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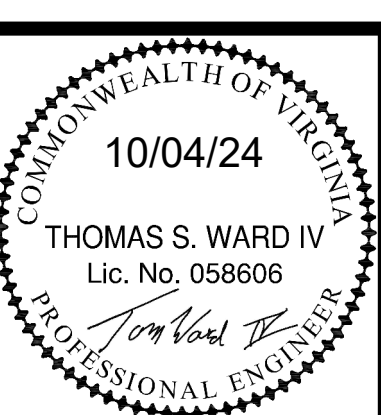
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SECOND FLOOR OBSTETRICS TRIAGE RENOVATION FOR
LEWIS GALE MEDICAL CENTER
 1900 ELECTRIC ROAD SALEM, VA 24153

DRAWN BY: **ARR**
 CHECKED BY: **JDW**

PLUMBING GENERAL NOTES, SCHEDULES AND DETAILS



COMMISSION No.
24013
 SHEET
P-001
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PLUMBING FIXTURE SCHEDULE

TYPE	FIXTURE DESCRIPTION
SK-1	<p>DESCRIPTION: SINK / LAVATORY, WALL MOUNTED, 20" X 18" VITREOUS CHINA, FRONT OVERFLOW, CRANE HARWICH® US1412-20S.</p> <p>FAUCET: 3-HOLE DRILLINGS, 8" GOOSENECK FAUCET, 4" VANDAL RESISTANT WRIST BLADE HANDLES, CERAMIC DISC CARTRIDGE, 1.5 GPM LAMINAR FLOW, ZURN Z831C4-XL.</p> <p>STRAINER: 1-1/4" 17 GAUGE OFFSET WHEELCHAIR STRAINER, CHROME PLATED BRASS GRID DRAIN WITH ELBOW AND 17 GAUGE OFFSET TAILPIECE, MCGUIRE 155WC.</p> <p>MIXING VALVE: THERMOSTATIC MIXING VALVE, 120 DEGREES IN, 110 DEGREES OUT, BRONZE FINISH, UNION CONNECTION, 5 PSI PRESSURE DIFFERENTIAL, 0.5 GPM MIN FLOW/4 GPM MAX FLOW, SYMMONS "MAXLINE" 7-225-OK-W.</p> <p>P-TRAP: 1-1/2" 17 GAUGE CHROME PLATED CAST BRASS TAP WITH CLEANOUT AND EXTENSION TO WALL WITH ESCUTCHEON PLATE, MCGUIRE 8912.</p> <p>SUPPLIES: 1/2" I.P.S. X 3/8" O.D. CHROME PLATED WITH ESCUTCHEONS AND 3/8" COMPRESSION CHROME PLATED FLEXIBLE RISERS, MCGUIRE 2165.</p> <p>ROUGH-INS: 2" WASTE, 2" VENT, 1/2" HOT AND COLD WATER. REFER TO ARCHITECTURAL DRAWINGS FOR REQUIRED HEIGHT.</p>
LAVATORY (L)	<p>L-1A DESCRIPTION: ADA LAVATORY, WALL MOUNTED, 20" X 18" VITREOUS CHINA, FRONT OVERFLOW, CRANE HARWICH® US1412-20S.</p> <p>FAUCET: 3-HOLE DRILLINGS, 8" GOOSENECK FAUCET, 4" VANDAL RESISTANT WRIST BLADE HANDLES, CERAMIC DISC CARTRIDGE, 0.5 GPM LAMINAR FLOW, ZURN Z831C4-XL.</p> <p>MIXING VALVE: THERMOSTATIC MIXING VALVE, 120 DEGREES IN, 110 DEGREES OUT, BRONZE FINISH, UNION CONNECTION, 5 PSI PRESSURE DIFFERENTIAL, 0.5 GPM MIN FLOW/4 GPM MAX FLOW, SYMMONS "MAXLINE" 7-225-OK-W.</p> <p>STRAINER: 1-1/4" 17 GAUGE OFFSET WHEELCHAIR STRAINER, CHROME PLATED BRASS GRID DRAIN WITH ELBOW AND 17 GAUGE OFFSET TAILPIECE, MCGUIRE 155WC.</p> <p>P-TRAP: 1-1/2" 17 GAUGE CHROME PLATED CAST BRASS TAP WITH CLEANOUT AND EXTENSION TO WALL WITH ESCUTCHEON PLATE, MCGUIRE 8912.</p> <p>SUPPLIES: 1/2" I.P.S. X 3/8" O.D. CHROME PLATED WITH ESCUTCHEONS AND 3/8" COMPRESSION CHROME PLATED FLEXIBLE RISERS, MCGUIRE 2165.</p> <p>ROUGH-INS: 2" WASTE, 2" VENT, 1/2" HOT AND COLD WATER. REFER TO ARCHITECTURAL DRAWINGS FOR REQUIRED HEIGHT.</p>
WATER CLOSET (WC)	<p>WC-1A DESCRIPTION: WATER CLOSET (A.D.A. COMPLIANT), WALL HUNG, 1.6 GALLON PER FLUSH SIPHON JET ACTION, VITREOUS CHINA, ELONGATED BOWL WITH 1-1/2" TOP SPUD INLET WITH SLOTTED RIM FOR BEDPAN HOLDING AND BOLT COVERS, AMERICAN STANDARD "AFWALL" 3352.101.</p> <p>SEAT: ELONGATED OPEN FRONT WHITE PLASTIC SEAT WITH SELF-SUSTAINING CHECK HINGES, CHURCH 9500SSCT, ZURN Z5955SS-EL.</p> <p>FLUSH VALVE: 1.6 GALLON FLUSH CYCLE EXPOSED, PISTON TYPE, CHROME PLATED CLOSET FLUSHMETER, VACUUM BREAKER, SPUD COUPLING FOR 1-1/2" TOP SPUD, BEDPAN WASHER WITH STRAIGHT DOWN TUBE, AMERICAN STANDARD 6047.860.002.</p> <p>ROUGH-INS: 4" WASTE, 2" VENT, 1" COLD WATER, TOP OF SEAT 19" AFF</p>
GENERAL NOTE:	<p>ALL SINKS SHALL BE SUPPLIED WITH HOT AND COLD WATER TO FAUCETS AS INDICATED ON PLANS AND FIXTURE SCHEDULE. PROVIDE CHROME PLATED BRASS SUPPLY STOPS WITH LOOSE KEYS AND WALL ESCUTCHEONS. PROVIDE CHROME PLATED FLEXIBLE RISERS OF SIZE REQUIRED TO PROPERLY CONNECT FIXTURES. PROVIDE 17 GAUGE CHROME PLATED CAST BRASS P-TRAP WITH CLEANOUT AND EXTENSION TO WALL WITH ESCUTCHEON. REFER TO SPECIFICATIONS FOR ACCEPTABLE MANUFACTURERS AND FIXTURE SCHEDULE FOR MINIMUM SIZES OF PLUMBING FIXTURE ROUGH-INS.</p> <p>PROVIDE MOLDED CLOSED CELL ANTI-MICROBIAL VINYL INSULATION KITS AT ALL SINKS REQUIRED TO BE A.D.A. ACCESSIBLE (MCGUIRE OR TRUEBRO). ALL SUCH FIXTURES AND FINAL INSTALLATIONS SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT (A.D.A.)</p>

PLUMBING PIPING LEGEND

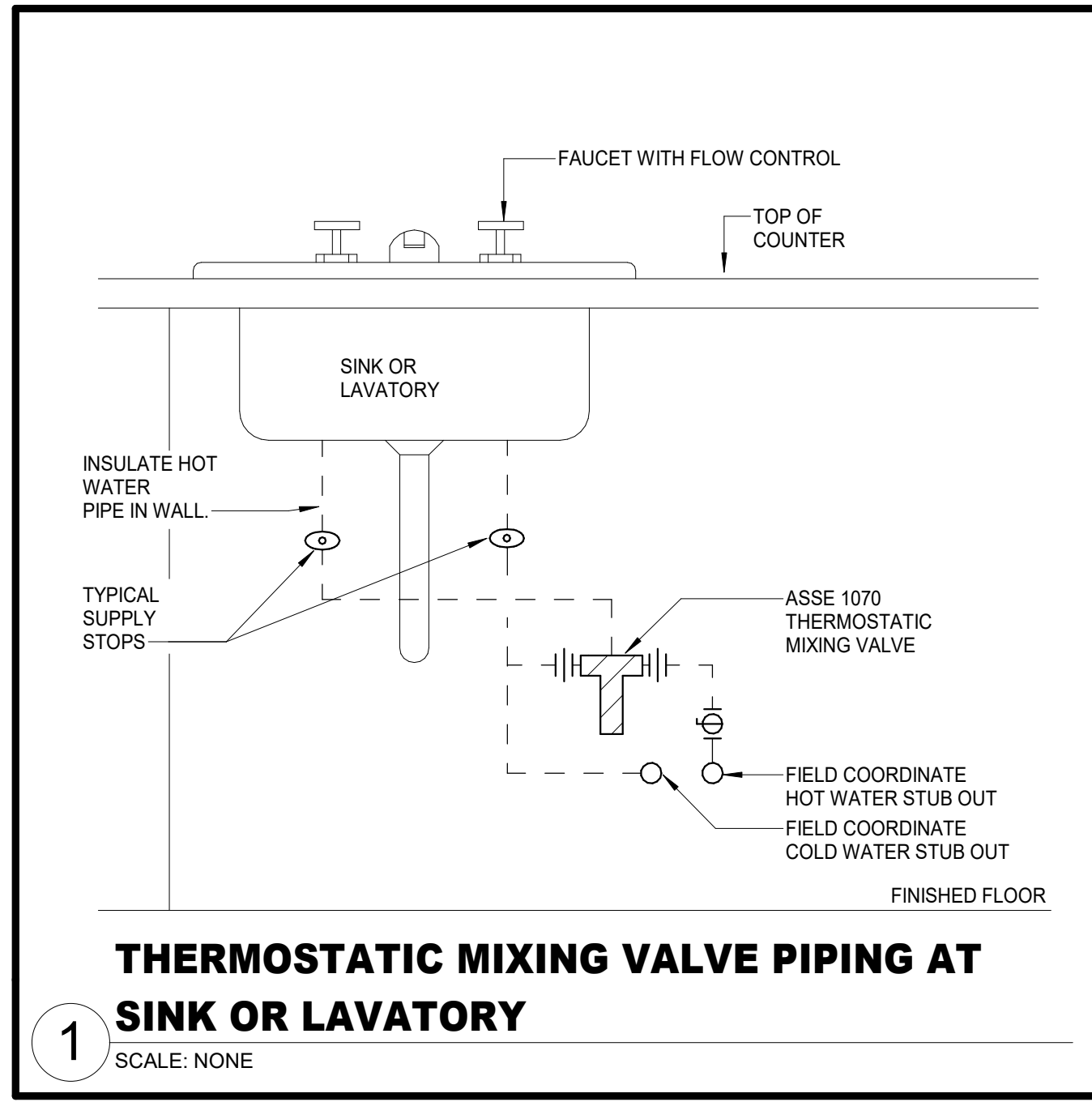
SYMBOLS	DESCRIPTION
—SAN—	SANITARY OR WASTE PIPING (SAN)
—VENT—	VENT PIPING (VENT)
—CW—	COLD WATER PIPING (CW)
—HW—	HOT WATER PIPING (HW)
—HWR—	HOT WATER RETURN PIPING (HWR)
—VAC—	MEDICAL VACUUM PIPING (VAC)
—O2—	MEDICAL OXYGEN PIPING (O2)
—AIR—	MEDICAL AIR PIPING (A)
—S—	SHUT-OFF VALVE
—BV—	BALANCING VALVE (BV)
—V—	BALL VALVE (BV)
—HSC—	HORIZONTAL SWING CHECK
—U—	UNION
—PD—	PIPING DOWN
—RD—	RISE OR DROP PIPING
—UP—	PIPING UP -OR- PIPING UP & DOWN
—C—	CAP ON END OF PIPE
1	REFER TO KEYED NOTE
(E)	EXISTING
(N)	NEW
B.F.F.	BELOW FINISHED FLOOR
A.F.F.	ABOVE FINISHED FLOOR
⊗	NEW CONNECTION
△	DELTA CHANGE SYMBOL

PLUMBING GENERAL NOTES

- ALL WORK, METHODS AND INSTALLATIONS INVOLVED IN THE PLUMBING DESIGN SHALL BE IN ACCORDANCE WITH THE CITY BUILDING CODE, INSPECTION REGULATIONS AND ALL OTHER OFFICIALS HAVING JURISDICTION.
- ALL PIPE LESS THAN 3" SHALL BE ROUTED AT 1/4" SLOPE PER FOOT.
- CONTRACTOR TO FIELD VERIFY AS NECESSARY THE EXACT ROUTING AND SIZES OF ALL PIPING.
- CONTRACTOR SHALL COORDINATE ROUTING OF PIPING IN CEILING SPACES WITH MECHANICAL AND ELECTRICAL EQUIPMENT, DUCTWORK AND CONDUIT. SHOULD A CONFLICT OCCUR THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER PRIOR TO INSTALLING AN ALTERNATE PIPING PLAN.
- COORDINATE ALL FIXTURE AND EQUIPMENT LOCATIONS AND CONNECTION REQUIREMENTS WITH LATEST ARCHITECTURAL DRAWINGS AND SPECIFICATIONS PRIOR TO ANY ROUGH-INS.
- DO NOT ROUGH-IN FROM THESE DRAWINGS. REFER TO LATEST ARCHITECTURAL DRAWINGS FOR DIMENSIONED LOCATIONS.
- PRIOR TO BEGINNING CONSTRUCTION, COORDINATE BUILDING BACKFLOW PREVENTION REQUIREMENTS WITH THE LOCAL AUTHORITY HAVING JURISDICTION AND PROVIDE AS DIRECTED.
- WITHIN THE EXISTING BUILDING, EXISTING WATER, WASTE AND VENT SERVICES ARE TO BE MODIFIED AS REQUIRED AND REUSED FOR THE INSTALLATION OF NEW AND/OR RELOCATED PLUMBING FIXTURES. REFER TO PLUMBING FLOOR PLANS FOR POINTS OF CONNECTION.
- CONTRACTOR TO COORDINATE ALL REMODEL WORK WITH THE WORK OF OTHER TRADES TO AVOID CONFLICTS AND TO MINIMIZE INTERRUPTION OF SERVICES.
- THE PROPER INSTALLATION OF NEW FIXTURES AND THE PROPER CONTINUED OPERATION OF EXISTING FIXTURES TO REMAIN SHALL DETERMINE THE EXTENT AND NATURE OF PLUMBING REMODEL WORK.
- CONTRACTOR SHALL CHECK ALL LOCATIONS, MEASUREMENTS, DEPTHS, AND REPORT ANY DISCREPANCIES FOR CORRECTION BEFORE DEMOLITION.

FIRE SPRINKLER SYSTEM NOTES

- THE EXISTING FIRE SUPPRESSION SYSTEM SHALL BE EXTENDED PROVIDING COVERAGE TO THE RENOVATED SPACE. NEW ADDITION. THE SYSTEM SHALL COMPLY WITH NFPA 13-2016 AND THE 2021 VIRGINIA UNIFORM STATEWIDE BUILDING CODE.
- INSTALLATION SHALL BE ACCOMPLISHED BY A CONTRACTOR WHO IS DULY LICENSED AND ACCREDITED IN THE INSTALLATION OF AUTOMATIC SPRINKLER SYSTEMS AND FIRE PROTECTION EQUIPMENT FOR THE PAST THREE YEARS.
- PIPING SHALL BE FERROUS PIPING (WELDED AND SEAMLESS), ASTM A795, ASTM A53 OR ASTM A153 IN ACCORDANCE WITH NFPA 13.
- CONTRACTOR SHALL COORDINATE THE LOCATIONS OF ALL SPRINKLERS AND SPRINKLER PIPING WITH OTHER PIPES, DUCTS, LIGHTS, EQUIPMENT, CONDUIT, STRUCTURAL SYSTEMS, CEILING SUPPORTS, AND FRAMING BEFORE INSTALLATION. SPRINKLER PIPING SHALL NOT BE INSTALLED WHERE ITS LOCATION INHIBITS EQUIPMENT FILTER AND MAINTENANCE ACCESS OR INFRINGES UPON CLEARANCE DICTATED BY THE NATIONAL ELECTRIC CODE. ALL SPRINKLERS TO BE CENTERED IN CEILING TILES - "CENTER OF TILE."
- PROVIDE U.L. APPROVED FIRESTOPPING AT ALL LOCATIONS WHERE PIPES PENETRATE RATED WALL ASSEMBLIES.
- CAREFULLY COORDINATE LOCATIONS OF SPRINKLERS WITH SURFACE MOUNTED LIGHT FIXTURES. MAINTAIN OBSTRUCTION DISTANCES AND SPACING IN ACCORDANCE WITH THE MANUFACTURERS LISTINGS AND NFPA REQUIREMENTS.
- THE EXISTING SPRINKLER SYSTEM SERVING AREAS NOT BEING RENOVATED MUST BE MAINTAINED DURING CONSTRUCTION.



1 THERMOSTATIC MIXING VALVE PIPING AT SINK OR LAVATORY
 SCALE: NONE



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DATE: OCT. 25, 2024

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PLUMBING SPECIFICATIONS

<p>GENERAL</p> <p>A. PERFORM WORK IN ACCORDANCE WITH APPLICABLE STATUTES, ORDINANCES, CODES AND REGULATIONS OF GOVERNMENTAL AUTHORITIES HAVING JURISDICTION.</p> <p>B. OBTAIN ALL PERMITS REQUIRED.</p> <p>C. CONTRACT DRAWINGS ARE DIAGRAMMATIC ONLY AND DO NOT GIVE FULLY DIMENSIONED LOCATIONS OF VARIOUS ELEMENTS OF WORK. DETERMINE EXACT LOCATIONS FROM FIELD MEASUREMENTS.</p> <p>D. GUARANTEE WORK FOR 1 YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION OF THE PROJECT. DURING THAT PERIOD MAKE GOOD ANY FAULTS OR IMPERFECTIONS THAT MAY ARISE DUE TO DEFECTS OR OMISSIONS IN MATERIAL, EQUIPMENT OR WORKMANSHIP. AT THE OWNER'S OPTION, REPLACEMENT OF FAILED PARTS OR EQUIPMENT SHALL BE PROVIDED.</p> <p>E. PROVIDE FINISHES TO MATCH APPROVED SAMPLES. ALL EXPOSED FINISHES SHALL BE APPROVED BY THE ARCHITECT. SUBMIT COLOR SAMPLES AS REQUIRED.</p> <p>F. MAINTAIN QUALITY CONTROL OVER SUPERVISION, SUBCONTRACTORS, SUPPLIERS, MANUFACTURERS, PRODUCTS, SERVICES, SITE CONDITIONS AND WORKMANSHIP TO PRODUCE WORK IN ACCORDANCE WITH CONTRACT DOCUMENTS.</p> <p>G. COMPLY WITH INDUSTRY STANDARDS EXCEPT WHEN MORE RESTRICTIVE TOLERANCES OR SPECIFIED REQUIREMENTS INDICATE MORE RIGID STANDARDS OR MORE PRECISE WORKMANSHIP.</p> <p>H. PERFORM WORK BY PERSONS QUALIFIED TO PRODUCE WORKMANSHIP OF SPECIFIED QUALITY.</p> <p>I. SECURE PRODUCTS IN PLACE WITH POSITIVE ANCHORAGE DEVICES DESIGNED AND SIZED TO WITHSTAND STRESSES, VIBRATION, AND RACKING. UNDER NO CONDITIONS SHALL MATERIAL OR EQUIPMENT BE SUSPENDED FROM STRUCTURAL BRIDGING.</p> <p>J. COMPLY WITH INSTRUCTIONS IN FULL DETAIL, INCLUDING EACH STEP IN SEQUENCE. SHOULD INSTRUCTION CONFLICT WITH CONTRACT DOCUMENTS, REQUEST CLARIFICATION FROM ARCHITECT/ENGINEER BEFORE PROCESSING.</p>	<p>PLUMBING FIXTURES AND FIXTURES CARRIERS:</p> <p>A. ACCEPTABLE MANUFACTURERS: 1. VITREOUS CHINA FIXTURES: AMERICAN STANDARD, ELJER, KOHLER, TOTO, ZURN.</p> <p>2. PLUMBING FAUCETS: AMERICAN STANDARD, CHICAGO, T&S BRASS, ZURN, SYMMONS, MOEN COMMERCIAL HD</p> <p>3. SUPPORTS AND CARRIERS: ZURN, J.R. SMITH, WADE, JOSAM, WATTS/ANCON, MIFAB</p> <p>4. FLUSH VALVES: SLOAN, ZURN, MOEN COMMERCIAL HD</p> <p>5. SUPPLIES, STOPS AND CHROME PLATED TUBULAR BRASS: MCGUIRE, KOHLER, CHICAGO, ZURN, BRASSCRAFT</p> <p>6. WATER CLOSET SEATS: BENEKE, CHURCH, OLSONITE, BEMIS, CENTOCO</p> <p>7. FLOOR DRAINS: ZURN, J.R. SMITH, JOSAM, WADE, WATTS/ANCON, SIOUX CHIEF, MIFAB</p> <p>8. STAINLESS STEEL SINKS: ELKAY, JUST</p> <p>9. THERMOSTATIC MIXING VALVES: LAWLOR, SYMMONS, POWERS, HOLBY</p> <p>10. HOSE BIBS: CHICAGO, JOSAM, WOODFORD, ZURN, J.R. SMITH, WADE</p> <p>11. WALL HYDRANTS: WOODFORD, MIFAB, ZURN, J.R. SMITH, JOSAM, WADE</p> <p>B. INSTALLATION: 1. INSTALLATION SHALL BE ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.</p> <p>2. PROVIDE NECESSARY STOPS, VALVE, TRAPS, UNIONS, VENTS, COLD WATER, HOT WATER, SANITARY, ETC. FOR A COMPLETE INSTALLATION.</p> <p>3. REMOVE PIPING AND SERVICES ROUGHED-IN INCORRECTLY AND INSTALL CORRECTLY, WITHOUT COST.</p> <p>4. EXPOSED PIPING, FITTINGS AND APPURTENANCES SHALL BE CHROME-PLATED BRASS.</p> <p>5. PROVIDE ISOLATION VALVES IN DOMESTIC WATER LINES TO ISOLATE ALL EQUIPMENT, AND WHERE SHOWN ON DRAWINGS.</p>
<p>DOMESTIC WATER PIPING AND APPURTENANCES</p> <p>A. FURNISH AND INSTALL DOMESTIC HOT AND COLD WATER PIPING.</p> <p>B. ABOVE SLAB PIPING. PROVIDE SEAMLESS ASTM B 88 AND ANSISF STANDARD 61 TYPE L COPPER WATER TUBE WITH WROUGHT COPPER AND BRONZE SOLDER-JOINT, ANSI B16.22. SOLDER MATERIAL SHALL BE 95-5 (LEAD FREE) (TIN-ANTIMONY-GRADE 95TA) ASTM 32.</p> <p>C. AIR CHAMBERS: PROVIDE A MINIMUM 18-INCH LONG AIR CHAMBER, OF THE SAME SIZE AND CONNECTING PIPE MATERIAL AT EACH SINGLE LAVATORY, SINK, DRINKING FOUNTAIN OR FIXTURE THAT DOES NOT HAVE A QUICK-CLOSING VALVE OR ELECTRICAL, PNEUMATIC, SPRING LOADED TYPE, OR FLUSH VALVE. AIR CHAMBERS TO BE USED FOR REMOTE FIXTURES AND NOT MIXED WITH WATER HAMMER ARRESTORS AT GROUP TOILETS.</p> <p>D. TESTING: TEST UNDER A COLD WATER HYDROSTATIC PRESSURE OF NOT LESS THAN 50 PSI FOR AT LEAST 15 MINUTES AND CAREFULLY CHECK FOR LEAKS. REPAIR LEAKS AND RETEST SYSTEM UNTIL PROVEN WATERTIGHT. USE ONLY POTABLE WATER FOR THE TEST. PERFORM THE TEST BEFORE FIXTURES, FAUCETS, TRIM OR FINAL CONNECTIONS ARE MADE TO EQUIPMENT.</p> <p>E. STERILIZE THE WATER SYSTEM WITH SOLUTION CONTAINING NOT LESS THAN 50 PPM AVAILABLE CHLORINE. ALLOW CHLORINATING SOLUTION TO REMAIN IN SYSTEM FOR PERIOD OF 8 HOURS (MINIMUM). HAVE VALVES AND FAUCETS OPENED AND CLOSED SEVERAL TIMES DURING THE PERIOD. AFTER STERILIZATION, FLUSH THE SOLUTION FROM THE SYSTEM WITH CLEAN WATER UNTIL RESIDUAL CHLORINE CONTENT IS LESS THAN 0.2 PARTS PER MILLION.</p>	<p>DOMESTIC WATER INSULATION</p> <p>A. ELASTOMERIC INSULATION: INSULATION MATERIAL SHALL BE FLEXIBLE, CLOSED-CELL ELASTIC INSULATION IN TUBULAR OR SHEET FORM. MATERIAL SHALL HAVE A FLAME SPREAD RATING OF 25 OR LESS AND A SMOKE DEVELOPED RATING OF 50 OR LESS WHEN TESTED IN ACCORDANCE WITH ASTM E84, LATEST REVISION. INSULATION THICKNESS FOR HOT WATER SHALL BE 1" FOR NOMINAL PIPE SIZES 1-1/2" AND SMALLER AND 1-1/2" FOR NOMINAL PIPE SIZES 2" AND LARGER. INSULATION THICKNESS FOR COLD WATER SHALL BE 1/2" FOR NOMINAL PIPE SIZES 1-1/2" AND SMALLER AND 1" FOR NOMINAL PIPE SIZES 2" AND LARGER.</p> <p>B. FIBERGLASS INSULATION: HEAVY DENSITY, DUAL TEMPERATURE FIBERGLASS INSULATION WITH FACTORY APPLIED, ALL SERVICE, REINFORCED VAPOR BARRIER JACKET HAVING INTEGRAL LAMINATED VAPOR BARRIER. PROVIDE WITH A FACTORY APPLIED PRESSURE SENSITIVE TAPE CLOSURE SYSTEM AND MATCHING BUTT STRIPS. INSULATION THICKNESS FOR HOT WATER SHALL BE 1" FOR NOMINAL PIPE SIZES 1-1/2" AND SMALLER AND 1-1/2" FOR NOMINAL PIPE SIZES 2" AND LARGER. INSULATION THICKNESS FOR COLD WATER SHALL BE 1/2" FOR NOMINAL PIPE SIZES 1-1/2" AND SMALLER AND 1" FOR NOMINAL PIPE SIZES 2" AND LARGER.</p> <p>C. COVER ALL HOT & COLD WATER PIPING WITH INSULATION BY SLITTING TUBULAR SECTIONS OR SLIDING UN-SLIT SECTIONS OVER THE OPEN ENDS OF PIPING OR TUBING. SEAMS AND BUTT JOINTS SHALL BE ADHERED AND SEALED USING ADHESIVE.</p> <p>D. ALL FITTINGS SHALL BE INSULATED WITH THE SAME INSULATION THICKNESS AS THE ADJACENT PIPING. ALL SEAMS AND MITERED JOINTS SHALL BE ADHERED WITH ADHESIVE.</p> <p>E. INSULATION APPLICATIONS: a. INDOOR CONCEALED: ELASTOMERIC b. INDOOR EXPOSED: FIBERGLASS</p>
<p>SOIL, WASTE AND SANITARY DRAIN PIPING, VENT PIPING AND APPURTENANCES</p> <p>A. CELLULAR CORE PVC PIPE IS NOT PERMITTED.</p> <p>B. ABOVE SLAB PIPE: NO-HUB CAST IRON SOIL PIPE AND FITTINGS SHALL CONFORM TO CISPI 301 AND ASTM A888. PIPE SHALL CONFORM TO ASTM A74. NO-HUB COUPLINGS SHALL CONFORM TO CISPI 310. RUBBER GASKETS FOR CAST IRON SOIL PIPE AND FITTINGS SHALL CONFORM TO ASTM C564.</p> <p>C. VENT PIPE AND FITTINGS: VENT PIPE AND FITTINGS: ABOVE SLAB PIPE: NO-HUB CAST IRON SOIL PIPE AND FITTINGS SHALL CONFORM TO CISPI 301 AND ASTM A888. PIPE SHALL CONFORM TO ASTM A74. NO-HUB COUPLINGS SHALL CONFORM TO CISPI 310. RUBBER GASKETS FOR CAST IRON SOIL PIPE AND FITTINGS SHALL CONFORM TO ASTM C564.</p> <p>D. BELOW SLAB ON GRADE PIPING: SAME AS DRAIN PIPE AND FITTINGS LISTED ABOVE.</p> <p>E. TESTING: BELOW SLAB ON GRADE AND ALL FLOORS IN MULTI-STORY BUILDINGS: TEST PIPE BELOW SLAB ON GRADE BEFORE BACKFILLING AND CONNECTING TO CITY SEWERS. MAINTAIN NOT LESS THAN 10 FOOT OF HYDROSTATIC HEAD FOR 1 HOUR WITHOUT A LEAK.</p> <p>F. RODDING SEWERS: ALL SANITARY SOIL AND WASTE LINES, BOTH IN THE BUILDING AND OUT, SHALL BE RODDED OUT AND FLUSHED OUT AFTER COMPLETION OF CONSTRUCTION AND PRIOR TO FINISH FLOOR BEING INSTALLED. ALL WORK MUST BE COMPLETED PRIOR TO SUBSTANTIAL COMPLETION. ALL FLOOR DRAINS AND CLEANOUT LOCATIONS MUST BE INCLUDED IN THIS WORK.</p>	

MEDICAL GAS SYSTEMS SPECIFICATIONS

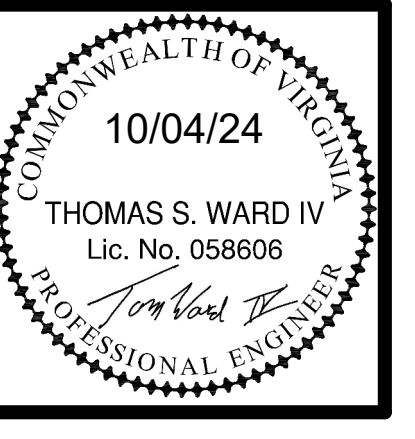
<p>GENERAL:</p> <p>1. THE WORK SHALL INCLUDE PROVIDING AND INSTALLING ALL MATERIALS INDICATED TO PROVIDE COMPLETE AND OPERABLE SYSTEMS. WORK SHALL INCLUDE CONNECTIONS TO EXISTING SITE UTILITIES.</p> <p>2. PROVIDE ACCESS PANELS FOR ALL EQUIPMENT AND MATERIALS REQUIRING MAINTENANCE OR INSPECTION.</p> <p>3. PROVIDE CUTTING AND PATCHING OF EXISTING CONSTRUCTION AS REQUIRED TO INSTALL THE WORK.</p> <p>4. SUBMITTALS: THE CONTRACTOR SHALL SUBMIT ALL PRODUCT DATA FOR REVIEW AND ACCEPTANCE BY THE ENGINEER. THE CONTRACTOR SHALL BE PROCEEDING AT THEIR OWN RISK IF THE CONTRACTOR CHOOSES TO PROCEED WITH THE WORK PRIOR TO ACCEPTANCE OF THE MATERIALS AND EQUIPMENT BY THE ENGINEER.</p> <p>5. THIRD PARTY CERTIFICATION: ALL PLUMBING PRODUCTS AND MATERIALS SHALL BE LISTED BY A THIRD-PARTY CERTIFICATION AGENCY AS COMPLYING WITH THE REFERENCED STANDARDS INDICATED IN THE IPC. PRODUCTS AND MATERIALS SHALL BE IDENTIFIED IN ACCORDANCE WITH THE IPC.</p> <p>6. COORDINATE WITH OWNER RETAINED VERIFIER FOR FINAL VERIFICATION OF THE MEDICAL GAS SYSTEMS. MAKE CORRECTIONS AS NEEDED, INCLUDING ADDITIONAL TESTING IF NECESSARY TO ATTAIN FULL AND UNQUALIFIED CERTIFICATION. COORDINATE WITH OWNER TO ENSURE MEDICAL GAS OUTLETS, WHETHER OWNER SUPPLIED OR CONTRACTOR SUPPLIED, IN WALLS, CEILINGS AND ALL EQUIPMENT ARE PROVIDED BY THE SAME MEDICAL GAS EQUIPMENT MANUFACTURER (MGEM) AND ARE SATISFACTORY TO THE OWNER.</p> <p>7. MEDICAL GAS CONTRACTOR SHALL SUPPLY, INSTALL, AND INTEGRATE THE NEW ALARM COMPONENTS. THE ELECTRICAL CONTRACTOR SHALL PROVIDE POWER WIRING TO EACH ALARM PANEL. MEDICAL GAS CONTRACTOR IS RESPONSIBLE FOR PROPER TERMINATION, TESTING, AND MARKING OF ALARM PANELS. TERMINATION SHALL BE DONE BY, OR UNDER THE SUPERVISION OF, MANUFACTURER OF THE ALARM PANELS.</p> <p>8. COORDINATE WITH MEDICAL GAS VERIFIER TO DELIVER A COMPLETE, TESTED MEDICAL GAS INSTALLATION READY FOR OWNER'S USE.</p> <p>9. MGEM WILL INCLUDE WITH SUBMITTALS AN AFFIDAVIT ATTESTING TO COMPLIANCE WITH ALL RELEVANT PARAGRAPHS OF NFPA 99 MOST RECENT EDITION INCLUDING ITEMS BELOW.</p> <p>10. THE CONTRACTOR SHALL FURNISH DOCUMENTATION ATTESTING THAT ALL INSTALLED PIPING MATERIALS WERE PURCHASED CLEAN AND COMPLIED WITH THE REQUIREMENTS OF NFPA 99 5.1.10.1 AND 5.1.10.2.</p> <p>11. THE CONTRACTOR SHALL FURNISH COPIES OF ASSE 6010 QUALIFICATIONS FOR ALL WORKERS INSTALLING MEDICAL GAS PIPING.</p>	<p>TESTING & FINAL INSPECTION:</p> <p>1. EACH SECTION OR AREA, AS COMPLETED, SHALL BE SUBJECTED TO TESTING BY MEANS OF OIL FREE NITROGEN. AT A TEST PRESSURE OF 1 1/2 TIMES THE MAXIMUM WORKING PRESSURE OR 150 PSI WHICH EVER IS GREATER. THIS PRESSURE SHALL BE MAINTAINED FOR MINIMUM OF TWENTY-FOUR (24) HOURS. WITH NO ALLOWANCE FOR LOSS OF PRESSURE. ALL TESTING SHALL BE IN ACCORDANCE WITH NFPA 99. THE OWNER SHALL BE ADVISED TO THE STANDING TEST SO THAT HE MAY BE PRESENT DURING THE TESTS.</p> <p>2. ADVISE OWNER PRIOR TO TESTS AS REQUIRED. TEST EACH SYSTEM SEPARATELY AS PER NFPA 99.</p> <p>3. EACH JOINT SHALL BE EXAMINED FOR LEAKAGE BY MEANS OF AN APPROVED OXYGEN LEAK DETECTOR.</p> <p>4. IF THERE IS A DROP IN PRESSURE, EACH JOINT AND THE EQUIPMENT IN THAT AREA OR SECTION SHALL BE INSPECTED AND TESTED FOR LEAKAGE. AFTER LEAKS HAVE BEEN LOCATED AND REPAIRED, THIS SECTION SHALL BE RETESTED AS PER PRECEDING PARAGRAPH. ALL GAUGES AND PRESSURE SWITCHES SHALL BE DISCONNECTED DURING TESTING PROCEDURE TO PREVENT DAMAGE TO EQUIPMENT.</p> <p>5. A FINAL TEST OF ALL SYSTEMS SHALL BE PERFORMED UPON COMPLETION OF ALL AREAS OR SECTIONS. THIS TEST SHALL BE PERFORMED WITH AN OWNER'S REPRESENTATIVE IN ATTENDANCE.</p> <p>6. AFTER COMPLETION OF ALL TESTING, ALL SYSTEMS SHALL BE PURGED AND GAUGES AND PRESSURE SWITCHES PLACED INTO POSITION. THE SYSTEMS SHALL BE LEFT UNDER 10 PSI NITROGEN PRESSURE UNTIL FINAL PURGING AND ANALYSES ARE PERFORMED IN ACCORDANCE WITH CAN/CSA-Z7396.1-09 AND DEPARTMENT OF LABOR REQUIREMENTS.</p>
<p>MEDICAL GAS PIPING SYSTEMS:</p> <p>1. PIPING SHALL BE SEAMLESS COPPER TUBING - TYPE K HARD SHALL BE USED IN ALL INSTANCES. ALL PIPING SHALL BE CHEMICALLY WASHED AND DEGREASED AND OTHERWISE BE ESPECIALLY PREPARED FOR MEDICAL GAS USAGE BY THE PIPING MANUFACTURER. THIS TUBING SHALL BE SUPPLIED TO THE JOB SITE CAPPED AT BOTH ENDS TO PREVENT CONTAMINATION PRIOR TO INSTALLATION.</p> <p>2. TUBING SHALL CONFORM TO ASTM SPECIFICATION B-819. SIZES AND LENGTHS REQUIRED ARE TO BE DETERMINED FROM THE PLANS. SMALLEST PIPE IF NOT INDICATED ON DRAWINGS SHALL BE AS PER NFPA 99.</p> <p>3. ALL FITTINGS USED FOR CONNECTING COPPER PIPE SHALL BE: A) CONSTRUCTED FROM WROUGHT COPPER, BRASS, OR BRONZE; B) MADE ESPECIALLY FOR SOLDERED OR BRAZED CONNECTIONS; C) SUITABLE FOR THE MAXIMUM PIPELINE PRESSURE THAT MAY BE EXPERIENCED IN THE CONSTRUCTION, TESTING, AND SERVICE OF THE SYSTEM.</p> <p>4. ALL PIPING, ASSEMBLIES, VALVES, FITTINGS EXCEPT ELBOWS, TEES, AND COUPLINGS THAT ARE JOINED TOGETHER BY BRAZING, SHALL BE: A) CLEANED USING METHODS SPECIFIED IN CGA STANDARD G-4.1, VISUALLY INSPECTED AND CAPPED OR SEALED TO PREVENT CONTAMINATION; AND LABELED, ON THE PART OR PACKAGE, BY THE MANUFACTURER, E.G., "CLEAN FOR OXYGEN SERVICE"; B) WHEN A FITTING OR OTHER COMPONENT CANNOT BE OBTAINED AS REQUIRED BY 2.3.3 OR BECOMES INADVERTENTLY CONTAMINATED, IT SHALL BE THOROUGHLY CLEANED OF OIL, GREASE AND OTHER READILY OXIDIZABLE MATERIAL BEFORE INSTALLATION. CLEANING ON SITE SHALL BE DONE IN ACCORDANCE WITH APPROVED PROCEDURES.</p> <p>5. MEDICAL GAS SHUT-OFF VALVES: VALVES SHALL BE 3 PIECE BALL-TYPE DESIGN WITH A BRASS FORGING BODY AND A CHROME PLATED BRASS BALL FOR SIZES 1/2" TO 4". SEATS SHALL BE REINFORCED TEFLON (PTFE) AND SEALS VITON FOR 1/2" TO 4". A BLOW-OUT PROOF STEM SHALL BE USED AND THE VALVE SHALL HAVE A MAXIMUM PRESSURE RATING OF 600 PSI. VALVES SIZES 1/2" TO 2" SHALL BE 4-BOLT DESIGN. VALVE BODIES SHALL BE CONSTRUCTED SO THAT THEY SWING OUT FOR EASE OF MAINTENANCE.</p> <p>A. ALL VALVES EXCEPT VALVES IN THE ZONE VALVE BOXES (ZVB'S), SHALL BE FURNISHED WITH A LOCKABLE DEVICE (LOCKS NOT INCLUDED), COPPER PIPE STUBS FOR EASE OF INSTALLATION, CAPPED, INDIVIDUALLY BAGGED TO PREVENT CONTAMINATION. VALVES IN THE ZVB'S WILL BE DELIVERED AS DETAILED ON DRAWINGS.</p> <p>B. ALL SERVICE ISOLATION VALVES AND VALVES IN ZONE VALVE BOX ASSEMBLIES SHALL HAVE A CRN AND EACH VALVE SHALL BEAR THE APPROVED TAG FOR THE SERVICES INTENDED. ALL MEDICAL GAS VALVES SHALL HAVE A 5 YEAR MANUFACTURER'S WARRANTY.</p> <p>6. DISS MEDICAL GAS OUTLETS: OUTLETS SHALL BE MANUFACTURED WITH A 6-1/2" LENGTH TYPE K 1/2" OUTSIDE DIAMETER (3/8" NOMINAL) SIZE COPPER INLET PIPE STUB, WHICH IS SILVER BRAZED TO THE OUTLET BODY.</p> <p>A. THE BODY SHALL BE OF 1-5/16" DIAMETER, ONE PIECE BRASS CONSTRUCTION. FOR POSITIVE PRESSURE GAS SERVICES, THE OUTLET SHALL BE EQUIPPED WITH A PRIMARY AND SECONDARY CHECK VALVE AND THE SECONDARY CHECK VALVE SHALL BE RATED AT A MAXIMUM OF 200 PSI IN THE EVENT THE PRIMARY CHECK VALVE IS REMOVED FOR MAINTENANCE.</p> <p>B. OUTLET BODIES SHALL BE GAS SPECIFIC BY INDEXING EACH GAS SERVICE TO A GAS SPECIFIC DUAL PIN INDEXING ARRANGEMENT ON THE RESPECTIVE IDENTIFICATION MODULE.</p> <p>C. A LARGE COLOR CODED FRONT PLATE SHALL BE USED FOR EASE OF GAS IDENTIFICATION AND AESTHETIC APPEAL. A ONE PIECE CHROMED FASCIA PLATE SHALL FRAME THE OUTLET, WITH THE BACK ROUGH-IN MOUNTED THE OUTLET SHALL ADJUST FROM 3/8" TO 1" VARIATION IN WALL THICKNESS.</p> <p>D. THE OUTLETS SHALL BE OF MODULAR DESIGN AND INCLUDE A GAS SPECIFIC 16 GA. STEEL MOUNTING PLATE DESIGNED TO PERMIT ON-SITE GANGING OF MULTIPLE OUTLETS, IN ANY ORDER, ON 6" SPACING.</p> <p>E. THE LATCH-VALVE ASSEMBLY SHALL BE D.I.S.S. (DIAMETER INDEX SAFETY SYSTEM) AND SHALL ONLY ACCEPT CORRESPONDING GAS SPECIFIC ADAPTERS.</p> <p>F. ALL OUTLETS SHALL BE CLEANED AND DEGREASED FOR MEDICAL GAS SERVICE, FACTORY ASSEMBLED AND TESTED.</p> <p>G. THE OUTLETS SHALL BE UL LISTED AND / OR ETL LISTED.</p> <p>H. MANUFACTURER SHALL BE BEACON MEDAES "SERIES B."</p> <p>7. HANGERS: HANGERS, BRACES AND RESTRAINTS SHALL ADEQUATELY SUPPORT THE SYSTEMS HORIZONTALLY AND VERTICALLY AND SHALL ALLOW FOR MOVEMENT WITHOUT TRANSMITTING STRESS OR VIBRATION TO THE STRUCTURE. HANGERS SHALL BE EQUAL TO GRINNELL PRODUCTS.</p> <p>8. PROVIDE ACRYLIC SNAP-ON LABELS WITH DIRECTIONAL ARROWS FOR ALL PLUMBING PIPING SYSTEMS. LABELS SHALL BE SPACED A MAXIMUM OF 25'-0" APART AND WITHIN 2'-0" OF WALL PENETRATIONS.</p> <p>9. PENETRATIONS: ALL PIPING PENETRATIONS OF RATED ASSEMBLIES SHALL BE SEALED IN ACCORDANCE WITH UL LISTED THROUGH PENETRATION ASSEMBLIES.</p>	<p>PURGING:</p> <p>1. IN THE PRESENCE OF THE INDEPENDENT TESTING AGENCY, AND AFTER THE SUCCESSFUL COMPLETION OF THE INSPECTION OF THE SOURCES, THE NITROGEN BLANKET SHALL BE PURGED FROM EACH COMPLETE PIPE LINE SYSTEM. THEY SHALL THEN BE FLUSHED WITH THE GAS TO BE CARRIED, I.E. OXYGEN, NITROUS OXIDE, ETC., TO ENSURE THAT ALL TRACES OF TESTING GAS (NITROGEN) ARE REMOVED FROM THE SYSTEM.</p> <p>2. THE CONTRACTOR SHALL OBTAIN AND PAY FOR THE GASES NECESSARY TO COMPLETE THE PURGING, FROM THE HOSPITAL'S SUPPLIES, PENDING SATISFACTORY NEGOTIATIONS WITH THE HOSPITAL.</p>
<p>CERTIFICATION:</p> <p>1. THE OWNER SHALL RETAIN AN INDEPENDENT TESTING AGENCY TO TEST THE MEDICAL GASES AND VACUUM SYSTEMS FOR CROSS CONNECTION AND PURITY. ALL TESTING SHALL BE AS OUTLINED IN NFPA 99.</p> <p>2. THE CONTRACTOR SHALL CO-OPERATE WITH THE TESTING AGENCY IN THE FOLLOWING MANNER: A. PROVIDE A QUALIFIED REPRESENTATIVE TO WITNESS ALL TESTS FOR CROSS CONNECTION AND PURITY. B. PROVIDE IMMEDIATE LABOR, MATERIALS, AND EQUIPMENT TO MAKE CONNECTIONS, WHEN REQUIRED WITHOUT DELAY. C. INSTALL SENSING AND REGULATING DEVICES AND EQUIPMENT AS REQUIRED BY THE TESTING AGENCY. D. BE PREPARED TO PUT ALL MEDICAL GAS SYSTEMS AND EQUIPMENT INTO FULL OPERATION AND CONTINUE THE OPERATION OF SAME DURING EACH WORKING DAY OF TESTING. OBTAIN ALL GASES REQUIRED BY THE TESTING AGENCY TO COMPLETE ALL TESTING AS INDICATED IN ABOVE. E. PROVIDE ALL PURGE VALVES REQUIRED BY TESTING AGENCY TO COMPLETE ALL TESTING.</p> <p>3. INCLUDE IN THE CONTRACT THE COSTS OF ALL BALANCING, FLOW REGULATING, AND SENSING DEVICE CHANGES AS DETERMINED BY THE TESTS.</p> <p>4. SHOULD THE INDEPENDENT TESTING AGENCY FIND THE INSTALLED SYSTEM DOES NOT COMPLY WITH THE REQUIREMENTS OF NFPA 99, THE CONTRACTOR SHALL MAKE GOOD ANY DEFICIENCIES AT HIS OWN EXPENSE AND ALSO BEAR THE COSTS OF ANY RETESTING REQUIRED.</p> <p>5. INSTALLATION SHALL NOT BE CONSIDERED COMPLETE UNTIL FINAL REPORTS BY THE TESTING AGENCY ARE SUBMITTED AND APPROVED BY THE OWNER.</p> <p>6. AFTER TESTING, LEAVE MEDICAL GAS SYSTEMS ACTIVATED.</p>	



SECOND FLOOR OBSTETRICS TRIAGE RENOVATION FOR
LEWIS GALE MEDICAL CENTER
1900 ELECTRIC ROAD
SALEM, VA 24153

DRAWN BY: ARR
CHECKED BY: JDW

PLUMBING SPECIFICATIONS



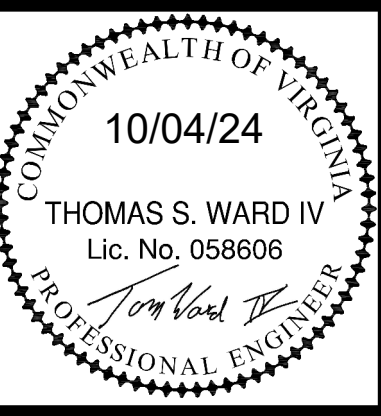
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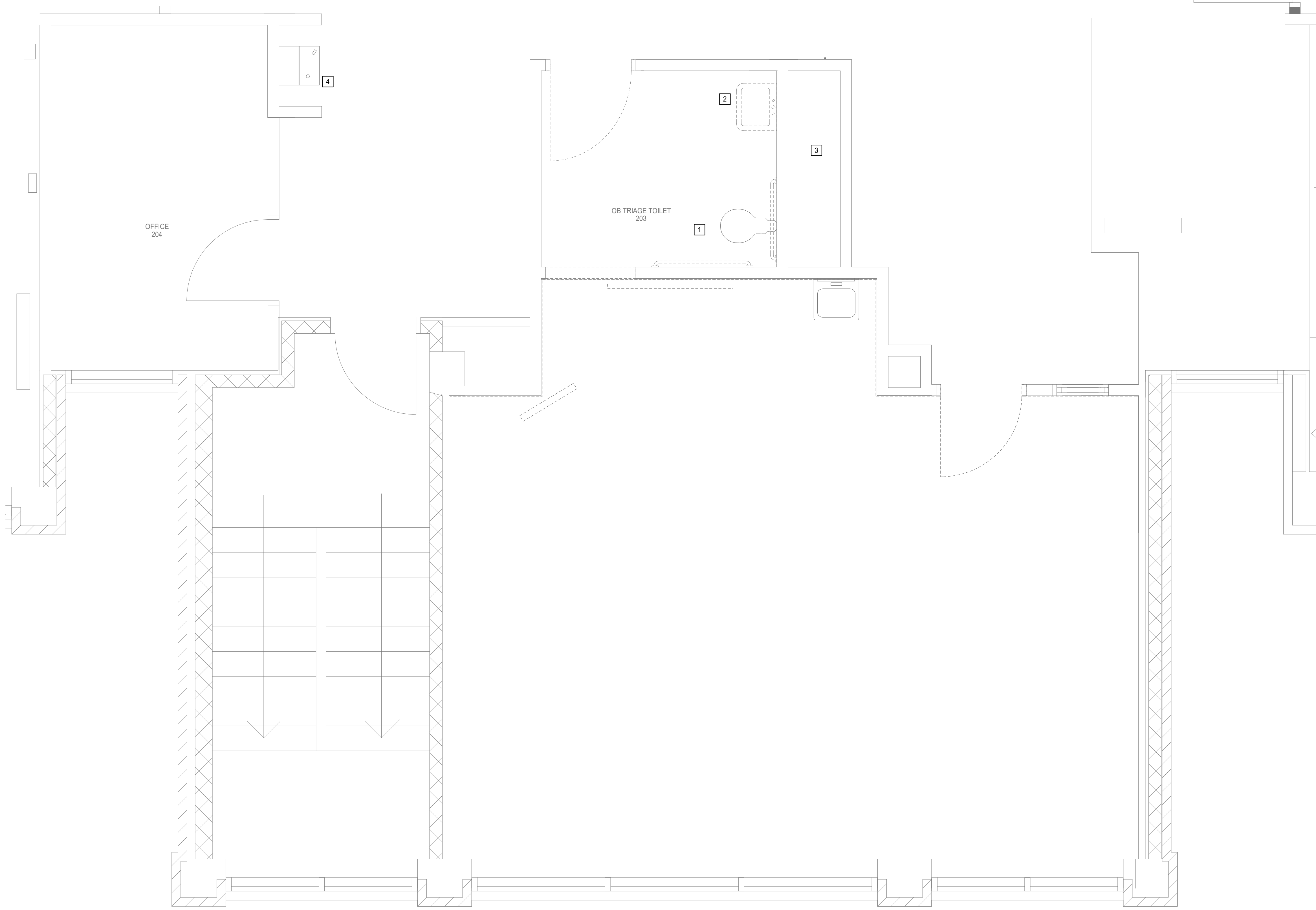
SECOND FLOOR
 PARTIAL OB
 TRIAGE
 PLUMBING
 DEMOLITION
 PLAN



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PLUMBING KEYED NOTES

KEYED NOTE	Description
1	EXISTING WATER CLOSET, FLUSH VALVE AND ASSOCIATED PIPING TO BE REMOVED. INSPECT EXISTING DRAIN PIPING AND WATER PIPING TO ENSURE IT IS IN GOOD CONDITION FOR REUSE. TEMPORARILY PLUG AND CAP EXISTING WASTE AND WATER LINES FOR REPLACEMENT FIXTURES.
2	EXISTING LAVATORY, MIXING VALVE AND ASSOCIATED PIPING TO BE REMOVED. INSPECT EXISTING DRAIN PIPING AND WATER PIPING TO ENSURE IT IS IN GOOD CONDITION FOR REUSE. TEMPORARILY PLUG AND CAP EXISTING WASTE AND WATER LINES FOR REPLACEMENT FIXTURES.
3	EXISTING PLUMBING CHASE.
4	EXISTING DRINKING FOUNTAIN TO REMAIN.



1 SECOND FLOOR PARTIAL OB TRIAGE PLUMBING DEMOLITION PLAN
 Scale: 1/2" = 1'-0"

DATE: OCT. 25, 2024

REVISIONS	DESCRIPTION

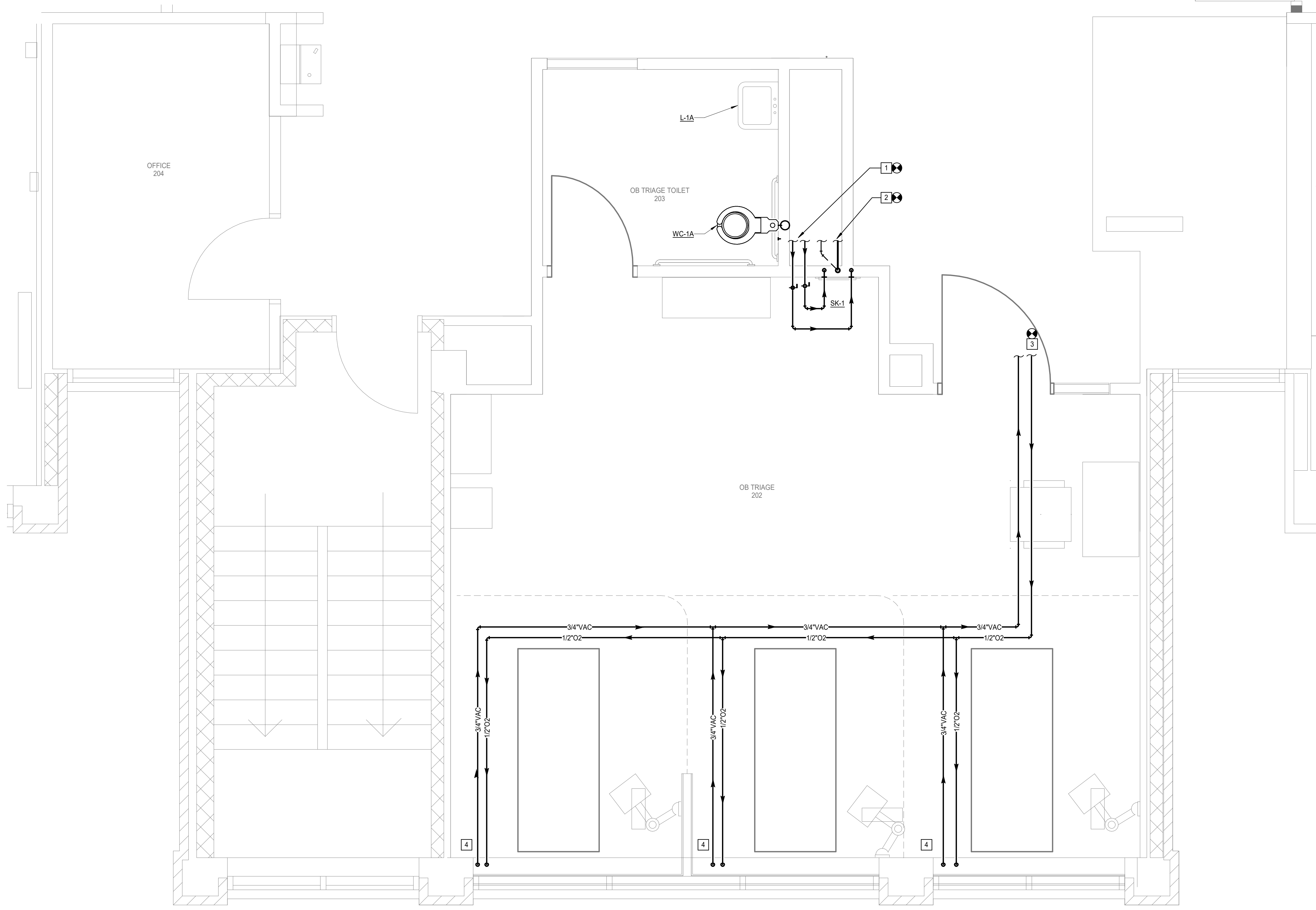
PLUMBING KEYED NOTES	
KEYED NOTE	DESCRIPTION
1	1/2" HOT AND COLD WATER TO EXISTING HOT AND COLD WATER RISERS LOCATED IN CHASE. FIELD VERIFY EXACT LOCATION OF EXISTING WATER PIPES.
2	2" SANITARY WASTE AND VENT TO EXISTING WASTE AND VENT RISERS LOCATED IN CHASE. FIELD VERIFY EXACT LOCATION OF WASTE AND VENT PIPES. PATCH FLOOR TO MATCH EXISTING.
3	CONNECT NEW 1/2" MEDICAL OXYGEN, AND 3/4" MEDICAL VACUUM TO EXISTING PIPING IN ZONE. FIELD VERIFY EXACT LOCATION OF EXISTING PIPES.
4	1/2" MEDICAL OXYGEN, AND 3/4" MEDICAL VACUUM DOWN TO NEW WALL MOUNT MEDICAL GAS OUTLETS. SEE SPECIFICATION FOR OUTLET TYPES.

DRAWN BY: ARR
 CHECKED BY: JDW

SECOND FLOOR
 PARTIAL OB
 TRIAGE
 PLUMBING NEW
 WORK PLAN

COMMONWEALTH OF VIRGINIA
 10/04/24
 THOMAS S. WARD IV
 Lic. No. 058606
 PROFESSIONAL ENGINEER

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1 SECOND FLOOR PARTIAL OB TRIAGE PLUMBING NEW WORK PLAN
 Scale: 1/2" = 1'-0"

GRILLES, REGISTERS AND DIFFUSERS

MARK	DESCRIPTION	MOUNTING TYPE	FACE WIDTH	FACE LENGTH	NECK SIZE	MAX AIRFLOW (CFM)	MAX AIR P.D. IN. H2O	MAX N.C.	MANUFACTURER	MODEL	REMARKS
A	SQUARE CEILING DIFFUSER	LAY-IN OR FLANGE	24"	24"	8"ø	230	0.10	25	PRICE	ASCD	1,2
B	SQUARE CEILING DIFFUSER	LAY-IN OR FLANGE	24"	24"	10"ø	420	0.10	25	PRICE	ASCD	1,2
Y	PERFORATE RETURN DIFFUSER	LAY-IN OR FLANGE	24"	24"	18/18	1350	0.05	20	PRICE	PDDR	---
Z	PERFORATE RETURN DIFFUSER	LAY-IN OR FLANGE	24"	24"	8/8	350	0.05	20	PRICE	PDDR	---

- GENERAL NOTES:**
- COORDINATE EXACT GRILLE AND DIFFUSER LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS.
 - ALL CEILING DIFFUSERS SHALL BE 4-WAY THROW TYPE UNLESS NOTED OTHERWISE.

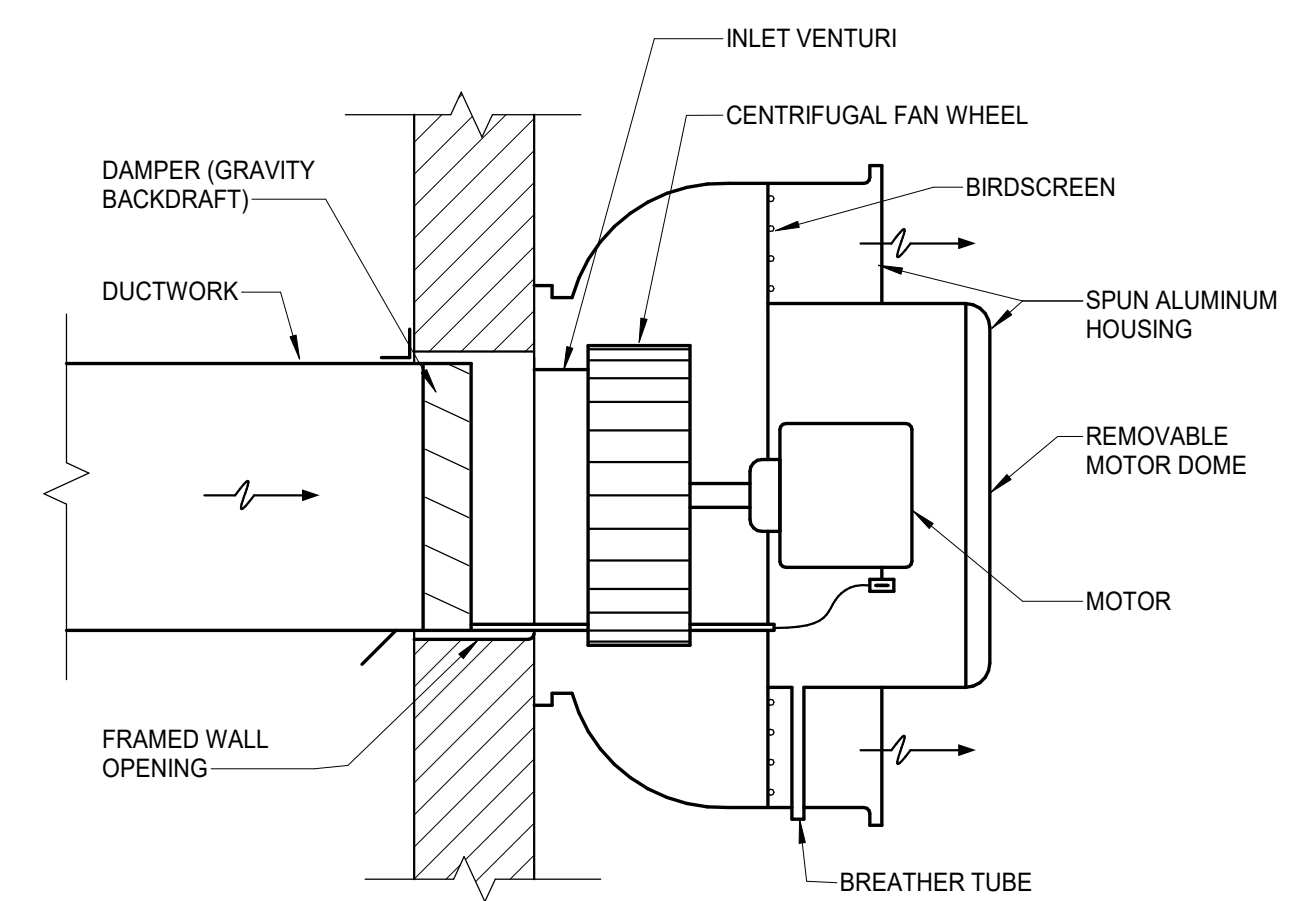
- REMARKS:**
- DUCT MOUNTED BALANCING DAMPERS SHALL BE FURNISHED AND INSTALLED WHERE RUNOUT IS ABOVE AN ACCESSIBLE CEILING. IN LOCATIONS ABOVE HARD CEILINGS, DIFFUSERS SHALL BE FURNISHED WITH OPPOSED BLADE DAMPER OPERABLE THRU DIFFUSER FACE.
 - THE HARD DUCT TAP FITTING AND FLEXIBLE DUCT CONNECTION SHALL BE SIZED TO EQUAL THE DIAMETER FOR THE DIFFUSER CONNECTION.

FAN

MARK	CFM	EXT. STATIC PRESSURE (IN. W.C.)	FAN RPM	ELECTRICAL CONNECTION				INTERLOCKED WITH	FAN TYPE	MANUFACTURER	MODEL	REMARKS	
				V	PH	F	MCA						
EF-1	1320	0.50	1,008	120	1	60	7.30	15	VAV-10-23	WALL MOUNTED	COOK	165WH3B	ALL

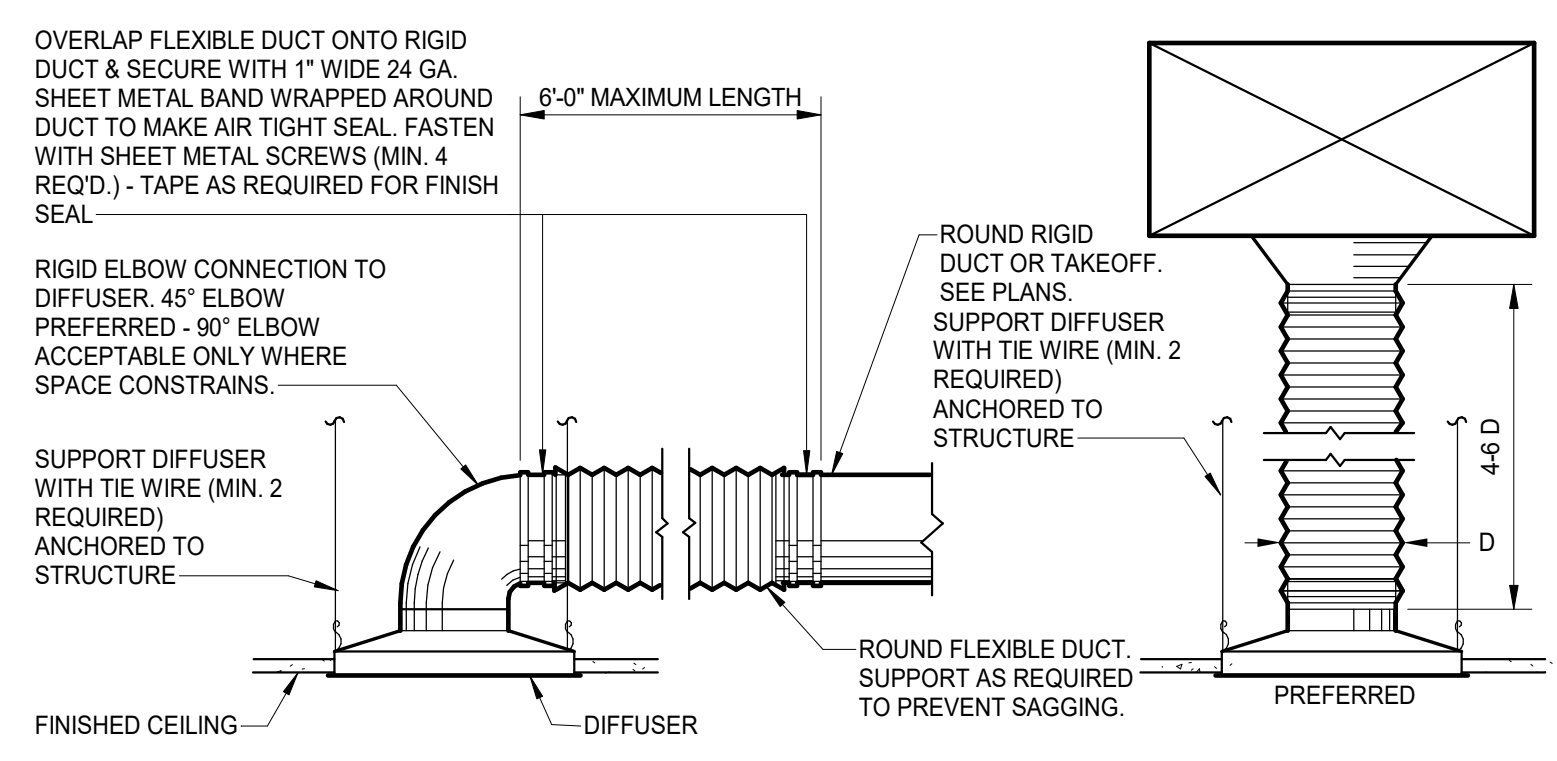
- GENERAL NOTES:**
- EXTERNAL STATIC PRESSURE INCLUDES LOSSES DUE TO DUCTWORK, AIR DEVICES AND DAMPERS. UNIT CASING MUST BE ADDED TO EXTERNAL STATIC PRESSURE TO OBTAIN TOTAL PRESSURE LOSS. INCREASE HORSEPOWER AS REQUIRED TO MEET YOUR TOTAL PRESSURE LOSS. COORDINATE WITH ELECTRICAL.
 - MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON UNIT FOR SERVICE, MAINTENANCE, AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCE AS REQUIRED BY NEC.

- REMARKS:**
- PROVIDE WITH DISCONNECT.
 - PROVIDE WITH GRAVITY BACKDRAFT DAMPER.

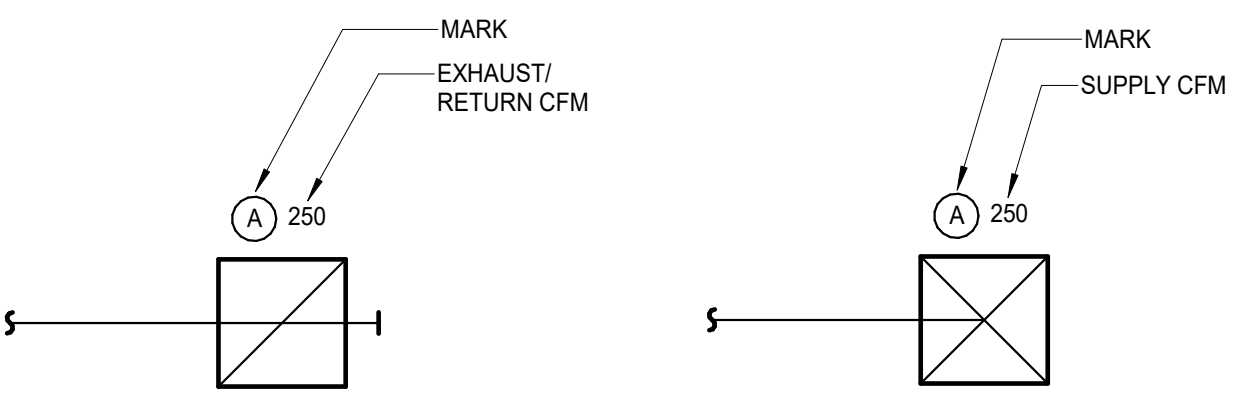


NOTES:
PROVIDE FAN WITH EXTERNAL DISCONNECTING MEANS. DISCONNECT INSIDE FAN HOUSING NOT ACCEPTABLE.

6 SIDEWALL EXHAUST FAN
Scale: NONE

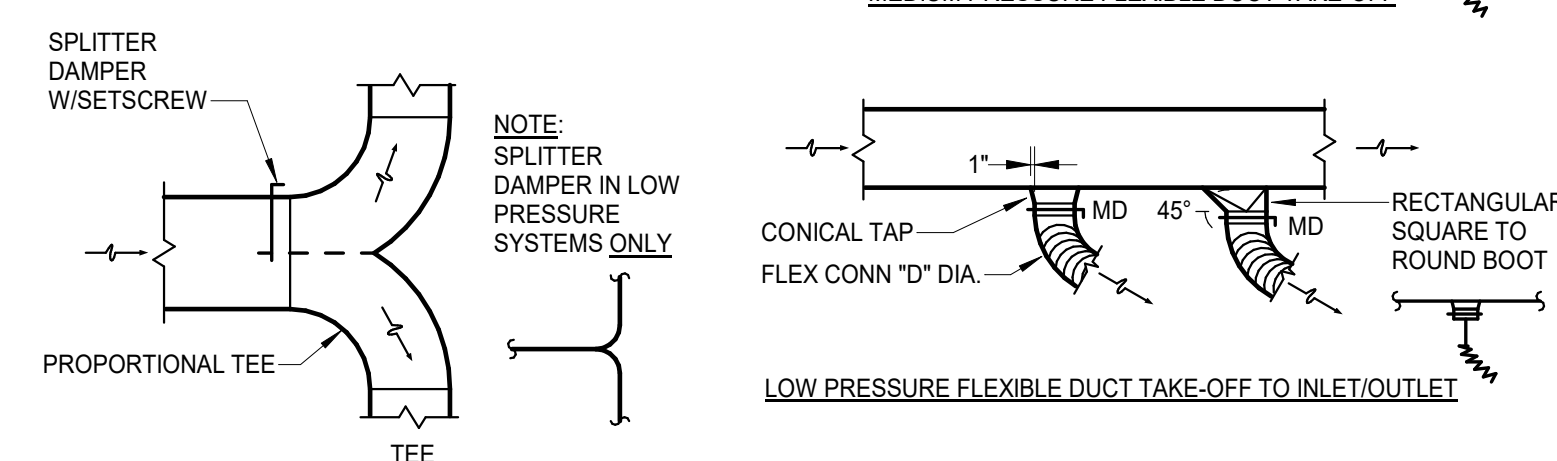
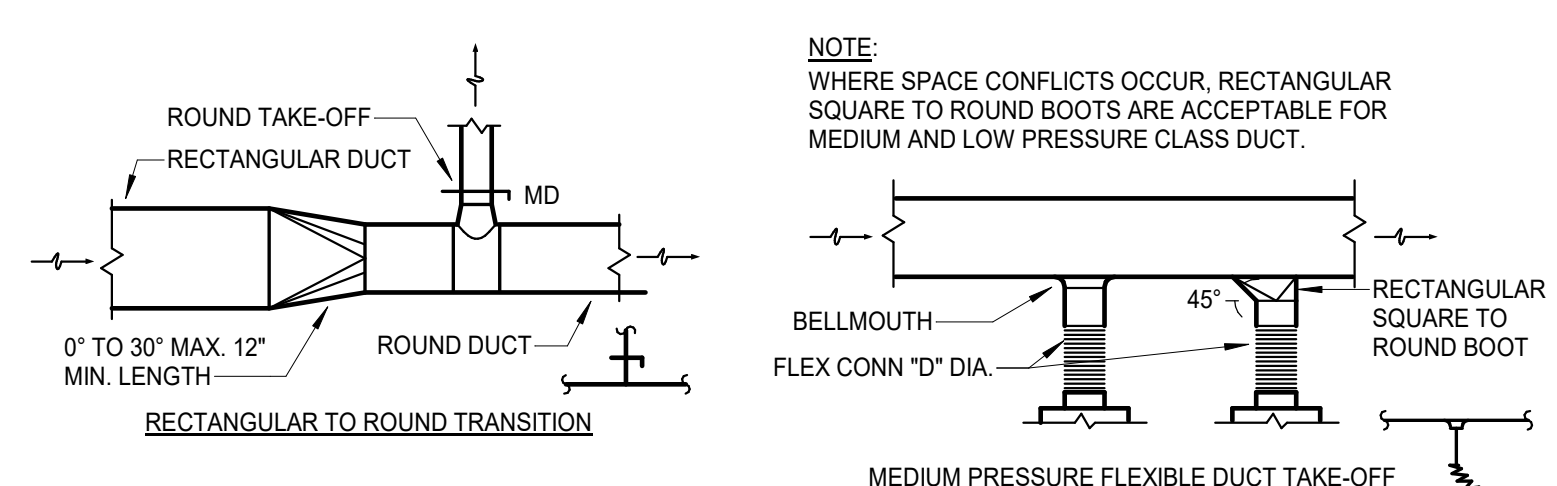


2 CEILING DIFFUSER INSTALLATION
Scale: NONE

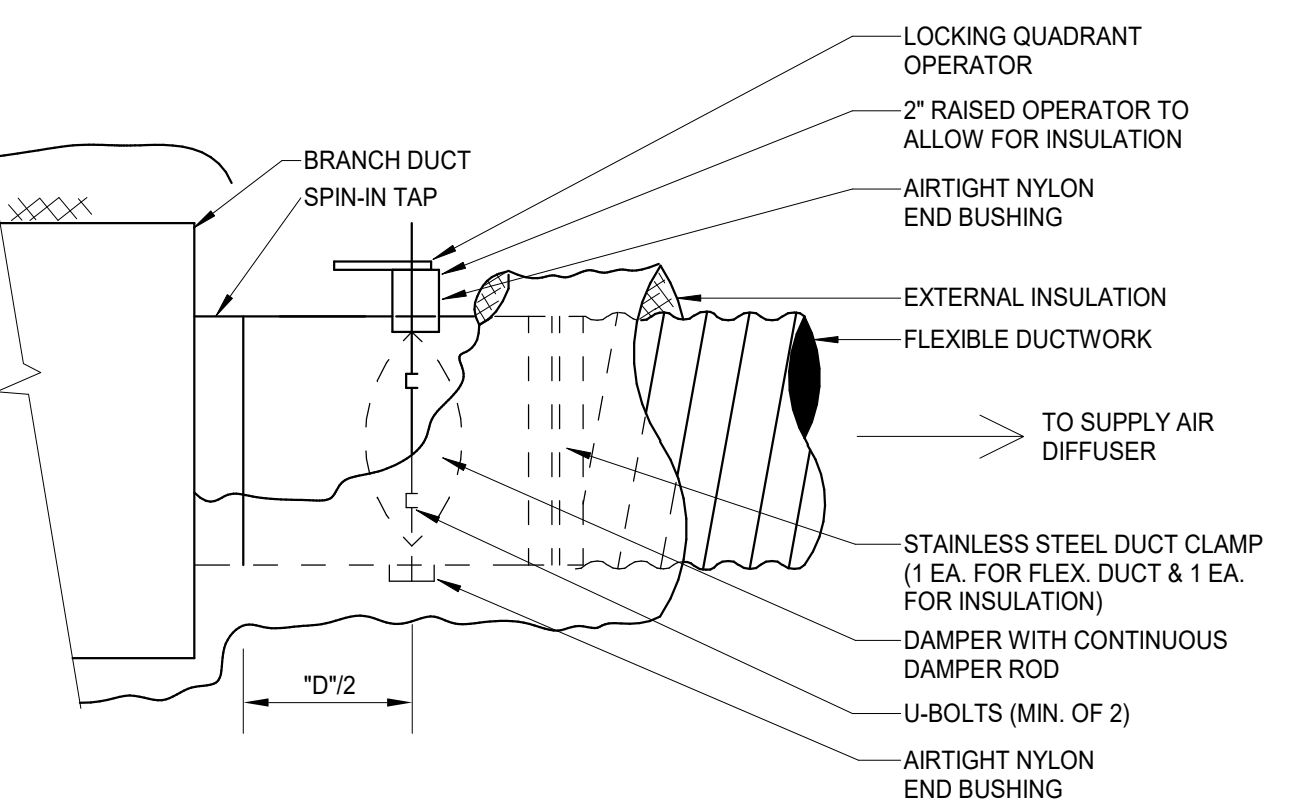


5 REGISTER SIZING
Scale: NONE

4 DIFFUSER SIZING
Scale: NONE



1 STANDARD DUCT CONSTRUCTION
Scale: NONE



3 FLEXIBLE DUCT TAP - SPIN-IN
Scale: NONE

GENERAL NOTES:

- INSTRUCT THE OWNER IN THE PROPER OPERATION AND MAINTENANCE OF THE MECHANICAL SYSTEMS UNTIL THE OWNER IS FULLY PREPARED TO OPERATE AND MAINTAIN THE MECHANICAL SYSTEM. HOWEVER, LENGTH OF INSTRUCTION TIME SHALL BE LIMITED TO ONE DAY.
- EQUIPMENT, MATERIALS AND LABOR REQUIRED BY THESE CONTRACT DRAWINGS SHALL BE GUARANTEED TO BE FREE FROM DEFECTIVE MATERIALS OR WORKMANSHIP FOR ONE YEAR AFTER FINAL ACCEPTANCE OF THE PROJECT UNLESS SPECIFIED OTHERWISE. DEFECTIVE MATERIALS OR WORKMANSHIP OCCURRING DURING THIS PERIOD SHALL BE CORRECTED AT NO ADDITIONAL COST.
- GENERAL CONTRACTOR TO VERIFY THE FINAL LOCATION OF ALL THERMOSTATS, TEMPERATURE SENSORS, PANELS AND CONTROL INSTRUMENTS WITH THE ARCHITECT AND OWNER PRIOR TO ROUGH-IN.
- GENERAL CONTRACTOR TO VERIFY WALL OPENINGS WITH STRUCTURE. LOCATIONS OF NEW AND EXISTING EQUIPMENT AND ROUTE OF DUCTWORK WITH EXISTING CONDITIONS PRIOR TO ROUGH-IN.
- REFER TO ARCHITECTURAL, STRUCTURAL AND ELECTRICAL DRAWINGS TO COORDINATE THE EXACT LOCATIONS OF DIFFUSERS, REGISTERS, GRILLES, PIPING AND OTHER MECHANICAL EQUIPMENT WITH CEILING GRID, LIGHTS, BEAMS AND OTHER BUILDING COMPONENTS.
- CEILING GRID AND OTHER ITEMS SHALL NOT BE SUPPORTED FROM OR IN CONTACT WITH MECHANICAL EQUIPMENT. CONDUIT, WIRING, PIPING AND SUPPORTS SHALL NOT BE LOCATED IN FRONT OF FAN COIL ACCESS PANELS.
- DUCTWORK AND PIPING SHALL NOT BE INSTALLED ABOVE ELECTRICAL PANELS. COORDINATE INSTALLATION OF DUCTWORK AND PIPING WITH ELECTRICAL PANELS WHEN SHOWN NEAR PANELS OR OVER ELECTRICAL ROOMS.
- MATERIAL AND INSTALLATION SHALL COMPLY WITH LOCAL CODES, APPLICABLE PROVISIONS OF LATEST EDITION OF NATIONAL FIRE PROTECTION ASSOCIATION, LOCAL UTILITY REGULATIONS AND GOVERNMENTAL DEPARTMENTS HAVING JURISDICTION.
- MECHANICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL SUPPORTS REQUIRED TO MOUNT MECHANICAL EQUIPMENT, PIPING AND DUCTWORK. EQUIPMENT SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
- ALL DUCTWORK TRANSITIONS AND PIPING INCREASERS/REDUCERS SHALL BE PROVIDED AS REQUIRED FOR EQUIPMENT CONNECTIONS. SEE MANUFACTURERS DATA FOR ACTUAL DUCTWORK AND PIPING CONNECTION SIZES AND LOCATIONS.
- PROVIDE AIR DEFLECTORS IN ALL SUPPLY AIR DUCTWORK SQUARE ELBOWS.
- DUCTWORK AND PIPING LAYOUTS ARE FOR DIAGRAMMATICAL PURPOSES ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEASURING AND COORDINATING ALL DUCTWORK AND PIPING PRIOR TO INSTALLATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANY AND ALL OFFSETS AS REQUIRED TO MEET THE INTENT OF THE DESIGN DOCUMENTS AT NO ADDITIONAL COST TO THE OWNER.
- THE GENERAL CONTRACTOR SHALL SEAL AND FLASH ALL WALL, ROOF, AND FLOOR PENETRATIONS AIRTIGHT AND WATERTIGHT AT EACH PIPE, DUCTWORK, AND CONDUIT PENETRATION. PROVIDE AIRTIGHT SEAL BETWEEN ALL FIRE PARTITION AND OR WALL PENETRATIONS WITH UL APPROVED FIRE-RESISTANT MATERIAL MATCHING OR EXCEEDING THE PENETRATED FIRE PARTITION AND OR WALLS RATING.
- ALL CUTTING AND PATCHING FOR THE INSTALLATION OF NEW WORK IN EXISTING BUILDING SHALL BE DONE BY THE GENERAL CONTRACTOR.
- PROVIDE FLEXIBLE DUCT CONNECTIONS BETWEEN THE SUPPLY AND RETURN DUCTS FROM ALL AIR UNITS AND AT BUILDING EXPANSION JOINTS. FLEXIBLE CONNECTIONS SHALL BE WEATHERTIGHT WHEN EXPOSED.
- PRIOR TO DEMOLITION THE CONTRACTOR SHALL TEST AND BALANCE THE EXISTING HVAC SYSTEM SHOWN ON THE DRAWINGS. CONTRACTOR SHALL DOCUMENT EXISTING AIRFLOWS TO BE REBALANCED DURING NEW CONSTRUCTION.
- THE CEILING SPACES ARE EXTREMELY CONGESTED AND WILL REQUIRE SIGNIFICANT ON-SITE FIELD COORDINATION BETWEEN THE CONSTRUCTION TRADES. PRIOR TO FABRICATION OF DUCTWORK THE CONTRACTOR SHALL GENERATE COORDINATION DRAWINGS AS REQUIRED FOR ALL SUCH AREAS AND SHOULD INDICATE STRUCTURE, CEILING FEATURES, LIGHT FIXTURES, PLUMBING AND FIRE SERVICE PIPING AND ALL MECHANICAL EQUIPMENT, PIPING AND DUCTWORK.

GENERAL DEMOLITION NOTES:

- THE CONTRACTOR SHALL REMOVE OR ALTER AS NECESSARY ALL EXISTING PIPING, EQUIPMENT, EQUIPMENT FOUNDATIONS, AND APPURTENANCES THAT ARE NOT REQUIRED FOR THE EXISTING SYSTEMS TO REMAIN. CONTRACTOR SHALL VISIT THE SITE TO DETERMINE THE SCOPE OF THIS WORK AND VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING BIDS.
- THESE DRAWINGS HAVE BEEN DEVELOPED FROM EXISTING DRAWINGS AND LIMITED FIELD MEASUREMENTS AND MAY NOT FULLY REFLECT ACTUAL FIELD CONDITIONS. THE CONTRACTOR SHALL VERIFY FIELD CONDITIONS AND NOTIFY THE ARCHITECT IN WRITING OF ANY WORK DESCRIBED IN THE CONTRACT DOCUMENTS WHICH CANNOT BE PERFORMED DUE TO EXISTING CONDITIONS.
- EXISTING EQUIPMENT SHALL BE TURNED OVER TO THE OWNER, UNLESS DIRECTED OTHERWISE AND LOCATED AS DIRECTED BY THE OWNER. ALL OTHER ITEMS TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND REMOVED FROM THE PREMISES.
- REMOVAL OF EXISTING FIXTURES AND EQUIPMENT MAY AFFECT ADJACENT SPACES NOT IN SCOPE. THE CONTRACTOR SHALL COORDINATE POTENTIAL SPACE INTERRUPTIONS WITH THE OWNER AND ARCHITECT PRIOR TO DEMOLITION.
- DEMOLITION WORK INCLUDES, BUT IS NOT NECESSARILY LIMITED TO THOSE ITEMS NOTED. OTHER ITEMS OF A MINOR NATURE MAY EXIST WHICH ARE NOT SPECIFICALLY NOTED ON THE DRAWINGS ARE TO BE REMOVED AS REQUIRED, TO PROVIDE ACCESS AND ALLOW ALTERATION OR NEW WORK TO PROCEED.
- INSULATION ON EXISTING PIPING OR DUCTWORK THAT IS DAMAGED OR REMOVED DUE TO THE DEMOLITION WORK SHALL BE REPLACED AND SEALED AS REQUIRED TO PROVIDE CONTINUOUS COVERAGE.
- ALL ACCESSIBLE ABANDONED DUCTWORK SHALL BE REMOVED AND PROPERLY DISPOSED OF.
- FIRE-RATED ASSEMBLIES SHALL BE MAINTAINED IN ACCORDANCE WITH AN APPROVED AND TESTED ULTHROUGH PENETRATION FIRESTOP SYSTEM AS SPECIFIED IN THE FIRE RESISTANCE DIRECTORY.
- DEMOLITION WORK CREATING NOISE WHICH CAN BE HEARD OUTSIDE OF THE EXISTING SPACE MUST BE COORDINATED WITH THE OWNER SO AS NOT TO DISRUPT THE ADJOINING SPACES.
- PORTIONS IF THE BUILDING WILL BE OCCUPIED DURING THIS RENOVATION, THE GENERAL CONTRACTOR SHALL TAKE ALL MEASURES NECESSARY TO PROVIDE FOR THE PROTECTION AND SAFETY OF THE BUILDING OCCUPANTS.

BASIS OF DESIGN

THE MANUFACTURER AND MODEL NUMBER LISTED IN THE DRAWINGS OR SPECIFICATIONS ARE THE BASIS OF DESIGN. WHEN PROVIDING EQUIPMENT THAT IS NOT THE BASIS OF DESIGN, THE CONTRACTOR SHALL PROVIDE AN ITEMIZED LIST OF ALL DEVIATIONS FROM THE INFORMATION DETAILED IN BOTH THE SPECIFICATION SECTION AND SCHEDULE. ADDITIONALLY, THE EQUIPMENT MUST MEET THE PHYSICAL CONSTRAINTS OF ROOM INCLUDING COORDINATION WITH OTHER TRADES AND ALL EQUIPMENT CLEARANCES, INCLUDING OTHER TRADES. FINALLY, THE CONTRACTOR SHALL PROVIDE AT THE CONTRACTOR'S COST ANY SCOPE INCREASE AND DEDUCTIONS BASED ON THE NON-BASIS OF DESIGN EQUIPMENT FOR THE FOLLOWING MINIMUM ITEMS:

- ELECTRICAL MODIFICATIONS, INCLUDING WIRING, CONDUIT, DISCONNECTS, OVERCURRENT PROTECTION, PANELS, ETC.
- STRUCTURAL MODIFICATIONS.
- CIVIL MODIFICATIONS.
- PLUMBING MODIFICATIONS.
- DUCT AND PIPE CONNECTIONS OR ARRANGEMENTS.
- SPACE HEATING AND COOLING REQUIREMENTS.
- EXHAUST OR VENTILATION MODIFICATIONS.
- VIBRATION ISOLATION REQUIREMENTS.
- CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE EQUIPMENT MANUFACTURER FOR ANY CHANGES TO THE REFRIGERANTS REQUIRED PER NEW EPA GUIDELINES. CONTRACTOR SHALL COORDINATE WITH OTHER DISCIPLINES FOR CHANGES IN EQUIPMENT SIZE OR ELECTRICAL REQUIREMENTS.

HVAC EQUIPMENT SIZES ARE BASED UPON ASHRAE 2021 WEATHER DATA AS LISTED BELOW.
HEATING AND COOLING DESIGN CONDITION LOCATION: **ROANOKE-BLACKSBURG, VIRGINIA**
SUMMER:
• OUTDOOR CONDITIONS: **92.1°F DB, 72.6 WB**
• INDOOR SETPOINTS: **75°F DB 50% RH**
WINTER:
• OUTDOOR CONDITIONS: **15.6°F DB**
• INDOOR SETPOINTS: **72°F DB 35% RH**

Salas O'Brien
salasobrien.com 540-952-9651
Project No: 2024-01751-00
119 Norfolk Ave SW, Suite 310
Roanoke, Virginia 24011

DATE: OCT. 25, 2024

REVISIONS	DATE	DESCRIPTION

HUGHES ASSOCIATES ARCHITECTS & ENGINEERS
656 ELM AVENUE, S.W. | ROANOKE, VIRGINIA 24016
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SECOND FLOOR OBSTETRICS TRIAGE RENOVATION FOR
LEWIS GALE MEDICAL CENTER
1900 ELECTRIC ROAD SALEM, VA 24153

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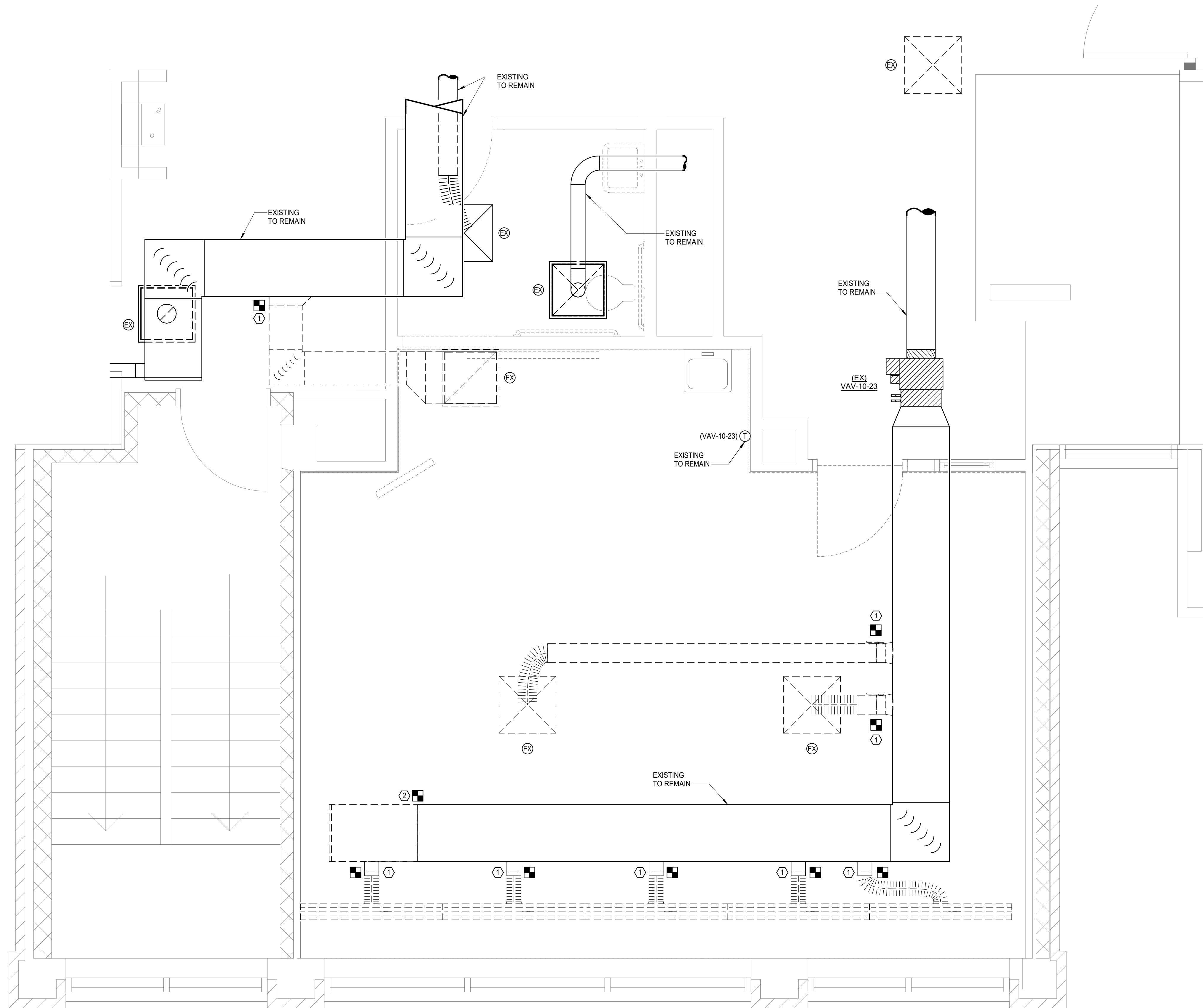
MECHANICAL
GENERAL NOTES,
DETAILS,
SCHEDULES, AND
SYMBOLS

COMMONWEALTH OF VIRGINIA
10/25/24
SAMUEL S. LOTT
Lic. No. 061900
PROFESSIONAL ENGINEER

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GENERAL SHEET NOTES:

1. ALL CEILING AIR DEVICES TO BE COVERED AND PROTECTED DURING DEMOLITION AND FLEX DUCT SHALL BE DEMOLISHED. ANY DEVICES DAMAGED DURING DEMOLITION OR CONSTRUCTION SHALL BE REPLACED IN KIND.
2. EXISTING CEILING AIR DEVICES TO BE RELOCATED BASED ON NEW RCP. REFER TO NEW WORK PLAN FOR NEW LOCATIONS.
3. ALL TERMINAL UNITS THAT ARE BEING DEMOLISHED SHALL BE TURNED OVER TO OWNER.
4. CONTRACTOR SHALL INSPECT SPACE ABOVE CEILING AND DEMOLISH ANY AND ALL ABANDONED FLEX DUCT AND SEAL EXISTING DUCT AIR TIGHT.

MECHANICAL KEYED NOTES:

1. DEMOLISH EXISTING DUCT TAP BACK TO TRUNK, CAPPED, AND INSULATED TO MATCH EXISTING. AIR DEVICES AND MECHANICAL EQUIPMENT ATTACHED TO DEMOLISHED PORTION OF DUCT SHALL BE DEMOLISHED.
2. DEMOLISH EXISTING DUCTWORK AND SEAL DUCT MAIN AIR TIGHT.

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SECOND FLOOR
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 TRIAGE
 MECHANICAL
 DEMOLITION
 PLAN

COMMONWEALTH OF VIRGINIA
 10/25/24
 SAMUEL S. LOTT
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 PROFESSIONAL ENGINEER

1 SECOND FLOOR PARTIAL OB TRIAGE MECHANICAL DEMOLITION PLAN
 Scale: 1/2" = 1'-0"

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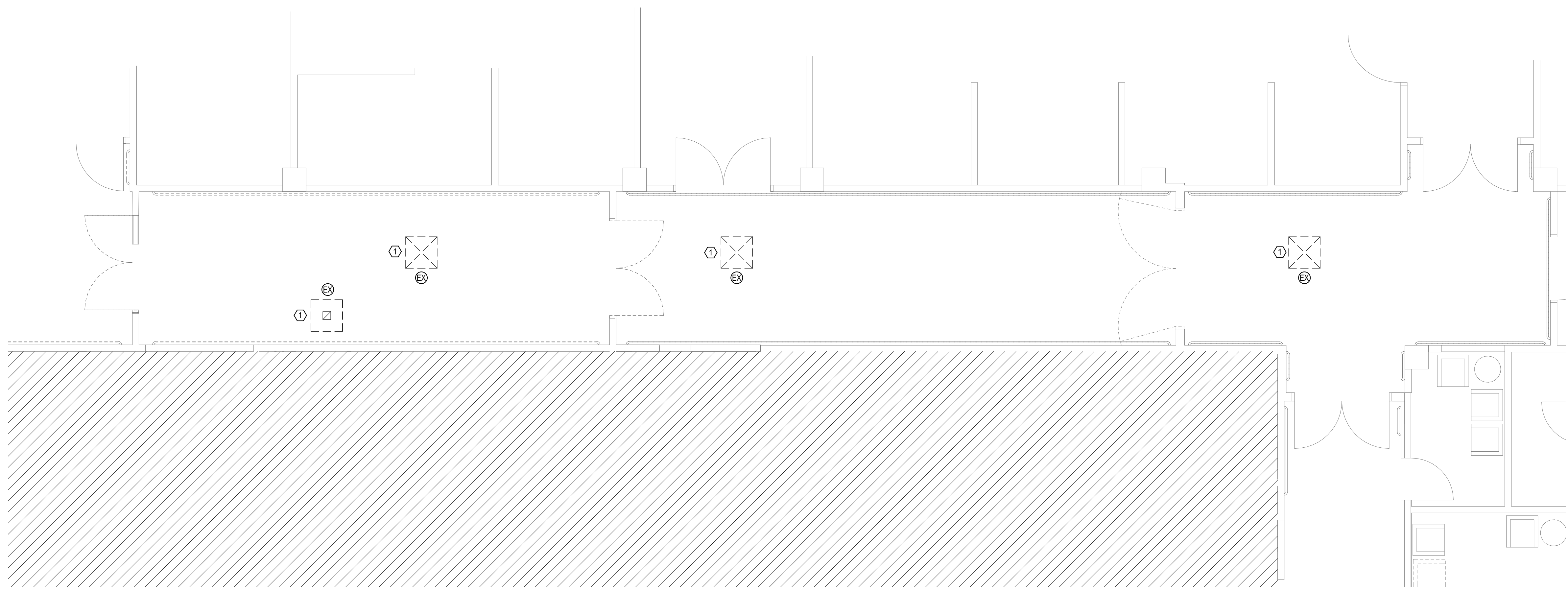
GENERAL SHEET NOTES:

- CONTRACTOR SHALL INSPECT SPACE ABOVE CEILING AND DEMOLISH ANY AND ALL ABANDONED FLEX DUCT AND SEAL EXISTING DUCT AIR TIGHT.
- PREPARE EXISTING THERMOSTAT FOR VAV BOX SERVING THE CORRIDOR FOR RELOCATION.

MECHANICAL KEYED NOTES:

- DEMOLISH EXISTING AIR DEVICES AND PREPARE DUCTWORK FOR NEW CONSTRUCTION.

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1 SECOND FLOOR PARTIAL WAITING ROOM MECHANICAL DEMOLITION PLAN
 Scale: 1/4" = 1'-0"

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SECOND FLOOR
 PARTIAL WAITING
 ROOM
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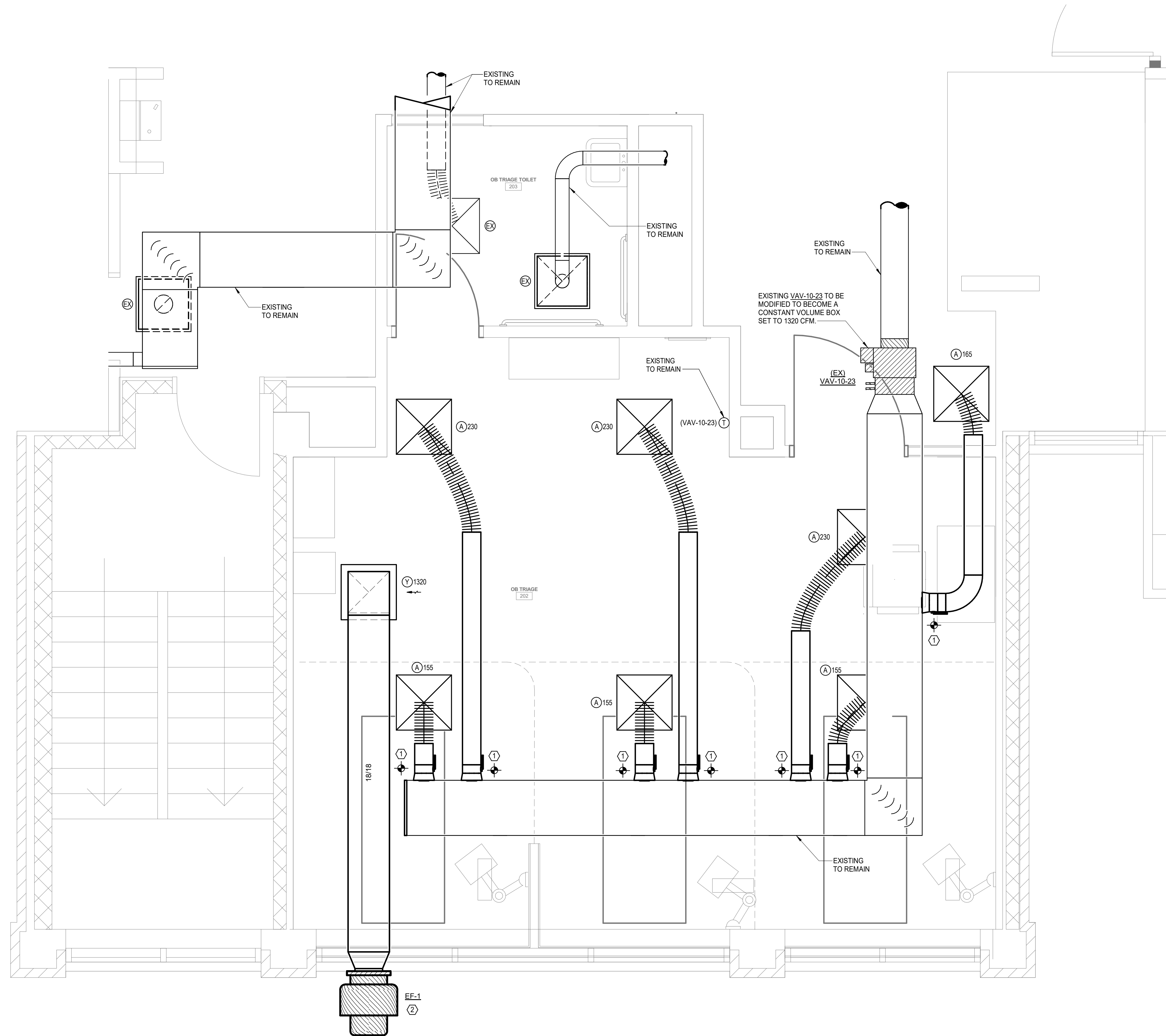
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GENERAL SHEET NOTES:

1. ALL EXISTING CEILING AIR DEVICES TO BE CLEANED AND EXAMINED. CONTRACTOR SHALL REPAIR, PAINT, OR REPLACED IF NECESSARY.

MECHANICAL KEYED NOTES: Ⓢ

1. INSTALL NEW SPIN IN FITTING WITH INTEGRAL DAMPER AND ROUTE NEW FLEX DUCT TO DIFFUSER AS SHOWN.
2. ROUTE EXHAUST DUCT UP FROM EXHAUST GRILLE IN CEILING SPACE TO EXTERIOR WALL. CONTRACTOR TO TRANSITION EXHAUST DUCT TO EXHAUST FAN MOUNTED ON EXTERIOR WALL.



1 SECOND FLOOR PARTIAL OB TRIAGE MECHANICAL NEW WORK PLAN
 Scale: 1/2" = 1'-0"

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SECOND FLOOR
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 TRIAGE
 MECHANICAL
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GENERAL SHEET NOTES:

1. THERMOSTAT FOR VAV-10-30 SERVING THE CORRIDOR TO BE RELOCATED TO NEW LOCATION AS SHOWN.
2. CONTRACTOR TO REBALANCE ALL DIFFUSERS CONNECTED TO VAV-10-30 NOT SHOWN ON DRAWING TO 145 CFM.

MECHANICAL KEYED NOTES: ②

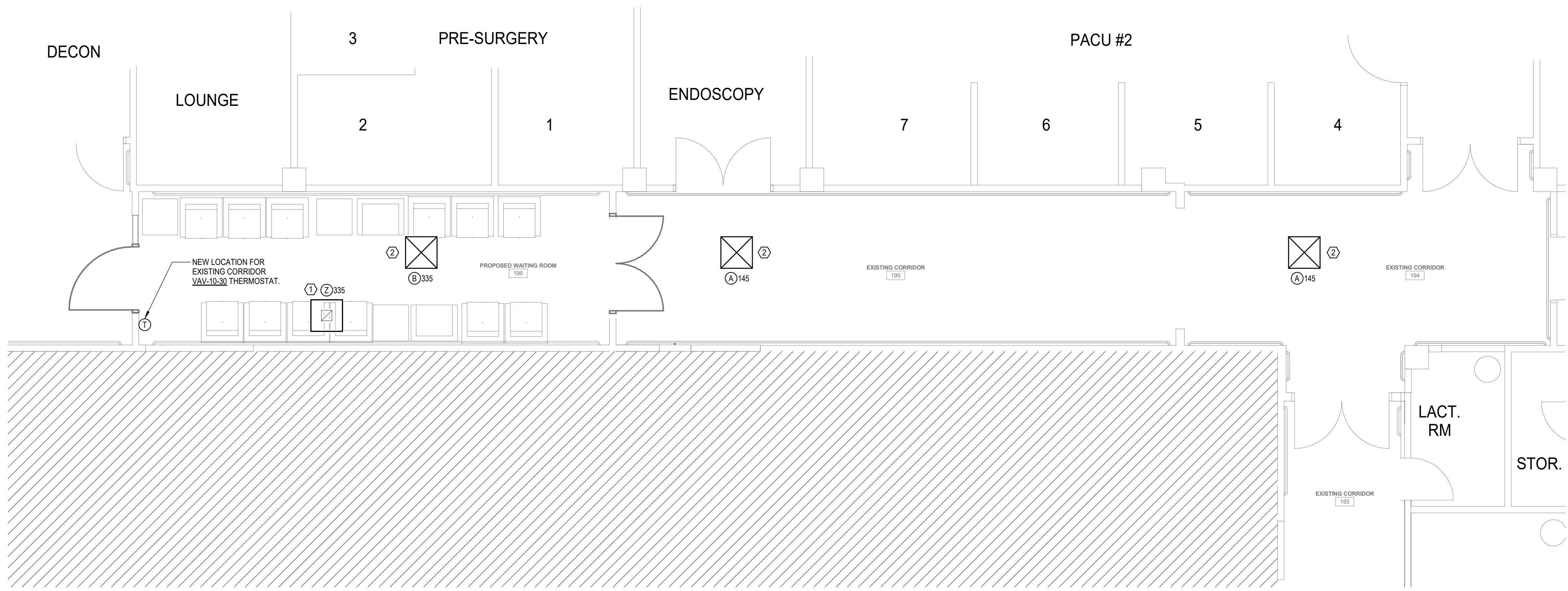
1. CONTRACTOR TO CONNECT EXISTING RETURN DUCTWORK TO NEW RETURN GRILLE. CONTRACTOR TO PROVIDE MANUAL DAMPER IN RETURN DUCTWORK AND BALANCE TO NEW RETURN GRILLE AS SHOWN.
2. INSTALL NEW SPIN IN FITTING WITH INTEGRAL DAMPER AND ROUTE NEW FLEX DUCT TO DIFFUSER AS SHOWN.

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SECOND FLOOR
 PARTIAL WAITING ROOM
 MECHANICAL
 NEW WORK PLAN

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1 SECOND FLOOR PARTIAL WAITING ROOM MECHANICAL NEW WORK PLAN
 Scale: 1/4" = 1'-0"

DATE: OCT. 25, 2024

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MECHANICAL CONTROLS AND SPECIFICATIONS

COMMONWEALTH OF VIRGINIA
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MECHANICAL SPECIFICATIONS

GENERAL

- PERFORM WORK IN ACCORDANCE WITH APPLICABLE STATUTES, ORDINANCES, CODES AND REGULATIONS OF GOVERNMENTAL AUTHORITIES HAVING JURISDICTION.
- OBTAIN ALL PERMITS REQUIRED.
- CONTRACT DRAWINGS ARE DIAGRAMMATIC ONLY AND DO NOT GIVE FULLY DIMENSIONED LOCATIONS OF VARIOUS ELEMENTS OF WORK. DETERMINE EXACT LOCATIONS FROM FIELD MEASUREMENTS.
- GUARANTEE WORK FOR 1 YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION OF HE PROJECT. DURING THAT PERIOD MAKE GOOD ANY FAULTS OR IMPERFECTIONS THAT MAY ARISE DUE TO DEFECTS OR OMISSIONS IN MATERIAL, EQUIPMENT OR WORKMANSHIP, AT THE OWNER'S OPTION, REPLACEMENT OF FAILED PARTS OR EQUIPMENT SHALL BE PROVIDED.
- IMMEDIATELY PRIOR TO SUBSTANTIAL COMPLETION OF THE PROJECT, REPLACE AIR FILTERS.
- PROVIDE EQUIPMENT HOUSEKEEPING PADS UNDER ALL FLOOR MOUNTED AND GROUND MOUNTED HVAC EQUIPMENT, AND AS SHOWN ON THE DRAWINGS. CONCRETE PADS ARE TO BE 4" THICK UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
- PROVIDE NAMEPLATES WITH 1/2" HIGH LETTERS AND FASTENED WITH EPOXY OR SCREWS.
- MAINTAIN QUALITY CONTROL OVER SUPERVISION, SUBCONTRACTORS, SUPPLIERS, MANUFACTURERS, PRODUCTS, SERVICES, SITE CONDITIONS AND WORKMANSHIP TO PRODUCE WORK IN ACCORDANCE WITH CONTRACT DOCUMENTS.
- COMPLY WITH INDUSTRY STANDARDS EXCEPT WHEN MORE RESTRICTIVE TOLERANCES OR SPECIFIED REQUIREMENTS INDICATE MORE RIGID STANDARDS OR MORE PRECISE WORKMANSHIP.
- PERFORM WORK BY PERSONS QUALIFIED TO PRODUCE WORKMANSHIP OF SPECIFIED QUALITY.
- SECURE PRODUCTS IN PLACE WITH POSITIVE ANCHORAGE DEVICES DESIGNED AND SIZED TO WITHSTAND STRESSES, VIBRATION, AND RACKING. UNDER NO CONDITIONS SHALL MATERIAL OR EQUIPMENT BE SUSPENDED FROM STRUCTURAL BRIDGING.
- PROVIDE FINISHES TO MATCH APPROVED SAMPLES. ALL EXPOSED FINISHES SHALL BE APPROVED BY THE ARCHITECT. SUBMIT COLOR SAMPLES AS REQUIRED.
- COMPLY WITH INSTRUCTIONS IN FULL DETAIL, INCLUDING EACH STEP IN SEQUENCE. SHOULD INSTRUCTION CONFLICT WITH CONTRACT DOCUMENTS, REQUEST CLARIFICATION FROM ARCHITECT / ENGINEER BEFORE PROCEEDING.

MECHANICAL ALTERATIONS

- INSPECT AND SERVICE EXISTING EQUIPMENT AND MATERIALS THAT ARE TO REMAIN OR TO BE REUSED. DISPOSAL OF EQUIPMENT, MATERIALS, OR HOUSEKEEPING PADS TO BE ABANDONED. PRIOR TO DISPOSAL, THE CONTRACTOR SHALL VERIFY WITH THE OWNER WHAT IS TO BE SALVAGED BY THE OWNER AND WHAT IS TO BECOME THE PROPERTY OF THE CONTRACTOR.
- HANDLING OF EQUIPMENT AND MATERIALS TO BE REMOVED.
- INSPECTION: EXISTING MATERIALS AND EQUIPMENT INDICATED ON THE DRAWINGS OR IN THE SPECIFICATIONS TO BE REUSED SHALL BE INSPECTED FOR DAMAGED OR MISSING PARTS. CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER, IN WRITING, ACCORDINGLY. IF USING MATERIALS SPECIFIED OR SHOWN ON THE DRAWING VOIDS OR DIMINISHES THE WARRANTY OR OPERATION OF REMAINING EQUIPMENT OR SYSTEMS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER, IN WRITING. DEMOLITION DRAWINGS ARE BASED ON CASUAL FIELD OBSERVATION, AND WHEN AVAILABLE, EXISTING RECORD DOCUMENTS. REPORT DISCREPANCIES TO ARCHITECT BEFORE DISTURBING EXISTING INSTALLATION, AND IMMEDIATELY AFTER SUCH DISCREPANCIES ARE DISCOVERED.
- APPLICATION: EXISTING MATERIALS AND EQUIPMENT INDICATED ON THE DRAWINGS OR IN THE SPECIFICATIONS TO BE REUSED SHALL BE CLEANED AND RECONDITIONED, INCLUDING CLEANING OF PIPING SYSTEMS AND HVAC COILS PRIOR TO INSTALLATION AND REUSE. MATERIAL AND EQUIPMENT REMOVED THAT IS NOT TO BE SALVAGED FOR OWNER'S USE OR FOR REUSE ON THE PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND BE REMOVED FROM THE SITE. MATERIAL OR EQUIPMENT SALVAGED FOR OWNER'S USE SHALL BE CAREFULLY HANDLED AND STORED WHERE DIRECTED BY THE OWNER OR THE ARCHITECT/ENGINEER. RELOCATE MATERIAL AND /OR EQUIPMENT AS DIRECTED BY OWNER. MATERIALS AND EQUIPMENT NOT INDICATED TO BE REMOVED OR ABANDONED SHALL BE RECONNECTED TO THE NEW SYSTEM. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL WALK AREAS TO BE RENOVATED WITH OWNER TO IDENTIFY AND DOCUMENT ITEMS TO BE SALVAGED FOR OWNER'S USE.
- SEQUENCE AND SCHEDULE: COORDINATE UTILITY SERVICE OUTAGES WITH UTILITY COMPANY, ARCHITECT AND OWNER. REMOVE CONCRETE HOUSEKEEPING PAD WHERE MATERIALS OR EQUIPMENT HAVE BEEN REMOVED.

TESTING, BALANCING, AND ADJUSTING

- VERIFY AND RECORD THE TESTING RESULTS PERFORMED BY THE MECHANICAL CONTRACTOR.
- THE OUTSIDE AIR, SUPPLY AIR, RETURN AIR, AND EXHAUST AIR FOR THE SYSTEM SHALL BE ADJUSTED TO WITHIN +/- 10% OF THE VALUE SCHEDULED ON THE DRAWINGS.
- SUPPLY FANS: TEST AND ADJUST FAN RPM TO ACHIEVE DESIGN CFM REQUIREMENTS. TEST AND RECORD MOTOR VOLTAGE AND AMPERAGES. COMPARE DATA WITH THE NAMEPLATE LIMITS TO ENSURE FAN MOTOR IS NOT IN OR ABOVE THE SERVICE FACTOR. TEST AND ADJUST THE OUTSIDE AIR ON APPLICABLE EQUIPMENT USING A PITOT-TUBE TRAVERSE.
- EXHAUST FANS: TEST, ADJUST, AND BALANCE EACH DIFFUSER, GRILLE, AND REGISTER TO WITHIN 10% OF DESIGN REQUIREMENTS. OBSERVE THROWS ARE IN DIRECTION AS INDICATED ON DRAWINGS. ONCE AIR FLOWS ARE SET TO ACCEPTABLE LIMITS, TAKE WET BULB AND DRY BULB AIR TEMPERATURES ON THE ENTERING AND LEAVING SIDE OF EACH COIL (COOLING ONLY).
- DIRECT EXPANSION EQUIPMENT: WITH EACH UNIT OPERATING AT NEAR DESIGN CONDITIONS, MEASURE AND RECORD THE FOLLOWING: MANUFACTURER, MODEL NUMBER, SERIAL NUMBER AND ALL NAMEPLATE DATA, AMBIENT TEMPERATURE, CONDENSER DISCHARGE TEMPERATURE, AMPERAGE AND VOLTAGE FOR EACH PHASE, LEAVING AND ENTERING AIR TEMPERATURES, SUCTION AND DISCHARGE PRESSURES AND TEMPERATURES, TONS OF COOLING. VERIFICATION THAT MOISTURE INDICATOR SHOWS DRY REFRIGERANT.
- TAB REPORT: THE ACTIVITIES DESCRIBED IN THIS SECTION SHALL BE RECORDED IN REPORT FORM TO BE PROVIDED IN QUADRUPPLICATE (4), INDIVIDUALLY BOUND, TO THE ARCHITECT AND ENGINEER. NEATLY TYPE AND ARRANGE DATA. INCLUDE WITH THE DATA THE DATE TESTED, PERSONNEL PRESENT, WEATHER CONDITIONS, NAMEPLATE RECORD OF THE TEST INSTRUMENTS USED AND LIST ALL MEASUREMENTS TAKEN AFTER ALL CORRECTIONS ARE MADE TO THE SYSTEM. RECORD ALL FAILURES AND CORRECTIVE ACTION TAKEN TO REMEDY ANY INCORRECT SITUATION. THE INTENT OF THE FINAL REPORT IS TO PROVIDE A REFERENCE OF ACTUAL OPERATING CONDITIONS FOR THE OWNER'S OPERATIONS PERSONNEL.

DUCTWORK

- DUCT MATERIAL AND CONSTRUCTION: USE LOCK FORMING QUALITY PRIME GALVANIZED STEEL SHEETS OR COILS UP TO 60" WIDE. STENCIL EACH SHEET WITH GAUGE AND MANUFACTURER'S NAME. STENCIL COILS OF SHEET STEEL THROUGHOUT ON 10' CENTERS WITH GAUGE AND MANUFACTURER'S NAME. PROVIDE CERTIFICATION OF DUCT GAUGE AND MANUFACTURER FOR EACH SIZE DUCT.
- RECTANGULAR LOW PRESSURE DUCT CONSTRUCTED OF SHEET METAL IN ACCORDANCE WITH THE LATEST EDITION OF SMACNA HVAC DUCT CONSTRUCTION STANDARDS.
- LOW PRESSURE ROUND DUCTS SHALL BE SHOP FABRICATED WITH SNAP LOCK LONGITUDINAL SEAMS. DUCTS SHALL BE CONSTRUCTED FOR A MINIMUM OF 2" W.G. STATIC PRESSURE.
- FLEXIBLE DUCT LOW PRESSURE SHALL BE A CONTINUOUS GALVANIZED SPRING STEEL WIRE HELIX, WITH REINFORCED METALIZED COVER, REINFORCED VAPOR BARRIER JACKET RATED FOR USE AT SYSTEM PRESSURE (6" WC MINIMUM), THERMAL CHARACTERISTICS OF R-6 BTU/HR/SQ. FT./"F AND 2" WALL THICKNESS INSULATION WITH 1" OVERLAP. ACCEPTABLE MANUFACTURERS: FLEXMASTER, HART & COOLEY, OMNIAIR.
- ACCEPTABLE MANUFACTURERS: FLEXMASTER, THERMOFLEX, OMNIAIR.
- DUCT LINING SHALL BE 1" THICK, 1 1/2 LB. DENSITY, FLEXIBLE LINING COATED ON THE AIR STREAM SIDE TO REDUCE ATTRITION. LINER SHALL BE SCHULER LINA-COUSTIC, CERTAIN TEED ULTRALITE, OR EQUAL MEETING REQUIREMENTS OF NFPA 90 A. PROVIDE I.A.Q. RATED LINER.
- VOLUME DAMPERS: MANUAL BALANCING DAMPERS THAT MEET OR EXCEED THE FOLLOWING MINIMUM CONSTRUCTION STANDARDS: FRAME 16-GAUGE, BLADES 16-GAUGE, BEARINGS CORROSION RESISTANT, OPPOSED BLADE DAMPERS.
- INSTALLATION: USE CONSTRUCTION METHODS AND REQUIREMENTS AS OUTLINED IN SMACNA HVAC DUCT CONSTRUCTION STANDARDS AS WELL AS SMACNA BALANCING AND ADJUSTING PUBLICATIONS, UNLESS INDICATED OTHERWISE IN THE SPECIFICATIONS. REFER TO DETAILS ON THE DRAWINGS FOR ADDITIONAL INFORMATION. REINFORCE DUCTS IN ACCORDANCE WITH RECOMMENDED CONSTRUCTION PRACTICE OF SMACNA. PROVIDE ADDITIONAL REINFORCEMENT OF LARGE PLENUMS AS REQUIRED TO PREVENT EXCESSIVE FLEXING AND OR VIBRATION.

DUCTWORK INSULATION

- FURNISH AND INSTALL EXTERNAL INSULATION ON SUPPLY, RETURN, EXHAUST AND FRESH AIR DUCTWORK.
- ALL DUCT INSULATION USED ON THE PROJECT INSIDE THE BUILDING MUST HAVE A FLAME SPREAD RATING NOT EXCEEDING 25 AND A SMOKE DEVELOPED RATING NOT EXCEEDING 50 AS DETERMINED BY TEST PROCEDURES ASTM E84, NFPA 255 AND UL 723.
- CONDENSATION ON ANY INSULATED SYSTEM IS NOT APPROVED.
- WHERE EXISTING INSULATED DUCTWORK OR OTHER SERVICES ARE TAPPED, REMOVE EXISTING INSULATION BACK TO UNDAUNAGED SECTIONS AND REPLACE WITH NEW INSULATION OF THE SAME TYPE AND THICKNESS AS EXISTING INSULATION.
- INSULATION: GLASS FIBER BLANKET DUCT INSULATION. ACCEPTABLE MANUFACTURERS ARE: MANVILLE R-SERIES MICRROLITE FSKL, OWENS-CORNING ED100 RKF, KNAUF 1.0 PCF FSK.
- REINFORCED FOIL TAPE: ACCEPTABLE MANUFACTURERS ARE: VENTURE 1525CW, 3" FSK.

AIR DEVICES

- FURNISH AND INSTALL AIR DISTRIBUTION DEVICES, INCLUDING GRILLES, DIFFUSERS, REGISTERS, DAMPERS, AND EXTRACTORS.
- ACCEPTABLE MANUFACTURERS: TUTTLE AND BAILEY, TITUS, KRUEGER, METAL-AIRE, NAILOR INDUSTRIES, PRICE

AIR FILTERS

- AIR FILTERS: FURNISH AND INSTALL A DISPOSAL MEDIA AND FRAME FILTER WITH RESISTANCE TO AIR FLOW OF A CLEAN FILTER NOT TO EXCEED 0.12" WG AT 300 FPM.
- INSTALL THE FILTERS AND FILTER GAUGES IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

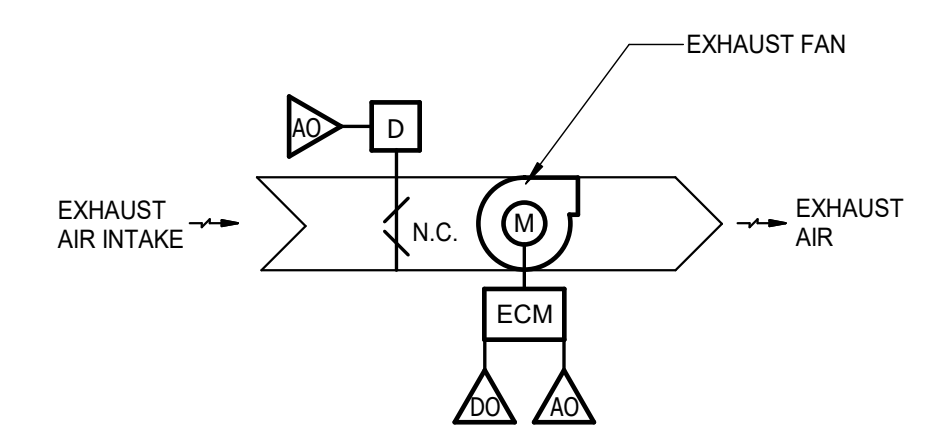
FANS

- PROVIDE FAN TYPE, ARRANGEMENT, ROTATION, CAPACITY, SIZE, MOTOR HORSEPOWER, AND MOTOR VOLTAGE AS SHOWN. FAN CAPACITIES AND CHARACTERISTICS ARE SCHEDULED ON THE DRAWINGS. PROVIDE FANS CAPABLE OF ACCOMMODATING STATIC PRESSURE VARIATIONS OF +10% OF SCHEDULED DESIGN AT THE DESIGN AIR FLOW.
- ACCEPTABLE MANUFACTURERS: COOK, GREENHECK, PENN VENTILATOR, ACME, CARNES, TWIN CITY
- SAFETY DISCONNECT SWITCH: PROVIDE A FACTORY-WIRED TO MOTOR, SAFETY DISCONNECT SWITCH ON EACH UNIT.
- DAMPERS, WHERE AUTOMATIC BACKDRAFT DAMPER IS SCHEDULED: MULTI-BLADED, ROLL FORMED ALUMINUM BLADES, NYLON BEARINGS, NEOPRENE WEATHER STRIP ON BLADE EDGE.
- ROOFTOP VENTILATION AND EXHAUST SYSTEMS: PROVIDE EACH MOTOR WITH INTERNAL OVERLOAD PROTECTION, ALUMINUM, STAINLESS STEEL OR PLASTIC COATED BIRD GUARD, SCREWS AND FASTENERS OF STAINLESS STEEL OR NONFERROUS MATERIAL, ALL ALUMINUM CONSTRUCTION UNLESS INDICATED OTHERWISE ON FAN SCHEDULE. WELDED CONSTRUCTION, CORROSION RESISTANT FASTENERS, MINIMUM 16 GAUGE MARINE ALLOY ALUMINUM, ALUMINUM BASE SHALL BE CONTINUOUSLY WELDED CURB CAP CORNERS.

STANDARD CONTROL SYMBOLS

CONTROLLERS / SENSORS	DDC I/O SYMBOLS	FINAL CONTROL ELEMENTS
SPACE THERMOSTAT OR TEMPERATURE SENSOR	DIGITAL (BINARY) INPUT POINT	TWO-WAY CONTROL VALVE, HYDRONIC OR STEAM
THERMOSTAT OR TEMPERATURE SENSOR WITH AIRFLOW AVERAGING ELEMENT	ANALOG INPUT POINT	THREE-WAY CONTROL VALVE, HYDRONIC
THERMOSTAT OR TEMPERATURE SENSOR WITH SENSING BULB IN HYDRONIC PIPE WELL	DIGITAL (BINARY) OUTPUT POINT	ELECTRIC MOTOR
THERMOSTAT OR TEMPERATURE SENSOR WITH SENSING BULB AND PROTECTIVE SHIELD	ANALOG OUTPUT POINT	FAN AND MOTOR
SPACE HUMIDISTAT OR HUMIDITY SENSOR		PUMP AND MOTOR
DUCT-MOUNTED HUMIDISTAT OR HUMIDITY SENSOR		ELECTRIC / ELECTRONIC DAMPER ACTUATOR
PRESSURE SENSOR		ELECTRIC / ELECTRONIC VALVE ACTUATOR
DIFFERENTIAL PRESSURE SENSOR		VARIABLE FREQUENCY DRIVE
DIGITAL TIMER		AIR FLOW MONITORING STATION
AIR STATIC PRESSURE SENSOR		
AIR VELOCITY PRESSURE SENSOR		
SPACE OCCUPANCY/VACANCY SENSOR		
CARBON DIOXIDE CONCENTRATION SENSOR		
DRAIN PAN CONDENSATE LEVEL SENSOR		
DUCT SMOKE DETECTOR		
REFRIGERANT CONCENTRATION SENSOR		
FLOW METER		
DEW POINT		
SWITCH		
	SWITCHES	PNEUMATIC COMPONENTS
	DAMPER END SWITCH	MAIN AIR SUPPLY, 20 PSIG
	EMERGENCY START OR STOP SWITCH	MAIN AIR SUPPLY, 80 PSIG
	MOTOR STARTER HOLDING COIL	DAMPER VALVE ACTUATOR WITH PILOT POSITIONER
	CONTACTOR HOLDING COIL	CONTROL VALVE OPERATOR WITH PILOT POSITIONER
	CONTROL RELAY HOLDING COIL	ELECTRONIC-TO-PNEUMATIC TRANSDUCER

WALL MOUNTED EXHAUST FAN (EF-1) - SEQUENCE OF OPERATIONS



EXHAUST FANS SHALL OPERATE CONTINUOUSLY AND BE INTERLOCKED WITH THE AIR HANDLING UNIT THAT SERVES VAV-10-23.