KEY TO SYMBOLS

NOTE: NOT ALL SYMBOLS INDICATED MAY APPEAR ON THESE CONTRACT DRAWINGS.

MISC. SYMBOLS

- EQUIPMENT IDENTITY (SEE EQUIP ABBREV LIST)
- MECHANICAL EQUIPMENT NUMBER
- INDICATES DETAIL OR SECTION NUMBER
- INDICATES DRAWING ON WHICH DETAIL OR SECTION APPEARS
- CONNECT NEW TO EXISTING
- TERMINATION POINT OF DEMOLITION

EQUIP. ABBREVIATIONS

ABV	ABOVE
ABV CLG	ABOVE CEILING
CONN	CONNECTION
CONT	CONTINUATION
DFU	DRAINAGE FIXTURE UNITS
DN	DOWN
DWG	DRAWING
FD	FLOOR DRAIN
FU	FIXTURE UNITS
HB	HOSE BIB
W	WASTE
V	VENT
CW	COLD WATER

1

LINE LEGEND

- SANITARY PIPING
- SANITARY VENT PIPING
- DOMESTIC COLD WATER PIPING
- DOMESTIC HOT WATER PIPING
- EXISTING WATER PIPING
- PIPING RISE
- PIPING DROP
- DIRECTION OF FLOW
- BALL VALVE ON LINE
- CAP PIPING
- HORIZONTAL CLEANOUT
- CO – CLEANOUT
- S.A. – SHOCK ABSORBER

GENERAL PLUMBING NOTES:

1. LOCATION AND SIZES OF ALL EXISTING SERVICES ARE APPROXIMATE. VERIFY ALL UTILITIES PRIOR TO COMMENCING WORK.

2. FOR EXACT LOCATION OF PLUMBING FIXTURES, FLOOR DRAINS AND EQUIPMENT SEE ARCHITECTURAL DRAWINGS.

3. ALL DOMESTIC WATER, VENT AND PROPANE GAS PIPING SHOWN TO BE RUN ABOVE CEILING UNLESS OTHERWISE NOTED.

4. ALL SANITARY PIPING SHOWN TO BE RUN BELOW FLOOR UNLESS OTHERWISE NOTED.

5. ENTIRE INSTALLATION INCLUDING MATERIALS, EQUIPMENT AND WORKMANSHIP SHALL CONFORM WITH ALL APPLICABLE LAWS, CODES AND REGULATIONS OF MUNICIPAL, STATE AND FEDERAL AUTHORITIES, ALSO NATIONAL STANDARD PLUMBING CODE 2003, AND OTHER REGULATORY BODIES HAVING JURISDICTION OVER THE CLASS OF WORK.

6. THE CONTRACTOR SHALL MAKE TESTS FOR ACCEPTANCE AND APPROVAL AS REQUIRED BY THE CODE. REQUIRED TESTS SHALL BE PERFORMED IN THE PRESENCE OF OWNER'S REPRESENTATIVE UNLESS WAIVED IN WRITING.

7. THE CONTRACTOR SHALL FIELD COORDINATE THE WORK WITH THAT OF ALL OTHER TRADES.

8. ALL DOMESTIC WATER PIPING SHALL BE INSULATED AS REQUIRED. REFER TO SPECIFICATION FOR PIPING INSULATION.

9. ANY ITEM OF MATERIALS NOT INDICATED ON THE DRAWINGS OR NOT SPECIFIED, AND WHICH ARE REQUIRED FOR THE COMPLETE INSTALLATION OF ANY PART OF THE WORK DESCRIBED, SHALL BE FURNISHED AS IF INDICATED OR SPECIFIED.

10. ALL COMPONENTS OF THE ENTIRE INSTALLATION SHALL BE UNCONDITIONALLY GUARANTEED BY THE CONTRACTOR AGAINST ALL DEFECTS OF EQUIPMENT, MATERIAL OR WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM THE RESPECTIVE DATES OF FINAL ACCEPTANCE BY THE OWNER, EXCEPT IF REQUIRED DIFFERENT BY THE LOCAL AUTHORITY HAVING JURISDICTION. ALL DEFECTS DEVELOPING DURING THAT PERIOD SHALL BE CORRECTED WITHOUT COST.

11. PROVIDE SLEEVES AS REQUIRED.

12. PRIOR TO STARTING CONSTRUCTION, DETERMINE EXACT INVERT ELEVATIONS, SIZES, DEPTH AND LOCATION OF EXISTING UTILITIES WHERE CONNECTIONS ARE TO BE MADE OR INTERSECTIONS OCCUR. NOTIFY AUTHORIZED REPRESENTATIVE OR ENGINEER OF ANY DISCREPANCY BETWEEN DRAWINGS AND ACTUAL FIELD CONDITIONS. WORK BACK TOWARD BUILDING FROM UTILITY CONNECTION FOR ALL PIPING SYSTEMS.

13. INSTALL ALL SHOCK ABSORBERS IN ACCORDANCE WITH THE LATEST "PLUMBING AND DRAINAGE INSTITUTE STANDARDS" FOR WATER HAMMER ARRESTORS AND PER FLORIDA PLUMBING CODE 2004, REQUIREMENTS.

14. FURNISH ACCESS PANELS IN NON ACCESSIBLE CEILINGS AND WALLS FOR ALL VALVES, SHOCK ABSORBERS, CLEANOUTS AND ALL OTHER ITEMS THAT REQUIRE ACCESS TO PROPERLY MAINTAIN OR SERVICE THE BUILDING. REFER TO SPECIFICATIONS. 1

15. PROVIDE PRESSURE SWITCH IN PUMP DISCHARGE PIPING A FLOAT SWITCH IN THE 10,000 GALLON A STORAGE TANK AND A SOLENOID VALVE IN THE SUPPLY PIPING TO THE 10,00 GALLON TANK. THE PRESSURE SWITCH SHALL ENERGIZE THE PUMP WHEN THE LINE PRESSURE REACHES 25 PSIG AND DE-ENERGIZE THE PUMP WHEN THE LINE PRESSURE REACHES 50 PSIG. THE FLOAT SWITCH SHALL OPEN THE SOLENOID VALVE WHEN THE LEVEL IN THE TANK DROPS TO 2 FEET ABOVE THE BOTTOM OF THE TANK. THE FLOAT SWITCH SHALL CLOSE THE SOLENOID VALVE WHEN THE TANK IS FULL.

PLUMBING FIXTURE AND SPECIALTIES SCHEDULE

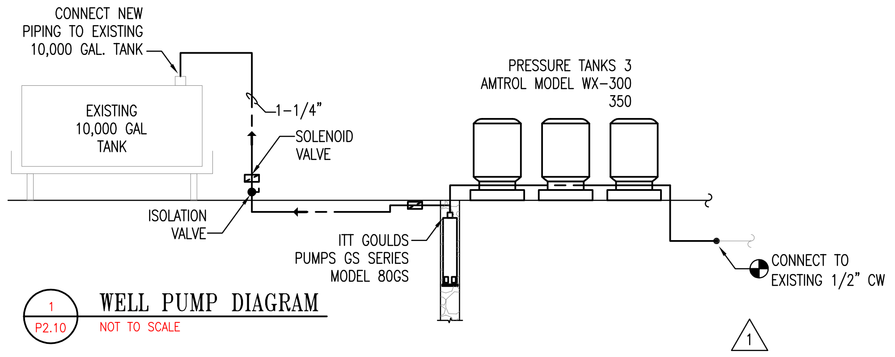
NO.	FIXTURE	TRAP	DRAIN	VENT	CW	HW	BASIS OF DESIGN	DFU	WATER FLOW RATE
WC-1	WATER CLOSET	INTEGRAL	4"	2"	1"	–	AMERICAN STANDARD MADERA MODEL NO. 2234.015 FLOOR MOUNTED, LOW CONSUMPTION (1.6 GPF) TOILET, WITH SLOAN ROYAL #111 MANUAL FLUSH VALVE, OLSONITE #95 OPEN FRONT SEAT LESS COVER	5	1.6 GPF
LAV-1	LAVATORY (EXISTING TO REMAIN)	1¼"	1¼"	½"	½"	½"	PROVIDE AMERICAN STANDARD 2362 SERIES FAUCET.	1	0.5 GPM
SH-1	SHOWER (EXISTING TO REMAIN)	½"	½"	2"	½"	½"	PROVIDE MODEL 190AA PRESSURE BALANCED SINGLE LEVER MIXING VALVE WITH MAXIMUM LIMIT TEMPERATURE STOP AND INTEGRAL VOLUME CONTROL. WALL HUNG SHOWER HEAD AND 69" STAINLESS STEEL HOSE.	3	2.5 GPM
S-1	DOUBLE BOWL SINK	½"	½"	½"	½"	½"	ELKAY LUSTERTONE DEEP DOUBLE BOWL SINK MODEL DLRQ332212, 33"x22"x12⅝"DP IN SIZE, WITH 3 FAUCET HOLES, LK2423BH GOOSENECK FAUCET WITH LAMINAR FLOW SPOUT END, 2.2 GPM MAX., WRIST HANDLES, AND LK35 STRAINER. PROVIDE ½"COLD & HOT WATER SUPPLIES AND 1½"P-TRAP.	2	2.2 GPM

3

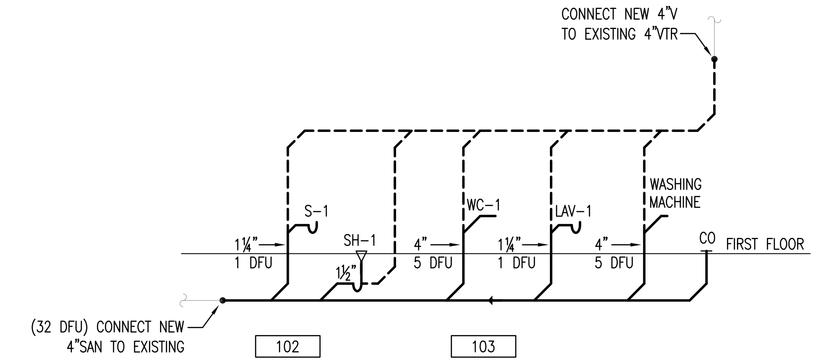
ELECTRIC WATER HEATER

NO.	STORAGE GALLONS	RECOVERY GPH	TEMP. RISE °F	ELECTRICAL kW	ELECTRICAL V-ø-Hz	LOCATION	BASIS OF DESIGN
WH-1	50	10	60	1.5	240-1-60	ABV RM 103	STATE PATRIOT PCE 50 20LSA

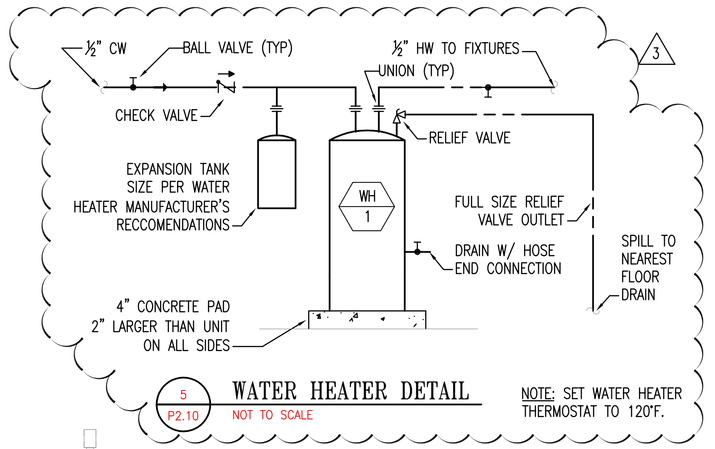
3 1 3



1 P2.10 WELL PUMP DIAGRAM
NOT TO SCALE

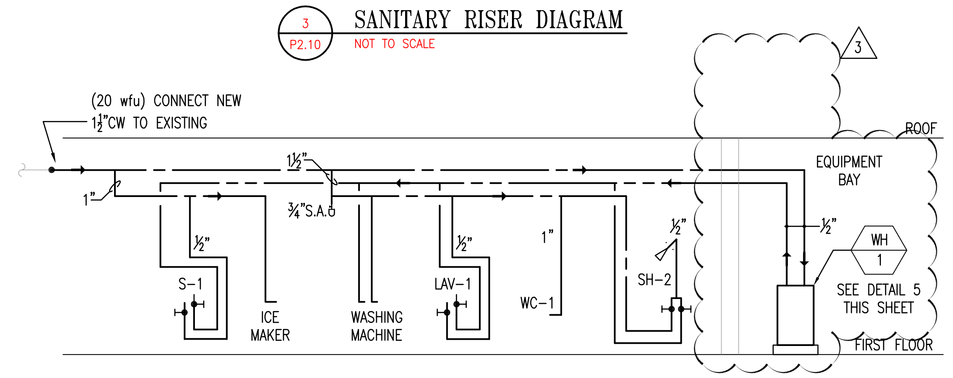


3 P2.10 SANITARY RISER DIAGRAM
NOT TO SCALE

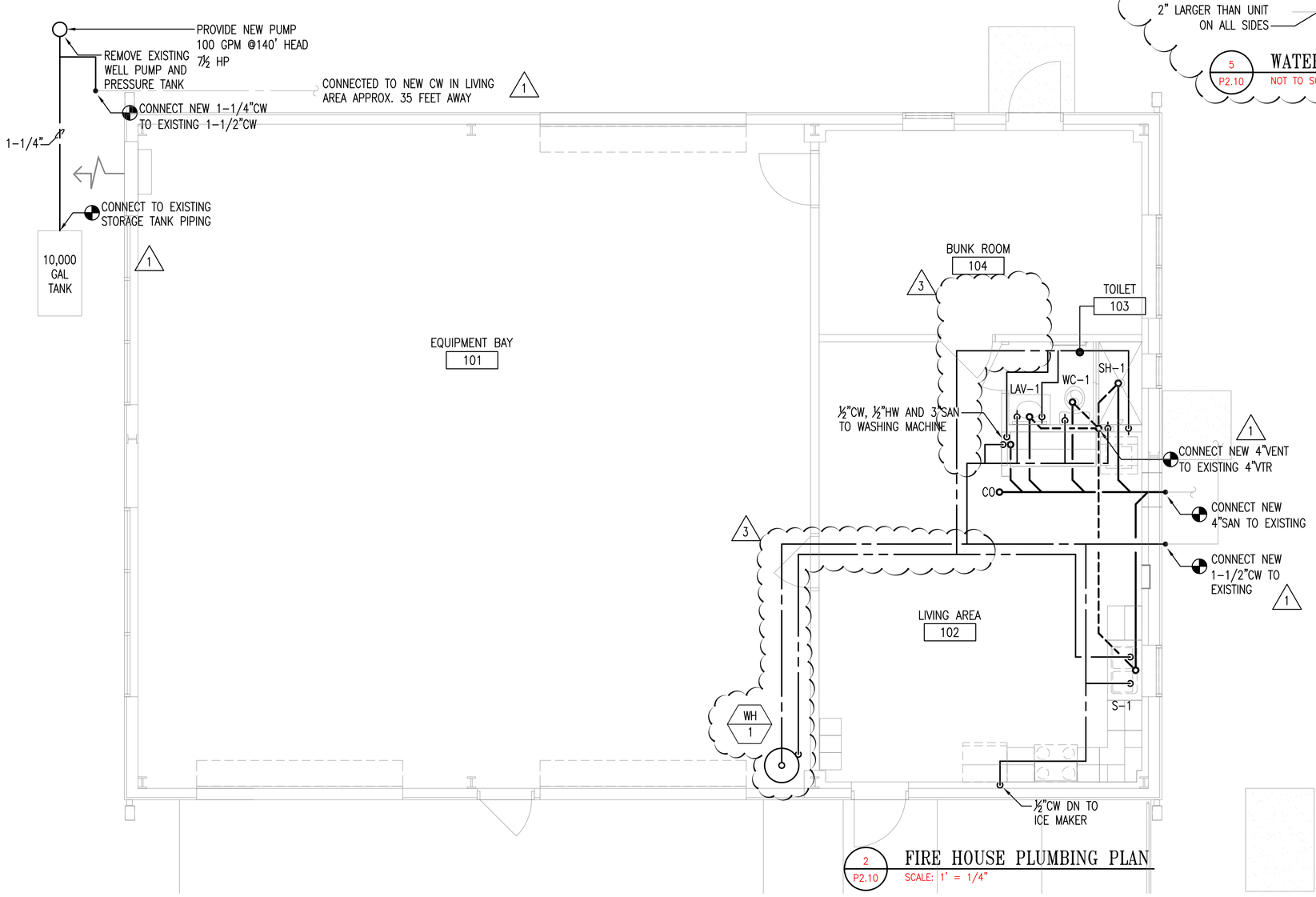


5 P2.10 WATER HEATER DETAIL
NOT TO SCALE

NOTE: SET WATER HEATER THERMOSTAT TO 120°F.



4 P2.10 DOMESTIC WATER RISER DIAGRAM
NOT TO SCALE



2 P2.10 FIRE HOUSE PLUMBING PLAN
SCALE: 1" = 1/4"

PLUMBING SPECIFICATIONS

1. GENERAL:

A. THE "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION", AIA DOCUMENT A201 LATEST EDITION, AND THIS SPECIFICATIONS AS APPLICABLE ARE PART OF THIS CONTRACT.

B. ALL APPLICABLE CODES, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER, PRIOR TO SUBMITTING A PROPOSAL, OF ANY WORK OR MATERIAL WHICH VIOLATES ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION SHALL BE CORRECTED BY THE CONTRACTOR.

C. INVESTIGATE EACH SPACE THROUGH WHICH EQUIPMENT MUST BE MOVED. WHERE NECESSARY, EQUIPMENT SHALL BE SHIPPED FROM MANUFACTURER IN SECTIONS OF SIZE SUITABLE FOR MOVING THROUGH AVAILABLE RESTRICTIVE SPACES. ASCERTAIN FROM BUILDING OWNER AT WHAT TIMES OF DAY EQUIPMENT MAY BE MOVED THROUGH ALL AREAS.

D. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. PIPE ROUTING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUN. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING OF PIPE TO AVOID OBSTRUCTIONS. COORDINATION WITH THE WORK OF ALL OTHER TRADES IS REQUIRED. MAINTAIN HEADROOM AND SPACE CONDITIONS.

E. INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.

F. CONNECTIONS TO SITE UTILITIES: INSTALL NEW WORK AND CONNECT TO SITE UTILITIES 5' OUTSIDE OF THE BUILDING WALL. COORDINATE WITH CIVIL TRADE.

G. THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING, EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALK AND PAVEMENTS, FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR THE EXTERIOR.

H. SEAL OPENINGS THROUGH PARTITIONS, WALLS AND FLOORS WITH NON-SHRINKING FIRE PROOF CAULKING OR OTHER NONCOMBUSTIBLE MATERIAL.

I. PROVIDE ALL NECESSARY FLASHING AND COUNTERFLASHING TO MAINTAIN WATERPROOFING INTEGRITY OF THIS BUILDING AS REQUIRED BY THE INSTALLATION OF PIPING AND EQUIPMENT.

J. THE CONTRACTOR'S PROPOSAL FOR ALL WORK SHALL BE PREDICATED ON THE PERFORMANCE OF THE WORK DURING REGULAR WORKING HOURS. WHEN SO DIRECTED, HOWEVER, THE CONTRACTOR SHALL INSTALL WORK IN OVERTIME AND THE ADDITIONAL COST TO BE CHARGED THEREFORE SHALL BE ONLY THE "PREMIUM" PORTIONS OF THE WAGES PAID.

K. INSURANCE: IN ACCORDANCE WITH BUILDING REQUIREMENTS AND SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER, ARCHITECT AND ENGINEER.

L. THE FINAL ACCEPTANCE WILL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, TESTED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTION AND APPROVAL.

2. PIPE AND FITTINGS:

A. SANITARY DRAINAGE AND VENT:

1) EXTRA HEAVY WEIGHT HUB AND SPIGOT CAST IRON SOIL PIPE AND FITTINGS WITH LEAD AND OAKUM JOINTS.
2) NO CELL CORE IS ALLOWED. ONLY SCHEDULE 40 PVC DWV (ASTM D-2665).
3) WHERE COPPER WASTE PIPING IS REQUIRED, TYPE M MINIMUM SHALL BE USED.

B. DOMESTIC WATER:

1) TYPE L HARD COPPER TUBING WITH CAST BRONZE OR WROUGHT COPPER FITTINGS AND 95 TIN ANTIMONY SOLDER JOINTS.
2) UNDERSLAB PIPING IS TO BE MINIMAL, USING SEAMLESS TYPE K COPPER WITH NO UNDERSLAB JOINTS AND NO RESTRICTIONS SUCH AS KINKS.

C. ALL EXPOSED PIPE AND FITTINGS SHALL BE CHROME PLATED BRASS.

D. ALL EXPOSED PIPING PASSING THROUGH WALLS, FLOORS, CEILINGS, AND PARTITIONS SHALL BE PROVIDED WITH CHROME PLATED CAST BRASS ESCUTCHEONS HELD IN PLACE WITH SET SCREWS.

3. INSULATION:

A. ALL INSULATION (INCLUDING JACKET, FACING AND ADHESIVE) SHALL HAVE COMPOSITE FIRE AND SMOKE HAZARD RATINGS AS TESTED BY PROCEDURES LISTED IN ASTM E-84, NFPA 255 AND UL 273, NOT EXCEEDING A FLAME SPREAD OF 25 AND A SMOKE DEVELOPED OF 50.

B. VALVES AND FITTINGS ON INTERIOR PIPING, IF SUBJECT TO INSULATION, SHALL BE COVERED WITH FIBERGLASS INSERT AND PREMOLDED PVC COVERS EQUAL TO MANVILLE "ZESTON 2000". ALUMINUM FITTING COVERS SHALL BE USED ON OUTSIDE PIPING.

C. COLD WATER PIPING: PROVIDE 1" THICK FIBERGLASS SECTION PIPE COVERING WITH VAPOR BARRIER JACKET.

D. HOT WATER PIPING: PROVIDE 1"THICK (FOR ½" TO 2" PIPE), AND 1½" (FOR 2 ½" PIPE AND OVER) FIBERGLASS SECTIONAL PIPE COVERING.

E. ALL UNDERSLAB DOMESTIC WATER PIPING AND TRAP PRIMING PIPING SHALL BE ENCASED IN 1" CLOSED CELL INSULATION.

4. PLUMBING FIXTURES:

A. PROVIDE ALL FIXTURES WITH STOP VALVES AND SUPPLIES AND FIXTURE TRAPS AS REQUIRED.

B. ALL FIXTURES SHALL BE AS INDICATED ON THE DWG P4.00, AND ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.

5. PIPING SUPPORTS:

A. SUPPORT ALL PIPING FROM BUILDING STRUCTURE BY PROVIDING INSERTS, BEAM CLAMPS, STEEL FISH PLATES (IN CONCRETE FILL ONLY), AND ACCEPTABLE BRACKETS. SUBMIT ALL METHODS FOR REVIEW.

B. PROVIDE ADDITIONAL FRAMING WHERE BUILDING STRUCTURE IS INADEQUATE. SUBMIT FOR REVIEW.

C. SUSPENDED HORIZONTAL PIPING:

1) SUPPORT ALL PIPING INDEPENDENTLY FROM STRUCTURE USING HEAVY IRON-HINGED TYPE HANGERS, SIMILAR TO GRINNELL CLEVIS #260.
2) PROVIDE ELECTROPLATED SOLID-BAND HANGERS SIMILAR TO AUTO-GRIP, FOR 2" AND SMALLER PIPE.
3) PROVIDE WALL BRACKETS FOR WALL-SUPPORTED PIPING, AND PROVIDE PIPE SADDLES FOR FLOOR-MOUNTED PIPING.
4) PROVIDE SUPPORTS WITH COPPER LINING FOR UNINSULATED COPPER PIPING.
5) SUSPEND PIPING FROM INSERTS, USING BEAM CLAMPS WITH RETAINING CLAMP OR LOCK NUT, STEEL FISH PLATES, CANTILEVER BRACKETS OR EQUAL ACCEPTED MEANS. BEAM CLAMPS SHALL BE SIMILAR TO GRINNELL FIGURES 61, 87, 131 OR 225.
6) SUSPEND PIPING BY RODS WITH DOUBLE NUTS.
7) PROVIDE ADDITIONAL STEEL FRAMING AS REQUIRED AND ACCEPTED WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING HANGER RODS IN REQUIRED LOCATIONS.
8) SUPPORT BRANCH FIXTURE WATER PIPING IN CHASES WITH COPPER PLATED METAL BRACKETS, SECURED TO STUDS, SIMILAR TO HOLDRITE # 102-18, 107-18, OR 101-26.

D. PROVIDE 180° ARC GALVANIZED METAL COVERING SHIELDS ON HANGERS FOR INSULATED PIPING WITHOUT INCOMPRESSIBLE INSULATING BLOCK IN INSULATION AT HANGERS.

E. MAXIMUM HANGER SPACING AS INDICATED:

1) COPPER TUBING 1½" AND SMALLER SHALL BE EVERY 6 FEET.
2) COPPER TUBING 1½" AND LARGER SHALL BE EVERY 10 FEET.
3) CAST IRON: EVERY 5 FEET AND AT EVERY FITTING OR JOINT.

F. VERTICAL PIPING:

1) PROVIDE EXTENSION PIPE CLAMPS BOLTED TO BARE PIPE ON EACH SIDE AND BEARING EQUALLY ON STRUCTURE OR WELDED TO BEAM.

6. TESTS:

A. DOMESTIC WATER PIPING:

1) TEST PIPING HYDRAUSTATICALLY AT A PRESSURE OF 125 PSI.
2) DURATION OF TEST SHALL BE 4 HOURS WITHOUT A LOSS IN PRESSURE.
3) UNDERGROUND AND UNDERSLAB PIPING MUST MAINTAIN 150 PSI FOR 48 HOURS CONTINUOUS WITH THE OWNER BEING NOTIFIED 24 HOURS PRIOR TO START OF TEST.

B. DRAINAGE AND VENT PIPING:

1) CAP ALL OUTLETS, EXCEPT THE HIGHEST OPENING, AND FILL PIPING SYSTEM TO OVERFLOWING FROM A POINT AT LEAST 10' ABOVE THE FLOOR.
2) THE WATER LEVEL SHALL REMAIN CONSTANT THROUGHOUT THE TEST DURATION OF AT LEAST 15 MIN.

C. ARRANGE AND COORDINATE TESTS WITH OWNER 48 HOURS IN ADVANCE. NOTIFY ARCHITECT OF TEST DATE AND TIME.

D. DEFECTS DISCLOSED BY THE TESTS SHALL BE REPAIRED OR REPLACED. TESTS SHALL BE REPEATED AS DIRECTED UNTIL ALL WORK IS PROVEN SATISFACTORY.

E. TAKE ALL PRECAUTIONS NECESSARY TO PREVENT DAMAGE TO THE BUILDING AND ITS CONTENTS AS A RESULT OF SUCH TESTS. REPAIR ANY DAMAGE CAUSED.

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CONSULTANTS

SEAL

PROJECT # 3305.15

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR AND THE ARCHITECT NOTIFIED OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE CONSTRUCTION

DO NOT SCALE DRAWINGS
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PROJECT TITLE

FIRE STATION RENOVATION
FOR LAKE COUNTY
6234 CR 561
CLERMONT, FLORIDA 34711

DRAWING TITLE

PLUMBING FLR PLAN, SCHED, RISERS, SPECS AND DETAILS

SCALE	AS NOTED
DRAWN	AHA
CHECKED	ACW
APPROVED	
DATE	08/08/2008

REVISIONS

SYMBOL	DATE	DESCRIPTION
1	08/27/08	CLARIFICATION & CODE COMMENTS RESPONSE
3	01/12/09	WATER HEATER REVISION

DRAWING #

P2.10