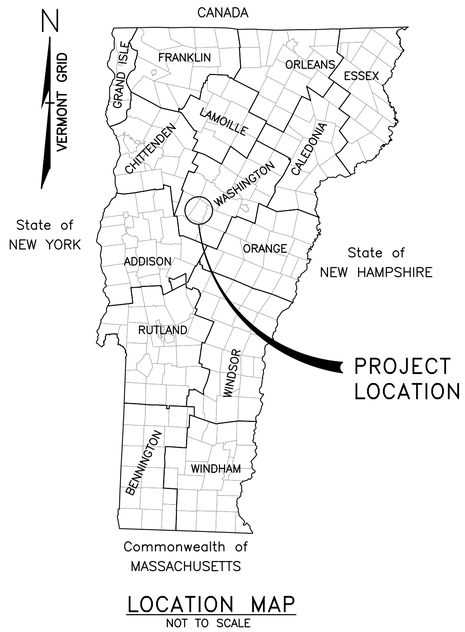
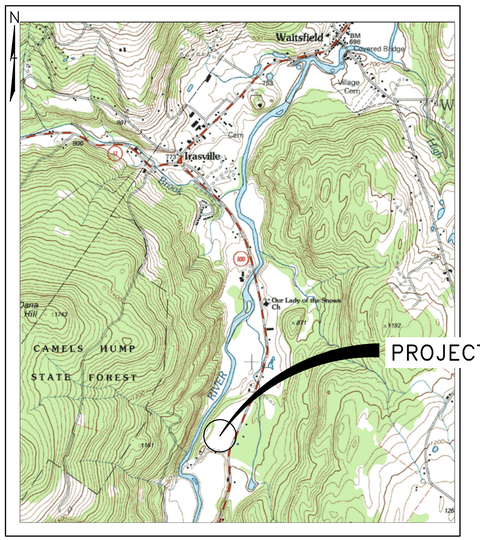


LOCATION MAP
NOT TO SCALE

TOWN OF WAITSFIELD
WAITSFIELD, VERMONT

WASTEWATER TREATMENT FACILITY
CONTRACT NO. 1



PROJECT AREA PLAN
SCALE: 1" = 2,000 FEET ±

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REVISIONS

NUMBER	DATE	REVISION DESCRIPTION	BY

CLIENT NAME
TOWN OF WAITSFIELD

PROJECT NAME
WAITSFIELD WASTEWATER TREATMENT FACILITY

PROJECT ADDRESS
4144 MAIN STREET
WAITSFIELD, VERMONT 05673

SHEET TITLE
CONTRACT NO. 1

TITLE SHEET

D&K PROJECT #	PROJ. ENG.
227947	JBA
DRAWN BY	CHECKED BY
EBS	DDC

DATE
APRIL 8, 2026

SHEET NUMBER
G1

SHEET: 1 of 81

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LEGEND

EXISTING

- MAJOR CONTOUR
- MINOR CONTOUR
- EDGE OF PAVEMENT
- EDGE OF GRAVEL
- PARCEL BOUNDARY
- RIGHT OF WAY
- TREE LINE
- UE — UE — UNDER GROUND ELECTRICAL
- UGC — UNDER GROUND CABLE
- W — W — WATER MAIN
- S — S — SEWER
- SD — STORM DRAIN
- O — O — FENCE
- STONE WALL
- WL — WETLAND
- WB — WETLAND BUFFER
- RC — RIVER CORRIDOR
- ZA — ZONE A FLOOD ZONE
- ZAE — ZONE AE FLOOD ZONE
- ZX — ZONE X FLOOD ZONE
- BUILDING
- LEDGE OUTCROP
- BENCH MARK
- CATCH BASIN
- T — TELEPHONE MANHOLE
- S — SEWER MANHOLE
- MH — MANHOLE
- G — GAS MANHOLE
- E — ELECTRICAL MANHOLE
- WELL
- UTILITY POLE
- CONTROL POINT
- LIGHT POLE
- SIGN (2 POST)
- SIGN (1 POST)
- GAS VALVE
- HYDRANT
- IRON PIPE FOUND
- WATER SHUT OFF
- GAS SHUT OFF
- TREE
- GUY WIRE
- STONE BOUND
- MAILBOX
- B — BORING
- TP — TEST PIT
- MW — MONITORING WELL
- HAZ — HAZARDOUS WASTE SITE

NEW

- S — S — SEWER MAIN
- SS — SEWER SERVICE
- FM — FORCE MAIN
- FMS — FORCE MAIN SERVICE
- WS — WATER SERVICE
- S — SEWER MANHOLE
- VV — VALVE VAULT
- AR — AIR RELEASE
- FMV — FORCE MAIN VALVE
- CO — ONE WAY CLEANOUT
- CO — TWO WAY CLEANOUT
- SEWER SERVICE
- WATER SERVICE
- DIRECTIONAL DRILL
- UGS — UNDERGROUND SIGNAL
- UGES — UNDERGROUND ELECTRICAL AND SIGNAL
- UGE&F — UNDERGROUND ELECTRICAL AND FIBER
- SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE
- PDF — PROJECT DEMARCATION FENCE
- PERMANENT EASEMENT
- TEMPORARY EASEMENT
- **WPA** — WELL PROTECTION ZONE
- **LOD** — LIMIT OF DISTURBANCE

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PROJECT ADDRESS
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WAITSFIELD, VERMONT 05673

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DATE
APRIL 8, 2026

SHEET NUMBER
G2

SHEET: 2 of 81

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CONSTRUCTION NOTES

1. CONTRACTOR TO BE RESPONSIBLE FOR MAINTAINING FUNCTION OF EXISTING UTILITIES (WATER, SEWER AND STORM DRAIN SYSTEMS) DURING INSTALLATION OF NEW UTILITIES, AND UNTIL NEW UTILITIES ARE INSTALLED, TESTED, ACCEPTED AND PLACED INTO SERVICE. THE COST ASSOCIATED WITH MAINTAINING EXISTING UTILITY FUNCTION SHALL BE PART OF THE UNIT PRICE OF UTILITY INSTALLED.
2. CONTRACTOR SHALL PROVIDE NEW GRAVEL AND CRUSHED GRAVEL AS SPECIFIED WITH THE TRENCH RESTORATION PRIOR TO PLACING TEMPORARY PAVEMENT.
3. ALL LAWNS AND WALKS SHALL BE REPAIRED BY THE CONTRACTOR AS PART OF THE UNIT PRICE OF UTILITY INSTALLED.
4. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES FOR TEMPORARY SUPPORT OF UTILITY POLES.
5. THE CONTRACTOR MUST PROVIDE A MINIMUM OF ONE LANE OF TRAFFIC ALONG ALL ROADWAYS FOR THE DURATION OF THE PROJECT.
6. CONTRACTOR SHALL REPLACE PAVEMENT STRIPING REMOVED DURING INSTALLATION OF UTILITY IMPROVEMENTS.
7. CONTRACTOR RESPONSIBLE FOR MAINTAINING ALL NECESSARY SEPARATIONS FROM SEPTIC AND SEWER PROVIDING PROPER MITIGATION WHEN SEPARATION DISTANCES CANNOT BE ACHIEVED. SEE SPECIFICATIONS FOR DETAILS.
8. CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES BEFORE CONSTRUCTION AND BEFORE ORDERING ANY PRECAST STRUCTURES.

MATERIAL SPECIFICATIONS:

1. SEE SPECIFICATIONS SECTION.

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GENERAL NOTES

1. GENERAL NOTES APPLY TO ALL DRAWINGS IN THE CONTRACT DOCUMENTS, AND DRAWING NOTES APPLY ONLY TO THOSE DRAWINGS ON WHICH THEY APPEAR.
2. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION PROCEDURES, SCHEDULES, TRAFFIC CONTROL, AND EQUIPMENT WITH THE OWNER. THE CONTRACTOR SHALL COORDINATE THEIR CONSTRUCTION SCHEDULE WITH ANY AND ALL AFFECTED UTILITIES IN ORDER TO PREVENT UNNECESSARY DELAYS IN THE WORK, AND/OR INTERRUPTION OF SERVICE.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING PAVEMENT AND ROADWAYS OUTSIDE THE WORK AREA. THE CONTRACTOR SHALL REPAIR, AT NO COST TO THE OWNER, ALL DAMAGED AREAS RESULTING FROM THEIR OPERATIONS OR THEIR SUB-CONTRACTORS. ANY AREAS OUTSIDE THE WORK AREA DISTURBED BY THE OPERATIONS OF THE CONTRACTOR SHALL BE RESTORED TO ORIGINAL CONDITIONS, REGARDLESS OF WHETHER THE RESTORATION IS SHOWN ON THE DRAWINGS.
4. THE CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL AND MAINTAIN TRAFFIC IN A SAFE MANNER THROUGHOUT THE CONSTRUCTION ACTIVITIES.
5. THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE.
6. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTORS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
7. CONTRACTORS SHALL COORDINATE WITH DIG-SAFE (1-888-344-7233) A MINIMUM OF 72 HOURS PRIOR TO ANY EXCAVATION. DIG-SAFE SHALL BE NOTIFIED "FOR EXCAVATION ACTIVITIES CONDUCTED WITHIN 100 FEET OF AN UNDERGROUND UTILITY FACILITY." CONTRACTOR SHALL "PREMARK PROPOSED EXCAVATION AREAS BEFORE CALLING DIG-SAFE."
8. ALL AREAS BEYOND THE LIMITS OF CONSTRUCTION WHICH ARE DISTURBED OR DAMAGED BY THE CONTRACTOR SHALL BE RESTORED TO THEIR ORIGINAL CONDITION BY THE CONTRACTOR AT NO COST TO THE OWNER.
9. ANY PROPERTY LINES SHOWN ON THESE DRAWINGS ARE APPROXIMATE ONLY, AND SHOWN ONLY FOR REFERENCE.
10. BEARINGS ARE BASED ON VERMONT STATE PLANE GRID NORTH.
11. TOPOGRAPHIC INFORMATION DEVELOPED FROM SURVEY PERFORMED ON 9/5/25, BY DUBOIS AND KING INC.
12. ELEVATIONS ARE BASED ON NAVD88 DATUM. HORIZONTAL POSITIONS ARE BASED ON NAD83 DATUM
13. THE PROPERTY LINES, EASEMENTS, AND OTHER REAL PROPERTY DESCRIPTIONS PROVIDED IN THESE PLANS DO NOT DEFINE LEGAL RIGHTS OR MEET LEGAL REQUIREMENTS FOR A LAND SURVEY AND SHALL NOT BE USED IN LIEU OF A SURVEY AS THE BASIS OF ANY LAND TRANSFER OR ESTABLISHMENT OF ANY PROPERTY RIGHT.

ELECTRICAL GENERAL NOTES

1. COORDINATE ALL ELECTRICAL SITE WORK WITH THE SITE TRADES FOR EXCAVATION AND BACKFILL OF TRENCHES ASSOCIATED WITH ALL UNDERGROUND CONDUITS.
2. THE DISTANCE BETWEEN HANDHOLES SHALL NOT EXCEED THREE HUNDRED FEET. ALL CONDUIT SWEEPS TURNED UP IN EQUIPMENT SLABS SHALL BE INSTALLED AS RIGID STEEL GALVANIZED CONDUIT. GROUND STEEL CONDUITS IN ACCORDANCE WITH APPLICABLE CODES.
3. ALL EMPTY CONDUITS SHALL CONTAIN A NYLON PULL ROPE AND BE CAPPED AT BOTH ENDS.
4. PROVIDE HANDHOLE BOXES AND EXTENSIONS TO ALLOW FOR CONDUIT BURIAL DEPTHS AND CONDUIT/BOX FILL CODE REQUIREMENTS.
5. ALL CONDUITS INSTALLED BELOW GRADE SHALL BE SCHEDULE 80 PVC MINIMUM, UNLESS OTHERWISE NOTED OR SHOWN ON THE DRAWINGS.
6. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PRE-CAST CONCRETE, PULL BOXES AND HANDHOLES PROCUREMENT AND INSTALLATION.
7. SEE CIVIL DRAWINGS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

SOIL EROSION & SEDIMENTATION CONTROL

1. THIS PROJECT SHALL FOLLOW THE LOW RISK SITE HANDBOOK (2025) AT A MINIMUM.
2. CONTRACTOR SHALL CONSTRUCT TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL FACILITIES PRIOR TO THE COMMENCEMENT OF EARTHWORK OPERATIONS. EROSION CONTROL MEASURES SHALL INCLUDE, BUT ARE NOT LIMITED TO, ITEMS IDENTIFIED WITHIN THIS PLAN SET OR WITHIN THE VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION (VTDEC) BEST MANAGEMENT PRACTICES (BMP'S) FOR EROSION CONTROL. SEE EROSION AND SEDIMENTATION CONTROL PLAN AND EROSION SEDIMENTATION CONTROL NOTES & DETAIL SHEET.
3. THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN EROSION AND SEDIMENTATION CONTROL DEVICES THROUGHOUT THE PROJECT SITE FOR THE DURATION OF ALL CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL (DAILY OR AS REQUIRED BASIS) INSPECT AND RECORD FINDINGS OF ALL EROSION AND SEDIMENTATION CONTROL DEVICES TO ENSURE THAT ALL ITEMS ARE IN STABLE CONDITION. IN THE EVENT THAT SAID ITEMS ARE DETERMINED TO BE IN UNSATISFACTORY CONDITION, THE CONTRACTOR SHALL RECORD THE UNSATISFACTORY ISSUE, THE DATE OF THE UNSATISFACTORY FINDING, THE APPROPRIATE CORRECTIVE MEASURE AND THE DATE THE CORRECTIVE MEASURE WAS COMPLETED.
4. ALL DISTURBED AREAS SHALL NOT BE LEFT BARE FOR MORE THAN 7 DAYS, SHALL BE STABILIZED IN A MANNER TO MITIGATE EROSION OR SEDIMENTATION FROM EXITING THE LIMIT OF WORK AND SHALL BE RESTORED IN-KIND UPON COMPLETION OF THE PROJECT. THE MAXIMUM AREA ALLOWED TO BE DISTURBED AND LEFT UNSTABILIZED IS ONE ACRE PER DRAINAGE AREA.
5. ALL SLOPES GREATER THAN 1V:3H SHALL BE PROTECTED FROM EROSION WITH EROSION CONTROL BLANKETS OR OTHER APPROPRIATE SLOPE STABILIZATION CONTROL MEASURES PRIOR TO LOAMING, SEEDING AND MULCHING WITHIN 72 HOURS OF COMPLETION. CONTRACTOR SHALL MAINTAIN EROSION CONTROL PROTECTION UNTIL VEGETATION GROWTH HAS BEEN ESTABLISHED. ALL SLOPE STABILIZATION CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION AND VERMONT BEST MANAGEMENT PRACTICES.
6. ALL SWALES AND DITCHES WITH SLOPES EXCEEDING 5% SLOPE SHALL BE PROTECTED FROM EROSION WITH MATTING. ALL MATTING SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION. ALL SWALES AND DITCHES SHALL BE PROPERLY STABILIZED PRIOR TO DIRECTING FLOW TO THEM.
7. THE CONTRACTOR SHALL NOT PLACE PERMANENT PLANTING AND SEEDING PRIOR TO MAY 1st AND AFTER SEPTEMBER 1st. TEMPORARY SEEDING SUCH AS WINTER RYE MAY BE USED OUTSIDE OF THIS PERIOD.
8. ALL WORK MUST BE DONE IN A MANNER WHICH MINIMIZES THE POTENTIAL FOR THE DISCHARGE OF SEDIMENT-LADEN WATER. CONTRACTOR IS RESPONSIBLE FOR DIVERTING, PUMPING, OR OTHERWISE CONTROLLING WATER AS NECESSARY.
9. ANY EPSC MEASURES NOT SHOWN IN THIS PLAN SET SHALL BE PERFORMED IN ACCORDANCE WITH THE VERMONT DEC LOW RISK SITE HANDBOOK FOR EROSION PREVENTION & SEDIMENT CONTROL.

CONSTRUCTION IN WETLAND/BUFFERS:

WHERE EARTHWORK IS CONDUCTED WITHIN WETLAND BUFFERS:

1. ENGINEER SHALL REVIEW SITE WORK PLAN WITH CONTRACTOR TO IDENTIFY LIMITATIONS FOR EQUIPMENT USE AND DISTURBANCE.
2. DELINEATE WETLAND BOUNDARIES IN THE PROPOSED WORK AREA AND MARK CONSTRUCTION LIMITS WITH SNOW FENCING.
3. PLACE APPROPRIATE EROSION CONTROL BARRIER (SILT FENCE OR APPROVED PERIMETER CONTROL) BETWEEN WORK AREA.
4. RESTORE DISTURBED AREAS TO PREVIOUS ELEVATION WITH INDIGENOUS MATERIAL AND RAKE SMOOTH. EXCESS MATERIAL SHALL BE REMOVED TO A NON-WETLAND AREA FOR DISPOSAL.
5. INSPECT RESTORED AREAS TO CONFIRM STABILITY, REPAIR AS REQUIRED.

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WAITSFIELD WASTEWATER TREATMENT FACILITY

PROJECT ADDRESS
4144 MAIN STREET
WAITSFIELD, VERMONT 05673

SHEET TITLE
CONTRACT NO. 1

GENERAL NOTES

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1.01 TO BE TESTED:

ALL PRESSURE PIPES, NON–PRESSURE PIPES, SANITARY MANHOLES, WET WELLS, PUMPSTATION TANKS, AND APPURTENANCES SHALL BE TESTED.

1.02 QUALITY ASSURANCE:

PRIOR TO FINAL ACCEPTANCE OF THE WORK, ALL PRESSURE PIPES, NON–PRESSURE PIPES, SANITARY MANHOLES, PUMP STATION WETWELLS, SEPTIC TANKS, AND APPURTENANCES SHALL MEET SPECIFIC LEAKAGE REQUIREMENTS. THESE LEAKAGE REQUIREMENTS MUST BE SATISFIED BY THE BASIC MATERIALS ALONE. WHERE JOINT FILLERS AND THE LIKE HAVE BEEN SPECIFIED, PRIMARILY TO PROTECT JOINTING MATERIALS, AND SECONDARILY TO PROVIDE A FACTOR OF SAFETY, THEY SHALL NOT BE APPLIED UNTIL AFTER LEAKAGE TESTS HAVE BEEN COMPLETED AND HAVE BEEN ACCEPTED BY ENGINEER.

EVERY TEST MUST BE WITNESSED BY ENGINEER AND ANY TEST NOT SO WITNESSED WILL BE CONSIDERED AS NOT HAVING BEEN PERFORMED. CONTRACTOR SHALL PRETEST THE WORK AND SHALL NOT REQUEST ENGINEER TO WITNESS THE FINAL TEST UNTIL HE IS REASONABLY CERTAIN THAT THE TEST WILL YIELD RESULTS WITHIN THE ACCEPTABLE LIMITS.

THESE TESTING REQUIREMENTS DO NOT APPLY TO EXISTING STRUCTURES OR PIPING.

1.03 SEQUENCING AND SCHEDULING:

NOTIFY ENGINEER AT LEAST 48 HOURS IN ADVANCE OF A SCHEDULED TEST SO THAT THE TEST MAY BE WITNESSED.

1.04 SUBMITALS

CERTIFIED TEST RESULTS ON FORMS APPROVED BY ENGINEER.

2.01 TESTING APPARATUS:

A. PROVIDE ALL LABOR, PUMPS, PLUGS, MEASURING EQUIPMENT AND OTHER APPARATUS, COMPLETE, AND AS REQUIRED TO PERFORM ALL TESTING.
B. PROVIDE CLEAN WATER, AIR, NITROGEN AND OTHER MATERIALS AS REQUIRED TO ACCOMPLISH ALL TESTING.
C. PROVIDE PLUGS AND CAPS CAPABLE OF WITHSTANDING THE TEST PRESSURES.
D. PROVIDE ALL TEMPORARY FLANGES, PLUGS, BULKHEADS, THRUSTBLOCKS, WEIGHTING, BRACING AND OTHER ITEMS NECESSARY TO PREVENT JOINTS FROM SEPARATING, AND TO PREVENT ANY INJURIES OR DAMAGE.
E. MONITORING AIR PRESSURE GAUGE SHALL HAVE A RANGE OF 0–10 PSI, DIVISIONS OF 0.10 PSI, AND ACCURACY OF 0.05 PSI+.

3.01 PREPARATION:

A. MANHOLE INSPECTIONS – GIVEN AMPLE NOTICE, ENGINEER WILL CONDUCT HIS INSPECTION OF MANHOLES PRIOR TO THE PERFORMANCE OF LEAKAGE TESTS. IF THE INSPECTIONS ARE NOT COMPLETED BEFORE LEAKAGE TESTING, AND SUBSEQUENT MODIFICATIONS ARE MADE TO A MANHOLE, THE MANHOLE SHALL BE RETESTED FOR LEAKAGE.
B. BRACING PRESSURE PIPING – PLUG OPEN ENDS, ADEQUATELY BLOCK BENDS, TEES, ENDS, AND OTHER FITTINGS, AND DO WHATEVER IS NECESSARY TO BRACE THE PIPING SYSTEM SO THAT IT WILL SAFELY WITHSTAND THE PRESSURES DEVELOPED UNDER THE TESTS AND SO THAT NO DAMAGE OR INJURY WILL OCCUR TO THE PIPELINE, PEOPLE OR PROPERTY.
C. PROTECTION – BEFORE TESTS ARE CONDUCTED, ISOLATE OR REMOVE ANY REGULATOR, GAUGE, TRAP, OR OTHER APPARATUS OR EQUIPMENT WHICH MAY BE DAMAGED BY TEST PRESSURES.
D. FLUSHING – FLUSH ALL PIPING SYSTEMS, EXCEPT AIR PIPING, WITH WATER PRIOR TO TESTING.

3.02 GENERAL:

A. TRAPPED AIR – TRAPPED AIR MAY CAUSE A FALSE INDICATION OF THE RATE OF LEAKAGE DURING EXFILTRATION TESTING. POINTS OF CONCERN INCLUDE ENDS OF LINES, STUBS, HOUSE CONNECTIONS AND HIGH POINTS IN PIPE LINES. NO CREDIT WILL BE MADE FOR THIS CONDITION AND NO ADJUSTMENT WILL BE MADE TO THE ALLOWABLE LEAKAGE. WHERE TRAPPED AIR IS SUSPECTED OF CAUSING A TEST FAILURE, DO WHATEVER IS NECESSARY TO EVACUATE THE AIR AND REPEAT THE TESTS UNTIL THE ACTUAL LEAKAGE IS EQUAL TO OR LESS THAN THE ALLOWABLE RATE OF LEAKAGE.
B. WATER ABSORPTION – NO CREDIT WILL BE GIVEN FOR ABSORPTION OF WATER IN PIPE AND MANHOLE WALLS. IF NECESSARY, FILL PIPES AND MANHOLES WITH WATER WELL IN ADVANCE OF EXFILTRATION TESTING AND ALLOW THEM TO SOAK IN ORDER TO ELIMINATE OR MINIMIZE THE EFFECTS OF ABSORPTION.

3.03 TESTS FOR NON–PRESSURE PIPING (EXCEPT STORM DRAINS)

A. GENERAL
1. LEAKAGE SHALL BE DETERMINED BY AIR TESTING OR EXFILTRATION TESTING. ENGINEER RESERVES THE RIGHT TO REQUIRE INFILTRATION TESTING.
2. LEAKAGE TESTING SHALL INCLUDE THE MAIN NON–PRESSURE PIPE, NEW HOUSE CONNECTIONS, AND ALL OTHER APPURTENANCES ON THE SECTION OF PIPELINE BEING TESTED.
3. GENERALLY LIMIT PIPELINE TEST SECTIONS TO RUNS BETWEEN ADJACENT STRUCTURES. MANHOLES MAY BE TESTED SIMULTANEOUSLY WITH PIPES WHEN USING EXFILTRATION TESTING.
4. ADEQUATELY PLUG ENDS OF ALL HOUSE CONNECTIONS, STUBS AND ALL OTHER OPENINGS FROM WHICH AIR OR WATER MAY ESCAPE.
5. USE CLEAN WATER FOR EXFILTRATION TESTS.
6. ALL PIPE TRENCH SHALL BE BACKFILLED PRIOR TO PERFORMING TESTING PROCEDURES.

B. EXFILTRATION TEST ON PIPES ONLY
1. THE MINIMUM WATER LEVEL REQUIRED FOR TESTING IS THE HIGHER OF EITHER 4' ABOVE THE CROWN OF THE UPSTREAM (HIGHEST) END OF THE PIPE BEING TESTED OR 4' ABOVE THE MAXIMUM GROUNDWATER LEVEL ALONG THE TEST SECTION. WHERE SUCH A WATER LEVEL WILL BE MORE THAN 25 FEET ABOVE THE LOWEST POINT IN THE SECTION BEING TESTED, THE ENGINEER WILL PRESCRIBE TEST MODIFICATIONS OR REQUIRE THAT OTHER METHODS OF TESTING BE UTILIZED.
2. INSTALL A WATERTIGHT PLUG IN THE DOWNSTREAM END AND A WATERTIGHT PLUG IN THE UPSTREAM END FITTED WITH A 2" DIAMETER, CLEAR RIGID TUBE INSTALLED IN A VERTICAL POSITION TO FACILITATE OBSERVATION OF WATER LEVELS. TUBE SHALL BE LONG ENOUGH TO OBTAIN THE REQUIRED HEAD AND MADE OF EXTRUDED LUCITE ACRYLIC, POLYCARBONATE (LEXAN), TENITE BUTYRATE OR OTHER PLASTIC MATERIAL. GLASS IS UNACCEPTABLE.
3. FILL PIPE WITH WATER AND LET STAND FOR AT LEAST FOUR (4) HOURS AND CONDUCT TEST. ADJUST WATER TO REFERENCE MARK, THEN CONTINUALLY ADD WATER FROM A GRADUATED CONTAINER TO KEEP WATER IN TUBE AT A CONSTANT LEVEL FOR 60 MINUTES.
4. UPON SATISFACTORILY COMPLETING THE TEST, REMOVE THE DOWNSTREAM PLUG IN THE PRESENCE OF ENGINEER. DO NOT TOUCH NOR REMOVE THE UPSTREAM PLUG UNTIL APPROVED BY ENGINEER.
5. ALLOWABLE EXFILTRATION IS 100 GALLONS/DAY/INCH DIAMETER/MILE OF PIPE.

C. EXFILTRATION TESTING OF PIPELINES AND MANHOLES
1. LOWER GROUNDWATER TABLE TO BELOW THE BOTTOM OF THE MANHOLE. INSTALL A WATERTIGHT PLUG IN THE PIPE AT A DOWNSTREAM MANHOLE AND ANOTHER WATERTIGHT PLUG(S) IN THE INCOMING PIPE(S) IN THE UPSTREAM MANHOLE. FILL UPSTREAM MANHOLE UNTIL WATER REACHES ITS HIGHEST POINT WITHOUT OVERFLOWING.
2. MORE THAN ONE MANHOLE MAY BE INCLUDED IN A TEST SECTION, PROVIDED THAT WHEN THE LOWEST MANHOLE IS FILLED, THE WATER LEVEL IN THE OTHER MANHOLES IS AT LEAST 2' ABOVE THE HIGHEST MANHOLE JOINT, AND THE PIPE IS SUBJECTED TO AT LEAST A 4' DIFFERENTIAL HYDROSTATIC PRESSURE.
3. ALLOW AT LEAST 4 HOURS FOR STABILIZATION. CONDUCT THE TEST FOR A MINIMUM OF 6 HOURS. ALLOWABLE EXFILTRATION IS THE ALLOWABLE PIPE EXFILTRATION AS SPECIFIED IN SUBSECTION 3.03.B.5 PLUS THE ALLOWABLE MANHOLE EXFILTRATION AS SPECIFIED IN SUBSECTION 3.05 E.

D. INFILTRATION TEST
1. THE MINIMUM HEAD OF GROUNDWATER REQUIRED FOR INFILTRATION TESTING IS 4' ABOVE THE CROWN OF THE PIPE AT THE UPSTREAM END.
2. INFILTRATION MAY BE MEASURED WITH AN APPROVED GRADUATED CONTAINER CAPABLE OF INTERCEPTING ALL INFLOW, BY A PIPELINE V–NOTCH WEIR, OR BY OTHER APPROVED METHODS. WHEN USING INSTREAM TYPE MEASURING DEVICES, DO NOT MEASURE FLOWS UNTIL STEADY STATE CONDITIONS ARE ESTABLISHED.
3. ALLOWABLE INFILTRATION IS SAME AS ALLOWABLE EXFILTRATIONS TEST AS SPECIFIED IN SUBSECTION 3.03 B.5.
4. WHERE GROUNDWATER LEVEL IS AT LEAST 2' ABOVE THE HIGHEST MANHOLE JOINT, MANHOLES MAY BE INCLUDED IN THE TEST. NO VISIBLE LEAKAGE WILL BE PERMITTED IN MANHOLES.

E. AIR TESTING–PIPES ONLY
1. INSTALL TAPPED PLUG AT AIR INLET AND AIRTIGHT PLUGS AT OTHER ENDS OF TEST SECTION.
2. CONNECT AIR SUPPLY EQUIPMENT TO TAPPED PLUG AND FILL SLOWLY UNTIL A CONSTANT PRESSURE OF 3.5 PSIG IS MAINTAINED.
3. MAINTAIN PRESSURE ABOVE 3.0 PSIG FOR AT LEAST 5 MINUTES FOR STABILIZATION OF THE TEMPERATURE. CHECK PLUGS FOR LEAKS.
4. ADJUST PRESSURE TO 3.5 PSIG AND DISCONNECT AIR SUPPLY.
5. BEGIN TIMING PRESSURE DROP AT 3.0 PSIG AND RECORD TIME INTERVAL FOR THE PRESSURE TO DROP TO 2.5 PSIG.
6. INCREASE ABOVE PRESSURES 0.5 PSIG FOR EACH FOOT GROUNDWATER IS ABOVE THE LOWEST INVERT OF THE PIPE.
7. MINIMUM TIME FOR PRESSURE DROP OF 0.5 PSIG SHALL BE 75 SECONDS PER INCH DIAMETER.
8. CONTRACTOR MAY CONDUCT WATER TEST IF AIR TEST FAILS.

3.04 TESTS FOR PRESSURE PIPES

B. GENERAL
1. LEAKAGE TESTING SHALL INCLUDE THE MAIN PRESSURE PIPE, SERVICE CONNECTIONS, AND ALL OTHER APPURTENANCES ON THE SECTION OF PIPELINE BEING TESTED.
2. ALL PIPES SHALL BE TESTED PRIOR TO APPLYING INSULATION AND BEFORE THEY ARE CONCEALED OR FURRED–IN.
3. PROVIDE ALL NECESSARY GAUGES. GAUGES SHALL BE STANDARD PRESSURE TYPE WITH A MINIMUM 6" DIAMETER DIAL AND A PRESSURE RANGE NOT IN EXCESS OF 150% OF THE MAXIMUM REQUIRED TEST PRESSURE.
4. PROVIDE AND MAINTAIN AT THE SITE A GAUGE STAND WITH AN APPROVED LABORATORY CALIBRATED TEST GAUGE. PERIODICALLY CHECK TEST GAUGES USED FOR TESTING AGAINST THE TEST GAUGE, AND WHENEVER REQUESTED BY ENGINEER.
5. WHERE IT IS ABSOLUTELY NECESSARY FOR TESTING, TAP PIPES AND INSERT APPROVED PLUGS AFTER TESTING IS COMPLETED. INSTALL AIR RELEASE VALVES AT HIGH POINTS FOR WATER TESTING IF HYDRANTS OR BLOWOFFS ARE NOT AVAILABLE.
6. PROVIDE A HAND OR MOTOR DRIVEN PUMP TO MAINTAIN THE REQUIRED TEST PRESSURE CONSTANT THROUGHOUT THE DURATION OF THE TEST. IF A WATER PUMP IS USED, INSTALL WATER METER ON SUPPLY SIDE OF PUMP. IF AN AIR OR INERT GAS PUMP IS USED, LEAKAGE SHALL BE DETERMINED AND CALCULATED BY THE CYCLING OF THE PUMP.
7. ALL CONCRETE THRUST BLOCKS AND RESTRAINTS SHALL BE IN PLACE AND CURED AT LEAST 7 DAYS.
8. ALL BURIED PIPE SHALL BE BACKFILLED.
9. ALL WATER MAIN TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF AWWA STANDARD C600.

B. NONGASEOUS PIPE HYDROSTATIC TEST
1. OPEN ALL AIR RELEASE VALVES AND FILL PIPE WITH WATER AT A RATE NOT TO EXCEED VENTING CAPACITY OF THE VALVES.
2. RAISE PRESSURE TO 150 PERCENT OF THE HIGHEST WORKING PRESSURE, OR 100 PSIG, WHICHEVER IS GREATER, ADJUSTED TO LOWEST POINT OF THE TEST SECTION. MAINTAIN A MINIMUM OF 125 PERCENT OF THE WORKING PRESSURE AT THE HIGHEST POINT OF THE TEST SECTION. IN SOME INSTANCES THE LENGTHS OF TEST SECTIONS WILL HAVE TO BE SHORTENED TO MEET THE ABOVE REQUIREMENTS.
3. MAINTAIN PRESSURE FOR A MINIMUM OF TWO (2) HOURS.
4. PERFORM LEAKAGE TEST.

C. NONGASEOUS PIPE LEAKAGE TEST
1. PERFORM SIMULTANEOUSLY WITH HYDROSTATIC TEST.
2. MAINTAIN PRESSURE WITHIN A MAXIMUM VARIATION OF ± 5 PSI FOR 2 HOURS MINIMUM.
3. RECORD AMOUNT OF LEAKAGE FROM WATER METER.
4. ALLOWABLE LEAKAGE IS:
   a. EXPOSED PIPING: EXPOSED PIPING WITH FLANGED, THREADED OR WELDED JOINTS, OR BURIED PIPE IN CONFLICT WITH POTABLE WATER LINES: NO LEAKAGE ALLOWED.
   b. OTHER PIPE BY THE FORMULA:

$$L = \frac{[(S)(D)(\sqrt{P})]}{148{,}000}$$

L = MAXIMUM ALLOWABLE LEAKAGE IN GALLONS PER HOUR.
S = LENGTH OF PIPE TESTED, IN FEET.
D = NOMINAL INTERNAL DIAMETER OF THE PIPE IN INCHES
P = AVERAGE TEST PRESSURE IN POUNDS PER SQUARE INCH GAGE.

3.05 WATER TESTS FOR SANITARY MANHOLES

A. MANHOLES MAY BE WATER TESTED SIMULTANEOUSLY WITH NON–PRESSURE PIPES. IF THE ALLOWABLE LEAKAGE IS EXCEEDED, SEPARATELY TEST EACH MANHOLE AND EACH RUN OF PIPE IN THE FAILED SECTION.
B. MANHOLES MAY BE TESTED PRIOR TO OR AFTER BACKFILLING BY FILLING THEM WITH CLEAN WATER TO THE TOP. CONDUCT TEST FOR 6 HOURS.
D. ENGINEER RESERVES TEST MANHOLES AND WET WELLS PRIOR TO FILLING INTERIOR JOINTS AND PRIOR TO CONSTRUCTING THE MANHOLE INVERTS AND BENCHES, BUT AFTER ALL PIPE CONNECTIONS TO THE MANHOLES HAVE BEEN MADE.
E. ALLOWABLE EXFILTRATION LEAKAGE IS ONE GALLON/ DAY/VERTICAL FOOT.

3.06 VACUUM TESTS FOR SANITARY MANHOLES

A. MANHOLES MAY BE VACUUM TESTED IN LIEU OF THE PREVIOUSLY DESCRIBED WATER TEST. THE VACUUM TESTS MUST BE ACCOMPLISHED PRIOR TO BACK–FILLING THE MANHOLE, FILLING JOINTS, AND CONSTRUCTING THE MANHOLE INVERTS AND BENCHES. ALL PIPE CONNECTIONS SHALL BE MADE PRIOR TO THE TEST.

B. TEST PROCEDURE
1. PLUG PIPE OPENINGS AND SECURELY BRACE THE PLUGS AND PIPE.
2. SET THE TESTER ONTO THE TOP SECTION OF THE MANHOLE AND INFLATE THE COMPRESSION BAND TO EFFECT A SEAL BETWEEN THE STRUCTURE AND THE VACUUM BASE.
3. CONNECT THE VACUUM PUMP TO THE OUTLET PORT, OPEN THE VALVE, START THE MOTOR AND DRAW A VACUUM OF 10" HG (MERCURY).
4. CLOSE THE VALVE AND MONITOR THE VACUUM GAUGE.
5. THE TEST SHALL PASS IF THE VACUUM HOLDS AT 10" HG OR DROPS NO LOWER THAN 9" HG WITHIN THE FOLLOWING TIMES:

DEPTH OF MANHOLE	TIME
0' – 10'	25 SEC.
10' – 15'	40 SEC.
15' – 20'	55 SEC.
20' – 25'	70 SEC.

6. IF THE VACUUM DROPS IN EXCESS OF THE PRESCRIBED RATE, THE CONTRACTOR SHALL LOCATE THE LEAK, MAKE PROPER REPAIRS, AND RETEST THE MANHOLE.
7. IF THE UNIT FAILS THE TEST AFTER REPAIR, THE UNIT SHALL BE WATER EXFILTRATION TESTED.

C. THE ENGINEER RESERVES THE RIGHT TO REQUIRE AN INFILTRATION TEST IF HE IS NOT SATISFIED WITH EXFILTRATION TEST.

3.07 ALLOWABLE LEAKAGE

A. IT IS THE INTENT OF THIS CONTRACT TO SECURE PIPING SYSTEMS WITH LEAKAGE, IN EACH SECTION OF PIPE AND WITHIN EACH STRUCTURE, EQUAL TO, OR LESS THAN THAT SPECIFIED. IT IS ALSO THE INTENT TO SECURE A PIPING SYSTEM FREE FROM VISIBLE DRIPS, STREAMS, AND LEAKS. THEREFORE, EVEN IF A PORTION OF THE SYSTEM MEETS THE REQUIREMENTS FOR ALLOWABLE LEAKAGE, VISIBLE LEAKS ARE NOT PERMITTED AND SHALL BE STOPPED.
B. LEAKAGE TESTS WILL BE CONSIDERED SATISFACTORILY PASSED WHEN THE RATE OF LEAKAGE IS EQUAL TO OR LESS THAN THE STIPULATED ALLOWANCES, THERE IS NO EVIDENCE OF VISIBLE LEAKS, AND THERE IS NO EVIDENCE OF OTHER SYSTEM DEFECTS.

3.08 RETESTING

A. PIPES AND MANHOLES NOT PASSING THE TESTS SHALL HAVE ALL DEFECTS CORRECTED TO THE SATISFACTION OF ENGINEER, AND SHALL BE RETESTED AND RECORRECTED AS OFTEN AS IS NECESSARY UNTIL THE TEST REQUIREMENTS HAVE BEEN MET.
B. IT IS THE INTENT OF THIS CONTRACT TO OBTAIN WORK MEETING TEST REQUIREMENTS ON THEIR OWN AND SOLELY THROUGH THE USE OF THE NORMAL INTEGRAL SEALING COMPONENTS. JOINT LEAKS SHALL NOT BE STOPPED THROUGH THE USE OF CONCRETE, CAULKING, MORTAR, OR OTHER PATCHING MATERIALS. LEAKING PIPE JOINTS SHALL BE REJOINED AND LEAKING MANHOLE JOINTS SHALL HAVE JOINTS RESET, OR REPLACED IF NECESSARY.
C. METHODS OTHER THAN REJOINING, RESETTING OR REPLACING JOINT SEALS SHALL REQUIRE THE WRITTEN APPROVAL OF ENGINEER.

3.09 LEAKAGE TESTING STRUCTURES (PUMP STATIONS AND SEPTIC TANKS)

EXFILTRATION TESTS – LEAKAGE SHALL BE DETERMINED BY EXFILTRATION TESTING. ENGINEER RESERVES THE RIGHT TO REQUIRE INFILTRATION TESTING.
1. DETERMINE GROUNDWATER LEVELS BY INSTALLING TEST HOLES, TEST PITS, OR PERFORATED OBSERVATION WELLS FITTED WITH SCREENS AT THE BOTTOM.
2. FILL STRUCTURES TO BE TESTED TO 12 INCHES ABOVE THEIR MAXIMUM OPERATING LEVELS, EXCEPT WHERE WEIRS CONTROL THE DEPTH, AND THEN TO THE MAXIMUM WEIR SETTING.
3. THE MINIMUM WATER LEVEL REQUIRED FOR TESTING IS 4 FEET ABOVE THE MAXIMUM GROUNDWATER LEVEL. WHERE THIS IS NOT POSSIBLE, ENGINEER WILL PRESCRIBE TEST MODIFICATIONS, REQUIRE INFILTRATION TESTING, OR REQUIRE THAT OTHER METHODS OF TESTING BE UTILIZED.
4. FOR POTABLE WATER FACILITIES, USE GOOD QUALITY, CLEAN WATER FOR TESTING. FOR SEWAGE, SLUDGE, OR OTHER WASTE FACILITIES, USE RELATIVELY CLEAN WATER, SUCH AS FROM SURFACE WATERS. IN SEWAGE LAGOONS, SEWAGE MAY BE USED PROVIDED THAT IT CAN BE PROPERLY DISPOSED OF AFTER EACH TEST.
5. UNLESS OTHERWISE APPROVED IN ADVANCE BY ENGINEER, EACH STRUCTURE OR TANK SHALL BE TESTED SEPARATELY.

3.10 ALLOWABLE LEAKAGE

A. THE MAXIMUM ALLOWABLE LEAKAGE FOR THE VARIOUS SYSTEMS IS CONTAINED ON THE FORM LEAKAGE TESTING REQUIREMENTS, ATTACHED TO THIS SECTION.
B. IT IS THE INTENT OF THIS CONTRACT TO SECURE SYSTEMS WITH LEAKAGE, IN EACH STRUCTURE, EQUAL TO, OR LESS THAN THAT SPECIFIED. IT IS ALSO THE INTENT TO SECURE A SYSTEM FREE FROM VISIBLE DRIPS, STREAMS, AND LEAKS. THEREFORE, EVEN IF A PORTION OF THE SYSTEM MEETS THE REQUIREMENTS FOR ALLOWABLE LEAKAGE, VISIBLE LEAKS ARE NOT PERMITTED AND SHALL BE STOPPED.
C. LEAKAGE TESTS WILL BE CONSIDERED SATISFACTORILY PASSED WHEN THE RATE OF LEAKAGE IS EQUAL TO OR LESS THAN THE STIPULATED ALLOWANCES, THERE IS NO EVIDENCE OF VISIBLE LEAKS, AND THERE IS NO EVIDENCE OF OTHER SYSTEM DEFECTS.

3.11 REPAIRS/REPLACEMENTS/RETESTING

A. STRUCTURES NOT PASSING THE TESTS SHALL HAVE DEFECTS CORRECTED TO THE SATISFACTION OF ENGINEER, AND SHALL BE RETESTED AND RECORRECTED AS OFTEN AS IS NECESSARY UNTIL THE TEST REQUIREMENTS HAVE BEEN MET.
B. IT IS THE INTENT OF THIS CONTRACT TO OBTAIN WORK MEETING TEST REQUIREMENTS ON THEIR OWN AND SOLELY THROUGH THE USE OF THE NORMAL INTEGRAL SEALING COMPONENTS. HOWEVER, IN CERTAIN INSTANCES, ENGINEER MAY APPROVE THE USE OF EPOXY COATINGS, EPOXY INJECTIONS, OR OTHER LONG– TERM SOLUTIONS FOR ELIMINATING OR REDUCING LEAKAGE.
C. METHODS OTHER THAN REJOINING, RESETTING OR REPLACING JOINT SEALS SHALL REQUIRE THE WRITTEN APPROVAL OF ENGINEER.

4.01 TESTING OF PRESSURE DISTRIBUTION LATERALS

4.02 PREPARATION

A. PRIOR TO TESTING, THE CONTRACTOR SHALL FILL THE PUMP STATION TO THE "PUMP ON" LEVEL WITH CLEAN WATER.
B. ALL PIPING, PUMPS AND CONTROLS SHALL BE IN THEIR FINAL CONFIGURATION, EXCEPT THAT ORIFICE GUARDS MUST NOT HAVE BEEN INSTALLED.
C. BALL VALVES PROVIDED AT THE BEGINNING OF EACH LATERAL SHOULD ALREADY HAVE BEEN ADJUSTED TO PROVIDE EVEN DISTRIBUTION OF LIQUID THROUGHOUT THE DISPOSAL FIELD.

4.03 TESTING

A. AFTER ACTUATING THE PUMP, THE SQUIRT HEIGHT OF WATER FROM REPRESENTATIVE ORIFICES WILL BE MEASURED. THE TEST WILL BE CONSIDERED SUCCESSFUL IF:

1. THE SQUIRT HEIGHT FROM ANY ORIFICE, MEASURED FROM THE TOP SURFACE OF THE DISTRIBUTION LATERAL TO THE HIGHEST POINT REACHED BY THE WATER, IS NOT LESS THAN 2.3 FEET, AND

2. THE DIFFERENCE BETWEEN THE LOWEST SQUIRT HEIGHT AND HIGHEST SQUIRT HEIGHT IN EACH BED IS LESS THAN 10%.

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PRESSURE AND LEAKAGE TESTING NOTES

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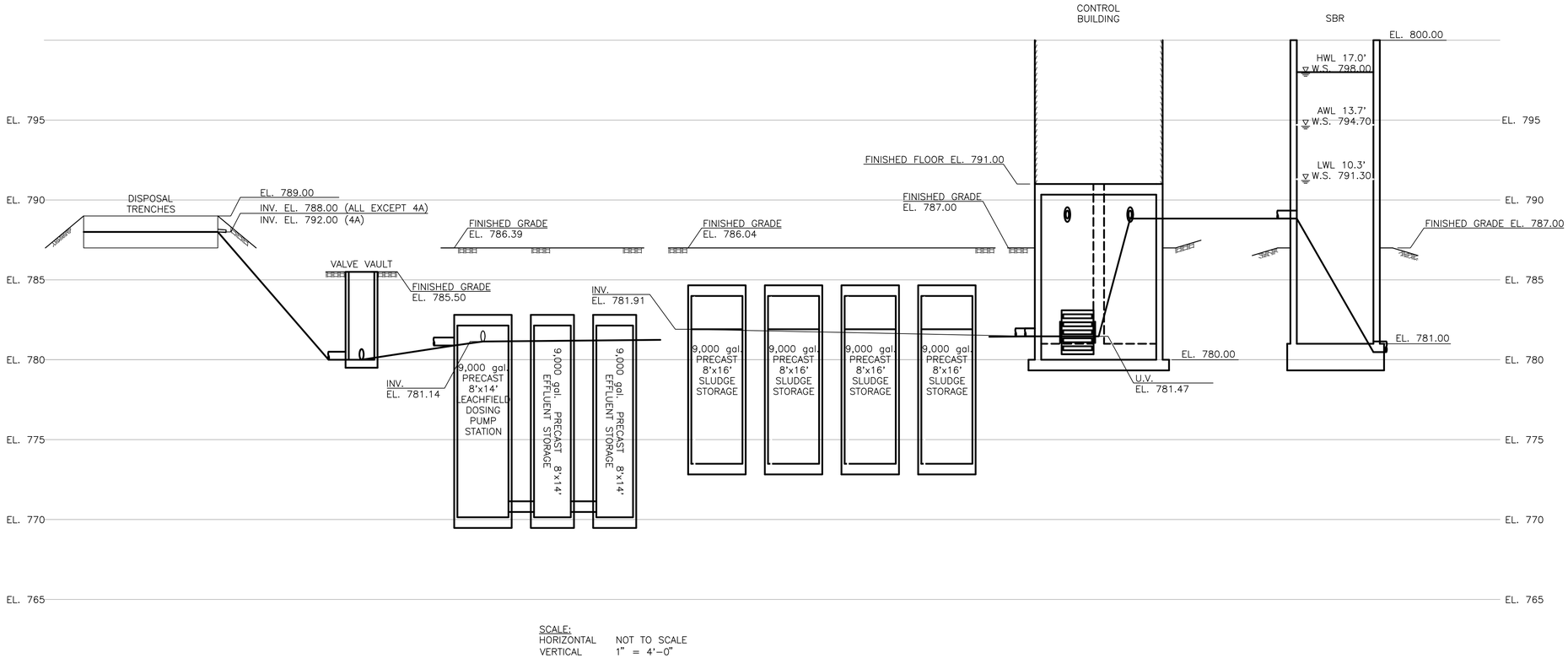

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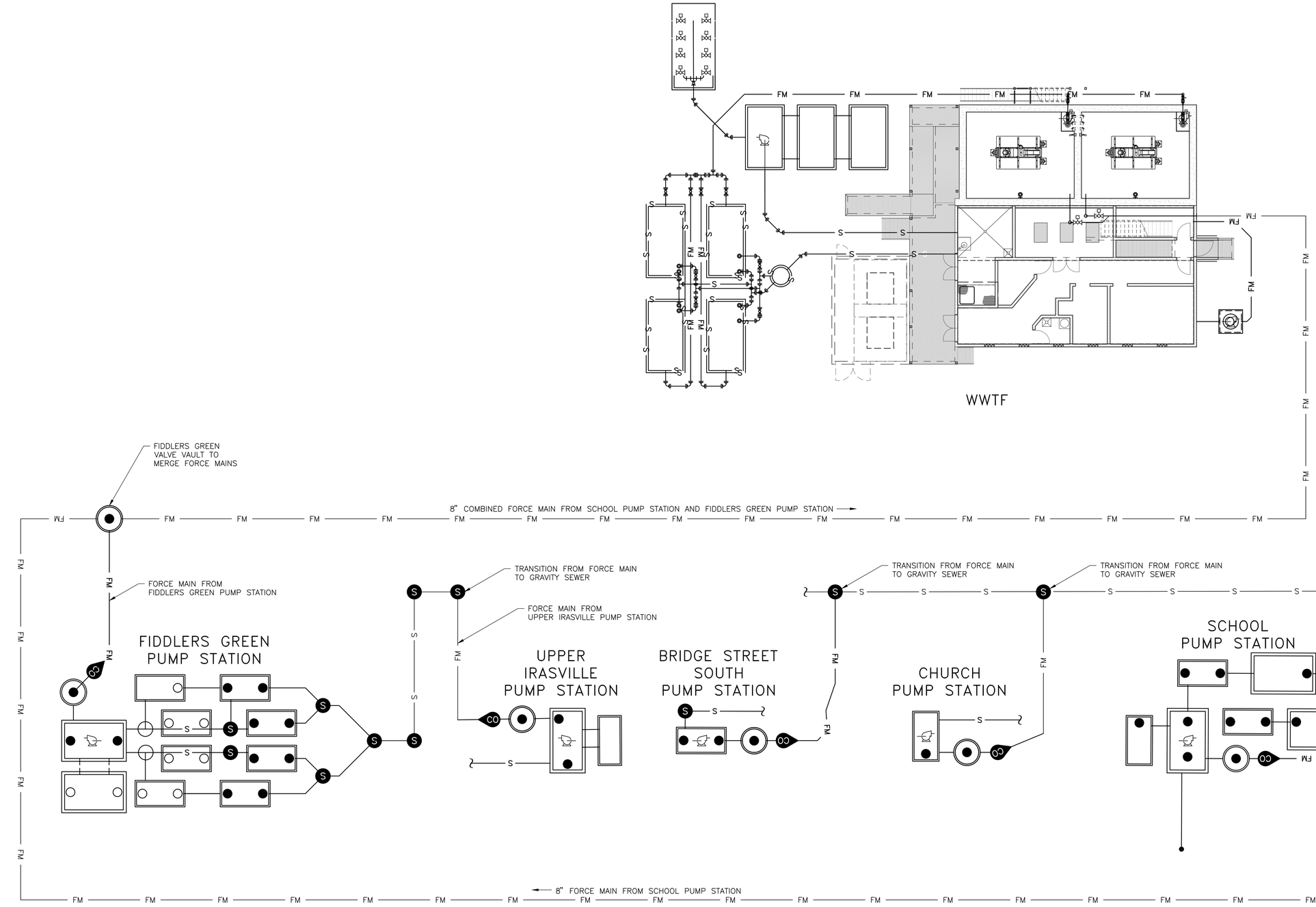

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SYSTEM FLOW SCHEMATIC

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N/F: WOOD KEVIN T
67 KINGSBURY ROAD
PARCEL ID: 30001

67

B24-2

KINGSBURY RD

B36-1

B28-1

(gravel)

SEEMS TO BE PAVED UNDERNEATH THE GROUND ROUGHLY 5" DOWN

UNLABELLED STAKE

BROKEN UP PAVE ON SURFACE

BROKEN UP PAVE ON SURFACE

BROKEN UP PAVE ON SURFACE

LIMITS

B-B4

B-B2

B-B1

0+07.88

PI=0+72.70

1+00

PI=1+15.63

B-B3

N/F: KETCHAM ESTATE LLC
6710 MAIN ST
PARCEL ID: 99197

LIMITS

2+00

N/F: KETCHAM ESTATE LLC
6710 MAIN ST
PARCEL ID: 99197

POSTED

LIMITS

3+00

N/F: WAITSFIELD TOWN OF
MAIN ST.
PARCEL ID: 99205.000

VT-WA-106
ARCHEOLOGY CENTROID
CENTROID OF VT-WA-106

ARCH

N/F: W
MAIN ST.
PARCEL ID: 99205.000

N/F: FITZGIBBONS BRYANT
240 KINGSBURY RD
PARCEL ID: 30004

KINGSBURY ROAD

1426 08 78SA

SIGN END

gravel

SET IRON PIPE
CCMB
794.5'

OHE

SET VIVAOT MM
KINGSBURY 1.0 +/-

RTE 100

VERMONT ROUTE 100

(paved)

PI=4+35.43

4+00

B02-1
>10'

PI=4+08.74

5+00

SET IRON PIPE IN CONC
789.7'

VIVAOT MM
1.1 +/-

VERMONT ROUTE 100

pond

pond

pond

N/F: MRV HOLDINGS LLC
6971 MAIN ST
PARCEL ID: 99204

N/F: HADDEN JOHN LEROY
6969 MAIN ST
PARCEL ID: 99202

N/F: HADDEN JOHN LEROY
6969 MAIN ST
PARCEL ID: 99202

N/F: BAKED BEADS REALTY LLC
6973 MAIN ST
PARCEL ID: 99206

PLAN

30' 0 30' 60'

SCALE IN FEET

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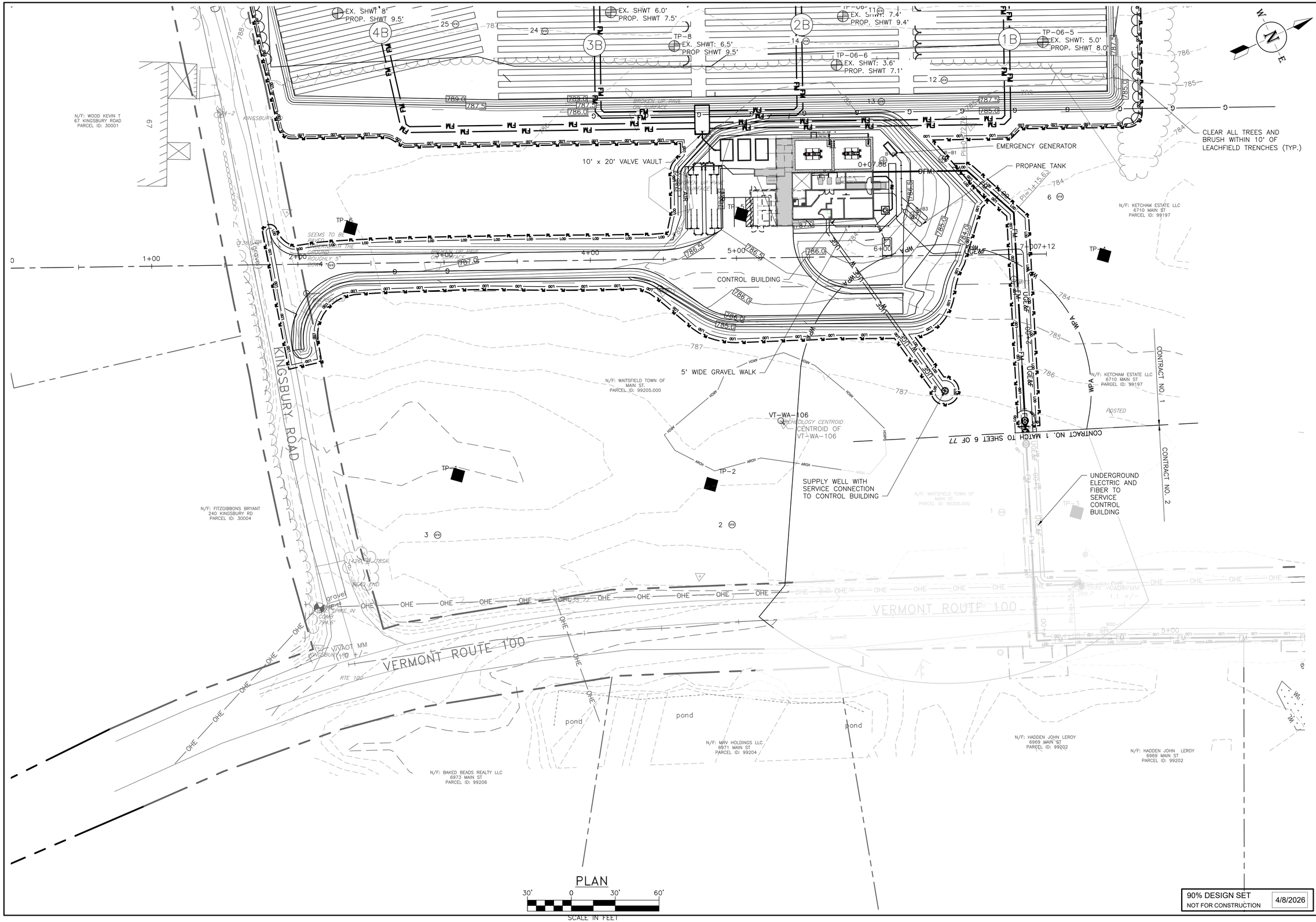

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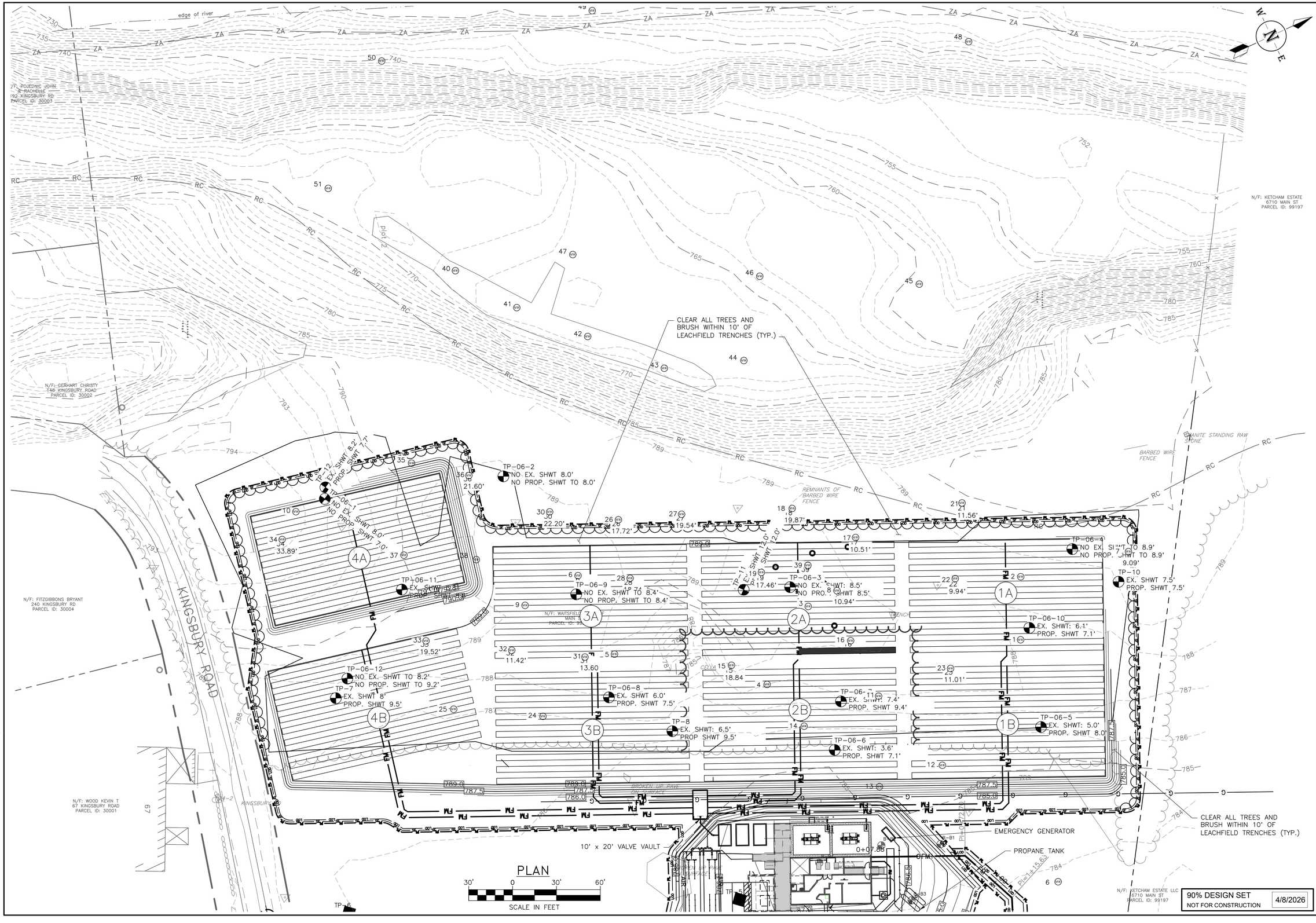

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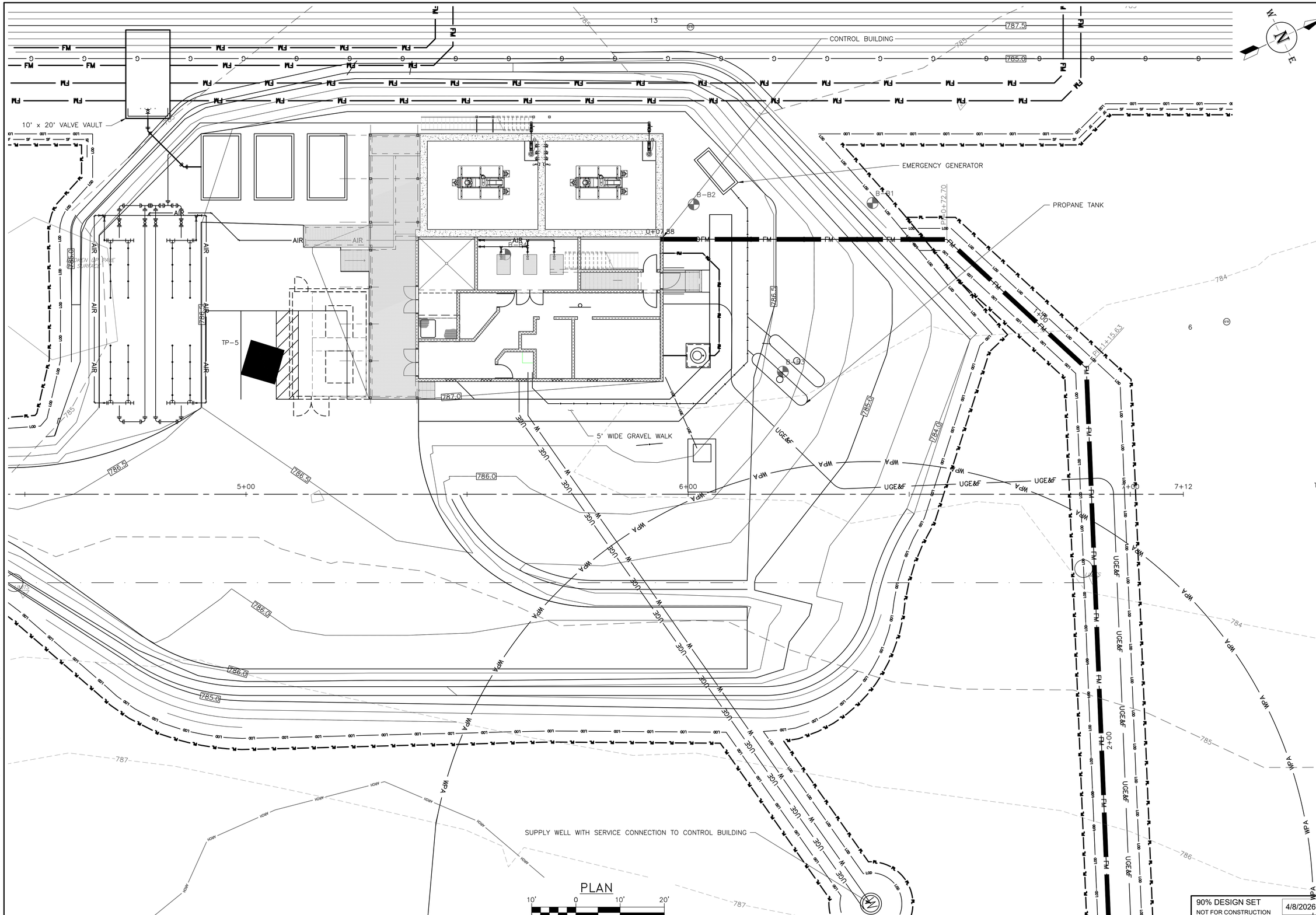

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WWTF SITE CONTROL BUILDING SITE PLAN

D&K PROJECT #	PROJ. ENG.
227947	JBA
DRAWN BY	CHECKED BY
EBS	DDC

DATE
APRIL 8, 2026

SHEET NUMBER
C5

SHEET: 11 of 81

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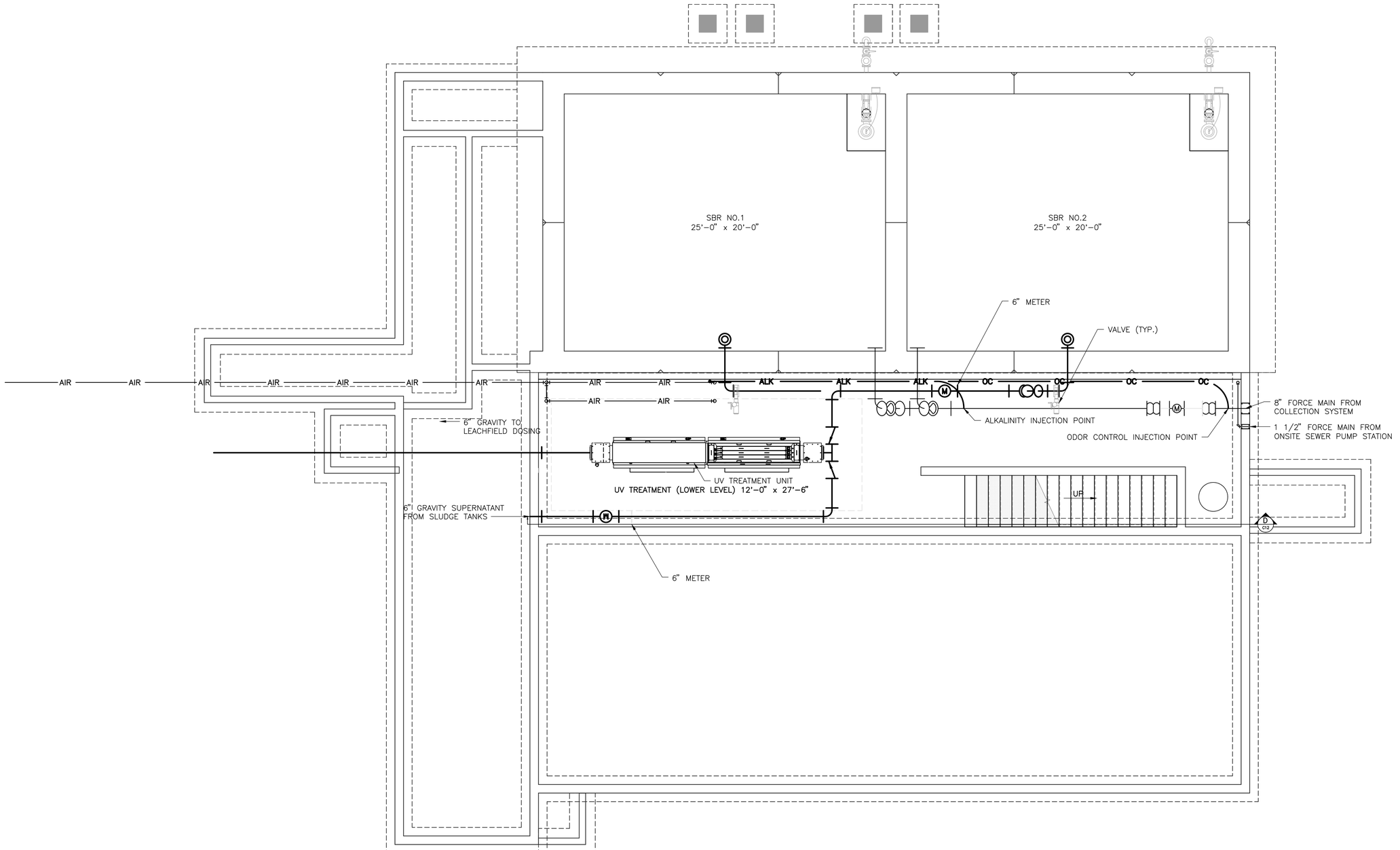

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4/8/2026

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REVISIONS

NUMBER	DATE	REVISION DESCRIPTION	BY

CLIENT NAME
TOWN OF WAITSFIELD

PROJECT NAME
WAITSFIELD WASTEWATER TREATMENT FACILITY

PROJECT ADDRESS
4144 MAIN STREET
WAITSFIELD, VERMONT 05673

SHEET TITLE
CONTRACT NO. 1

FLOOR PLAN
LOWER LEVEL

D&K PROJECT #	PROJ. ENG.
227947	JBA
DRAWN BY	CHECKED BY
EBS	DDC

DATE
APRIL 8, 2026

SHEET NUMBER
P1

SHEET: 12 of 81

I:\2\227947 Waitsfield Water and Wastewater Feasibility Study\Drawings\Civil\227947-STRUC-NU-01.dwg 3/31/2026 4:00 PM

9000 gal. PRECAST
8'–9" x 14'–0"
12'–0" Ht. I.D.
LEACHFIELD DOSING
PUMP STATION
(UNDERGROUND)

9000 gal. PRECAST
8'–9" x 14'–0"
12'–0" Ht. I.D.
TERTIARY EFFLUENT
STORAGE
(UNDERGROUND)

9000 gal. PRECAST
8'–9" x 14'–0"
12'–0" Ht. I.D.
TERTIARY EFFLUENT
STORAGE
(UNDERGROUND)

ACCESS RAMP

ACCESS RAMP

SBR NO.1
25'–0" x 20'–0"

SBR NO.2
25'–0" x 20'–0"

4'–4" WIDE GRATED WALK

ORP ASSEMBLY (TYP)

D.O. ASSEMBLY (TYP)

LEVEL SENSING PRESSURE TRANSDUCER (TYP)

LEVEL SENSING FLOAT SWITCH (TYP)

SLUDGE PUMP (TYP.)

MOORING POST (TYP)

AQUACAM–D TREATMENT UNIT (TYP.)

COAGULANT INJECTION POINT

SECONDARY
CONTAINMENT
PALLET

ODOR CONTROL
SODIUM PERMANGANATE

CHEMICAL FEED ROOM
23'–0" x 12'–6"
CEILING HT. 8'–0"

ALKALINITY
SODA ASH

UP

UP TO UPPER LEVEL
OPEN TO TRUSSES

DOWN TO LOWER LEVEL

BLOWER ROOM
22'–0" x 12'–0"

CORRIDOR
5'–0" min. WIDTH
FINISHED FLOOR
EL. 788.00'
OPEN TO TRUSSES

COAGULANT
POLY ALUMINUM
CHLORIDE

ELECTRICAL ROOM
10'–4" x 8'–0"
CEILING HT. 8'–0"

CONTROLS

CONTROLS

BATHROOM 13'–4"
x 7'–6"
CEILING HT. 8'–0"

LABORATORY/OFFICE
13'–4" x 20'–0"
CEILING HT. 8'–0"

UTILITY ROOM
5'–6" x 7'–8"
CEILING HT. 8'–0"

WX–448C
80 gal.

PUMP STATION
500 gpd
5'–6" Sq

FILTER
(FUTURE)

FILTER ROOM
16'–8" x 26'–8"

FILTER
(FUTURE)

LOADING DOCK

UP

GRATE OVER SECONDARY
CONTAINMENT SUMP

4' 0 4' 8'
SCALE IN FEET

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WAITSFIELD
WASTEWATER
TREATMENT
FACILITY

PROJECT ADDRESS
4144 MAIN STREET
WAITSFIELD, VERMONT 05673

SHEET TITLE
CONTRACT NO. 1

FLOOR PLAN

D&K PROJECT #	PROJ. ENG.
227947	JBA
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EBS	DDC

DATE
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SHEET NUMBER
P2

SHEET: 13 of 81

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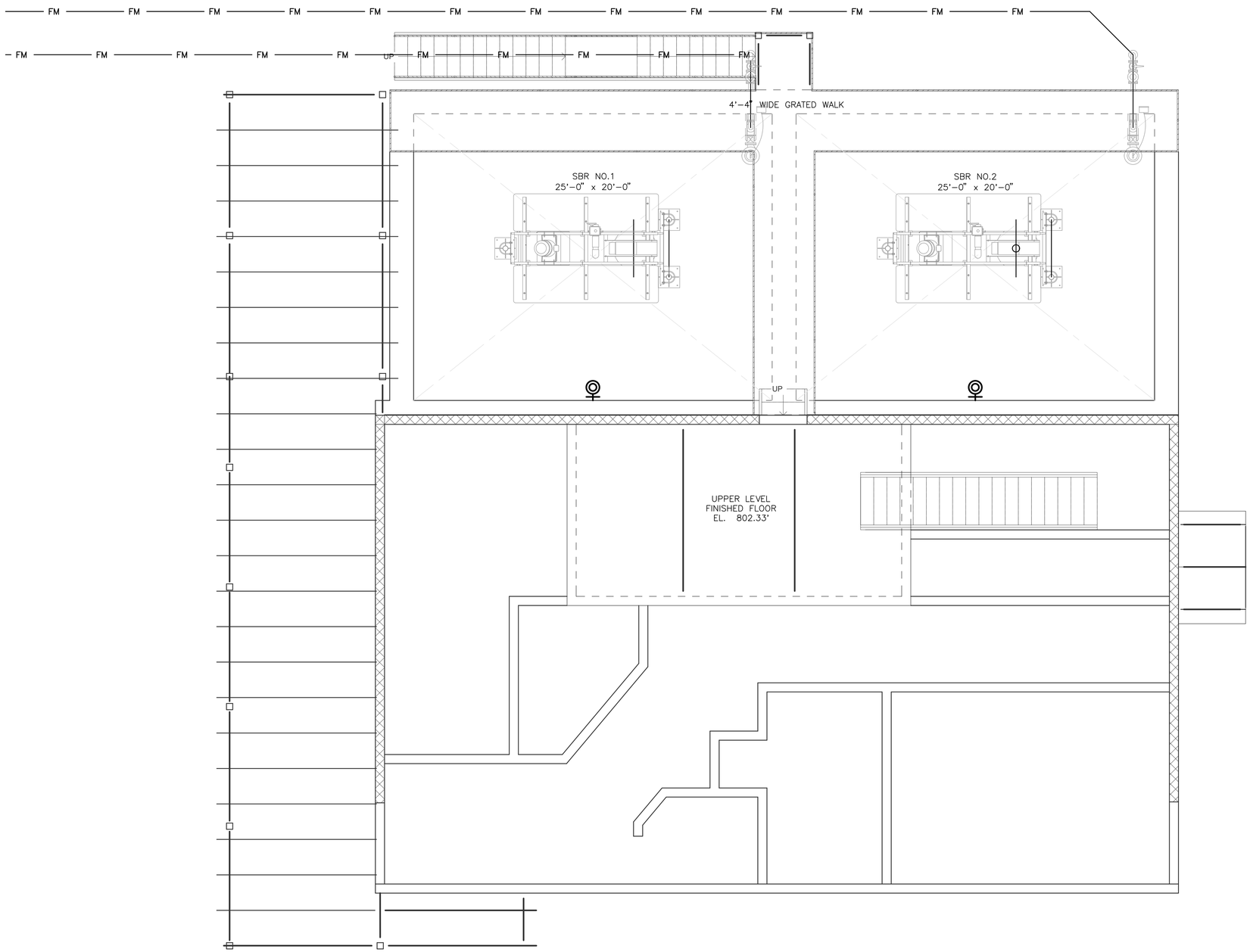

4' 0 4' 8'

SCALE IN FEET

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PROJECT ADDRESS
4144 MAIN STREET
WAITSFIELD, VERMONT 05673

SHEET TITLE
CONTRACT NO. 1

FLOOR PLAN UPPER LEVEL

D&K PROJECT #	PROJ. ENG.
227947	JBA
DRAWN BY	CHECKED BY
EBS	DDC

DATE
APRIL 8, 2026

SHEET NUMBER
P3

SHEET: 14 of 81

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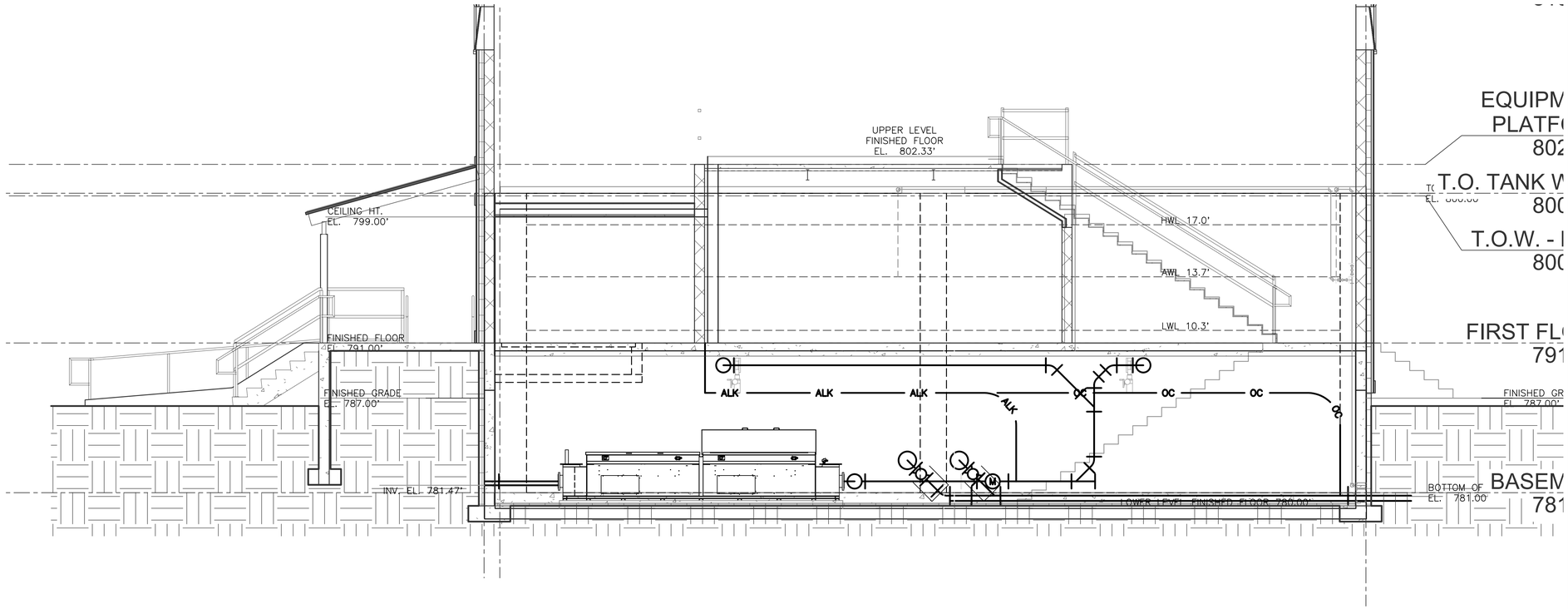

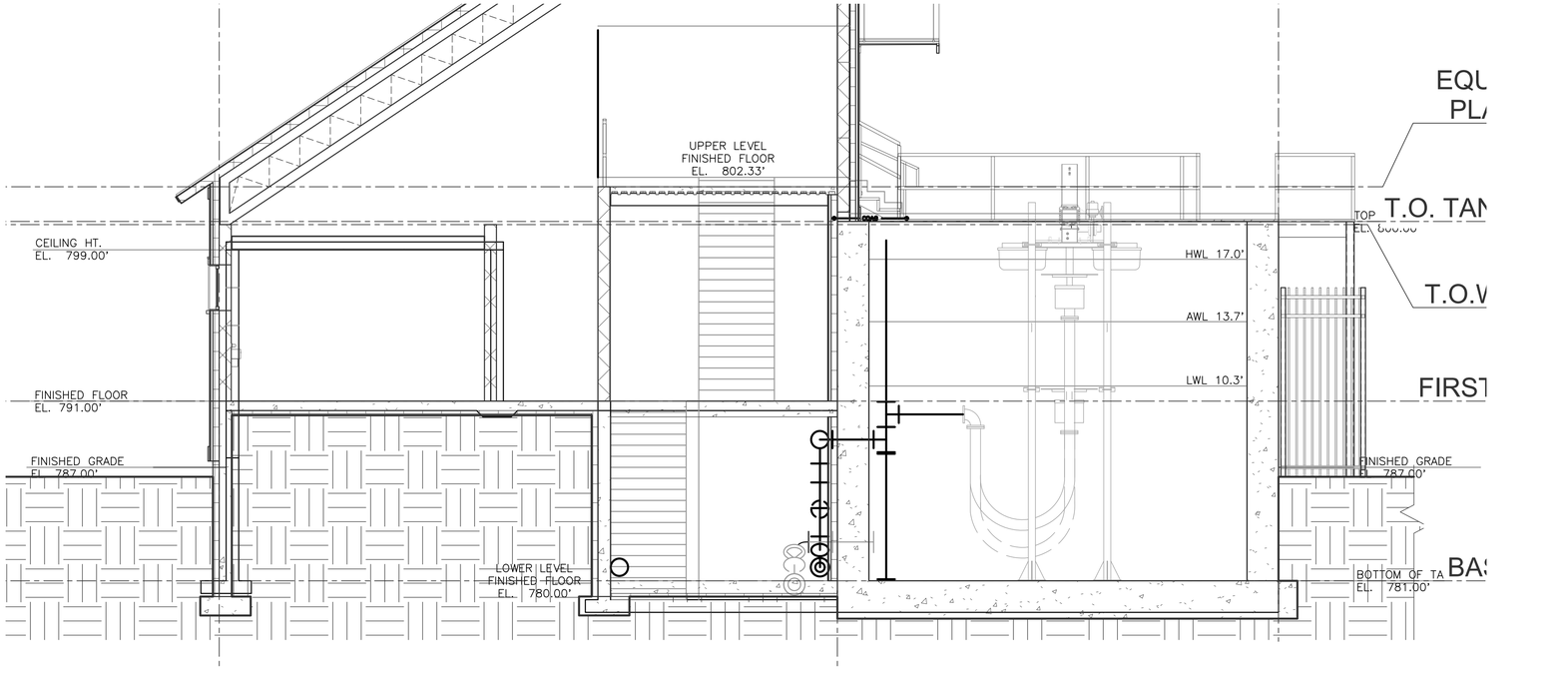

4' 0 4' 8'
SCALE IN FEET

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CONTRACT NO. 1

SECTIONS

D&K PROJECT #	PROJ. ENG.
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SHEET NUMBER
P4

SHEET: 15 of 81

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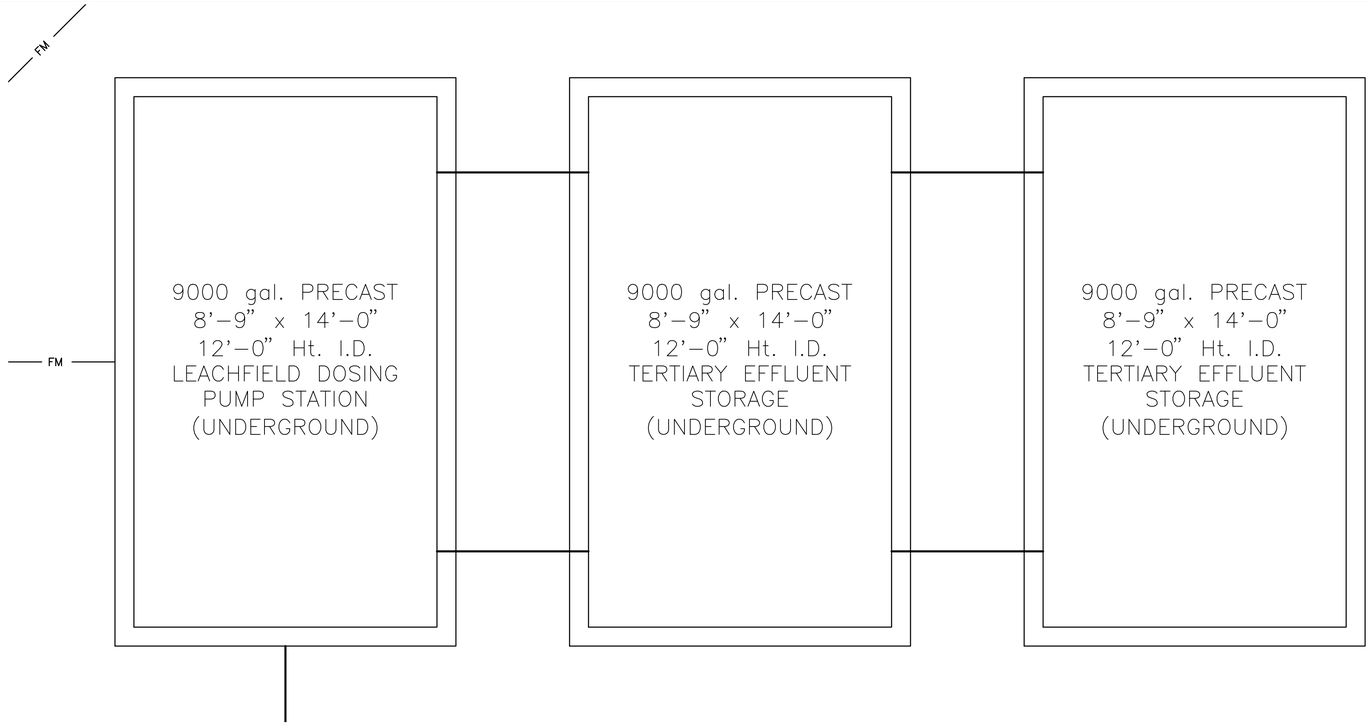

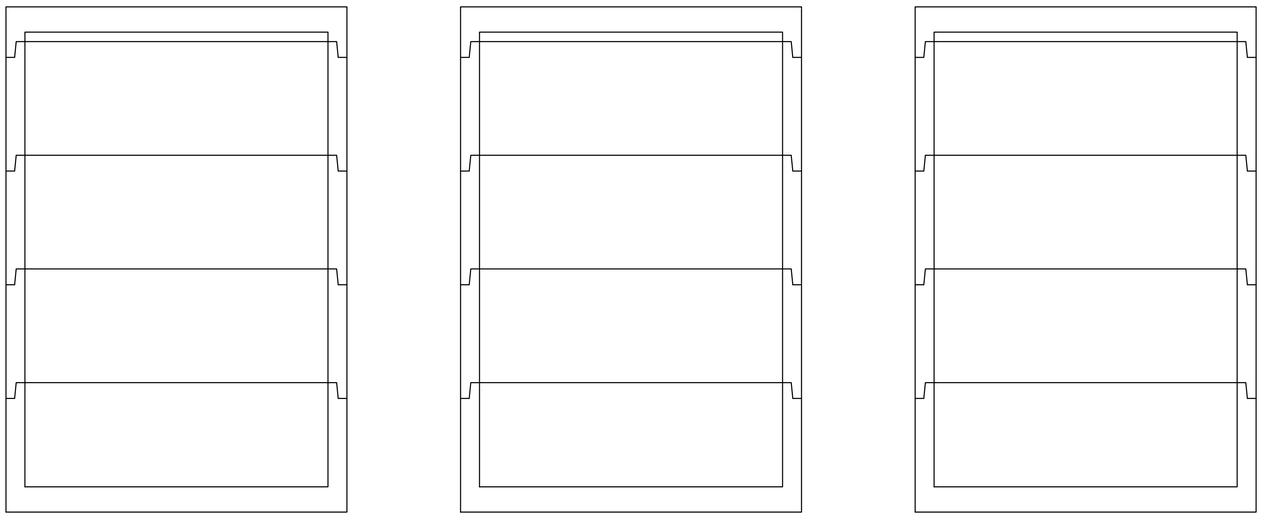

2' 0 2' 4'
SCALE IN FEET

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SHEET TITLE
CONTRACT NO. 1

LEACHFIELD
DOSING TANKS

D&K PROJECT #	PROJ. ENG.
227947	JBA
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EBS	DDC

DATE
APRIL 8, 2026

SHEET NUMBER
P5

SHEET: 16 of 81

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9000 gal. PRECAST
8'–0" x 16'–0"
10'–6" Ht. I.D.
SLUDGE TANK
(UNDERGROUND)

9000 gal. PRECAST
8'–0" x 16'–0"
10'–6" Ht. I.D.
SLUDGE TANK
(UNDERGROUND)

9000 gal. PRECAST
8'–0" x 16'–0"
10'–6" Ht. I.D.
SLUDGE TANK
(UNDERGROUND)

9000 gal. PRECAST
8'–0" x 16'–0"
10'–6" Ht. I.D.
SLUDGE TANK
(UNDERGROUND)

AIR

FM

2' 0 2' 4'
SCALE IN FEET

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WAITSFIELD, VERMONT 05673

SHEET TITLE
CONTRACT NO. 1

SLUDGE TANKS

D&K PROJECT #	PROJ. ENG.
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EBS	DDC

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APRIL 8, 2026

SHEET NUMBER
P6

SHEET: 17 of 81

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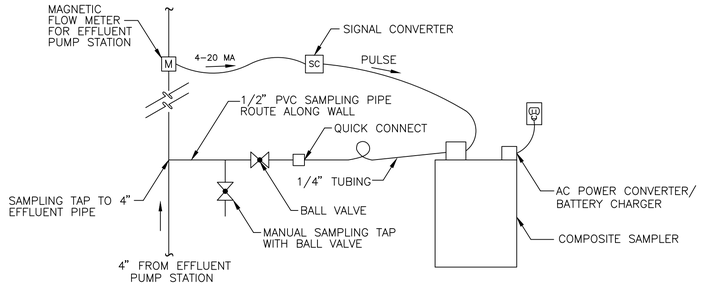
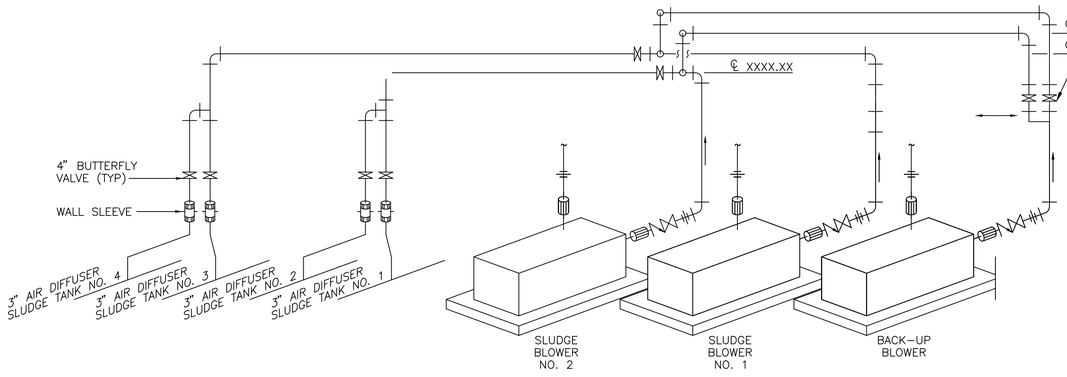


EFFLUENT SAMPLING DETAIL

NOT TO SCALE



BLOWER SCHEMATIC

NOT TO SCALE

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PROJECT ADDRESS
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WAITSFIELD, VERMONT 05673

SHEET TITLE
CONTRACT NO. 1

PROCESS DETAILS

D&K PROJECT #	PROJ. ENG.
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EBS	DDC

DATE
APRIL 8, 2026

SHEET NUMBER
P7

SHEET: 18 of 81

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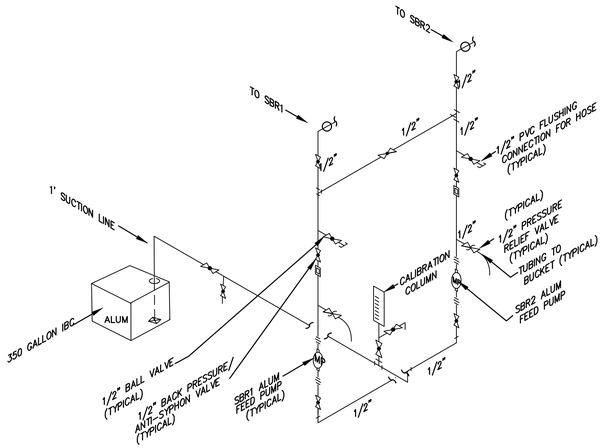
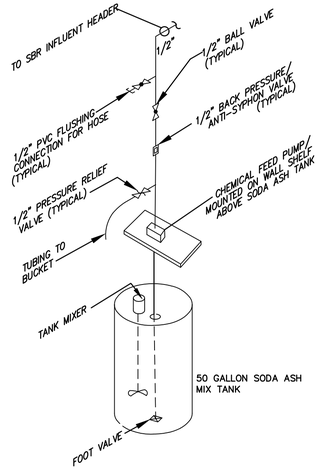


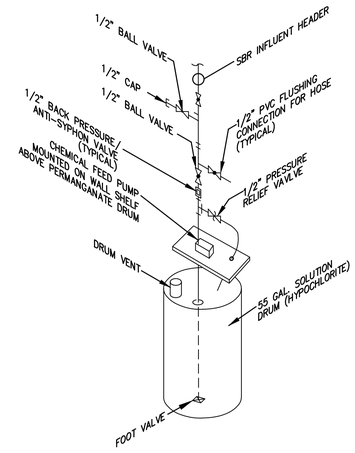
PAC FEED SYSTEM SCHEMATIC

NOT TO SCALE



SODA ASH FEED SYSTEM

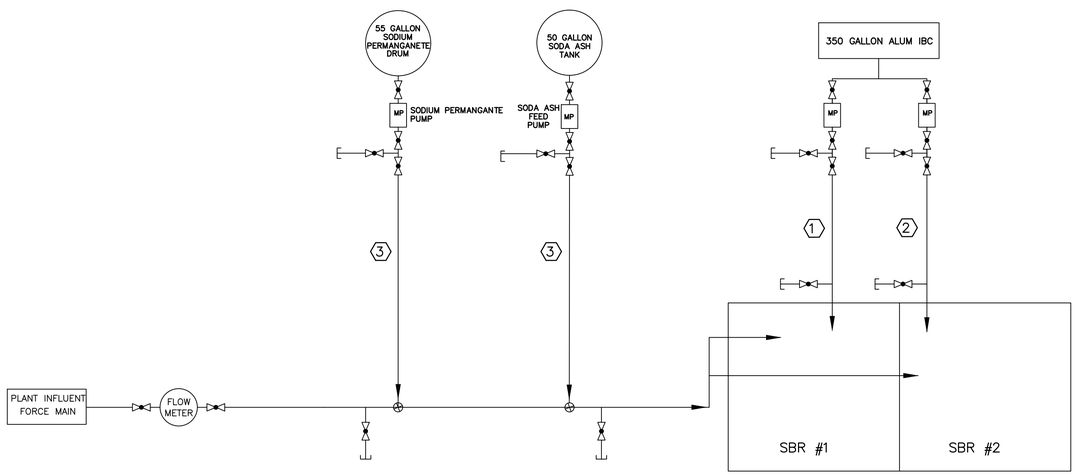
NOT TO SCALE



SODIUM PERMANGANATE FEED SCHEMATIC

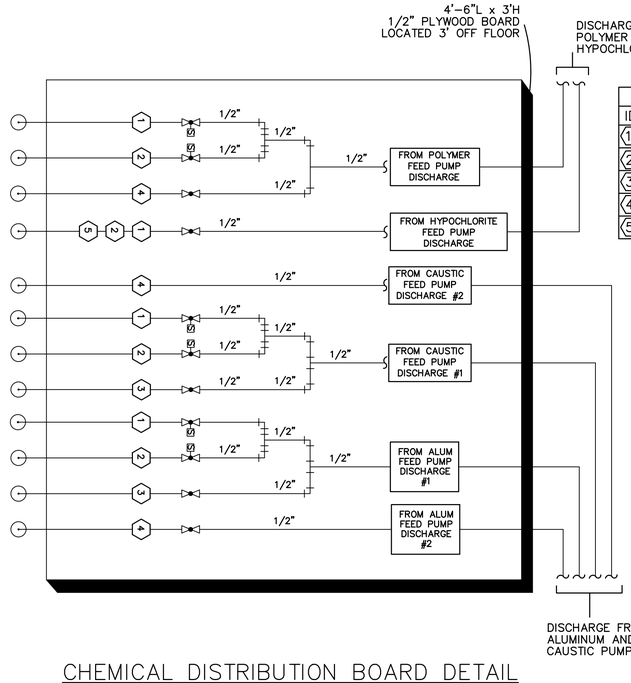
NOT TO SCALE

PIPE DESCRIPTIONS	
ID	DESCRIPTIONS
1	TO SBR NO. 1 BASIN
2	TO SBR NO. 2 BASIN
3	TO SBR INFLUENT (COMMON LINE)
4	TO SBR DECANT (COMMON LINE)



CHEMICAL FEED PROCESS FLOW SCHEMATIC

NOT TO SCALE



CHEMICAL DISTRIBUTION BOARD DETAIL

NOT TO SCALE

PIPE DESCRIPTIONS	
ID	DESCRIPTIONS
1	TO SBR NO. 1 BASIN
2	TO SBR NO. 2 BASIN
3	TO SBR INFLUENT (COMMON LINE)
4	TO SBR DECANT (COMMON LINE)
5	TO EFFLUENT FILTERS

LEGEND

- MOTORIZED BUTTERFLY VALVE
- MOTORIZED PLUG VALVE
- SOLENOID VALVE
- BALL VALVE
- 1/2" CORPORATE STOP W/ INJECTION NOZZLE
- CHEMICAL PIPING WITH FLOW DIRECTION
- PROCESS PIPING

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PROJECT NAME
WAITSFIELD WASTEWATER TREATMENT FACILITY

PROJECT ADDRESS
4144 MAIN STREET
WAITSFIELD, VERMONT 05673

SHEET TITLE
CONTRACT NO. 1
CHEMICAL SCHEMATICS AND DETAILS

D&K PROJECT #	PROJ. ENG.
227947	JBA
DRAWN BY	CHECKED BY
EBS	DDC

DATE
APRIL 8, 2026

SHEET NUMBER
P8

SHEET: 19 of 81

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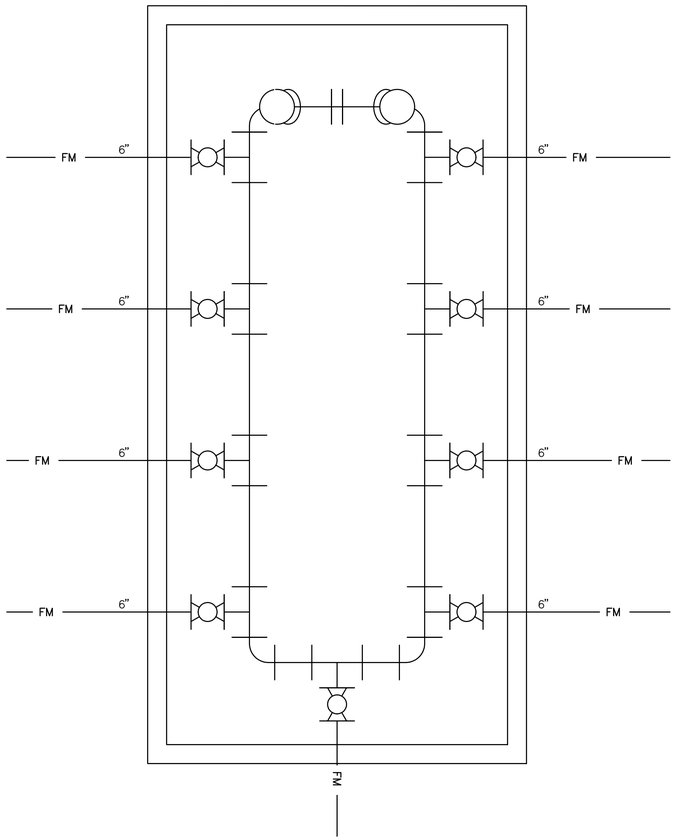
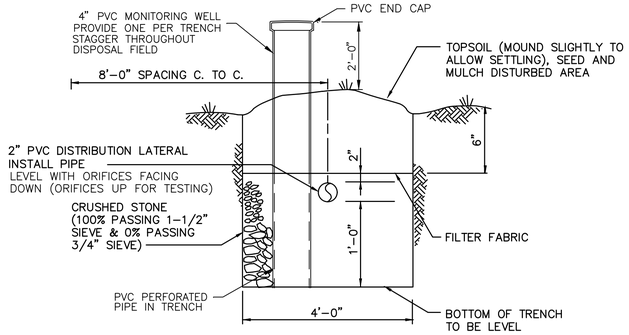


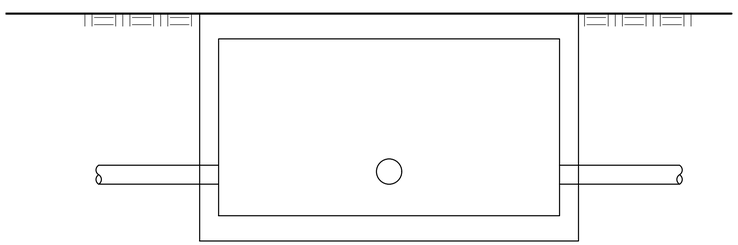


DISPOSAL FIELD TRENCH

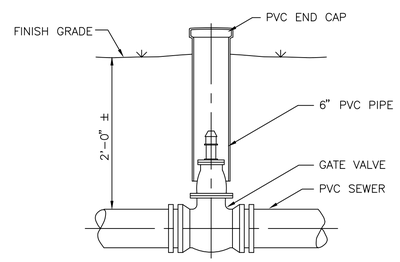
NOT TO SCALE

FIELD IDENTIFICATION	LENGTH OF 4" DISTRIBUTION MANIFOLD	# OF2" LATERALS PER FIELD	LENGTH OF 2" LATERALS	# OF 1/4" ORIFICES PER LATERAL	TOTAL # ORIFICES PER FIELD	ORIFICE SPACING

DISPOSAL FIELD SCHEDULE



DISPOSAL FIELD VALVE VAULT DETAIL



DISPOSAL FIELD BURIED GATE VALVE DETAIL

NOT TO SCALE

2' 0 2' 4'

SCALE IN FEET

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4144 MAIN STREET
WAITSFIELD, VERMONT 05673

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CONTRACT NO. 1

DISPOSAL FIELD VALVE VAULT

D&K PROJECT #	PROJ. ENG.
227947	JBA
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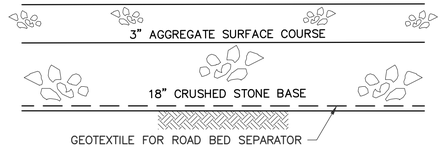
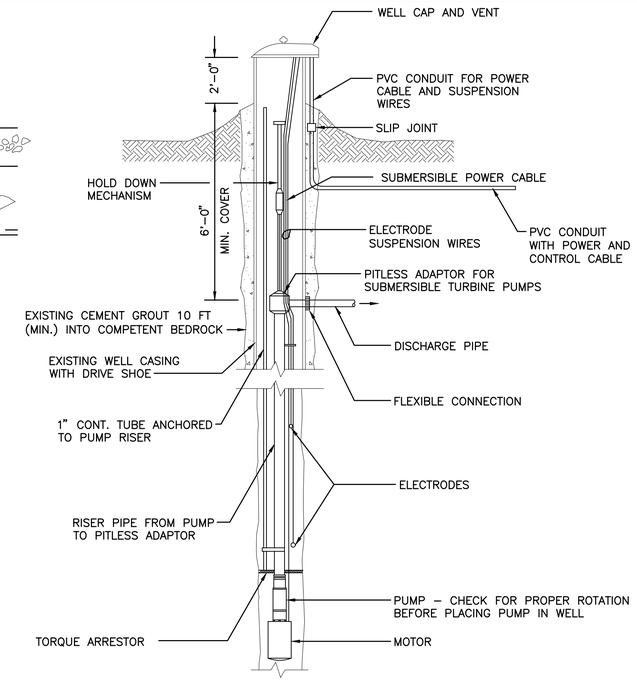


GRAVEL DRIVE SECTION

NOT TO SCALE



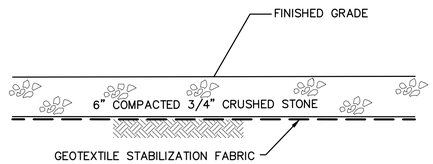
NOTE:
1. WELL CONSTRUCTION SHALL COMPLY WITH ALL REQUIREMENTS OF THE VERMONT DEPARTMENT OF ENVIRONMENTAL PROTECTION.

WELL CONSTRUCTION DETAIL

NOT TO SCALE

WELL SCHEDULE

WELL NO.	CAP ELEV.	PUMP ELEV.	LOW WATER LEVEL SWITCH	PUMP Q, GMP	TDH, FT.	PUMP MODEL	DISCHARGE PITLESS ELEV.	DISCHARGE PITLESS SIZE	PUMP DISCHARGE PIPING	TORQUE ARRESTER
1	790 FEET	487 FEET	492 FEET	5 GPM		GOULDS	781 FEET	1 ½"	1 ½"	



TYPICAL STONE WALK SECTION

NOT TO SCALE

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PROJECT ADDRESS
4144 MAIN STREET
WAITSFIELD, VERMONT 05673

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CONTRACT NO. 1

SITE DETAILS

D&K PROJECT #	PROJ. ENG.
227947	JBA
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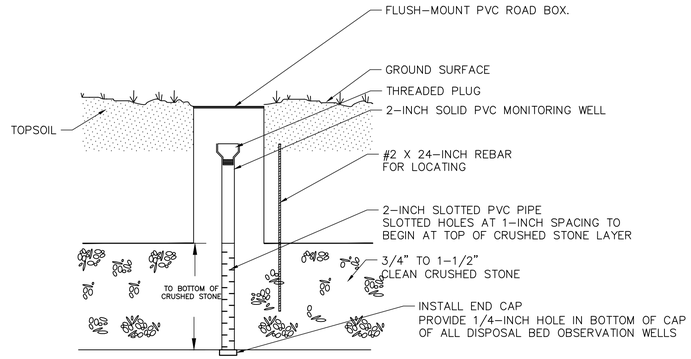
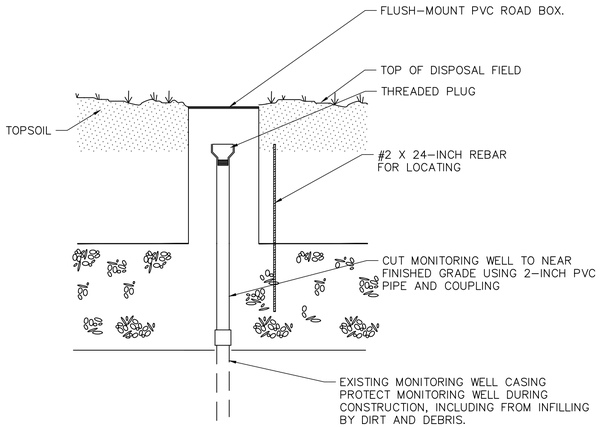


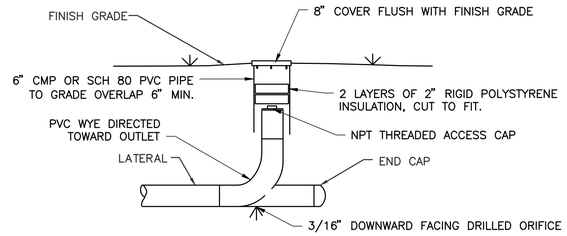
DISPOSAL TRENCH OBSERVATION WELL DETAIL

NOT TO SCALE



MONITORING WELL FINISH DETAIL

NOT TO SCALE



LATERAL CLEAN–OUT DETAIL

NOT TO SCALE

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PROJECT ADDRESS
4144 MAIN STREET
WAITSFIELD, VERMONT 05673

SHEET TITLE
CONTRACT NO. 1
DISPOSAL FIELDS DETAILS

D&K PROJECT #	PROJ. ENG.
227947	JBA
DRAWN BY	CHECKED BY
EBS	DDC

DATE
APRIL 8, 2026

SHEET NUMBER
C7

SHEET: 22 of 81

90% DESIGN SET
NOT FOR CONSTRUCTION
4/8/2026

ABBREVIATIONS

ABBR	DESCRIPTION
#	NUMBER OF POUNDS
&	AND
=	EQUAL
@	AT
A/C	AIR CONDITIONING
A/E	ARCHITECT/ENGINEER
ABV	ABOVE
AC	ACOUSTICAL
ACT	ACOUSTIC CEILING TILE
AD	ACCESS DOOR or AREA DRAIN
ADD	ADDITIONAL
ADJ	ADJACENT
ADJT	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ALT	ALTERNATE
ALUM	ALUMINUM
ANCH	ANCHOR
ANCH B	ANCHOR BOLT
ANOD	ANODIZED
AP	ACCESS PANEL
APPROX	APPROXIMATELY
ARCH	ARCHITECT/ARCHITECTURAL
ASB	ASBESTOS
AUTO	AUTOMATIC
AUX	AUXILIARY
AV	AUDIO VISUAL
AVG	AVERAGE
B	BOLT
BC	BRICK COURSE
BD	BOARD
BEL	BELOW
BET	BETWEEN
BIT	BITUMINOUS
BL	BLANKET
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BEAM, BENCH MARK
BN	BULL NOSE
BO	BOTTOM OF
BOS	BOTTOM OF STEP
BOT	BOTTOM
BRCG	BRACING
BRG	BEARING
BRK	BRICK
BRKT	BRACKET
BS	BOTH SIDES
BSMT	BASEMENT
BUR	BUILT UP ROOFING
BW	BOTH WAYS
CAB	CABINET
CB	CATCH BASIN
CEM	CEMENT
CER	CERAMIC
CF	CUBIC FEET
CG	CORNER GUARD
CH	CEILING HEIGHT
CHAM	CHAMFER
CIR	CIRCLE
CIRC	CIRCUMFERENCE
CJ	CONTROL JOINT or CONSTRUCTION JOINT
CL	CENTER LINE
CLF	CHAIN LINK FENCE
CLNG	CEILING
CLOS	CLOSET
CLR	CLEAR
CLS	CLOSURE OR CLOSER
CM	CONSTRUCTION MANAGER
CMU	CEMENT MASONRY UNIT
CO	CLEAN OUT
COL	COLUMN
COMP	COMPRESSIBLE
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
COORD	COORDINATE
COR	CORRUGATED
CORR	CORRIDOR
CPT	CARPET
CR	CHAIR RAIL
CRS	COURSE
CSMT	CASEMENT
CT	CERAMIC TILE
CTR	CENTER
CTSK	COUNTERSUNK
CU	CUBIC
CUH	CABINET UNIT HEATER
CW	COLD WATER
CYL	CYLINDER
D	DEEP OR DEPTH
DB	DECIBELS
DBL	DOUBLE
DEM	DEMOLISH
DEPT	DEPARTMENT
DET	DETAIL
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIAG	DIAGONAL
DIFF	DIFFUSER
DIM	DIMENSION
DISP	DISPENSER
DMT	DEMOUNTABLE
DN	DOWN
DP	DAMP PROOFING
DR	DOOR OR DRAIN
DS	DOWN SPOUT
DWG	DRAWING

ABBREVIATIONS

ABBR	DESCRIPTION
E	EAST
EA	EACH
EIFS	EXTERIOR INSULATION FINISH SYSTEM
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRIC OR ELECTRICAL
ELEV	ELEVATOR
EMER	EMERGENCY
ENAM	ENAMEL
ENCL	ENCLOSURE
ENG	ENGINEER
ENT	ENTRANCE
EOS	EDGE OF SLAB
EQ	EQUAL
EQUIP	EQUIPMENT
EW	EACH WAY
EWC	ELEC. WATER COOLER
EXH	EXHAUST
EXIST	EXISTING
EXIST	EXISTING
EXP	EXPANSION
EXPD	EXPANDED
EXPO	EXPOSED
EXT	EXTERIOR
EXTR	EXTRUDED
FA	FIRE ALARM
FAS	FASTENER
FB	FACE BRICK OR FLAT BAR
FC	FLEXIBLE CONNECTION
FD	FLOOR DRAIN or FIRE DAMPER
FDN	FOUNDATION
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CAB
FFE	FINISHED FLOOR ELEVATION
FGL	FIBERGLASS
FHC	FIRE HOSE CABINET
FIN	FINISHED
FIX	FIXTURE
FLASH	FLASHING
FLEX	FLEXIBLE
FLOUR	FLUORESCENT
FLR	FLOOR
FLRG	FLOORING
FOW	FACE OF WALL
FP	FIRE PROOFING
FR	FIRE RATED
FRM	FRAME
FRP	FIBERGLASS REINF. PANELING
FRT	FIRE RET. TREATED
FT	FOOT OR FEET
FTG	FOOTING
FTR	FIN TUBE RADIATION
FUR	FURRED OR FURRING
FURN	FURNISHED
FUT	FUTURE
FXD	FIXED
GA	GAUGE
GALV	GALVANIZE(D)
GB	GRAB BAR
GC	GENERAL CONTRACTOR
GD	GRADE
GDR	GUARDRAIL
GEN	GENERAL
GL	GLASS
GRD	GROUND
GS	GRAVEL STOP
GT	GROUT
GWB	GYPSUM WALL BOARD
GYP	GYPSUM
HB	HOSE BIB
HBD	HARDBOARD
HC	HOLLOW CORE or HANDICAP ACCESSIBLE
HDR	HANDRAIL
HDW	HARDWARE
HDWD	HARDWOOD
HM	HOLLOW METAL
HOR	HORIZONTAL
HP	HIGH PRESSURE
HR	HOUR
HT	HEIGHT
HTG	HEATING
HTR	HEATER
HVAC	HEATING, VENT. & A/C
HW	HOT WATER
ID	INSIDE DIAMETER
IN	INCH
INCL	INCLUDED/ING
INFO	INFORMATION
INSUL	INSULATION
INT	INTERIOR
INTER	INTERMEDIATE
JAN	JANITOR
JB	JUNCTION BOX
JC	JANITOR'S CLOSET
JST	JOIST
JT	JOINT
K PL	KICK PLATE
KD	KNOCK DOWN
LAM	LAMINATE
LAV	LAVATORY
LBS	POUNDS
LF	LINEAL FEET
LF F	LIGHT FIXTURE
LFLI	LANDLORD FURNISHED LANDLORD INSTALLED
LFLI	LANDLORD FURNISHED TENANT INSTALLED
LIQ	LIQUID
LOC	LOCATION
LT	LIGHT

ABBREVIATIONS

ABBR	DESCRIPTION
LTG	LIGHTING
LTL	LINTEL
LVR	LOUVER
LW	LONG WAY
MACH	MACHINE
MAINT	MAINTENANCE
MAS	MASONRY
MAT	MATERIAL
MAX	MAXIMUM
MCF	METAL FURRING CHANNEL
MD	METAL DECKING
MECH	MECHANICAL
MED	MEDIUM
MEMB	MEMBER
MFR	MANUFACTURER
MH	MANHOLE
MHO	MAGNETIC HOLD OPEN
MIN	MINIMUM OR MINUTE
MIRR	MIRROR
MISC	MISCELLANEOUS
MLD	MOLDING
MO	MASONRY OPENING
MOV	MOVABLE
MR	MOISTURE RESISTANT
MTD	MOUNTED
MTL	METAL
MULL	MULLION
N	NORTH
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFE	OWNER FURNISHED EQUIPMENT
OFF	OFFICE
OFI	OWNER FURNISHED AND INSTALLED
OH	OVERHEAD
OHD	OVER HEAD DOOR
OPNG	OPENING
OPP	OPPOSITE
OPPH	OPPOSITE HAND
OZ	OUNCE
PART	PARTITION
PC	PRECAST OR PIECE
PED	PEDESTAL
PERF	PERFORATED
PERIM	PERIMETER
PFN	PREFINISHED
PH	PARTIAL HEIGHT
PL	PLATE
PLAM	PLASTIC LAMINATE
PLAS	PLASTER
PLUM	PLUMBING
PLWD	PLYWOOD
PNL	PANEL
PORC	PORCELAIN
PREFAB	PREFABRICATED
PRESS	PRESSURE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PAINT OR POINT
PTD	PAINTED
PVC	POLY VINYL CHLORIDE
PVMT	PAVEMENT
PVR	PAVER
QTY	QUANTITY
R	RADIUS/RISER
RA	RETURN AIR
RAD	RADIATION
RD	ROOF DRAIN, ROAD
REBAR	REINFORCING BAR
REC	RECESSED
REF	REFERENCE
REFL	REFLECTED
REFR	REFRIGERATOR
REG	REGISTER
REINF	REINFORCED
REM	REMOVE
REQD	REQUIRED
RES	RESISTANT
RESIL	RESILIENT
RET	RETAINING
REV	REVISION/REVERSE
RF	ROOF
RFG	ROOFING
RM	ROOM OR ROOF MEMBRANE
RO	ROUGH OPENING
RSL	RESILIENT FLOORING
S	SOUTH
SAT	SUSPENDED ACOUSTICAL TILE
SAWM	SELF ADHERED WATERPROOF MEMBRANE
SC	SOLID CORE
SCHED	SCHEDULE
SECT	SECTION
SF	SQUARE FEET
SHLV	SHELVING
SHT	SHEET
SIM	SIMILAR
SLDG	SLIDING
SLNT	SEALANT
SPCG	SPACING
SPEC	SPECIFICATION
SPKR	SPEAKER
SPR HD	SPRINKLER HEAD

ABBREVIATIONS

ABBR	DESCRIPTION
SQ	SQUARE
SS	STAINLESS STEEL
STC	SOUND TRANSMISSION CLASS
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
STOR	STORAGE
STRUCT	STRUCTURAL
SURF	SURFACE
SUSP	SUSPENDED
SV	SHEET VINYL
SYM	SYMBOL
SYS	SYSTEM
T	TREAD, TILE
T&G	TONGUE AND GROOVE
TBD	TACK BOARD
TEL	TELEPHONE
TEMP	TEMPORARY, TEMPERATURE
TFLI	TENANT FURNISHED LANDLORD INSTALLED
TFTI	TENANT FURNISHED or TENANT INSTALLED
THERM	THERMOMETER
THK	THICK
THR	THRESHOLD
THRU	THROUGH
TK BD	TACK BOARD
TLT	TOILET
TOC	TOP OF CURB
TOF	TOP OF FOOTING
TOS	TOP OF STEEL
TOW	TOP OF WALL
TR	TRENCH
TRT	TREATED
TYP	TYPICAL
UC	UNDER CUT
UH	UNIT HEATER
UL	UNDERWRITER'S LABORATORIES
UNFIN	UNFINISHED
UNO	UNLESS NOTED OTHERWISE
UR	URINAL
UTIL	UTILITY
VAC	VACUUM
VAR	VARIABLE
VB	VAPOR BARRIER
VCT	VINYL COMPOSITE TILE
VEH	VEHICLE
VERT	VERTICAL
VEST	VESTIBULE
VIF	VERIFY IN FIELD
VNR	VENEER
VOL	VOLUME
VP	VENT PIPE
VTR	VENT THROUGH ROOF
VWC	VINYL WALL COVERING
W	WEST
W/	WITH
W/O	WITH OUT
WC	WATER CLOSET
WD	WOOD
WF	WIDE FLANGE
WG	WIRE GLASS
WIN	WINDOW
WP	WATER PROOF
WR	WATER RESISTANT
WS	WATER STOP
WT	WEIGHT
WWF	WELDED WIRE FABRIC

SYMBOL LEGEND

WALL TAG — 1\ — WALL TYPE

WINDOW TAG — 1t — WINDOW TYPE

DOOR TAG — ### — DOOR NUMBER

ROOM TAG — Room name — ROOM NAME; 101 — ROOM NUMBER; 150 SF — AREA

SECTION MARK — 1 / A101 — SIM — DRAWING NUMBER; SHEET NUMBER

EXTERIOR ELEVATION — 1 / A4.1 — DRAWING NUMBER; SHEET NUMBER

INTERIOR ELEVATION — 1 / A8.1 (1, 2, 3, 4) — DETAIL NUMBER, TYP; DRAWING NUMBER; SHEET NUMBER

DETAIL SECTION — 1 / A101 — SIM — DRAWING NUMBER; SHEET NUMBER

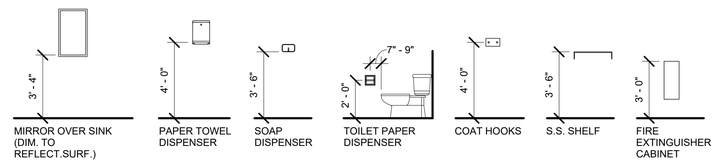
FLOOR FINISH TAG — Floor Material / Floor Material — FLOOR MATERIAL

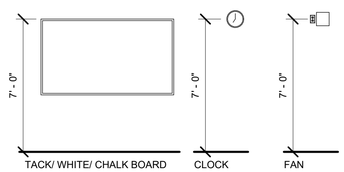
DETAIL — 1 / A101 — SIM — DRAWING NUMBER; SHEET NUMBER

GENERAL NOTES:

1. GENERAL CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO STARTING ANY WORK.
2. DIMENSIONS TO NEW CONSTRUCTION SHALL BE TO FACE OF CMU, UNLESS OTHERWISE NOTED OR INDICATED.

MOUNTING HEIGHTS FOR EQUIPMENT & ACCESSORIES





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VERMONT
NEW HAMPSHIRE
MAINE AND NEW YORK

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PROFESSIONAL SEAL

NO.	DATE	DESCRIPTION	BY	CK'D

SCOTT + PARTNERS ARCHITECTURE
7 CARMICHAEL ST. ESSEX JUNCTION, VT 05452
P. 802.879.5153 F. 802.872.2764 SCOTTPARTNERS.COM

PROJECT NAME

WAITSFIELD WASTEWATER TREATMENT CENTER

PROJECT ADDRESS
4144 MAIN ST
WAITSFIELD, VT 05673

SHEET TITLE

GENERAL NOTES & ABBREVIATIONS

DRAWN BY	DATE
EK	01/27/26
CHECKED BY	S+P PROJECT #
JLG	25-1756

SHEET NUMBER

A0.1

PROJECT TYPE	
Project Type	-

NEW CONSTRUCTION	Yes
ADDITION	No
MODIFICATION/RECONSTRUCTION	No
RENOVATION/ADDITION	No

PROJECT NARRATIVE:

Construction of new waste processing and filtration facility. **Industrial** processes take up most of the facility with a small office/control/lab area.

APPLICABLE CODES	
Code Name	Notes
NFPA 101 2021 EDITION	AS AMENDED BY THE 2025 VT FIRE & BUILDING SAFETY CODE
NFPA 1 2021 EDITION	AS AMENDED BY THE 2025 VT FIRE & BUILDING SAFETY CODE
IBC 2021 EDITION	AS AMENDED BY THE 2025 VT FIRE & BUILDING SAFETY CODE
ADA 2010 EDITION	AS AMENDED BY THE 2012 VT ACCESS RULES
2020 CBES	BY EXECUTIVE ORDER OF THE GOVERNOR

BUILDING HEIGHT, STORIES & AREA										
BUILDING OCCUPANCY (NFPA CHAPTER 6 & IBC CHAPTER 5)	CODES		ZONING REQUIREMENTS		MAXIMUM ALLOWABLE PER CODE (IBC CHAPTER 5)			PROPOSED VALUES		
	NFPA OCCUPANCY SECTION	IBC OCCUPANCY SECTION	LOCAL ZONING HEIGHT	LOCAL ZONING SET BACKS	HEIGHT	STORIES	BUILDING AREA	PROPOSED GROSS PROJECT AREA	# STORIES	HEIGHT
F-1 FACTORY / INDUSTRIAL		TABLES 504.3, 504.4 & 506.2			55'	2	15,500 SF	2,047 SF	1 W/ PARTIAL BASEMENT AND EQUIPMENT PLATFORM	48' TO HIGHEST POINT

BUILDING CONSTRUCTION TYPE:

- ☐ TYPE 1 ☐ A ☐ B
- ☑ TYPE 2 ☐ A ☑ B
- ☐ TYPE 3 ☐ A ☐ B
- ☐ TYPE 4 ☐ A ☐ B
- ☐ TYPE 5 ☐ A ☐ B

FIRE DETECTION SYSTEM:

- ☐ NO DETECTION AND ALARM, OR COMMUNICATION SYSTEM REQUIRED OR PROVIDED
- ☑ FIRE ALARM SYSTEM PROVIDED

SPRINKLER PROTECTION

- ☐ SPRINKLED
- ☑ NOT SPRINKLED

EXTINGUISH REQUIREMENTS:

- ☐ SPRINKLER SYSTEM
- ☑ PORTABLE FIRE EXTINGUISHERS
  - CLASS A: ☑
  - CLASS B & C: ☐

REQUIRED TRAVEL DISTANCE TO EXTINGUISHER: 75'-0"

EGRESS REQUIREMENTS																
OCCUPANCY NFPA CHAPTER 7.3				EGRESS FACTORS		REQUIRED EGRESS WIDTHS			ALLOWABLE EGRESS DISTANCES			PROPOSED EGRESS DISTANCES (SEE PLAN)			REQUIRED EXITS	
OCCUPANCY TYPE	AREA	LOAD FACTOR	OCCUPANCY	STAIR EGRESS CAPACITY FACTOR	CORRIDOR/ EXIT PATH EGRESS CAPACITY FACTOR	REQUIRED STAIR WIDTH	REQUIRED CORRIDOR /EXIT PATH WIDTH	MINIMUM EGRESS WIDTH	MAX. DEAD END CORRIDOR	MAX. COMMON PATH OF TRAVEL	MAX. TOTAL TRAVEL DISTANCE	DEAD END CORRIDOR	COMMON PATH OF TRAVEL	TRAVEL DISTANCE	REQUIRED NUMBER OF EXITS	PROPOSED NUMBER OF EXITS
INDUSTRIAL	2138 SF	100 SF/PER PERSON	22					36 IN.	50 FT	50 FT	200 FT	SEE PLANS	SEE PLANS	SEE PLANS	2	2

ADDITIONAL LIFE SAFETY REQUIREMENTS:

PROTECTION FROM HAZARDS:
- HAZARDS ON SITE INCLUDE REGULATED CHEMICALS INCLUDING SEVERAL CORROSIVES IN LARGE QUANTITIES. SEE A SEPARATE HAZARDS NARRATIVE WITH A FULL LIST OF CHEMICALS, QUANTITIES, STORAGE AND CONTAINMENT METHODOLOGY, USE AND DISPOSAL.
- WALL RATINGS, WHERE REQUIRED AS PART OF THE CONTAINMENT/PROTECTION ARE SHOWN ON THE PLANS- **1 HOUR FIRE** RATED BARRIERS UNLESS NOTED OTHERWISE.
- STORAGE CABINETS WILL ALSO BE USED AS PART OF THE CONTAINMENT STRATEGY. SEE MECHANICAL FOR SPECIAL VENTING REQUIREMENTS.

INTERIOR FINISHES:
INTERIOR FINISHES SHALL BE CLASS A OR CLASS B.

WASTEWATER TREATMENT AND COLLECTION FACILITIES (NFPA 820):
- NON-COMBUSTIBLE OR LIMITED-COMBUSTIBILITY MATERIALS
- FIRE ALARM REQUIRED IN ALL SPACES
- VENTILATION MONITORING REQUIRED
- ALARM SIGNALING SYSTEMS REQUIRED
- LIGHTNING PROTECTION PER NFPA 780

SINGLE EXIT PERMITTED:
FROM ANY STORY / EQUIPMENT PLATFORM IF COMMON PATH OF TRAVEL LIMITATIONS ARE MET.

LIFE SAFETY PLAN SYMBOL LEGEND

1 HOUR FIRE RATED BARRIER

EXIT — EXIT

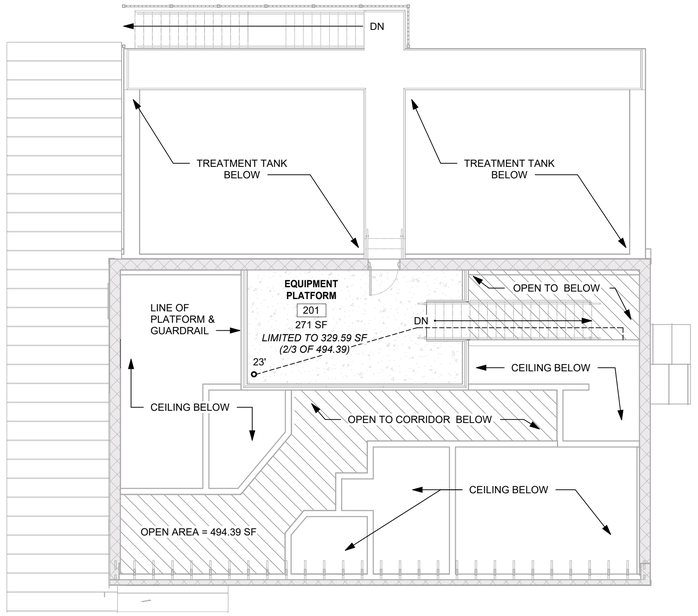
X' — TRAVEL DISTANCE

D = MAX. DIAGONAL DIMENSION OF AREA SERVED

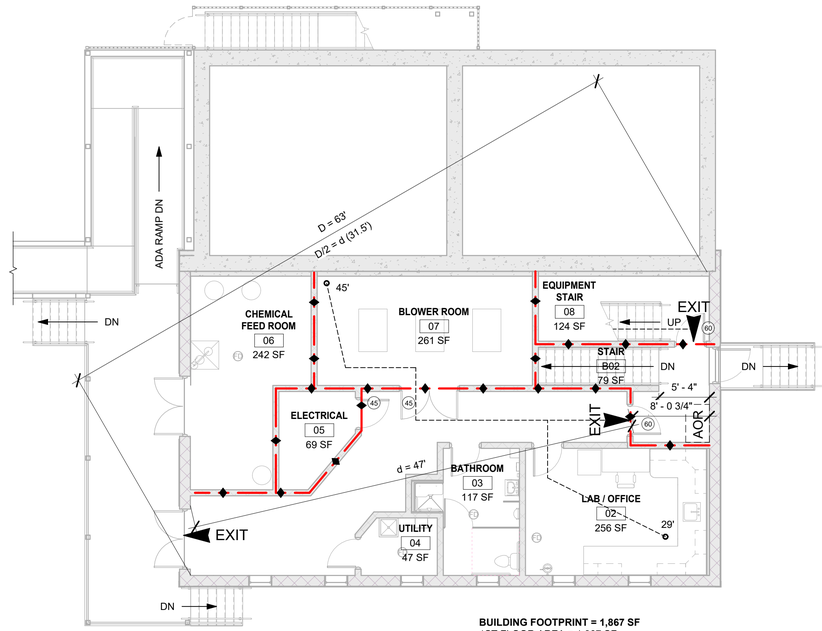
d = EXIT SEPARATION DISTANCE

AOR = AREA OF REFUGE

20-MINUTE RATING | 45-MINUTE RATING | 60-MINUTE RATING | 90-MINUTE RATING

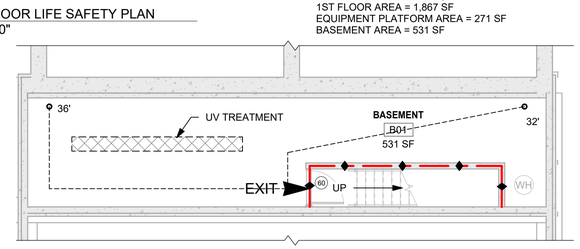


3 EQUIPMENT PLATFORM LIFE SAFETY PLAN
1/8" = 1'-0"



2 FIRST FLOOR LIFE SAFETY PLAN
1/8" = 1'-0"

BUILDING FOOTPRINT = 1,867 SF
1ST FLOOR AREA = 1,867 SF
EQUIPMENT PLATFORM AREA = 271 SF
BASEMENT AREA = 531 SF



1 BASEMENT LIFE SAFETY PLAN
1/8" = 1'-0"

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PROFESSIONAL SEAL

NO.	DESCRIPTION	DATE	BY	CK'D

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7 CARMICHAEL ST. ESSEX JUNCTION, VT 05452
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PROJECT NAME
WAITSFIELD WASTEWATER TREATMENT CENTER

PROJECT ADDRESS
4144 MAIN ST
WAITSFIELD, VT 05673

SHEET TITLE
LIFE SAFETY CODE SUMMARY & PLANS

DRAWN BY	DATE
EK	01/27/26
CHECKED BY	S+P PROJECT #
JLG	25-1756

SHEET NUMBER
A0.2

2020 Vermont Commercial Building Energy Standards (CBES) – Base of Design Criteria

Date: 01/15/2026
Project Name: Waitsfield Wastewater Treatment Facility
Address:

This project is submitted under the 2020 Vermont Commercial Building Energy Standards as adopted on September 01, 2020.

Project Description:

Construction of new waste processing and filtration facility. **Industrial** processes take up most of the facility with a small office/control/lab area. The structure is a single-story with mezzanine, and partial full basement.

Number of stories above grade: 1
Number of stories: 1
Building Square Footage: 1,867 SF
Conditioned Square Footage: 1,867 SF

Act 250 (Y/N): YES

Act 250 Permit #: Permit Application is Pending

Compliance Method:

X **Option 1a: Chapter 5-Plus-Credits** (see CBES for full requirements each point option)

_____ **Option 1b: ASHRAE 90.1-2016** (with CBES amendments C401.2.1) Plus-Credits

Must select option 1a, 1b, 2a, 2b or 3) - Compliance Documentation required: COMcheck™ Software Vermont 2020 CBES Version

Credits achieved: 6 Occupancy Group: F/I (See Table C406.1 for credits and groups)

	POINTS AVAILABLE	POINTS ACHIEVED
1. More efficient HVAC performance	3	
2.1. Reduced lighting power: Option 1	2	
2.2. Reduced lighting power: Option 2	4	
3. Enhanced lighting controls	1	
4. On-site supply of renewable energy	3	
5. Dedicated outdoor air system	3	
6.1. High-efficiency service water heating	3	
6.2. High-efficiency service water heating	2	
6.3. Heat pump water heating equipment	2	
7. Enhanced envelope	3	
8. Reduced air infiltration	3	3
9. Efficient kitchen appliances	N/A	
10. Controlled Receptacles	N/A	

CONFIRM W/ D&K ON OTHER POINTS

_____ **Option 2a: ASHRAE/IESNA Standard 90.1-2016 Energy Cost Budget Method**
Compliance documentation requirements as noted in Section 11.7

_____ **Option 2b: ASHRAE/IESNA Standard 90.1-2016 Appendix G -Performance Rating Method** (Review CBES amendments C401.2.1) Compliance documentation requirements as noted in Appendix G

_____ **Option 3: Above Code Program**
Contact Vermont PSD for approval of Above Code Program and documentation requirements

Air Leakage Thermal Envelope method of compliance:

X Air Barrier Performance Testing: Blower Door Test minimum requirement 0.25 CFM75/sq ft of building shell (6 sides) or

X **Continuous Air Barrier Commissioning**

Other Requirements Where applicable:

EV charging requirement: 2 # Total Parking Spaces: 1 Total EVSE Equipped Parking Spaces: 1 # Total EVSE Ready Parking Spaces

2020 CBES ENVELOPE REQUIREMENTS		
COMPONENT	**MINIMUM R VALUE**	**PROPOSED R-VALUE**
ROOF - INSULATION ENTIRELY ABOVE DECK	R-40 ci	R-40 ci
WALLS, ABOVE GRADE - MASS	R-19 ci	R-20 ci
WALLS, BELOW GRADE	R-15 ci	R-20 ci
FLOORS, SLAB ON GRADE (UNHEATED)	R-10 entire slab	R-10 entire slab
DOORS, SWINGING	U-0.37	U-0.37
FENESTRATION, OPERABLE	U-0.33	U-0.33
FENESTRATION, FIXED	U-0.37	U-0.37
FENESTRATION, ENTRANCE DOORS	U-0.68	U-0.68
SHGC - E/W ORIENTATION, 0.2 ≤ PF < 0.5	U-0.48	U-0.48

CERTIFICATES AND AFFIDAVITS

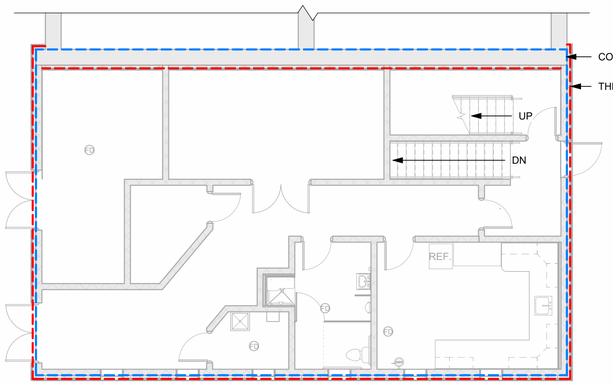
THE GENERAL CONTRACTOR OR CM IS RESPONSIBLE FOR FILLING OUT AND FILLING ALL THE CBES CERTIFICATE AND AFFIDAVITS. THEY SHALL ALSO BE RESPONSIBLE FOR REMOTELY INSTALLING THEM ON THE WALL OF THE MECHANICAL OR ELECTRICAL ROOM

Copies of the signed certification documents shall be included in the construction files for the project, shall be sent to the local town clerk for recording in the land records, and shall be sent to the Vermont Public Service Department. The certificate shall include the following.

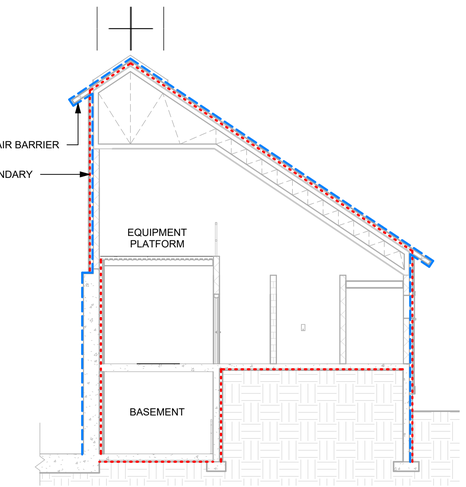
1. Compliance Method
2. Thermal envelope details, including:
   a. R-values of insulation installed in or on ceilings, roofs, walls, foundations and slabs, basement walls, crawl space walls and floors, and ducts outside of conditioned spaces.
   b. U-factors and solar heat gain coefficients (SHGC) of fenestration's
3. Results from any building envelope air leakage testing performed on the building.
4. An indication of the solar-ready zone and other requirements of Section C402.5. Where there is more than one value for any component of the building envelope, the certificate shall indicate the area-weighted average value where available. If the area-weighted average is not available, the certificate shall list each value that applies to 10 percent or more of the total component area.

INSULATION AND AIR SEALING NOTES:

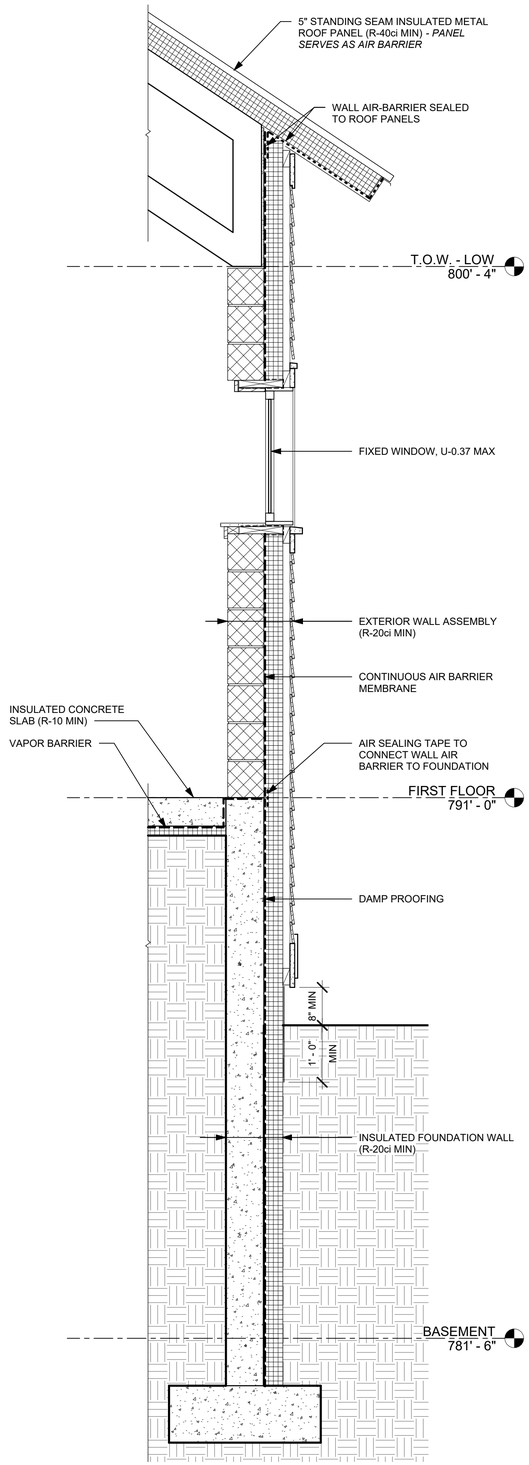
1. GENERAL AIR SEALING MEASURES WILL BE INSTALLED THROUGH THE USE OF INDUSTRY STANDARD MATERIALS AND TECHNIQUES, INCLUDING: USE OF MINIMUM EXPANDING FOAM AND RIGID MATERIALS TO SEAL CRACKS CAPS AND VOIDS, AND USE OF PRESSURE DIFFERENTIAL DIAGNOSTIC TECHNIQUES TO LOCATE AIR LEAKAGE PATHS. GC IS TO PROVIDE A MINIMUM OF ONE BLOWER DOOR TEST PRIOR TO INSTALLATION OF DRYWALL AND ONE BLOWER DOOR TEST AFTER DRYWALL INSTALLATION OR AS MANY TEST ARE REQUIRED UNTIL APPROVED AIR LEAKAGE RATES ARE MET. BLOWER DOOR CONTRACTOR IS TO BE A TRAINED AND QUALIFIED TECHNICIAN FROM AN INDEPENDENT TESTING ORGANIZATION APPROVED BY THE OWNER AND ARCHITECT.
2. AIR SEALING WILL INVOLVE (BUT NOT LIMITED TO) EFFECTIVE SEALING WITH APPROPRIATE PRODUCTS IN THE FOLLOWING AREAS.
   a. ALL PLUMBING, ELECTRICAL, ELECTRICAL BOX OR BATH FAN DUCT PENETRATIONS IN EXTERIOR WALLS WITH CAULK OR MINIMALLY EXPANDING FOAM.
   b. METAL BATH FAN HOUSINGS SEALED TO SHEET ROCK WITH CAULK OF MINIMALLY EXPANDING FOAM.
   c. AROUND WINDOW AND DOOR ROUGH OPENING, MINIMALLY EXPANDING FOAM WITH BEAD SIZE TO SEAL WINDOW FRAME TO ROUGH OPENING, DO NOT TRY TO FILL DEPTH OF GAP.
   d. INSULATING CONTRACTOR SHOULD COORDINATE AIR SEALING WORK WITH GENERAL CONTRACTOR. THE GC IS TO ENSURE COMPLETE AND THROUGH AIR SEALING.



3 A0.3 FLOOR PLAN
1/8" = 1'-0"



1 A0.3 BUILDING SECTION
1/8" = 1'-0"



2 A0.3 TYPICAL WALL SECTION
3/4" = 1'-0"

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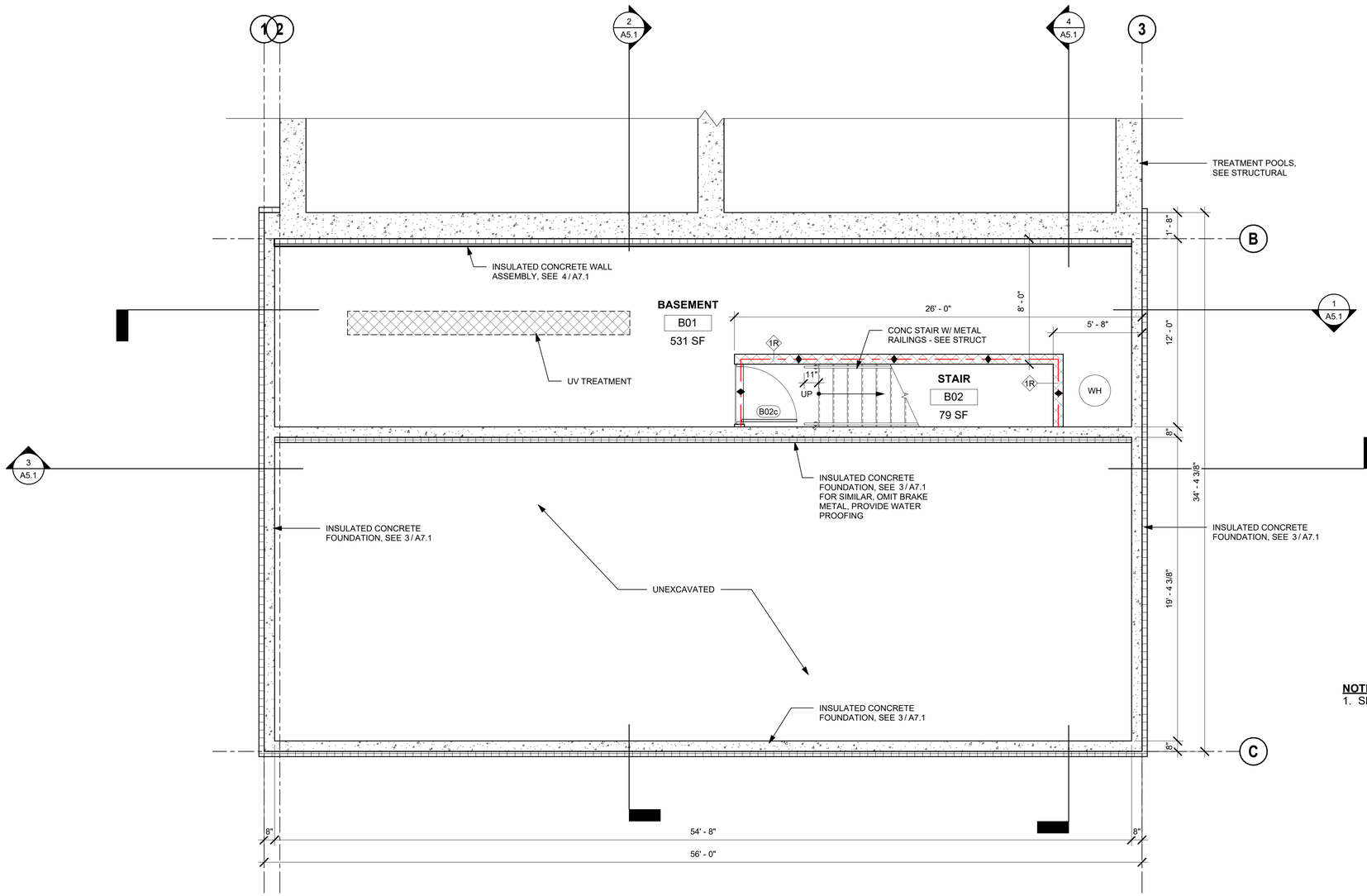
PROJECT NAME
WAITSFIELD WASTEWATER TREATMENT CENTER

PROJECT ADDRESS
4144 MAIN ST
WAITSFIELD, VT 05673

SHEET TITLE
ENERGY CODE COMPLIANCE

DRAWN BY	DATE
EK	03/24/26
CHECKED BY	S+P PROJECT #
JLG	25-1756

SHEET NUMBER
A0.3



1 A2.1 BASEMENT
1/4" = 1'-0"

1 A4.1

NOTES:
1. SEE STRUCTURAL FOR ALL C.I.P. CONCRETE

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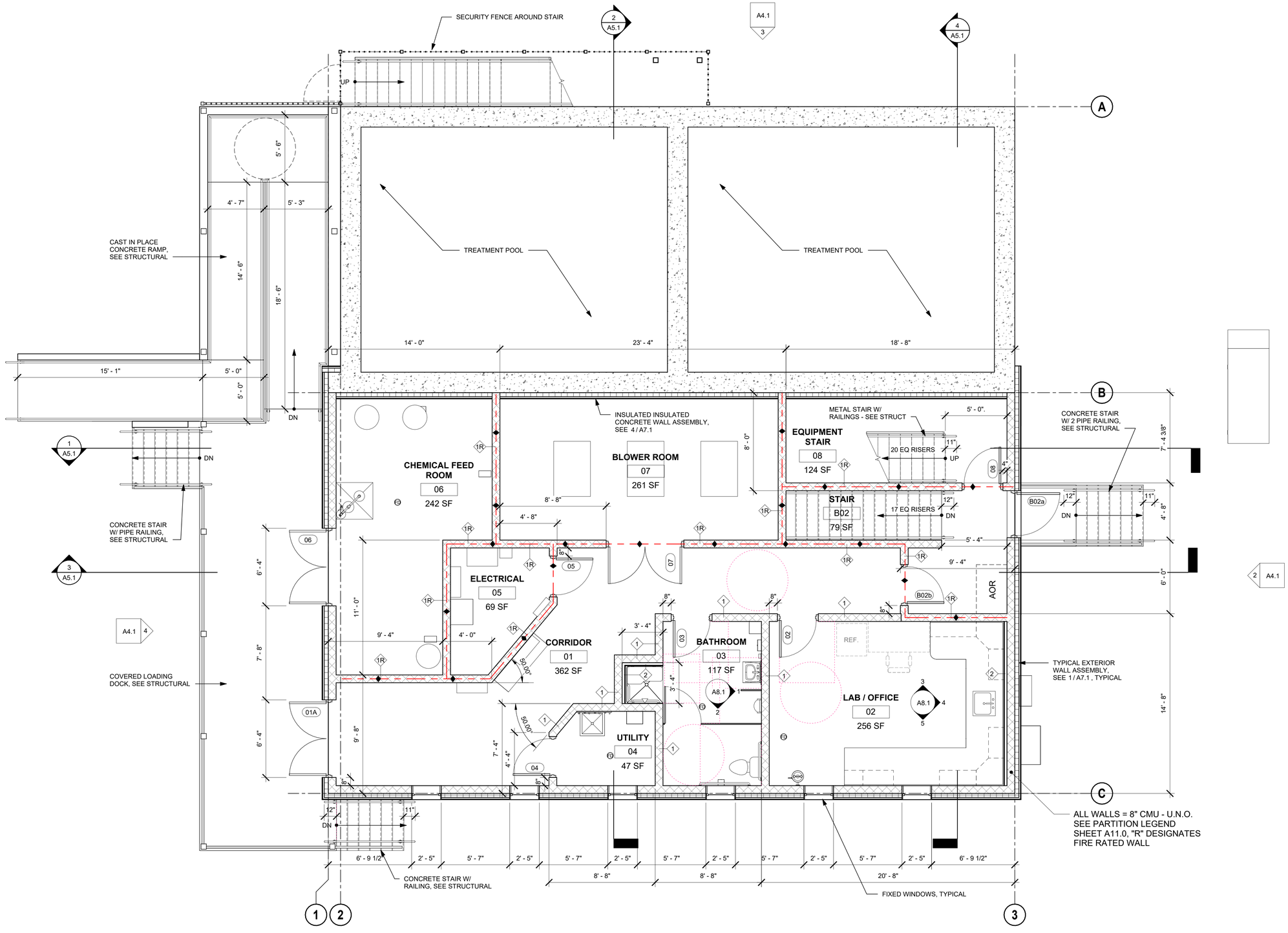
PROJECT ADDRESS
4144 MAIN ST
WAITSFIELD, VT 05673

SHEET TITLE
BASEMENT PLAN

DRAWN BY	DATE
EK	03/24/26
CHECKED BY	S+P PROJECT #
JLG	25-1756

SHEET NUMBER
A2.1



1 A2.2 FIRST FLOOR
1/4" = 1'-0"

1 A4.1

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PROJECT ADDRESS
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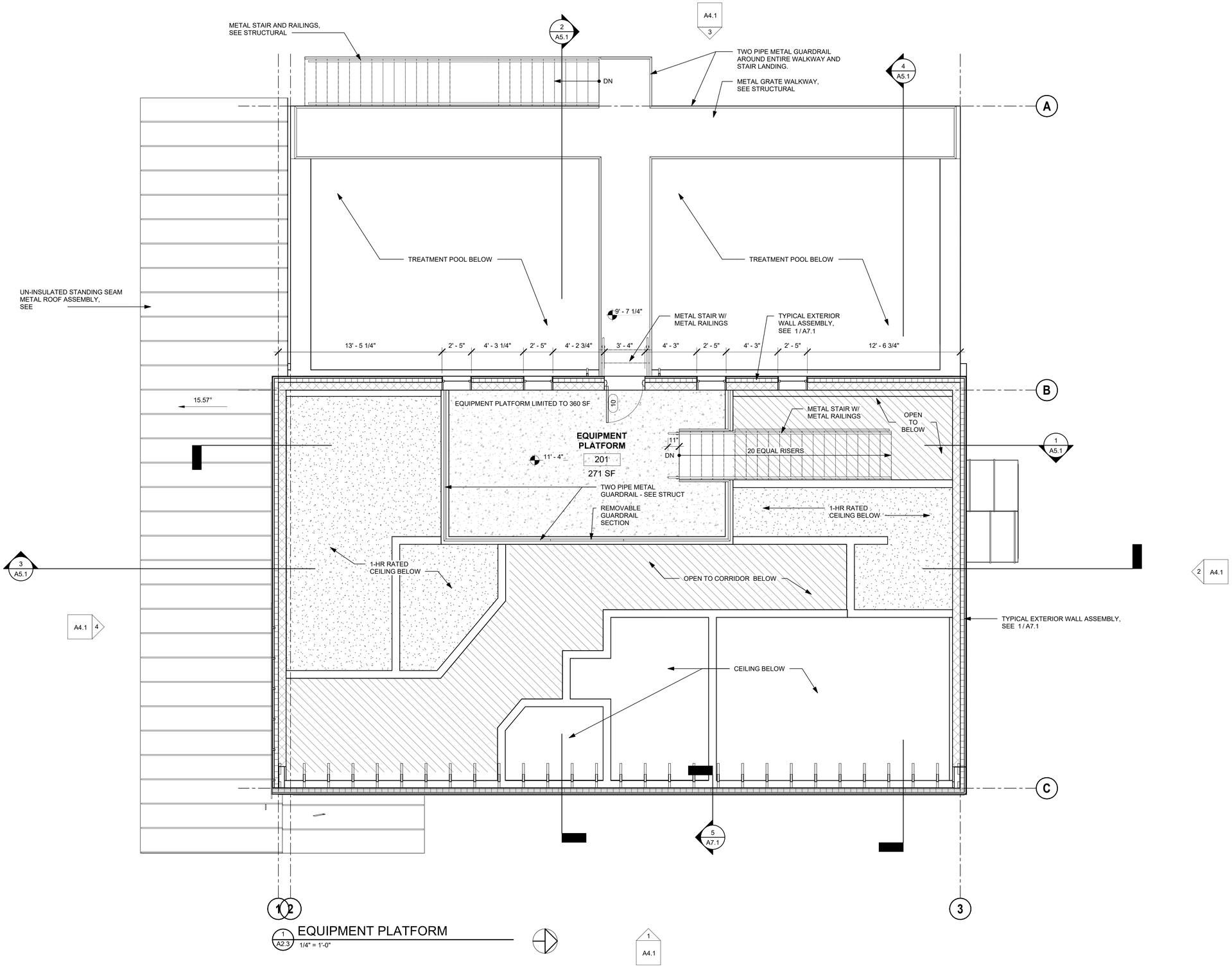
SHEET TITLE
FIRST FLOOR PLAN

DRAWN BY	DATE
EK	03/24/26
CHECKED BY	S+P PROJECT #
JLG	25-1756

SHEET NUMBER
A2.2



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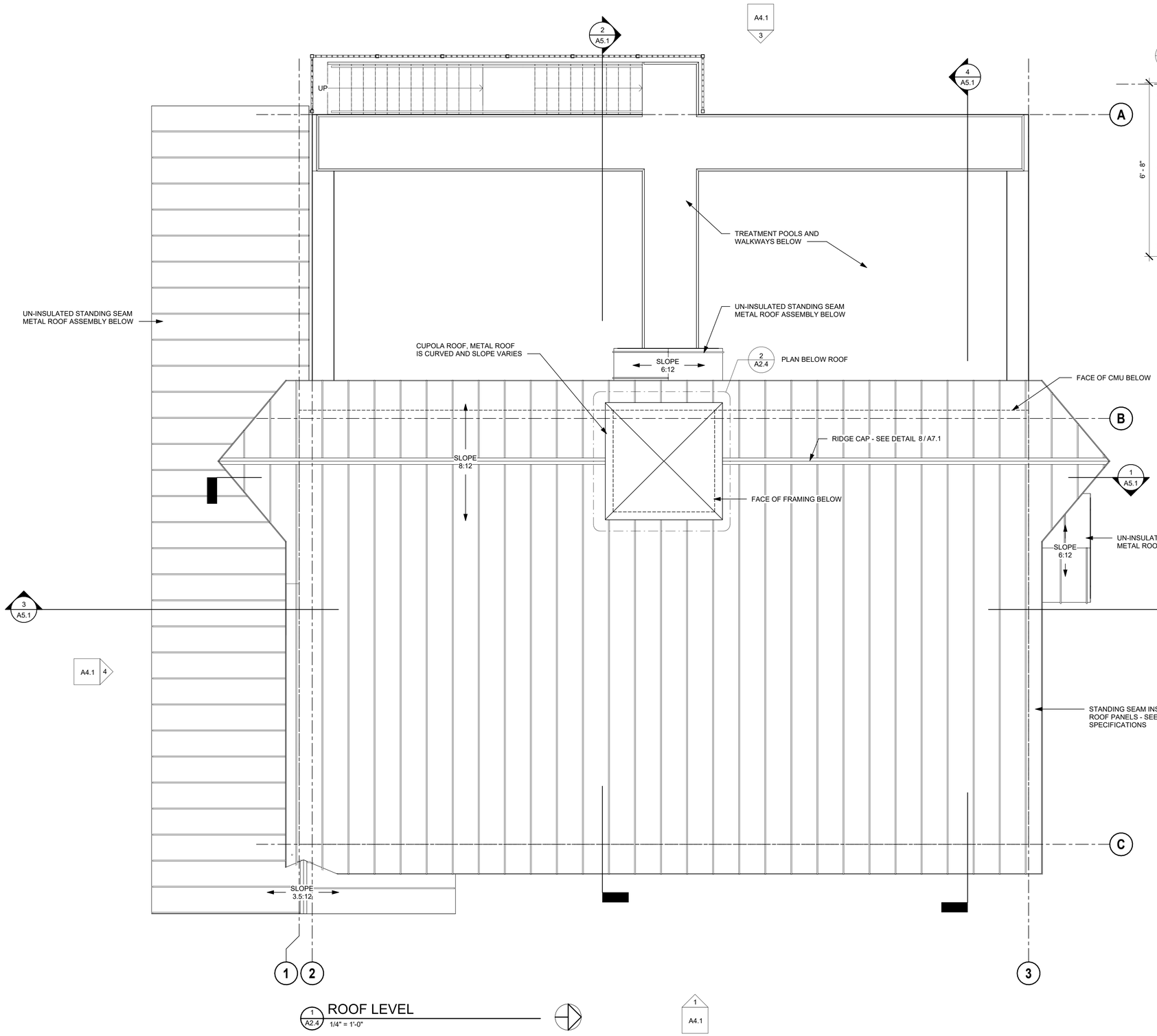
SHEET TITLE
MEZZANINE PLAN

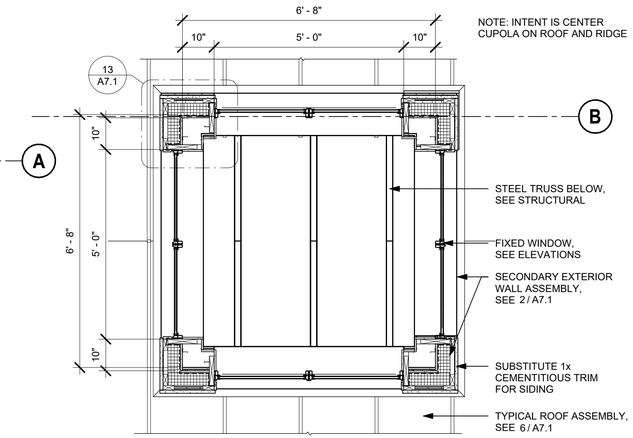
DRAWN BY	DATE
EK	03/24/26
CHECKED BY	S+P PROJECT #
JLG	25-1756

SHEET NUMBER
A2.3



ROOF LEVEL

1 / A2.4 — 1/4" = 1'-0"



NOTE: INTENT IS CENTER CUPOLA ON ROOF AND RIDGE

CUPOLA PLAN

2 / A2.4 — 1/2" = 1'-0"

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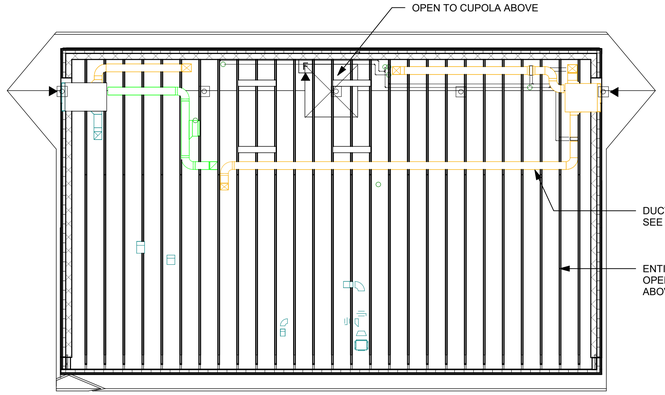
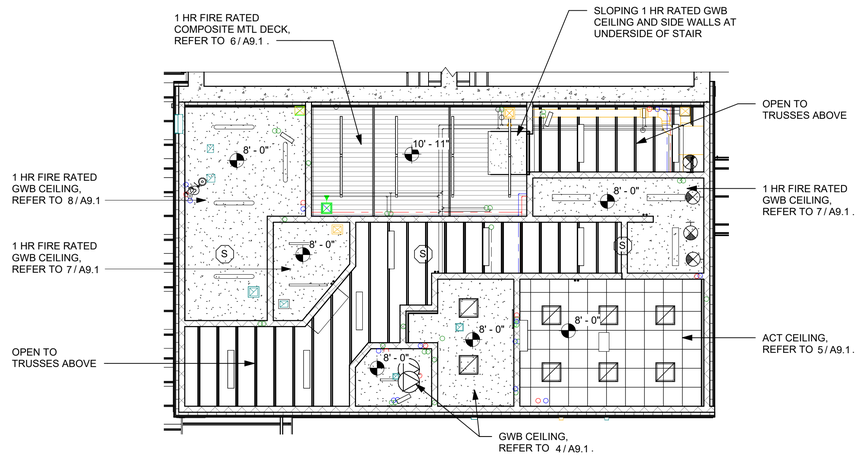
SHEET TITLE
ROOF PLAN

DRAWN BY	DATE
EK	03/25/26
CHECKED BY	S+P PROJECT #
JLG	25-1756

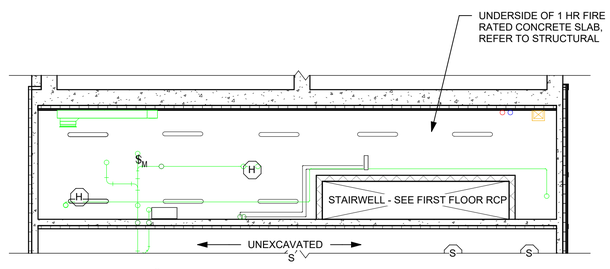
SHEET NUMBER
A2.4



3 A3.1 EQUIPMENT PLATFORM
1/8" = 1'-0"



2 A3.1 FIRST FLOOR
1/8" = 1'-0"



1 A3.1 BASEMENT
1/8" = 1'-0"

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SHEET TITLE
REFLECTED CEILING PLANS

DRAWN BY	DATE
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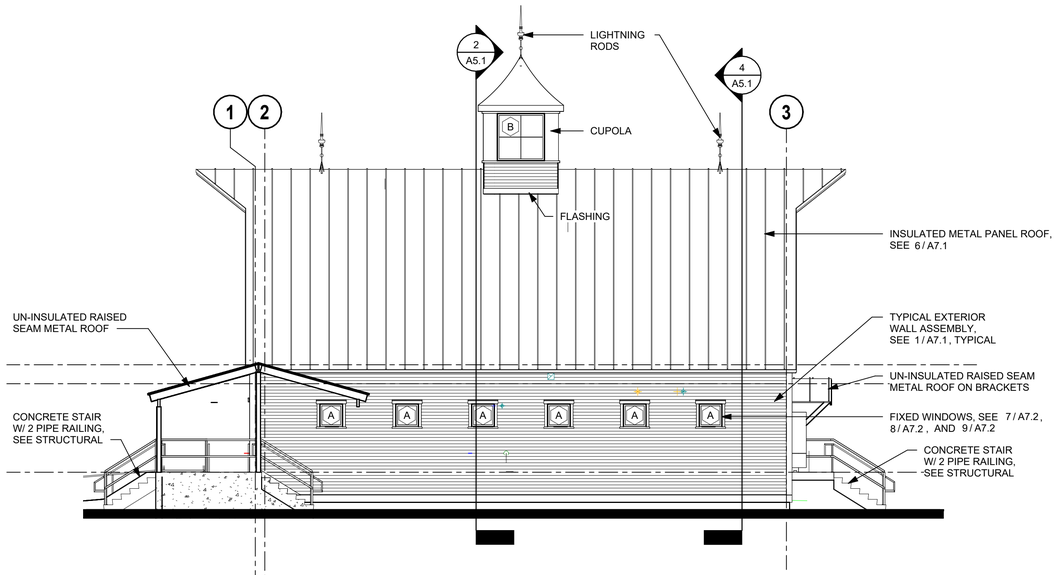
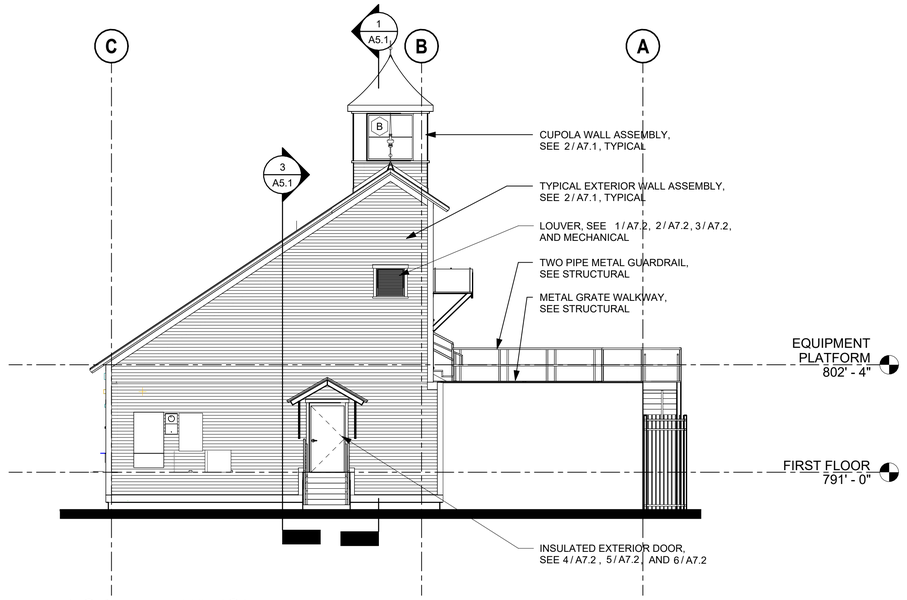
JLG	25-1756

SHEET NUMBER
A3.1



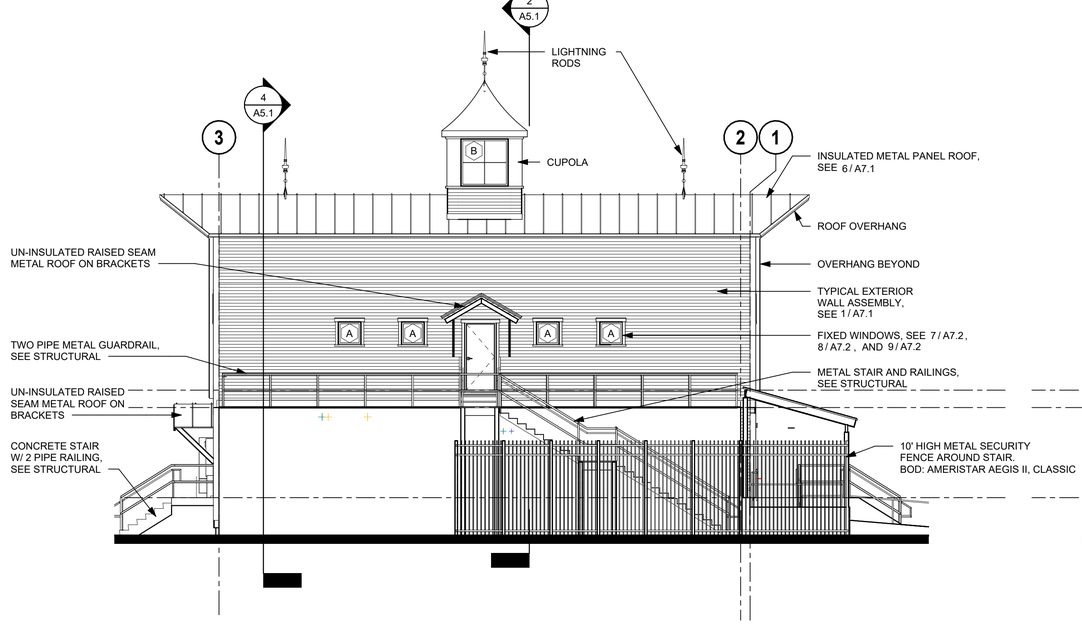
1 A4.1 EAST ELEVATION

1/8" = 1'-0"



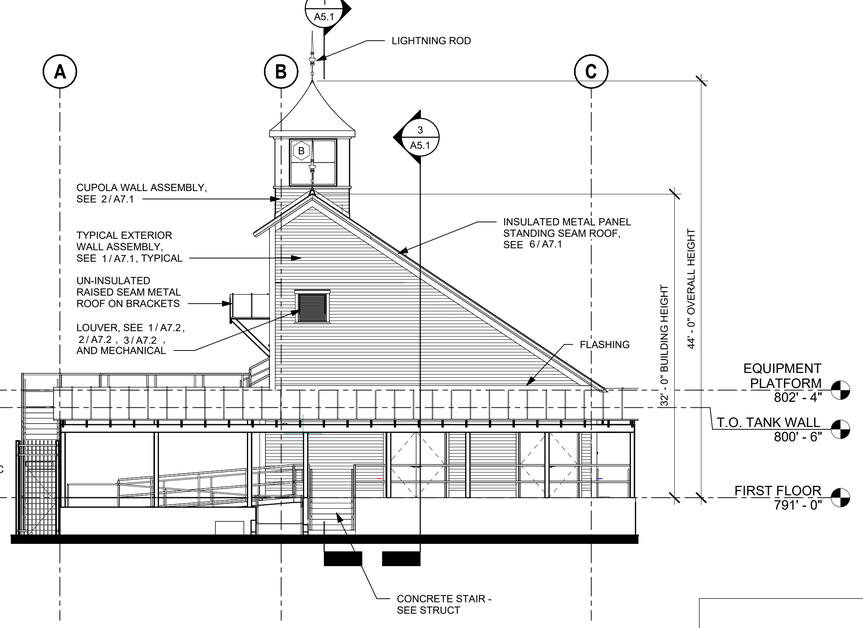
2 A4.1 NORTH ELEVATION

1/8" = 1'-0"



3 A4.1 WEST ELEVATION

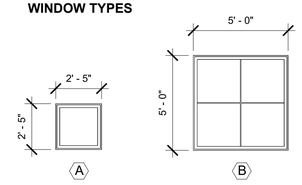
1/8" = 1'-0"



4 A4.1 SOUTH ELEVATION

1/8" = 1'-0"

WINDOW TYPES



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SHEET TITLE

EXTERIOR ELEVATIONS

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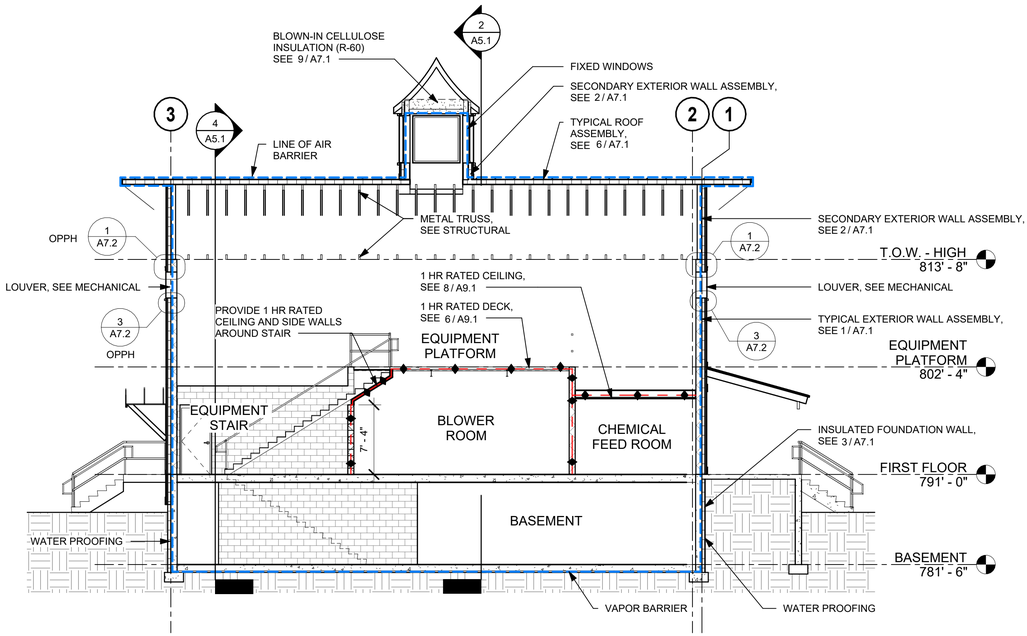
JLG	25-1756

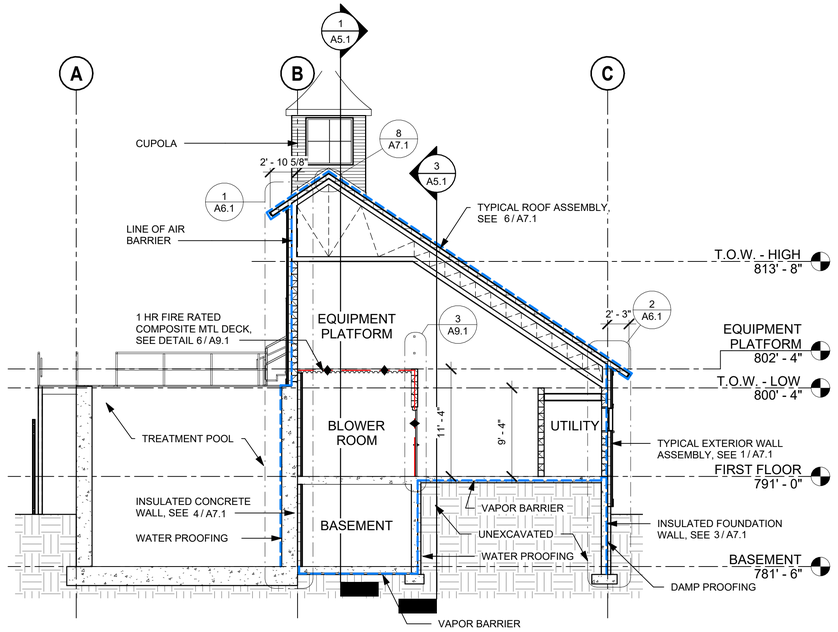
SHEET NUMBER

A4.1



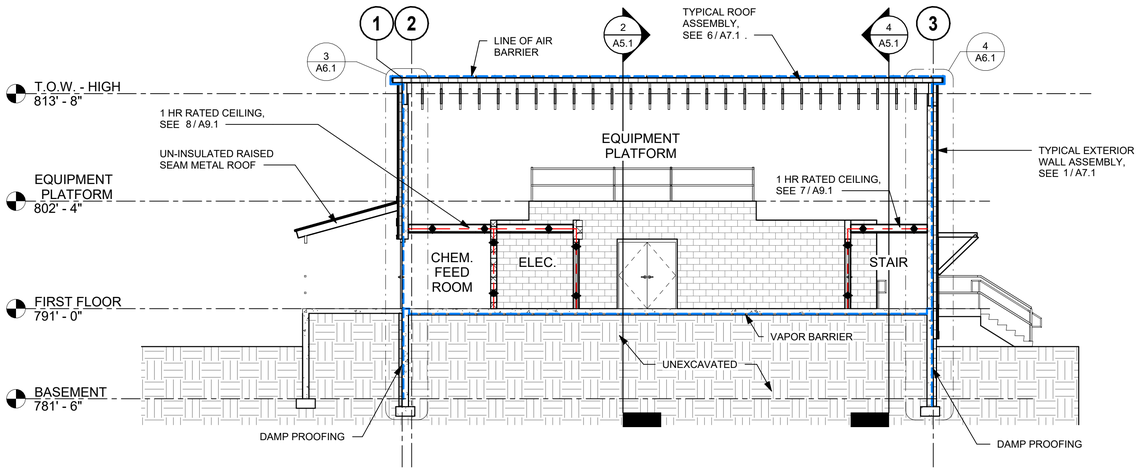
1 A5.1 NORTH-SOUTH SECTION LOOKING EAST

1/8" = 1'-0"



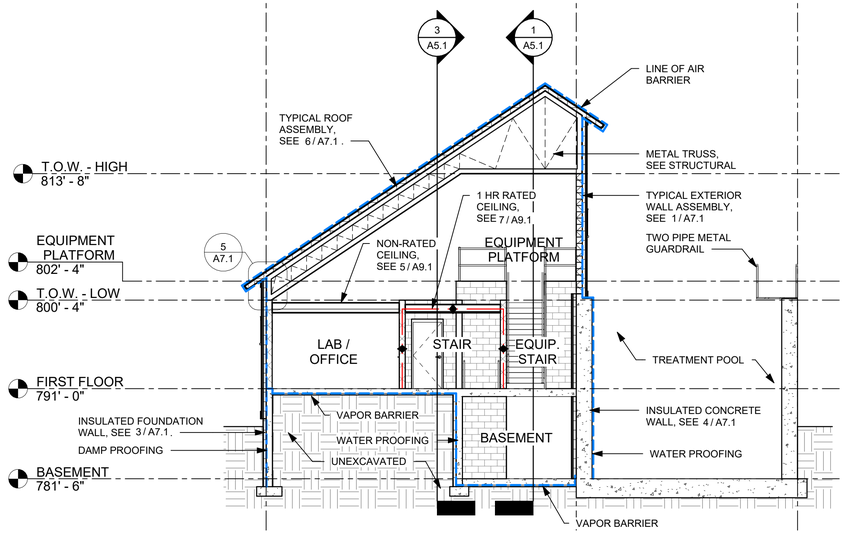
2 A5.1 EAST-WEST SECTION LOOKING NORTH

1/8" = 1'-0"



3 A5.1 NORTH-SOUTH SECTION LOOKING WEST

1/8" = 1'-0"



4 A5.1 EAST-WEST SECTION LOOKING SO

1/8" = 1'-0"

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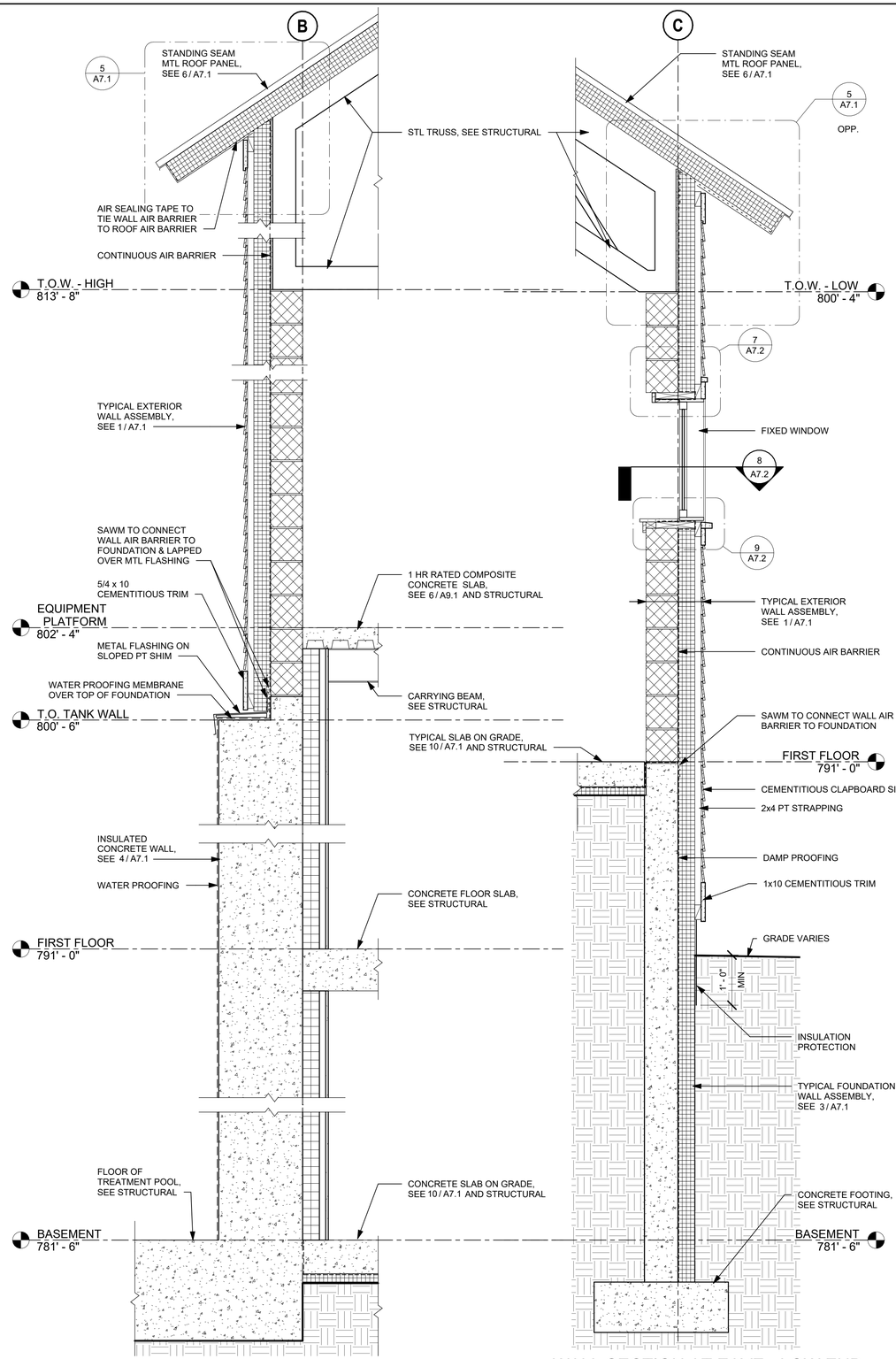
SHEET TITLE

BUILDING SECTIONS

DRAWN BY	DATE
EK	03/24/26
CHECKED BY	S+P PROJECT #
JLG	25-1756

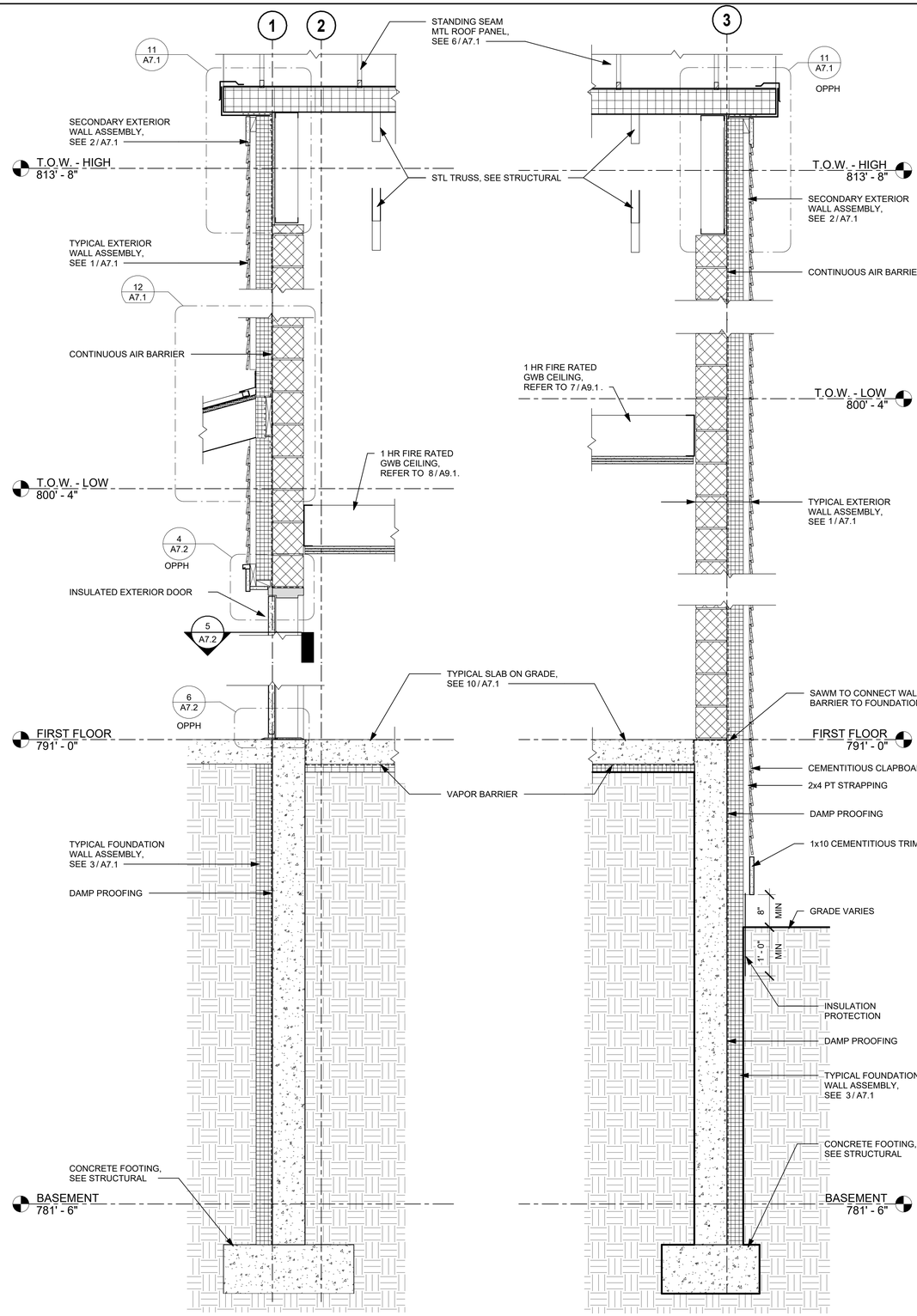
SHEET NUMBER

A5.1



1 / A6.1 WALL SECTION AT EAVE - HIGH END
3/4" = 1'-0"

2 / A6.1 WALL SECTION AT EAVE - LOW END
3/4" = 1'-0"



3 / A6.1 SOUTH GABLE END WALL SECTION
3/4" = 1'-0"

4 / A6.1 NORTH GABLE END WALL SECTION
3/4" = 1'-0"

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SHEET TITLE
WALL SECTIONS

DRAWN BY	DATE
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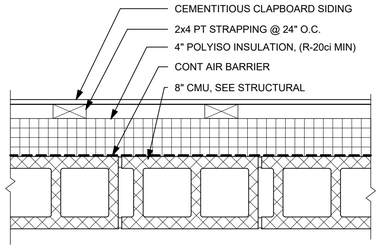
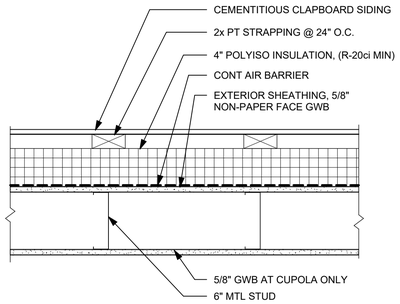
JLG	25-1756

SHEET NUMBER
A6.1



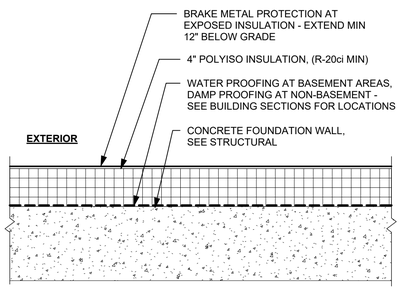
1 / A7.1 TYPICAL EXTERIOR WALL ASSEMBLY

1 1/2" = 1'-0"



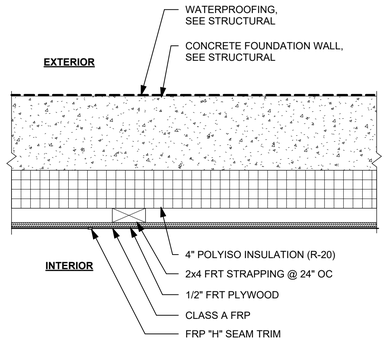
2 / A7.1 SECONDARY EXTERIOR WALL ASSEMBLY

1 1/2" = 1'-0"



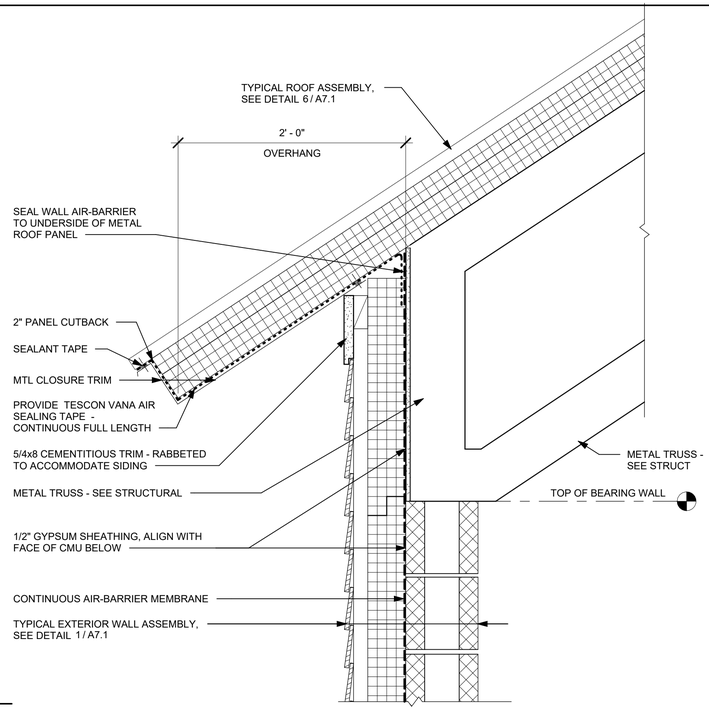
3 / A7.1 FOUNDATION WALL ASSEMBLY

1 1/2" = 1'-0"



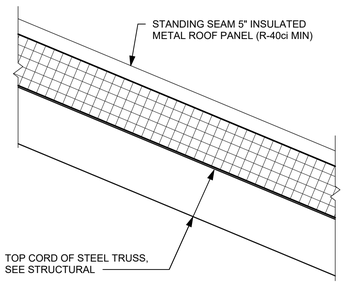
4 / A7.1 SECONDARY FOUNDATION WALL ASSEMBLY

1 1/2" = 1'-0"



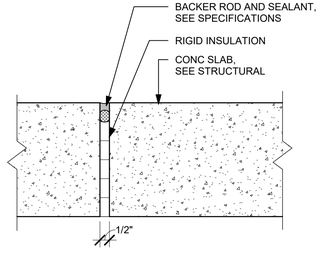
5 / A7.1 TYPICAL EAVE DETAIL

1 1/2" = 1'-0"



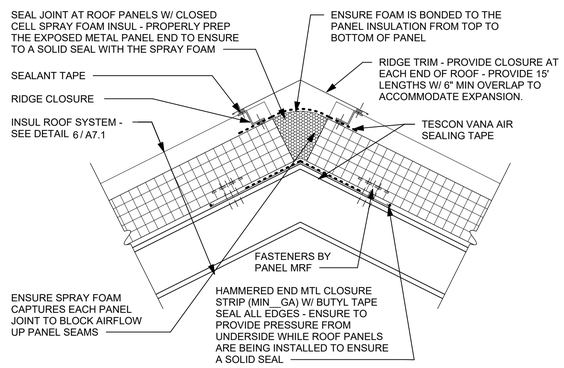
6 / A7.1 TYPICAL ROOF ASSEMBLY

1 1/2" = 1'-0"



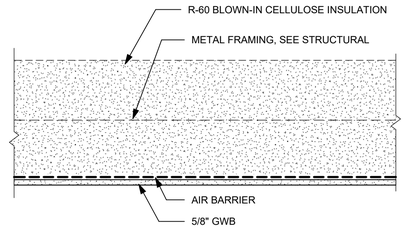
7 / A7.1 JOINT FILLER AT STRUCTURAL SLAB

3" = 1'-0"



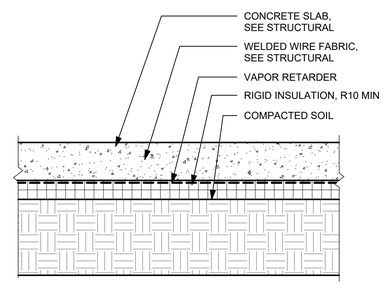
8 / A7.1 RIDGE DETAIL

1 1/2" = 1'-0"



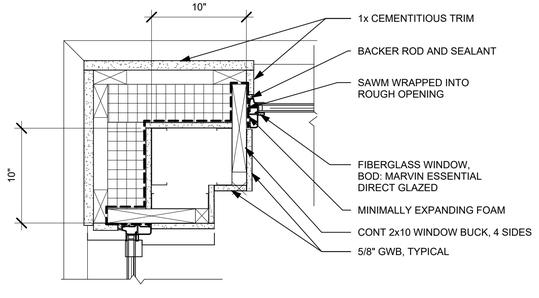
9 / A7.1 CUPOLA CEILING

1 1/2" = 1'-0"



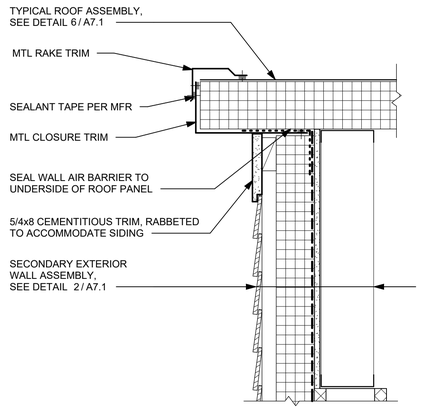
10 / A7.1 TYPICAL SLAB ON GRADE

1 1/2" = 1'-0"



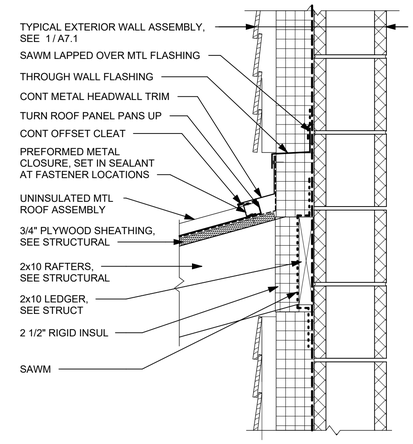
13 / A7.1 CUPOLA CORNER PLAN

1 1/2" = 1'-0"



11 / A7.1 TYPICAL RAKE DETAIL

1 1/2" = 1'-0"



12 / A7.1 SHED ROOF TO EXT WALL

1 1/2" = 1'-0"

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PROFESSIONAL SEAL

NO.	DESCRIPTION	DATE	BY	CK'D

SCOTT + PARTNERS ARCHITECTURE
7 CARMICHAEL ST. ESSEX JUNCTION, VT 05452
P 802.879.5153 F 802.872.2764 SCOTTPARTNERS.COM

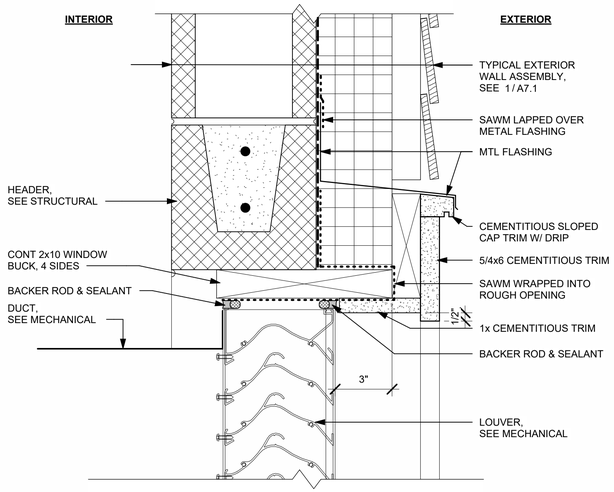
PROJECT NAME
WAITSFIELD WASTEWATER TREATMENT CENTER

PROJECT ADDRESS
4144 MAIN ST
WAITSFIELD, VT 05673

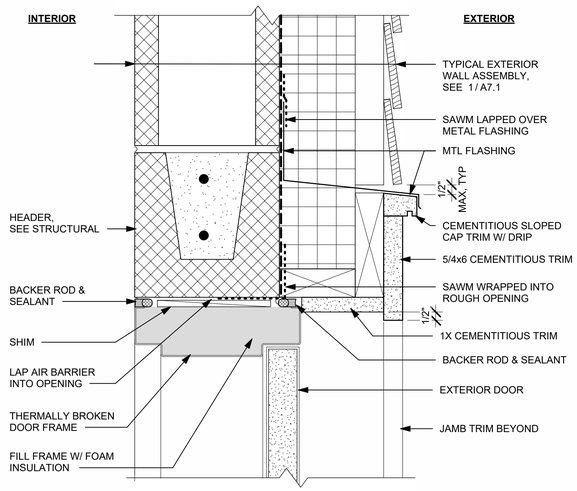
SHEET TITLE
EXTERIOR DETAILS

DRAWN BY	DATE
EK	03/24/26
CHECKED BY	S+P PROJECT #
JLG	25-1756

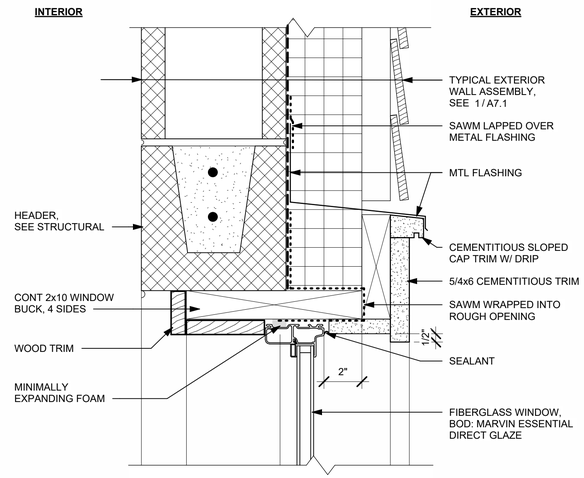
SHEET NUMBER
A7.1



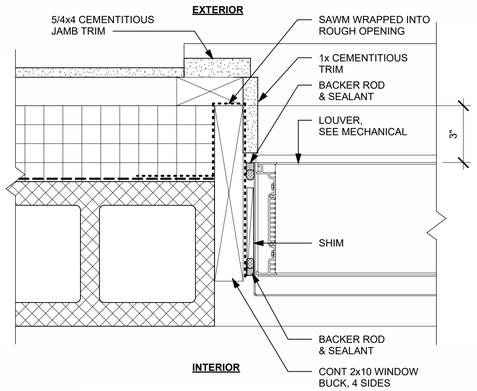
1 MECHANICAL LOUVER HEAD
3" = 1'-0"



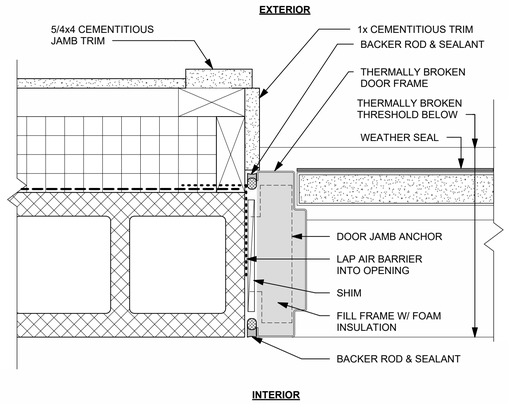
4 TYPICAL EXTERIOR DOOR HEAD
3" = 1'-0"



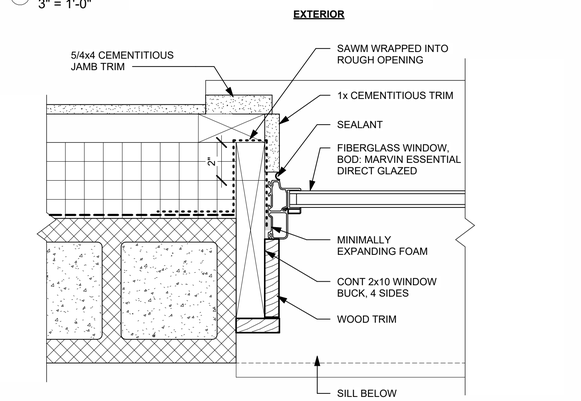
7 TYPICAL WINDOW HEAD
3" = 1'-0"



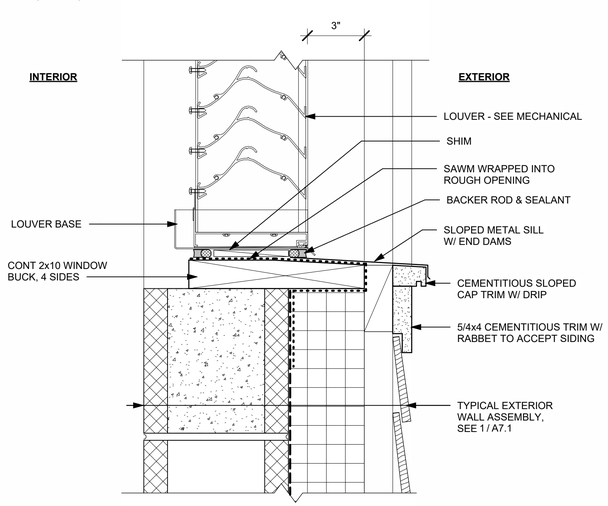
2 MECHANICAL LOUVER JAMB
3" = 1'-0"



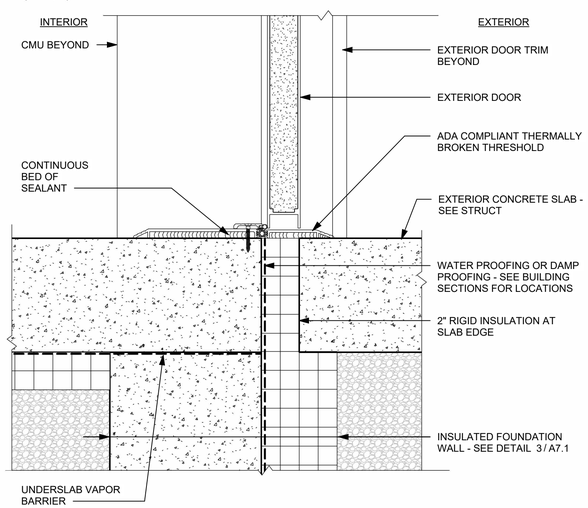
5 TYPICAL EXTERIOR DOOR JAMB
3" = 1'-0"



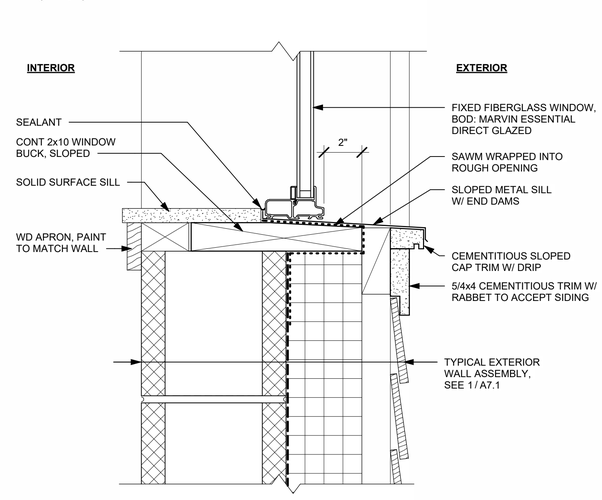
8 TYPICAL WINDOW JAMB
3" = 1'-0"



3 MECHANICAL LOUVER SILL
3" = 1'-0"



6 TYPICAL EXTERIOR DOOR THRESHOLD
3" = 1'-0"



9 TYPICAL WINDOW SILL
3" = 1'-0"

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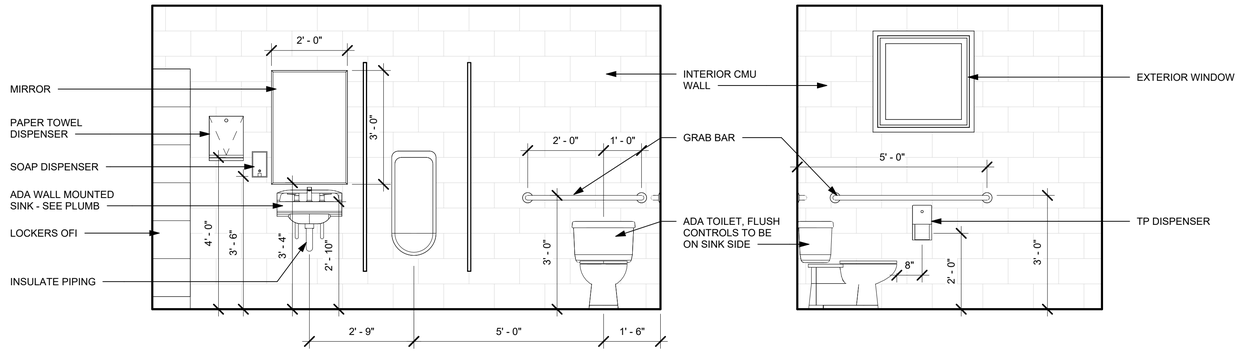
EXTERIOR DETAILS

DRAWN BY	DATE
EK	03/24/26
CHECKED BY	S+P PROJECT #
JLG	25-1756

SHEET NUMBER
A7.2

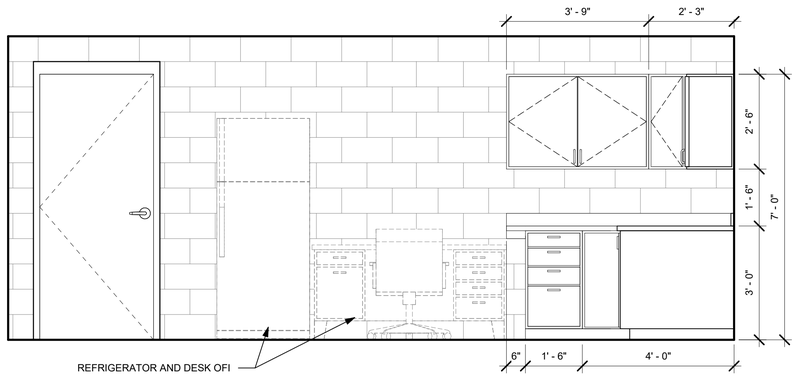


1 A8.1 BATHROOM INT ELEVATION A

1/2" = 1'-0"

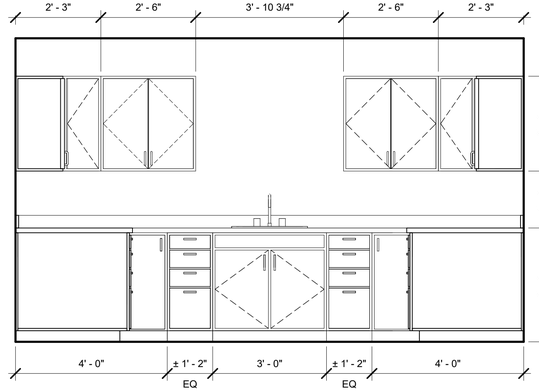
2 A8.1 BATHROOM INT ELEVATION B

1/2" = 1'-0"



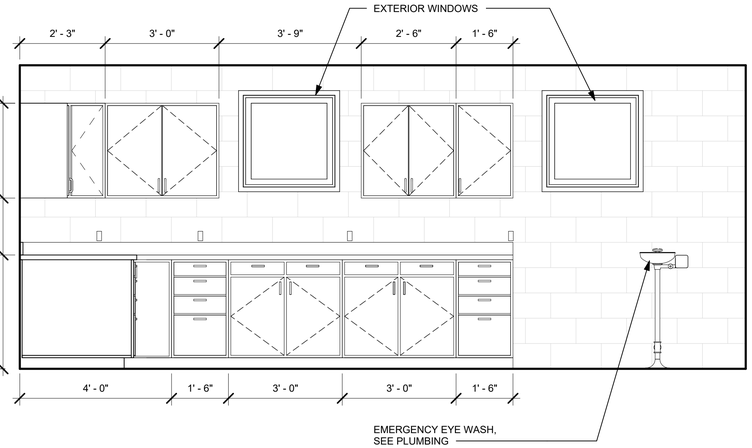
3 A8.1 LAB INT ELEVATION A

1/2" = 1'-0"



4 A8.1 LAB INT ELEVATION B

1/2" = 1'-0"



5 A8.1 LAB INT ELEVATION C

1/2" = 1'-0"

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INTERIOR ELEVATIONS

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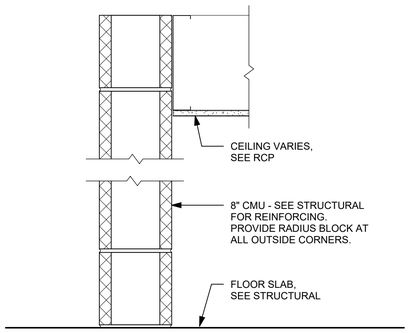
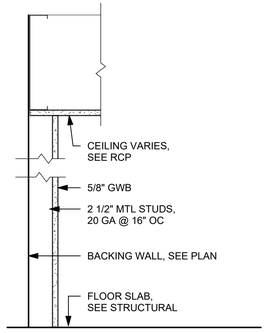


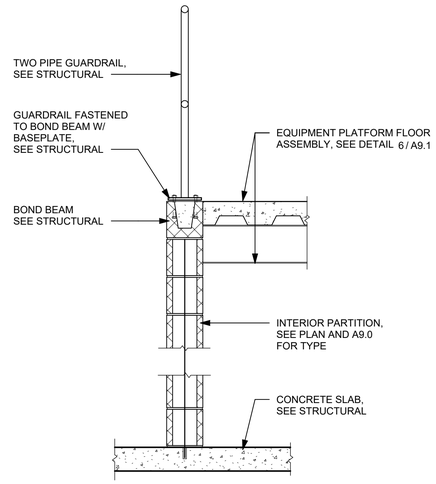
1 PARTITION TYPE 1
1 1/2" = 1'-0"

1R = 1 HOUR FIRE RATED CMU PER UL DESIGN U906

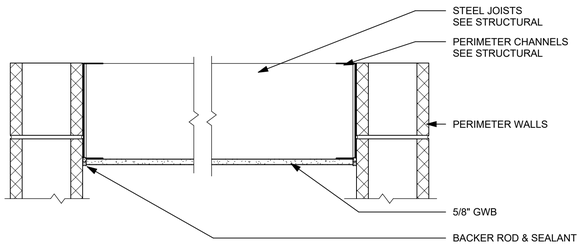


2 PARTITION TYPE 2
1 1/2" = 1'-0"

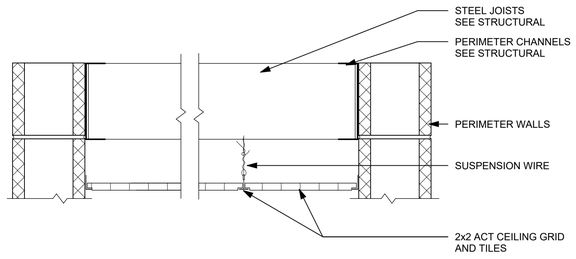
NOTE:
USE MR GWB WITHIN 6' OF WET AREAS, SINKS IN WALL PLUMBING



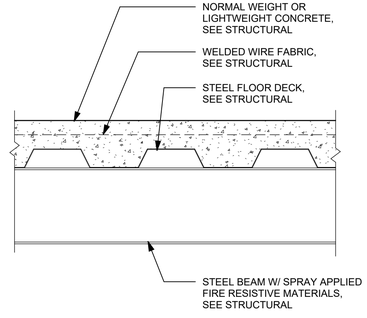
3 SECTION AT MEZZANINE
3/4" = 1'-0"



4 A9.1 NON-RATED GWB CEILING
1 1/2" = 1'-0"

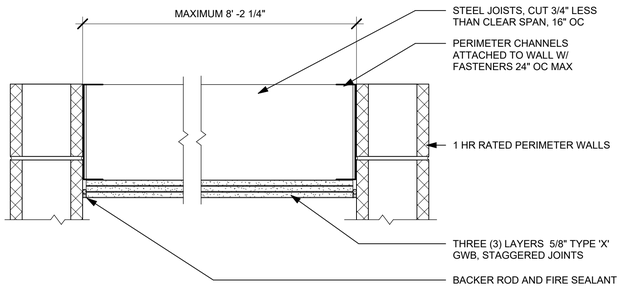


5 A9.1 NON-RATED ACT CEILING
1 1/2" = 1'-0"



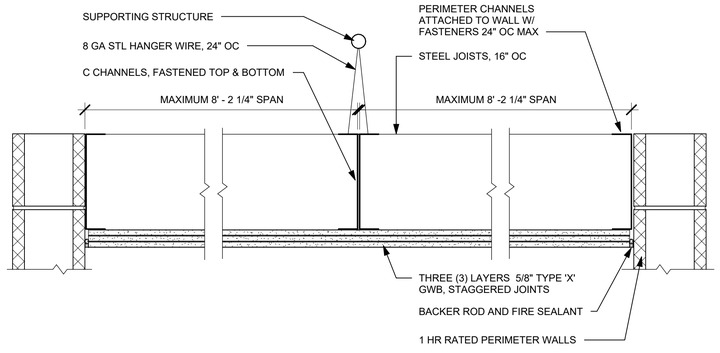
6 A9.1 1-HR RATED COMPOSITE DECK
1 1/2" = 1'-0"

PER UL DESIGN D918



7 A9.1 1-HR RATED GWB CEILING TYPE 1
1 1/2" = 1'-0"

PER UL DESIGN I501



8 A9.1 1-HR RATED GWB CEILING TYPE 2
1 1/2" = 1'-0"

PER UL DESIGN I505

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7 CARMICHAEL ST. ESSEX JUNCTION, VT 05452
P. 802.879.5153 | F. 802.872.2764 | SCOTTPARTNERS.COM

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JLG	25-1756

SHEET NUMBER
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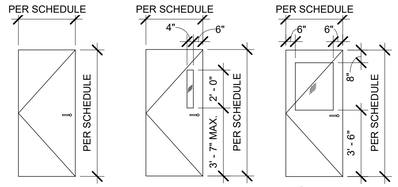
DOOR SCHEDULE

Level	LOCATION			DOOR						FRAME				
	DOOR No.	ROOM No.	ROOM NAME	TYP	MAT'L	WIDTH	HEIGHT	THK	GLAZING	TYP	MAT'L	RATING	HDWR SET	REMARKS
BASEMENT														
BASEMENT	B02c	B01	BASEMENT	NL		3' - 6"	7' - 0"	1 3/4"	SAFETY GLASS	1	HM	60 MIN	1	
FIRST FLOOR														
FIRST FLOOR	01A	01	CORRIDOR	HG	HM	6' - 0"	7' - 0"	1 3/4"	SAFETY GLASS	2	HM	-	2	
FIRST FLOOR	02	02	LAB / OFFICE	HG	HM	3' - 0"	7' - 0"	1 3/4"	SAFETY GLASS	1	HM	-	3	
FIRST FLOOR	03	03	BATHROOM	F	HM	3' - 0"	7' - 0"	1 3/4"	-	1	HM	-	4	
FIRST FLOOR	04	04	UTILITY	F	HM	3' - 0"	7' - 0"	1 3/4"	-	1	HM	-	5	
FIRST FLOOR	05	05	ELECTRICAL	F	HM	3' - 0"	7' - 0"	1 3/4"	-	1	HM	45 MIN	6	
FIRST FLOOR	06	06	CHEMICAL FEED ROOM	F	HM	6' - 0"	7' - 0"	1 3/4"	SAFETY GLASS	2	HM	-	2	
FIRST FLOOR	07	07	BLOWER ROOM	F	HM	6' - 0"	7' - 0"	1 3/4"	SAFETY GLASS	2	HM	45 MIN	7	
FIRST FLOOR	08	08	EQUIPMENT STAIR	NL	HM	3' - 0"	7' - 0"	1 3/4"	SAFETY GLASS	1	HM	60 MIN	1	
FIRST FLOOR	B02a	B02	STAIR	NL	HM	3' - 6"	7' - 0"	1 3/4"	SAFETY GLASS	1	HM	-	8	
FIRST FLOOR	B02b	B02	STAIR	NL	HM	3' - 0"	7' - 0"	1 3/4"	SAFETY GLASS	1	HM	60 MIN	1	
FIRST FLOOR	GATE	EXTERIOR	STAIR AT TREATMENT	GATE	MTL	3' - 0"	7' - 0"	N/A	FENCING	-	-	-	-	
EQUIPMENT PLATFORM														
EQUIPMENT PLATFORM	10	201	EQUIPMENT PLATFORM	HG	HM	3' - 0"	7' - 0"	1 3/4"	SAFETY GLASS	1	HM	45 MIN	8	

DOOR TYPES

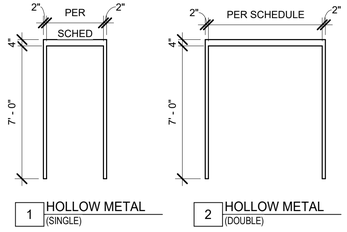


F
FLUSH

NL
NARROW LIGHT

HG
HALF GLASS

FRAME TYPES



1 HOLLOW METAL (SINGLE)

2 HOLLOW METAL (DOUBLE)

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GENERAL

1. USE STRUCTURAL DRAWINGS IN CONJUNCTION WITH THE SPECIFICATIONS AND ARCHITECTURAL, ELECTRICAL, MECHANICAL AND SITE DRAWINGS.
2. ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE CODES, STANDARDS, AND REGULATIONS.
3. DIMENSIONS SHALL NOT BE SCALED FROM DRAWINGS.
4. DETAILS SHOWN ARE TYPICAL. SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
5. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AND REPORT DISCREPANCIES TO ENGINEER BEFORE PROCEEDING WITH THE WORK.
6. IN CASE OF DISCREPANCIES BETWEEN THE DRAWINGS AND THE SPECIFICATIONS, THE DRAWINGS GOVERN.

SHOP DRAWINGS AND PRODUCT DATA

1. SHOP DRAWINGS: SUBMIT ELECTRONICALLY TO THE ENGINEER FOR REVIEW. SHOP DRAWINGS WILL BE PROCESSED AND RETURNED ELECTRONICALLY.
2. PRODUCT DATA: SUBMIT ELECTRONICALLY TO THE ENGINEER, MARKING TO INDICATE ACTUAL PRODUCT TO BE PROVIDED. PRODUCT DATA WILL BE PROCESSED AND RETURNED ELECTRONICALLY.

EARTHWORK

1. SUBMITTALS: SUBMIT TEST REPORTS ON BORROW MATERIAL, VERIFICATION OF FOOTING SUBGRADE MATERIAL, IN-PLACE SOIL DENSITY TEST AND OPTIMUM MOISTURE-MAXIMUM DENSITY CURVES.
2. EXISTING UTILITIES: LOCATE BY HAND EXCAVATION AND PROVIDE PROTECTION FROM DAMAGE. COOPERATE WITH OWNER AND UTILITY COMPANIES FOR MAINTAINING SERVICES.
3. PROTECTIONS: PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES IN AREAS OF WORK. BARRICADE OPEN EXCAVATIONS AND PROVIDE WARNING LIGHTS. SLOPE SIDES OF EXCAVATIONS AS REQUIRED FOR SAFE WORKING CONDITIONS. COMPLY WITH REGULATIONS OF AUTHORITIES HAVING JURISDICTION INCLUDING OSHA REGULATIONS FOR ALL EXCAVATION AND BACKFILLING WORK.
4. SATISFACTORY SOIL MATERIALS: DEFINED AS THOSE COMPLYING WITH ASTM D 2487 SOIL GROUPS GW, GP, GM, SM, SW AND SP.
5. CRUSHED STONE: WASHED, HARD, DURABLE ROCK MEETING THE REQUIREMENTS CALLED OUT FOR ITEM 704.02B 3/4 INCH STONE IN THE LATEST SECTION OF THE VERMONT AGENCY OF TRANSPORTATION (VTRANS) STANDARD SPECIFICATION FOR CONSTRUCTION.
6. STRUCTURAL FILL: CLEAN, WELL-GRADED SANDS AND GRAVELS MEETING THE REQUIREMENTS CALLED OUT FOR IN ITEM 704.08A GRANULAR BACKFILL FOR STRUCTURES IN THE LATEST EDITION OF THE VERMONT AGENCY OF TRANSPORTATION (VTRANS) STANDARD SPECIFICATION FOR CONSTRUCTION.
7. SUBBASE FILL MATERIAL: GRANULAR BORROW MEETING THE REQUIREMENTS CALLED OUT FOR IN ITEM 703.04 GRANULAR BACKFILL FOR STRUCTURES IN THE LATEST EDITION OF THE VERMONT AGENCY OF TRANSPORTATION (VTRANS) STANDARD SPECIFICATION FOR CONSTRUCTION.
8. EXCAVATION: REMOVE AND DISPOSE OF MATERIAL ENCOUNTERED TO OBTAIN REQUIRED SUBGRADE ELEVATIONS.
9. BACKFILL AND FILL: PLACE SATISFACTORY BACKFILL AND FILL SOIL MATERIALS IN LAYERS NOT MORE THAN 8 INCHES IN LOOSE DEPTH, COMPACTING EACH LAYER TO REQUIRED MAXIMUM DENSITY. DO NOT PLACE MATERIALS ON SURFACES THAT ARE MUDDY, FROZEN, OR CONTAIN ICE OR FROST. USE SUBBASE MATERIAL UNDER ALL PAVEMENT, EXTERIOR SLAB AND WALKS, UNDER AND AROUND PIPING OR CONDUIT. USE DRAINAGE FILL UNDER INTERIOR SLABS ON GRADE. USE ENGINEERED FILL UNDER STRUCTURES AND WITHIN 5 FEET OF BUILDING LINES.
10. COMPACTION: COMPACT EACH LAYER OF BACKFILL AND FILL SOIL MATERIALS AND THE TOP 12 INCHES OF EXISTING SUBGRADE FOR STRUCTURES, SLABS, STEPS AND PAVEMENTS TO 95 PERCENT MAXIMUM DENSITY AND FOR FOOTINGS TO 98 PERCENT MAXIMUM DENSITY AS DETERMINED BY ASTM D 698. FOR LAWN AND OTHER UNPAVED AREAS, COMPACT TO 92 PERCENT MAXIMUM DENSITY.
11. TESTING: OWNER WILL ENGAGE SOILS TESTING AND INSPECTION SERVICE FOR QUALITY CONTROL TESTING DURING EARTHWORK OPERATIONS. TYPE AND QUANTITY OF TESTS SHALL BE AS DIRECTED BY THE ENGINEER.
12. SEPARATION GEOTEXTILE: NON-WOVEN GEOTEXTILE FABRIC, MANUFACTURED FOR SEPARATION APPLICATIONS, COMPLYING WITH VTRANS SPECIFICATION ITEM 649.31 GEOTEXTILE UNDER STONE FILL.
13. FOOTINGS: PLACE FOOTINGS ON UNDISTURBED SOIL OR COMPACTED STRUCTURAL FILL. ASSUMED BEARING CAPACITY FOR FOUNDATION DESIGN IS 1.5 TON PER SQUARE FOOT.

DESIGN CRITERIA

1. CODES:	IBC 2021 AND ASCE 7-16, AS AMENDED BY 2015 VERMONT FIRE AND BUILDING SAFETY CODE
2. BUILDING OR STRUCTURE RISK CATEGORY:	III
3. ROOF LOADS (MAIN BUILDING) :	
DEAD AND LIVE LOAD:	REFER TO TRUSS LOADING DIAGRAM
GROUND SNOW LOAD (Pg):	70 PSF
FLAT ROOF SNOW LOAD (Pf):	48.5 PSF
SLOPED ROOF SNOW LOAD (Ps):	Cs x Pf
EXPOSURE FACTOR (Ce):	0.9
THERMAL FACTOR (Ct):	1.0
IMPORTANCE FACTOR (Is):	1.1
4. ROOF LOADS (CANOPY) :	
DEAD LOAD:	20 PSF (INCLUDES 5 PSF FOR FUTURE SOLAR PANELS)
GROUND SNOW LOAD (Pg):	70 PSF
FLAT ROOF SNOW LOAD (Pf):	58.2 PSF
SLOPED ROOF SNOW LOAD (Ps):	Cs x Pf
EXPOSURE FACTOR (Ce):	0.9
THERMAL FACTOR (Ct):	1.2
IMPORTANCE FACTOR (Is):	1.1
5. FLOOR LIVE LOADS:	
6" SLAB-ON-GRADE:	250 PSF
10" ELEVATED CONCRETE SLAB	250 PSF
MEZZANINE:	125 PSF
6. WIND LOAD:	
ULTIMATE WIND SPEED (Vult):	115 MPH
NOMINAL DESIGN WIND SPEED (Vasd):	89 MPH
IMPORTANCE FACTOR (Iw):	1.0
WIND EXPOSURE:	C
INT. PRESSURE COEFFICIENT (GCpi):	+/- 0.18
COMPONENTS/CLADDING:	ASCE 7-16
7. SEISMIC LOAD:	
IMPORTANCE FACTOR (Ie):	1.25
MAPPED SPECTRAL RESPONSE COEFFICIENTS:	Ss = 0.259 AND S1 = 0.075
SITE CLASS:	E
SPECTRAL RESPONSE COEFFICIENTS:	Sds = 0.410 AND Sd1 = 0.210
SEISMIC DESIGN CATEGORY:	D
SEISMIC FORCE-RESISTING SYSTEM:	SPECIAL REINFORCED MASONRY SHEAR WALLS
DESIGN BASE SHEARS:	
N-S DIRECTION:	V = 0.010W
E-W DIRECTION:	V = 0.010W
ANALYSIS PROCEDURE:	EQUIVALENT LATERAL FORCE METHOD

CONCRETE

1. ALL CONCRETE SHALL CONFORM TO REQUIREMENTS AND RECOMMENDATIONS OF ACI 318 "BUILDING CODE REQUIREMENTS OF REINFORCED CONCRETE" AND ACI FIELD REFERENCE MANUAL MNL-15.
2. CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF ACI 301," SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS," EXCEPT AS MODIFIED OR SUPPLEMENTED BELOW.
3. SHOP DRAWINGS AND DATA: SUBMIT SHOP DRAWINGS COMPLYING WITH ACI MNL-66 "ACI DETAILING MANUAL" AND PRODUCT DATA FOR ACCESSORIES, ADMIXTURES AND CURING COMPOUNDS.
4. CONCRETE COMPRESSIVE DESIGN STRENGTHS AND MIX PROPORTIONS SHALL BE AS OUTLINED BELOW. MIX PROPORTIONS AND DESIGNS SHALL BE SUBMITTED FOR APPROVAL. LIMIT MAXIMUM WATER-SOLUBLE CHLORIDE ION CONTENT IN CONCRETE BY WEIGHT OF CEMENT FOR CAST-IN-PLACE CONCRETE TO 0.3 FOR INTERIOR CONCRETE AND 0.15 FOR EXTERIOR CONCRETE.

CONCRETE USAGE	CONCRETE CLASS	COMPRESSIVE STRENGTH	MAX W/CM RATIO	AIR
FOOTINGS AND WALLS	F2, S0, W0, C1	4,500 PSI AT 28 DAYS	0.45	6% +/- 1.5%
INTERIOR SLABS ON GRADE	F0, S0, W0, C0	3,500 PSI AT 28 DAYS	0.50	< 3%
EXTERIOR SLABS ON GRADE	F3, S0, W0, C2	5,000 PSI AT 28 DAYS	0.40	6% +/- 1.5%

5. STEEL REINFORCEMENT INSTALLATION (INCLUDING WELDED WIRE REINFORCEMENT): COMPLY WITH CRSI "MANUAL OF STANDARD PRACTICE" FOR FABRICATING, PLACING, AND SUPPORTING REINFORCEMENT. CLEAN REINFORCEMENT OF LOOSE RUST AND MILL SCALE, EARTH, ICE, AND OTHER FOREIGN MATERIALS THAT REDUCE BOND TO CONCRETE. ACCURATELY POSITION, SUPPORT, AND SECURE REINFORCEMENT AGAINST DISPLACEMENT.
6. REINFORCING STEEL: ASTM A 615 GRADE 60.
7. JOINT SEALANT: SIKAFLEX 1A AS MANUFACTURED BY SIKA CORPORATION OR APPROVED EQUAL.
8. EXPANSION AND ISOLATION JOINT FILLER: ASTM D1751, ASPHALT-SATURATED CELLULOSIC FIBER.
9. FOUNDATION INSULATION: 2 INCHES THICK DOW STYROFOAM SM/SB/TG BRAND INSULATION UNLESS NOTED.
10. ALL CONCRETE SHALL BE READY-MIX CONCRETE CONFORMING TO ASTM C 94 EXCEPT THAT ADDITION OF WATER WILL NOT BE PERMITTED.
11. ALL REINFORCING MARKED CONTINUOUS (CONT.) SHALL BE LAPPED 64 BAR DIAM. AT SPLICES AND CORNERS AND SHALL BE HOOKED OR EXTENDED 48 BAR DIAM. AT NON-CONTINUOUS ENDS.
12. REINFORCEMENT SHALL BE SECURELY TIED IN ITS PROPER PLACE BEFORE AND DURING CONCRETE PLACEMENT OPERATIONS USING APPROVED CHAIRS AND SPACERS AS REQUIRED.
13. SLABS ON GRADE SHALL BE PLACED OVER A POROUS 8 INCH LAYER OF COMPACTED DRAINAGE FILL (MINIMUM), UNLESS OTHERWISE SHOWN ON PLANS. PROVIDE 6 x 6 10/10 WELDED WIRE MESH PLACED 1 INCH FROM TOP OF SLABS IN ALL SLABS ON GRADE UNLESS OTHERWISE SHOWN. SLABS SHALL BE PLACED IN ALTERNATE STRIPS, EACH STRIP NOT TO EXCEED 40 FEET WIDE BY 160 FEET LONG. SAWCUT LENGTHS IN PANELS NOT TO EXCEED 20 FEET IN LENGTH OR WIDTH. SAW CUTTING SHALL BE DONE WITH "SOFF-CUT" SAWS. JOINTS TO BE LOCATED TO CONFORM TO BAY SPACING WHENEVER POSSIBLE (AT COLUMN CENTERLINES, HALF BAYS, THIRD BAYS). SLAB PANEL LENGTH TO WIDTH RATIO NOT TO EXCEED 1.5.
14. THE CONCRETE CONTRACTOR SHALL INSTALL OR GIVE OTHER TRADES AMPLE OPPORTUNITY TO INSTALL ALL ANCHORS, BOLTS, PLATES, NAILERS, SLOTS, CHASES, PIPE SLEEVES, ETC., AS REQUIRED BY THESE TRADES. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS BEFORE SETTING SCREEDS AND FORMS.
15. FOUNDATION WALLS SHALL BE PLACED IN ALTERNATE LENGTHS. CONSTRUCTION OR CONTROL JOINTS SHALL BE PLACED NOT MORE THAN 60 FEET APART NOR MORE THAN 30 FEET FROM A CORNER. NO HORIZONTAL JOINTS SHALL BE PERMITTED EXCEPT AS SHOWN ON PLANS. FOUNDATION WALLS SHALL BE BRACED UNTIL ADJOINING FLOOR CONSTRUCTION IS IN PLACE.
16. EPOXY-COATED REINFORCING STEEL: ASTM A615 GRADE 60 DEFORMED BARS, EPOXY COATED PER ASTM 934, WITH LESS THAN 2 PERCENT DAMAGED COATING IN EACH 12" BAR LENGTH.
17. PROVIDE CLEARANCES FROM FACES OF CONCRETE TO REINFORCEMENT AS FOLLOWS (UNLESS NOTED OTHERWISE):

    CONCRETE CAST AGAINST EARTH: 3" (ALL BARS)
    CONCRETE EXPOSED TO EARTH OR WEATHER
    #6 AND LARGER: 2"
    #5 AND SMALLER: 1-1/2"
    CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
    SLABS, WALLS AND JOISTS: 3/4" (#11 AND SMALLER)
    BEAMS AND COLUMNS (MAIN STEEL AND TIES): 1-1/2" (ALL BARS)
18. ALL CONCRETE SHALL BE CONSOLIDATED USING MECHANICAL VIBRATING EQUIPMENT.
19. FORMED CONCRETE NOT EXPOSED TO VIEW SHALL RECEIVE A ROUGH FORM FINISH; FORMED CONCRETE EXPOSED TO VIEW SHALL RECEIVE A SMOOTH FORM FINISH.
20. CONCRETE SLABS SHALL BE WET CURED, USE OF MEMBRANE-FORMING CURING COMPOUND IS PROHIBITED.
21. CONCRETE SLABS SHALL RECEIVE A TROWELED FINISH FOR INTERIOR CONCRETE AND A BROOM FINISH FOR EXTERIOR CONCRETE.
22. INTERIOR SLABS ON GRADE SHALL RECEIVE A PENETRATING FLOOR SEALER WHERE EXPOSED PER ARCHITECTURAL DRAWINGS. APPLY ASHFORD FORMULA BY CURECRETE, OR APPROVED EQUAL TO ALL EXPOSED CONCRETE SURFACES. IN STRICT COMPLIANCE WITH MANUFACTURER'S RECOMMENDATIONS. COORDINATE EXPOSED SLAB AREAS WITH ARCHITECTURAL DRAWINGS.
23. TESTING: THE OWNER WILL EMPLOY A TESTING LABORATORY TO PERFORM TESTS FOR QUALITY CONTROL DURING PLACEMENT AS DIRECTED BY THE ENGINEER.
24. COMPRESSION TEST: ACI 318, PREPARE 4 CYLINDERS PER TEST SET FOR EACH COMPOSITE SAMPLE. (3) CYLINDERS SHALL BE TESTED AT 28 DAYS
    1. AT LEAST ONCE A DAY.
    2. AT LEAST ONCE FOR EACH 150 CUBIC YARDS OF CONCRETE
    3. AT LEAST ONCE FOR EACH 5,000 SQUARE FEET OF SURFACE AREA FOR SLABS OR WALLS.

MASONRY:

1. CONCRETE MASONRY CONSTRUCTION SHALL CONFORM TO THE LATEST EDITIONS OF THE "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES (ACI 530/ASCE 5)", "SPECIFICATIONS FOR MASONRY STRUCTURES (ACI 530.1/ASCE 6)" AND TO THE NATIONAL CONCRETE MASONRY ASSOCIATION "SPECIFICATION FOR THE DESIGN AND CONSTRUCTION OF LOAD BEARING CONCRETE MASONRY" (TR758).
2. MATERIAL STRENGTH SHALL BE AS FOLLOWS:

    A. CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C-90 NORMAL WEIGHT, COMPRESSIVE STRENGTH ON NET AREA = 1,900 PSI PER ASTM C-90.

    B. MORTAR SHALL CONFORM TO ASTM C-270 TYPE S. 1 PART CEMENT, 1/4 TO 1/2 LIME, 2-1/4 TO 3 SAND (ASTM C270).

    C. GROUT SHALL CONFORM TO ASTM C-476 FINE OR COARSE. 1 PART CEMENT, 0 TO 1/10 LIME, 2-1/4 TO 3 SAND (ASTM C476), PLUS COARSE AGGREGATE.
3. PRIOR TO GROUTING CELLS, BARS AND CELLS MUST BE INSPECTED BY THE ENGINEER.
4. THE BASE OF EACH CELL IN WHICH A BAR IS PLACED MUST HAVE A CLEANOUT HOLE.
5. REINFORCED MASONRY WALLS SHALL HAVE #9 GA. WIRE (LADDER TYPE) AT 16" O.C. HORIZONTAL REINFORCEMENT.
6. PLACE HORIZONTAL REINFORCING BARS CONTINUOUSLY THROUGH EXPANSION JOINTS. WRAP MASTIC TAPE ON TWO #5 HORIZONTAL BOND BEAM BARS FOR 18" ON SIDE OF JOINT.
7. MASONRY OPENINGS MORE THAN 16" WIDE REQUIRE APPROVED LINTELS.
8. MASONRY OPENINGS FOR UTILITIES ARE TO BE CLOSED UP WITH NEW MASONRY WORK AROUND THE UTILITY.
9. FILL THREE COURSES OF CONCRETE BLOCKS UNDER ALL BEARING PLATES WITH GROUT FOR A WIDTH EQUAL TO THREE TIMES THE BEARING PLATE LENGTH.
10. REINFORCING BARS SHALL BE CONTINUOUS FULL HEIGHT AND SPLICED 2' -0" ABOVE EACH FLOOR LEVEL. AT OPENINGS THAT INTERRUPT BARS, ADD AN ADDITIONAL BAR TO EACH SIDE OF THE OPENING FOR EACH INTERRUPTED BAR.
11. PROVIDE ONE 1-#7 (MIN.) VERTICALLY GROUTED SOLID ON EACH SIDE OF CONTROL AND EXPANSION JOINTS AND OPENINGS AND EXTEND 24" BEYOND EACH SIDE OF OPENING.
12. PROVIDE 1-#7 (MIN) AT EACH SIDE OF ALL DOOR AND WINDOW OPENINGS AND EXTEND FULL HEIGHT OF WALL.
13. MASONRY BLOCK CELLS CONTAINING VERTICAL REINFORCING SHALL BE GROUTED SOLID. FILLING CELLS WITH MORTAR IS UNACCEPTABLE. THE COMPRESSIVE STRENGTH OF GROUT AT THE END OF 28 DAYS SHALL BE 3000PSI MINIMUM.
14. REINFORCED MASONRY WALLS SHALL HAVE BOND BEAMS AT EACH FLOOR LEVEL. BOND BEAM REINFORCING BARS SHALL BE EXTENDED INTO AND BE CONTINUOUS WITH ALL INTERSECTING BOND BEAMS.
15. BONDING METHODS, TIES, LINTELS, AND ACCESSORIES SHALL BE APPROVED BY THE ENGINEER.
16. INSTALL LINTELS FOR ALL OPENINGS IN ACCORDANCE WITH THE DETAILS ON THE DRAWINGS.

STEEL DECKING

1. CODES AND STANDARDS: AISI "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS;" AWS "STRUCTURAL WELDING CODE," SDI "DESIGN MANUAL FOR COMPOSITE DECKS, FORM DECKS AND ROOF DECKS;" COMPLY WITH APPLICABLE PROVISIONS EXCEPT AS OTHERWISE INDICATED.
2. FM LISTING: PROVIDE METAL ROOF DECK UNITS WHICH HAVE BEEN EVALUATED BY FACTORY MUTUAL SYSTEM AND ARE LISTED IN "FACTORY MUTUAL APPROVAL GUIDE" FOR "CLASS I" FIRE-RATED CONSTRUCTION.
3. SHOP DRAWINGS AND DATA: SHOW COMPLETE DETAILS AND SCHEDULES (IF REQUIRED) FOR LAYOUT AND TYPES OF DECK PANELS, ANCHORAGE, SUPPLEMENTARY FRAMING, CUT OPENINGS, AND ACCESSORIES.
4. STEEL: GALVANIZED UNITS - ASTM A 446, GRADE A.
5. SHOP FINISH: MANUFACTURER'S STANDARD BAKED-ON RUST-INHIBITIVE PAINT FOR PAINTED UNITS AND ASTM A 525, G90 FOR GALVANIZED UNITS.
6. FABRICATION: FORM DECK UNITS IN LENGTHS TO SPAN AT LEAST 3 SUPPORTS; NESTED 2 INCHES END LAPS; NESTED SIDE LAPS, UNLESS OTHERWISE INDICATED.
7. ROOF DECK: COMPLY WITH SDI "ROOF DECK SPECIFICATIONS," OF METAL THICKNESS, WIDTH AND DEPTH INDICATED COMPLYING WITH AND APPROVED BY FACTORY MUTUAL FOR SPANS INDICATED ON PLANS. DECK SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS AND ACCEPTED STANDARD PRACTICE. ROOF DECK SHALL BE WELDED TO ALL SUPPORTS WITH 5/8 INCH DIAMETER FUSION WELDS SPACED 12 INCHES ON CENTER. SIDE LAPS SHALL BE MECHANICALLY FASTENED AT MIDSPAN WITH #10 SELF-TAPPING SHEET METAL SCREWS. ALL EDGES OF DECK SHALL BE PROPERLY SUPPORTED.
8. ACCESSORIES: PROVIDE COVER PLATES, CLOSURE STRIPS, ROOF SUMP PANS, CANT STRIPS, AS REQUIRED; USE DECK MANUFACTURER'S STANDARD UNLESS OTHERWISE SHOWN.
9. INSTALLATION: PLACE DECK UNITS AND SECURE TO ADJACENT FRAMING BY 5/8" DIAMETER FUSION WELDING 12" O.C. TO SUPPORTS, WITH A MINIMUM OF 2 WELDS AT EACH SUPPORT, UNLESS OTHERWISE INDICATED. FASTEN SIDE LAPS AT MIDSPAN WITH #10 SCREWS.
10. REINFORCE AROUND OPENINGS AS FOLLOWS: FOR OPENINGS LESS THAN 15" IN ANY DIMENSION, ADD A 20 GA. STEEL SHEET AT LEAST 12" LONGER AND WIDER THAN OPENING. CENTER STEEL SHEET OVER OPENING IN DECK. FASTEN TO DECK WITH #12 SELF-TAPPING SCREWS AT 6" O.C. AT ALL EDGES AND AT CORNERS. FOR OPENINGS OVER 15" IN ANY DIMENSION, ADD AN L3 x 3 x 1/4 STEEL FRAME TO SUPPORT DECK DIRECTLY FROM JOISTS OR BEAMS.
11. TOUCH-UP SHOP PAINT AFTER INSTALLATION. CLEAN FIELD WELDS AND ABRADED AREAS, AND APPLY SAME TYPE PAINT AS USED IN SHOP.

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4144 MAIN STREET
WAITSFIELD, VERMONT
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SHEET TITLE

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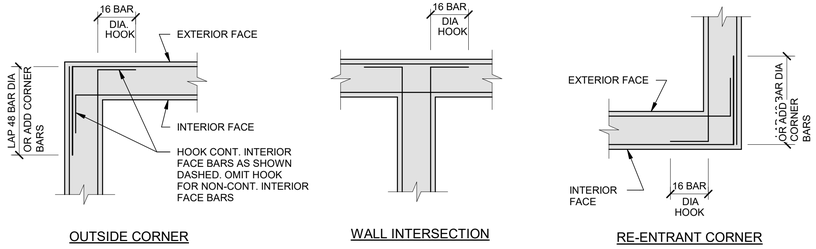
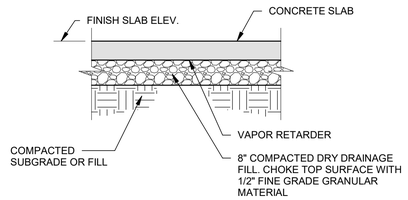


1 S0.2 TYPICAL REINFORCING AT CONCRETE WALL CORNERS

NOT TO SCALE



2 S0.2 TYPICAL SLAB/SUBGRADE PROFILE

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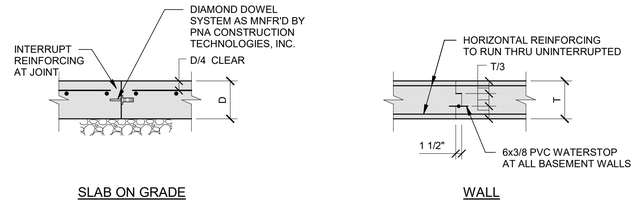

3 S0.2 TYPICAL CONSTRUCTION JOINT DETAILS

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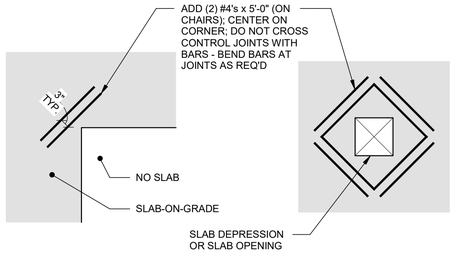
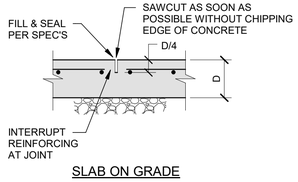


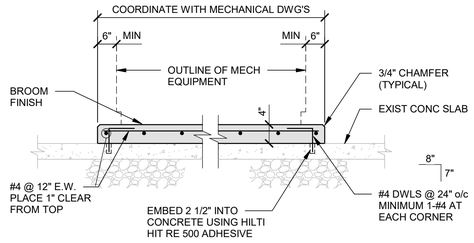
4 S0.2 TYP. SLAB RE-ENTRANT CORNERS DETAIL

1/2" = 1'-0"



5 S0.2 TYPICAL CONTRACTION JOINT DETAIL

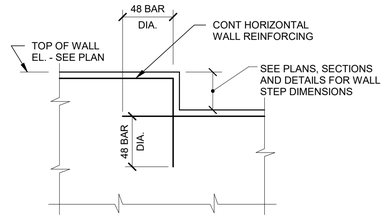
NOT TO SCALE



1. COORDINATE SIZES, LOCATIONS AND QUANTITIES WITH MECHANICAL AND ARCHITECTURAL DRAWINGS.

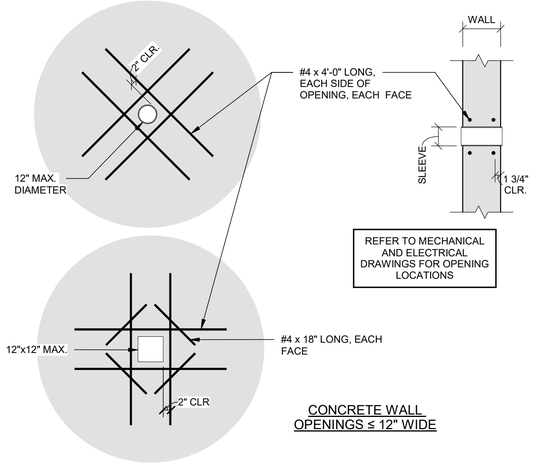
6 S0.2 TYPICAL INTERIOR EQUIPMENT PAD DETAIL

NOT TO SCALE



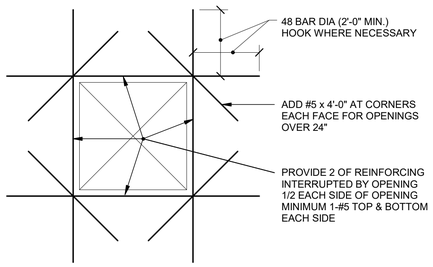
7 S0.2 TYPICAL WALL STEP DETAIL

NOT TO SCALE



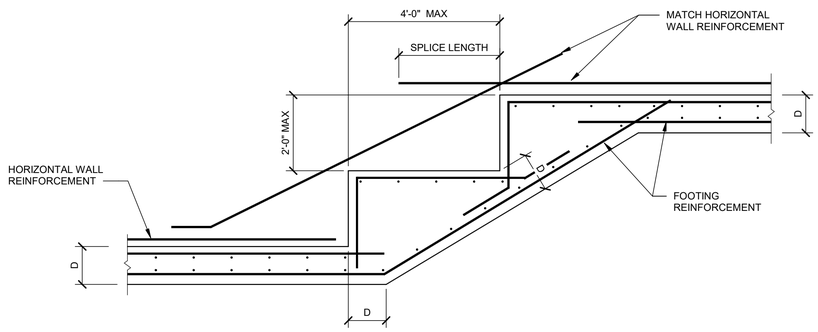
8 S0.2 TYP. REINFORCING AT WALL OPENINGS

1/2" = 1'-0"



9 S0.2 TYP. REINF. AT CONCRETE WALL OPENINGS

NOT TO SCALE



10 S0.2 TYPICAL STEPPED FOOTING DETAIL

1/2" = 1'-0"

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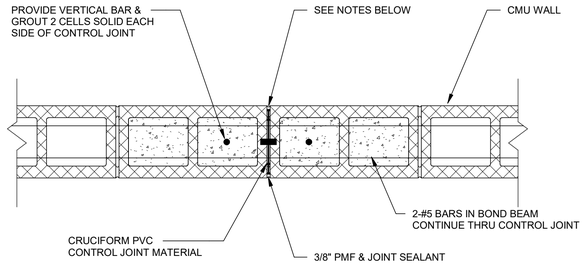
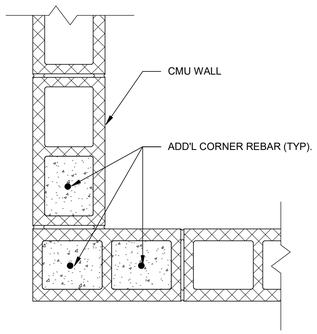


NOTES:

1. RAKE EXCESS MORTAR FROM CONTROL JOINT.
2. PROVIDE BACKER ROD AND CAULK JOINT FOR FINAL COMPLETION.
3. EXTEND CONTROL JOINT FULL HEIGHT OF WALL.
4. REFER TO ARCH. DRAWINGS FOR EXTERIOR WALL FINISH.

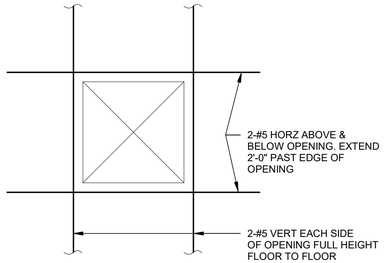
1 S0.3 MASONRY CONTROL JOINT DETAIL

1 1/2" = 1'-0"



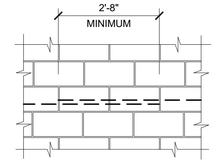
2 S0.3 CMU CORNER DETAIL

1 1/2" = 1'-0"



3 S0.3 CMU WALL OPENING DETAIL

NOT TO SCALE



4 S0.3 TYPICAL BOND BEAM SPLICE DETAIL

1/2" = 1'-0"

5 S0.3 TYPICAL NON-LOAD BEARING CMU PARTITION DETAIL

NOT TO SCALE

BAR SIZE DESIGNATION	MINIMUM SPLICE LENGTH (INCHES)	MINIMUM DEVELOPMENT LENGTH (INCHES) BASED ON BAR IN CENTER OF:			
		6" CMU	8" CMU	10" CMU	12" CMU
#3	27	16	16	16	16
#4	36	21	21	21	21
#5	45	32	26	26	26
#6	54	61 (3)	43	40	40
#7	63	NP (4)	60	46	46
#8	72	NP (4)	92	71	61
#9	82	NP (4)	NP (4)	91	74

NOTES:

1. THE MINIMUM REBAR SPLICE LENGTH SCHEDULE IS BASED ON F'm = 1,500 PSI AND Fv = 60,000 PSI. ADJUST FOR OTHER STRENGTHS USING ACI-530.
2. IF EPOXY COATED REBAR IS USED, INCREASE DEVELOPMENT LENGTH BY AN ADDITIONAL 50%.
3. PERMITTED ONLY IF MORTAR FINS ARE REMOVED FROM THE CELL TO BE GROUTED.
4. NP = NOT PERMITTED, BAR IS TOO LARGE FOR THIS WALL.
5. WHEN BARS OF DIFFERENT SIZE ARE LAP SPLICED, THE SPLICE LENGTH SHALL BE THE LARGER OF EITHER THE DEVELOPMENT LENGTH OF THE LARGER BAR OR THE SPLICE LENGTH OF THE SMALLER BAR.

6 S0.3 MASONRY REBAR SPLICE LENGTH SCHEDULE

1/2" = 1'-0"

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SHEET TITLE

TYPICAL DETAILS

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S0.3

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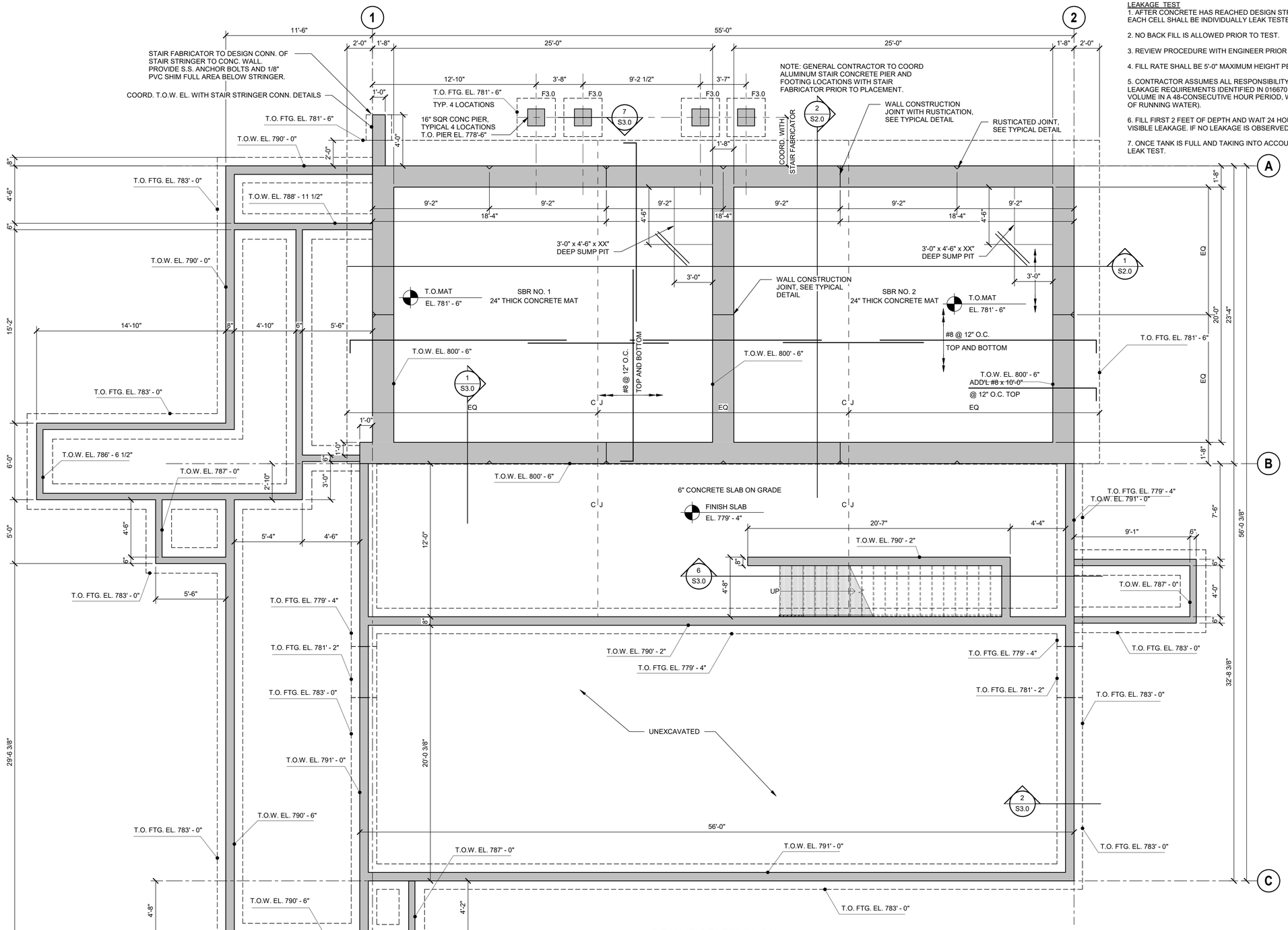

FOUNDATION PLAN

1/4" = 1'-0"

1. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR PIPING, CONDUIT, AND EQUIPMENT SLEEVES, INSERTS OR OTHER EMBEDMENTS IN THE CONCRETE BASE MAT OR WALLS.

2. F3.0 SHALL BE 3'-0" x 3'-0" x 12" THICK WITH 4-#5 x 2'-8" EACH WAY BOTTOM. BOTTOM OF FOOTING SHALL BE MINIMUM 5'-0" BELOW FINISH GRADE.

LEAKAGE TEST

1. AFTER CONCRETE HAS REACHED DESIGN STRENGTH AND IS A MINIMUM OF 28 DAYS OLD, EACH CELL SHALL BE INDIVIDUALLY LEAK TESTED.

2. NO BACK FILL IS ALLOWED PRIOR TO TEST.

3. REVIEW PROCEDURE WITH ENGINEER PRIOR TO TEST.

4. FILL RATE SHALL BE 5'-0" MAXIMUM HEIGHT PER DAY.

5. CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR PROVIDING SBR TANKS THAT MEET THE LEAKAGE REQUIREMENTS IDENTIFIED IN 016670 (ALLOWABLE LEAKAGE RATE OF 0.1% OF TANK VOLUME IN A 48-CONSECUTIVE HOUR PERIOD, WITH NO VISIBLE DRIPS, LEAKS, OR STREAMS OF RUNNING WATER).

6. FILL FIRST 2 FEET OF DEPTH AND WAIT 24 HOURS. OBSERVE SLAB/WALL JOINT FOR ANY VISIBLE LEAKAGE. IF NO LEAKAGE IS OBSERVED, PROCEED WITH ADDITIONAL TANK FILLING.

7. ONCE TANK IS FULL AND TAKING INTO ACCOUNT WATER ABSORPTION PERIOD, PERFORM LEAK TEST.

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WAITSFIELD WASTEWATER TREATMENT FACILITY

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FOUNDATION PLAN

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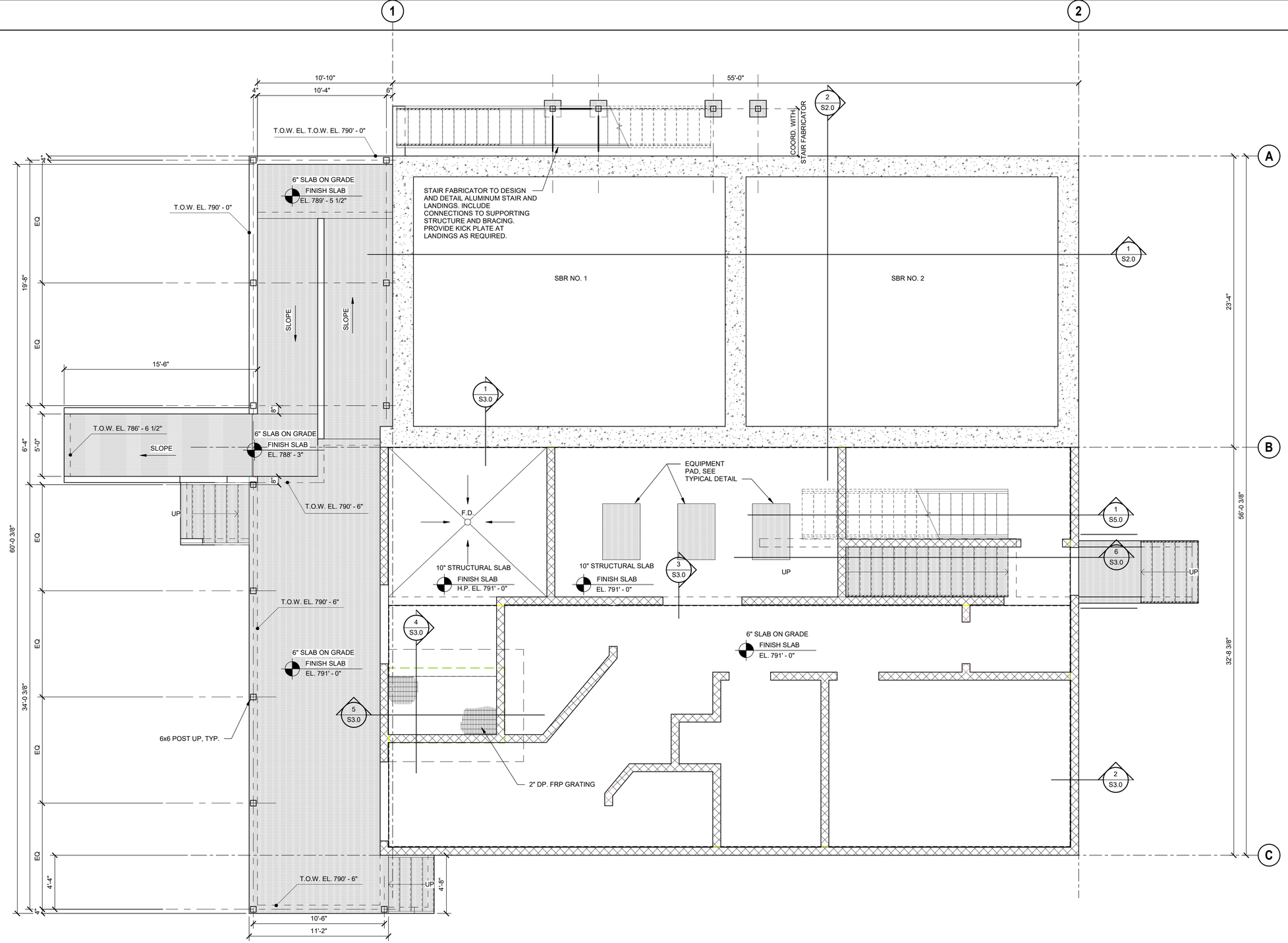

1 S1.1 FLOOR PLAN
1/4" = 1'-0"

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S1.1

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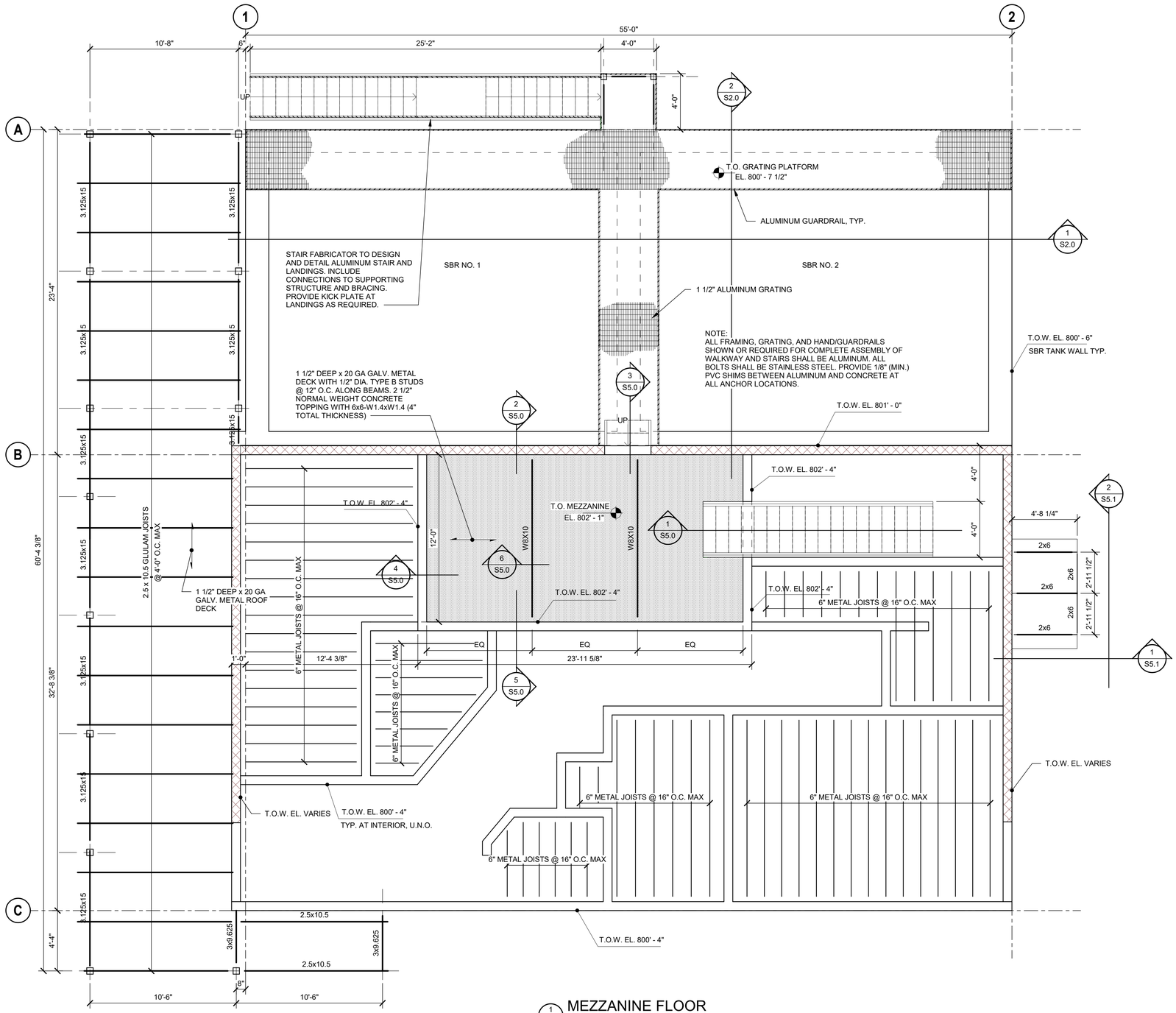

1 S1.2 MEZZANINE FLOOR
1/4" = 1'-0"

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MEZZANINE FLOOR PLAN

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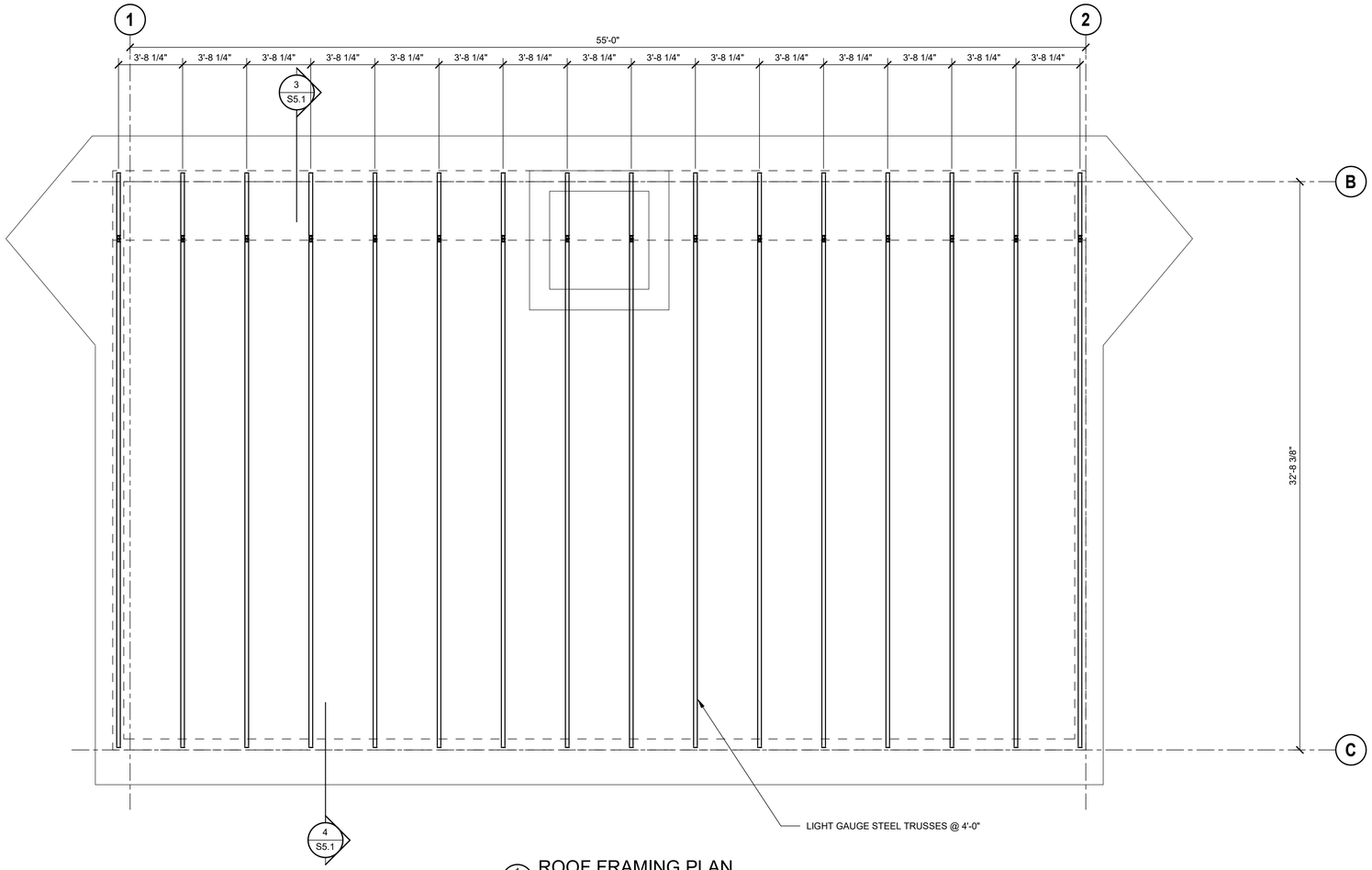
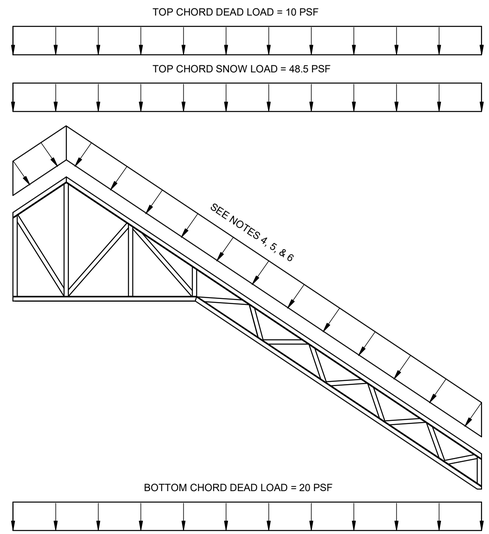
S1.2

SHEET OF



1 S1.3 ROOF FRAMING PLAN
1/4" = 1'-0"



NOTES:

1. THE TRUSS CONSTRUCTION, INCLUDING CONNECTIONS AND BRACING, SHALL BE BY THE TRUSS MANUFACTURER.
2. REFER TO DRAWINGS S0.1 FOR ADDITIONAL NOTES AND DESIGN REQUIREMENTS.
3. DESIGN LOADINGS SHALL BE AS INDICATED ABOVE OR AS PER THE CURRENT EDITION OF THE STATE BUILDING CODE, WHICHEVER IS MORE STRINGENT.
4. IN ADDITION TO ABOVE LOADS, TRUSSES SHALL BE DESIGNED FOR UNBALANCED SNOW LOAD AND WIND PRESSURES PER THE CURRENT EDITION OF THE STATE BUILDING CODE.
5. TRUSS LOADS SHOWN ARE IN ADDITION TO THE TRUSS SELF WEIGHT.
6. ALL TRUSSES AND CONNECTIONS SHALL BE DESIGNED TO A MINIMUM NET UPLIFT OF 10 PSF.

2 S1.3 TYPICAL LOADING FOR ROOF TRUSSES
3/16" = 1'-0"

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S1.3

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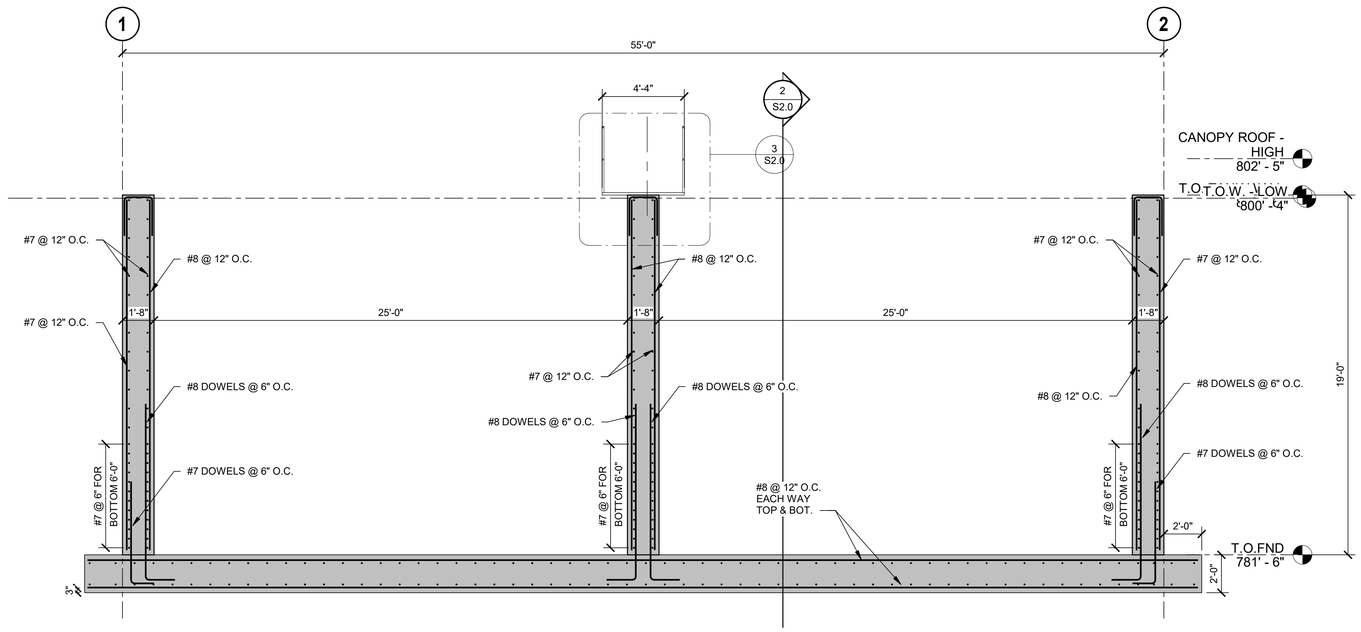
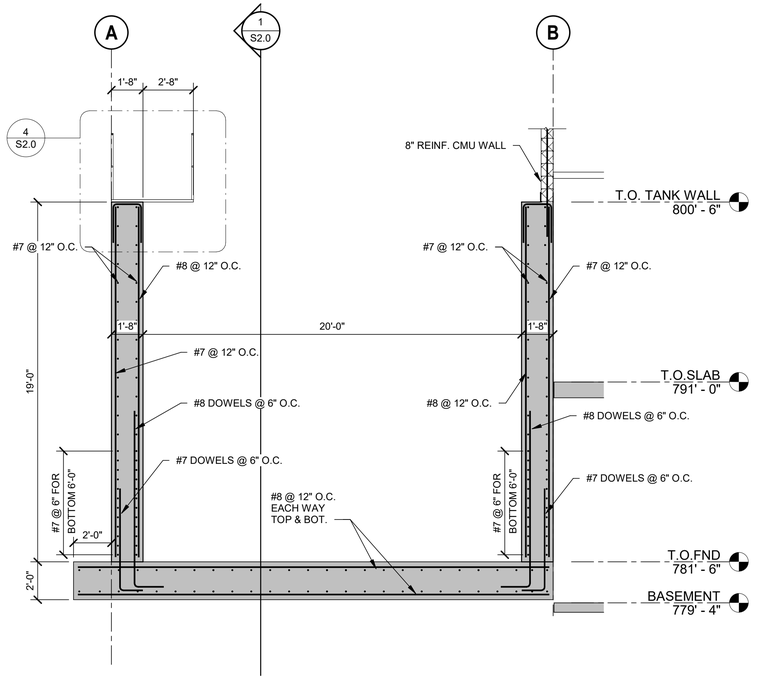
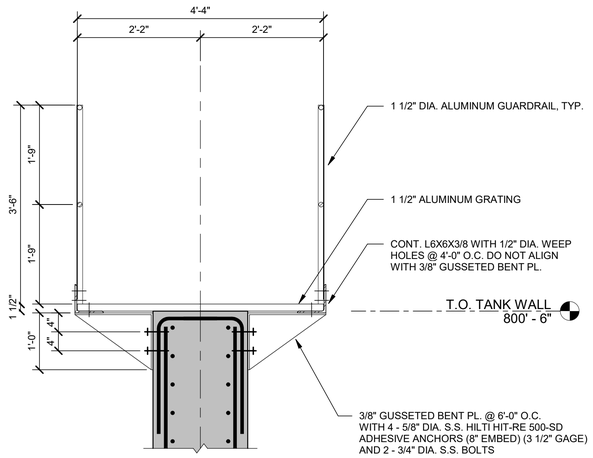


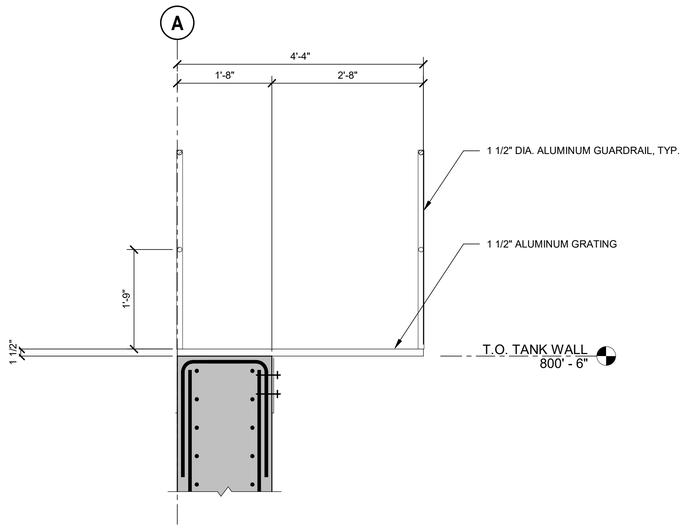
1 S2.0 SECTION
1/4" = 1'-0"



2 S2.0 SECTION
1/4" = 1'-0"



3 S2.0 SECTION
3/4" = 1'-0"



4 S2.0 SECTION
3/4" = 1'-0"

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S2.0

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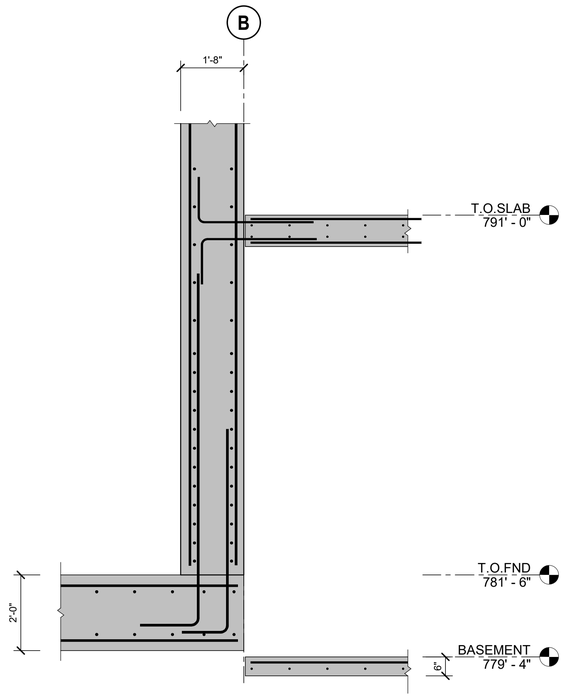
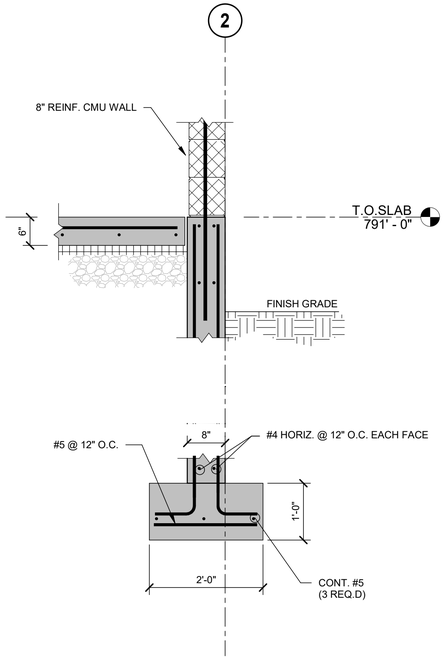
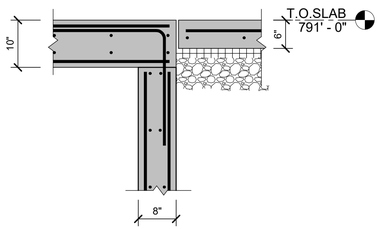


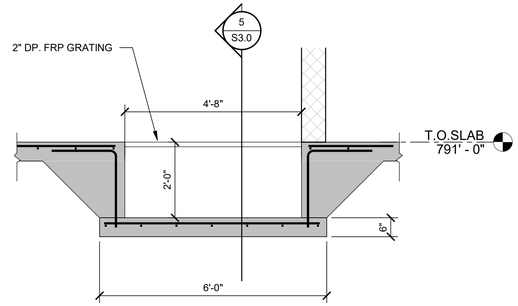
1 S3.0 SECTION
1/2" = 1'-0"



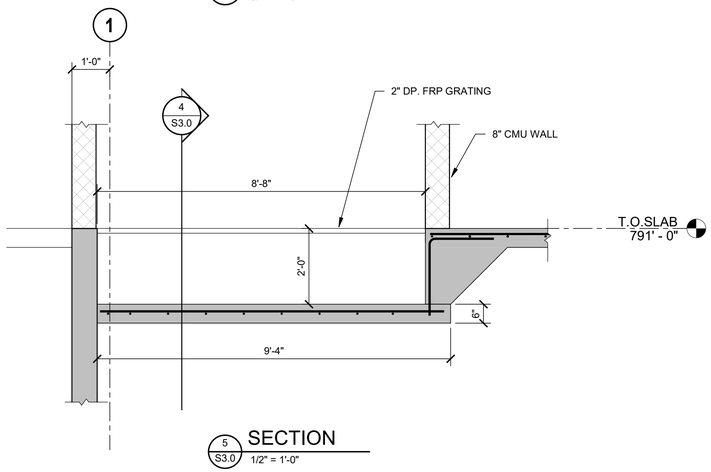
2 S3.0 SECTION
3/4" = 1'-0"



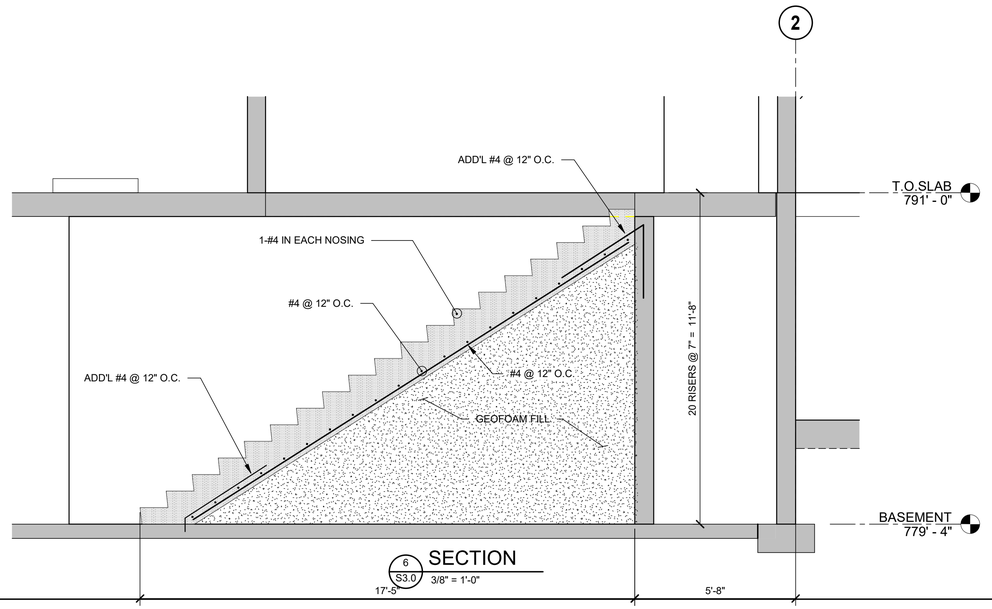
3 S3.0 SECTION
3/4" = 1'-0"



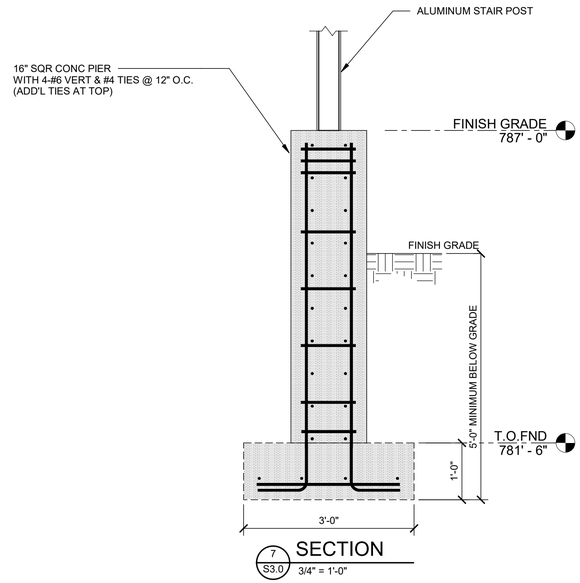
4 S3.0 SECTION
1/2" = 1'-0"



5 S3.0 SECTION
1/2" = 1'-0"



6 S3.0 SECTION
3/8" = 1'-0"



7 S3.0 SECTION
3/4" = 1'-0"

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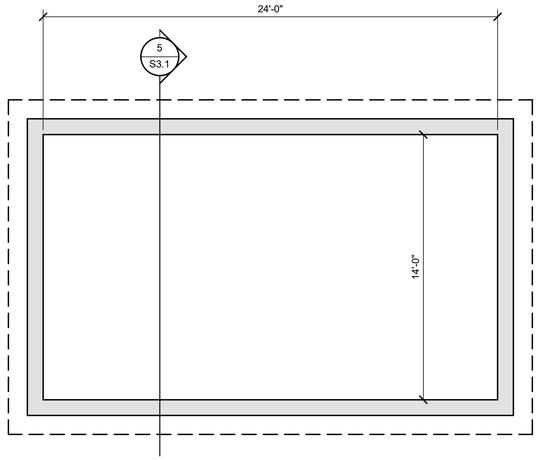
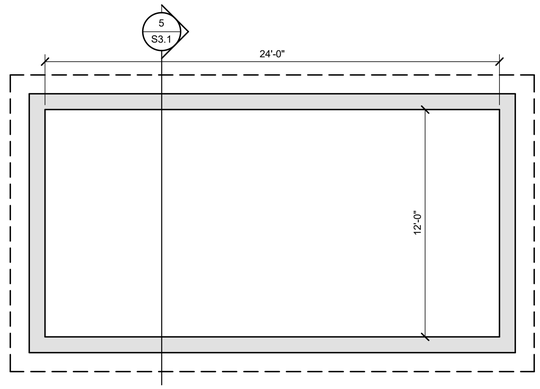
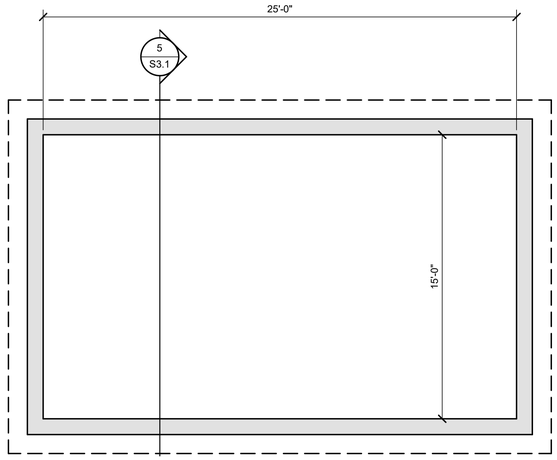


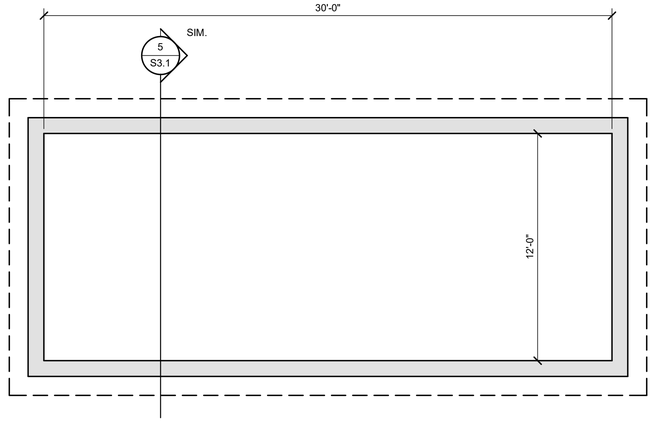
1 S3.1 UPPER IRASVILLE PUMP STATION PLAN
1/4" = 1'-0"



2 S3.1 SCHOOL STREET PUMP STATION PLAN
1/4" = 1'-0"



3 S3.1 FIDDLER GREEN PUMP STATION PLAN
1/4" = 1'-0"



4 S3.1 SCHOOL STREET SEPTIC TANK PLAN
1/4" = 1'-0"

5 S3.1 TYPICAL PUMP STATION SECTION
1/2" = 1'-0"

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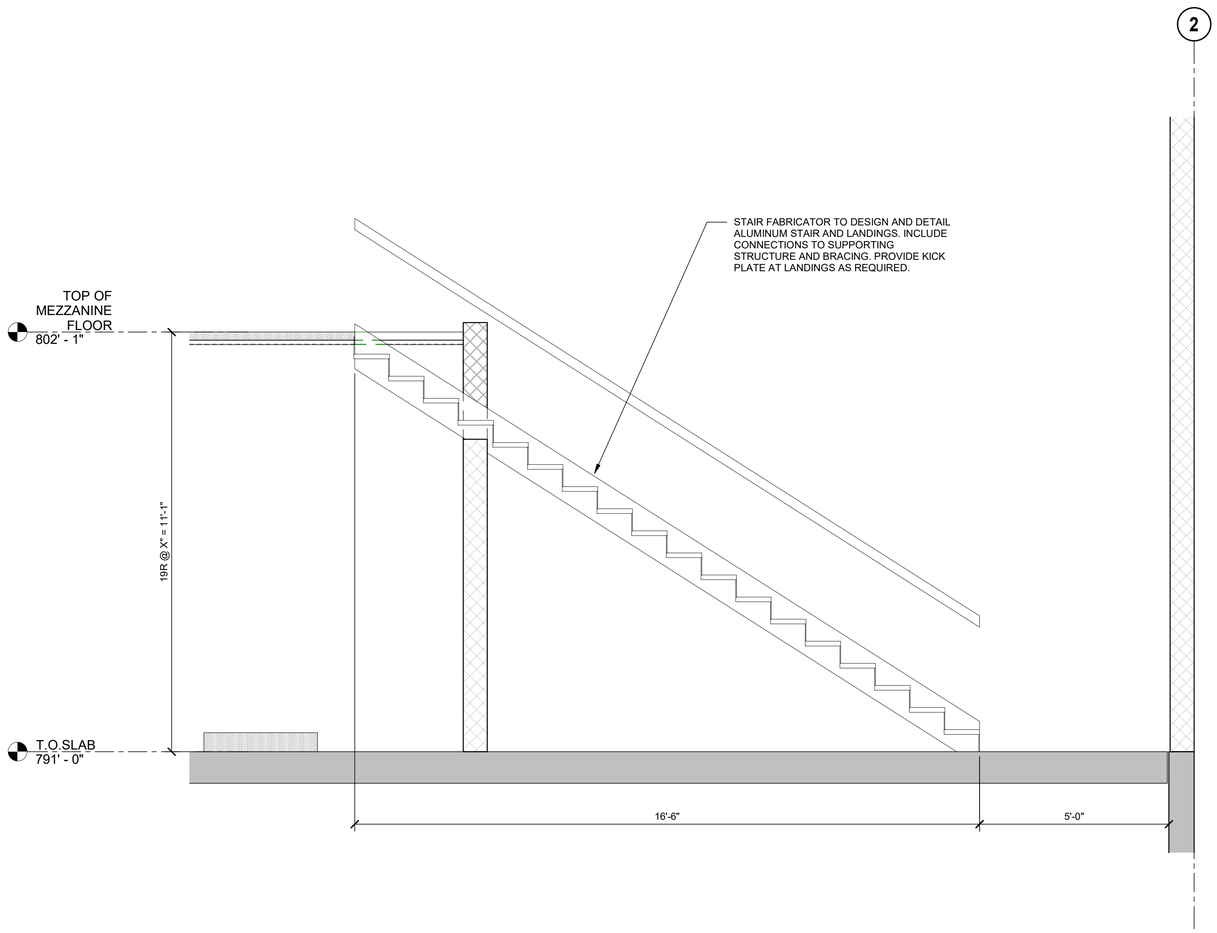
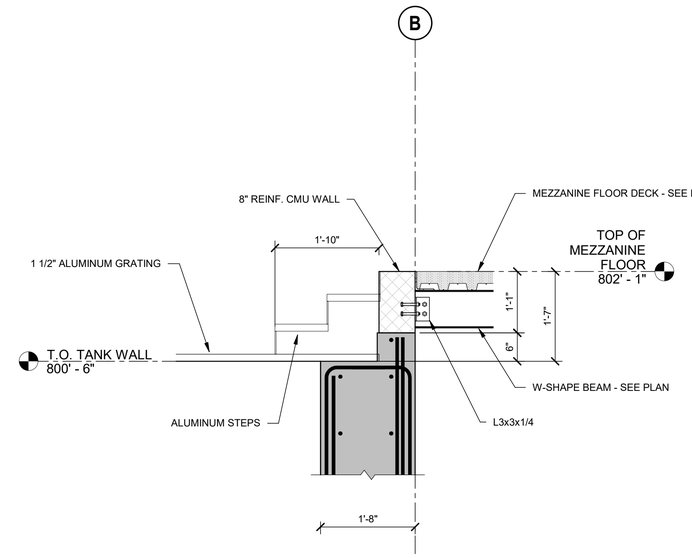
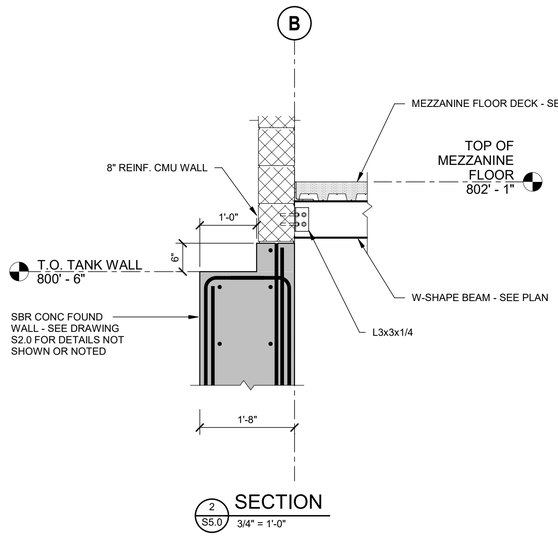


1 S5.0 SECTION
1/2" = 1'-0"



3 S5.0 SECTION
3/4" = 1'-0"



2 S5.0 SECTION
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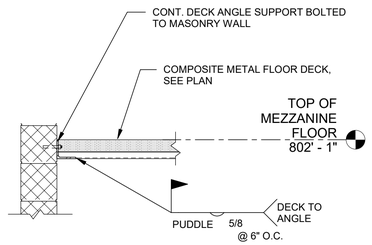

4 S5.0 SECTION
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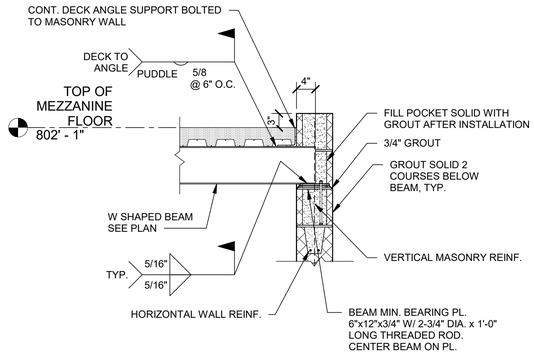
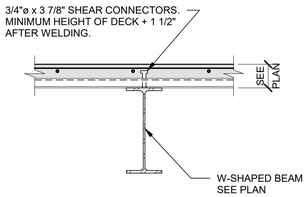


5 S5.0 SECTION
3/4" = 1'-0"



6 S5.0 SECTION
3/4" = 1'-0"

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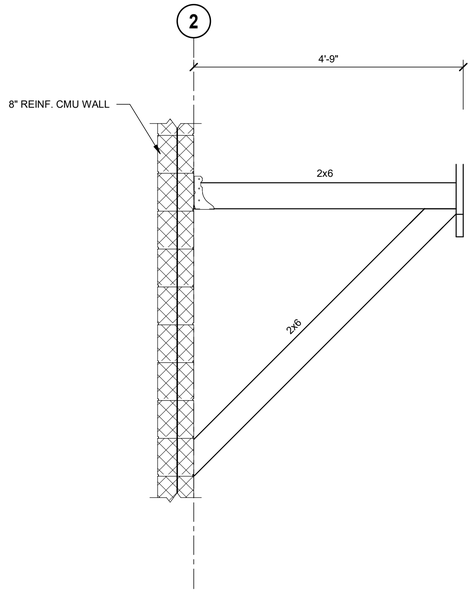
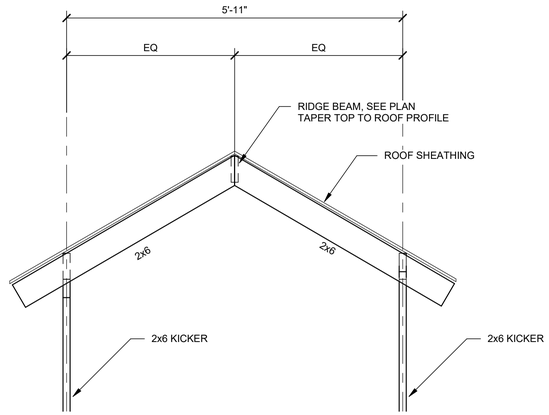
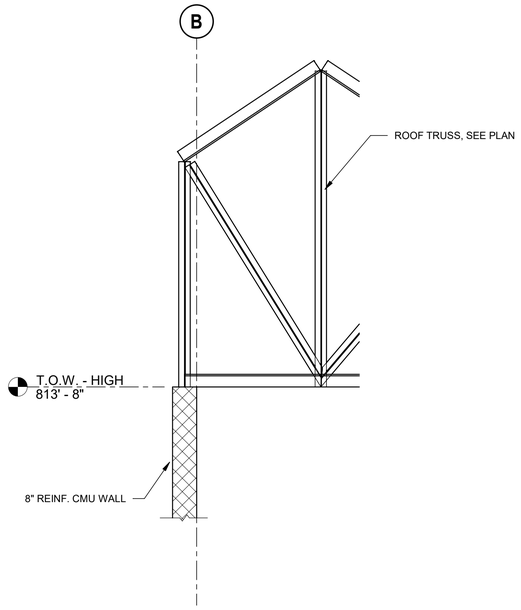


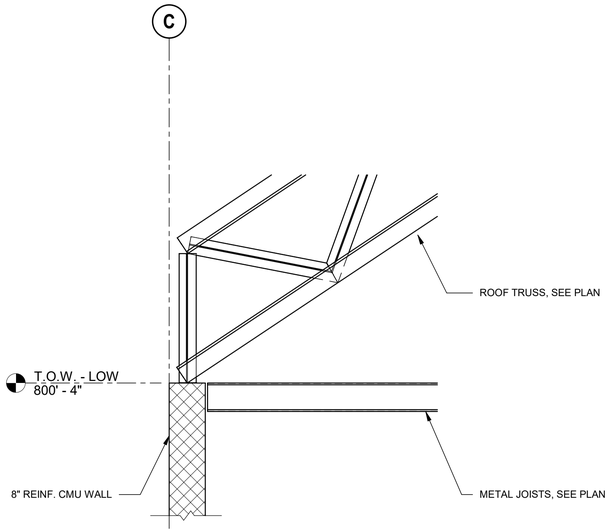
1 S5.1 SECTION
3/4" = 1'-0"



2 S5.1 SECTION
3/4" = 1'-0"



3 S5.1 SECTION
1/2" = 1'-0"



4 S5.1 SECTION
3/4" = 1'-0"

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SHEET OF

MECHANICAL LEGENDS & ABBREVIATIONS

NOTE: NOT ALL SYMBOLS/ABBREVIATIONS SHOWN IN THE LEGEND ARE USED IN THIS DRAWING SET. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY CONTENT SHOWN ON DRAWINGS.

DUCTWORK

- 20x12 — RECTANGULAR DUCT, FIRST NUMBER IS DIMENSION IN VIEW OF DRAWING
- 20"ø — ROUND RIGID DUCT
- SUPPLY/OUTSIDE AIR DUCT ELBOW UP/DOWN
- RETURN DUCT ELBOW UP/DOWN
- EXHAUST DUCT ELBOW UP/DOWN
- 20x20 — RECTANGULAR DUCT 90° MITERED ELBOW WITH TURNING VANES
- 20x20 — TYPICAL LONG RADIUS ELBOW, RECTANGULAR/ROUND DUCT
- 20x20 — TYPICAL BRANCH DUCT 45° TAKE-OFF W/ VOLUME DAMPER
- DUCT RISE
- DUCT SET DOWN
- FLEXIBLE DUCT
- FIRE DAMPER
- S — SMOKE DAMPER
- FS — FIRE & SMOKE DAMPER
- S — DUCT SMOKE DETECTOR
- DUCT SOUND ATTENUATION LINING
- BDD — BACKDRAFT DAMPER
- BRD — BAROMETRIC RELIEF DAMPER
- FLEXIBLE DUCT CONNECTOR
- FC — EQUIPMENT FLEX CONNECTOR
- TG — TRANSFER GRILLE
- DIRECTION OF SUPPLY AIR FLOW
- DIRECTION OF RETURN OR EXHAUST AIR FLOW
- SF — SUPPLY FAN ROOF MOUNTED
- EF — EXHAUST FAN ROOF MOUNTED
- S — SMOKE DETECTOR
- FAN (SCHEMATIC)
- SUPPLY AIR DIFFUSER, REGISTER, OR GRILLE
- RETURN AIR REGISTER OR GRILLE
- EXHAUST AIR REGISTER OR GRILLE

PIPING SYSTEMS

- RL — REFRIGERANT LIQUID
- RS — REFRIGERANT SUCTION
- CWR — CONDENSER WATER RETURN
- CWS — CONDENSER WATER SUPPLY
- GHR — GLYCOL HEATING RETURN
- GHS — GLYCOL HEATING SUPPLY
- LPS — LOW PRESSURE STEAM
- MPS — MEDIUM PRESSURE STEAM
- HPS — HIGH PRESSURE STEAM
- LPC — LOW PRESSURE CONDENSATE
- MPC — MEDIUM PRESSURE CONDENSATE
- HPC — HIGH PRESSURE CONDENSATE
- HWR — HEATING HOT WATER RETURN
- HWS — HEATING HOT WATER SUPPLY
- MU — MAKE-UP WATER
- CHWR — CHILLED WATER RETURN
- CHWS — CHILLED WATER SUPPLY
- GCR — CHILLED GLYCOL RETURN
- GCS — CHILLED GLYCOL SUPPLY
- CTR — COOLING TOWER RETURN
- CTS — COOLING TOWER SUPPLY
- FOS — FUEL OIL SUPPLY
- FOR — FUEL OIL RETURN

PIPE FITTINGS

- UNION
- STRAINER
- STRAINER WITH BLOW DOWN VALVE
- FLOW DIRECTION
- PIPE TURNED UP
- PIPE TURNED DOWN
- TEE BOTTOM TAKE-OFF
- TEE TOP TAKE-OFF
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- THERMOMETER
- AUTOMATIC AIR VENT
- CIRCULATOR PUMP
- F&T — FLOAT & THERMOSTATIC TRAP
- PIPE CAPPED
- PIPE ANCHOR

PIPE VALVES

- GATE VALVE
- GLOBE VALVE
- CHECK VALVE
- CIRCUIT SETTER
- BACKFLOW PREVENTER RPZ ASSY
- BALL VALVE
- SAFETY RELIEF VALVE
- BUTTERFLY VALVE
- ACX — TWO-WAY MOTORIZED VALVE
- ACX — THREE-WAY MOTORIZED VALVE
- PRESSURE REGULATING VALVE
- GAS COCK
- PRESSURE GAUGE WITH VALVE

CONTROLS & BALANCING

- CONTROLS WIRING
- T — WALL MOUNTED THERMOSTAT. ARROW POINTS TO DEVICE CONTROLLED
- T — UNIT MOUNTED THERMOSTAT
- T120 — THERMOSTAT, LINE VOLTAGE
- TR — THERMOSTAT, REVERSE ACTING
- TG — THERMOSTAT, WITH GUARD
- S — FAN SPEED CONTROL
- H — HUMIDISTAT
- TS — THERMAL SENSOR
- A — AQUASTAT
- PT — PRESSURE TRANSMITTER
- FS — FLOW SWITCH
- BALANCING VALVE
- DPS — DIFFERENTIAL PRESSURE SWITCH
- VD — MANUAL VOLUME DAMPER
- ACX — AUTOMATIC CONTROL DAMPER
- M — MOTOR OPERATED DAMPER
- FS1 — AIR FLOW SWITCH
- CO — CARBON MONOXIDE GAS SENSOR
- CO2 — CARBON DIOXIDE GAS SENSOR
- HVAC — CONTROL PANEL
- BAS — BAS PANEL

DRAWING NOTATIONS

- ø — PHASE OR ROUND DIAMETER
- DEMO LINE
- EXISTING LINE
- 1 — REVISION CLOUD WITH REVISION NUMBER
- POINT OF CONNECTION
- POINT OF DISCONNECT
- XXX / ### — MOTORIZED EQUIPMENT ABBREVIATION / MOTORIZED EQUIPMENT NUMBER
- XXX / ### — NON-MOTORIZED EQUIPMENT ABBREVIATION / NON-MOTORIZED EQUIPMENT NUMBER
- 1 / A101 SIM — NOTES WHEN SIMILAR TO SECTION; DETAIL NUMBER; DRAWING NUMBER
- 1 / A101 SIM — NOTES WHEN SIMILAR TO SECTION; SECTION LETTER; SHEET NUMBER WHERE SECTION VIEW IS SHOWN
- XXX / ### — RADIATION TAG; LENGTH OF RADIATION ELEMENT
- XXX / ### — REGISTER, GRILLE & DIFFUSER TAG; CFM

ABBREVIATIONS

ø	DIAMETER
A	AMPS/AMPERAGE
AA	ALL AROUND
ABV	AUTOMATIC BALANCE VALVE
ACV	MOTORIZED VALVE
AD	ACCESS DOOR
AFF	ABOVE FINISH FLOOR
AI	ANALOG INPUT
AO	ANALOG OUTPUT
APD	AIR PRESSURE DROP
ARCH	ARCHITECT(URAL)
ATC	AUTOMATIC TEMPERATURE CONTROL
AWT	AVERAGE WATER TEMPERATURE
BAS	BUILDING AUTOMATION SYSTEM
BF	BOILER FEEDWATER
BHP	BRAKE HORSEPOWER
BOD	BOTTOM OF DUCTWORK (ELEVATION)
BTU/H	BRITISH THERMAL UNITS PER HOUR
C	COMMON
CAP	CAPACITY
CFM	CUBIC FEET PER MINUTE
CKT	CIRCUIT
CM	CONSTRUCTION MANAGER
CONN.	CONNECTION
COP	COEFFICIENT OF PERFORMANCE
CP	CONTROL PANEL
db	DRY BULB TEMPERATURE
DCW	DOMESTIC COLD WATER
DDC	DIRECT DIGITAL CONTROL
DI	DIGITAL INPUT
DIA.	DIAMETER
DN	DOWN
DO	DIGITAL OUTPUT
DR	DRAIN
DWG	DRAWING
DWV	DRAIN, WASTE, VENT
DX	DIRECT EXPANSION
<E>	EXISTING
E/A	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EC	ELECTRICAL CONTRACTOR
ECON	ECONOMIZER
EDB	ENTERING DRY BULB
EER	ENERGY EFFICIENCY RATIO
EFF	EFFICIENCY
ESP	EXTERNAL STATIC PRESSURE
EWB	ENTERING WET BULB
EWT	ENTERING WATER TEMPERATURE
FA	FREE AREA
FLA	FULL LOAD AMPS
FOB	FLAT ON BOTTOM
FOT	FLAT ON TOP
FPI	FINS PER INCH
FPM	FEET PER MINUTE
FT	FEET
FVNR	FULL VOLTAGE ON-REVERSING
GAL	GALLON(S)
GC	GENERAL CONTRACTOR
GPM	GALLONS PER MINUTE
HOA	HAND-OFF-AUTOMATIC
HP	HORSEPOWER
Hz	HERTZ
ID	INSIDE DIAMETER
in	INCH(ES)
kW	KILOWATT(S)
LAT	LEAVING AIR TEMPERATURE
LDB	LEAVING DRY BULB
LF	LINEAR FEET
LRA	LOCKED ROTOR AMPS
LWB	LEAVING WET BULB
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBH	1,000 BRITISH THERMAL UNITS PER HOUR
MC	MECHANICAL CONTRACTOR
MCA	MINIMUM CIRCUIT AMPACITY
MCC	MOTOR CONTROL CENTER
MEP	MECHANICAL, ELECTRICAL, PLUMBING
MIN	MINIMUM
MMBH	MILLIONS OF BTU/H
MOCP	MAXIMUM OVERCURRENT PROTECTION
MOD	MOTOR OPERATED DAMPER
MRE	MECHANICAL ROOM EQUIPMENT
MTD	MOUNTED
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACTOR
NO	NORMALLY OPEN
NO.	NUMBER
NTS	NOT TO SCALE
O/A	OUTDOOR AIR
OAT	OUTSIDE AIR TEMPERATURE
OD	OUTSIDE DIAMETER
OED	OPEN ENDED DUCT
OIT	OPERATOR INTERFACE TERMINAL
P	PUMP
PC	PLUMBING CONTRACTOR
PD	PRESSURE DROP
PH	ELECTRICAL PHASE
PSI	POUNDS PER SQUARE INCH
R/A	RETURN AIR
RH	RELATIVE HUMIDITY
RLA	RATED LOAD AMPS
RPM	REVOLUTIONS PER MINUTE
S/A	SUPPLY AIR
SAT	SUPPLY AIR TEMPERATURE
SF	SQUARE FEET
SP	STATIC PRESSURE
SS	STAINLESS STEEL
TEMP	DEGREES FAHRENHEIT (°F) UNLESS OTHERWISE NOTED
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
UD	UNDERCUT DOOR
VB	VACUUM BREAKER
VFD	VARIABLE FREQUENCY DRIVE
VIF	VERIFY IN FIELD
WB	WET BULB TEMPERATURE
WC	WATER COLUMN
WG	WATER GAUGE
WPD	WATER PRESSURE DROP

MECHANICAL GENERAL NOTES

A. GENERAL

1. DO NOT SCALE DRAWINGS. CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS IN THE FIELD AND SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY & ALL DISCREPANCIES.
2. IT IS NOT INTENDED THAT THE DRAWINGS SHOW EVERY PIPE, FITTING OR MINOR DETAIL. SYSTEM & COMPONENTS SHALL BE INSTALLED ACCORDING TO THE INTENT AND MEANING OF CONTRACT DOCUMENTS AND IN ACCORDANCE WITH GOOD PRACTICE.
3. CONTRACTOR IS RESPONSIBLE TO PROVIDE COMPLETE AND OPERATIONAL SYSTEMS WITH FACILITIES AND SERVICES TO MEET REQUIREMENTS INDICATED AND IN ACCORDANCE WITH APPLICABLE CODES AND ORDINANCES.
4. EQUIPMENT AND COMPONENTS HAVING EQUAL PERFORMANCE CHARACTERISTICS BY OTHER MANUFACTURERS MAY BE CONSIDERED, PROVIDED DEVIATIONS IN DIMENSIONS, OPERATION AND OTHER CHARACTERISTICS DO NOT CHANGE DESIGN CONCEPT OR INTENDED PERFORMANCE AS JUDGED BY THE ENGINEER. BURDEN OF PROOF OF EQUALITY OF PRODUCTS IS ON THE CONTRACTOR.
5. CONTRACTOR IS RESPONSIBLE FOR THE SAFEKEEPING OF HIS OWN PROPERTY ON THE JOB SITE. OWNER ASSUMES NO RESPONSIBILITY FOR THE PROTECTION OF PROPERTIES AGAINST FIRE, THEFT AND ENVIRONMENTAL CONDITIONS.
6. CONTRACTOR IS RESPONSIBLE TO PROPERLY PROTECT OWNER'S PROPERTY AND EQUIPMENT FROM INJURY, AND DAMAGE TO SAME SHALL BE REPLACED BY CONTRACTOR.
7. CONTRACTOR IS TO CLEAN JOB SITE DAILY AND REMOVE FROM THE PREMISES ANY DIRT AND DEBRIS CAUSED BY THE PERFORMANCE OF THE WORK INCLUDED IN THIS CONTRACT.
8. ALL WORK TO BE PERFORMED IN A CLEAN AND WORKMANLIKE MANNER, CARE SHALL BE EXERCISED TO MINIMIZE ANY INCONVENIENCE OR DISTURBANCE TO OTHER AREAS OF THE BUILDING WHICH ARE TO REMAIN IN OPERATION.
9. ISOLATE CONSTRUCTION AREAS BY MEANS OF TEMPORARY PARTITIONS AND/OR TARPS TO KEEP DUST AND DIRT WITHIN WORK AREA.
10. CONTRACTOR IS RESPONSIBLE TO PROPERLY SECURE AREAS OF CONSTRUCTION AT THE END OF EACH WORKING DAY.
11. ALL OPENINGS TO BE CLOSED WITH TAMPER-PROOF SCREWS. NO TOOLS SHALL BE LEFT UNATTENDED AT ANY TIME.
12. ALL ROUGH OPENINGS THRU EXTERIOR WALLS SHALL BE SEALED/CAULKED WATERTIGHT WITH ELASTOMERIC SEALANT.
13. FIRE AND MOISTURE SEAL ALL DUCT AND PIPE PENETRATIONS THRU GENERAL CONSTRUCTION IN ACCORDANCE WITH DIVISION 7.
14. MOUNTING HEIGHTS FOR THERMOSTATS, EQUIPMENT ON/OFF SWITCHES, ETC., LOCATED IN HANDICAP ACCESSIBLE SPACES SHALL BE 48" TO TOP OF CONTROL UNLESS NOTED OTHERWISE BY ARCHITECT. REFER TO ARCHITECTURAL ELEVATIONS FOR FURTHER DETAILS.
15. ALL WORK IN INTERIOR FINISHED SPACES EXCEPT WHERE INDICATED IS TO BE CONCEALED ABOVE CEILING. PROVIDE ALL NECESSARY CUTTING, PATCHING, REPAINTING AND/OR REPLACEMENT OF FINISHES AS REQUIRED. PERFORM PROPER COORDINATION WITH AFFECTED TRADES.

B. QUALITY OF WORK

1. IT IS THE INTENT OF THE DRAWINGS AND SPECIFICATIONS TO OBTAIN A COMPLETE AND SATISFACTORY INSTALLATION. AN ATTEMPT HAS BEEN MADE TO SEPARATE AND DEFINE THE WORK OF THE CONTRACTOR. DRAWINGS ARE DIAGRAMMATIC, BUT MUST BE FOLLOWED AS CLOSELY AS ACTUAL CONSTRUCTION OF THE FACILITY AND WORK OF OTHER TRADES WILL PERMIT. THE DRAWINGS UTILIZE SYMBOLS AND SCHEMATIC DIAGRAMS TO INDICATE VARIOUS ITEMS OF WORK. THEREFORE, NO INTERPRETATION WILL BE MADE FROM THE LIMITATION OF SYMBOLS AND DIAGRAMS THAT ANY ELEMENTS NECESSARY FOR THE COMPLETE INSTALLATION ARE EXCLUDED. THE ENGINEER IS TO BE NOTIFIED OF ANY DISCREPANCIES, OMISSIONS, CONFLICTS, OR INTERFERENCE WHICH OCCUR BETWEEN VARIOUS DRAWINGS AND SPECIFICATIONS. IF SUCH NOTIFICATION IS NOT RECEIVED, THE INSTALLING CONTRACTOR(S) IS TO BE RESPONSIBLE FOR THEIR INTERPRETATIONS.
2. "PROVIDE" MEANS "FURNISH AND INSTALL" AND MUST INCLUDE ALL EQUIPMENT (THAT INCLUDE THE ACCESSORIES, SUPPORTS, FITTINGS AND OTHER INCIDENTAL MATERIAL NEEDED FOR THE EQUIPMENT), DEVICES, HARDWARE, MOUNTS, LABOR, RIGGING, SUBCONTRACTS, ETC., THAT RESULT IN A COMPLETE AND FUNCTIONAL PROJECT INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS REQUIRED BY CODE. MINOR ITEMS TO FINISH THE WORK SUCH AS PATCHING, BLOCKING, TRIM, TOUCH-UP PAINT, ETC., SHALL BE PROVIDED WHETHER OR NOT INDICATED IN THE CONTRACT DOCUMENTS.
3. LOCATE ALL TEMPERATURE, PRESSURE, AND FLOW MEASURING DEVICES IN ACCESSIBLE LOCATIONS IN STRAIGHT SECTIONS OF PIPE OR DUCT AS RECOMMENDED BY THE MANUFACTURER. NOTIFY ENGINEER FOR FIELD REVIEW IF CONFIGURATION WILL NOT ALLOW.
4. WHERE TWO OR MORE ITEMS OF THE SAME TYPE OF EQUIPMENT ARE REQUIRED, THE PRODUCT OF ONE MANUFACTURER IS TO BE USED.
5. ALL WORKMANSHIP, MATERIALS, AND EQUIPMENT IS TO BE GUARANTEED FOR A PERIOD OF ONE YEAR AFTER ACCEPTANCE BY THE OWNER.
6. PROVIDE IDENTIFICATION LABELS FOR NEW EQUIPMENT. AFFIX PERMANENT IDENTIFYING TAGS OR LABELS TO FANS, TERMINAL UNITS, AIR-HANDLERS ETC. IDENTIFY SYSTEM ON PIPING AND DUCTWORK MAINS AND INDICATE DIRECTION OF FLOW ON PIPING. INDICATE THE CONTROLLED EQUIPMENT ON WALL MOUNTED CONTROLS.

C. CODES/PERMITS

1. WORK IS TO BE PERFORMED IN STRICT ACCORDANCE WITH STATE RECOGNIZED BUILDING CODES, NFPA, ASHRAE, UNDERWRITERS LABORATORIES AND ALL MUNICIPAL, STATE AND OTHER AUTHORITIES, PUBLIC AND PRIVATE, HAVING JURISDICTION. REPORT ALL DISCREPANCIES WITH SUCH REGULATIONS TO ENGINEER AND DO NOT PROCEED WITH ANY WORK UNTIL WRITTEN AUTHORIZATION IS RECEIVED FROM THE ENGINEER.
2. ALL NECESSARY FEES, PERMITS, AND APPROVALS AS REQUIRED BY THE WORK OF THESE DRAWINGS AND SPECIFICATIONS IS TO BE OBTAINED AND PAID FOR BY THIS CONTRACTOR.
3. NOTHING CONTAINED IN THE SPECIFICATIONS OR INDICATED ON THESE DRAWINGS IS TO BE CONSTRUED TO CONFLICT WITH APPLICABLE PORTIONS OF ANY LAWS, ORDINANCES, REGULATIONS, OR CODES.

D. COORDINATION OF WORK

1. COORDINATE CONSTRUCTION OF ALL MECHANICAL WORK WITH ARCHITECTURAL, STRUCTURAL, CIVIL, PLUMBING, AND ELECTRICAL WORK - NEW OR EXISTING.
2. CONTRACTOR IS RESPONSIBLE TO PRODUCE FOR REVIEW AND APPROVAL COORDINATION DRAWINGS OF ALL TRADES BEFORE COMMENCEMENT OF INSTALLATION. ANY INSTALLATION WORK COMPLETED BEFORE REVIEW AND APPROVAL OF COORDINATION DRAWINGS IS AT CONTRACTORS OWN RISK AND CHANGE ORDERS SHALL NOT BE ENTERTAINED FOR ANY REQUIRED REWORK.
3. WHEN MECHANICAL WORK (HVAC, PLUMBING, FIRE PROTECTION, ETC.) IS SUBCONTRACTED, IT IS TO BE THE MECHANICAL CONTRACTOR'S RESPONSIBILITY TO COORDINATE SUBCONTRACTORS AND THE ASSOCIATED CONTRACTS. WHEN DISCREPANCIES ARISE PERTAINING TO WHICH CONTRACTOR PROVIDES A PARTICULAR ITEM OF THE MECHANICAL CONTRACT OR WHICH CONTRACTOR PROVIDES FINAL CONNECTIONS FOR A PARTICULAR ITEM OF THE MECHANICAL CONTRACT, IT MUST BE BROUGHT TO THE ATTENTION OF THE MECHANICAL CONTRACTOR, WHOSE DECISION IS FINAL.
4. THE LOCATIONS OF ALL ITEMS SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS ARE APPROXIMATE AND NOT DEFINITELY FIXED BY DIMENSIONS. THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS MUST BE DETERMINED BY THE PROJECT SITE CONDITIONS. CASES WHERE THERE ARE MAJOR CONFLICTS THE CONTRACTOR MUST NOTIFY THE ENGINEER FOR FIELD REVIEW. DO NOT SCALE THE DRAWINGS.
5. PROVIDE LOCATIONS OF REQUIRED ACCESS PANELS FOR INSTALLATION IN WALLS AND CEILINGS TO SERVICE VALVES, DAMPERS, AND OTHER CONCEALED MECHANICAL EQUIPMENT. GENERAL CONTRACTOR IS TO FURNISH & INSTALL ACCESS PANELS. COORDINATE ACCESS DOOR LOCATIONS WITH ARCHITECT AND INTERIOR DESIGNER.
6. COORDINATE LOCATIONS AND SIZES OF ALL FLOOR, WALL, AND ROOF OPENINGS WITH ALL OTHER TRADES INVOLVED. ALL OPENINGS IN FIRE WALLS, FLOORS AND RATED PARTITIONS FOR PIPING, CONDUIT, ETC., ARE TO BE FIRE STOPPED WITH A UL APPROVED SYSTEM.

E. PIPING

1. SEE PIPING PLAN SHEETS FOR PIPING GENERAL NOTES.

F. DUCTWORK

1. SEE DUCTWORK PLANS SHEETS FOR DUCTWORK GENERAL NOTES.

G. WARRANTY

1. GUARANTEE ALL WORK PERFORMED AND MATERIALS AND EQUIPMENT INSTALLED TO THE FULL EXTENT REQUIRED BY THE DRAWINGS AND SPECIFICATIONS TO BE FREE FROM INHERENT DEFECTS OF MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE.
2. REPLACE ANY MATERIAL AND EQUIPMENT PRIOR TO THE FINAL ACCEPTANCE WHICH IS CORRODED OR OTHERWISE DAMAGED THROUGH THE MECHANICAL CONTRACTOR'S FAILURE TO PROPERLY OPERATE AND MAINTAIN THE INSTALLATION DURING CONSTRUCTION OR RETESTING.
3. KEEP THE WORK IN REPAIR AND REPLACE ANY DEFECTIVE MATERIALS, EQUIPMENT, OR WORKMANSHIP UPON NOTICE FROM THE ENGINEER OR OWNER'S REPRESENTATIVE FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE.

H. INSURANCE

1. THE CONTRACTOR MUST, DURING THE LIFE OF THE CONTRACT, MAINTAIN IN FORCE, SUCH INSURANCE AS IS REQUIRED OF THE PRIME CONTRACTOR IN THE GENERAL CONDITIONS OF THE CONTRACT, AND IS TO FURNISH THE PRIME CONTRACTOR AND THE OWNER WITH CERTIFICATION OF SUCH INSURANCE BEFORE BEGINNING WORK ON THIS SECTION OF CONTRACT.

I. DOCUMENTATION

1. PROVIDE AN ENTIRE SET OF PROJECT CLOSE-OUT DOCUMENTS TO OWNER PER CONTRACT DOCUMENTS. PACKAGE MUST CONTAIN ENTIRE O&M MANUALS WITH PROJECT SUBMITTALS AND SUBMITTAL COMMENTS, TAB REPORTS, TEST REPORTS, AND RECORD DRAWINGS, PLUS ADMINISTRATIVE DOCUMENTS.

THE HVAC SYSTEM CONSISTS OF A LOW TEMPERATURE LP GAS CONDENSING HYDRONIC BOILER, UNIT HEATERS, CABINET HEATERS, FINTUBE RADIATION, AND HEATING COILS. AN ENERGY RECOVERY VENTILATOR SERVES THE LAB AREA. EXHAUST FANS, EXHAUST LOUVERS AND INTAKE LOUVERS ARE SIZED TO VENTILATE THE ROOMS AS FOLLOWS:

CHEMICAL FEED ROOM = 10 AIR CHANGES PER HOUR (ACH)
ELECTRICAL ROOM = 12 ACH
BLOWER ROOM = 10 ACH
BASEMENT = 6 ACH

AS THE FACILITY IS TYPICALLY UNMANNED THERMOSTATS WILL BE SET AT 55F IN MOST SPACES. LAB AREA AND CHEMICAL FEED ROOM THERMOSTATS WILL BE SET AT 68F.

BUILDING CODES AND STANDARDS:
2020 VERMONT COMMERCIAL BUILDING ENERGY STANDARDS
2025 VERMONT FIRE AND BUILDING SAFETY CODE
2025 VERMONT PLUMBING RULES

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03.26.26

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PROFESSIONAL SEAL

NO.	DESCRIPTION	DATE	BY	CKD

WAITSFIELD
WASTEWATER
TREATMENT FACILITY

4144 MAIN ST
WAITSFIELD, VT 05673

SHEET TITLE

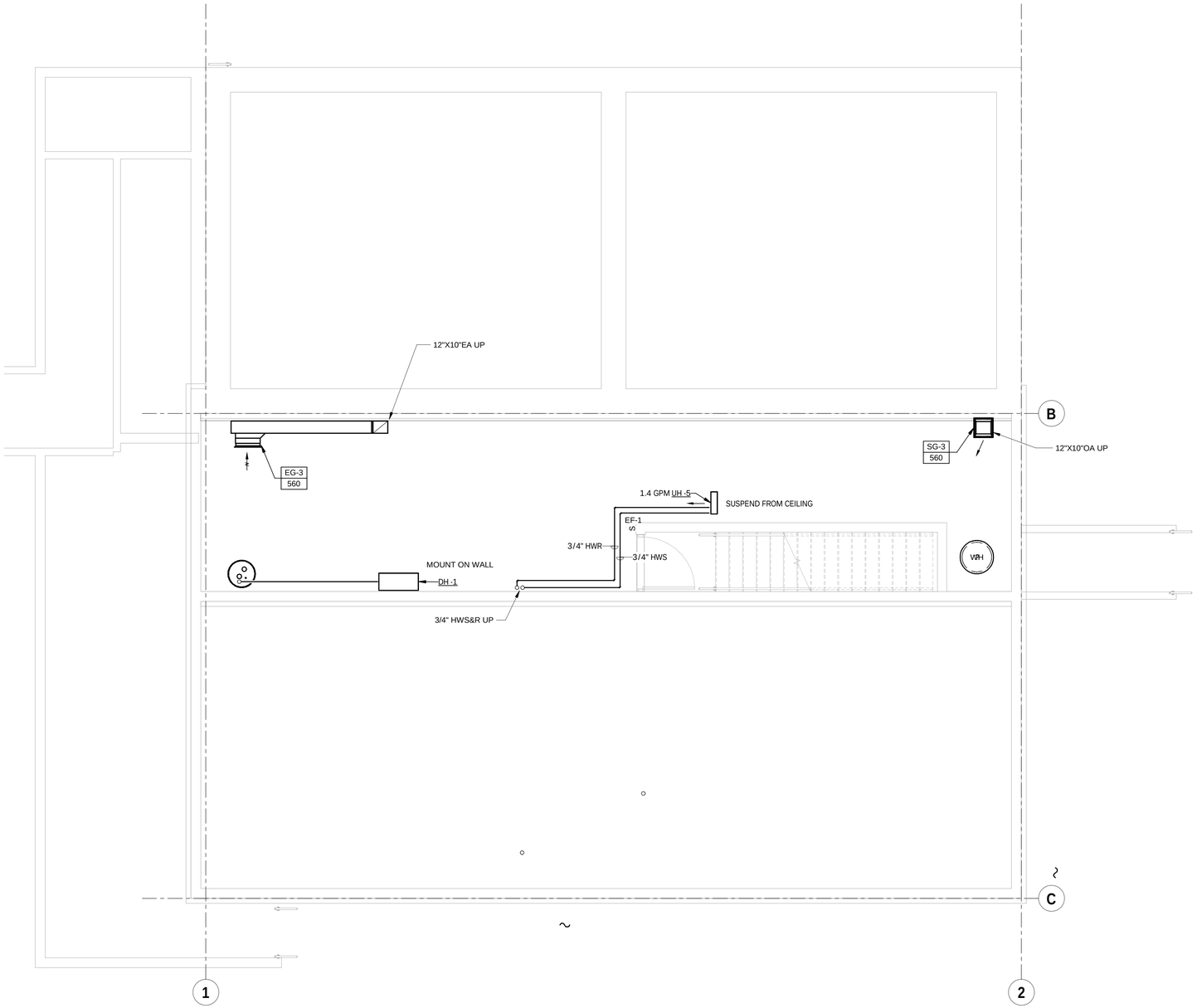
MECHANICAL
LEGENDS & NOTES

DRAWN BY	DATE
Author	01/23/23
CHECKED BY	D&K PROJECT #
Checker	227947
PROJ. ENG.	D&K ARCHIVE #
Designer	

SHEET NUMBER

M0.1

SHEET OF



BASEMENT HVAC PLAN

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

MECHANICAL DUCTWORK NOTES

1. SEE SHEET M0.1 FOR MECHANICAL GENERAL NOTES.
2. FABRICATE DUCTWORK FROM FIELD VERIFIED DIMENSIONS. FABRICATE DUCTWORK IN ACCORDANCE WITH SMACNA GUIDELINES (LATEST EDITION). PRIOR TO FABRICATING DUCTWORK VERIFY CEILING CLEARANCES WITH STRUCTURE, PIPES, ETC. COORDINATE THE INSTALLATION OF DUCTWORK WITH SPRINKLER PIPING. INSTALL DUCTWORK PRIOR TO INSTALLING ANY PIPING AND ELECTRICAL WORK TO REDUCE CONFLICTS.
3. ALL DUCTWORK IS TO BE FABRICATED FROM G-90 GALVANIZED SHEET METAL, MINIMUM 24 GA. THICKNESS, IN LOCK-FORMING QUALITY, UNLESS SPECIFIED OTHERWISE.
4. ALL DUCTWORK DIMENSIONS SHOWN ON PLANS ARE CLEAR INTERNAL SIZES.
5. ALL SUPPLY, RETURN, EXHAUST, AND OUTSIDE AIR DUCTWORK SHALL BE FABRICATED AT A MINIMUM CLASS OF 2 INCH WATER GAUGE SEAL CLASS 'A'.
6. ALL ROUND DUCTWORK TO BE SPIRAL ROUND.
7. ALL DUCT SEALANT TO BE WATER BASED LOW VOC.
8. PROVIDE FLEXIBLE CONNECTIONS BETWEEN MECHANICAL EQUIPMENT AND DUCTWORK.
9. ALL SUPPLY AND O/A DUCT WORK TO BE INSULATED TO MEET THE ENERGY CONSERVATION CODE ADOPTED BY THE STATE. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
10. COORDINATE THE LOCATION OF CEILING AIR INLETS AND OUTLETS WITH LIGHTS, SPRINKLER HEADS, LIFE SAFETY DEVICES AND WITH ARCHITECT'S REFLECTED CEILING PLAN.
11. PROVIDE ADJUSTABLE VOLUME DAMPERS AT ALL BRANCH DUCT TAKE OFFS. "RAP-IT" STYLE VOLUME DAMPERS AND HARDWARE IS NOT PERMITTED. FOR LOW FLOW BRANCHES, PROVIDE EDGE SEALED DAMPERS TO OBTAIN PROPER FLOW BALANCING.
12. FLEXIBLE AIR DUCTS TO BE NOT OVER 6 FEET LONG WITH APPROVED TRANSITIONS AND SMOOTH BENDS TO TERMINAL CONNECTIONS.
13. PITCH DUCT CONNECTIONS TO LOUVERS TO DRAIN TOWARD LOUVER.
14. WATERPROOF BOTTOM AND SIDES OF ALL INTAKE, EXHAUST AND RELIEF PLENUMS.

PROGRESS DWGS
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WASTEWATER
TREATMENT FACILITY

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WAITSFIELD, VT 05673

SHEET TITLE

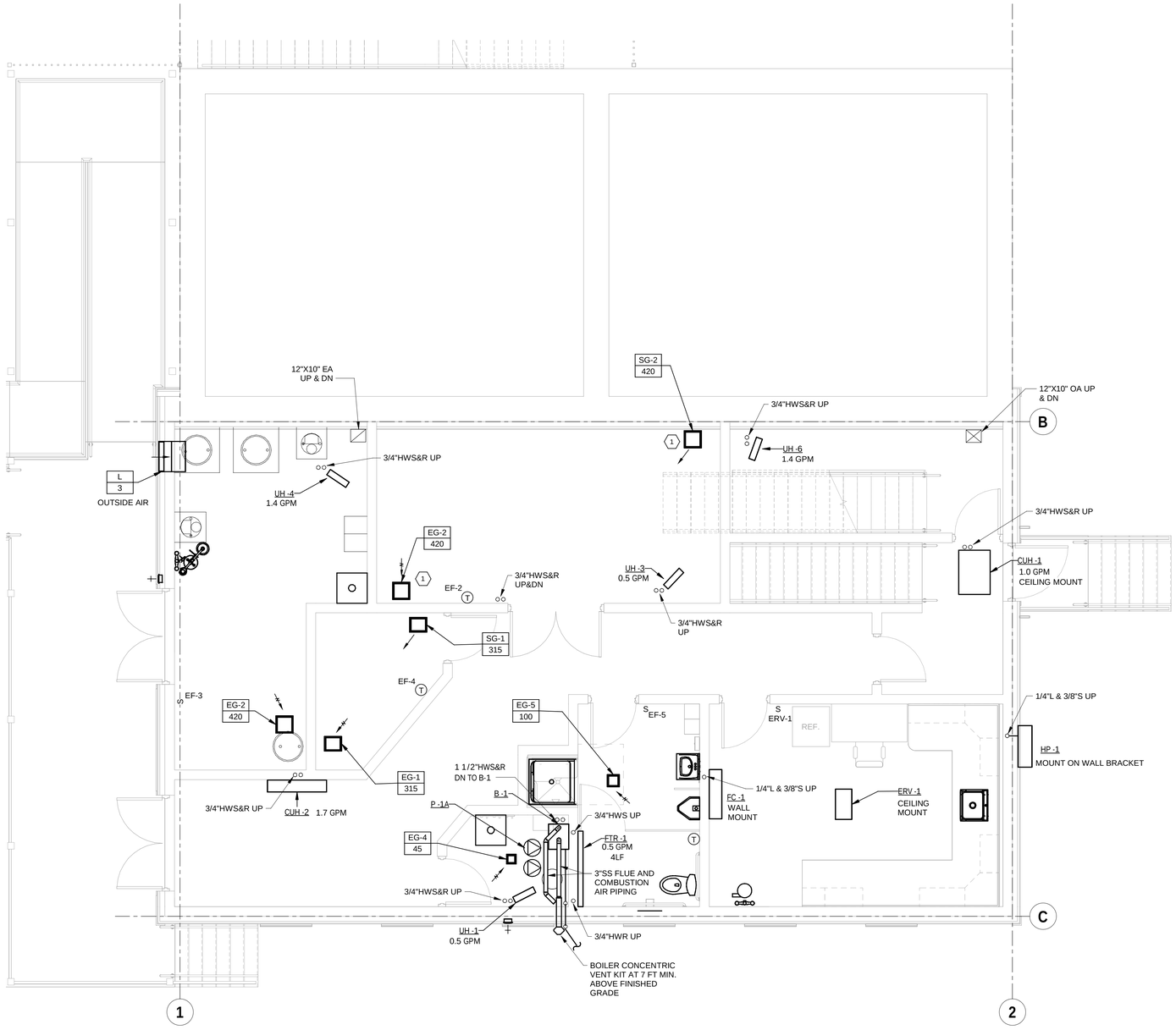
HVAC PLAN - BASEMENT

DRAWN BY	DATE
JJC	01/23/23
CHECKED BY	D&K PROJECT #
JHP	227947
PROJ. ENG.	D&K ARCHIVE #
JJC	

SHEET NUMBER

M1.1

SHEET OF



FIRST FLOOR HVAC PLAN

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

KEY NOTES:

1. PROVIDE FIRE DAMPER IN FLOOR ASSEMBLY OF MEZZANINE. SEE FIRE DAMPER DETAIL.

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SHEET TITLE

HVAC PLAN - FIRST FLOOR

DRAWN BY	DATE
Author	01/07/26
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Checker	227947
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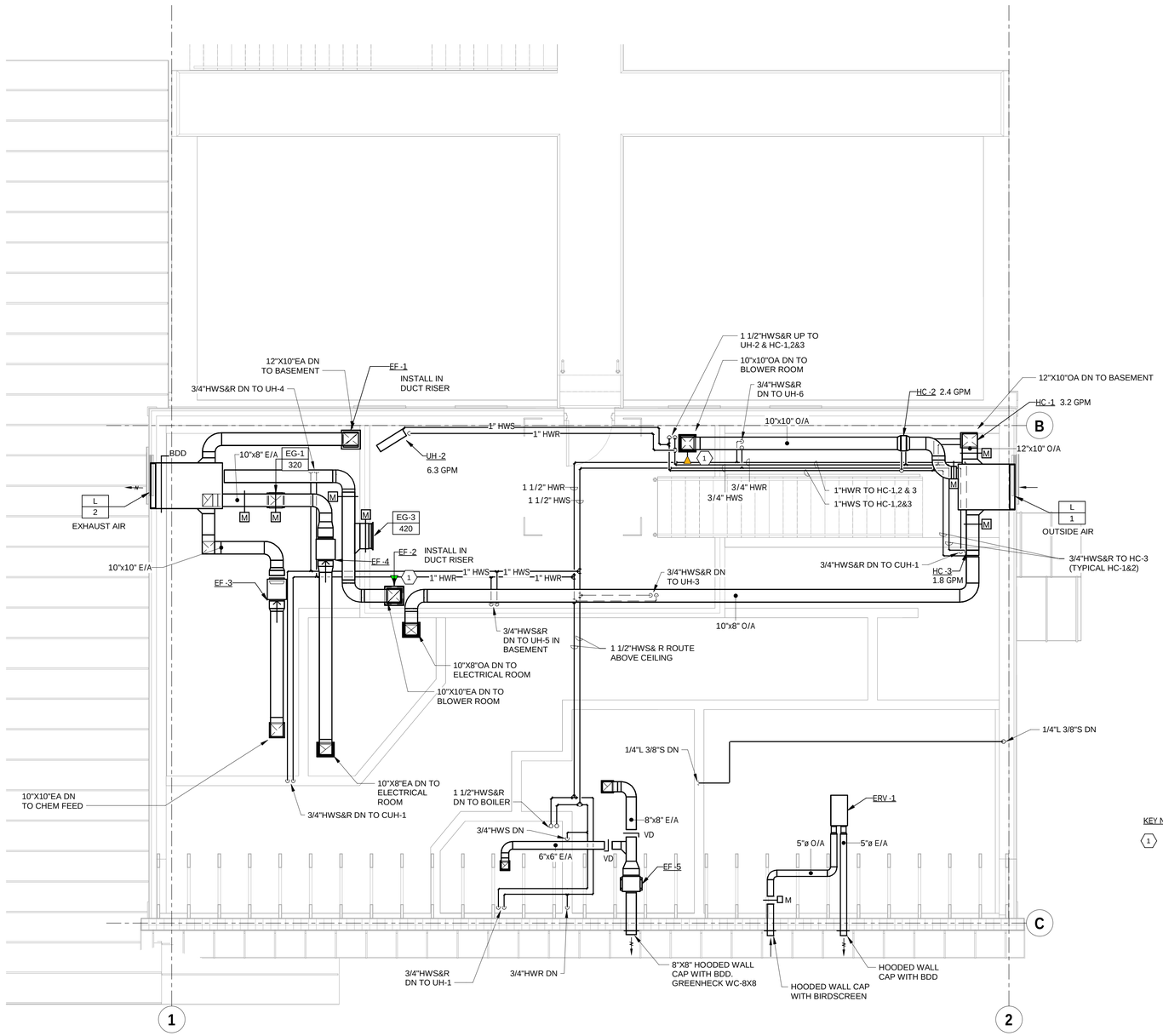
Designer	

SHEET NUMBER

M1.2

SHEET OF



KEY NOTES:

1. PROVIDE FIRE DAMPER IN FLOOR ASSEMBLY OF MEZZANINE. SEE FIRE DAMPER DETAIL.

MEZZANINE HVAC PLAN

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

PROGRESS DWGS
NOT FOR CONSTRUCTION 03.26.26

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NO.	DATE	DESCRIPTION	BY	CKD

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WASTEWATER
TREATMENT FACILITY

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WAITSFIELD, VT 05673

SHEET TITLE

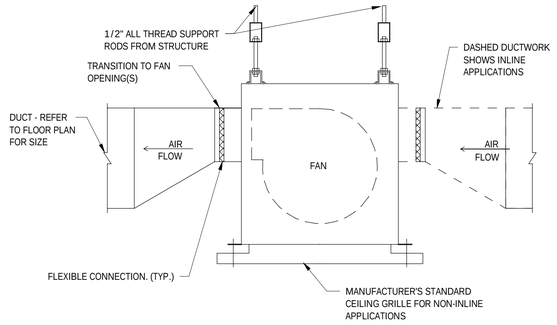
HVAC PLAN -
MEZZANINE

DRAWN BY	DATE
JJC	01/07/26
CHECKED BY	D&K PROJECT #
JHP	227947
PROJ. ENG.	D&K ARCHIVE #
JJC	

SHEET NUMBER

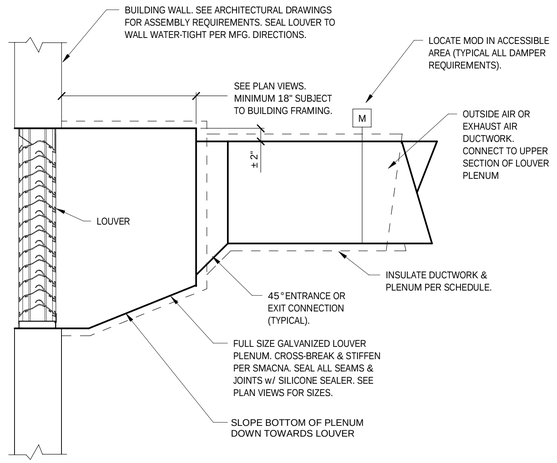
M1.3

SHEET OF



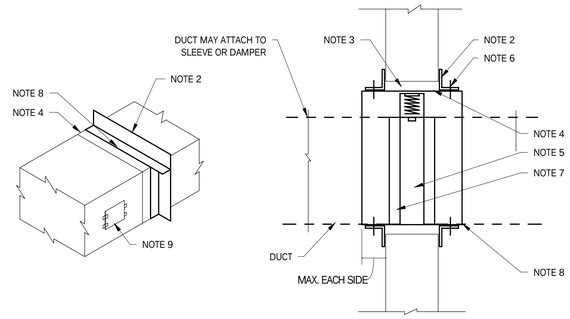
CABINET FAN DETAIL

SCALE: NOT TO SCALE



LOUVER PLENUM DETAIL

SCALE: NOT TO SCALE



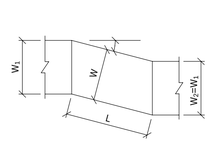
NOTES:

1. VERTICAL POSITION IS SHOWN. HORIZONTAL INSTALLATION THROUGH FLOOR ASSEMBLY IS SIMILAR.
2. RETAINING ANGLES:
   - MINIMUM 1½"x1½"x0.054 (16GA.)
   - RETAINING ANGLES MUST LAP STRUCTURAL OPENING 1" MINUMUM AND COVER CORNERS OF OPENINGS.
3. CLEARANCE: 1/8" PER LINEAR FOOT BOTH DIMENSIONS.
4. STEEL SLEEVE
5. APPROVED FIRE DAMPER
6. SECURE RETAINING ANGLES TO SLEEVE ONLY ON 8" CENTERS MINIMUM.
7. SECURE DAMPER TO SLEEVE ON 8" CENTERS.
8. CONNECT DUCT TO SLEEVE.
9. INSTALL ACCESS DOOR.
10. ALL SIZES AND DIMENSIONS TO BE AS PER SMACNA AND THE FIRE DAMPER MANUFACTURERS' DETAILS AND INSTRUCTIONS AS TESTED AND APPROVED BY U.L., MUST BE USED.

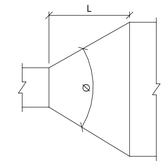
TYPICAL FIRE DAMPER DETAIL

SCALE: NOT TO SCALE

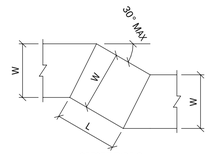
OFFSET 2 AND 3 AND TRANSITIONS MAY HAVE EQUAL OR UNEQUAL INLET AND OUTLET AREAS. TRANSITIONS MAY CONVERT DUCT PROFILES TO ANY COMBINATION FOR RECTANGULAR, ROUND OR FLAT OVAL SHAPES



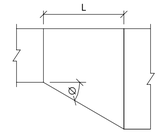
OFFSET TYPE 1 (ANGLED)



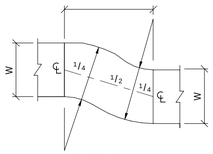
CONCENTRIC TRANSITION ØMAX. 45°DIVERGING, 60°CONVERGING



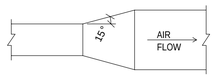
OFFSET TYPE 2 (MITERED)



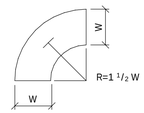
ECCENTRIC TRANSITION ØMAX. 30° (EXCEPT 45° IS PERMITTED AT ROUND TO FLAT OVAL)



OFFSET TYPE 3 (RADIUSSED OR OGEE)



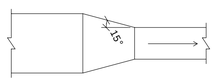
DIVERGING FLOW



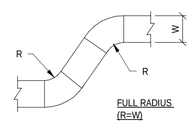
RADIUS ELBOW

NOTE:

90 DEGREE ELBOW SHOWN SIMILAR RADIUS CONSTRUCTION FOR ALL ANGLES



CONTRACTING FLOW



FULL RADIUS (R=W)

DUCTWORK TRANSITION SCHEMATICS

SCALE: NOT TO SCALE

PROGRESS DWGS
NOT FOR CONSTRUCTION 03.26.26

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PROFESSIONAL SEAL

NO.	DATE	DESCRIPTION	BY	CKD

WAITSFIELD
WASTEWATER
TREATMENT FACILITY

4144 MAIN ST
WAITSFIELD, VT 05673

SHEET TITLE

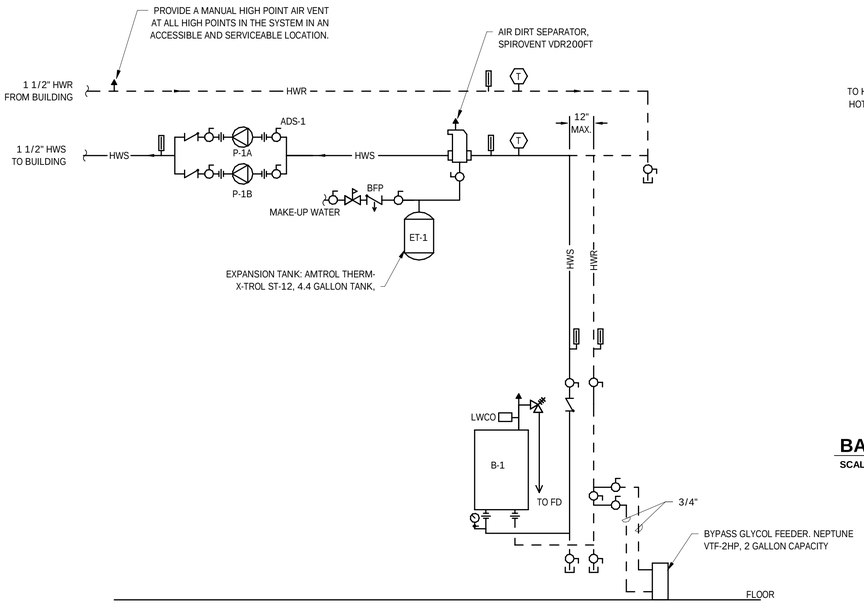
MECHANICAL DETAILS

DRAWN BY	DATE
Author	01/23/23
CHECKED BY	D&K PROJECT #
Checker	227947
PROJ. ENG.	D&K ARCHIVE #
Designer	

SHEET NUMBER

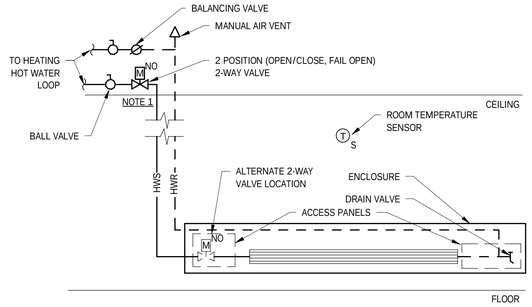
M5.1

SHEET OF



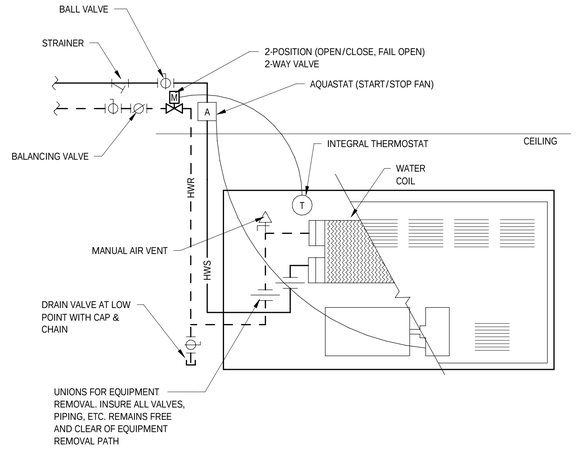
BOILER PIPING SCHEMATIC

SCALE: 12" = 1'-0"



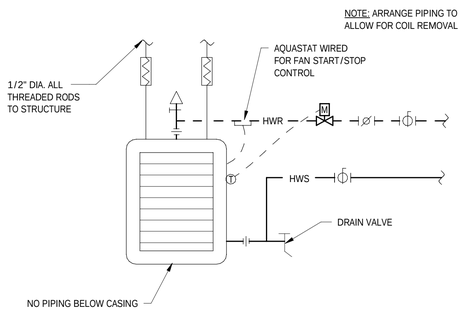
BASEBOARD & FIN TUBE RADIATION DETAIL

SCALE: NOT TO SCALE



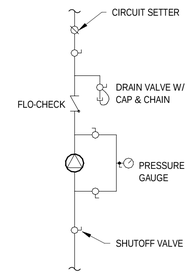
CABINET UNIT HEATER DETAIL

SCALE: NOT TO SCALE



UNIT HEATER DETAIL - DK

SCALE: NOT TO SCALE



TYPICAL CIRCULATOR PIPING DETAIL

SCALE: NOT TO SCALE

PROGRESS DWGS
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NO.	DATE	DESCRIPTION	BY	CKD

WAITSFIELD
WASTEWATER
TREATMENT FACILITY

4144 MAIN ST
WAITSFIELD, VT 05673

SHEET TITLE

MECHANICAL DETAILS

DRAWN BY	DATE
Author	03/16/26
CHECKED BY	D&K PROJECT #
Checker	227947
PROJ. ENG.	D&K ARCHIVE #
Designer	

SHEET NUMBER

M5.2

SHEET OF

DUCTWORK INSULATION SCHEDULE

APPLICATION	TYPE (NOTE 7)	THICKNESS	DENSITY	JACKET	REMARKS
EXHAUST DUCTWORK WITH 10 FT OF WALL LOUVER	FIBERGLASS WRAP	1.5" (MIN. R=4.0)	0.75 PCF	FOIL FACED	-
OUTSIDE AIR DUCT FROM LOUVER PLENUM TO DUCT COIL	FIBERGLASS WRAP	3.0" (MIN. R=8.0)	0.75 PCF	FOIL FACED	-
LOUVER PLENUMS	FIBERGLASS BOARD	3" (MIN. R=12.0)	-	FOIL FACED	-

NOTES:
1. REFER TO SPECIFICATIONS.

GRILLES, REGISTERS & DIFFUSERS

TAG	BASIS OF DESIGN MANUFACTURER	NECK SIZE	CFM	TYPE & BASIS OF DESIGN MODEL	REMARKS
EG-1	PRICE	12"x10"	155 - 315	EXHAUST GRILLE SURFACE MOUNT/630L	--
EG-2	PRICE	12"x12"	320 - 420	EXHAUST GRILLE SURFACE MOUNT/630L	--
EG-3	PRICE	20"x10"	425 - 550	EXHAUST DIFFUSER DUCT MOUNT/630L	--
EG-4	PRICE	6"x6"	0 - 75	EXHAUST GRILLE SURFACE MOUNT/630L	--
EG-5	PRICE	8"x8"	80 - 150	EXHAUST GRILLE SURFACE MOUNT/630L	--
SG-1	PRICE	12"x10"	0 - 320	SUPPLY DIFFUSER SIDEWALL SURFACE MOUNT/620L	--
SG-2	PRICE	12"x12"	325 - 420	SUPPLY DIFFUSER SIDEWALL SURFACE MOUNT/620L	--
SG-3	PRICE	14"x14"	425 - 550	SUPPLY DIFFUSER SIDEWALL SURFACE MOUNT/620L	--

NOTES:
1. PROVIDE SQUARE TO ROUND REGISTER BOX. SEAL COLLAR PERIMETER CONNECTION TO DIFFUSER w/ DUCT SEALER.
2. CONTRACTOR TO SUPPORT ALL CEILING PAD CUT-IN STYLE RGD'S FROM STRUCTURE OR T-BAR FRAMING. DO NOT SUPPORT FROM CEILING PADS.
3. REFER TO PLAN VIEWS FOR DISCHARGE PATTERNS. ALL PATTERNS ARE 4-WAY EXCEPT WHERE SHOWN.

ENERGY RECOVERY UNIT SCHEDULE

TAG	LOCATION	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	WEIGHT (LBS)	MOTORS						SUMMER ENERGY SAVINGS	WINTER ENERGY SAVINGS	ELECTRICAL					REMARKS
					SUPPLY FAN			EXHAUST FAN										
					AIRFLOW	WATTS	E.S.P.	CFM	WATTS	ESP	TOTAL EFFECT.	TOTAL EFF.	VOLTS	PHASE	HZ	MCA	MOCP	
ERV-1	LAB	PANASONIC	WHISPERCOMFORT 60FV-06VE1	21	60	39	0.10 in-wg	60	39	0.10 in-wg	60	73	115	1	60	15	15 A	

NOTES:
1. SINGLE POINT POWER FEED.
2. FUSED DISCONNECT.

FAN SCHEDULE

TAG	Location	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	TYPE	FLOW (CFM)	S.P. (IN)	RPM	BHP	MAX (DBA)	MOTOR				WEIGHT (LBS)	REMARKS
										HP	VOLTS	PHASE	AMPS		
EF-1	Basement	Greenheck	SQ-95-VG	Direct Drive Centrifugal Inline Fan	560	0.50 in-wg	1644	0.12 hp	58	0.17 hp	115 V	1	2.2 A	43	ALL
EF-2	Blower Room	Greenheck	SQ-95	Direct Drive Centrifugal Inline Fan	450	0.50 in-wg	1550	0.1 hp	57	0.13 hp	115 V	1	2 A	39	ALL
EF-3	Chemical Feed	Greenheck	SQ-90-VG	Direct Drive Centrifugal Inline Fan	420	0.38 in-wg	1508	0.06 hp	53	0.1 hp	115 V	1	1.4 A	42	ALL
EF-4	Electrical Room	Greenheck	SQ-90-VG	Direct Drive Centrifugal Inline Fan	320	0.38 in-wg	1386	0.05 hp	51	0.1 hp	15 V	1	1.4 A	42	ALL
EF-5	Bathroom Utility	Greenheck	CSP-A200	Inline Cabinet Fan	145	0.40 in-wg	825	0.07 hp	35	0.1 hp	115 V	1	0.46 A	23	ALL

NOTES:
ADD 1" FILTER HOUSING AT FAN INLETS. PROVIDE 1" THICK MERV 8 FILTER

LOUVER SCHEDULE

TAG	TYPE	Width	Height	APPLICATION	SCREEN	FRAME	CFM	MATERIAL	FINISH	FREE AREA	VELOCITY	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	REMARKS
L-1	DRAINABLE BLADE	3' - 0"	3' - 0"	INTAKE	BIRDSCREEN	4" HEAVY GAUGE	1295	ALUMINUM	KYNAR	4.51 SF	287 FPM	GREENHECK	ESJ-401	
L-2	DRAINABLE BLADE	3' - 0"	3' - 0"	EXHAUST	BIRDSCREEN	4" HEAVY GAUGE	1710	ALUMINUM	KYNAR	4.51 SF	379 FPM	GREENHECK	ESJ-401	
L-3	DRAINABLE BLADE	2' - 0"	2' - 0"	INTAKE	BIRDSCREEN	4" HEAVY GAUGE	420	ALUMINUM	KYNAR	1.73 SF	243 FPM	GREENHECK	ESJ-401	

NOTES:
1. PROVIDE COLOR CHART TO ARCHITECT FOR COLOR SELECTION

DEHUMIDIFIER SCHEDULE

TAG	LOCATION	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	DEHUMIDIFIER LOAD (GALS/DAY)	Full Load Current	Watts	ELECTRICAL			REMARKS
							VOLTS	PHASE	HZ	
DH-1	BASEMENT	BROAN	B120DHV	15.1	7 A	840 W	115 V	1	60 Hz	

HEAT PUMP, SPLIT TYPE OUTDOOR UNIT SCHEDULE

TAG	MATCHED UNIT TAG	LOCATION	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	COOLING CONDITION					HEATING				FAN AIRFLOW	ELECTRICAL				REFRIGERANT	SOUND (DBA)	WEIGHT (LBS)	REMARKS
					COOLING CAPACITY (TONS)	EAT		EFFICIENCY		HEATING CAPACITY	EAT		COP		VOLTS	PHASE	HZ	MCA				
						DB	WB	EER2	SEER2		DB	WB										
HP-1	FC-1	EXTERIOR WALL	MITSUBISHI	MUZ-FX09NL	0.75 ton	95 °F	75 °F	18.4	33.1	12,000 Btu/h	47 °F	43 °F	4.6	1,815 CFM	208 V	1	60 Hz	14.0 A	R454B	49	89	

NOTES:
1. 1/4" REFRIGERANT LIQUID AND 3/8" REFRIGERANT GAS CONNECTIONS
2. INCLUDE WALL MOUNTING BRACKET
3. REFRIGERANT IS R454B. ESTIMATED TOTAL CHARGE IS 2.12 LB.
4. ALL STARTERS FOR HVAC EQUIPMENT WHICH ARE NOT FACTORY MOUNTED SHALL BE FURNISHED UNDER DIVISION 23, AND INSTALLED UNDER DIVISION 26. ALL DISCONNECTS SHALL BE FURNISHED AND INSTALLED BY DIVISION 26.

HEAT PUMP, SPLIT TYPE INDOOR UNIT SCHEDULE

TAG	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	COOLING PERFORMANCE			HEATING PERFORMANCE			CFM	QTY	E.S.P.	POWER (WATTS)	VOLTS	PHASE	AMPS	HZ	WEIGHT	SOUND (DBA)	REMARKS
			CAPACITY	EAT		CAPACITY	EAT												
				DB	WB		DB	WB											
FC-1	MITSUBISHI	MSZ-FX09NL	9,000.0 Btu/h	95 °F	75 °F	12000.0 Btu/h	47 °F	45 °F	526 CFM	1	0.00 in-wg	40 W	208 V	1	1.0 A	60 Hz	31.00 lbf	44	

NOTES:
1. FAN DATA ALL AT HIGH SPEED
2. 1/4" REFRIGERANT LIQUID AND 3/8" REFRIGERANT GAS CONNECTIONS
3. PROVIDE WIRED WALL MOUNT CONTROLS
4. PROVIDE ALL LINE SETS, FILTERS, DRYERS, CONDENSATE DRAIN FOR A COMPLETE PACKAGE
3. HEAT PUMP FAN MOTOR WAS MULTIPLE SPEEDS. DURING NORMAL COOLING OR HEATING OPERATION, THE FAN SPEED MODULATES TO MEET THE HEATING AND COOLING LOAD.
4. MECHANICAL CONTRACTOR TO FURNISH AN NECESSARY SEPARATE MOTOR STARTERS FOR MECHANICAL EQUIPMENT. STARTERS SHALL IN INSTALLED BY THE ELECTRICAL CONTRACTOR, SEE ELECTRICAL DRAWINGS FOR SEPARATE DISCONNECTS PROVIDED BY THE ELECTRICAL CONTRACTOR FOR ELECTRICALLY POWERED MECHANICAL EQUIPMENT.

SEQUENCE OF OPERATION:

BOILER B-1 SHALL BE FURNISHED WITH AN INTEGRAL CONTROLLER. SPACE THERMOSTATS SHALL ACTIVATE THE BOILER ON A HEAT DEMAND AND ENERGIZE HEATING PUMPS. SET OUTDOOR RESET CURVE TO OPERATE BETWEEN 120F HWS TEMPERATURE AT 30F OUTSIDE AIR TEMPERATURE, AND 80F HWS TEMPERATURE AT 60F OUTSIDE AIR TEMPERATURE.

PUMPS P-1A & 1B SHALL BE ACTIVATED BY THE BOILER CONTROLLER. PROVIDE A PUMP CONTROLLER TO START THE STANDBY PUMP UPON FAILURE OF THE PRIMARY PUMP AND ROTATE PUMPS FOR EQUAL RUNTIME. PUMP SPEED SHALL BE PROGRAMMED TO RESPOND TO HEATING SYSTEM DEMAND. SET AT SELF-ADJUSTING PROPORTIONAL PRESSURE MODE.

EXHAUST FAN EF-1 BASEMENT, EF-3 CHEMICAL FEED ROOM AND EF-5 BATHROOM SHALL BE CONTROLLED BY A MANUAL WALL SWITCH WITH TIMER FUNCTION. WHEN FAN IS TURNED ON MOTORIZED DAMPER NEAR INTAKE LOUVER SHALL OPEN. PROVIDE DAMPER ACTUATOR WITH END SWITCH.
EXHAUST FAN EF-2 BLOWER ROOM AND EF-4 ELECTRICAL ROOM SHALL BE CONTROLLED BY COOLING THERMOSTATS. WHEN FAN IS TURNED ON MOTORIZED DAMPER NEAR INTAKE LOUVER SHALL OPEN. PROVIDE DAMPER ACTUATOR WITH END SWITCH.

ENERGY RECOVERY VENTILATOR ERV-1 IN LAB SHALL BE CONTROLLED BY A MANUAL WALL SWITCH WITH TIMER FUNCTION.

TWO WAY ZONE VALVES AT UNIT HEATERS AND CABINET UNIT HEATERS SHALL BE CONTROLLED BY INTEGRAL THERMOSTATS.

TWO WAY ZONE VALVE AT FINTUBE RADIATION FTR-12 SHALL BE CONTROLLED BY A WALL MOUNTED THERMOSTAT.

HEATING COILS SHALL BE CONTROLLED BY TEMPERATURE SENSORS LOCATED IN OUTSIDE AIR DUCTS DOWNSTREAM FROM COILS. WHEN DISCHARGE AIR TEMPERATURE IS 50F OR BELOW TWO WAY ZONE VALVE SHALL OPEN. WHEN DISCHARGE AIR TEMPERATURE RISES TO 70F ZONE VALVE SHALL CLOSE.

MOTORIZED DAMPERS AT EF-2 & EF-4 SHALL BE CONTROLLED BY AN OUTDOOR AIR TEMPERATURE SENSOR. WHEN OUTSIDE AIR IS 45F (ADJUSTABLE) OR LOWER DAMPERS AT EG-1 AND EG-3 SHALL OPEN AND DAMPERS DOWNSTREAM SHALL CLOSE. WHEN COOLING THERMOSTATS FOR EF-2 & EF-4 TURN ON FANS EXCESS HEAT FROM THE BLOWER AND ELECTRICAL ROOM SHALL DISCHARGE INTO THE MEZZANINE SPACE.

HEAT PUMP HP-1 AND FAN COIL FC-1 SHALL BE CONTROLLED BY A WIRED THERMOSTAT FURNISHED WITH THE HEAT PUMP.

DEHUMIDIFIER DH-1 SHALL BE CONTROLLED BY A ROOM HUMIDISTAT. SET POINT SHALL BE 55%RH (ADJUSTABLE).

PROGRESS DWGS
NOT FOR CONSTRUCTION 03.26.26

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PROFESSIONAL SEAL

NO.	DATE	DESCRIPTION	BY	CKD

WAITSFIELD
WASTEWATER
TREATMENT FACILITY

4144 MAIN ST
WAITSFIELD, VT 05673

SHEET TITLE

MECHANICAL SCHEDULES

DRAWN BY	DATE
JJC	01/23/23
CHECKED BY	D&K PROJECT #
JHP	227947
PROJ. ENG.	D&K ARCHIVE #
JJC	

SHEET NUMBER

M6.1

SHEET OF

BOILER SCHEDULE

TAG	LOCATION	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	FUEL	HEATING (MBH)		WATER				ELECTRICAL				OPERATING WEIGHT (LBS)	REMARKS
					INPUT	OUTPUT	EWT	LWT	GPM	WPD (FT)	FLA	VOLTS	HZ	PH		
B-1	UTILITY ROOM	WEIL MCLAIN	SIMPLICITY 150C	PROPANE	150.0	139	100 °F	120 °F	12	5	11	120	60	1	131	

NOTES:
1. 3"Ø VENT AND COMBUSTION AIR CONNECTIONS. 3/4" WATER CONNECTIONS. 1/2" GAS CONNECTION.
2. DOE SEASONAL EFFICIENCY (AFUE) IS 95%. SEALED COMBUSTION.
3. WALL MOUNTED TO WALL STUDS.
4. UL & ASME RATED.
5. SERVICE CLEARANCES: FRONT 24", SIDES 3", TOP 15", BOTTOM 12".
6. PROVIDE MANUFACTURER AUTHORIZED REPRESENTATIVE SUPERVISED START-UP SERVICES AND OPERATOR TRAINING.
8. MINIMUM RETURN WATER TEMPERATURE IS 100 DEG F.
9. PROVIDE 3" AL29-4C STAINLESS STEEL VENT PIPING FOR FLUE AND COMBUSTION AIR. PROVIDE CONCENTRIC VENT KIT INSTALLED 7 FT MINIMUM ABOVE FINISHED GRADE. PROVIDE ADAPTERS TO CONNECT TO BOILER.
10. PROVIDE LP GAS CONVERSION AND ADJUST PRESSURE REGULATOR FOR GAS PRESSURE RANGE AS REQUIRED BY BOILER MANUFACTURER.

CABINET UNIT HEATER SCHEDULE

TAG	LOCATION	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	AIRFLOW	TYPE	HEATING CAPACITY (BTU/HR)	GPM	WPD (FT)	MOTOR				REMARKS
									HP	VOLTS	PHASE	AMPS	
CUH-1	STAIR	VULCAN	C-1170-02	185 CFM	CEILING MOUNT	4,592	1.0	0.15	0.07	115	1	0.8	PROVIDE INTEGRAL THERMOSTAT
CUH-2	HALLWAY	VULCAN	F-1020-04	430 CFM	FLOOR MOUNT	8,344	1.7	0.75	0.07	115	1	1.4	PROVIDE INTEGRAL THERMOSTAT

NOTES:
1. HEATING FLUID IS 35% PROPYLENE GLYCOL..
2. HEATING CAPACITY IS BASED ON 120°F EWT, 100°F LWT, 65°F EAT.

FINNED TUBE RADIATION SCHEDULE

TAG	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	ENCLOSURE		TUBE DIAMETER	CAPACITY BTU PER FOOT	WATER PRESSURE DROP	EWT	LWT	EAT	FINS				GPM	FTR Rows	REMARKS
			HEIGHT	DEPTH							MATERIAL	HEIGHT	WIDTH	FINS PER INCH			
FTR-1	VULCAN	VC3/4-434	1' - 8"	0' - 4"	3/4"	516.0 Btu/h	0.25 ftH2O	120 °F	100 °F	65 °F	COPPER	0' - 4 1/4"	0' - 3 5/8"	40	1.0	2	

NOTES:
1. COMMERCIAL GRADE FIN TUBE RADIATION.
2. LENGTH LISTED IN SYMBOL IS THE ACTIVE LENGTH OF BASEBOARD & FIN TUBE RADIATION. ENCLOSURE TO CONTAIN DRAIN VALVE AND ACCESS PANEL.
3. ENCLOSURE MOUNTED 4" ABOVE FINISHED FLOOR OR AT TOP OF EXISTING MOULDING.

PUMP SCHEDULE

TAG	LOCATION	SERVES	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	GPM	WPD (FT)	CONNECTION SIZES	HP	VOLTS	PH	HZ	REMARKS
							DISCHARGE (IN.)					
P-1A	UTILITY ROOM	HEATING	TACO	VR15M	22	26.0	1.5	0.5	230	1	60	
P-1B	UTILITY ROOM	HEATING	TACO	VR15M	31	26.0	1.5	0.5	230	1	60	

WATER COIL SCHEDULE

TAG	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	FLUID	EAT		LAT	APD (IN)	FLUID FLOW (GPM)	WATER PD FT	EWT	LWT	COILS		REMARKS
				DB	WB	DB						ROWS	FPI	
HC-1	COIL MASTER	HWC02Q06	35% PG	0 °F	0 °F	53 °F	0.12 in-wg	3.2 GPM	1.3 ftH2O	180 °F	160 °F	2	6	12"HX14"W
HC-2	COIL MASTER	HWC02Q06	35% PG	0 °F	0 °F	50 °F	0.13 in-wg	2.4 GPM	0.6 ftH2O	180 °F	160 °F	2	6	10.5"HX12"W
HC-3	COIL MASTER	HWC02C05	35% PG	0 °F	0 °F	51 °F	0.09 in-wg	1.8 GPM	1.1 ftH2O	180 °F	160 °F	2	5	10.5"H X 10"W

NOTES:
1. HEATING FLUID IS 35% PROPYLENE GLYCOL..
2. HEATING CAPACITY IS BASED ON 120°F EWT, 100°F LWT, 65°F EAT.

UNIT HEATER SCHEDULE

TAG	LOCATION	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	TYPE	HEATING CAPACITY (BTU/HR)	GPM	MOTOR				REMARKS
							WATTS	VOLTS	PHASE	AMPS	
UH-1	UTILITY ROOM	VULCAN	HV-108A	HORIZONTAL	2,248	0.5 GPM	16	115 V	1	0.8 A	PROVIDE INTEGRAL THERMOSTAT
UH-2	MEZZANINE	VULCAN	HV-156	HORIZONTAL	31,640	6.3 GPM	246	115 V	1	4.5 A	PROVIDE INTEGRAL THERMOSTAT
UH-3	BLOWER	VULCAN	HV-108A	HORIZONTAL	2,248	0.5 GPM	16	115 V	1	0.8 A	PROVIDE INTEGRAL THERMOSTAT
UH-4	CHEMICAL FEED	VULCAN	HV-125A	HORIZONTAL	6,944	1.4 GPM	25	115 V	1	1.2 A	PROVIDE INTEGRAL THERMOSTAT
UH-5	BASEMENT	VULCAN	HV-125A	HORIZONTAL	6,944	1.4 GPM	25	115 V	1	1.2 A	PROVIDE INTEGRAL THERMOSTAT
UH-6	REFUGE	VULCAN	HV-125A	HORIZONTAL	6,944	1.4 GPM	25	115 V	1	1.2 A	PROVIDE INTEGRAL THERMOSTAT

NOTES:
1. HEATING FLUID IS 35% PROPYLENE GLYCOL..
2. HEATING CAPACITY IS BASED ON 120°F EWT, 110°F LWT, 65°F EAT.

PROGRESS DWGS
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PROFESSIONAL SEAL

NO.	DATE	DESCRIPTION	BY	CKD

WAITSFIELD
WASTEWATER
TREATMENT FACILITY

4144 MAIN ST
WAITSFIELD, VT 05673

SHEET TITLE

MECHANICAL
SCHEDULES

DRAWN BY	DATE
JJC	03/16/26
CHECKED BY	D&K PROJECT #
JHP	227947
PROJ. ENG.	D&K ARCHIVE #
JJC	

SHEET NUMBER

M6.2

SHEET OF

PLUMBING LEGENDS & ABBREVIATIONS

NOTE: NOT ALL SYMBOLS/ABBREVIATIONS SHOWN IN THE LEGEND ARE USED IN THIS DRAWING SET. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY CONTENT SHOWN ON DRAWINGS.

PLUMBING SYSTEMS

- COLD WATER
- HOT WATER
- HOT WATER RECIRCULATION
- SANITARY
- SANITARY LINE BELOW FLOOR/GRADE
- SANITARY VENT
- SD — STORM DRAINAGE
- SD — STORM DRAINAGE BELOW FLOOR/GRADE
- CD — CONDENSATE DRAIN
- CA — COMPRESSED AIR
- NG — NATURAL GAS
- LPG — LIQUID PROPANE GAS
- N — MEDICAL GAS: NITROGEN
- NO — MEDICAL GAS: NITROUS OXIDE
- O — MEDICAL GAS: OXYGEN
- VAC — MEDICAL GAS: VACUUM
- MA — MEDICAL GAS: COMPRESSED AIR

PIPE FITTINGS

- UNION
- STRAINER
- STRAINER WITH BLOW DOWN VALVE
- FLOW DIRECTION
- PIPE TURNED UP
- PIPE TURNED DOWN
- TEE BOTTOM TAKE-OFF
- TEE TOP TAKE-OFF
- PIPE CONTINUED
- PIPE CAPPED
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- FLEXIBLE PIPE CONNECTOR
- FLOW SWITCH
- MANUAL AIR VENT
- AUTOMATIC AIR VENT
- THERMOMETER

PIPE VALVES

- GATE VALVE
- GLOBE VALVE
- CHECK VALVE
- BACKFLOW PREVENTER
- BALL VALVE
- SAFETY RELIEF VALVE
- BUTTERFLY VALVE
- ELECTRIC SOLENOID ACTUATED SAFETY SHUTOFF VALVE
- GAS VALVE
- PRESSURE REGULATING/REDUCING VALVE
- PRESSURE GAUGE WITH VALVE
- BALANCING VALVE

PLUMBING EQUIPMENT

- (PLUMBING & DRAINAGE INSTITUTE SIZE CATEGORY) — A
- WATER HAMMER ARRESTOR
- FLOOR DRAIN TRAP PRIMER
- FD — FLOOR DRAIN
- RD — ROOF DRAIN
- FCO — FLOOR CLEANOUT
- WCO — WALL CLEANOUT
- FIXTURE OR DRAIN TRAP
- HOSE BIBB
- WALL HYDRANT
- CIRCULATOR PUMP
- METER

DRAWING NOTATIONS

- ø — PHASE OR ROUND DIAMETER
- DEMO LINE
- EXISTING LINE
- 1 — REVISION CLOUD WITH REVISION NUMBER
- CONNECT TO EXISTING
- REMOVE EXISTING
- XXX / ### — MOTORIZED EQUIPMENT ABBREVIATION / MOTORIZED EQUIPMENT NUMBER
- XXX / ### — NON-MOTORIZED EQUIPMENT ABBREVIATION / NON-MOTORIZED EQUIPMENT NUMBER
- 1 / A101 — DETAIL NUMBER / DRAWING NUMBER
- 1 / A101 — SECTION LETTER / SHEET NUMBER WHERE SECTION VIEW IS SHOWN

ABBREVIATIONS

AAV	AIR ADMITTANCE VALVE	NFHB	NON-FREEZE HOSE BIBB
ACV	AUTOMATIC CONTROL VALVE	N.T.S.	NOT TO SCALE
AD	AREA DRAIN	OD	OUTSIDE DIAMETER
ADA	AMERICAN DISABILITIES ACT	OSC&Y	OUTSIDE SCREW & YOKE GATE VALVE
A.F.F.	ABOVE FINISHED FLOOR	P.C.	PLUMBING CONTRACTOR
AW	ACID RESISTANT WASTE PIPING	PD	PUMP DISCHARGE
AV	ACID RESISTANT VENT PIPING	PO	PLUGGED OUTLET
BLDG	BUILDING	PRV	PRESSURE REDUCING VALVE
BLW	BELOW	PSI	POUNDS PER SQUARE INCH
BOP	BOTTOM OF PIPE	PVC	POLYVINYL CHLORIDE (PIPE)
BTU	BRITISH THERMAL UNITS	RD	ROOF DRAIN
CLG	CEILING	RHW	RECIRCULATING HOT WATER
C.M.	CONSTRUCTION MANAGER	RPM	REVOLUTIONS PER MINUTE
CO	CLEANOUT	RPZ	REDUCED PRESSURE ZONE ASSEMBLY
COND	CONDENSATE	SA	SHOCK ABSORBER
CODP	CLEANOUT DECK PLATE	SAN	SANITARY WASTE
CONN	CONNECT	SD	STORM DRAINAGE
CONT	CONTINUATION	SPEC	SPECIFICATIONS
CPVC	CHLORINATED POLYVINYL CHLORIDE (PIPE)	SQ. FT.	SQUARE FEET
CV	CHECK VALVE	TEMP	TEMPERATURE
CVO	CAPPED AND VALVED OUTLET	TMV	THERMOSTATIC MIXING VALVE
CW	COLD WATER	TYP	TYPICAL
DCW	DOMESTIC COLD WATER	U	URINAL
DIA	DIAMETER	V	VENT
DF	DRINKING FOUNTAIN	VB	VACUUM BREAKER
DFU	DRAINAGE FIXTURE UNIT	VTR	VENT THROUGH ROOF
DHW	DOMESTIC HOT WATER	W/	WITH
DHWC	DOMESTIC HOT WATER RECIRCULATION	WC	WATER CLOSET
DN	DOWN	WCO	WALL CLEANOUT
DR	DRAIN	WH	WALL HYDRANT
DS	DOWNSPOUT	WSFU	WATER SUPPLY FIXTURE UNITS
DW	DISHWASHER	WPD	WATER PRESSURE DROP
DWG	DRAWING	WTD	WATER TEMPERATURE DROP
DWH	DOMESTIC WATER HEATER	WTR	WATER TEMPERATURE RISE
DWV	DRAIN, WASTE, AND VENT		
<E>	EXISTING TO REMAIN		
E.C.	ELECTRICAL CONTRACTOR		
ECO	END CLEANOUT		
EF	EFFICIENCY FACTOR		
EJ DIS	EJECTOR DISCHARGE		
EL	ELEVATION		
ELEC	ELECTRICAL		
EI	THERMAL EFFICIENCY		
ETR	EXISTING TO REMAIN		
EWC	ELECTRIC WATER COOLER		
EXIST	EXISTING		
FCO	FLOOR CLEANOUT		
FD	FLOOR DRAIN		
FDC	FIRE DEPARTMENT (SIAMESE) CONNECTION		
FLR	FLOOR		
FS	FLOOR SINK		
FT	FEET		
FU	FIXTURE UNIT		
GAL	GALLONS		
G.C.	GENERAL CONTRACTOR		
GI	GREASE INTERCEPTOR		
GPH	GALLONS PER HOUR		
GPM	GALLONS PER MINUTE		
HB	HOSE BIBB		
HCLG	HUNG CEILING		
HP	HORSEPOWER		
HW	HOT WATER		
IDW	INDIRECT WASTE		
IN	INCH		
K.E.S.	KITCHEN EQUIPMENT SUPPLIER		
LAV	LAVATORY		
MAX	MAXIMUM		
MBH	THOUSAND BTU'S PER HOUR		
M.C.	MECHANICAL CONTRACTOR		
MECH	MECHANICAL		
MIN	MINIMUM		
MS	MOP SINK		
MTD	MOUNTED		

PLUMBING FIXTURE SCHEDULE

ITEM	DESCRIPTION	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	TRIM & ACCESSORIES	CONNECTION SIZE				REMARKS
					WASTE	VENT	CW	HW	
EEW-1	MSR Pedestal Mount Eye/Face Wash	Haws Corporation	7261-7271		1 1/4"	0"	1/2"	1/2"	PROVIDE HAWS MODEL 9201EFE THERMOSTATIC MIXING VALVE
EWS-1	EMERGENCY EYEWASH SHOWER	HAWS	8300-8309		1 1/4"	0"	1"	1"	PROVIDE HAWS MODEL 9201E THERMOSTATIC MIXING VALVE
FCO									
FD-A	12-1/4 Heavy Duty Drain with Sediment Bucket	Zurn Industries, LLC	Z505		0"	0"	0"	0"	PROVIDE JAY R SMITH STINK STOPPER QUAD CLOSE TRAP SEAL
FD-B	Body Assembly with "Type B" Strainer	Zurn Industries, LLC	ZN415-6NH-8B						PROVIDE JAY R SMITH STINK STOPPER QUAD CLOSE TRAP SEAL
FD-C	12-1/4 Heavy Duty Drain with Sediment Bucket	Zurn Industries, LLC	Z505		0"	0"	0"	0"	PROVIDE JAY R SMITH STINK STOPPER QUAD CLOSE TRAP SEAL
HB-1	WALL HYDRANT FREEZELESS	Woodford Manufacturing Company	RB65C-6						
L-1	LUCERNE Basin, 4" (102mm) centres, 20-1/2" x 18-1/4" x 8-1/8" (521mm x 464mm x 206mm) deep, wall hung, vitreous china, splash back, front overflow, self-draining deck, for concealed arm support.	American Standard	0355.012	SYMMONS SYMMETRIX S202G FAUCET, ADA COMPLIANT SINGLE LEVER, NON-AERATED LAMINAR SPRAY AT 0.5 GPM, PROVIDE FLOOR MOUNTED WALL CARRIER ZURN Z1224 SERIES WITH BACK PLATE. WATTS 1/2" LEAD FREE LFE480 LAVATORY TEMPERING VALVE AT EACH LAVATORY	2"	1 1/2"	1/2"	1/2"	LOW FLOW AERATOR TO BE PROVIDED WITH FAUCET. FAUCET MUST CONTAIN NO MORE THAN 0.25" WEIGHTED AVERAGE LEAD CONTENT.
MS-1	Mop Service Basin	Zurn Water, LLC	Z1996-24		0"	0"	0"	0"	
S-1	Lustertone Single Bowl sink	Elkay Manufacturing	DLR252210	ELKAY LKD2423BHC GOOSENECK FAUCET , 1.5 GPM AERATOR	2"	1 1/2"	1/2"	1/2"	LOW FLOW AERATOR TO BE PROVIDED WITH FAUCET. FAUCET MUST CONTAIN NO MORE THAN 0.25" WEIGHTED AVERAGE LEAD CONTENT.
SH-1		OASIS	SH-3636 ABF/BP1		0"	0"	0"	0"	Shower
TMV-1	THERMOSTATIC MIXING VALVE FOR EMERGENCY EYEWASH SHOWER	HAWS	9201E		0"	0"	1"	1"	
TMV-2	THERMOSTATIC MIXING VALVE AT WATER HEATER	Powers Controls	LFMM431		0"	0"	0"	0"	
TMV-3	THERMOSTATIC MIXING VALVE FOR EMERGENCY EYEWASH	HAWS	9201EFE		0"	0"	1"	1"	
UR-1					0"	0"	0"	0"	WATER HAMMER ARRESTOR
WC-1	Two-Piece Close Coupled Toilet	TOTO	CST454CEF	AMERICAN STANDARD SEAT MODEL 5321.110 EVERCLEAN ELONGATED SEAT WITH SLOW CLOSE SNAP-OFF HINGES	3"	2"	1/2"	0"	

PLUMBING GENERAL NOTES

QUALITY OF WORK

1. CONTRACT DOCUMENTS ARE IN PART DIAGRAMMATIC, INTENDED TO CONVEY SCOPE & ARRANGEMENT OF WORK. CONSULT ELECTRICAL AND STRUCTURAL CONSTRUCTION DRAWINGS FOR FAMILIARITY WITH CONDITIONS AFFECTING WORK. VERIFY SPACES IN WHICH WORK MUST BE PERFORMED BY ON-SITE MEASUREMENTS. DO NOT SCALE DRAWINGS.
2. CONTRACTOR MUST VERIFY EXISTING CONDITIONS AS THERE MAY BE VARIOUS CONDITIONS AT THE SITE WHICH DO NOT SHOW ON THE ACCOMPANYING DRAWINGS, OR WHICH ARE AT VARIANCE WITH THE CONDITIONS INDICATED ON THE DRAWINGS. IT IS IMPORTANT THAT EACH BIDDER VISIT THE SITE TO BECOME ACQUAINTED WITH THE EXISTING CONDITIONS, AND TO TAKE THESE CONDITIONS INTO CONSIDERATION WHEN PREPARING THEIR PROPOSAL. EACH BIDDER MUST OBTAIN INFORMATION OR MAKE MEASUREMENTS DESIRED. LACK OF KNOWLEDGE RELATIVE TO THE EXISTING SITE CONDITIONS IS NOT ALLOWED AS A BASIS FOR EXTRA COMPENSATION.
3. THE PLUMBING CONTRACTOR MUST PROVIDE MATERIALS, EQUIPMENT, AND LABOR TO FABRICATE NEW PLUMBING INSTALLATIONS AS SHOWN ON THE DRAWINGS AND AS SPECIFIED HEREIN:
   A. FURNISH AND INSTALL PIPING, CONNECTIONS, AND HARDWARE NECESSARY FOR AN ENTIRE OPERATING SYSTEM.
   B. A LICENSED PLUMBER MUST PERFORM PLUMBING WORK.
4. WHERE TWO OR MORE ITEMS OF THE SAME TYPE OF EQUIPMENT ARE REQUIRED, THE PRODUCT OF ONE MANUFACTURER MUST BE USED.
5. WORKSMANSHIP, MATERIALS, AND EQUIPMENT MUST BE GUARANTEED FOR A PERIOD OF ONE YEAR AFTER ACCEPTANCE BY THE OWNER.

CODES/PERMITS

1. WORK MUST BE PERFORMED IN STRICT ACCORDANCE WITH THE UNDERWRITERS LABORATORY STANDARDS AND MUNICIPAL, STATE AND OTHER AUTHORITIES' REGULATIONS, PUBLIC AND PRIVATE, HAVING JURISDICTION. REPORT DISCREPANCIES WITH SUCH REGULATIONS TO ENGINEER AND DO NOT PROCEED WITH WORK UNTIL WRITTEN AUTHORIZATION IS RECEIVED FROM THE ENGINEER.
2. NECESSARY FEES, PERMITS, AND APPROVALS AS REQUIRED BY THE WORK OF THESE DRAWINGS AND SPECIFICATIONS MUST BE OBTAINED AND PAID FOR BY THIS CONTRACTOR.
3. NOTHING CONTAINED IN THE SPECIFICATIONS OR INDICATED ON THESE DRAWINGS IS TO BE CONSTRUED TO CONFLICT WITH APPLICABLE PORTIONS OF LAWS, ORDINANCES, REGULATIONS, OR CODES.

COORDINATION OF WORK

1. COORDINATE CONSTRUCTION OF PLUMBING WORK WITH ARCHITECTURAL, STRUCTURAL, CIVIL, MECHANICAL, ELECTRICAL WORK, ETC., SHOWN ON OTHER CONTRACT DOCUMENT DRAWINGS.
2. CONTRACTOR IS RESPONSIBLE TO PRODUCE FOR REVIEW AND APPROVAL COORDINATION DRAWINGS OF ALL TRADES BEFORE COMMENCEMENT OF INSTALLATION. ANY INSTALLATION WORK COMPLETED BEFORE REVIEW AND APPROVAL OF COORDINATION DRAWINGS IS AT CONTRACTORS OWN RISK AND CHANGE ORDERS SHALL NOT BE ENTERTAINED FOR ANY REQUIRED REWORK.
3. PLUMBING CONTRACTOR MUST DISCONNECT, REMOVE, AND PROPERLY DISPOSE OF PLUMBING MATERIALS AND EQUIPMENT IN ORDER TO PREPARE EXISTING AREAS AND BUILDINGS FOR RENOVATION WORK. CONTRACTOR TO CLOSELY COORDINATE WITH THE GENERAL CONTRACTOR TO PROVIDE ENTIRE DEMOLITION OF NECESSARY AREAS AND SYSTEMS. CONTRACTOR MUST REVIEW PROJECT DOCUMENTS FOR EXTENT OF DEMOLITION REQUIREMENTS – ENTIRE DEMOLITION SCOPE IS NOT NECESSARILY NOTED ON THE PLUMBING DRAWINGS.
4. THE LOCATIONS OF ITEMS SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS THAT ARE NOT DEFINITIVELY FIXED BY DIMENSIONS ARE APPROXIMATE ONLY. THE EXACT LOCATIONS NECESSARY TO SECURE THE MOST DESIRABLE CONDITIONS AND RESULTS MUST BE DETERMINED BY THE PROJECT SITE CONDITIONS AND MUST HAVE THE APPROVAL OF THE ENGINEER BEFORE BEING INSTALLED. DO NOT SCALE THE DRAWINGS.
5. PROVIDE LOCATIONS OF REQUIRED ACCESS PANELS FOR INSTALLATION IN WALLS AND CEILINGS TO SERVICE VALVES, DAMPERS, AND OTHER CONCEALED PLUMBING EQUIPMENT. GENERAL CONTRACTOR MUST FURNISH & INSTALL ACCESS PANELS. COORDINATE ACCESS DOOR LOCATIONS WITH ARCHITECT AND INTERIOR DESIGNER.
6. LOCATIONS AND SIZES OF FLOOR, WALL, AND ROOF OPENINGS MUST BE COORDINATED WITH OTHER TRADES INVOLVED. OPENINGS IN FIRE WALLS DUE TO PIPING MUST BE FIRE STOPPED.

PIPING

1. TAKE NECESSARY MEASUREMENTS AT THE BUILDING AND FABRICATE THE PIPING ON THE SITE, IF REQUIRED, TO PROVIDE AN APPROVABLE INSTALLATION.
2. INSTALL PIPING CONCEALED ABOVE CEILING OR IN WALL CHASES UNLESS OTHERWISE INDICATED. EXPOSED PIPING IS TO BE 3/4" MINIMUM FROM WALL SURFACE.
3. PROVIDE STOP VALVES AT FIXTURE AND EQUIPMENT SUPPLIES. EXPOSED FIXTURE CONNECTIONS MUST BE CHROME PLATED. PROVIDE VACUUM BREAKERS WHERE REQUIRED BY CODE.
4. PROVIDE NECESSARY HANGERS FOR SUPPORT OF HORIZONTAL AND VERTICAL PIPING IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
5. PROVIDE NECESSARY UNIONS TO FACILITATE REPAIR OF EQUIPMENT AND FITTINGS.
6. IDENTIFICATION: CONTINUOUSLY IDENTIFY PIPING 8' ON CENTER.
7. PROVIDE NECESSARY VALVES, PIPES, FITTINGS, AND WATER HAMMER ARRESTORS THROUGHOUT THE SYSTEM TO ELIMINATE WATER HAMMER.
8. PROVIDE NECESSARY FLOOR AND WALL CLEANOUTS THROUGHOUT THE SYSTEM FOR A CODE COMPLIANT INSTALLATION.
9. PIPING AT FLOOR PENETRATIONS AND PENETRATIONS OF FIRE RATED WALLS MUST BE SEALED WITH FIRE CAULK (BOTH SIDES WHERE ACCESSIBLE).

PROGRESS DWGS
NOT FOR CONSTRUCTION
03.26.26

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PROFESSIONAL SEAL

NO.	DATE	DESCRIPTION	BY	CK'D

WAITSFIELD
WASTEWATER
TREATMENT FACILITY

4144 MAIN ST
WAITSFIELD, VT 05673

SHEET TITLE

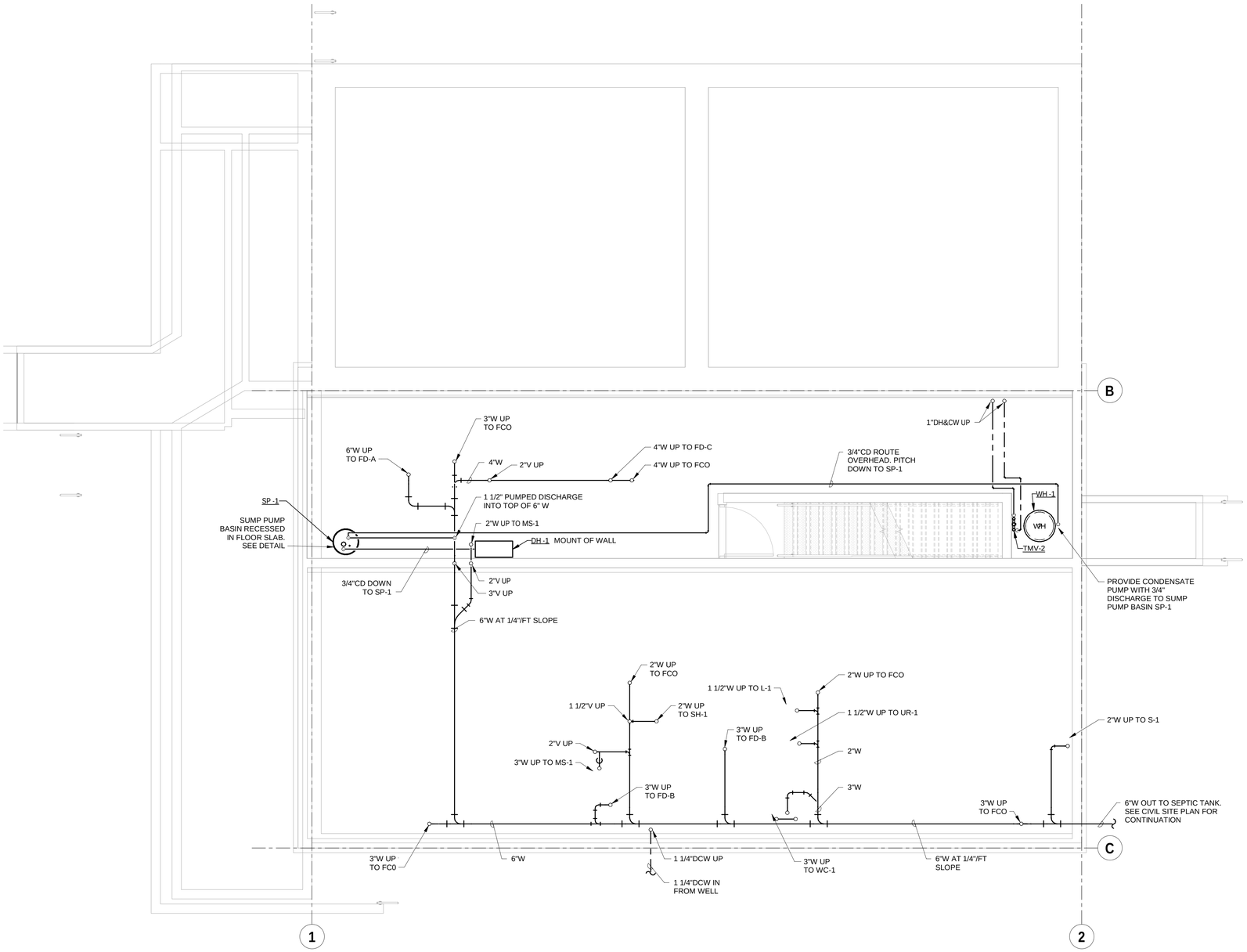
PLUMBING
LEGENDS & NOTES

DRAWN BY: Author	DATE: 01/23/23
CHECKED BY: Checker	D&K PROJECT #: 227947
PROJ. ENG.: Designer	D&K ARCHIVE #:

SHEET NUMBER

P0.1

SHEET OF



BASEMENT PLUMBING PLAN

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

PLUMBING KEYNOTES

PROGRESS DWGS
NOT FOR CONSTRUCTION 03.26.26

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WAITSFIELD
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WAITSFIELD, VT 05673

SHEET TITLE

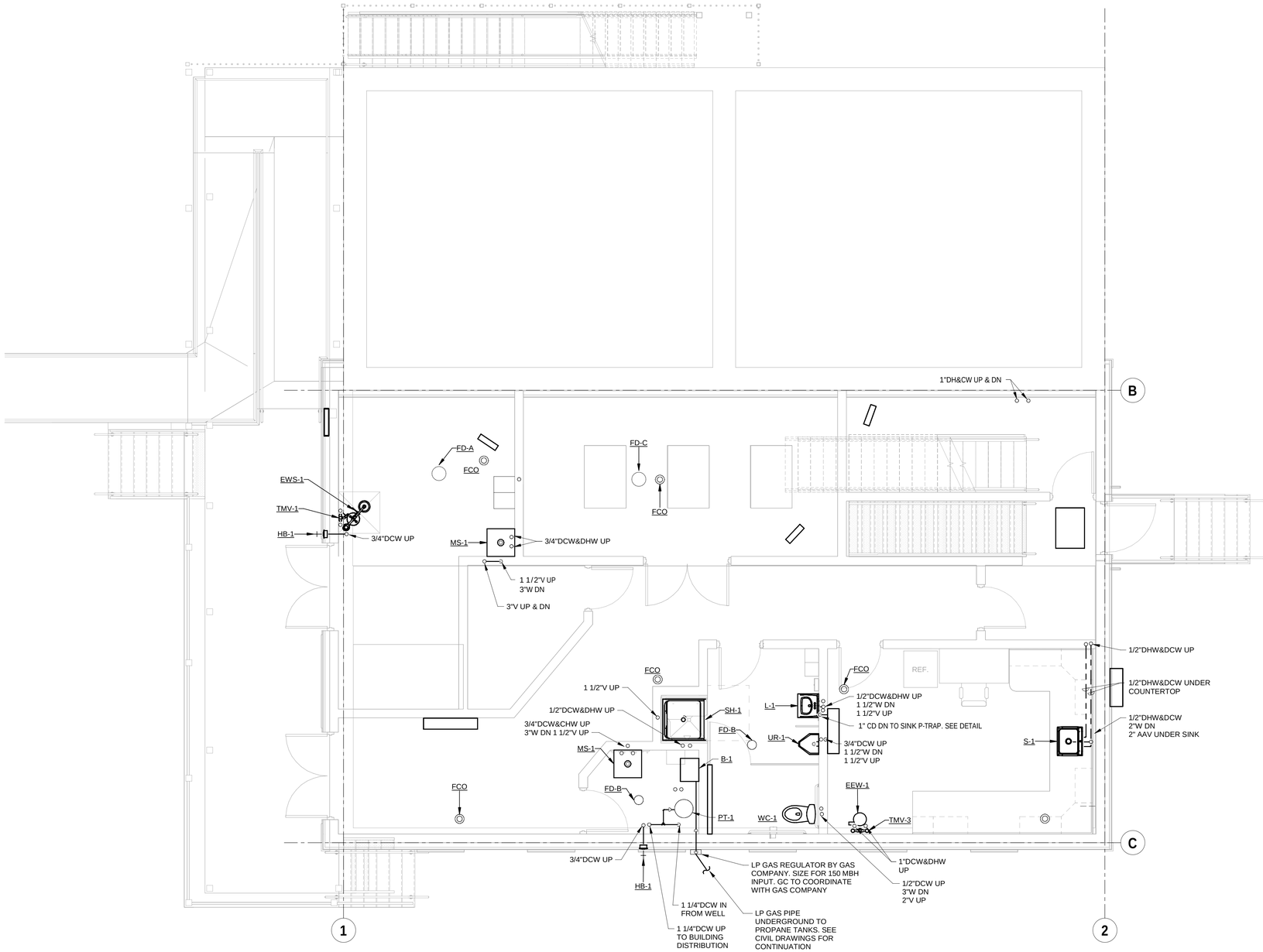
PLUMBING PLAN - BASEMENT

DRAWN BY	DATE
Author	01/23/23
CHECKED BY	D&K PROJECT #
Checker	227947
PROJ. ENG.	D&K ARCHIVE #
Designer	

SHEET NUMBER

P1.1

SHEET OF



FIRST FLOOR PLUMBING PLAN

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

PROGRESS DWGS
NOT FOR CONSTRUCTION 03.26.26

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PROFESSIONAL SEAL

NO.	DATE	DESCRIPTION	BY	CK'D

WAITSFIELD
WASTEWATER
TREATMENT FACILITY

4144 MAIN ST
WAITSFIELD, VT 05673

SHEET TITLE

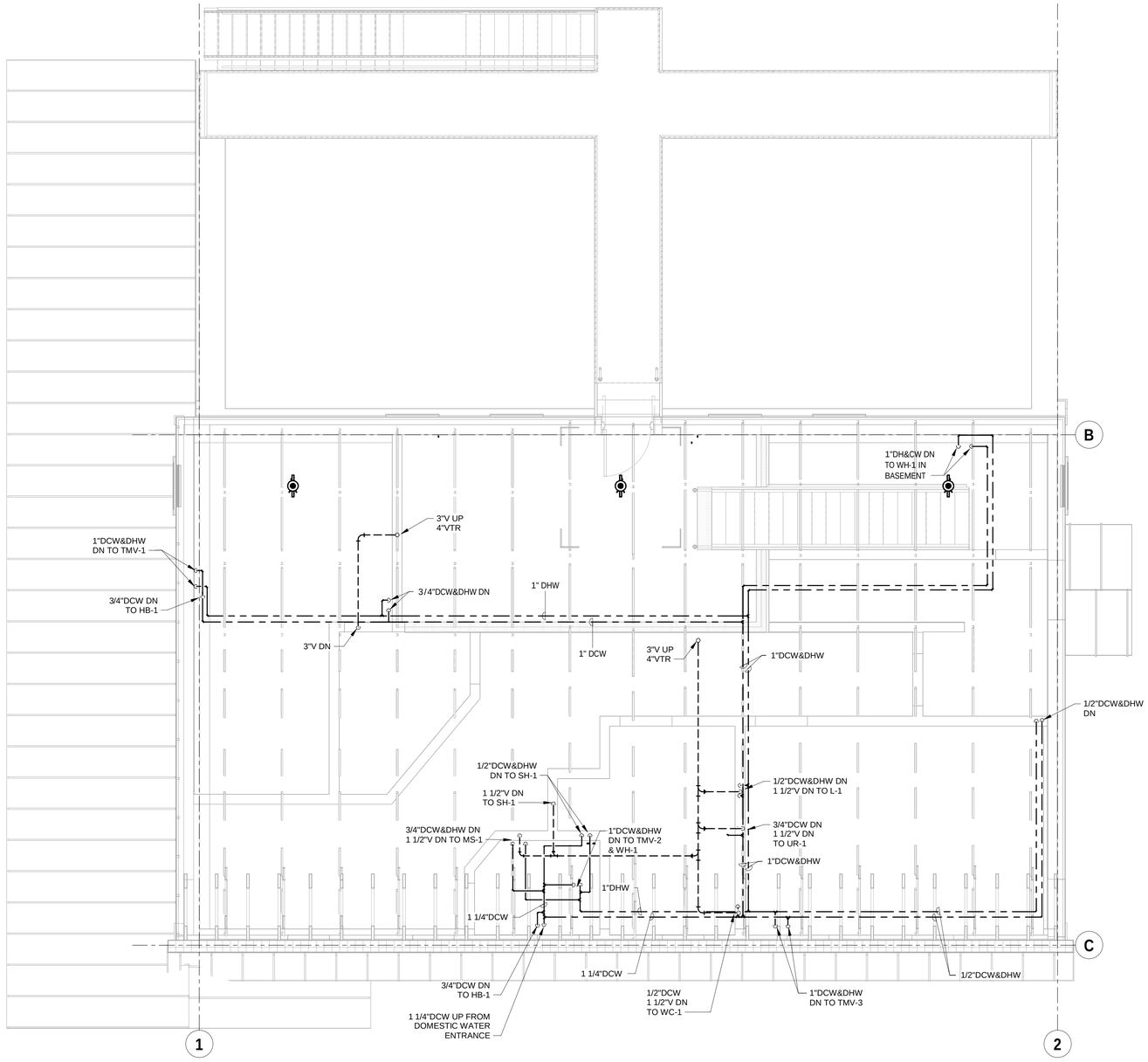
PLUMBING PLAN - FIRST FLOOR

DRAWN BY	DATE
Author	01/15/26
CHECKED BY	D&K PROJECT #
Checker	227947
PROJ. ENG.	D&K ARCHIVE #
Designer	

SHEET NUMBER

P1.2

SHEET OF



MEZZANINE PLUMBING PLAN

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

PROGRESS DWGS
NOT FOR CONSTRUCTION
03.26.26

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NO.	DATE	DESCRIPTION	BY	CKD

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WAITSFIELD, VT 05673

SHEET TITLE

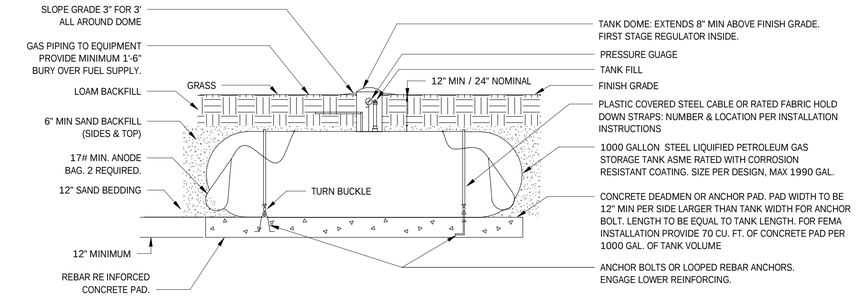
PLUMBING PLAN -
MEZZANINE

DRAWN BY	DATE
Author	01/15/26
CHECKED BY	D&K PROJECT #
Checker	227947
PROJ. ENG.	D&K ARCHIVE #
Designer	

SHEET NUMBER

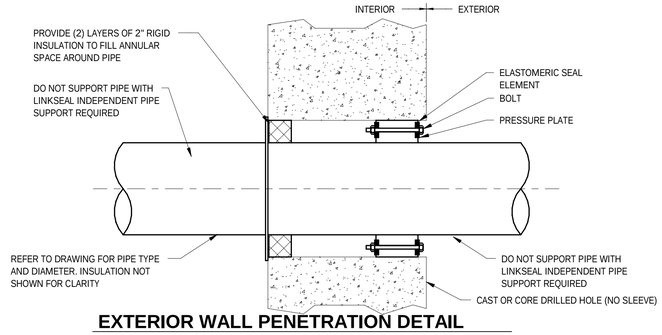
P1.3

SHEET OF



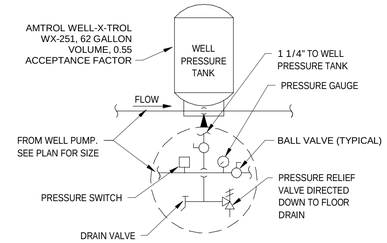
UNDERGROUND PROPANE GAS TANK DETAIL NON-FEMA TYPICAL

SCALE: 1/8" = 1'-0"



EXTERIOR WALL PENETRATION DETAIL

SCALE: NOT TO SCALE



WELL PRESSURE TANK DETAIL

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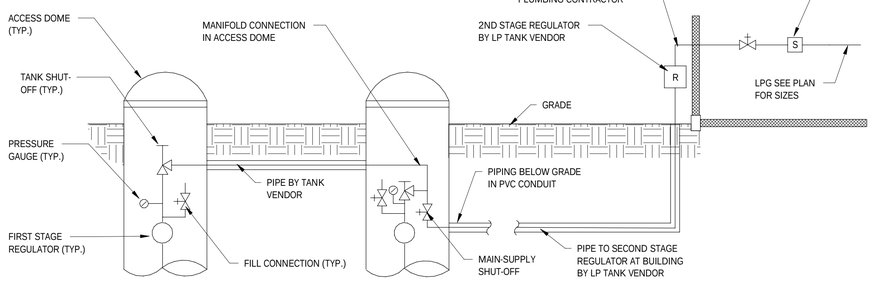
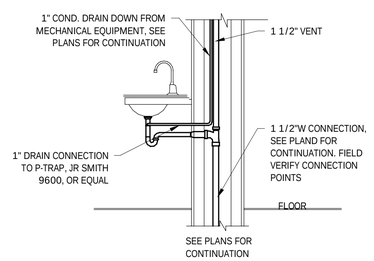


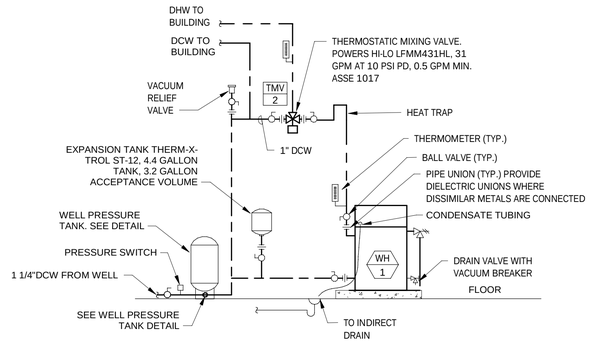
LP GAS STORAGE TANK PIPING DETAIL

SCALE: NOT TO SCALE



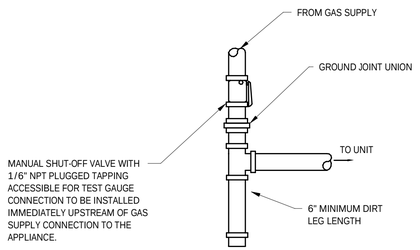
CONDENSATE DRAIN TO SINK P-TRAP DETAIL

SCALE: NOT TO SCALE



MASTER SINGLE WATER HEATER DETAIL

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



NOTE: PROVIDE CONNECTION TO BOILER AS DIRECTED BY BOILER MANUFACTURER

GAS SUPPLY CONNECTION DETAIL1

SCALE: 1/8" = 1'-0"

WATER HEATER SCHEDULE

TAG	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	TYPE	FIRST HOUR GPH	TEMPERATURE RISE	GALLONS	HEATING ELEMENT AMPS	ELECTRICAL			REMARKS
								VOLTAGE	PHASE	HZ	
WH-1	AO SMITH	HPTU-80N	HYBRID	86	90 °F	80 gal	30	240 V	1	60 Hz	

SUMP PUMP SCHEDULE

TAG	LOCATION	SERVES	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	GPM	WPD (FT)	CONNECTION SIZES DISCHARGE (IN.)	HP	VOLTS	PH	HZ	REMARKS
SP-1	BASEMENT	BASEMENT	Zoeller	912-0082/M2 64	34	10.0	2	0.3	115	1	0	SUMP PUMP IN PE BASIN

PROGRESS DWGS
NOT FOR CONSTRUCTION
03.26.26

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VERMONT
NEW HAMPSHIRE
MAINE AND NEW YORK

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PROFESSIONAL SEAL

NO.	DATE	DESCRIPTION	BY	CK'D

WAITSFIELD WASTEWATER TREATMENT FACILITY

4144 MAIN ST
WAITSFIELD, VT 05673

SHEET TITLE

PLUMBING DETAILS

DRAWN BY	DATE
Author	01/23/23
CHECKED BY	D&K PROJECT #
Checker	227947
PROJ. ENG.	D&K ARCHIVE #
Designer	

SHEET NUMBER

P5.1

SHEET OF

ELECTRICAL LEGENDS & ABBREVIATIONS

NOTE: NOT ALL SYMBOLS/ABBREVIATIONS SHOWN IN THE LEGEND ARE USED IN THIS DRAWING SET. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY CONTENT SHOWN ON DRAWINGS.

POWER

- DUPLEX RECEPTACLE, 20A, 120V
- GFCI DUPLEX RECEPTACLE
- GFCI WEATHER RESISTANT DUPLEX RECEPTACLE WITH WATERPROOF IN-USE COVER
- DUPLEX RECEPTACLE WITH TYPE-A AND TYPE-C USB
- DUPLEX RECEPTACLE ON EMERGENCY CIRCUIT, DEVICE SHALL BE RED WITH RED DEVICE PLATE
- DUPLEX RECEPTACLE FOR FIXED MICROWAVE, COORDINATE EXACT LOCATION WITH ES
- DUPLEX RECEPTACLE FOR FIXED DISHWASHER, COORDINATE EXACT LOCATION WITH ES
- SPLIT WIRED DUPLEX RECEPTACLE, TOP SWITCHED
- AUTOMATICALLY CONTROLLED DUPLEX RECEPTACLE, TOP CONTROLLED WITH NEC REQUIRED MARKING
- COUNTERTOP HEIGHT DUPLEX RECEPTACLE, 20A, 120V
- QUADRUPLEX RECEPTACLE, 20A,120V
- COUNTERTOP HEIGHT QUADRUPLEX RECEPTACLE, 20A, 120V
- CEILING MOUNTED DUPLEX RECEPTACLE
- SPECIAL PURPOSE RECEPTACLE, REFER TO SCHEDULE.
- EQUIPMENT SERVICE SWITCH
- MOTOR STARTER, PROVIDED BY MC, INSTALLED BY EC.
- VFD VARIABLE FREQUENCY DRIVE, PROVIDED BY MC, INSTALLED BY EC.
- JUNCTION BOX
- ELECTRIC MOTOR
- FB FLOOR BOX

ELECTRICAL DISTRIBUTION

- P1 ELECTRICAL DISTRIBUTION PANEL
- HEAVY DUTY FUSED DISCONNECT, 600V
- T1 DRY TYPE TRANSFORMER
- SWBD DISTRIBUTION SWITCHBOARD, REFER TO ONE-LINE DIAGRAM
- ATS AUTOMATIC TRANSFER SWITCH (ATS)

LIGHTING

- RECESSED RECTANGULAR LUMINAIRE, DRAWN TO SCALE
- EMERGENCY RECESSED RECTANGULAR LUMINAIRE, DRAWN TO SCALE
- SURFACE RECTANGULAR LUMINAIRE, DRAWN TO SCALE
- EMERGENCY SURFACE RECTANGULAR LUMINAIRE, DRAWN TO SCALE
- LINEAR PENDANT LUMINAIRE, DRAWN TO SCALE
- RECESSED DOWNLIGHT LUMINAIRE, DRAWN TO SCALE
- EMERGENCY RECESSED DOWNLIGHT LUMINAIRE, DRAWN TO SCALE
- SURFACE DOWNLIGHT LUMINAIRE, DRAWN TO SCALE
- ROUND PENDANT LUMINAIRE, DRAWN TO SCALE
- UNDERCABINET LUMINAIRE, DRAWN TO SCALE
- WALL MOUNTED VANITY LUMINAIRE, DRAWN TO SCALE
- WALL MOUNTED LUMINAIRE
- WALL MOUNTED SCONCE LUMINAIRE
- EXTERIOR WALLPACK LUMINAIRE, DRAWN TO SCALE
- HIGH BAY LUMINAIRE, DRAWN TO SCALE
- WALL MOUNTED EMERGENCY LIGHTING UNIT
- WALL MOUNTED EMERGENCY REMOTE HEAD
- WALL MOUNTED EXIT SIGN, FILLED SIDES INDICATE ILLUMINATED FACE, ARROWS INDICATE DIRECTION
- CEILING MOUNTED EXIT SIGN, FILLED SIDES INDICATE ILLUMINATED FACE, ARROWS INDICATE DIRECTION
- WALL MOUNTED COMBINATION EXIT/EMERGENCY SIGN, FILLED SIDES INDICATE ILLUMINATED FACE, ARROWS INDICATE DIRECTION
- CEILING MOUNTED COMBINATION EXIT/EMERGENCY SIGN, FILLED SIDES INDICATE ILLUMINATED FACE, ARROWS INDICATE DIRECTION

LIGHTING CONTROLS

- $ SINGLE POLE SWITCH
- $3 3-WAY SWITCH
- $4 4-WAY SWITCH
- $D 0-10V DIMMER SWITCH
- $PD PHASE DIMMER SWITCH
- $OC OCCUPANCY SWITCH
- $OCD OCCUPANCY DIMMER SWITCH
- $OC3 OCCUPANCY 3-WAY SWITCH
- $LV LOW VOLTAGE SWITCH
- $LVD LOW VOLTAGE DIMMER SWITCH
- $W WIRELESS SWITCH
- $WD WIRELESS DIMMER SWITCH
- OCS CEILING MOUNTED OCCUPANCY/VACANY SENSOR
- OCS DL CEILING MOUNTED OCCUPANCY/VACANY/DAYLIGHT SENSOR
- DL DAYLIGHT SENSOR
- PC EXTERIOR PHOTOCELL
- TC ASTRONOMICAL 365 DAY TIMECLOCK

COMMUNICATION

- FLUSH MOUNTED 2-PORT CAT. 6 WALL JACK WITH (2) CAT. 6 HOMERUNS TO NETWORK TERMINATION AREA
- WIFI WIRELESS ACCESS POINT LOCATION WITH (1) CAT. 6 HOMERUN TO NETWORK TERMINATION AREA
- W WALL PHONE LOCATION WITH (1) CAT. 6 HOMERUN TO NETWORK TERMINATION AREA
- TV FLUSH MOUNTED CATV FEMALE F CONNECTOR WITH (1) RG6/U HOMERUN TO CATV TERMINATION AREA
- PA PUBLIC ADDRESS SPEAKER
- SP AUDIO SPEAKER

SECURITY

- IP CAMERA, PROVIDE (1) CAT. 6 HOMERUN TO SECURITY TERMINATION AREA
- CR CARD READER
- ES ELECTRIC STRIKE
- RX REQUEST TO EXIT
- KP KEYPAD
- MSN SECURITY MOTION SENSOR
- SEC SECURITY CONTROL PANEL

DRAWING NOTATIONS

- DEMO LINE
- EXISTING LINE
- NEW LINE
- 1 REVISION CLOUD WITH REVISION NUMBER
- NOTES WHEN SIMILAR TO SECTION
- 1 / A101 SIM DETAIL NUMBER / DRAWING NUMBER
- NOTES WHEN SIMILAR TO SECTION
- 1 / A101 SECTION LETTER / SHEET NUMBER WHERE SECTION VIEW IS SHOWN

FIRE ALARM

- F FIRE ALARM MANUAL PULL STATION
- 15 S FIRE ALARM STROBE - NUMBER DENOTES CANDELLA RATING
- 15 F FIRE ALARM HORN/STROBE - NUMBER DENOTES CANDELLA RATING
- 15 SP FIRE ALARM SPEAKER/STROBE - NUMBER DENOTES CANDELLA RATING
- H FIRE ALARM HORN
- LF F LOW FREQUENCY NOTIFICATION DEVICE - APPLIES TO ALL DEVICES
- C F CEILING MOUNTED NOTIFICATION DEVICE - APPLIES TO ALL DEVICES
- S FIRE ALARM SYSTEM SMOKE DETECTOR
- CO FIRE ALARM SYSTEM CARBON MONOXIDE DETECTOR
- H FIRE ALARM SYSTEM HEAT DETECTOR
- S FIRE ALARM SYSTEM DUCT SMOKE DETECTOR
- C FIRE ALARM SYSTEM COMBINATION SMOKE/CO DETECTOR
- LF SSB FIRE ALARM SYSTEM DETECTOR WITH LOW FREQUENCY SOUNDER BASE - APPLIES TO ALL DEVICES
- CM FIRE ALARM SYSTEM CONTROL MODULE
- MM FIRE ALARM SYSTEM MONITORING MODULE
- F FIRE ALARM SYSTEM SPRINKLER FLOW SWITCH
- T FIRE ALARM SYSTEM SPRINKLER TAMPER SWITCH
- PS FIRE ALARM SYSTEM SPRINKLER PRESSURE SWITCH
- RA FIRE ALARM SYSTEM REMOTE ANNUCIATOR
- FACP FIRE ALARM SYSTEM CONTROL PANEL
- NAC FIRE ALARM SYSTEM NOTIFICATION APPLIANCE CIRCUIT POWER SUPPLY
- 120V S 120V SMOKE DETECTOR
- 120V STR 120V SMOKE DETECTOR WITH INTEGRAL STROBE
- 120V C 120V COMBINATION SMOKE/CO DETECTOR
- 120V C STR 120V COMBINATION SMOKE/CO DETECTOR WITH INTEGRAL STROBE
- 120V S 120V STROBE

ABBREVIATIONS

ø	PHASE
A	AMPERE(S)
A.C.	ALTERNATING CURRENT
AF	AMP FRAME
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AL	ALUMINUM
ALT	ALTERNATE
ARCH	ARCHITECT(URAL)
AT	AMP TRIP
ATC	AUTOMATIC TEMPERATURE CONTROL
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BAS	BUILDING AUTOMATION SYSTEM
BW	BUSWAY
C	CONDUIT
CATV	CABLE ACCESS TELEVISION
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CLG	CEILING
CM	CONSTRUCTION MANAGER
COND	CONDUCTOR
CONN	CONNECT
CT	CURRENT TRANSFORMER
CU	COPPER
D.C.	DIRECT CURRENT
DISC	DISCONNECT
DN	DOWN
DP	DOUPLE POLE
DT	DOUPLE THROW
DWG	DRAWING
<E>	EXISTING
EC	ELECTRICAL CONTRACTOR
E. HTR	ELECTRIC HEATER
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
EOL	END OF LINE RESISTOR
ES	EQUIPMENT SUPPLIER
F	FUSE
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FDR	FEEDER
FL	FLOOR
FS	FUSIBLE SWITCH
FT	FEET
FPC	FIRE PROTECTION CONTRACTOR
<D>	DEMOLISH
GC	GENERAL CONTRACTOR
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFP	GROUND FAULT PROTECTION
GND	GROUND
HOA	HAND-OFF-AUTOMATIC
HP	HORSEPOWER
Hz	FREQUENCY IN CYCLES PER SECOND
IMC	INTERMEDIATE METALLIC CONDUIT
in	INCH(ES)
JB	JUNCTION BOX
K	KEY OPERATED
KCMIL	THOUSAND CIRCULAR MIL(S)
KVA	KILOVOLT AMPERE(S)
KVAR	KILOVAR(S)
KW	KILOWATT(S)
LF	LINEAR FEET
LV	LOW VOLTAGE
MC	MECHANICAL CONTRACTOR
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MEP	MECHANICAL, ELECTRICAL, PLUMBING
MH	MANHOLE
MLO	MAIN LUGS ONLY
MTH	MOUNTING HEIGHT
MTR	MOTOR
MTS	MANUAL TRANSFER SWITCH
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NF	NONFUSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NO.	NUMBER
NTS	NOT TO SCALE
OH	OVERHEAD
P	POLE(S)
PC	PLUMBING CONDUCTOR
PNL	PANEL
PRI	PRIMARY
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
R	RELAY
<R>	REMOVE AND RELOCATE
RECP	RECEPTACLE
RMC	RIGID METALIC CONDUIT
SEC	SECONDARY
ST	SINGLE THROW
SF	SQUARE FEET
SW	SWITCH
SWBD	SWITCHBOARD
TEL	TELEPHONE
TEMP	TEMPORARY
TV	TELEVISION
TYP	TYPICAL
UC	UNDERCABINET
UG	UNDERGROUND
UH	UNIT HEATER
UNG	UNGROUNDED
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTED POWER SYSTEM
V	VOLT(S)
VA	VOLT AMPERE(S)
VAR	REACTIVE VOLT AMPERE(S)
VP	VAPORPROOF
VFD	VARIABLE FREQUENCY DRIVE
VIF	VERIFY IN FIELD
W	WATT(S)
WP	WEATHERPROOF
XFMR	TRANSFORMER
XP	EXPLOSION PROOF

LABELS AND MARKINGS

1. NEC 110.16 ARC FLASH LABELS ELECTRICAL EQUIPMENT SUCH AS MAIN SERVICE PANELBOARD AND ALL THREE PHASE PANELS LIKELY TO REQUIRE EXAMINATION, ADJUSTMENT, SERVICING OR MAINTENANCE SHALL BE FIELD OR FACTORY MARKED TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRIC ARC FLASH.
2. NEC 110.24(A) AVAILABLE FAULT CURRENT FIELD MARKING - SERVICE EQUIPMENT SHALL BE LEGIBLY MARKED IN THE FIELD WITH THE MAXIMUM FAULT CURRENT. THE FIELD MARKING(S) SHALL INCLUDE THE DATE THE FAULT-CURRENT CALCULATION WAS PERFORMED.
3. NEC 210.5(C) (1) (B) POSTING OF IDENTIFICATION MEANS THE METHOD UTILIZED FOR CONDUCTORS ORIGINATING WITHIN EACH BRANCH-CIRCUIT DISTRIBUTION POINT. THE EQUIPMENT SHALL BE DOCUMENTED IN A MANNER THAT IS READILY AVAILABLE OR SHALL BE PERMANENTLY POSTED AT EACH BRANCH-CIRCUIT PANEL BOARD OR SIMILAR BRANCH-CIRCUIT DISTRIBUTION EQUIPMENT.
4. NEC 230.70(B) SERVICE EQUIPMENT EACH SERVICE DISCONNECT SHALL BE PERMANENTLY MARKED TO IDENTIFY IT AS A SERVICE DISCONNECT.
5. NEC 408.3(F) (1) HIGH LEG IDENTIFICATION AT EACH PANELBOARD CONTAINING A 4-WIRE, DELTA-CONNECTED SYSTEM WHERE THE MID-POINT OF ONE PHASE WINDING IS GROUNDED SHALL BE LEGIBLY AND PERMANENTLY MARKED. VERIFY WITH GMP IF SERVICE IS A 4-WIRE DELTA SERVICE.
6. NEC 408.4(A) CIRCUIT DIRECTORY OR CIRCUIT IDENTIFICATION EVERY CIRCUIT AND CIRCUIT MODIFICATION SHALL BE LEGIBLY IDENTIFIED AS TO ITS CLEAR, EVIDENT, AND SPECIFIC PURPOSE OR USE. THE IDENTIFICATION SHALL INCLUDE AN APPROVED DEGREE OF DETAIL THAT ALLOWS EACH CIRCUIT TO BE DISTINGUISHED FROM ALL OTHERS. THE IDENTIFICATION SHALL BE INCLUDED IN A CIRCUIT DIRECTORY THAT IS LOCATED ON THE FACE OR INSIDE OF THE PANEL DOOR IN THE CASE OF A PANELBOARD, AND LOCATED AT EACH SWITCH ON A SWITCHBOARD. NO CIRCUIT SHALL BE DESCRIBED IN A MANNER THAT DEPENDS ON TRANSIENT CONDITIONS OF OCCUPANCY.
7. NEC 408.4(B) SOURCE OF SUPPLY ALL PANELBOARDS SUPPLIED BY A FEEDER(S) SHALL BE MARKED TO INDICATE EACH DEVICE OR EQUIPMENT WHERE THE POWER ORIGINATES.
8. NEC 705.12(D) (3) MARKING EQUIPMENT CONTAINING OVERCURRENT DEVICES OR CIRCUITS SUPPLYING POWER FROM MULTIPLE SOURCES SHALL BE MARKED TO INDICATE THE PRESENCE OF ALL SOURCES.
9. NFPA 70E ARTICLE 205.12 CIRCUIT AND VOLTAGE IDENTIFICATION SHALL BE SECURELY AFFIXED AND MAINTAINED IN UPDATED AND LEGIBLE CONDITION.

SHOCK HAZARD/FLASH HAZARD ANALYSIS AND FIELD MARKING

1. ELECTRICAL CONTRACTOR SHALL PROVIDE A SHOCK HAZARD AND A FLASH HAZARD ANALYSIS FOR ALL SWITCHBOARDS, PANELBOARDS, INDUSTRIAL CONTROL PANELS, AND MOTOR CONTROL CENTERS ON THE PROJECT. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL SAFETY SIGNS AND LABELS AS A RESULT OF THE ANALYSIS.
2. ANALYSIS SHALL BE AS OUTLINED BY NFPA 70E. A SHOCK HAZARD ANALYSIS SHALL DETERMINE THE VOLTAGE TO WHICH PERSONNEL WILL BE EXPOSED, BOUNDARY REQUIREMENTS, AND THE PERSONAL PROTECTIVE EQUIPMENT NECESSARY IN ORDER TO MINIMIZE THE POSSIBILITY OF ELECTRICAL SHOCK TTHE ANALYSIS SHALL BE PERFORMED BY A REGISTERED PROFESSIONAL ENGINEER REGISTERED IN THE STATE AND ANALYSIS BE SUBMITTED AS PART OF THE SHOP DRAWING PROCESS. REFER TO NFPA FOR THE REQUIREMENTS OF CONDUCTING A SHOCK HAZARD ANALYSIS. A FLASH HAZARD ANALYSIS SHALL BE PERFORMED IN ORDER TO PROTECT PERSONNEL FROM THE POSSIBILITY OF BEING INJURED BY AN ARC-FLASH. THE ANALYSIS SHALL DETERMINE THE FLASH PROTECTION BOUNDARY AND THE PERSONAL PROTECTIVE EQUIPMENT FOR THE PEOPLE WITHIN THE FLASH PROTECTION BOUNDARY.
3. ALL SWITCHBOARDS, PANELBOARDS, INDUSTRIAL CONTROL PANELS, AND MOTOR CONTROL CENTERS THAT ARE LIKELY TO REQUIRE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE WHILE ENERGIZED, SHALL BE FIELD MARKED TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS. THE MARKING SHALL BE LOCATED SO AS TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE OF THE EQUIPMENT.
4. REFER TO ANSI Z535.4 - PRODUCT SAFETY SIGNS AND LABELS, THIS REFERENCE PROVIDES GUIDELINES FOR SAFETY SIGNS AND LABELS FOR FIELD MARKING.

GENERAL NOTES:

1. ALL WORK SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE (N.E.C.) LATEST EDITION, CONTRACTOR TO OBTAIN ALL PERMITS AND ARRANGE FOR ALL INSPECTIONS WITH AUTHORITY HAVING JURISDICTION.
2. ALL LIGHTING AND POWER WIRING SHALL BE IN CONDUIT, ALL RACEWAYS SHALL BE EMT (ELECTRICAL METALLIC TUBING). ALL CONDUCTORS SHALL BE COPPER GROUND (TYPICAL) WITH NUMBER OF CONDUCTORS AS REQUIRED. REFER TO PANEL SCHEDULES, TYPICAL. ALL CONDUCTORS SHALL BE COPPER, WIRE SIZE NO. 8 AWG AND SMALLER BE TYPE "TH/THW" INSULATION. SIZES LARGER THEN NO. 8 SHALL HAVE TYPE "THHN/THWN" INSULATION UNLESS OTHERWISE NOTES.
3. LIMIT 20A, 120V BRANCH CIRCUITS TO A MAXIMUM 192OVA LOAD AND 15A, 120V BRANCH CIRCUIT TO A MAXIMUM 144OVA LOAD.
4. ALL WIRING SHALL BE CONCEALED IN WALLS AND ABOVE CEILING IN FINISHED AREAS AND WHEREVER POSSIBLE. WIRING IN UTILITY AREAS (MECHANICAL SPACE) MAY BE RUN EXPOSED AS APPROVED BY THE ARCHITECT. EXPOSED WIRING SHALL BE IN CONDUIT, BE PARALLEL TO BUILDING STRUCTURAL ELEMENTS AND PRESENT A NEAT AND COMPLETE INSTALLATION.
5. WHERE WIRING CAN NOT BE ROUTED CONCEALED UTILIZE WIREMOLD SURFACE RACEWAY (WITH ALL NECESSARY FITTINGS/HARDWARE AND ATTACHMENT) WITH STRANDED TYPE THHN/THWN CONDUCTOR. ALL COMPONENTS SHALL BE PAINTED AS DIRECT BY ENGINEER. COORDINATE MOUNTING WITH ARCHITECT.
6. CONDUITS, RACEWAYS AND CABLES SHALL BE PROPERLY AND SECURELY ATTACHED TO BUILDING STRUCTURAL COMPONENTS AS REQUIRED BY N.E.C. ALL FASTENERS AND HARDWARE SHALL BE APPROVED FOR THE INSTALLATION AND THE CONDITIONS ENCOUNTERED.
7. EACH OUTLET OR JUNCTION IN ANY OF THE WIRING SYSTEMS SHALL BE MADE IN AN APPROVED, METALLIC JUNCTION BOX. SUCH BOX SHALL BE SUITABLE FOR THE SIZE AND NUMBER OF CONDUCTORS AND DEVICES TO BE INSTALLED, AS WELL AS THE CONDITION ENCOUNTERED. ALL SPLICES SHALL BE MADE WITH APPROVED, MECHANICAL CONNECTORS.
8.
9. VERIFY ALL STRUCTURAL, ARCHITECTURAL AND MECHANICAL CONDITIONS (DUCT CLEARANCES, COUNTER HEIGHTS, DOOR SWINGS, ETC.) PRIOR TO ROUGH IN FOR ELECTRICAL WIRING EQUIPMENT.
10. ALL ELECTRICAL WORK SHALL BE CAREFULLY COORDINATED WITH THE WORK OF OTHER TRADES AND ON-SITE CONDITIONS. WHERE CUTTING, DRILLING OR ALTERATION TO THE WORK OF OTHERS IS NECESSARY, FOR THE PROPER INSTALLATION OF ELECTRICAL EQUIPMENT, SUCH WORK SHALL BE PLANNED IN ADVANCE WITH THE GENERAL CONTRACTOR AND SHALL BE CAREFULLY DONE. ANY DAMAGE TO THE BUILDINGS OR EQUIPMENT SHALL BE REPAIRED BY PROPERLY TRAINED PERSONNEL, TO THE SATISFACTION OF THE ARCHITECT, AT NO ADDITIONAL COST TO THE OWNER.
11. DURING ROUGH IN AND FINISHED STAGES OF CONSTRUCTION, PROTECT AND KEEP CLEAN ALL ELECTRICAL EQUIPMENT, PANELS, FIXTURES AND DEVICES.
12. PROVIDE ALL INFORMATION ABOUT EQUIPMENT WHICH IS BEING FURNISHED TO THE GENERAL CONTRACTOR FOR COORDINATION PURPOSES. PROVIDE ALL INSTALLATION DETAILS AND SUPPORT COMPONENTS TO THE GENERAL CONTRACTOR SO THAT THESE MAY BE BUILT INTO THE CONSTRUCTION IN A TIMELY MANNER.
13. VERIFY LOCATIONS OF MECHANICAL, HVAC AND OWNER'S EQUIPMENT AND POWER CONNECTION DETAILS SO THAT THE ASSOCIATED ELECTRICAL WORK WILL BE PROPERLY COORDINATED AND INSTALLED.
14. PROVIDE EACH MECHANICAL FAN, PUMP OR HVAC UNIT WITH FUSED DISCONNECT, WEATHERPROOF NEMA 3R&12 (WP), FOR OUTDOOR, NEMA 1 FOR INDOOR. FUSE TO MATCH EQUIPMENT NAMEPLATE OF EQUIPMENT.
15. THE ARCHITECT RESERVES THE RIGHT TO RELOCATE ANY LIGHTING FIXTURE SHOWN TO WITHIN FIVE (5) FEET OF THAT LOCATION AS TO WORK WITH FINAL FIT-UP REQUIREMENTS. COORDINATE ALL SWITCHES, RECEPTACLE AND LIGHTING FIXTURE LOCATIONS WITH THE ARCHITECT.
16. ALL MECHANICAL EQUIPMENT SHALL HAVE HACR RATED BREAKERS PER N.E.C. REQUIREMENTS.
17. INSTALL EMERGENCY LIGHTING FIXTURES AHEAD OF LOCAL SWITCHING PER N.E.C.
18. ALL EXIT SIGN LIGHTING SHALL BE INSTALLED ON A SEPARATE BRANCH CIRCUIT.
19. VERIFY THE CONDITION BRANCH CIRCUIT WIRING INDICATED TO BE REUSED. IF WIRING IS FOUND TO BE IN POOR CONDITION, REPLACE WITH #12, TYPE THHN/THWN COPPER CONDUCTORS.
20. THE INTERIOR ELECTRICAL SYSTEM SHALL BE COMPLETELY AND EFFECTIVELY GROUNDED AS REQUIRED BY THE NEC. ALL METALLIC RACEWAYS SHALL BE MECHANICALLY AND ELECTRICALLY SECURE AT ALL JOINTS AND AT ALL BOXES, CABINETS, FITTINGS, AND EQUIPMENT.
21. UPON COMPLETION OF WORK CORRECT ALL PANELBOARD CIRCUITS DIRECTORY CARDS TO REFLECT AS-BUILT CONDITIONS.
22. ALL RACEWAYS SHALL BE PROVIDED WITH EQUIPMENT GROUND CONDUCTOR. EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSTALLED IN ALL ELECTRICAL RACEWAYS AND SHALL BE SPECIFIED IN ACCORDANCE WITH NEC 250 AND SHALL BE CONTINOUS.
23. CLEARLY IDENTIFY ALL INCOMING CONDUCTOR BY CIRCUIT NUMBER DURING INSTALLATION IN THE DISTRIBUTION PANELS (E.G. CABLE MARKERS #1, #11 ETC).
24. LOCATION OF ALL OUTLETS SHOWN ON DRAWINGS IS APPROXIMATE. CHECK ALL MEASUREMENTS AND VERIFY EXACT LOCATION WITH ARCHITECT.
25. FURNISH, INSTALL TEST, CALIBRATE, AND OTHERWISE MAKING OPERATIONAL ALL DEVICES AND EQUIPMENT SHOWN ON THESE DRAWINGS.
26. IT IS THE INTENT OF DRAWINGS AND SPECIFICATION, TO OBTAIN A COMPLETE AND SATISFACTORY INSTALLATION. AN ATTEMPT HAS BEEN MADE TO SEPARATE AND DEFINE THE WORK OF THE CONTRACTOR. DRAWINGS ARE DIAGRAMMATIC, BUT SHALL BE FOLLOWED AS CLOSELY AS ACTUAL CONSTRUCTION OF THE FACILITY AND THE WORK OF OTHER TRADES WILL PERMIT. THE DRAWINGS UTILIZE SYMBOLS AND SCHEMATIC DIAGRAMS TO INDICATE VARIOUS ITEMS OF WORK. THEREFORE, NO INTERPRETATION WILL BE MADE FROM THE LIMITATION OF SYMBOLS AND DIAGRAMS THAT ANY ELEMENTS NECESSARY OF THE COMPLETE INSTALLATION IS EXCLUDING. THE ENGINEER SHOULD BE NOTIFIED OF A DISCREPANCIES, OMISSIONS, CONFLICTS, OR INTERFERENCE WHICH OCCUR BETWEEN VARIOUS DRAWINGS AND SPECIFICATIONS. IF SUCH NOTIFICATION IS NOT RECEIVED, THE INSTALLING CONTRACTOR(S) SHALL BE RESPONSIBLE FOR THEIR INTERPRETATIONS.

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PROFESSIONAL SEAL

REVISIONS

NUMBER	DATE	REVISION DESCRIPTION	BY

TOWN OF WAITSFIELD

PROJECT NAME:
WAITSFIELD COMMUNITY WASTEWATER SYSTEM

4144 MAIN STREET
WAITSFIELD, VERMONT 056673

SHEET TITLE:
ELECTRICAL LEGENDS & NOTES

DRAWN BY: WHH	DATE: 4/8/2026
CHECKED BY: EJD	D&K PROJECT #: 227947
PROJ. ENG.: WHH	D&K ARCHIVE #:

SHEET NUMBER
E0.1

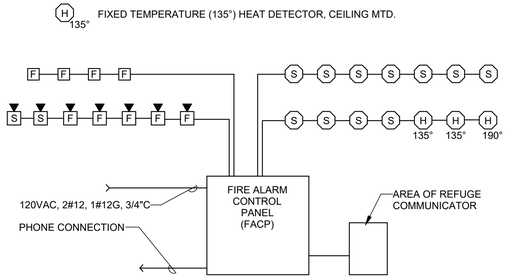
SHEET: of

FIRE ALARM WORK NOTES:

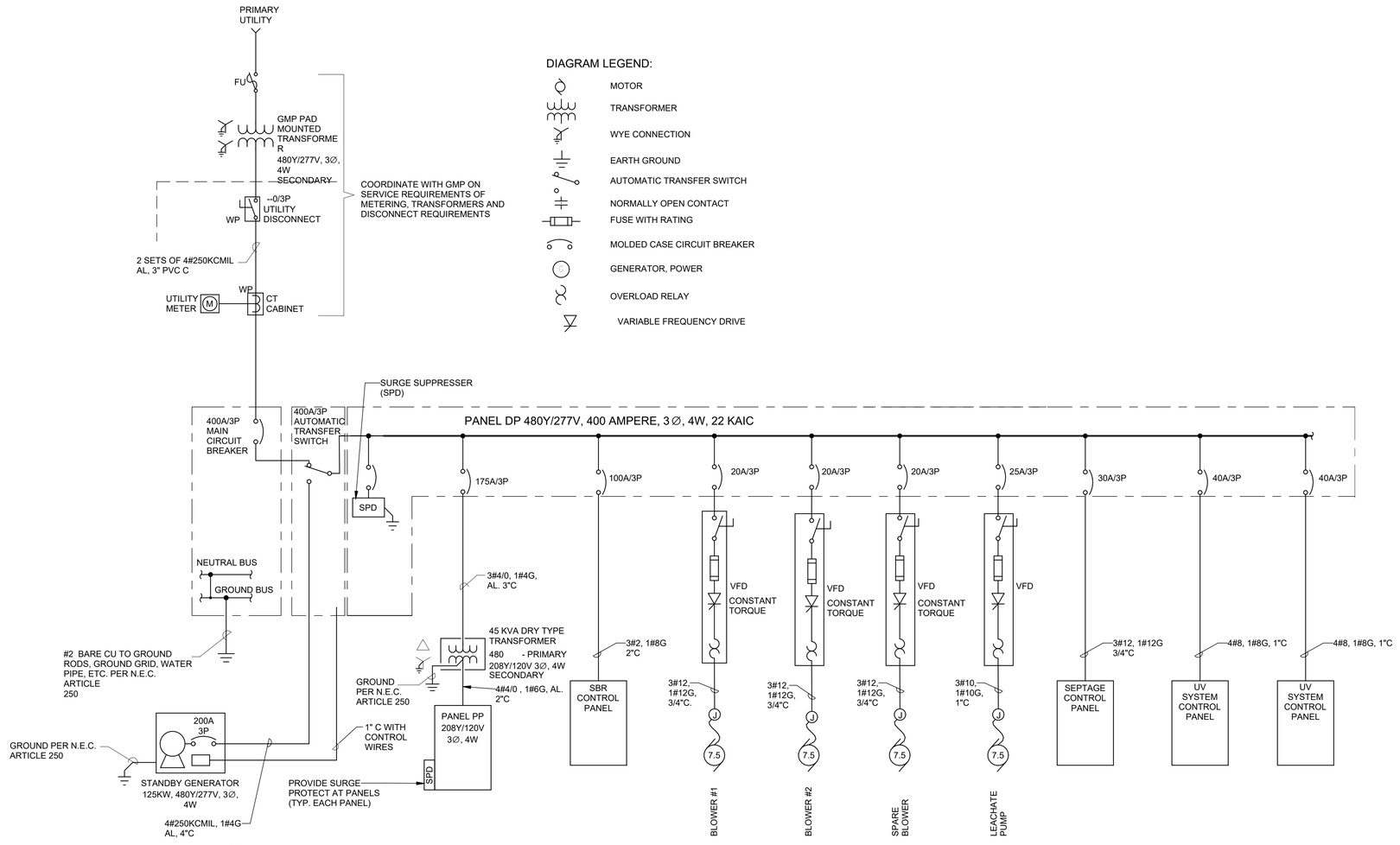
1. ACTUAL NUMBER OF DEVICES IS NOT SHOWN. REFER TO FINAL PLANS FOR EXACT LOCATIONS AND QUANTITIES. A NEW ADDRESSABLE FIRE ALARM SYSTEM IS REQUIRED FOR ALL AREAS OF THE CONTROL BUILDING.
2. AUDIO/VISUAL DEVICE CIRCUITS SHALL HAVE A MINIMUM OF 20% SPARE CAPACITY. .
3. CORRIDOR AUDIO/VISUAL (STROBE TYPE) NOTIFICATION DEVICES SHALL BE SYNCHRONIZED.
4. ALARM WIRING SHALL BE IN CONDUIT.
5. NUMBER OF CONDUCTORS PER MANUFACTURER'S REQUIREMENTS AND SHALL COMPLY WITH NEC.
6. ALL INSTALLATION WORK SHALL BE DONE IN ACCORDANCE WITH FIRE ALARM MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.
7. FIRE ALARM SYSTEM MUST COMPLY WITH STATE OF VERMONT REQUIREMENTS AND APPROVED BY TOWN OF MIDDLEBURY, VT FIRE DEPARTMENT.
8. LABEL ALL ADDRESSABLE DEVICES ON OUTSIDE OF DEVICE WITH PRINTED ADHESIVE TAPE - BLACK PRINT ON CLEAR OR WHITE..
9. PROVIDE SMOKE DETECTORS ABOVE ALL FIRE ALARM CONTROL PANELS, INCLUDING THE FACP AND ALL SNAC PANELS.
10. ALL CIRCUITS SHALL BE CLASS A LOOPS. TWO RISERS PER CIRCUIT LOOP SHALL BE SEPARATED BY 1'-1/4" MINIMUM.
11. FIRE ALARM SYSTEM SHALL BE U.L.LISTED AND ADA COMPLIANT.
12. SUBMIT A COPY OF THE PROPOSED FIRE ALARM SYSTEM SUBMITTAL TO THE LOCAL FIRE DEPARTMENT FOR FINAL APPROVAL.

FIRE ALARM AND DETECTION SYSTEM DEVICES LEGEND:

FACP	FIRE ALARM CONTROL PANEL
F	COMBINATION AUDIO/VISUAL (STROBE) NOTIFICATION APPLIANCE MTD. @ 6" BELOW CEILING OR +80" AFF, WHICHEVER IS LESS. WITH FIELD SELECTABLE OUTPUT SETTINGS
F	MANUAL PULL STATION.
S	VISUAL (STROBE) NOTIFICATION DEVICE, MTD. @ 6" BELOW CEILING OR +80" AFF, WHICHEVER IS LESS. WITH FIELD SELECTABLE OUTPUT SETTING
S	SMOKE DETECTOR, CEILING MTD
H 135°	FIXED TEMPERATURE (135°) HEAT DETECTOR, CEILING MTD.



2 FIRE ALARM RISER DIAGRAM
SCALE: NO SCALE



1 ONE-LINE DIAGRAM
SCALE: 12" = 1'-0"

DIAGRAM LEGEND:

- MOTOR
- TRANSFORMER
- WYE CONNECTION
- EARTH GROUND
- AUTOMATIC TRANSFER SWITCH
- NORMALLY OPEN CONTACT
- FUSE WITH RATING
- MOLDED CASE CIRCUIT BREAKER
- GENERATOR, POWER
- OVERLOAD RELAY
- VARIABLE FREQUENCY DRIVE

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PROFESSIONAL SEAL

REVISIONS		
NUMBER	DATE	REVISION DESCRIPTION

TOWN OF WAITSFIELD

PROJECT NAME:
WAITSFIELD COMMUNITY WASTEWATER SYSTEM

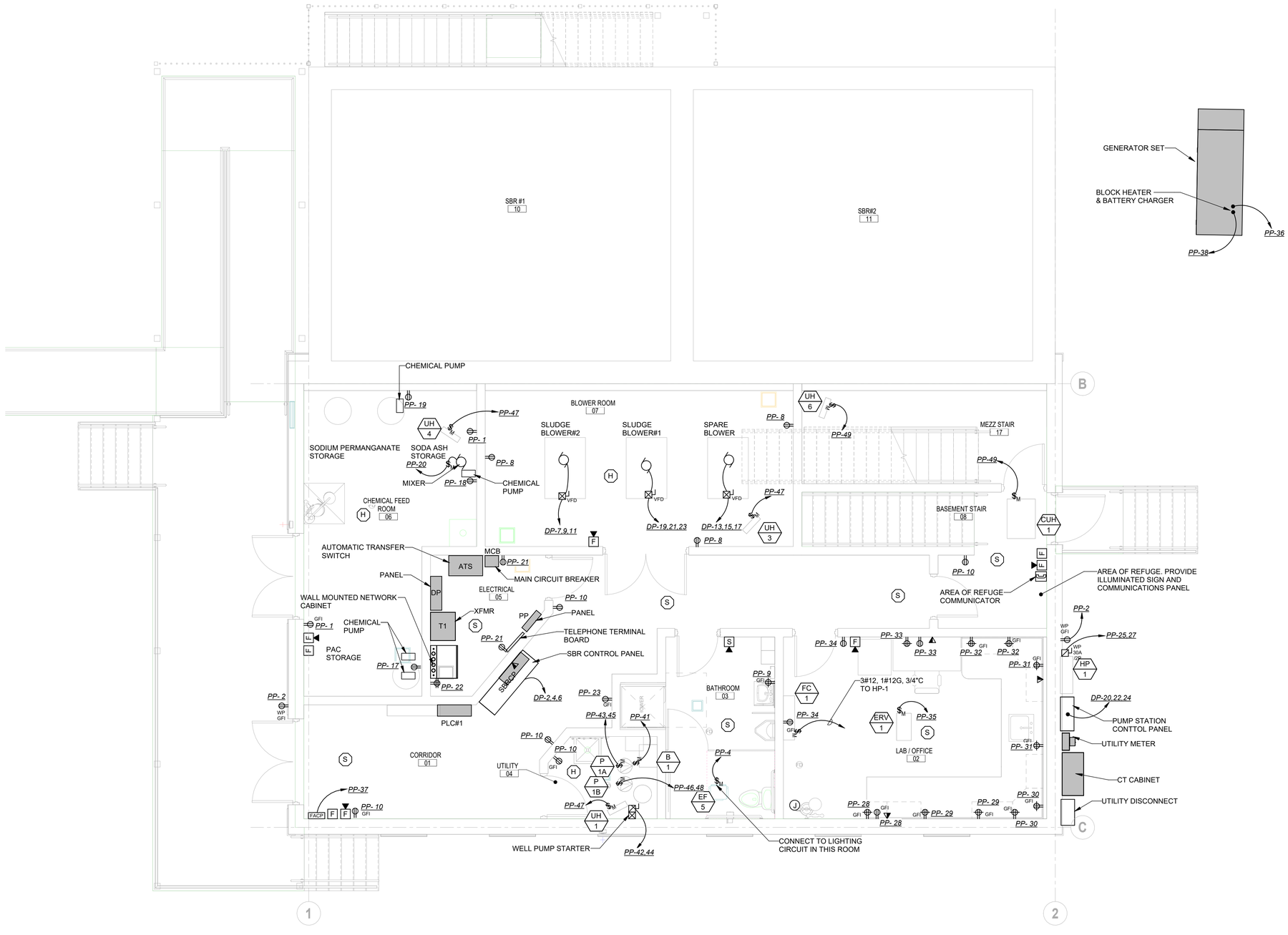
4144 MAIN STREET
WAITSFIELD, VERMONT 056673

SHEET TITLE:
SINGLE LINE DIAGRAM

DRAWN BY: WHH	DATE: 4/8/2026
CHECKED BY: EJD	D&K PROJECT #: 227947
PROJ. ENG.: WHH	D&K ARCHIVE #:

SHEET NUMBER
E0.2

SHEET: of



1 FIRST FLOOR ELECTRICAL FLOOR PLAN
SCALE: 1/4" = 1'-0"

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NUMBER	DATE	REVISION DESCRIPTION	BY

TOWN OF WAITSFIELD

PROJECT NAME:
WAITSFIELD COMMUNITY WASTEWATER SYSTEM

4144 MAIN STREET
WAITSFIELD, VERMONT 056673

SHEET TITLE:
FIRST FLOOR ELECTRICAL PLAN

DRAWN BY: WHH	DATE: 4/8/2026
CHECKED BY: EJD	D&K PROJECT #: 227947
PROJ. ENG.: WHH	D&K ARCHIVE #:

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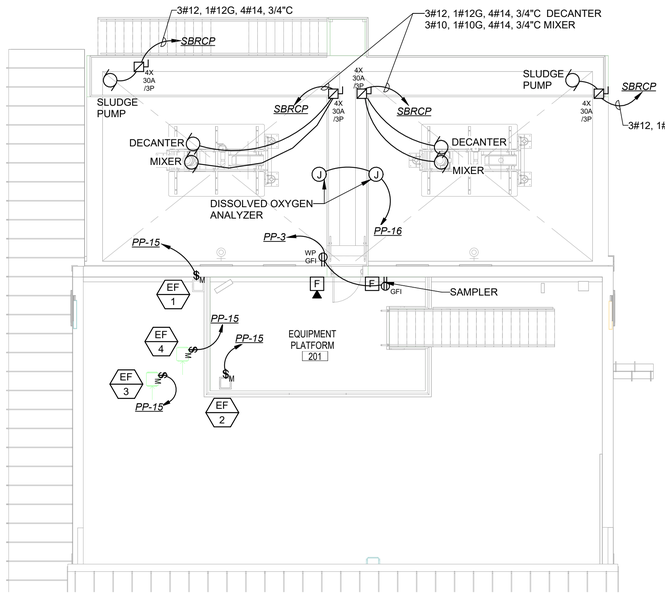
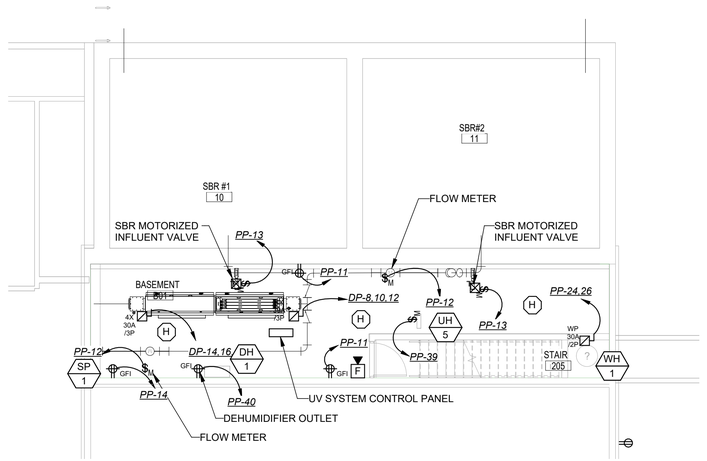
E1.1

SHEET: of



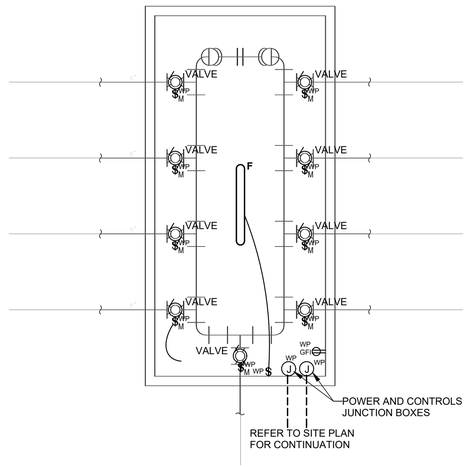
2 MEZZANINE LEVEL ELECTRICAL FLOOR PLAN

SCALE: 1/8" = 1'-0"



1 LOWER LEVEL ELECTRICAL FLOOR PLAN

SCALE: 1/8" = 1'-0"



3 LEACH FIELD VALVE VAULT ELECTRICAL PLAN

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

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REVISIONS

NUMBER	DATE	REVISION DESCRIPTION	BY

TOWN OF WAITSFIELD

PROJECT NAME:

WAITSFIELD COMMUNITY WASTEWATER SYSTEM

4144 MAIN STREET
WAITSFIELD, VERMONT 056673

SHEET TITLE:

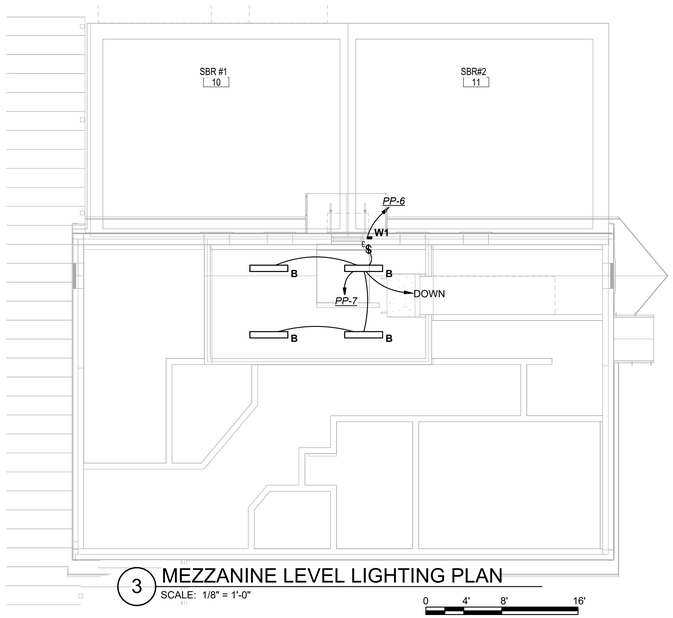
MEZZANINE AND LOWER LEVEL POWER PLANS

DRAWN BY	DATE
WHH	4/8/2026
CHECKED BY	D&K PROJECT #
EJD	227947
PROJ. ENG.	D&K ARCHIVE #
WHH	

SHEET NUMBER

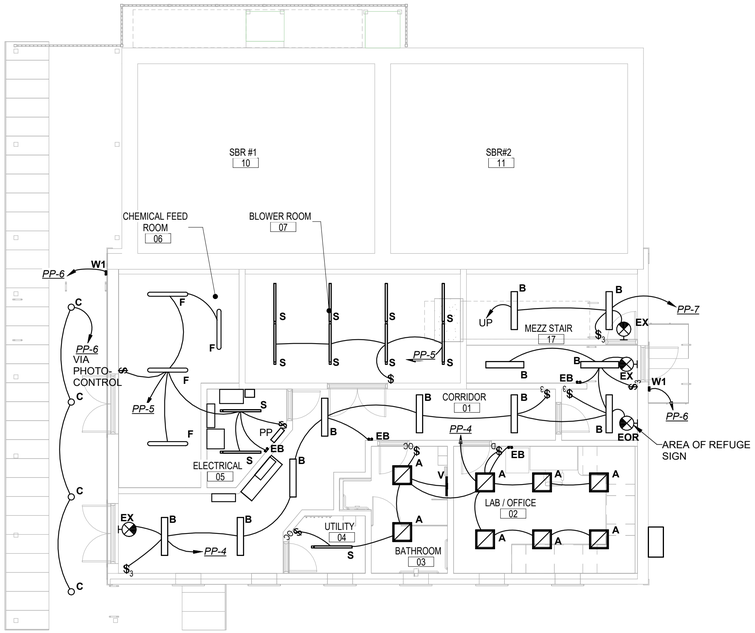
E1.2

SHEET: of



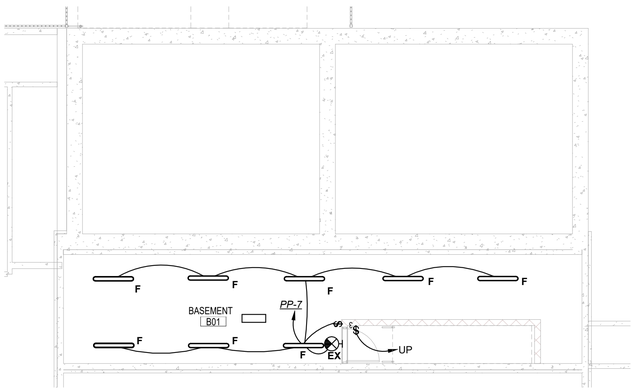
3 MEZZANINE LEVEL LIGHTING PLAN
SCALE: 1/8" = 1'-0"

0 4' 8' 16'



1 FIRST FLOOR LIGHTING PLAN
SCALE: 1/8" = 1'-0"

0 4' 8' 16'



2 LOWER LEVEL LIGHTING FLOOR PLAN
SCALE: 1/8" = 1'-0"

0 4' 8' 16'

LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER	MODEL	DESCRIPTION	MOUNTING	FINISH	LUMENS	LAMP COLOR	ELECTRICAL	REMARKS
A	LITHONIA LIGHTING	CPX 2X2 AL07 80CRI SWW7 SWL MVOLT	2X2 FLAT PANEL	RECESSED	WHITE	2500	4000K	120 V/1-19 VA	
B	LITHONIA LIGHTING	TRUN 48 AL04 FMP 8SWW2 ZT MVOLT	4' WRAP	SURFACE	WHITE	3000	4000K	120 V/1-30 VA	
C	JUNO LIGHTING	JSBC 6IN SWW2 90CRI WL MW	6" DIA SURFACE	SURFACE	BLACK	1000	4000K	120 V/1-13 VA	WITH TRIM JSBCTRIM 6IN MB
EB	LITHONIA LIGHTING	EU2L	EMERGENCY	WALL @7'6"	WHITE	N/A	4000K	120 V/1-2 VA	
EOR	LITHONIA LIGHTING	LQM P W 1 R MVOLT EL SW01	AREA OF REFUGE SIGN	WALL @7'6"	WHITE	N/A	RED	120 V/1-3 VA	
EX	LITHONIA LIGHTING	LHQM S W RG MVOLT M6	EXIT SIGN	WALL @7'6"	WHITE	N/A	RED	120 V/1-3 VA	
F	LITHONIA LIGHTING	CSVT L48 AL03 MVOLT SWW3 80CRI	4' INDUSTRIAL	SURFACE	WHITE	3100	4000K	120 V/1-27 VA	
S	LITHONIA LIGHTING	CSS L48 AL03 MVOLT MIN10 ZC 40K 80CRI	4' STRIP LIGHT	SURFACE	WHITE	3000	4000K	120 V/1-22 VA	
V	LITHONIA LIGHTING	FMVCSL 24IN MVOLT 30K 90CRI BN M6	2' VANITY	WALL @7'6"	NICKLE	1300	3000K	120 V/1-18 VA	
W1	LITHONIA LIGHTING	WPX0 LED AL0 SWW2 MVOLT PE DDBXD M2	WALL PACK	WALL @ 8'	BLACK	850	4000K	120 V/1-13 VA	

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PROFESSIONAL SEAL

REVISIONS

NUMBER	DATE	REVISION DESCRIPTION	BY

TOWN OF WAITSFIELD

PROJECT NAME:
WAITSFIELD COMMUNITY WASTEWATER SYSTEM

4144 MAIN STREET
WAITSFIELD, VERMONT 056673

SHEET TITLE:
LIGHTING PLANS

DRAWN BY: WHH	DATE: 4/8/2026
CHECKED BY: EJD	D&K PROJECT #: 227947
PROJ. ENG.: WHH	D&K ARCHIVE #:

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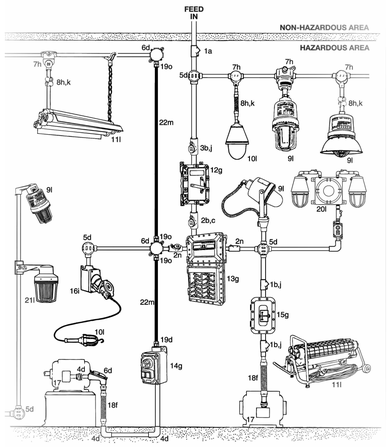
E2.1

SHEET: of



CLASS 1, DIVISION 1, GROUP D LIGHTING INSTALLATION DETAIL

NOT TO SCALE

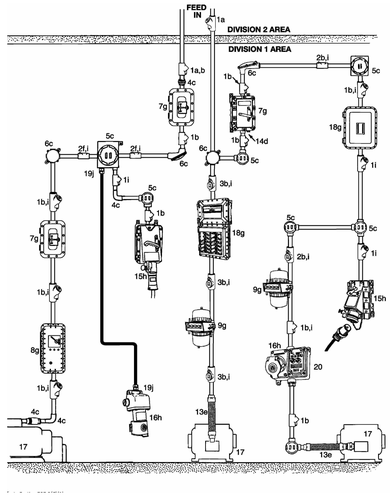
NOTE:
THIS DIAGRAM IS GENERAL IN NATURE AND IS PROVIDED FOR REFERENCE ONLY. PORTIONS MAY NOT APPLY TO THIS PROJECT. THE INTENT IS TO PROVIDE TYPICAL DETAILS FOR CONSTRUCTION IN CLASS I, DIVISION 1 HAZARDOUS LOCATIONS.

ITEM

1 SEALING FITTINGS. VERTICAL CONDUITS.
2 SEALING FITTINGS. VERTICAL OR HORIZONTAL CONDUITS.
3 SEALING FITTINGS, EXPANDED FILL.
4 UNIONS/ELBOWS.
5 EXPLOSIONPROOF JUNCTION BOXES. WITH THREADED COVERS.
6 EXPLOSIONPROOF JUNCTION BOXES.WITH GROUND SURFACE COVERS.
7 FIXTURE HANGERS.
8 FLEXIBLE AND SWIVEL FIXTURE SUPPORTS.
9 LUMINAIRES, FLOOD.
10 LUMINAIRES, LED.
11 LUMINAIRES, LED.
12 CIRCUIT BREAKER.
13 PANELBOARD, FACTORY SEALED.
14 PUSH BUTTON/ PILOT LIGHT, FACTORY SEALED.
15 SWITCH/MANUAL MOTOR STARTER. DISCONNECT.
16 RECEPTACLE, FACTORY SEALED.
17 MOTOR FOR HAZARDOUS LOCATION.
18 FLEXIBLE CONNECTOR.
19 TMCX CABLE/CONNECTORS, LISTED FOR CLASS I, DIVISION 1.
20 EMERGENCY LIGHTING SYSTEM. ELS SERIES.
21 STROBE WARNING LIGHT. CODE•MASTER™ STROBE.
22 MC-HL ARMORED/PVC JACKETED CABLE.

NATIONAL ELECTRIC CODE REFERENCE

a. SECTION 501.15(A)(4) SEAL REQUIRED ON EITHER SIDE OF BOUNDARY (WITHIN 10 FEET) ENTERING OR LEAVING HAZARDOUS AREA.
b. SECTION 501.15(A)(1) SEALS REQUIRED WITHIN 18 INCHES OF ALL ARCING DEVICES.
c. SECTION 501.15(A)(1) SEALS REQUIRED IF CONDUIT IS TRADE SIZE 2 OR LARGER.
d. SECTION 501.10(A) AND 500.8(D) BOXES AND FITTINGS MUST BE EXPLOSIONPROOF AND HAVE 5 FULL THREADS (4-1/2 WHEN FACTORY THREADED) ENGAGED. PERMITTED WIRING METHODS INCLUDE THREADED RMC, THREADED IMC, LISTED MI CABLE/FITTINGS AND LISTED MC-HL CABLE WITH LISTED CABLE CONNECTORS.
e. SECTION 501.15(F)(1) DRAIN/BREATHERS MUST BE INSTALLED TO PREVENT ACCUMULATION OF LIQUIDS OR CONDENSED VAPORS.
f. SECTION 501.10(A)(2 FLEXIBLE CONNECTIONS AS AT MOTOR TERMINALS MUST BE EXPLOSIONPROOF.
g. SECTION 501.115 PANELBOARDS, CIRCUIT BREAKERS, PUSH BUTTONS, SWITCHES, MOTOR CONTROLLERS SHALL BE EXPLOSIONPROOF AND APPROVED FOR CLASS I, DIVISION 1 LOCATIONS.
h. SECTION 501.130(A)(4) BOXES AND FITTINGS USED FOR SUPPORT OF LIGHTING FIXTURES SHALL BE APPROVED FOR CLASS I, DIVISION 1 LOCATIONS.
i. SECTION 501.145 RECEPTACLES AND PLUGS MUST BE EXPLOSIONPROOF AND PROVIDE GROUNDING CONDUCTOR FOR PORTABLE EQUIPMENT.
j. SECTION 501.15(C)(6) APPROVED EXPANDED FILL SEALS PERMIT UP TO 40% FILL OF CROSS SECTIONAL AREA OF CONDUIT.
k. SECTION 501.130(A)(3) PENDANT FIXTURE STEMS MUST BE THREADED RIGID OR IMC CONDUIT. STEMS OVER 12 INCHES MUST BE BRACED OR HAVE APPROVED FLEXIBLE CONNECTOR.
l. SECTION 501.130(A)(1) ALL LIGHTING FIXTURES, BOTH FIXED AND PORTABLE, MUST BE APPROVED FOR CLASS I, DIVISION 1.
m. SECTION 501.10(A)(1)(C) WHERE WIRING METHODS ALLOW MC-HL CABLE IN INDUSTRIAL ESTABLISHMENTS WITH LIMITED PUBLIC ACCESS.
n. FOR SOME APPLICATIONS PRODUCTS MAY REQUIRE SEALS INSTALLED IMMEDIATELY ADJACENT
o. SECTION 501.15(D)(1) CABLE SEALS, CLASS I, DIVISION 1.



CLASS 1, DIVISION 1, GROUP D POWER INSTALLATION DETAIL

NOT TO SCALE

NOTE:
THIS DIAGRAM IS GENERAL IN NATURE AND IS PROVIDED FOR REFERENCE ONLY. PORTIONS MAY NOT APPLY TO THIS PROJECT. THE INTENT IS TO PROVIDE TYPICAL DETAILS FOR CONSTRUCTION IN CLASS I, DIVISION 1 HAZARDOUS LOCATIONS.

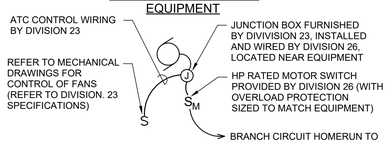
ITEM

1 SEALING FITTING. - USED WITH VERTICAL CONDUITS.
2 SEALING FITTINGS. - USED WITH VERTICAL OR HORIZONTAL CONDUITS.
3 SEALING FITTINGS, EXPANDED FILL.
4 UNIONS/ELBOWS.
5 EXPLOSIONPROOF JUNCTION BOXES. WITH THREADED COVERS.
6 EXPLOSIONPROOF JUNCTION BOXES.WITH GROUND SURFACE COVERS.
7 CIRCUIT BREAKER/DISCONNECT SWITCH/MANUAL STARTERS.
8 COMBINATION CIRCUIT BREAKER AND LINE STARTER. BOLTED COVER.
9 THREADED CIRCUIT BREAKER. THREADED COVER.
10 PUSH BUTTON/PILOT LIGHT, FACTORY SEALED.
11 PUSH BUTTON, NON-FACTORY SEALED..
12 SWITCH/MOTOR STARTER, FACTORY SEALED.
13 FLEXIBLE CONNECTOR.
14 DRAIN/BREATHER, COMBINATION. .
15 RECEPTACLE, NON-FACTORY SEALED. .
16 RECEPTACLE, FACTORY SEALED.
17 MOTOR FOR EXPLOSIONPROOF LOCATION.
18 PANELBOARDS.
19 TYPE MC-HL CABLE WITH TMCX CONNECTORS, LISTED FOR CLASS I, DIVISION 1.
20 GROUND FAULT INTERRUPTER (GFI).

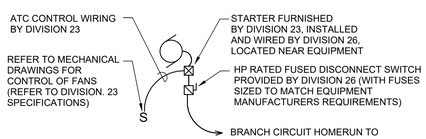
NATIONAL ELECTRIC CODE REFERENCE

a. SECTION 501.15(A)(4) SEAL REQUIRED ON EITHER SIDE OF BOUNDARY (WITHIN 10 FEET) ENTERING OR LEAVING HAZARDOUS AREA.
b. SECTION 501.15(A)(1) SEALS REQUIRED WITHIN 18 INCHES OF ALL ARCING DEVICES.
c. SECTION 501.10(A) AND 500.8(D) BOXES AND FITTINGS MUST BE EXPLOSIONPROOF AND HAVE 5 FULL THREADS (4-1/2 WHEN FACTORY THREADED) ENGAGED. PERMITTED WIRING METHODS INCLUDE THREADED RMC, THREADED IMC, LISTED MI CABLE/FITTINGS AND LISTED MC-HL CABLE WITH LISTED CABLE CONNECTORS.
d. SECTION 501.15(F)(1) DRAIN/BREATHERS MUST BE INSTALLED TO PREVENT ACCUMULATION OF LIQUIDS OR CONDENSED VAPORS.
e. SECTION 501.10(A)(2) FLEXIBLE CONNECTIONS AS AT MOTOR TERMINALS MUST BE EXPLOSIONPROOF.
f. SECTION 501.10(A)(3) ALL BOXES, FITTINGS AND JOINTS SHALL BE APPROVED FOR CLASS I, DIVISION 1.
g. SECTION 501.115 PANELBOARDS, CIRCUIT BREAKERS, PUSH BUTTONS, SWITCHES, MOTOR CONTROLLERS SHALL BE EXPLOSIONPROOF AND APPROVED FOR CLASS I, DIVISION 1 LOCATIONS.
h. SECTION 501.115 RECEPTACLES AND PLUGS MUST BE EXPLOSIONPROOF AND PROVIDE GROUNDING CONDUCTOR FOR PORTABLE EQUIPMENT.
i. SECTION 501.15(A)(1)(2) SEALS REQUIRED IF ENTRIES ARE TRADE SIZE 2 " OR LARGER.
j. SECTION 501.15(D)(1) CABLE SEALS, CLASS I, DIVISION 1.

TYPICAL SINGLE PHASE EQUIPMENT



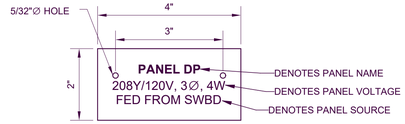
TYPICAL THREE PHASE EQUIPMENT



TYPICAL WIRING DIAGRAMS MECHANICAL EQUIPMENT

2 MOTOR CONNECTION DETAIL

SCALE: NO SCALE

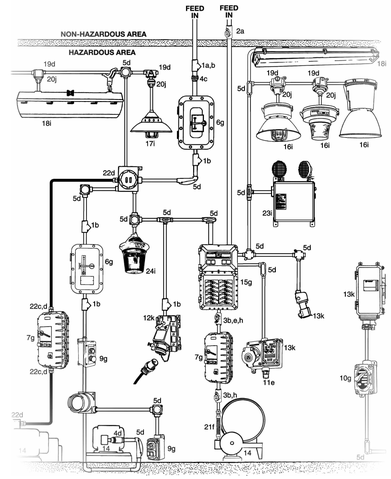


NOTES:

1. PROVIDE NAMEPLATES FOR ALL PANELBOARDS, DISCONNECTS AND ELECTRICAL EQUIPMENT, TYPICAL. REFER TO SPECIFICATIONS FOR ADDITIONAL NAMEPLATE REQUIREMENTS.
2. NAMEPLATE SHALL BE 1/16" WHITE PLASTIC W/ BLACK CENTER LAMINATION. FACE SHALL BE WHITE, ENGRAVED LETTERS SHALL BE BLACK AND 1/4" HIGH.
3. SECURE NAMEPLATE TO SURFACES WITH (2) FLAT-HEAD BRASS SCREWS.

1 PANELBOARDS & DISCONNECTS NAMEPLATE DETAIL

SCALE: NO SCALE



CLASS 1, DIVISION 2, LIGHTING AND POWER INSTALLATION

NOT TO SCALE

NOTE:
THIS DIAGRAM IS GENERAL IN NATURE AND IS PROVIDED FOR REFERENCE ONLY. PORTIONS MAY NOT APPLY TO THIS PROJECT. THE INTENT IS TO PROVIDE TYPICAL DETAILS FOR CONSTRUCTION IN CLASS I, DIVISION 2 HAZARDOUS LOCATIONS.

ITEM

1 SEALING FITTING. USED WITH VERTICAL CONDUITS.
2 SEALING FITTINGS. USED WITH VERTICAL OR HORIZONTAL CONDUITS.
3 SEALING FITTING, EXPANDED FILL.
4 UNIONS/ELBOWS.
5 CONDUIT BOXES, BODIES, FITTINGS.
6 CIRCUIT BREAKER OR DISCONNECT SWITCH.
7 COMBINATION CIRCUIT BREAKER AND LINE STARTER. BOLTED COVER.
8 THREADED CIRCUIT BREAKER, THREADED COVER.
9 PUSH BUTTON/PILOT LIGHT, FACTORY SEALED.
10 SWITCH/MOTOR STARTER, FACTORY SEALED.
11 DRAIN/BREATHER, COMBINATION.
12 RECEPTACLE, NON-FACTORY SEALED, INTERLOCKED
13 RECEPTACLE, FACTORY SEALED, WITH GFI
14 MOTOR FOR DIVISION 2 HAZARDOUS LOCATION.
15 LIGHTING PANELBOARD, FACTORY SEALED..
16 LUMINAIRES, FLOOD.
17 LUMINAIRES, LED
18 LUMINAIRES, FLUORESCENT/LED
19 OUTLET BOXES FOR PENDANT MOUNT FIXTURES.
20 FLEXIBLE FIXTURE SUPPORTS.
21 FLEXIBLE CONNECTOR. LIQUIDTIGHT FLEXIBLE METAL CONDUIT AND FITTINGS.
22 CABLE/CONNECTORS, LISTED FOR DIVISION 2.
23 EMERGENCY LIGHTING SYSTEM..
24 STROBE WARNING LIGHT.

NATIONAL ELECTRIC CODE REFERENCE

a. SECTION 501.15(B)(2) SEALS REQUIRED ON EITHER SIDE OF THE BOUNDARY (WITHIN 10 FEET) ENTERING OR LEAVING THE HAZARDOUS (CLASSIFIED) AREAS
b. SECTION 501.15(B)(1) SEALS REQUIRED IN ALL CONDUITS CONNECTED TO ENCLOSURES THAT ARE REQUIRED TO BE EXPLOSIONPROOF
c. SECTION 501.15(B)(1) AND 501.15(E)(1) CLASS I, DIVISION 1 WIRING METHODS SUCH AS THREADED RIGID METAL CONDUIT, IMC AND EXPLOSIONPROOF FITTINGS ARE REQUIRED BETWEEN THE SEAL AND THE EXPLOSIONPROOF ENCLOSURE. MC-HL OR MC CABLE IS ALLOWED HOWEVER FITTINGS MUST BE CLASS I, DIVISION 1 LISTED (CABLE CONNECTOR WITH INTEGRAL SEALING METHOD).
d. SECTION 501.10(B) BOXES AND FITTINGS ARE NOT REQUIRED TO BE EXPLOSIONPROOF UNLESS THE ENCLOSURE CONTAINS ARCING (CONTACTS), SPARKING OR HEAT PRODUCING DEVICES. PERMITTED WIRING METHODS INCLUDE ALL THOSE FOR DIVISION 1 SUCH AS THREADED RMC, THREADED IMC AND LISTED MC-HL CABLE WITH LISTED CABLE CONNECTORS. ALSO A VARIETY OF ADDITIONAL CABLE AND RACEWAY SYSTEMS ARE PERMITTED INCLUDING MC CABLE WITH LISTED MC CABLE CONNECTORS.
e. SECTION 501.15(F)(1) DRAINS/BREATHERS MUST BE INSTALLED TO PREVENT ACCUMULATION OF LIQUIDS OR CONDENSED VAPORS.
f. SECTION 501.10(B)(2) FLEXIBLE CONNECTIONS SUCH AS FLEXIBLE FITTINGS AND LIQUIDTIGHT FLEXIBLE METAL CONDUIT WITH LISTED FITTINGS ARE PERMITTED. LISTED LIQUIDTIGHT FLEXIBLE METAL CONDUIT FITTINGS ARE FITTINGS LISTED FOR USE WITH LIQUIDTIGHT FLEXIBLE METAL CONDUIT. THEY ARE NOT FITTINGS LISTED FOR CLASS I, DIVISION 2 HAZARDOUS (CLASSIFIED) LOCATIONS.
g. SECTION 501.115(B)(1) CIRCUIT BREAKERS, PUSHBUTTONS, SWITCHES, MOTOR CONTROLLERS SHALL BE IDENTIFIED FOR THE LOCATION - EXPLOSIONPROOF OR CONTACTS ARE WITHIN A FACTORY SEALED EXPLOSIONPROOF CHAMBER.
h. SECTION 501.15(C)(6) APPROVED EXPANDED FILL SEALS PERMIT UP TO 40% FILL OF CROSS SECTIONAL AREA OF CONDUIT.
i. SECTION 501.130(B)(1) LUMINAIRES SHALL BE TESTED AND MARKED WITH THE OPERATING TEMPERATURE/T-CODE (CLASS I, DIVISION 2) OR LUMINAIRES SHALL BE IDENTIFIED CLASS I, DIVISION 1 - EXPLOSIONPROOF.
j. SECTION 501.130(B)(3) PENDANT FIXTURE STEMS MUST BE THREADED RIGID METAL OR IMC CONDUIT. STEMS OVER 12 INCHES MUST BE BRACED OR HAVE AN APPROVED FLEXIBLE FITTING/CONNECTOR.
k. SECTION 501.145 RECEPTACLES AND PLUGS MUST BE IDENTIFIED FOR THE LOCATION (EXPLOSIONPROOF OR CLASS I, DIVISION 2) AND HAVE A GROUNDING CONDUCTOR FOR PORTABLE EQUIPMENT.

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NO.	DATE	DESCRIPTION	BY	CKD

TOWN OF WAITSFIELD

WAITSFIELD COMMUNITY WASTEWATER SYSTEM
4144 MAIN STREET
WAITSFIELD, VERMONT
056673

SHEET TITLE

HAZARDOUS EQUIPMENT DETAILS

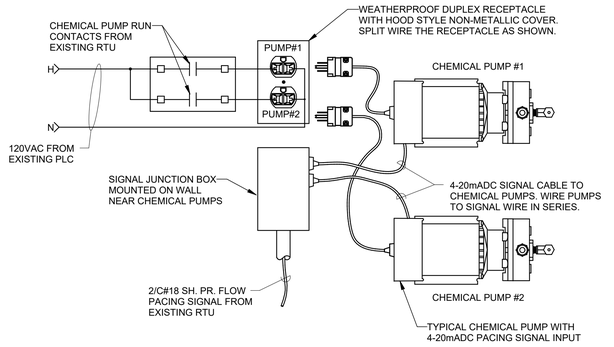
DRAWN BY	DATE
WHH	08/09/23
CHECKED BY	D&K PROJECT #
RFK	227947
PROJ. ENG.	D&K ARCHIVE #
WHH	

SHEET NUMBER

E5.1

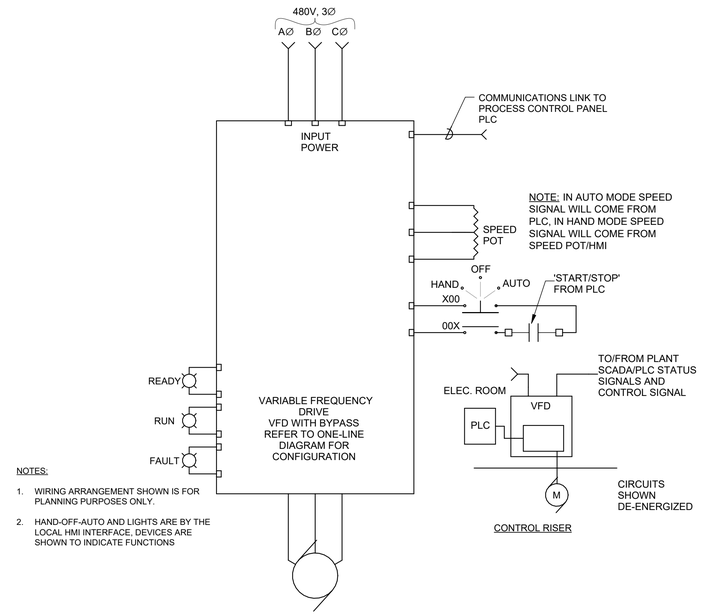
SHEET OF

Autodesk Docs://227947 Waitsfield Water and Wastewater Feasibility Study/227947 Waitsfield Elec-R24.rvt 3/31/2026 10:26:37 AM



1 CHEMICAL PUMP WIRING DIAGRAM

SCALE: not to scale

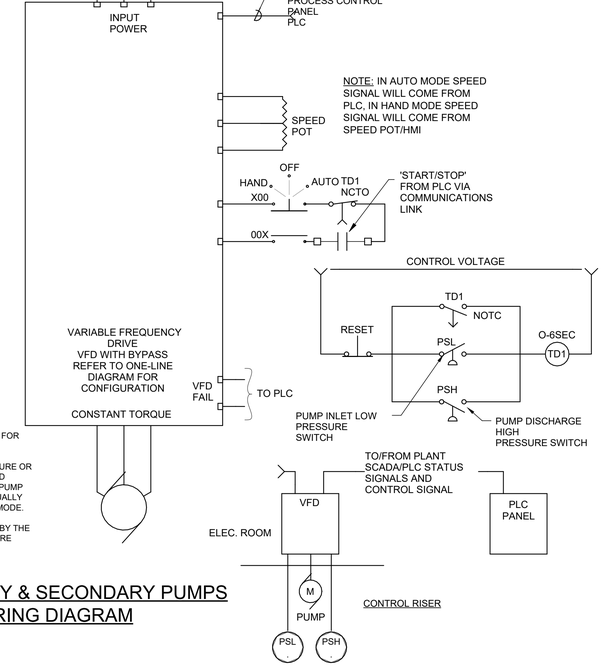


NOTES:

1. WIRING ARRANGEMENT SHOWN IS FOR PLANNING PURPOSES ONLY.
2. HAND-OFF-AUTO AND LIGHTS ARE BY THE LOCAL HMI INTERFACE, DEVICES ARE SHOWN TO INDICATE FUNCTIONS

TYPICAL PUMP WIRING DIAGRAM

NO SCALE



NOTES:

1. WIRING ARRANGEMENT SHOWN IS FOR PLANNING PURPOSES ONLY.
2. UPON EITHER A LOW INLET PRESSURE OR A HIGH DISCHARGE PRESSURE AND AFTER A SHORT TIME DELAY, THE PUMP VFD WILL SHUT DOWN UNTIL MANUALLY RESET IN EITHER HAND OR AUTO MODE.
3. HAND-OFF-AUTO AND LIGHTS ARE BY THE LOCAL HMI INTERFACE, DEVICES ARE SHOWN TO INDICATE FUNCTIONS

PRIMARY & SECONDARY PUMPS VFD WIRING DIAGRAM

NO SCALE

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TOWN OF WAITSFIELD

WAITSFIELD COMMUNITY WASTEWATER SYSTEM

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WIRING DIAGRAMS

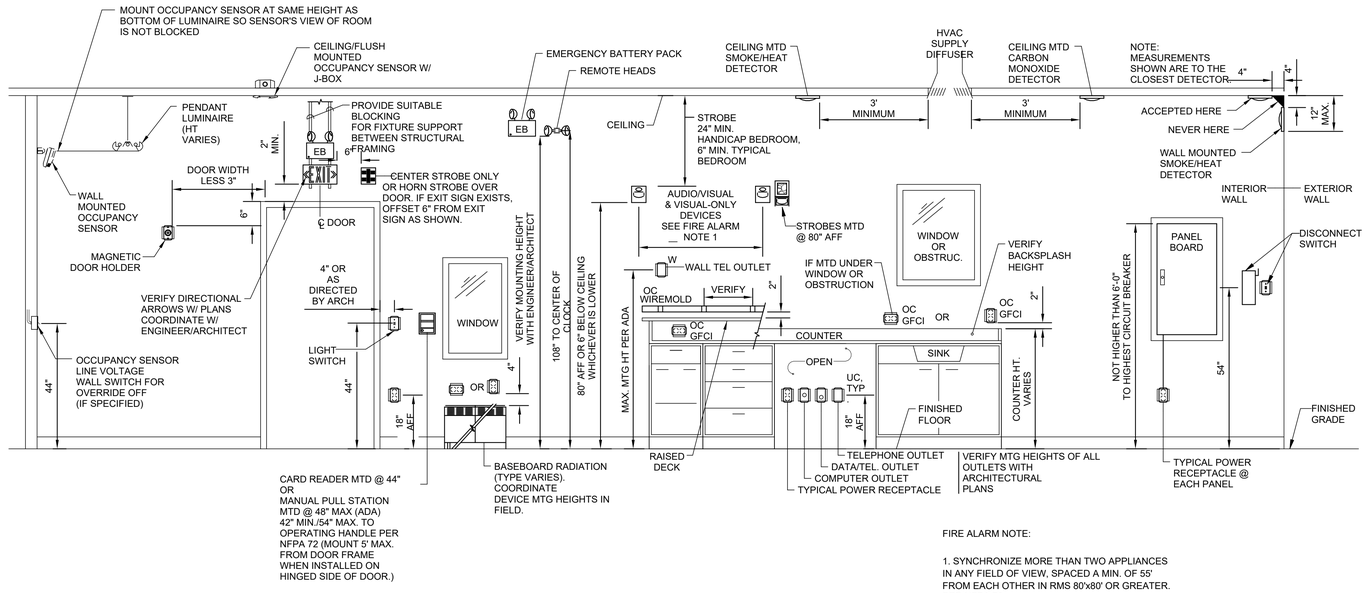
DRAWN BY	DATE
WHH	9/22/23
CHECKED BY	D&K PROJECT #
RFK	227947
PROJ. ENG.	D&K ARCHIVE #
WHH	

SHEET NUMBER

E5.2

SHEET OF

Autodesk Docs://227947 Waitsfield Water and Wastewater Feasibility Study/227947_Waitsfield Elec.rvt 3/31/2026 10:26:37 AM

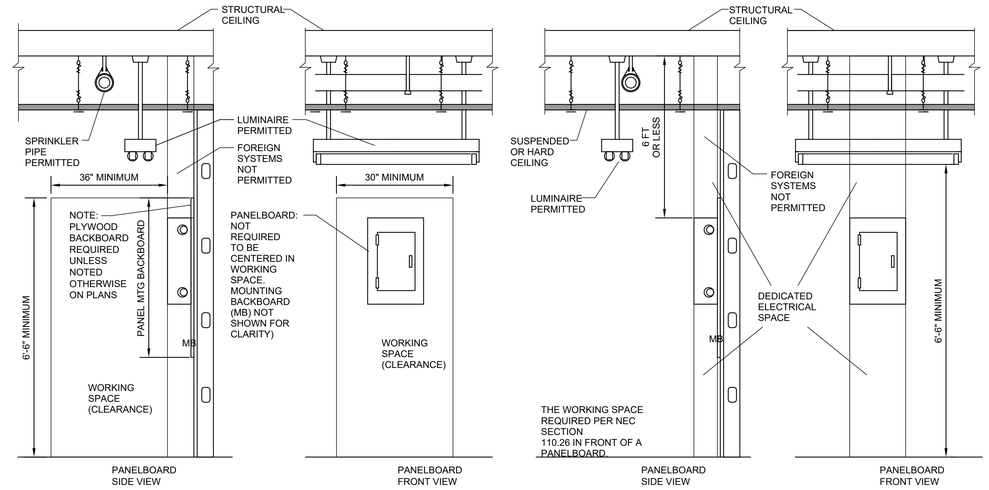


FIRE ALARM NOTE:

1. SYNCHRONIZE MORE THAN TWO APPLIANCES IN ANY FIELD OF VIEW, SPACED A MIN. OF 55' FROM EACH OTHER IN RMS 80'x80' OR GREATER. PER NFPA 72.

1 TYPICAL DEVICE MOUNTING HEIGHTS

SCALE: NOT TO SCALE (NOT ALL DEVICES MAY BE USED)



2 WORKING SPACE

SCALE: 12" = 1'-0"

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	DATE		

TOWN OF WAITSFIELD

WAITSFIELD COMMUNITY WASTEWATER SYSTEM
4144 MAIN STREET
WAITSFIELD, VERMONT
056673

SHEET TITLE

ELECTRICAL DETAILS

DRAWN BY	DATE
WHH	08/09/23
CHECKED BY	D&K PROJECT #
RFK	227947
PROJ. ENG.	D&K ARCHIVE #
WHH	

SHEET NUMBER

E5.3

SHEET OF

Autodesk Docs://227947 Waitsfield Water and Wastewater Feasibility Study/227947_Waitsfield-Elec-R24.rvt 3/31/2026 10:26:38 AM

Panel: DP

Location: ELECTRICAL 05 | **Volts:** 480/277 Wye | **A.I.C. Rating:**
Supply From: ATS | **Phases:** 3 | **Mains Type:**
Mounting: Surface | **Wires:** 4 | **Mains Rating:** 600 A
Enclosure: Type 1 | **SubFeed Lugs:** No | **Panel Bus**

WIRE SIZE (H,N&G)	CONDUIT	DESCRIPTION	POLE	AMP	CKT No	A	B	C	A	B	C	CKT No	AMP	POLE	DESCRIPTION	CONDUIT	WIRE SIZE (H,N&G)
					1	11457			8980			2					
3-#4, 1-#4, 1-#8	1-1/4"	TRANSFORMER T1	3	70 A	3		8441			8980		4	100 A	3	SBRCP	2"	3-#1, 1-#1, 1-#8
					5			9727			8980	6					
					7	2273			3333			8					
3-#12, 1-#12	3/4"	POWER BLOWER #1	3	20 A	9		2273			3333		10	30 A	3	POWER BASEMENT UV SYSTEM	3/4"	3-#10, 1-#10, 1-#10
					11			2273			3333	12					
					13	2273			3333			14					
3-#12, 1-#12	3/4"	POWER BLOWER #2	3	20 A	15		2273			3333		16	30 A	3	POWER BASEMENT UV SYSTEM	3/4"	3-#10, 1-#10, 1-#10
					17			2273			3333	18					
					19	2273			377			20					
3-#12, 1-#12	3/4"	POWER BLOWER #3	3	20 A	21		2273			377		22	20 A	3	SEWAGE PUMP STATION	3/4"	3-#12, 1-#12, 1-#12
					23			2273			377	24					
					25							26					
					27							28					
					29							30					
					31							32					
					33							34					
					35							36					
					37							38					
					39							40					
					41							42					
				Total Load:		34299 VA		31283 VA		32568 VA							
				Total Amps:		125 A		113 A		118 A							

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
HVAC	44572 VA	100.00%	44572 VA		
Lighting	1303 VA	100.00%	1303 VA	**Total Conn. Load:**	98150 VA
Motor	17459 VA	100.00%	17459 VA	**Total Est. Demand:**	98150 VA
Other	0 VA	0.00%	0 VA	**Total Conn.:**	118 A
Power	26780 VA	100.00%	26780 VA	**Total Est. Demand:**	118 A
Receptacle	8036 VA	100.00%	8036 VA		

Notes:

Panel: PP

Location: ELECTRICAL 05 | **Volts:** 120/208 Wye | **A.I.C. Rating:** 10 KAIC
Supply From: T1 | **Phases:** 3 | **Mains Type:** MCB
Mounting: SURFACE | **Wires:** 4 | **Mains Rating:** 225 A
Enclosure: TYPE 1 | **SubFeed Lugs:** | **Panel Bus** 225 A

WIRE SIZE (H,N&G)	CONDUIT	DESCRIPTION	POLE	AMP	CKT No	A	B	C	A	B	C	CKT No	AMP	POLE	DESCRIPTION	CONDUIT	WIRE SIZE (H,N&G)
1-#12, 1-#12, 1-#12	3/4"	RECEPTACLE CHEMICAL ROOM --	1	20 A	1	360			360			2	20 A	1	RECEPTACLE	3/4"	1-#12, 1-#12, 1-#12
1-#12, 1-#12, 1-#12	3/4"	RECEPTACLE ROOM	1	20 A	3		360			729		4	20 A	1	LIGHTING	3/4"	1-#12, 1-#12, 1-#12
1-#12, 1-#12, 1-#12	3/4"	LIGHTING CHEMICAL ROOM	1	20 A	5			330			92	6	20 A	1	LIGHTING	3/4"	1-#12, 1-#12, 1-#12
1-#12, 1-#12, 1-#12	3/4"	LIGHTING	1	20 A	7	402			540			8	20 A	1	RECEPTACLE BLOWER ROOM 07	3/4"	1-#12, 1-#12, 1-#12
1-#12, 1-#12, 1-#12	3/4"	RECEPTACLE BATHROOM 03	1	20 A	9		180			900		10	20 A	1	RECEPTACLE CORRIDOR 01	3/4"	1-#12, 1-#12, 1-#12
1-#12, 1-#12, 1-#12	3/4"	RECEPTACLE BASEMENT B01	1	20 A	11			360			200	12	20 A	1	HVAC BASEMENT B01	3/4"	1-#12, 1-#12, 1-#12
1-#12, 1-#12, 1-#12	3/4"	HVAC BASEMENT B01	1	20 A	13	1000			180			14	20 A	1	RECEPTACLE BASEMENT B01	3/4"	1-#12, 1-#12, 1-#12
1-#12, 1-#12, 1-#12	3/4"	HVAC EF-1, 2, 3, & 4	1	20 A	15		756			200		16	20 A	1	ANALYZERS	3/4"	1-#12, 1-#12, 1-#12
1-#12, 1-#12, 1-#12	3/4"	RECEPTACLE CHEMICAL ROOM --	1	20 A	17			180			180	18	20 A	1	RECEPTACLE CHEMICAL FEED...	3/4"	1-#12, 1-#12, 1-#12
1-#12, 1-#12, 1-#12	3/4"	RECEPTACLE CHEMICAL FEED...	1	20 A	19	180			830			20	20 A	1	HVAC CHEMICAL FEED ROOM 06	3/4"	1-#12, 1-#12, 1-#12
1-#12, 1-#12, 1-#12	3/4"	RECEPTACLE ELECTRICAL 05	1	20 A	21		360			360		22	20 A	1	RECEPTACLE ELECTRICAL 05	3/4"	1-#12, 1-#12, 1-#12
1-#12, 1-#12, 1-#12	3/4"	RECEPTACLE CORRIDOR 01	1	20 A	23			180			2250	24	20 A	2	HVAC		2-#10, 1-#10, 1-#10
2-#12, 1-#12, 1-#12	3/4"	HP-1	2	20 A	25	1450			2250			26					
					27		1450			360		28	20 A	1	RECEPTACLE LAB / OFFICE 02	3/4"	1-#12, 1-#12, 1-#12
1-#12, 1-#12, 1-#12	3/4"	RECEPTACLE LAB / OFFICE 02	1	20 A	29			360			360	30	20 A	1	RECEPTACLE LAB / OFFICE 02	3/4"	1-#12, 1-#12, 1-#12
1-#12, 1-#12, 1-#12	3/4"	RECEPTACLE LAB / OFFICE 02	1	20 A	31	360			360			32	20 A	1	RECEPTACLE LAB / OFFICE 02	3/4"	1-#12, 1-#12, 1-#12
1-#12, 1-#12, 1-#12	3/4"	RECEPTACLE LAB / OFFICE 02	1	20 A	33		360			360		34	20 A	1	RECEPTACLE LAB / OFFICE 02	3/4"	1-#12, 1-#12, 1-#12
1-#12, 1-#12, 1-#12	3/4"	HVAC LAB / OFFICE 02	1	20 A	35			500			1500	36	20 A	1	BLOCK HEATER	3/4"	1-#8, 1-#8, 1-#8
1-#12, 1-#12, 1-#12	3/4"	POWER CORRIDOR 01	1	20 A	37	250			200			38	20 A	1	BATTERY CHARGER	3/4"	1-#12, 1-#12, 1-#12
1-#12, 1-#12, 1-#12	3/4"	HVAC BASEMENT B01	1	20 A	39		100			836		40	20 A	1	RECEPTACLE BASEMENT B01	3/4"	1-#12, 1-#12, 1-#12
1-#12, 1-#12, 1-#12		HVAC UTILITY 04	1	20 A	41			250			1170	42	20 A	2	WELL PUMP	3/4"	2-#12, 1-#12, 1-#12
2-#12, 1-#12, 1-#12		HVAC UTILITY 04	2	20 A	43	565			1170			44					
					45		565			565		46					
1-#12, 1-#12, 1-#12		HVAC UTILITY 04	1	20 A	47			1250			565	48	20 A	2	HVAC UTILITY 04		2-#12, 1-#12, 1-#12
1-#12, 1-#12, 1-#12		HVAC MEZZ STAIR 17	1	20 A	49	1000						50					
					51							52					
					53							54					
					55							56					
					57							58					
					59							60					
					61							62					
					63							64					
					65							66					
					67							68					
					69							70					
					71							72					
				Total Load:		11457 VA		8441 VA		9727 VA							
				Total Amps:		97 A		70 A		83 A							

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
HVAC	17636 VA	100.00%	17636 VA		
Lighting	1303 VA	100.00%	1303 VA	**Total Conn. Load:**	29625 VA
Other	0 VA	0.00%	0 VA	**Total Est. Demand:**	29625 VA
Power	2650 VA	100.00%	2650 VA	**Total Conn.:**	82 A
Receptacle	8036 VA	100.00%	8036 VA	**Total Est. Demand:**	82 A

Notes:

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TOWN OF WAITSFIELD

PROJECT NAME:
WAITSFIELD COMMUNITY WASTEWATER SYSTEM

4144 MAIN STREET
WAITSFIELD, VERMONT 056673

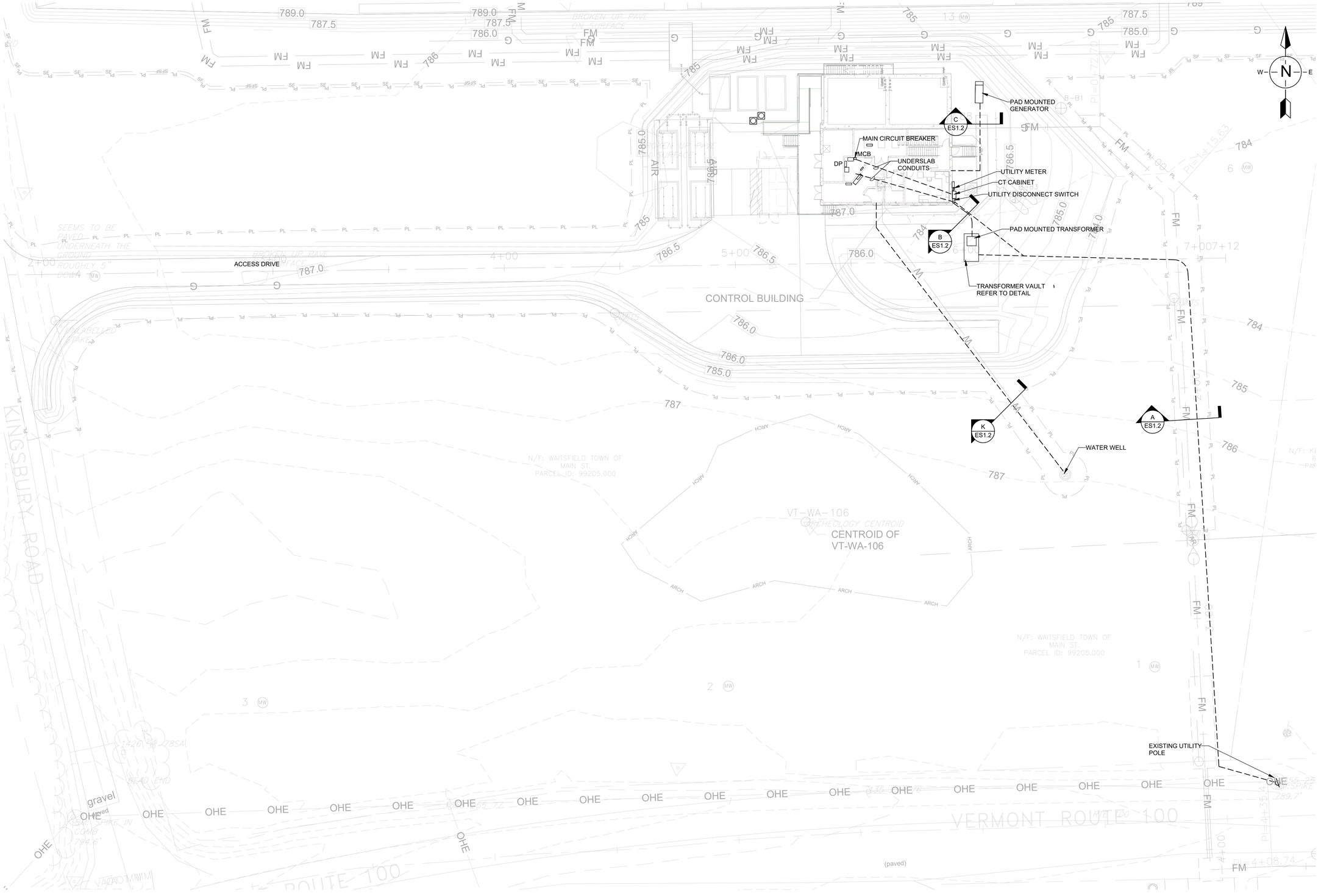
SHEET TITLE:
PANEL SCHEDULE

DRAWN BY	DATE
WHH	4/8/2026
CHECKED BY	D&K PROJECT #
EJD	227947
PROJ. ENG.	D&K ARCHIVE #
WHH	

SHEET NUMBER

E6.1

SHEET: of



1 ELECTRICAL SITE PLAN
SCALE: 1" = 20'-0"

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4144 MAIN STREET
WAITSFIELD, VERMONT 056673

SHEET TITLE:
ELECTRICAL SITE PLAN

DRAWN BY	DATE
WHH	4/8/2026
CHECKED BY	D&K PROJECT #
EJD	227947
PROJ. ENG.	D&K ARCHIVE #
WHH	

SHEET NUMBER
ES1.1

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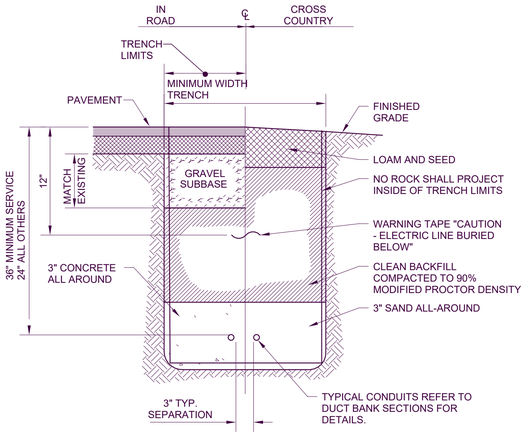

2 TYPICAL TRENCH SECTION
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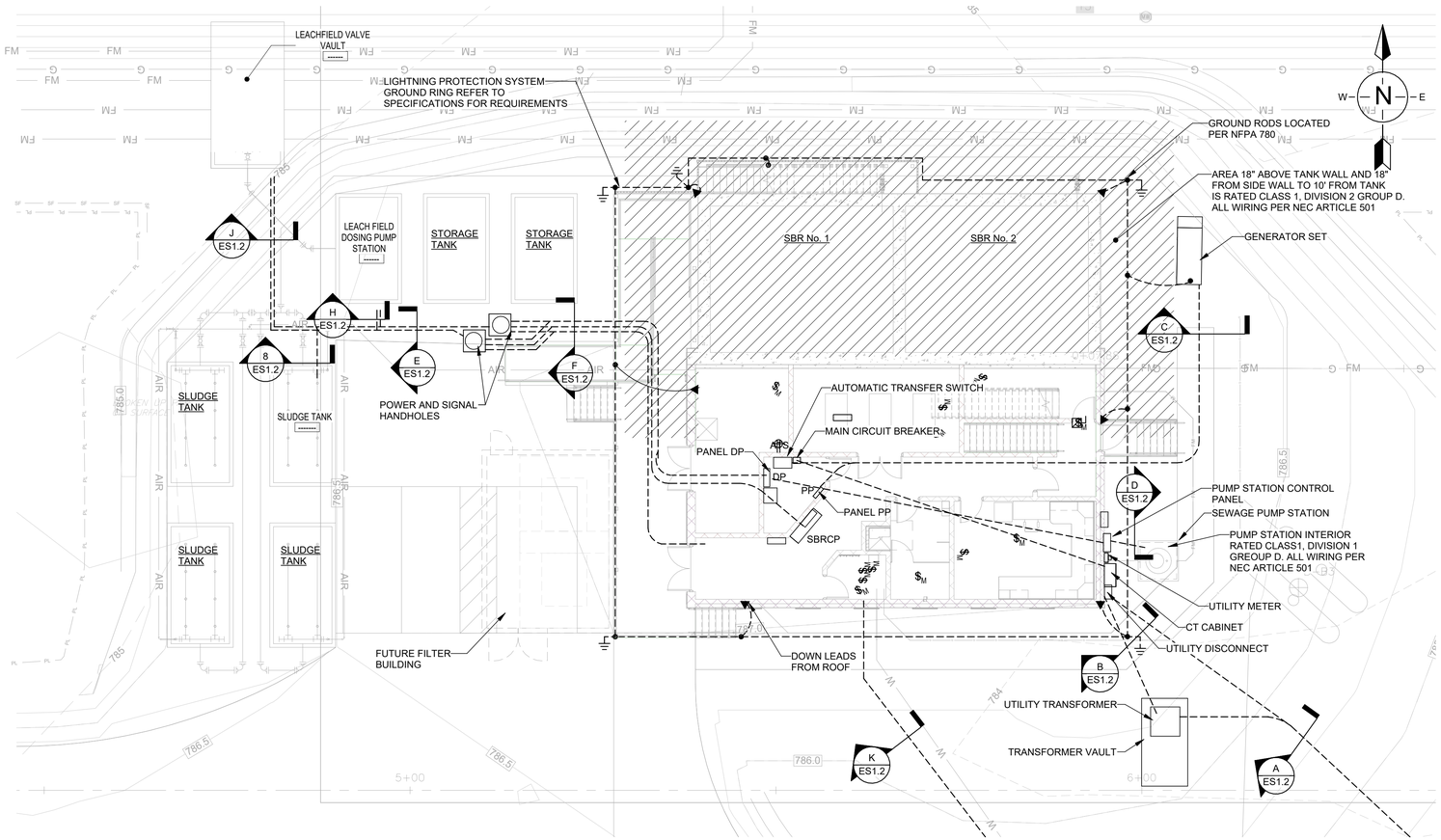
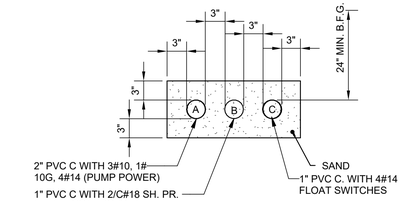
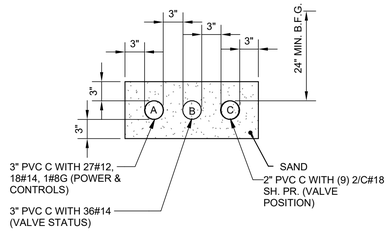


1 ENLARGED ELECTRICAL SITE PLAN
SCALE: 1" = 10'-0"



H DUCTBANK SECTION - LEACHATE PUMP STATION
SCALE: NOT TO SCALE



J DUCTBANK TRENCH SECTION - VALVE VAULT
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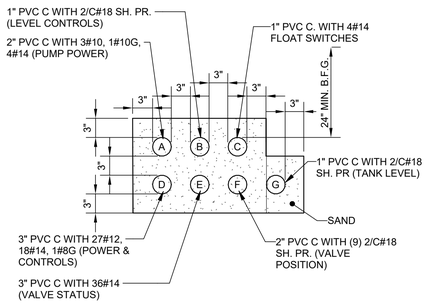
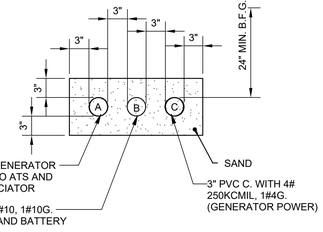
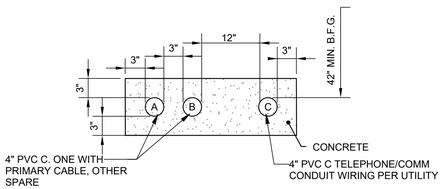


E DUCTBANK TRENCH SECTION - AFTER MANHOLES
SCALE: NOT TO SCALE



C DUCTBANK SECTION - GENERATOR
SCALE: NOT TO SCALE



A DUCTBANK SECTION - PRIMARY SERVICE
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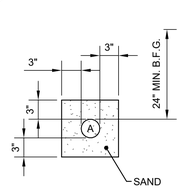

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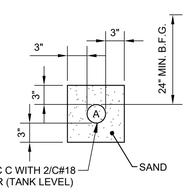

8 DUCTBANK SECTION - SLUDGE TANK
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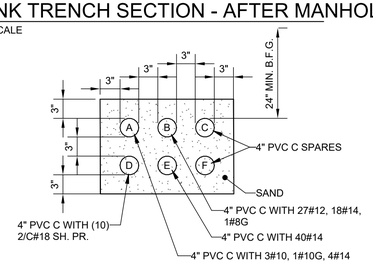

F DUCT BANK SECTION - MANHOLES
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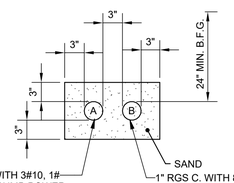

D DUCTBANK SECTION - SEPTAGE PUMP STATION
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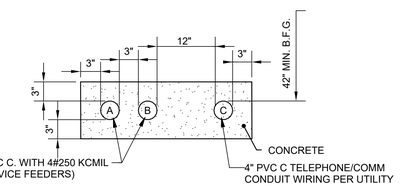

B DUCTBANK SECTION - SECONDARY SERVICE
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PROFESSIONAL SEAL

REVISIONS

NUMBER	DATE	REVISION DESCRIPTION	BY

TOWN OF WAITSFIELD

PROJECT NAME:
WAITSFIELD COMMUNITY WASTEWATER SYSTEM

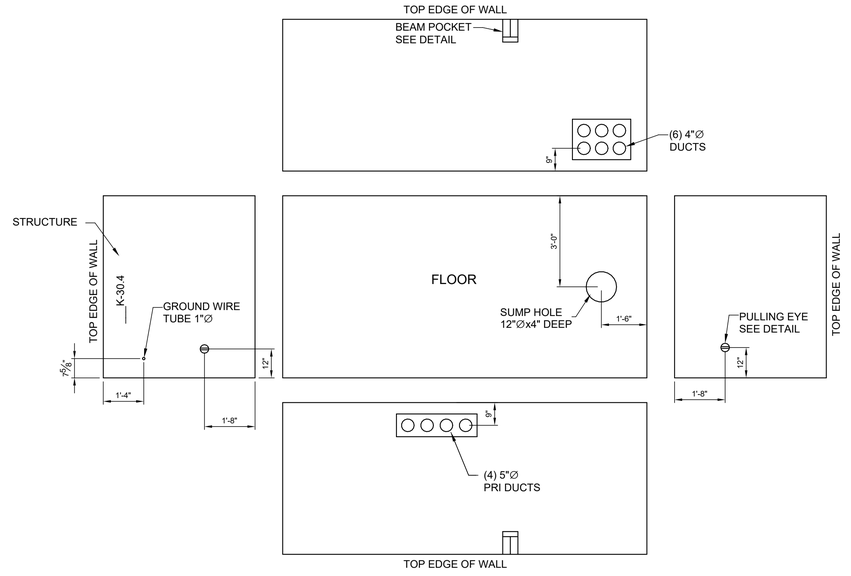
4144 MAIN STREET
WAITSFIELD, VERMONT 056673

SHEET TITLE:
ENLARGED ELECTRICAL SITE PLAN

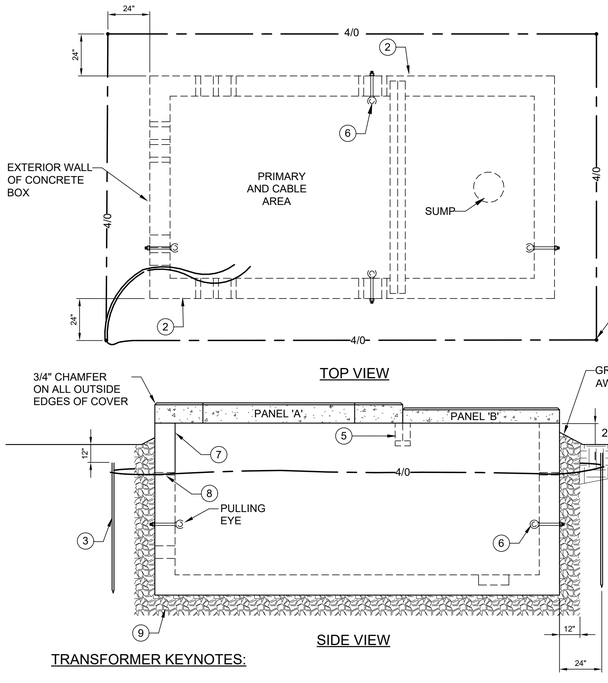
DRAWN BY: WHH	DATE: 4/8/2026
CHECKED BY: EJD	D&K PROJECT #: 227947
PROJ. ENG.: WHH	D&K ARCHIVE #:

SHEET NUMBER
ES1.2

SHEET: of



VAULT WALL PENETRATIONS AND ACCESSORY LOCATIONS

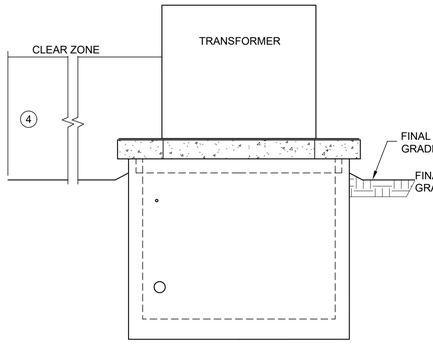


TOP VIEW

SIDE VIEW

TRANSFORMER KEYNOTES:

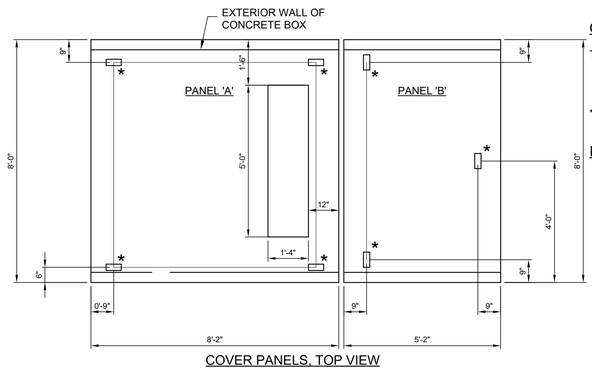
1. PRIMARY CONDUIT TERMINATORS, IN EACH SIDE WALL BY GMP.
2. SECONDARY CONDUIT TERMINATORS (IN REAR AND SIDE WALLS ONLY) BY GMP.
3. GROUND RODS: 5/8"Ø X 8' LONG COPPER CLAD. GROUND WIRE: 4/0 BARE COPPER.
4. ACCESS DOORS MUST FACE CLEAR SPACE TO 12' AWAY MINIMUM.
5. WIDE FLANGE (WF) STEEL BEAM, HOT DIPPED GALVANIZED OR 2 COATS OF EPOXY PAINT OVER RUST INHIBITING PRIMER. BEAM TO BE INSTALLED FLUSH WITH TOP SURFACE OF BASE UNIT WITH PANELS 1 & 2 IN-PLACE AND FIXED IN-PLACE BY NON-SHRINK GROUT LAID AT LEAST 2" IN DEPTH.
6. PULLING EYES SHALL BE INSTALLED IN WALLS OPPOSITE PRIMARY CONDUITS AS SHOWN. APPROVED MATERIAL FOR PULLING EYE IS MFGR: CROSBY GROUP. DESC: SHOULDER NUT EYE BOLT TYPE G-277. SIZE: 1-1/4" DIA., 15,200 LB WORKING LOAD. USE 3" SQUARE X 1/4" HOT DIPPED GALVANIZED WASHER UNDER NUT. ALTERNATE MATERIAL IS: HOT DIPPED GALVANIZED 7/8" DIA. X 9" STEEL LOOP SET INTO CONCRETE WALL OF STRUCTURE. MFGR: CONDUX INT'L INC.CAT. #83830-00.
7. 2 LAYERS OF 15 LB. BLACK ASPHALT ROOFING FELT BETWEEN ALL CONCRETE TO CONCRETE AND CONCRETE TO STEEL CONTACT SURFACES OF PANELS.
8. 1"Ø PVC TUBE THROUGH WALL FOR GROUND WIRE. LOCATE THE TUBE 16" DOWN ON THE END WALL WHICH IS OPPOSITE THE SUMP HOLE END OF BOX.
9. EXCAVATION FOR THE BOX SHALL BE 12 INCHES DEEPER THAN SET DEPTH. THE BACKFILL BENEATH THE BOX AND AROUND THE WALL UP TO FINAL GRADE SHALL BE CRUSHED STONE FOR A DISTANCE OF 12 INCHES MINIMUM FROM THE BOX WALLS.
10. FOUNDATION TOP SHALL BE NO LESS THAN TWO (2), OR MORE THAN FOUR (4) INCHES ABOVE FINAL GRADE.



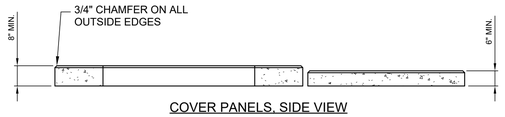
END VIEW

LAYOUT AND GROUNDING DETAILS

1 TRANSFORMER VAULT DETAIL
SCALE: NOT TO SCALE



COVER PANELS, TOP VIEW

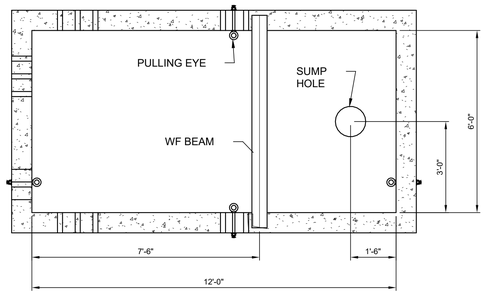


COVER PANELS, SIDE VIEW

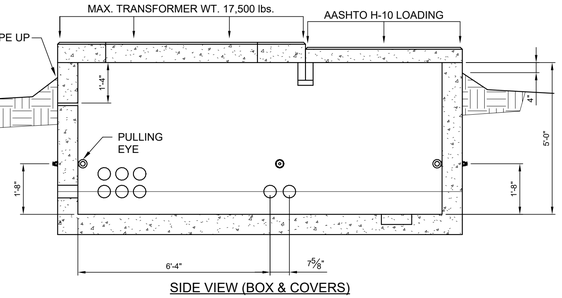
* RECESSED LIFTING EYES, #6 REBAR IN APPROX. 2.5"x6" SLOT (TOTAL 7 EYES)

NOTES:
1. PANEL 'A' DESIGN LOAD 17,500 lbs.
2. PANEL 'B' DESIGN LOAD AASHTO H-10.

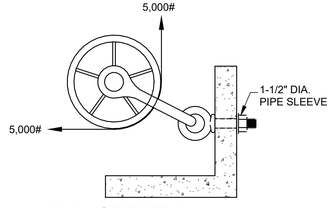
VAULT COVER DETAILS



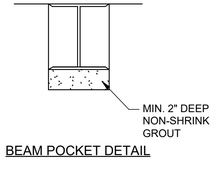
TOP VIEW (BOX ONLY)



SIDE VIEW (BOX & COVERS)



PULLING EYE DETAIL



BEAM POCKET DETAIL

VAULT DETAILS

GENERAL NOTES:

THESE GENERAL REQUIREMENTS APPLY TO THE FOLLOWING SPECIFIC APPLICATIONS:

K-30.4 3 PHASE PAD TRANSFORMER 5kV (15) & BELOW, 750 & 1000 KVA (208)
- 1500 THRU 2500 KVA (480V) *

* CONTACT GMP ENGINEERING DEPARTMENT FOR CURRENT TRANSFORMER VAULT SIZE AND CONFIGURATION REQUIREMENTS.

I DESIGN LOADS:

- THE CONCRETE BOX AND STEEL BEAMS SHALL BE DESIGNED TO SUPPORT STATIC LOADS OF COVER PANELS "A" AND "B" AND DESIGN LOADS SPECIFIED FOR THE EQUIPMENT APPLICATION. THE SIDE WALLS OF THE BOX SHALL WITHSTAND FIELD CONDITIONS OF BACKFILL CONSISTING OF 12 INCHES OF CRUSHED STONE AROUND ALL SIDE WALLS AND BENEATH THE STRUCTURE AND WITH THE WATER TABLE AT THE TOP OF THE WALLS.
- COVER PANELS SHALL BE ABLE TO SUPPORT THE LOADS SPECIFIED FOR THE APPLICATION WITH SUITABLE IMPACT FACTORS.
- SET DEPTH OF THE BOX WILL BE WITH APPROXIMATELY 4 INCHES OF WALL ABOVE FINAL GRADE AND WITH NO EARTH COVERING THE SLABS.
- BUOYANCY OF THE STRUCTURE SHALL BE NEGATIVE WITH NO LOAD CONDITIONS ON THE COVER PANELS.

II APPROVED SUPPLIERS:

CONCRETE STRUCTURES SHALL BE SUPPLIED FROM CONCRETE PRODUCT MANUFACTURERS AND HARDWARE MANUFACTURERS PRE-APPROVED BY GMP.

PRE-APPROVED REQUIRES THE FOLLOWING:

SUBMITTAL OF DETAILED SHOP DRAWINGS FOR THE COMPLETE STRUCTURE DESIGN FOR THIS SPECIFICATION. THE SHOP DRAWINGS SHALL BE STAMPED AND CERTIFIED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF VERMONT.

THE STRUCTURE SHALL BE IDENTIFIED BY THE CONCRETE MANUFACTURER USING THE K-30. "X" UTILITY DESIGNATOR (WHERE THE "X" IS REPLACED BY SPECIFIC 1.2 OR 3... IN THE K-30 DESIGN SERIES) AND BY A CONCRETE MANUFACTURER'S UNIQUE CATALOG NUMBER FOR THE COMPLETE STRUCTURE. THIS CATALOG NUMBER SHALL BE PAINTED ON THE END WALL 6 INCHES DOWN ON THE PANEL "A" END IN BLACK COLORED PAINT FORMULATED FOR USE ON CONCRETE.

EACH COMPLETE STRUCTURE, INCLUDING CONCRETE BOX AND COVER PANELS. STEEL BEAM AND ALL REQUIRED PULLING EYES OR IRONS, SHALL BE SUPPLIED BY A SINGLE CONCRETE PRODUCT MANUFACTURER. NO PARTIAL PRODUCTS OR SUBSTITUTIONS WILL BE PERMITTED.

III PRODUCT DOCUMENTATION:

PROOF OF PURCHASE FROM AN APPROVED MANUFACTURER SHALL BE PROVIDED ON ORIGINAL LETTERHEAD DOCUMENT OF THE MANUFACTURER AND SHALL INCLUDE THE FOLLOWING INFORMATION:

1. NAME OF PURCHASER (COMPANY).
2. DATE OF PURCHASE.
3. CONCRETE MANUFACTURER CATALOG NUMBER(S) OF STRUCTURES PURCHASED.
4. QUANTITY OF EACH STRUCTURE PURCHASED.
5. NAME AND LOCATION OF PROJECT BY STREET ADDRESS AND TOWN.
6. PRINTED NAME AND SIGNATURE OF AUTHORIZED SALES AGENT FOR CONCRETE PRODUCT MANUFACTURER.

THIS PROOF OF PURCHASE SHALL BE DELIVERED TO THE UTILITY COMPANY PROJECT INSPECTOR OR OWNER.

NOTES FOR ALL CONCRETE FOUNDATIONS:

1. CONCRETE TO BE MIN. 4000 PSI, 28 DAY STRENGTH.
2. AIR ENTRAINMENT TO BE 4% TO 6%.
3. REINFORCING STEEL TO CONFORM TO ASTM-615, GRADE 60 AND TO BE PLACED IN ACCORDANCE WITH ACI STANDARDS.
4. PROVIDE #4 REINFORCING @ 9" EACH WAY, TOP AND SIDES.
5. ALL CONCRETE WORK SHALL CONFORM TO ACI STANDARD PRACTICE.
6. CONCRETE FOUNDATIONS MAY BE CAST-IN-PLACE OR PRE-CAST DESIGN.

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PROFESSIONAL SEAL

REVISIONS

NUMBER	DATE	REVISION DESCRIPTION	BY

TOWN OF WAITSFIELD

PROJECT NAME:

WAITSFIELD COMMUNITY WASTEWATER SYSTEM

4144 MAIN STREET
WAITSFIELD, VERMONT 056673

SHEET TITLE:

ELECTRICAL SITE DETAILS

DRAWN BY	DATE
WHH	4/8/2026
CHECKED BY	D&K PROJECT #
EJD	227947
PROJ. ENG.	D&K ARCHIVE #
WHH	

SHEET NUMBER

ES5.1

SHEET: of

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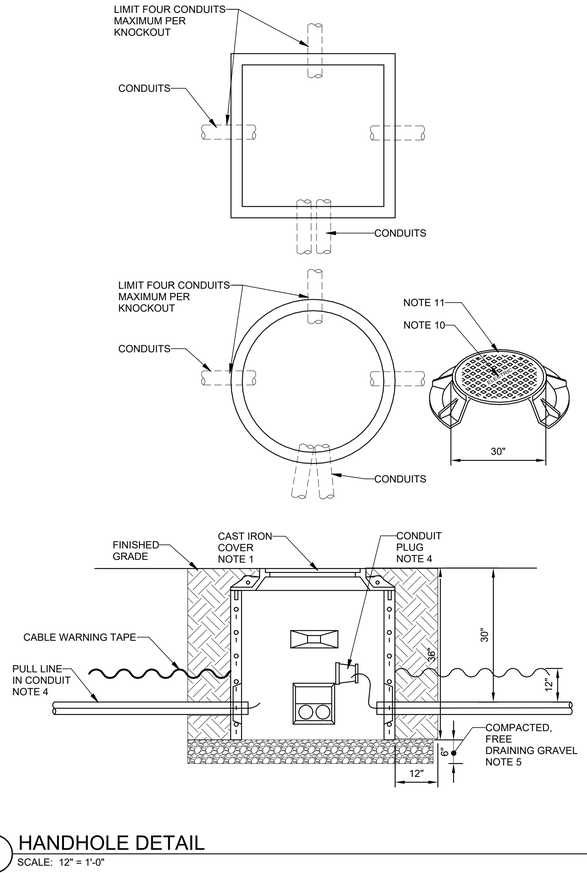
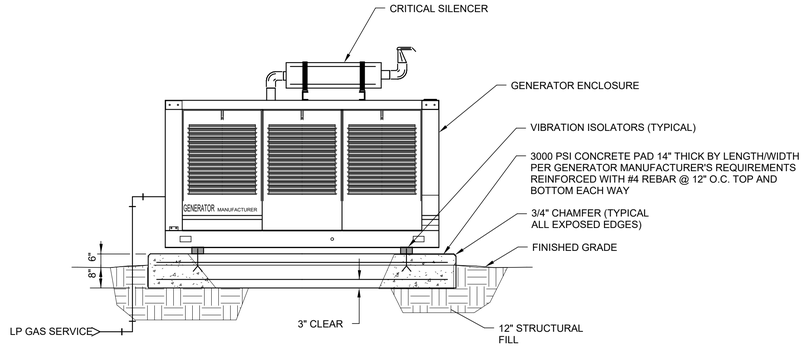


4 HANDHOLE DETAIL
SCALE: 12" = 1'-0"

HANDHOLE GENERAL NOTES:

1. INSTALL 36"D X 36"H ROUND OR 36" SQUARE X 36"H HANDHOLE, AND CAST IRON FRAME.
2. INSTALL CONDUIT, WITH ALL JOINTS CEMENTED, THROUGH KNOCKOUT TO 4" INSIDE HANDHOLE. TERMINATE CONDUIT RUN WITH END BELL. CONDUIT DESTINATION TO BE PERMANENTLY MARKED ON CONDUIT END. CONDUIT SIZE AS SHOWN ON DRAWING SCH. 40 PVC. LIMIT (4) 4" DIAMETER CONDUITS PER KNOCKOUT.
3. GAPS AROUND CONDUIT AT KNOCKOUT OPENINGS SHALL BE SEALED WITH CEMENT MORTAR TO PREVENT BACKFILL FROM ENTERING HANDHOLE.
4. INSTALL 1/4" DIAMETER NYLON PULL LINE IN EACH DUCT, INCLUDING 10' SLACK, AND SECURE TO CONDUIT PLUG. PLUGGED CONDUIT TO BE LEFT ACCESSIBLE.
5. INSTALL ON VIRGIN OR WELL TAMPED GRAVEL. WHERE POOR SOIL EXISTS, REMOVE TO 6" BELOW BOTTOM OF HANDHOLE AND BACKFILL WITH COMPACTED CLEAN GRAVEL, FREE OF FOREIGN MATTER AND DEBRIS, AND EXTENDING 12" PST EDGE OF STRUCTURE. REMAINING BACKFILL SHALL NOT CONTAIN ASHES, FROZEN MATERIAL DEBRIS OR STONES LAGER THAN 2" IN MAXIMUM DIA.
6. WHEN INSTALLING CABLE , UTILIZE PULLING EYELETS PROVIDE IN HANDHOLE.
7. THE GRAY CAST IRON SHALL CONFORM TO ASTM A48-1983 CLASS 30-B.
8. DESIGN LOADING SHALL BE IN ACCORDANCE WITH AASHTO HS20-1983.
9. (5) 1-1/4" DIA. HOLES, 5" FROM EDGE AND 72 DEGREE APART.
10. "ELECTRIC" LETTERS 2-1/2" HIGH.
11. FOUNDRY NAME OR INSIGNIA AND DATE (YEAR MANUFACTURED) SHALL BE CAST IN UNDERSIDE OF COVER.
12. RIBS TO BE TAPERED FROM 1/2" TO 3/4".
13. LIFTING NOTCH ADJACENT TO EACH PICK HOLE.
14. THE 30" COVER FITS INTO THE 30" FRAME. WEIGHT OF 30" COVER APPROXIMATELY 265 POUNDS.



NOTES:

1. PROVIDE 6"x6" WINDOW IN SLAB AND SLIP JOINT AT CONDUIT TERMINATIONS.
2. ALL WORK SHALL BE DONE PER PLUMBING AND GAS CODE AND LOCAL GAS COMPANY REQUIREMENTS. EXACT GAS PIPE SIZE AND PRESSURE AS PER GENERATOR MANUFACTURER'S REQUIREMENTS.

1 GENERATOR MOUNTING DETAIL
SCALE: 12" = 1'-0"

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PROFESSIONAL SEAL

REVISIONS

NUMBER	DATE	REVISION DESCRIPTION	BY

TOWN OF WAITSFIELD

PROJECT NAME:
WAITSFIELD COMMUNITY WASTEWATER SYSTEM

4144 MAIN STREET
WAITSFIELD, VERMONT 056673

SHEET TITLE:
ELECTRICAL SITE DETAILS

DRAWN BY	DATE
WHH	4/8/2026
CHECKED BY	D&K PROJECT #
EJD	227947
PROJ. ENG.	D&K ARCHIVE #
WHH	

SHEET NUMBER
ES5.2

SHEET: of

COORDINATION & INTEGRATION:

1. THE CONTROL SYSTEM SUPPLIER SHALL HAVE PRIMARY RESPONSIBILITY FOR SOFTWARE AND PROGRAMMING OF SCADA.
2. THE VARIOUS EQUIPMENT VENDORS SHALL HAVE PRIMARY RESPONSIBILITY FOR THEIR EQUIPMENT HARDWARE SOFTWARE AND PROGRAMMING.
3. THE EQUIPMENT SUPPLIERS SHALL COORDINATE THEIR RESPECTIVE INPUT/OUTPUT (I/O) LISTS WITH THE CONTROL SYSTEM INTEGRATOR.
4. RESOLUTION OF VARIOUS CONTROL SYSTEM INTERFACE ISSUES WILL BE MADE IN CONJUNCTION WITH THE SHOP DRAWING REVIEW PHASES OF THE PROJECT.

CONTROL VOLTAGES:

1. THE PREFERRED CONTROL VOLTAGES ARE 24 VAC AND 24 VDC FOR SAFETY CONSIDERATIONS.
2. 120 VAC MAY BE USED FOR CONTROLS.
3. 24 VDC SHOULD BE USED INSIDE CABINETS AND WHERE THE POSSIBILITY OF INDUCTIVE COUPLING WILL PRODUCE ERRONEOUS SIGNALS.
4. CONTROL CIRCUITS SHALL BE PROPERLY FUSED.
5. 4-20 ma EXTERNAL LOOPS SHOULD BE FUSED WITH A SERIES 217, 0.032A FAST ACTING FUSE.

INSTRUMENTATION GROUNDING:

1. SHIELDED CONDUCTORS SHALL HAVE THEIR SHIELD WIRE CONNECTED TO GROUND AT ONE END ONLY. GROUND SHIELDS AT CONTROL PANEL, NOT AT FIELD INSTRUMENTS.
2. CONTROL CABINETS SHALL BE PROVIDED WITH AN ISOLATED INSTRUMENT GROUND BUS FOR INSTRUMENTATION GROUND WIRE. THIS BUS SHALL BE TIED TO FACILITY GROUND AT A SINGLE POINT (BONDED).
3. EQUIPMENT & INSTRUMENT GROUNDS SHALL NOT BE INTERMIXED.
4. WHERE ANALOG SIGNALS ARE LACED FROM ONE DEVICE TO ANOTHER, THE SHIELD/DRAIN WIRE SHALL BE CONTINUOUS AND ONLY TIED TO GROUND AT ONE POINT.

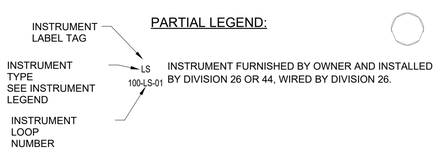
PROCESS PARAMETER SCALING & CALIBRATION

1. ALL INSTRUMENTS SHALL BE PROPERLY CALIBRATED BY THE INSTALLING CONTRACTOR. A CALIBRATION STICKER SHALL BE ATTACHED INDICATING CALIBRATION DATE AND THE INITIALS OF THE INDIVIDUAL WHO PERFORMED THE CALIBRATION.
2. ALL PROCESS ANALOG LOOPS SHALL BE PROPERLY CALIBRATED AND SCALED TO THE EXTENT POSSIBLE AND PRACTICAL. ANALOG INSTRUMENTS SHALL BE CALIBRATED TO READ THE ENTIRE OPERATING RANGE FOR THE PARAMETER BEING MONITORED. ADEQUATE RESOLUTION SHALL BE PROVIDED SO THAT AUTOMATIC CONTROL PROCESSES SHALL RESPOND PROPERLY.

INSTRUMENTATION PIPING & MOUNTING

1. DIRECT READING INSTRUMENTS SHALL BE MOUNTED AT EYE HEIGHT, ~5 FT ABOVE FINISHED FLOOR, UNLESS PROCESS RESTRAINTS NECESSITATE OTHER MOUNTING ARRANGEMENTS, OR UNLESS OTHERWISE NOTED.
2. INSTRUMENTS SHALL BE SECURELY ANCHORED TO THE STRUCTURES OR MONITORED EQUIPMENT. PROPER MOUNTING HARDWARE SHALL BE UTILIZED. (BOLTS, NUTS, UNISTRUT, ETC.)
3. ALL INSTRUMENT TUBING SHALL BE CONSTRUCTED OF MATERIAL COMPATIBLE WITH MONITORED PROCESS FLUID UNLESS OTHERWISE NOTED. TUBING INSTALLATION SHALL PROVIDE ADEQUATE PROTECTION AND SUPPORT WHERE APPROPRIATE. TUBING AND PIPING ARRANGEMENTS SHALL BE PROPERLY SLOPED AND INSTALLED FOR THE FLUID BEING MONITORED. REFER TO INSTRUMENT SOCIETY OF AMERICA (ISA) GUIDELINES AND RECOMMENDATIONS.
4. ALL INSTRUMENT TAPS INTO PROCESS PIPING SHALL BE PROVIDED WITH AN ISOLATION VALVE. (NOMINAL 1/2" OR 3/4" BALL VALVE). ISOLATION VALVES SHALL BE CONSTRUCTED OF MATERIAL COMPATIBLE WITH THE MONITORED PROCESS FLUID.
5. ALL INSTRUMENTS WHICH REQUIRE PERIODIC CALIBRATION SHALL BE PROVIDED WITH MEANS TO CALIBRATE IN PLACE (E.G. CALIBRATION BLOCK AND/OR CALIBRATION VALVING.)
6. VENTS AND DRAINS SHALL BE PROVIDED ON PROCESS EQUIPMENT AND INSTRUMENTATION AS REQUIRED TO SUPPORT ROUTINE AND MAINTENANCE OPERATIONS.

PARTIAL LEGEND:



INSTRUMENT FURNISHED BY OWNER AND INSTALLED BY DIVISION 26 OR 44, WIRED BY DIVISION 26.

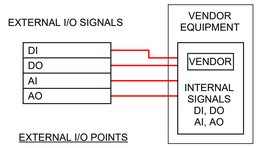
INPUT/OUTPUT SIGNALS:

1. THE VARIOUS EQUIPMENT AND CONTROL SYSTEM SUPPLIERS SHALL COORDINATE THEIR RESPECTIVE INPUT/OUTPUT SIGNALS BETWEEN THEMSELVES, THE SYSTEM INTEGRATOR AND THE ENGINEER.
2. WHERE ONE CONTROL SYSTEM REQUIRES A SIGNAL (DIGITAL INPUT OR DIGITAL OUTPUT) FROM AN EXTERNAL DEVICE OR OTHER CONTROL SYSTEM, IT SHALL BE PROVIDED BY INDEPENDENT DRY CONTACT.
3. WHERE CONTROL VOLTAGES OR SIGNALS ARE NOT COMPATIBLE, INTERPOSING RELAYS SHALL BE PROVIDED. PROVIDE ANALOG SIGNAL BOOSTERS OR ISOLATORS WHERE REQUIRED FOR PROPER EQUIPMENT OPERATION.

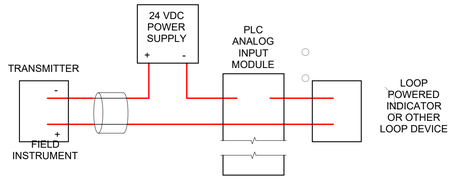
ALARMS:

1. THE VARIOUS EQUIPMENT AND CONTROL SYSTEM SUPPLIERS SHALL COORDINATE THEIR RESPECTIVE ALARM LISTS AND POINTS SO THAT AN INTEGRATED ALARM LIST IS PREPARED FOR THE PROJECT.
2. THE SYSTEM INTEGRATOR SHALL PREPARE AND PROVIDE A SUMMARY OF ALL PLANT ALARMS.

VENDOR CONTROL PANELS - INTERNAL & EXTERNAL I/O



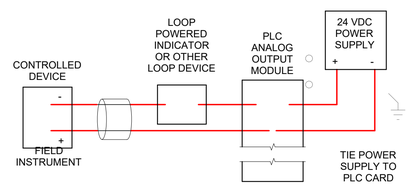
THESE DRAWINGS DEPICT THE INSTRUMENTATION SIGNALS THAT ARE PROVIDED TO OR
FROM A VENDOR'S PROCESS (EXTERNAL I/O). TO THIS END, THE ENGINEER HAS NOT DEFINED ALL OF THE VENDOR RELATED INTERNAL INPUT/OUTPUT SIGNALS. THESE WILL
BE DELINEATED IN THE VENDOR'S SHOP DRAWINGS. THE ENGINEER HAS DEFINED EXTERNAL SIGNALS THAT INTERFACE WITH THE VENDOR'S CONTROL SYSTEM TO THE EXTENT THAT THEY ARE KNOWN. ADDITIONAL EXTERNAL I/O MAY BE DEFINED IN CONJUNCTION WITH THE SHOP DRAWING PHASE OF THE PROJECT.



TYPICAL 4-20 ma ANALOG INPUT LOOP

NOT TO SCALE

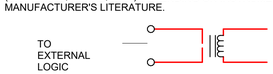
NOTE: LOOP FAN OUT CONSIDERATIONS MUST BE EVALUATED. ACTUAL WIRING
CONNECTION AT PLC MAY VARY DEPENDING ON DC SUPPLY AND PLC AI CARD WIRING ARRANGEMENT. OTHER LOOP WIRING ARRANGEMENT MAY BE REQUIRED
(E.G. 3 WIRE, 4 WIRE, ETC.) DEPENDING ON INSTRUMENT TYPE. CONSULT MANUFACTURER'S LITERATURE.



TYPICAL 4-20 ma ANALOG OUTPUT LOOP

NOT TO SCALE

NOTE: LOOP FAN OUT CONSIDERATIONS MUST BE EVALUATED. ACTUAL WIRING
CONNECTION AT PLC MAY VARY DEPENDING ON DC SUPPLY AND PLC AO CARD WIRING ARRANGEMENT. OTHER LOOP WIRING ARRANGEMENT MAY BE REQUIRED
(E.G. 3 WIRE, 4 WIRE, ETC.) DEPENDING ON INSTRUMENT TYPE. CONSULT MANUFACTURER'S LITERATURE.



DRY CONTACT ARRANGEMENT

NOT TO SCALE

INSTRUMENTATION NOTES:

1. PROVIDE NECESSARY WIRING AND CONDUIT BETWEEN PLC PANELS, REMOTE INPUT/OUTPUT MODULES AND FIELD INSTRUMENTS AS REQUIRED.
2. MINIMUM SIZE CONDUIT TO BE 3/4".
3. MINIMUM SIZE CONTROL WIRING TO BE #14 AWG.
4. SHIELDED CABLE TO BE 2/C#18 FOR LOOP POWERED DEVICES. 4/C#18 FOR 4-WIRE DEVICES.
5. WIRING MAY BE COMBINED IN SINGLE RACEWAYS FOR EACH OF THE FOLLOWING CATEGORIES. DO NOT MIX CATEGORIES IN A SINGLE CONDUIT
   A. 120V POWER WIRING
   B. CONTROL AND DISCRETE OUTPUT SIGNALS (24VAC)
   C. DISCRETE INPUT SIGNALS (24VDC)
   D. ANALOG SIGNAL WIRING
6. LOCATION OF VALVES, INSTRUMENTS, ETC. ARE SHOWN IN APPROXIMATE LOCATIONS. REFER TO PROCESS DRAWINGS FOR FURTHER DETAIL. FINAL LOCATIONS TO BE DETERMINED IN FIELD BY ENGINEER AND/OR VENDOR WHERE APPROPRIATE.
7. REFER TO POWER PLANS FOR INSTRUMENTATION POWER REQUIREMENTS.
8. IT IS THE INTENT OF DRAWINGS AND SPECIFICATIONS TO OBTAIN A COMPLETE AND SATISFACTORY INSTALLATION. AN ATTEMPT HAS BEEN MADE TO SEPARATE AND DEFINE THE WORK OF THE CONTRACTOR. DRAWINGS ARE DIAGRAMMATIC, BUT SHALL BE FOLLOWED AS CLOSELY AS ACTUAL CONSTRUCTION OF THE FACILITY AND THE WORK OF OTHER TRADES WILL PERMIT. THE DRAWINGS OF NECESSITY UTILIZE SYMBOLS AND SCHEMATIC DIAGRAMS TO INDICATE VARIOUS ITEMS OF WORK. THEREFORE, NO INTERPRETATION WILL BE MADE FROM THE LIMITATION OF SYMBOLS AND DIAGRAMS THAT ANY ELEMENTS NECESSARY FOR A COMPLETE INSTALLATION ARE EXCLUDED. THE ENGINEER SHOULD BE NOTIFIED OF ANY DISCREPANCIES, OMISSIONS, CONFLICTS OR INTERFERENCES WHICH OCCUR BETWEEN VARIOUS DRAWINGS AND SPECIFICATIONS. IF SUCH NOTIFICATION IS NOT RECEIVED, THE INSTALLING CONTRACTOR(S) SHALL BE RESPONSIBLE FOR THEIR INTERPRETATIONS.
9. DURING ROUGH IN AND FINISHED STAGES OF CONSTRUCTION, THE INSTRUMENTATION CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT AND KEEP CLEAN ALL ELECTRICAL EQUIPMENT, PANELS, FIXTURES AND DEVICES AS WELL AS ALL EXISTING EQUIPMENT AND RELATED WORK AREAS.
10. THE CONTRACTOR SHALL PROVIDE ALL INFORMATION ABOUT PROPOSED EQUIPMENT TO THE ENGINEER/OWNER FOR REVIEW PURPOSES. THE CONTRACTOR SHALL PROVIDE ALL INSTALLATION DETAILS AND SUPPORT COMPONENTS SO THAT THESE MAY BE BUILT INTO THE CONSTRUCTION IN A TIMELY MANNER.
11. THE GENERAL AND SPECIFIC NOTES SHOWN ON THE ELECTRICAL DRAWINGS ARE INCORPORATED INTO THE INSTRUMENTATION NOTES BY REFERENCE.
12. CONTROL CIRCUITS SHALL BE ARRANGED TO USE SUPERVISED CONTACTS WHEREVER POSSIBLE. THIS MEANS THAT NORMALLY CLOSED CONTACTS WILL BE USED AND THE CONTACTS WILL OPEN WHEN A PROCESS TRANSITION OCCURS (E.G. HIGH LEVEL, LOW LEVEL, HIGH PRESSURE, ETC.)
13. SEE ELECTRICAL DRAWINGS FOR ADDITIONAL DETAILS FOR CONDUIT, DEVICE LOCATIONS, AND POWER CIRCUITS.

INSTRUMENT LABEL LEGEND:

AE	ANALYTICAL ELEMENT
AV	ACTUATED VALVE
AIT	ANALYTICAL INDICATOR TRANSMITTER
AFS	AIR FLOW SWITCH
CV	CONTROL VALVE
ES	EMERGENCY STOP
FCV	FLOW CONTROL VALVE
FE	FLOW ELEMENT
FIT	FLOW INDICATOR TRANSMITTER
FS	FLOW SWITCH
FS	FLOAT SWITCH
FT	FLOW TRANSMITTER
HIT	HUMIDITY INDICATOR TRANSMITTER
IA	INTRUSION ALARM
IR	CURRENT MONITOR RELAY
IS	CURRENT SENSOR
KQI	TIME TOTALIZER INDICATOR (ELAPSED TIME METER)
LE	LEVEL ELEMENT
LIC	LEVEL INDICATOR TRANSMITTER
LIT	LEVEL INDICATOR CONTROLLER
LS	LEVEL SWITCH
LT	LEVEL TRANSMITTER
MV	MOTORIZED VALVE
PB	PUSH-BUTTON
PIT	PRESSURE INDICATOR TRANSMITTER
PS	PRESSURE SWITCH
PT	PRESSURE TRANSMITTER
RI/O	REMOTE INPUT/OUTPUT MODULE
SS	SENSOR SWITCH
SV	SOLENOID VALVE
TE	TEMPERATURE ELEMENT
TIT	TEMPERATURE INDICATOR TRANSMITTER
TS	TEMPERATURE SWITCH
TT	TEMPERATURE TRANSMITTER
VS	VIBRATION SWITCH
ZS	PROXIMITY SWITCH
ZXL	PROXIMITY SWITCH LOW
ZXH	PROXIMITY SWITCH HIGH

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PROFESSIONAL SEAL

REVISIONS

NUMBER	DATE	REVISION DESCRIPTION	BY

TOWN OF WAITSFIELD

PROJECT NAME:
WAITSFIELD COMMUNITY WASTEWATER SYSTEM
4144 MAIN STREET
WAITSFIELD, VERMONT 056673

SHEET TITLE:
INSTRUMENTATION LEGEND

DRAWN BY WHH	DATE 4/8/2026
CHECKED BY EJD	D&K PROJECT # 227947
PROJ. ENG. WHH	D&K ARCHIVE #

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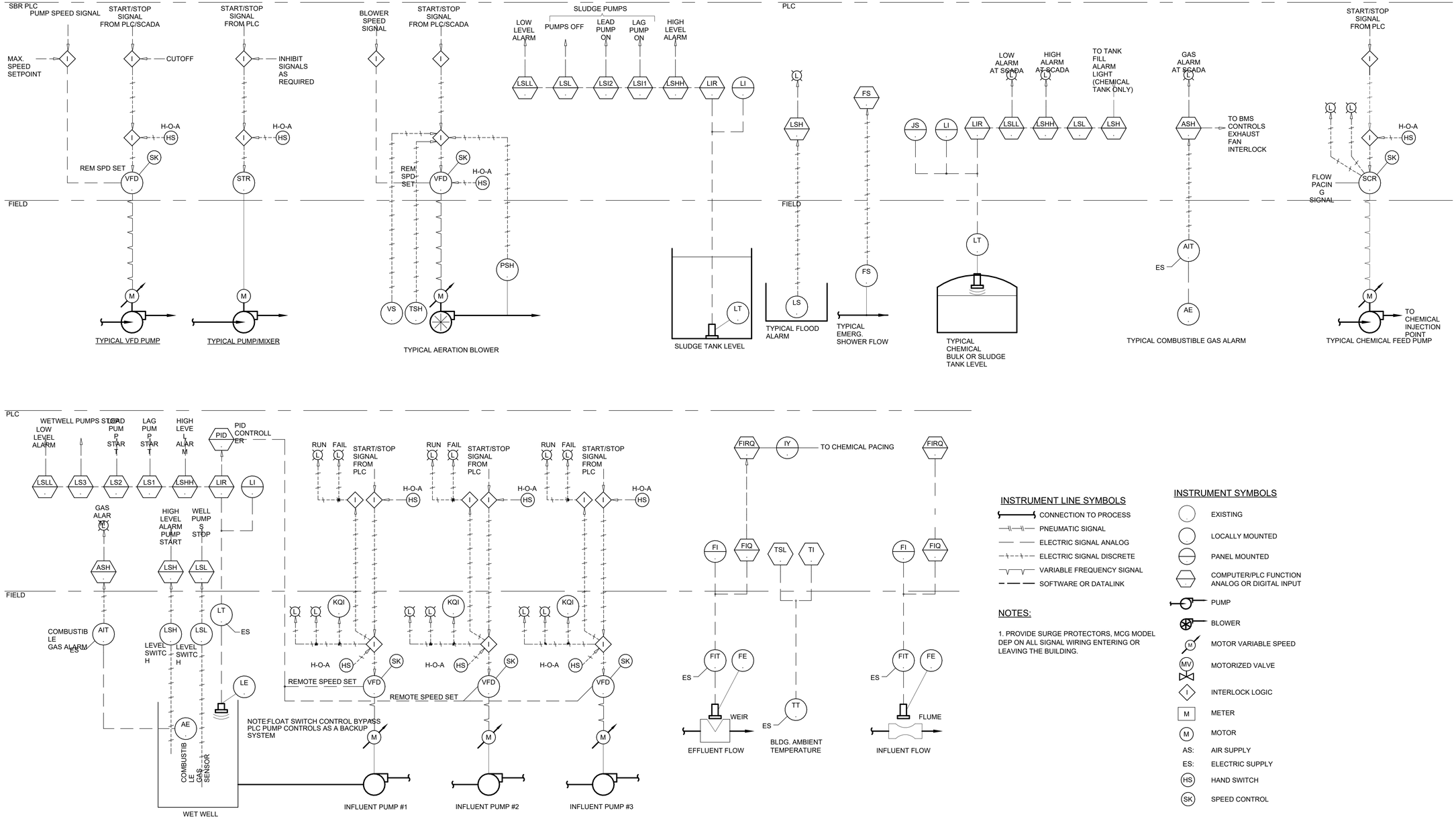

INSTRUMENT LINE SYMBOLS

- CONNECTION TO PROCESS
- PNEUMATIC SIGNAL
- ELECTRIC SIGNAL ANALOG
- ELECTRIC SIGNAL DISCRETE
- VARIABLE FREQUENCY SIGNAL
- SOFTWARE OR DATALINK

INSTRUMENT SYMBOLS

- EXISTING
- LOCALLY MOUNTED
- PANEL MOUNTED
- COMPUTER/PLC FUNCTION ANALOG OR DIGITAL INPUT
- PUMP
- BLOWER
- MOTOR VARIABLE SPEED
- MOTORIZED VALVE
- INTERLOCK LOGIC
- METER
- MOTOR
- AS: AIR SUPPLY
- ES: ELECTRIC SUPPLY
- HS: HAND SWITCH
- SK: SPEED CONTROL

NOTES:

1. PROVIDE SURGE PROTECTORS, MCG MODEL DEP ON ALL SIGNAL WIRING ENTERING OR LEAVING THE BUILDING.

1 INSTRUMENTATION LOOP DIAGRAMS

SCALE: 12" = 1'-0"

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TOWN OF WAITSFIELD

PROJECT NAME:
WAITSFIELD COMMUNITY WASTEWATER SYSTEM

4144 MAIN STREET
WAITSFIELD, VERMONT 056673

SHEET TITLE:
INSTRUMENTATION LOOP DIAGRAMS

DRAWN BY	DATE
WHH	4/8/2026
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PROJ. ENG.	D&K ARCHIVE #
WHH	

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SHEET: of

SBR INSTRUMENTATION WIRING SCHEDULE

TAG NO.	iNSTRUMENT	DESCRIPTION	TO DEVICE	WIRE	COMMENTS
101A	MV	MOTORIZED VALVE SBR#1	SBR CONTROL PANEL	2#12, 1#12G, 4#14	INFLUENT TO SBR
101B	MV	MOTORIZED VALVE SBR#2	SBR CONTROL PANEL	2#12, 1#12G, 4#14	INFLUENT TO SBR
102A	FIT	FLOW METER SBR#1	SBR CONTROL PANEL	2/C#18 SH. PR.	FLOW TO SBR BASIN
102B	FIT	FLOW METER SBR#1	SBR CONTROL PANEL	2/C#18 SH. PR.	FLOW TO SBR BASIN
105A	M	SBR #1 MIXER	SBR CONTROL PANEL	PUMP CABLE	
105B	M	SBR #1 MIXER	SBR CONTROL PANEL	PUMP CABLE	
106A	M	SBR#1 DECANTER DRIVE	SBR CONTROL PANEL	POWER CABLE	
106B	M	SBR#1 DECANTER DRIVE	SBR CONTROL PANEL	POWER CABLE	
107A	SV	AIR VALVE	SBR CONTROL PANEL	2#14	
107B	SV	AIR VALVE	SBR CONTROL PANEL	2#14	
108A	AIT	DO ANALYZER	SBR CONTROL PANEL	2/C#18 SH. PR.	
108B	AIT	DO ANALYZER	SBR CONTROL PANEL	2/C#18 SH. PR.	
110A	LT	LEVEL TRANSMITTER	SBR CONTROL PANEL	2/C#18 SH. PR.	
110B	LT	LEVEL TRANSMITTER	SBR CONTROL PANEL	2/C#18 SH. PR.	
111A	LSH	LEVEL SWITCH - HIGH	SBR CONTROL PANEL	2#14	
111B	LSH	LEVEL SWITCH - HIGH	SBR CONTROL PANEL	2#14	
112A	M	SBR #1 SLUDGE PUMP	SBR CONTROL PANEL	PUMP CABLE	
112B	M	SBR #1 SLUDGE PUMP	SBR CONTROL PANEL	PUMP CABLE	
113A	MV	MOTORIZED VALVE - SLUDGE VALVE	SBR CONTROL PANEL	2#12, 1#12G, 4#14	
113B	MV	MOTORIZED VALVE - SLUDGE VALVE	SBR CONTROL PANEL	2#12, 1#12G, 4#14	

INSTRUMENTATION WIRING SCHEDULE

TAG NO.	iNSTRUMENT	DESCRIPTION	TO DEVICE	WIRE	COMMENTS
108A	M	CHEMICAL PUMP	PLC#1	2/C#18 SH. PR. & 2#14	
108A	M	CHEMICAL PUMP	PLC#1	2/C#18 SH. PR. & 2#14	
108A	LT	LEVEL TRANSMITTER	PLC#1	2/C#18 SH. PR.	
108A	MX	MIXER	PLC#1	2#14	
108A	M	CHEMICAL PUMP	PLC#1	2/C#18 SH. PR. & 2#14	
108A	LT	LEVEL TRANSMITTER	PLC#1	2/C#18 SH. PR.	
108A	M	CHEMICAL PUMP	PLC#1	2/C#18 SH. PR. & 2#14	
108A	LT	LEVEL TRANSMITTER	PLC#1	2/C#18 SH. PR.	
108A	FS	FLOW SWITCH	PLC#1	2#14	
108A	FS	FLOW SWITCH	PLC#1	2#14	
130A	UV	UV SYSTEM MODULE	PLC#1	ETHERNET CABLE	
130B	UV	UV SYSTEM MODULE	PLC#1		
131A	MV	MOTORIZED VALVE - EFFLUENT VALVE	PLC#1	2#12, 1#12G, 4#14	
131B	MV	MOTORIZED VALVE - EFFLUENT VALVE	PLC#1	2#12, 1#12G, 4#14	
132	FIT	FLOW METER - FLOW TO LECH FIELD	PLC#1	2/C#18 SH. PR.	
180C	VFD	SPARE BLOWER	PLC#1	4#14, 2/C*18 SH. PR,	
180C	VFD	BLOWER #1	PLC#1	4#14, 2/C*18 SH. PR,	
180C	VFD	BLOWER #2	PLC#1	4#14, 2/C*18 SH. PR,	
181A	TSH	TEMPERATURE SWITCH - HIGH	PLC#1	2#14	
181B	TSH	TEMPERATURE SWITCH - HIGH	PLC#1	2#14	
181C	TSH	TEMPERATURE SWITCH - HIGH	PLC#1	2#14	
182A	VS	VIBRATION SWITCH	PLC#1	2#14	
182B	VS	VIBRATION SWITCH	PLC#1	2#14	
182C	VS	VIBRATION SWITCH	PLC#1	2#14	
183A	PSH	PRESSURE SWITCH	PLC#1	2#14	
183B	PSH	PRESSURE SWITCH	PLC#1	2#14	
183C	PSH	PRESSURE SWITCH	PLC#1	2#14	
200	LSH	LEVEL SWITCH - HIGH (FLOOD ALARM)	PLC#1	2#14	
200	MV	MOTORIZED VALVE	PLC#1	2#14	
200A	ZS	LIMIT SWITCH - VALVE OPEN	PLC#1	2#14	
200B	ZS	LIMIT SWITCH - VALVE CLOSED	PLC#1	2#14	
201	MV	MOTORIZED VALVE	PLC#1	2#14	
201A	ZS	LIMIT SWITCH - VALVE OPEN	PLC#1	2#14	
201B	ZS	LIMIT SWITCH - VALVE CLOSED	PLC#1	2#14	
202	MV	MOTORIZED VALVE	PLC#1	2#14	
202A	ZS	LIMIT SWITCH - VALVE OPEN	PLC#1	2#14	
202B	ZS	LIMIT SWITCH - VALVE CLOSED	PLC#1	2#14	
203	MV	MOTORIZED VALVE	PLC#1	2#14	
203A	ZS	LIMIT SWITCH - VALVE OPEN	PLC#1	2#14	
203B	ZS	LIMIT SWITCH - VALVE CLOSED	PLC#1	2#14	
204	MV	MOTORIZED VALVE	PLC#1	2#14	
204A	ZS	LIMIT SWITCH - VALVE OPEN	PLC#1	2#14	
204B	ZS	LIMIT SWITCH - VALVE CLOSED	PLC#1	2#14	
205	MV	MOTORIZED VALVE	PLC#1	2#14	
205A	ZS	LIMIT SWITCH - VALVE OPEN	PLC#1	2#14	
205B	ZS	LIMIT SWITCH - VALVE CLOSED	PLC#1	2#14	
206	MV	MOTORIZED VALVE	PLC#1	2#14	
206A	ZS	LIMIT SWITCH - VALVE OPEN	PLC#1	2#14	
207	MV	MOTORIZED VALVE	PLC#1	2#14	
207A	ZS	LIMIT SWITCH - VALVE OPEN	PLC#1	2#14	
207A	ZS	LIMIT SWITCH - VALVE CLOSED	PLC#1	2#14	
207B	ZS	LIMIT SWITCH - VALVE CLOSED	PLC#1	2#14	
208	MV	MOTORIZED VALVE	PLC#1	2#14	
208A	ZS	LIMIT SWITCH - VALVE OPEN	PLC#1	2#14	
208B	ZS	LIMIT SWITCH - VALVE CLOSED	PLC#1	2#14	
209	LSH	LEVEL SWITCH - HIGH	PLC#1	2#14	
210	CP	SEWAGE PUMP STATION CONTROL PANEL	PLC#1	8#14	
XX	SAM	SAMPLER	PLC#1	2/C#18 SH. PR.	

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TOWN OF WAITSFIELD

PROJECT NAME:
WAITSFIELD COMMUNITY WASTEWATER SYSTEM

4144 MAIN STREET
WAITSFIELD, VERMONT 056673

SHEET TITLE:
INSTRUMENTATION LOOP SCHEDULE

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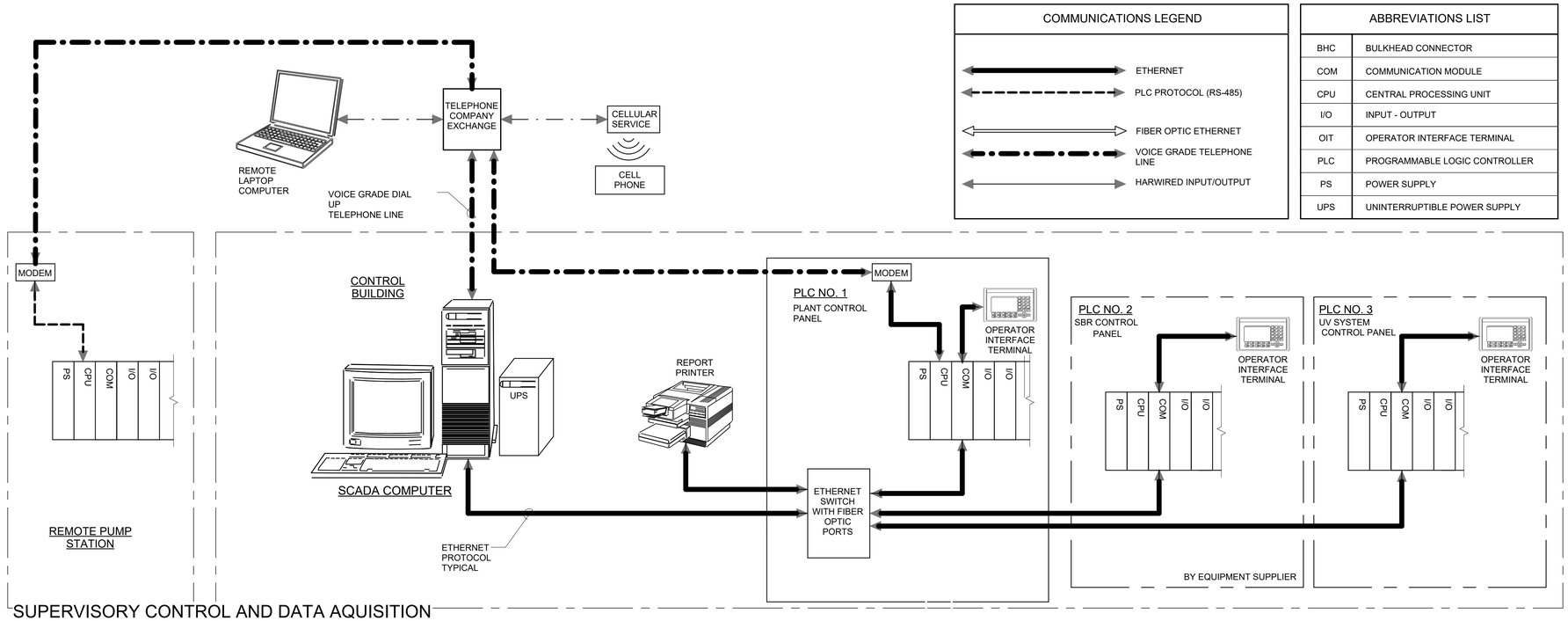
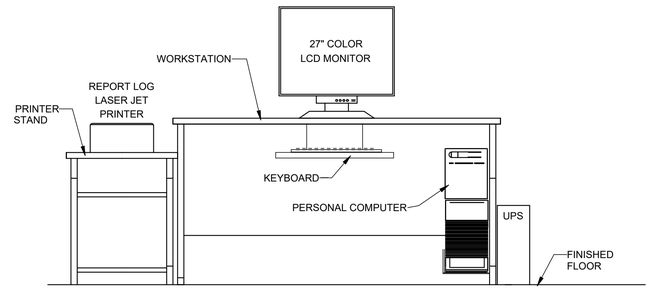


1 SUPERVISORY CONTROL AND DATA AQUISITION SYSTEM (SCADA) BLOCK DIAGRAM

SCALE: NO SCALE

COMMUNICATIONS LEGEND	
	ETHERNET
	PLC PROTOCOL (RS-485)
	FIBER OPTIC ETHERNET
	VOICE GRADE TELEPHONE LINE
	HARWIRED INPUT/OUTPUT

ABBREVIATIONS LIST	
BHC	BULKHEAD CONNECTOR
COM	COMMUNICATION MODULE
CPU	CENTRAL PROCESSING UNIT
I/O	INPUT - OUTPUT
OIT	OPERATOR INTERFACE TERMINAL
PLC	PROGRAMMABLE LOGIC CONTROLLER
PS	POWER SUPPLY
UPS	UNINTERRUPTIBLE POWER SUPPLY



2 OPERATIONS CONSOL ELEVATION AT OFFICE

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WAITSFIELD, VERMONT 056673

SHEET TITLE:

SCADA SYSTEM BLOCK DIAGRAM

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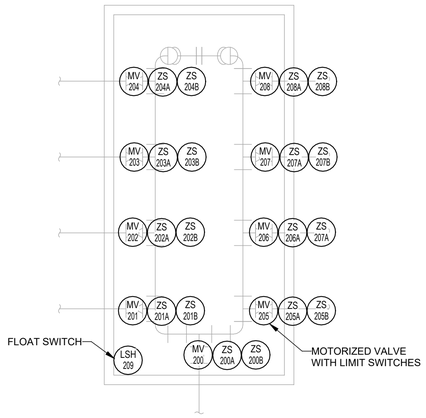
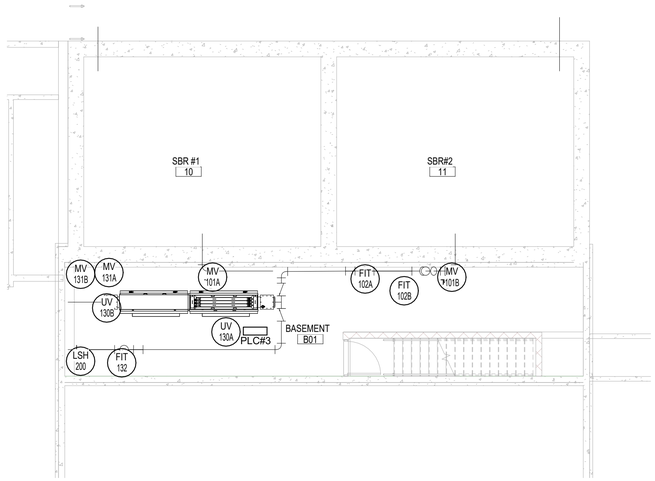


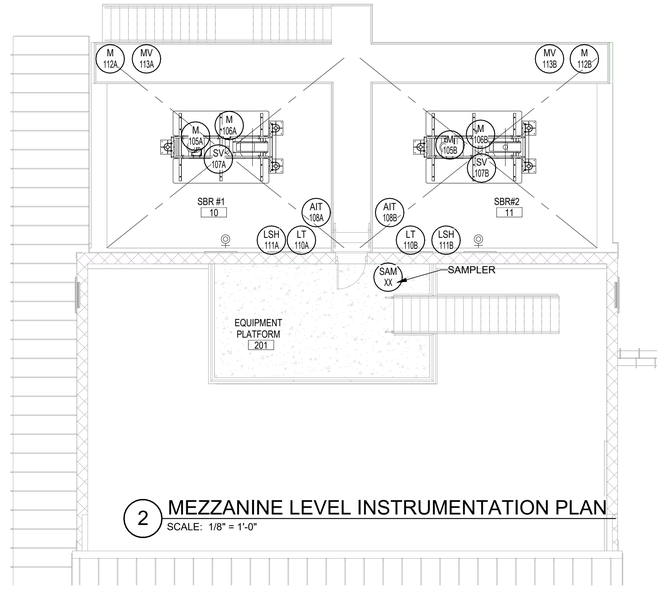
4 LEACH FIELD VALVE VAULT INSTRUMENTATION PLAN

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



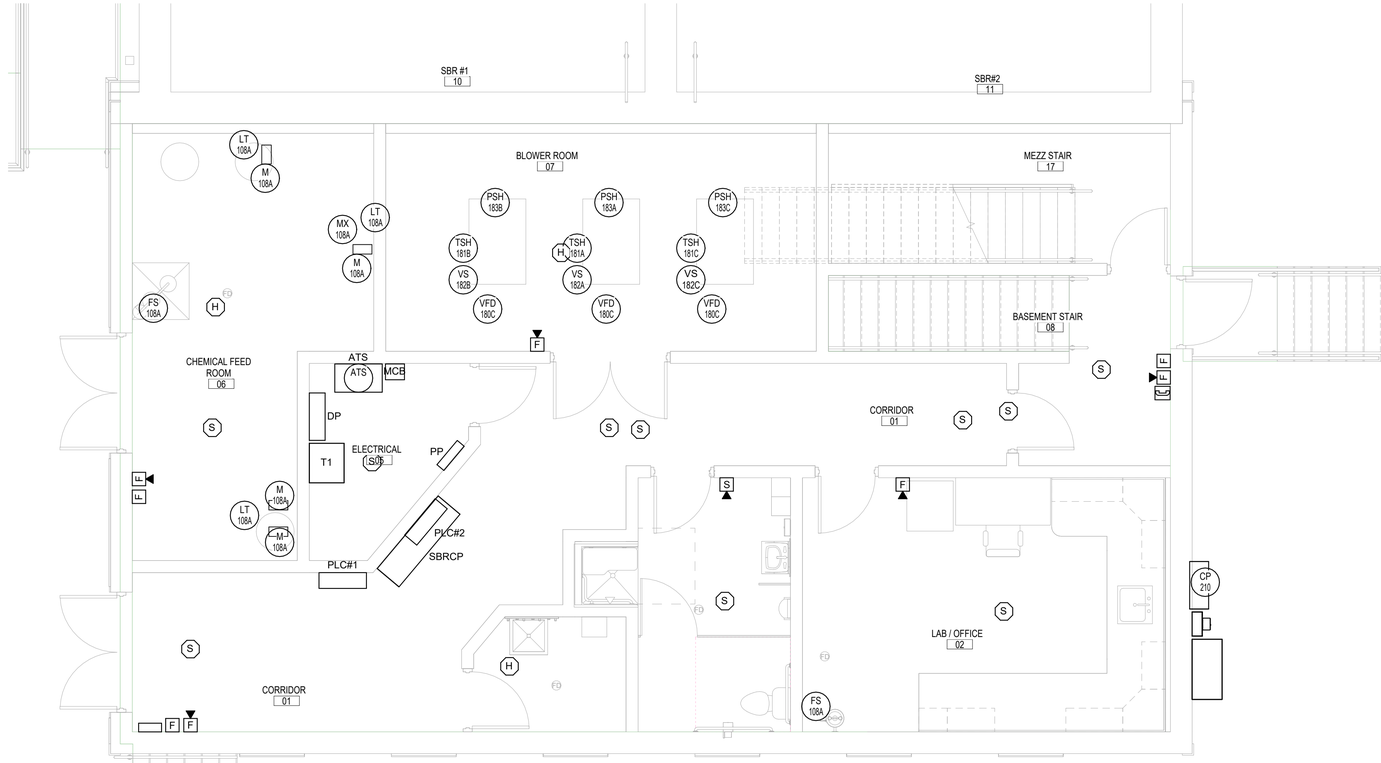
1 LOWER LEVEL INSTRUMENTATION FLOOR PLAN

SCALE: 1/8" = 1'-0"



2 MEZZANINE LEVEL INSTRUMENTATION PLAN

SCALE: 1/8" = 1'-0"



3 FIRST FLOOR INSTRUMENTATION FLOOR PLAN

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

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TOWN OF WAITSFIELD

PROJECT NAME:

WAITSFIELD COMMUNITY WASTEWATER SYSTEM

4144 MAIN STREET
WAITSFIELD, VERMONT 056673

SHEET TITLE:

INSTRUMENTATION PLANS

DRAWN BY	DATE
WHH	4/8/2026
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