

REFERENCE: HB-0035

PROJECT: 50639

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

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY ROCKINGHAM
PROJECT DESCRIPTION REPLACE BRIDGE #780177 ON
SR 1535 (PRICE ROAD) OVER MATRIMONY CREEK

SITE DESCRIPTION BRIDGE #780177 ON
SR 1535 (PRICE ROAD) OVER MATRIMONY CREEK

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	HB-0035	1	

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 PERFORM INDEPENDENT SUBSURFACE INVESTIGATIONS AND MAKE INTERPRETATIONS AS NECESSARY TO CONFIRM CONDITIONS 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

J. SWARTLEY

T.J. WILLIAMS

INVESTIGATED BY S&ME. INC.

DRAWN BY C. CHANDLER

CHECKED BY L. CAMPOS

SUBMITTED BY S. MITCHELL

DATE JUNE, 2025

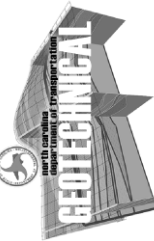


8848 RED OAK BLVD
SUITE A
CHARLOTTE, NC 28217
(704) 523-4726

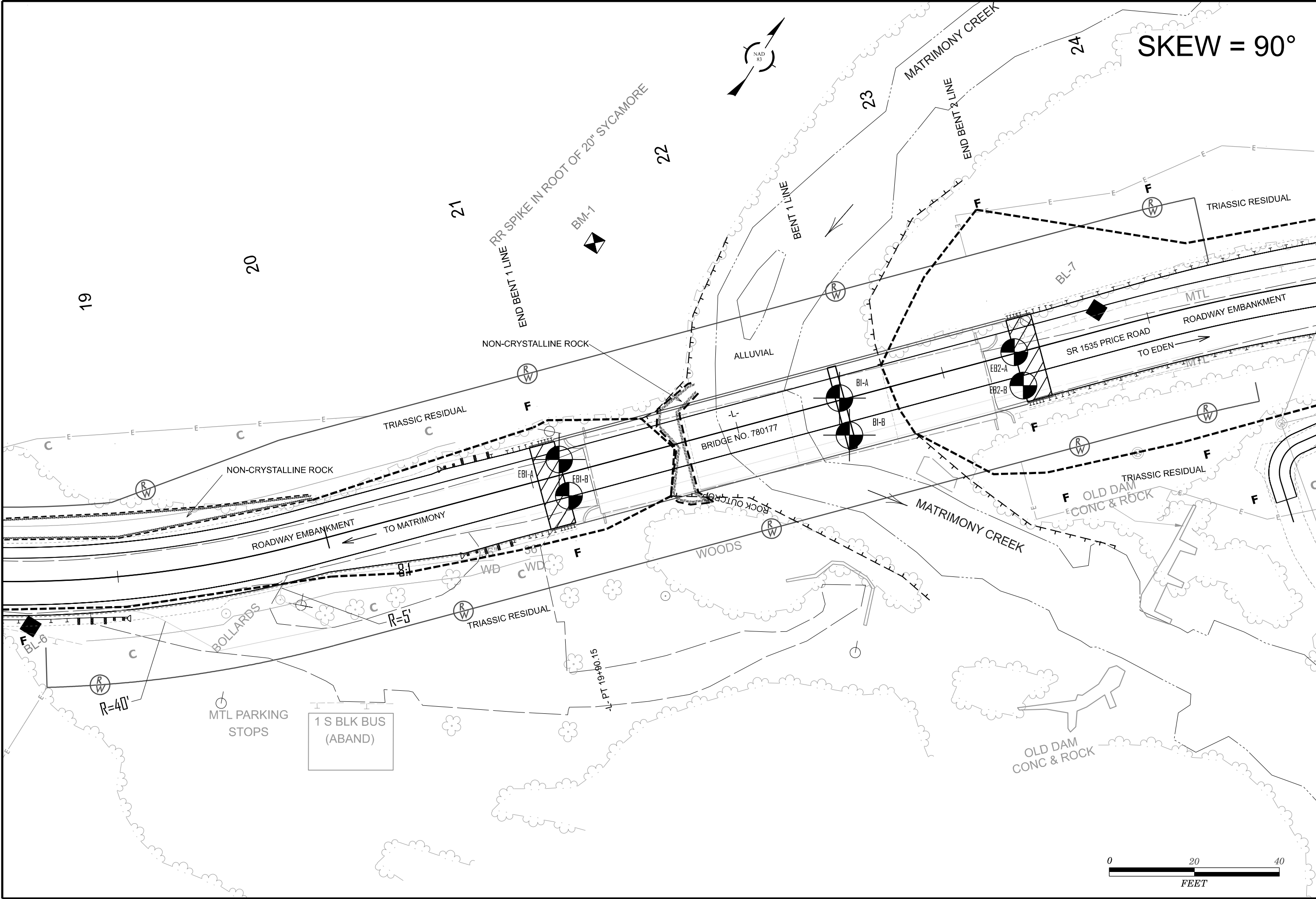


DocuSigned by:
Stacie Mitchell 07/10/2025
BBC611B64F19458
SIGNATURE DATE

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



SKEW = 90°

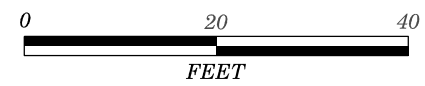


TIP PROJECT: HB-0035

REPLACE BRIDGE #780177 ON SR 1535 (PRICE ROAD)
OVER MATRIMONY CREEK IN EDEN

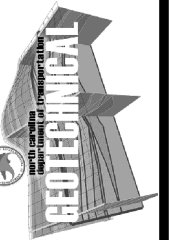
GEOTECHNICAL UNIT

PREPARED BY
8848 RED OAK BLVD
SUITE A
CHARLOTTE, NC 28217





Prepared For:



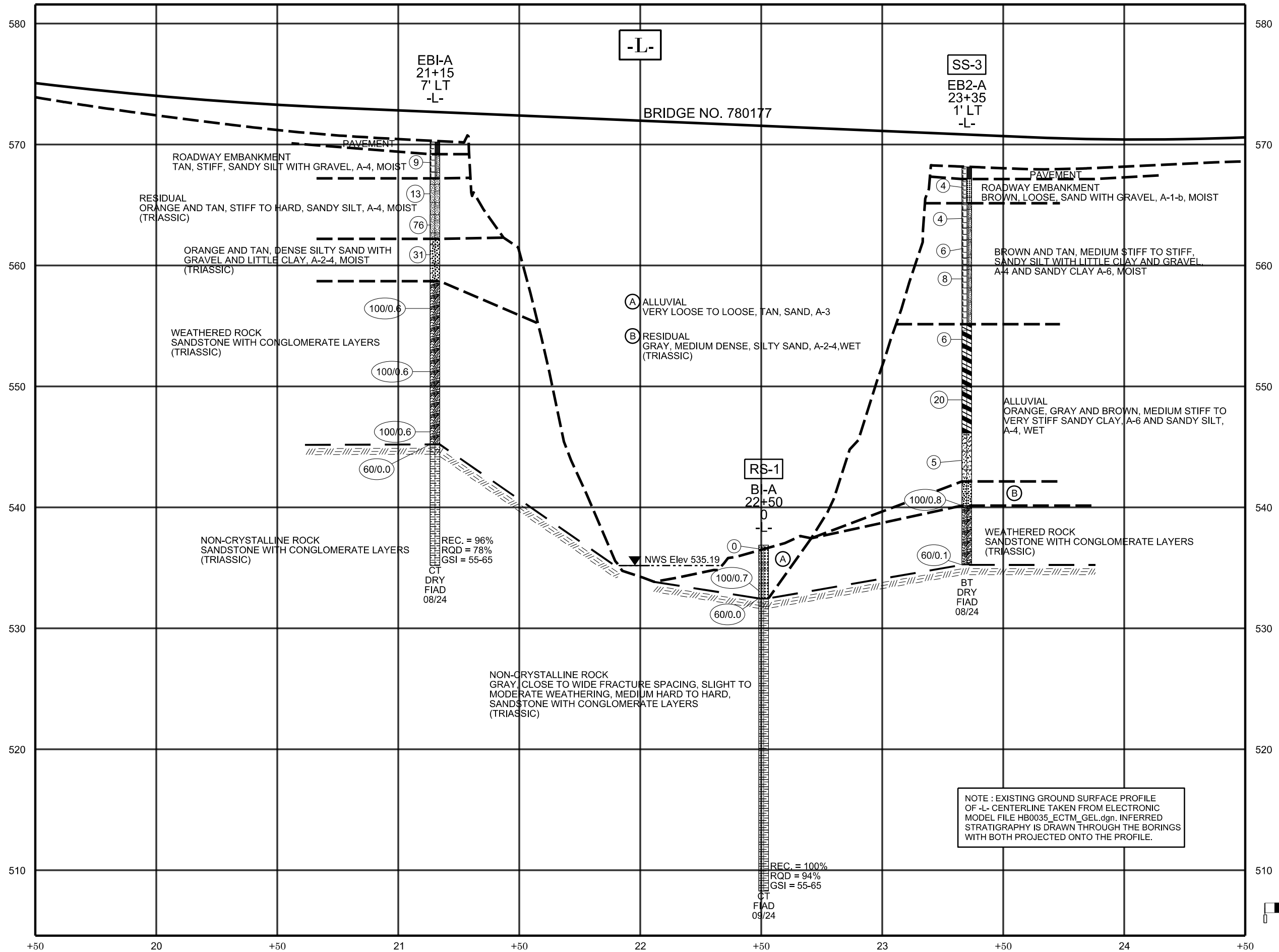
TIP PROJECT: HB-0035

REPLACE BRIDGE #780177 ON SR 1535 (PRICE ROAD) OVER MATRIMONY CREEK IN EDEN

GEOTECHNICAL UNIT

PREPARED BY

8848 RED OAK BLVD SUITE A CHARLOTTE, NC 28217



VE = 5

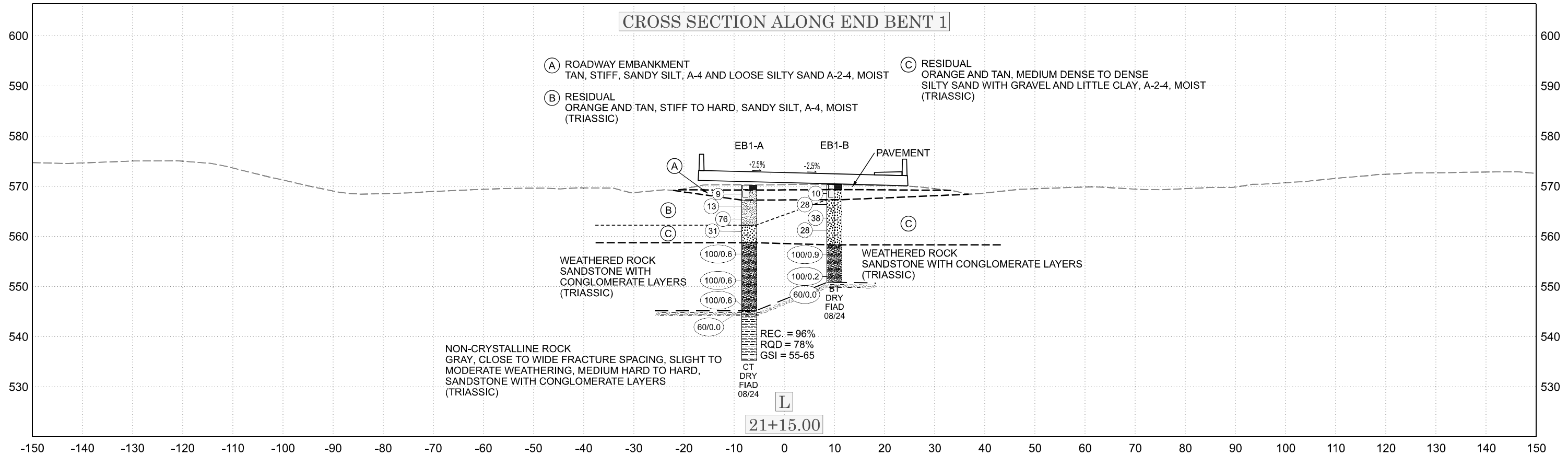


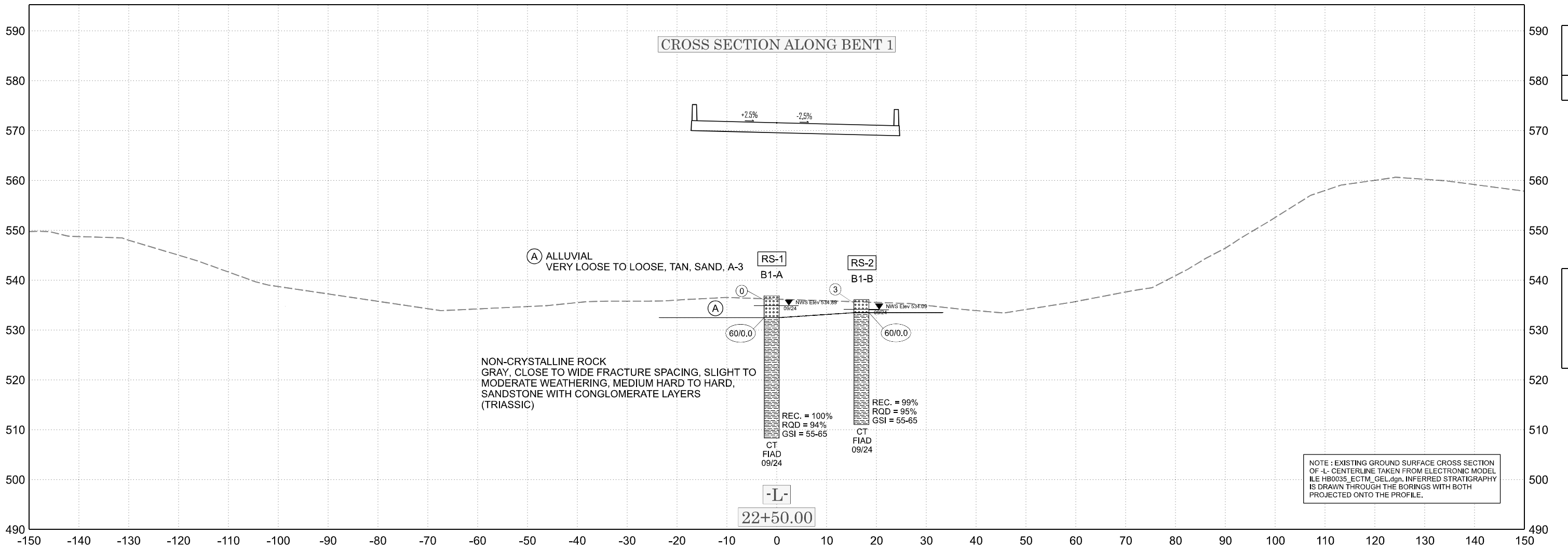
-L- X-5

HB-0035

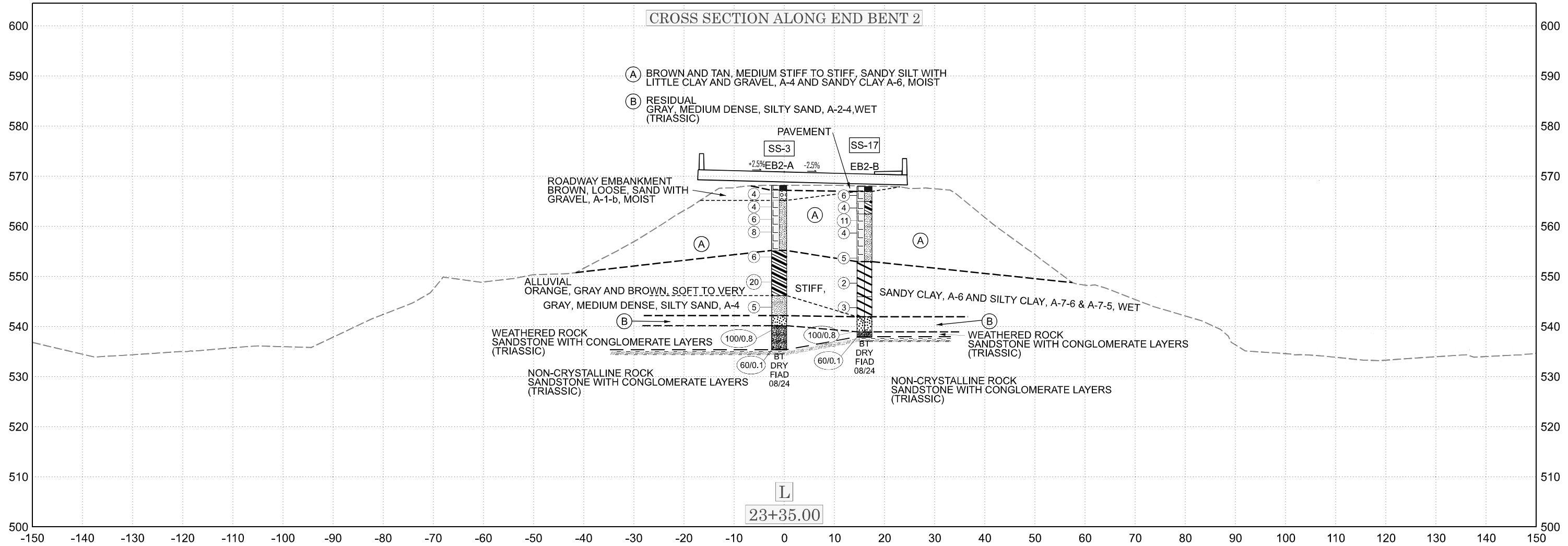
CROSS SECTION ALONG END BENT 1

- (A) ROADWAY EMBANKMENT
TAN, STIFF, SANDY SILT, A-4 AND LOOSE SILTY SAND A-2-4, MOIST
- (B) RESIDUAL ORANGE AND TAN, STIFF TO HARD, SANDY SILT, A-4, MOIST (TRIASSIC)
- (C) RESIDUAL ORANGE AND TAN, MEDIUM DENSE TO DENSE SILTY SAND WITH GRAVEL AND LITTLE CLAY, A-2-4, MOIST (TRIASSIC)





CROSS SECTION ALONG END BENT 2



-L- X-7

HB-0035

L

23+35.00

GEOTECHNICAL BORING REPORT BORE LOG

GEOTECHNICAL BORING REPORT CORE LOG

WBS 50639.1.1		TIP HB-0035		COUNTY ROCKINGHAM		GEOLOGIST Swartley, J.									
SITE DESCRIPTION BRIDGE NO. 177 ON SR 1535 (-L-) OVER MATRIMONY CREEK							GROUND WTR (ft)								
BORING NO. EB1-A		STATION 21+15		OFFSET 7 ft LT		ALIGNMENT -L-									
COLLAR ELEV. 570.2 ft		TOTAL DEPTH 35.0 ft		NORTHING 1,000,177		EASTING 1,768,900									
DRILL RIG/HAMMER EFF./DATE SME9403 CME-550X 91% 01/03/2024			DRILL METHOD NW Casing w/ Core		HAMMER TYPE Automatic										
DRILLER Shearin, T.		START DATE 08/05/24		COMP. DATE 08/07/24		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					
575															
570	569.2	1.0	3	4	5									570.2 GROUND SURFACE 0.0	
														569.2 (PAVEMENT) 1.0	
	566.7	3.5	2	5	8									567.2 ROADWAY EMBANKMENT 3.0	
														567.2 TRIASSIC RESIDUAL 3.0	
565	564.2	6.0	13	30	46									ORANGE AND TAN, STIFF TO HARD, SANDY SILT, A-4	
	561.7	8.5	13	17	14									562.2 ORANGE AND TAN, DENSE, SILTY SAND, A-2-4 8.0	
560	556.8	13.4	60	40/0.1										558.7 WEATHERED ROCK 11.5	
	551.8	18.4	7	60	40/0.1									(SANDSTONE WITH CONGLOMERATE LAYERS)	
550	546.8	23.4	20	60	40/0.1										
	545.2	25.0	60/0.0											545.2 NON-CRYSTALLINE ROCK 25.0	
540														GRAY, CLOSE TO WIDE FRACTURE SPACING, SLIGHT TO MODERATE WEATHERING, MEDIUM HARD TO HARD, SANDSTONE WITH CONGLOMERATE LAYERS	
														REC. = 96% RQD = 78% GSI = 55-65	
														35.0 Boring Terminated at Elevation 535.2 ft IN NON-CRYSTALLINE ROCK (SANDSTONE/CONGLOMERATE)	

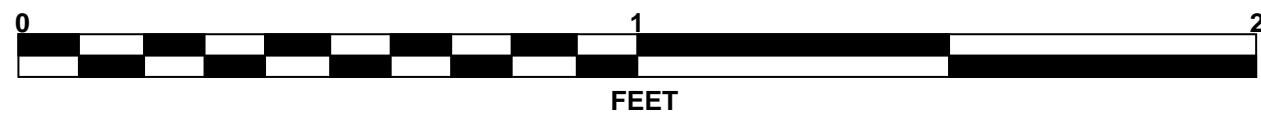
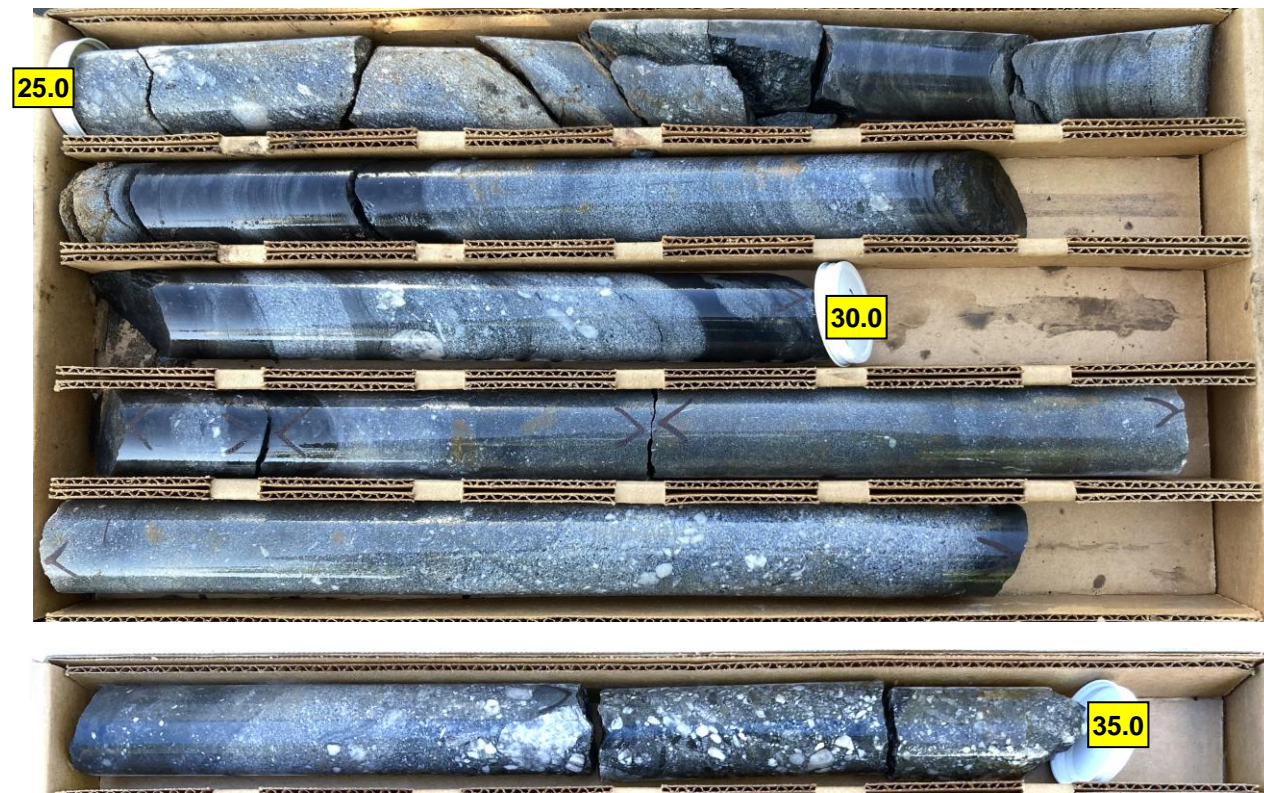
WBS 50639.1.1		TIP HB-0035		COUNTY ROCKINGHAM		GEOLOGIST Swartley, J.						
SITE DESCRIPTION BRIDGE NO. 177 ON SR 1535 (-L-) OVER MATRIMONY CREEK							GROUND WTR (ft)					
BORING NO. EB1-A		STATION 21+15		OFFSET 7 ft LT		ALIGNMENT -L-						
COLLAR ELEV. 570.2 ft		TOTAL DEPTH 35.0 ft		NORTHING 1,000,177		EASTING 1,768,900						
DRILL RIG/HAMMER EFF./DATE SME9403 CME-550X 91% 01/03/2024			DRILL METHOD NW Casing w/ Core		HAMMER TYPE Automatic							
DRILLER Shearin, T.		START DATE 08/05/24		COMP. DATE 08/07/24		SURFACE WATER DEPTH N/A						
CORE SIZE NQ				TOTAL RUN 10.0 ft								
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS	DEPTH (ft)
					REC. (ft) %	RQD (ft) %		REC. (ft) %	RQD (ft) %			
545.2	545.2	25.0	5.0	1:27 1:34 1:23 1:38 1:52	(4.6) 92%	(2.8) 56%		(9.6) 96%	(7.8) 78%		Begin Coring @ 25.0 ft NON-CRYSTALLINE ROCK	25.0
540	540.2	30.0	5.0	2:13 2:15 3:28 4:14 4:06	(5.0) 100%	(5.0) 100%					GRAY, CLOSE TO WIDE FRACTURE SPACING, SLIGHT TO MODERATE WEATHERING, MEDIUM HARD TO HARD, SANDSTONE WITH CONGLOMERATE LAYERS	
											GSI = 55-65	
											Boring Terminated at Elevation 535.2 ft IN NON-CRYSTALLINE ROCK (SANDSTONE/CONGLOMERATE)	35.0

NCDOT BORE DOUBLE HB-0035_GEO_BRDG.GPJ NC_DOT.GDT 10/23/24

NCDOT CORE DOUBLE HB-0035_GEO_BRDG.GPJ NC_DOT.GDT 10/23/24

CORE PHOTOGRAPHS

EB1-A
BOXES 1 & 2: 25.0 - 35.0 FEET



GEOTECHNICAL BORING REPORT

BORE LOG

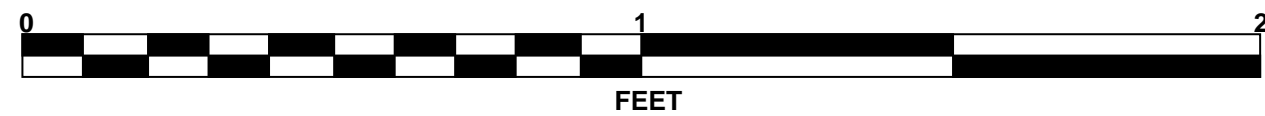
WBS 50639.1.1		TIP HB-0035		COUNTY ROCKINGHAM		GEOLOGIST Swartley, J.										
SITE DESCRIPTION BRIDGE NO. 177 ON SR 1535 (-L-) OVER MATRIMONY CREEK							GROUND WTR (ft)									
BORING NO. EB1-B		STATION 21+15		OFFSET 10 ft RT		ALIGNMENT -L-	0 HR. N/A									
COLLAR ELEV. 570.3 ft		TOTAL DEPTH 19.5 ft		NORTHING 1,000,165		EASTING 1,768,913	24 HR. FIAD									
DRILL RIG/HAMMER EFF./DATE SME9403 CME-550X 91% 01/03/2024				DRILL METHOD Wash Boring		HAMMER TYPE Automatic										
DRILLER Shearin, T.		START DATE 08/06/24		COMP. DATE 08/06/24		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100			ELEV. (ft)	DEPTH (ft)		
575																
570	569.3	1.0	4	4	6									570.3	0.0	GROUND SURFACE
														569.3	1.0	(PAVEMENT)
	567.1	3.2	12	14	14	10								567.3	3.0	ROADWAY EMBANKMENT TAN, LOOSE, SILTY SAND WITH GRAVEL, A-2-4
565	564.3	6.0	15	14	24											TRIASSIC RESIDUAL TAN AND ORANGE, MEDIUM DENSE TO DENSE, SILTY SAND WITH LITTLE CLAY, A-2-4
	562.1	8.2	16	16	12											
560																
	557.1	13.2	19	50	50/0.4									558.3	12.0	WEATHERED ROCK (SANDSTONE WITH CONGLOMERATE LAYERS)
555																
	552.1	18.2	100/0.2													
	550.8	19.5	60/0.0											550.8	19.5	Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 550.8 ft ON NON-CRYSTALLINE ROCK (SANDSTONE/CONGLOMERATE)

NCDOT BORE DOUBLE HB-0035_GEO_BRDG.GPJ NC_DOT.GDT 10/23/24

CORE PHOTOGRAPHS

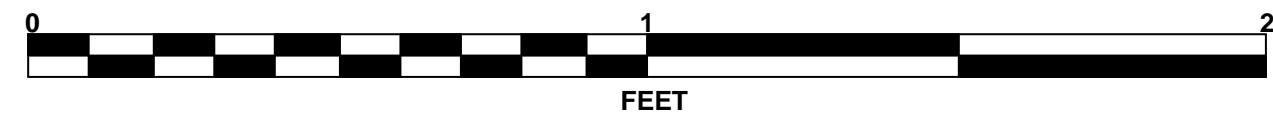
B1-A

BOXES 1 & 2: 4.4 - 23.2 FEET



B1-A

BOX 3: 23.2 - 28.6 FEET



GEOTECHNICAL BORING REPORT BORE LOG

GEOTECHNICAL BORING REPORT CORE LOG

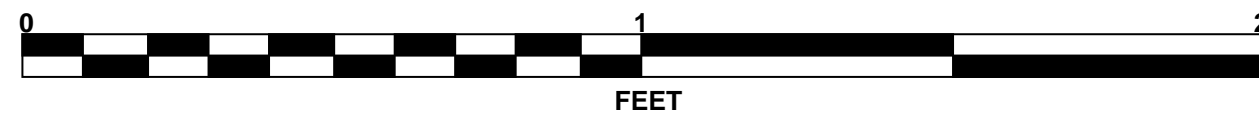
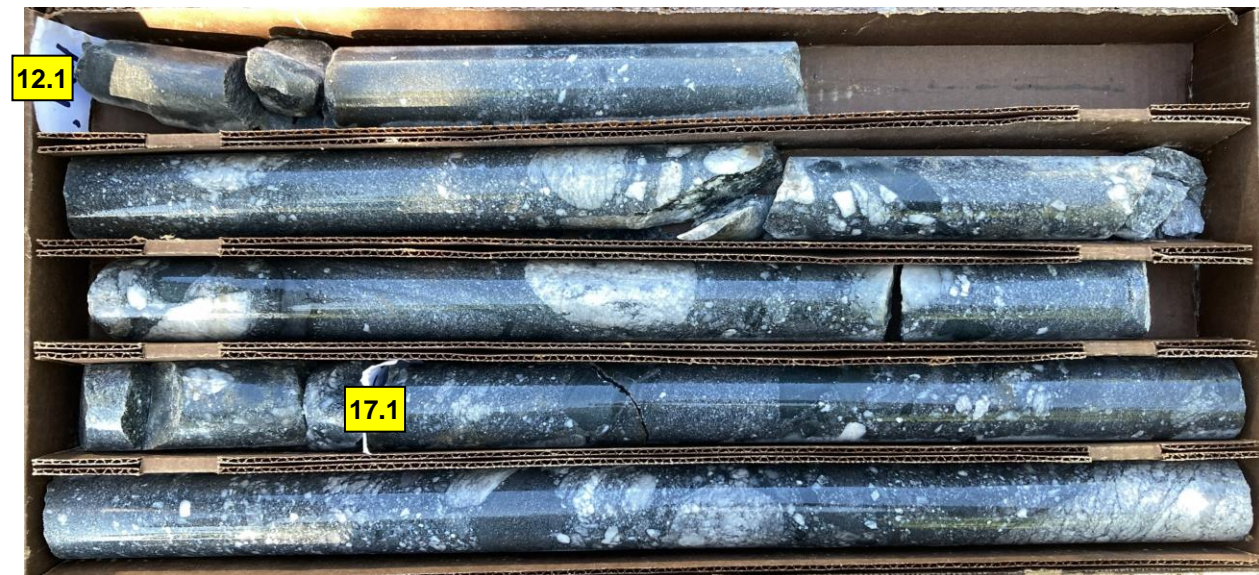
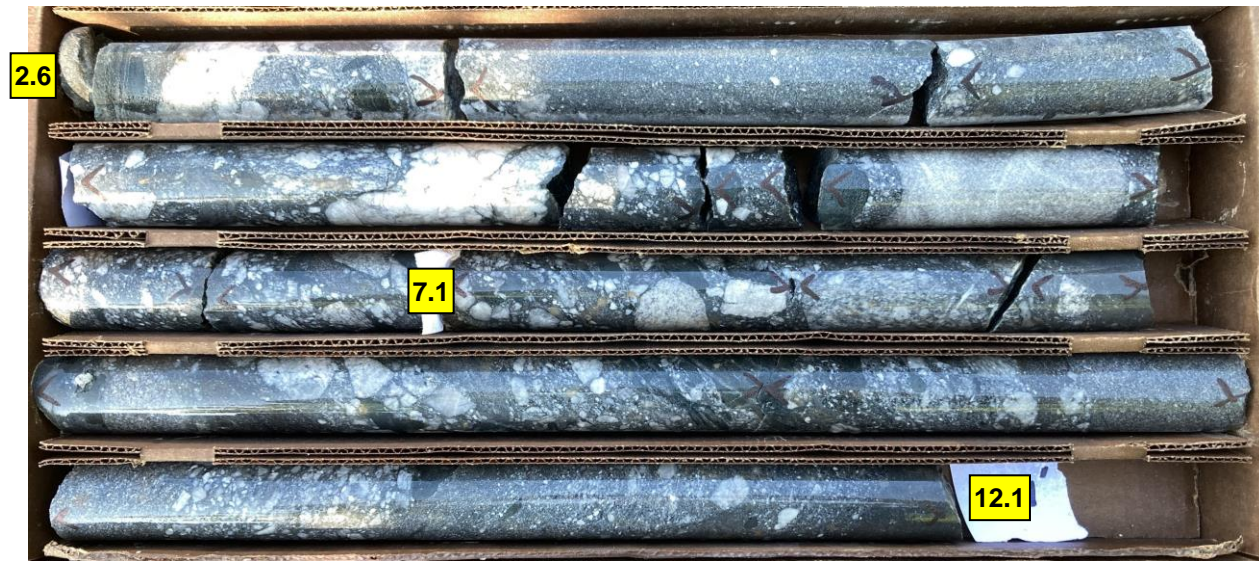
WBS 50639.1.1		TIP HB-0035		COUNTY ROCKINGHAM		GEOLOGIST Swartley, J.										
SITE DESCRIPTION BRIDGE NO. 177 ON SR 1535 (-L-) OVER MATRIMONY CREEK							GROUND WTR (ft)									
BORING NO. B1-B		STATION 22+53		OFFSET 17 ft RT		ALIGNMENT -L-										
COLLAR ELEV. 536.1 ft		TOTAL DEPTH 25.1 ft		NORTHING 1,000,262		EASTING 1,769,011										
DRILL RIG/HAMMER EFF./DATE SME275 DIEDRICH D-50 91% 01/19/2024			DRILL METHOD NW Casing w/ Core		HAMMER TYPE Automatic											
DRILLER Williams Jr., T.		START DATE 09/05/24		COMP. DATE 09/05/24		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						
540																
535	536.1	0.0	1	2	1									536.1	GROUND SURFACE	0.0
	533.5	2.6	60/0.0											533.5	ALLUVIAL VERY LOOSE, TAN, SAND, A-3	2.6
530															NON-CRYSTALLINE ROCK GRAY AND WHITE, CLOSE TO WIDE FRACTURE SPACING, FRESH TO SLIGHT WEATHERING, HARD TO VERY HARD, SANDSTONE WITH CONGLOMERATE LAYERS	
525															REC. = 99% RQD = 95% GSI = 55-65	
520																
515																
														511.0	Boring Terminated at Elevation 511.0 ft IN NON-CRYSTALLINE ROCK (SANDSTONE/CONGLOMERATE)	25.1

WBS 50639.1.1		TIP HB-0035		COUNTY ROCKINGHAM		GEOLOGIST Swartley, J.						
SITE DESCRIPTION BRIDGE NO. 177 ON SR 1535 (-L-) OVER MATRIMONY CREEK							GROUND WTR (ft)					
BORING NO. B1-B		STATION 22+53		OFFSET 17 ft RT		ALIGNMENT -L-						
COLLAR ELEV. 536.1 ft		TOTAL DEPTH 25.1 ft		NORTHING 1,000,262		EASTING 1,769,011						
DRILL RIG/HAMMER EFF./DATE SME275 DIEDRICH D-50 91% 01/19/2024			DRILL METHOD NW Casing w/ Core		HAMMER TYPE Automatic							
DRILLER Williams Jr., T.		START DATE 09/05/24		COMP. DATE 09/05/24		SURFACE WATER DEPTH N/A						
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	TOTAL RUN 22.5 ft		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS	DEPTH (ft)
					REC. (ft) %	RQD (ft) %		REC. (ft) %	RQD (ft) %			
533.5	533.5	2.6	4.5	0:43/0.5 1:45 2:30 3:30	(4.4) 98%	(4.3) 96%		(22.3) 99%	(21.4) 95%		Begin Coring @ 2.6 ft NON-CRYSTALLINE ROCK	2.6
530	529.0	7.1	5.0	3:30 3:30 4:00 4:00	(5.0) 100%	(5.0) 100%					GRAY AND WHITE, CLOSE TO WIDE FRACTURE SPACING, FRESH TO SLIGHT WEATHERING, HARD TO VERY HARD, SANDSTONE WITH CONGLOMERATE LAYERS	
525	524.0	12.1	5.0	4:00 4:00			RS-2				GSI = 55-65	
520	519.0	17.1	5.0	1:45 1:45 1:50 2:30 2:30	(5.0) 100%	(4.2) 84%						
515	514.0	22.1	3.0	1:45 2:40 4:30 8:30 7:00	(4.9) 98%	(4.9) 98%						
	511.0	25.1	3.0	8:15 10:30 10:00	(3.0) 100%	(3.0) 100%					Boring Terminated at Elevation 511.0 ft IN NON-CRYSTALLINE ROCK (SANDSTONE/CONGLOMERATE)	25.1

CORE PHOTOGRAPHS

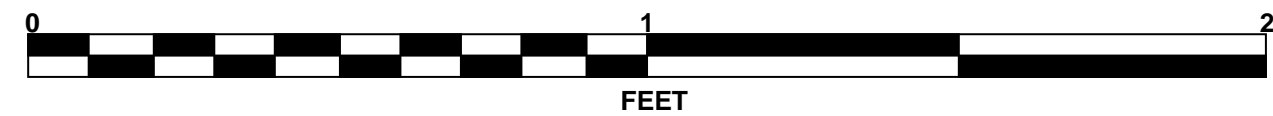
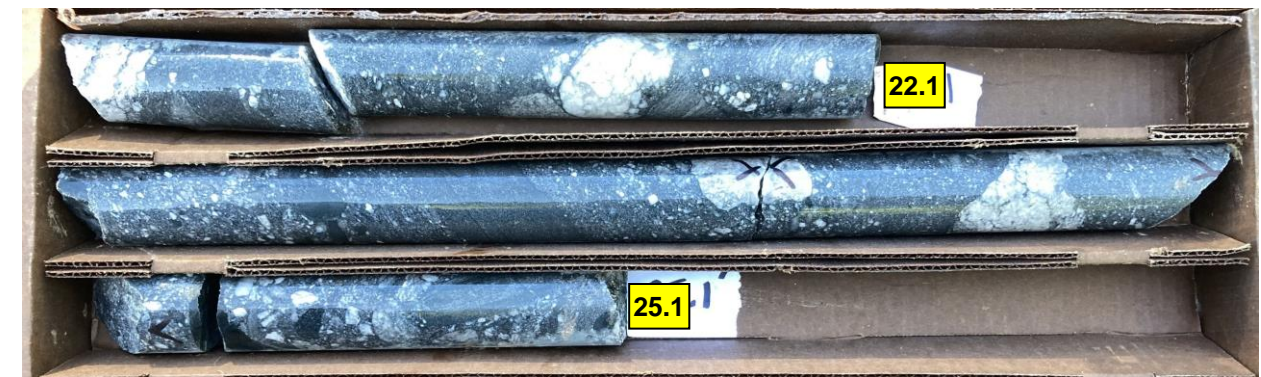
B1-B

BOXES 1 & 2: 2.6 - 20.7 FEET



B1-B

BOX 3: 20.7 - 25.1 FEET



GEOTECHNICAL BORING REPORT

BORE LOG

WBS 50639.1.1		TIP HB-0035		COUNTY ROCKINGHAM		GEOLOGIST Swartley, J.									
SITE DESCRIPTION BRIDGE NO. 177 ON SR 1535 (-L-) OVER MATRIMONY CREEK							GROUND WTR (ft)								
BORING NO. EB2-A		STATION 23+35		OFFSET 1 ft LT		ALIGNMENT -L-									
COLLAR ELEV. 568.2 ft		TOTAL DEPTH 32.9 ft		NORTHING 1,000,334		EASTING 1,769,054									
DRILL RIG/HAMMER EFF./DATE SME9403 CME-550X 91% 01/03/2024			DRILL METHOD H.S. Augers		HAMMER TYPE Automatic										
DRILLER Shearin, T.		START DATE 08/05/24		COMP. DATE 08/05/24		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															
	567.2	1.0	4	2	2								M	568.2 GROUND SURFACE 0.0 567.2 (PAVEMENT) 1.0	
565	564.7	3.5	2	2	2								M	565.2 ROADWAY EMBANKMENT 3.0 BROWN, LOOSE, SAND WITH GRAVEL, A-1-b	
	562.2	6.0	4	2	4								M	562.2 BROWN AND TAN, MEDIUM STIFF, SANDY SILT, A-4	
560	559.7	8.5	2	3	5								M	559.7	
	555.2	13.5	2	3	3								W	555.2 ALLUVIAL 13.0 ORANGE, MEDIUM STIFF TO VERY STIFF, SANDY CLAY, A-6	
550	549.7	18.5	8	5	15								W	549.7	
	546.2	23.5	3	2	3								W	546.2 BROWN AND GRAY, MEDIUM STIFF, SANDY SILT, A-4	
545	544.7	23.5											W	544.7	
	542.2													542.2 TRIASSIC RESIDUAL 26.0 GRAY, MEDIUM DENSE, SILTY SAND, A-2-4	
540	539.7	28.5												540.2 WEATHERED ROCK 28.0 (SANDSTONE WITH CONGLOMERATE LAYERS)	
	537.9		27	73/0.3										537.9	
	535.4	32.8												535.4 NON-CRYSTALLINE ROCK 32.8 (SANDSTONE WITH CONGLOMERATE LAYERS)	
			60/0.1											535.3	

Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 535.3 ft IN NON-CRYSTALLINE ROCK (SANDSTONE/CONGLOMERATE)

*residual layer from 26.0' - 28.0' is inferred

WBS 50639.1.1		TIP HB-0035		COUNTY ROCKINGHAM		GEOLOGIST Swartley, J.									
SITE DESCRIPTION BRIDGE NO. 177 ON SR 1535 (-L-) OVER MATRIMONY CREEK							GROUND WTR (ft)								
BORING NO. EB2-B		STATION 23+35		OFFSET 16 ft RT		ALIGNMENT -L-									
COLLAR ELEV. 567.9 ft		TOTAL DEPTH 30.1 ft		NORTHING 1,000,323		EASTING 1,769,066									
DRILL RIG/HAMMER EFF./DATE SME9403 CME-550X 91% 01/03/2024			DRILL METHOD H.S. Augers		HAMMER TYPE Automatic										
DRILLER Shearin, T.		START DATE 08/06/24		COMP. DATE 08/06/24		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															
	567.9	1.0	5	4	2								M	567.9 GROUND SURFACE 0.0 566.9 (PAVEMENT) 1.0	
565	564.4	3.5	2	2	2								M	564.4 ROADWAY EMBANKMENT 3.0 TAN, MEDIUM STIFF, SILT WITH GRAVEL, A-4	
	561.9	6.0	1	4	7								M	561.9 ORANGE, MEDIUM STIFF, SANDY CLAY, A-6	
560	559.4	8.5	3	2	2								M	559.4 TAN AND ORANGE, MEDIUM STIFF TO STIFF, SANDY SILT WITH LITTLE CLAY, A-4	
	555.2	13.5	2	3	2								M	555.2	
555	554.4	18.5	1	1	1								M	554.4 ALLUVIAL 15.0 ORANGE, GRAY AND BROWN, SOFT, CLAY AND SILTY CLAY, A-7-6 & A-7-5	
	549.4	23.5	2	1	2								W	549.4	
545	544.4	23.5												544.4	
	541.9													541.9 TRIASSIC RESIDUAL 26.0 GRAY, MEDIUM DENSE, SILTY SAND, A-2-4	
540	539.4	28.5	8	92/0.3										539.4 WEATHERED ROCK 29.0 (SANDSTONE WITH CONGLOMERATE LAYERS)	
	537.9	30.0												537.9	
			60/0.1											537.8	

Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 537.8 ft IN NON-CRYSTALLINE ROCK (SANDSTONE/CONGLOMERATE)

NCDOT BORE DOUBLE HB-0035_GEO_BRDG.GPJ NC_DOT.GDT 10/23/24

Form No. TR-43-D7012C-02

Revision No. : 0

Revision Date: 08/22/18

UNCONFINED COMPRESSION (ASTM D7012 Method C)



S&ME, Inc. - Knoxville 1413 Topside Road, Louisville, TN 37777

 Project Name: HB-0035
 Project Number: 24350498

 Report Date: September 20, 2024
 Reviewed By: Lindsey Deskins

Boring No.	Sample No.	Depth (ft)	Dimensions, in.		Shape (See Key)	Area (in ²)	Unit Weight (lbs/ft ³)	Loading Rate (psi/sec)	Maximum Load (lbs)	Strength (psi)	Moisture (%)
			Length	Diameter							
B1-A	RS-1	13.2 - 13.6	3.97	1.86	A	2.72	171.2	84	21,954	8,071	0.4
B1-B	RS-2	10.1 - 10.5	4.01	1.87	A	2.75	166.7	90	63,178	22,974	0.2

NOTES: Effective (as received) unit weight as determined by RTH 109-93.

Loading rates were selected to target reaching failure between 2 and 15 minutes.

Test results for specimens not meeting the requirements of ASTM D4543-19 may differ from a test specimen that meets the requirements of ASTM D4543.

SHAPE KEY

ASTM D4543-19 Standard Practice for Preparing Rock Core as Cylindrical Test Specimens and Verifying Conformance to Dimensional and Shape Tolerance Section 1.2 - "Rock is a complex engineering material that can vary greatly as a function of lithology, stress history, weathering, moisture content and chemistry, and other natural geologic processes. As such, it is not always possible to obtain or prepare rock core specimens that satisfy the desirable tolerances given in this practice. Most commonly, this situation presents itself with weaker, more porous, and poorly cemented rock types and rock types containing significant or weak (or both) structural features. For rock types which are difficult to prepare, all reasonable efforts shall be made to prepare a specimen in accordance with this practice and for the intended test procedure. However, when it has been determined by trial and error that this is not possible, prepare the rock specimen to the closest tolerances practicable and consider this to be the best effort and report it as such and if allowable or necessary for the intended test, capping the ends of the specimen as discussed in this practice is permitted."

- A Test specimen measurements met the desired shape tolerances of ASTM D4543-19 (side straightness, end flatness & parallelism, and end perpendicularity to axis)
- B Test specimen measurements met the desired shape tolerances of ASTM D4543-19 for end flatness & parallelism, and end perpendicularity to axis. Specimen did not meet the desired tolerance for side straightness. Specimen prepared to closest tolerances practicable.
- C Test specimen measurements met the desired shape tolerances of ASTM D4543-19 for end flatness & parallelism. Specimen did not meet the desired tolerances for side straightness and end perpendicularity to axis. Specimen prepared to closest tolerances practicable.
- D Test specimen measurements met the desired shape tolerances of ASTM D4543-19 for end flatness. Specimen did not meet the desired tolerances for side straightness, parallelism and end perpendicularity to axis. Specimen prepared to closest tolerances practicable.
- E Test specimen measurements met the desired shape tolerances of ASTM D4543-19 for end flatness and end perpendicularity to axis. Specimen did not meet the desired tolerance for side straightness and parallelism. Specimen prepared to closest tolerances practicable.

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50639.1.1 (HB-0035)
Rockingham Co.

SITE PHOTOGRAPH

Bridge No. 177 on -L- (SR 1535) over Matrimony Creek



Looking South