PLUMBING LEGEND

SYMBOL	ABBR.	DESCRIPTION
	W	WASTE OR SEWER PIPING
	CWV	COMBINATION WASTE AND VENT
GR	GW	GREASE WASTE
	V	VENT PIPING
	CW	COLD WATER PIPING
	HW	HOT WATER PIPING
	HWR	HOT WATER RETURN PIPING
G	G	NATURAL GAS PIPING
FW	FW	FILTERED WATER PIPING
RD	RD	ROOF DRAIN LEADER
OD	OD	ROOF OVERFLOW DRAIN LEADER
D	D/CD	INDIRECT OR CONDENSATE DRAIN
	–	ISOMETRIC CONTINUATION
	–	PIPE RISE
	–	PIPE DROP
	–	PIPE DROP UNDER A HORIZONTAL PIPE
	–	PIPE CAP
	–	PIPE BREAK
	GV	GATE VALVE
	GBV	GLOBE VALVE
	BV	BALL VALVE
	CV	CHECK VALVE
	PV	PLUG VALVE
	SV	SOLENOID VALVE
BV	–	BALANCING VALVE
	PNV	PNEUMATIC VALVE
	BV	BUTTERFLY VALVE
	–	UNION
	–	REDUCER
	HB	HOSE BIBB
	GPR	GAS PRESSURE REGULATOR
	F	FIRE SPRINKLER PIPING
	FS	FLOOR SINK
	FD	FLOOR DRAIN
	FCO/SCO	FLOOR OR SURFACE CLEANOUT
	WCO	WALL CLEANOUT
	RD/OD	ROOF DRAIN/ OVERFLOW DRAIN
	VTR	VENT THRU ROOF
TP	TP	TRAP PRIMER
WHA	WHA	WATER HAMMER ARRESTOR
	PDP	POSITIVE DISPLACEMENT PUMP
	CP	CENTRIFUGAL PUMP
	POC	POINT OF CONNECTION BETWEEN NEW AND EXISTING

NOTE: ALL SYMBOLS MAY NOT APPLY

2015 IECC COMPLIANCE NOTES

1. WATER-HEATING EQUIPMENT NOT SUPPLIED WITH INTEGRAL HEAT TRAPS AND SERVING NON-CIRCULATING SYSTEMS SHALL BE PROVIDED WITH HEAT TRAPS ON SUPPLY AND DISCHARGE PIPING ASSOCIATED WITH EQUIPMENT.
2. PROVIDE MINIMUM 1" PIPE INSULATION HAVING A CONDUCTIVITY NOT GREATER THAN 0.27 BTU PER IN/HR FT2 DEG F ON AUTOMATIC-CIRCULATING HOT WATER SYSTEMS. PROVIDE MINIMUM 1/2" INSULATION HAVING A CONDUCTIVITY NOT GREATER THAN 0.27 BTU PER IN/HR FT2 DEF F FOR FIRST 8 FEET OF NON-CIRCULATING SYSTEMS WITHOUT INTEGRAL HEAT TRAPS.
3. SERVICE WATER-HEATING EQUIPMENT SHALL BE PROVIDED WITH CONTROLS TO ALLOW A SETPOINT OF 110°F FOR EQUIPMENT SERVING DWELLING UNITS AND 90°F FOR EQUIPMENT SERVING OTHER OCCUPANCIES. THE OUTLET TEMPERATURE OF LAVATORIES IN PUBLIC FACILITY RESTROOMS SHALL NOT EXCEED 110°F.
4. WATER-HEATING EQUIPMENT AND HOT WATER STORAGE TANKS SHALL MEET THE REQUIREMENTS OF THE CURRENT IECC CODE. THE EFFICIENCY SHALL BE VERIFIED THROUGH DATA FURNISHED BY THE MANUFACTURER OR THROUGH CERTIFICATION UNDER AN APPROVED CERTIFICATION PROGRAM.

CODE INFORMATION

1. 2012 IBC, 2012 IPC, 2015 IECC. ALL SYSTEMS SHALL BE IN COMPLIANCE WITH THE ABOVE CODES AS ADOPTED BY RICHMOND, TEXAS.
2. EQUIPMENT AND APPLIANCES SHALL BE INSTALLED AS REQUIRED BY THE TERMS OF THEIR APPROVAL, IN ACCORDANCE WITH THE CONDITIONS OF THE LISTING, THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND THIS CODE. MANUFACTURER'S INSTALLATION INSTRUCTIONS SHALL BE AVAILABLE ON THE JOB SITE AT THE TIME OF INSPECTION PER THE PLUMBING CODE.
3. MATERIALS EXPOSED WITHIN PLENUMS SHALL HAVE A FLAME SPREAD RATING INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE TO ASTM E84 OR UL 723.
4. ALL MATERIALS INSTALLED WITHIN PLENUMS SHALL BE LISTED AND LABELED FOR INSTALLATIONS WITHIN A PLENUM.

PLUMBING SPECIFICATIONS

NOTE:ALL SPECIFICATIONS MAY NOT APPLY

NOTICE TO OWNERS, ARCHITECTS AND CONTRACTORS REGARDING PRICING ESTIMATES
1. UNDER NO CIRCUMSTANCES SHALL THESE DRAWINGS BE "FINAL" OR "HARD BID" UNTIL THE PROJECT IS FULLY PERMITTED.
2. ALL PRELIMINARY PRICING EFFORTS SHALL BE CONSIDERED AS ESTIMATES ONLY AND SHALL INCLUDE SUCH CONTINGENCIES, ALLOWANCES, ALTERNATIVES, ETC. TO ACCOUNT FOR MODIFICATIONS AND ADDITIONS THAT WILL OCCUR TO THE DRAWINGS DURING FINALIZATION OF THE DESIGN AND PERMITTING PROCESS.

SCOPE OF WORK
1. ALL WORK REQUIRED CONSISTS OF PERFORMING ALL LABOR AND FURNISHING ALL MATERIALS, FIXTURES AND EQUIPMENT REQUIRED TO PROVIDE COMPLETE PLUMBING INSTALLATION AS INDICATED ON THE DRAWINGS. IT SHALL FURTHER INCLUDE FURNISHING AND INSTALLING ALL MISCELLANEOUS ITEMS REQUIRED FOR THE OPERATION OF THE SYSTEMS, WHETHER SPECIFICALLY CALLED FOR OR NOT. CONNECT ALL EQUIPMENT FURNISHED UNDER OTHER TRADES AS REQUIRED. DETERMINE IN ADVANCE THE SHUT-DOWN OF EXISTING UTILITIES.
2. EXACT LOCATION OF PLUMBING FIXTURES SHALL BE DETERMINED FROM ARCHITECTURAL DRAWINGS.
3. SPECIAL INSPECTIONS: WHERE THE PLANS INDICATE SPECIAL INSPECTIONS AND REPORT, OR AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION (AHJ), THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, HIRE AN INDEPENDENT THIRD PARTY INSPECTOR OR TESTING AGENCY TO PERFORM THE REQUIRED INSPECTIONS FOR THE TYPES OF WORK REQUIRED OR IDENTIFIED ON THE SPECIAL INSPECTION FORM. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT TO THE REGISTERED DESIGN PROFESSIONAL ENGINEER, PROVIDING TEST RESULTS AND STATING WHETHER THE ITEMS REQUIRING SPECIAL INSPECTION WERE IN COMPLIANCE WITH THE INSPECTION REQUIREMENTS. PROVIDE ADDITIONAL COST FOR ENGINEER'S SEALED LETTER OF APPROVAL.

CODES
1. ALL MATERIALS, EQUIPMENT AND INSTALLATION MUST COMPLY WITH ALL APPLICABLE LAWS, CODES, RULES, AND REGULATIONS, REQUIRED BY CITY, COUNTY, STATE, AND FEDERAL AGENCIES.

PERMITS
1. THIS CONTRACTOR SHALL PAY FOR ALL PERMITS, LICENSES AND FEES REQUIRED BY STATE AND LOCAL AUTHORITIES.
2. COMBUSTIBLE MATERIALS SHALL NOT BE USED IN A NON-COMBUSTIBLE CONSTRUCTION TYPE BUILDING AS DEFINED BY THE BUILDING CODE. COMBUSTIBLE MATERIALS SHALL BE PROTECTED AS SPECIFIED BY THE ENGINEER AND ARCHITECT OF RECORD.

INSPECTION
1. FURNISH OWNER WITH CERTIFICATE OF INSPECTION AND APPROVAL BY LOCAL AUTHORITIES PRIOR TO FINAL ACCEPTANCE OF THE PROJECT BY THE OWNER. ALL WORK MUST BE INSPECTED.

EXISTING CONDITIONS
1. THE CONTRACTOR SHALL VERIFY EXACT LOCATIONS OF ALL UTILITIES PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL VISIT THE SITE AND INSPECT THE WORK TO BE PERFORMED, IN ADDITION TO WHAT IS SHOWN HEREIN, AND INCLUDE IN BID AN AMOUNT TO DO SUCH WORK.
2. CONTRACTOR SHALL VERIFY INVERT ELEVATIONS OF SEWERS TO WHICH NEW WASTE LINES ARE TO BE CONNECTED BEFORE MAKING UP OR INSTALLATION OF NEW SYSTEM.
3. PRIOR TO COMMENCING WORK, PLUMBING CONTRACTOR SHALL CLEAN, TEST AND INSPECT ALL EXISTING ABOVE AND BELOW GROUND SEWER LINES TO INSURE THAT EXISTING SEWER PIPING IS IN SATISFACTORY WORKING CONDITION. CONTRACTOR SHALL REPORT ANY DEFECTS/DEFICIENCIES TO OWNER/ARCHITECT IMMEDIATELY. SUBMIT ADDENDUM BID TO ACCOMMODATE ANY REPAIR/REPLACEMENTS AS REQUIRED.
4. CONTRACTOR SHALL NOT CUT HOLES IN STRUCTURAL MEMBERS WITHOUT FIRST SECURING WRITTEN APPROVAL FROM THE ARCHITECT.

SHOP DRAWING SUBMITTALS
1. PRIOR TO PROCUREMENT, CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR REVIEW FOR ALL EQUIPMENT, INCLUDING THE FOLLOWING:
   A. DOMESTIC WATER, GAS, SANITARY AND STORM PIPING AND FITTINGS.
   B. BALL, BUTTERFLY VALVES, PRESSURE REDUCING VALVES AND SOLENOID VALVES.
   C. THERMAL INSULATION.
   D. WATER HEATERS AND PUMPS.
   E. OIL AND GREASE INTERCEPTORS.

MATERIALS

WATER PIPING:
1. ALL PIPING SHALL CONFORM TO THE REQUIREMENTS OF THE ANSI SAFETY CODE AND BE FREE FROM ALL DEFECTS AND BE PROPERLY IDENTIFIED.
2. ABOVE GROUND SHALL BE:
   2.1. TYPE "L" OR TYPE "M" HARD DRAWN COPPER TUBING CONFORMING TO ASTM B 88.
   2.2. CPVC PLASTIC PIPE CONFORMING TO ASTM D 2846; ASTM F 441-442; CSA B137.6.
   2.3. CROSS-LINKED POLYETHYLENE (PEX) PLASTIC TUBING, IF ALLOWED BY THE AUTHORITY HAVING JURISDICTION, CONFORMING TO ASTM F 876; ASTM F 877; CSA B137.5.
3. BELOW GROUND: (INSTALLED IN CONCRETE OR UNDER CONCRETE) TYPE "K" SOFT DRAWN COPPER TUBING, CONFORMING TO ASTM B 88-72, SPIRALLY WRAP PIPING BELOW GRADE OR FLOORS WITH 3 LAYERS OF 20 MIL POLYETHYLENE TAPE WITH 1/2 OVERLAP. INSTALL NO PIPING JOINTS BELOW FLOOR.
4. ALL COPPER TUBING SHALL UTILIZE SWEAT FITTINGS SOLDERED WITH ASTM B 32, ALLOY SN95, SN94, OR E. LEAD FREE SOLDER.

SOIL, WASTE, VENT AND STORM PIPING:
1. ALL SOIL AND WASTE PIPING SHALL SLOPE MINIMUM OF 1/4" PER FOOT. PIPING 4" AND LARGER MAY SLOPE 1/8" PER FOOT SLOPE IF SITE CONDITIONS WON'T ALLOW 1/4" PER FOOT SLOPE.
2. CHANGES IN DIRECTION, WHERE SPACE PERMITS, SHALL BE MADE WITH LONG SWEEP BENDS, Y-FITTINGS AND 1/8 OR 1/16 BENDS OR COMBINATION AND 1/8 BENDS.
3. SANITARY TEE BRANCHES AND 1/4 BENDS MAY BE USED FOR CONNECTION OF BRANCH LINES TO FIXTURES AND FROM STACKS TO HORIZONTAL DRAINAGE.
4. MATERIALS:
   4.1. CAST IRON: NO-HUB CAST IRON, CISPI DESIGNATION 301-12 FOR ALL SOIL, WASTE AND VENT PIPING WITH STANDARD WEIGHT FITTINGS. USE STAINLESS STEEL NO-HUB CAST IRON COUPLINGS THROUGHOUT THE PROJECT. INSTALL PIPE AND FITTINGS PER CISPI DESIGNATION 301-12. RESTRAIN PIPE AND FITTINGS USING ENGINEERED (HOLDRITE OR EQUAL) ASSEMBLIES INSTALLED PER MANUFACTURERS INSTRUCTIONS.
   4.2. GALVANIZED IRON: SCHEDULE 40 STANDARD WEIGHT CONFORMING TO ASTM A72-68. USE WROUGHT IRON SCREWED FITTINGS TO MATCH PIPE. MAKE ALL SCREWED JOINTS WITH TEFLON TAPE. (NO GALVANIZED IRON OR STEEL PIPE SHALL BE USED UNDERGROUND.)
   4.3. ABS: ABS PIPING CONFORMING TO ASTM D2661-78 FOR ALL SOIL, WASTE AND VENT PIPING WITH MATCHING FITTINGS. ABS ABOVE AND BELOW GRADE FOR COMBUSTIBLE CONSTRUCTION OR ALLOWED BY LOCAL JURISDICTION. ABS FOR NON-COMBUSTIBLE CONSTRUCTION BELOW GRADE ONLY.
   4.4. PVC: SCHEDULE 40 SOLID WALL PIPE AND DWV FITTING SYSTEM: PIPE AND FITTINGS SHALL BE MANUFACTURED FROM PVC COMPOUND WITH A CELL CLASS OF 12454 PER ASTM D 1784 AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE AND FITTINGS SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM D 1785 AND ASTM D 2665. ALL PIPE AND FITTINGS TO BE PRODUCED AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND LOCAL CODE REQUIREMENTS. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2564. PRIMER SHALL CONFORM TO ASTM F 656. THE SYSTEM IS INTENDED FOR NON-PRESSURE DRAINAGE APPLICATIONS WHERE THE TEMPERATURE WILL NOT EXCEED 140° F.

VALVES:
1. SIZE OF SHUT-OFF VALVES, CONTROL VALVES, BALANCING COCKS, UNIONS ETC., SHALL BE FULL LINE SIZE.
2. PROVIDE SHUT-OFF VALVES IN CEILING SPACE FOR COLD AND HOT WATER PIPING CONNECTIONS TO ALL PLUMBING FIXTURES, HOSE BIBBS AND TRAP PRIMERS. PROVIDE STAINLESS STEEL CEILING/WALL ACCESS PANELS AS NECESSARY, IN ACCORDANCE WITH ARCHITECT'S REQUIREMENTS.

PIPE HANGERS:
1. PIPE HANGERS SHALL BE MICHIGAN #400 FOR STEEL PIPING, #402 FOR GAS AND COPPER PIPING. SUPPORT PIPING 1-1/4" AND SMALLER 6'-0" O/C, AND PIPING 1-1/2" AND LARGER 10'-0" O/C. WASTE PIPING SHALL BE SUPPORTED AT 4'-0" O/C. PROVIDE 3/8" DIA. THREADED ROD PROPERLY BRACED FOR SEISMIC RESTRAINT ZONE 2.

PIPE INSULATION:
1. ALL DOMESTIC COLD WATER PIPING SHALL HAVE 1/2 INCH THICK FIBERGLASS INSULATION WHERE DAMAGE TO ANY BUILDING COMPONENTS WILL OCCUR AS A RESULT OF CONDENSATION FORMING ON COLD WATER PIPING.
2. ALL DOMESTIC HOT WATER AND HOT WATER RETURN PIPING SHALL HAVE 1 INCH THICK FIBERGLASS INSULATION.
3. PIPE INSULATION SHALL HAVE AN ASJ JACKET AND A THERMAL CONDUCTIVITY (K-FACTOR) NOT EXCEEDING 0.27 AT 75 DEGREES MEAN TEMPERATURE.
4. THE MAXIMUM FIRE HAZARD CLASSIFICATION OF THE INSULATION SYSTEM SHALL NOT HAVE MORE THAN A FLAME SPREAD OF 25, A FUEL CONTRIBUTED RATING OF 50, AND A SMOKE DEVELOPED RATING OF 50 WHEN TESTED IN ACCORDANCE WITH U.L. REQUIREMENTS. PIPE COVERING SHALL BEAR THE U.L. LABEL.
5. INSULATE ALL FITTINGS, VALVE BODIES ETC. WITH SINGLE OR MULTIPLE LAYERS OF INSULATION WITH PREFABRICATED FITTINGS WITH P.V.C. JACKETS.
6. SUBMIT SHOP DRAWINGS FOR ALL INSULATION MATERIALS.

CLEAN OUTS: (ZURN, JOSAM, SMITH)
1. CLEAN OUTS SHALL BE THE SAME SIZE AS THE LARGEST DOWNSTREAM PIPE IT IS SERVING. NO PLASTIC CLEAN OUTS WILL BE ACCEPTED. PLUGS SHALL BE BRONZE.

PIPE EXPANSION:
1. ALL PIPE CONNECTIONS SHALL BE INSTALLED TO ALLOW FOR FREEDOM OF MOVEMENT OF THE PIPING DURING EXPANSION AND CONTRACTION.
2. EXPANSION LOOPS AND EXPANSION JOINTS WITH PROPER ANCHORS AND GUIDES SHALL BE PROVIDED AS REQUIRED. ANCHORS AND JOINTS SHALL BE SUBJECT TO THE REVIEW OF THE ARCHITECT.
3. ALL SUPPORTS SHALL BE INSTALLED TO PERMIT THE MATERIALS TO CONTRACT AND EXPAND FREELY WITHOUT PUTTING A STRAIN OR STRESS ON ANY PART OF THE SYSTEM. PROVIDE ANCHORS AS REQUIRED.

UNIONS
1. PROVIDE A UNION BETWEEN CONNECTIONS TO EACH FIXTURE, DEVICE OR PIECE OF EQUIPMENT FOR DISCONNECTING OF PIPING.
2. CONTRACTOR SHALL INSTALL DIELECTRIC UNIONS AT CONNECTIONS OF DISSIMILAR METALS.

PIPE INSTALLATION
1. INSTALL PIPING TO BEST SUIT FIELD CONDITIONS, COORDINATE LAYOUT OF PIPING WITH DUCT WORK AND OFFSET PIPING AS REQUIRED TO CLEAR NEW WORK.
2. ALL VENTS THROUGH ROOF SHALL BE MINIMUM 10'-0" REMOVED FROM ALL AIR INTAKES, EVAPORATIVE COOLERS, ETC.
3. CONTRACTOR SHALL ROUGH-IN ALL WASTE AND SUPPLY PIPING TO SPECIAL EQUIPMENT ACCORDING TO MANUFACTURERS SHOP DRAWINGS AND MAKE FINAL CONNECTIONS. ALL SUPPLIES SHALL BE VALVED.
4. A WATER-HAMMER ARRESTOR SHALL BE INSTALLED WHERE QUICK-CLOSING VALVES ARE UTILIZED. INCLUDES TOILET FLUSH VALVE GROUPS AND CONNECTIONS TO ALL SOLENOID ACTIVATED VALVES. WATER-HAMMER ARRESTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND SHALL CONFORM TO ASSE 1010.
5. PROVIDE MEANS OF PREVENTING DISSIMILAR METAL CONTACT BETWEEN ALL PIPING MATERIALS FROM ANY OTHER METAL OR STRUCTURAL MEMBER TO PREVENT GALVANIC ACTION BETWEEN THE TWO METALS.
6. WHEN WATER PIPE AND SEWER ARE LAID PARALLEL TO EACH OTHER, ONE OF THE FOLLOWING PROCEDURES MUST BE FOLLOWED:
   A. THE HORIZONTAL DISTANCE BETWEEN THE WATER PIPE AND SEWER SHALL NOT BE LESS THAN SIX (6) FEET.
   B. EACH LINE SHALL BE LAID IN A SEPARATE TRENCH, OR IN BETWEEN FILLED WITH COMPACT FILL.
   C. THE WATER SERVICE PIPE MAY BE PLACED IN THE TRENCH WITH THE BUILDING DRAIN AND/OR BUILDING SEWER, PROVIDED THE BOTTOM OF THE WATER SERVICE PIPE, AT ALL POINTS SHALL BE AT LEAST TWELVE (12) INCHES ABOVE THE TOP OF THE SEWER LINE, AND SHALL BE PLACED ON A SOLID SHELF EXCAVATED AT ONE SIDE OF THE COMMON TRENCH.
   D. WATER SERVICE AND SEWER SHALL BE CONSTRUCTED OF MATERIALS APPROVED FOR USE WITHIN A BUILDING AND PRESSURE TESTED TO ASSURE WATER TIGHTNESS BEFORE BACKFILLING.

ACCESSIBILITY
1. THE INSTALLATION OF ALL VALVES, UNIONS, THERMOMETERS, GAUGES, OR OTHER INDICATING OR RECORDING DEVICES, OR SPECIALITIES REQUIRING FREQUENT READING, REPAIRS, ADJUSTMENT, INSPECTION, REMOVAL, OR REPLACEMENT SHALL BE CONVENIENTLY AND ACCESSIBLY LOCATED WITH REFERENCE TO THE FINISHED BUILDING.

TESTING
1. FILL DOMESTIC WATER SYSTEM WITH WATER AND PRESSURIZE TO 125 PSI AND MAINTAIN FOR (4) FOUR HOURS WITH NO PRESSURE DROP.
2. FILL WASTE, SOIL, VENT AND STORM DRAINAGE SYSTEMS WITH WATER TO HIGHEST POINT OF THE SYSTEM. HOLD PRESSURE FOR (4) HOURS WITH NO DROP IN WATER LEVEL.
3. IF THE SYSTEM IS TESTED IN SECTIONS, EACH SECTION SHALL BE FILLED WITH WATER BUT NO SECTION SHALL BE TESTED WITH LESS THAN A TEN FOOT HEAD OF WATER.
4. GAS TESTING:
   A. AIR PRESSURE TEST SYSTEM TO 75 PSI AND MAINTAIN FOR A PERIOD OF (8) HOURS WITH NO PRESSURE DROP.
   B. PURGE LINE WITH NITROGEN AT JUNCTION WITH MAIN LINE AT GAS METER TO REMOVE ALL AIR. CLEAR COMPLETE LINE BY ATTACHING A TEST PILOT FIXTURE AT CAPPED STUB-IN LINE AT THE BUILDING LOCATION, AND LET GAS FLOW UNTIL TEST PILOT IGNITES. CAUTION: FAILURE TO PURGE SYSTEM MAY RESULT IN EXPLOSION WITHIN LINE WHEN AIR-TO-GAS IS AT CORRECT MIXTURE.
5. TEST AND OBTAIN APPROVAL ON ALL UNDERGROUND PIPING BEFORE COVERING WORK. PROVIDE WRITTEN TESTING REPORT TO ARCHITECT.

CLEANING
1. AT THE COMPLETION OF THE WORK AND PRIOR TO FINAL ACCEPTANCE, ALL PARTS OF THE WORK INSTALLED UNDER THIS SPECIFICATION SHALL BE THOROUGHLY CLEANED. ALL EQUIPMENT, FIXTURES, PIPE, VALVES AND FITTINGS SHALL BE CLEANED OF GREASE, METAL CUTTINGS AND SLUDGE WHICH MAY HAVE ACCUMULATED BY OPERATION OF THE SYSTEM FOR TESTING HEREIN BEFORE SPECIFIED OR FROM OTHER CAUSES.

STERILIZATION
1. STERILIZE THE ENTIRE WATER DISTRIBUTION SYSTEM THOROUGHLY WITH A SOLUTION CONTAINING NOT LESS THAN 50 PARTS PER MILLION OF AVAILABLE CHLORINE. FOR CHLORINATING MATERIALS USE SODIUM HYPOCHLORITE SOLUTION CONFORMING TO FEDERAL SPEC. O-B-441, GRADE D, AND INTRODUCE INTO THE SYSTEM BY USE OF A COCK AT A SLOW, EVEN, CONTINUOUS RATE. ALLOW THE STERILIZING SOLUTION TO REMAIN IN THE SYSTEM FOR A PERIOD OF 24 HOURS, DURING WHICH TIME ALL VALVES AND FAUCETS SHALL BE OPENED AND CLOSED SEVERAL TIMES. AFTER STERILIZATION, FLUSH THE SOLUTION FROM THE SYSTEM WITH CLEAN WATER UNTIL THE RESIDUAL CHLORINE CONTENT IS NO GREATER THAN 0.2 PARTS PER MILLION. PLATE COUNT SHALL INDICATE COUNT LESS THAN 100 BACTERIA PER CC.

GUARANTEE
1. THE CONTRACTOR SHALL GUARANTEE ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP FROM DEFECT OF MATERIAL AND WORKMANSHIP, AND SHALL REPLACE OR REPAIR, WITHOUT ADDITIONAL COST TO THE OWNER, ALL DEFECTIVE MATERIAL AND WORKMANSHIP FOR A PERIOD (1) YEAR AFTER COMPLETION AND ACCEPTANCE.

COORDINATION
1. ALL CONTRACTORS SHALL BE RESPONSIBLE FOR COORDINATING WORK WITH OTHER TRADES AFFECTED BY EACH OTHERS WORK AND FOR CUTTING AND REFINISHING OF EXISTING WALLS, FLOORS, SOLID AND SUSPENDED CEILINGS ETC., WHERE REQUIRED BY WORK SHOWN AND NOTED HEREIN. INSTALL ALL WORK TO CLEAR NEW AND EXISTING ARCHITECTURAL AND STRUCTURAL MEMBERS. ITEMS SUCH AS PIPE, FITTINGS, ETC., SHALL NOT BE INSTALLED IN CONFLICT WITH EQUIPMENT. COORDINATE ALL CUTTING AND PATCHING WITH THE GENERAL CONTRACTOR. SUBCONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING OF HIS WORK. OBTAIN WRITTEN PERMISSION OF ARCHITECT BEFORE PROCEEDING WITH ANY CUTTING OR PATCHING OF STRUCTURAL SYSTEMS.

SUBSTITUTIONS
1. SUBSTITUTIONS OF MATERIALS OR PRODUCTS SHOWN HEREIN SHALL BE AT THE OWNER'S, ARCHITECT'S OR ENGINEER'S WRITTEN APPROVAL ONLY, WITH COPIES OF APPROVAL SENT TO ARCHITECT FOR PROJECT FILE. DEVIATION FROM THESE DRAWINGS WILL NOT BE ALLOWED. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL SUBSTITUTIONS AND ALL COSTS OF CHANGES INCURRED BY THEMSELVES AND OTHERS DUE TO THE SUBSTITUTIONS.

RECORD DRAWINGS
1. PROVIDE TWO (2) SETS OF "RECORD" DRAWINGS (AS-BUILTS) AND TWO (2) BOUND SETS OF ALL OPERATIONS MANUALS, DIAGRAMS, SERVICE CONTRACTS, GUARANTEES, ETC., ONE FOR THE OWNER AND ONE FOR BUILDING OPERATIONS DEPARTMENT. OBTAIN A COMPLETE SET OF RECORD DRAWINGS OF EXISTING CONSTRUCTION FROM THE OWNERS FOR INFORMATION ON EXISTING CONDITIONS. INCORPORATE ANY EXISTING CONDITIONS ON NEW RECORD DRAWINGS REQUIRED TO SHOW THE "INSTALLED" INSTALLATION.

ORDER OF PRECEDENCE OF DOCUMENTS
1. SHOULD A CONFLICT ARISE BETWEEN CONSTRUCTION DOCUMENTS, THE ORDER OF PRECEDENCE SHALL BE:
   A. SPECIAL PROVISIONS
   B. GENERAL PROVISIONS
   C. SPECIFICATIONS
   D. DETAILS ON DRAWINGS
   E. PLAN DRAWINGS
2. THE ENGINEER OF RECORD SHALL BE NOTIFIED BEFORE A DECISION IS MADE.

REFERENCE SYMBOLS

- (# / SHEET) GENERAL REFERENCE — DESIGNATES SHEET NUMBER
- (# / SHEET) DETAIL REFERENCE — TOP DESIGNATES DETAIL NUMBER; BOTTOM DESIGNATES SHEET NUMBER
- (# / X0.0) SECTION REFERENCE — TOP DESIGNATES SECTION NUMBER; BOTTOM DESIGNATES SHEET NUMBER
- (EQUIP #) EQUIPMENT NAME AND NUMBER
- (#) SHEET KEYNOTE NUMBER
- (#) REVISION NUMBER
- ELEVATION SYMBOL
- NEW CONNECTION TO EXISTING

PLUMBING SHEET INDEX

P0.1	PLUMBING SPECS, SYMBOLS, AND SHEET INDEX
P1.1	PLUMBING FLOOR PLAN
P2.1	SCHEDULES, AND CALCULATIONS
P2.2	DETAILS
P2.2	WASTE, GREASE, AND VENT SCHEMATICS
P2.3	WATER AND GAS SCHEMATICS

TEXAS ENGINEER FIRM REGISTRATION #F-15201

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THE MONTESSORIOM AT BELLA TERRA

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NO.	DESCRIPTION	DATE
1	FINAL SCHEME	02.01.19
2	REV.FINAL SCHEME	02.07.19
3	PERMIT	05.24.19

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Date Signed: 05/24/19

Project No.	1801.74
Date	02/11/19
Drawn by	JG
Checked by	NL

Sheet No.

P0.1