layout. Ensure that all waste lines being removed are plugged such that no sewer or gases will escape sanitary system.
- Contractor shall camera the existing under slab sewer piping prior to cutting concrete. Engineer shall be contacted if the existing lines are not in the location shown on plans or are not in proper working order.
- All new piping shall be concealed in walls, above ceiling, or below slab where possible. Otherwise, contractor shall run water lines as close to structure as possible and coordinate routing with other trades.
- Any slab cutting for plumbing access requires soil compaction, vapor barrier and embedded #4 rebar dowels no less than 18" on center.
- Contractor shall reconnect any existing fixtures/piping to remain where the existing piping or surrounding area is affected by the new or demolition work by other trades.

General Notes:

- Existing building water piping is copper. Contractor shall provide Type L annealed copper piping with 95/5 solder joints.
- Existing building S.W. & V are PVC. Contractor shall provide PVC Schedule 40 DWV (conforming to ASTM D2665) fittings for S.W. & V indicated on plans.
- Contractor may run 3" waste pipe at 1/8" slope where 2 1/2" or smaller would be acceptable for the DFUs but not allow for the proper code required 1/4" sloping and fit in the given space.
- Contractor shall include all fittings, extensions, etc necessary to connect all plumbing equipment (including equipment furnished by others).

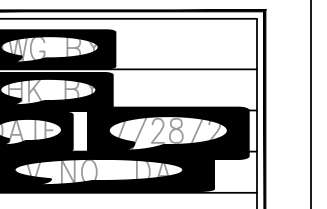
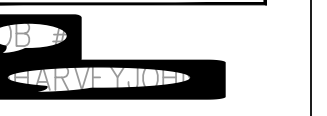
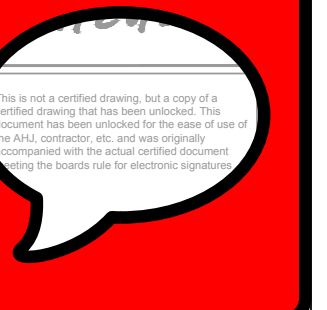
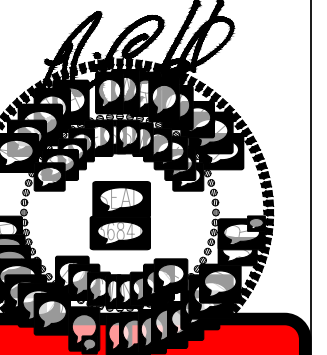
Plan Notes: (All notes not used on all sheets)

- Extend and connect to existing waste as indicated.
- Extend and connect to existing vent as indicated.
- Provide new master tempering valve, Watts # LFN170 up high on wall. Provide check valve on the 140°F hot water and the cold water incoming supplies. Hot water exiting mixing valve to be set at 120°F.
- Provide Trap Primer for floor drain, hub drain, and/or floor sink. Provide distribution box as necessary.
- Route CW & HW down wall and below slab to half height wall at bar.
- Route Type 'K' soft copper below slab.
- Provide 2 new gas instantaneous hot water heaters. Plumbing Contractor shall provide piping, offsets, and fittings required for the installation; and a complete and working system. Water heater and all piping must be installed to meet ADA clearance requirements. See riser diagram and "Gas Tankless Water Heater Detail" for additional information.
- New Trapzilla TZ-600, rated for 75 GPM, with a grease retention of 635 pounds. See interceptor details for more information. Provide extension collar if necessary for invert. Foot traffic rated.
- Provide new gas tank type water heater on stand, with safety pan, and expansion tank. Mounted on stand such that drain pan is above edge of mop sink. Safety pan shall discharge into mop sink, indirect. See riser diagram and "Gas Tank Type Water Heater Detail" for additional information.
- Install Hyfab eMVPJ-1LX21 booster pump on platform above mop sink to increase water pressure to 70 psi. Coordinate exact location and mounting with general contractor and other trades. Install pump per manufacturer's installation instructions and clearances.
- Route new 1" water line up within wall and continue through ceiling space to booster pump above mop sink.
- Continue new 1" water line across site to existing water meter and connect 1" line to existing 3/4" water meter.

Wall Ratings and Types Legend

See architectural sheets for more information on ratings and additional rated constructions including structure where applicable. Protect all rated constructions as required.

Existing Wall to Remain	_____
New Wall being Constructed	_____
One Hour Fire Barrier	-----
Existing Wall being Demolished	-----

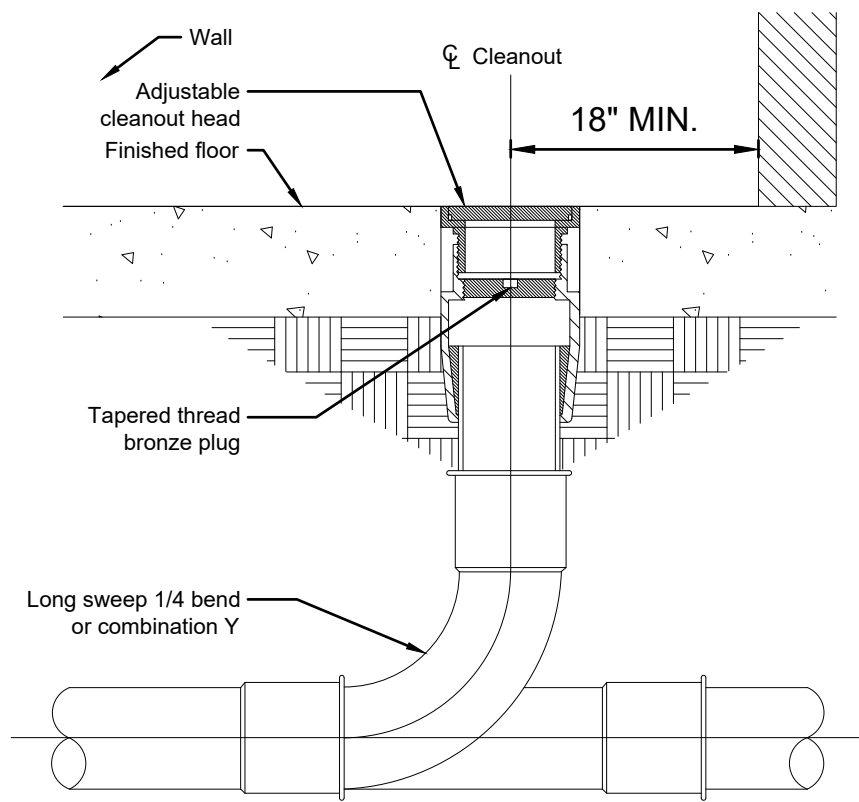


Plumbing Fixtures, Equipment, & Accessories					
Tag	Description	Fixture Specification	Water Line & Connection Size		
			CW	HW	W
WC	Water Closet, Tank Type, Floor Mounted ADA	 Toilet: Toto Eco Drake CST744EL, 1.28 GPF, Colonial White, Vitreous china, chrome side trip lever, 12" rough-in, 16 1/2" tall without seat. Seat: Bemis #7850TDG, heavy duty, antimicrobial elongated seat with open front. Valve: McGuire #LFB02. Provide flexible 3/8" supply line between angle stop and fixture.	1/2"	-	4"
L1	Lavatory Wall Hung ADA	 Lavatory Basin: Toto #LT307, Vitreous china, top of rim at 34" AFF for ADA Faucet: Delta #15769L-F-SP, single hole faucet, 1.2 GPM flow rate. Trap & Supplies: McGuire #8902, 17 gauge 1 1/4" x 1 1/2" P-trap and nipple, McGuire #LFB02 angle supply stops. Mount P-trap such that ADA clearance requirements are maintained. Accessories: Truebro 82192 Lav Guard 2 molded insulation # 101-EZ, 3 piece interlocking trap assembly and 2 piece interlocking hot water angle valve assembly, with nylon type fasteners.	1/2"	1/2"	2"
WCO	Wall Clean Out	Zurn #Z1446 wall cleanout tee, dura-coated cast iron body, gas and watertight ABS tapered thread plug, and round, smooth stainless steel wall access cover with securing screw.	-	-	see plans
FCO	Floor Clean Out	Zurn Z1400 'Leveltr' adjustable floor clean out, cast iron with gas and watertight ABS tapered thread plug, and round, polished nickel bronze top that is adjustable to final finished grade.	-	-	see plans
FDB	Floor Drain	Zurn #Z415B floor drain. Dura-Coated cast iron body with bottom outlet, combination invertible membrane damp and adjustable collar with seepage slots and type "B" polished nickel bronze, light duty heel proof strainer. Connect to trap primer as required.	-	-	see plans
FDI	Floor Drain	Zurn #Z415I floor drain. Dura-Coated cast iron body with bottom outlet, combination invertible membrane damp and adjustable collar with seepage slots and type "I" polished nickel bronze, light duty heel proof strainer. Connect to trap primer as required.	-	-	see plans
FS	Floor Sink	Plastic Oddities PFS400H 14"x14" PVC floor sink with 4" outlet. Provide half plastic grate as well as secondary strainer	-	-	4"
TP	Trap Primer	Watts #200 Flow through trap primer	1/2"	-	-
SA	Shock Absorber	Watts series #15M2 water hammer arrestor, sized to match associated line. Shock absorber shall meet all requirements ASSE 1010, ANSI A1 12.261M as well as the 2018 NCSBC and the 2018 NCSPC, section 604.9	see plans	see plans	-
VB	Vacuum Breaker	Watts #SD-3 vacuum breaker, sized to match associated line. Vacuum breaker shall meet all requirements ASSE 1022, as well as the 2018 NCSBC and the 2018 NCSPC, section 608.16.1.	-	-	-

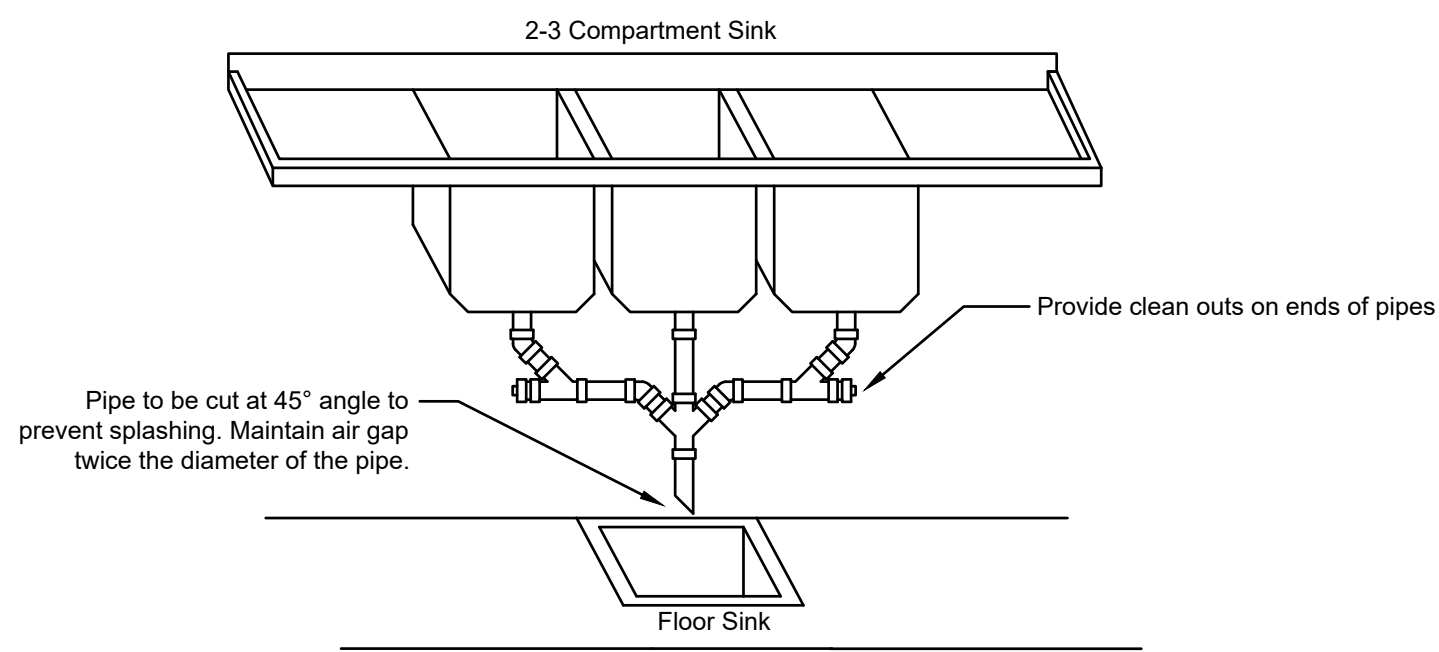
The intention of the depicted images above are to show the general appearance of the fixtures being specified. Exact representation is not necessarily shown nor are accessories for models or some variation of the model. The fixture specification should take precedent over the photo.

Kitchen Equipment, Fixtures, & Accessories						
Tag	Description	Equipment/Fixture Details	Furnished By:	Water Line & Connection Size		
				CW	HW	W
1	Hand Sink	1/2" cold water and 1/2" hot water located at 16" AFF. 1 1/2" direct drain, Mount rim per ADA	Tenant/Owner	1/2"	1/2"	1 1/2"
8	Mop Sink	1/2" cold water and 1/2" hot water located at 36" AFF. 3" direct drain	Tenant/Owner	1/2"	1/2"	3"
14	Ice Maker	1/2" cold water located at 16" AFF. 1 1/2" drain to floor sink (indirect connection)	Tenant/Owner	1/2"	-	1 1/2"
15	Prep Sink	1/2" cold water and 1/2" hot water located at 16" AFF. 1 1/2" indirect drain to floor sink, Mount rim per ADA	Tenant/Owner	1/2"	1/2"	1 1/2"
18	3 Compartment Sink	1/2" cold water and 1/2" hot water located at 16" AFF. 1 1/2" drain to floor sink (indirect connection), Mount rim per ADA	Tenant/Owner	1/2"	1/2"	1 1/2"
19	Prep Sink	1/2" cold water and 1/2" hot water located at 16" AFF. 1 1/2" indirect drain to floor sink, Mount rim per ADA	Tenant/Owner	1/2"	1/2"	1 1/2"
22	Dishwasher	1/2" hot water located at 16" AFF., deployed in water box, see plumbing schedule. 2" drain or hose from unit to floor sink (indirect connection)	Tenant/Owner	-	1/2"	2"
24	Pre Rinse	1/2" cold water and 1/2" hot water located at 16" AFF. 1 1/2" drain to floor sink (indirect connection), Mount rim per ADA	Tenant/Owner	1/2"	1/2"	1 1/2"
37	Hand Sink	1/2" cold water and 1/2" hot water located at 16" AFF. 1 1/2" direct drain, Mount rim per ADA	Tenant/Owner	1/2"	1/2"	1 1/2"
39	Coffee Maker	1/2" cold water located at 16" AFF.	Tenant/Owner	1/2"	-	-
40	Soda Dispenser	1/2" cold water located at 16" AFF.	Tenant/Owner	1/2"	-	-
43	Ice Bin	1 1/2" drain to floor sink (indirect connection)	Tenant/Owner	-	-	1 1/2"
42	Beer Dispenser	1 1/2" drain to floor sink (indirect connection)	Tenant/Owner	-	-	1 1/2"
44	Glass Washer	1/2" cold water and 1/2" hot water located at 16" AFF. 1" drain to floor sink (indirect connection)	Tenant/Owner	-	1/2"	1"
46	Ice Maker	1/2" cold water located at 16" AFF. 1 1/2" drain to floor sink (indirect connection)	Tenant/Owner	1/2"	-	1 1/2"

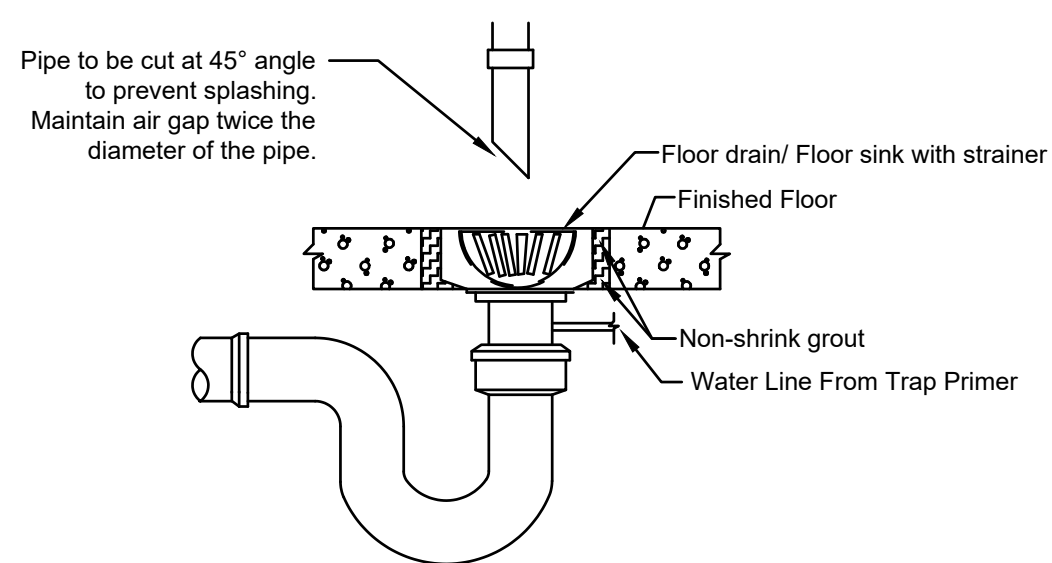
Coordinate exact requirements and locations with equipment vendor/contractor and owner.



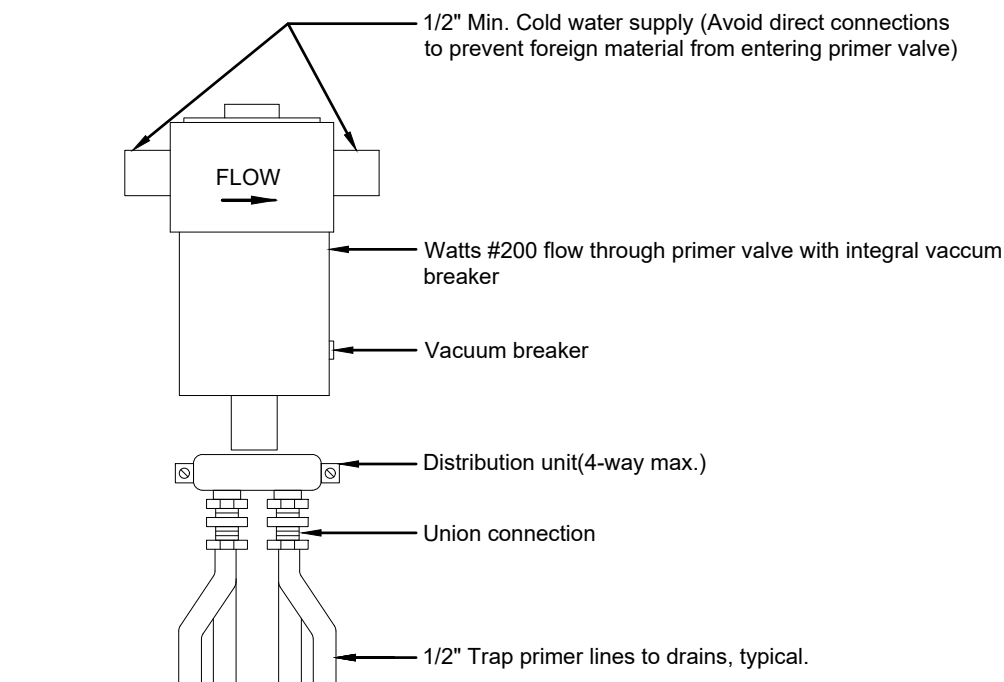
5 Floor Cleanout with Sweep Bend or Combination Detail
Scale: None



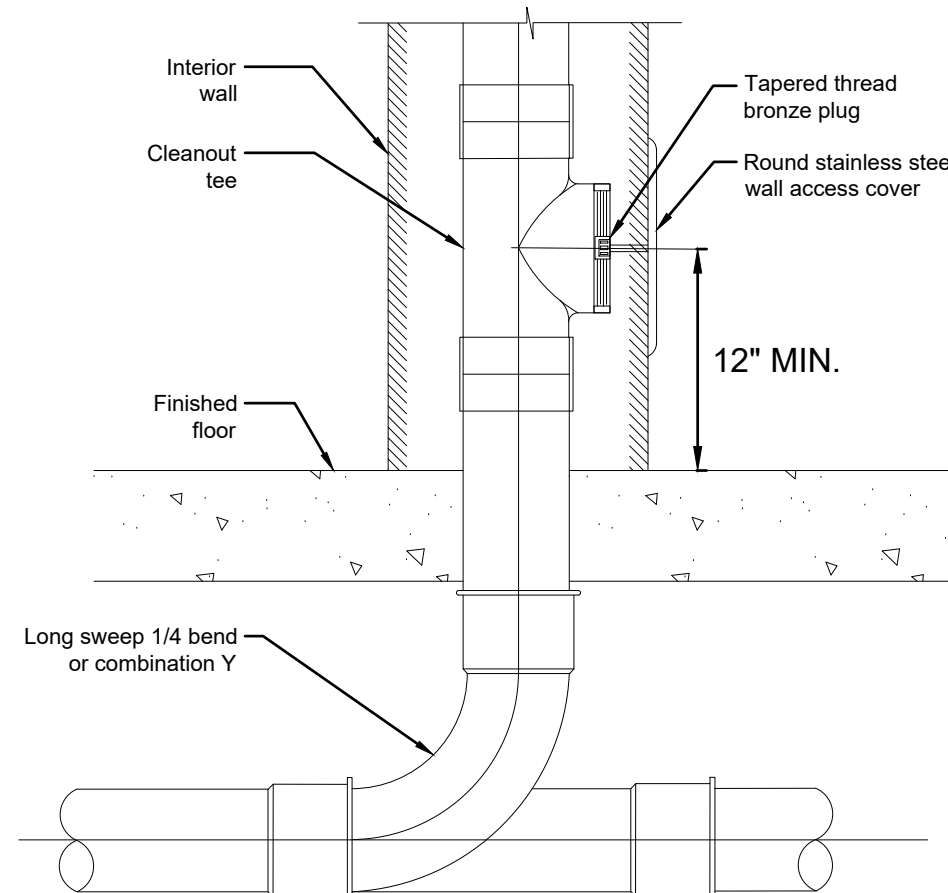
3 Multi Compartment Sink Detail
Scale: None



4 Floor Drain/Sink Detail
Scale: None



1 Trap Primer Detail
Scale: None

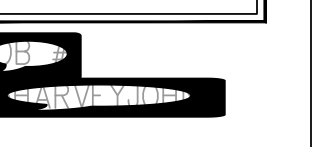
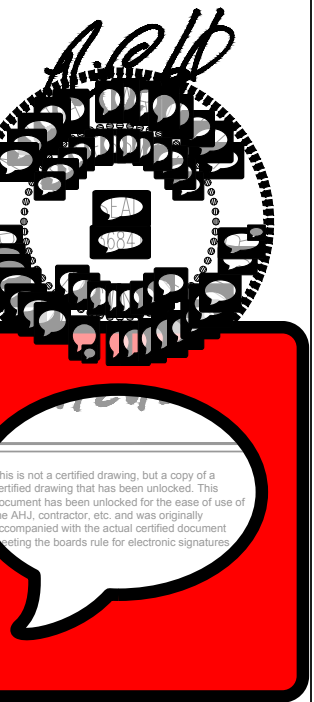


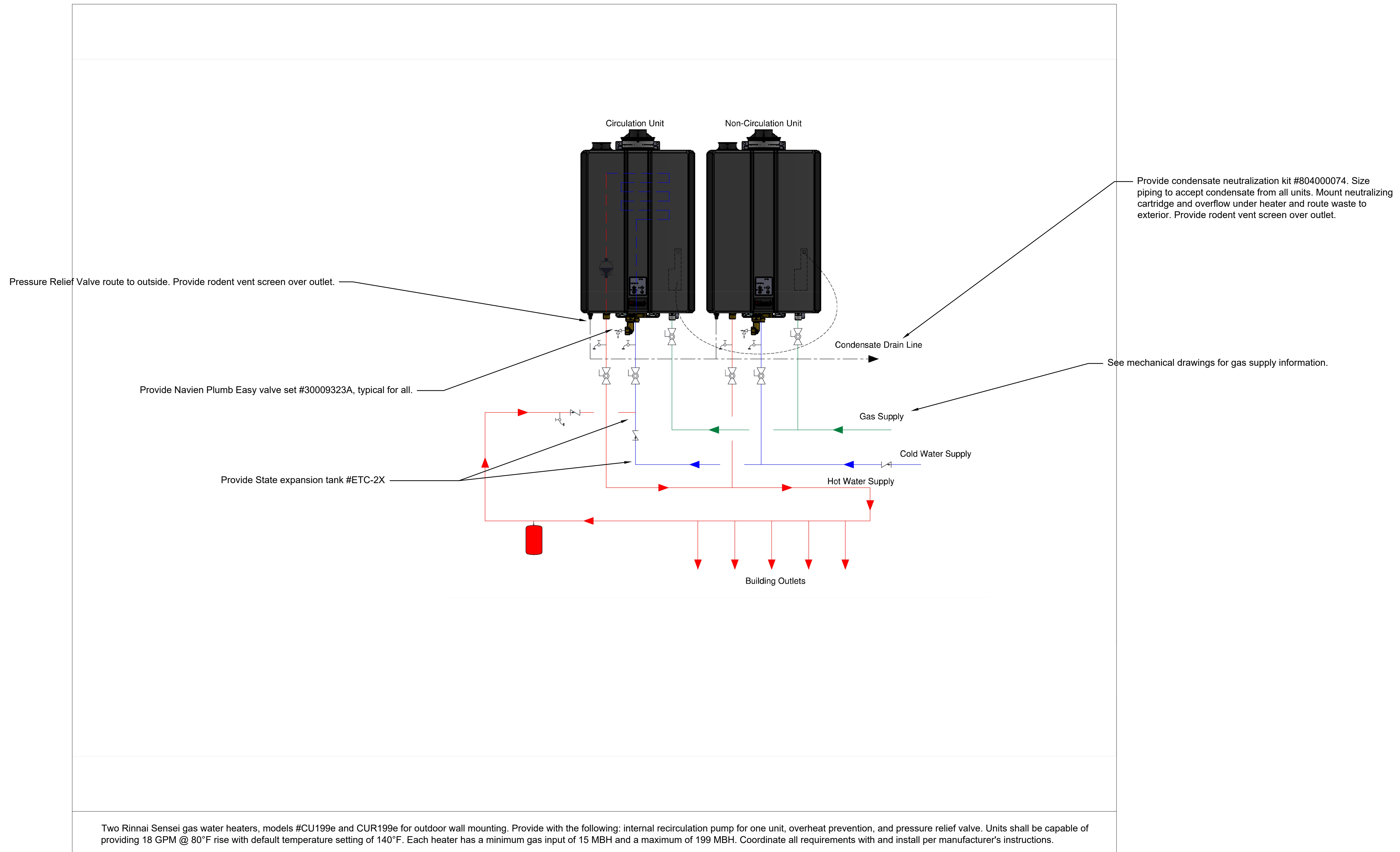
2 Wall Cleanout with Sweep Bend or Combination Detail
Scale: None

Plumbing Legend and Abbreviations	
— GW —	Grease Waste Piping 'GW'
— S —	Sanitary Sewer Piping 'W'
— EX W —	Existing Sanitary Sewer Piping 'EX W'
— V —	Vent Piping 'V'
— EX V —	Existing Vent Piping 'EX V'
— CW —	Cold Water Piping 'CW'
— EX CW —	Existing Cold Water Piping 'EX CW'
— HW —	Hot Water Piping 'HW'
— 140 —	Hot Water Piping 140°F HW
— EX HW —	Existing Hot Water Piping 'EX HW'
— HW R —	Hot Water Return Piping 'HW R'
— EX HW R —	Existing Hot Water Return Piping 'EX HW R'
— SD —	Roof Drain / Storm Piping
— A —	Compressed Air Piping
— RO —	RO water piping
— CO2 —	CO2 piping (by others)
— CV —	Check Valve
— BV —	Ball Valve
— PRV —	Pressure Reducing Valve 'PRV'
— GV —	Gate Valve 'GV'
— TU —	Tee Turns Up
— TB —	Tee from Below
— EU —	Elb Turns Up
— ED —	Elb Turns Down
— CL —	Capped Line
— CE —	Connect to Existing
— ER —	Existing to Remain
— EWH —	Electric Water Heater
— GWH —	Gas Water Heater
— IWH —	Instantaneous Water Heater
— RP —	Recirculation Pump
— VTR —	Vent Through Roof
— AAV —	Air Admittance Valve
— RD —	Primary Roof Drain
— SRD —	Secondary Roof Drain

Plumbing Specifications:

- These plans are diagrammatic only. Contractor shall provide all necessary offsets, elbows, tees, etc. for a complete working system.
- Contractor shall obtain and pay all fees related to permitting, inspections, taps, etc. Coordinate with GC to confirm none of these costs are covered by them.
- All work shall be coordinated with all other trades prior to installation. Contractor shall coordinate routing of all piping with existing and new conditions and shall provide any necessary rerouting, offsets, etc. required for a completely coordinated and working system.
- The plumbing system shall be installed in accordance with 2018 NC plumbing code and local AHJ requirements.
- New portion of the domestic water system shall be purged of damaging matter and disinfected in accordance with 2018 NC Plumbing code. Remove dirt and debris as work progresses. Submit third-party witness reports of purging and disinfecting activities.
- All plumbing systems shall be tested as required per 2018 NC Plumbing Code.
- All piping systems shall be strapped and supported as required by 2018 NC Plumbing Code & the manufacturer's recommendations.
- Plumbing contractor shall provide cleanouts in compliance with IPC section 708, as well as the following locations:
 - as indicated on plans
 - at the base of the waste stack
 - at every two 90° turns or every four 45° turns
 - on all horizontal waste line, no further than 100 feet apart
- Plumbing fixtures with automatic or quick-closing valves and kitchen equipment shall have a shock arrestors, piston type water hammer arrestor, sized according to manufacturer's recommendations & PDI standards.
- All overhead domestic water piping (above slab) shall be type "L" copper with 95/5 lead free solder. All below grade water piping shall be type "K" soft copper. Each complying with ASTM B-88. All piping shall have manufacturer's name and the applicable standard to which it was made clearly labeled on each length. Contractor shall use brazed joints on all piping 1 1/2" and larger.
- Water piping shall be insulated with closed cell (Arma-cell) type insulation with a smoke density rating not exceeding 50 and a flame density rating not exceeding 25. Thickness for cold water piping insulation shall be 1/2" thick, thickness for hot water & return piping insulation shall be 1" thick.
- Branch lines and base of risers shall have, shut-off valves. All domestic water ball valves shall be a brass body, full port, with a chrome plated ball, Teflon seats, 600 WOG, for sizes 1/2" thru 3". Sizes above 3" shall be a bronze gate valve, NRS, solid disc, cutoff valve, screw-over bonnet, 400 WOG. Provide valve handle extensions if necessary due to insulation.
- Storm, waste & vent piping, underground, shall be PVC Schedule 40 DWV with piping and fittings conforming to ASTM D-2685.
- The backflow prevention device shall be installed as required per local AHJ. Purge water piping before setting backflow preventer.
- Sanitary sewer piping shown is below slab or within walls unless otherwise noted. Sanitary vent piping shown is within wall and above ceiling unless otherwise noted.
- Domestic water piping shown on drawing is above ceiling or within walls unless otherwise noted.
- The plumbing contractor shall coordinate all underslab plumbing piping with all structural foundations and footings and all underslab plumbing piping elevation inverts with site utility.
- All piping penetrations thru new or existing walls and/or floors shall be sealed to equal the rating of the new or existing wall or floor.
- All vent thru the roof penetrations shall be coordinated with the general contractor. Plumbing contractor shall provide all flashing material required for vent thru roof. Vents thru the roof shall be located a minimum of 10'-0" away from all fresh air intakes.
- Contractor shall coordinate any plumbing work requiring shutdown with the owner 72 hours in advance. If other users will be affected, coordinate with owner/building management at the beginning of the project to find a workable solution.
- Plumbing contractor shall provide shop drawings to the engineer for review and approval prior to beginning work.

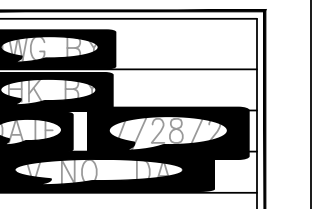
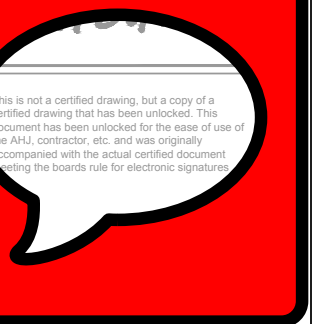
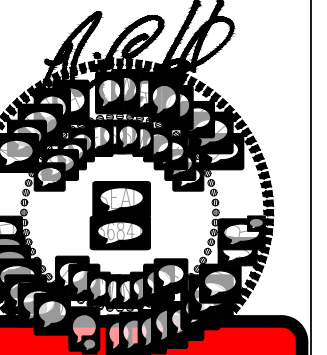




Two Rinnai Sensei gas water heaters, models #CU199e and CUR199e for outdoor wall mounting. Provide with the following: internal recirculation pump for one unit, overheat prevention, and pressure relief valve. Units shall be capable of providing 18 GPM @ 80°F rise with default temperature setting of 140°F. Each heater has a minimum gas input of 15 MBH and a maximum of 199 MBH. Coordinate all requirements with and install per manufacturer's instructions.

1 Gas Tankless Water Heater Detail
 With Hot Water Recirculation Loop
 Scale: NTS

Fixture Type	Occupancy	Quantity	Drainage Fixture Units		Water Supply Fixture Units			
			Each	Total	CW	HW	CW & HW Total	
Water Closet (Tank Type)	Public	2	4	8	2	-	2	4
Lavatory	Private	7	1	7	0.5	0.5	0.7	4.9
Mop Sink	Public	1	2	2	2.25	2.25	3	3
Break Sink	Private	3	2	6	1.5	1.5	2	6
Dishwasher (Residential Style)	Private	2	2	4	-	1.4	1.4	2.8
Bath Tub	Private	0	2	0	1	1	1.4	0
Shower	Public	0	2	0	3	3	4	0
Floor Drain		3	2	6	-	-	-	-
Total DFUs				33				
Total WFSUs				20.7				
GPM								
Total GPM				19.9		from table E103.3(3)		
Minimum Building Drain Size				4"				
Minimum Water Line Size				1"				
* building drain and water meter are existing								



SIZING TOOL - Harvey John's Steak House

Sink Compartments (Length x Width x Height)

- Sink #1: 3 Compartments 18" x 24" x 18"
- Sink #2: 1 Compartment 24" x 24" x 14"
- Sink #3: 1 Compartment 24" x 24" x 14"

Flowrate

Type of Fixture	# of Fixtures	GPM
Sink Compartments	3	64.5
Floor Drains/Floor Sinks	0	0
Mop Sink	1	3.75
Hand Sink	0	0
Pre-Rinse Sink	1	3.75
Dishwasher	1	2
Required Flowrate		73.55

Grease Output

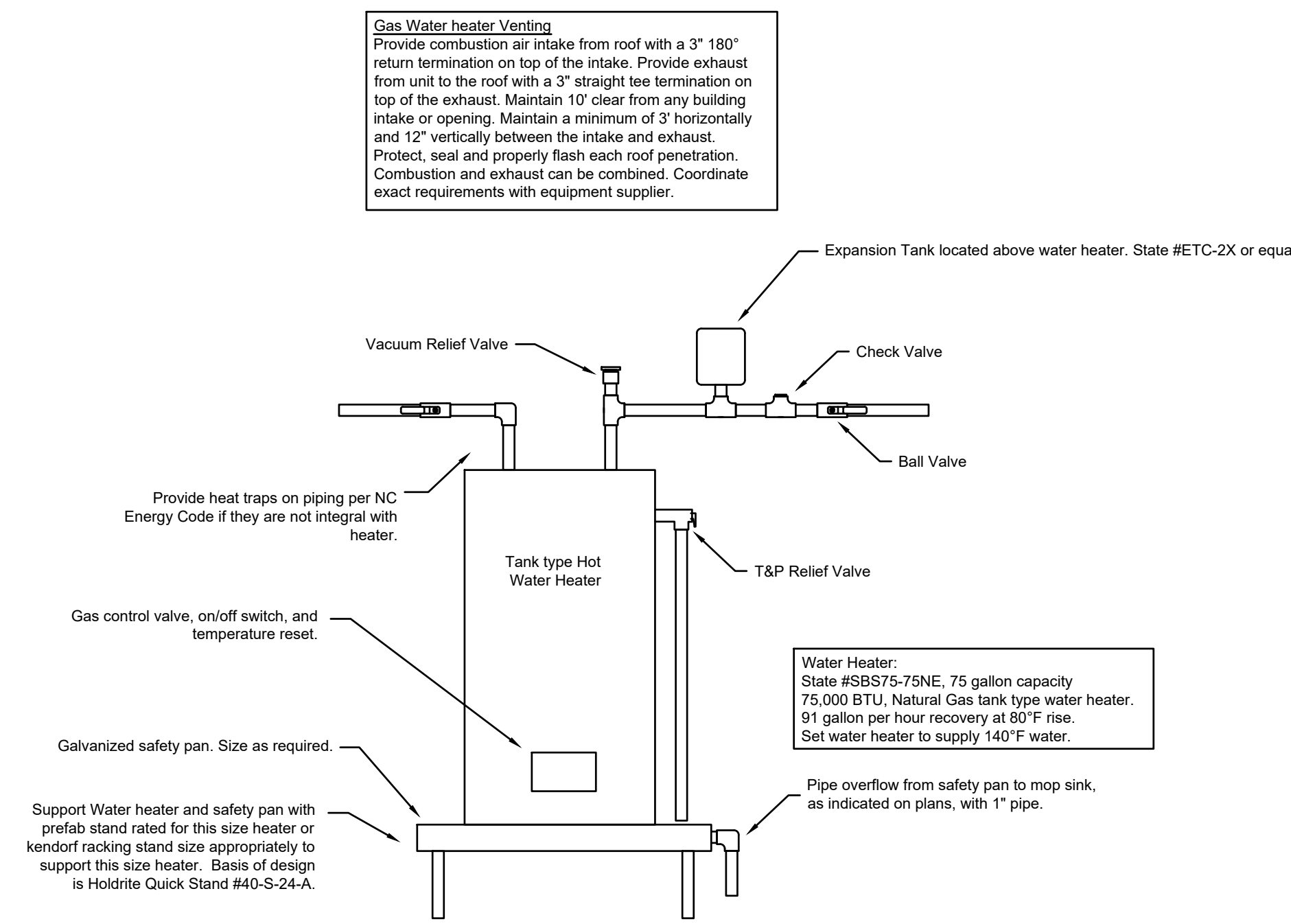
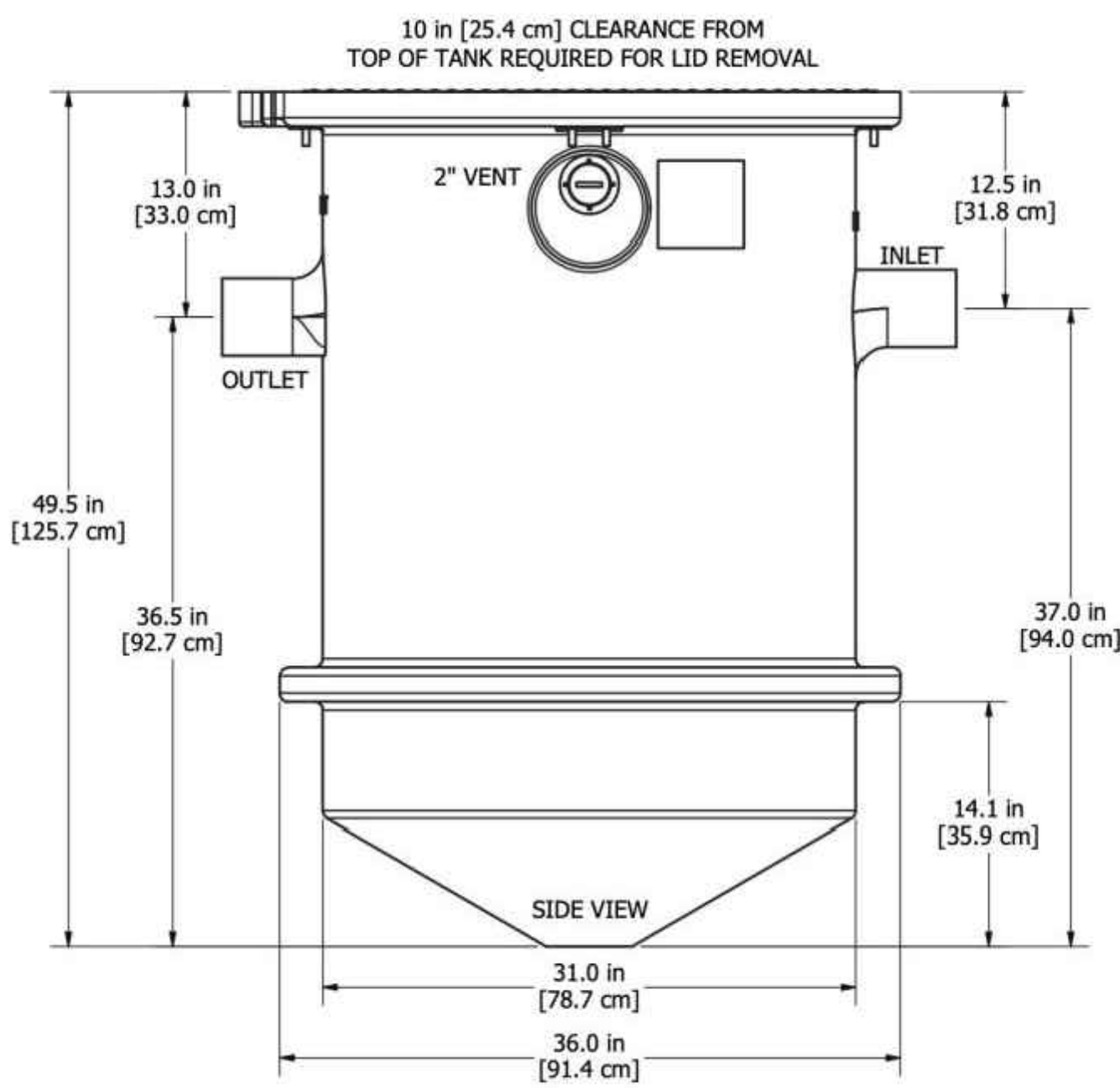
Field	Field	Field
Restaurant Type	Bar Grill	Fryer
Plates	Silverware	Pump Outs
Customers per Day	120 to 200 per Day	30 Days
Capacity		33.6 lb

Other Requirements

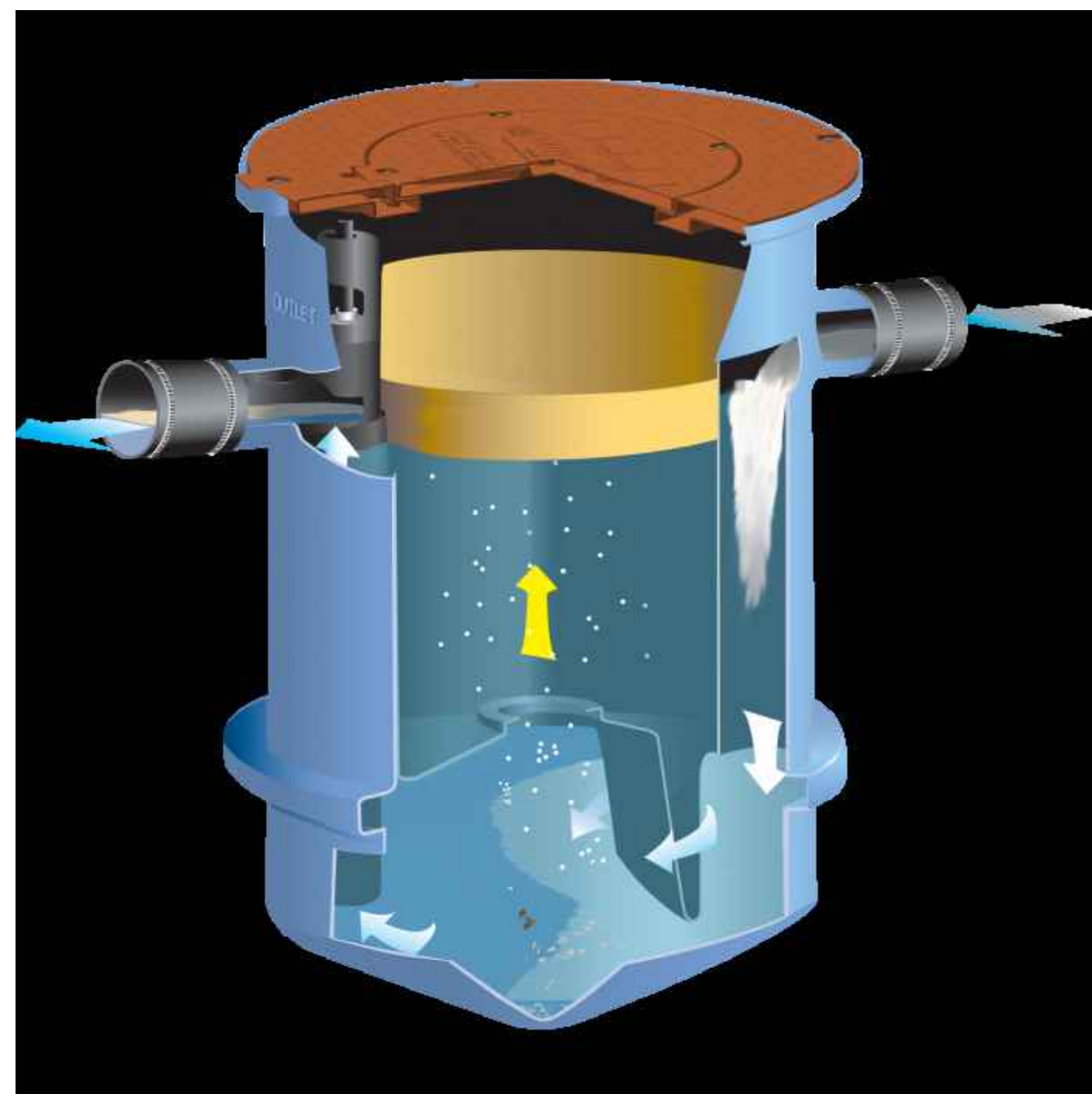
Requirement	Requirement	Requirement
Model Position	In-Ground	Pipe Size
95% Efficiency?	No	Drain Time
		2 Minutes

1/3

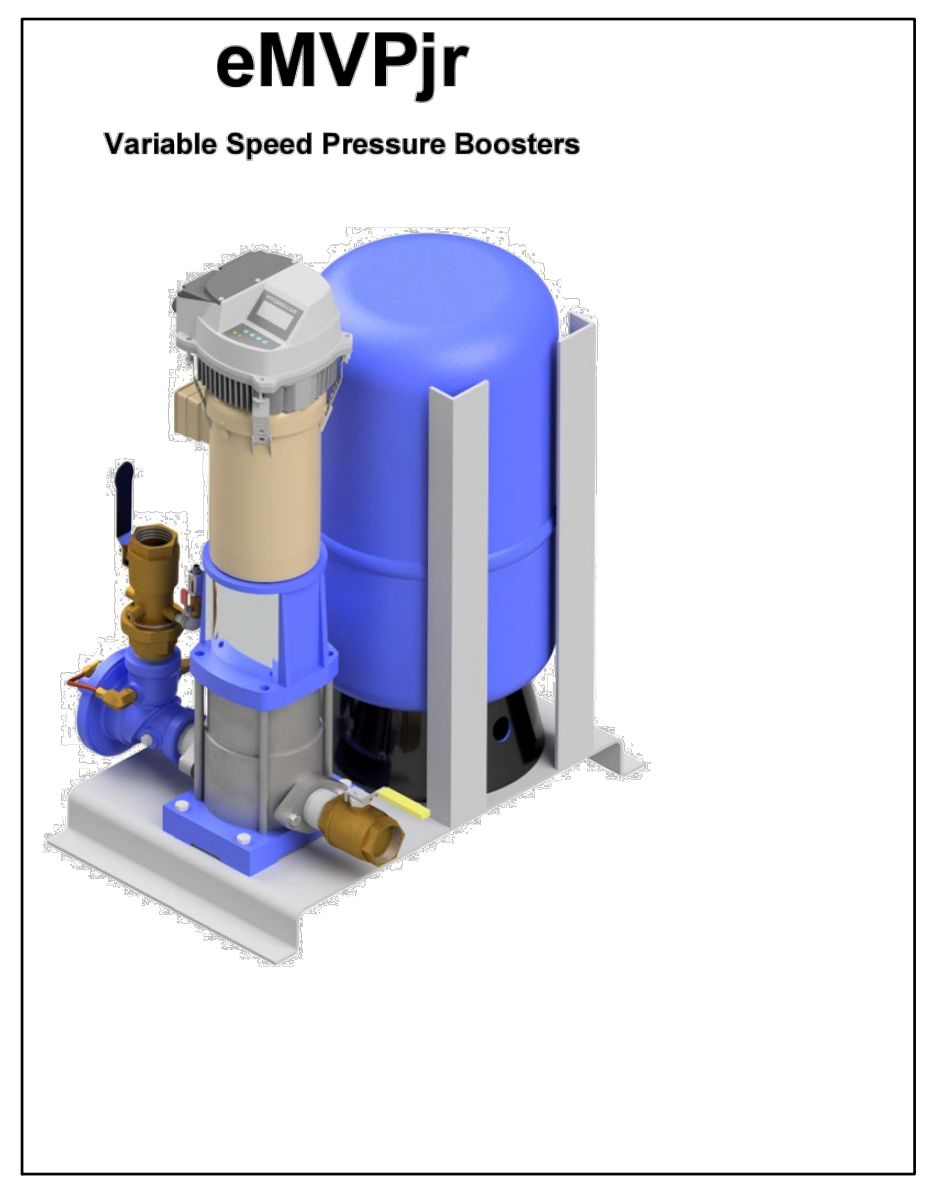
Tankless Water Heater Sizing Calculator			
Developed by the Plan Review Unit of the Environmental Health Section NC Division of Public Health			
Enter the quantity of each piece of equipment listed below			
For other equipment enter the description and gallon per minute (GPM) value.			
Find dishmachine GPM on the "Dishmachine Sizing" sheet below or on the manufacturer's spec sheet.			
Establishment Name:			
Address:			
Equipment	Quantity	GPM each	GPM Calculated
Handwashing sink	5	5 GPM each	2.5
Washing sink	1	2 GPM each	2
Prep sink	2	1 GPM each	2
Service sink	1	1 GPM each	1
Other equipment	Description	GPM value	
Other equipment	Dishwasher	1	1
Other equipment			0
Other equipment			0
Dishmachine Brand	Dishmachine Model	Dishmachine GPM	
Pre-rinse Quantity	1	2 GPM each	2
Total Gallons per Minute (GPM) Needed:			10.5



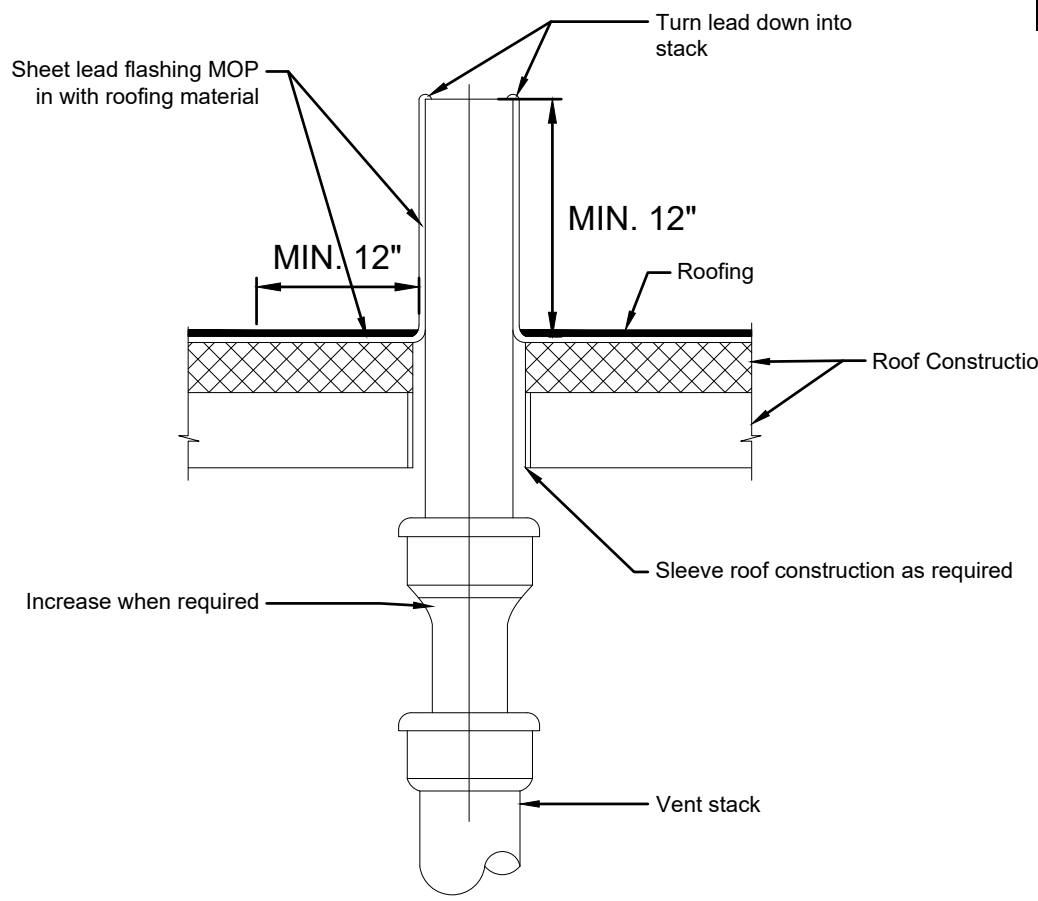
1 Gas Tank Type Water Heater Mounting Detail
Scale: None



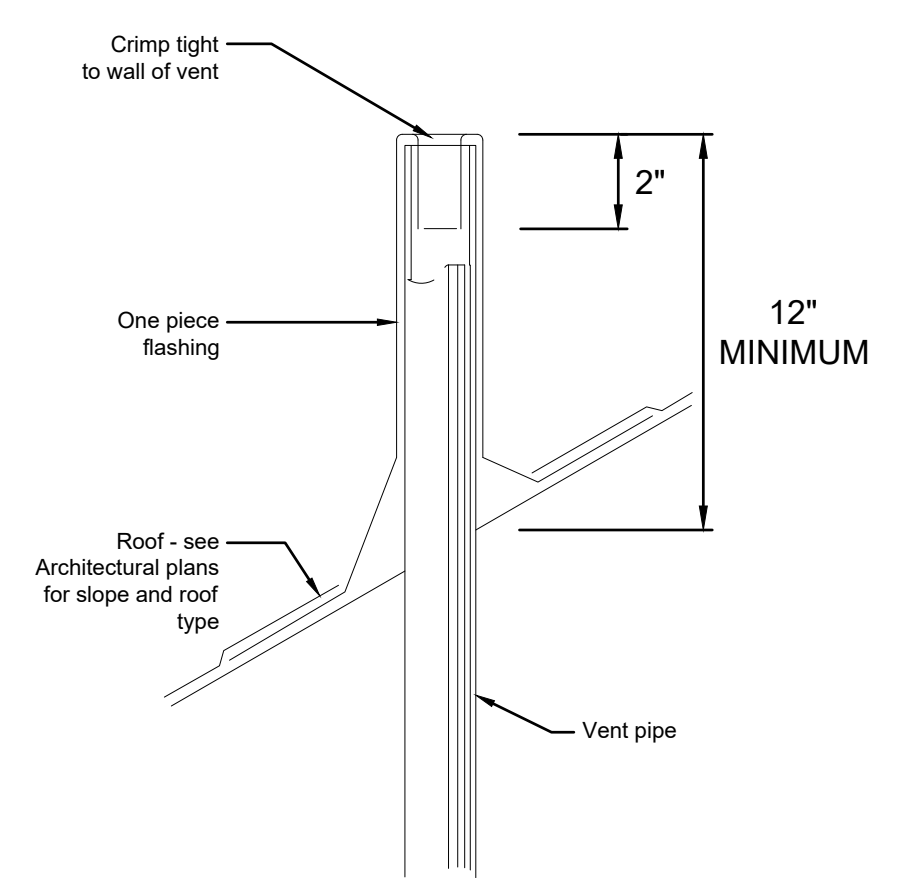
4 Grease Trap Section Details
Scale: NTS



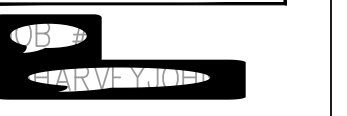
2 Booster Pump
Scale: None

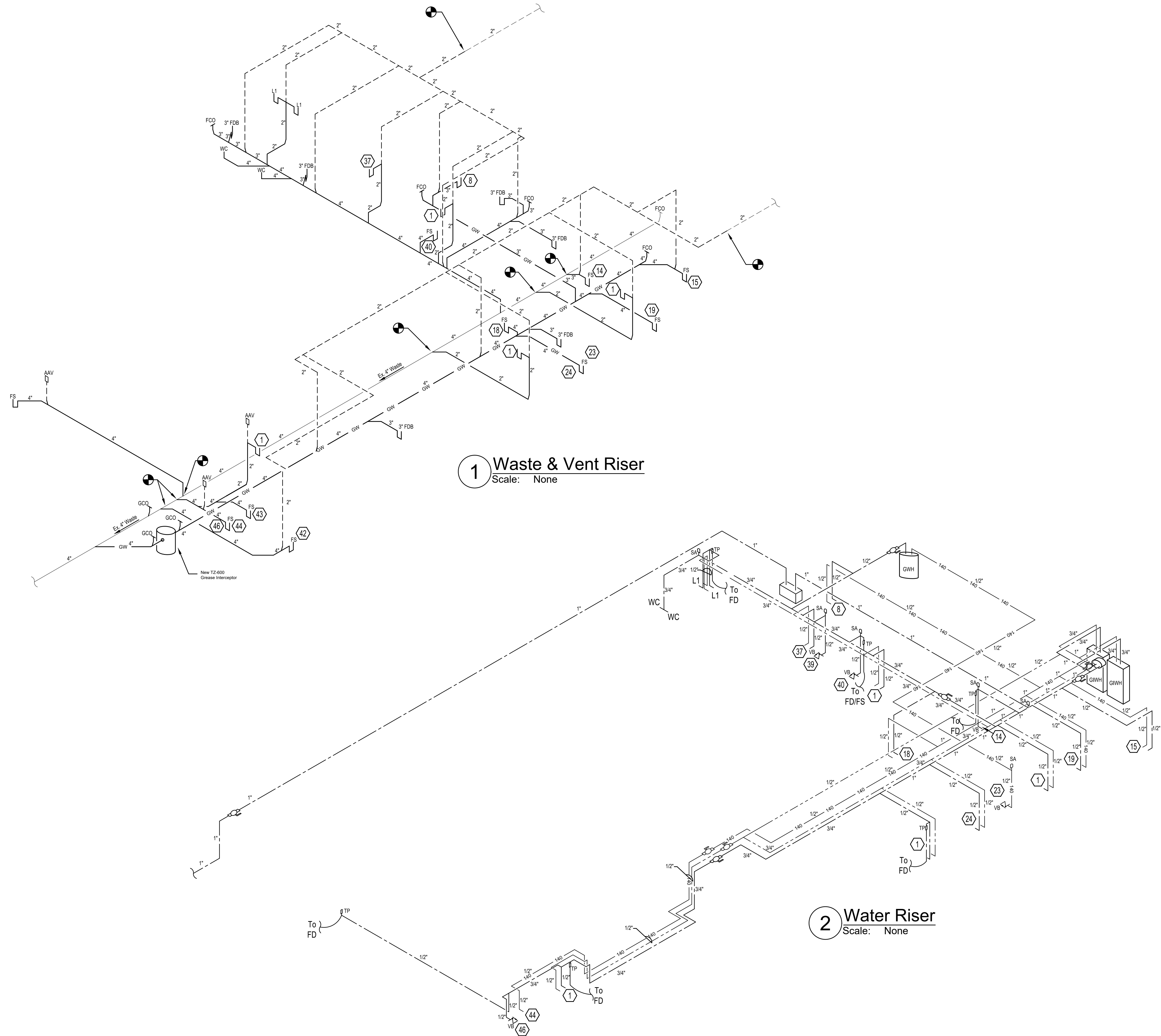


5 Vent Through Flat Roof Detail
Scale: None



3 Vent Through Sloped Roof Detail
Scale: None





1 Waste & Vent Riser
Scale: None

2 Water Riser
Scale: None

