

EXECUTION VERSION

**I-95 Express Lanes - Opitz Boulevard Ramp
("Opitz") Project**

Exhibit C-6

Technical Requirements

Attachment 3.4b

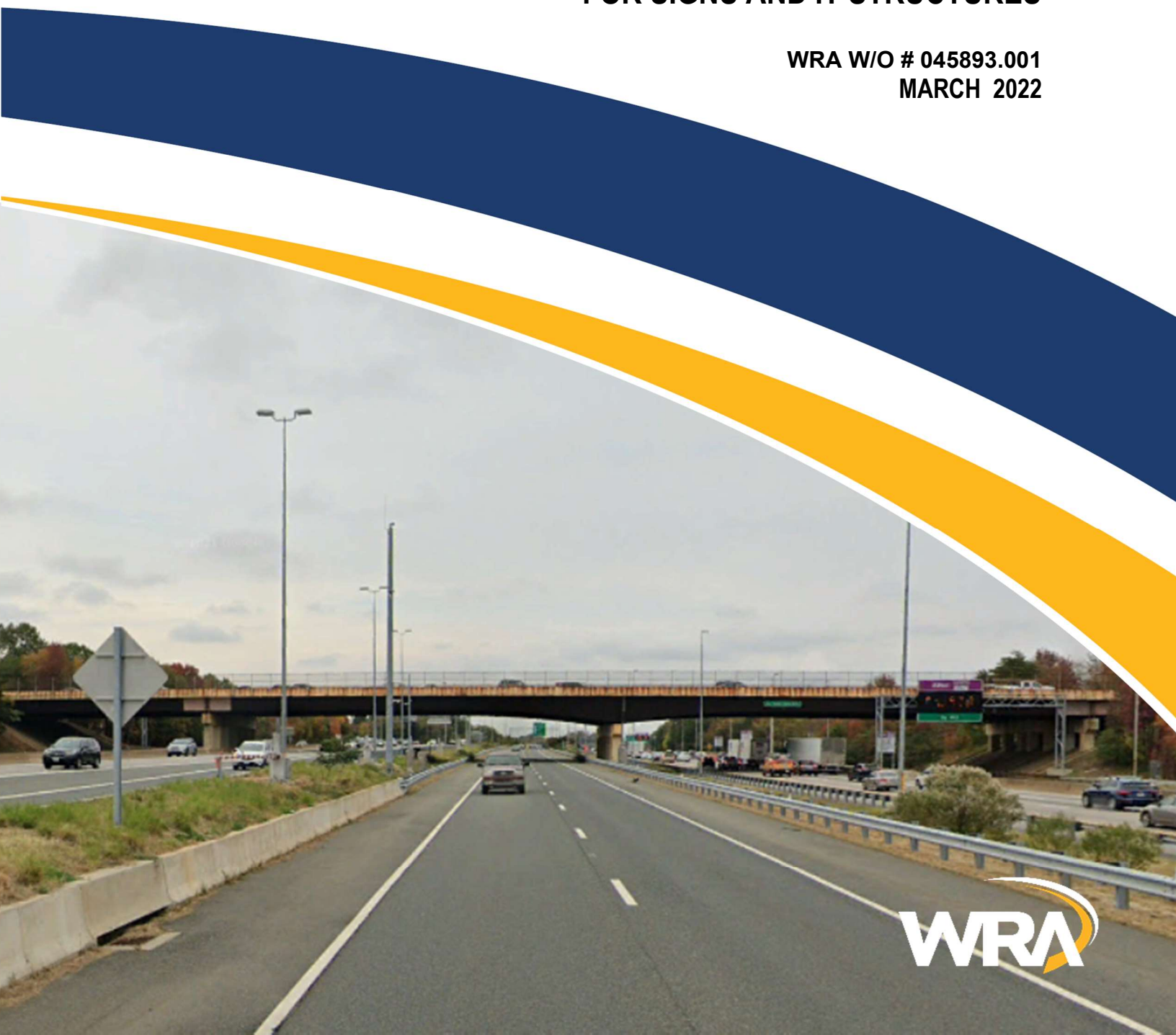
**Opitz Project Geotechnical Data Report for
Signs and ITS Structures**

Interstate-95 Express Lanes
OPITZ BOULEVARD SIGNS & ITS
PRINCE WILLIAMS COUNTY, VIRGINIA
STATE PROJECT # 0095-076-299, P101, C501
UPC# 116663

GEOTECHNICAL DATA REPORT

FOR SIGNS AND IT STRUCTURES

WRA W/O # 045893.001
MARCH 2022



1. Introduction

The Interstate 95 reversible High Occupancy-Toll (HOT) facility is maintained and operated by Transurban in the median of interstate I-95. The facility stretches from south of Garrisonville Road in Stafford County to north of Edsall Road in Fairfax County.

Whitman, Requardt, and Associate, LLP. (WRA) was tasked to conduct a geotechnical investigation in the area of proposed Signs and IT structures located at various location along Opitz Blvd., I-95 Northbound and I-95 Southbound general-purpose lanes, and I-95 express lanes. The project area stretches from Cardinal Drive to north of Opitz Boulevard. The project is located in Woodbridge, Prince Williams County, Virginia. A site vicinity map is included in Appendix A.

2. Purpose and Scope

The purpose of this study was to determine the subsurface conditions in the vicinity of the proposed Signs and IT Structures to help in the design of foundations of the proposed signs and ITS. The scope of this study included drilling one soil test boring (per structure) to a depth of 25-feet or refusal in the vicinity of the proposed structures. Following completion of the field work, the scope of this task included conducting laboratory tests and prepare data report containing result of the field exploration and laboratory test results. Evaluations of those conditions and preparing recommendations with respect to the geotechnical aspect of the proposed structures were not within our authorized scope of services.

3. Field Investigation

A total of twenty-five (29) Standard Penetration Test (SPT) borings were drilled in the vicinity of the proposed Signs and ITS structure locations. At the locations where structures are in a proximity to each other, borings were combined, and one representative test boring was drilled at a median location. Boring I-11, proposed at the area of ITS structure on Opitz Blouvard was cancelled and substituted by boring B-A1-1 recently drilled during geotechnical investigation program for the proposed spot improvement project at Opitz Boulevard. Boring log of B-A1-1 is included in appendix B. The test boring location plan is included in Appendix A.

The test boring locations were staked by H&B Surveyors. The borings were drilled by Soil and Land Use Technology (SaLUT), Inc., from Glenburnie, Maryland, from December 2021 to February of 2022 using a truck mounted B57 Mobile drill rig equipped with automatic hammer with standard penetration testing (SPT). Full time inspection and logging of the soil borings soil borings was provided by WRA. Table 1 included in appendix B provides a summary of the boring designations, stations, ground surface elevations, depths, and groundwater observations. A description of the soils and conditions encountered at each test boring location is presented on the Boring Logs included in the Appendix B

The borings were advanced using hollow-stem augers and soil samples were recovered from the borings at 2.5 feet interval for the top 20 feet and at 5 feet intervals thereafter. The soil samples were recovered by driving a Standard Penetration Test 1 3/8-inch ID (2-inch OD) split-spoon sampler in accordance with ASTM D-1586 specifications. The sampler was first seated about 6 inches to penetrate through the loose cuttings and then driven an additional 1 foot with blows of a 140-pound automatic hammer falling 30 inches. The number of hammer blows required to drive the sampler the final foot is typically designated as the Standard Penetration Resistance (N) value.

4. Laboratory Testing

Soil obtained from the sampling device were inspected and identified by the WRA Geotechnical Engineer per Unified Soil Classification System (USCS). A representative portion of each soil obtained from the sampling device were sealed in glass sample jars and transported to SaLUT soils testing laboratory. All the jar samples were assigned for their natural water contents testing, and selected soil samples were subjected to Atterberg limits and Grain size analysis to determine additional engineering properties of the existing on-site soils. These tests were performed in general accordance with applicable AASHTO procedures. The results of these tests are included in Appendix C.



APPENDIX A

Figures

APPENDIX A.1
Site Vicinity Map



APPENDIX A.2

Test Boring Location Plan

PROJECT MANAGER: *Bimal Shab, P.E., (703) 259-2362 (NOVA District)*
 SURVEYED BY, DATE: *H&B Surveying and Mapping, LLC, (804) 330-3781, 03/09/2021*
 DESIGN BY: *Whitman, Reardon & Associates, LLP, (804) 272-8700*
 SUBSURFACE UTILITY BY, DATE: *AccuMark, Inc. (804) 550-7140, 07/07/2021*

See Sheet 10 for Utility Owner's List

REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	95		0095-076-299-C-501	4

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

Whitman, Reardon & Associates
 Richmond, Virginia
 HYDRAULICS ENGINEER

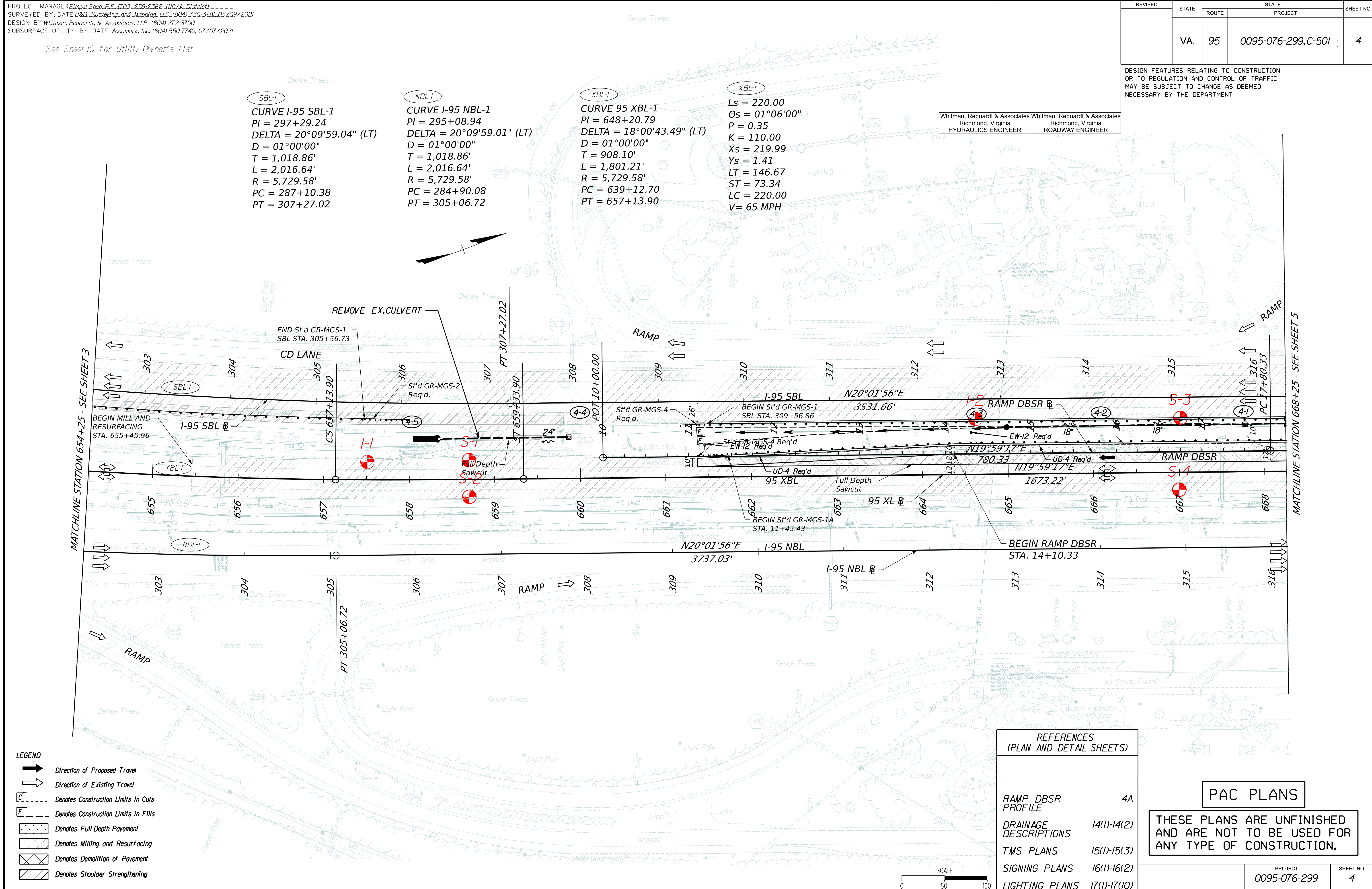
Whitman, Reardon & Associates
 Richmond, Virginia
 ROADWAY ENGINEER

SBL-1
 CURVE I-95 SBL-1
 PI = 297+29.24
 DELTA = 20°09'59.04" (LT)
 D = 01°00'00"
 T = 1,018.86'
 L = 2,016.64'
 R = 5,729.58'
 PC = 287+10.38
 PT = 307+27.02

NBL-1
 CURVE I-95 NBL-1
 PI = 295+08.94
 DELTA = 20°09'59.01" (LT)
 D = 01°00'00"
 T = 1,018.86'
 L = 2,016.64'
 R = 5,729.58'
 PC = 284+90.08
 PT = 305+06.72

XBL-1
 CURVE 95 XBL-1
 PI = 648+20.79
 DELTA = 18°00'43.49" (LT)
 D = 01°00'00"
 T = 908.10'
 L = 1,801.21'
 R = 5,729.58'
 PC = 639+12.70
 PT = 657+13.90

XBL-1
 Ls = 220.00
 Os = 01°06'00"
 P = 0.35
 K = 110.00
 Xs = 219.99
 Ys = 1.41
 LT = 146.67
 ST = 73.34
 LC = 220.00
 V = 65 MPH



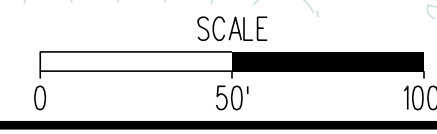
- LEGEND**
- Direction of Proposed Travel
 - Direction of Existing Travel
 - Denotes Construction Limits In Cuts
 - Denotes Construction Limits In Fills
 - Denotes Full Depth Pavement
 - Denotes Milling and Resurfacing
 - Denotes Demolition of Pavement
 - Denotes Shoulder Strengthening

REFERENCES (PLAN AND DETAIL SHEETS)

RAMP DBSR PROFILE	4A
DRAINAGE DESCRIPTIONS	14(1)-14(2)
TMS PLANS	15(1)-15(3)
SIGNING PLANS	16(1)-16(2)
LIGHTING PLANS	17(1)-17(10)

PAC PLANS

THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.



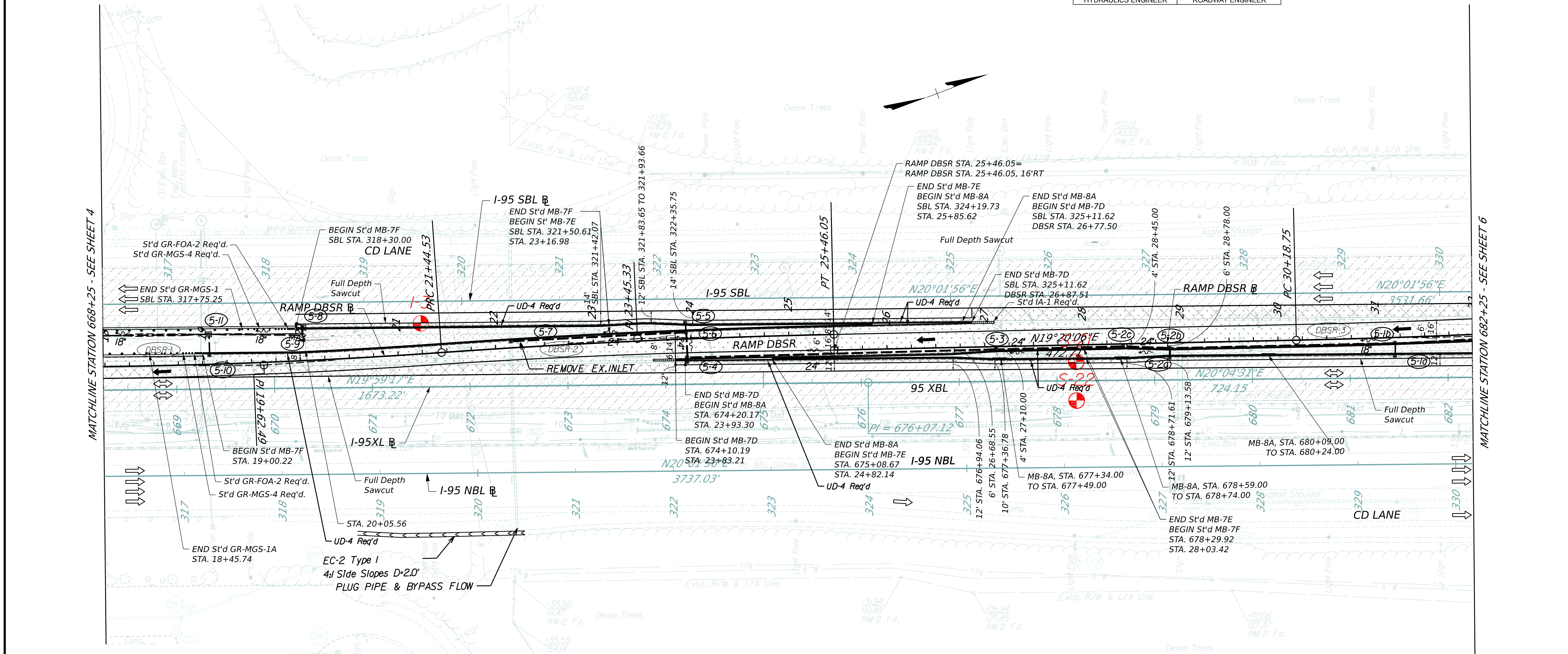
PROJECT MANAGER: Bimbal Shabb, P.E. (703) 259-2362 (NOVA District)
 SURVEYED BY, DATE: H&B Surveying and Mapping, LLC (804) 330-3781, 03/09/2021
 DESIGN BY: Whitman, Requardt & Associates, LLP (804) 272-8700
 SUBSURFACE UTILITY BY, DATE: AccuMark, Inc. (804) 550-7140, 07/07/2021

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	VA.	95		0095-076-299, C-501	5

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Whitman, Requardt & Associates Richmond, Virginia HYDRAULICS ENGINEER	Whitman, Requardt & Associates Richmond, Virginia ROADWAY ENGINEER
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LEGEND

- ➔ Direction of Proposed Travel
- ➔ Direction of Existing Travel
- Denotes Construction Limits In Cuts
- Denotes Construction Limits In Fills
- ▨ Denotes Full Depth Pavement
- ▨ Denotes Milling and Resurfacing
- ▨ Denotes Demolition of Pavement
- ▨ Denotes 4" Concrete Cap

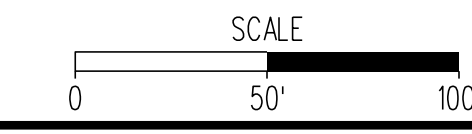
CURVE DBSR-1	CURVE DBSR-2	CURVE DBSR-3
PI = 19+62.49	PI = 23+45.33	PI = 32+09.50
DELTA = 03°28'13.10" (LT)	DELTA = 02°49'01.91" (RT)	DELTA = 02°40'34.53" (LT)
D = 00°57'10"	D = 00°42'06"	D = 00°42'06"
T = 182.15'	T = 200.80'	T = 190.75'
L = 364.20'	L = 401.52'	L = 381.43'
R = 6,013.00'	R = 8,166.00'	R = 8,166.00'
PC = 17+80.33	PC = 21+44.53	PC = 30+18.75
PT = 21+44.53	PT = 25+46.05	PT = 34+00.18
e = 2.0%	e = NC	e = NC
V = 50 MPH	V = 50 MPH	V = 50 MPH

REFERENCES (PLAN AND DETAIL SHEETS)

RAMP DBSR PROFILE	5A
E&S PLAN	5B
DRAINAGE DESCRIPTIONS	14(1)-14(2)
TMS PLANS	15(1)-15(3)
SIGNING PLANS	16(1)-16(2)
LIGHTING PLANS	17(1)-17(10)

PAC PLANS

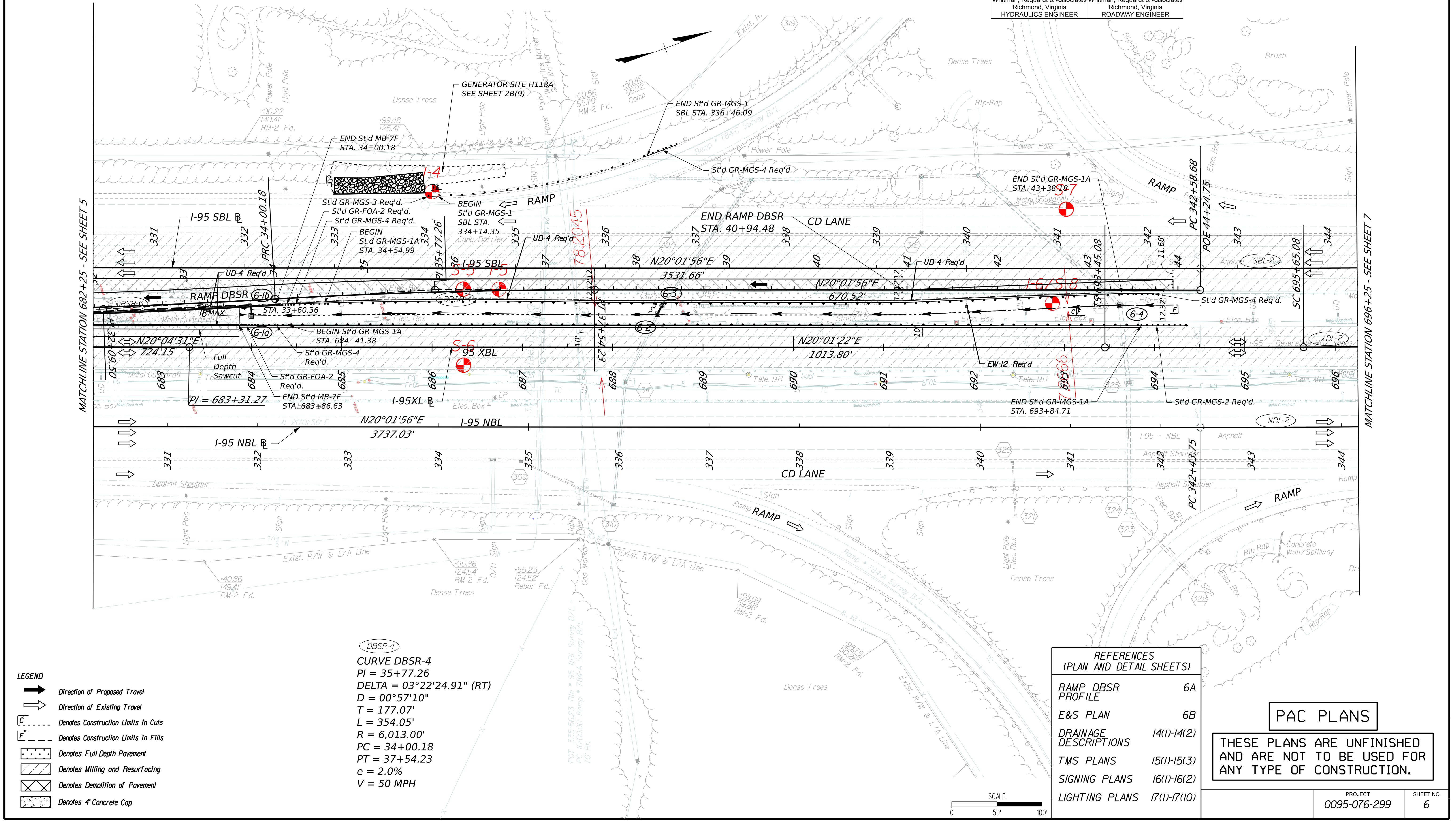
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.



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DESIGN BY: Whitman, Requardt & Associates, LLP (804) 272-8700
SUBSURFACE UTILITY BY: DATE: AccuMark, Inc. (804) 550-7140 07/07/2021

See Sheet 10 for Utility Owner's List

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	95	0095-076-299-C-501	6
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT				
Whitman, Requardt & Associates Richmond, Virginia HYDRAULICS ENGINEER		Whitman, Requardt & Associates Richmond, Virginia ROADWAY ENGINEER		



MATCHLINE STATION 682+25 - SEE SHEET 5

MATCHLINE STATION 696+25 - SEE SHEET 7

- LEGEND**
- Direction of Proposed Travel
 - Direction of Existing Travel
 - Denotes Construction Limits in Cuts
 - Denotes Construction Limits in Fills
 - Denotes Full Depth Pavement
 - Denotes Milling and Resurfacing
 - Denotes Demolition of Pavement
 - Denotes 4" Concrete Cap

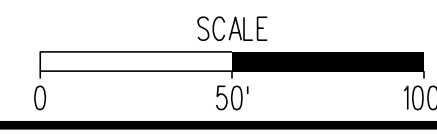
CURVE DBSR-4
 PI = 35+77.26
 DELTA = 03°22'24.91" (RT)
 D = 00°57'10"
 T = 177.07'
 L = 354.05'
 R = 6,013.00'
 PC = 34+00.18
 PT = 37+54.23
 e = 2.0%
 V = 50 MPH

REFERENCES (PLAN AND DETAIL SHEETS)

RAMP DBSR PROFILE	6A
E&S PLAN	6B
DRAINAGE DESCRIPTIONS	14(1)-14(2)
TMS PLANS	15(1)-15(3)
SIGNING PLANS	16(1)-16(2)
LIGHTING PLANS	17(1)-17(10)

PAC PLANS

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 DESIGN BY: *Whitman, Requardt & Associates, LLP (804) 272-8700*
 SUBSURFACE UTILITY BY, DATE: *AccuMark, Inc. (804) 550-7740 07/07/2021*

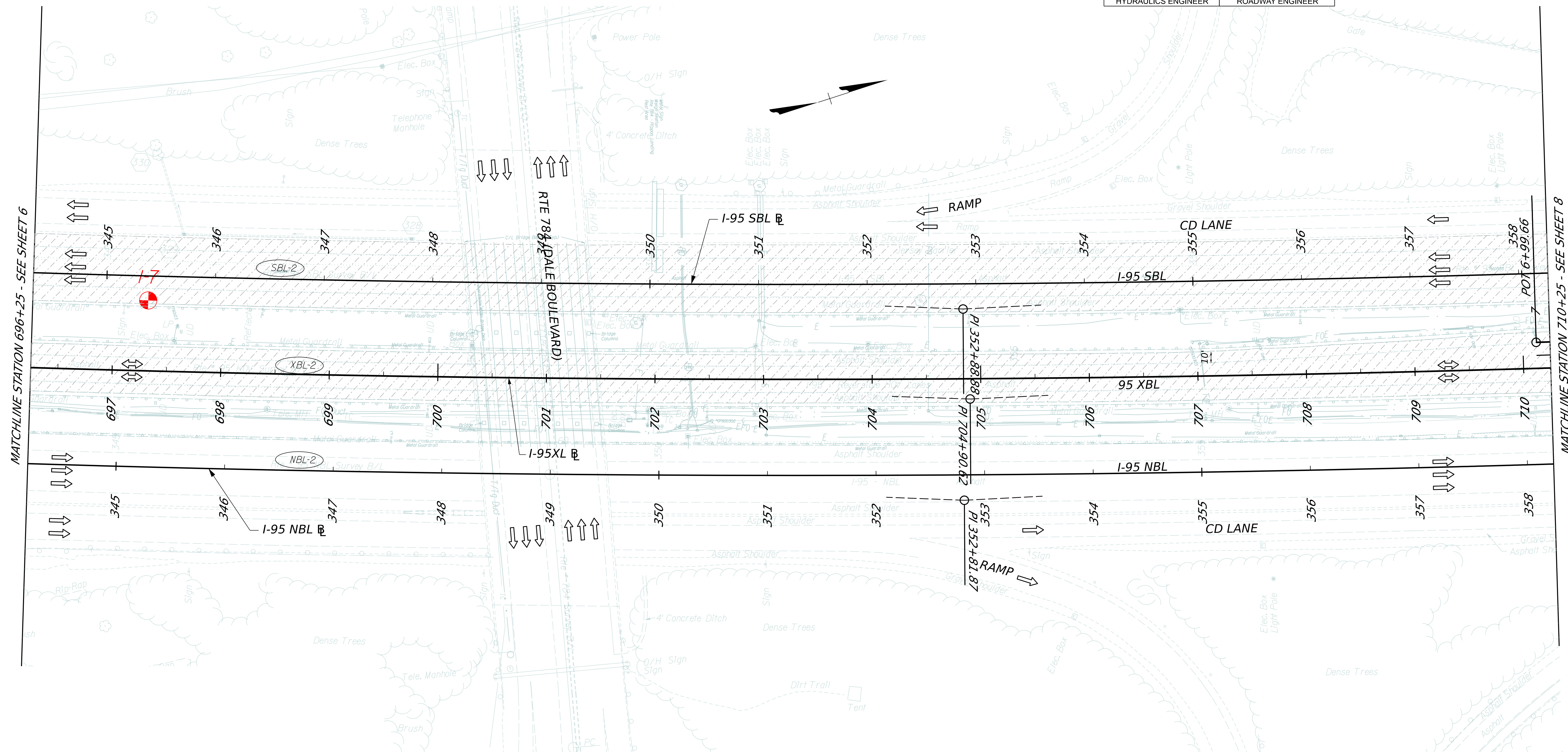
See Sheet 10 For Utility Owner's List

REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	95		0095-076-299, C-501	7

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

Whitman, Requardt & Associates
 Richmond, Virginia
 HYDRAULICS ENGINEER

Whitman, Requardt & Associates
 Richmond, Virginia
 ROADWAY ENGINEER



- LEGEND**
- Direction of Proposed Travel
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 - Denotes Construction Limits in Cuts
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 - Denotes Full Depth Pavement
 - Denotes Milling and Resurfacing
 - Denotes Demolition of Pavement

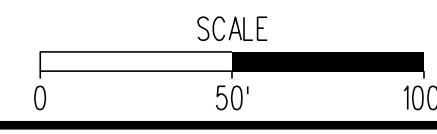
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 CURVE I-95 NBL-2
 PI = 352+81.87
 DELTA = 05°09'36.94" (LT)
 D = 00°14'56"
 T = 1,038.12'
 L = 2,074.84'
 R = 23,037.51'
 PC = 342+43.75
 PT = 363+18.59
- SBL-2**
 CURVE I-95 SBL-2
 PI = 352+88.88
 DELTA = 05°09'37.02" (LT)
 D = 00°15'02"
 T = 1,030.20'
 L = 2,059.00'
 R = 22,861.51'
 PC = 342+58.68
 PT = 363+17.68
- XBL-2**
 CURVE 95 XBL-2
 PI = 704+90.62
 DELTA = 04°37'08.11" (LT)
 D = 00°14'59"
 T = 925.54'
 L = 1,850.08'
 R = 22,949.51'
 PC = 695+65.08
 PT = 714+15.16
- XBL-2**
 Ls = 220.00
 Os = 00°16'29"
 P = 0.88
 K = 110.00
 Xs = 220.00
 Ys = 0.35
 LT = 146.67
 ST = 73.33
 LC = 220.00
 V = 65 mph

**REFERENCES
(PLAN AND DETAIL SHEETS)**

TMS PLANS 15(1)-15(3)

PAC PLANS

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PROJECT 0095-076-299	SHEET NO. 7
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PROJECT MANAGER: Bimbal Shabb, P.E. (703) 259-2362 (NOVA District)
 SURVEYED BY: DATE: H&B Surveying and Mapping, LLC (804) 330-3781 03/09/2021
 DESIGN BY: Whitman, Reardon & Associates, LLP (804) 272-8700
 SUBSURFACE UTILITY BY: DATE: AccuMark, Inc. (804) 550-7140 07/07/2021

See Sheet 10 for Utility Owner's List

003
 COMMONWEALTH OF VIRGINIA
 DEPARTMENT OF HIGHWAY
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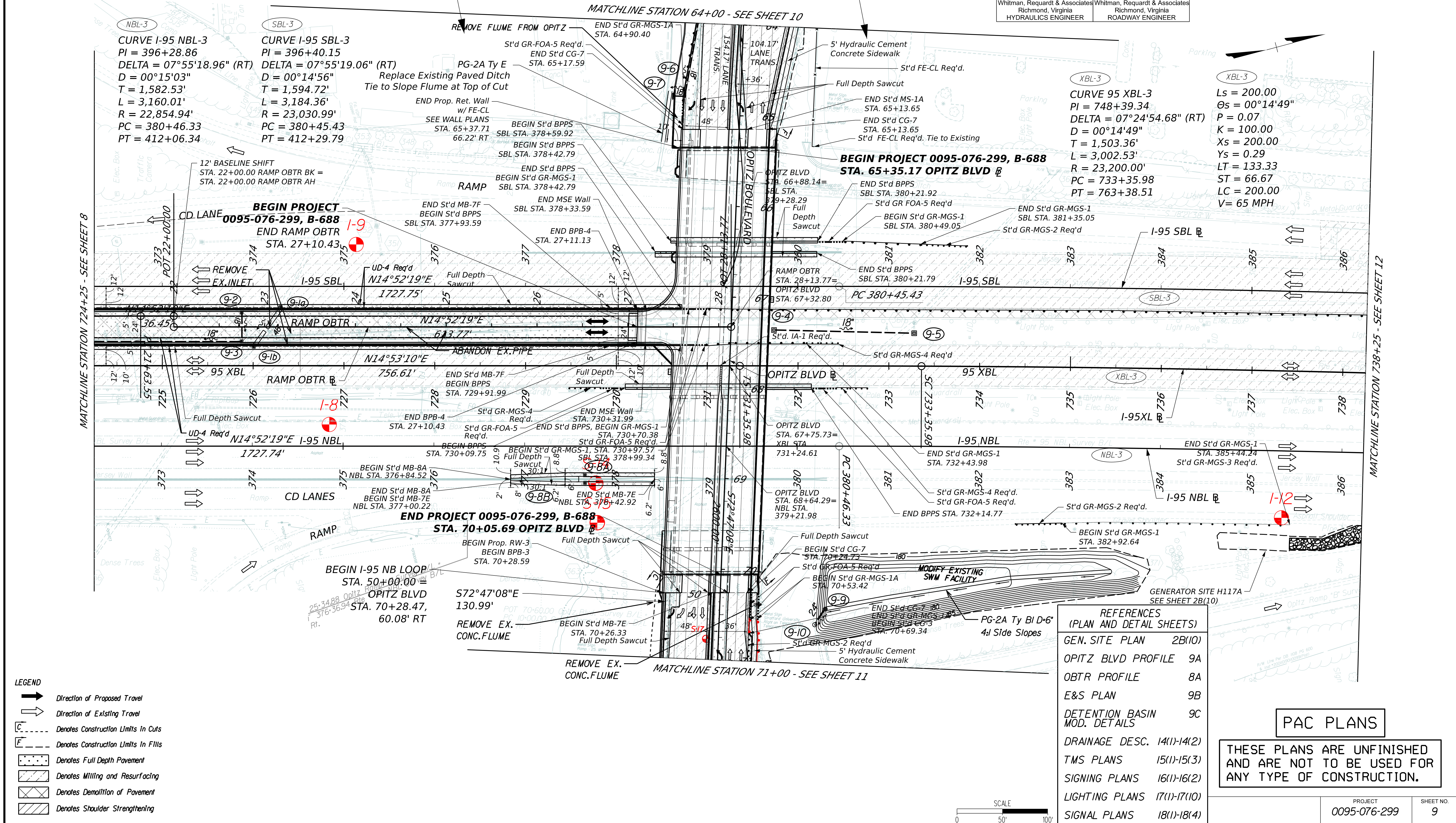
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 COMMONWEALTH OF VIRGINIA
 DB 1250 PG 506
 HWY PB 9 PG 314
 NO GPIN ASSIGNED
 0.654 +/- AC (CALC)

REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	95		0095-076-299, C-501	9

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Whitman, Reardon & Associates
 Richmond, Virginia
 HYDRAULICS ENGINEER

Whitman, Reardon & Associates
 Richmond, Virginia
 ROADWAY ENGINEER



PROJECT MANAGER: Bimbal Shabb, P.E. (703) 259-2362 (NOVA District)
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 DESIGN BY: Whitman, Requardt & Associates, LLP (804) 272-8700
 SUBSURFACE UTILITY BY: DATE Accumark, Inc. (804) 550-7140 07/07/2021

See Sheet 10 for Utility Owner's List

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	95	0095-076-299-C-501	8

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

Whitman, Requardt & Associates
 Richmond, Virginia
 HYDRAULICS ENGINEER

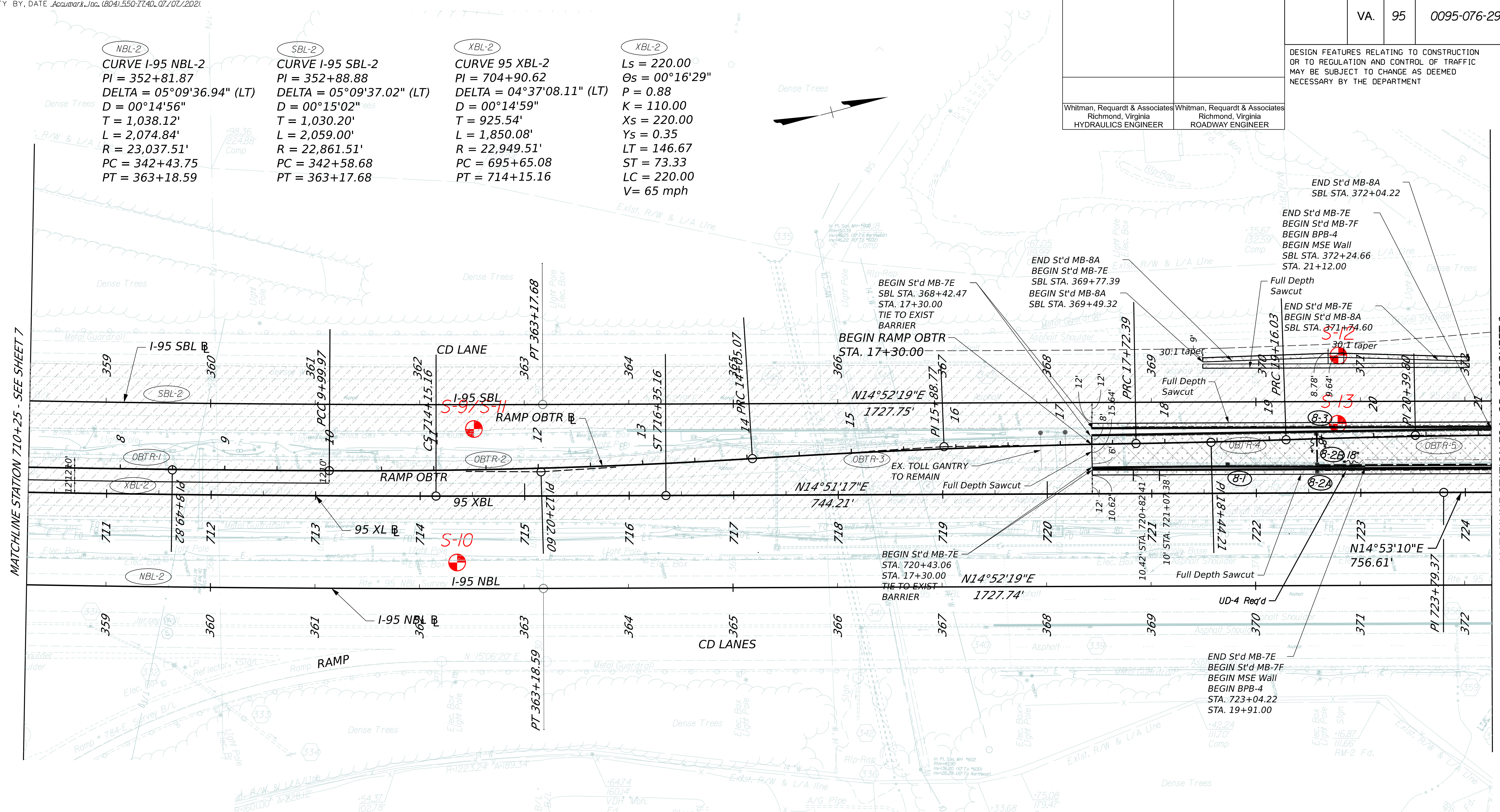
Whitman, Requardt & Associates
 Richmond, Virginia
 ROADWAY ENGINEER

<p>NBL-2 CURVE I-95 NBL-2 PI = 352+81.87 DELTA = 05°09'36.94" (LT) D = 00°14'56" T = 1,038.12' L = 2,074.84' R = 23,037.51' PC = 342+43.75 PT = 363+18.59</p>	<p>SBL-2 CURVE I-95 SBL-2 PI = 352+88.88 DELTA = 05°09'37.02" (LT) D = 00°15'02" T = 1,030.20' L = 2,059.00' R = 22,861.51' PC = 342+58.68 PT = 363+17.68</p>	<p>XBL-2 CURVE 95 XBL-2 PI = 704+90.62 DELTA = 04°37'08.11" (LT) D = 00°14'59" T = 925.54' L = 1,850.08' R = 22,949.51' PC = 695+65.08 PT = 714+15.16</p>	<p>XBL-2 Ls = 220.00' Os = 00°16'29" P = 0.88 K = 110.00 Xs = 220.00 Ys = 0.35 LT = 146.67 ST = 73.33 LC = 220.00 V = 65 mph</p>
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MATCHLINE STATION 710+25 - SEE SHEET 7

MATCHLINE STATION 724+25 - SEE SHEET 9



<p>OBTR-1 CURVE OBTR-1 PI = 8+49.82 DELTA = 00°45'01.98" (LT) D = 00°15'00" T = 150.16' L = 300.31' R = 22,925.51' PC = 6+99.66 PT = 9+99.97 e = NC V = 50 MPH</p>	<p>OBTR-2 CURVE OBTR-2 PI = 12+02.60 DELTA = 03°52'06.35" (LT) D = 00°57'18" T = 202.63' L = 405.10' R = 6,000.00' PC = 9+99.97 PT = 14+05.07 e = 2.00% V = 50 MPH</p>	<p>OBTR-3 CURVE OBTR-3 PI = 15+88.77 DELTA = 02°37'50.62" (RT) D = 00°42'59" T = 183.69' L = 367.32' R = 8,000.00' PC = 14+05.07 PT = 17+72.39 e = NC V = 50 MPH</p>	<p>OBTR-4 CURVE OBTR-4 PI = 18+44.21 DELTA = 01°00'35.16" (LT) D = 00°42'11" T = 71.82' L = 143.63' R = 8,150.00' PC = 17+72.39 PT = 19+16.03 e = NC V = 50 MPH</p>	<p>OBTR-5 CURVE OBTR-5 PI = 20+39.80 DELTA = 01°44'05.24" (RT) D = 00°42'03" T = 123.77' L = 247.52' R = 8,175.00' PC = 19+16.03 PT = 21+63.55 e = NC V = 50 MPH</p>
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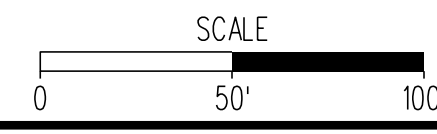
- LEGEND**
- Direction of Proposed Travel
 - Direction of Existing Travel
 - Denotes Construction Limits in Cuts
 - Denotes Construction Limits in Fills
 - Denotes Full Depth Pavement
 - Denotes Milling and Resurfacing
 - Denotes Demolition of Pavement

REFERENCES (PLAN AND DETAIL SHEETS)

RAMP OBTR PROFILE	8A
E&S PLAN	8B
DRAINAGE DESCRIPTIONS	14(1)-14(2)
TMS PLANS	15(1)-15(3)
SIGNING PLANS	16(1)-16(2)
LIGHTING PLANS	17(1)-17(10)

PAC PLANS

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 DESIGN BY: Whitman, Requardt & Associates, LLP (804) 272-8700
 SUBSURFACE UTILITY BY, DATE: AccuMark, Inc. (804) 550-7740, 07/07/2021

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REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	95	0095-076-299, C-501	12

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

Whitman, Requardt & Associates
 Richmond, Virginia
 HYDRAULICS ENGINEER

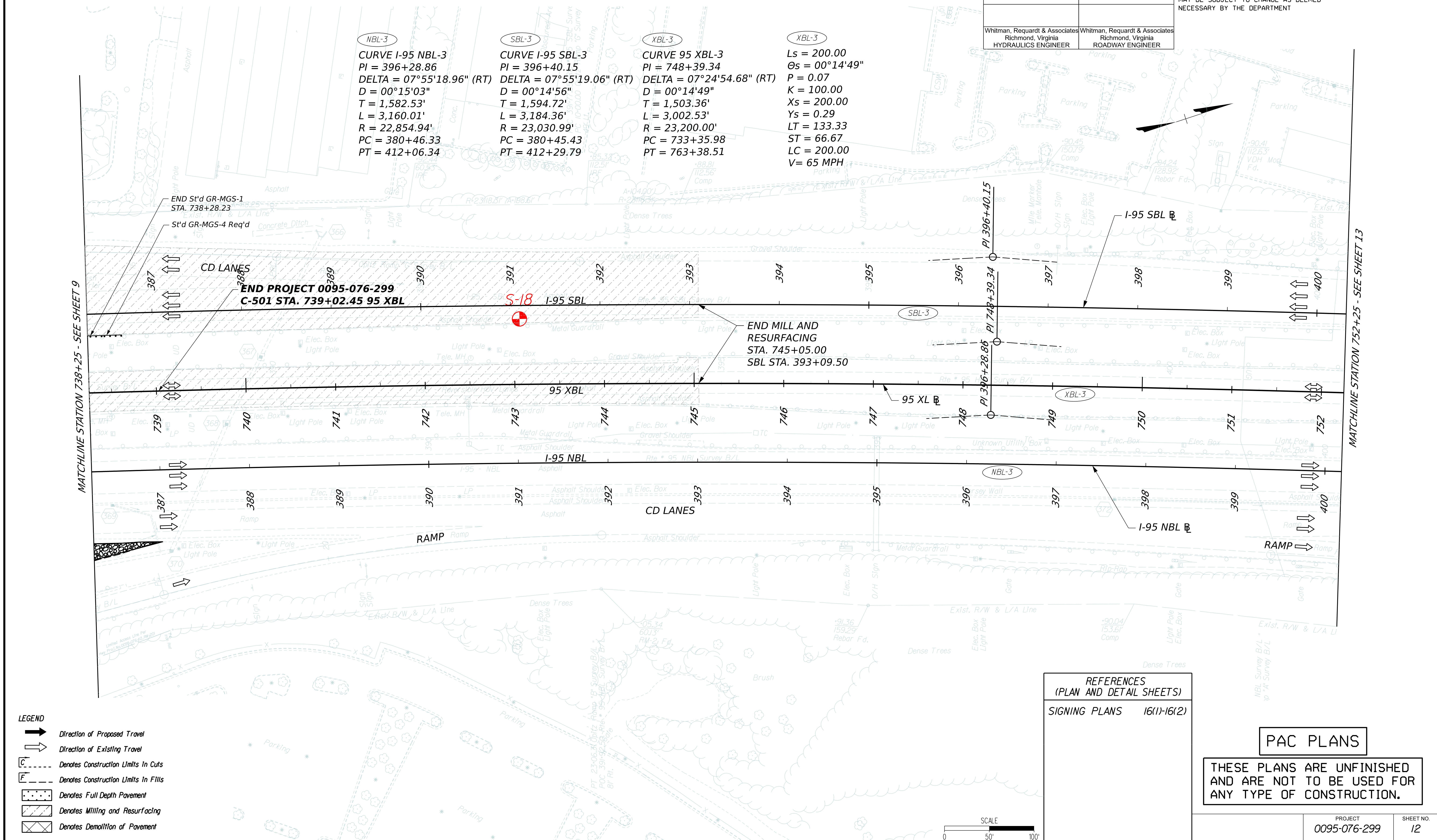
Whitman, Requardt & Associates
 Richmond, Virginia
 ROADWAY ENGINEER

NBL-3
 CURVE I-95 NBL-3
 PI = 396+28.86
 DELTA = 07°55'18.96" (RT)
 D = 00°15'03"
 T = 1,582.53'
 L = 3,160.01'
 R = 22,854.94'
 PC = 380+46.33
 PT = 412+06.34

SBL-3
 CURVE I-95 SBL-3
 PI = 396+40.15
 DELTA = 07°55'19.06" (RT)
 D = 00°14'56"
 T = 1,594.72'
 L = 3,184.36'
 R = 23,030.99'
 PC = 380+45.43
 PT = 412+29.79

XBL-3
 CURVE 95 XBL-3
 PI = 748+39.34
 DELTA = 07°24'54.68" (RT)
 D = 00°14'49"
 T = 1,503.36'
 L = 3,002.53'
 R = 23,200.00'
 PC = 733+35.98
 PT = 763+38.51

XBL-3
 Ls = 200.00
 Os = 00°14'49"
 P = 0.07
 K = 100.00
 Xs = 200.00
 Ys = 0.29
 LT = 133.33
 ST = 66.67
 LC = 200.00
 V = 65 MPH

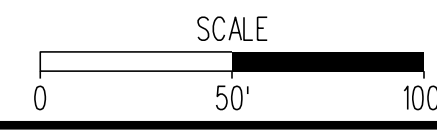


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REFERENCES
 (PLAN AND DETAIL SHEETS)
 SIGNING PLANS 16(1)-16(2)

PAC PLANS

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PROJECT	SHEET NO.
0095-076-299	12

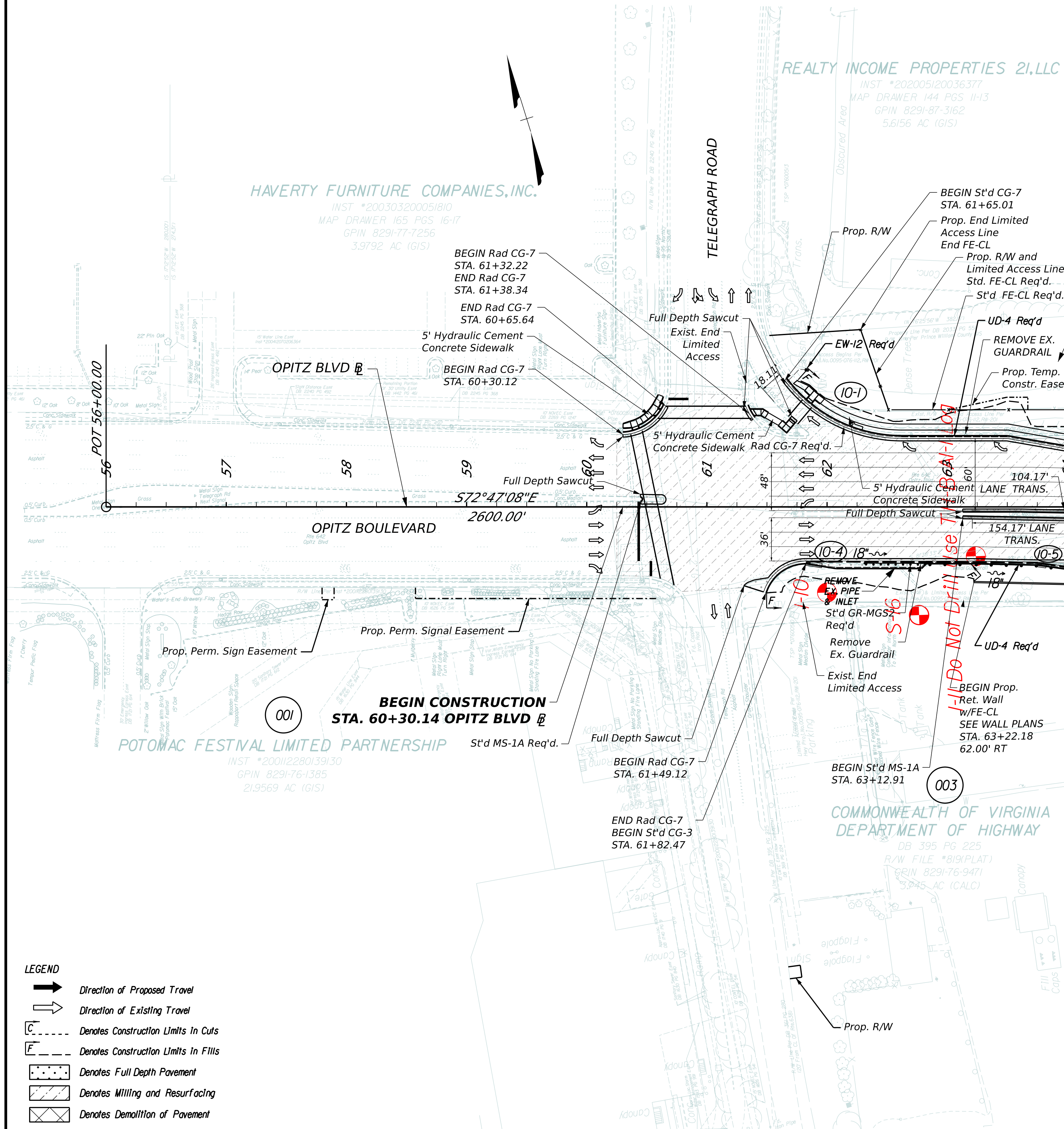
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 Richmond, Virginia
 HYDRAULICS ENGINEER

Whitman, Requardt & Associates
 Richmond, Virginia
 ROADWAY ENGINEER



002

COMMONWEALTH OF VIRGINIA
 DB 1250 PG 506
 HWY PB 9 PG 314
 NO GPIN ASSIGNED
 0.654 +/- AC (CALC)

Utility Owner's List

Water & Sewer:
 Prince William County Service Authority
 Engineering
 P.O. Box 2266
 4 County Complex Court
 Woodbridge, VA 22195-2266
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 Richard "Ricky" Hagstrom
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 Street Lighting Program Coordinator
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 701 E. Cary St.
 Andrew Brooks
 Undergound Damage Prevention Manager
 Dominion Emergency Preparedness Center
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 Suite 430
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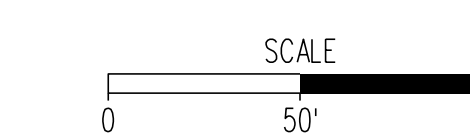
LUMEN (Qwest)
 Samantha Meyer
 Business Analyst - Relocations
 Tulsa, OK
 relocations@lumen.com

REFERENCES (PLAN AND DETAIL SHEETS)

OPITZ BLVD PROFILE	10A
E&S PLAN	10B
DRAINAGE DESC.	14(1)-14(2)
TMS PLANS	15(1)-15(3)
SIGNING PLANS	16(1)-16(2)
LIGHTING PLANS	17(1)-17(10)
SIGNAL PLANS	18(1)-18(4)

PAC PLANS

THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.



PROJECT	SHEET NO.
0095-076-299	10

APPENDIX B

Subsurface Investigation Record

APPENDIX B-1

Test Boring Summary

Table 1: Summary of Test Borings

Boring ID	Coordinates		Roadway	Ground EL (ft.)	Drilled Depth (ft.)	Groundwater Depth		Cave-in Depth (ft.)	Date Drilled
	Northing (ft.)	Easting (ft.)				During drilling (ft.)	At Completion (ft.)		
S-1	348484.1	3624371.3	Express Lane	110	28.7	NE	DRY	19.8	2/16/2022
S-2	348471.9	3624412.9	Express Lane	110	28.7	12.5	23.5	28.0	2/16/2022
S-3	349283.1	3624619.1	I-95 GP	129	16.1	13.5	9.5	13.2	2/2/2022
S-4	349252.6	3624697.1	Express Lane	133	20.1	16.0	DRY	17.5	2/16/2022
S-5	351101.3	3625275.0	I-95 GP	167	30.0	18.5	18.5	21.3	1/31/2022
S-6	351074.3	3625351.7	Express Lane	169	30.0	26.0	24.0	26.2	2/15/2022
S-7	351756.8	3625425.4	I-95 GP	173	29.3	NE	26.4	27.2	2/7/2022
S-8/I-6	351706.9	3625517.6	Express Lane	173	30.0	17.0	23.8	27.2	2/14/2022
S-9/S-11	353768.4	3626160.8	I-95 GP	181	30.0	24.0	21.8	23.1	1/30/2022
S-10	353719.7	3626280.0	I-95 GP	177	30.0	19.0	17.8	21.5	2/10/2022
S-12	354583.1	3626310.1	I-95 GP	181	24.7	24.0	DRY	21.7	2/13/2022
S-13	354568.6	3626364.5	I-95 GP	182	30.0	NE	DRY	27.1	1/30/2022
S-14	355167.7	3626734.1	I-95 GP	181	29.3	17.6	14.3	14.3	2/9/2022
S-15	355156.9	3626774.2	I-95 GP	180	29.3	14.5	17.4	24.6	2/8/2022
S-16	355430.6	3626149.0	VDOT Yard	203	29.2	23.5	26.0	27.2	1/24/2022
S-17	355266.7	3626936.4	Opitz Blvd.	208	30.0	NE	DRY	27.3	1/25/2022
S-18	356525.7	3626909.5	I-95 GP	200	30.0	16.0	DRY	10.2	1/26/2022
S-21	350321.8	3625036.4	Express Lane	160	30.0	18.0	19.5	21.9	2/14/2022
S-22	350308.5	3625072.6	Express Lane	160	30.0	22.0	12.7	23.4	2/15/2022
I-1	348375.5	3624333.5	Express Lane	106	28.7	NE	DRY	28.2	2/17/2022
I-2	349058.3	3624536.0	I-95 GP	122	16.2	9.0	13.2	15.1	2/2/2022
I-3	349705.1	3624770.8	I-95 GP	140	30.0	19.5	19.7	23.8	2/1/2022
I-4	351103.4	3625167.0	I-95 GP	166	30.0	17.0	18.3	25.9	2/9/2022
I-5	351136.3	3625293.8	I-95 GP	168	30.0	16.0	16.6	24.4	1/31/2022
I-7	352130.0	3625653.3	I-95 GP	178	30.0	15.5	17.2	21.8	2/1/2022
I-8	354926.4	3626601.7	I-95 GP	179	30.0	14.0	25.5	27.5	2/10/2022
I-9	355008.4	3626410.6	I-95 GP	185	30.0	17.5	21.5	24.7	2/6/2022
I-10	355473.7	3626074.4	VDOT Yard	205	30.0	18.5	Dry	27.1	1/24/2022
I-12	355913.5	3626970.2	I-95 GP	186	30.0	17.0	Dry	24.6	2/13/2022
B-A1-1	355465.6	3626202.7	Opitz Blvd	110	15.0	NE	Dry		11/9/2022

APPENDIX B-2

Test Boring logs



PROJECT #: 45893-001
 LOCATION: I-95 Express way/Opitz Blvd.
 STRUCTURE: SIGN

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 PAGE 1 OF 1

STATION: NORTHING: 348484.0748 ft SURFACE ELEVATION: 110.0 ft
 OFFSET: EASTING: 3624371.2574 ft COORD. DATUM: VA South

FIELD DATA

Date(s) Drilled: 2/16/2022 - 2/16/2022
 Drilling Method(s): HSA
 SPT Method: Automatic Hammer
 Other Test(s):
 Driller: SaLUT, Inc.
 Logger: Daniel Case

LAB DATA

LIQUID LIMIT
 PLASTICITY INDEX
 MOISTURE CONTENT (%)

GROUND WATER
 NOT ENCOUNTERED DURING DRILLING

FIELD DESCRIPTION OF STRATA

LL PI

DEPTH (ft)	ELEVATION (ft)	SOIL			ROCK			STRATA LEGEND
		STANDARD PENETRATION TEST HAMMER BLOWS	SOIL RECOVERY (%)	SAMPLE LEGEND	SAMPLE INTERVAL	CORE RECOVERY (%)	ROCK QUALITY DESIGNATION	
0.0	110.0							
2	105	33	73	3.5				
4	105	40	47	5				
6	105	49	50/2"	6				
8	105	50/5"	27	7.5				
10	100	33	50/3"	11				
12	100	50/5"	333	12.5				
14	95	50/5"	27	13.5				
16	95	50/4"	27	15				
18	90	50/5"	27	16				
20	90	50/5"	27	17.5				
22	85	2	50/4"	18.5				
24	85	50/4"	47	20				
26	85	50/4"	47	23.5				
28	85	50/2"	100	25				
				28.5				
				28.7				

0.0 / 110.0
 17" Asphalt **ASPH**
 1.4 / 108.6
 12" *Subbase material*, Light gray, medium to coarse, SAND AND GRAVEL, trace Silt, moist **CRA**
 2.4 / 107.6
Residual, Gray, black, SILT derived from highly weathered Graphitic Schist, hard, moist to dry below 13.5ft. **ML**

Auger refusal at 28.7ft.
 Boring terminated at 28.7ft.

REMARKS: Rig Type: B57 Mobile.
 Cave-in depth 19.8ft. Dry at completion.

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SPT_LOG:I-95 EXPRESS LANE- OPITZ BLVD SIGN AND IT BORINGS.GP-J.SPT7.GDT.gINT_version 10.02.00.04:3/8/22:Whitman, Raquardt, and Associates



PROJECT #: 45893-001
 LOCATION: I-95 Express way/Opitz Blvd.
 STRUCTURE: SIGN

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 PAGE 1 OF 1

STATION: NORTHING: 348471.9265 ft
 SURFACE ELEVATION: 110.0 ft
 OFFSET: Easting: 3624412.8929 ft
 COORD. DATUM: VA South

FIELD DATA

Date(s) Drilled: 2/16/2022 - 2/16/2022

LAB DATA

Drilling Method(s): HSA
 SPT Method: Automatic Hammer
 Other Test(s):
 Driller: SaLUT, Inc.
 Logger: Daniel Case

LIQUID LIMIT
 PLASTICITY INDEX
 MOISTURE CONTENT (%)

GROUND WATER
 ▽ FIRST ENCOUNTERED AT 12.5 ft DEPTH

FIELD DESCRIPTION OF STRATA

LL PI

DEPTH (ft)	ELEVATION (ft)	SOIL			ROCK			STRATA LEGEND
		STANDARD PENETRATION TEST HAMMER BLOWS	SOIL RECOVERY (%)	SAMPLE LEGEND	SAMPLE INTERVAL	CORE RECOVERY (%)	ROCK QUALITY DESIGNATION	
0.0	110.0							
2								17" Asphalt ASPH
4	105	40	50/5"	60	3.5			1.4 / 108.6 14" Subbase material, Light gray, medium to coarse, SAND AND GRAVEL, trace Silt, moist CRA
6	23	35		100	5			2.6 / 107.4 Residual, Gray, black, SILT derived from highly weathered Graphitic Schist, some lithified rock fragments, hard, dry to moist to wet below 23.5ft. ML
8	8	36			6			
10	100	18		100	7.5			
12	41	50/5"			8.5			
14	28	50/5"		60	10			
16	95	50/6"			11			
18					12.5			
20	90	50/5"		60	13.5			
22					15			
24	85	50/4"		33	16			
26					17.5			
28	50/2"			27	18.5			
					20			
					23.5			
					25			
					28.5			
				100	28.7			

Auger refusal at 28.7ft.
 Boring terminated at 28.7ft.

REMARKS: Rig Type: B57 Mobile.
 Cave-in depth 28.0ft. Groundwater at completion 23.5ft.

PAGE 1 OF 1

S-2

SPT_LOG:I-95 EXPRESS LANE- OPITZ BLVD SIGN AND IT BORINGS.GP-J-SPT7.GDT:GINT_version 10.02.00.04:3/8/22:Whitman, Raquardt, and Associates



PROJECT #: 45893-001
 LOCATION: I-95 Express way/Opitz Blvd.
 STRUCTURE: SIGN

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 PAGE 1 OF 1

STATION: NORTHING: 349283.1224 ft SURFACE ELEVATION: 129.0 ft
 OFFSET: Easting: 3624619.0786 ft COORD. DATUM: VA South

FIELD DATA

Date(s) Drilled: 2/2/2022 - 2/2/2022
 Drilling Method(s): HSA
 SPT Method: Automatic Hammer
 Other Test(s):
 Driller: SaLUT, Inc.
 Logger: Daniel Case

LAB DATA

LIQUID LIMIT
 PLASTICITY INDEX
 MOISTURE CONTENT (%)

GROUND WATER
 ▽ FIRST ENCOUNTERED AT 13.5 ft DEPTH

FIELD DESCRIPTION OF STRATA

LL PI

DEPTH (ft)	ELEVATION (ft)	SOIL			ROCK			STRATA LEGEND
		STANDARD PENETRATION TEST HAMMER BLOWS	SOIL RECOVERY (%)	SAMPLE LEGEND	CORE RECOVERY (%)	ROCK QUALITY DESIGNATION	DIP °	
0.0	129.0							
1.3	127.7							
2.4	126.6							
6.5	122.5							
14.0	115.0							
16.1								

0.0 / 129.0
 15" Asphalt **ASPH**

1.3 / 127.7
 14" *Subbase material*, Light gray, medium to coarse, SAND AND GRAVEL, trace Silt, moist **CRA**

2.4 / 126.6
 FILL, Brown, fine to medium CLAYEY SAND, trace Gravel, medium dense, moist **SC**

6.5 / 122.5
 Brown, gray, fine to medium SILTY SAND, dense to medium dense, moist **SM**

14.0 / 115.0
 Residual, Gray, black, highly weathered GRAPHITIC SCHIST ROCK FRAGMENTS, extremely dense, dry **MST**

Auger refusal at 16.1ft.
 Boring terminated at 16.1ft.

SPT_LOG:I-95 EXPRESS LANE- OPITZ BLVD SIGN AND IT BORINGS.GPJ-SPT7.GDT:GINT _version 10.02.00.04:3/8/22:Whitman, Raquardt, and Associates

REMARKS: Rig Type: B57 Mobile.
 Cave-in depth 13.2ft. Groundwater at completion 9.5ft.

PAGE 1 OF 1

S-3



PROJECT #: 45893-001
LOCATION: I-95 Express way/Opitz Blvd.
STRUCTURE: SIGN

S-4
PAGE 1 OF 1

STATION: NORTHING: 349252.5811 ft SURFACE ELEVATION: 133.0 ft
OFFSET: Easting: 3624697.135 ft COORD. DATUM: VA South

FIELD DATA

Date(s) Drilled: 2/16/2022 - 2/16/2022

LAB DATA

Drilling Method(s): HSA
 SPT Method: Automatic Hammer
 Other Test(s):
 Driller: SaLUT, Inc.
 Logger: Daniel Case

LIQUID LIMIT
 PLASTICITY INDEX
 MOISTURE CONTENT (%)

GROUND WATER
 ▽ FIRST ENCOUNTERED AT 16.0 ft DEPTH

FIELD DESCRIPTION OF STRATA

LL PI

DEPTH (ft)	ELEVATION (ft)	SOIL			ROCK			STRATA LEGEND
		STANDARD PENETRATION TEST HAMMER BLOWS	SOIL RECOVERY (%)	SAMPLE INTERVAL	CORE RECOVERY (%)	ROCK QUALITY DESIGNATION	DIP °	
0.0	133.0							
2								
3	130	4	100	3.5				
4								
5		5	100	5				
6								
8	125	8	100	6				
10								
11		10	60	7.5				
12								
13	120	12	100	8.5				
14								
15		14	100	10				
16								
17		16	100	11				
18	115							
19		18	100	12.5				
20								
20.1		20	100	15				
20.5		20.5	100	16				
21								
21.5		21.5	100	17.5				
22								
22.5		22.5	100	18.5				
23								
23.5		23.5	100	20				
24								
24.5		24.5	100	20.1				

0.0 / 133.0
 15" Asphalt **ASPH**

1.3 / 131.7
 15" Subbase material, Light gray, medium to coarse, SAND AND GRAVEL, trace Silt, moist **CRA**

2.5 / 130.5
 Possible fill, Brown, fine to medium SILTY SAND, gray Clay seam, trace Gravel, loose to medium dense, moist **SM**

11.2 / 121.8
 Dark gray, SANDY SILT, trace Clay, trace Gravel, stiff to very stiff, moist **ML**

17.5 / 115.5
 Residual, Gray, black, SILT derived from highly weathered GRAPHITIC SCHIST ROCK FRAGMENTS, some lithified rock fragments, hard, moist **ML**

Auger refusal at 20.1ft.
 Boring terminated at 20.1ft.

REMARKS: Rig Type: B57 Mobile.
 Cave-in depth 17.5ft. Dry at completion.

PAGE 1 OF 1

S-4

SPT_LOG:I-95 EXPRESS LANE- OPITZ BLVD SIGN AND IT BORINGS.GP-J.SPT7.GDT.gINT _version 10.02.00.04:3/8/22:Whitman, Raquardt, and Associates



PROJECT #: 45893-001
 LOCATION: I-95 Express way/Opitz Blvd.
 STRUCTURE: SIGN

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 PAGE 1 OF 1

STATION: NORTHING: 351101.2832 ft SURFACE ELEVATION: 167.0 ft
 OFFSET: Easting: 3625275.036 ft COORD. DATUM: VA South

FIELD DATA

Date(s) Drilled: 1/31/2022 - 1/31/2022

LAB DATA

Drilling Method(s): HSA
 SPT Method: Automatic Hammer
 Other Test(s):
 Driller: SaLUT, Inc.
 Logger: Daniel Case

LIQUID LIMIT
 PLASTICITY INDEX
 MOISTURE CONTENT (%)

GROUND WATER
 ▽ FIRST ENCOUNTERED AT 18.5 ft DEPTH

FIELD DESCRIPTION OF STRATA

LL PI

DEPTH (ft)	ELEVATION (ft)	SOIL			ROCK			STRATA LEGEND
		STANDARD PENETRATION TEST HAMMER BLOWS	SOIL RECOVERY (%)	SAMPLE INTERVAL	CORE RECOVERY (%)	ROCK QUALITY DESIGNATION	DIP °	
2	165							
4	3	4	87	3.5				
6	3	5	87	6				
8	3	5	100	8.5				
10	3	5	100	10				
12	3	5	100	11				
14	3	6	100	12.5				
16	3	4	100	13.5				
18	3	4	100	15				
20	4	12	100	16				
22	4	10	100	17.5				
24	6	12	100	18.5				
26	6	13	100	20				
28	6	13	100	23.5				
30	40	44	100	25				
		47	100	28.5				
				30				

0.0 / 167.0
 15" Asphalt **ASPH**

1.3 / 165.7
 16" *Subbase material*, Light gray, medium to coarse, SAND AND GRAVEL, trace Silt, moist **CRA**

2.6 / 164.4
FILL, Brown, brown/gray, fine to medium CLAYEY SAND, loose to medium dense, moist **SC**

13.5 / 153.5
 Brown, gray, fine to medium SILTY SAND, medium dense, moist. Red coloring noted in sample #6, at 16-17.5'. **SM**

28.5 / 138.5
Residual, Dark gray, hard SANDY SILT derived from decomposition of GRAPHITIC SCHIST ROCK, moist **ML**
 Boring terminated at 30ft

REMARKS: Rig Type: B57 Mobile.
 Cave-in depth 21.3ft. Groundwater at completion 18.5ft.

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S-5

SPT_LOG:I-95 EXPRESS LANE- OPITZ BLVD SIGN AND IT BORINGS.GPJ-SPT7.GDT:GINT _version 10.02.00.04:3/8/22:Whitman, Raquardt, and Associates



PROJECT #: 45893-001
LOCATION: I-95 Express way/Opitz Blvd.
STRUCTURE: SIGN

S-6
PAGE 1 OF 1

STATION: NORTHING: 351074.2587 ft SURFACE ELEVATION: 169.0 ft
OFFSET: Easting: 3625351.6978 ft COORD. DATUM: VA South

FIELD DATA

Date(s) Drilled: 2/15/2022 - 2/15/2022

LAB DATA

Drilling Method(s): HSA
 SPT Method: Automatic Hammer
 Other Test(s):
 Driller: SaLUT, Inc.
 Logger: Daniel Case

LIQUID LIMIT
 PLASTICITY INDEX
 MOISTURE CONTENT (%)

GROUND WATER
 ▽ FIRST ENCOUNTERED AT 26.0 ft DEPTH

FIELD DESCRIPTION OF STRATA

LL PI

DEPTH (ft)	ELEVATION (ft)	SOIL			ROCK			STRATA LEGEND
		STANDARD PENETRATION TEST HAMMER BLOWS	SOIL RECOVERY (%)	SAMPLE LEGEND	SAMPLE INTERVAL	CORE RECOVERY (%)	ROCK QUALITY DESIGNATION	
2	165	3	87	X	3.5			
4		4			5			
6		7	40	X	6			
8		7			7.5			
10	160	6	100	X	8.5			
12		9			10			
14	155	8	100	X	11			
16		12			12.5			
18		10	100	X	13.5			
20	150	1			15			
22		3	100	X	16			
24	145	19			17.5			
26		21	50/2"	X	18.5			
28		25			20			
30	140	36	100	X	23.5			
		37			25			
		15			28.5			
		24	100	X	30			
		19						

0.0 / 169.0
 17" Asphalt **ASPH**

1.4 / 167.6
 12" *Subbase material*, Light gray, medium to coarse, SAND AND GRAVEL, trace Silt, moist **CRA**

2.4 / 166.6
 Brown, gray, fine to medium SILTY SAND, loose to medium dense, moist **SM**

11.0 / 158.0
 Brown, gray, fine to medium SILTY SAND, clay seam at multiple locations, none to trace Gravel, medium dense, moist **SM**

15.0 / 154.0
 Gray, brown, fine to medium SILTY SAND, trace Gravel, very loose, moist **SM**

18.5 / 150.5
Residual, Dark gray, fine to medium SILTY SAND, seam of white and dark gray sandy Silt at multiple locations, very dense to dense, moist. **SM**

Boring terminated at 30ft

REMARKS: Rig Type: B57 Mobile.
 Cave-in depth 26.2ft. Groundwater at completion 24.0ft.

PAGE 1 OF 1
S-6

SPT LOG: I-95 EXPRESS LANE - OPITZ BLVD SIGN AND IT BORINGS.GPJ-SPT7.GDT.gINT _version 10.02.00.04:3/8/22:Whitman, Raquardt, and Associates



PROJECT #: 45893-001
 LOCATION: I-95 Express way/Opitz Blvd.
 STRUCTURE: SIGN

S-7
 PAGE 1 OF 1

STATION: OFFSET:
 NORTHING: 351756.8326 ft Easting: 3625425.3792 ft
 SURFACE ELEVATION: 173.0 ft COORD. DATUM: VA South

FIELD DATA

Date(s) Drilled: 2/7/2022 - 2/7/2022

LAB DATA

Drilling Method(s): HSA
 SPT Method: Automatic Hammer
 Other Test(s):
 Driller: SaLUT, Inc.
 Logger: Daniel Case

GROUND WATER
 NOT ENCOUNTERED DURING DRILLING

LIQUID LIMIT
 PLASTICITY INDEX
 MOISTURE CONTENT (%)

FIELD DESCRIPTION OF STRATA

LL PI

DEPTH (ft)	ELEVATION (ft)	SOIL			ROCK			STRATA LEGEND
		STANDARD PENETRATION TEST HAMMER BLOWS	SOIL RECOVERY (%)	SAMPLE INTERVAL	CORE RECOVERY (%)	ROCK QUALITY DESIGNATION	DIP °	
0.0	173.0							7" Asphalt ASPH
0.6	172.4							9" Subbase material, Light gray, medium to coarse, SAND AND GRAVEL, trace Silt, moist CRA
1.3	171.7							Brown, gray, fine to medium CLAYEY SAND, trace Gravel,, medium dense to loose, moist SC
7.0	166.0							Red, brown, fine to medium, SILTY SAND, loose, moist SM
9.0	164.0							Gray, SANDY CLAY, trace Gravel, medium stiff, moist CL
12.0	161.0							Red/brown, gray, fine to medium, CLAYEY SAND, trace Gravel, loose to very loose to medium dense, moist. SC
29.0	144.0							Residual, Dark gray, SILT derived from decomposition of GRAPHITIC SCHIST, hard, moist ML

REMARKS: Rig Type: B57 Mobile.
 Cave-in depth 27.2ft. Groundwater at completion 26.4ft.

PAGE 1 OF 1

S-7

SPT LOG: I-95 EXPRESS LANE - OPITZ BLVD SIGN AND IT BORINGS.GP-J.SPT7.GDT.gINT, version 10.02.00.04:3/8/22:Whitman, Raquardt, and Associates



PROJECT #: 45893-001
LOCATION: I-95 Express way/Opitz Blvd.
STRUCTURE: IT/SIGN

S-8/I-6
PAGE 1 OF 1

STATION: NORTHING: 351706.9142 ft SURFACE ELEVATION: 173.0 ft
OFFSET: Easting: 3625517.6146 ft COORD. DATUM: VA South

FIELD DATA

Date(s) Drilled: 2/14/2022 - 2/14/2022

LAB DATA

Drilling Method(s): HSA
 SPT Method: Automatic Hammer
 Other Test(s):
 Driller: SaLUT, Inc.
 Logger: Daniel Case

LIQUID LIMIT
 PLASTICITY INDEX
 MOISTURE CONTENT (%)

GROUND WATER
 ▽ FIRST ENCOUNTERED AT 17.0 ft DEPTH

FIELD DESCRIPTION OF STRATA

LL PI

DEPTH (ft)	ELEVATION (ft)	SOIL			ROCK			STRATA LEGEND
		STANDARD PENETRATION TEST HAMMER BLOWS	SOIL RECOVERY (%)	SAMPLE INTERVAL	CORE RECOVERY (%)	ROCK QUALITY DESIGNATION	DIP °	
2	170	3	67	1.5				
4		4	100	4				
6		2	100	6.5				
8	165	2	100	8				
10		4	100	10.5				
12		2	100	11.5				
14	160	3	87	13				
16		3	100	15.5				
18	155	1	100	16.5				
20				18				
22		2	60	20.5				
24	150	5	100	21				
26		7	100	22.5				
28	145	13	100	23.5				
30		18	100	25				
		24	100	28.5				
		52	100	30				

0.0 / 173.0
 10" Topsoil **TOPS**
 0.8 / 172.2
 Fill, Brown, fine to medium SILTY SAND, loose, moist **SM**

6.5 / 166.5
 Brown, gray, fine to medium CLAYEY SAND, loose, moist **SC**

14.0 / 159.0
 Dark gray, SANDY SILT, trace organic materials, medium stiff to very soft, moist **ML**

21.0 / 152.0
 Red, gray, fine to medium CLAYEY SAND, trace of rock fragments, loose, wet **SC**

24.0 / 149.0
 Residual, Brown, gray, SANDY SILT, very stiff to hard, moist **ML**

Boring terminated at 30ft.

REMARKS: Rig Type: B57 Mobile.
 Cave-in depth 27.2ft. Groundwater at completion 23.8ft.

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SPT_LOG:I-95 EXPRESS LANE- OPITZ BLVD SIGN AND IT BORINGS.GPJ-SPT7.GDT:GINT _version 10.02.00.04:3/8/22:Whitman, Raquardt, and Associates



PROJECT #: 45893-001
 LOCATION: I-95 Express way/Opitz Blvd.
 STRUCTURE: SIGN

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STATION: NORTHING: 353768.3611 ft SURFACE ELEVATION: 181.0 ft
 OFFSET: EASTING: 3626160.827 ft COORD. DATUM: VA South

FIELD DATA

Date(s) Drilled: 1/30/2022 - 1/30/2022

LAB DATA

Drilling Method(s): HSA
 SPT Method: Automatic Hammer
 Other Test(s):
 Driller: SaLUT, Inc.
 Logger: J. Yadeta/D. Case

LIQUID LIMIT
 PLASTICITY INDEX
 MOISTURE CONTENT (%)

GROUND WATER
 ▽ FIRST ENCOUNTERED AT 24.0 ft DEPTH

FIELD DESCRIPTION OF STRATA

LL PI

DEPTH (ft)	ELEVATION (ft)	SOIL			ROCK			STRATA LEGEND
		STANDARD PENETRATION TEST HAMMER BLOWS	SOIL RECOVERY (%)	SAMPLE LEGEND	SAMPLE INTERVAL	CORE RECOVERY (%)	ROCK QUALITY DESIGNATION	
0.0	181.0							
2								
4	3	5	33	X	3.5			
6	175	3	3	X	6			
8								
10								
12	170	3	4	X	11			
14								
16	165	2	2	X	16			
18								
20								
22	160	2	3	X	18.5			
24		1	2	X	23.5			
26	155							
28								
30								

0.0 / 181.0
 17" Asphalt **ASPH**

1.4 / 179.6
 15" Subbase material, Light gray, medium to coarse, SAND AND GRAVEL, trace Silt, moist **CRA**

2.7 / 178.3
 Gray, brown, SANDY LEAN CLAY, stiff to medium stiff, moist **CL**

9.0 / 172.0
 Brown, gray, fine to medium CLAYEY SAND, trace Gravel, loose, moist **SC**

23.5 / 157.5
 Gray, brown, fine to medium POORLY GRADED SAND, trace Clay, trace to none Gravel, very loose to loose, wet **SP**

Boring terminated at 30ft

REMARKS: Rig Type: B57 Mobile.
 Cave-in depth 23.1ft. Groundwater at completion 21.8ft.

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SPT LOG: I-95 EXPRESS LANE - OPITZ BLVD SIGN AND IT BORINGS.GPJ-SPT7.GDT.gINT, version 10.02.00.04:3/8/22:Whitman, Raquardt, and Associates



PROJECT #: 45893-001
LOCATION: I-95 Express way/Opitz Blvd.
STRUCTURE: SIGN

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PAGE 1 OF 1

STATION: NORTHING: 353719.7384 ft SURFACE ELEVATION: 177.0 ft
OFFSET: Easting: 3626280.0489 ft COORD. DATUM: VA South

FIELD DATA										LAB DATA								
DEPTH (ft)	ELEVATION (ft)	SOIL			ROCK			STRATA LEGEND	Date(s) Drilled: 2/10/2022 - 2/10/2022	Drilling Method(s): HSA	SPT Method: Automatic Hammer	Other Test(s):	Driller: SaLUT, Inc.	Logger: Daniel Case	GROUND WATER ▼ FIRST ENCOUNTERED AT 19.0 ft DEPTH	LIQUID LIMIT	PLASTICITY INDEX	MOISTURE CONTENT (%)
		STANDARD PENETRATION TEST HAMMER BLOWS	SOIL RECOVERY (%)	SAMPLE LEGEND	SAMPLE INTERVAL	CORE RECOVERY (%)	ROCK QUALITY DESIGNATION											
FIELD DESCRIPTION OF STRATA															LL	PI		
0.0	177.0																	
2	175																	
4	174	4	55	X	3.5													
6	172	5	55	X	5													
8	170	5	55	X	6													
10	168	6	80	X	7.5													
12	165	3	73	X	8.5													
14	163	3	73	X	10													
16	161	3	73	X	11													
18	160	5	100	X	12.5													
20	158	3	20	X	13.5													
22	155	4	20	X	15													
24	153	1	87	X	16													
26	151	3	5	X	17.5													
28	149	7	100	X	19.5													
30	147	13	22	X	21													
					23.5													
					25													
					28.5													
					30													
Boring terminated at 30ft																		

SPT LOG: I-95 EXPRESS LANE - OPITZ BLVD SIGN AND IT BORINGS.GPJ-SPT7.GDT.gINT _version 10.02.00.04:3/8/22:Whitman, Raquardt, and Associates

REMARKS: Rig Type: B57 Mobile.
 Cave-in depth 21.5ft. Groundwater at completion 17.8ft.

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PROJECT #: 45893-001
 LOCATION: I-95 Express way/Opitz Blvd.
 STRUCTURE: SIGN

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PAGE 1 OF 1

STATION: OFFSET:
 NORTHING: 354568.6342 ft Easting: 3626364.4812 ft
 SURFACE ELEVATION: 182.0 ft COORD. DATUM: VA South

FIELD DATA

Date(s) Drilled: 1/30/2022 - 1/30/2022

LAB DATA

Drilling Method(s): HSA
 SPT Method: Automatic Hammer
 Other Test(s):
 Driller: SaLUT, Inc.
 Logger: J. Yadeta/D. Case

LIQUID LIMIT
 PLASTICITY INDEX
 MOISTURE CONTENT (%)

GROUND WATER
 NOT ENCOUNTERED DURING DRILLING

FIELD DESCRIPTION OF STRATA

LL PI

DEPTH (ft)	ELEVATION (ft)	SOIL			ROCK			STRATA LEGEND
		STANDARD PENETRATION TEST HAMMER BLOWS	SOIL RECOVERY (%)	SAMPLE INTERVAL	CORE RECOVERY (%)	ROCK QUALITY DESIGNATION	DIP °	
2	180							
4	3	2	53	3.5				
6	3			5				
8	175	5	93	6				
10	4	5	100	7.5				
12	170	3	100	8.5				
14	WOH	4	100	10				
16	3	5	100	11				
18	165	7	100	12.5				
20	2	4	100	13.5				
22	160	7	100	15				
24	7	12	100	16				
26	155	7	100	17.5				
28	8	14	100	18.5				
30	22	14	100	20				

0.0 / 182.0
 17" Asphalt **ASPH**

1.4 / 180.6
 15" *Subbase material*, Light gray, medium to coarse, SAND AND GRAVEL, trace Silt, moist **CRA**

2.7 / 179.3
 FILL, Gray, brown, fine to medium SILTY SAND, very loose to medium dense to loose, moist **SM**

11.5 / 170.5
 Brown, fine to medium POORLY GRADED SAND WITH SILT, loose moist **SP-SM**

13.5 / 168.5
 Gray, LEAN CLAY, Sand seam, STIFF, moist **CL**

15.0 / 167.0
 Gray, brown, fine to medium POORLY GRADED SAND, trace Silt, medium dense, moist. layer of 3" thick SILT was noted between 24'-24.3' **SP**

28.5 / 153.5
 Brown, gray, CLAYEY SILT, trace Sand, lithified, hard, moist **ML**

Boring terminated at 30ft

REMARKS: Rig Type: B57 Mobile.
 Cave-in depth 27.1ft. Dry at completion

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SPT_LOG:I-95 EXPRESS LANE- OPITZ BLVD SIGN AND IT BORINGS.GPJ-SPT7.GDT:GINT _version 10.02.00.04:3/8/22:Whitman, Raquardt, and Associates



PROJECT #: 45893-001
 LOCATION: I-95 Express way/Opitz Blvd.
 STRUCTURE: SIGN

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 PAGE 1 OF 1

STATION: NORTHING: 355167.6741 ft SURFACE ELEVATION: 181.0 ft
 OFFSET: EASTING: 3626734.0987 ft COORD. DATUM: VA South

FIELD DATA

Date(s) Drilled: 2/9/2022 - 2/9/2022
 Drilling Method(s): HSA
 SPT Method: Automatic Hammer
 Other Test(s):
 Driller: SaLUT, Inc.
 Logger: Daniel Case

LAB DATA

LIQUID LIMIT
 PLASTICITY INDEX
 MOISTURE CONTENT (%)

GROUND WATER
 ▽ FIRST ENCOUNTERED AT 17.6 ft DEPTH

FIELD DESCRIPTION OF STRATA

LL PI

DEPTH (ft)	ELEVATION (ft)	SOIL			ROCK			STRATA LEGEND
		STANDARD PENETRATION TEST HAMMER BLOWS	SOIL RECOVERY (%)	SAMPLE INTERVAL	CORE RECOVERY (%)	ROCK QUALITY DESIGNATION	DIP °	
0.0	181.0							
2	180	2	87	1.5				
3		3						
4		4	100	4				
6	175	2						
8		3	93	6.5				
10		3	100	9				
12	170	7						
14		9	60	10.5				
16		7						
18	165	22	87	11.5				
20		7						
22		7	87	13				
24	160	26						
26		9	87	14				
28	155	27						
29.3	150	50/3"	100	15.5				

0.0 / 181.0
 6" Asphalt **ASPH**

0.5 / 180.5
 11" *Subbase material*, Light gray, medium to coarse, SAND AND GRAVEL, trace Silt, moist **CRA**

1.4 / 179.6
FILL, Gray. brown, fine to medium CLAYEY SAND, loose, moist **SC**

4.5 / 176.5
 Red, brown, fine to medium SILTY SAND, Seam of gray clay with gravel at 7ft, loose, moist **SM**

11.5 / 169.5
 Brown to gray, fine SILTY SAND, seam of rock fragments at 15.5ft., medium dense, moist. **SM**

19.0 / 162.0
Residual, Dark gray, SANDY SILT, stiff, moist **ML**

24.5 / 156.5
Residual, Dark gray, SANDY SILT, some decomposed rock fragments, stiff, wet **ML**

28.5 / 152.5
Residual, Dark gray, SANDY SILT, some decomposed rock fragments, hard, wet **ML**
 Boring terminated at 29.3ft

REMARKS: Rig Type: B57 Mobile.
 Cave-in depth 14.3ft. Dry at completion

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SPT_LOG:I-95 EXPRESS LANE- OPITZ BLVD SIGN AND IT BORINGS.GP-J.SPT7.GDT:GINT _version 10.02.00.04:3/8/22:Whitman, Raquardt, and Associates



PROJECT #: 45893-001
LOCATION: I-95 Express way/Opitz Blvd.
STRUCTURE: SIGN

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PAGE 1 OF 1

STATION: NORTHING: 355156.8782 ft
OFFSET: Easting: 3626774.1596 ft
SURFACE ELEVATION: 180.0 ft
COORD. DATUM: VA South

FIELD DATA

Date(s) Drilled: 2/8/2022 - 2/8/2022

LAB DATA

Drilling Method(s): HSA
 SPT Method: Automatic Hammer
 Other Test(s):
 Driller: SaLUT, Inc.
 Logger: Daniel Case

LIQUID LIMIT
 PLASTICITY INDEX
 MOISTURE CONTENT (%)

GROUND WATER
 ▽ FIRST ENCOUNTERED AT 14.5 ft DEPTH

FIELD DESCRIPTION OF STRATA

LL PI

DEPTH (ft)	ELEVATION (ft)	SOIL			ROCK			STRATA LEGEND
		STANDARD PENETRATION TEST HAMMER BLOWS	SOIL RECOVERY (%)	SAMPLE INTERVAL	CORE RECOVERY (%)	ROCK QUALITY DESIGNATION	DIP °	
0.0	180.0							5" Asphalt ASPH
0.4	179.6							12" Subbase material, Light gray, medium to coarse, SAND AND GRAVEL, trace Silt, moist CRA
1.4	178.6							Brown/gray, fine to medium CLAYEY SAND, loose, moist SC
5.0	175.0							Gray, SANDY SILT, soft, moist ML
6.7	173.3							Red, brown, fine to medium, SILTY SAND, loose to very loose to loose, moist SM
15.0	165.0							Brown, fine to medium, CLAYEY SAND, trace dark gray silt, loose, moist SC
16.5	163.5							Brown, gray, SANDY SILT, stiff, moist ML
20.0	160.0							Brown, fine to medium SILTY SAND, trace Gravel, loose, wet SM
23.5	156.5							Residual, Gray, red/brown, SANDY SILT derived from decomposition of GRAPHITIC SCHIST, very hard, moist ML
29.3	150.0							Boring terminated at 29.3ft

SPT_LOG:I-95 EXPRESS LANE- OPITZ BLVD SIGN AND IT BORINGS.GP-J-SPT7.GDT:GINT _version 10.02.00.04:3/8/22:Whitman, Raquardt, and Associates

REMARKS: Rig Type: B57 Mobile.
 Cave-in depth 24.6ft. Groundwater at completion 17.4ft.

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PROJECT #: 45893-001
LOCATION: I-95 Express way/Opitz Blvd.
STRUCTURE: SIGN

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PAGE 1 OF 1

STATION: NORTHING: 355430.6134 ft SURFACE ELEVATION: 203.0 ft
OFFSET: Easting: 3626149.0411 ft COORD. DATUM: VA South

FIELD DATA

Date(s) Drilled: 1/24/2022 - 1/24/2022

LAB DATA

Drilling Method(s): HSA
 SPT Method: Automatic Hammer
 Other Test(s):
 Driller: SaLUT, Inc.
 Logger: J. Yadeta/R. Bowls

LIQUID LIMIT
 PLASTICITY INDEX
 MOISTURE CONTENT (%)

GROUND WATER
 ▽ FIRST ENCOUNTERED AT 23.5 ft DEPTH

FIELD DESCRIPTION OF STRATA

LL PI

DEPTH (ft)	ELEVATION (ft)	SOIL			ROCK			STRATA LEGEND
		STANDARD PENETRATION TEST HAMMER BLOWS	SOIL RECOVERY (%)	SAMPLE LEGEND	SAMPLE INTERVAL	CORE RECOVERY (%)	ROCK QUALITY DESIGNATION	
0.0	203.0							
2.0	200.0	2	53	X	1			
3.5					2.5			
4.0		2	93	X	3.5			
6.0		4			5			
6.0		3	93	X	6			
8.0	195.0	2			7.5			
8.5		3	100	X	8.5			
10.0		3			10			
11.0		9	100	X	11			
12.5	190.0	12			12.5			
13.5		12	100	X	13.5			
15.0		31 50/3"			15			
16.0		10			16			
17.5	185.0	26	100	X	17.5			
18.5		28			18.5			
20.0		10	100	X	20			
22.0		16			22			
23.5	180.0	39			23.5			
24.0		50/2"	47	X	24.0			
25.0					25			
28.5	175.0	50	86	X	28.5			
29.2		50/1"			29.2			

0.0 / 203.0
 4" Asphalt **ASPH**

0.3 / 202.7
 15" Subbase material, Light gray, medium to coarse, SAND AND GRAVEL, loose, moist **CRA**

2.2 / 200.8
 FILL, Orange brown, LEAN CLAY, medium stiff, trace Sand, moist **CL**

6.0 / 197.0
 Gray, fine SILTY SAND, trace Gravel, trace elastic fine, loose, moist **SM**

7.0 / 196.0
 Possible fill, Brown, tan, SANDY LEAN CLAY, medium stiff, moist **CL**

11.0 / 192.0
 Red, brown, fine to medium SILTY SAND, medium dense to very dense, moist **SM**

14.5 / 188.5
 Residual, Light gray-black, SILT, trace decomposed rock fragments, moist to wet at 23.5ft. Seam of wet Clayey Silt was noted from 18' - 18.5'. **ML**

24.0 / 179.0
 Residual, Gray, black, highly weathered GRAPHITIC SCHIST ROCK FRAGMENTS, extremely dense, dry. **MST**

Boring terminated at 29.2ft

REMARKS: Rig Type: B57 Mobile.
 Cave-in depth 27.2ft. Groundwater at completion 26ft.

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SPT_LOG:I-95 EXPRESS LANE- OPITZ BLVD SIGN AND IT BORINGS.GP-J.SPT7.GDT.gINT _version 10.02.00.04:3/8/22:Whitman, Raquardt, and Associates



PROJECT #: 45893-001
LOCATION: I-95 Express way/Opitz Blvd.
STRUCTURE: SIGN

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PAGE 1 OF 1

STATION: NORTHING: 355266.7467 ft
 SURFACE ELEVATION: 208.0 ft
OFFSET: Easting: 3626936.4088 ft
 COORD. DATUM: VA South

FIELD DATA

Date(s) Drilled: 1/25/2022 - 1/25/2022

LAB DATA

Drilling Method(s): HSA
 SPT Method: Automatic Hammer
 Other Test(s):
 Driller: SaLUT, Inc.
 Logger: R. Bowls

LIQUID LIMIT
 PLASTICITY INDEX
 MOISTURE CONTENT (%)

GROUND WATER
 NOT ENCOUNTERED DURING DRILLING

FIELD DESCRIPTION OF STRATA

LL PI

DEPTH (ft)	ELEVATION (ft)	SOIL			ROCK			STRATA LEGEND
		STANDARD PENETRATION TEST HAMMER BLOWS	SOIL RECOVERY (%)	SAMPLE INTERVAL	CORE RECOVERY (%)	ROCK QUALITY DESIGNATION	DIP °	
0.0	208.0							12" Asphalt ASPH
1.0	207.0	47	47	1.0				10" Subbase material, Light gray, medium to coarse, SAND AND GRAVEL, loose, moist CRA
1.9	206.1	33	33	1.9				FILL, Orange brown, fine to coarse, CLAYEY SAND, some Silt and gravel size rock fragments, loose, moist SC
7.5	200.5	100	100	7.5				Possible fill, Brown, SANDY LEAN CLAY, medium stiff, moist CL
10.0	198.0	100	100	10.0				Possible fill, Tan-brown, fine to coarse SILTY SAND, trace to some rock fragments, loose to medium dense, moist SM
12.0	195.0	100	100	12.0				encountered wood at 12ft.
18.5	190.0	100	100	18.5				
28.5	180.0	47	47	28.5				3" spoon was pushed to get a sample at 28.5'-30'. 2" split spoon didn't recovery sample
30.0								Boring terminated at 30ft.

SPT_LOG:I-95 EXPRESS LANE- OPITZ BLVD SIGN AND IT BORINGS.GPJ-SPT7.GDT.gINT_version 10.02.00.04:3/8/22:Whitman, Raquardt, and Associates

REMARKS: Rig Type: B57 Mobile.
 Cave-in depth 27.3ft. Dry at completion

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PROJECT #: 45893-001
LOCATION: I-95 Express way/Opitz Blvd.
STRUCTURE: SIGN

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PAGE 1 OF 1

STATION: NORTHING: 356525.7328 ft
OFFSET: Easting: 3626909.5415 ft
SURFACE ELEVATION: 200.0 ft
COORD. DATUM: VA South

FIELD DATA

Date(s) Drilled: 1/26/2022 - 1/26/2022

LAB DATA

Drilling Method(s): HSA
 SPT Method: Automatic Hammer
 Other Test(s):
 Driller: SaLUT, Inc.
 Logger: R. Bowls

LIQUID LIMIT
 PLASTICITY INDEX
 MOISTURE CONTENT (%)

GROUND WATER
 ▽ FIRST ENCOUNTERED AT 16.0 ft DEPTH

FIELD DESCRIPTION OF STRATA

LL PI

DEPTH (ft)	ELEVATION (ft)	SOIL			ROCK			STRATA LEGEND
		STANDARD PENETRATION TEST HAMMER BLOWS	SOIL RECOVERY (%)	SAMPLE INTERVAL	CORE RECOVERY (%)	ROCK QUALITY DESIGNATION	DIP °	
0.0	200.0							0.0 / 200.0
1.2	198.8							15" Asphalt ASPH
2.5	197.5	6	80	2.5				15" Subbase material, Light gray, medium to coarse, SAND AND GRAVEL, loose, moist CRA
4.0	195.0	5	100	4.0				2.5 / 197.5 Tan, brown, fine to medium SILTY SAND, medium dense, moist to wet below 16ft. SM
6.0	190.0	7	100	6.5				
8.0	185.0	4	100	7.5				
10.0	180.0	7	100	9.0				
12.0		9	100	11.5				
14.0		10	100	12.5				
16.0	185.0	4	100	14.0				
18.0		7	100	15.0				
20.0	180.0	4	100	16.5				
22.0		10	100	17.5				
24.0		14	100	19.0				
26.0	175.0	19	100	20.0				25.0 / 175.0 Brown, orange, fine to coarse CLAYEY SAND, trace Silt, trace rock fragments, dense, wet SC
28.0		22	100	21.5				
30.0	170.0	26	100	25.0				28.0 / 172.0 Brown-Gray, LEAN CLAY, hard, moist CL
30.0				30.0				Boring terminated at 30ft.

SPT_LOG:I-95 EXPRESS LANE- OPITZ BLVD SIGN AND IT BORINGS.GP-J.SPT7.GDT.gINT _version 10.02.00.04:3/8/22:Whitman, Raquardt, and Associates

REMARKS: Rig Type: B57 Mobile.
 Cave-in depth 10.2ft. Dry at completion

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PROJECT #: 45893-001
LOCATION: I-95 Express way/Opitz Blvd.
STRUCTURE: SIGN

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PAGE 1 OF 1

STATION: NORTHING: 350321.785 ft
OFFSET: Easting: 3625036.384 ft
SURFACE ELEVATION: 160.0 ft
COORD. DATUM: VA South

FIELD DATA

Date(s) Drilled: 2/14/2022 - 2/14/2022

LAB DATA

Drilling Method(s): HSA
 SPT Method: Automatic Hammer
 Other Test(s):
 Driller: SaLUT, Inc.
 Logger: Daniel Case

GROUND WATER
 ▽ FIRST ENCOUNTERED AT 18.0 ft DEPTH

LIQUID LIMIT
 PLASTICITY INDEX
 MOISTURE CONTENT (%)

FIELD DESCRIPTION OF STRATA

LL PI

DEPTH (ft)	ELEVATION (ft)	SOIL			ROCK			STRATA LEGEND
		STANDARD PENETRATION TEST HAMMER BLOWS	SOIL RECOVERY (%)	SAMPLE LEGEND	SAMPLE INTERVAL	CORE RECOVERY (%)	ROCK QUALITY DESIGNATION	
0	160.0							
2	158.6							
4	155.0	4	67		3.5			
6	153.0	4	87		6			
8	150.0	5	100		7.5			
10	145.0	7	100		8.5			
12	140.0	9	100		10			
14	135.0	10	100		11			
16	130.0	11	100		12.5			
18	125.0	13	100		13.5			
20	120.0	14	100		15			
22	115.0	18	100		16			
24	110.0	11	100		17.5			
26	105.0	16	100		18.5			
28	100.0	11	100		20			
30	95.0	16	100		23.5			
					25			
					28.5			
					30			

0.0 / 160.0	17" Asphalt ASPH
1.4 / 158.6	12" Subbase material, Light gray, medium to coarse, SAND AND GRAVEL, trace Silt, moist CRA
2.4 / 157.6	Brown, fine to medium SILTY SAND, trace Gravel, loose, moist SM
7.0 / 153.0	Gray, brown, fine CLAYEY SAND, loose moist SC
8.5 / 151.5	Brown, gray, SANDY ELASTIC SILT, stiff, moist ML
11.5 / 148.5	Gray, brown, fine to medium SILTY SAND, none to trace Gravel below 16ft., medium dense, moist. SM
23.5 / 136.5	Residual, Gray, brown, SANDY SILT, hard to very stiff, moist ML
Boring terminated at 30ft	

REMARKS: Rig Type: B57 Mobile.
 Cave-in depth 21.9ft. Groundwater at completion 19.5ft.

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SPT_LOG:I-95 EXPRESS LANE- OPITZ BLVD SIGN AND IT BORINGS.GPJ-SPT7.GDT:GINT _version 10.02.00.04:3/8/22:Whitman, Raquardt, and Associates



PROJECT #: 45893-001
LOCATION: I-95 Express way/Opitz Blvd.
STRUCTURE: SIGN

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PAGE 1 OF 1

STATION: NORTHING: 350308.5313 ft
 SURFACE ELEVATION: 160.0 ft
OFFSET: Easting: 3625072.5539 ft
 COORD. DATUM: VA South

FIELD DATA

Date(s) Drilled: 2/15/2022 - 2/15/2022

LAB DATA

Drilling Method(s): HSA
 SPT Method: Automatic Hammer
 Other Test(s):
 Driller: SaLUT, Inc.
 Logger: Daniel Case

LIQUID LIMIT
 PLASTICITY INDEX
 MOISTURE CONTENT (%)

GROUND WATER
 ▽ FIRST ENCOUNTERED AT 22.0 ft DEPTH

FIELD DESCRIPTION OF STRATA

LL PI

DEPTH (ft)	ELEVATION (ft)	SOIL			ROCK			STRATA LEGEND
		STANDARD PENETRATION TEST HAMMER BLOWS	SOIL RECOVERY (%)	SAMPLE LEGEND	SAMPLE INTERVAL	CORE RECOVERY (%)	ROCK QUALITY DESIGNATION	
0.0	160.0							
2	158.6	6	100	X	3.5			17" Asphalt ASPH
4	155	5	100	X	5			1.4 / 158.6 13" Subbase material, Light gray, medium to coarse, SAND AND GRAVEL, trace Silt, moist CRA
6	153	6	100	X	6			2.5 / 157.5 Brown, gray, fine to medium SILTY SAND, trace Gravel, medium dense, moist SM
8	150	3	100	X	7.5			6.7 / 153.3 Gray, SANDY LEAN CLAY, stiff, moist CL
10	145	3	100	X	8.5			8.7 / 151.3 Gray, brown, fine to medium SILTY SAND, trace Gravel, loose, moist SM
12	140	4	100	X	10			11.1 / 148.9 Gray, brown, SANDY SILT, stiff, moist. ML
14	135	6	100	X	11			13.5 / 146.5 Gray-brown, fine to medium SILTY SAND, medium dense, moist SM
16	130	7	100	X	12.5			
18		8	100	X	15			
20		10	100	X	16			
22		7	100	X	17.5			
24		5	100	X	18.5			
26		4	100	X	20			
28		3	100	X	23.5			
30		12	100	X	25			
30		13	100	X	28.5			
30					30			Boring terminated at 30ft

REMARKS: Rig Type: B57 Mobile.
 Cave-in depth 23.4ft. Groundwater at completion 12.7ft.

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SPT_LOG:I-95 EXPRESS LANE- OPITZ BLVD SIGN AND IT BORINGS.GPJ-SPT7.GDT:GINT _version 10.02.00.04:3/8/22:Whitman, Raquardt, and Associates



PROJECT #: 45893-001
 LOCATION: I-95 Express way/Opitz Blvd.
 STRUCTURE: IT

STATION: NORTHING: 348375.5208 ft SURFACE ELEVATION: 106.0 ft
 OFFSET: EASTING: 3624333.4883 ft COORD. DATUM: VA South

FIELD DATA

Date(s) Drilled: 1/17/2022 - 1/17/2022
 Drilling Method(s): HSA
 SPT Method: Automatic Hammer
 Other Test(s):
 Driller: SaLUT, Inc.
 Logger: Daniel Case

LAB DATA

LIQUID LIMIT
 PLASTICITY INDEX
 MOISTURE CONTENT (%)

GROUND WATER
 NOT ENCOUNTERED DURING DRILLING

FIELD DESCRIPTION OF STRATA

LL PI

DEPTH (ft)	ELEVATION (ft)	SOIL			ROCK			STRATA LEGEND
		STANDARD PENETRATION TEST HAMMER BLOWS	SOIL RECOVERY (%)	SAMPLE LEGEND	SAMPLE INTERVAL	CORE RECOVERY (%)	ROCK QUALITY DESIGNATION	
0.0	106.0							
2	104.5							
4	103.5	8	87	X	3.5			
6	100.0	5	100	X	5			
8	88.0	22	100	X	6			
10	95.0	22	87	X	7.5			
12	85.0	31	32	X	8.5			
14	80.0	20	60	X	10			
16	75.0	50/4"			11			
18	70.0	50/5"			12.5			
20	65.0	50/4"			13.5			
22	60.0				15			
24	55.0	23	53	X	16			
26	50.0	50/4"			17.5			
28	45.0				18.5			
30	40.0	50/2"	100	X	20			
					23.5			
					25			
					28.5			
					28.7			

0.0 / 106.0
 18" Asphalt **ASPH**

1.5 / 104.5
 12" Subbase material, Light gray, medium to coarse, SAND AND GRAVEL, trace Silt, moist **CRA**

2.5 / 103.5
 Dark gray, SANDY SILT, very stiff, dry **ML**

6.0 / 100.0
 Residual, Gray, black, SILT derived from highly weathered Graphitic Schist, trace Sand, very stiff to hard, moist. **ML**

Auger refusal at 28.7ft.
 Boring terminated at 28.7ft.

REMARKS: Rig Type: B57 Mobile.
 Cave-in depth 28.2ft. Dry at completion

SPT_LOG:I-95 EXPRESS LANE- OPITZ BLVD SIGN AND IT BORINGS.GPJ-SPT7.GDT:GINT _version 10.02.00.04:3/8/22:Whitman, Raquardt, and Associates



PROJECT #: 45893-001
 LOCATION: I-95 Express way/Opitz Blvd.
 STRUCTURE: IT

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 PAGE 1 OF 1

STATION: NORTHING: 349058.3417 ft
 SURFACE ELEVATION: 122.0 ft
 OFFSET: Easting: 3624535.9808 ft
 COORD. DATUM: VA South

FIELD DATA

Date(s) Drilled: 2/2/2022 - 2/2/2022
 Drilling Method(s): HSA
 SPT Method: Automatic Hammer
 Other Test(s):
 Driller: SaLUT, Inc.
 Logger: Daniel Case

LAB DATA

LIQUID LIMIT
 PLASTICITY INDEX
 MOISTURE CONTENT (%)

GROUND WATER
 ▽ FIRST ENCOUNTERED AT 9.0 ft DEPTH

FIELD DESCRIPTION OF STRATA

LL PI

DEPTH (ft)	ELEVATION (ft)	SOIL			ROCK			STRATA LEGEND
		STANDARD PENETRATION TEST HAMMER BLOWS	SOIL RECOVERY (%)	SAMPLE LEGEND	SAMPLE INTERVAL	CORE RECOVERY (%)	ROCK QUALITY DESIGNATION	
2	120							
4	118	12	100	X	3.5			
6	116	13	100	X	6			
8	115	27	100	X	7.5			
10	114	33	100	X	8.5			
12	112	9	100	X	11			
14	110	16	100	X	12.5			
16	108	9	100	X	13.5			
16	106	17	100	X	15			
16	104	44	100	X	16			
16	102	50/2"	100	X	16.2			

0.0 / 122.0
 17" Asphalt **ASPH**

1.4 / 120.6
 13" *Subbase material*, Light gray, medium to coarse, SAND AND GRAVEL, trace Silt, moist **CRA**

2.5 / 119.5
FILL, Brown, gray, fine to medium SILTY SAND, trace Gravel, medium dense, moist **SM**

6.0 / 116.0
Residual, Gray, fine SILTY SAND, trace decomposed rock fragments, very dense to dense to very dense, moist **SM**

Auger refusal at 16.2ft.
 Boring terminated at 16.2ft.

SPT_LOG:I-95 EXPRESS LANE- OPITZ BLVD SIGN AND IT BORINGS.GPJ-SPT7.GDT.gINT_ version 10.02.00.04:3/8/22:Whitman, Raquardt, and Associates

REMARKS: Rig Type: B57 Mobile.
 Cave-in depth 15.1ft. Groundwater at completion 13.2ft.

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PROJECT #: 45893-001
 LOCATION: I-95 Express way/Opitz Blvd.
 STRUCTURE: IT

I-3
 PAGE 1 OF 1

STATION: NORTHING: 349705.1095 ft SURFACE ELEVATION: 140.0 ft
 OFFSET: Easting: 3624770.7962 ft COORD. DATUM: VA South

FIELD DATA

Date(s) Drilled: 2/2/2022 - 2/2/2022

LAB DATA

Drilling Method(s): HSA
 SPT Method: Automatic Hammer
 Other Test(s):
 Driller: SaLUT, Inc.
 Logger: Daniel Case

LIQUID LIMIT
 PLASTICITY INDEX
 MOISTURE CONTENT (%)

GROUND WATER
 ▽ FIRST ENCOUNTERED AT 19.5 ft DEPTH

FIELD DESCRIPTION OF STRATA

LL PI

DEPTH (ft)	ELEVATION (ft)	SOIL			ROCK			STRATA LEGEND
		STANDARD PENETRATION TEST HAMMER BLOWS	SOIL RECOVERY (%)	SAMPLE LEGEND	SAMPLE INTERVAL	CORE RECOVERY (%)	ROCK QUALITY DESIGNATION	
2								
4	135	4	5	100	3.5			
6		3	5	100	6			
8		3	5	100	7.5			
10	130	3	5	100	8.5			
12		3	4	100	10			
14		2	4	100	11			
16	125	2	4	100	12.5			
18		2	4	100	13.5			
20	120	3	6	100	15			
22		3	6	100	16			
24		9	21	100	17.5			
26	115	9	16	100	18.5			
28		20	21	100	20			
30	110	21	29	100	23.5			

0.0 / 140.0
 15" Asphalt **ASPH**

1.4 / 138.6
 15" Subbase material, Light gray, medium to coarse, SAND AND GRAVEL, trace Silt, moist **CRA**

2.5 / 137.5
 FILL, Brown, gray, fine to medium SILTY SAND, loose, moist **SM**

8.5 / 131.5
 Brown, gray, fine to medium, SILTY SAND, medium dense to loose to medium dense, moist to wet below 19.5' **SM**

23.5 / 116.5
 Red, dark brown, fine to medium, CLAYEY SAND, dense, moist **SC**

Boring terminated at 30ft

REMARKS: Rig Type: B57 Mobile.
 Cave-in depth 23.8ft. Groundwater at completion 19.7ft.

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SPT_LOG:I-95 EXPRESS LANE- OPITZ BLVD SIGN AND IT BORINGS.GPJ-SPT7.GDT.gINT_version 10.02.00.04:3/8/22:Whitman, Raquardt, and Associates



PROJECT #: 45893-001
LOCATION: I-95 Express way/Opitz Blvd.
STRUCTURE: IT

STATION: NORTHING: 351103.3533 ft
 SURFACE ELEVATION: 166.0 ft
OFFSET: Easting: 3625166.9815 ft
 COORD. DATUM: VA South

FIELD DATA

Date(s) Drilled: 2/9/2022 - 2/9/2022

LAB DATA

Drilling Method(s): HSA
 SPT Method: Automatic Hammer
 Other Test(s):
 Driller: SaLUT, Inc.
 Logger: Daniel Case

LIQUID LIMIT
 PLASTICITY INDEX
 MOISTURE CONTENT (%)

GROUND WATER
 ▽ FIRST ENCOUNTERED AT 17.0 ft DEPTH

FIELD DESCRIPTION OF STRATA

LL PI

DEPTH (ft)	ELEVATION (ft)	SOIL			ROCK			STRATA LEGEND
		STANDARD PENETRATION TEST HAMMER BLOWS	SOIL RECOVERY (%)	SAMPLE INTERVAL	CORE RECOVERY (%)	ROCK QUALITY DESIGNATION	DIP °	
0.0	166.0							5" Asphalt ASPH
0.4	165.6							12" Subbase material, Light gray, medium to coarse, SAND AND GRAVEL, trace Silt, moist CRA
1.4	164.6							FILL, Brown, fine to medium CLAYEY SAND, trace to none Gravel, loose, moist SC
11.5	154.5							Gray, SANDY CLAY, medium stiff, moist CL
14.5	151.5							Brown/gray, fine to medium CLAYEY SAND, trace Gravel, loose to medium dense to loose, moist SC
21.0	145.0							Brown/gray, fine to medium SILTY SAND, dense, moist SM
29.5	136.5							Residual, Dark gray, SANDY SILT, very stiff, moist ML

SPT_LOG:I-95 EXPRESS LANE- OPITZ BLVD SIGN AND IT BORINGS.GP-J.SPT7.GDT:GINT_version 10.02.00.04:3/8/22:Whitman, Raquardt, and Associates

REMARKS: Rig Type: B57 Mobile.
 Cave-in depth 25.9ft. Groundwater at completion 18.3ft.



PROJECT #: 45893-001
 LOCATION: I-95 Express way/Opitz Blvd.
 STRUCTURE: IT

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 PAGE 1 OF 1

STATION: NORTHING: 351136.2611 ft
 SURFACE ELEVATION: 168.0 ft
 OFFSET: Easting: 3625293.8104 ft
 COORD. DATUM: VA South

FIELD DATA

Date(s) Drilled: 1/31/2022 - 1/31/2022

LAB DATA

Drilling Method(s): HSA
 SPT Method: Automatic Hammer
 Other Test(s):
 Driller: SaLUT, Inc.
 Logger: Daniel Case

LIQUID LIMIT
 PLASTICITY INDEX
 MOISTURE CONTENT (%)

GROUND WATER
 ▽ FIRST ENCOUNTERED AT 16.0 ft DEPTH

FIELD DESCRIPTION OF STRATA

LL PI

DEPTH (ft)	ELEVATION (ft)	SOIL			ROCK			STRATA LEGEND
		STANDARD PENETRATION TEST HAMMER BLOWS	SOIL RECOVERY (%)	SAMPLE LEGEND	SAMPLE INTERVAL	CORE RECOVERY (%)	ROCK QUALITY DESIGNATION	
0.0	168.0							
1.4	166.6							
2.5	165.5							
5.5	162.5							
16.0	160.0							
16.5	155.5							
16.6	151.5							
24.2	143.8							
28.5	140.0							
30.0	138.0							

0.0 / 168.0
 15" Asphalt **ASPH**

1.4 / 166.6
 15" Subbase material, Light gray, medium to coarse, SAND AND GRAVEL, trace Silt, moist **CRA**

2.5 / 165.5
 FILL, Brown, fine to medium SAND, medium dense, moist **SP**

5.5 / 162.5
 Brown, fine to medium, SILTY SAND, seam of gray Clay seam at 11ft., loose to medium dense, moist. **SM**

16.5 / 151.5
 Dark brown, mottled, medium stiff, SANDY CLAY, wet **SC**

24.2 / 143.8
 Residual, Dark gray, SANDY SILT, hard, moist **ML**

Boring terminated at 30ft

SPT_LOG:I-95 EXPRESS LANE- OPITZ BLVD SIGN AND IT BORINGS.GPJ-SPT7.GDT:GINT_version 10.02.00.04:3/8/22:Whitman, Raquardt, and Associates

REMARKS: Rig Type: B57 Mobile.
 Cave-in depth 24.4ft. Groundwater at completion 16.6ft.

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PROJECT #: 45893-001
LOCATION: I-95 Express way/Opitz Blvd.
STRUCTURE: IT

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PAGE 1 OF 1

STATION: NORTHING: 352129.9655 ft
 SURFACE ELEVATION: 178.0 ft
OFFSET: Easting: 3625653.3351 ft
 COORD. DATUM: VA South

FIELD DATA

Date(s) Drilled: 2/2/2022 - 2/2/2022

LAB DATA

Drilling Method(s): HSA
 SPT Method: Automatic Hammer
 Other Test(s):
 Driller: SaLUT, Inc.
 Logger: Daniel Case

GROUND WATER
 ▽ FIRST ENCOUNTERED AT 15.5 ft DEPTH

LIQUID LIMIT
 PLASTICITY INDEX
 MOISTURE CONTENT (%)

FIELD DESCRIPTION OF STRATA

LL PI

DEPTH (ft)	ELEVATION (ft)	SOIL			ROCK			STRATA LEGEND
		STANDARD PENETRATION TEST HAMMER BLOWS	SOIL RECOVERY (%)	SAMPLE LEGEND	SAMPLE INTERVAL	CORE RECOVERY (%)	ROCK QUALITY DESIGNATION	
0.0	178.0							
2.0	175.0							
3.0		3	100	X	3.5			
4.0		4	100	X	5			
6.0		2	87	X	6			
8.0	170.0	2	100	X	7.5			
10.0		3	100	X	8.5			
12.0		3	100	X	11			
14.0	165.0	1	100	X	12.5			
16.0		1	100	X	13.5			
18.0	160.0	WH	100	X	15			
20.0		WH	100	X	16			
22.0			100	X	17.5			
24.0	155.0	1	100	X	18.5			
26.0		2	100	X	20			
28.0	150.0	2	100	X	22			
30.0		3	100	X	23.5			
		6	100	X	25			
			100	X	28.5			
			100	X	30			

0.0 / 178.0
 12" Asphalt **ASPH**

1.0 / 177.0
 15" Subbase material, Light gray, medium to coarse, SAND AND GRAVEL, trace Silt, moist **CRA**

2.2 / 175.8
 FILL, Brown, fine to medium CLAYEY SAND, loose to very loose to loose, moist **SC**

14.0 / 164.0
 Brown, gray, fine to medium, SILTY SAND, loose, moist **SM**

18.5 / 159.5
 Brown, red, very soft, SANDY CLAY, wet **CL**

22.0 / 156.0
 Brown, gray, fine to medium POORLY GRADED SAND, trace Clay, very loose, wet **SP-SC**

28.5 / 149.5
 Brown, gray, fine to medium CLAYEY SAND, loose, wet **SC**

Boring terminated at 30ft

REMARKS: Rig Type: B57 Mobile.
 Cave-in depth 21.8ft. Groundwater at completion 17.2ft.

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SPT_LOG:I-95 EXPRESS LANE- OPITZ BLVD SIGN AND IT BORINGS.GPJ-SPT7.GDT:GINT_version 10.02.00.04:3/8/22:Whitman, Raquardt, and Associates



PROJECT #: 45893-001
LOCATION: I-95 Express way/Opitz Blvd.
STRUCTURE: IT

I-8
PAGE 1 OF 1

STATION: NORTHING: 354926.3632 ft SURFACE ELEVATION: 179.0 ft
OFFSET: Easting: 3626601.6726 ft COORD. DATUM: VA South

FIELD DATA

Date(s) Drilled: 2/10/2022 - 2/10/2022

LAB DATA

Drilling Method(s): HSA
 SPT Method: Automatic Hammer
 Other Test(s):
 Driller: SaLUT, Inc.
 Logger: Daniel Case

LIQUID LIMIT
 PLASTICITY INDEX
 MOISTURE CONTENT (%)

GROUND WATER
 ▽ FIRST ENCOUNTERED AT 14.0 ft DEPTH

FIELD DESCRIPTION OF STRATA

LL PI

DEPTH (ft)	ELEVATION (ft)	SOIL			ROCK			STRATA LEGEND
		STANDARD PENETRATION TEST HAMMER BLOWS	SOIL RECOVERY (%)	SAMPLE INTERVAL	CORE RECOVERY (%)	ROCK QUALITY DESIGNATION	DIP °	
2								
4	175	6	27	3.5				
6	3	6	100	5				
8				6				
10	170	8	100	7.5				
12				8.5				
14	165	5	100	10				
16				11				
18				12.5				
20	160	7	100	13.5				
22				15				
24	155	50/3"	73	16				
26				17				
28	150	15	73	18				
30				19				

0.0 / 179.0
 17" Asphalt **ASPH**

1.4 / 177.6
 15" Subbase material, Light gray, medium to coarse, SAND AND GRAVEL, trace Silt, moist **CRA**

2.6 / 176.4
 Possible fill, Brown, fine to medium SILTY SAND, medium dense, moist **SM**

8.5 / 170.5
 Brown, fine to medium SILTY SAND, trace gravel, medium dense to loose to medium dense, moist **SM**

16.5 / 162.5
 Residual, Dark gray, SILT, hard, moist to wet below 20ft. Some decomposed rock fragments is noted below 25ft. **ML**

Boring terminated at 30ft

REMARKS: Rig Type: B57 Mobile.
 Cave-in depth 27.5ft. Groundwater at completion 25.5ft.

PAGE 1 OF 1
I-8

SPT_LOG:I-95 EXPRESS LANE- OPITZ BLVD SIGN AND IT BORINGS.GP-J.SPT7.GDT.gINT_version 10.02.00.04:3/8/22:Whitman, Raquardt, and Associates



PROJECT #: 45893-001
LOCATION: I-95 Express way/Opitz Blvd.
STRUCTURE: IT

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PAGE 1 OF 1

STATION: NORTHING: 355008.3844 ft SURFACE ELEVATION: 185.0 ft
OFFSET: Easting: 3626410.6391 ft COORD. DATUM: VA South

FIELD DATA

Date(s) Drilled: 2/6/2022 - 2/6/2022

LAB DATA

Drilling Method(s): HSA
 SPT Method: Automatic Hammer
 Other Test(s):
 Driller: SaLUT, Inc.
 Logger: Daniel Case

LIQUID LIMIT
 PLASTICITY INDEX
 MOISTURE CONTENT (%)

GROUND WATER
 ▽ FIRST ENCOUNTERED AT 17.5 ft DEPTH

FIELD DESCRIPTION OF STRATA

LL PI

DEPTH (ft)	ELEVATION (ft)	SOIL			ROCK			STRATA LEGEND
		STANDARD PENETRATION TEST HAMMER BLOWS	SOIL RECOVERY (%)	SAMPLE INTERVAL	CORE RECOVERY (%)	ROCK QUALITY DESIGNATION	DIP °	
0.0	185.0							
2	180	6	87	1.5				
4	180	4	100	4				
6	180	4	100	5.5				
8	180	2	100	8				
10	175	3	100	9				
12	175	1	100	11.5				
14	170	3	100	13				
16	170	5	100	14				
18	170	3	100	15.5				
20	165	3	100	16.5				
22	165	5	100	18				
24	160	8	100	19				
26	160	10	100	20.5				
28	160	21	100	23.5				
30	155	23	100	25				
		32	100	28.5				
		42	100	30				

0.0 / 185.0 5" Asphalt ASPH		
0.4 / 184.6 12" Subbase material, Light gray, medium to coarse, SAND AND GRAVEL, trace Silt, moist CRA		
1.4 / 183.6 FILL, Brown, gray, fine to medium CLAYEY SAND, medium dense to loose, moist SC		
6.5 / 178.5 Gray, brown, fine to medium, CLAYEY SAND, loose, moist SC		
12.0 / 173.0 Dark brown, SANDY CLAY, medium stiff to stiff, moist CL		
16.5 / 168.5 Dark brown, brown, fine to medium, CLAYEY SAND, trace gravel, loose to medium dense, moist to wet below 17.5ft. SC		
24.0 / 161.0 Residual, Gray, SILT, hard, moist ML		
Boring terminated at 30ft		

REMARKS: Rig Type: B57 Mobile.
 Cave-in depth 24.7ft. Groundwater at completion 21.5ft.

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SPT_LOG:I-95 EXPRESS LANE- OPITZ BLVD SIGN AND IT BORINGS.GPJ-SPT7.GDT:GINT_version 10.02.00.04:3/8/22:Whitman, Raquardt, and Associates



PROJECT #: 45893-001
LOCATION: I-95 Express way/Opitz Blvd.
STRUCTURE: IT

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PAGE 1 OF 1

STATION: NORTHING: 355473.7156 ft
 SURFACE ELEVATION: 205.0 ft
OFFSET: Easting: 3626074.3805 ft
 COORD. DATUM: VA South

FIELD DATA

Date(s) Drilled: 1/24/2022 - 1/24/2022

LAB DATA

Drilling Method(s): HSA
 SPT Method: Automatic Hammer
 Other Test(s):
 Driller: SaLUT, Inc.
 Logger: J. Yadeta/R. Bowls

LIQUID LIMIT
 PLASTICITY INDEX
 MOISTURE CONTENT (%)

GROUND WATER
 ▽ FIRST ENCOUNTERED AT 18.5 ft DEPTH

FIELD DESCRIPTION OF STRATA

LL PI

DEPTH (ft)	ELEVATION (ft)	SOIL			ROCK			STRATA LEGEND
		STANDARD PENETRATION TEST HAMMER BLOWS	SOIL RECOVERY (%)	SAMPLE INTERVAL	CORE RECOVERY (%)	ROCK QUALITY DESIGNATION	DIP °	
1	204.8	6	100	1.5				
2	204.8							
4	200	WOH WOH	40	3.5				
6	200	2	40	6				
8	199.0	2	40	7.5				
10	195	WOH WOH	100	8.5				
12	195	2	100	10				
14	190	3	100	11.5				
16	190	15	100	13				
18	185	8	100	13.5				
20	185	12	100	15				
22	185	20	93	16				
24	180	49 50/5"	93	17.5				
26	180	35 50/4"	93	18.5				
28	180	15	100	20				
30	175	28	50	23.5				
		13	29 50/4"	25				
			93	28.5				
				30				

0.0 / 205.0
 2" Topsoil **TOPS**

0.2 / 204.8
 FILL, Brown, orange, SANDY CLAY, some gravel aggregate base material, medium stiff, moist **CL**

0.8 / 204.2
 FILL, Gray, fine to coarse CLAYEY, SILTY SAND, medium dense to very loose, moist **SC-SM**

6.0 / 199.0
 POSSIBLE FILL, Brown, orange, LEAN CLAY, trace to some Sand, soft to very soft to stiff, moist **CL**

12.0 / 193.0
 Brown, gray, red, SILT, trace Sand, hard, dry **ML**

16.0 / 189.0
 Residual, Light gray, black, SILT derived from highly weathered Graphitic Schist, some lithified rock fragments, dry. Water noted in sample #9 at 18.5ft **ML**

Boring terminated at 30ft

SPT_LOG:I-95 EXPRESS LANE- OPITZ BLVD SIGN AND IT BORINGS.GP-J.SPT7.GDT.gINT_version 10.02.00.04:3/8/22:Whitman, Raquardt, and Associates

REMARKS: Rig Type: B57 Mobile.
 Cave-in depth 27.1ft. Dry at completion

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PROJECT #: 45893-001
 LOCATION: I-95 Express way/Opitz Blvd.
 STRUCTURE: PAVEMENT

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 PAGE 1 OF 1

STATION: 63+25
 NORTHING: 355465.6391 ft
 SURFACE ELEVATION: 212.5 ft
 OFFSET: 41 RT
 Easting: 3626202.7403 ft
 COORD. DATUM: VA South

FIELD DATA										LAB DATA			
DEPTH (ft)	ELEVATION (ft)	SOIL			ROCK			STRATA LEGEND	LAB DATA				
		STANDARD PENETRATION TEST HAMMER BLOWS	SOIL RECOVERY (%)	SAMPLE LEGEND	SAMPLE INTERVAL	CORE RECOVERY (%)	ROCK QUALITY DESIGNATION		DIP °	LIQUID LIMIT	PLASTICITY INDEX	MOISTURE CONTENT (%)	FINES CONTENT #200 (%)
Date(s) Drilled: 11/9/2021 - 11/9/2021								LAB DATA					
Drilling Method(s): HSA								LIQUID LIMIT					
SPT Method: Automatic Hammer								PLASTICITY INDEX					
Other Test(s):								MOISTURE CONTENT (%)					
Driller: SaLUT, Inc.								FINES CONTENT #200 (%)					
Logger: J. Yadeta													
GROUND WATER													
NOT ENCOUNTERED DURING DRILLING													
FIELD DESCRIPTION OF STRATA													
0.0	212.5							0.0					
12" Asphalt ASPH													
1.0	211.5												
4" Subbase material, Light gray, medium to coarse, SAND AND GRAVEL, trace Silt, dry CRA													
1.33	211.17												
Fill, Tan-gray, FAT CLAY WITH SAND, trace wood, medium stiff, moist.													
Wood stuck at spoon tip and there were no sample recovered. sample was later retrieved with 3" spoon CH													
8.5	204.0												
Fill, Tan, fine to medium, SILTY SAND, medium dense, moist SM													
15.0	197.5												
Boring terminated at 15ft													

SPT_LOGB:I-95 EXPRESS LANE- OPITZ BLVD BORINGS.GPJ:SPT7.GDT:gnT_version 10.02.00.04:1/20/22:WRA

REMARKS: Rig Type: Acker XLS.
 Boring was offset 5' towards east due to underground utility. Hole backfilled with soil cutting and patched with cold asphalt at the surface.

PAGE 1 OF 1
B-A1-1



PROJECT #: 45893-001
 LOCATION: I-95 Express way/Opitz Blvd.
 STRUCTURE: IT

I-12
 PAGE 1 OF 1

STATION: OFFSET:
 NORTHING: 355913.4916 ft Easting: 3626970.194 ft
 SURFACE ELEVATION: 186.0 ft COORD. DATUM: VA South

FIELD DATA

Date(s) Drilled: 2/13/2022 - 2/13/2022

LAB DATA

Drilling Method(s): HSA
 SPT Method: Automatic Hammer
 Other Test(s):
 Driller: SaLUT, Inc.
 Logger: Daniel Case

LIQUID LIMIT
 PLASTICITY INDEX
 MOISTURE CONTENT (%)

GROUND WATER
 ▽ FIRST ENCOUNTERED AT 17.0 ft DEPTH

FIELD DESCRIPTION OF STRATA

LL PI

DEPTH (ft)	ELEVATION (ft)	SOIL		SAMPLE INTERVAL	ROCK			STRATA LEGEND
		STANDARD PENETRATION TEST HAMMER BLOWS	SOIL RECOVERY (%)		CORE RECOVERY (%)	ROCK QUALITY DESIGNATION	STRATA	
0.0	186.0							
0.0 - 0.7	186.0 - 185.3	3	60	1.5				8" Topsoil TOPS
0.7 - 0.7	185.3	4	100	3				Brown, Sandy FAT CLAY, stiff, moist CH
0.7 - 4.0	185.3 - 180.0	4	100	4				
4.0 - 6.0	180.0 - 178.0	4	100	5.5				
6.0 - 8.0	178.0 - 175.0	6	100	6.5				
8.0 - 9.0	175.0 - 174.0	8	100	8				
9.0 - 10.0	174.0 - 173.0	3	100	9				
10.0 - 10.5	173.0 - 172.5	19	42	10.5				9.5 / 176.5 Brown, gray, SANDY SILT, trace decomposed rock fragments, very hard to stiff, moist ML
10.5 - 11.5	172.5 - 171.5	25	100	11.5				
11.5 - 13.0	171.5 - 170.0	35	50/2"	13				
13.0 - 14.0	170.0 - 169.0	21	100	14				
14.0 - 15.5	169.0 - 167.5	30	43	15.5				
15.5 - 16.5	167.5 - 166.5	4	100	16.5				
16.5 - 17.0	166.5 - 166.0	6	11	17.0				17.5 / 168.5 <i>Residual</i> , Gray, brown, highly weathered, lithified, GRAPHITIC SCHIST ROCK FRAGMENTS, dense, moist MST
17.0 - 18.0	166.0 - 165.0	11	100	18				
18.0 - 19.0	165.0 - 164.0	7	11	19				
19.0 - 20.5	164.0 - 162.5	11	28	20.5				
20.5 - 23.5	162.5 - 160.0	40	45	23.5				
23.5 - 24.0	160.0 - 159.5	45	50/4"	24.0				24.0 / 162.0 Gray, brown, SANDY SILT, seam of rusty Sand, very hard, dry to moist ML
24.0 - 25.0	159.5 - 158.5	10	41	25.0				
25.0 - 28.5	158.5 - 155.0	10	100	28.5				
28.5 - 30.0	155.0 - 153.0	41	32	30.0				
30.0	153.0							Boring terminated at 30.0ft

REMARKS: Rig Type: B57 Mobile.
 Cave-in depth 24.6ft. Dry at completion.

PAGE 1 OF 1

I-12

SPT_LOG:I-95 EXPRESS LANE- OPITZ BLVD SIGN AND IT BORINGS.GPJ-SPT7.GDT.gINT _version 10.02.00.04:3/8/22:Whitman, Raquardt, and Associates

APPENDIX C

Laboratory Test Results

Boring	S No.	Depth (ft)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	% < #4 Sieve	% < #200 Sieve	Classification	AASHTO	Water Content (%)
I-02	S-1	3.5 - 5.0				86	24			14.6
I-02	S-2	6.0 - 7.6								23.1
I-02	S-3	8.5 - 10.0								21.9
I-02	S-4	11.0 - 12.5								22.6
I-02	S-5	13.5 - 15.0								17.1
I-03	S-1	3.5 - 5.0								21.4
I-03	S-2	6.0 - 7.6				99	23			16.5
I-03	S-3	8.5 - 10.0								25.9
I-03	S-4	11.0 - 12.5								27.6
I-03	S-5	13.5 - 15.0								28.9
I-03	S-6	16.0 - 17.5								25.3
I-03	S-7	18.5 - 20.0								25.6
I-03	S-8	23.5 - 25.0								22.8
I-03	S-9	28.5 - 30.0								16.9
I-04	S-1	1.5 - 3.0								12.6
I-04	S-2	4.0 - 5.5								16.7
I-04	S-3	6.5 - 8.0	51	27	24	100	25	SC	A-2-7	15.8
I-04	S-4	9.0 - 10.5								18.4
I-04	S-5	11.5 - 13.0	82	34	48	100	88	CH	A-7-5	36.3
I-04	S-6	14.0 - 15.5								17.6
I-04	S-7	16.5 - 18.0								22.6
I-04	S-8	19.0 - 20.5								22.5
I-04	S-9	23.5 - 25.0								25.2
I-04	S-10	28.5 - 30.0								9.3
I-05	S-1	3.5 - 5.0								10.7
I-05	S-2	6.0 - 7.6								18.4
I-05	S-3	8.5 - 10.0				100	23			18.6

TLB LAB SUMMARY - BASIC - OPITZ BLVD - ASSIGHT.GPJ - PROJECT.GDT - 3/2022



Summary of Laboratory Results
Opitz Blvd.

Woodbridge, VA
Project Number: 21-0038

Boring	S No.	Depth (ft)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	% < #4 Sieve	% < #200 Sieve	Classification	AASHTO	Water Content (%)
I-05	S-4	11.0 - 12.5								24.2
I-05	S-5	13.5 - 15.0								19.7
I-05	S-6	16.0 - 17.5								16.4
I-05	S-7	18.5 - 20.0								33.8
I-05	S-8	23.5 - 25.0								20.4
I-05	S-9	28.5 - 30.0								22.4
I-07	S-1	3.5 - 5.0								19.1
I-07	S-2	6.0 - 7.6	54	30	24	100	29	SM	A-2-7	16.8
I-07	S-3	8.5 - 10.0								19.3
I-07	S-4	11.0 - 12.5								31.0
I-07	S-5	13.5 - 15.0				99	27			20.7
I-07	S-6	16.0 - 17.5								22.8
I-07	S-7	18.5 - 20.0								38.2
I-07	S-8	22.0 - 23.5								27.8
I-07	S-9	28.5 - 30.0								26.2
I-08	S-1	3.5 - 5.0								16.3
I-08	S-2	6.0 - 7.6				100	22			17.2
I-08	S-3	8.5 - 10.0								19.4
I-08	S-4	11.0 - 12.5								16.8
I-08	S-5	13.5 - 15.0								17.8
I-08	S-6	16.0 - 17.5								21.5
I-08	S-7	19.5 - 21.0								18.2
I-08	S-8	23.5 - 25.0								31.4
I-08	S-9	28.5 - 30.0								14.2
I-09	S-1	1.5 - 3.0								16.7
I-09	S-2	4.0 - 5.5								20.7
I-09	S-3	6.5 - 8.0	49	27	22	100	48	SC	A-7-6	28.9

TLB LAB SUMMARY - BASIC - OPITZ BLVD. ASSIGNMENT: GPR PROJECT: GDT 3/2022



Summary of Laboratory Results
Opitz Blvd.

Woodbridge, VA
Project Number: 21-0038

Boring	S No.	Depth (ft)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	% < #4 Sieve	% < #200 Sieve	Classification	AASHTO	Water Content (%)
I-09	S-4	9.0 - 10.5								24.5
I-09	S-5	11.5 - 13.0								19.3
I-09	S-6	14.0 - 15.5	63	28	35	100	56	CH	A-7-6	21.9
I-09	S-7	16.5 - 18.0								19.1
I-09	S-8	19.0 - 20.5								24.0
I-09	S-9	23.5 - 25.0								28.4
I-09	S-10	28.5 - 30.0								14.8
I-10	S-1	0.0 - 1.5								9.9
I-10	S-2	3.5 - 5.0								19.5
I-10	S-3	5.0 - 6.5								21.4
I-10	S-4	8.5 - 10.0	39	19	20	90	60	CL	A-6	20.4
I-10	S-5	10.0 - 11.5								20.0
I-10	S-6	11.5 - 13.0								17.2
I-10	S-7	13.5 - 15.0								17.0
I-10	S-8	16.0 - 17.5								14.1
I-10	S-9	18.5 - 20.0								15.6
I-10	S-10	23.5 - 25.0								9.1
S-03	S-1	3.5 - 5.0	29	20	9	75	21	SC	A-2-4	10.9
S-03	S-2	6.0 - 7.6								18.4
S-03	S-3	8.5 - 10.0								22.3
S-03	S-4	11.0 - 12.5								18.4
S-03	S-5	13.5 - 15.0								21.2
S-03	S-6	16.0 - 17.5								19.0
S-05	S-1	3.5 - 5.0								18.2
S-05	S-2	6.0 - 7.6								18.8
S-05	S-3	8.5 - 10.0	55	27	28	99	27	SC	A-2-7	19.1
S-05	S-4	11.0 - 12.5								19.1

TLB LAB SUMMARY - BASIC - OPITZ BLVD. ASSIGNMENT: GFI PROJECT: GDT 3/2022



Summary of Laboratory Results
Opitz Blvd.

Woodbridge, VA
Project Number: 21-0038

Boring	S No.	Depth (ft)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	% < #4 Sieve	% < #200 Sieve	Classification	AASHTO	Water Content (%)
S-05	S-5	13.5 - 15.0								20.1
S-05	S-6	16.0 - 17.5								21.6
S-05	S-7	18.5 - 20.0								21.9
S-05	S-8	23.5 - 25.0								20.2
S-05	S-9	28.5 - 30.0								21.0
S-07	S-1	1.5 - 3.0								14.6
S-07	S-2	4.0 - 5.5	50	24	26	85	44	SC	A-7-6	16.2
S-07	S-3	6.5 - 8.0								20.8
S-07	S-4	9.0 - 10.5	47	25	22	97	46	SC	A-7-6	20.7
S-07	S-5	11.5 - 13.0								18.5
S-07	S-6	14.0 - 15.5								17.5
S-07	S-7	16.5 - 18.0								18.6
S-07	S-8	19.0 - 20.5								17.8
S-07	S-9	23.5 - 25.0								17.3
S-07	S-10	28.5 - 30.0								22.0
S-09	S-1	3.5 - 5.0								20.3
S-09	S-2	6.0 - 7.6	47	23	24	90	49	SC	A-7-6	17.9
S-09	S-3	8.5 - 10.0								24.7
S-09	S-4	11.0 - 12.5								25.2
S-09	S-5	13.5 - 15.0								21.5
S-09	S-6	16.0 - 17.5								18.5
S-09	S-7	18.5 - 20.0								18.7
S-09	S-8	23.5 - 25.0								26.1
S-09	S-9	28.5 - 30.0								25.5
S-10	S-1	3.5 - 5.0								23.6
S-10	S-2	6.0 - 7.6								26.6
S-10	S-3	8.5 - 10.0								14.9

TLB LAB SUMMARY - BASIC - OPITZ BLVD - ASSIGHT.GPJ - PROJECT.GDT - 3/2022



Summary of Laboratory Results
Opitz Blvd.

Woodbridge, VA
Project Number: 21-0038

Boring	S No.	Depth (ft)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	% < #4 Sieve	% < #200 Sieve	Classification	AASHTO	Water Content (%)
S-10	S-4	11.0 - 12.5	39	25	14	80	48	SC	A-6	16.8
S-10	S-5	13.5 - 15.0								16.5
S-10	S-6	16.0 - 17.5								16.8
S-10	S-7	18.5 - 20.0								19.9
S-10	S-8	23.5 - 25.0								28.6
S-10	S-9	28.5 - 30.0								22.7
S-13	S-1	3.5 - 5.0								16.9
S-13	S-2	6.0 - 7.6								20.1
S-13	S-3	8.5 - 10.0				100	23			17.3
S-13	S-4	11.0 - 12.5								18.7
S-13	S-5	13.5 - 15.0								37.5
S-13	S-6	16.0 - 17.5								15.4
S-13	S-7	18.5 - 20.0								17.2
S-13	S-8	23.5 - 25.0								20.8
S-13	S-9	28.5 - 30.0								26.4
S-14	S-1	1.5 - 3.0								17.6
S-14	S-2	4.0 - 5.5				97	29			15.3
S-14	S-3	6.5 - 8.0								10.6
S-14	S-4	9.0 - 10.5								11.2
S-14	S-5	11.5 - 13.0								20.2
S-14	S-6	14.0 - 15.5								31.4
S-14	S-7	16.5 - 18.0								24.4
S-14	S-8	19.0 - 20.5								30.1
S-14	S-9	23.5 - 25.0								17.0
S-14	S-10	28.5 - 30.0								25.6
S-15	S-1	1.5 - 3.0								16.3
S-15	S-2	4.0 - 5.5								22.0

TLB LAB SUMMARY - BASIC - OPITZ BLVD - ASSIGHT.GPJ - PROJECT.GDT - 3/2/22



Summary of Laboratory Results
Opitz Blvd.

Woodbridge, VA
Project Number: 21-0038

Boring	S No.	Depth (ft)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	% < #4 Sieve	% < #200 Sieve	Classification	AASHTO	Water Content (%)
S-15	S-3	6.5 - 8.0								13.4
S-15	S-4	9.0 - 10.5				96	20			12.6
S-15	S-5	11.5 - 13.0								15.1
S-15	S-6	14.0 - 15.5								23.4
S-15	S-7	16.5 - 18.0								28.3
S-15	S-8	19.0 - 20.5								20.0
S-15	S-9	23.5 - 25.0								20.0
S-15	S-10	28.5 - 30.0								18.1
S-16	S-1	1.0 - 2.5								15.1
S-16	S-2	3.5 - 5.0								22.1
S-16	S-3	6.0 - 7.5								17.0
S-16	S-4	8.5 - 10.0	47	27	20	95	46	SC	A-7-6	19.0
S-16	S-5	11.0 - 12.5								16.8
S-16	S-6	13.5 - 15.0								15.1
S-16	S-7	16.0 - 17.5								20.8
S-16	S-8	18.5 - 20.0								12.5
S-16	S-9	23.5 - 25.0								9.7
S-16	S-10	28.5 - 30.0								13.4
S-17	S-1	1.0 - 2.5								18.3
S-17	S-2	3.5 - 5.0								21.4
S-17	S-3	6.0 - 7.5	45	29	16	99	32	SM	A-2-7	19.4
S-17	S-4	8.5 - 10.0								14.2
S-17	S-5	11.0 - 12.5								17.1
S-17	S-6	13.5 - 15.0								14.6
S-17	S-7	16.0 - 17.5								13.6
S-17	S-8	18.5 - 20.0								15.7
S-17	S-9	23.5 - 25.0								23.1



Summary of Laboratory Results
Opitz Blvd.

Woodbridge, VA
Project Number: 21-0038

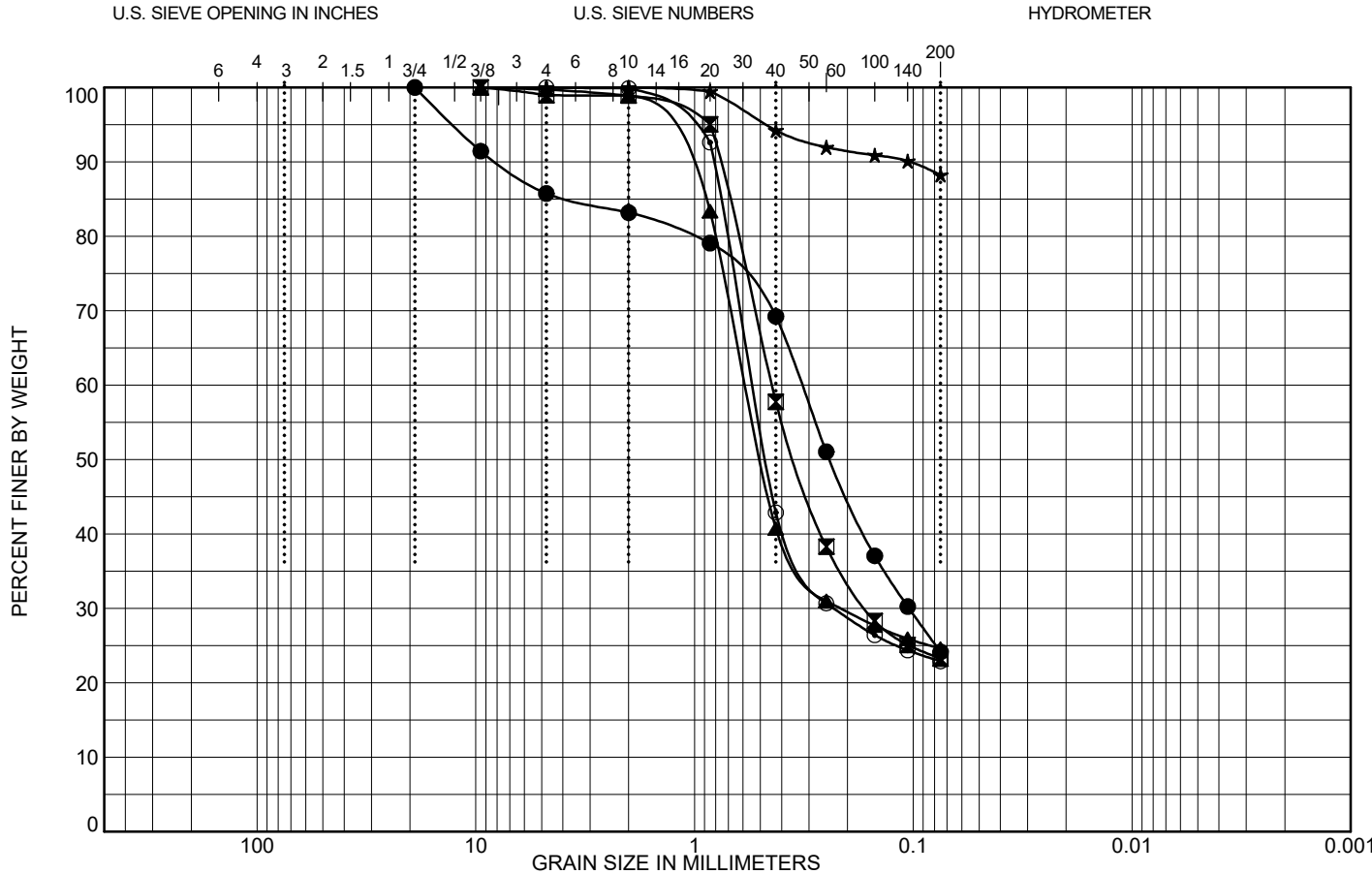
Boring	S No.	Depth (ft)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	% < #4 Sieve	% < #200 Sieve	Classification	AASHTO	Water Content (%)
S-17	S-10	28.5 - 30.0								16.0
S-18	S-1	2.5 - 4.0								14.5
S-18	S-2	5.0 - 6.5								12.8
S-18	S-3	7.5 - 9.0				100	22			16.4
S-18	S-4	10.0 - 11.5								17.3
S-18	S-5	12.5 - 14.0								19.6
S-18	S-6	15.0 - 16.5								25.2
S-18	S-7	17.5 - 19.0								24.1
S-18	S-8	20.0 - 21.5								23.5
S-18	S-9	25.0 - 26.5								20.1
S-18	S-10	28.5 - 30.0								23.5

TLB LAB SUMMARY - BASIC - OPITZ BLVD - ASSIGHTI.GPJ - PROJECT.GDT - 3/2/22



Summary of Laboratory Results
Opitz Blvd.

Woodbridge, VA
Project Number: 21-0038



	D10	D30	D60	D100
●		0.105	0.325	19
☒		0.164	0.443	9.5
▲		0.214	0.581	9.5
★				4.76
⊙		0.231	0.54	4.76

Test Method: VTM-25

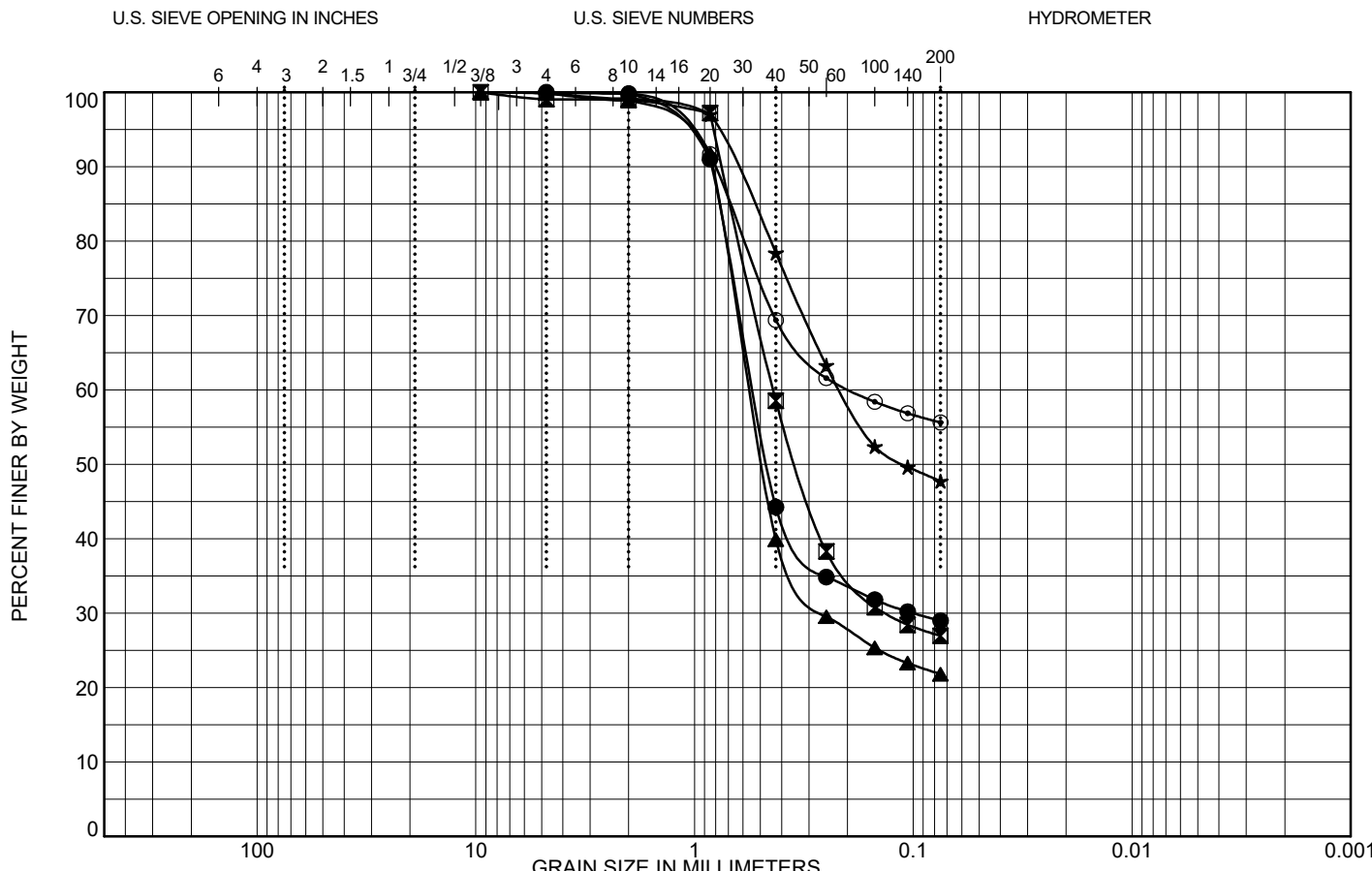
Tested By: CL Date: 2/23/2022

COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Boring	S No.	Depth	%Gravel	%Sand	%Silt	%Clay	LL	PI	MC(%)	Classification	AASHTO
●	I-02	S-1	3.5 - 5.0	14.3	61.6	24.1				14.6		
☒	I-03	S-2	6.0 - 7.6	1.1	75.7	23.3				16.5		
▲	I-04	S-3	6.5 - 8.0	0.3	75.1	24.6	51	24	15.8		CLAYEY SAND(SC)	A-2-7
★	I-04	S-5	11.5 - 13.0	0.0	11.8	88.2	82	48	36.3		FAT CLAY(CH)	A-7-5
⊙	I-05	S-3	8.5 - 10.0	0.0	77.1	22.9				18.6		

	GRAIN SIZE DISTRIBUTION Opitz Blvd.	Woodbridge, VA Project Number: 21-0038	Sheet 1 of 5
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T&E GRAIN SIZE LANDSCAPE USGS OPITZ BLVD. ASHIGM1.GPJ SALUT2014.GDT 3/3/22



	D10	D30	D60	D100
●		0.1	0.537	4.76
☒		0.133	0.436	9.5
▲		0.256	0.556	9.5
★			0.214	4.76
⊙			0.194	4.76

Test Method: VTM-25

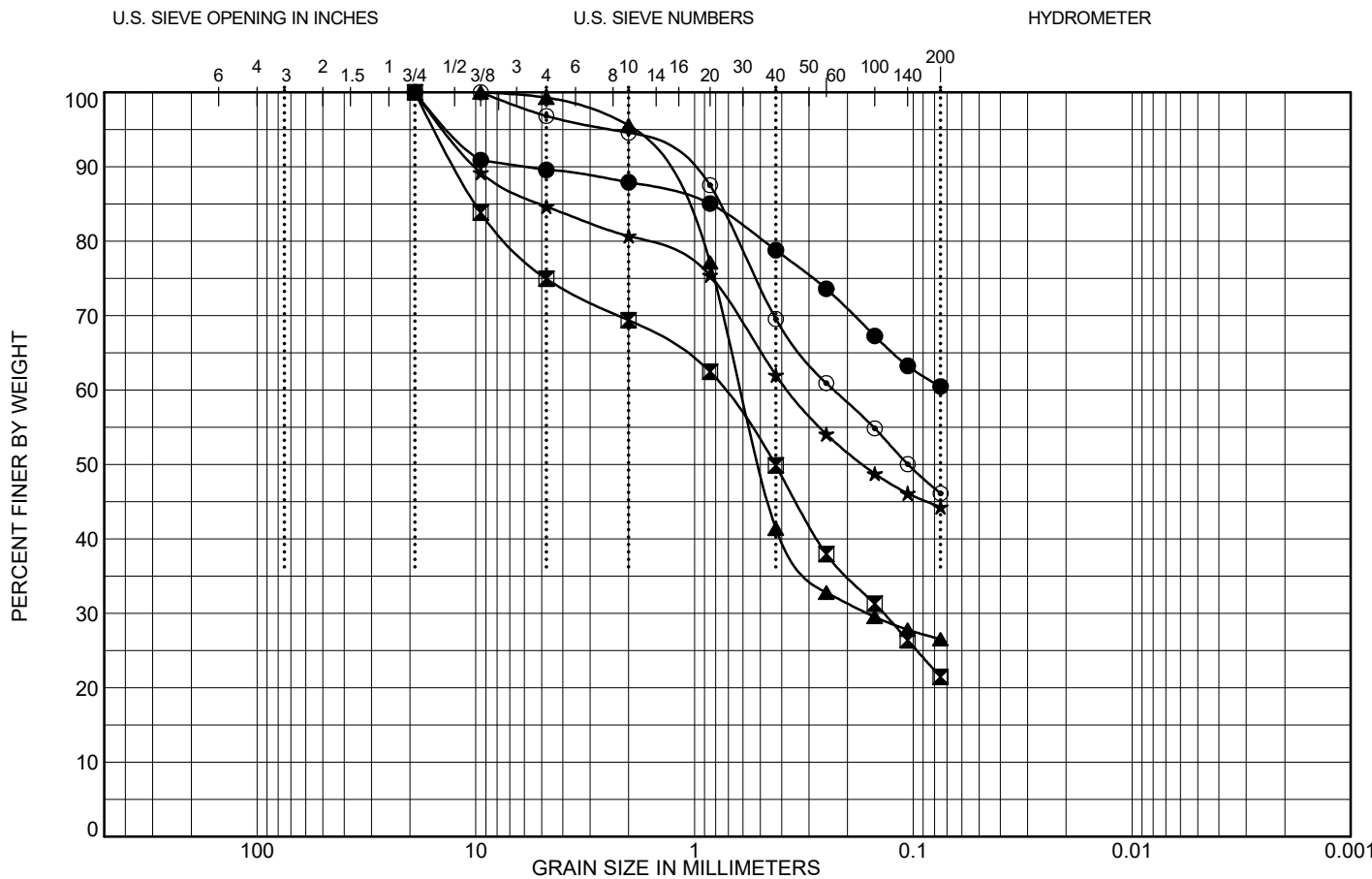
Tested By: CL Date: 2/23/2022

COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Boring	S No.	Depth	%Gravel	%Sand	%Silt	%Clay	LL	PI	MC(%)	Classification	AASHTO
●	I-07	S-2	6.0 - 7.6	0.0	71.0	29.0	54	24	16.8		SILTY SAND(SM)	A-2-7
☒	I-07	S-5	13.5 - 15.0	0.9	72.1	27.0			20.7			
▲	I-08	S-2	6.0 - 7.6	0.2	78.0	21.8			17.2			
★	I-09	S-3	6.5 - 8.0	0.0	52.3	47.7	49	22	28.9		CLAYEY SAND(SC)	A-7-6
⊙	I-09	S-6	14.0 - 15.5	0.0	44.4	55.6	63	35	21.9		SANDY FAT CLAY(CH)	A-7-6

	GRAIN SIZE DISTRIBUTION Opitz Blvd.	Woodbridge, VA Project Number: 21-0038	Sheet 2 of 5
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T&E GRAIN SIZE LANDSCAPE USGS OPITZ BLVD. ASHIGM1.GPJ SALUT2014.GDT 3/3/22



	D10	D30	D60	D100
●				19
☒		0.137	0.742	19
▲		0.162	0.61	9.5
★			0.372	19
⊙			0.231	9.5

Test Method: VTM-25

Tested By: CL Date: 2/23/2022

COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

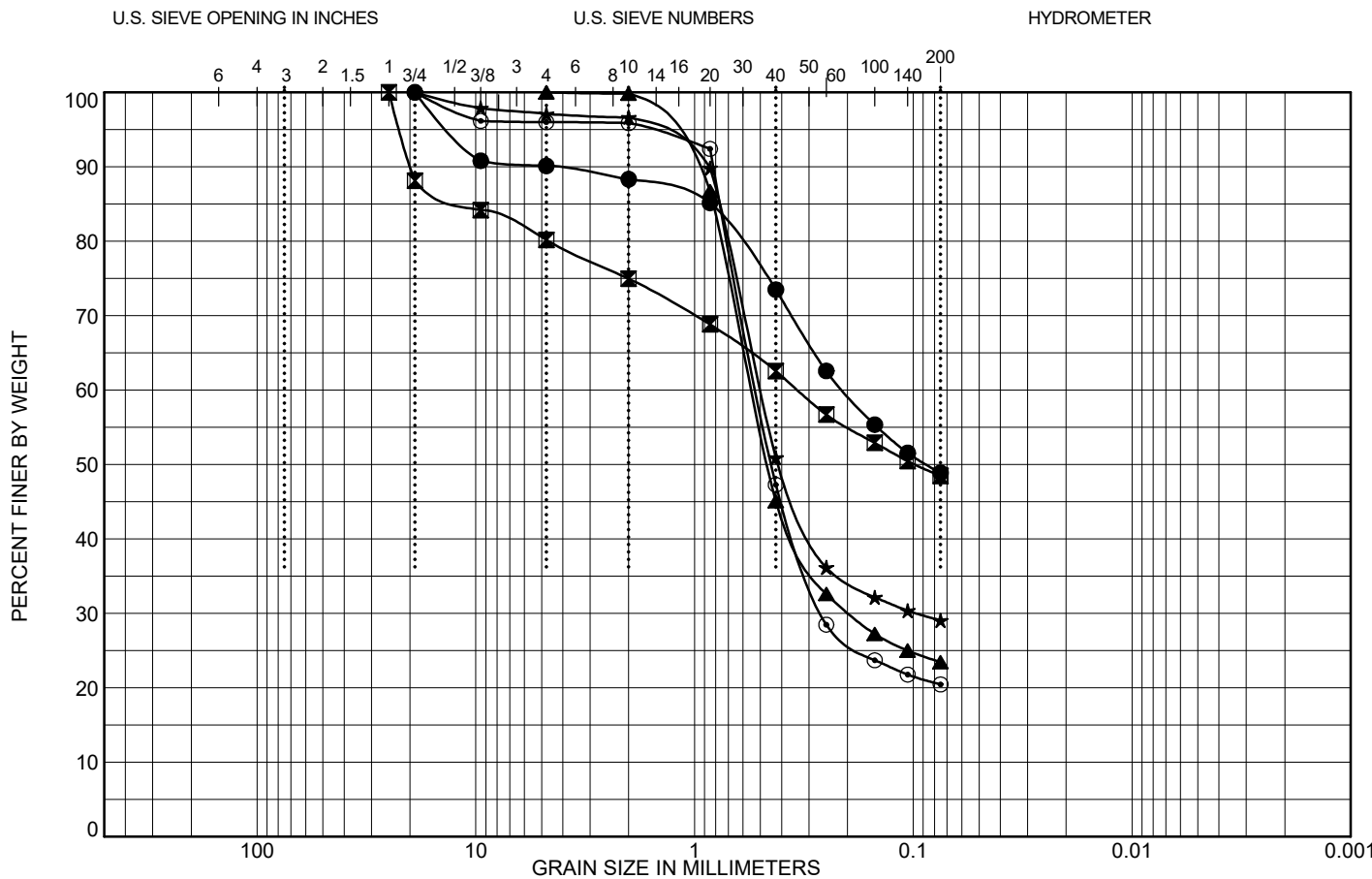
	Boring	S No.	Depth	%Gravel	%Sand	%Silt	%Clay	LL	PI	MC(%)	Classification	AASHTO
●	I-10	S-4	8.5 - 10.0	10.4	29.1	60.5	39	20	20.4		SANDY LEAN CLAY(CL)	A-6
☒	S-03	S-1	3.5 - 5.0	25.1	53.5	21.5	29	9	10.9		CLAYEY SAND with GRAVEL(SC)	A-2-4
▲	S-05	S-3	8.5 - 10.0	0.7	72.8	26.5	55	28	19.1		CLAYEY SAND(SC)	A-2-7
★	S-07	S-2	4.0 - 5.5	15.4	40.4	44.3	50	26	16.2		CLAYEY SAND with GRAVEL(SC)	A-7-6
⊙	S-07	S-4	9.0 - 10.5	3.2	50.7	46.1	47	22	20.7		CLAYEY SAND(SC)	A-7-6



GRAIN SIZE DISTRIBUTION
Opitz Blvd.

Woodbridge, VA
Project Number: 21-0038

T&B GRAIN SIZE LANDSCAPE USGS OPITZ BLVD. ASHIGNI GRI. SALUT2014.GDT 3/3/22



	D10	D30	D60	D100
●			0.208	19
☒			0.337	25
▲		0.195	0.545	4.76
★		0.096	0.5	19
⊙		0.261	0.517	19

Test Method: VTM-25

Tested By: CL Date: 2/23/2022

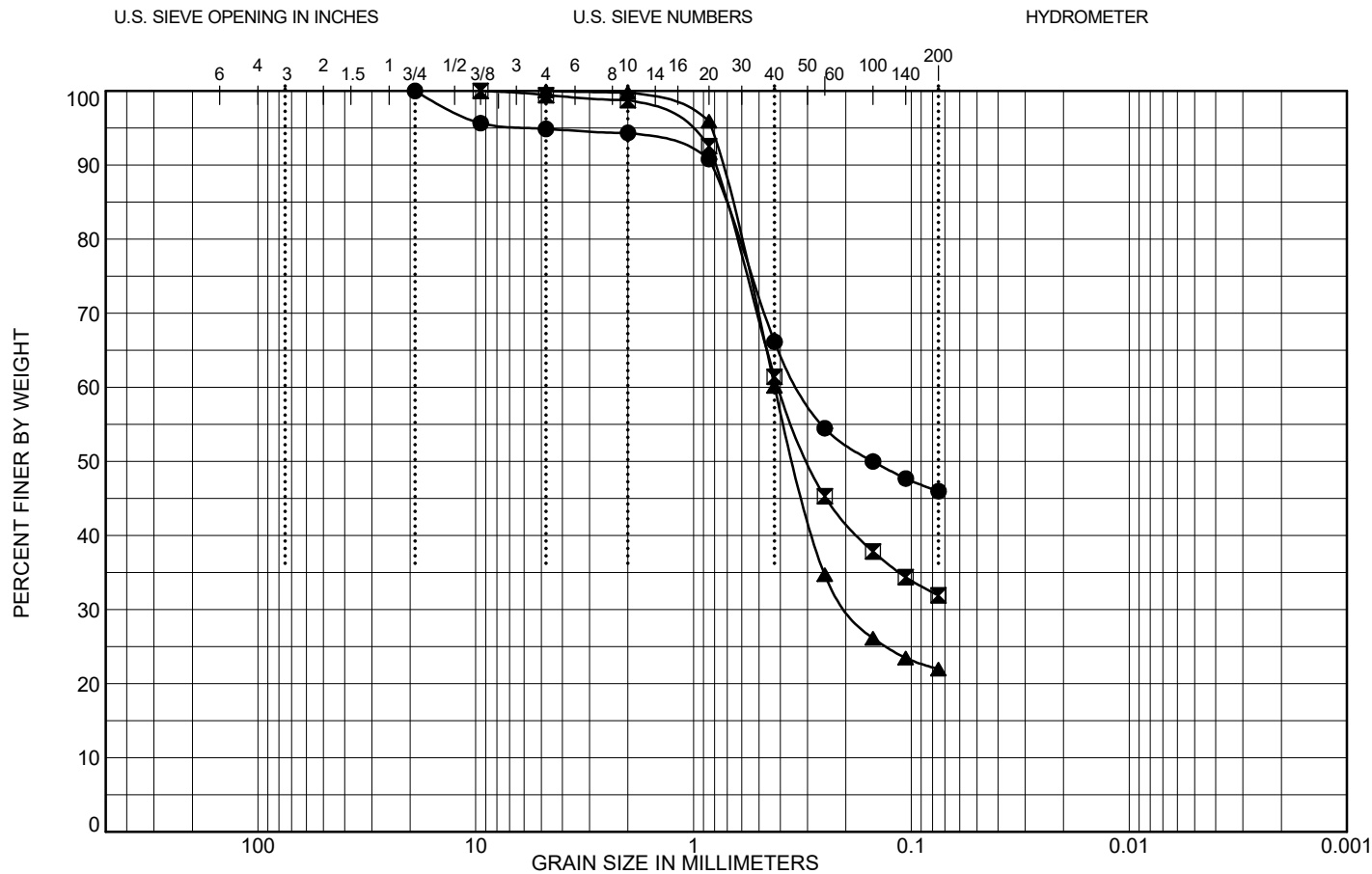
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Boring	S No.	Depth	%Gravel	%Sand	%Silt	%Clay	LL	PI	MC(%)	Classification	AASHTO
●	S-09	S-2	6.0 - 7.6	9.9	41.2	48.9	47	24	17.9		CLAYEY SAND(SC)	A-7-6
☒	S-10	S-4	11.0 - 12.5	19.8	31.7	48.5	39	14	16.8		CLAYEY SAND with GRAVEL(SC)	A-6
▲	S-13	S-3	8.5 - 10.0	0.0	76.6	23.4				17.3		
★	S-14	S-2	4.0 - 5.5	2.9	68.0	29.0				15.3		
⊙	S-15	S-4	9.0 - 10.5	4.0	75.5	20.4				12.6		

	GRAIN SIZE DISTRIBUTION Opitz Blvd.	Woodbridge, VA Project Number: 21-0038	Sheet 4 of 5
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TLB GRAIN SIZE LANDSCAPE USCS OPTZ BLVD ASHIGNI GRI SALUT2014.GDT 3/3/22

TLB GRAIN SIZE LANDSCAPE USCS OPTIZ BLVD ASHIGNI GRI SALLT2014.GDT 3/3/22




	D10	D30	D60	D100
●			0.321	19
⊠			0.406	9.5
▲		0.189	0.424	4.76

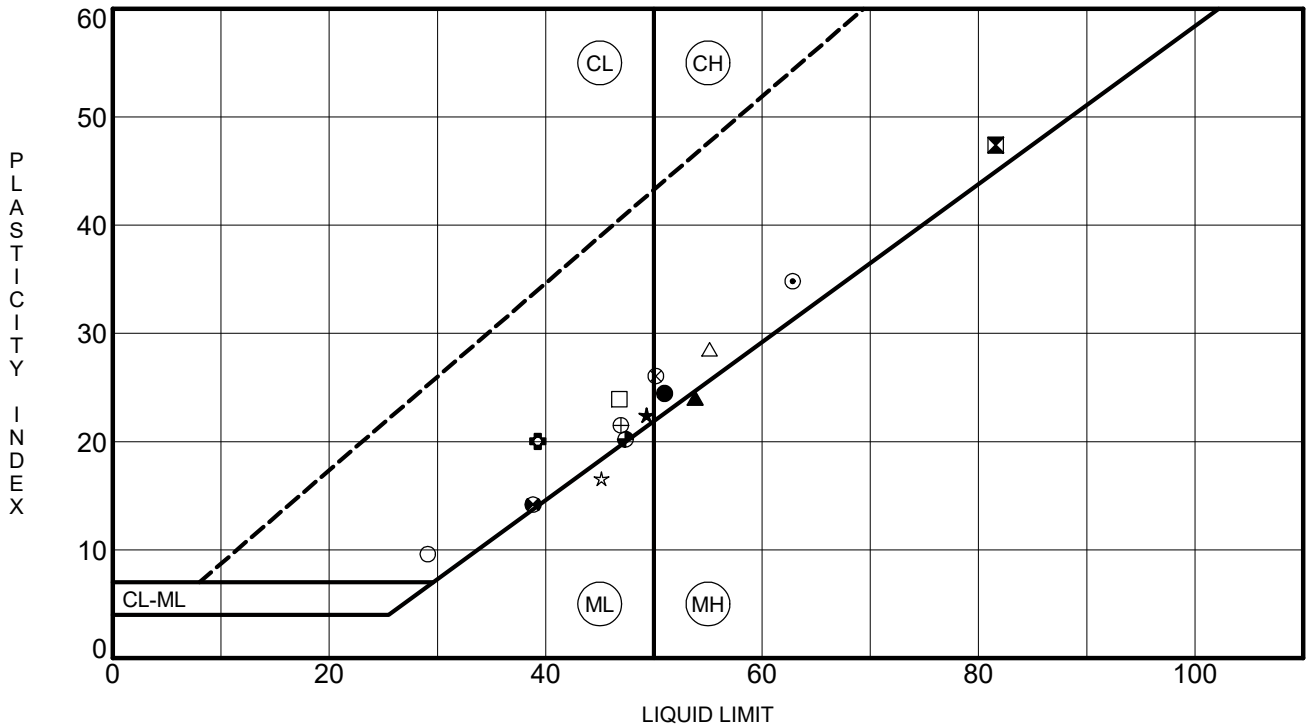
Test Method: VTM-25

Tested By: CL Date: 2/23/2022

COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Boring	S No.	Depth	%Gravel	%Sand	%Silt	%Clay	LL	PI	MC(%)	Classification	AASHTO
●	S-16	S-4	8.5 - 10.0	5.1	48.9	46.0	47	20	19.0		CLAYEY SAND(SC)	A-7-6
⊠	S-17	S-3	6.0 - 7.5	0.6	67.5	31.9	45	16	19.4		SILTY SAND(SM)	A-2-7
▲	S-18	S-3	7.5 - 9.0	0.0	78.0	22.0				16.4		

	GRAIN SIZE DISTRIBUTION Opitz Blvd.	Woodbridge, VA Project Number: 21-0038	Sheet 5 of 5
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Boring	Depth	LL	PL	PI	Fines	Classification	AASHTO
● I-04	6.5 - 8.0	51	27	24	25	CLAYEY SAND(SC)	A-2-7
⊠ I-04	11.5 - 13.0	82	34	48	88	FAT CLAY(CH)	A-7-5
▲ I-07	6.0 - 7.6	54	30	24	29	SILTY SAND(SM)	A-2-7
★ I-09	6.5 - 8.0	49	27	22	48	CLAYEY SAND(SC)	A-7-6
⊙ I-09	14.0 - 15.5	63	28	35	56	SANDY FAT CLAY(CH)	A-7-6
⊕ I-10	8.5 - 10.0	39	19	20	60	SANDY LEAN CLAY(CL)	A-6
○ S-03	3.5 - 5.0	29	20	9	21	CLAYEY SAND with GRAVEL(SC)	A-2-4
△ S-05	8.5 - 10.0	55	27	28	27	CLAYEY SAND(SC)	A-2-7
⊗ S-07	4.0 - 5.5	50	24	26	44	CLAYEY SAND with GRAVEL(SC)	A-7-6
⊕ S-07	9.0 - 10.5	47	25	22	46	CLAYEY SAND(SC)	A-7-6
□ S-09	6.0 - 7.6	47	23	24	49	CLAYEY SAND(SC)	A-7-6
⊕ S-10	11.0 - 12.5	39	25	14	48	CLAYEY SAND with GRAVEL(SC)	A-6
⊕ S-16	8.5 - 10.0	47	27	20	46	CLAYEY SAND(SC)	A-7-6
☆ S-17	6.0 - 7.5	45	29	16	32	SILTY SAND(SM)	A-2-7

Test Method: VTM-7

Tested By: SM

Date: 2/23/2022



ATTERBERG LIMITS' RESULTS

Project: Opitz Blvd.
 Location: Woodbridge, VA
 Project Number: 21-0038

Boring	S No.	Depth (ft)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	% < #4 Sieve	% < #200 Sieve	Classification	AASHTO	Water Content (%)
I-01	S-1	3.5 - 5.0								11.2
I-01	S-2	6.0 - 7.6	35	29	6	100	81	ML	A-4	13.8
I-01	S-3	8.5 - 10.0								12.9
I-01	S-4	11.0 - 12.5								11.0
I-01	S-5	13.5 - 15.0								9.6
I-01	S-6	16.0 - 17.5								10.1
I-01	S-7	19.5 - 21.0								10.7
I-01	S-8	23.5 - 25.0								8.8
I-01	S-9	28.5 - 30.0								12.1
I-12	S-1	1.5 - 3.0								15.7
I-12	S-2	4.0 - 5.5	60	28	32	100	69	CH	A-7-6	23.7
I-12	S-3	6.5 - 8.0								21.4
I-12	S-4	9.0 - 10.5								19.4
I-12	S-5	11.5 - 13.0								15.3
I-12	S-6	14.0 - 15.5								18.7
I-12	S-7	16.5 - 18.0								23.5
I-12	S-8	19.0 - 20.5								17.1
I-12	S-9	23.5 - 25.0								7.4
I-12	S-10	28.5 - 30.0								20.9
S-01	S-1	3.5 - 5.0								14.2
S-01	S-2	6.0 - 7.6	40	32	8	99	77	ML	A-4	11.7
S-01	S-3	8.5 - 10.0								11.4
S-01	S-4	11.0 - 12.5								12.7
S-01	S-5	13.5 - 15.0								10.9
S-01	S-6	16.0 - 17.5								8.2
S-01	S-7	18.5 - 21.0								7.0
S-01	S-8	23.5 - 25.0								5.9

TLB LAB SUMMARY - BASIC - OPITZ BLVD - ASSIGN#2.GPJ - PROJECT.GDT - 3/2022



Summary of Laboratory Results

Opitz Blvd.

Woodbridge, VA

Project Number: 21-0038

Boring	S No.	Depth (ft)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	% < #4 Sieve	% < #200 Sieve	Classification	AASHTO	Water Content (%)
S-01	S-9	28.5 - 30.0								5.2
S-02	S-1	3.5 - 5.0								9.1
S-02	S-2	6.0 - 7.6								8.9
S-02	S-3	8.5 - 10.0				97	48			10.0
S-02	S-4	11.0 - 12.5								7.3
S-02	S-5	13.5 - 15.0								4.7
S-02	S-6	16.0 - 17.5								8.5
S-02	S-7	18.5 - 21.0								11.7
S-02	S-8	23.5 - 25.0								13.0
S-02	S-9	28.5 - 30.0								12.8
S-04	S-1	3.5 - 5.0								16.8
S-04	S-2	6.0 - 7.6				79	25			11.7
S-04	S-3	8.5 - 10.0								17.1
S-04	S-4	11.0 - 12.5								33.7
S-04	S-5	13.5 - 15.0								29.9
S-04	S-6	16.0 - 17.5								19.4
S-04	S-7	18.5 - 21.0								6.5
S-06	S-1	3.5 - 5.0								17.1
S-06	S-2	6.0 - 7.6								14.1
S-06	S-3	8.5 - 10.0				100	22			18.6
S-06	S-4	11.0 - 12.5								25.2
S-06	S-5	13.5 - 15.0								30.0
S-06	S-6	16.0 - 17.5								20.2
S-06	S-7	18.5 - 21.0								19.1
S-06	S-8	23.5 - 25.0								8.4
S-06	S-9	28.5 - 30.0								21.4
S-08	S-1	1.5 - 3.0								18.9

TLB LAB SUMMARY - BASIC - OPITZ BLVD - ASSIGNMENT - PROJECT - GDT - 3/2022



Summary of Laboratory Results
Opitz Blvd.

Woodbridge, VA
Project Number: 21-0038

Boring	S No.	Depth (ft)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	% < #4 Sieve	% < #200 Sieve	Classification	AASHTO	Water Content (%)
S-08	S-2	4.0 - 5.5								15.4
S-08	S-3	6.5 - 8.0	51	27	24	97	36	SC	A-7-6	19.8
S-08	S-4	9.0 - 10.5								22.7
S-08	S-5	11.5 - 13.0								34.1
S-08	S-6	14.0 - 15.5	36	27	9	95	50	ML	A-4	27.4
S-08	S-7	16.5 - 18.0								18.0
S-08	S-8	21.0 - 22.5								24.3
S-08	S-9	23.5 - 25.0								26.5
S-08	S-10	28.5 - 30.0								18.1
S-12	S-1	1.5 - 3.0								14.4
S-12	S-2	4.0 - 5.5				97	22			16.4
S-12	S-3	6.5 - 8.0								36.5
S-12	S-4	9.0 - 10.5	77	41	36	100	98	MH	A-7-5	42.3
S-12	S-5	11.5 - 13.0								35.6
S-12	S-6	14.0 - 15.5								24.2
S-12	S-7	16.5 - 18.0								15.3
S-12	S-8	21.0 - 22.5								19.6
S-12	S-9	23.5 - 25.0								17.4
S-12	S-10	28.5 - 30.0								15.2
S-21	S-1	3.5 - 5.0								16.8
S-21	S-2	6.0 - 7.6								36.9
S-21	S-3	8.5 - 10.0	68	37	31	100	90	MH	A-7-5	41.7
S-21	S-4	11.0 - 12.5								16.2
S-21	S-5	13.5 - 15.0								16.9
S-21	S-6	16.0 - 17.5								17.2
S-21	S-7	18.5 - 21.0								27.1
S-21	S-8	23.5 - 25.0								22.8

TLB LAB SUMMARY - BASIC - OPITZ BLVD - ASSIGN02.GPJ - PROJECT.GDT - 3/2022



Summary of Laboratory Results
Opitz Blvd.

Woodbridge, VA
Project Number: 21-0038

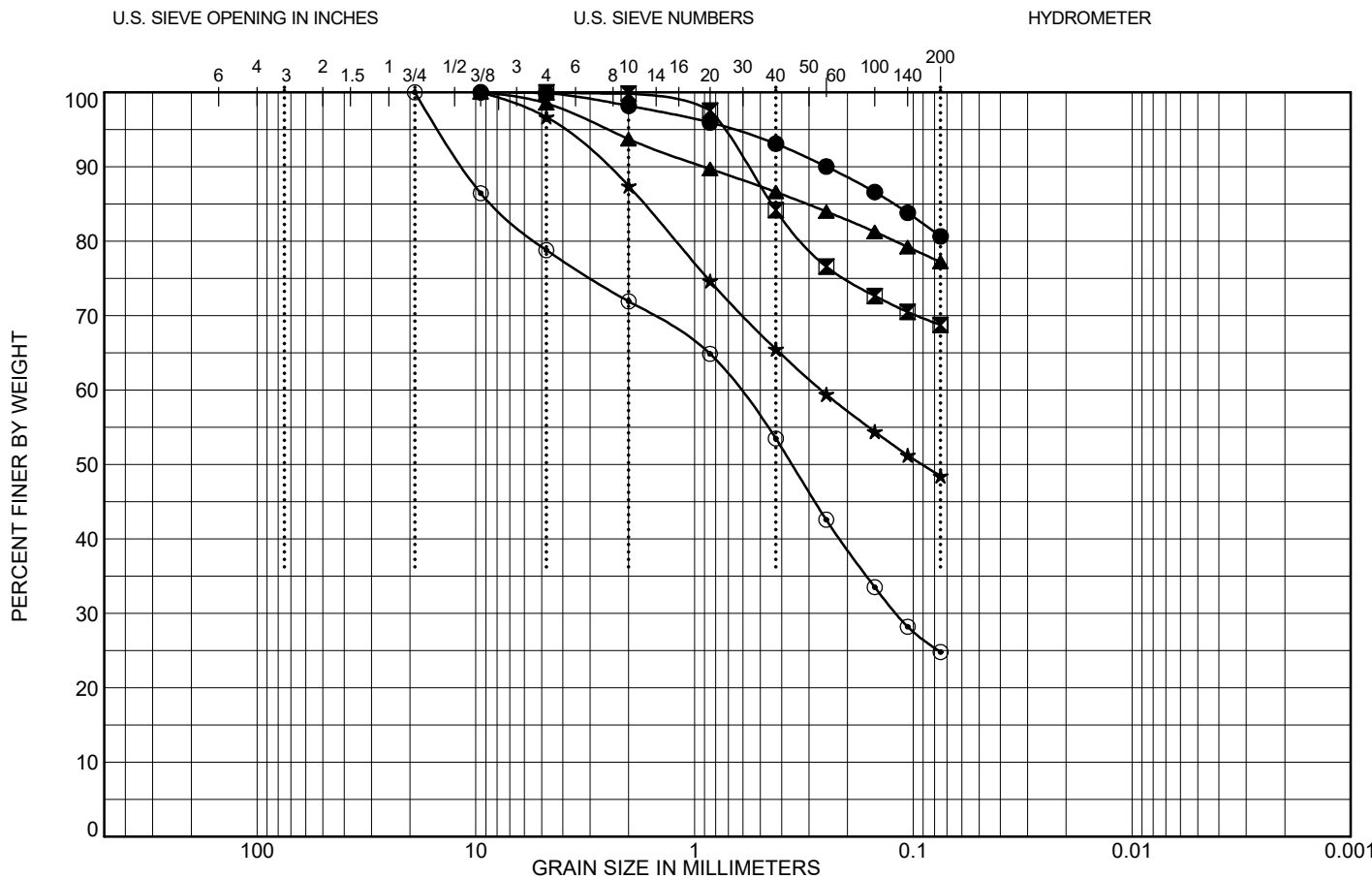
Boring	S No.	Depth (ft)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	% < #4 Sieve	% < #200 Sieve	Classification	AASHTO	Water Content (%)
S-21	S-9	28.5 - 30.0								21.0
S-22	S-1	3.5 - 5.0								14.5
S-22	S-2	6.0 - 7.6								34.5
S-22	S-3	8.5 - 10.0								25.4
S-22	S-4	11.0 - 12.5	59	30	29	100	76	CH	A-7-5	36.5
S-22	S-5	13.5 - 15.0								17.1
S-22	S-6	16.0 - 17.5								21.3
S-22	S-7	18.5 - 21.0								26.4
S-22	S-8	23.5 - 25.0								37.7
S-22	S-9	28.5 - 30.0								20.3

TLB LAB SUMMARY - BASIC - OPITZ BLVD - ASSIGN2.GPJ - PROJECT.GDT - 3/2/22



Summary of Laboratory Results
Opitz Blvd.

Woodbridge, VA
Project Number: 21-0038




	D10	D30	D60	D100
●				9.5
☒				4.76
▲				9.5
★			0.263	9.5
⊙		0.119	0.632	19

Test Method: VTM-25

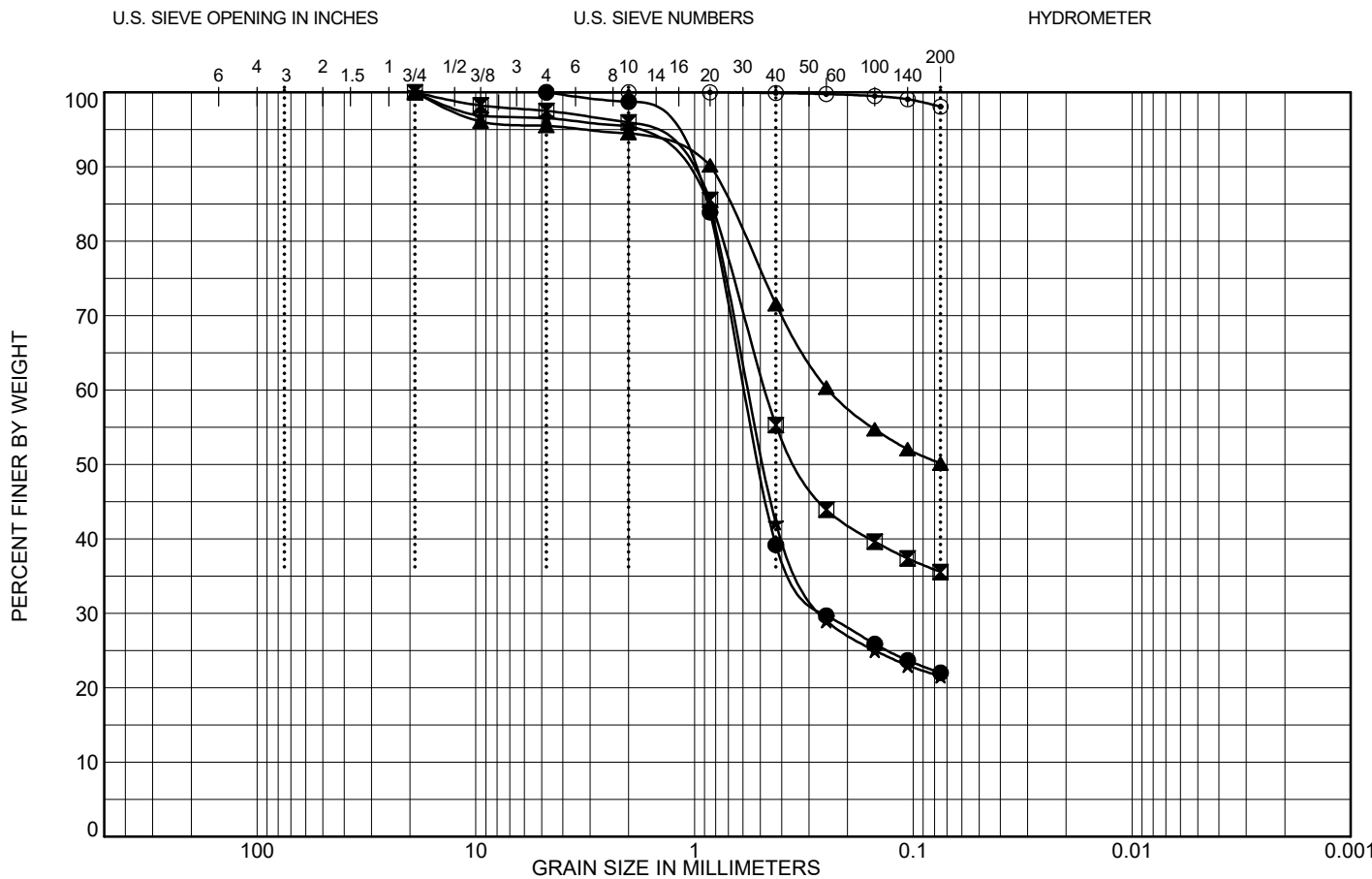
Tested By: CL, SR Date: 3/1/2022

COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Boring	S No.	Depth	%Gravel	%Sand	%Silt	%Clay	LL	PI	MC(%)	Classification	AASHTO
●	I-01	S-2	6.0 - 7.6	0.1	19.3	80.6	35	6	13.8		SILT with SAND(ML)	A-4
☒	I-12	S-2	4.0 - 5.5	0.0	31.2	68.8	60	32	23.7		SANDY FAT CLAY(CH)	A-7-6
▲	S-01	S-2	6.0 - 7.6	1.5	21.3	77.2	40	8	11.7		SILT with SAND(ML)	A-4
★	S-02	S-3	8.5 - 10.0	3.3	48.2	48.5			10.0			
⊙	S-04	S-2	6.0 - 7.6	21.2	54.0	24.8			11.7			

	GRAIN SIZE DISTRIBUTION Opitz Blvd.	Woodbridge, VA Project Number: 21-0038	Sheet 1 of 3
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T&E GRAIN SIZE LANDSCAPE USGS OPTIZ BLVD ASIGR2.GPJ SALUT2014.GDT 3/3/22




	D10	D30	D60	D100
●		0.255	0.587	4.76
☒			0.473	19
▲			0.243	19
★		0.26	0.569	19
⊙				4.76

Test Method: VTM-25

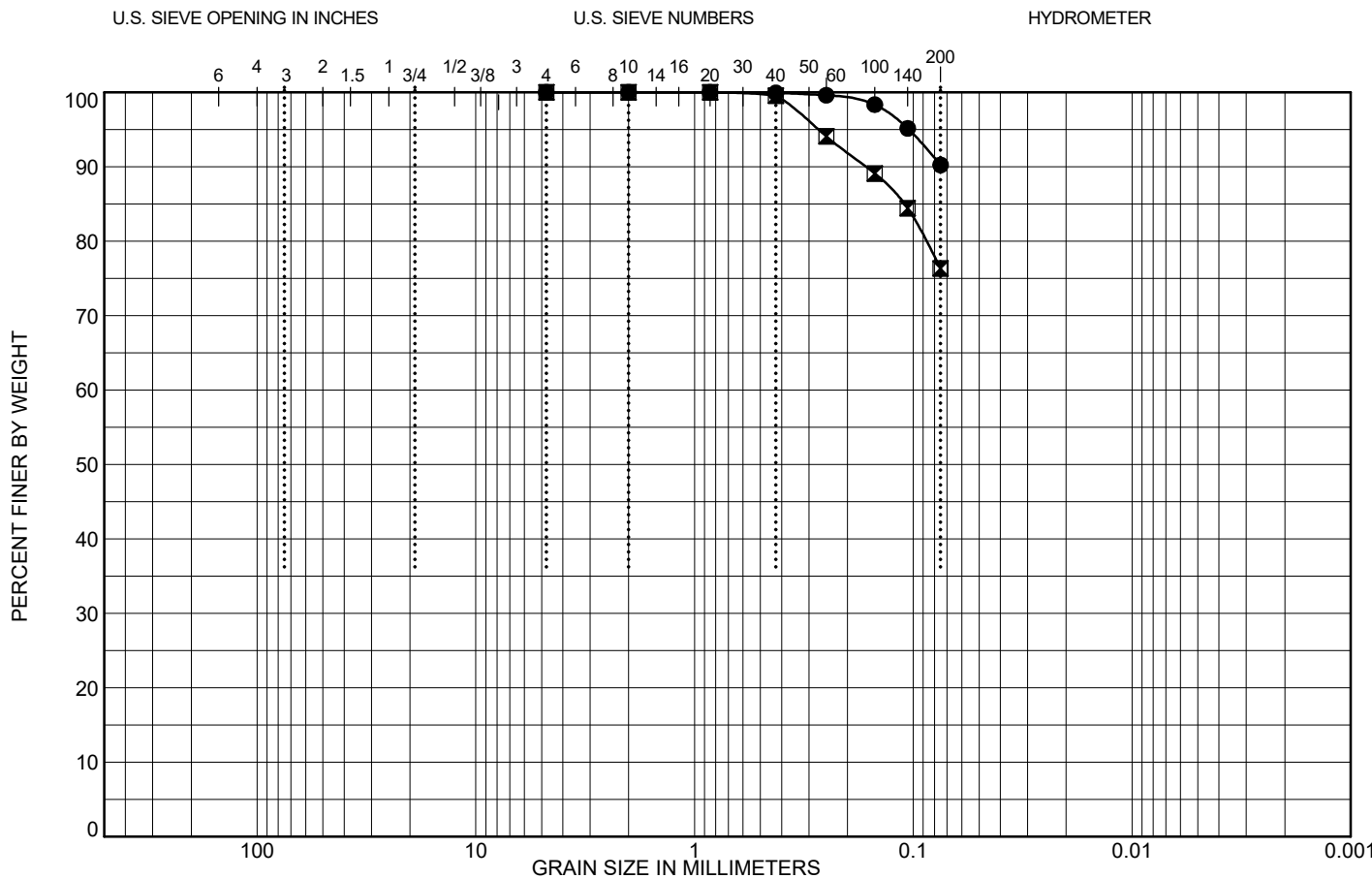
Tested By: CL, SR Date: 3/1/2022

COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Boring	S No.	Depth	%Gravel	%Sand	%Silt	%Clay	LL	PI	MC(%)	Classification	AASHTO
●	S-06	S-3	8.5 - 10.0	0.0	78.0	22.0				18.6		
☒	S-08	S-3	6.5 - 8.0	2.5	61.9	35.6	51	24	19.8		CLAYEY SAND(SC)	A-7-6
▲	S-08	S-6	14.0 - 15.5	4.5	45.4	50.1	36	9	27.4		SANDY SILT(ML)	A-4
★	S-12	S-2	4.0 - 5.5	3.5	75.0	21.6			16.4			
⊙	S-12	S-4	9.0 - 10.5	0.0	1.9	98.1	77	36	42.3		ELASTIC SILT(MH)	A-7-5

	GRAIN SIZE DISTRIBUTION Opitz Blvd.	Woodbridge, VA Project Number: 21-0038	Sheet 2 of 3
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T&E GRAIN SIZE LANDSCAPE USGS OPTIZ BLVD ASIGR2.GPJ SALUT2014.GDT 3/3/22



	D10	D30	D60	D100
●				4.76
■				4.76

Test Method: VTM-25

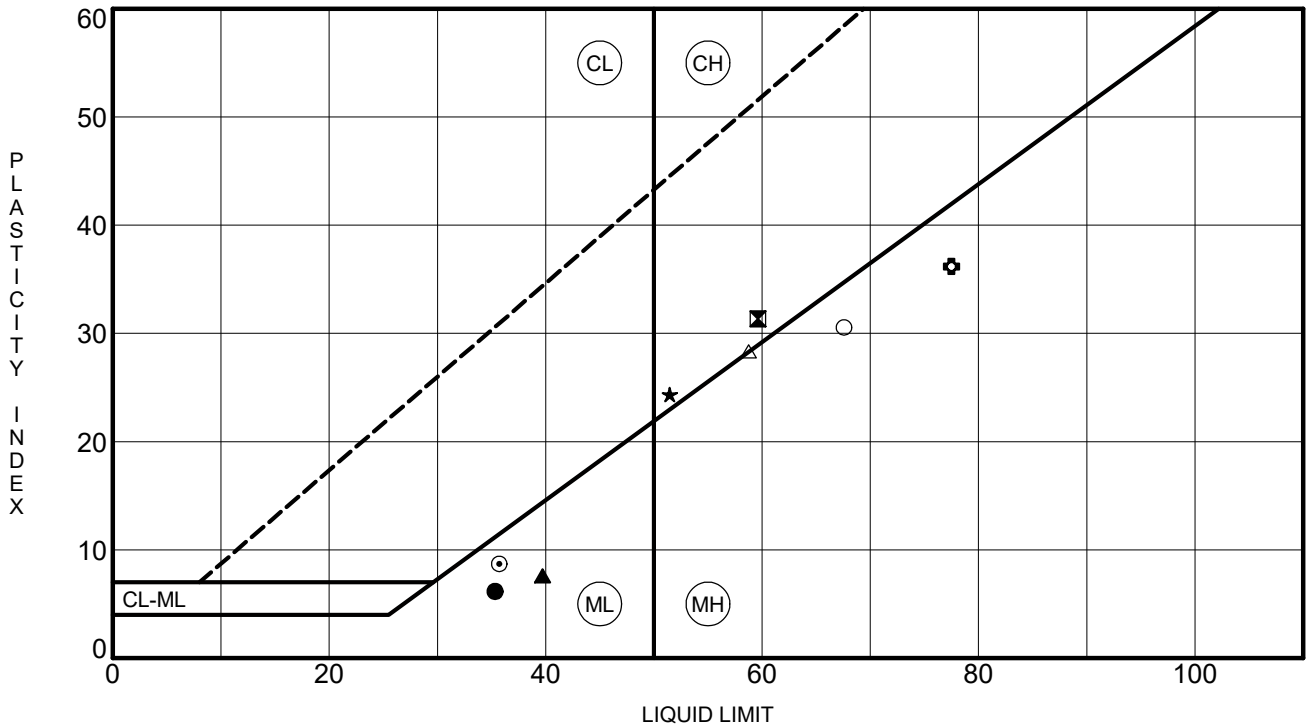
Tested By: CL, SR Date: 3/1/2022

COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Boring	S No.	Depth	%Gravel	%Sand	%Silt	%Clay	LL	PI	MC(%)	Classification	AASHTO
●	S-21	S-3	8.5 - 10.0	0.0	9.8	90.2	68	31	41.7		ELASTIC SILT(MH)	A-7-5
■	S-22	S-4	11.0 - 12.5	0.0	23.7	76.3	59	29	36.5		FAT CLAY with SAND(CH)	A-7-5

	GRAIN SIZE DISTRIBUTION Opitz Blvd.	Woodbridge, VA Project Number: 21-0038	Sheet 3 of 3
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TB GRN SIZE LANDSCAPE USCS OPTZ BLVD ASIGR2.GPJ SALLT2014.GDT 3/3/22



Boring	Depth	LL	PL	PI	Fines	Classification	AASHTO
● I-01	6.0 - 7.6	35	29	6	81	SILT with SAND(ML)	A-4
⊠ I-12	4.0 - 5.5	60	28	32	69	SANDY FAT CLAY(CH)	A-7-6
▲ S-01	6.0 - 7.6	40	32	8	77	SILT with SAND(ML)	A-4
★ S-08	6.5 - 8.0	51	27	24	36	CLAYEY SAND(SC)	A-7-6
⊙ S-08	14.0 - 15.5	36	27	9	50	SANDY SILT(ML)	A-4
⊕ S-12	9.0 - 10.5	77	41	36	98	ELASTIC SILT(MH)	A-7-5
○ S-21	8.5 - 10.0	68	37	31	90	ELASTIC SILT(MH)	A-7-5
△ S-22	11.0 - 12.5	59	30	29	76	FAT CLAY with SAND(CH)	A-7-5

Test Method: VTM-7

Tested By: SM Date: 3/2/2022



ATTERBERG LIMITS' RESULTS

Project: Opitz Blvd.
 Location: Woodbridge, VA
 Project Number: 21-0038

T&E CONSULTANTS - OPITZ BLVD. ASSIGNMENT - TLE2009.GDT 3/2/22