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<p>SECTION 150000 - BASIC MECHANICAL REQUIREMENTS</p> <p>PART 1 GENERAL</p> <p>A. GENERAL CONDITIONS OTHER CONTRACT DOCUMENTS</p> <p>1. THE GENERAL CONDITIONS AND OTHER CONTRACT DOCUMENTS AS SET FORTH HEREBY ARE TO BE INCORPORATED INTO AND BECOME A PART OF THE SPECIFICATIONS FOR THE WORK UNDER THIS DIVISION.</p> <p>B. CODES AND PERMITS</p> <p>1. COMPLY WITH RULES, REGULATIONS OF STATE, COUNTY, AND CITY AUTHORITIES HAVING JURISDICTION OVER THE PREMISES, INCLUDING SAFETY REQUIREMENTS OF OSHA. DO NOT CONSTRUCT THIS AS RELIEVING CONTRACTOR OF HIS OBLIGATION TO COMPLY WITH SPECIFICATIONS WHICH EXCEED CODE REQUIREMENTS AND NOT IN CONFLICT THEREWITH.</p> <p>2. SECURE AND PAY FOR ALL PERMITS AND CERTIFICATES OF INSPECTION REQUIRED. MAKE PAYMENTS TO ALL PUBLIC UTILITIES FOR WORK PERFORMED BY THEM IN PROVIDING SERVICE CONNECTIONS.</p> <p>C. LOCAL CONDITIONS</p> <p>1. VISIT SITE. BECOME FAMILIAR WITH CONDITIONS AFFECTING THIS WORK. NO ADDITIONAL PAYMENT WILL BE MADE ON CLAIMS THAT ARISE FROM LACK OF KNOWLEDGE OF EXISTING CONDITIONS.</p> <p>2. THIS CONTRACTOR SHALL BE HELD TO HAVE EXAMINED THE PREMISES AND SITE SO AS TO COMPARE THEM WITH THE DRAWINGS AND SPECIFICATIONS. NO ALLOWANCE SHALL BE MADE TO THE CONTRACTOR BY REASON OF HIS FAILURE TO HAVE MADE SUCH EXAMINATION OR OF ANY ERROR ON HIS PART.</p> <p>D. DRAWINGS</p> <p>1. DRAWINGS AND SPECIFICATIONS ARE TO BE CONSIDERED AS SUPPLEMENTING EACH OTHER. WORK SPECIFIED SHALL BE PERFORMED OR FURNISHED AS THOUGH MENTIONED IN BOTH SPECIFICATIONS AND DRAWINGS.</p> <p>2. THE DRAWINGS ARE SCHEMATIC ONLY AND ARE INTENDED TO SHOW THE APPROXIMATE LOCATIONS. DO NOT SCALE.</p> <p>E. SHOP DRAWINGS</p> <p>1. THIS CONTRACTOR SHALL SUBMIT SHOP DRAWINGS ON THE ITEMS OF EQUIPMENT AND SYSTEMS AS NECESSARY TO CLEARLY SHOW EQUIPMENT AND CONSTRUCTION.</p> <p>F. SUPERVISION</p> <p>1. THIS CONTRACTOR SHALL HAVE IN CHARGE OF THE WORK, A COMPETENT SUPERINTENDENT WITH EXPERIENCE IN THE WORK TO BE INSTALLED UNDER THIS CONTRACT.</p> <p>G. COORDINATION</p> <p>1. THIS CONTRACTOR SHALL COORDINATE HIS WORK AND COOPERATE WITH THE OTHER CONTRACTORS. HE SHALL ARRANGE HIS WORK WITH THEIRS SO THAT THERE WILL BE NO DELAY IN THE PROPER INSTALLATION.</p> <p>2. EXAMINE WORK OF OTHER TRADES WHICH COMES IN CONTACT WITH OR IS COVERED BY THIS WORK. DO NOT ATTACH TO, COVER, OR FINISH AGAINST ANY DEFECTIVE WORK, OR INSTALL WORK OF THIS DIVISION IN A MANNER WHICH WILL PREVENT OTHER TRADES FROM PROPERLY INSTALLING THEIR WORK. CONSULT ALL DRAWINGS, SPECIFICATIONS AND DETAILS OF OTHER DIVISIONS OF THE WORK.</p> <p>H. GUARANTEE AND WARRANTIES</p> <p>1. WARRANT THAT EQUIPMENT AND ALL WORK IS INSTALLED IN ACCORDANCE WITH GOOD ENGINEERING PRACTICE AND THAT ALL EQUIPMENT WILL MEET REQUIREMENTS SPECIFIED. ANY EQUIPMENT FAILING TO PERFORM OR FUNCTION AS SPECIFIED SHALL BE REPLACED WITH COMPLYING EQUIPMENT, WITHOUT COST TO THE OWNER.</p> <p>2. GUARANTEE AGAINST DEFECTS IN WORKMANSHIP AND MATERIALS; MAKE GOOD REPAIR OR REPLACE ANY DEFECTIVE WORK, MATERIAL OR EQUIPMENT WITHIN ONE YEAR FROM DATE OF ACCEPTANCE.</p> <p>PART 2 PRODUCTS - NOT USED</p> <p>PART 3 EXECUTION - NOT USED</p> <p>END OF SECTION</p> <p>SECTION 152500 - MECHANICAL INSULATION</p> <p>PART 1 GENERAL</p> <p>1. FURNISH AND INSTALL INSULATION FOR DUCTWORK AND PIPING AS DESCRIBED IN CONTRACT DOCUMENTS. SUBMIT PRODUCT DATA FOR EACH TYPE OF MECHANICAL INSULATION FOR THE DATA FOR EACH TYPE OF MECHANICAL INSULATION FOR THE PROJECT, IDENTIFYING R VALUE, THICKNESS, AND ACCESSORIES.</p> <p>1. INSULATION SHALL HAVE A FIRE RATED RATING OF 25 OR LESS AND A SMOKE DEVELOPED RATING OF 50 OR LESS.</p> <p>2. SCHEDULE INSULATION APPLICATION AFTER DUCT AND PIPING TESTS HAVE BEEN COMPLETED.</p> <p>PART 2 PRODUCTS</p> <p>1. GLASS FIBER: INORGANIC GLASS FIBERS, BONDED WITH A THERMOSETTING RESIN.</p> <p>a. BLANKET: 1-1/2" THICK WITH ALUMINUM FOIL SCRIM FACING</p> <p>b. AND 1 LB/CU. FT. DENSITY, OWENS-CORNING FRK</p> <p>b. PREFORMED PIPE INSULATION: 1" THICK WITH REINFORCED ALL SERVICE VAPOR RETARDER JACKETING, OWENS-CORNING FIBERGLASS ASJ.</p> <p>c. DUCT LINER: 1" THICK COATED WITH A BLACK PIGMENTED FIRE-RESISTANT COATING ON THE AIRSTREAM SIDE AND 1-1/2 LB./CU. FT. DENSITY, OWENS-CORNING AEROFLEX.</p> <p>d. OTHER APPROVED MANUFACTURERS: CERTAINEED, KNAUF, AND MANVILLE.</p> <p>PART 3 EXECUTION</p> <p>1. SELECT ACCESSORIES COMPATIBLE WITH MATERIALS SUITABLE FOR THE SERVICE THAT DO NOT CORRODE, SOFTEN, OR OTHERWISE ATTACK THE INSULATION OR JACKET.</p> <p>2. SLIP INSULATION ON THE COLD AND HOT WATER PIPE AND SEAL JOINTS WITH ADHESIVE. WHERE THE SLIP ON TECHNIQUE IS NOT POSSIBLE, CUT ONE SIDE LONGITUDINALLY AND APPLY TO THE PIPE. SEAL SEAMS AND JOINTS WITH ADHESIVE.</p> <p>3. INSULATE FINISHED PLUMBING LINES TO FIXTURES ACCESSIBLE TO THE DISABLED WITH 3/8" ARMSTRONG ARMAFLEX OR EQUAL.</p> <p>4. DUCTWORK APPLICATION:</p> <p>a. ALL RETURN AIR DUCTWORK IS TO BE LINED WITH DUCT LINER.</p> <p>b. ALL SUPPLY DUCTWORK LOCATED IN CONCEALED AREAS OR ABOVE THE CEILING IS TO BE WRAPPED WITH BLANKET INSULATION. THE FIRST 15'-0" OF THE SUPPLY DUCTWORK FROM THE ROOFTOP UNIT IS TO BE LINED WITH DUCT LINER. WRAP INSULATION CAN BE OMITTED ON SECTIONS OF DUCTWORK INSTALLED WITH DUCT LINER.</p> <p>c. ALL SUPPLY DUCTWORK IN STOCKROOM IS TO BE UN-INSULATED.</p> <p>d. FOR THE EXPOSED DUCTWORK IN THE SALES AREA, THE FIRST 15'-0" OF THE SUPPLY DUCTWORK FROM THE ROOFTOP UNIT IS TO BE LINED WITH DUCT LINER. IF CONCENTRIC DIFFUSERS ARE MOUNTED DIRECTLY BELOW THE ROOFTOP UNIT, ALL OF THE SUPPLY DUCTWORK SHOULD BE LINED TO THE CONCENTRIC DIFFUSERS.</p> <p>5. DOMESTIC COLD AND HOT WATER PIPING IS TO BE INSULATED WITH 1" PREFORMED PIPE INSULATION.</p> <p>END OF SECTION</p> <p>SECTION 154100 - PLUMBING PIPING</p> <p>PART 1 GENERAL</p> <p>1. FURNISH AND INSTALL PLUMBING PIPING AS SHOWN ON DWGS.</p> <p>2. FURNISH AND INSTALL WATER METER (IF REQUIRED) IN COMPLIANCE WITH THE LOCAL WATER UTILITY COMPANY'S STANDARDS.</p> <p>A. SUMMARY</p> <p>1. THIS SECTION INCLUDES PLUMBING PIPING SYSTEMS AS SHOWN ON DWGS. AND CONNECTING INTO SYSTEMS AS REQUIRED. SYSTEMS INCLUDE THE FOLLOWING:</p> <p>a. POTABLE WATER DISTRIBUTION, INCLUDING COLD AND HOT WATER SUPPLY.</p> <p>b. DRAINAGE AND VENT SYSTEMS, INCLUDING SANITARY AND STORM.</p> <p>PART 2 PRODUCTS</p> <p>A. DOMESTIC WATER PIPING SYSTEMS</p> <p>1. ALL ABOVE-GROUND PIPING SHALL BE TYPE "L" HARD DRAWN COPPER WITH WROUGHT COPPER FITTINGS.</p> <p>2. SWEAT COPPER JOINTS WITH 95/5 TIN-ANTIMONY SOLDER FOR ABOVE GROUND PIPING.</p> <p>B. SOIL, WASTE, AND VENT PIPING</p> <p>1. PIPE AND FITTINGS</p> <p>a. ABS (ASTM D268) OR PVC (ASTM D2685) PLASTIC PIPE & FITTINGS. PROVIDE APPROVED CLEANER & GLUE FOR ABS OR PVC FITTINGS.</p> <p>b. VENT PIPING SHALL BE TYPE "L" HARD COPPER WITH WROUGHT COPPER FITTINGS OR STEEL PIPING WITH NO HUB CONNECTIONS WHERE RETURN AIR PLENUM IS UTILIZED.</p> <p>PART 3 EXECUTION</p> <p>A. VALVES</p> <p>1. SECTIONAL VALVES: INSTALL SECTIONAL VALVES CLOSE TO MAIN ON EACH BRANCH OR EQUIPMENT CONNECTIONS AND WHERE INDICATED. USE BALL VALVES FOR SECTIONAL VALVES 2 INCHES AND SMALLER.</p> <p>2. SHUTOFF VALVES: INSTALL SHUTOFF VALVES ON INLET TO EACH PLUMBING EQUIPMENT ITEM. ON EACH SUPPLY TO EACH PLUMBING FIXTURE NOT HAVING STOPS ON SUPPLIES, AND ELSEWHERE AS INDICATED. FOR SHUTOFF VALVES 2 INCHES AND SMALLER, USE BALL VALVES.</p> <p>B. CONNECTIONS</p> <p>1. SUPPLY RUNOUTS TO FIXTURES: INSTALL HOT AND COLD WATER SUPPLY PIPING RUNOUTS OF SIZES INDICATED, BUT NOT SMALLER THAN REQUIRED BY PLUMBING CODE TO FIXTURES.</p> <p>2. DRAINAGE RUNOUTS TO FIXTURES: PROVIDE DRAINAGE AND VENT PIPING RUNOUTS, WITH APPROVED TRAP, OF SIZES INDICATED, BUT NOT SMALLER THAN REQUIRED BY PLUMBING CODE, TO PLUMBING FIXTURES AND DRAINS.</p> <p>C. FIELD QUALITY CONTROL</p> <p>1. INSPECT WATER DISTRIBUTION PIPING AND DRAINAGE PIPING.</p> <p>a. DO NOT ENCLOSE, COVER, OR PUT INTO OPERATION WATER DISTRIBUTION PIPING SYSTEM UNTIL IT HAS BEEN INSPECTED AND APPROVED BY THE AUTHORITY HAVING JURISDICTION.</p> <p>2. TEST WATER DISTRIBUTION PIPING AS FOLLOWS:</p> <p>a. TEST FOR LEAKS AND DEFECTS IN NEW WATER DISTRIBUTION PIPING</p> <p>b. CAP AND SUBJECT THE PIPING SYSTEM TO A STATIC WATER PRESSURE TWICE THE OPERATING PRESSURE WITHOUT</p>	<p>TWO-PIECE PIPE STRAPS SIZED FOR OUTSIDE DIAMETER OF PIPE/INSULATION, B-LINE B2000 SERIES. MANUFACTURERS: B-LINE, UNISTRUT, SUPERSTRUT OR APPROVED EQUAL.</p> <p>K. WALL SUPPORT: (PIPE SIZES TO 3 INCH): CARBON STEEL HOOK, B-LINE B3191, MICHIGAN, PHD, HILTI, HOLDRITE OR APPROVED EQUAL.</p> <p>L. VERTICAL SUPPORT: STEEL RISER CLAMP SIZED TO FIT OUTSIDE DIAMETER OF PIPE, B-LINE B3373, MICHIGAN, PHD, HILTI, HOLDRITE OR APPROVED EQUAL.</p> <p>M. FLOOR SUPPORT (HOT PIPE SIZES TO 6 INCH AND ALL COLD PIPE SIZES): CARBON STEEL ADJUSTABLE PIPE SADDLE (SCREWED OR WELDED TO APPROPRIATE BASE STAND) AND NIPPLE ATTACHED TO STEEL BASE STAND SIZED FOR PIPE ELEVATION, B-LINE B3093, B3087, B3090 OR B3088, MICHIGAN, PHD, HILTI, HOLDRITE OR APPROVED EQUAL.</p> <p>N. HANGERS SHALL BE DESIGNED TO IMPEDE DISENGAGEMENT BY MOVEMENT OF SUPPORTED PIPE.</p> <p>O. PROVIDE STONEMAN TRISOLATORS OR EQUIVALENT OR 1/4 INCH THICK HAIR FELT AT ALL COPPER PIPE HANGERS OR SUPPORTS, EXCEPT NONE REQUIRED FOR INSULATED HOT PIPES.</p> <p>P. HANGERS AND CLAMPS FOR SUPPORT OF BARE COPPER TUBING SHALL BE COATED WITH COPPER-COLORED EPOXY PAINT. AN ADDITIONAL PVC COATING OF THE EPOXY-COATED HANGER SHALL BE APPLIED WHERE REQUIRED BY THE TENANT'S AUTHORIZED REPRESENTATIVE.</p> <p>Q. HANGERS FOR OTHER THAN BARE COPPER PIPING SHALL BE ZINC PLATED IN ACCORDANCE WITH ASTM A166. ALL SHALL HAVE AN ELECTRO-DEPOSITED GREEN EPOXY FINISH.</p> <p>R. STRUT CHANNELS SHALL BE PRE-GALVANIZED IN ACCORDANCE WITH ASTM A653-G90 OR HAVE AN ELECTRO-DEPOSITED EPOXY FINISH.</p> <p>S. ROOF SUPPORTS FOR PIPE SIZES TO 3 INCH: POLYCARBONATE RESIN ROLLER AND NYLON ROD SITUATED IN A POLYCARBONATE RESIN BASE, 1/2" SHAPED CRADLE, GUIDE HOLES PROVIDED FOR MOUNTING STRAP (USING 1/2 INCH #10 SCREWS) AND SPACERS AS REQUIRED. SPACED MAXIMUM 10'-0" ON CENTER, MIRO 24-R OR APPROVED EQUAL.</p> <p>PART 2 PRODUCTS - NOT USED</p> <p>PART 3 EXECUTION - NOT USED</p> <p>END OF SECTION</p> <p>SECTION 154400 - PLUMBING FIXTURES</p> <p>PART 1 GENERAL</p> <p>1. PROVIDE PLUMBING FIXTURES AND TRIM, FITTINGS, OTHER COMPONENTS AND SUPPORTS AS SPECIFIED ON THE DRAWINGS IN THE PLUMBING FIXTURE SCHEDULE.</p> <p>2. FAUCETS: UNLESS OTHERWISE SPECIFIED, PROVIDE FAUCETS THAT ARE CAST BRASS WITH POLISHED CHROME-PLATED FINISH.</p> <p>3. FURNISH WALL CARRIERS FOR THE FOLLOWING FIXTURES:</p> <p>a. WALL HUNG LAVATORIES AND SINKS</p> <p>PART 2 PRODUCTS</p> <p>1. ORDER PRODUCTS AS INDICATED ON DRAWINGS.</p> <p>2. INSPECT EACH INSTALLED FIXTURE FOR DAMAGE. REPLACE DAMAGED FIXTURES AND COMPONENTS.</p> <p>3. SUBMIT SHOP DRAWINGS TO DESIGNER FOR SUBSTITUTION APPROVAL.</p> <p>PART 3 EXECUTION</p> <p>1. OPERATE AND ADJUST FAUCETS AND CONTROLS. REPLACE DAMAGED AND MALFUNCTIONING FIXTURES, FITTINGS, AND CONTROLS.</p> <p>2. ADJUST WATER PRESSURE AT FAUCETS, AND FLOWMETERS HAVING CONTROLS, TO PROVIDE PROPER FLOW AND STREAM.</p> <p>3. CLEAN WASHERS OF LEAKING AND DRIPPING FAUCETS AND STOPS.</p> <p>4. REPLACE FIXTURES, FITTINGS, AND SPOUT AND DRAIN STRAINERS WITH MANUFACTURER'S RECOMMENDED CLEANING METHODS AND MATERIALS.</p> <p>5. PROVIDE PROTECTIVE COVERING FOR INSTALLED FIXTURES AND FITTINGS.</p> <p>6. DO NOT ALLOW USE OF FIXTURES AS TEMPORARY FACILITIES.</p> <p>END OF SECTION</p> <p>SECTION 154600 - PLUMBING EQUIPMENT</p> <p>PART 1 GENERAL</p> <p>A. THIS SECTION INCLUDES DOMESTIC WATER HEATERS</p> <p>1. TANKLESS RACK SYSTEM WALL MOUNTED GAS WATER HEATER.</p> <p>2. SMALL ELECTRIC DOMESTIC WATER HEATER.</p> <p>PART 2 PRODUCTS</p> <p>A. TANKLESS RACK SYSTEM: NAVIEN MODEL NPE240A</p> <p>1. PROVIDE TANKLESS RACK SYSTEM OF SIZE, FLOW RATE AND TEMPERATURE RISE AS SPECIFIED ON THE DRAWINGS.</p> <p>2. TO BE CONSTRUCTED OF MARINE GRADE POWDER COATED ALUMINUM.</p> <p>3. WATER AND GAS PIPING MANIFOLD ASSEMBLED AT MANUFACTURER'S FACTORY AND DELIVERED TO THE JOBSITE SUCH THAT ONLY FINAL CONNECTIONS ARE REQUIRED ON SITE.</p> <p>4. UNITS WATER TRUNK LINES ARE CONSTRUCTED OF TWO (2) 2-1/2" DIAMETER RIGID COPPER. UNITS GAS LINE IS 1-1/4" - 1-1/2" DIA NPT POWDER COATED SCHEDULE 40 STEEL. SPECIFY SIZE WHEN ORDERING.</p> <p>5. CONCENTRIC VENTING SYSTEM IS PROVIDED BY THE MANUFACTURER AND SHIPPED LOOSE TO BE INSTALLED BY THE CONTRACTOR ON SITE. SPECIFY LENGTH WHEN ORDERING.</p> <p>6. APPROVED ALTERNATE MANUFACTURERS</p> <p>6.1. RINNAI MODEL: C1991</p> <p>6.2. AO SMITH MODEL: AT-CRS2WN-N</p> <p>6.3. STATE MODEL: GTS-CRS-2WM-MI</p> <p>B. INSTA HOT WATER HEATER</p> <p>1. STORES WITH ONLY PET WASH PROVIDE TANKLESS WATER HEATER BELOW LAVATORY IN RESTROOMS.</p> <p>PART 3 EXECUTION - NOT USED</p> <p>END OF SECTION</p> <p>SECTION 154900 - NATURAL GAS SYSTEMS</p> <p>PART 1 GENERAL</p> <p>1. FURNISH AND INSTALL GAS PIPING AS SHOWN ON DRAWINGS, AND IN COMPLIANCE WITH NFPA 54.</p> <p>2. PURCHASE GAS METER (IF REQUIRED) IN COMPLIANCE WITH GAS COMPANY'S STANDARDS. LOCATE AS SHOWN ON DWGS.</p> <p>PART 2 PRODUCTS</p> <p>1. PIPING SHALL BE ASTM A53, SCHEDULE 40 BLACK STEEL PIPE, PROVIDE THREADED PIPE FOR 2" AND UNDER PIPING, PROVIDE PLAIN END PIPE FOR 2-1/2" AND OVER PIPING.</p> <p>2. FITTINGS SHALL BE 150# MALLEABLE IRON FOR 2" AND UNDER. FITTINGS SHALL BE ASTM A-234 B11 WELDED FOR 2-1/2" AND OVER.</p> <p>3. USE AN APPROVED PIPE DOPE AT CONNECTIONS.</p> <p>4. PROVIDE A DRIP LEG, GAS COCK, AND UNION WITHIN 72 INCHES OF EACH CONNECTION TO EQUIPMENT.</p> <p>B. VALVES - SEE SECTION 150500</p> <p>PART 3 EXECUTION</p> <p>1. COMPLY WITH NFPA 54 "NATIONAL FUEL GAS CODE" FOR GAS PIPING</p> <p>2. TO LOCK GAS COMPANY STANDARDS.</p> <p>2. REPAIR LEAKS AND DEFECTS WITH NEW MATERIALS, AND RETEST SYSTEM UNTIL SATISFACTORY RESULTS ARE OBTAINED.</p> <p>3. REPORT TEST RESULTS PROMPTLY AND IN WRITING TO THE ARCHITECT AND THE AUTHORITY HAVING JURISDICTION.</p> <p>4. VERIFY CAPACITIES AND PRESSURE RATINGS OF GAS METERS, REGULATORS, VALVES, AND SPECIALTIES.</p> <p>5. VERIFY OBTAINING AND SETTINGS FOR PRESSURE REGULATORS.</p> <p>6. VERIFY THAT SPECIFIED PIPING TESTS ARE COMPLETE.</p> <p>7. INSTALL SHUT-OFF VALVE, UPSTREAM FROM GAS METER, OUTSIDE BUILDING AT GAS SERVICE ENTRANCE.</p> <p>END OF SECTION</p> <p>SECTION 156000 - ROOFTOP HEATING AND COOLING UNITS</p> <p>PART 1 GENERAL</p> <p>1. INSTALL ROOFTOP HEATING AND COOLING UNITS AS SCHEDULED ON THE DRAWINGS. UNITS SHALL BE RATED BY ARI STANDARD 240 FOR CAPACITY AND ARI STANDARD 270 FOR SOUND. UNITS SHALL BE DESIGNED, MANUFACTURED AND TESTED IN ACCORDANCE WITH UL REQUIREMENTS AND HAVE THE UL LABEL. UNITS SHALL CARRY A 5-YEAR WARRANTY ON COMPRESSORS, A 10-YEAR WARRANTY ON HEAT EXCHANGERS, AND A 1-YEAR WARRANTY ON ALL OTHER PARTS.</p> <p>PART 2 PRODUCTS</p> <p>1. EQUIPMENT SHALL BE YORK MANUFACTURED BY JOHNSON CONTROLS - NO EXCEPTIONS. UNITS SHALL BE COMPLETELY FACTORY ASSEMBLED AND TESTED. UNITS SHALL INCLUDE THE FOLLOWING: CONDENSER FANS, COILS AND MOTOR, INTERCONNECTING WIRING AND CONTROL PANEL, FILTER SECTION, COMPRESSORS AND COMPLETE REFRIGERATION SYSTEM, CENTRIFUGAL EVAPORATOR FAN AND MOTOR, GAS-FIRED FURNACE SECTION, AND AUTOMATIC CONTROLS AS SCHEDULED ON DRAWINGS.</p> <p>2. FACTORY-INSTALLED OPTIONS SHALL INCLUDE INTELLISPEED VARIABLE FREQUENCY DRIVE (VFD), INTELLISPEED CONTROL OF THE VFD BASED ON STAGES OF COOLING (PROVIDES SINGLE ZONE VAV FAN OPERATION AS DEFINED BY ASHRAE 90.1 SECTION 6.4.3.10), DRY BULB LOW LEAK ECONOMIZER W/BAROMETRIC RELIEF AND WITH ECONOMIZER FAULT DETECTION & DIAGNOSTIC (MEETS ASHRAE 90.1-2013, IECC 2015, CALIFORNIA TITLE 24, AMCA 511), 3 HP HIGH STATIC BELT DRIVE BLOWER, STANDARD 2" THROWAWAY FILTERS, SIMPLICITY® SE CONTROLLER INCLUDING DISCHARGE AIR, RETURN AIR, AND OUTDOOR AIR TEMPERATURE SENSORS, POWERED CONVENIENCE OUTLET (110 VAC / 15 AMP), HACR CIRCUIT BREAKER/DISCONNECT, RETURN AIR SMOKE DETECTOR (BOTTOM RETURN ONLY), PHASE MONITOR, MICRO-CHANNEL "ALL-ALUMINUM" CONDENSER COIL, COPPER TUB/ALUMINUM FIN EVAPORATOR COIL, AND COMPOSITE DRAIN PAN.</p> <p>3. FIELD-INSTALLED ACCESSORIES SHALL INCLUDE 14" HIGH ROOF CURB, CO2 SPACE/WALL MOUNT SENSOR, AND YORK PROGRAMMABLE THERMOSTAT.</p>	<p>EXCEEDING PRESSURE RATING OF PIPING SYSTEM MATERIALS. ISOLATE TEST SOURCE AND ALLOW TO STAND FOR 4 HOURS. LEAKS AND LOSS IN TEST PRESSURE CONSTITUTE DEFECTS THAT MUST BE REPAIRED.</p> <p>c. REPAIR LEAKS AND DEFECTS WITH NEW MATERIALS AND RETEST SYSTEM OR PORTION THEREOF UNTIL SATISFACTORY RESULTS ARE OBTAINED.</p> <p>3. DRAINAGE AND VENT PIPING TEST:</p> <p>a. TEST DRAINAGE AND VENT SYSTEM ACCORDING TO PROCEDURES OF AUTHORITY HAVING JURISDICTION.</p> <p>END OF SECTION</p> <p>SECTION 154400 - PLUMBING FIXTURES</p> <p>PART 1 GENERAL</p> <p>1. PROVIDE PLUMBING FIXTURES AND TRIM, FITTINGS, OTHER COMPONENTS AND SUPPORTS AS SPECIFIED ON THE DRAWINGS IN THE PLUMBING FIXTURE SCHEDULE.</p> <p>2. FAUCETS: UNLESS OTHERWISE SPECIFIED, PROVIDE FAUCETS THAT ARE CAST BRASS WITH POLISHED CHROME-PLATED FINISH.</p> <p>3. FURNISH WALL CARRIERS FOR THE FOLLOWING FIXTURES:</p> <p>a. WALL HUNG LAVATORIES AND SINKS</p> <p>PART 2 PRODUCTS</p> <p>1. ORDER PRODUCTS AS INDICATED ON DRAWINGS.</p> <p>2. INSPECT EACH INSTALLED FIXTURE FOR DAMAGE. REPLACE DAMAGED FIXTURES AND COMPONENTS.</p> <p>3. SUBMIT SHOP DRAWINGS TO DESIGNER FOR SUBSTITUTION APPROVAL.</p> <p>PART 3 EXECUTION</p> <p>1. OPERATE AND ADJUST FAUCETS AND CONTROLS. REPLACE DAMAGED AND MALFUNCTIONING FIXTURES, FITTINGS, AND CONTROLS.</p> <p>2. ADJUST WATER PRESSURE AT FAUCETS, AND FLOWMETERS HAVING CONTROLS, TO PROVIDE PROPER FLOW AND STREAM.</p> <p>3. CLEAN WASHERS OF LEAKING AND DRIPPING FAUCETS AND STOPS.</p> <p>4. REPLACE FIXTURES, FITTINGS, AND SPOUT AND DRAIN STRAINERS WITH MANUFACTURER'S RECOMMENDED CLEANING METHODS AND MATERIALS.</p> <p>5. PROVIDE PROTECTIVE COVERING FOR INSTALLED FIXTURES AND FITTINGS.</p> <p>6. 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CONCENTRIC VENTING SYSTEM IS PROVIDED BY THE MANUFACTURER AND SHIPPED LOOSE TO BE INSTALLED BY THE CONTRACTOR ON SITE. SPECIFY LENGTH WHEN ORDERING.</p> <p>6. APPROVED ALTERNATE MANUFACTURERS</p> <p>6.1. RINNAI MODEL: C1991</p> <p>6.2. AO SMITH MODEL: AT-CRS2WN-N</p> <p>6.3. STATE MODEL: GTS-CRS-2WM-MI</p> <p>B. INSTA HOT WATER HEATER</p> <p>1. STORES WITH ONLY PET WASH PROVIDE TANKLESS WATER HEATER BELOW LAVATORY IN RESTROOMS.</p> <p>PART 3 EXECUTION - NOT USED</p> <p>END OF SECTION</p> <p>SECTION 154900 - NATURAL GAS SYSTEMS</p> <p>PART 1 GENERAL</p> <p>1. FURNISH AND INSTALL GAS PIPING AS SHOWN ON DRAWINGS, AND IN COMPLIANCE WITH NFPA 54.</p> <p>2. PURCHASE GAS METER (IF REQUIRED) IN COMPLIANCE WITH GAS COMPANY'S STANDARDS. LOCATE AS SHOWN ON DWGS.</p> <p>PART 2 PRODUCTS</p> <p>1. PIPING SHALL BE ASTM A53, SCHEDULE 40 BLACK STEEL PIPE, PROVIDE THREADED PIPE FOR 2" AND UNDER PIPING, PROVIDE PLAIN END PIPE FOR 2-1/2" AND OVER PIPING.</p> <p>2. FITTINGS SHALL BE 150# MALLEABLE IRON FOR 2" AND UNDER. FITTINGS SHALL BE ASTM A-234 B11 WELDED FOR 2-1/2" AND OVER.</p> <p>3. USE AN APPROVED PIPE DOPE AT CONNECTIONS.</p> <p>4. PROVIDE A DRIP LEG, GAS COCK, AND UNION WITHIN 72 INCHES OF EACH CONNECTION TO EQUIPMENT.</p> <p>B. VALVES - SEE SECTION 150500</p> <p>PART 3 EXECUTION</p> <p>1. COMPLY WITH NFPA 54 "NATIONAL FUEL GAS CODE" FOR GAS PIPING</p> <p>2. TO LOCK GAS COMPANY STANDARDS.</p> <p>2. REPAIR LEAKS AND DEFECTS WITH NEW MATERIALS, AND RETEST SYSTEM UNTIL SATISFACTORY RESULTS ARE OBTAINED.</p> <p>3. REPORT TEST RESULTS PROMPTLY AND IN WRITING TO THE ARCHITECT AND THE AUTHORITY HAVING JURISDICTION.</p> <p>4. VERIFY CAPACITIES AND PRESSURE RATINGS OF GAS METERS, REGULATORS, VALVES, AND SPECIALTIES.</p> <p>5. VERIFY OBTAINING AND SETTINGS FOR PRESSURE REGULATORS.</p> <p>6. VERIFY THAT SPECIFIED PIPING TESTS ARE COMPLETE.</p> <p>7. INSTALL SHUT-OFF VALVE, UPSTREAM FROM GAS METER, OUTSIDE BUILDING AT GAS SERVICE ENTRANCE.</p> <p>END OF SECTION</p> <p>SECTION 156000 - ROOFTOP HEATING AND COOLING UNITS</p> <p>PART 1 GENERAL</p> <p>1. INSTALL ROOFTOP HEATING AND COOLING UNITS AS SCHEDULED ON THE DRAWINGS. UNITS SHALL BE RATED BY ARI STANDARD 240 FOR CAPACITY AND ARI STANDARD 270 FOR SOUND. UNITS SHALL BE DESIGNED, MANUFACTURED AND TESTED IN ACCORDANCE WITH UL REQUIREMENTS AND HAVE THE UL LABEL. UNITS SHALL CARRY A 5-YEAR WARRANTY ON COMPRESSORS, A 10-YEAR WARRANTY ON HEAT EXCHANGERS, AND A 1-YEAR WARRANTY ON ALL OTHER PARTS.</p> <p>PART 2 PRODUCTS</p> <p>1. EQUIPMENT SHALL BE YORK MANUFACTURED BY JOHNSON CONTROLS - NO EXCEPTIONS. UNITS SHALL BE COMPLETELY FACTORY ASSEMBLED AND TESTED. UNITS SHALL INCLUDE THE FOLLOWING: CONDENSER FANS, COILS AND MOTOR, INTERCONNECTING WIRING AND CONTROL PANEL, FILTER SECTION, COMPRESSORS AND COMPLETE REFRIGERATION SYSTEM, CENTRIFUGAL EVAPORATOR FAN AND MOTOR, GAS-FIRED FURNACE SECTION, AND AUTOMATIC CONTROLS AS SCHEDULED ON DRAWINGS.</p> <p>2. FACTORY-INSTALLED OPTIONS SHALL INCLUDE INTELLISPEED VARIABLE FREQUENCY DRIVE (VFD), INTELLISPEED CONTROL OF THE VFD BASED ON STAGES OF COOLING (PROVIDES SINGLE ZONE VAV FAN OPERATION AS DEFINED BY ASHRAE 90.1 SECTION 6.4.3.10), DRY BULB LOW LEAK ECONOMIZER W/BAROMETRIC RELIEF AND WITH ECONOMIZER FAULT DETECTION & DIAGNOSTIC (MEETS ASHRAE 90.1-2013, IECC 2015, CALIFORNIA TITLE 24, AMCA 511), 3 HP HIGH STATIC BELT DRIVE BLOWER, STANDARD 2" THROWAWAY FILTERS, SIMPLICITY® SE CONTROLLER INCLUDING DISCHARGE AIR, RETURN AIR, AND OUTDOOR AIR TEMPERATURE SENSORS, POWERED CONVENIENCE OUTLET (110 VAC / 15 AMP), HACR CIRCUIT BREAKER/DISCONNECT, RETURN AIR SMOKE DETECTOR (BOTTOM RETURN ONLY), PHASE MONITOR, MICRO-CHANNEL "ALL-ALUMINUM" CONDENSER COIL, COPPER TUB/ALUMINUM FIN EVAPORATOR COIL, AND COMPOSITE DRAIN PAN.</p> <p>3. FIELD-INSTALLED ACCESSORIES SHALL INCLUDE 14" HIGH ROOF CURB, CO2 SPACE/WALL MOUNT SENSOR, AND YORK PROGRAMMABLE THERMOSTAT.</p>	<p>EXCEEDING PRESSURE RATING OF PIPING SYSTEM MATERIALS. ISOLATE TEST SOURCE AND ALLOW TO STAND FOR 4 HOURS. LEAKS AND LOSS IN TEST PRESSURE CONSTITUTE DEFECTS THAT MUST BE REPAIRED.</p> <p>c. REPAIR LEAKS AND DEFECTS WITH NEW MATERIALS AND RETEST SYSTEM OR PORTION THEREOF UNTIL SATISFACTORY RESULTS ARE OBTAINED.</p> <p>3. DRAINAGE AND VENT PIPING TEST:</p> <p>a. TEST DRAINAGE AND VENT SYSTEM ACCORDING TO PROCEDURES OF AUTHORITY HAVING JURISDICTION.</p> <p>END OF SECTION</p> <p>SECTION 154400 - PLUMBING FIXTURES</p> <p>PART 1 GENERAL</p> <p>1. PROVIDE PLUMBING FIXTURES AND TRIM, FITTINGS, OTHER COMPONENTS AND SUPPORTS AS SPECIFIED ON THE DRAWINGS IN THE PLUMBING FIXTURE SCHEDULE.</p> <p>2. FAUCETS: UNLESS OTHERWISE SPECIFIED, PROVIDE FAUCETS THAT ARE CAST BRASS WITH POLISHED CHROME-PLATED FINISH.</p> <p>3. FURNISH WALL CARRIERS FOR THE FOLLOWING FIXTURES:</p> <p>a. WALL HUNG LAVATORIES AND SINKS</p> <p>PART 2 PRODUCTS</p> <p>1. ORDER PRODUCTS AS INDICATED ON DRAWINGS.</p> <p>2. INSPECT EACH INSTALLED FIXTURE FOR DAMAGE. REPLACE DAMAGED FIXTURES AND COMPONENTS.</p> <p>3. SUBMIT SHOP DRAWINGS TO DESIGNER FOR SUBSTITUTION APPROVAL.</p> <p>PART 3 EXECUTION</p> <p>1. OPERATE AND ADJUST FAUCETS AND CONTROLS. REPLACE DAMAGED AND MALFUNCTIONING FIXTURES, FITTINGS, AND CONTROLS.</p> <p>2. ADJUST WATER PRESSURE AT FAUCETS, AND FLOWMETERS HAVING CONTROLS, TO PROVIDE PROPER FLOW AND STREAM.</p> <p>3. CLEAN WASHERS OF LEAKING AND DRIPPING FAUCETS AND STOPS.</p> <p>4. REPLACE FIXTURES, FITTINGS, AND SPOUT AND DRAIN STRAINERS WITH MANUFACTURER'S RECOMMENDED CLEANING METHODS AND MATERIALS.</p> <p>5. PROVIDE PROTECTIVE COVERING FOR INSTALLED FIXTURES AND FITTINGS.</p> <p>6. DO NOT ALLOW USE OF FIXTURES AS TEMPORARY FACILITIES.</p> <p>END OF SECTION</p> <p>SECTION 154600 - PLUMBING EQUIPMENT</p> <p>PART 1 GENERAL</p> <p>A. THIS SECTION INCLUDES DOMESTIC WATER HEATERS</p> <p>1. TANKLESS RACK SYSTEM WALL MOUNTED GAS WATER HEATER.</p> <p>2. SMALL ELECTRIC DOMESTIC WATER HEATER.</p> <p>PART 2 PRODUCTS</p> <p>A. TANKLESS RACK SYSTEM: NAVIEN MODEL NPE240A</p> <p>1. PROVIDE TANKLESS RACK SYSTEM OF SIZE, FLOW RATE AND TEMPERATURE RISE AS SPECIFIED ON THE DRAWINGS.</p> <p>2. TO BE CONSTRUCTED OF MARINE GRADE POWDER COATED ALUMINUM.</p> <p>3. WATER AND GAS PIPING MANIFOLD ASSEMBLED AT MANUFACTURER'S FACTORY AND DELIVERED TO THE JOBSITE SUCH THAT ONLY FINAL CONNECTIONS ARE REQUIRED ON SITE.</p> <p>4. UNITS WATER TRUNK LINES ARE CONSTRUCTED OF TWO (2) 2-1/2" DIAMETER RIGID COPPER. UNITS GAS LINE IS 1-1/4" - 1-1/2" DIA NPT POWDER COATED SCHEDULE 40 STEEL. SPECIFY SIZE WHEN ORDERING.</p> <p>5. CONCENTRIC VENTING SYSTEM IS PROVIDED BY THE MANUFACTURER AND SHIPPED LOOSE TO BE INSTALLED BY THE CONTRACTOR ON SITE. SPECIFY LENGTH WHEN ORDERING.</p> <p>6. APPROVED ALTERNATE MANUFACTURERS</p> <p>6.1. RINNAI MODEL: C1991</p> <p>6.2. AO SMITH MODEL: AT-CRS2WN-N</p> <p>6.3. STATE MODEL: GTS-CRS-2WM-MI</p> <p>B. INSTA HOT WATER HEATER</p> <p>1. STORES WITH ONLY PET WASH PROVIDE TANKLESS WATER HEATER BELOW LAVATORY IN RESTROOMS.</p> <p>PART 3 EXECUTION - NOT USED</p> <p>END OF SECTION</p> <p>SECTION 154900 - NATURAL GAS SYSTEMS</p> <p>PART 1 GENERAL</p> <p>1. FURNISH AND INSTALL GAS PIPING AS SHOWN ON DRAWINGS, AND IN COMPLIANCE WITH NFPA 54.</p> <p>2. PURCHASE GAS METER (IF REQUIRED) IN COMPLIANCE WITH GAS COMPANY'S STANDARDS. LOCATE AS SHOWN ON DWGS.</p> <p>PART 2 PRODUCTS</p> <p>1. PIPING SHALL BE ASTM A53, SCHEDULE 40 BLACK STEEL PIPE, PROVIDE THREADED PIPE FOR 2" AND UNDER PIPING, PROVIDE PLAIN END PIPE FOR 2-1/2" AND OVER PIPING.</p> <p>2. FITTINGS SHALL BE 150# MALLEABLE IRON FOR 2" AND UNDER. FITTINGS SHALL BE ASTM A-234 B11 WELDED FOR 2-1/2" AND OVER.</p> <p>3. USE AN APPROVED PIPE DOPE AT CONNECTIONS.</p> <p>4. PROVIDE A DRIP LEG, GAS COCK, AND UNION WITHIN 72 INCHES OF EACH CONNECTION TO EQUIPMENT.</p> <p>B. VALVES - SEE SECTION 150500</p> <p>PART 3 EXECUTION</p> <p>1. COMPLY WITH NFPA 54 "NATIONAL FUEL GAS CODE" FOR GAS PIPING</p> <p>2. TO LOCK GAS COMPANY STANDARDS.</p> <p>2. REPAIR LEAKS AND DEFECTS WITH NEW MATERIALS, AND RETEST SYSTEM UNTIL SATISFACTORY RESULTS ARE OBTAINED.</p> <p>3. REPORT TEST RESULTS PROMPTLY AND IN WRITING TO THE ARCHITECT AND THE AUTHORITY HAVING JURISDICTION.</p> <p>4. VERIFY CAPACITIES AND PRESSURE RATINGS OF GAS METERS, REGULATORS, VALVES, AND SPECIALTIES.</p> <p>5. VERIFY OBTAINING AND SETTINGS FOR PRESSURE REGULATORS.</p> <p>6. VERIFY THAT SPECIFIED PIPING TESTS ARE COMPLETE.</p> <p>7. INSTALL SHUT-OFF VALVE, UPSTREAM FROM GAS METER, OUTSIDE BUILDING AT GAS SERVICE ENTRANCE.</p> <p>END OF SECTION</p> <p>SECTION 156000 - ROOFTOP HEATING AND COOLING UNITS</p> <p>PART 1 GENERAL</p> <p>1. INSTALL ROOFTOP HEATING AND COOLING UNITS AS SCHEDULED ON THE DRAWINGS. UNITS SHALL BE RATED BY ARI STANDARD 240 FOR CAPACITY AND ARI STANDARD 270 FOR SOUND. UNITS SHALL BE DESIGNED, MANUFACTURED AND TESTED IN ACCORDANCE WITH UL REQUIREMENTS AND HAVE THE UL LABEL. UNITS SHALL CARRY A 5-YEAR WARRANTY ON COMPRESSORS, A 10-YEAR WARRANTY ON HEAT EXCHANGERS, AND A 1-YEAR WARRANTY ON ALL OTHER PARTS.</p> <p>PART 2 PRODUCTS</p> <p>1. EQUIPMENT SHALL BE YORK MANUFACTURED BY JOHNSON CONTROLS - NO EXCEPTIONS. UNITS SHALL BE COMPLETELY FACTORY ASSEMBLED AND TESTED. UNITS SHALL INCLUDE THE FOLLOWING: CONDENSER FANS, COILS AND MOTOR, INTERCONNECTING WIRING AND CONTROL PANEL, FILTER SECTION, COMPRESSORS AND COMPLETE REFRIGERATION SYSTEM, CENTRIFUGAL EVAPORATOR FAN AND MOTOR, GAS-FIRED FURNACE SECTION, AND AUTOMATIC CONTROLS AS SCHEDULED ON DRAWINGS.</p> <p>2. FACTORY-INSTALLED OPTIONS SHALL INCLUDE INTELLISPEED VARIABLE FREQUENCY DRIVE (VFD), INTELLISPEED CONTROL OF THE VFD BASED ON STAGES OF COOLING (PROVIDES SINGLE ZONE VAV FAN OPERATION AS DEFINED BY ASHRAE 90.1 SECTION 6.4.3.10), DRY BULB LOW LEAK ECONOMIZER W/BAROMETRIC RELIEF AND WITH ECONOMIZER FAULT DETECTION & DIAGNOSTIC (MEETS ASHRAE 90.1-2013, IECC 2015, CALIFORNIA TITLE 24, AMCA 511), 3 HP HIGH STATIC BELT DRIVE BLOWER, STANDARD 2" THROWAWAY FILTERS, SIMPLICITY® SE CONTROLLER INCLUDING DISCHARGE AIR, RETURN AIR, AND OUTDOOR AIR TEMPERATURE SENSORS, POWERED CONVENIENCE OUTLET (110 VAC / 15 AMP), HACR CIRCUIT BREAKER/DISCONNECT, RETURN AIR SMOKE DETECTOR (BOTTOM RETURN ONLY), PHASE MONITOR, MICRO-CHANNEL "ALL-ALUMINUM" CONDENSER COIL, COPPER TUB/ALUMINUM FIN EVAPORATOR COIL, AND COMPOSITE DRAIN PAN.</p> <p>3. FIELD-INSTALLED ACCESSORIES SHALL INCLUDE 14" HIGH ROOF CURB, CO2 SPACE/WALL MOUNT SENSOR, AND YORK PROGRAMMABLE THERMOSTAT.</p>	<p>PART 2 PRODUCTS</p> <p>1. PIPING BETWEEN FIRE-DEPARTMENT CONNECTION AND CHECK VALVES: STANDARD-WEIGHT STEEL PIPE WITH GROOVED-END OR THREADED END FITTINGS.</p> <p>2. STANDARD-PRESSURE, WET-PIPE SPRINKLER SYSTEM NPS 2 AND SMALLER: STANDARD-WEIGHT OR SCHEDULE 30, BLACK-STEEL PIPE WITH THREADED OR GROOVED-END FITTINGS.</p> <p>3. STANDARD-PRESSURE, WET-PIPE SPRINKLER SYSTEM NPS 2-1/2 AND LARGER: STANDARD-WEIGHT OR SCHEDULE 30, BLACK-STEEL PIPE WITH WELDED OR GROOVED-END FITTINGS.</p> <p>4. STANDARD-PRESSURE, WET-PIPE SPRINKLER SYSTEM NPS 2-1/2 AND LARGER: STANDARD-WEIGHT OR SCHEDULE 10, BLACK-STEEL PIPE WITH WELDED FITTINGS.</p> <p>5. SPRINKLER TYPES:</p> <p>5.1. ROOMS WITHOUT CEILINGS: UPRIGHT SPRINKLERS</p> <p>5.2. ROOMS WITH SUSPENDED OR HARD-LID CEILINGS: PENDENT SPRINKLERS</p> <p>5.3. SPRINKLER SHALL BE APPROVED AUTOMATIC SPRAY SPRINKLERS TO COMPLY WITH NFPA 13. SPRINKLERS SHALL BE OF OPERATING TEMPERATURE AS REQUIRED BY NFPA AND THE FIRE MARSHALL'S OFFICE. PROVIDE ANTI-FREEZE LOOP AT TOWERS. PROVIDE ANTI-FREEZE LOOP AT ENTRY VESTIBULE IN AREAS NORTH OF THE MASON DIXON LINE. VERIFY ALL FIRE MARSHALL REGULATIONS. PROVIDE APPROVED METAL CABINET WITH NUMBER OF REPLACEMENT HEADS OF VARIOUS TYPES AND QUANTITIES AS REQUIRED BY INSURING AGENCY.</p> <p>PART 3 EXECUTION</p> <p>1. INSTALL PIPING FREE OF SAGS AND BENDS</p> <p>2. INSTALL FITTINGS FOR CHANGES IN DIRECTION AND BRANCH CONNECTIONS</p> <p>3. INSTALL SLEEVES FOR PIPES PASSING THROUGH CONCRETE AND MASONRY WALLS AND FLOORS.</p> <p>4. EXTERIOR WALL, PIPE PENETRATIONS: MECHANICAL SLEEVE SEALS INSTALLED IN STEEL OR CAST-IRON PIPES FOR WALL SLEEVES.</p> <p>5. INSTALL EQUIPMENT TO ALLOW MAXIMUM POSSIBLE HEADROOM UNLESS SPECIFIC MOUNTING HEIGHTS ARE INDICATED.</p> <p>6. INSTALL EQUIPMENT LEVEL AND PLUMB, PARALLEL AND PERPENDICULAR TO OTHER BUILDING SYSTEMS AND COMPONENTS, UNLESS OTHERWISE INDICATED.</p> <p>7. INSTALL CHECK VALVES WHERE INDICATED ON PLANS.</p> <p>7.1 TESTING</p> <p>a. TEST SYSTEM UNDER NORMAL OPERATION CONDITIONS AND DEMONSTRATE THAT PARTS ARE FUNCTIONING PROPERLY. CONDUCT TESTS AND SECURE FINAL CERTIFICATES OF APPROVAL. DELIVER COPIES OF CERTIFICATES TO ARCHITECT/ENGINEER AND LANDLORD.</p> <p>b. TEST SHALL INCLUDE BY NOT LIMITED TO THE FOLLOWING: TWO-HOUR, 200 POUND HYDROSTATIC TEST ABOVE GROUND SYSTEM.</p> <p>c. INCLUDE COST AND RUN SUCH TEST AS MAY BE NECESSARY TO DEMONSTRATE THAT EQUIPMENT EQUALS OR EXCEEDS CAPACITIES SPECIFIED UPON REQUEST.</p> <p>d. NOTIFY ARCHITECT/ENGINEER TWENTY-FOUR HOURS BEFORE TESTING.</p>	<p>Date 05/28/2021 08/06/2021</p> <p>Issue Bid Permit Set Addendum A</p>
<p>© 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205</p>					