

1/2" HWC140 UP -

1-1/2" HW140 UP — 3" SCW UP -2" DI UP -

1-1/2" SCW UP/DN —

1-1/4" HW UP/DN — 1/2" HWC UP/DN —

<u>BFP-2</u>-

CART HOLDING

2" DI UP -1" CA UP -1" RO95 UP -

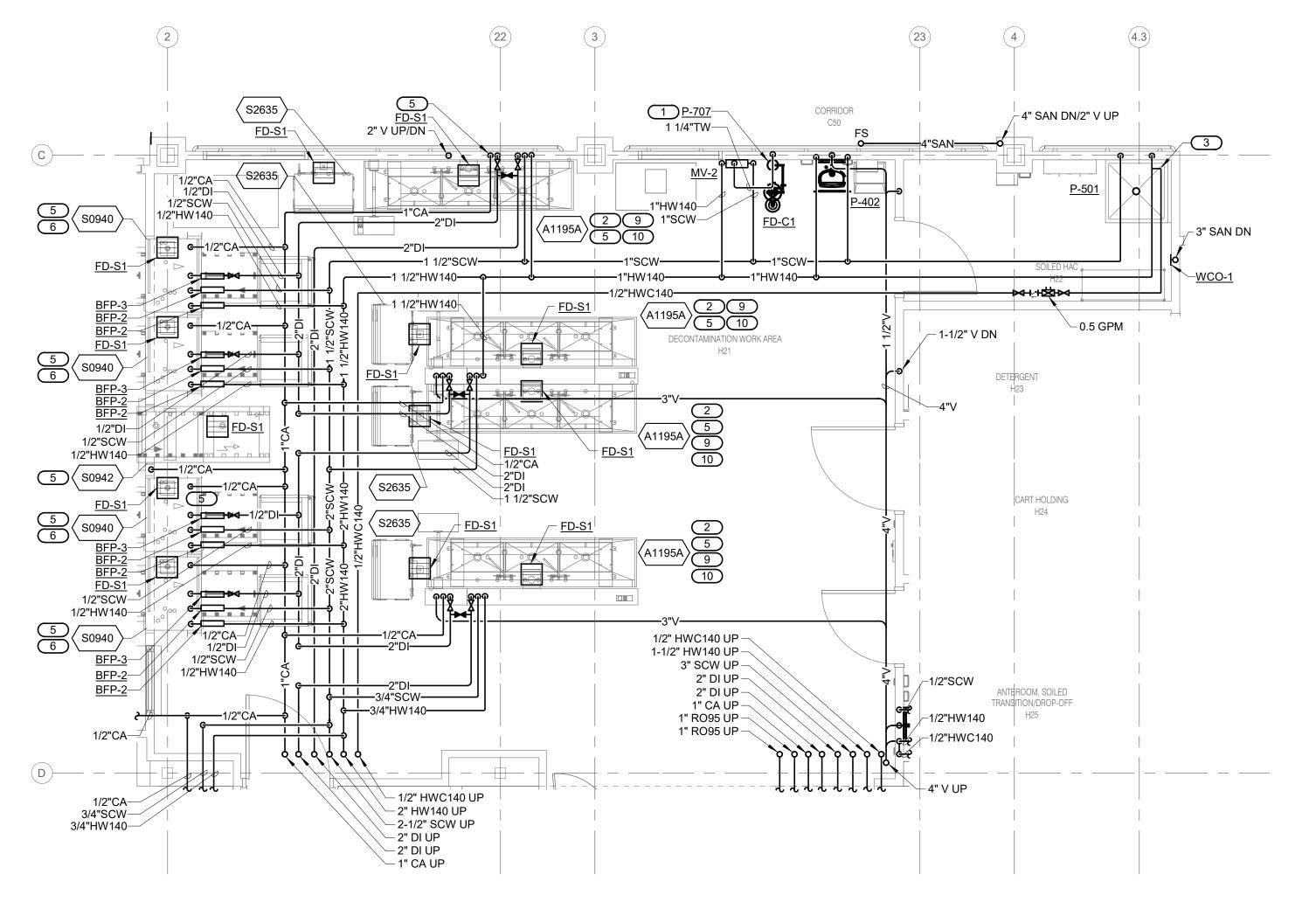
1" RO95 UP -

H \*\*\* \*\*\*

-4" V UP ANTEROOM, SOILED

2" O UP/DN

≺A1195A)



**GENERAL PLUMBING NOTES:** 

AND GENERAL NOTES.

PROCEEDING.

REFERENCE P000 - PLUMBING COVERSHEET FOR PLUMBING SYMBOLS, ABBREVIATIONS,

EXISTING CONDITIONS ARE SHOWN BASED ON INFORMATION OBTAINED FROM FIELD

SURVEYS, EXISTING BUILDING DOCUMENTS, AND STAFF. VERIFY EXISTING CONDITIONS AND

G.C. SHALL CUT AND PATCH EXISTING AS

REQUIRED FOR NEW WORK. REFERENCE

COMPLETE LAYOUT DRAWINGS SHALL BE **REQUIRED BY SPECIFICATION SECTION 22 05** 11. CONSTRUCTION WORK SHALL NOT BEGIN UNTIL SYSTEM LAYOUT DRAWINGS HAVE BEEN

CONTRACTOR SHALL MINIMIZE DOWNTIME OF EXISTING SYSTEMS BY INSTALLING NEW SYSTEMS PRIOR TO TYING INTO EXISTING. NOTIFY C.O.R. A MINIMUM OF 24 HOURS PRIOR

ALL PIPING, OF ANY KIND, ABOVE SOLID LID

WELDED OR SWEATED JOINTS AND

REFERENCE PL500 FOR PLUMBING FLOW

REFERENCE 9/PL400 FOR FIRE RATED

REFERENCE 1/PL401 FOR EMERGENCY SHOWER & EYEWASH DETAIL.

REFERENCE 4/PL401 FOR FIXTURE HOT WATER

REFERENCE 5/PL401 FOR COMPRESSOR AIR

REFERENCE 6/PL401 FOR COMPRESSED AIR

REFERENCE 10/PL401 FOR CART WASH PIPING

3-BAY REPROCESSING SINKS ARE LOCATED

BACKWALLS. SANITARY VENT, COMPRESSED AIR, DEIONIZED WATER, SOFT COLD WATER, AND HOT WATER SERVING REPROCESSING

REFERENCE 11/PL401 FOR ENDOSCOPE

SINKS SHALL BE ROUTED DOWN WEST

SECTION OF BACKWALL WHICH IS FULL

HEIGHT. COORDINATE PIPE ROUTING WITH

POWER AND DATA CONDUIT PROVIDED BY

CONTRACTORS. REFERENCE ARCHITECTURAL SHEETS FOR DIMENSIONS OF BACKWALL. NOTIFY ARCHITECT/ENGINEER OF ANY

REVISIONS TO WALL DIMENSIONS NECESSAR FOR ACCOMMODATING ALL UTILITIES.

. CONTRACTOR SHALL LOCATE DI WATER

RISERS AND PROVIDE ACCESS PANEL IN BACKWALL. VALVES AND PIPING ACCESSORIES SHALL NOT BE LOCATED ABOVE HARD LID CEILINGS. VALVES SHOWN FOR CLARITY ON

. PROVIDE 6'-6" LENGTH OF PIPE SPOOL WITH

. 3" RO BACKWASH DRAIN PIPED ALONG FLOOR FROM RO TRAIN TO FLOOR SINK. DISCHARGE

. ROUTE CONDENSATE DRAIN TO FLOOR SINK. DISCHARGE THROUGH 45° ELBOW WITH 1" GAP

BETWEEN ELBOW OUTLET AND FLOOR SINK

1" AIR GAP ABOVE FLOOR SINK RIM.

OVER FLOOR SINK THROUGH 90° ELBOW WITH

BLIND FLANGE ENDS FOR FLEXIBILITY TO INSTALL FUTURE BACKFLOW PREVENTER. . 2-1/2" CW DN TO PURE WATER PRODUCTION EQUIPMENT. REFERENCE 3/PL500 FOR PURE

WATER FLOW DIAGRAM.

REFERENCE 3/PL401 FOR THREE

REFERENCE 8/PL401 FOR WASHER

DISINFECTOR PIPING DIAGRAM.

REPROCESSOR PIPING DETAIL.

ON PREDOMINATELY HALF-HEIGHT

ELECTRICAL AND TECHNOLOGY

COMPARTMENT SINK DETAIL.

WALL PENETRATION DETAIL.

REFERENCE PL600 FOR PLUMBING MATERIAL

FLOOR/WALL PENETRATION DETAIL.

O. REFERENCE 10/PL400 FOR NON-FIRE RATED

CEILINGS SHALL BE CONSTRUCTED OF AS FEW PIECES AS POSSIBLE AND SHALL ONLY UTILIZE

SPECIFICATION SECTION 22 05 05 FOR

REPORT ANY CONFLICTS BEFORE

ADDITIONAL INFORMATION.

APPROVED BY THE C.O.R.

TO SYSTEM SHUTDOWN.

CONNECTIONS.

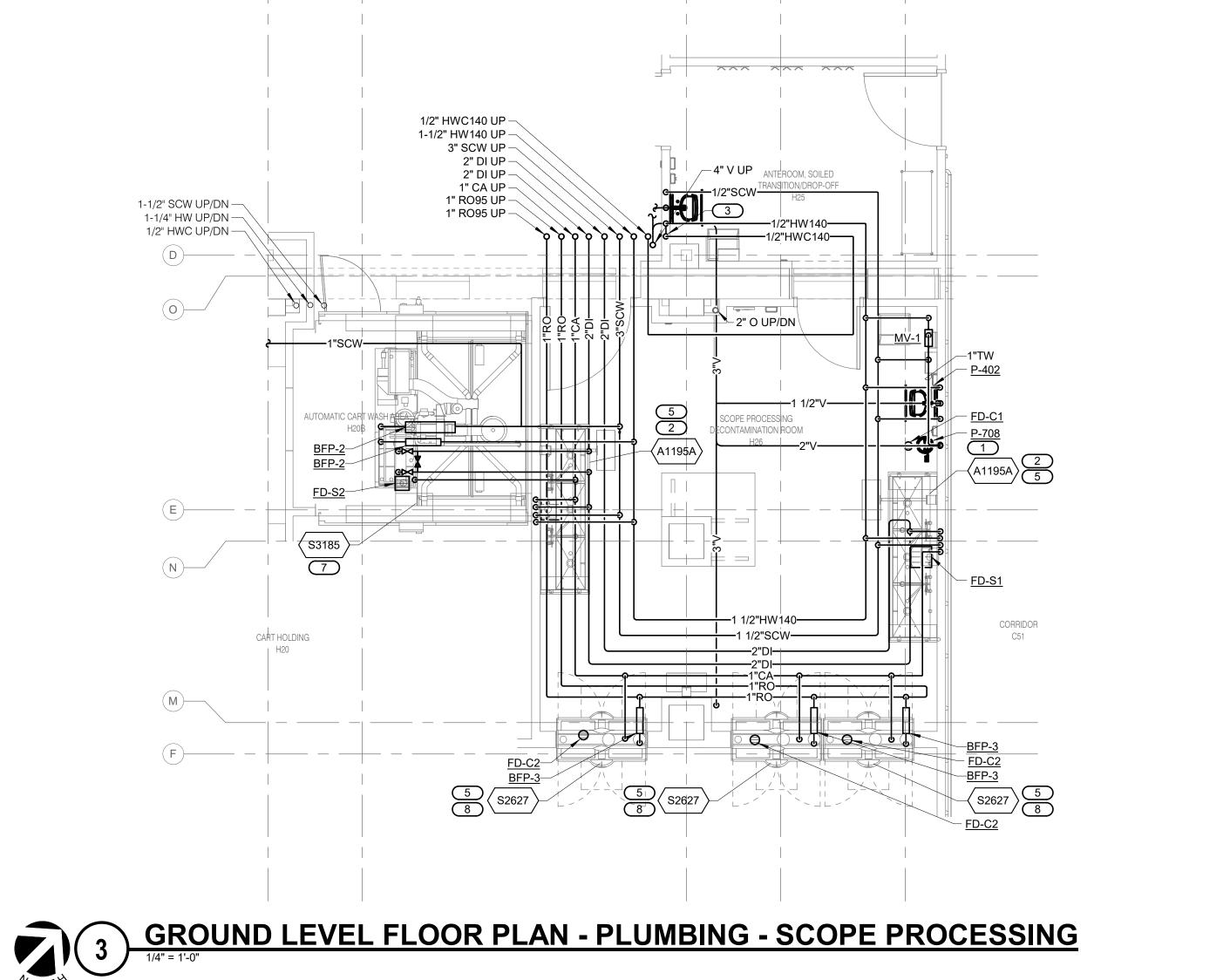
KEYNOTES: #

ROUTING DETAIL.

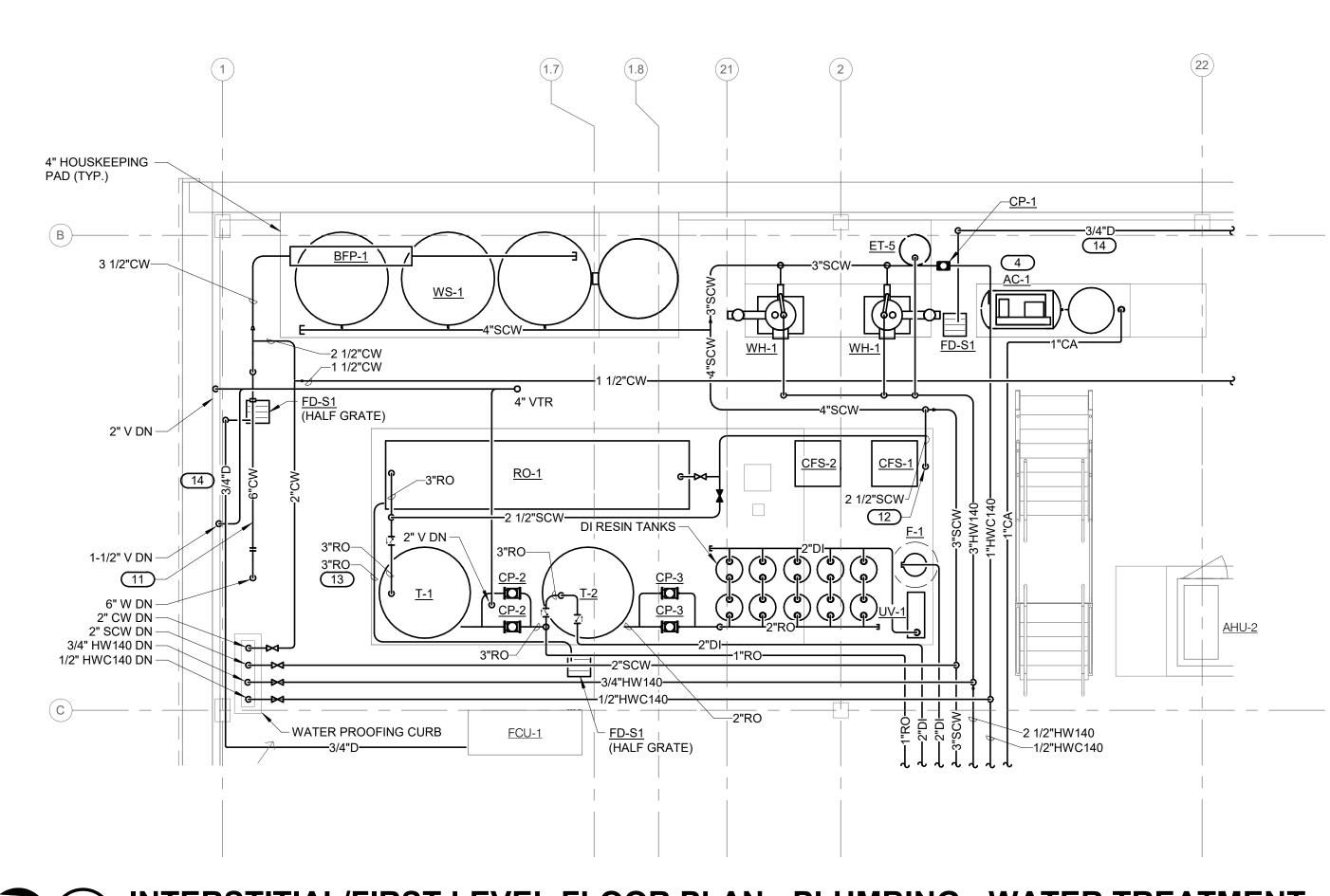
TERMINAL DETAIL.

DRAIN DETAIL.

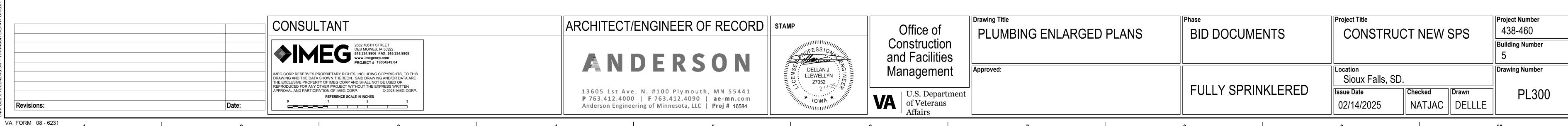


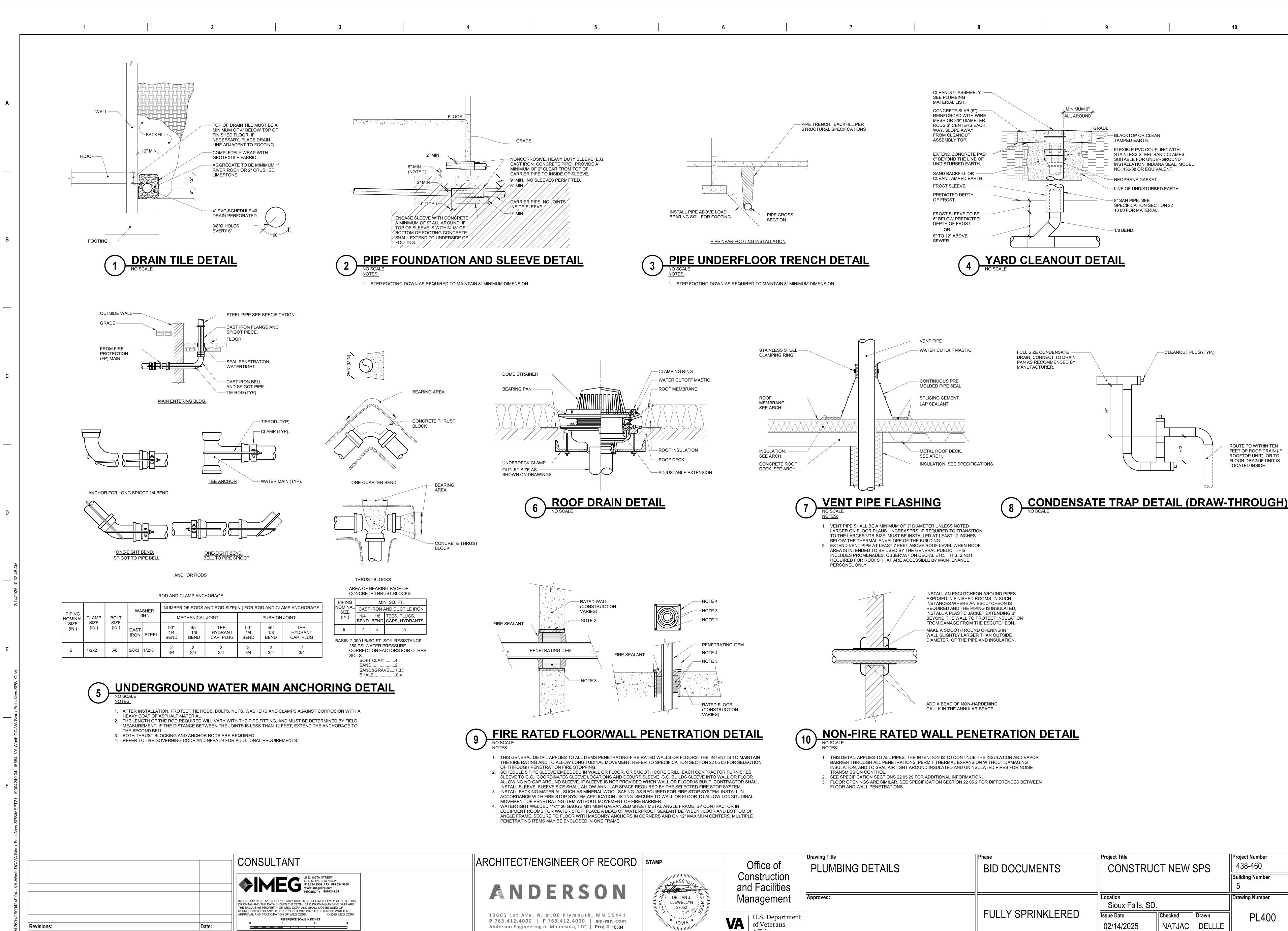


−<u>BFP-3</u>



INTERSTITIAL/FIRST LEVEL FLOOR PLAN - PLUMBING - WATER TREATMENT





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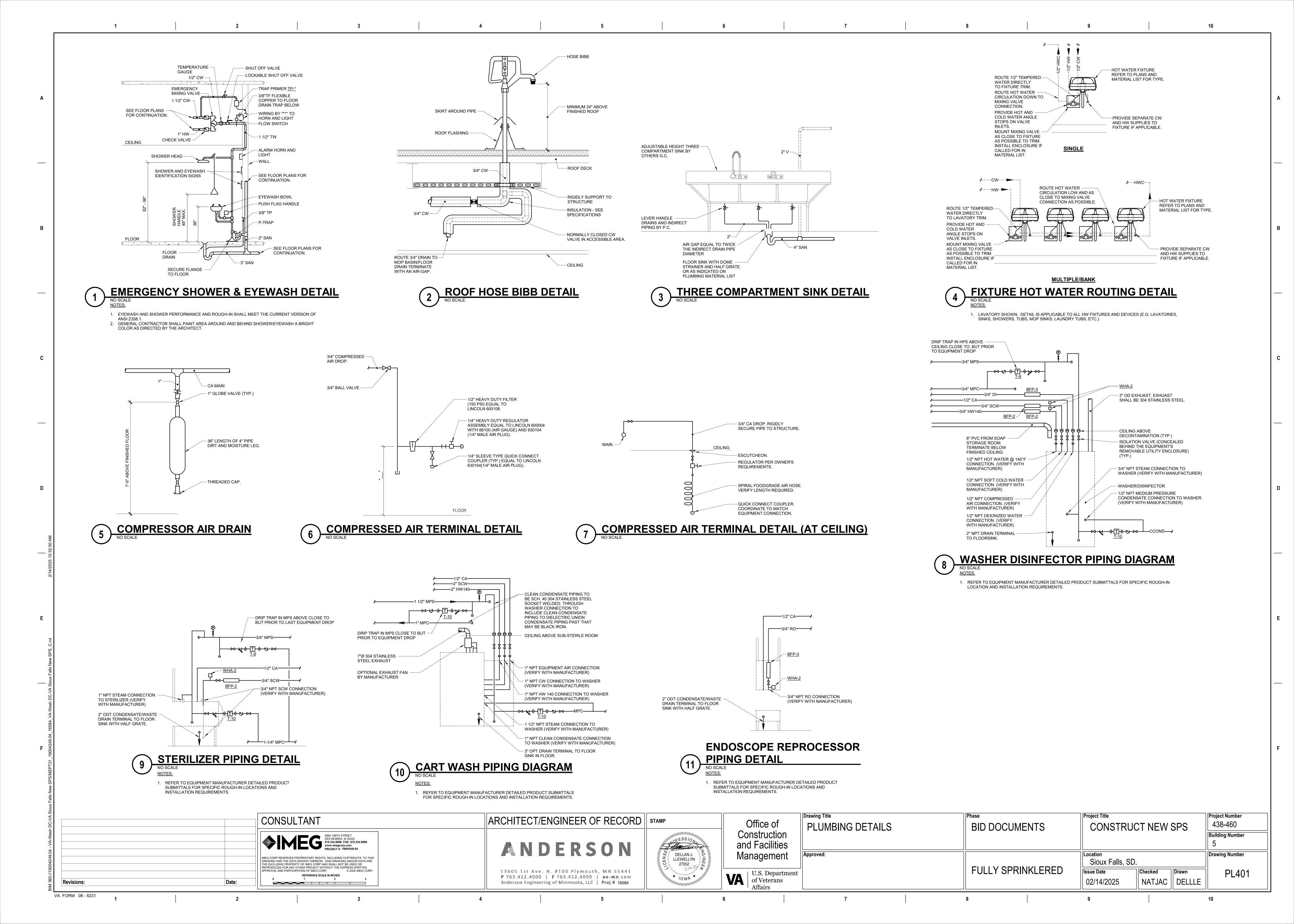
Anderson Engineering of Minnesota, LLC | Proj # 16584

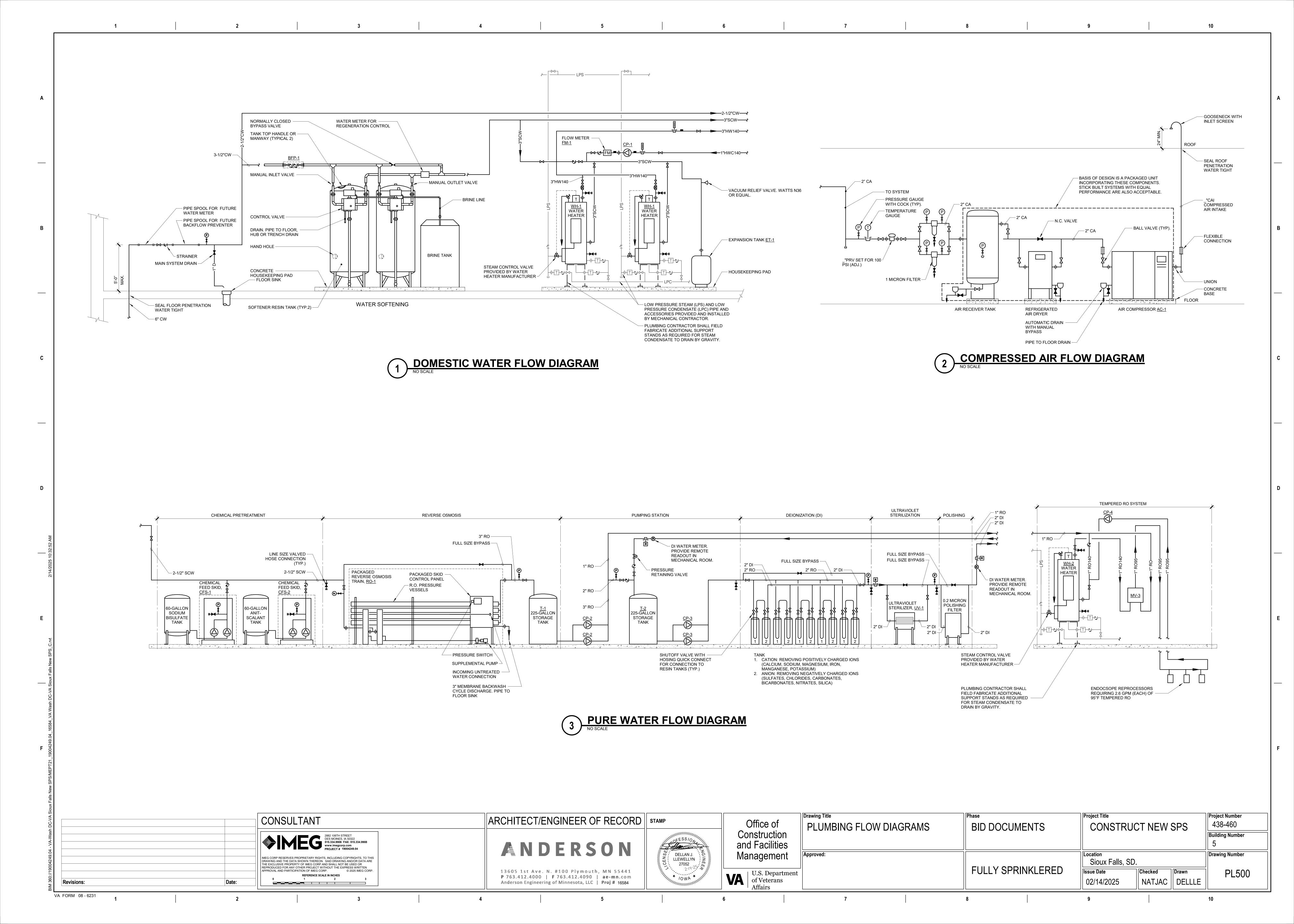
NATJAC | DELLLE

VA FORM 08 - 6231

Revisions:

REFERENCE SCALE IN INCHES





PLUMBING MATERIAL LIST PLUMBING MATERIAL LIST PLUMBING MATERIAL LIST MANUFACTURER AND MODEL MANUFACTURER AND MODEL MANUFACTURER AND MODEL BACK FLOW PREVENTER - DOUBLE CHECK, LEAD FREE BRONZE OR STAINLESS STEEL CONSTRUCTION, SAME SIZE AS PIPE, NON-CORROSIVE APOLLO (4ALF-100), WATTS (757) DIGITAL MIXING VALVE - MASTER THERMOSTATIC MIXING VALVE FOR TEMPERED WATER CONTROL, STAINLESS STEEL OR BRASS VALVE POWERS INTELLISTATION (LFIS075) P-707 | EMERGENCY SHOWER & EYE/FACE WASH - COMBINATION UNIT, FREESTANDING, FLOOR MOUNTED WITH BACK INLET, STAINLESS STEEL GUARDIAN (G1900 SERIES), BRADLEY INTERNAL PARTS, STAINLESS STEEL SPRINGS, SPRING-LOADED CHECK VALVES, GATE STYLE SHUT-OFF VALVES ON INLET AND OUTLET OF UNIT WILKINS (350AST), MIFAB (BEECO CONSTRUCTION WITH POLYMER ELECTRONICS ENCLOSURE, INTEGRAL INLET SUPPLY CHECK VALVES AND OUTLET MIXED TEMPERATURE SHOWER HEAD, BRASS/BRONZE STAY OPEN BALL VALVE, STAINLESS STEEL/ALUMINUM PULL ROD, STAINLESS STEEL BOWL, PLASTIC SPRAY (S19314 SERIES), ACORN SAFETY TEST PORTS WITH SHUT-OFF VALVES, FACTORY TESTED, RATED FOR 175 PSI AT 33°F TO 140°F, 8 PSI (MAXIMUM) PRESSURE DROP AT 10 FPS, ALIBARRACUDA 20 FDC SS) HEADS WITH CAPS AND RETAINING CHAINS/STRAPS, BRASS SUPPLY ARMS, BRASS/BRONZE STAY OPEN BALL VALVE, METAL FLAG, INTEGRAL (\$13/\$23 SERIES), HAWS (8300 SERIES), PARTS TO BE SERVICEABLE WITHOUT REMOVING UNIT FROM LINE, APPROVED BY USC FCCC & HR, AWWA C510-92, ASSE 1015, IAPMO AND SBCCI FLOW CONTROL FITTINGS, STAINLESS STEEL SUPPLY PIPING AND FITTINGS, UNIVERSAL IDENTIFICATION SIGN, ANSI Z358.1-2004 COMPLIANT. SPEAKMAN (SE-1200 SERIES), ENCON 3/4" INLET/OUTLET CONNECTIONS WITH A FLOW OF 23 GPM AT 10 PSI PRESSURE LOSS MAXIMUM. PROVIDE ELECTRIC ALARM UNIT INCLUDING VISUAL AND AUDIBLE ALARM. FOR COMMUNICATION TO DDC SYSTEM, PROVIDE WATERPROOF MOUNT WITHIN 60" OF FINISHED FLOOR. PROVIDE AND INSTALL BRONZE OR EPOXY COATED STRAINER UPSTREAM OF EACH UNIT AND OPERATIONAL FEATURES: +/- 2 DEGREE F WATER TEMPERATURE CONTROL AT POINTS OF USE 25 FEET DOWNSTREAM DURING DEMAND AND FLOW SWITCH. SHALL BE ACTIVATED BY EITHER FLOW TO EYEWASH OR SHOWER. ADDITIONAL VALVE UPSTREAM OF EACH STRAINER. FLOW PRESSURE DROP CURVES SHALL BE SUBMITTED. ALSO AT THE VALVE DURING ZERO SYSTEM DEMAND. AUTOMATIC SHUTOFF OF HOT WATER UPON COLD WATER SUPPLY FAILURE AND ALSO IN THE EVENT OF POWER FAILURE. ELECTRICAL REQUIREMENTS - 120 VOLT, 0.11 AMP BFP-2 BACK FLOW PREVENTER - REDUCED PRESSURE ZONE, LEAD FREE BRONZE CONSTRUCTION, SIZE SAME AS PIPE, NON-CORROSIVE INTERNAL WATTS (LF009), WILKINS (375XL). PARTS. STAINLESS STEEL SPRINGS. DIFFERENTIAL PRESSURE RELIEF VALVE BETWEEN SPRING-LOADED CHECK VALVES, BALL STYLE SHUT-OFFEBCO (LF860), APOLLO (RPLF4A) MINIMUM FLOW RATE OF SHOWER SHALL BE 20 GPM AT 30 PSI. MINIMUM FLOW RATE OF EYE/FACE WASH SHALL BE 3.0 GPM AT 30 PSI. CONNECTIVITY: BACNET MS/TP, MODBUS. |VALVES| ON INLET AND OUTLET OF UNIT, AIR GAP DRAIN FITTING, TEST PORTS WITH SHUT-OFF VALVES, RATED FOR 175 PSI AT 33°F TO 140°F, 15 ACTIVATION TIME SHALL BE 1 SECOND OR LESS. BRASS/BRONZE PIPING, FITTINGS, AND VALVES SHALL BE CHROME-PLATED OR PSI (MAXIMUM) PRESSURE DROP AT 10 FPS, FACTORY TESTED, ALL PARTS TO BE SERVICEABLE WITHOUT REMOVING UNIT FROM LINE, PROGRAMMABLE FEATURES: SET POINT RANGE, THERMAL DISINFECTION MODE, FIRST LEVEL HI/LOW TEMPERATURE ALARM DISPLAY, AND CHEMICAL-RESISTANT POWDER COATED. APPROVED BY USC FCCC & HR, AWWA C511-92, ASSE 1013, IAPMO AND SBCCI LISTED. TEMPERATURE ERROR LEVEL FOR SAFETY SHUTDOWN. MOUNT SHOWER HEAD BETWEEN 82"-96" AND PULL ROD AT MAXIMUM 69" ABOVE FINISH FLOOR. EYE/FACE WASH OUTLET HEADS SHALL BE MOUNT WITHIN 60" OF FINISHED FLOOR. ROUTE DRAIN PIPE FROM AIR GAP FITTING TO FLOOR DRAIN. PROVIDE AND INSTALL BRONZE OR 33-45" ABOVE FINISH FLOOR. ELECTRICAL CONNECTIONS - 120-230 VAC, CORD AND PLUG, UL LISTED. EPOXY COATED STRAINER UPSTREAM OF EACH UNIT AND ADDITIONAL VALVE UPSTREAM OF EACH STRAINER. FLOW PRESSURE DROP CURVES EMERGENCY EYE/FACE WASH - WALL MOUNTED, STAINLESS STEEL BOWL, TWIN SPRAY HEADS WITH CAPS AND RETAINING CHAINS/STRAPS, BRADLEY (S19224T), ACORN SAFETY PROVIDE FIELD ADJUSTMENT BY FACTORY AUTHORIZED REPRESENTATIVE. UNIT SHALL BE ASSE 1017 LISTED AND APPROVED. VALVE SHALL BRASS SUPPLY ARMS, INTEGRAL FLOW CONTROL FITTING, BRASS PIPING AND FITTINGS WITH BRASS/BRONZE STAY OPEN BALL VALVE, 1-1/4" (S0420), ENCON (01045501), GUARDIAN WATTS (SS009), WILKINS (375ST), BFP-3 BACK FLOW PREVENTER - REDUCED PRESSURE ZONE, ENTIRELY LEAD FREE STAINLESS STEEL CONSTRUCTION, SIZE SAME AS PIPE, COMPLY WITH FEDERAL ACT S.3874. DRAIN OUTLET WITH CHROME PLATED BRASS TAILPIECE AND TRAP, UNIVERSAL IDENTIFICATION SIGN, ANSI Z358.1-2004 COMPLIANT. (G1750), SPEAKMAN (SE-490) STAINLESS STEEL INTERNAL PARTS, STAINLESS STEEL SPRINGS, DIFFERENTIAL PRESSURE RELIEF VALVE BETWEEN SPRING-LOADED CHECK | APOLLO (RPS40) P-103 WATER CLOSET - WALL HUNG, FLUSH VALVE TYPE, WHITE VITREOUS CHINA, SIPHON JET, HIGH EFFICIENCY RATED FOR 1.28 GPF, ELONGATED WATER CLOSET - AMERICAN STANDARD VALVES, FULL PORT BALL SHUT-OFF VALVES ON INLET AND OUTLET OF UNIT, AIR GAP DRAIN FITTING, TEST PORTS WITH SHUT-OFF VALVES, (2257.101). SLOAN (ST-2050), ZURN PROVIDE ELECTRIC ALARM UNIT INCLUDING VISUAL AND AUDIBLE ALARM. FOR COMMUNICATION TO DDC SYSTEM, PROVIDE WATERPROOF BOWL, 1-1/2" TOP SPUD. RATED FOR 175 PSI AT 33°F TO 140°F, 15 PSI (MAXIMUM) PRESSURE DROP AT 10 FPS, FACTORY TESTED, ALL PARTS TO BE SERVICEABLE FLOW SWITCH. SHALL BE ACTIVATED BY EITHER FLOW TO EYEWASH OR SHOWER. ELECTRICAL REQUIREMENTS - 120 VOLT, 0.11 AMP WITHOUT REMOVING UNIT FROM LINE, APPROVED BY USC FCCC & HR, AWWA C511-92, ASSE 1013, IAPMO AND SBCCI LISTED. (Z5615), KOHLER (K-84325), TOTO FLUSH VALVE - EXPOSED, MANUAL OPERATION, 1.28 GALLONS PER FLUSH, 11-1/2" ROUGH-IN, CHROME PLATED, 1" I.P.S. SCREWDRIVER MINIMUM FLOW RATE OF 3.0 GPM AT 30 PSI. ACTIVATION TIME SHALL BE 1 SECOND OR LESS. BRASS/BRONZE PIPING, FITTINGS, AND VALVES STOP-CHECK VALVE WITH VANDAL RESISTANT CAP, HIGH BACK PRESSURE VACUUM BREAKER, SPUD COUPLING AND FLANGE, WALL FLANGE MOUNT WITHIN 60" OF FINISHED FLOOR. FLOW PRESSURE DROP CURVES SHALL BE SUBMITTED. WITH SET SCREW, NON-HOLD-OPEN HANDLE, ADJUSTABLE TAILPIECE, ADA COMPLIANT, 3 YEAR WARRANTY. SHALL BE CHROME-PLATED OR CHEMICAL-RESISTANT POWDER COATED. FLUSH VALVE - ZURN (Z6000AV-HET), CFS-1 CHEMICAL FEED SYSTEM - PAINTED CARBON STEEL SKID MOUNTED SODIUM BISULFATE FEED SYSTEM, FULLY REDUNDANT METERING PUMPS, KURITA (RO CHEMICAL FEED SYSTEM) SLOAN (111-1.28), AMERICAN PRESSURE GUAGE PER PUMP, PRESSURE RELIEF VALVE PER PUMP, BACKPRESSURE VALVE, CALIBRATION COLUMN, SUCTION STRAINER, SEAT - WHITE, EXTRA HEAVY, OPEN FRONT, INJECTION MOLDED SOLID ANTI-MICROBIAL PLASTIC, SELF-SUSTAINING HINGE, STAINLESS STEEL ORSTANDARD (6047.121), KOHLER MOUNT WITH OUTLET HEADS AT 42" ABOVE FINISH FLOOR. SEVEN ISOLATION VALVES. PIPING TO RO INLET HEADER PROVIDED/INSTALLED BY PLUMBING CONTRACTOR. PLATED STEEL POSTS AND NUTS. (K-13517-CP), TOTO (TMT1LN32#CP), EYEWASH SHALL COMPLY WITH ANSI Z358.1 AND ASME A112.18.1. MIXING VALVE SHALL BE ASSE 1071 LISTED AND APPROVED AMTC (MF-700-T12) COUPLED WITH 60 GALLON FEED TANK WITH LEVEL INDICATION AND INTEGRAL DUAL CONTAINMENT, HDPE BASE TANK MOUNTED OFF SKID. CONTRACTOR OPTION: COMBINATION WATER CLOSET/FLUSH VALVE PACKAGED SYSTEM BY AMERICAN STANDARD, KOHLER, SLOAN, OR ZURN PRIER (C-634BX), WOODFORD (B67), HOSE BIBB - FREEZELESS WALL HYDRANT, BRASS VALVE BODY AND SEAT, STANDARD FINISH, NON-FERROUS METAL STEM, AUTOMATIC USEF-60-P OR EQUAL. DRAINING, VACUUM BREAKER, 3/4" MALE HOSE THREAD, WALL CLAMP, CONCEALED IN FLUSH MOUNTED LOCKABLE WALL BOX, KEY OPERATED, ZURN (Z1300), WATTS (HY-725), MIFAB ACCESSORIES - WATER CLOSET SUPPORT CARRIER RATED FOR 500 LBS. BEMIS (3155SSCT), CHURCH (3155C), NEMA 4X FRP CONTROL BOX. 120V/1PH. ASSE 1019 OR 1052 LISTED AND APPROVED. (MHY-20), SMITH (5509QT), WADE (8700) BENEKE (533PC), OLSONITE (95), SAME AS WATER CLOSET MANUFACTURER MOUNT WATER CLOSET WITH CARRIER BOLTED SECURELY TO FLOOR. TOP OF SEAT SHALL BE AT 16"-17" ABOVE FINISHED FLOOR (VERIFY VERIFY NUMBER OF KEY OPERATORS TO BE PROVIDED WITH OWNER. BOX COVER AND HYDRANT SHALL USE A COMMON KEY. MOUNT AT 18' 52"X44"X74" (LXWXH). 500 LBS EXACT MOUNTING HEIGHT WITH MANUFACTURER). FLUSH HANDLE SHALL BE LOCATED ON THE WIDE SIDE OF THE TOILET STALL AND BE AT 12" ABOVE GRADE UNLESS NOTED OTHERWISE ON DRAWINGS. CHEMICAL FEED SYSTEM - PAINTED CARBON STEEL SKID MOUNTED ANTI-SCALANT FEED SYSTEM, FULLY REDUNDANT METERING PUMPS, (MAXIMUM) ABOVE BOWL RIM AND OPERATE WITH NO GREATER THAN 5 LB FORCE IN COMPLIANCE WITH LATEST ADA STANDARDS. VERIFY KURITA (RO CHEMICAL FEED SYSTEM) HOSE BIBB - FOR INDOOR USE, BRASS CONSTRUCTION, STANDARD FINISH, VACUUM BREAKER, 3/4" MALE HOSE THREAD, METAL WHEEL PRIER (C-155NP.75), WOODFORD (24) PRESSURE GUAGE PER PUMP, PRESSURE RELIEF VALVE PER PUMP, BACKPRESSURE VALVE, CALIBRATION COLUMN, SUCTION STRAINER, **EQUIPMENT REQUIREMENTS AND ROUGH-IN LOCATIONS** HANDLE, ASSE 1011 LISTED AND APPROVED. CHICAGO FAUCET (293), ACORN (8121), SEVEN ISOLATION VALVES. PIPING TO RO INLET HEADER PROVIDED/INSTALLED BY PLUMBING CONTRACTOR. P-103A WATER CLOSET - ACCESSIBLE, WALL HUNG, FLUSH VALVE TYPE, WHITE VITREOUS CHINA, SIPHON JET, HIGH EFFICIENCY RATED FOR 1.28 GPF, WATER CLOSET - AMERICAN STANDARD T&S BRASS (B-0736), MIFAB (MHY-90) ELONGATED BOWL, 1-1/2" TOP SPUD. (2257.101), SLOAN (ST-2050), ZURN MOUNT AT 18" ABOVE FINISHED FLOOR UNLESS NOTED OTHERWISE ON DRAWINGS COUPLED WITH 60 GALLON FEED TANK WITH LEVEL INDICATION AND INTEGRAL DUAL CONTAINMENT, HDPE BASE TANK MOUNTED OFF SKID. (Z5615), KOHLER (K-84325), TOTO USEF-60-P OR EQUAL. P-805 HOSE BIBB - FREEZELESS ROOF HYDRANT, ONE PIECE VARIABLE FLOW PLUNGER WITH ROD GUIDE, BUILT-IN VENT FOR AUTOMATIC DRAINING, WOODFORD (RHY2-MS), PRIER (P-RH2) FLUSH VALVE - EXPOSED, MANUAL OPERATION, 1.28 GALLONS PER FLUSH, 11-1/2" ROUGH-IN, CHROME PLATED, 1" I.P.S. SCREWDRIVER CAST IRON FLANGED HYDRANT SUPPORT WITH UNDER-DECK FLANGE, WELL SEAL BETWEEN SUPPORT AND HYDRANT PIPE WITH EDPM BOOT MIFAB (MHY-58) STOP-CHECK VALVE WITH VANDAL RESISTANT CAP, HIGH BACK PRESSURE VACUUM BREAKER, SPUD COUPLING AND FLANGE, WALL FLANGE NEMA 4X FRP CONTROL BOX. 120V/1PH WITH SET SCREW, NON-HOLD-OPEN HANDLE, ADJUSTABLE TAILPIECE, ADA COMPLIANT, 3 YEAR WARRANTY. FLUSH VALVE - ZURN (Z6000AV-HET), SLOAN (111-1.28), AMERICAN 52"X44"X74" (LXWXH). 500 LBS. PROVIDE WITH ASSE 1052 OR 1057 APPROVED, FIELD TESTABLE, DOUBLE CHECK VALVE BACK FLOW PREVENTER WITH 3/4" THREADED HOSE SEAT - WHITE, EXTRA HEAVY, OPEN FRONT, INJECTION MOLDED SOLID ANTI-MICROBIAL PLASTIC, SELF-SUSTAINING HINGE, STAINLESS STEEL OF STANDARD (6047.121), KOHLER CONNECTION AT HYDRANT OUTLET. PUMP - B&G (ECOCIRC XL SERIES). CIRCULATING PUMP - VARIABLE SPEED, LEAD FREE BRONZE OR STAINLESS STEEL CONSTRUCTION, PERMANENTLY LUBRICATED SEALED (K-13517-CP), TOTO (TMT1LN32#CP), PLATED STEEL POSTS AND NUTS. BEARINGS, MECHANICAL SEAL, OIL LUBRICATED, ECM MOTOR WITH INTEGRATED VARIABLE SPEED CONTROL AND THERMAL OVERLOAD GRUNDFOS (MAGNA SERIES), WILO AMTC (MF-700-T12) PROVIDE 3/8" FLEXIBLE COPPER TUBING CONNECTION TO 1/8"NPT DRAIN PORT. ROUTE 3/8" DRAIN LINE TO NEARBY FLOOR DRAIN PROTECTION, ONE SET OF DRY CONTACTS FOR STATUS OUTPUT TO BMS, FLANGED CONNECTIONS, RATED FOR 125 PSIG AT 225°F, (STRATOS Z SERIES) CONTRACTOR OPTION: COMBINATION WATER CLOSET/FLUSH VALVE PACKAGED SYSTEM BY AMERICAN STANDARD, KOHLER, SLOAN, OR ZURN ROOF DRAIN - CAST IRON BODY. SECURED CAST IRON DOME, 15" ROUND, BOTTOM OUTLET, FLASHING CLAMP, GRAVEL STOP, UNDERDECK MANUFACTURER PROVIDED PUMP BODY INSULATION KIT, UL LISTED. ZURN (Z-100), SMITH (1010), WADE CLAMP, BEARING PAN, ADJUSTABLE EXTENSION TO MATCH INSULATION THICKNESS, OUTLET SIZE AS LISTED ON DRAWINGS. (3000), JOSAM (21500), WATTS (RD-300) ACCESSORIES - WATER CLOSET SUPPORT CARRIER RATED FOR 500 LBS. BEMIS (3155SSCT), CHURCH (3155C), 2 GPM @ 27 FEET OF HEAD. MOTOR SHALL BE 1/4 HP. MIFAB (R1200), SUN (RD4000), FROET BENEKE (533PC), OLSONITE (95), SAME MOUNT WATER CLOSET WITH CARRIER BOLTED SECURELY TO FLOOR. TOP OF SEAT SHALL BE AT 17"-19" ABOVE FINISHED FLOOR (VERIFY AS WATER CLOSET MANUFACTURER ELECTRICAL REQUIREMENTS - 120V, 1 PHASE (HARD-WIRE) EXACT MOUNTING HEIGHT WITH MANUFACTURER). FLUSH HANDLE SHALL BE LOCATED ON THE WIDE SIDE OF THE TOILET STALL AND BE AT 12" RD-2 ROOF DRAIN - CAST IRON BODY, SECURED CAST IRON DOME, 15" ROUND, BOTTOM OUTLET, FLASHING CLAMP, GRAVEL STOP, UNDERDECK ZURN (Z-100), SMITH (1070), WADE (MAXIMUM) ABOVE BOWL RIM AND OPERATE WITH NO GREATER THAN 5 LB FORCE IN COMPLIANCE WITH LATEST ADA STANDARDS. VERIFY CLAMP, BEARING PAN, ADJUSTABLE EXTENSION TO MATCH INSULATION THICKNESS, 2" TALL INTERNAL STANDPIPE, OUTLET SIZE AS LISTED ON (3000), JOSAM (21500), WATTS (RD-300), CIRCULATING PUMP - VERTICAL MULTISTAGE CENTRIFUGAL, 316 STAINLESS STEEL, BRONZE BEARINGS, MECHANICAL SEAL, OIL LUBRICATED, GRUNDFOS (CRN 20-3), B&G, TACO, EQUIPMENT REQUIREMENTS AND ROUGH-IN LOCATIONS. FLEXIBLE COUPLING, NON-WETTED STEEL SHAFT, OPEN DRIP-PROOF NON OVERLOADING MOTOR WITH INTERNAL THERMAL OVERLOAD MIFAB (R1200) PROTECTION, FLANGED CONNECTIONS, RATED FOR 125 PSIG AT 225°F, UL LISTED. ROOF DRAIN OUTLET - DOWNSPOUT NOZZLE, ROUND STEEL FRAME WITH PERFORATED ALUMINUM HINGED STRAINER, ARCHITECT TO SELECT ZURN (ZF199) LAVATORY - WALL MOUNTED, WHITE VITREOUS CHINA, 20"x18", 4" HIGH BACKSPLASH, FAUCET HOLES ON 8" CENTERS, DRILLED FOR CONCEALEDLAVATORY FROM STANDARD COLORS, OUTLET SIZE AS LISTED ON DRAWINGS. ARM CARRIER. GERBER (12-658), KOHLER (K-2030), 100 GPM @ 150 FEET OF HEAD. MOTOR SHALL BE 7.5 HP OPERATING AT 3,600 RPM. REVERSE OSMOSIS TRAIN - 100 GPM SINGLE PASS REVERSE OSMOSIS TRAIN, 145 GPM FEED FLOW (125 GPM RAW WATER, 20 GPM RECYCLE WATER), 33 GPM REJECT FLOW RATE, 15.0 GFD FLUX RATE, 181 PSIG OPERATING PRESSURE, 30 PSIG PERMEATE BACK PRESSURE. SCHEDULE LAVATORY TRIM - TWO HANDLE MIXING FAUCET, BRASS CONSTRUCTION, CHROME-PLATED FINISH, RIGID GOOSENECK SPOUT WITH NOMINAL 6" ELECTRICAL REQUIREMENTS - 460V-3 PHASE (HARD-WIRE) 10 TYPÉ 304L STAINLESS STEEL HIGH PRESSURE PIPING. SCHEDULE 80 PVC LOW PRESSURE PIPING. POWDER COATED CARBON STEEL CARTRIDGE FILTER HOUSING - SHELC REACH AND LAMINAR FLOW OUTLET, 4" WRIST BLADE HANDLES AT 8" CENTERS, CERAMIC DISC CARTRIDGE, PERFORATED GRID STRAINER WITH LAVATORY TRIM - DELTA (23C644-R4), CIRCULATING PUMP - VERTICAL MULTISTAGE CENTRIFUGAL, 316 STAINLESS STEEL, BRONZE BEARINGS, MECHANICAL SEAL, OIL LUBRICATED, GRUNDFOS (CRN 20-3), B&G, TACO, AMERICAN STANDARD, CHICAGO 1-1/4" 17 GAUGE TAILPIECE. SUPPORT FRAME, ZINC COATED FASTENERS. OR EQUAL FLEXIBLE COUPLING, NON-WETTED STEEL SHAFT, OPEN DRIP-PROOF NON OVERLOADING MOTOR WITH INTERNAL THERMAL OVERLOAD FAUCET, KOHLER, MOEN, SYMMONS, PROTECTION, FLANGED CONNECTIONS, RATED FOR 125 PSIG AT 225°F, UL LISTED. MAXIMUM FLOW TO BE 0.5 GPM IN COMPLIANCE WITH ENERGY POLICY ACT OF 2005 AND ASME/ANSI STANDARD A112.18.1M. FAUCET SHALL CARTRIDGE FILTER HOUSING: ONE HOUSEING, SEVEN FILTERS PER HOUSING, 2.5" DIAMETER BY 40" LONG, NOMINAL ONE-MICRON FILTRATION | MEMBRANE HOUSINGS - PENTAIR T&S BRASS, ZURN COMPLY WITH FEDERAL ACT S.3874. PROVIDE RESTRICTIVE DEVICE AS REQUIRED. RATING, 125 GPM @ 4.46 GPM/10" EQUIVALENT, CONSTRUCTED OF TYPE 304 STAINLESS STEEL, SWING BOLT CLOSURE, INLET AND OUTLET CODELINE OR EQUAL 100 GPM @ 150 FEET OF HEAD. MOTOR SHALL BE 7.5 HP OPERATING AT 3,600 RPM. MIXING VALVE - WATTS (LFUSG-B), MIXING VALVE - POINT-OF-USE ANTI-SCALD THERMOSTATIC MIXING VALVE FOR TEMPERED WATER CONTROL, ALL BRONZE/BRASS LEONARD (170D-LF), LAWLER MEMBRANE ELEMENTS - TORAY CONSTRUCTION, ROUGH FINISH, THREADED INLETS, TAMPER RESISTANT SETPOINT, 3/8" COMPRESSION INLETS AND OUTLETS, COLD WATER (TMM-1070T), ACORN CONTROLS ELECTRICAL REQUIREMENTS - 460V-3 PHASE (HARD-WIRE MEMBRANE HOUSINGS: FRP, 8" DIAMETER, 4-ELEMENT LONG, SMOOTHED EXTERIOR, FACTORY PAINTED, GROOVED END END ENTRY FITTINGS, (TMG20D-400) OR EQUAL 300 PSI RATED PRESSURE, 4:2 ARRAY FOR 6 TOTAL HOUSINGS. BYPASS IF USED WITH MIXING FAUCET. (ST70), APOLLO (34DLF), POWERS PLIMP - B&G (ECOCIRC XL SERIES) CIRCULATING PUMP - VARIABLE SPEED, LEAD FREE BRONZE OR STAINLESS STEEL CONSTRUCTION, PERMANENTLY LUBRICATED SEALED (LFE480), SLOAN (MIX-135-A), SYMMONS BEARINGS, MECHANICAL SEAL, OIL LUBRICATED, ECM MOTOR WITH INTEGRATED VARIABLE SPEED CONTROL AND THERMAL OVERLOAD GRUNDFOS (MAGNA SERIES), WILO CABINET - SEMI-RECESSED 18 GAUGE STAINLESS STEEL CABINET WITH 16 GAUGE LOCKING DOOR TO ENCLOSE VALVE, INLET STOPS, OUTLET (8210CK), WILKINS (ZW3870XLT) MEMBRANE ELEMENTS: POLYAMIDE THIN FILM, LOW ENERGY, QUANTITY 24 PROTECTION, ONE SET OF DRY CONTACTS FOR STATUS OUTPUT TO BMS, FLANGED CONNECTIONS, RATED FOR 125 PSIG AT 225°F. (STRATOS Z SERIES) MANUFACTURER PROVIDED PUMP BODY INSULATION KIT, UL LISTED. HIGH PRESSURE PUMP: VERTICAL MULTISTAGE CENTRIFUGAL, CONSTRUCTED OF TYPE 304L STAINLESS STEEL INTERNALS AND CAST IRON INSULATION KIT - TRUEBRO 0.5 GPM OUTPUT. UNIT TO MIX 140 DEGREE F HOT WATER SUPPLY AND 40 DEGREE F COLD WATER SUPPLY FOR 110 DEGREE F OUTLET. (LAV-GUARD), BROCAR PRODUCTS FRAME, 25 HP, VFD WITH FUSED DISCONNECT. 8 GPM @ 27 FEET OF HEAD. MOTOR SHALL BE 1/4 HP. (TRAP WRAP), MCGUIRE (PROWRAP), PRESSURE GUAGES AT PRE-FILTER, POST-FILTER, PUMP DISCHARGE, MEMBRANE FEED, INTERSTAGE, REJECT, AND PERMEATE. PRESSURE UNIT SHALL BE ASSE 1070 LISTED AND APPROVED. VALVE SHALL COMPLY WITH FEDERAL ACT S.3874. PLUMBEREX (PRO-EXTREME) ELECTRICAL REQUIREMENTS - 120V, 1 PHASE (HARD-WIRE) TRANSMITTERS AT FEED, RECYCLE, AND REJECT. CONDUCTIVITY SENSORS AT INLET AND PERMEATE. PH SENSOR AT INLET. TEMPERATURE EMERGENCY OXYGEN CONNECTION - RECESSED ASSEMBLY, WEATHER TIGHT ENCLOSURE, WITH PADLOCK STAPLE, LABELED "EMERGENCY INSULATION KIT - PRE-MANUFACTURED FOR P-TRAP, STOP VALVES AND SUPPLY LINES SENSOR AT INLET. ORP SENSOR AT INLET. CONTROL VALVES AT INLET, REJECT FLUSH, AND REJECT CONTROL. PATTON'S MEDICAL, TRI-TECH, AMICO. LOW PRESSURE GASEOUS OXYGEN INLET". NEMA 4, UL 508A LISTED CONTROL ENCLOSURE. ACCESSORIES - QUARTER-TURN 3/8" CHROME PLATED HEAVY BRASS ANGLE SUPPLY STOPS, CHROME PLATED SOFT COPPER SUPPLY LINES, ASSEMBLY TO INCLUDE: DRAIN AND TAILPIECE, 1-1/4" 17 GAUGE CAST BRASS P-TRAP, SUPPORT CARRIER. 460V/3PH AND 120V/1PH POWER CONNECTIONS 1) 2" FEMALE NPT INLET CONNECTION, FURNISHED WITH THREADED PLUG. MOUNT LAVATORY WITH SUPPORT CARRIER BOLTED SECURELY TO FLOOR. TOP OF RIM SHALL BE AT 31" ABOVE FLOOR. ARMAFLEX WITH TAPE 2) 2" BALL SHUTOFF VALVE IS NOT ACCEPTABLE IN LIEU OF INSULATION KIT. PURE WATER STORAGE TANK - VERTICAL CONE BOTTOM, NATURAL COLOR HDLPE CONSTRUCTION, MANWAY, [ "] INLET/OUTLET KURITA (ICT) OR EQUAL 3) 0-100 PSI PRESSURE GAUGE BETWEEN THE INLET AND SHUTOFF VALVE. 4) PRESSURE RELIEF VALVE. SET AT 150% NORMAL SYSTEM OPERATING PRESSURE. MOP BASIN - PRECAST TERRAZZO, 24"x24"x12", STAINLESS STEEL INTEGRAL DRAIN WITH REMOVABLE STRAINER, 3" OUTLET, CONTINUOUS MOP BASIN - FIAT (TSB), ACORN (TSH) 225 GALLON CAPACITY, 30 DEGREE CONE, 48" DIAMETER x 54" HIGH 5) CHECK VALVE FOR INSTALLATION IN MAIN LINE STAINLESS STEEL CAP ON ALL EDGES. CREATIVE INDUSTRIES (MC), WILLIAMS 6) CHECK VALVE FOR INSTALLATION IN EMERGENCY CONNECTION LINE ELECTRONIC LEVEL TRANSMITTER, 120V/1PH POWER CONNECTION. TRIM - EXPOSED TWO HANDLE MIXING FAUCET, BRASS CONSTRUCTION, CHROME-PLATED FINISH, SINGLE WING HANDLES, 1/4 TURN CERAMIC EMERGENCY LINE CHECK VALVE SHALL BE INSTALLED BETWEEN THE EMERGENCY LINE SHUTOFF VALVE AND THE EMERGENCY LINE DISC CARTRIDGE, 3/4" HOSE THREAD SPOUT WITH ASSE 1053 RATED INTEGRAL VACUUM BREAKER, WALL BRACE, PAIL HOOK, CHECK STOPS OR TRIM - DELTA (28C2383), AMERICAN 23" DIAMETER MANWAY ON TANKS 250 GALLONS AND LARGER, SKIDDED STEEL BASE, 150 PSIG WORKING PRESSURE, ASME STAMPED, 25-YEAR INLINE CHECK VALVES TO PREVENT THERMAL CROSSOVER. FAUCET SHALL COMPLY WITH FEDERAL ACT S.3874. STANDARD (8344.012), CHICAGO FAUCETS (897-CP), MOEN (8124), PURE WATER STORAGE TANK - VERTICAL CONE BOTTOM, NATURAL COLOR HDLPE CONSTRUCTION, MANWAY, [ "] INLET/OUTLET KURITA (ICT) OR EQUAL VENT RELIEF VALVE TO THE OUTDOORS. ACCESSORIES - MOP HANGER, HOSE AND HOSE BRACKET, TRAP TWO 24" WIDE STAINLESS STEEL WALL GUARDS. SPEAKMAN (SC-5812), SYMMONS (S-2490), ZURN (Z841M1-XL) EXPANSION TANK - WELDED STEEL CONSTRUCTION, ASME STAMPED, GUARANTEED AIRTIGHT AND LEAKPROOF, STAINLESS STEEL SYSTEM 225 GALLON CAPACITY, 30 DEGREE CONE, 48" DIAMETER x 54" HIGH CONNECTION, HEAVY DUTY BUTYL DIAPHRAGM AND RIGID POLYPROPYLENE LINER MECHANICALLY BONDED TO TANK TO PROVIDE A 100% (THERM-X-TROL ST-42VC-DD), B&G VACUUM BREAKER - WATTS (8A), OR NON-CORROSIVE WATER RESERVOIR, DIAPHRAGM AND LINER SHALL BE APPROVED FOR USE IN POTABLE WATER SYSTEMS, ALL WETTED ELECTRONIC LEVEL TRANSMITTER. 120V/1PH POWER CONNECTION (PTA), ELBI (DTS, DTL), TACO (PAX APPROVED EQUAL COMPONENTS OF FDA APPROVED MATERIALS. PROVIDE STANDARD SCHRADER AIR VALVE FOR FIELD CHARGING. TANK SHALL COMPLY WITH SERIES), WATTS (DETA), WESSELS 23" DIAMETER MANWAY ON TANKS 250 GALLONS AND LARGER, SKIDDED STEEL BASE, 150 PSIG WORKING PRESSURE, ASME STAMPED, 25-YEAR MOP BASIN - FIAT (TSB), ACORN (TSH) MOP BASIN - PRECAST TERRAZZO, 36"x24"x12", STAINLESS STEEL INTEGRAL DRAIN WITH REMOVABLE STRAINER, 3" OUTLET, CONTINUOUS STAINLESS STEEL CAP ON ALL EDGES. CREATIVE INDUSTRIES (MC), WILLIAMS MINIMUM TANK VOLUME TO BE 23 GALLONS UV LAMP - 254 NM DISINFECTION ULTRAVIOLET STERILIZER, 90 GPM CONSTANT FLOW, 120 GPM MAXIMUM FLOW, 99% UVT, TYPE 316L STAINLESS AQUAFINE (OPTIVENN OPV02CDM) OR MINIMUM ACCEPTING VOLUME TO BE 11.2 GALLONS TRIM - EXPOSED TWO HANDLE MIXING FAUCET, BRASS CONSTRUCTION, CHROME-PLATED FINISH, SINGLE WING HANDLES, 1/4 TURN CERAMIC STEEL REACTION CHAMBER. TWO 9,000 HOUR SINGLE END AMALGAM LPHO LAMPS IN QUARTZ SLEEVES, UV INTENSITY READING SENSOR, DISC CARTRIDGE, 3/4" HOSE THREAD SPOUT WITH ASSE 1053 RATED INTEGRAL VACUUM BREAKER, WALL BRACE, PAIL HOOK, CHECK STOPS OR TRIM - DELTA (28C2383), AMERICAN NEMA 4X STAINLESS STEEL CONTROLS ENCLOSURE, REMOTE START/STOP AND HOA. TANK SHALL HAVE A WORKING TEMPERATURE OF 200°F AND A WORKING PRESSURE OF 150 PSIG. FACTORY PRE-CHARGED FOR SHIPPING. INLINE CHECK VALVES TO PREVENT THERMAL CROSSOVER. FAUCET SHALL COMPLY WITH FEDERAL ACT S.3874. STANDARD (8344.012), CHICAGO FIELD CHARGE TANK TO 78 PSIG FAUCETS (897-CP), MOEN (8124). ACCESSORIES - MOP HANGER, HOSE AND HOSE BRACKET, TRAP [ONE 24" WIDE STAINLESS STEEL WALL GUARD AND ONE 36" WIDE STAINLESS SPEAKMAN (SC-5812), SYMMONS POLISHING FILTER **CARTRIDGE FILTER HOUSING - SHELCO** WALL CLEANOUT - TEE, CAST IRON ACCESS BODY, GAS AND WATERTIGHT THREADED PLUG, ROUND STAINLESS STEEL ACCESS COVER, ZURN (Z-1446), SMITH (4530), WADE STEEL WALL GUARD. (S-2490), ZURN (Z841M1-XL) (12HPI4) OR EQUAL (8560), JOSAM (58910), WATTS (CO-460) CARTRIDGE FILTER HOUSING - HIGH PURITY, 12" ROUND X 30" LONG SWING BOLT CLOSURE, TYPE 316L STAINLESS STEEL ELECTROPOLISHED MIFAB (C1460-RD) VACUUM BREAKER - WATTS (8A), OR ENCLOSURE WITH EPR GASKET, 150 PSI RATED PRESSURE, 90 GPM CAPACITY. WATER HEATER - SEMI-INSTANTANEOUS, STEAM TO WATER, DOUBLE WALL, VERTICAL CONFIGURATION, SHELL AND TUBE CROSS FLOW DESIGN AERCO (SWDW+), CEMLINE (SEH) APPROVED EQUAL INTEGRAL DEMAND ANTICIPATOR SHALL BE PROVIDED TO MAINTAIN DISCHARGE WATER TEMPERATURE AT 5°F OF SETPOINT, NON-FERROUS PATTERSON-KELLEY (PK), ARMSTRONG MEMBRANE CARTRIDGES - ONE SET OF POLYETHERSULFONE MEMBRANE CARTRIDGES WITH POLYPROPYLENE SUPPORTS, 0.2 MICRON, BETA SINK - SELF-RIMMING SINGLE COMPARTMENT WITH FAUCET DECK, 18 GAUGE TYPE 304 STAINLESS STEEL, 24" (SIDE-TO-SIDE) x 19" SINK - ELKAY (LR/LK99), JUST (SL/JB-99), MATERIALS ON DOMESTIC WATER SIDE, ASME 150 PSI SHELL AND 150 PSI COPPER COILS, RESILIENT INSULATION, IN-LINE CIRCULATOR AS (DFS-DW SERIES), THERMAFLO (FRONT-TO-BACK) OVERALL SIZE, 20" x 16" x 7-1/2" DEEP BOWL, COMPLETELY UNDERCOATED, 3-1/2" DIAMETER DRAIN OUTLET LOCATION FRANKE (LBS) REQUIRED, ELECTRONIC CONTROL VALVE, ASME/CSA T&P RELIEF VALVE, UNION, ORIFICE, DOUBLE SOLENOID TEMPERATURE LIMIT SAFETY, (TH-750V), PVI (COBREX CENTERED IN BOWL. REMOVABLE TYPE 304 STAINLESS STEEL BASKET STRAINER WITH NEOPRENE STOPPER. FLOOR DRAIN - 14 GAUGE TYPE 304 STAINLESS STEEL RECEPTOR, 6" ROUND, 6" DEEP, 3" BOTTOM OUTLET, FLASHING COLLAR, SURFACE FLOOR DRAIN - ZURN (Z-415), SMITH POWER ON/TRIPPED STATUS AND REMOTE DIAL THERMOMETER AND COMPOUND GAUGE, DRY CONTACTS FOR REMOTE HIGH LIMIT ALARM, INSTANTANEOUS), HUBBELL (STX SINK TRIM - DELTA (9178-DST) MEMBRANE CLAMP. (2005), WADE (1100), JOSAM (30000). SINK TRIM - SINGLE HANDLE MIXING FAUCET, BRASS CONSTRUCTION, CHROME-PLATED FINISH, NOMINAL 10" HIGH-RISE SWING SPOUT, AMERICAN STANDARD (4285.300). WATTS (FD-100), MIFAB (F1100), SUN CERAMIC CARTRIDGE, NOMINAL 8" REACH, PULL DOWN SPRAY HOSE WITH AERATOR STREAM / SPRAY SELECTOR, LEVER HANDLE. ELKAY (LK6000), MOEN (7594C), TRAP SEAL - 3", PLASTIC HOUSING WITH FLEXIBLE DIAPHRAGM, SEALING GASKETS, RECLOSES AND SEALS WHEN DISCHARGE IS COMPLETED, 75 GPM OF WATER FROM 50°F TO 140°F WITH 3,400 LBS/HOUR STEAM AT 15 PSIG. SYMMONS (S-2302-PD), KOHLER MAXIMUM FLOW TO BE 2.2 GPM IN COMPLIANCE WITH ENERGY POLICY ACT OF 2005 AND ASME/ANSI STANDARD A112.18.1M. FAUCET SHALI (K-597-CP) TRAP SEAL - SURE SEAL (SS), PROVENT ELECTRICAL REQUIREMENTS - 120V, 5 AMPS COMPLY WITH FEDERAL ACT S.3874. PROVIDE RESTRICTIVE DEVICE AND ESCUTCHEON PLATE AS REQUIRED. (TRAP GUARD), SMITH (QUAD CLOSE), INSULATION KIT - MCGUIRE GREEN DRAIN, MIFAB (MI-GARD) SET WATER TEMPERATURE AT 140°F. ACCESSORIES - 1-1/2" 17 GAUGE CHROME-PLATED BRASS TAILPIECE AND P-TRAP, QUARTER-TURN BALL VALVE TYPE 3/8" CHROME-PLATED (PROWRAP), JUST (J-ADA), PLUMBEREX FD-C2 FLOOR DRAIN - 14 GAUGE TYPE 304 STAINLESS STEEL RECEPTOR, 6" ROUND, 6" DEEP, 4" BOTTOM OUTLET, FLASHING COLLAR, SURFACE FLOOR DRAIN - ZURN (Z-550), SMITH WATER HEATER - SEMI-INSTANTANEOUS, STEAM TO WATER, DOUBLE WALL, VERTICAL CONFIGURATION, SHELL AND TUBE CROSS FLOW DESIGN AERCO (SWDW+), CEMLINE (SEH) BRASS ANGLE SUPPLIES WITH STOPS. CHROME-PLATED SOFT COPPER SUPPLY LINES. (PRO-EXTREME), TRUEBRO 2110), WADE (1310), JOSAM (32100). MEMBRANE CLAMP. INTEGRAL DEMAND ANTICIPATOR SHALL BE PROVIDED TO MAINTAIN DISCHARGE WATER TEMPERATURE AT 5°F OF SETPOINT, NON-FERROUS PATTERSON-KELLEY (PK), ARMSTRONG (LAV-GUARD2) | WATTS (FD-300), MIFAB (F1320), SUN MATERIALS ON DOMESTIC WATER SIDE, ASME 150 PSI SHELL AND 150 PSI COPPER COILS, RESILIENT INSULATION, IN-LINE CIRCULATOR AS INSULATION KIT - PRE-MANUFACTURED FOR P-TRAP, STOP VALVES, AND SUPPLY LINES. TRAP SEAL - 4". PLASTIC HOUSING WITH FLEXIBLE DIAPHRAGM, SEALING GASKETS, RECLOSES AND SEALS WHEN DISCHARGE IS COMPLETED, REQUIRED, ELECTRONIC CONTROL VALVE, ASME/CSA T&P RELIEF VALVE, UNION, ORIFICE, DOUBLE SOLENOID TEMPERATURE LIMIT SAFETY, (TH-750V), PVI (COBREX ELECTRIC WATER COOLER - WALL HUNG, 18 GAUGE STAINLESS STEEL CABINET AND NON-SPLASH BASIN WITH STAINLESS STEEL FINISH, ELECTRIC WATER COOLER - ELKAY ASSE 1072 INSTANTÁNEOÙS), HUBBELL (STX POWER ON/TRIPPED STATUS AND REMOTE DIAL THERMOMETER AND COMPOUND GAUGE, DRY CONTACTS FOR REMOTE HIGH LIMIT ALARM, STREAM PROJECTOR WITH PROTECTIVE HOOD. PUSH BAR OR LEVER OPERATING CONTROLS ON FRONT AND SIDES. BUILT-IN FLOW TRAP SEAL - SURE SEAL (SS), PROVENT (EZS8), OASIS (P8AC), HALSEY-TAYLOR 1-YEAR WARRANTY. (TRAP GUARD), SMITH (QUAD CLOSE) REGULATOR, PLASTIC P-TRAP ASSEMBLY, ADJUSTABLE THERMOSTAT, MOUNTING ACCESSORIES, TANK DRAIN AND ANGLE STOPS, HERMETIC (HAC-8FS-Q), MURDOCK (A111) COMPRESSOR TO OPERATE ON HFC-134a REFRIGERANT. COMPLIANT TO LATEST ANSI A117.1 AND ADA STANDARDS. UNIT SHALL COMPLY WITH GREEN DRAIN MIFAB (MI-GARD) 8 GPM OF WATER FROM 50°F TO 140°F WITH 360 LBS/HOUR STEAM AT 15 PSIG GLASS FILLER - ELKAY (98498C), OASIS, FLOOR SINK - 14 GAUGE TYPE 304 STAINLESS STEEL RECEPTOR, 12"x12"x6" DEEP, 4" OUTLET, TRAP, STAINLESS STEEL RIM AND SECURED FULL ZURN (Z1750), SMITH (9690), WADE HALSEY-TAYLOR, MURDOCK ELECTRICAL REQUIREMENTS - 120V, 5 AMPS GRATE WITH 1/2" SQUARE OPENINGS, STAINLESS STEEL ANTI-SPLASH INTERIOR DOME STRAINER. (9100), WATTS (FS-780), GLASS FILLER - UNIT DECK MOUNTED GOOSENECK FILLER, STAINLESS STEEL CONSTRUCTION AND FINISH, PLASTIC PUSH LEVER CONTROL BLUCHER-JOSAM (76640), MIFAB SET WATER TEMPERATURE AT 140°F. (FS1920-FL-3) UNIT SHALL PROVIDE 8.0 GPH OF WATER FROM 80°F TO 50°F AT 90°F AMBIENT. WATER SYSTEM SHALL BE OF LEAD FREE CONSTRUCTION. TANK FD-S2 FLOOR SINK - CAST IRON BODY, NICKEL BRONZE RIM AND GRATE, 8" SQUARE, 4" BOTTOM OUTLET, 6" DEEP RECEPTOR WITH ALUMINUM DOME ZURN (Z1910), SMITH (3101), WADE WATER HAMMER ARRESTOR - BELLOWS TYPE, PRE-CHARGED, ALL LEAD FREE STAINLESS STEEL CONSTRUCTION, ASSE 1010 APPROVED, PDI ZURN (Z1700), JR SMITH (5005-5050), SHALL BE TESTED TO 125 PSIG. STRAINER, ACID RESISTANT COATED INTERIOR, SEEPAGE FLANGE WITH CLAMP. (W-9110), JOSAM (49300), WATTS CERTIFIED, RATED FOR 1-11 FIXTURE UNITS. WADE (W5-100), JOSAM (75000 SERIES), WATTS (SS), MIFAB (WHB) (FS-710) SIQUX CHIFF (861-2xXFNWC) ORIFICE SHALL BE AT 36" (MAXIMUM) ABOVE FINISHED FLOOR. BOTTOM OF APRON SHALL BE AT 27" ABOVE FINISHED FLOOR IN COMPLIANCE SUN (F\$2300), MIFAB (F\$1520) INSTALL PER MANUFACTURER'S RECOMMENDATIONS WITH LATEST ADA STANDARDS. MIXING VALVE - THERMOSTATIC MIXING VALVE FOR EMERGENCY EYEWASH OR COMBINATION EYEWASH/FACEWASH FIXTURE, BRONZE BODY LEONARD (TA-LF). ACORN CONTROLS WATER HAMMER ARRESTOR - BELLOWS TYPE, PRE-CHARGED, ALL LEAD FREE STAINLESS STEEL CONSTRUCTION, ASSE 1010 APPROVED, PDI ZURN (Z1700), JR SMITH (5005-5050), CONSTRUCTION. FAIL TO COLD WATER ONLY, OUTLET THERMOMETER, COMBINATION CHECK STOPS OR SEPARATE SUPPLY CHECK VALVES AND (ET71 SERIES), ARMSTRONG (Z358), CERTIFIED. RATED FOR 33-60 FIXTURE UNITS. ELECTRICAL REQUIREMENTS - 1/5 HP MOTOR, 120V-1 PHASE, CORD AND PLUG, PLAIN RECEPTACLE MOUNTED WITHIN EWC LOWER ENCLOSURE WADE (W5-100), JOSAM (75000 SERIES). SHUT OFF VALVES, OUTLET ISOLATION VALVE, MOUNTING BRACKET. APOLLO (34ELF), BRADLEY (S19 GFCI BREAKER. WATTS (SS), MIFAB (WHB) SERIES), HAWS (TWBS.EWE), LAWLER INSTALL PER MANUFACTURER'S RECOMMENDATIONS SHOWER VALVE - ACCESSIBLE, SINGLE HANDLE PRESSURE BALANCED MIXING FAUCET, BRASS OR BRONZE CONSTRUCTION, WASHERLESS MOEN COMMERCIAL CONTRACTOR SHALL PROVIDE A LOCKING CABINET CONCEALING SHUTOFF VALVES TO PREVENT UNAUTHORIZED CLOSURE. CABINET SHALL BE (911E/F), POWERS (ES), GUARDIAN WHA-3 WATER HAMMER ARRESTOR - BELLOWS TYPE, PRE-CHARGED, ALL LEAD FREE STAINLESS STEEL CONSTRUCTION, ASSE 1010 APPROVED, PDI ZURN (Z1700), JR SMITH (5005-5050), DESIGN, OFF-COLD-HOT TEMPERATURE RANGE INDICATOR DIAL, POLISHED CHROME CAST METAL LEVER HANDLE, INTEGRAL CHECK STOPS, (8342/52236GBM25), SYMMONS RECESSED 18 GAUGE STAINLESS STEEL WITH 16 GAUGE LOCKING DOOR TO ENCLOSE VALVE, INLET CHECK STOPS, OUTLET THERMOMETER, (G6020) |WADE (W5-100), JOSAM (75000 SERIES) CERTIFIED, RATED FOR 61-113 FIXTURE UNITS. ADJUSTABLE TEMPERATURE LIMIT STOP. ASSE 1016 LISTED. (9605-PLR), AMERICAN STANDARD AND OUTLET VALVE. WATTS (SS), MIFAB (WHB) 1662.223). DELTA INSTALL PER MANUFACTURER'S RECOMMENDATIONS ACCESSORIES - CHROME-PLATED BRASS SHOWERHEAD WITH SWIVEL BALL JOINT, CHROME-PLATED BRASS ARM AND FLANGE, HAND HELD (R10700-ÚNWS/T13H323-20), LEONARD THERMOSTATIC MIXING AND PRESSURE REGULATING VALVE TO DELIVER 3 GPM OF TEMPERED WATER (60-100 DEGREE F) WITH 10 PSI SHOWER WITH ON/OFF CONTROL AND NON-POSITIVE SHUT OFF. 72" CHROME-PLATED METAL HOSE AND QUICK DISCONNECT, CHROME-PLATED (PAM-II-ST-F/51-3D/62003), POWERS WATER SOFTENER - PRE-PIPED AND SKID MOUNTED. TRIPLEX SOFTENER TANKS, AUTOMATIC REGENERATION TYPE BASED ON HARDNESS KURITA (USST) OR PREAPPROVED PRESSURE DIFFERENTIAL. BRASS SWIVEL CONNECTOR, 36" CHROME-PLATED MOUNTING RAIL, CHROME-PLATED BRASS SUPPLY ELBOW FLANGE, CHROME-PLATED SENSOR WITH VOLUMETRIC TOTAL BACKUP, MULTIPLE TANK PROGRESSIVE CONTROL SYSTEM, POWER SUPPLY WITH CORD AND PLUG. (PB417M202BV) ELEVATED VACUUM BREAKER WITH CHROME-PLATED PIPING AND FLANGES, CHROME-PLATED BRASS 2 FUNCTION TRANSFER VALVE. UNIT SHALL BE ASSE 1071 LISTED AND APPROVED. VALVE SHALL COMPLY WITH FEDERAL ACT S.3874. MAXIMUM FLOW RATE OF 240 GPM AT 25 PSI PRESSURE DROP (TWO VESSELS ONLINE, ONE VESSEL IN STANDBY) MINIMUM FLOW RATE OF 25 GPM TO AVOID CHANNELING (ONE VESSEL ONLINE, TWO VESSELS IN STANDBY) MIXING VALVE - THERMOSTATIC MIXING VALVE FOR EMERGENCY SHOWER OR COMBINATION SHOWER/EYEWASH FIXTURE, BRONZE BODY INSTALL ALL CONTROLS BETWEEN 38" AND 48" ABOVE FINISHED FLOOR IN COMPLIANCE WITH LATEST ADA STANDARDS. INSTALL BOTTOM OF CONSTRUCTION, FAIL TO COLD WATER ONLY, INLET AND OUTLET THERMOMETERS, COMBINATION CHECK STOPS OR SEPARATE SUPPLY CHECK (ET71 SERIES), ARMSTRONG (Z358), SHOWERHEAD AT 78" ABOVE FINISHED FLOOR. MAXIMUM FLOW TO BE 2.5 GPM IN COMPLIANCE WITH ENERGY POLICY ACT OF 2005 AND MINIMUM CAPACITY OF 1.200.000 GRAINS PER TANK VALVES AND SHUT OFF VALVES, OUTLET ISOLATION VALVE, MOUNTING BRACKET. BRADLEY (S19), HAWS (9201H), LAWLER ASME/ANSI STANDARD A112.18.1M. SET SAFETY LIMIT STOP TO 110 DEGREE F DISCHARGE. SALT DOSAGE OF 15 LBS PER CUBIC FOOT OF RESIN (911), POWERS (ETV400), GUARDIAN CONTRACTOR SHALL PROVIDE A LOCKING CABINET CONCEALING SHUTOFF VALVES TO PREVENT UNAUTHORIZED CLOSURE. CABINET SHALL BE (G6040) CONTROL VALVE SIZE: 3" RECESSED 18 GAUGE STAINLESS STEEL WITH 16 GAUGE LOCKING DOOR TO ENCLOSE VALVE, INLET CHECK STOPS, OUTLET THERMOMETER, SOFTENER TANK SIZE: 48" DIAMETER BY 72" OVERALL HEIGHT |BRINE TANK SIZE: 50" DIAMETER BY 60" HEIGH DUAL THERMOSTATIC MIXING AND PRESSURE REGULATING VALVE TO DELIVER 25 GPM OF TEMPERED WATER (60-100 DEGREE F) WITH 10 PSI ELECTRICAL REQUIREMENTS - 120V-1 PHASE RECEPTACLE REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS UNIT SHALL BE ASSE 1071 LISTED AND APPROVED. VALVE SHALL COMPLY WITH FEDERAL ACT S.3874. YARD CLEANOUT - ROUND, DURA-COATED CAST IRON, SIZE AS LISTED ON DRAWINGS, DOUBLE FLANGED HOUSING, HEAVY DUTY SECURED ZURN (Z1474), SMITH (4261), WADE SCORIATED DURA-COATED CAST IRON COVER, LIFTING DEVICE, BRONZE CLEANOUT PLUG WITH GAS/WATER-TIGHT SEAL (8401), JOSAM (58680), WATTS (CO-300-MF), MIFAB (C1300-MF) **Project Title Drawing Title Project Number** ARCHITECT/ENGINEER OF RECORD | STAMP CONSULTANT Office of 438-460 PLUMBING MATERIAL LISTS CONSTRUCT NEW SPS **BID DOCUMENTS** Construction **Building Number** and Facilities ANDERSON **Drawing Number** DELLAN J. Management IMEG CORP RESERVES PROPRIETARY RIGHTS. INCLUDING COPYRIGHTS. TO THIS LLEWELLYN Sioux Falls, SD. AWING AND THE DATA SHOWN THEREON. SAID DRAWING AND/OR DATA ARE 27052 THE EXCLUSIVE PROPERTY OF IMEG CORP AND SHALL NOT BE USED OR RODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN **FULLY SPRINKLERED** Checked PL600 APPROVAL AND PARTICIPATION OF IMEG CORP. 13605 1st Ave. N. #100 Plymouth, MN 55441 **Issue Date** © 2025 IMEG COR | U.S. Department of Veterans REFERENCE SCALE IN INCHES P 763.412.4000 | F 763.412.4090 | ae-mn.com \* 4W01 \* 02/14/2025 NATJAC | DELLLE Revisions: Anderson Engineering of Minnesota, LLC | Proj # 16584

VA FORM 08 - 6231

	ELEC.	TRICAL	SYMBOL LIST
SYMBOL:	TAG:	SPEC SECTION:	DESCRIPTION:
GB	<u>GB</u>	26 05 26	GROUND BUS
IBT	<u>IBT</u>	26 05 26	INTERSYSTEM BONDING TERMINATION
	<u>ECONN</u>	26 05 33	ELECTRICAL CONNECTION
J O	<u>JB</u>	26 05 33	JUNCTION BOX
	<u>FB-#</u> or <u>PT-#</u>	26 27 26	FLOOR BOX or POKE THROUGH
RI <b>V</b>	<u>RI-TECH</u>	26 05 33	TECHNOLOGY OUTLET ROUGH-IN
<b>♥</b> RI	RI-TECH-C	26 05 33	TECHNOLOGY ROUGH-IN, CEILING
W/RI ▼	RI-TECH-W	26 05 33	TECHNOLOGY ROUGH-IN, WALL PHONE
TV	<u>RI-TV</u>	26 05 33	TV ANTENNA OUTLET ROUGH-IN
( <del>1 1 1 1 1 1</del>	<u>WM-#</u>	26 05 35	MULTI OUTLET SYSTEM
•	<u>WW-#</u>	26 05 35	ELECTRICAL WIREWAY w/ DEVICES SHOWN
	PANEL '###'	26 24 16	PANELBOARD - RECESS MOUNT
	PANEL '###'	26 24 16	PANELBOARD - SURFACE MOUNT
	MX-#/MS-# /CB-#/CS-#	26 24 19	MANUAL SWITCH / STARTER / COMBINATION STARTER/ CIRCUIT BREAKER. REFER TO DISC/STA SCHEDULE
$\boxtimes$	TR-#/DTR-#	26 22 00	TRANSFORMER. REFER TO TRANSFORMER SCHEDULE
	<u>CB-#</u>	26 28 16	CIRCUIT BREAKER - SURFACE MOUNTED. REFER TO DISC/STA SCHEDULE
	<u>CB-#</u>	26 28 16	CIRCUIT BREAKER - FLUSH MOUNTED. REFER TO DISC/STA SCHEDULE
□₁	DS-#/FDS-#/DSS-#	26 28 16	DISCONNECT. REFER TO DISC/STA SCHEDULE
DB	<u>DB</u>	ARCH	DOOR BELL
HD	<u>HD</u>	ARCH	HAND DRYER
PP	<u>PP</u>	ARCH	PUSH PAD

	ELEC	TRICAL	SYMBOL LIST
SYMBOL:	TAG:	SPEC SECTION:	DESCRIPTION:
ο <del>=</del> 0	REC-DUP-O	26 27 26	DUPLEX RECEPTACLE CONTROLLED BY OCCUPANCY
o <b>=</b>	REC-QUAD-O	26 27 26	QUAD RECEPTACLE CONTROLLED BY OCCUPANCY
-	REC-DUP	26 27 26	DUPLEX RECEPTACLE, 125V
₩	REC-DUP-GFI	26 27 26	DUPLEX GFI RECEPTACLE, 125V
G	REC-DUP-GFI-R	26 27 26	GROUND FAULT DEVICE
W <del>≠</del>	REC-DUP-WP	26 27 26	DUPLEX GFI WEATHERPROOF RECEPTACLE 125V
<sub>X</sub> <b>⇒</b>	REC-DUP-XP	26 27 26	DUPLEX RECEPTACLE, EXPLOSION PROOF, 125V
₩	REC-ISO	26 27 26	ISOLATED GROUND RECEPTACLE, 125V
s₩	REC-ISO-SUR	26 27 26	ISOLATED GROUND RECEPTACLE WITH SURGE SUPPRESSION, 125V
s <b>⇒</b>	REC-ISO- SUR-QUAD	26 27 26	ISOLATED GROUND QUAD RECEPTACLE WITH SURGE SUPPRESSION, 125V
∪ <b>⇒</b>	REC-USB	26 27 26	DUPLEX RECEPTACLE, USB CHARGING
⇒	REC-ARC	26 27 26	ARC FAULT CIRCUIT INTERRUPTER RECEPT 125V
х- <del>О</del>	REC-SIM-XP	26 27 26	RECEPTACLE, EXPLOSION PROOF, 125V
^ <del>=</del> >	REC-TAMP	26 27 26	DUPLEX RECEPTACLE, TAMPER RESISTANT, 125V
<del>≠⊜</del> >	REC-TAMP-GFI	26 27 26	GFI DUPLEX RECEPTACLE, TAMPER RESISTANT, 125V
=∰>	REC-TAMP-QUAD	26 27 26	QUAD RECEPTACLE, TAMPER RESISTANT, 125V
=₩	REC-QUAD	26 27 26	QUAD RECEPTACLE, 125V
<del>&gt;</del> ₩	REC-QUAD-GFI	26 27 26	QUAD GFI RECEPTACLE, 125V
∪ <b>=⊕</b>	REC-QUAD-USB	26 27 26	QUAD RECEPTACLE, USB 125V
w w	REC-QUAD-WP	26 27 26	QUAD GFI WEATHERPROOF RECEPTACLE, 125V
	REC-DUP-PED	26 05 33	RECEPTACLE - PEDESTAL STYLE
	REC-PED-QUAD	26 05 33	RECEPTACLE - PEDESTAL STYLE
# <sup>©</sup>	REC-Z#	26 27 26	IEC PIN AND SLEEVE RECEPTACLE, 600V
	PP#	26 27 23	POWER POLE

SYMBOL:	TAG:	SPEC SECTION:	DESCRIPTION:
S	SW-1P	26 09 33	SWITCH - SINGLE POLE
\$ <sub>60</sub>	SW-1P-060	26 09 33	SWITCH - LOCAL TIMER - SPRING WOUND
S <sub>T</sub>	SW-1P-ADJ	26 09 33	SWITCH - LOCAL TIMER - USER ADJUSTABLE
SJ	SW-1P-DJ	26 09 33	SWITCH - DOOR JAMB
s <sub>E</sub>	SW-1P-EM	26 09 33	SWITCH - EMERGENCY
s <sub>X</sub>	SW-1P-EX	26 09 33	SWITCH - EXPLOSION PROOF
s <sub>K</sub>	<u>SW-1P-K</u>	26 09 33	SWITCH - SINGLE POLE - KEY LOCK
S <sub>L</sub>	SW-1P-LH	26 09 33	SWITCH - LIGHTED HANDLE
S <sub>M</sub>	<u>SW-1P-M</u>	26 09 33	SWITCH - MOMENTARY CONTACT
\$ <sub>P</sub>	<u>SW-1P-PL</u>	26 09 33	SWITCH - PILOT LIGHT
s <sub>W</sub>	SW-1P-WP	26 09 33	SWITCH - WEATHERPROOF
<b>s</b> <sub>2</sub>	<u>SW-2P</u>	26 09 33	SWITCH - TWO POLE
<b>s</b> <sub>3</sub>	<u>SW-3W</u>	26 09 33	SWITCH - THREE WAY
s <sub>3E</sub>	SW-3W-EM	26 09 33	SWITCH - THREE WAY - EMERGENCY
<b>s</b> <sub>K3</sub>	<u>SW-3W-K</u>	26 09 33	SWITCH - THREE WAY - KEY LOCK
<b>S</b> <sub>4</sub>	<u>SW-4W</u>	26 09 33	SWITCH - FOUR WAY
D <sub>D</sub>	SW-D-LED	26 09 33	DIMMER - LED
D <sub>D3</sub>	SW-D3-LED	26 09 33	DIMMER - LED - 3-WAY
D <sub>O</sub>	SW-OD	26 09 33	DIMMER - WALL DIMMER OCCUPANCY SENSOR
(LS) D	SW-LS-D	26 09 33	DAYLIGHT LEVEL SENSOR - 1 ZONE DIMMINO
PC	SW-LS-PC	26 09 33	PHOTOCELL
⊚ <sub>D</sub>	SW-OC-D	26 09 33	OCCUPANCY SENSOR - DUAL TECHNOLOGY
OC D	SW-OC-D-W	26 09 33	OCCUPANCY SENSOR - DUAL TECHNOLOGY - WALL MOUNTED
\$ <sub>O</sub>	SW-OC-P-O	26 09 33	SWITCH - OCCUPANCY SENSOR WALL SWITCH
\$ <sub>O2</sub>	<u>SW-OC-P-O2</u>	26 09 33	SWITCH - OCCUPANCY SENSOR AND DUAL SWITCH
© <sub>P</sub>	SW-OC-P-P	26 09 33	OCCUPANCY SENSOR - PASSIVE INFRARED 360 DEGREE COVERAGE
OC <sub>P</sub>	SW-OC-P-W	26 09 33	OCCUPANCY SENSOR - PASSIVE INFRARED WALL MOUNTED
© <sub>∪</sub>	SW-OC-U	26 09 33	OCCUPANCY SENSOR - ULTRASONIC 360 DEGREE COVERAGE
© <sub>A</sub>	SW-OC-U-A	26 09 33	OCCUPANCY SENSOR - ULTRASONIC TWO SIDED CORRIDOR COVERAGE
OC U	SW-OC-U-W	26 09 33	OCCUPANCY SENSOR - ULTRASONIC - WALL MOUNTED
SW	<u>SW</u>	26 09 33	WALL CONTROL STATION
TC	<u>TC-#</u>	26 09 33	TIME SWITCH
#B	SW-DCS	26 09 33	DIMMER CONTROL STATION
[#B#F]	SW-LCS	26 09 33	DIMMER CONTROL STATION WITH FADERS
S <sub>LV</sub>	<u>SW-LV</u>	26 09 33	CENTRAL CONTROL - STATION
ALCR	ALCR20	26 09 33	AUTOMATIC LOAD CONTROL RELAY
BCELTS	<b>BCELTS</b>	26 09 33	BRANCH CIRCUIT EMERGENCY LIGHTING TRANSFER SWITCH 20A

	ELEC	TRICAL	SYMBOL LIST
YMBOL:	TAG:	SPEC SECTION:	DESCRIPTION:
			LINEAR LUMINAIRES
			TROFFER
$\triangle$			WALL SCONCE LUMINAIRE
0			DOWNLIGHT LUMINAIRE
<b>(</b> 0)			AIMABLE OR WALL WASH LUMINAIRE
	REFER TO L		INDUSTRIAL LUMINAIRE
<b>Y Y</b>	SCHED	JULE	WALL BRACKET LUMINAIRE
			POLE MOUNTED LUMINAIRE
			SINGLE FACE EXIT SIGN
			DOUBLE FACE EXIT SIGN
<b>**</b>			WALL/CEILING EMERGENCY EXIT SIGN
			EMERGENCY UNIT

	ELECTRICAL EQUIPMENT TAGS	
TAG:	DESCRIPTION:	RELATED SPECIFICATION
ATS-#	AUTOMATIC TRANSFER SWITCH, REFER TO TRANSFER SWITCH SCHEDULE	26 36 00
<u>BAT-#</u>	BATTERY RACK	26 32 13
<u>C-#</u>	GENERAL PURPOSE CONTACTOR	26 28 21
<u>CR-#</u>	CORD REEL	26 27 26
<u>DP-#</u>	DISTRIBUTION PANEL	26 24 16
<u>INV-#</u>	LIGHTING INVERTER	26 52 00
<u>MX-#</u>	MANUAL SWITCH, REFER TO DISCONNECT AND STARTER SCHEDULE	26 24 19
SPD-#	SURGE PROTECTION DEVICE	26 43 00
<u>UPS-#</u> US-#	UNINTERRUPTIBLE POWER SUPPLY UNIT SUBSTATION	26 33 53 26 11 00
<u>VFD-#</u>	VARIABLE FREQUENCY DRIVE - REFER TO VFD SCHEDULE	26 29 23

CON	ITACT PERSONS:
DESCRIPTION:	PERSON:
PROJECT MANAGER	ERIC J. HENDERSON, PE
MECHANICAL	DELLAN J. LLEWELLYN, PE
ELECTRICAL	KRISTEN SPINA, PE
TECHNOLOGY	DAMON M. DEEN

ADDI	ICADLE CODEC
APPL	ICABLE CODES
CONTRACTOR SHALL COMPLY V	WITH APPLICABLE CODES AND LOCAL AMENDMENTS.
BUILDING CODE:	IBC 2021 EDITION
FIRE CODE:	IFC 2021 EDITION
PLUMBING CODE:	IPC 2021 EDITION
MECHANICAL CODE:	IMC 2021 EDITION
ELECTRICAL CODE:	NFPA 70 (NEC) 2020 EDITION
LIFE SAFETY CODE:	NFPA 101 2021 EDITION
ENERGY CONSERVATION CODE:	IECC 2021
HEALTH DEPARTMENT CODE:	CURRENT EDITION
LOCAL BUILDING CODE:	CURRENT EDITION

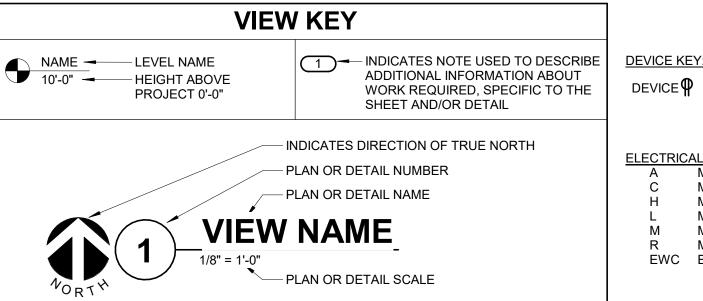
	LUMINAIRE SYMBOL KEY
SYMBOL:	DESCRIPTION:
	NORMAL BRANCH LUMINAIRE
<b>/////////////////////////////////////</b>	[CRITICAL] BRANCH LUMINAIRE
<b>D</b>	EMERGENCY [LIFE SAFETY] BRANCH LUMINAIRE [UNSWITCHED FOR NIGHT LIGHT, UNLESS NOTED 'SE']
	ELECTRICAL ABBREVIATION KEY
ADDD:	DESCRIPTION

	<b>ELECTRICAL ABBREVIATION KEY</b>
ABBR:	DESCRIPTION:
AFF	ABOVE FINISHED FLOOR
С	CONDUIT
GFI	GROUND FAULT INTERRUPTER
N.C.	NORMALLY CLOSED
NIC	NOT IN CONTRACT
N.O.	NORMALLY OPEN
SV	SOLENOID VALVE
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED

	ONLEGG OTTERWISE NOTED
	CONTRACTOR ABBREVIATION KEY
ABBR:	DESCRIPTION:
A.C.	ASBESTOS ABATEMENT CONTRACTOR
C.C.	CIVIL CONTRACTOR
C.O.R.	CONTRACTING OFFICER'S REPRESENTATIVE
E.C.	ELECTRICAL CONTRACTOR
F.P.C.	FIRE PROTECTION CONTRACTOR
G.C.	GENERAL CONTRACTOR
M.C.	MECHANICAL CONTRACTOR
P.C.	PLUMBING CONTRACTOR
T.C.	TECHNOLOGY CONTRACTOR
T.C.C.	TEMPERATURE CONTROLS CONTRACTOR

## **ELECTRICAL RENOVATION NOTES:**

- TO, LIGHTING, POWER, AND SYSTEMS. 1. EXISTING CONDITIONS ARE SHOWN BASED ON INFORMATION OBTAINED FROM FIELD SURVEYS, EXISTING BUILDING DOCUMENTS, AND STAFF. VERIFY EXISTING CONDITIONS AND 3.
- REPORT ANY CONFLICTS BEFORE PROCEEDING. 2. NOT ALL EXISTING EQUIPMENT, LUMINAIRES, AND CONDUIT ARE SHOWN. VERIFY EXISTING CONDITIONS AND REPORT ANY CONFLICTS WITH NEW WORK BEFORE STARTING WORK.
- 3. FIELD VERIFY THE AVAILABLE CLEARANCES FOR CABLE TRAY, BUSWAY AND CONDUITS BEFORE FABRICATION. RISES AND DROPS MAY BE NECESSARY BECAUSE OF EXISTING 4. EACH CONTRACTOR SHALL FIELD VERIFY ACCESSIBILITY TO THE AREA OF THEIR WORK AND
- SHALL NOTIFY THE GENERAL CONTRACTOR PRIOR TO BIDDING IF OTHER UTILITIES ARE REQUIRED TO BE REMOVED OR RELOCATED TO ALLOW ACCESS TO THEIR AREA OF WORK. 5. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CUTTING, REMOVAL AND PATCHING OF ROOFS, WALLS, AND FLOORS ASSOCIATED WITH WORK BY ALL CONTRACTORS.
- CONTRACTORS SHALL NOTIFY THE GC OF AFFECTED AREAS PRIOR TO BIDDING. 6. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF CEILINGS, CEILING TILES, AND CEILING GRIDS ASSOCIATED WITH AREAS OF WORK BY ALL CONTRACTORS. NOTIFY THE GENERAL CONTRACTOR OF AFFECTED AREAS PRIOR TO
- 7. WHERE EXISTING ELECTRICAL SYSTEMS ARE LOCATED IN AREAS THAT CONFLICT WITH NEW LUMINAIRE KEY: EQUIPMENT, PIPING, OR DUCTWORK TO BE INSTALLED, EACH CONTRACTOR SHALL EITHER ARRANGE NEW EQUIPMENT, CONDUIT, OR DUCTWORK IN SUCH A FASHION THAT IT DOES NOT CONFLICT WITH EXISTING SYSTEMS, OR REWORK EXISTING ELECTRICAL SYSTEMS TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT, PIPING, OR DUCTWORK.



INDICATES SIMILAR DETAIL REFERENCED -

IN MULTIPLE LOCATIONS

LINE TYPE AND TAG KEY:

NEW WORK BY THIS CONTRACTOR (WIDE LINE)

---- NEW ---- EXISTING TO BE REMOVED (SHORT DASHED PATTERN) — — NEW UNDERFLOOR OR UNDERGROUND (LONG DASHED PATTERN)

EXISTING TO REMAIN OR WORK BY OTHERS (NARROW LINE)

---- EXISTING TO BE REMOVED BY OTHERS (SHORT DASHED PATTERN) — — EXISTING UNDERFLOOR OR UNDERGROUND (LONG DASHED PATTERN)

HALFTONING DOES NOT MODIFY SCOPE.

'TAG'-E TAGS WITH DASH 'E' INDICATES THE REFERENCED OBJECT IS EXISTING UNDERLINED TAG INDICATES OBJECT IS IN-SCOPE. IF NEW, ADDITIONAL INFORMATION IS AVAILABLE IN A SCHEDULE, MATERIAL LIST, OR SYMBOL LIST

INDICATES AN EXISTING SYSTEM'S POINT OF CONNECTION/REMOVAL

	ELECTRICAL SHEET INDEX	
E000	ELECTRICAL COVERSHEET	
FA001	ELECTRICAL FIRE ALARM COVERSHEET	
ES-100	NEW ELECTRICAL SITE PLAN	
ED101	GROUND LEVEL FLOOR DEMOLITION PLAN - ELECTRICAL	
ED121	ROOF DEMOLITION PLAN - ELECTRICAL	
EL101	GROUND LEVEL FLOOR PLAN - LIGHTING	
EL111	INTERSTITIAL/FIRST LEVEL FLOOR PLAN - LIGHTING	
EP101	GROUND LEVEL FLOOR PLAN - POWER	
EP102	PARTIAL GROUND LEVEL FLOOR PLAN - POWER	
EP111	INTERSTITIAL/FIRST LEVEL FLOOR PLAN - POWER	
EP121	ROOF PLAN - POWER	
EP151	FIFTH LEVEL FLOOR PLAN - POWER	
FA101	GROUND LEVEL FLOOR PLAN - FIRE ALARM	
FA111	INTERSTITIAL/FIRST LEVEL FLOOR PLAN - FIRE ALARM	
E400	ELECTRICAL DETAILS	
E401	ELECTRICAL DETAILS	
E402	ELECTRICAL DETAILS	
E500	ELECTRICAL ONE-LINE DIAGRAMS	
E501	ELECTRICAL ONE-LINE DIAGRAMS	
E600	ELECTRICAL SCHEDULES	
E601	ELECTRICAL SCHEDULES	

# **ELECTRICAL GENERAL NOTES:**

- THESE NOTES APPLY TO ALL ELECTRICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED {L###} INDICATES THE LIGHTING SEQUENCE OF OPERATION FOR THE SPACE. REFER TO THE LIGHTING SEQUENCE OF OPERATION MATRIX ON SHEET **E601**. "NL" INDICATES LUMINAIRE IS UNSWITCHED FOR NIGHT LIGHT. "SE" INDICATES LUMINAIRE IS SWITCHED/CONTROLLED DURING NORMAL OPERATION AND
  - OPERATES FROM **EMERGENCY CIRCUIT** UPON LOSS OF POWER. SHADED LUMINAIRE OR DEVICE INDICATES LUMINAIRE OR DEVICE IS CONNECTED TO AN EMERGENCY CIRCUIT. REFER TO SHEET **E601** FOR LUMINAIRE SCHEDULE. VACANCY/OCCUPANCY SENSOR LAYOUT: SENSORS ARE SHOWN ON THE PLANS FOR
  - DESIGN INTENT AND MAY NOT REPRESENT EVERY DEVICE. PROVIDE MANUFACTURER SPECIFIC FLOOR PLAN LAYOUTS SHOWING LOCATION, ORIENTATION, AND COVERAGE AREA OF EACH CONTROL DEVICE, SENSOR, AND CONTROLLER/INTERFACE. AREAS REQUIRING MULTIPLE SENSOR DEVICES FOR APPROPRIATE COVERAGE. SUBMIT SPECIFIC MANUFACTURER-APPROVED SENSOR LAYOUT AS AN OVERLAY DIRECTLY ON THE PROJECT DRAWINGS, EITHER IN PRINT OR APPROVED ELECTRONIC FORM.

F1 = FIXTURE TAG 1 = CIRCUIT NUMBER a = SWITCH DESIGNATION LUMINAIRE NL = SUBSCRIPT (IF APPLICABLE) Z = ZONE DESIGNATION

> \*IF LABEL IS ORIENTED HORIZONTALLY A SLASH WILL SEPARATE THIS INFORMATION. EX: F1/1/a/NL

DEVICE A = MOUNTING (IF APPLICABLE)
1 = CIRCUIT NUMBER

\*IF LABEL IS ORIENTED HORIZONTALLY A SLASH WILL SEPARATE THIS INFORMATION. EX: A / 1

MOUNT AT +6" TO CENTERLINE ABOVE COUNTER OR BACKSPLASH

MOUNT AT CEILING MOUNT ORIENTED HORIZONTALLY

MOUNT IN CASEWORK MOUNT IN MODULAR FURNITURE

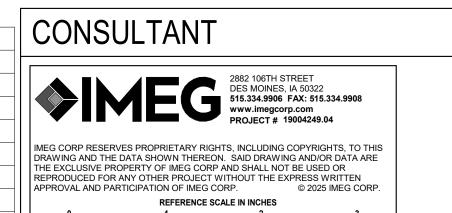
MOUNT IN SURFACE RACEWAY EWC ELECTRIC WATER COOLER

## **ELECTRICAL INSTALLATION NOTES:**

THE COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE ABA STANDARDS FOR ACCESSIBLE DESIGN. REFER TO THE ADA GUIDELINES FOR ALL CONFIGURATION DETAILS ON THIS PAGE FOR ADDITIONAL INFORMATION. CIRCUIT NUMBERS ARE SHOWN FOR CIRCUIT IDENTIFICATION. CIRCUITING SHALL AGREE WITH NUMBERING ON THE PANEL PROVIDED. COMMON NEUTRALS MAY NOT BE USED FOR BRANCH CIRCUITS. BALANCE THE LOAD ON PANEL AS EVENLY AS POSSIBLE BETWEEN EACH LIFE SAFETY, CRITICAL, EQUIPMENT BRANCH WIRING FOR FEEDERS AND BRANCH CIRCUITS SHALL BE ROUTED IN SEPARATE RACEWAY, JUNCTION BOXES, PULL BOXES, AND CABINETS. WIRING FOR EACH BRANCH SHALL BE INDEPENDENT FROM OTHER BRANCHES, INCLUDING THE NORMAL BRANCH. FLUSH MOUNT ALL LIGHTING CONTROL DEVICES AT +42" FROM FLOOR (CENTERLINE DIMENSION), EXCEPT WHERE OTHERWISE NOTED. DEVICES MAY BE SURFACE MOUNTED WHEN CONDUIT IS SPECIFIED EXPOSED. FLUSH MOUNT ALL DUPLEX RECEPTACLES AND TECHNOLOGY OUTLETS AT +18" FROM FLOOR (CENTERLINE DIMENSION), EXCEPT WHERE OTHERWISE NOTED. RECEPTACLES AND OUTLETS MAY BE SURFACE MOUNTED WHEN CONDUIT IS SPECIFIED EXPOSED. MOUNT EXTERIOR LOCATED RECEPTACLES WITH WHILE-IN-USE COVERS AT +20" FROM FINISHED GRADE (CENTER DIMENSIONS) TO MAINTAIN INSTALLATION ADA COMPLIANCE. ALL MATERIALS USED TO SEAL PENETRATIONS OF FIRE RATED WALLS AND FLOORS SHALL BE TESTED AND CERTIFIED AS A SYSTEM PER ASTM E814 STANDARDS FOR FIRE TESTS OF THROUGH-PENETRATION FIRESTOPS. REFER TO 26 05 03 FOR ADDITIONAL INFORMATION AND REQUIREMENTS SPECIFIC TO FIRESTOPPING.

- CONNECTION FOR ELECTRIC WATER COOLERS (EWC) SHALL BE A JUNCTION BOX CONCEALED BEHIND WATER COOLER ACCESS PLATE OR BE A GFI RECEPTACLE LOCATED DIRECTLY BELOW AND CENTERED ON EWC. CONTRACTOR SHALL VERIFY TYPE OF EWC TO BE INSTALLED.
- MOUNT ALL FIRE ALARM PULL STATIONS AT +42" FROM FLOOR (CENTERLINE DIMENSION) EXCEPT WHERE OTHERWISE NOTED.
- INSTALL ALL WALL MOUNTED FIRE ALARM NOTIFICATION DEVICES AT 90" ABOVE FINISHED FLOOR OR 6" BELOW THE CEILING, WHICHEVER IS LOWER, EXCEPT WHERE OTHERWISE NOTED. HEIGHT SHALL BE MEASURED TO THE TOP OF THE DEVICE. CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL CEILING MOUNTED DEVICES AND
- EQUIPMENT WITH LUMINAIRES, SPRINKLER, AND CEILING DIFFUSERS. CENTER ALL DEVICES IN CEILING TILE PATTERN. SMOKE DETECTORS AND OCCUPANCY/VACANCY SENSORS SHALL BE LOCATED NO CLOSER THAN 3 FEET TO AN AIR SUPPLY DIFFUSER OR RETURN GRILLE. CONTRACTOR SHALL VERIFY ALL FURNITURE, MODULAR FURNITURE, AND EQUIPMENT LOCATIONS WITH ARCHITECTURAL PLANS, ELEVATIONS, AND REVIEWED SHOP DRAWINGS. PRIOR TO MAKING THE ACTUAL ELECTRICAL INSTALLATION, THIS CONTRACTOR SHALL
- ADJUST RECEPTACLES, OUTLETS, OR CONNECTION LOCATIONS TO ACCOMMODATE FURNITURE AND/OR EQUIPMENT. ELECTRICAL AND TECHNOLOGY EQUIPMENT SHALL BE MOUNTED TO AVOID IMPEDANCE OF, OPERATION OF, AND/OR ACCESS TO ELECTRICAL AND MECHANICAL EQUIPMENT. ALL MOUNTING OF ELECTRICAL AND TELECOMMUNICATIONS EQUIPMENT, ON EQUIPMENT SUPPLIED BY ANOTHER CONTRACTOR, SHALL BE APPROVED IN ADVANCE BY THE OTHER
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OPENINGS REQUIRED IN WALLS. ALL OPENINGS SHALL BE REPAIRED TO MATCH EXISTING BY A QUALIFIED CONTRACTOR AT THE EXPENSE OF THIS CONTRACTOR. ALL CONDUITS THROUGH WALLS SHALL BE GROUTED OR
- SEALED INTO OPENINGS. . ALL WELDING SHALL BE ACCORDING TO AMERICAN WELDING SOCIETY STANDARDS. CONTRACTOR SHALL FURNISH TO THE ARCHITECT/ENGINEER CERTIFICATES QUALIFYING EACH WELDER, PRIOR TO START OF WORK. THE ARCHITECT/ENGINEER RESERVES THE
- RIGHT TO REQUIRE QUALIFYING DEMONSTRATION, AT THE CONTRACTOR'S EXPENSE, OF ANY WELDERS ASSIGNED TO THE JOB. EACH CONTRACTOR IS RESPONSIBLE FOR DAMAGE CAUSED BY THEIR ACTIONS TO THE WALLS. FLOORS, CEILINGS, AND ROOFS. THE CONTRACTOR WHOSE WORK CAUSES DAMAGE
- IS RESPONSIBLE FOR PATCHING TO MATCH ORIGINAL CONSTRUCTION, FIRE RATING, AND REFER TO ARCHITECTURAL REFLECTED CEILING PLAN, ELECTRICAL, TECHNOLOGY AUDIO/VISUAL, AND OTHER ELECTRICAL PLANS FOR EXACT LOCATIONS OF ALL CEILING
- MOUNTED DEVICES. OTHER THAN SPRINKLERS. 17. ELECTRICAL IDENTIFICATION. REFER TO SPECIFICATION SECTION 26 05 53 FOR COLOR/LABEL REQUIREMENTS FOR CONDUIT, BOX, CABLE/WIRE, AND EQUIPMENT.

VA FORM 08 - 6231



# ARCHITECT/ENGINEER OF RECORD | STAMP

# ANDERSON

13605 1st Ave. N. #100 Plymouth, MN 55441 P 763.412.4000 | F 763.412.4090 | ae-mn.com Anderson Engineering of Minnesota, LLC | Proj # 16584



Office of Construction and Facilities Management

U.S. Department of Veterans

Drawing Title

**ELECTRICAL COVERSHEET** 

**FULLY SPRINKLERED** 

BID DOCUMENTS

CONSTRUCT NEW SPS **Building Number Drawing Number** Sioux Falls, SD. Checked Drawn JMK JDR

**Project Number** 

438-460

**Project Title** 

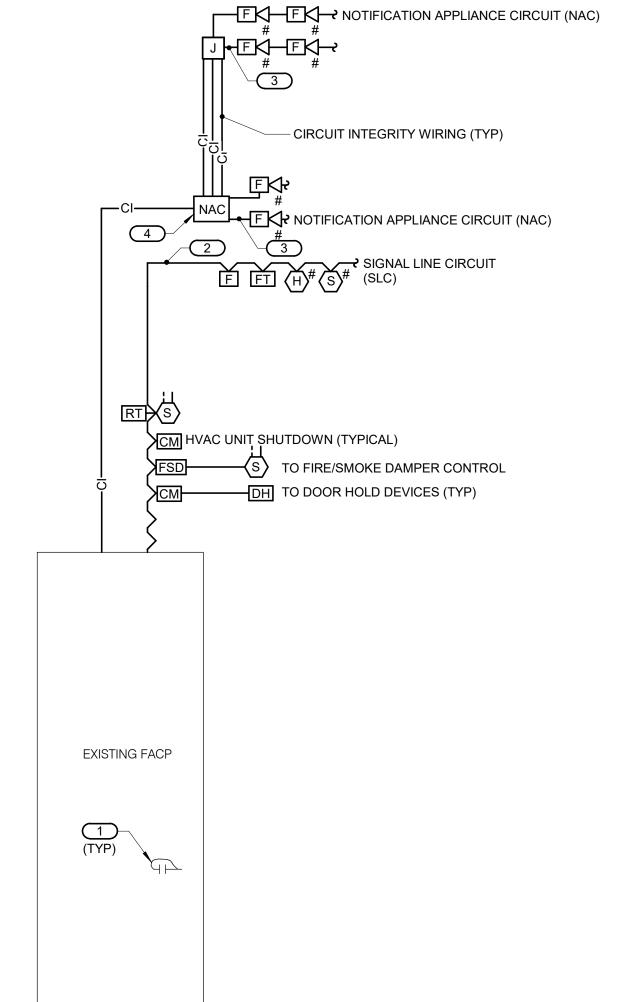
		ODEO							
SYMBOL:	TAG:	SPEC SECTION:	DESCRIPTION:						
COMMON AND SEQUENCE OF OPERATION SUBSCRIPTS			SUBSCRIPTS: TYPE / PROGRAMMING  WG = WIRE GUARD IS REQUIRED WP = WEATHERPROOF A = ATRIUM CA = CLEAN AGENT SYSTEM CR = COMPUTER ROOM E = ELEVATOR RECALL D = HVAC CONTROL DH = DOOR HOLD RELEASE DIPS = DUAL INTERLOCK PREACTION SYS FD = FIRE DOOR RELEASE MP = MEDICAL PROCEDURE S = SLEEPING / PATIENT ROOM SW = STAIRWELL # = 15, 30, 75, 110, 177 CANDELA RATING CD = CANDELA RATING SELECTED BY NICET DESIGNER						
ш	NAC-#	28 31 00	NOTIFICATION APPLIANCE CIRCUIT						
	AMP-#	28 31 00	PANEL AMPLIFIER RACK, FIRE ALARM						
(S)# (S)#	<u>FA-120</u>	28 31 00	FIRE ALARM SMOKE DETECTOR, CEILING OR WALL MOUNT						
(S)	FA-122	28 31 00	BLANK - PHOTOELECTRIC FIRE ALARM DUCT SMOKE DETECTOR						
(S) <sup>AS</sup>	ASSD-#	28 31 50	# = EQUIP OR SYSTEM FIRE ALARM AIR SAMPLING SMOKE DETECTION						
H)#	<u>FA-140</u>	28 31 00	FIRE ALARM HEAT DETECTOR  BLANK = COMBINATION RATE OF RISE / FIXED TEMP AT = ATTIC (LOCATED IN) F = FIXED TEMP RC = RATE COMPENSATED X - EXPLOSION PROOF						
<b>∅</b> <sup>#</sup>	<u>FA-151</u>	28 31 00	FIRE ALARM FLAME DETECTOR, CEILING OR WALL MOUNT						
F	<u>FA-130</u>	28 31 00	FIRE ALARM MANUAL PULL STATION						
FT	<u>FA-131</u>	28 31 00	FIRE ALARM MANUAL PULL STATION W/ COVER						
g g	<u>FA-200</u>	28 31 00	FIRE ALARM VISUAL ALARM DEVICE, CEILING OR WALL MOUNT #= CANDELA RATING.						
			CD = CANDELA RATING SELECTED BY NICET DESIGNER						
FO FO	FA-263	28 31 00	ELECTRIC BELL FOR SPRINKLER SYSTEM						
F F F	<u>FA-210</u>	28 31 00	AUDIO HORN/CHIME ALARM DEVICE, CEILING OR WALL MOUNTED  M = MINI-HORN						
			S = SLEEPING / PATIENT ROOM						
	<u>FA-211</u>	28 31 00	COMBINATION AUDIO HORN/CHIME AND VISUAL ALARM DEVICE, CEILING OR WALL MOUNTED						
			# = CANDELA RATING CD = CANDELA RATING SELECTED BY NICET DESIGNER						
	FA-220	28 31 00	AUDIO (SPEAKER) ALARM DEVICE, CEILING OR WALL MOUNTED						
π #	<u>FA-221</u>	28 31 00	COMBINATION AUDIO (VOICE) AND VISUAL ALARM DEVICE, CEILING OR WALL MOUNTED						
			# = CANDELA RATING CD = CANDELA RATING SELECTED BY NICET DESIGNER						
RI	<u>FA-241</u>	28 31 00	FIRE ALARM REMOTE INDICATOR						
RT	<u>FA-242</u>	28 31 00	FIRE ALARM REMOTE INDICATOR W/ TEST SWITCH						
FS	<u>FA-260</u>	28 31 00	FIRE ALARM FLOW SWITCH TO MONITOR SPRINKLER SYSTEM						
		25.5	BLANK = REFER TO PLANS  KB = KNOX BOX						
TS	<u>FA-261</u>	28 31 00	FIRE ALARM TAMPER SWITCH TO MONITOR SPRINKLER SYSTEM						
			BLANK = REFER TO PLANS PIV = POST INDICATOR VALVE						
MM	FA-160	28 31 00	FIRE ALARM ADDRESSABLE MONITOR MODULE						

**ELECTRICAL SYMBOL LIST** 

	SEQUENCE OF		N O				СМ	CM	СМ	CM Z
SYSTEM INPUTS	OPERATION	PANEL/ANNUNCIATOR ALARM INDICATION	PANEL/ANNUNCIATOR SUPERVISORY INDICATION	PANEL/ANNUNCIATOR TROUBLE INDICATION	AUDIBLE ALARMS SEQUENCE	VISUAL ALARMS SEQUENCE	ELECTRIC SPRINKLER BELL SEQUENCE	SPRINKLER PREACTION ACTIVATION SEQUENCE	SMOKE DAMPER CONTROL SEQUENCE	AHU & MECHANICAL FAN SHUTDOWN SEQUENCE
FIRE ALARM PANEL, TRANSPO	ONDER, NAC PANEL		Х							
FIRE ALARM PANEL, TRANSPONDER, NAC PANEL BATTERY OR CHARGER FAILURE				X						
FIRE ALARM PANEL, TRANSPONDER, NAC PANEL ABNORMAL SWITCH OR CONTROL POSITION.			X							
FIRE ALARM PANEL, TRANSPONDER, NAC PANEL GROUND FAULT, OPEN CIRCUIT, SHORT CIRCUIT				X						
FIRE ALARM PANEL, TRANSPONDER, NAC PANEL AC POWER LOSS OR IRREGULARITY				Х						
NOTIFICATION APPLIANCE CIRCUIT OR SLC LOOP GROUND FAULT, OPEN CIRCUIT, SHORT CIRCUIT				Х						
INITIATING DEVICE FAILURE OR COMMUNICATION ERROR				Х						
FIRE ALARM PANEL MANUAL FIRE DRILL			Х		Х	Х				
MANUAL PULL STATION	FT F	Х			Х	X				
SMOKE DETECTOR	(S) <sub>#/_</sub> H(S) <sub>#/_</sub>	Х			Х	Х				
HEAT DETECTOR	$H_{H_{-}}$ $H_{H_{-}}$ $H_{H_{-}}$	Х			х	X				
SPRINKLER SYSTEM FLOW SWITCH	MM FS	Х			Х	Х	X	Х		
SPRINKLER SYSTEM CABINET MONITOR	MM [TS]		X							
SMOKE DETECTOR FOR HVAC CONTROL	(S) <sub>#/</sub> H(S) <sub>#/</sub>		X						X	X

1. ALL SEQUENCE OF OPERATION SHALL MATCH EXISTING FIRE ALARM SEQUENCE IN FACILITY. COORDINATE REQUIREMENTS PRIOR TO PROGRAMMING.





- THE RISER DIAGRAM IS INTENDED TO CONVEY THE TYPES OF FIRE ALARM CONNECTIONS AND SPECIFICALLY DOES NOT INDICATE QUANTITIES, NUMBER OF
- CIRCUITS REQUIRED OR DISTANCES. 2. THE COMPLETE FIRE ALARM SYSTEM SHALL MEET ALL APPLICABLE CODES AND MANUFACTURER'S RECOMMENDATIONS. 3. CONTRACTOR SHALL COORDINATE ALL WIRE SIZES, TYPES AND REQUIREMENTS
- WITH THE VENDOR PRIOR TO BID. REFER TO SPECIFICATIONS TO DETERMINE CIRCUIT STYLES AND IF CONDUIT IS REQUIRED OR PLENUM RATED CABLE IS 4. ALL +120VAC WIRING REQUIRED FOR OPERATION OF THE SYSTEM AS DESCRIBED
- IN THE CONSTRUCTION DOCUMENTS SHALL BE PROVIDED BY THE ELECTRICAL
- 5. ALL NECESSARY RELAYS MAY NOT BE SHOWN ON THIS PLAN, BUT WHERE REQUIRED FOR PROPER OPERATION OF THE SYSTEM THEY SHALL BE PROVIDED
- BY THE CONTRACTOR. 6. PARTIAL EVACUATION OR RELOCATION OF OCCUPANTS IS THE STANDARD OPERATING PROCEDURE FOR THIS FACILITY IN THE EVENT OF AN ALARM. THEREFORE, ALL NOTIFICATION APPLIANCE CIRCUITS MUST BE INSTALLED AND PROTECTED IN ACCORDANCE WITH THE CIRCUIT SURVIVABILITY REQUIREMENTS DESCRIBED IN NFPA 72. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

#### KEYNOTES: #

- 1. REPRESENTATIVE OF PROGRAMMABLE I/O POINTS IN THE PANEL OR A GENERAL SYSTEM TROUBLE/ALARM CONTACT CONNECTED TO THE SYSTEM NOTED. REFER
- TO SPECIFICATIONS FOR MORE INFORMATION. 2. REFER TO SPECIFICATION FOR REQUIREMENTS OF EACH INITIATION LOOP AND
- WIRING STYLE. REFER TO FLOOR PLANS FOR DEVICES AND THEIR LOCATIONS. 3. REFER TO SPECIFICATION FOR REQUIREMENTS OF EACH NOTIFICATION
- APPLIANCE CIRCUIT AND WIRING STYLE. REFER TO FLOOR PLANS FOR DEVICES AND THEIR LOCATIONS. 4. PROVIDE NOTIFICATION APPLIANCE EXTENDER PANELS AS REQUIRED.
- DETERMINATION OF NEED TO BE MADE BY FIRE ALARM VENDOR. REFER TO SPECIFICATIONS FOR REQUIREMENTS AND ACCEPTABLE MOUNTING LOCATIONS.

FIRE ALARM RISER

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Office of

Construction and Facilities Management

Drawing Title Project Title ELECTRICAL FIRE ALARM BID DOCUMENTS CONSTRUCT NEW SPS COVERSHEET Sioux Falls, SD. FULLY SPRINKLERED

VA U.S. Department of Veterans Affairs

JMK

Drawn Checked JDR

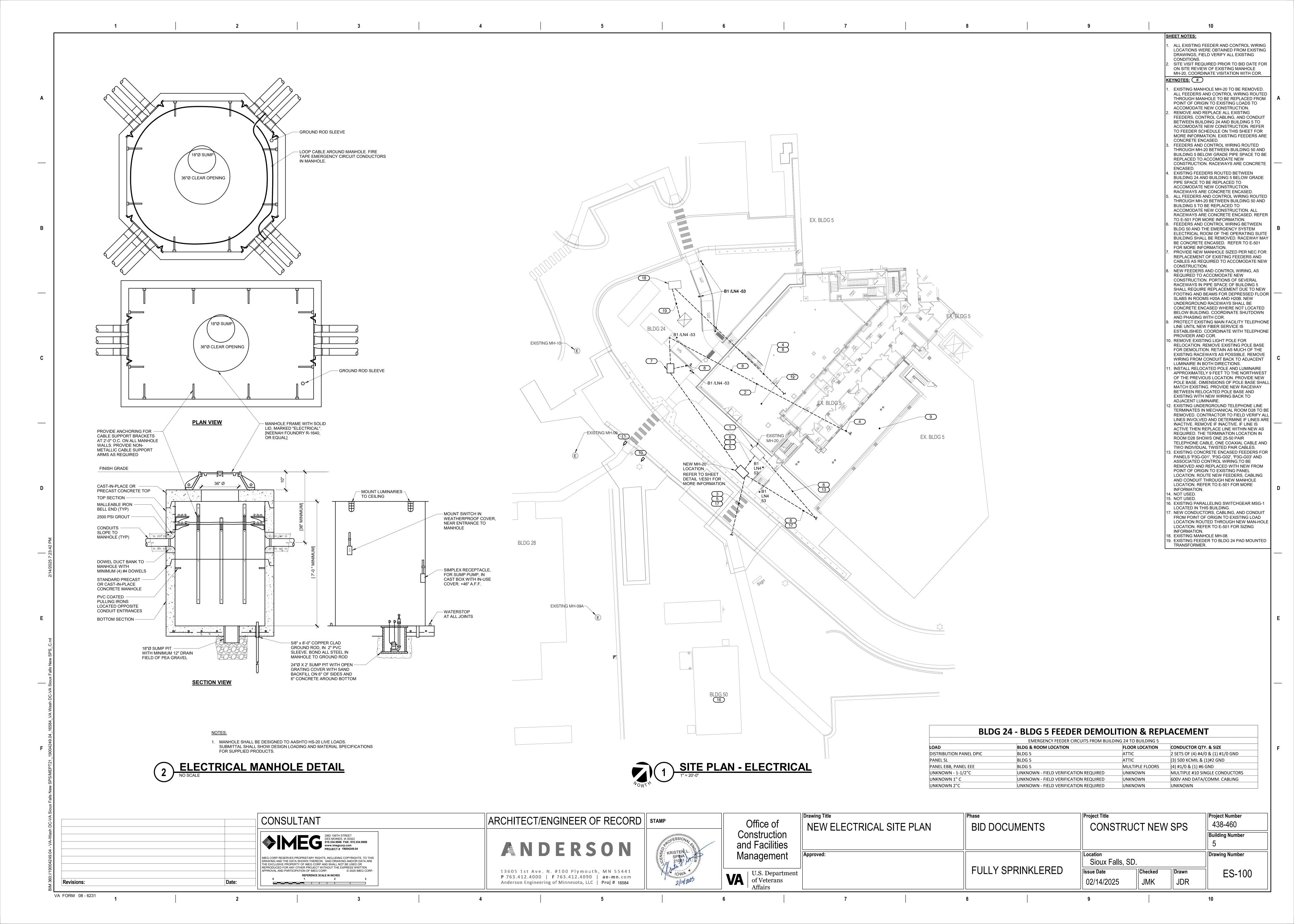
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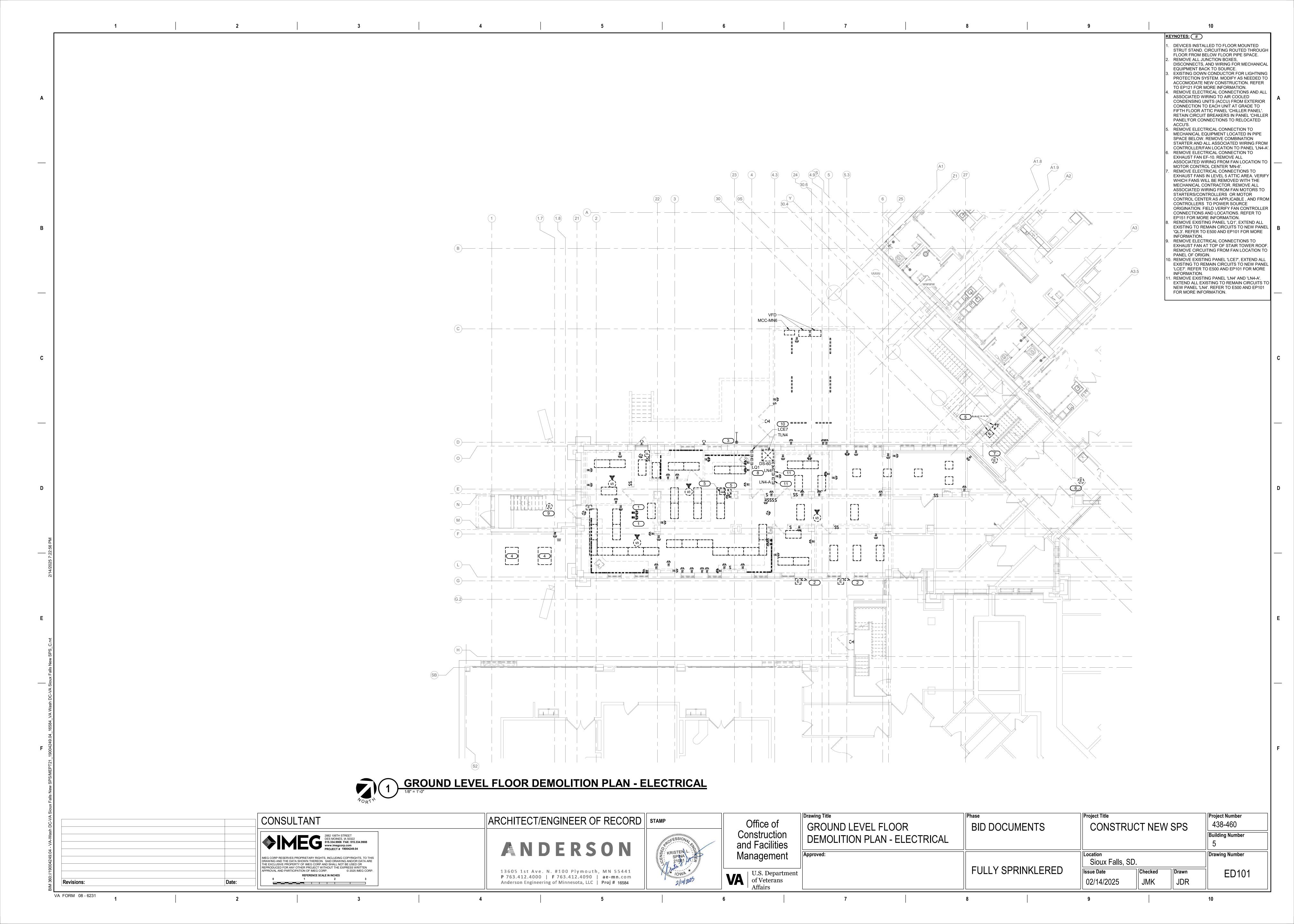
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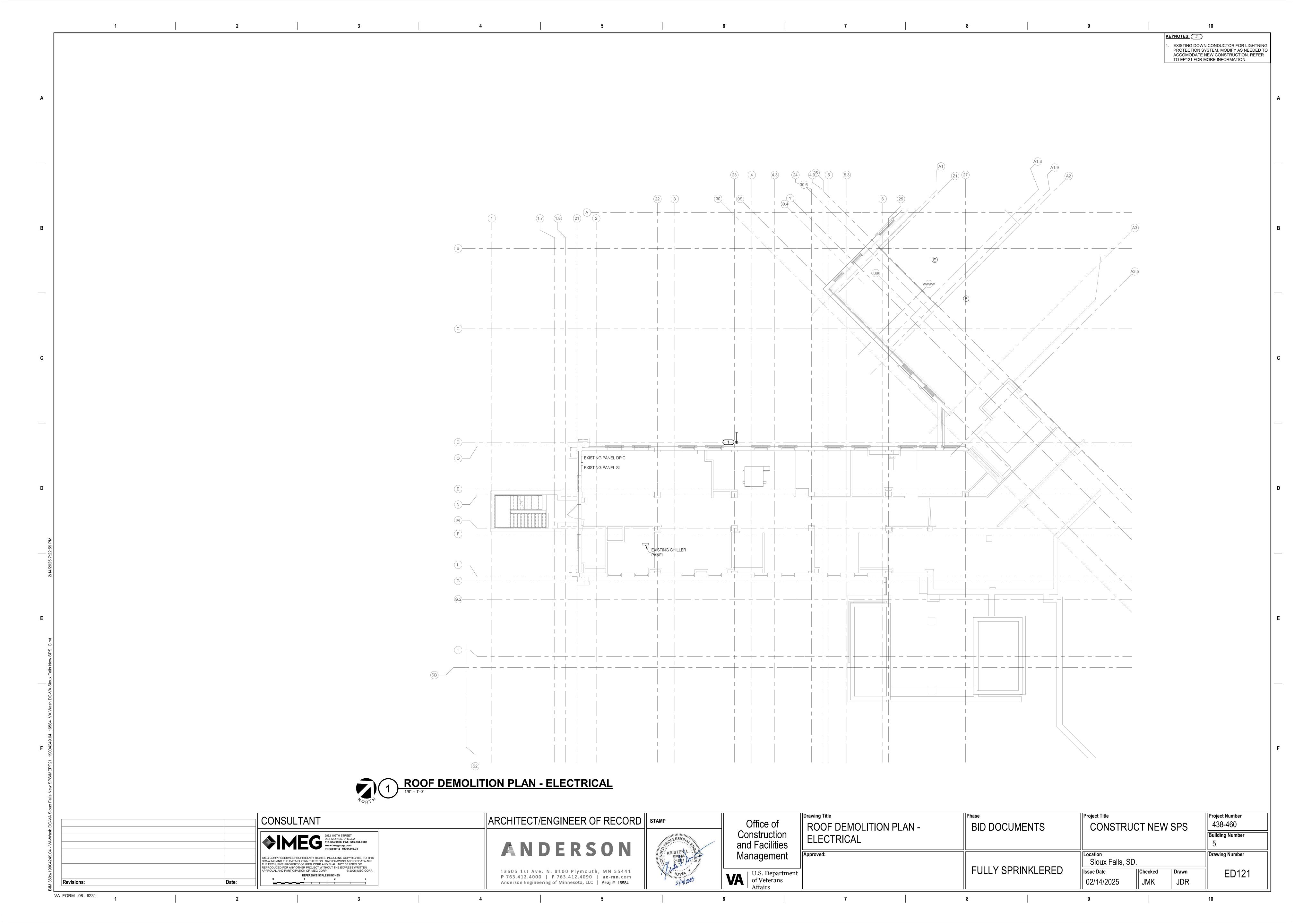
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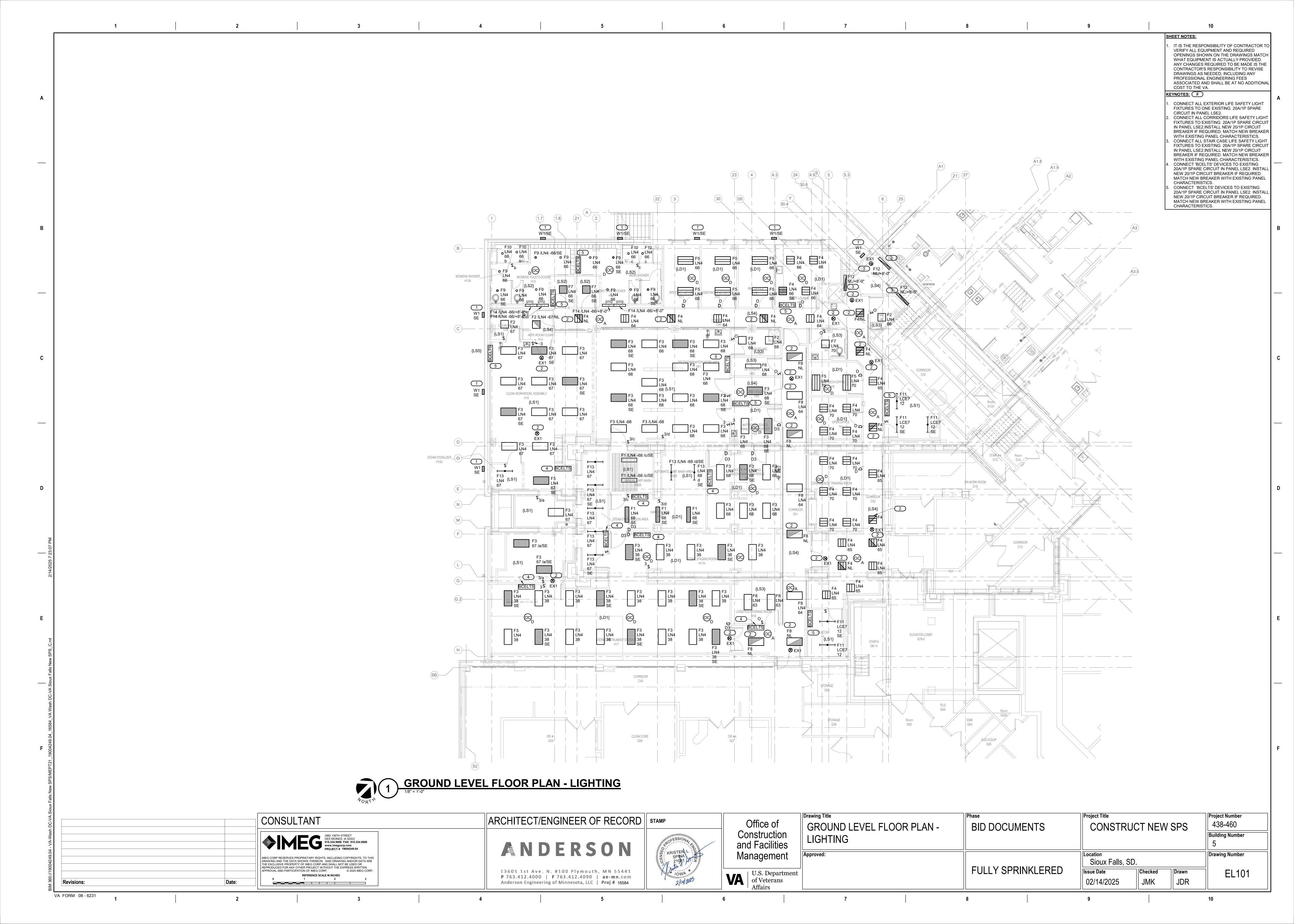
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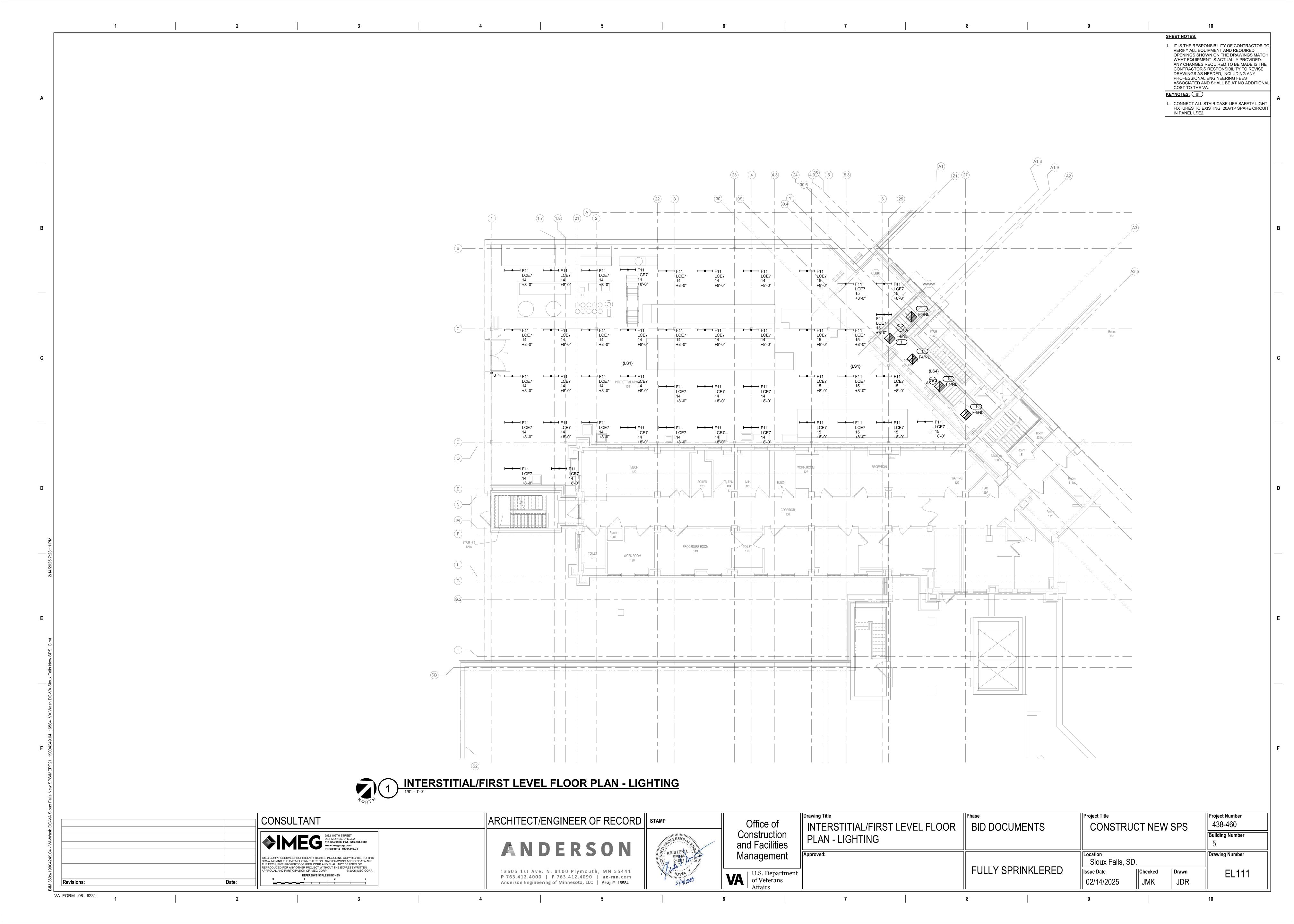
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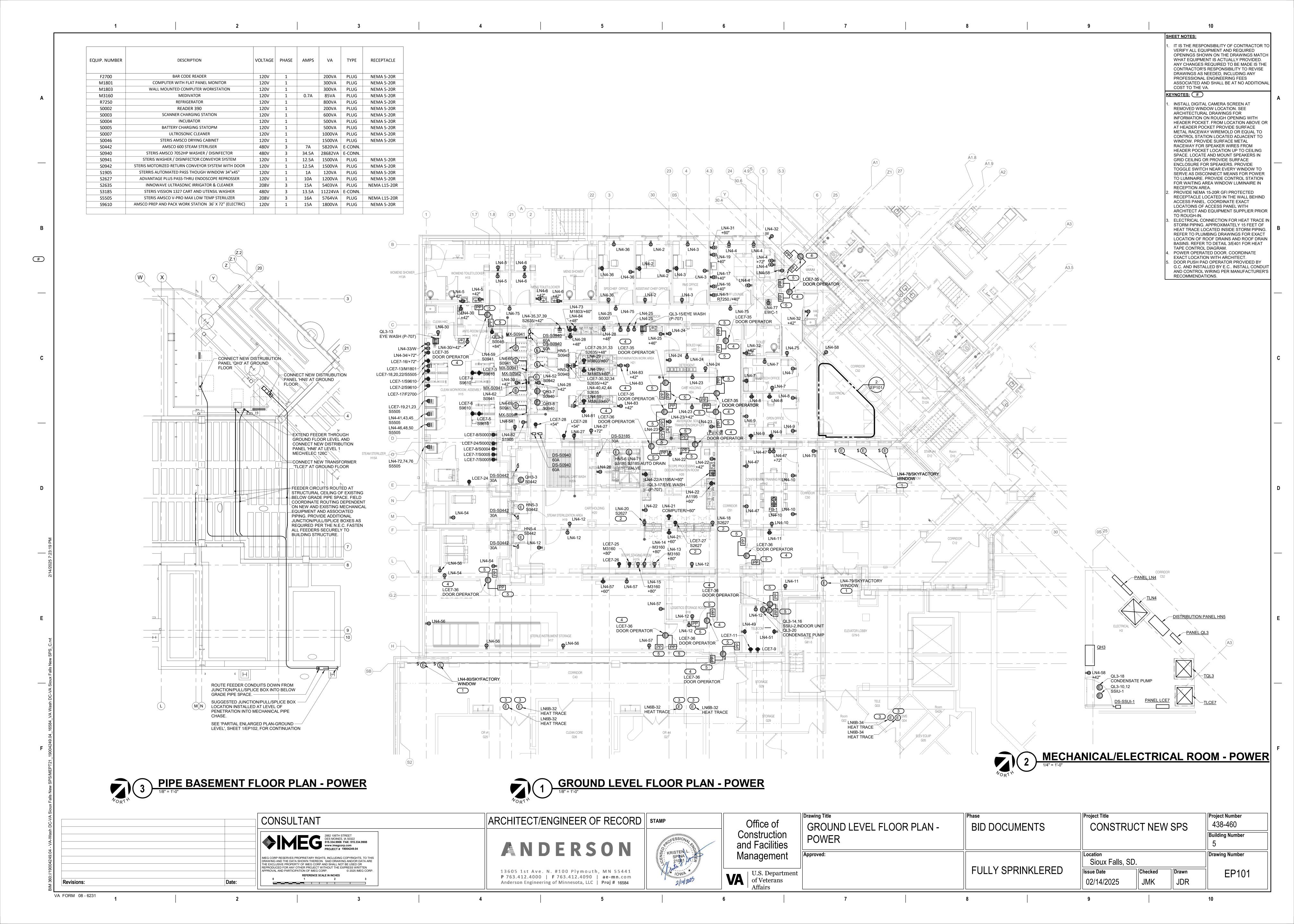


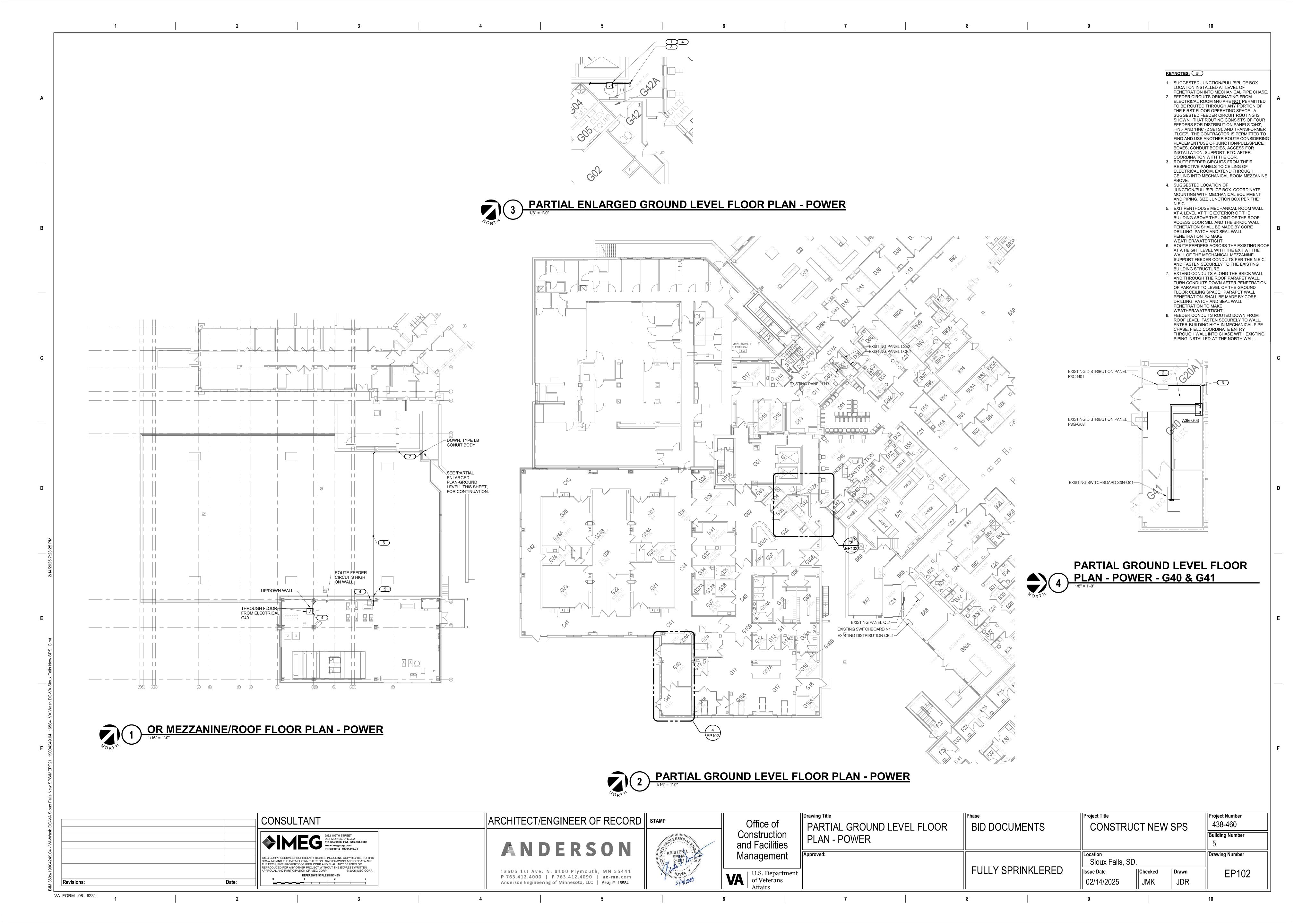


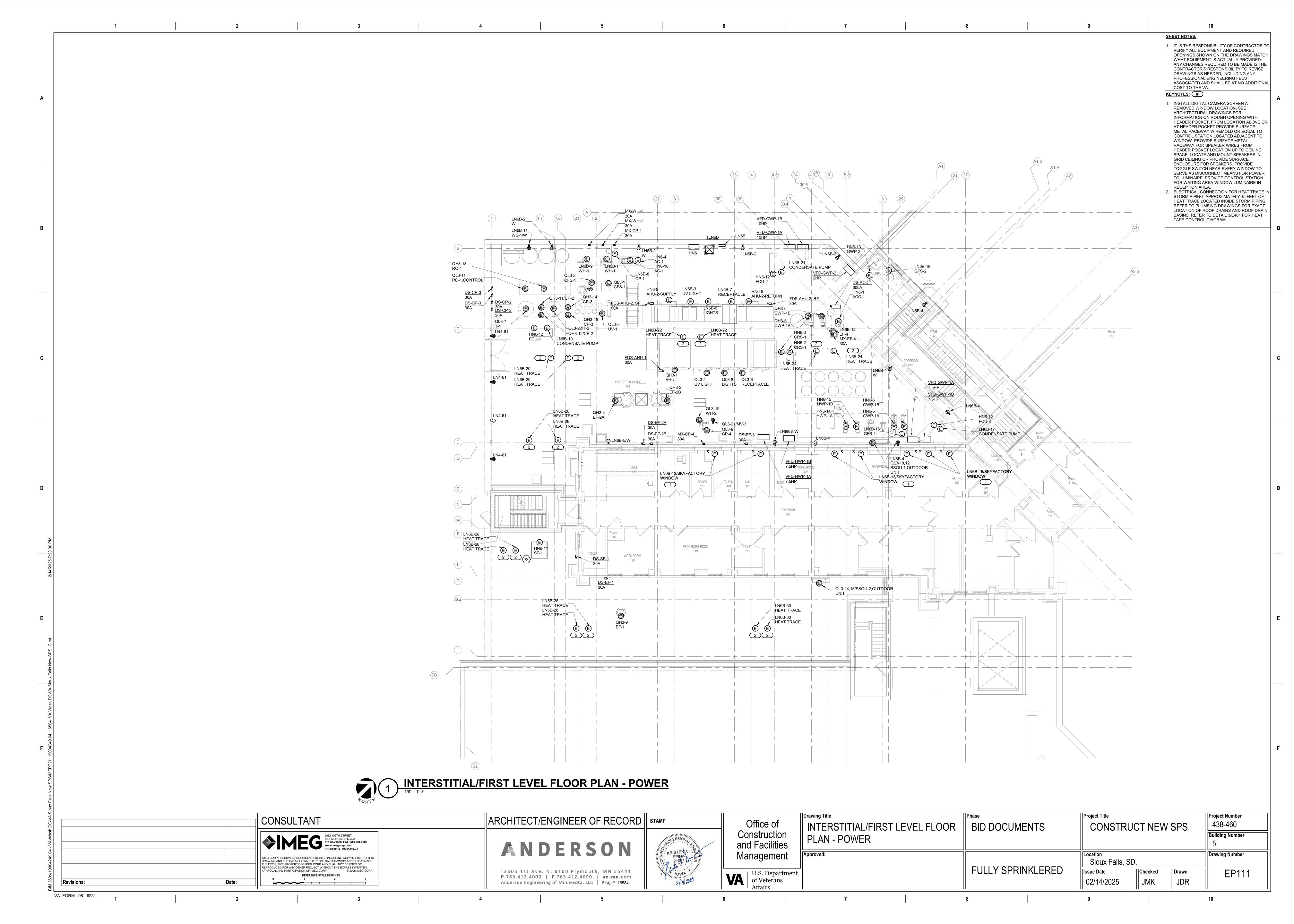


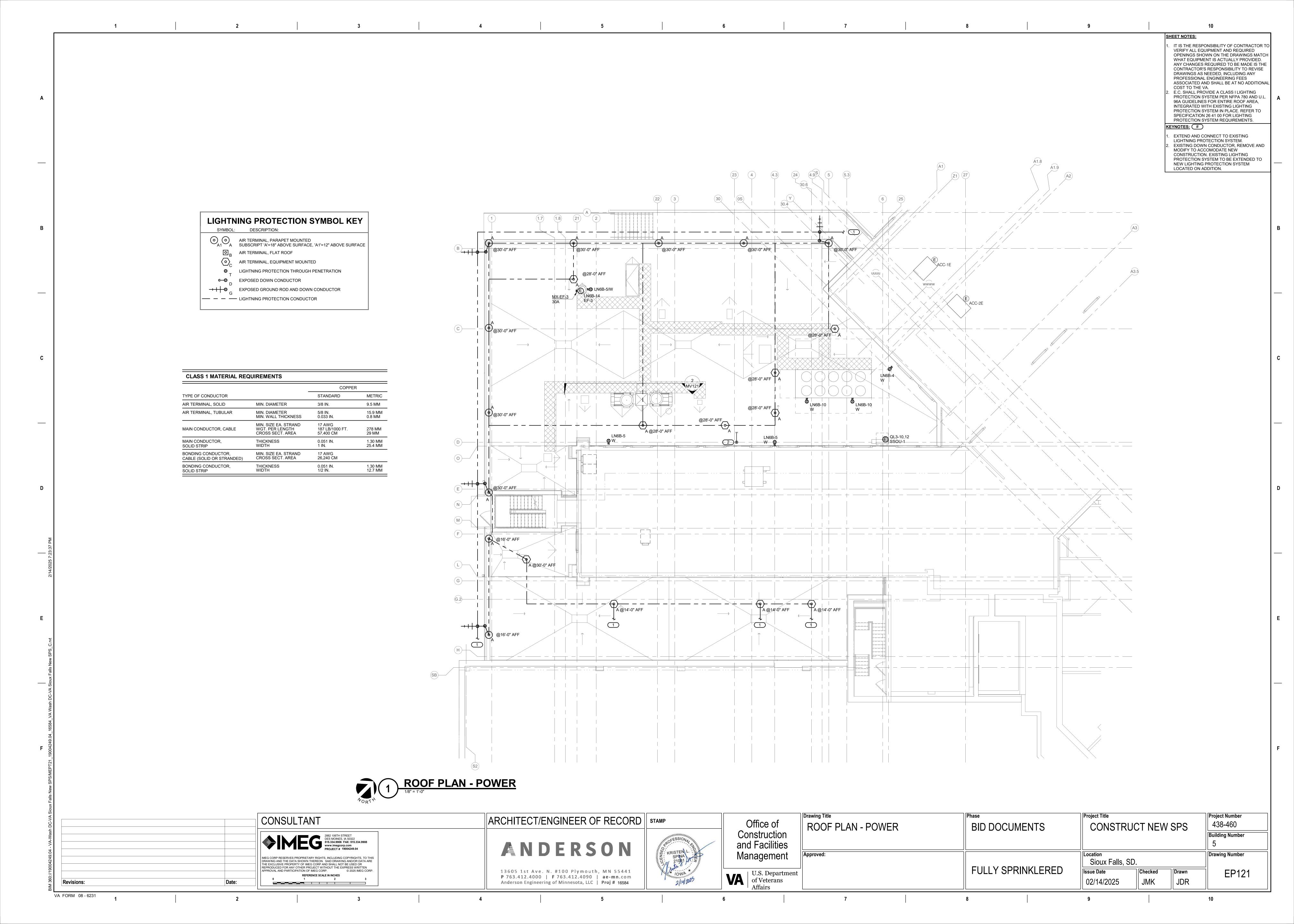


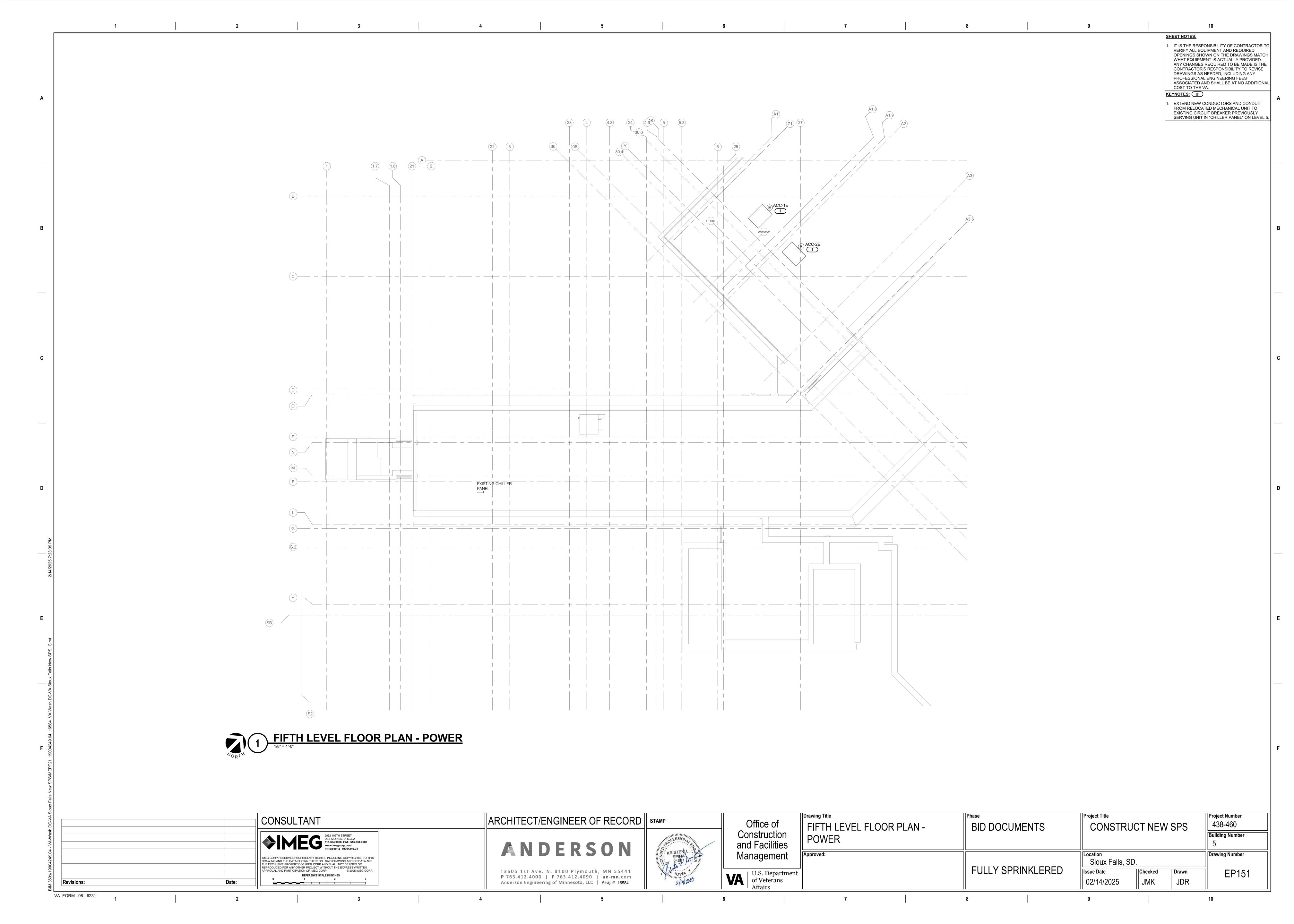


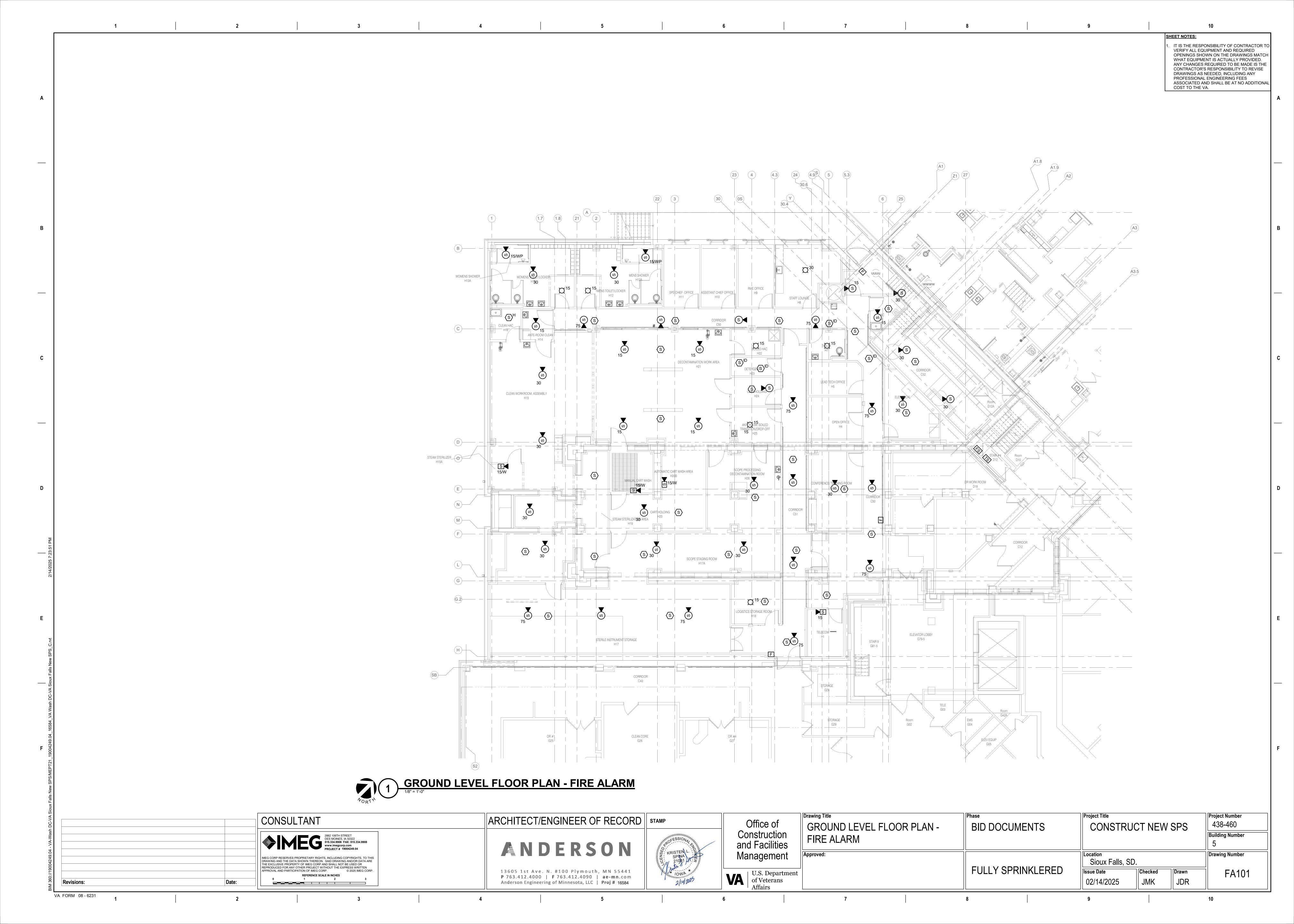


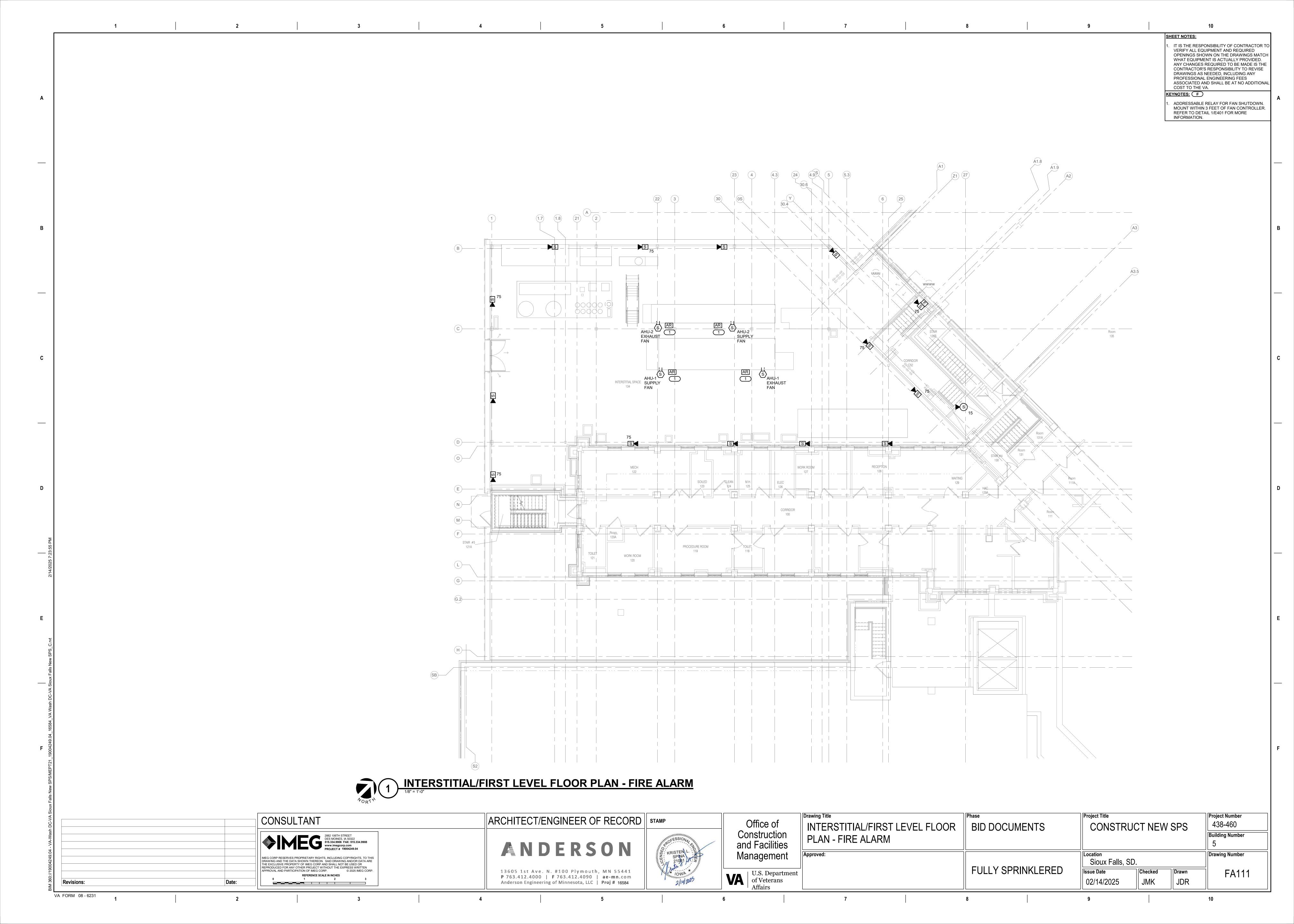


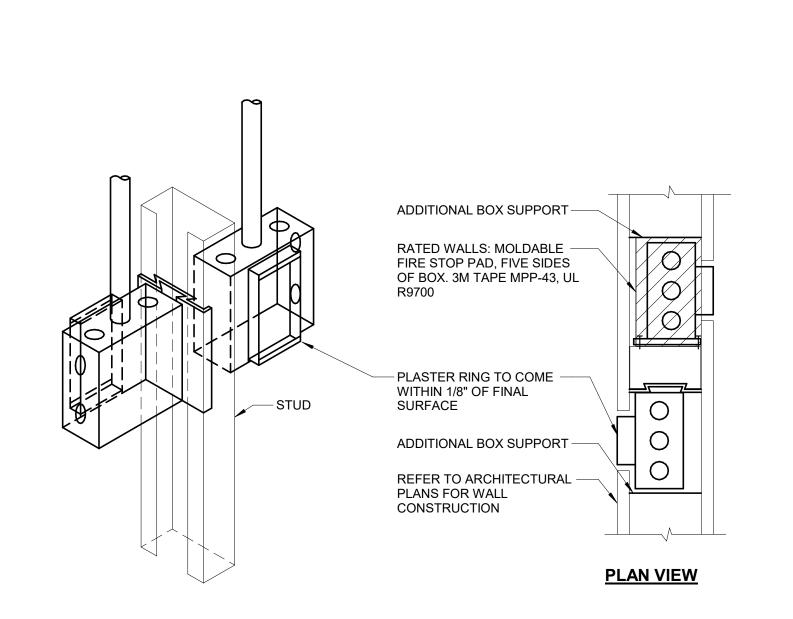






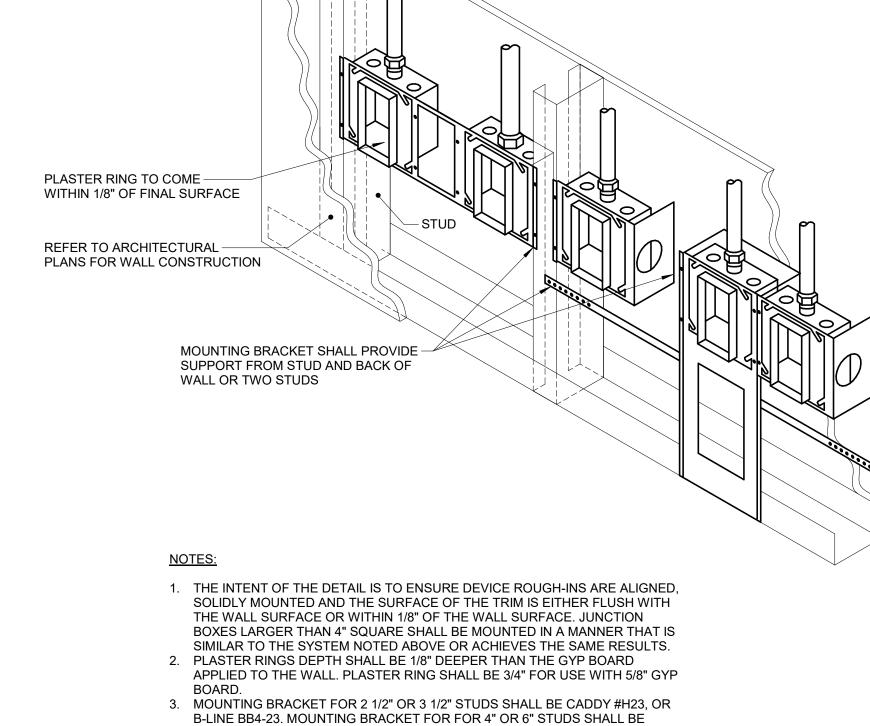






1. HORIZONTAL CONDUIT CONNECTION BETWEEN BOXES LESS THAN 2'-0" NOT PERMITTED. SEE SPECIFICATIONS AND DRAWING NOTES FOR ADDITIONAL SPACE REQUIREMENTS BETWEEN DEVICES.

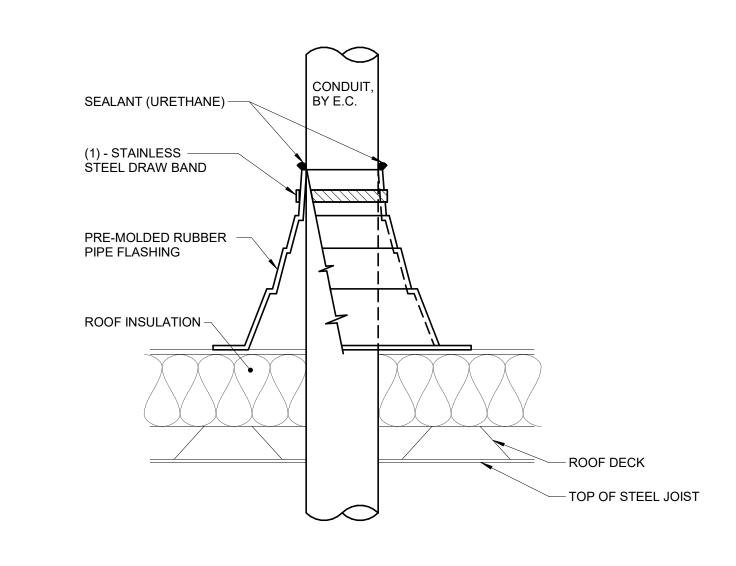
SIDE BY SIDE DEVICE OPENINGS
NO SCALE



CADDY #H46TC OR B-LINE BB4-# . FOR MULTIPLE BOXES BETWEEN STUDS, BRACKET SHALL BE CADDY #RBS16/#RBS24 OR B-LINE BB6-# OR BBF# FLOOR MOUNT SUPPORT WITH BBFC. 4. WHERE RECEPTACLE AND TECHNOLOGY DEVICES ARE SHOWN SERVING A COMMON COMPUTER OR EQUIPMENT, OR SHOWN IN SIMILAR LOCATIONS ON THE DRAWINGS THE DEVICES SHALL BE INSTALLED ON OPPOSITE SIDES OF A

BACKBOX MOUNTING DETAIL

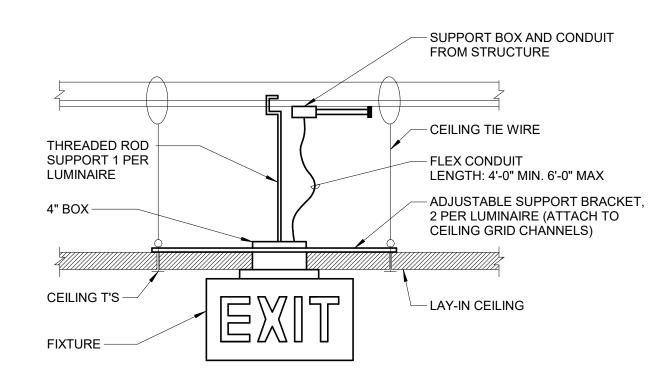
COMMON STUD OR IN ADJACENT OPENINGS WITH MOUNTING BRACKETS.



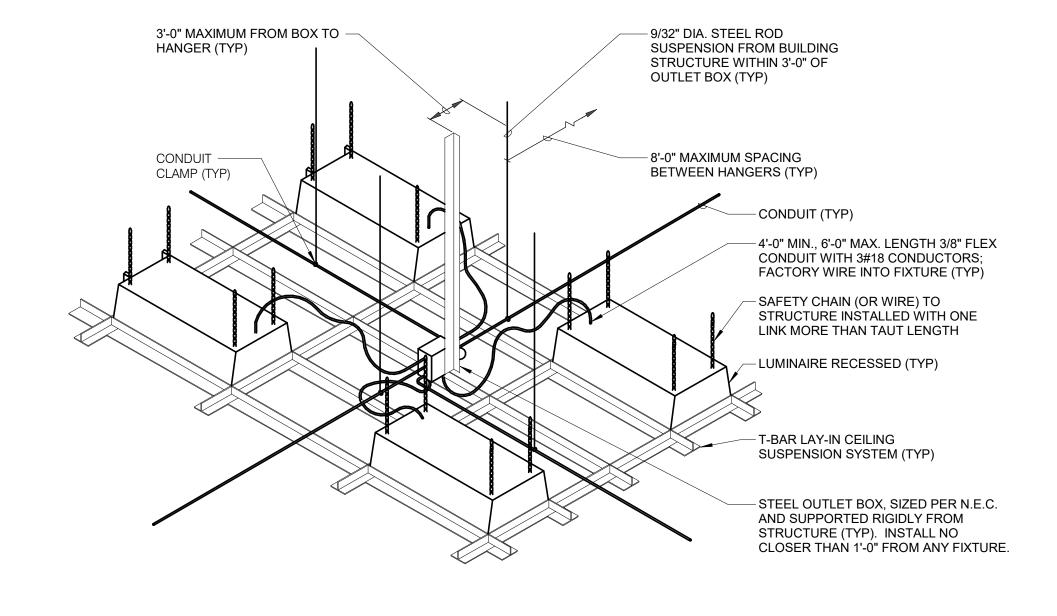
1. CONDUIT SHALL BE SUPPORTED WITHIN 24 INCHES ABOVE AND BELOW ROOF. 2. VERIFY FINAL REQUIREMENTS WITH GENERAL CONTRACTOR (G.C.) AND

CONDUIT ROOF PENETRATION

ROOFING INSTALLER PRIOR TO INSTALLATION.



**EXIT SIGN MOUNTING DETAIL** 

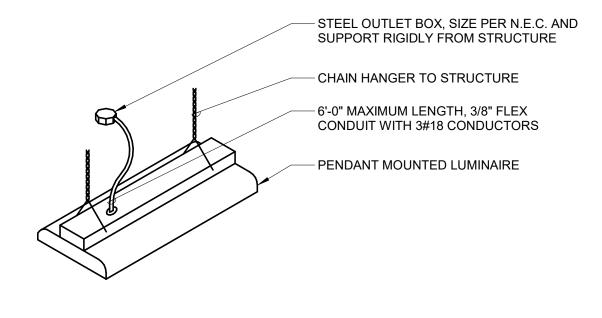


ADDITIONAL INFORMATION.

1. DO NOT SUPPORT CONDUIT OR BOXES FROM CEILING GRID HANGERS. 2. PROVIDE A MINIMUM OF TWO INDEPENDENT #12 GAUGE SUSPENDED CEILING SUPPORT WIRES LOCATED ON DIAGONAL CORNERS OF THE LUMINAIRES. LUMINAIRES WEIGHING 56 LBS OR GREATER REQUIRE FOUR SUPPORT WIRES. REFER TO SPECIFICATIONS FOR

5 RECESSED LUMINAIRE DETAIL (SAFETY CHAIN)

NO SCALE



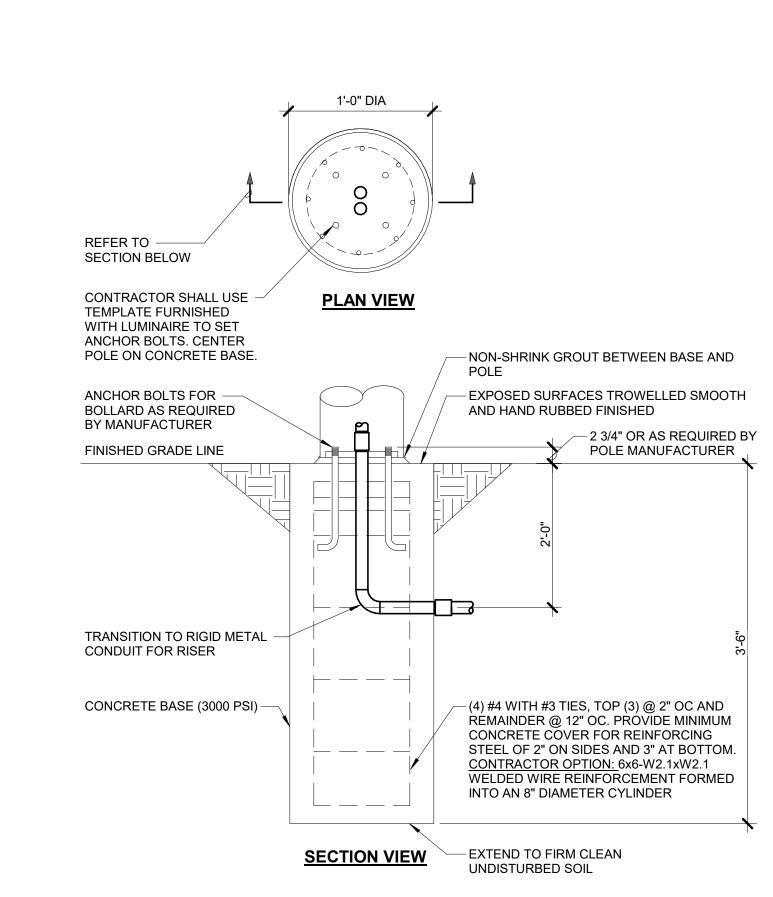
1. SELECT CHAIN LENGTH TO PROVIDE MOUNTING HEIGHT AS REQUIRED ON 2. PROVIDE TWO CHAIN HANGERS FOR EACH LUMINAIRE. ADJUST TO HANG LUMINAIRE LEVEL.

6 CHAIN SUSPENDED MOUNTING DETAIL
NO SCALE

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# 2 BOLLARD BASE DETAIL NO SCALE



HEAT TAPE CONTROL DIAGRAM

1. ALL WIRING SHALL BE COPPER TYPE "THWN" INSTALLED IN I.M.C. CONDUIT.

PANELBOARD, REFER TO SCHEDULE FOR NUMBER, SIZE AND TYPE OF BREAKERS

— HEAT TAPE CONTROL THERMOSTAT TO SHUT OFF HEAT TAPE WHEN AMBIENT

TEMPERATURE IS ABOVE 40°F

THERMOSTAT -

- BREAKERS FOR HEAT TAPE SHALL BE 30mA GROUND FAULT EQUIPMENT PROTECTION TYPE. COORDINATE MODELS WITH HEAT TAPE MANUFACTURER BREAKERS FOR HEAT TAPE AND CONTROLS SHALL HAVE HANDLE "LOCK-ON"

20A/2P

• •

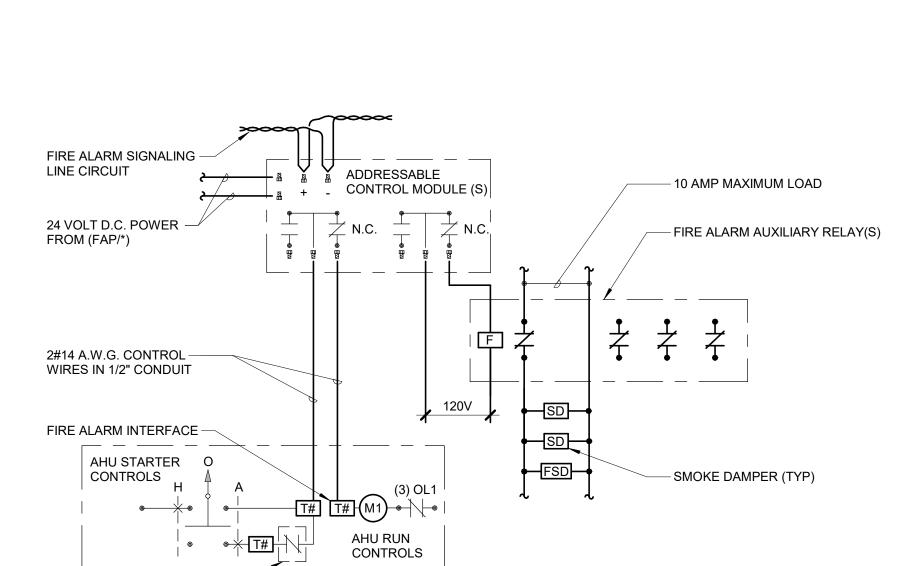
NEUTRAL -

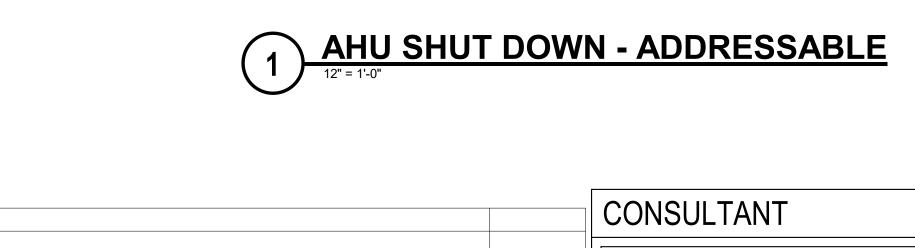
CONNECTION

REGULATING HEATER CABLE

BRAID -

THE FOLLOWING SCHEDULE SHALL BE ADHERED TO UNLESS THEY CONST RMC CONDUIT WILL BE PERMITTED IN PLACE OF ALL CONDUIT SPECIFIED II									
NSTALLATION TYPE	RMC	IMC	EMT	RTRC	PVC COATED RMC	PVC	PVC CONCRETE ENCASED	HDPE	ASR
FEEDERS: SWITCHBOARDS, DISTRIBUTION PANELS, PANELBOARDS, MOTOR CONTROL CENTERS, ETC.		х	х						
BRANCH CIRCUITS: LIGHTING, RECEPTACLES, CONTROLS, ETC.		x	X						
MECHANICAL EQUIPMENT FEEDERS: PUMPS, CHILLERS, AIR HANDLING UNITS, ETC.		х	х						
FLOOR MOUNTED EQUIPMENT FEEDERS: PUMPS, ETC. (INCLUDE NO MORE THAN 6 FEET OF LFMC TO PUMP)		х	х						
CONTROLS (LIGHTING, POWER, BUILDING AUTOMATION, ETC.)		Х	х						
FINISHED SPACES / CONCEALED			х						
WET AND DAMP LOCATIONS: (CONDUIT, BOXES, FITTINGS, NSTALLED AND EQUIPPED TO PREVENT WATER ENTRY)	х			х					
CORROSIVE LOCATIONS				х	x				
ELEVATED CONCRETE SLABS (ABOVE GRADE)	х					х			
NTERIOR LOCATIONS: CONCEALED			х						
NTERIOR LOCATIONS: EXPOSED		х	х						
NTERIOR LOCATIONS: EXISTING WALLS AND EXPOSED NSTALLATION (FINISHED SPACES)			х						х
UNDERGROUND / SLABS ON GRADE (IN OR UNDER SLABS ON GRADE)									
WITHIN 5' FROM THE PERIMETER OF THE BUILDING	X					x			
WITHIN 5' FROM THE PERIMETER OF THE BUILDING WHEN PASSING THROUGH THE PERIMETER OF THE BUILDING FOUNDATION:	х			х			х		
UNDERGROUND SITE CONDUITS:									
WITHIN 5' FROM THE PERIMETER OF A BUILDING FOUNDATION	X			х			x		
5' OR GREATER FROM THE PERIMETER OF A BUILDING FOUNDATION	Х			х		Х			
UNDER ROADS, DRIVES, AND VEHICLE TRAVELED WAYS. WHEN HDPE DIRECTIONAL BORING IS ALLOWED: PROVIDE PRESSURIZED GROUT					x	х		Х	
FIRE RATED ASSEMBLIES: FIRE RATED ASSEMBLIES LISTED WITH PHENOLIC RTRC RACEWAY				x					





TEMPERATURE -

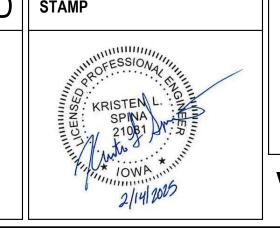
CONTROL RELAY

SEQUENCE OF OPERATION:

ADDRESSABLE CONTROL MODULE PROGRAMMED NORMALLY CLOSED FOR NORMAL

OPERATION UPON ACTIVATION OF A SMOKE DETECTOR IN THE AREA SERVED BY THE AHU, THE CONTROL MODULE WILL OPEN SHUTTING DOWN THE AHU AND CLOSING THE SMOKE

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1 2



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ELECTRICAL DETAILS

BID DOCUMENTS FULLY SPRINKLERED

Project Number 438-460 CONSTRUCT NEW SPS Building Number Drawing Number Sioux Falls, SD. Checked Drawn E401 JMK JDR

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