

REFERENCE: B-5721

PROJECT: 45677

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY ROCKINGHAM
PROJECT DESCRIPTION REPLACE BRIDGE NO. 124 ON
SR 2177 OVER MAYO RIVER

INVENTORY

CONTENTS

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STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5721	1	23

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT (919) 707-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THE PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

- NOTES:
1. THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS ACCURATE NOR IS IT CONSIDERED PART OF THE PLANS, SPECIFICATIONS OR CONTRACT FOR THE PROJECT.
 2. BY HAVING REQUESTED THIS INFORMATION, THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

PERSONNEL

- M. LEAR
J. HOWARD
C. TREMBLAY
C. CARPENTER
M. MOSELEY

INVESTIGATED BY WOOD E&S, INC.
 DRAWN BY R. RAHIE
 CHECKED BY C. T. TANG
 SUBMITTED BY M. LEAR
 DATE MARCH, 2022

WOOD E&S, INC.
 4021 STIRRUP CREEK DRIVE, SUITE 100
 DURHAM, NORTH CAROLINA 27703
 (919) 381-9900

NC Engineering F-1253 NC Geology C-247



DocuSigned by:
Michael Lear 04/07/2022

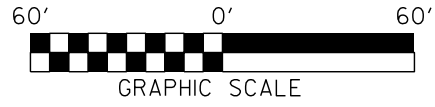
SIGNATURE DATE

**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT
SUBSURFACE INVESTIGATION
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS**

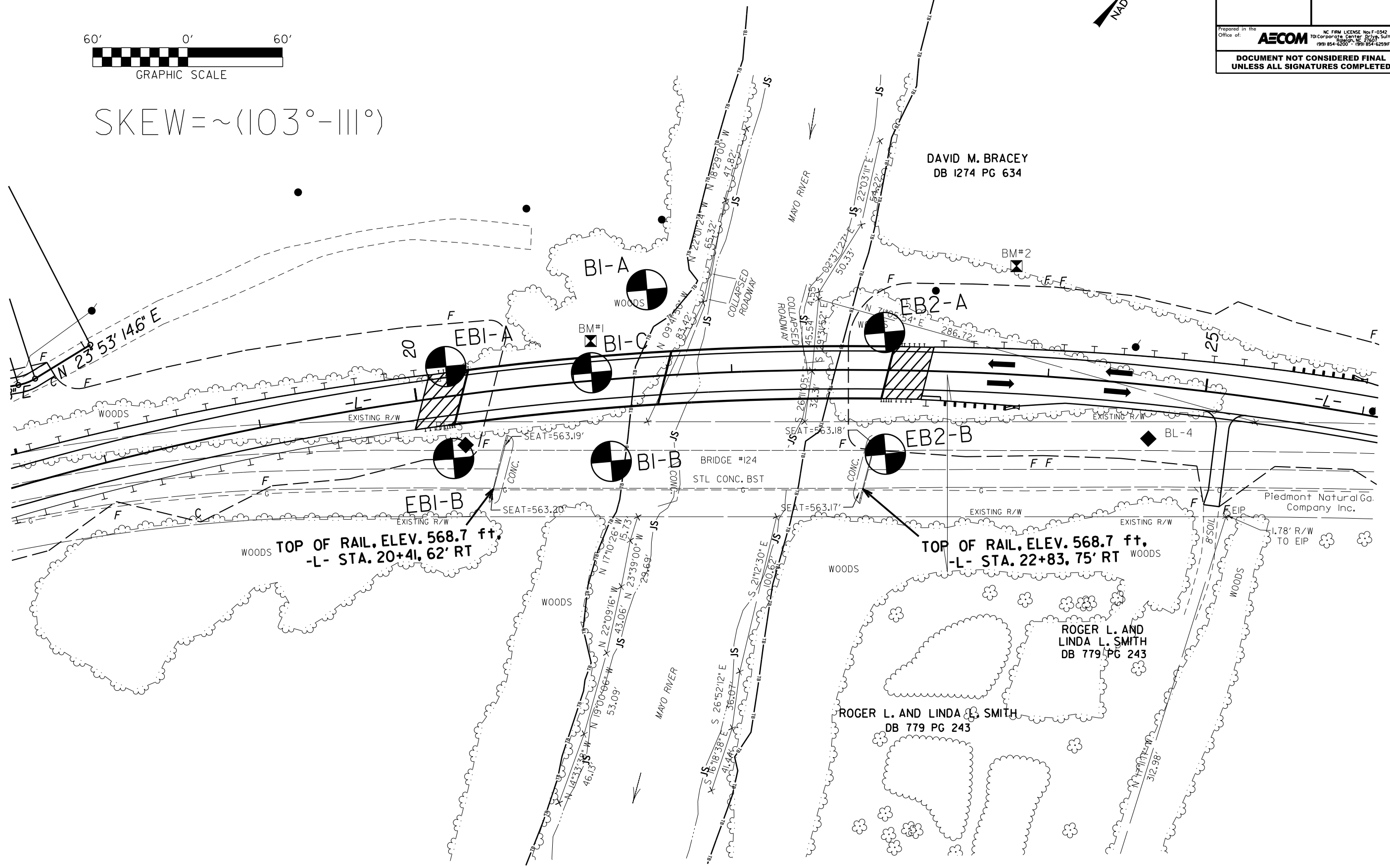
SOIL DESCRIPTION										GRADATION										ROCK DESCRIPTION										TERMS AND DEFINITIONS									
SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 206, ASTM D1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE, VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6										WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.										HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED, AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS IN NON-COASTAL PLAIN MATERIAL. THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:										ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. AQUIFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC. ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM PARENT MATERIAL. FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION (FM) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS, MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (ROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.									
SOIL LEGEND AND AASHTO CLASSIFICATION										ANGULARITY OF GRAINS										WEATHERED ROCK (WR)										CRYSTALLINE ROCK (CR)									
MINERALOGICAL COMPOSITION										NON-CRYSTALLINE ROCK (NCR)										COASTAL PLAIN SEDIMENTARY ROCK (CP)										WEATHERING									
COMPRESSION										PERCENTAGE OF MATERIAL										GROUND WATER										MISCELLANEOUS SYMBOLS									
TEXTURE OR GRAIN SIZE										RECOMMENDATION SYMBOLS										ROCK HARDNESS										SOIL MOISTURE - CORRELATION OF TERMS									
CONSISTENCY OR DENSENESS										ABBREVIATIONS										SOIL MOISTURE SCALE (ATTERBERG LIMITS)										PLASTICITY									
PLASTICITY										EQUIPMENT USED ON SUBJECT PROJECT										FRACTURE SPACING										BEDDING									
COLOR										INDURATION										NOTES:										FRACURE SPACING									
DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.																																							

5/14/99
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2-0011 -

PROJECT REFERENCE NO. B-5721	SHEET NO. 3
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
Prepared in the Office of: AECOM NC FIRM LICENSE NO. F-0342 701 Corporate Center Drive, Suite 415 Raleigh, NC 27607 (919) 854-6200 • (919) 854-6259(fax)	
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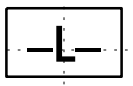
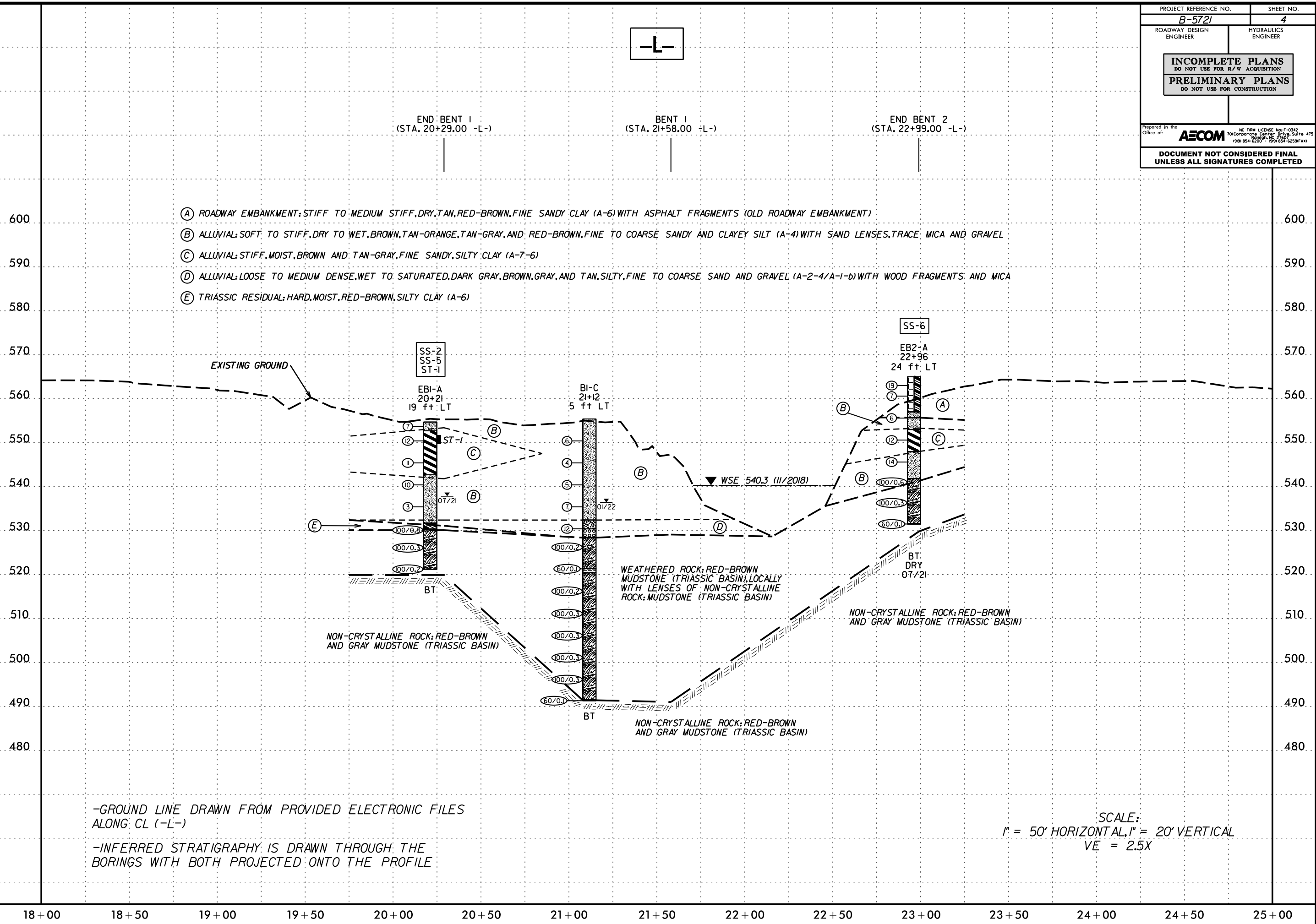
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1.78' R/W TO EIP

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PROJECT REFERENCE NO. B-5721	SHEET NO. 4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
Prepared in the Office of: AECOM <small>NC FIRM LICENSE No F-0342 70 Corporate Center Drive, Suite 475 Cary, NC 27507 (919) 854-6000 • (919) 854-6259(FAX)</small>	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

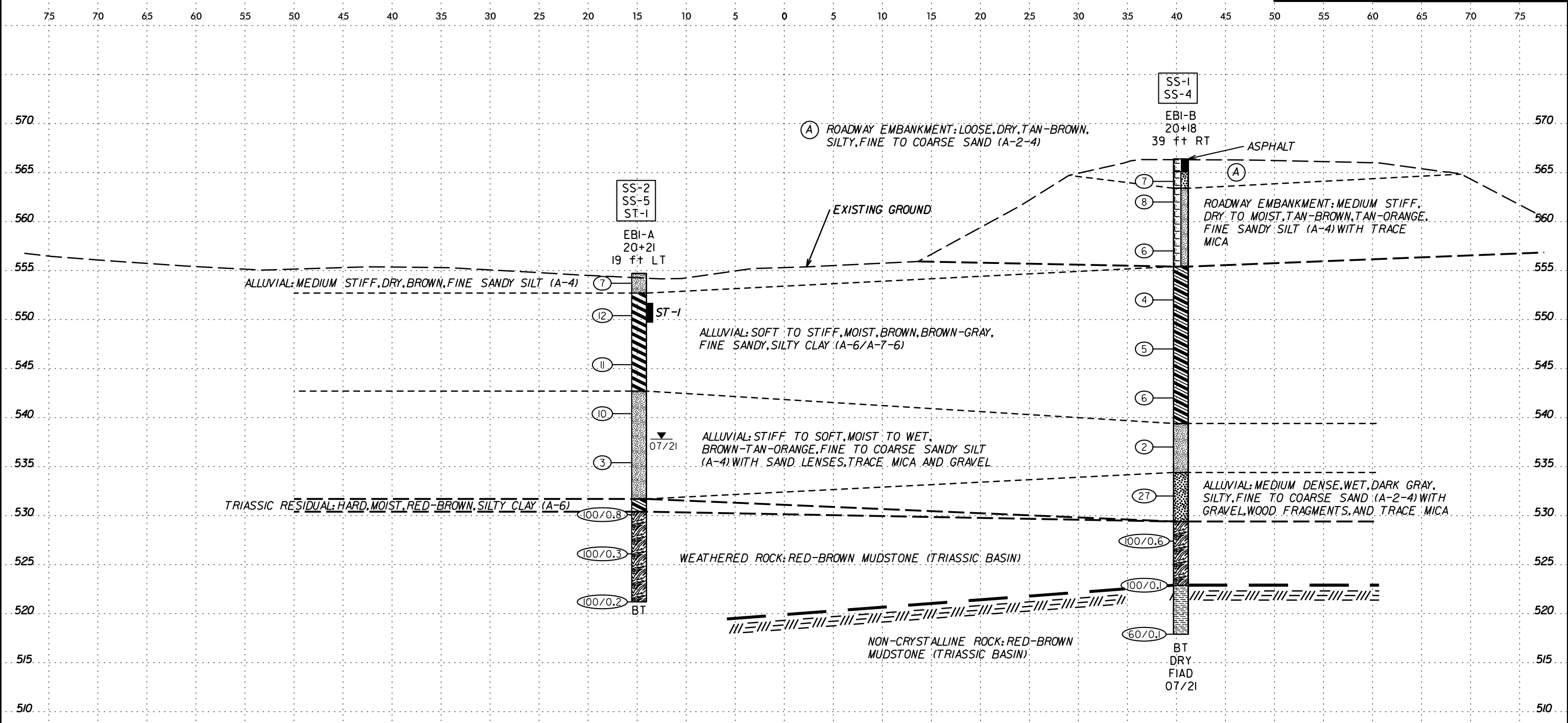


-GROUND LINE DRAWN FROM PROVIDED ELECTRONIC FILES ALONG CL (-L-)
 -INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE PROFILE

SCALE:
 1" = 50' HORIZONTAL, 1" = 20' VERTICAL
 VE = 2.5X

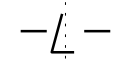
18+00 18+50 19+00 19+50 20+00 20+50 21+00 21+50 22+00 22+50 23+00 23+50 24+00 24+50 25+00

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 6/23/16

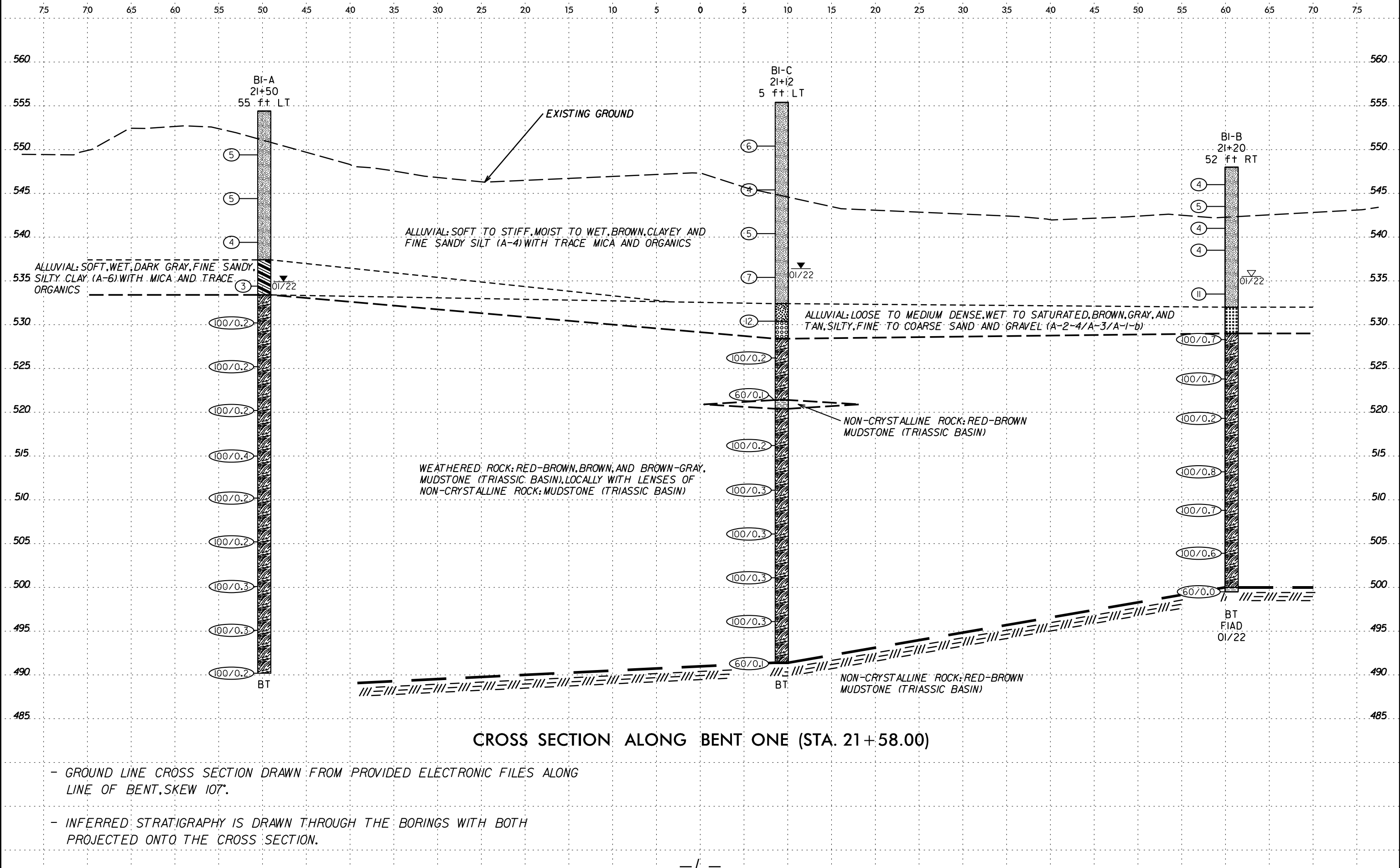


CROSS SECTION ALONG END BENT ONE (STA. 20+29.00)

- GROUND LINE CROSS SECTION DRAWN FROM PROVIDED ELECTRONIC FILES ALONG LINE OF BENT, SKEW APPROXIMATELY III°.
- INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE CROSS SECTION.



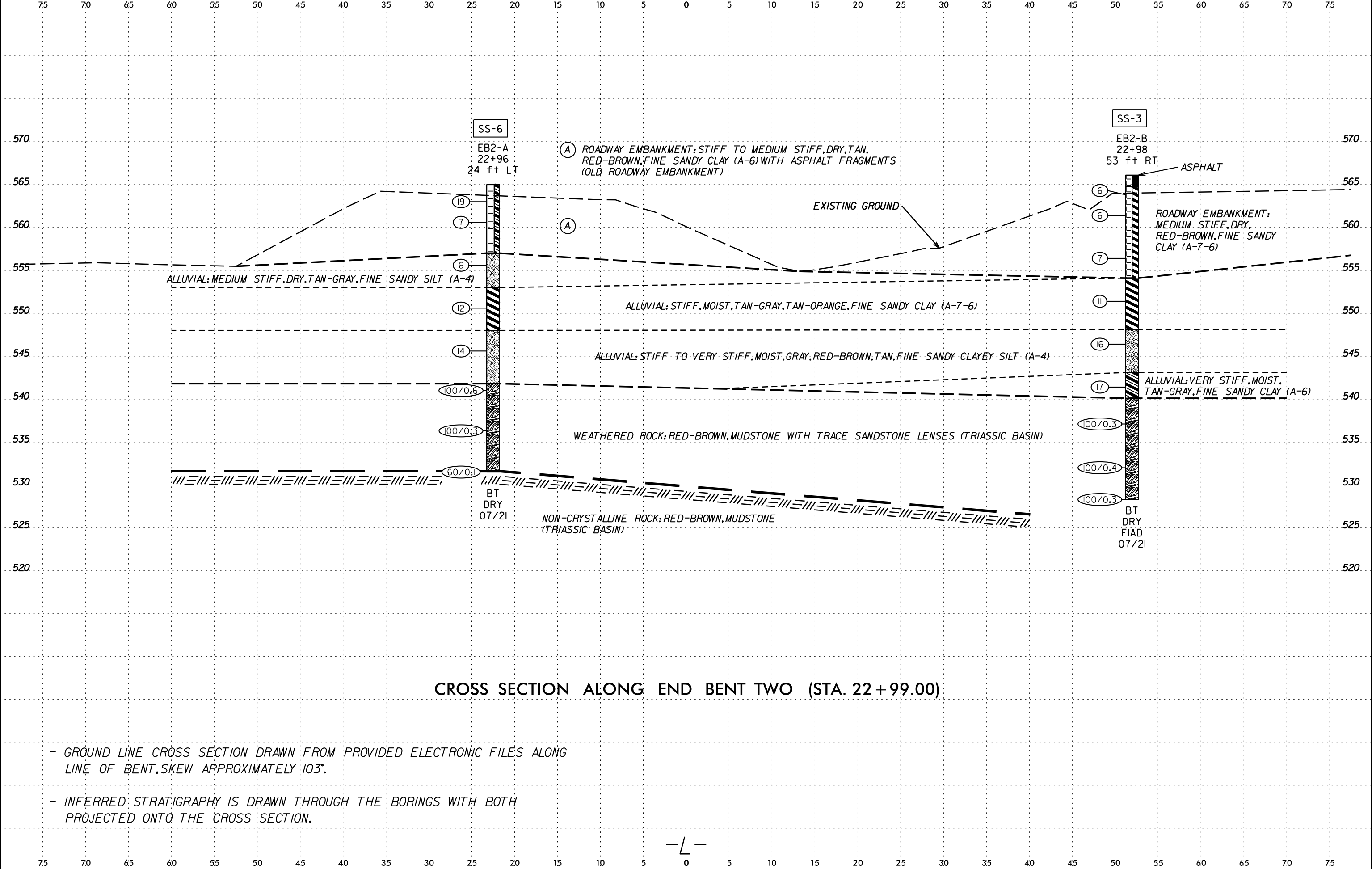
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CROSS SECTION ALONG BENT ONE (STA. 21+58.00)

- GROUND LINE CROSS SECTION DRAWN FROM PROVIDED ELECTRONIC FILES ALONG LINE OF BENT, SKEW 107°.
- INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE CROSS SECTION.

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6/23/16

GEOTECHNICAL BORING REPORT BORE LOG

WBS 45677.1.1		TIP B-5721		COUNTY ROCKINGHAM		GEOLOGIST J. Howard											
SITE DESCRIPTION B-5721: Replace Bridge No. 124 on SR 2177 (Dan Valley Road) Over the Mayo River						GROUND WTR (ft)											
BORING NO. EB1-A		STATION 20+21		OFFSET 19 ft LT		ALIGNMENT -L-											
COLLAR ELEV. 554.7 ft		TOTAL DEPTH 33.5 ft		NORTHING 963,079		EASTING 1,719,346											
DRILL RIG/HAMMER EFF./DATE SUM0093 DIEDRICH D-50 88% 11/19/2020		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic													
DRILLER M. Moseley		START DATE 07/12/21		COMP. DATE 07/12/21		SURFACE WATER DEPTH N/A											
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)		
555	554.7	0.0	2	3	4										554.7	0.0	GROUND SURFACE
	551.4	3.3	5	5	7									D	552.7	2.0	ALLUVIAL Medium stiff, dry, brown, fine sandy SILT (A-4)
550													23%				Stiff, moist, brown, fine sandy, silty CLAY (A-7-6)
	546.4	8.3	4	5	6									M			Pushed tubes at offset location (-L- 20+21, 22 feet LT) on 1/31/2022 ST-1: 3.0-5.0 feet, Recovery = 2.0 feet ST-2: 6.0-8.0 feet, Recovery = 1.4 feet
545														M			
	541.4	13.3	4	5	5									M			Stiff to soft, moist to wet, tan, tan-orange, fine to coarse sandy SILT (A-4), with sand lenses, trace mica and gravel
540																	
	536.4	18.3	2	1	2												
535													35%				
	531.4	23.3	36	20	80/0.3												
530														M			TRIASSIC RESIDUAL Hard, moist, red-brown, silty CLAY (A-6)
	526.4	28.3															WEATHERED ROCK Red-brown, MUDSTONE (TRIASSIC BASIN)
525																	
	521.4	33.3															

Boring Terminated at Elevation 521.2 ft in Weathered Rock: MUDSTONE (TRIASSIC BASIN)

NOTE: Shelby Tubes ST-1 and ST-2 pushed at offset location -L- Station 20+21, 22 ft LT on 1/31/2022

Other Samples:
ST-1 (3.0 - 5.0)
ST-2 (6.0 - 8.0)

GEOTECHNICAL BORING REPORT BORE LOG

WBS 45677.1.1		TIP B-5721		COUNTY ROCKINGHAM		GEOLOGIST J. Howard											
SITE DESCRIPTION B-5721: Replace Bridge No. 124 on SR 2177 (Dan Valley Road) Over the Mayo River						GROUND WTR (ft)											
BORING NO. EB1-B		STATION 20+18		OFFSET 39 ft RT		ALIGNMENT -L-											
COLLAR ELEV. 566.4 ft		TOTAL DEPTH 48.5 ft		NORTHING 963,034		EASTING 1,719,383											
DRILL RIG/HAMMER EFF./DATE SUM0093 DIEDRICH D-50 88% 11/19/2020		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic													
DRILLER M. Moseley		START DATE 07/13/21		COMP. DATE 07/13/21		SURFACE WATER DEPTH N/A											
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)		
570																	
	566.4																PAVEMENT
565	565.1	1.3															ASPHALT (0.0 - 0.5), ABC (0.5 - 1.3)
	563.0	3.4	3	3	4								18%				ROADWAY EMBANKMENT Loose, dry, tan-brown, silty, fine to coarse SAND (A-2-4)
560														D			Medium stiff, dry to moist, tan-brown, tan-orange, fine sandy SILT (A-4) with trace mica
	558.0	8.4	2	3	3									M			
555																	
	553.0	13.4	1	2	2												ALLUVIAL Soft to medium stiff, moist, brown-gray, fine sandy, silty CLAY (A-6)
550													26%				
	548.0	18.4	2	2	3												
545																	
	543.0	23.4	2	2	4												
540																	
	538.0	28.4	2	1	1												
535																	
	533.0	33.4	3	2	25												
530																	
	528.0	38.4	71	29/0.1													
525																	
	523.0	43.4															
520																	
	518.0	48.4															

Boring Terminated with Standard Penetration Test Refusal at Elevation 517.9 ft in Non-Crystalline Rock: MUDSTONE (TRIASSIC BASIN)

GEOTECHNICAL BORING REPORT BORE LOG

SHEET 9

WBS 45677.1.1		TIP B-5721		COUNTY ROCKINGHAM		GEOLOGIST C. Tremblay										
SITE DESCRIPTION B-5721: Replace Bridge No. 124 on SR 2177 (Dan Valley Road) Over the Mayo River							GROUND WTR (ft)									
BORING NO. B1-A		STATION 21+50		OFFSET 55 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 554.4 ft		TOTAL DEPTH 64.2 ft		NORTHING 963,191		EASTING 1,719,423										
DRILL RIG/HAMMER EFF./DATE GEO105 Diedrich D120 78% 03/24/2022		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic												
DRILLER C. Carpenter		START DATE 01/28/22		COMP. DATE 01/31/22		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)	
555															554.4	GROUND SURFACE
																ALLUVIAL Medium stiff to soft, moist, brown, fine sandy SILT (A-4) with trace mica and organics
550	550.4	4.0	2	2	3											
545	545.4	9.0	3	2	3											
540	540.4	14.0	2	2	2											
535	535.4	19.0	2	1	2										537.4	Soft, wet, dark gray, fine sandy, silty CLAY (A-6) with mica and trace organics
530	530.4	24.0	100/0.2												533.4	WEATHERED ROCK Red-Brown MUDSTONE (Triassic Basin)
525	525.4	29.0	100/0.2													
520	520.4	34.0	100/0.2													
515	515.4	39.0	100/0.4													
510	510.4	44.0	100/0.2													
505	505.4	49.0	100/0.2													
500	500.4	54.0	100/0.3													
495	495.4	59.0	100/0.3													
	490.4	64.0	100/0.2												490.2	Boring Terminated at Elevation 490.2 ft in Weathered Rock: MUDSTONE (TRIASSIC BASIN)

NCDOT BORE SINGLE B5721_GEO_BRD124_GINT.GPJ_NC_DOT.GDT 4/1/22

GEOTECHNICAL BORING REPORT BORE LOG

SHEET 9

WBS 45677.1.1		TIP B-5721		COUNTY ROCKINGHAM		GEOLOGIST C. Tremblay										
SITE DESCRIPTION B-5721: Replace Bridge No. 124 on SR 2177 (Dan Valley Road) Over the Mayo River							GROUND WTR (ft)									
BORING NO. B1-C		STATION 21+12		OFFSET 5 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 555.4 ft		TOTAL DEPTH 64.1 ft		NORTHING 963,128		EASTING 1,719,424										
DRILL RIG/HAMMER EFF./DATE GEO105 Diedrich D120 78% 03/24/2022		DRILL METHOD H.S. Augers/Mud Rotary		HAMMER TYPE Automatic												
DRILLER C. Carpenter		START DATE 01/26/22		COMP. DATE 01/28/22		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)	
560															555.4	GROUND SURFACE
																ALLUVIAL Medium stiff, moist to wet, brown, fine sandy SILT (A-4) with mica
555																
550	551.4	4.0	3	3	3											
545	546.4	9.0	3	2	2											
540	541.4	14.0	3	2	3											
535	536.4	19.0	3	3	4											
530	531.4	24.0	3	5	7											
525	526.4	29.0	100/0.2													
520	521.4	34.0	60/0.1													
515	516.4	39.0	100/0.2													
510	511.4	44.0	100/0.3													
505	506.4	49.0	100/0.3													
500	501.4	54.0	100/0.3													
495	496.4	59.0	100/0.3													
	491.4	64.0	60/0.1												491.4	NON-CRYSTALLINE ROCK Red-brown MUDSTONE (Triassic Basin) Boring Terminated with Standard Penetration Test Refusal at Elevation 491.3 ft in Non-Crystalline Rock: MUDSTONE (TRIASSIC BASIN)

NCDOT BORE SINGLE B5721_GEO_BRD124_GINT.GPJ_NC_DOT.GDT 4/1/22

NOTE: Attempted to begin rock coring in boring at depth of 35.5 feet, augers were drilled out with roller cone to 35.5 ft and core tools were advanced to bottom of hole, no progress made with rock coring tooling as the core bit repeatedly plugged with clay. Unable to advance with core tools due to soft rock conditions. Boring continued with mud rotary methods and SPT's to termination with augers used as casing to stabilize boring.

GEOTECHNICAL BORING REPORT BORE LOG

WBS 45677.1.1		TIP B-5721		COUNTY ROCKINGHAM		GEOLOGIST C. Tremblay												
SITE DESCRIPTION B-5721: Replace Bridge No. 124 on SR 2177 (Dan Valley Road) Over the Mayo River							GROUND WTR (ft)											
BORING NO. B1-B		STATION 21+20		OFFSET 52 ft RT		ALIGNMENT -L-												
COLLAR ELEV. 548.0 ft		TOTAL DEPTH 48.5 ft		NORTHING 963,089		EASTING 1,719,466												
DRILL RIG/HAMMER EFF./DATE GEO105 Diedrich D120 78% 03/24/2022				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic												
DRILLER C. Carpenter		START DATE 01/25/22		COMP. DATE 01/25/22		SURFACE WATER DEPTH N/A												
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION				
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)			
550															548.0	GROUND SURFACE	0.0	
	547.0	1.0	1	2	2	4								M		ALLUVIAL Medium stiff to stiff, moist to wet, brown, fine sandy, clayey SILT (A-4) with mica		
545	544.5	3.5	3	3	2	5							M					
	542.0	6.0	3	2	2	4							M					
540	539.5	8.5	2	2	2	4							W					
	534.5	13.5	4	5	6	11							W					
535																		
	529.5	18.5	10	54	46/0.2					100/0.7				W	532.0	Medium dense, saturated, gray, fine to coarse SAND (A-3) with trace gravel	16.0	
530														Sat.	529.0		19.0	
	524.5	23.5	37	63/0.2						100/0.7						WEATHERED ROCK Red-brown to gray and brown-gray, MUDSTONE (Triassic Basin)		
525																		
	519.5	28.5	100/0.2							100/0.2								
520																		
	514.5	33.5	28	72/0.3						100/0.8								
515																		
	509.5	38.5	78	22/0.2						100/0.7								
510																		
	504.5	43.5	80	20/0.1						100/0.6								
505																		
	499.5	48.5	60/0.0							60/0.0					500.0	NON-CRYSTALLINE ROCK Red-brown MUDSTONE (Triassic Basin) Boring Terminated with Standard Penetration Test Refusal at Elevation 499.5 ft in Non-Crystalline Rock: MUDSTONE (TRIASSIC BASIN)	48.0	
500															499.5			48.5

NCDOT BORE SINGLE B5721 GEO BRDG124 GINT.GPJ NC_DOT.GDT 4/1/22

NOTE: Boring advanced through existing bridge deck. Deck to ground surface measured as 18.8 feet at time of boring. Bridge core measured as 0.2' asphalt over 0.6' Concrete

GEOTECHNICAL BORING REPORT BORE LOG

SHEET 11

WBS 45677.1.1		TIP B-5721		COUNTY ROCKINGHAM		GEOLOGIST J. Howard										
SITE DESCRIPTION B-5721: Replace Bridge No. 124 on SR 2177 (Dan Valley Road) Over the Mayo River						GROUND WTR (ft)										
BORING NO. EB2-A		STATION 22+96		OFFSET 24 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 565.0 ft		TOTAL DEPTH 33.5 ft		NORTHING 963,254		EASTING 1,719,562										
DRILL RIG/HAMMER EFF./DATE SUM0093 DIEDRICH D-50 88% 11/19/2020		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic												
DRILLER M. Moseley		START DATE 07/15/21		COMP. DATE 07/15/21		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
565														565.0	0.0	GROUND SURFACE
	564.0	1.0														ROADWAY EMBANKMENT
	561.6	3.4	3	14	5											Stiff to medium stiff, dry, tan, red-brown, fine sandy CLAY (A-6), with asphalt fragments (Old Roadway Embankment)
560			4	3	4											
	556.6	8.4														
555			2	3	3											ALLUVIAL
	551.6	13.4														Medium stiff, dry, tan-gray, fine sandy SILT (A-4)
550			4	6	6											Stiff, moist, tan-gray, fine sandy CLAY (A-7-6)
	546.6	18.4														
545			5	7	7											Stiff, moist, gray, red-brown, fine sandy, clayey SILT (A-4)
	541.6	23.4														
540			47	53/0.1												WEATHERED ROCK
	536.6	28.4														Red-brown, MUDSTONE, with sandstone lens at 23.2 ft (TRIASSIC BASIN)
535			100/0.3													
	531.6	33.4														
			60/0.1													
																NON-CRYSTALLINE ROCK
																Gray, MUDSTONE (TRIASSIC BASIN)
																Boring Terminated with Standard Penetration Test Refusal at Elevation 531.5 ft in Non-Crystalline Rock: MUDSTONE (TRIASSIC BASIN)

NCDOT BORE SINGLE B5721_GEO_BRDG124_GINT.GPJ_NC_DOT.GDT 4/1/22

GEOTECHNICAL BORING REPORT BORE LOG

SHEET 11

WBS 45677.1.1		TIP B-5721		COUNTY ROCKINGHAM		GEOLOGIST J. Howard										
SITE DESCRIPTION B-5721: Replace Bridge No. 124 on SR 2177 (Dan Valley Road) Over the Mayo River						GROUND WTR (ft)										
BORING NO. EB2-B		STATION 22+98		OFFSET 53 ft RT		ALIGNMENT -L-										
COLLAR ELEV. 566.1 ft		TOTAL DEPTH 37.8 ft		NORTHING 963,191		EASTING 1,719,606										
DRILL RIG/HAMMER EFF./DATE SUM0093 DIEDRICH D-50 88% 11/19/2020		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic												
DRILLER M. Moseley		START DATE 07/14/21		COMP. DATE 07/14/21		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
570																
565	564.8	1.3	2	3	3											PAVEMENT
	562.4	3.7	3	3	3											ASPHALT (0.0 - 0.6ft), ABC (0.6 - 1.3ft)
560																ROADWAY EMBANKMENT
	557.4	8.7	2	3	4											Medium stiff, dry, red-brown, fine sandy CLAY (A-7-6)
555																
	552.4	13.7	4	4	7											ALLUVIAL
550																Stiff, moist, tan-orange, fine sandy, CLAY (A-7-6)
	547.4	18.7	6	6	10											Very stiff, moist, tan, gray, fine sandy SILT (A-4)
545																
	542.4	23.7	4	6	11											Very stiff, moist, tan-gray, fine sandy CLAY (A-6)
540																
	537.4	28.7														WEATHERED ROCK
535			100/0.3													Red-brown, MUDSTONE (TRIASSIC BASIN)
	532.4	33.7														
530			100/0.4													
	528.6	37.5														
			100/0.3													
																Boring Terminated at Elevation 528.3 ft in Weathered Rock: MUDSTONE (TRIASSIC BASIN)

NCDOT BORE SINGLE B5721_GEO_BRDG124_GINT.GPJ_NC_DOT.GDT 4/1/22

SOIL TEST RESULTS

SAMPLE NO.	BORING	STATION	OFFSET	LINE	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
									C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-1	EB1-B	20+18	39' RT	-L-	1.3' - 2.8'	A-2-4(0)	31	6	33.4	38.9	12.2	13.7	98.2	79.6	32.2	18.0	-
SS-4	EB1-B	20+18	39' RT	-L-	13.4' - 14.9'	A-6(10)	37	14	0.8	37.7	28.3	33.2	100.0	99.9	75.0	26.2	-
SS-2	EB1-A	20+21	19' LT	-L-	3.3' - 4.8'	A-7-6(15)	46	20	0.5	30.1	26.8	42.6	100.0	99.8	74.8	23.1	-
SS-5	EB1-A	20+21	19' LT	-L-	18.3' - 19.8'	A-4(0)	27	7	9.5	53.6	17.5	19.4	100.0	99.1	44.2	34.8	-
ST-1	EB1-A	20+21	22' LT	-L-	3.0'-5.0'	A-7-6(17)	45	21	0.8	30.8	31.7	36.7	100.0	99.7	78.5	21.7	-
SS-6	EB2-A	22+96	24' LT	-L-	13.4' - 14.9'	A-7-6(14)	44	18	3.2	30.4	22.4	44.0	100.0	99.2	74.8	24.4	-
SS-3	EB2-B	22+98	53' RT	-L-	8.7' - 10.2'	A-7-6(19)	51	25	2.1	30.8	18.3	48.8	100.0	99.5	73.9	30.1	-

ND = NOT DETERMINED
 NV = NO VALUE
 NP = NON-PLASTIC



Signature

115-01-0504

Certification #

Albert Romero

Print Name

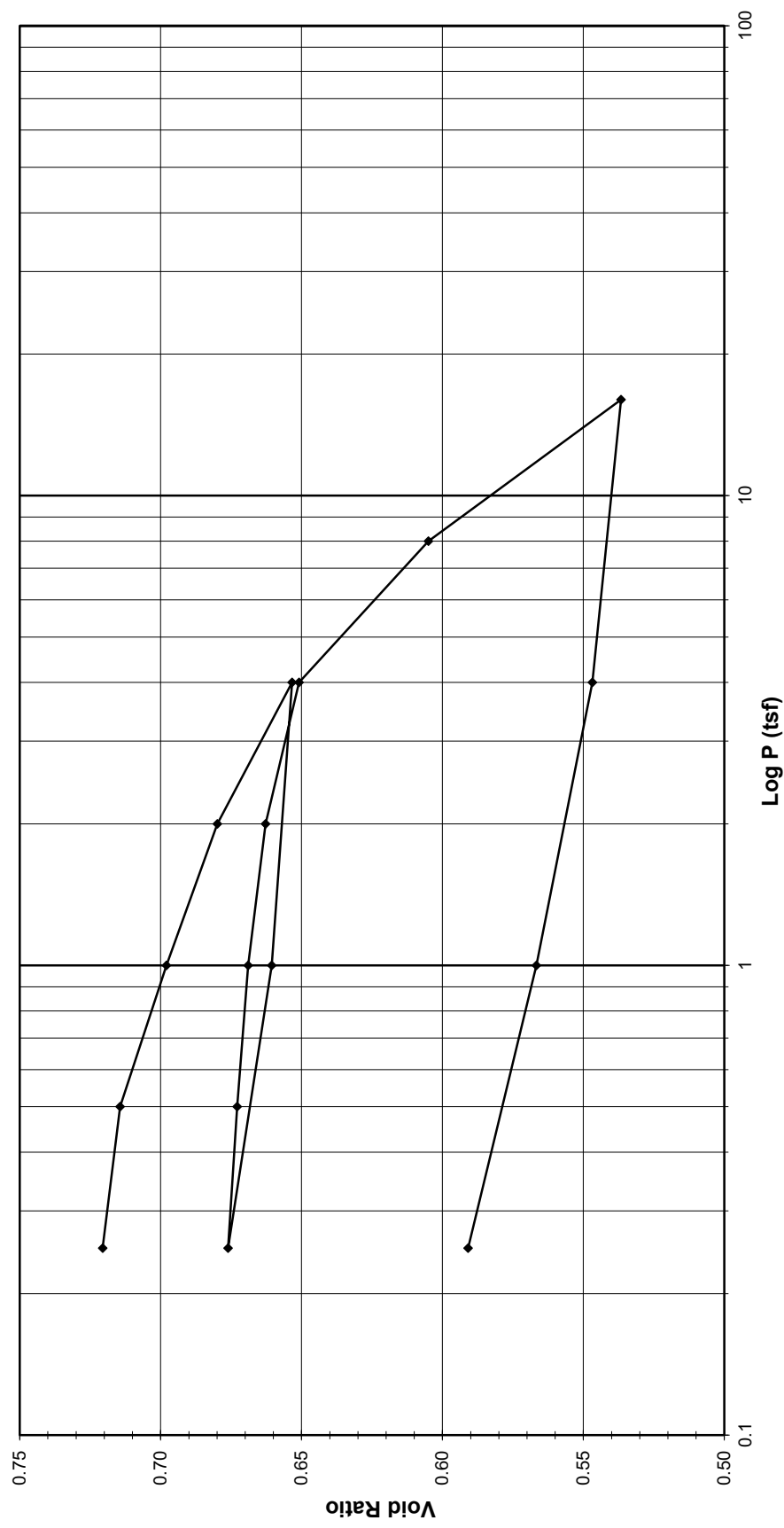
ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Wood, PLC
 Client Reference B5721-Replace Bridge No. 124
 Project No. R-2022-047-001
 Lab ID R-2022-047-001-001

Boring No. EB1-A
 Depth (ft) 3.0-5.0
 Sample No. ST-1
 Visual Description Brown Lean Clay with Sand

Station: 20+21 -L-
 Offset: 22' LT

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



page 1 of 4
 Tested By 129-07-0411 Date 3/3/2022 Approved By MPS Date 3/15/2022

DCN: CT-24E Date: 5/3/12 Revision: 6

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ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Wood, PLC
 Client Reference B5721-Replace Bridge No. 124
 Project No. R-2022-047-001
 Lab ID R-2022-047-001-001

Boring No. EB1-A
 Depth (ft) 3.0-5.0
 Sample No. ST-1
 Visual Description Brown Lean Clay with Sand

Station: 20+21 -L-
 Offset: 22' LT

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Consolidometer No. R470
 1 Division = 0.0001 (in.)

Sample Properties

	Initial	Final
Water Content		
Tare Number	719	479
Wt. Tare & WS (g)	401.49	248.19
Wt. Tare & DS (g)	346.12	223.40
Wt. Water (g)	55.37	24.79
Wt. Tare (g)	91.40	98.94
Wt. DS (g)	254.72	124.46
Water Content (%)	21.74	19.92
Sample Parameters		
Sample Diameter (in)	2.5	2.5
Sample Height (in)	1.0000	0.9231
Sample Volume (cc)	80.44	74.26
Wt. Wet Sample + Ring (g)	366.40	364.12
Wt. of Ring (g)	214.12	214.12
Wt. of Wet Sample (g)	152.28	150.00
Wet Density (pcf)	118.13	126.05
Wet Density (g/cc)	1.89	2.02
Water Content (%)	21.74	19.92
Wt. of Dry Sample (g)	125.09	125.09
Dry Density (pcf)	97.04	105.12
Dry Density (g/cc)	1.56	1.68
Void Ratio	0.7234	0.5909
Saturation (%)	80.53	90.34
Specific Gravity	2.68	Assumed

Test Data Summary

Applied Pressure (tsf)	Final Reading (div)	Dial Deflection (div)	Machine Deflection (div)	Corrected Reading (div)	Height of Sample (mm)	Volume (cc)	Dry Density (g/cc)	Void Ratio
Seating	0	0	0	0	25.400	80.440	1.55506	0.72341
0.25	61.5	45.2	16.3	16.3	25.359	80.309	1.55760	0.72060
0.5	116.9	64.6	52.3	52.3	25.267	80.019	1.56323	0.71440
1	237.7	90.0	147.7	147.7	25.025	79.252	1.57837	0.69795
2	375.2	122.6	252.6	252.6	24.758	78.408	1.59536	0.67988
4	563.6	157.2	406.4	406.4	24.368	77.171	1.62094	0.65336
1	483.2	118.9	364.3	364.3	24.475	77.509	1.61386	0.66062
0.25	356.9	82.3	274.5	274.5	24.703	78.231	1.59896	0.67609
0.5	383.1	89.8	293.4	293.4	24.655	78.080	1.60206	0.67285
1	420.6	104.4	316.2	316.2	24.597	77.896	1.60584	0.66891
2	479.5	127.9	351.6	351.6	24.507	77.612	1.61173	0.66281
4	579.5	158.5	421.0	421.0	24.331	77.054	1.62340	0.65086
8	882.6	195.7	686.9	686.9	23.655	74.914	1.66976	0.60502
16	1328.0	244.2	1083.7	1083.7	22.647	71.722	1.74407	0.53664
4	1205.5	180.9	1024.6	1024.6	22.797	72.198	1.73258	0.54682
1	1044.5	135.2	909.3	909.3	23.090	73.125	1.71061	0.56669
0.25	867.9	99.0	768.8	768.8	23.447	74.255	1.68458	0.59091

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 Tested By 129-07-0411 Date 3/3/2022 Input Checked By GEM Date 3/15/2022

DCN: CT-24E Date: 5/3/12 Revision: 6

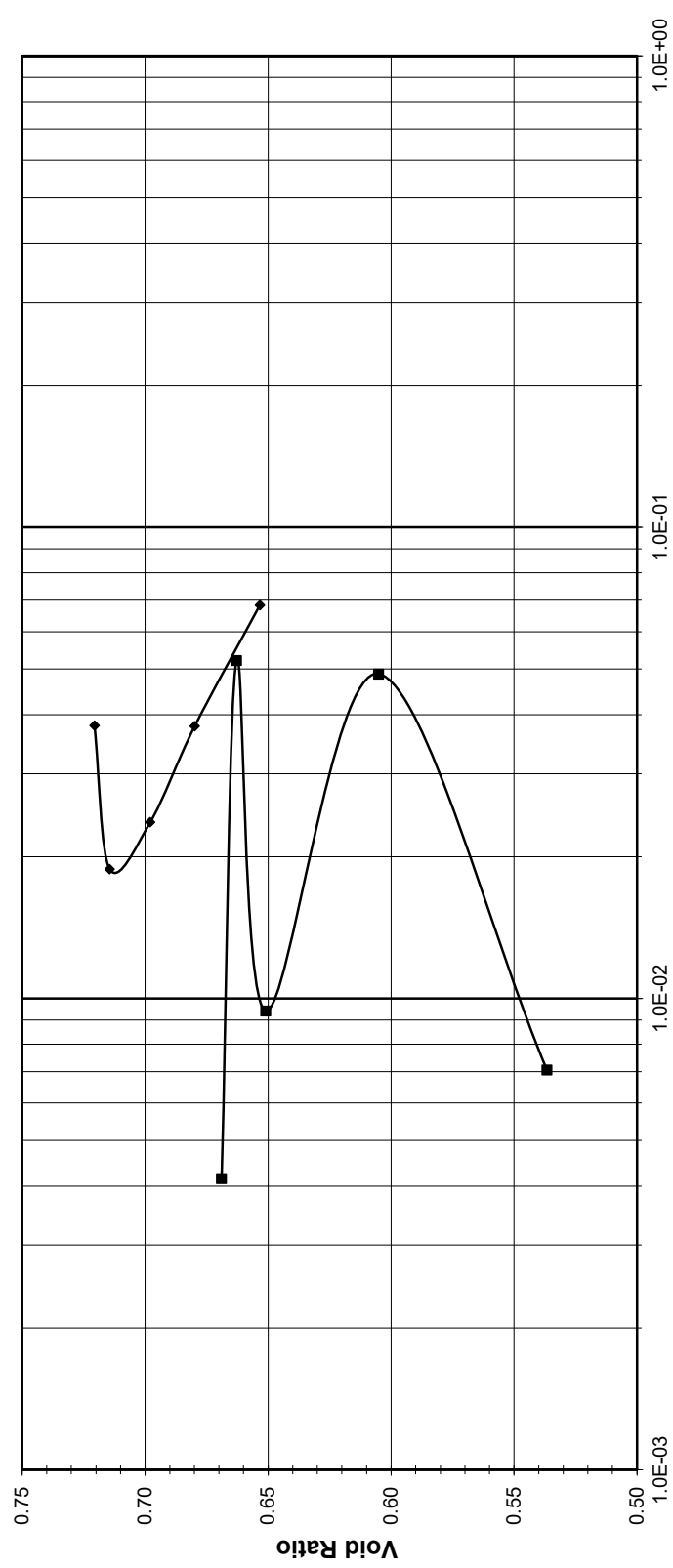
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ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	Wood, PLC	Boring No.	EB1-A	Station:	20+21 -L-
Client Reference	B5721-Replace Bridge No. 124	Depth (ft)	3.0-5.0	Offset:	22' LT
Project No.	R-2022-047-001	Sample No.	ST-1		
Lab ID	R-2022-047-001-001	Visual Description	Brown Lean Clay with Sand		

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Coefficient of Consolidation (cm²/sec)

—●— First Cycle Up - - - ■ - - - Second Cycle Up

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Tested By 129-07-0411 Date 3/3/2022 Input Checked By GEM Date 3/15/2022

DCN: CT-24E Date: 5/3/12 Revision: 6

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ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	Wood, PLC	Boring No.	EB1-A	Station:	20+21 -L-
Client Reference	B5721-Replace Bridge No. 124	Depth (ft)	3.0-5.0	Offset:	22' LT
Project No.	R-2022-047-001	Sample No.	ST-1		
Lab ID	R-2022-047-001-001	Visual Description	Brown Lean Clay with Sand		

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Consolidometer No. R470

1 Division = 0.0001 (in.)

Sample Properties

	Initial	Final
Water Content		
Tare Number	719	479
Wt. Tare & WS (g)	401.49	248.19
Wt. Tare & DS (g)	346.12	223.40
Wt. Water (g)	55.37	24.79
Wt. Tare (g)	91.40	98.94
Wt. DS (g)	254.72	124.46
Water Content (%)	21.74	19.92

Sample Parameters	
Sample Diameter (in)	2.5
Sample Height (in)	1.000
Sample Volume (cc)	80.44
Wt. of Wet Sample + Ring (g)	366.40
Wt. of Ring (g)	214.12
Wt. of Wet Sample (g)	152.28
Wet Density (pcf)	118.13
Wet Density (g/cc)	1.89
Water Content (%)	21.74
Wt. of Dry Sample (g)	125.09
Dry Density (pcf)	97.04
Dry Density (g/cc)	1.56
Void Ratio	0.7234
Saturation (%)	80.53
Specific Gravity	2.68

Load Increment (tsf)	Dial Reading @ t ₅₀ (div)	Machine Deflection (div)	C _v Test Data Summary	
			Corrected Dial Reading @ t ₅₀ (div)	Sample Height @ t ₅₀ (cm)
0 - 0.25	30.9	45.2	-14.3	2.544
0.25 - 0.5	90.9	64.6	26.3	2.533
0.5 - 1.0	178.5	90.0	88.5	2.518
1.0 - 2.0	305.8	122.6	183.2	2.493
2.0 - 4.0	453.2	157.2	296.0	2.465
4.0 - 1.0	NA	118.9	NA	NA
1.0 - 0.25	NA	82.3	NA	NA
0.25 - 0.5	NA	89.8	NA	NA
0.5 - 1.0	407.1	104.4	302.6	2.463
1.0 - 2.0	453.1	127.9	325.2	2.457
2.0 - 4.0	542.4	158.5	383.9	2.443
4.0 - 8.0	689.7	195.7	493.9	2.415
8.0 - 16.0	1120.7	244.2	876.4	2.317
16.0 - 4.0	NA	180.9	NA	NA
4.0 - 1.0	NA	135.2	NA	NA
1.0 - 0.25	NA	99.0	NA	NA

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Tested By 129-07-0411 Date 3/3/2022 Input Checked By GEM Date 3/15/2022

DCN: CT-24E Date: 5/3/12 Revision: 6

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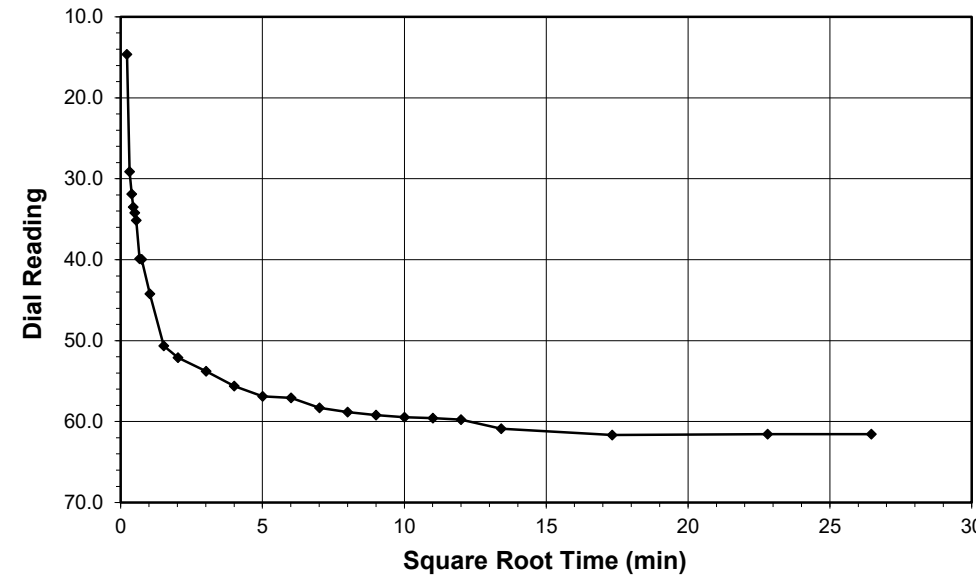
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AASHTO T-216

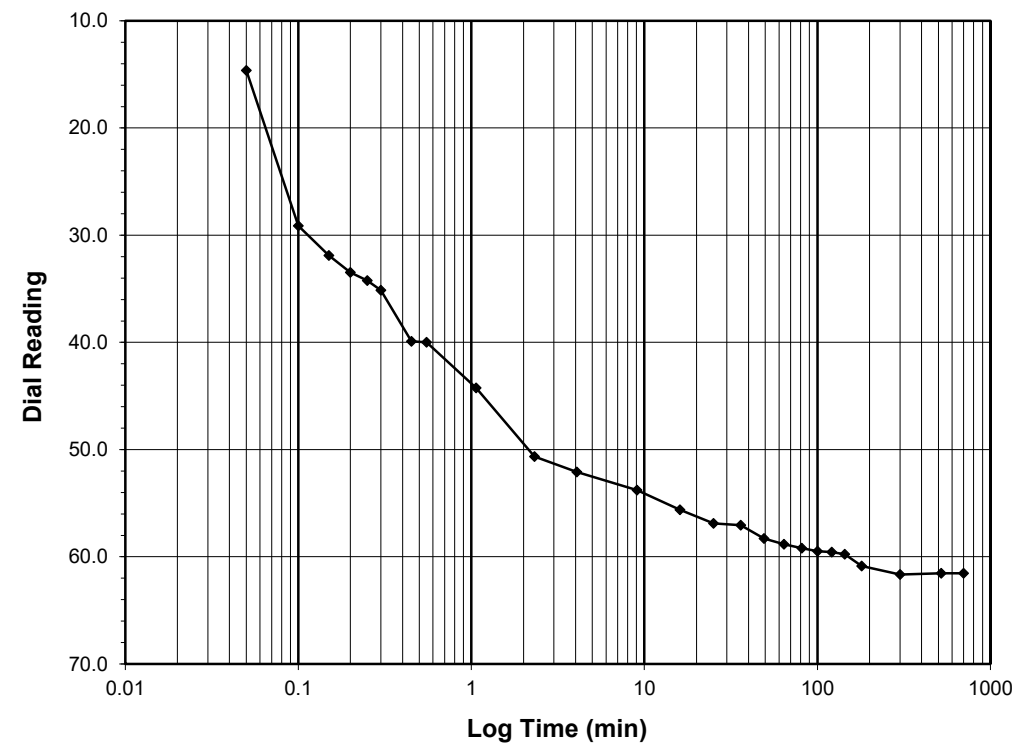
Client Wood, PLC Boring No. EB1-A Station: 20+21 -L-
 Client Project B5721-Replace Bridge No. 124 Depth (ft) 3.0-5.0 Offset: 22' LT
 Project No. R-2022-047-001 Sample No. ST-1
 Lab ID R-2022-047-001-001 Visual Description Brown Lean Clay with Sand

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.0-0.25
 Final Reading (div) 61.5
 Consolidometer No. R470
 1 Division (in) 0.0001
 Start Date 3/3/2022
 Start Time 9:50:27

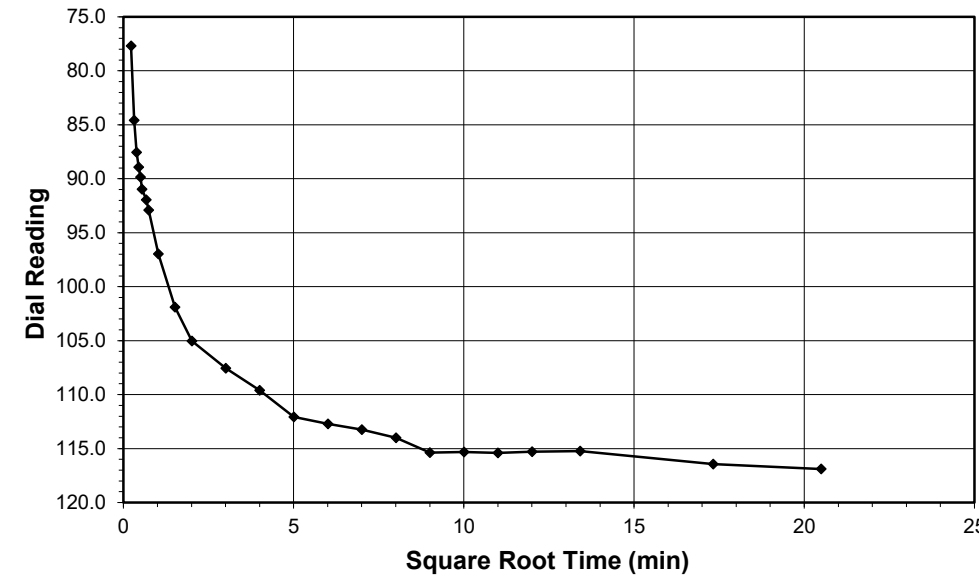
Elapsed Time (min)	Dial Reading (div)
Initial	0.0
0.05	14.6
0.10	29.1
0.15	31.9
0.20	33.5
0.25	34.2
0.30	35.1
0.45	39.9
0.55	40.0
1.07	44.2
2.32	50.6
4.07	52.1
9.07	53.8
16.07	55.6
25.07	56.9
36.07	57.1
49.07	58.3
64.07	58.8
81.07	59.2
100.07	59.5
121.07	59.6
144.07	59.8
180.07	60.9
300.07	61.7
520.07	61.6
700.07	61.5



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

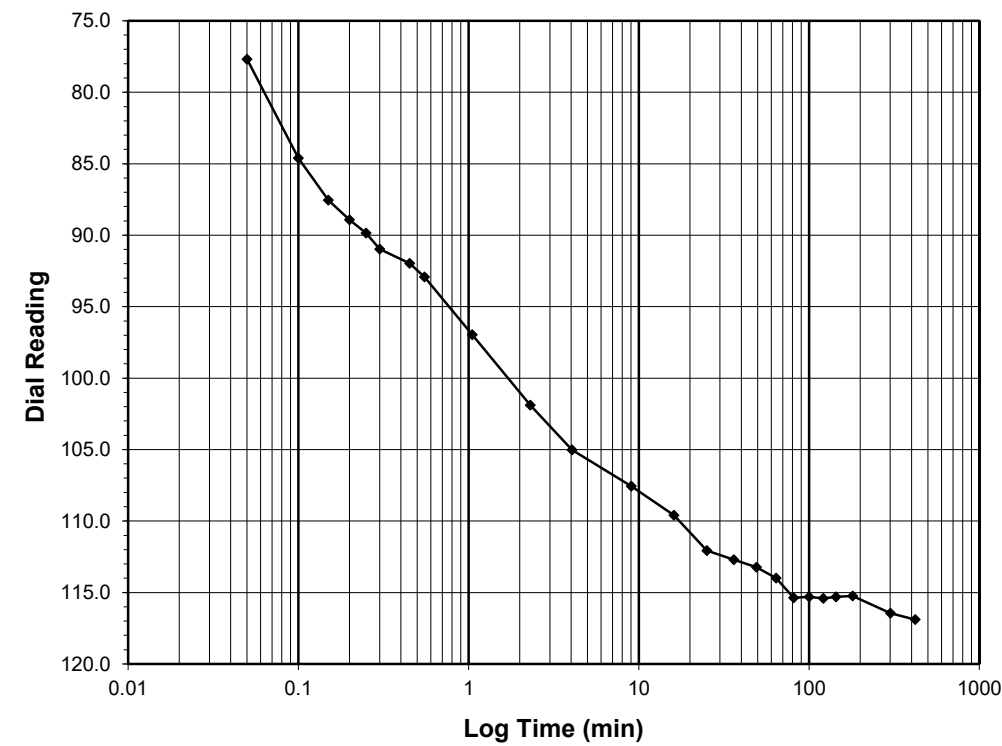
Client Wood, PLC Boring No. EB1-A Station: 20+21 -L-
 Client Project B5721-Replace Bridge No. 124 Depth (ft) 3.0-5.0 Offset: 22' LT
 Project No. R-2022-047-001 Sample No. ST-1
 Lab ID R-2022-047-001-001 Visual Description Brown Lean Clay with Sand

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.25-0.5
 Final Reading (div) 116.9
 Consolidometer No. R470
 1 Division (in) 0.0001
 Start Date 3/3/2022
 Start Time 21:50:44

Elapsed Time (min)	Dial Reading (div)
Initial	61.5
0.05	77.7
0.10	84.6
0.15	87.5
0.20	88.9
0.25	89.9
0.30	91.0
0.45	92.0
0.55	92.9
1.05	97.0
2.30	101.9
4.05	105.0
9.05	107.6
16.05	109.6
25.07	112.1
36.07	112.7
49.07	113.2
64.07	114.0
81.07	115.4
100.07	115.3
121.07	115.4
144.07	115.3
180.07	115.2
300.07	116.4
420.00	116.9



Tested By 129-07-0411 Date 3/3/2022 Checked By GEM Date 3/15/2022

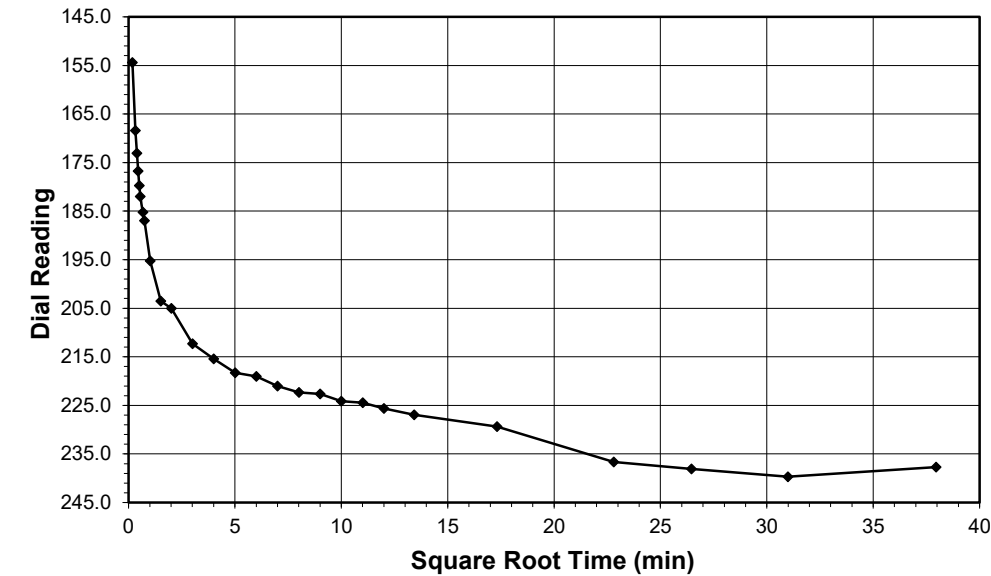
Tested By 129-07-0411 Date 3/3/2022 Checked By GEM Date 3/15/2022



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

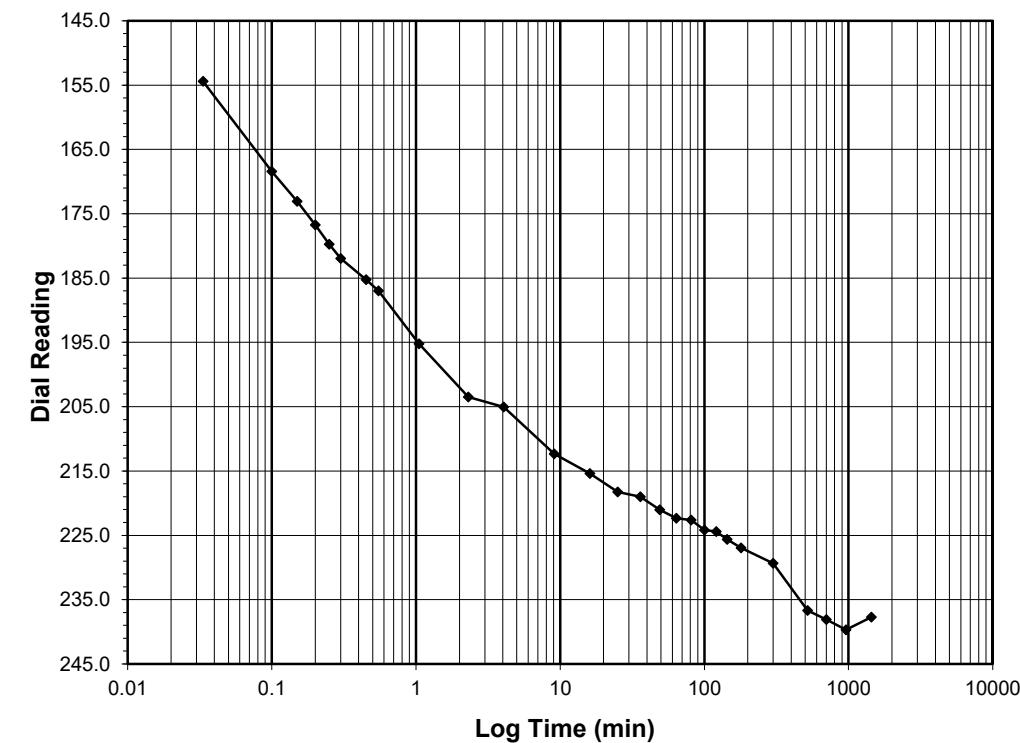
Client Wood, PLC Boring No. EB1-A Station: 20+21 -L-
 Client Project B5721-Replace Bridge No. 124 Depth (ft) 3.0-5.0 Offset: 22' LT
 Project No. R-2022-047-001 Sample No. ST-1
 Lab ID R-2022-047-001-001 Visual Description Brown Lean Clay with Sand

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.5-1.0
 Final Reading (div) 237.7
 Consolidometer No. R470
 1 Division (in) 0.0001
 Start Date 3/4/2022
 Start Time 4:50:44

Elapsed Time (min)	Dial Reading (div)
Initial	116.9
0.03	154.4
0.10	168.4
0.15	173.1
0.20	176.7
0.25	179.8
0.30	182.0
0.45	185.3
0.55	187.0
1.05	195.2
2.30	203.5
4.05	205.0
9.07	212.3
16.07	215.4
25.07	218.3
36.07	219.0
49.07	221.0
64.07	222.3
81.07	222.6
100.07	224.2
121.07	224.4
144.07	225.6
180.07	227.0
300.07	229.3
520.07	236.7
700.07	238.1
960.07	239.7
1440.07	237.7



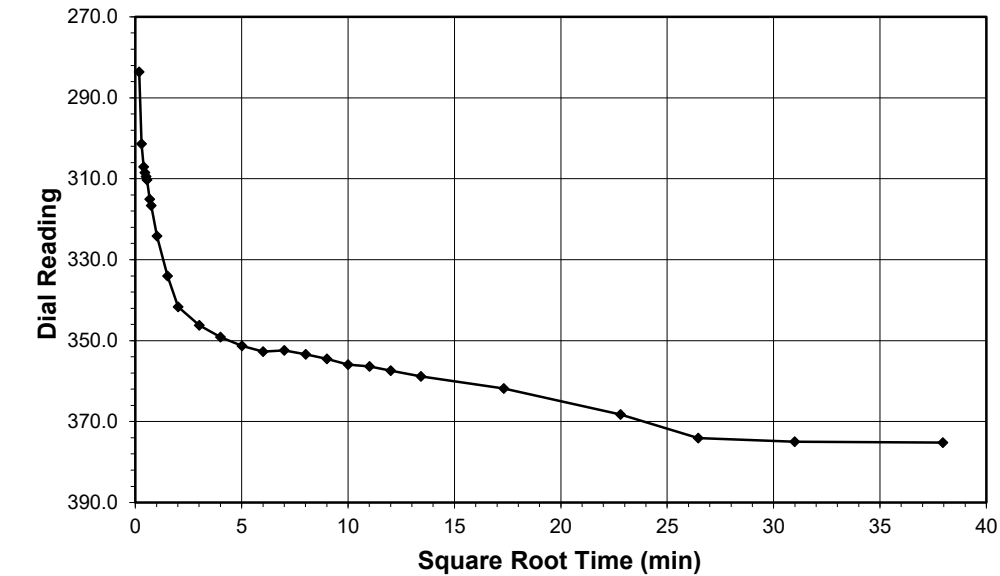
Tested By 129-07-0411 Date 3/4/2022 Checked By GEM Date 3/15/2022



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

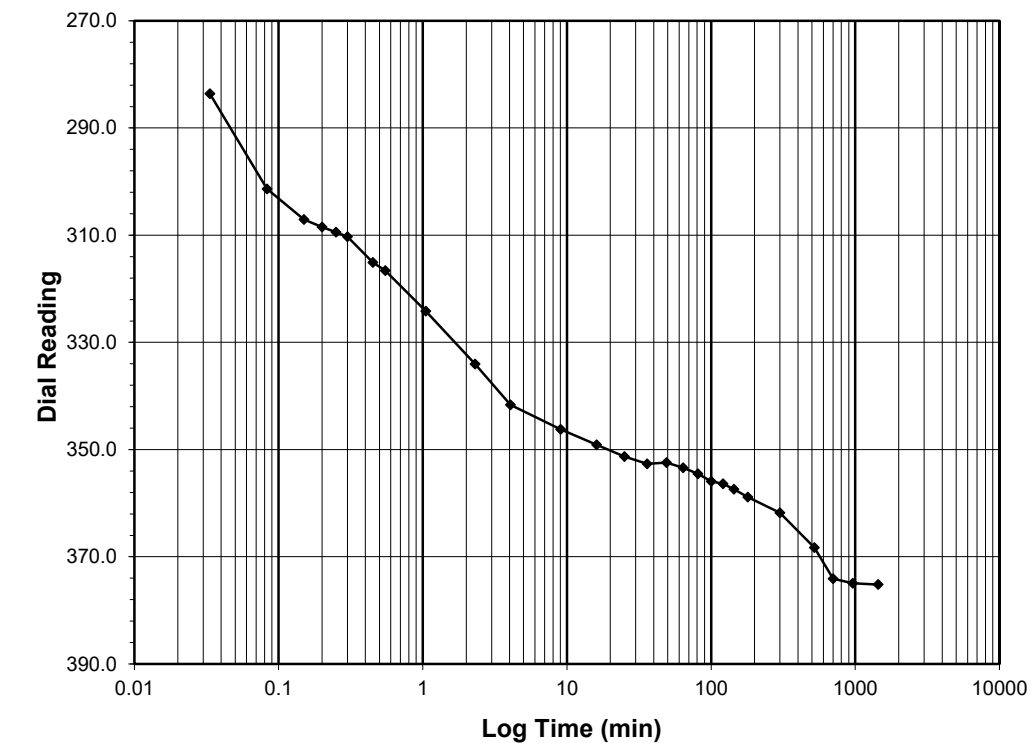
Client Wood, PLC Boring No. EB1-A Station: 20+21 -L-
 Client Project B5721-Replace Bridge No. 124 Depth (ft) 3.0-5.0 Offset: 22' LT
 Project No. R-2022-047-001 Sample No. ST-1
 Lab ID R-2022-047-001-001 Visual Description Brown Lean Clay with Sand

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-2.0
 Final Reading (div) 375.2
 Consolidometer No. R470
 1 Division (in) 0.0001
 Start Date 3/5/2022
 Start Time 4:51:07

Elapsed Time (min)	Dial Reading (div)
Initial	237.7
0.03	283.6
0.08	301.4
0.15	307.1
0.20	308.5
0.25	309.4
0.30	310.3
0.45	315.1
0.55	316.6
1.05	324.2
2.30	334.0
4.05	341.7
9.05	346.2
16.05	349.1
25.05	351.3
36.05	352.7
49.05	352.4
64.05	353.4
81.05	354.5
100.07	355.9
121.07	356.4
144.07	357.4
180.07	358.9
300.07	361.8
520.07	368.3
700.07	374.1
960.07	374.9
1440.07	375.2



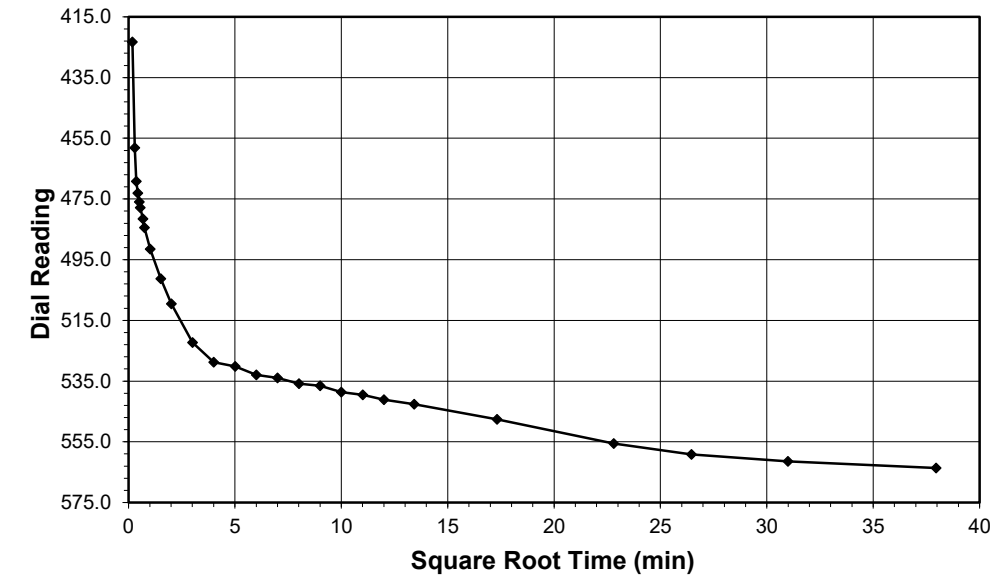
Tested By 129-07-0411 Date 3/5/2022 Checked By GEM Date 3/15/2022



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

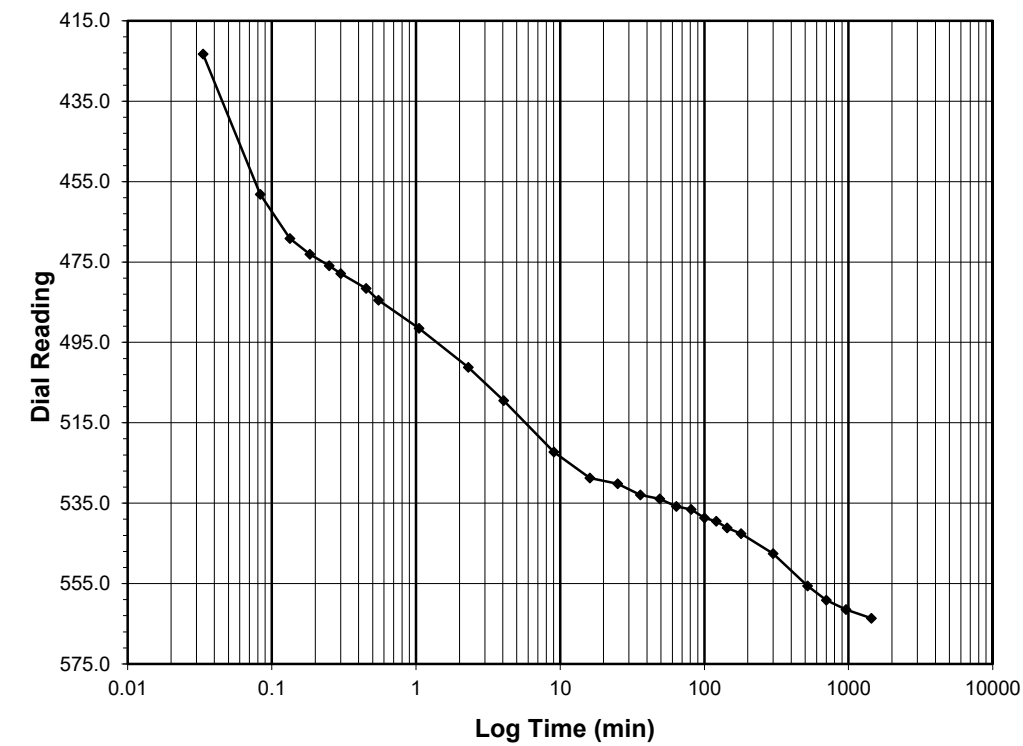
Client Wood, PLC Boring No. EB1-A Station: 20+21 -L-
 Client Project B5721-Replace Bridge No. 124 Depth (ft) 3.0-5.0 Offset: 22' LT
 Project No. R-2022-047-001 Sample No. ST-1
 Lab ID R-2022-047-001-001 Visual Description Brown Lean Clay with Sand

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 2.0-4.0
 Final Reading (div) 563.6
 Consolidometer No. R470
 1 Division (in) 0.0001
 Start Date 3/6/2022
 Start Time 4:51:26

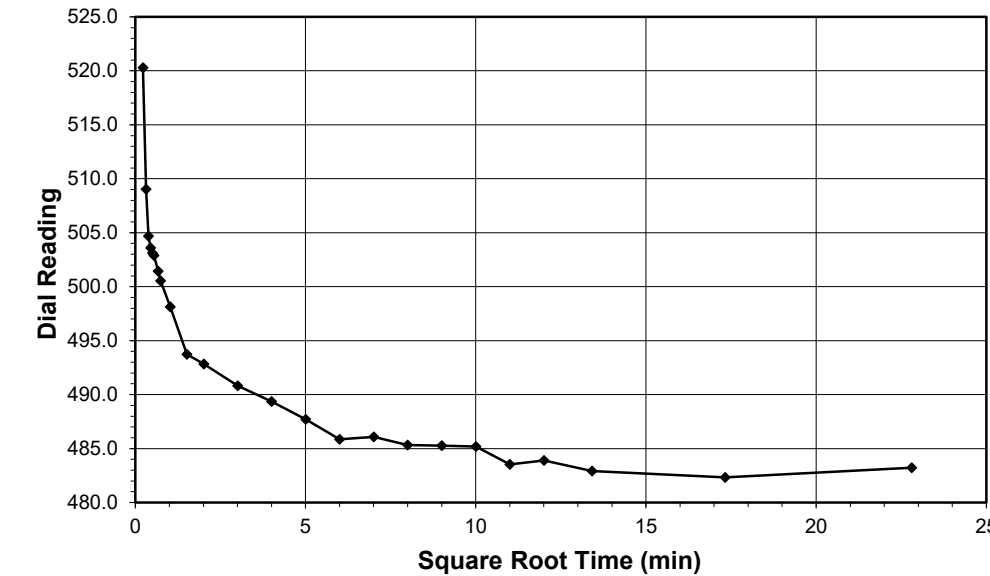
Elapsed Time (min)	Dial Reading (div)
Initial	375.2
0.03	423.3
0.08	458.2
0.13	469.2
0.18	473.1
0.25	475.9
0.30	477.9
0.45	481.6
0.55	484.5
1.05	491.5
2.30	501.2
4.05	509.5
9.05	522.3
16.05	528.8
25.05	530.2
36.05	532.9
49.05	534.0
64.05	535.8
81.05	536.5
100.07	538.7
121.07	539.5
144.07	541.1
180.07	542.6
300.07	547.6
520.07	555.6
700.07	559.2
960.07	561.4
1440.07	563.6



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

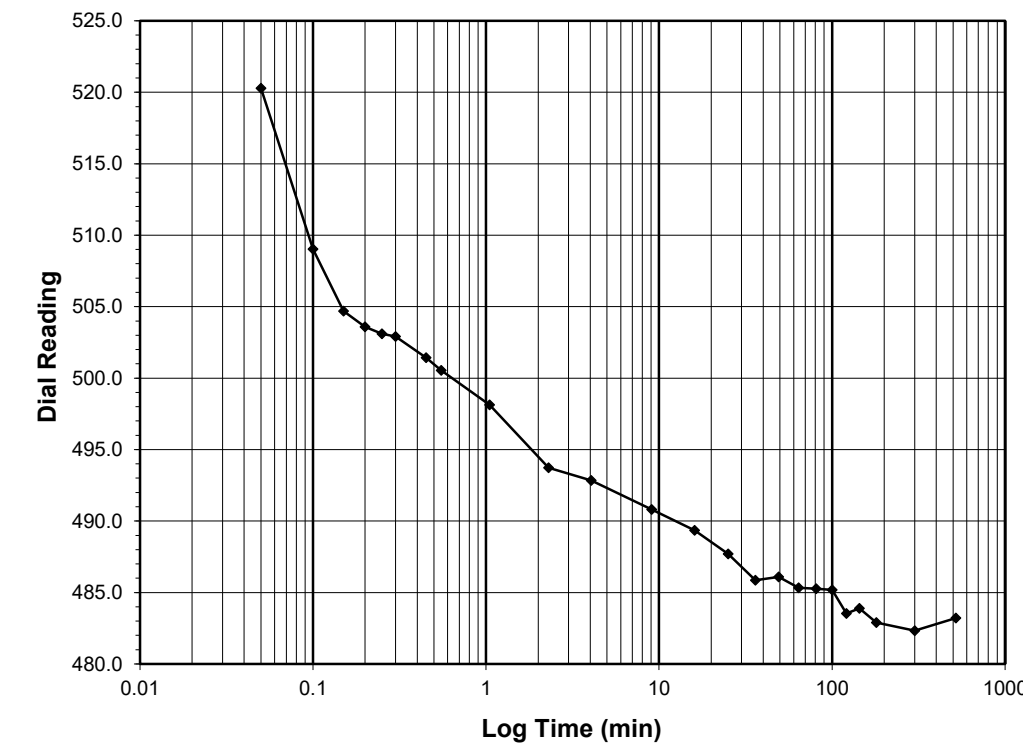
Client Wood, PLC Boring No. EB1-A Station: 20+21 -L-
 Client Project B5721-Replace Bridge No. 124 Depth (ft) 3.0-5.0 Offset: 22' LT
 Project No. R-2022-047-001 Sample No. ST-1
 Lab ID R-2022-047-001-001 Visual Description Brown Lean Clay with Sand

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 4.0-1.0
 Final Reading (div) 483.2
 Consolidometer No. R470
 1 Division (in) 0.0001
 Start Date 3/7/2022
 Start Time 4:51:44

Elapsed Time (min)	Dial Reading (div)
Initial	563.6
0.05	520.3
0.10	509.0
0.15	504.7
0.20	503.6
0.25	503.1
0.30	502.9
0.45	501.4
0.55	500.5
1.05	498.1
2.30	493.7
4.05	492.8
9.05	490.8
16.05	489.4
25.05	487.7
36.05	485.9
49.05	486.1
64.05	485.3
81.05	485.3
100.07	485.2
121.07	483.5
144.07	483.9
180.07	482.9
300.07	482.3
520.07	483.2



Tested By 129-07-0411 Date 3/6/2022 Checked By GEM Date 3/15/2022

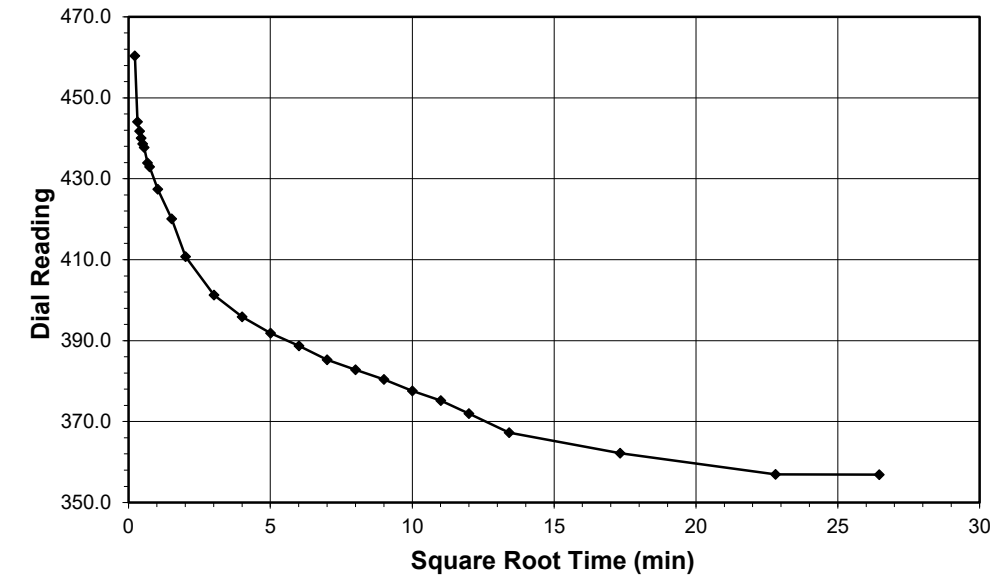
Tested By 129-07-0411 Date 3/7/2022 Checked By GEM Date 3/15/2022



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

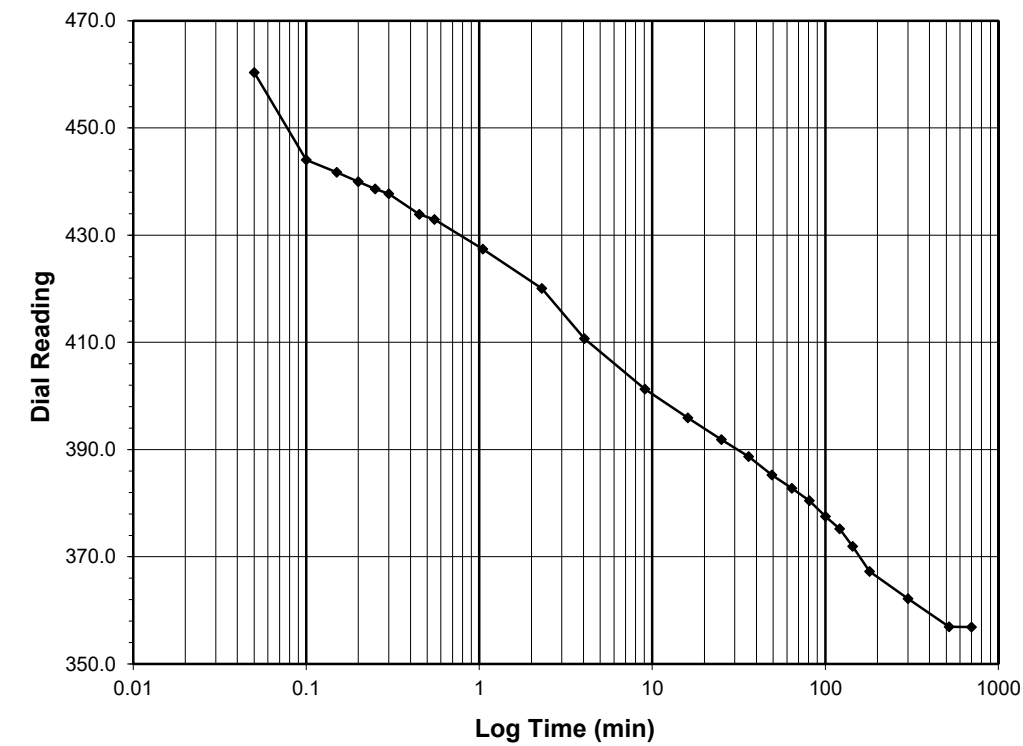
Client Wood, PLC Boring No. EB1-A Station: 20+21 -L-
 Client Project B5721-Replace Bridge No. 124 Depth (ft) 3.0-5.0 Offset: 22' LT
 Project No. R-2022-047-001 Sample No. ST-1
 Lab ID R-2022-047-001-001 Visual Description Brown Lean Clay with Sand

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-0.25
 Final Reading (div) 356.9
 Consolidometer No. R470
 1 Division (in) 0.0001
 Start Date 3/7/2022
 Start Time 16:52:11

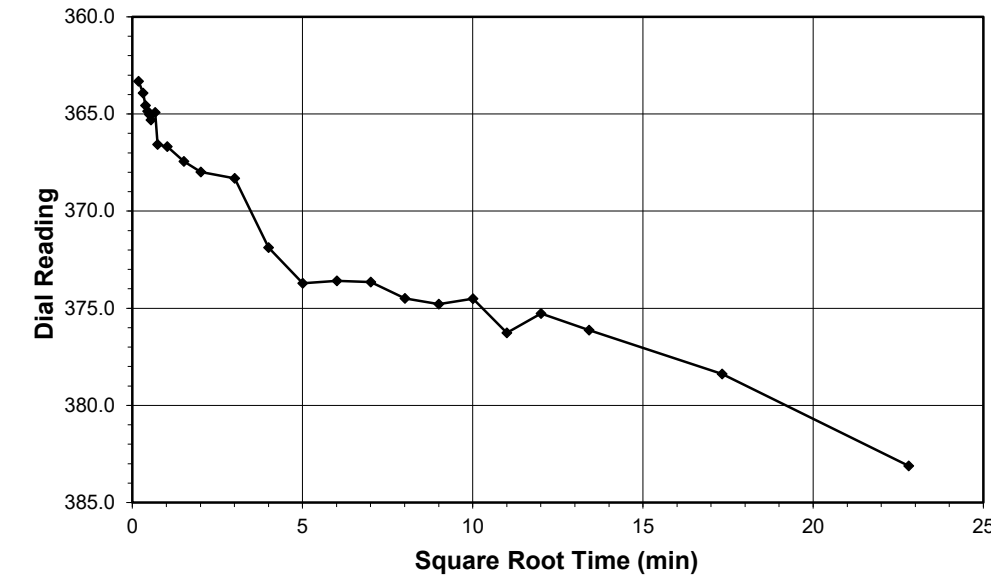
Elapsed Time (min)	Dial Reading (div)
Initial	483.2
0.05	460.4
0.10	444.1
0.15	441.7
0.20	440.0
0.25	438.6
0.30	437.7
0.45	433.9
0.55	432.9
1.05	427.4
2.30	420.1
4.05	410.7
9.05	401.3
16.05	395.9
25.05	391.8
36.05	388.7
49.05	385.3
64.05	382.8
81.05	380.4
100.05	377.6
121.05	375.2
144.07	372.0
180.07	367.3
300.07	362.2
520.07	356.9
700.07	356.9



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

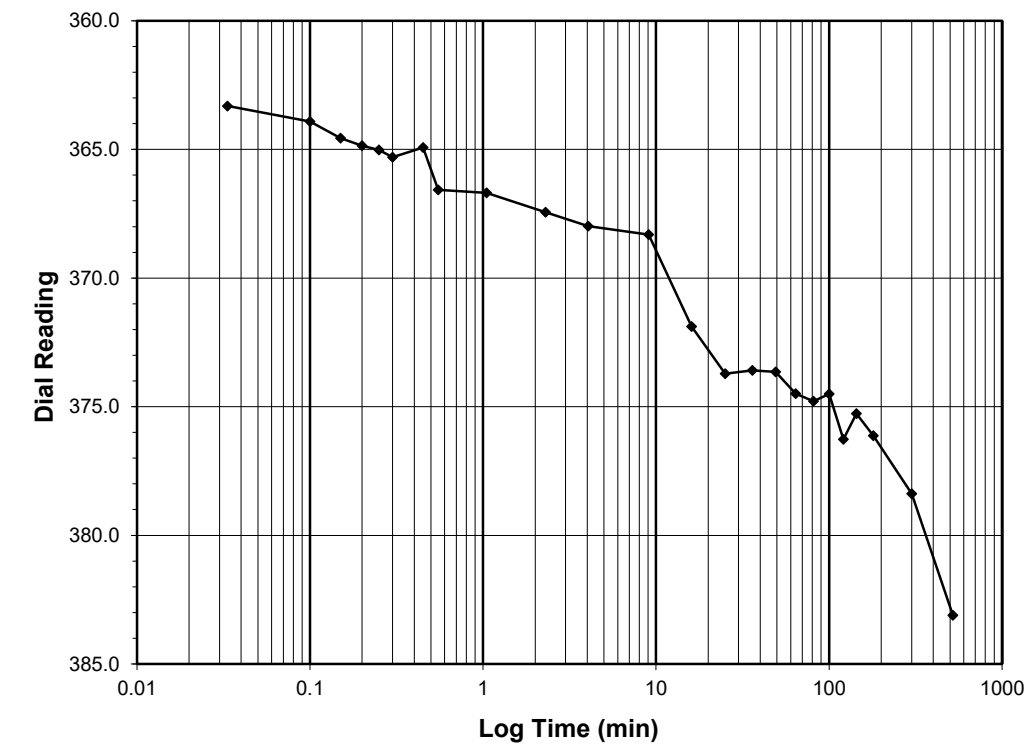
Client Wood, PLC Boring No. EB1-A Station: 20+21 -L-
 Client Project B5721-Replace Bridge No. 124 Depth (ft) 3.0-5.0 Offset: 22' LT
 Project No. R-2022-047-001 Sample No. ST-1
 Lab ID R-2022-047-001-001 Visual Description Brown Lean Clay with Sand

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.25-0.5
 Final Reading (div) 383.1
 Consolidometer No. R470
 1 Division (in) 0.0001
 Start Date 3/8/2022
 Start Time 4:52:15

Elapsed Time (min)	Dial Reading (div)
Initial	356.9
0.03	363.3
0.10	363.9
0.15	364.6
0.20	364.8
0.25	365.0
0.30	365.3
0.45	364.9
0.55	366.6
1.05	366.7
2.30	367.4
4.05	368.0
9.05	368.3
16.05	371.9
25.07	373.7
36.07	373.6
49.07	373.7
64.07	374.5
81.07	374.8
100.07	374.5
121.07	376.3
144.07	375.3
180.07	376.1
300.07	378.4
520.07	383.1



Tested By 129-07-0411 Date 3/7/2022 Checked By GEM Date 3/15/2022

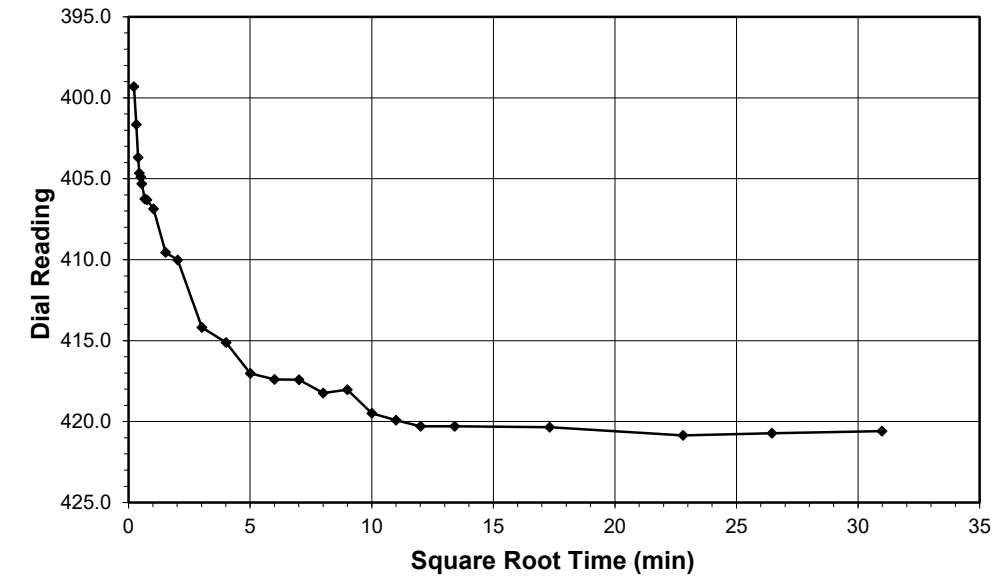
Tested By 129-07-0411 Date 3/8/2022 Checked By GEM Date 3/15/2022



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Wood, PLC Boring No. EB1-A Station: 20+21 -L-
 Client Project B5721-Replace Bridge No. 124 Depth (ft) 3.0-5.0 Offset: 22' LT
 Project No. R-2022-047-001 Sample No. ST-1
 Lab ID R-2022-047-001-001 Visual Description Brown Lean Clay with Sand

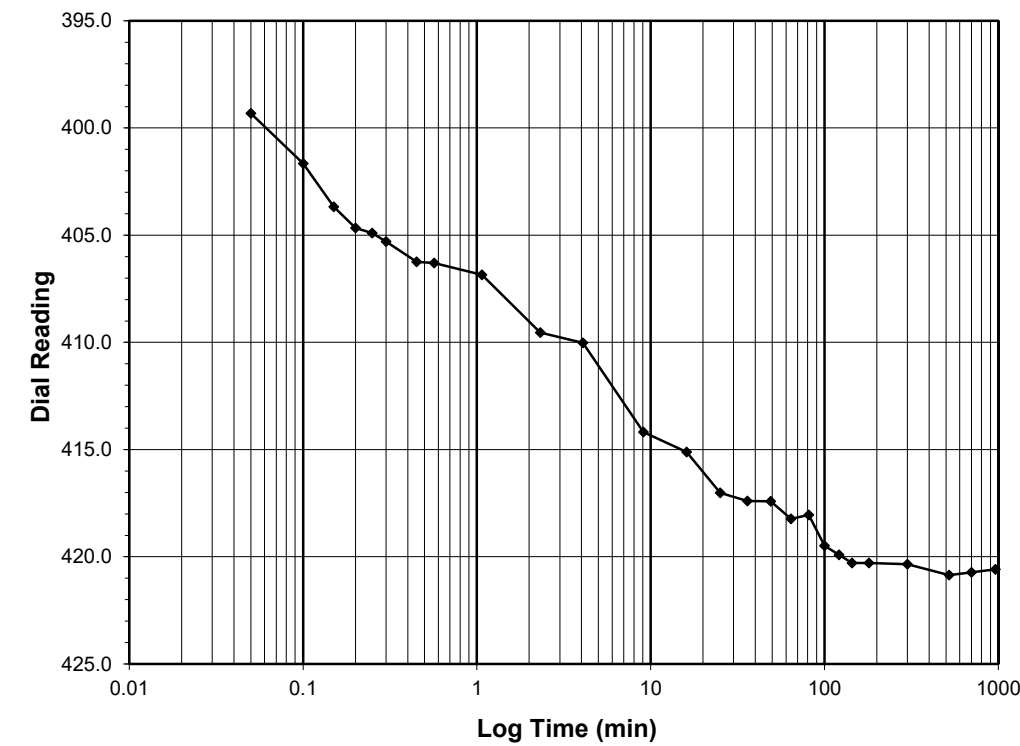
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.5-1.0
Final Reading (div) 420.6
 Consolidometer No. **R470**
 1 Division (in) 0.0001

Start Date 3/8/2022
 Start Time 13:32:29

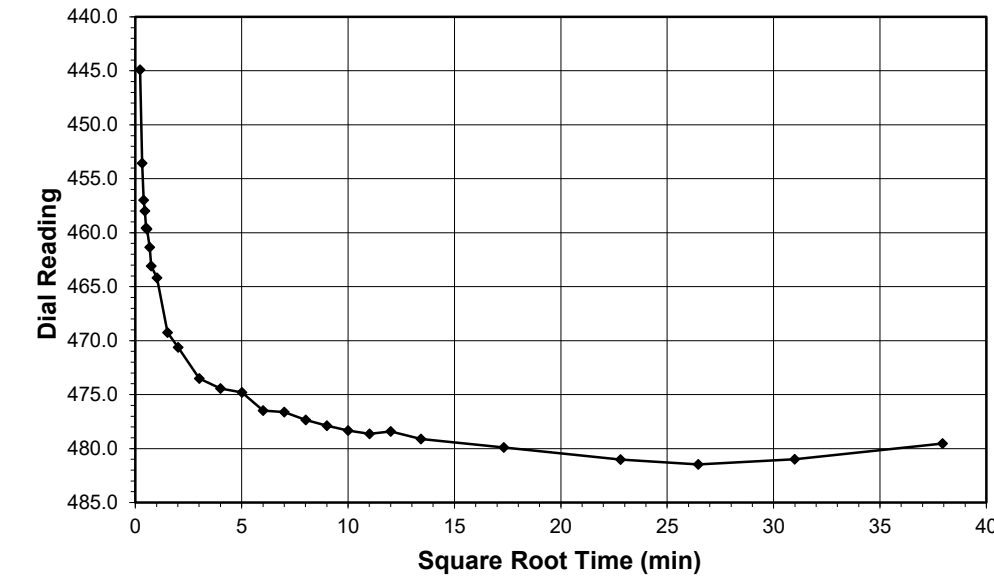
Elapsed Time (min)	Dial Reading (div)
Initial	383.1
0.05	399.3
0.10	401.7
0.15	403.7
0.20	404.7
0.25	404.9
0.30	405.3
0.45	406.2
0.57	406.3
1.07	406.9
2.32	409.5
4.07	410.0
9.07	414.2
16.07	415.1
25.07	417.0
36.07	417.4
49.07	417.4
64.07	418.2
81.07	418.0
100.07	419.5
121.07	419.9
144.07	420.3
180.07	420.3
300.07	420.3
520.07	420.9
700.07	420.7
960.07	420.6



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Wood, PLC Boring No. EB1-A Station: 20+21 -L-
 Client Project B5721-Replace Bridge No. 124 Depth (ft) 3.0-5.0 Offset: 22' LT
 Project No. R-2022-047-001 Sample No. ST-1
 Lab ID R-2022-047-001-001 Visual Description Brown Lean Clay with Sand

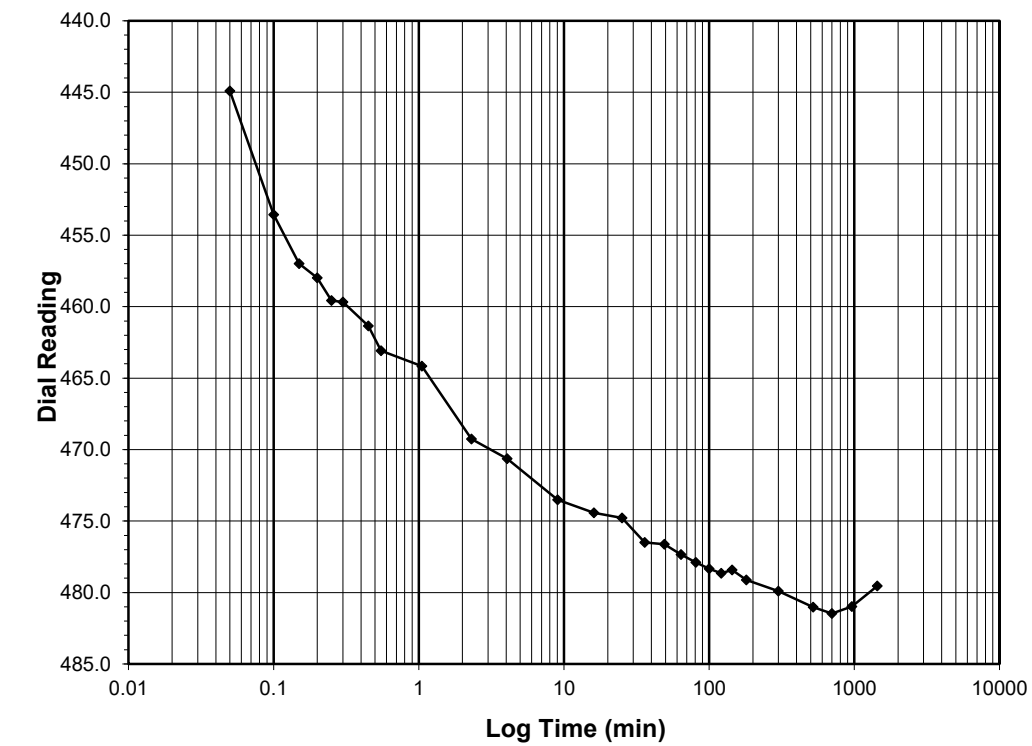
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-2.0
Final Reading (div) 479.5
 Consolidometer No. **R470**
 1 Division (in) 0.0001

Start Date 3/9/2022
 Start Time 7:52:41

Elapsed Time (min)	Dial Reading (div)
Initial	420.6
0.05	444.9
0.10	453.6
0.15	457.0
0.20	458.0
0.25	459.6
0.30	459.7
0.45	461.3
0.55	463.1
1.05	464.2
2.30	469.3
4.05	470.6
9.05	473.5
16.07	474.4
25.07	474.8
36.07	476.5
49.07	476.6
64.07	477.3
81.07	477.9
100.07	478.3
121.07	478.6
144.07	478.4
180.07	479.1
300.07	479.9
520.07	481.0
700.07	481.5
960.07	481.0
1440.00	479.5



Tested By 129-07-0411 Date 3/8/2022 Checked By GEM Date 3/15/2022

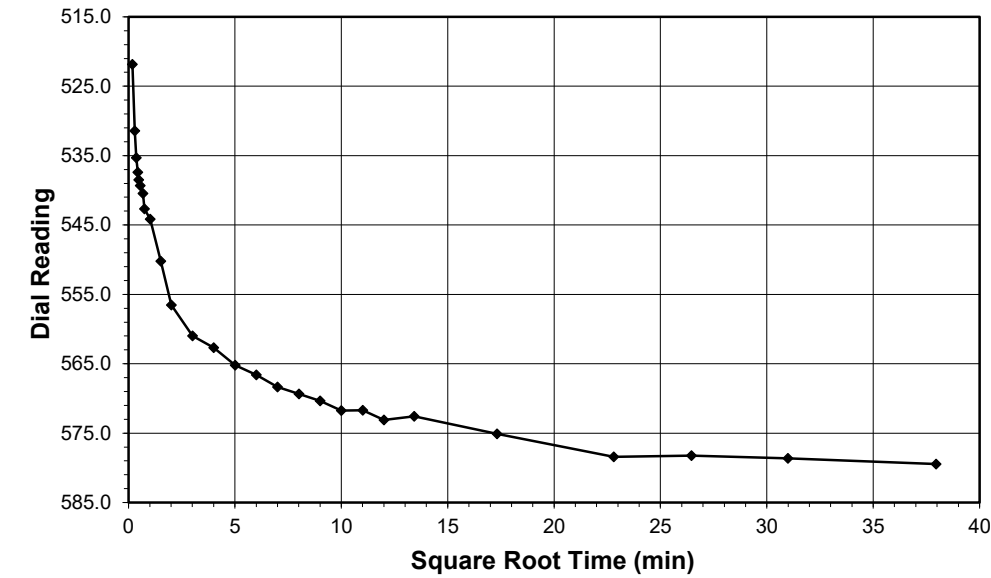
Tested By 129-07-0411 Date 3/9/2022 Checked By GEM Date 3/15/2022



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

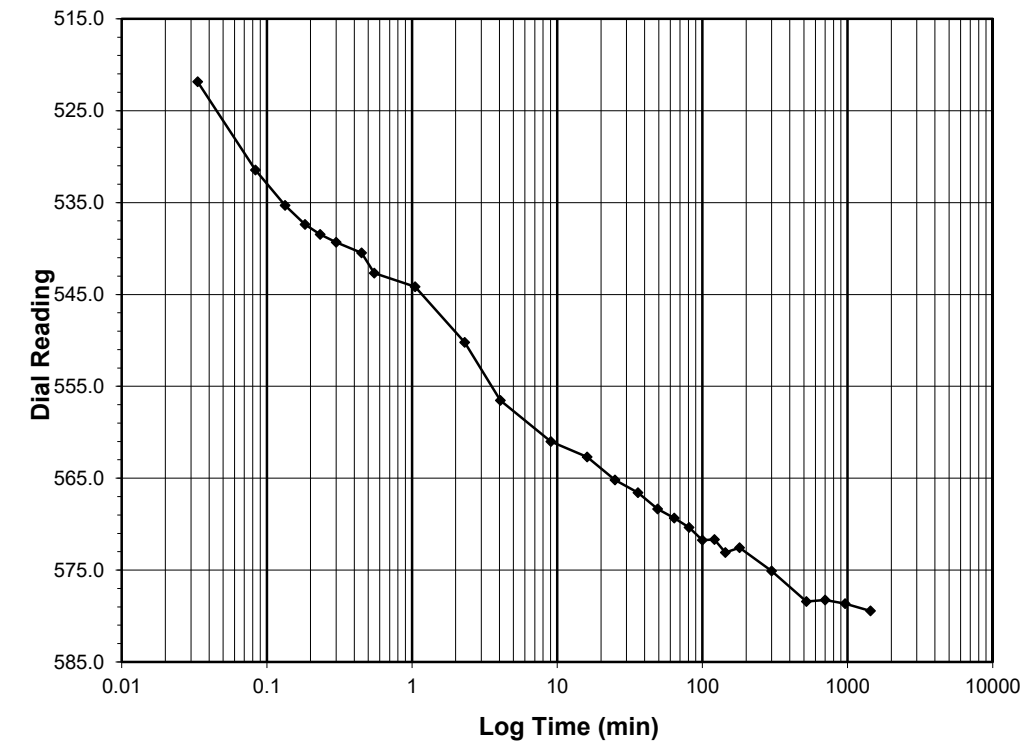
Client Wood, PLC Boring No. EB1-A Station: 20+21 -L-
 Client Project B5721-Replace Bridge No. 124 Depth (ft) 3.0-5.0 Offset: 22' LT
 Project No. R-2022-047-001 Sample No. ST-1
 Lab ID R-2022-047-001-001 Visual Description Brown Lean Clay with Sand

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 2.0-4.0
 Final Reading (div) 579.5
 Consolidometer No. R470
 1 Division (in) 0.0001
 Start Date 3/10/2022
 Start Time 7:52:41

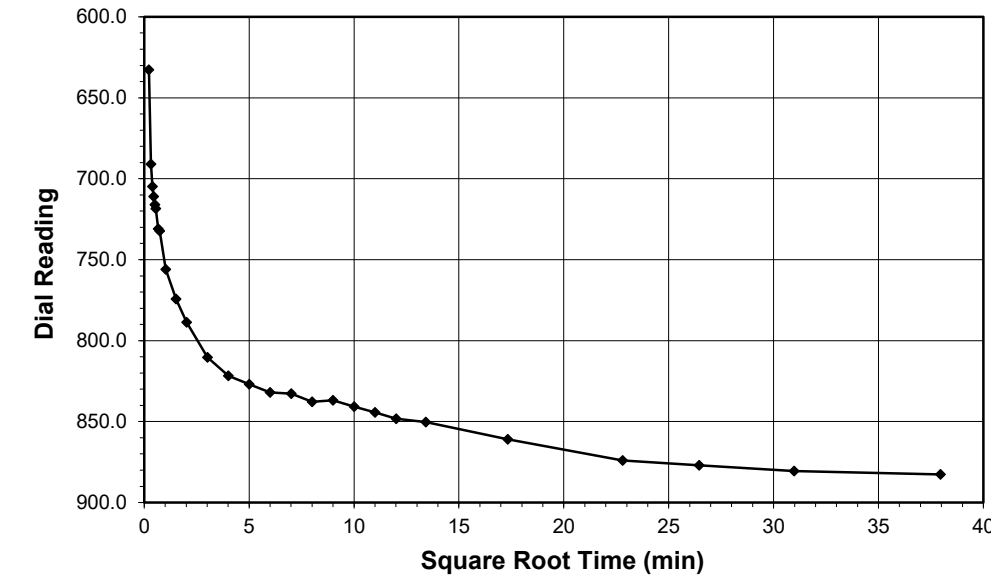
Elapsed Time (min)	Dial Reading (div)
Initial	479.5
0.03	521.9
0.08	531.4
0.13	535.3
0.18	537.4
0.23	538.5
0.30	539.3
0.45	540.5
0.55	542.7
1.05	544.2
2.30	550.2
4.05	556.5
9.05	561.0
16.05	562.7
25.05	565.2
36.05	566.6
49.05	568.3
64.05	569.3
81.07	570.4
100.07	571.7
121.07	571.7
144.07	573.1
180.07	572.6
300.07	575.1
520.07	578.4
700.07	578.2
960.07	578.6
1440.07	579.5



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

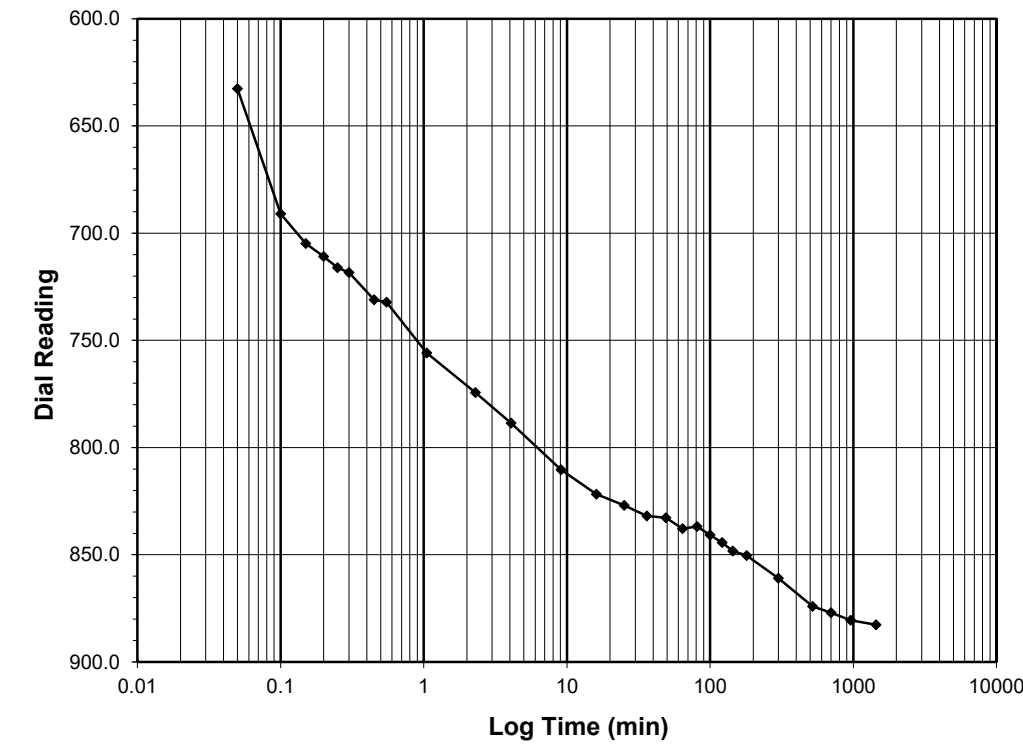
Client Wood, PLC Boring No. EB1-A Station: 20+21 -L-
 Client Project B5721-Replace Bridge No. 124 Depth (ft) 3.0-5.0 Offset: 22' LT
 Project No. R-2022-047-001 Sample No. ST-1
 Lab ID R-2022-047-001-001 Visual Description Brown Lean Clay with Sand

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 4.0-8.0
 Final Reading (div) 882.6
 Consolidometer No. R470
 1 Division (in) 0.0001
 Start Date 3/11/2022
 Start Time 7:53:11

Elapsed Time (min)	Dial Reading (div)
Initial	579.5
0.05	632.6
0.10	691.0
0.15	704.8
0.20	710.9
0.25	716.0
0.30	718.4
0.45	731.0
0.55	732.2
1.05	755.9
2.30	774.3
4.07	788.6
9.07	810.3
16.07	821.7
25.07	826.9
36.07	831.9
49.07	832.7
64.07	837.8
81.07	836.8
100.07	840.8
121.07	844.3
144.07	848.2
180.07	850.3
300.07	861.0
520.07	874.1
700.07	877.0
960.07	880.5
1440.08	882.6



Tested By 129-07-0411 Date 3/10/2022 Checked By GEM Date 3/15/2022

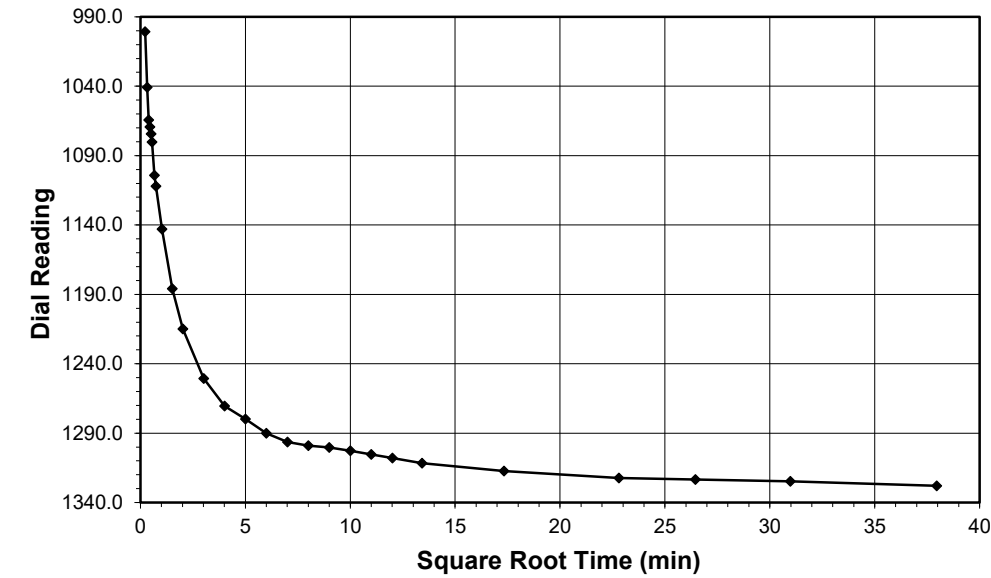
Tested By 129-07-0411 Date 3/11/2022 Checked By GEM Date 3/15/2022

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



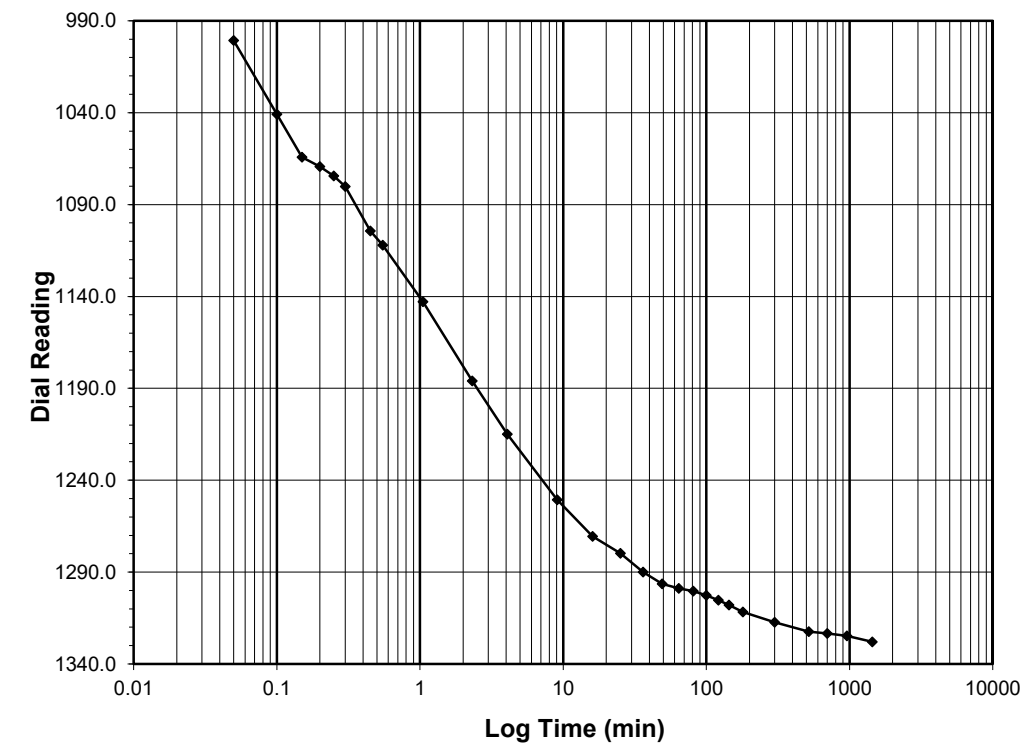
Client Wood, PLC Boring No. EB1-A Station: 20+21 -L-
 Client Project B5721-Replace Bridge No. 124 Depth (ft) 3.0-5.0 Offset: 22' LT
 Project No. R-2022-047-001 Sample No. ST-1
 Lab ID R-2022-047-001-001 Visual Description Brown Lean Clay with Sand

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 8.0-16.0
Final Reading (div) 1328.0
 Consolidometer No. **R470**
 1 Division (in) 0.0001
 Start Date 3/12/2022
 Start Time 7:53:36

Elapsed Time (min)	Dial Reading (div)
Initial	882.6
0.05	1000.8
0.10	1040.8
0.15	1064.3
0.20	1069.3
0.25	1074.4
0.30	1080.2
0.45	1104.3
0.55	1112.1
1.05	1142.9
2.32	1186.0
4.07	1215.0
9.07	1250.7
16.07	1270.5
25.07	1279.8
36.07	1290.1
49.07	1296.4
64.07	1298.9
81.07	1300.3
100.07	1302.6
121.07	1305.3
144.07	1307.9
180.07	1311.8
300.07	1317.3
520.07	1322.4
700.07	1323.4
960.07	1324.7
1440.22	1328.0

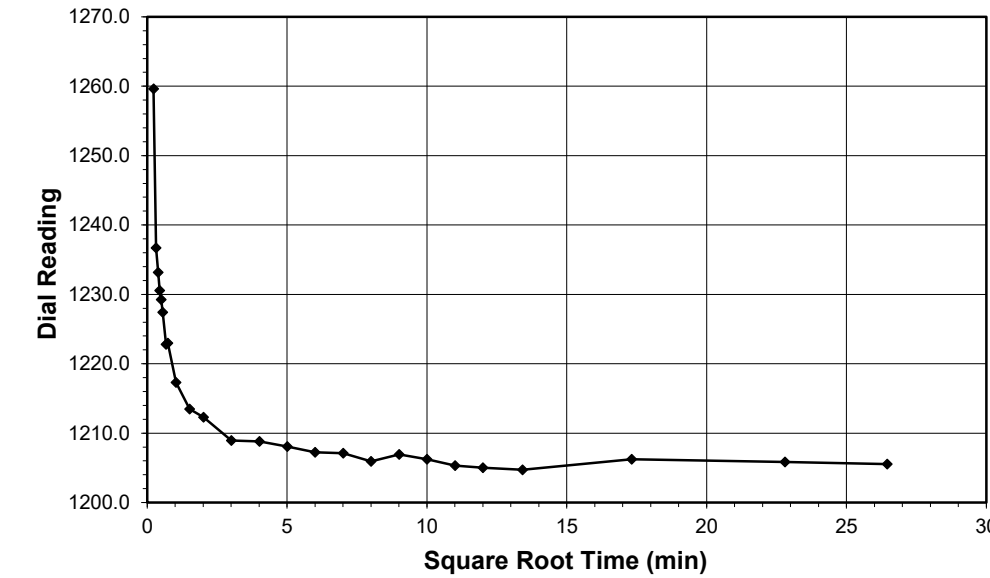


ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



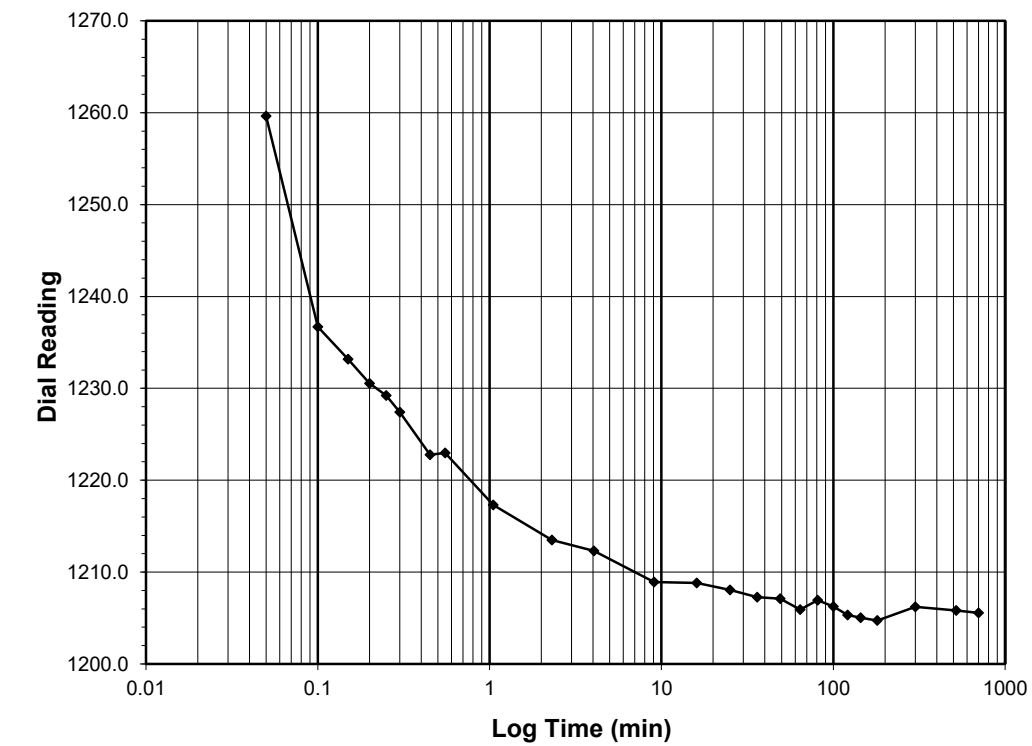
Client Wood, PLC Boring No. EB1-A Station: 20+21 -L-
 Client Project B5721-Replace Bridge No. 124 Depth (ft) 3.0-5.0 Offset: 22' LT
 Project No. R-2022-047-001 Sample No. ST-1
 Lab ID R-2022-047-001-001 Visual Description Brown Lean Clay with Sand

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 16.0-4.0
Final Reading (div) 1205.5
 Consolidometer No. **R470**
 1 Division (in) 0.0001
 Start Date 3/13/2022
 Start Time 7:53:49

Elapsed Time (min)	Dial Reading (div)
Initial	1328.0
0.05	1259.6
0.10	1236.7
0.15	1233.2
0.20	1230.5
0.25	1229.2
0.30	1227.4
0.45	1222.8
0.55	1223.0
1.05	1217.3
2.30	1213.5
4.05	1212.3
9.07	1208.9
16.07	1208.8
25.07	1208.1
36.07	1207.3
49.07	1207.1
64.07	1205.9
81.07	1207.0
100.07	1206.2
121.07	1205.3
144.07	1205.0
180.07	1204.7
300.07	1206.2
520.07	1205.8
700.07	1205.5



Tested By 129-07-0411 Date 3/12/2022 Checked By GEM Date 3/15/2022

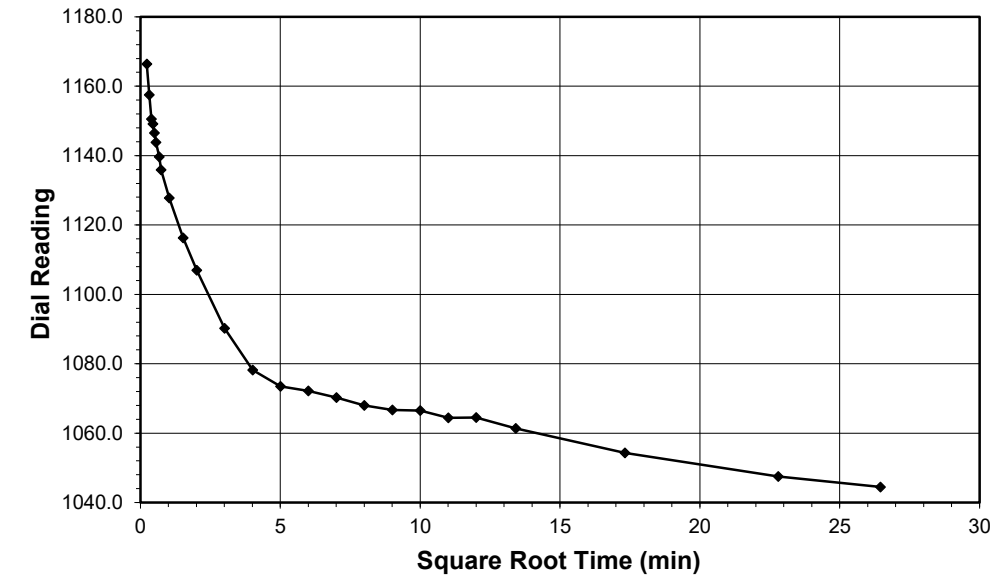
Tested By 129-07-0411 Date 3/13/2022 Checked By GEM Date 3/15/2022



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

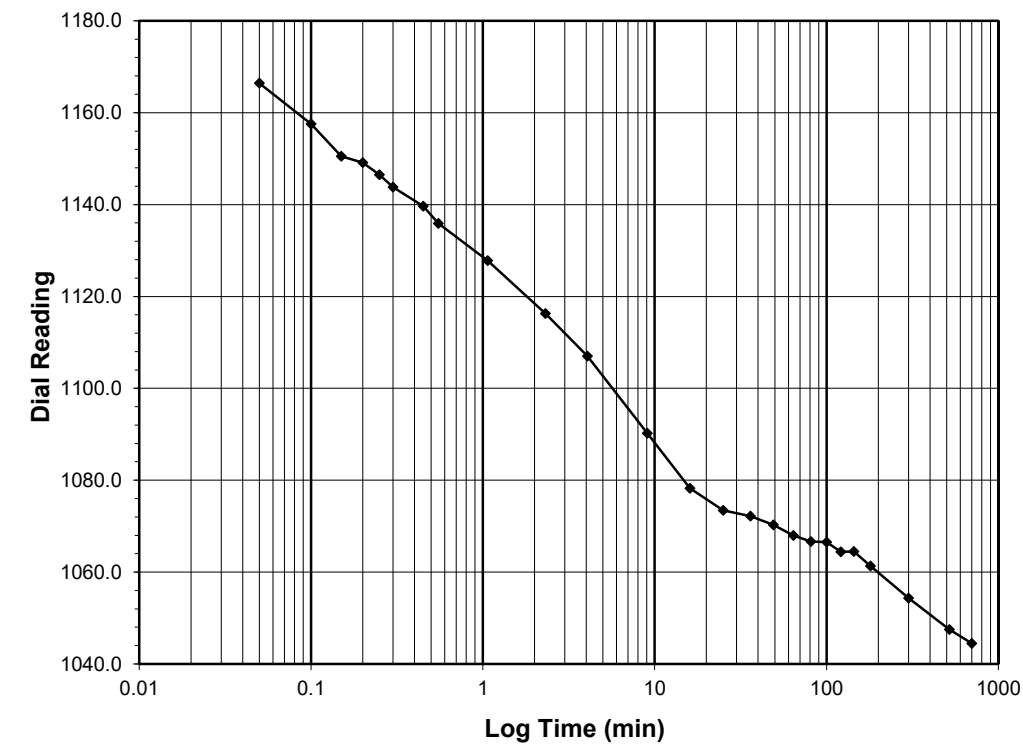
Client Wood, PLC Boring No. EB1-A Station: 20+21 -L-
 Client Project B5721-Replace Bridge No. 124 Depth (ft) 3.0-5.0 Offset: 22' LT
 Project No. R-2022-047-001 Sample No. ST-1
 Lab ID R-2022-047-001-001 Visual Description Brown Lean Clay with Sand

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 4.0-1.0
 Final Reading (div) 1044.5
 Consolidometer No. R470
 1 Division (in) 0.0001
 Start Date 3/13/2022
 Start Time 19:54:01

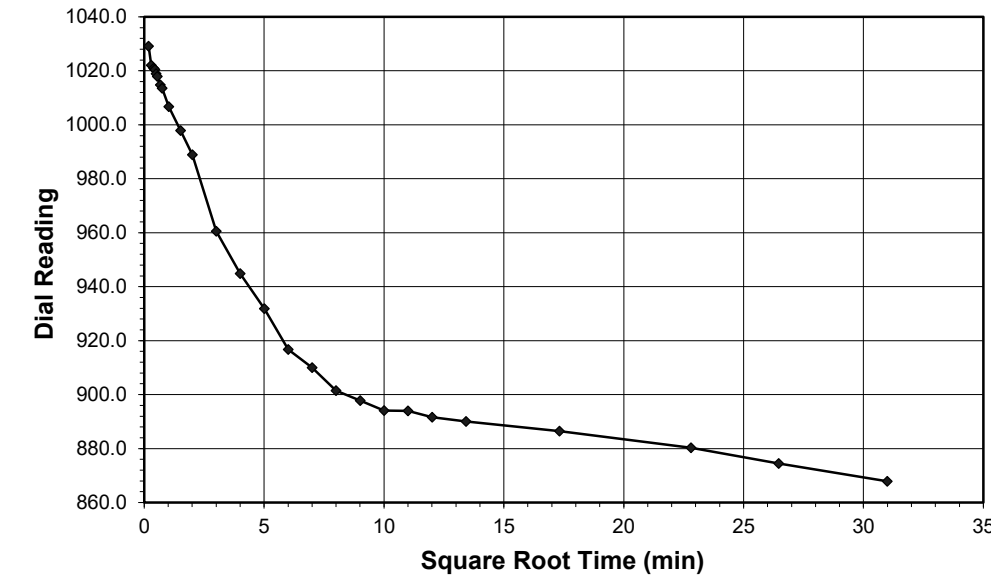
Elapsed Time (min)	Dial Reading (div)
Initial	1205.5
0.05	1166.4
0.10	1157.5
0.15	1150.5
0.20	1149.1
0.25	1146.5
0.30	1143.8
0.45	1139.7
0.55	1135.9
1.07	1127.8
2.32	1116.3
4.07	1107.0
9.07	1090.2
16.07	1078.2
25.07	1073.4
36.07	1072.2
49.07	1070.3
64.07	1068.0
81.07	1066.7
100.07	1066.5
121.07	1064.4
144.07	1064.5
180.07	1061.3
300.07	1054.3
520.07	1047.5
700.07	1044.5



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

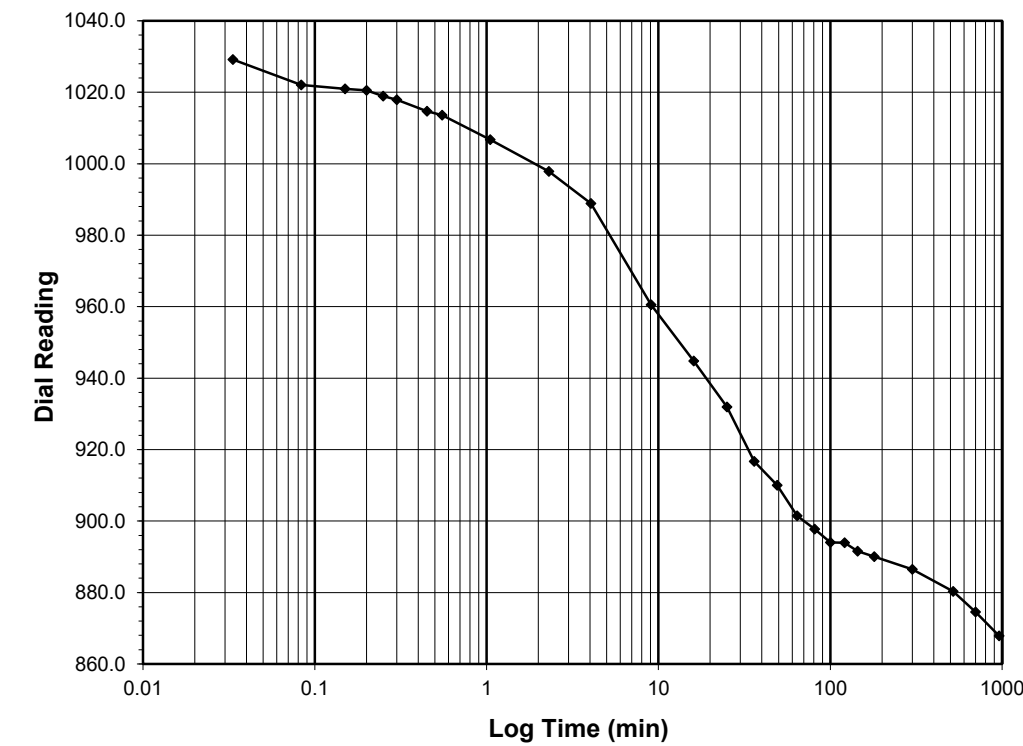
Client Wood, PLC Boring No. EB1-A Station: 20+21 -L-
 Client Project B5721-Replace Bridge No. 124 Depth (ft) 3.0-5.0 Offset: 22' LT
 Project No. R-2022-047-001 Sample No. ST-1
 Lab ID R-2022-047-001-001 Visual Description Brown Lean Clay with Sand

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-0.25
 Final Reading (div) 867.9
 Consolidometer No. R470
 1 Division (in) 0.0001
 Start Date 3/14/2022
 Start Time 7:54:07

Elapsed Time (min)	Dial Reading (div)
Initial	1044.5
0.03	1029.2
0.08	1022.0
0.15	1021.0
0.20	1020.5
0.25	1018.9
0.30	1017.9
0.45	1014.7
0.55	1013.6
1.05	1006.7
2.30	997.8
4.05	988.9
9.05	960.5
16.05	944.8
25.05	931.9
36.05	916.7
49.05	910.0
64.05	901.5
81.05	897.7
100.05	894.0
121.07	893.9
144.07	891.6
180.07	890.0
300.07	886.5
520.07	880.3
700.07	874.5
960.07	867.9



Tested By 129-07-0411 Date 3/13/2022 Checked By GEM Date 3/15/2022

Tested By 129-07-0411 Date 3/14/2022 Checked By GEM Date 3/15/2022

SITE PHOTOGRAPH

