

PLUMBING SYMBOLS & ABBREVIATIONS SCHEDULE			
MARK	DESCRIPTION	MARK	DESCRIPTION
WC	WATER CLOSET TYPE AS SCHEDULED	—○	PIPING UP
LAV	LAVATORY TYPE AS SCHEDULED	—○	PIPING DOWN
SK	SINK TYPE AS SCHEDULED	—X	GATE VALVE
UR	URINAL TYPE AS SCHEDULED	—/	CHECK VALVE
MS	MOP SINK TYPE AS SCHEDULED	—F	FIRE PIPING
FD	FLOOR DRAIN TYPE AS SCHEDULED	—	UNION
—	COLD WATER PIPING	—	CLEAN OUT
—	HOT WATER PIPING	WCO	WALL CLEAN OUT
—	HOT WTR. RETURN	FCO	FLOOR CLEAN OUT
—	SANITARY PIPING	AF.F.	ABOVE FINISHED FLOOR
—AV	ACID RESISTING VENT	—G	GAS PIPING
—AW	ACID RESISTING WASTE	—KW	KITCHEN WASTE
—	SANITARY VENT PIPING	—>	DIRECTION OF FLOW
—>	DIRECTION OF SLOPE	TP	TRAP PRIMER VALVE
—D	DRAIN LINE	O VTR	VENT THRU ROOF
HB	HOSE BIBB	(P)	RISER DESIGNATION
COTG	CLEAN OUT TO GRADE		

UNLESS NOTED OTHERWISE, WATER AND VENT PIPING SHOWN ARE ABOVE CEILING, WASTE IS BELOW FLOOR.

PLUMBING FIXTURE SCHEDULE						
TYPE	DESCRIPTION	MANUFACTURER CATALOG NO.	ACCESSORIES	FIXTURE SERVICE SIZE	REMARKS	ACCEPTABLE MANUFACTURERS
EW-1	ELECTRIC WATER HEATER 30 GALLON, COMPACT	STATE PCE-30-20LSA	FURNISHED WITH T & P RELIEF VALVE	1" CW	277V/1/60 3000 WATTS	A.O. SMITH OR EQUAL
EQ	FLOOR CLEAN-OUT, ROUND NICKEL BRONZE TOP	JR SMITH 4020 SERIES		3" OR 4" W AS NOTED		SMITH, ZURN
WCO	WALL CLEAN OUT, TAPER THREAD PLUG WITH ROUND COVER	JAY R. SMITH #4472				
L-1	LAVATORY- WALL MOUNTED 4" CENTER	AMERICAN STANDARD # 0355.012	FAUCET HOLES DRILLED ON 4" CENTERS FOR CHICAGO No. 895-CP GOOSENECK FAUCET, TAILPIECE, P-TRAP, STOPS AND SUPPLIES. PROVIDE TRUEBRO INSTALLATION KIT, FLOOR MOUNTED SMITH CARRIER	1/2" CW, 1/2" HW, 1/2" SAN, 1/2" V		KOHLER, TOTO, CRANE, STERLING
SK-1	SINGLE BOWL SINK, 18GA, 17"x20"x6", STAINLESS STEEL, DRAIN CENTERED, ADA	ELKAY #LRAD1720-60-3	FAUCET: CHICAGO FAUCET #786-CP DECK MOUNTED FAUCET WITH GOOSENECK SPOUT AND WITH PLAIN OUTLET. TRIM: MCGUIRE #151 STRAINER, #1-2165 SUPPLY STOPS, H-8912 P-TRAP.	1/2" CW, 1/2" HW, 2" W, 2" V	VERIFY SPEC WITH ARCHITECT	JUST, STERLING
SK-2	SINGLE BOWL SINK, 18GA, 22"x19"x6", ADA, TYPE 302 SS DRAIN CENTERED, ADA	ELKAY #LRAD2219-60-3	FAUCET: CHICAGO FAUCET #786-CP DECK MOUNTED FAUCET WITH GOOSENECK SPOUT AND WITH PLAIN OUTLET. TRIM: MCGUIRE #151 STRAINER, #1-2165 SUPPLY STOPS, H-8912 P-TRAP.	1/2" CW, 1/2" HW, 2" W, 2" V	VERIFY SPEC WITH ARCHITECT	JUST, STERLING
EW-1	EYE/FACE WASH	HAWS #7360BT-7460BT		1/2" CW, 1/2" V, 1/2" SAN,		
FD-1	FLOOR DRAIN, ROUND TOP NICKEL BRONZE STRAINER	JR SMITH 2005A	TRAP PRIMER CONNECTION	1/2" CW, 2" OR 3" W		WADE, ZURN
TP	TRAP PRIMER VALVE,	PRECISION PLUMBING PRODUCTS # PO-500	PRIME RITE WITH DISTRIBUTIONS AS REQUIRED	1/2" CW		
WC-1	WATER CLOSET, WHITE FLOOR MOUNTED, FLUSH VALVE, ELONGATED, 17 1/4" RIM HEIGHT, 10" ROUGH-IN, 1.28 GPF	AMERICAN STANDARD MADERA # 3043.001	OLSONITE # 10CC, WHITE, OPEN FRONT SEAT, SLOAN OPTIMA PLUS # 8111-1.28 FLUSH VALVE	1" CW, 2" V, 4" SAN		KOHLER, TOTO, CRANE
XT-1	EXPANSION TANK	THERM-X-TROL ST-5		3/4" CW		
VRV-1	VACUUM RELIEF VALVE	WATTS N36-M1		3/4" CW		

**PLUMBING GENERAL NOTES (apply to all sheets)**  
 -Drawings are diagrammatic; confirm dimensions & locations in the field. If conflicting dimensions are shown, use larger dimension.  
 -Guarantee labor and materials for 1 year.  
 -Applicable codes include but are not limited to 2000 Uniform Plumbing Code with City of Houston amendments.  
 -See Architectural plans and elevations for exact location of fixtures and wall mounted devices.  
 -Plenums are crowded and not all obstacles are indicated. Allow for additional pipe offsets not indicated on drawings.  
 -Seal all penetrations of roof, floors, exterior walls, and rated walls.  
 -Secure all permits and provide any required temporary utilities.  
 -All plumbing vents thru roof shall have the minimum separation from HVAC outside air inlets per the applicable code; coordinate w/ HVAC contractor.  
 -All work in or above occupied areas shall be at Owners convenience and may be during evenings or weekends. Schedule all service interruptions in advance with Owner.  
 -Location of existing under slab plumbing is estimated--allow for exploratory chipping to confirm actual locations.  
 -Visit site prior to bid--no extras will be allowed for conditions that could be readily observed.  
 -Do not run piping over electrical panels.  
 -Do not go into sterile or critical areas without express permission of Owner.  
 -The general contractor shall make an allowance in his price to pay all gas company setup fees associated with installation of gas service and meter at the building.

**PLUMBING SPECIFICATIONS**  
**15010 BASIC MECHANICAL REQUIREMENTS**  
 Submit shop drawings on all fixtures, trim, equipment, specialties and insulation. Produce record drawings on reproducible media; show exact dimensions to all under slab piping and show flow lines. Provide Milcor or equal access doors for access to all valves, controls, water hammer arrestors, or other devices requiring attention. Doors shall match wall or ceiling rating. Architect must approve location and appearance of all access doors. Demolition: Damage to existing materials/equipment will be repaired at no additional cost to Owner. Re-support any remaining piping that was supported by walls being removed. Where fixtures are removed, cap utilities inside wall, above ceiling or below floor. Give dem'd equipment to Owner; dispose of if Owner doesn't want

**15140 SUPPORTS AND ANCHORS**  
 Pipe and equipment hangers and supports shall be per the local code. Provide 4" reinforced concrete housekeeping pad with chamfered edge for all floor or ground mounted equipment. Flash and seal all roof penetrations.

**15260 INSULATION**  
 All insulation must have flame spread rating less than 25, smoke developed less than 50 as per ASTM E84, NFPA 255, UL273. Provide galvanized sheet metal shields on all pipe hangers for pipes 1-1/2" or larger. Provide high-density insulation (calcium silicate) inserts at hangers for pipe 4" and above.

Domestic cold water piping in exterior walls, attic (above building insulation) or other areas that are subject to freezing provide 1" fiberglass insulation.  
 Domestic hot water piping - provide 1" fiberglass with all service jacket.

**15325 FIRE SPRINKLERS & PIPING**  
 Area is currently sprinkled; add new heads and revise heads as required to accommodate wall and ceiling revisions. Project area shall be fully sprinkled.

Work shall be by a licensed sprinkler contractor in accordance with current NFPA 13, Sprinkler Rules of the State Board of Insurance of Texas and Factory Mutual.

Use Schedule 40 black steel, ASTM A135 w/125 lb malleable iron screwed fittings. All piping shall be concealed above finished ceilings; seal penetrations of floors & rated walls. Coordinate pipe routing and chemical compatibility of materials with other trades

Match existing heads. Pendant mounted chrome plated heads in ceilings or sidewalls. Provide concealed type heads where indicated on plans. All head locations shall be approved by Architect and shall typically be centered (±2") in ceiling tiles or ceiling elements.

Contractor is responsible for system design and a layout that provides proper coverage. Submit to Engineer, hydraulic calculations and pipe/head shop drawings, approved in writing by a licensed Professional Engineer or Contractor's "Responsible Managing Employee". Make all required submittals to City/County, Fire Marshall & FM (or insurance agency designated by Owner). Test system in presence of local authorities. Work shall proceed prior to Receiving State Board & FM approvals, however after receipt of agency reviews, Contractor shall return to site and make all required modifications or additions at no additional cost.

**15410 PLUMBING PIPING**  
 Domestic hot/cold inside the building.  
 Use ASTM B88 type L copper; under slab inside the building, type ASTM B88 type K copper; underground, outside the building, schedule 40 PVC. Coordinate pipe routing and chemical compatibility of materials with other trades

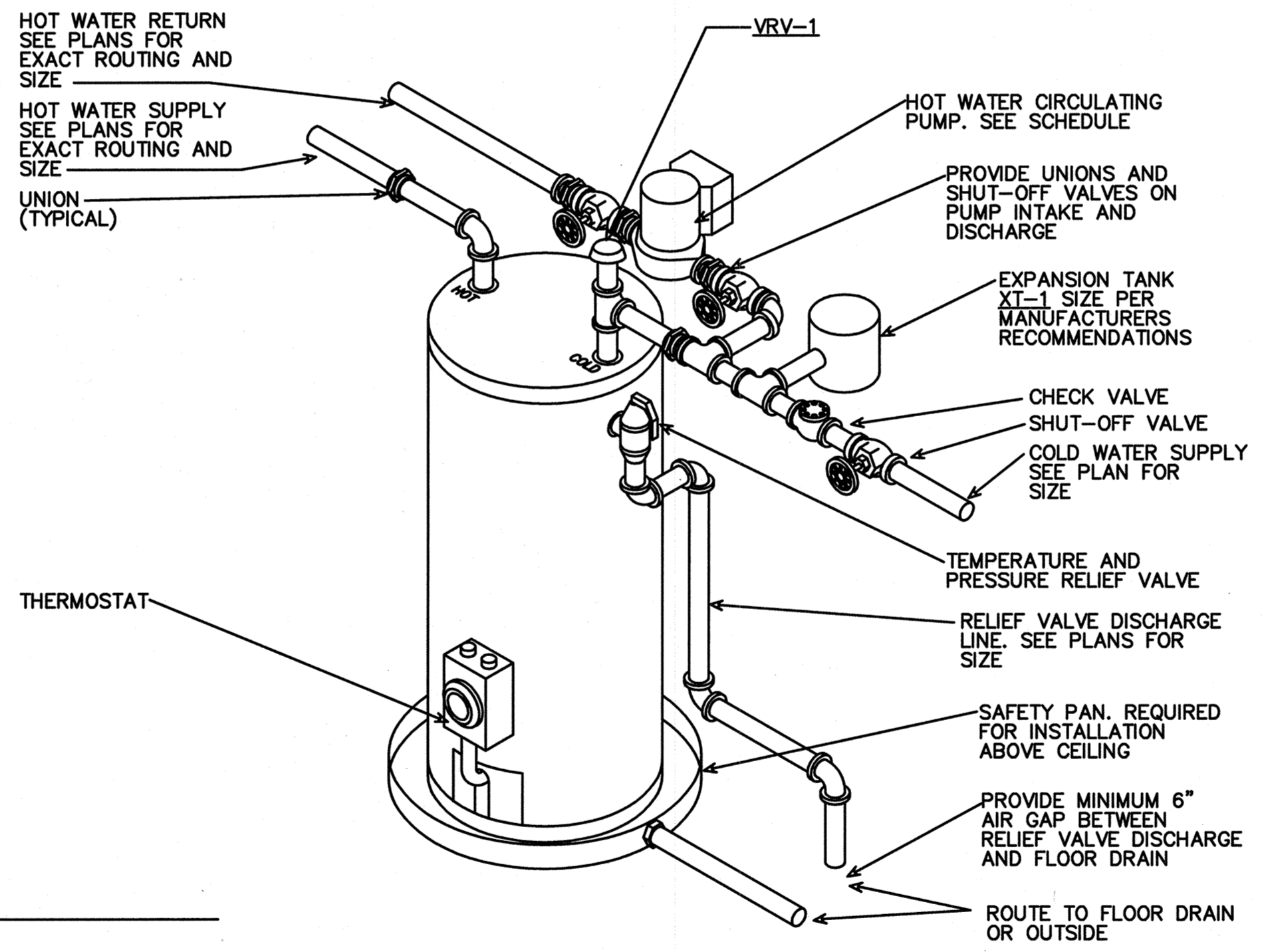
**Waste and vent:**  
 ASTM A74 cast iron no-hub or copper. Schedule 40 PVC may be used where allowed by code. Do not install PVC pipe in environmental return air plenums. Transitions between under slab PVC and above slab cast iron shall be made as detailed on the drawings.

Flush and sterilize water pipe. Support piping every 10' or less or 1" and larger pipe; every 6' on 3/4" or smaller. With copper pipe use copper hangers or tape at contact point. All piping penetrations through roof shall be sealed.

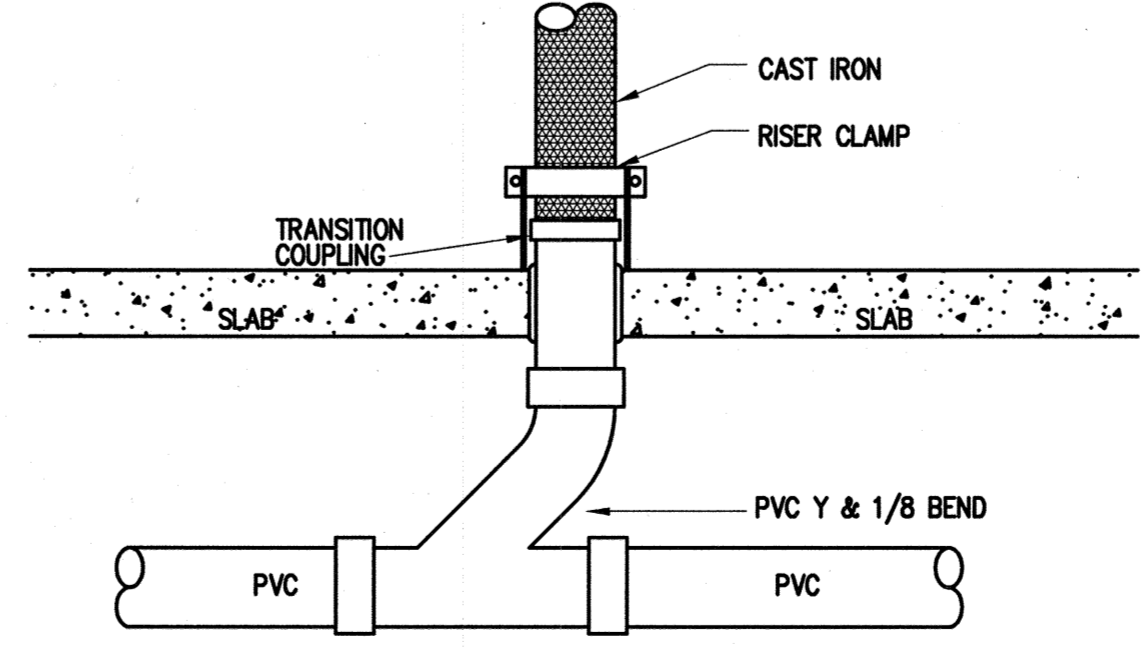
**15440 PLUMBING FIXTURES**  
 Provide stop valves; water hammer arrestor or 18" long air chamber, tail pieces, p trap w/ cleanout plug & ground joint unions at each fixture. Confirm all faucets/fittings are compatible with fixtures, prior to ordering. All wall hung fixtures shall have chair carriers.

**General note re plumbing fixtures water use:** Fixtures shall be certified to meet the water saving performance standards of Texas Civil Statutes Section 337.252 and shall be listed with the State as complying with such. All fixtures shall comply with the more restrictive of ANSI or the following (when tested per ANSI testing procedures); a) Maximum flow from sink or lavatory faucet or faucet aerator shall be 2.20 gallons per minute (g.p.m.) at a pressure of 60 psi. b) Maximum flow from a shower head shall be 2.75 g.p.m. at press. of 80 psi. c) Maximum volume of water per flush from a urinal and associated flush valve shall not exceed 1.0 gallon. d) Maximum volume of water per flush from a toilet shall not exceed 1.60 gallons.

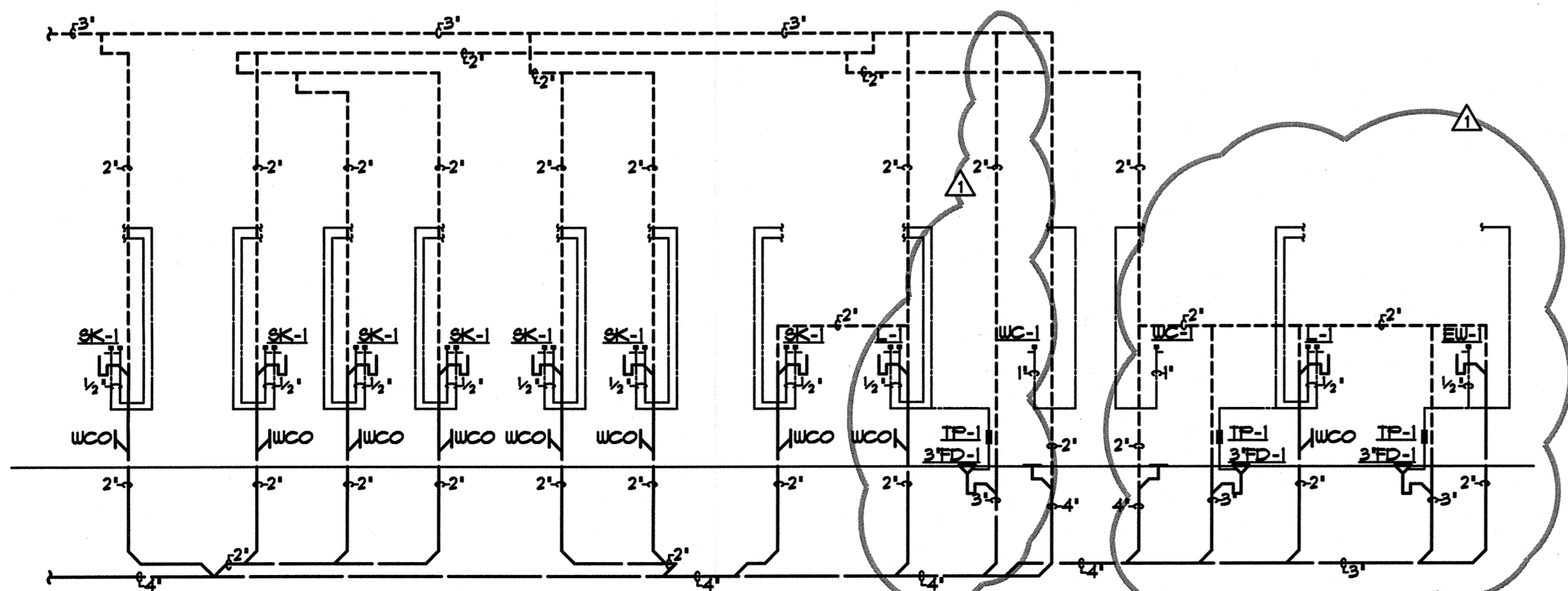
**General note re handicap plumbing fixtures:** Fixtures shall comply with requirements of the Americans with Disabilities Act, Public Law 101-336 and with State of Texas Civil Statutes Articles 7, 601B. Flush controls shall be no more than 44" above floor & on the wide side of stalls. Exposed hot water & drain pipes shall be configured to protect against contact & shall be insulated with prefabricated covers by Truebro or equal. Drinking fountain spouts shall be no higher than 36"; flow shall be parallel to unit front & arc at least 4" high. Lavatories shall be minimum 17" front to back and shall allow minimum 27" high knee clearance. Urinal rims shall not exceed 17" above finished floor; flush controls shall be no more than 44" above floor.



03 ELECTRIC WATER HEATER (WITH RETURN)  
 NTS

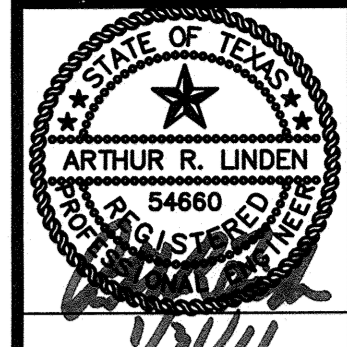


02 CI TO PVC PIPING BELOW SLAB DETAIL  
 NTS



01 PLUMBING RISER DIAGRAM  
 NTS

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PROJECT NUMBER  
 DRAWN BY  
 RE:  
 CHECKED BY  
 ABG  
 SHEET DATE  
 11/15/2010  
**PLUMBING SPECIFICATIONS**

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