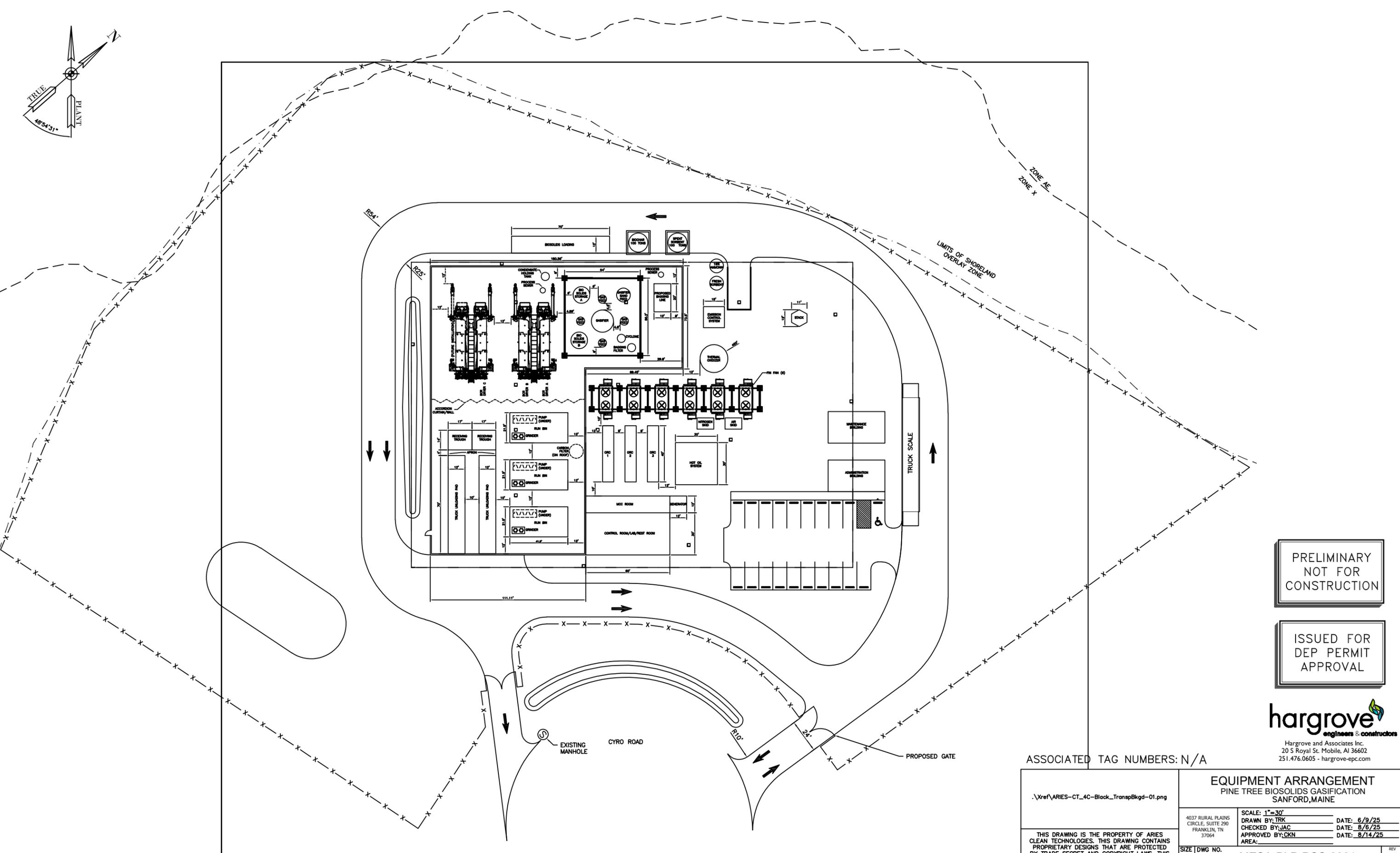
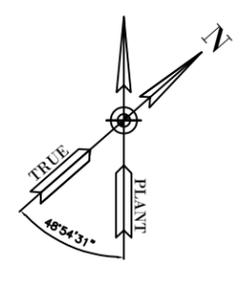


Attachment I

Site Plan



PRELIMINARY
NOT FOR
CONSTRUCTION

ISSUED FOR
DEP PERMIT
APPROVAL

hargrove
engineers & constructors
Hargrove and Associates Inc.
20 S Royal St. Mobile, AL 36602
251.476.0605 - hargrove-epc.com

ASSOCIATED TAG NUMBERS: N/A

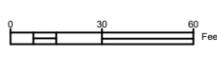
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EQUIPMENT ARRANGEMENT
PINE TREE BIOSOLIDS GASIFICATION
SANFORD, MAINE

4037 RURAL PLAINS CIRCLE, SUITE 290 FRANKLIN, TN 37064	SCALE: 1"=30'	DATE: 6/9/25
	DRAWN BY: TRK	DATE: 8/6/25
	CHECKED BY: JAC	DATE: 8/14/25
	APPROVED BY: CKN	DATE: 8/14/25
	AREA:	

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SIZE DWG NO. D	MESA-PLP-PCS-0001	REV B
PROJECT# MESA2401	SHEET 1 OF	



Attachment J

Construction Plan View

PERMITTING PLANS FOR

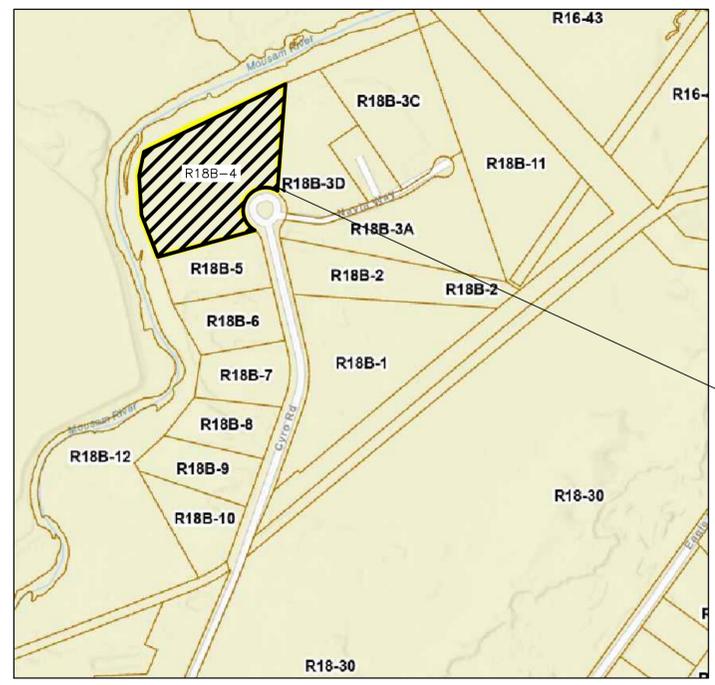
ARIES CLEAN TECHNOLOGIES

PINE TREE BIOSOLIDS GASIFICATION

PROJECT NUMBER: MESA2401

CYRO ROAD LOT 4

SANFORD, MAINE 04073



TAX MAP
SCALE: 1" = 500'



VICINITY MAP
SCALE: 1" = 2000'
YORK COUNTY, MAINE

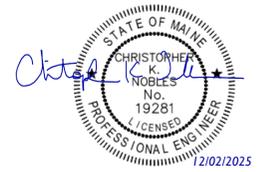


FLOOD MAP
SCALE: 1" = 500'

THE MAJORITY OF THE LOCUS PARCEL IS LOCATED IN "ZONE X (NO SCREEN)" ON THE FEMA NATIONAL FLOOD INSURANCE RATE MAP (FIRM), YORK COUNTY, MAINE, PANEL 0412 OF 0800, COMMUNITY: CITY OF SANFORD, NUMBER: 230156, PANEL: 0412, SUFFIX: G, VERSION NUMBER: 2.3.2.1, MAP NUMBER 2303100412G, EFFECTIVE DATE: JULY 17, 2024. ZONE X (NO SCREEN) IS DEFINED AS "AREAS OF MINIMAL FLOOD HAZARD". A PORTION OF THE LOCUS PANEL ADJACENT TO THE MOUSAM RIVER IS LOCATED IN "ZONE AE" WITH BASE FLOOD ELEVATIONS (BFE) RANGING FROM APPROXIMATELY 221.5' AT THE NORTHEASTERLY CORNER OF THE SUBJECT PARCEL TO APPROXIMATELY ELEVATION 224' AT THE SOUTHWESTERLY CORNER OF THE SUBJECT PARCEL. ZONE AE IS DEFINED AS "SPECIAL FLOOD AREAS WITH BASE FLOOD ELEVATION OR DEPTH". ELEVATIONS ON THE FIRM ARE BASED ON NAVD88. THE FLOOD ZONE BOUNDARIES, AS DEPICTED HEREON ARE BASED ON GEO-REFERENCING THE ABOVE REFERENCE FIRM.

DRAWING INDEX	
SHEET NUMBER	SHEET TITLE
MESA-PLN-CVL-0001	COVER PAGE
MESA-PLN-CVL-0002	GENERAL NOTES
MESA-PLN-CVL-0003	EXISTING CONDITIONS PLAN
MESA-PLN-CVL-0004	CIVIL SITE PLAN
MESA-PLN-CVL-0005	GRADING AND DRAINAGE PLAN
MESA-PLN-CVL-0006	UNDERGROUND UTILITIES PLAN
MESA-PLN-CVL-0007	EROSION CONTROL PLAN
MESA-PLN-CVL-0008	PIPE & STRUCTURE TABLES & SEWER PROFILE
*MESA-PLN-CVL-0009	DRAINAGE PROFILES
MESA-PLN-CVL-0010	EROSION CONTROL DETAILS
MESA-PLN-CVL-0011	EROSION CONTROL DETAILS
MESA-PLN-CVL-0012	DRAINAGE AND SEWER DETAILS
*MESA-PLN-CVL-0013	CONSTRUCTION DETAILS
*MESA-PLN-CVL-0014	CHAIN LINK FENCE DETAILS
MESA-PLN-CVL-0015	FIREWATER DETAILS
MESA-PLN-CVL-0016	VEHICLE TRACKING TEMPLATES
MESA-PLN-CVL-0017	VEHICLE TRACKING TEMPLATES

* ASTERISK SHEETS NOT INCLUDED



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PREPARED BY

Hargrove and Associates Inc.
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PROJECT NO: 1479.2450088

ARIES CLEAN TECHNOLOGIES LLC
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ASSOCIATED TAG NUMBERS: N/A



COVER PAGE
PINE TREE
SANFORD, MAINE

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4037 RURAL PLAINS CIRCLE, SUITE 290 FRANKLIN, TN 37064
SCALE: AS NOTED
DRAWN BY: ZHA
CHECKED BY: JAC
APPROVED BY: CKN
AREA:
DATE: 6/2/25
DATE: 8/6/25
DATE: 8/14/25

SIZE DWG NO. MESA-PLN-CVL-0001
PROJECT# MESA2401 SHEET 1 OF 17

REVISIONS

1. GENERAL:

1.1. THE CONTRACTOR IS RESPONSIBLE FOR PROCUREMENT OF ANY AND ALL REQUIRED PERMITS PRIOR TO CONSTRUCTION.

1.2. METHODS OF CONSTRUCTION SHALL CONFORM TO ALL APPLICABLE LOCAL, STATE, AND FEDERAL LAWS AND ORDINANCES.

1.3. CONTRACTOR SHALL FIELD VERIFY ALL SIZES AND LOCATIONS OF EXISTING ITEMS AND COORDINATE WITH ENGINEER IF CONFLICTS EXIST.

1.4. CONTRACTOR SHALL ENSURE GOOD HOUSEKEEPING PRACTICES ARE MAINTAINED THROUGHOUT CONSTRUCTION. THE CONSTRUCTION SITE SHALL BE CLEANED AT THE END OF EACH DAY.

1.5. CONTRACTOR SHALL INSPECT ALL CONSTRUCTION MATERIALS (PIPE, DRAINAGE STRUCTURES, FENCING, ETC.) PRIOR TO ACCEPTING DELIVERY. ANY DAMAGED MATERIAL SHALL BE REJECTED IMMEDIATELY. CONTRACTOR SHALL STORE MATERIAL ON SITE SO THAT IT IS PROTECTED FROM DAMAGE. OWNER IS NOT RESPONSIBLE FOR ANY DAMAGED OR STOLEN MATERIALS.

1.6. CONTRACTOR SHALL HAVE ALL UTILITIES LOCATED PRIOR TO BEGINNING ANY WORK. CONTRACTOR SHALL NOT ASSUME UTILITIES ARE EXACTLY IN THE AREA MARKED AND SHALL USE EXTREME CAUTION WHEN WORKING IN AREAS WHERE EXISTING UTILITIES ARE PRESENT.

1.7. PIPES SHALL BE PROPERLY BEDDED TO PROVIDE STRUCTURAL SUPPORT FOR THE PIPE. PIPE SHALL REST ON SAND OR FINE GRAVEL. PIPE SHALL NOT REST ON ROCK OR BE SUPPORTED ON BLOCKS PLACED IN THE TRENCH. IF SOFT MATERIAL IS ENCOUNTERED THE TRENCH SHALL BE OVER EXCAVATED AND BY AT LEAST 2 PIPE DIAMETERS AND BACKFILLED WITH APPROPRIATE BEDDING MATERIAL. PIPING SHALL BE LAID ON A FIRM BASE THE ENTIRE TRENCH LENGTH.

1.8. BASED ON CURRENT FEDERAL EMERGENCY MANAGEMENT ADMINISTRATION (FEMA) FIRM MAP NUMBER 23031C0412G, MAP REVISION DATED JULY 17, 2024, MAJORITY OF THE SITE IS LOCATED WITHIN ZONE X, AREA OF MINIMAL FLOOD HAZARD. A PORTION OF THE SITE IS LOCATED IN ZONE AE, SPECIAL FLOOD HAZARD AREAS WITH BASE FLOOD ELEVATION OR DEPTH. NO BUILDING OR EQUIPMENT LOCATED WITHIN AE ZONE. THE BASE FLOOD ELEVATIONS (BFE) RANGE FROM APPROXIMATELY 221.5' AT THE NORTHEASTERLY CORNER OF THE PARCEL TO APPROXIMATELY 224' AT THE SOUTHWESTERLY CORNER OF THE PARCEL.

1.9. FLOOD ZONE DETERMINATION IS BASED ON THE FLOOD INSURANCE RATE MAPS AND DOES NOT IMPLY THAT THE PROPERTY WILL OR WILL NOT BE FREE FROM FLOODING OR DAMAGE.

1.10. PROJECT LOCATION: CYRO ROAD LOT 4, SANFORD, MAINE 04073

1.11. ON-THE-GROUND FIELD SURVEY BY CIVIL CONSULTANTS CONDUCTED ON DECEMBER 12, 13, AND 23, 2024. THE DATA WAS UPLOADED TO OPUS (STATIC SOLUTION) OR COLLECTED UTILIZING A GPS NETWORK ROVER AND THE MAINE STATE PLANE COORDINATE WEST ZONE NAD83/NAVDS8, US SURVEY FEET, GRID.

1.12. DESIGN OF THE STORMWATER MANAGEMENT SYSTEM IN ACCORDANCE WITH MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND CITY OF SANFORD REGULATIONS BY CIVIL CONSULTANTS. HARGROVE IS NOT RESPONSIBLE FOR THE STORMWATER MANAGEMENT SYSTEM.

1.13. CONTRACTOR WILL PROVIDE QUALITY CONTROL TESTING SERVICES (3rd PARTY).

1.14. CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS TO THE ENGINEER UPON COMPLETION OF CONSTRUCTION. DRAWINGS SHALL BE SUBMITTED TO ENGINEER FOR RECORD IN BOTH .PDF AND AUTOCAD FORMATS.

2. REFERENCE DOCUMENTS:

2.1. MAINE EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMPS) OCTOBER 2016.

2.2. CHAPTER 500 STORMWATER MANAGEMENT RULES, MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION (MAINE DEP).

2.3. MAINE DOT STANDARD SPECIFICATIONS - 2020 EDITION.

2.4. CITY OF SANFORD, MAINE TECHNICAL MANUAL. MAY 2022

2.5. ALTA/NSPS LAND TITLE SURVEY PLAN PREPARED BY CIVIL CON ON JANUARY 10, 2025

2.6. PRELIMINARY GEOTECHNICAL INVESTIGATION PREPARED BY CREDERE & ASSOCIATES, LLC ON MAY 16, 2025

3. DIMENSIONING:

3.1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS RELATED TO EXISTING CONDITIONS IN THE FIELD PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALE. SCALE IS FOR GUIDELINE PURPOSES ONLY. IF DIMENSIONS ARE UNCLEAR, DO NOT SCALE. REQUEST CLARIFICATION FROM THE ENGINEER.

3.2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO EMPLOY THE NECESSARY PROFESSIONAL SERVICES METHODS AND SUPPORTS REGARDING FORMING AND CONSTRUCTION LOADS.

3.3. CONTRACTOR MUST FOLLOW STATE REQUIREMENTS AND GOOD SURVEY PRACTICES FOR CONSTRUCTION LAYOUT WORK.

4. EROSION CONTROL NOTES:

4.1. EROSION CONTROL DEVICES MUST BE INSTALLED IMMEDIATELY AFTER GROUND DISTURBANCE OCCURS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ACCOMPLISH EROSION CONTROL FOR ALL DRAINAGE PATTERNS CREATED AT VARIOUS STAGES DURING CONSTRUCTION AND ALTER THE LOCATION OF EROSION CONTROL DEVICES ACCORDINGLY. ANY DIFFICULTY IN CONTROLLING EROSION DURING ANY PHASE OF CONSTRUCTION MUST BE REPORTED TO THE DESIGN PROFESSIONAL IMMEDIATELY.

4.2. ALL DISTURBED AND GRADED AREAS MUST BE APPLIED WITH SEEDING AS SOON AS FINAL GRADE IS ACHIEVED.

4.3. SEDIMENT AND EROSION CONTROL MEASURES MUST BE CHECKED AFTER EACH RAIN EVENT. EACH DEVICE IS TO BE MAINTAINED OR REPLACED IF SEDIMENT ACCUMULATION HAS REACHED HALF THE CAPACITY OF THE DEVICE. ADDITIONAL DEVICES MUST BE INSTALLED IF NEW CHANNELS HAVE DEVELOPED.

4.4. CONTRACTOR MUST INSPECT CONTROL MEASURES AT THE END OF EACH WORKING DAY OF ENSURE MEASURES ARE FUNCTIONING PROPERLY.

4.5. EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION CONTROL AND SEDIMENT CONTROL MEASURES MUST BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT.

4.6. FAILURE TO INSTALL, OPERATE OR MAINTAIN ALL EROSION CONTROL MEASURES WILL RESULT IN ALL CONSTRUCTION BEING STOPPED ON THE JOB UNTIL SUCH MEASURES ARE CONNECTED.

4.7. ALL SITE EROSION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH ALL GOVERNING RULES, REGULATIONS, AND SITE SPECIFIC SWPPP.

4.8. SILT FENCE(S), CONSTRUCTION EXIT PAD(S), AND ALL OTHER PERIMETER EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO SITE CONSTRUCTION ACTIVITIES.

4.9. AT A MINIMUM, THE EROSION CONTROL DEVICES SHOWN ON THESE PLANS SHALL BE INSTALLED. ADDITIONAL MEASURES MAY BE REQUIRED AND SHALL BE IMMEDIATELY INSTALLED UPON ANY ADDITIONAL SILTATION, EROSION, AND OTHER DEGRADATION OR POLLUTION TO THE SITE OR ADJACENT PROPERTIES, STREAMS, DITCHES, AND PUBLIC ROADWAYS NOT MITIGATED OR UNFORESEEN BY THIS SET OF PLANS.

4.10. ALL EROSION CONTROL DEVICES SHALL BE PROPERLY MAINTAINED DURING THE CONSTRUCTION PROCESS. ALL EROSION CONTROL DEVICES SHALL BE INSPECTED AT A MINIMUM OF ONCE A WEEK, AFTER EACH RAINFALL GREATER THAN 0.5 INCHES IN A 24 HOUR PERIOD, AND UNTIL ALL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED. ALL EROSION CONTROL INSTALLATION, MAINTENANCE, REPAIRS, AND CLEAN UP FROM INSUFFICIENT DEVICES SHALL BE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE AT NO ADDITIONAL COST TO THE OWNER.

4.11. ALL EROSION CONTROL MEASURES SHALL REMAIN UNTIL ALL UPLAND DISTURBANCE ACTIVITIES HAVE CEASED AND PERMANENT STABILIZATION HAS BEEN ACHIEVED. AFTER EROSION CONTROL MEASURES HAVE BEEN REMOVED, THE CONTRACTOR SHALL CLEAN AND DRESS THE AREA.

4.12. DISCHARGE FROM DEWATERING OPERATIONS SHALL NOT POLLUTE, ERODE, NOR CAUSE DAMAGE TO ADJACENT PROPERTIES.

4.13. TEMPORARY MULCH SHOULD BE APPLIED TO AREAS THAT WILL NOT BE ACTIVELY WORKED FOR MORE THAN 14 DAYS (7 DAYS IN SENSITIVE AREAS) IN ACCORDANCE WITH MAINE EROSION AND SEDIMENT CONTROL PRACTICES.

4.14. FOLLOW STATE REQUIREMENTS AND GOOD SURVEY PRACTICES FOR CONSTRUCTION LAYOUT WORK.

5. SITE WORK/GRADING/PAVING:

5.1. FOLLOWING THE STRIPPING OPERATIONS AND PRIOR TO THE PLACEMENT OF STRUCTURAL FILLS OR STRUCTURAL ELEMENTS, THE EXPOSED SUBGRADE SOILS SHOULD BE OBSERVED BY THE GEOTECHNICAL ENGINEER OR HIS APPROVED REPRESENTATIVE. PROOFROLLING SHOULD BE DONE PER FINAL GEOTECHNICAL REPORT.

5.2. PROPOSED GRADES INDICATED ON THIS PLAN ARE TO FINISH GRADE. THE CONTRACTOR SHALL MAKE SUBGRADE ADJUSTMENTS FOR TOPSOIL, PAVING, BUILDING PAD, ETC.

5.3. ALL UNDERGROUND UTILITIES SHALL BE INSTALLED BEFORE PLACING OF PAVING.

5.4. CONTRACTOR MUST MAKE EVERY REASONABLE EFFORT TO LOCATE ALL EXISTING UNDERGROUND UTILITIES AND EXERCISE CARE TO PROTECT THEM FROM DAMAGE DURING EXCAVATION AND CONSTRUCTION.

5.5. TOP SOIL CONTAINING ORGANIC MATTER, DEBRIS OR OTHER LOOSE MATERIAL MUST BE STRIPPED. TOP SOIL MUST BE STOCK PILED ON SITE AND SPREAD OVER PREVIOUS AREAS FOR GRASS STABILIZATION. THIS SOIL IS NOT CONSIDERED SUITABLE FOR STRUCTURAL BACKFILL. ANY OTHER ON SITE MATERIAL DEFINED AS UNSUITABLE MUST BE REMOVED FROM THE CONSTRUCTION AREAS.

5.6. ALL TREES AND STUMPS MUST BE MULCHED AND SPREAD AS A TOPPING OVER PREVIOUS AREAS. NO VEGETATION MAY BE BURNED OR BURIED ON SITE. ALL ORGANIC MATERIAL NOT MULCHED AND USED ON SITE MUST BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL LAWS AND ORDINANCES. CONTRACTOR SHOULD COORDINATE WITH THE OWNER ON DISPOSAL REQUIREMENTS. CONTRACTOR IS RESPONSIBLE FOR ALL TRUCKING AND DISPOSAL FEES.

5.7. ANY DISTURBED AREA NOT RECEIVING AN IMPERVIOUS PAVEMENT SURFACE SHALL BE GRADED FOR POSITIVE DRAINAGE AND STABILIZED BY GRASSING. VEGETATION SHALL BE NATIVE, PERENNIAL AND WELL ESTABLISHED FOR GROWING IN THE LOCAL CONDITIONS.

5.8. CONTRACTOR SHALL SHORE UP ALL FOUNDATIONS WHERE EXCAVATION MAY CAUSE INSTABILITIES. CONTRACTOR SHALL FOLLOW ALL OWNER REGULATIONS FOR WORKING IN EXCAVATIONS. EXCAVATIONS GREATER THAN 4 FEET IN DEPTH SHALL BE BRACED UNLESS SIDES ARE SLOPED IN ACCORDANCE WITH OSHA STANDARDS.

5.9. ALL OPEN EXCAVATING INCLUDING DITCHES AND TRENCHES SHALL BE PROTECTED IN ACCORDANCE WITH OSHA 1926 SUBPART P.

5.10. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO EMPLOY THE NECESSARY PROFESSIONAL SERVICES TO DETERMINE THE NECESSARY METHODS AND SUPPORTS REGARDING FORMING AND CONSTRUCTION LOADS.

5.11. CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE IS MAINTAINED THROUGHOUT CONSTRUCTION. PONDING AND STANDING WATER SHALL BE KEPT TO A MINIMUM.

5.12. CONSTRUCTION SHALL BE PER ALL APPLICABLE CODES AND REGULATIONS.

5.13. FILL MUST BE PLACED AND COMPACTED IN ACCORDANCE WITH MATERIALS SECTION IN THE GEOTECHNICAL REPORT.

5.14. CONTRACTOR SHALL REPAIR ANY DAMAGED AREAS, I.E. BUILDINGS, UTILITIES, ETC., RESULTING FROM THEIR ACTIONS. ALL REPAIR COSTS MUST BE THE RESPONSIBILITY OF THE CONTRACTOR.

5.15. A GEOTECHNICAL ENGINEER IS TO OBSERVE ALL EXCAVATIONS AND IS TO CERTIFY THAT ALL BEARING SURFACES MEET DESIGN CRITERIA. CONTRACTOR MUST COORDINATE SUBCONTRACT OR GEOTECH ENGINEER WITH NAVFAC DURING CONSTRUCTION.

5.16. ASPHALT, CONCRETE AND GRAVEL PAVING MUST BE INSTALLED IN ACCORDANCE TO THE GOVERNING SPECIFICATIONS AND GOOD CONSTRUCTION PRACTICES.

5.17. CONTRACTOR TO PROVIDE APPROPRIATE MEANS OF EGRESS IN ACCORDANCE TO OSHA GUIDELINES FOR ALL EXCAVATIONS. MEANS OF EGRESS MUST BE LOCATED SO AS NOT TO REQUIRE WORKERS TO TRAVEL MORE THAN 25 FEET LATERALLY WITHIN THE EXCAVATION AND/OR TRENCH. STORMWATER DRAINAGE SHALL NOT BE ALLOWED TO ENTER EXCAVATION WHILE WORKERS ARE PRESENT.

5.18. CONTRACTOR IS RESPONSIBLE FOR ANY DEWATERING REQUIRED TO FACILITATE CONSTRUCTION. THE CONTRACTOR SHALL DISCHARGE WATER FROM THE EXCAVATION TO A DEWATERING BASIN OR FILTER BAG PRIOR TO ENTERING THE DRAINAGE SYSTEM. THE LOCATION OF THE DEWATERING BASIN TO BE PROVIDED BY THE CONTRACTOR AND APPROVED BY THE OWNER/ENGINEER BEFORE DISCHARGE.

5.19. CONTRACTOR SHALL COORDINATE WITH OWNER FOR PERMITTING OF GROUNDWATER DISCHARGE (DEWATERING).

5.20. CONTRACTOR SHALL HAND PROBE AND HAND EXCAVATE WITHIN 2 FEET OF KNOWN PIPE LOCATIONS.

5.21. CONTRACTOR TO PROVIDE CONCRETE JOINTING PLAN FOR APPROVAL PRIOR TO CONSTRUCTION.

5.22. ALL MATERIALS SHALL BE DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL LAWS AND ORDINANCES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING THESE MATERIALS FROM ENTERING THE STORMWATER DRAINAGE FEATURES. STRUCTURES, ETC.

5.23. MAXIMUM SIDE SLOPES OF ALL EXPOSED SURFACES SHALL NOT EXCEED 3:1 UNLESS OTHERWISE APPROVED BY GEOTECHNICAL ENGINEER.

6. STORM DRAINAGE NOTES:

6.1. ALL STORM PIPES 12" AND GREATER SHALL BE HIGH-DENSITY POLYETHYLENE (HDPE) IN ACCORDANCE WITH MAINE DOT SECTION 706.

6.2. ALL GRATE INLETS SHALL BE PRECAST INLET BOXES WITH GASKETED JOINTS.

6.3. STORM DRAINAGE SYSTEMS SHALL BE CONSTRUCTED FROM DOWNSTREAM TO UPSTREAM. VERIFY ALL PIPE SLOPES, INVERTS, AND POINTS OF CONNECTION PRIOR TO CONSTRUCTION. NOTIFY THE ENGINEER OF ANY DISCREPANCIES.

6.4. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS ON ALL STORM PIPE MATERIALS TO THE ENGINEER PRIOR TO INSTALLATION AND/OR FABRICATION.

6.5. ALL PROPOSED STORM INLETS (GRATES, CURB, YARD, AREA DRAINS) ARE TO BE LOCATED AT THE LOWPOINTS. GRADING SHALL BE TO DIRECT RUNOFF TO THESE INLETS. NOTIFY THE ENGINEER OF ANY DISCREPANCIES.

6.6. THE CONTRACTOR SHALL VERIFY ALL EXISTING AND PROPOSED STORM PIPE GRADES AND POINTS OF CONNECTION PRIOR TO INSTALLATION. THE ENGINEER SHALL BE NOTIFIED OF ANY DEVIATIONS PRIOR TO CONSTRUCTION.

6.7. ALL STORM INLETS SHALL BE TRAFFIC RATED IN VEHICLE AREAS.

6.8. STORMWATER PIPE SHALL BE PROPERLY BEDDED IN SUITABLE BACKFILL MATERIAL. SEE DETAIL ON SHEET MESA2401-PLN-CVL-00012 FOR PIPE BEDDING SECTION

7. SANITARY SEWER UTILITY NOTES:

7.1. GRAVITY SANITARY SEWER PIPE SHALL BE POLYVINYL CHLORIDE (PVC) MEETING THE REQUIREMENTS OF ASTM D3034. PIPE SHALL BE SDR35. PIPE SIZE SHALL BE NOTED ON PLANS.

7.2. BUILDING CONNECTIONS SHALL BE MADE WITH A WYE CONNECTION. COORDINATE SEWER TIE LOCATIONS WITH THE BUILDING PLUMBING DRAWINGS. PIPE WORK ON THESE PLANS TERMINATE FIVE FEET FROM THE BUILDING.

7.3. PROPOSED SANITARY SEWER PIPE SHALL TIE IN TO EXISTING SANFORD SEWERAGE DISTRICT MANHOLE.

7.4. SEWER PIPE SHALL BE PROPERLY BEDDED IN SUITABLE BACKFILL MATERIAL. SEE DETAIL ON SHEET MESA2401-PLN-CVL-00012 FOR PIPE BEDDING SECTION.

8. POTABLE WATER UTILITY NOTES:

8.1. POTABLE WATER SHALL BE HDPE WITH A RATING CLASS OF SDR-11. SEE PIP PN12PDOH02 PIPING MATERIAL SPECIFICATION FOR ADDITIONAL INFORMATION.

8.2. VALVE BOXES IN UNPAVED AREAS SHALL BE RAISED ABOVE GRADE A MINIMUM OF 3 INCHES. VALVE BOXES LOCATED IN AREAS THAT WILL RECEIVE VEHICLE OR PEDESTRIAN TRAFFIC SHALL BE INSTALLED FLUSH WITH A BRASS COVER SUITABLE FOR HS-20 LOAD RATINGS.

8.3. PIPES SHALL BE FLUSHED CLEAN WITH WATER PRIOR TO INSTALLATION. WATER SHALL BE FLOWED THROUGH THE PIPE UNTIL NO DIRTY WATER APPEARS AT THE POINT OF OUTLET.

8.4. CONTRACTOR SHALL HAND EXCAVATE WITHIN 2' OF KNOWN PIPE LOCATIONS.

8.5. ALL UNDERGROUND UTILITIES SHALL BE INSTALLED PRIOR TO INSTALLATION OF ANY AREA PAVING.

8.6. INSTALL TRACER/WARNING TAPE A MINIMUM OF 12" ABOVE THE TOP OF PIPE BUT NOT MORE THAN 18".

8.7. ABOVEGROUND PIPING SHALL BE PROTECTED FROM FREEZING IN ACCORDANCE WITH MECHANICAL PIPING PLANS.

8.8. ALL WATER LINES SHALL BE FLUSHED, STERILIZED AND PRESSURE TESTED IN ACCORDANCE WITH SANFORD WATER DISTRICT STANDARDS.

8.9. CHLORINATED WATER SOLUTION SHALL NOT BE DISCHARGED TO DRAIN FIELDS OR SURFACE WATERS.

8.10. CONTRACTOR SHALL CONFORM TO ALL LOCAL, STATE, AND FEDERAL CODES, LAWS AND REGULATIONS FOR WATER UTILITIES. WHEN CONFLICTS OCCUR BETWEEN THESE, THE MOST STRINGENT CODE SHALL APPLY.

8.11. MINIMUM COVER FOR POTABLE WATER SHALL BE A MINIMUM OF 66 INCHES.

8.12. POTABLE PIPE SHALL BE PROPERLY BEDDED IN SUITABLE BACKFILL MATERIAL. SEE DETAIL ON SHEET MESA2401-PLN-CVL-00012 FOR PIPE BEDDING SECTION.

9. FIREWATER UTILITY NOTES:

9.1. FIREWATER PIPING AND FITTINGS SHALL BE SDR-11 (200 PSI RATING) IN ACCORDANCE WITH PIP PN12PDOH02.

9.2. MINIMUM COVER FOR FIRE WATER SHALL BE A MINIMUM OF 66 INCHES AND A MAXIMUM OF 84 INCHES. COORDINATE WITH GRADING PLAN PRIOR TO LAYING PIPE.

9.3. FIREWATER PIPE, FITTINGS, AND APPURTENANCES SHALL MEET CITY OF SANFORD SPECIFICATIONS.

9.4. MECHANICAL JOINTS ARE REQUIRED ON PIPE BENDS, TEES, FIRE HYDRANTS, AND POST INDICATOR VALVES. FUSION JOINTS ARE ALLOWED ON STRAIGHT RUNS OF PIPE.

9.5. VALVE BOXES IN UNPAVED AREAS SHALL BE RAISED ABOVE GRADE A MINIMUM OF 3 INCHES. VALVE BOXES LOCATED IN AREAS THAT WILL RECEIVE VEHICLE OR PEDESTRIAN TRAFFIC SHALL BE INSTALLED FLUSH WITH A BRASS COVER SUITABLE FOR HS-20 LOAD RATINGS.

9.6. PRIOR TO ACTIVATING A NEW WATER MAIN OR SERVICE CONNECTION, THE SANFORD WATER DISTRICT WILL OVERSEE AND APPROVE OF ANY FLUSHING AND DISINFECTING PROCEDURES. PRESSURE TESTING SHALL ALSO BE CONDUCTED IN THE PRESENCE OF SANFORD WATER DISTRICT.

9.7. CONTRACTOR SHALL PERFORM HYDROSTATIC TESTING OF NEWLY INSTALLED FIREWATER LINES IN ACCORDANCE WITH FM GLOBAL PROPERTY LOSS PREVENTION DATA SHEETS 3-10, SECTION 2.1.5.6.

9.8. CONTRACTOR TO COORDINATE UNDERGROUND FIREWATER INSTALLATION WITH OTHER UTILITIES AND FOUNDATIONS.

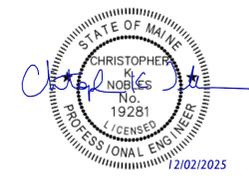
9.9. CONTRACTOR SHALL HAND EXCAVATE WITHIN 2' OF KNOWN PIPE LOCATIONS.

9.10. ALL UNDERGROUND UTILITIES SHALL BE INSTALLED PRIOR TO INSTALLATION OF ANY AREA PAVING.

9.11. FIREWATER PIPE SHALL BE PROPERLY BEDDED IN SUITABLE BACKFILL MATERIAL. SEE DETAIL ON SHEET MESA2401-PLN-CVL-00012 FOR PIPE BEDDING SECTION.

LEGEND

	EXISTING MAJOR CONTOURS		WATTLE
	EXISTING MINOR CONTOURS		EXISTING BOLLARD
	PROPOSED MAJOR CONTOURS		STORMWATER PIPE NUMBER
	PROPOSED MINOR CONTOURS		STORMWATER STRUCTURE NUMBER
	TREE LINE		SANITARY SEWER PIPE NUMBER
	FLOOD ZONE BOUNDARY		SANITARY SEWER STRUCTURE NUMBER
	SHORELAND OVERLAY ZONE		CONSTRUCTION ENTRANCE
	RESOURCE PROTECTION ZONE		INLET PROTECTION
	WETLAND BOUNDARY		PROPOSED BUILDING
	PROPERTY LINE		PROPOSED CONCRETE PAVING
	PROPERTY LINE ABUTTER		PROPOSED GRAVEL SURFACING
	RIVER BANK		PROPOSED ASPHALT SURFACING
	EASEMENT		EXISTING ASPHALT
	50' SETBACK		WETLAND AREA
	BUFFER LIMIT		
	LIMIT OF CONSTRUCTION		
	PROPOSED FENCE		
	EXISTING OVERHEAD WIRES		
	EXISTING WATER LINE		
	EXISTING SEWER LINE		
	SILT FENCE		
	FLOW LINE		
	FLOW ARROW		
	PROPOSED UNDERGROUND ELECTRIC LINE		
	PROPOSED 6" FIREWATER LINE		
	PROPOSED 10" FIREWATER LINE		
	PROPOSED 6" SANITARY SEWER LINE		
	PROPOSED 4" SANITARY SEWER LINE		
	PROPOSED 1" POTABLE WATER LINE		
	PROPOSED 3" POTABLE WATER LINE		
	GRATE INLET/CATCH BASIN		
	PROPOSED BOLLARD		
	WATER VALVE		
	EXISTING FIRE HYDRANT		
	CONTROL POINT		
	PROPOSED FIRE HYDRANT		
	PROPOSED PIV		
	PROPOSED GATE VALVE		
	PROPOSED BACKFLOW PREVENTER		
	PROPOSED WATER METER		
	PROPOSED SEWER MANHOLE		
	PROPOSED SEWER CLEANOUT		
	POWER POLE		
	GUY WIRE		
	ELECTRICAL BOX		

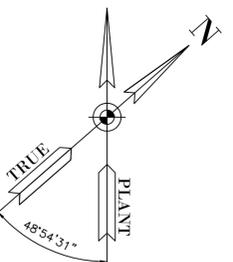


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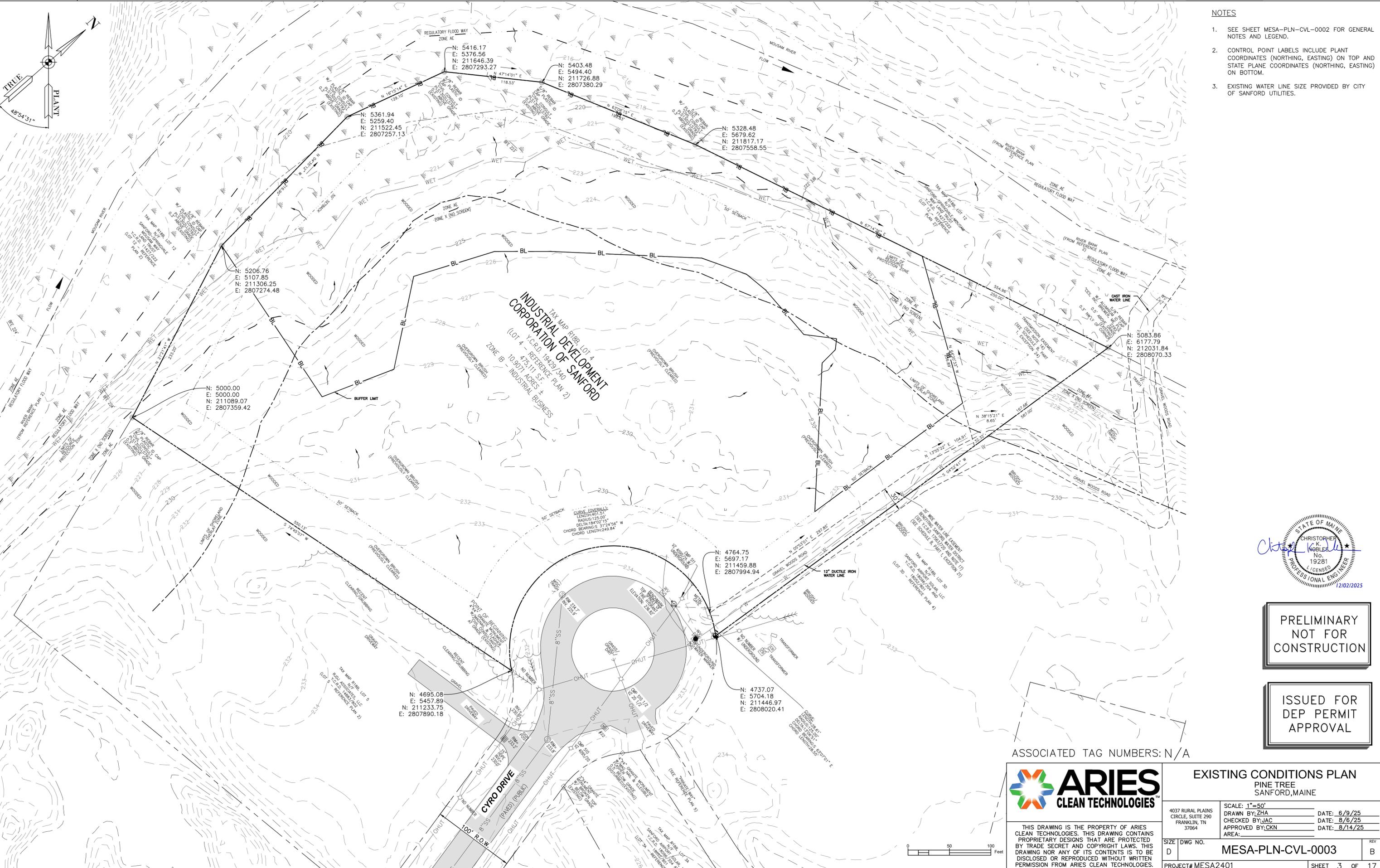
ISSUED FOR DEP PERMIT APPROVAL

ASSOCIATED TAG NUMBERS: N/A

	GENERAL NOTES PINE TREE SANFORD, MAINE	
	4037 RURAL PLAINS CIRCLE, SUITE 290 FRANKLIN, TN 37064	SCALE: NONE DRAWN BY: ZHA CHECKED BY: JAC APPROVED BY: CKN AREA:
THIS DRAWING IS THE PROPERTY OF ARIES CLEAN TECHNOLOGIES. THIS DRAWING CONTAINS PROPRIETARY DESIGNS THAT ARE PROTECTED BY TRADE SECRET AND COPYRIGHT LAWS. THIS DRAWING NOR ANY OF ITS CONTENTS IS TO BE DISCLOSED OR REPRODUCED WITHOUT WRITTEN PERMISSION FROM ARIES CLEAN TECHNOLOGIES.	DATE: 6/2/25 DATE: 8/6/25 DATE: 8/14/25	SIZE DWG NO. MESA-PLN-CVL-0002
PROJECT# MESA2401	SHEET 2 OF 17	REV B



- NOTES**
- SEE SHEET MESA-PLN-CVL-0002 FOR GENERAL NOTES AND LEGEND.
 - CONTROL POINT LABELS INCLUDE PLANT COORDINATES (NORTHING, EASTING) ON TOP AND STATE PLANE COORDINATES (NORTHING, EASTING) ON BOTTOM.
 - EXISTING WATER LINE SIZE PROVIDED BY CITY OF SANFORD UTILITIES.



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APPROVAL**

ASSOCIATED TAG NUMBERS: N/A

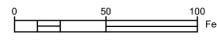


EXISTING CONDITIONS PLAN
PINE TREE
SANFORD, MAINE

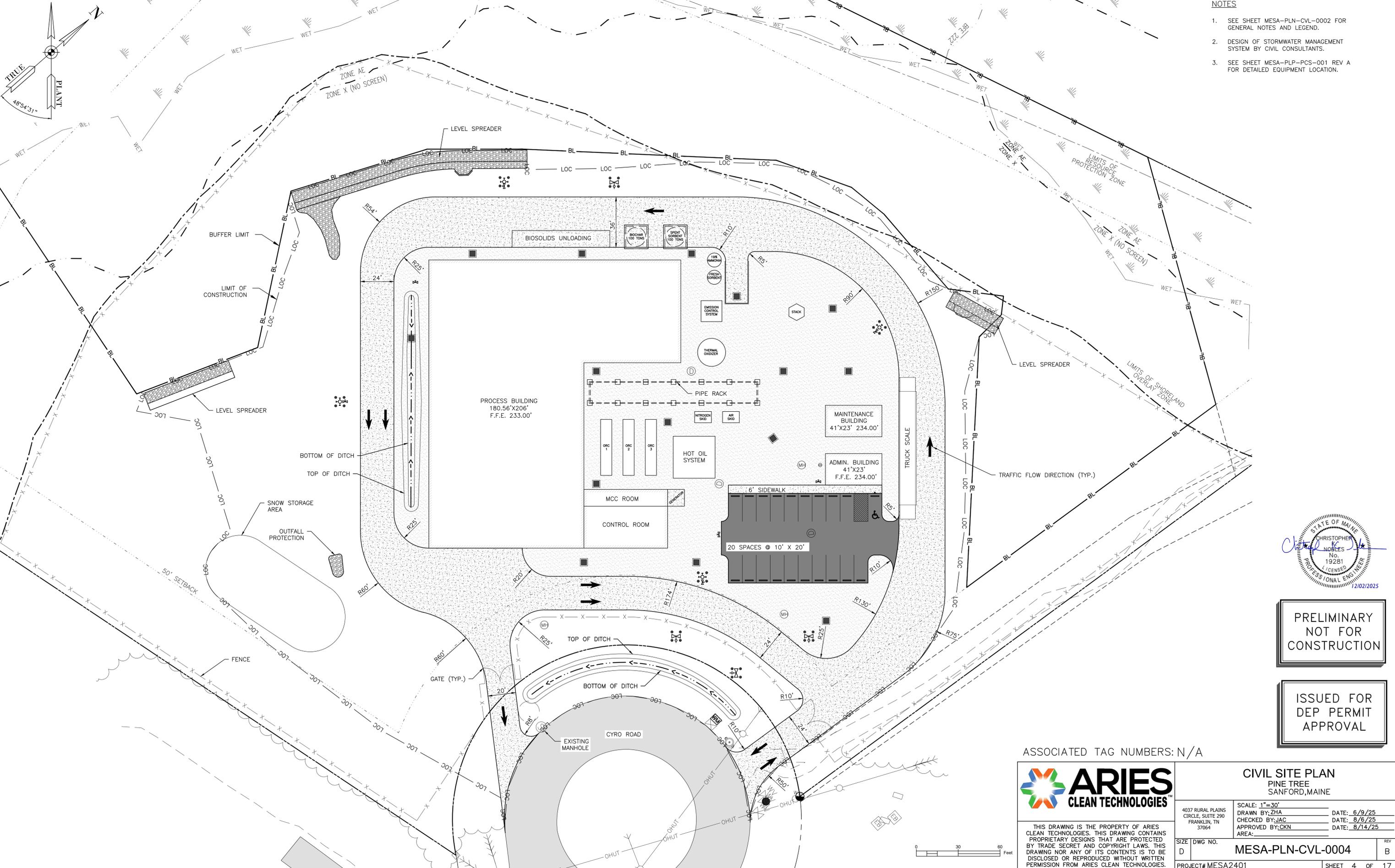
4037 RURAL PLAINS CIRCLE, SUITE 290 FRANKLIN, TN 37064	SCALE: 1"=50' DRAWN BY: ZHA CHECKED BY: JAC APPROVED BY: CKN AREA:	DATE: 6/9/25 DATE: 8/6/25 DATE: 8/14/25
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SIZE DWG NO. D	MESA-PLN-CVL-0003	REV B
PROJECT# MESA2401	SHEET 3 OF 17	



- NOTES**
- SEE SHEET MESA-PLN-CVL-0002 FOR GENERAL NOTES AND LEGEND.
 - DESIGN OF STORMWATER MANAGEMENT SYSTEM BY CIVIL CONSULTANTS.
 - SEE SHEET MESA-PLP-PCS-001 REV A FOR DETAILED EQUIPMENT LOCATION.



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APPROVAL**

ASSOCIATED TAG NUMBERS: N/A

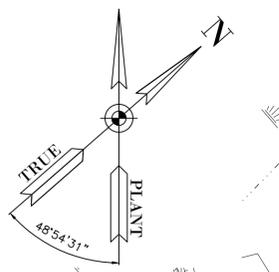


CIVIL SITE PLAN
PINE TREE
SANFORD, MAINE

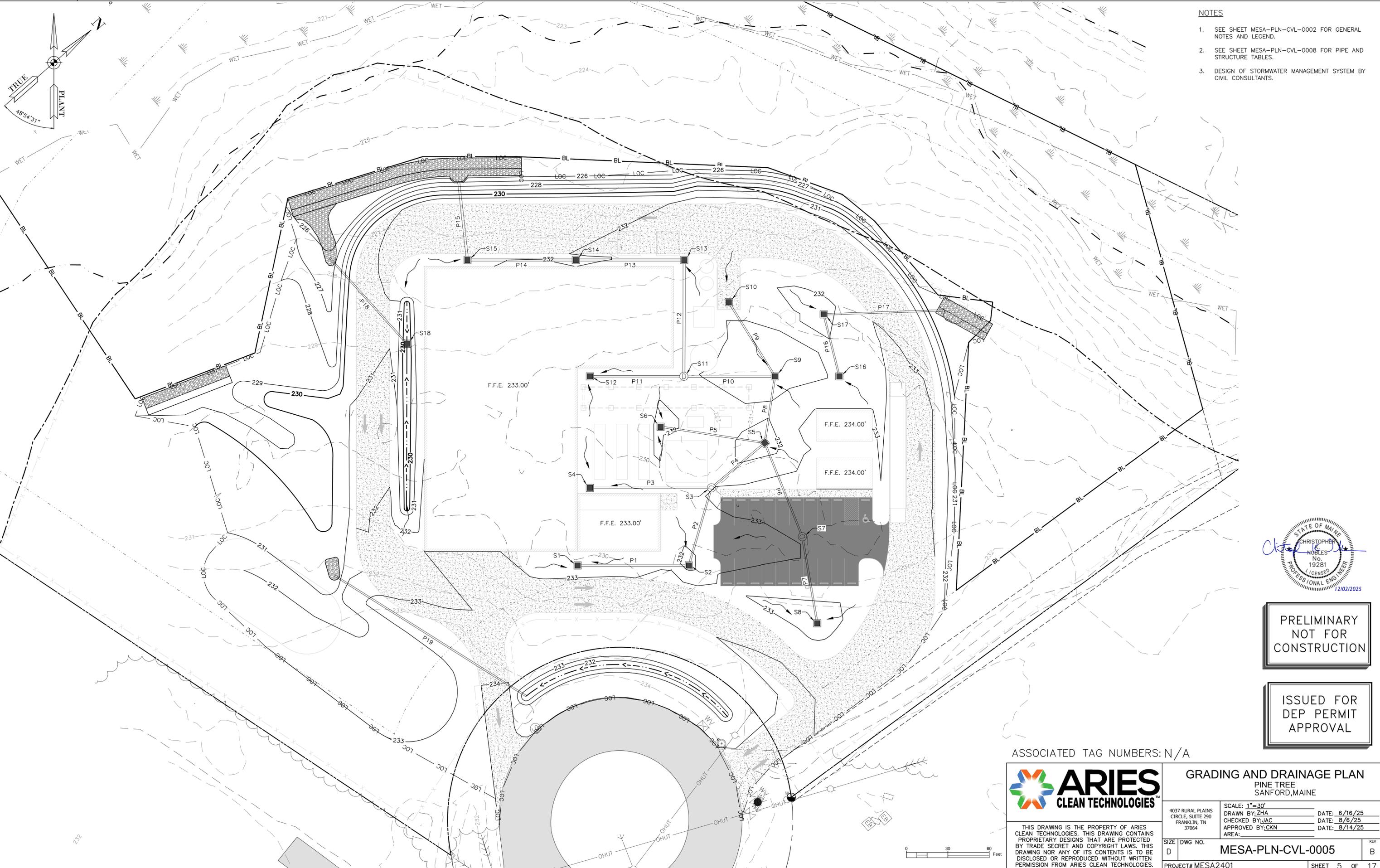
4037 RURAL PLAINS CIRCLE, SUITE 290 FRANKLIN, TN 37064	SCALE: 1"=30' DRAWN BY: ZHA CHECKED BY: JAC APPROVED BY: CKN AREA:	DATE: 6/9/25 DATE: 8/6/25 DATE: 8/14/25
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SIZE DWG NO. D	MESA-PLN-CVL-0004	REV B
PROJECT# MESA2401		SHEET 4 OF 17



- NOTES**
- SEE SHEET MESA-PLN-CVL-0002 FOR GENERAL NOTES AND LEGEND.
 - SEE SHEET MESA-PLN-CVL-0008 FOR PIPE AND STRUCTURE TABLES.
 - DESIGN OF STORMWATER MANAGEMENT SYSTEM BY CIVIL CONSULTANTS.



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ASSOCIATED TAG NUMBERS: N/A

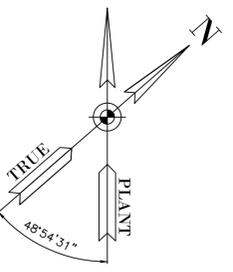


GRADING AND DRAINAGE PLAN
PINE TREE
SANFORD, MAINE

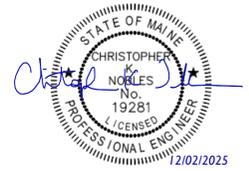
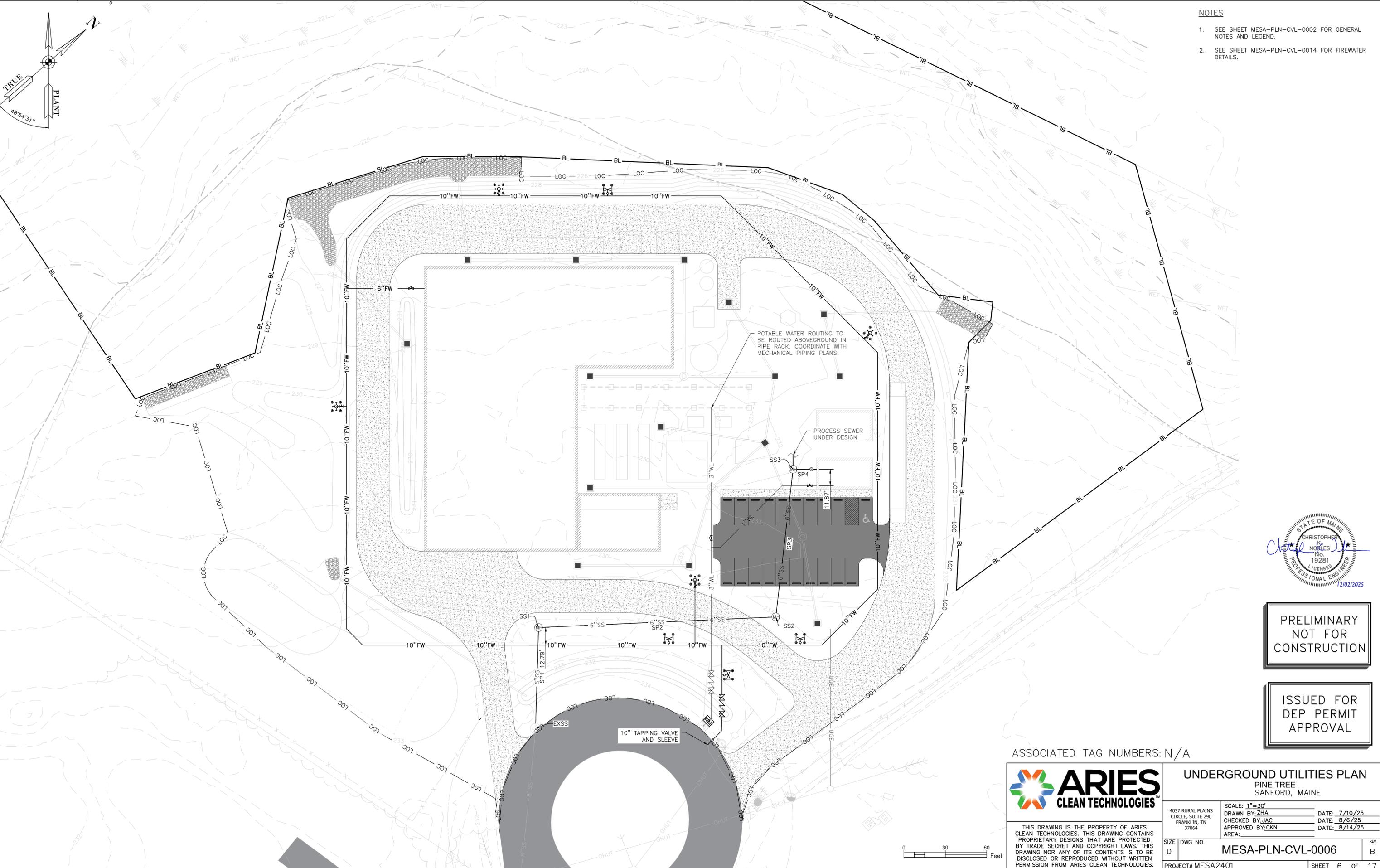
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SIZE DWG NO. D	MESA-PLN-CVL-0005	REV B
PROJECT# MESA2401		SHEET 5 OF 17



- NOTES**
1. SEE SHEET MESA-PLN-CVL-0002 FOR GENERAL NOTES AND LEGEND.
 2. SEE SHEET MESA-PLN-CVL-0014 FOR FIREWATER DETAILS.



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ASSOCIATED TAG NUMBERS: N/A

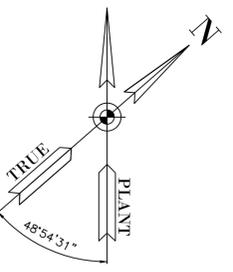


UNDERGROUND UTILITIES PLAN
PINE TREE
SANFORD, MAINE

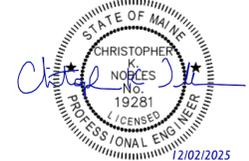
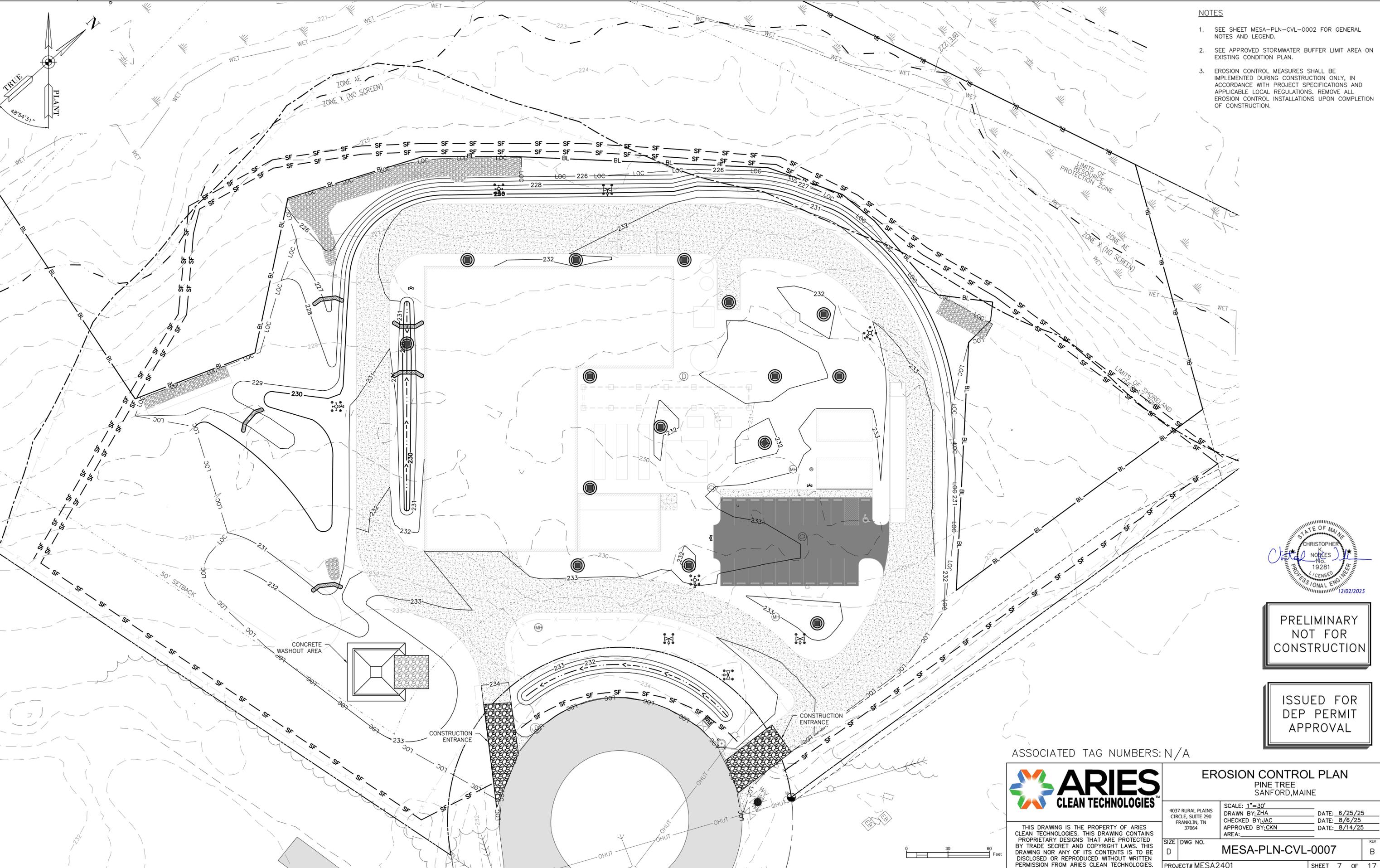
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SIZE D	DWG NO. MESA-PLN-CVL-0006	REV B
PROJECT# MESA2401		SHEET 6 OF 17



- NOTES**
- SEE SHEET MESA-PLN-CVL-0002 FOR GENERAL NOTES AND LEGEND.
 - SEE APPROVED STORMWATER BUFFER LIMIT AREA ON EXISTING CONDITION PLAN.
 - EROSION CONTROL MEASURES SHALL BE IMPLEMENTED DURING CONSTRUCTION ONLY, IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND APPLICABLE LOCAL REGULATIONS. REMOVE ALL EROSION CONTROL INSTALLATIONS UPON COMPLETION OF CONSTRUCTION.



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ASSOCIATED TAG NUMBERS: N/A

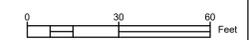


EROSION CONTROL PLAN
PINE TREE
SANFORD, MAINE

4037 RURAL PLAINS CIRCLE, SUITE 290 FRANKLIN, TN 37064	SCALE: 1"=30' DRAWN BY: ZHA CHECKED BY: JAC APPROVED BY: CKN AREA:	DATE: 6/25/25 DATE: 8/6/25 DATE: 8/14/25
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SIZE DWG NO. D	MESA-PLN-CVL-0007	REV B
PROJECT# MESA2401		SHEET 7 OF 17



REVISIONS

NOTES

- SEE SHEET MESA-PLN-CVL-0005 FOR GRADING AND DRAINAGE PLAN.
- SEE SHEET MESA-PLN-CVL-0006 FOR UNDERGROUND UTILITIES PLAN.

STORMWATER STRUCTURE TABLE

STRUCTURE NAME	DESCRIPTION	COORDINATES	RIM ELEV.	INVERT ELEV(S)
S1	24" GRATE INLET	N:4904.50 E:5549.49	232.20	229.00 (12" HDPE)(E) P1
S2	24" GRATE INLET	N:4904.50 E:5630.00	231.80	228.60 (12" HDPE)(W) P1 228.60 (12" HDPE)(N) P2
S3	JUNCTION	N:4960.58 E:5646.38	232.89	228.31 (12" HDPE)(S) P2 228.31 (12" HDPE)(W) P3 228.31 (12" HDPE)(NE) P4
S4	24" GRATE INLET	N:4960.58 E:5558.36	232.00	228.75 (12" HDPE)(E) P3
S5	24" GRATE INLET	N:4993.06 E:5684.99	231.50	228.06 (12" HDPE)(SW) P4 228.06 (12" HDPE)(N) P8 228.06 (12" HDPE)(W) P5 228.06 (12" HDPE)(S) P6
S6	24" GRATE INLET	N:5004.69 E:5609.57	231.50	228.44 (12" HDPE)(E) P5
S7	JUNCTION	N:4925.23 E:5712.22	233.07	228.43 (12" HDPE)(S) P7 228.43 (12" HDPE)(N) P6
S8	24" GRATE INLET	N:4862.69 E:5723.01	232.50	228.75 (12" HDPE)(N) P7
S9	24" GRATE INLET	N:5041.07 E:5692.37	231.50	227.82 (18" HDPE)(W) P10 227.82 (12" HDPE)(NW) P9 227.82 (12" HDPE)(S) P8
S10	24" GRATE INLET	N:5094.59 E:5658.99	232.00	228.14 (12" HDPE)(SE) P9
S11	JUNCTION	N:5041.07 E:5626.39	232.13	227.50 (12" HDPE)(W) P11 227.50 (18" HDPE)(E) P10 227.50 (18" HDPE)(N) P12
S12	24" GRATE INLET	N:5041.07 E:5558.36	232.00	227.84 (12" HDPE)(E) P11
S13	24" GRATE INLET	N:5125.08 E:5626.67	232.00	227.08 (18" HDPE)(W) P13 227.08 (18" HDPE)(S) P12
S14	24" GRATE INLET	N:5125.08 E:5548.20	231.82	226.69 (18" HDPE)(E) P13 226.69 (18" HDPE)(W) P14
S15	24" GRATE INLET	N:5125.09 E:5469.72	231.50	226.30 (18" HDPE)(E) P14 226.30 (18" HDPE)(N) P15
S16	24" GRATE INLET	N:5041.07 E:5739.06	232.10	229.07 (12" HDPE)(N) P16
S17	24" GRATE INLET	N:5085.82 E:5727.70	231.50	228.84 (12" HDPE)(E) P17 228.84 (12" HDPE)(S) P16
S18	24" GRATE INLET	N:5064.66 E:5425.88	229.71	227.24 (12" HDPE)(NW) P18

SANITARY SEWER STRUCTURE TABLE

STRUCTURE NAME	DESCRIPTION	COORDINATES	RIM ELEV.	INVERT ELEV(S)
EXSS	EXISTING MANHOLE	N:4786.71 E:5518.89	234.70	225.90 (6" PVC)(N) SP1
SS1	MANHOLE	N:4859.66 E:5521.06	233.40	226.26 (6" PVC)(E) SP2 226.26 (6" PVC)(S) SP1
SS2	MANHOLE	N:4867.33 E:5692.86	233.10	227.12 (6" PVC)(N) SP3 227.12 (6" PVC)(W) SP2
SS3	MANHOLE	N:4973.97 E:5705.41	232.87	227.66 (6" PVC)(S) SP3 230.00 (4" PVC)(E) SP4 227.66 (PVC)(N) SP5

SANITARY SEWER PIPE TABLE

NAME	UPSTREAM STRUCTURE	DOWNSTREAM STRUCTURE	PIPE SIZE	LENGTH	SLOPE	INVERT (IN)	INVERT (OUT)
SP1	SS1	EXSS	6" PVC	73	0.50%	226.26	225.90
SP2	SS2	SS1	6" PVC	172	0.50%	227.12	226.26
SP3	SS3	SS2	6" PVC		0.50%	227.66	227.12
SP4	CLEANOUT	SS3	4" PVC	12	0.50%	230.06	230.00
SP5	SS3	TBD	TBD	TBD	TBD	227.66	TBD

STORMWATER PIPE TABLE

NAME	UPSTREAM STRUCTURE	DOWNSTREAM STRUCTURE	PIPE SIZE	LENGTH	SLOPE	INVERT (IN)	INVERT (OUT)
P1	S1	S2	12" HDPE	81	0.50%	229.00	228.60
P2	S2	S3	12" HDPE	58	0.50%	228.60	228.31
P3	S4	S3	12" HDPE	88	0.50%	228.75	228.31
P4	S3	S5	12" HDPE	50	0.50%	228.31	228.06
P5	S6	S5	12" HDPE	76	0.50%	228.44	228.06
P6	S7	S5	12" HDPE	73	0.50%	228.43	228.06
P7	S8	S7	12" HDPE	63	0.50%	228.75	228.43
P8	S5	S9	12" HDPE	49	0.50%	228.06	227.82
P9	S10	S9	12" HDPE	63	0.50%	228.14	227.82
P10	S9	S11	18" HDPE	65	0.50%	227.82	227.50
P11	S12	S11	12" HDPE	68	0.50%	227.84	227.50
P12	S11	S13	18" HDPE	84	0.50%	227.50	227.08
P13	S13	S14	18" HDPE	78	0.50%	227.08	226.69
P14	S14	S15	18" HDPE	78	0.50%	226.69	226.30
P15	S15	OUTFALL	18" HDPE	57	0.50%	226.30	226.02
P16	S16	S17	12" HDPE	46	0.50%	229.07	228.84
P17	S17	OUTFALL	12" HDPE	87	0.50%	228.84	228.40
P18	S18	OUTFALL	12" HDPE	83	0.76%	227.24	226.60
P19	DITCH	OUTFALL	12" HDPE	163	0.61%	231.50	230.50



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APPROVAL

ASSOCIATED TAG NUMBERS: N/A

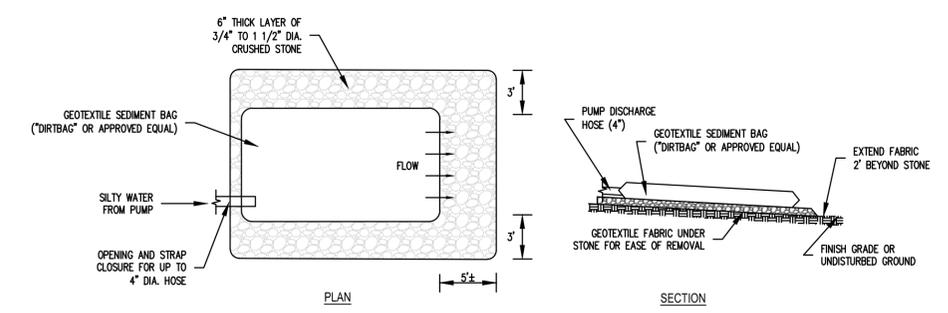


PIPE & STRUCTURE TABLES & SEWER PROFILE
PINE TREE
SANFORD, MAINE

4037 RURAL PLAINS CIRCLE, SUITE 290
FRANKLIN, TN 37064
SCALE: AS SHOWN
DRAWN BY: ZHA
CHECKED BY: JAC
APPROVED BY: CKN
DATE: 6/23/25
DATE: 8/6/25
DATE: 8/14/25
AREA:

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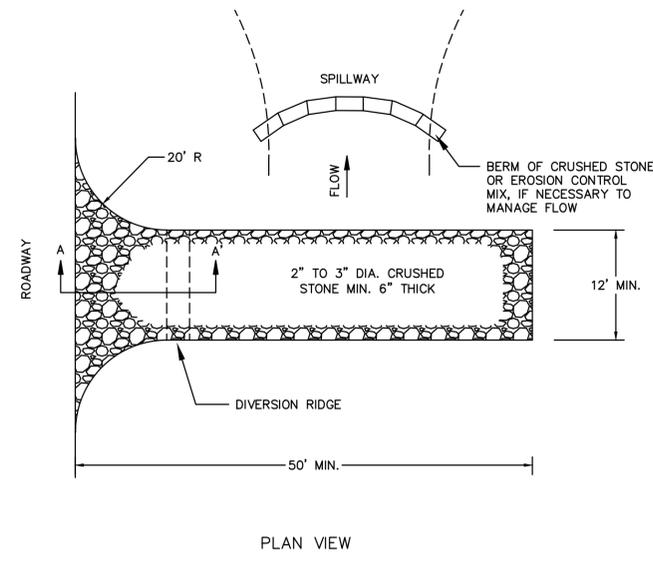
SIZE DWG NO. PROJECT# MESA-PLN-CVL-0008 REV B
SHEET 8 OF 17



CONSTRUCTION SPECIFICATIONS

1. SET-UP THE FILTER BAG PRIOR TO INITIATING ANY ACTIVITIES WHICH WILL REQUIRE DEWATERING.
2. THE TYPE OF FABRIC SHOULD BE BASED ON THE SIZE OF SOIL PARTICLES TO BE TRAPPED (I.E. A WOVEN MATERIAL FOR COARSE PARTICLES AND A NONWOVEN MATERIAL FOR FINER PARTICLES).
3. A FILTER BAG SHOULD BE LOCATED IN AN AREA MOSTLY LEVEL (WITH LESS THAN 5% SLOPE). A PAD OF CRUSHED GRAVEL MAY BE PROVIDED.
4. AVOID DISCHARGING TO AN AREA THAT IS BARE OF VEGETATION OR NEWLY VEGETATED. ANY SIGN OF EROSION OR CHANNELIZATION FROM THE DISCHARGED WATER REQUIRES IMMEDIATE ATTENTION.

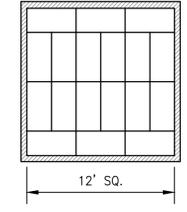
1 FILTER BAG DETAIL
SCALE: N.T.S.



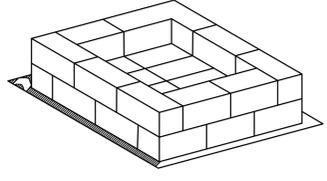
CONSTRUCTION SPECIFICATIONS

1. THE ENTRANCE/EXIT PAD SHOULD HAVE A LENGTH OF 50 FEET OR MORE AND A 12-FOOT MINIMUM WIDTH (OR AS APPROPRIATE TO CONTAIN THE WHEEL BASE OF CONSTRUCTION VEHICLES PLUS 3 FEET ON EITHER SIDE).
2. THE PAD SHOULD BE 6 INCHES OR MORE THICK WITH ANGULAR AGGREGATE (2-3 INCH DIAMETER). APPROPRIATE RECLAIMED CONCRETE MATERIAL MAY BE USED.
3. THE AGGREGATE SHOULD BE PLACED OVER A GEOTEXTILE FILTER TO PREVENT THE STONES FROM PUSHING INTO THE NATIVE SOIL.
4. AT THE BOTTOM OF SLOPES, A DIVERSION RIDGE SHOULD BE PROVIDED TO INTERCEPT RUNOFF.
5. BERMS MAY BE NECESSARY TO DIVERT WATER AROUND ANY EXPOSED SOIL, AND RUNOFF SHOULD BE DIRECTED TO A SEDIMENT TRAP.
6. THE WHEELS OF CONSTRUCTION EQUIPMENT MAY BE WASHED PRIOR TO EXITING THE SITE. WASHING SHOULD BE PERFORMED IN AN AREA THAT DRAINS TO A SEDIMENT TRAP OR BASIN.

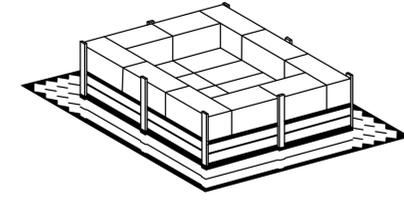
2 CONSTRUCTION ENTRANCE/EXIT
SCALE: N.T.S.



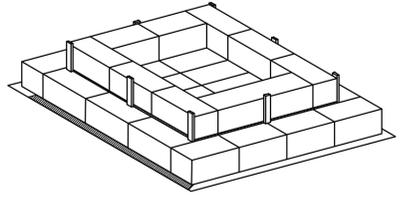
STEP 1
ARRANGE HAY BALES OVER GEOTEXTILE FABRIC OR STONE BASE ON LEVEL LAND TIGHTLY PACKED AS SHOWN TO COVER AN AREA APPROXIMATELY 12' x 12'



STEP 2
INSTALL ANOTHER LAYER OF HAYBALES ON THE OUTER EDGE AS SHOWN



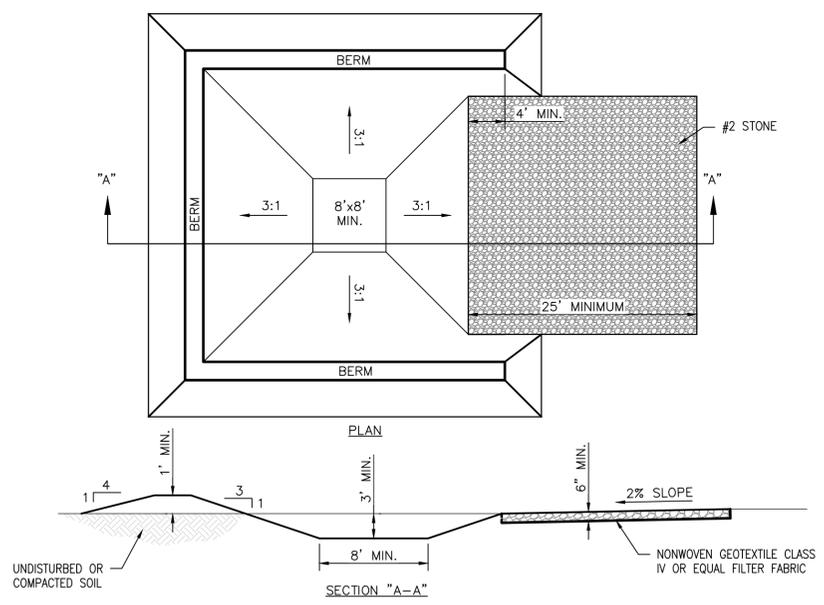
STEP 3
INSTALL ANOTHER LAYER OF HAYBALES ON THE OUTSIDE OF THE SEDIMENT BARRIER AND SECURE IN PLACE BY DRIVING REBAR OR WOODEN STAKE THROUGH EACH OF THE OUTER HAY BALES. (STAKES NOT SHOWN FOR CLARITY PURPOSES.)



STEP 4
INSTALL ANOTHER LAYER OF HAYBALES ON THE OUTSIDE OF THE SEDIMENT BARRIER AND SECURE IN PLACE BY DRIVING REBAR OR WOODEN STAKE THROUGH EACH OF THE OUTER HAY BALES. (STAKES NOT SHOWN FOR CLARITY PURPOSES.)

- NOTES:**
1. WHERE POSSIBLE, THE STRUCTURE SHALL BE PLACED ON A LEVEL, WELL VEGETATED UPLAND SITE SUCH THAT WATER WILL FLOW AWAY FROM STRUCTURE AND ANY WORK AREAS.
 2. THE CONTRACTOR SHALL PROPERLY REMOVE AND PROPERLY DISPOSE OF THE DEWATERING STRUCTURE IMMEDIATELY UPON COMPLETION OF DEWATERING OPERATIONS. UNDER NO CIRCUMSTANCE SHALL USED DEWATERING STRUCTURES BE LEFT IN PLACE FOR A PERIOD OF TIME GREATER THAN 48 HOURS AFTER DEWATERING OPERATIONS ARE COMPLETE.
 3. THE STRUCTURE SHOULD BE POSITIONED SUCH THAT WATER WILL NOT FLOW DIRECTLY INTO ANY WETLAND OR WATERBODIES.

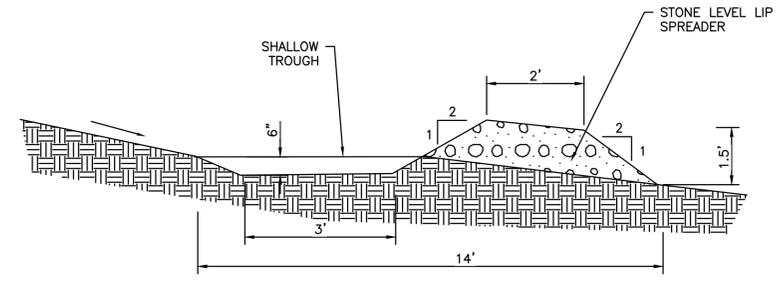
3 DEWATERING BASIN DETAIL
SCALE: N.T.S.



SPECIAL NOTES :

1. A WASHOUT FACILITY SHOULD NOT BE PLACED WITHIN 50 FEET OF A STORM DRAIN OR DISCHARGE POINT UNLESS THE PIT IS LINED WITH ANCHORED PLASTIC SHEETING (MINIMUM 10-MIL THICKNESS) AND IS NOT ALLOWED TO OVERFLOW.
2. THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
3. CWA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8'x8' SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 3:1 OR FLATTER. THE PIT SHALL BE AT LEAST 3' DEEP. A BELOW-GRADE CWA SHOULD BE SIZED TO CONTAIN ALL LIQUID WASTES WITH A 4-INCH FREEBOARD.
4. BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE A MINIMUM HEIGHT OF 1'
5. VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.
6. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
7. USED EXCAVATED MATERIAL FOR PERIMETER FOR BERM CONSTRUCTION.

4 CONCRETE WASHOUT AREA
SCALE: N.T.S.

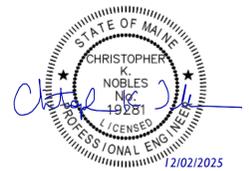


CONSTRUCTION SPECIFICATIONS

1. WHEN DISCHARGING TO A FORESTED BUFFER, THE RECEIVING AREA SHOULD REMAIN UNDISTURBED, HAVE A DUFF LAYER, AND HAVE AN UNEVEN TOPOGRAPHY BUT WITHOUT CHANNELIZATION THAT COULD CONCENTRATE RUNOFF. A SPREADER SHOULD BE LOCATED AWAY FROM A STREAM OR WETLAND.
2. THE LIP OF THE LEVEL SPREADER SHOULD BE INSTALLED ON THE CONTOUR TO ENSURE A UNIFORM DISTRIBUTION OF FLOWS OR SHOULD CONSIST OF CRUSHED ROCK (1"-3" ARE RECOMMENDED) PLACED ON THE UNDISTURBED PART OF THE LEVEL LIP TO PROMOTE SHEET FLOW AND REDUCE VELOCITY.
3. THE ENTRY ANGLE FROM THE CHANNEL TO THE LEVEL SPREADER SHOULD BE NO GREATER THAN 30 DEGREES TO PREVENT SCOUR AND SHORT CIRCUITING.
4. CONSTRUCTION OF A SPREADER SHOULD OCCUR FROM THE UPHILL SIDE.

5 LEVEL SPREADER DETAIL
SCALE: N.T.S.

BERM STONE SIZE	
SIIEVE SIZE	% BY WEIGHT
12"	100
6"	84-100
3"	68-83
1"	42-55
#4	8-12



PRELIMINARY NOT FOR CONSTRUCTION

ISSUED FOR DEP PERMIT APPROVAL

ASSOCIATED TAG NUMBERS: N/A



EROSION CONTROL DETAILS
PINE TREE
SANFORD, MAINE

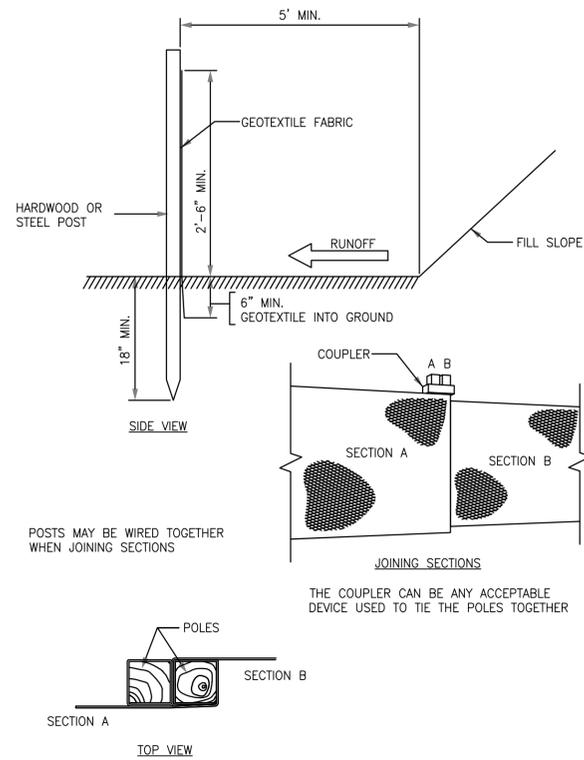
4037 RURAL PLAINS CIRCLE, SUITE 290
FRANKLIN, TN 37064

SCALE: NONE
DRAWN BY: ZHA
CHECKED BY: JAC
APPROVED BY: CKN
AREA:

DATE: 7/7/25
DATE: 8/6/25
DATE: 8/14/25

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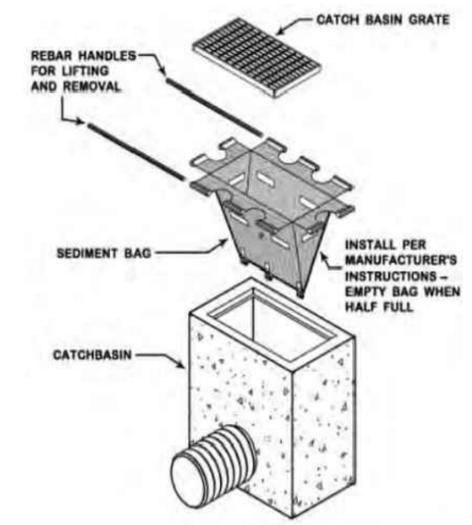
SIZE DWG NO. MESA-PLN-CVL-0010
PROJECT# MESA2401 SHEET 10 OF 17



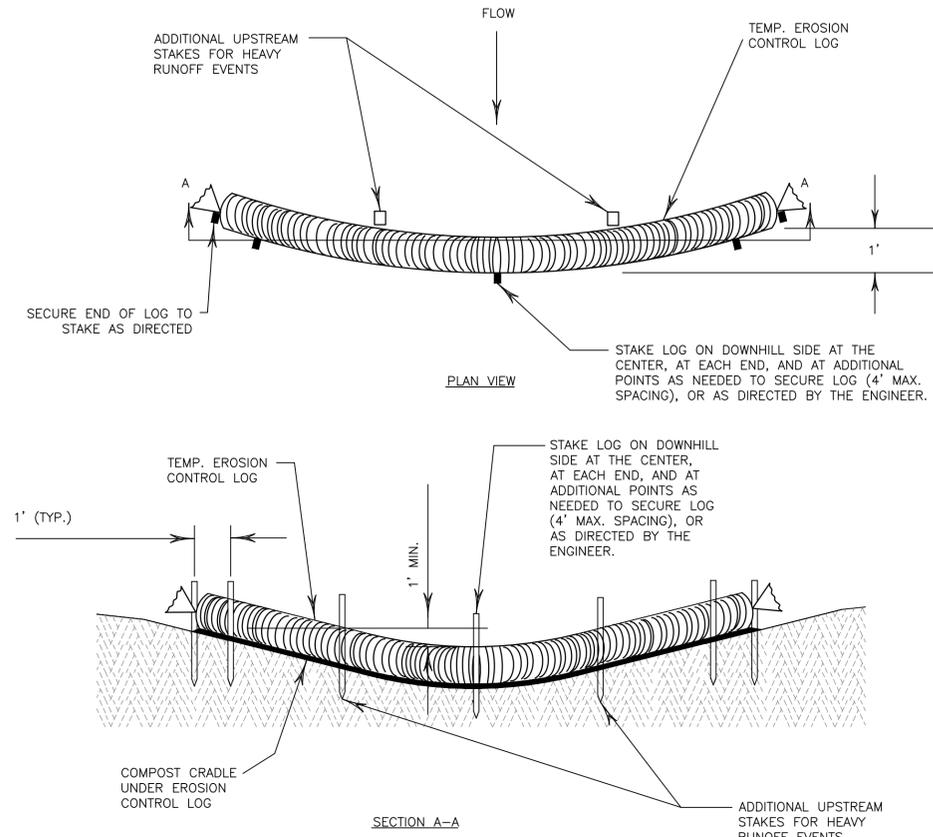
REF: BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENTATION CONTROL - LEVEL SPREADER

SILT FENCE SEDIMENT BARRIER 802(04)

1 SILT FENCE SCALE: N.T.S.



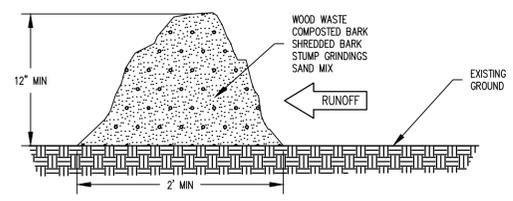
3 INLET PROTECTION OPTION ONE SCALE: N.T.S.



EROSION CONTROL LOG NOTES

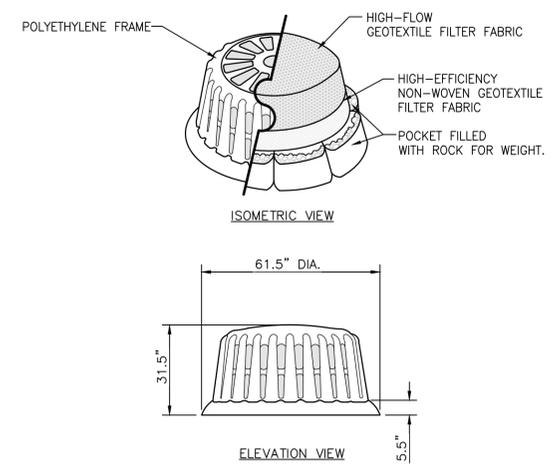
1. EROSION CONTROL LOGS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, OR AS DIRECTED BY THE ENGINEER.
2. LENGTHS OF EROSION CONTROL LOGS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND AS REQUIRED FOR THE PURPOSE INTENDED.
3. UNLESS OTHERWISE DIRECTED, USE BIODEGRADABLE OR PHOTODEGRADABLE CONTAINMENT MESH ONLY WHERE LOG WILL REMAIN IN PLACE AS PART OF A VEGETATIVE SYSTEM. FOR TEMPORARY INSTALLATIONS, USE RECYCLABLE CONTAINMENT MESH.
4. FILL LOGS WITH SUFFICIENT FILTER MATERIAL TO ACHIEVE THE MINIMUM COMPACTED DIAMETER SPECIFIED IN THE PLANS WITHOUT EXCESSIVE DEFORMATION.
5. STAKES SHALL BE 2" X 2" WOOD OR #3 REBAR, 2'-4' LONG, EMBEDDED SUCH THAT 2" PROTRUDES ABOVE LOG, OR AS DIRECTED BY THE ENGINEER.
6. DO NOT PLACE STAKES THROUGH CONTAINMENT MESH.
7. COMPOST CRADLE MATERIAL IS INCIDENTAL & WILL NOT BE PAID FOR SEPARATELY.
8. SANDBAGS USED AS ANCHORS SHALL BE PLACED ON TOP OF LOGS & SHALL BE OF SUFFICIENT SIZE TO HOLD LOGS IN PLACE.
9. TURN THE ENDS OF EACH ROW OF LOGS UPSLOPE TO PREVENT RUNOFF FROM FLOWING AROUND THE LOG.
10. FOR HEAVY RUNOFF EVENTS, ADDITIONAL UPSTREAM STAKES MAY BE NECESSARY TO KEEP LOG FROM FOLDING IN ON ITSELF.

2 EROSION CONTROL LOG (WATTLE) SCALE: N.T.S.



- NOTES:
1. THIS BERM MAY BE USED IN PLACE OF FILTER FENCE WHERE APPLICABLE. THE MIXTURE OF THE BERM MATERIAL NEEDS TO BE A WELL-GRADE BLEND OF ORGANIC & MINERAL SUBSTANCE CONFORMING TO THE FOLLOWING STANDARDS:
 ORGANIC MATTER CONTENT: BETWEEN 80% AND 100%
 MOISTURE CONTENT: 30%-60%
 PH: BETWEEN 5.0 AND 8.0
 PARTICLE SIZE BY WEIGHT SHALL BE 100% PASSING A 5" SCREEN AND A MINIMUM OF 70% MAXIMUM OF 85%, PASSING A 0.75" SCREEN.
 LARGE PORTION OF SILTS, CLAYS OR FINE SANDS ARE NOT ACCEPTABLE MIX
 2. THE BERM SHALL BE PLACED ALONG A RELATIVELY LEVEL CONTOUR WHEREVER POSSIBLE. THE EXISTING SURFACE MUST BE SCOURED AND THE MIXTURE KEYED IN LIKE ANY OTHER SEDIMENT CONTROL MEASURE.

5 FILTER BERM DETAIL SCALE: N.T.S.



- NOTES:
1. FABRIC DROP INLET PROTECTION SHALL BE INSPECTED DAILY AND SEDIMENT REMOVED.

4 INLET PROTECTION OPTION TWO SCALE: N.T.S.



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ASSOCIATED TAG NUMBERS: N/A

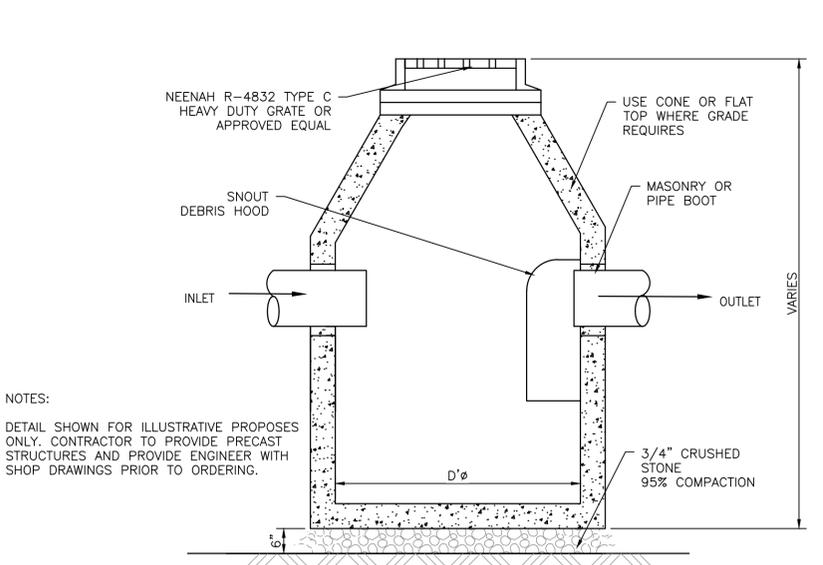


EROSION CONTROL DETAILS
PINE TREE
SANFORD, MAINE

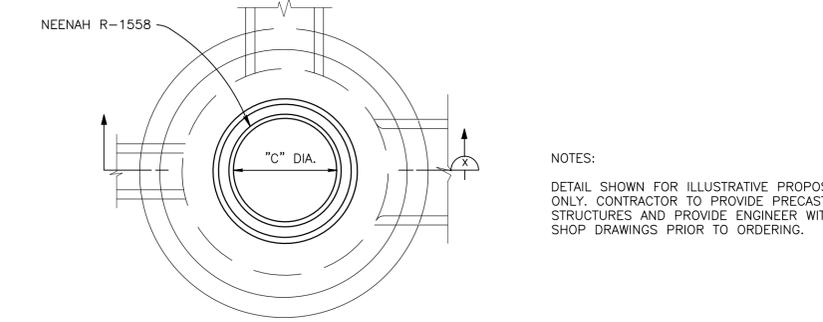
4037 RURAL PLAINS CIRCLE, SUITE 290 FRANKLIN, TN 37064	SCALE: NONE DRAWN BY: ZHA CHECKED BY: JAC APPROVED BY: CKN AREA:	DATE: 7/9/25 DATE: 8/6/25 DATE: 8/14/25
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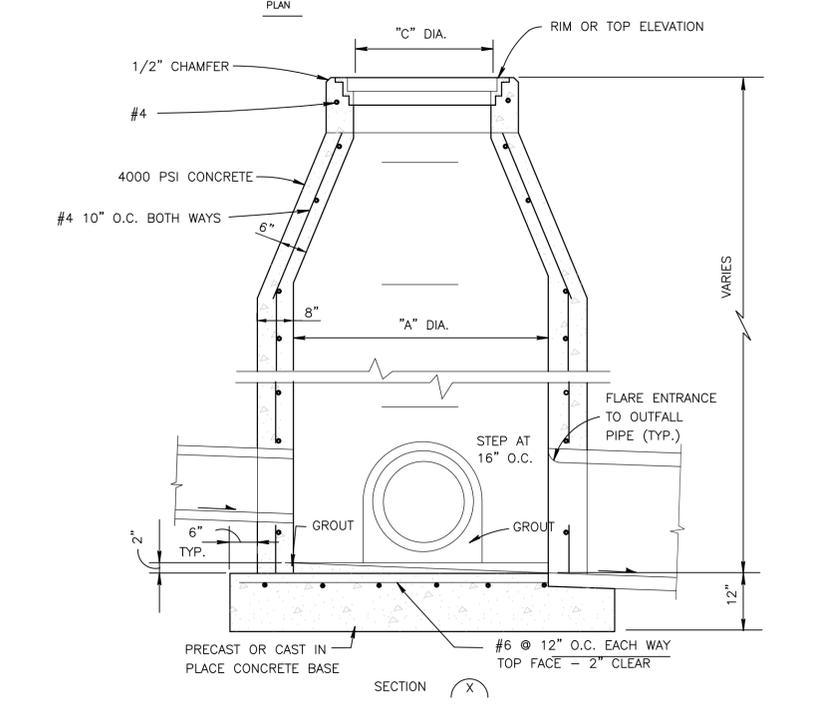
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PROJECT# MESA2401		SHEET 11 OF 17



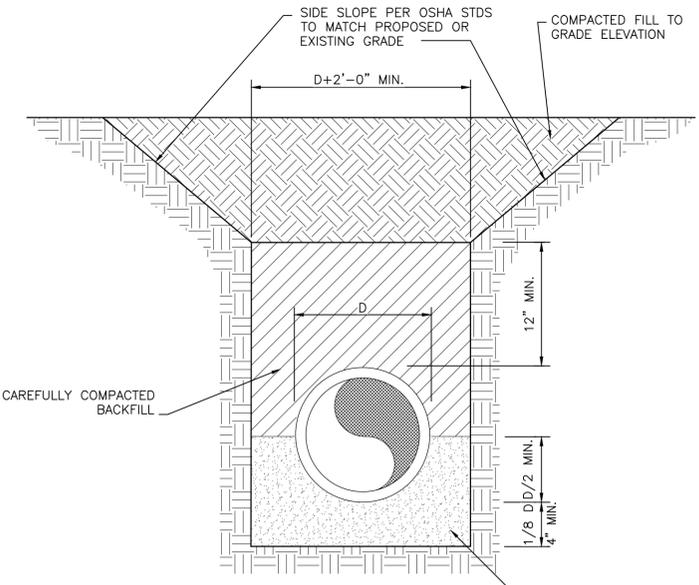
1 TYPICAL CATCH BASIN DETAIL
SCALE: N.T.S.



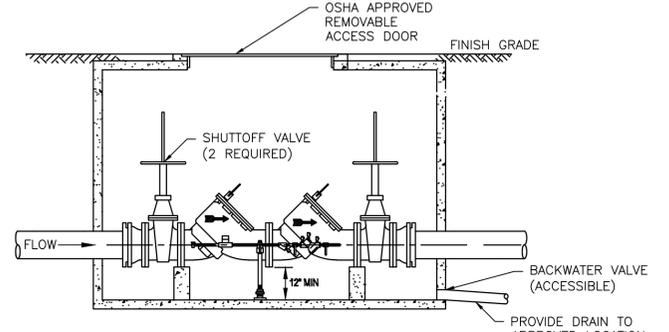
2 PIPE EMBEDMENT DETAIL
SCALE: N.T.S.



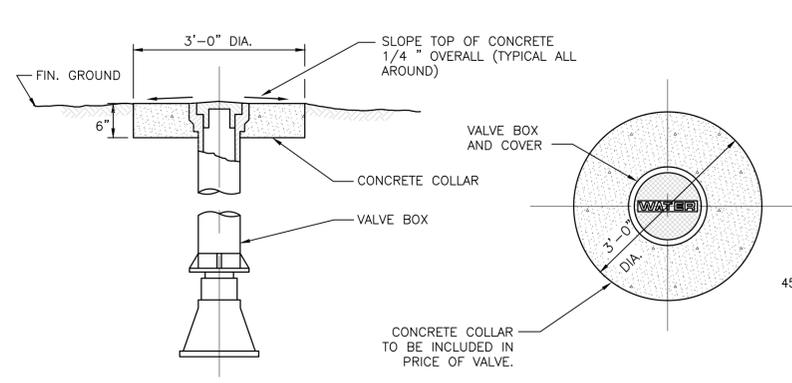
5 SANITARY SEWER MANHOLE DETAIL
SCALE: N.T.S.



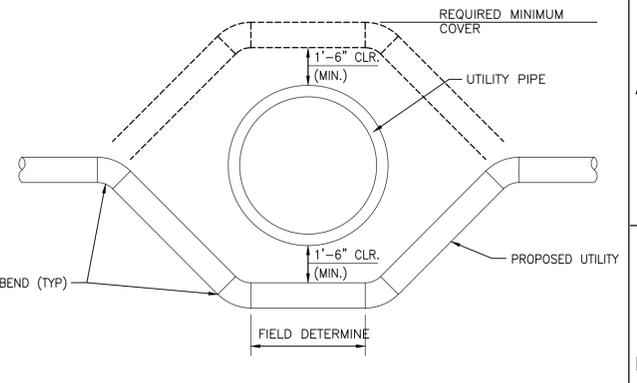
6 TYPICAL CLEANOUT DETAIL
SCALE: N.T.S.



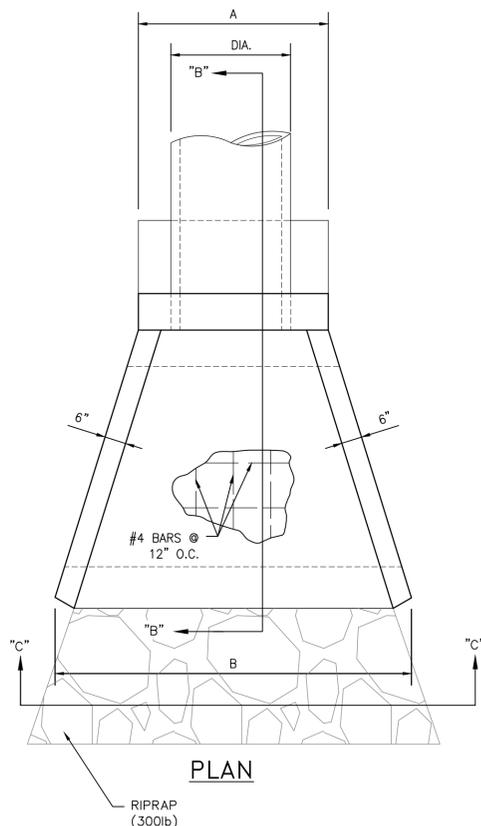
7 BACKFLOW PREVENTER DETAIL
SCALE: N.T.S.



3 VALVE BOX COLLAR DETAIL
SCALE: N.T.S.



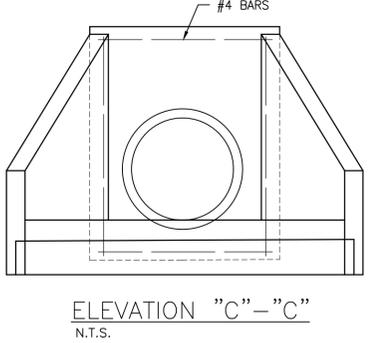
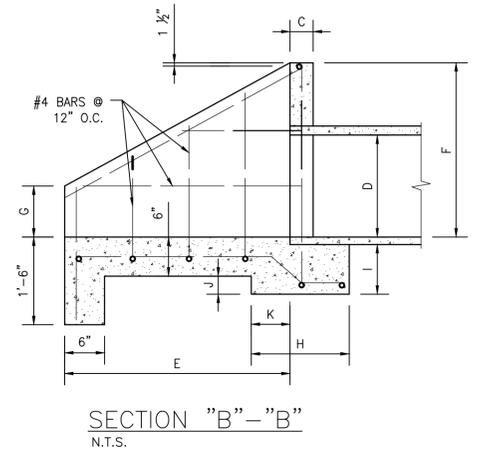
4 UTILITY CROSSING
SCALE: N.T.S.



DIMENSIONS FOR VERTICAL HEADWALL

DIA.	A	B	C	E	F	G	H	I	J	K
15"	3'-0"	5'-0"	0'-6"	3'-0"	2'-4"	0'-9"	2'-0"	1'-0"	0'-6"	0'-6"
18"	3'-0"	5'-0"	0'-6"	3'-6"	2'-6"	0'-9"	2'-0"	1'-0"	0'-6"	0'-6"
24"	4'-0"	7'-0"	0'-6"	4'-6"	3'-2"	1'-0"	2'-0"	1'-0"	0'-6"	0'-6"
30"	4'-6"	8'-6"	0'-8"	5'-6"	3'-9"	1'-0"	2'-0"	1'-0"	0'-6"	0'-6"
36"	5'-0"	10'-0"	0'-8"	6'-0"	4'-3"	1'-6"	2'-0"	1'-0"	0'-6"	0'-6"

8 CONCRETE HEADWALL DETAIL
SCALE: N.T.S.



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CONSTRUCTION**

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APPROVAL**

ASSOCIATED TAG NUMBERS: N/A

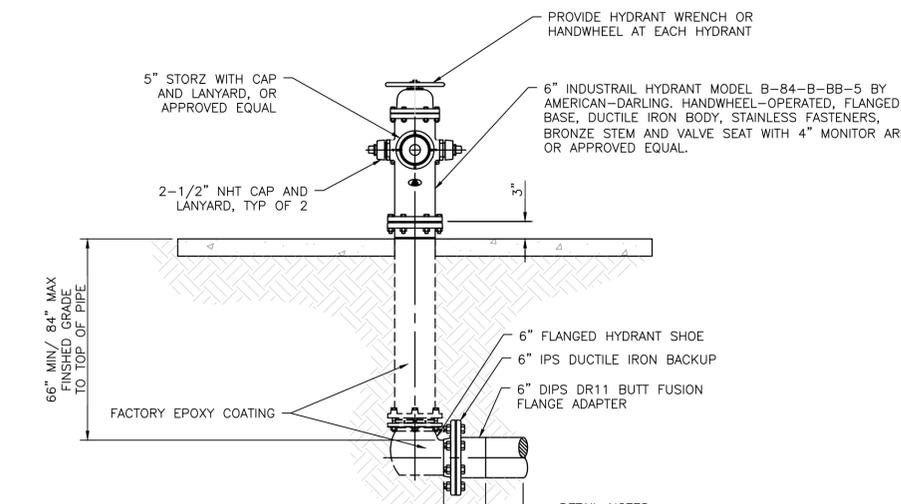


DRAINAGE AND SEWER DETAILS
PINE TREE
SANFORD, MAINE

4037 RURAL PLAINS CIRCLE, SUITE 290 FRANKLIN, TN 37064
SCALE: NONE
DRAWN BY: ZHA
CHECKED BY: JAC
APPROVED BY: CKN
DATE: 7/2/25
DATE: 8/6/25
DATE: 8/14/25
AREA:

SIZE DWG NO. MESA-PLN-CVL-0012
PROJECT# MESA2401
SHEET 12 OF 17

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PROVIDE HYDRANT WRENCH OR HANDWHEEL AT EACH HYDRANT

5" STORZ WITH CAP AND LANYARD, OR APPROVED EQUAL

6" INDUSTRIAL HYDRANT MODEL B-84-B-BB-5 BY AMERICAN-DARLING. HANDWHEEL-OPERATED, FLANGED BASE, DUCTILE IRON BODY, STAINLESS FASTENERS, BRONZE STEM AND VALVE SEAT WITH 4" MONITOR ARM, OR APPROVED EQUAL.

2-1/2" NHT CAP AND LANYARD, TYP OF 2

66" MIN/ 84" MAX FINISHED GRADE TO TOP OF PIPE

6" FLANGED HYDRANT SHOE

6" IPS DUCTILE IRON BACKUP

6" DIPS DR11 BUTT FUSION FLANGE ADAPTER

FACTORY EPOXY COATING

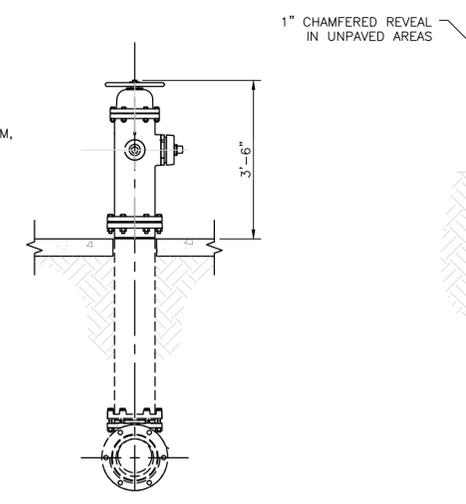
12"

DETAIL NOTES:

1. PROVIDE MINIMUM 48"x48"x4" THICK CONCRETE APRON AT EACH HYDRANT WITH FOUR (2) PROTECTIVE BOLLARDS ON TRAFFIC SIDE, 48" CLEAR OF ANY CONNECTION.
2. PROVIDE ISOLATION VALVE UPSTREAM OF EACH HYDRANT, SEE DETAIL 2, THIS SHEET.

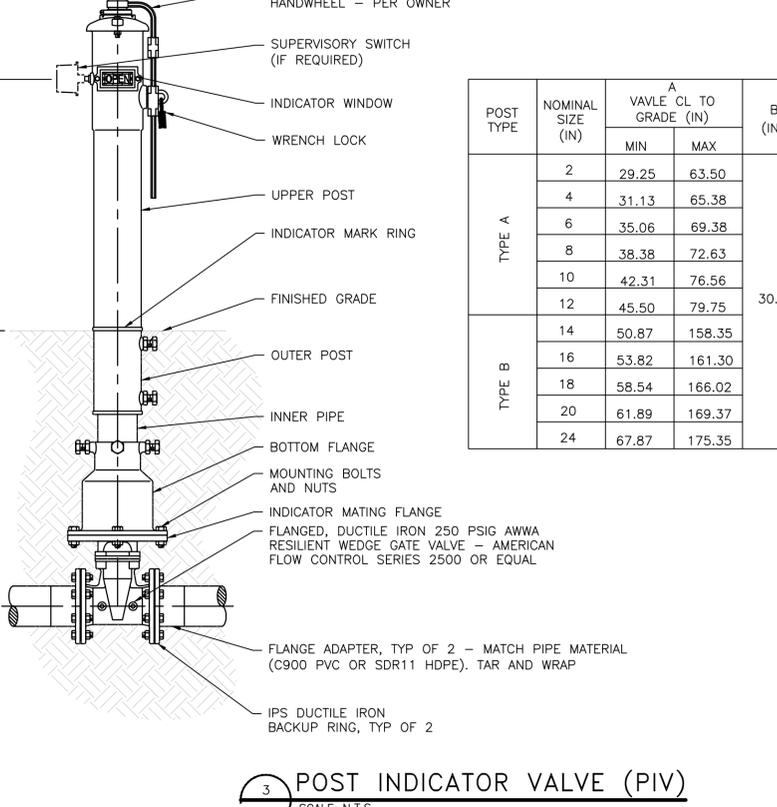
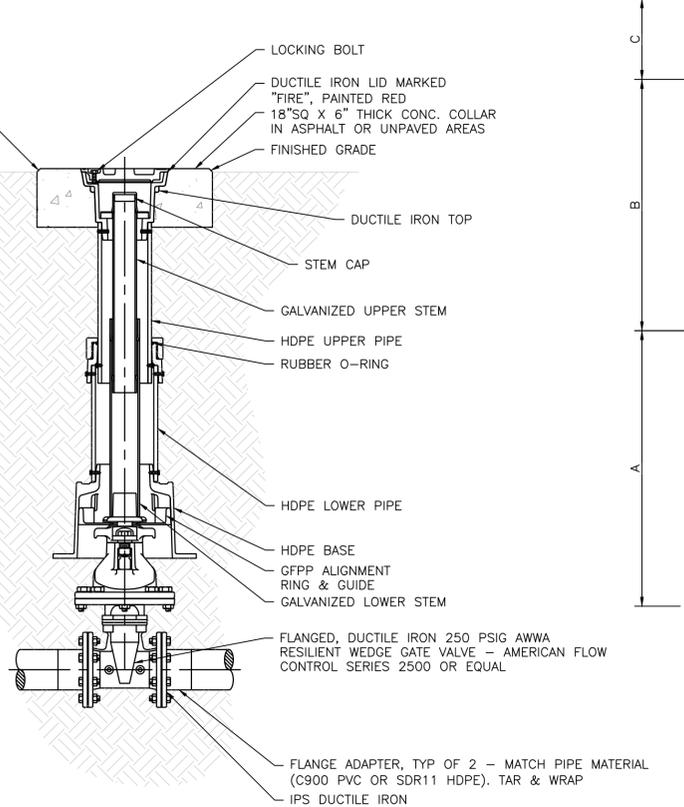
PREPARE SURFACE TO SSPC SP 1 & INSTALL TWO LAYERS OF WAX-TAPE® #1 NON-FIRMING ANTICORROSION WRAP BY TRENTON MATERIALS (OR APPROVED EQUAL) PER MANUFACTURERS RECOMMENDATIONS

1 STANDARD HYDRANT
SCALE: N.T.S.



AFC MODEL NUMBER	LENGTH (IN)		WEIGHT (LBS)
	MINIMUM	MAXIMUM	
1	18.25	20.25	29
2	22.25	28.25	32
3	24.75	32.50	35
4	29.75	40.50	39
5	37.75	56.50	48
6	49.75	80.50	54
7	75.75	128.50	72
8	127.75	179.75	99
9	178.75	230.75	127

2 GATE ISOLATION VALVE
SCALE: N.T.S.



POST TYPE	NOMINAL SIZE (IN)	VALVE CL TO GRADE (IN)		B (IN)	C (IN)
		MIN	MAX		
TYPE A	2	29.25	63.50	30.00	9.50
	4	31.13	65.38		
	6	35.06	69.38		
	8	38.38	72.63		
TYPE B	10	42.31	76.56		
	12	45.50	79.75		
	14	50.87	158.35		11.30
	16	53.82	161.30		
	18	58.54	166.02		
	20	61.89	169.37		
24	67.87	175.35			

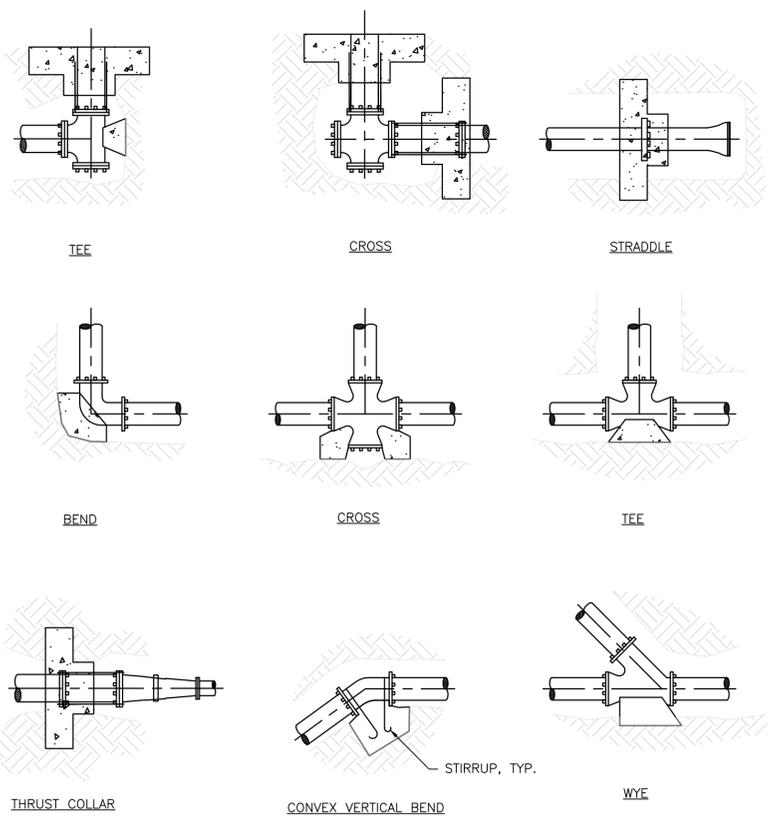
3 POST INDICATOR VALVE (PIV)
SCALE: N.T.S.

VOLUME OF THRUST BLOCKS FOR VERTICAL BENDS

FTG SIZE	BEND ANGLE		
	45°	22.5°	11.25°
6"	1.1	0.5	0.4
8"	1.9	1.0	0.5
10"	3.0	1.5	0.8
12"	4.3	2.2	1.1
16"	7.6	3.9	1.9
20"	11.9	6.1	3.0
24"	17.1	8.7	4.4

RODS FOR VERTICAL BENDS

FTG SIZE	ROD SIZE	MINIMUM EMBED
6"	#6	30"
8"	#6	30"
10"	#6	30"
12"	#6	30"
16"	#8	36"
20"	(4)#8	42"
24"	(4)#8	42"



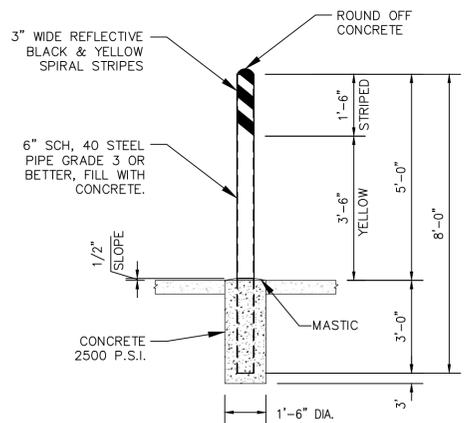
BEARING AREA OF THRUST BLOCK (SQ. FT.)

FTG SIZE	TEE & WYE	90° BEND	PLUGGED CROSS	TEE PLUGGED ON RUN	45° BEND	22.5° BEND	11.25° BEND
6"	2.8	4.0	4.0	4.0	2.2	1.1	N/A
8"	5.0	7.1	7.1	7.1	3.8	2.0	1.0
10"	7.9	11.1	11.1	11.1	6.0	3.1	1.5
12"	11.3	16.0	16.0	16.0	8.7	4.4	2.2
16"	20.1	28.4	28.4	28.4	15.4	7.8	3.9
20"	31.4	44.4	44.4	44.4	24.0	12.3	6.2
24"	45.2	64.4	64.4	64.4	34.6	17.7	8.9

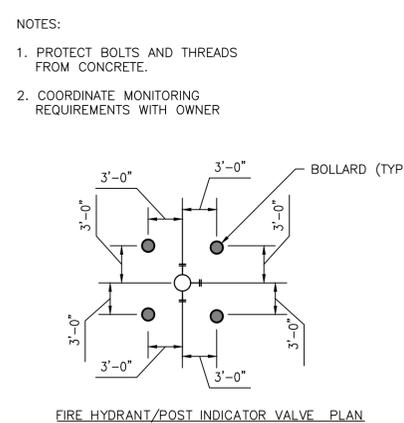
4 THRUST BLOCKING
SCALE: N.T.S.

THRUST BLOCK NOTES

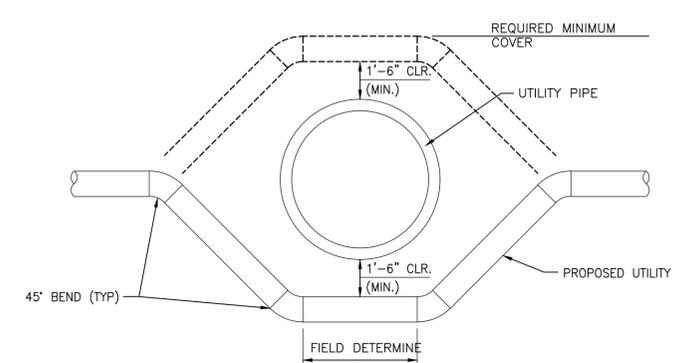
1. THRUST BLOCK (TBS) ARE REQUIRED WHERE NON-RESTRAINED JOINTS ARE USED. SPECIFICALLY WHERE MJ FITTINGS DO NOT USE LOCKING MJ OR MJ WITH SET SCREW RETAINERS PER NFPA24.10.6.2. PROVIDE TBS AT ANY FITTING OR TRANSITION OR WHERE DIRECTED OTHERWISE BY OWNER.
2. HEAT FUSION JOINTS (BOTH BUTT AND ELECTROFUSION) ACHIEVES THRUST RESTRAINT PER AWWA M55, PER AWWA C906 §4.5, AS REFERENCED BY NFPA 24, THUS DO NOT REQUIRE TBS.
3. PER NFPA 24-10.6.3 FUSION WELDED PIPING SYSTEMS DO NOT REQUIRE ADDITIONAL RESTRAINT VIA THRUST BLOCKS.
4. ALL CONCRETE SHALL BE PLACED AGAINST UNDISTURBED EARTH.
5. CONCRETE SHALL BE PLACED IN FORMS. FORMS SHALL BE REMOVED BEFORE BACKFILLING.
6. FOR ALL THRUST BLOCKS CONCRETE SHALL CURE A MINIMUM OF 72 HOURS PRIOR TO HYDROSTATIC TESTING.
7. RODS AND REINFORCING STEEL WHICH ARE EXPOSED TO SOIL SHALL BE ZINC COATED.
8. FITTINGS SHALL BE COVERED IN 10MIL POLYETHYLENE SHEETING PRIOR TO CONCRETE PLACEMENT. BOLTS SHALL REMAIN ACCESSIBLE.



6 BOLLARD DETAIL
SCALE: N.T.S.



FIRE HYDRANT/POST INDICATOR VALVE PLAN



5 UTILITY CROSSING
SCALE: N.T.S.

ASSOCIATED TAG NUMBERS: N/A



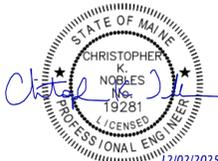
FIREWATER DETAILS
PINE TREE
SANFORD, MAINE

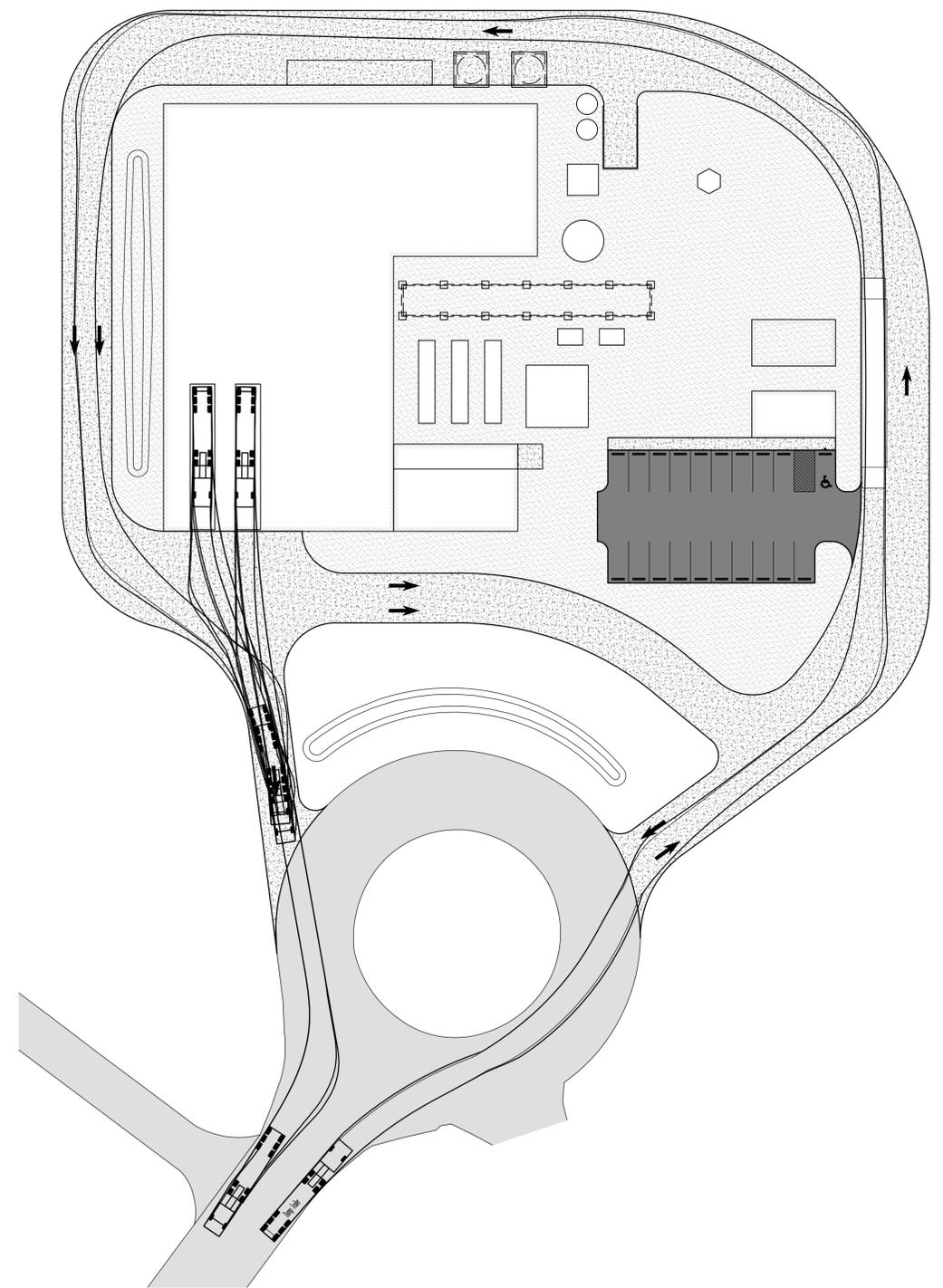
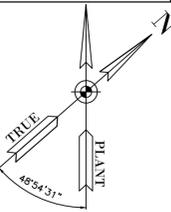
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4037 RURAL PLAINS CIRCLE, SUITE 290 FRANKLIN, TN 37064	SCALE: NONE DRAWN BY: ZHA CHECKED BY: JAC APPROVED BY: CKN AREA:	DATE: 7/9/25 DATE: 8/6/25 DATE: 8/14/25
SIZE: D DWG NO.: MESA-PLN-CVL-0015 PROJECT#: MESA2401	REV: B	SHEET 15 OF 17

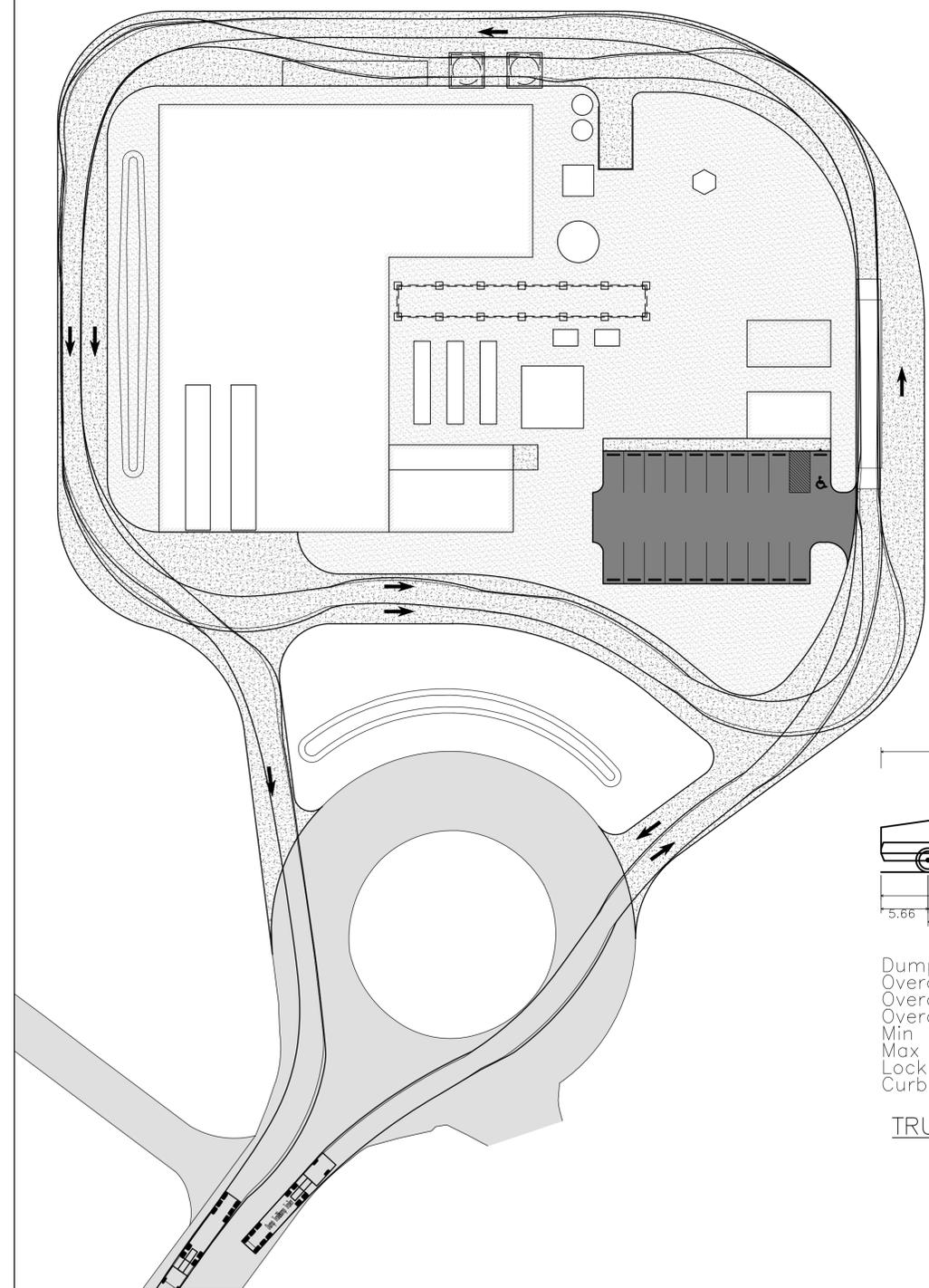
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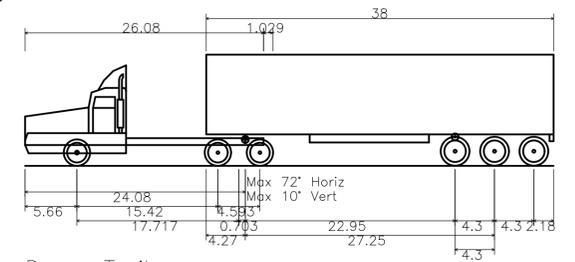




TRUCK WITH DUMP TRAILER INTO RECEIVING BUILDING



TRUCK WITH DUMP TRAILER ENTERING/EXITING



Dump Trailer
 Overall Length 57.810ft
 Overall Width 9.000ft
 Overall Body Height 12.123ft
 Min Body Ground Clearance 1.370ft
 Max Track Width 9.000ft
 Lock-to-lock time 6.00s
 Curb to Curb Turning Radius 49.213ft

TRUCK WITH DUMP TRAILER PROFILE

PRELIMINARY
 NOT FOR
 CONSTRUCTION



ISSUED FOR
 DEP PERMIT
 APPROVAL

ASSOCIATED TAG NUMBERS: N/A



VEHICLE TRACKING TEMPLATES
 PINE TREE
 SANFORD, MAINE

4037 RURAL PLAINS
 CIRCLE, SUITE 290
 FRANKLIN, TN
 37064

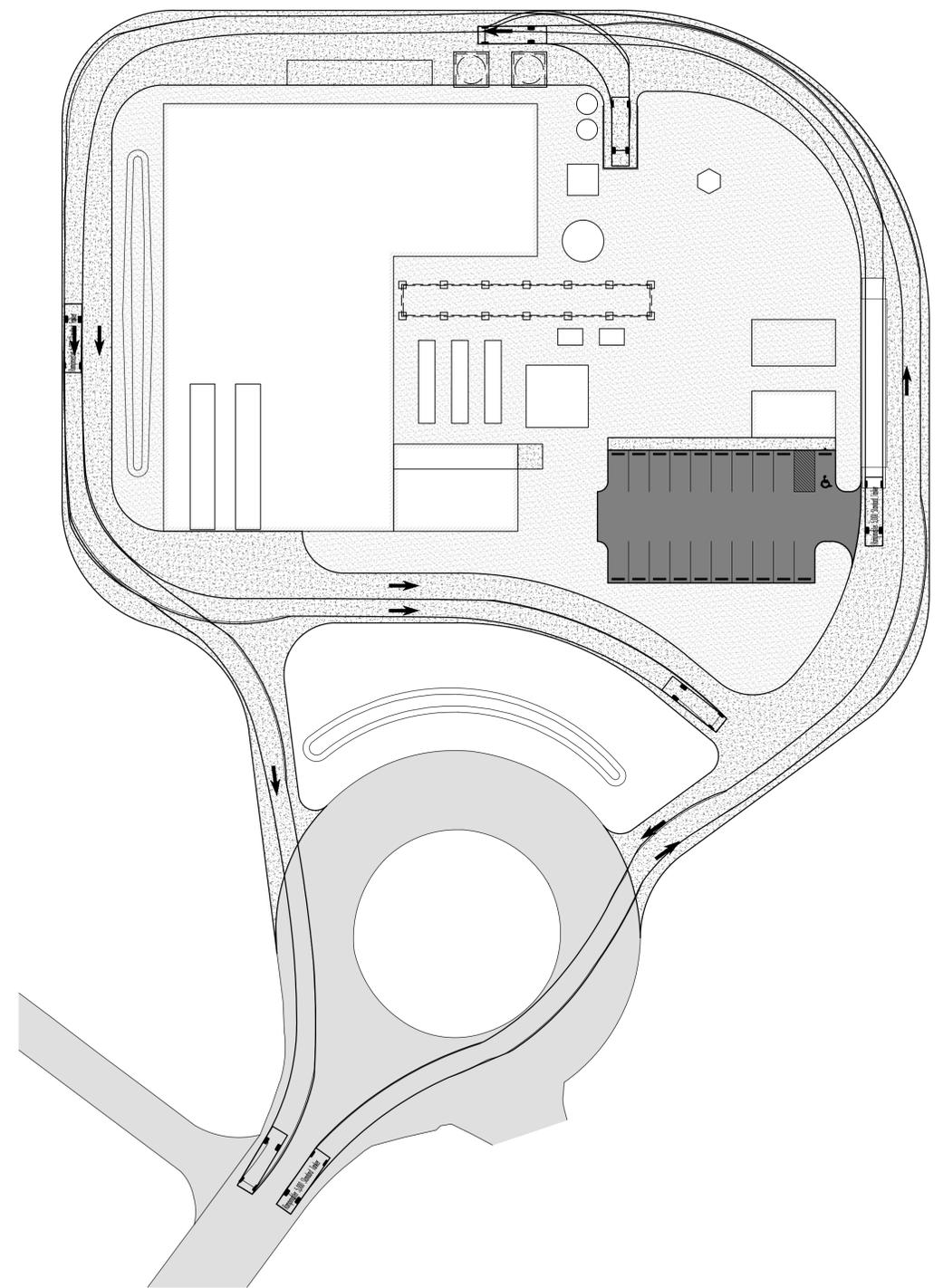
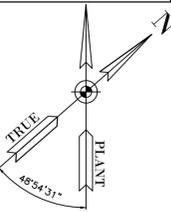
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 DRAWN BY: ZHA
 CHECKED BY: JAC
 APPROVED BY: CKN
 AREA:

DATE: 6/16/25
 DATE: 8/6/25
 DATE: 8/14/25

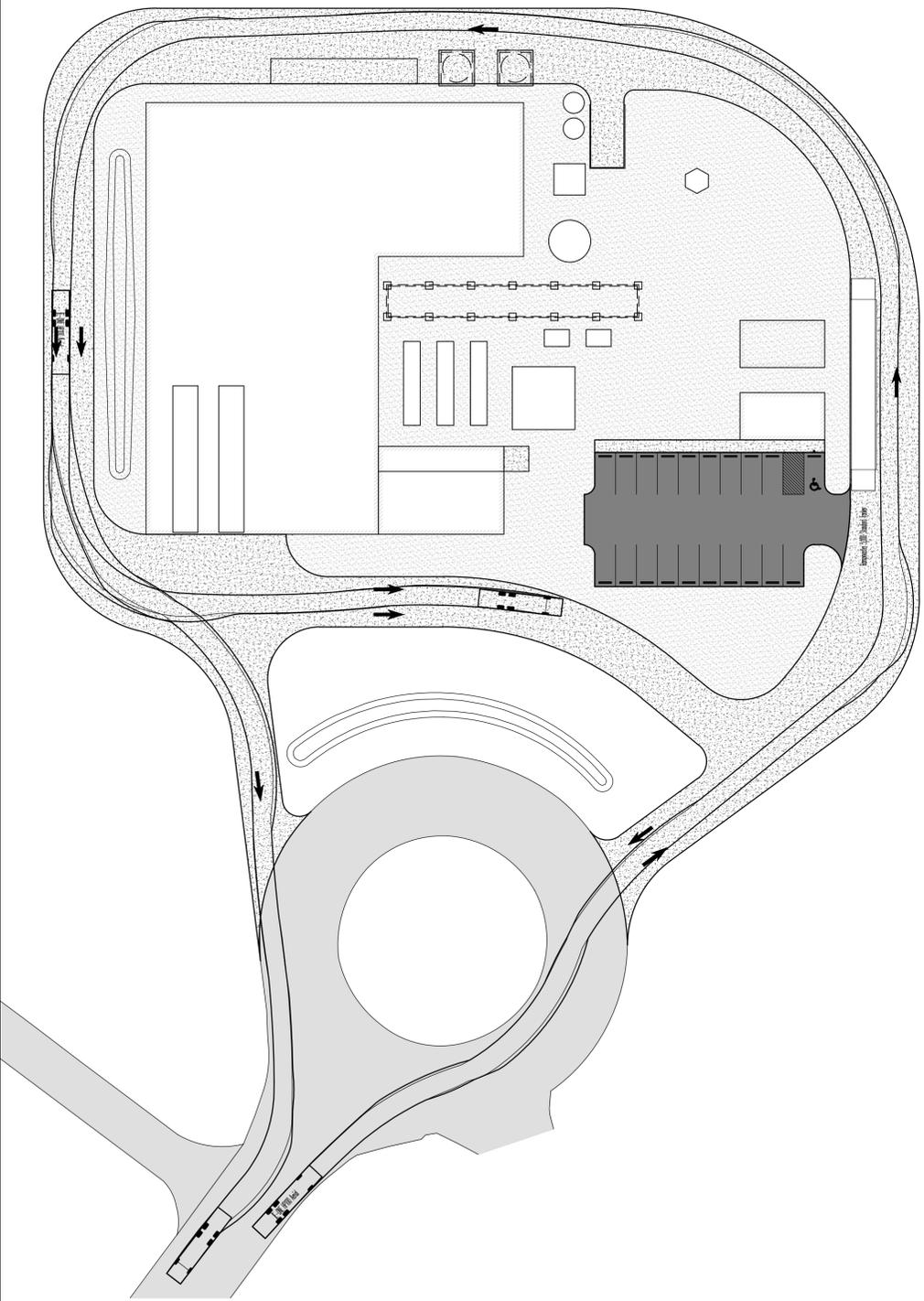
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SIZE DWG NO. MESA-PLN-CVL-0016
 PROJECT# MESA2401 SHEET 16 OF 17





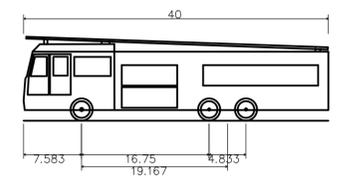
TANKER INTO UNLOADING AREA



FIRE LADDER TRUCK VEHICLE TRACKING TEMPLATE

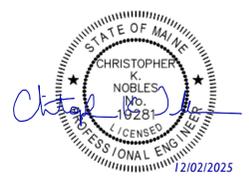
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Overall Length	33.123ft
Overall Width	8.415ft
Overall Body Height	8.768ft
Min Body Ground Clearance	1.440ft
Track Width	8.415ft
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	40.000ft

TANKER PROFILE



E-ONE HP100 Aerial	
Overall Length	40.000ft
Overall Width	8.333ft
Overall Body Height	11.000ft
Min Body Ground Clearance	1.393ft
Track Width	8.333ft
Lock-to-lock time	6.00s
Max Wheel Angle	45.00°

FIRE LADDER TRUCK PROFILE



PRELIMINARY
NOT FOR
CONSTRUCTION

ISSUED FOR
DEP PERMIT
APPROVAL

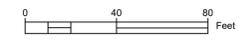
ASSOCIATED TAG NUMBERS: N/A



VEHICLE TRACKING TEMPLATES
PINE TREE
SANFORD, MAINE

4037 RURAL PLAINS CIRCLE, SUITE 290 FRANKLIN, TN 37064	SCALE: AS NOTED DRAWN BY: ZHA CHECKED BY: JAC APPROVED BY: CKN AREA:	DATE: 6/23/25 DATE: 8/6/25 DATE: 8/14/25
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SIZE DWG NO. D	MESA-PLN-CVL-0017	REV B
PROJECT# MESA2401		SHEET 17 OF 17

Subsurface Investigation Information



CREDERE ASSOCIATES, LLC

776 Main Street
Westbrook, Maine 04092
Phone: 207-828-1272
Fax: 207-887-1051

May 16, 2025

Mr. Mark Bauer
Principal Development Engineer
Aries Clean Energy
4037 Rural Plain Circle, Suite 290
Franklin, Tennessee 37064

**SUBJECT: Preliminary Geotechnical Investigation
Proposed Biosolids Facility
Lot 4, Cyro Road, Sanford, Maine**

Dear Mr. Bauer:

Credere Associates, LLC (Credere) has completed a preliminary geotechnical investigation for Aries Clean Energy (Aries) to support the design of a biosolids facility to be constructed on Lot 4, Cyro Road, Sanford, Maine (Site). As part of this work, Credere conducted subsurface exploration and laboratory testing programs, evaluated subsurface conditions, completed engineering analyses, developed recommendations for the geotechnical aspects of the project design and construction, and prepared this geotechnical report. The following sections provide a summary of our project understanding, scope of work, findings, the implications of these findings, and recommendations for design and construction. Concurrently, Credere completed a hydrological investigation, which will be discussed and provided under separate cover.

This work was completed in accordance with the scope of work (SOW) and general provisions presented in our proposal dated January 13, 2025. The original proposed SOW (drilling method, number of borings, and in-situ and laboratory testing) was modified in the field¹ based on encountering soft silt and clay. Recommended changes were reviewed and approved by Aries, during the implementation of the field program. The contents of this report are subject to limitations included in **Appendix A**.

A quality control/quality assurance review of the geotechnical work completed by Credere for this project was completed by Isabel V Schonewald, P.E. (ME, NH) of Schonewald Engineering Associates, Inc. located in Cumberland, Maine.

¹ A total of 6 geotechnical borings were completed given the budget and time constraints of the project. Undisturbed tube samples of the clay and silt were collected to for geotechnical testing and subsequent settlement evaluations. In-situ vane shear testing was completed to determine the shear strength of the deposit for subsequent stability evaluations.

Project Understanding

Relevant Site History and Current Site Conditions

The 10.91-acre Site is largely wooded and undeveloped. The Site is accessed by Cyro Road. The Site is located approximately 231 feet above sea level (AMSL), and the topography at the Site generally slopes to the northwest towards the Mousam River but is generally flat. There are no utilities currently present at the Site.

The proposed layout is in the initial phases of development and the exact features/structures and locations of these features/structures have not been established at this time. The preliminary layout of the facility was provided to Credere by Aries on January 2, 2025, and is included in **Appendix D**. Similarly, preliminary equipment loads for certain Site features were provided (see **Appendix D**) by Aries on March 4, 2025. Additionally, a revised preliminary Site layout dated February 25, 2025, was provided on March 8, 2025. Once the final Site layout and equipment and building loads have been established, additional geotechnical analysis will be required to confirm stability and predicted settlements, as well as structure foundation design recommendations.

A Site Location Plan is provided as **Figure 1**. A Detailed Site Plan depicting the boring locations is provided as **Figure 2**.

Surficial Geology

According to the Maine Geological Survey (MGS) map, Surficial Geology of the Alfred Quadrangle, Maine, the Site is underlain by marine delta deposits that typically consist of coarse sand and gravel grading to fine sand and silt. The subsurface conditions encountered during this investigation are discussed in the **Findings** section of this report.

Bedrock Geology

According to the MGS map, Bedrock Geology of Kittery 1:100,000 Quadrangle, Maine and New Hampshire, mapped bedrock at the Site is Permian-aged biotite-muscovite-garnet granite and pegmatite.

Scope of Work

Geotechnical Drilling

To evaluate the subsurface conditions underlying the Site, a subsurface exploration program was completed. The subsurface exploration program consisted of drilling 6 soil borings, designated CA-101 through CA-106 and 3 soil borings that were completed as monitoring wells, designated CA-MW-1 through CA-MW-3. The latter were completed to support the concurrent hydrological investigation. The 6 soil borings CA-101 through CA-106 were located based on the preliminary layout of the facility that was provided by Aries on January 2, 2025. Of the six soil borings completed as part of the geotechnical evaluation, three borings were located in key areas; these borings were designated CA-103, CA-105, and CA-106. **Figure 2** depicts the soil boring locations.



Soil borings were completed between March 3 and 7, 2025, by Seaboard Drilling of Somersworth, New Hampshire, and were coordinated, observed, and logged by Credere on a full-time basis. Borings were advanced with a Diedrich D-50 Track Rig using standard drive and wash methods, except for boring CA-101, which was advanced using hollow stem augers to 12 feet below the ground surface (bgs) and terminated due to blowing sands.

Standard Penetration Tests (SPTs) were performed, and split-spoon samples were collected at 5-foot intervals to their proposed depths or refusal (as indicated on **Figure 2**). Where refusal was not encountered above 42 feet bgs, soil borings were advanced to refusal using a rod probe. Samples from each split spoon interval were classified and placed in jars for possible geotechnical lab analysis. SPT data (N-values)² were obtained to provide an indication of the in-situ density or consistency of the soil that correlates to key engineering parameters. In lieu of SPTs, in-situ vane shear testing was conducted in soft marine silt-clay encountered in test borings CA-103, CA-105, and CA-106. In-situ vane shear tests are performed to assess the undrained shear strength (S_u) and the residual shear strength (S_{ur}) of the soils. The vane shear tests were performed by Seaboard Drilling using methods and equipment that generally conform to the ASTM standard test method; Seaboard Drilling provided the vane constant that is used to equate the torque applied to the vane (in foot-pounds) to the undrained shear strength of the soil (in pounds per square feet).

Three (3) undisturbed Shelby tube samples (designated U-1 through U-3) of the soft clay and silt encountered in soil boring CA-105 were collected between 25 and 37 feet bgs.

Soil boring logs describing the specific conditions encountered are included as **Appendix B**.

Geotechnical Laboratory Program

Upon completion of the geotechnical drilling program, tube and split spoon soil samples were selected and submitted to Soil Metrics LLC of Cape Elizabeth, Maine. Seventeen jar samples of soil collected from the split-spoon sampler were submitted for gradation (ASTM D422), and 12 of the 17 were run with the hydrometer test as these samples contained more than 20 percent silt and clay sized particles (material finer than the #200 U.S. Standard Sieve), and 12 samples were submitted for Atterberg Limits (ASTM D4318). Additionally, three tube samples (designated U) were submitted for hydrometer test, Atterberg Limits, laboratory shear vane, and one-dimensional consolidation. The following table summarizes samples submitted for testing. The laboratory report is included in **Appendix C**.

Boring Number	Washed Gradation	Gradation w/ Hydrometer and Atterberg Limits*	Tube Log, Atterberg Limits, Hydrometer, Laboratory Shear Vane and 1-D Consolidation
CA-101	S-2 (5-7')		
CA-102	S-2 (5-7')	S-6 (25-27'), S-7 (30-32')	

² Typically, field N-values are adjusted for the hammer efficiency. N-values were not adjusted as the majority of samples at depth had N-values of WOH or WOR. Additionally, a hammer efficiency report was requested but never received from the drillers.



Boring Number	Washed Gradation	Gradation w/ Hydrometer and Atterberg Limits*	Tube Log, Atterberg Limits, Hydrometer, Laboratory Shear Vane and 1-D Consolidation
CA-103		S-3 (15-17'), SS V-3/V-4 (25-27'), SS V-7/V-8 (35-37')	
CA-104		S-6 (25-27'), S-8 (35-37')	
CA-105		SS V-3/V-4 (27-29'), SS V-5/V-6 (32-34'), SS V-7 (37-38')	U-1 (25-27'), U-2 (30-32'), U-3 (35-37')
CA-106		SS V-3/V-4 (25-27'), SS V-7/V-8 (35-37')	
CA-MW-1	S-3 (4-6')		
CA-MW-2	S-2 (5-7')		
CA-MW-3	S-2 (5-7')		

* Split spoon sample designated S were collected as part of SPT, and those designated SS were grab split spoon samples collected after in-site vane test

Findings – Subsurface Conditions

The subsurface conditions encountered in the explorations at the Site consisted of 5 to 13 inches of topsoil/vegetation over 3 to 17 feet of sand with varying amounts of gravel and silt (SW/SP/SM), underlain by 25 to 40 feet of clay and silt (CL/CL-ML). Refusal, interpreted to be bedrock, was encountered in soil borings CA-103 through CA-106 at between 40 and 51.7 feet bgs; rock core was not obtained so the type of refusal could not be determined.

The following bullets describe our interpretation of the generalized soil profile and characteristics of the soil strata underlying the Site based on the conditions encountered in widely spaced test borings. More specific descriptions of the conditions encountered at each location are provided on the logs included as **Appendix B**.

- The soil encountered at the ground surface consisted of approximately 5 to 13 inches of a vegetated layer. In general, the Site is wooded with some clearing. At the time of drilling the Site was covered with over 1 foot of snow.
- The sand encountered consisted of 3 to 8 feet of fine to medium sand over 5 to 10 feet of fine to coarse sand, both layers with varying amounts of gravel and trace silt. The SPT N-values in the upper, fine to medium sand ranged from 4 to 12 with an average N-value of 7 indicating the material is primarily loose. The SPT N-values in the lower fine to coarse sand ranged from 16 to 46 with an average N-value of 30 indicating the material is primarily medium dense.
- Based on field observations and local experience, the 25- to 40-foot-thick layer of clay and silt material encountered at approximately 8 to 19 feet bgs across the Site is typical of the Presumpscot Formation found in Maine. The deposit appears to consist of 2 to 8 feet of olive-brown, desiccated (weathered) clay and silt (commonly referred to as the crust) underlain by gray, clay and silt.
- SPT N-values in the crust ranged from 4 to 9 (with an average N-value of 6) indicating a medium stiff to stiff consistency. Typically, this material is overconsolidated with



overconsolidation ratios (OCRs³) ranging from 4 to 8 or greater. One sample of the crust material was submitted to the laboratory for grain size/hydrometer and Atterberg limits. The results indicated the crust material was 78% silt and 18% clay and had a liquid limit (LL) of 22.7, a plastic limit (PL) of 19.3, and a plasticity index (PI) of 3.4 indicating low plasticity. In-situ vane shear test data was not collected in this layer due to its stiffness.

- SPT N-values in the gray clay and silt deposit ranged from 2 to *weight of rods* indicating a soft to very soft consistency. Fourteen samples (11 jar samples and 3 tube samples) of the soft clay and silt deposit were submitted for grain size/hydrometer and Atterberg Limits tests. On average the samples were 60% silt and 40% clay. The average LL, PL and PI were 22, 36, and 16, respectively, indicating moderate plasticity. In-situ vane shear testing from 20 to 30 feet bgs indicated S_u values from 980 to 1932 psf and S_r values from 140 to 336 psf. In-situ vane testing from 30 to 42 bgs indicated S_u values from 616 to 1204 psf and S_r values from 28 to 308. Laboratory vanes collected from tube samples at 30 and 35 feet bgs indicated S_u values of 877 and 940 psf, which correlates nicely with the in-situ data.
- Consolidation tests were completed on three tube samples from CA-105. Sample U-1 from 25-27 feet bgs was highly disturbed, and the results should be used with caution. Tube samples U-2 collected from 30-32 and U-3 collected from 35-37 feet bgs, appeared undisturbed and yielded virgin compression ratios (C_{CR}) of 0.234 and 0.290 and recompression ratios (C_{RR}) of 0.022 and 0.021, respectively. Based on the compression curves, the preconsolidation pressure or maximum past pressure (σ_{mp}) can be estimated as 7300 psf at 31 feet bgs and 5900 psf at 36 feet bgs.

Bedrock

Refusal was encountered between 40 to 52 feet bgs. Bedrock was not cored, as it was not part of the original SOW, so the type of refusal is unknown.

Groundwater

Groundwater was noted during exploration activities typically between 6 and 10 feet bgs. Stabilized groundwater measurements were obtained on March 19, 2025, in monitoring wells CA-MW-1 through CA-MW-3. At that time, groundwater was gauged at 5.0, 6.4, and 8.3 feet bgs, which corresponds to elevation 225, 223, and 217 feet⁴, respectively. Groundwater appears to be flowing north northeast in the direction of flow of the Mousam River. Note that groundwater fluctuations may occur due to variations in rainfall, temperature, and other factors occurring since the time the measurements were made.

3 The OCR and/or maximum past pressure are critical parameters in predicting the overall settlement a deposit will experience. If predicted final pressures are less than the maximum past pressure, settlement will occur in relation to the recompression ratio. If the final pressure is greater than the maximum past pressure, settlement will occur in relation to the compression ratio. Typically, the recompression ratio is an order of magnitude less than the compression ratio.

4 Ground surface elevation was estimated based on the Site plans provided. Additionally, Credere recorded the locations and elevation of the on-Site wells using used a GPS.



Implications of Subsurface Conditions

The subsurface conditions encountered at the Site, in particular the presence of clay and silt, coupled with the proposed Site design features have implications with respect to the geotechnical design aspects of the proposed development, specifically the allowable bearing capacity, predicted long-term settlement, and global stability⁵. Particularly challenging are the combination of the proposed fill (up to 4 feet) and the heavily loaded structures, specifically the dryer package (3 dryers, 105 tons each), the wet silos (3 silos, 350 tons each), and dry silos (4 silos, 100 tons each).

Proposed Fill: Based on the proposed Site plans, the Site will be filled up to 4 feet in places. This is a key controlling design feature affecting settlement and stability, which in turn limits the allowable bearing pressure. Current Site grades slope gradually down to the west towards the Mousam River. The current proposed plan depicts the final Site development slightly elevated (approximately 233 feet elevation near Cyro Road and 231 feet elevation near the dry silos). The plant layout is encircled in an access road, which is elevated similarly; several stormwater retention ponds (bottom elevation 220 feet) are located in the southwest portion of the Site, adjacent to the filled slope of the road and the wet silos.

The 3 to 4 feet of fill that is proposed is estimated to create $\frac{3}{4}$ to 1 inch of total settlement across the Site. Additional settlement will result from the structure/equipment loads, as discussed below.

Equipment Loads: Based on the proposed design plans and the estimated equipment loads provided by Aries, the wet and dry silos are located near the exterior of the proposed fill and are heavily loaded. Therefore, they control the geotechnical design criteria, meaning, lightly loaded structures located in non-fill areas may have less stringent design criteria/recommendations.

Crederre reviewed the current proposed design plans, and the estimated equipment loads provided by Aries. Based on this, the allowable bearing capacity, predicted long-term settlement, and deep-seated (global) stability was evaluated along two critical sections: line 1 – running perpendicular to the slope crest and cutting through the road at the location of the dry silos, and line 2 – running perpendicular to the slope crest and cutting through the stormwater basins and the road at the location of the wet silos (see **Appendix D**).

Line 1 appears to be stable under proposed conditions. However, the allowable bearing capacity is limited by the anticipated total and differential settlement. Each dry silo appears to be approximately 12 feet in diameter⁶ and weighs/holds an estimated 100 tons. If we assume a 16 by 16-foot square shallow mat foundation and an allowable bearing capacity of 1,000 psf, the total estimated settlement is 1.5 inches. Therefore, it appears that the dry silo could be supported by shallow foundations, if 1.5 inches of total settlement and an angular distortion of 0.005 (roughly based on $\frac{1}{2}$ inch of differential settlement over 8 feet) is tolerable.

⁵ Global stability refers to the overall stability of a slope or embankment. The low shear strength of clay and silt can lead to potential failure or landslides under certain loading conditions.

⁶ Equipment dimensions were estimated based on the proposed plan provided by Aries.



Line 2 in its proposed configuration is not stable with respect to deep-seated (global) stability. It does appear that if the wet silos are moved approximately 90 feet from the edge of the road or if the stormwater basins are relocated, the section will be stable. However, the bearing capacity will be limited in order to reduce anticipated total and differential settlement to reasonable magnitudes. Each wet silo appears to be approximately 12 by 12 feet square and weighs/holds and estimated 350 tons. If we assume a 14 ft by 56 ft mat foundation under the group of wet silos, the bearing pressure would be approximately 2,500 psf resulting in total anticipated settlement greater than 2 inches.

In summary, the lighter loaded structures/equipment should be evaluated separately since settlement is not likely to control allowable bearing pressure and shallow spread footings or mat foundations will likely provide adequate support. As noted above, the proposed fill coupled with the relatively heavy loads of certain equipment (wet and dry silos) make the use of shallow mat foundations complicated for these structures. If the anticipated settlement and/or limited allowable bearing capacity are unacceptable, pile-supported slabs may be used to support the heavily-loaded structures, which will transfer the load to the underlying bedrock; therefore, eliminating total and differential settlement as a design factor. We note that supplemental test borings with rock coring at key locations will be needed to provide guidance for pile design. Likewise, relocating the heavily loaded equipment away from the fill slope crest to areas of less fill is a potential solution.

Construction considerations: Surface water and groundwater controls will be necessary during construction. Groundwater was encountered between 5 and 8 feet below the ground surface, which indicates that groundwater is perched on the clay and silt material.

Native clay and silt deposits can be difficult to work with. Disturbance of soft deposits typically results in loss of strength, which could adversely affect the performance of the foundation. The ability to work with stiff deposits of this material is highly dependent on maintaining strict control over the moisture content of the material and avoiding dynamically loading the material. The clay and silt material is not recommended for reuse.

Foundation Design and Construction Recommendations

Based on the subsurface conditions encountered at the Site and Credere's understanding of the proposed project, the following geotechnical recommendations are provided for consideration during design and construction. It should be noted that these are preliminary and general recommendations. Once the final design has been developed, these recommendations should be reviewed by Credere and updated accordingly.

Understanding of Proposed Structures and Equipment	
Structures/Equipment*	Design Considerations
Wet/dry silos, dryer package	Small and large footprint; heavily loaded; no heated space
Office structures	Lightly loaded; heated spaces

*See **Appendix D** for list of equipment list and estimated loading. Equipment dimensions were scaled from provided drawings.



Site Preparation/Site Work

In all areas where structure/equipment and access roadways are proposed, all existing vegetation, fill/debris materials, topsoil, and other organic matter or deleterious material should be removed to expose suitable subgrade soils consisting of stable inorganic soils. The subgrade preparation area for the foundations for these structures should extend outward from the edge of the foundation to the limit of the zone of influence. The limit of the zone of influence is defined by a line extending downward and outward at a one horizontal to two vertical (1H:2V) slope from a point 2 feet outside of the lower outside edge of the foundation element to the exposed subgrade surface.

The exposed subgrade soils in structures/equipment foundation footprints and access roads should be proofrolled with 6 to 8 passes of a self-propelled static roller; a vibratory roller is not recommended as it may further disturb silty subgrade material. All loose or yielding areas should be overexcavated and replaced with compacted Granular Fill to reach subgrade elevation.

The Granular Fill should be placed in loose lifts not to exceed 12 inches in thickness and should be compacted to at least 95% of the material's maximum dry density, as determined by ASTM D-1557 (Modified Proctor). Special placement and compaction methods, such as Crushed Stone wrapped in nonwoven geotextile fabric and tamped with the excavator bucket, may be warranted in wet areas. Considering groundwater was encountered at 5 to 8 feet bgs, wet conditions should be expected.

The prepared subgrade should be firm and stable under the action of construction equipment.

Conventional Spread Footings

Lightly loaded structures having relatively small foundation footprints (i.e., footprint widths between 3 and 6 feet) can be supported by spread footings with a net allowable bearing capacity of 2,000 psf.

A preliminary settlement evaluation that assumed up to 4 feet of fill across the Site, conservatively predicted up to 1.5 inch of total settlement for these lighter structures. Structures supported by spread footings should be designed to allow for ½ inch of differential settlement between different foundation elements.

Conventional spread footings bearing on a minimum of 1 foot of compacted Structural Fill overlying prepared subgrade should provide satisfactory support for these structures. Where foundation elements coincide with groundwater (observed between 5 and 8 feet bgs), they should bear on 12 inches of ¾-inch Crushed Stone wrapped in geotextile fabric. This may apply to the exterior footings.

All footings should have a minimum dimension of 2 feet, regardless of the calculated bearing pressure. The structural design of the footings should limit eccentric soil contact pressures.



All footings should be founded at least 4.5 feet below the lowest adjacent exterior grade for frost protection and should be protected from frost action during construction. If called for, interior footings should be at least 1.5 feet below finished floor elevation.

Considering the observed shallow groundwater conditions (approximately 5 to 8 feet bgs), groundwater and stormwater runoff controls should be incorporated into the design of foundational elements. Permanent perimeter (footing) drains and underdrains should be considered in the foundation design to relieve the buildup of hydrostatic pressure under the foundational elements. All groundwater, surface water and storm water should be redirected away from structures/equipment.

Granular Fill should be used for backfill against the interior and exterior of the wall footing stems up to slab subgrade elevation and extend to a distance of at least five feet out from the walls, if traditional shallow foundations are used. This will safeguard against frozen material (in winter) or hydrostatic forces (spring) against the footing walls.

All Granular or Structural Fill underneath structures/equipment foundations should be placed in loose lifts not to exceed 12 inches in thickness and should be compacted to at least 95% of the material's Modified Proctor.

Mat Foundations

Structures/equipment with heavy loading and requiring large foundations (i.e., dry silos with 16' x 16' foundations or dryers with 16' x 54' foundation) should be founded on structural slabs/mat foundations.

Based on an applied bearing pressure of 1,000 psf, preliminary settlement analysis of mat foundations predicted settlement up to 1.5 inches. Additionally, mat foundations with an applied bearing pressure of 2,500 psf, predicted settlement of 2 inches. If the predicted settlement exceeds design tolerances, the mat foundations should be supported on piles seated on bedrock.

In the case where the equipment pads are exposed to freeze-thaw conditions (unlike a typical building on-grade floor slab), the structural slabs should be designed with frost walls that extend below frost depth of 4.5 feet.

A modulus of subgrade reaction equal to 100 pounds per cubic inch (pci) for a 1-foot square plate may be used for the structural design of slabs if controlled Structural Fill is in contact with the slabs. The structural design of mat foundations should limit eccentric soil contact pressures.

Piles

Considering the thickness of clay/silt at the Site, steel H-piles, concrete filled pipe piles, and rigid inclusion piles are viable options for settlement-sensitive structures/equipment with heavy loading. The piles should be designed as end-bearing piles that derive their capacity by fully penetrating the clay/silt to termination on the bedrock surface at anticipated depths of 40 to 50 feet bgs. A general comparison of each pile type is provided below.



Feature	Steel H-Piles	Concrete-Filled Pipe Piles	Rigid Inclusion Piles
Load Capacity	High	Very High	Moderate
Installation Method	Driven	Driven or Drilled	Drilled/Displacement
Vibration/Noise	High	Moderate	Low
Corrosion Resistance	Low (unless coated)	High (with concrete fill)	High
Reusability	Yes	No	No
Cost	Moderate	High	Low to Moderate
Typical Use	Deep foundations	Heavy structures, offshore	Ground improvement

Lateral loads (unknown at this time) could be carried by the horizontal component of batter piles. All the batter piles, if included in the design, should be driven to an angle no steeper than three vertical to one horizontal (3V:1H). Additionally, lateral loads be resisted by passive earth pressures acting on the grade beams and pile caps.

Slab-on-grade

Slab-on-grade should bear on a minimum of 12 inches of compacted Structural Fill overlying prepared subgrade material. All Granular Fill (that is required to achieve slab subgrade elevation) and Structural Fill (under the footings and slab) should be placed in loose lifts not to exceed 12 inches in thickness and should be compacted to at least 95% of the material's Modified Proctor.

Retaining Walls

If retaining walls are part of the proposed design for grade separation, the following design criterion should be considered. When designing unrestrained retaining walls with horizontal backfills, the active earth pressure coefficient (K_a) can be assumed to be 0.27 (typical for free-draining sand and gravel with peak friction angle, ϕ of 32°). Retaining walls should be backfilled with free draining backfill material that extends to a minimum of 5 feet behind any exposed surface for frost protection. Passive pressure (K_p) should not be relied upon for the design of any retaining walls.⁷

Earth support walls should be designed to withstand surcharge loads that may be imposed during the life of the structure, including loads from fill and/or construction equipment that may be placed adjacent to the wall. The design of retaining walls must incorporate toe drains with positive outlets and weep holes. A backfill soil unit weight of 125 pounds per cubic foot (pcf) should be used for determining the earth pressure acting on the wall. For design purposes, free draining backfill material can be assumed to have an internal friction angle (ϕ) of 32 degrees and a (sliding) interface friction angle between fill and concrete (δ) of 24 degrees. This applies to all foundation elements. Additionally, the minimum factor of safety against sliding and overturning should be 1.50 or as required by the applicable building code.

⁷ Typically, K_a and K_p are not provided as equivalent fluid pressures, because they do not account for ground surface slope, loading, wall geometry, or groundwater conditions.



Seismic Considerations

Earthquake loading should be evaluated in accordance with the methods presented in Section 1613 of the (2024) International Building Code and Chapter 20 of the 2022 ACSE/SEI 7 Minimum Design Loads and Associated Criteria for Building and Other Structures. Site-specific parameters recommended for use in the analysis are as follows: Risk Category II; Site Soil Class = D/E; and Mapped Acceleration Parameters $S_s = 0.3$, $S_1 = 0.064$, $S_{MS} = 0.32$, $S_{M1} = 0.13$, $S_{DS} = 0.21$, $S_{D1} = 0.87$, and Seismic Design Category = B⁸.

Groundwater Control

An exterior footing drain and slab underdrain should be incorporated into the foundation design with positive (gravity) outlet. If positive outlet/discharge cannot be achieved for the slab underdrain and/or footing drains, permanent sumps with pump systems should be included in the mechanical design. Additionally, any retaining walls must be backfilled with free draining material (i.e., non-frost susceptible), have a toe drain, and weep holes. Roof drains and surface water runoff should be directed away from foundations; roof drains should not be tied into the perimeter drains.

Groundwater will likely be encountered during construction requiring conventional temporary dewatering such as from localized sumps to allow fill placement in the dry. If dry placement of fill cannot be achieved, ¾ inch Crushed Stone wrapped in nonwoven geotextile fabric should be used.

Underground Utilities

Underground pipes and utilities should be placed on bedding material in accordance with the manufacturers' specifications. In the absence of specific recommendations by the manufacturer, pipe bedding should consist of ¾ inch Crushed Stone for PVC sewer pipes and Granular Fill with a maximum stone size of 1 inch for all other utilities not requiring rigid bedding. Wherever possible, flexible pipe and connections should be utilized.

Trench backfill should be placed in loose lifts not to exceed 12 inches in thickness (6 inches in thickness where hand operated equipment is used) and should be compacted to at least 95% of the materials Modified Proctor.

Materials

All fill material used within and around foundation footprints, under pavement, and in utility trenches should be non-cohesive soil free from ice, snow, roots, sod, rubbish, and other deleterious or organic matter. These materials are considered "non-frost susceptible". Fill material should meet the following requirements⁹:

- Structural Fill – Maine DOT 703.06 Type A
- Granular Fill – Maine DOT 703.06 Type D

⁸ Based on ASCE 7-22 using the ASCE 7 online Hazard Tool <https://asce7hazardtool.online/>

⁹ Maine DOT Material Specifications were used as these materials should be readily available in the area.



- Base Course for flexible pavement section – Maine DOT 703.06 Type B
- Subbase Course for flexible pavement section – Maine DOT 703.06 Type D

Reuse of On-Site Material

On-site material, which satisfies the specifications for Granular Fill, may be reused on Site. This material should be stockpiled and tested prior to reuse.

Final Design Phase

Once the final facility layout and equipment loading have been established, additional analysis may be required to confirm that settlement and stability at the Site is acceptable. Supplemental borings and rock coring may be required by the structural engineer in designing pile supported structures. Additionally, the recommendations contained herein should be reviewed considering any new information obtained.

Construction

It is recommended that geotechnical engineering services be retained during the earthwork phases of construction. This is to observe compliance with the design concepts, specifications, and recommendations and to allow design changes in the event that subsurface conditions differ from those anticipated prior to the start of construction.

Closing

We trust this report is responsive to Aries Clean Energy's needs. Should you have any questions, please do not hesitate to contact me at tpatten@crederellc.com or 207-730-1053.

Very truly yours,

CREDERE ASSOCIATES, LLC



Mary Theresa Giasi, P.E.
President, Lead Geotechnical Engineer



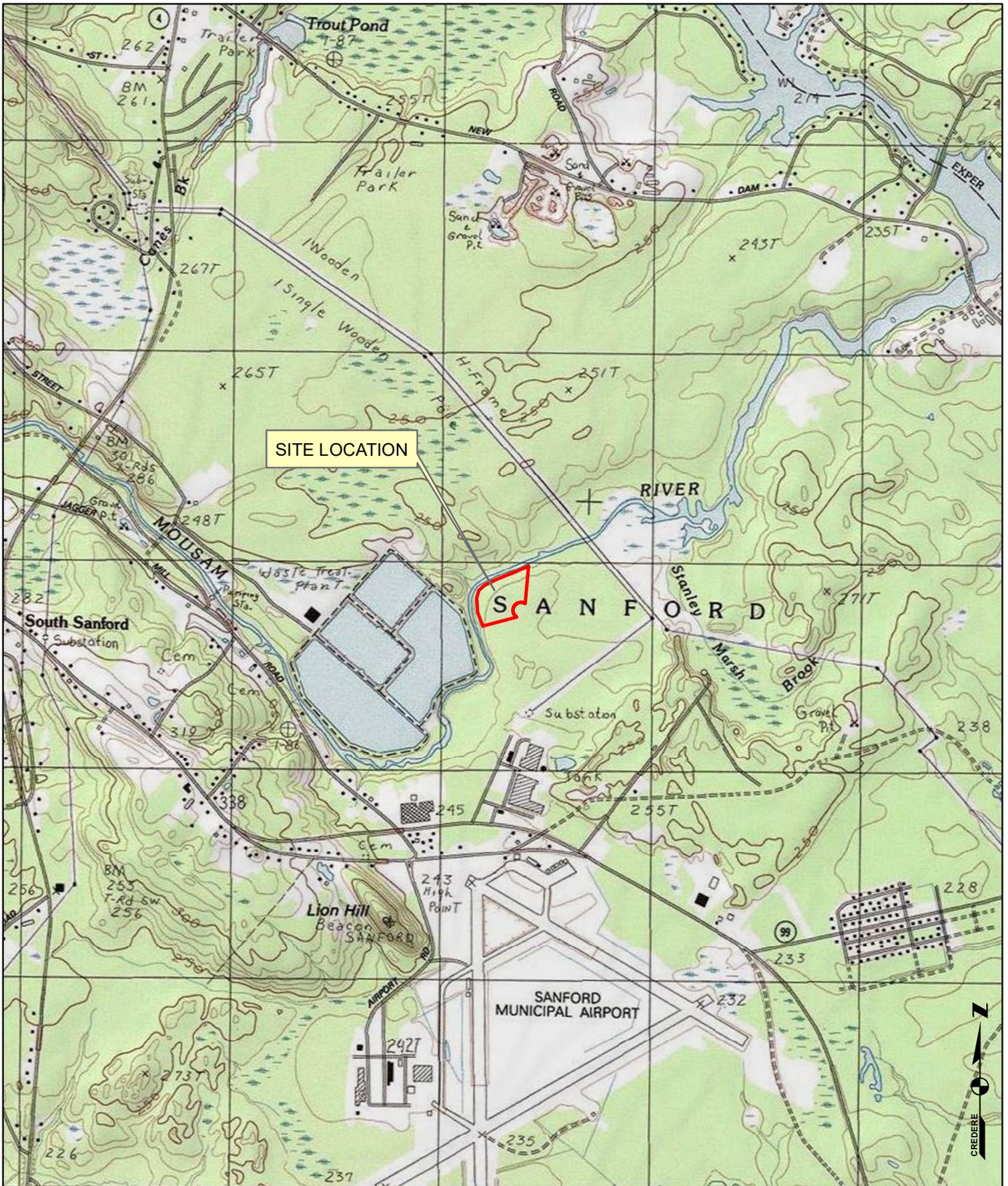
Allison Drouin, PG, LG
Vice President of Quality Assurance, Senior Geologist

Attachments: Figure 1 – Site Plan
 Figure 2 – Sample Location Plan
 Appendix A – Limitations
 Appendix B – Boring Logs
 Appendix C – Geotechnical Laboratory Reports
 Appendix D – Design Information



Figures

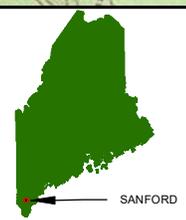
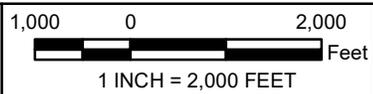


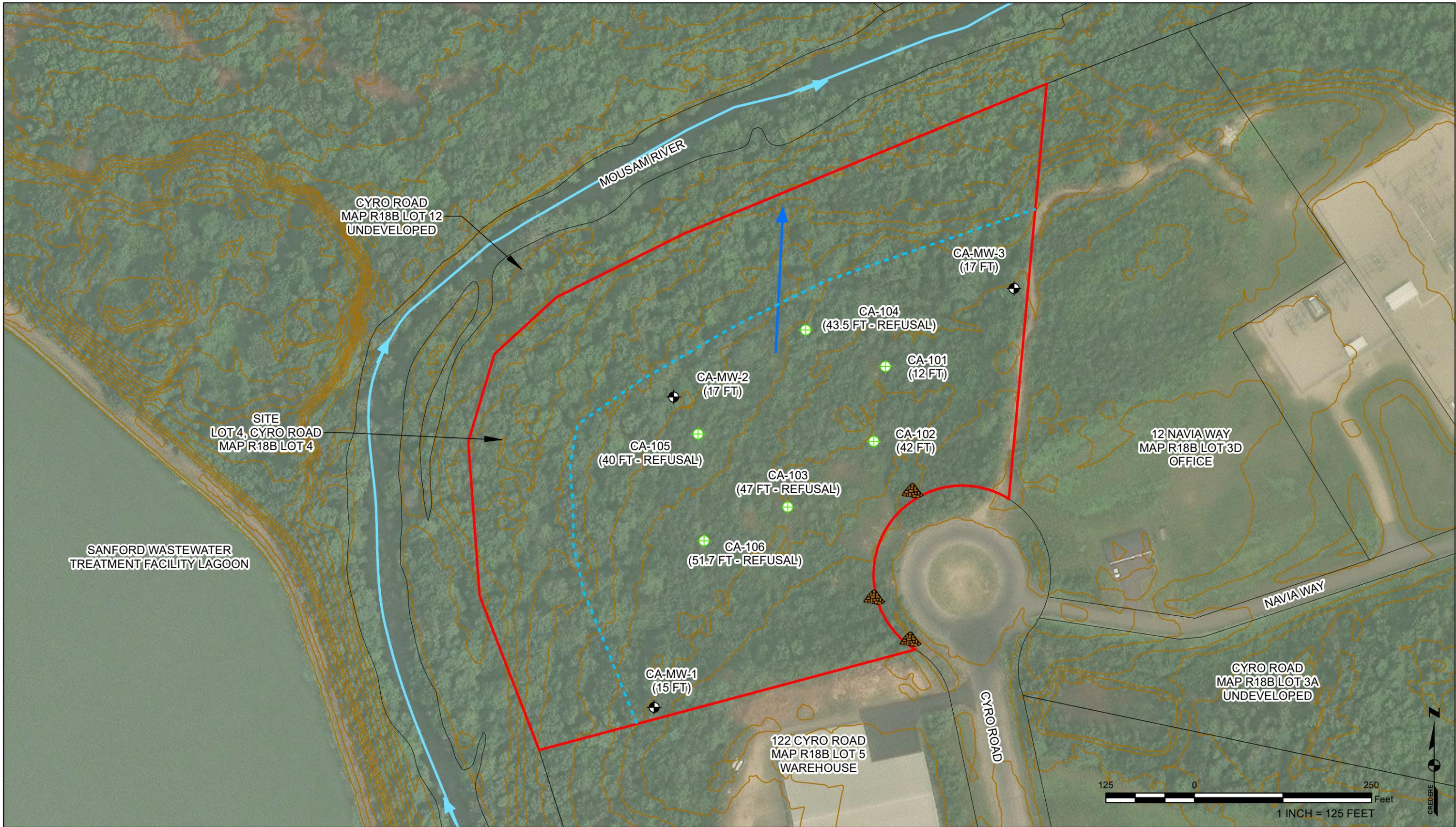


DRAWN BY: **BHW** DATE: **11/4/2024**
 CHECKED BY: **GWK** PROJECT: **24001944**
Creder Associates, LLC
 776 MAIN STREET
 WESTBROOK, MAINE
 Tel. 207.828.1272
 Fax 207.887.1051
 WWW.CREDERELLC.COM

FIGURE 1 SITE LOCATION PLAN

LOT 4, CYRO ROAD
 SANFORD, MAINE





DRAWN BY: BHW/CD | DATE: 4/30/2025
 CHECKED BY: GWK | PROJECT: 24001944

**FIGURE 2
 BORING LOCATION PLAN**

LOT 4, CYRO ROAD
 SANFORD, MAINE

- ▭ SITE BOUNDARY
- PARCEL BOUNDARIES
- ⊕ SOIL BORING
- ⊕ GROUNDWATER MONITORING WELL
- ▲ MISCELLANEOUS DEBRIS
- 250' SHORELAND BUFFER
- RIVER FLOW
- PRESUMED GROUNDWATER FLOW
- 2 FOOT ELEVATION CONTOURS

NOTES:
 1. EXISTING CONDITIONS AND FEATURES SHOWN ON THIS PLAN ARE APPROXIMATE AND ARE BASED ON INFORMATION OBTAINED FROM THE CITY OF SANFORD ONLINE GIS DATA, MAINE GIS PARCEL LAYER, ESRI ORTHO PHOTOS, AND FIELD WORK PERFORMED ON NOVEMBER 18, 2024.
 2. BORINGS ADVANCED TO REFUSAL ARE LABELED AS SUCH.

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Appendix A
Limitations



Limitations

Explorations

- The analyses and recommendations submitted in this report are based in part upon the data obtained from subsurface explorations. The nature and extent of variations between these explorations may not become evident until construction. If variations then appear evident, it may be necessary to re-evaluate the recommendations of this report.
- The generalized soil profile described in the text is intended to convey trends in the subsurface conditions. The boundaries between strata are approximate and idealized, and have been developed by interpretations of widely spaced explorations and samples. Actual soil transitions are probably more erratic. For specific information, refer to the boring logs.
- Water level readings have been made in drilled holes at times and under conditions stated in the boring logs. This data has been reviewed and interpretations have been made in the text of this report. However, it must be noted that fluctuations in the level of the groundwater may occur due to variations in rainfall, temperature, and other factors occurring since the time the measurements were made.

Review

- In the event that any changes in the nature, design or location of the proposed structure are planned, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and conclusions of this report modified or verified in writing by CREDERE ASSOCIATES, LLC. It is recommended that this firm be provided the opportunity for a general review of the final design and specifications in order that earthwork and foundation recommendations may be properly interpreted and implemented in the design specifications

Construction

- It is recommended that this firm be retained to provide soil engineering services during construction of the excavation and foundation phases of the work. This is to observe compliance with the design concepts, specifications, and recommendations and to allow design changes in the event that subsurface conditions differ from those anticipated prior to start of construction.

Use of Report

- This soil and foundation report has been prepared for this project by CREDERE ASSOCIATES, LLC. This report is for design purposes only and is not sufficient to prepare an accurate bid. Contractors wishing a copy of this report may secure it with the understanding that its scope of work is limited to design considerations only.



-
- The report has been prepared by CREDERE ASSOCIATES, LLC for the exclusive use of AERIES CLEAN ENERGY for the Proposed Biosolids Facility located at Lot 4, Cyro Road, Sanford, Maine, in accordance with generally accepted soil and foundation engineering practices. No other warranty, express or implied, is made.



Appendix B

Boring Logs





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Boring Log

CA-101
 PAGE 1 OF 1

CLIENT Aeries Clean Technologies **PROJECT NAME** Lot 4, Cyro Road, Sanford
PROJECT # 24001944 **PROJECT LOCATION** Cyro Road, Sanford, Maine
DATE STARTED 3/3/25 **LOGGED BY** M. Hixon **DEPTH TO WATER** ~ 7' bgs **WELL DIAMETER** NA
CONTRACTOR Seaboard Drilling, LLC/Parker Johnson **WELL MATERIALS** NA
DRILLING METHOD Hollow Stem Auger **ANNULUS MATERIALS** NA, NA
DRILLING EQUIPMENT Diedrich D-50, borehole diam. 4 **MP ELEVATION** _____ **GROUND ELEVATION** 230

NOTES _____

CREDERE GEOTECH 2023 - GINT STD US LAB.GDT - 4/7/25 09:30 - P:\24001944 LOT 4, CYRO ROAD, SANFORD\WORK\GEO\TECH\FIELD\LOT 4, CYRO ROAD, SANFORD.GPJ

Depth (ft)	Penetration/ Recovery (in)	Blow Counts	SPT (N-Value)	Adjusted N60 Value	Sample ID * = Lab Submittal for Gradation	Field Screening (ppm)	Depth (ft)	Graphic Log	LITHOLOGY	NOTES
0	24/16	7 4 4 5	8		S-1	<0.1	0-2		0-6" Dark brown fine Sand, moist [TOPSOIL].	
5	24/5	3 4 5 5	9		S-2	<0.1	5-7		(SP) 6-16" Loose, brown, fine to medium SAND, little Silt, trace fine Gravel, moist. Advanced to 5' bgs.	
10	24/13	4 5 3 4	8		S-3	<0.1	10-12		(SW) 0-10" Loose, brown, fine to coarse SAND, little Silt, trace fine Gravel, wet. (SM) 10-13" Brown SILT, little fine Sand, wet.	
15										
20										
25										

Drilling encountered difficulty advancing HSA due to blowing sands binding up the augers. Driller recommended switching to drive and wash. End of boring at 12 feet bgs (no refusal).



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Boring Log

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 PAGE 1 OF 2

CLIENT Aeries Clean Technologies **PROJECT NAME** Lot 4, Cyro Road, Sanford
PROJECT # 24001944 **PROJECT LOCATION** Cyro Road, Sanford, Maine
DATE STARTED 3/3/25 **LOGGED BY** M. Hixon **DEPTH TO WATER** NA **WELL DIAMETER** NA
CONTRACTOR Seaboard Drilling, LLC/Parker Johnson **WELL MATERIALS** NA
DRILLING METHOD Drive and wash **ANNULUS MATERIALS** NA, NA
DRILLING EQUIPMENT Diedrich D-50, borehole diam. 4 **MP ELEVATION** _____ **GROUND ELEVATION** 230

NOTES _____

CREDERE GEOTECH 2023 - GINT STD US LAB.GDT - 4/7/25 09:30 - P:\24001944 LOT 4, CYRO ROAD, SANFORD\WORK\GEO\TECH\FIELD\LOT 4, CYRO ROAD, SANFORD.GPJ

Depth (ft)	Penetration/ Recovery (in)	Blow Counts	SPT (N-Value)	Adjusted N60 Value	Sample ID * = Lab Submittal for Gradation	Field Screening (ppm)	Depth (ft)	Graphic Log	LITHOLOGY	NOTES
0	24/15	4 3 4 5	7		S-1	<0.1	0-2		0-13" Loose, dark brown fine SAND, trace Silt, moist [TOPSOIL].	
									(SP) 13-15" Brown, fine to medium SAND, trace Silt, moist. Advanced to 5' bgs.	
5	24/7	10 10 12 12	22		S-2*	<0.1	5-7		(SW) 0-7" Medium dense, fine to coarse SAND, little Gravel, trace Silt, moist. Advanced to 10' bgs.	
10	24/0	6 9 10 12	19		S-3	<0.1	10-12		No recovery. Advanced to 15' bgs.	
15	24/19	5 2 2 3	4		S-4	<0.1	15-17		(CL) 0-19" Soft, olive-brown CLAY & SILT, wet. Advanced to 20' bgs.	
20	24/12	2 1 1 2	2		S-5*	<0.1	20-22		(CL) 0-12" Very soft, gray CLAY & SILT, silt lenses, wet. Advanced to 25' bgs.	
25	24/24	WOH/ 24"	-		S-6*	<0.1	25-27		(CL) 0-24" Same as previous. Advanced to 30' bgs.	



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CLIENT Aeries Clean Technologies

PROJECT NAME Lot 4, Cyro Road, Sanford

PROJECT # 24001944

PROJECT LOCATION Cyro Road, Sanford, Maine

Depth (ft)	Penetration/ Recovery (in)	Blow Counts	SPT (N-Value)	Adjusted N60 Value	Sample ID * = Lab Submittal for Gradation	Field Screening (ppm)	Depth (ft)	Graphic Log	LITHOLOGY	NOTES
30	24/19	WOR/24"	-		S-7*	<0.1	30-32		(CL) 0-19" Same as previous.	
									Advanced to 35' bgs.	
35	24/0	WOR/24"	-		S-8*	<0.1	35-37		No recovery.	
									Advanced to 40' bgs.	
40	24/24	WOR/24"	-		S-9*	<0.1	40-42		(CL) 0-24" Very soft, gray CLAY & SILT, silt lenses, wet.	
									End of boring at 42' bgs (no refusal).	
45										
50										
55										
60										

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Boring Log

CA-103
 PAGE 1 OF 2

CLIENT Aeries Clean Technologies **PROJECT NAME** Lot 4, Cyro Road, Sanford
PROJECT # 24001944 **PROJECT LOCATION** Cyro Road, Sanford, Maine
DATE STARTED 3/7/25 **LOGGED BY** M. Hixon **DEPTH TO WATER** NA **WELL DIAMETER** NA
CONTRACTOR Seaboard Drilling, LLC/Parker Johnson **WELL MATERIALS** NA
DRILLING METHOD Drive and wash **ANNULUS MATERIALS** NA, NA
DRILLING EQUIPMENT Diedrich D-50, borehole diam. 4 **MP ELEVATION** _____ **GROUND ELEVATION** 229

NOTES _____

Depth (ft)	Penetration/ Recovery (in)	Blow Counts	SPT (N-Value)	Adjusted N60 Value	Sample ID * = Lab Submittal for Gradation	Field Screening (ppm)	Depth (ft)	Graphic Log	LITHOLOGY	NOTES
0									Advanced to 5' bgs.	
5	24/9	6 5 12 14	17		S-1		5-7		(SW) 0-9" Medium dense, light brown/brown, fine to coarse SAND, little Silt, trace fine to coarse Gravel, moist. Advanced to 10' bgs.	
10	24/24	WOH/6" 3 2 3	5		S-2		10-12		(CL) 0-24" Medium stiff, olive-brown CLAY & SILT, trace fine Sand, moist. Pp= 0.5 tsf. Pp (w/ adaptor)= 0.219 tsf. Advanced to 15' bgs.	
15	24/24	WOH/6" 4 5 5	9		S-3*		15-17		(CL) 0-24" Stiff, olive-gray CLAY & SILT, trace fine Sand, moist. Pp = 2 tsf. Pp (w/ adaptor) = 0.281 tsf. Advanced to 20' bgs.	Pp = pocket penetrometer (tsf)
20	24/24	WOH/24"	-		S-4		20-22		(CL) 0-24" Very soft, gray CLAY & SILT w/ silt lenses, wet. Pp = 0.25 tsf. Pp (w/ adaptor) = 0.125 tsf.	
	-/-	-	-		V-1		22-23		V-1: Tu=40 / Tr=5 Su=1120 / Sr=140	Used 2 5/8" Dia. by 4 3/4" tapered vane, 1/K=28, S(psf) = T(lbf-ft) x (1/K) Tu = torque (undrained), Tr = torque (residual), Su = shear strength (undrained), Sr= shear strength (residual)
	-/-	-	-		V-2		23-24		V-2: Tu=45 / Tr=5 Su=1260 / Sr=140	
	-/-	-	-		V-3		25-26		V-3: Tu=35 / Tr=5 Su=980 / Sr=140	
	-/-	-	-		V-4		26-27		V-4: Tu=45 / Tr=5 Su=1260 / Sr=140 Advanced to 30' bgs.	

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Boring Log

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 PAGE 2 OF 2

CLIENT Aeries Clean Technologies

PROJECT NAME Lot 4, Cyro Road, Sanford

PROJECT # 24001944

PROJECT LOCATION Cyro Road, Sanford, Maine

Depth (ft)	Penetration/ Recovery (in)	Blow Counts	SPT (N-Value)	Adjusted N60 Value	Sample ID * = Lab Submittal for Gradation	Field Screening (ppm)	Depth (ft)	Graphic Log	LITHOLOGY	NOTES
30	-/-	-	-		V-5		30-31		V-5: Tu=34 / Tr=5 Su=952 / Sr=140	
	-/-	-	-		V-6		31-32		V-6: Tu=37 / Tr=7 Su=1036 / Sr=196	
									Advanced to 35' bgs.	
35	-/-	-	-		V-7		35-36		V-7: Tu=25 / Tr=1 Su=700 / Sr=28	
	-/-	-	-		V-8		36-37		V-8: Tu=30 / Tr=5 Su= 840 / Sr=140	
									Advanced to 45' bgs.	
40	-/-	-	-		V-9		40-41		V-9: Tu=22 / Tr=2 Su=616 / Sr=56	
	-/-	-	-		V-10		41-42		V-10: Tu=25 / Tr=11 Su=700 / Sr=308	
									Advanced using rod probe to refusal.	
45										
50										
55										
60										
									End of boring at 47' bgs (rod probe refusal). Probable bedrock.	

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Boring Log

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 PAGE 1 OF 2

CLIENT Aeries Clean Technologies **PROJECT NAME** Lot 4, Cyro Road, Sanford
PROJECT # 24001944 **PROJECT LOCATION** Cyro Road, Sanford, Maine
DATE STARTED 3/3/25 **LOGGED BY** M. Hixon **DEPTH TO WATER** NA **WELL DIAMETER** NA
CONTRACTOR Seaboard Drilling, LLC/Parker Johnson **WELL MATERIALS** NA
DRILLING METHOD Drive and wash **ANNULUS MATERIALS** NA, NA
DRILLING EQUIPMENT Diedrich D-50, borehole diam. 4 **MP ELEVATION** _____ **GROUND ELEVATION** 229

NOTES _____

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Depth (ft)	Penetration/ Recovery (in)	Blow Counts	SPT (N-Value)	Adjusted N60 Value	Sample ID * = Lab Submittal for Gradation	Field Screening (ppm)	Depth (ft)	Graphic Log	LITHOLOGY	NOTES
0	24/3	3 3 4 4	7		S-1		0-2		0-13" Loose, dark brown fine SAND, trace Silt, moist [TOPSOIL].	
									Advanced to 5' bgs.	
5	24/0	9 10 11 15	21		S-2		5-7		No recovery. Rock observed in split spoon tip.	
									Advanced to 10' bgs.	
10	24/9	25 21 18 21	39		S-3		10-12		(SW) 0-9" Dense, brown, fine to coarse SAND, some fine Gravel, trace Silt.	
									Advanced to 15' bgs.	
15	24/0	20 21 19 17	40		S-4		15-17		No recovery.	
									Advanced to 20' bgs.	
20	24/24	WOH/ 24"	-		S-5		20-22		(CL) 0-12" Very soft, olive-brown/gray CLAY & SILT, silt lenses. (CL) 12-24" Gray CLAY & SILT, silt lenses.	
									Advanced to 25' bgs.	
25	24/24	WOH/ 24"	-		S-6*		25-27		(CL) 0-24" Very soft, gray CLAY & SILT, silt lenses.	
									Advanced to 30' bgs.	



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 PAGE 1 OF 2

CLIENT Aeries Clean Technologies **PROJECT NAME** Lot 4, Cyro Road, Sanford
PROJECT # 24001944 **PROJECT LOCATION** Cyro Road, Sanford, Maine
DATE STARTED 3/5/25 **LOGGED BY** M. Hixon **DEPTH TO WATER** NA **WELL DIAMETER** NA
CONTRACTOR Seaboard Drilling, LLC/Parker Johnson **WELL MATERIALS** NA
DRILLING METHOD Drive and wash **ANNULUS MATERIALS** NA, NA
DRILLING EQUIPMENT Diedrich D-50, borehole diam. 4 **MP ELEVATION** _____ **GROUND ELEVATION** 227

NOTES _____

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Depth (ft)	Penetration/ Recovery (in)	Blow Counts	SPT (N-Value)	Adjusted N60 Value	Sample ID * = Lab Submittal for Gradation	Field Screening (ppm)	Depth (ft)	Graphic Log	LITHOLOGY	NOTES
0	24/10	2 3 9 11	12		S-1		0-2		0-5" Dark brown fine SAND, trace Silt, moist [TOPSOIL].	
									(SP) 5-10" Medium dense, brown, fine to medium SAND, little Silt, trace fine to coarse Gravel, moist. Advanced to 5' bgs.	
5	24/8	22 28 27 28	55		S-2		5-7		(SW) 0-8" Very dense, brown fine to coarse SAND, little fine to coarse Gravel, little Silt. Advanced to 10' bgs.	
10	24/16	5 4 2 1	6		S-3		10-12		(CL) 0-16" Medium stiff, gray CLAY & SILT, silt lenses. Advanced to 15' bgs.	
15	24/24	1 1/12"	1		S-4		15-17		(CL) 0-24" Very soft, gray CLAY & SILT, silt lenses. Pp=0.25 tsf. Pp (w/ adaptor)=0.203 tsf.	Pp = pocket penetrometer (tsf)
	-/-	- - - -	-		V-1		17-18		V-1: Tu=>150 / Tr=25 Su=>1650 / Sr=275 Advanced to 20' bgs.	Used 3 5/8" Dia. by 6 1/8" tapered vane, 1/K=11, S (psf) =T (lbf-ft) x (1/K) Tu = torque (undrained), Tr = torque (residual), Su = shear strength (undrained), Sr= shear strength (residual)
20	24/9	WOH/ 24"	-		S-5		20-22		(CL) Same as previous.	
	-/-	- - - -	-		V-2		22-23		V-2: Tu=127 / Tr=25 Su=1397 / Sr=275 Advanced to 25' bgs.	
25	24/14	- - - -	-		U-1		25-27			
	-/-	- - - -	-		V-3		27-28		(CL) Same as previous.	
	-/-	- - - -	-		V-4		28-29		V-3: Tu=116 / Tr=25 Su=1276 / Sr=275 V-4: Tu=150 / Tr=23 Su=1650 / Sr=253 Advanced to 30' bgs.	



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Boring Log

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 PAGE 2 OF 2

CLIENT Aeries Clean Technologies

PROJECT NAME Lot 4, Cyro Road, Sanford

PROJECT # 24001944

PROJECT LOCATION Cyro Road, Sanford, Maine

Depth (ft)	Penetration/ Recovery (in)	Blow Counts	SPT (N-Value)	Adjusted N60 Value	Sample ID * = Lab Submittal for Gradation	Field Screening (ppm)	Depth (ft)	Graphic Log	LITHOLOGY	NOTES
30	24/24	-	-		U-2		30-32			
	-/-	-	-		V-5		32-33		(CL) Same as previous.	
	-/-	-	-		V-6		33-34		V-5: Tu= >150 / Tr=15 Su=>1650 / Sr=165 V-6: Tu=140 / Tr=22 Su=1540 / Sr=242	
		-	-						Advanced to 35' bgs.	
35	24/22	-	-		U-3		35-37			
	-/-	-	-		V-7		37-38		Encountered denser material. V-7: Tu=35 / Tr=12 Su=980 / Sr=336	V-7, switched to 2 5/8" Dia. by 4 3/4" tapered vane, 1/K = 28
40		-	-						End of boring at 40' bgs (roller cone refusal). Probable fractured bedrock.	
45		-	-							
50		-	-							
55		-	-							
60		-	-							

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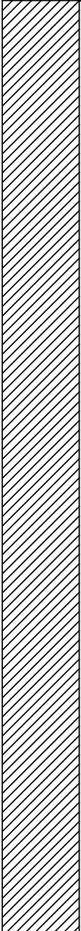
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Boring Log

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 PAGE 1 OF 2

CLIENT Aeries Clean Technologies **PROJECT NAME** Lot 4, Cyro Road, Sanford
PROJECT # 24001944 **PROJECT LOCATION** Cyro Road, Sanford, Maine
DATE STARTED 3/7/25 **LOGGED BY** M. Hixon **DEPTH TO WATER** NA **WELL DIAMETER** NA
CONTRACTOR Seaboard Drilling, LLC/Parker **WELL MATERIALS** NA
DRILLING METHOD Drive and wash **ANNULUS MATERIALS** NA, NA
DRILLING EQUIPMENT Diedrich D-50, borehole diam. 4 **MP ELEVATION** _____ **GROUND ELEVATION** 229

NOTES _____

Depth (ft)	Penetration/ Recovery (in)	Blow Counts	SPT (N-Value)	Adjusted N60 Value	Sample ID * = Lab Submittal for Gradation	Field Screening (ppm)	Depth (ft)	Graphic Log	LITHOLOGY	NOTES
0									Advanced to 5' bgs.	
5	24/0	10 10 15 20	25		S-1		5-7		No recovery. Advanced to 10' bgs.	
10	24/9	3 2 4 3	6		S-2		10-12		(CL) 0-9" Medium stiff, olive-brown/gray CLAY & SILT, some Silt and fine Sand. Advanced to 15' bgs.	
15	24/23	WOH/24"	-		S-3		15-17		(CL) 0-24" Very soft, gray CLAY & SILT, silt and fine sand lenses. Pp (w/adaptor)=0.125 tsf Advanced to 20' bgs.	Pp = pocket penetrometer (tsf)
20	24/24	WOH/24"	-		S-4		20-22		(CL) 0-24" Very soft, gray CLAY & SILT, silt and fine sand lenses. Pp = 0.25 tsf. Pp (w/ adaptor)= 0.094 tsf.	
	-/-	-	-		V-1		22-23		(CL) Same as previous.	Used 2 5/8" Dia. by 4 3/4" tapered vane, 1/K=28, S (psf) = T (lbf-ft) x (1/K) Tu = torque (undrained), Tr = torque (residual), Su = shear strength (undrained), Sr= shear strength (residual)
	-/-	-	-		V-2		23-24		V-1: Tu=57 / Tr=12 Su=1596 / Sr=336 V-2: Tu=69 / Tr=10 Su=1932 / Sr=280	
	-/-	-	-		V-3*		25-26		Advanced to 25' bgs.	
25	-/-	-	-		V-4		26-27		(CL) Same as previous. V-3: Tu=42 / Tr=10 Su=1176 / Sr=280 V-4: Tu=55 / Tr=12 Su=1540 / Sr=336 Advanced to 30' bgs.	

CREDERE GEOTECH 2023 - GINT STD US LAB.GDT - 4/7/25 09:30 - P:\24001944 LOT 4, CYRO ROAD, SANFORD\WORK\GEO\TECH\FIELD\LOT 4, CYRO ROAD, SANFORD.GPJ

Appendix C
Geotechnical Laboratory Reports

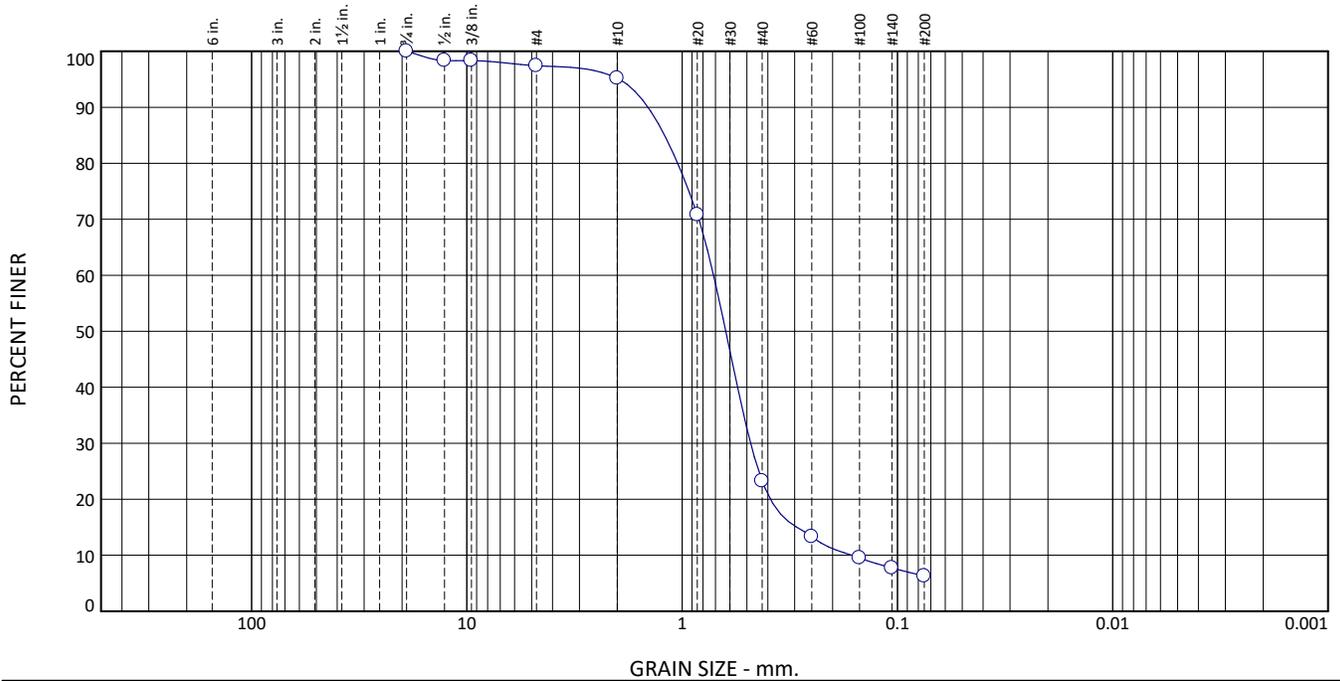


CYRO ROAD SITE
SANFORD, MAINE

GEOTECHNICAL TESTING RESULTS
for
Crederre Associates Associates
April 6, 2025
Crederre Project No 24001944

GRAIN SIZE ANALYSES

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.6	2.2	71.9	17.0	6.3	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
.75	100.0		
.5	98.3		
.375	98.3		
#4	97.4		
#10	95.2		
#20	70.8		
#40	23.3		
#60	13.3		
#100	9.5		
#140	7.7		
#200	6.3		

· (no specification provided)

Source of Sample: CA-101 Depth: 5-7
 Sample Number: S-2

Material Description
 Brown fine to medium SAND, trace fine gravel and silt.

Atterberg (ASTM D4318)
 PL= LL= PI=

Sieve Test (ASTM D6913)
 Test Date: 3/24/2025 Technician: sjr

Coefficients
 D₉₀= 1.4406 D₈₅= 1.2064
 D₆₀= 0.7142 D₅₀= 0.6271
 D₃₀= 0.4808 D₁₅= 0.2930
 D₁₀= 0.1630
 C_u= 4.38 C_c= 1.99

Test Notes
 Entire sample tested. As-Received moisture content = 5.2%

Hydrometer Test
 Test Date: _____ Technician: _____

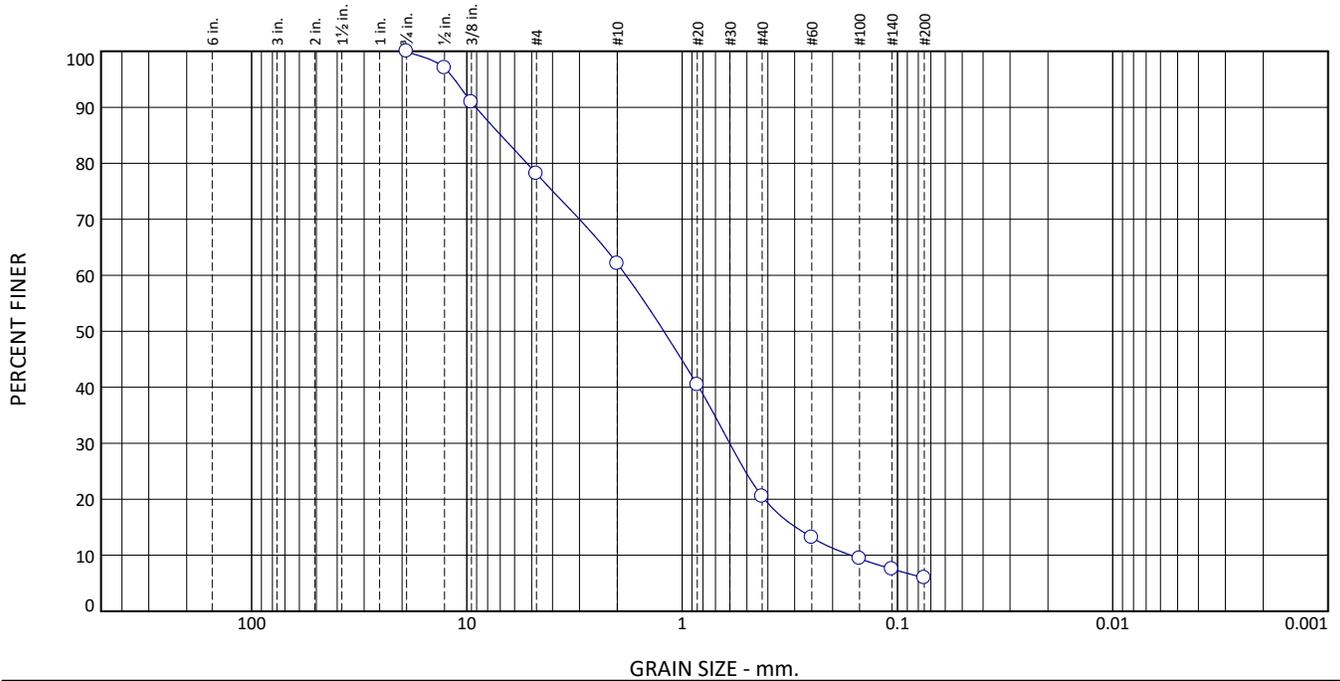
USCS (ASTM D2487)
 SP

Test Notes

Date Sampled: 3/3/2025
 Date Received: 3/19/2025
 Checked By: sjr
 Title: _____

Soil Metrics LLC Cape Elizabeth, Maine	Client: Credere Associates, LLC Project: Cyro Road, Sanford, ME. Project No: Credere PN 24001944
Figure _____	

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	21.8	16.1	41.6	14.5	6.0	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
.75	100.0		
.5	97.0		
.375	90.9		
#4	78.2		
#10	62.1		
#20	40.4		
#40	20.5		
#60	13.2		
#100	9.4		
#140	7.5		
#200	6.0		

· (no specification provided)

Source of Sample: CA-102 Depth: 5-7
 Sample Number: S-2

Material Description
 Brown fine to coarse SAND, some gravel, trace silt.

Atterberg (ASTM D4318)
 PL= LL= PI=

Sieve Test (ASTM D6913)
 Test Date: 3/24/2025 Technician: sjr

Coefficients
 D₉₀= 9.0877 D₈₅= 6.9447
 D₆₀= 1.8226 D₅₀= 1.2159
 D₃₀= 0.6016 D₁₅= 0.2966
 D₁₀= 0.1648
 C_u= 11.06 C_c= 1.20

Test Notes
 Entire sample tested. As-Received moisture content = 12.1%.

Hydrometer Test
 Test Date: _____ Technician: _____

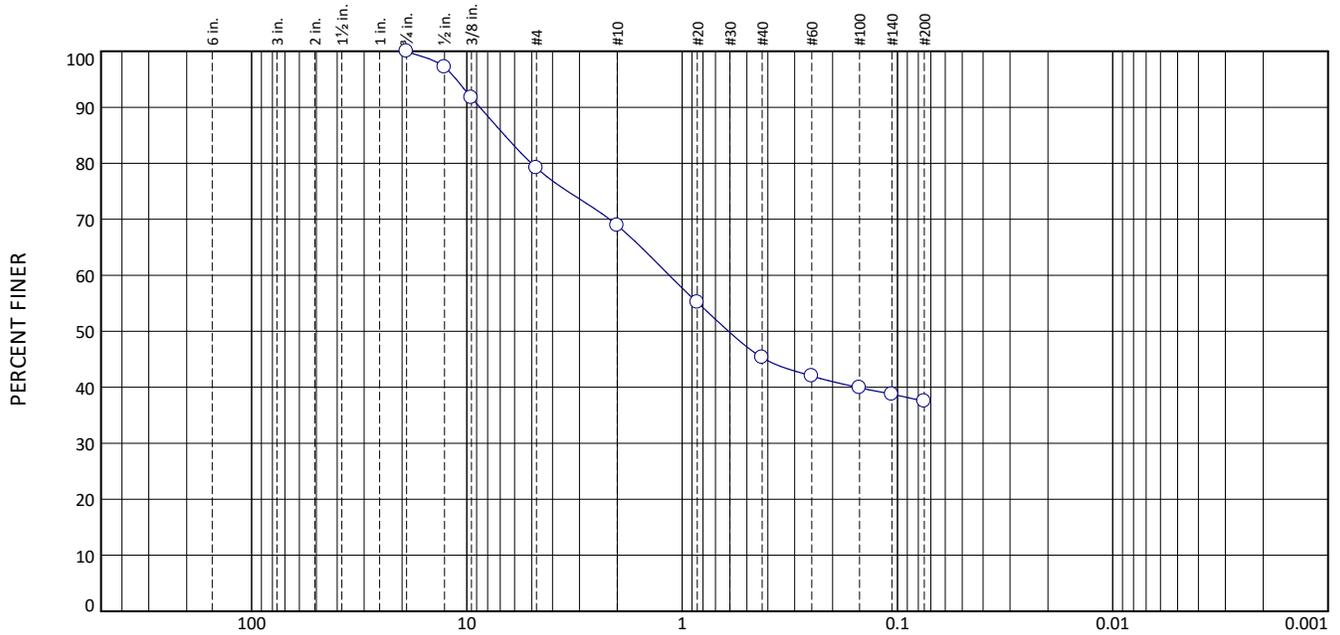
USCS (ASTM D2487)
 SW

Test Notes

Date Sampled: 3/3/2025
 Date Received: 3/19/2025
 Checked By: sjr
 Title: _____

Soil Metrics LLC Cape Elizabeth, Maine	Client: Credere Associates, LLC Project: Cyro Road, Sanford, ME. Project No: Credere PN 24001944
Figure	

Particle Size Distribution Report



GRAIN SIZE - mm.

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	20.8	10.3	23.6	7.8	37.5	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
.75	100.0		
.5	97.2		
.375	91.7		
#4	79.2		
#10	68.9		
#20	55.1		
#40	45.3		
#60	42.0		
#100	39.9		
#140	38.7		
#200	37.5		

· (no specification provided)

Source of Sample: CA-MW-1 Depth: 4-6
 Sample Number: S-3

Material Description
 Brown fine to medium silty SAND, some fine gravel.

Atterberg (ASTM D4318)
 PL= LL= PI=

Sieve Test (ASTM D6913)

Test Date: 3/24/2025 Technician: sjr

Coefficients
 D₉₀= 8.6939 D₈₅= 6.6764
 D₆₀= 1.1480 D₅₀= 0.6092
 D₃₀= D₁₅=
 D₁₀=
 C_u= C_c=

Test Notes
 Entire sample tested. As-received moisture content = 12.8%

Hydrometer Test

Test Date: _____ Technician: _____

USCS (ASTM D2487)
 SM

Test Notes

Date Sampled: 3/4/2025

Date Received: 3/19/2025

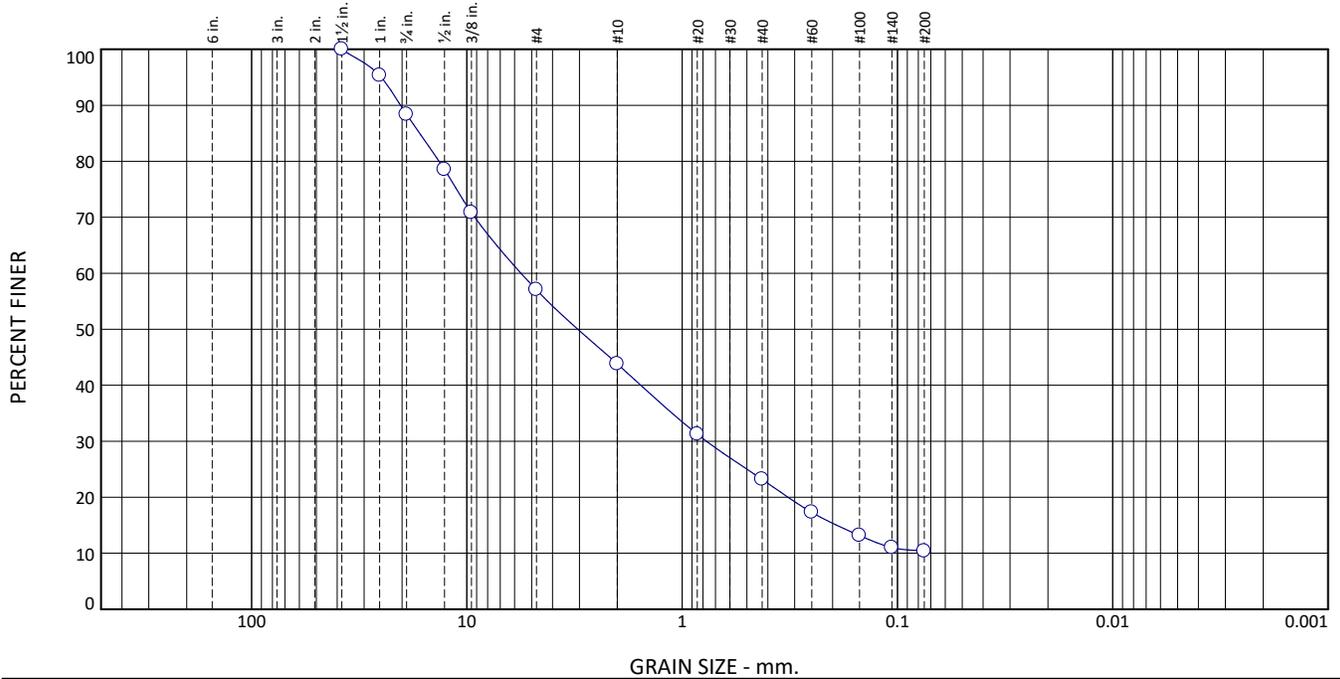
Checked By: sjr

Title: _____

<p>Soil Metrics LLC</p> <p>Cape Elizabeth, Maine</p>	<p>Client: Credere Associates, LLC Project: Cyro Road, Sanford, ME.</p> <p>Project No: Credere PN 24001944</p>
---	---

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	11.6	31.4	13.2	20.6	12.8	10.4	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
1.5	100.0		
1	95.3		
.75	88.4		
.5	78.5		
.375	70.8		
#4	57.0		
#10	43.8		
#20	31.3		
#40	23.2		
#60	17.3		
#100	13.2		
#140	11.0		
#200	10.4		

· (no specification provided)

Source of Sample: CA-MW-2 Depth: 5-7
 Sample Number: S-2

Material Description
 Brown gravelly fine to coarse SAND, little silt.

Atterberg (ASTM D4318)
 PL= LL= PI=

Sieve Test (ASTM D6913)
 Test Date: 3/24/2025 Technician: sjr

Coefficients
 D₉₀= 20.3246 D₈₅= 16.5554
 D₆₀= 5.6034 D₅₀= 3.0520
 D₃₀= 0.7706 D₁₅= 0.1916
 D₁₀=
 C_u= C_c=

Test Notes
 Entire sample tested. As=received moisture content = 5.5%

Hydrometer Test
 Test Date: _____ Technician: _____

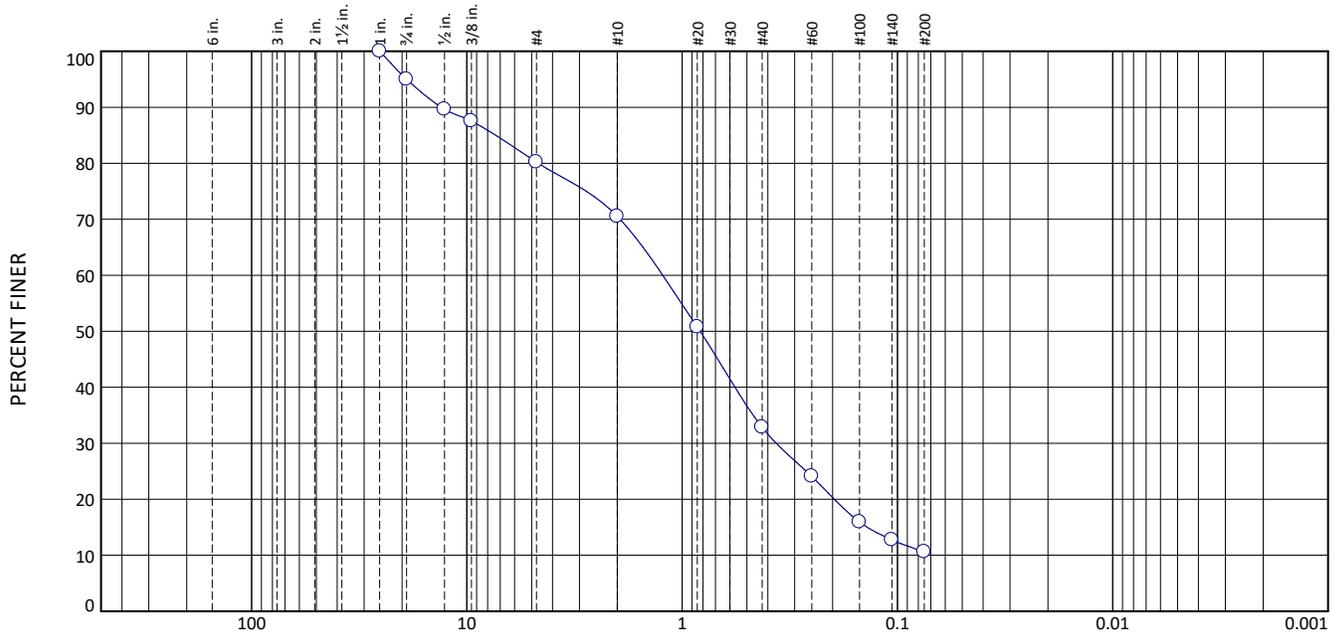
USCS (ASTM D2487)
 SM

Test Notes

Date Sampled: 3/4/2025
 Date Received: 3/19/2025
 Checked By: sjr
 Title: _____

<p>Soil Metrics LLC</p> <p>Cape Elizabeth, Maine</p>	<p>Client: Credere Associates, LLC Project: Cyro Road, Sanford, ME.</p> <p>Project No: Credere PN 24001944</p>
<p>Figure</p>	

Particle Size Distribution Report



GRAIN SIZE - mm.

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	5.0	14.8	9.7	37.6	22.3	10.6	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
1	100.0		
.75	95.0		
.5	89.6		
.375	87.6		
#4	80.2		
#10	70.5		
#20	50.7		
#40	32.9		
#60	24.1		
#100	15.9		
#140	12.7		
#200	10.6		

· (no specification provided)

Source of Sample: CA-MW-3 Depth: 5-7
 Sample Number: S-2

Material Description
 Brown fine to coarse SAND, little fine gravel and silt.

Atterberg (ASTM D4318)
 PL= LL= PI=

Sieve Test (ASTM D6913)

Test Date: 3/24/2025 Technician: sjr

Coefficients
 D₉₀= 13.1327 D₈₅= 7.3433
 D₆₀= 1.2307 D₅₀= 0.8248
 D₃₀= 0.3657 D₁₅= 0.1383
 D₁₀=
 C_u= C_c=

Test Notes
 Entire sample tested. As-received moisture content = 10.2%

Hydrometer Test

USCS (ASTM D2487)

Test Date: _____ Technician: _____

Test Notes

Date Sampled: 3/5/2025

Date Received: 3/19/2025

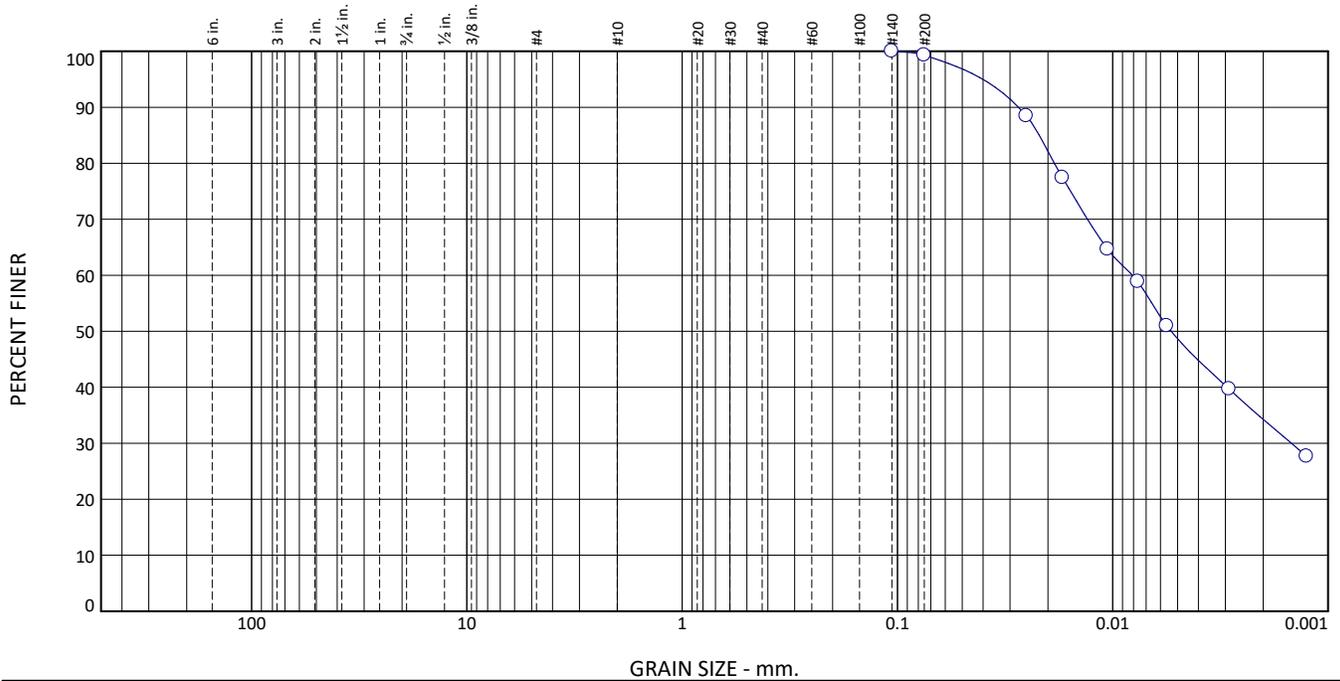
Checked By: sjr

Title: _____

<p>Soil Metrics LLC</p> <p>Cape Elizabeth, Maine</p>	<p>Client: Credere Associates, LLC Project: Cyro Road, Sanford, ME.</p> <p>Project No: Credere PN 24001944</p>
<p>Figure</p>	

HYDROMETERS

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.0	0.7	65.0	34.3

Test Results (ASTM D6913 and D422)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#140	100.0		
#200	99.3		
0.0252 mm.	88.5		
0.0171 mm.	77.4		
0.0105 mm.	64.6		
0.0076 mm.	58.8		
0.0056 mm.	51.0		
0.0029 mm.	39.7		
0.0013 mm.	27.7		

(no specification provided)

Material Description
Gray Silty CLAY

Atterberg (ASTM D4318)
PL= 20.0 LL= 30.0 PI= 10.0

Sieve Test (ASTM D6913)

Test Date: 3/28/2025 Technician: sjr

Test Notes

Coefficients
D₉₀= 0.0274 D₈₅= 0.0219
D₆₀= 0.0081 D₅₀= 0.0054
D₃₀= 0.0015 D₁₅=
D₁₀=
C_u= C_c=

Hydrometer Test (ASTM D422)

Test Date: 3/28/2025 Technician: sjr

Test Notes

USCS (ASTM D2487)

CL

Date Sampled: 3/3/2025

Date Received: 3/19/2025

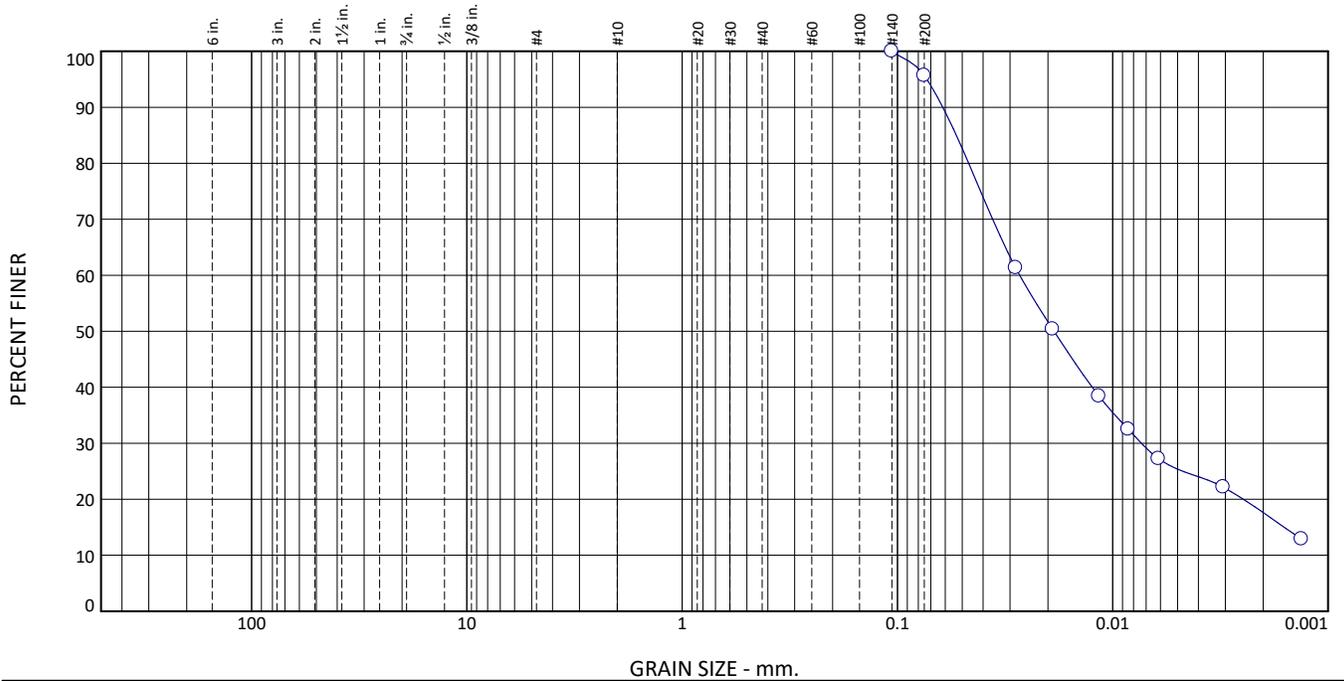
Checked By: sjr

Title: _____

Source of Sample: CA-102 Depth: 25-27
Sample Number: S-6

<p>Soil Metrics LLC</p> <p>Cape Elizabeth, Maine</p>	<p>Client: Credere Associates, LLC Project: Cyro Road, Sanford, ME.</p> <p>Project No: Credere PN 24001944</p>
<p>Figure</p>	

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.0	4.3	78.1	17.6

Test Results (ASTM D6913 and D422)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#140	100.0		
#200	95.7		
0.0282 mm.	61.3		
0.0190 mm.	50.4		
0.0116 mm.	38.4		
0.0085 mm.	32.5		
0.0061 mm.	27.2		
0.0031 mm.	22.2		
0.0013 mm.	12.9		

(no specification provided)

Material Description

Gray clayey SILT

Atterberg (ASTM D4318)

PL= 19.3 LL= 22.7 PI= 3.4

Coefficients

D₉₀= 0.0615 D₈₅= 0.0533

D₆₀= 0.0270 D₅₀= 0.0187

D₃₀= 0.0074 D₁₅= 0.0016

D₁₀=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/28/2025 Technician: sjr

Test Notes

Hydrometer Test (ASTM D422)

Test Date: 3/28/2025 Technician: sjr

Test Notes

USCS (ASTM D2487)

ML

Date Sampled: 3/7/2025

Date Received: 3/19/2025

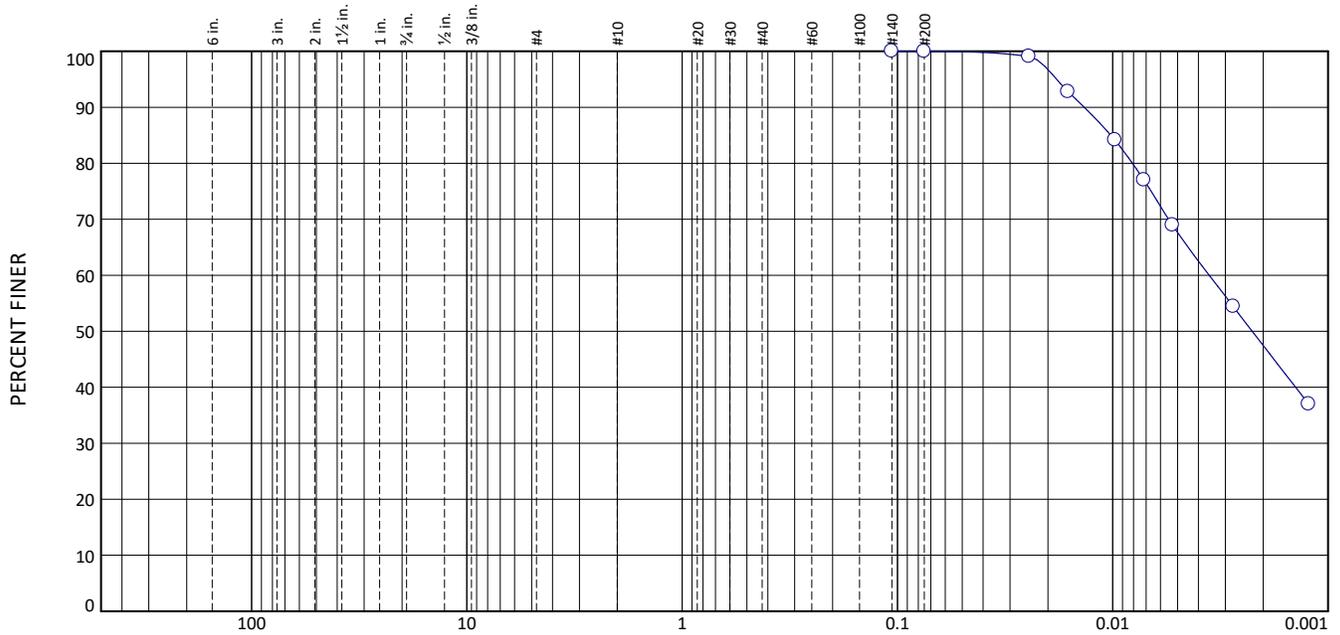
Checked By: sjr

Title: _____

Source of Sample: CA-103 Depth: 15-17
Sample Number: S-3

<p>Soil Metrics LLC</p> <p>Cape Elizabeth, Maine</p>	<p>Client: Credere Associates, LLC Project: Cyro Road, Sanford, ME.</p> <p>Project No: Credere PN 24001944</p>
<p>Figure</p>	

Particle Size Distribution Report



GRAIN SIZE - mm.

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.0	0.0	52.5	47.5

Test Results (ASTM D6913 and D422)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#140	100.0		
#200	100.0		
0.0245 mm.	99.1		
0.0161 mm.	92.8		
0.0098 mm.	84.1		
0.0072 mm.	77.0		
0.0053 mm.	68.9		
0.0028 mm.	54.4		
0.0012 mm.	37.0		

· (no specification provided)

Material Description

Gray silty CLAY

Atterberg (ASTM D4318)

PL= 21.8 LL= 36.7 PI= 14.9

Coefficients

D₉₀= 0.0136 D₈₅= 0.0102

D₆₀= 0.0036 D₅₀= 0.0022

D₃₀= D₁₅=

D₁₀=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/30/2025 Technician: sjr

Test Notes

Hydrometer Test (ASTM D422)

Test Date: 3/30/2025 Technician: sjr

Test Notes

USCS (ASTM D2487)

CL

Date Sampled: 3/7/2025

Date Received: 3/19/2025

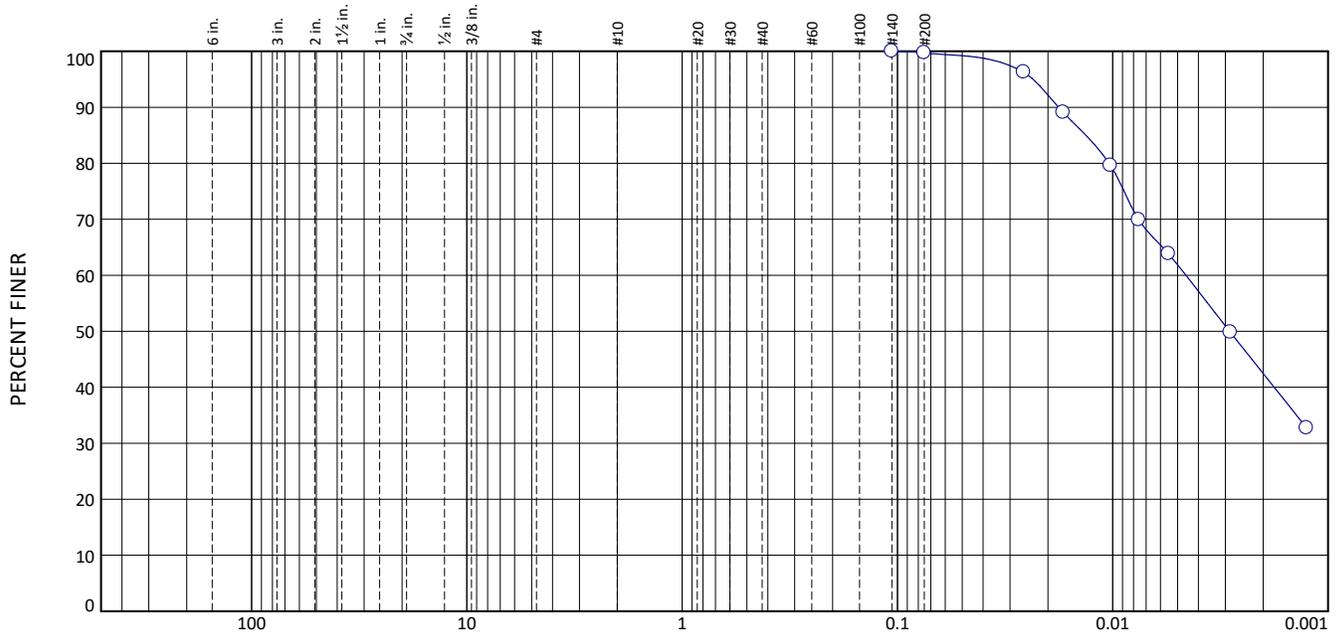
Checked By: sjr

Title: _____

Source of Sample: CA-103 Depth: 35-37
Sample Number: S-V7/V8

<p>Soil Metrics LLC</p> <p>Cape Elizabeth, Maine</p>	<p>Client: Credere Associates, LLC Project: Cyro Road, Sanford, ME.</p> <p>Project No: Credere PN 24001944</p>
<p>Figure</p>	

Particle Size Distribution Report



GRAIN SIZE - mm.

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.0	0.3	57.2	42.5

Test Results (ASTM D6913 and D422)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#140	100.0		
#200	99.7		
0.0259 mm.	96.3		
0.0170 mm.	89.1		
0.0102 mm.	79.6		
0.0076 mm.	69.9		
0.0055 mm.	63.8		
0.0028 mm.	49.8		
0.0013 mm.	32.7		

· (no specification provided)

Material Description

Gray silty CLAY

Atterberg (ASTM D4318)

PL= 23.2 LL= 38.6 PI= 15.4

Coefficients

D₉₀= 0.0178 D₈₅= 0.0133

D₆₀= 0.0046 D₅₀= 0.0029

D₃₀= D₁₅=

D₁₀=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/28/2025 Technician: sjr

Test Notes

Hydrometer Test (ASTM D422)

Test Date: 3/28/2025 Technician: sjr

Test Notes

USCS (ASTM D2487)

CL

Date Sampled: 3/4/2025

Date Received: 3/19/2025

Checked By: sjr

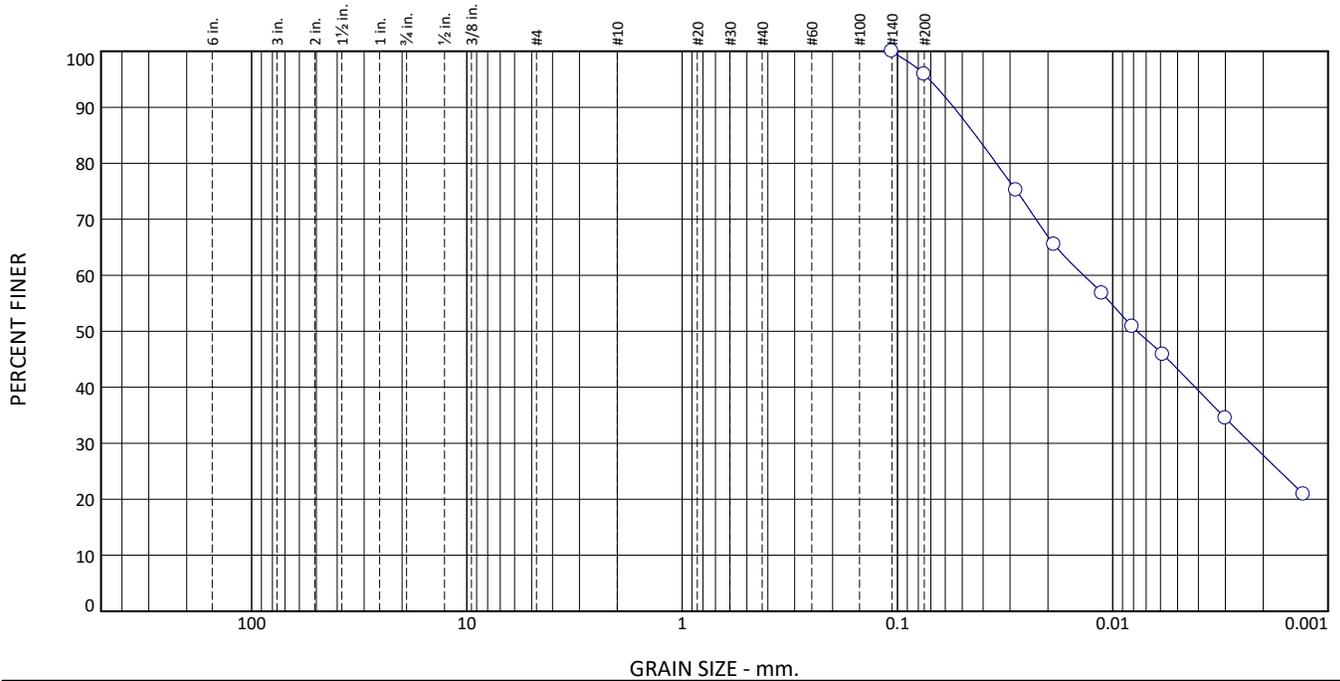
Title: _____

Source of Sample: CA-104 Depth: 25-27
Sample Number: S-6

<p>Soil Metrics LLC</p> <p>Cape Elizabeth, Maine</p>	<p>Client: Credere Associates, LLC Project: Cyro Road, Sanford, ME.</p> <p>Project No: Credere PN 24001944</p>
---	--

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.0	4.1	68.0	27.9

Test Results (ASTM D6913 and D422)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#140	100.0		
#200	95.9		
0.0281 mm.	75.2		
0.0187 mm.	65.5		
0.0112 mm.	56.8		
0.0081 mm.	50.8		
0.0058 mm.	45.8		
0.0030 mm.	34.5		
0.0013 mm.	20.9		

(no specification provided)

Material Description
Gray silty CLAY/Gray clayer SILT

Atterberg (ASTM D4318)
PL= 21.6 LL= 28.5 PI= 6.9

Sieve Test (ASTM D6913)
Test Date: 3/28/2025 Technician: sjr

Coefficients
D₉₀= 0.0547 D₈₅= 0.0433
D₆₀= 0.0136 D₅₀= 0.0077
D₃₀= 0.0023 D₁₅=
D₁₀=
C_u= C_c=

Test Notes

Hydrometer Test (ASTM D422)
Test Date: 3/28/2025 Technician: sjr

USCS (ASTM D2487)
CL-ML

Test Notes

Date Sampled: 3/4/2025

Date Received: 3/19/2025

Checked By: sjr

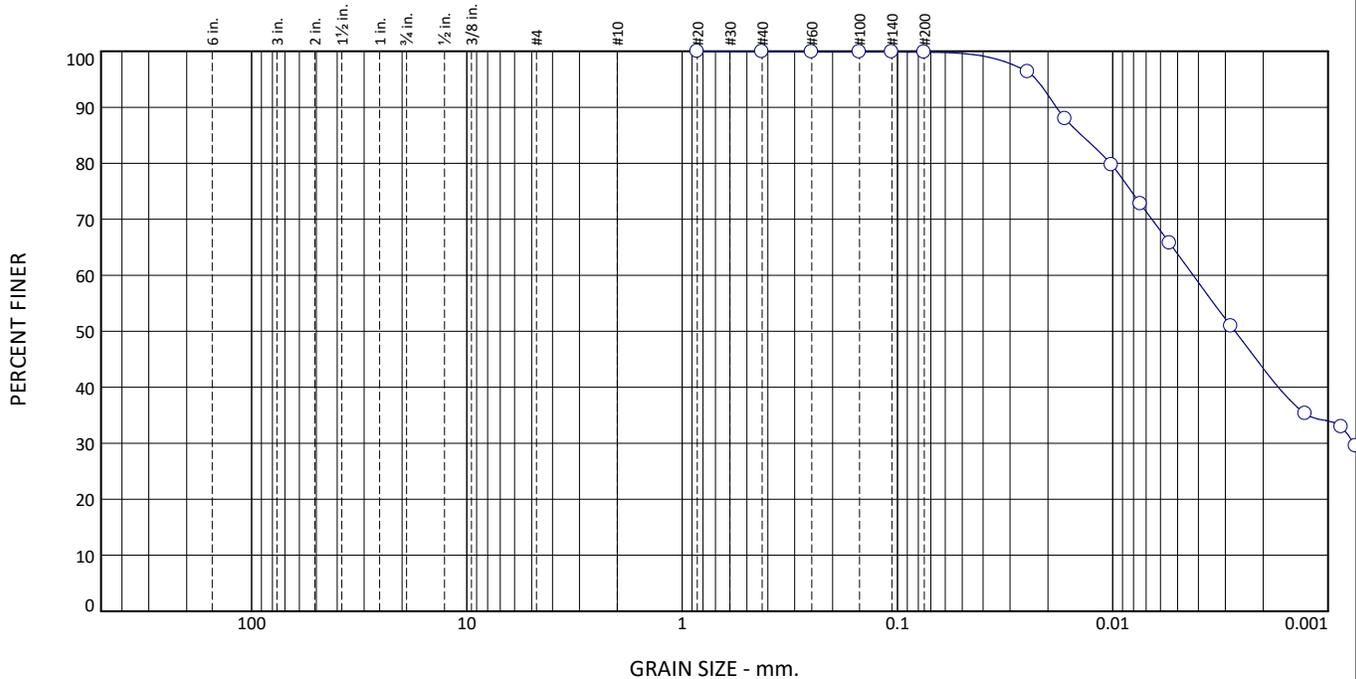
Title: _____

Source of Sample: CA-104 Depth: 35-37
Sample Number: S-8

<p>Soil Metrics LLC</p> <p>Cape Elizabeth, Maine</p>	<p>Client: Credere Associates, LLC Project: Cyro Road, Sanford, ME.</p> <p>Project No: Credere PN 24001944</p>
---	--

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
					0.1	56.4	43.4

Test Results (ASTM D6913 and D422)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.9		
#60	99.9		
#100	99.9		
#140	99.9		
#200	99.8		
0.0248 mm.	96.3		
0.0166 mm.	87.9		
0.0101 mm.	79.7		
0.0074 mm.	72.7		
0.0054 mm.	65.7		
0.0028 mm.	50.9		
0.0013 mm.	35.3		
0.0009 mm.	32.9		
0.0007 mm.	29.5		

(no specification provided)

Material Description
Brown Silty CLAY

Atterberg (ASTM D4318)
PL= 24.2 LL= 39.5 PI= 15.3

Sieve Test (ASTM D6913)

Test Date: 4/1/2025 Technician: sjr

Test Notes

Coefficients
D₉₀= 0.0183 D₈₅= 0.0140
D₆₀= 0.0042 D₅₀= 0.0027
D₃₀= 0.0008 D₁₅=
D₁₀=
C_u= C_c=

Hydrometer Test (ASTM D422)

Test Date: 4/1/2025 Technician: sjr

Test Notes

USCS (ASTM D2487)
CL

Date Sampled: 3/6/2025

Date Received: 3/10/2025

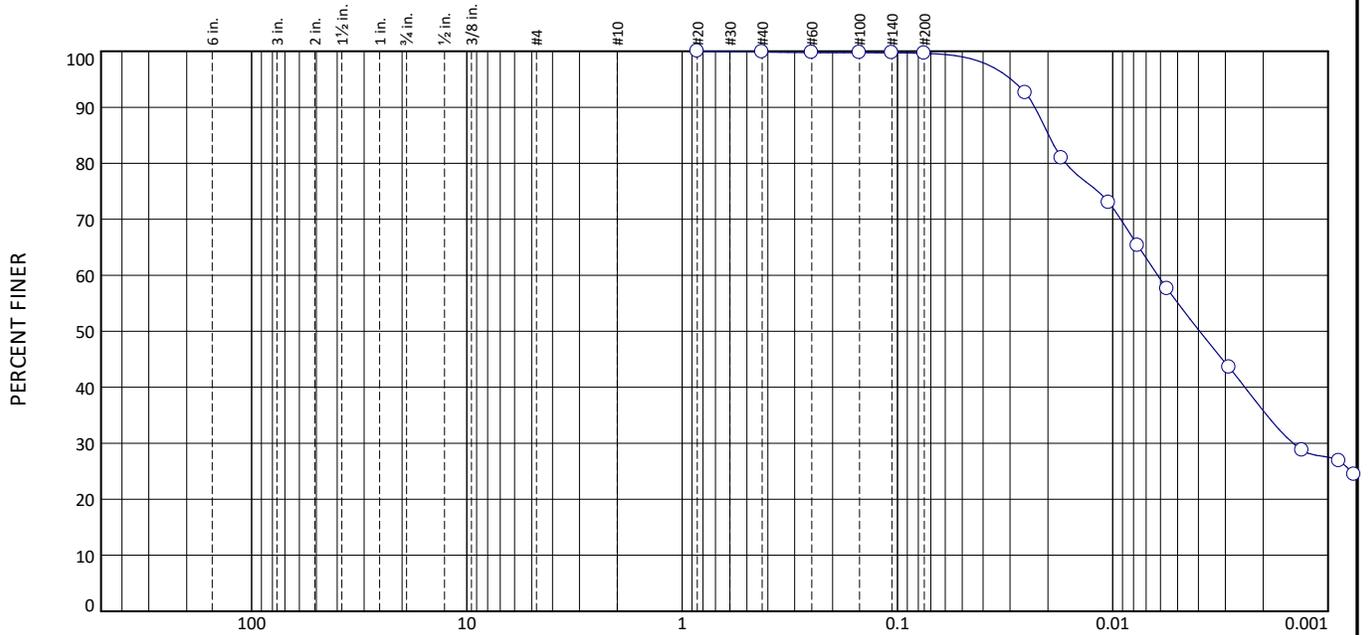
Checked By: sjr

Title: _____

Source of Sample: CA-105 Depth: 25-27
Sample Number: U-1

<p>Soil Metrics LLC</p> <p>Cape Elizabeth, Maine</p>	<p>Client: Credere Associates, LLC Project: Cyro Road, Sanford, ME.</p> <p>Project No: Credere PN 24001944</p>
<p>Figure _____</p>	

Particle Size Distribution Report



GRAIN SIZE - mm.

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	0.3	63.8	35.8

Test Results (ASTM D6913 and D422)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#20	100.0		
#40	99.9		
#60	99.8		
#100	99.7		
#140	99.7		
#200	99.6		
0.0255 mm.	92.6		
0.0173 mm.	80.9		
0.0104 mm.	73.0		
0.0077 mm.	65.3		
0.0056 mm.	57.6		
0.0029 mm.	43.5		
0.0013 mm.	28.8		
0.0009 mm.	26.9		
0.0008 mm.	24.4		

· (no specification provided)

Material Description

Gray Silty Clay

Atterberg (ASTM D4318)

PL= 23.2 LL= 36.4 PI= 13.2

Coefficients

D₉₀= 0.0230 D₈₅= 0.0198

D₆₀= 0.0062 D₅₀= 0.0039

D₃₀= 0.0015 D₁₅=

D₁₀=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 4/1/2025 Technician: sjr

Test Notes

Hydrometer Test (ASTM D422)

Test Date: 4/1/2025 Technician: sjr

Test Notes

USCS (ASTM D2487)

CL

Date Sampled: 3/6/2025

Date Received: 3/10/2025

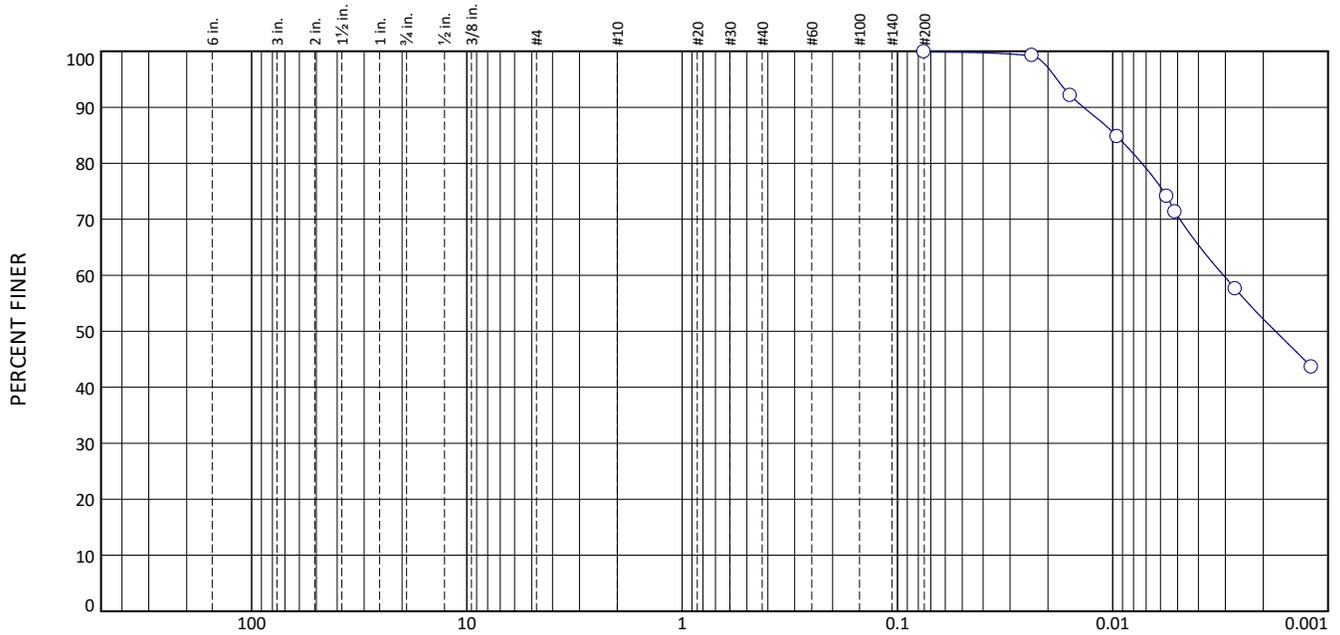
Checked By: sjr

Title: _____

Source of Sample: CA-105 Depth: 30-32
Sample Number: U-2

<p>Soil Metrics LLC</p> <p>Cape Elizabeth, Maine</p>	<p>Client: Credere Associates, LLC Project: Cyro Road, Sanford, ME.</p> <p>Project No: Credere PN 24001944</p>
<p>Figure _____</p>	

Particle Size Distribution Report



GRAIN SIZE - mm.

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						47.7	52.2

Test Results (ASTM D6913 and D422)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#200	99.9		
0.0236 mm.	99.2		
0.0157 mm.	92.1		
0.0095 mm.	84.7		
0.0056 mm.	74.0		
0.0051 mm.	71.3		
0.0027 mm.	57.5		
0.0012 mm.	43.5		

· (no specification provided)

Material Description

Gray silty CLAY

Atterberg (ASTM D4318)

PL= 24.7 LL= 43.0 PI= 18.3

Coefficients

D₉₀= 0.0137 D₈₅= 0.0097

D₆₀= 0.0031 D₅₀= 0.0018

D₃₀= D₁₅=

D₁₀=

C_u= C_c=

Sieve Test (ASTM D6913)

Test Date: 3/25/2025 Technician: sjr

Test Notes

Hydrometer Test (ASTM D422)

Test Date: 3/25/2025 Technician: sjr

Test Notes

USCS (ASTM D2487)

CL

Date Sampled: 3/6/2025

Date Received: 3/19/2025

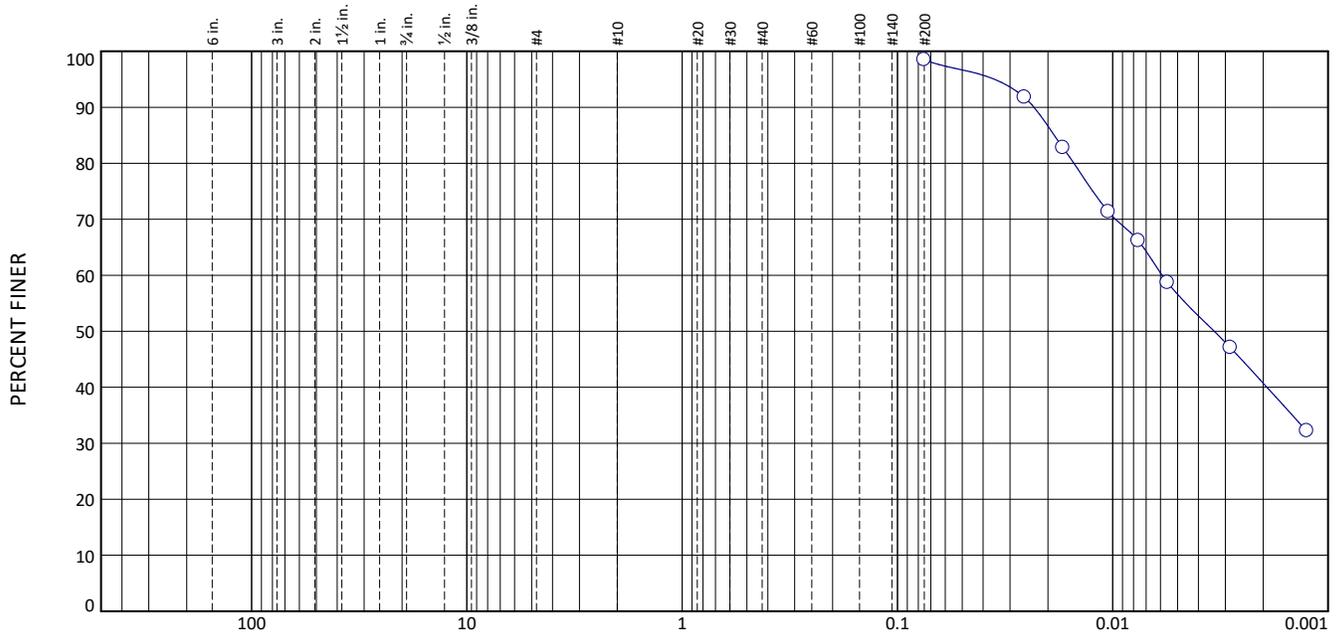
Checked By: sjr

Title: _____

Source of Sample: CA-105 Depth: 27-29
Sample Number: S-V3/V4

<p>Soil Metrics LLC</p> <p>Cape Elizabeth, Maine</p>	<p>Client: Credere Associates, LLC Project: Cyro Road, Sanford, ME.</p> <p>Project No: Credere PN 24001944</p>
<p>Figure</p>	

Particle Size Distribution Report



GRAIN SIZE - mm.

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						57.8	40.7

Test Results (ASTM D6913 and D422)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#200	98.5		
0.0256 mm.	91.8		
0.0170 mm.	82.8		
0.0105 mm.	71.3		
0.0076 mm.	66.2		
0.0056 mm.	58.7		
0.0028 mm.	47.1		
0.0013 mm.	32.2		

· (no specification provided)

Material Description

Gray silty CLAY

Sieve Test (ASTM D6913)

Test Date: 3/25/2025 Technician: sjr

Test Notes

Hydrometer Test (ASTM D422)

Test Date: 3/25/2025 Technician: sjr

Test Notes

Atterberg (ASTM D4318)

PL= 23.9 LL= 38.9 PI= 15.0

Coefficients

D₉₀= 0.0232 D₈₅= 0.0187

D₆₀= 0.0059 D₅₀= 0.0034

D₃₀= D₁₅=

D₁₀=

C_u= C_c=

USCS (ASTM D2487)

CL

Date Sampled: 3/6/2025

Date Received: 3/19/2025

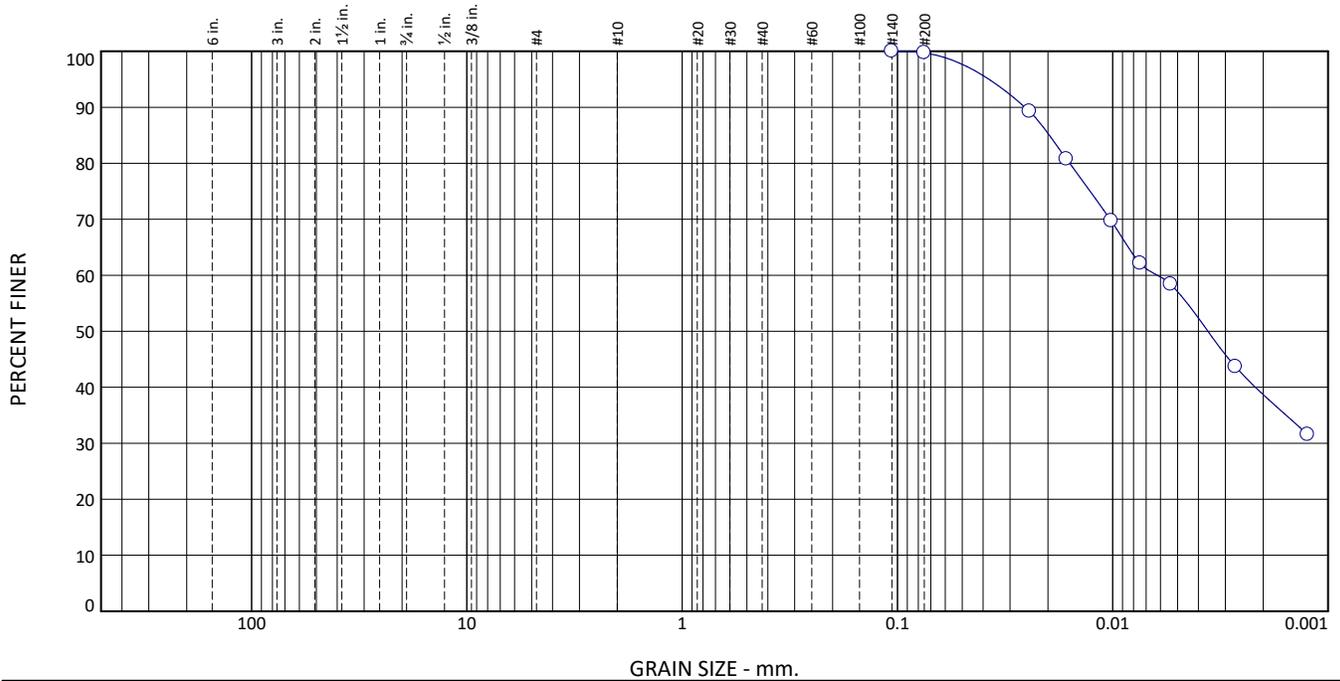
Checked By: sjr

Title: _____

Source of Sample: CA-105 Depth: 37-38
Sample Number: S-V7

<p>Soil Metrics LLC</p> <p>Cape Elizabeth, Maine</p>	<p>Client: Credere Associates, LLC Project: Cyro Road, Sanford, ME.</p> <p>Project No: Credere PN 24001944</p>
<p>Figure _____</p>	

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.0	0.3	61.0	38.7

Test Results (ASTM D6913 and D422)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#140	100.0		
#200	99.7		
0.0243 mm.	89.3		
0.0164 mm.	80.7		
0.0102 mm.	69.7		
0.0075 mm.	62.1		
0.0054 mm.	58.4		
0.0027 mm.	43.6		
0.0012 mm.	31.5		

· (no specification provided)

Material Description
Gray silty CLAY

Atterberg (ASTM D4318)
PL= 21.7 LL= 35.9 PI= 14.2

Sieve Test (ASTM D6913)

Test Date: 3/30/2025 Technician: sjr

Test Notes

Coefficients
D₉₀= 0.0256 D₈₅= 0.0197
D₆₀= 0.0062 D₅₀= 0.0036
D₃₀= D₁₅=
D₁₀=
C_u= C_c=

Hydrometer Test (ASTM D422)

Test Date: 3/30/2025 Technician: sjr

Test Notes

USCS (ASTM D2487)

CL

Date Sampled: 3/7/2025

Date Received: 3/19/2025

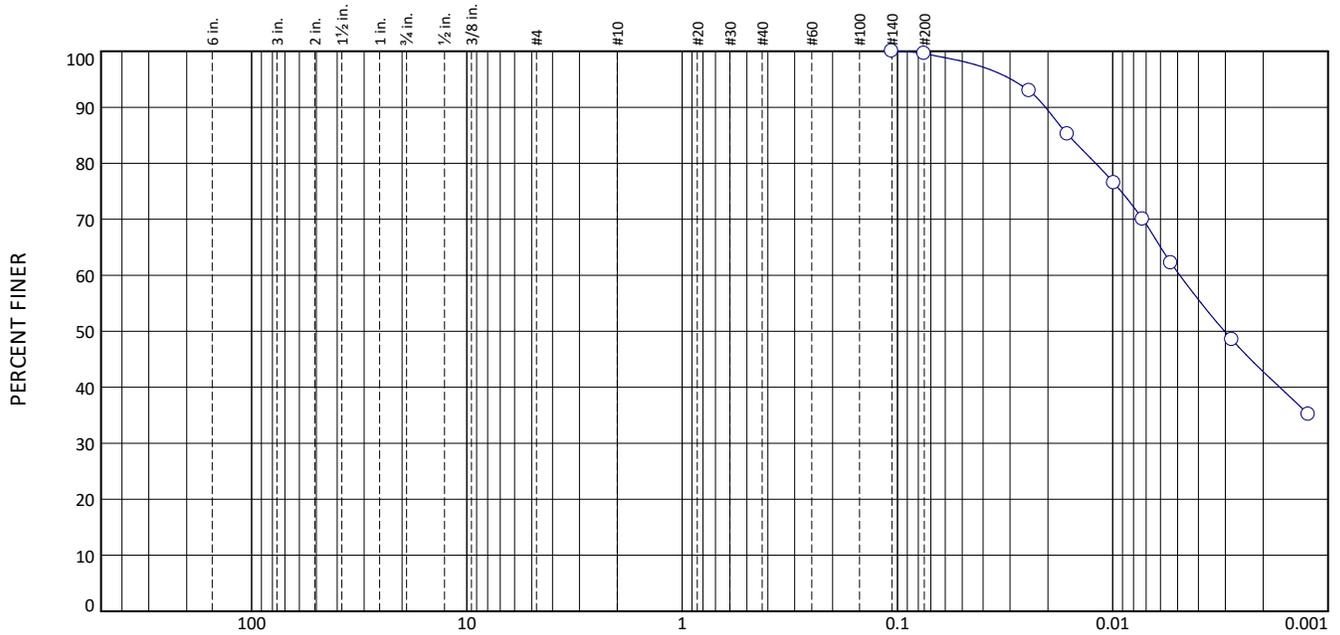
Checked By: sjr

Title: _____

Source of Sample: CA-106 Depth: 25-27
Sample Number: S-V3/V4

<p>Soil Metrics LLC</p> <p>Cape Elizabeth, Maine</p>	<p>Client: Credere Associates, LLC Project: Cyro Road, Sanford, ME.</p> <p>Project No: Credere PN 24001944</p>
<p>Figure</p>	

Particle Size Distribution Report



GRAIN SIZE - mm.

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.0	0.4	99.6	

Test Results (ASTM D6913 and D422)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
#140	100.0		
#200	99.6		
0.0244 mm.	92.9		
0.0162 mm.	85.2		
0.0099 mm.	76.5		
0.0072 mm.	70.0		
0.0054 mm.	62.2		
0.0028 mm.	48.5		
0.0012 mm.	35.1		

· (no specification provided)

Material Description

Gray silty CLAY

Atterberg (ASTM D4318)

PL= 23.0 LL= 37.6 PI= 14.6

Sieve Test (ASTM D6913)

Test Date: 3/30/2025 Technician: sjr

Test Notes

Coefficients

D₉₀= D₈₅=
 D₆₀= D₅₀=
 D₃₀= D₁₅=
 D₁₀=
 C_u= C_c=

Hydrometer Test

Test Date: 3/30/2025 Technician: sjr

Test Notes

USCS (ASTM D2487)

CL

Date Sampled: 3/7/2025

Date Received: 3/19/2025

Checked By: sjr

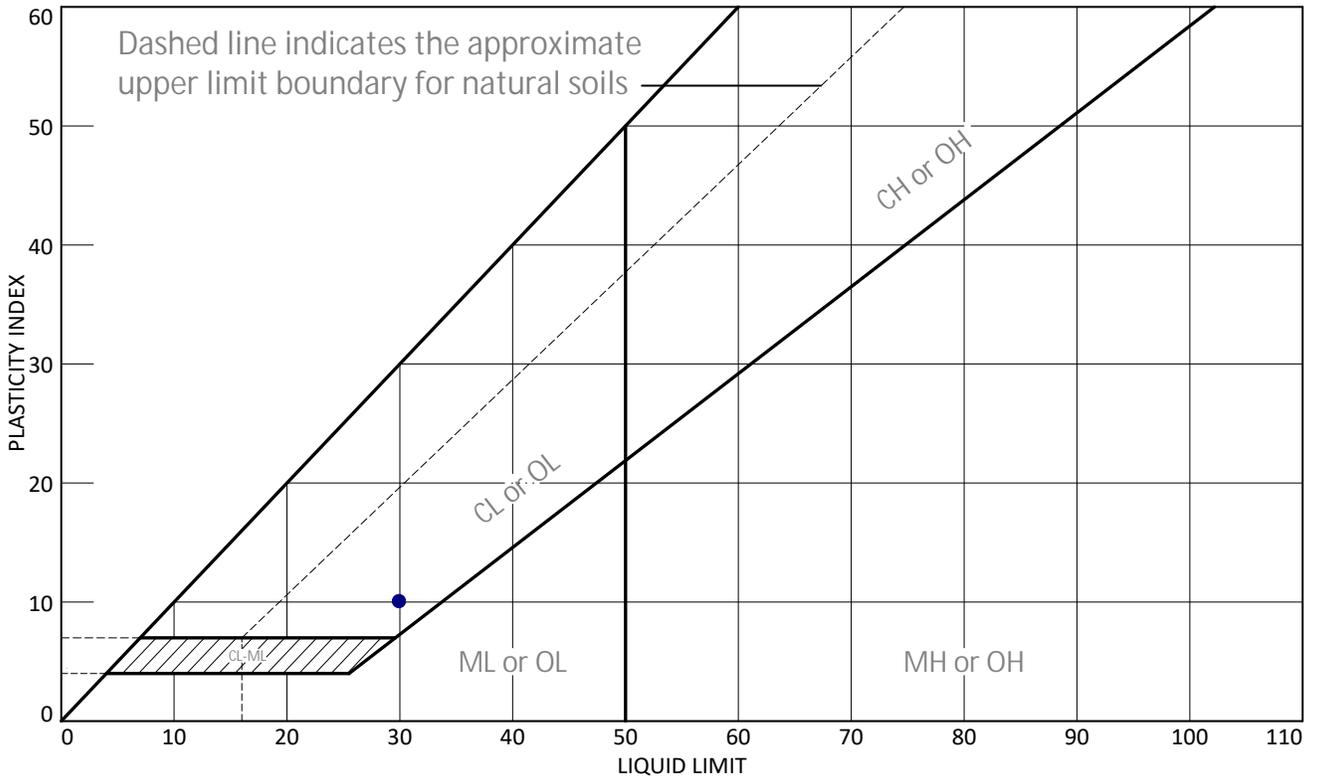
Title: _____

Source of Sample: CA-106 Depth: 35-37
 Sample Number: S-V7/V8

<p>Soil Metrics LLC</p> <p>Cape Elizabeth, Maine</p>	<p>Client: Credere Associates, LLC Project: Cyro Road, Sanford, ME.</p> <p>Project No: Credere PN 24001944</p>
<p>Figure</p>	

ATTERBERG LIMITS

LIQUID AND PLASTIC LIMITS TEST REPORT

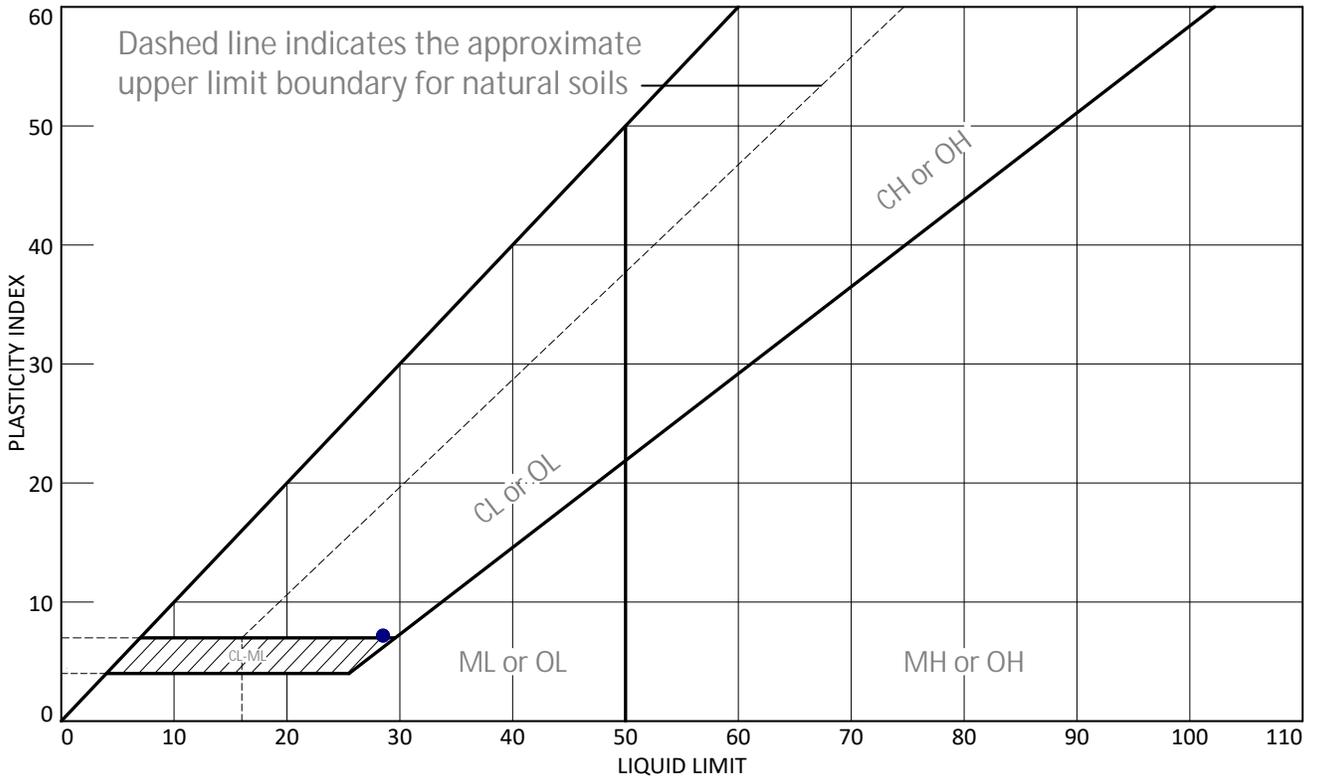


SOIL DATA									
	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	LIQUIDITY INDEX	USCS
●	CA-102	S-6	25-27	31.4	20.0	30.0	10.0	1.1	CL

<p style="text-align: center; font-weight: bold;">Soil Metrics LLC</p> <p style="text-align: center;">Cape Elizabeth, Maine</p>	<p>Client: Credere Associates, LLC Project: Cyro Road, Sanford, ME.</p> <p>Project No.: Credere PN 24001944 Figure</p>
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Tested By: sjr Checked By: sjr

LIQUID AND PLASTIC LIMITS TEST REPORT

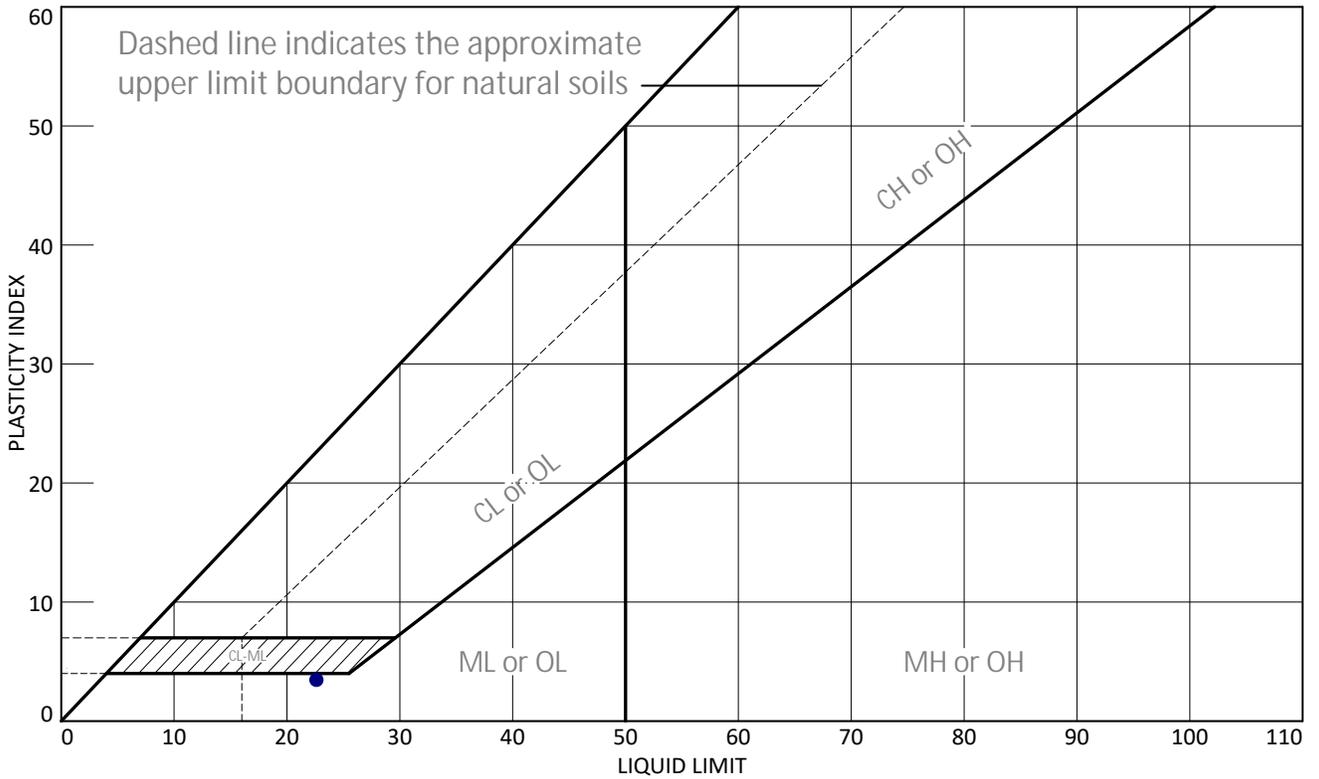


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	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	LIQUIDITY INDEX	USCS
●	CA-102	S-7	30-32	33.5	21.5	28.6	7.1	1.7	CL/ML

<p style="text-align: center; font-weight: bold;">Soil Metrics LLC</p> <p style="text-align: center;">Cape Elizabeth, Maine</p>	<p>Client: Credere Associates, LLC Project: Cyro Road, Sanford, ME.</p> <p>Project No.: Credere PN 24001944</p> <p style="text-align: right;">Figure</p>
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Tested By: sjr Checked By: sjr

LIQUID AND PLASTIC LIMITS TEST REPORT

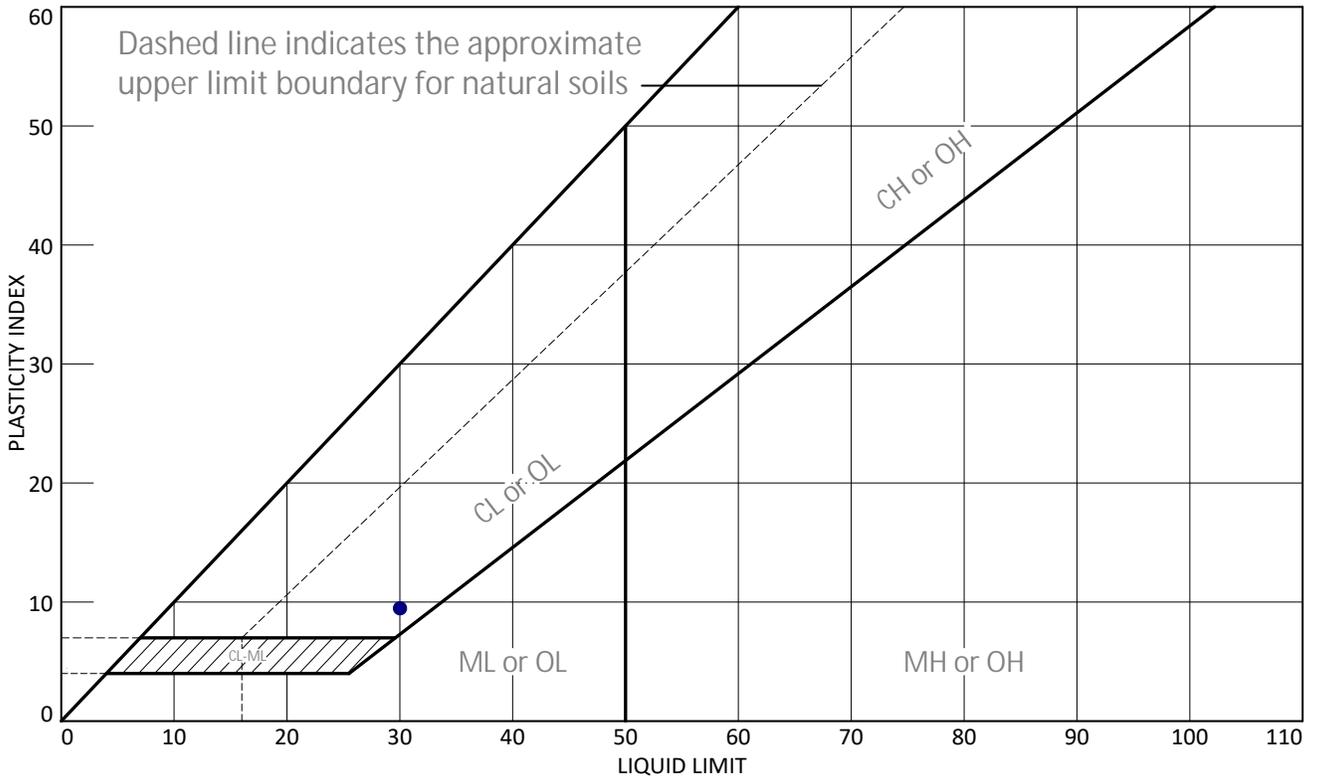


SOIL DATA									
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●	CA-103	S-3	15-17	22.4	19.3	22.7	3.4	0.9	ML

<p style="text-align: center; font-weight: bold;">Soil Metrics LLC</p> <p style="text-align: center;">Cape Elizabeth, Maine</p>	<p>Client: Credere Associates, LLC Project: Cyro Road, Sanford, ME.</p> <p>Project No.: Credere PN 24001944 Figure</p>
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Tested By: sjr Checked By: sjr

LIQUID AND PLASTIC LIMITS TEST REPORT

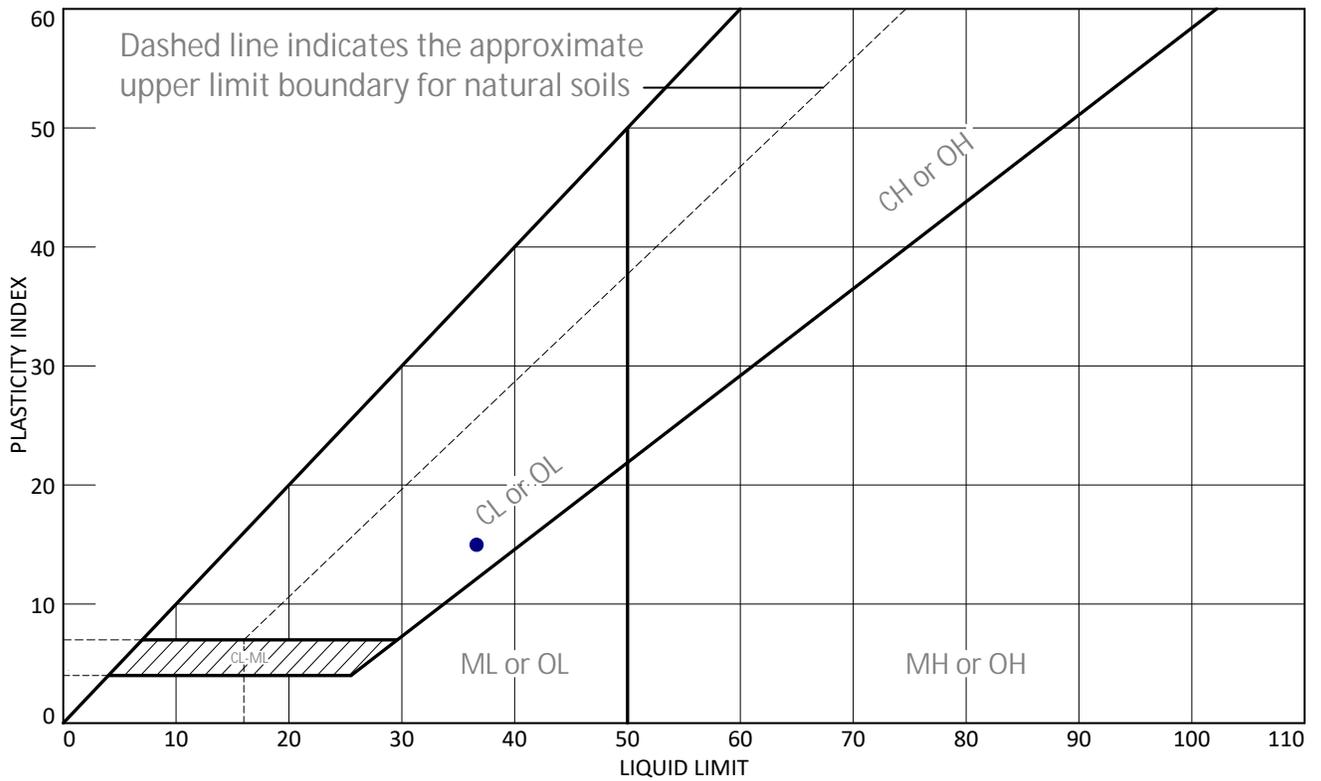


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●	CA-103	S-V3/V4	25-27	31.5	20.7	30.1	9.4	1.1	CL

<p style="text-align: center; font-weight: bold;">Soil Metrics LLC</p> <p style="text-align: center;">Cape Elizabeth, Maine</p>	<p>Client: Credere Associates, LLC Project: Cyro Road, Sanford, ME.</p> <p>Project No.: Credere PN 24001944 Figure</p>
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Tested By: sjr Checked By: sjr

LIQUID AND PLASTIC LIMITS TEST REPORT

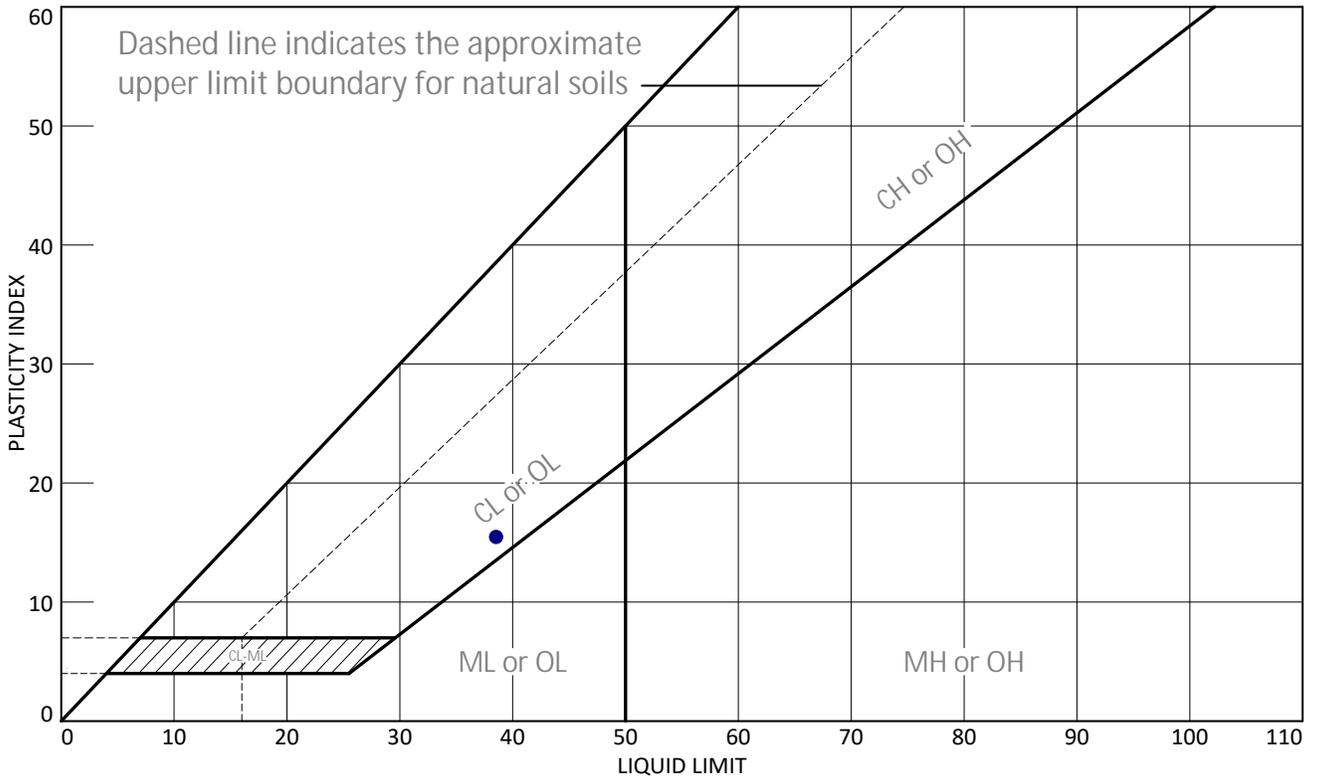


SOIL DATA									
	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	LIQUIDITY INDEX	USCS
●	CA-103	S-V7/V8	35-37	41.1	21.8	36.7	14.9	1.3	CL

<p style="text-align: center; font-size: 1.2em;">Soil Metrics LLC</p> <p style="text-align: center;">Cape Elizabeth, Maine</p>	<p>Client: Credere Associates, LLC Project: Cyro Road, Sanford, ME.</p> <p>Project No.: Credere PN 24001944 Figure</p>
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Tested By: sjr Checked By: sjr

LIQUID AND PLASTIC LIMITS TEST REPORT

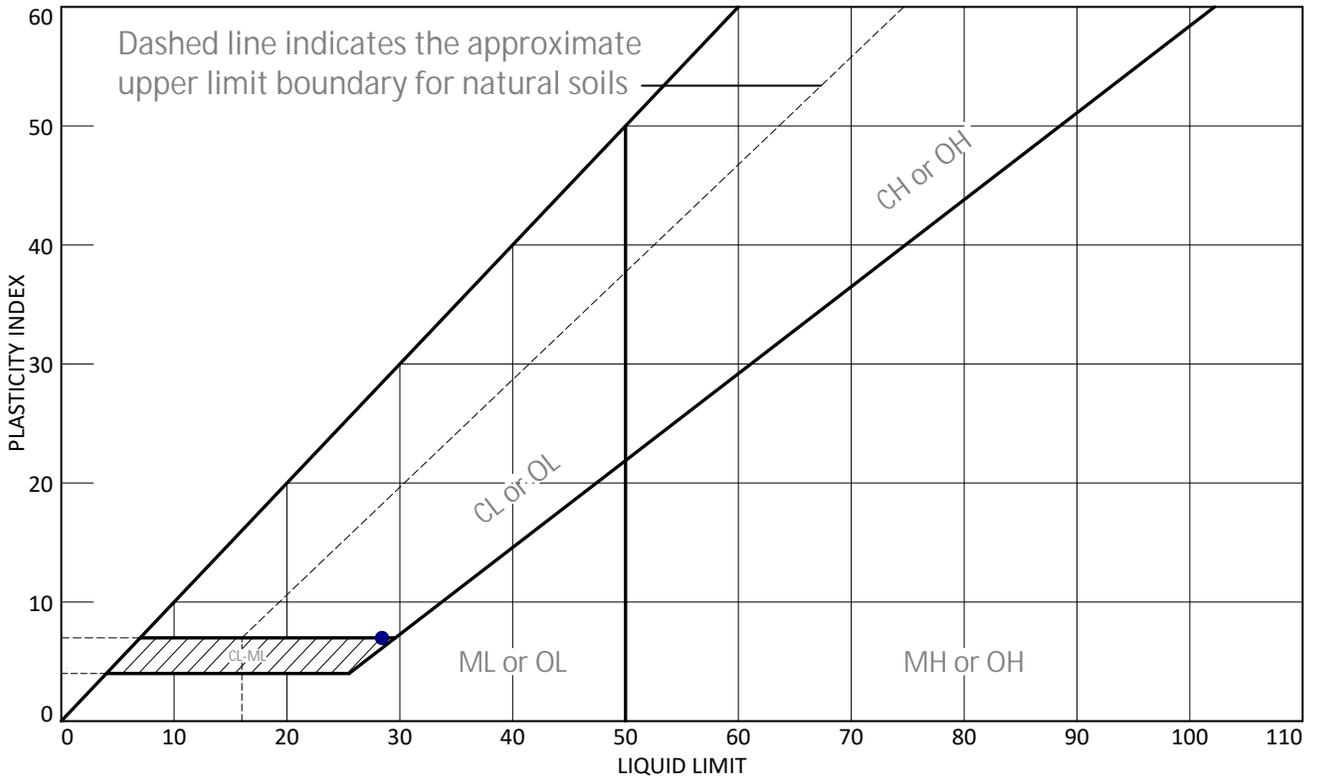


SOIL DATA									
	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	LIQUIDITY INDEX	USCS
●	CA-104	S-6	25-27	36.2	23.2	38.6	15.4	0.8	CL

<p style="text-align: center; font-size: 1.2em;">Soil Metrics LLC</p> <p style="text-align: center;">Cape Elizabeth, Maine</p>	<p>Client: Credere Associates, LLC Project: Cyro Road, Sanford, ME.</p> <p>Project No.: Credere PN 24001944 Figure</p>
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Tested By: sjr Checked By: sjr

LIQUID AND PLASTIC LIMITS TEST REPORT

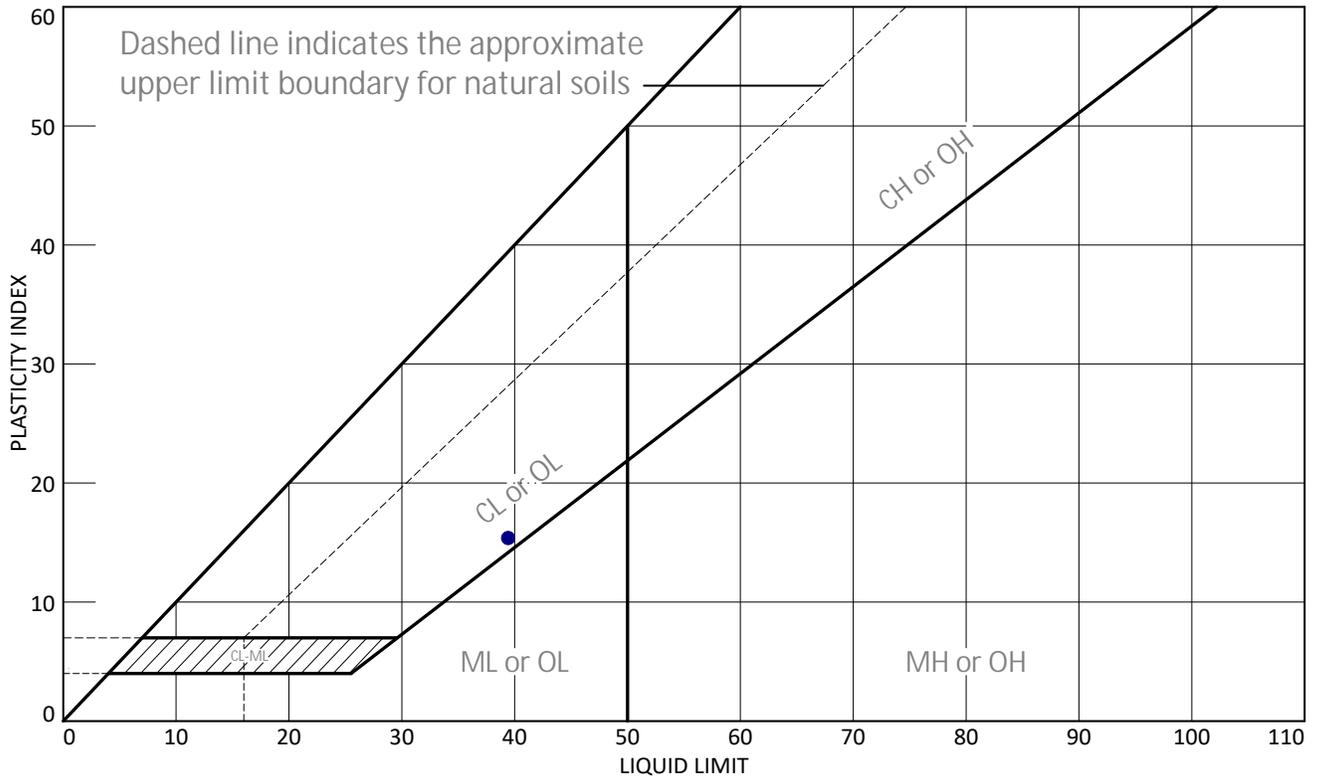


SOIL DATA									
	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	LIQUIDITY INDEX	USCS
●	CA-104	S-8	35-37	31.4	21.6	28.5	6.9	1.4	CL/ML

<p style="text-align: center; font-weight: bold;">Soil Metrics LLC</p> <p style="text-align: center;">Cape Elizabeth, Maine</p>	<p>Client: Credere Associates, LLC Project: Cyro Road, Sanford, ME.</p> <p>Project No.: Credere PN 24001944 Figure</p>
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Tested By: sjr Checked By: sjr

LIQUID AND PLASTIC LIMITS TEST REPORT

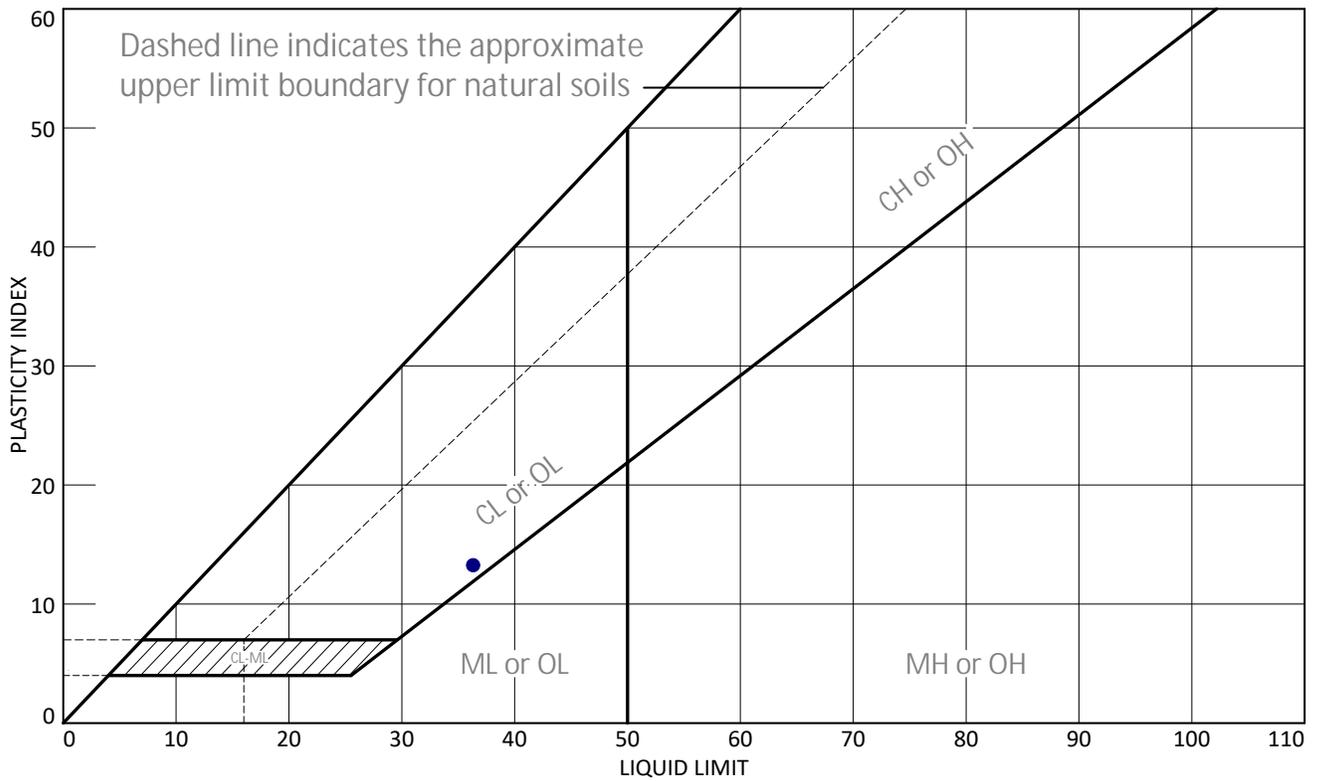


SOIL DATA									
	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	LIQUIDITY INDEX	USCS
●	CA-105	U-1	25-27	38.3	24.2	39.5	15.3	0.9	CL

<p style="text-align: center; font-weight: bold;">Soil Metrics LLC</p> <p style="text-align: center;">Cape Elizabeth, Maine</p>	<p>Client: Credere Associates, LLC Project: Cyro Road, Sanford, ME.</p> <p>Project No.: Credere PN 24001944 Figure</p>
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Tested By: sjr Checked By: sjr

LIQUID AND PLASTIC LIMITS TEST REPORT

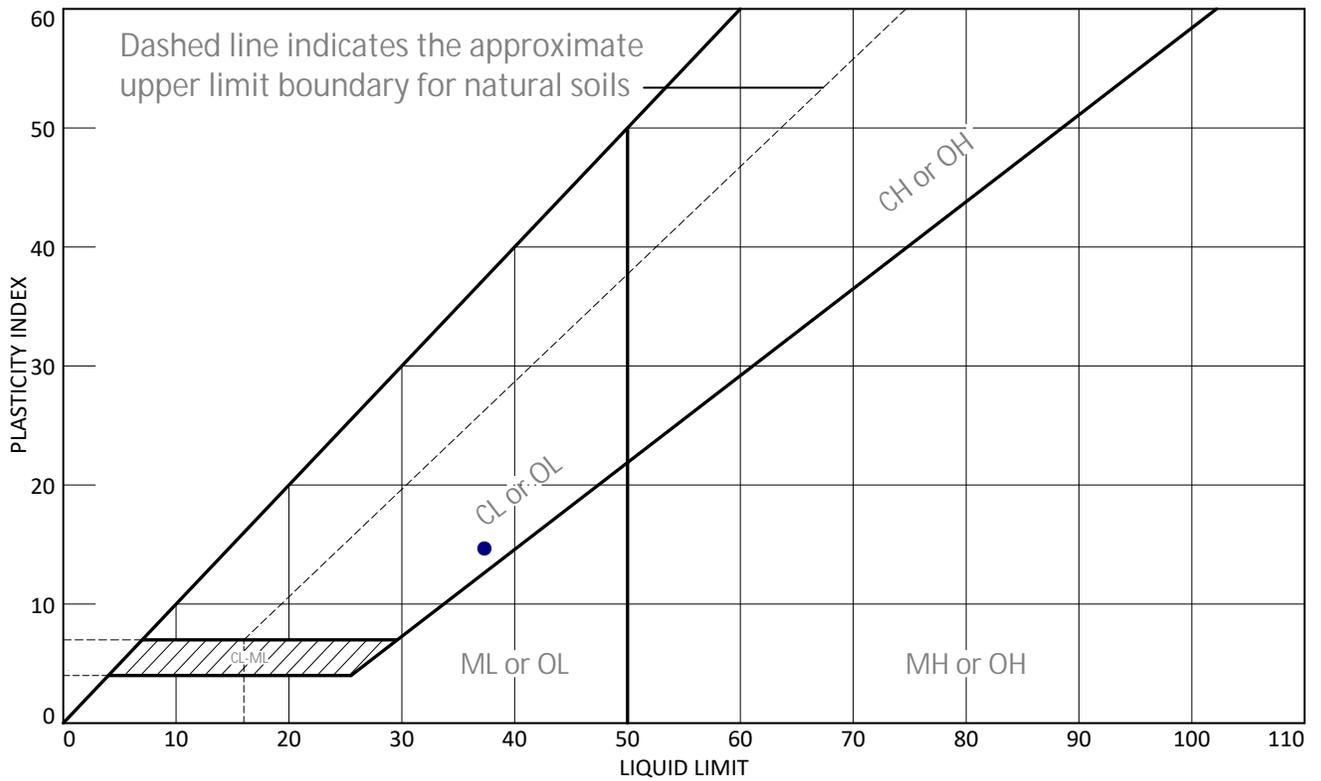


SOIL DATA									
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●	CA-105	U-2	30-32	32.9	23.2	36.4	13.2	0.7	CL

<p style="text-align: center; font-weight: bold;">Soil Metrics LLC</p> <p style="text-align: center;">Cape Elizabeth, Maine</p>	<p>Client: Credere Associates, LLC Project: Cyro Road, Sanford, ME.</p> <p>Project No.: Credere PN 24001944 Figure</p>
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Tested By: sjr Checked By: sjr

LIQUID AND PLASTIC LIMITS TEST REPORT

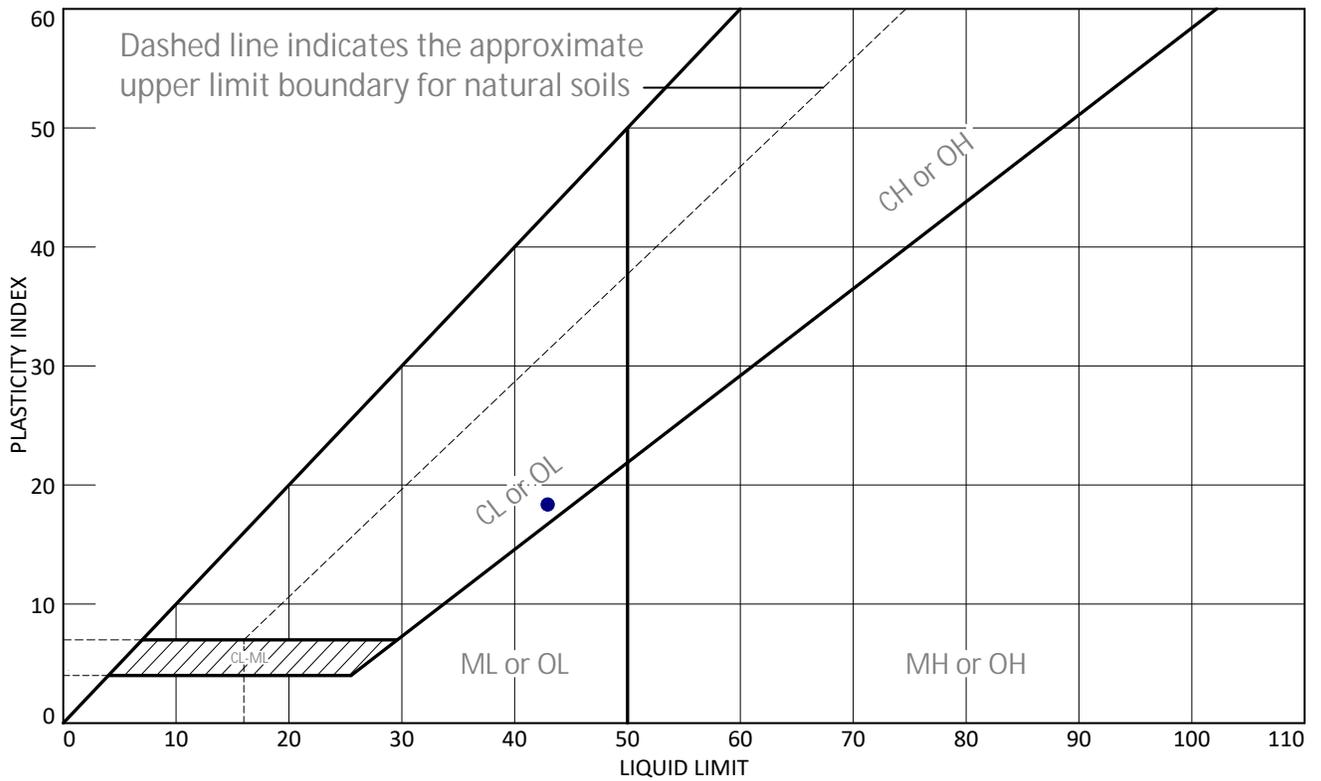


SOIL DATA									
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●	CA-105	U-3	35-37	41.6	22.8	37.4	14.6	1.3	CL

<p style="text-align: center; font-weight: bold;">Soil Metrics LLC</p> <p style="text-align: center;">Cape Elizabeth, Maine</p>	<p>Client: Credere Associates, LLC Project: Cyro Road, Sanford, ME.</p> <p>Project No.: Credere PN 24001944 Figure</p>
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Tested By: sjr Checked By: sjr

LIQUID AND PLASTIC LIMITS TEST REPORT

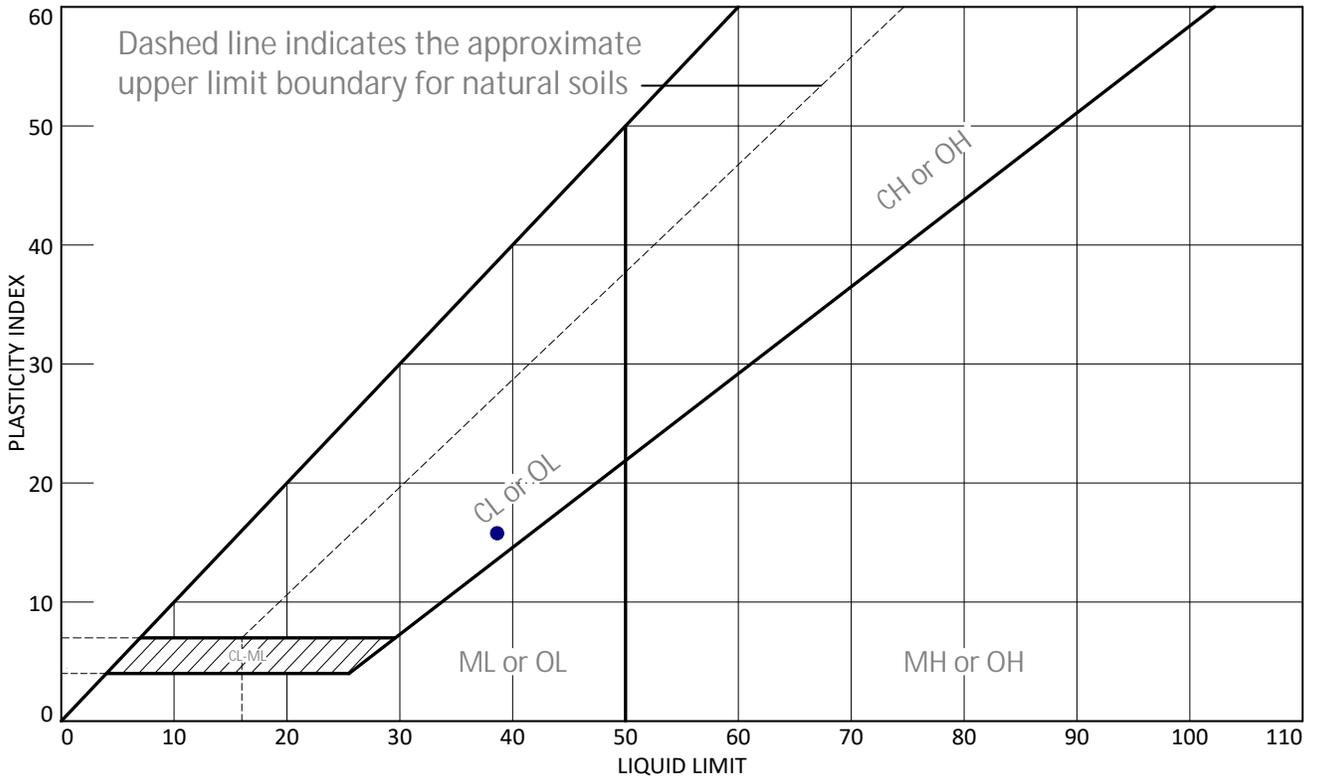


SOIL DATA									
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●	CA-105	S-V3/V4	27-29	44.3	24.7	43.0	18.3	1.1	CL

<p style="text-align: center; font-size: 1.2em;">Soil Metrics LLC</p> <p style="text-align: center;">Cape Elizabeth, Maine</p>	<p>Client: Credere Associates, LLC Project: Cyro Road, Sanford, ME.</p> <p>Project No.: Credere PN 24001944</p> <p style="text-align: right;">Figure</p>
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Tested By: sjr Checked By: sjr

LIQUID AND PLASTIC LIMITS TEST REPORT

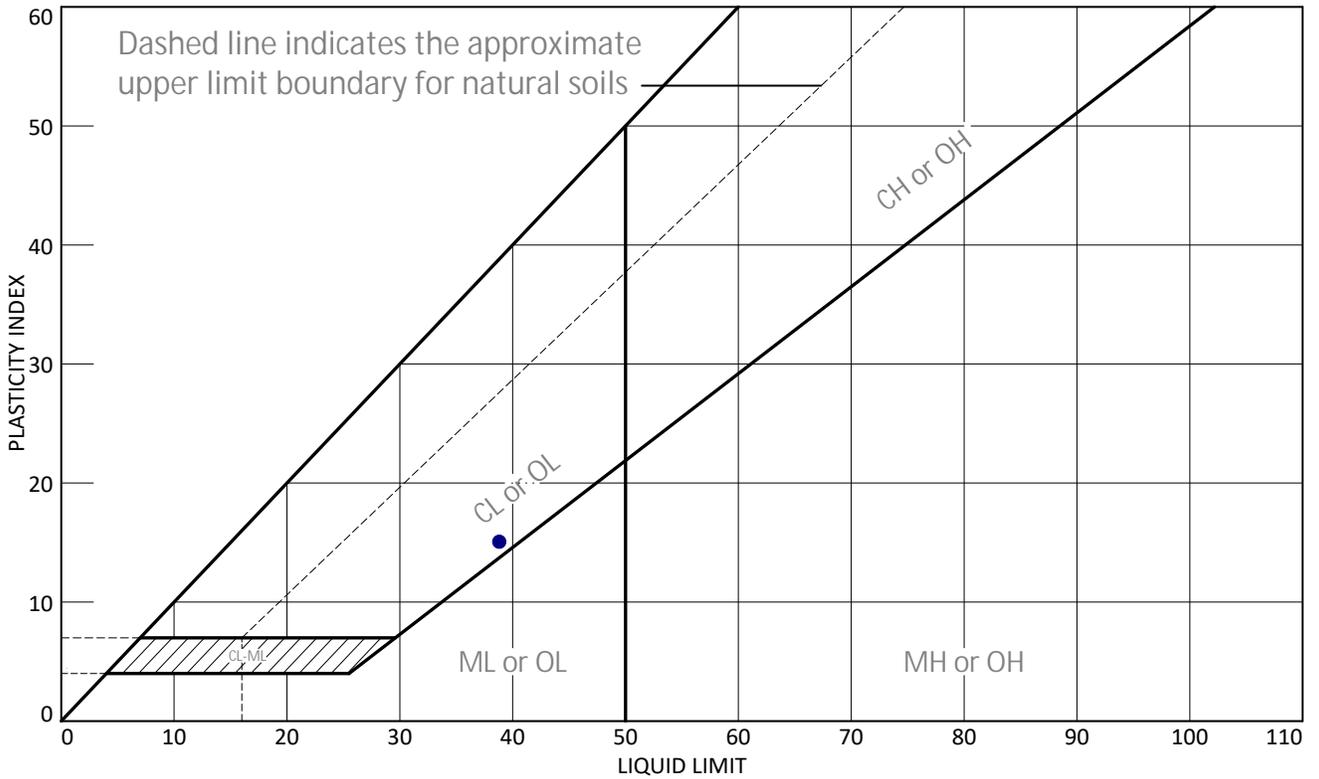


SOIL DATA									
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●	CA-105	S-V5/V6	32-34	36.6	23.0	38.7	15.7	0.9	CL

<p style="text-align: center; font-size: 1.2em;">Soil Metrics LLC</p> <p style="text-align: center;">Cape Elizabeth, Maine</p>	<p>Client: Credere Associates, LLC Project: Cyro Road, Sanford, ME.</p> <p>Project No.: Credere PN 24001944 Figure</p>
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Tested By: sjr Checked By: sjr

LIQUID AND PLASTIC LIMITS TEST REPORT

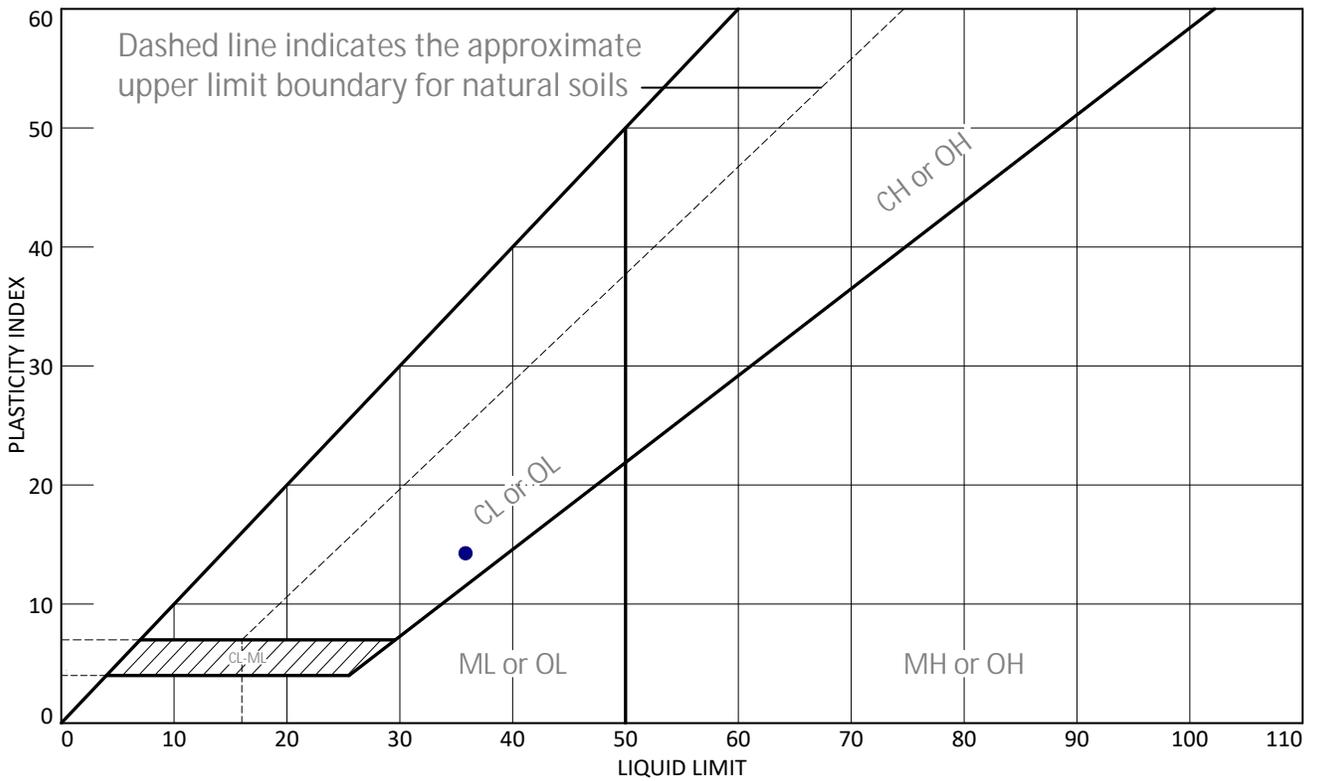


SOIL DATA									
	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	LIQUIDITY INDEX	USCS
●	CA-105	S-V7	37-38	41.6	23.9	38.9	15.0	1.2	CL

<p style="text-align: center; font-size: 1.2em;">Soil Metrics LLC</p> <p style="text-align: center;">Cape Elizabeth, Maine</p>	<p>Client: Credere Associates, LLC Project: Cyro Road, Sanford, ME.</p> <p>Project No.: Credere PN 24001944</p> <p style="text-align: right;">Figure</p>
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Tested By: sjr Checked By: sjr

LIQUID AND PLASTIC LIMITS TEST REPORT

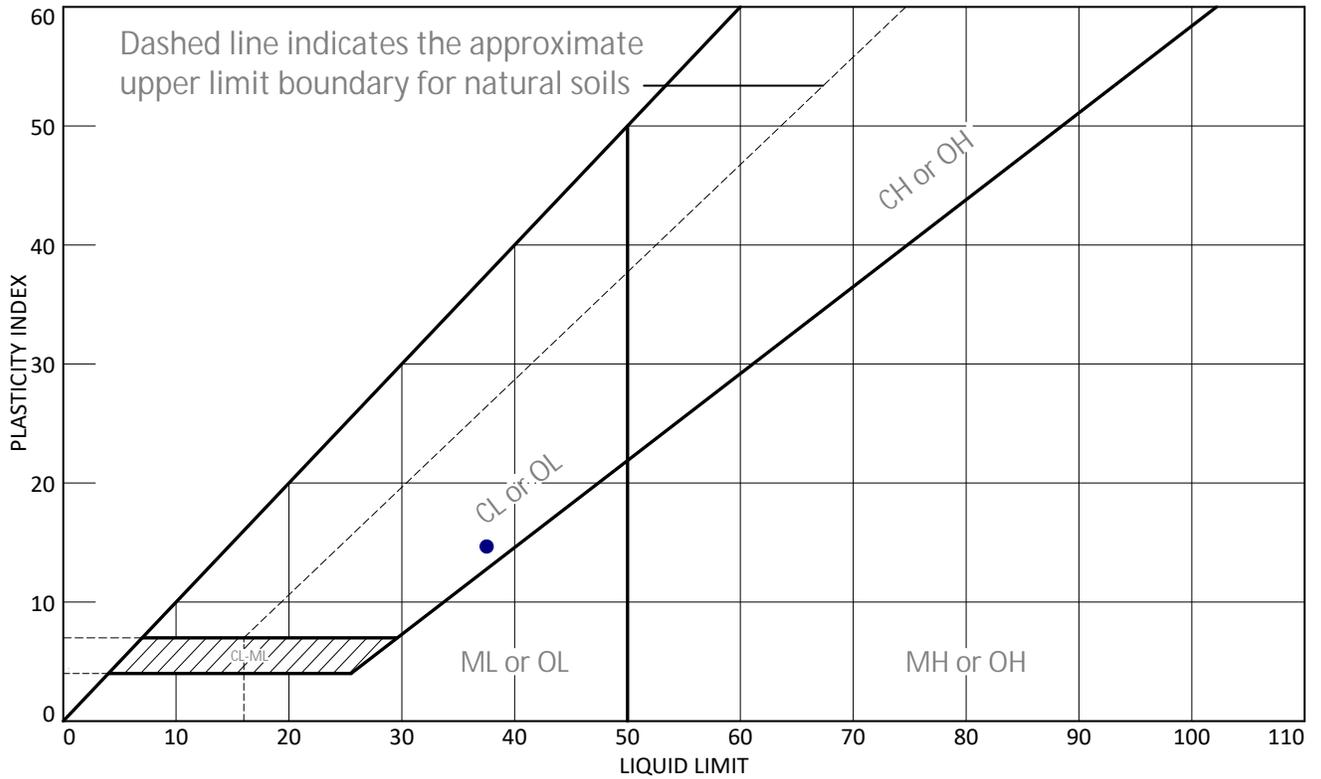


SOIL DATA									
	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	LIQUIDITY INDEX	USCS
●	CA-106	S-V3/V4	25-27	31.6	21.7	35.9	14.2	0.7	CL

<p style="text-align: center; font-weight: bold;">Soil Metrics LLC</p> <p style="text-align: center;">Cape Elizabeth, Maine</p>	<p>Client: Credere Associates, LLC Project: Cyro Road, Sanford, ME.</p> <p>Project No.: Credere PN 24001944 Figure</p>
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Tested By: sjr Checked By: sjr

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA									
	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	LIQUIDITY INDEX	USCS
●	CA-106	S-V7/V8	35-37	36.8	23.0	37.6	14.6	0.9	CL

<p style="text-align: center; font-size: 1.2em;">Soil Metrics LLC</p> <p style="text-align: center;">Cape Elizabeth, Maine</p>	<p>Client: Credere Associates, LLC Project: Cyro Road, Sanford, ME.</p> <p>Project No.: Credere PN 24001944 Figure</p>
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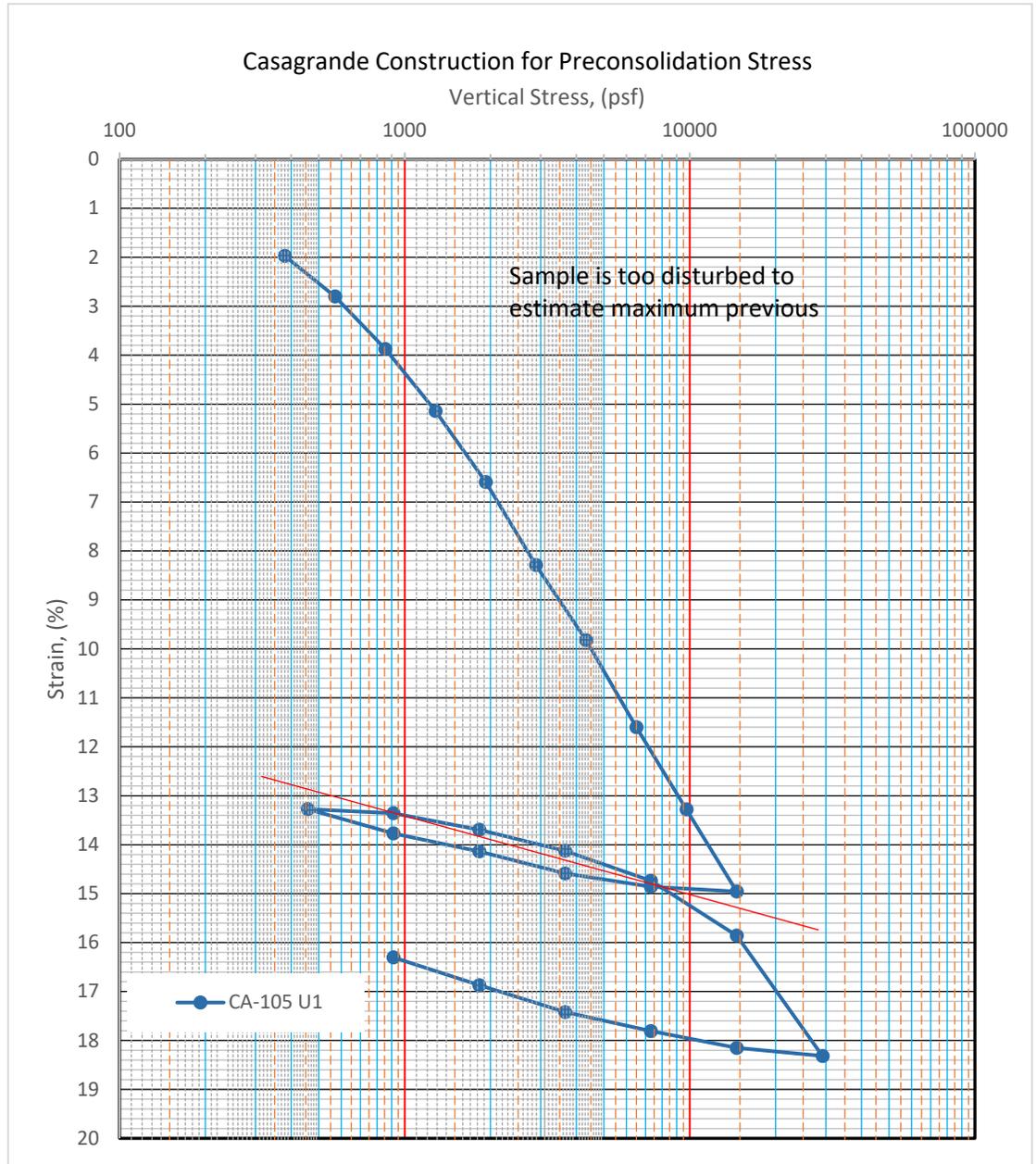
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CONSOLIDATION TESTING

CA-105 U1 CONSOLIDATION

Consolidation Test Data
Summary Report

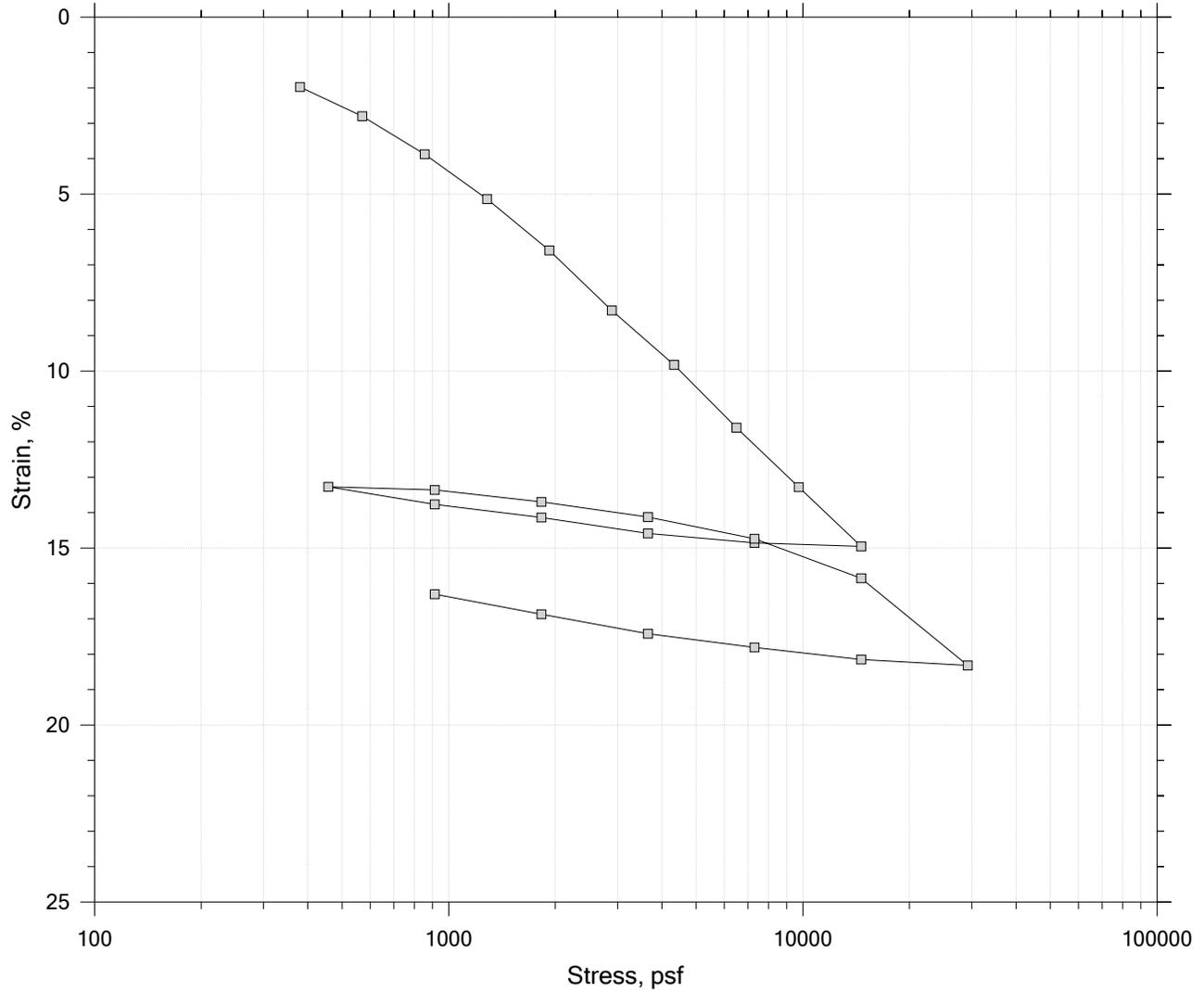
Project Name:		Cyro Road	
Project Number:		174-01	
Project Location:		Sanford, ME	
Client:		Credere PN 24001944	
Sample Description:		Gray silty Clay	
Preparation:		Trimmed Shelby Tube	
Lab Test No:	ICON 65-445		
Boring No.	CA-105		
Sample No:	U1		
Boring Elevation (ft).	--		
Sample Depth (ft):	25-27		
Test Specimen Depth (Ft):	25.4		
Test Specimen Elevation:	---		
Water Content (%):	36.5		
Dry Unit Weight (pcf):	85.8		
Wet Unit Weight (pcf):	117.1		
Saturation Before (%):	100.0		
Saturation After (%):	100		
Void Ratio Before:	1		
Void Ratio After:	0.68		
Overburden Pressure (psf):	--		
Max Previous stress (psf):			
Max Prev. stress (Work) (psf):	--		
OCR:	--		
Compression Index (C _{CE}):	--		
Recompression Index (C _{RE}):	0.016	from re-load curve	
Liquid Limit:	39.5		
Plastic Limit:	24.2		
Plasticity Index:	15.3		
Liquidity Index:	0.8		
Organic Content	--		
Lab Vane Su at 25.75 ft. (psf)	220		
Tested By:	sjr		
Date Tested:	3/20/2025		
Checked By:	sjr		



Note 1: The calculations for the Max Previous Stress, the Compression Index and the Recompression Index are provided for the convenience of the Specifier. The Specifier should make their own independent assessment of Maximum Previous stress, Cce and Cre for use in any engineering analyses.

One-Dimensional Consolidation by ASTM D2435 - Method B

Summary Report



				Before Test	After Test
Current Vertical Effective Stress, psf: 0		Specimen Height, in: 1		Water Content, %	24.59
Preconsolidation Stress, psf: ---		Specimen Diameter, in: 2.5		Dry Unit Weight, pcf	102.5
Compression Ratio: 0		LL: 40		Saturation, %	100.00
Specimen Diameter, in: 2.5		PL: 24		Void Ratio	0.68
LL: 40		PI: 15			
PL: 24		GS: 2.75			

Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U1	Test Date: 3/22/2025	Depth: 25.4
Test Number: ICON 65-445	Preparation:	Elevation: --
Description:		
Remarks:		
Displacement at End of Increment		

One-Dimensional Consolidation by ASTM D2435 - Method B

Specimen Diameter, in: 2.50	Specific Gravity: 2.75 (Implied)	Liquid Limit: 40
Specimen Height, in: 1.00	Initial Void Ratio: 1	Plastic Limit: 24
Final Height, in: 0.84	Final Void Ratio: 0.677	Plasticity Index: 15

	Before Test Trimblings	Before Test Specimen	After Test Specimen	After Test Trimblings
Container ID	203	---	"Ring"	304
Mass Container, gm	37.05	109.53	109.53	60.71
Mass Container + Wet Soil, gm	156.59	260.46	247.25	198.28
Mass Container + Dry Soil, gm	123.47	220.07	220.07	171.13
Mass Dry Soil, gm	86.42	110.54	110.54	110.42
Water Content, %	38.32	36.54	24.59	24.59
Void Ratio	---	1.00	0.68	---
Degree of Saturation, %	---	100.24	100.00	---
Dry Unit Weight, pcf	---	85.789	102.5	---

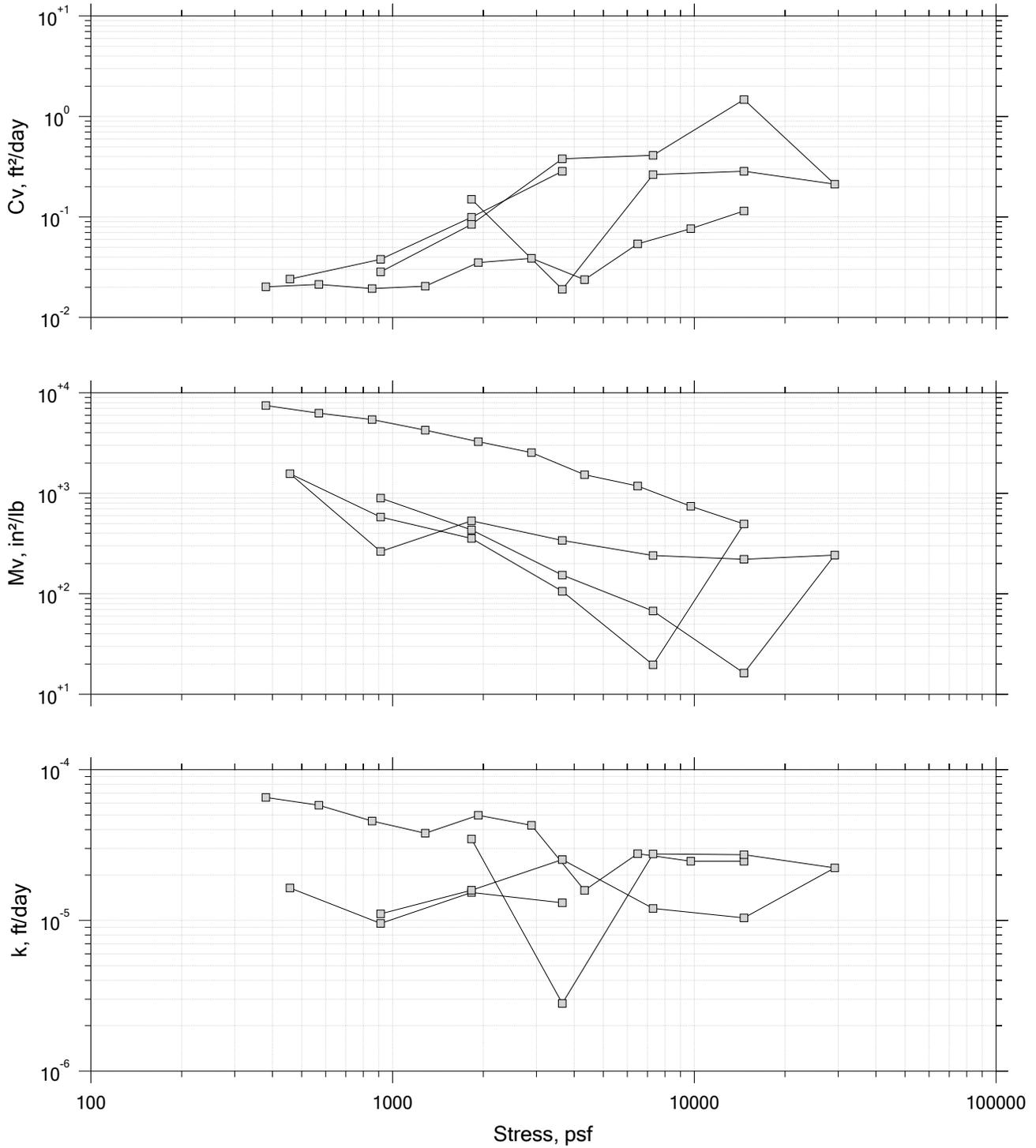
Preconsolidation Stress, psf	---
Compression Ratio	0
Rebound Ratio	0
Compression Index	0
Rebound Index	0

Note: Specific Gravity and Void Ratios are calculated assuming the degree of saturation equals 100% at the end of the test. Therefore, values may not represent actual values for the specimen.

	Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
	Boring Number: CA-105	Tester: SJR	Checker: SJR
	Sample Number: U1	Test Date: 3/22/2025	Depth: 25.4
	Test Number: ICON 65-445	Preparation:	Elevation: --
	Description:		
	Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Sqrt of Time Coefficients



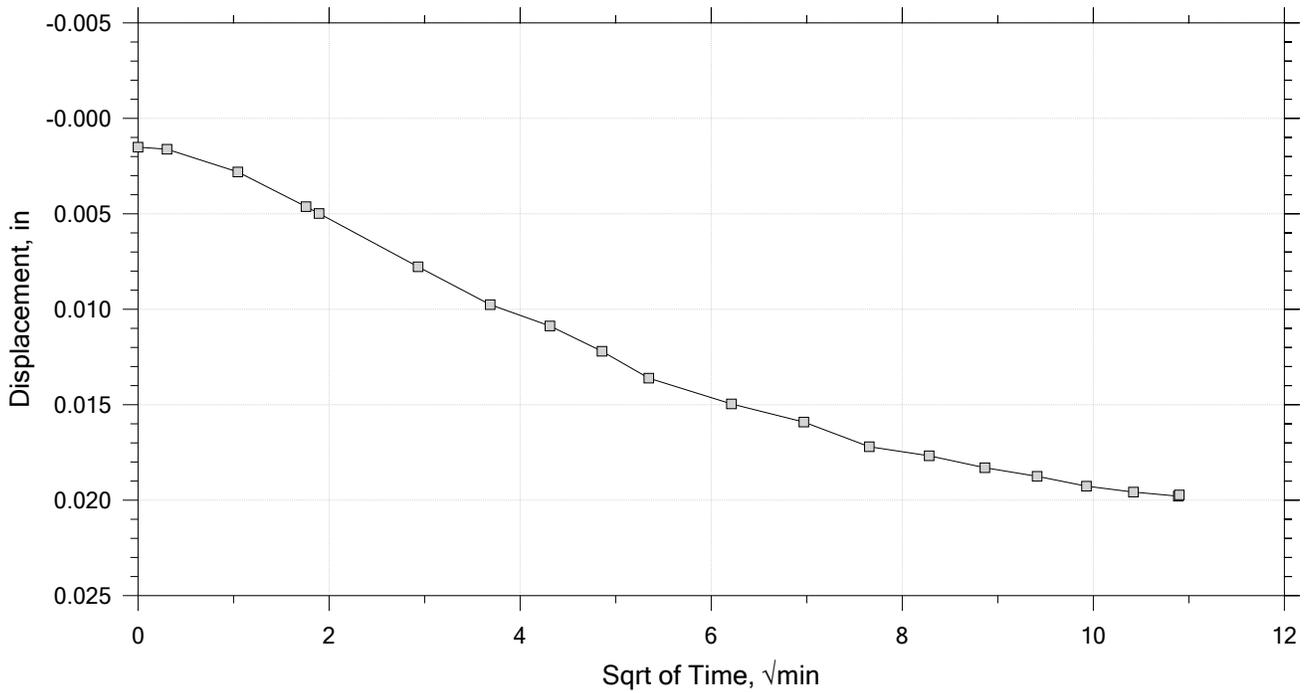
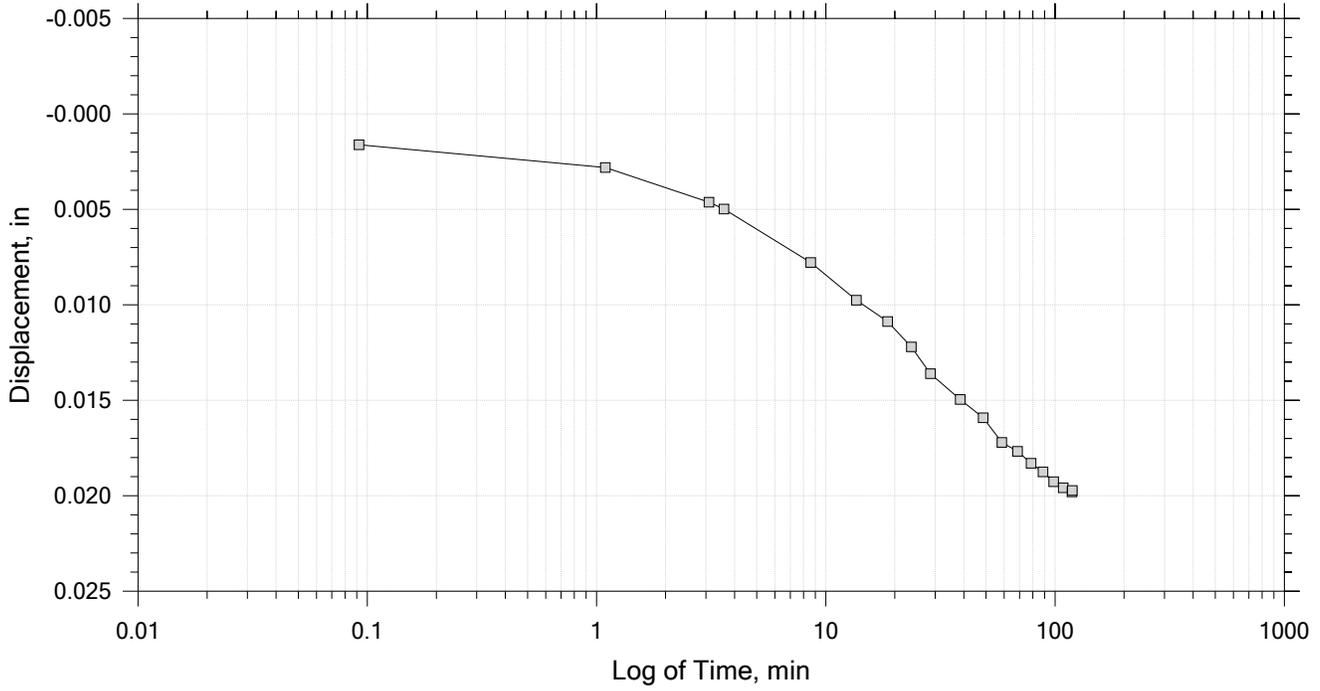
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U1	Test Date: 3/22/2025	Depth: 25.4
Test Number: ICON 65-445	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 1 of 26

Constant Load Step

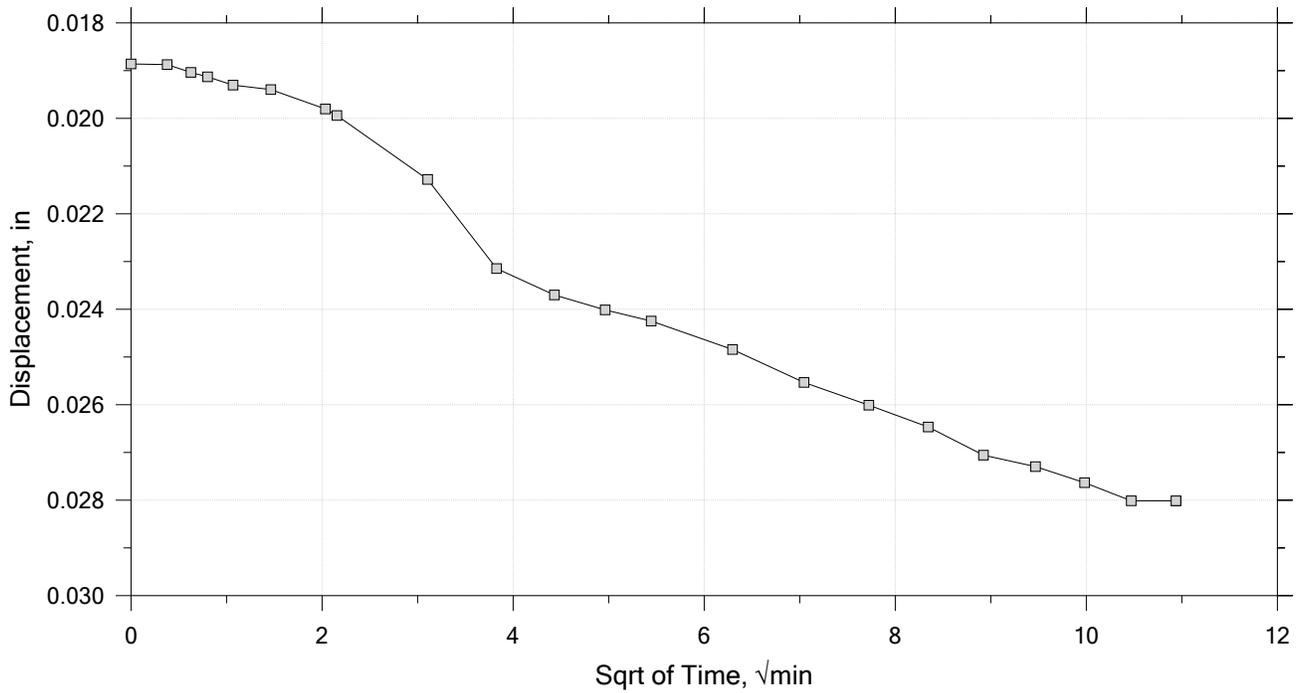
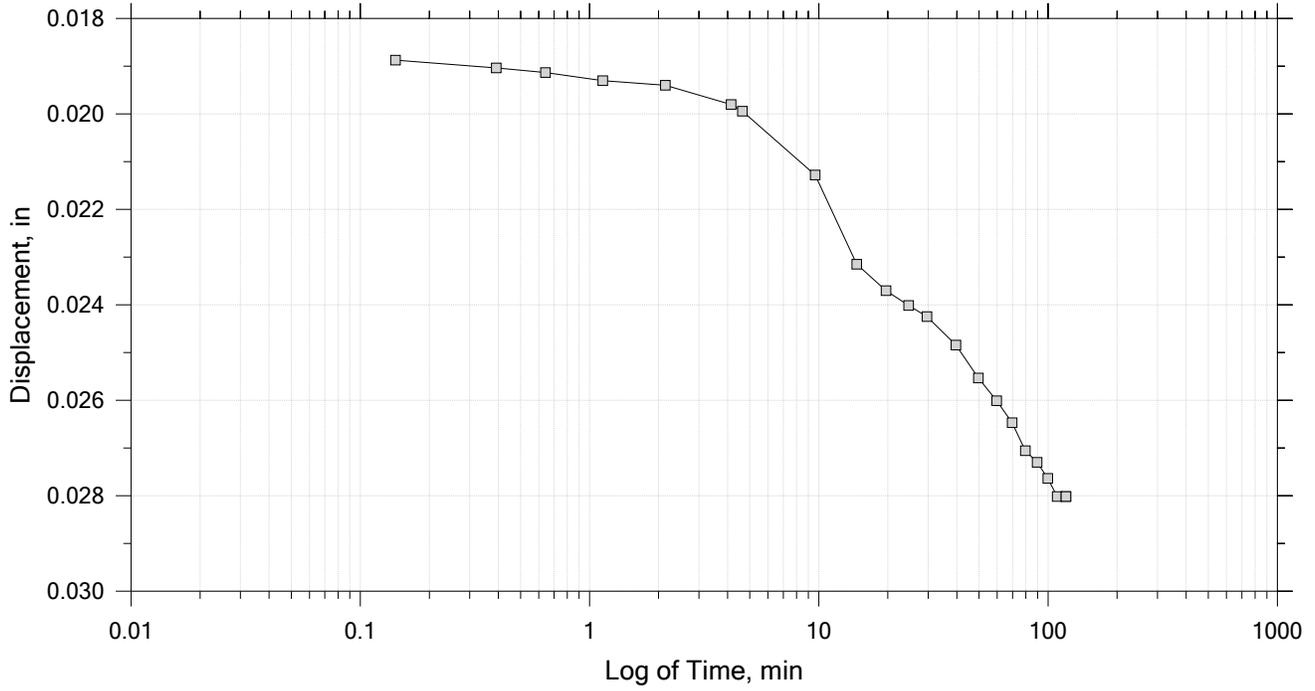
Stress: 380 psf



	Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
	Boring Number: CA-105	Tester: SJR	Checker: SJR
	Sample Number: U1	Test Date: 3/22/2025	Depth: 25.4
	Test Number: ICON 65-445	Preparation:	Elevation: --
	Description:		
	Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

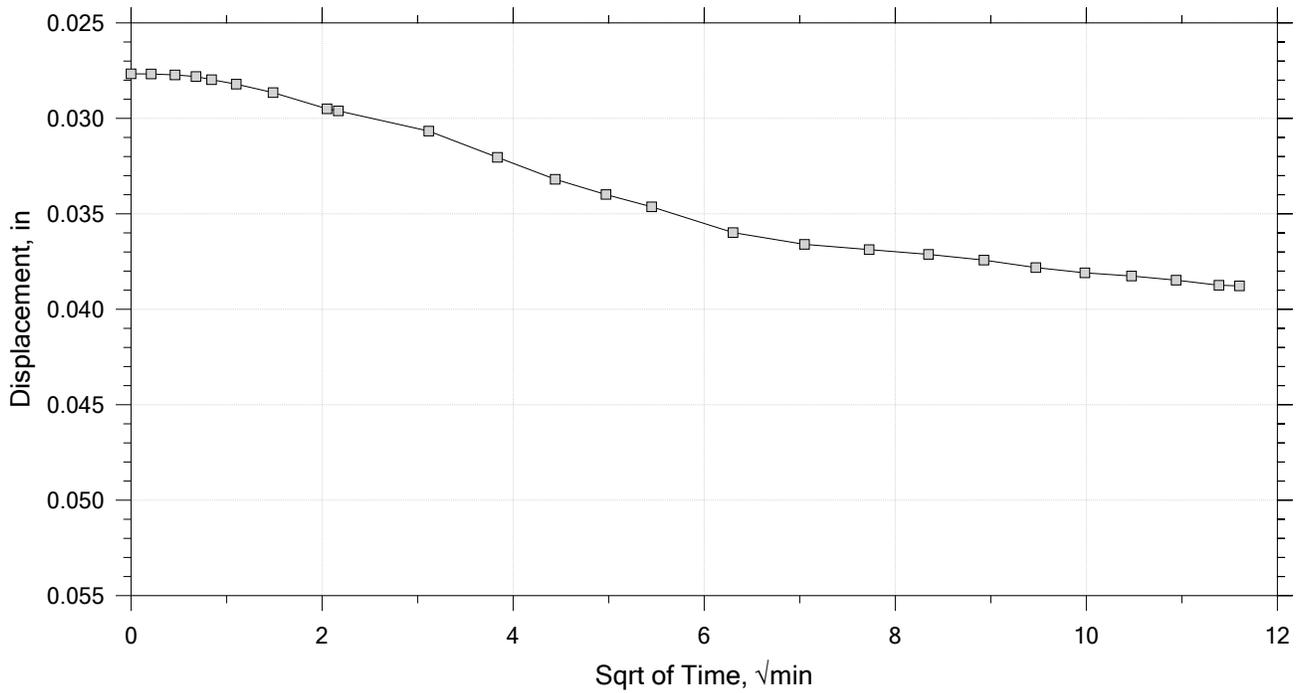
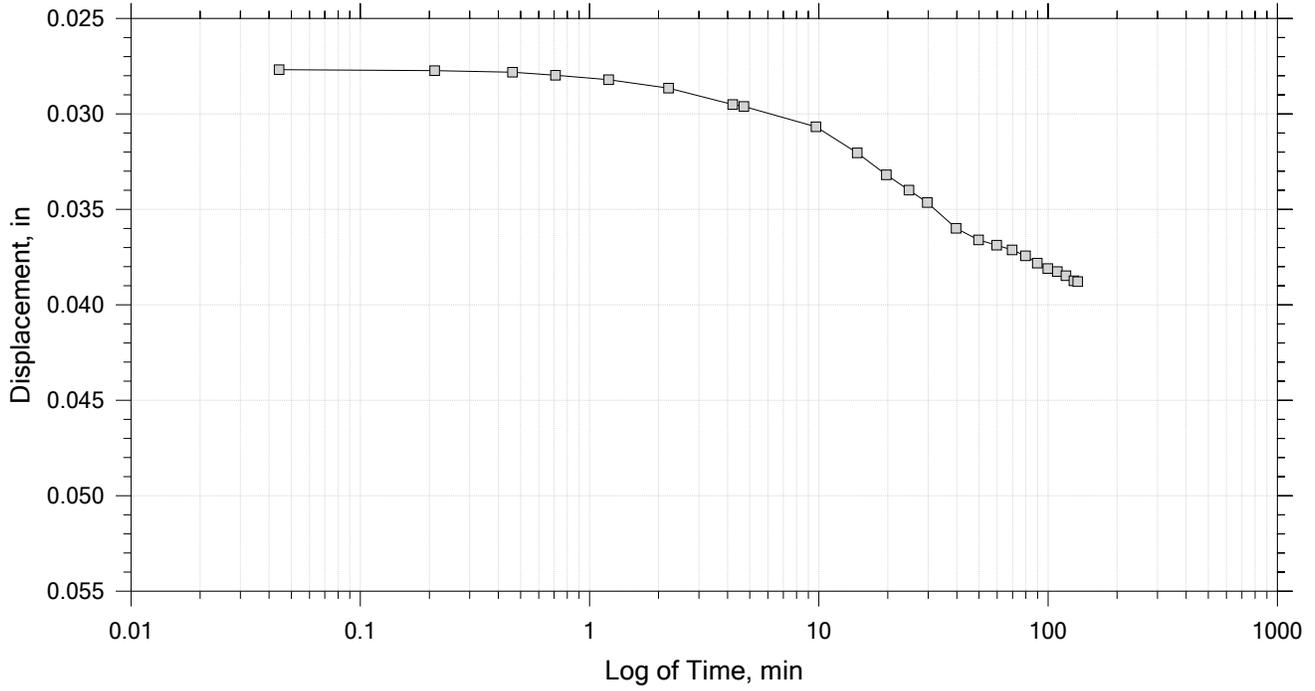
Time Curve 2 of 26
Constant Load Step
Stress: 570 psf



	Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
	Boring Number: CA-105	Tester: SJR	Checker: SJR
	Sample Number: U1	Test Date: 3/22/2025	Depth: 25.4
	Test Number: ICON 65-445	Preparation:	Elevation: --
	Description:		
	Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 3 of 26
Constant Load Step
Stress: 855 psf



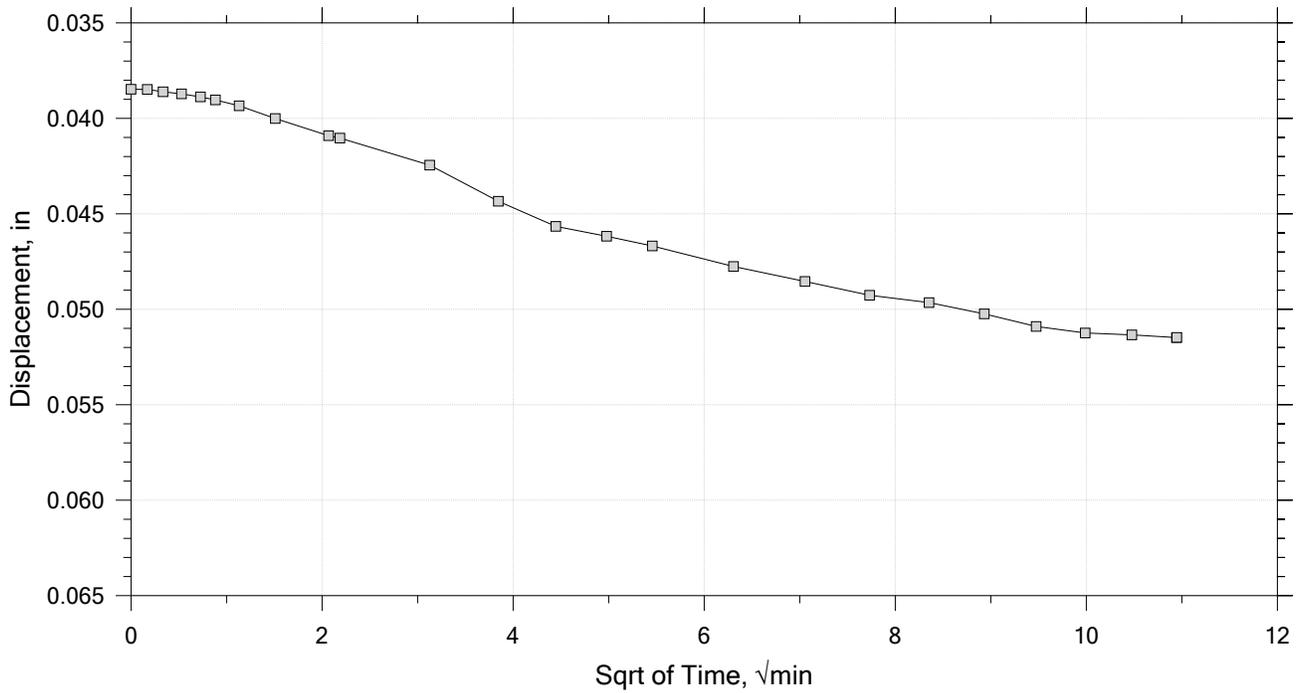
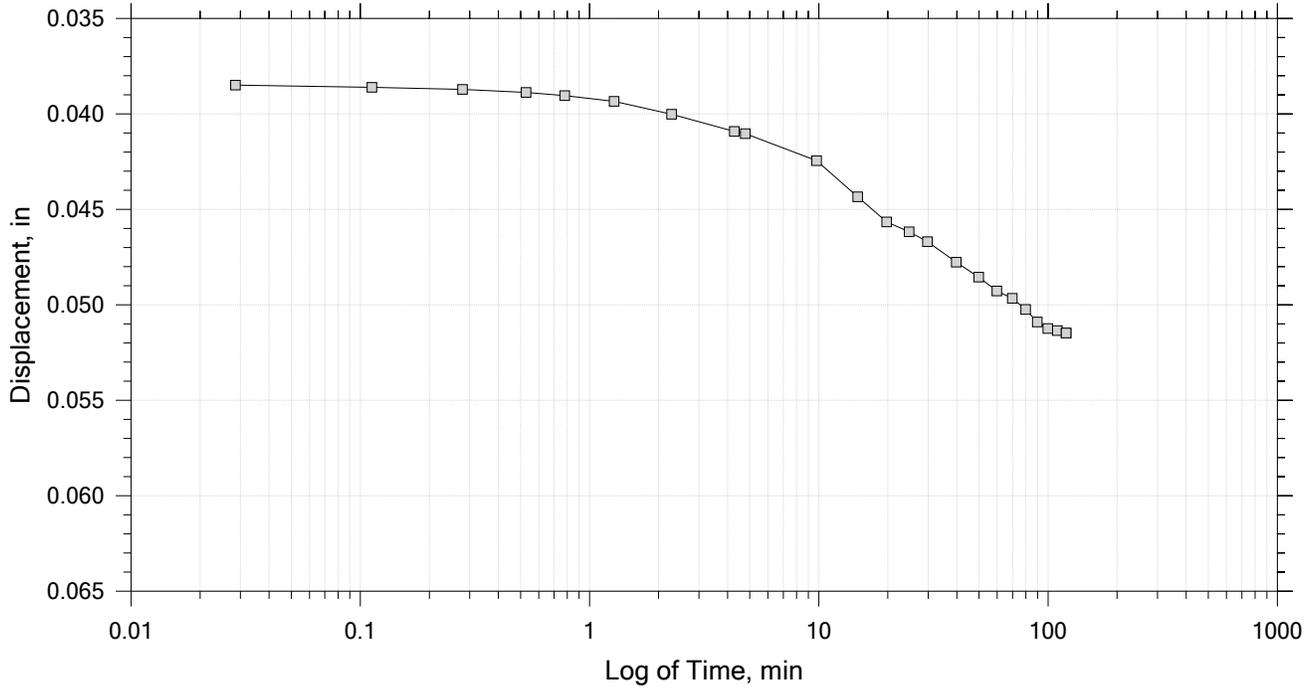
	Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
	Boring Number: CA-105	Tester: SJR	Checker: SJR
	Sample Number: U1	Test Date: 3/22/2025	Depth: 25.4
	Test Number: ICON 65-445	Preparation:	Elevation: --
	Description:		
	Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 4 of 26

Constant Load Step

Stress: 1.28e+03 psf

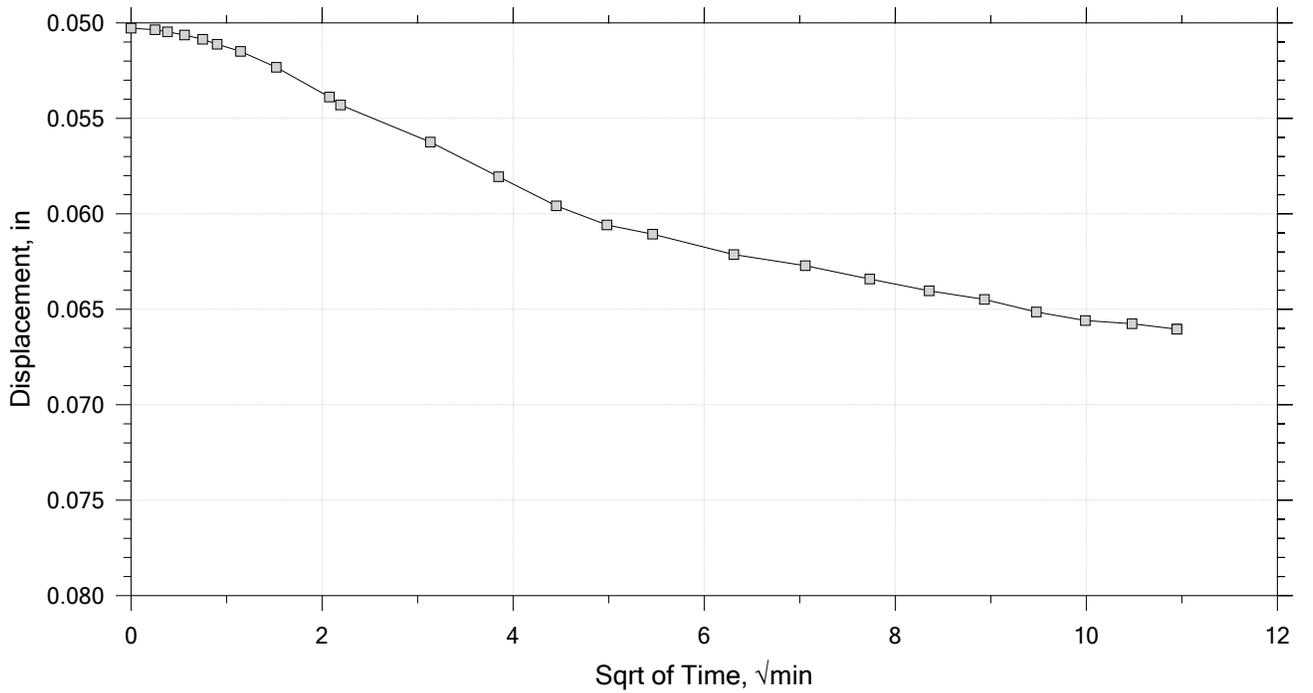
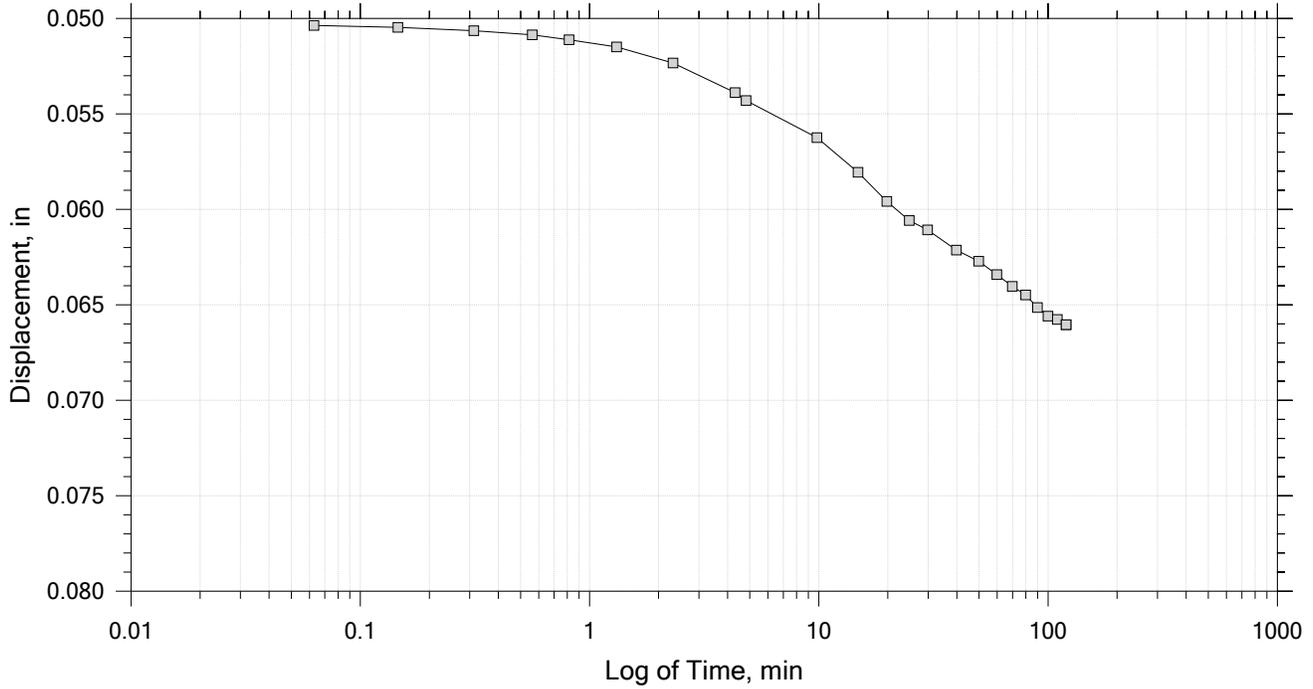


One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 5 of 26

Constant Load Step

Stress: 1.92e+03 psf



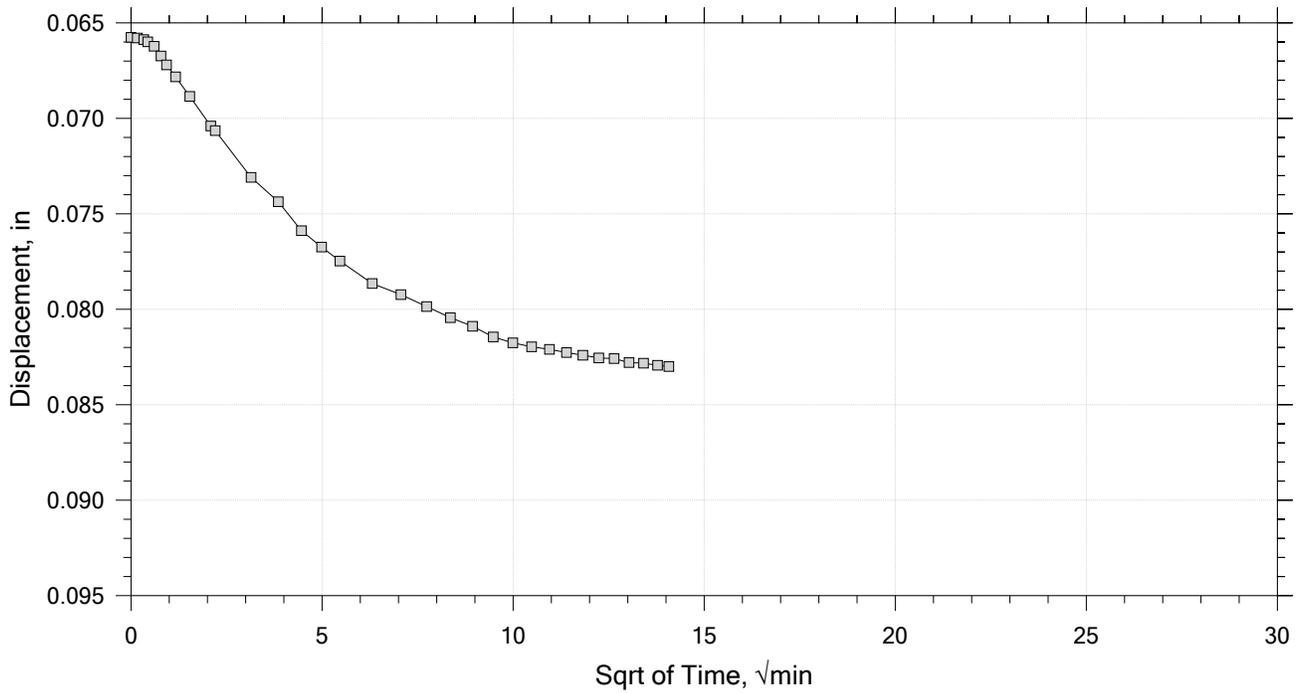
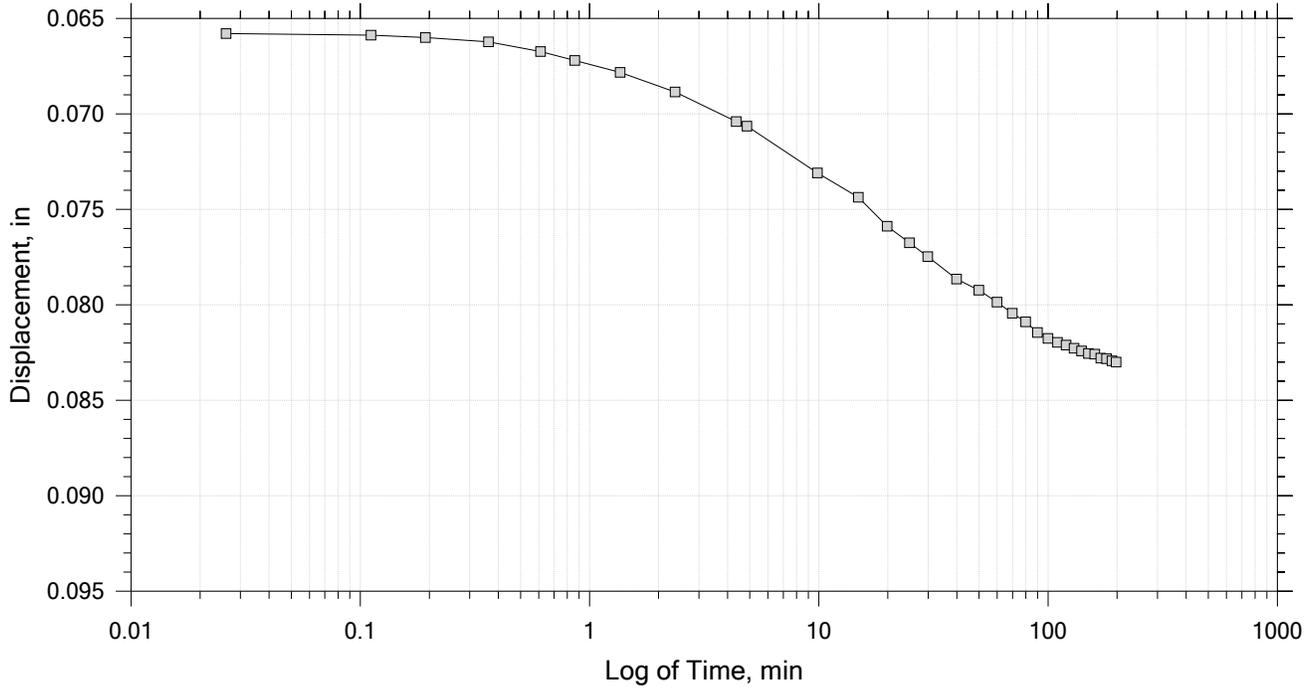
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U1	Test Date: 3/22/2025	Depth: 25.4
Test Number: ICON 65-445	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 6 of 26

Constant Load Step

Stress: 2.89e+03 psf



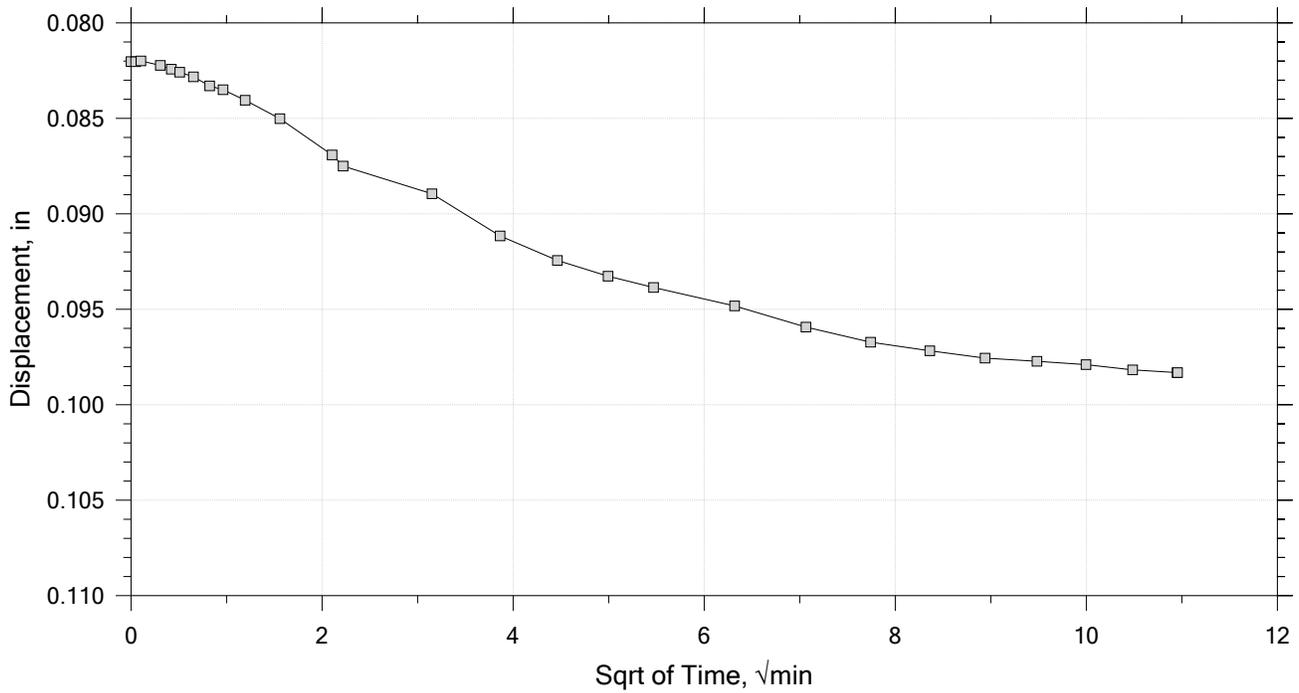
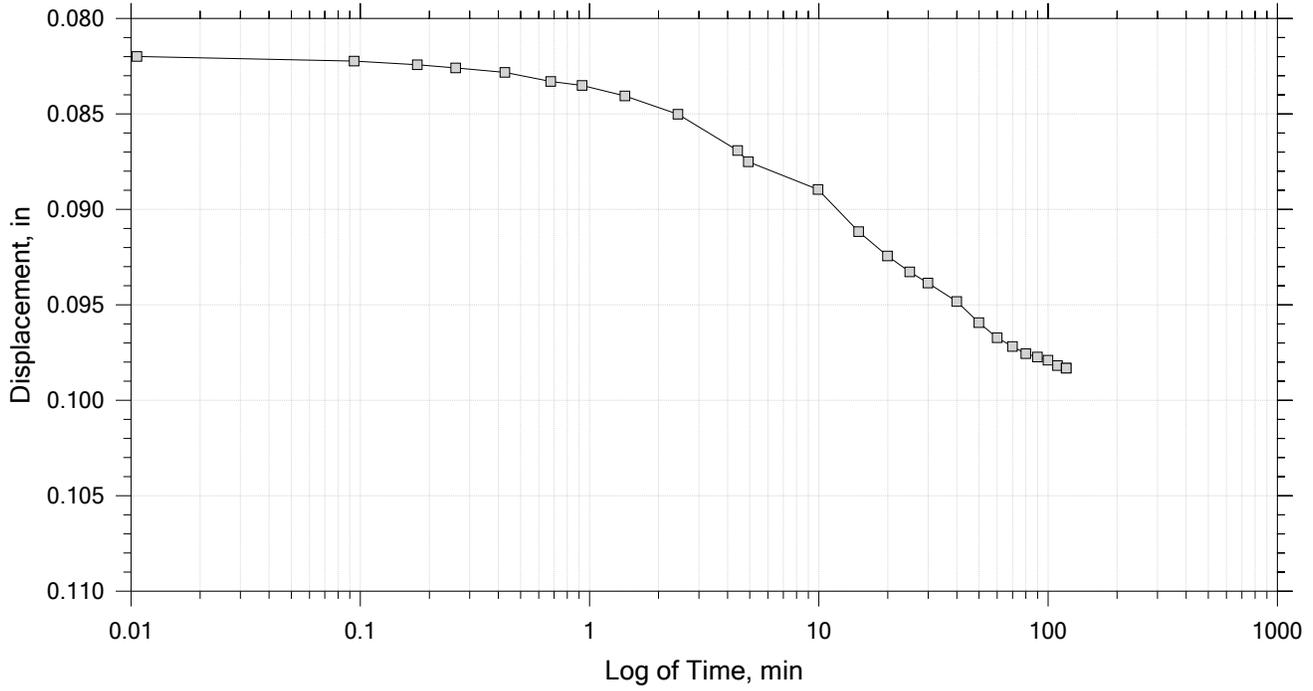
	Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
	Boring Number: CA-105	Tester: SJR	Checker: SJR
	Sample Number: U1	Test Date: 3/22/2025	Depth: 25.4
	Test Number: ICON 65-445	Preparation:	Elevation: --
	Description:		
	Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 7 of 26

Constant Load Step

Stress: 4.33e+03 psf



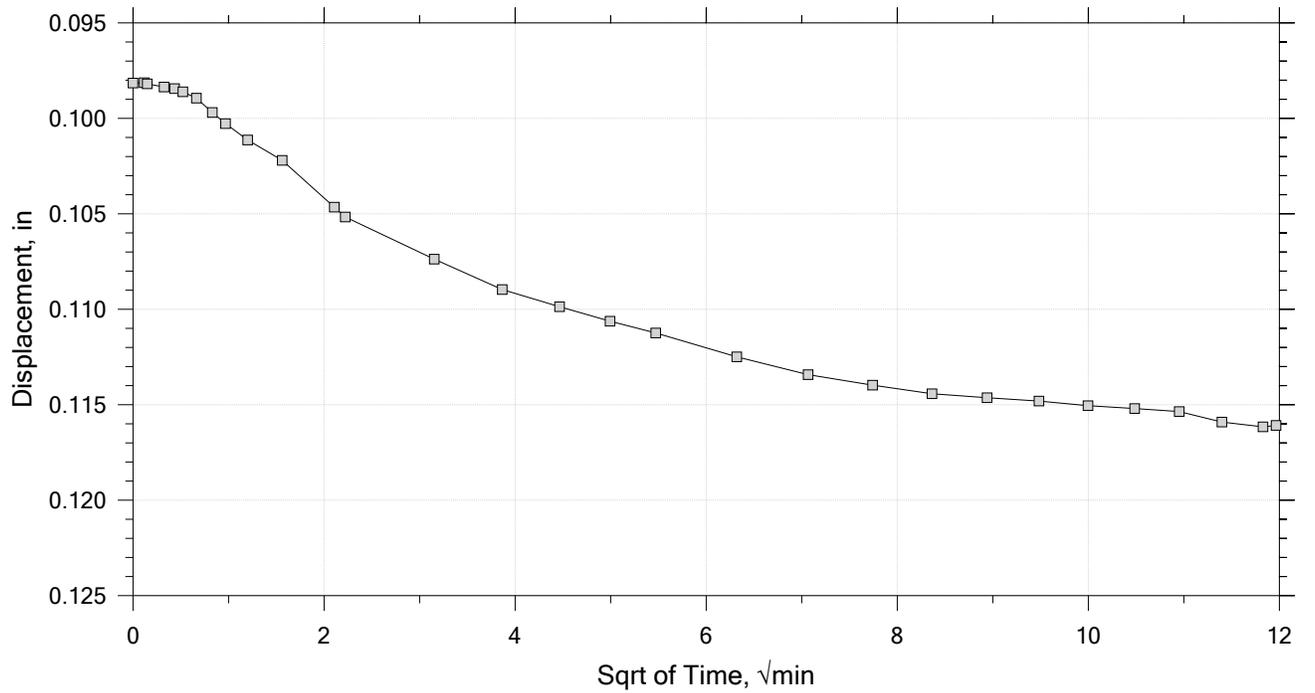
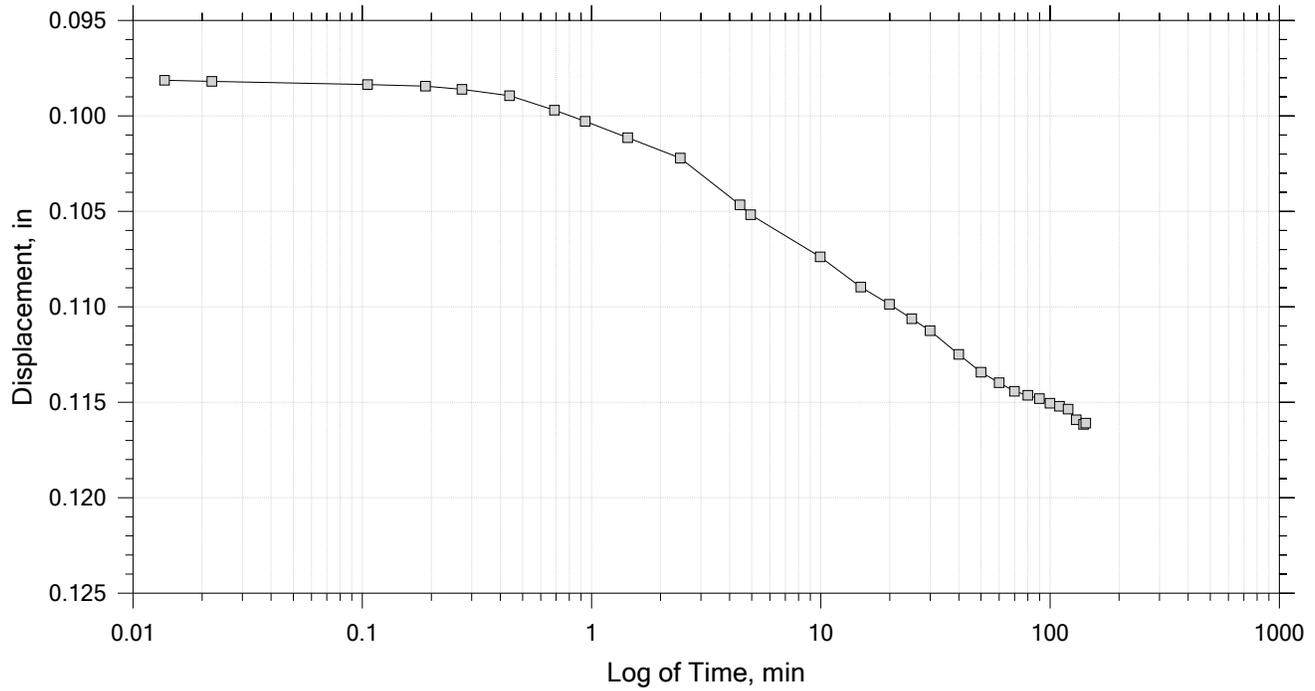
	Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
	Boring Number: CA-105	Tester: SJR	Checker: SJR
	Sample Number: U1	Test Date: 3/22/2025	Depth: 25.4
	Test Number: ICON 65-445	Preparation:	Elevation: --
	Description:		
	Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 8 of 26

Constant Load Step

Stress: 6.49e+03 psf



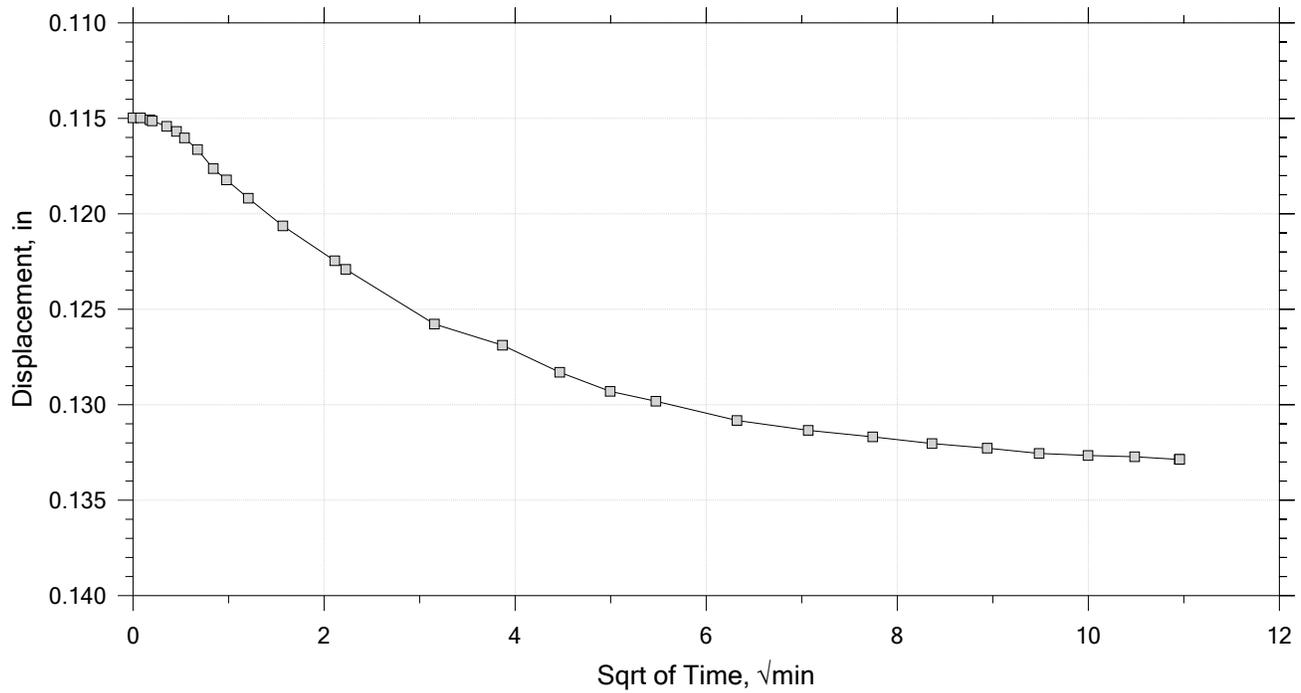
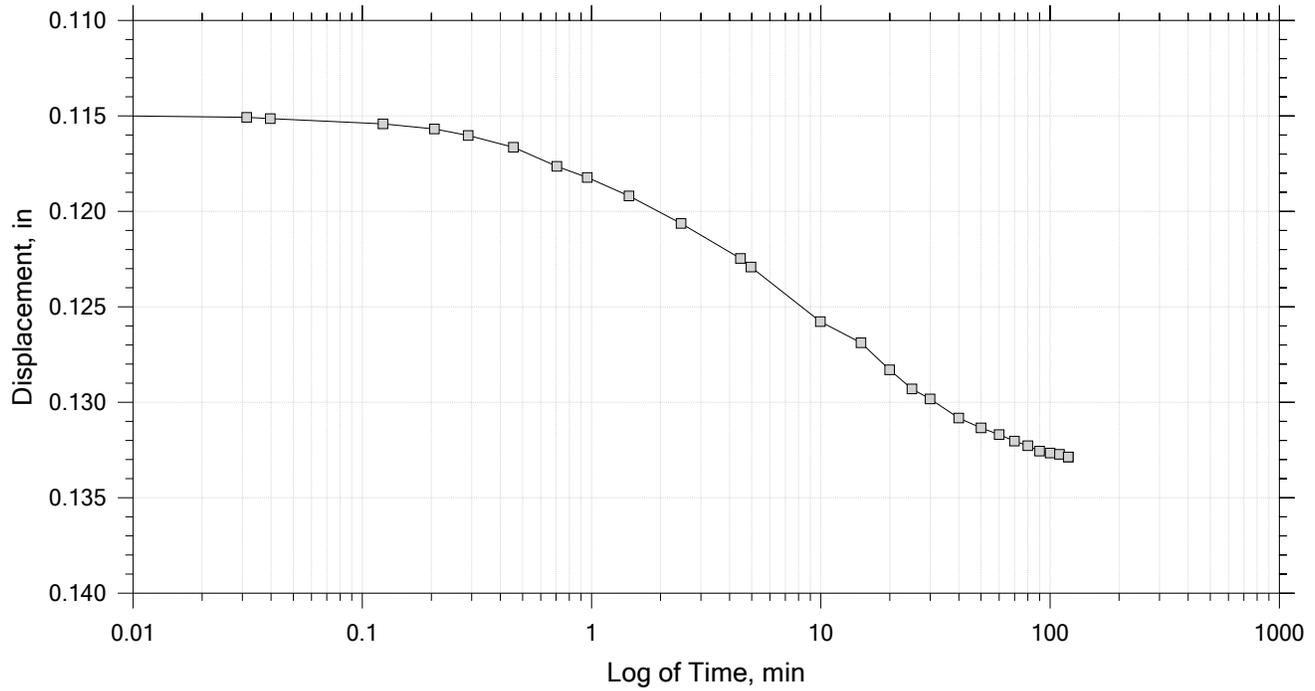
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	Boring Number: CA-105	Tester: SJR	Checker: SJR
	Sample Number: U1	Test Date: 3/22/2025	Depth: 25.4
	Test Number: ICON 65-445	Preparation:	Elevation: --
	Description:		
	Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 9 of 26

Constant Load Step

Stress: 9.74e+03 psf



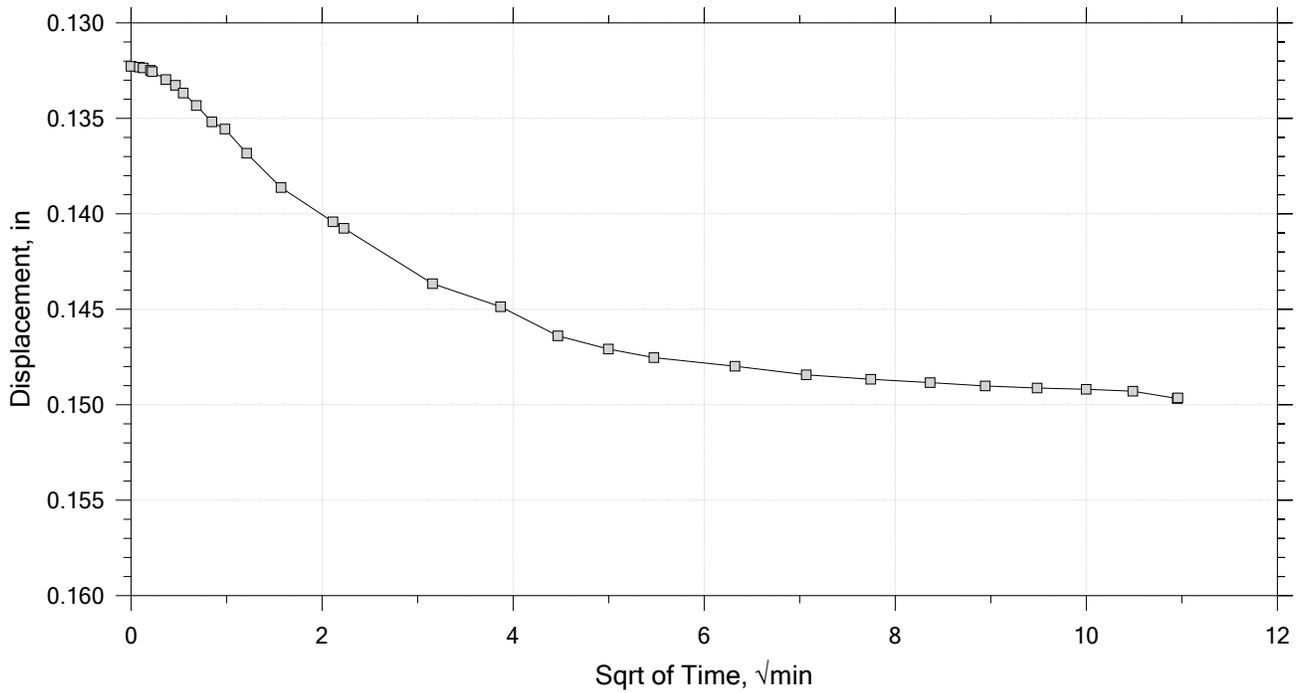
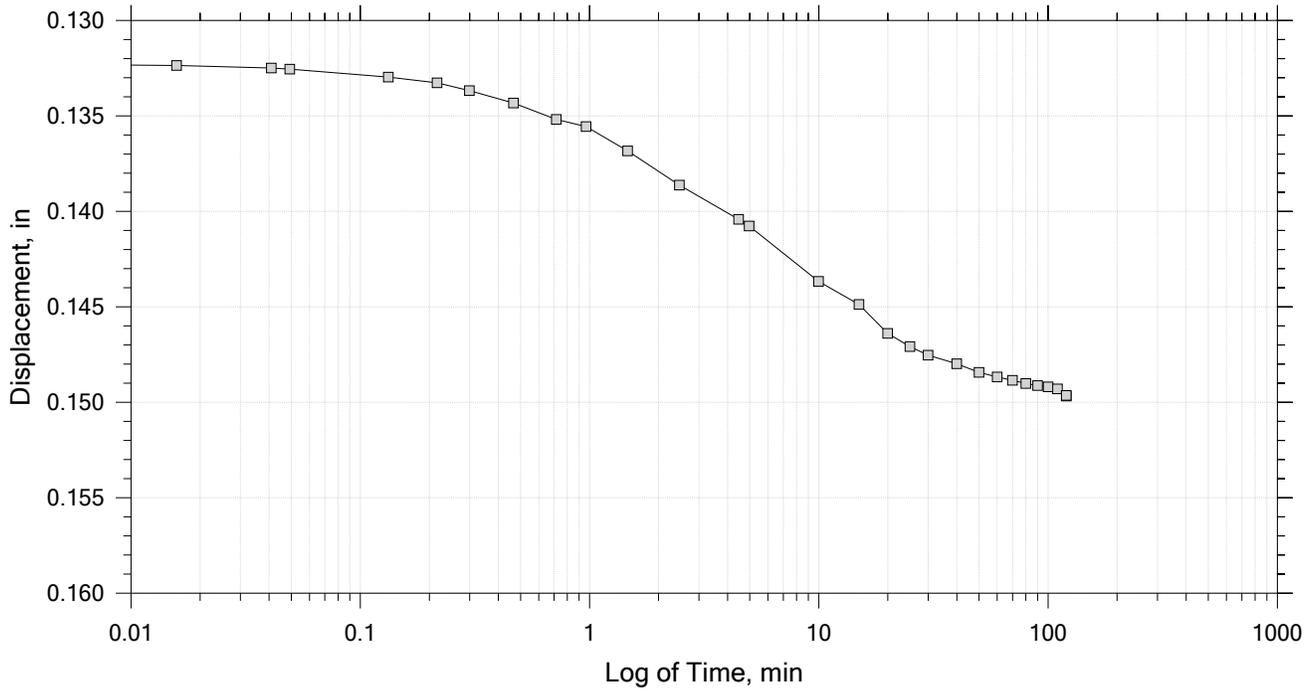
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U1	Test Date: 3/22/2025	Depth: 25.4
Test Number: ICON 65-445	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 10 of 26

Constant Load Step

Stress: 1.46e+04 psf



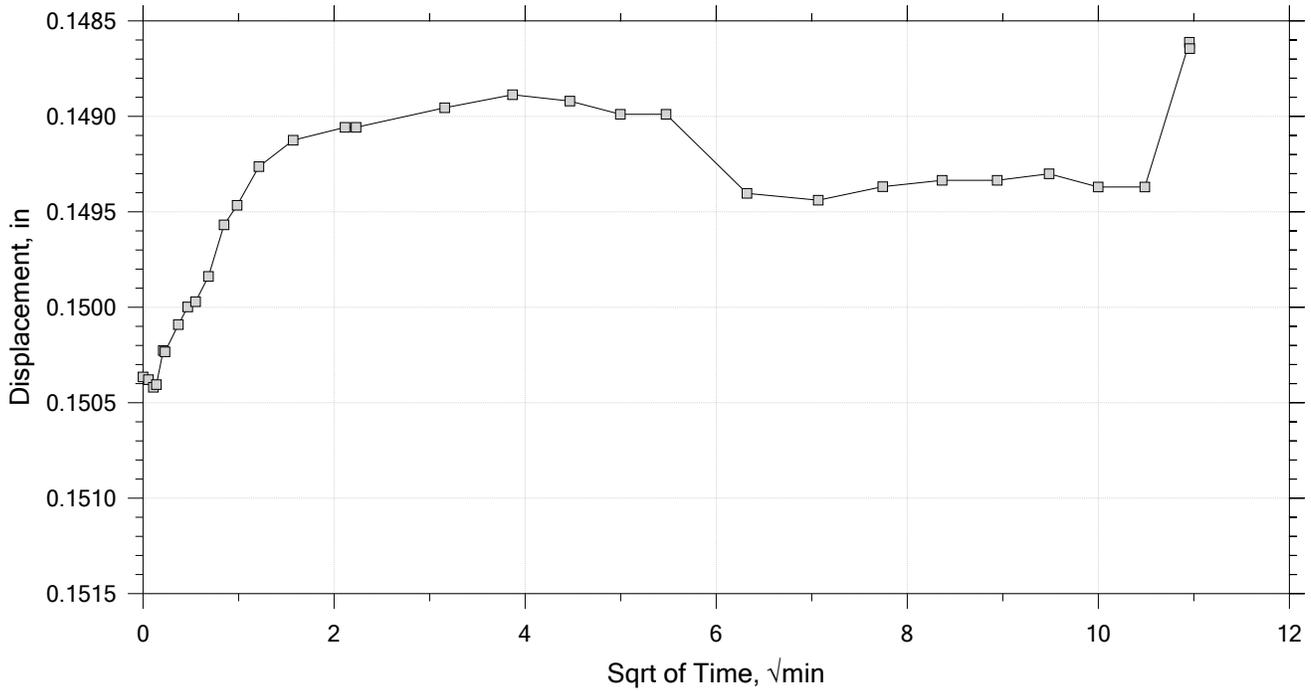
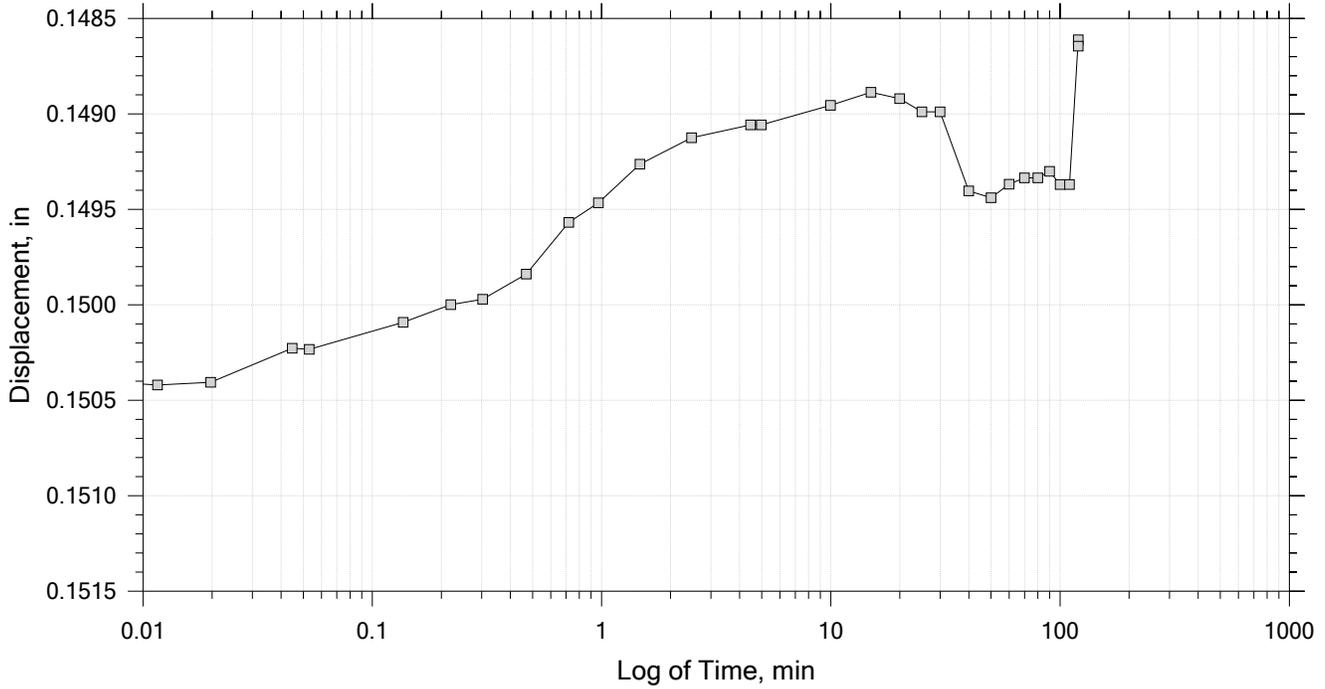
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U1	Test Date: 3/22/2025	Depth: 25.4
Test Number: ICON 65-445	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 11 of 26

Constant Load Step

Stress: 7.3e+03 psf



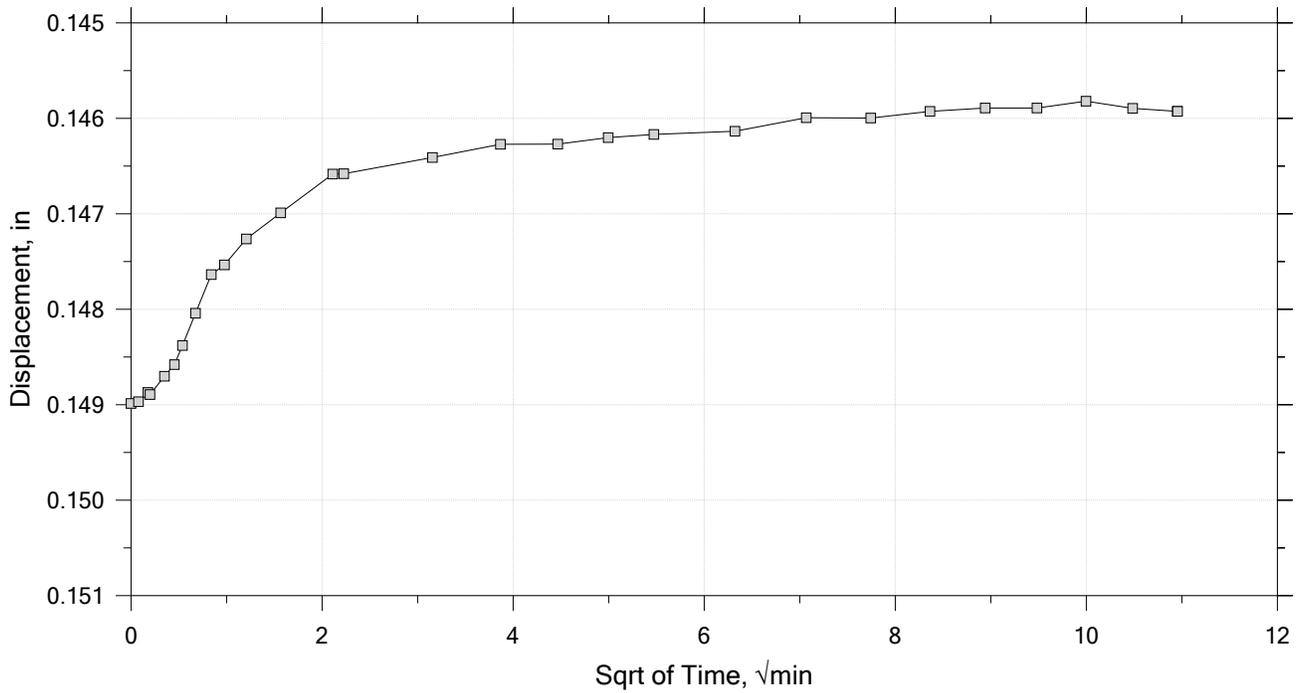
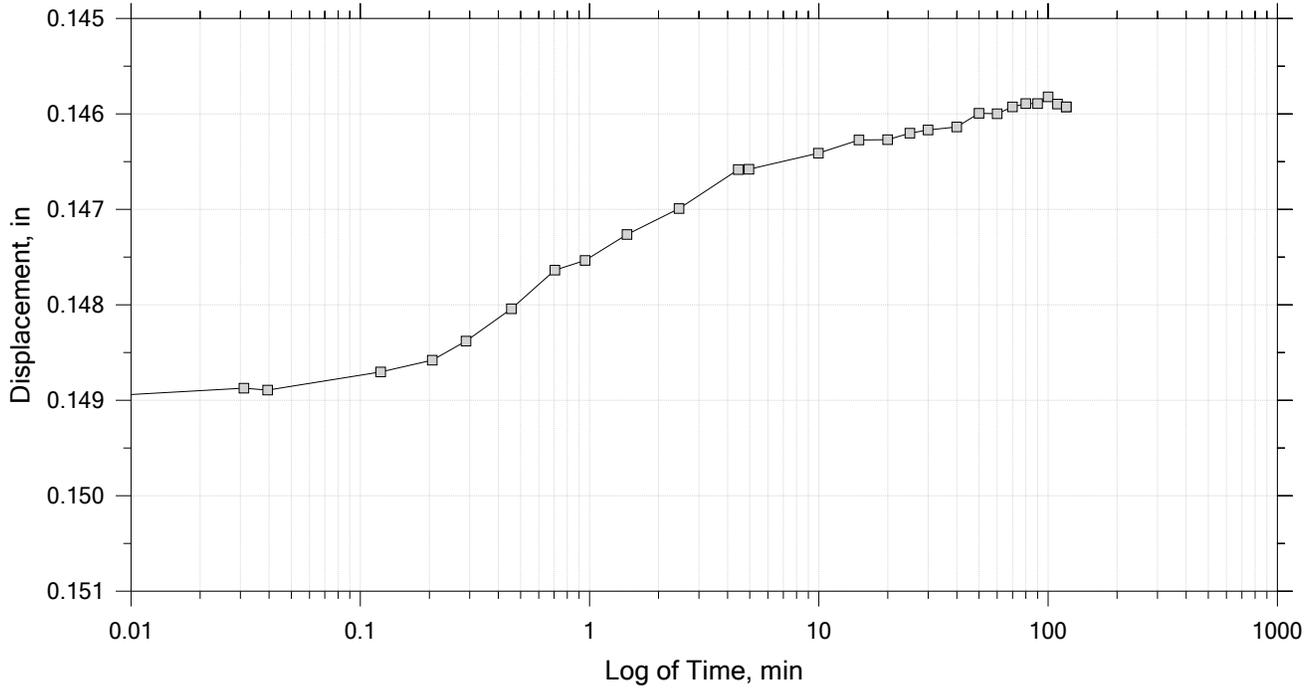
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	Boring Number: CA-105	Tester: SJR	Checker: SJR
	Sample Number: U1	Test Date: 3/22/2025	Depth: 25.4
	Test Number: ICON 65-445	Preparation:	Elevation: --
	Description:		
	Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 12 of 26

Constant Load Step

Stress: 3.65e+03 psf



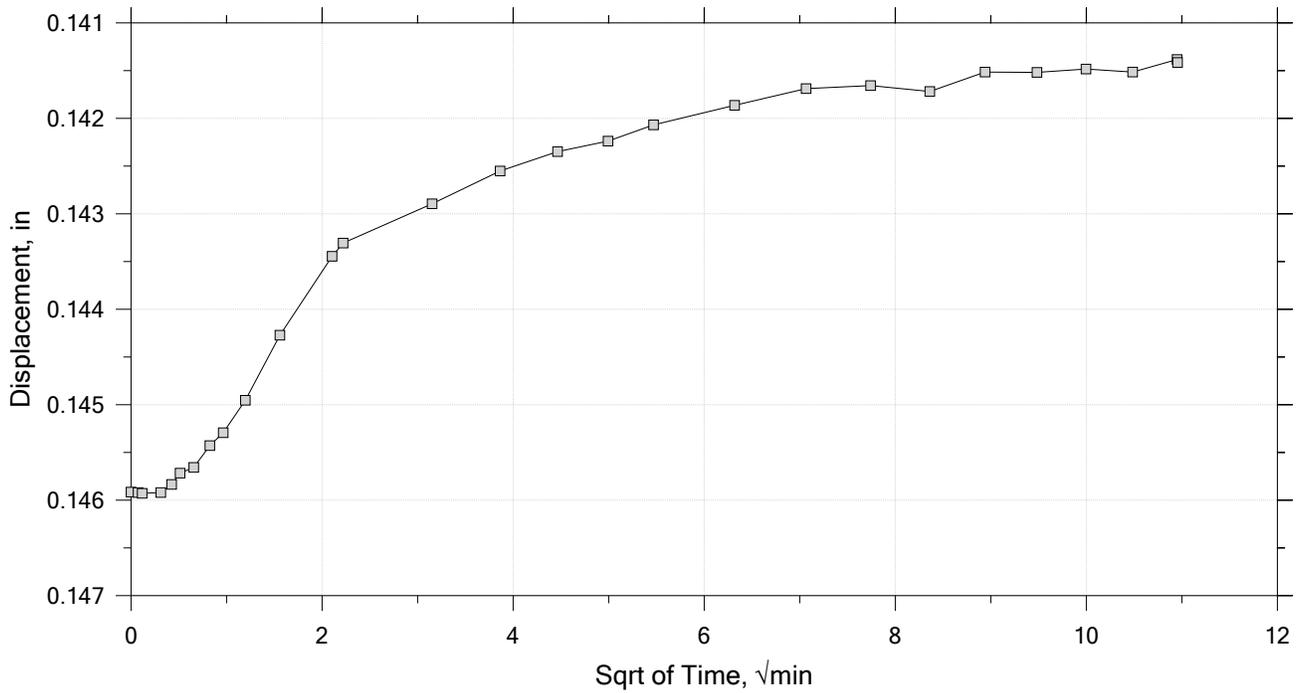
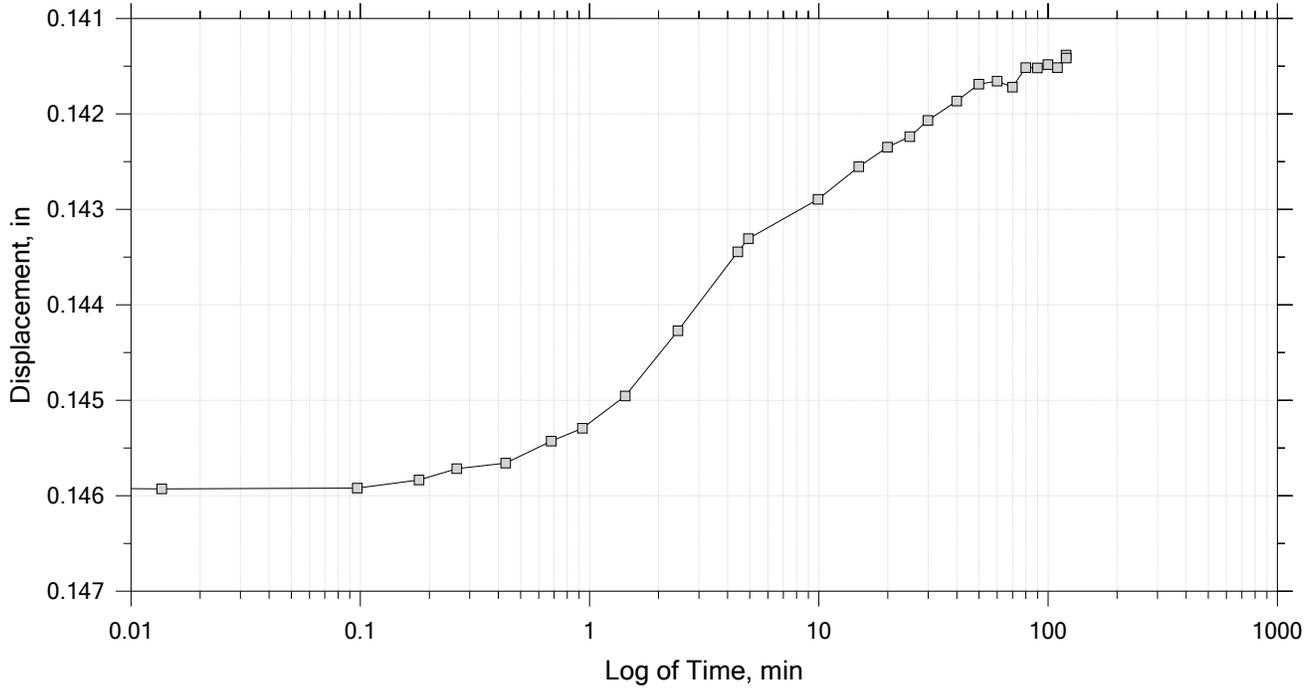
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U1	Test Date: 3/22/2025	Depth: 25.4
Test Number: ICON 65-445	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 13 of 26

Constant Load Step

Stress: 1.83e+03 psf



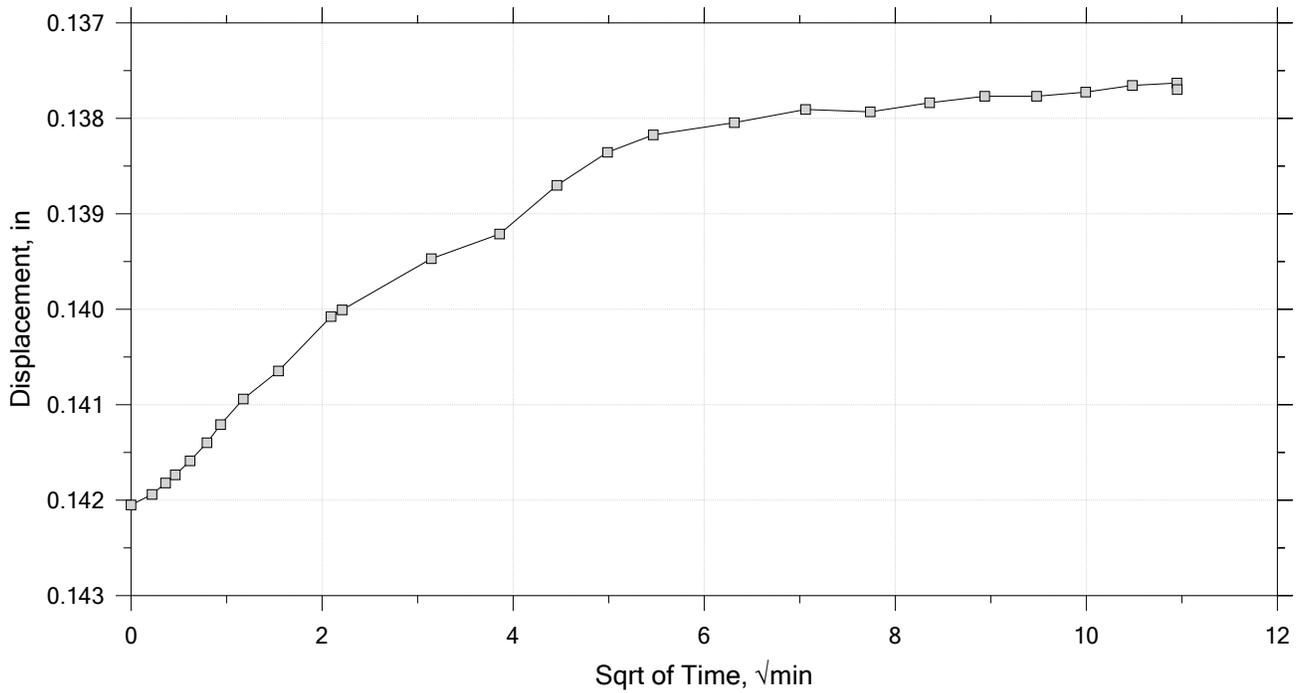
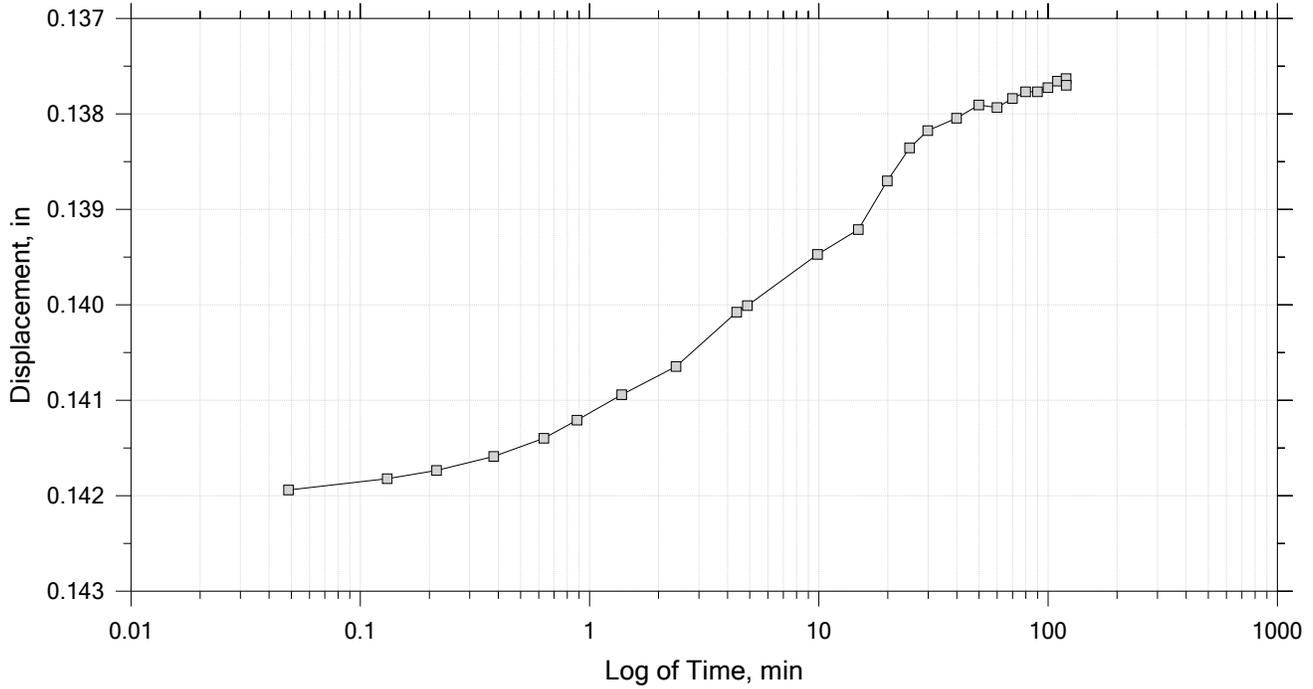
	Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
	Boring Number: CA-105	Tester: SJR	Checker: SJR
	Sample Number: U1	Test Date: 3/22/2025	Depth: 25.4
	Test Number: ICON 65-445	Preparation:	Elevation: --
	Description:		
	Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 14 of 26

Constant Load Step

Stress: 913 psf



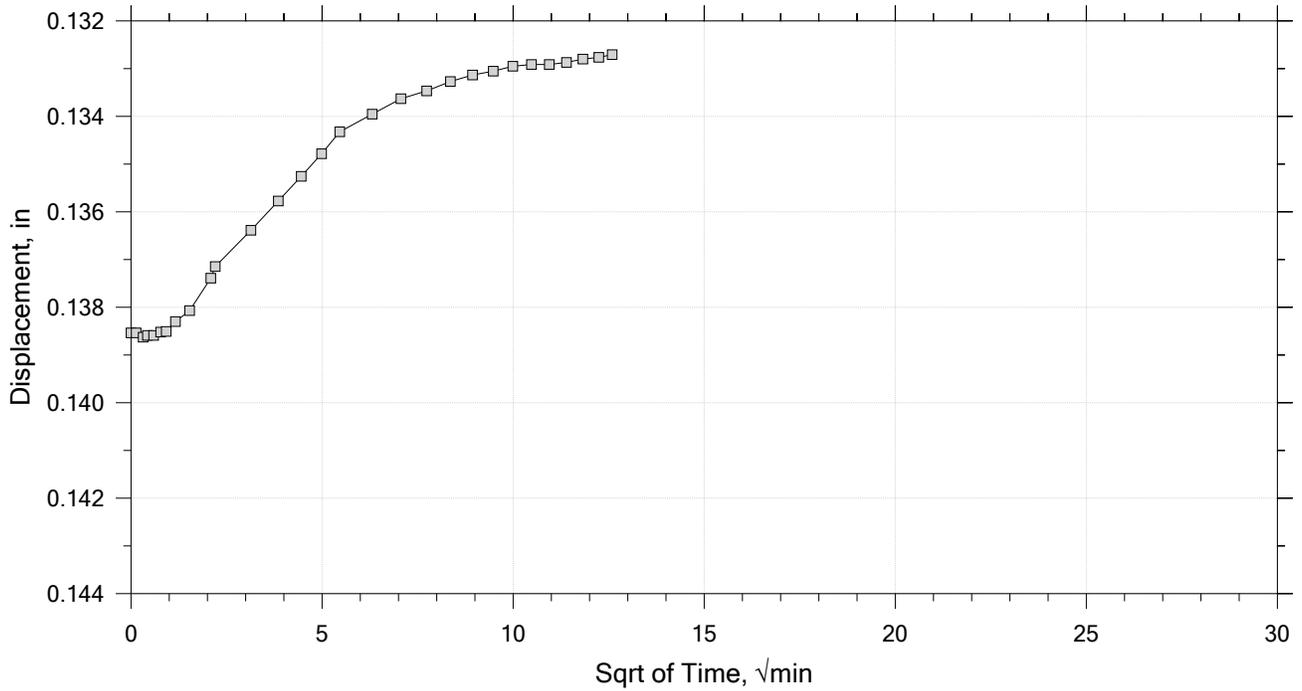
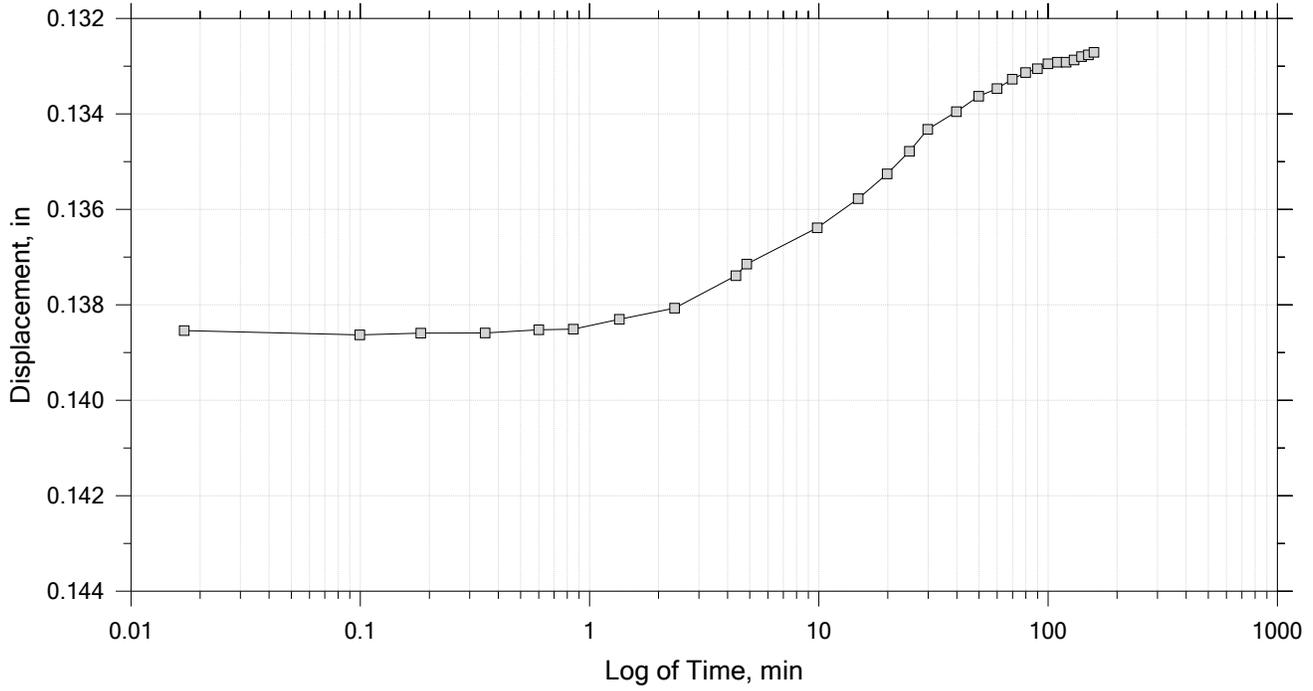
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U1	Test Date: 3/22/2025	Depth: 25.4
Test Number: ICON 65-445	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 15 of 26

Constant Load Step

Stress: 457 psf



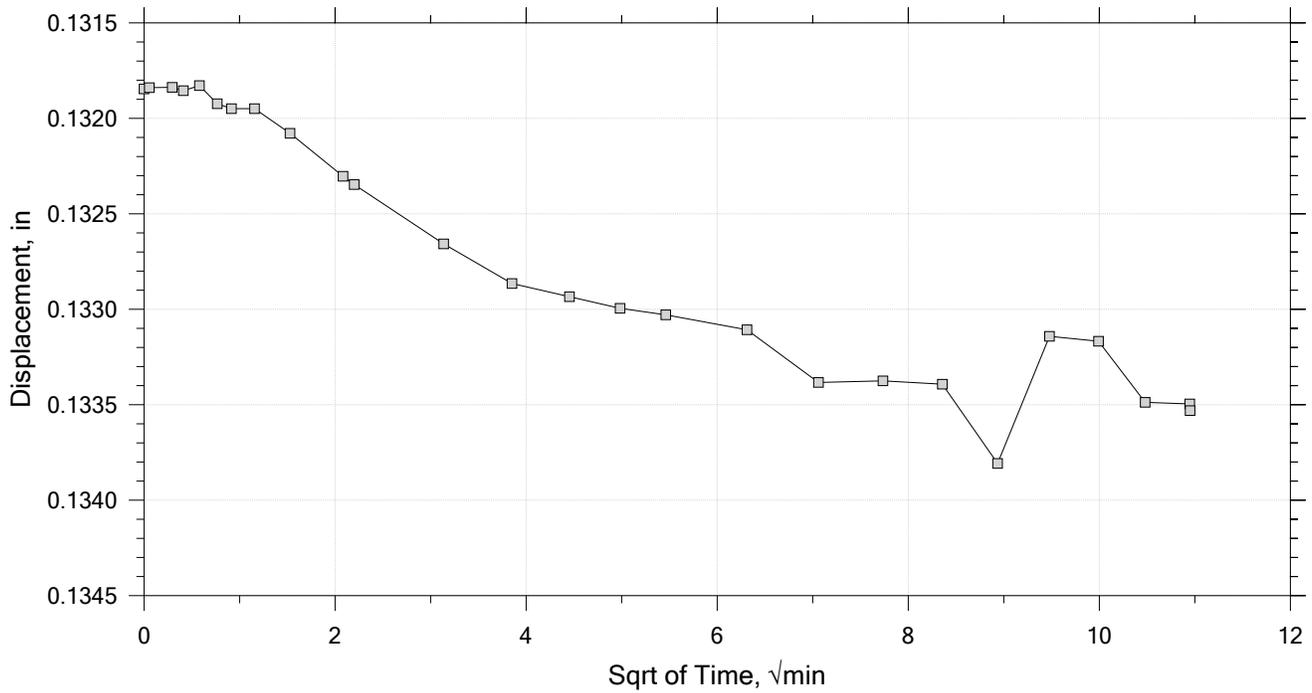
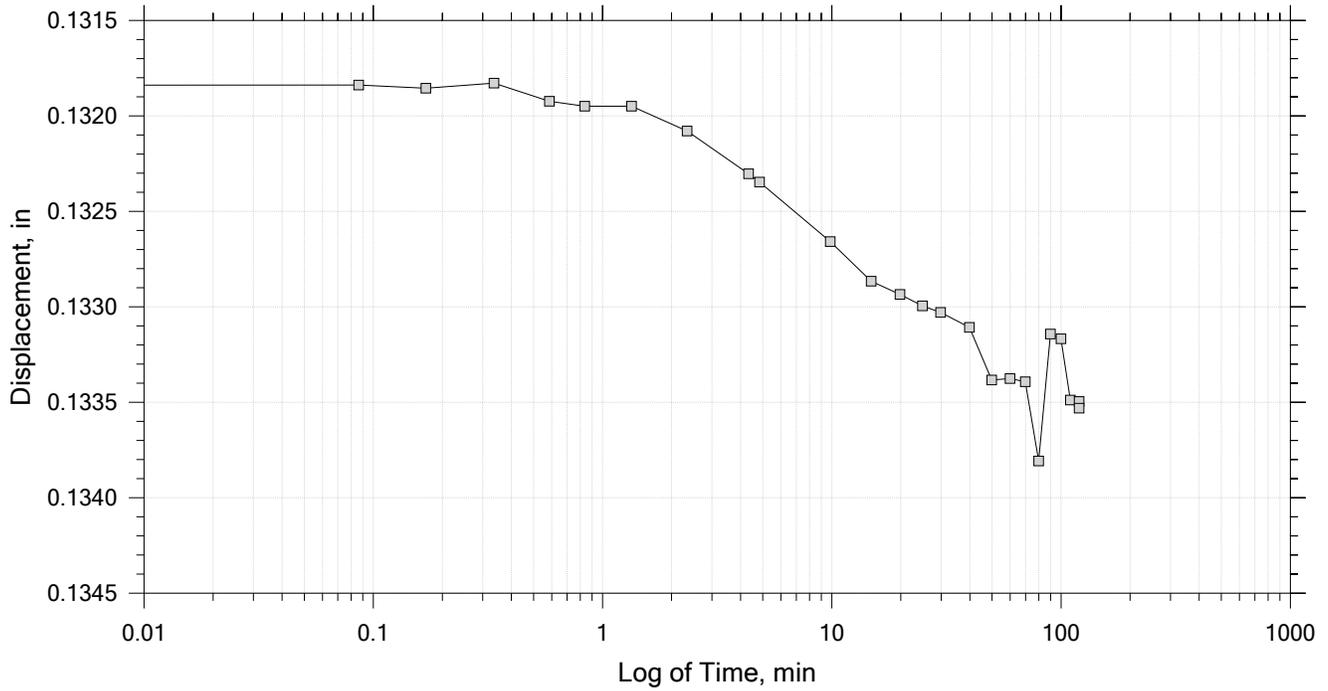
	Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
	Boring Number: CA-105	Tester: SJR	Checker: SJR
	Sample Number: U1	Test Date: 3/22/2025	Depth: 25.4
	Test Number: ICON 65-445	Preparation:	Elevation: --
	Description:		
	Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 16 of 26

Constant Load Step

Stress: 913 psf



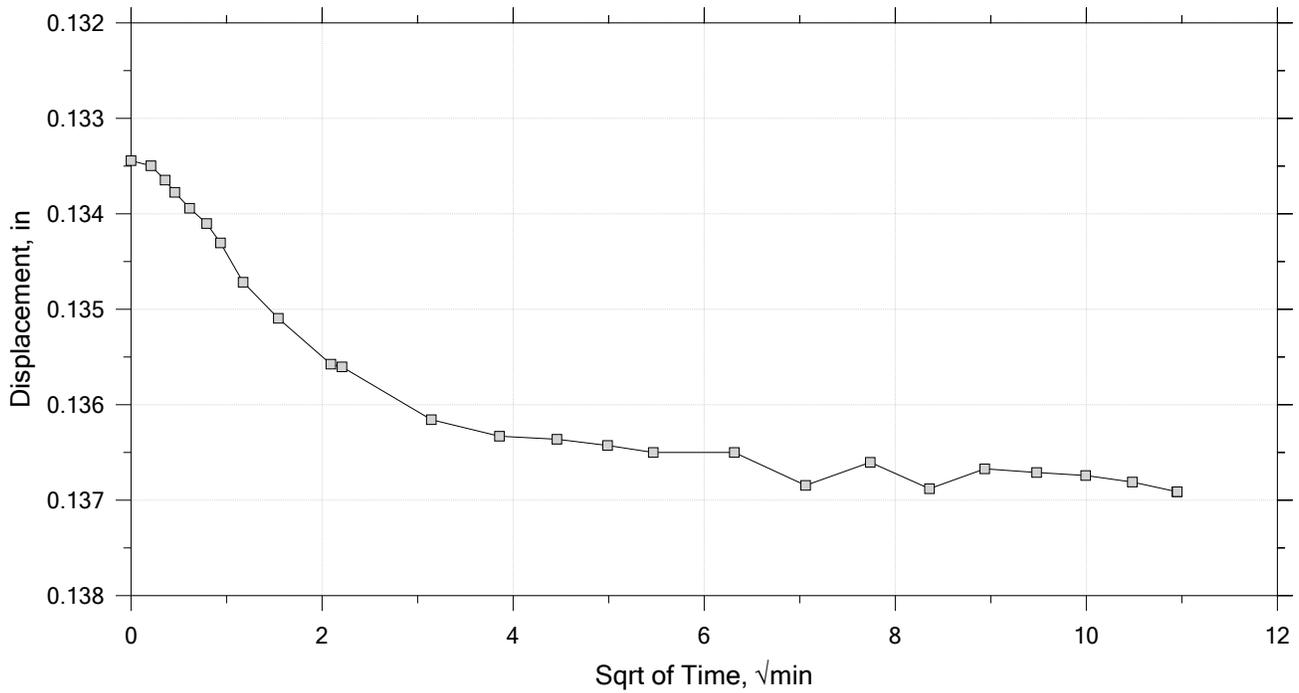
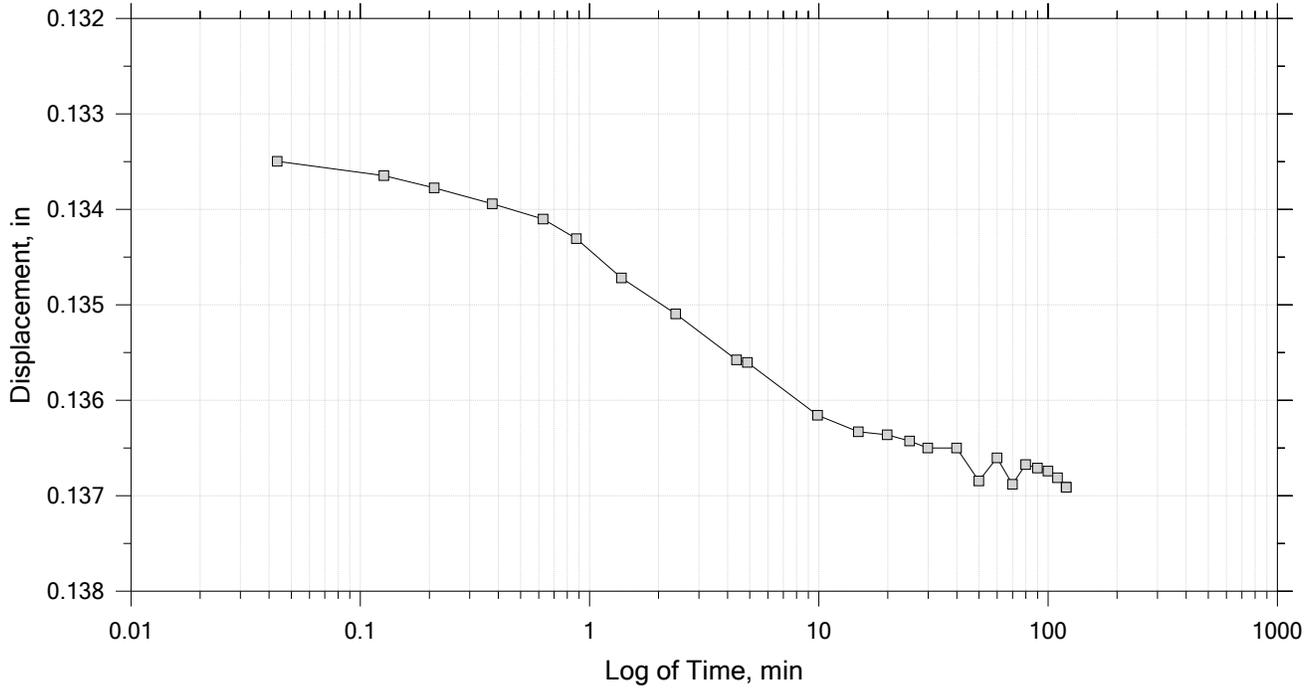
	Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
	Boring Number: CA-105	Tester: SJR	Checker: SJR
	Sample Number: U1	Test Date: 3/22/2025	Depth: 25.4
	Test Number: ICON 65-445	Preparation:	Elevation: --
	Description:		
	Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 17 of 26

Constant Load Step

Stress: 1.83e+03 psf



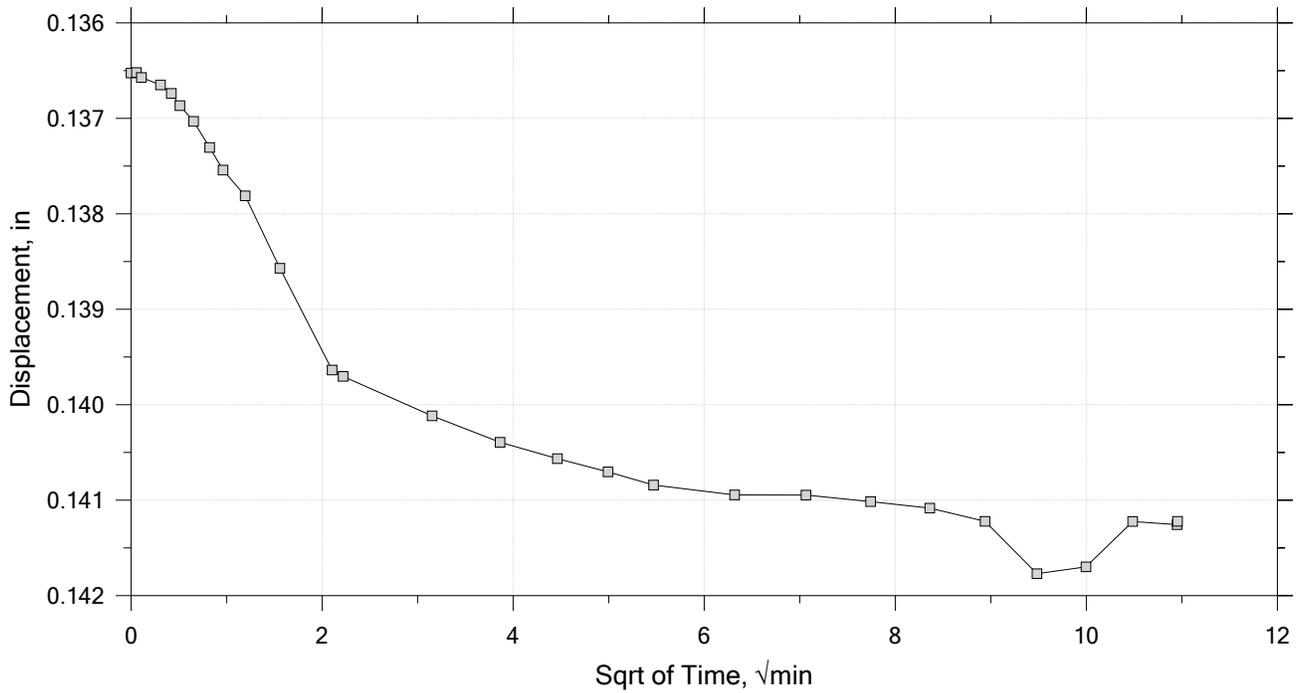
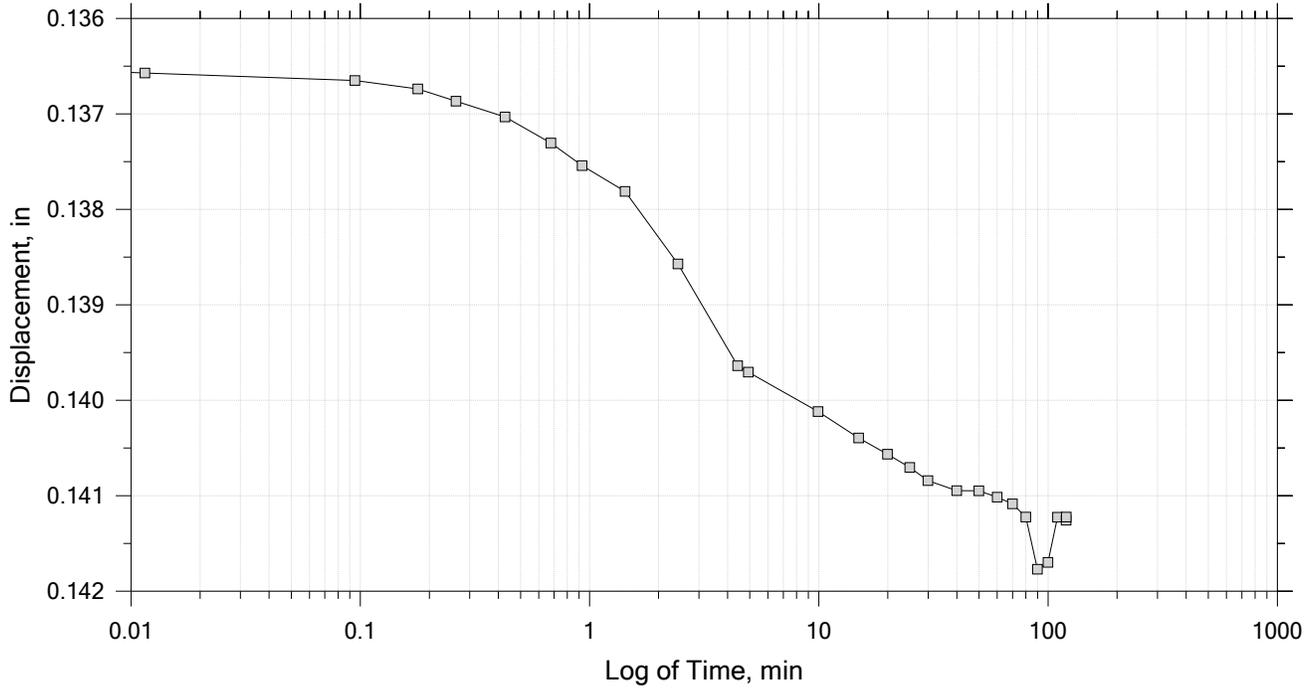
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U1	Test Date: 3/22/2025	Depth: 25.4
Test Number: ICON 65-445	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 18 of 26

Constant Load Step

Stress: 3.65e+03 psf



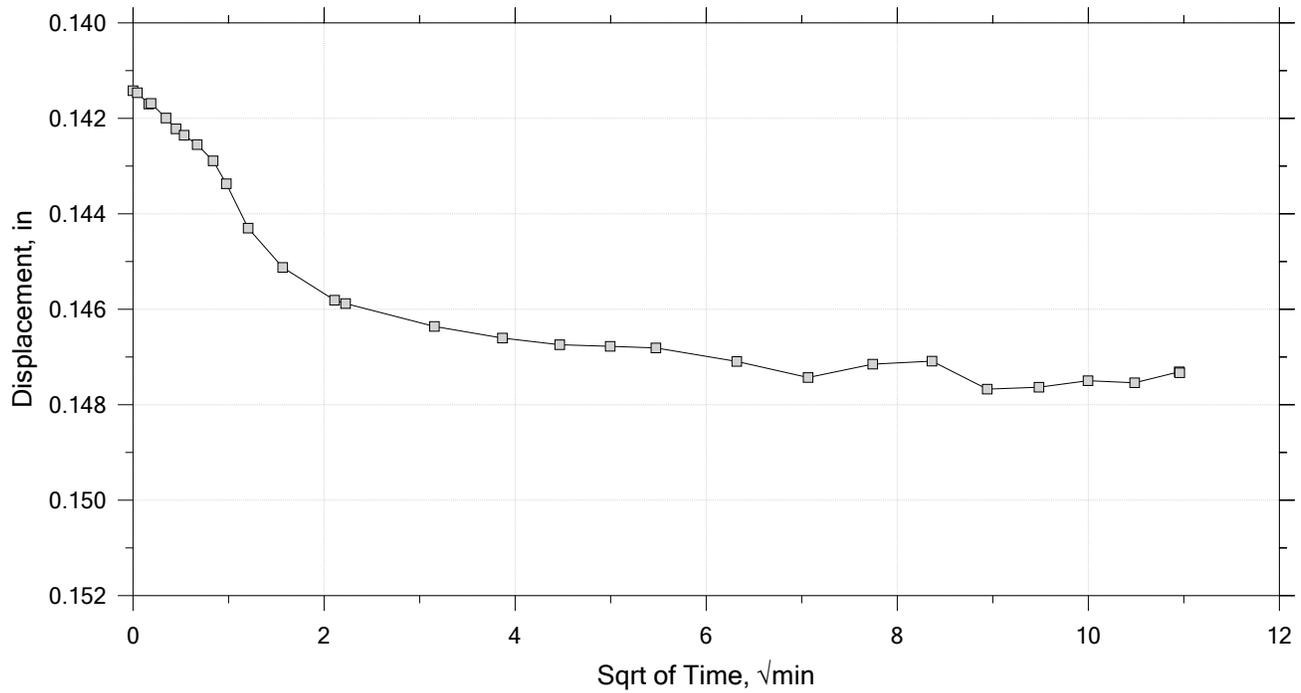
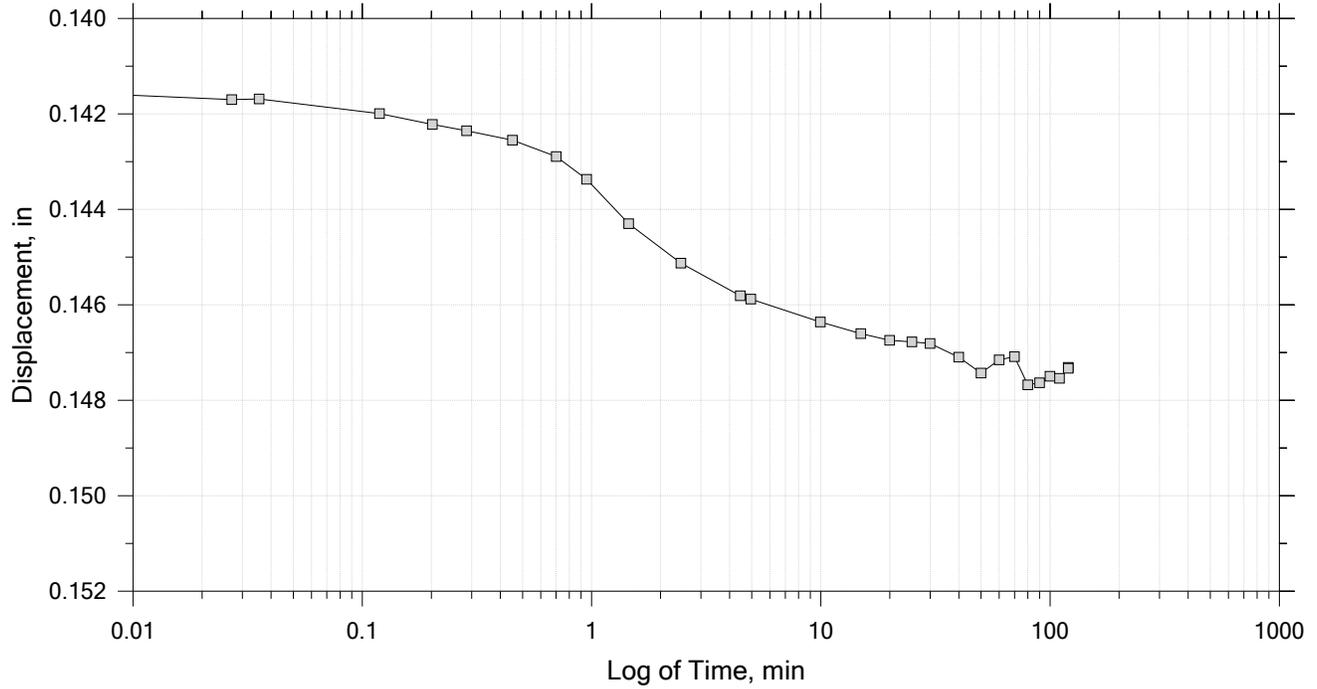
	Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
	Boring Number: CA-105	Tester: SJR	Checker: SJR
	Sample Number: U1	Test Date: 3/22/2025	Depth: 25.4
	Test Number: ICON 65-445	Preparation:	Elevation: --
	Description:		
	Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 19 of 26

Constant Load Step

Stress: 7.3e+03 psf



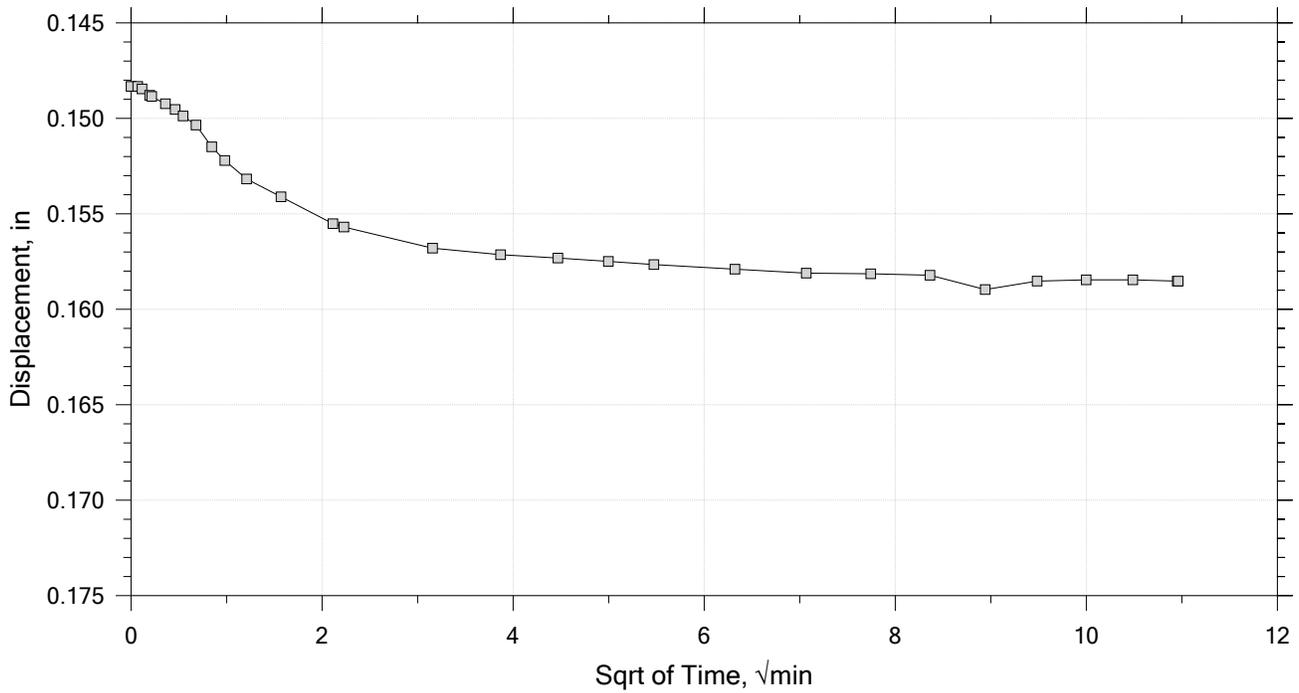
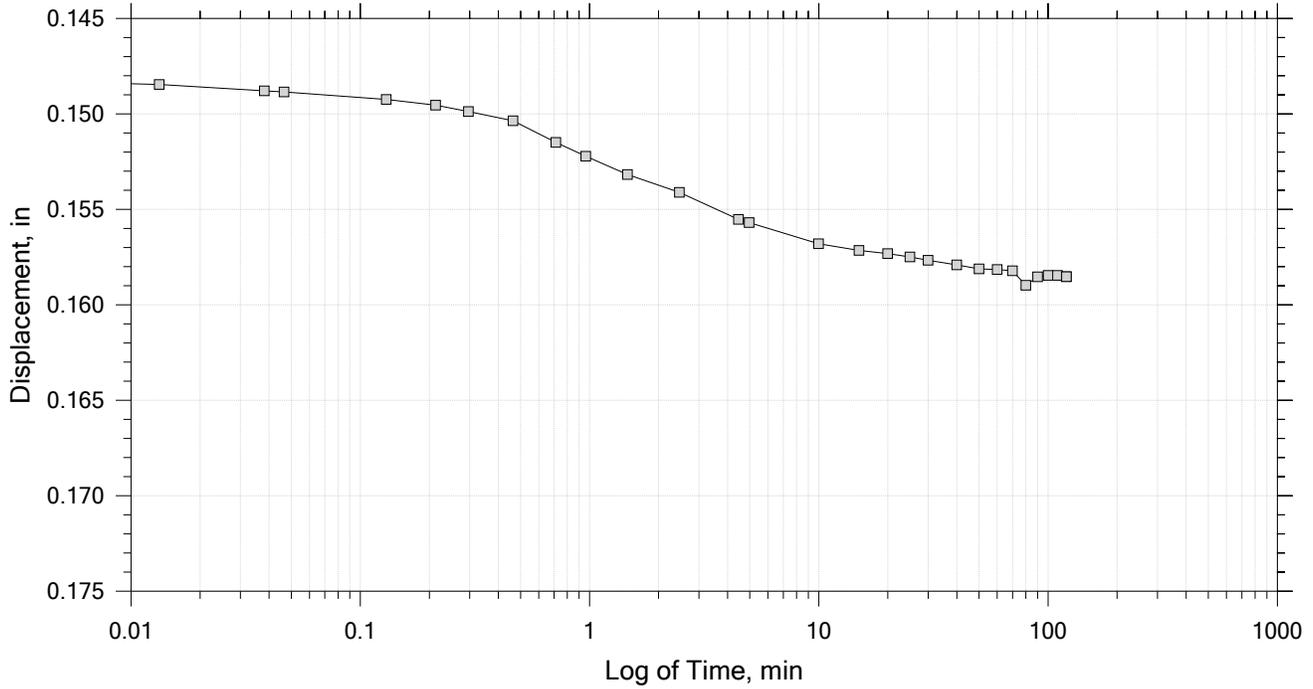
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U1	Test Date: 3/22/2025	Depth: 25.4
Test Number: ICON 65-445	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 20 of 26

Constant Load Step

Stress: 1.46e+04 psf



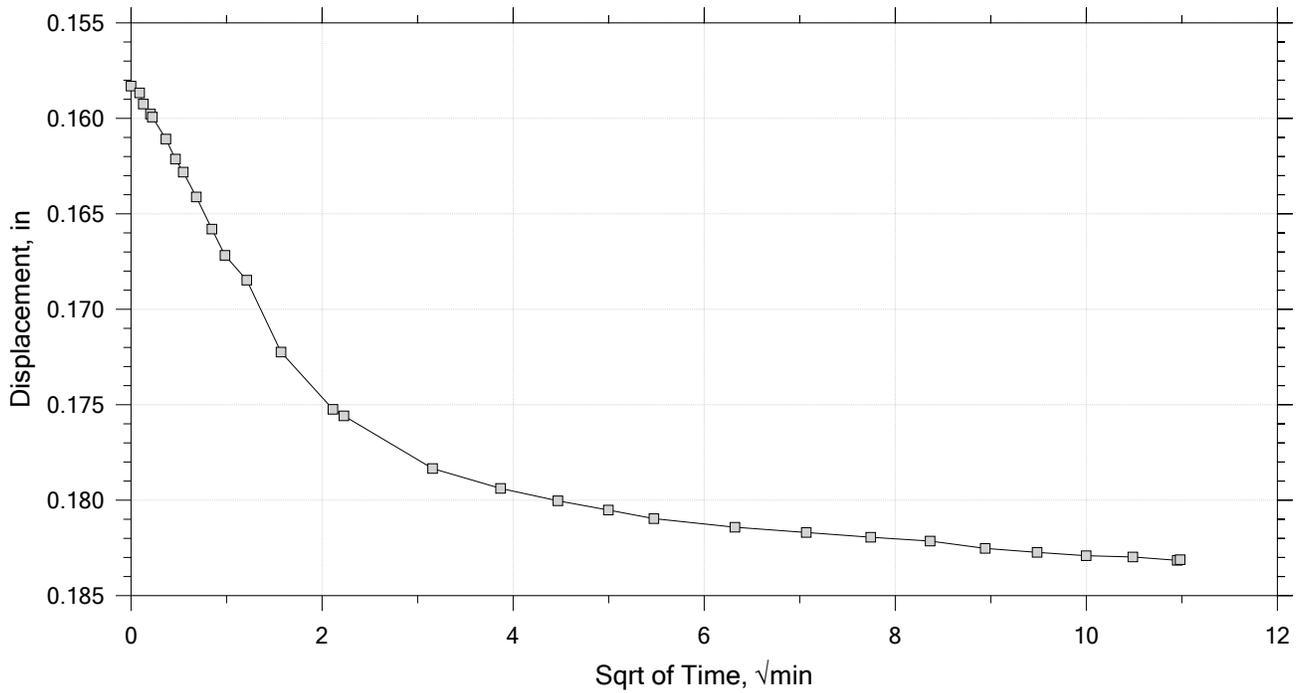
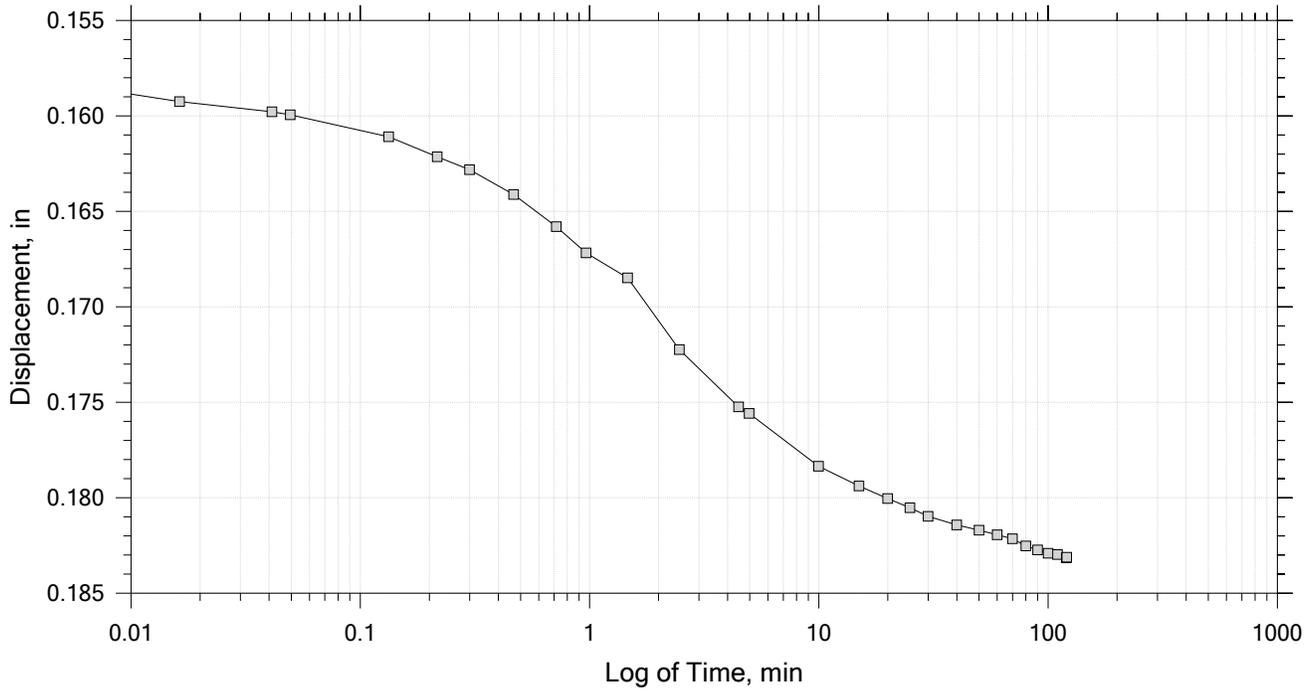
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U1	Test Date: 3/22/2025	Depth: 25.4
Test Number: ICON 65-445	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 21 of 26

Constant Load Step

Stress: 2.92e+04 psf



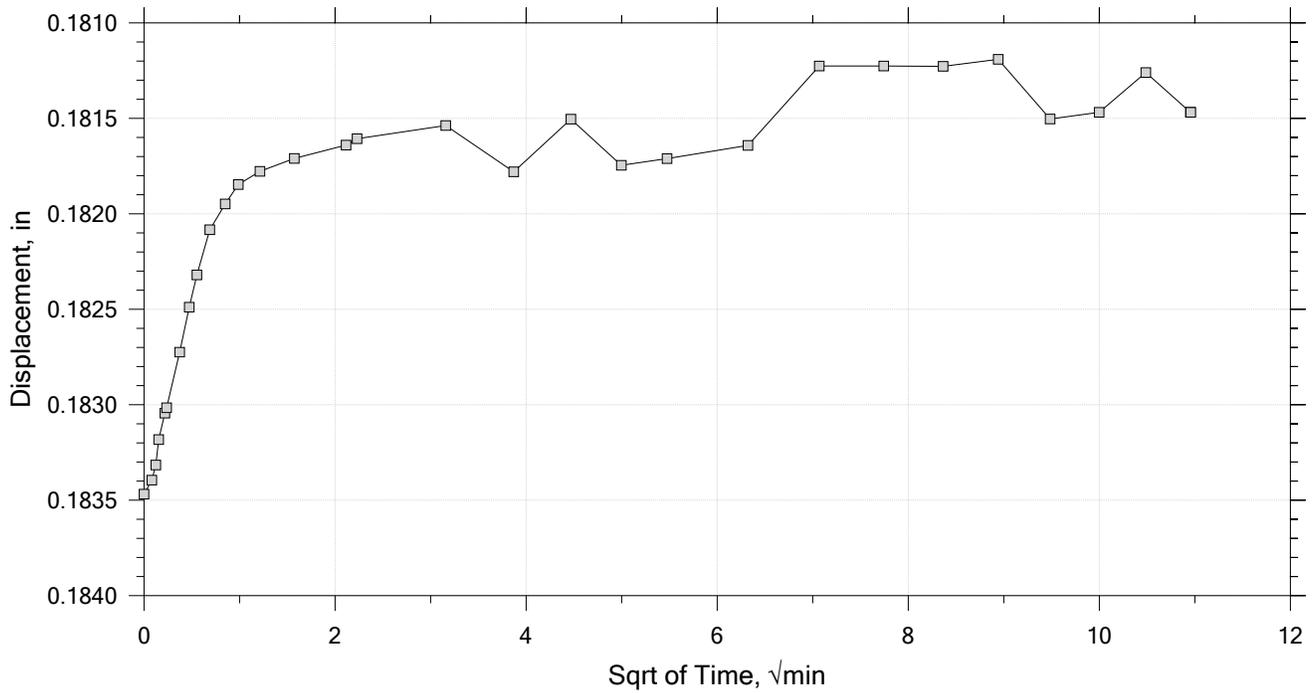
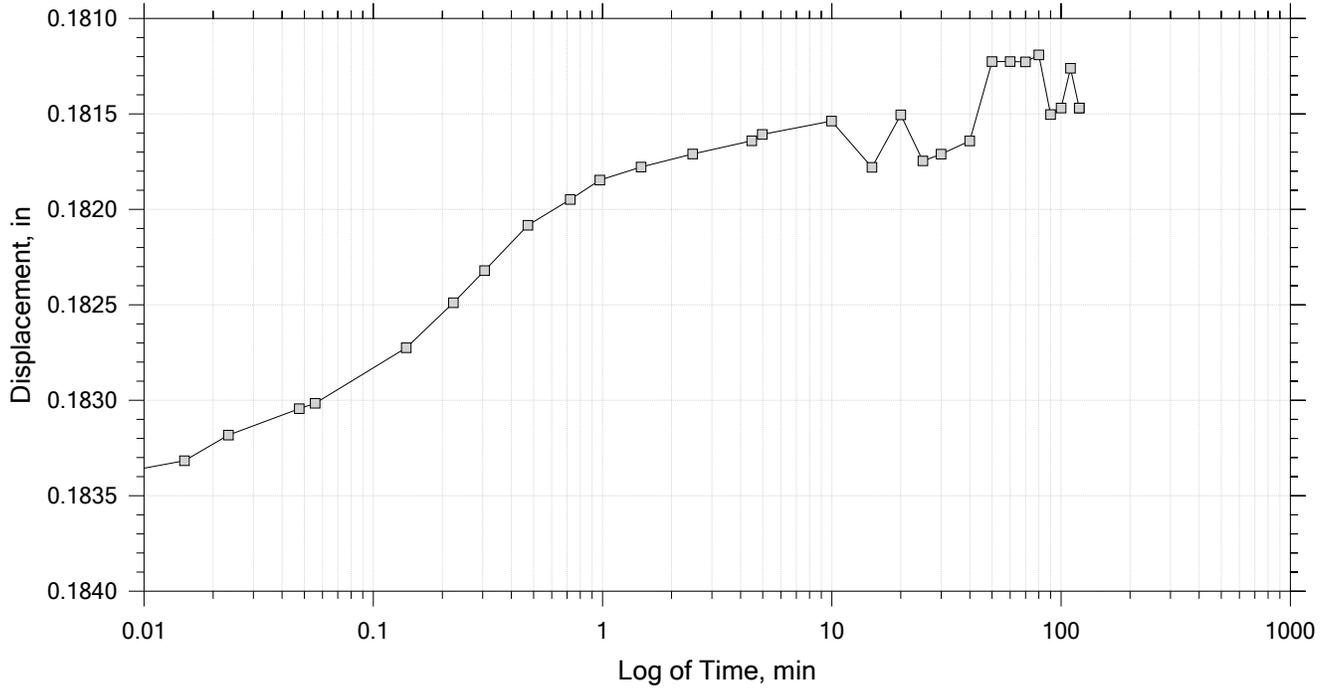
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U1	Test Date: 3/22/2025	Depth: 25.4
Test Number: ICON 65-445	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 22 of 26

Constant Load Step

Stress: 1.46e+04 psf



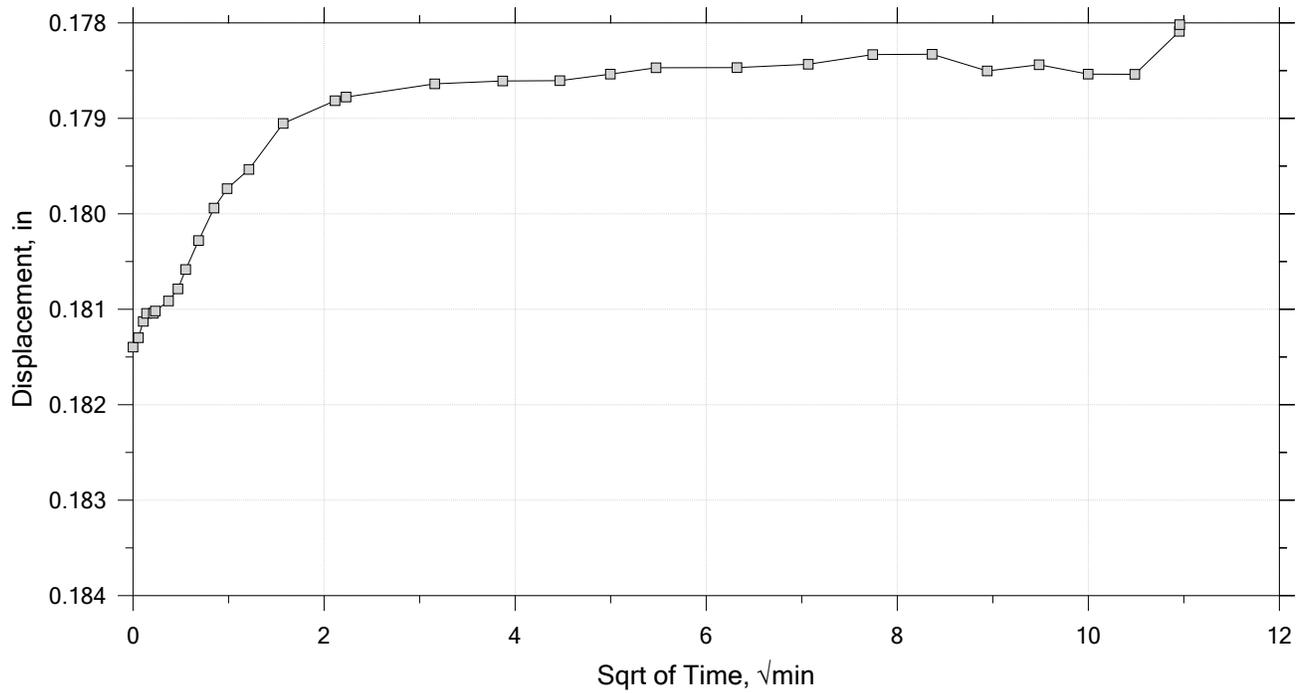
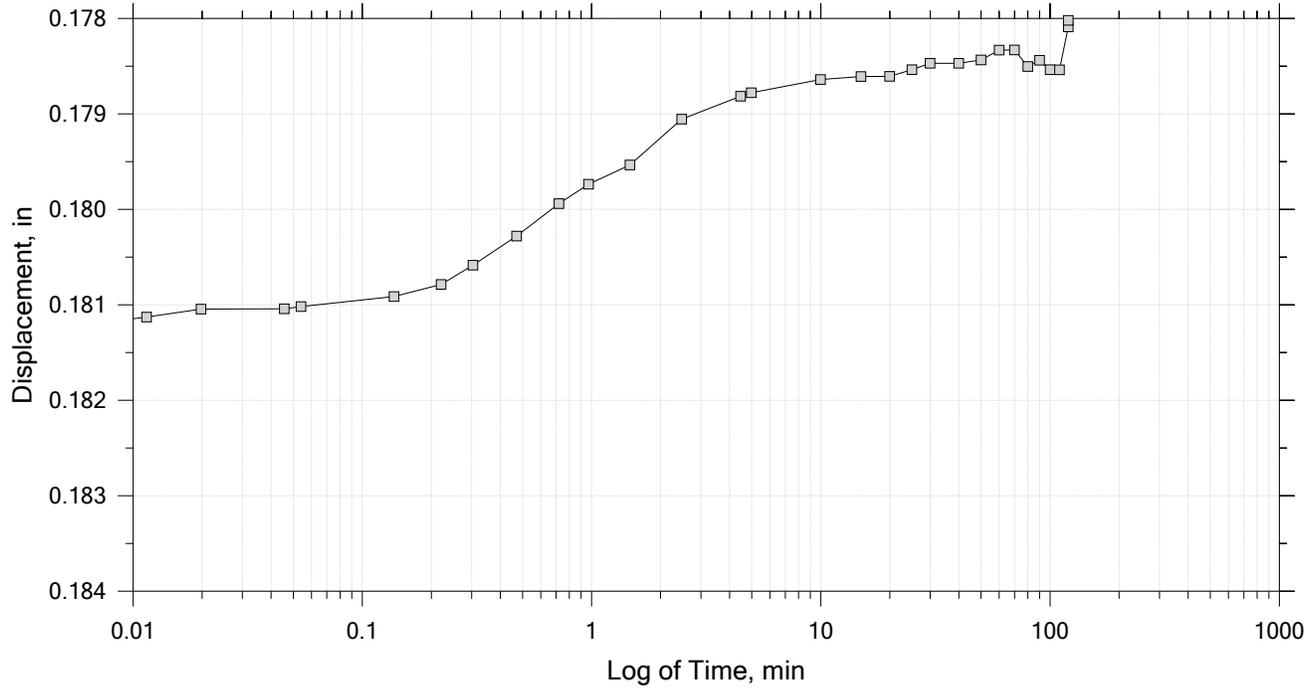
	Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
	Boring Number: CA-105	Tester: SJR	Checker: SJR
	Sample Number: U1	Test Date: 3/22/2025	Depth: 25.4
	Test Number: ICON 65-445	Preparation:	Elevation: --
	Description:		
	Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 23 of 26

Constant Load Step

Stress: 7.3e+03 psf



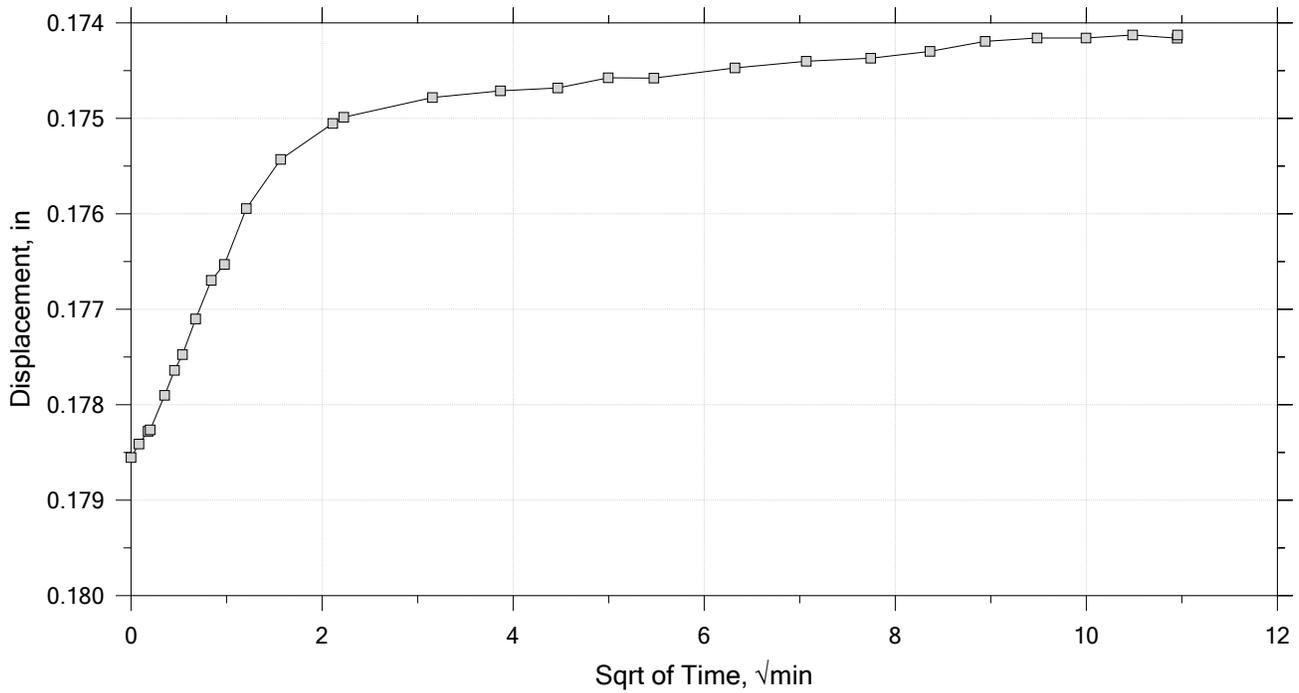
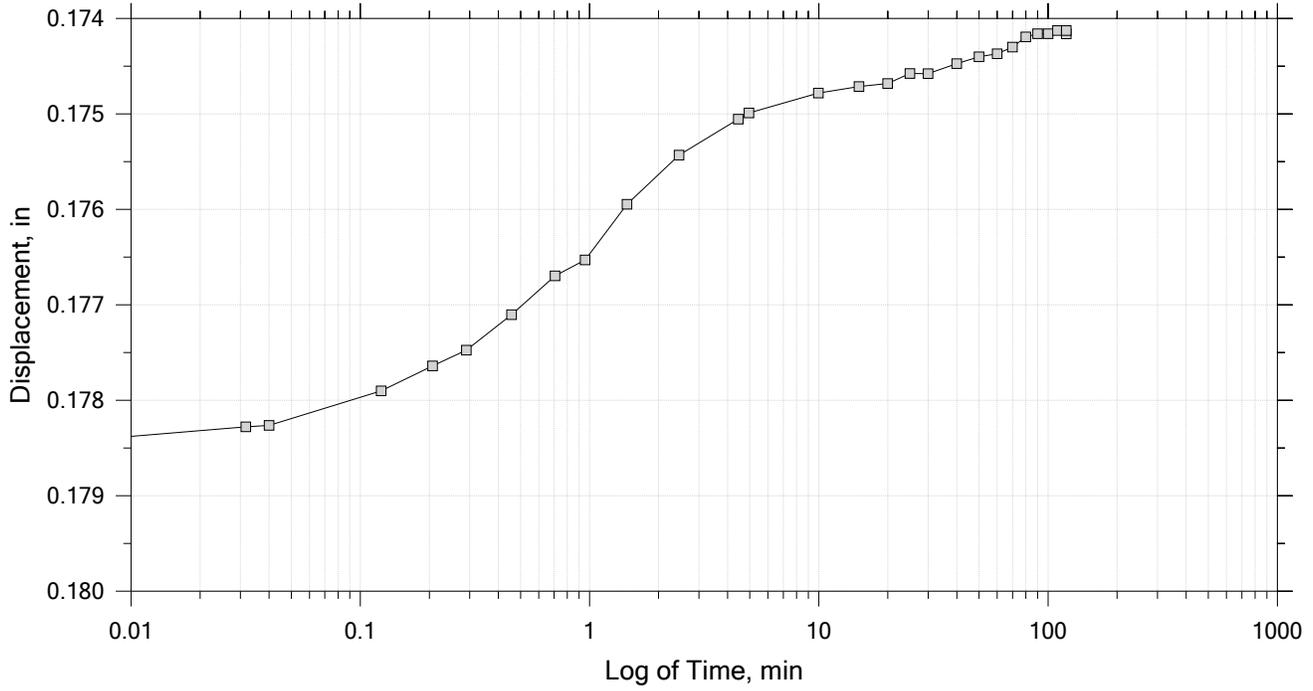
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U1	Test Date: 3/22/2025	Depth: 25.4
Test Number: ICON 65-445	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 24 of 26

Constant Load Step

Stress: 3.65e+03 psf



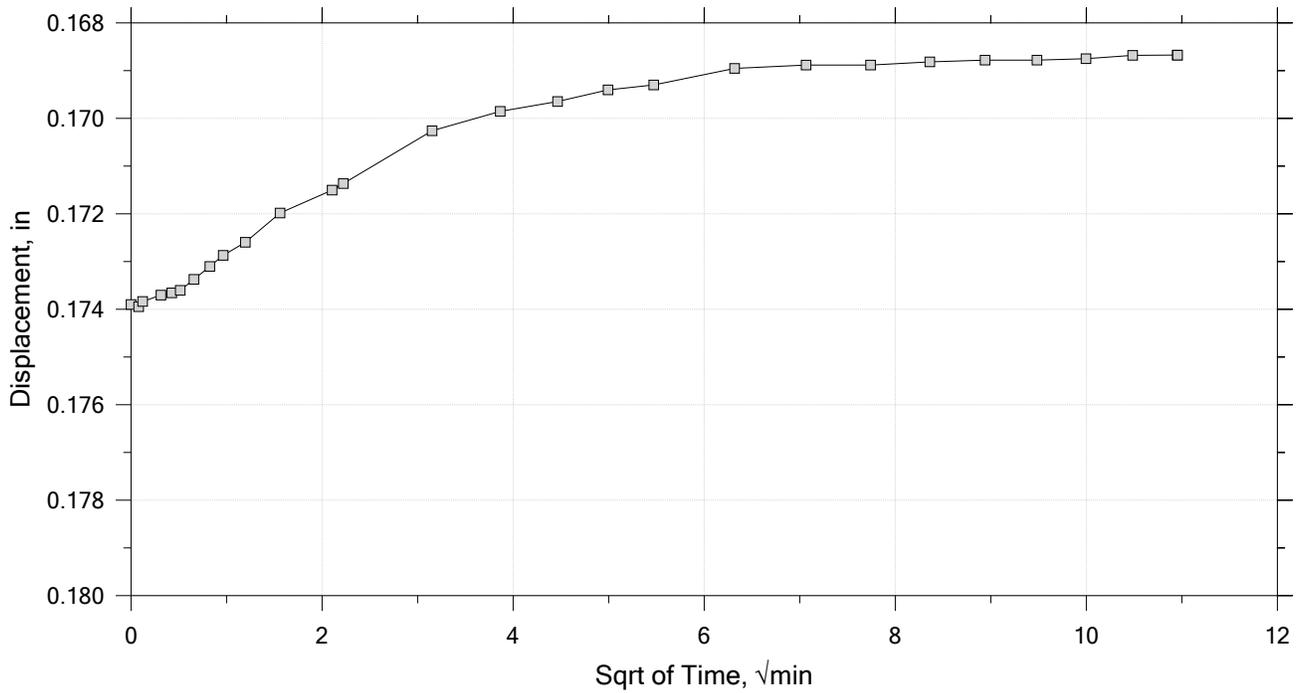
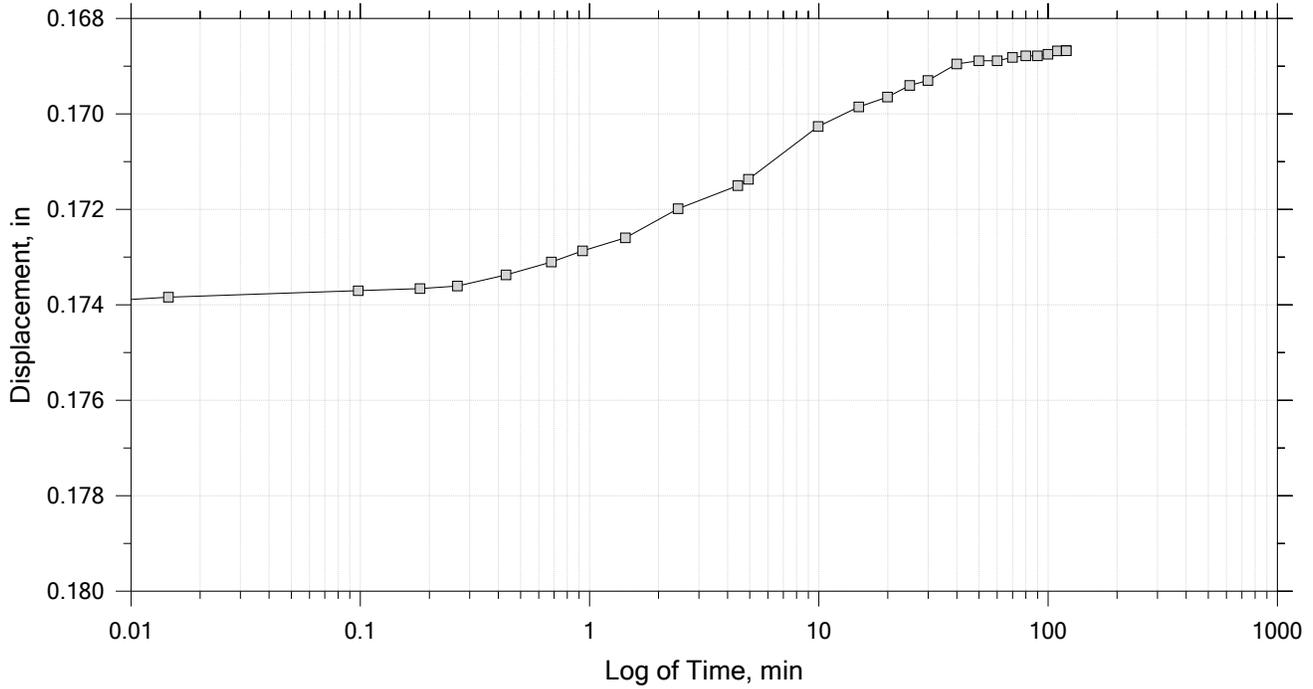
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U1	Test Date: 3/22/2025	Depth: 25.4
Test Number: ICON 65-445	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 25 of 26

Constant Load Step

Stress: 1.83e+03 psf



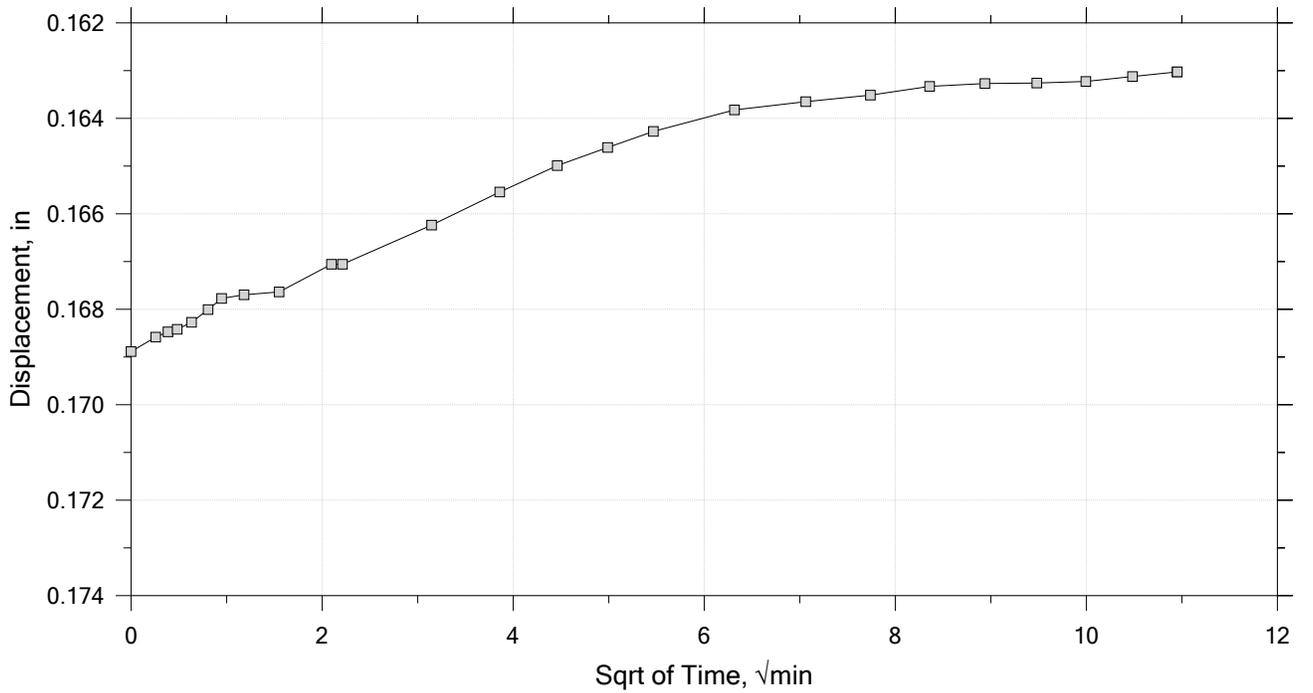
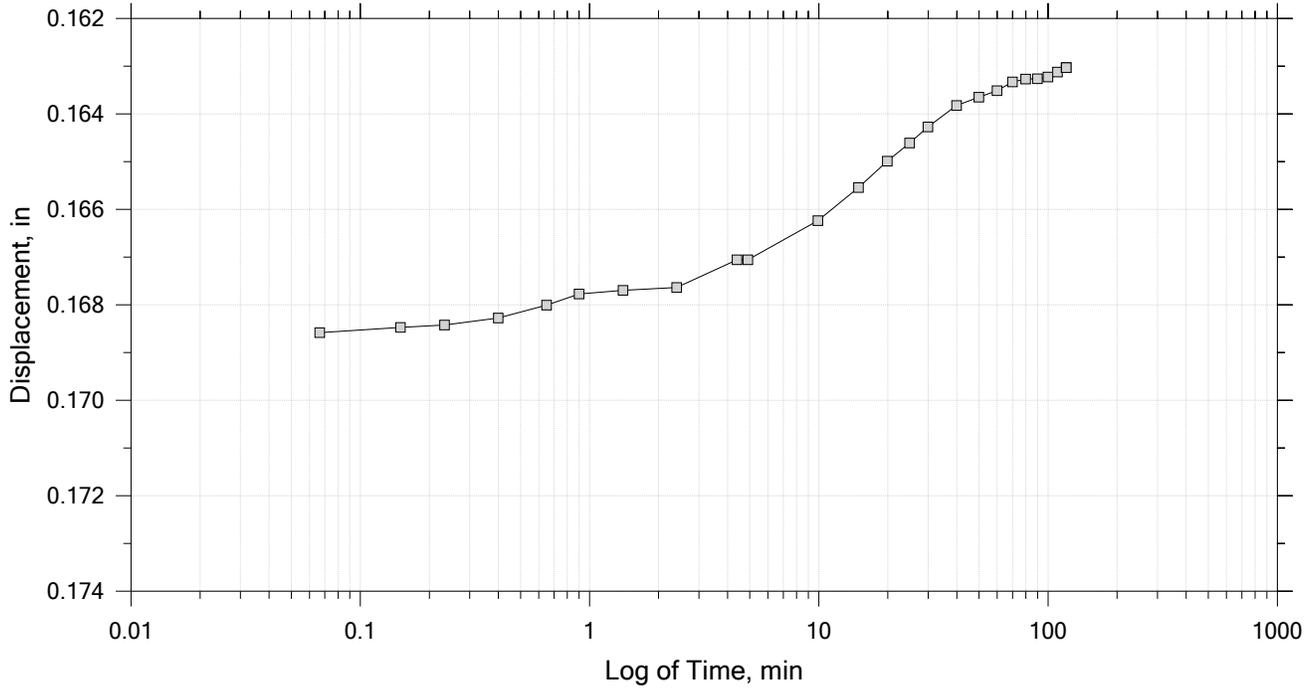
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U1	Test Date: 3/22/2025	Depth: 25.4
Test Number: ICON 65-445	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 26 of 26

Constant Load Step

Stress: 913 psf

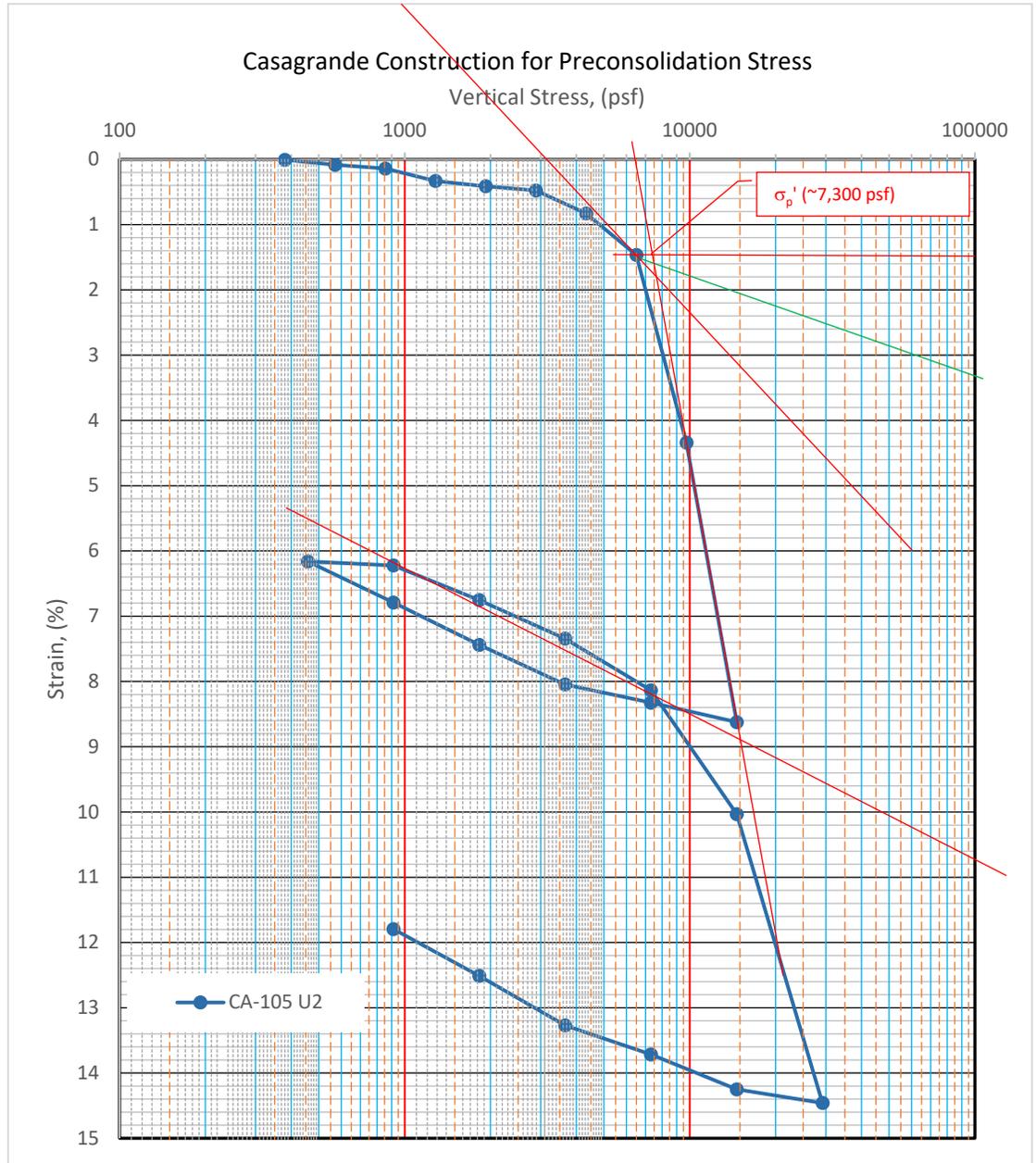


Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U1	Test Date: 3/22/2025	Depth: 25.4
Test Number: ICON 65-445	Preparation:	Elevation: --
Description:		
Remarks:		

CA-105 U2 CONSOLIDATION

Consolidation Test Data
Summary Report

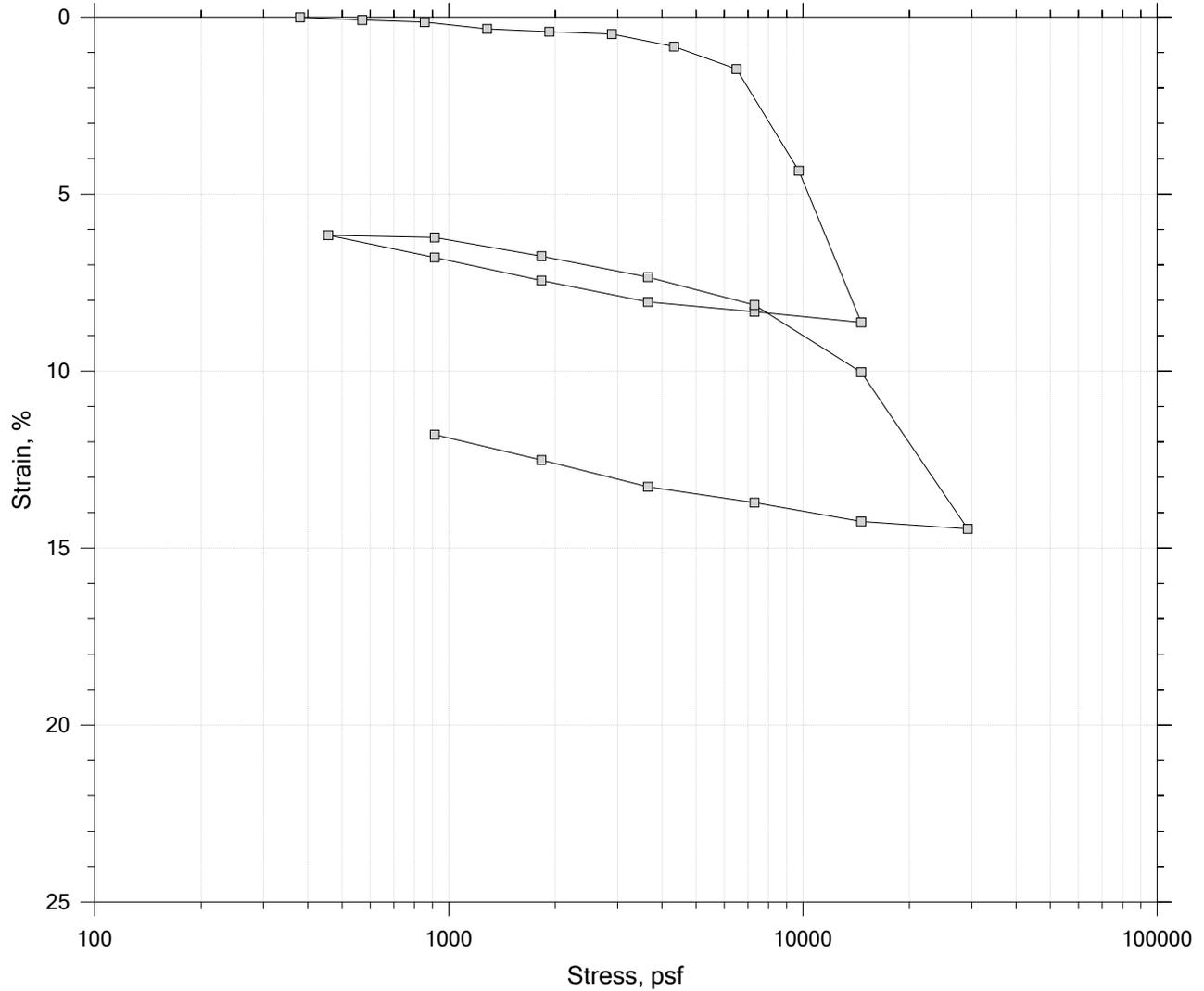
Project Name:	Cyro Road	
Project Number:	174-01	
Project Location:	Sanford, ME	
Client:	Credeire PN 24001944	
Sample Description:	Gray silty Clay	
Preparation:	Trimmed Shelby Tube	
Lab Test No:	ICON 65-443	
Boring No.	CA-105	
Sample No:	U2	
Boring Elevation (ft).	--	
Sample Depth (ft):	30-32	
Test Specimen Depth (Ft):	31.62	
Test Specimen Elevation:	---	
Water Content (%):	38.0	
Dry Unit Weight (pcf):	84.1	
Wet Unit Weight (pcf):	116.1	
Saturation Before (%):	99.5	
Saturation After (%):	100	
Void Ratio Before:	1.06	
Void Ratio After:	0.82	
Overburden Pressure (psf):	--	
Max Previous stress (psf):	7,300	
Max Prev. stress (Work) (psf):	--	
OCR:	--	
Compression Index (C_{CE}):	0.234	
Recompression Index (C_{RE}):	0.022	from re-load curve
Liquid Limit:	36.4	
Plastic Limit:	23.2	
Plasticity Index:	13.2	
Liquidity Index:	1.1	
Organic Content	--	
Lab Vane S_u at 31.25 ft. (psf)	877	
Tested By:	sjr	
Date Tested:	3/13/2025	
Checked By:	sjr	



Note 1: The calculations for the Max Previous Stress, the Compression Index and the Recompression Index are provided for the convenience of the Specifier. The Specifier should make their own independent assessment of Maximum Previous stress, Cce and Cre for use in any engineering analyses.

One-Dimensional Consolidation by ASTM D2435 - Method B

Summary Report



				Before Test	After Test	
Current Vertical Effective Stress, psf: 0		Specimen Diameter, in: 2.5		Water Content, %	37.99	29.42
Preconsolidation Stress, psf: ---		Specimen Height, in: 1		Dry Unit Weight, pcf	84.105	95.36
Compression Ratio: 0		LL: 32		Saturation, %	99.51	100.00
		PL: 19		Void Ratio	1.06	0.82
		PI: 13				
		GS: 2.77				

	Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
	Boring Number: CA-105	Tester: SJR	Checker: SJR
	Sample Number: U2	Test Date: 3/13/2025	Depth: 31.65
	Test Number: ICON 65-443	Preparation:	Elevation: --
	Description:		
	Remarks:		
	Displacement at End of Increment		

One-Dimensional Consolidation by ASTM D2435 - Method B

Specimen Diameter, in: 2.50	Specific Gravity: 2.77 (Implied)	Liquid Limit: 32
Specimen Height, in: 1.00	Initial Void Ratio: 1.06	Plastic Limit: 19
Final Height, in: 0.88	Final Void Ratio: 0.816	Plasticity Index: 13

	Before Test Trimblings	Before Test Specimen	After Test Specimen	After Test Trimblings
Container ID	204	---	"Ring"	322
Mass Container, gm	36.88	109.53	109.53	60.69
Mass Container + Wet Soil, gm	143.66	259.07	249.78	200.11
Mass Container + Dry Soil, gm	117.22	217.9	217.9	168.42
Mass Dry Soil, gm	80.34	108.37	108.37	107.73
Water Content, %	32.91	37.99	29.42	29.42
Void Ratio	---	1.06	0.82	---
Degree of Saturation, %	---	99.51	100.00	---
Dry Unit Weight, pcf	---	84.105	95.36	---

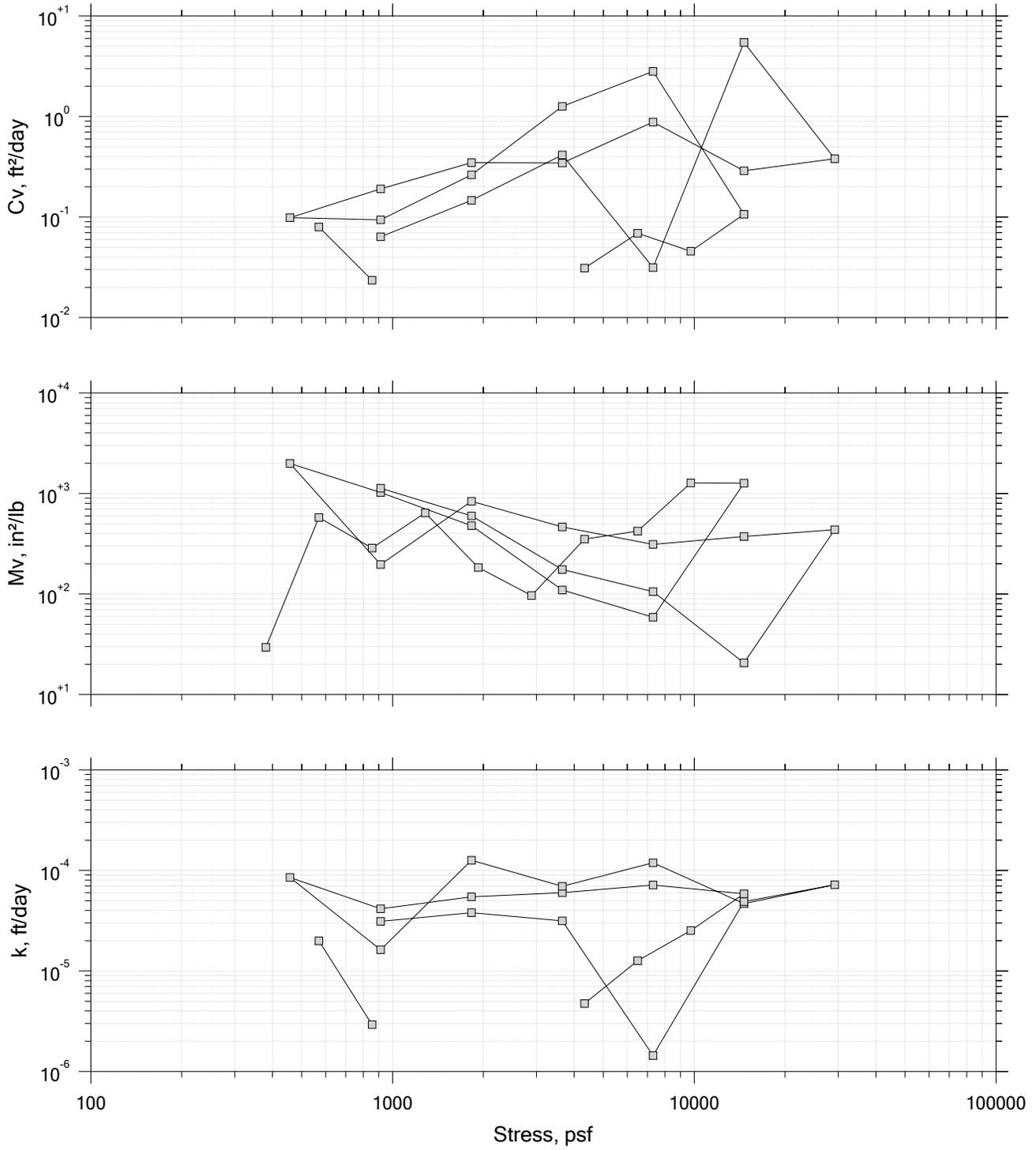
Preconsolidation Stress, psf	---
Compression Ratio	0
Rebound Ratio	0
Compression Index	0
Rebound Index	0

Note: Specific Gravity and Void Ratios are calculated assuming the degree of saturation equals 100% at the end of the test. Therefore, values may not represent actual values for the specimen.

	Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
	Boring Number: CA-105	Tester: SJR	Checker: SJR
	Sample Number: U2	Test Date: 3/13/2025	Depth: 31.65
	Test Number: ICON 65-443	Preparation:	Elevation: --
	Description:		
	Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

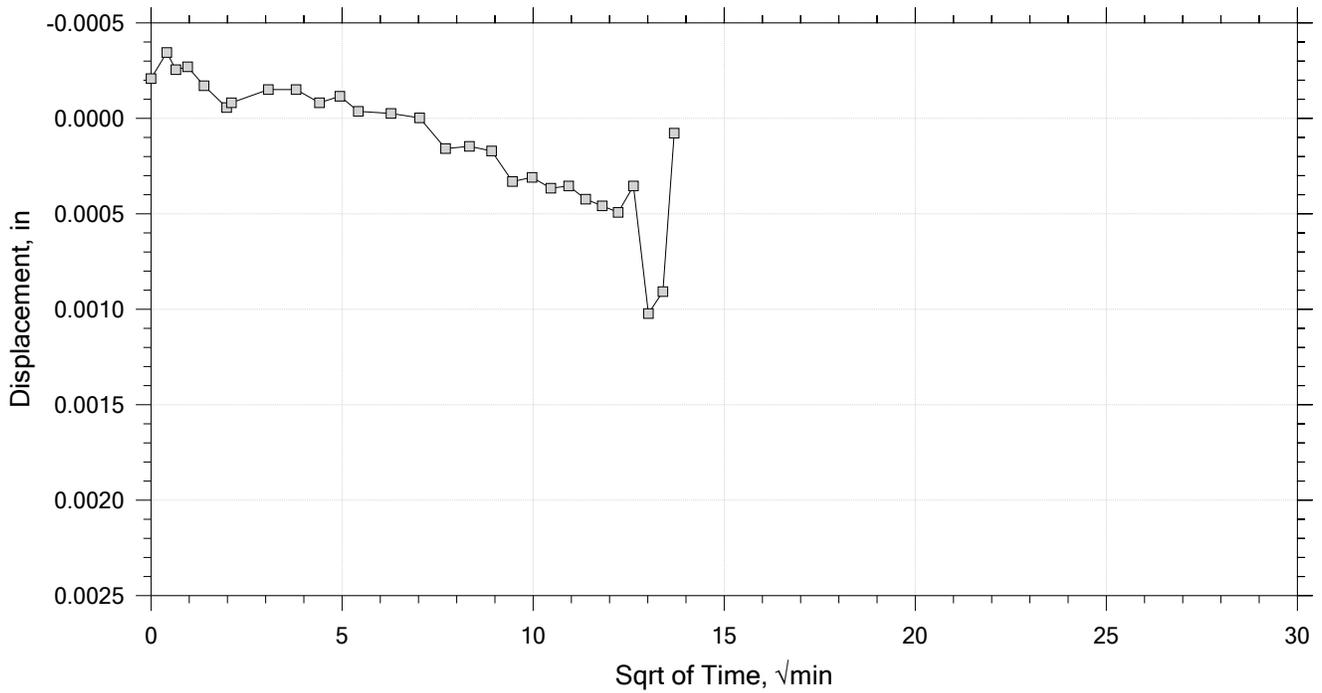
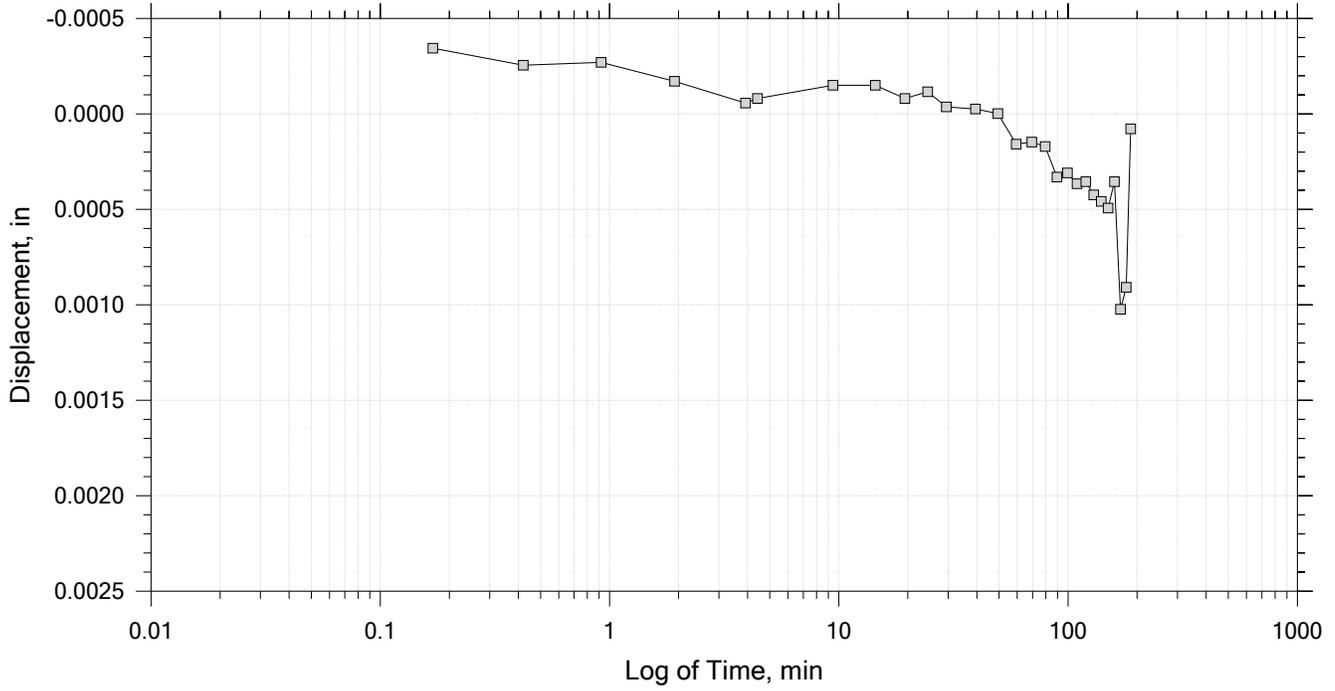
Sqrt of Time Coefficients



Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U2	Test Date: 3/13/2025	Depth: 31.65
Test Number: ICON 65-443	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

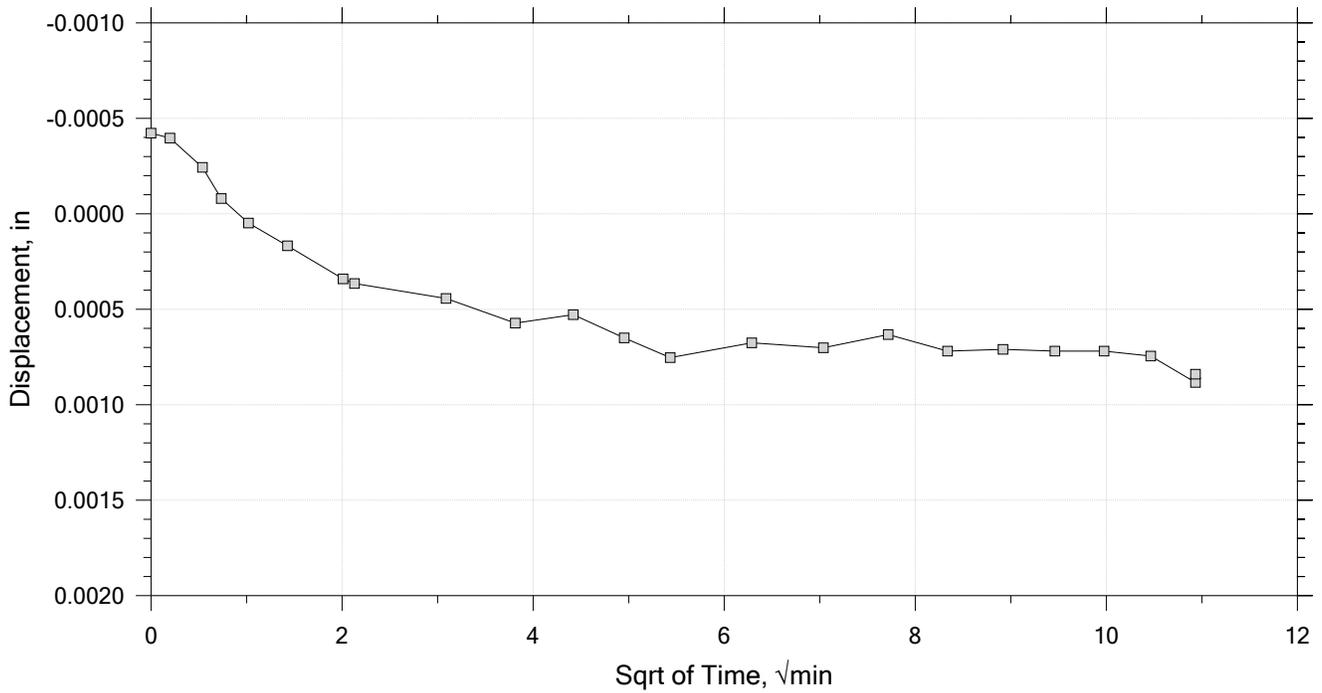
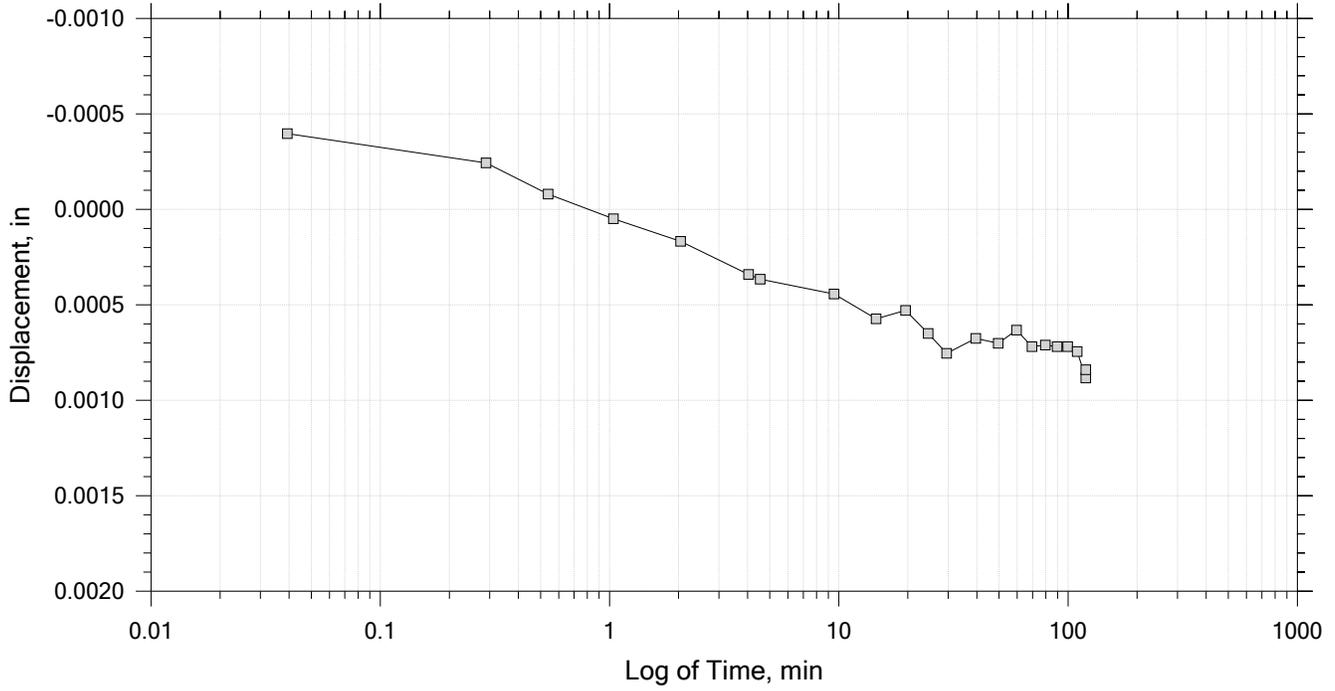
Time Curve 1 of 26
Constant Load Step
Stress: 380 psf



	Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
	Boring Number: CA-105	Tester: SJR	Checker: SJR
	Sample Number: U2	Test Date: 3/13/2025	Depth: 31.65
	Test Number: ICON 65-443	Preparation:	Elevation: --
	Description:		
	Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 2 of 26
Constant Load Step
Stress: 570 psf



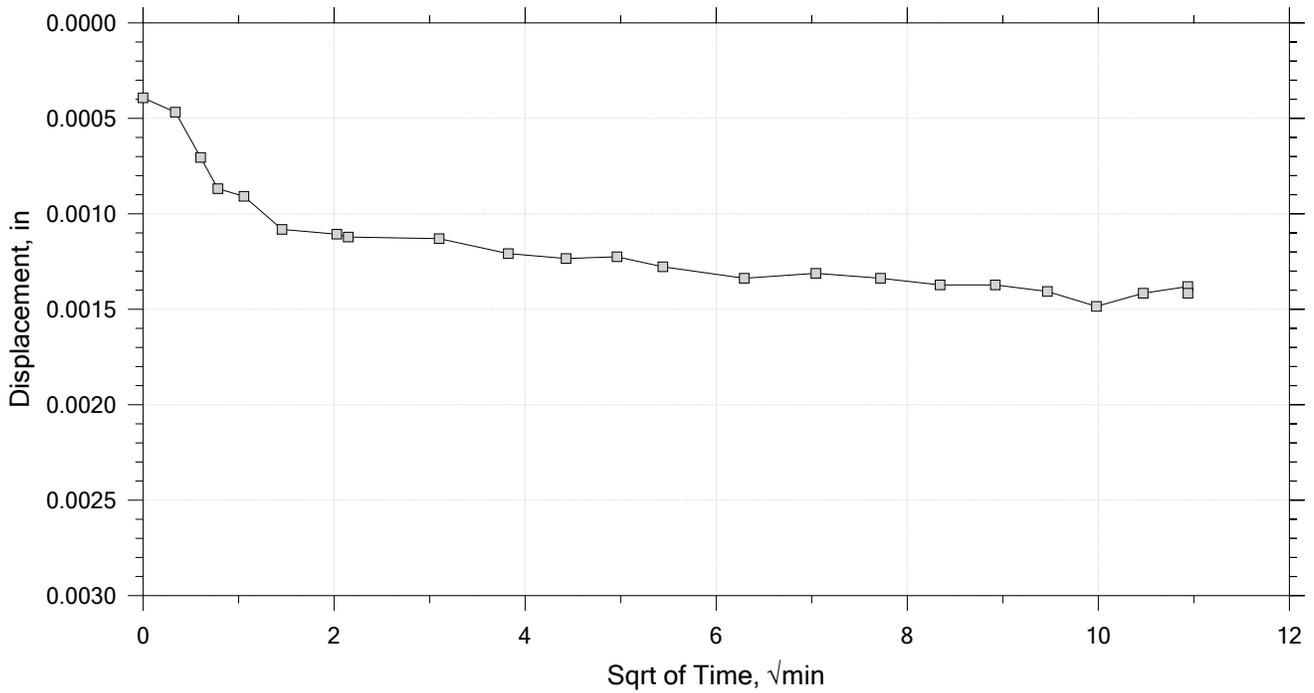
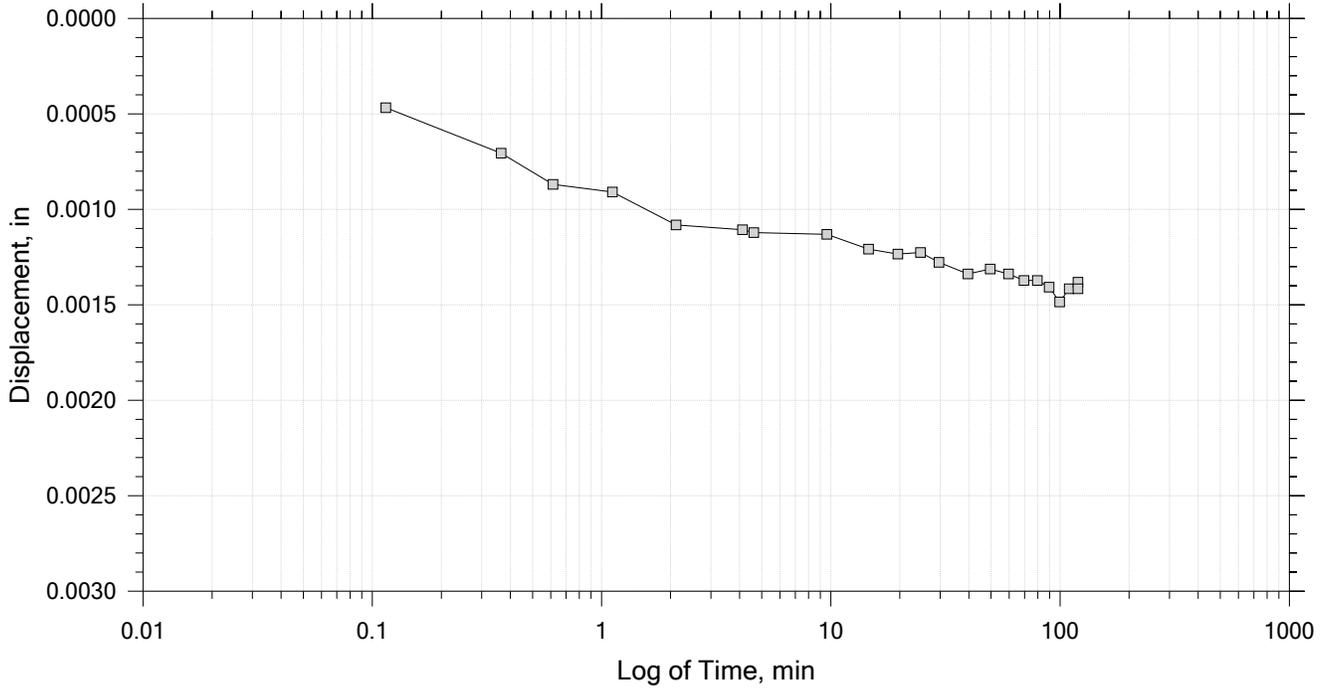
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U2	Test Date: 3/13/2025	Depth: 31.65
Test Number: ICON 65-443	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 3 of 26

Constant Load Step

Stress: 855 psf



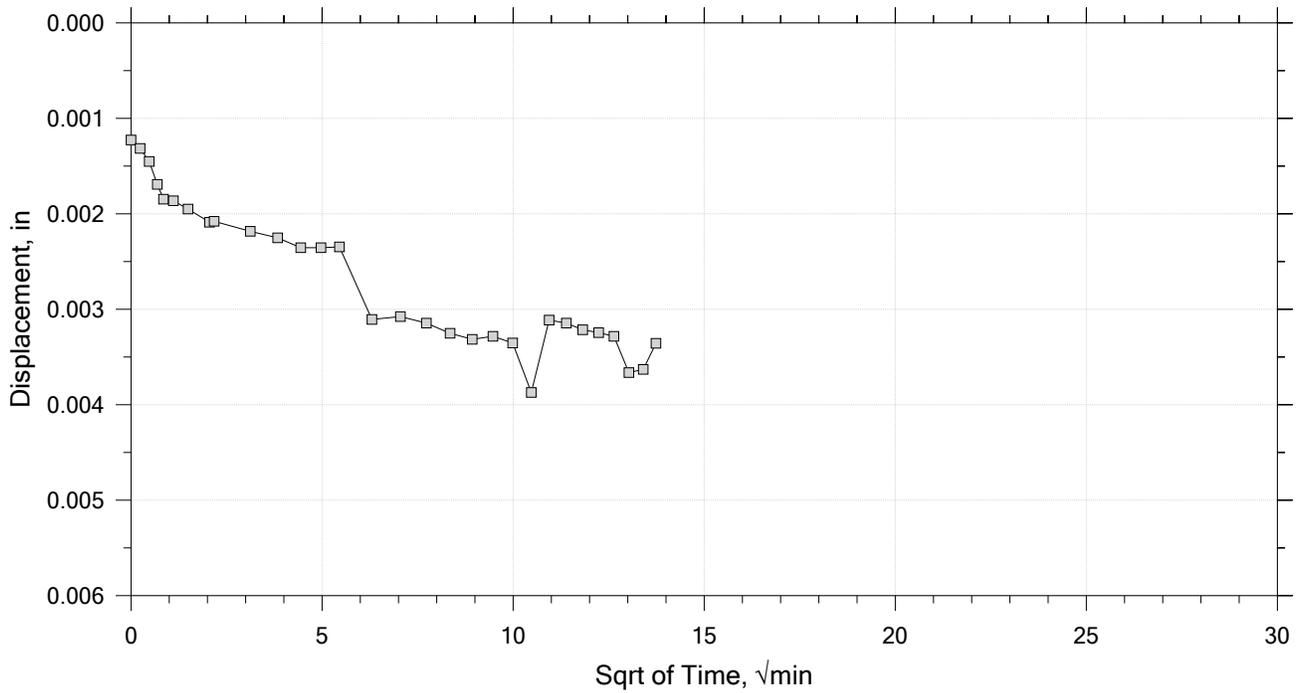
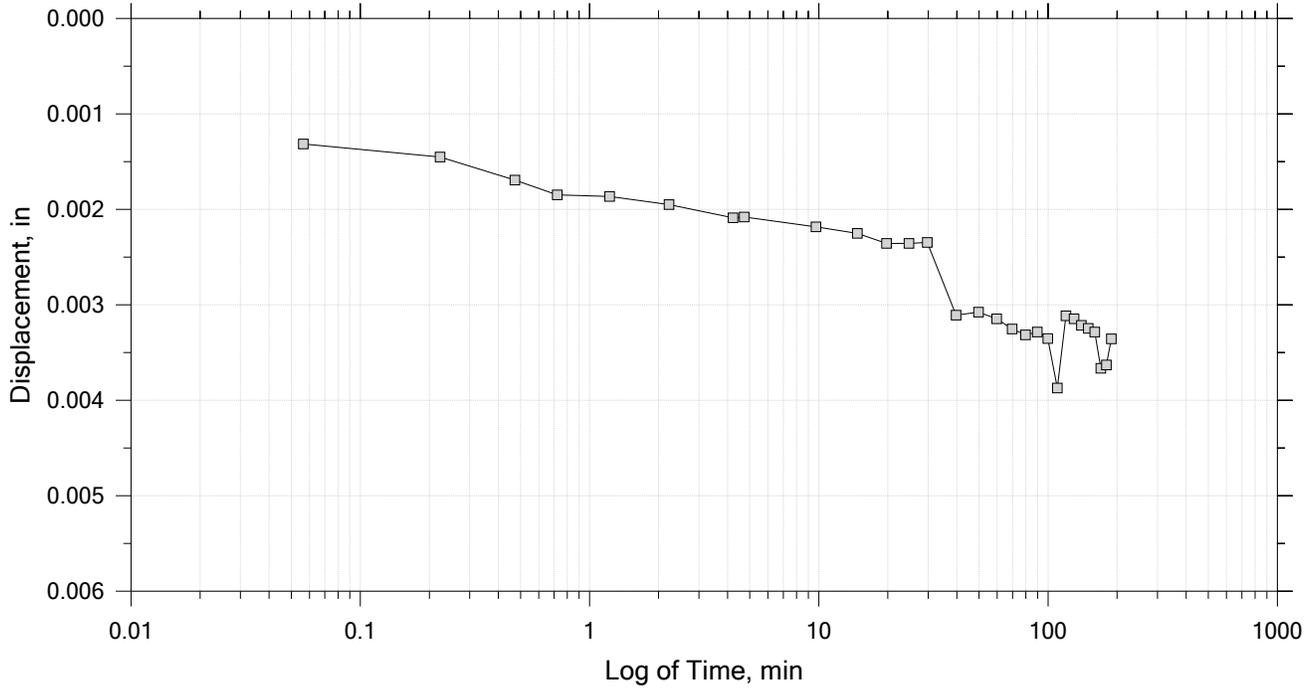
	Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
	Boring Number: CA-105	Tester: SJR	Checker: SJR
	Sample Number: U2	Test Date: 3/13/2025	Depth: 31.65
	Test Number: ICON 65-443	Preparation:	Elevation: --
	Description:		
	Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 4 of 26

Constant Load Step

Stress: 1.28e+03 psf



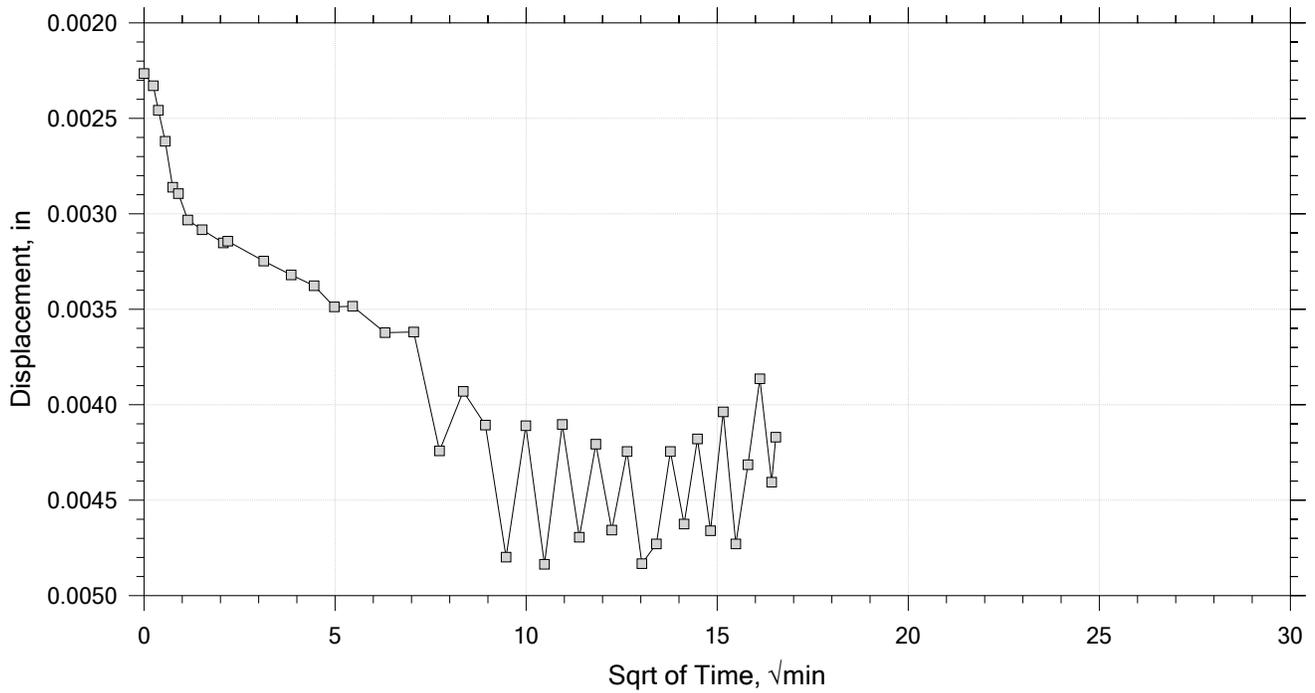
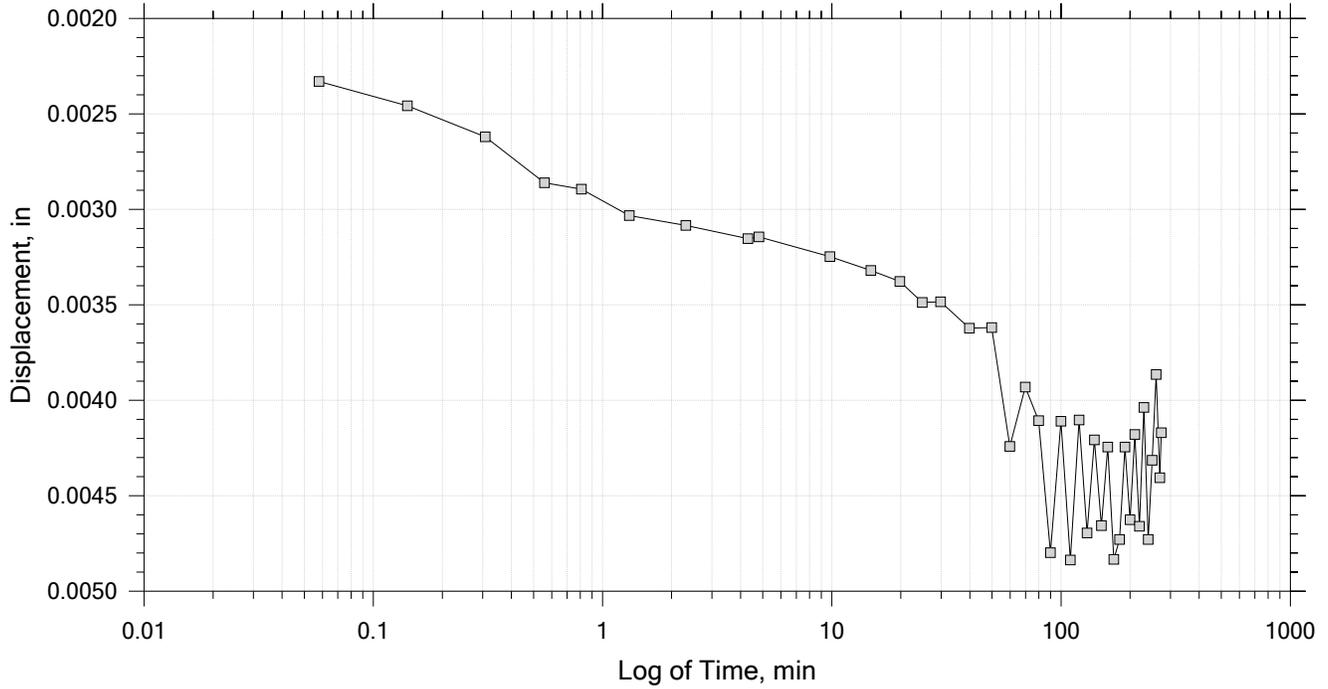
	Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
	Boring Number: CA-105	Tester: SJR	Checker: SJR
	Sample Number: U2	Test Date: 3/13/2025	Depth: 31.65
	Test Number: ICON 65-443	Preparation:	Elevation: --
	Description:		
	Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 5 of 26

Constant Load Step

Stress: 1.92e+03 psf



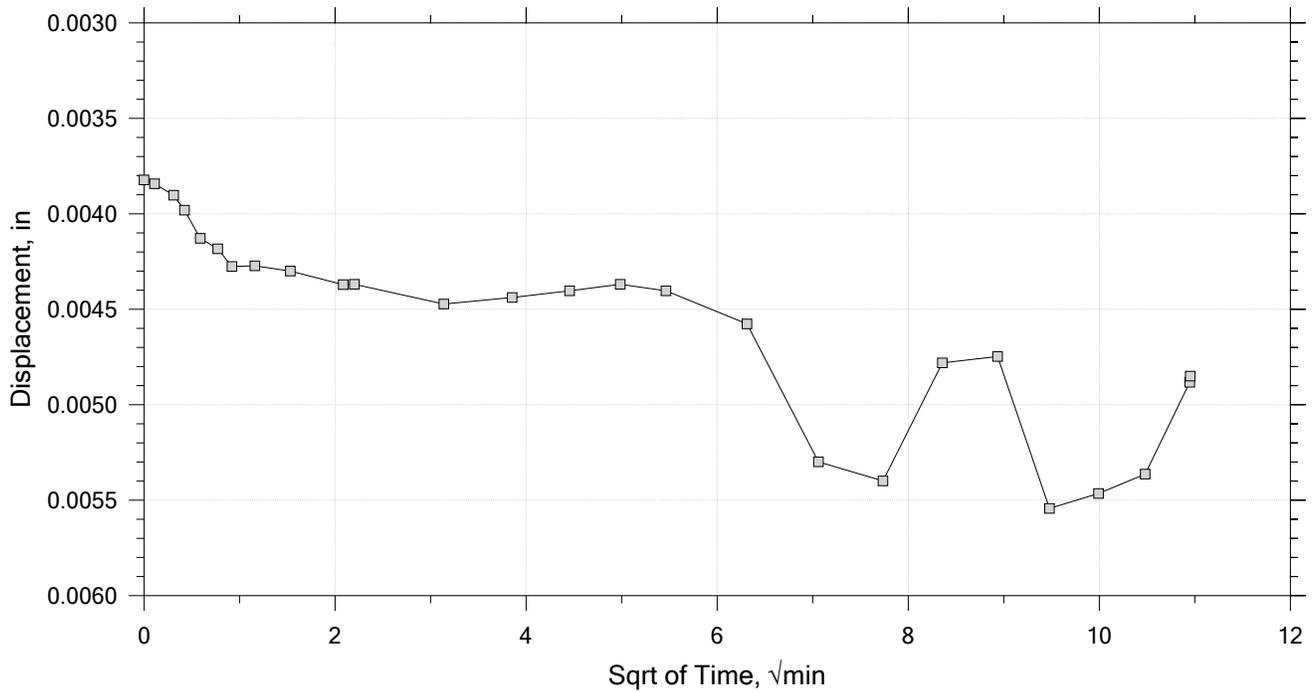
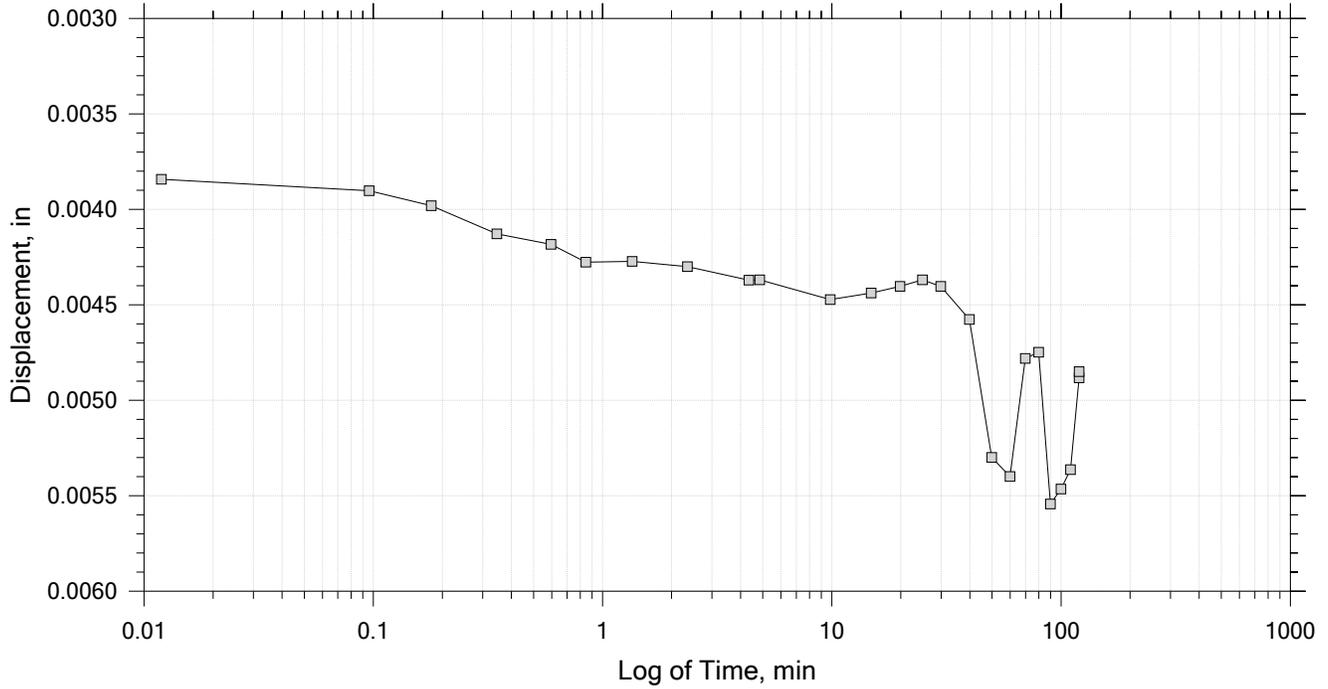
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U2	Test Date: 3/13/2025	Depth: 31.65
Test Number: ICON 65-443	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 6 of 26

Constant Load Step

Stress: 2.89e+03 psf



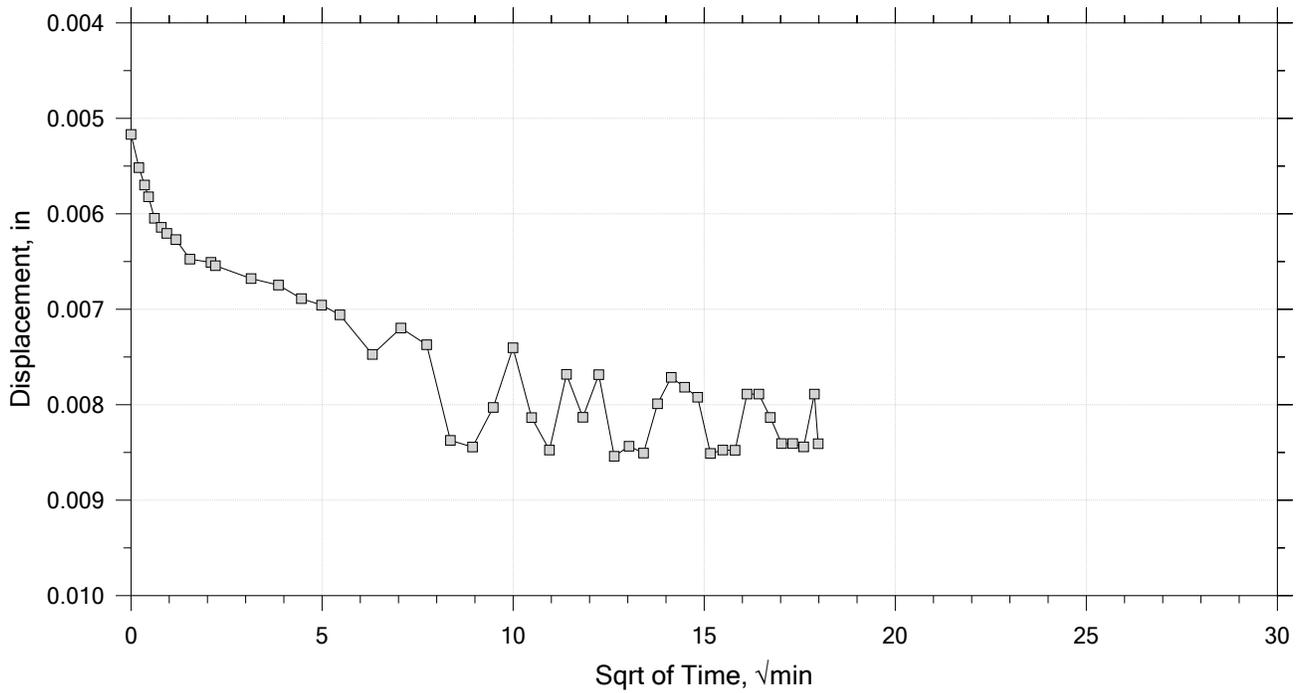
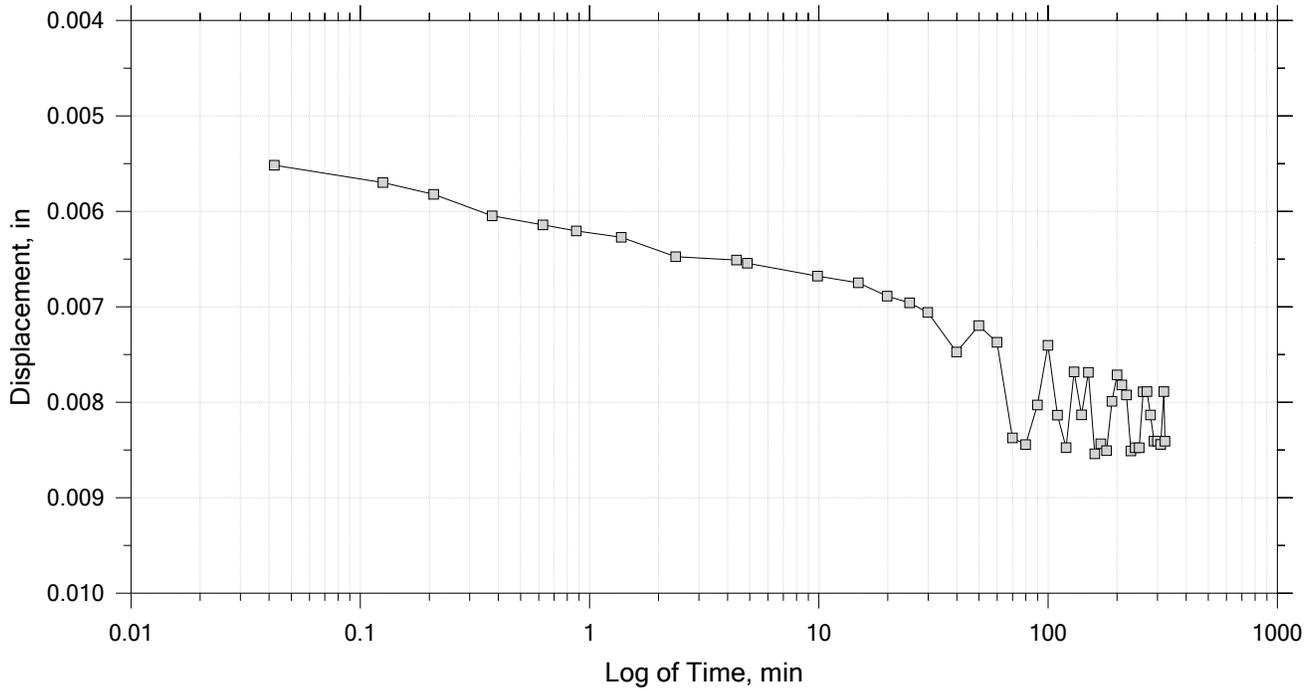
	Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
	Boring Number: CA-105	Tester: SJR	Checker: SJR
	Sample Number: U2	Test Date: 3/13/2025	Depth: 31.65
	Test Number: ICON 65-443	Preparation:	Elevation: --
	Description:		
	Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 7 of 26

Constant Load Step

Stress: 4.33e+03 psf



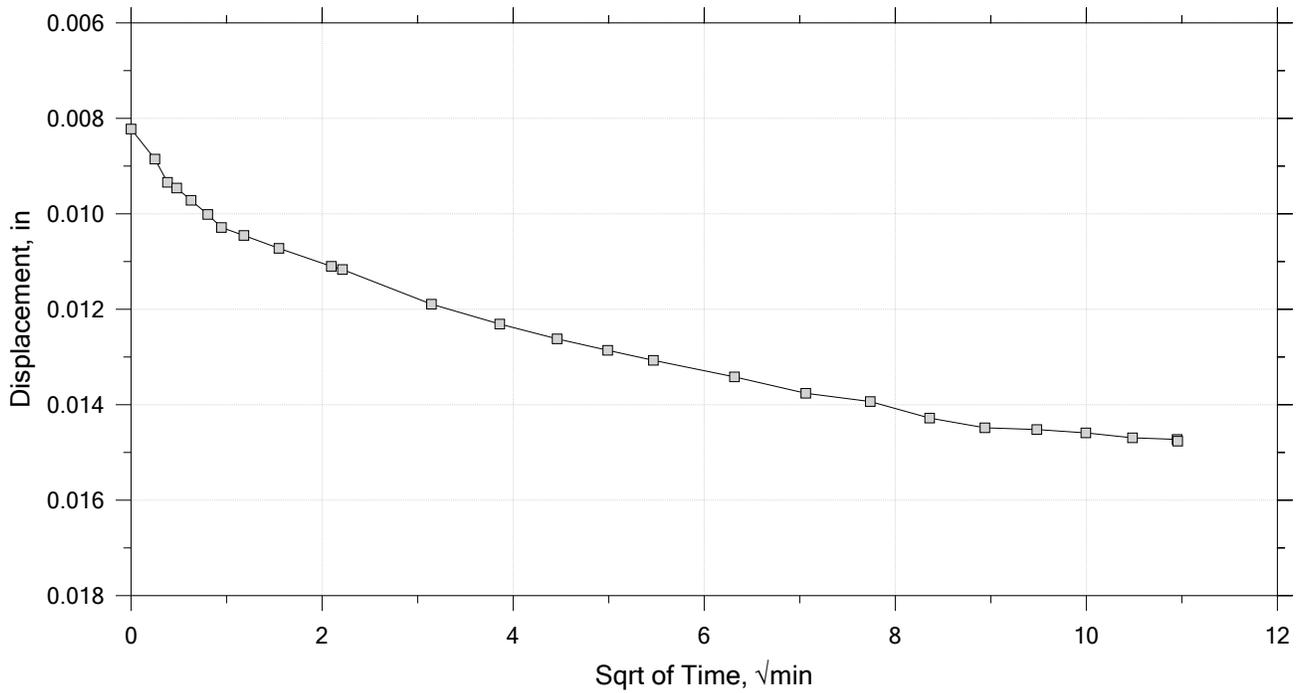
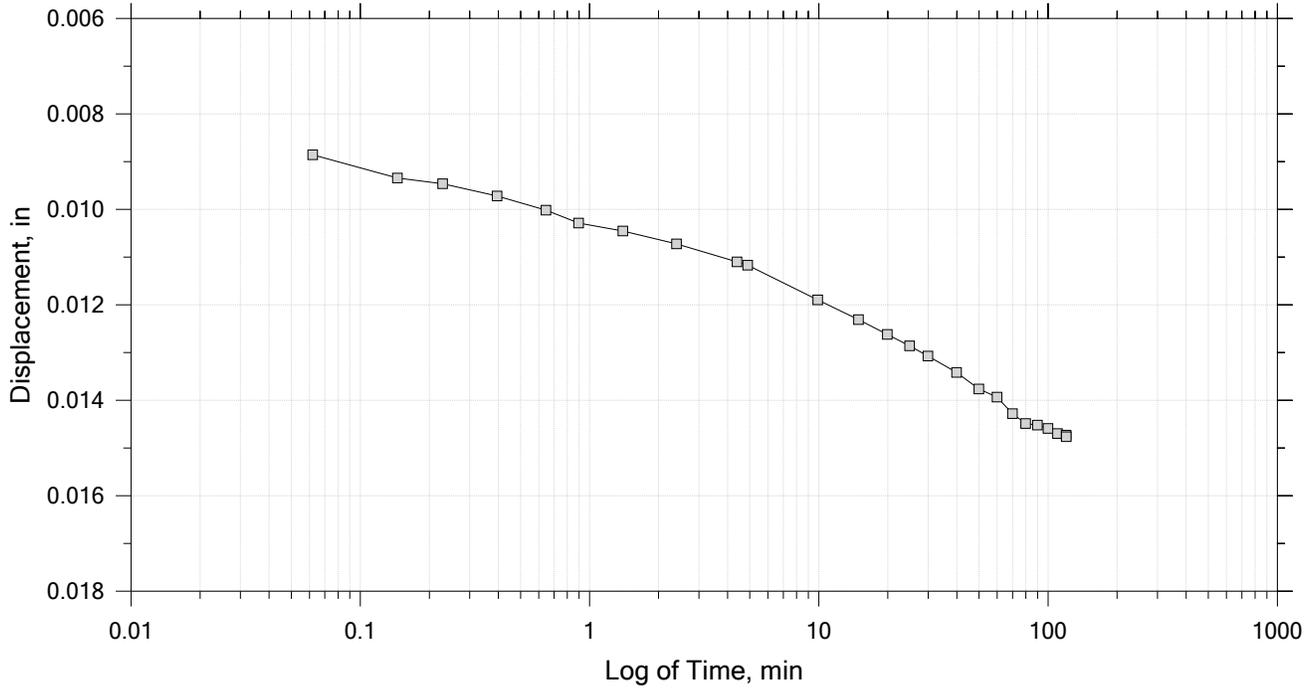
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U2	Test Date: 3/13/2025	Depth: 31.65
Test Number: ICON 65-443	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 8 of 26

Constant Load Step

Stress: 6.49e+03 psf



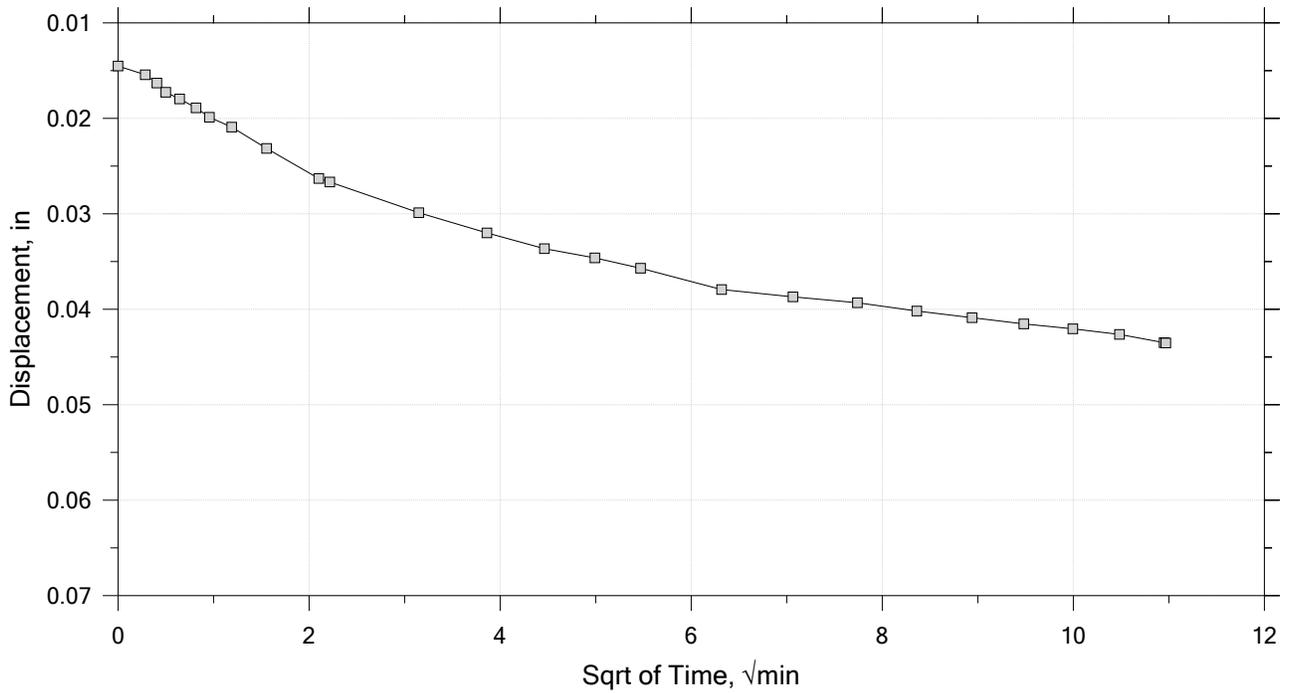
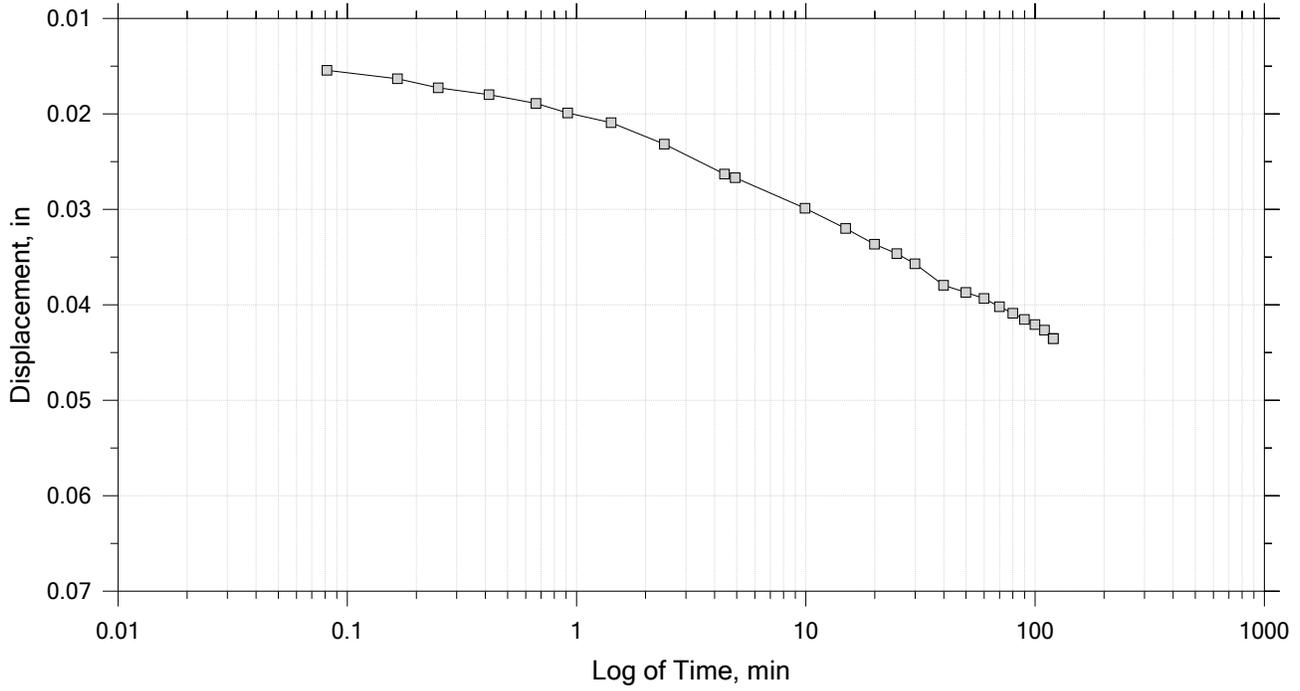
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U2	Test Date: 3/13/2025	Depth: 31.65
Test Number: ICON 65-443	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 9 of 26

Constant Load Step

Stress: 9.74e+03 psf



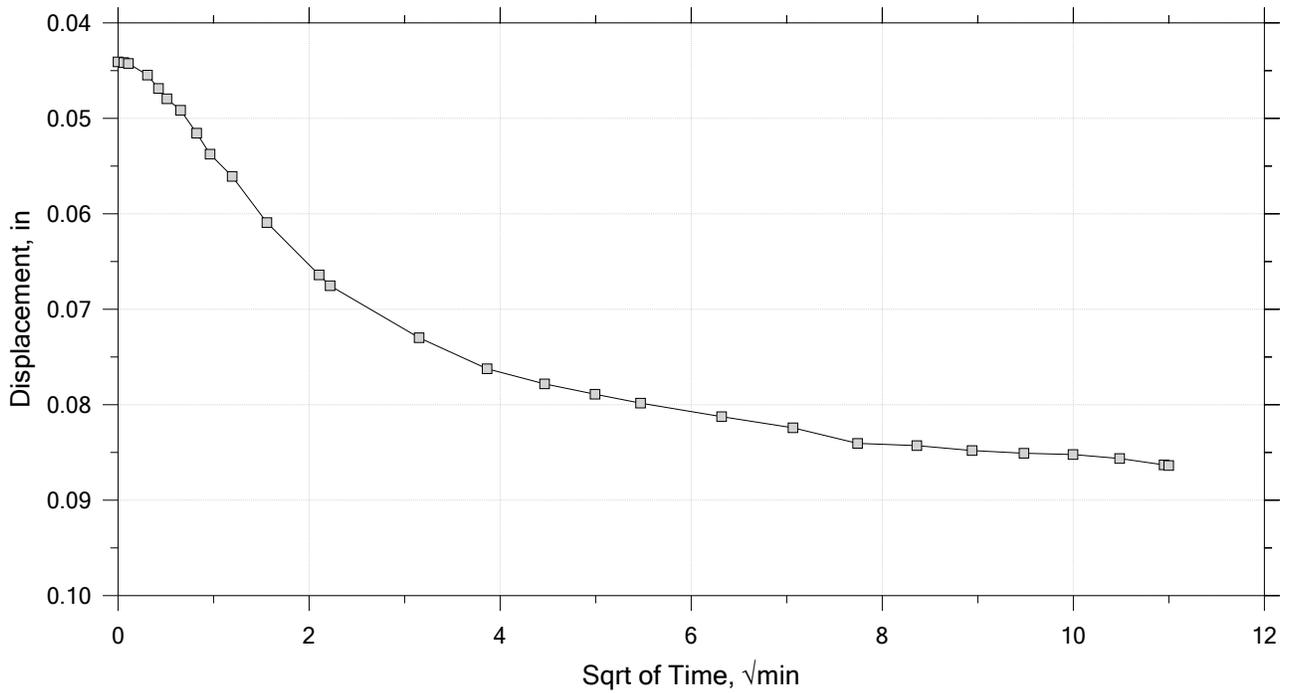
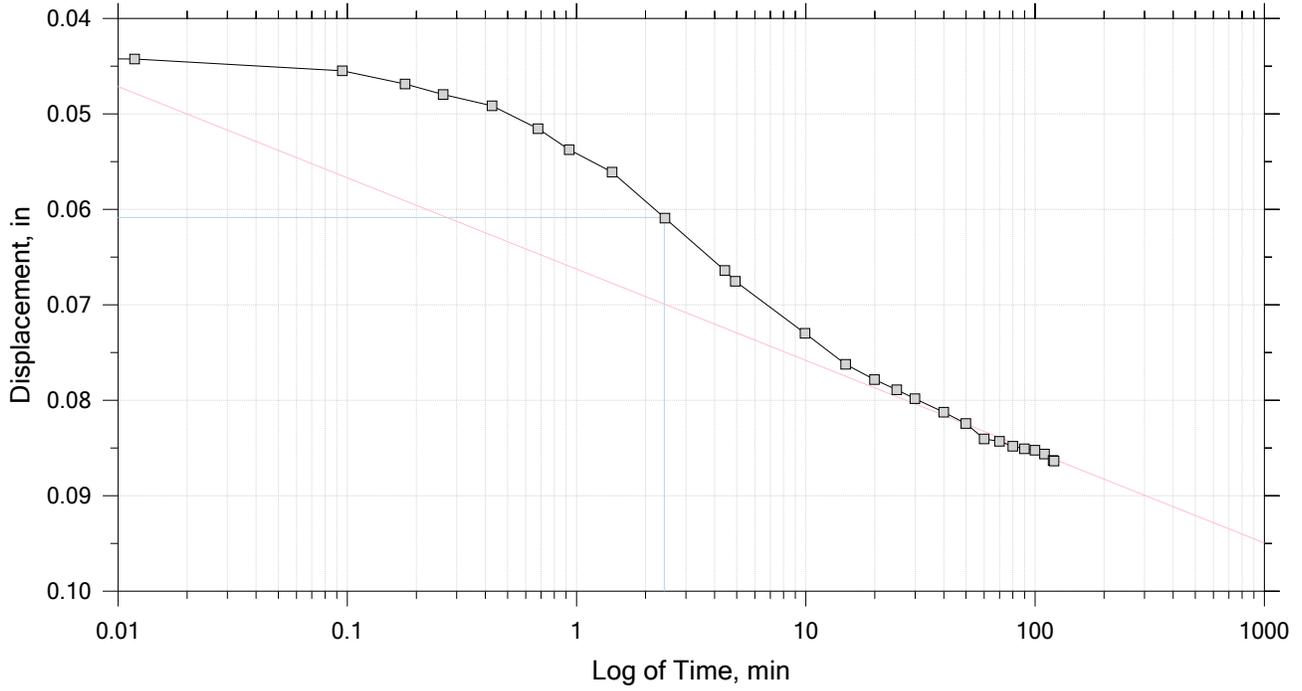
	Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
	Boring Number: CA-105	Tester: SJR	Checker: SJR
	Sample Number: U2	Test Date: 3/13/2025	Depth: 31.65
	Test Number: ICON 65-443	Preparation:	Elevation: --
	Description:		
	Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 10 of 26

Constant Load Step

Stress: 1.46e+04 psf



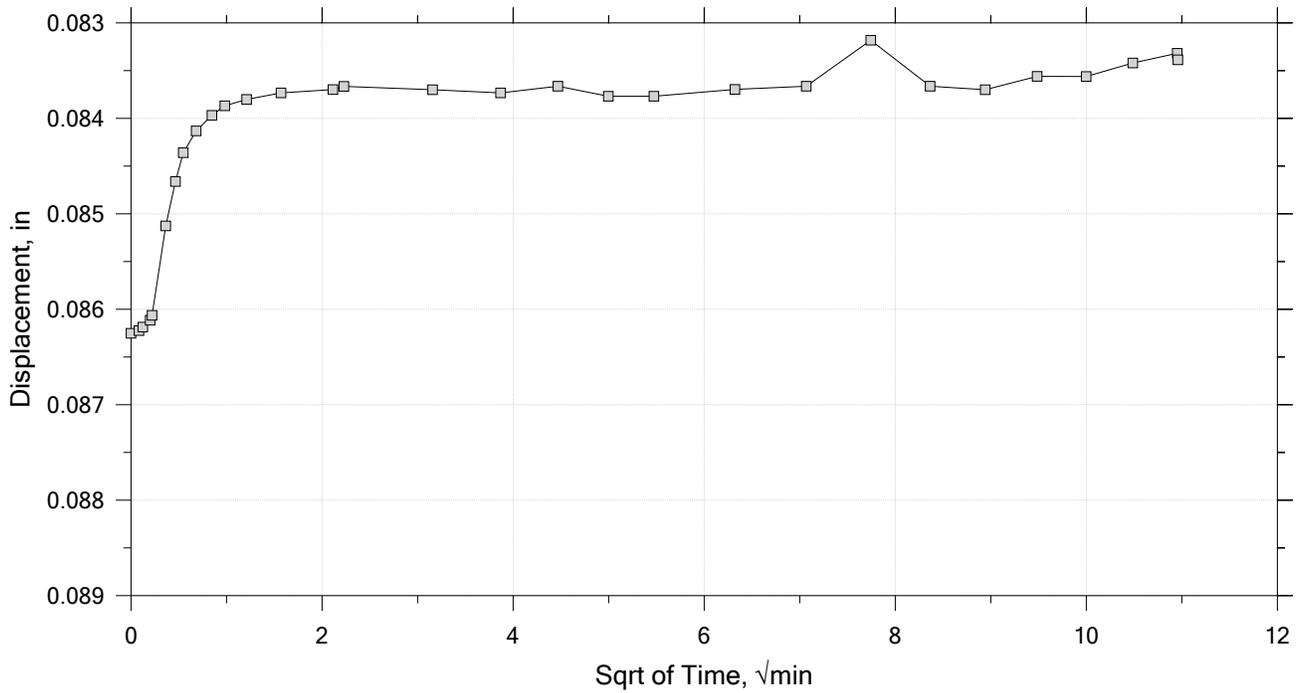
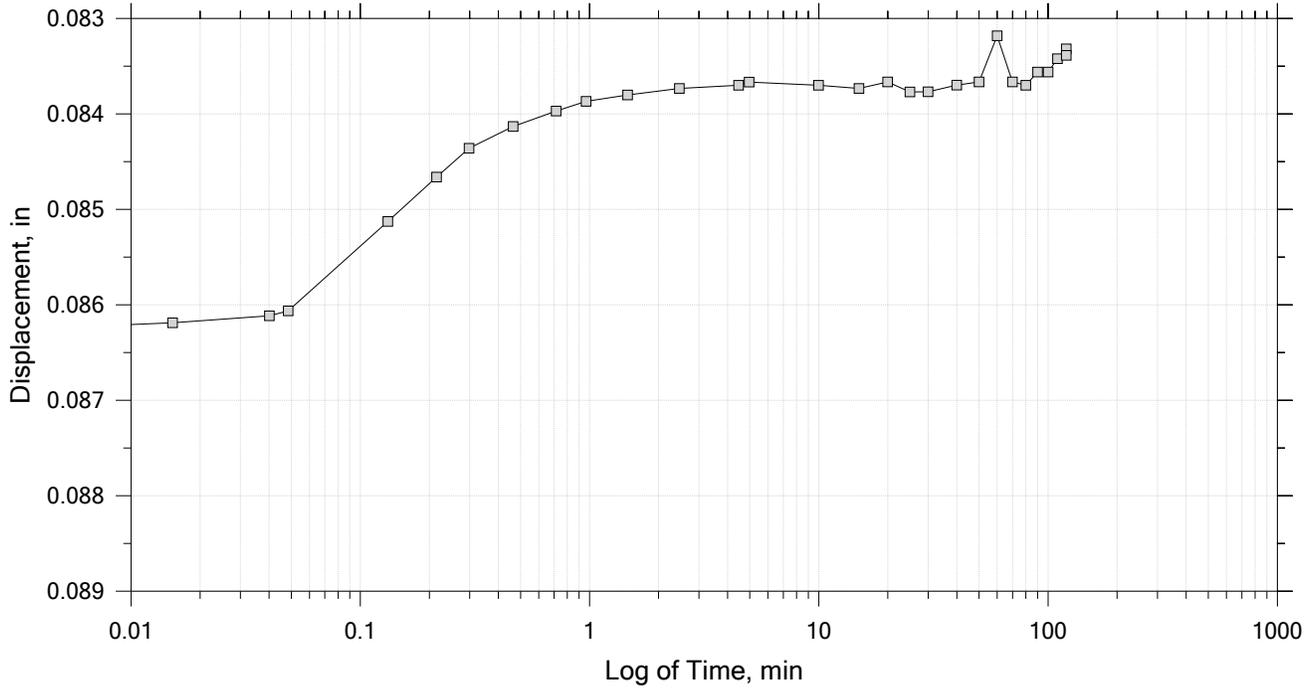
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U2	Test Date: 3/13/2025	Depth: 31.65
Test Number: ICON 65-443	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 11 of 26

Constant Load Step

Stress: 7.3e+03 psf



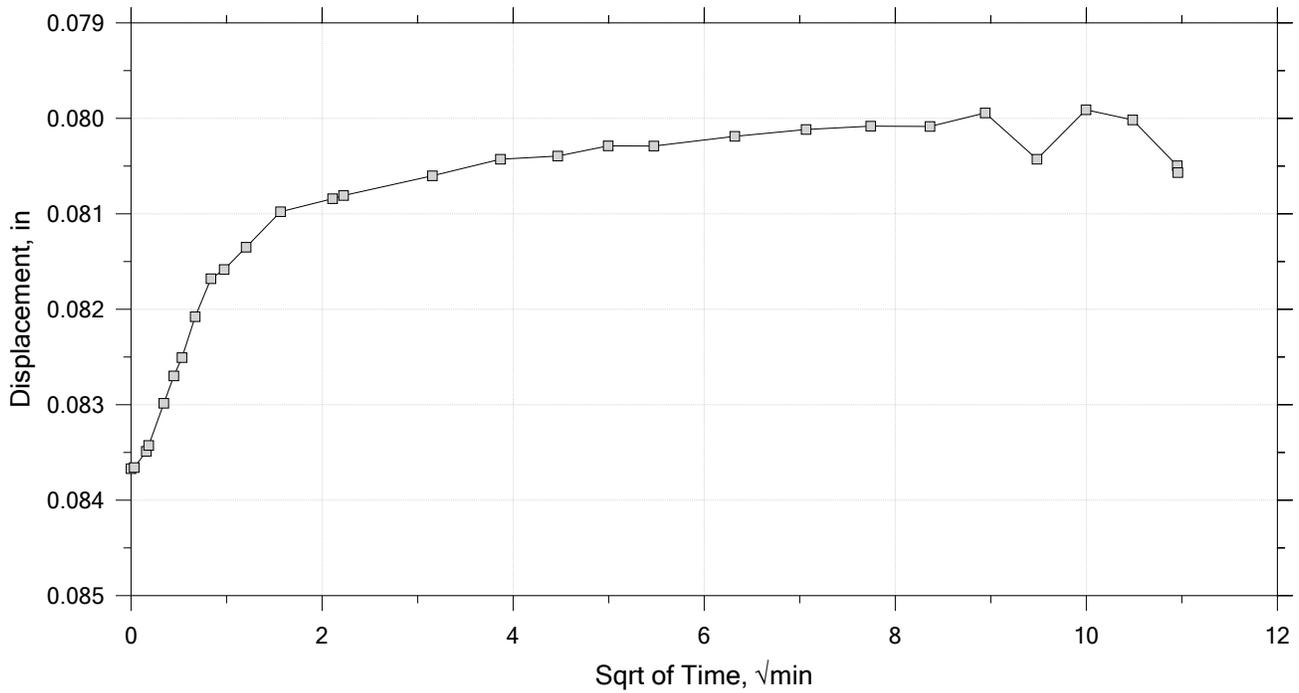
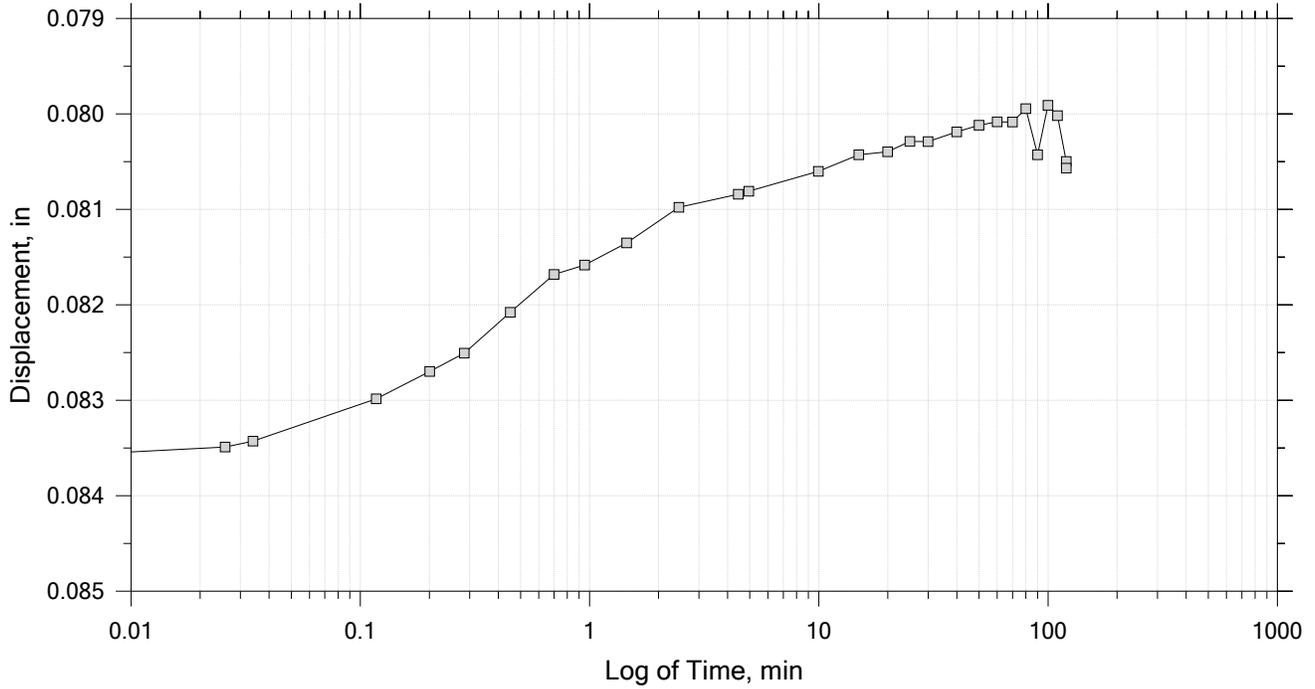
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U2	Test Date: 3/13/2025	Depth: 31.65
Test Number: ICON 65-443	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 12 of 26

Constant Load Step

Stress: 3.65e+03 psf



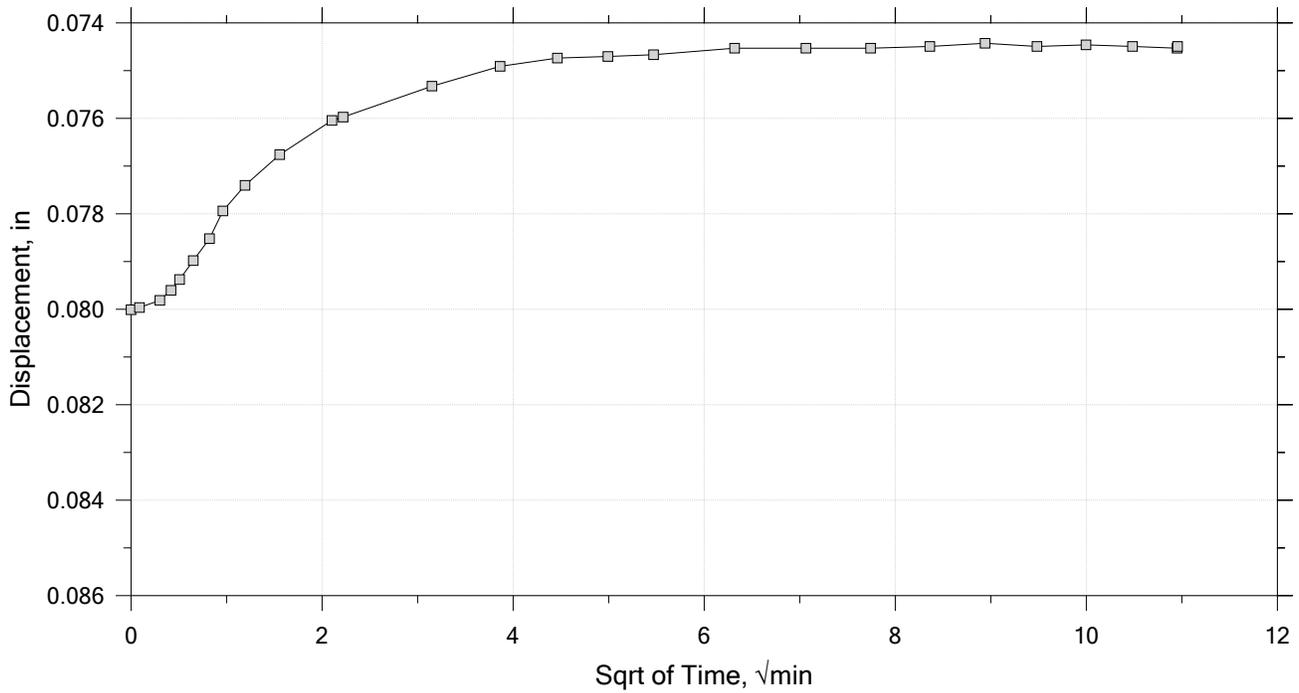
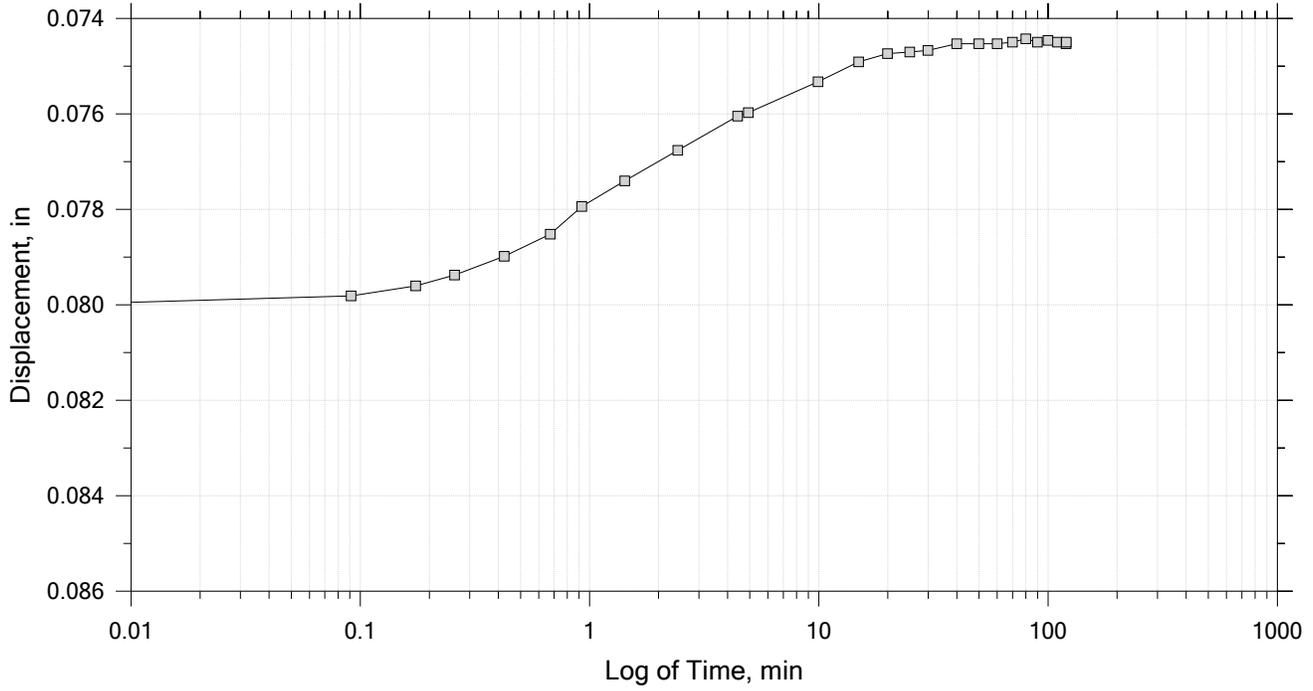
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U2	Test Date: 3/13/2025	Depth: 31.65
Test Number: ICON 65-443	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 13 of 26

Constant Load Step

Stress: 1.83e+03 psf



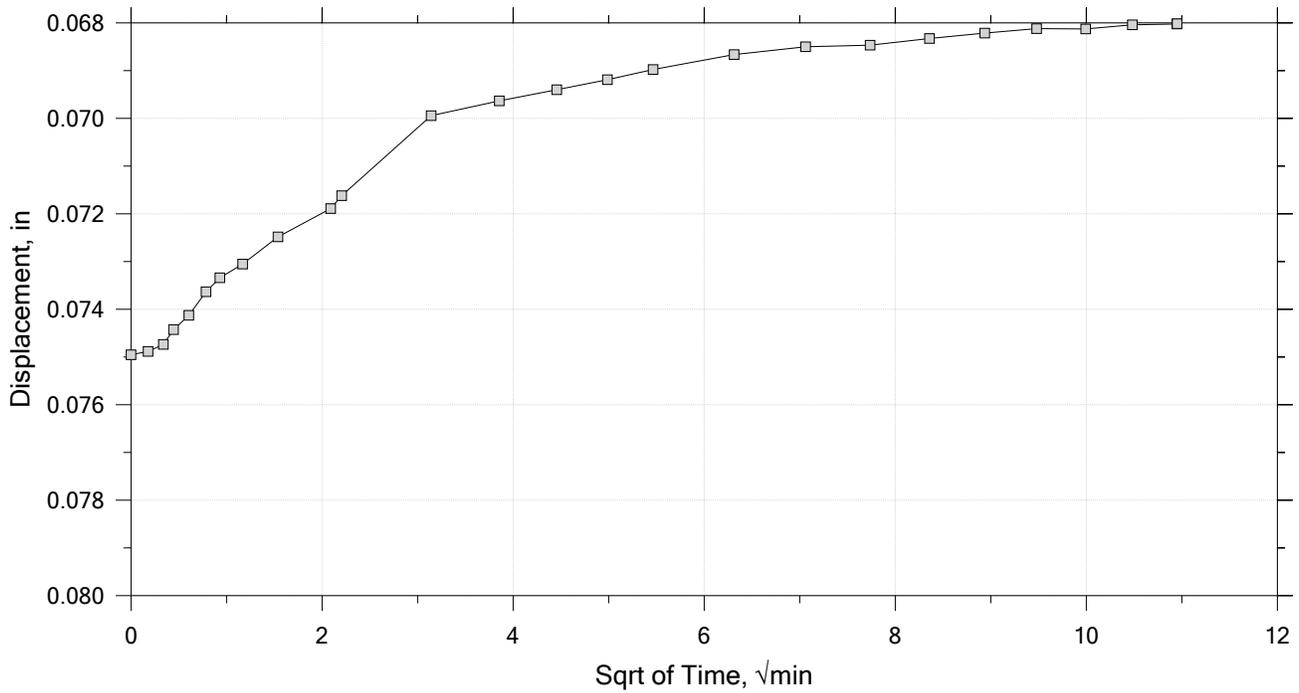
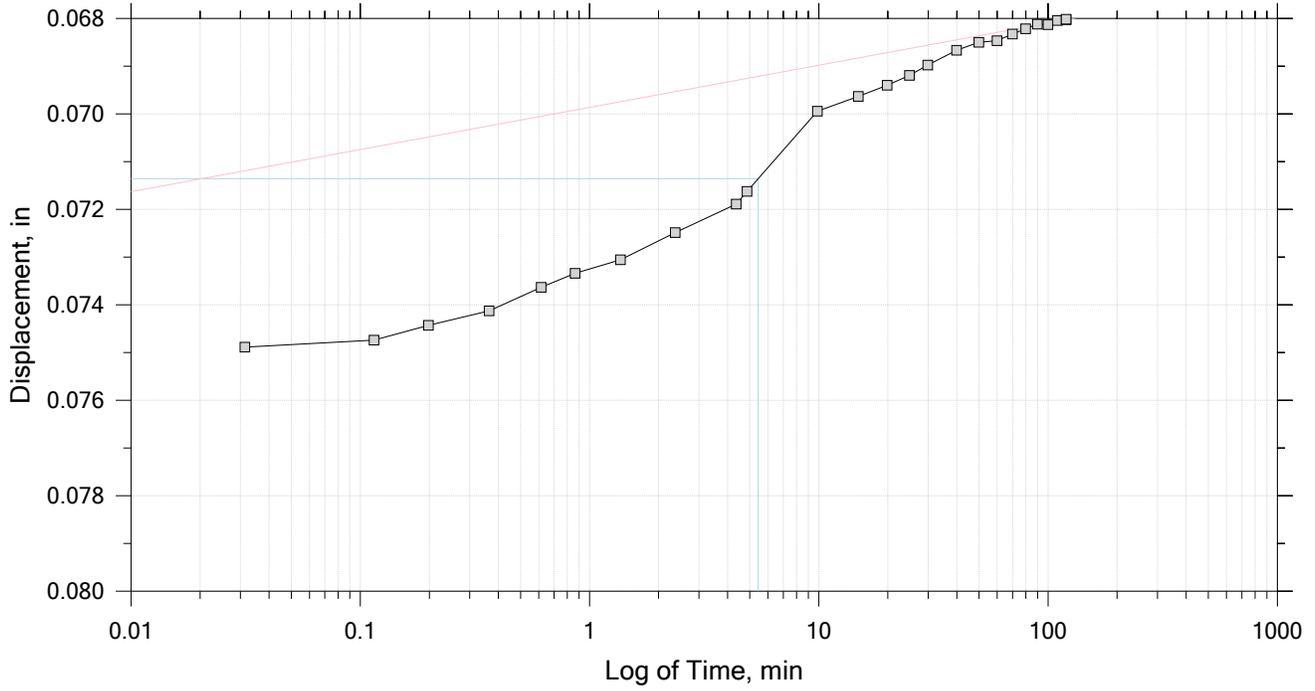
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U2	Test Date: 3/13/2025	Depth: 31.65
Test Number: ICON 65-443	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 14 of 26

Constant Load Step

Stress: 913 psf



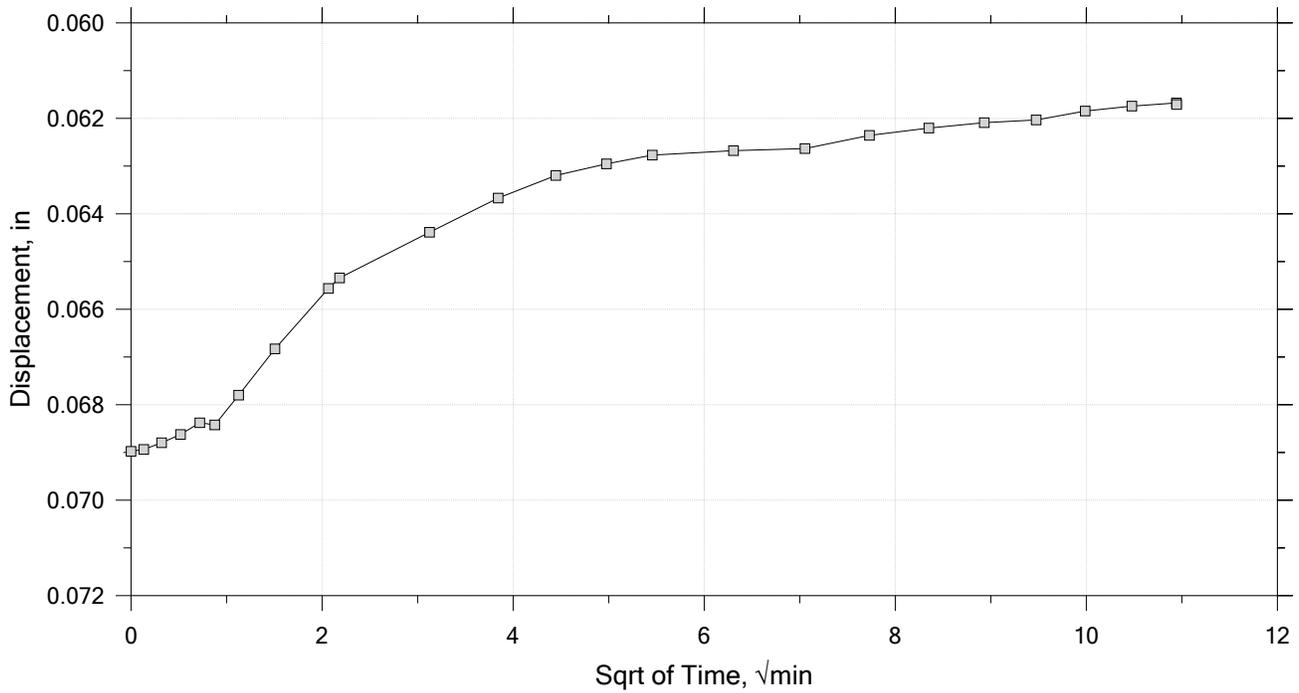
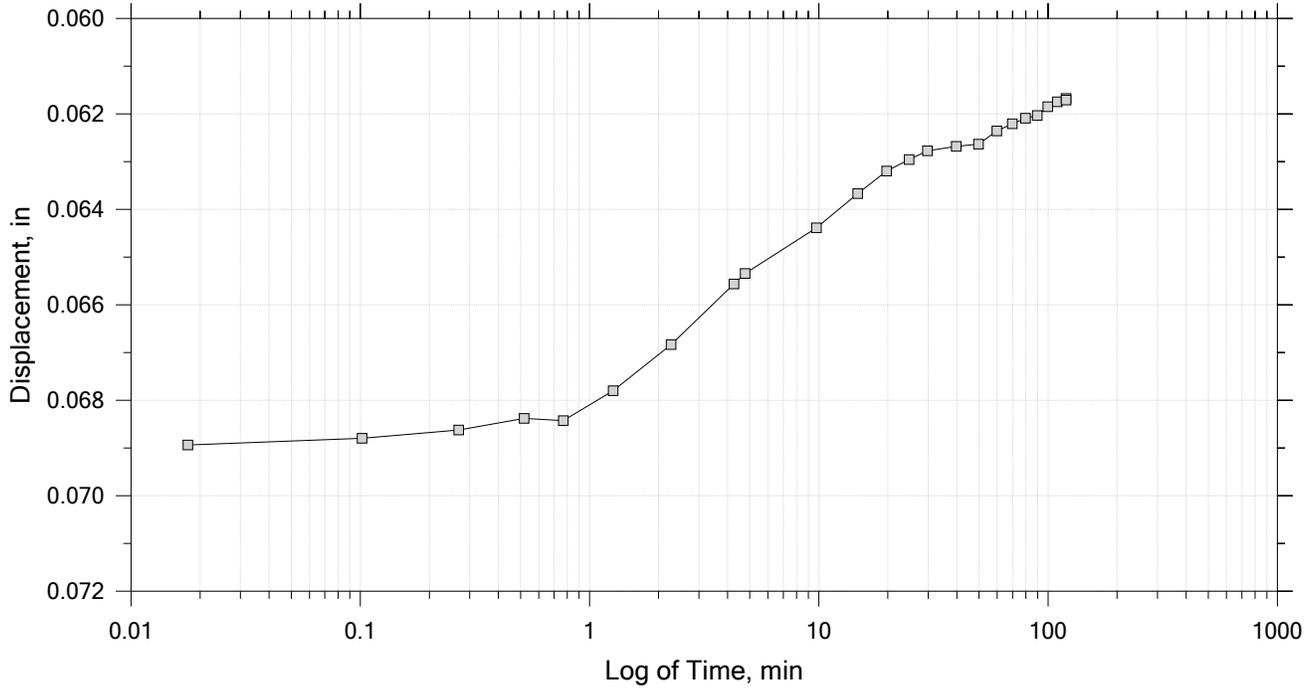
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U2	Test Date: 3/13/2025	Depth: 31.65
Test Number: ICON 65-443	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 15 of 26

Constant Load Step

Stress: 457 psf



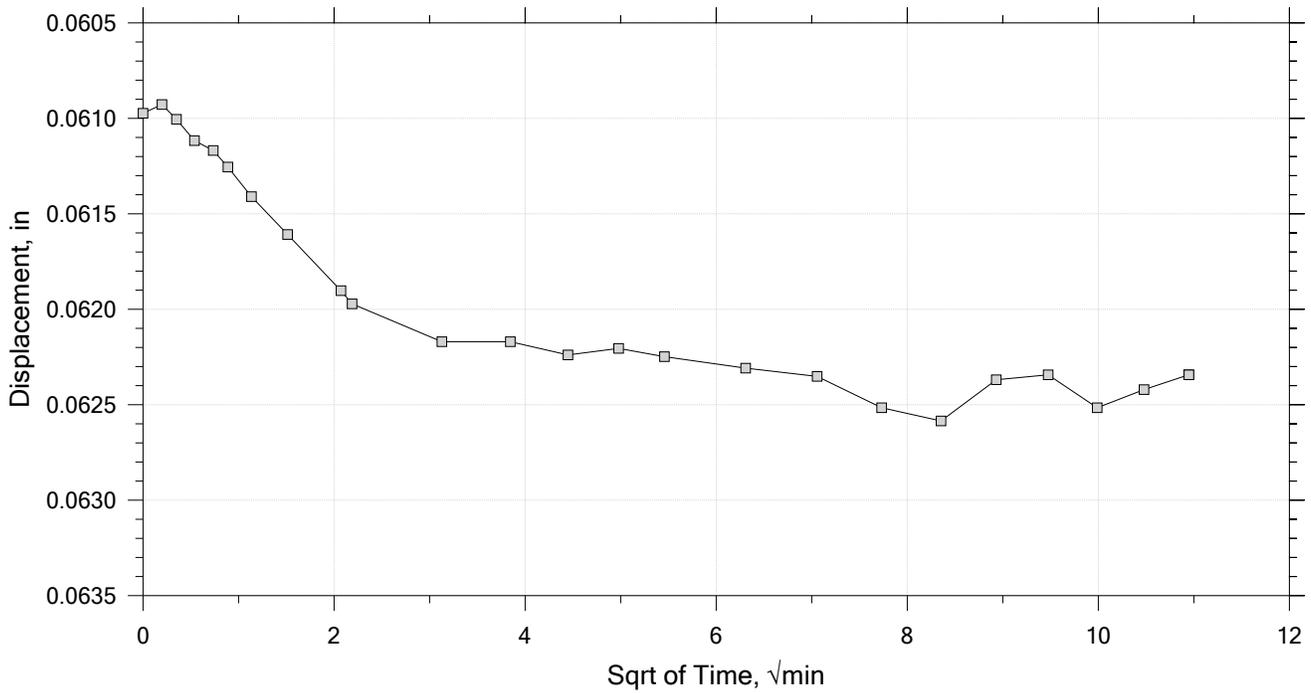
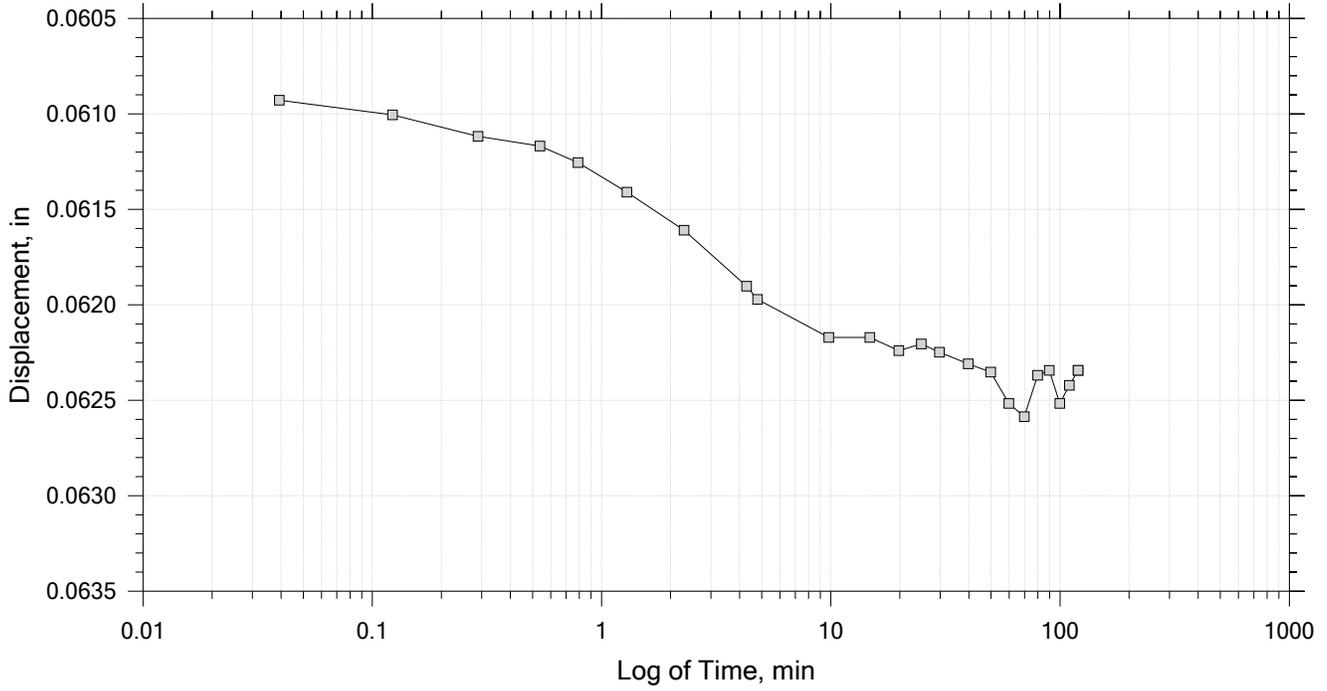
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U2	Test Date: 3/13/2025	Depth: 31.65
Test Number: ICON 65-443	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 16 of 26

Constant Load Step

Stress: 913 psf



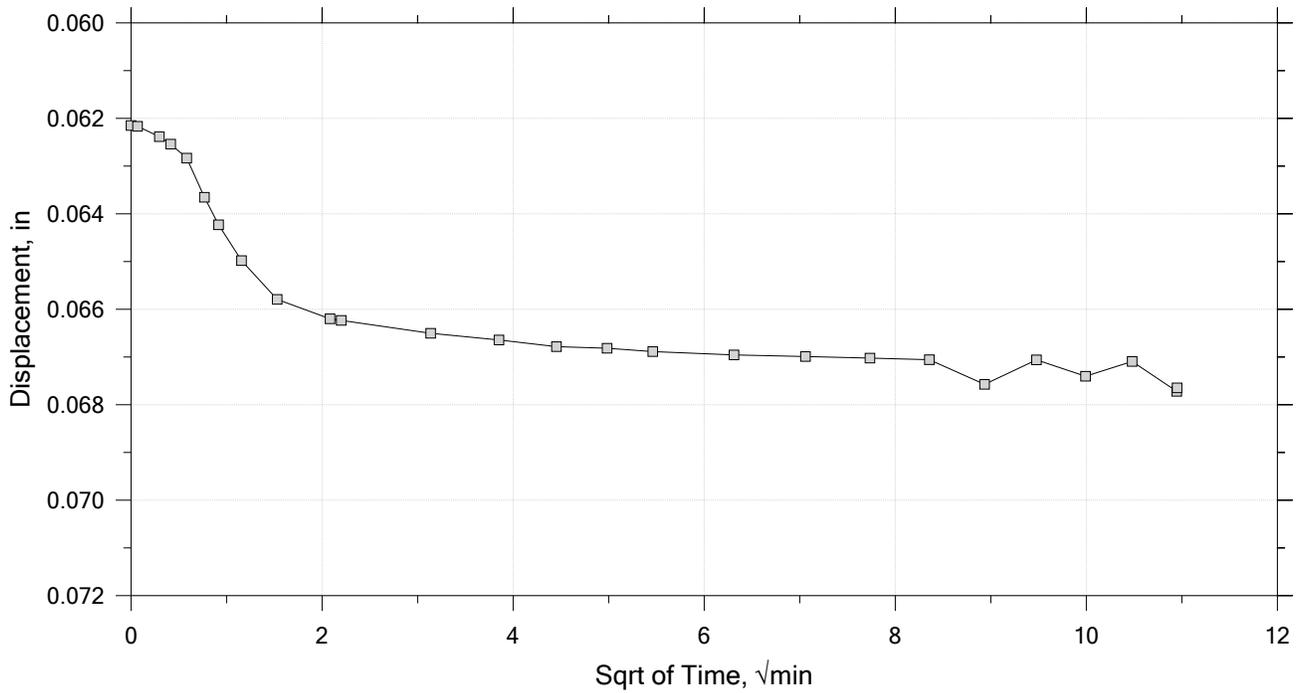
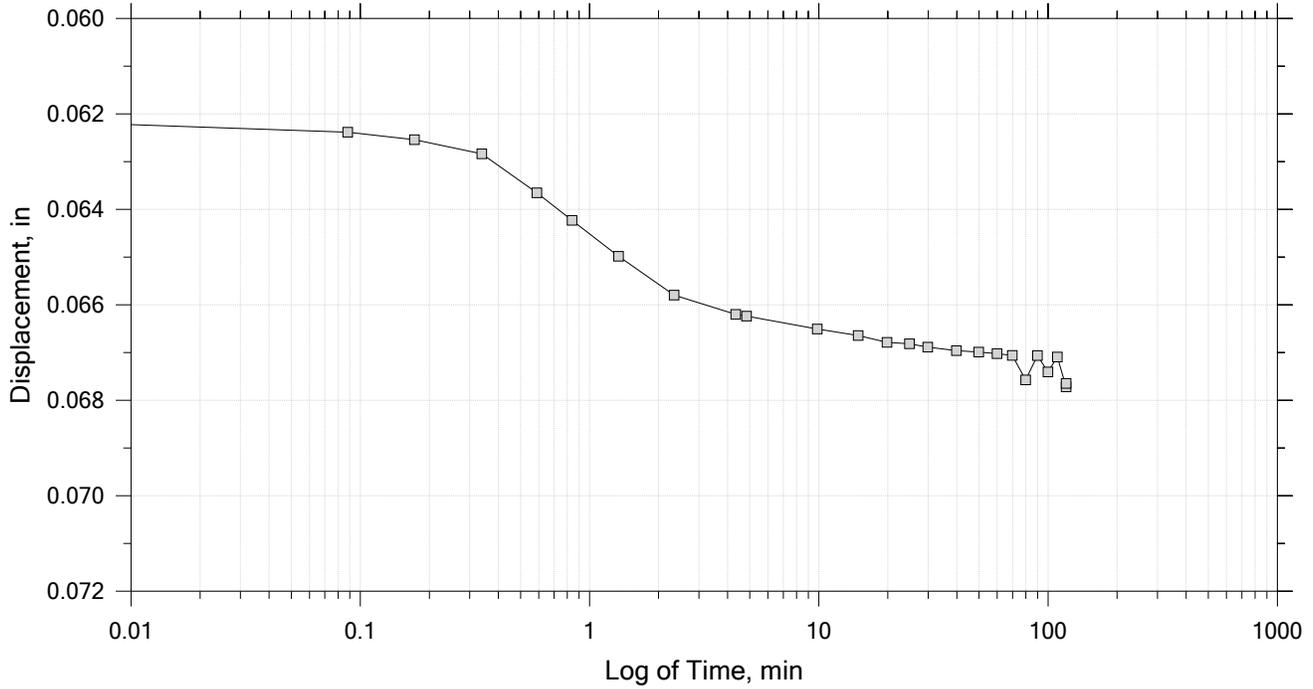
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U2	Test Date: 3/13/2025	Depth: 31.65
Test Number: ICON 65-443	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 17 of 26

Constant Load Step

Stress: 1.83e+03 psf



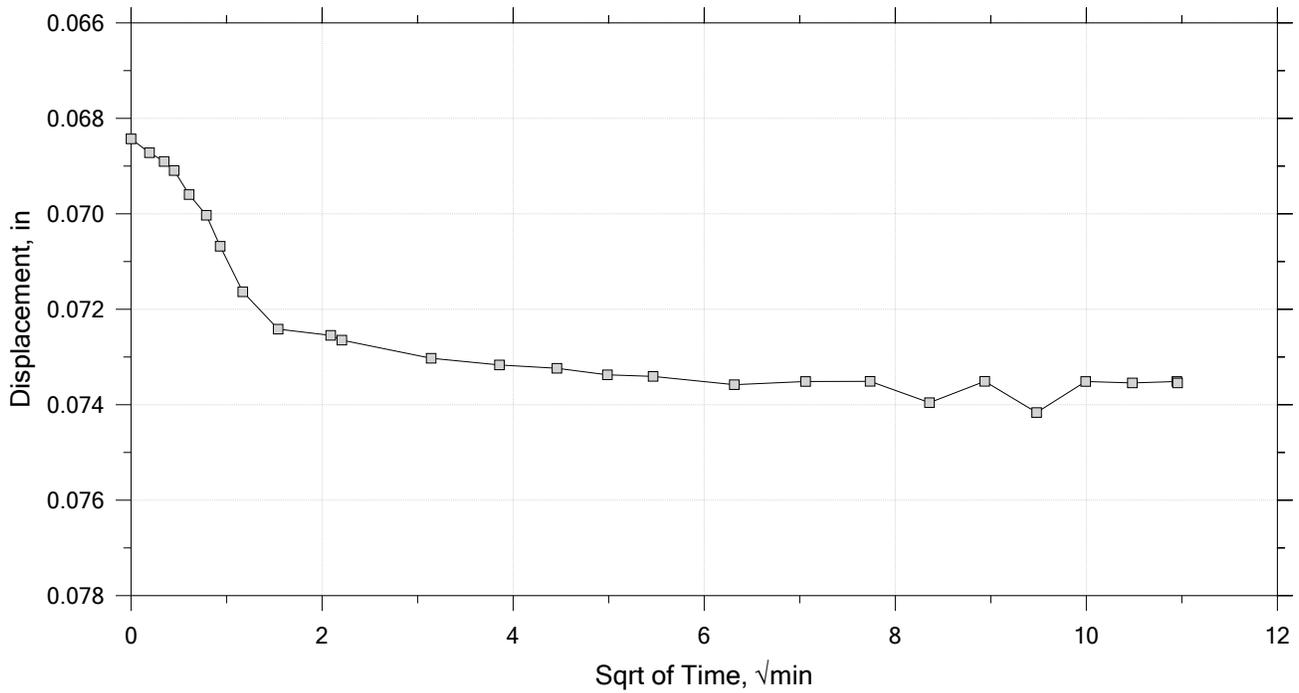
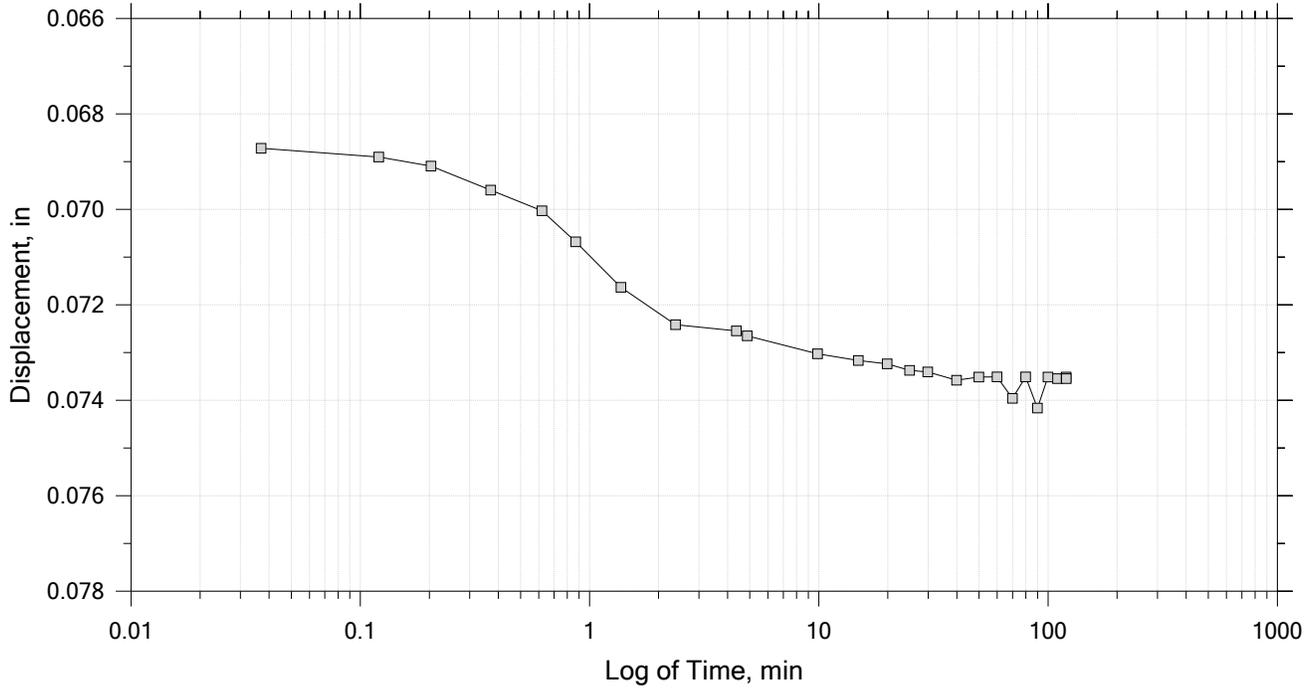
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U2	Test Date: 3/13/2025	Depth: 31.65
Test Number: ICON 65-443	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 18 of 26

Constant Load Step

Stress: 3.65e+03 psf



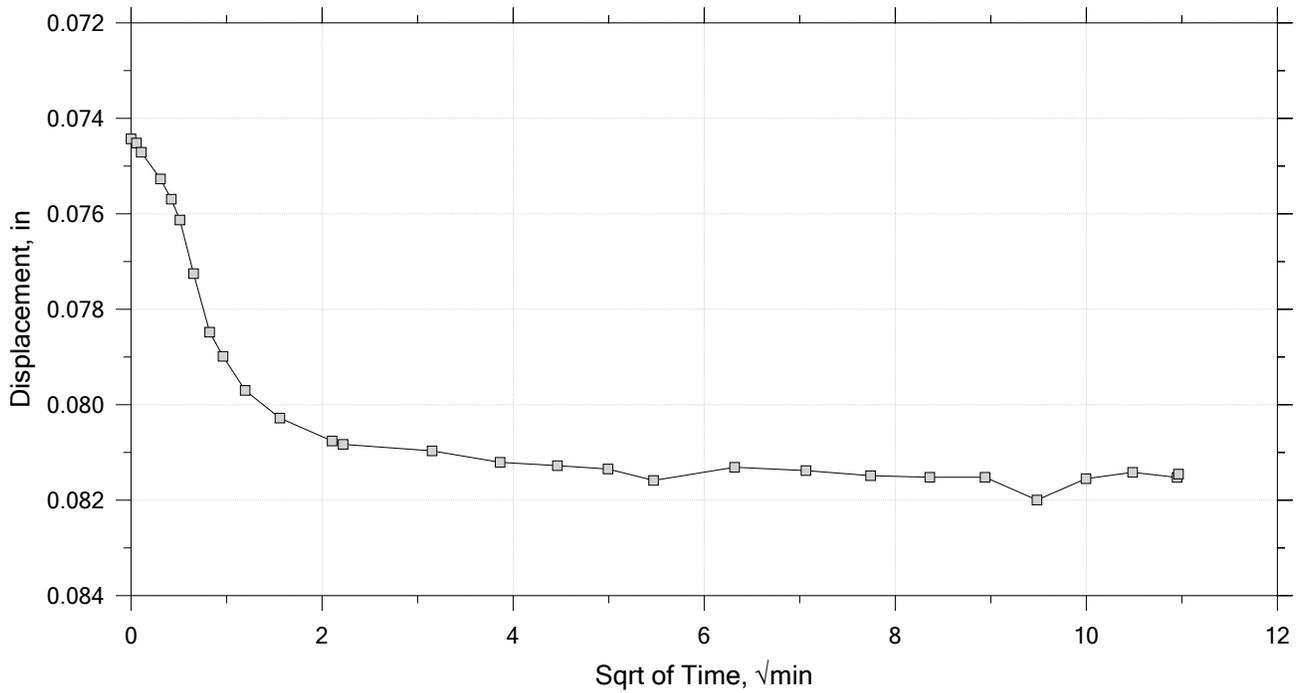
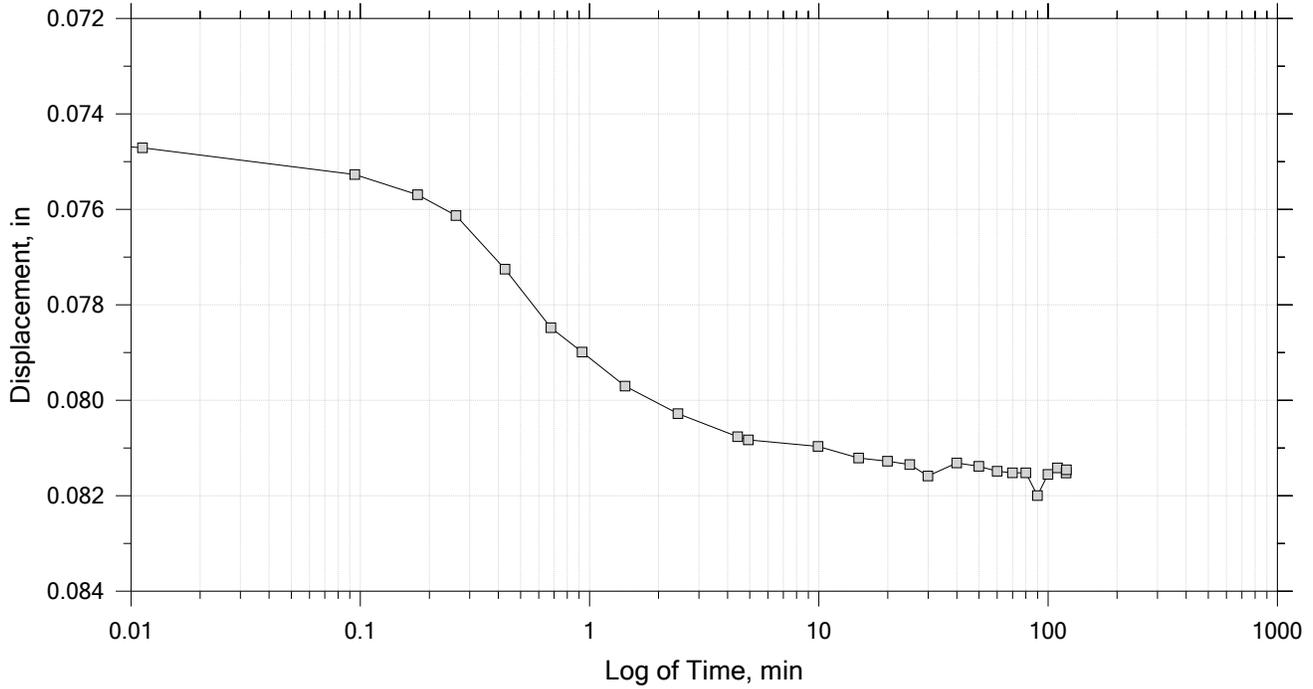
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U2	Test Date: 3/13/2025	Depth: 31.65
Test Number: ICON 65-443	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 19 of 26

Constant Load Step

Stress: 7.3e+03 psf



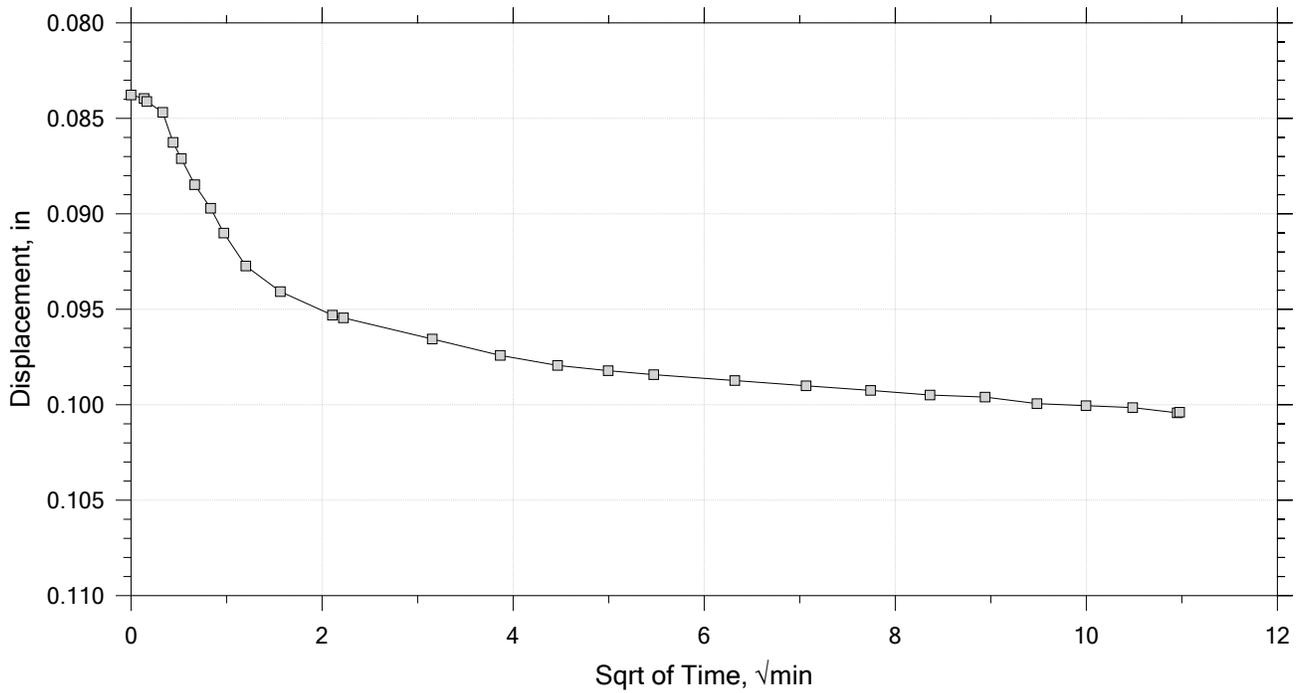
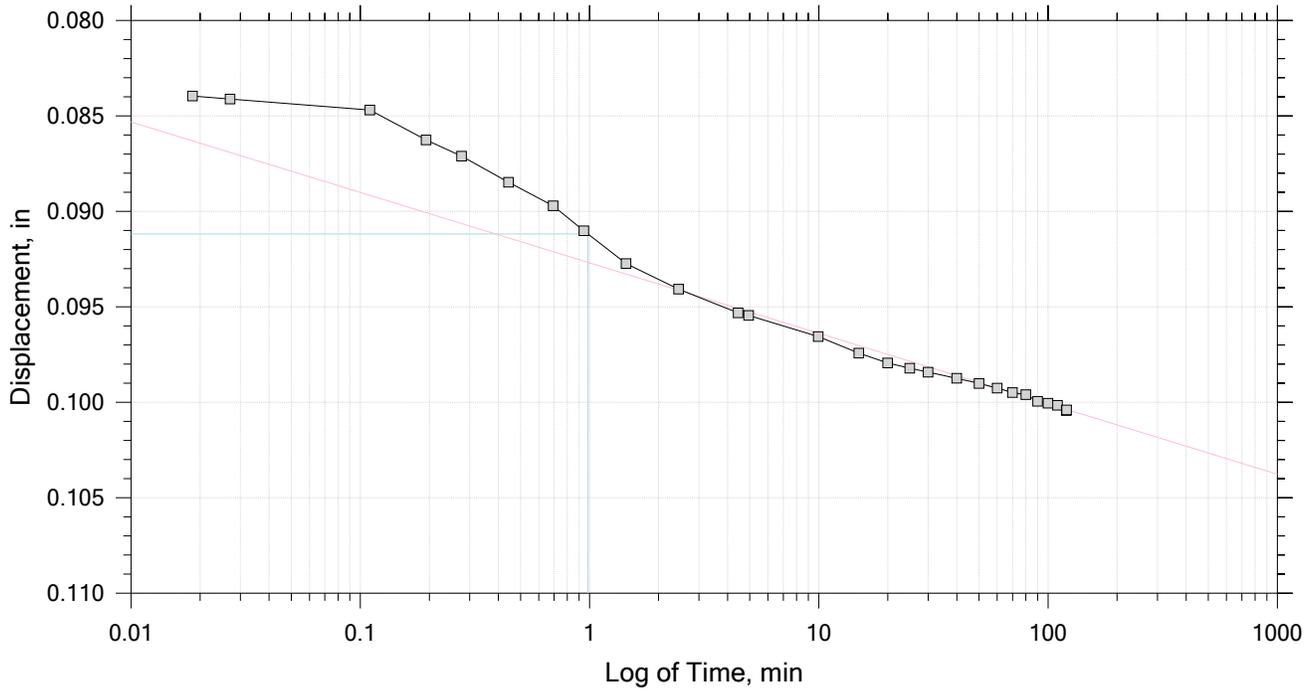
	Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
	Boring Number: CA-105	Tester: SJR	Checker: SJR
	Sample Number: U2	Test Date: 3/13/2025	Depth: 31.65
	Test Number: ICON 65-443	Preparation:	Elevation: --
	Description:		
	Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 20 of 26

Constant Load Step

Stress: 1.46e+04 psf



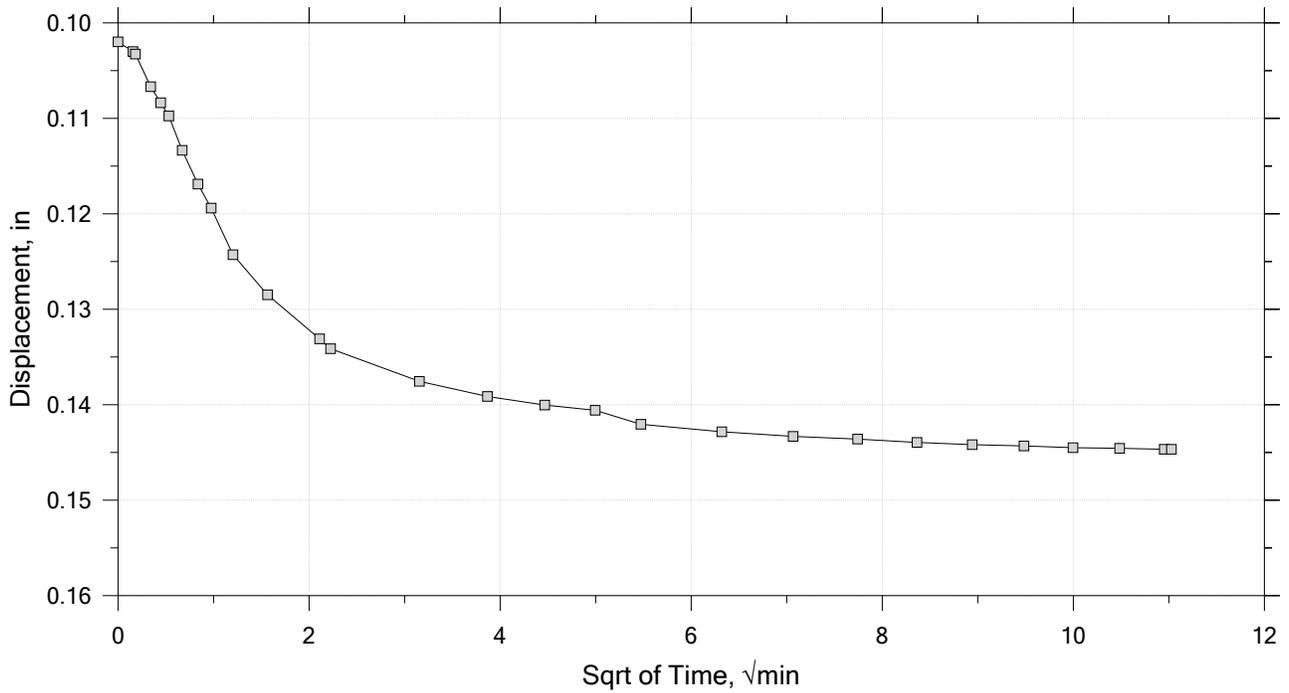
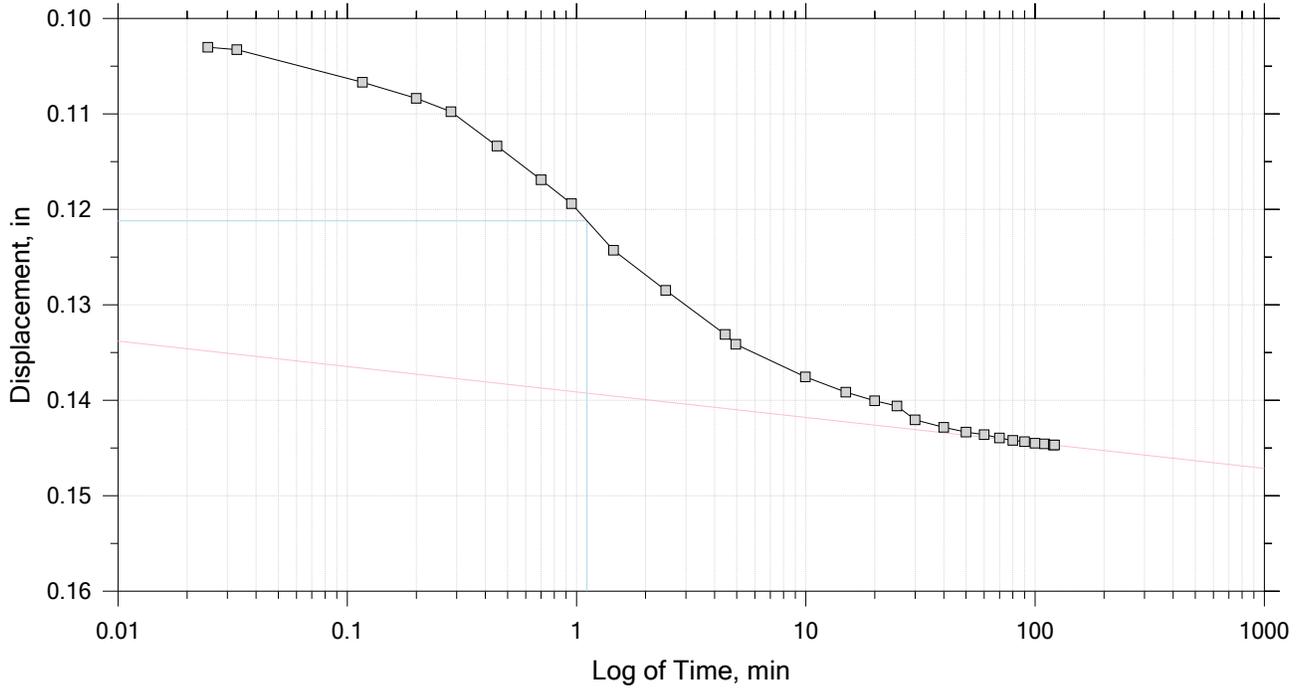
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U2	Test Date: 3/13/2025	Depth: 31.65
Test Number: ICON 65-443	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 21 of 26

Constant Load Step

Stress: 2.92×10^4 psf



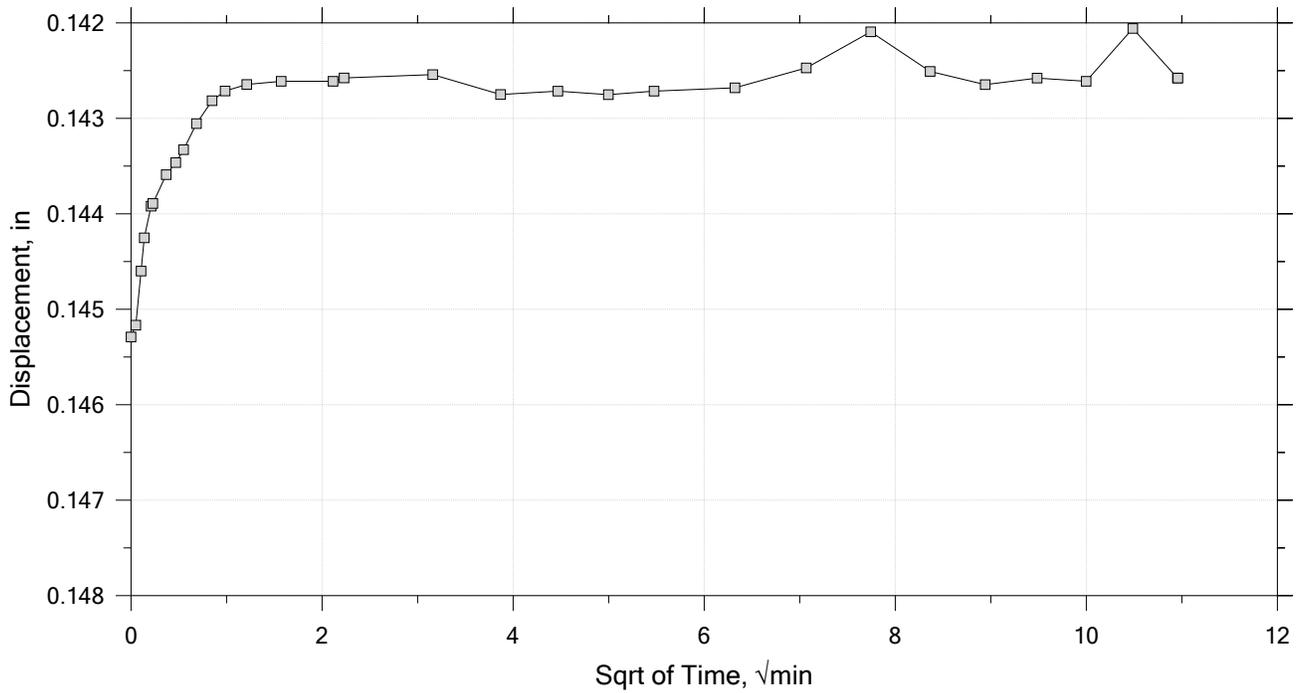
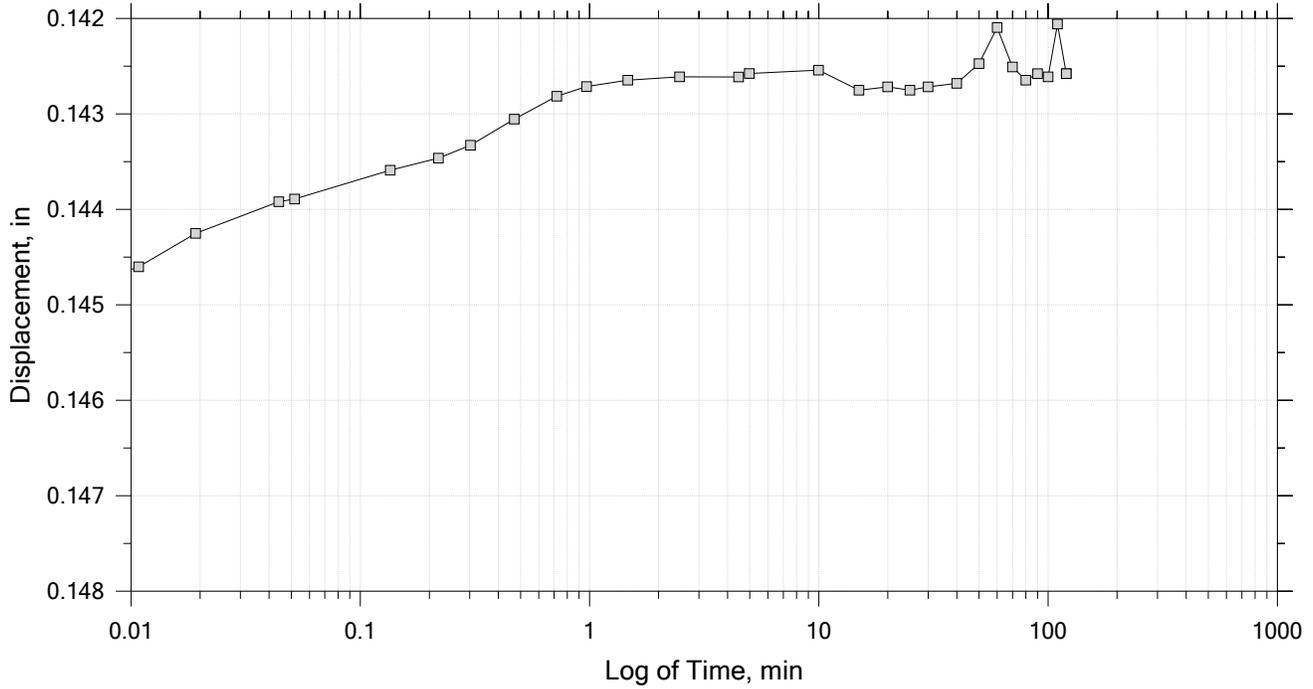
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U2	Test Date: 3/13/2025	Depth: 31.65
Test Number: ICON 65-443	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 22 of 26

Constant Load Step

Stress: 1.46e+04 psf



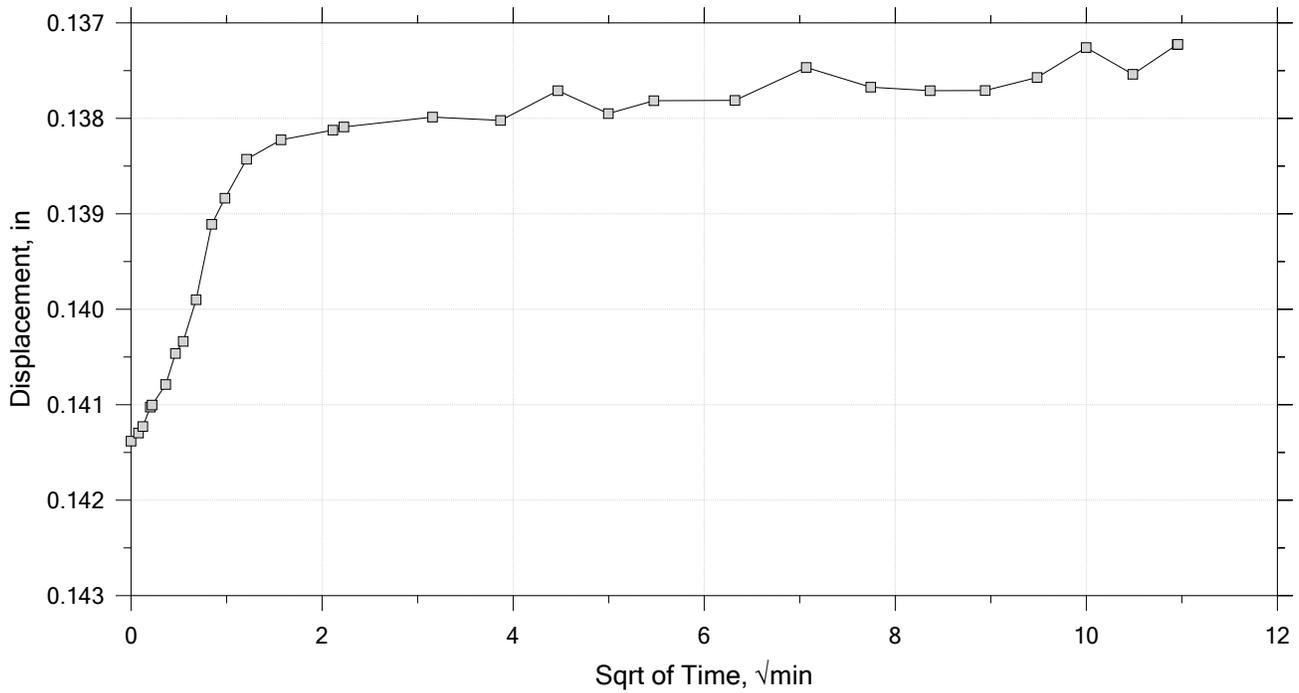
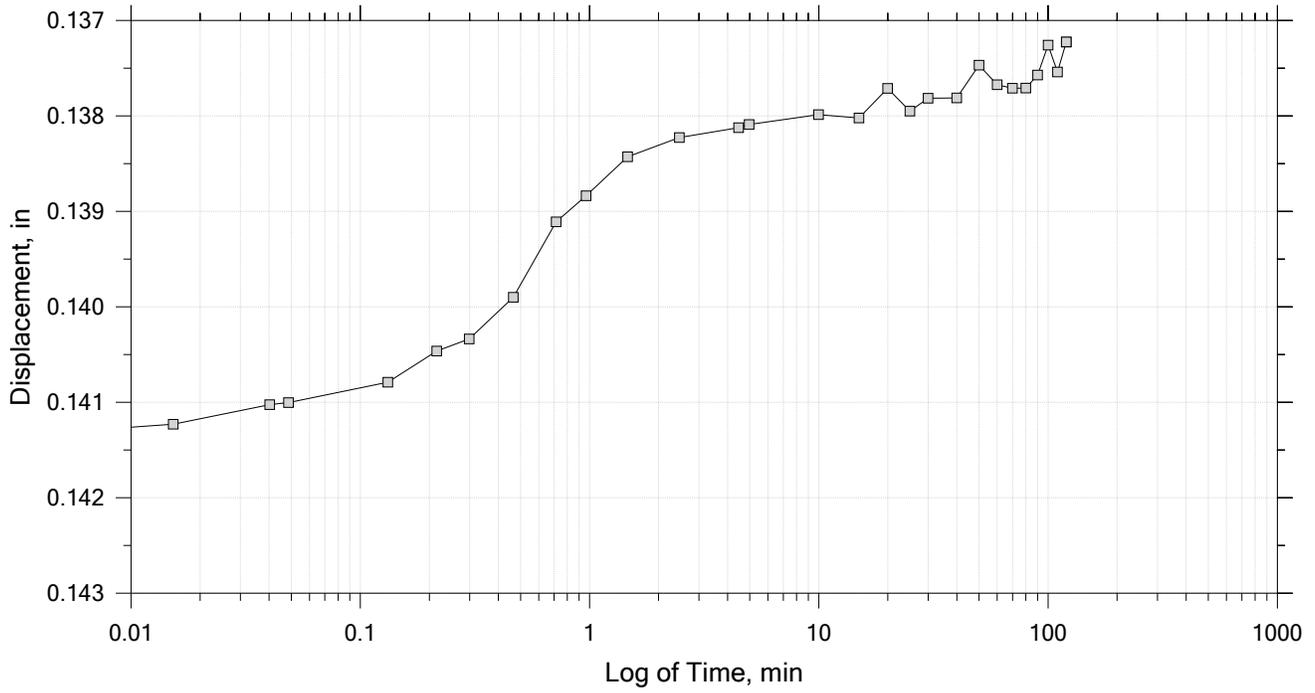
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U2	Test Date: 3/13/2025	Depth: 31.65
Test Number: ICON 65-443	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 23 of 26

Constant Load Step

Stress: 7.3e+03 psf



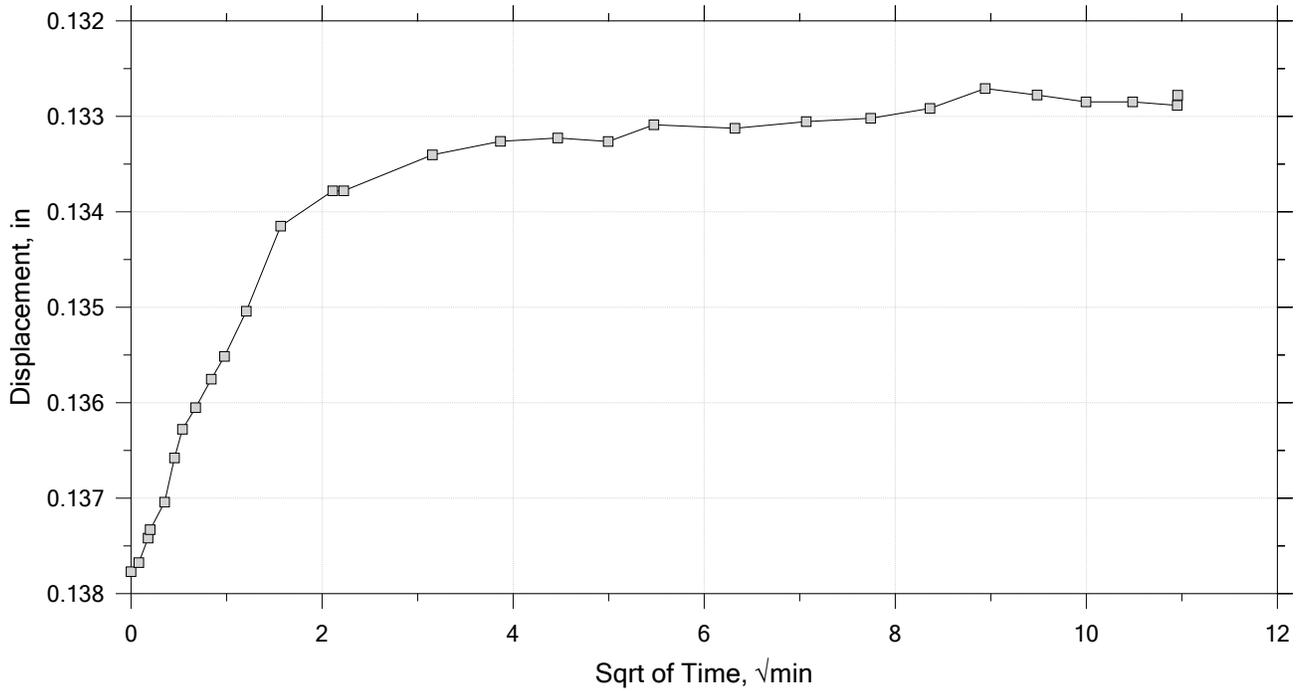
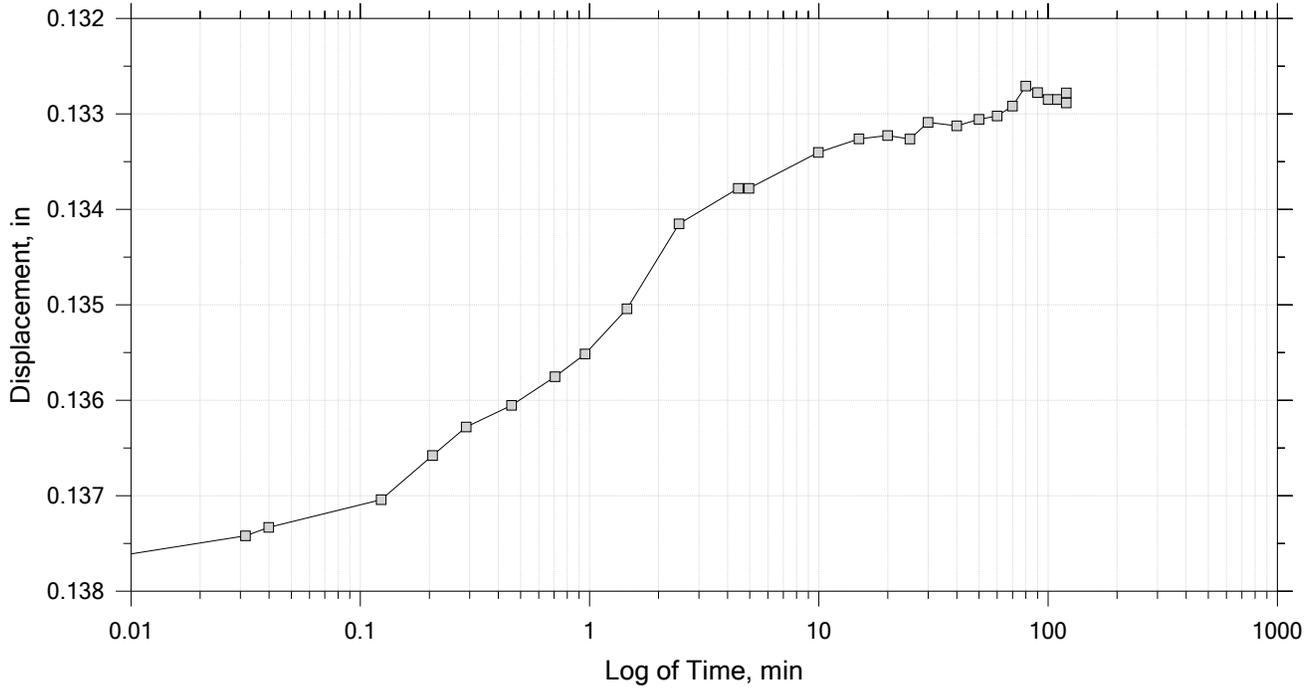
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U2	Test Date: 3/13/2025	Depth: 31.65
Test Number: ICON 65-443	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 24 of 26

Constant Load Step

Stress: 3.65e+03 psf



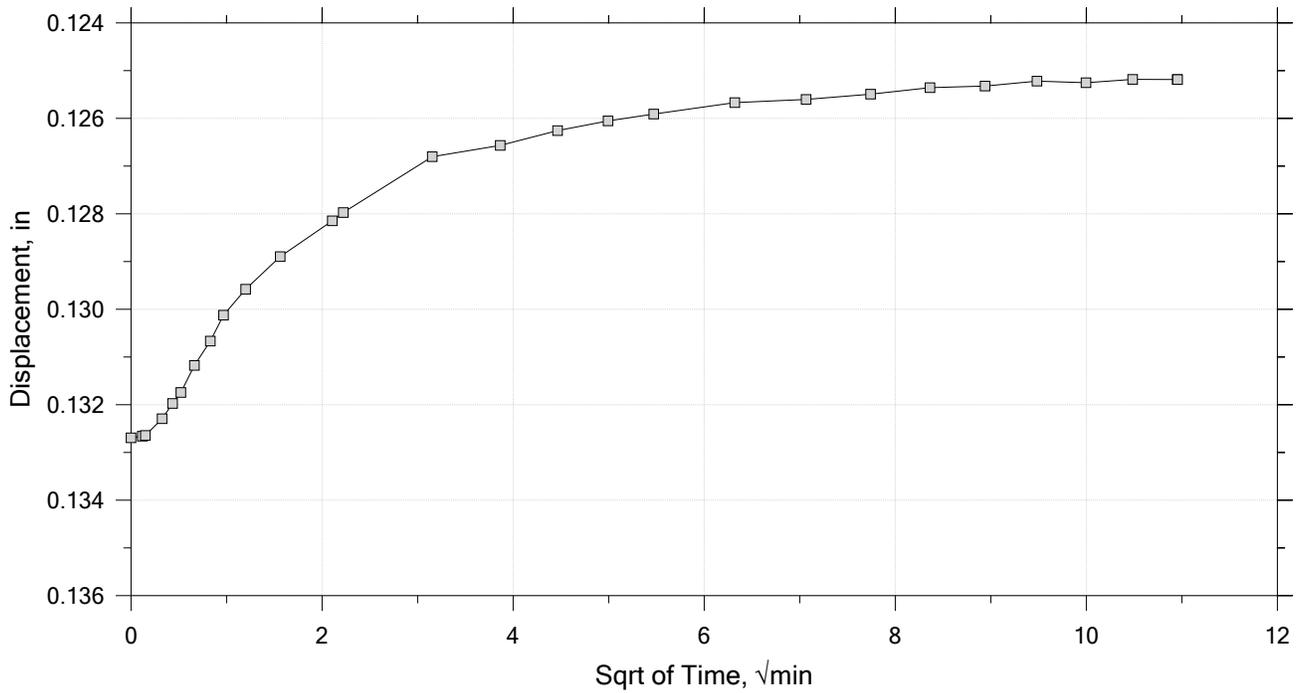
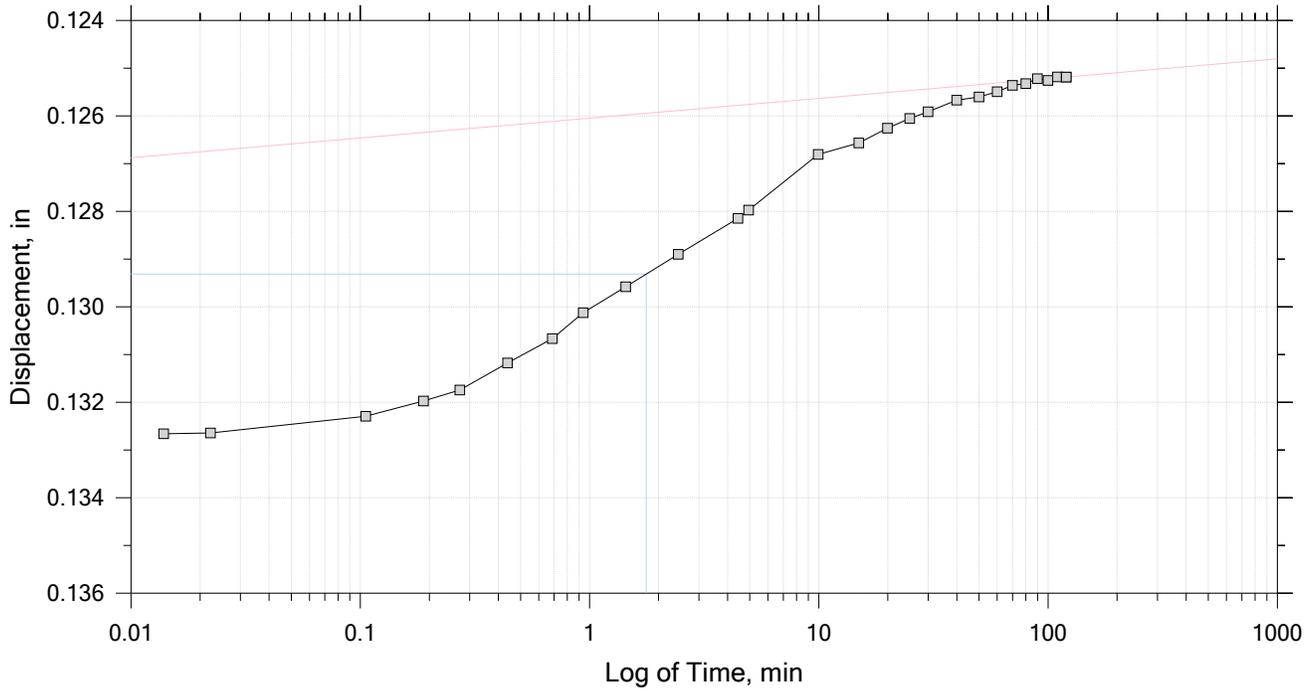
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U2	Test Date: 3/13/2025	Depth: 31.65
Test Number: ICON 65-443	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 25 of 26

Constant Load Step

Stress: 1.83e+03 psf



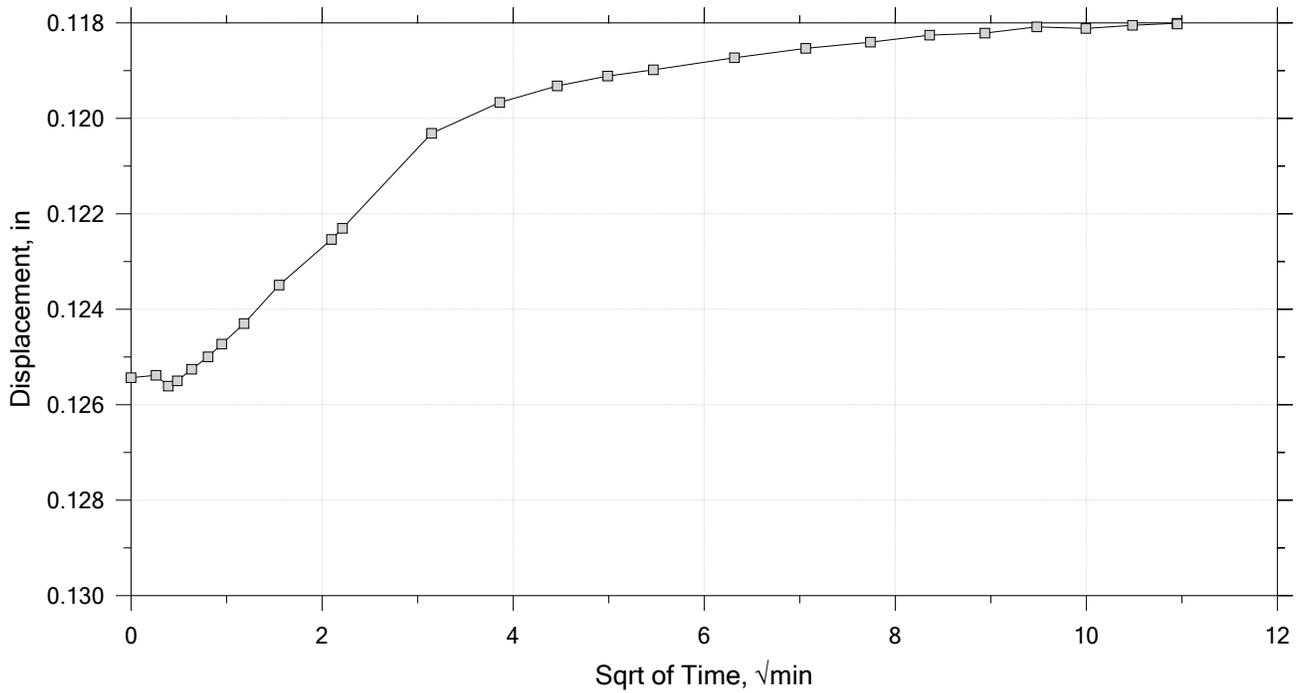
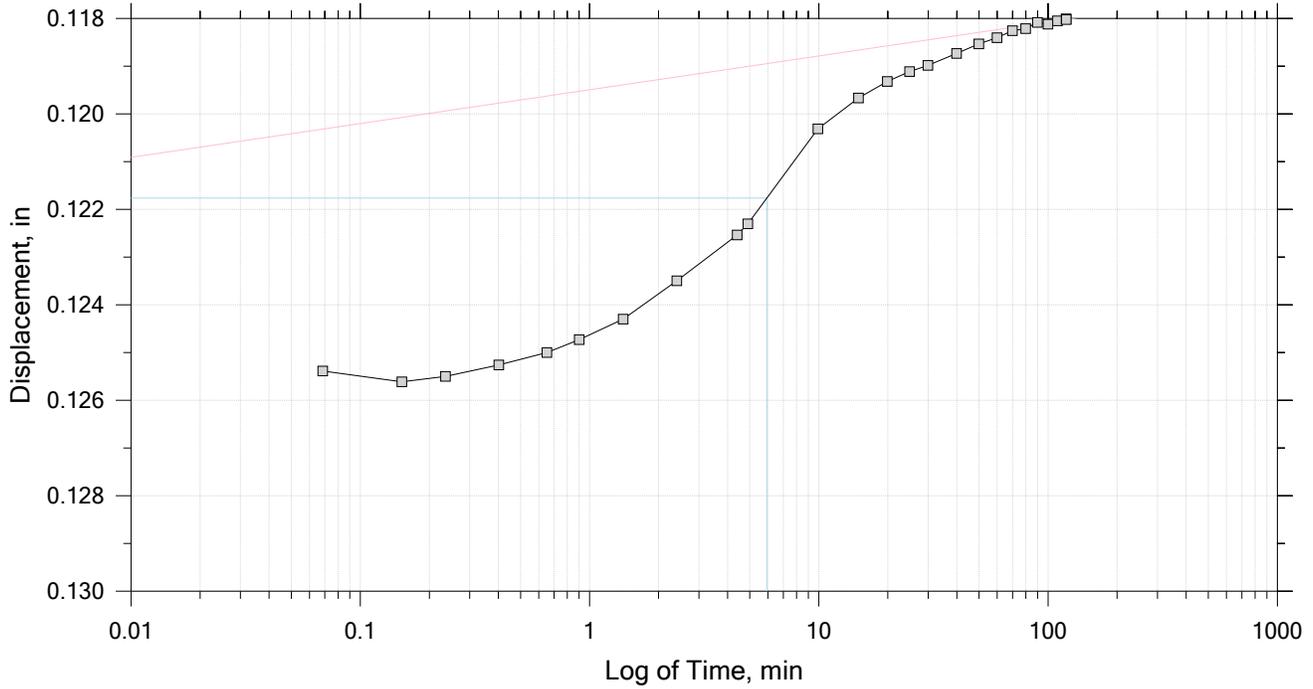
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U2	Test Date: 3/13/2025	Depth: 31.65
Test Number: ICON 65-443	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 26 of 26

Constant Load Step

Stress: 913 psf

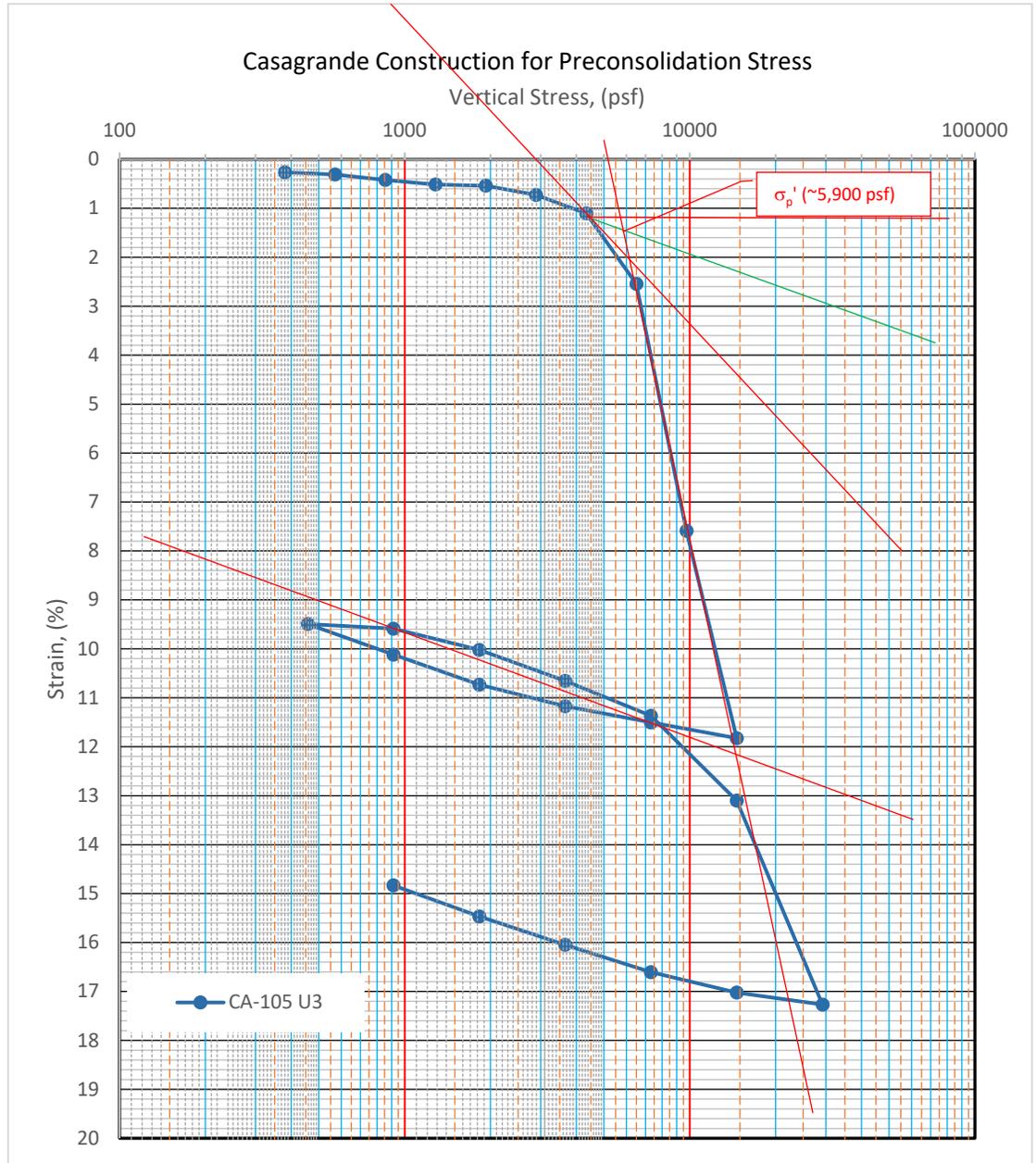


Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U2	Test Date: 3/13/2025	Depth: 31.65
Test Number: ICON 65-443	Preparation:	Elevation: --
Description:		
Remarks:		

CA-105 U3 CONSOLIDATION

Consolidation Test Data
Summary Report

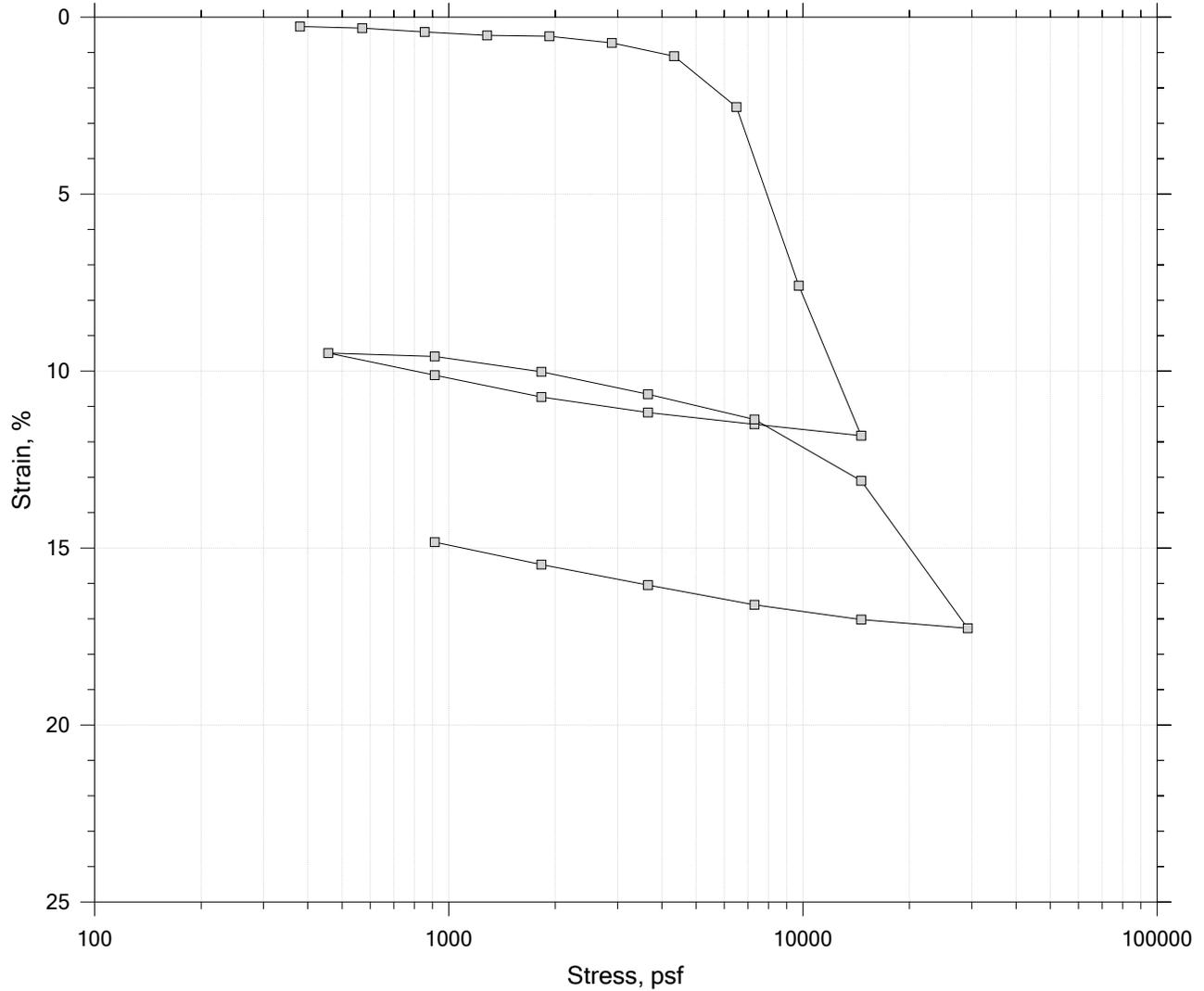
Project Name:	Cyro Road
Project Number:	174-01
Project Location:	Sanford, ME
Client:	Credeire PN 24001944
Sample Description:	Gray silty Clay
Preparation:	Trimmed Shelby Tube
Lab Test No:	ICON 65-444
Boring No.:	CA-105
Sample No.:	U3
Boring Elevation (ft):	--
Sample Depth (ft):	35-37
Test Specimen Depth (Ft):	36.35
Test Specimen Elevation:	---
Water Content (%):	38.6
Dry Unit Weight (pcf):	83.4
Wet Unit Weight (pcf):	115.6
Saturation Before (%):	93.6
Saturation After (%):	100
Void Ratio Before:	1.22
Void Ratio After:	0.89
Overburden Pressure (psf):	--
Max Previous stress (psf):	5,900
Max Prev. stress (Work) (psf):	--
OCR:	--
Compression Index (C_{CE}):	0.29
Recompression Index (C_{RE}):	0.021 from re-load curve
Liquid Limit:	37.4
Plastic Limit:	22.8
Plasticity Index:	14.6
Liquidity Index:	1.1
Organic Content	--
Lab Vane S_u at 36.65 ft. (psf)	940
Tested By:	sjr
Date Tested:	3/16/2025
Checked By:	sjr



Note 1: The calculations for the Max Previous Stress, the Compression Index and the Recompression Index are provided for the convenience of the Specifier. The Specifier should make their own independent assessment of Maximum Previous stress, Cce and Cre for use in any engineering analyses.

One-Dimensional Consolidation by ASTM D2435 - Method B

Summary Report



				Before Test	After Test
Current Vertical Effective Stress, psf: 0		Water Content, %		38.56	30.08
Preconsolidation Stress, psf: 5727		Dry Unit Weight, pcf		83.424	97.951
Compression Ratio: 0		Saturation, %		93.63	100.00
Specimen Diameter, in: 2.5	Specimen Height, in: 1	Void Ratio		1.22	0.89
LL: 37	PL: 23	PI: 15	GS: 2.97		

	Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
	Boring Number: CA-105	Tester: SJR	Checker: SJR
	Sample Number: U3	Test Date: 3/16/2025	Depth: 36.35
	Test Number: ICON 65-444	Preparation:	Elevation: --
	Description:		
	Remarks:		
	Displacement at End of Increment		

One-Dimensional Consolidation by ASTM D2435 - Method B

Specimen Diameter, in: 2.50	Specific Gravity: 2.97 (Implied)	Liquid Limit: 37
Specimen Height, in: 1.00	Initial Void Ratio: 1.22	Plastic Limit: 23
Final Height, in: 0.85	Final Void Ratio: 0.894	Plasticity Index: 15

	Before Test Trimblings	Before Test Specimen	After Test Specimen	After Test Trimblings
Container ID	206	---	"Ring"	317
Mass Container, gm	36.9	109.53	109.53	60.89
Mass Container + Wet Soil, gm	151.7	258.47	249.36	200.69
Mass Container + Dry Soil, gm	117.95	217.02	217.02	168.36
Mass Dry Soil, gm	81.05	107.49	107.49	107.47
Water Content, %	41.64	38.56	30.08	30.08
Void Ratio	---	1.22	0.89	---
Degree of Saturation, %	---	93.63	100.00	---
Dry Unit Weight, pcf	---	83.424	97.951	---

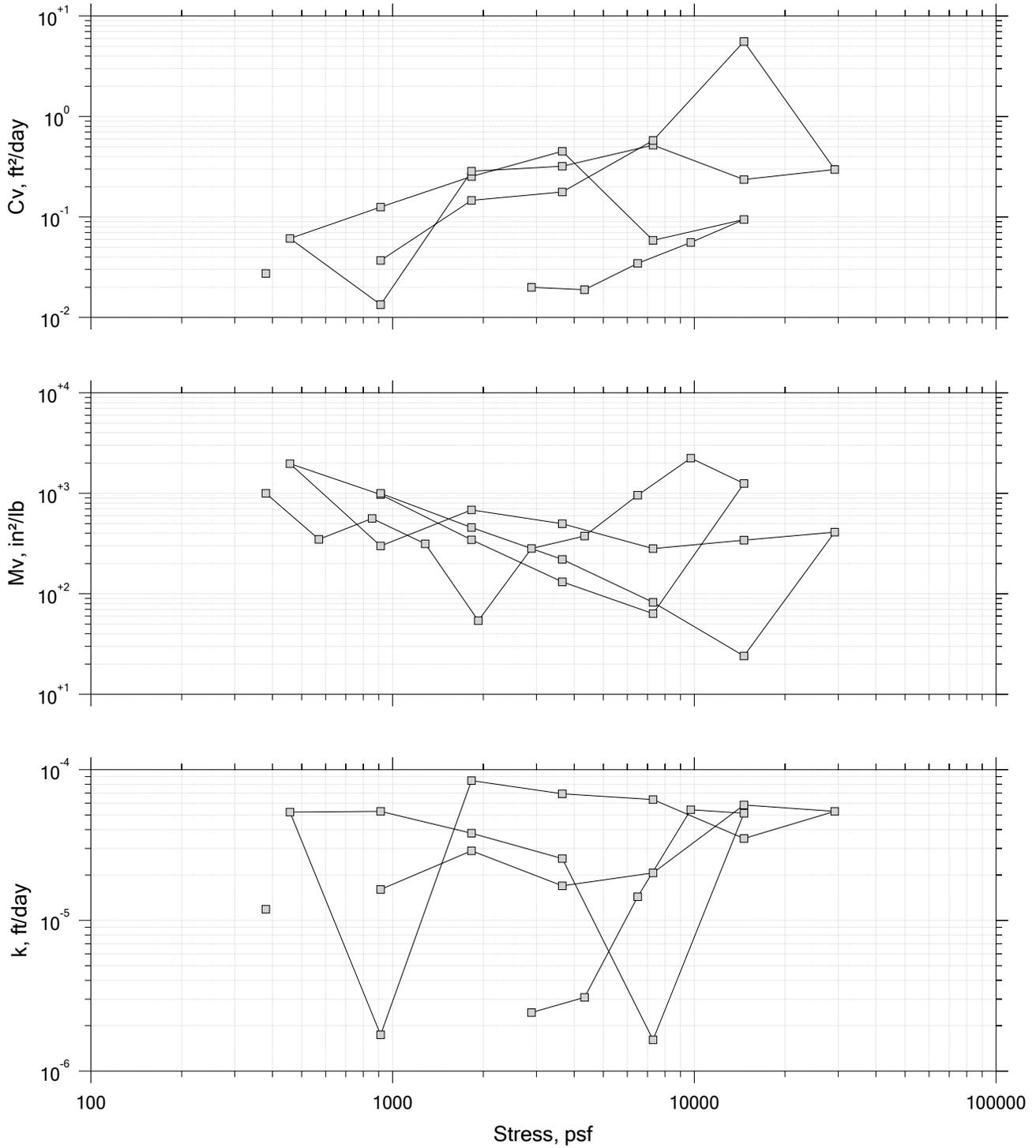
Preconsolidation Stress, psf	5727
Compression Ratio	0
Rebound Ratio	0
Compression Index	0
Rebound Index	0

Note: Specific Gravity and Void Ratios are calculated assuming the degree of saturation equals 100% at the end of the test. Therefore, values may not represent actual values for the specimen.

	Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
	Boring Number: CA-105	Tester: SJR	Checker: SJR
	Sample Number: U3	Test Date: 3/16/2025	Depth: 36.35
	Test Number: ICON 65-444	Preparation:	Elevation: --
	Description:		
	Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Sqrt of Time Coefficients



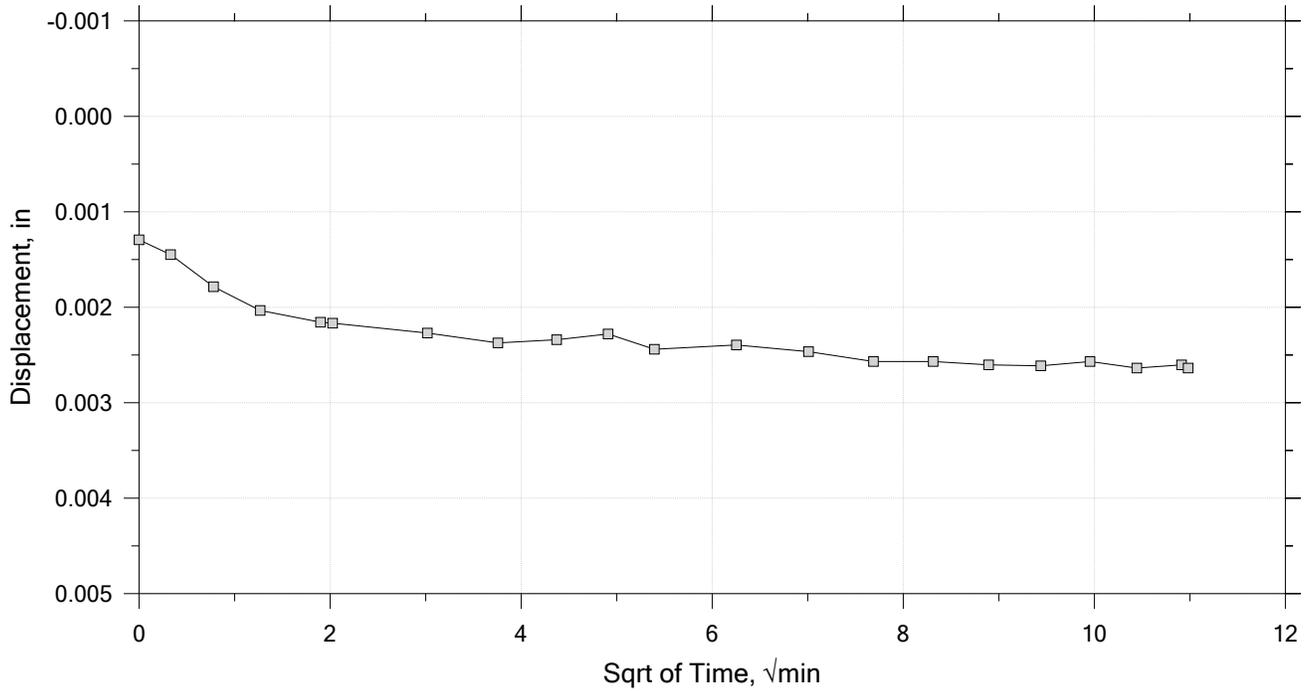
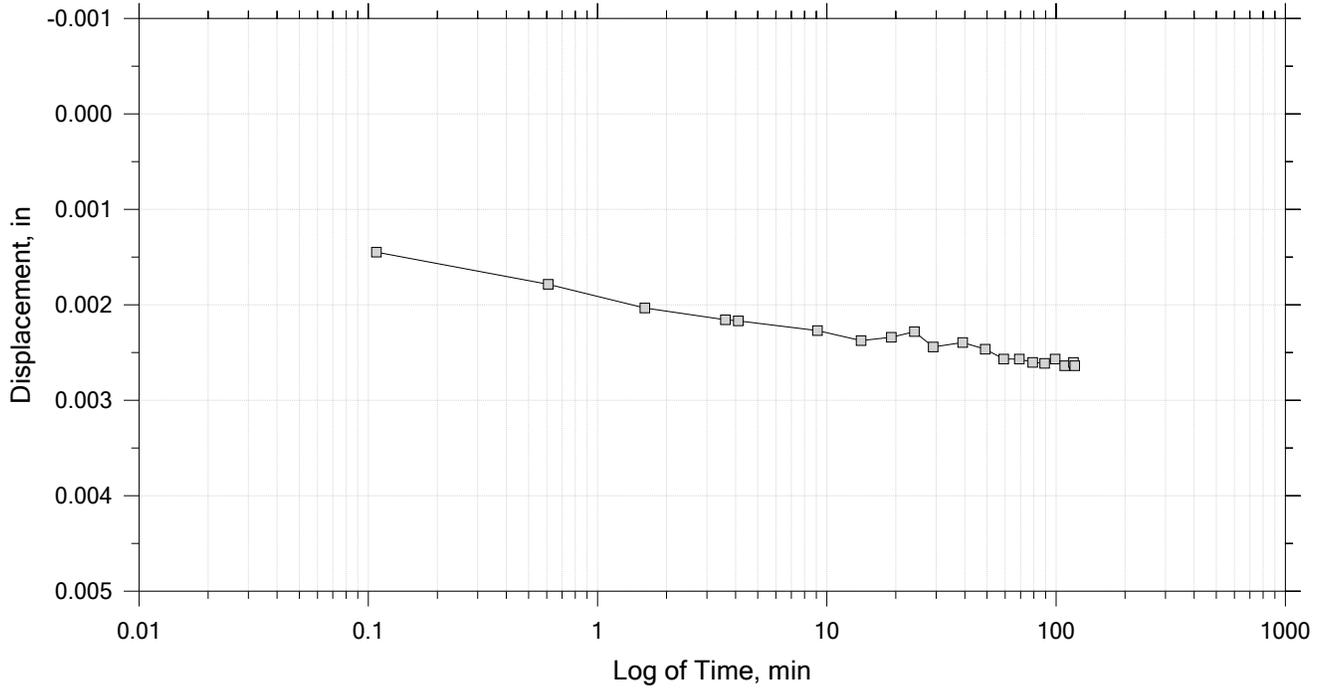
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U3	Test Date: 3/16/2025	Depth: 36.35
Test Number: ICON 65-444	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 1 of 26

Constant Load Step

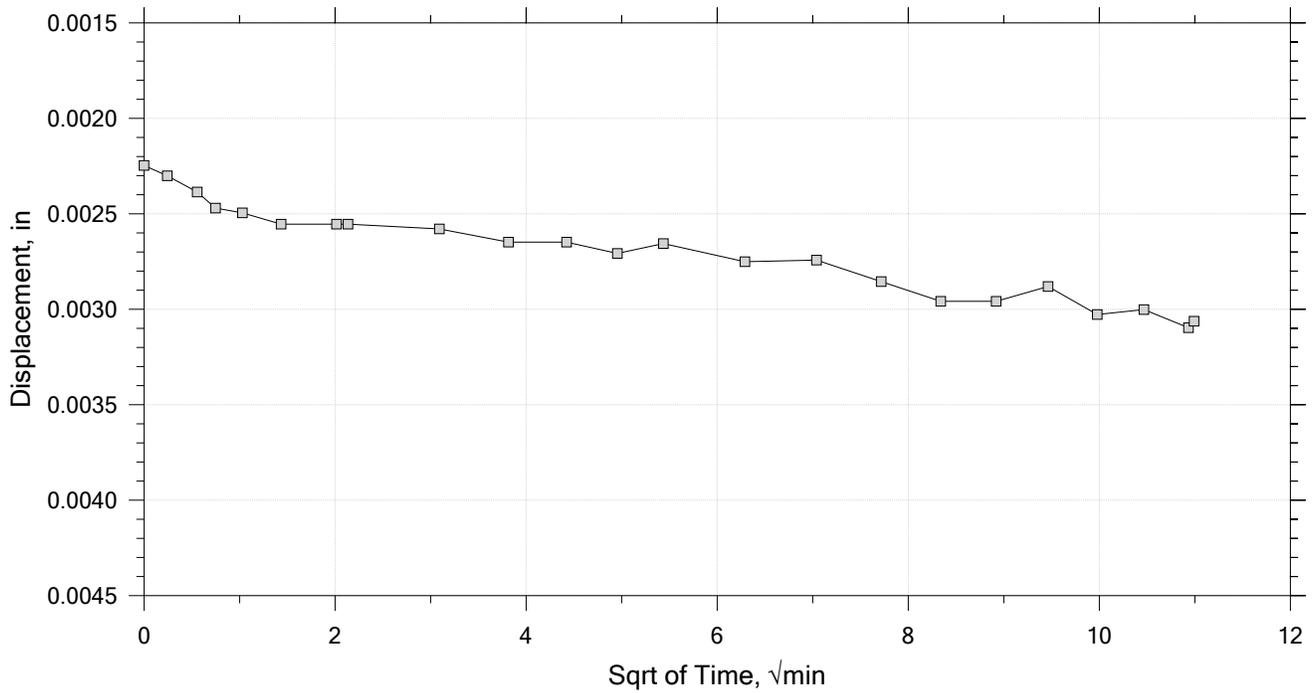
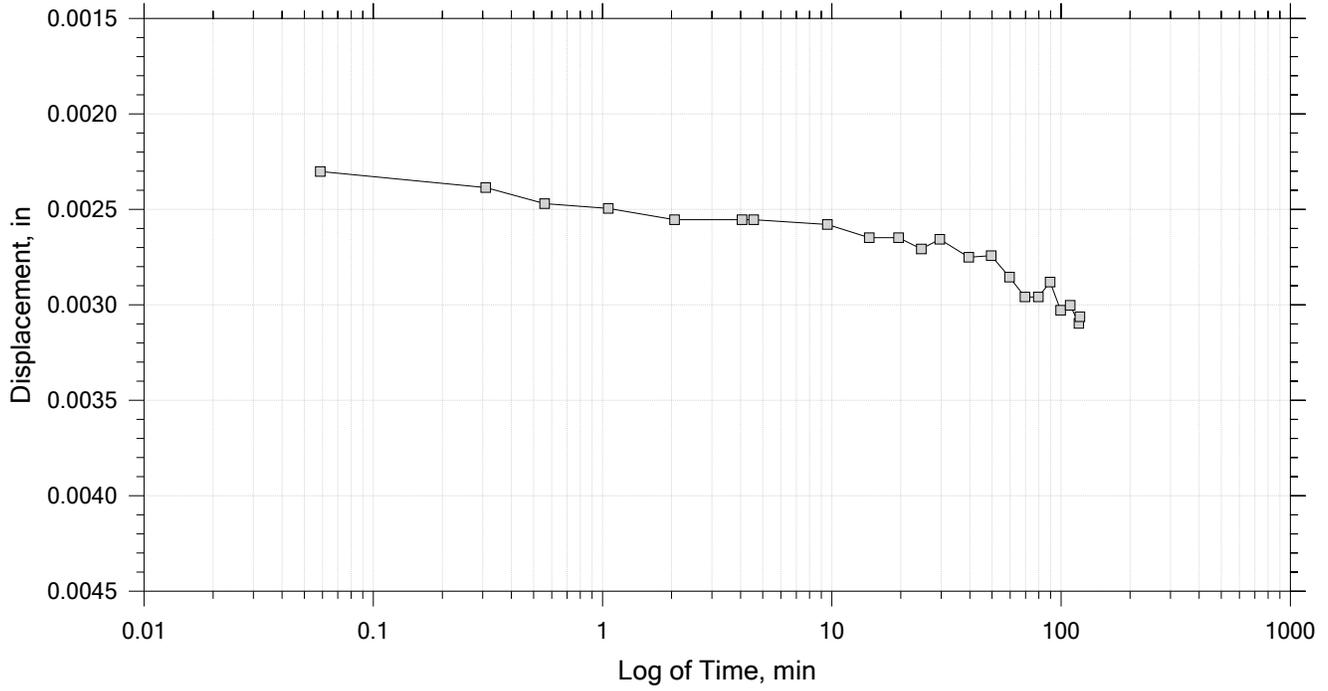
Stress: 380 psf



Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U3	Test Date: 3/16/2025	Depth: 36.35
Test Number: ICON 65-444	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 2 of 26
 Constant Load Step
 Stress: 570 psf



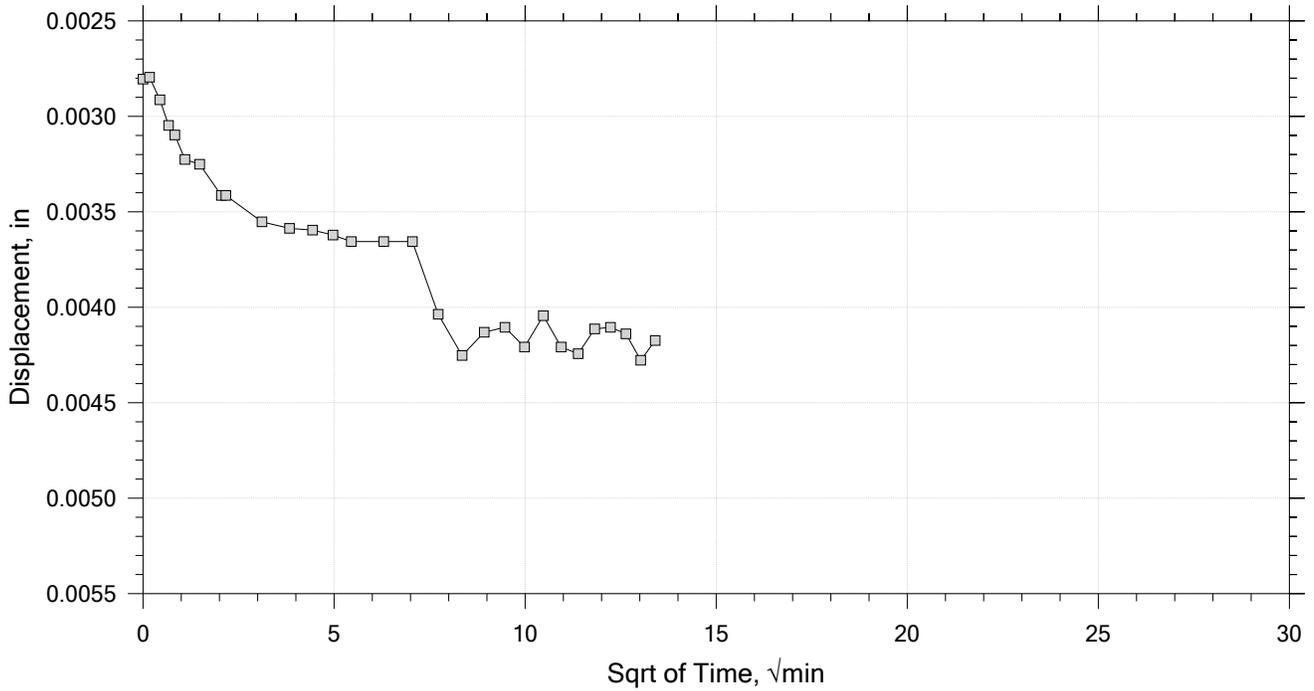
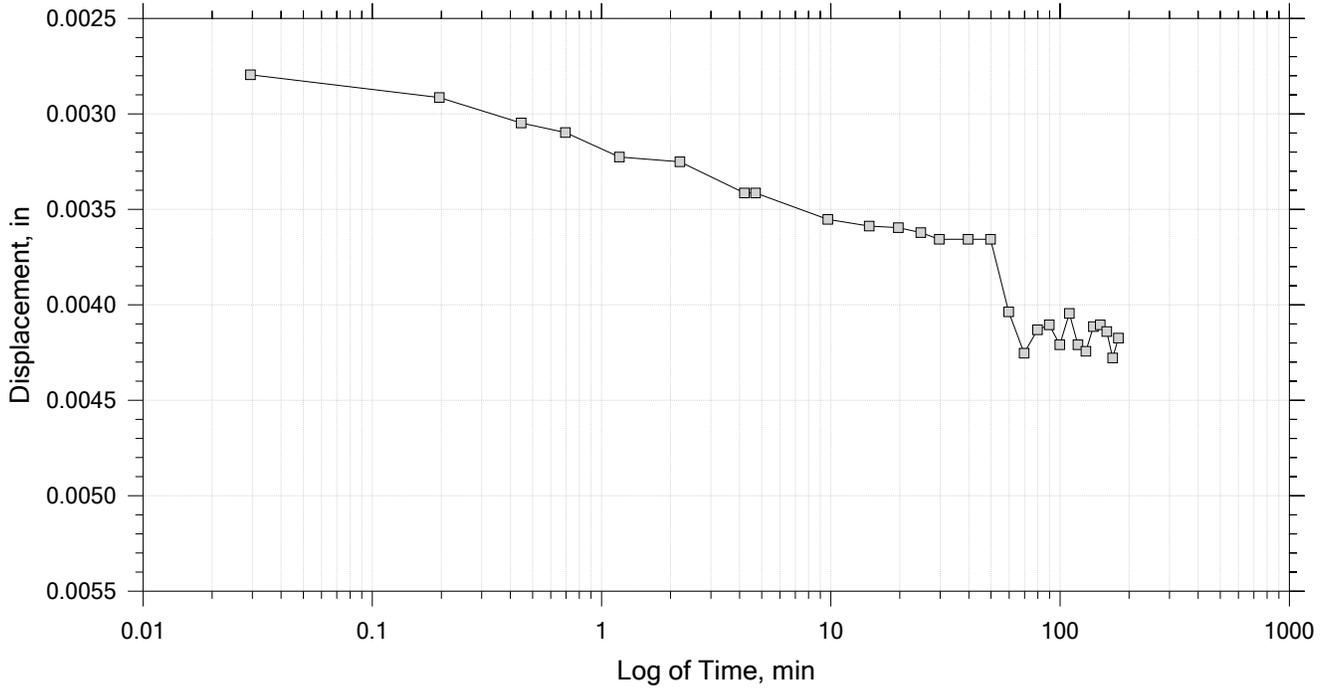
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U3	Test Date: 3/16/2025	Depth: 36.35
Test Number: ICON 65-444	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 3 of 26

Constant Load Step

Stress: 855 psf



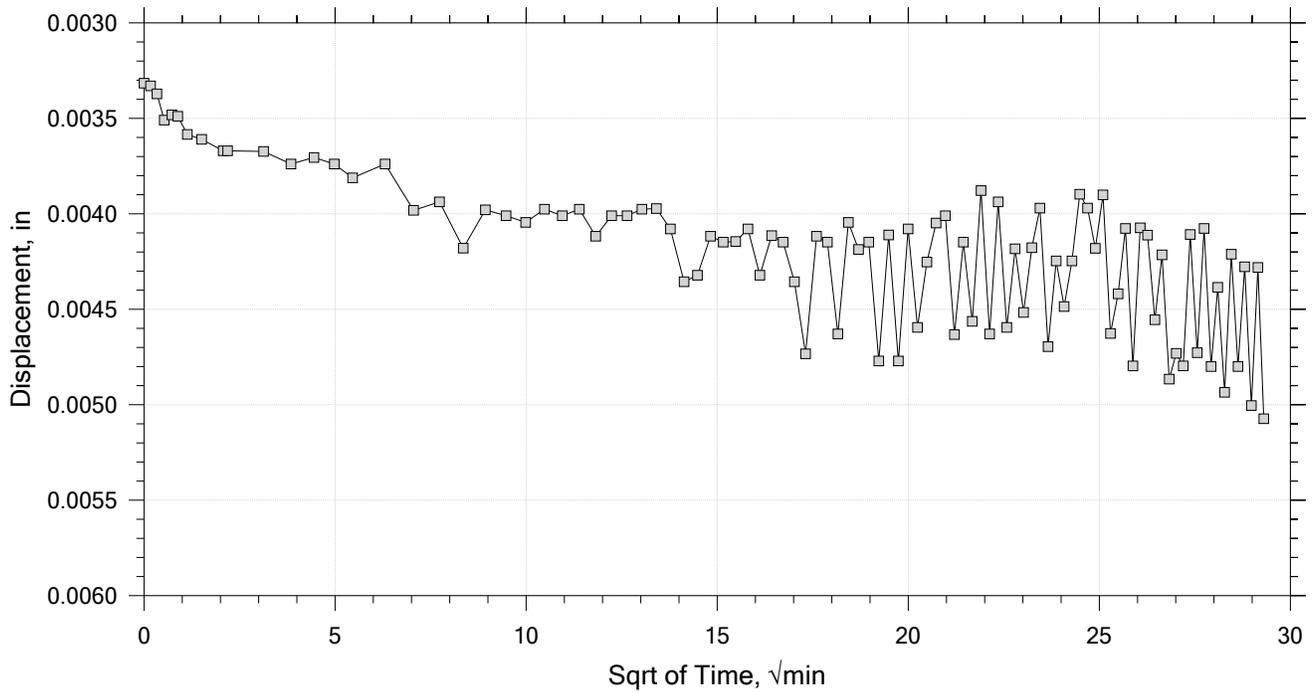
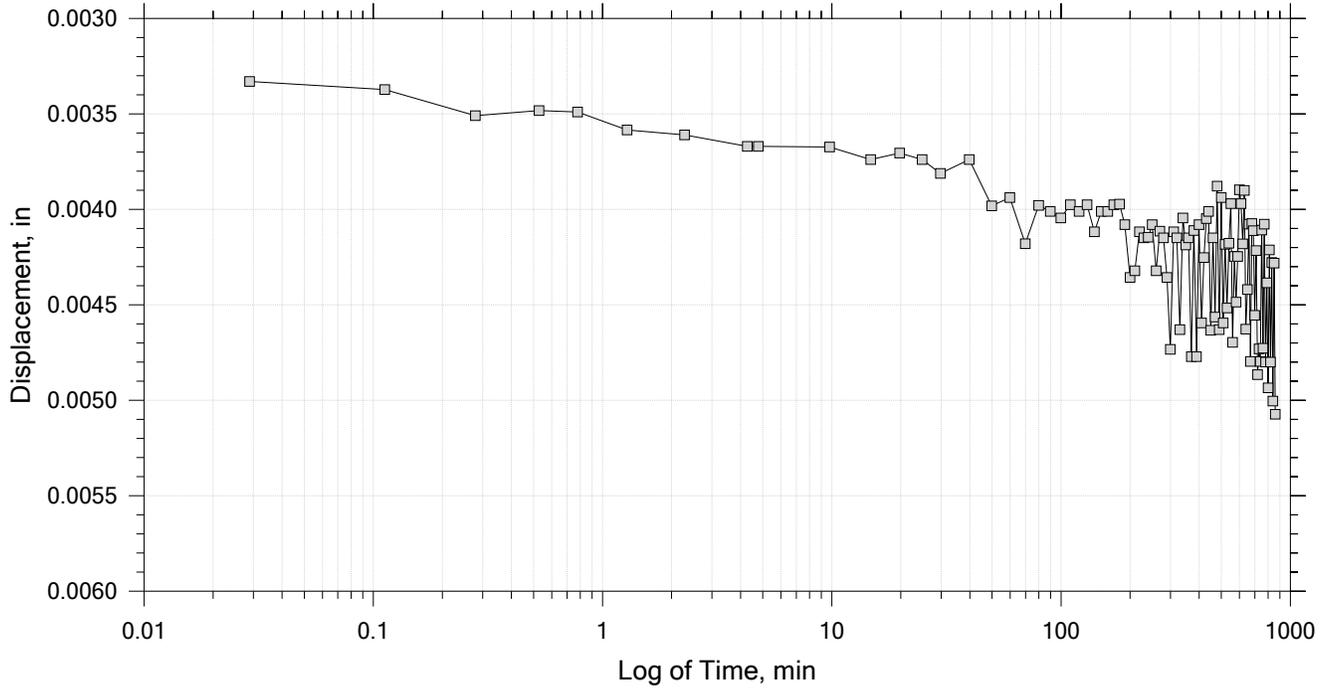
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U3	Test Date: 3/16/2025	Depth: 36.35
Test Number: ICON 65-444	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 4 of 26

Constant Load Step

Stress: 1.28e+03 psf



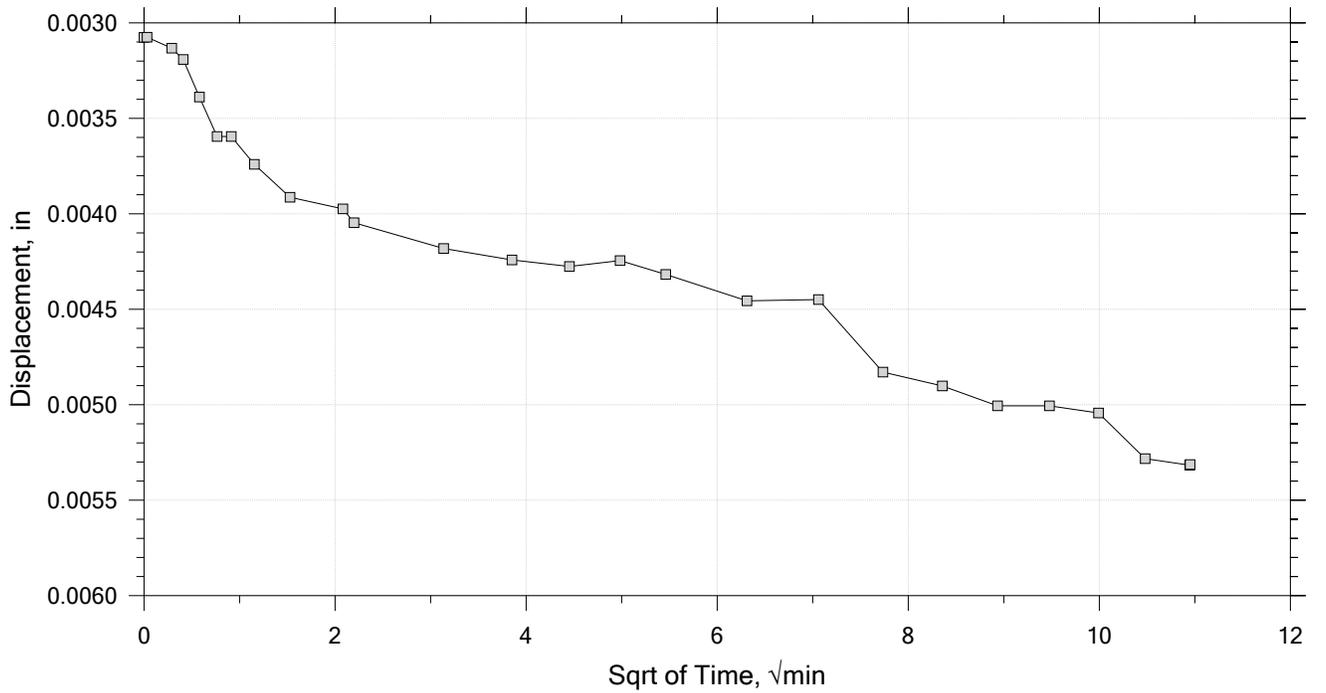
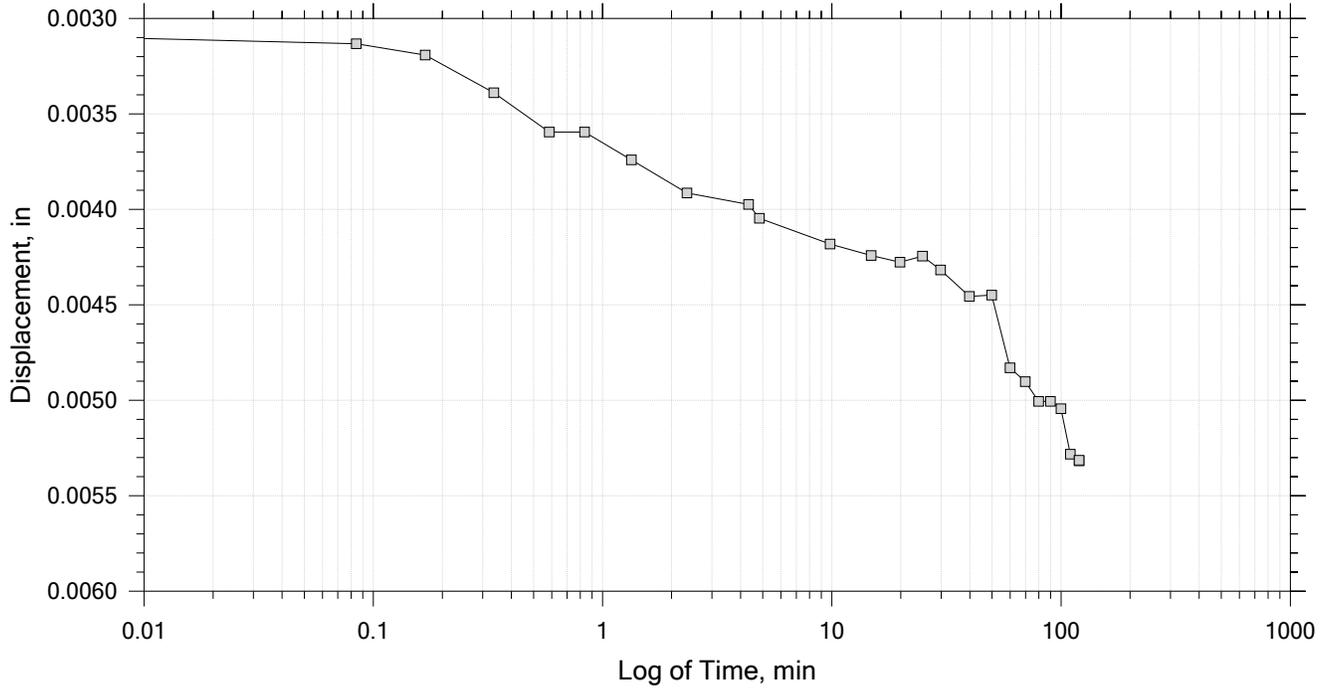
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U3	Test Date: 3/16/2025	Depth: 36.35
Test Number: ICON 65-444	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 5 of 26

Constant Load Step

Stress: 1.92e+03 psf



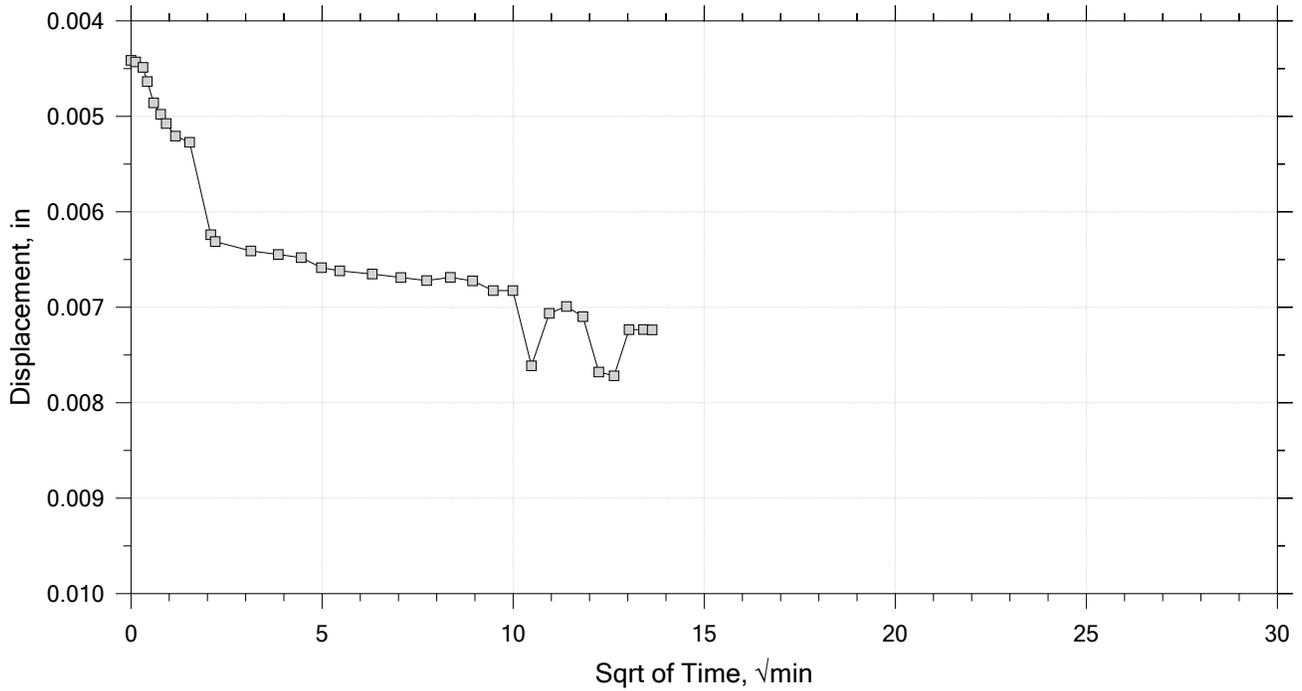
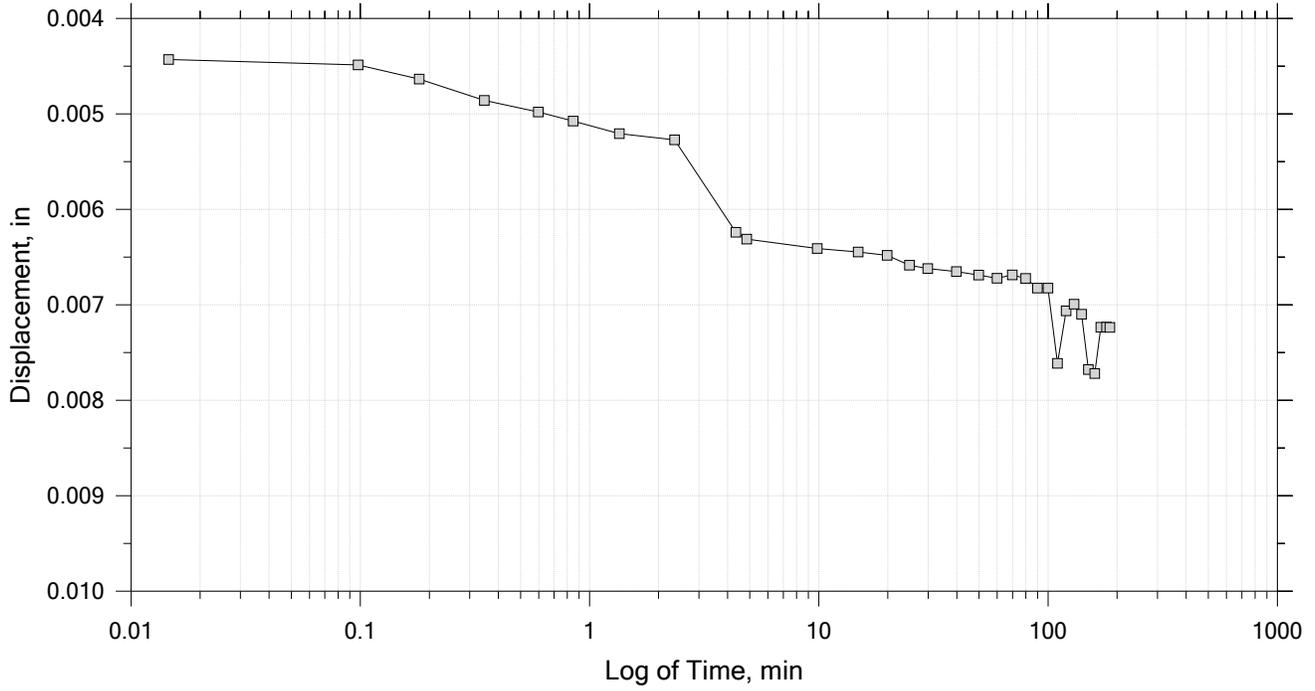
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U3	Test Date: 3/16/2025	Depth: 36.35
Test Number: ICON 65-444	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 6 of 26

Constant Load Step

Stress: 2.89e+03 psf



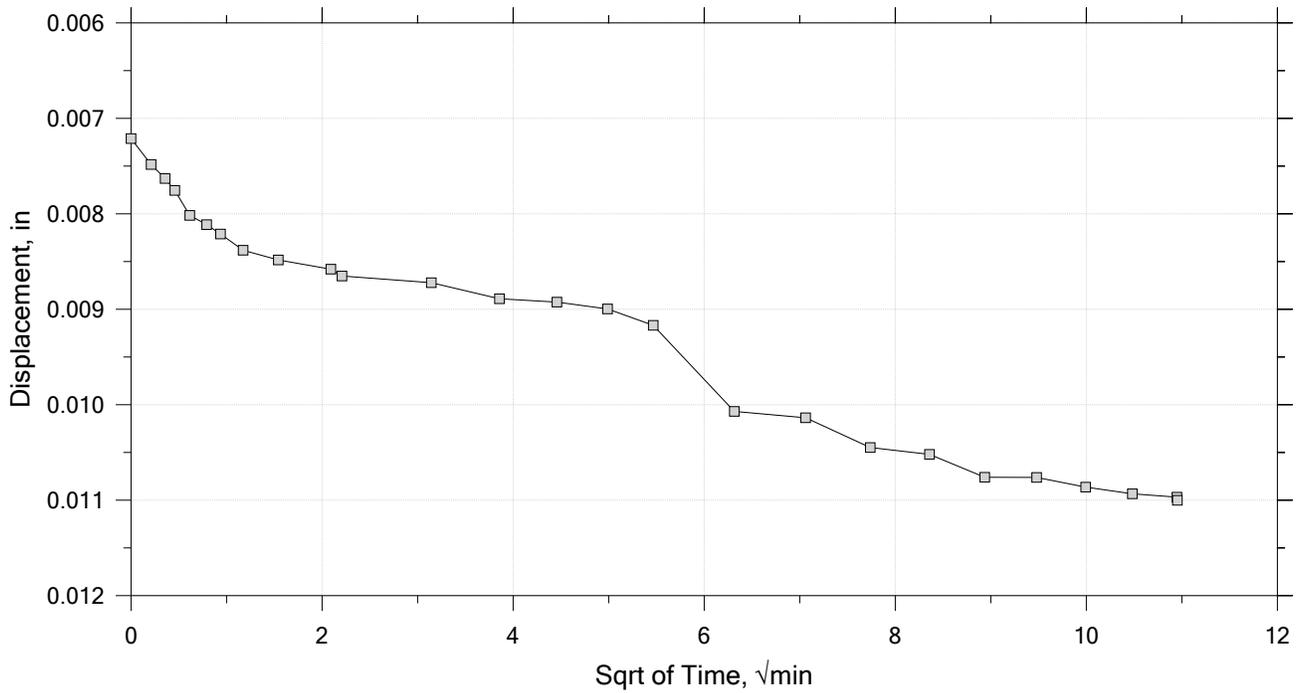
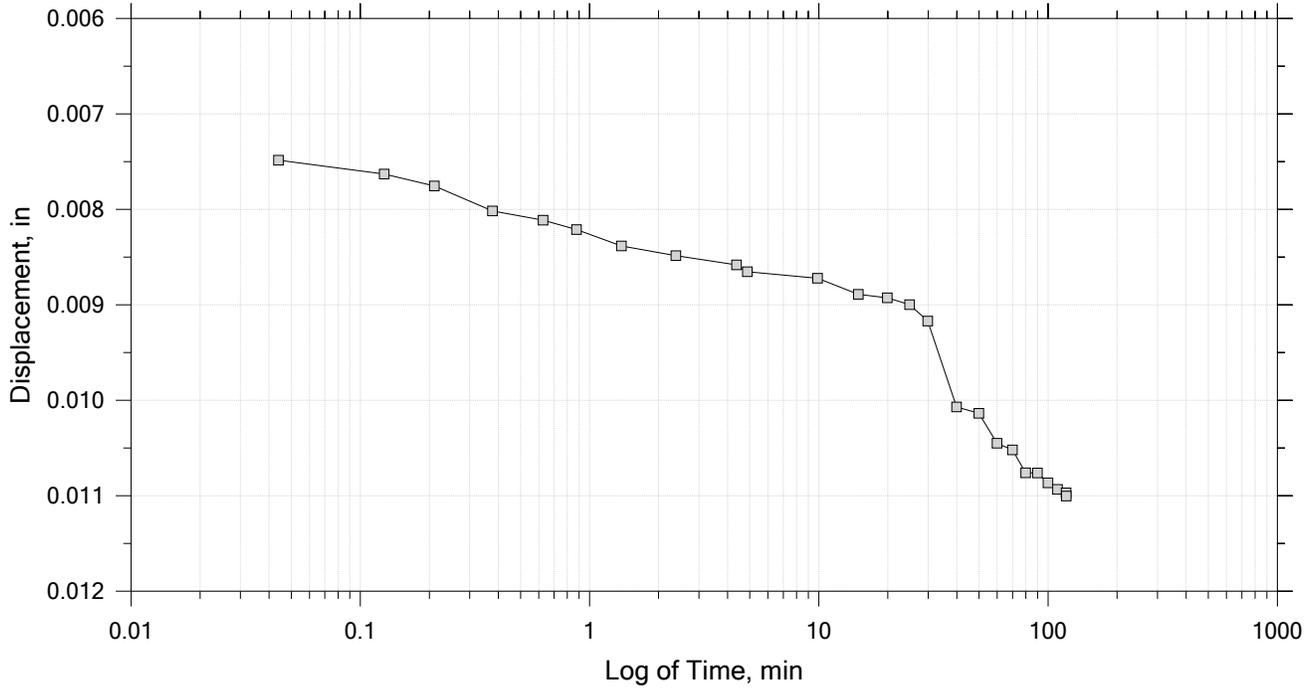
	Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
	Boring Number: CA-105	Tester: SJR	Checker: SJR
	Sample Number: U3	Test Date: 3/16/2025	Depth: 36.35
	Test Number: ICON 65-444	Preparation:	Elevation: --
	Description:		
	Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 7 of 26

Constant Load Step

Stress: 4.33e+03 psf



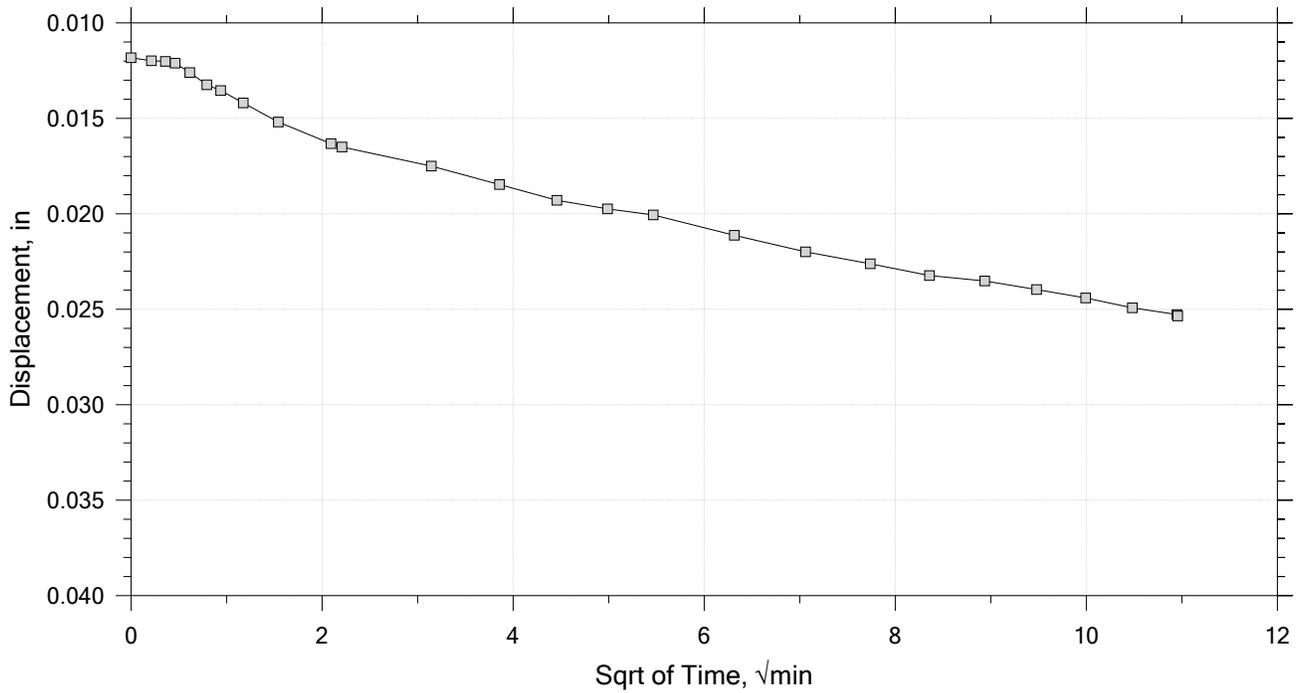
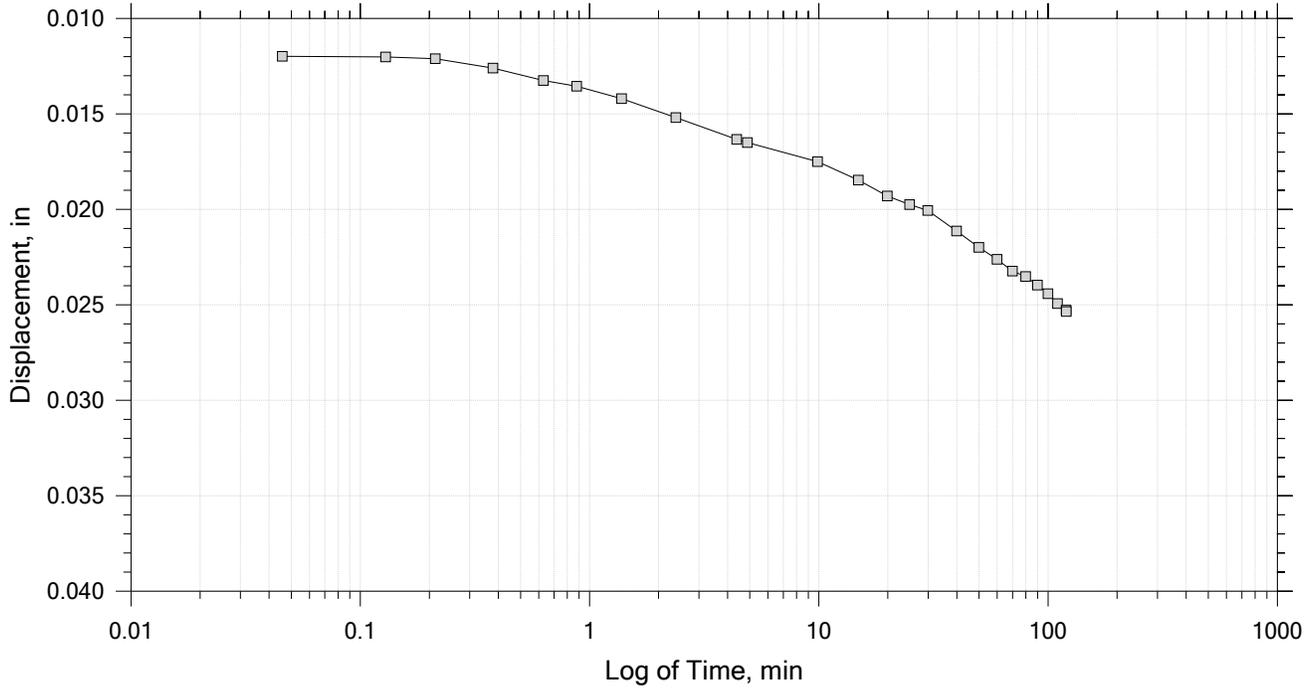
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U3	Test Date: 3/16/2025	Depth: 36.35
Test Number: ICON 65-444	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 8 of 26

Constant Load Step

Stress: 6.49e+03 psf



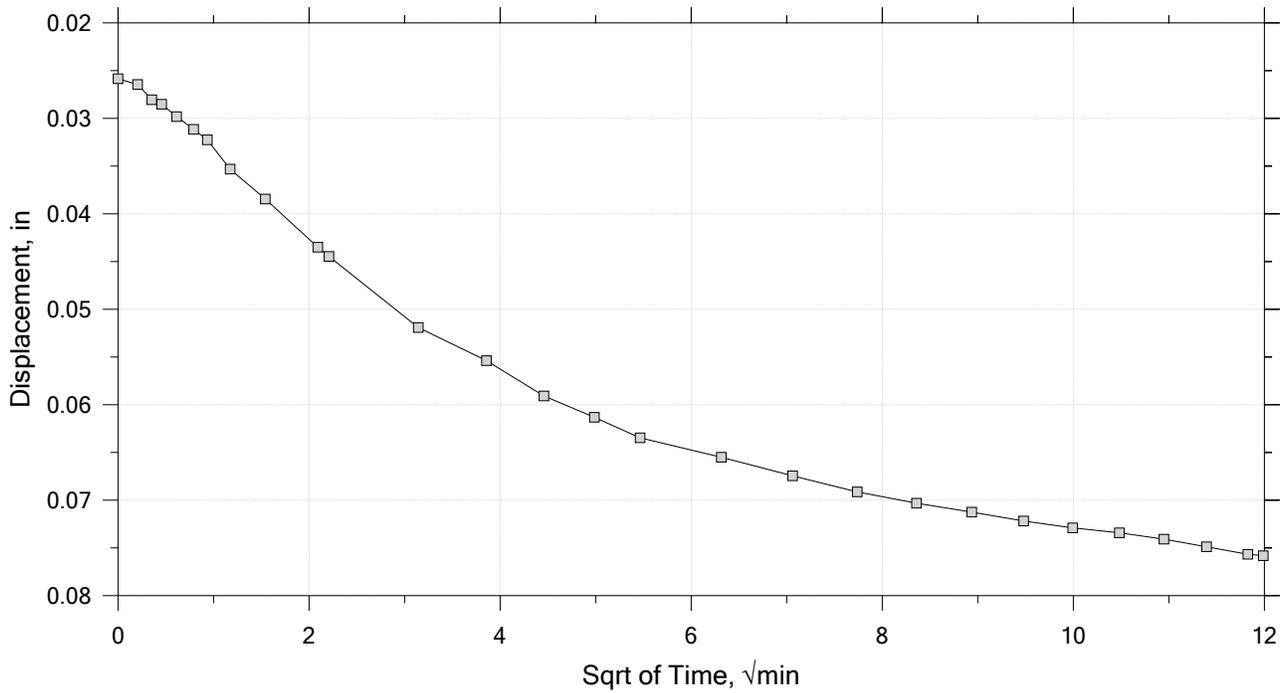
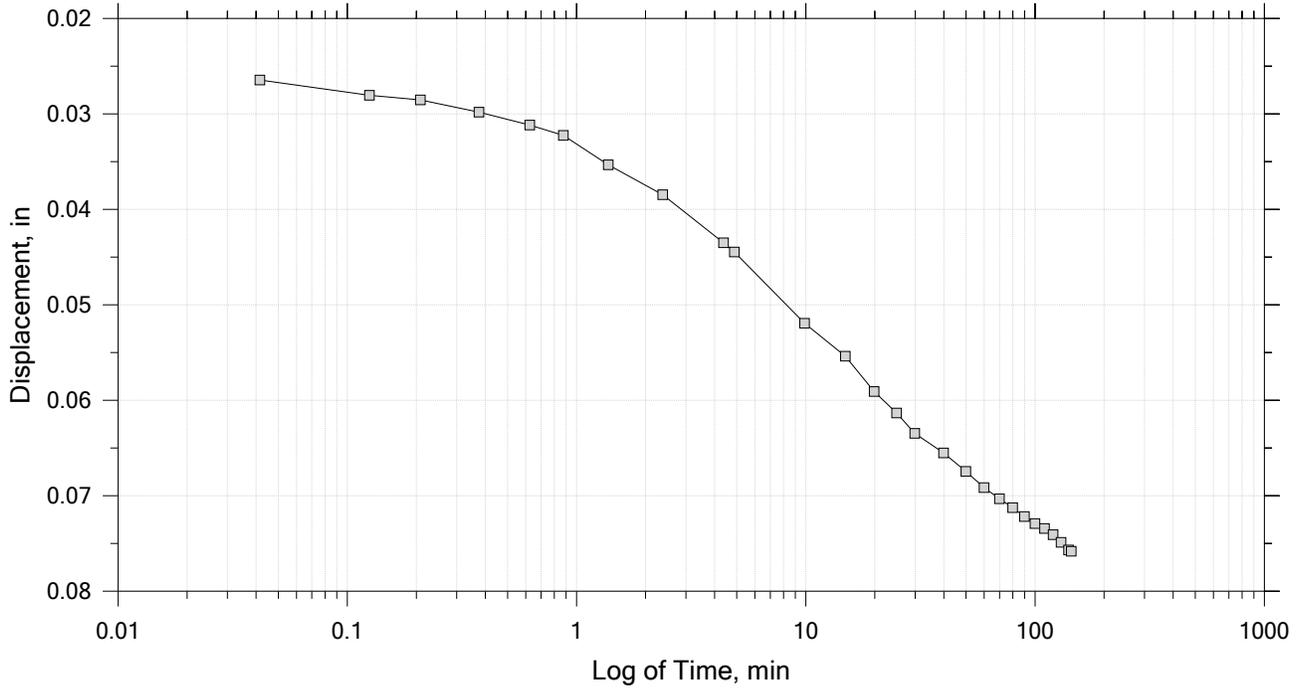
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U3	Test Date: 3/16/2025	Depth: 36.35
Test Number: ICON 65-444	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 9 of 26

Constant Load Step

Stress: 9.74e+03 psf



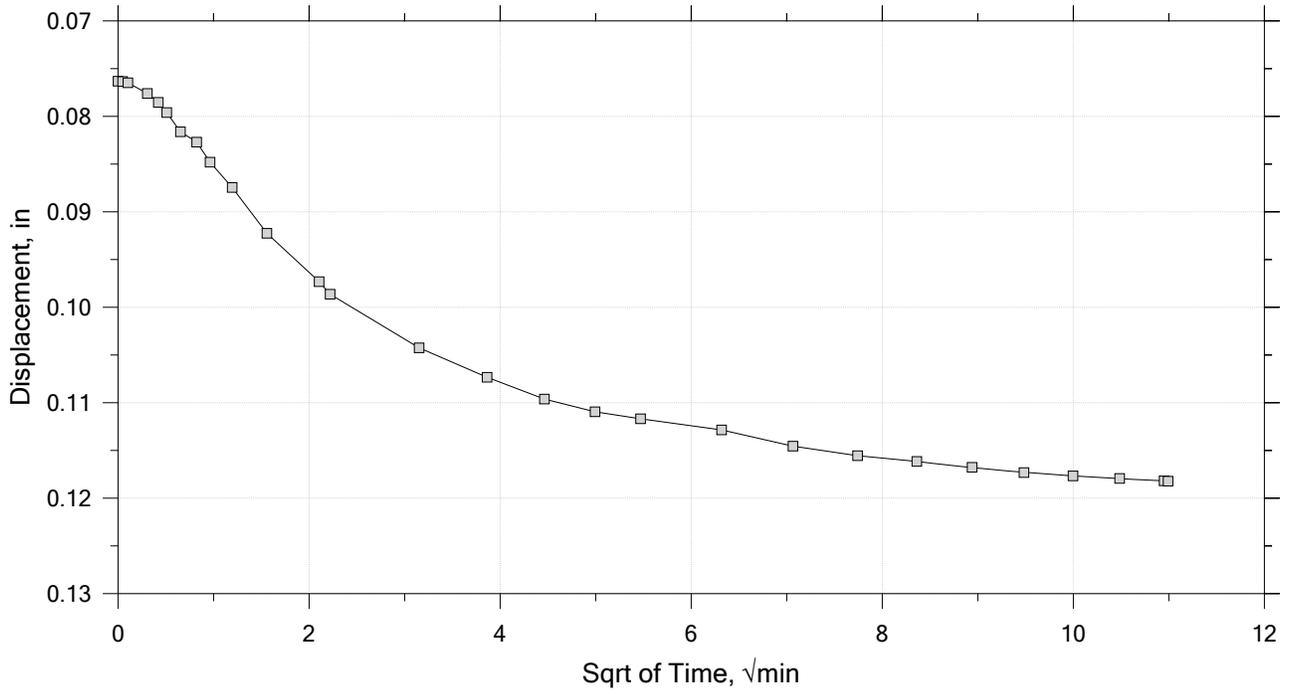
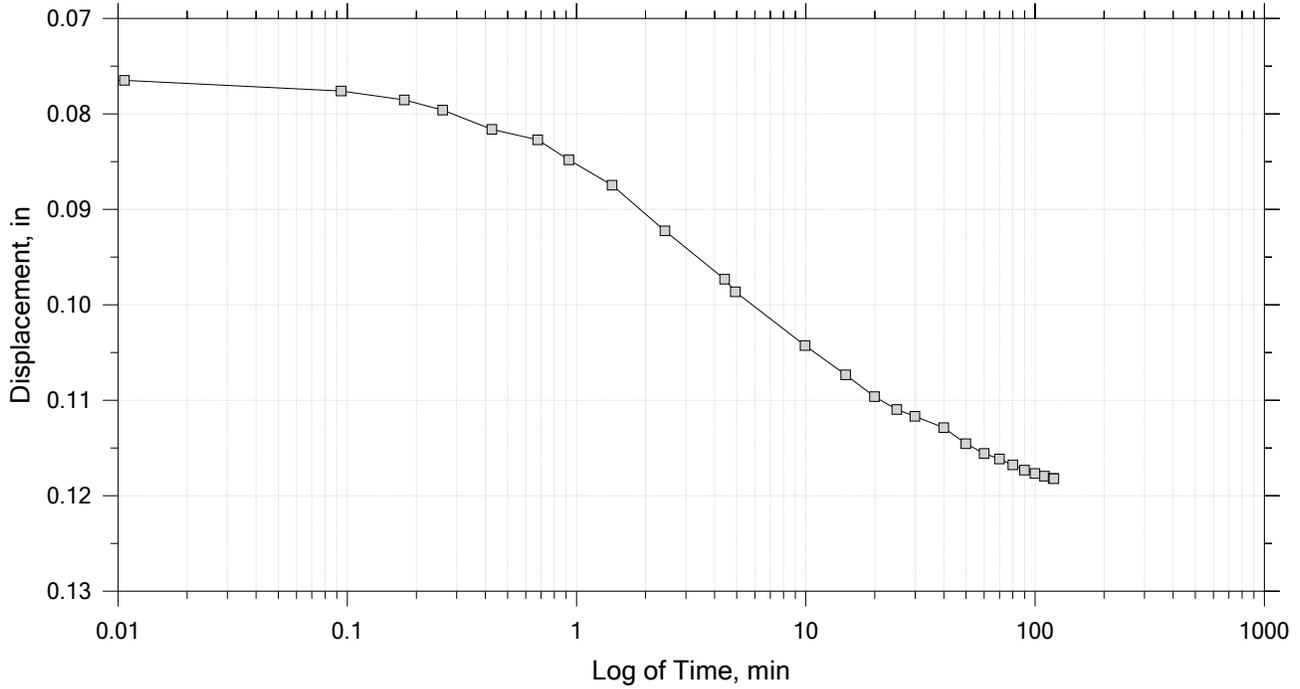
	Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
	Boring Number: CA-105	Tester: SJR	Checker: SJR
	Sample Number: U3	Test Date: 3/16/2025	Depth: 36.35
	Test Number: ICON 65-444	Preparation:	Elevation: --
	Description:		
	Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 10 of 26

Constant Load Step

Stress: 1.46e+04 psf



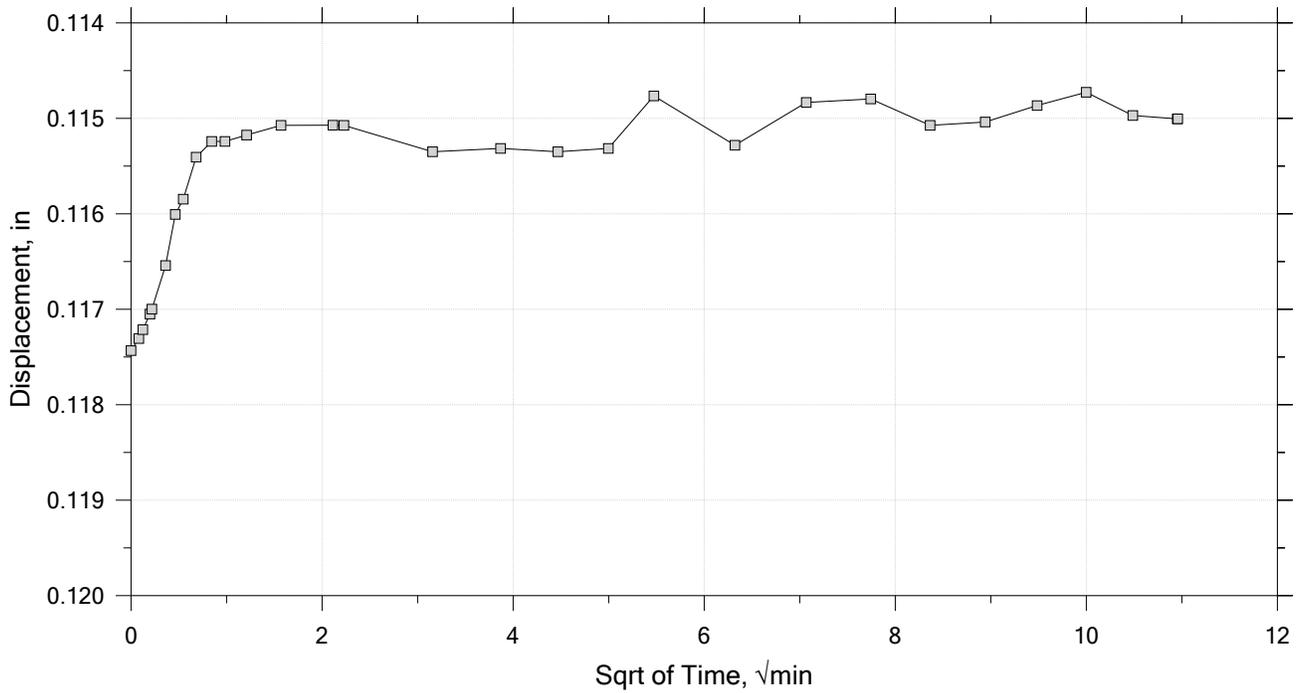
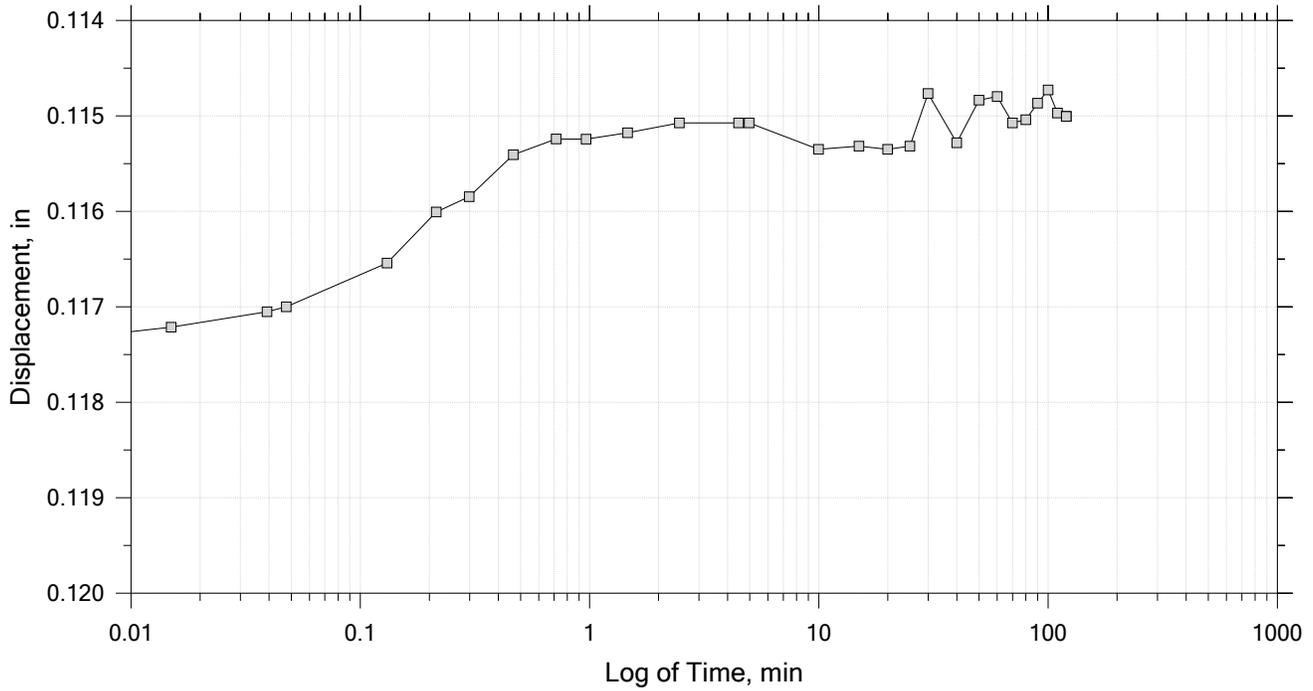
	Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
	Boring Number: CA-105	Tester: SJR	Checker: SJR
	Sample Number: U3	Test Date: 3/16/2025	Depth: 36.35
	Test Number: ICON 65-444	Preparation:	Elevation: --
	Description:		
	Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 11 of 26

Constant Load Step

Stress: 7.3e+03 psf



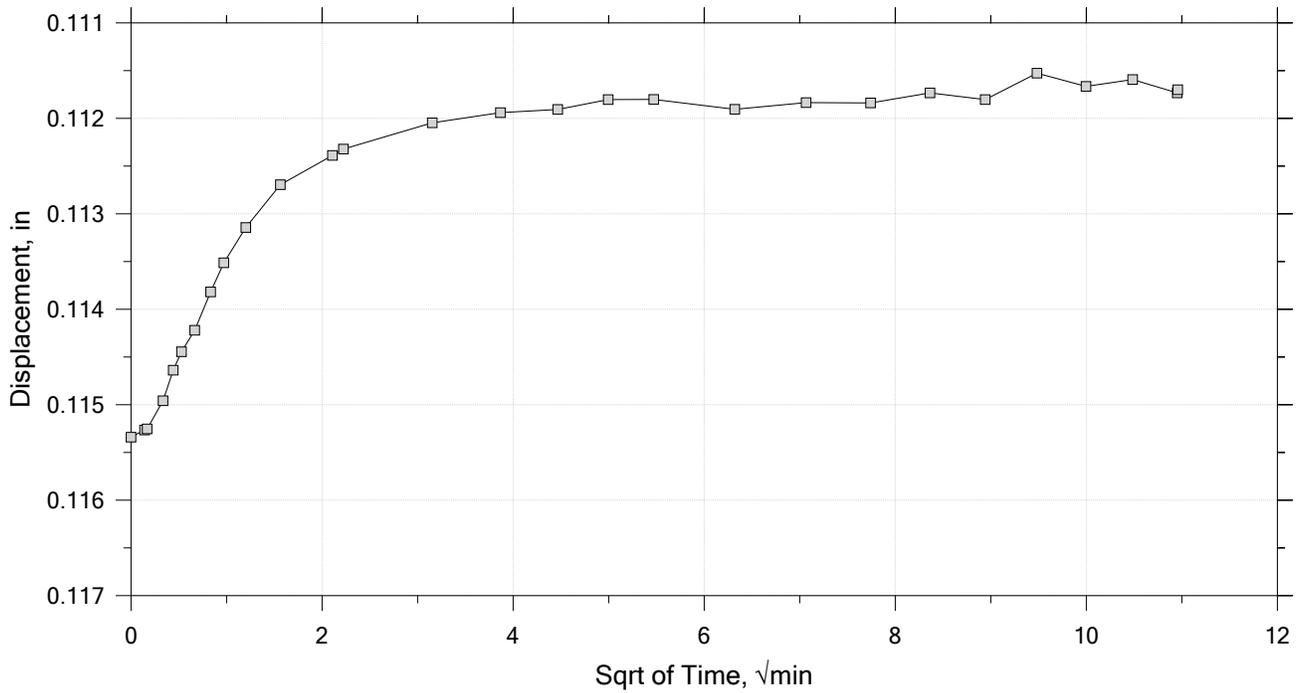
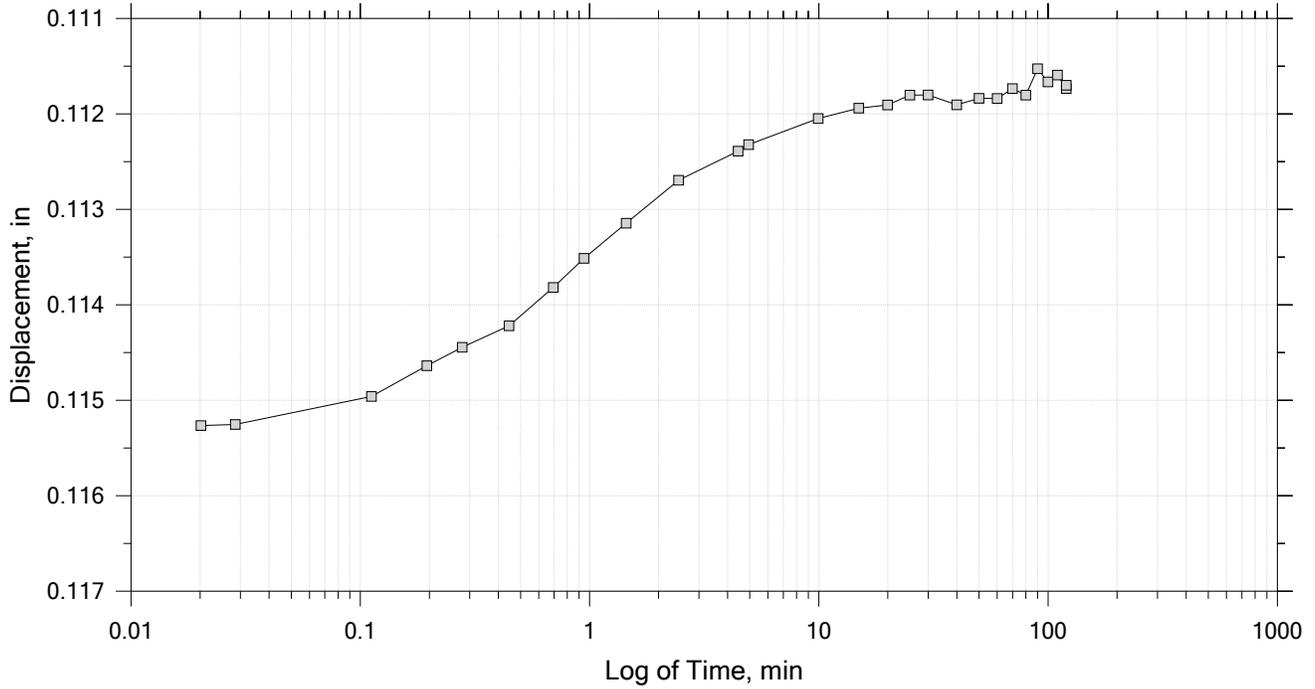
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U3	Test Date: 3/16/2025	Depth: 36.35
Test Number: ICON 65-444	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 12 of 26

Constant Load Step

Stress: 3.65e+03 psf



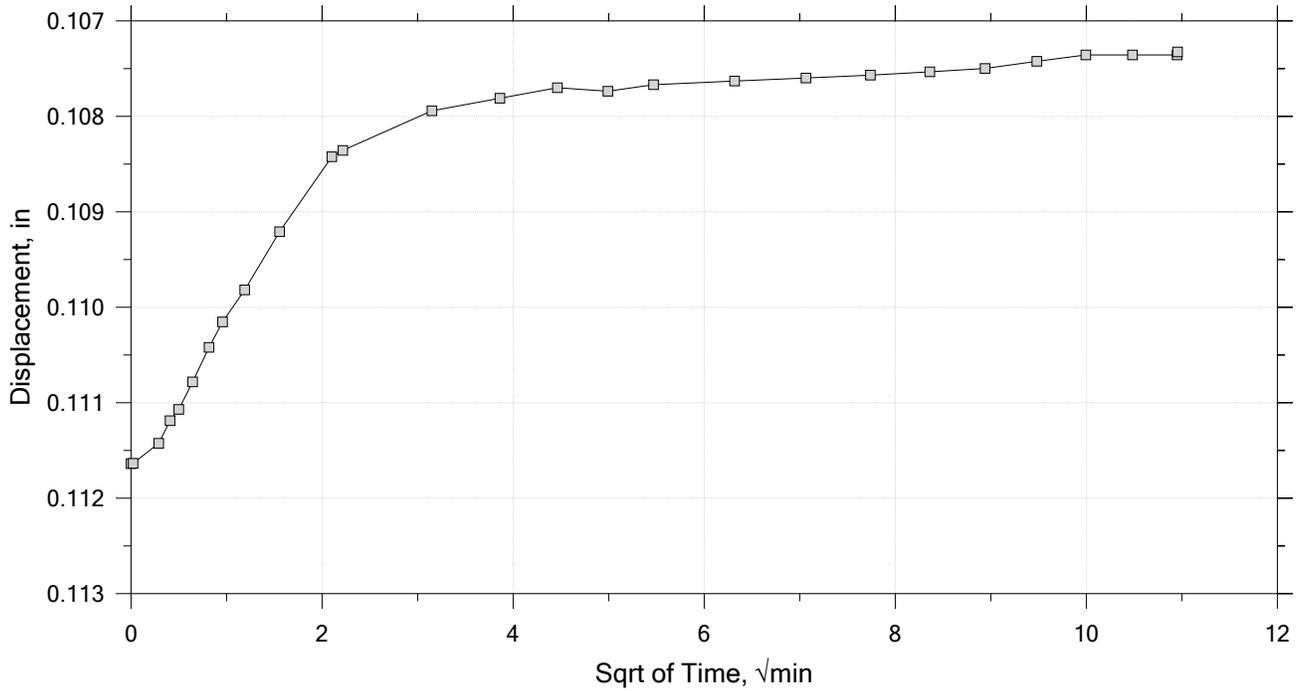
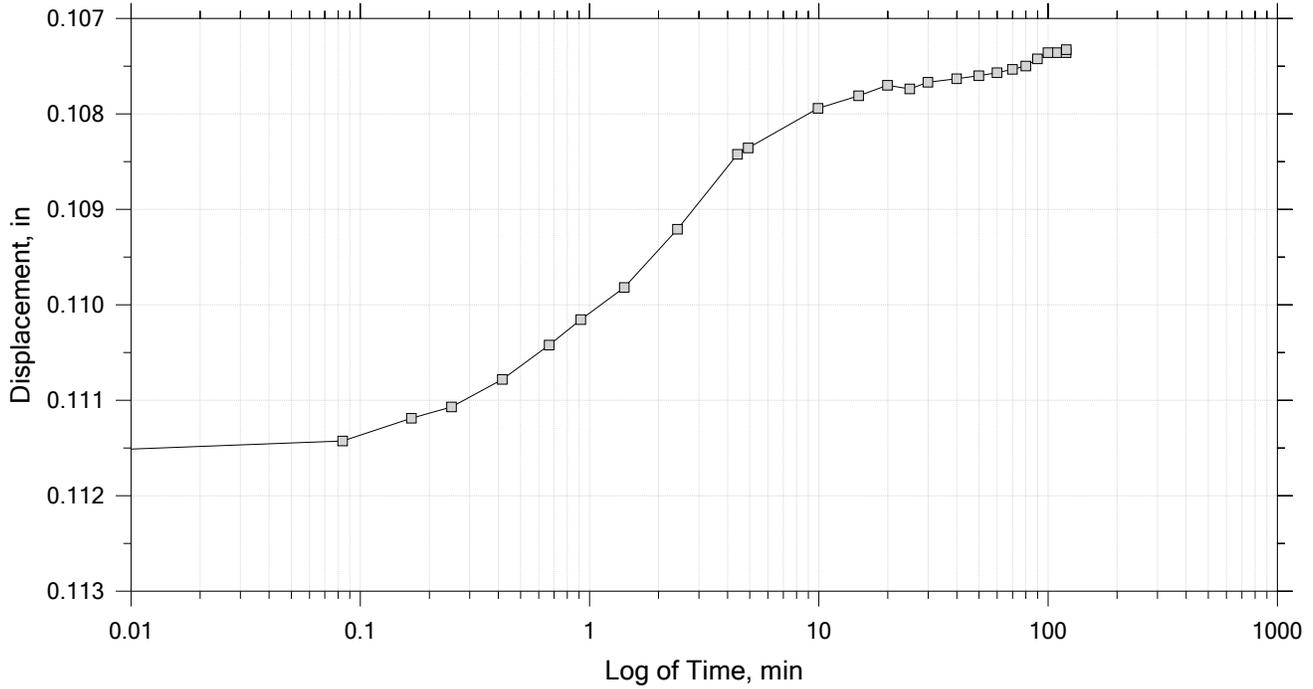
	Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
	Boring Number: CA-105	Tester: SJR	Checker: SJR
	Sample Number: U3	Test Date: 3/16/2025	Depth: 36.35
	Test Number: ICON 65-444	Preparation:	Elevation: --
	Description:		
	Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 13 of 26

Constant Load Step

Stress: 1.83e+03 psf



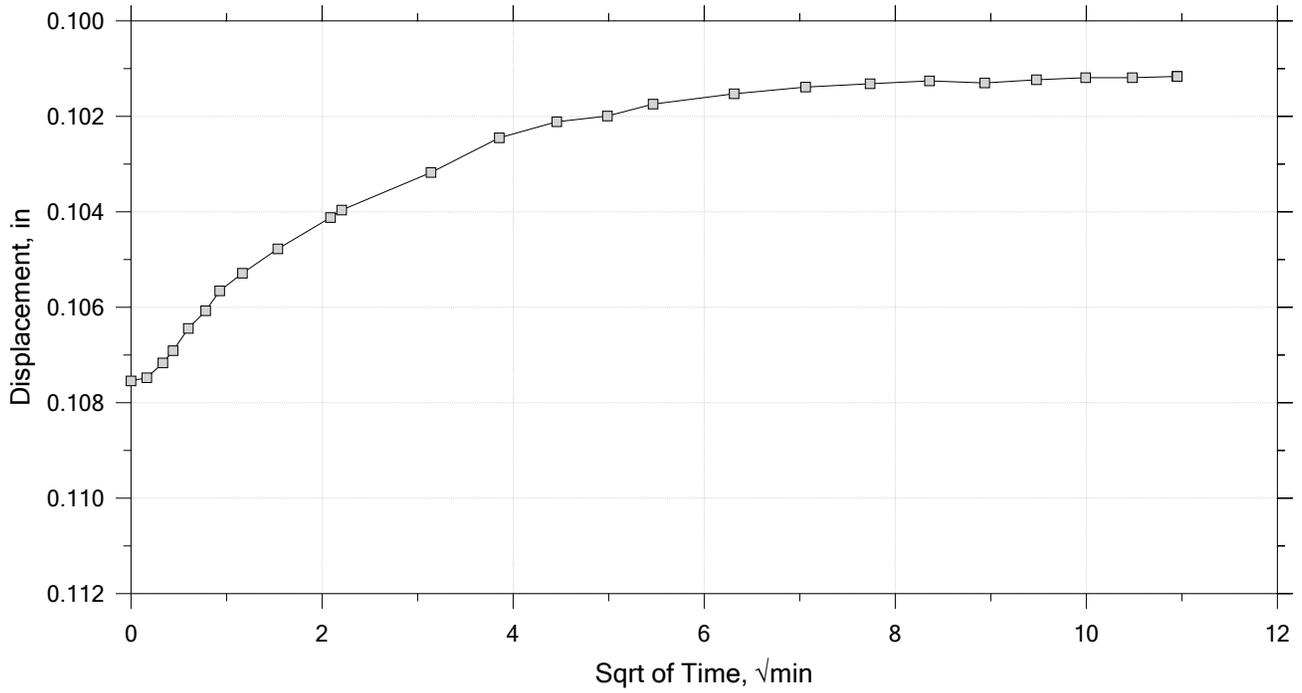
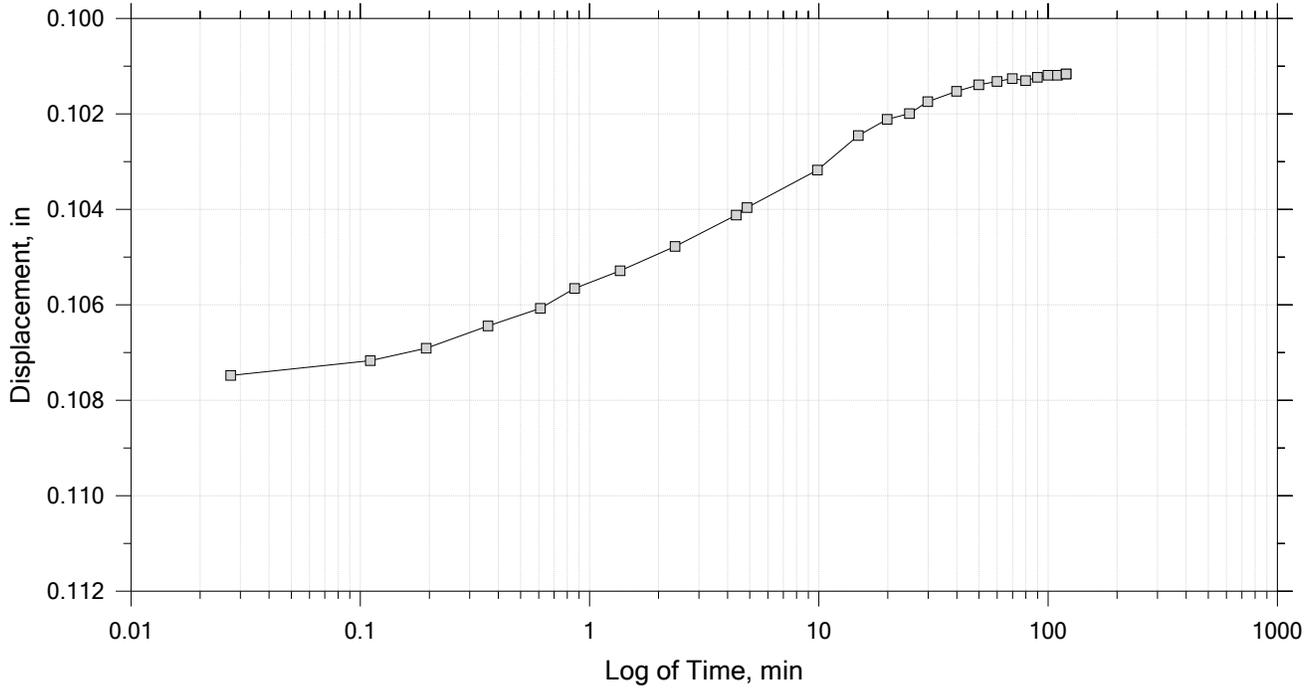
	Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
	Boring Number: CA-105	Tester: SJR	Checker: SJR
	Sample Number: U3	Test Date: 3/16/2025	Depth: 36.35
	Test Number: ICON 65-444	Preparation:	Elevation: --
	Description:		
	Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 14 of 26

Constant Load Step

Stress: 913 psf



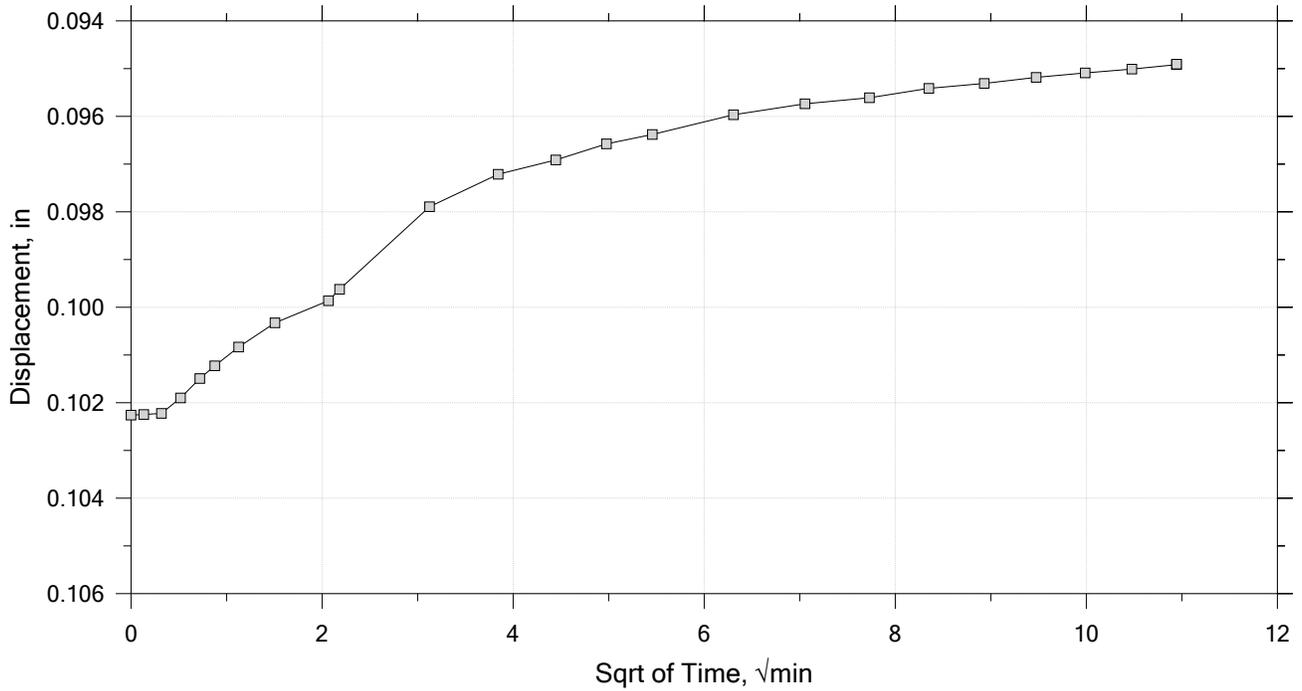
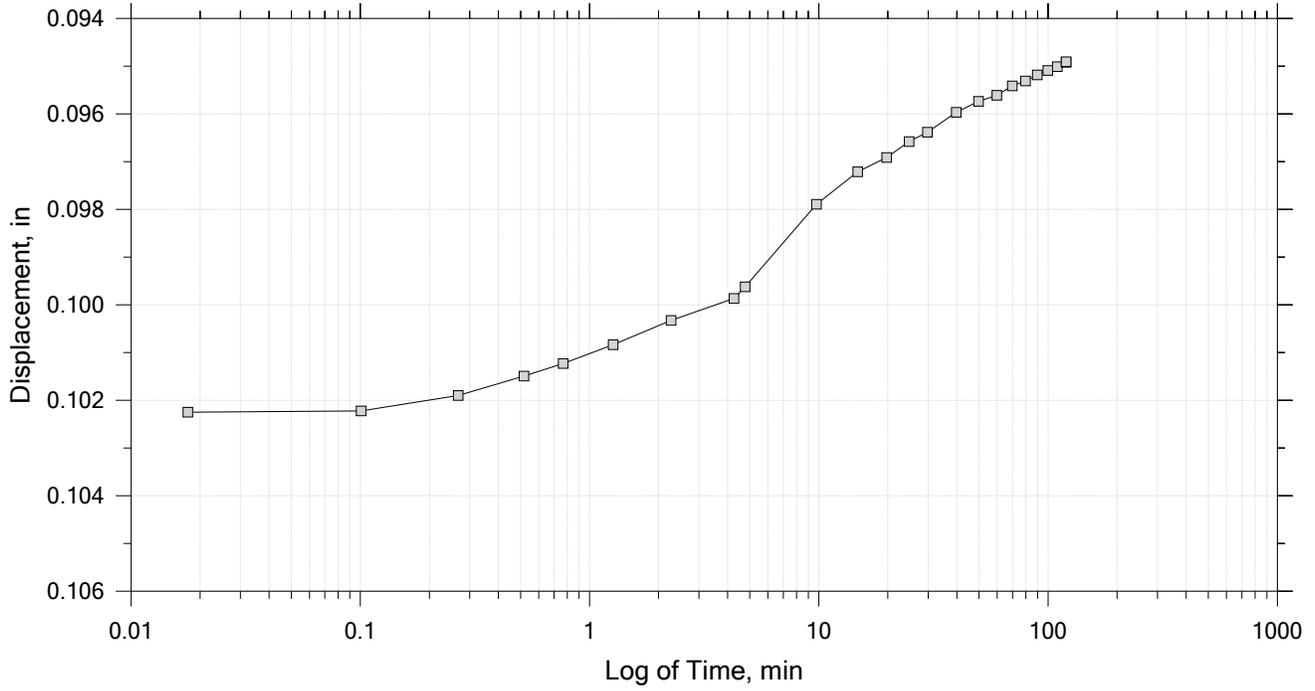
	Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
	Boring Number: CA-105	Tester: SJR	Checker: SJR
	Sample Number: U3	Test Date: 3/16/2025	Depth: 36.35
	Test Number: ICON 65-444	Preparation:	Elevation: --
	Description:		
	Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 15 of 26

Constant Load Step

Stress: 457 psf



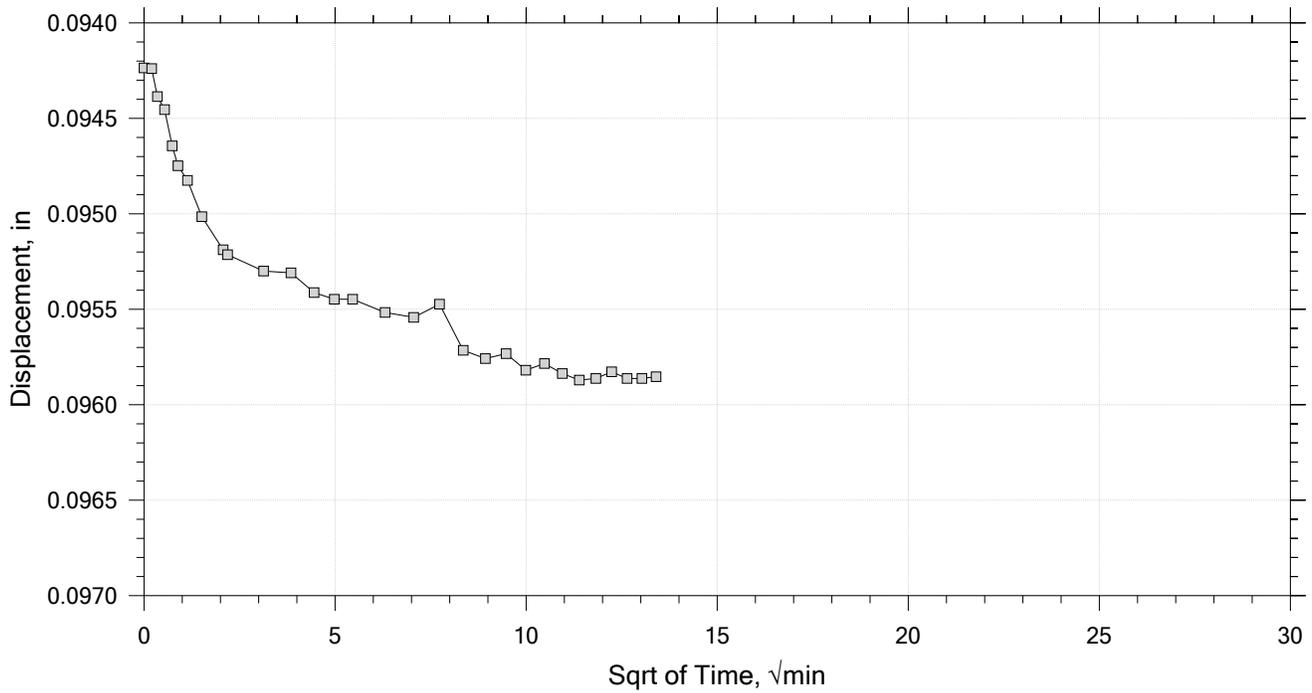
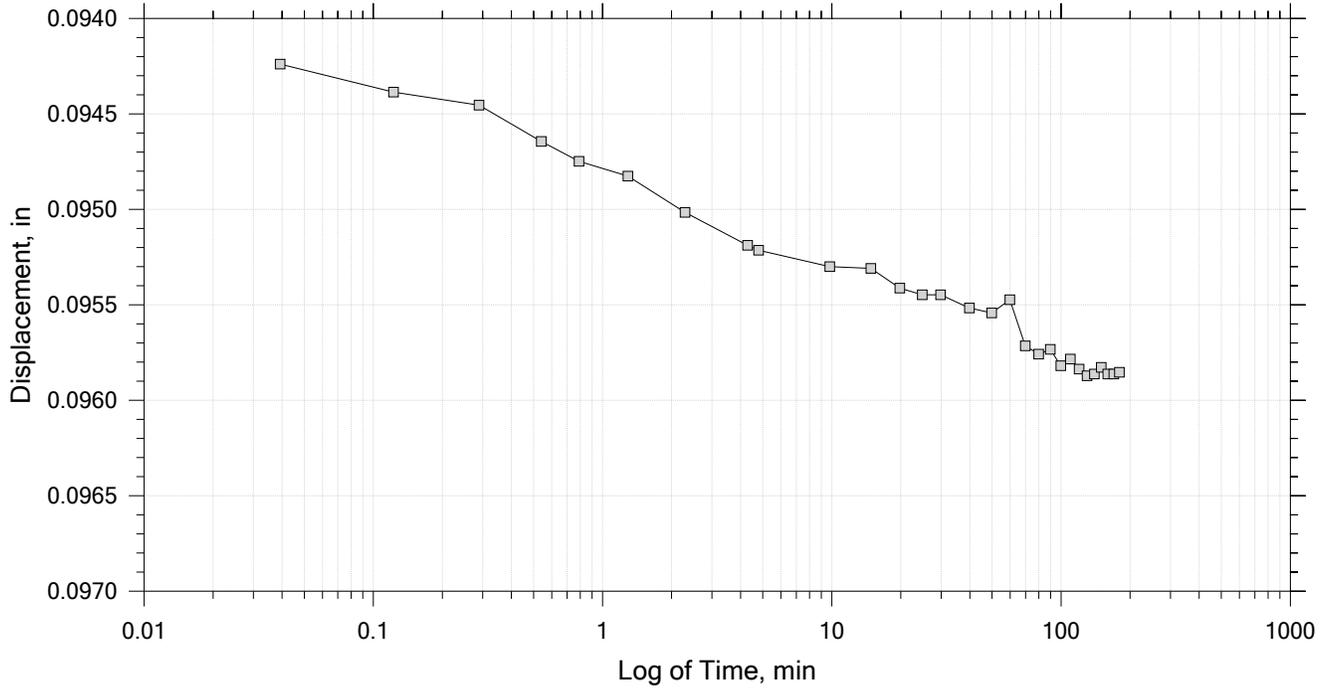
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U3	Test Date: 3/16/2025	Depth: 36.35
Test Number: ICON 65-444	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 16 of 26

Constant Load Step

Stress: 913 psf



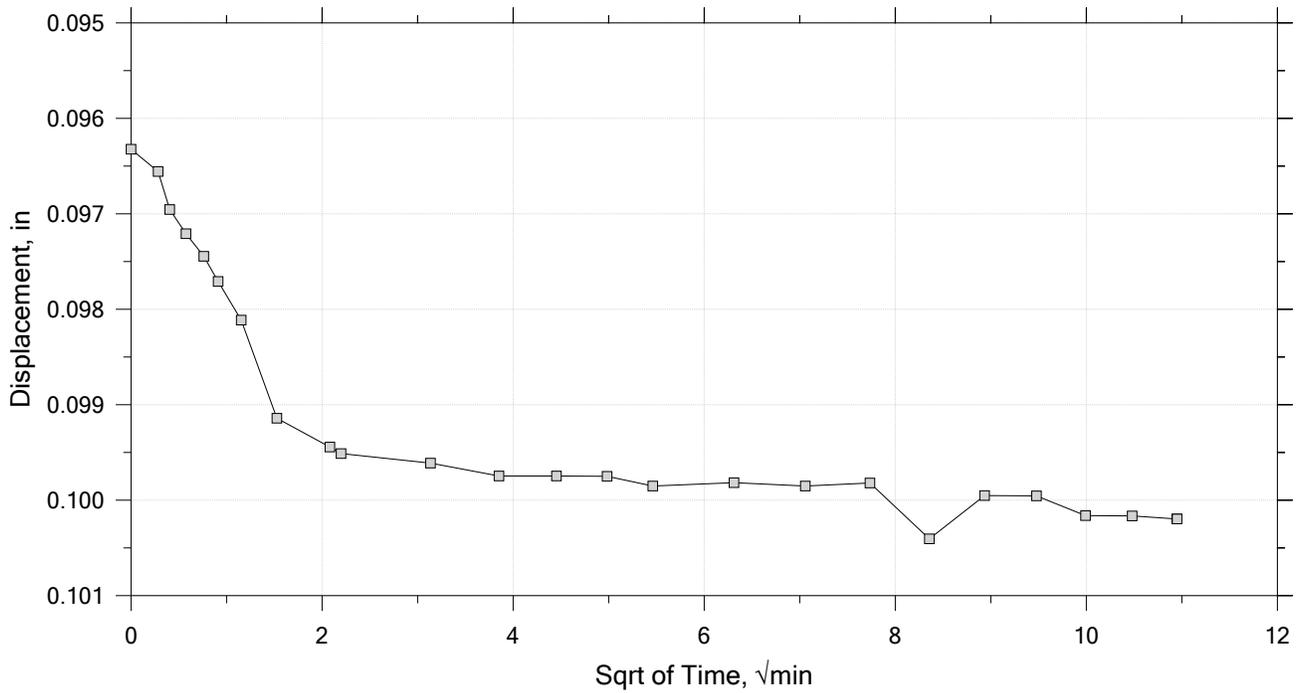
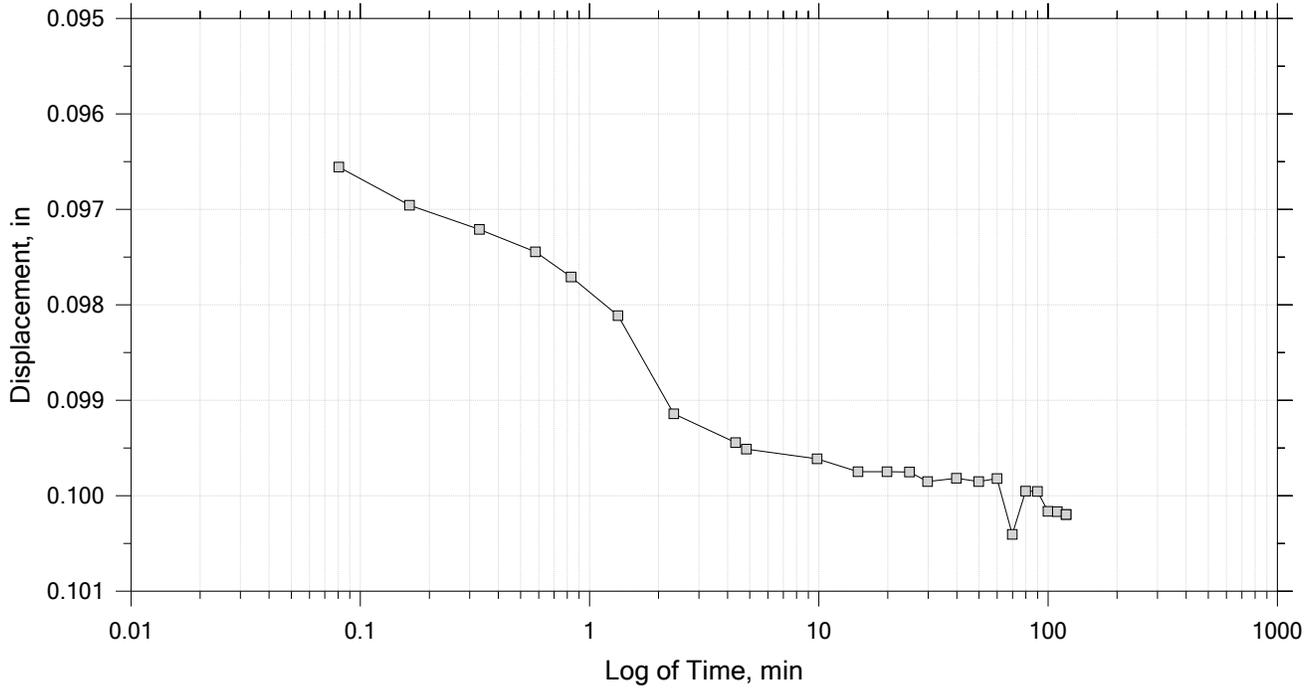
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U3	Test Date: 3/16/2025	Depth: 36.35
Test Number: ICON 65-444	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 17 of 26

Constant Load Step

Stress: 1.83e+03 psf



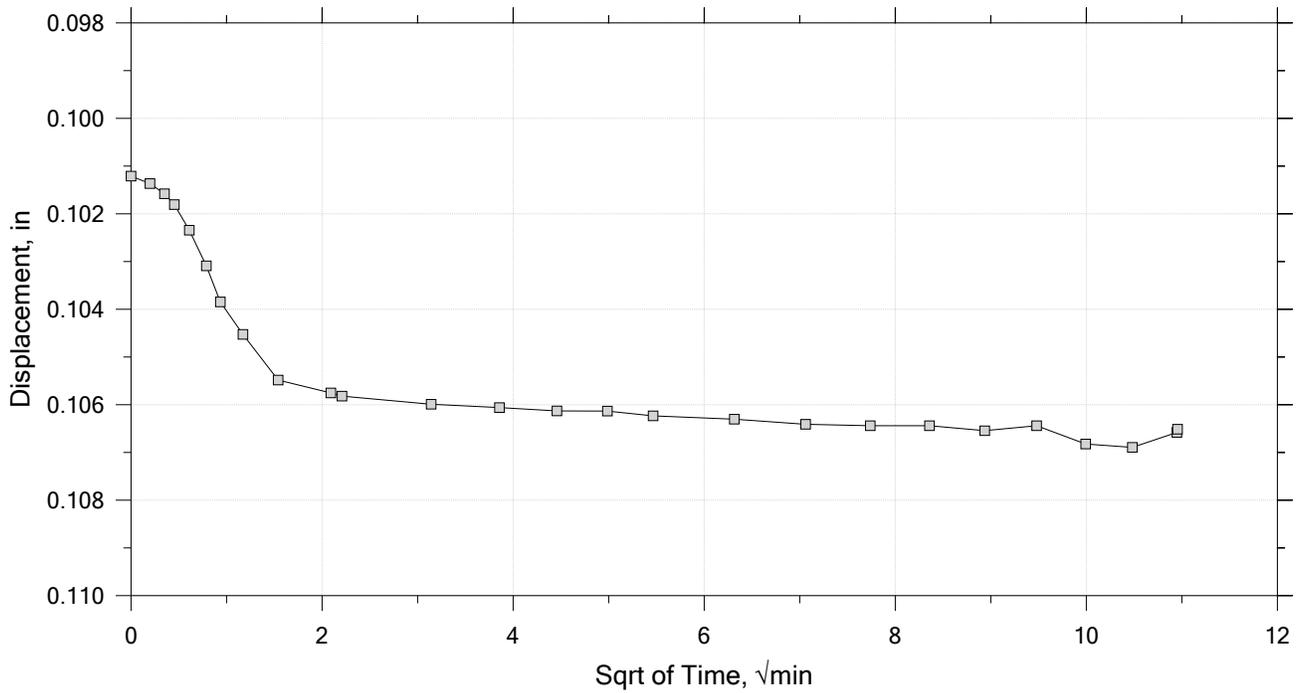
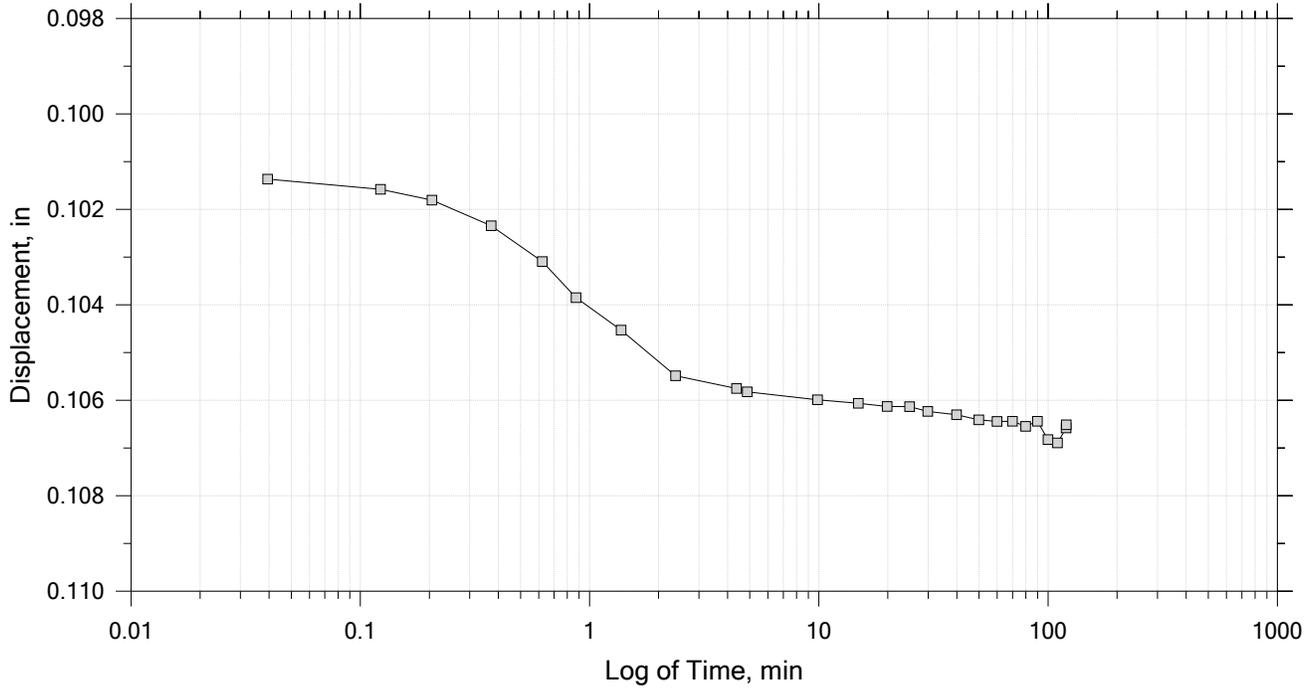
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U3	Test Date: 3/16/2025	Depth: 36.35
Test Number: ICON 65-444	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 18 of 26

Constant Load Step

Stress: 3.65e+03 psf



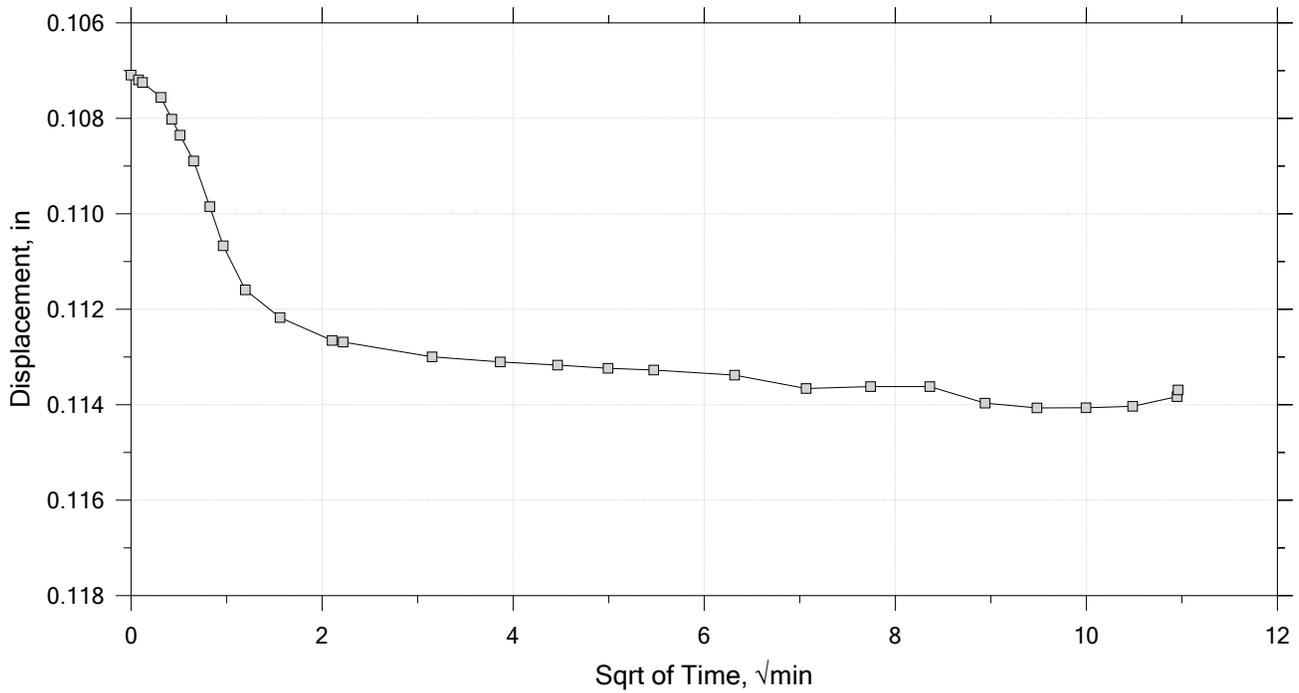
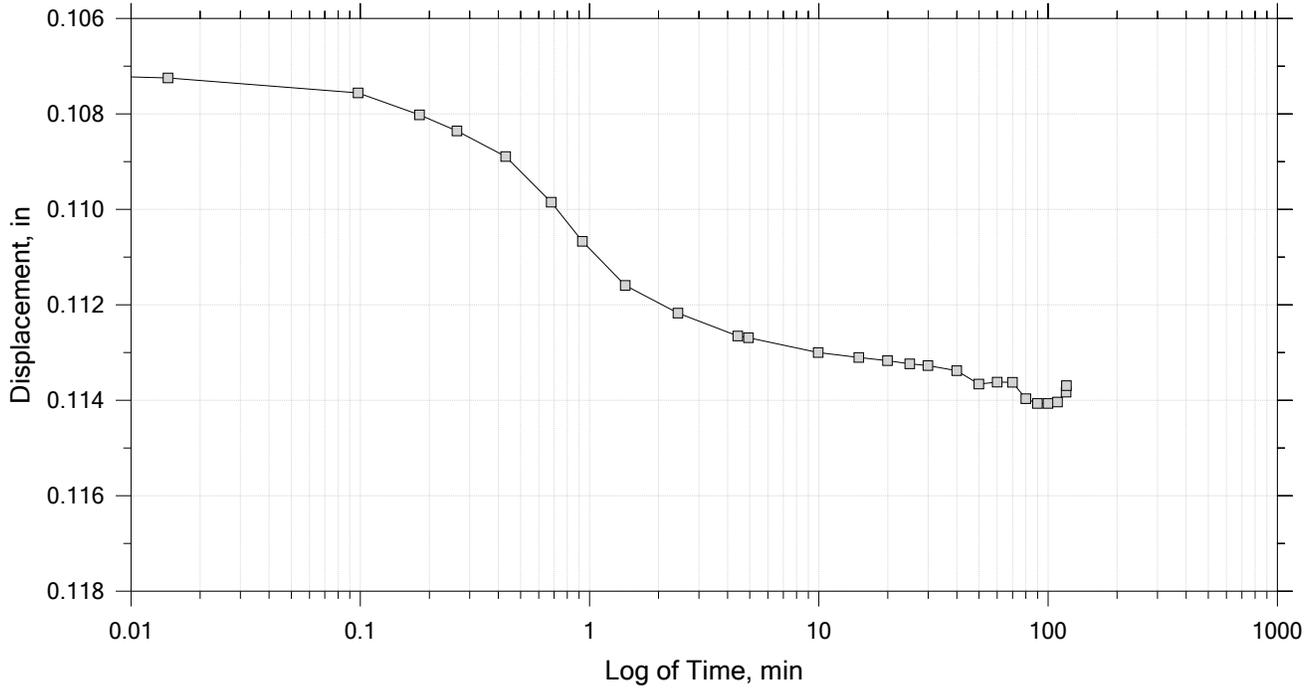
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Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U3	Test Date: 3/16/2025	Depth: 36.35
Test Number: ICON 65-444	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 19 of 26

Constant Load Step

Stress: 7.3e+03 psf



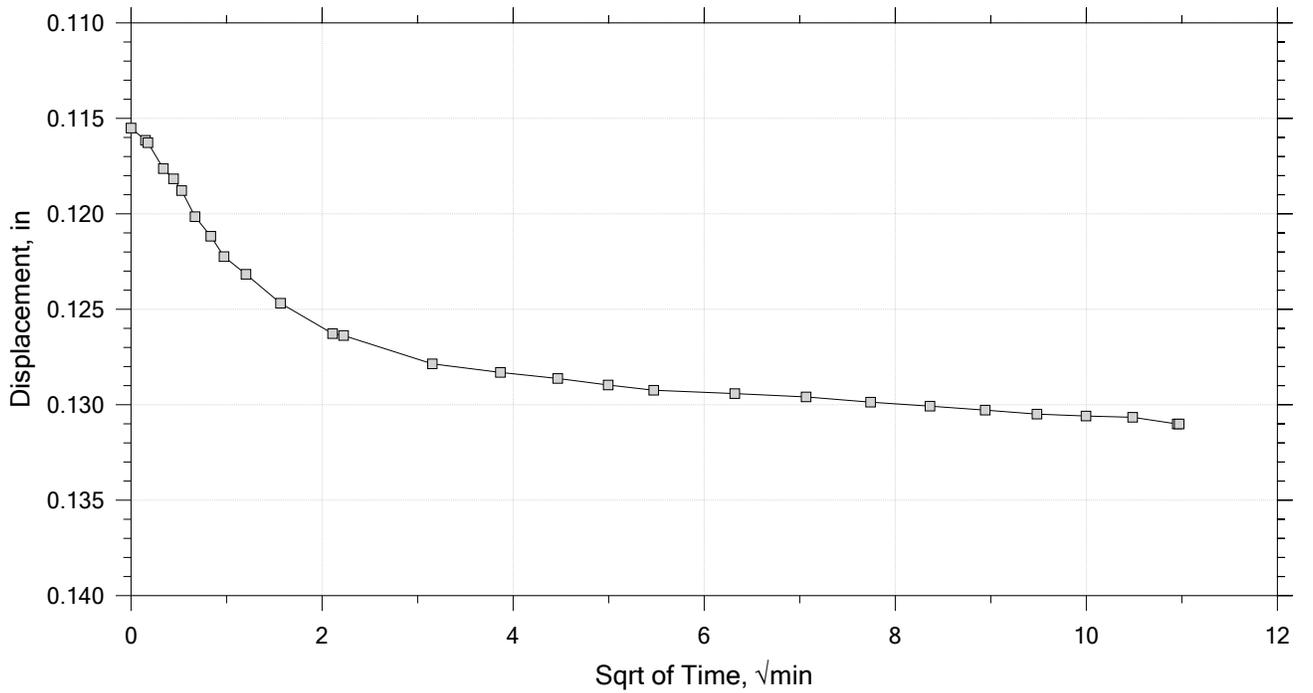
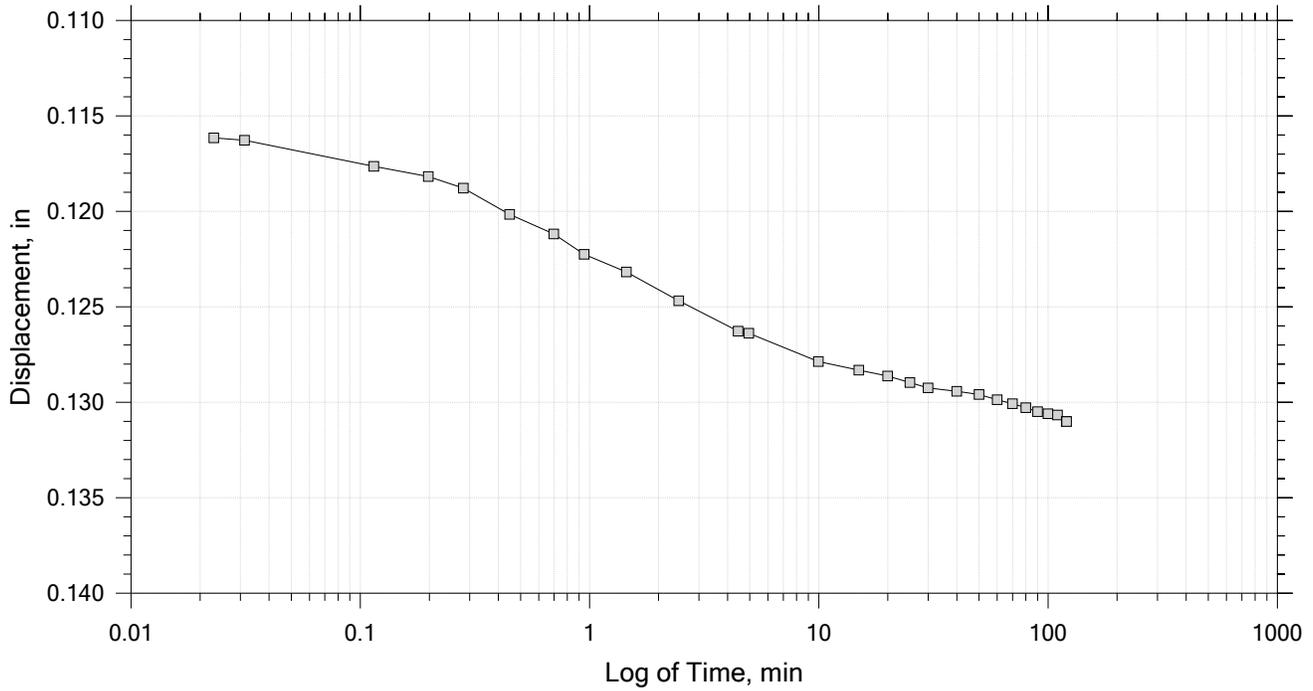
	Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
	Boring Number: CA-105	Tester: SJR	Checker: SJR
	Sample Number: U3	Test Date: 3/16/2025	Depth: 36.35
	Test Number: ICON 65-444	Preparation:	Elevation: --
	Description:		
	Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 20 of 26

Constant Load Step

Stress: 1.46e+04 psf

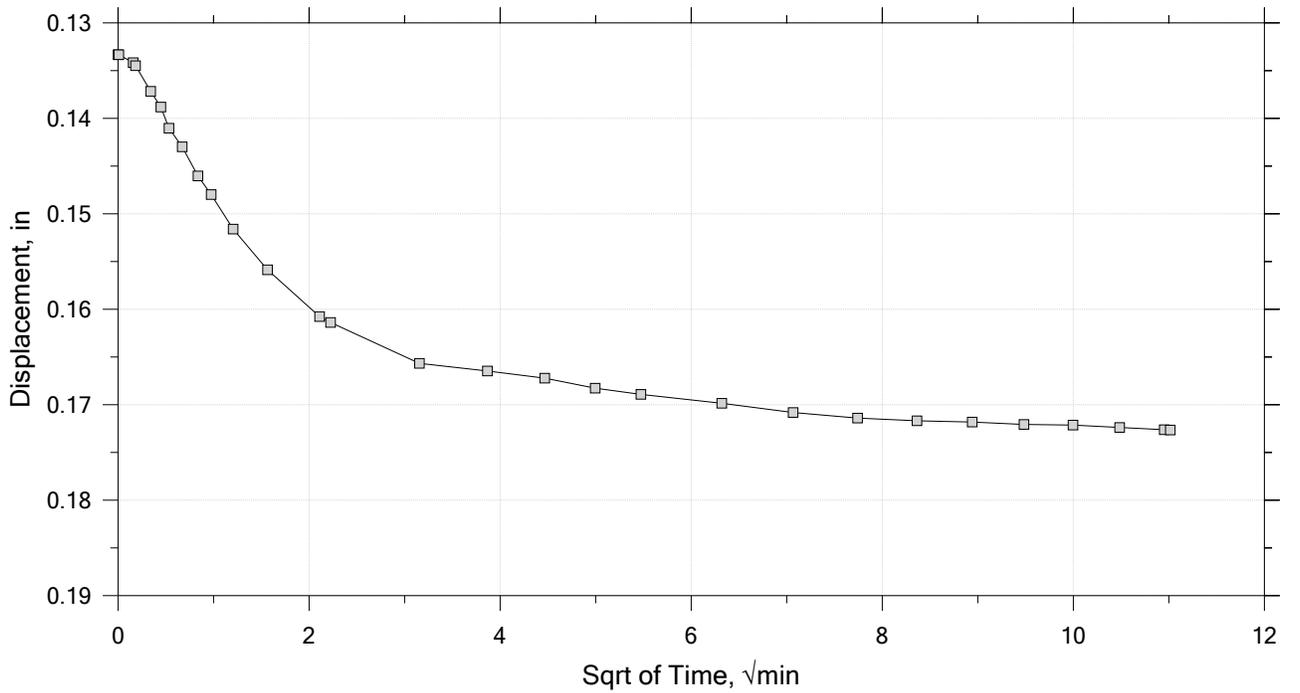
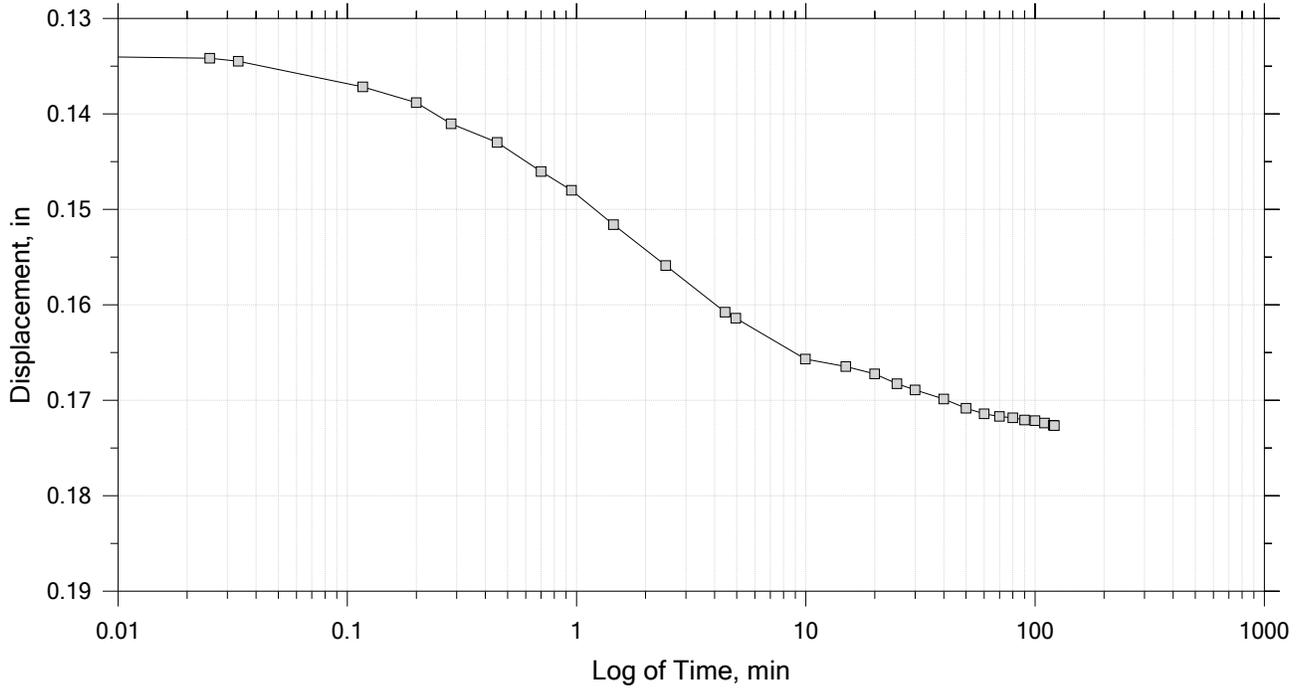


One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 21 of 26

Constant Load Step

Stress: 2.92e+04 psf



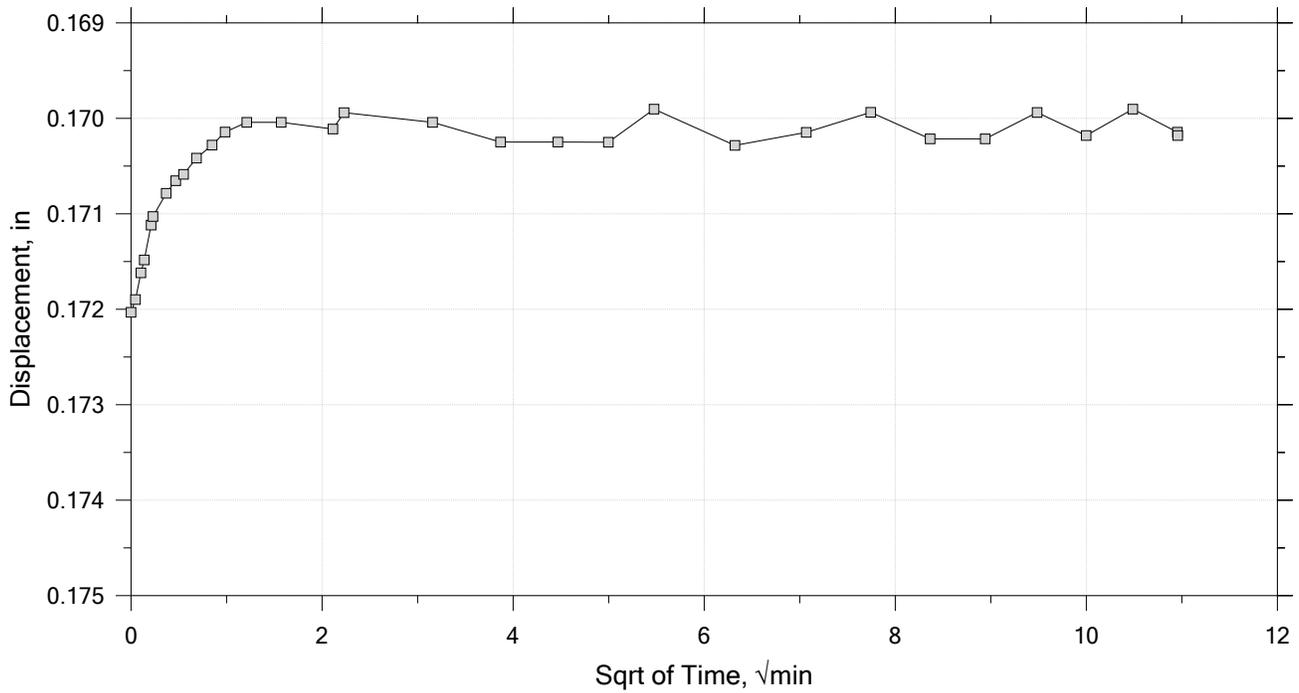
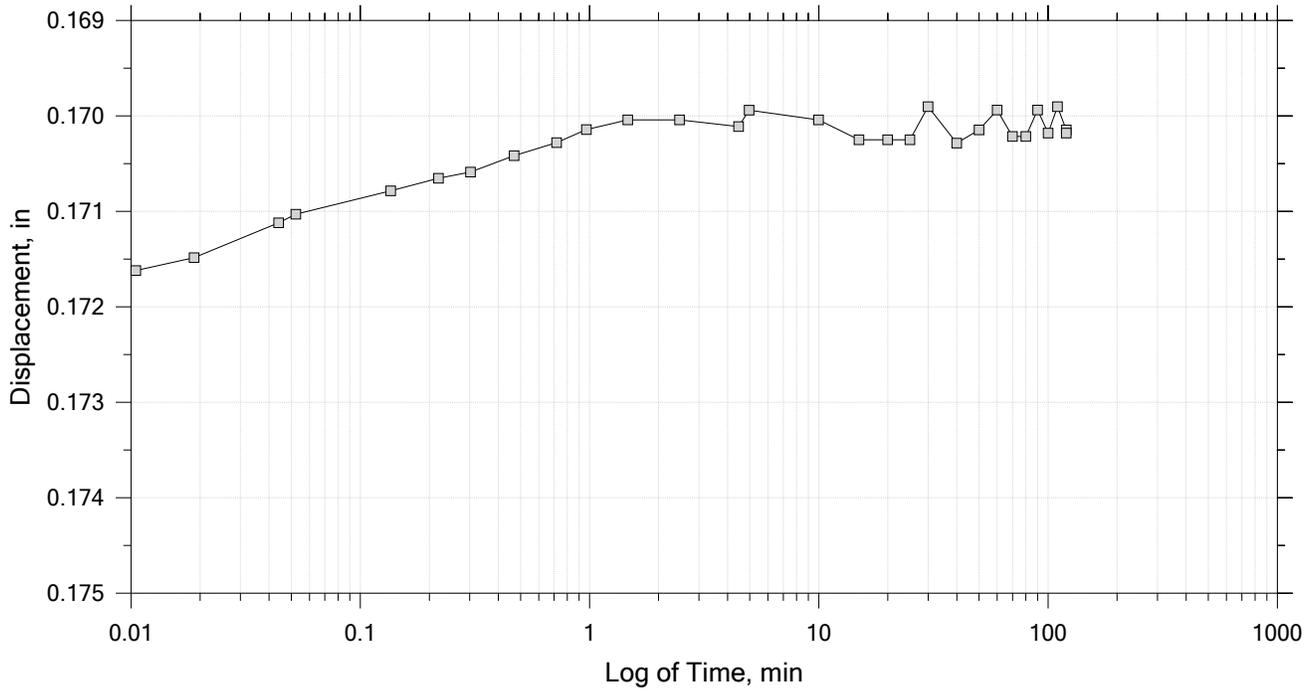
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U3	Test Date: 3/16/2025	Depth: 36.35
Test Number: ICON 65-444	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 22 of 26

Constant Load Step

Stress: 1.46e+04 psf



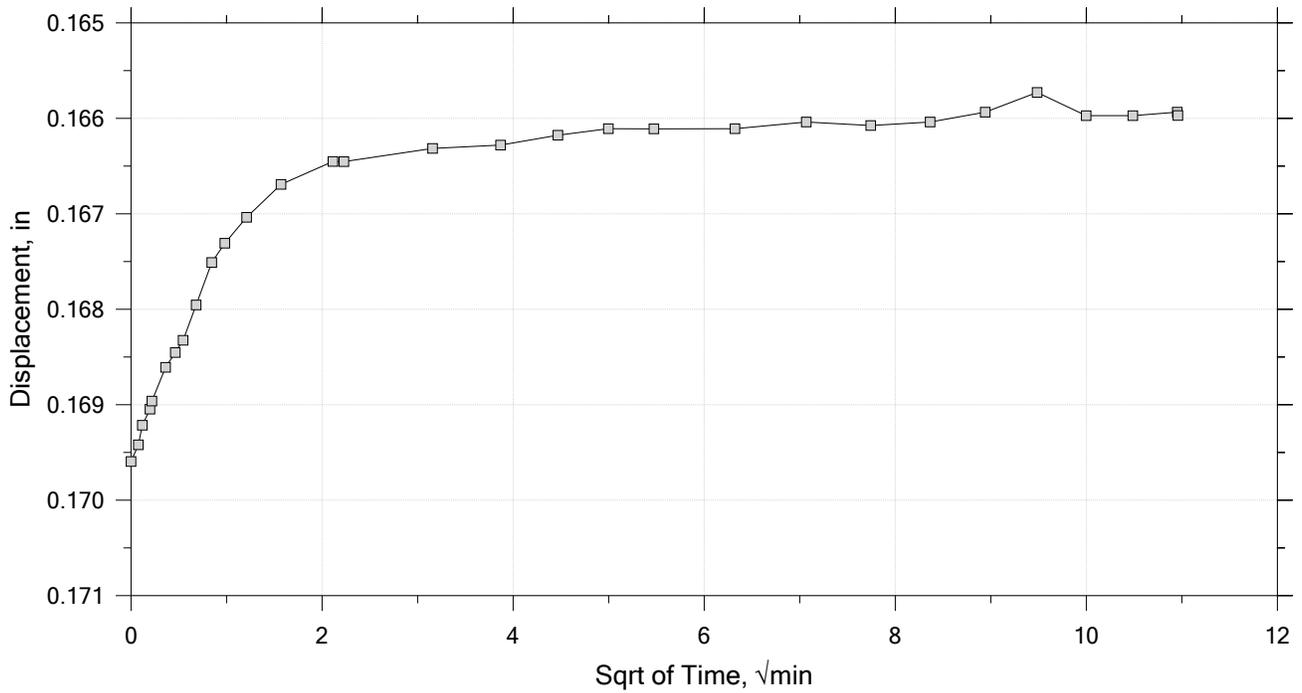
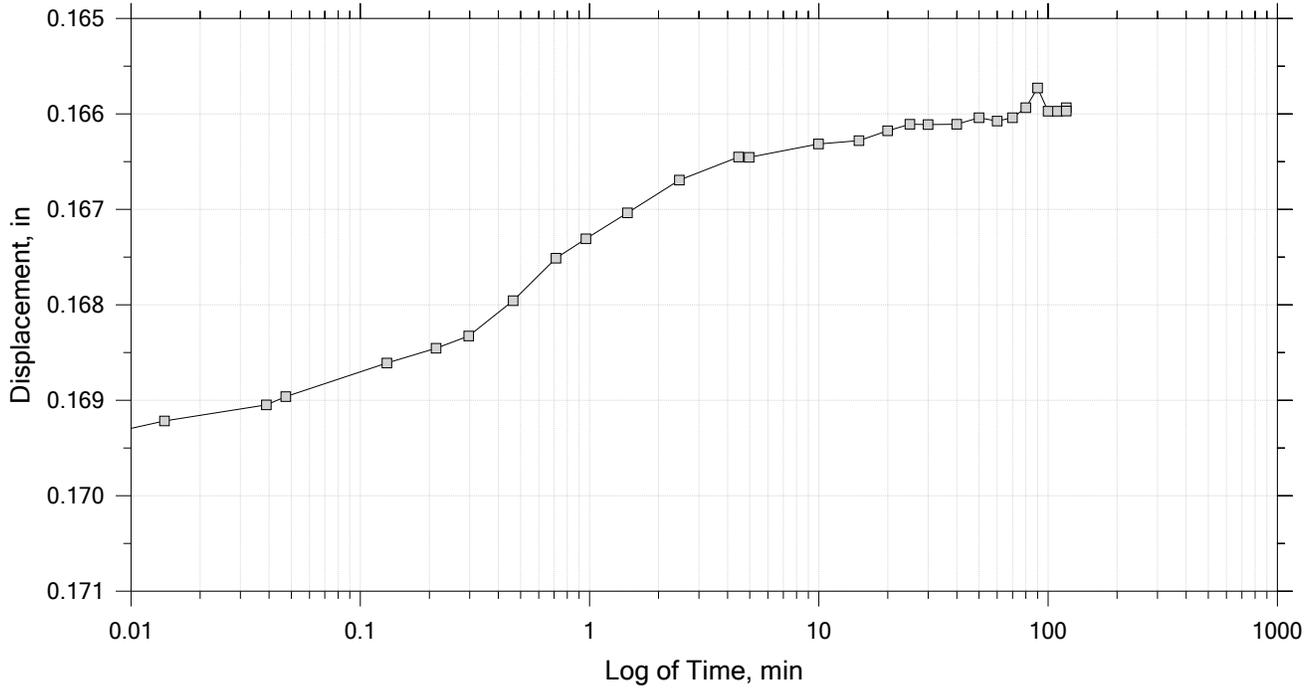
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U3	Test Date: 3/16/2025	Depth: 36.35
Test Number: ICON 65-444	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 23 of 26

Constant Load Step

Stress: 7.3e+03 psf



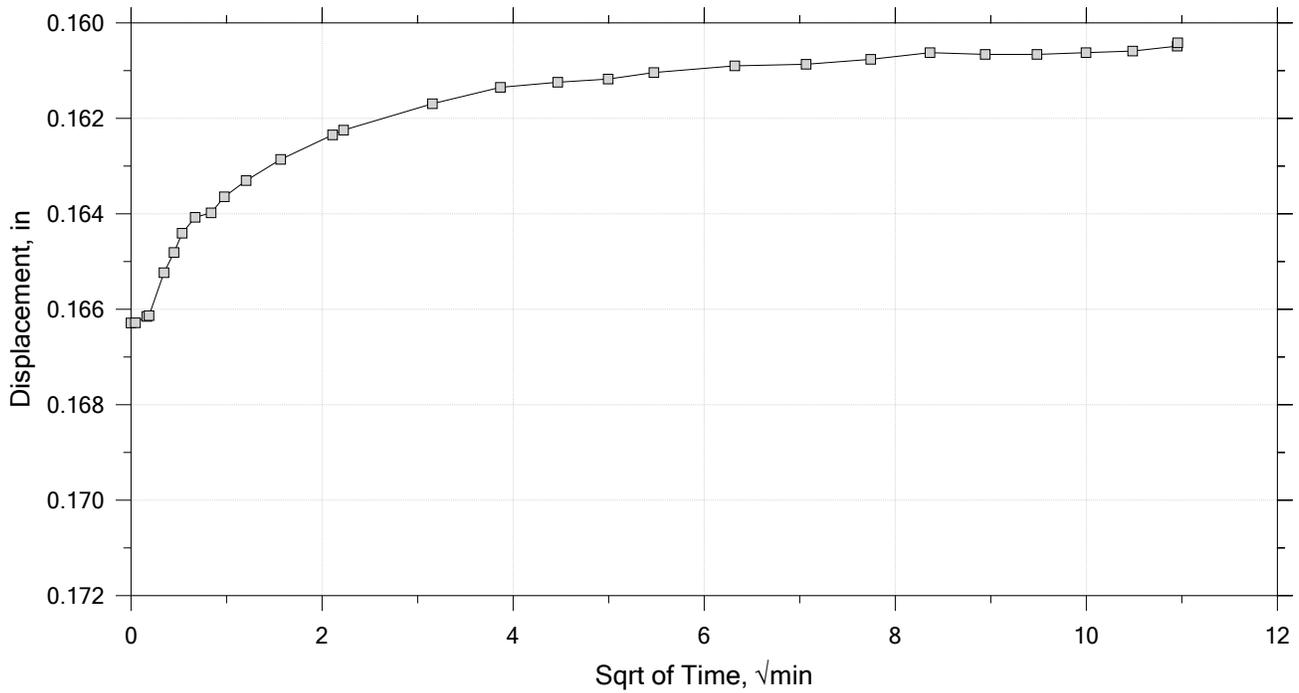
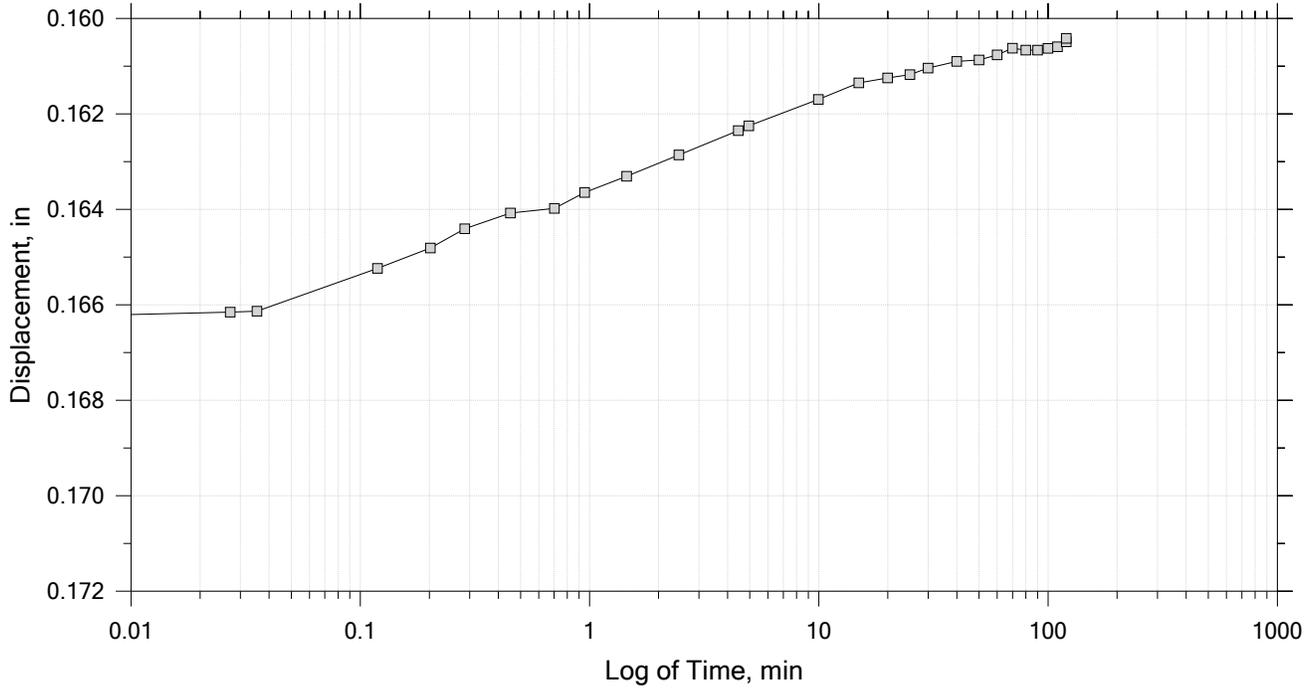
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U3	Test Date: 3/16/2025	Depth: 36.35
Test Number: ICON 65-444	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 24 of 26

Constant Load Step

Stress: 3.65e+03 psf



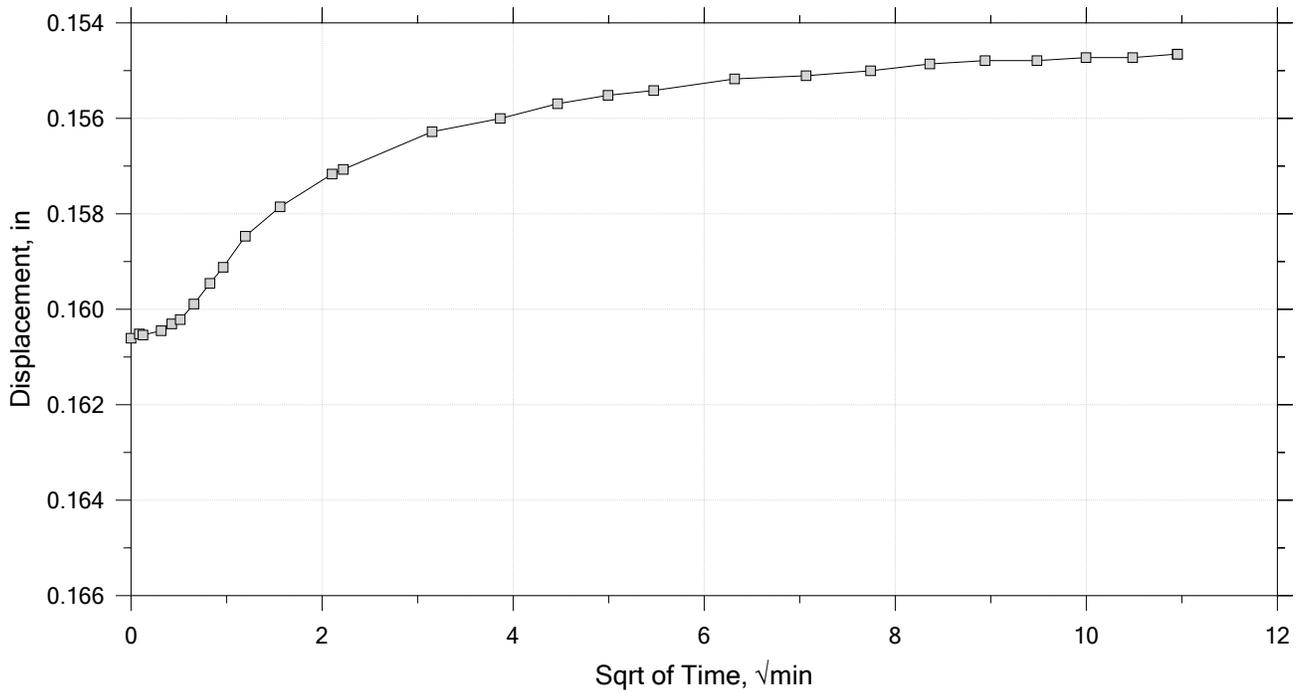
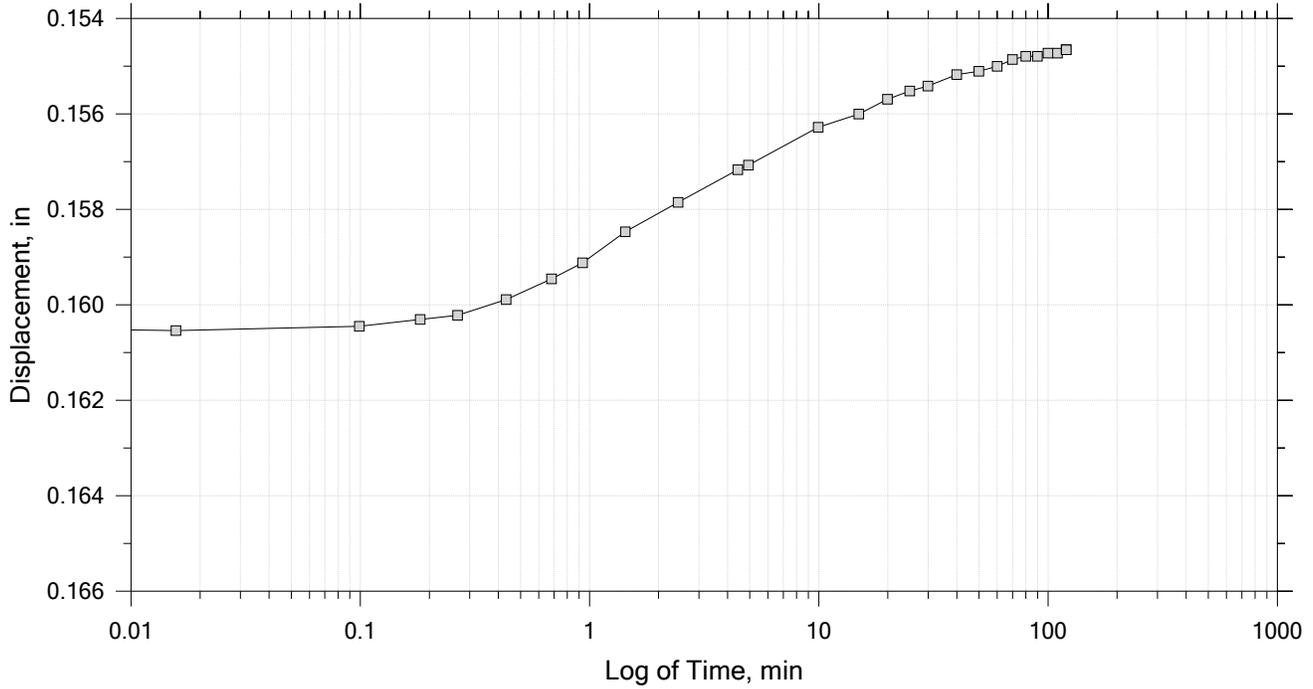
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U3	Test Date: 3/16/2025	Depth: 36.35
Test Number: ICON 65-444	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 25 of 26

Constant Load Step

Stress: 1.83e+03 psf



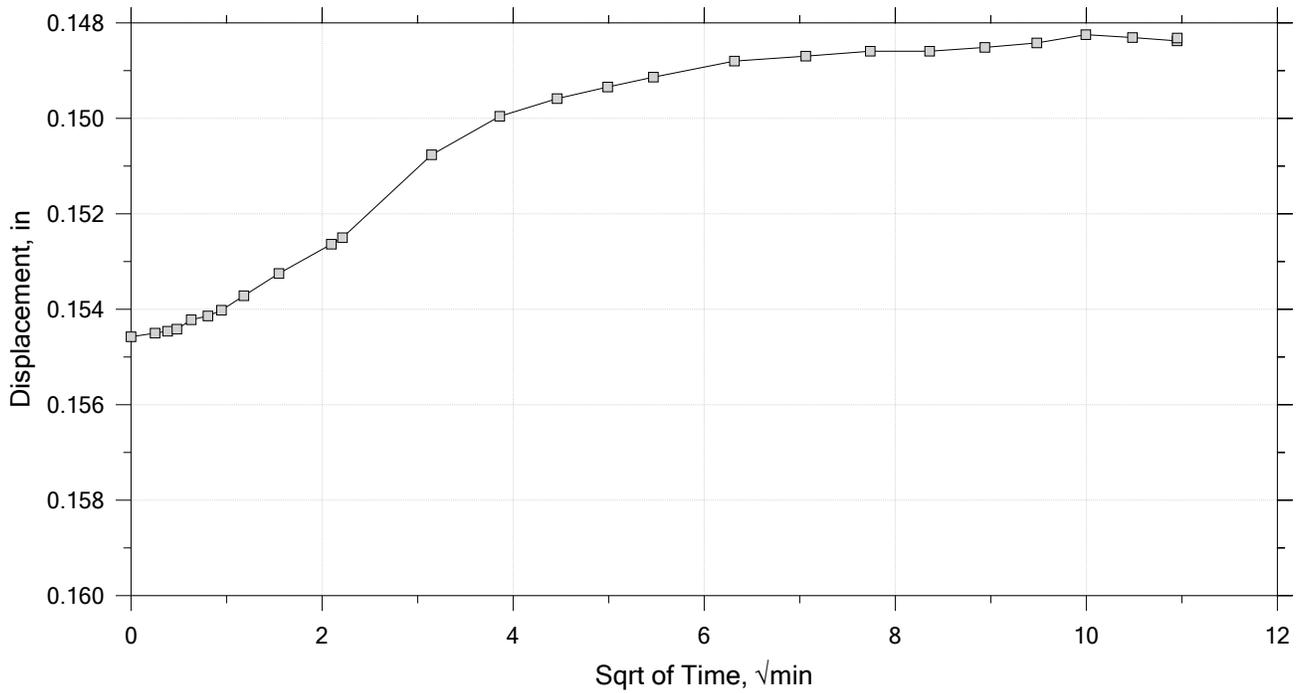
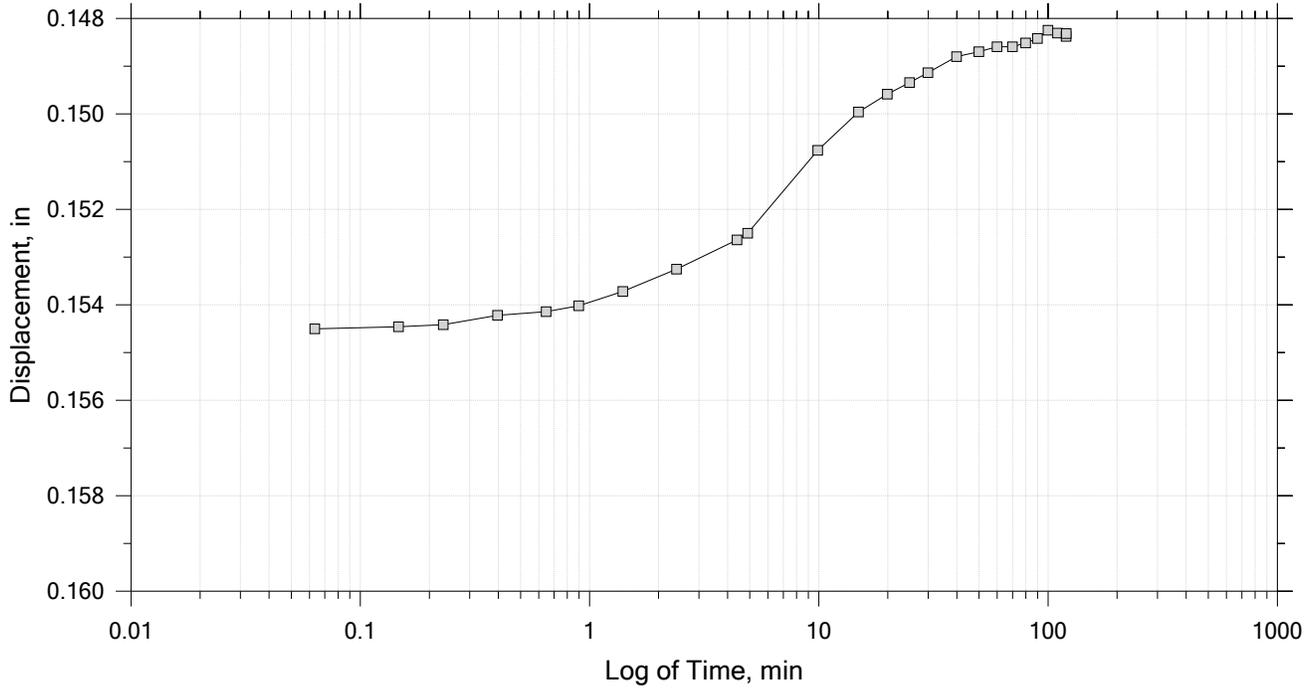
Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U3	Test Date: 3/16/2025	Depth: 36.35
Test Number: ICON 65-444	Preparation:	Elevation: --
Description:		
Remarks:		

One-Dimensional Consolidation by ASTM D2435 - Method B

Time Curve 26 of 26

Constant Load Step

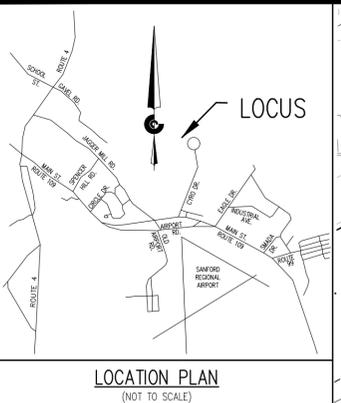
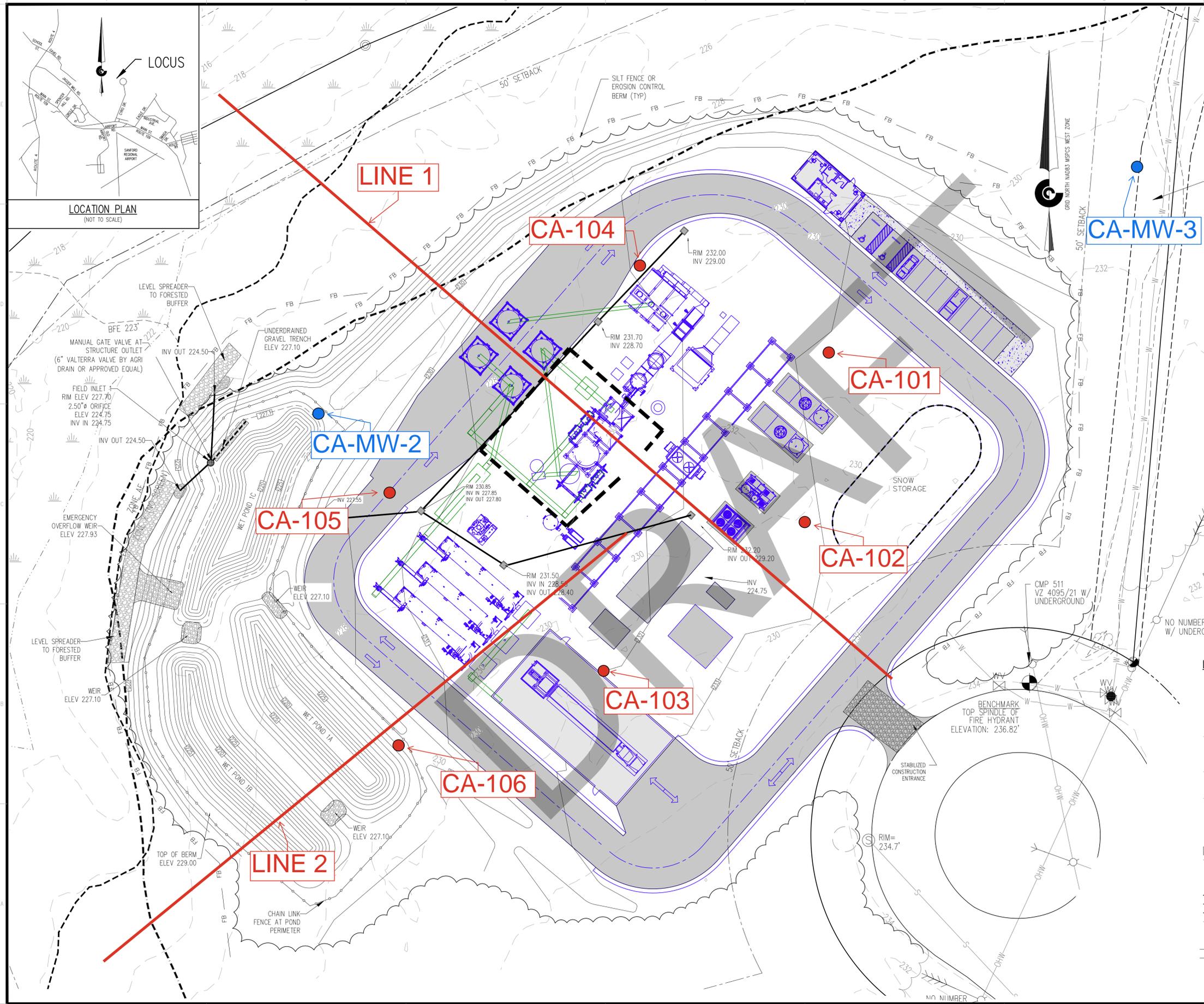
Stress: 913 psf



Project Name: Cyro Road	Location: Sanford, ME	Project Number: 174-01
Boring Number: CA-105	Tester: SJR	Checker: SJR
Sample Number: U3	Test Date: 3/16/2025	Depth: 36.35
Test Number: ICON 65-444	Preparation:	Elevation: --
Description:		
Remarks:		

Appendix D
Design Information





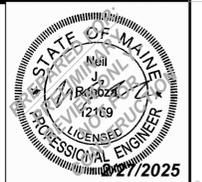
- REFERENCE PLANS:**
- "STANDARD BOUNDARY SURVEY PLAN PREPARED FOR INDUSTRIAL DEVELOPMENT CORPORATION OF SANFORD, P.O. BOX 307 - SPRINGVALE, MAINE 04083, OFF CYRO DRIVE & JAGGER MILL ROAD - SANFORD, ME", SHEETS 1 AND 2 OF 2, DATED JULY 19, 1994, PREPARED BY CIVIL CONSULTANTS, RECORDED AT THE YORK COUNTY REGISTRY OF DEEDS IN PLAN BOOK 239, PAGES 31-32. PROJECT #83-259
 - "SUBDIVISION PLAN, CYRO ROAD EXTENSION, SANFORD INDUSTRIAL DEVELOPMENT PARK", DATED JANUARY 20, 1998, LAST REVISED JANUARY 21, 1998, PREPARED BY CIVIL CONSULTANTS, RECORDED AT THE YORK COUNTY REGISTRY OF DEEDS IN PLAN BOOK 239, PAGE 33. PROJECT #83-259
 - "AMENDED SUBDIVISION PLAN, CYRO ROAD EXTENSION, SANFORD INDUSTRIAL DEVELOPMENT PARK, CYRO DRIVE, SANFORD MAINE, THIS PLAN REVISES THE PLAN RECORDED IN YCRO PLAN BOOK 239, PAGE 33", DATED APRIL 17, 2017, LAST REVISED JULY 26, 2017, PREPARED BY STEVEN C. HORNE, LLC, RECORDED AT THE YORK COUNTY REGISTRY OF DEEDS IN PLAN BOOK 389, PAGE 50.
 - "REVISED EXISTING CONDITIONS TOPOGRAPHIC PLAN OF LOT 4 CYRO ROAD EXTENSION, PREPARED FOR RYMES PROPANE & OIL", DATED AUGUST 15, 2017, LAST REVISED MARCH 13, 2018, PREPARED BY STEVEN C. HORNE, LLC.
 - "SECOND AMENDED SUBDIVISION PLAN, CYRO ROAD EXTENSION, SANFORD INDUSTRIAL DEVELOPMENT PARK, CYRO DRIVE, SANFORD, YORK COUNTY, MAINE, RECORD OWNER: INDUSTRIAL DEVELOPMENT CORPORATION OF SANFORD, 917 MAIN STREET, SANFORD, MAINE 04073", DATED JUNE 19, 2019, PREPARED BY CES INC., RECORDED AT THE YORK COUNTY REGISTRY OF DEEDS IN PLAN BOOK 403, PAGE 49.

- CONSTRUCTION SCHEDULE:**
- EROSION CONTROL MEASURES INSTALLED AND STABILIZED (MAY 2025)
 - EXCAVATION FOR WET PONDS AND STORAGE TANKS, INSTALLATION OF WET POND LINER (MAY 2025)
 - STABILIZATION/PROTECTION OF WET PONDS, GENERAL SITE GRADING AND INFRASTRUCTURE INSTALLATION (MAY 2025 - AUGUST 2025)
 - PAVING (SEPTEMBER 2025)
 - FINALIZE INFRASTRUCTURE INSTALLATION AND SITE STABILIZATION (SEPTEMBER 2025)

**PREPARED FOR:
PERMITTING ONLY
- NOT FOR
CONSTRUCTION.
2/27/2025**

LEGEND:

19429/340	DEED BOOK/PAGE NUMBER
HDPE	HIGH DENSITY POLYETHYLENE
INV.	INVERT
N/F	NOW OR FORMERLY
S.F.	SQUARE FEET
Y.C.R.D.	YORK COUNTY REGISTRY OF DEEDS
⊙	SANITARY SEWER MANHOLE
⊙	APPROXIMATE UNDERGROUND SEWER LINE
⊙	CATCH BASIN
⊙	WATER SHUT OFF
⊙	WATER VALVE
⊙	APPROXIMATE UNDERGROUND WATER LINE
⊙	UTILITY POLE
⊙	GUY WIRE
⊙	OVERHEAD WIRES
⊙	ELECTRIC JUNCTION BOX
⊙	SIGN
⊙	MAILBOX
⊙	TREE LINE
⊙	BUSH
⊙	WETLAND (SEE NOTE 15)
⊙	RIVER BANK
⊙	EXISTING REBAR (AS NOTED)
⊙	EXISTING GRANITE BOUND (AS NOTED)
⊙	5/8" REBAR W/CAP "CIVIL CONSULT PLUS 2362" TO BE SET SUBJECT PARCEL BOUNDARY LINE
⊙	APPROXIMATE ABUTTING PARCEL BOUNDARY LINE
⊙	EASEMENT BOUNDARY LINE
⊙	ZONING SETBACK LINE
⊙	BENCHMARK (AS NOTED)
⊙	STATE PLANE COORDINATES
⊙	CHAIN LINK SECURITY FENCE
⊙	EROSION CONTROL FILTER BERM



CIVIL CONSULTANTS
Engineers
Planners
Surveyors
P.O. Box 100
South Berwick
Maine
03908
207-384-2550
www.civcon.com

NO.	REVISIONS	INT.	DATE

RECORD OWNER:
INDUSTRIAL DEVELOPMENT CORPORATION OF SANFORD
OWNER ADDRESS:
917 MAIN STREET
SUITE D
SANFORD, ME 04073

**SITE DEVELOPMENT PLAN OF LAND OF
INDUSTRIAL DEVELOPMENT CORPORATION OF
SANFORD - CYRO ROAD - TAX MAP R18B, LOT 4
SANFORD, YORK COUNTY, MAINE**

PREPARED FOR: ARIES CLEAN TECHNOLOGIES, LLC
CLIENT ADDRESS: 4037 RURAL PLAINS CIRCLE, FRANKLIN, TN 37064

DATE: FEBRUARY 27, 2025
DRAWN BY: NJR/LTE
CHECKED BY:
APPROVED BY:

**STORMWATER
MANAGEMENT
PLAN**

PROJECT NO: 2425800

SW2
SHEET: 2 OF 4

EQUIPMENT LIST			Weight - Tons
TAG	EQUIPMENT MAMA	EQUIPMENT DESCRIPTION	
		ADMIN BUILDING	
2	X-1001	RECEIVING BRIDLING WITH TROUGH	?? concrete floor slab on grade with prefabed steel building. Capable to receiving 100 ton GVW trucks with sludge
3	CY-1002A/B	WET BIOBOLID8 TRANSFER CONVEYOR	
4	SL-1003A/B/C	WET BI080LIDS SILO	1050 3 each and each can hold 300 tons of sludge 350 4861.111 12x12 2430.556 54x16
5	P-1004A/B/C	WET BIOSOLIDS FEED PUMP	3 3 tons each
6	PK*2001	DRYER PACKAGE	315 Each dryer wet load ~ 204344 LB, 3 dryers - 105 tons each 204344 102.172
7	PK*2002	PELLETIZER BUILDING	
8	CY—7006A/B	BIOSOLIDS CONVEYOR	
9	SL-3001A/BC/D	GASIFIER FEED BIN	28 4 each, 7 tons each full
	CY-3002A/B/C/D	GASIFIER FEED CONVEYOR	
	GS-3003	GASIFIER	130 approximate weight with structures
	CL—3006/MB	GASIFIER CYCLONES	44 with both cyclones
	SL—3004	SAND BIN WITH DUST CONTROL	2
	T0-4001	THERMAL OXIDIZER	120 with platforms
	CY-7011	BIOCHAR COOLING SCREW	8
	CY-7012	BIOCHAR SCREW CONVEYOR	8
	CY*7007	SAND COOLING SCREW	8
	BY-7010	LAND SCREY/ CON'VEYOR	
	CY*2003	PELETIZER FEED CONVEYORS	
	CY-2004	PELLETIZER DRY BIOSOLIDS STORAGE CONVEYOR	
10	E-4004	FLUE GAS/HOT OIL EXCHANGER	15 guess with oil
11	PK-5001	EMISSION CONTROL SYSTEM PACKAGE	
12	PK-6001	ORC PACKAGE	25
13	SL-7005A/B	DRIED BIOSOLIDS STORAGE SILO	100 100 781.25 16x16
14	(5L*5002	SPENT SORBENT BIN WITH DUST CONTROL	100
15	SL-7003	BIOCHAR HOLDING BIN	100
16	X*7008	gAND SCREEN	
17	BE-7006	BUCKET ELEVATOR	
18	X-8013	VENT STACK	30
19	E-4009	THERMAL OXIDIZER AIR PREHEATER	4
20	E-4006	GASIFIER AIR PREHEATER	4
21	(TK*4002	HOT OIL SURGE DRUM	4
22	P-4003A/B	HOT OIL PUMP	
23	EC-4005	HOT OIL BYPASS AIR COOLER	
24	PK-8014	LIQUID NITROGEN PACKAGE	8
25	PK-8001	P5A/M5MBRANF NITROGEN PACKAGE	6
26	PK-8001	INSTRUMENT/PLANT AIR PACKAGE	4
27	(PK-8007	COOLING WATER PACKAGE	60 cooling tower with water- guess
28	PK*8009	CONDENSATE TREATMENT UNIT	6
29	PK-8010	WASTEWATER TREATMENT UNIT	6
30	V-8011	OPEN DRAIN PIT	
31		STORM WATFR RFTFNITION POND-FOR REFERSNCS ONLY	
32		MCC BUILDING	

Undrained Shear Strength (PSF) In-Situ Vane Test

