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PLUMBING SPECIFICATIONS:

SCOPE OF WORK:

- INCLUDE PROVIDING SUPERVISION, LABOR, SUPPLIES, MATERIALS (TO INCLUDE EQUIPMENT), TOOLS, SERVICES, DOCUMENTATION, TESTS & DEMONSTRATIONS, CERTIFICATES, AND DOLLAR COSTS REQUIRED TO CONSTRUCT THE COMPLETE SYSTEMS AS SPECIFIED AND SHOWN BY THE PLANS. THE MAJOR ITEMS OF THE WORK ARE:
 PLUMBING SYSTEM. SPECIAL SYSTEMS AS INDICATED.
 SERVICES AND SUPPORT WORK, INCLUDING TRANSPORTATION, MATERIALS HANDLING, INSPECTING, STORAGE, GUARDING, SCAFFOLDING, HOISTING, ETC.
 SALES TAX, PERMITS, INSPECTION FEES, APPROVALS, LICENSES, REGISTRATIONS, AND CERTIFICATES.
 COORDINATION, NOTIFICATION, INSPECTIONS, FIELD SURVEYS OF THE JOB SITE, AND REPORTS.
 TESTS AND DEMONSTRATIONS.
 SUBMITTALS, INCLUDING SHOP DRAWINGS.
 REPLACEMENT OF DEFECTIVE WORK.
 DEMOLITION AND SALVAGE.

PERMITS AND COSTS:

- OBTAIN AND PAY FOR PERMITS, ASSESSMENTS, TAXES, FEES, LICENSES, ETC. NECESSARY FOR THE INSTALLATION OF THE WORK.

TRANSPORTATION AND DELIVERY:

- PROVIDE AND PAY FOR THE TRANSPORTATION, STORAGE AND HANDLING OF MATERIALS.

SHOP DRAWINGS & SUBSTITUTIONS:

- SUBMIT SHOP DRAWINGS AND PRODUCT INFORMATION FOR REVIEW FOR MATERIALS AS LISTED, AND FOR ANY SUBSTITUTE MATERIAL.
- SUBMIT REQUESTS FOR USE OF ALTERNATIVE MATERIALS. SUBMIT SUBSTITUTES OF EQUIVALENT MATERIALS OF SIMILAR QUALITY, THE SAME OR BETTER WITH RESPECT TO STYLE AND FUNCTION, FOR REVIEW AND ACCEPTANCE. STATE PROPOSED EXCEPTIONS TO REQUIREMENTS CLEARLY IN ONE PLACE, INCLUDING REQUIRED RELATED CHANGES TO BUILDING SYSTEMS, OPERATING PROCEDURES, AND MAINTENANCE FUNCTIONS.
- COORDINATE ANY CHANGES TO ELECTRICAL, STRUCTURAL, AND MECHANICAL SYSTEMS REQUIRED BY USE OF EQUIPMENT OTHER THAN "BASIS OF DESIGN". SUBMIT SHOP DRAWINGS INDICATING REQUIRED CHANGES.

GUARANTEES / WARRANTIES:

- REPLACE ANY WORK OR MATERIAL WHICH DEVELOPS DEFECTS, EXCEPT FROM ORDINARY WEAR AND TEAR, WITHIN ONE (1) YEAR FROM THE DATE OF BENEFICIAL ACCEPTANCE BY THE OWNER.
- WATER HEATERS SHALL HAVE A MINIMUM FIVE (5) YEAR MANUFACTURER'S GUARANTEE AGAINST DEFECTIVE PARTS.

GENERAL:

- PLANS ARE DIAGRAMMATIC. ESTABLISH DETAILS OF THE WORK AS NECESSARY TO PROVIDE FOR THE COMPLETE INSTALLATION OF SYSTEMS AND MATERIALS. ARRANGE THE WORK TO AVOID INTERFERENCE WITH OTHER BUILDING COMPONENTS OR SYSTEMS. LAY OUT THE WORK AND BE RESPONSIBLE FOR LOCATIONS, LEVELS, GRADES, AND ARCHITECTURAL OR STRUCTURAL FEATURES SUCH AS BEAMS, FIRE BARRIERS, CEILING TYPES AND HEIGHTS, SLAB OR WALL THICKNESS, CABINET HEIGHTS, OR DOOR SWINGS. DO NOT SCALE THE PLANS FOR ANY DIMENSION. VERIFY DIMENSIONS BEFORE STARTING WORK AND REPORT ANY DISCREPANCY OR INTERFERENCE TO THE OWNER'S REPRESENTATIVE FOR CLARIFICATION.
- FURNISH THREE (3) SETS OF OPERATING AND MAINTENANCE MANUALS FOR MAJOR MATERIALS, AND FOR SPECIAL SYSTEMS MATERIALS.
- RECORD ON ONE SET OF PLANS CHANGES AND DEVIATIONS FROM THE CONTRACT PLANS. RECORD FINAL LOCATION OF EQUIPMENT, AIR DIFFUSERS, DUCTWORK, CONTROLS, BURIED PIPING, ETC. MAKE SUFFICIENT MEASUREMENTS TO LOCATE MAJOR PIPING AND SHOW SAME ON RECORD PLANS AS-BUILT CONDITIONS. TRANSFER CHANGES AND DEVIATIONS TO REPRODUCIBLE "SEPIA" PLANS AND DELIVER TO OWNER'S REPRESENTATIVE.

CODES:

- PERFORM WORK PER APPLICABLE CODES, ORDINANCES OR REQUIREMENTS OF THE LOCAL BUILDING OFFICIALS, OR THE FOLLOWING:
 - INTERNATIONAL BUILDING CODE.
 - INTERNATIONAL PLUMBING CODE (GEORGIA EDITION)
 - HEATING, VENTILATION AND AIR CONDITIONING: INTERNATIONAL MECHANICAL CODE (GEORGIA EDITION) THE GEORGIA STATE ENERGY CODE FOR BUILDINGS NFPA 90A AND NFPA 96
 - OWNER'S PUBLISHED DESIGN CRITERIA.

ELECTRICAL :

- COORDINATE ALL PLUMBING EQUIPMENT THAT HAS MOTOR CONTROLLERS FOR ALL MOTORS SPECIFIED UNDER DIVISION 15.
- PROVIDE PILOT DUTY CONTROL SYSTEMS AND RELATED WIRING (INCLUDING ANY NECESSARY RACEWAY SYSTEM) FOR MECHANICAL EQUIPMENT.

SUPPORTING DEVICES AND MATERIALS:

- PROVIDE SUPPORTS FOR PROPER AND RIGID MOUNTING FOR MATERIALS MOUNTING MATERIALS.
- PROVIDE 4" HIGH CONCRETE PAD FOR FLOOR OR GROUND MOUNTED EQUIPMENT. PROVIDE ANCHOR BOLTS AND OTHER ACCESSORIES REQUIRED FOR CASTING IN CONCRETE BASES.

COMPLETION:

- DEMONSTRATE THAT WORK IS COMPLETE AND CALIBRATED. PERFORM REQUIRED TESTS.
- INSTRUCT FACILITY OPERATING PERSONNEL IN THE SAFE AND CORRECT PROCEDURES FOR CLEANING, CHECKING, LOGGING, LUBRICATING, TESTING, TROUBLE SHOOTING AND OPERATING OF EQUIPMENT AND SYSTEMS.

INSULATION:

- INSULATION, INCLUDING FACING, JACKETS, AND ADHESIVE USED TO ADHERE THE FACING OR JACKET; NOT EXCEEDING A FLAME SPREAD OF 25, NOR A SMOKE DEVELOPED RATING OF 50AS, TESTED IN ACCORDANCE WITH ASTM E84 AND UL LISTED.

- WATER PIPING INSULATION; 1/2" THICK PREFORMED FIBERGLASS, CONFORMING TO FEDERAL SPEC. HH-1-5588, FORM D, TYPE III CLASS 12 WITH THERMAL CONDUCTIVITY NOT TO EXCEED 0.22 BTU/HR.-FT.2-O/F/IN. AT 75o; WITH UL LISTED ALL SERVICE OFF-WHITE VINYL-GLASS FIBER-SCRIM-FOIL-KRAFT FACTORY APPLIED JACKET, SELF-SEALING LAP AND 3" BUTT JOINT STRIPS. OWENS-CORNING FIBERGLASS 25 ASJ/SSL OR EQUAL.

- REFRIGERANT PIPING AND CONDENSATE DRAIN PIPING NOT IN CEILING AIR PLENUM AREAS MAY BE INSULATED WITH CLOSED CELL TYPE INSULATION, ARMAFLEX, IF PERMITTED BY LOCAL CODES.

FIRE STOPPING

- PACK SLEEVES THROUGH FLOORS AND FIRE WALLS WITH FIRE RESISTANT MATERIAL TO PREVENT FIRE SPREAD, FIRE RETARDANT SEALANT; ASBESTOS FREE, UL CLASSIFIED, ASTM E814-1983. FORMING AND BACKING MATERIAL INSTALLED WITH THE SEALANT SHALL BE BULK CERAMIC FIBER OR RIGID FIBERBOARD RATED FOR 23000F. MANUFACTURERS: 3M 303 FIRE BARRIER, DOW CORNING OR GE SILICONE FOAM, HILTI FIRESTOP, NELSON FLAMESEAL, OR THOMPSON & BETTS FLAME-SAFE.
- FIRE STOP PLASTIC OR INSULATED PIPING USING AN INTUMESCENT FIRE STOPPING SYSTEM DESIGNED TO EXPAND UNDER HEAT AND SEAL THE PENETRATION. DOW CORNING # 2002, 3M # 07270.
- INSTALL FIRE STOPPING MATERIALS IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND THE LISTING REQUIREMENTS.

PIPE AND FITTINGS:

- DOMESTIC WATER PIPING ABOVE GRADE; TYPE "L" HARD DRAWN COPPER TUBING, A.S.T.M. SPECIFICATION B-88. CONSTRUCTION; SUITABLE FOR A WATER PRESSURE OF 200 LBS. AT 2000F. FITTINGS; SWEAT TYPE WROUGHT COPPER FITTINGS CONFORMING TO ANSI B16.22. JOINTS; "SWEAT" TYPE CONSTRUCTION USING 95-5 SOLDER AND A SUITABLE NON-CORRODE PASTE OR APPROVED EQUAL SOLDERING SYSTEM.
- ALL UNDERGROUND WATER SERVICE PIPING; TYPE "K" HARD DRAWN COPPER TUBING, FED. SPEC. NO. WW-T-799 WITH BRAZED JOINTS AND WROUGHT COPPER SOCKET FITTINGS. BRAZED JOINTS; MADE USING A BCUP-5 BRAZING ALLOY WITH A COMPATIBLE FLUX.
- SANITARY WASTE AND VENT PIPING; SERVICE WEIGHT HUBLESS CAST IRON WITH NO HUB FITTINGS CONFORMING TO CISPI 301. SCHEDULE 40 PVC PIPING MAY BE USED INSIDE CHASES AND BELOW THE FLOOR, BUT NOT ABOVE CEILING RETURN AIR PLENUM SPACE.
- CONDENSATE DRAIN PIPING; DWV COPPER. PROVIDE A 3" MINIMUM TRAP AT EACH COOLING COIL. PITCH CONDENSATE PIPING A MINIMUM OF 1/4" PER FT. AWAY FROM THE COOLING COIL. INSULATE CONDENSATE DRAIN PIPING AS SPECIFIED HEREIN.
- NATURAL GAS PIPING; SCH. 40 BLACK STEEL, ASTM A120, WITH SCREWED BLACK STEEL FITTINGS. CONNECTIONS TO EQUIPMENT; MADE WITH 125 LB. BLACK MALLEABLE IRON FITTINGS WITH JOINTS USING "TITE-SEAL" ON MALE THREADS ONLY. PROVIDE A VALVE, CRANE 324 OR EQUAL, AND A UNION AT EACH CONNECTION TO A PIECE OF EQUIPMENT. ALL GAS PIPING; GRADED NOT LESS THAN 1/4" IN 15 FT. PROVIDE 6" DIRT LEGS IN GAS PIPING AT THE ENDS OF HORIZONTAL RUNS, AT THE BASE OF RISERS, AND AT CONNECTIONS TO EQUIPMENT.

WATER PIPING INSTALLATION:

- RUN CONCEALED IN CHASES, CEILING, OR WALL CONSTRUCTION UNLESS OTHERWISE INDICATED. PROVIDE ALL NECESSARY LOOPS, HANGERS, ANCHORS, OFFSETS, ETC., REQUIRED FOR PROPER SUPPORT AND CONTROL OF EXPANSION AND CONTRACTION OF PIPING.

SOIL, WASTE, AND VENT PIPING INSTALLATION:

- GRADE OR PITCH OF THE SOIL AND VENT SYSTEM; UNIFORM. SEWER PIPE UNDER FLOOR; NOT LESS THAN TWO PERCENT (.02) GRADE, AND PIPE OUTSIDE THE BUILDING; NOT LESS THAN ONE PERCENT (.01) GRADE.

SLEEVES:

- PROVIDE STANDARD WEIGHT GALVANIZED STEEL PIPE SLEEVES AROUND ALL PIPING PASSING THROUGH MASONRY WALLS, FLOORS, BEAMS, ETC. WHERE PIPES ARE INSULATED THE SLEEVES; OF SUCH A DIAMETER AS TO ALLOW THE INSULATED PIPE TO PASS THROUGH EASILY. SLEEVES IN OUTSIDE WALLS BELOW GRADE; CAULKED AS REQUIRED TO MAKE THEM WATERTIGHT.

UNIONS:

- UNIONS; LOCATED AS SHOWN ON THE PLANS AND AS REQUIRED SO THAT PIPING CAN BE EASILY DISMANTLED. DO NOT INSTALL UNIONS IN INACCESSIBLE LOCATIONS.

TRAPS:

- PROVIDE ALL FIXTURES, DRAINS, ETC. WITH TRAPS, UNLESS SPECIFICALLY SHOWN OTHERWISE. TRAPS; SET IN AN UPRIGHT POSITION, PERFECTLY LEVEL AND TRUE, VENTED AS REQUIRED. PROVIDE EXPOSED TRAPS WITH BRASS CLEANOUT PLUGS.

CLEANOUTS:

- PROVIDE READILY ACCESSIBLE CLEANOUTS WITH EASILY REMOVABLE PLUGS IN SOIL AND WASTE LINES AS REQUIRED BY CODES, AS SHOWN ON THE DRAWINGS, AND AS FOLLOWS: AT THE BOTTOM OF EACH EXPOSED TRAP WHICH IS NOT INTEGRAL WITH THE FIXTURE, AT OR NEAR THE END OF EACH BRANCH AND TRUNK DRAINAGE LINE, AND IN HORIZONTAL LINES AT INTERVALS OF NOT MORE THAN 50'.

FLOOR DRAINS:

- JOSAM SERIES OR EQUAL WITH TRAP PRIMERS, SIZE AS INDICATED ON THE PLANS.

WATER HAMMER ARRESTORS:

- WATER HAMMER ARRESTORS; SELECT AND SIZE IN PER STANDARD P.D.I. - WH201. JOSAM 75000 OR EQUAL ZURN, SMITH OR WADE.

WATER PRESSURE REDUCING VALVE:

- WHERE PRESSURE OF WATER SERVICE EXCEEDS 70 PSI, PROVIDE A WATER PRESSURE REDUCING VALVE. HIGH CAPACITY REGULATOR WATTS SERIES 223 RATED 250 PSI INLET, SET 65 PSI OUTLET.

HOSE BIBBS:

- INTERIOR HOSE BIBBS; CHICAGO MFG. #998, 1/2" BRASS COMPRESSION TYPE WITH TEE HANDLE AND VACUUM BREAKER. EQUAL BY SPEAKMAN OR T & S BRASS CO.

BACKFLOW PREVENTER:

- PROVIDE IN INCOMING DOMESTIC WATER SERVICE WHERE REQUIRED BY LOCAL CODES OR UTILITY REQUIREMENTS. PROVIDE A FULL SIZE COPPER DRAIN LINE FROM UNIT TO FLOOR DRAIN. WATTS #909 WATER PRESSURE BACKFLOW PREVENTER OF SAME SIZE AS PIPE INSTALLED IN. COMPLETE WITH CHECK VALVE, GATE VALVES, AND TEST COCKS. EQUAL BY CLA-VAL OR CASH ACME.

VACUUM BREAKERS AND CHECK VALVES:

- PROVIDE ON CONNECTIONS TO HOSE BIBBS, HOSE OUTLETS, WALL HYDRANTS, BELOW THE RIM WATER SUPPLIES OF ALL TYPES, PLUGGED OR CAPPED OUTLETS. WATTS REGULATOR COMPANY MODEL NO. 288A OR SLOAN VALVE COMPANY SERIES V WITH BRONZE BODY CHROME-PLATED IN FINISHED AREAS.

PLUMBING FIXTURES AND TRIM:

- ALL PLUMBING FIXTURES AND TRIM; SUITABLE FOR USE BY HANDICAPPED PERSONS, AND IN ACCORDANCE WITH THE HANDICAPPED REQUIREMENTS OF ANSI A117.1-1986, AND THE BUILDING CODE.

WATER HEATERS: (GAS)

- WATER HEATER; NATURAL GAS, A.G.A. CERTIFIED, ASHRAE STD. 90, WITH CONTROLS, VALVES, AQUASTAT, HIGH LIMIT CONTROL, 100 % SAFETY SHUTDOWN PILOT. A.O. SMITH, LOCKINVAR, RUUD, RHEEM
- PROVIDE ASME RATED COMBINATION TEMPERATURE AND PRESSURE RELIEF VALVE WITH THE CAPACITY TO RELIEVE THE FULL CAPACITY OF THE HEATING ELEMENT ON BOTH TEMPERATURE AND PRESSURE RELIEF. WATTS
- PROVIDE DRAIN PAN UNDER WATER HEATER. PIPE RELIEF VALVE DISCHARGE TO DRAIN PAN. PIPE DRAIN PAN DRAIN TO FLOOR DRAIN, OR TO THE NEAREST UTILITY OR JANITOR'S SINK. DO NOT MAKE DIRECT CONNECTION TO DRAIN.

TEST AND INSPECTIONS:

- TEST NEW AND EXISTING WATER PIPING BEFORE FIXTURES ARE CONNECTED BY CAPPING OR PLUGGING ALL OPENINGS, PURGING AIR FROM PIPING SYSTEMS, AND APPLYING LINE PRESSURE AT THE HIGHEST AVAILABLE PRESSURE FOR THREE (3) HOURS. DISMANTLE LEAKING JOINTS OR PIPING, REPLACE DEFECTIVE PIPE OR FITTINGS, AND RETEST THE SYSTEM.
- TEST SOIL, WASTE, AND VENT SYSTEM WITHIN THE BUILDING AND TO 5' OUTSIDE THE BUILDING WALL BEFORE BEING CONCEALED BY CAPPING OR PLUGGING ALL NECESSARY OPENINGS AND FILLING ENTIRE SYSTEM WITH WATER TO A LEVEL OF THE HIGHEST VENT STACK ABOVE THE ROOF. THE SYSTEM SHALL HOLD THIS TEST FOR NOT LESS THAN ONE HOUR WITHOUT A DROP IN THE WATER LEVEL. REMOVE DEFECTIVE JOINTS, PIPE, AND FITTINGS, INSTALL NEW JOINTS, PIPE, OR FITTINGS, AND RETEST THE SYSTEM. NO CRACKED HUBS WILL BE PERMITTED.

STERILIZATION:

- UPON COMPLETION OF INSTALLATION AND TEST OF POTABLE WATER SUPPLY PIPING, DISINFECT WITH A MIXTURE CONTAINING NOT LESS THAN 0.6 POUND OF HIGH TEST CALCIUM HYPOCHLORITE, OR 2 POUNDS OF CHLORINATED LIME TO EACH 1000 GALLONS OF WATER TO PROVIDE NOT LESS THAN 50 PPM OF AVAILABLE CHLORINE. INJECT THE MIXTURE INTO THE SYSTEM AND RETAIN FOR NOT LESS THAN 24 HOURS, AT WHICH TIME THE CHLORINE LEVEL SHALL BE AT 10 PPM OR GREATER. DRAIN THE SYSTEM, FLUSH WITH POTABLE WATER UNTIL ONLY A NORMAL CHLORINE RESIDUAL REMAINS (.2 PPM) AND PLACE IN SERVICE OR,
- IF THE LOCAL HEALTH AUTHORITY REQUIRES DIFFERENT OR ADDITIONAL PROCEDURES, MEET THOSE REQUIREMENTS, AND SUBMIT A CERTIFICATE, OR LETTER CERTIFYING ACCEPTANCE BY THE LOCAL HEALTH AUTHORITY.

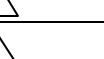
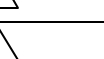
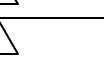
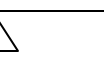
TEST, ADJUST AND BALANCE:

- PERFORM TEST, ADJUST AND BALANCE ON ALL HOT WATER RETURN BALANCING VALVES.
- PROVIDE TEST AND BALANCE REPORT.

Revisions

Revision History

Number	Date	Description
106/2009		RELEASE FOR PERMIT



Project Number

0905

Job Address

5063 Post Road
 Cumming,
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 30040

Drawing Title

Plumbing Specifications

Drawing Status

Released for Construction

Scaling

AS SHOWN

