

PLUMBING SPECIFICATIONS

PART 1 - GENERAL

- 1.01-DESCRIPTION
- A. THE WORK INCLUDES PROVIDING NEW MATERIALS, FITTINGS, AND ACCESSORIES NECESSARY FOR A COMPLETE FUNCTIONING PLUMBING SYSTEM. ALL WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES AND/OR ORDINANCES AND IS SUBJECT TO INSPECTION.
 - B. HOOK UP CHARGES, PERMITS AND ALL OTHER EXPENSES RELATED TO A COMPLETE AND FUNCTIONING PLUMBING SYSTEM ARE INCLUDED AS PART OF THIS SECTION.
 - C. COORDINATE ALL WORK WITH THE WORK OF OTHER SECTIONS, EQUIPMENT FURNISHED BY OTHERS, AND WITH THE CONSTRAINTS OF THE EXISTING CONDITIONS OF THE PROJECT SITE.
- 1.02-FIXTURES AND PLUMBING SPECIALTIES
- A. ALL PLUMBING FIXTURES AND PLUMBING SPECIALTIES ARE AS INDICATED ON THESE DRAWINGS. NO SUBSTITUTIONS ALLOWED UNLESS MODEL IS AN APPROVED EQUAL.
 - B. PROVIDE PLUMBING TRIM AND ACCESSORIES FROM THE FOLLOWING:
 1. TRIM (P-TRAPS, STOPS, SUPPLIES, ETC): BRASSCRAFT; MCGUIRE; JAMECO.
 2. FIXTURE SEATS: BEMIS; BENEKE; CHURCH; CENTOCO; OLSONITE.
 3. FIXTURE CARRIERS: J.R. SMITH; JOSAM; WADE.
- EXTRA STOCK:
- FURNISH SPECIAL WRENCHES AND OTHER DEVICES NECESSARY FOR SERVICING PLUMBING FIXTURES AND TRIM TO OWNER WITH RECEIPT. FURNISH ONE (1) DEVICE FOR EVERY FORTY (40) UNITS, BUT IN NO CASE LESS THAN TWO (2) DEVICES.

PART 2 - PRODUCTS

- 2.01-DOMESTIC WATER SYSTEM
- A. PROVIDE COMPLETE SYSTEMS OF COLD AND HOT PIPING AND ACCESSORIES SO THAT EVERY PIECE OF WATER USING EQUIPMENT WILL BE FURNISHED WITH A WATER SUPPLY. EXTEND TO POINTS INDICATED ON THE DRAWINGS.
 - B. PIPING AND FITTINGS:
 1. PIPE AND FITTINGS SHALL BE AS LISTED HEREIN AND SHALL BE USED ON THE SERVICES INDICATED.
 2. TYPE "L" HARD DRAWN COPPER TUBING, ASTM B 88 WITH SOLDERED JOINTS AND WROUGHT COPPER SOCKET FITTINGS FOR ALL ABOVE GROUND WATER PIPING 2" IN SIZE AND UNDER.
 3. TYPE "K" HARD DRAWN COPPER TUBING, ASTM B 88, WITH BRAZED JOINTS AND WROUGHT COPPER SOCKET FITTING FOR ALL BELOW GROUND COPPER PIPING.
 - C. JOINTS:
 2. SOLDER JOINTS FOR TYPE "L" COPPER TUBING SHALL BE MADE USING 95-5 TIN-ANTIMONY SOLDER WITH A COMPATIBLE FLUX.
 3. BRAZED JOINTS SHALL USE A BCuP-5 BRAZING ALLOY WITH A COMPATIBLE FLUX.
 4. SOLDER FOR POTABLE WATERPIPING SHALL BE LEAD FREE.
 - D. DIELECTRIC ADAPTERS:
 1. DIELECTRIC ADAPTERS SHALL BE PROVIDED BETWEEN COPPER AND IRON PIPE CONNECTIONS AND BETWEEN FERROUS AND NON-FERROUS PIPING OR EQUIPMENT.
- 2.02-SANITARY WASTE AND VENT SYSTEMS:
- A. PROVIDE COMPLETE SYSTEM OF SANITARY, WASTE AND VENT PIPING TO POINTS INDICATED ON THE DRAWINGS.
 - B. BASIC PIPE TUBE AND FITTINGS:
 1. ABOVEGROUND PIPING:
 - a. HUBLESS CAST IRON PIPE: HUBLESS CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 888 AND CSPI STANDARD 301. ALL PIPE SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE AND LISTED BY NSF INTERNATIONAL. ONLY PIPING PRODUCTS MADE IN THE USA WILL BE ACCEPTABLE.
 - b. GASKETS: NEOPRENE GASKET JOINTS, ASTM C-564.
 - c. COUPLINGS: "HUSKY" HEAVY DUTY STAINLESS STEEL CLAMPS FROM ANAHEIM FOUNDRY COMPANY. NO COUPLING SHALL HAVE LESS THAN 4 CLAMP RINGS.
 2. UNDERGROUND BUILDING DRAIN PIPING:
 - a. HUB AND SPIGOT CAST IRON SOIL PIPE: HUB AND SPIGOT CAST IRON PIPE SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 74. ALL PIPE SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE AND LISTED BY NSF INTERNATIONAL. PIPE TO BE SERVICE WEIGHT (SW). PIPE AND FITTINGS SHALL COATED IN ACCORDANCE WITH THE ASTM AND CSPI STANDARDS FOR PIPE AND FITTINGS. ONLY PIPING PRODUCTS MADE IN THE USA WILL BE ACCEPTABLE.
 - C. JOINTS:
 1. JOINTS FOR CAST IRON PIPE ABOVE THE FLOOR SHALL HAVE NEOPRENE GASKETS AND 24 GA. STAINLESS STEEL BANDS AND CLAMPS. TORQUE 125 IN. BS., 150 IN. LBS. FOR VANDAL PROOF.
 - D. DRAINS:
 1. FLOOR DRAINS SHALL BE SET FLUSH WITH THE FLOOR. ALL FLOOR DRAINS SHALL BE VANDAL PROOF.
- 2.03-NATURAL GAS PIPING
- A. PROVIDE A COMPLETE SYSTEM OF GAS PIPING FROM THE OUTLET OF THE GAS METER TO ALL EQUIPMENT REQUIRING GAS AS INDICATED ON THE DRAWINGS.
 - B. PIPING SHALL BE SCHEDULE 40 BLACK STEEL ASTM A-53

- C. ALL PIPING AND FITTINGS LOCATED OUTDOORS AND ABOVE GRADE SHALL BE CLEANED FREE OF RUST AND PAINTED WITH ONE (1) COAT OF ZINC RUST PRIMER AND ONE (1) FINISH COAT OF ALUMINUM BASE PAINT.
 - D. APPLY TWO COATS OF ASPHALTUM BASE PAINT TO PIPING BURIED UNDERGROUND.
 - E. EACH PIECE OF EQUIPMENT SHALL BE PROVIDED WITH LUBRICATED PLUG VALVE WITH A HANDLE, UNION AND DRIP LEG AT THE UNIT CONNECTION.
- 2.04-PLUMBING SYSTEMS VALVES
- A. VALVES SHALL HAVE THE NAME OR TRADEMARK OF THE MANUFACTURER AND THE WORKING PRESSURE STAMPED OR CAST ON THE VALVE BODY.
 - B. SHUTOFF VALVES, WITH UNIONS SHALL BE PROVIDED TO EACH PLUMBING FIXTURE, OR OTHER EQUIPMENT ITEM, TO FACILITATE ISOLATION FOR REPAIR OR REPLACEMENT. VALVES SHALL BE EQUAL TO JENKINS #902-T BALL VALVE, CHROME-FINISHED BRONZE, TEFLON SEATS AND PACKING, 400 LB W.O.G. SOLDER END.
 - C. DOMESTIC WATER SYSTEM:
 1. BALL VALVES 2" IN SIZE AND SMALLER SHALL HAVE BRONZE BODY AND BONNET, 2-PIECE CONSTRUCTION; CHROME-PLATED BRASS BALL WITH CONVENTIONAL FULL PORT; BLOWOUT PROOF; BRONZE OR BRASS STEM; TEFLON SEATS AND SEALS; THREADED OR SOLDERED END CONNECTIONS. VINYL-COVERED STEEL LEVER HANDLE OPERATOR. VALVES SHALL BE CRANE NO 9323 SERIES OR EQUAL.
 2. GATE VALVES 2" IN SIZE AND SMALLER SHALL HAVE BRONZE BODY, NON-RISING STEM, SOLID WEDGE, AND SOLDER ENDS FOR 200 POUNDS W.O.G. VALVES SHALL BE CRANE NO. 1324, OR EQUAL.
 3. CHECK VALVES 2" IN SIZE AND SMALLER SHALL BE HORIZONTAL SWING TYPE WITH BRONZE BODY, COMPOSITION DISC, AND SOLDER ENDS FOR 200 POUND W.O.G. VALVES SHALL BE CRANE NO. 1342, OR EQUAL.
 - D. VALVES FOR NATURAL GAS SYSTEMS
 1. LOW PRESSURE GAS STOPS, 2" AND SMALLER, AGA-CERTIFIED DESIGN FOR 2 PSIG OR LESS NATURAL GAS WITH AGA STAMP; PLUG OR BALL TYPE, BRONZE BODY AND BRONZE PLUG OR CHROME-PLATED BRASS BALL. INCLUDE FLAT HEAD, SQUARE HEAD OR LEVEL HANDLE AND THREADED ENDS. VALVES SHALL BE CRANE NO 9203 OR EQUAL.
 2. LUBRICATED PLUG VALVES 3" IN SIZE AND LARGER SHALL BE THE SEMI-STEEL TYPE WITH CAST IRON BODY, LUBRICATED CAST IRON PLUG, FLANGED ENDS, AND WRENCH OPERATED FOR 175# WOG. VALVES SHALL BE CRANE NO 9203 OR EQUAL.
 3. LUBRICATED PLUG VALVES (2-1/2" IN SIZE AND SMALLER) SHALL HAVE BRONZE BODY AND PLUG, THREADED ENDS, AND SQUARE HEAD FOR 125# WOG. VALVES SHALL BE CRANE NO. 250 OR EQUAL.
 4. LUBRICATED PLUG VALVES SHALL BE LUBRICATED AT THE FACTORY AND SEALANT SHALL BE SUITABLE FOR NATURAL GAS. PROVIDE SIX (6) STICKS OR TUBES OF SEALANT UTILIZED AND TURN SUCH OVER TO THE OWNER S REPRESENTATIVE.
 5. PROVIDE ONE (1) VALVE WRENCH FOR EACH SIZE AND TYPE OF VALVE HEAD AND TURN SUCH WRENCHES OVER TO THE OWNER'S REPRESENTATIVE.

2.05-PLUMBING SYSTEM INSULATION

- A. ALL INSULATION SHALL BE APPLIED IN A NEAT AND WORKMANLIKE MANNER. REMOVE AND REPLACE ALL INSULATION NOT APPLIED IN STRICT ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS OR NOT PRESENTING A NEAT APPEARANCE. INSULATION SHALL BE CONTINUOUS THROUGH WALL AND CEILING OPENINGS AND SLEEVES. ALL INSULATION SHALL BE APPLIED BY CONTRACTOR. SPECIALIZED IN INSULATION APPLICATION, IN ACCORDANCE WITH BEST TRADE PRACTICES AND AS GUIDED BY MANUFACTURERS PRINTED INSTALLATION DIRECTIONS.
- B. WORK INCLUDED: PIPE COVERING FOR DOMESTIC HOT WATER, COLD WATER AND INTERIOR CONDENSATE PIPING.
- C. MATERIALS AND INSTALLATION: NO PIPE INSULATION SHALL BE APPLIED UNTIL PIPING HAS BEEN PRESSURE TESTED AND APPROVED. ALL INSULATION SHALL BE APPLIED STRICTLY IN ACCORDANCE WITH THE MANUFACTURER S RECOMMENDATIONS. MATERIALS AS MANUFACTURED BY JOHNS MANVILLE, FIBERGLASS PHILIP CAREY, OR ARMSTRONG WILL BE ACCEPTABLE IF EQUAL TO THOSE SPECIFIED. ALL INSULATION ON INDOOR WORK SHALL HAVE COMPOSITE FIRE AND SMOKE HAZARD RATINGS AS TESTED BY PROCEDURE NFPA 255 NOT EXCEEDING: FLAME SPREAD 25, FUEL CONTRIBUTED 50, SMOKE DEVELOPED 50. ACCESSORIES SUCH AS ADHESIVES, MASTICS, CEMENTS, TAPES AND CLOTH FOR FITTING, SHALL HAVE THE SAME COMPONENT RATINGS AS LISTED ABOVE. INSULATION SHALL HAVE AN AVERAGE THERMAL CONDUCTIVITY NOT TO EXCEED 0.25 BTU/INCH OF THICKNESS PER SQUARE FOOT PER 1 DEGREE F. AT A MEAN TEMPERATURE OF 75 DEGREES F.
- D. DOMESTIC HOT WATER PIPING: ALL DOMESTIC HOT WATER PIPING SHALL BE INSULATED WITH 1" THICK FIBERGLASS PIPE INSULATED WITH FOIL-KRAFT LAMINATE VAPOR BARRIER FASTENED WITH PRESSURE SENSITIVE TAPE AND LAPPED 12" MINIMUM. ALL FITTINGS, VALVES, FLANGES, ETC. SHALL BE COVERED WITH PVC FITTING COVER, TAPE AND TACKED FASTENED.
- E. COLD WATER LINES: ALL DOMESTIC COLD WATER PIPING SHALL BE INSULATED WITH 1/2" THICK FIBERGLASS INSULATED WITH FOIL KRAFT LAMINATED VAPOR BARRIER FASTENED WITH PRESSURE SENSITIVE TAPE AND LAPPED 12" MINIMUM. ALL FITTINGS, VALVES, STRAINERS, FLANGES, ETC. SHALL BE COVERED WITH PVC FITTING COVER, TAPED AND TACKED FASTENED.
- F. NO INSULATION SHALL BE INSTALLED ON ANY PIPING BEFORE BUILDING IS ADEQUATELY CLOSED IN. WHERE NECESSARY TO INSTALL ANY INSULATION BEFORE IT IS PROTECTED BY BUILDING ENCLOSURES, PERMISSION SHALL BE SECURED FIRST. WHERE PERMISSION IS GRANTED, THE COVERING MUST BE EFFECTIVELY PROTECTED BY ROOFING FELT, WIRED ON THE COVERING TO MAKE AN ABSOLUTE WATERPROOF PROTECTION FOR THE PIPE COVERING.

- G. AT LAVATORIES FOR HANDICAPPED PERSONS PROVIDE HANDI LAV-GUARD 102, COLOR WHITE, AS MANUFACTURED BY TRUEBRO, INC.
- 2.07-HANGERS AND SUPPORTS
- A. FURNISH AND INSTALL ALL PIERS, FOUNDATIONS, SUPPORTING MATERIAL, HANGERS, CLAMPS, INSERTS, ETC., NECESSARY FOR THE INSTALLATION OF ALL PIPES AND EQUIPMENT.
 - B. SOIL, WASTE AND VENT STACKS SHALL BE WELL SUPPORTED AT THE BASE OF THE STACK. HORIZONTAL PIPING SHALL HAVE SUPPORTS AT 5' ON CENTER.
 - C. SUPPORTS AND HANGER SPACING FOR COPPER PIPING. SEE SCHEDULE ON DRAWINGS FOR MAXIMUM SPACING OF PIPE HANGERS.
- PART 3 - EXECUTION
- 3.01-INSTALLATION
- A. UNIONS SHALL BE PROVIDED AT ALL PIPING CONNECTIONS TO EQUIPMENT.
 - B. CHANGES IN WATER PIPE SIZE SHALL BE MADE WITH REDUCING FITTINGS. NO BUSHINGS WILL BE ALLOWED.
 - C. HORIZONTAL SOIL, WASTE AND CONDENSATE PIPING 2-1/2" IN SIZE AND SMALLER SHALL BE SLOPED A MINIMUM OF 1/4" PER FOOT. HORIZONTAL SOIL, WASTE AND CONDENSATE PIPING 3" IN SIZE AND LARGER SHALL BE SLOPED AT A MINIMUM OF 1/8" PER FOOT.
 - D. ON SOIL, WASTE AND VENT PIPING CHANGES IN PIPE SIZE SHALL BE MADE WITH REDUCING FITTINGS AND CHANGES IN PIPE DIRECTION SHALL BE MADE WITH FITTINGS. NO BUSHINGS SHALL BE ALLOWED.
 - E. HUBS ON ALL DRAINAGE AND VENT PIPING SHALL HAVE THE OPEN HUB END FACING AGAINST THE DIRECTION OF THE FLOW.
- 3.02-TESTING
- A. GENERAL:
 1. CONCEALED, UNDERGROUND AND INSULATED PIPING SHALL BE TESTED IN PLACE BEFORE CONCEALING, BURYING, OR COVERING. TESTS SHALL BE CONDUCTED IN THE PRESENCE OF THE ARCHITECT OF RECORD OR HIS DESIGNATE REPRESENTATIVE. EQUIPMENT, MATERIALS AND INSTRUMENTS REQUIRED FOR TESTS SHALL BE FURNISHED BY THE CONTRACTOR WITHOUT ADDITIONAL COST TO THE OWNER.
 - B. PLUMBING SYSTEMS:
 1. SOIL, WASTE AND VENT PIPING SHALL BE TESTED WITH WATER BEFORE INSTALLING FIXTURES. WATER TEST SHALL BE APPLIED TO THE SYSTEM EITHER IN ITS ENTIRETY OR IN SECTIONS. IF THE TEST IS APPLIED TO THE ENTIRE SYSTEM, ALL OPENINGS IN THE PIPING SHALL BE CLOSED EXCEPT THE HIGHEST OPENING, AND THE SYSTEM SHALL BE FILLED WITH WATER TO THE POINT OF OVERFLOW.
 2. THE ENTIRE HOT AND COLD WATER PIPING SYSTEMS SHALL BE TESTED AT A HYDROSTATIC PRESSURE OF NOT LESS THAN 100 POUNDS PER SQUARE INCH GAUGE (BEFORE INSULATION IS APPLIED), AND PROVED TIGHT AT THIS PRESSURE FOR NOT LESS THAN 30 MINUTES IN ORDER TO PERMIT INSPECTION OF ALL JOINTS.
 3. WHEN TESTING INDICATES MATERIALS OR WORKMANSHIP IS DEFICIENT, REPLACE OR REPAIR AS REQUIRED, AND REPEAT TEST UNTIL STANDARDS ARE ACHIEVED.

3.03-DISINFECTION OF DOMESTIC WATER PIPING

- A. PRIOR TO STARTING WORK, VERIFY SYSTEM IS COMPLETE, FLUSHED AND CLEAN. DISINFECTION PROCEDURE SHALL COMPLY WITH ALL LOCAL REQUIREMENTS.
- B. ENSURE PH OF WATER TO BE TREATED IS BETWEEN 7.4 AND 7.6 BY ADDING ALKALI OR ACID HYDROCHLORIC.
- C. INJECT DISINFECTANT, FREE CHLORINE IN LIQUID, POWDER, TABLET OR GAS FORM, THROUGHOUT SYSTEM TO OBTAIN 50 TO 80 MG/L RESIDUAL.
- D. BLEED WATER FROM OUTLETS TO ENSURE DISTRIBUTION AND TEST FOR DISINFECTANT RESIDUAL AT MINIMUM 15 PERCENT OF OUTLETS.
- E. MAINTAIN DISINFECTANT IN SYSTEM FOR 24 HOURS.
- F. IF FINAL DISINFECTANT RESIDUAL TESTS LESS THAN 25 MG/L, REPEAT TREATMENT.
- G. FLUSH DISINFECTANT FROM SYSTEM UNTIL RESIDUAL EQUAL TO THAT OF INCOMING WATER OR 1.0 MG/L.
- H. TAKE SAMPLES NO SOONER THAN 24 HOURS AFTER FLUSHING, FROM 10 PERCENT OF OUTLETS AND FROM WATER ENTRY, AND ANALYZE IN ACCORDANCE WITH AWWA C651.

3.04-NATURAL GAS PIPING

- A. INSPECT TEST AND PURGE GAS SYSTEMS ACCORDING TO NFPA 54, PART 4 "GAS PIPING INSPECTION, TESTING AND PURGING" AND LOCAL GAS UTILITY REQUIREMENTS.
- B. REPAIR LEAKS AND DEFECTS WITH NEW MATERIALS AND RETEST SYSTEM UNTIL SATISFACTORY RESULTS ARE OBTAINED.
- C. REPORT TEST RESULTS PROMPTLY AND IN WRITING TO THE ARCHITECT AND THE AUTHORITY HAVING JURISDICTION.
- D. VERIFY CAPACITIES AND PRESSURE RATINGS OF GAS METERS, REGULATORS, VALVES AND SPECIALTIES.
- E. VERIFY CORRECT SETTING FOR REGULATORS.
- F. VERIFY THAT SPECIFIED PIPING TESTS ARE COMPLETE.

MARK	DESCRIPTION	MANUFACTURER, MODEL NUMBER	FITTINGS/ACCESSORIES	REMARKS	MINIMUM FIXTURE CONNECTIONS			
					CW	HW	WASTE	VENT
P-1	WATER CLOSET ELONGATED, FLOOR MTD., FLUSH VALVE	AMERICAN STANDARD 3451.128 MADERA	FLUSH VALVE: SLOAN ROYAL 111-1.28 SEAT: CHURCH #9500C	1.28GPF, ELONGATED	1"	---	4"	2"
P-1A	WATER CLOSET ELONGATED, FLOOR MTD., FLUSH VALVE, ADA	AMERICAN STANDARD 2305.100 MADERA ADA 16-1/8"	FLUSH VALVE: SLOAN ROYAL 111-1.28 SEAT: CHURCH #9500C	1.28GPF, ELONGATED, ADA, ADA HANDLE INSTALLED ON WIDE SIDE	1"	---	4"	2"
P-3	LAVATORY COUNTERTOP ADA	AMERICAN STANDARD 0491.019 RONDAJAN	FAUCET: DELTA 505, PROVIDE WITH GRID DRAIN, OFFSET TAILPIECE AND TRUEBRO "LAV-GUARD" #103	19" ROUND COUNTER TOP 4" CENTERS, SINGLE LEVER FAUCET, ADA	1/2"	1/2"	1-1/4"	1-1/4"
P-5	ELECTRIC WATER COOLER ADA	OASIS PBACSL		HIGH/LOW ADA	1/2"	---	1-1/4"	1-1/4"
HD	HUB DRAIN		OPEN HUB A.F.F. WITH TRAP PRIMER VALVE		---	---	---	---
FD-1	FLOOR DRAIN	J.R. SMITH 2005	FINISHED AREAS, PROVIDE WITH TRAP PRIMER CONNECTION AND PRIMER VALVE		---	---	---	---
FD-2	FLOOR DRAIN	J.R. SMITH 2240	UNFINISHED AREAS, MECHANICAL ROOMS, LAUNDRY ROOMS, ETC. WITH SEDIMENT BUCKET AND TRAP PRIMER		---	---	---	---
FS-1	FLOOR SINK	J.R. SMITH 3150			---	---	---	---
RCP-1	HOT WATER RECIRC. PUMP	BELL & GOSSETT NBF-22	BRONZE IN-LINE CIRCULATOR PUMP, PROVIDE WITH STRAINER, CHECK VALVE AND GATE VALVES.	PROVIDE W/AQUASTAT	---	3/4"	---	---
TMV-1	THERMOSTATIC MIXING VALVE	WATTS LFMMV			1/2"	1/2"	---	---
NFWH	NON FREEZE WALL HYDRANT	WOODFORD B65 SERIES	FLUSH MOUNT, RECESSED BOX, SELF DRAINING WITH VACUUM BREAKER, LOCKABLE		3/4"	---	---	---
HB	HOSE BIBB INTERIOR	WOODFORD MODEL 24	SELF DRAINING WITH VACUUM BREAKER		1/2"	---	---	---

MARK	MANUFACTURER/MODEL	STORAGE, GALLONS	RECOVERY GPH @ 100°F	INPUT, MBH	FLUE, IN. DIAMETER	INLET/OUTLET	GAS CONN.	ELECTRICAL VOLTS, PHASE	REMARKS
WHG-1	A.O. SMITH BTH 300	130	349	300	6"	1-1/2"	XX	SEE ELEC.	1, 2, 3
WHG-2	A.O. SMITH BTH 300	130	349	300	6"	1-1/2"	XX	SEE ELEC.	1, 2, 3

NOTES:

1. PROVIDE AMTROL ST-5 EXPANSION TANK
2. SET THE TEMPERATURE TO 180°F
3. PROPANE GAS

NOMINAL PIPE OR TUBE SIZE (IN.)	STD. WT. STEEL PIPE (F.T.)			COPPER TUBE (F.T.)			CAST IRON SOIL	PLASTIC	MIN. ROD DIAMETER FOR SINGLE RIGID ROD HANGERS	
	WATER SERVICE	VAPOR SERVICE	WATER SERVICE	VAPOR SERVICE	WATER SERVICE	VAPOR SERVICE			STEEL & CAST IRON SOIL PIPE	COPPER & PLASTIC PIPE
UP TO 1/2"	7'	8'	5'	6'					3/8"	3/8"
1/2"	7'	8'	5'	7'					3/8"	3/8"
3/4"	7'	9'	5'	7'					3/8"	3/8"
1"	7'	9'	6'	8'					3/8"	3/8"
1-1/4"	7'	9'	7'	9'					3/8"	3/8"
1-1/2"	9'	12'	8'	10'					3/8"	3/8"
2"	10'	13'	8'	11'					3/8"	3/8"
2-1/2"	11'	14'	9'	13'					1/2"	1/2"
3"	12'	15'	10'	14'					1/2"	1/2"
4"	14'	17'	12'	16'					5/8"	1/2"

10 FT. MAX. SPACING AND 10 FT. MAX. HANGER SPACING SHALL BE MAINTAINED. ALSO, THE CHANGE OF THE BARREL, ALSO, THE CHANGE OF THE SECTION AND BARREL CONNECTIONS.

FOLLOW PIPE MANUFACTURER'S RECOMMENDATIONS FOR SUPPORTS AND SPACING.

---	SANITARY, WASTE - S, W, SAN
----	VENT PIPING - V
----	COLD WATER PIPING - CW
----	HOT WATER PIPING - HW
----	HOT WATER CIRCULATING PIPING - HWC
---	GAS PIPING - G
----	PIPING BELOW FLOOR
---	CLEANOUTS - CO, WCO, FCO, GCO
---	GATE VALVE - GV
---	BALL VALVE - BV
---	PRESSURE REDUCING VALVE - PRV
---	CHECK VALVE - CV
---	WATER HAMMER ARRESTER
---	GAS - PRESSURE REGULATOR
---	GAS - LUBRICATED PLUG VALVE
---	GAS - COCK VALVE
---	GAS - METER
---	FLOOR DRAIN - FD, FD-*
A/C	ABOVE CEILING
A/F	ABOVE FLOOR
BFP	BACKFLOW PREVENTER
B/F	BELOW FLOOR
B/G	BELOW GRADE
CD	CONDENSATE DRAIN
CO	CLEAN OUT
CW	COLD WATER
DN	DOWN
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
GCO	GRADE CLEANOUT
HD	HUB DRAIN
HW	HOT WATER
HWR	HOT WATER CIRCULATING
NFWH	NONFREEZE WALL HYDRANT
PRV	PRESSURE REDUCING VALVE
S	SANITARY SEWER
S.S.	STAINLESS STEEL
V	VENT
VTR	VENT THROUGH ROOF
W	WASTE
WCO	WALL CLEANOUT
WHA	WATER HAMMER ARRESTOR
WHE-*	WATER HEATER
P-*	PLUMBING FIXTURE
---	IN-LINE BACKFLOW PREVENTER

REVISIONS
 No. 1 DATE 11/27/2011 ADD P-5
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PROJECT TITLE
 PLUMBING LEGEND AND SCHEDULES

SHEET No.
 P0.1

DRAWN BY
 GD

CHECKED BY
 DATE
 AUG 24, 2011

PROJECT No.
 11024

AGFOOD DEVELOPMENT, INC.
 UNION COUNTY CANNERY
 UNION COUNTY, GEORGIA

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