

## PLUMBING SPECIFICATIONS

### GENERAL WORK:

- The Contractor shall provide all labor, materials, tools, apparatus and equipment required to complete his work in accordance with the contract documents, codes, laws and ordinances, and accepted trade procedures.
- In preparing his estimate, the contractor shall review all of the contract documents including those of the other trades in order to acquaint himself with existing and related conditions that may, will, or could affect his work. He shall be experienced, skilled, and knowledgeable with this type of construction and shall be expert and proficient in the preparation of estimates and the comprehension, implementation, and interpretation of contract documents such as those prepared for this project.
- The contractor by his acceptance of the contract guarantees that all work installed shall be free from all defects in workmanship and materials and that all apparatus furnished by him shall develop the capacities and characteristics specified. He further guarantees that if, during a period of one (1) year from the date of the certificate of completion and acceptance of the work, any such defects in workmanship, material or performance appear, such defects shall be remedied by him without cost to the owner. If the contractor fails to remedy the defects as outlined within a reasonable length of time, to be specified in a notice from the owner's authorized representative to the contractor, the owner will have such work done, and he will charge the cost to the contractor.
- The contractor shall visit the site before he submits his proposal. He shall examine all existing conditions which affect the work. The submission of the proposal shall be considered evidence that this requirement has been fulfilled. No extra payment will be allowed for additional work made necessary by the failure to visit the site.
- Plumbing work shall be installed in a neat and workmanlike manner in accordance with latest and best practices of the trade. Only mechanics skilled in this type of work shall be employed and utilized by Contractor for this Division in the execution of this work.
- The contract drawings are diagrammatic and indicate the general arrangement of all systems and work included in the contract. The contract drawings are not to be scaled. The architectural contract drawings and details together with the other contract documents shall be examined for all dimensional information.
- The contractor shall follow the contract drawings in laying out his work, and he shall also check the contract drawings of the other trades to verify spaces in which his work shall be provided.
- The contractor shall, without additional costs to the owner, make reasonable modifications in the layout of his work in order to prevent conflicts with the work of other trades or for the proper execution of his work.
- The contractor shall supply all labor required to perform all work which may be claimed by trade organizations within his jurisdiction. All work shall be performed without any additional cost to the owner regardless of which section of the contract documents the work shall be responsible to verify, with all local organizations the extent of any collective bargaining agreements and/or any jurisdictional decisions rendered regarding disputes between the respective trades, and provide and install his work in accordance with the accepted trade practice in the area.
- The entire installation shall conform with all pertinent codes and regulations of the local, municipal, county, state, and federal authorities, The National Board of Fire Underwriters, the codes of the International Codes Council, the National Fire Protective Association and all other jurisdictions. All materials and equipment shall bear the stamps or seals of the NFPA, ASME, NEMA, IEEE, UL, and other recognized industry regulatory groups.
- The contractor shall give all necessary notices, obtain all permits, pay all governmental taxes, fees and other costs in connection with his work. He shall file all necessary plans, and prepare all other documents including additional detailed plans that are required for compliance with all applicable laws, ordinances, rules and regulations.
- The Contractor shall coordinate with the General Contractor and locate all required cutting and patching and the like required by the installation of the plumbing work.
- It work shall be installed in strict accordance with the equipment manufacturer's recommendations and requirements. All systems are to be tested, adjusted and balanced to provide performance as indicated on the drawings. Test and adjust all safety controls.
- Coordinate to assure that all work of all trades will be concealed within the wall and ceiling construction and without the need to reduce ceiling heights. Report exceptions to the architect prior to construction and erection of the work. Openings around piping passing through the construction shall be sealed with fire barrier caulking. All materials located within the return air plenum shall be non-combustible with flame spread ratings of 25 or less and smoke developed ratings of 50 or less. All control wiring located within ceiling return air plenums shall be plenum rated or shall be run in conduit. All work shall be located to avoid conflicts with other work and provide adequate clearances for architectural design, proper operation, adjustments, component service, and provide a minimum 2" clearance between all piping and other work.
- Provide supports, hangers, flexible pipe connections, vibration isolation, supplementary supports, controls and wiring, cleaning, painting, specialties and all other labor, materials, devices and services required for a complete, first quality installation. All work shall be supported from the building structural system. Work shall not be supported from the ceiling suspension system, from electrical work, nor from other mechanical work. Unless otherwise indicated, run all piping as high as possible. Provide starters for all motor driven equipment.
- The contractor shall provide and maintain in good order a complete set of blue line prints of the contract drawings. As the work progresses, the actual location of all work shall be clearly recorded, including all changes to the contract and equipment size and type. These prints shall be available at the site for inspection at all times. At the conclusion of the work, the contractor shall, at his own expense, obtain a set of reproductions of the original contract drawings, and utilizing the symbols on the contract drawings, shall incorporate all "as built" data in a clearly legible and reproducible manner. All schedules shall be corrected to indicate "as built" conditions. All revisions shall be incorporated on these reproductions including all sketches and written directives. All concealed equipment, manifeaders, pull and junction boxes, etc. shall be dimensionally located from the building structure. As a condition for acceptance of the work, the "as built" reproductions and one (1) set of prints shall be signed, dated and delivered to the engineer.

### PLUMBING:

- Gate valves shall be all red bronze, 125 psi WP, solid wedge disc, non-rising stem, soldered ends and equivalent to Stockham B-109. Provide shut-off valves for all connected equipment.
- The Contractor shall provide a sanitary drain from all fixtures. The Contractor shall provide all required vent piping for all fixtures installed. Pitch Drainage Piping 1/8" per foot (1%) unless otherwise noted. Snake all lines and test system just prior to turn over to owner. Provide cleanouts and piping 50 feet on centers on all horizontal piping, in direction of flow, in changes of 45° or more, and elsewhere required by codes. Cleanouts accessible through walls shall be provided with chrome-plated covers and frame, in floors with recessed top to receive floor finishing material.
- The Contractor shall sterilize all new domestic water piping as required by the plumbing code and the Health Department. The plumbing contractor shall provide water hammer arresters as required. Water hammer arresters: Smith Series 5000 stainless steel Hydrotrols, P.D.I. certified and A.S.S.E. approved.
- Alternate sanitary vent piping shall be standard weight uncoated cast iron bell and spigot soil pipe and fittings conforming to ASTM A74 with caulked oakum and lead joints, no-hub if permitted by code. DWV Copper, or standard weight galvanized steel with galvanized cast iron banded and recessed screwed drainage fittings, ASTM A126. Alternate sanitary piping within the building shall be standard weight, uncoated cast iron bell and spigot soil pipe and fittings conforming to ASTM A 74 with caulked oakum and lead joints or DWV copper. Codes permitting, no-hub may be used.
- Provide trap primers where required by the local Plumbing Inspector. All Plumbing must be tested and approved by plumbing inspector and meet the requirements of section 107 of the International Plumbing Code. Floor Drains shall be installed according to section 413 of the International Plumbing Code. All potable water outlets shall be protected from cross connection as required under section 609 of the International Plumbing Code.
- All Plumbing must be tested and approved by plumbing inspector and meet the requirements of section 107 of the International Plumbing Code.
- All potable water outlets shall be protected from cross connection as required under section 609 of the International Plumbing Code.
- Provide an unconditional one-year written guarantee to replace or repair all defective work.
- All hole drilling for pipe hangers or floor and wall penetrations shall be by the Plumbing Contractor for Plumbing work.
- All piping shall be supported by pipe hangers of similar material as piping being supported. Suspend from building structure with spacing of steel requirements of the latest edition of the IBC-2006 and IPC 2006 as well as the local authority having jurisdiction. Refer to table 308.5 Hanger Spacing of the 2006 IPC. Do not use wire or perforated metal strap to support piping. Do not rest piping on any part of building structure for support.
- Seismic protection for the Plumbing system shall be provided as required by the IBC 2006 Building Code. The following system components shall be provided with seismic restraints:
  - Plumbing System Piping having hangers longer than 12"
  - Plumbing System Piping in mechanical rooms larger than 1-1/4" I.D.
  - Plumbing System Piping outside of mechanical rooms larger than 2-1/2" I.D.
  - Domestic water heaters.

## PLUMBING SYMBOLS & INDICATIONS

-----	Condensate Piping	Existing - to - New Connection	BFP	Backflow Preventer
-----	Sanitary Piping		BT	Bathub
-----	Sanitary Vent Piping		CW	Cleanout
-----	Domestic Cold Water Piping		DFU	Cold Water Drainage Fixture Unit
-----	Domestic Hot Water Piping		DW	Domestic Water Heater
-----	Domestic Hot Water Recirc Piping		EA	Existing
-----	Gas Piping		FD	Floor Drain
-----	Existing Piping		FDD	Funnel Floor Drain
-----	Shut-Off Valve w/ Drain		FU	Fixture Unit
-----	Direction of Flow Arrow		G	General Contractor
-----	Cleanout		HW	Hot Water
-----	Pipe Turning Down		L	Lavatory
-----	Pipe Turning Up		PC	Plumbing Contractor
-----	Equipment Designation		RD	Root Drain
-----	Shut-Off Valve		SA	Sanitary
-----			SH	Shower
-----			SK	Sink
-----			SQFT	Square Feet
-----			WC	Water Closet
-----			WH	Wall Hydrant
-----			VTR	Vent Thru Roof

## MATERIAL AND INSULATION SCHEDULE

System	Material		Insulation			Remarks
	Basis of Design	Alternate Material	Basis of Design	Type	Wall (in)	
Domestic Cold Water - Above Grade	Type "L" Copper	-----	Certainiteed	500" Snap On	1/2	Yes
Domestic Hot Water - Above Grade	Type "L" Copper	-----	Certainiteed	500" Snap On	1/2	Yes
Sanitary Piping - Above Grade	Cast Iron	"DWV" Copper	-----	-----	-----	-----
Sanitary Piping - Below Grade	Service Wt. Cast Iron	-----	-----	-----	-----	-----
Sanitary Vent Piping	Cast Iron	"DWV" Copper	-----	-----	-----	-----
Piping Subject to Freezing	-----	-----	Certainiteed	500" Snap On	2-1/2	Aluminum
Storm Piping - Above Grade	Cast Iron	-----	Certainiteed	Pipe Wrap	1-1/2	Yes
Natural Gas Piping	Sch. 40 Black Steel	-----	-----	-----	-----	Inulate horizontal piping at underside of roof. Insulation shall have a white PVC jacket on all piping and fittings. Comply with utility company standards.
Condensate	Sch. 40 Black Steel	Copper	-----	-----	-----	Category III, AL29-4C, Gas Tight

## PLUMBING FIXTURE SCHEDULE

NOTE: ALL PLUMBING FIXTURES AND FAUCETS SHALL BE PROVIDED IN CUSTOM COLORS AND FINISHES. COORDINATE COLOR & FIXTURE SELECTION WITH THE ARCHITECT AND OWNER.

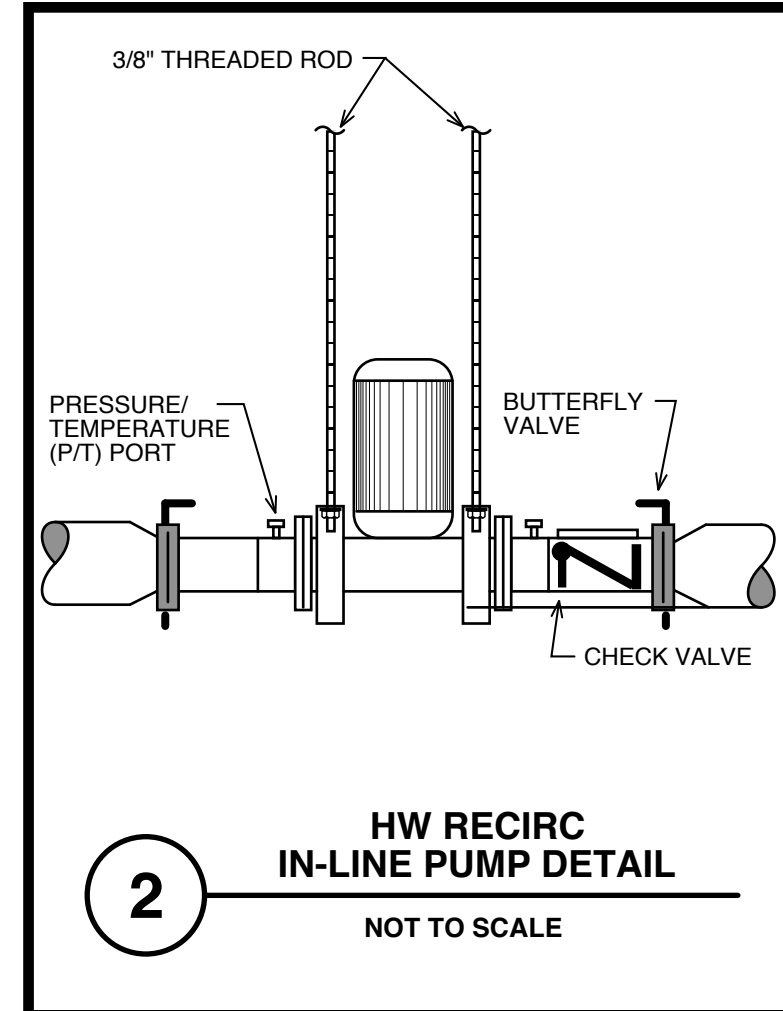
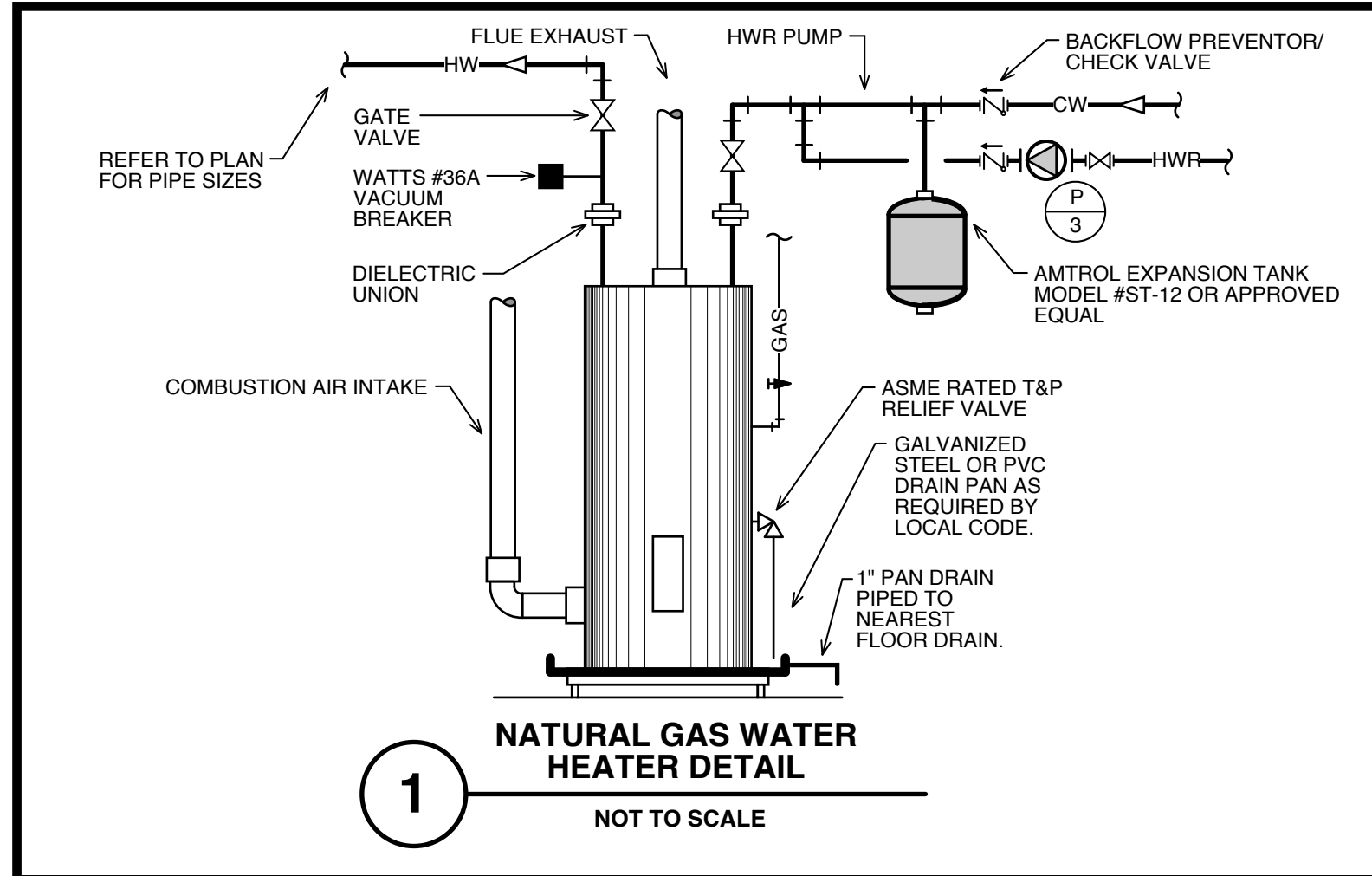
Tag	Fixture Type	Migr.	Model No.	CWS	HWS	Drain	Faucet	Drain	Flush Valve	Seat	Mount	Remarks
WC-1	Water Closet (ADA)	Toto	CST464MF	1/2"	---	4"	---	---	---	SS114	Wall	Floor Mounted at ADA Height Gravity Tank Dual Flush
WC-2	Water Closet	Toto	CST464MF	1/2"	---	4"	---	---	---	SS114	Wall	Floor Mounted Dual Flush Height Gravity Tank
UR-1	Urinal	Toto	UT104E	1"	---	4"	---	---	Toto Electronic	---	Wall	Wall Mounted Dual Valve 1.0 gpf
SH-1	Shower	Am Standard	4834Y1K.ST	1"	---	4"	T675.507 with Valve Body	---	---	---	Floor	Shower Head, Pressure Balance Valve Body
L-1	Lavatory	Kohler	K-2210	1/2"	1/2"	1-1/2"	Am Std 2064.101	Pop-Up	---	---	Wall	Trap, Drain, Trim, Stops, Lav Guard2 Style Trap Guard
L-2	Lavatory	Kohler	K-2210	1/2"	1/2"	1-1/2"	Am Std 2064.101	Pop-Up	---	---	Wall	Trap, Drain, Trim, Stops, Lav Guard2 Style Trap Guard
SK-1	Sink	Elkay	DCR252210	1/2"	1/2"	1-1/2"	Chicago 526-GN2AE1CP	Integral	---	---	Counter	Trap, Drain, Trim, Stops (Coordinate Handle Style with Architect)
SK-2	Sink	Elkay	GECR2521	1/2"	1/2"	1-1/2"	Chicago 526-GN2AE1CP	Integral	---	---	Counter	Trap, Drain, Trim, Stops (Coordinate Handle Style with Architect)
SK-3	Triple Sink	Elkay	LTR4622	1/2"	1/2"	1-1/2"	Chicago 526-GN2AE1CP	Integral	---	---	Counter	Trap, Drain, Trim, Stops (Coordinate Handle Style with Architect) (2) Faucets
SK-4	Bar Sink	Elkay	RLLVR12	1/2"	1/2"	1-1/2"	Sloan EAF-275 ISM	Integral	---	---	Counter	Trap, Drain, Trim, Stops (Coordinate Handle Style with Architect)
MR-1	Mop Receptor	Florestone	MSR 2424	1/2"	1/2"	4"	Integral	Integral	---	---	Floor	Stainless Steel Backsplash, Chicago #MR370 Hose and Bracket, Faucet w/Vacuum Breaker
RD-1	Roof Drain	Zurn	RD-2120	---	---	4"	---	---	---	---	Floor	Roof Drain with deck clamp
FD-1	Floor Drain	J.R. Smith	2110	---	---	4"	---	---	---	---	Floor	Duco Cast Iron Body, Body Flange, Flashing Collar, Cast Iron Bar Grate.
WB-1	Gas Outlet Box	Oatey	#38695	---	---	---	---	---	---	---	Wall	With Gas Valve
WB-2	Water Outlet Box	Oatey	#38608	---	---	---	---	---	---	---	Wall	With Shut Off Valve
WH-1	Wall Hydrant	J.R. Smith	5509QT	1/2"	---	---	---	---	---	---	Wall	Quarter Turn, Non-Freeze, Integral Vacuum Breaker, T Handle Key, Stainless Box
EWC-1	Electric Water Cooler	Filter	107-16	1/2"	---	1-1/2"	---	---	---	---	Wall	Trap, Drain, Trim, Stops
GT-1	Grease Trap	J.R. Smith	8015GT	---	---	2"	---	---	---	---	Wall	Steel Interceptor, Duco Lining, Draw Off Piping, Line Shut Off, Flow Control Fitting

## GAS-FIRED WATER HEATER SCHEDULE

Unit Designation	DWH-1	
Basis of Design	Bradford White	
Model Number	EF-100T-199E-3N	
Design Pressure (PSI)	150	
Operating Pressure (PSI)	---	
Storage Capacity (Gal.)	100	
Recovery (GPH @ 100°F Rise)	230	
Operating Temperature (°F)	140	
Dimensions (Diameter x Height) (in.)	28" Ø x 75"	
Flue / Combustion Connection Size (in.)	3" Ø / 3" Ø	
Operating Weight (lbs.)	1700	
Heating Capacity		
Fuel	Nat. Gas	
Burner Type	Submerged	
Ignitor	Electronic	
Gas Input (MBH)	199	
Inlet Gas Pressure (Min-Max) (in. W.C.)	N/A	
Thermal Efficiency	96%	
Electrical	120/1/60	
Unit FLA	1.8	
Accessories		
ASME T&P Relief Valve	Yes	
Brass Drain Valve	Yes	
Direct Vent Concentric Penetration Kit	Yes	
Fuel Pressure Regulator	Yes	
Drat Control	Yes	
Low Water Cut-Off	Yes	
Drain Pan	Yes	
Pan Drain with Alarm	-----	

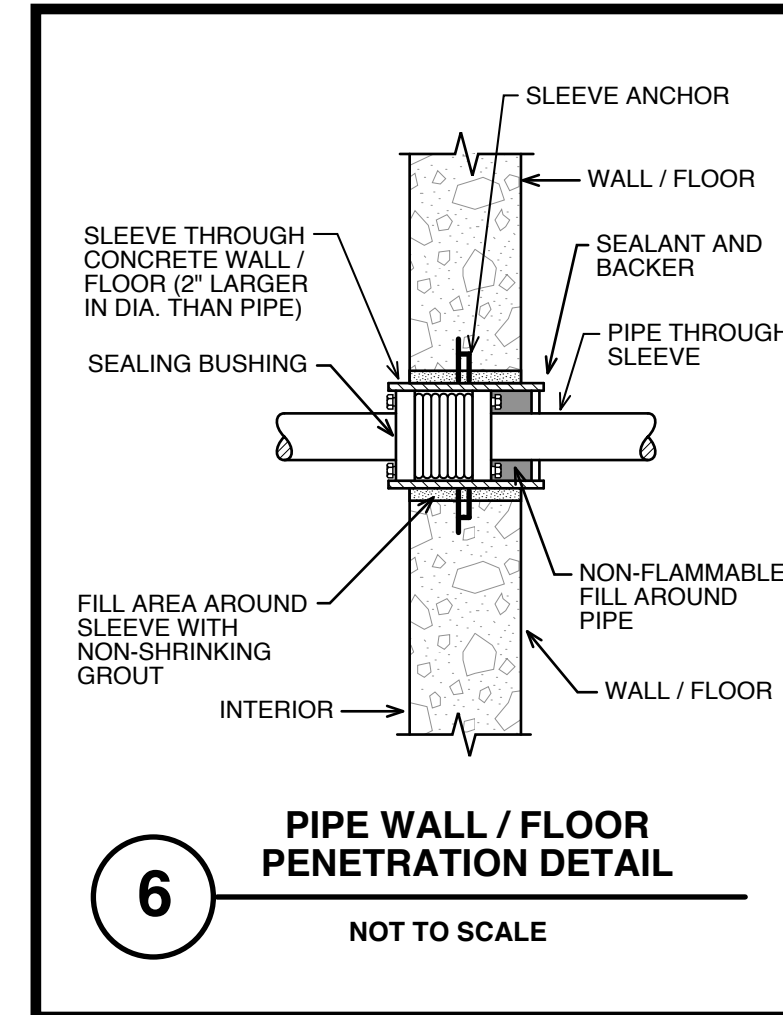
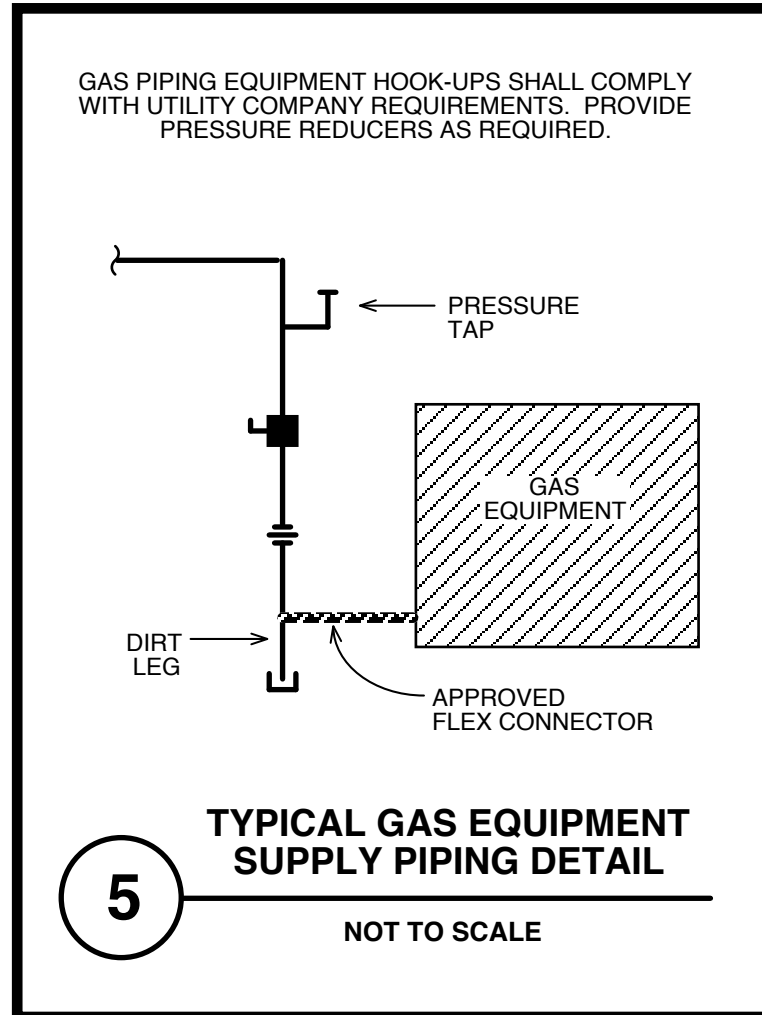
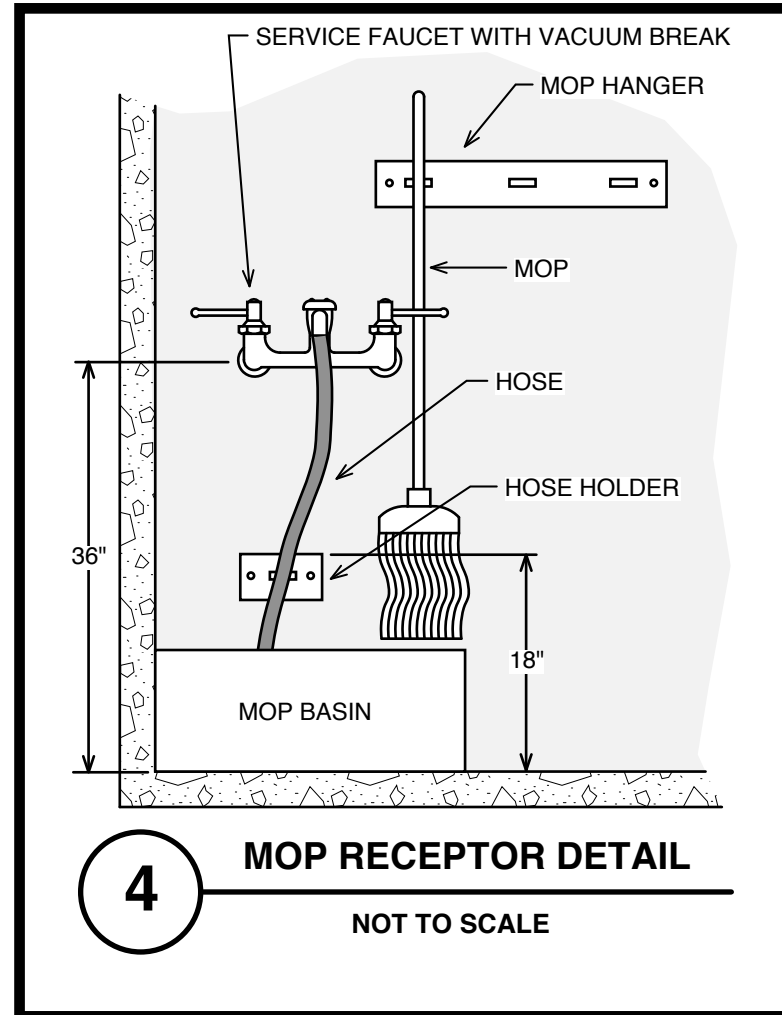
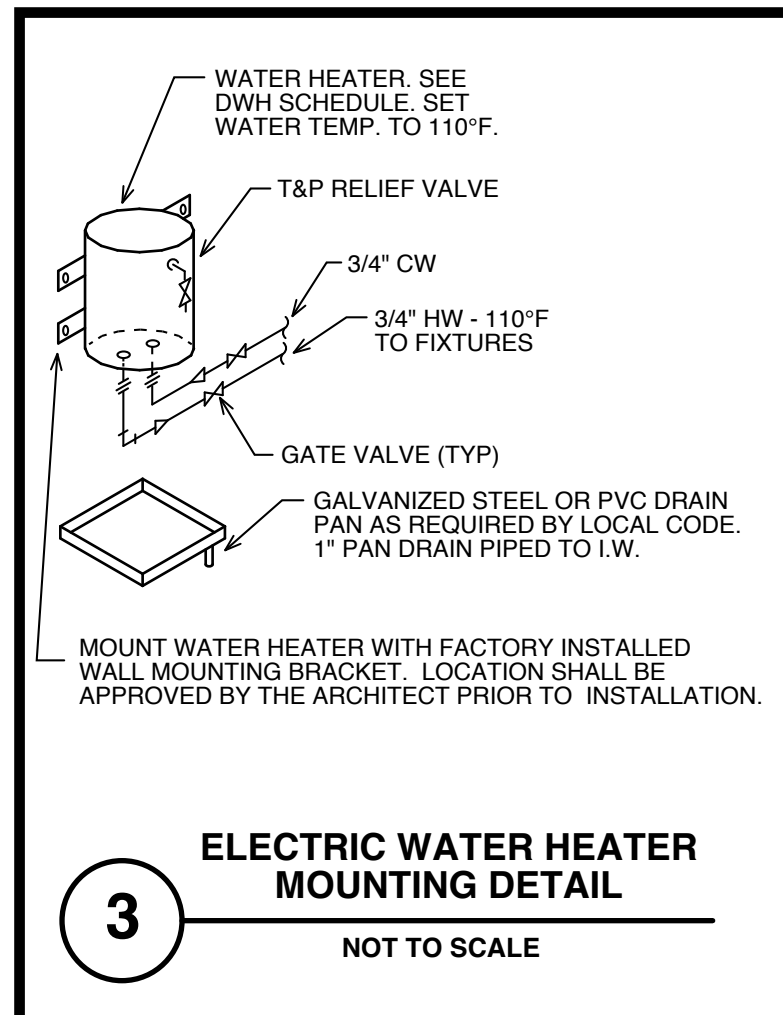
## HW RECIRC PUMP SCHEDULE

Unit Designation	P-1	
Basis of Design	Taco	
Pump Model No.	003-BC4	
Side Outlet Discharge Size	1/2"	
Vent Size	-----	
System	DW Recirc	
Head (FT)	5	
RPM	3250	
Dimensions (L x W x H) (in)	5x3x4	
Boost (PSI)	-----	
Electrical	120/1/60	
HP	1/40	
Accessories		
Skid Mount Package	-----	
Wall Mounted Remote Alarm Panel	-----	
On/Off Switch	Yes	
Starters & Disconnects	Yes	
Check Valve	-----	
Low Suction Cut-off	-----	
Fiberglass Basin with Check Valve	-----	
Lights and Horns	-----	
High Water Alarm	-----	
Electric Alternation	-----	
Float Controls	-----	



## ELECTRIC WATER HEATER SCHEDULE

Unit Designation	DWH-1	
Basis of Design	Bradford White	
Model Number	M-2-WH30U6SS	
Design Pressure (psi)	150	
Operating Pressure (psi)	150	
Storage Capacity (gal)	30	
Recovery (GPH @ 70°F Rise)	15	
Operating Temperature (°F)	110	
Dimensions (Diameter x Height)	22 x 30	
Operating Weight (lbs.)	331	
Electrical	120/1/60	
Standard kW Rating	1.5 kW	
No. / Capacity of Elements	1 @ 1.5 kW	
Unit FLA	---	
Accessories		
ASME T&P Relief	Yes	
Brass Drain Valve	Yes	
Immersion Thermostat	Yes	
ASME Construction	Yes	
Mounting Kit	Yes	
Drain Pan	Yes	
Pan Drain Alarm	Yes	
System Sentinel Diagnostic Panel	Yes	



## PLUMBING ALTERNATES

- PROVIDE ALTERNATE PRICING TO INCLUDE ALL LABOR AND MATERIALS REQUIRED FOR COMPLETE INSTALLATION OF ALL FIELDS HALL WORK.
- STONE TERRACE, PLANTER AND STAIRS FROM DRIVEWAY AT FRONT OF FELLOWSHIP HALL. NO PLUMBING WORK ASSOCIATED WITH ALTERNATE #2.
- PROVIDE ALTERNATE PRICING TO INCLUDE ALL LABOR AND MATERIALS REQUIRED FOR COMPLETE INSTALLATION OF KITCHEN IN FELLOWSHIP HALL. BASE BID INCLUDES EMPTY ROOM WITH ROUGHED IN PIPING STUBBS VALVED AND CAPPED (NO TERMINATIONS TO EQUIPMENT).
- PROVIDE ALTERNATE PRICING TO INCLUDE ALL LABOR AND MATERIALS REQUIRED FOR COMPLETE INSTALLATION OF ALL WORK SHOWN IN EXISTING PARISH CENTER (NOT ADDITION).
- DRY LAID PATIO OUTSIDE FELLOWSHIP HALL. NO PLUMBING WORK ASSOCIATED WITH ALTERNATE #5.
- SUBSTITUTE ENGINEERED STONE TILE IN PUBLIC AREAS OF FIRST FLOOR WITH LINOLEUM. NO PLUMBING WORK ASSOCIATED WITH ALTERNATE #6.
- PROVIDE ALTERNATE PRICING TO INCLUDE ALL LABOR AND MATERIALS REQUIRED FOR COMPLETE INSTALLATION OF ALTERNATE LIGHTING SCHEME IN FELLOWSHIP HALL AS DOCUMENTED ON ARCHITECTURAL PLANS. NO PLUMBING WORK ASSOCIATED WITH ALTERNATE #7.
- PROVIDE ALTERNATE PRICING TO INCLUDE ALL LABOR AND MATERIALS REQUIRED FOR COMPLETE INSTALLATION OF ONE LIEBERT ACCUVAR TVSS ON EACH PANEL A1A AND H1A. NO PLUMBING WORK ASSOCIATED WITH ALTERNATE #8.
- PROVIDE ALTERNATE PRICING TO INCLUDE ALL LABOR AND MATERIALS REQUIRED FOR COMPLETE INSTALLATION OF ONE LIEBERT ACCUVAR TVSS ON EACH PANEL A1A AND H1A. NO PLUMBING WORK ASSOCIATED WITH ALTERNATE #9.



341 South Broad Street Suite 310  
Trenton, New Jersey 08611  
609.387.0095 / 609.858.0366

www.mcauffreycarroll.com

JEFFREY E. HOLSTEIN, P.E.

N.J. LIC. # GE46443

N.J. AUTH. # 26G28143700

**New Parish Center and Facilities Renovations**  
 Zion Evangelical Lutheran Church  
 11 Schooley's Mountain Road  
 Washington Twp, Morris County NJ 07853

Date	1/20/07
CAD File Name	
Project Manager	DD
Drawn By	DD
Checked By	DD
Project ID	08-500
Drawing Title	Plumbing Notes, Schedules and Details
Drawing No.	P-4