22 05 00 BASIC PLUMBING REQUIREMENTS

- A. SEE DIVISION 00 PROCUREMENT AND CONTRACTING AND DIVISION 01 GENERAL REQUIREMENT FOR ADDITIONAL
- B. PLUMBING CONTRACTOR SHALL VERIFY REQUIREMENTS FOR TEMPORARY WATER WITH GENERAL CONTRACTOR AND INCLUDE IN HIS SCOPE OF WORK WHEN DIRECTED BY G.C.. INSTALL IN ACCORDANCE WITH ALL CODE AND OSHA REQUIREMENTS FOR CONSTRUCTION PROJECTS.
- 1. SEE DIVISION 01 23 00 PRODUCT SUBSTITUTION PROCEDURES FOR ADDITIONAL REQUIREMENTS. 2. CONTRACTOR SHALL PROVIDE ALL SUPPORTING DATA AND ASSUME THE BURDEN OF PROOF THAT ANY SUBSTITUTE IS EQUIVALENT AS TO APPEARANCE, CONSTRUCTION, CAPACITY, AND PERFORMANCE. THE JUDGMENT OF EQUIVALENCY SHALL BE MADE BY THE ENGINEER AT THE TIME OF SHOP DRAWING REVIEW, NOT
- 3. WHERE SUBSTITUTE EQUIPMENT REQUIRES REDESIGN OF ANY PART OF THE PROJECT, THE COST OF REDESIGN AND ADDITIONAL COSTS OF THE WORK SHALL BE PAID BY THE CONTRACTOR. REDESIGN SHALL BE SUBJECT TO THE APPROVAL OF ALL AUTHORITIES HAVING JURISDICTION OVER THE WORK INCLUDING THE ARCHITECT/ ENGINEER
- 4. CONTRACTOR SHALL ASSUME ALL COORDINATION RESPONSIBILITIES FOR SUBSTITUTE EQUIPMENT INCLUDING COORDINATION ACROSS TRADES AND COORDINATION OF PREVIOUSLY REVIEWED AND APPROVED SHOP

DRAWING SUBMITTALS, SHOULD THESE SHOP DRAWINGS BE AFFECTED BY THE SUBSTITUTED EQUIPMENT.

- D. SHOP DRAWINGS, PRODUCT DATA, TEST RESULTS AND SAMPLE SUBMITTALS: 1. SEE DIVISION 01 33 23 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES FOR ADDITIONAL REQUIREMENTS
- 2. PLUMBING CONSTRUCTION ADMINISTRATION SUBMITTAL LIST: a. PIPING
- b. PIPE IDENTIFICATION
- c. FIXTURES d. INSULATION

C. SUBSTITUTIONS

- e. HANGERS f. DRAINS AND CLEANOUTS
- g. VALVES h. BACKFLOW PREVENTERS
- i. WATER HEATERS
- j. PUMPS k. SEWAGE EJECTORS
- PROJECT CLOSEOUT
- a. PROVIDE PLUMBING EQUIPMENT OPERATING AND MAINTENANCE MANUALS TO THE OWNER PER IECC C303.3 AND C408.2.5.1.
- b. PROVIDE RECORD DRAWINGS TO THE OWNER IN AUTOCAD FORMAT.
- 1. SEE DIVISION 09 91 00 FINISH AND PAINTING FOR ADDITIONAL REQUIREMENTS.
- 2. PREPARE EXPOSED PIPE, FITTINGS, SUPPORTS, AND ACCESSORIES FOR FINISH PAINTING IN ROOMS THAT WILL HAVE CEILING AND STRUCTURE PAINTED.
- 3. COORDINATE WORK WITH THE PAINTERS SO THAT ALL EQUIPMENT IS INSTALLED PRIOR TO PAINTING. P.C. SHALL
- PAINT ITEMS IF NOT IN PLACE PRIOR TO NORMAL ROUTINE PAINTING.
- 4. IF FINISH BECOMES RUSTED, CORRODED, SCRATCHED, OR FLAKED DURING STORAGE OR INSTALLATION, REFINISH THE EQUIPMENT TO THE SATISFACTION OF THE OWNER.
- 5. WHERE THE PLUMBING CONTRACTOR IS REQUIRED TO PAINT, THE PAINTING SHALL BE DONE IN ACCORDANCE WITH THE PAINTING PORTION OF THE ARCHITECTURAL SPECIFICATION. F. DETAILS AND SCHEDULES ARE SHOWN TO AID THE CONTRACTOR AND ARE NOT MEANT TO BE INCLUSIVE OF ALL
- DEVICES. PROVIDE REQUIRED EQUIPMENT AND ACCESSORIES FOR A COMPLETE INSTALLATION. G. INSTALL ALL EQUIPMENT PER MANUFACTURER'S INSTALLATION INSTRUCTIONS AND REQUIREMENTS. PROVIDE ADDITIONAL WORK AND MATERIALS AS REQUIRED.
- H. PROVIDE ALL STATE AND LOCAL PERMITS AND ANY OTHER RELATED FEES.
- 1. PROVIDE CERTIFICATE OF COMPLIANCE FROM AUTHORITY HAVING JURISDICTION INDICATING APPROVAL
- BACKFLOW PREVENTION DEVICES TESTING AND INSTALLATION. 2. PERFORM WORK PER ALL LOCAL AND STATE CODES, ORDINANCES AND REGULATIONS HAVING JURISDICTION. J. COORDINATE INSTALLATION OF PLUMBING WORK WITH THE OTHER CONTRACTORS TO AVOID CONFLICTS WITH
- K. VERIFY CONNECTION REQUIREMENTS FOR EQUIPMENT FURNISHED BY OTHERS WITH FINAL SHOP DRAWINGS.
- L. CUTTING AND PATCHING PROVIDE ALL CUTTING AND PATCHING NECESSARY FOR PLUMBING WORK INSTALLATION UNLESS THIS WORK IS IDENTIFIED TO BE THE WORK OF OTHER CONTRACTORS. PATCHING SHALL MATCH ADJACENT SURFACES. CORE DRILL OR SAW-CUT OPENINGS THROUGH EXISTING CONCRETE.
- 2. P.C. SHALL PROVIDE SAWCUTTING, EXCAVATION, AND BACKFILL OF EXISTING FLOORS AS REQUIRED FOR INSTALLATION OF NEW UNDERGROUND PIPING. P.C. SHALL PROVIDE CONCRETE AND REINFORCING PER FLOOR SLAB SPECIFICATIONS IN REMOVED AREA OF THICKNESS TO MATCH EXISTING (FIELD VERIFY). PROVIDE DOWELS INTO EXISTING FLOOR SLAB. DOWEL DIAMETER SHALL BE MINIMUM ONE EIGHTH OF FLOOR SLAB THICKNESS. DOWEL LENGTH SHALL BE 12" FOR SLABS LESS THAN 6" THICK, 16" FOR SLABS 6-7" THICK, 18" FOR SLABS 8-9" THICK, AND 20" FOR SLABS GREATER THAN 9" THICK. DOWELS SHALL BE SPACED 12" O.C. AND PENETRATION IN EXISTING SLAB SHALL BE HALF THE LENGTH.
- M. FIRE RATED INTERIOR WALL AND FLOOR PIPE PENETRATIONS 1. SLEEVE REQUIRED FOR PENETRATION OF CONCRETE AND MASONRY WALLS AND FLOORS.
- 2. SEAL OPENING AROUND PIPE WITH A UL APPROVED FIRE-STOP SYSTEM HAVING AN F-RATING NOT LESS THAN THE HOURLY RATING OF THE ASSEMBLY BEING PENETRATED.
- 3. PROVIDE FIRE-RESISTIVE JOINT SYSTEM PRODUCTS BY THE SAME MANUFACTURER AS BEING USED ON THE
- REMAINDER OF THE PROJECT (COORDINATE WITH GC/CM). 4. WHERE A SLEEVE IS REQUIRED, FURNISH AND INSTALL SLEEVES FOR NEW DRYWALL WALLS AND CONCRETE WALLS
- AND FLOORS. FURNISH SLEEVES TO THE MASON CONTRACTOR FOR INSTALLATION IN NEW MASONRY WALLS. 5. PROVIDE UL ASSEMBLY PENETRATION NUMBER TO AHJ COMPLIANT WITH BUILDING UL ASSEMBLY 30 DAYS PRIOR
- 1. PLUMBING CONTRACTOR SHALL PROVIDE ALL SEALANTS WHERE JOINT IS HIDDEN AND WHERE JOINT IS EXPOSED IN MECHANICAL ROOM. 2. SEALANT CONTRACTOR SHALL PROVIDE SEALANTS AT ALL EXPOSED LOCATIONS IN FINISHED ROOMS.
- 1. INSTALL ONE-PIECE (TWO PIECE FOR EXISTING PIPING) POLISHED CHROME PLATED STEEL ESCUTCHEONS AT
- PENETRATIONS EXPOSED IN FINISHED ROOMS (ROOMS WHICH DON'T HAVE UNFINISHED CONCRETE FLOORS).
- 2. ESCUTCHEONS WITH SPRINGS FOR WALL AND CEILING LOCATIONS. 3. ID TO CLOSELY FIT AROUND PIPE/INSULATION, OD THAT COMPLETELY COVERS THE OPENING.
- 4. ESCUTCHEONS REQUIRED IN CABINETS AND CASEWORK.
- 1. CLEAN FIXTURES AND EQUIPMENT AND LEAVE IN PROPER WORKING CONDITION AT THE TIME OF FINAL CLEAN-UP.
- 2. REMOVE, CLEAN AND REPLACE AERATORS AFTER FLUSHING WATER PIPING.
- 3. PROVIDE OPERATING INSTRUCTIONS FOR A TOTAL OF TWO (2) HOURS. MAINTAIN A RECORD OF OPERATING INSTRUCTION PERIODS AND OBTAIN OWNER SIGNOFF THAT INSTRUCTIONS HAVE BEEN COMPLETED.
- 1. FURNISH ACCESS PANELS OF ADEQUATE SIZE TO PERMIT SERVICE OF EQUIPMENT, VALVES, OR OTHER SPECIALTIES WHICH REQUIRE MAINTENANCE OR ADJUSTMENT WHICH ARE INSTALLED BEHIND WALLS OR ABOVE NON-LAYIN
- 2. PANELS SHALL BE SUITABLE FOR INSTALLATION IN THE MATERIAL FORMING THE FINISHED SURFACE, WITH
- FLANGED FLUSH METAL FRAME, FLUSH HINGED STEEL DOOR, FLUSH SCREWDRIVER OPERATED LATCH. 3. PANELS UL LISTED TO CONFORM TO THE FIRE RATING OF THE SURFACE INSTALLED IN.
- 4. TURN ACCESS PANEL OVER TO CONTRACTOR SKILLED IN THE CONSTRUCTION OF THE SURFACES INVOLVED FOR
- 5. ARCHITECT TO APPROVE ACCESS PANEL LOCATION PRIOR TO INSTALLATION OF EQUIPMENT REQUIRING ACCESS. 6. COORDINATE WITH THE OTHER CONTRACTORS AND WHEREVER PRACTICAL, GROUP DEVICES IN SUCH A MANNER

SO AS TO MINIMIZE PANELS. 22 05 19 METERS AND GAUGES

- A. PRESSURE GAUGES AND THERMOMETERS
- 1. MANUFACTURERS: TRERICE, U.S. GAUGE, ASHCROFT, MARSH, WEISS, WEKSLER.
- a. GENERAL PURPOSE: TRERICE 600CB PBF CERTIFIED LEAD FREE CAST ALUMINUM CASE, PHOSPHOR BRONZE BOURDON TUBE; TRERICE 872-1PBF LEAD FREE BRASS PRESSURE SNUBBER. 1). GAUGE COCK: APOLLO 77FLF-100 LEAD FREE FULL PORT THREADED BRASS VALVE, 150 PSI SWP, 400 DEG F
- 3. STEM THERMOMETERS: a. GENERAL PURPOSE: TRERICE BX9, ASTM E1, ORGANIC SPIRIT LIQUID FILL, CAST ALUMINUM CASE WITH EPOXY FINISH, CAST ALUMINUM ADJUSTABLE JOINT WITH POSITIVE LOCKING DEVICE, 9" SCALE, 3/4" NPT BRASS STEM,
- WITH EXTENSIONS AS REQUIRED FOR INSULATION. b. PROVIDE THERMOWELL FOR ALL THERMOMETERS. BRASS IN COPPER TUBING, SIZE AND INSERTION LENGTH
- FOR APPLICATION. PROVIDE HEAT TRANSFER MEDIUM. 4. SCALE RANGES AND MINIMUM INCREMENT AS FOLLOWS:
- a. COLD WATER: 0-100 PSIG/ 1 PSIG; 0-100 DEG F/ 1 DEG F b. HOT WATER: 0-100 PSIG/ 1 PSIG; 0-160 DEG F/ 2 DEG F.
- 5. EXTEND NIPPLES TO ALLOW INSULATION CLEARANCE.
- 6. INSTALL WHERE READ FROM NORMAL OPERATING LEVEL. CALIBRATE FOR ACCURACY.

MAXIMUM TEMPERATURE.

22 05 29 PIPE AND EQUIPMENT HANGERS AND SUPPORTS

- A. MANUFACTURERS: B-LINE, EMPIRE INDUSTRIES, GLOBAL PIPE HANGER PRODUCTS, GRINNEL, NATIONAL PIPE HANGER,
- B. ANGLES, CHANNELS, AND BEAMS: ASTM A36 AND A572 AS REQUIRED.

2. SEE SCHEDULE ON PLANS FOR HANGER SPACING.

- C. HANGERS SHALL NOT BE ATTACHED TO JOIST BRIDGING D. ATTACHMENT TO METAL DECK: HANGERS MAY BE ANCHORED TO METAL FLOOR/ROOF DECK IF ALL THE FOLLOWING CONDITIONS ARE MET:
- 1. MAXIMUM HANGER LOAD OF 50 LBS. 2. ANCHORED TO BOTTOM OF DECK FLUTES, NOT UPPER FLUTE.
- 3. ANCHOR LENGTH SHALL EXCEED DECK DEPTH. E. PIPE HANGERS/SUPPORTS
- 1. SEE DETAILS ON PLANS FOR ADDITIONAL PIPE HANGER SPECIFICATIONS.
- 3. CONFORM TO ASME B31.9 AND MANUFACTURER'S STANDARDIZATION SOCIETY (MSS) SP-58-2009.
- a. V BOTTOM CLEVIS HANGER: MSS SP-58 TYPE 1, B-LINE FIGURE B3106 AND FIGURE B3106V PRE-GALVANIZED PLASTIC PIPE SUPPORT CHANNEL FOR PEX PIPING TO INCREASE HANGER SPACING.
- 5. INSTALL HANGERS AND SUPPORTS SO PIPING LIVE AND DEAD LOADS AND STRESSES FROM MOVEMENT WILL NOT BE TRANSMITTED TO CONNECTED EQUIPMENT. ADJUST HANGERS TO DISTRIBUTE LOADS EQUALLY ON ATTACHMENTS AND TO PROVIDE INDICATED PIPE SLOPES.
- F. STRUT SYSTEM 1. COMPLY WITH THE LATEST REVISION OF MFMA STANDARDS PUBLICATION NUMBER MFMA-3, "METAL FRAMING
- 2. INSTALL STRUT IN ACCORDANCE WITH MFMA-102 "GUIDELINES FOR THE USE OF METAL FRAMING"; IN
- ACCORDANCE WITH EQUIPMENT MANUFACTURER'S RECOMMENDATONS, AND WITH RECOGNIZED INDUSTRY
- 4. 1-5/8 INCHES WIDE IN VARYING HEIGHTS AND WELDED COMBINATIONS AS REQUIRED TO MEET LOAD CAPACITIES. 5. MANUFACTURER'S STANDARD FINISH OR PLAIN FINISH.
- G. PROVIDE SUPPORT FOR UTILITY METERS IN ACCORDANCE WITH REQUIREMENTS OF UTILITY COMPANIES.

3. COLD FORMED LOW CARBON STEEL METAL FRAMING CHANNEL STRUT: B-LINE TYPE B CHANNEL.

22 05 53 MECHANICAL IDENTIFICATION

- 1. MANUFACTURERS: MARKING SERVICES, BRADY B-1, AND SETON SETONFLEX.
- 2. 3/4" HIGH, 1/16" THICK PLASTIC WITH ENGRAVED WHITE LETTERS ON BLACK BACKGROUND COLOR, SCREW OR ADHESIVE MOUNTING.
- 3. PROVIDE AT STARTERS.
- 1. MANUFACTURERS: MARKING SERVICES, W.H. BRADY, AND SETON NAME PLATE COMPANY.
- 2. 1-1/2" DIAMETER 20 GAUGE BRASS TAG WITH STAMPED BLACK LETTERS. ATTACH WITH 5765 #6 SOLID BRASS BEAD 3. PROVIDE TYPEWRITTEN LETTER SIZE CHART.
- 4. COORDINATE VALVE TAG NOMENCLATURE/NUMBERING SEQUENCE/STARTING NUMBER WITH OWNER PRIOR TO ORDERING TAGS
- 5. ALL VALVES SHALL BE TAGGED EXCEPT DRAIN VALVES AND FIXTURE STOPS.
- - 1. MANUFACTURERS: W.H. BRADY, MY SAFETY SIGN AND SETON NAME PLATE COMPANY. 2. PLASTIC SIGN: MIN 4" SIDE x 2" HIGH, 1/16" THICK LAMINATE PLASTIC WITH ENGRAVED LETTERS. TWO HOLES
- PUNCHED, WITH VALVE CHAIN. WHITE BACKGROUND W/ RED LETTERS.
- 3. PROVIDE AT MAIN WATER SHUTOFF VALVE IN ASPEN DENTAL MECHANICAL ROOM. D. PIPE IDENTIFICATION
- INDOOR SELF-ADHESIVE PIPE MARKERS
 - a. MANUFACTURERS: MARKING SERVICES MS-900, BRADY B-736, SETON OPTI-CODE.
 - b. FLEXIBLE PVC FILM WITH PRESSURE SENSITIVE ACRYLIC ADHESIVE BACKING WITH PRINTED MARKINGS. c. SECURE WITH 2" WIDE TAPE WITH ARROWS INDICATING FLOW.
- 2. COLOR, OVERALL SIZE AND LETTER HEIGHT SHALL CONFORM TO ASME A13.1- 2007 "SCHEME FOR THE
- IDENTIFICATION OF PIPING SYSTEMS" 3. IDENTIFY PIPE SERVICE, FLOW DIRECTION, AND PRESSURE.
- 4. IDENTIFICATION SYSTEM SHALL MATCH CURRENT SYSTEM IN THE BUILDING. WHERE NONE EXISTS, PROVIDE PER **SPECIFICATIONS** 5. NOMENCLATURE TO MATCH NAME ON DRAWING LEGEND.
- a. LOCATE TO FACE GREATEST POINT OF VISIBILITY. ALL ADJACENT LABELS TO BE INSTALLED NEATLY IN A ROW.
- b. LOCATE IDENTIFICATION NOT-TO-EXCEED 50 FEET FOR EXPOSED PIPING.
- c. LOCATE IDENTIFICATION NOT-TO-EXCEED 25 FEET FOR PIPING ABOVE CEILINGS.
- d. MINIMUM ONE LOCATION PER ROOM. e. INSTALL IDENTIFICATION AFTER PIPING AND INSULATION IS COMPLETE TO ENSURE MAXIMUM VISIBILITY OF THE IDENTIFICATION SYSTEM.
- f. BEHIND ACCESS PANELS AND ALL OTHER ACCESSIBLE POINTS OF SERVICE.
- g. NEAR LOCATIONS WHERE PIPES PENETRATE WALLS, FLOORS OR CEILINGS. h. NEAR EACH VALVE AND CONTROL DEVICE.
- i. AT EACH MAJOR PIECE OF EQUIPMENT.

22 07 00 INSULATION

- 1. SEE INSULATION SCHEDULES ON PLANS FOR ADDITIONAL INFORMATION.
- 2. INSULATION, INSULATION SYSTEMS AND JACKETS SHALL MEET UL-723/ASTM E84 REQUIREMENTS OF MAX. FIRE HAZARD CLASSIFICATION OF 25, AND MAX. FLAME SPREAD, FUEL CONTRIBUTED, AND SMOKE DEVELOPED OF 50 WHEN INSTALLED IN RETURN AIR PLENUMS
- 3. INSTALL MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND MICA PUBLICATION "COMMERCIAL AND INDUSTRIAL STANDARDS", 2011 SEVENTH EDITION.
- 4. CONTINUE INSULATION WITHOUT INTERRUPTIONS THROUGH WALLS AND FLOOR PENETRATIONS AND HANGERS. 5. REPAIR INSULATION ON EXISTING PIPING WHICH IS DAMAGED DUE TO CONNECTING OF NEW PIPING. MAINTAIN EXISTING VAPOR BARRIER INTEGRITY.
- B. FIBERGLASS (F.G.) INSULATION RIGID PIPING:
 - a. O.C. FIBERGLAS PIPE INSULATION, KNAUF EARTHWOOL PIPE INSULATION, JOHNS MANVILLE MICRO-LOK.
 - b. SINGLE OR DOUBLE ADHESIVE SELF-SEALING LAP SYSTEM FOR LONGITUDINAL JOINT, PRESSURE SENSITIVE BUTT STRIP SEALS, ALL SERVICE JACKET VAPOR BARRIER COVERING.
 - c. 3.5-5.5 LB./CU.FT., R=4.3 / NOMINAL INCH AT 75 DEG F.
 - d. MAX 850 DEG F, JACKET MAX 150 DEG F, 0.02 PERM.
 - e. COMPRESSIVE STRENGTH AT 10% DEFORMATION 125 LB./S.F.
 - f. VALVES, FITTINGS, AND FLANGE COVERS: 1). ZESTON 2000/300 SERIES, CEELCO 300 SERIES, PROTO LOSMOKE PVC JACKET
- 2). HIGH IMPACT 30 MIL WHITE PVC WITH PRECUT FIBERGLASS INSERTS. MAX TEMP 150 DEG C. ELASTOMERIC FOAM INSULATION 1. SEAL BUTT JOINTS WITH ADHESIVE.
- PIPE a. MANUFACTURERS: AEROFLEX AEROCEL SSPT, K-FLEX INSUL-LOCK DS, ARMACELL AP/ARMAFLEX BLACK
- b. EPDM/PVC BASE ELASTOMERIC FOAM MATERIAL
- c. DUAL TAPE CLOSURE
- d. MAX. 'K' VALUE 0.245 AT 75 DEG F
- e. MAX. CONTINUOUS TEMPERATURE 220 DEG F f. MAX. 0.05 PERM PER ASTM E96
- g. MAX. FIRE/SMOKE DEVELOPED OF 25/50 PER ASTM E84 FOR UP TO 2" THICK.
- h. PROVIDE MANUFACTURER PREFORMED INSULATION OVER VALVES AND FITTINGS i. FIELD CUTTING AND GLUING LONGITUDINAL JOINT NOT PERMITTED.
- D. PIPE INSULATION REQUIREMENTS 1. INSULATE ENTIRE PIPING SYSTEM INCLUDING VALVES AND FITTINGS PER MICA INSULATION STANDARDS PLATES
- SEAL ALL INSULATION ENDS.

22 10 00 EXCAVATION AND BACKFILL

- A. P.C. SHALL EXCAVATE AND BACKFILL TRENCHES FOR PLUMBING WORK. B. PROTECT TREES, PLANTS, LAWNS, AND OTHER FEATURES REMAINING AS PORTION OF FINAL LANDSCAPING.
- C. PROTECT BENCHMARKS, EXISTING STRUCTURES, FENCES, SIDEWALKS, PAVING, AND CURBS FROM EXCAVATING EQUIPMENT AND VEHICULAR TRAFFIC. D. MAINTAIN, PROTECT, AND TEMPORARILY SUPPORT ABOVE AND BELOW GRADE UTILITIES WHICH ARE TO REMAIN.
- E. PROVIDE AND MAINTAIN ALL FENCING, BARRICADES, SIGNS, WARNING LIGHTS, AND/OR OTHER EQUIPMENT NECESSARY TO KEEP ALL EXCAVATION PITS AND TRENCHES AND THE ENTIRE SUBGRADE AREA SAFE UNDER ALL CIRCUMSTANCES AND AT ALL TIMES. NO EXCAVATION SHALL BE LEFT UNATTENDED WITHOUT ADEQUATE
- F. ELEVATIONS SHOWN ON THE PLANS ARE SUBJECT TO SUCH REVISIONS AS MAY BE NECESSARY TO FIT FIELD CONDITIONS. G. EXCAVATING
- 1. CUT TRENCHES SUFFICIENTLY WIDE TO ENABLE INSTALLATION AND ALLOW INSPECTION. REMOVE WATER OR MATERIALS THAT INTERFERE WITH WORK.
- 2. DO NOT INTERFERE WITHIN 45 DEGREE BEARING SPLAY OF FOUNDATIONS. 3. EXCAVATE MINIMUM 4" BELOW BOTTOM OF PIPE IF STONE GREATER THAN 1" OR BEDROCK IS ENCOUNTERED. 4. REMOVE UNSTABLE AREAS OF SUBGRADE BELOW PIPE TO MINIMUM 24" BELOW PIPE OR TO STABLE MATERIAL. BACKFILL WITH PEA GRAVEL, LIMESTONE SCREENINGS, OR EQUIVALENT AND COMPACT TO DENSITY EQUAL TO
- REQUIREMENTS FOR SUBSEQUENT BACKFILL MATERIAL. 5. STOCKPILE EXCAVATED MATERIAL IN AREA DESIGNATED ON SITE AND REMOVE EXCESS MATERIAL NOT BEING

- H. BEDDING AND BACKFILL
- a. INSTALL WITH MINIMUM OF 1-1/2 INCH CLEARANCE TO CONCRETE AND ENSURE THERE IS NO DISTURBANCE OF BEARING SOIL.
- b. BACKFILL WITH COMPACTED ENGINEER FILL PER GEOTECH REPORT. 2. MECHANICALLY COMPACT BEDDING AND BACKFILL TO PREVENT SETTLEMENT. THE INITIAL COMPACTED LIFT TO NOT EXCEED 24" COMPACTED TO 95% DENSITY PER MODIFIED PROCTOR TEST (ASTM D-1557). SUBSEQUENT LIFTS
- UNDER PAVEMENTS, CURBS, WALKS AND STRUCTURES ARE NOT TO EXCEED 12" AND BE COMPACTED TO 95% DENSITY PER MODIFIED PROCTOR TEST. IN ALL OTHER AREAS WHERE CONSTRUCTION ABOVE THE EXCAVATION IS NOT ANTICIPATED WITHIN 2 YEARS, MECHANICALLY COMPACT BACKFILL IN LIFTS NOT EXCEEDING 24" TO 90% DENSITY PER MODIFIED PROCTOR TEST.
- MAINTAIN OPTIMUM MOISTURE CONTENT OF FILL MATERIALS TO ATTAIN REQUIRED COMPACTION DENSITY.
- 4. DRAIN/VACUUM PIPING a. BEDDING: WHERE OVEREXCAVATED, BRING BACK TO BOTTOM OF PIPE ELEVATION WITH DRY SAND, GRAVEL, PEA GRAVEL, WASHED STONE OR CRUSHED STONE PASSING A 3/4" SIEVE.
- b. BACKFILL TO A DEPTH OF 12" OVER THE PIPE WITH SAND, CRUSHED STONE THAT PASSES A 1" SIEVE. PLACE IN WELL TAMPED MAXIMUM 6" LAYERS FOR LENGTH OF SEWER AND WIDTH OF TRENCH.
- 5. COMPRESSED AIR PIPING (BELOW FLOOR) a. BEDDING: WHERE OVEREXCAVATED, BRING BACK TO BOTTOM OF PIPE ELEVATION WITH DRY SAND, PEA
- GRAVEL OR WASHED STONE PASSING A 3/4" SIEVE. b. BACKFILL TO A DEPTH OF 12" OVER THE PIPE WITH SAND, PEA GRAVEL, OR WASHED STONE THAT PASSES A 3/4" SIEVE. PLACE IN WELL TAMPED MAXIMUM 6" LAYERS FOR LENGTH OF WATER PIPE AND WIDTH OF
- 6. BACKFILL ABOVE 12" ABOVE THE PIPE: a. UNDER EXISTING AND FUTURE UTILITIES, AND BUILDINGS: GRANULAR MATERIALS, PIT RUN SAND, GRAVEL, OR
- CRUSHED STONE, FREE FROM LARGE STONES, ORGANIC, AND FROZEN MATERIALS. 7. DIRECT SURFACE WATER AWAY FROM STOCKPILE SITE TO PREVENT EROSION OR DETERIORATION OF MATERIALS. REMOVE STOCKPILE, LEAVE AREA IN A CLEAN AND NEAT CONDITION. GRADE SITE SURFACE TO PREVENT FREESTANDING SURFACE WATER.

22 11 00 WATER PIPING AND VALVES

- 1. SEE PIPE SCHEDULE ON PLANS FOR ADDITIONAL INFORMATION.
- 1. DRAWINGS AND DIAGRAMS SHOW SIZE AND APPROXIMATE LOCATION OF PIPING. THE DRAWINGS SHALL NOT BE SCALED TO DETERMINE EXACT LOCATION. PROVIDE ADDITIONAL OFFSETS TO COORDINATE WITH INSTALLATION
- REQUIREMENTS OF OTHER SYSTEMS ROUTE ABOVE GROUND PIPING IN ORDERLY MANNER, PARALLEL TO BUILDING STRUCTURE. OFFSET PIPE CONNECTIONS AT EQUIPMENT TO ALLOW FOR SERVICE, SUCH AS REMOVAL OF THE EQUIPMENT.
- INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. 4. INSTALL PIPING TO CONSERVE BUILDING SPACE AND NOT INTERFERE WITH USE OF SPACE AND OTHER WORK.
- GROUP PIPING WHENEVER PRACTICAL AT COMMON ELEVATIONS. 5. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR CONNECTED EQUIPMENT WITH RESPECT TO THE BUILDING AND PLUMBING SYSTEM.
- PROVIDE CLEARANCE FOR INSTALLATION OF INSULATION AND ACCESS TO VALVES. 7. DO NOT ROUTE PIPING ABOVE TRANSFORMERS, PANELBOARDS, MOTOR CONTROL CENTERS, SWITCHBOARDS OR OTHER ELECTRICAL DISTRIBUTION EQUIPMENT.
- PROVIDE NON-CONDUCTING DIELECTRIC CONNECTIONS WHEREVER JOINTING DISSIMILAR METALS. 9. USE ONLY NEW MATERIAL, FREE OF DEFECTS, RUST AND SCALE, AND MEETING THE LATEST REVISION OF THE ASTM 10. PREPARE EXPOSED UNFINISHED PIPE, FITTINGS, SUPPORTS, AND ACCESSORIES, READY FOR FINISH PAINTING.
- 11. SLOPE PIPING AND ARRANGE SYSTEMS TO DRAIN AT LOW POINTS. USE TOP CONNECTIONS FOR TAKEOFFS TO EQUIPMENT ABOVE THE MAINS AND BOTTOM CONNECTIONS FOR TAKEOFFS TO EQUIPMENT BELOW THE MAINS. 12. USE LONG RADIUS ELBOWS FOR ALL 90 DEGREE ELBOWS.

13. INSTALL VALVE STEM BETWEEN THE VERTICAL (UPRIGHT) OR HORIZONTAL POSITION.

- 14. DO NOT SUPPORT WEIGHT OF PIPING ON VALVE. 15. PIPING INSTALLED IN EXTERIOR WALLS SHALL BE INSTALLED ON THE ROOM SIDE OF EXTERIOR WALL INSULATION AND ONLY WHEN APPROVED BY THE ENGINEER. WHEREVER POSSIBLE, AVOID ROUTING DOMESTIC WATER SUPPLY
- C. PIPING TESTING 1. EACH TEST MUST BE WITNESSED BY THE OWNER'S REPRESENTATIVE. IF LEAKS ARE FOUND, REPAIR THE AREA WITH NEW MATERIALS AND REPEAT THE TEST. DO NOT INSULATE PIPE UNTIL IT HAS BEEN SUCCESSFULLY TESTED. MEASURE AND RECORD TEST PRESSURE AT THE HIGH POINT IN THE SYSTEM.
- 3. TEST WATER DISTRIBUTION SYSTEM WITH POTABLE WATER UNDER A WATER PRESSURE OF 100 PSIG OR THE WORKING PRESSURE OF THE SYSTEM (WHICHEVER IS GREATER) FOR A PERIOD OF (4) HOURS. IF LOCAL AUTHORITIES REQUIRE MORE STRINGENT TESTING, CONTRACTOR SHALL COMPLY WITH THOSE REQUIREMENTS
- TO THE EXISTING SYSTEM.). WATER PIPING BALANCING 1. VERIFY THAT SUFFICIENT WATER FLOW, PRESSURE AND TEMPERATURE ARE AVAILABLE AT EACH OUTLET AND

2. BALANCE CIRCULATING HOT WATER SYSTEM TO ENSURE PROPER CIRCULATION OF HOT WATER IN THE SYSTEM

4. WHERE NEW PIPING IS AN EXTENSION OF THE EXISTING SYSTEM, TEST THE NEW PIPING PRIOR TO CONNECTION

- WITH HOT WATER AVAILABLE TO ALL FIXTURES AND CONNECTIONS. E. FLUSH AND DISINFECT DOMESTIC WATER SUPPLY SYSTEM AS FOLLOWS: 1. FILL PIPING WITH POTABLE WATER AND ALLOW TO STAND FOR 24 HOURS.
- 2. FLUSH EACH OUTLET BEGINNING WITH OUTLET CLOSEST TO BUILDING CONTROL VALVE AND THEN EACH
- 3. FLUSH EACH OUTLET MINIMUM 1 MINUTE AND UNTIL WATER APPEARS CLEAR AT THE OUTLET. 4. FILL SYSTEM WITH WATER/CHLORINE SOLUTION OF 50 PPM OF CHLORINE AND LET STAND FOR 24 HOURS, OR 200
- PPM FOR 3 HOURS. 5. FLUSH WITH POTABLE WATER.
- 6. REPEAT DISINFECTION IF BACTERIOLOGICAL CONTAMINATION EXISTS. 7. PERFORM WATER QUALITY TEST IF REQUIRED BY LOCAL AUTHORITIES. 8. IF LOCAL AUTHORITIES REQUIRE MORE STRINGENT FLUSHING AND DISINFECTION, CONTRACTOR SHALL COMPLY
- WITH THOSE REQUIREMENTS. 1. MANUFACTURERS: NIBCO, APOLLO, KEYSTONE, CENTERLINE, DEZURIK, CRANE, MUELLER, POWELL, VIEGA, GRINNELL, SIOUX CHIEF. LISTING OF MODEL NUMBER DOES NOT PRECLUDE OTHER ACCEPTABLE MANUFACTURERS
- a. PEX BALL VALVE 1). APOLLO 77X SERIES 2). BRONZE THREE PIECE BODY, CHROME PLATED BRASS BALL, FULL PORT, TEFLON SEATS AND STUFFING BOX

FROM PROVIDING EQUIVALENT VALVES.

PROVIDE BRONZE VALVE FOR COPPER PIPE.

RING, LEVER HANDLE WITH VALVE EXTENSIONS FOR INSULATED PIPING, CRIMP JOINT ENDS, 200 PSI WOG, NSF 61 LISTED.

3. SHUTOFF VALVES 1" AND SMALLER

- 4. SHUTOFF VALVES 2" AND SMALLER a. BRONZE BALL VALVE:
 - 1). SOLDERED: NIBCO S-685-66-LF. 2). PRESS FITTING: VIEGA SERIES 2970.*ZL OR SERIES 2971.*ZL 3). TWO PIECE, CHROME PLATED BRASS OR STAINLESS STEEL BALL, FULL PORT, REINFORCED PTFE SEATS AND
- STUFFING BOX RING, LEVER HANDLE WITH LOCKABLE HANDLE AND VALVE STEM EXTENSIONS FOR INSULATED PIPING, 250 PSI, NSF 61 ANNEX G LISTED. 5. MANUAL BALANCE VALVES 2" AND SMALLER
- a. BELL & GOSSETT A-549LFP(C), CALEFFI, NIBCO, FLOWSET, ARMSTRONG, AND IMI HYDRONIC ENGINEERING): BRONZE BODY WITH CALIBRATED BRASS ORIFICE OR VENTURI, MEMORY STOP, SOLDERED ENDS AND PRESSURE TAPS. 125 PSIG RATING AT 240 DEG F, NSF 61 ANNEX G LISTED LEAD FREE.
- b. INSTALL 5 PIPE DIAMETERS DOWNSTREAM AND 2 PIPE DIAMETERS UPSTREAM OF A FITTING. 6. DRAIN VALVES: SHUTOFF VALVE WITH THREADED CAP. PROVIDE FOR COMPLETE SYSTEM DRAINAGE, NSF 61
- SPRING LOADED CHECK VALVES a. 2" AND SMALLER:

22 11 23 NATURAL GAS PIPING AND ACCESSORIES

- 1). THREADED: NIBCO MODEL 480-Y-LF 2). BRONZE BODY, TFE SEAT AND DISC, STAINLESS STEEL SPRING, CLASS 125, NSF 61 ANNEX G LISTED LEAD
- A. COORDINATE INSTALLATION OF GAS SERVICE WITH GAS UTILITY. CONTACT GAS UTILITY TO ARRANGE SERVICE AND ASSIST OWNER IN APPLYING FOR NEW SERVICE.
- 1. INSTALL, INSPECT, TEST, AND PURGE GAS PIPING IN CONFORMANCE WITH NFPA 54, UTILITY COMPANY AND ALL 2. MAKE BRANCH CONNECTIONS TO THE MAIN FROM THE TOP OR SIDE. 3. PAINT EXTERIOR GAS PIPING NOT LOCATED ON THE ROOF WITH TWO (2) COATS RUST RESISTANT PAINT, COLOR
- BALL VALVES (MANUFACTURERS: NIBCO 585/580-70UL, WATTS B6000UL): BRONZE BODY, THREADED ENDS, CHROME PLATED BRONZE BALL, FULL/CONVENTIONAL PORT, TEFLON SEAT, BLOWOUT-PROOF STEM, TWO-PIECE
- 3. PROVIDE A MAIN GAS LINE SHUTOFF VALVE IMMEDIATELY AFTER THE METER CONNECTION. D. GAS PRESSURE REGULATORS

C. GAS VALVES

TO MATCH ADJACENT SURFACE.

1. UL LISTED FOR USE AS NATURAL GAS SHUTOFF.

CONSTRUCTION, 150 PSIG WORKING PRESSURE.

1. CAST IRON BODY, ALUMINUM SPRING CASE, ALUMINUM ORIFICE, BUNA-N DIAPHRAGM, INTERNAL RELIEF VALVE SET TO RELIEVE AT 7-10" W.C. ABOVE NORMAL OUTLET PRESSURE SETTING OF 7" WC., TOPCOAT ENAMEL.

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SYM.		IDENITIFICATION!	CVA	ADDD	IDENITIFICATION
DIDINIC A		<u>IDENTIFICATION</u>	SYM.	ABBK.	<u>IDENTIFICATION</u>
PIPING A					DIDING CAD
	CO	CLEAN OUT			PIPING CAP
	WCO	WALL CLEAN OUT			UNION
$\stackrel{\sim}{-}$	FCO	FLOOR CLEAN OUT (FLUSH)	<u> </u>		THERMOMETER
	BFP	BACKFLOW PREVENTER	<u> 오</u>		PRESSURE GAUGE
<u> </u>	PRV	PRESSURE REDUCING VALVE		HB	HOSE BIBB
<u> </u>		SHUTOFF VALVE	<u> </u>	RD	ROOF DRAIN
- Ф-		BALANCE ASSEMBLY (IN PLAN VIEWS)	0	OF	OVERFLOW DRAIN
		BALANCE VALVE (IN DETAILS)	0	HD	HUB DRAIN
-⊘-		AUTOMATIC BALANCE VALVE	0	HD-R	HUB DRAIN WITH REDUCER
-0-		THERMOSTATIC BALANCE VALVE		FD	FLOOR DRAIN
N		CHECK VALVE	X		FIXTURE UNIT (WATER SUPPLY, WAS
ਠ		GLOBE VALVE	ᄑ		TEST CONNECTION
Q	WHA	WATER HAMMER ARRESTOR			
<u>PIPING</u>					
	CW	COLD HARD WATER PIPING		ST	STORM PIPING
	HW	HOT WATER PIPING	—оғ—	OF	OVERFLOW CONDUCTOR PIPING
	HWR	HOT WATER RETURN PIPING		V	VENT PIPING
	S	COLD SOFT WATER PIPING	<u>—</u> G—	G	GAS PIPING
-NP-CW-	NP-CW	NON-POTABLE WATER PIPING	——A——	AIR	AIR PIPING
—SA—	SA	SANITARY WASTE PIPING		V	VACUUM PIPING
MISCELLA	<u>ANEOUS</u>				
•	EL	ELEVATION	\Diamond		DETAIL OR SECTION NUMBER SHEET NUMBER
<u>ABBREVIA</u>	<u>ATIONS</u>				
	AFF	ABOVE FINISHED FLOOR		OC	ON CENTER
	AFG	ABOVE FINISHED GRADE		PC	PLUMBING CONTRACTOR
	ВЈ	BETWEEN JOISTS		RC	REFRIGERATION CONTRACTOR
	EC	ELECTRICAL CONTRACTOR		RI	ROUGH-IN
	FPC	FIRE PROTECTION CONTRACTOR		TJ	THROUGH JOISTS
	GC	GENERAL CONTRACTOR / CONSTRUCTION MANAGER		TTS	TIGHT TO STRUCTURE
	НС	HVAC CONTRACTOR		TYP	TYPICAL
	IE	INVERT ELEVATION		VTR	VENT THROUGH ROOF
	NIC	NOT IN CONTRACT		WP	WEATHER PROOF
	NTS	NOT TO SCALE			
FIRE RATE	<u>D W</u> ALLS		<u>I</u>		
		FIRE - 1 HOUR			FIRE - 3 HOUR

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JOB NUMBER 230264900

PLUMBING SPECIFICATIONS (CONT.)

- 2. SENSUS MODELS 496
- 3. FOR REGULATORS INSTALLED INDOORS, PIPE THE RELIEF VALVE VENT FULL SIZE TO THE OUTSIDE OF THE BUILDING AT A NON-HAZARDOUS LOCATION. INCREASE VENT SIZE ONE PIPE SIZE IF VENT LENGTH EXCEEDS 10 FEET. TERMINATE WITH AN ELBOW DOWN WITH A SCREEN OVER THE OPENING. DO NOT COMBINE VENTS.
- 4. MAXITROL 325 SERIES WITH VENT LIMITER ARE PERMITTED FOR INDOOR APPLICATIONS WHERE SUPPLYING LESS THAN 300,000 BTUH.
- FOR REGULATORS INSTALLED OUTDOORS, POSITION THE REGULATOR SO THE RELIEF VALVE VENT IS FACING DOWN OR INSTALL ELBOW FACING DOWN A MINIMUM 10 FEET FROM AN OUTSIDE AIR INTAKE AND 5 FEET FROM A GAS FLUE DISCHARGE.

22 13 00 DRAIN PIPING AND VALVES

- A. PIPING INSTALLATION
- INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- 2. FIELD VERIFY EXISTING AND PROPOSED SEWER ELEVATIONS AND SIZES AND NOTIFY THE OWNER'S REPRESENTATIVE IN WRITING OF ANY VARIATION OF THE ELEVATIONS BEFORE BEGINNING ANY SEWER AND
- 3. DRAWINGS AND DIAGRAMS SHOW SIZE AND APPROXIMATE LOCATION OF PIPING. THE DRAWINGS SHALL NOT BE SCALED TO DETERMINE EXACT LOCATION. PROVIDE ADDITIONAL OFFSETS TO COORDINATE WITH INSTALLATION
- REQUIREMENTS OF OTHER SYSTEMS.

 4. ROUTE ABOVE GROUND PIPING IN ORDERLY MANNER, PARALLEL TO BUILDING STRUCTURE. OFFSET PIPE CONNECTIONS AT EQUIPMENT TO ALLOW FOR SERVICE, SUCH AS REMOVAL OF THE EQUIPMENT.
- 5. INSTALL PIPING TO CONSERVE BUILDING SPACE AND NOT INTERFERE WITH USE OF SPACE AND OTHER WORK. GROUP PIPING WHENEVER PRACTICAL AT COMMON ELEVATIONS.
- 6. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR CONNECTED EQUIPMENT WITH RESPECT TO THE BUILDING AND PLUMBING SYSTEM.
- 7. PROVIDE CLEARANCE FOR INSTALLATION OF INSULATION AND ACCESS TO VALVES.
- 8. DO NOT ROUTE PIPING ABOVE TRANSFORMERS, PANELBOARDS, SWITCHBOARDS OR OTHER ELECTRICAL DISTRIBUTION EQUIPMENT.
- 9. PROVIDE NON-CONDUCTING DIELECTRIC CONNECTIONS WHEREVER JOINTING DISSIMILAR METALS.
- 10. PROVIDE NO-HUB ADAPTER ON PVC PIPE WHERE USING NO-HUB COUPLINGS.
- 11. SLOPE SANITARY PIPE 2" AND SMALLER 1/4" PER FOOT; 3" AND LARGER PIPING 1/8" PER FOOT.
 12. RUN ALL DRAIN LINES FROM EQUIPMENT OVERFLOW RECEIVERS, ETC. TO FLOOR / HUB DRAINS. DRAIN LINES SHALL BE HARD DRAWN COPPER INSTALLED WITH A MINIMUM OF 1/8" PER FOOT SLOPE. NO DRAIN LINE SHALL BE SMALLER THAN 3/4". INSTALL A TEE AT EACH ELBOW OF CONDENSATE DRAIN PIPING WITH A CLEANOUT PLUG
- ON THE BLIND TEE.

 B. SANITARY DRAIN PIPING TESTING: TEST DRAIN AND VENT PIPING PER CODE REQUIREMENTS.
- B. SANITARY DRAIN PIPING TESTING: TEST DRAIN AND VENT PIPING PER CODE REQUIREMENTS.C. AIR ADMITTANCE VALVES NOT PERMITTED.

22 15 00 COMPRESSED AIR PIPING

- A. PIPING INSTALLATION
- 1. DRAWINGS AND DIAGRAMS SHOW SIZE AND APPROXIMATE LOCATION OF PIPING. THE DRAWINGS SHALL NOT BE SCALED TO DETERMINE EXACT LOCATION. PROVIDE ADDITIONAL OFFSETS TO COORDINATE WITH INSTALLATION REQUIREMENTS OF OTHER SYSTEMS
- 2. ROUTE PIPING IN ORDERLY MANNER, PARALLEL TO BUILDING STRUCTURE. OFFSET PIPE CONNECTIONS AT
- EQUIPMENT TO ALLOW FOR SERVICE, SUCH AS REMOVAL OF THE EQUIPMENT.

 3. INSTALL PIPING TO CONSERVE BUILDING SPACE AND NOT INTERFERE WITH USE OF SPACE AND OTHER WORK.
- GROUP PIPING WHENEVER PRACTICAL AT COMMON ELEVATIONS.
- PROVIDE CLEARANCE FOR ACCESS TO VALVES AND FITTINGS.
 PROVIDE NON-CONDUCTING DIELECTRIC CONNECTIONS WHEREVER JOINTING DISSIMILAR METALS.
- 6. USE ONLY NEW MATERIAL, FREE OF DEFECTS, RUST AND SCALE, AND MEETING THE LATEST REVISION OF THE ASTM
- SPECIFICATIONS.

 7. PREPARE EXPOSED UNFINISHED PIPE, FITTINGS, SUPPORTS, AND ACCESSORIES FOR FINISH PAINTING.
- 8. SLOPE PIPING AND ARRANGE SYSTEMS TO DRAIN AT LOW POINTS.
- 9. ALL TAKEOFFS SHALL BE FROM THE TOP OF THE PIPIING.
 10. USE ECCENTRIC FITTINGS FOR CHANGES IN HORIZONTAL PIPE SIZES TO MAINTAIN BOTTOM OF PIPE LEVEL.
- CONCENTRIC FITTINGS MAY BE USED FOR CHANGES IN VERTICAL PIPE SIZES.

 11. INSTALL VALVE STEM BETWEEN THE VERTICAL (UPRIGHT) OR HORIZONTAL POSITION.
- 12. DO NOT SUPPORT WEIGHT OF PIPING ON VALVE.
- B. PIPING PRESSURE TESTS1 FACH TEST MUST BE WITNESSED BY THE OWNER'S REPRESENTATION
- EACH TEST MUST BE WITNESSED BY THE OWNER'S REPRESENTATIVE. IF LEAKS ARE FOUND, REPAIR THE AREA WITH NEW MATERIALS AND REPEAT THE TEST.
- 2. TEST THE SYSTEM WITH AIR TO THE PRESSURE SETTING OF THE RELIEF VALVE FOR AN 8 HOUR DURATION.
- WHERE MULTIPLE NEW PIPE BRANCHES ARE EXTENDED FROM AN EXISTING MAIN, TEST THE EXISTING MAIN AND NEW BRANCHES AT 1.5 TIMES THE SYSTEM OPERATING PRESSURE IN LIEU OF THE PRESSURE ABOVE.
- 4. WHERE NEW PIPING IS AN EXTENSION OF THE EXISTING SYSTEM, TEST THE NEW PIPING PRIOR TO CONNECTION TO THE EXISTING SYSTEM.
- TO THE EXISTING SYSTEM.

 5. REMOVE RELIEF VALVE DURING TESTS.
- 6. RELIEVE PRESSURE IN SYSTEM AFTER PRESSURE TESTS.
- C. UNIONS AND FLANGES1. COPPER PIPE 2" AND SMALLER: BRONZE, SOLDERED JOINTS.
- D. VALVES

 1. MANUFACTURERS: NIRCO APOLLO HAMMOND MILWAUKEE KEYSTO
- 1. MANUFACTURERS: NIBCO, APOLLO, HAMMOND, MILWAUKEE, KEYSTONE, CENTERLINE, DEZURIK, CRANE, MUELLER, POWELL, AND GRINNELL.
- 2. MAIN PIPING
- a. BALL VALVES 2" AND SMALLER:

 1) NIBCO MODEL T-585-70
- NIBCO MODEL T-585-70
 TWO PIECE, FULL PORT, THREADED ENDS, BRONZE BODY.
- 3). CHROME PLATED BRASS BALL, TEFLON SEATS AND STUFFING BOX RING, LEVER HANDLE; 600 PSI WOG.3. VALVES TO EQUIPMENT
- a. TWO PIECE, FULL PORT, THREADED ENDS BRONZE BODY.
- b. CHROME PLATED BRASS BALL, TEFLON SEATS AND STUFFING BOX RING, LEVER HANDLE, SAFETY VENT FOR PRESSURE RELIEF OF DOWNSTREAM PIPING TO EQUIPMENT; 600 PSI WOG.
- c. BALL VALVES 1" AND SMALLER: NIBCO MODEL T-585-70-SV

22 40 00 PLUMBING FIXTURES

- A. FIXTURE
- SEE SCHEDULES FOR ADDITIONAL INFORMATION.
 LIKE FIXTURE TYPE (FAUCETS, WATER CLOSETS, LAVS) SHALL BE THE PRODUCT OF THE SAME MANUFACTURER.
- LIKE FIXTURE TYPE (FAUCETS, WATER CLOSETS, LAVS) SHALL BE THE PRODUCT OF THE SAME MANUFACTURER.
 SAFETY COVERS OVER EXPOSED WASTE AND SUPPLY PIPING AT ADA ACCESSIBLE FIXTURES SHALL BE LAV-GUARD BY TRUEBRO OR EQUIVALENT.
- B. INSTALLATION
- INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
 PROVIDE CHROME PLATED RIGID SUPPLIES TO FIXTURES WITH STOPS, REDUCERS, AND ESCUTCHEONS UNLESS
- OTHERWISE NOTED IN SCHEDULES AND DETAILS.

 3. SEAL FIXTURES TO WALL AND FLOOR SURFACES WITH MILDEW-RESISTANT SILICONE SEALANT, COLOR TO MATCH
- 4. INSTALL BARRIER-FREE FIXTURES IN COMPLIANCE WITH LOCAL CODES AND FEDERAL ADA ACCESSIBILITY
- 5. EXPOSED TRAPS, PIPING, AND ESCUTCHEONS SHALL BE CHROME PLATED BRASS UNLESS OTHERWISE NOTED IN SCHEDULES AND DETAILS.
- SCHEDULES AND DETAILS.
 6. ADJUST LAVATORY THERMOSTATIC MIXING VALVE TO 105 DEG F MAXIMUM OUTLET TEMPERATURE.

PIPE SCHEDULE																												
					СО	PPER							PEX					P۱	VC				CAST IRC	N		ST	TEEL	
			C1220	00 TUBE		FITTI	INGS	JO	INTS		PIPE	I	FITTINGS	JOINTS		PIPE		F	ITTI	IGS	JOINTS	PIPE 8	& FITTINGS	JOINTS	PIPE	FITTINGS	JOIN	ITS
SERVICE	LOCATION	ASTM B42 TYPE L HARD DRAWN	ASTM B88 TYPE L HARD DRAWN	ASTM B42 TYPE K ANNEALED TUBING	19 TYPE K N	ANSI B16.15, B16.18, B16.22, B16.23, B16.26, B16.29, B16.32	ANSI B16.22 WROUGHT COPPER AND BRONZE	LEAD FREE SOI	A5.8 BCuP SIL	ASTM B32 GRADE 95TA SOLDER ASTM F876, F877, F2023	71 CL-	ASTM F2023	ASTM F1807	PER MFR REQUIREMENTS (1)	SCH. 40 PRESSURE RATED ASTM D1785	SCH. 40 NON-PRESS. RATED ASTM D1784,	DWV NON-PRESS. RATED ASTM F891	ASTM D2665	ASTM F1866	ASTM D2466 ASTM D2467	ASTM F656 SOLVENT WELD, ASTM D2564 SOLVENT CEMENT	HUBLESS ASTM A888, CISPI 301	BELL AND SPIGOT ASTM A74 SERVICE WEIGHT	ASTM C1277, CISPI 310 STD. S.S. CLAMP & SHIELD. ASTM C564 RUBBER GASKET.	BLACK STEEL	ANSI B16.3 MALLEABLE IRON, CLASS 150	COLD PRESS MECHICAL JOINT	THREADED
WATER	ABOVE GROUND	X	Х			X		X		X	X		Х	Χ														
WATER	BELOW GROUND			X X		Χ			Х	Х		Х	Χ	Χ														
SANITARY, SEWER, DRAIN, WASTE	ABOVE GROUND																X	Х	Х		Х	X	X	Χ				
AND VENT	UNDER BUILDING														Х	Х		Χ	Х		Х	X	X	Χ				
AIR	ABOVE GROUND		Χ				Χ			X																		
AIR	BELOW GROUND			X			Χ		Х																			
VACUUM	INSIDE BUILDING														Х		Х			(2) (2)	X							
GAS	ABOVE GROUND																								Х	X	(4)	X

- ALL MATERIALS SHALL COMPLY WITH LATEST VERSION OF LISTED STANDARD. ALL IMPORTED MATERIAL SHALL BE CERTIFIED BY A DOMESTIC THIRD PARTY FOR COMPLIANCE WITH STANDARD.

(1) NO JOINTS PERMITTED UNDERGROUND
(2) PROVIDE PRESSURIZED DEEP SOCKET LONG SWEEP AND WYE TYPE PATTERN FITTINGS. NO SHORT SWEEP 90'S OR TEES PERMITTED.

(4) VIEGA MEGAPRESS FITTING COMPLYING WITH ASTM A420 OR ASME B16.3. EPDM SEAL FOR WATER APPLICATIONS, HNBR SEAL FOR GAS.

10 YEAR WARRANTY IN MATERIAL AND WORKMANSHIP. INSTALL PER MFR INSTALLATION INSTRUCTIONS.

INSULATION SCHEDULE												
SERVICE	LOCATION	INSULATION	JACKET		SIZE =>1.5"							
CW	GENERAL BUILDING	TYPE (1) RIGID F.G. OR ELAST. FOAM (10)	NR	<1.5 "	1/2"							
CW	IN WALLS	ELASTOMERIC FOAM	NR	1/2"	1/2"							
CW (PEX AND CPVC)	ALL	NR	NR	NR	NR							
HW, HWR	GENERAL BUILDING	RIGID F.G. OR ELAST. FOAM (10)	NR	1"	1 1/2"							
HW NOT ON RECIRC. LOOP	GENERAL BUILDING	RIGID F.G. OR ELAST. FOAM (10)	NR	1"	1"							
HW BRANCH	IN WALLS	ELASTOMERIC FOAM	NR	1/2"	1/2"							

NR = NOT REQUIRED

COLD WATER = HARD, SOFT, IRRIGATION, HOSE STATION, ETC. AT ALL PRESSURES.

HOT WATER = WATER SYSTEMS OPERATING AT TEMPERATURES GREATER THAN 105 DEG F AT ALL PRESSURES.

(1) WHERE INSULATION IS PROVIDED ON PIPING INSULATE METERS, VALVES, BACKFLOW PREVENTERS AND ALL INLINE EQUIPMENT.

(10) INSULATION NOT REQUIRED FOR EXPOSED FINAL PIPING CONNECTIONS TO FIXTURES.

LON

• P.C. SHALL PROVIDE PRODUCT SUBMITTALS TO ADMI FOR REVIEW AND APPROVAL IF PEX PIPE IS USED IN LIEU OF COPPER.

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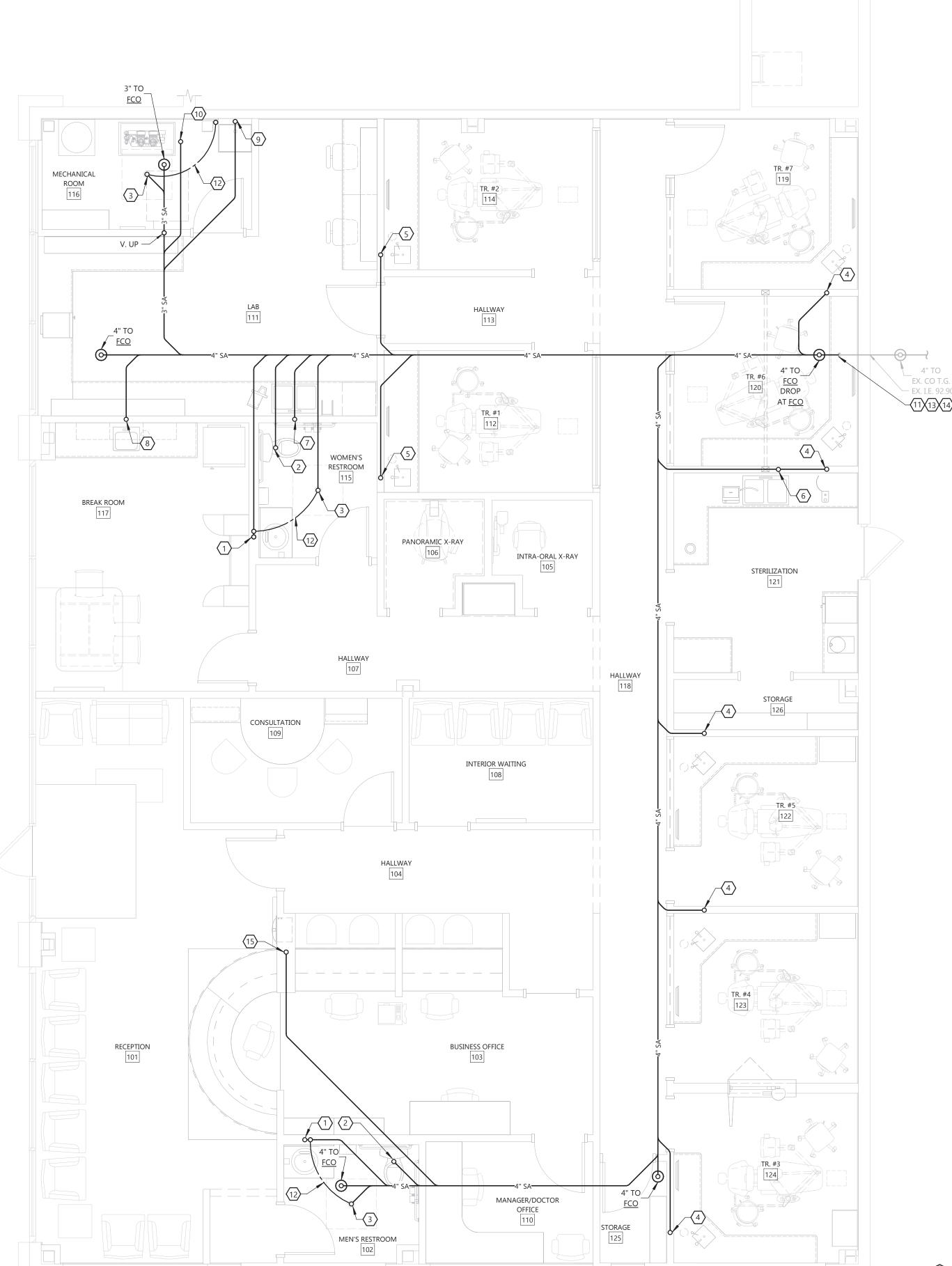
SHEET DATES

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STRUCTURAL COORDINATION NOTE:

• CLOSELY COORDINATE THE PLUMBING INSTALLATION WITH THE STRUCTURE, OTHER TRADES, AND CORRESPONDING OBSTRUCTIONS. SET INVERT ELEVATIONS OF ALL BRANCH LINES, LAYOUT EXACT RUNS, AND DETERMINE FINAL PITCH ADJUSTMENTS FOR UNDERFLOOR PIPING AS NECESSARY TO ACCOMMODATE FOUNDATION WALLS, PIERS, AND FOOTINGS. ADJUST PIPING AS NEEDED TO AVOID CONFLICT IN THE FIELD. CLOSELY COORDINATE ALL UNDERFLOOR PIPING LAYOUTS WITH THE GENERAL CONTRACTOR PRIOR TO CONSTRUCTION. VERIFY ALL PIPE ROUTING THROUGH OR BENEATH THE FOUNDATION WALLS WITH THE STRUCTURAL ENGINEER TO ENSURE PROPER PLACEMENT. DO NOT PIERCE, PENETRATE, OR OTHERWISE MODIFY ANY STRUCTURAL COMPONENTS WITHOUT PRIOR WRITTEN APPROVAL FROM THE STRUCTURAL ENGINEER.

SOIL TESTING NOTE:

• G.C. SHALL HIRE A SOIL TESTING AGENCY TO PERFORM A COMPACTION TEST OF LANDLORD DELIVERED PAD DURING & AFTER UNDERGROUND UTILITY INSTALLATION. G.C. SHALL NOT INSTALL UNDERGROUND UTILITIES IN LANDLORD DELIVERED PAD UNTIL COMPACTION REPORTS HAVE BEEN RECEIVED FROM THE LANDLORD, AND PROPER COMPACTION HAS BEEN MET. ALL REPORTS SHALL BE SUBMITTED TO ADMI.

DENTAL EQUIPMENT COORDINATION:

• PLUMBING CONTRACTOR SHALL VERIFY TYPE AND LOCATION OF ALL DENTAL EQUIPMENT, ROUGH-IN DIMENSIONS, AND REQUIRED PLUMBING CONNECTIONS. PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL ALL FLOOR FIXTURES, FLOOR DRAINS, HUB DRAINS, WATER CLOSETS, LAVATORIES AND FLOOR SINKS. DENTAL EQUIPMENT SUPPLIER SHALL FURNISH AND INSTALL ALL FIXTURES IDENTIFIED ON THEIR PLANS (WITH THE EXCEPTION OF THOSE IDENTIFIED ABOVE). DENTAL EQUIPMENT SUPPLIER SHALL INSTALL ALL DENTAL EQUIPMENT AND PROVIDE ALL FIXTURE TRAPS, SUPPLIES AND STOPS, ISOLATION VALVES, MIXING VALVES, ETC. AND MAKE FINAL CONNECTIONS TO DENTAL EQUIPMENT. PLUMBING CONTRACTOR SHALL MAKE FINAL CONNECTION TO AIR COMPRESSOR AND VACUUM SYSTEM. VERIFY ALL EQUIPMENT CONNECTIONS WITH ADMI AND DENTAL EQUIPMENT SUPPLIER PRIOR TO INSTALLATION. PROVIDE ADDITIONAL CONNECTIONS AS REQUIRED. COORDINATE ALL WORK ACCORDINGLY.

GENERAL NOTES:

• REFER TO SHEET U1.1 PRIOR TO ROUGH-IN OF FIXTURES.

• P.C. SHALL VERIFY RIM ELEVATION OF SANITARY MANHOLE UPSTREAM OF BUILDING SEWER CONNECTION TO THE MAIN IS BELOW FLOOR ELEVATION OF TENANT BUILDING. IF RIM IS ABOVE FLOOR ELEVATION, PROVIDE PRICE TO ADD A BACKWATER VALVE AND NOTIFY EXCEL ENGINEERING.

NO DOUBLE WYE OR DOUBLE SANITARY TEE SHALL BE PERMITTED IN HORIZONTAL POSITION FOR SANITARY DRAINAGE APPLICATION.

KEYNOTES:

- 1 ROUTE 2" UNDERFLOOR SANITARY UP TO LAVATORY (L-1).
- (2) ROUTE 4" UNDERFLOOR SANITARY UP TO WATER CLOSET (WC-1H).
- ROUTE 3" UNDERFLOOR SANITARY UP TO FLOOR DRAIN (<u>FD-1</u>). TAPER FLOOR TOWARDS DRAIN.
- $\overline{\langle 4 \rangle}$ route 2" underfloor sanitary up to treatment sink (<u>S-1</u>).
- $\langle 5 \rangle$ route 2" underfloor sanitary up to treatment sink (S-2).
- $\langle 6 \rangle$ Route 2" underfloor sanitary up to sterilization sink (<u>S-3</u>).
- $\overline{7}$ route 2" underfloor sanitary up to laboratory sink (<u>S-4</u>).
- $\langle 8 \rangle$ route 2" underfloor sanitary up to Breakroom sink (<u>S-5</u>).
- 9 Route 2" underfloor sanitary up to service sink (<u>SS-1</u>).
- $\langle 10 \rangle$ Route 3" underfloor sanitary up to a height of 18" for vacuum waste. PROVIDE UNDERFLOOR TRAP. SEE RAM-VAC DETAIL SHEET P1.2 FOR MORE INFORMATION.
- PROVIDE UNDERFLOOR SANITARY WASTE CONNECTIONS TO THE EXISTING SANITARY SERVICE (PROVIDED BY LANDLORD). FIELD VERIFY EXISTING UNDERGROUND PIPING LOCATION, DEPTH AND SIZE AT POINT OF NEW CONNECTION PRIOR TO INSTALLATION OF ANY UNDERGROUND PIPING.
- (12) TRAP PRIMER PIPING.
- (13) P.C. SHALL PROVIDE A RECORDING OF CAMERA INSPECTION OF ON-SITE SANITARY UTILITY SERVICE TO ADMI PRIOR TO COMMENCING NEW WORK INSTALLATION AND ONCE PROJECT IS COMPLETE. P.C. SHALL ESTABLISH THE EXACT LOCATION AND SIZE OF UTILITY SERVICES PRIOR TO BUILDING ROUGH-IN. COORDINATE LOCATION OF BUILDING SERVICE ENTRANCES AND SYSTEM PIPE ROUTING WITH UTILITY SERVICE MAINS ON SITE AND ADJUST FOR SPECIFIC SITE FEATURES AND FIELD CONDITIONS ENCOUNTERED. NOTIFY ADMI AND EXCEL ENGINEERING OF ANY ABNORMALITIES.
- PROVIDE FCO WITHIN 5' OF EXTERIOR WALL IF A CLEANOUT DOES NOT EXIST WITHIN 5' OF EXTERIOR WALL, EITHER INSIDE OR OUTSIDE.
- ROUTE 2" UNDERFLOOR SANITARY UP TO BOTTLE FILLING STATION (BFS-1).



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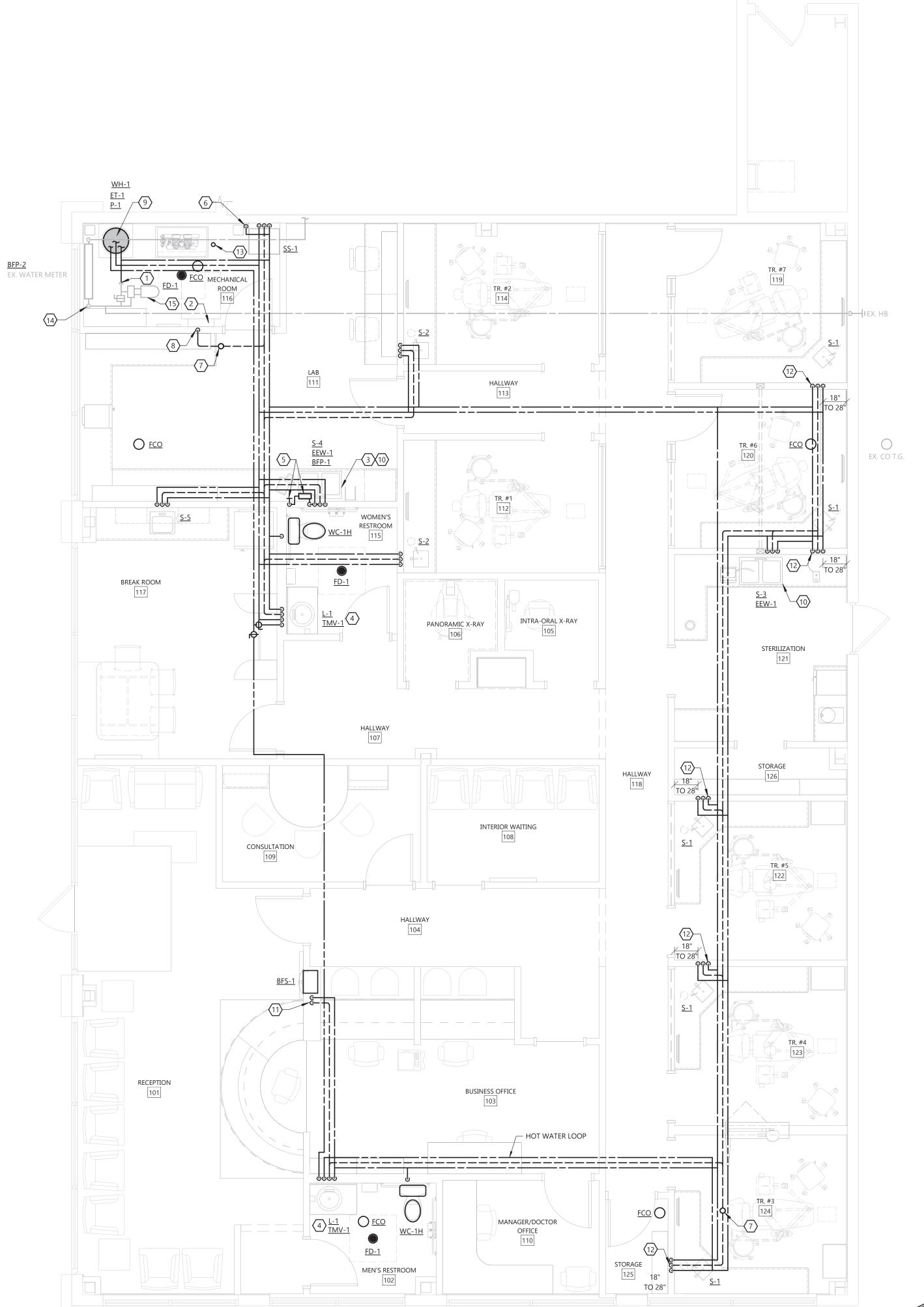
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DENTAL EQUIPMENT COORDINATION:

PLUMBING CONTRACTOR SHALL VERIFY TYPE AND LOCATION OF ALL DENTAL EQUIPMENT, ROUGH-IN DIMENSIONS, AND REQUIRED PLUMBING CONNECTIONS. PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL ALL FLOOR FIXTURES, FLOOR DRAINS, HUB DRAINS, WATER CLOSETS, LAVATORIES AND FLOOR SINKS. DENTAL EQUIPMENT SUPPLIER SHALL FURNISH AND INSTALL ALL FIXTURES IDENTIFIED ON THEIR PLANS (WITH THE EXCEPTION OF THOSE IDENTIFIED ABOVE). DENTAL EQUIPMENT SUPPLIER SHALL INSTALL ALL DENTAL EQUIPMENT AND PROVIDE ALL FIXTURE TRAPS, SUPPLIES AND STOPS, ISOLATION VALVES, MIXING VALVES, ETC. AND MAKE FINAL CONNECTIONS TO DENTAL EQUIPMENT. PLUMBING CONTRACTOR SHALL MAKE FINAL CONNECTION TO AIR COMPRESSOR AND VACUUM SYSTEM. VERIFY ALL EQUIPMENT CONNECTIONS WITH ADMI AND DENTAL EQUIPMENT SUPPLIER PRIOR TO INSTALLATION. PROVIDE ADDITIONAL CONNECTIONS AS REQUIRED. COORDINATE ALL WORK ACCORDINGLY.

GENERAL NOTES:

 PROVIDE ADDITIONAL BFP'S AS REQUIRED AT EQUIPMENT CONNECTIONS NOT SHOWN. FIELD VERIFY LOCATIONS AND REQUIREMENTS WITH EQUIPMENT CUT SHEETS.

 SINK FAUCETS SHALL BE INSTALLED WITH CONTROL AT THE LEFT, AND SPRAYER AT THE RIGHT OF THE SPOUT.

• REFER TO SHEET U1.1 PRIOR TO ROUGH-IN OF FIXTURES.

 PIPE SIZES PROVIDED BY LANDLORD SHALL MATCH ISOMETRIC OF THESE DOCUMENTS. FIELD VERIFY AND COORDINATE WORK.

 ALL PIPING IS TO BE CONCEALED. IF BUILDING CONSTRUCTION DOES NOT PERMIT CONCEALING PIPING, LOCATIONS AND ROUTING ARE TO BE APPROVED BY ARCHITECT/OWNER PRIOR TO INSTALLATION.

KEYNOTES:

- CONNECT NEW DOMESTIC WATER TO EXISTING DOMESTIC COLD WATER TERMINATION AS PROVIDED BY LANDLORD. FIELD VERIFY EXACT ROUTING FROM EXISTING METER TERMINATION. G.C. SHALL SET UP ACCOUNT WITH LOCAL UTILITY & INSTALL UTILITY METER. ACCOUNT SHALL BE TRANSFERRED TO ADMI AT A LATER DATE.
- COORDINATE WITH ELECTRICAL CONTRACTOR TO MAINTAIN CODE REQUIRED CLEARANCES AROUND ELECTRICAL EQUIPMENT.
- PLASTER TRAP ASSEMBLY FURNISHED BY SULLIVAN-SCHEIN AND INSTALLED BY THE PLUMBING CONTRACTOR ON THE SINK WASTE LINE. USE THREADED FITTINGS FOR DRAIN ASSEMBLY. SEE DETAIL 1/A5.4.
- ROUTE 1/2" CW FROM COLD WATER STOP UNDER LAVATORY TO AUTOMATIC TRAP PRIMER (TP-2) VALVE. ROUTE 1/2" CW FROM VALVE INTO WALL AND ROUTE UNDERFLOOR TO FLOOR DRAIN CONNECTIONS. SEE DETAIL 4/P3.0.
- PIPE 1/2" CW SUPPLY FROM SINK TO <u>BFP-1</u> INSIDE CABINET BELOW SINK. PIPE IN WALL FROM <u>BFP</u> TO 44" A.F.F. FOR CONNECTION TO MODEL TRIMMER. TERMINATE WITH 3/8" COMPRESSION STOP. INSTALL IN ACCORDANCE WITH LOCAL CODES. PROVIDE 2" HUB DRAIN (<u>HD</u>) INSIDE CABINET, DISCHARGE <u>BFP</u> TO <u>HD</u> VIA AIR GAP. ELIMINATE <u>BFP</u> AND <u>HD</u> IF PERMITTED BY AUTHORITY HAVING JURISDICTION. SEE DETAILS 2/A5.4 & 5/P3.0.
- 6 1/2" CW PIPING TO TRAP PRIMER (<u>TP-1</u>). ROUTE 1/2" CW PIPING DOWN WALL TO UNDERFLOOR. CONNECT PIPING UNDERFLOOR TO FLOOR DRAIN ASSEMBLY. SEE TRAP PRIMER DETAIL 5/P3.0.
- (7) EXTEND 3" VENT UP TO VTR. COORDINATE VTR LOCATION WITH MECHANICAL CONTRACTOR AND EXISTING EQUIPMENT SERVING ADJACENT TENANT SPACE. ADJUST VTR LOCATION AS REQUIRED TO MAINTAIN A MINIMUM OF 20' CLEARANCE.
- 8 ROUTE 3" VENT UP FROM SANITARY DRAIN SERVING CIRCUIT VENT AND CONNECT TO VENT PIPING ABOVE CEILING. VENT SHALL SERVE AS BUILDING MAIN VENT.
- 9 SEE WATER HEATER DETAIL 7/P3.0.
- 10) INSTALL <u>EEW-1</u> IN THIRD HOLE OF SINK. SEE EEW DETAIL 9/P3.0.
- PROVIDE HUB DRAIN CONNECTION AT 16" A.F.F. AND WATER VALVE 20" A.F.F. OUT OF <u>BFS-1</u> ROUGH IN CLEARANCE AREA. SEE BOTTLE FILLING STATION DETAIL 9/A5.0 FOR MORE INFORMATION.
- 12) EXTEND WATER SUPPLY PIPING MINIMUM 6" INSIDE CABINET.
 TERMINATE WITH SUPPLY STOP. EXPOSED PIPING SHALL BE COPPER.
- CONNECT RAM-VAC TO 3" TRAPPED WASTE FROM UNDERGROUND.
- PROVIDE BALL VALVE AT 5' A.F.F.. NO FIXTURES SHALL CONNECT TO CW UPSTREAM OF THIS VALVE. PROVIDE SIGN WHICH READS "WATER SHUTOFF".
- PRESSURE BOOSTER PUMP W/ EXPANSION TANK ABOVE CEILING PROVIDED BY LANDLORD PER MINIMUM 60 PSIG WORK LETTER REQUIREMENT. P.C. SHALL FIELD VERIFY OUTLET PRESSURE SETTING AND ADJUST AS REQUIRED TO MATCH WATER CALCULATIONS ON SHEET P2.0.



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PROJECT INFORMATION

BUILD-OUT FOR:

| DENTAL
HARRIMAN, NY 10926

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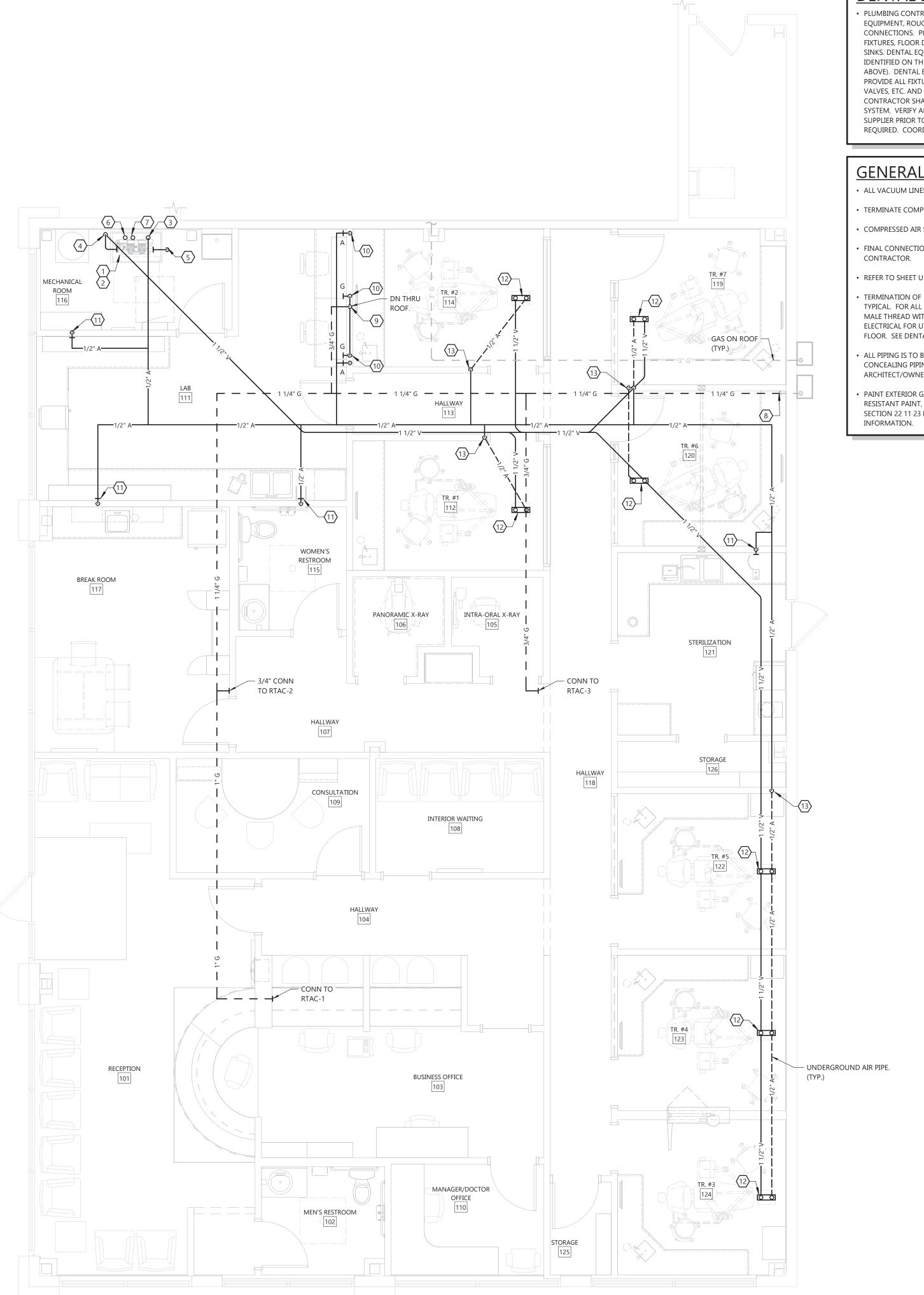
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FLOOR PLAN - AIR AND VACUUM PIPING

SCALE: 1/4" = 1'-0"

0' 4' 8'

DENTAL EQUIPMENT COORDINATION:

 PLUMBING CONTRACTOR SHALL VERIFY TYPE AND LOCATION OF ALL DENTAL EQUIPMENT, ROUGH-IN DIMENSIONS, AND REQUIRED PLUMBING CONNECTIONS. PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL ALL FLOOR FIXTURES, FLOOR DRAINS, HUB DRAINS, WATER CLOSETS, LAVATORIES AND FLOOR SINKS. DENTAL EQUIPMENT SUPPLIER SHALL FURNISH AND INSTALL ALL FIXTURES IDENTIFIED ON THEIR PLANS (WITH THE EXCEPTION OF THOSE IDENTIFIED ABOVE). DENTAL EQUIPMENT SUPPLIER SHALL INSTALL ALL DENTAL EQUIPMENT AND PROVIDE ALL FIXTURE TRAPS, SUPPLIES AND STOPS, ISOLATION VALVES, MIXING VALVES, ETC. AND MAKE FINAL CONNECTIONS TO DENTAL EQUIPMENT. PLUMBING CONTRACTOR SHALL MAKE FINAL CONNECTION TO AIR COMPRESSOR AND VACUUM SYSTEM. VERIFY ALL EQUIPMENT CONNECTIONS WITH ADMI AND DENTAL EQUIPMENT SUPPLIER PRIOR TO INSTALLATION. PROVIDE ADDITIONAL CONNECTIONS AS REQUIRED. COORDINATE ALL WORK ACCORDINGLY.

GENERAL NOTES:

- ALL VACUUM LINES SHALL BE INSTALLED BELOW SLAB UNLESS OTHERWISE NOTED.
- TERMINATE COMPRESSED AIR LINES PER DENTAL EQUIPMENT DETAILS.
- COMPRESSED AIR SHALL BE INSTALLED ABOVE CEILING UNLESS OTHERWISE NOTED.
- FINAL CONNECTIONS TO AIR COMPRESSOR AND VACUUM SYSTEM BY PLUMBING
- REFER TO SHEET U1.1 PRIOR TO ROUGH-IN OF FIXTURES.
- TERMINATION OF 1 1/2" VACUUM LINES TO BE REDUCED TO 1/2" FEMALE THREAD TYPICAL. FOR ALL UTILITY CENTERS, TERMINATION OF 1/2" AIR LINES TO BE 1/2" MALE THREAD WITH 3/8" COMPRESSION FITTING TYPICAL. ALL PLUMBING AND ELECTRICAL FOR UTILITY CENTER SHALL BE CONTAINED WITHIN 12" X 12" AREA IN FLOOR. SEE DENTAL EQUIPMENT DRAWINGS FOR FURTHER INFORMATION.
- ALL PIPING IS TO BE CONCEALED. IF BUILDING CONSTRUCTION DOES NOT PERMIT CONCEALING PIPING, LOCATIONS AND ROUTING ARE TO BE APPROVED BY ARCHITECT/OWNER PRIOR TO INSTALLATION.
- PAINT EXTERIOR GAS PIPING NOT LOCATED ON ROOF WITH TWO (2) COATS OF RUST RESISTANT PAINT, COLOR TO MATCH ADJACENT SURFACE. SEE SPECIFICATION SECTION 22 11 23 NATURAL GAS PIPING AND ACCESSORIES FOR MORE

GAS LOAD SUMMARY REQUIRED PRESSURE

Total 286.4 - GAS PRESSURE AT METER = 7" W.C.

KEYNOTES:

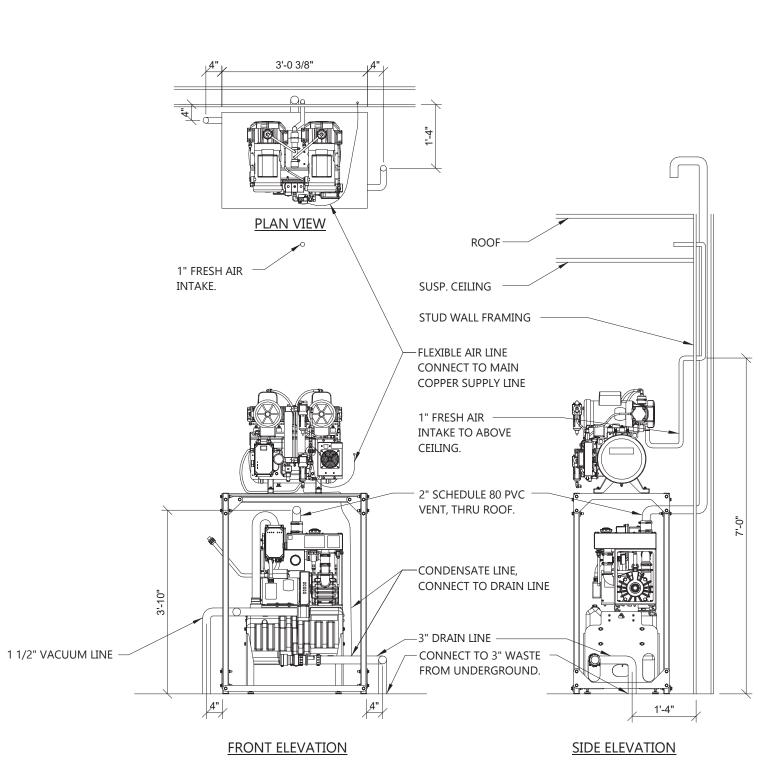
- $\overbrace{1}$ AIR COMPRESSOR TO BE FURNISHED AND INSTALLED BY THE OWNER'S EQUIPMENT PROVIDER.
- $\overline{2}$ VACUUM EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE OWNER'S EQUIPMENT PROVIDER. UNIT CONTAINS INTEGRAL AMALGAM SEPARATOR.
- $\overline{\langle 3 \rangle}$ Route 1/2" compressed air line above ceiling and transition to
- WITH TENANT AND EQUIPMENT MANUFACTURER PRIOR TO INSTALLATION. 4 route 1 1/2" vacuum piping down below floor for distribution.
- $\overline{\langle 5 \rangle}$ ROUTE VACUUM DISCHARGE TO ADJACENT 3" HUB DRAIN AS SHOWN ON SHEET P1.1. DISCHARGE IN ACCORDANCE WITH PLUMBING CODE. SEE RAM-VAC DETAIL FOR MORE INFORMATION.

HORIZONTAL FOR DISTRIBUTION. VERIFY LINE SIZE AND CAPACITY REQUIREMENTS

(6) CONNECT 2" PVC TO VACUUM HEADS AND ROUTE TO V.T.R.. TERMINATE ABOVE ROOF WITH GOOSENECK FITTING. DO NOT JOIN WITH SANITARY VENT. MAINTAIN ALL CODE REQUIRED CLEARANCES ON THE ROOF. COORDINATE VTR LOCATIONS

WITH MECHANICAL EQUIPMENT. SEE RAM-VAC DETAIL FOR MORE INFORMATION.

- 7 route 1" pvc up to above suspended ceiling for fresh air intake for air COMPRESSOR. INSTALL AT TIME OF DENTAL EQUIPMENT INSTALLATION. DO NOT JOIN WITH SANITARY VENT. SEE RAM-VAC DETAIL FOR MORE INFORMATION.
- $\overline{8}$ route gas piping on roof to termination provided by Landlord. COORDINATE METER INSTALLATION WITH UTILITY. METER PROVIDED BY UTILITY. G.C. SHALL SET UP ACCOUNT & COORDINATE METER INSTALLATION WITH LOCAL UTILITY. ACCOUNT SHALL BE TRANSFERRED TO ADMI AT A LATER DATE.
- (9) ROUTE NEW 3/4" GAS LINE DOWN IN WALL TO RECESSED SHUTOFF BOX WITH VALVE. PROVIDE "WATTS" APU-9 10"x10" SPRING FIT ACCESS PANEL. LABEL AS "GAS SHUTOFF". ROUTE GAS TO LAB WORK STATIONS AND PROVIDE 1/2" BRANCH LINES TO INDIVIDUAL LAB STATIONS. VERIFY ROUGH-IN LOCATION WITH TENANT REPRESENTATIVE. SEE LAB WORK STATION ELEVATION 6/P3.0. PROVIDE GAS PRESSURE REGULATOR AND EXTERIOR VENT IF REQUIRED PER OWNER FURNISHED EQUIPMENT (COORDINATE WITH OWNER AS REQUIRED).
- PROVIDE 1/2" GAS LINE AND 1/2" AIR LINE STUBBED OUT AT LAB WORK STATION ELEVATION (SEE DETAIL 6/P3.0). PLUMBING CONTRACTOR TO MAKE FINAL CONNECTIONS.
- 71) PROVIDE 1/2" COMPRESSED AIR CONNECTION AT 44" A.F.F. SEE DETAIL 1/MD AIR VALVE DETAIL FOR ADDITIONAL REQUIREMENTS.
- PROVIDE 1 1/2" VACUUM CONNECTION AND 1/2" COMPRESSED AIR CONNECTION TO UTILITY CENTER. STUB PIPING UP THROUGH FLOOR TO UTILITY CENTER ENCLOSURE FOR TERMINATION BY OWNER'S EQUIPMENT PROVIDER. SEE UTILTY CENTER DETAIL ON SHEET A5.2. PROVIDE CLOSED CELL INSULATION BETWEEN THE COPPER PIPING AND CONCRETE FLOOR.
- (13) ROUTE 1/2" COMPRESSED AIR PIPING DOWN THRU WALL AND BELOW FLOOR FOR DISTRIBUTION. PROVIDE CLOSED CELL INSULATION BETWEEN THE COPPER PIPING AND CONCRETE FLOOR.



RAM-VAC DETAIL



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COLLABORATION

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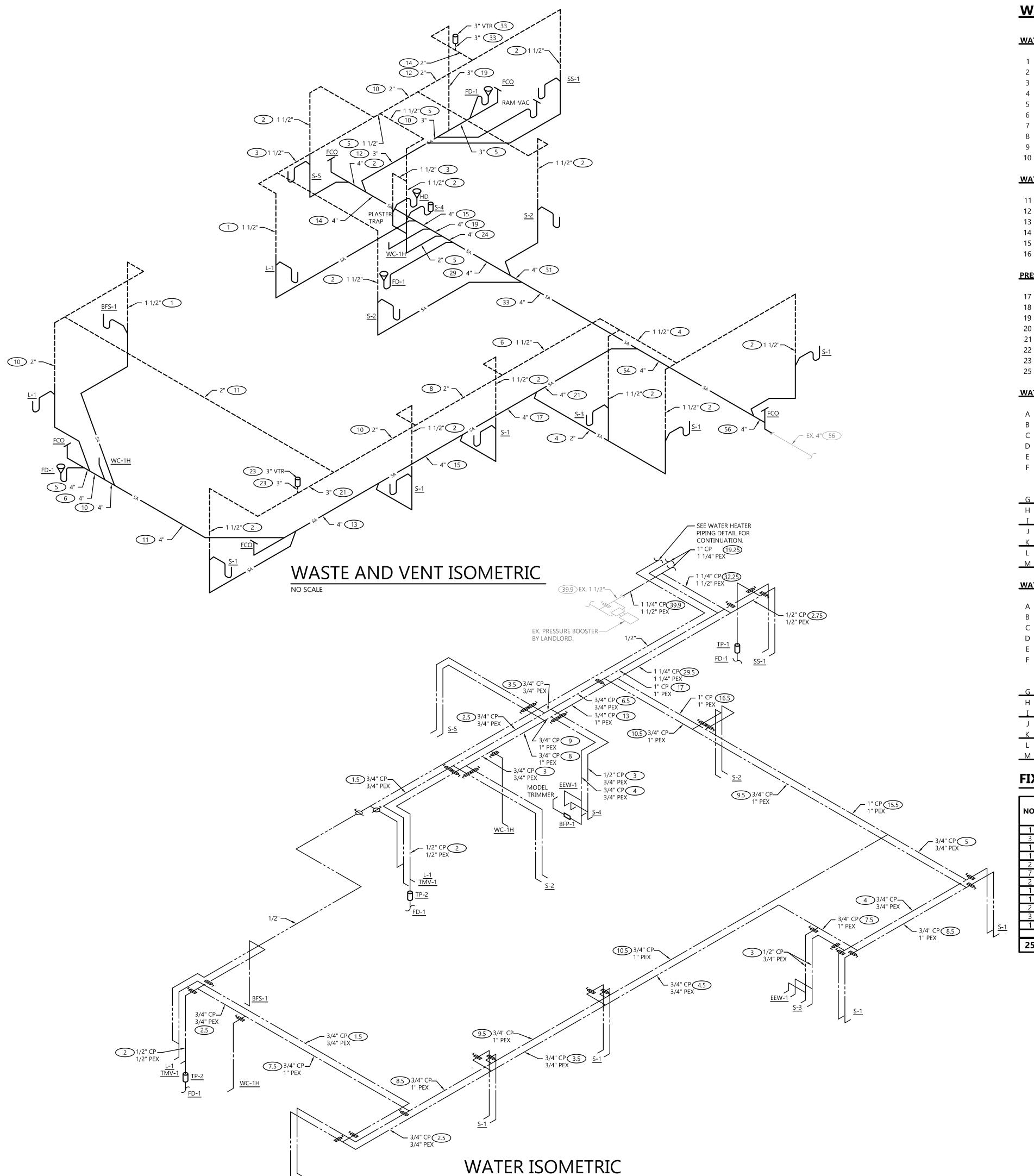
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PROFESSIONAL SEAL

SHEET DATES SHEET ISSUE JULY 12, 2023 REVISIONS

JOB NUMBER 230264900



WATER CALCULATIONS

WATER PRESSURE DATA

1	ASSUMED STATIC PRESSURE AT MAIN	60 PSIG
2	ASSUMED RESIDUAL PRESSURE AT MAIN	50 PSIG
3	ASSUMED RESIDUAL FLOW AT MAIN	1000 GPM
4	BUILDING FIXTURE UNITS	39.9 F.U.
5	PREDOMINATE FLUSH TYPE	TANK
6	CONTINUOUS FLOW GPM	⁰ GPM
7	BUILDING DEMAND	23.6 GPM
8	RESIDUAL PRESSURE AT BUILDING DEMAND	60.0 PSIG
9	SAFETY FACTOR	⁵ PSIG
10	PRESSURE AVAILABLE FOR DOMESTIC USE	55.0 PSIG

WATER SERVICE AND DISTRIBUTION SIZING DATA

11	ELEVATION OF RESIDUAL TEST HYDRANT	100.00 FEET
12	ELEVATION OF WATER METER	105.00 FEET
13	ELEVATION DIFFERENCE TEST HYDRANT TO METER	5.00 FEET
14	WATER METER SIZE	1INCHES
15	DEVELOPED LENGTH MAIN TO METER	35 FEET
16	WATER SERVICE SIZE	1 1/2 INCHES

PRESSURE AVAILABLE AFTER METER

17	PRESSURE DROP BETWEEN MAIN AND METER	2.19 psig/1
18	FRICTION PRESSURE LOSS BETWEEN MAIN AND METER	0.8 PSIG
19	ELEVATION PRESSURE LOSS BETWEEN MAIN AND METER	2.2 PSIG
20	SERVICE/METER PRESSURE LOSS	20 PSIG
21	BACKFLOW PREVENTER PRESSURE LOSS	14 PSIG
22	PRESSURE AVAILABLE AFTER METER	18.4 PSIG
23	ADDITIONAL PRESSURE DUE TO BOOSTER PUMP	50 PSIG
25	AVAILABLE BUILDING WATER PRESSURE	68.4 PSIG

WATER DISTRIBUTION SIZING - COLD WATER

Α	AVAILABLE BUILDING WATER PRESSURE	68.4 PSIG							
В	START POINT TAG (SEE ISOMETRIC FOR TAG LOCATION)	METER				А			
C	DIST. PREVIOUS START POINT TO THIS START POINT			WS	FU	0 FT		WS	FU
D	UNIFORM LOSS PREV. START POINT TO THIS START POINT			Copper	PEX	32.93 PSIG/100'		Copper	PEX
Ε	PIPE PRESSURE DROP FROM METER TO START POINT		Pipe	Flush	Flush	0.0 PSIG		Flush	Flush
F	CONTROLLING FIXTURE: ID	EEW-1	size	tank	tank	WC-1H		tank	tank
	ROOM NAME & NO.:	STERILIZATION 121	1/2	5	3	MEN'S REST. 102	1/2	5	3
	PRESSURE REQUIRED	30 PSIG	3/4	16.5	6	25 PSIG	3/4	16.5	6
G	ELEV. DIFF. BETW. METER AND CONTROLLING FIXTURE	3 FEET	1	31	20.5	3 FEET	1	31	20.5
Н	PRESSURE LOSS DUE TO WATER SOFTENER	0 PSIG	1 1/4	58	34	<mark>0</mark> PSIG	1 1/4	58	34
I	PRESSURE LOSS DUE TO MIXING VALVE	<mark>0</mark> PSIG	1 1/2	107	55	<mark>0</mark> PSIG	1 1/2	107	55
J	PRESSURE AVAILABLE FOR PIPING PRESSURE DROP	37.1PSIG	2	260	135	42.1PSIG	2	260	135
<u>K</u>	DEVELOPED LENGTH START PT. TO CONTR. FIXTURE	75 FEET	2 1/2	469		130 FEET	2 1/2	469	
L	EQUIVALENT LENGTH START PT. TO CONTR. FIXTURE	113 FEET	3	752		195 FEET	3	752	
M	PRESSURE AVAILABLE FOR UNIFORM LOSS	32.93 PSIG/100'	4	1792		21.56 PSIG/100'	4	1792	

WATER DISTRIBUTION SIZING - HOT WATER

Α	AVAILABLE BUILDING WATER PRESSURE	68.4 PSIG							
В	START POINT TAG (SEE ISOMETRIC FOR TAG LOCATION)	METER				Α			
C	DIST. PREVIOUS START POINT TO THIS START POINT			WS	FU	80 FT		WS	SFU
D	UNIFORM LOSS PREV. START POINT TO THIS START POINT			Copper	PEX	27.44 PSIG/100'		Copper	PEX
Е	PIPE PRESSURE DROP FROM METER TO START POINT		Pipe	Flush	Flush	22.0 PSIG		Flush	Flush
F	CONTROLLING FIXTURE: ID	EEW-1	size	tank	tank	L-1		tank	tank
	ROOM NAME & NO.:	STERILIZATION 121	1/2	5	3	MEN'S REST. 102	1/2	5	3
	PRESSURE REQUIRED	30 PSIG	3/4	16.5	6	8 PSIG	3/4	16.5	6
G	ELEV. DIFF. BETW. METER AND CONTROLLING FIXTURE	3 FEET	1	31	20.5	3 FEET	1	31	20.5
Н	PRESSURE LOSS DUE TO WATER SOFTENER	0 PSIG	1 1/4	58	34	0 PSIG	1 1/4	58	34
I	PRESSURE LOSS DUE TO MIXING VALVE	0 PSIG	1 1/2	107	55	8 PSIG	1 1/2	107	55
J	PRESSURE AVAILABLE FOR PIPING PRESSURE DROP	37.1PSIG	2	260	135	29.1PSIG	2	260	135
K	DEVELOPED LENGTH START PT. TO CONTR. FIXTURE	90 FEET	2 1/2	469		95 FEET	2 1/2	469	
L	EQUIVALENT LENGTH START PT. TO CONTR. FIXTURE	135 FEET	3	752		143 FEET	3	752	
_M	PRESSURE AVAILABLE FOR UNIFORM LOSS	27.44 PSIG/100'	4	1792		20.42 PSIG/100'	4	1792	

FIXTURE UNITS

			WASTE		C	OLD WAT	ΓER	ŀ	TAW TOP	TOTAL WATER		
NO.	FIXTURE	UNITS	TOTAL	TRAP SIZE	UNITS	TOTAL	BRANCH SIZE	UNITS	TOTAL	BRANCH SIZE	UNITS	TOTAL
1	BOTTLING STATION	1	1	1 1/4"	0.5	0.5	1/2"	·	-	-	0.5	0.5
3	FLOOR DRAIN- 3"	5	15	3"	-	-	-	·	-	-	-	
1	HUB OUTLET- 2"	3	3	2"	-	-	-	Ī	-	-	-	
1	RAM-VAC	5	5	3"	-	-	-	Ī	-	-	-	
2	LAV	1	2	1 1/4"	1.5	3	1/2"	1.5	3	1/2"	2	4
7	SINK- S-1 & 2	2	14	1 1/2"	1	7	1/2"	1	7	1/2"	1.5	10.
2	SINK- S-3 & 4	2	4	1 1/2"	3	6	1/2"	3	6	1/2"	4	8
1	SINK- S-5	2	2	1 1/2"	1	1	1/2"	1	1	1/2"	1.4	1.4
1	SINK- SERVICE- 2"	2	2	2"	2.25	2.25	1/2"	2.25	2.25	1/2"	3	
2	WATER CLO- TANK	4	8	-	5	10	1/2"	-	-	-	5	10
3	TRAP PRIMER	_	-	-	0.5	1.5	1/2"	•	-	-	0.5	1.5
1	MODEL TRIMMER	-	-	-	1	1	1/2"	_	-	-	1	
25	TOTAL		56			32.25			19.25			39.9

GENERAL NOTES:

•SEE UNDERGROUND PLAN AND FIXTURE UNIT SCHEDULE FOR RUNOUT TRAP SIZE TO FIXTURE.

•SEE FIXTURE UNIT SCHEDULE THIS SHEET FOR RUNOUT PIPING SIZE TO FIXTURE.

•IF PEX IS USED IN LIEU OF COPPER, P.C. SHALL PROVIDE COMPLETE MATERIAL SUBMITTALS (PIPE, FITTINGS, ETC.) TO ASPEN DENTAL MANAGEMENT INC. FOR APPROVAL PRIOR TO INSTALLATION.

•AIR ADMITTANCE VALVES NOT PERMITTED (I.E. STUDOR VENT).

 P.C. SHALL PERFORM FIRE HYDRANT FLOW TEST TO VERIFY WATER PRESSURE INFORMATION PRIOR TO INSTALLATION OF ANY WATER PIPING. PROVIDE FLOW TEST INFORMATION TO EXCEL ENGINEERING AND ASPEN DENTAL MANAGEMENT INC. FOR EVALUATION.



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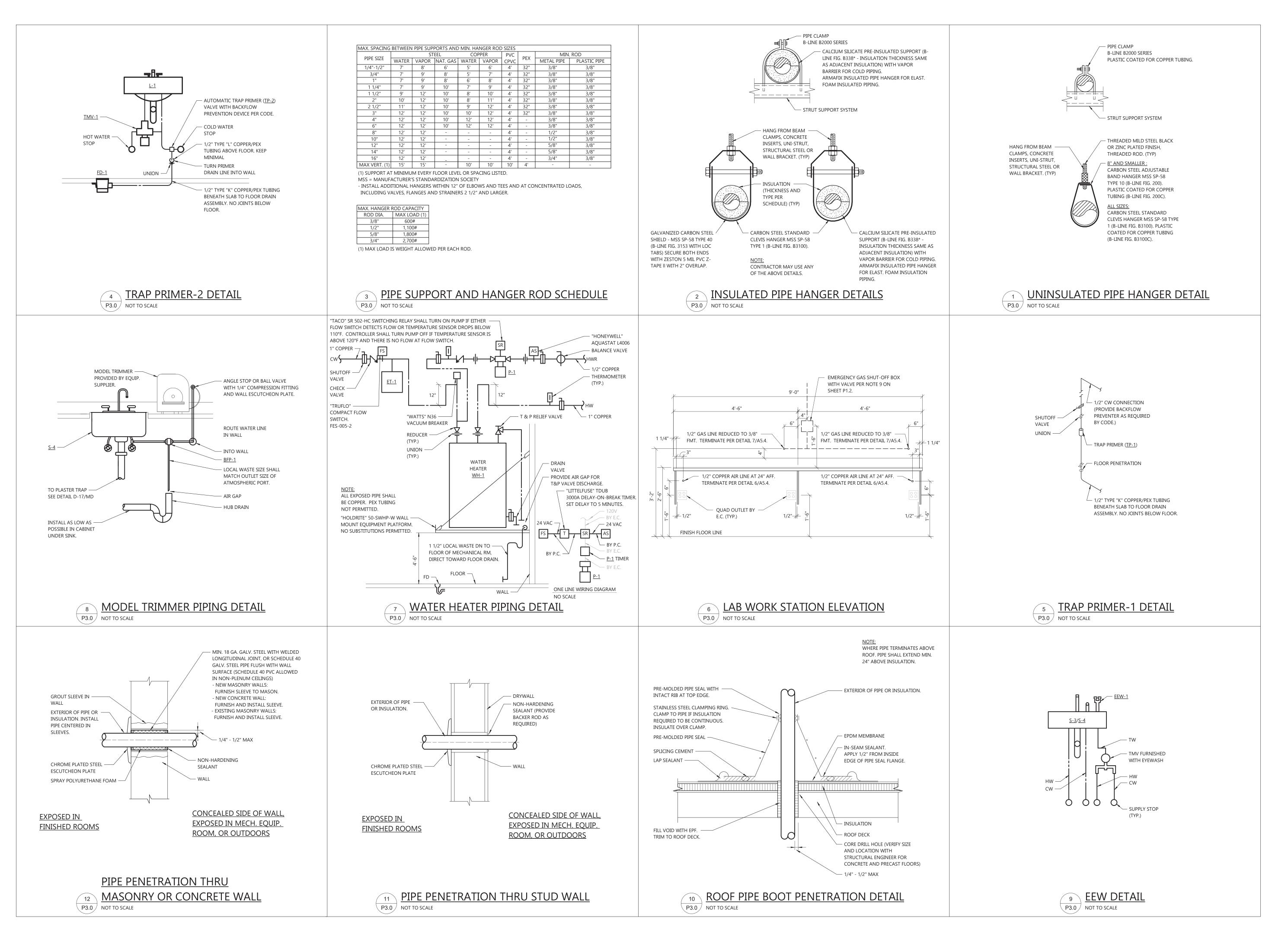
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PROJECT INFORMATION

ASPEN DENTAL

SEY LANE • HARRIMAN, NY 1092

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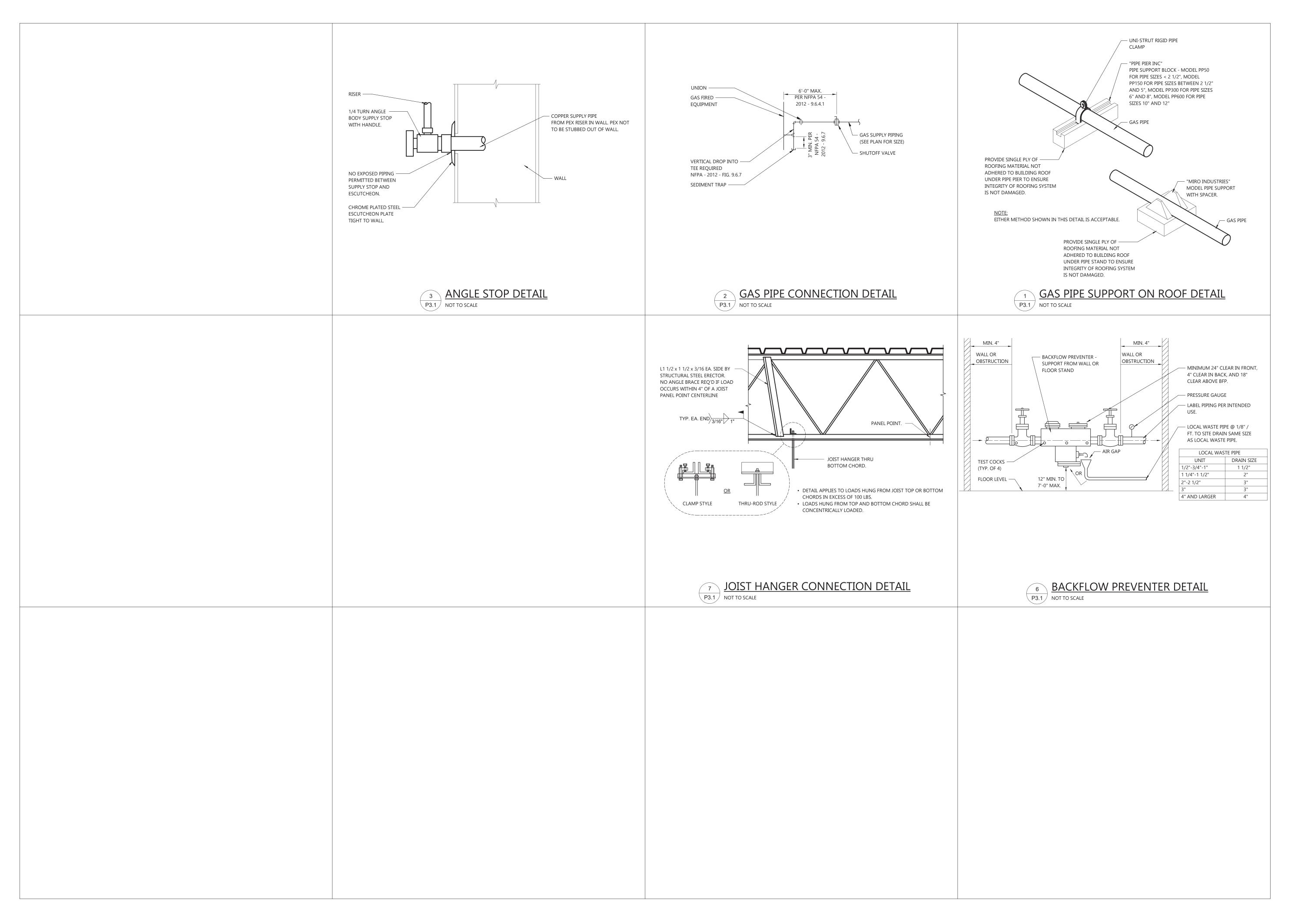
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PROPOSED BUILD-OUT FOR:

ASPEN DENTAL

ASPEN DENTAL

6 LOCEY LANE • HARRIMAN, NY 10926

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P3.1

TR	AP	PRI	MER	SCHEDU	JLE	(T.P.)

NO.	LOCATION	CONN. SIZE	MODEL	REMARKS	SUPPLIED BY
1	MECH.	1/2"	P2-500	"PRECISION PLUMBING PRODUCTS"	TENANT G.C.
2	TOILET	3/8"	PRO1-ULP500	"PRECISION PLUMBING PRODUCTS"	TENANT G.C.

WATER CLOSET SCHEDULE (W.C.)

		FLUCIA			BOWL		FLUCITYATYE	FLUSH VALVE/		
NO.	MT'G	FLUSH TYPE	GPF	MFR/MODEL	RIM HT. PIPINO		FLUSH VALVE TYPE	SUPPLY STOP	SEAT	SUPPLIED BY
		IIFL		IVIFK/IVIODEL	A.F.F.	CONNECTION	IIFL	MFR/MODEL		
1H	FLOOR	TANK	1.28	MANSFIELD 137-3173	16-1/2"	HANDLE STOP	-	BRASSCRAFT OCR1912AZX C	CHURCH 9400SSCT	TENANT P.C.

⁻ ACCEPTABLE MANUFACTURERS:

- WATER SAVING 1.6 GPF, SIPHON JET ELONGATED VITREOUS CHINA WATER CLOSET BOWL WITH WHITE SOLID PLASTIC OPEN FRONT SEAT WITH SELF-SUSTAINING CHECK HINGE. - TANK WATER CLOSETS: CLOSE-COUPLED WITH VITREOUS CHINA TANK AND COVER, FLUSH ASSEMBLY AND ANGLE SUPPLY.

- FLOOR SET WATER CLOSETS WITH BOLT CAPS. - CONTROLS FOR ADA ACCESSIBLE FIXTURES SHALL BE ON THE OPEN SIDE.

CLEANOUT SCHEDULE

CLLA	11001 SCHILDOLL								
			BODY	PLUG	Α	CCESS COVER			
SYM.	LOCATION	SIZES			MAT'L	MISC.	FIGURE	REMARKS	SUPPLIED BY
FCO	FINISHED ROOMS W/O CARPET (1)	2" - 6"	C.I.	PVC	N.B.	-	Z-1400	"ZURN"	TENANT G.C.
FCO	FINISHED ROOMS WITH CARPET (1)	2" - 6"	C.I.	PVC	N.B.	CARPET MARKER	Z-1400-CM	"ZURN"	TENANT G.C.

- RECESSED TAPER THREAD PLUG WITH SLOTTED RECESS.

(1) FINISHED ROOMS ARE ROOMS WITH CARPET OR FLOOR TILE OR ROOMS ACCESSIBLE BY A DOOR LESS THAN 42" WIDE.

DF	DRAIN SCHEDULE													
			OUTLET	BODY	STRAINER/	TOP								
SYM	TYPE	APPLICATION	SIZE	MAT'L	MAT'L	SIZE	MISC.	MODEL	REMARKS	SUPPLIED BY				
FD-1	FLOOR	PEDESTRIAN TRAFFIC	2"-3" (1)	CAST IRON	N. B. "TYPE S"	5" DIA	TRAP PRIMER CONN.	ZN-415-S-DP-P	"ZURN" (2)	TENANT G.C.				
HD	HUB DRAIN	INDIRECT WASTE	(1)	-	-	-	STUB 2" A.F.F.	-	-	TENANT G.C.				

(1) AS NOTED ON DRAWINGS

(2) DECORATIVE POLISHED TOP NOT REQUIRED IN MECHANICAL ROOM.

BAC	BACKFLOW PREVENTER / VACUUM BREAKER SCHEDULE (B.F.P.)													
SYM.	LOC.	GPM	MAX. P.D. (PSI)	SIZE	ТҮРЕ	MAX. HAZ.	BFP/VB PRESS.	APPLICATION	ASSE STD.	MODEL	REMARKS	SUPPLIED BY		
BFP-1	LAB	2.0	4.0	1/2"	BFP W/ INT. ATM. VENT	LOW	CONTIN.	MODEL TRIMMER	1012	9D (1)	"WATTS"	TENANT G.C.		
BFP-2	МЕСН	24.0	13.0	1 1/4"	REDUCED PRESS. PRINCIPLE BFP	HIGH	CONTIN.	WATER SERVICE	1013	LF009	"WATTS"	TENANT G.C.		

⁻ ACCEPTABLE MANUFACTURERS: WATTS, CONBRACO, AMES.

(1) P.C. SHALL VERIFY SCHEDULED BFP IS ADEQUATE FOR HAZARD LEVEL WITH PLUMBING INSPECTOR. USE SCHEDULED BFP

UNLESS PLUMBING INSPECTOR CLASSIFIES AS HIGHER OR LOWER HAZARD. P.C. SHALL INSTALL BFP IN ACCORDANCE WITH MFRS

RECOMMENDATIONS AND CODE CLEARANCE REQUIREMENTS. RELOCATE/REROUTE AS REQUIRED IF LOCATION SHOWN ON PLAN DOES NOT MEET REQUIREMENTS. PROVIDE ALL NECESSARY DRAIN PIPING, ETC. FOR A COMPLETE INSTALLATION.

ELECTRICAL/STARTER/DISCONNECT SCHEDULE

			FLFC	TRICAL D	ΔΤΔ			STAF	TFR		DISCON	INFCT			
SYM.	LOCATION	НР	KW	AMPS	VOLT	PH.	TYPE	LOCATION	FURN. BY	ACCESS- ORIES	DIS- CONNECT	FURN. BY	REMARKS	SUPPLIED BY	
BFS-1	SEE DWG	-	-	5.0	120	1	INTEG	INTEGRAL	EM	-	NR	-	REC.	TENANT G.C.	
WH-1	MECH.	-	3.0	-	208	1	INTEG	INTEGRAL	EM	-	R	EC	-	TENANT G.C.	
P-1	MECH.	-	0.04	-	120	1	(1)	MECH RM	PC	-	NR	-	-	TENANT G.C.	

REMARKS: REC.=RECEPTACLE

STARTER TYPE:

INTEG.= INTEGRAL: PROVIDED INTEGRAL WITH EQUIPMENT.
RELAY= UL LISTED MOTOR RATED RELAY WITH SEPARATE ENTRANCES FOR INPUT AND OUTPUT CONTACTS, AND LED STATUS INDICATOR.

FURNISHED BY: EM = EQUIPMENT MANUFACTURER DISCONNECT: NR= NOT REQUIRED PC = PLUMBING CONTRACTOR R = REQUIRED

EC = ELECTRICAL CONTRACTOR HC = HEATING CONTRACTOR

- ACCEPTABLE MANUFACTURERS: ALLEN BRADLEY, CUTLER HAMMER, SQUARE D, GENERAL ELECTRIC.

- VERIFY VOLTAGE AND PHASE WITH ELECTRICAL CONTRACTOR BEFORE ORDERING EQUIPMENT. (1) SWITCHING RELAY AND TIMER. SEE ONE LINE WIRING DIAGRAM ON SHEET P3.0 FOR ADDITIONAL INFORMATION.

BOTTLE FILLING STATION SCHEDULE (B.F.S.)												
NO.	RECESS	CAP. (GPH)	BARRIER FREE	NUMBER OF BASINS	CONTROL	RATED WATTS	FULL LOAD AMPS	MODEL	REMARKS	SUPPLIED BY		
1	YES	8.0	YES	-	SENSOR	370	5.0	LZWSM8K	ELKAY	TENANT G.C.		

- PROVIDE WITH 1-1/4" WITH C.O. PLUG (MCGUIRE 8872), AND ANGLE WATER STOP WITH HANDLE (BRASSCRAFT OCR19ZX C).

- CAPACITY BASED ON 50 DEGREE F WATER IN AMBIENT TEMPERATURE OF 90 DEGREES F.

NATER HEATER SCHEDULE (M	<i>I</i> .H
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NO.	LOC.	ТҮРЕ	MOUNTING	SIZE DIA. X HT.	COMM. TANK WARR.	KW	VOLTAGE/ PHASE	AMPS	REC. GPH	TANK SIZE GAL.	MODEL	REMARKS	SUPPLIED BY
1	MECH	COMM.	PLATFORM	17.75" x 45.5"	3 YR (2)	3.0/3.0 (1)	208/1	14.4	12.0	30	ELD30	"RHEEM"	TENANT G.C.

- RECOVERY BASED ON 100 DEGREE F TEMPERATURE RISE, GLASS LINING, 100 PSIG T&P RELIEF VALVE SETTING, 150 PSIG WORKING PRESSURE.

(1) ELEMENTS WIRED FOR NON-SIMULTANEOUS OPERATION

(2) P.C. SHALL BE RESPONSIBLE FOR REGISTRATION OF WATER HEATER FOR WARRANTY PURPOSES.

CI	CIRCULATING PUMP SCHEDULE (P.)													
NO.	SERVICE	FLUID TEMP F	GPM	HEAD (FT)	RPM	MOTOR H.P.	TYPE	MODEL	REMARKS	SUPPLIED BY				
1	HOT WATER CIRC	120	3	5	2800	39 WATT	IN-LINE	NBF-8	"B & G" (1)	TENANT G.C.				

(1) PROVIDE "INTERMATIC" MODEL ST01 DIGITAL 7-DAY SWITCH TIMER TO CONTROL PUMP OPERATION.

SET TIMER TO PROVIDE POWER TO PUMP 30 MINUTES BEFORE OFFICE OPENING, AND REMOVE POWER 60 MINUTES AFTER OFFICE CLOSING.

EMERGENCY EYE WASH SCHEDULE (E.E.W.)

NO.	MOUNTING	THERMOSTATIC MIXING VALVE	OPERATION	BACKFLOW PREVENTER	VALVE & TRIM MAT'L	MODEL	REMARKS	SUPPLIED BY
1	SINK	(1)	HAND	(2)	BRASS	EW1022BP-TMV	WATER SAVER	TENANT G.C.

- DECK MOUNTED EMERGENCY EYEWASH WITH DUST COVERS, HAND OPERATED, 8" UNDERCOUNTER HOSE.

(1) AP3600 TMV FURNISHED BY P.C.. TMV MEETS ANSI Z358.1. (2) IN LINE DUAL CHECK BACKFLOW PREVENTER FURNISHED BY MANUFACTURER.

E	EXPANSION TANK SCHEDULE (E.T.)													
ı	NO.	MOUNTING	TANK TYPE	CONN. SIZE	TANK CAP. (GAL.)	ACCEPT. CAPACITY (GAL.)	PRECHARGE PRESSURE (PSIG)	WORKING PRESS (PSIG)	DIA.	HEIGHT	WEIGHT FILLED (LBS.)	MODEL	REMARKS	SUPPLIED BY
	1	DIDE	DIVDHDVCM	2 //"	2.1	1.0	(1)	150	0"	12"	16	\\/LI &	"ELEVCON"	TENIANT G.C

(1) VERIFY WATER PRESSURE PRIOR TO INSTALLATION. SET PRECHARGE PRESSURE TO STATIC PRESSURE IN STREET.

LAVATORY SCHEDULE (L.)

'			. 50.		- ()							
			OVERALL	EALICET	FAUCET	RALL FAUCET LAV DRAIN (1) SUPPLY STOP						
	NO.	MOUNTING	SIZE	CENTERS		TYPE	MODEL	TYPE	MODEL	TYPE	MODEL	SUPPLIED BY
	1	(2)	(2)	4"	(2)	(2)	(2)	HANDLE	BRASSCRAFT OCR1912AZX C	WRIST BLADE	AM. STD. 7500.175	TENANT G.C.

- ACCEPTABLE MANUFACTURERS:

-DRAINS AND TRAPS: KOHLER, DEARBORN, KEENEY, MCGUIRE, BRASSCRAFT.

-STOPS AND SUPPLIES: KOHLER, BRASSCRAFT, DEARBORN, KEENEY, MCGUIRE. -CARRIERS AND SUPPORTS: ANCON, JOSAM, SMITH, WADE, ZURN.

- ALL MODEL NUMBERS BASED ON KOHLER UNLESS INDICATED OTHERWISE. - VITREOUS CHINA LAVS, 1-1/4" 17 GAUGE "P" TRAP WITH CLEANOUT PLUG (MCGUIRE 8872), BUSHING ON END OF OUTLET TUBE, WALL FLANGE.

- WALL HUNG LAVS WITH BACKSPLASH.

- FAUCETS WITH VANDAL RESISTANT AERATOR. (1) PROVIDE TRUEBRO MODEL #102 INSULATION KIT.

(2) BASIN, STRAINER AND TAILPIECE FURNISHED BY MILLWORK CONTRACTOR, INSTALLED BY P.C..

SEF	SERVICE SINK SCHEDULE (S.S.)												
NO.	MOUNTING		BASIN	1									
		MAT'L	SIZE	RIM GUARD	MODEL	PIPING EXPOSURE	BACKFLOW PREVENTER	MFR/MODEL	SUPPLIED BY				
1	WALL	POLYPROPYLENE	23x25x15	-	MUSTEE 14CP	DECK MOUNT	WATTS N9-CD (2)	(1)	TENANT G.C.				

(1) FAUCET, SUPPLY HOSES AND P-TRAP FURNISHED WITH BASIN BY MANUFACTURER. (2) ASSE 1052 LISTED.

SINK SCHEDULE (S.)

2114	MAR SCHILDGE (S.)											
NO.			SINK									
	COMPARTMENT		OVERALL	MODEL	NO.	SPOUT		HANDLE	FINISH	SPRAY	MODEL	SUPPLIED BY
	NO.	DEPTH	SIZE	IVIODEL	HOLES	REACH HEIGHT		HANDLE	LIMISH	SPRAT	IVIODEL	
1	1	(4)	(4)	(4)	2	5"	10"	SINGLE	CHROME	NO	DELTA 1903-DST	TENANT G.C.
2	1	(4)	(4)	(4)	2	5"	10"	SINGLE	CHROME	NO	DELTA 1903-DST	TENANT G.C.
3	2	(4)	(4)	(4)	3	8"	8.875"	SINGLE	CHROME	YES	KOHLER K-7508	TENANT G.C.
4	2	(4)	(4)	(4)	3	8"	8.875"	SINGLE	CHROME	YES	KOHLER K-7508 (1)	TENANT G.C.
5	1	(4)	(4)	(4)	2	5"	10"	SINGLE	CHROME	NO	DELTA 1903-DST (3)	TENANT G.C.

- ACCEPTABLE MANUFACTURERS:

-STOPS AND SUPPLIES: KOHLER, BRASSCRAFT, DEARBORN, KEENEY, MCGUIRE.

-DRAINS AND TRAPS: KOHLER, DEARBORN, KEENEY, MCGUIRE, BRASSCRAFT. - SELF-RIMMING 20 GA. 302 S.S. SINK, ANGLE SUPPLIES WITH HANDLE STOPS (BRASSCRAFT OCR1912AZX C. PROVIDE EACH COMPARTMENT WITH STAINLESS STEEL STRAINER AND TAILPIECE (ELKAY LK-35B), AND 1-1/2" 17 GAUGE "P" TRAP W/ CLEANOUT (MCGUIRE 8912). - VERIFY SINK CUTOUT SIZE WILL FIT IN COUNTERTOP WITH CABINET SHOP DRAWINGS PRIOR TO ORDERING.

(1) INSTALL PLASTER TRAP FURNISHED BY SULLIVAN-SCHEIN.

(3) PROVIDE TRUEBRO MODEL #102 INSULATION KIT. (4) BASIN FURNISHED BY MILLWORK CONTRACTOR, INSTALLED BY P.C..

TH	THERMOSTATIC MIXING VALVE SCHEDULE (T.M.V.)											
NO.	SERVICE	INLETS	OUTLET	ACT. P.D. (PSI)	MAX. FLOW (GPM)	ACTUAL FLOW (GPM)	TEMP. SETTING (°F)	MODEL	REMARKS	SUPPLIED		
1	LAVATORY	3/8"	3/8"	25	4.0	1.5	105	LFUSG-B-M2	"WATTS" (1)	TENANT G		

- ACCEPTABLE MANUFACTURERS: SYMMONS, WATTS, POWERS, ZURN. - PROVIDE WITH CHECK STOPS, REMOVABLE CARTRIDGE WITH STRAINER, STAINLESS STEEL PISTON, AND SOLID WAX HYDRAULIC PRINCIPLE THERMOSTAT. (1) LISTED FOR ASSE 1070 USE.

Always a Better Plan 100 Camelot Drive Fond du Lac, WI 54935 920-926-9800

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COLLABORATION

PROJECT INFORMATION

PROFESSIONAL SEAL

SHEET DATES SHEET ISSUE JULY 12, 2023 REVISIONS

> **JOB NUMBER** 230264900

SHEET NUMBER

PLUMBING SCHEDULES

⁻SUPPLY STOPS: BRASSCRAFT, CHICAGO, KOHLER, DEARBORN, KEENEY, MCGUIRE.