

DIVISION 22 - PLUMBING SPECIFICATIONS

20500 GENERAL PROVISIONS

- A. PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL A PLUMBING SYSTEM, COMPLETE AS INDICATED ON THE DRAWINGS, AS REQUIRED BY CODE AND AS SPECIFIED HEREIN.
- B. WITHOUT RESTRICTING THE GENERALITY OF THE FIRST STATEMENT, THE WORK TO BE PERFORMED UNDER THIS DIVISION SHALL INCLUDE, BUT IS NOT LIMITED TO, THE FOLLOWING:
  - 1. PLUMBING WORK AS DESCRIBED IN SECTIONS 220500 THROUGH 224000.
- C. THE ELECTRICAL CONTRACTOR, UNLESS OTHERWISE NOTED, IS TO PROVIDE POWER WIRING FOR EACH ITEM OF ELECTRICAL EQUIPMENT AND MAKE FINAL CONNECTIONS TO MOTORS.
- D. ALL FINISH PAINTING IS TO BE PERFORMED BY THE GENERAL CONTRACTOR, EXCEPT AS NOTED ELSEWHERE. THIS CONTRACTOR SHALL RESTORE TO ORIGINAL CONDITION ANY PAINTING DEFACED BY THIS CONTRACTOR AFTER ORIGINAL PAINTING.
- E. ALL WORK SHALL CONFORM TO CODES, RULES, AND REGULATIONS:
  - 1. STATE PLUMBING CODE.
  - 2. LOCAL BUILDING CODE.
  - 3. NATIONAL FIRE PROTECTION ASSOCIATION.
  - 4. CERTAIN CODES AND STANDARDS AS SET UP BY VARIOUS TECHNICAL SOCIETIES SUCH AS ASME, ASHRAE, ASTM, SMACNA, ARI, AABC, OR IEEE.
  - 5. FEDERAL OCCUPATIONAL SAFETY AND HEALTH STANDARDS.
  - 6. LOCAL INSPECTOR'S REQUIREMENTS.
  - 7. STATE INDUSTRIAL COMMISSION REQUIREMENTS.
  - 8. BUILDING INSURING AGENCY REQUIREMENTS.
- F. ALL PERMITS REQUIRED BY LAWS, ORDINANCES AND BUILDING CODES HAVING JURISDICTION SHALL BE OBTAINED AT THE PROPER TIME BY AND AT THE EXPENSE OF THIS CONTRACTOR.
- G. THIS CONTRACTOR SHALL OBTAIN ALL INSPECTIONS REQUIRED BY ALL LAWS, ORDINANCES AND PUBLIC AUTHORITY HAVING JURISDICTION AND SHALL OBTAIN CERTIFICATES OF SUCH INSPECTIONS AND SUBMIT SAME TO THE ARCHITECT AND SHALL PAY ALL FEES, CHARGES, ASSESSMENTS AND OTHER EXPENSES IN CONNECTION THEREWITH.
- H. PIPING AND EQUIPMENT LAYOUT IS SCHEMATIC. EXACT LOCATIONS ARE DETERMINED BY STRUCTURE CONDITIONS. DESIGN OF SYSTEM MAY NOT BE CHANGED. ONLY EXACT LOCATION OF PIPING MAY BE REVISED TO SUIT CONSTRUCTION CONDITIONS AND AID IN COORDINATION WITH WORK OF OTHER CONTRACTORS.
- I. THE MATERIALS AND EQUIPMENT INSTALLED IN THE WORK SHALL MEET THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND NO MATERIALS OR EQUIPMENT SHALL BE ORDERED UNTIL REVIEWED BY THE ENGINEER AND/OR ARCHITECT.
- J. THIS CONTRACTOR SHALL SUBMIT SHOP DRAWINGS PER THE DOCUMENTS PROVIDED BY THE OWNER/ARCHITECT/CONTRACTOR.
  - 1. EXPANSION TANK
  - 2. DRAINS AND CLEANOUTS
  - 3. VALVES
  - 4. ALL PLUMBING FIXTURES, FAUCETS AND FITTINGS
  - 5. WATER HEATER
  - 6. PIPE INSULATION
  - 7. GREASE INTERCEPTOR
- K. CATALOG DATA FOR EQUIPMENT REVIEWED BY THE ARCHITECT SHALL NOT SUPERSEDE THE ENGINEER'S CONTRACT DOCUMENTS. THE REVIEW OF THE ENGINEER SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR DEVIATIONS FROM DRAWINGS OR SPECIFICATIONS, PROVIDING PROPER CLEARANCE FABRICATION PROCESS AND COORDINATION WITH OTHER TRADES.
- L. WHEN SUBMITTED FOR THE ARCHITECT'S REVIEW, SHOP DRAWINGS SHALL BEAR THE CONTRACTOR'S CERTIFICATION THAT THEY HAVE REVIEWED, CHECKED AND APPROVED THE SHOP DRAWINGS, THAT THEY ARE IN HARMONY WITH THE REQUIREMENTS OF THE PROJECT AND WITH THE PROVISIONS OF THE CONTRACT DOCUMENTS AND THAT THEY HAVE VERIFIED ALL FIELD MEASUREMENTS AND CONSTRUCTION CRITERIA, MATERIALS, CATALOG NUMBERS AND SIMILAR DATA. CONTRACTOR SHALL ALSO CERTIFY THAT THE WORK REPRESENTED BY THE SHOP DRAWINGS IS RECOMMENDED BY THE CONTRACTOR AND THE CONTRACTOR'S GUARANTEE WILL FULLY APPLY.
- M. ALL CONTRACTORS SUBMITTING PROPOSALS FOR THIS WORK SHALL FIRST EXAMINE THE SITE AND ALL CONDITIONS THEREIN. ALL PROPOSALS SHALL TAKE INTO CONSIDERATION ALL SUCH CONDITIONS AS MAY AFFECT THE WORK UNDER THIS CONTRACT. THE SUBMITTING OF A BID AUTOMATICALLY IMPLIES THAT THIS EXAMINATION OF SITE HAS BEEN DONE.
- N. CONTRACTOR SHALL VERIFY LOCATION OF UTILITIES AND NOTE CONDITIONS WHICH WOULD AFFECT THE WORK. ALL DISCREPANCIES SHALL THEN BE REPORTED PRIOR TO THE BID AWARD.
- O. PROVIDE INSTRUCTION TO OWNER'S OPERATING PERSONNEL AS NECESSARY, SHOWING LOCATIONS AND PROPER OPERATION OF MAJOR ITEMS OF EQUIPMENT AND SYSTEM COMPONENTS AND REFERRING TO THE OPERATING INSTRUCTION MANUAL DESCRIBED BELOW AS A GUIDE.
- P. COMPLETE A WRITTEN MANUAL OF OPERATING INSTRUCTIONS INCLUDING COPIES OF SHOP DRAWINGS AND A LISTING OF EQUIPMENT SUPPLIERS. ASSEMBLE IN 8-1/2" X 11" HARD BACKED INDEXED BINDER. MATERIAL SHALL BE AS FOLLOWS:
  - 1. TITLE PAGE: TITLE OF JOB, TENANT, ADDRESS, DATE OF SUBMISSION, CONTRACTOR AND ENGINEER.
  - 2. INDEX.
  - 3. LIST OF MAJOR EQUIPMENT USED IN PROJECT ACCOMPANIED BY CONTRACTOR PURCHASE ORDER NUMBERS AND SUPPLIERS NAMES AND ADDRESSES.
  - 4. ONE COPY OF EACH SHOP DRAWING GROUPED BY TYPES OF EQUIPMENT, I.E., PLUMBING FIXTURES, VALVES, ETC.
  - 5. SECTION FOR EACH SYSTEM INCLUDING:
    - 5.1. BRIEF DESCRIPTION OF SYSTEM OPERATION WITH LOCATION OF MAJOR COMPONENTS.
    - 5.2. LIST OF ITEMS IN SYSTEM REQUIRING PERIODIC SERVICE.
- Q. SUBMIT A COMPLETED COPY TITLED "PLUMBING OPERATING INSTRUCTION MANUAL" ON THE BINDING EDGE OF BINDER TO ARCHITECT FOR APPROVAL. AFTER ARCHITECT'S REVIEW AND ANY CORRECTIONS REQUIRED ARE COMPLETED, SUBMIT A COPY OF THE MANUAL, TO THE OWNER.

220502 FIRESTOPPING

- A. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR FIRESTOPPING AROUND ALL OPENINGS FOR PIPES, DUCTS, CONDUITS ETC., INSTALLED BY CONTRACTOR AT ALL FIRE WALLS. FIRESTOPPING SHALL BE PERFORMED BY AN INSTALLER WHO HAS BEEN TRAINED BY THE MANUFACTURER, OR MANUFACTURER'S REPRESENTATIVE, IN THE INSTALLATION PROCEDURES BASED ON PUBLISHED UL TESTED FIRE STOP SYSTEMS.
- B. FIRESTOPPING SHALL MEET THE REQUIREMENTS OF ASTM E-814 OR UL 1479 FIRE TESTS BY A RECOGNIZED TESTING AGENCY. FIRESTOPPING SHALL ALSO CONFORM TO THE FOLLOWING GOVERNING CODES: INTERNATIONAL BUILDING CODE, NFPA 101- LIFE SAFETY CODE & NFPA 70 - NATIONAL ELECTRIC CODE.
- C. PENETRATION
  - 1. CLEAN PENETRATION HOLES OF DIRT, LOOSE MATERIALS AND FOREIGN MATTER WHICH MAY AFFECT BOND OR INSTALLATION.
  - 2. REMOVE COATINGS SUCH AS PAINT, CURING COMPOUNDS, WATER REPELLENT & SEALERS AS REQUIRED.
  - 3. INSTALL BACKING MATERIALS TO PREVENT LIQUID MATERIAL LEAKAGE.
- D. APPLICATION
  - 1. PREPARE AND APPLY PENETRATION SEALING SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS.
  - 2. EMPLOY INSTALLATION TECHNIQUES WHICH WILL ENSURE THAT FIRESTOPPING IS DEPOSITED TO FILL AND SEAL HOLES AND OPENINGS.
  - 3. TOOL EXPOSED SURFACES OF APPLIED SEALANT TO SMOOTH FINISH.
  - 4. PROTECT MATERIALS FROM DAMAGE ON SURFACES SUBJECTED TO TRAFFIC.
- E. PROVIDE INTUMESCENT SEALANTS AND COLLARS AT OPENINGS INVOLVING PLASTIC OR INSULATED PIPE SIMILAR TO THE METACAULK SERIES 880 AND 890.
- F. FIRESTOPPING BY DOW CORNING, 3M, HILTI OR METACAULK MAY FURNISHED AT THE CONTRACTOR'S OPTION.

220529 PIPE ANCHORS, HANGERS AND SUPPORTS

- A. ALL PIPING SHALL BE SEPARATELY HUNG AND SUPPORTED FROM APPROVED STRUCTURAL MEMBERS OR CONCRETE OVERHEAD STRUCTURE ONLY. NO PIPE SHALL BE HUNG FROM ROOF DECK, PIPE, DUCTS OR OTHER COMPONENTS OR EQUIPMENT OF OTHER TRADES.
- B. PROVIDE LISTED/APPROVED ADJUSTABLE HANGERS, INSERTS, BRACKETS, CLAMPS, SUPPLEMENTARY STEEL AND OTHER DEVICES REQUIRED FOR PROPER SUPPORT OF ALL PIPE LINES.
- C. HANGERS SHALL BE DESIGNED TO ALLOW FOR EXPANSION AND CONTRACTION AND TO ALLOW INSULATION (WHERE APPLICABLE) TO RUN CONTINUOUSLY THROUGH HANGERS.
- D. WIRE OR STRAP HANGERS ARE NOT PERMITTED. ADJUST HANGERS SO AS TO DISTRIBUTE WEIGHT LOAD EQUALLY ON ATTACHMENTS.

220548 PLUMBING SYSTEM TESTING

- A. SYSTEM TESTING SHALL PROVIDE FOR THE FOLLOWING:
  - 1. TEST NEW INTERIOR DOMESTIC WATER SYSTEM.
  - 2. TEST ALL SOIL, WASTE, AND VENT PIPING.
  - 3. FURNISH ALL PUMPS FOR AIR AND WATER PRESSURE TESTS ALONG WITH GAUGES AND ANY OTHER REQUIRED TEST EQUIPMENT.
  - 4. UNDERGROUND LINES TO BE TESTED BEFORE BEING CONCEALED. CONTRACTOR SHALL REPAIR ANY LEAKS AND ALL DAMAGE RESULTING THEREFROM.
  - 5. CHANGES IN AMBIENT TEMPERATURE WILL BE TAKEN INTO ACCOUNT WHEN TESTING UNDERGROUND PIPING. HOWEVER, THE VARIOUS SYSTEMS SHALL BE THOROUGHLY INSPECTED FOR LEAKS BEFORE HYDROSTATIC PRESSURE TESTS ARE CONCLUDED.
  - 6. INTERIOR WATER PIPING: HYDROSTATIC TEST AT 125 PSI AWWA PROCEDURES AND TO THE SATISFACTION OF LOCAL AUTHORITY HAVING JURISDICTION.
  - 7. SOIL, WASTE, AND VENT PIPING SHALL BE WATER AND SMOKE OR AIR TIGHT (STATE PLUMBING CODE).
- B. MEASURE LEAKAGE BY METERING WATER REQUIRED TO MAINTAIN LINE PRESSURE. REMOVE AIR BEFORE TESTING.
- C. REPAIR ANY LEAKING JOINTS AND DEMONSTRATE ACCEPTABLE LEAKAGE TO SATISFACTION OF OWNER'S REPRESENTATIVE AND APPROVING AUTHORITY. FLUSH ALL PIPING BEFORE PLACING INTO OPERATION.

220550 STERILIZATION

- A. STERILIZE NEW DOMESTIC WATER LINES AFTER INSTALLATION.
- B. FURNISH A CERTIFICATE OF STERILIZATION AND APPROVAL FOR HUMAN CONSUMPTION TO BE SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THIS STATE, REGULARLY EMPLOYED BY THE TESTING LABORATORY. CERTIFICATE MUST BE GIVEN TO THE ARCHITECT AND OWNER BEFORE FINAL PAYMENT WILL BE MADE.
- C. STERILIZATION SHALL BE BY MEANS OF CHLORINE INJECTED INTO THE WATER SYSTEM NEAR THE SOURCE AND OUTLETS THROUGHOUT THE SYSTEM SHALL BE TESTED TO PROVE PRESENCE OF MINIMUM REQUIREMENTS. LEAVE CHLORINE IN FOR 24 HOURS AND FLUSH OUT SYSTEM UPON COMPLETION OF WORK. STERILIZATION PROCEDURE SHALL BE WITNESSED BY THE OWNER'S REPRESENTATIVE.
- D. STERILIZATION SHALL BE PERFORMED UNDER THE IMMEDIATE SUPERVISION OF A WATER TESTING LABORATORY REGULARLY ENGAGED IN THE SERVICE AND SHALL BE DONE ACCORDING TO THEIR INSTRUCTIONS.

220553 EQUIPMENT IDENTIFICATION

- A. STENCILS, LABELS, TAGS, AND COLOR CODES SHALL CONFORM TO ANSI A13.
- B. PRODUCTS SHALL BE SETON. EQUAL PRODUCTS BY BRADY MAY BE FURNISHED AT CONTRACTOR'S OPTION.
- C. STENCILS SHALL BE REUSABLE AND HAVE 1" HIGH CHARACTERS. CHARACTERS SHALL BE PAINTED WHITE OVER A BLACK BACKGROUND. INCLUDE ON PIPING A WHITE (OR BLACK) STENCILED ARROW IN FLOW DIRECTION NEXT TO STENCIL. STENCIL ONLY AFTER FINAL PAINTING IS COMPLETE. CHARACTERS SHALL BE LEGIBLE FROM FLOOR. APPLY CLEAR ACRYLIC, LACQUER, OR VARNISH OVER THE FINISHED STENCIL.
- D. PREPRINTED FLEXIBLE VINYL LABEL WITH PERMANENT PRESSURE SENSITIVE ADHESIVE BACK MAY BE USED ON PIPE INSTEAD OF STENCIL. LABEL SHALL BE OF SUFFICIENT LENGTH TO ENCIROLE THE PIPE (AND INSULATION WHEN APPLICABLE) AND OVERLAP ON ITSELF. EACH LABEL SHALL HAVE AT LEAST ONE FLOW DIRECTION ARROW AND SHALL BE PERMANENTLY LABELED WITH PIPE CONTENT.
- E. PIPING, VALVES, DRAINS, CONTROL PANELS AND SIMILAR EQUIPMENT SHALL BE IDENTIFIED AS TO FUNCTION AND SYSTEM NUMBER AS DIRECTED BY THE OWNER'S REPRESENTATIVE AND AS LISTED BELOW:
  - IDENTIFICATION ITEM : TYPE
  - PIPING : STENCIL OR PIPE LABEL
  - VALVES : TAG
  - PIPING SPECIALTY : TAG
  - WATER HEATER AND OTHER EQUIPMENT : STENCIL
- F. IDENTIFY PIPE LINES WITH STENCIL OR PIPE LABEL WITH COLOR CODED BANDS AT THE FOLLOWING LOCATIONS:
  - 1. AT EQUIPMENT CONNECTION AT EACH VALVE.
  - 2. AT BOTH SIDES OF WALLS THROUGH WHICH PIPE PASSES.
  - 3. AT EVERY 20 FT. INTERVAL ON CONTINUOUS PIPE LINES.
  - 4. AT EACH BRANCH CONNECTION.
  - 5. SHOW FLOW DIRECTION ARROWS AT EACH IDENTIFICATION POINT.

220700 INSULATION

- A. PIPE INSULATION AND APPURTENANCES AND COVERINGS ON PIPES USED IN CHASES, SHAFTS OR OTHER CONCEALED SPACES IN TYPES 1 AND 2 CONSTRUCTION SHALL HAVE A FLAME SPREAD RATING NOT EXCEEDING TWENTY-FIVE (25) AND IN TYPE 3 AND 4 CONSTRUCTION NOT EXCEEDING SEVENTY-FIVE (75) AND A SMOKE DEVELOPED RATING NOT EXCEEDING FIFTY (50).
- B. INSULATION SHALL BE RIDGE ONE-PIECE FIBERGLASS PIPE INSULATION WITH REQUIREMENTS COMPLYING WITH ASTM C 547, SELF-SEALING ADHESIVE LAP LONGITUDINAL JOINTS AND BUTT STRIPS FOR TRANSVERSE JOINTS. JACKETING SHALL CONFORM TO ASTM C 1136, TYPE I, MAXIMUM VAPOR TRANSMISSION RATING OF 0.02 PERM WHEN TESTED ACCORDING TO ASTM E 96, PROCEDURE A, (K VALVE) 0.25 BTU/IN.HR. \* FT2 \* F AT 75°F MEAN TEMPERATURE WITH A MINIMUM R-VALUE OF R4.
  - PROVIDE INSULATION THICKNESS AS INDICATED:
  - DOMESTIC COLD WATER PIPING 1" AND SMALLER: 1/2" THICKNESS.
  - DOMESTIC COLD WATER PIPING 1-1/4" - 1-1/2" - 3/4" THICKNESS.
  - DOMESTIC COLD WATER 2" AND LARGER: 1" THICKNESS.
  - DOMESTIC HOT WATER PIPING 2" AND SMALLER: 1" THICKNESS.
  - DOMESTIC HOT WATER RETURN PIPING: 1" THICKNESS.
  - PLUMBING VENT PIPING WITHIN 6 FEET OF ROOF OUTLET: 1" THICKNESS.
  - CONDENSATE PIPING: 1/2" THICKNESS.
- C. GLUE IN PLACE WITH SCHULLER U-GLUE.
- D. THE FITTINGS SHALL BE INSULATED WITH SCHULLER ZESTON INSULATION AND HAVE FACTORY PREMOLDED PVC COVERS. BUTT THE JOINTS TOGETHER AND WRAP WITH 3" WIDE STRIP TAPE. SEAL IN PLACE WITH SCHULLER U-GLUE.
- E. INSULATION SHALL NOT BE APPLIED UNTIL THE GENERAL CONSTRUCTION HAS PROGRESSED SUFFICIENTLY TO INSURE AGAINST PHYSICAL OR MOISTURE DAMAGE TO THE INSULATION. ALL INSULATION DAMAGED THROUGH FAILURE TO OBSERVE THIS DIRECTIVE SHALL BE REPLACED AT PLUMBING CONTRACTOR'S EXPENSE.
- F. INSTALL ALL INSULATION ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- G. INSULATION SHALL NOT BE APPLIED OVER FLANGES, JOINTS AND SEAMS IN PIPING.
- H. INSULATION SHALL BE SCHULLER. EQUAL PRODUCT BY ARMSTRONG, CERTAINTED, OWENS-CORNING OR KNAUF MAY BE FURNISHED AT THE CONTRACTOR'S OPTION.

221113 PLUMBING BASIC MATERIALS AND METHODS

- A. PROVIDE AND ERECT THE FOLLOWING PIPING AS SHOWN ON THE DRAWINGS AND/OR AS REQUIRED.
  - 1. SANITARY BUILDING DRAIN AND VENT PIPING SHALL BE SERVICE WEIGHT CAST IRON SOIL PIPE.
  - 2. SCHEDULE 40 PVC PIPING MAY BE USED FOR SANITARY WASTE AND VENT PIPING AT THE CONTRACTOR'S OPTION IF CEILING SPACE IS NOT USED AS A RETURN AIR PLENUM SPACE.
  - 3. DOMESTIC HOT AND COLD WATER USE TYPE "L" HARD COPPER PIPE.
  - 4. CAST IRON - NON-COMBUSTIBLE PIPING REQUIRED IN WALL AT HOODS.
- B. THIS CONTRACTOR IS TO BECOME INFORMED OF THE EXACT DIMENSIONS OF FINISHED WORK WHERE PIPES ARE TO BE PLACED AND WILL ARRANGE THE WORK ACCORDINGLY, ASSUMING ALL RESPONSIBILITY FOR PROPER LOCATION. IN THE ERECTION OF THE MAINS, SPECIAL CARE SHALL BE USED PROVIDING SUPPORT AND PROPER ALLOWANCES SHALL BE MADE FOR EXPANSION.
- C. ALL PIPE LINES MUST BE PROVIDED WITH A SUFFICIENT NUMBER OF FITTINGS OR UNIONS TO MAKE POSSIBLE DISASSEMBLY WITHOUT BREAKAGE OF FITTINGS.
- D. ALL EXPOSED PIPING SHALL BE NEAT AND CAREFULLY ALIGNED WITH THE STRUCTURAL ELEMENTS OF THE BUILDING. NO OFFSETS OR OBLIQUE BENDS WILL BE PERMITTED. DRAWINGS ARE DIAGRAMMATIC AND SHOULD NOT BE USED FOR LAYOUT WORK.
- E. ALL LOW POINTS IN WATER PIPING TO HAVE DRAIN VALVES WITH STANDARD HOSE ATTACHMENTS. HOT AND COLD WATER PIPING IS TO PITCH TOWARD THE NEAREST DRAIN VALVE.
- F. ALL PIPES TO BE INSTALLED SHALL BE LOCATED AT SUFFICIENT DISTANCE FROM WALLS, OTHER PIPES, CONDUIT, DUCTWORK AND OTHER OBSTACLES TO AVOID INTERFERENCE AND TO PERMIT THE APPLICATION OF FULL THICKNESS OF INSULATION SPECIFIED.
- G. MECHANICAL JOINT TYPE PIPING SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. THERMOMETERS BY TRECICE, ASHCROFT, MARSHALLTOWN, AND WEISS ARE ACCEPTABLE.

221116 PLUMBING SYSTEMS

- A. SANITARY BUILDING DRAIN, SOIL, WASTE AND VENT LINES SHALL BE SERVICE WEIGHT CAST IRON HUBLESS PIPE WITH STAINLESS STEEL AT COUPLINGS. SCHEDULE 40 PVC MAY BE USED FOR SANITARY WASTE AND VENT PIPING IF CEILING SPACE IS NOT USED AS A RETURN AIR PLENUM. TYPE NO. S1110-4 MAY BE USED IN LIEU OF FIELD FABRICATED FLASHINGS.
- B. VENT STACKS SHALL EXTEND THROUGH THE BUILDING, TERMINATING 12" ABOVE THE ROOF. STANDARD FLASHING SHALL BE EXTENDED 12" IN ALL DIRECTIONS FROM THE VENT TERMINAL AND TURNED DOWN INTO VENT. FLASHING UNITS AS MADE BY STONEMAN CAULK TYPE NO. S1110-4 MAY BE USED IN LIEU OF FIELD FABRICATED FLASHINGS.
- C. HORIZONTAL RUNS SHALL BE GIVEN AS STEEP A PITCH TOWARD THE OUTLET AS CONDITIONS WILL PERMIT BUT NOT LESS THAN 1/8" PER FOOT.
- D. FULL "Y" BRANCH FITTINGS AND EXTENSION WITH BRASS NIPPLES AND FINISHED SCREW PLUGS FOR CLEANOUTS SHALL BE PLACED IN ACCESSIBLE POSITIONS AT ENDS OF HORIZONTAL LINES OF PIPE AND AT FOOT OF ALL VERTICAL LINES OF PIPE OR ELSEWHERE, AS MAY BE REQUIRED BY THE CODE.
- E. WHERE CLEANOUTS OCCUR IN FINISHED AREAS, THEY SHALL BE RECESSED AND COVERS TO BE FLUSH WITH THE FLOOR OR WALL.
- F. HOT AND COLD WATER PIPING, ABOVE GROUND, SHALL BE TYPE "L" HARD COPPER TUBE WITH SOLDER FITTINGS. EXPOSED PIPING AT FIXTURES SHALL BE CHROME PLATED BRASS.
- G. ALL COPPER TUBING SHALL HAVE SWEAT JOINTS AND BE CLEAN OF SCALE AND FOREIGN MATTER BEFORE INSTALLATION. ALL ENDS OF TUBING TO BE SWEATED SHALL BE REAMED, CLEANED AND BURNISHED TO REMOVE DIRT AND OXIDE. HARD 95-5 LEAD-FREE SOLDER SHALL BE USED AND APPLIED TO THE JOINTS ACCORDING TO STANDARD PRACTICE AND/OR MANUFACTURER'S RECOMMENDATIONS. SUITABLE ADAPTERS SHALL BE USED AT CONNECTION TO EQUIPMENT.
- H. EACH HOT AND COLD WATER BRANCH SHALL BE PROVIDED WITH A GATE VALVE SHUT-OFF.
- I. GREASE INTERCEPTOR - SHALL BE AS SPECIFIED ON DRAWINGS.

221120 DRAIN PIPING

- A. FURNISH AND INSTALL A GRAVITY DRAIN PIPING SYSTEM FROM WATER HEATER, TERMINATING AT THE MOP SINK.
- B. PIPING IS TO BE SCHEDULE 40 PVC WITH DRAINAGE PATTERN FITTINGS, BONDED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
- C. PIPING IS TO BE SECURED TO PIPE HANGERS, USING PROPER SPACING AND THE APPROPRIATE HEIGHT TO ALLOW THE PIPE TO PITCH PROPERLY.

224000 PLUMBING FIXTURES AND EQUIPMENT

- A. WATER CLOSETS AND LAVATORIES SHALL BE VITREOUS CHINA AND SHALL ALL BE BY THE SAME MANUFACTURER.
- B. ALL WALL HUNG LAVATORIES, FLUSH VALVES, ETC., SHALL BE PER DRAWINGS AND MOUNTED AT THE MANUFACTURER'S RECOMMENDED ROUGHING IN MEASUREMENTS, UNLESS NOTED OTHERWISE.
- C. VALVES TO BE AS FOLLOWS:
  - 125 LB. S.W.P. GATE, GLOBE AND CHECK VALVES:
    - 1. GATE (2-1/2" AND SMALLER) - ALL BRONZE, SCREWED, TAPERED, SOLID WEDGE DISC, SCREWED BONNET, RISING STEM.
    - 2. BALL (2-1/2" AND SMALLER) - ALL BRONZE, TEFLON STEM SEALS AND SEAT, 1/4 TURN SHUT-OFF, VINYL COVERED HANDLES.
    - 3. GLOBE (2-1/2" AND SMALLER) - ALL BRONZE, SCREWED, TAPERED, SOLID WEDGE DISC.
    - 4. SCREWED BONNET, RISING STEM.
    - 5. CHECK (2-1/2" AND SMALLER) - ALL BRONZE, SCREWED, HORIZONTAL SWING CHECK WITH BRONZE DISC.
- D. VALVES SHALL BE MILWAUKEE. EQUAL PRODUCTS BY CRANE, HAMMOND, POWELL, WIA, WORTH, NORTHERN INDIANA BRASS COMPANY OR STOCKHAM MAY BE FURNISHED AT THE CONTRACTOR'S OPTION.
- E. UNIONS TO BE AS FOLLOWS:
  - 1. UNIONS FOR COPPER PIPE TO BE 150LB., ALL BRONZE, SOLDER END TYPE BY CHASE. EQUAL PRODUCTS BY CRANE, MUELLER OR NORTHERN INDIANA BRASS COMPANY MAY BE FURNISHED AT THE CONTRACTOR'S OPTION.
  - 2. DIELECTRIC UNIONS BETWEEN FERROUS AND COPPER SHALL BE INSULATED TO PREVENT METAL-TO-METAL CONTACT AND SHALL BE MANUFACTURED BY CAPITAL MANUFACTURING COMPANY OF COLUMBUS, OHIO. EQUAL PRODUCTS BY PATROL OR PECO SALES COMPANY.
- F. CLEANOUTS TO BE AS FOLLOWS:
  - 1. FLOOR TYPE TO BE ADJUSTABLE CAST IRON WITH NICKEL BRONZE TOP. TOP TO BE FLUSH WITH FLOOR. SEE DRAWINGS FOR MODEL AND MANUFACTURER.
  - 2. WALL TYPE TO BE CAST IRON TEE WITH ROUND POLISHED STAINLESS STEEL ACCESS COVER AND THREADED PLUG. SEE DRAWINGS FOR MODEL AND MANUFACTURER.
- G. FLOOR DRAINS TO BE AS FOLLOWS:
  - 1. CAST IRON BODY SHALLOW SUMP DRAIN WITH DOUBLE DRAINAGE FLANGE AND WEEPHOLES, FLASHING CLAMP, BOTTOM OUTLET WITH NEOPRENE GASKET INSIDE CONNECTOR, 6" DIAMETER ADJUSTABLE GRATE. FRAME AND GRATE TO HAVE POLISHED NICKEL-BRONZE FINISH. SEE DRAWINGS FOR MODEL AND MANUFACTURER. EQUAL PRODUCT MAY BE SUPPLIED AT THE CONTRACTOR'S OPTION.

SITE NUMBER:	08452
BUILDING TYPE:	E2000
ASSET TYPE:	FREESTANDING
CLASSIFICATION:	REFRESH
OWNER:	STARBOARD
BASE VERSION:	2021 SPRING
UPGRADE CLASSIFICATION:	N/A
PROJECT YEAR:	2022
DESIGN TYPE:	(2.0) UM BRIGHT
DRAWING RELEASE:	2021 SPRING

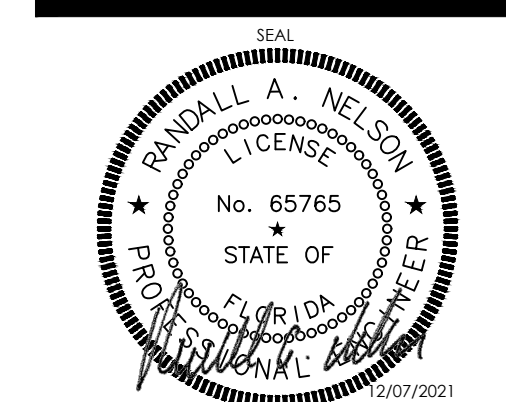


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**Wendy's.**  
 #08452 (STARBOARD #469)  
 648 BARNES BLVD.  
 ROCKLEDGE, FL 32955

REV.	DATE	DESCRIPTION

ISSUE DATE: 12/07/2021  
PROJECT NUMBER: 2120444  
DRAWN BY: MS/BS  
CHECKED BY: AR/CF



SHEET NAME  
PLUMBING SPECIFICATIONS  
SHEET NUMBER

**SP4**