

N:\PROJECTS\MINNESOTA\00076AAL - DAVINCI TANK & MBBR DESIGN - DRAWINGS, MAPS, PHOTOS\1 - CAD\G - NOTES.DWG, DATE PRINTED: March 5, 2026, SHEET SIZE: ANSI A (8.50 X 11.00 INCHES)

GENERAL NOTES

- EXISTING COMPONENTS, DIMENSIONS, LOCATIONS AND SLOPES HAVE NOT BEEN CONFIRMED AND ARE ONLY ASSUMED.
- INSTALLER SHALL BE RESPONSIBLE FOR ALL UTILITY LOCATES (GOPHER ONE) ASSOCIATED WITH EXCAVATION WORK. GOPHER ONE DOES NOT LOCATE PRIVATE UTILITIES. INSTALLER IS RESPONSIBLE FOR ADEQUATE LOCATING AND PROTECTING OF ANY PRIVATE UTILITIES IN WORK AREA.
- ALL DESIGN, FABRICATION, INSTALLATION AND OPERATION OF EQUIPMENT AND MATERIALS SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES.
- ALL WORK SHALL CONFORM TO MN RULES CHAPTERS 7080 - 7083 WHERE APPLICABLE. INSTALLER SHALL REFER TO ENGINEER FOR ANY WAIVER TO THESE RULES.
- INSTALLER SHALL BE RESPONSIBLE FOR ALL APPLICABLE PERMITS.

WASTEWATER PUMPING DURING INSTALLATION

- PUMPING BY A MINNESOTA LICENSED SSTS MAINTAINER SHALL BY FURNISHED BY CONTRACTOR AS NEEDED DURING INSTALLATION. REFER TO CURRENT FACILITY SDS PERMIT FOR PUMPING AND TANK MAINTENANCE REQUIREMENTS.

DISPOSAL OF CONTAMINATED MATERIALS

- ANY CONTAMINATED MATERIALS GENERATED DURING THE COURSE OF CONSTRUCTION SHALL BE TRANSPORTED TO A PERMITTED MUNICIPAL OR INDUSTRIAL SOLID WASTE LANDFILL THAT ACCEPTS THIS TYPE OF WASTE. THE LANDFILL MUST BE NOTIFIED PRIOR TO DISPOSAL. ANY BIOSOLIDS SHALL BE TRANSPORTED BY A LICENSED SSTS MAINTAINER TO A PERMITTED FACILITY, WITH ALL TRANSFER VOLUMES RECORDED AND SUBMITTED TO ENGINEER AND MPCA ACCORDING TO THE PERMIT.

SITE WORK NOTES

- CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGE, INJURY OR LOSS TO ALL PUBLIC AND PRIVATE PROPERTY NOT DESIGNATED FOR REMOVAL, RELOCATION OR REPLACEMENT IN THE COURSE OF CONSTRUCTION.
- CONTRACTOR SHALL RESTORE ALL DISTURBED SURFACES TO EXISTING OR BETTER CONDITIONS.
- EXCAVATE AND BACKFILL TRENCHES NECESSARY FOR COMPLETING WORK OF THIS PLAN. EXCAVATE AND BACKFILL TRENCHES BY MACHINERY OR BY HAND, HOWEVER, ENGINEER IS EMPPOWERED, IF NECESSITY EXISTS, TO DIRECT THAT HAND EXCAVATION AND BACKFILLING BE EMPLOYED. PERFORM EXCAVATION OF WHATEVER SUBSTANCES ENCOUNTERED, TO GRADES AND DEPTHS INDICATED ON DRAWINGS, AS SPECIFIED, OR DIRECTED BY ENGINEER. REMOVE AND DISPOSE OF EXCAVATED MATERIAL NOT REQUIRED FOR BACKFILL.
- DO NOT PERFORM TRENCHING, BACKFILLING OR COMPACTING WHEN WEATHER CONDITIONS OR CONDITION OF MATERIALS WILL PREVENT SATISFACTORY WORK.
- DO NOT USE FROZEN MATERIALS AS BACKFILL OR WET MATERIALS CONTAINING MOISTURE IN EXCESS OF QUANTITY NECESSARY FOR SATISFACTORY COMPACTION.
- BACKFILL MATERIAL SHALL BE NATIVE SOIL AND SHALL NOT CONTAIN MORE THAN 5% BY VOLUME OF EITHER ROCKS OR ORGANICS

EROSION & SEDIMENTATION CONTROL NOTES

- CONTRACTOR SHALL CONTROL THE WASHING OR BLOWING OF SEDIMENT OFF THE PROJECT SITE. IT MAY BE NECESSARY TO INSTALL SEDIMENT BARRIERS TO HELP REDUCE OFF-SITE SEDIMENTATION. MEASURES TO CONTROL DUST AND WIND EROSION MAY BE NECESSARY (I.E. WETTING OF THE SITE).
- WHEN REQUIRED, SITE MUST BE SEEDED TO ESTABLISH A TEMPORARY VEGETATIVE COVER.

ELECTRICAL NOTES

- CONTRACTOR SHALL UTILIZE A QUALIFIED, LICENSED ELECTRICIAN TO BE FULLY RESPONSIBLE FOR FURNISHING A COMPLETE, OPERABLE, AND CODE-COMPLIANT SYSTEM INCLUDING BUT NOT LIMITED TO: SERVICE COORDINATION, CONDUIT AND WIRE SIZING, EQUIPMENT SELECTION, ROUTING, INSTALLATION, LABELING, TESTING, AND DOCUMENTATION.
- CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR, AND INCIDENTAL WORK REQUIRED TO COMPLETE THE ELECTRICAL INSTALLATION AS SHOWN OR IMPLIED BY THE CONTRACT DOCUMENTS.
- CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS, COORDINATE WITH THE UTILITY PROVIDER, AND COMPLY WITH ALL APPLICABLE CODES.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SIZING OF FEEDERS, CONDUITS, AND OVERCURRENT PROTECTION BASED ON INSTALLED EQUIPMENT LOADS AND CODE REQUIREMENTS.
- CONTRACTOR SHALL PROVIDE TRENCHING, BACKFILL, WIRING, CONDUIT, DISCONNECTS, TERMINATIONS, LABELING, AND TESTING.
- ALL WORK SHALL BE IN ACCORDANCE WITH THE FOLLOWING (LATEST ADOPTED VERSIONS):
 - NATIONAL ELECTRICAL CODE (NEC), NFPA 70
 - NFPA 70E - ELECTRICAL SAFETY IN THE WORKPLACE
 - MINNESOTA STATE ELECTRICAL CODE
 - OSHA REGULATIONS
 - APPLICABLE ANSI, NEMA, IEEE, AND UL STANDARDS
- CONTRACTOR SHALL SUBMIT THE FOLLOWING:
 - PRODUCT DATA FOR PANELS, DISCONNECTS, CONDUITS, WIRE, AND ELECTRICAL DEVICES.
 - MANUFACTURER CERTIFICATIONS FOR ALL LISTED EQUIPMENT.
 - FINAL AS-BUILT DRAWINGS INCLUDING WIRE AND CONDUIT SIZES, ROUTING, PANEL SCHEDULES, AND GROUNDING.
- INSTALLATION
 - CONTRACTOR SHALL INSTALL ALL EQUIPMENT IN ACCORDANCE WITH THE NEC AND MANUFACTURER RECOMMENDATIONS.
 - WORK SHALL BE NEAT, PROFESSIONAL, AND ARRANGED FOR ACCESSIBILITY AND FUTURE MAINTENANCE.
 - CONDUITS SHALL BE SUPPORTED AND ROUTED TO AVOID CONFLICTS WITH STRUCTURAL AND MECHANICAL SYSTEMS.
 - CONTRACTOR SHALL COORDINATE PANEL AND EQUIPMENT LOCATIONS WITH THE OWNER PRIOR TO ROUGH-IN.
 - CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR FIELD CHANGES.
 - UTILITY COORDINATION SHALL BE PERFORMED BY THE CONTRACTOR, INCLUDING SERVICE ENTRY MODIFICATIONS IF APPLICABLE.
 - LABEL ALL CIRCUITS, EQUIPMENT, PANELS, AND JUNCTION BOXES WITH METHOD APPROVED BY ENGINEER.
 - PROVIDE WIRE LABELS AT BOTH ENDS OF EACH CONDUCTOR.
 - TEST ALL CIRCUITS FOR CONTINUITY, INSULATION RESISTANCE, AND PROPER PHASING.
 - DEMONSTRATE OPERATION OF ALL SYSTEMS TO OWNER AND ENGINEER PRIOR TO ACCEPTANCE.
 - SUBMIT WRITTEN TEST REPORTS AND VERIFICATION OF INSPECTIONS FROM THE LOCAL AUTHORITY HAVING JURISDICTION.

LEGEND

- FORCEMAIN - - - - -
- ELECTRICAL -ELEC-ELEC-ELEC-ELEC-
- CHEM LINE - CHEM - CHEM - CHEM - CHEM -
- STORM SEWER - - - >> - - - >> - - -
- GRAVITY SEWER - - - > - - - > - - -
- FENCING - - - x - - - x - - -
- DEMOLISH XXXXXXXXXXXXXXXXXXXX



17818 HWY 65 NE, SUITE 100
HAM LAKE MN, 55304

REVISIONS:

NO.	DESCRIPTION	DATE

DAVINCI ACADEMY

532 BUNKER LAKE BLVD NE, HAM LAKE, MN 55304

PROJECT:

TANK & MBBR IMPROVEMENTS
DAVINCI ACADEMY WWTF


DRAWING STATUS:

ISSUED FOR CONSTRUCTION

SHEET NAME:

GENERAL NOTES

DATE: 3/5/2026	SCALE: NONE
DRAWN BY: A.STARKS	
CHECKED BY: V.GRUFFAT	
PROJECT NO.: M00076AAL	
SHEET NO.: G-10	

Professional Engineer
 I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota.
 Signature: 
 Typed or Printed Name: Adam G. Stern, PE
 Date: 2026.03.05 License Number: 57377

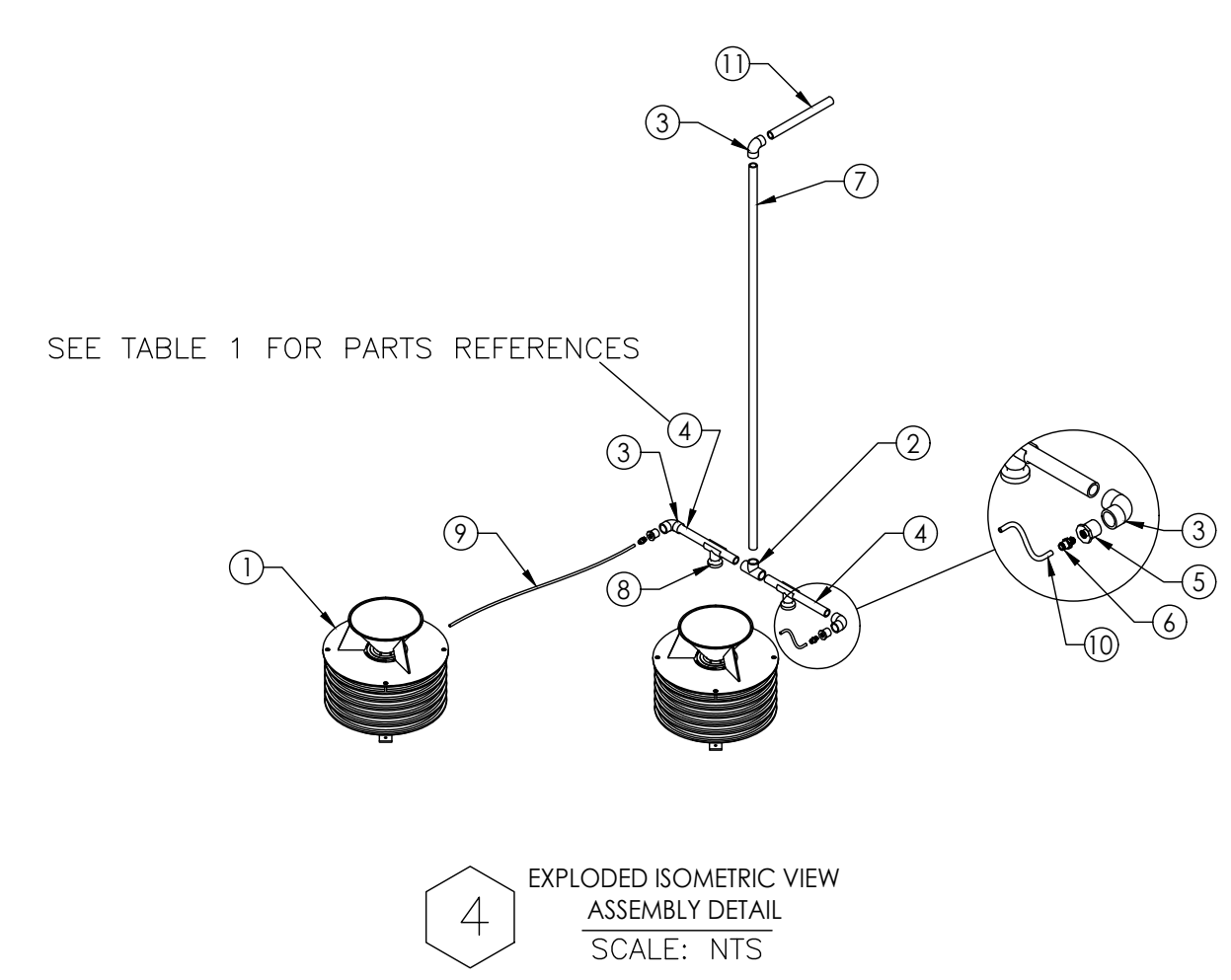
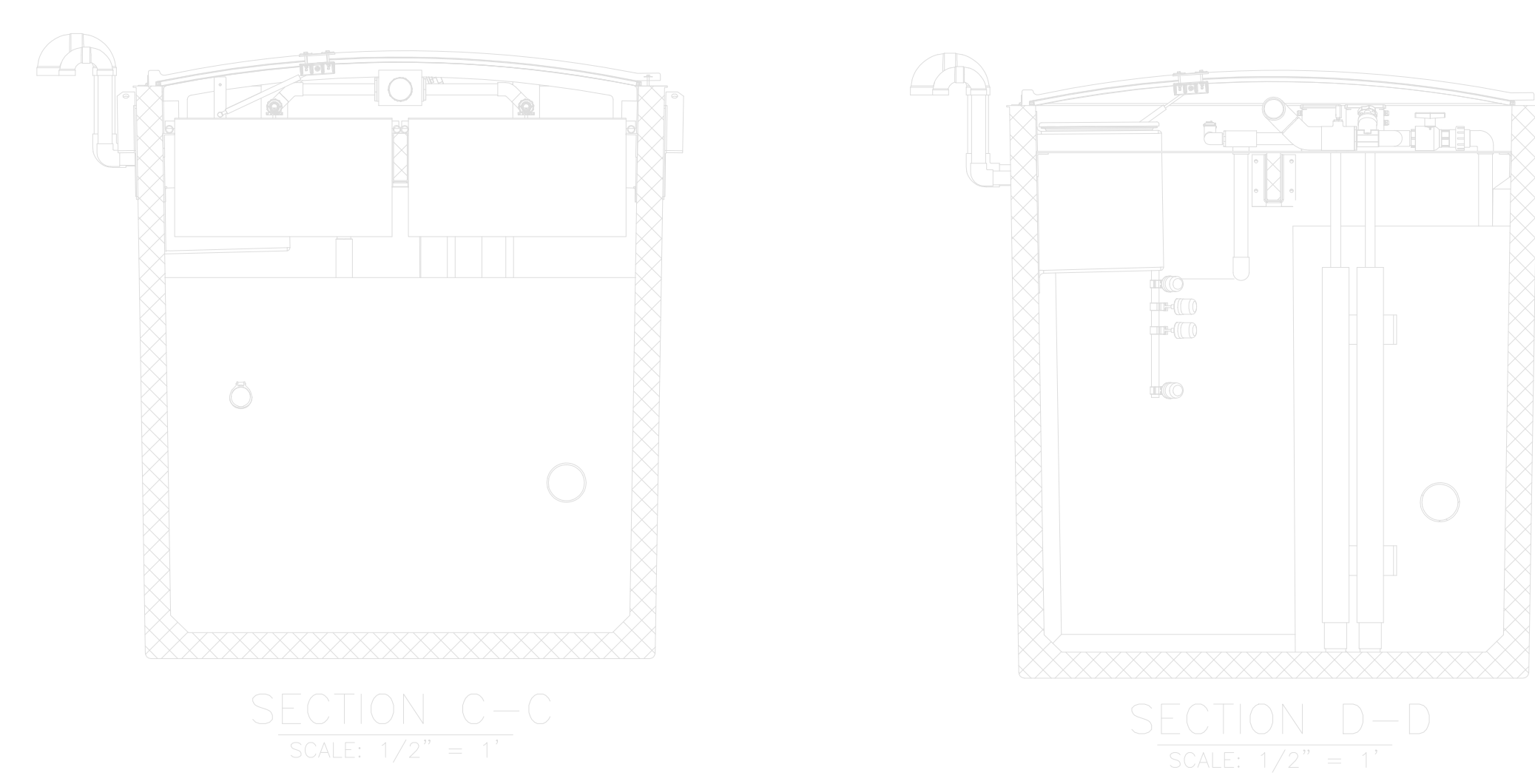
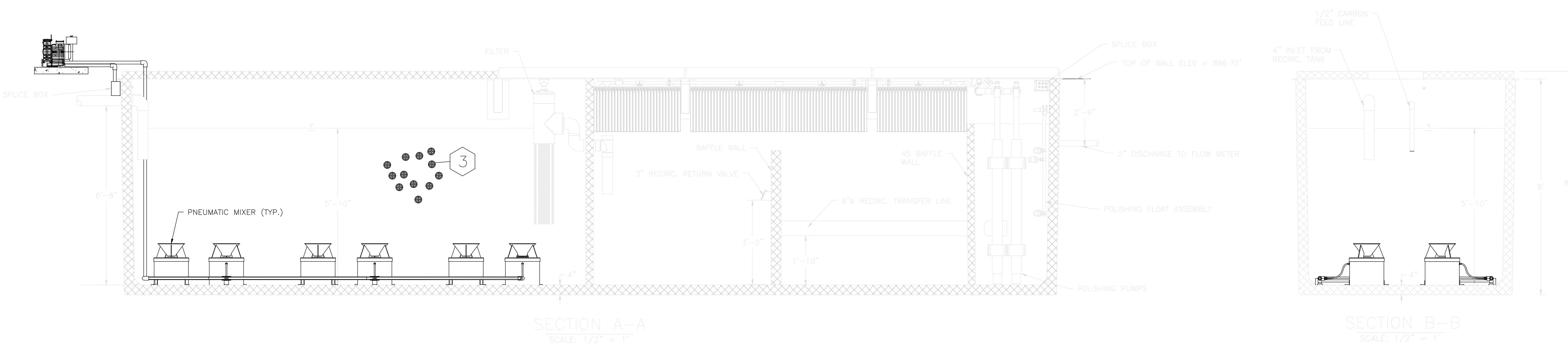
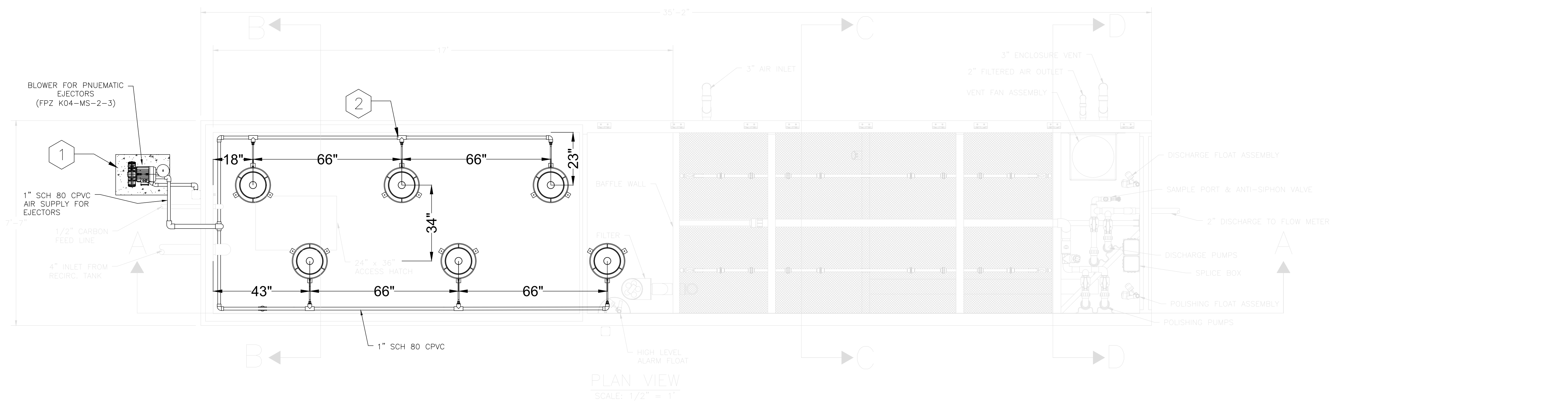


TABLE 1. ORENCO PARTS REFERENCE FOR ASSEMBLY DETAIL

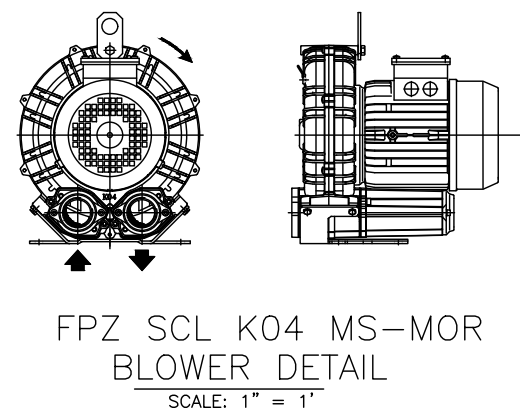
ITEM SEQ.	ITEM NUMBER	DESCRIPTION
1	45-PNEUMATIC-MIXER-18	Pneumatic Mixer, 18" DIA.
2	SPEARS 801-010	TEE, 1" SCH. 80 SLIP
3	13-41-26-1040	ELL, 90 DEG, 1" DIA. SCH 80 (SOC X SOC)
4	45-1.00-80-PVC-13.63	PIPE, 1" DIA. SCH 80 PVC, 17' LENGTH
5	SPEARS 838-099	RED BUSHING, 1" DIA X 3/8" SCH. 80 PVC (SPIG X FIPT)
6	PARKER 6505 60 14WP2	3/8 PUSH TO CONNECT FITTING
7	45-1.00-80-PVC-75.38	PIPE, 1" DIA. SCH. 80 PVC, 75-3/8'L
8	SNAP TEE PIPE BRACE	SNAP TEE, 1" DIA.
9	TUBEL	TUBE, 3/8" OD, -43'L
10	TUBES	TUBE, 3/8" OD, -9'L
11	45-1.00-80-PVC-13.75	PIPE, 1" DIA. SCH. 80 PVC, 13-3/4'L

KEYED NOTES

- 1 POUR 24" L X 18" W X 3" DEEP CONCRETE PAD FOR BLOWER. FURNISH AND INSTALL FPZ K04-MS-2-3 BLOWER. PLUMB BLOWER DISCHARGE TO 1" SCH 80 PVC CONNECTION TO TANK PNEUMATIC EJCTOR SUPPLY LINE. PROVIDE WIRE AND CONDUIT NECESSARY TO CONNECT FORMER FAN-BLADE MIXER ELECTRICAL POWER TO BLOWER INSTEAD. BLOWER SHALL BE CONTROLLED BY EXISTING FAN BLADE MIXER SUBPANEL AND VFD. CONTRACTOR SHALL ENSURE ALL ELECTRICAL IS COMPLETED BY A LICENSED ELECTRICIAN, AND MEETS ALL LOCAL, STATE, AND FEDERAL ELECTRICAL CODES.
- 2 INSTALL ORENCO PNEUMATIC MIXERS OR ENGINEER APPROVED EQUIVALENT AND AIR SUPPLY PIPING IN LOCATIONS AS SPECIFIED, AND ACCORDING TO ALL MANUFACTURER'S INSTALLATION INSTRUCTIONS. CONTRACTOR SHALL STARTUP AND TEST MIXERS WITH OPERATOR AND ENGINEER TO ENSURE DESIRABLE OPERATION IS ACHIEVED.
- 3 INSTALL ORENCO MBBR SPECIFIED REPLACEMENT TREATMENT MEDIA OR ENGINEER APPROVED EQUIVALENT, ACCORDING TO MANUFACTURER'S PERCENT FILL AND INSTALLATION INSTRUCTIONS.
- 4 THE DETAIL VIEW PROVIDED IS INTENDED TO GENERALLY ILLUSTRATE THE PARTS AND ASSEMBLY ORDER OF THE PNEUMATIC EJCTORS, AND IS NOT INTENDED TO BE EXACT ASSEMBLY INSTRUCTIONS. TWO (2) PNEUMATIC EJCTORS ARE SHOWN WHILE THE PROJECT WILL REQUIRE SIX (6). THE ACTUAL INSTALLATION SHALL OCCUR AS REPRESENTED IN KEYED DETAIL 2.

GENERAL NOTES

1. CONTRACTOR SHALL COORDINATE WITH EQUIPMENT MANUFACTURERS TO MAINTAIN ANY AND ALL WARRANTIES. ALL WARRANTIES SHALL BE TRANSFERRED TO FACILITY OWNER WITH FINAL SUBMITTALS. ANY WORK COMPLETED WHICH VOIDS MANUFACTURER WARRANTIES SHALL BE INSTEAD COVERED BY CONTRACTOR TO THE SAME OR GREATER EXTENT THAN MANUFACTURER.
2. CONTRACTOR SHALL PROVIDE NOTICE TO OPERATOR AND ENGINEER A MINIMUM OF TWO BUSINESS DAYS PRIOR TO THE FOLLOWING EVENTS:
 - 2.1. CLEANOUT OF EXISTING MBBR MEDIA
 - 2.2. COMPLETION AND FINAL INSPECTION OF EJCTORS
 - 2.3. CLEAN WATER TESTING OF EJCTORS
 - 2.4. FINAL WALKTHROUGH AND CLOSEOUT



REVISIONS:

NO.	DESCRIPTION	DATE

DAVINCI ACADEMY

532 BUNKER LAKE BLVD NE, HAM LAKE, MN 55304

PROJECT:
TANK & MBBR IMPROVEMENTS
DAVINCI ACADEMY WWTF

DRAWING STATUS:
ISSUED FOR CONSTRUCTION

SHEET NAME:
MBBR MIXING IMPROVEMENTS (BY OTHERS)

DATE: 3/5/2026 SCALE: AS NOTED
DRAWN BY: A.STARKS
CHECKED BY: V.GRUFFAT
PROJECT NO.: M00076AAL
SHEET NO.: M-11

Professional Engineer
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota.
Signature: *Adam G. Stern*
Typed or Printed Name: Adam G. Stern, PE
Date: 2026.03.05 License Number: 57377