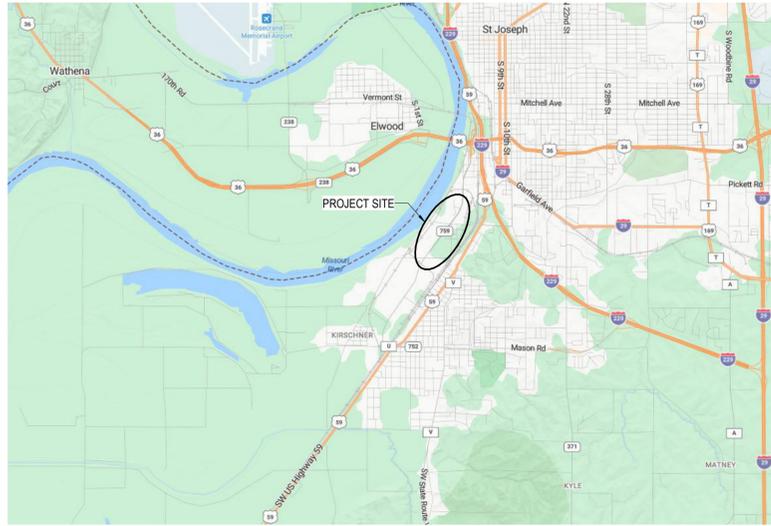


# CITY OF ST. JOSEPH



**LOCATION MAP**  
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State law requires 2 Days Advance Notice



**SITE AERIAL**  
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## DEPARTMENT OF PUBLIC WORKS

FINAL DESIGN PLANS FOR:

## WATER PROTECTION FACILITY ST JOSEPH WPF DOMESTIC BLOWER REPLACEMENT

02/20/2026

3500 759 HIGHWAY

HDR Project No. 10419293

C.I.P. No: 25655



**CITY OF ST. JOSEPH**  
DEPARTMENT OF PUBLIC WORKS  
1100 FREDERICK AVE  
ST. JOSEPH, MISSOURI 64501  
TEL 816.271.4653



**HDR**  
HDR Engineering, Inc  
MO STATE CERTIFICATE  
OF AUTHORITY #000856  
3500 759 HIGHWAY, ST. JOSEPH, MO  
KANSAS CITY, MO 64131  
(816) 360-2700

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SERIES 00 - GENERAL	
00G001	COVER SHEET
00G002	SHEET INDEX
00G003	ABBREVIATIONS
00G004	SYMBOLS, PIPING SYSTEMS, AND EQUIPMENT IDENTIFICATION
00G006	MECHANICAL LEGEND
00G007	ELECTRICAL LEGEND
00G009	INSTRUMENTATION LEGEND
00Y601	PROCESS AND INSTRUMENTATION DIAGRAM DOMESTIC PROCESS AERATION BLOWERS OPTION 1
00Y602	PROCESS AND INSTRUMENTATION DIAGRAM DOMESTIC PROCESS AERATION BLOWERS OPTION 2
SERIES 02 - STANDARD DETAILS	
02S001	STRUCTURAL NOTES
02S501	STRUCTURAL DETAILS
02A501	ARCHITECTURAL DETAILS
02A601	ARCHITECTURAL DOORS AND SCHEDULES
02D501	PROCESS DETAILS
02D502	PROCESS DETAILS
02M602	MECHANICAL SCHEDULES
02E501	ELECTRICAL STANDARD DETAILS
SERIES 10 - SITE PLANNING	
10C100	OVERALL SITE PLAN
10C101	ENLARGED SITE PLAN
SERIES 56 - BLOWER BUILDING	
56X101	PHASE 1 DEMOLITION
56X102	PHASE 2 DEMOLITION
56X601	ELECTRICAL DEMOLITION ONE-LINE DIAGRAM
56X602	CONTROL PANEL MODIFICATIONS AND DEMOLITION
56A001	ARCHITECTURAL LIFE SAFETY PLAN
56A002	ARCHITECTURAL LIFE SAFETY PLAN
56A101	ARCHITECTURAL PLAN
56A201	ARCHITECTURAL ELEVATIONS
56D101	UPPER PROCESS PLAN - OPTION 1
56D102	LOWER PROCESS PLAN - OPTION 1
56D103	PROCESS PLAN - OPTION 2
56D301	PROCESS SECTIONS - OPTION 1
56D302	PROCESS SECTIONS - OPTION 1
56D303	PROCESS SECTION - OPTION 2
56D304	PROCESS SECTION - OPTION 2
56D701	PIPING ISOMETRIC - OPTION 1
56D702	PIPING ISOMETRIC - OPTION 2
56M101	HVAC PLAN
56M301	HVAC SECTIONS
56E101	ELECTRICAL POWER PLAN
56E601	ELECTRICAL ONE-LINE DIAGRAM
56E651	ELECTRICAL SCHEDULES
56Y601	INSTRUMENTATION ONE-LINE AND NETWORK BLOCK DIAGRAMS



ISSUE	DATE	DESCRIPTION
0	02/20/2026	ISSUED FOR CONSTRUCTION

PROJECT MANAGER	DEREK A. PATRICK
STRUCTURAL	DAVID WISEMAN
ARCHITECTURAL	ERICA BUTTMAN
PROCESS	KYLE SIMS
MECHANICAL	KEVAN PRINDS
ELECTRICAL	CALEB DADY
I&C	KEITH BOYD
PROJECT NUMBER	10419293



## ST JOSEPH WPF DOMESTIC BLOWER REPLACEMENT

### GENERAL SHEET INDEX

FILE NAME 10419293-GENERAL  
SCALE



SHEET  
**00G002**

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1	2	3	4	5	6	7	8
<p>A/C AIR CONDITIONING A/E ARCHITECT/ENGINEER A AMPERE AB ANCHOR BOLT ABAN ABANDON ABC AGGREGATE BASE COURSE ABT ABOUT AC ALTERNATING CURRENT ACK ACKNOWLEDGE ACP ACOUSTIC CEILING PANEL, ASPHALTIC CONCRETE PAVEMENT ACST ACOUSTIC AD ADDENDUM, AREA DRAIN ADDL ADDITIONAL ADH ADHESIVE ADJ ADJUSTABLE, ADJACENT AF AMP FRAME, AMP FUSE AFF ABOVE FINISH FLOOR AFG ABOVE FINISH GRADE AGGR AGGREGATE AI AREA INLET, ANALOG INPUT AIC AMPS INTERRUPTING CAPACITY ALIG ALIGNMENT ALT ALTERNATE, ALTITUDE ALUM ALUMINUM AM ACOUSTICAL MATERIAL AMB AMBIENT ANC ANCHOR AO ANALOG OUTPUT AP ACCESS PANEL APRX APPROXIMATE APVD APPROVED ARCH ARCHITECTURAL ASSY ASSEMBLY AT ACUSTICAL TILE, AMP TRIP ATC ACUSTICAL TILE CEILING ATM ATMOSPHERE AUTO AUTOMATIC AUX AUXILIARY AVE AVENUE AVG AVERAGE AWG AMERICAN WIRE GAGE AWT ACOUSTICAL WALL TILE</p> <p>B TO B BACK-TO-BACK BAL BALANCE BBD BULLETIN BOARD BC BASE CABINET, BOTTOM CHORD, BOLT CENTER, BOLT CIRCLE BD BOARD BE BOTH ENDS, BELL END BF BOTH FACES, BOTTOM FACE, BLIND FLANGE, BOARD FEET BITUM BITUMINOUS BKG BACKING BL BASE LINE BLDG BUILDING BLK BLOCK BLKG BLOCKING BM BENCHMARK, BEAM BOC BACK OF CURB BOD BOTTOM OF DUCT BOG BOTTOM OF GRILLE BOL BOTTOM OF LOUVER, BOLLARD BOP BOTTOM OF PIPE BOR BOTTOM OF REGISTER BOT BOTTOM BOU BOTTOM OF UNIT BP BASE PLATE BRG BEARING BRGP BEARING PLATE BRKT BRACKET BS BOTH SIDES BTU BRITISH THERMAL UNIT BTW BETWEEN BTWLD BUTT WELD BU BUILT UP, BUILT-UP BUR BUILT-UP ROOFING BW BOTH WAYS BYP BYPASS</p> <p>CTOC CENTER TO CENTER C&amp;G CURB AND GUTTER C CHANNEL SHAPE, CENTIGRADE, CONDUIT CAB CABINET CAP CAPACITY CAT CATALOG, CATALOGIORY CAV CAVITY CB CATCH BASIN CCB CONCRETE BLOCK CCW COUNTER CLOCKWISE CDF CONTROLLED-DENSITY FILL CE CONCRETE EDGE CER CERAMIC CF CUBIC FEET (FOOT) CFL COUNTER FLASHING CHBD CHALKBOARD CHD CHORD CHFR CHAMFER CHH COMMUNICATION HANDHOLE CI CURB INLET CIP CAST-IN-PLACE CIPB CONCRETE INTERLOCKING PAVER BALLAST CIRC CIRCULATION, CIRCULAR CJ CONSTRUCTION JOINT CKT CIRCUIT CL CENTERLINE, CLASS, CLOSE CLG CEILING CLKG CAULKING CLR CLEAR CMH COMMUNICATION MANHOLE CMP CORRUGATED METAL PIPE CMU CONCRETE MASONRY UNIT CO CLEANOUT, CONCRETE OPENING COL COLUMN COM COMMON COMB COMBINATION COMM COMMUNICATION COMP COMPOSITION, COMPRESSIBLE, COMPOSITE CON CONCENTRIC</p>	<p>CONC CONCRETE CONN CONNECTION CONST CONSTRUCTION CONT CONTINUOUS COOR COORDINATE CORR CORROSIVE, CORRUGATED CP CHECKER PLATE, CONTROL POINT CPLG COUPLING CRL CORROSION-RESISTANT LINING CSC COMPRESSION SLEEVE COUPLING CSK COUNTERSINK CSS CLINIC SERVICE SINK CT CERAMIC TILE CTJ CONTRACTION JOINT CTR CENTER CTRL CONTROL CVT CULVERT CU COPPER, CUBIC CW CLOCKWISE CY CUBIC YARD</p> <p>d PENNY (NAIL MEASURE) D DEEP, DIFFUSER, DRAIN DB DUCT BANK, DECIBEL, DRY BULB DBA DEFORMED BAR ANCHOR DBL DOUBLE DC DIRECT CURRENT DEG DEGREE DEG C DEGREE CENTIGRADE DEG F DEGREE FAHRENHEIT DEMO DEMOLITION DEP DEPRESSED DEPT DEPARTMENT DET DETAIL DI DROP INLET, DUCTILE IRON, DIGITAL INPUT DIA DIAMETER DIAG DIAGONAL, DIAGRAM DIFF DIFFERENTIAL, DIFFERENCE DIM DIMENSION DISCH DISCHARGE DIST DISTANCE, DISTRIBUTION DIV DIVISION DL DEAD LOAD DMJ DOUBLE MECHANICAL JOINT DMFP DAMP PROOFING DN DOWN DO DISSOLVED OXYGEN, DIGITAL OUTPUT, DITTO DP DEPTH DPDT DOUBLE POLE, DOUBLE THROW DPST DOUBLE POLE, SINGLE THROW DS DOWN SPOUT DT DOUBLE TEE, DRIP TRAP ASSEMBLY DUP DUPLICATE DWG DRAWING DWL DOWEL DWR DRAWER</p> <p>E EAST EA EACH, EXHAUST AIR EC ELECTRICAL CONTRACTOR ECC ECCENTRIC ED EQUIPMENT DRAIN EDB ELECTRICAL DUCT BANK EE EACH END EF EACH FACE EFF EFFLUENT, EFFICIENCY EHH ELECTRICAL HANDHOLE EIFS EXTERIOR INSULATION &amp; FINISH SYSTEM EJ EXPANSION JOINT EL ELBOW, ELEVATION ELEC ELECTRICAL EMBD EMBEDDED EMER EMERGENCY EMH ELECTRICAL MANHOLE ENC ENCLOSURE ENGR ENGINEER ENTR ENTRANCE EOP EDGE OF PAVEMENT EQ EQUAL EQUIP EQUIPMENT EQUIV EQUIVALENT ES EACH SIDE, EQUAL SPACE, EMERGENCY SHOWER ESEW EMERGENCY SHOWER AND EYE WASH EST ESTIMATE EW EACH WAY, EMERGENCY EYE/FACE WASH EWC ELECTRIC WATER COOLER EWEF EACH WAY, EACH FACE EWTB EACH WAY, TOP AND BOTTOM EXC EXCAVATION EXH EXHAUST EXP EXPANSION, EXPOSED EXST EXISTING EXT EXTERIOR, EXTERNAL, EXTENSION</p> <p>F TO F FACE TO FACE F&amp;B FACE AND BYPASS FAB FABRICATE FB FLOOR BEAM FBD FIBERBOARD FBG FIBERGLASS FBM BOARD FOOT MEASURE FBO FURNISHED BY OWNER FC FLUSHING CONNECTION FCA FLANGED COUPLING ADAPTER FD FLOOR DRAIN FDC FLEXIBLE DUCT CONNECTION FDR FEEDER FDTN FOUNDATION FE FLANGED END FEC FIRE EXTINGUISHER CABINET FES FLARED END SECTION FEXT FIRE EXTINGUISHER FF FAR FACE, FACTORY FINISH, FLAT FACE FFH FINISHED GRADE FH FIRE HYDRANT FIG FIGURE FIN FINISH FJT FLUSH JOINT FL FLOW, FLOW LINE</p>	<p>FV FIELD VERIFY CONN CONNECTION FLG FLANGE FLOR FLUORESCENT FLR FLOOR FLS FLASHING, FLUSH FN FENCE FO FINISHED OPENING FOB FLAT ON BOTTOM FOC FACE OF CONCRETE, FACE OF CURB FOF FACE OF FINISH FOM FACE OF MASONRY FOS FACE OF STUDS FOT FLAT ON TOP FPT FEMALE PIPE THREAD FR FRAME FRP FIBERGLASS REINFORCED PLASTIC FRTM FIRE RETARDANT TREATED MATERIAL FS FLOOR SINK, FAR SIDE FT FEET, FOOT FTG FOOTING, FITTING FUR FURRED, FURRING FURN FURNITURE, FURNISH FUT FUTURE FV FACE VELOCITY FW FIELD WELD, FIRE WALL FWD FORWARD FWE FURNISHED WITH EQUIPMENT FXTR FIXTURE</p> <p>G GRILLE, GROUND GA GAUGE (METAL THICKNESS) GAL GALLON GALV GALVANIZED GB GRAB BAR, GRADE BREAK GC GROOVED COUPLING GD GUARD GEN GENERAL GFCI GROUND FAULT CIRCUIT INTERRUPTER GFMU GROUND FACE MASONRY UNIT GG GUTTER GRADE GJ GROOVED JOINT GL GLASS GLB GLASS BLOCK, GLULAM BEAM GND GROUND GP GUY POLE GR GRADE GRTG GRATING GSB GYPSUM SHEATHING BOARD GT GREASE TRAP GVL GROUND VENT GW GUY WIRE GWB GYPSUM WALLBOARD GYP GYPSUM HARDBOARD</p> <p>H HIGH HB HOSE BIBB HBD HARDBOARD HC HANDICAPPED, HOLLOW CORE, HORIZONTAL CURVE, HORIZONTAL CENTERLINE HD HEAD, HOT DIP HDR HEADER HDW HARDWARE HEX HEXAGONAL HGR HANGER HH HANDHOLE HID HIGH-INTENSITY DISCHARGE HM HOLLOW METAL HORIZ HORIZONTAL HP HIGH POINT, HORSEPOWER HPC HORIZONTAL POINT OF CURVATURE HPS HIGH-PRESSURE SODIUM HPT HORIZONTAL POINT OF TANGENCY HR HOSE REEL, HOUR HNS HEADED STUD, HIGH STRENGTH HSS HOLLOW STRUCTURAL SHAPE HT HEIGHT HTG HEATING HV HIGH VOLTAGE HVAC HEATING, VENTILATING AND AIR CONDITIONING HWD HARDWOOD HWL HIGH WATER LEVEL HYD HYDRAULIC HZ HERTZ, CYCLES PER SECOND</p> <p>ID INSIDE DIAMETER, INTERIOR DIMENSION IE INVERT ELEVATION, FOR EXAMPLE IF INSIDE FACE IH INTAKE HOOD IMP IMPACT IN INCH INC INCLUDE, INCANDESCENT INF INFLUENT INSTR INSTRUMENTATION INSUL INSULATION INT INTERIOR, INTERSECTION INTR INTERMEDIATE, INTERIOR INV INVERT IPS IRON PIPE SIZE IPT INTERNAL PIPE THREAD IR INSIDE RADIUS, IRON ROD IRR IRRIGATION ISO ISOMETRIC</p> <p>JB JUNCTION BOX JCT JUNCTION JF JOINT FILLER JT JOIST JT JOINT</p> <p>K KIP KB KNEE BRACE KCMIL KILOMIL KD KNOCK DOWN KO KNOCK OUT KSI KIPS PER SQUARE INCH KW KILOWATT</p>	<p>L ANGLE, LENGTH, LAVATORY, LINTEL LAD LADDER LAM LAMINATE LATL LATERAL LB LAG BOLT, POUND LCTB LIQUID CHALK AND TACK BOARD LDG LANDING LE LEADER LE LIFTING EYE LF LINEAR FOOT LG LONG LH LEFT HAND LIN LINEAR LIQ LIQUID LLH LONG LEG HORIZONTAL LLV LONG LEG VERTICAL LMLU LIQUID MARKER LECTURE UNIT LNG LONGITUDINAL LOC LOCATION LP LOW POINT LPS LOW-PRESSURE SODIUM LR LONG RADIUS LT LEFT LTD LIMITED LTG LIGHTING LTL LINTEL LTMG LIGHTNING LV LOW VOLTAGE LVL LAMINATED VENEER LUMBER LVR LOUVER LW LIGHTWEIGHT LWC LIGHTWEIGHT CONCRETE LWL LOW WATER LEVEL</p> <p>MA MIXED AIR MACH MACHINED MAINT MAINTENANCE MAN MANUAL MATL MATERIAL MAX MAXIMUM MB MACHINE BOLT MBR MEMBER MC MECHANICAL CONTRACTOR, MECHANICAL COUPLING, MOMENT CONNECTION MCB METAL CORNER BEAD MCI MASONRY CONTROL JOINT MDMJ MODIFIED DOUBLE MECHANICAL JOINT MECH MECHANICAL MED MEDIUM MFR MANUFACTURER MH MANHOLE, METAL HALIDE MIN MINIMUM MIR MIRROR MISC MISCELLANEOUS MJ MECHANICAL JOINT ML MASONRY LINTEL MLO MAIN LUGS ONLY MMB MEMBRANE MO MASONRY OPENING MOD MODULAR, MODIFY MON MONUMENT MPT MALE PIPE THREAD MRGWB MOISTURE-RESISTANT GYPSUM WALLBOARD MS MOP SINK MSL MEAN SEA LEVEL MT MOUNT MU MASONRY UNIT MULL MULLION MV MEDIUM VOLTAGE MW MONITORING WELL</p> <p>N NORTH, NEUTRAL NA NOT APPLICABLE NAT NATURAL, NATIONAL NC NORMALLY CLOSED NEG NEGATIVE NF NEAR FACE, NON-FUSED NIC NOT IN CONTRACT NO NORMALLY OPEN, NUMBER NOM NOMINAL NPS NOMINAL PIPE SIZE NPT NATIONAL PIPE THREAD NS NEAR SIDE NTS NOT TO SCALE NWL NORMAL WATER LEVEL</p> <p>O TO O OUT TO OUT OA OUTSIDE AIR, OVERALL OC ON CENTER OCPD OVER CURRENT PROTECTION DEVICE OD OUTSIDE DIAMETER OED OPEN END DUCT OF OUTSIDE FACE, OFFICE FURNISHING OFI OWNER FURNISHED CONTRACTOR INSTALLED OFIO OWNER FURNISHED OWNER INSTALLED OG ORIGINAL GROUND OH OVERHEAD OPNG OPENING OPP OPPOSITE OPT OPTIONAL OR OUTSIDE RADIUS ORD OVERFLOW ROOF DRAIN ORIG ORIGINAL OVL OVERFLOW OVHG OVERHANG OZ OUNCE</p> <p>P PAINT PA PUBLIC ADDRESS PAR PARALLEL, PARAPET PB PANIC BAR, PULL BOX PBD PARTICLE BOARD PC POINT OF CURVE, PIECE, PRECAST PCC POINT OF COMPOUND CURVATURE PCF POUNDS PER CUBIC FOOT PCT PERCENT PE PLAIN END PED PEDESTAL</p>	<p>PEN PENETRATION PERF PERFORATED PERM PERMANENT PERP PERPENDICULAR PF POWER FACTOR PFMU PREFACED MASONRY UNIT PH PHASE PI POINT OF INTERSECTION PKG PACKAGE PL PLATE, PROPERTY LINE, PRECAST LINTEL PLAS PLASTER PLAT PLATFORM PLBG PLUMBING PLF POUNDS PER LINEAR FOOT PNEU PNEUMATIC POL POLISH POS POSITIVE, POSITION POLY PROPYLENE, POWER POLE PRC POINT OF REVERSE CURVATURE PREF PREFINISHED PREFAB PREFABRICATED PRELIM PRELIMINARY PREP PREPARE PRES PRESSURE PRI PRIMARY PROP PROPERTY, PROPOSED PROT PROTECTION PS PIPE SUPPORT PSF POUNDS PER SQUARE FOOT PSI POUNDS PER SQUARE INCH PSIA POUNDS PER SQUARE INCH ABSOLUTE PSIG POUNDS PER SQUARE INCH GAGE PST PRESTRESSED PT POINT, POINT OF TANGENCY PTN PARTITION PVC POLYVINYL CHLORIDE, POINT OF VERTICAL CURVE PVMT PAVEMENT PWD PLYWOOD PWW PLYWOOD WEB JOIST PZ PIEZOMETER</p> <p>Q RATE OF FLOW QT QUARRY TILE QTR QUARTER QTY QUANTITY QUAL QUALITY</p> <p>R&amp;R REMOVE AND REPLACE R&amp;S REMOVE AND SALVAGE R RADIUS, REGISTER, RISER RA RETURN AIR RB RESILIENT BASE, ROCK BERM RCPT RECEPTACLE RD ROOF DRAIN REC RECESS RECD RECEIVED RECT RECTANGULAR RED REDUCER REF REFERENCE REINF REINFORCING REM REMOVE REQD REQUIRED RESIL RESILIENT RET RETAINING, RETURN REV REVISION, REVERSE RF RESILIENT FLOORING RFG ROOFING RFL REFLECTED, REFLECTOR RGH ROUGH RGS RIGID GALVANIZED STEEL RGS-PVC PVC COATED RGS RH RELIEF HOOD, RIGHT HAND, RELATIVE HUMIDITY RL REQUIRED LAP RLFA RELIEF AIR RND ROUND RNG RUNNING RO ROUGH OPENING ROW RIGHT-OF-WAY RPM REVOLUTIONS PER MINUTE RR RAILROAD RSP ROCK SLOPE PROTECTION RT RIGHT RVT RESILIENT VINYL TILE R READY</p> <p>S SOUTH, SINK SA SUPPLY AIR SAMU SOUND-ABSORBING MASONRY UNIT SAN SANITARY SB SPLASH BLOCK SC SOLID CORE SCH SCHEDULE SCHEM SCHEMATIC SCN SCREEN SE STEEL/ALUMINUM EDGE SEC SECONDARY, SECONDS SECT SECTION SEP SEPARATE SF SQUARE FOOT, SILT FENCE SG SHEET GLASS, SEALANT GROOVE SH SHOWER SHT SHEET SHTG SHEATHING SIL SILENCE SJM SIMILAR SJ SLAB JOINT SL SLOPE, STEEL LINTEL SLTD SLOTTED SLV SLEEVE SMLS SEAMLESS SOG SLAB ON GRADE SP SOUNDPROOF, STANDPIPE SPA SPACING SPEC SPECIFICATION SPLY SUPPLY SPST SINGLE POLE SINGLE THROW SPT SET POINT SQ SQUARE SR SHORT RADIUS</p>	<p>SS SERVICE SINK SST STAINLESS STEEL ST STREET STA STATION STD STANDARD STIF STIFFENER STR STRIP STO STORAGE STR STRUCTURAL, STRAIGHT SUB SUBSTITUTE SUC SUCTION SUSP SUSPENDED SY SQUARE YARD SYM SYMBOL SYMM SYMMETRICAL SYN SYNTHETIC SYS SYSTEM</p> <p>T&amp;B TOP AND BOTTOM T&amp;G TONGUE AND GROOVE T TILE, TREAD TA TOILET ACCESSORY, TEMPERED AIR TAN TANGENT TBM TEMPORARY BENCHMARK TCE TEMPORARY CONSTRUCTION EASEMENT TEF TONGUE EPOXY FLOORING TEMP TEMPORARY, TEMPERATURE THD THREAD THK THICK THRESH THRESHOLD TKBD TACK BOARD TOB TOP OF BOLT, TOP OF BANK, TOP OF BEAM, TOP OF BERM TOC TOP OF CURB, TOP OF CONCRETE TOD TOP OF DUCT TOF TOP OF FOOTING TOG TOP OF GRATING TOL TOLERANCE, TOP OF LEDGER TOM TOP OF MASONRY TOP TOP OF PLATE TOPO TOPOGRAPHY TOS TOP OF SLAB, TOP OF STEEL, TOE OF SLOPE TOW TOP OF WALL TP TOILET PARTITION, TELEPHONE POLE, TOE PLATE, TRAP PRIMER TPD TOILET PAPER DISPENSER TPC TOPPING, THROUGH PLATE GIRDER TR TRANSOM TRANS TRANSITION TRD TRENCH DRAIN TYP TYPICAL</p> <p>U URINAL UG UNDERGROUND ULT ULTIMATE UNFN UNFINISHED UNO UNLESS NOTED OTHERWISE UTIL UTILITY</p> <p>V VENT, VELOCITY, VOLT VA VOLT AMPERE VAC VACUUM VAR VARNISH, VARIABLE, VOLT AMPERES REACTIVE VB VAPOR BARRIER, VINYL BASE, VALVE BOX VC VERTICAL CURVE VCP VITRIFIED CLAY PIPE VCT VINYL COMPOSITION TILE, VERTICAL CENTERLINE VEL VELOCITY VENT VENTILATION VERT VERTICAL VERTS VERTICAL REINFORCING VG VERTICAL GRAIN VIF VERIFY IN FIELD VIN VINYL VOL VOLUME VPC VERTICAL POINT OF CURVATURE VPI VERTICAL POINT OF INTERSECTION VPT VERTICAL POINT OF TANGENCY VS VERSUS, VAPOR SEAL VTR VENT THROUGH ROOF VWC VINYL WALL COVERING</p> <p>W WITH W/O WITHOUT W WATT, WEST, WIDE, WINDOW, WIRE, WIDE FLANGE BEAM WB WOOD BASE WC WATER CLOSET, WATER COLUMN WD WOOD, WIDTH WF WIDE FLANGE, WASH FOUNTAIN WG WIRE GLASS, WATER GAGE WH WALL HYDRANT, WEEP HOLE WI WROUGHT IRON WL WATER LEVEL WLD WELDED WM WIRE MESH WP WEATHERPROOF WS WATERSTOP, WATER SURFACE WSCOT WAINSCOT WT WEIGHT, WATER TIGHT WTHP WATERPROOF, WORKING POINT WWF WELDED WIRE FABRIC</p> <p>XP EXPLOSION-PROOF XS EXTRA STRONG XSECT CROSS SECTION XXS DOUBLE EXTRA STRONG</p> <p>YH YARD HYDRANT YS YIELD STRENGTH</p>	<p><b>GENERAL NOTES</b></p> <ol style="list-style-type: none"> <li>THESE ABBREVIATIONS APPLY TO THE ENTIRE SET OF CONTRACT DRAWINGS.</li> <li>LISTING OF ABBREVIATIONS DOES NOT IMPLY THAT ALL ABBREVIATIONS ARE USED IN THE CONTRACT DRAWINGS.</li> <li>ABBREVIATIONS SHOWN ON THIS SHEET INCLUDE VARIATIONS OF A WORD. FOR EXAMPLE, "MOD" MAY MEAN MODIFY OR MODIFICATION, "INC" MAY MEAN INCLUDED OR INCLUDING, AND "REINF" MAY MEAN REINFORCE OR REINFORCING.</li> <li>SEE INSTRUMENTATION AND GENERAL LEGEND SHEETS FOR PROJECT-SPECIFIC EQUIPMENT AND PIPING SYSTEM ABBREVIATIONS.</li> </ol>	



MISSOURI CERTIFICATE OF AUTHORITY #000856  
3500 759 HIGHWAY, ST. JOSEPH, MO  
64503AS CITY, MO 64131

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0	02/20/2026	ISSUED FOR CONSTRUCTION

PROJECT MANAGER	DEREK A. PATRICK
STRUCTURAL	DAVID WISEMAN
ARCHITECTURAL	ERICA BUTTMAN
PROCESS	KYLE SIMS
MECHANICAL	KEVAN PRINDS
ELECTRICAL	CALEB DADY
I&C	KEITH BOYD
PROJECT NUMBER	10419293



## ST JOSEPH WPF DOMESTIC BLOWER REPLACEMENT

### GENERAL ABBREVIATIONS

FILE NAME 10419293-GENERAL  
SCALE



SHEET  
**00G003**



1	2	3	4	5	6	7	8		
PIPING SYSTEMS	PIPING SYMBOLOGY	HVAC SYMBOLOGY	HVAC SYMBOLOGY	TEMPERATURE CONTROL DIAGRAM SYMBOLOGY	TEMPERATURE CONTROL DIAGRAM SYMBOLOGY	ABBREVIATIONS	ABBREVIATIONS		
<p>--- COLD WATER, POTABLE (CW)</p> <p>--- HOT WATER, POTABLE (HW)</p> <p>--- HOT WATER RECIRCULATING, POTABLE (HWC)</p> <p>--- NPW NON POTABLE COLD WATER</p> <p>--- 140 HOT WATER - TEMPERATURE, POTABLE</p> <p>--- TW TEPID WATER, POTABLE</p> <p>--- TW- TEPID WATER RETURN, POTABLE</p> <p>--- SAN- SANITARY SEWER BELOW GRADE</p> <p>--- SAN SANITARY SEWER ABOVE GRADE</p> <p>--- V SANITARY VENT</p> <p>--- AW ACID WASTE</p> <p>--- AV ACID VENT</p> <p>--- CW- COMBINATION WASTE AND VENT</p> <p>--- PD PRESSURE DRAINAGE</p> <p>--- SD STORM DRAIN ABOVE GRADE</p> <p>--- SD- STORM DRAIN BELOW GRADE</p> <p>--- OD STORM DRAIN OVERFLOW</p> <p>--- NG NATURAL GAS</p> <p>--- LP LIQUEFIED PROPANE</p> <p>--- CA COMPRESSED AIR</p> <p>--- HWS HEATING HOT WATER SUPPLY</p> <p>--- HWR HEATING HOT WATER RETURN</p> <p>--- GHWS GLYCOL HEATING HOT WATER SUPPLY</p> <p>--- GHWR GLYCOL HEATING HOT WATER RETURN</p> <p>--- CHWS CHILLED WATER SUPPLY</p> <p>--- CHWR CHILLED WATER RETURN</p> <p>--- GCWS GLYCOL CHILLED WATER SUPPLY</p> <p>--- GCWR GLYCOL CHILLED WATER RETURN</p> <p>--- CWS CONDENSER WATER SUPPLY</p> <p>--- CWR CONDENSER WATER RETURN</p> <p>--- RL REFRIGERANT LIQUID</p> <p>--- RS REFRIGERANT SUCTION</p> <p>--- CD CONDENSATE DRAIN</p> <p>--- CPD CONDENSATE PUMP DISCHARGE</p> <p>--- STM-15 STEAM SUPPLY - PSI</p> <p>--- BBD BOILER BLOW DOWN</p> <p>--- BF BOILER FEED</p> <p>--- SV STEAM VENT</p> <p>--- MU MAKE-UP WATER</p>	<p>PIPE ANCHOR</p> <p>PIPE GUIDE</p> <p>EXPANSION JOINT</p> <p>PRESSURE/TEMPERATURE PORT</p> <p>THERMOMETER</p> <p>THERMOWELL</p> <p>PRESSURE GAUGE</p> <p>TEMPERATURE GAUGE</p> <p>FLEXIBLE PIPING CONNECTION</p> <p>WYE STRAINER</p> <p>MANUAL AIR VENT</p> <p>AUTOMATIC AIR VENT</p> <p>METER (WATER, GAS, OTHER)</p> <p>FLOOR CLEANOUT</p> <p>CLEANOUT</p> <p>WALL CLEANOUT</p> <p>DOUBLE GRADE CLEANOUT</p> <p>WATER HAMMER ARRESTOR</p> <p>EARTHQUAKE VALVE</p> <p>CONCENTRIC REDUCER</p> <p>EGCENTRIC REDUCER, FLAT ON BOTTOM</p> <p>EGCENTRIC REDUCER, FLAT ON TOP</p> <p>ELBOW, 90° TURN DOWN</p> <p>ELBOW, 90° TURN UP</p> <p>TEE, OUTLET UP</p> <p>TEE, OUTLET DOWN</p> <p>TEE, OUTLET UP W/ 90° TURN</p> <p>TEE, OUTLET DOWN W/ 90° TURN</p> <p>PIPE BREAK</p> <p>PIPE CAP</p> <p>BLIND FLANGE</p> <p>UNION</p> <p>FLOW ARROW</p> <p>SHUTOFF VALVE (NORMALLY OPEN)</p> <p>SHUTOFF VALVE (NORMALLY CLOSED)</p> <p>DRAIN VALVE</p> <p>CHECK VALVE</p> <p>VACUUM BREAKER</p> <p>AUTOMATIC FLOW CONTROL VALVE</p> <p>CALIBRATED MANUAL BALANCING VALVE</p> <p>PRESSURE-RELIEF VALVE</p> <p>PRESSURE-REDUCING VALVE (PRV)</p> <p>AUTOMATIC CONTROL VALVE, 2-WAY</p> <p>AUTOMATIC CONTROL VALVE, 3-WAY</p> <p>BACKFLOW PREVENTER</p> <p>PLUMBING FIXTURE</p>	<p>SUPPLY AIR OR OUTSIDE AIR DUCT UP (SECTION CUT, FIRST DIMENSION DUCT WIDTH)</p> <p>SUPPLY AIR OR OUTSIDE AIR DUCT DOWN (NO SECTION CUT)</p> <p>RETURN AIR DUCT UP (SECTION CUT)</p> <p>RETURN AIR DUCT DOWN (NO SECTION CUT)</p> <p>EXHAUST AIR DUCT UP (NO SECTION CUT)</p> <p>EXHAUST AIR DUCT DOWN (NO SECTION CUT)</p> <p>ROUND ELBOW UP</p> <p>ROUND ELBOW DOWN</p> <p>TRANSITION - RECTANGULAR TO ROUND DUCT</p> <p>STANDARD BRANCH</p> <p>ELBOW - W/TURNING VANE (RECTANGULAR)</p> <p>ELBOW - (RECTANGULAR), SMOOTH RADIUS</p> <p>RECTANGULAR DUCT OR OPENING SIZE FIRST NUMBER INDICATES SIZE OF SIDE SHOWN</p> <p>ROUND DUCT SIZE</p> <p>RECTANGULAR DUCT INCLINE - RISE OR DROP IN RESPECT TO THE AIR FLOW</p> <p>ROUND DUCT INCLINE - RISE OR DROP IN RESPECT TO THE AIR FLOW</p> <p>HIDDEN DUCT</p> <p>DUCT/PIPE ELEVATION TAG ABOVE FINISH FLOOR</p> <p>VOLUME DAMPER</p> <p>MOTOR OPERATED DAMPER</p> <p>FIRE DAMPER</p> <p>SMOKE DAMPER</p> <p>SMOKE AND FIRE DAMPER</p> <p>FLEXIBLE CONNECTION</p> <p>FLEXIBLE DUCT - TWO LINE</p> <p>FLEXIBLE DUCT - ONE LINE</p> <p>ACOUSTICAL LINING - DUCT DIMENSIONS FOR NET FREE AREA</p> <p>UNDERCUT DOOR</p> <p>NEW TO EXISTING CONNECTION</p> <p>REMOVE EXISTING UP TO THIS POINT</p> <p>HVAC EMERGENCY SHUTDOWN SWITCH</p>	<p>TAG-SIZE CFM SUPPLY AIR REGISTER</p> <p>TAG-SIZE CFM EXHAUST AIR OR RETURN AIR GRILLE</p> <p>TAG-SIZE CFM EXHAUST AIR OR RETURN AIR GRILLE</p> <p>TAG-SIZE CFM SUPPLY AIR ASSEMBLY SQUARE DIFFUSER</p> <p>TAG-SIZE CFM SUPPLY AIR ASSEMBLY ROUND DIFFUSER</p> <p>MISCELLANEOUS DEVICE IDENTIFIER</p> <p>COIL IDENTIFIERS</p> <p>CONTROL DEVICE IDENTIFIER</p> <p>CONTROL INPUT/OUTPUT IDENTIFIER</p> <p>DUCT MOUNTED SMOKE DETECTOR</p> <p>TEMPERATURE AVERAGING SENSOR</p> <p>MOTOR OPERATED DAMPER</p> <p>MOTOR OPERATED SINGLE BLADE DAMPER</p> <p>BACKDRAFT DAMPER</p> <p>HUMIDIFIER</p> <p>AIRFLOW MEASURING STATION</p> <p>INTAKE/ EXHAUST LOUVER</p> <p>FILTER</p> <p>FREEZE STAT</p> <p>SEE CONTROL ABBREVIATIONS (TYP) FAN</p> <p>FAN WITH EC MOTOR</p> <p>PUMP</p> <p>PUMP WITH EC MOTOR</p>	<p>AD ACCESS DOOR</p> <p>AFR ABOVE FINISHED ROOF</p> <p>AHU AIR HANDLING UNIT</p> <p>APD AIR PRESSURE DROP</p> <p>ARF ABOVE RAISED FLOOR</p> <p>AV AIR VALVE</p> <p>BAS BUILDING AUTOMATION SYSTEM</p> <p>BDD BACK DRAFT DAMPER</p> <p>BHP BRAKE HORSE POWER</p> <p>BOE BOTTOM OF EQUIPMENT</p> <p>BTUH BRITISH THERMAL UNITS PER HOUR</p> <p>CAV CONSTANT AIR VOLUME</p> <p>CFH CUBIC FEET PER HOUR</p> <p>CFM CUBIC FEET PER MINUTE</p> <p>COP COEFFICIENT OF PERFORMANCE</p> <p>COR CONTRACTING OFFICER'S REPRESENTATIVE</p> <p>CRAC COMPUTER ROOM AIR CONDITIONER</p> <p>CU CONDENSING UNIT</p> <p>DB DRY BULB</p> <p>DDC DIRECT DIGITAL CONTROL</p> <p>DH DEHUMIDIFIER</p> <p>DX DIRECT EXPANSION</p> <p>EAT ENTERING AIR TEMPERATURE</p> <p>EDH ELECTRIC DUCT HEATER</p> <p>EER ENERGY EFFICIENCY RATIO</p> <p>EMCS ENERGY MANAGEMENT CONTROL SYSTEM</p> <p>ERU ENERGY RECOVERY UNIT</p> <p>ESP EXTERNAL STATIC PRESSURE</p> <p>ESS EMERGENCY SHUTOFF SWITCH</p> <p>EWT ENTERING WATER TEMPERATURE</p> <p>F FUTURE</p> <p>FA FREE AREA</p> <p>FAN CONTROL PANEL</p> <p>FCU FAN COIL UNIT</p> <p>FDBK FEEDBACK</p> <p>FLA FULL LOAD AMPS</p> <p>FLT FILTER</p> <p>FPB FAN POWERED BOX</p> <p>FSM FEET PER MINUTE</p> <p>GC GENERAL CONTRACTOR</p> <p>GE GRAVITY EXHAUST</p> <p>GI GRAVITY INTAKE</p> <p>GPH GALLONS PER HOUR</p> <p>GPM GALLONS PER MINUTE</p> <p>IO INPUT/OUTPUT</p> <p>IP CURRENT TO PNEUMATIC</p> <p>IAQ INDOOR AIR QUALITY</p> <p>IPLV INTEGRATED PART LOAD VALUE</p> <p>LAT LEAVING AIR TEMPERATURE</p> <p>LVR LOUVER</p> <p>LWT LEAVING WATER TEMPERATURE</p> <p>MAU MAKE-UP AIR UNIT</p> <p>MBH THOUSAND BTUH</p> <p>MCC MOTOR CONTROL CENTER</p> <p>NC NOISE CRITERIA</p> <p>NO NUMBER</p> <p>NRG NOISE REDUCTION COEFFICIENT</p> <p>OS&amp;Y OUTSIDE SCREW AND YOKE</p> <p>OS&amp;Y OUTSIDE SCREW AND YOKE</p> <p>PD PRESSURE DROP</p> <p>PPH POUNDS PER HOUR</p> <p>RH RELATIVE HUMIDITY</p> <p>RTU ROOFTOP UNIT</p> <p>S SIGNAL PORT</p> <p>SCFM STANDARD CUBIC FEET PER MINUTE</p> <p>SEER SEASONAL ENERGY EFFICIENCY RATIO</p> <p>SP STATIC PRESSURE</p> <p>TC TECHNOLOGY CONTRACTOR</p> <p>TCP TEMPERATURE CONTROL PANEL</p> <p>TD TEMPERATURE DIFFERENTIAL</p> <p>TES THERMAL ENERGY STORAGE</p> <p>TSP TOTAL STATIC PRESSURE</p> <p>UH UNIT HEATER</p> <p>V&amp;C VALVE AND CAP</p> <p>VAV VARIABLE AIR VOLUME</p> <p>VRF VARIABLE REFRIGERANT FLOW</p> <p>VTR VENT THROUGH ROOF</p> <p>WB WET BULB</p> <p>WC WATER COLUMN</p> <p>WPD WATER PRESSURE DROP</p>					
				<p><b>GENERAL MECHANICAL DEMOLITION NOTES</b></p> <ol style="list-style-type: none"> <li>THE CONTRACTOR SHALL COMPLETELY REMOVE ALL PIPING, DUCTWORK, COILS, EQUIPMENT, TERMINAL UNITS, ASSOCIATED CONTROLS, WIRING, AND OTHER ITEMS SHOWN BOLD AND/OR BOLD DASHED LINES UNLESS SPECIFICALLY NOTED OTHERWISE. THE ITEMS INDICATED ON THE DRAWINGS TO BE REMOVED ARE ONLY TO INDICATE IN GENERAL THE AMOUNT OF DEMOLITION WORK INVOLVED. A SITE INVESTIGATION BY THE CONTRACTOR MUST BE PERFORMED TO AID IN DETERMINING THE COMPLETE EXTENT OF WORK INVOLVED.</li> <li>PIPING AND DUCTWORK EMBEDDED IN FLOORS, WALLS, AND CEILINGS MAY REMAIN IF SUCH MATERIALS DO NOT INTERFERE WITH NEW INSTALLATIONS. REMOVE MATERIALS ABOVE ACCESSIBLE CEILINGS. REMAINING PIPING SHALL BE DRAINED AND CAPPED WITHOUT CREATING DEAD LEGS IN THE SYSTEM. REMAINING DUCTWORK SHALL BE CAPPED.</li> <li>LOCATE, IDENTIFY, AND PROTECT MECHANICAL SERVICES PASSING THROUGH DEMOLITION AREA AND SERVING OTHER AREAS OUTSIDE THE DEMOLITION LIMITS. MAINTAIN SERVICES TO AREAS OUTSIDE DEMOLITION LIMITS. WHEN SERVICES MUST BE INTERRUPTED, NOTIFY OWNER AND INSTALL TEMPORARY SERVICES FOR AFFECTED AREAS.</li> <li>EXISTING EQUIPMENT BEING REMOVED AND CONSIDERED SALVAGEABLE BY THE OWNER SHALL BE TURNED OVER TO THE OWNER.</li> <li>CONTRACTORS SHALL COORDINATE AND SCHEDULE ALL NECESSARY UTILITY SHUT-OFFS WITH OWNER PRIOR TO PROCEEDING WITH SUCH WORK.</li> <li>COORDINATE SAW-CUTTING OF THE FLOOR OR WALL WITH OTHER TRADES.</li> <li>THE CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING, PAINTING, REPAIRING OR REPLACEMENT OF ALL WALLS, FLOORS, CEILINGS, OR OTHER BUILDING ELEMENTS THAT ARE DISTURBED AS PART OF THE DEMOLITION OR INSTALLATION OF MECHANICAL WORK. SUCH WORK SHALL MATCH THE EXISTING CONSTRUCTION, FINISH, AND RATING. FIRE SEAL WALL OPENINGS AS REQUIRED.</li> <li>REPLACE/REPAIR DAMAGED PIPING AND/OR DUCTWORK INSULATION TO MATCH EXISTING.</li> <li>CONTRACTOR SHALL PROVIDE WORK IN PHASES AS REQUIRED BY THE CONTRACT DOCUMENTS WHILE MINIMIZING POTENTIAL WORK DELAYS AND UTILITY SHUT-DOWNS. COORDINATE ALL WORK WITH PROJECT PHASING PLAN AND WORK SHOWN ON DEMOLITION AND NEW PLANS. ALL EXISTING AREAS OF THE BUILDING NOT A PART OF A CURRENT PHASE OF WORK SHALL REMAIN OPERATIONAL WHILE WORK IN EACH INDIVIDUAL PHASE IS COMPLETED.</li> </ol>		<p><b>GENERAL MECHANICAL NOTES</b></p> <ol style="list-style-type: none"> <li>THESE NOTES ARE NOT ALL INCLUSIVE. REFER TO DRAWINGS AND SPECIFICATION FOR ADDITIONAL REQUIREMENTS.</li> <li>THIS IS A STANDARD MECHANICAL (HVAC AND PLUMBING) SYMBOLOGY AND ABBREVIATIONS SHEET. LISTING OF SYMBOLS AND ABBREVIATIONS DOES NOT IMPLY ALL SYMBOLS AND ABBREVIATIONS HAVE BEEN USED ON THIS PROJECT.</li> <li>VALVE SYMBOLS SHOWN HERE ARE APPLICABLE ONLY TO MECHANICAL SHEETS.</li> <li>PROVIDE ALL MATERIALS, LABOR, AND EQUIPMENT FOR COMPLETE AND OPERABLE SYSTEMS AS INDICATED ON THE DRAWINGS AS SPECIFIED, OR AS REQUIRED BY CODE.</li> <li>MECHANICAL INSTALLATION SHALL COMPLY WITH THE ADA/ABA ACCESSIBILITY GUIDELINES.</li> <li>DETAILS APPLY TO THE ENTIRE PROJECT AND ARE ONLY REFERENCED TO PROVIDE CLARITY IF THERE ARE MULTIPLE DETAILS THAT COULD APPLY TO A PARTICULAR PROJECT CONDITION.</li> <li>COORDINATE LOCATION OF ALL MECHANICAL EQUIPMENT, DUCTWORK, AND PIPING WITH OTHER TRADES BEFORE PROCEEDING WITH WORK. DO NOT INSTALL MECHANICAL EQUIPMENT, DUCTWORK, OR PIPING ABOVE ELECTRICAL EQUIPMENT WHERE PROHIBITED BY ELECTRICAL CODES (SWITCHBOARDS, PANELS, ETC.).</li> <li>LIGHT LINE WEIGHT INDICATES EXISTING PIPING, DUCTWORK, AND/OR EQUIPMENT TO REMAIN. BOLD LINE WEIGHT INDICATES NEW WORK TO BE INSTALLED AS WORK OF THIS CONTRACT.</li> <li>COORDINATE INSTALLATION OF OUTSIDE AIR INTAKE WITH INSTALLATION OF PLUMBING VENTS, FLUES AND EXHAUST/RELIEF OUTLETS TO MAINTAIN 10' SEPARATION.</li> <li>ALL WORK IN FINISHED SPACES SHALL BE LOCATED ABOVE CEILINGS, IN CHASES OR OTHER CONCEALED ACCESSIBLE LOCATIONS UNLESS NOTED OTHERWISE. LOCATE AND ARRANGE VALVES, DRAIN FITTINGS, ETC. TO BE ACCESSIBLE THROUGH LAY-IN CEILINGS, ACCESS PANELS OR ACCESS DOORS. PROVIDE AN ACCESS PANEL OR DOOR FOR ALL NON-ACCESSIBLE INSTALLATIONS. COORDINATE LOCATION OF ACCESS PANELS OR DOORS WITH THE ARCHITECT/ENGINEER AND OTHER TRADES.</li> <li>ALL MATERIALS LOCATED IN PLENUM SHALL BE RATED FOR PLENUM INSTALLATION.</li> <li>ALL DUCTWORK, PIPING, AND EQUIPMENT SUPPORTED FROM STRUCTURAL STEEL SHALL BE COORDINATED WITH ALL TRADES. ALL ATTACHMENTS TO STEEL BAR JOISTS, TRUSSES, OR JOIST GIRDERS SHALL BE AT PANEL POINTS OR AS SHOWN ON THE MECHANICAL OR STRUCTURAL DRAWINGS. WELDING TO STRUCTURAL MEMBERS SHALL NOT BE PERMITTED.</li> <li>ALL MISCELLANEOUS METALS AND MATERIALS REQUIRED TO ENSURE PROPER INSTALLATION AND AS SHOWN IN DETAILS FOR PIPING, DUCTWORK, AND EQUIPMENT (UNLESS OTHERWISE NOTED) SHALL BE PROVIDED BY THE INSTALLING CONTRACTOR.</li> <li>PROVIDE DIELECTRIC UNIONS AT ALL CONNECTIONS OF DISSIMILAR METALS (SUCH AS COPPER TO GALVANIZED STEEL).</li> <li>PROVIDE ISOLATION VALVES AT EACH PIECE OF EQUIPMENT. ALSO PROVIDE ISOLATION VALVES ON EACH BRANCH AND/OR RISER SERVING MULTIPLE PIECES OF EQUIPMENT OR FIXTURES AND ELSEWHERE AS INDICATED. INSTALL VALVES AS CLOSE TO MAIN AS POSSIBLE.</li> </ol>		<p><b>GENERAL HVAC NOTES</b></p> <ol style="list-style-type: none"> <li>DUCTWORK DIMENSIONS: FIRST NUMBER INDICATES SIDE OF DUCTWORK SHOWN. ALL DIMENSIONS ARE IN INCHES AND ARE INSIDE CLEAR DIMENSIONS.</li> <li>VOLUME DAMPERS ABOVE PLASTER OR GYPBOARD CEILINGS SHALL HAVE EXTENSION RODS AND CHROME-PLATED ESCUTCHEON PLATES.</li> <li>COORDINATE ALL GRILLE, REGISTER AND DIFFUSER LOCATIONS WITH REFLECTED CEILING PLAN, LIGHTING, AND ALL OTHER CEILING MOUNTED DEVICES.</li> <li>PROVIDE FLEXIBLE CONNECTIONS IN ALL DUCTWORK AND PIPING SYSTEMS CONNECTED TO FANS, PUMPS AND OTHER EQUIPMENT WHICH REQUIRE VIBRATION ISOLATION.</li> <li>PROVIDE ACCESSIBLE VOLUME DAMPERS OR OTHER MEANS OF AIRFLOW ADJUSTMENT AT ALL DUCT RUN-OUTS TO DIFFUSERS AND GRILLES.</li> <li>PROVIDE DUCT ACCESS DOORS AT OUTSIDE AIR INTAKE PLENUMS.</li> <li>ALL DUCT RUN-OUTS TO DIFFUSERS AND GRILLES SHALL BE THE SAME AS THE DIFFUSER OR GRILLE NECK SIZE UNLESS NOTED OTHERWISE.</li> <li>ALL PIPING RUN-OUTS SHALL BE 3/4" UNLESS NOTED OTHERWISE.</li> </ol> <p><b>GENERAL PLUMBING NOTES</b></p> <ol style="list-style-type: none"> <li>SANITARY SEWER PIPING SMALLER THAN 3" SHALL BE SLOPED AT 1/4" PER FOOT, 3" AND LARGER SHALL BE SLOPED AT 1/8" PER FOOT.</li> <li>WALL HYDRANTS SHALL BE INSTALLED BETWEEN 18" MIN AND 24" MAX ABOVE FINISH GRADE. COORDINATE ELEVATIONS OF FINISH FLOOR OR FINISH EXTERIOR GRADE. PROVIDE ACCESSIBLE INSIDE SHUTOFF VALVE FOR EACH WALL HYDRANT.</li> <li>INSTALL WALL CLEANOUTS (WCO) ON ALL SANITARY AND STORM RISERS AT 30" ABOVE FINISH FLOOR UNLESS NOTED OTHERWISE. COORDINATE EXACT HEIGHT WITH OTHER TRADES TO ENSURE ACCESSIBILITY.</li> <li>ROUTE ALL STORM PIPING AS HIGH AS POSSIBLE AND SLOPE AT 1/8" PER FOOT UNLESS NOTED OTHERWISE. OVERFLOW DOWN SPOUT NOZZLES SHALL BE INSTALLED AT 12" ABOVE FINISH EXTERIOR GRADE UNLESS NOTED OTHERWISE.</li> <li>PROVIDE BACKFLOW PREVENTERS IN ACCORDANCE WITH THE LOCAL CODES. PROVIDE AIR GAP FITTINGS FOR ALL RPZ BACKFLOW PREVENTERS AND ROUTE DISCHARGE PIPING TO NEAREST FLOOR DRAIN OR FLOOR SINK OR AS SHOWN ON DRAWINGS.</li> <li>PROVIDE GAS REGULATORS, REGULATOR VENT PIPING, SHUTOFF VALVES, DIRT LEGS, AND UNIONS ON ALL GAS FIRED EQUIPMENT. REGULATE GAS PRESSURE AS REQUIRED FOR EACH SPECIFIC PIECE OF GAS FIRED EQUIPMENT.</li> </ol>	

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MISSOURI CERTIFICATE OF AUTHORITY #000856  
3500 759 HIGHWAY, ST. JOSEPH, MO 64508  
64508 AS CITY, MO 64131

ISSUE	DATE	DESCRIPTION
0	02/20/2026	ISSUED FOR CONSTRUCTION

PROJECT MANAGER	DEREK A. PATRICK
STRUCTURAL ARCHITECTURAL	DAVID WISEMAN ERICA BUTTMAN
PROCESS	KYLE SIMS
MECHANICAL	KEVAN PRINDS
ELECTRICAL	CALEB DADY
I&C	KEITH BOYD
PROJECT NUMBER	10419293



**ST JOSEPH WPF DOMESTIC BLOWER REPLACEMENT**

**GENERAL MECHANICAL LEGEND**

FILE NAME: 10419293-GENERAL

SCALE: 1" = 1'



SHEET: 00G006

# ONE-LINE, POWER, AND LIGHTING SYMBOLOGY

**LOW VOLTAGE CIRCUIT BREAKER**  
RATING AND NO. OF POLES AS SHOWN FOR OTHER THAN MCCB  
X - INDICATES TYPE  
Y - INDICATES TRIP UNIT TYPE

**TYPES**  
MCCB - MOLDED CASE  
ICCB - INSULATED CASE  
LVP - LOW VOLTAGE POWER  
MCP - MOTOR CIRCUIT PROTECTOR (RATING PER CONNECTED LOAD)

**TRIP UNIT**  
L - LONG TIME PICKUP  
S - SHORT TIME PICKUP  
I - INSTANTANEOUS PICKUP  
G - GROUND FAULT PICKUP  
A - ARC ENERGY REDUCTION MODE

PROTECTION RELAY  
X - INDICATES IEEE FUNCTION NUMBER

INTERLOCK: X - INDICATES TYPE

**TYPES**  
E - ELECTRICAL  
M - MECHANICAL  
K - KEY

GFP - GROUND FAULT PROTECTION

52 - MEDIUM VOLTAGE CIRCUIT BREAKER

FUSE, RATING, AND NUMBER OF FUSES AS NOTED

FUSED CUTOFF, CURRENT RATING, FUSE RATING, AND QUANTITY AS NOTED

FUSIBLE SWITCH, CURRENT RATING, FUSE RATING, AND QUANTITY AS NOTED (3 POLE UON)

NON-FUSED SWITCH, CURRENT RATING, AND NUMBER OF POLES AS NOTED (3 POLE UON)

DISCONNECT OR DRAWOUT CONNECTION

MAGNETIC MOTOR STARTER

SEPARATELY MOUNTED COMBINATION MAGNETIC MOTOR STARTER AND DISCONNECT

MOTOR/LOAD CONTROLLER

SEPARATELY MOUNTED MOTOR/LOAD CONTROLLER WITH SHORT CIRCUIT PROTECTION AND DISCONNECT

**MOTOR STARTER AND CONTROLLER SUBSCRIPTS**  
A - MAGNETIC STARTER NEMA SIZE  
B - STARTER TYPE  
NONE - FULL VOLTAGE NON-REVERSING (FNVR)  
FVR - FULL VOLTAGE REVERSING  
2S - TWO SPEED  
RVAT - REDUCED VOLTAGE AUTO TRANSFORMER

C - CONTROL DIAGRAM NUMBER  
D - CONTROLLER TYPE  
VFD - VARIABLE FREQUENCY DRIVE  
SS - SOLID STATE  
CONT - CONTACTOR

SEPARATELY MOUNTED COMBINATION MOTOR STARTER OR CONTROLLER: SEE ELECTRICAL ONE-LINE DIAGRAM OR SCHEDULE FOR DESCRIPTION

SEPARATELY MOUNTED MOTOR STARTER OR CONTROLLER: SEE ELECTRICAL ONE-LINE DIAGRAM OR SCHEDULE FOR DESCRIPTION

NON-FUSED SAFETY SWITCH, 30A, 3P, X INDICATES AMP RATING GREATER THAN 30A  
FUSED SAFETY SWITCH, 30A, 3P, X - INDICATES AMP RATING GREATER THAN 30A  
Y - INDICATES FUSE SIZE  
MR - EQUIPMENT MANUFACTURER RECOMMENDED FUSE SIZE

SEPARATELY MOUNTED CIRCUIT BREAKER: SEE ELECTRICAL ONE-LINE DIAGRAM OR SCHEDULE FOR DESCRIPTION

7 1/2 - MOTOR WITH DESIGN HORSEPOWER (WHEN INDICATED)

HP - GENERATOR

TRANSFER SWITCH, CURRENT RATING, AND NUMBER OF POLES AS NOTED  
ATS - AUTOMATIC  
MTS - MANUAL

**TRANSFORMER**  
Δ 3-PHASE, 3-WIRE DELTA CONNECTION  
⏚ 3-PHASE, 4-WIRE GROUNDWYE CONNECTION

SWITCHBOARD OR PANELBOARD: NAME, VOLTAGE, PHASE, NUMBER OF WIRES WHEN INDICATED

100 KVA - NON-MOTOR LOAD WITH DESIGN KVA, KW, OR AMP

VOLTAGE TRANSFORMER (VT, PT, OR CPT)

CURRENT TRANSFORMER (CT)

WH - UTILITY WATT-HOUR METER PER UTILITY REQUIREMENTS

DMP - DIGITAL METERING PACKAGE

GROUND

LIGHTNING ARRESTER

SPD - LOW VOLTAGE SURGE PROTECTIVE DEVICE

SS - SELECTOR SWITCH

PB - PUSHBUTTON

IC - INSTRUMENTATION / CONTROL DEVICE

SV - SOLENOID VALVE

CONTROL PANEL INTEGRAL OR PROVIDED WITH ASSOCIATED EQUIPMENT

CONTROL PANEL WITH DISCONNECT SWITCH INTEGRAL OR PROVIDED WITH ASSOCIATED EQUIPMENT

JUNCTION OR PULL BOX

PANELBOARD (250V TO 600V)

PANELBOARD (LESS THAN 250V)

ELECTRICAL EQUIPMENT ENCLOSURE ESTIMATED SIZE AS INDICATED WHEN USED, X - INDICATES EQUIPMENT TYPE

**EQUIPMENT TYPES**  
ATS - AUTOMATIC TRANSFER SWITCH  
CP - CONTROL PANEL  
INV - LIGHTING INVERTER  
MTS - MANUAL TRANSFER SWITCH  
MCC - MOTOR CONTROL CENTER  
UPS - UNINTERRUPTIBLE POWER SUPPLY  
VFD - VARIABLE FREQUENCY DRIVE  
SB - SWITCHBOARD  
SG - SWITCHGEAR  
T - TRANSFORMER

PLUG-IN RECEPTACLE STRIP, QUANTITY AND SPACING OF RECEPTACLES AS NOTED OR SPECIFIED

SPECIAL-PURPOSE RECEPTACLE AS DEFINED ON PLANS

TWO RECEPTACLES IN 2-GANG BOX UNDER COMMON COVER PLATE

DUPLEX RECEPTACLE

SIMPLEX RECEPTACLE

RECESSED FLOOR MOUNTED BOX, QUANTITY AND TYPE OF RECEPTACLES AS INDICATED

**RECEPTACLE SUBSCRIPTS**  
X - INDICATES TYPE  
G - GROUND FAULT CIRCUIT INTERRUPTER  
TR - TAMPER RESISTANT  
USB - USB CHARGING STATION  
SPD - SURGE PROTECTIVE DEVICE  
Y - INDICATES CIRCUIT NUMBER FROM PANELBOARD

CONDUIT TURNING UP

CONDUIT TURNING DOWN

HOMERUN TO SOURCE NUMBER IN PARENTHESES REPRESENTS CONDUCTOR SIZE OTHER THAN #12  
SINGLE PHASE: 2#12, #12G IN 3/4" THREE PHASE: 3#12, #12G IN 3/4" UNLESS OTHERWISE NOTED, CONDUCTOR SIZE IS FOR ENTIRE CIRCUIT, SOURCE TO LAST DEVICE.  
SEE ONE-LINE DIAGRAM FOR CIRCUIT REQUIREMENTS

CONDUIT CONNECTION TO EQUIPMENT

CIRCUIT RUN BETWEEN DEVICES EXPOSED IN NON-ARCHITECTURALLY FINISHED AREAS; CONCEALED IN ARCHITECTURALLY FINISHED AREAS. CONDUIT AND CONDUCTOR SIZES SHALL BE THE SAME AS THE HOMERUN FOR THE CIRCUIT

CONDUIT RUN BETWEEN DEVICES CONCEALED IN NON-ARCHITECTURALLY FINISHED AREAS OR UNDER FLOOR SLAB. CONDUIT AND CONDUCTOR SIZES SHALL BE THE SAME AS THE HOMERUN FOR THE CIRCUIT

CIRCUIT CONTINUATION

CONDUIT STUBBED OUT AND CAPPED

CORD AND PLUG CONNECTION

CONDUIT TAG OR CIRCUIT NUMBER - WIRE AND CONDUIT SIZE AS SPECIFIED IN CIRCUIT SCHEDULE ON THE SHEETS

GROUND CABLE

GROUND ROD

CEILING/PENDANT/BOLLARD MOUNTED LUMINAIRE

CEILING/PENDANT/BOLLARD MOUNTED LUMINAIRE, EMERGENCY (INTERNAL OR EXTERNAL POWER SOURCE AS INDICATED)

WALL MOUNTED LUMINAIRE

WALL MOUNTED LUMINAIRE, EMERGENCY (INTERNAL OR EXTERNAL POWER SOURCE AS INDICATED)

WALL MOUNTED FLOOD LUMINAIRE

POLE/STANCHION MOUNTED LUMINAIRE

POLE/STANCHION MOUNTED LUMINAIRE EMERGENCY (INTERNAL OR EXTERNAL POWER SOURCE AS INDICATED)

POLE/STANCHION MOUNTED FLOOR LUMINAIRE

CEILING/PENDANT MOUNTED LUMINAIRE

WALL MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED

CEILING/PENDANT MOUNTED LUMINAIRE EMERGENCY (INTERNAL OR EXTERNAL POWER SOURCE AS INDICATED)

WALL MOUNTED LUMINAIRE EMERGENCY (INTERNAL OR EXTERNAL POWER SOURCE AS INDICATED)

EMERGENCY LIGHT, NUMBER OF ATTACHED HEADS AS SHOWN

EMERGENCY LIGHT, REMOTE MOUNTED HEAD

DOUBLE-FACED CEILING OR WALL MOUNTED EXIT LIGHT; DIRECTIONAL ARROWS (IF REQUIRED) AS INDICATED ON PLANS

SINGLE-FACED CEILING OR WALL MOUNTED EXIT LIGHT; DIRECTIONAL ARROWS (IF REQUIRED) AS INDICATED ON PLANS

**LIGHTING FIXTURE SUBSCRIPTS**  
X - INDICATES LUMINAIRE TYPE PER LUMINAIRE SCHEDULE  
Y - INDICATES CIRCUIT NUMBER FROM PANELBOARD  
Z - INDICATES CONTROLLING SWITCH (IF REQUIRED)  
NL - NIGHT LIGHT UNSWITCHED

ROOM/AREA LIGHTING CONTROL DESIGNATION, SEE LIGHTING CONTROL STRATEGY SCHEDULE FOR REQUIREMENTS

LOW VOLTAGE DIGITAL WALL SWITCH, NUMBER INDICATES QUANTITY OF PUSH BUTTONS PER SINGLE GANG PLATE, LETTER INDICATES CONTROL ZONE WHEN SHOWN

WALL SWITCH  
**SUBSCRIPTS**  
X - INDICATES TYPE  
NONE - SINGLE POLE  
2 - DOUBLE POLE  
3 - THREE-WAY  
4 - FOUR-WAY  
K - KEY SWITCH  
P - PILOT LIGHT  
L - LIGHTED HANDLE  
DM - DIMMING  
MC - MOMENTARY CONTACT  
T - TIMER  
Y - INDICATES CONTROLLING SWITCH (IF REQUIRED)

MANUAL MOTOR STARTER  
**SUBSCRIPTS**  
X - INDICATES TYPE  
HP - HORSEPOWER RATED  
TE - HORSEPOWER RATED WITH THERMAL ELEMENT  
Y - INDICATES SWITCH TYPE  
NONE - TOGGLE SWITCH TYPE  
R - ROTARY SWITCH TYPE

PHOTOCELL

TIME CLOCK

LIGHTING CONTROL OCCUPANCY SENSOR, WALL MOUNTED, X INDICATES SPECIFIC TYPE AS SPECIFIED

LIGHTING CONTROL OCCUPANCY SENSOR, CEILING MOUNTED, X INDICATES SPECIFIC TYPE AS SPECIFIED

# COMMUNICATION SYMBOLOGY

WALL MOUNTED DATA OUTLET, NUMBER INDICATES QUANTITY OF JACKS IN OUTLET BOX "0" INDICATES CONDUIT AND DEVICE BOX ROUGH-IN ONLY

ABOVE CEILING DATA OUTLET, NUMBER INDICATES QUANTITY OF JACKS IN OUTLET BOX "0" INDICATES CONDUIT AND DEVICE BOX ROUGH-IN ONLY

RECESSED FLOOR MOUNTED DATA OUTLET, NUMBER INDICATES QUANTITY OF JACKS IN OUTLET BOX "0" INDICATES CONDUIT AND DEVICE BOX ROUGH-IN ONLY

# AUDIO/VISUAL SYMBOLOGY

TELEVISION OUTLET

CEILING MOUNT SPEAKER

WALL MOUNT SPEAKER  
X - INDICATES HEIGHT

HORN TYPE TRANSDUCER

VOLUME CONTROL

HEAD END EQUIPMENT

FLOOR MOUNTED MICROPHONE JACK

WALL MOUNTED MICROPHONE JACK

# SECURITY SYMBOLOGY

DOOR POSITION SWITCH

COMBINATION ELECTRIC DOOR STRIKE AND POSITION SWITCH

PROXIMITY CARD READER

PROXIMITY CARD READER WITH KEYPAD

DUAL TECHNOLOGY MOTION DETECTOR

REQUEST TO EXIT MOTION DETECTOR

REQUEST TO EXIT PUSH BUTTON

GLASS BREAK DETECTOR

CCTV CAMERA  
PAN/TILT/ZOOM WHEN INDICATED

SECURITY EQUIPMENT CABINET

REMOTE KEYPAD/CONTROL STATION

# EMERGENCY ALARM SYMBOLOGY

ALARM BELL

ALARM HORN

ALARM FLASHING LIGHT

ALARM BELL AND FLASHING LIGHT COMBINATION UNIT

ALARM HORN AND FLASHING LIGHT COMBINATION UNIT

PUSHBUTTON OR PULLSTATION

# SITE SYMBOLOGY

EXTERIOR PAD MOUNTED TRANSFORMER

POLE - MOUNTED TRANSFORMER

ELECTRICAL HANDHOLE OR MANHOLE  
X - INDICATES SEQUENCE NUMBER  
Y - MHX OR HHX

POLE/STANCHION MOUNTED FLOOD LUMINAIRE, LAMP TYPE AS SPECIFIED

POLE MOUNTED AREA OR ROADWAY LUMINAIRE, LAMP TYPE AS SPECIFIED

HIGH MAST LIGHTING, NUMBER OF LUMINAIRES AS SPECIFIED

**LIGHTING FIXTURE SUBSCRIPTS**  
X - INDICATES LUMINAIRE TYPE PER LUMINAIRE SCHEDULE  
Y - INDICATES CIRCUIT NUMBER FROM PANELBOARD

POWER POLE

DOWNGUY

UNDERGROUND (UNO) ELECTRICAL AND COMMUNICATION SYSTEMS PATHWAY

OVERHEAD ELECTRICAL AND COMMUNICATION SYSTEMS PATHWAY

# CONTROL SYMBOLOGY

ELECTRICAL CONNECTION

NO ELECTRICAL CONNECTION

SOLENOID VALVE

CONTROL RELAY COIL:  
X - INDICATES TYPE  
Y - INDICATES LOOP NUMBER, WHEN USED

**TYPE**  
CR - CONTROL RELAY  
PC - PHOTOCELL  
DP - DEFINITE PURPOSE  
M - MOTOR STARTER  
TC - TIME CLOCK  
LC - LIGHTING CONTACTOR  
TR - TIMING RELAY

NORMALLY OPEN CONTACT (N.O.)

NORMALLY CLOSED CONTACT (N.C.)

MICROPROCESSOR (PLC, RTU, ETC.) OUTPUT

MICROPROCESSOR (PLC, RTU, ETC.) INPUT

DENOTES FIELD DEVICE

TERMINAL CONNECTION

CAPACITOR

DIODE

FIELD WIRING EXTERNAL TO CONTROL PANEL

NORMALLY OPEN TIME DELAY RELAY CONTACT WITH TIME DELAY ON CLOSING AFTER COIL IS ENERGIZED

NORMALLY CLOSED TIME DELAY RELAY CONTACT WITH TIME DELAY ON OPENING AFTER COIL IS ENERGIZED

NORMALLY OPEN TIME DELAY RELAY CONTACT WITH TIME DELAY ON OPENING AFTER COIL IS DE-ENERGIZED

NORMALLY CLOSED TIME DELAY RELAY CONTACT WITH TIME DELAY ON CLOSING AFTER COIL IS DE-ENERGIZED

NORMALLY OPEN TEMPERATURE SWITCH; CLOSE ON RISING TEMPERATURE

NORMALLY CLOSED TEMPERATURE SWITCH; OPEN ON RISING TEMPERATURE

NORMALLY OPEN FLOW SWITCH; CLOSE ON INCREASING FLOW

NORMALLY CLOSED FLOW SWITCH; OPEN ON INCREASING FLOW

NORMALLY OPEN LEVEL SWITCH; CLOSE ON RISING LEVEL

NORMALLY CLOSED LEVEL SWITCH; OPEN ON RISING LEVEL

NORMALLY OPEN PRESSURE SWITCH; CLOSE ON INCREASING PRESSURE

NORMALLY CLOSED PRESSURE SWITCH; OPEN ON INCREASING PRESSURE

# CONTROL SYMBOLOGY

NORMALLY OPEN LIMIT SWITCH, CLOSE ON REACHING LIMIT

NORMALLY CLOSED LIMIT SWITCH, OPEN ON REACHING LIMIT

3 POSITION SELECTOR SWITCH, MAINTAINED CONTACTS, UNLESS OTHERWISE NOTED, 2-POSITION SIMILAR

NORMALLY OPEN PUSHBUTTON, MOMENTARY CONTACT UNLESS OTHERWISE NOTED

NORMALLY CLOSED PUSHBUTTON, MOMENTARY CONTACT UNLESS OTHERWISE NOTED

INDICATING LIGHT  
X INDICATES LENS COLOR

PUSH TO TEST INDICATING LIGHT  
X INDICATES LENS COLOR  
**LENS COLORS**  
R - RED Y - YELLOW  
G - GREEN W - WHITE  
B - BLUE A - AMBER

THERMAL OVERLOAD ELEMENT

THERMAL OVERLOAD RELAY CONTACT WHEN SHOWN X INDICATES QUANTITY

CONTROL POWER TRANSFORMER (CPT)

RUN TIME METER

# GENERAL NOTES

- THIS IS A STANDARD ELECTRICAL SYMBOLOGY SHEET. NOT ALL SYMBOLS MAY BE USED ON THIS PROJECT.
- SCREENING OR SHADING OF WORK IS USED TO INDICATE EXISTING COMPONENTS OR TO DE-EMPHASIZE PROPOSED IMPROVEMENTS TO HIGHLIGHT SELECTED TRADE WORK. REFER TO CONTEXT OF EACH SHEET FOR USAGE.
- SEE INSTRUMENTATION LEGEND SHEET FOR PROJECT SPECIFIC EQUIPMENT SYMBOLS, EQUIPMENT ABBREVIATIONS, AND PIPING SYSTEM ABBREVIATIONS.

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ISSUE	DATE	DESCRIPTION
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PROJECT MANAGER	DEREK A. PATRICK
STRUCTURAL	DAVID WISEMAN
ARCHITECTURAL	ERICA BUTTMAN
PROCESS	KYLE SIMS
MECHANICAL	KEVAN PRINDS
ELECTRICAL	CALEB DADY
I&C	KEITH BOYD
PROJECT NUMBER	10419293



## ST JOSEPH WPF DOMESTIC BLOWER REPLACEMENT

## GENERAL ELECTRICAL LEGEND

FILE NAME: 10419293-GENERAL  
SCALE: 0 1" 2"  
SHEET: 00G007

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### PRIMARY ELEMENT SYMBOLOGY

**LEVEL ELEMENT**  
A = TAG NUMBER  
B = TYPE  
LAN - LOCAL AREA NETWORK  
PRESS - HYDROSTATIC PRESSURE  
RAD - RADAR  
US - ULTRASONIC  
VIB - VIBRATION LEVEL SWITCH

**FLOAT SWITCH**  
A = TAG NUMBER  
B = TYPE  
DIS - DISPLACEMENT  
FLT - FLOAT SWITCH

**ANALYTICAL ELEMENT**  
A - TAG NUMBER  
B - TYPE:  
CL2 CHLORINE  
CO CARBON MONOXIDE  
CO2 CARBON DIOXIDE  
COMB COMBUSTIBLES  
COND CONDUCTIVITY  
DEN DENSITY  
DO DISSOLVED OXYGEN  
H2S HYDROGEN SULFIDE  
HCL HYDROGEN CHLORIDE  
NOX NITROGEN OXIDE  
O2 OXYGEN  
SS SUSPENDED SOLIDS  
TURB TURBIDITY

### LINE TYPES

### INSTRUMENT SYMBOLOGY

**PROGRAMMABLE LOGIC CONTROL**  
A = INSTRUMENT IDENTIFICATION (SEE CHART)  
B = LOOP NUMBER  
CCC/ AAH ANALYTICAL ALARM HIGH  
DDD/ AAL ANALYTICAL ALARM LOW  
EEE = FAH FLOW ALARM HIGH  
FAL FLOW ALARM LOW  
LAH LEVEL ALARM HIGH  
LAL LEVEL ALARM LOW  
OOR OUT OF RANGE

### ACTUATOR SYMBOLOGY

**OPERATOR ABBREVIATIONS:**  
M = MOTOR  
P = PNEUMATIC  
S = SOLENOID

### CONTROL SWITCH NOTATION ABBREVIATIONS

**A: DEVICE TYPE**  
HS HAND/SELECTOR SWITCH  
OIT OPERATOR INTERFACE TERMINAL  
PB PUSH BUTTON  
POT POTENTIOMETER

**B: LOOP NO.**

**C: FUNCTION**  
ACK ACKNOWLEDGE  
E-STOP EMERGENCY STOP  
FAIL FAILURE  
FOR FORWARD-OFF-REVERSE  
FR FORWARD-REVERSE  
FS FAST-SLOW  
LL LEAD-LAG  
LRS LEAD-LAG-STANDBY  
LOR LOCAL-OFF-REMOTE  
LR LOCAL-REMOTE  
LS LEAD-STANDBY  
MA MANUAL-AUTO  
MOA MANUAL-OFF-AUTO  
OAC OPEN-AUTO-CLOSE  
OC OPEN-CLOSE  
ON-OFF  
OOC OPEN-OFF-CLOSE  
OSC OPEN-STOP-CLOSE  
POT POTENTIOMETER  
RJ RUN-JOG  
RJR RUN-JOG-REVERSE  
SIL SILENCE  
SS START-STOP

### VALVES AND GATES

**AIR-RELEASE VACUUM VALVE**  
A = AIR RELEASE  
A/V = AIR/VACUUM  
VAC = VACUUM

### P&ID I/O SYMBOLOGY

### INSTRUMENT IDENTIFICATION LETTERS

FIRST LETTER	SUCCEEDING LETTERS				
	MEASURED OR INITIATING VARIABLE	VARIABLE MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT/ACTIVE FUNCTION	FUNCTION MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	USER'S CHOICE			CONTROL	CLOSED
D	USER'S CHOICE	DIFFERENTIAL			DEVIATION
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			
G	USER'S CHOICE		GLASS, GAUGE VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN	SCAN		
K	TIME	TIME, RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	USER'S CHOICE				MIDDLE, INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE, RESTRICTION		
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZE	INTEGRATE, TOTALIZE		
R	RADIATION		RECORD		RUN
S	SPEED, FREQUENCY	SAFETY		SWITCH	STOP
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECH. ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL PROBE		
X	ALARM	X AXIS	ACCESSORY DEVICES UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y AXIS		AUXILIARY DEVICES	
Z	POSITION, DIMENSION	Z AXIS SAFETY INSTRUMENTED SYSTEM		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

### ABBREVIATIONS

**PROCESS PIPING SYSTEM IDENTIFICATION**  
B BLOWER  
CA COOLING AIR  
NFW NON-POTABLE WATER  
PA PROCESS AIR  
PD PROCESS DRAIN  
VVENT VENT  
VLV VALVE (ANY TYPE)  
VSH VIBRATION LEVEL SWITCH

**NETWORK, SECURITY, AND SURVEILLANCE**  
FPP FIBER OPTIC PATCH PANEL  
LAN LOCAL AREA NETWORK  
MC MEDIA CONVERTER  
NAS NETWORK ATTACHED STORAGE  
NVR NETWORK VIDEO RECORDER SYSTEM  
SPD SURGE PROTECTIVE DEVICE  
SVS SURVEILLANCE SYSTEM  
UPS UNINTERRUPTIBLE POWER SUPPLY  
WAN WIDE AREA NETWORK

**MISCELLANEOUS INSTRUMENTATION**  
E/P VOLTAGE TO PNEUMATIC  
HMI HUMAN-MACHINE INTERFACE  
IP CURRENT TO PNEUMATIC  
OIT OPERATOR INTERFACE TERMINAL  
P&ID PROCESS AND INSTRUMENTATION DIAGRAM

### NETWORK EQUIPMENT

### CROSS REFERENCE SYMBOLOGY

### PROCESS EQUIPMENT SYMBOLS

### ADDITIONAL I&C SYMBOLOGY

### GENERAL NOTES

- THIS IS A STANDARD INSTRUMENTATION SYMBOLS AND ABBREVIATIONS SHEET. LISTING OF SYMBOLS AND ABBREVIATIONS DOES NOT IMPLY ALL SYMBOLS AND ABBREVIATIONS HAVE BEEN USED ON THIS PROJECT.
- SEE PROCESS, MECHANICAL AND PLUMBING LEGEND SHEET FOR MISCELLANEOUS PIPING SYMBOLS.
- SCREENING OR SHADING OF WORK IS USED TO INDICATE EXISTING COMPONENTS OR TO DE-EMPHASIZE PROPOSED IMPROVEMENTS TO HIGHLIGHT SELECTED TRADE WORK. REFER TO CONTEXT OF EACH SHEET FOR USAGE.
- VALVE SYMBOLS SHOWN HERE ARE APPLICABLE ONLY TO INSTRUMENTATION DIAGRAMS. SEE PROCESS, MECHANICAL AND PLUMBING LEGEND SHEET FOR VALVE SYMBOLS USED ELSEWHERE ON THE SHEETS.



ISSUE	DATE	DESCRIPTION
0	02/20/2026	ISSUED FOR CONSTRUCTION

**PROJECT MANAGER** DEREK A. PATRICK  
STRUCTURAL DAVID WISEMAN  
ARCHITECTURAL ERICA BUTTMAN  
PROCESS KYLE SIMS  
MECHANICAL KEVAN PRINDS  
ELECTRICAL CALEB DADY  
I&C KEITH BOYD

**PROJECT NUMBER** 10419293

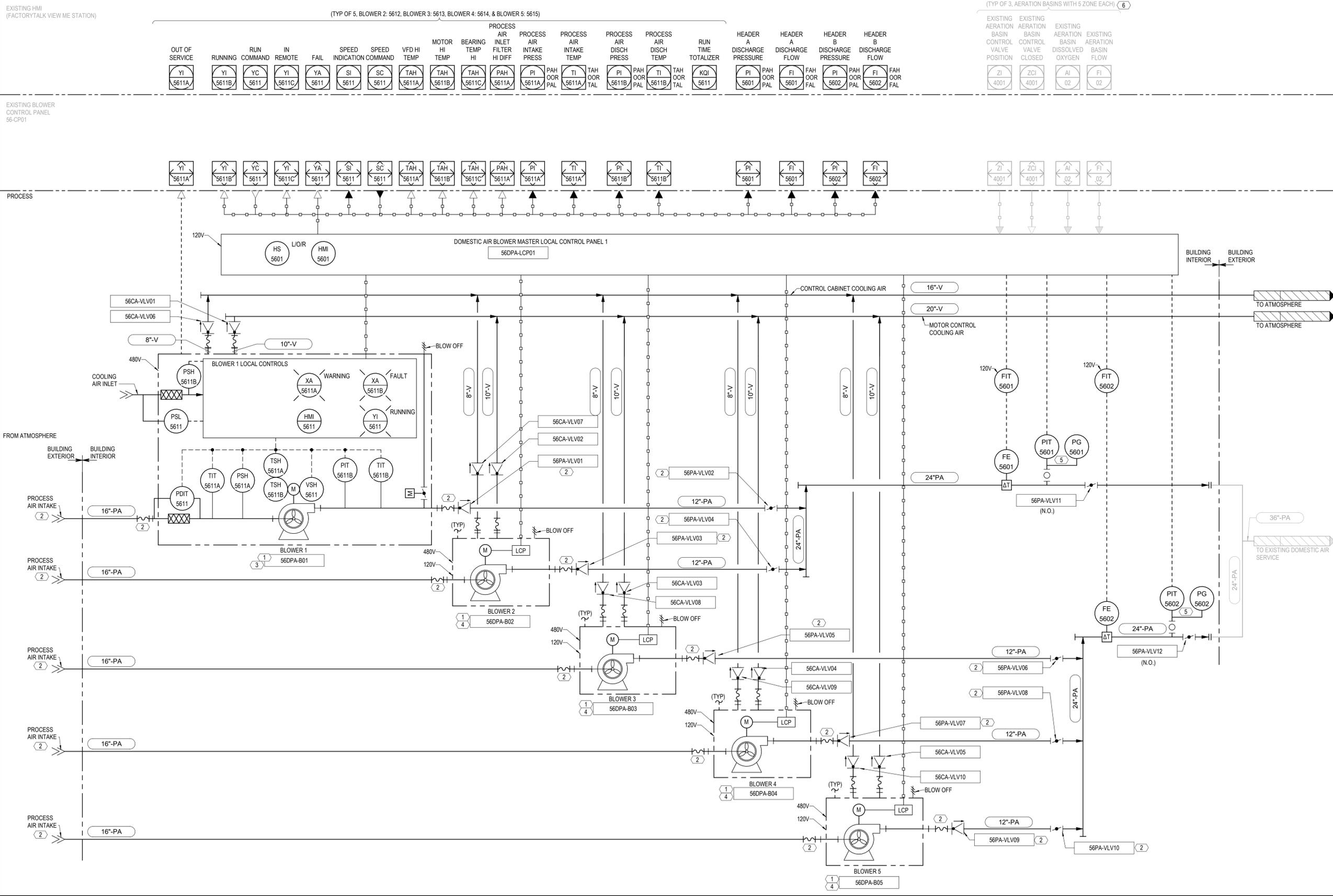


## ST JOSEPH WPF DOMESTIC BLOWER REPLACEMENT

### GENERAL INSTRUMENTATION LEGEND

FILE NAME 10419293-GENERAL  
SCALE 1" = 2'

SHEET 00G009



**GENERAL NOTES**

- BLOWER PACKAGE IS BASED ON SULZER AS THE SELECTED EQUIPMENT MANUFACTURER. CONTRACTOR RESPONSIBLE FOR COORDINATION OF FINAL APPROVED EQUIPMENT.
- THE P&ID SHOWS THE NECESSARY EQUIPMENT/APURTENANCES REQUIRED TO PROVIDE A FULLY WORKING SYSTEM. THIS MAY CHANGE BASED ON THE FINAL SELECTED VENDOR. THE CMAR CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING WITH THE EQUIPMENT SUPPLIER AND SYSTEM INTEGRATOR THAT ALL EQUIPMENT/APURTENANCES ARE PROVIDED FOR THE SYSTEM.
- FURNISH VENDOR APPROVED VIBRATION DETECTION DEVICE FOR EACH BLOWER MOTOR.
- CONTRACTOR SHALL FIELD INVESTIGATE AND VERIFY THAT ALL DO PROBES AND AIR FLOW CONTROL VALVES ARE WORKING PROPERLY. REPAIR AND RE-CALIBRATE AS REQUIRED.
- EXISTING DISSOLVED OXYGEN ANALYZERS AND AIR FLOW CONTROL VALVE IO SHALL BE MADE AVAILABLE TO THE BLOWER MASTER CONTROL PANEL. REFER TO EXISTING DRAWINGS IN THE 2013 AMMONIA REMOVAL IMPROVEMENTS PROJECT.
- BLOWER COOLING AIR IS EITHER PIPED OUT OF THE ROOM OR REJECTED THROUGH THE PROCESS AIR OUTLET ONLY. HEATED AIR CANNOT BE DISCHARGED INTO DOMESTIC AIR BLOWER ROOM.

**KEYNOTES** ##

- BLOWER MANUFACTURER SCOPE OF SUPPLY, ALL BLOWER PARTS AND ACCESSORIES INSIDE ENCLOSURE PROVIDED BY MANUFACTURER.
- EQUIPMENT PROVIDED BY BLOWER MANUFACTURER.
- BLOWER 1 DEPICTS A DETAILED VIEW OF BLOWER INTERNALS AND IS TYPICAL FOR BLOWERS 2-5.
- SIMPLIFIED BLOWER DEPICTED FOR CLARITY. REFER TO BLOWER 1 FOR DETAILED VIEW.
- ORIENTATE PRESSURE GAUGE AND PRESSURE TRANSMITTER SUCH THAT IT CAN BE VIEWED FROM GRADE.
- REFER TO AMMONIA REMOVAL IMPROVEMENTS PROJECT, SHEET # 00Y605.

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MISSOURI CERTIFICATE OF AUTHORITY #000886  
3800 759 HIGHWAY, ST. JOSEPH, MO  
KANSAS CITY, MO 64131

ISSUE	DATE	DESCRIPTION
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PROJECT MANAGER	DEREK A. PATRICK
STRUCTURAL	DAVID WISEMAN
ARCHITECTURAL	ERICA BUTTMAN
PROCESS	KYLE SIMS
MECHANICAL	KEVAN PRINDS
ELECTRICAL	CALEB DADY
I&C	KEITH BOYD
PROJECT NUMBER	10419293

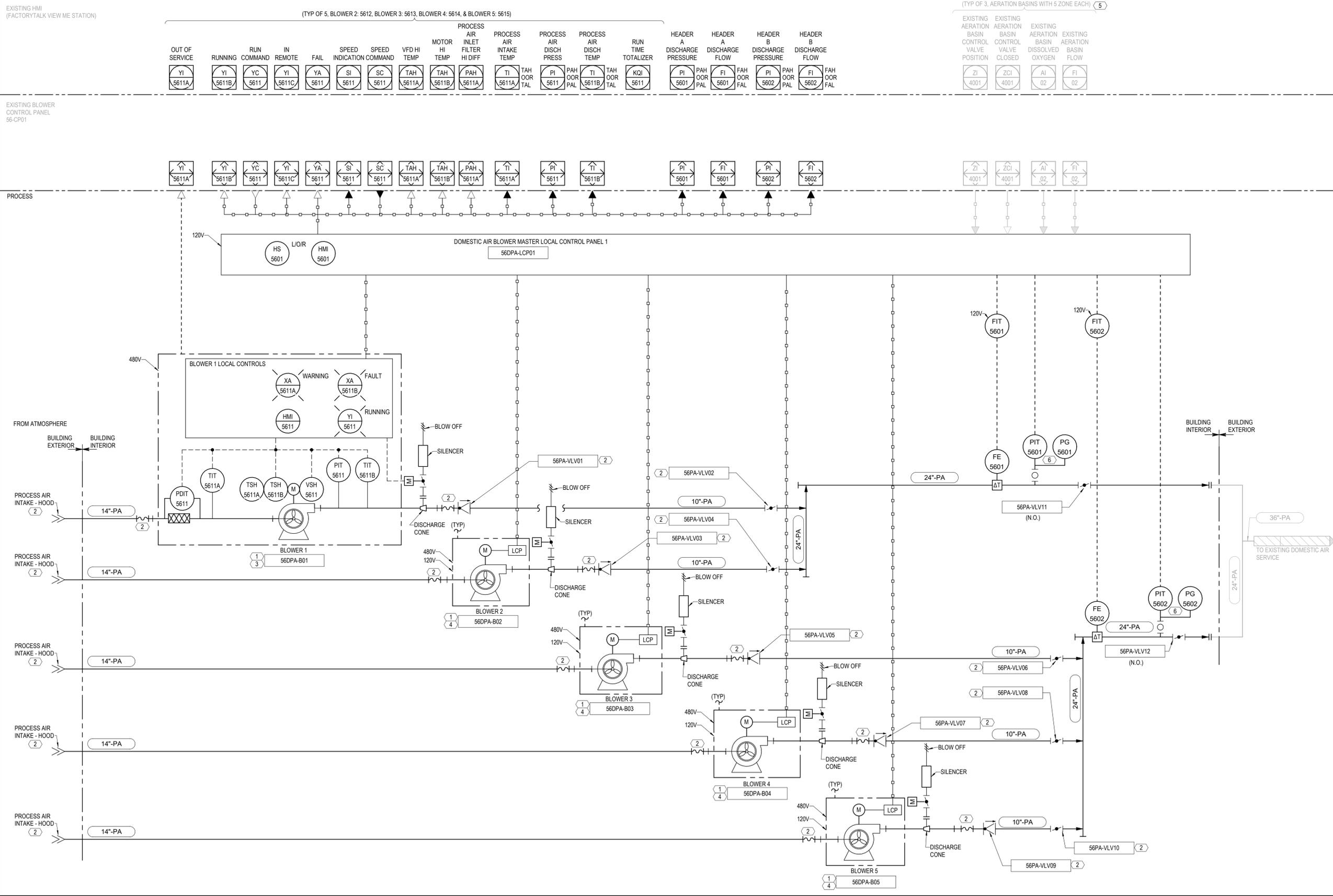


**ST JOSEPH WPF DOMESTIC BLOWER REPLACEMENT**

**GENERAL PROCESS AND INSTRUMENTATION DIAGRAM DOMESTIC PROCESS AERATION BLOWERS OPTION 1**

FILE NAME 10419293-GENERAL  
SCALE NONE  
0 1" 2"

SHEET 00Y601



- ### GENERAL NOTES
- BLOWER PACKAGE IS BASED ON NEUROSO AS THE SELECTED EQUIPMENT MANUFACTURER. CONTRACTOR RESPONSIBLE FOR COORDINATION OF FINAL APPROVED EQUIPMENT.
  - THE P&ID SHOWS THE NECESSARY EQUIPMENT/APURTENANCES REQUIRED TO PROVIDE A FULLY WORKING SYSTEM. THIS MAY CHANGE BASED ON THE FINAL SELECTED VENDOR. THE CMAR CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING WITH THE EQUIPMENT SUPPLIER AND SYSTEM INTEGRATOR THAT ALL EQUIPMENT/APURTENANCES ARE PROVIDED FOR THE SYSTEM.
  - FURNISH VENDOR APPROVED VIBRATION DETECTION DEVICE FOR EACH BLOWER MOTOR.
  - CONTRACTOR SHALL FIELD INVESTIGATE AND VERIFY THAT ALL DO PROBES AND AIR FLOW CONTROL VALVES ARE WORKING PROPERLY. REPAIR AND RE-CALIBRATE AS REQUIRED.
  - EXISTING DISSOLVED OXYGEN ANALYZERS AND AIR FLOW CONTROL VALVE IO SHALL BE MADE AVAILABLE TO THE BLOWER MASTER CONTROL PANEL. REFER TO EXISTING DRAWINGS IN THE 2013 AMMONIA REMOVAL IMPROVEMENTS PROJECT.
  - BLOWER COOLING AIR IS EITHER PIPED OUT OF THE ROOM OR REJECTED THROUGH THE PROCESS AIR OUTLET ONLY. HEATED AIR CANNOT BE DISCHARGED INTO DOMESTIC AIR BLOWER ROOM.

- ### KEYNOTES (#)
- BLOWER MANUFACTURER SCOPE OF SUPPLY, ALL BLOWER PARTS AND ACCESSORIES INSIDE ENCLOSURE PROVIDED BY MANUFACTURER.
  - EQUIPMENT PROVIDED BY BLOWER MANUFACTURER.
  - BLOWER 1 DEPICTS A DETAILED VIEW OF BLOWER INTERNALS AND IS TYPICAL FOR BLOWERS 2-5.
  - SIMPLIFIED BLOWER DEPICTED FOR CLARITY. REFER TO BLOWER 1 FOR DETAILED VIEW.
  - REFER TO AMMONIA REMOVAL IMPROVEMENTS PROJECT, SHEET # 00Y605.
  - ORIENTATE PRESSURE GAUGE AND PRESSURE TRANSMITTER SUCH THAT IT CAN BE VIEWED FROM GRADE.

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ISSUE	DATE	DESCRIPTION
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PROJECT MANAGER	DEREK A. PATRICK
STRUCTURAL	DAVID WISEMAN
ARCHITECTURAL	ERICA BUTTMAN
PROCESS	KYLE SIMS
MECHANICAL	KEVAN PRINDS
ELECTRICAL	CALEB DADY
I&C	KEITH BOYD
PROJECT NUMBER	10419293



## ST JOSEPH WPF DOMESTIC BLOWER REPLACEMENT

### GENERAL PROCESS AND INSTRUMENTATION DIAGRAM DOMESTIC PROCESS AERATION BLOWERS OPTION 2

FILE NAME	10419293-GENERAL
SCALE	NONE

SHEET  
**00Y602**

GENERAL

- SCOPE  
THE NOTES ON THIS SHEET AND THE STANDARD STRUCTURAL DETAILS ARE GENERAL AND APPLY TO THE ENTIRE PROJECT WHETHER SPECIFICALLY CALLED OUT OR NOT, EXCEPT WHERE THERE ARE SPECIFIC INDICATIONS TO THE CONTRARY ON STRUCTURAL SHEETS. IF THERE ARE QUESTIONS, THEY SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER AND ANSWERED IN WRITING PRIOR TO CONSTRUCTION.
- APPLICABLE SPECIFICATIONS AND CODES  
A. INTERNATIONAL BUILDING CODE, IBC 2018 WITH APPLICABLE EDITIONS OF THE CODE AS ADOPTED BY THE CITY OF ST. JOSEPH, MISSOURI, WITH APPLICABLE EDITIONS OF THE CODE REFERENCED STANDARDS  
B. ACI 350-06  
C. LOCAL JURISDICTION AMENDMENTS
- DESIGN CRITERIA  
APPLIES TO ALL STRUCTURES (UNLESS NOTED OTHERWISE)  
A. RISK CATEGORY III  
1. DEAD LOAD  
a. ACTUAL TRIBUTARY STRUCTURE WEIGHT  
2. LIVE LOAD  
a. ELEVATED FLOORS: 100 PSF  
b. WALKWAYS, STAIRS, GRATING: 100 PSF  
c. SLAB ON GRADE: 250 PSF  
d. ROOF: 20 PSF (NOT REDUCIBLE)  
3. WIND  
a. ULTIMATE WIND SPEED: 120 MPH  
b. EXPOSURE: C  
c. IMPORTANCE FACTOR: 1.0  
d. ALL STRUCTURES ARE ENCLOSED  
4. SEISMIC  
a. IMPORTANCE FACTOR: 1.25  
b. SPECTRAL RESPONSE ACCELERATION,  $S_s$  = .085  
c. SPECTRAL RESPONSE ACCELERATION,  $S_1$  = .062  
d. SITE CLASS: D  
e. SEISMIC DESIGN CATEGORY: B  
f. SPECTRAL RESPONSE COEFFICIENT,  $S_{DS}$  = .091  
g. SPECTRAL RESPONSE COEFFICIENT,  $S_{D1}$  = .099  
5. SNOW LOAD  
a. GROUND SNOW LOAD = 20 PSF  
b. FLAT ROOF SNOW LOAD = 22 PSF  
c. EXPOSURE FACTOR = 1.0  
d. IMPORTANCE FACTOR = 1.1  
e. THERMAL FACTOR = 1.2
- SAFETY  
SAFETY AND STRUCTURE STABILITY DURING CONSTRUCTION ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. STRUCTURES HAVE BEEN DESIGNED TO RESIST THE DESIGN LIVE LOADS ONLY AS A COMPLETED STRUCTURE.
- OPENINGS  
OPENINGS FOR PIPES, DUCTS, CONDUITS, ETC. ARE NOT ALL SHOWN ON THE STRUCTURAL DRAWINGS. COORDINATE AND PROVIDE OPENINGS AS REQUIRED TO ACCOMMODATE ALL WORK SHOWN OR SPECIFIED IN THE CONTRACT DOCUMENTS AND OTHERWISE REQUIRED FOR THE FURNISHING OF A FUNCTIONALLY COMPLETE PROJECT. REINFORCE AROUND OPENINGS PER STANDARD STRUCTURAL DETAILS UNLESS OTHERWISE SHOWN.
- STANDARD DETAILS  
THE STANDARD DETAILS DEPICT TYPICAL DETAILING TO BE USED ON THIS PROJECT. IF CONDITIONS ARE NOT EXPLICITLY SHOWN ON THE DRAWINGS, THEY SHALL BE MADE SIMILAR TO THE STANDARD DETAILS. OBTAIN APPROVAL OF ENGINEER IN WRITING FOR SIMILAR CONDITIONS PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS OF EXISTING CONSTRUCTION AS REQUIRED TO COORDINATE NEW CONSTRUCTION. SUBMIT REQUIRED CHANGES FOR APPROVAL.
- CONTRACTOR TO SUBMIT FOR REVIEW ALL EQUIPMENT SIZES, OPERATING WEIGHTS, VIBRATION FORCES, SUPPORT LOCATIONS, ALONG WITH ANY FLOOR OPENINGS, NOTCHES, AND RECESSES REQUIRED BY SUCH EQUIPMENT. CONCRETE SUPPORT PADS AND/OR FRAMING REQUIRED TO SUPPORT SAID EQUIPMENT SHALL NOT BE FABRICATED AND PLACED UNTIL THE CONCRETE SUPPORT PADS AND/OR FRAMING IS APPROVED TO SUPPORT THE EQUIPMENT.

CONCRETE

- DESIGN STRENGTHS  
 $F_c$  = 4,500 PSI  
 $F_y$  = 60,000 PSI
- CONCRETE COVER  
UNLESS OTHERWISE NOTED, PROVIDE CONCRETE COVER FOR REINFORCING AS FOLLOWS:  
CONCRETE DEPOSITED AGAINST EARTH: 3"  
TIE REINFORCING AT COLS & PILASTERS: 1 1/2"  
ALL OTHER: 2"  
SEE DRAWINGS FOR EXCEPTIONS
- SEE SPECIFICATIONS FOR REINFORCING PLACEMENT REQUIREMENTS.
- REFER TO OTHER DISCIPLINE DRAWINGS PRIOR TO CONSTRUCTION FOR EMBEDDED ITEMS AND PENETRATIONS NOT SHOWN ON STRUCTURAL DRAWINGS. AS REQUIRED TO ACCOMMODATE ALL WORK SHOWN OR SPECIFIED IN THE CONTRACT DOCUMENTS AND OTHERWISE REQUIRED FOR THE FURNISHING OF A FUNCTIONALLY COMPLETE PROJECT. REINFORCE AROUND OPENINGS PER STANDARD STRUCTURAL DETAILS UNLESS OTHERWISE SHOWN.
- PROVIDE 3/4" CHAMFERS AT ALL EXPOSED EDGES. NOT ALL CHAMFERS MAY BE SHOWN ON DRAWINGS.
- FIELD ADJUST REINFORCING AT OPENINGS AND EMBEDDED ITEMS AS INDICATED.
- ANCHOR BOLTS NOT SPECIFIED BY ENGINEER SHALL BE DESIGNED AND CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER, RETAINED BY THE CONTRACTOR. IN ACCORDANCE WITH APPLICABLE PROJECT AND CODE REQUIREMENTS. SUBMIT AS A SHOP DRAWING FOR REVIEW AND APPROVAL BY THE ENGINEER. COORDINATE LOCATION, SIZE AND EMBEDMENT PRIOR TO CASTING CONCRETE.
- CONTINUOUS WATERSTOP SHALL BE INSTALLED IN JOINTS SUBJECT TO STATIC WATER PRESSURE.
- ABSOLUTELY NO WELDING OF REINFORCING BARS OR TORCHING TO BEND REINFORCING BARS SHALL BE ALLOWED WITHOUT SPECIFIC APPROVAL FROM THE STRUCTURAL ENGINEER.
- CONTRACTOR SHALL SUBMIT A CONCRETE PLACEMENT PLAN IDENTIFYING JOINT TYPES, JOINT LOCATIONS AND CONCRETE PLACEMENT SEQUENCE.
- ALL CAST IN PLACE AND POST-INSTALLED ANCHORS INDICATED IN THE STRUCTURAL DOCUMENTS SHALL COMPLY WITH APPENDIX D OF ACI 318 AND CHAPTER 19 OF THE IBC. ALL EXPANSION AND ADHESIVE ANCHORS SHALL HAVE THE ICC REPORT SHOWING EQUIVALENT LOAD CAPACITY. SUBMIT AND INSTALL PER THE ICC EVALUATION REPORT.

STEEL

- DESIGN STRENGTHS  
WIDE FLANGE AND TEES:  $F_y$  = 50 KSI  
PIPES:  $F_y$  = 35 KSI  
STAINLESS STEEL:  $F_y$  = 33 KSI  
HSS SECTIONS:  $F_y$  = 46 KSI  
ALL OTHER PLATES AND SHAPES:  $F_y$  = 36 KSI
- DIMENSIONS  
TO CENTERLINES OF COLUMNS AND BEAMS, TOP SURFACES OF BEAMS AND TUBES AND BACKS OF CHANNELS AND ANGLES UNO.
- ELEVATIONS  
TOP OF STEEL REFERS TO TOP SURFACE OF MEMBER OR FLANGE UNLESS NOTED OTHERWISE.
- WHEN FILLET WELD SIZE IS NOT INDICATED, PROVIDE MAXIMUM WELD SIZE BASED ON MATERIAL THICKNESS IN ACCORDANCE WITH AISC SPECIFICATIONS.
- ALL BOLTED STRUCTURAL CONNECTIONS ARE BEARING TYPE CONNECTIONS UNLESS OTHERWISE SPECIFIED TO BE SLIP-CRITICAL. PROVIDE LOAD INDICATING WASHERS AT SLIP-CRITICAL CONNECTIONS.
- CONFORM TO AISC 360, STEEL CONSTRUCTION MANUAL AND AISC 341, SEISMIC DESIGN MANUAL.
- ALL STEEL BEAMS SHALL RECEIVE STANDARD CAMBER PER THE SPECIFICATIONS UNLESS NOTED OTHERWISE ON THE PLANS. BEAMS REQUIRING SPECIAL CAMBER ARE DENOTED ON THE BEAMS SHOWN ON THE FRAMING PLANS. EXAMPLE (+1/2") INDICATED 1/2".

ALUMINUM

- STRUCTURAL ALUMINUM YIELD STRENGTHS  
STRUCTURAL ALUMINUM:  $F_y$  = 35 KSI  
STRUCTURAL ALUMINUM IS ALLOY 6061-T6 UNLESS NOTED OTHERWISE
- DIMENSIONS  
TO CENTERLINES OF COLUMNS AND BEAMS, TOP SURFACES OF BEAMS AND TUBES AND BACKS OF CHANNELS AND ANGLES UNLESS NOTED OTHERWISE.
- ELEVATIONS  
TOP OF ALUMINUM REFERS TO TOP SURFACE OR FLANGE OF MEMBER UNLESS NOTED OTHERWISE.
- WHEN FILLET WELD SIZE IS NOT INDICATED, PROVIDE MAXIMUM WELD SIZE FOR THE MATERIAL THICKNESS IN ACCORDANCE WITH THE LATEST EDITION OF THE "ALUMINUM DESIGN MANUAL" BY THE ALUMINUM ASSOCIATION.
- ALUMINUM IN CONTACT WITH DISSIMILAR MATERIALS OR CONCRETE: CONTACT SURFACES SHALL BE PROVIDED WITH GALVANIC SEPARATION PER SPECIFICATIONS.

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MISSOURI CERTIFICATE OF AUTHORITY #000856  
3500 759 HIGHWAY, ST. JOSEPH, MO 64503  
ST. JOSEPH, MO 64503

ISSUE	DATE	DESCRIPTION
0	02/20/2026	ISSUED FOR CONSTRUCTION

PROJECT MANAGER	DEREK A. PATRICK
STRUCTURAL	DAVID WISEMAN
ARCHITECTURAL	ERICA BUTTMAN
PROCESS	KYLE SIMS
MECHANICAL	KEVAN PRINDS
ELECTRICAL	CALEB DADY
I&C	KEITH BOYD
PROJECT NUMBER	10419293

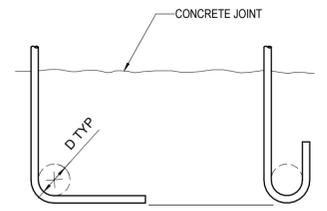


ST JOSEPH WPF DOMESTIC BLOWER REPLACEMENT

STANDARD DETAILS  
STRUCTURAL NOTES

FILE NAME: 10419293-GENERAL  
SCALE: 0 1" 2"

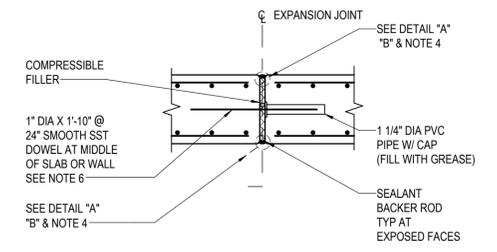
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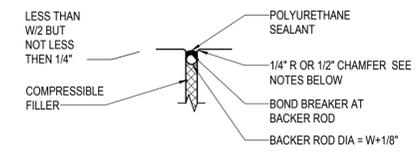
90° STD HOOK      180° STD HOOK

BAR SIZE	HL	HW	TL	D	$f_c=4.0$ OR 4.5 KSI
#3	6"	3"	3"	2 1/4"	6"
#4	8"	4"	4 1/2"	3"	7"
#5	10"	5"	5"	3 3/4"	9"
#6	1'-0"	6"	6"	4 1/2"	10"
#7	1'-2"	7"	7"	5 1/4"	12"
#8	1'-4"	8"	8"	6"	14"
#9	1'-7"	11 3/4"	10 1/2"	9 1/2"	15"
#10	1'-10"	1'-1 1/4"	11 1/2"	10 3/4"	17"
#11	2'-0"	1'-2 3/4"	1'-1"	12"	19"

\* COMPLYING WITH MINIMUM COVER REQUIREMENTS OF ACI 318, 12.5.3. OTHERWISE Ldh MUST BE RE-CALCULATED.



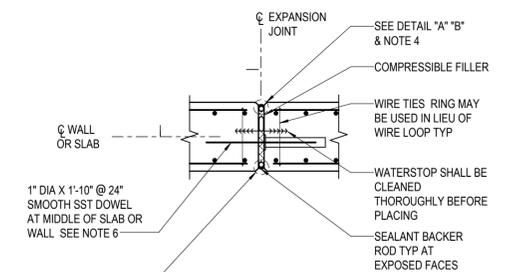
NON-WATER BEARING SLAB OR WALL



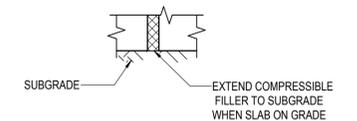
DETAIL "A" EXPOSED FACE

NOTES:

- FOR WALLS, FORM ALL JOINT EDGES AT 1/2" CHAMFER.
- FOR UNDER SIDE OF EXPOSED SLABS, FORM JOINT EDGES AT 1/2" CHAMFER.
- FOR SLABS, PROVIDE 1/4" RADIUS TOOLED EDGES AT TOP SURFACE.
- USE DETAIL "B" AT UNDERSIDE OF SLABS ON GRADE ONLY. USE DETAIL "A" AT ALL OTHER LOCATIONS.
- "W" = 1" WIDE UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
- SMOOTH DOWEL AND PV ASSEMBLY AT EXPANSION JOINTS SHALL USE GREENSTREAK "SPEED DOWEL" NO. PSD12#7TX (BASE CODE PSD#7BX).

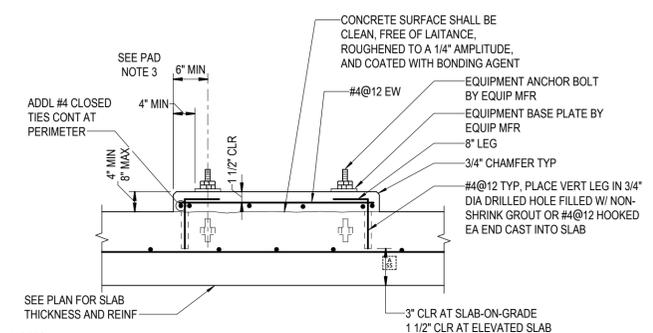


WATER BEARING SLAB OR WALL



DETAIL "B" SOIL SIDE

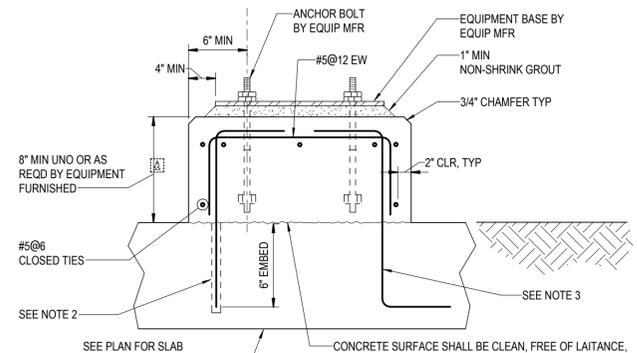
1 REINFORCING HOOK SCHEDULE  
NOT TO SCALE



- NOTES:
- PROVIDE ABOVE PAD UNDER ALL ELECTRICAL AND MECHANICAL EQUIPMENT SUPPORTED ON STRUCTURAL SLABS. ALSO PROVIDE FOR EQUIPMENT WEIGHING LESS THAN 5000 POUNDS WHICH ARE SUPPORTED ON GRADE, OR WHERE SPECIFICALLY NOTED ON PLANS PER DETAIL 5 THIS SHEET. FOR PAD HEIGHT GREATER THAN 8", SEE DETAIL 4 THIS SHEET.
  - PAD THICKNESS SHALL BE A MINIMUM OF 4". CONTRACTOR SHALL VERIFY THE PAD DIMENSIONS.
  - PROVIDE EMBEDDED CHANNELS FOR ANCHORING ELECTRICAL EQUIPMENT WHERE REQUIRED.

- PAD NOTES:
- EQUIPMENT PAD DETAILS ON THIS SHEET APPLY FOR SUPPORT OF ALL EQUIPMENT UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
  - BEFORE EQUIPMENT SUPPORT PADS ARE CAST, THE PAD SIZES AND REINFORCING SHALL BE APPROVED BY THE ENGINEER AS BEING CAPABLE OF SUPPORTING EQUIPMENT TO BE PLACED THEREON. EQUIPMENT BASE DIMENSIONS SHALL BE THE LARGER OF AS DETERMINED BY THE EQUIPMENT MANUFACTURER OR AS INDICATED ON THE DRAWINGS. SUBMIT ALL EQUIPMENT DIMENSIONS AND LOADS TO ENGINEER.
  - 6" MINIMUM PAD EDGE DIMENSION TO EQUIPMENT ANCHOR BOLT APPLIES FOR ALL NON-ELECTRICAL EQUIPMENT SUPPORT PADS. AT ELECTRICAL EQUIPMENT, PROVIDE 1" FROM EDGE OF EQUIPMENT TO EDGE OF PAD.
  - THE SIZE, NUMBER, TYPE, LOCATION AND THREAD PROJECTION OF THE ANCHOR BOLTS SHALL BE AS DETERMINED BY THE EQUIPMENT MANUFACTURER AND SHALL BE AS APPROVED BY THE ENGINEER. ANCHOR BOLTS SHALL BE HELD IN POSITION WITH A TEMPLATE WHILE EQUIPMENT BASE IS BEING CAST.
  - EQUIPMENT BASES SHALL BE INSTALLED LEVEL UNLESS SPECIFIED OTHERWISE, TOLERANCE IS 1/8" ACROSS PLAN DIAGONALS.

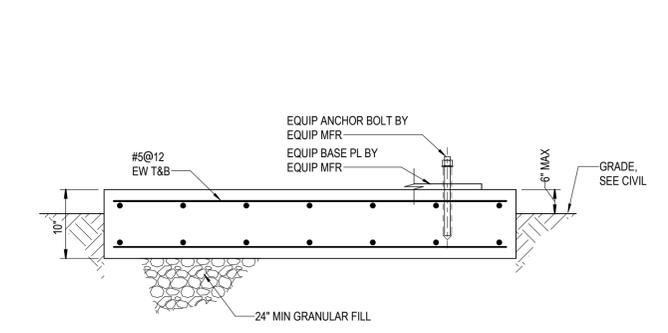
3 SHALLOW EQUIPMENT PAD  
NOT TO SCALE



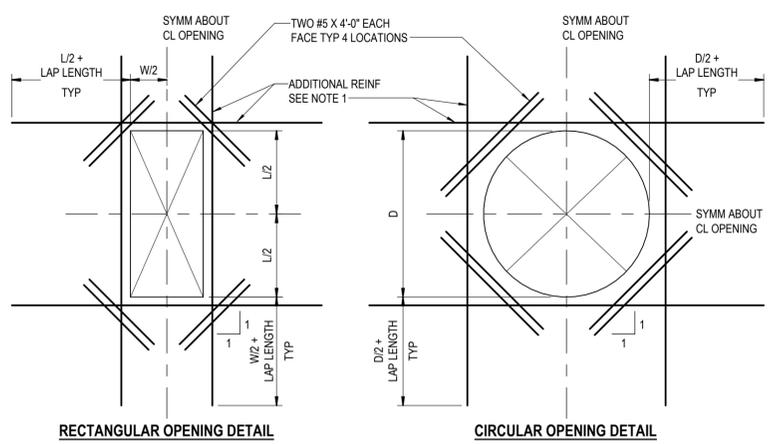
- NOTES:
- SEE PAD NOTES AT DETAIL 3 THIS SHEET.
  - DRILL INTO SLAB TO INDICATED DEPTH AT 12" ON CENTER AROUND PERIMETER OF EQUIPMENT BASE AND SET #5 DOWEL HOOKED AS SHOWN USING ADHESIVE FOR CONCRETE ANCHORS. THICKNESS TO BE COORDINATED WITH EQUIPMENT SUPPLIER. THICKEN SLAB ON GRADE BELOW EQUIPMENT PAD AS REQUIRED TO MAINTAIN MINIMUM 3" COVER ON EQUIPMENT ANCHOR BOLTS.
  - FOR EQUIPMENT BASES ON NEW SLABS, PROVIDE #5 DOWELS HAVING TWO HOOKED ENDS AT 12" ON CENTER AROUND PERIMETER, UNLESS NOTED OTHERWISE.

4 TALL EQUIPMENT PAD  
NOT TO SCALE

2 EXPANSION JOINTS WITH SEALANT (EJ)  
NOT TO SCALE



5 CONCRETE PAD  
NOT TO SCALE



8 EXTRA REINFORCING AROUND OPENINGS  
NOT TO SCALE

BAR	MIN BAR SPACING	MINIMUM LAP SPLICE LENGTHS $f_c = 4500$ psi			
		LAPS FOR BARS SPACED GREATER THAN MIN BAR SPACING		LAPS FOR BARS SPACED CLOSER THAN MIN BAR SPACING	
		VERTICAL	OTHER	VERTICAL	OTHER
#3	3"	1'-1"	1'-5"	1'-8"	2'-2"
#4	3"	1'-6"	1'-11"	2'-3"	2'-11"
#5	3"	1'-10"	2'-5"	2'-10"	3'-8"
#6	4"	2'-3"	2'-11"	3'-4"	4'-4"
#7	4"	3'-3"	4'-3"	4'-11"	6'-4"
#8	4"	3'-9"	4'-10"	5'-7"	7'-3"
#9	4 1/2"	4'-2"	5'-6"	6'-4"	8'-2"
#10	5"	4'-8"	6'-2"	7'-1"	9'-3"
#11	5 5/8"	5'-3"	6'-10"	7'-11"	10'-3"

- NOTES:
- ALL REBAR SPLICE LENGTHS SHALL BE AS SHOWN UNDER HEADING "VERTICAL" EXCEPT IF SPLICED BARS ARE HORIZONTAL BARS WITH 12" OR MORE CONCRETE BELOW. THEN SPLICE LENGTH SHALL BE AS SHOWN UNDER HEADING "OTHER".
  - \*AT SPLICES THE BAR SPACING IS THE CENTER TO CENTER DISTANCE BETWEEN ADJACENT REBAR.
  - ALL SPLICES SHALL BE CONTACT SPLICES AND WIRED TOGETHER.
  - NO WELDED OR MECH SPLICES ARE PERMITTED UNLESS INDICATED OTHERWISE.
  - UNLESS OTHERWISE SHOWN, SPLICES FOR BOTTOM REINF BARS IN BEAM AND SLABS SHALL BE CENTERED OVER THE SUPPORTS. SPLICES FOR TOP REINFORCING BARS SHALL BE LOCATED ON THE CENTERLINE OF SPAN.

6 CONCRETE REINFORCING LAP SPLICE SCHEDULE  
NOT TO SCALE

- NOTES:
- PROVIDE ADDITIONAL REINFORCING THE SAME SIZE AS DISCONTINUOUS REINFORCEMENT AT OPENING. QUANTITY OF REINFORCING IN EACH DIRECTION SHALL BE EQUAL TO OR ONE GREATER THAN THE NUMBER OF DISCONTINUOUS BARS. PLACE 1/2 OF ADDITIONAL REINFORCING BARS EACH SIDE OF OPENING. PLACE ADDITIONAL REINFORCEMENT AT 3" OC (TYPICAL BOTH DIRECTIONS AND ALL LAYERS OF REINFORCEMENT). START FIRST BAR 2" CLEAR TO OPENING.
  - EXTEND ADDITIONAL REINFORCING BEYOND EDGE OF OPENING AS SHOWN ABOVE. ADDITIONAL BARS MAY TERMINATE AT THE END OF THE WALL WITH A STANDARD HOOK WHERE THE LENGTH OF THE WALL WILL NOT PERMIT BARS TO EXTEND AS SHOWN ABOVE.
  - TYPICAL WALL OR SLAB REINFORCING NOT SHOWN FOR CLARITY. TERMINATE TYPICAL REINFORCING 2" CLEAR TO OPENING.
  - OPENINGS 12" OR LESS IN SLABS AND WALLS. NO EXTRA REBARS ARE REQUIRED UNLESS SHOWN OTHERWISE. TYPICAL REINFORCING SHALL BE RESPAVED (NOT CUT) TO ALLOW FOR OPENINGS TO BE MADE.
  - UNLESS SHOWN OTHERWISE ON DRAWINGS, PROVIDE EXTRA REINFORCING AROUND OPENINGS AS SHOWN AND INDICATED ABOVE.
  - PROVIDE ADDITIONAL DOWELS PER NOTE 1 ABOVE FOR ALL OPENINGS NEAR THE FLOOR SLAB, BASE SLAB, OR CORNERS.



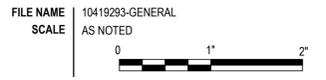
ISSUE	DATE	DESCRIPTION
0	02/20/2026	ISSUED FOR CONSTRUCTION

PROJECT MANAGER	DEREK A. PATRICK
STRUCTURAL	DAVID WISEMAN
ARCHITECTURAL	ERICA BUTTMAN
PROCESS	KYLE SIMS
MECHANICAL	KEVAN PRINDS
ELECTRICAL	CALEB DADY
I&C	KEITH BOYD
PROJECT NUMBER	10419293



ST JOSEPH WPF  
DOMESTIC BLOWER  
REPLACEMENT

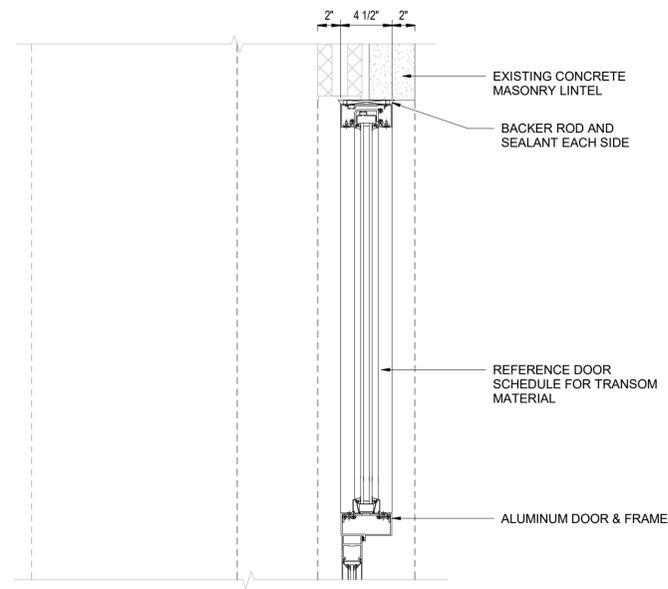
STANDARD DETAILS  
STRUCTURAL DETAILS



SHEET  
02S501

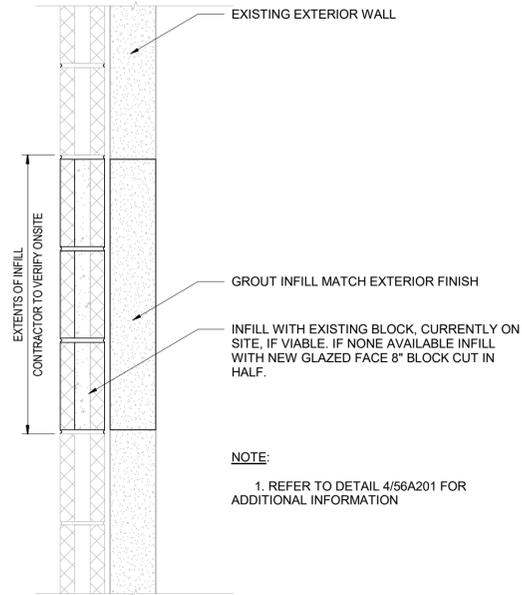
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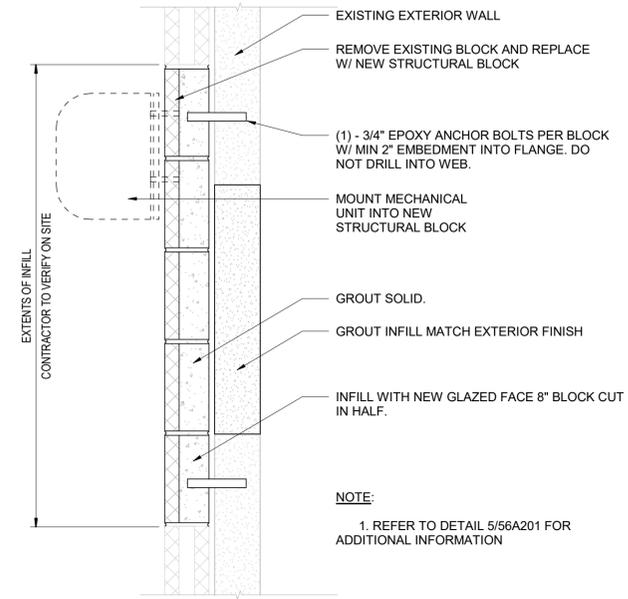
**NOTES:**  
1. SIMILAR DETAIL FOR INTERIOR DOOR REPLACEMENT.

**1** EXTERIOR ALUMINUM DOOR HEAD IN CMU WALL  
1 1/2" = 1'-0"



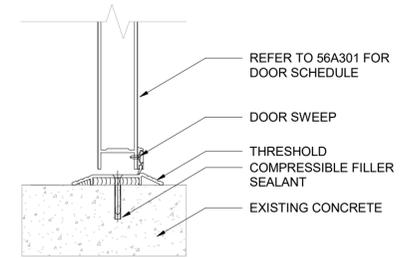
**NOTE:**  
1. REFER TO DETAIL 4/56A201 FOR ADDITIONAL INFORMATION

**2** WALL PENETRATION INFILL DETAIL  
1 1/2" = 1'-0"

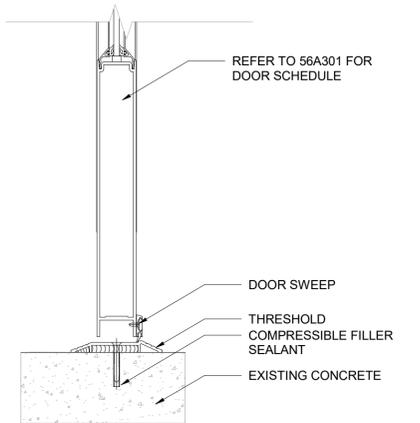


**NOTE:**  
1. REFER TO DETAIL 5/56A201 FOR ADDITIONAL INFORMATION

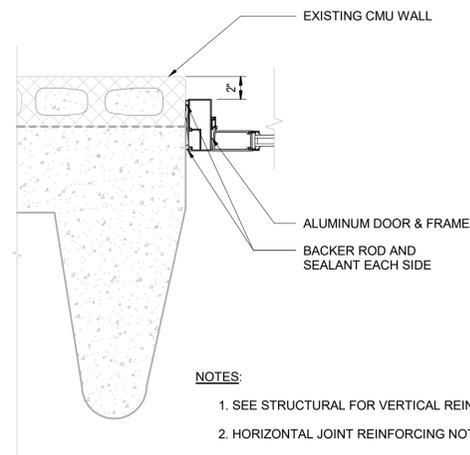
**3** WALL PENETRATION INFILL DETAIL  
1 1/2" = 1'-0"



**4** INTERIOR DOOR SILL  
3" = 1'-0"

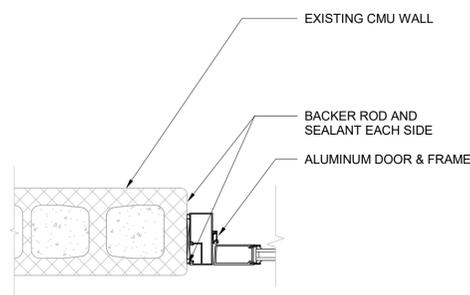


**5** EXTERIOR DOOR SILL  
3" = 1'-0"



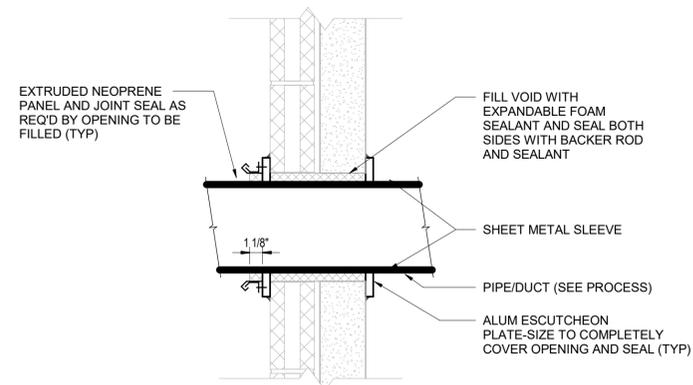
**NOTES:**  
1. SEE STRUCTURAL FOR VERTICAL REINFORCING.  
2. HORIZONTAL JOINT REINFORCING NOT SHOWN.

**6** EXTERIOR ALUMINUM DOOR JAMB IN 8" CMU WALL  
1 1/2" = 1'-0"

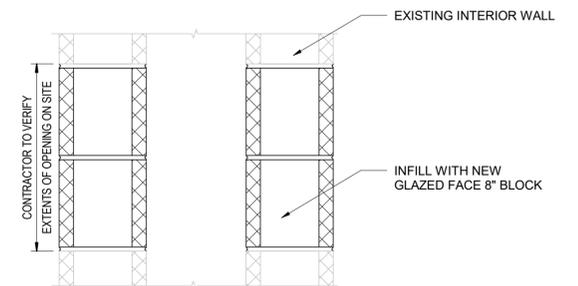


**NOTES:**  
1. SEE STRUCTURAL FOR VERTICAL REINFORCING.  
2. HORIZONTAL JOINT REINFORCING NOT SHOWN.

**7** INTERIOR ALUMINUM DOOR JAMB IN 8" CMU WALL  
1 1/2" = 1'-0"



**8** WALL PENETRATION AT PIPE  
1 1/2" = 1'-0"



**9** WALL PENETRATION INFILL DETAIL  
1 1/2" = 1'-0"



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MECHANICAL	KEVAN PRINDS
ELECTRICAL	CALEB DADY
I&C	KEITH BOYD
PROJECT NUMBER	10419293



**ST JOSEPH WPF DOMESTIC BLOWER REPLACEMENT**

**STANDARD DETAILS ARCHITECTURAL DETAILS**

FILE NAME	10419293-GENERAL
SCALE	AS NOTED

SHEET  
**02A501**

**DOOR SCHEDULE**

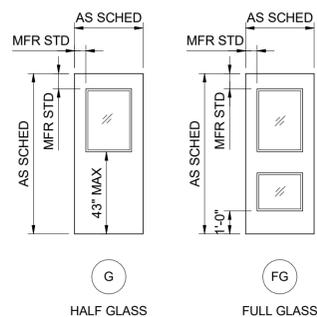
DOOR NUMBER	PR	WIDTH	HEIGHT	DOOR			FRAME			GLASS	RATING	HARDWARE SET	DETAILS			REMARKS
				TYPE	MATERIAL	FINISH	TYPE	MATERIAL	FINISH				HEAD	JAMB	SILL	
100A	PR	3' - 6"	7' - 0"	FG	AL	AN	1	AL	AN	1	-	HW - 1	1/02A501	6/02A501	5/02A051	1
102A	PR	3' - 0"	7' - 0"	G	AL	AN	1	AL	AN	-	-	HW - 2	1/02A501	7/02A501	4/02A501	2

**MATERIAL AND FINISH LEGEND**

MATERIAL	FINISH
AL ALUMINUM	AN ANODIZED

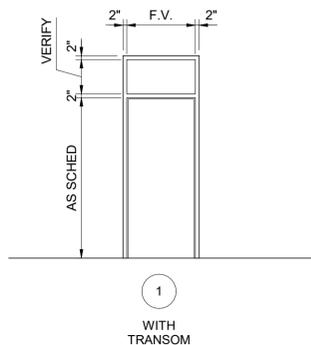
- NOTES:  
 1. SEE DOOR TYPES DETAIL ON THIS SHEET FOR DOOR ELEVATIONS.  
 2. SEE FRAME TYPES DETAIL ON THIS SHEET FOR FRAME ELEVATIONS.  
 3. FIELD VERIFY EXISTING OPENING AFTER DEMOLITION FOR DOOR AND FRAME OPENING WIDTH.

- REMARKS:  
 1. GLASS TRANSOM HEIGHT IS ROUGHLY 3'-0". VERIFY EXACT HEIGHT IN FIELD. REFERENCE DETAIL 1/02A501.  
 2. ALUMINUM TRANSOM HEIGHT IS ROUGHLY 4'-0". VERIFY EXACT HEIGHT IN FIELD. REFERENCE DETAIL 1/02A501.



**DOOR TYPES**

1/4" = 1'-0"



**FRAME TYPES**

1/4" = 1'-0"

**GLASS TYPES**

1. INSULATED CLEAR TEMPERED GLASS

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ISSUE	DATE	DESCRIPTION
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PROJECT NUMBER	10419293



**ST JOSEPH WPF DOMESTIC BLOWER REPLACEMENT**

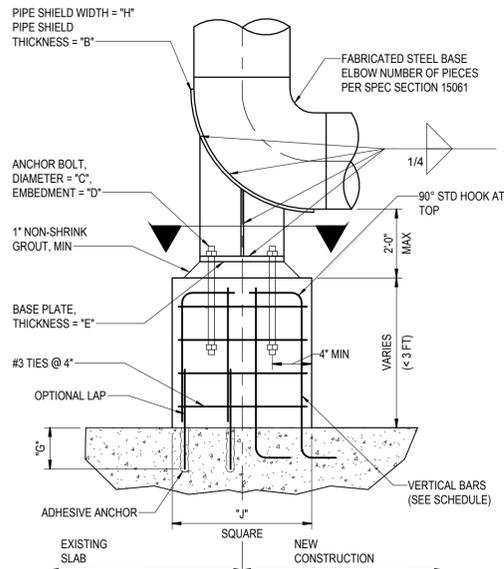
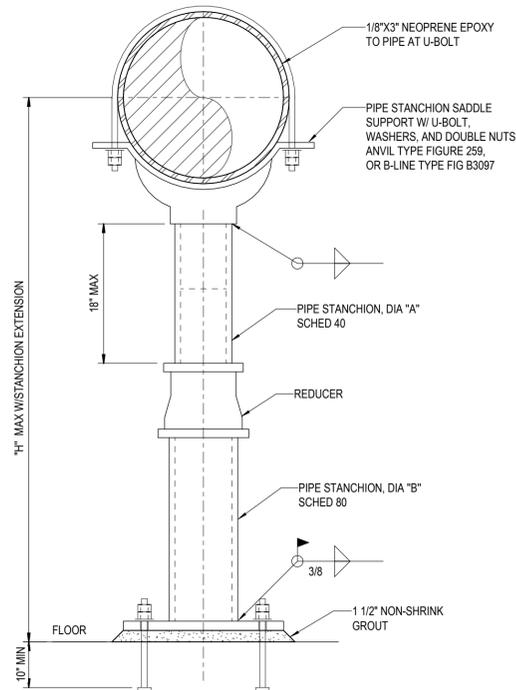
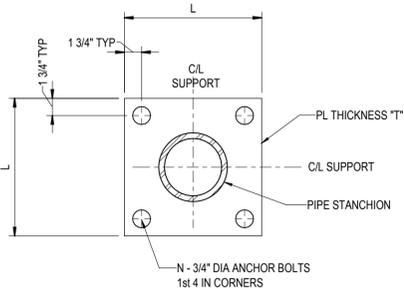
**STANDARD DETAILS ARCHITECTURAL DOORS AND SCHEDULES**

FILE NAME 10419293-56-U-BLOWER BUILDING  
 SCALE As indicated



SHEET  
**02A601**

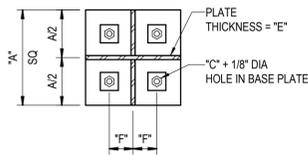
PIPE SIZE	ADJUSTABLE PIPE SADDLE SUPPORT SCHEDULE						
	DIMENSIONS IN INCHES				H FT	BASE PL TXL	N
	A		B				
ANVIL	B-LINE	ANVIL	B-LINE				
14/16	3	4	8	8	10'-0"	3/4X12	4
18	4	6	8	8	10'-0"	3/4X12	4
20	4	6	8	8	10'-0"	3/4X12	4
24	4	6	8	8	10'-0"	3/4X12	4



PIPE SIZE	A	B	C	D	E	F	G	H	J	VERT REINF	
										QTY	SIZE
8"	6"	5/16"	1/2"	8"	1/2"	2"	5"	2"	12"	4	#6
10"	6"			8"		2"		2 1/2"	12"	4	#6
12"	8"		5/8"	10"	5/8"	3"		3"	14"	4	#6
14"	10"					4"		3 1/2"	16"	8	#6
16"	10"	3/8"				4"	7 1/2"	4"	16"	8	#6
18"	12"			12"		5"		4 1/2"	18"	8	#6
20"	14"					6"		5"	20"	8	#7
24"	16"	1/2"	3/4"		3/4"	6 3/4"		6"	22"	8	#7
30"	20"	1/2"		14"		8 3/4"	10"	7 1/2"	26"	12	#7
36"	24"	5/8"				10 3/4"		9"	30"	12	#8
42"	28"	3/4"		16"		12 3/4"		10 1/2"	34"	16	#8
48"	30"	7/8"	1"		1"	13"		12"	34"	16	#8
54"	30"	7/8"		18"		13"		13 1/2"	34"	16	#8
60"	36"	1"				16"		15"	40"	20	#8

NOTE:

1. FOR TIE CONFIGURATION SEE TIE CONFIGURATION DETAIL BELOW.



SECTION



4-BAR



8-BAR

TIE CONFIGURATION

NOTE:

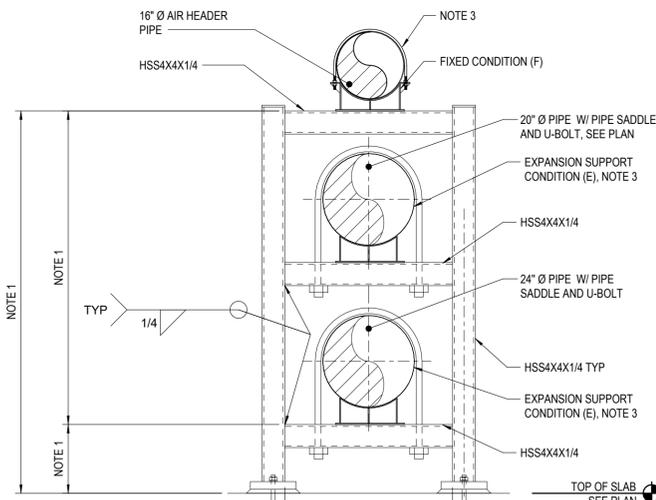
1. INTERIOR SUPPORTS TO BE HOT-DIPPED GALV STEEL.  
EXTERIOR SUPPORTS TO BE SHOP PRIMED AND FIELD PAINTED.

1 ADJUSTABLE PIPE SUPPORT

NOT TO SCALE

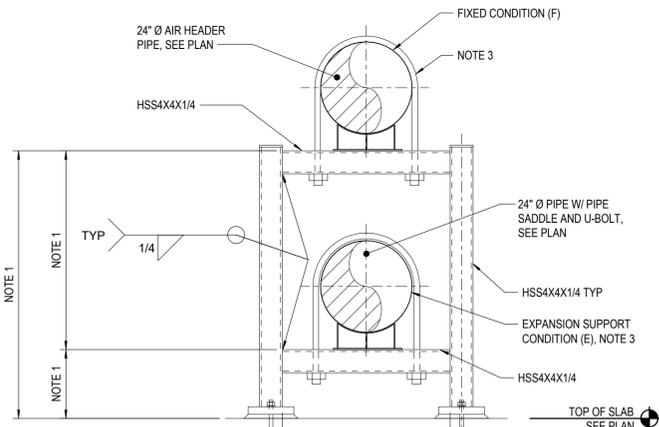
2 BASE ELBOW OR TEE CONCRETE PIPE SUPPORT

NOT TO SCALE



NOTES:

- COORDINATE TOP OF STEEL ELEVATION WITH PIPE ELEVATION ON PROCESS DRAWINGS AND SADDLE SUPPORT.
- SPACING OF SUPPORTS SHALL BE 10'-0" OC MAXIMUM.
- TIGHTLY CLAMP PIPE TO SADDLE ONLY AT FIXED SUPPORTS, DENOTED AS (F) WHERE INDICATED ON PLANS. DO NOT CLAMP PIPE TO SADDLE AT EXPANSION SUPPORTS, DENOTED AS (E) WHERE INDICATED ON PLANS.
- STEEL SHALL BE HOT DIP GALVANIZED, UNLESS NOTED OTHERWISE.
- SEE DETAIL 6 THIS SHEET FOR PIPE SADDLE.

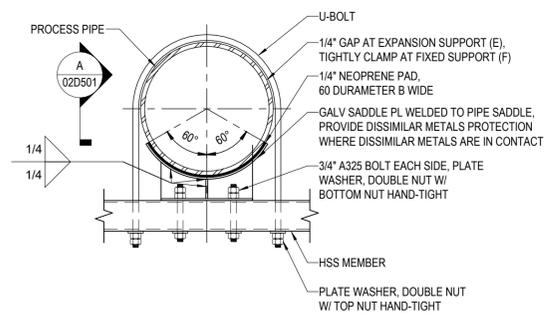
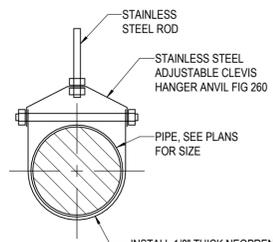


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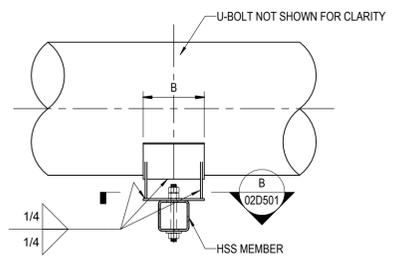
- COORDINATE TOP OF STEEL ELEVATION WITH PIPE ELEVATION ON PROCESS DRAWINGS AND SADDLE SUPPORT.
- SPACING OF SUPPORTS SHALL BE 10'-0" OC MAXIMUM.
- TIGHTLY CLAMP PIPE TO SADDLE ONLY AT FIXED SUPPORTS, DENOTED AS (F) WHERE INDICATED ON PLANS. DO NOT CLAMP PIPE TO SADDLE AT EXPANSION SUPPORTS, DENOTED AS (E) WHERE INDICATED ON PLANS.
- STEEL SHALL BE HOT DIP GALVANIZED, UNLESS NOTED OTHERWISE.
- SEE DETAIL 6 THIS SHEET FOR PIPE SADDLE.

5 PIPE SUPPORT

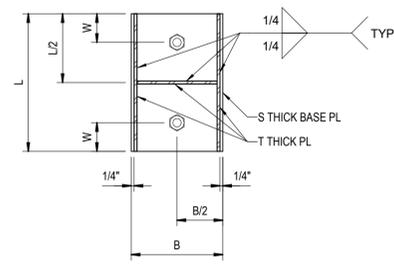
NOT TO SCALE



PIPE SADDLE DIMENSIONS					
PIPE SIZE	T	S	B	W	L
16"	1/4"	3/8"	8"	2 1/2"	12"
20"	1/4"	3/8"	10"	2 1/2"	15"
24"	1/4"	3/8"	10"	2 1/2"	17"



SECTION A



SECTION B

6 STEEL PIPE SADDLE

NOT TO SCALE

3 TRIPLE PIPE RACK

NOT TO SCALE

4 DOUBLE PIPE RACK

NOT TO SCALE



MISSOURI CERTIFICATE OF AUTHORITY #000856  
3500 759 HIGHWAY, ST. JOSEPH, MO 64508  
ST. JOSEPH, MO 64501

ISSUE	DATE	DESCRIPTION
0	02/20/2026	ISSUED FOR CONSTRUCTION

PROJECT MANAGER	DEREK A. PATRICK
STRUCTURAL	DAVID WISEMAN
ARCHITECTURAL	ERICA BUTTMAN
PROCESS	KYLE SIMS
MECHANICAL	KEVAN PRINDS
ELECTRICAL	CALEB DADY
I&C	KEITH BOYD

PROJECT NUMBER 10419293



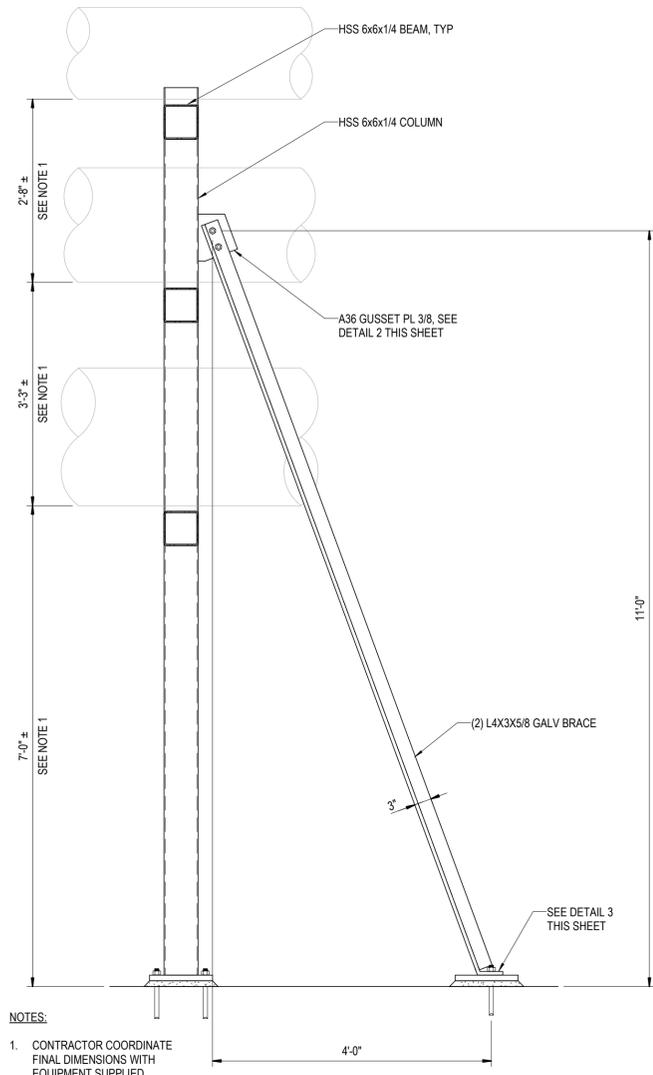
ST JOSEPH WPF DOMESTIC BLOWER REPLACEMENT

STANDARD DETAILS PROCESS DETAILS

FILE NAME 10419293-GENERAL  
SCALE AS NOTED

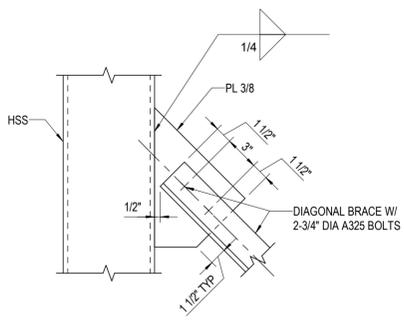


SHEET 02D501

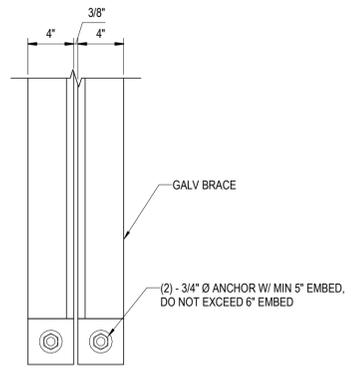


NOTES:  
 1. CONTRACTOR COORDINATE FINAL DIMENSIONS WITH EQUIPMENT SUPPLIED.

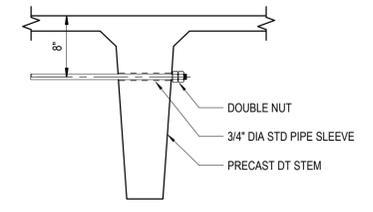
**1** FIXED SUPPORT BRACE  
 NOT TO SCALE



**2** BRACE CONNECTION  
 NOT TO SCALE



**3** BRACE CONNECTION  
 1 1/2" = 1'-0"



**4** DOUBLE TEE HANGER SLEEVE  
 NOT TO SCALE

NOTE:  
 PROVIDE SLEEVES AS REQUIRED TO ACCOMMODATE PIPE, DUCT WORK AND CONDUIT HANGERS.

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I&C	KEITH BOYD
PROJECT NUMBER	10419293

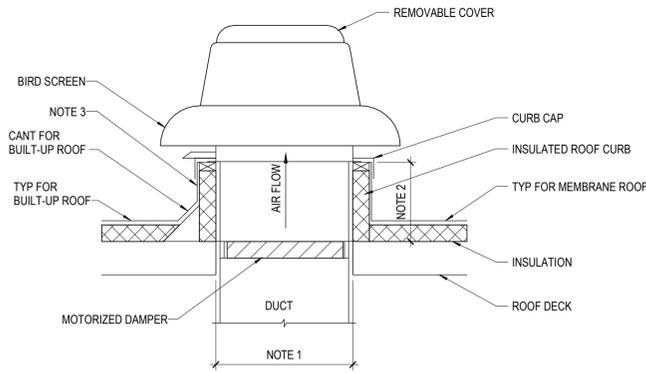


**ST JOSEPH WPF DOMESTIC BLOWER REPLACEMENT**

**STANDARD DETAILS  
 PROCESS DETAILS**

FILE NAME: 10419293-GENERAL  
 SCALE: AS NOTED

SHEET **02D502**



**NOTES:**

- COORDINATE MANUFACTURER'S RECOMMENDED ROOF OPENING SIZE WITH STRUCTURAL.
- REFER TO PLANS FOR ROOF CURB HEIGHT ABOVE INSULATION.
- REFER TO ARCHITECTURAL DETAILS FOR CURB FLASH AND COUNTER FLASH AS REQUIRED TO PROVIDE A WEATHERPROOF AND WATERPROOF ENCLOSURE. CONTRACTOR TO COORDINATE WORK WITH THE ROOFING CONTRACTOR.
- INSTALL FAN IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION.

**1 DOWNBLAST EXHAUST FAN AT ROOF**  
NOT TO SCALE

DUCTLESS SPLIT SYSTEM AIR CONDITIONER SCHEDULE																
INDOOR UNIT DATA										OUTDOOR UNIT DATA						
MARK	CFM	COOLING COIL DATA		FAN MOTOR DATA				BASIS OF DESIGN	MARK	AMB. TEMP. (°F)	REFR.	ELECTRICAL DATA			BASIS OF DESIGN	
		AIRSIDE DATA		MIN. CAP. (BTUH)	M.O.P.	VOLT	HZ					PH	VOLT	HZ		PH
		DB	WB													
56-FCU01	915	80.0	67.0	36,000.0	20	240	60	1	FTXV36AVJU9	56-CU01	95.0	R-32	240	60	1	RKV36AVJU9

FILTER SCHEDULE													
MARK	TOTAL CFM	FILTER FRAME OVERALL				INDIVIDUAL FILTER				FILTER PERFORMANCE			BASIS OF DESIGN (FILTER FRAME)
		DIMENSIONS (IN)		DIMENSIONS (IN)		# ROWS	# COLUMNS	TYPE	DEPTH (IN)	EFFICIENCY			
		WIDTH	HEIGHT	WIDTH	HEIGHT								
56-FLT03	8625	60	72	20	24	3	3	PLEAT	2	MERV 8 MIN.	AAF SUREPLEAT		
56-FLT04	8625	60	72	20	24	3	3	PLEAT	2	MERV 8 MIN.	AAF SUREPLEAT		
56-FLT05	8625	60	72	20	24	3	3	PLEAT	2	MERV 8 MIN.	AAF SUREPLEAT		
56-FLT06	8625	60	72	20	24	3	3	PLEAT	2	MERV 8 MIN.	AAF SUREPLEAT		
56-FLT07	8625	60	72	20	24	3	3	PLEAT	2	MERV 8 MIN.	AAF SUREPLEAT		
56-FLT08	8625	60	72	20	24	3	3	PLEAT	2	MERV 8 MIN.	AAF SUREPLEAT		
56-FLT09	8625	60	72	20	24	3	3	PLEAT	2	MERV 8 MIN.	AAF SUREPLEAT		
56-FLT10	8625	60	72	20	24	3	3	PLEAT	2	MERV 8 MIN.	AAF SUREPLEAT		

FAN SCHEDULE												
MARK	LOCATION	FAN DATA					ELECTRICAL DATA					BASIS OF DESIGN
		TYPE	CFM	EXT. S.P. (IN. WG)	DRIVE	RPM	HP	VOLT	PH	HZ	RPM	
56-EF03	BLOWER ROOM	ROOF	17,250	0.25	BELT	625	5	480	3	60	1,725	COOK ACE-B 365C11B
56-EF04	BLOWER ROOM	ROOF	17,250	0.25	BELT	625	5	480	3	60	1,725	COOK ACE-B 365C11B
56-EF05	BLOWER ROOM	ROOF	17,250	0.25	BELT	625	5	480	3	60	1,725	COOK ACE-B 365C11B
56-EF06	BLOWER ROOM	ROOF	17,250	0.25	BELT	625	5	480	3	60	1,725	COOK ACE-B 365C11B

DAMPER SCHEDULE						
MARK	SERVES	SERVICE TYPE	MAX AIR VEL. (FPM)	NOM. SIZE L x W (IN.)	ACTUATOR TYPE	BASIS OF DESIGN
56-MOD03	56-EF03	EXHAUST	1,568	44X36	ELECTRIC	GREENHECK VCD
56-MOD04	56-EF04	EXHAUST	1,568	44X36	ELECTRIC	GREENHECK VCD
56-MOD05	56-EF05	EXHAUST	1,568	44X36	ELECTRIC	GREENHECK VCD
56-MOD06	56-EF06	EXHAUST	1,568	44X36	ELECTRIC	GREENHECK VCD
56-MOD07	EXISTING LOUVER	INTAKE	288	72X60	ELECTRIC	RUSKIN CD-40
56-MOD08	EXISTING LOUVER	INTAKE	288	72X60	ELECTRIC	RUSKIN CD-40
56-MOD09	EXISTING LOUVER	INTAKE	288	72X60	ELECTRIC	RUSKIN CD-40
56-MOD10	EXISTING LOUVER	INTAKE	288	72X60	ELECTRIC	RUSKIN CD-40
56-MOD11	EXISTING LOUVER	INTAKE	288	72X60	ELECTRIC	RUSKIN CD-40
56-MOD12	EXISTING LOUVER	INTAKE	288	72X60	ELECTRIC	RUSKIN CD-40
56-MOD13	EXISTING LOUVER	INTAKE	288	72X60	ELECTRIC	RUSKIN CD-40
56-MOD14	EXISTING LOUVER	INTAKE	288	72X60	ELECTRIC	RUSKIN CD-40

Autodesk Docs/10419293\_St\_Joe\_Blower\_Replacement\_2024/10419293-00-GENERAL.rvt 2/18/2026 6:59:33 PM



ISSUE	DATE	DESCRIPTION
0	02/20/2026	ISSUED FOR CONSTRUCTION

PROJECT MANAGER	DEREK A. PATRICK
STRUCTURAL	DAVID WISEMAN
ARCHITECTURAL	ERICA BUTTMAN
PROCESS	KYLE SIMS
MECHANICAL	KEVAN PRINDS
ELECTRICAL	CALEB DADY
I&C	KEITH BOYD
PROJECT NUMBER	10419293



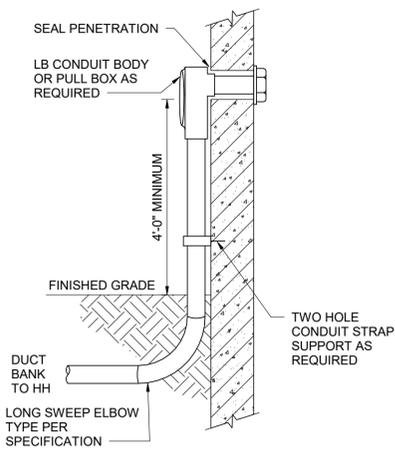
**ST JOSEPH WPF DOMESTIC BLOWER REPLACEMENT**

**STANDARD DETAILS MECHANICAL SCHEDULES**

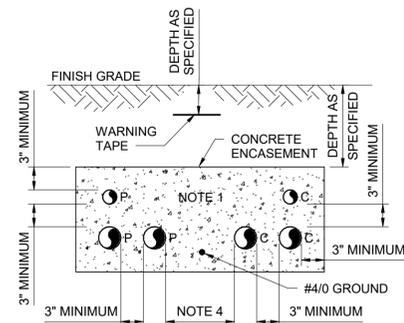
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**02M602**

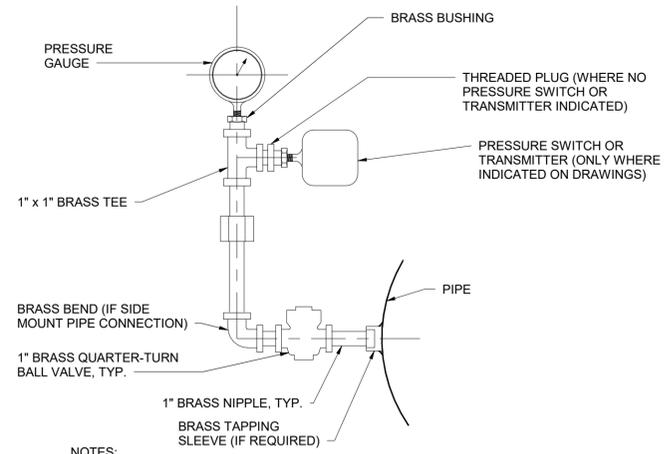


**1** ABOVE GRADE FACILITY ENTRANCE DETAIL  
NOT TO SCALE



- NOTES:**
1. NUMBER OF CONDUITS AS REQUIRED FOR THE APPLICATION.
  2. P SUBSCRIPT ELECTRICAL POWER OR CONTROL CONDUIT.
  3. C SUBSCRIPT COMMUNICATION (TELEPHONE, DATA, INSTRUMENTATION) CONDUIT.
  4. 6" MINIMUM WHEN POWER CONDUIT CONTAINS LESS THAN 1000V. 12" MINIMUM WHEN POWER CONDUIT CONTAINS MORE THAN 1000V.

**2** CONCRETE ENCASED DUCTBANK SECTION  
NOT TO SCALE



- NOTES:**
1. ALL COMPONENTS SHALL BE BRASS.
  2. REFER TO DRAWING FOR APPLICATION.
  3. ALL SWITCHES SHALL BE MERCURY FREE.

**3** PRESSURE GAUGE ASSEMBLY & SWITCH/TRANSMITTER  
NOT TO SCALE

Autodesk Docs/10419293\_St\_Joe\_Blower\_Replacement\_2024/10419293-00-GENERAL.rvt 2/18/2026 9:05:04 AM



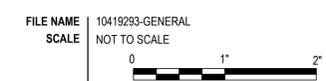
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PROJECT NUMBER	10419293



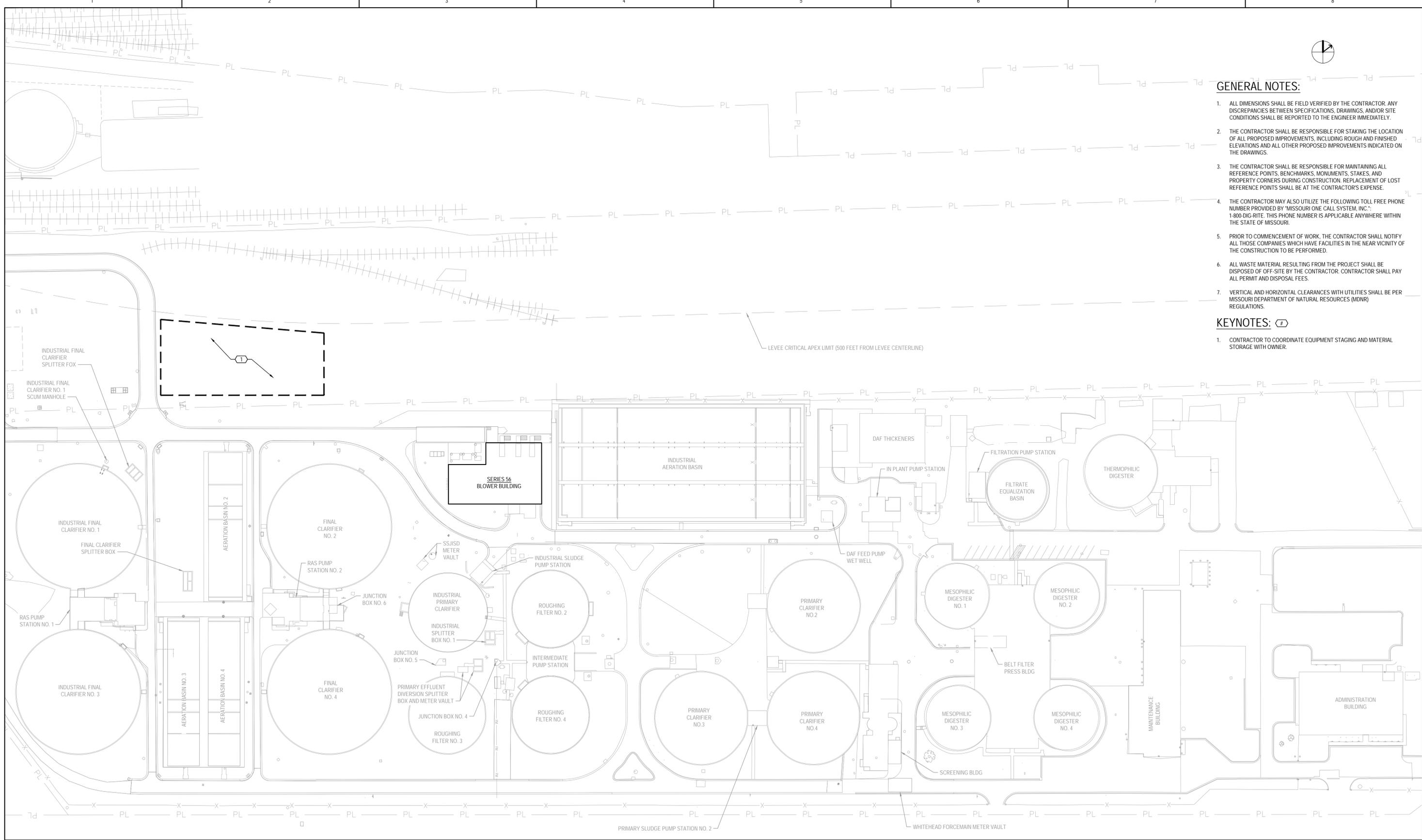
**ST JOSEPH WPF DOMESTIC BLOWER REPLACEMENT**

**STANDARD DETAILS  
ELECTRICAL STANDARD DETAILS**



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**02E501**

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**GENERAL NOTES:**

1. ALL DIMENSIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR. ANY DISCREPANCIES BETWEEN SPECIFICATIONS, DRAWINGS, AND/OR SITE CONDITIONS SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR STAKING THE LOCATION OF ALL PROPOSED IMPROVEMENTS, INCLUDING ROUGH AND FINISHED ELEVATIONS AND ALL OTHER PROPOSED IMPROVEMENTS INDICATED ON THE DRAWINGS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL REFERENCE POINTS, BENCHMARKS, MONUMENTS, STAKES, AND PROPERTY CORNERS DURING CONSTRUCTION. REPLACEMENT OF LOST REFERENCE POINTS SHALL BE AT THE CONTRACTOR'S EXPENSE.
4. THE CONTRACTOR MAY ALSO UTILIZE THE FOLLOWING TOLL FREE PHONE NUMBER PROVIDED BY 'MISSOURI ONE CALL SYSTEM, INC.': 1-800-DIG-RITE. THIS PHONE NUMBER IS APPLICABLE ANYWHERE WITHIN THE STATE OF MISSOURI.
5. PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL NOTIFY ALL THOSE COMPANIES WHICH HAVE FACILITIES IN THE NEAR VICINITY OF THE CONSTRUCTION TO BE PERFORMED.
6. ALL WASTE MATERIAL RESULTING FROM THE PROJECT SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR. CONTRACTOR SHALL PAY ALL PERMIT AND DISPOSAL FEES.
7. VERTICAL AND HORIZONTAL CLEARANCES WITH UTILITIES SHALL BE PER MISSOURI DEPARTMENT OF NATURAL RESOURCES (MDNR) REGULATIONS.

**KEYNOTES:** K

1. CONTRACTOR TO COORDINATE EQUIPMENT STAGING AND MATERIAL STORAGE WITH OWNER.



MISSOURI CERTIFICATE OF AUTHORITY #000856  
3500 759 HIGHWAY, ST. JOSEPH, MO  
KANSAS CITY, MO 64131

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0	02/20/2026	ISSUED FOR CONSTRUCTION

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PROCESS	KYLE SIMS
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ELECTRICAL	CALEB DADY
I&C	KEITH BOYD
PROJECT NUMBER	10419293



**ST JOSEPH WPF DOMESTIC  
BLOWER REPLACEMENT**

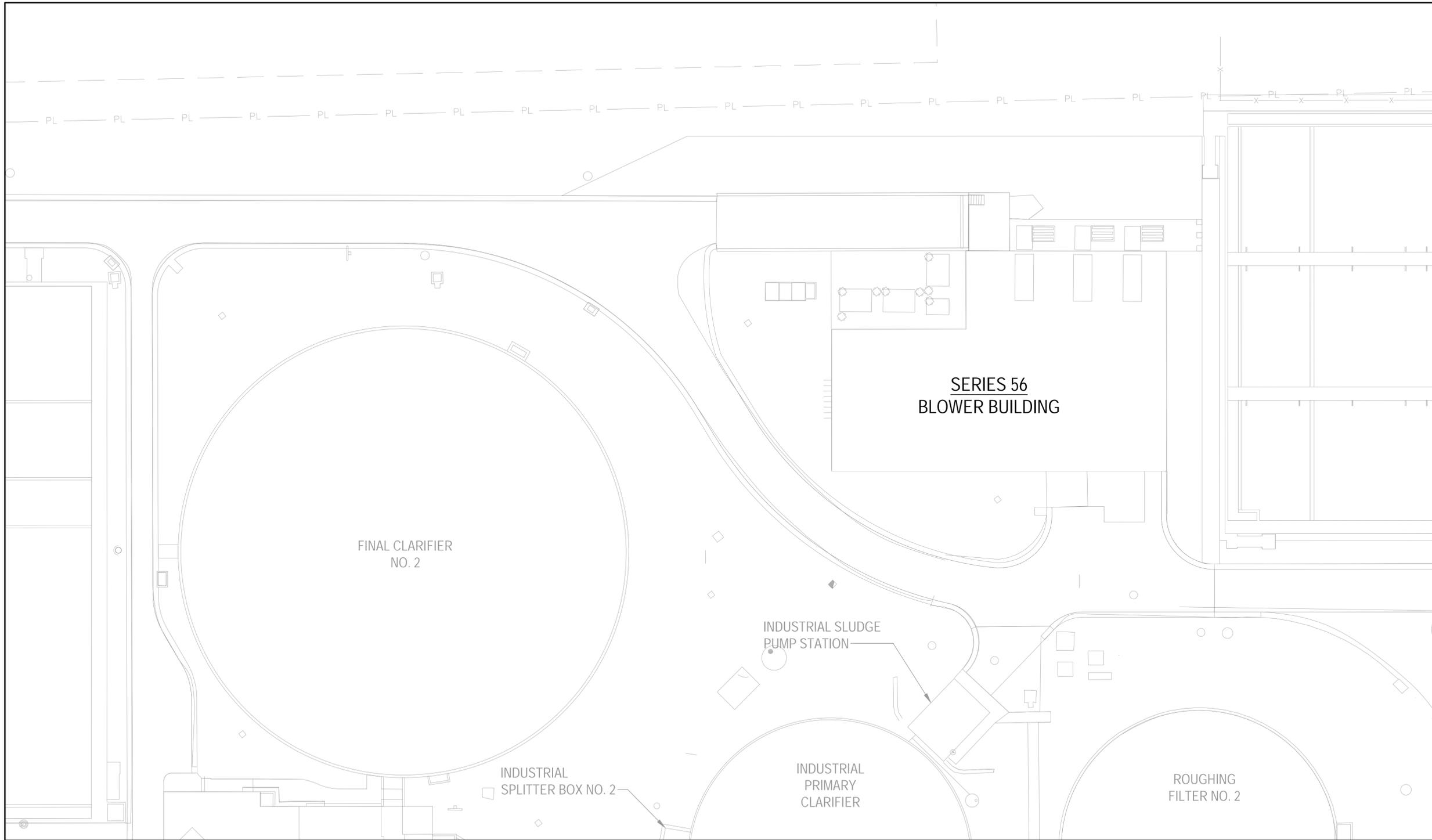
**SITE PLANNING  
OVERALL SITE PLAN**

FILE NAME 10419293\_10C100.DWG  
SCALE 1" = 60'



SHEET  
**10C100**

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7/2/2025 9:19 AM



**GENERAL NOTES:**

1. ALL DIMENSIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR. ANY DISCREPANCIES BETWEEN SPECIFICATIONS, DRAWINGS, AND/OR SITE CONDITIONS SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
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KANSAS CITY, MO 64131

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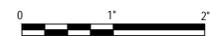
PROJECT MANAGER	DEREK PATRICK
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ELECTRICAL	CALEB DADY
I&C	KEITH BOYD
PROJECT NUMBER	10419293



**ST JOSEPH WPF DOMESTIC BLOWER REPLACEMENT**

**SITE PLANNING ENLARGED SITE PLAN**

FILE NAME 10419293\_10C101.DWG  
SCALE 1" = 20'



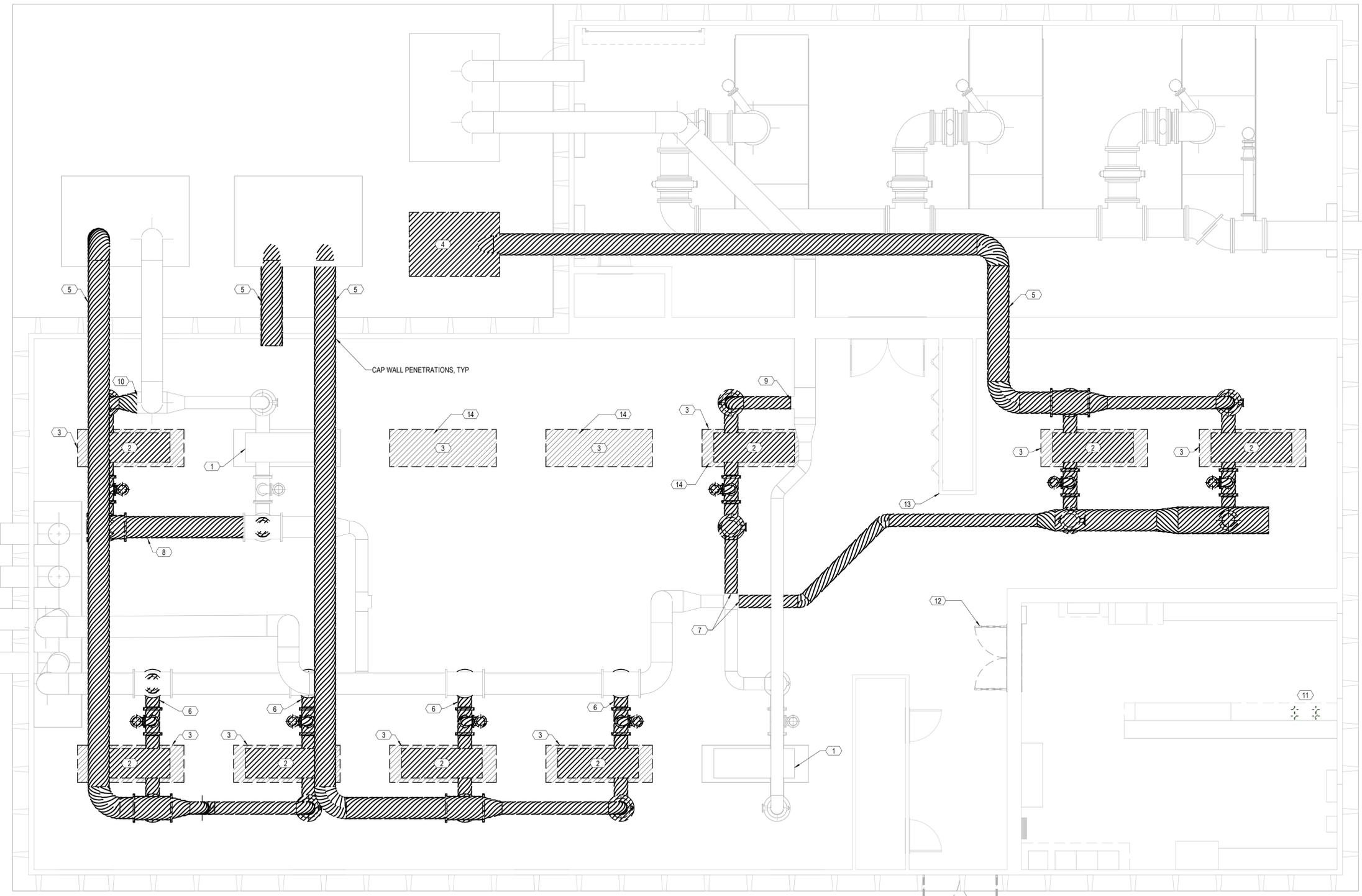
SHEET  
**10C101**

**GENERAL NOTES**

1. SEE SPECIFICATION XX XX XX FOR DEMOLITION SEQUENCING.
2. PHASE 1 DEMOLITION SEQUENCING TO ALLOW OPERATIONAL BLOWERS TO REMAIN IN SERVICE.
3. REFER TO WATER PROTECTION FACILITY AMMONIA REMOVAL IMPROVEMENTS, DATED 2013 FOR ADDITIONAL INFORMATION ON EXISTING FACILITIES.
4. CONTRACTOR SHALL COORDINATE ALL EQUIPMENT SHUTDOWNS WITH THE OWNER. CONTRACTOR SHALL NOTIFY THE OWNER AT LEAST 5 BUSINESS DAYS PRIOR TO EQUIPMENT SHUTDOWN. REPLACEMENT EQUIPMENT SHALL BE TESTED AND RETURNED TO SERVICE A MINIMUM OF 1-HOUR BEFORE THE END OF THE OPERATOR'S SHIFT. NO SHUTDOWNS SHALL BE ALLOWED ON FRIDAYS OR 24 HOURS BEFORE ANY CITY HOLIDAY. REFER TO SPECIFICATION 01 14 16.

**KEYNOTES** (##)

1. OPERATIONAL POSITIVE DISPLACEMENT BLOWER.
2. DEMOLISH EXISTING POSITIVE DISPLACEMENT BLOWER AND ASSOCIATED INLET AND OUTLET PIPING.
3. DEMOLISH EXISTING CONCRETE PAD. REPAIR CONCRETE SURFACE PER SPECIFICATION 02 41 00.
4. DEMOLISH EXISTING BAGHOUSE.
5. EXISTING 24" INFLUENT AIR PIPING TO BE DEMOLISHED TO EXISTING INLET PIPING OF EXISTING BLOWERS. REFER TO SHEET 56D101 FOR EXTENTS OF NEW INFLUENT AIR PIPING.
6. DEMOLISH EXISTING 16" AIR OUTLET PIPING TO 24" OUTLET PIPING HEADER. CAP AT HEADER PIPING TO ENSURE OPERATION OF EXISTING OPERATIONAL BLOWERS.
7. DEMOLISH EXISTING 14" AIR OUTLET PIPING TO 14" OUTLET PIPING TEE. CAP AT HEADER TEE PIPING TO ENSURE OPERATION OF EXISTING OPERATIONAL BLOWERS.
8. DEMOLISH EXISTING 24" AIR PIPING TO 24" FLANGE. CAP AT PIPING TO ENSURE OPERATION OF EXISTING OPERATIONAL BLOWERS.
9. DEMOLISH EXISTING 14" AIR INLET PIPING AT TEE. CAP AT TEE TO ENSURE OPERATION OF EXISTING OPERATIONAL BLOWERS.
10. CAP END OF PIPE TO ENSURE OPERATION OF EXISTING OPERATIONAL BLOWER.
11. GRIND AND SEAL CONDUITS. RESIZE EQUIPMENT PAD AS REQUIRED FOR SWITCHBOARD SELECTED.
12. DEMOLISH DOOR, FRAME AND HARDWARE TO BE REMOVE IN THEIR ENTIRETY. PREPARE OPENING FOR THE INSTALLATION OF A NEW DOOR, FRAME AND HARDWARE PATCH AND REPAIR SURFACES AFFECTED BY DEMOLITION.
13. DEMOLISH DAMAGED CMU BLOCKS. CAREFULLY REMOVE BLOCKS AND MORTAR JOINTS. PROTECT ADJACENT AREAS AND UTILIZE TEMPORARY SHORING AS NECESSARY TO MAINTAIN WALL STABILITY.
14. INFILL EXISTING EQUIPMENT PAD LOCATIONS WITH TILE TO MATCH ADJACENT.



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0	02/20/2026	ISSUED FOR CONSTRUCTION

PROJECT MANAGER	DEREK A. PATRICK
STRUCTURAL	DAVID WISEMAN
ARCHITECTURAL	ERICA BUTTMAN
PROCESS	KYLE SIMS
MECHANICAL	KEVAN PRINDS
ELECTRICAL	CALEB DADY
I&C	KEITH BOYD
PROJECT NUMBER	10419293



**ST JOSEPH WPF DOMESTIC BLOWER REPLACEMENT**

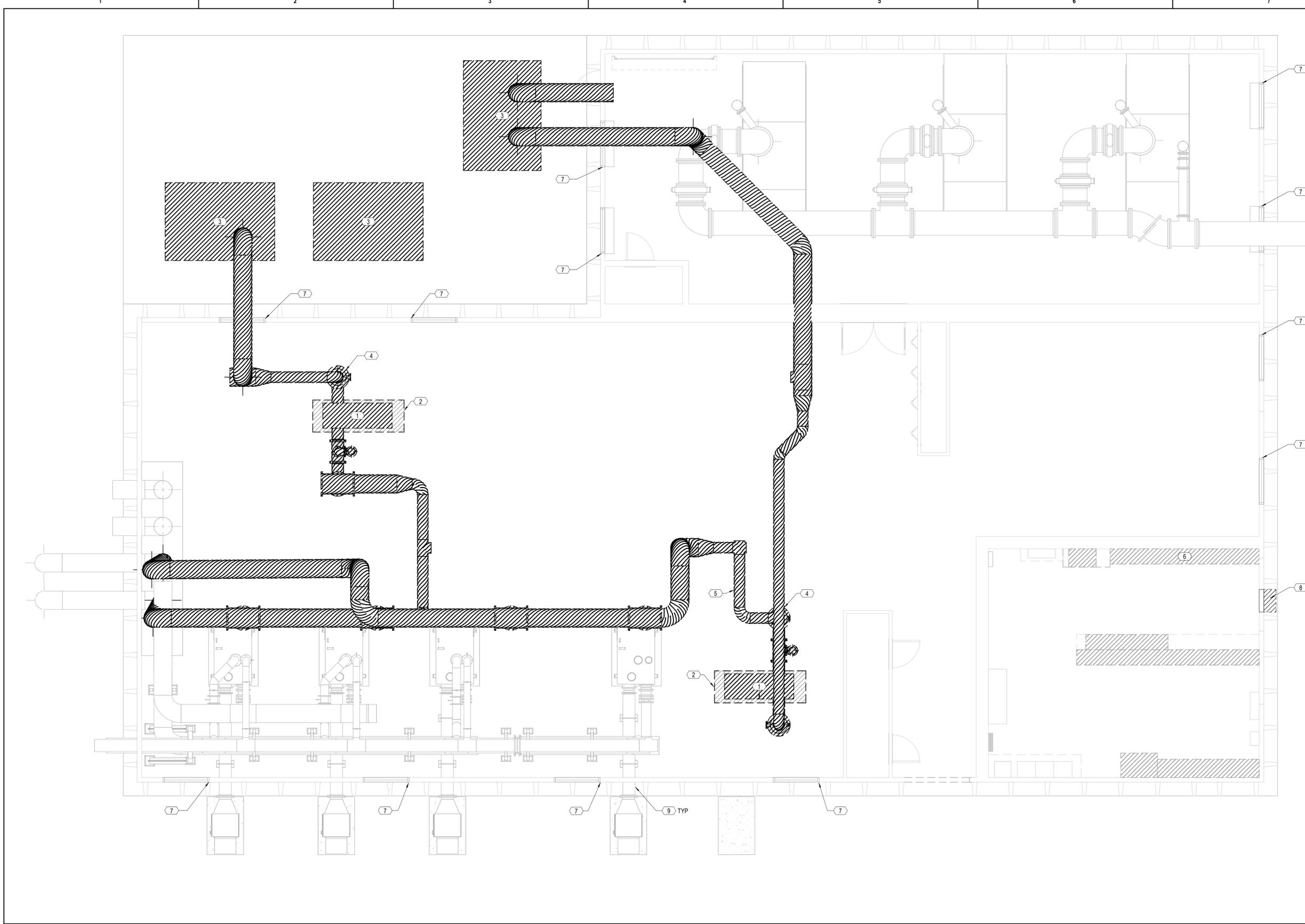
**BLOWER BUILDING PHASE 1 DEMOLITION**

FILE NAME 10419293-56-U-BLOWER BUILDING  
SCALE 3/16" = 1'-0"



SHEET  
**56X101**

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**GENERAL NOTES**

1. SEE SPECIFICATION XX XX XX FOR DEMOLITION SEQUENCING.
2. PHASE 2 DEMOLITION SHALL NOT OCCURE UNTIL PHASE 1 DEMOLITION IS COMPLETE AND NEW BLOWERS ARE INSTALLED AND COMMISSIONED.
3. PHASE 2 DEMOLITION TO ALL OPERATIONAL BLOWER TO REMAIN IN SERVICE.
4. REFER TO WATER PROTECTION FACILITY AMMONIA REMOVAL IMPROVEMENTS, DATED 2013 FOR ADDITIONAL INFORMATION ON EXISTING FACILITIES.
5. CONTRACTOR SHALL COORDINATE ALL EQUIPMENT SHUTDOWNS WITH THE OWNER. CONTRACTOR SHALL NOTIFY THE OWNER AT LEAST 5 BUSINESS DAYS PRIOR TO EQUIPMENT SHUTDOWN. REPLACEMENT EQUIPMENT SHALL BE TESTED AND RETURNED TO SERVICE A MINIMUM OF 1-HOUR BEFORE THE END OF THE OPERATOR'S SHIFT. NO SHUTDOWNS SHALL BE ALLOWED ON FRIDAYS OR 24 HOURS BEFORE ANY CITY HOLIDAY. REFER TO SPECIFICATION 01 14 16.

**KEYNOTES (#)**

1. DEMOLISH EXISTING POSITIVE DISPLACEMENT BLOWER AND ASSOCIATED INLET AND OUTLET PIPING.
2. DEMOLISH EXISTING CONCRETE PAD. REPAIR CONCRETE SURFACE PER SPECIFICATION 02 41 00.
3. DEMOLISH EXISTING BAGHOUSE.
4. EXISTING 24" INFLUENT AIR PIPING TO BE DEMOLISHED TO EXISTING INLET PIPING OF EXISTING BLOWERS. REFER TO SHEET 56D101 FOR EXTENTS OF NEW INFLUENT AIR PIPING.
5. DEMOLISH EXISTING 14" AIR OUTLET PIPING TO 14" OUTLET PIPING TEE. CAP AT HEADER TEE PIPING TO ENSURE OPERATION OF EXISTING OPERATIONAL BLOWERS.
6. REMOVE ALL ABANDONED CIRCUITS AND CONDUITS TO FULLEST EXTENT POSSIBLE.
7. REMOVE EXISTING CAULKING AROUND EXISTING LOUVERS. LOUVERS TO REMAIN. PREPARE GAP FOR NEW CAULKING.
8. DEMOLISH WALL MOUNTED AIR CONDITIONING UNIT. DO NOT DISTURB EXISTING TEE STEM.
9. CORE DRILL INTO DOUBLE TEE FLANGE. DO NOT DISTURB WEB. COORDINATE WALL PENETRATION WITH INLET PIPE SIZE OF SELECTED MANUFACTURER (TYP).



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I&C	KEITH BOYD
PROJECT NUMBER	10419293



**ST JOSEPH WPF DOMESTIC BLOWER REPLACEMENT**

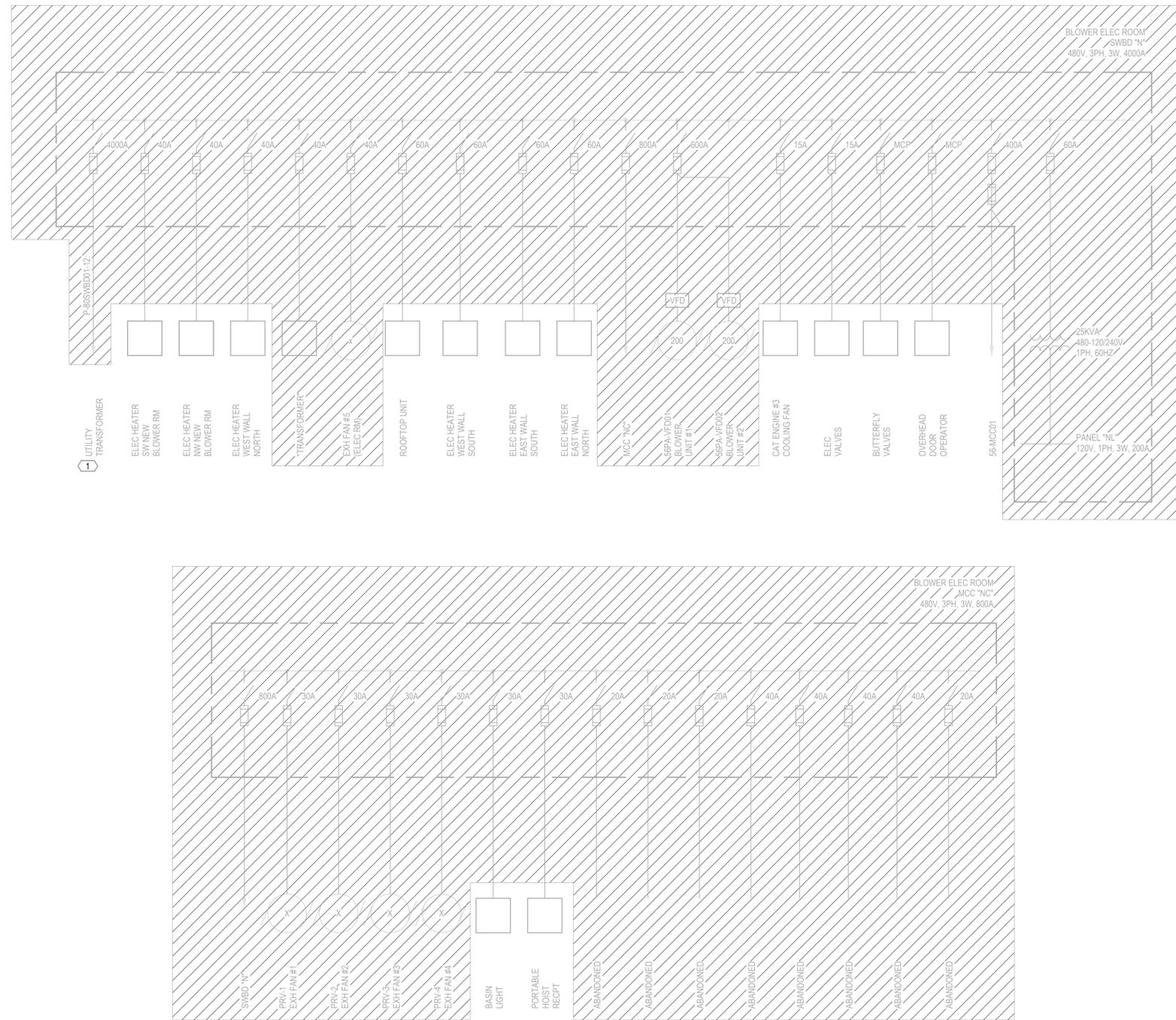
**BLOWER BUILDING PHASE 2 DEMOLITION**

FILE NAME 10419293-56-U-BLOWER BUILDING  
SCALE 3/16" = 1'-0"



SHEET  
**56X102**

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**GENERAL NOTES**

- COORDINATE ALL OUTAGES WITH PLANT STAFF AND EVERGY AS REQUIRED.
- ALL CONDUITS AND CIRCUITS TO BE REMOVED TO FULLEST EXTENT POSSIBLE FROM DEMOLISHED EQUIPMENT.

**KEYNOTES (#)**

- COORDINATE WITH EVERGY AND PLANT STAFF FOR SHUTDOWN, DEMO OF EXISTING CONDUITS AND CIRCUITS, AND INSTALLATION AND TERMINATION OF NEW CONDUITS AND CIRCUIT.



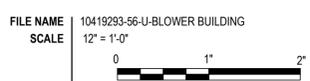
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**ST JOSEPH WPF DOMESTIC BLOWER REPLACEMENT**

**BLOWER BUILDING ELECTRICAL DEMOLITION ONE-LINE DIAGRAM**



SHEET  
**56X601**



**CODE ANALYSIS**

**REFERENCED CODES AND STANDARDS**

THE PROJECT CONSISTS OF CONSTRUCTION AND INSTALLATION OF FIVE (5) NEW DOMESTIC BLOWERS AT THE EXISTING BLOWER BUILDING AT THE ST. JOSEPH WATER PROTECTION FACILITY (WPF). THE FACILITY IS LOCATED ST. JOE MISSOURI.

**CODE AND STANDARDS**

- 2018 INTERNATIONAL BUILDING CODE
- 2018 INTERNATIONAL FIRE CODE
- 2009 INTERNATIONAL ENERGY CONSERVATION CODE
- 2017 NATIONAL ELECTRICAL CODE
- 2018 UNIFORM MECHANICAL CODE
- 2018 UNIFORM PLUMBING CODE

**BUILDING DESCRIPTION**

BUILDING IS NOT EQUIPPED WITH AN AUTOMATIC SPRINKLER SYSTEM

TYPE IIB CONSTRUCTION (IBC) IBC TABLE 602 & TABLE 601

BASIC ALLOWABLE BUILDING AREA (PER STORY) 17,500 SQ. FT.(NO INCREASE TAKEN FOR FRONTAGE) IBC § TABLE 506.2

BUILDING IS 8,186 SQ. FT

ALLOWABLE BUILDING HEIGHT: 55 FT/ 3 STORIES IBC § 504.3 ALLOWABLE BUILDING HEIGHT IN FEET ABOVE GRADE PLANE

BUILDING HEIGHT : 29 FT / 1 STORY ABOVE GRADE AND 1 STORY BELOW GRADE

**BUILDING OCCUPANCY CLASSIFICATION**

IBC OCCUPANCY CLASSIFICATIONS - SINGLE USE OCCUPANCY IBC § 508.1

MODERATE-HAZARD FACTORY INDUSTRIAL, GROUP F-1 IBC § 306.1

**FIRE RATE WALLS**

- EXTERIOR WALLS 0 - HOUR CONSTRUCTION IBC TABLE 601 AND TABLE 602
- PERMANENT PARTITIONS 0 - HOUR CONSTRUCTION IBC TABLE 601

THE SCOPE OF WORK FOR THE PROJECT INCLUDES REPLACEMENT OF EXISTING EQUIPMENT AND REPLACEMENT OF SOME ARCHITECTURAL ELEMENTS AS DESCRIBED BELOW. THE PROJECT SCOPE INCLUDES:

- REPLACEMENT OF DOMESTIC AERATION BLOWERS. THIS INCLUDES FIVE (5) NEW BLOWERS IN A 4 FIRM/1 STANDBY CONFIGURATION.
- UPGRADES TO THE BLOWER ELECTRICAL SYSTEMS (E.G. WIRING, CONDUIT, MCC'S, SWITCHGEAR, AND VFDS)
- UPGRADES TO THE INSTRUMENTATION AND CONTROLS EQUIPMENT.
- MINOR ARCHITECTURAL IMPROVEMENTS
- MINOR STRUCTURAL IMPROVEMENTS
- MECHANICAL/HVAC UPGRADES TO THE BLOWER BUILDING TO VENTILATE SPACE FOR NEW BLOWERS.

THE IEBC CLASSIFIES (IEBC-SECTION 602) THIS SCOPE OF WORK AS ALTERATION LEVEL 2 AND REQUIRES THE WORK TO COMPLY WITH CHAPTER 7 AND 8. THE IEBC CHAPTER 7 AND 8 REQUIREMENTS ARE LISTED BELOW.

**IEBC CHAPTER 7 REQUIREMENTS:**

- 1.THE CURRENT OCCUPANCY OF THE BLOWER ROOM IS MODERATE-HAZARD FACTORY INDUSTRIAL, GROUP F-1 AND WILL REMAIN THIS SAME OCCUPANCY.
- 2.THE EXISTING BUILDING IS NOT ALTERED TO BE LESS SAFE THAN IN PRESENT CONDITIONS.
- 3.ANY NEW INTERIOR FINISHES WILL COMPLY WITH THE IBC – CHAPTER 8
- 4.THE SCOPE OF WORK WILL NOT CHANGE THE FOLLOWING IN THE BLOW BUILDING:  
THE CURRENT LEVEL OF FIRE PROTECTION PROVIDED  
THE MEANS OF EGRESS  
THE ROOFING MATERIALS
- 5.THE ALTERATION WILL INCLUDE MINOR STRUCTURAL REPAIRS – SEE STRUCTURAL DRAWINGS FOR DESCRIPTION.
- 6.THE ALTERATION WILL CONFORM TO THE ENERGY REQUIREMENTS OF THE IECC.

**IEBC CHAPTER 8 REQUIREMENTS:**

- 1.NEWLY INSTALLED ELECTRICAL EQUIPMENT AND WIRING RELATING TO WORK DONE IN THE SCOPE OF WORK IS REQUIRED TO COMPLY WITH NFPA 70.
- 2.THE MECHANICAL EQUIPMENT WILL BE UPGRADED TO VENTILATE THE SPACE FOR NEW BLOWERS.

**INTERIOR WALL, CEILING, AND FLOOR FINISHES: IBC TABLE 803.13**

GROUP	WITH SPRINKLER SYSTEM			
	EXITS	EXIT ACCESS CORRIDORS	ROOMS AND ENCLOSED SPACES	INTERIOR FINISH FLOOR
F-1	N/A	N/A	A, B, OR C	CLASS I OR II

**MEANS OF EGRESS REQUIRED: SEE LIFE SAFETY PLANS FOR EGRESS PROVIDED**

**MINIMUM NUMBER OF MEANS OF EGRESS**

ACCESSIBLE MEANS OF EGRESS - ACCESS WITHIN ALLOWABLE TRAVEL DISTANCE SHALL BE PROVIDED TO NOT LESS THAN ONE ACCESSIBLE AREA OF REFUGE OR ONE ACCESSIBLE EXIT TO EXIT DICHARGE IBC § 1009.1

**TRAVEL DISTANCE TO AN EXIT**

• F-1, NON-SPRINKLERED: 200 FEET IBC § TABLE 1017.2

**COMMON PATH OF TRAVEL**

• F-1, NON-SPRINKLERED: 75 FEET IBC § TABLE 1006.2.1

**DEAD-END LIMITS**

• F-1, NON-SPRINKLERED: 20 FEET IBC § 1020.5

**RE MOTENESS OF EXITS**

• TWO EXITS ARE REQUIRED - 1/2 DIAGONAL DISTANCE EXIT SEPERATION PROVIDED IBC § TABLE 1007.1.1

**MINIMUM WIDTH**

NOT LESS THAN 36" FOR ANY MEANS OF EGRESS IBC § 1010.1

NOT LESS THAN 32" FOR DOOR CLEAR WIDTH IBC § 1010.1.2.1

DOORS SHALL SWING IN THE DIRECTION OF TRAVEL WHERE SERVING MORE THAN 50 PERSONS.

**ILLUMINATION OF MEANS OF EGRESS**

MINIMUM ILLUMINATION FOR MEANS OF EGRESS SHALL BE AT LEAST 1FT. CANDLE IBC § 1008.2.1

(MEASURED FROM WALKING SURFACE)

MINIMUM ILLUMINATION FOR FLOORS AND OTHER WALKING SURFACES SHALL BE AT LEAST 1FT. CANDLE IBC § 1008.2.1

**MARKING MEANS OF EGRESS**

EXITS OTHER THAN MAIN EXTERIOR EXIT DOORS THAT ARE OBVIOUSLY AND CLEARLY IDENTIFIED AS EXITS, SHALL BE MARKED BY APPROVED SIGNS IBC § 1013.1

ACCESS TO EXITS SHALL BE MARKED BY APPROVED, READILY VISIBLE SIGNS IN ALL CASES WHERE THE EXIT OR WAY TO REACH EXITIS NOT READILY APPARENT TO OCCUPANTS IBC § 1013.1

A SIGN WITH DIRECTIONAL INDICATOR SHOWING DIRECTION OF TRAVEL SHALL BE PLACED IN EVERY LOCATION WHERE DIRECTION OF TRAVEL TO REACH THE NEAREST EXIT IS NOT APPARENT IBC § 1013.1

EVERY EXIT OR DIRECTIONAL SIGN SHALL BE ILLUMINATED BY A RELIABLE LIGHT SOURCE IBC § 1013.6.3

**ACCESSIBLE MEANS OF EGRESS**

BUILDINGS OR PORTIONS OF BUILDINGS SHALL BE ACCESSIBLE TO PERSONS WITH DISABILITIES. IBC § 1101

ACCESSIBLE MEANS OF EGRESS SHALL BE PROVIDED WITH NOT LESS THAN ONE IBC § 1101

ACCESSIBLE MEANS OF EGRESS. WHERE MORE THAN ONE MEANS OF EGRESS ARE REQUIRED BY CHAPTER 11 FROM ANY ACCESSIBLE SPACE, EACH

ACCESSIBLE PORTION OF THE SPACE SHALL BE SERVED BY NOT LESS THAN TWO.

EACH REQUIRED ACCESSIBLE MEANS OF EGRESS SHALL BE CONTINUOUS TO A PUBLIC WAY.

**OCCUPANCY CAPACITY FACTORS**

• LEVEL COMPONENTS (DOORS) - 0.2 INCHES PER OCCUPANT IBC § 1005.3.2

**OCCUPANCY LOAD FACTORS**

• INDUSTRIAL USE: 100 SQ.FT./PERSON GROSS FLOOR AREA IBC TABLE 1004.5

**FIRE DEPARTMENT VEHICLE ACCESS**

• DIMENSIONS OF FIRE LANES AND TURNAROUNDS COMPLY WITH IFC. IFC APPENDIX D103

**FIRE HYDRANT PLACEMENT AND COVERAGE**

• THE MAXIMUM DISTANCE TO A FIRE HYDRANT FROM ANY POINT ON THE EXTERIOR BUILDING SHALL NOT EXCEED 400 FT. IFC § 507.5.1

• THE MAXIMUM SPACING TO A FIRE HYDRANT SHALL NOT EXCEED 500 FT IFC APPENDIX C103

**ACTIVE FIRE PROTECTION SYSTEMS**

**FIRE ALARM**

• FIRE ALARM SYSTEM NOT REQUIRED IBC § 907.2

**FIRE SUPPRESSION SYSTEMS AND WATER SUPPLY**

• SPRINKLER SYSTEMS NOT REQUIRED IBC § 903.2.9

**FIRE EXTINGUISHERS**

• PORTABLE FIRE EXTINGUISHERS SHALL BE INSTALLED PER NFPA 10. IFC § 906.1

• A MAXIMUM TRAVEL DISTANCE TO THE EXTINGUISHER OF 75 FEET. IFC § 906.1

**WATER SUPPLY**

FIRE HYDRNAT FLOW TEST TO BE PERFORMED

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PROCESS	KYLE SIMS
MECHANICAL	KEVAN PRINDS
ELECTRICAL	CALEB DADY
I&C	KEITH BOYD
PROJECT NUMBER	10419293



**ST JOSEPH WPF DOMESTIC BLOWER REPLACEMENT**

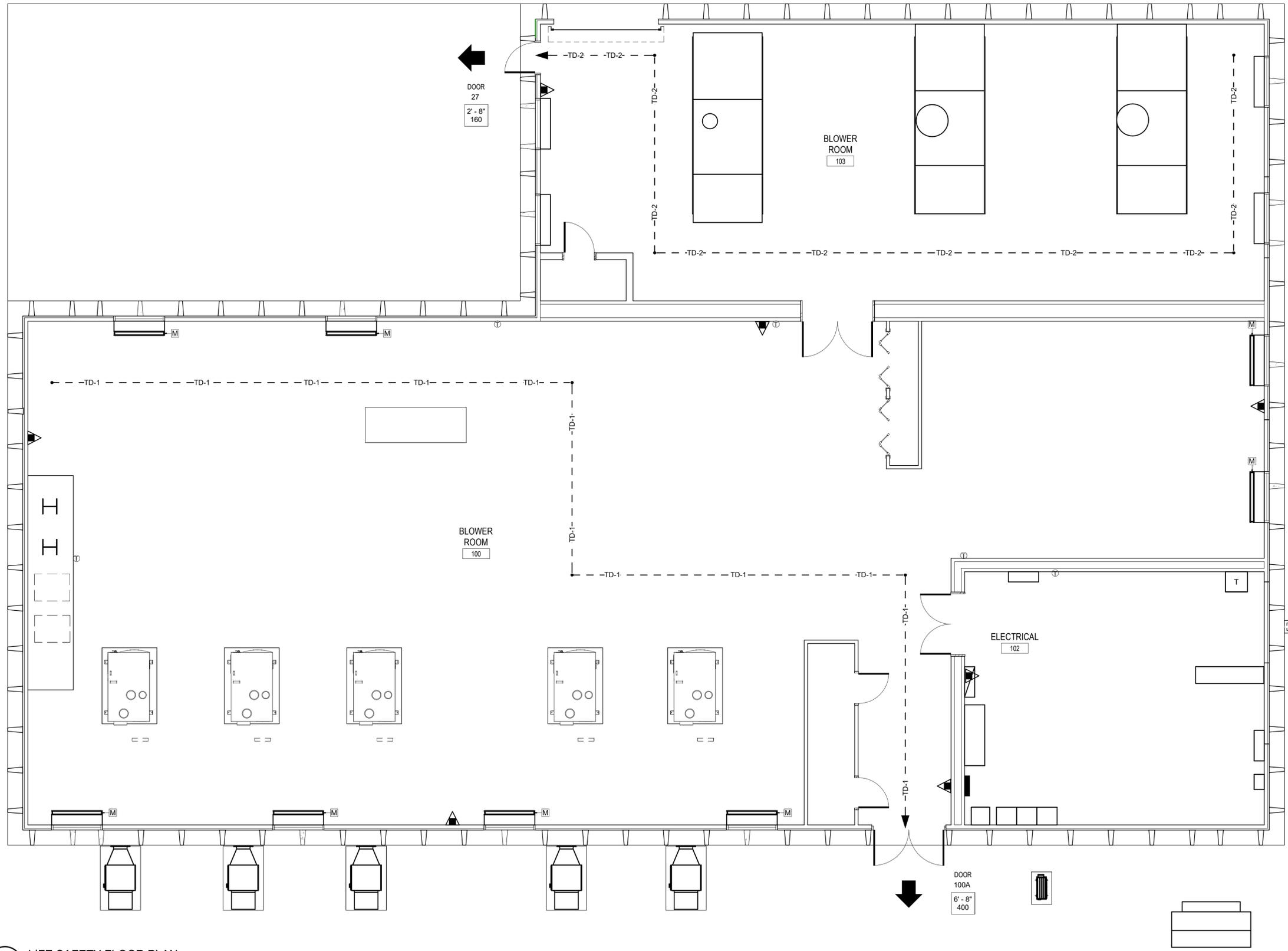
**BLOWER BUILDING ARCHITECTURAL LIFE SAFETY PLAN**

FILE NAME 10419293-56-U-BLOWER BUILDING  
SCALE



SHEET  
**56A001**

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**GENERAL NOTES**

**LIFE SAFETY PLAN LEGEND**

- NOTE: ALL SYMBOLS MAY NOT BE USED.
- EXITS**
- X'-X" CLEAR DOOR WIDTH (FEET - INCHES)
  - XXX EXIT EGRESS CAPACITY (NO. OF PEOPLE)
- EGRESS PATH**
- TRAVEL DISTANCE --- TD --->
  - COMMON PATH --- CP --->
  - DEAD END --- DE --->
- EXIT DISCHARGE**
- EXIT DISCHARGE [Arrow]
- FIRE EXTINGUISHER**
- [Triangle with X] FIRE EXTINGUISHER
- EXIT SIGNS**
- 1. NOT REQUIRED AND NOT PROVIDED.

**KEYNOTES (#)**

MEANS OF EGRESS CAPACITY PROVIDED EGRESS CAPACITY - LEVEL COMPONENTS & RAMPS			
EXIT ID	EGRESS CAPACITY FACTOR	CLEAR WIDTH	EGRESS CAPACITY
27	0.2	2' - 8"	160
100A	0.2	6' - 8"	400

MEANS OF EGRESS SCHEDULE		
EGRESS PATH ID	EGRESS DISTANCE	
	PROVIDED	MAXIMUM PERMITTED
TD-1	128' - 6"	200' - 0"
TD-2	108' - 0"	200' - 0"

**2 LIFE SAFETY FLOOR PLAN**  
3/16" = 1'-0"



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**ST JOSEPH WPF DOMESTIC BLOWER REPLACEMENT**

**BLOWER BUILDING ARCHITECTURAL LIFE SAFETY PLAN**

FILE NAME 10419293-56-U-BLOWER BUILDING  
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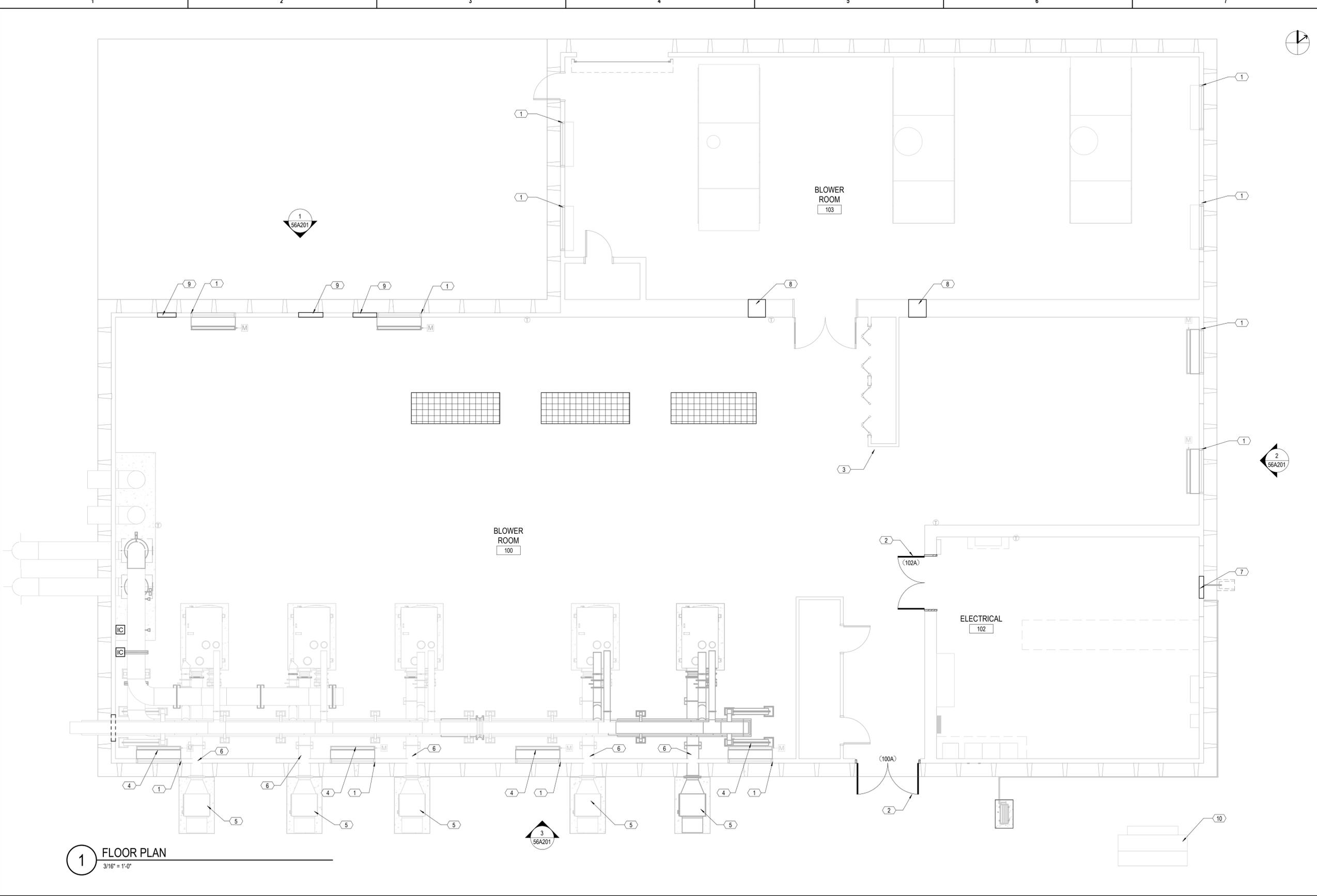
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**GENERAL NOTES**

1. FIELD VERIFY EXISTING CONDITIONS PRIOR TO MANUFACTURING OF INFILL ASSEMBLIES AT DOOR AND OPENINGS.
2. SEE STRUCTURAL DETAILS FOR CONCRETE REPAIRS WHERE REQUIRED.
3. CONTACT AE FOR INSTRUCTIONS IF EXISTING CONDITIONS ARE REVEALS OR FOUND TO BE INCONSISTENT WITH THE CONTRACT DOCUMENTS.
4. SEE SHEET 02A601 FOR DOOR SCHEDULES.

**KEYNOTES** (##)

1. PROVIDE NEW SEALANT AROUND ALL EXISTING LOUVERS.
2. REFER TO DOOR SCHEDULE FOR DOOR AND FRAME INFORMATION.
3. PROVIDE AND INSTALL NEW CMU BLOCKS TO MATCH EXISTING IN SIZE, COLOR, TEXTURE, AND STRENGTH. MATCH MORTAR TYPE AND COLOR, AND TOOL JOINTS TO MATCH EXISTING. CLEAN EXPOSED MASONRY SURFACES UPON COMPLETION. CONTRACTOR TO UTILIZE EXISTING BLOCKS CURRENTLY ONSITE, IF STILL VIABLE.
4. EQUIPMENT; SEE TO MECHANICAL.
5. EQUIPMENT; SEE PROCESS.
6. CORE DRILL OPENING IN DOUBLE TEE FLANGE AS REQUIRED FOR INSTALLATION OF PROCESS PIPING. CONTACTOR COORDINATE FINAL OPENING SIZE AND LOCATION WITH EQUIPMENT FURNISHED. DO NOT DISTURB DOUBLE-TEE WEB. REFERENCE DETAIL 8/02A501.
7. INFILL EXISTING PENETRATION; REFERENCE DETAIL 3/02A501.
8. INFILL EXISTING PENETRATION; REFERENCE DETAIL 9/02A501.
9. INFILL EXISTING PENETRATION; REFERENCE DETAIL 2/02A501.
10. EXISTING EQUIPMENT; SEE ELECTRICAL.



**1 FLOOR PLAN**  
3/16" = 1'-0"

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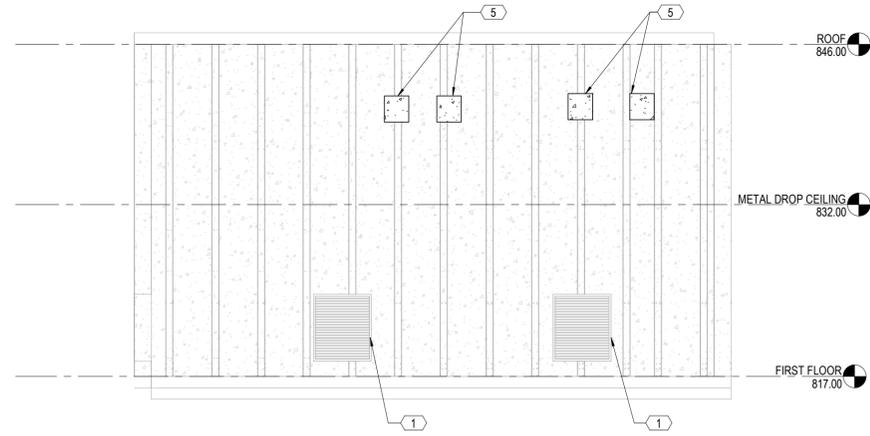
**ST JOSEPH WPF DOMESTIC  
BLOWER REPLACEMENT**

**BLOWER BUILDING  
ARCHITECTURAL PLAN**

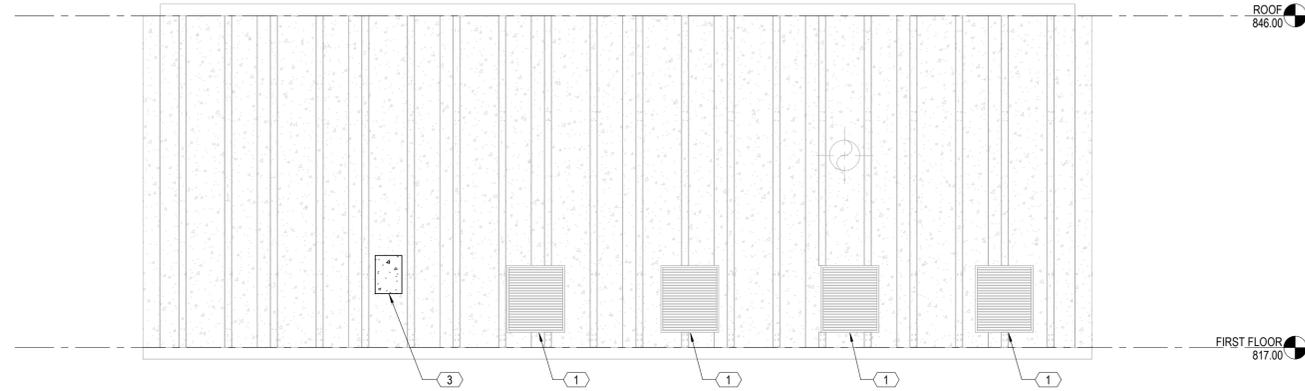
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SHEET  
**56A101**

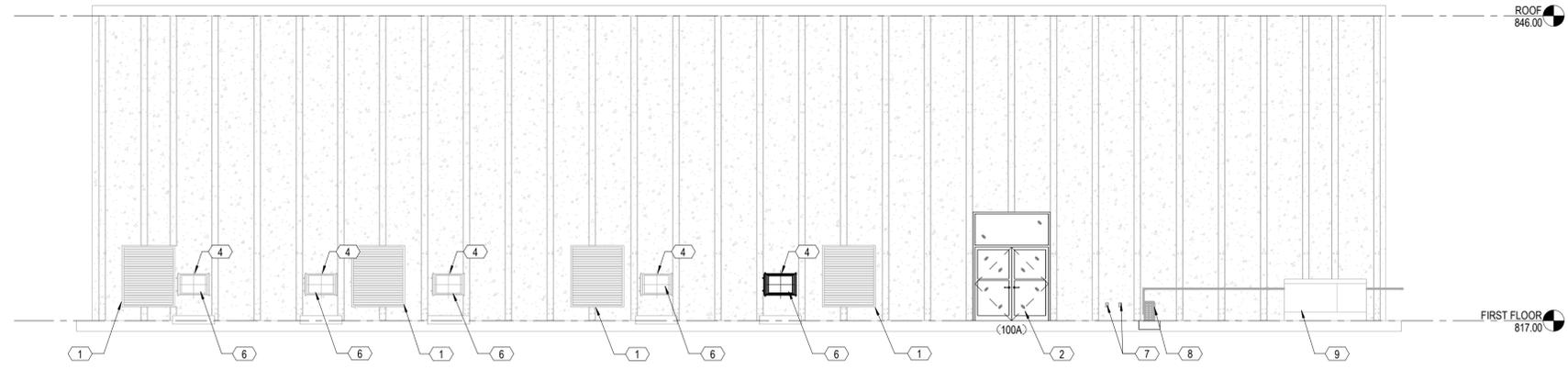
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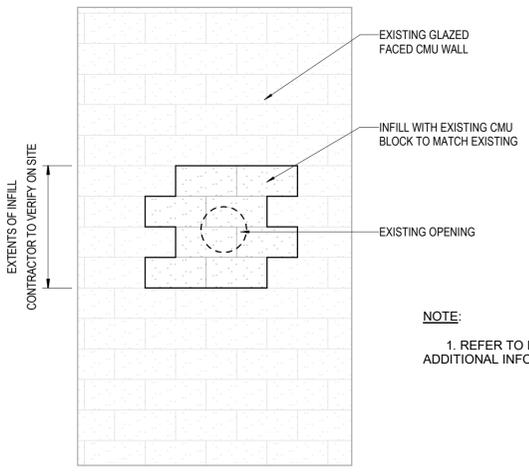
**1 NORTH ELEVATION**  
1/8" = 1'-0"



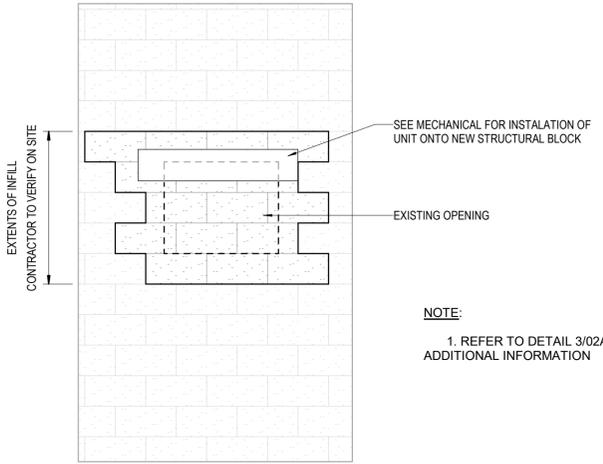
**2 EAST ELEVATION**  
1/8" = 1'-0"



**3 SOUTH ELEVATION**  
1/8" = 1'-0"



**4 PENETRATION ELEVATION**  
1/2" = 1'-0"



**5 PENETRATION ELEVATION AT MINI SPLIT**  
1/2" = 1'-0"

**KEYNOTES** (#)

1. PROVIDE NEW SEALANT AROUND ALL EXISTING LOUVERS.
2. REFER TO DOOR SCHEDULE FOR DOOR AND FRAME INFORMATION.
3. INFILL EXISTING PENETRATION; REFERENCE DETAIL 3/02A501.
4. SAW CUT OPENING IN FLANGE FOR EQUIPMENT. CONTACTOR COORDINATE FINAL OPENING SIZE AND LOCATION WITH EQUIPMENT FURNISHED. DO NOT DISTURB DOUBLE-TEE WEB. REFERENCE DETAIL 8/02A501.
5. INFILL EXISTING PENETRATION; REFERENCE DETAIL 2/02A501.
6. EQUIPMENT; SEE PROCESS
7. EQUIPMENT; SEE ELECTRICAL
8. EQUIPMENT; SEE TO MECHANICAL.
9. EXISTING EQUIPMENT; SEE ELECTRICAL



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**ST JOSEPH WPF DOMESTIC BLOWER REPLACEMENT**

**BLOWER BUILDING ARCHITECTURAL ELEVATIONS**

FILE NAME: 10419293-56-U-BLOWER BUILDING  
SCALE: As indicated  
0 1" 2"

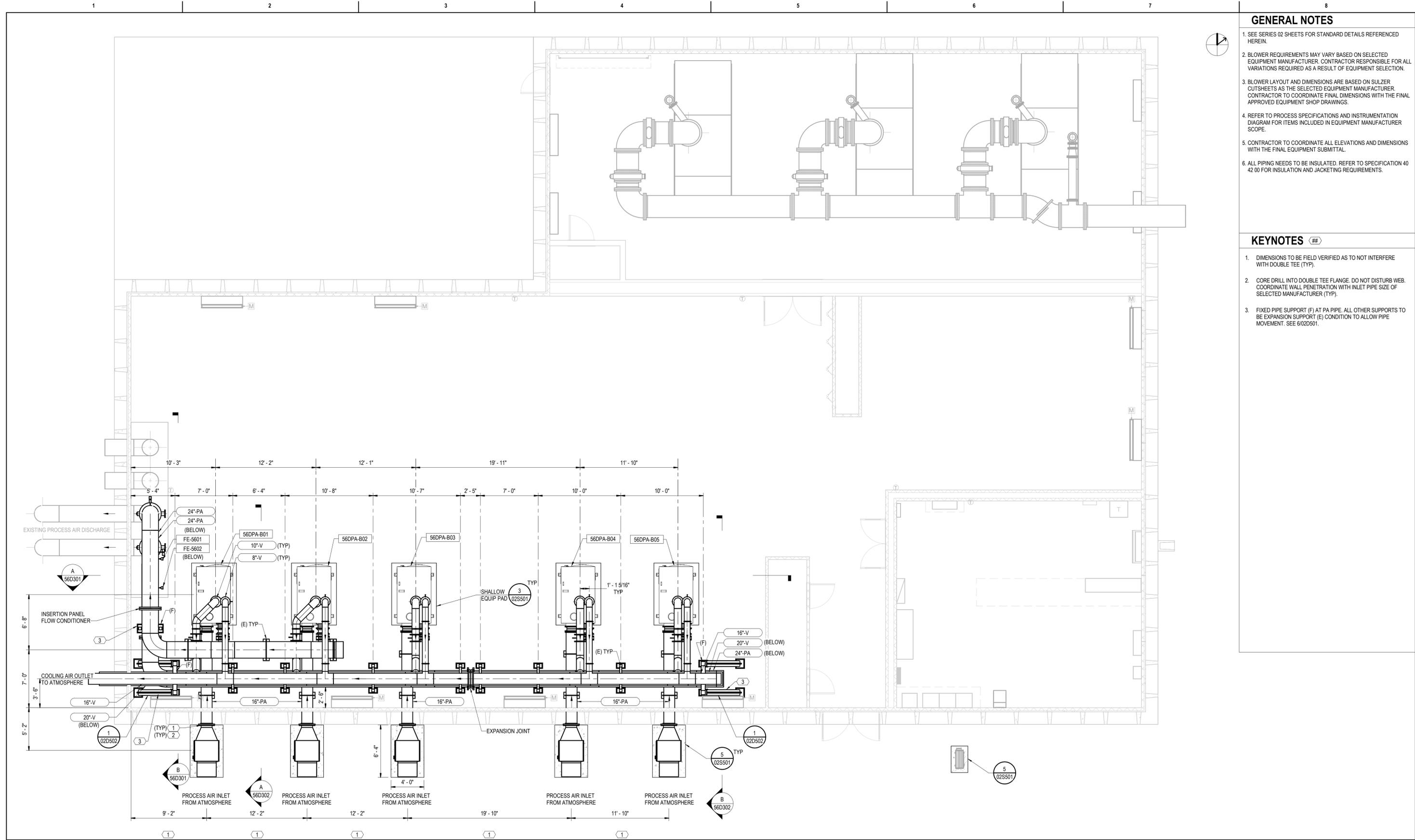
SHEET  
**56A201**

**GENERAL NOTES**

- SEE SERIES 02 SHEETS FOR STANDARD DETAILS REFERENCED HEREIN.
- BLOWER REQUIREMENTS MAY VARY BASED ON SELECTED EQUIPMENT MANUFACTURER. CONTRACTOR RESPONSIBLE FOR ALL VARIATIONS REQUIRED AS A RESULT OF EQUIPMENT SELECTION.
- BLOWER LAYOUT AND DIMENSIONS ARE BASED ON SULZER CUTSHEETS AS THE SELECTED EQUIPMENT MANUFACTURER. CONTRACTOR TO COORDINATE FINAL DIMENSIONS WITH THE FINAL APPROVED EQUIPMENT SHOP DRAWINGS.
- REFER TO PROCESS SPECIFICATIONS AND INSTRUMENTATION DIAGRAM FOR ITEMS INCLUDED IN EQUIPMENT MANUFACTURER SCOPE.
- CONTRACTOR TO COORDINATE ALL ELEVATIONS AND DIMENSIONS WITH THE FINAL EQUIPMENT SUBMITTAL.
- ALL PIPING NEEDS TO BE INSULATED. REFER TO SPECIFICATION 40 42 00 FOR INSULATION AND JACKETING REQUIREMENTS.

**KEYNOTES ##**

- DIMENSIONS TO BE FIELD VERIFIED AS TO NOT INTERFERE WITH DOUBLE TEE (TYP).
- CORE DRILL INTO DOUBLE TEE FLANGE. DO NOT DISTURB WEB. COORDINATE WALL PENETRATION WITH INLET PIPE SIZE OF SELECTED MANUFACTURER (TYP).
- FIXED PIPE SUPPORT (F) AT PA PIPE. ALL OTHER SUPPORTS TO BE EXPANSION SUPPORT (E) CONDITION TO ALLOW PIPE MOVEMENT. SEE 602D501.



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3500 759 HIGHWAY, ST. JOSEPH, MO  
KANSAS CITY, MO 64131

ISSUE	DATE	DESCRIPTION
0	02/20/2026	ISSUED FOR CONSTRUCTION

PROJECT MANAGER	DEREK A. PATRICK
STRUCTURAL	DAVID WISEMAN
ARCHITECTURAL	ERICA BUTTMAN
PROCESS	KYLE SIMS
MECHANICAL	KEVAN PRINDS
ELECTRICAL	CALEB DADY
I&C	KEITH BOYD
PROJECT NUMBER	10419293



**ST JOSEPH WPF DOMESTIC BLOWER REPLACEMENT**

**BLOWER BUILDING UPPER PROCESS PLAN - OPTION 1**

FILE NAME 10419293-56-U-BLOWER BUILDING  
SCALE 3/16" = 1'-0"



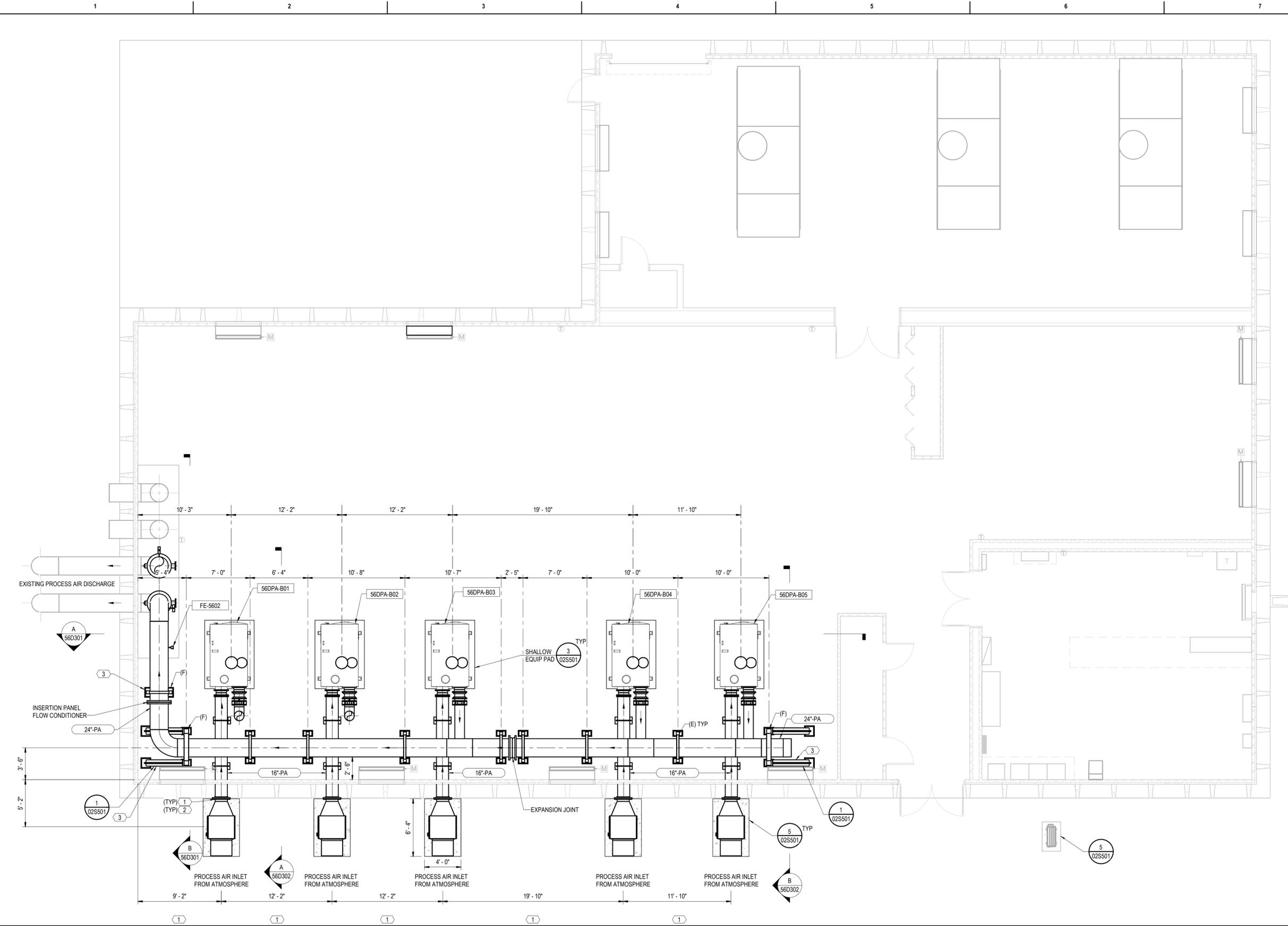
SHEET  
**56D101**

**GENERAL NOTES**

- SEE SERIES 02 SHEETS FOR STANDARD DETAILS REFERENCED HEREIN.
- BLOWER REQUIREMENTS MAY VARY BASED ON SELECTED EQUIPMENT MANUFACTURER. CONTRACTOR RESPONSIBLE FOR ALL VARIATIONS REQUIRED AS A RESULT OF EQUIPMENT SELECTION.
- BLOWER LAYOUT AND DIMENSIONS ARE BASED ON SULZER CUTSHEETS AS THE SELECTED EQUIPMENT MANUFACTURER. CONTRACTOR TO COORDINATE FINAL DIMENSIONS WITH THE FINAL APPROVED EQUIPMENT SHOP DRAWINGS.
- REFER TO PROCESS SPECIFICATIONS AND INSTRUMENTATION DIAGRAM FOR ITEMS INCLUDED IN EQUIPMENT MANUFACTURER SCOPE.
- CONTRACTOR TO COORDINATE ALL ELEVATIONS AND DIMENSIONS WITH THE FINAL EQUIPMENT SUBMITTAL.
- ALL PIPING NEEDS TO BE INSULATED. REFER TO SPECIFICATION 40 42 00 FOR INSULATION AND JACKETING REQUIREMENTS.

**KEYNOTES (#)**

- DIMENSIONS TO BE FIELD VERIFIED AS TO NOT INTERFERE WITH DOUBLE TEE (TYP).
- CORE DRILL INTO DOUBLE TEE FLANGE. DO NOT DISTURB WEB. COORDINATE WALL PENETRATION WITH INLET PIPE SIZE OF SELECTED MANUFACTURER (TYP).
- FIXED PIPE SUPPORT (F) AT PA PIPE. ALL OTHER SUPPORTS TO BE EXPANSION SUPPORT (E) CONDITION TO ALLOW PIPE MOVEMENT. SEE 602D501.



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PROJECT MANAGER	DEREK A. PATRICK
STRUCTURAL	DAVID WISEMAN
ARCHITECTURAL	ERICA BUTTMAN
PROCESS	KYLE SIMS
MECHANICAL	KEVAN PRINDS
ELECTRICAL	CALEB DADY
I&C	KEITH BOYD
PROJECT NUMBER	10419293



**ST JOSEPH WPF DOMESTIC BLOWER REPLACEMENT**

**BLOWER BUILDING LOWER PROCESS PLAN - OPTION 1**

FILE NAME 10419293-56-U-BLOWER BUILDING  
SCALE 3/16" = 1'-0"  
0 1' 2'

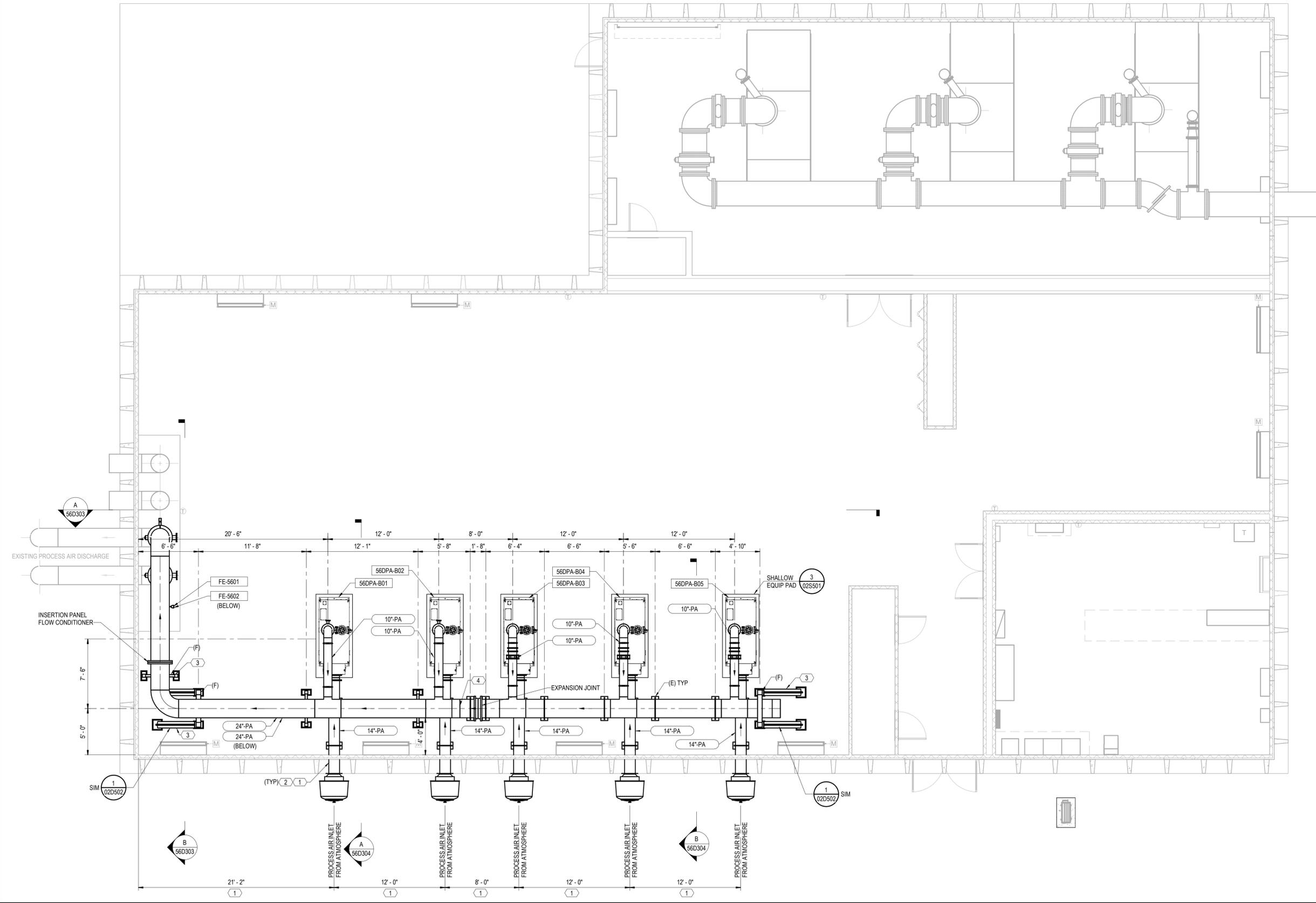
SHEET  
**56D102**

**GENERAL NOTES**

- SEE SERIES 02 SHEETS FOR STANDARD DETAILS REFERENCED HEREIN.
- BLOWER REQUIREMENTS MAY VARY BASED ON SELECTED EQUIPMENT MANUFACTURER. CONTRACTOR RESPONSIBLE FOR ALL VARIATIONS REQUIRED AS A RESULT OF EQUIPMENT SELECTION.
- BLOWER LAYOUT AND DIMENSIONS ARE BASED ON NEUROS CUTSHEETS AS THE SELECTED EQUIPMENT MANUFACTURER. CONTRACTOR TO COORDINATE FINAL DIMENSIONS WITH THE FINAL APPROVED EQUIPMENT SHOP DRAWINGS.
- REFER TO PROCESS SPECIFICATIONS AND INSTRUMENTATION DIAGRAM FOR ITEMS INCLUDED IN EQUIPMENT MANUFACTURER SCOPE.
- CONTRACTOR TO COORDINATE ALL ELEVATIONS AND DIMENSIONS WITH THE FINAL EQUIPMENT SUBMITTAL.
- ALL PIPING NEEDS TO BE INSULATED. REFER TO SPECIFICATION 40 42 00 FOR INSULATION AND JACKETING REQUIREMENTS.

**KEYNOTES (#)**

- DIMENSIONS TO BE FIELD VERIFIED AS TO NOT INTERFERE WITH DOUBLE TEE (TYP).
- CORE DRILL INTO DOUBLE TEE FLANGE. DO NOT DISTURB WEB. COORDINATE WALL PENETRATION WITH INLET PIPE SIZE OF SELECTED MANUFACTURER (TYP).
- FIXED PIPE SUPPORT (F) AT PA PIPE. ALL OTHER SUPPORTS TO BE EXPANSION SUPPORT (E) CONDITION TO ALLOW PIPE MOVEMENT. SEE 6/02D501.
- 56DPA-B01 AND 56DPA-B02 PIPE HEADER BEGINS HERE. REFER TO SECTION AND ISOMETRIC VIEWS FOR PIPE CONFIGURATION CLARIFICATION.



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PROCESS	KYLE SIMS
MECHANICAL	KEVAN PRINDS
ELECTRICAL	CALEB DADY
I&C	KEITH BOYD
PROJECT NUMBER	10419293



**ST JOSEPH WPF DOMESTIC BLOWER REPLACEMENT**

**BLOWER BUILDING PROCESS PLAN - OPTION 2**

FILE NAME 10419293-56-U-BLOWER BUILDING  
SCALE 3/16" = 1'-0"



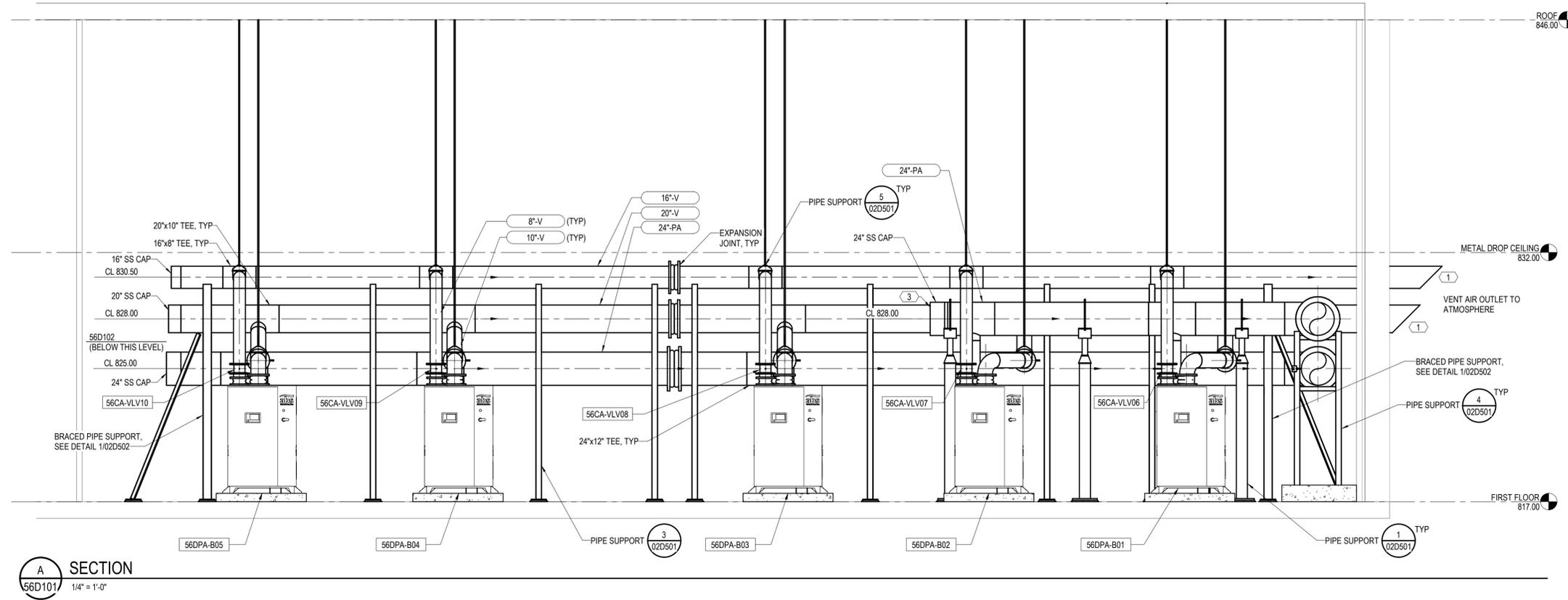
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**GENERAL NOTES**

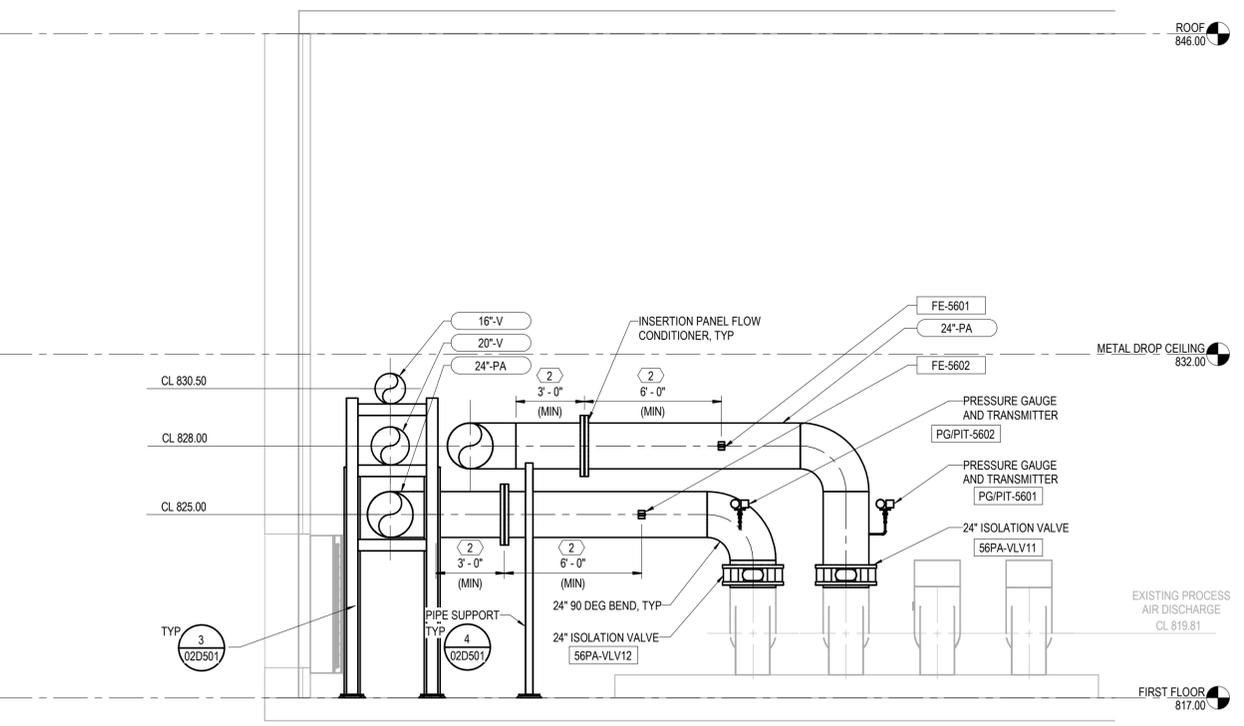
- SEE SERIES 02 SHEETS FOR STANDARD DETAILS REFERENCED HEREIN.
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- REFER TO PROCESS SPECIFICATIONS AND INSTRUMENTATION DIAGRAM FOR ITEMS INCLUDED IN EQUIPMENT MANUFACTURER SCOPE.
- CONTRACTOR TO COORDINATE ALL ELEVATIONS AND DIMENSIONS WITH THE FINAL EQUIPMENT SUBMITTAL.
- ALL PIPING NEEDS TO BE INSULATED. REFER TO SPECIFICATION 40 42 00 FOR INSULATION AND JACKETING REQUIREMENTS.
- REFER TO SPECIFICATIONS FOR COMPLETE PIPE SUPPORT REQUIREMENTS.

**KEYNOTES** (#)

- TERMINATE PIPE AT 45 DEGREE ANGLE AND INSTALL A MESH SCREEN.
- DISTANCE VARIES BY MANUFACTURER. CONTRACTOR TO COORDINATE WITH THE FLOW CONDITIONER SUPPLIER TO ENSURE THE MINIMUM UPSTREAM AND DOWNSTREAM STRAIGHT-RUN REQUIREMENTS ARE MAINTAINED.
- 56DPA-B01 AND 56DPA-B02 PIPE HEADER BEGINS HERE. REFER TO SECTION AND ISOMETRIC VIEWS FOR PIPE CONFIGURATION CLARIFICATION.



**A SECTION**  
56D101 1/4" = 1'-0"



**B SECTION**  
56D101 1/4" = 1'-0"



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MECHANICAL	KEVAN PRINDS
ELECTRICAL	CALEB DADY
I&C	KEITH BOYD
PROJECT NUMBER	10419293



**ST JOSEPH WPF DOMESTIC BLOWER REPLACEMENT**

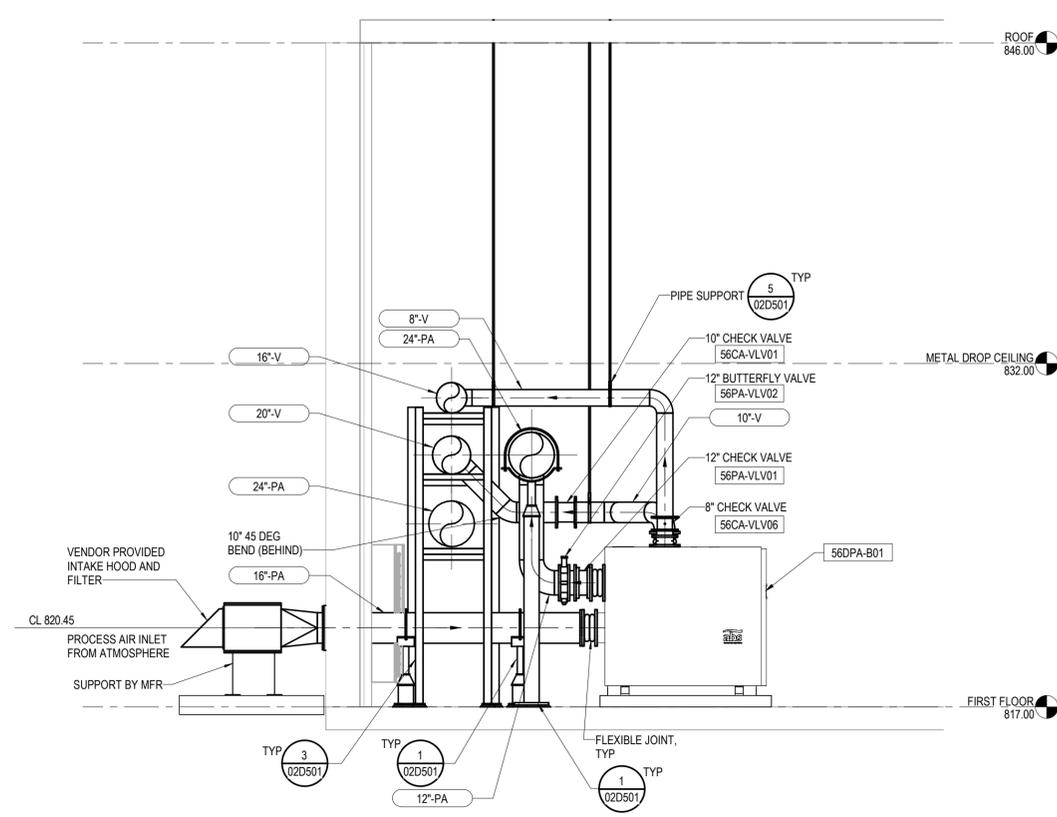
**BLOWER BUILDING PROCESS SECTIONS - OPTION 1**

FILE NAME 10419293-56-U-BLOWER BUILDING  
SCALE 1/4" = 1'-0"  
0 1" 2"

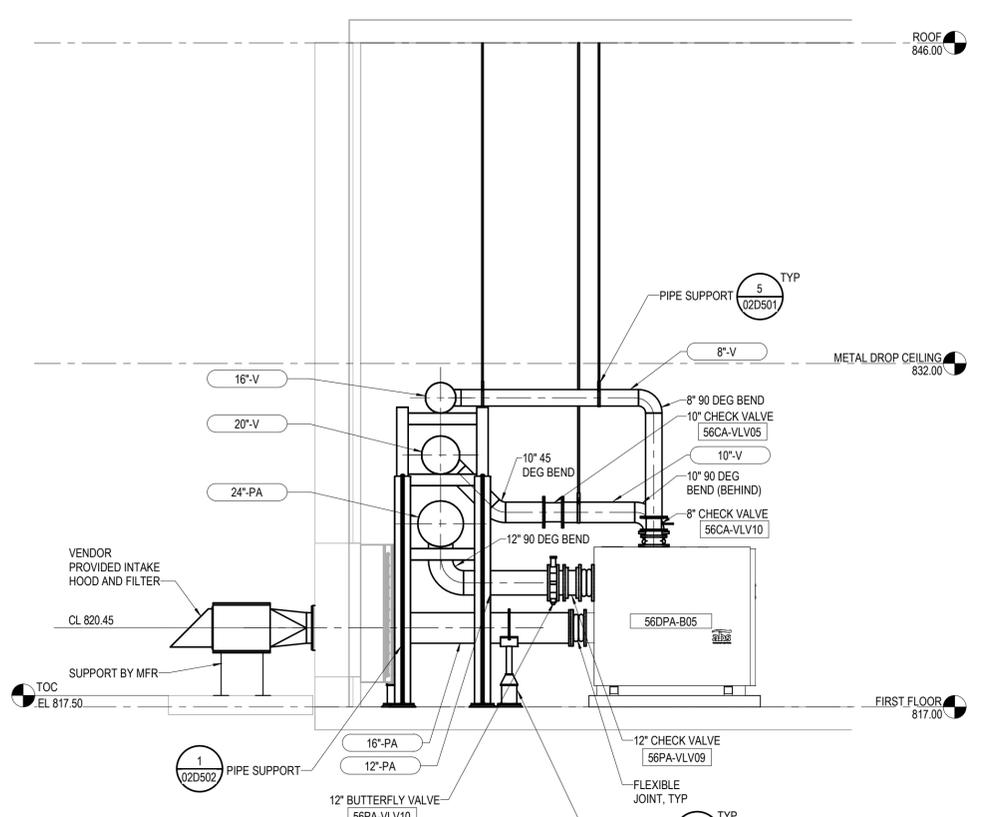
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2/18/2026 3:35:44 PM



**A SECTION**  
56D101 1/4" = 1'-0"



**B SECTION**  
56D101 1/4" = 1'-0"

- GENERAL NOTES**
- SEE SERIES 02 SHEETS FOR STANDARD DETAILS REFERENCED HEREIN.
  - BLOWER REQUIREMENTS MAY VARY BASED ON SELECTED EQUIPMENT MANUFACTURER. CONTRACTOR RESPONSIBLE FOR ALL VARIATIONS REQUIRED AS A RESULT OF EQUIPMENT SELECTION.
  - BLOWER LAYOUT AND DIMENSIONS ARE BASED ON SULZER CUTSHEETS AS THE SELECTED EQUIPMENT MANUFACTURER. CONTRACTOR TO COORDINATE FINAL DIMENSIONS WITH THE FINAL APPROVED EQUIPMENT SHOP DRAWINGS.
  - REFER TO PROCESS SPECIFICATIONS AND INSTRUMENTATION DIAGRAM FOR ITEMS INCLUDED IN EQUIPMENT MANUFACTURER SCOPE.
  - CONTRACTOR TO COORDINATE ALL ELEVATIONS AND DIMENSIONS WITH THE FINAL EQUIPMENT SUBMITTAL.
  - ALL PIPING NEEDS TO BE INSULATED. REFER TO SPECIFICATION 40 42 00 FOR INSULATION AND JACKETING REQUIREMENTS.
  - REFER TO SPECIFICATIONS FOR COMPLETE PIPE SUPPORT REQUIREMENTS.

**KEYNOTES** (#)



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MECHANICAL	KEVAN PRINDS
ELECTRICAL	CALEB DADY
I&C	KEITH BOYD
PROJECT NUMBER	10419293



**ST JOSEPH WPF DOMESTIC  
BLOWER REPLACEMENT**

**BLOWER BUILDING  
PROCESS SECTIONS - OPTION 1**

FILE NAME 10419293-56-U-BLOWER BUILDING  
SCALE 1/4" = 1'-0"  
0 1' 2'

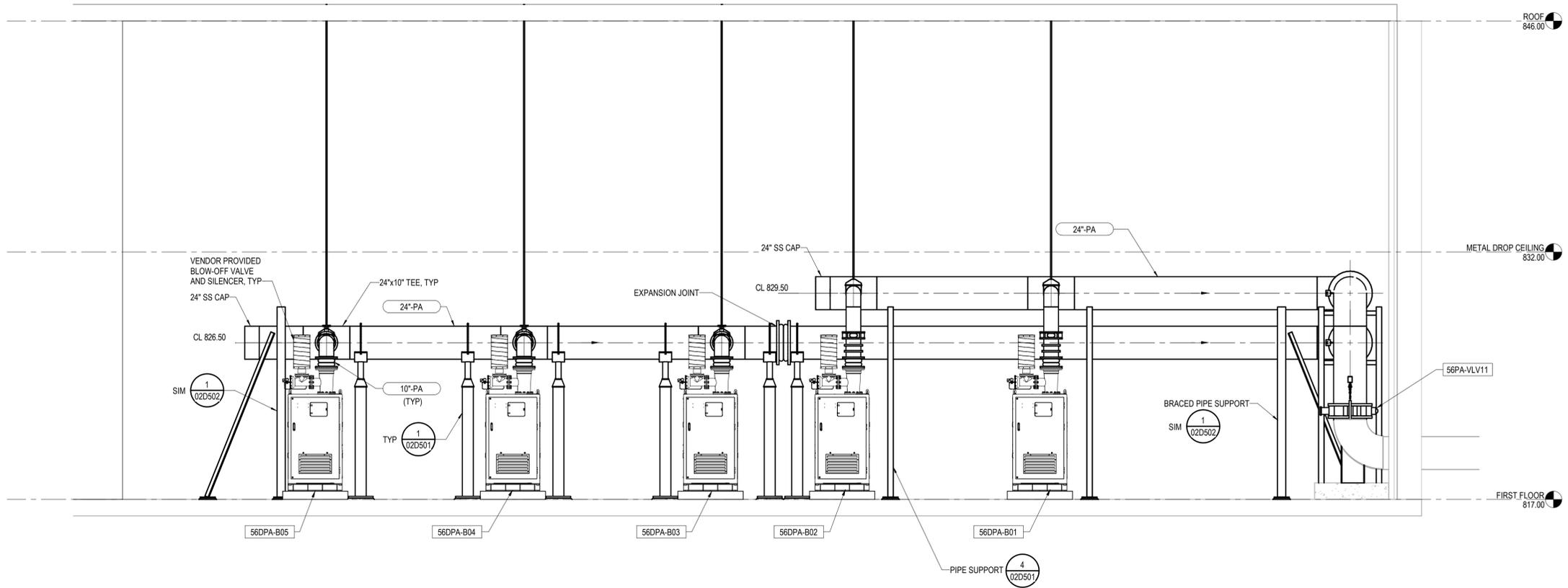
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**GENERAL NOTES**

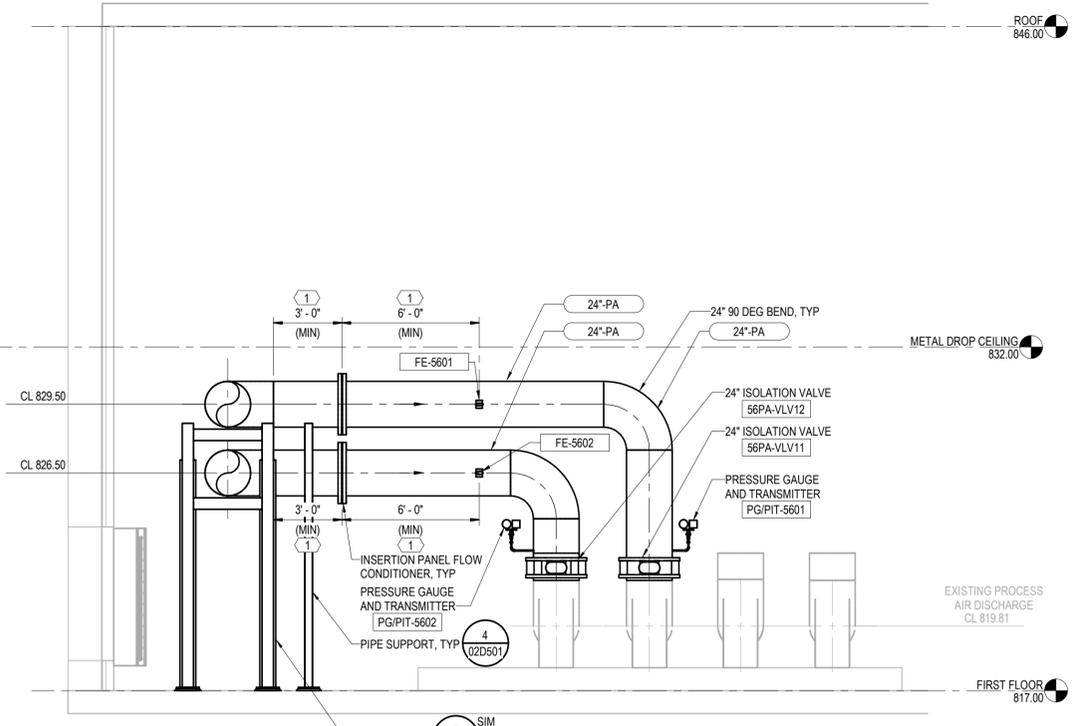
- SEE SERIES 02 SHEETS FOR STANDARD DETAILS REFERENCED HEREIN.
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- REFER TO PROCESS SPECIFICATIONS AND INSTRUMENTATION DIAGRAM FOR ITEMS INCLUDED IN EQUIPMENT MANUFACTURER SCOPE.
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- ALL PIPING NEEDS TO BE INSULATED. REFER TO SPECIFICATION 40 42 00 FOR INSULATION AND JACKETING REQUIREMENTS.
- REFER TO SPECIFICATIONS FOR COMPLETE PIPE SUPPORT REQUIREMENTS.

**KEYNOTES** (#)

- DISTANCE VARIES BY MANUFACTURER. CONTRACTOR TO COORDINATE WITH THE FLOW CONDITIONER SUPPLIER TO ENSURE THE MINIMUM UPSTREAM AND DOWNSTREAM STRAIGHT-RUN REQUIREMENTS ARE MAINTAINED.



**A SECTION**  
56D103 1/4" = 1'-0"



**B SECTION**  
56D103 1/4" = 1'-0"



ISSUE	DATE	DESCRIPTION
0	02/20/2026	ISSUED FOR CONSTRUCTION

PROJECT MANAGER	DEREK A. PATRICK
STRUCTURAL	DAVID WISEMAN
ARCHITECTURAL	ERICA BUTTMAN
PROCESS	KYLE SIMS
MECHANICAL	KEVAN PRINDS
ELECTRICAL	CALEB DADY
I&C	KEITH BOYD
PROJECT NUMBER	10419293



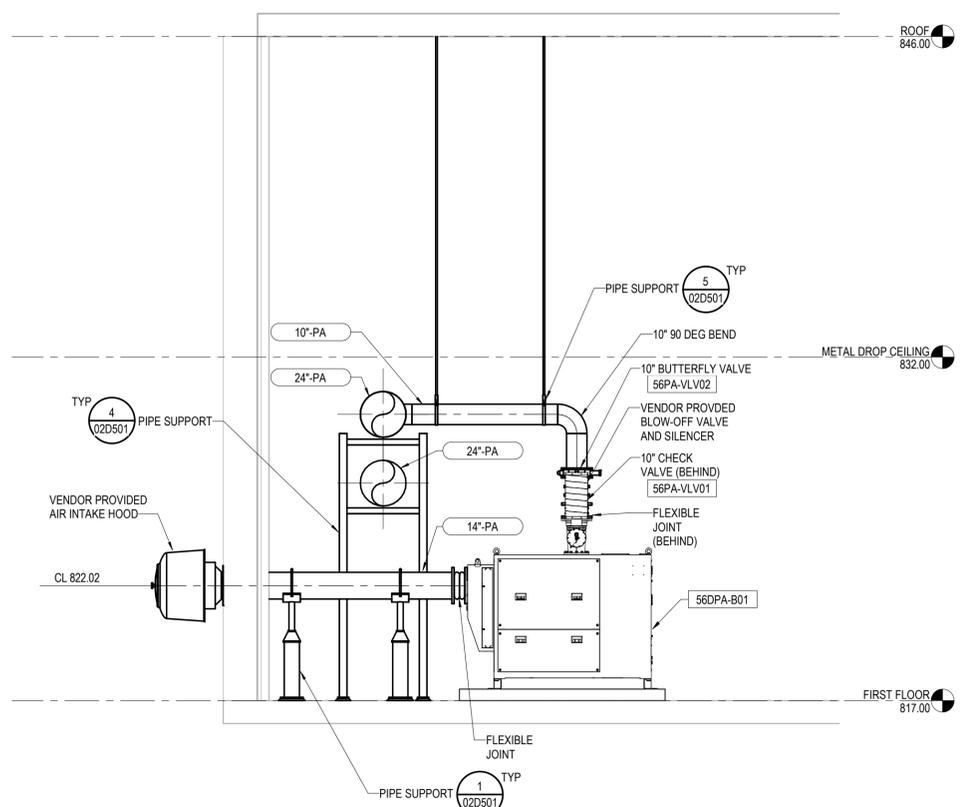
**ST JOSEPH WPF DOMESTIC BLOWER REPLACEMENT**

**BLOWER BUILDING PROCESS SECTION - OPTION 2**

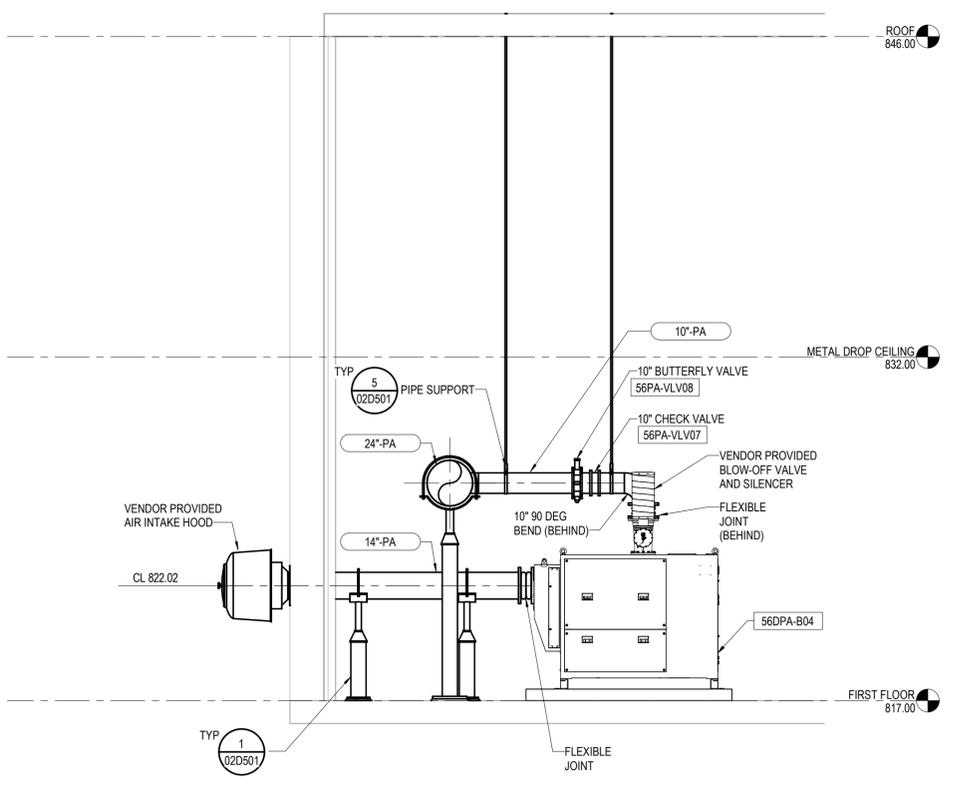
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SCALE 1/4" = 1'-0"  
0 1" 2"

SHEET  
**56D303**

Autodesk Docs/10419293\_St\_Joe\_Blower\_Replacement\_2024/10419293-56-U-BLOWER BUILDING.rvt 2/17/2026 1:02:28 PM



**A SECTION**  
56D103 1/4" = 1'-0"



**B SECTION**  
56D103 1/4" = 1'-0"

**GENERAL NOTES**

1. SEE SERIES 02 SHEETS FOR STANDARD DETAILS REFERENCED HEREIN.
2. BLOWER REQUIREMENTS MAY VARY BASED ON SELECTED EQUIPMENT MANUFACTURER. CONTRACTOR RESPONSIBLE FOR ALL VARIATIONS REQUIRED AS A RESULT OF EQUIPMENT SELECTION.
3. BLOWER LAYOUT AND DIMENSIONS ARE BASED ON SULZER CUTSHEETS AS THE SELECTED EQUIPMENT MANUFACTURER. CONTRACTOR TO COORDINATE FINAL DIMENSIONS WITH THE FINAL APPROVED EQUIPMENT SHOP DRAWINGS.
4. REFER TO PROCESS SPECIFICATIONS AND INSTRUMENTATION DIAGRAM FOR ITEMS INCLUDED IN EQUIPMENT MANUFACTURER SCOPE.
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6. ALL PIPING NEEDS TO BE INSULATED. REFER TO SPECIFICATION 40 42 00 FOR INSULATION AND JACKETING REQUIREMENTS.
7. REFER TO SPECIFICATIONS FOR COMPLETE PIPE SUPPORT REQUIREMENTS.

**KEYNOTES** (#)

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ISSUE	DATE	DESCRIPTION
0	02/20/2026	ISSUED FOR CONSTRUCTION

PROJECT MANAGER	DEREK A. PATRICK
STRUCTURAL	DAVID WISEMAN
ARCHITECTURAL	ERICA BUTTMAN
PROCESS	KYLE SIMS
MECHANICAL	KEVAN PRINDS
ELECTRICAL	CALEB DADY
I&C	KEITH BOYD
PROJECT NUMBER	10419293

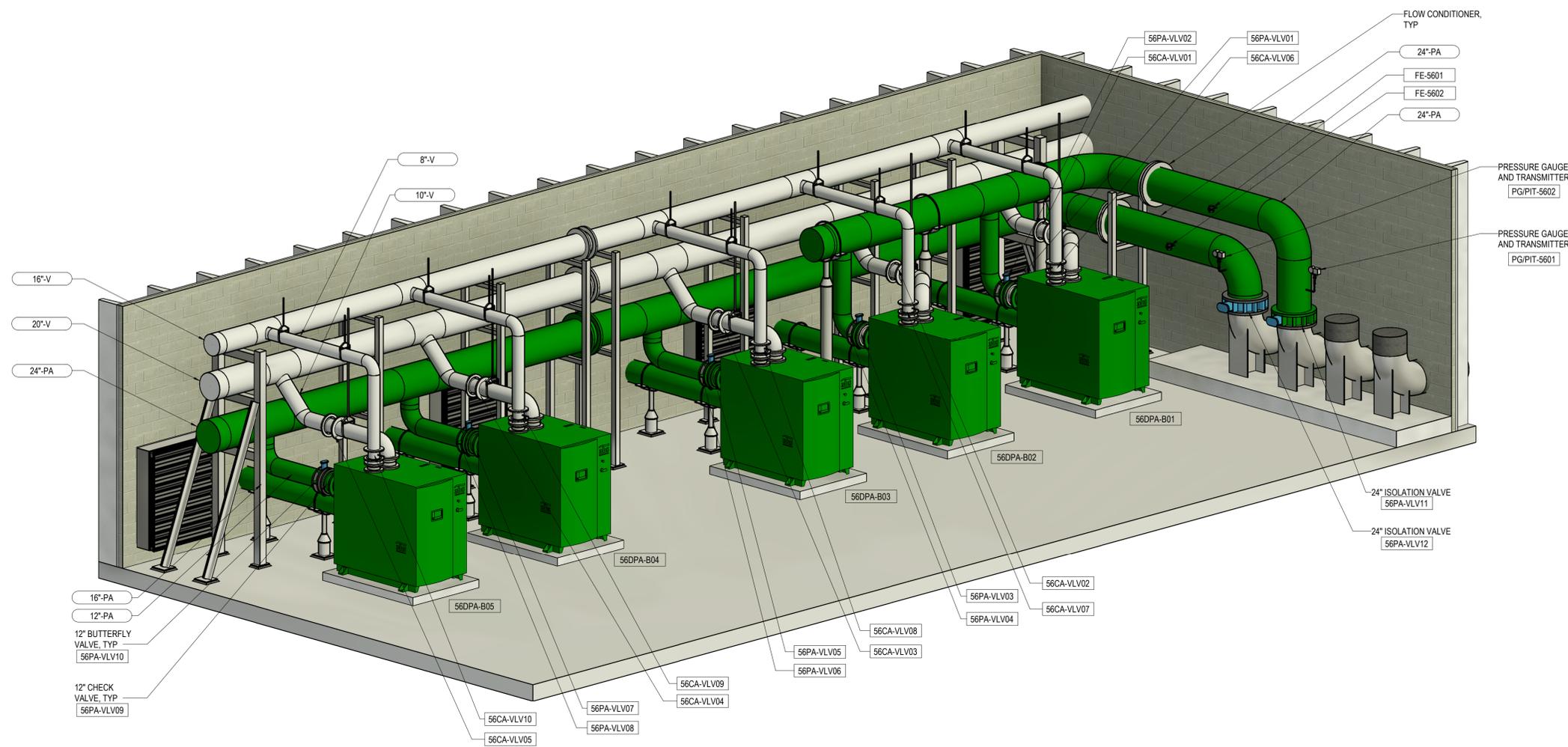


**ST JOSEPH WPF DOMESTIC BLOWER REPLACEMENT**

**BLOWER BUILDING PROCESS SECTION - OPTION 2**

FILE NAME 10419293-56-U-BLOWER BUILDING  
SCALE 1/4" = 1'-0"  
0 1' 2'

SHEET  
**56D304**



PIPING ISOMETRIC

**GENERAL NOTES**

- PERSPECTIVE DRAWING IS FOR REFERENCE ONLY. FINAL CONSTRUCTION, FACILITY LAYOUT, ETC. TO COMPLY WITH FINAL APPROVED SHOP DRAWINGS AND APPLICABLE SPECIFICATIONS.

**KEYNOTES** (#)

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3500 759 HIGHWAY, ST. JOSEPH, MO  
KANSAS CITY, MO 64131

ISSUE	DATE	DESCRIPTION
0	02/20/2026	ISSUED FOR CONSTRUCTION

PROJECT MANAGER	DEREK A. PATRICK
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ELECTRICAL	CALEB DADY
I&C	KEITH BOYD

PROJECT NUMBER 10419293



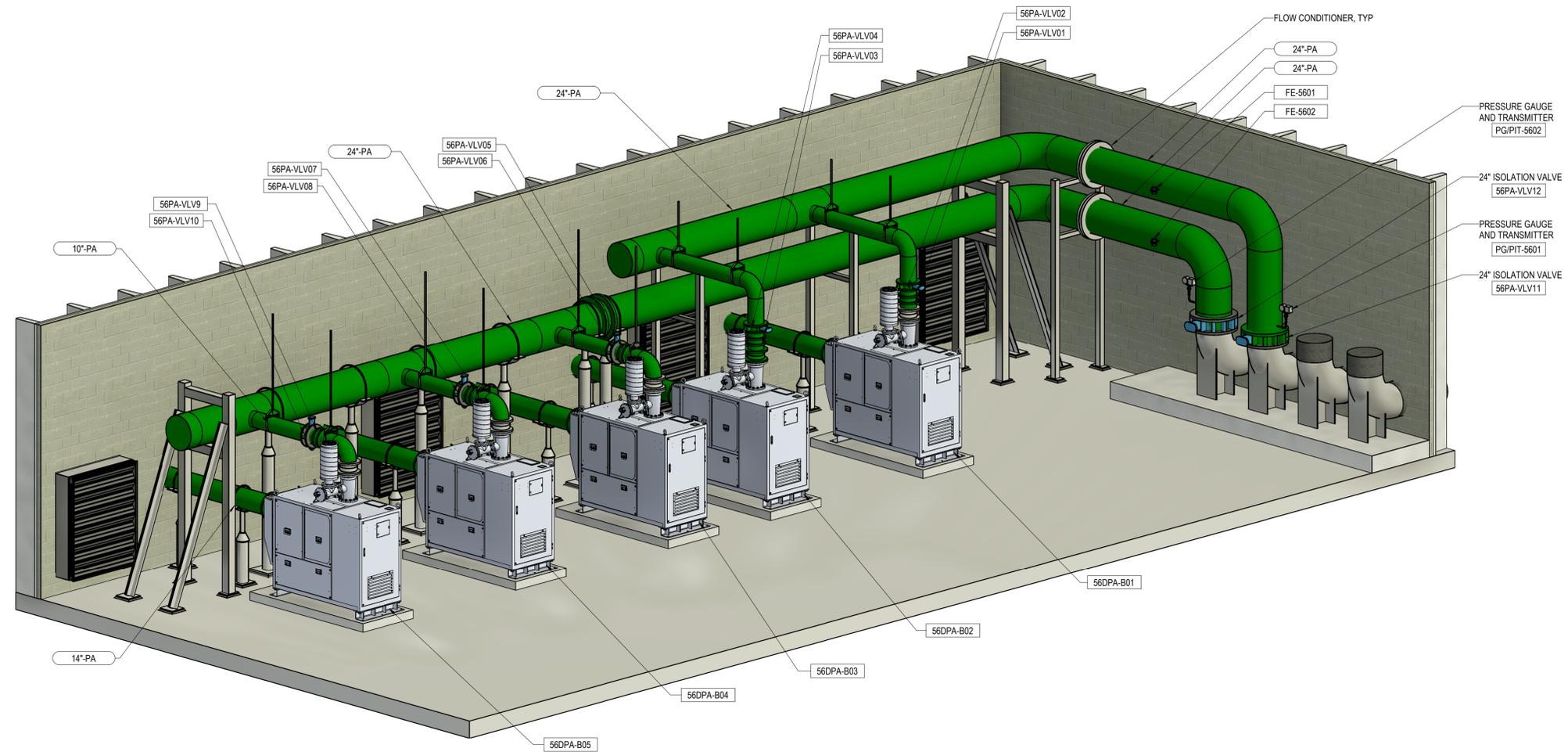
**ST JOSEPH WPF DOMESTIC BLOWER REPLACEMENT**

**BLOWER BUILDING PIPING ISOMETRIC - OPTION 1**

FILE NAME 10419293-56-U-BLOWER BUILDING  
SCALE



SHEET  
**56D701**



PIPING ISOMETRIC

**GENERAL NOTES**

1. PERSPECTIVE DRAWING IS FOR REFERENCE ONLY. FINAL CONSTRUCTION, FACILITY LAYOUT, ETC. TO COMPLY WITH FINAL APPROVED SHOP DRAWINGS AND APPLICABLE SPECIFICATIONS.

**KEYNOTES** ##

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3500 759 HIGHWAY, ST. JOSEPH, MO  
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PROCESS	KYLE SIMS
MECHANICAL	KEVAN PRINDS
ELECTRICAL	CALEB DADY
I&C	KEITH BOYD

PROJECT NUMBER 10419293



**ST JOSEPH WPF DOMESTIC  
BLOWER REPLACEMENT**

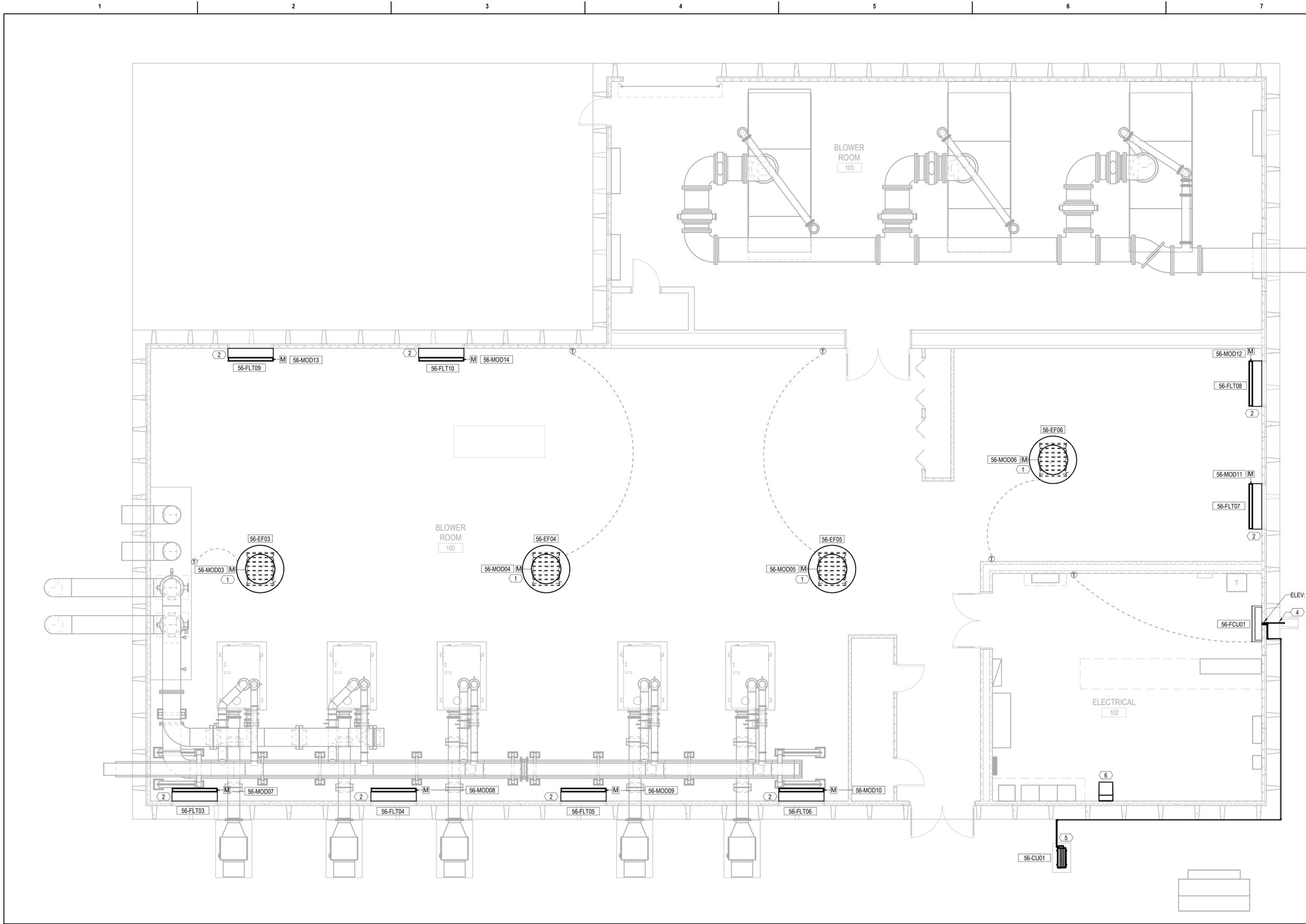
**BLOWER BUILDING  
PIPING ISOMETRIC - OPTION 2**

FILE NAME 10419293-56-U-BLOWER BUILDING  
SCALE



SHEET  
**56D702**

Autodesk Docs // 10419293\_St\_Joe\_Blower\_Replacement\_2024/10419293-56-U-BLOWER BUILDING.rvt  
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**GENERAL NOTES**

- 1 THERMOSTATS SHALL BE MOUNTED AT 42" AFF MEASURED FROM TOP OF THERMOSTAT. COORDINATE MOUNTING HEIGHT WITH ADJACENT ELECTRICAL EQUIPMENT.

**KEYNOTES ##**

1. MOUNT 44 X36 CONTROL DAMPER ON SURFACE OF STRUCTURE AND PROVIDE BIRDSCREEN AT INTAKE. REFERENCE DETAIL 1/02M602.
2. FILTER FRAME AND MERV 8 FILTERS TO BE PROVIDED BETWEEN INTAKE LOUVER AND CONTROL DAMPER.
3. USE EXISTING WALL PENETRATION FOR FCU PIPING OUT TO THE EXTERIOR.
4. ROUTE 3/4" CD TO SPLASH BLOCK OUTSIDE BUILDING.
5. ROUTE REF PIPING ACCORDING TO MANUFACTURER'S REQUIREMENTS.
6. RELOCATE EXISTING UNIT HEATER TO THE FOLLOWING LOCATION.

**EXHAUST FANS**

SEQUENCE OF OPERATION (ON-OFF-AUTO CONTROL):  
BY TURNING THEIR MCC-MOUNTED MOTOR STARTER SWITCH TO THE "ON" POSITION, EXHAUST FANS' INTERLOCKED MOTORIZED CONTROL DAMPERS SHALL BE COMMANDED OPEN AND PROVEN OPEN, AND THE FAN SHALL BE ENERGIZED.

BY TURNING THEIR MCC-MOUNTED MOTOR STARTER SWITCH TO THE "AUTO" POSITION, EXHAUST FANS' INTERLOCKED MOTORIZED CONTROL DAMPERS SHALL BE COMMANDED OPEN AND PROVEN OPEN, AND THE FAN SHALL BE ENERGIZED WHEN CALLED FOR BY THE INTERLOCKED THERMOSTAT. WHEN THE INTERLOCKED THERMOSTAT IS SATISFIED, THE EXHAUST FAN SHALL BE DE-ENERGIZED, THE MOTORIZED CONTROL DAMPERS SHALL BE COMMANDED CLOSED, AND THE FAN SHALL BE DE-ENERGIZED.

BY TURNING THEIR MCC-MOUNTED MOTOR STARTER SWITCH TO THE "OFF" POSITION, THE EXHAUST FAN SHALL BE DE-ENERGIZED, THE MOTORIZED CONTROL DAMPERS SHALL BE COMMANDED CLOSED, AND THE FAN SHALL BE DE-ENERGIZED.

TAG	THERMOSTAT	CONTROL DAMPERS
56-EF03	T-56EF03	56-MOD03, 56-MOD11, 56-MOD12
56-EF04	T-56EF04	56-MOD04, 56-MOD09, 56-MOD10
56-EF05	T-56EF05	56-MOD05, 56-MOD07, 56-MOD08
56-EF06	T-56EF06	56-MOD06, 56-MOD13, 56-MOD14

**MINI-SPLIT SYSTEM**  
SEQUENCE OF OPERATION:  
AIR CONDITIONER 56-FCU01 SHALL BE CONTROLLED BY ITS MANUFACTURER-PROVIDED CONTROL PANEL, MOUNTED INSIDE THE ELECTRICAL ROOM.



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ELECTRICAL	CALEB DADY
I&C	KEITH BOYD
PROJECT NUMBER	10419293



**ST JOSEPH WPF DOMESTIC  
BLOWER REPLACEMENT**

**BLOWER BUILDING  
HVAC PLAN**

FILE NAME 10419293-56-U-BLOWER BUILDING  
SCALE 3/16" = 1'-0"  
0 1" 2"

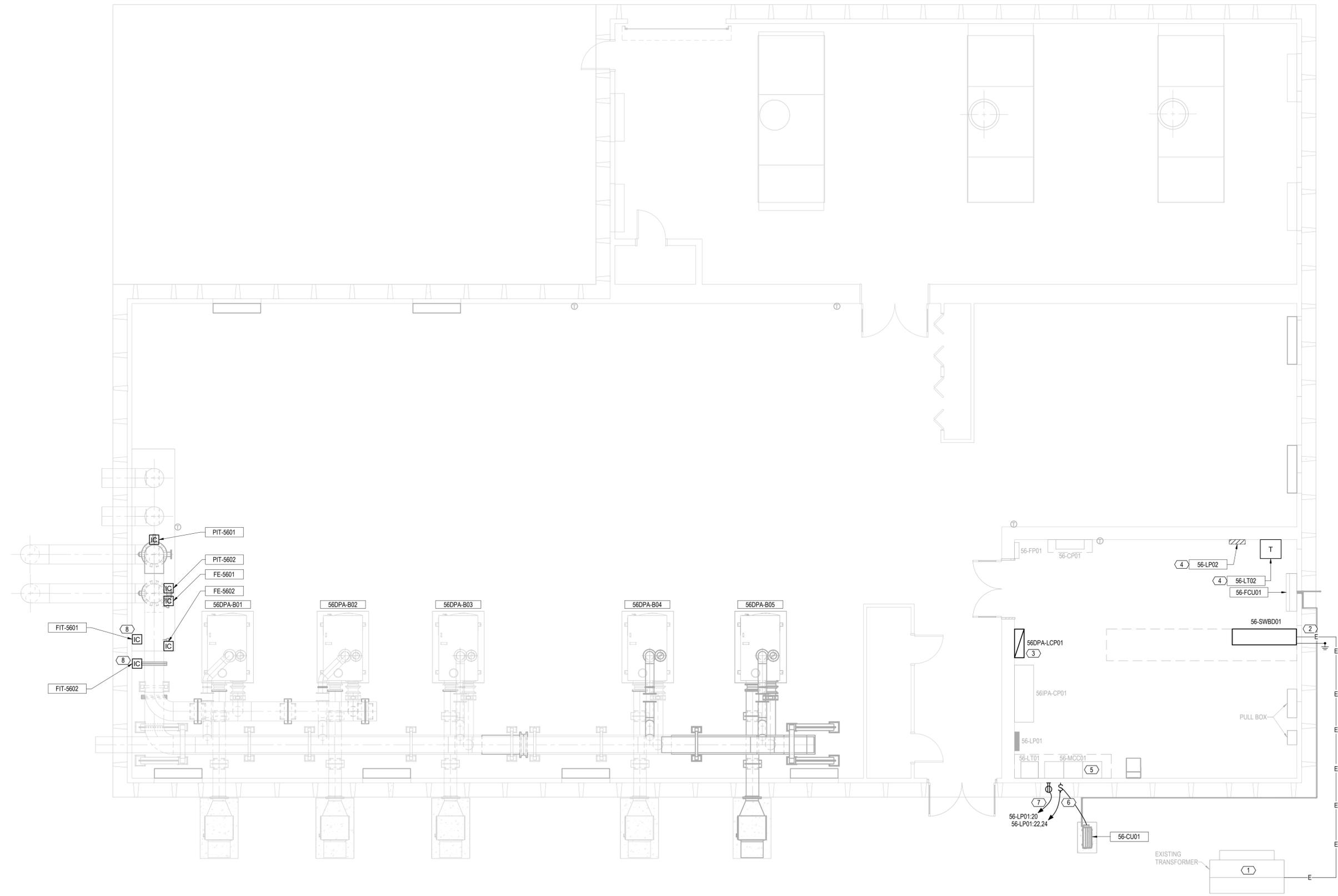
SHEET  
**56M101**

**GENERAL NOTES**

1. CONDUITS INSIDE OF BLOWER BUILDING SHALL BE ROUTED OVERHEAD AND INSTALLED SO AS TO NOT IMPEDE EQUIPMENT REMOVAL OR MAINTENANCE.
2. SEE 56M101 FOR LOCATIONS OF ROOF MOUNTED EXHAUST FANS, DAMPERS, AND THERMOSTATS. EXHAUST FANS AND POWERED DAMPERS SHALL HAVE SAFETY SWITCHES RATED FOR THE EQUIPMENT MOUNTED ON OR NEAR THE EQUIPMENT IN AN ACCESSIBLE LOCATION. COORDINATE REQUIREMENTS FOR CONDUITS AND WIRING WITH 56E601.
3. LAYOUT SHOWN ON ELECTRICAL DRAWING IS FOR SULZER BLOWERS. IF OTHER MANUFACTURER IS SELECTED, DRAWINGS WILL BE COORDINATED. BLOWERS SHALL HAVE DISCONNECTS MOUNTED ON OR AS PART OF THE ENCLOSURE.
4. FINAL INSTRUMENT LOCATIONS TO BE DETERMINED BY PIPE ROUTING AND REQUIRED UPSTREAM AND DOWNSTREAM LENGTHS.
5. SEE 56E601 FOR POWER ONE-LINE DRAWING.
6. SEE DETAIL 3/02E501 FOR PRESSURE INSTRUMENTATION.

**KEYNOTES (#)**

1. EXISTING EVERGY TRANSFORMER. COORDINATE WITH EVERGY AND PLANT STAFF FOR SHUTDOWN, DEMO OF EXISTING CONDUITS AND CIRCUIT, AND INSTALLATION AND TERMINATION OF NEW CONDUITS AND CIRCUIT. SEE 56E601 FOR QUANTITY OF CIRCUIT AND CONDUIT SIZES.
2. CONDUIT TO TURN VERTICAL AND MOUNT ON EXTERIOR OF BUILDING, PENETRATE WALL ABOVE SWITCHBOARD. COORDINATE WITH SPECIFICATION 01 73 20 AND DETAIL 1/02E501. PROVIDE NEMA 4X PULL BOX IF REQUIRED FOR BENDING RADIUS. PROVIDE INFORMATION ON WHAT WILL BE INSTALLED PRIOR TO INSTALLATION FOR APPROVAL.
3. RELOCATE ELECTRIC HEATER TO AREA NOT ABOVE NEW PANEL OR IN CONFLICT WITH CONDUITS. SEE 56M101 FOR LOCATION. INSTALL NEW CONDUIT AND CIRCUIT FROM 56-LP02.
4. FINAL LOCATION OF PANELBOARD AND TRANSFORMER MAY NEED TO BE ADJUSTED WITH CONSTRUCTION SEQUENCE. COORDINATE WITH ENGINEER AND PLANT STAFF PRIOR TO RELOCATING.
5. INSTALL NEW COMPARTMENTS IN 56-MCC01 FOR EXHAUST FANS. SEE 56E601.
6. PROVIDE WEATHERPROOF AND LOCKABLE COVER FOR RATED SWITCH. COORDINATE WITH SELECTED MANUFACTURER EQUIPMENT FOR ANY ADDITIONAL REQUIREMENTS.
7. WEATHERPROOF WITH IN USE COVER AND GFCI RECEPTACLE.
8. MOUNT FLOW METER TRANSMITTERS WITH DISPLAY BELOW PIPE.



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MISSOURI CERTIFICATE OF AUTHORITY #000856  
3800 759 HIGHWAY, ST. JOSEPH, MO  
KANSAS CITY, MO 64131

ISSUE	DATE	DESCRIPTION
0	02/20/2026	ISSUED FOR CONSTRUCTION

PROJECT MANAGER	DEREK A. PATRICK
STRUCTURAL	DAVID WISEMAN
ARCHITECTURAL	ERICA BUTTMAN
PROCESS	KYLE SIMS
MECHANICAL	KEVAN PRINDS
ELECTRICAL	CALEB DADY
I&C	KEITH BOYD
PROJECT NUMBER	10419293



**ST JOSEPH WPF DOMESTIC BLOWER REPLACEMENT**

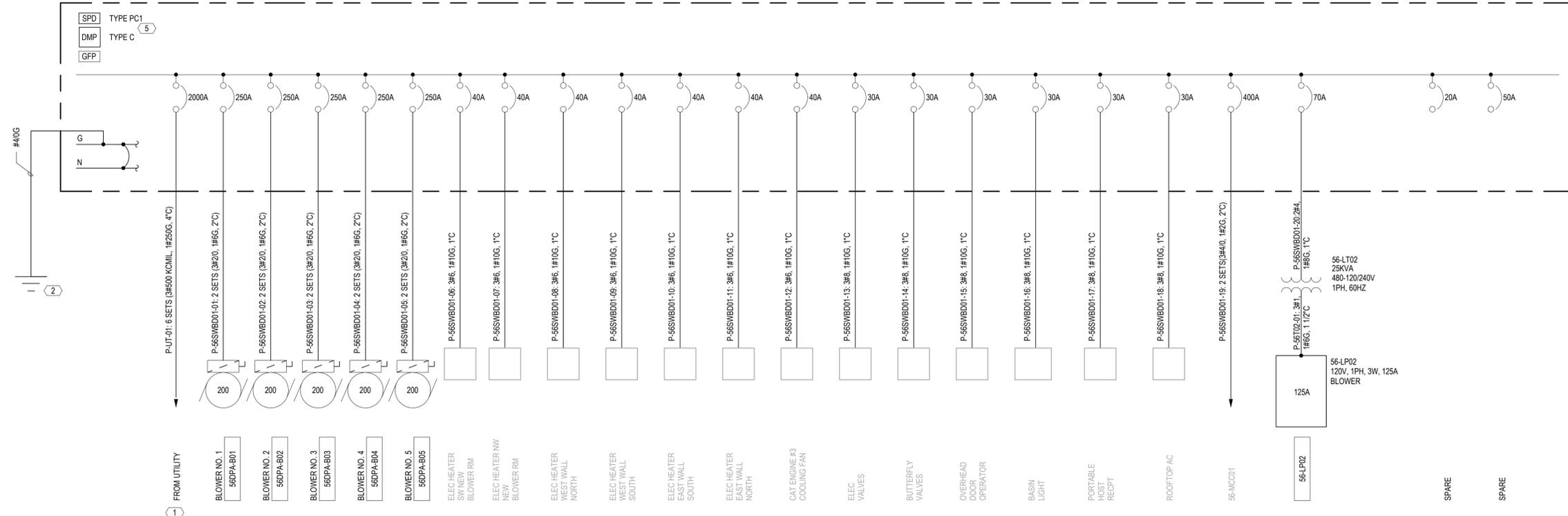
**BLOWER BUILDING ELECTRICAL POWER PLAN**

FILE NAME 10419293-56-U-BLOWER BUILDING  
SCALE 3/16" = 1'-0"

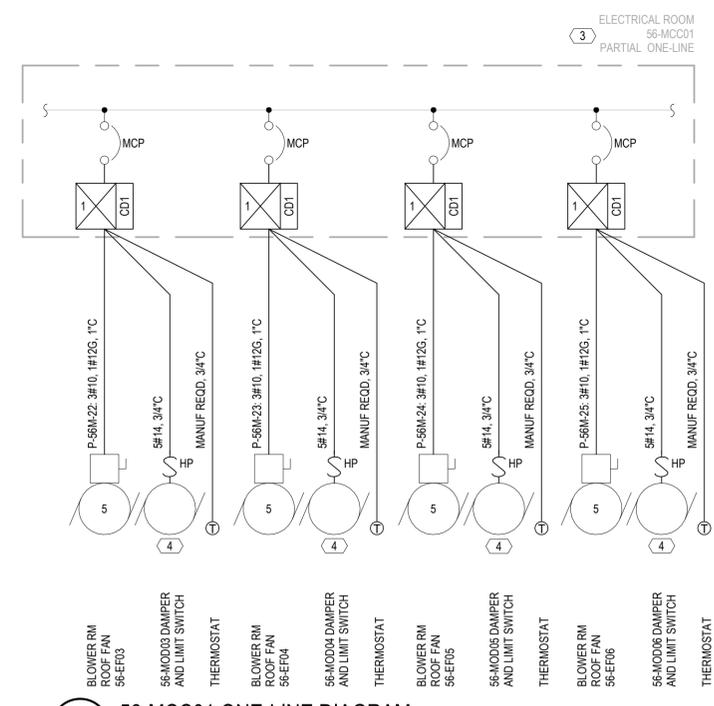


SHEET  
**56E101**

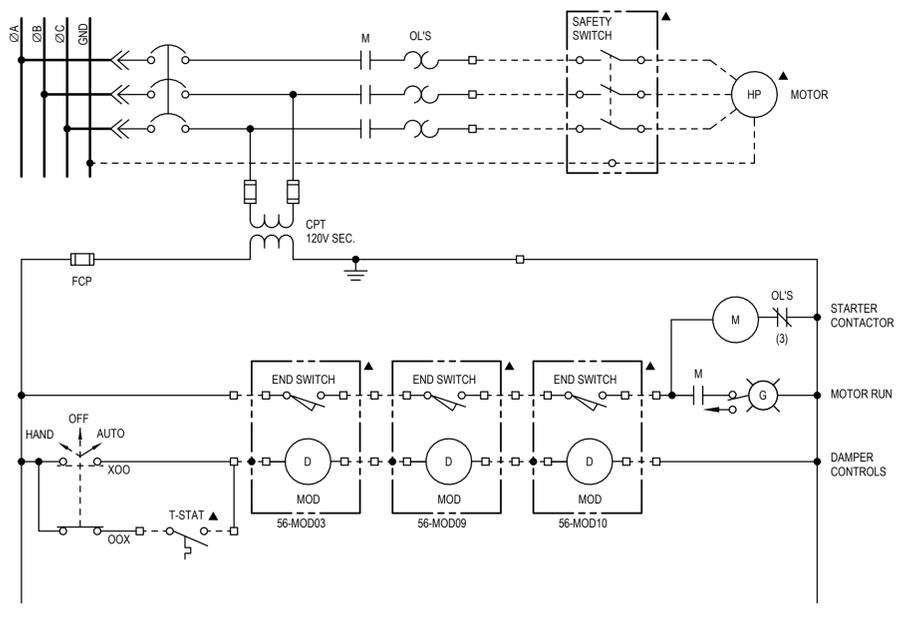
BLOWER ELEC ROOM  
56-SWBD01  
480V, 3PH, 3W, 2000A



**1** 56-SWBD01 ONE-LINE DIAGRAM  
NOT TO SCALE



**2** 56-MCC01 ONE-LINE DIAGRAM  
NOT TO SCALE



**3** CONTROL WIRING DIAGRAM CD1  
NOT TO SCALE  
56-EF03 SHOWN, SIMILAR FOR: 56-EF04, 05, 06  
SEE 56M101 FOR SEQUENCE OF OPERATIONS FOR OTHER EXHAUST FANS AND DAMPERS

**GENERAL NOTES**

- COORDINATE ALL OUTGAGES WITH PLANT STAFF AND EVERGY AS REQUIRED.
- SWITCHBOARD SHALL BE SERVICE ENTRANCE RATED.
- SWITCHBOARD MUST FIT IN AVAILABLE SPACE. SEE 56E101
- BLOWER PACKAGE IS BASED ON SULZER AS THE SELECTED EQUIPMENT MANUFACTURER. CONTRACTOR RESPONSIBLE FOR COORDINATION OF FINAL APPROVED EQUIPMENT.
- CONTRACTOR TO COORDINATE REMOVAL OF ANY LOADS OR EQUIPMENT THAT DO NOT EXIST OR DO NOT NEED TO BE REFEED WITH PLANT STAFF AND ENGINEER.

**KEYNOTES**

- COORDINATE WITH EVERGY AND PLANT STAFF FOR SHUTDOWN, DEMO OF EXISTING CONDUITS AND CIRCUIT, AND INSTALLATION AND TERMINATION OF NEW CONDUITS AND CIRCUIT.
- CONNECT TO NEW GROUND ROD IN LOCATION TO BE DETERMINED BY CONTRACTOR AND CONNECT TO EXISTING BUILDING GROUND IF LOCATED.
- 56-MCC01 IS SCHNEIDER ELECTRIC/SQUARE D MODEL 6. PROVIDE COMPATIBLE MOTOR STARTER COMPARTMENTS IN VERTICAL SECTION 1. NEW COMPARTMENTS SHALL BE 6 OR 12 IN HIGH. SEE WIRING DIAGRAM.
- ONE DAMPER SHOWN. WIRE TO OTHERS AS SHOWN ON WIRING DIAGRAM AND AS REQUIRED BY PROVIDED EQUIPMENT.
- SEE 56Y601 FOR CONTROL CIRCUITS.

- ▲ DENOTES FIELD DEVICE.
- DENOTES FIELD WIRING.

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ARCHITECTURAL	ERICA BUTTMAN
PROCESS	KYLE SIMS
MECHANICAL	KEVAN PRINDS
ELECTRICAL	CALEB DADY
I&C	KEITH BOYD
PROJECT NUMBER	10419293



**ST JOSEPH WPF DOMESTIC  
BLOWER REPLACEMENT**

**BLOWER BUILDING  
ELECTRICAL ONE-LINE DIAGRAM**

FILE NAME 10419293-56-U-BLOWER BUILDING  
SCALE NONE



SHEET  
**56E601**

GENERAL NOTES

- 1. SEE SHEET 00G006 FOR ELECTRICAL LEGEND AND GENERAL NOTES.
- 2. BLOWER PACKAGE IS BASED ON SULZER AS THE SELECTED EQUIPMENT MANUFACTURER. CONTRACTOR RESPONSIBLE FOR COORDINATION OF FINAL APPROVED EQUIPMENT.
- 3. INTERCEPT AND REFEED EXISTING CIRCUITS THAT ARE TO REMAIN. COORDINATE WITH PLANT STAFF AND DEMO WORK FOR ANY ADDITIONAL CIRCUITS THAT ARE TO BE REMOVED.

BRANCH PANEL: 56-LP01

LOCATION: ELECTRICAL ROOM      VOLTS: 240/120      A.I.C. RATING: 10 KA  
 SUPPLY FROM: 56-LT01      PHASE: 1      MAINS TYPE: MCB  
 MOUNTING: SURFACE      WIRE: 3+GND      MAINS RATING: 100 A  
 ENCLOSURE: NEMA 1      INTEGRAL SPD: NO      SERVICE ENTRANCE LABEL: NO

CKT NO.	DESCRIPTION	CONNECTED LOAD (VA)				OCF		CONNECTED LOAD (VA)				DESCRIPTION	CKT NO.
		LTS	REC	MECH	MISC	AMPS	P	LTS	REC	MECH	MISC		
1	IAB 1 LIGHTS & PLUGS					20	1	A	20	1		56-CP01	2
3	AIR BLAST EFFLUENT					20	1	B	20			IAB 3 LIGHTS	4
5	IAB 2 PLUGS					20	2	A	20			IAB 3 PLUGS	6
7	IAB 2 LIGHTS					20		B	20			BLOWER 13,14,15 OIL C.H.T.	8
9	(UNKNOWN - BKR ON)					20		A	20			METER CABINET HEATER	10
11	SPARE					20		B	20			SPARE	12
13	SPARE					20		A	20			SPARE	14
15	SPARE					20		B	20			SPARE	16
17	SPARE					20		A	20			SPARE	18
19	SPARE					20		B	20			RECEPTACLE (NEAR AC UNIT)	20
21	SPARE							A		20	1	56-CU/FCU01 (SPLIT AC UNIT)	22
23	SPACE							B					24
25	SPACE							A				SPACE	26
27	SPACE							B				SPACE	28
29	SPACE							A				SPACE	30
31	SPACE							B				SPACE	32
33	SPACE							A				SPACE	34
35	SPACE							B				SPACE	36
37	SPACE							A				SPACE	38
39	SPACE							B				SPACE	40
41	SPACE							A				SPACE	42
43								B					44
45								A					46
47	SURGELOGIC							B				SPD	48
49								A					50
51								B					52
53								A					54

LOAD SUMMARY							PHASE BALANCE		
CONNECTED LOAD (KVA)	LTS	REC	MECH	MISC	SPARE	TOTAL	240	LINE-TO-LINE VOLTS	PHASE A (KVA)
0.0	0.0	0.0	0.0	0.0	---	0.0	240	LINE-TO-LINE VOLTS	PHASE A (KVA)
1.25	NEC	1.00	1.00	20%	---	---	0	CONNECTED AMPS	PHASE B (KVA)
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	DESIGN AMPS	

BRANCH PANEL: 56-LP02

LOCATION: ELECTRICAL ROOM      VOLTS: 240/120      A.I.C. RATING: 10 KA  
 SUPPLY FROM: 56-LT02      PHASE: 1      MAINS TYPE: MCB  
 MOUNTING: SURFACE      WIRE: 3+GND      MAINS RATING: 100 A  
 ENCLOSURE: NEMA 1      INTEGRAL SPD: NO      SERVICE ENTRANCE LABEL: NO

CKT NO.	DESCRIPTION	CONNECTED LOAD (VA)				OCF		CONNECTED LOAD (VA)				DESCRIPTION	CKT NO.
		LTS	REC	MECH	MISC	AMPS	P	LTS	REC	MECH	MISC		
1	LIGHTING GROUP #1 - BLOWER ROOM					20	1	A	20	1		LIGHTING GROUP #5 - BLOWER ROOM	2
3	LIGHTING GROUP #2 - BLOWER ROOM					20	1	B	20	1		LIGHTING GROUP #3 - BLOWER ROOM	4
5	LIGHTS - ELECTRICAL ROOM					20	2	A	20	1		LIGHTING GROUP #4 - BLOWER ROOM	6
7	LIGHTING GROUP #1 - ENGINE ROOM					20	1	B	20	1		PLUGS - WEST WALL BY BLOWERS 6 & 7 - ENGINE ROOM	8
9	LIGHTING GROUP #2 - ENGINE ROOM					20	1	A	20	1		PLUGS - WEST WALL ENGINE ROOM & NORTHEAST WALL	10
11	LIGHTING GROUP #3 - ENGINE ROOM					20	1	B	20	1		PLUGS - BLOWER ROOM WEST & SOUTH WALL	12
13	PLUGS - ELECTRICAL ROOM & WEST WALL OF ELECTRICAL ROOM					20	1	A	20	1		PLUGS - ENGINE ROOM SOUTH & DOCK LIGHTS	14
15	LIGHTS, FRONT ENTRANCE - PLUGS, UTILITY AREA					20	1	B	20	1		DAMPERS - INTERLOCKED THRU EXHAUST FAN #2	16
17	DAMPERS - INTERLOCKED THRU EXHAUST FAN #1					20	1	A	20	1		750 56DPA-LCP01	18
19	BATHROOM & JANITOR CLOSET LIGHTS & FAN					20	1	B	20	1		BREAKER ON	20
21	HOT WATER HEATER					20	1	A	20	1		PLUGS - BLOWER ROOM EAST & SOUTH WALL	22
23	56PA-B01					500	20	1	B	20	1	500 56PA-B04	24
25	56PA-B02					500	20	1	A	20	1	500 56PA-B05	26
27	56PA-B03					500	20	1	B	20	1	DAMPERS - INTERLOCKED THRU EXHAUST FAN #4	28
29	WALL AC					20	2	A	20	1		GE PROGRAM CONTROLLER	30
31								B	20	1		OUTSIDE LIGHT NE	32
33	BUTTERFLY VALVES					20	1	A	20	1		HEATER - ELEC ROOM	34
35	CON. POWER AAF6/BLOWER INTERLOCK SYS.					20	1	B	20	1			36
37	FIT-5601					100	20	1	A	20	1	SPARE	38
39	FIT-5602					100	20	1	B	20	1	SPARE	40
41	SPARE					20	1	A	20	1		SPARE	42

LOAD SUMMARY							PHASE BALANCE		
CONNECTED LOAD (KVA)	LTS	REC	MECH	MISC	SPARE	TOTAL	240	LINE-TO-LINE VOLTS	PHASE A (KVA)
0.0	0.0	0.0	0.0	3.5	---	3.5	240	LINE-TO-LINE VOLTS	PHASE A (KVA)
1.25	NEC	1.00	1.00	20%	---	---	14	CONNECTED AMPS	PHASE B (KVA)
0.0	0.0	0.0	0.0	3.5	0.7	4.1	17	DESIGN AMPS	

KEYNOTES

- 1. NEW CONDUIT AND CIRCUIT TO RELOCATED ELECTRIC HEATER.

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PROJECT MANAGER	DEREK A. PATRICK
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I&C	KEITH BOYD
PROJECT NUMBER	10419293

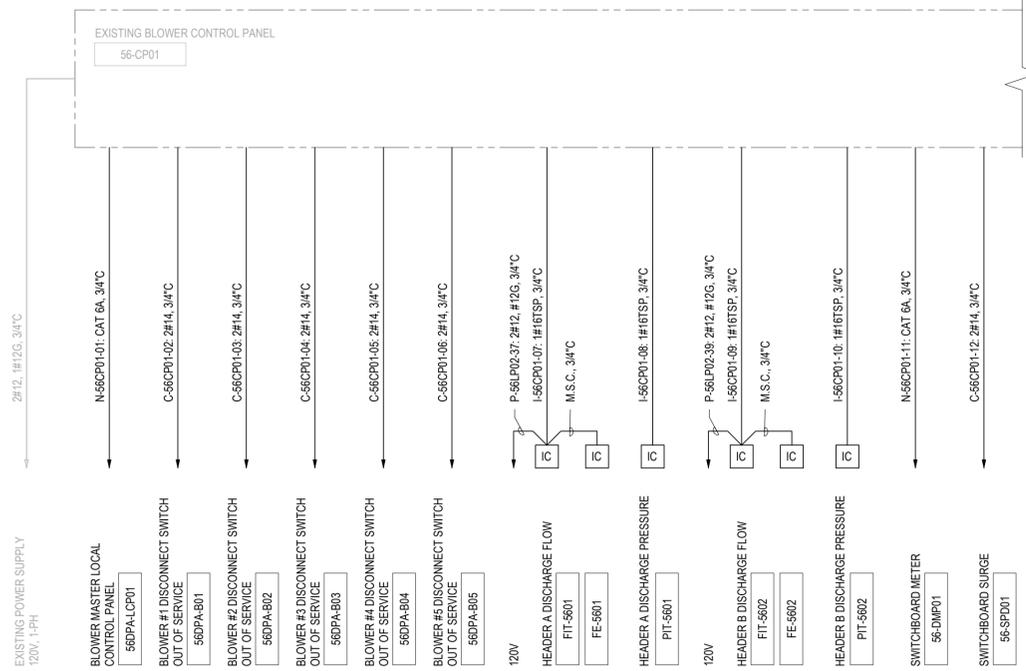


ST JOSEPH WPF DOMESTIC BLOWER REPLACEMENT

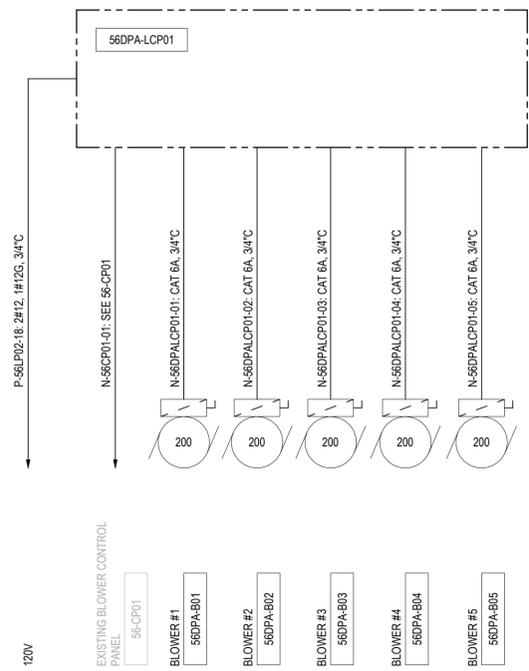
BLOWER BUILDING ELECTRICAL SCHEDULES

FILE NAME 10419293-56-U-BLOWER BUILDING  
 SCALE NONE

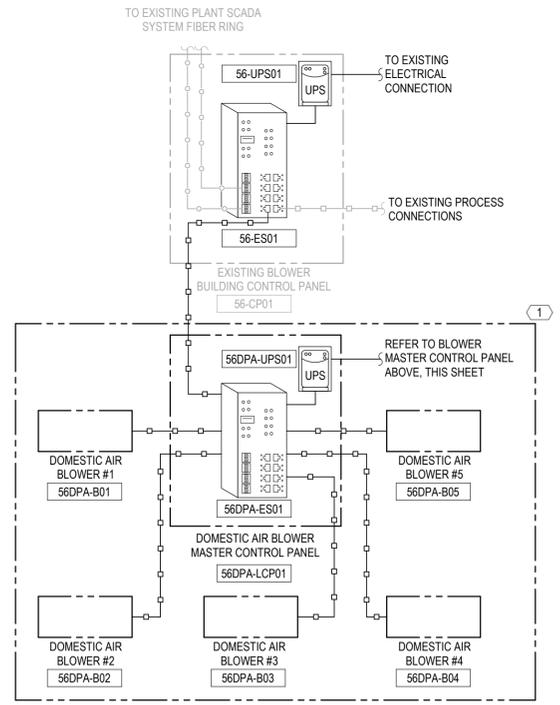
SHEET 56E651



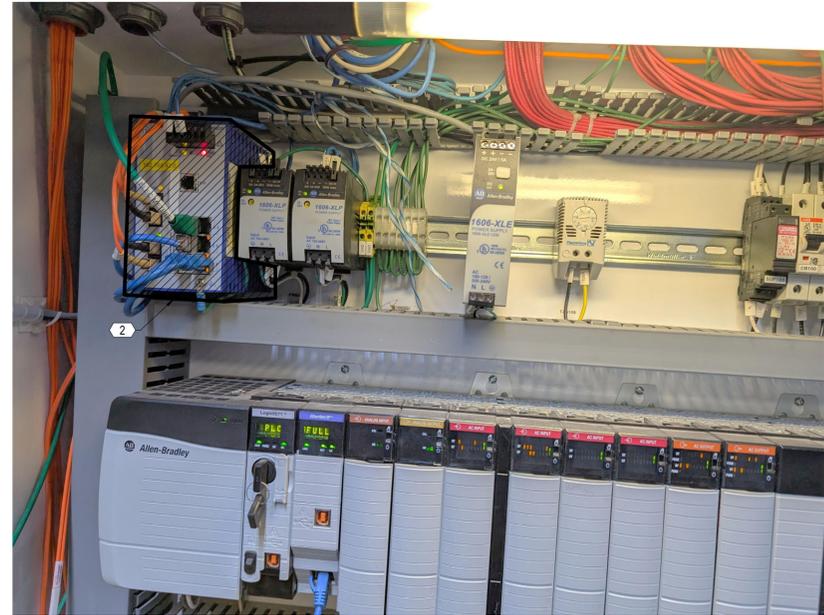
**1 PARTIAL EXISTING BLOWER CONTROL PANEL ONE-LINE DIAGRAM, 56-CP01**  
NOT TO SCALE



**2 DOMESTIC AIR BLOWER MASTER LOCAL CONTROL PANEL ONE-LINE DIAGRAM, 56DPA-LCP01**  
NOT TO SCALE



**3 DOMESTIC AIR BLOWER NETWORK ARCHITECTURE DIAGRAM**  
NOT TO SCALE



**4 DOMESTIC PROCESS AIR CONTROL PANEL DEMOLITION SCOPE**  
NOT TO SCALE

**GENERAL NOTES**

1. BLOWER PACKAGE IS BASED ON SULZER AS THE SELECTED EQUIPMENT MANUFACTURER. CONTRACTOR RESPONSIBLE FOR COORDINATION OF FINAL APPROVED EQUIPMENT.

**KEYNOTES** (#)

- BLOWER VENDOR PACKAGE EQUIPMENT.
- DEMOLISH AND REPLACE EXISTING NETWORK SWITCH. RECONNECT ALL EXISTING ETHERNET CABLES. REPROGRAM AS REQUIRED TO MAINTAIN ALL EXISTING PLANT OPERATIONS AND INTEGRATION INTO EXISTING PLANT NETWORK. CHANGE DEFAULT LOGIN CREDENTIALS, COORDINATE NEW LOGIN CREDENTIALS WITH OWNER, AND FURNISH TO OWNER WHEN WORK IS COMPLETE.

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3500 759 HIGHWAY, ST. JOSEPH, MO  
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ELECTRICAL	CALEB DADY
I&C	KEITH BOYD
PROJECT NUMBER	10419293



**ST JOSEPH WPF DOMESTIC BLOWER REPLACEMENT**

**BLOWER BUILDING INSTRUMENTATION ONE-LINE AND NETWORK BLOCK DIAGRAMS**

FILE NAME 10419293-56-U-BLOWER BUILDING  
SCALE NOT TO SCALE  
0 1" 2"

SHEET  
**56Y601**