

SCORE

THE CONTRACTOR SHALL COORDINATE THE WORK AND EQUIPMENT OF THIS DIVISION WITH THE WORK AND EQUIPMENT SPECIFIED ELSEWHERE IN ORDER TO ASSURE A COMPLETE AND SATISFACTORY INSTALLATION. WORK SUCH AS EXCAVATION, BACKFILL, CONCRETE, FLASHING, WIRING, ETC., WHICH IS REQUIRED BY THE WORK OF THIS SECTION SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE SECTION OF THE SPECIFICATIONS.

IT IS THE INTENTION OF THESE SPECIFICATIONS AND DRAWINGS TO CALL FOR FINISHED WORK, TESTED AND READY FOR OPERATION. WHENEVER THE WORD "PROVIDE" IS USED, IT SHALL MEAN "FURNISH AND INSTALL COMPLETE AND READY FOR USE".

THE WORD "PROVIDE" MEANS FURNISH, FABRICATE, COMPLETE, INSTALL, ERECT, INCLUDING LABOR AND INCIDENTAL MATERIALS NECESSARY TO COMPLETE IN PLACE AND READY FOR OPERATION OR USE THE ITEM REFERRED TO OR DESCRIBED HEREIN AND/OR SHOWN OR REFERRED TO ON THE CONTRACT DRAWINGS.

EQUIPMENT APPLICATION AND PERFORMANCE

THE CONTRACTOR AND/OR EQUIPMENT SUPPLIER SHALL BE RESPONSIBLE TO SEE THAT EQUIPMENT SUPPLIED IS CORRECT FOR THE INTENDED APPLICATION AND WILL PERFORM WITHIN THE LIMITS OF CAPACITY, NOISE, LIFE EXPECTANCY, PRESSURE DROP AND SPACE LIMITATIONS INTENDED FOR THAT EQUIPMENT AS SHOWN ON THE PLANS OR DESCRIBED IN THE SPECIFICATIONS. THE SHOP DRAWINGS SHALL SHOW THE CAPACITY AND OPERATING CHARACTERISTICS OF THE EQUIPMENT.

WHERE THE CONTRACTOR PROPOSES TO USE AN ITEM OF EQUIPMENT OTHER THAN THAT SPECIFIED OR DETAILED ON THE DRAWINGS, WHICH REQUIRES ANY PART OF THE STRUCTURE, PARTITIONS, FOUNDATIONS, PIPING, WIRING OR ANY OTHER PART OF THE MECHANICAL, ELECTRICAL, OR ARCHITECTURAL LAYOUT, ALL SUCH REDVISION, AND ALL NEW DRAWINGS AND DETAILS REQUIRED THEREFORE, SHALL BE PREPARED BY THE SUBCONTRACTOR AT HIS OWN EXPENSE AND SUBMITTED FOR APPROVAL BY THE ARCHITECT.

WHERE SUCH APPROVED DEVIATION REQUIRES A DIFFERENT QUANTITY AND ARRANGEMENT OF DUCTWORK, PIPING, WIRING, CONDUIT, AND EQUIPMENT FROM THAT SPECIFIED ON THE DRAWINGS, THE CONTRACTOR SHALL FURNISH AND INSTALL ANY SUCH DUCTWORK, PIPING, STRUCTURAL SUPPORTS, INSULATION, CONTROLS, MOTORS, STARTERS, ELECTRICAL WIRING AND CONDUIT, AND ANY OTHER ADDITIONAL EQUIPMENT REQUIRED BY THE SYSTEM, AT NO ADDITIONAL COST TO THE OWNER.

ELECTRIC CONNECTIONS
ELECTRIC CONNECTIONS SHALL BE USED AT ANY POINTS WITHIN THE PIPING SYSTEMS WHERE DISSIMILAR METALS MEET. CAREFUL ATTENTION SHALL BE GIVEN TO SUPPORT BRACKETS AND HANGERS TO SELECT PROPER MATERIALS TO AVOID DISSIMILAR METAL CONTACT AT THESE POINTS.

NOTES TO CONTRACTOR

CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIALS CALLED FOR IN THESE SPECIFICATIONS AND ACCOMPANYING DRAWINGS, AND MUST FURNISH THE APPARATUS COMPLETE IN EVERY RESPECT. ANYTHING CALLED FOR IN THE SPECIFICATIONS AND NOT SHOWN ON THE DRAWINGS OR SHOWN ON THE DRAWINGS AND NOT CALLED FOR IN THE SPECIFICATIONS MUST BE FURNISHED BY THE CONTRACTOR.

CONTRACTOR IS RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH THE DETAILS OF THE CONSTRUCTION OF THE BUILDING. WORK UNDER THESE SPECIFICATIONS INSTALLED IMPROPERLY ON WHICH REQUIRES CHANGING DUE TO IMPROPER READING OR INTERPRETATION OF BUILDING PLANS SHALL BE CORRECTED AND CHANGED AS DIRECTED BY THE ARCHITECT WITHOUT ADDITIONAL COST TO THE OWNER.

CONDITIONS SOMETIMES OCCUR WHICH REQUIRE CERTAIN CHANGES IN DRAWINGS AND SPECIFICATIONS. IN THE EVENT THAT SUCH CHANGES IN DRAWINGS AND SPECIFICATIONS ARE NECESSARY, THE SAME ARE TO BE MADE BY THE CONTRACTOR WITHOUT EXPENSE TO THE OWNER, PROVIDED SUCH CHANGES DO NOT REQUIRE FURNISHING MORE MATERIALS, OR PERFORMING MORE LABOR THAN THE TRUE INTENT OF THE DRAWINGS AND SPECIFICATIONS DEMANDS. IT IS UNDERSTOOD THAT WHILE THE DRAWINGS ARE TO BE FOLLOWED AS CIRCUMSTANCES WILL PERMIT, THE CONTRACTOR IS HELD RESPONSIBLE FOR THE INSTALLATION OF THE SYSTEM ACCORDING TO THE TRUE INTENT AND MEANING OF THE DRAWINGS. ANYTHING NOT ENTIRELY CLEAR IN THE DRAWINGS AND SPECIFICATION WILL BE FULLY EXPLAINED IF APPLICATION IS MADE TO THE ARCHITECT. SHOULD, HOWEVER, CONDITIONS ARISE WHERE IN THE JUDGMENT OF THE CONTRACTOR CERTAIN CHANGES WILL BE ADVISABLE, THE CONTRACTOR WILL COMMUNICATE WITH THE ARCHITECT AND SECURE HIS APPROVAL OF THESE CHANGES BEFORE GOING AHEAD WITH THE WORK.

THE RIGHT TO MAKE ANY RESPONSIBLE CHANGE IN LOCATION OF APPARATUS, EQUIPMENT, ROUTING OF PIPING UP TO THE TIME OF ROUGHING IN, IS RESERVED BY THE ARCHITECT WITHOUT INVOLVING ANY ADDITIONAL EXPENSE TO THE OWNER.

IT SHALL BE THE DUTY OF PROSPECTIVE CONTRACTORS TO VISIT THE JOB SITE AND FAMILIARIZE THEMSELVES WITH JOB CONDITIONS. NO EXTRAS WILL BE ALLOWED BECAUSE OF ADDITIONAL WORK NECESSITATED BY, OR CHANGES IN PLANS REQUIRED BECAUSE OF EVIDENT JOB CONDITIONS, THAT ARE NOT INDICATED ON THE DRAWINGS.

CODES, RULES, PERMITS AND FEES

ALL MATERIALS FURNISHED AND ALL WORK INSTALLED SHALL COMPLY WITH THE NATIONAL FIRE CODES OF THE NATIONAL FIRE PROTECTION ASSOCIATION, AND WITH THE REQUIREMENTS OF ALL GOVERNMENTAL DEPARTMENTS HAVING JURISDICTION.

ALL MATERIALS AND EQUIPMENT FOR THE ELECTRICAL PORTION OF THE MECHANICAL SYSTEM SHALL BEAR THE APPROVAL LABEL, AND SHALL BE LISTED BY THE UNDERWRITERS' LABORATORIES, INC.

ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE NORTH CAROLINA STATE BUILDING CODE, AND REQUIREMENTS OF GOVERNMENTAL AGENCIES HAVING JURISDICTION.

COOPERATION WITH OTHER TRADES

THIS CONTRACTOR SHALL GIVE FULL COOPERATION TO OTHER TRADES AND SHALL FURNISH ANY INFORMATION NECESSARY TO PERMIT THE WORK OF ALL TRADES TO BE INSTALLED SATISFACTORILY AND WITH THE LEAST POSSIBLE INTERFERENCE OR DELAY.

WHERE THE WORK OF THE CONTRACTOR WILL BE INSTALLED IN CLOSE PROXIMITY TO, OR MAY INTERFERE WITH THE WORK OF OTHER TRADES, HE SHALL ASSIST IN WORKING OUT SPACE CONDITIONS TO MAKE A SATISFACTORY ADJUSTMENT. IF SO DIRECTED BY THE ARCHITECT, THE CONTRACTOR SHALL PREPARE COMPOSITE WORKING DRAWINGS AND SECTIONS AT A SUITABLE SCALE OF 1/8" = 1'-0" CLEARLY SHOWING HOW HIS WORK IS TO BE INSTALLED IN RELATION TO THE WORK OF OTHER TRADES. IF THE CONTRACTOR INSTALLS HIS WORK BEFORE COORDINATION WITH OTHER TRADES, OR SO AS TO CAUSE ANY INTERFERENCE WITH WORK OF OTHER TRADES, HE SHALL MAKE THE NECESSARY CHANGES IN HIS WORK TO CORRECT THE CONDITION WITHOUT EXTRA CHARGE.

THE CONTRACTOR SHALL FURNISH TO OTHER TRADES, AS REQUIRED, ALL NECESSARY TEMPLATES, PATTERNS, SETTING PLANS, AND SHOP DETAILS FOR THE PROPER INSTALLATION OF WORK AND FOR THE PURPOSE OF COORDINATING ADJACENT WORK.

SAFETY REQUIREMENTS

ALL SYSTEMS SHALL BE INSTALLED SO AS TO BE SAFE OPERATING AND ALL MOVING PARTS SHALL BE COVERED WHERE SUBJECT TO HUMAN CONTACT. ALL ROUGH EDGES OF EQUIPMENT AND MATERIALS SHALL BE MADE SMOOTH.

ALL SAFETY CONTROLS SHALL BE CHECKED UNDER THE SUPERVISION OF THE ARCHITECT'S REPRESENTATIVE AND EIGHT (8) COPIES OF TEST DATE SHOWING SETTING AND PERFORMANCE OF SAFETY CONTROLS SHALL BE SUBMITTED TO THE ARCHITECT. SAFETY DEVICES SHALL BE ASME STAMPED AND SHALL HAVE STAMPED RELIEF VALVES. WATER HEATERS SHALL BE PROVIDED WITH ASME STAMPED Y & P RELIEF VALVE.

CONCEALED RISE

IN GENERAL, ALL PIPES IN FINISHED SPACES SHALL BE RUN CONCEALED IN FLOORS, WALLS, PARTITIONS AND ABOVE CEILINGS, UNLESS OTHERWISE NOTED. ALL PIPE SHALL RUN INSIDE THE INSULATED PERIMETER OF THE BUILDING.

EXCAVATING AND BACKFILLING

IN BACKFILLING PIPE TRENCHES, APPROVED FILL SHALL FIRST BE COMPACTED FIRMLY AND EVENLY ON BOTH SIDES OF PIPE IN 6" LAYERS TO A DEPTH OF 12" OVER THE TOP OF THE PIPE. REMAINDER OF TRENCH SHALL BE BACKFILLED TO ESTABLISHED GRADE IN 6" LAYERS. COMPACT BETWEEN EACH LAYER WITH A HIGH-FREQUENCY VIBRATOR TAMPER SUCH AS DART SOL. CONTRACTOR (AS MANUFACTURED BY DART MANUFACTURING COMPANY, DENVER, COLORADO). FILL SHALL BE COMPACTED TO DENSITY SPECIFIED UNDER EARTH WORK SECTION OF SPECIFICATIONS FOR SPECIFIED AREA THROUGH WHICH TRENCH PASSES. COMPACT FILL TO WORK MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT ALL OTHER AREAS. EARTH BEARING PRESSURE AS INDICATED SHALL BE VERIFIED BY A TESTING LABORATORY, WHICH FOLLOWING THE CRITERIA SPECIFIED FOR FOUNDATION WALL, TRENCH, ETC. IN THE EARTH WORK SECTION OF THE SPECIFICATIONS, THE REPORTS SHALL BE FORWARDED TO THE ARCHITECT FOR APPROVAL UNLESS OTHERWISE SPECIFIED. THE COST WILL BE BORNE BY THE CONTRACTOR BEFORE ANY WORK IS PERFORMED. IF THE EARTH BEARING PRESSURE IS LESS THAN THAT REQUIRED, THE CONTRACTOR SHALL NOT BEGIN ADDITIONAL WORK UNTIL NOTIFIED BY THE ARCHITECT TO DO SO. A COPY OF THE REPORT SHALL BE FORWARDED TO THE ARCHITECT IN TRIPlicate.

PROTECTION

THE CONTRACTOR SHALL PROTECT ALL WORK AND MATERIAL FROM DAMAGE, AND SHALL BE LIABLE FOR ALL DAMAGE TO EXISTING CONSTRUCTION.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR WORK AND EQUIPMENT UNTIL ALL CONSTRUCTION IS FINALLY COMPLETED, TESTED AND ACCEPTED. HE SHALL PROTECT WORK AGAINST THEFT, INJURY OR DAMAGE, AND SHALL CAREFULLY STORE MATERIAL AND EQUIPMENT. MATERIALS SHALL BE IMMEDIATELY INSTALLED. HE SHALL CLOSE OPEN ENDS OF WORK INCLUDING PIPE, DUCT, OR EQUIPMENT WITH TEMPORARY PLUGS OR CAPS. STORAGE AND CONSTRUCTION TO PREVENT ENTRY OF OBSTRUCTING MATERIALS OR DUST AND DEBRIS.

PROVIDE A PROTECTIVE COVERING OF NOT LESS THAN 0.004" THICK VINYL SHEETING (OR A SIMILAR APPROVED MATERIAL) TO BE USED IN COVERING ALL ITEMS OF EQUIPMENT, IMMEDIATELY AFTER THE EQUIPMENT HAS BEEN SET IN PLACE, (OR IF IN A PLACE OF STORAGE WITHIN THE BUILDING UNDER CONSTRUCTION) TO PREVENT THE ACCUMULATION OF DIRT, SAND, CEMENT, PLASTER, PAINT OR OTHER FOREIGN MATERIAL FROM COLLECTING ON THE EQUIPMENT AND/OR FOULING WORKING PARTS.

CLEANING

CLEAN FROM ALL EXPOSED INSULATION AND METAL SURFACES GREASE, DEBRIS, DIRT, OIL, OR OTHER FOREIGN MATERIAL.

CHROME PLATED FITTINGS, FIXTURES, PIPING AND TRIM SHALL BE POLISHED UPON COMPLETION.

EQUIPMENT SERVICEABILITY

ALL EQUIPMENT SHALL BE SERVICEABLE. ALL TESTS SHALL BE INSTALLED SO THAT IT CAN BE REMOVED. ALL EQUIPMENT IN OR CONNECTED TO PIPING SYSTEMS SHALL HAVE VALVES TO ISOLATE FROM THE SYSTEM. THIS INCLUDES, BUT NOT LIMITED TO, CONTROL VALVES, WATER HEATERS, SENSORS, SWITCHES, CAPS AND HANGERS. UNIONS (SCREWED OR FLANGED) SHALL BE PROVIDED SO THAT ALL EQUIPMENT IS REMOVABLE.

ACCEPTANCE OF EQUIPMENT

CONTRACTOR SHALL MAKE ALL NECESSARY TESTS, TRIAL OPERATION, BALANCING AND BALANCE TESTS, ETC., AS MAY BE REQUIRED AS DIRECTED BY THE ENGINEER TO PROVE THAT ALL WORK UNDER THESE SPECIFICATIONS IS COMPLETE. ALL TESTS SHALL BE STARTED BY A REPRESENTATIVE OF THE EQUIPMENT MANUFACTURER. ALL COSTS OF THESE PROCEDURES SHALL BE BORNE BY THE CONTRACTOR.

UPON COMPLETION OF ALL WORK THE SYSTEM SHALL BE TESTED TO DETERMINE IF ANY EXCESS NOISE OR VIBRATION IS APPARENT DURING OPERATION OF THE SYSTEM. IF ANY SUCH OBJECTIONS ARE DETECTED IN THE SYSTEM OR NOISY EQUIPMENT FOUND, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING SAME. DUCTS, PLenums AND CASINGS SHALL BE CLEANED OF ALL DEBRIS AND BLOWN FREE OF ALL PARTICLES OF DIRT, OIL AND DUST BEFORE INSTALLING OUTLET FACES. EQUIPMENT SHALL BE WIPED CLEAN WITH ALL TRACES OF OIL, DUST, DIRT AND PAINT SPOTS REMOVED. TEMPORARY FILTERS SHALL BE PROVIDED FOR ALL FANS THAT ARE OPERATED DURING CONSTRUCTION AND AFTER ALL CONSTRUCTION DIRT HAS BEEN REMOVED FROM THE BUILDING. NEW FILTERS SHALL BE INSTALLED. BEARINGS SHALL BE LUBRICATED AS RECOMMENDED BY THE EQUIPMENT MANUFACTURER. ALL CONTROL VALVES AND EQUIPMENT SHALL BE ADJUSTED TO SETTING INDICATED. FANS SHALL BE ADJUSTED TO THE SPEED INDICATED BY THE MANUFACTURER TO MEET SPECIFIED CONDITIONS.

WARRANTY

THE CONTRACTOR SHALL GUARANTEE THE COMPLETE MECHANICAL SYSTEM AGAINST DEFECT DUE TO FAULTY MATERIALS, FAULTY WORKMANSHIP OR FAILURE DUE TO NEGLIGENCE OF THE CONTRACTOR. THIS GUARANTEE WILL EXCLUDE NORMAL WEAR AND TEAR, MAINTENANCE, LUBRICATION, REPLACEMENT OF EXPENDABLE COMPONENTS, OR ABUSE. THE GUARANTEE PERIOD SHALL BEGIN ON THE DATE OF THE FINAL ACCEPTANCE AND SHALL CONTINUE FOR A PERIOD OF 12 MONTHS DURING WHICH TIME THE CONTRACTOR SHALL MAKE GOOD SUCH DEFECTIVE WORKMANSHIP AND MATERIALS AND ANY DAMAGE RESULTING THERE FROM, WITHIN A REASONABLE TIME OF NOTICE GIVEN BY THE OWNER.

TEST

ALL PIPING SHALL BE TESTED BEFORE COVERING IS APPLIED OR WORK CONCEALED, AND ALL LEAKS CORRECTED BY REMOVAL OF DEFECTIVE MATERIAL

AND/OR MAKING UP NEW JOINTS. EQUIPMENT SHALL BE PROTECTED FROM TEST PRESSURE BY CAPPING LINES OR WITH VALVES DURING TEST. CALCULATING OF PIPING WILL NOT BE PERMITTED AND WHERE EVIDENT OF CALCULATING IS NOTED, THE JOINTS SHALL BE REMOVED FROM THE PIPING SYSTEM REGARDLESS OF WHETHER OR NOT IT IS LEAKING.

TEST ALL WATER PIPING AT 125 PSIG.

TEST ALL WASTE AND VENT PIPING WITH A 10 FOOT HEAD.

TESTS SHALL BE HELD FOR A MINIMUM OF 15 MINUTES IN ACCORDANCE WITH 2018 NORTH CAROLINA PLUMBING CODE SECTION 312.

STERILIZATION OF WATER PIPING SHALL BE IN ACCORDANCE WITH AWWA SPECIFICATION D901. AFTER THE PRESSURE TESTS HAVE BEEN MADE, THE SYSTEM SHALL BE FLUSHED WITH WATER. THE CHLORINATING MATERIAL SHALL BE LIQUID CHLORINE-WATER MIXTURE CALCIUM HYPOCHLORITE, SODIUM HYPOCHLORITE, OR CHLORINATED LIME-WATER MIXTURE. THE SOLUTION SHALL HAVE NOT LESS THAN 50 PPM AVAILABLE CHLORINE. THE DISINFECTING SOLUTION SHALL BE ALLOWED TO REMAIN IN THE SYSTEM FOR A MINIMUM PERIOD OF 24 HOURS. AFTER DECONTAMINATION, THE SYSTEM SHALL BE FLUSHED WITH CLEAN WATER UNTIL RESIDUAL CHLORINE CONTENT IS NOT GREATER THAN .02 PPM. AFTER THE SYSTEM IS FLUSHED, WATER SAMPLES SHALL BE TAKEN AND TESTED AT THE CONTRACTOR'S EXPENSE BY AN INDEPENDENT TESTING LAB AND REPORTS SHALL BE FURNISHED TO THE ENGINEER'S FOR APPROVAL. IF THE WATER IS FOUND UNSAFE FOR HUMAN CONSUMPTION, THE DISINFECTING PROCEDURE SHALL BE REPEATED.

PIPING

SOIL, WASTE, VENT AND DRAIN PIPING SHALL BE SERVICE WEIGHT ASTM A-74-69 BELL AND SPIGOT, BEARING THE LABEL OF THE CAST IRON SOIL PIPE INSTITUTE AND SHALL BE LISTED BY NSF INTERNATIONAL. THE CASINGS SHALL BE GRAY IRON OF GOOD QUALITY MADE BY OLIPHAN, AIR FURNACE OR ELECTRIC FURNACE PROCESS. THE RESULTANT PIPE SHALL BE COMPACT, CLOSE GRAINED METAL, SOFT ENOUGH TO PERMIT CUTTING AND DRILLING. PIPE SHALL HAVE BEEN HYDROSTATICALLY TESTED AT NOT LESS THAN 50 POUNDS PER SQUARE INCH GAUGE. FACTORY COATED BY HEATING TO 300 DEGREES F, AND DRIPPING IN A BATH OF COAL TAR FITCH AND OIL.

JOINTS BETWEEN CAST IRON PIPE AND BETWEEN CAST IRON PIPE AND FITTINGS SHALL BE MADE WITH NEOPRENE PUSH GASKETS CONFORMING TO ASTM C-564. AT CONTRACTOR'S OPTION JOINTS ABOVE GRADE MAY BE MADE WITH NO-HUB BANDS USING HEAVY DUTY STAINLESS STEEL CLAMPS, BANDS AND CLAMPS SHALL COMPLY WITH THE REQUIREMENT OF ASTM STANDARD C-1540 AND SHALL BE 304 STAINLESS STEEL SHIELDED COUPLINGS, APPROVED MANUFACTURERS: HUSKY H2000, IDEAL HEAVY DUTY DR OR MISSION HEAVY WEIGHT.

COPPER -- ALL PIPING SHALL BE HARD DRAWN COPPER TUBING ASTM B 88 TYPE "L" ABOVE GRADE, TYPE "K" BELOW GRADE.

FITTINGS FOR COPPER TUBING SHALL BE ANSI 816.18 OR 816.22 SOLDER JOINT FITTINGS. ENDS OF PIPE SHALL BE REAMED, PIPE AND FITTINGS CLEANED. USE ONLY 95-5 (95% TIN AND 5% ANTIMONY) SOLDER WITH NON-CORROSIVE FLUX.

GAS PIPING

ALL ABOVE GROUND PIPING AND FITTINGS SHALL BE STEEL PIPE; ANSI/ASTM A53 "WELDED AND SEAMLESS STEEL PIPE".

FITTINGS SHALL BE STEEL OR MALLEABLE IRON. PIPE JOINTS MAY BE SCREWED OR WELDED. FITTINGS SHALL BE SUITABLE FOR THE APPROPRIATE WORKING PRESSURE.

ALL GAS PIPING SHALL BE TESTED WITH AIR AT 150 PSIG MINIMUM. ALL JOINTS SHALL BE CHECKED TO DETERMINE IF ANY LEAKS OCCUR, USING SOAP SOLUTION. ANY JOINT OR FITTING FOUND DEFECTIVE SHALL BE REMOVED AND REPLACED. NO CAULKING OR OTHER ARTIFICIAL MEANS WILL BE USED TO MAKE REPAIRS.

GROUND PLUG SHUTOFF COCKS SHALL BE INSTALLED AT EACH EQUIPMENT SERVICE STOP. PIPING SHALL BE INSTALLED WITH VALVES, ORN POCKETS, STOP COCKS, AND OTHER ACCESSORIES THAT MAY BE REQUIRED TO GIVE PROPER SERVICE.

PAINT ALL GAS PIPING LIGHT YELLOW.

HANGERS

ALL PIPING SHALL BE SUPPORTED ON NOT LESS THAN 10" CENTERS AND WITHIN 30" OF EACH CHANGE OF DIRECTION EXCEPT THAT PIPING 1/4" SIZE AND SMALLER SHALL BE SUPPORTED ON 2" CENTERS.

PIPE HANGERS SHALL BE SUPPORTED BY MEANS OF IRON HANGER RODS FROM THE BUILDING CONSTRUCTION OR FROM STRUCTURAL STEEL MEMBERS. IN AN APPROVED MANNER, WHERE REQUIRED, PIPING SHALL BE HUNG FROM ANGLE IRON CLIPS OR SUITABLE BRACKETS ATTACHED TO SIDES OF MASON CONSTRUCTION.

PIPE INSULATION

ALL WATER PIPING SHALL BE INSULATED WITH HEAVY DENSITY FIBERGLASS WITH AN ALL-SERVICE JACKET COMPOSED OF AN OUTER COAT OF VINYL FIBERGLASS SCRM CLOTH, ALUMINUM FOL, AND KRAFT PAPER, IN THAT ORDER, FROM OUTSIDE TO INSIDE OF PIPE COVERING INSULATION. THICKNESS SHALL BE 1" FOR ALL PIPING.

VALVE TAGS AND SCHEDULES

EACH VALVE SHALL BE PROVIDED WITH AN ENGRAVED BLACK FINISH, PHENOLIC VALVE TAG INDICATING VALVE SERVICE AND VALVE SIZE. VALVE TAG LETTERING SHALL BE AT LEAST 1/4" HIGH ETCHED WHITE LETTERS AND BEVELLED WHITE TRIM. TAGS TO BE ATTACHED USING BRASS CHAINS. PROVIDE STEEL COLOR CODED 3/4" INCH DIAMETER EILING TACKS IN ACOUSTICAL TILE CEILINGS OR COLOR CODED CHAINS APPLIED TO CEILING GRID TO LOCATE EQUIPMENT OR VALVES THAT ARE INSTALLED ABOVE CEILING.

VALVES

BALL VALVES SHALL BE CAST RED BRONZE WITH TWO PIECE BODY, FULL PORT. WHEN INSTALLED IN INSULATION, PIPING FURNISH EXTENDED TEE HANDLE. ALL ISOLATION VALVES INSTALLED ABOVE CEILINGS SHALL BE BALL VALVES.

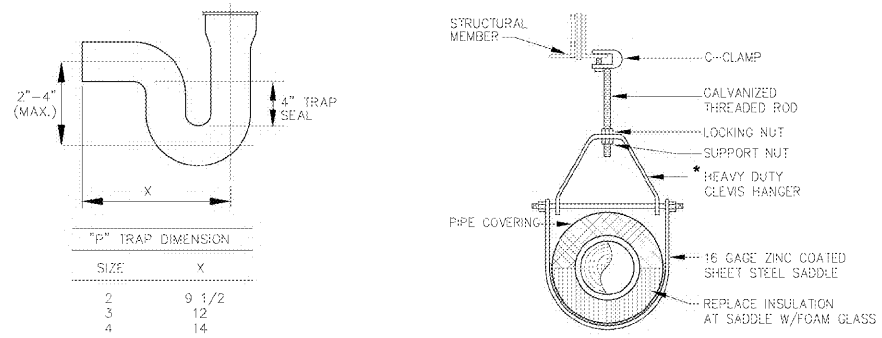
SOIL, WASTE, VENT AND DRAIN PIPING SHALL BE SOLID WALL PVC OR CPVC PIPE AND FITTINGS CONFORMING TO ASTM D 2665. JOINTS FOR PVC PIPE SHALL BE SOLVENT CEMENT IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

PLUMBING LEGEND table with columns: SYMBOL, ABBREVIATION, DESCRIPTION. Includes entries for CW (COLD WATER), HW (HOT WATER), W (WASTE), V (VENT), BALL VALVE, SHOCK ABSORBER.

PLUMBING SPECIALTIES SCHEDULE table with columns: SYM, DESCRIPTION, MODEL NUMBER, REMARKS. Includes entries for FLOOR DRAIN, SHOCK ABSORBER, WALL CLEANOUT.

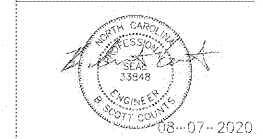
PLUMBING FIXTURE SCHEDULE table with columns: SYM, DESCRIPTION, MODEL NUMBER, REMARKS. Includes entries for WATER COOLER, LAVATORY, WATER COOLER (H/L/D).

- 1. SEE ARCHITECTURAL PLANS FOR EXACT LOCATION AND MOUNTING HEIGHTS OF ALL FIXTURES.
2. PROVIDE TRUEBRO MODEL 502 INSULATION KIT, PLUMBEREX MODEL PRO-2000 OR MCGUIRE PWB602 PREWRAPPED CAST IRON TRAP ASSEMBLY KIT ON ALL HANGERS FOR ACCESSIBLE LAVATORIES AND/OR SINKS.
3. PROVIDE CARRIERS FOR ALL WALL MOUNTED FIXTURES.
4. EQUAL CHINA FIXTURE BY AMERICAN STANDARD, ZURN & SLOAN.
5. EQUAL TOLLET SEAT BY OLSONITE & BENEKE.
6. EQUAL FLUSH VALVES BY SLOAN & TOTO.
7. TOP OF FLUSH VALVE SHALL BE LOCATED MINIMUM 3" BELOW BOTTOM OF GRAB BAR P.L.C. TO CUT OUTLET TUBE AS REQUIRED.
8. FLUSH VALVE MECHANISM SHALL BE LOCATED OPPOSITE OF HAND RAIL, AS PER ADA REQUIREMENT.
9. EQUAL FAUCETS BY SIMMONS, CHICAGO FAUCETS, DELTA, MOEN & AMERICAN STANDARD.
10. EQUAL STAINLESS STEEL SINK BY FRANK & JURY.
11. EQUAL FAUCETS BY CHICAGO FAUCETS, T&S, ELKAY, ZURN & AMERICAN STANDARD.
12. EQUAL CAST IRON LAVATORIES BY GECO & ZURN.
13. EQUAL SPECIALTY FIXTURE BY GATEY, SIOUX CHIEF.



Biloba Architecture, PLLC

1601 JM Keynes Drive
Suite 300
Charlotte, NC 28202
704.248.2822
www.biloba.com
ELECTRICAL and Electrical Engineer
McKnight Smith Ward Griffin Engineers
4223 South Boulevard
Charlotte, NC 28209
704.527.2112
NC Certificate of License: F-0595
MSWG PROJECT #20-027



Drawn MGC
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Revisions

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Brown Hall Renovation

1601 E. Market Street
Greensboro, NC 27411
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Project Number 109
Title Schedules & Details

Sheet P001
Title of