STATE	FHWA-EFLHD PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	VA-0EA-US1(1)	1	0001-029-001 SEE TABULATION BELOW FOR SECTION NUMBER	1

FOR INDEX OF SHEETS SEE SHEET 1B

THIS PROJECT WAS DEVELOPED UTILIZING VDOT's ENGINEERING DESIGN PACKAGE (GEOPAK).

U.S. Department of Transportation
Eastern Federal Lands Highway Division

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

PLAN AND PROFILE OF PROPOSED
STATE HIGHWAY

COUNTY OF FAIRFAX
US ROUTE 1 IMPROVEMENTS AT FORT BELVOIR
FROM: POHICK ROAD
TO: MOUNT VERNON MEMORIAL HIGHWAY

100% PLANS
OCTOBER 16, 2014
SECTION E

PROJECT MANAGER LAURA MEHIEL A.MORTON_THOMAS_&_ASSOC.
SURVEYED BY FHWA - SUPPLEMENTED BY A.MORTON_THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM_WELLS A.MORTON_THOMAS_&_ASSOC.
DESIGNED BY MICHAEL GIFFORD A.MORTON_THOMAS_&_ASSOC.

FUNCTIONAL CLASSIFICATION AND TRAFFIC DATA					
U.S. Route 1 - Urban Principal Arterial					
Fr: To:	Telegraph Road Fairfax Co. Pkwy	Fairfax Co. Pkwy Pohick Road	Pohick Road Belvoir Road	Belvoir Road Mt Vernon Hwy	North of Mt Vernon Hwy
ADT (2010)	37,000	56,000	46,500	46,500	35,000
ADT (2040)	60,000	66,000	53,000	66,000	54,000
DHV	5,500				
D (%) (design hour)	8.3				
T (%) (design hour)	5.0				
V (MPH)	50	50	50	45	50

Telegraph Rd. - Urban Minor Arterial	
Fr.: 0.228 Miles North of US 1 To: 0.026 Miles South of US 1	
ADT (2010)	24,000
ADT (2040)	20,000
DHV	2,424
D (%) (design hour)	81/19
T (%) (design hour)	3
V (MPH)	45

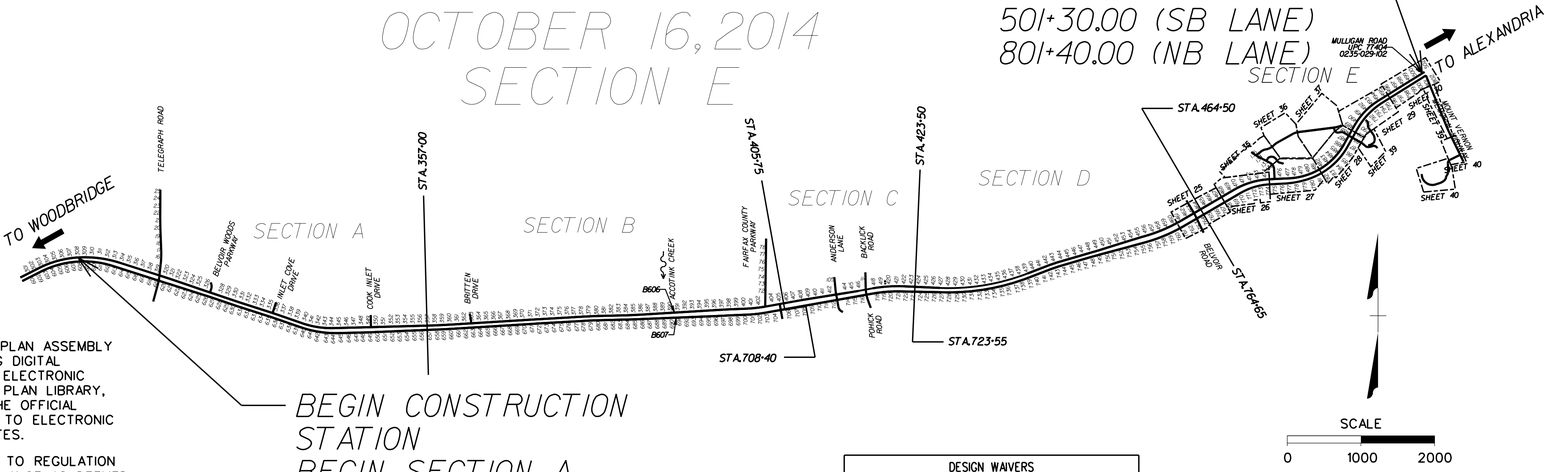
Fairfax Co. Pkwy-Urban Principal Arterial	
Fr.: 0.033 Miles North of US 1 To: US 1	
ADT (2010)	22,000
ADT (2040)	38,000
DHV	2,046
D (%) (design hour)	51/49
T (%) (design hour)	0
V (MPH), Posted	45

CONVENTIONAL SIGNS

STATE LINE
COUNTY LINE
CITY,TOWN OR VILLAGE
RIGHT OF WAY LINE
FENCE LINE
UNFENCED PROPERTY LINE
FENCED PROPERTY LINE
WATER LINE
SANITARY SEWER LINE
GAS LINE
ELECTRIC UNDERGROUND CABLE
TRAVELED WAY
GUARD RAIL
RETAINING WALL
RAILROADS
BASE OR SURVEY LINE

LEVEE OR EMBANKMENT
BRIDGES
CULVERTS
DROP INLET
POWER POLES
TELEPHONE OR TELEGRAPH POLES
TELEPHONE OR TELEGRAPH LINES
HEDGE
TREES
HEAVY WOODS
GROUND ELEVATION
GRADE ELEVATION
WATERS OF THE UNITED STATES
WETLANDS

END CONSTRUCTION STATION
END SECTION E
501+30.00 (SB LANE)
801+40.00 (NB LANE)



SCALE
0 1000 2000

BEGIN CONSTRUCTION STATION
BEGIN SECTION A
308+20 (SB LANE)
609+45 (NB LANE)

Fairfax County Population 1,081,426 (2010 Census)

DESIGN WAIVERS	
Reduced Lane Width	Station 308+20 to 501+30
Reduced Buffer Width	Station 464+50 to 501+30

THE COMPLETE ELECTRONIC PDF VERSION OF THE PLAN ASSEMBLY AS AWARDED, HAS BEEN SEALED AND SIGNED USING DIGITAL SIGNATURES AND THE OFFICIAL PLAN ASSEMBLY IN ELECTRONIC FORMAT IS STORED IN THE VDOT CENTRAL OFFICE PLAN LIBRARY, INLCUDING ALL SUBSEQUENT REVISIONS, WILL BE THE OFFICIAL CONSTRUCTION PLANS. FOR INFORMATION RELATIVE TO ELECTRONIC FILES AND LAYERED PLANS, SEE THE GENERAL NOTES.

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

THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE VDOT's 2007 ROAD AND BRIDGE SPECIFICATIONS, 2008 ROAD AND BRIDGE STANDARDS, 2011 WORK AREA PROTECTION MANUAL, 2009 MANUAL OF UNIFORM AND TRAFFIC CONTROL DEVICES AND 2011 VA SUPPLEMENT TO THE MANUAL OF UNIFORM AND TRAFFIC CONTROL DEVICES.

AS AMENDED BY CONTRACT PROVISIONS AND THE COMPLETE ELECTRONIC .PDF VERSION OF THE PLAN ASSEMBLY.

ALL CURVES ARE TO BE SUPERELEVATED, TRANSITIONED AND WIDENED IN ACCORDANCE WITH STANDARD TC-5.11U, EXCEPT WHERE OTHERWISE NOTED.

THE ORIGINAL APPROVED TITLE SHEET(S), INCLUDING ORIGINAL SIGNATURES, ARE FILED IN THE VDOT CENTRAL OFFICE PLAN LIBRARY. ANY MISUSE OF ELECTRONIC FILES, INCLUDING SCANNED SIGNATURES, IS ILLEGAL AND ENFORCED TO THE FULL EXTENT OF THE LAW.

STATE PROJECT NO.	SECTION	FEDERAL AID PROJECT NO.	TYPE CODE	UPC NO.	EQUALITIES	LENGTH INCLUDING BRIDGE(S)		LENGTH EXCLUDING BRIDGE(S)		BRIDGE PROJECT NO.	TYPE PROJECT	DESCRIPTION
					FEET	FEET	MILES	FEET	MILES			
0001-029-001	P101	STP-5A01(470)	PENG	103073		19,272.67	3.650	19,002.67	3.599		PRELIMINARY	FROM: POHICK ROAD
	R201	STP-5A01(470)	ROWA	103073		19,272.67	3.650	19,002.67	3.599		RIGHT OF WAY	TO: MT. VERNON MEMORIAL HWY
	C501	STP-5A27(470)	1000	103073		19,272.67	3.650	19,002.67	3.599		CONSTRUCTION	

REVISED

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
TIER 2 PROJECT

RECOMMENDED FOR APPROVAL FOR CONSTRUCTION	
DATE	(DESIGN BUILD FIRM) DESIGN MANAGER
DATE	(DESIGN-BUILD FIRM) PROJECT MANAGER

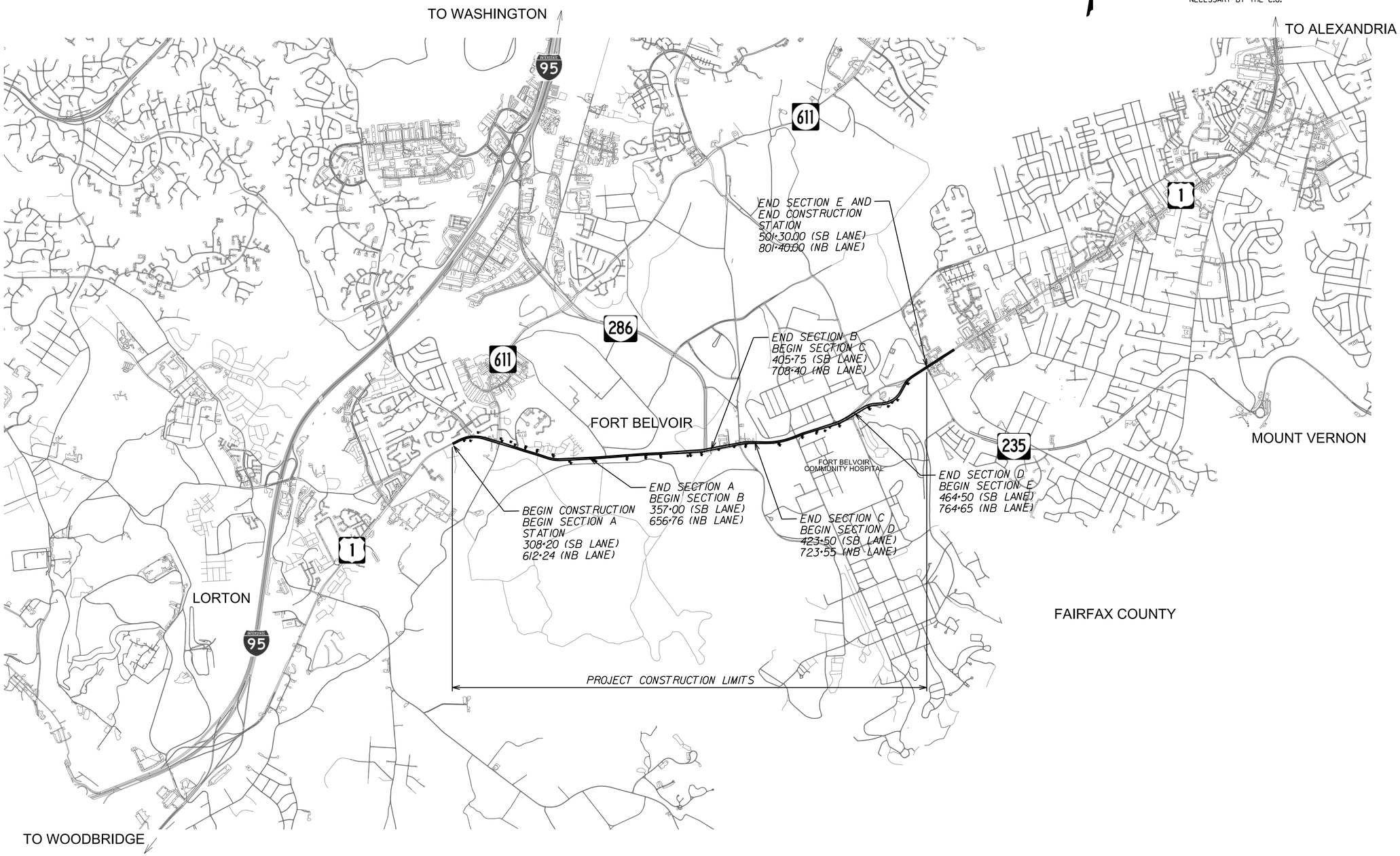
APPROVED FOR CONSTRUCTION	
DATE	SENIOR PROJECT MANAGER FEDERAL HIGHWAY ADMINISTRATION EASTERN FEDERAL LANDS HIGHWAY DIVISION

PROJECT MANAGER LAURA MEHIFI, A.MORTON THOMAS & ASSOC.
SURVEYED BY FHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIFFORD, A.MORTON THOMAS & ASSOC.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	1A

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

LOCATION MAP



SCALE
0 2000' 4000'

PROJECT	SHEET NO.
0001-029-001	1A

PROJECT MANAGER LAURA MEHIEL A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIFFORD A.MORTON THOMAS & ASSOC.

INDEX OF SHEETS

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101,R201,C501	IB

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

TITLE SHEET	I
LOCATION MAP	IA
INDEX OF SHEETS	IB
NOT INCLUDED IN THIS SET	IC - IF(2)
CONSTRUCTION ALIGNMENT DATA	IF(3) - IF(5)
NOT INCLUDED IN THIS SET	IG(1) - IG(III)
E/S CONTROL SEQUENCE OF CONSTRUCTION	IG(IV)
NOT INCLUDED IN THIS SET	IG(IA) - IG(IC)
DITCH DETAILS	IG(ID)
E/S DETAILS	IG(2) - IG(8)
NOT INCLUDED IN THIS SET	IH(1) - IH(8)
STORM DRAINAGE DESCRIPTIONS	IH(8) - IH(10)
NOT INCLUDED IN THIS	II
TMP SUGGESTED SEQUENCE OF CONSTRUCTION	IJ(1A)
NOT INCLUDED IN THIS SET	IJ(A1) - IJ(A7)
TMP TYPICAL SECTIONS	IJ(A8) - IJ(A9)
NOT INCLUDED IN THIS SET	IK - IO
TMP/SOC PHASE 2A	IP(A1) - IP(A4)
TMP/SOC PHASE 2B	IP(B1) - IP(B5)
TMP/SOC PHASE 2C	IP(C1) - IP(C4)
TMP/SOC PHASE 2D	IP(D1) - IP(D4)
NOT INCLUDED IN THIS SET	IQ(1) - IQ(8)
TEMPORARY ALIGNMENT GEOMETRY	IQ(9) - IQ(11A)
GENERAL NOTES	2
NOT INCLUDED IN THIS SET	2A(1) - 2A(6)
TYPICAL SECTIONS	2A(7) - 2A(9)
NOT INCLUDED IN THIS SET	2A(10) - 2A(11)
TYPICAL SECTION DETAILS	2A(12)
NOT INCLUDED IN THIS SET	2B(1) - 2B(5)
PERCHED WATER TABLE DETAIL	2B(6)
NOT INCLUDED IN THIS SEET	2C
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SWMPPP SHEETS	2E(1) - 2E(3)
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SWM BASIN DETAILS	2F(9) - 2F(17)
GRADING DETAILS	2G
EXISTING ROUTE 1 DEMOLITION AND FILL	2H
NOT INCLUDED IN THIS SET	2I
STRUCTURE DETAILS	2J(1) - 2J(2)
NOT INCLUDED IN THIS SET	3 - 24
PLAN SHEET (STATION 460+75.00 TO 467+75.00)	25
PROFILE SHEET (STATION 460+75.00 TO 467+75.00)	25a(1)
NOT INCLUDED IN THIS SET	25b
EROSION AND SEDIMENT CONTROL INITIAL PHASE	25c
NOT INCLUDED IN THIS SET	25d
EROSION AND SEDIMENT CONTROL FINAL PHASE	25e
PLAN SHEET (STATION 467+75.00 TO 474+75.00)	26
PROFILE SHEET (STATION 467+75.00 TO 474+75.00)	26a
NOT INCLUDED IN THIS SET	26b
EROSION AND SEDIMENT CONTROL INITIAL PHASE	26c
NOT INCLUDED IN THIS SET	26d
EROSION AND SEDIMENT CONTROL FINAL PHASE	26e
PLAN SHEET (STATION 474+75.00 TO 481+75.00)	27
PROFILE SHEET (STATION 474+75.00 TO 481+75.00)	27a(1)
PROFILE SHEET WOODLAWN ROAD	27a(2)
NOT INCLUDED IN THIS SET	27b
EROSION AND SEDIMENT CONTROL INITIAL PHASE	27c
NOT INCLUDED IN THIS SET	27d
EROSION AND SEDIMENT CONTROL FINAL PHASE	27e
PLAN SHEET (STATION 481+75.00 TO 488+75.00)	28
PROFILE SHEET (STATION 481+75.00 TO 488+75.00 SOUTHBOUND)	28a(1)
PROFILE SHEET (STATION 781+47.00 TO 788+47.00 NORTHBOUND)	28a(2)
NOT INCLUDED IN THIS SET	28b
EROSION AND SEDIMENT CONTROL INITIAL PHASE	28c
NOT INCLUDED IN THIS SET	28d
EROSION AND SEDIMENT CONTROL FINAL PHASE	28e
PLAN SHEET (STATION 488+75.00 TO 495+75.00)	29
PROFILE SHEET (STATION 488+75.00 TO 495+75.00)	29a
NOT INCLUDED IN THIS SET	29b
EROSION AND SEDIMENT CONTROL INITIAL PHASE	29c
NOT INCLUDED IN THIS SET	29d
EROSION AND SEDIMENT CONTROL FINAL PHASE	29e
PLAN SHEET (STATION 495+75.00 TO 501+26.02)	30
PROFILE SHEET (STATION 495+75.00 TO 501+26.02)	30a
NOT INCLUDED IN THIS SET	30b
EROSION AND SEDIMENT CONTROL INITIAL PHASE	30c
NOT INCLUDED IN THIS SET	30d
EROSION AND SEDIMENT CONTROL FINAL PHASE	30e
NOT INCLUDED IN THIS SET	31 - 34
PLAN SHEET (WOODLAWN ROAD)	35
PROFILE SHEET (WOODLAWN ROAD)	35a
NOT INCLUDED IN THIS SET	35b
EROSION AND SEDIMENT CONTROL INITIAL PHASE	35c
NOT INCLUDED IN THIS SET	35d
EROSION AND SEDIMENT CONTROL FINAL PHASE	35e
PLAN SHEET (EXISTING ROUTE 1)	36
NOT INCLUDED IN THIS SET	36a-36b
EROSION AND SEDIMENT CONTROL INITIAL PHASE	36c
NOT INCLUDED IN THIS SET	36d
EROSION AND SEDIMENT CONTROL FINAL PHASE	36e
PLAN SHEET (EXISTING ROUTE 1)	37
NOT INCLUDED IN THIS SET	37a-37b
EROSION AND SEDIMENT CONTROL INITIAL PHASE	37c
NOT INCLUDED IN THIS SET	37d
EROSION AND SEDIMENT CONTROL FINAL PHASE	37e
NOT INCLUDED IN THIS SET	38
PLAN SHEET (MOUNT VERNON MEM.HWY)	39
NOT INCLUDED IN THIS SET	39a-39b
EROSION AND SEDIMENT CONTROL INITIAL PHASE	39c
NOT INCLUDED IN THIS SET	39d
EROSION AND SEDIMENT CONTROL FINAL PHASE	39e
PLAN SHEET (MOUNT VERNON MEM.HWY)	40
NOT INCLUDED IN THIS SET	40a-40b
EROSION AND SEDIMENT CONTROL INITIAL PHASE	40c
NOT INCLUDED IN THIS SET	40d
EROSION AND SEDIMENT CONTROL FINAL PHASE	40e
NOT INCLUDED IN THIS SET	41a-41c
DRIVEWAY PROFILES	41d-41h
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CULVERT SEQUENCES OF CONSTRUCTION	43(6)
NOT INCLUDED IN THIS SET	44(1) - 44(9)
ROUTE 1 AND MT.VERNON MEM.PKWY.TEMPORARY TRAFFIC SIGNAL PLAN	44(10A) - 44(10D)
UTILITY RELOCATION NOTES	45(1)
NOT INCLUDED IN THIS SET	45(2) - 45(8)
UTILITY RELOCATION PLAN SHEETS	45(9) - 45(17)
NOT INCLUDED IN THIS SET	45(18) - 45(21)
UTILITY RELOCATION PROFILES	45(22) - 45(25)

SITE PLAN FOR OTIS MASON HOUSE RELOCATION TO BE SUBMITTED UNDER SEPARATE COVER

CROSS SECTIONS SUBMITTED UNDER SEPARATE COVER

VDOT STANDARD DETAILS AND INSERTABLE SHEETS SUBMITTED UNDER SEPERATE COVER

SHEETS NOTED AS NOT INCLUDED IN THIS SET ARE NOT RELEVANT FOR THIS SUBMISSION.

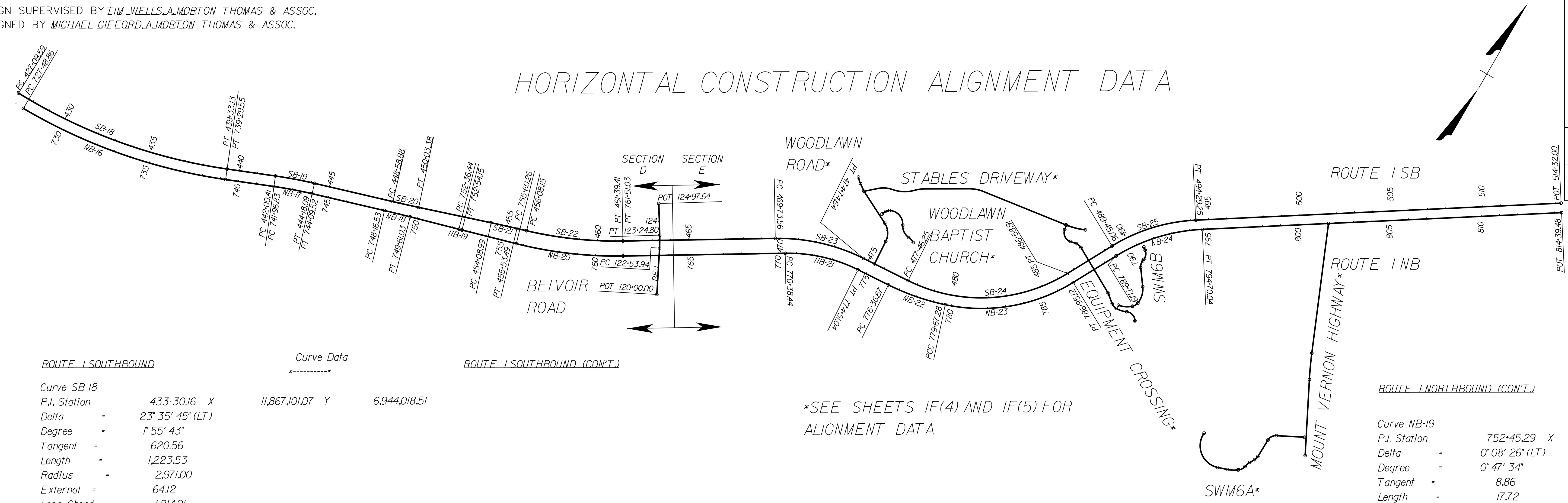
PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY FHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIFFORD, A.MORTON THOMAS & ASSOC.

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	1F(3)

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

A. Morton Thomas & Assoc.
Chantilly, Virginia
(ROADWAY DISCIPLINE)

HORIZONTAL CONSTRUCTION ALIGNMENT DATA



ROUTE 1 SOUTHBOUND

Curve Data

Curve SB-18
P.I. Station 433+30.16 X 11,867,101.07 Y 6,944,018.51
Delta = 23° 35′ 45″ (LT)
Degree = 1° 55′ 43″
Tangent = 620.56
Length = 1,223.53
Radius = 2,971.00
External = 64.12
Long Chord = 1,214.91
Mid.Ord. = 62.76
P.C. Station 427+09.59 X 11,866,480.75 Y 6,944,035.79
P.T. Station 439+33.13 X 11,867,676.45 Y 6,944,250.98
C.C. X 11,866,563.47 Y 6,947,005.64
Back = 91° 35′ 43″
Ahead = 67° 59′ 58″
Chord Bear = 79° 47′ 51″

Curve Data

Curve SB-19
P.I. Station 443+09.31 X 11,868,025.24 Y 6,944,391.91
Delta = 4° 55′ 54″ (RT)
Degree = 2° 15′ 56″
Tangent = 108.91
Length = 217.68
Radius = 2,529.00
External = 2.34
Long Chord = 217.62
Mid.Ord. = 2.34
P.C. Station 442+00.41 X 11,867,924.26 Y 6,944,351.11
P.T. Station 444+18.09 X 11,868,129.35 Y 6,944,423.88
C.C. X 11,868,871.66 Y 6,942,006.27
Back = 67° 59′ 58″
Ahead = 72° 55′ 52″
Chord Bear = 70° 27′ 55″

Curve Data

Curve SB-20
P.I. Station 449+31.13 X 11,868,619.80 Y 6,944,574.46
Delta = 1° 08′ 45″ (LT)
Degree = 0° 47′ 34″
Tangent = 72.25
Length = 144.50
Radius = 7,226.00
External = 0.36
Long Chord = 144.50
Mid.Ord. = 0.36
P.C. Station 448+58.88 X 11,868,550.73 Y 6,944,553.26
P.T. Station 450+03.38 X 11,868,688.43 Y 6,944,597.05
C.C. X 11,866,429.76 Y 6,951,460.97
Back = 72° 55′ 52″
Ahead = 71° 47′ 08″
Chord Bear = 72° 21′ 30″

Curve Data

Curve SB-21
P.I. Station 454+81.24 X 11,869,142.34 Y 6,944,746.42
Delta = 1° 08′ 45″ (RT)
Degree = 0° 47′ 34″
Tangent = 72.25
Length = 144.50
Radius = 7,226.00
External = 0.36
Long Chord = 144.50
Mid.Ord. = 0.36
P.C. Station 454+08.99 X 11,869,073.71 Y 6,944,723.83
P.T. Station 455+53.49 X 11,869,211.41 Y 6,944,767.62
C.C. X 11,871,332.39 Y 6,937,859.91
Back = 71° 47′ 08″
Ahead = 72° 55′ 52″
Chord Bear = 72° 21′ 30″

ROUTE 1 SOUTHBOUND (CON'T.)

Curve Data

Curve SB-23
P.I. Station 472+29.00 X 11,870,679.73 Y 6,945,563.98
Delta = 27° 27′ 26″ (RT)
Degree = 5° 28′ 47″
Tangent = 255.45
Length = 501.08
Radius = 1,045.62
External = 30.75
Long Chord = 496.30
Mid.Ord. = 29.87
P.C. Station 469+73.56 X 11,870,461.14 Y 6,945,431.80
P.T. Station 474+74.64 X 11,870,934.64 Y 6,945,580.48
C.C. X 11,871,002.19 Y 6,944,537.04
Back = 58° 50′ 21″
Ahead = 86° 17′ 47″
Chord Bear = 72° 34′ 04″

Curve Data

Curve SB-24
P.I. Station 482+46.17 X 11,871,704.57 Y 6,945,630.32
Delta = 58° 06′ 06″ (LT)
Degree = 6° 21′ 58″
Tangent = 499.92
Length = 912.66
Radius = 900.00
External = 129.53
Long Chord = 874.05
Mid.Ord. = 113.23
P.C. Station 477+46.25 X 11,871,205.69 Y 6,945,598.03
P.T. Station 486+58.91 X 11,871,940.77 Y 6,946,070.92
C.C. X 11,871,147.56 Y 6,946,496.15
Back = 86° 17′ 47″
Ahead = 28° 11′ 41″
Chord Bear = 57° 14′ 44″

Curve Data

Curve SB-25
P.I. Station 491+92.44 X 11,872,192.85 Y 6,946,541.15
Delta = 28° 57′ 31″ (RT)
Degree = 5° 58′ 51″
Tangent = 247.39
Length = 484.20
Radius = 958.00
External = 31.43
Long Chord = 479.06
Mid.Ord. = 30.43
P.C. Station 489+45.06 X 11,872,075.96 Y 6,946,323.12
P.T. Station 494+29.25 X 11,872,400.68 Y 6,946,675.33
C.C. X 11,872,920.29 Y 6,945,870.49
Back = 28° 11′ 41″
Ahead = 57° 09′ 12″
Chord Bear = 42° 40′ 27″

ROUTE 1 NORTHBOUND

Curve Data

Curve NB-16
P.I. Station 733+46.80 X 11,867,143.78 Y 6,943,973.21
Delta = 22° 20′ 01″ (LT)
Degree = 1° 53′ 30″
Tangent = 597.93
Length = 1,180.69
Radius = 3,029.00
External = 58.45
Long Chord = 1,173.23
Mid.Ord. = 57.35
P.C. Station 727+48.86 X 11,866,545.86 Y 6,943,976.69
P.T. Station 739+29.55 X 11,867,698.18 Y 6,944,197.21
C.C. X 11,866,563.47 Y 6,947,005.64
Back = 90° 19′ 59″
Ahead = 67° 59′ 58″
Chord Bear = 79° 09′ 59″

Curve Data

Curve NB-17
P.I. Station 743+03.24 X 11,868,044.65 Y 6,944,337.20
Delta = 4° 55′ 54″ (RT)
Degree = 2° 19′ 07″
Tangent = 106.41
Length = 212.69
Radius = 2,471.00
External = 2.29
Long Chord = 212.62
Mid.Ord. = 2.29
P.C. Station 741+96.83 X 11,867,945.99 Y 6,944,297.33
P.T. Station 744+09.52 X 11,868,146.38 Y 6,944,368.43
C.C. X 11,868,871.66 Y 6,942,006.27
Back = 67° 59′ 58″
Ahead = 72° 55′ 52″
Chord Bear = 70° 27′ 55″

Curve Data

Curve NB-18
P.I. Station 748+88.78 X 11,868,604.53 Y 6,944,509.10
Delta = 1° 08′ 45″ (RT)
Degree = 0° 47′ 34″
Tangent = 72.25
Length = 144.50
Radius = 7,226.00
External = 0.36
Long Chord = 144.50
Mid.Ord. = 0.36
P.C. Station 748+16.53 X 11,868,535.46 Y 6,944,487.90
P.T. Station 749+61.03 X 11,868,674.01 Y 6,944,528.93
C.C. X 11,870,656.43 Y 6,937,580.18
Back = 72° 55′ 52″
Ahead = 74° 04′ 37″
Chord Bear = 73° 30′ 15″

ROUTE 1 NORTHBOUND (CON'T.)

Curve Data

Curve NB-19
P.I. Station 752+45.29 X 11,868,947.37 Y 6,944,606.91
Delta = 0° 08′ 26″ (LT)
Degree = 0° 47′ 34″
Tangent = 8.86
Length = 17.72
Radius = 7,226.00
External = 0.01
Long Chord = 17.72
Mid.Ord. = 0.01
P.C. Station 752+36.44 X 11,868,938.85 Y 6,944,604.48
P.T. Station 752+54.15 X 11,868,955.88 Y 6,944,609.36
C.C. X 11,866,956.43 Y 6,951,553.23
Back = 74° 04′ 37″
Ahead = 73° 56′ 11″
Chord Bear = 74° 00′ 24″

Curve Data

Curve NB-20
P.I. Station 758+57.36 X 11,869,535.54 Y 6,944,776.27
Delta = 15° 05′ 51″ (LT)
Degree = 2° 33′ 20″
Tangent = 297.10
Length = 590.76
Radius = 2,242.00
External = 19.60
Long Chord = 589.06
Mid.Ord. = 19.43
P.C. Station 755+60.26 X 11,869,250.03 Y 6,944,694.06
P.T. Station 761+51.03 X 11,869,789.77 Y 6,944,930.01
C.C. X 11,868,629.67 Y 6,946,848.53
Back = 73° 56′ 11″
Ahead = 58° 50′ 21″
Chord Bear = 66° 23′ 16″

Curve Data

Curve NB-21
P.I. Station 772+46.61 X 11,870,727.29 Y 6,945,496.91
Delta = 27° 27′ 26″ (RT)
Degree = 6° 35′ 33″
Tangent = 212.33
Length = 416.50
Radius = 869.12
External = 25.56
Long Chord = 412.53
Mid.Ord. = 24.83
P.C. Station 770+34.28 X 11,870,545.59 Y 6,945,387.04
P.T. Station 774+50.78 X 11,870,939.17 Y 6,945,510.63
C.C. X 11,870,995.31 Y 6,944,643.32
Back = 58° 50′ 21″
Ahead = 86° 17′ 47″
Chord Bear = 72° 34′ 04″

Curve Data

Curve NB-22
P.I. Station 778+02.87 X 11,871,290.14 Y 6,945,534.35
Delta = 14° 34′ 16″ (LT)
Degree = 4° 24′ 27″
Tangent = 166.20
Length = 330.61
Radius = 1,300.00
External = 10.58
Long Chord = 329.72
Mid.Ord. = 10.50
P.C. Station 776+36.67 X 11,871,124.29 Y 6,945,523.61
P.T. Station 779+67.28 X 11,871,447.96 Y 6,945,586.46
C.C. X 11,871,040.31 Y 6,946,820.90
Back = 86° 17′ 47″
Ahead = 71° 43′ 31″
Chord Bear = 79° 00′ 39″

ROUTE 1 NORTHBOUND (CON'T.)

Curve Data

Curve NB-23
P.I. Station 783+49.78 X 11,871,811.17 Y 6,945,706.41
Delta = 43° 31′ 50″ (LT)
Degree = 5° 58′ 51″
Tangent = 382.50
Length = 727.84
Radius = 958.00
External = 73.54
Long Chord = 710.46
Mid.Ord. = 68.30
P.C. Station 779+67.28 X 11,871,447.96 Y 6,945,586.46
P.T. Station 786+95.12 X 11,871,991.89 Y 6,946,043.52
C.C. X 11,871,147.56 Y 6,946,496.15
Back = 71° 43′ 31″
Ahead = 28° 11′ 41″
Chord Bear = 49° 57′ 36″

Curve Data

Curve NB-24
P.I. Station 792+26.07 X 11,872,242.74 Y 6,946,511.47
Delta = 28° 57′ 31″ (RT)
Degree = 5° 48′ 18″
Tangent = 254.88
Length = 498.85
Radius = 987.00
External = 32.38
Long Chord = 493.56
Mid.Ord. = 31.35
P.C. Station 789+71.19 X 11,872,122.32 Y 6,946,286.84
P.T. Station 794+70.04 X 11,872,456.87 Y 6,946,649.71
C.C. X 11,872,992.21 Y 6,945,820.51
Back = 28° 11′ 41″
Ahead = 57° 09′ 12″
Chord Bear = 42° 40′ 27″

BELVOIR ROAD

Curve BE-1
P.I. Station 122+89.39 X 11,869,924.26 Y 6,945,099.21
Delta = 5° 04′ 28″ (LT)
Degree = 7° 09′ 43″
Tangent = 35.45
Length = 70.85
Radius = 800.00
External = 0.79
Long Chord = 70.83
Mid.Ord. = 0.78
P.C. Station 122+53.94 X 11,869,940.28 Y 6,945,067.59
P.T. Station 123+24.80 X 11,869,905.51 Y 6,945,129.30
C.C. X 11,869,226.58 Y 6,944,706.16
Back = 333° 08′ 30″
Ahead = 328° 04′ 03″
Chord Bear = 330° 36′ 17″

SCALE 0 400′ 800′

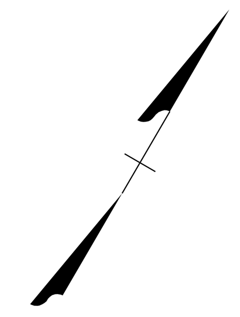
PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY FHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIFFORD, A.MORTON THOMAS & ASSOC.

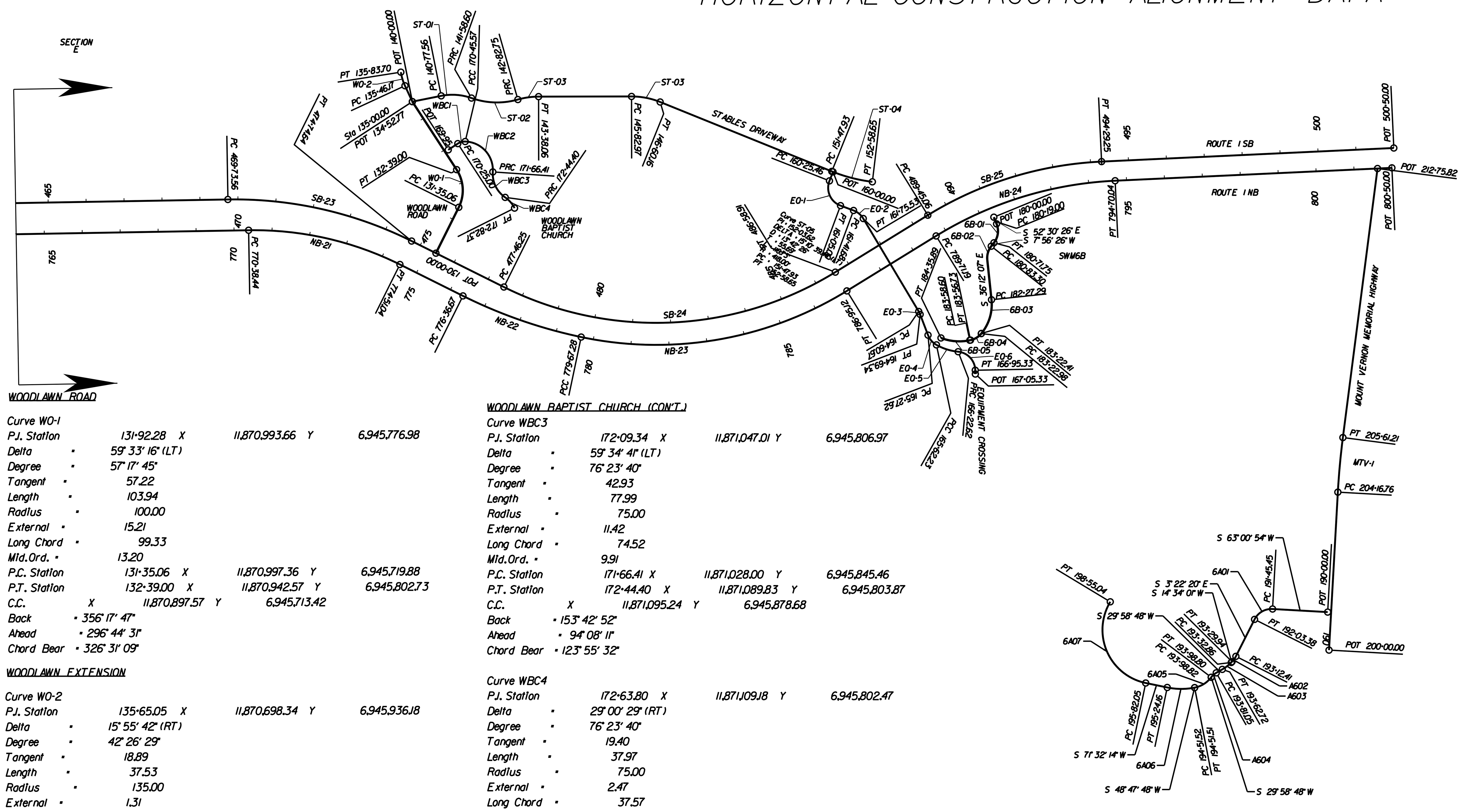
REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	1F(4)

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

A. Morton Thomas & Assoc.
Chantilly, Virginia
(ROADWAY DISCIPLINE)

HORIZONTAL CONSTRUCTION ALIGNMENT DATA





WOODLAWN ROAD

Curve WO-1

P.I. Station	131·92.28	X 11,870,993.66	Y 6,945,776.98
Delta =	59° 33' 16" (LT)		
Degree =	57° 17' 45"		
Tangent =	57.22		
Length =	103.94		
Radius =	100.00		
External =	15.21		
Long Chord =	99.33		
Mid.Ord. =	13.20		
P.C. Station	131·35.06	X 11,870,997.36	Y 6,945,719.88
P.T. Station	132·39.00	X 11,870,942.57	Y 6,945,802.73
C.C.		X 11,870,897.57	Y 6,945,713.42
Back =	356° 17' 47"		
Ahead =	296° 44' 31"		
Chord Bear =	326° 31' 09"		

WOODLAWN EXTENSION

Curve WO-2

P.I. Station	135·65.05	X 11,870,698.34	Y 6,945,936.18
Delta =	15° 55' 42" (RT)		
Degree =	42° 26' 29"		
Tangent =	18.89		
Length =	37.53		
Radius =	135.00		
External =	1.31		
Long Chord =	37.41		
Mid.Ord. =	1.30		
P.C. Station	135·46.17	X 11,870,713.82	Y 6,945,925.36
P.T. Station	135·83.70	X 11,870,686.42	Y 6,945,950.84
C.C.		X 11,870,791.16	Y 6,946,036.02
Back =	304° 56' 56"		
Ahead =	320° 52' 38"		
Chord Bear =	312° 54' 47"		

WOODLAWN BAPTIST CHURCH

Curve WBC1

P.I. Station	170·35.61	X 11,870,915.53	Y 6,945,873.02
Delta =	34° 39' 20" (RT)		
Degree =	168° 31' 01"		
Tangent =	10.61		
Length =	20.57		
Radius =	34.00		
External =	1.62		
Long Chord =	20.25		
Mid.Ord. =	1.54		
P.C. Station	170·25.00	X 11,870,910.76	Y 6,945,863.54
P.T. Station	170·45.57	X 11,870,924.85	Y 6,945,878.10
C.C.		X 11,870,941.12	Y 6,945,848.25
Back =	26° 44' 31"		
Ahead =	61° 23' 51"		
Chord Bear =	44° 04' 11"		

Curve WBC2

P.I. Station	171·23.66	X 11,870,993.41	Y 6,945,915.48
Delta =	92° 19' 01" (RT)		
Degree =	76° 23' 40"		
Tangent =	78.10		
Length =	120.84		
Radius =	75.00		
External =	33.28		
Long Chord =	108.19		
Mid.Ord. =	23.05		
P.C. Station	170·45.57	X 11,870,924.85	Y 6,945,878.10
P.T. Station	171·66.41	X 11,871,028.00	Y 6,945,845.46
C.C.		X 11,870,960.75	Y 6,945,812.25
Back =	61° 23' 51"		
Ahead =	153° 42' 52"		
Chord Bear =	107° 33' 22"		

WOODLAWN BAPTIST CHURCH (CON'T.)

Curve WBC3

P.I. Station	172·09.34	X 11,871,047.01	Y 6,945,806.97
Delta =	59° 34' 41" (LT)		
Degree =	76° 23' 40"		
Tangent =	42.93		
Length =	77.99		
Radius =	75.00		
External =	11.42		
Long Chord =	74.52		
Mid.Ord. =	9.91		
P.C. Station	171·66.41	X 11,871,028.00	Y 6,945,845.46
P.T. Station	172·44.40	X 11,871,089.83	Y 6,945,803.87
C.C.		X 11,871,095.24	Y 6,945,878.68
Back =	153° 42' 52"		
Ahead =	94° 08' 11"		
Chord Bear =	123° 55' 32"		

Curve WBC4

P.I. Station	172·63.80	X 11,871,109.18	Y 6,945,802.47
Delta =	29° 00' 29" (RT)		
Degree =	76° 23' 40"		
Tangent =	19.40		
Length =	37.97		
Radius =	75.00		
External =	2.47		
Long Chord =	37.57		
Mid.Ord. =	2.39		
P.C. Station	172·44.40	X 11,871,089.83	Y 6,945,803.87
P.T. Station	172·82.37	X 11,871,125.43	Y 6,945,791.86
C.C.		X 11,871,084.42	Y 6,945,729.07
Back =	94° 08' 11"		
Ahead =	123° 08' 41"		
Chord Bear =	108° 38' 26"		

STABLES DRIVEWAY

Curve ST-01

P.I. Station	141·19.09	X 11,870,840.83	Y 6,945,977.86
Delta =	30° 57' 16" (RT)		
Degree =	38° 11' 50"		
Tangent =	41.53		
Length =	81.04		
Radius =	150.00		
External =	5.64		
Long Chord =	80.06		
Mid.Ord. =	5.44		
P.C. Station	140·77.56	X 11,870,809.73	Y 6,945,950.33
P.T. Station	141·58.60	X 11,870,881.66	Y 6,945,985.47
C.C.		X 11,870,909.16	Y 6,945,838.01
Back =	48° 28' 58"		
Ahead =	79° 26' 14"		
Chord Bear =	63° 57' 36"		

Curve ST-02

P.I. Station	142·22.75	X 11,870,944.73	Y 6,945,997.23
Delta =	35° 34' 03" (LT)		
Degree =	28° 38' 52"		
Tangent =	64.15		
Length =	124.15		
Radius =	200.00		
External =	10.04		
Long Chord =	122.17		
Mid.Ord. =	9.56		
P.C. Station	141·58.60	X 11,870,881.66	Y 6,945,985.47
P.T. Station	142·82.75	X 11,870,989.18	Y 6,946,043.48
C.C.		X 11,870,845.00	Y 6,946,182.08
Back =	79° 26' 14"		
Ahead =	43° 52' 11"		
Chord Bear =	61° 39' 12"		

STABLES DRIVEWAY (CON'T.)

Curve ST-03

P.I. Station	143·10.58	X 11,871,008.47	Y 6,946,063.54
Delta =	15° 50' 45" (RT)		
Degree =	28° 38' 52"		
Tangent =	27.83		
Length =	55.31		
Radius =	200.00		
External =	1.93		
Long Chord =	55.14		
Mid.Ord. =	1.91		
P.C. Station	142·82.75	X 11,870,989.18	Y 6,946,043.48
P.T. Station	143·38.06	X 11,871,032.51	Y 6,946,077.58
C.C.		X 11,871,133.37	Y 6,945,904.87
Back =	43° 52' 11"		
Ahead =	59° 42' 56"		
Chord Bear =	51° 47' 34"		

Curve ST-04

P.I. Station	146·22.05	X 11,871,277.74	Y 6,946,220.79
Delta =	22° 06' 42" (RT)		
Degree =	28° 38' 52"		
Tangent =	39.08		
Length =	77.18		
Radius =	200.00		
External =	3.78		
Long Chord =	76.71		
Mid.Ord. =	3.71		
P.C. Station	145·82.97	X 11,871,244.00	Y 6,946,201.09
P.T. Station	146·60.16	X 11,871,316.42	Y 6,946,226.35
C.C.		X 11,871,344.86	Y 6,946,028.38
Back =	59° 42' 56"		
Ahead =	81° 49' 38"		
Chord Bear =	70° 46' 17"		

STABLES DRIVEWAY (CON'T.)

Curve ST-05

P.I. Station	152·03.62	X 11,871,854.36	Y 6,946,303.61
Delta =	15° 10' 39" (LT)		
Degree =	13° 42' 26"		
Tangent =	55.69		
Length =	110.73		
Radius =	418.00		
External =	3.69		
Long Chord =	110.40		
Mid.Ord. =	3.66		
P.C. Station	151·47.93	X 11,871,799.24	Y 6,946,295.69
P.T. Station	152·58.65	X 11,871,905.49	Y 6,946,325.68
C.C.		X 11,871,739.82	Y 6,946,709.45
Back =	81° 49' 38"		
Ahead =	66° 38' 59"		
Chord Bear =	74° 14' 18"		

EQUIPMENT CROSSING

Curve EO-1

P.I. Station	160·76.47	X 11,871,814.19	Y 6,946,220.60
Delta =	91° 08' 54" (LT)		
Degree =	114° 35' 30"		
Tangent =	51.01		
Length =	79.54		
Radius =	50.00		
External =	21.43		
Long Chord =	71.42		
Mid.Ord. =	15.00		
P.C. Station	160·25.46	X 11,871,806.52	Y 6,946,271.03
P.T. Station	161·05.00	X 11,871,864.46	Y 6,946,229.28
C.C.		X 11,871,855.95	Y 6,946,278.55
Back =	171° 20' 58"		
Ahead =	80° 12' 04"		
Chord Bear =	125° 46' 31"		

Curve EO-2

P.I. Station	161·59.28	X 11,871,917.95	Y 6,946,238.52
Delta =	38° 47' 18" (RT)		
Degree =	114° 35' 30"		
Tangent =	17.60		
Length =	33.85		
Radius =	50.00		
External =	3.01		
Long Chord =	33.21		
Mid.Ord. =	2.84		
P.C. Station	161·41.68	X 11,871,900.60	Y 6,946,235.52
P.T. Station	161·75.53	X 11,871,933.34	Y 6,946,229.99
C.C.		X 11,871,909.11	Y 6,946,186.25
Back =	80° 12' 04"		
Ahead =	118° 59' 22"		
Chord Bear =	99° 35' 43"		

Curve EO-3

P.I. Station	164·65.01	X 11,872,186.56	Y 6,946,089.69
Delta =	9° 56' 14" (RT)		
Degree =	114° 35' 30"		
Tangent =	4.35		
Length =	8.67		
Radius =	50.00		
External =	0.19		
Long Chord =	8.66		
Mid.Ord. =	0.19		
P.C. Station	164·60.67	X 11,872,182.75	Y 6,946,091.80
P.T. Station	164·69.34	X 11,872,189.94	Y 6,946,086.96
C.C.		X 11,872,158.52	Y 6,946,048.06
Back =	118° 59' 22"		
Ahead =	128° 55' 35"		
Chord Bear =	123° 57' 29"		

Curve EO-4

P.I. Station	165·45.65	X 11,872,249.30	Y 6,946,039.01
Delta =	39° 39' 41" (LT)		
Degree =	114° 35' 30"		
Tangent =	18.03		
Length =	34.61		
Radius =	50.00		
External =	3.15		
Long Chord =	33.92		
Mid.Ord. =	2.97		
P.C. Station	165·27.62	X 11,872,235.28	Y 6,946,050.34
P.T. Station	165·62.23	X 11,872,267.33	Y 6,946,039.24
C.C.		X 11,872,266.69	Y 6,946,089.24
Back =	128° 55' 35"		
Ahead =	89° 15' 54"		
Chord Bear =	109° 05' 45"		

EQUIPMENT CROSSING (CON'T.)

Curve EO-5

P.I. Station	165·92.87	X 11,872,297.97	Y 6,946,039.64
Delta =	23° 51' 52" (LT)		
Degree =	39° 30' 52"		
Tangent =	30.64		
Length =	60.39		
Radius =	145.00		
External =	3.20		
Long Chord =	59.96		
Mid.Ord. =	3.13		
P.C. Station	165·62.23	X 11,872,267.33	Y 6,946,039.24
P.T. Station	166·22.62	X 11,872,325.83	Y 6,946,052.39
C.C.		X 11,872,265.47	Y 6,946,184.23
Back =	89° 15' 54"		
Ahead =	65° 24' 02"		
Chord Bear =	77° 19' 58"		

Curve EO-6

P.I. Station	166·67.11	X 11,872,366.28	Y 6,946,070.91
Delta =	83° 19' 04" (RT)		
Degree =	114° 35' 30"		
Tangent =	44.48		
Length =	72.71		
Radius =	50.00		
External =	16.92		
Long Chord =	66.47		
Mid.Ord. =	12.64		
P.C. Station	166·22.62	X 11,872,325.83	Y 6,946,052.39
P.T. Station	166·95.33	X 11,872,389.38	Y 6,946,032.89
C.C.		X 11,872,346.65	Y 6,946,006.93
Back =	65° 24' 02"		
Ahead =	148° 43' 06"		
Chord Bear =	107° 03' 34"		

SCALE 0 200' 400'

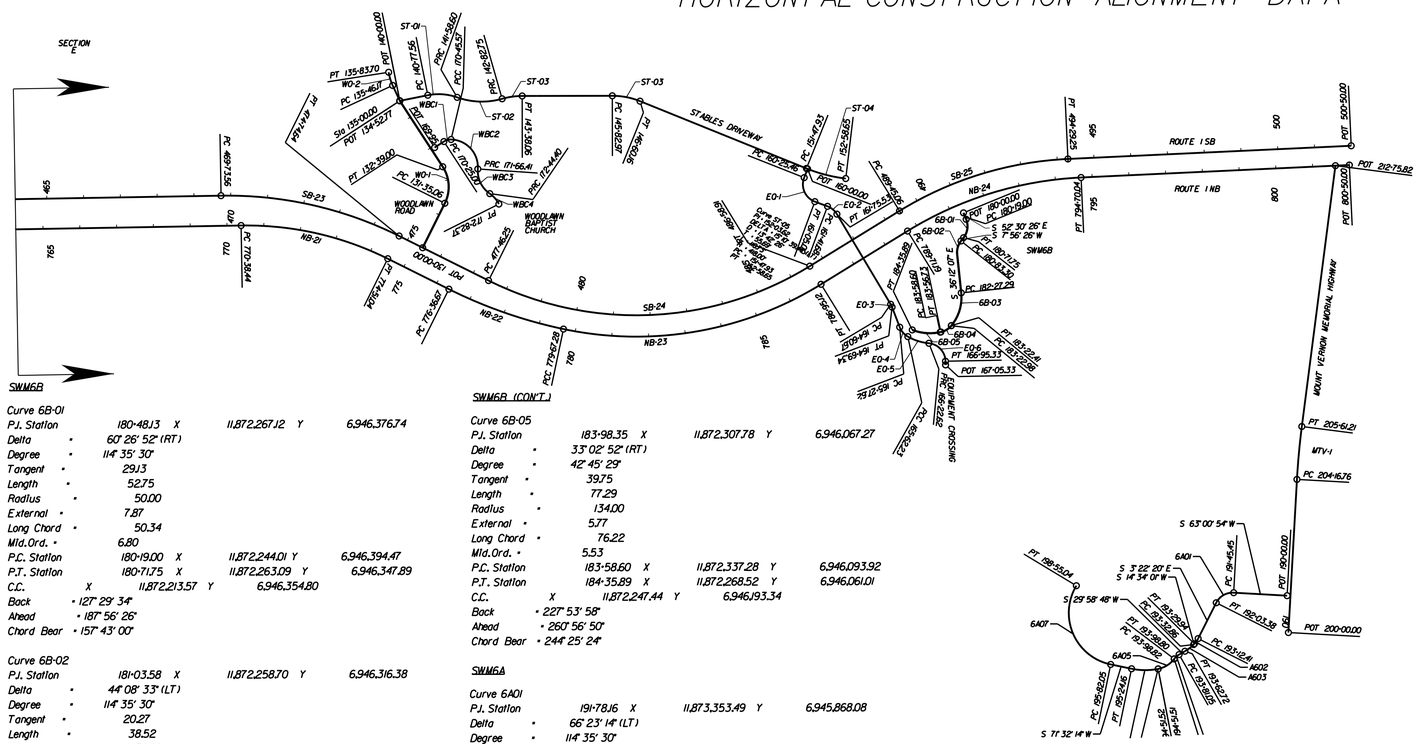
PROJECT MANAGER LAURA MEHIEL, A. MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A. MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A. MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIFFORD, A. MORTON THOMAS & ASSOC.

HORIZONTAL CONSTRUCTION ALIGNMENT DATA

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	I	0001-029-001 P101, R201, C501	1F(5)

A. Morton Thomas & Assoc.
Chantilly, Virginia
(ROADWAY DISCIPLINE)

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



SWM6B

Curve 6B-01

P.I. Station	180+48.13	X	11,872,267.12	Y	6,946,376.74
Delta	60° 26' 52" (RT)				
Degree	114° 35' 30"				
Tangent	29.13				
Length	52.75				
Radius	50.00				
External	7.87				
Long Chord	50.34				
Mid.Ord.	6.80				
P.C. Station	180+19.00	X	11,872,244.01	Y	6,946,394.47
P.T. Station	180+71.75	X	11,872,263.09	Y	6,946,347.89
C.C.	X	11,872,213.57	Y	6,946,354.80	
Back	127° 29' 34"				
Ahead	187° 56' 26"				
Chord Bear	157° 43' 00"				

Curve 6B-02

P.I. Station	181+03.58	X	11,872,258.70	Y	6,946,316.38
Delta	44° 08' 33" (LT)				
Degree	114° 35' 30"				
Tangent	20.27				
Length	38.52				
Radius	50.00				
External	3.95				
Long Chord	37.58				
Mid.Ord.	3.66				
P.C. Station	180+83.30	X	11,872,261.50	Y	6,946,336.45
P.T. Station	181+21.82	X	11,872,270.67	Y	6,946,300.02
C.C.	X	11,872,311.02	Y	6,946,329.55	
Back	187° 56' 26"				
Ahead	143° 47' 53"				
Chord Bear	165° 52' 09"				

Curve 6B-03

P.I. Station	182+77.51	X	11,872,362.63	Y	6,946,174.39
Delta	45° 25' 01" (RT)				
Degree	47° 44' 47"				
Tangent	50.22				
Length	95.12				
Radius	120.00				
External	10.08				
Long Chord	92.65				
Mid.Ord.	9.30				
P.C. Station	182+27.29	X	11,872,332.97	Y	6,946,214.91
P.T. Station	183+22.41	X	11,872,354.59	Y	6,946,124.82
C.C.	X	11,872,236.13	Y	6,946,144.03	
Back	143° 47' 53"				
Ahead	189° 12' 54"				
Chord Bear	166° 30' 24"				

Curve 6B-04

P.I. Station	183+40.53	X	11,872,351.68	Y	6,946,106.94
Delta	38° 41' 03" (RT)				
Degree	114° 35' 30"				
Tangent	17.55				
Length	33.76				
Radius	50.00				
External	2.99				
Long Chord	33.12				
Mid.Ord.	2.82				
P.C. Station	183+22.98	X	11,872,354.49	Y	6,946,124.26
P.T. Station	183+56.73	X	11,872,338.66	Y	6,946,095.17
C.C.	X	11,872,305.14	Y	6,946,132.27	
Back	189° 12' 54"				
Ahead	227° 53' 58"				
Chord Bear	208° 33' 26"				

SWM6B (CON'T)

Curve 6B-05

P.I. Station	183+98.35	X	11,872,307.78	Y	6,946,067.27
Delta	33° 02' 52" (RT)				
Degree	42° 45' 29"				
Tangent	39.75				
Length	77.29				
Radius	134.00				
External	5.77				
Long Chord	76.22				
Mid.Ord.	5.53				
P.C. Station	183+58.60	X	11,872,337.28	Y	6,946,093.92
P.T. Station	184+35.89	X	11,872,268.52	Y	6,946,061.01
C.C.	X	11,872,247.44	Y	6,946,193.34	
Back	227° 53' 58"				
Ahead	260° 56' 50"				
Chord Bear	244° 25' 24"				

SWM6A

Curve 6A01

P.I. Station	191+78.16	X	11,873,353.49	Y	6,945,868.08
Delta	66° 23' 14" (LT)				
Degree	114° 35' 30"				
Tangent	32.71				
Length	57.93				
Radius	50.00				
External	9.75				
Long Chord	54.75				
Mid.Ord.	8.16				
P.C. Station	191+45.45	X	11,873,382.64	Y	6,945,882.93
P.T. Station	192+03.38	X	11,873,355.41	Y	6,945,835.43
C.C.	X	11,873,405.32	Y	6,945,838.37	
Back	243° 00' 54"				
Ahead	176° 37' 40"				
Chord Bear	209° 49' 17"				

Curve 6A02

P.I. Station	193+21.25	X	11,873,362.34	Y	6,945,717.77
Delta	17° 56' 21" (RT)				
Degree	102° 18' 50"				
Tangent	8.84				
Length	17.53				
Radius	56.00				
External	0.69				
Long Chord	17.46				
Mid.Ord.	0.68				
P.C. Station	193+12.41	X	11,873,361.82	Y	6,945,726.59
P.T. Station	193+29.94	X	11,873,360.12	Y	6,945,709.21
C.C.	X	11,873,305.92	Y	6,945,723.30	
Back	176° 37' 40"				
Ahead	194° 34' 01"				
Chord Bear	185° 35' 50"				

Curve 6A03

P.I. Station	193+47.88	X	11,873,355.61	Y	6,945,691.85
Delta	15° 24' 47" (RT)				
Degree	51° 37' 04"				
Tangent	15.02				
Length	29.86				
Radius	111.00				
External	1.01				
Long Chord	29.77				
Mid.Ord.	1.00				
P.C. Station	193+32.86	X	11,873,359.38	Y	6,945,706.39
P.T. Station	193+62.72	X	11,873,348.10	Y	6,945,678.84
C.C.	X	11,873,251.95	Y	6,945,734.30	
Back	194° 34' 01"				
Ahead	209° 58' 48"				
Chord Bear	202° 16' 25"				

SWM6A (CON'T)

Curve 6A04

P.I. Station	193+90.05	X	11,873,334.45	Y	6,945,655.17
Delta	23° 06' 49" (LT)				
Degree	130° 13' 04"				
Tangent	9.00				
Length	17.75				
Radius	44.00				
External	0.91				
Long Chord	17.63				
Mid.Ord.	0.89				
P.C. Station	193+81.05	X	11,873,338.94	Y	6,945,662.96
P.T. Station	193+98.80	X	11,873,333.37	Y	6,945,646.24
C.C.	X	11,873,377.06	Y	6,945,640.98	
Back	209° 58' 48"				
Ahead	186° 51' 59"				
Chord Bear	198° 25' 24"				

Curve 6A05

P.I. Station	194+26.40	X	11,873,330.07	Y	6,945,618.83
Delta	41° 55' 49" (RT)				
Degree	79° 34' 39"				
Tangent	27.59				
Length	52.69				
Radius	72.00				
External	5.10				
Long Chord	51.52				
Mid.Ord.	4.77				
P.C. Station	193+98.82	X	11,873,333.37	Y	6,945,646.22
P.T. Station	194+51.51	X	11,873,309.31	Y	6,945,600.66
C.C.	X	11,873,261.89	Y	6,945,654.83	
Back	186° 51' 59"				
Ahead	228° 47' 48"				
Chord Bear	207° 49' 54"				

SWM6A (CON'T)

Curve 6A06

P.I. Station	194+88.32	X	11,873,281.61	Y	6,945,576.40
Delta	22° 44' 26" (RT)				
Degree	31° 18' 33"				
Tangent	36.80				
Length	72.63				
Radius	183.00				
External	3.66				
Long Chord	72.16				
Mid.Ord.	3.59				
P.C. Station	194+51.52	X	11,873,309.30	Y	6,945,600.65
P.T. Station	195+24.16	X	11,873,246.71	Y	6,945,564.75
C.C.	X	11,873,188.75	Y	6,945,738.33	
Back	228° 47' 48"				
Ahead	251° 32' 14"				
Chord Bear	240° 10' 01"				

Curve 6A07

P.I. Station	197+83.93	X	11,873,000.30	Y	6,945,482.48
Delta	109° 22' 41" (RT)				
Degree	40° 04' 01"				
Tangent	201.88				
Length	272.99				
Radius	143.00				
External	104.40				
Long Chord	233.38				
Mid.Ord.	60.34				
P.C. Station	195+82.05	X	11,873,191.79	Y	6,945,546.42
P.T. Station	198+55.04	X	11,873,003.53	Y	6,945,684.34
C.C.	X	11,873,146.51	Y	6,945,682.06	
Back	251° 32' 14"				
Ahead	0° 54' 55"				
Chord Bear	306° 13' 35"				

MOUNT VERNON MEMORIAL HIGHWAY

Curve MTV-1

P.I. Station	204+89.02	X	11,873,343.77	Y	6,946,299.93
Delta	4° 08' 18" (RT)				
Degree	2° 51' 53"				
Tangent	72.26				
Length	144.45				
Radius	2,000.00				
External	1.30				
Long Chord	144.42				
Mid.Ord.	1.30				
P.C. Station	204+16.76	X	11,873,376.56	Y	6,946,235.54
P.T. Station	205+61.21	X	11,873,315.71	Y	6,946,366.52
C.C.	X	11,875,158.81	Y	6,947,143.05	
Back	333° 00' 54"				
Ahead	337° 09' 12"				
Chord Bear	335° 05' 03"				

SCALE
0 200' 400'

PROJECT	SHEET NO.
0001-029-001	1F(5)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIFFORD, A.MORTON THOMAS & ASSOC.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	1G(1v)

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

E & S SEQUENCE OF CONSTRUCTION (SECTION E)
INITIAL AND FINAL PHASE

INITIAL PHASE (SHEETS 25C-30C, 35C-37C, 39C, 40C)

GENERAL NOTE: See sheet 43(6) for detailed sequence of construction for 60" culvert.

WORK AREA FOR SHEETS 25C-30C, 35C-37C, 39C, 40C

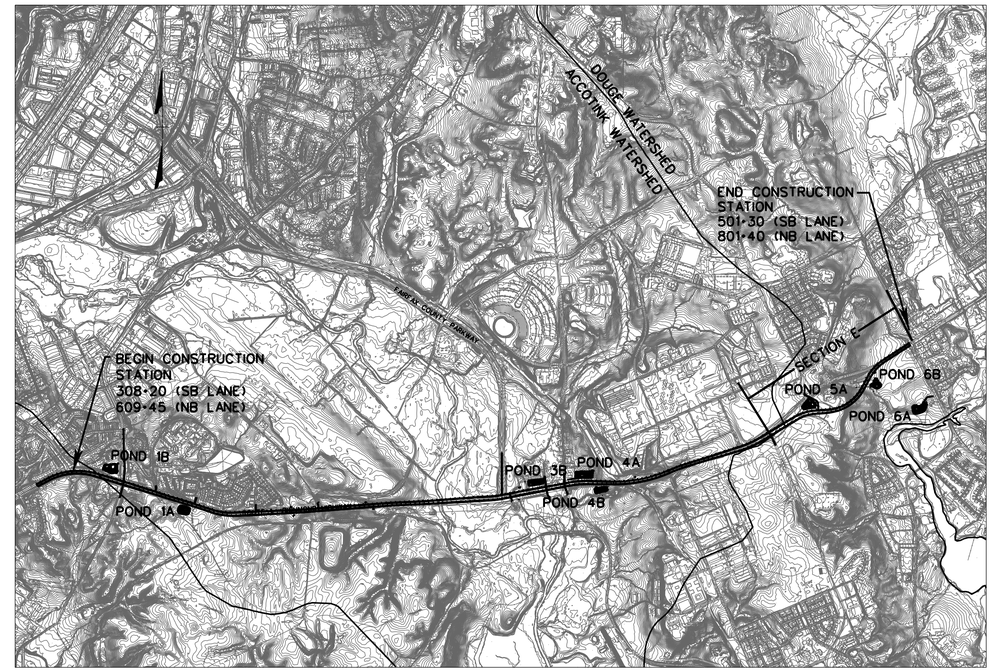
1. Clear and grub for perimeter controls. Install perimeter controls including SCE's, TSF, SSF, DD (not to traps), and TSD's.
2. Clear and grub for sediment traps and basins. Install Trap 5 and Basins 5A and 6B. Install Basin 6A after others are completed. Install diversion dikes once traps are operational.
3. Begin earthwork, utility relocations and storm drain operations.

FINAL PHASE (SHEETS 25E-30E, 35E-37E, 39E, 40E)

WORK AREA FOR SHEETS 25E-30E, 35E-37E, 39E, 40E

1. Direct new storm drains to sediment basins. Inlets do not need inlet protection as long as storm drain flows to a Basin (5A, 6A, 6B). Abandon Trap #5 once 60" culvert is complete and interim grades will allow sediment laden water to be directed to Basin 6B.
2. Once traffic is active on new Route 1 and slopes/ disturbed areas are permanently stable, contractor shall remove existing pavement from old Route 1. Flow from work areas should be directed to one of the three (3) Basins or to protected Inlets. Place TSF and SSF as shown.
3. Convert existing sediment basins to permanent SWM facilities when all disturbed areas have been permanently stabilized.

SECTION E
WORK AREA MAP



	PROJECT	SHEET NO.
	0001-029-001	1G(1v)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIFFORD, A.MORTON THOMAS & ASSOC.

DITCH TYPICAL SECTIONS

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	1G(1D)

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

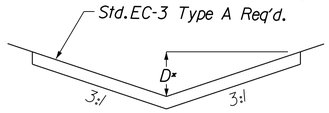
A. Morton Thomas & Assoc.
Chantilly, Virginia
(HYDRAULIC DISCIPLINE)

NOTE:

1. IF ROCK IS ENCOUNTERED IN DITCHES WHERE LINING IS RECOMMENDED, NOTIFY CO. IF SUITABLE ROCK IS PRESENT, LINING MAY BE ELIMINATED.

D-28A

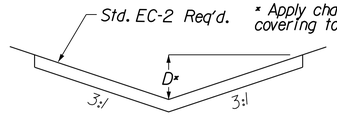
* Apply channel protective covering to Depth D



Location	Start Station	Invert	End Station	Invert	D*
(D-28A) Rte. 1 NB	781+00	113.0'	787+79	34.8'	1'

Existing Ditch flows to D-28B-R

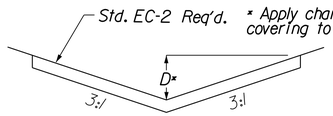
* Apply channel protective covering to Depth D



Location	Start Station	Invert	End Station	Invert	D*
(D-28B-R) Rte. 1 SB	490+50	62.2'	488+25	57.0'	1.5'

D-28B-L, D-35A

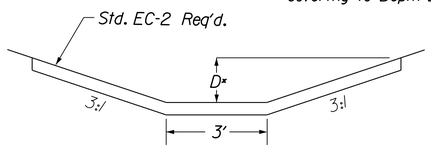
* Apply channel protective covering to Depth D



Location	Start Station	Invert	End Station	Invert	D*
(D-28B-L) Rte. 1 SB	480+91	123.5'	486+06	55.0'	1'
(D-35A) Woodlawn Rd.	131+00	128.0'	132+50	124.5'	1'

D-30A

* Apply channel protective covering to Depth D



Location	Start Station	Invert	End Station	Invert	D*
(D-30A) Rte. 1 SB	492+00	53.6'	500+80	±30 (Match existing inlet)	1.5'

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
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DESIGNED BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	1G(2)

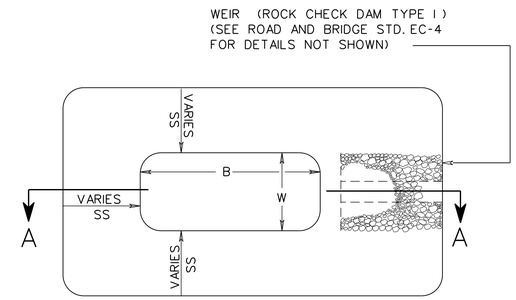
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE C.O.

A. Morton Thomas & Assoc.
Chantilly, Virginia
(HYDRAULIC DISCIPLINE)

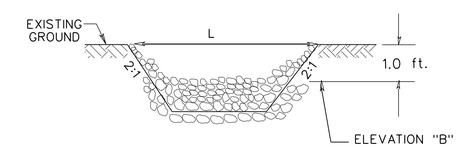
TEMPORARY SEDIMENT TRAP DETAIL SHEET

TEMPORARY SEDIMENT TRAP TABLE

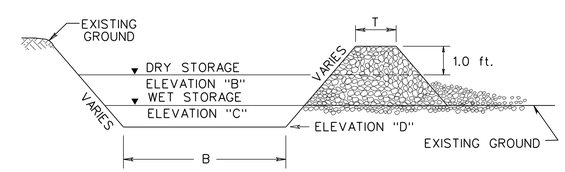
	SEDIMENT TRAP INFORMATION	SECTION THRU TEMPORARY SEDIMENT TRAP	SECTION THRU WEIR	SIDE SLOPES (SS)	WET STORAGE ELEV. (C)	DRY STORAGE ELEV. (B)	ESTIMATED QUANTITES: SEDIMENT BASIN EXCAVATION CU. YARDS	SILTATION CONTROL EXCAVATION CU. YARDS	DRY RIP RAP CLASS AI TONS	REMARKS
SHEET NO. STATION NO. TRAP NO.	9B 652+00 1	B= 38.00' W= 13.00' ELEV. D= 93.00' T= 2.00'	L= 6.00' Elev. B = 97.00'	2:1	95.40'	97.00'				
SHEET NO. STATION NO. TRAP NO.	13B 381+35 2	B= 84.00' W= 18.00' ELEV. D= 30.00' T= 2.00'	L= 15.00' Elev. B = 34.00'	2:1	32.25'	34.00'				
SHEET NO. STATION NO. TRAP NO.	22B 445+00 3	B= 64.00' W= 29.00' ELEV. D= 114.00' T= 2.00'	L= 18.00' Elev. B = 118.00'	2:1	116.12'	118.00'				
SHEET NO. STATION NO. TRAP NO.	11C 368+75 4	B= 24.00' W= 14.00' ELEV. D= 56.50' T= 2.00'	L= 8.00' Elev. B = 60.50'	2:1	58.50'	60.50'				
SHEET NO. STATION NO. TRAP NO.	28C 787+25 5	B= 41.00' W= 26.0'-66.0' ELEV. D= 40.00' T= 2.00'	L= 18.00' Elev. B = 44.00'	2:1	42.33'	44.00'				
SHEET NO. STATION NO. TRAP NO.		B= W= ELEV. D= T=	L= Elev. B =							
SHEET NO. STATION NO. TRAP NO.		B= W= ELEV. D= T=	L= Elev. B =							
SHEET NO. STATION NO. TRAP NO.		B= W= ELEV. D= T=	L= Elev. B =							
SHEET NO. STATION NO. TRAP NO.		B= W= ELEV. D= T=	L= Elev. B =							
SHEET NO. STATION NO. TRAP NO.		B= W= ELEV. D= T=	L= Elev. B =							
SHEET NO. STATION NO. TRAP NO.		B= W= ELEV. D= T=	L= Elev. B =							
SHEET NO. STATION NO. TRAP NO.		B= W= ELEV. D= T=	L= Elev. B =							
SHEET NO. STATION NO. TRAP NO.		B= W= ELEV. D= T=	L= Elev. B =							
SHEET NO. STATION NO. TRAP NO.		B= W= ELEV. D= T=	L= Elev. B =							
SHEET NO. STATION NO. TRAP NO.		B= W= ELEV. D= T=	L= Elev. B =							
SHEET NO. STATION NO. TRAP NO.		B= W= ELEV. D= T=	L= Elev. B =							



PLAN VIEW OF TEMPORARY SEDIMENT TRAP



TYPICAL SECTION THRU WEIR
(ROCK CHECK DAM TYPE 1)



TYPICAL SECTION (AA) THRU
TEMPORARY SEDIMENT TRAP

NEW 6/01

SPECIAL DESIGN SECTION
DRAWING NO. IISA-6

NOTE: REFERENCES TO "ENGINEER" IN THE DETAILS ON THIS SHEET WILL BE REPLACED WITH "CONTRACTING OFFICER". REFERENCES TO "THE DEPARTMENT" WILL BE REPLACED WITH "THE GOVERNMENT".

SCALE
0 25' 50'

AFC DATE: 04/30/2014
NDC : TBD

PROJECT	SHEET NO.
0001-029-001	1G(2)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

NOTE: REFERENCES TO "ENGINEER" IN THE DETAILS ON THIS SHEET WILL BE REPLACED WITH "CONTRACTING OFFICER". REFERENCES TO "THE DEPARTMENT" WILL BE REPLACED WITH "THE GOVERNMENT".

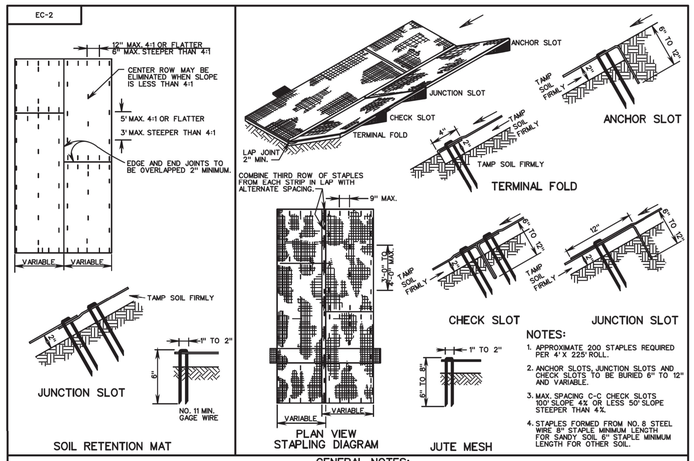
COMMONWEALTH OF VIRGINIA
MATTHEW H. WILLEMS
Lic. No. 0402 036144
PROFESSIONAL ENGINEER

A. Morton Thomas & Assoc.
Chantilly, Virginia
(HYDRAULIC DISCIPLINE)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	1G(3)

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

EC-2



NOTES:

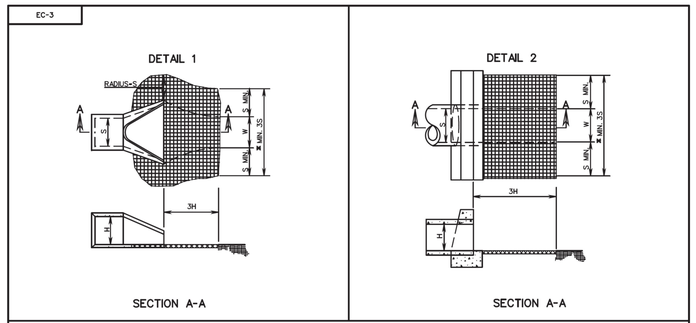
1. APPROXIMATE 200 STAPLES REQUIRED PER 4' X 225' ROLL.
2. ANCHOR SLOTS, JUNCTION SLOTS AND CHECK SLOTS TO BE BURIED 6" TO 12" AND VARIABLE.
3. MAX. SPACING C-C CHECK SLOTS 100' SLOPE 4X OR LESS 50' SLOPE STEEPER THAN 4X.
4. STAPLES FORMED FROM NO. 8 STEEL WIRE 8" STAPLE MINIMUM LENGTH FOR SANDY SOIL 6" STAPLE MINIMUM LENGTH FOR OTHER SOIL.

GENERAL NOTES:

1. BASIS OF PAYMENT TO BE SQUARE YARDS OF PROTECTIVE COVERING COMPLETE IN PLACE. PROTECTIVE COVERING IS TO BE LOCATED AS INDICATED ON THE PLANS IN ACCORDANCE WITH THE DIMENSIONS SPECIFIED ON TYPICAL SECTION.
2. "T-TOP" STAPLES OR OTHER MANUFACTURER'S DESIGN APPROVED BY THE ENGINEER MAY BE SUBSTITUTED FOR THE STAPLES SHOWN.
3. JUTE MESH OR SOIL RETENTION MAT IN ACCORDANCE WITH THE SPECIFICATIONS MAY BE USED AT THE OPTION OF THE CONTRACTOR.
4. WIDTH OF MATERIAL MAY VARY FROM MINIMUM DIMENSION BY INCREMENTS OF 4 OR 5 FEET.
5. FOR SOURCES OF APPROVED MATERIAL SEE VDOT'S APPROVED PRODUCTS LIST FOR STD. EC-2 MATERIAL.

VDOT ROAD AND BRIDGE STANDARDS		PROTECTIVE COVERING INSTALLATION CRITERIA VIRGINIA DEPARTMENT OF TRANSPORTATION	SPECIFICATION REFERENCE
SHEET 1 OF 1	REVISION DATE		244 606
113.02			

EC-3



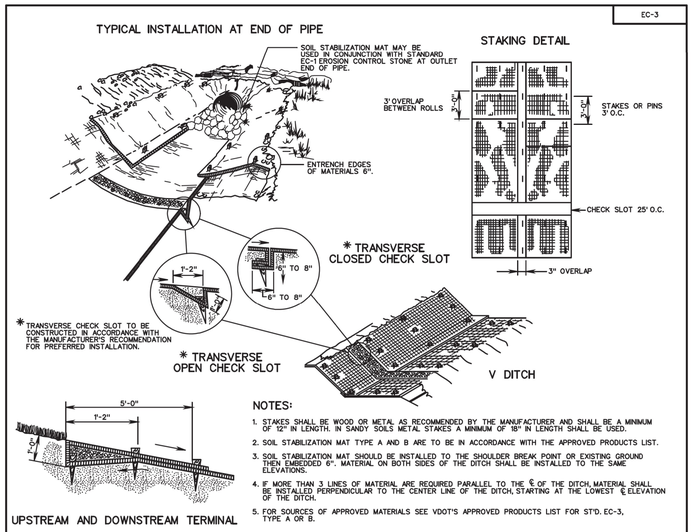
NOTES:

1. FOR MULTIPLE LINE INSTALLATIONS, DIMENSION S IS TO GOVERN THE PROTECTION OUTSIDE THE CHANNEL WIDTH (W).
2. ON ANY INSTALLATION REQUIRING CULVERT OUTLET PROTECTION WHERE NO ENDWALL OR ENDSECTION IS SPECIFIED ON THE PLANS, CONSTRUCTION IS TO BE IN ACCORDANCE WITH DETAIL 2 SHOWN ABOVE.
3. SOIL STABILIZATION MAT TYPE B SHALL BE USED FOR CULVERT OUTLET PROTECTION WHERE THE OUTLET VELOCITY IS 6 FPS OR LESS FOR THE DESIGN STORM AND THE TOTAL HYDRAULIC OPENING IS LESS THAN 7 SQUARE FEET. IF THE TOTAL HYDRAULIC OPENING IS 7 SQUARE FEET OR GREATER, OR THE DESIGN STORM OUTLET VELOCITY IS GREATER THAN 6 FPS USE STANDARD EC-1.
4. S = DIAMETER OF CIRCULAR CULVERT OR SPAN FOR BOX, ELLIPTICAL OR ARCH CULVERT.
   H = DIAMETER OF CIRCULAR CULVERT OR RISE/HEIGHT FOR BOX, ELLIPTICAL OR ARCH CULVERT.

* USE TYPICAL SECTION SHOWN ON PLANS FOR SIDE SLOPE, BOTTOM WIDTH AND DEPTH OF CHANNEL OR MATCH EXISTING DITCH OR NATURAL GROUND.

VDOT ROAD AND BRIDGE STANDARDS		SOIL STABILIZATION MAT CULVERT OUTLET PROTECTION INSTALLATION VIRGINIA DEPARTMENT OF TRANSPORTATION	SPECIFICATION REFERENCE
SHEET 2 OF 3	REVISION DATE		204 245 303 414
113.04			

EC-3

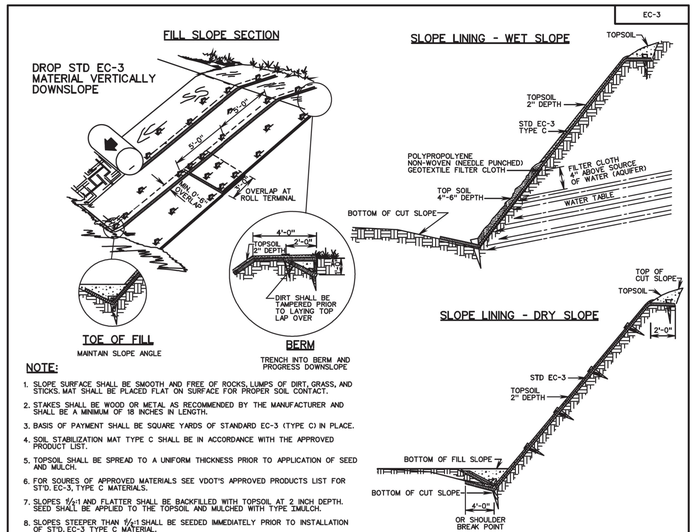


NOTES:

1. STAKES SHALL BE WOOD OR METAL AS RECOMMENDED BY THE MANUFACTURER AND SHALL BE A MINIMUM OF 12" IN LENGTH. IN SANDY SOILS METAL STAKES A MINIMUM OF 18" IN LENGTH SHALL BE USED.
2. SOIL STABILIZATION MAT TYPE A AND B ARE TO BE IN ACCORDANCE WITH THE APPROVED PRODUCTS LIST.
3. SOIL STABILIZATION MAT SHOULD BE INSTALLED TO THE SHOULDER BREAK POINT OR EXISTING GROUND THEN EMBEDDED 6". MATERIAL ON BOTH SIDES OF THE DITCH SHALL BE INSTALLED TO THE SAME ELEVATIONS.
4. IF MORE THAN 3 LINES OF MATERIAL ARE REQUIRED PARALLEL TO THE ℄ OF THE DITCH, MATERIAL SHALL BE INSTALLED PERPENDICULAR TO THE CENTER LINE OF THE DITCH, STARTING AT THE LOWEST ℄ ELEVATION OF THE DITCH.
5. FOR SOURCES OF APPROVED MATERIALS SEE VDOT'S APPROVED PRODUCTS LIST FOR STD. EC-3, TYPE A OR B.

SPECIFICATION REFERENCE	SOIL STABILIZATION MAT DITCH INSTALLATION TYPE A OR B VIRGINIA DEPARTMENT OF TRANSPORTATION	VDOT ROAD AND BRIDGE STANDARDS	
244 606		REVISION DATE	SHEET 1 OF 3 113.03

EC-3



NOTE:

1. SLOPE SURFACE SHALL BE SMOOTH AND FREE OF ROCKS, LUMPS OF DIRT, GRASS, AND STICKS. MAT SHALL BE PLACED FLAT ON SURFACE FOR PROPER SOIL CONTACT.
2. STAKES SHALL BE WOOD OR METAL AS RECOMMENDED BY THE MANUFACTURER AND SHALL BE A MINIMUM OF 18 INCHES IN LENGTH.
3. BASIS OF PAYMENT SHALL BE SQUARE YARDS OF STANDARD EC-3 (TYPE C) IN PLACE.
4. SOIL STABILIZATION MAT TYPE C SHALL BE IN ACCORDANCE WITH THE APPROVED PRODUCT LIST.
5. TOPSOIL SHALL BE SPREAD TO A UNIFORM THICKNESS PRIOR TO APPLICATION OF SEED AND MULCH.
6. FOR SOURES OF APPROVED MATERIALS SEE VDOT'S APPROVED PRODUCTS LIST FOR STD. EC-3, TYPE C MATERIALS.
7. SLOPES 1½:1 AND FLATTER SHALL BE BACKFILLED WITH TOPSOIL AT 2 INCH DEPTH. SEED SHALL BE APPLIED TO THE TOPSOIL AND MULCHED WITH TYPE 1 MULCH.
8. SLOPES STEEPER THAN 1½:1 SHALL BE SEEDED IMMEDIATELY PRIOR TO INSTALLATION OF STD. EC-3 TYPE C MATERIAL.

SPECIFICATION REFERENCE	SOIL STABILIZATION MAT - SLOPE INSTALLATION TYPE C VIRGINIA DEPARTMENT OF TRANSPORTATION	VDOT ROAD AND BRIDGE STANDARDS	
244 606		REVISION DATE	SHEET 3 OF 3 113.05

SCALE
0 25' 50'

AFC DATE: 04/30/2014

PROJECT	SHEET NO.
0001-029-001	1G(3)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

NOTE: REFERENCES TO "ENGINEER" IN THE DETAILS ON THIS SHEET WILL BE REPLACED WITH "CONTRACTING OFFICER". REFERENCES TO "THE DEPARTMENT" WILL BE REPLACED WITH "THE GOVERNMENT".

COMMONWEALTH OF VIRGINIA
MATTHEW H. WILLEMS
Lic. No. 0402 036144
PROFESSIONAL ENGINEER

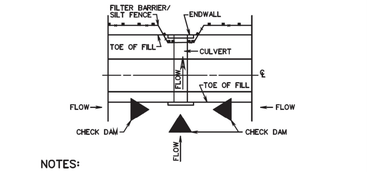
A. Morton Thomas & Assoc.
Chantilly, Virginia
(HYDRAULIC DISCIPLINE)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	IG(4)

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

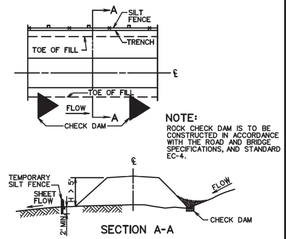
EC-5

TYPICAL DETAIL FOR TEMPORARY FILTER BARRIER/SILT FENCE/CHECK DAM AT CULVERT



NOTES:
1. IF ANY PORTION OF FILL IS GREATER THAN 5', SILT FENCE IS REQUIRED. IF FILL HEIGHT IS LESS THAN 5', FILTER BARRIER IS REQUIRED.
2. ROCK CHECK DAM IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE ROAD AND BRIDGE SPECIFICATIONS, AND STANDARD EC-4.

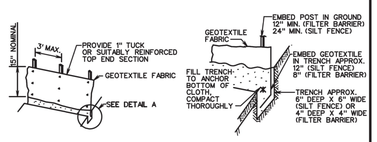
TYPICAL DETAIL FOR TEMPORARY SILT FENCE/CHECK DAM AT TOE OF FILL



NOTE:
ROCK CHECK DAM IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE ROAD AND BRIDGE SPECIFICATIONS, AND STANDARD EC-4.

SECTION A-A

TEMPORARY FILTER BARRIER

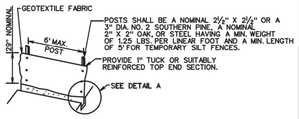


DETAIL A

*SLICING IS AN APPROVED ALTERNATE METHOD TO TRENCHING

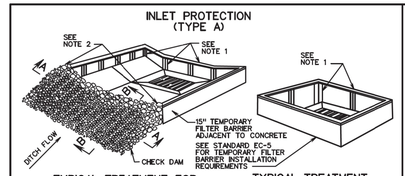
NOTE:
SUPPORTS FOR TEMPORARY FILTER BARRIERS SHALL BE A NOMINAL 1" X 2" OR A 1½" DIA. NO. 2 SOUTHERN PINE OR OAK, OR STEEL HAVING A MIN. WEIGHT OF 1.00 LBS. PER LINEAR FOOT.

TEMPORARY SILT FENCE



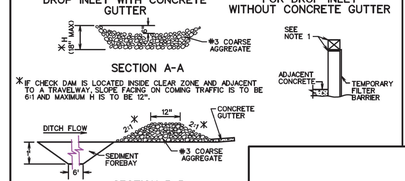
SPECIFICATION REFERENCE	TEMPORARY SILT BARRIERS FILTER BARRIER, SILT FENCE, AND BRUSH BARRIER VIRGINIA DEPARTMENT OF TRANSPORTATION	VDOT ROAD AND BRIDGE STANDARDS	
		REVISION DATE	SHEET 1 OF 2
			113.07

INLET PROTECTION (TYPE A)



TYPICAL TREATMENT FOR DROP INLET WITH CONCRETE GUTTER

TYPICAL TREATMENT FOR DROP INLET WITHOUT CONCRETE GUTTER



SECTION A-A

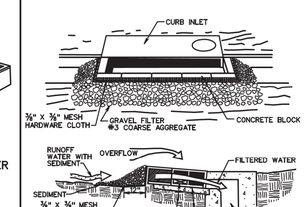
*IF CHECK DAM IS LOCATED INSIDE CLEAR ZONE AND ADJACENT TO A TRAVELWAY, SLOPE FACING ON COMING TRAFFIC IS TO BE 6:1 AND MAXIMUM H IS TO BE 12".

SECTION B-B

NOTES
1. POSTS AND TOP RAIL SHALL BE A NOMINAL 2½" X 2½" OR A 3" DIA. NO. 2 SOUTHERN PINE. A NOMINAL 2" X 2" OAK OR STEEL HAVING A MIN. WEIGHT OF 1.25 LBS. PER LINEAR FOOT AND A MIN. LENGTH OF 5' FOR TEMPORARY SILT FENCES.
2. END OF FILTER BARRIER TO BE EMBEDDED INTO AGGREGATE.
3. IF A DROP INLET IS LOCATED IN A SAG IN THE DITCH GRADE, A CHECK DAM IS REQUIRED FOR EACH SIDE OF THE INLET THAT RECEIVES DITCH FLOW.
4. WHERE DRAINAGE AREAS EXCEED ONE ACRE OR DITCH GRADE EXCEEDS 3%, A TEMPORARY SEDIMENT FOREBAY SHALL BE INSTALLED WITH MINIMUM DIMENSIONS OF 12" DEPTH, 2' WIDTH AND 6' LENGTH.

EC-6

INLET PROTECTION (TYPE B)



SECTION VIEW

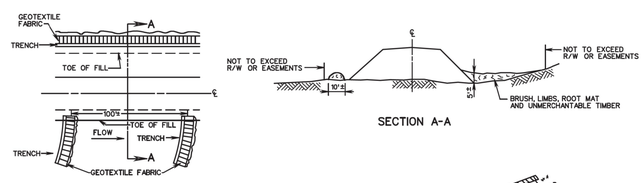
SPECIFIC APPLICATION
THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE AN OVERFLOW CAPABILITY IS NECESSARY TO PREVENT EXCESSIVE PONDING IN FRONT OF THE STRUCTURE.

NOTE:
GEOTEXTILE PRODUCTS DESIGNED TO BE INSERTED INTO GRATED DROP INLETS OR DESIGNED TO COVER THE SLOTS OF SLOT DROP INLETS, THAT HAVE BEEN APPROVED FOR USE ON VDOT PROJECTS AND ARE FOUND ON VDOT'S SPEL LIST, MAY BE SUBSTITUTED FOR THE DROP INLET PROTECTION DEVICES DETAILED HEREON.

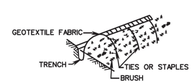
SPECIFICATION REFERENCE	INLET PROTECTION (TYPE A AND B) VIRGINIA DEPARTMENT OF TRANSPORTATION	VDOT ROAD AND BRIDGE STANDARDS	
107 242 303		REVISION DATE	SHEET 1 OF 2
			113.09

EC-5

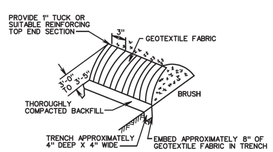
SILT BARRIERS
TYPICAL DETAIL FOR BRUSH BARRIER
(TO BE USED AT ALL APPLICABLE LOCATIONS)



SECTION A-A



BACK ISOMETRIC



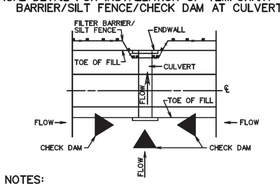
FRONT ISOMETRIC

NOTES:
1. BRUSH BARRIERS SHALL BE CONSTRUCTED AT LOCATION SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. BRUSH SHALL BE PILED AGAINST EXISTING TREES TO PREVENT MOVEMENT OF BARRIER. BRUSH SHALL BE PILED AS TIGHTLY AS POSSIBLE AND WEIGHTED DOWN BY UNMERCHANTANTABLE LOGS.
2. GEOTEXTILE FABRIC CONFORMING TO THE ROAD AND BRIDGE SPECIFICATIONS SHALL BE INSTALLED AS DETAILED ABOVE. GEOTEXTILE FABRIC MAY ALSO BE ATTACHED TO EXISTING FENCES WHEN SPECIFIED ON THE PLANS OR DIRECTED BY THE ENGINEER.
3. NO BRUSH WILL BE DESTROYED OR REMOVED FROM THE PROJECT UNTIL ALL BRUSH SILT BARRIERS ARE IN PLACE AND HAVE BEEN INSPECTED AND APPROVED BY THE ENGINEER.
4. DIMENSIONS SHOWN ARE APPROXIMATE ONLY.

VDOT ROAD AND BRIDGE STANDARDS	TEMPORARY SILT BARRIERS FILTER BARRIER, SILT FENCE, AND BRUSH BARRIER VIRGINIA DEPARTMENT OF TRANSPORTATION	SPECIFICATION REFERENCE
SHEET 2 OF 2 / REVISION DATE		107 303
113.08		

EC-6

TYPICAL DETAIL FOR INSTALLATION OF TEMPORARY FILTER BARRIER/SILT FENCE/CHECK DAM AT CULVERT



NOTES:
1. IF ANY PORTION OF FILL IS GREATER THAN 5', SILT FENCE IS REQUIRED. IF FILL HEIGHT IS LESS THAN 5', FILTER BARRIER IS REQUIRED.
2. ROCK CHECK DAM IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE ROAD AND BRIDGE SPECIFICATIONS, AND STANDARD EC-4.
3. FILTER BARRIER/SILT FENCE IS TO BE INSTALLED IN ACCORDANCE WITH THE ROAD AND BRIDGE SPECIFICATIONS, AND STANDARD EC-5.

* INSTALLATION DETAIL ONLY - ROCK CHECK DAMS, FILTER BARRIER, AND SILT FENCE TO BE PAID FOR IN ACCORDANCE WITH THE ROAD AND BRIDGE SPECIFICATIONS.

VDOT ROAD AND BRIDGE STANDARDS	INLET PROTECTION (TYPE C) VIRGINIA DEPARTMENT OF TRANSPORTATION	SPECIFICATION REFERENCE
SHEET 2 OF 2 / REVISION DATE		107 242 303
113.10		

SCALE 0 25' 50'

AFC DATE: 04/30/2014

PROJECT	SHEET NO.
0001-029-001	IG(4)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

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COMMONWEALTH OF VIRGINIA
MATTHEW H. WILLEMS
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PROFESSIONAL ENGINEER

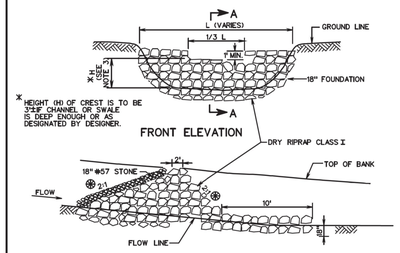
A. Morton Thomas & Assoc.
Chantilly, Virginia
(HYDRAULIC DISCIPLINE)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	1G(5)

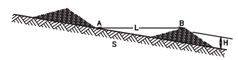
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE C.O.

EC-4

TYPICAL DETAIL FOR ROCK CHECK DAM TYPE I



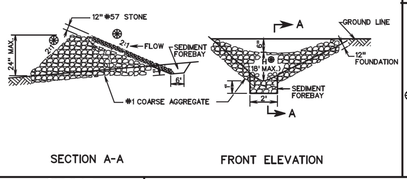
SUGGESTED ROCK CHECK DAM SPACING



L = H/S WHERE:
H = HEIGHT OF DAM CREST IN FEET
S = CHANNEL SLOPE IN FT/FT
L = CHECK DAM SPACING IN FEET- THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION

CHECK DAM SPACING , L TO BE DETERMINED FROM THE EQUATION. IN STEEP SLOPE AREAS THE CHECK DAM SPACING IS NOT TO BE LESS THAN 25'.

TYPICAL DETAIL FOR ROCK CHECK DAM TYPE II

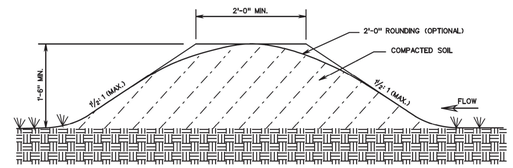


NOTES:

1. ROCK CHECK DAMS THAT ARE DESIGNATED ON THE PLANS AS A STORMWATER MANAGEMENT (SWM) ITEM ARE TO BE LEFT IN PLACE AS A PERMANENT INSTALLATION.
2. WHERE DRAINAGE AREAS EXCEED 1 ACRE OR DITCH GRADE EXCEEDS 3%, A TEMPORARY SEDIMENT FOREBAY SHALL BE INSTALLED WITH MINIMUM DIMENSIONS OF 12" DEPTH, 2' WIDTH AND 6' LENGTH.
3. ⊕ IF CHECK DAMS IS LOCATED INSIDE CLEAR ZONE AND ADJACENT TO A TRAVELWAY, SLOPE FACING ON COMING TRAFFIC IS TO BE 6:1 AND MAXIMUM H IS TO BE 12".
4. ALTERNATIVE MATERIALS ON VDOT'S SPEL LIST MAY BE SUBSTITUTED AT NO ADDITIONAL COST TO THE DEPARTMENT.
5. SEE STANDARD EC-5 FOR DETAILS FOR ROCK CHECK DAMS IN ROADSIDE DITCHES.
6. CHECK DAM SHALL NOT BE USED FOR LOCATIONS IN LIVE STREAM.

VDOT ROAD AND BRIDGE STANDARDS		ROCK CHECK DAMS TYPE I & II	SPECIFICATION REFERENCE
SHEET 1 OF 1	REVISION DATE	VIRGINIA DEPARTMENT OF TRANSPORTATION	107 303
113.06			

EC-9



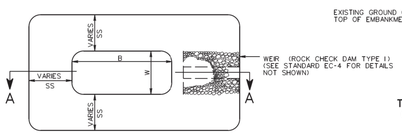
TEMPORARY DIVERSION DIKE

NOTE:

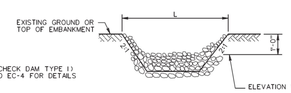
1. THE CHANNEL CREATED BEHIND THE DIKE SHALL HAVE A POSTIVE GRADE TO A STABILIZED OUTLET. THE CHANNEL SHALL BE STABILIZED, AS NECESSARY, TO PREVENT EROSION.
2. TEMPORARY DIVERSION DIKE WILL BE MEASURED AND PAID FOR IN ACCORDANCE WITH SECTION 303 OF THE SPECIFICATIONS.

SPECIFICATION REFERENCE	TEMPORARY DIVERSION DIKE	VDOT ROAD AND BRIDGE STANDARDS	
303	VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE	SHEET 1 OF 1
			113.13

EC-7



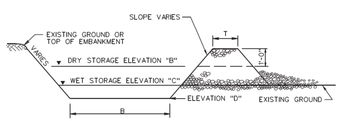
PLAN VIEW OF TEMPORARY SEDIMENT TRAP



TYPICAL SECTION THRU WEIR
(ROCK CHECK DAM TYPE 1)

NOTES:

1. CHECK DAM IS SHOWN FOR ILLUSTRATION ONLY AND IS NOT INCLUDED IN PAYMENT FOR SEDIMENT TRAP.
2. THE SEDIMENT STORAGE VOLUME SHALL BE 134 CUBIC YARDS/ACRE OF TOTAL CONTRIBUTING DRAINAGE AREA AND SHALL CONSIST OF HALF IN THE FORM OF WET STORAGE AND HALF IN THE FORM OF DRY STORAGE.
3. SEE PLANS FOR DIMENSIONS AND ELEVATIONS.

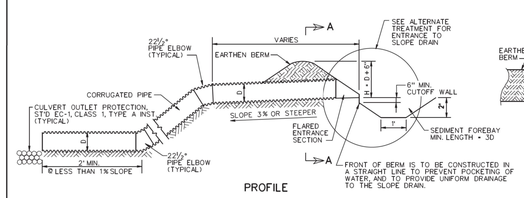


TYPICAL SECTION (A-A) THRU
TEMPORARY SEDIMENT TRAP

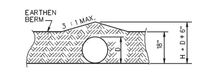
SPECIFICATION REFERENCE	TYPICAL SEDIMENT TRAP	VDOT ROAD AND BRIDGE STANDARDS	
107 303	VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE 01/13	SHEET 1 OF 1
			113.11

EC-10

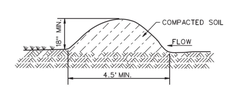
TEMPORARY BERM & SLOPE DRAIN



PROFILE



SECTION A-A



EARTHEN BERM

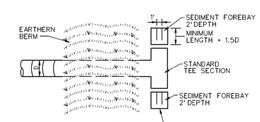
EARTHEN BERM SHALL BE INSTALLED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER.

SIZE OF SLOPE DRAIN	
MAXIMUM DRAINAGE AREA (ACRES)	MINIMUM PIPE DIAMETER, D (IN.)
0.5	12
1.5	18
2.5	21
3.0	24

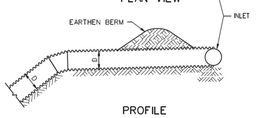
NOTES

1. SLOPE DRAIN SHALL BE SECURELY STAKED TO THE SLOPE, AT 10' (OR LESS) INTERVALS.
2. THE SLOPE DRAIN SECTIONS SHALL BE SECURELY FASTENED TOGETHER AND HAVE WATER TIGHT FITTINGS.

ALTERNATE ENTRANCE TREATMENT



PLAN VIEW



PROFILE

VDOT ROAD AND BRIDGE STANDARDS		TEMPORARY BERM & SLOPE DRAIN	SPECIFICATION REFERENCE
SHEET 1 OF 1	REVISION DATE 01/13	VIRGINIA DEPARTMENT OF TRANSPORTATION	107 303
113.14			

AFC DATE: 04/30/2014	PROJECT	SHEET NO.
	0001-029-001	1G(5)

PROJECT MANAGER LAURA MEHLEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY FHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
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COMMONWEALTH OF VIRGINIA
MATTHEW H. WILLEMS
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A. Morton Thomas & Assoc.
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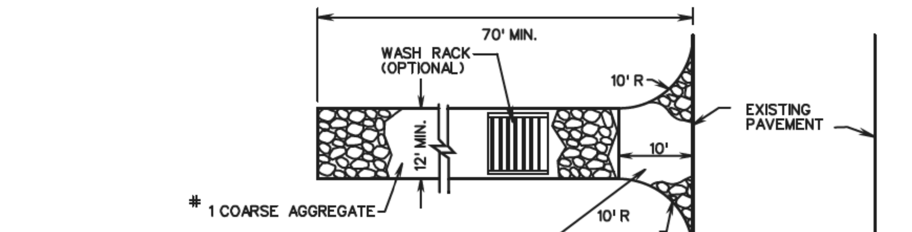
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	1G(6)

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

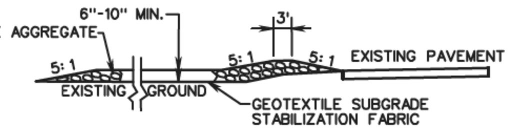
EC-11

MINIMUM REQUIREMENTS FOR STABILIZED CONSTRUCTION ENTRANCE



PLAN

6" MINIMUM DEPTH #1 COARSE AGGREGATE, WITH MINIMUM 10' CLOSEST TO ROADWAY CAPPED WITH 4" MINIMUM DEPTH #68 OR #78 AGGREGATE, AS DIRECTED BY THE ENGINEER.

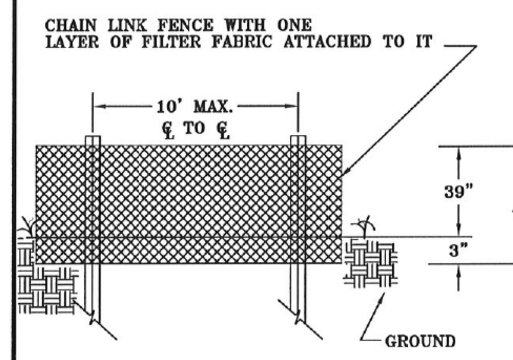


PROFILE

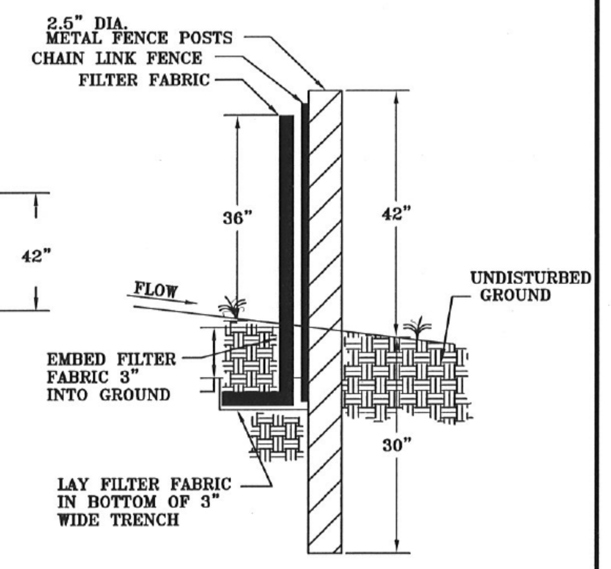
1. SURFACE WATER SHALL BE PIPED UNDER THE CONSTRUCTION ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
2. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT OF WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT OF WAY SHALL BE REMOVED IMMEDIATELY.
3. WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT OF WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
4. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER HEAVY USE AND EACH RAIN.

SPECIFICATION REFERENCE	STABILIZED CONSTRUCTION ENTRANCE	VDOT ROAD AND BRIDGE STANDARDS	
107 303	VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE	SHEET 1 OF 1 / 113.15

FAIRFAX COUNTY PUBLIC FACILITIES MANUAL



ELEVATION VIEW



SSF X—X—X—X—X

SECTION VIEW

SUPER SILT FENCE
NO SCALE

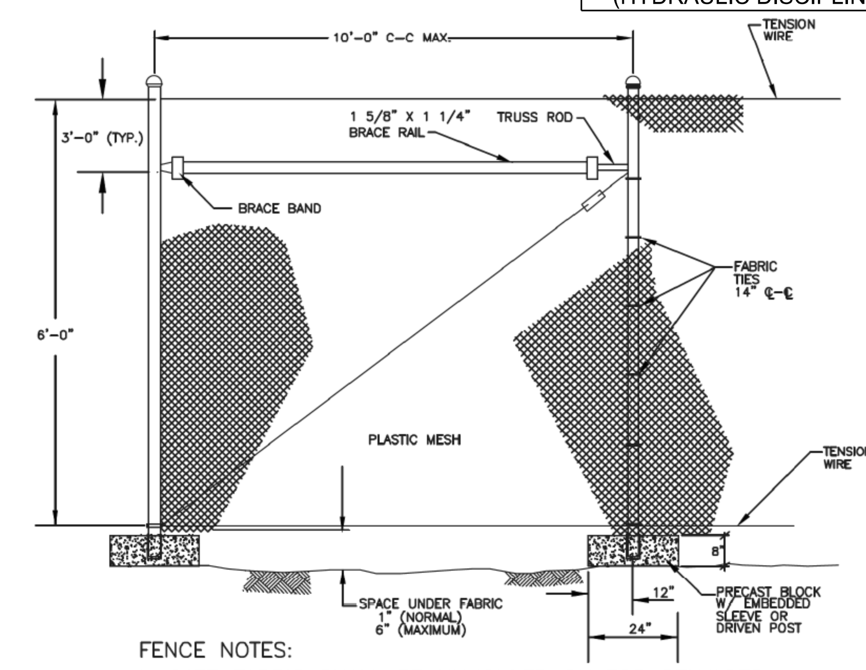
FENCING

Chain link fence shall be 39" above grade with 3" embedded for a total fabric width of 42". The post shall be 42" above grade with 30" placed below grade (without concrete) for a total length of 72".

NOTES

1. Chain link fence shall be fastened securely to fence posts with wire ties.
2. Filter fabric shall be fastened securely to chain link fence with ties spaced horizontally 24" at the top and midsection.
3. Physical properties of the filter fabric shall conform to the latest edition of THE VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK.
4. When two sections of filter fabric adjoin each other, they shall be overlapped by 6".
5. Maintenance shall be performed as needed and material shall be removed when sediment build-up reaches 50% of the height of the super silt fence.

Ref. Sec. 11-0110.3, 11-0110.3J / Rev. 1-00, 2011 Reprint	SUPER SILT FENCE NO SCALE	PLATE NO.	STD. NO.
		7-11	

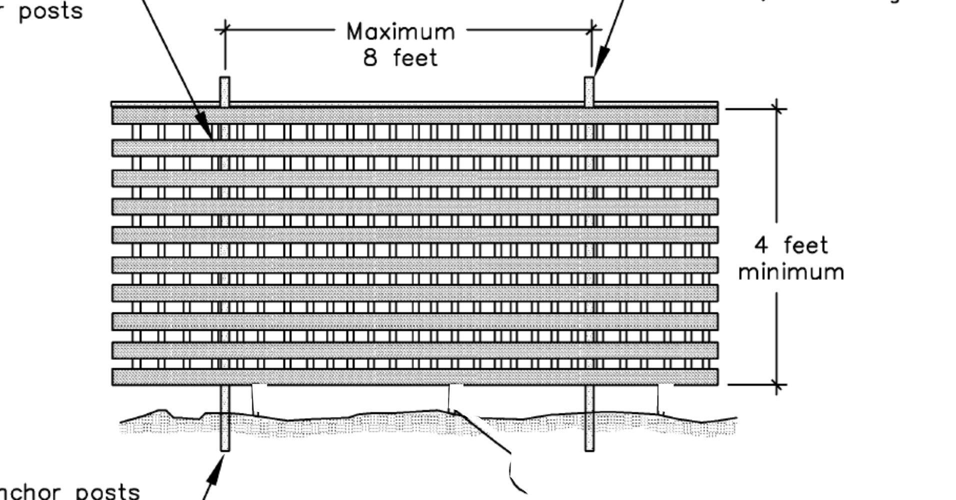


FENCE NOTES:
1. GATE FABRIC SHALL BE KNUCKLED ON TOP SELVAGES.
2. CONCRETE FOUNDATIONS AT GATES. SIZE BY GATE MANUFACTURER. RECOMMENDED
3. ALL FENCE, GATE POSTS & FRAMES TO BE GROUNDED.
4. ATTACH FENCE FABRIC TO LINE POSTS, TOP AND BOTTOM TENSION WIRES WITH TIE WIRES.
5. ALL TYPE V-1 & V-2 GATES SHALL ALLOW 180° OPENING SWING.
6. POSTS, RAILS AND RODS TO BE INSTALLED INSIDE OF FENCE FABRIC.
7. MATERIALS TO MEET REQUIREMENTS OF AASHTO M181.

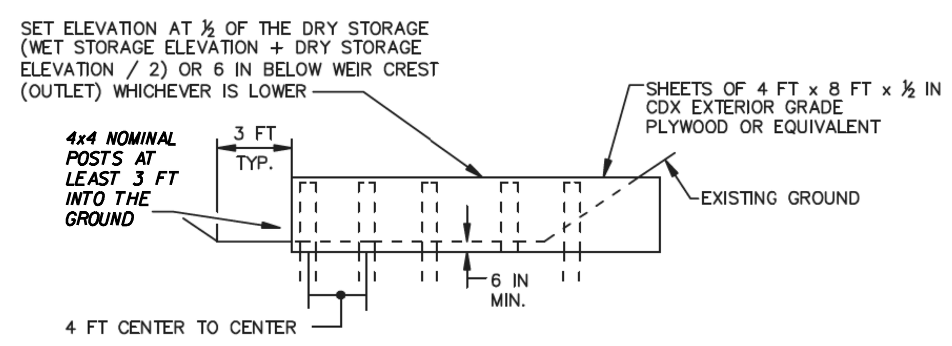
CHAIN LINK FENCE (TEMPORARY)
NOT TO SCALE

NOTE: REFERENCES TO "ENGINEER" IN THE DETAILS ON THIS SHEET WILL BE REPLACED WITH "CONTRACTING OFFICER". REFERENCES TO "THE DEPARTMENT" WILL BE REPLACED WITH "THE GOVERNMENT".

ORANGE CONSTRUCTION FENCE



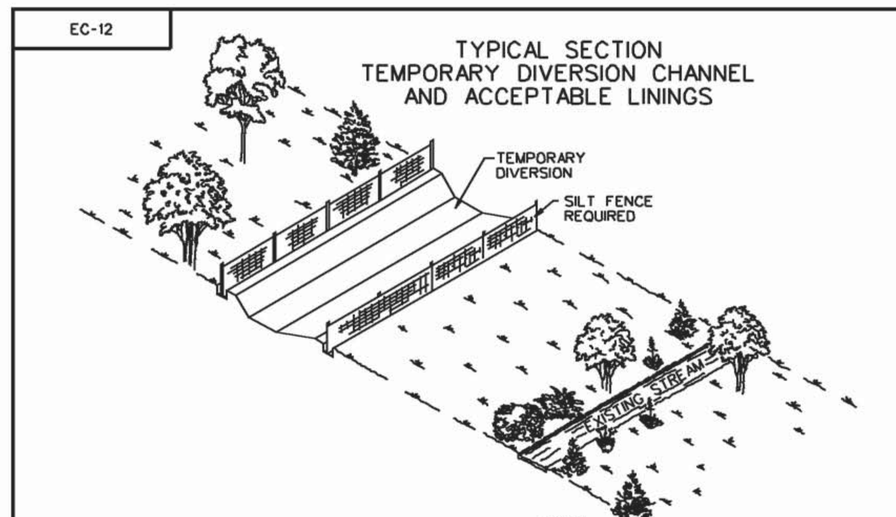
Notes:
1. Blaze orange plastic mesh fence for haul road delineation only.
2. Device should be maintained throughout construction.

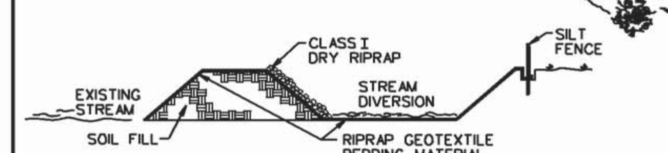


BAFFLE DETAIL

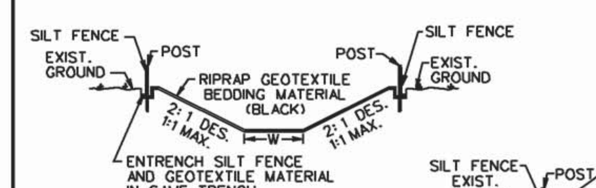
EC-12

TYPICAL SECTION TEMPORARY DIVERSION CHANNEL AND ACCEPTABLE LININGS

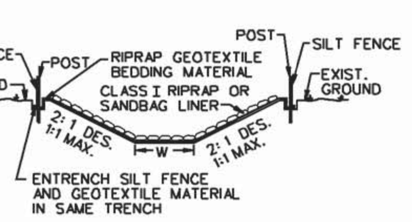




DAM DETAIL



CLASS A LINING



CLASS B LINING

BOTTOM WIDTH OF TEMPORARY DIVERSION CHANNEL SHALL APPROXIMATE THE BOTTOM WIDTH OF THE NATURAL STREAM CHANNEL.

STREAM DIVERSION GENERAL NOTES

SLOPES

MAXIMUM STEEPNESS OF SIDE SLOPES SHALL BE 1:1. DEPTH AND GRADE MAY BE VARIABLE, DEPENDENT ON SITE CONDITIONS, BUT SHALL BE SUFFICIENT TO ENSURE CONTINUOUS FLOW OF WATER IN THE DIVERSION.

EXCAVATION

NO EXCAVATED MATERIAL SHALL BE STORED OR STOCKPILED NEXT TO THE DIVERSION OR IN SUCH A MANNER THAT SILTATION OF THE STREAM COULD OCCUR.

PIPE CULVERTS

PIPE CULVERT(S) MAY BE USED TO DIVERT A STREAM PROVIDED THEY ARE PROPERLY SIZED TO SAFELY CARRY THE FLOW OF A TWO YEAR STORM EVENT. UNDERSIZED PIPES SHALL BE USED FOR NO LONGER THAN 72 HOURS PROVIDED LESS THAN 50% THREAT OF RAIN CAN BE REASONABLY EXPECTED WITHIN THAT TIME PERIOD AND THEY ARE APPROVED BY THE ENGINEER.

WHEN THE CONTRACTOR USES PIPE CULVERTS IN LIEU OF THE DIVERSION CHANNEL OR A PORTION OF THE CHANNEL, PAYMENT WILL BE MADE BASED ON THE PRICE BID FOR THE QUANTITIES SHOWN ON THE PLANS FOR TEMPORARY DIVERSION CHANNEL EXCAVATION AND TEMPORARY DIVERSION CHANNEL LINING CLASS SPECIFIED.

LINING

THE CONTRACTOR SHALL HAVE THE OPTION OF USING A HIGHER CLASS OF LINING THAN THAT SPECIFIED ON THE PLANS. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR USING THE HIGHER CLASS.

STREAM DIVERSION LINERS SHALL BE SECURED AT THE UPSTREAM AND DOWNSTREAM SIDES WITH NON-ERODIBLE WEIGHTS SUCH AS EROSION CONTROL STONE. THESE WEIGHTS SHALL ALLOW NORMAL FLOW OF THE STREAM. SOIL SHALL NOT BE MIXED IN WITH STREAM DIVERSION WEIGHTS. WEIGHTS MAY ALSO BE NEEDED ALONG THE STREAM DIVERSION'S LENGTH.

STREAM DIVERSION LINERS SHALL BE ENTRENCHED AT THE TOP OF THE DIVERSION SLOPES (SLOPE BREAKS) WITH A LINE OF SILT FENCE.

PROTECTIVE COVERING (EC-2) STAPLES OR NON-ERODIBLE WEIGHTS SHALL BE USED AS NECESSARY TO ANCHOR STREAM DIVERSION LINERS TO THE SIDE SLOPES OF THE DIVERSION. WOODEN STAKES SHALL NOT BE USED ON THE DIVERSON'S BOTTOM OR SIDE SLOPES.

STREAM DIVERSION LINERS SHALL BE OVERLAPPED WHEN A SINGLE OR CONTINUOUS LINER IS NOT AVAILABLE OR IS IMPRACTICAL. OVERLAPS SHALL BE PLACED SUCH THAT CONTINUOUS FLOW OF THE STREAM IS MAINTAINED. AN UPSTREAM SECTION SHALL OVERLAP A DOWNSTREAM SECTION BY A MINIMUM OF 18". OVERLAPS ALONG THE CROSS-SECTION SHALL BE MADE SUCH THAT A LINER IS PLACED IN THE STREAM DIVERSION BOTTOM FIRST AND ADDITIONAL PIECES OF LINER ON THE SLOPES OVERLAP THE BOTTOM PIECE BY A MINIMUM OF 18".

GENERAL

THE DOWNSTREAM PLUG SHALL BE REMOVED PRIOR TO THE UPSTREAM PLUG WHEN A STREAM DIVERSION IS USED FOR THE TRANSPORT OF WATER.

NON-ERODIBLE MATERIALS, INCLUDING BUT NOT LIMITED TO, EROSION CONTROL STONE, CONCRETE BARRIERS, SANDBAGS, PLYWOOD, OR SHEET PILING SHALL BE USED BOTH TO DIVERT THE STREAMS AWAY FROM THEIR ORIGINAL CHANNELS AND TO PREVENT OR REDUCE WATER BACKUP INTO A CONSTRUCTION AREA.

STREAMS MAY BE DIVERTED THROUGH AN EXISTING OR INCOMPLETE STRUCTURE PROVIDED THEY WILL NOT RE-ENTER A DISTURBED AREA, COME INTO CONTACT WITH WET CONCRETE, AND/OR BECOME PARTIALLY OR WHOLLY IMPOUNDED, SILTED, OR OTHERWISE CONTAMINATED.

STREAMS MAY BE REDIVERTED UPON COMPLETION OF THE DRAINAGE STRUCTURE(S) FOR WHICH THE DIVERSION WAS BUILT. PRIOR TO REDIVERSION, ANY MATERIALS USED TO PREVENT WATER BACKUP INTO THE DOWNSTREAM END OF THE DRAINAGE STRUCTURE(S) SHALL BE REMOVED. THIS MATERIAL SHALL NOT BE PLACED IN THE DOWNSTREAM END OF THE DIVERSION UNTIL AFTER WATER HAS BEEN REDIVERTED TO THE DRAINAGE STRUCTURE(S). A STREAM SHALL BE REDIVERTED BY REMOVING ALL OF THE MATERIALS DAMMING THE UPSTREAM END OF THE DRAINAGE STRUCTURE(S) BEFORE PLACING IT IN THE UPSTREAM END OFF THE STREAM DIVERSION. THE DIVERSION SHALL BE SEALED OFF AT THE DOWNSTREAM END AND THEN BACKFILLED.

ONCE STARTED, ANY WORK TO RELOCATE A STREAM (PLUGS) SHALL NOT BE DISCONTINUED UNTIL IT IS COMPLETED.

ANY DEVIATIONS TO THE ABOVE NOTED STREAM DIVERSION DESIGN, INSTALLATION, OR MAINTAINANCE SHALL BE APPROVED BY THE ENGINEER.

VDOT ROAD AND BRIDGE STANDARDS		TEMPORARY DIVERSION CHANNEL	SPECIFICATION REFERENCE
SHEET 1 OF 1 / 113.16	REVISION DATE 4/09	VIRGINIA DEPARTMENT OF TRANSPORTATION	302 303 414

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEEORD, A.MORTON THOMAS & ASSOC.

COMMONWEALTH OF VIRGINIA
MATTHEW H. WILLEMS
Lic. No. 0402 036144
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A. Morton Thomas & Assoc.
Chantilly, Virginia
(HYDRAULIC DISCIPLINE)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	I	0001-029-001 P101, R201, C501	IG(7)

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

TABLE 3.31-B

ACCEPTABLE TEMPORARY SEEDING PLANT MATERIALS

"QUICK REFERENCE FOR ALL REGIONS"

Planting Dates	Species	Rate (lbs./acre)
Sept. 1 - Feb. 15	50/50 Mix of Annual Ryegrass (Lolium multi-florum) & Cereal (Winter) Rye (Secale cereale)	50 - 100
Feb. 16 - Apr. 30	Annual Ryegrass (Lolium multi-florum)	60 - 100
May 1 - Aug 31	German Millet (Setaria italica)	50

TABLE 3.32-D

SITE SPECIFIC SEEDING MIXTURES FOR COASTAL PLAIN AREA

	Total Lbs. Per Acre
Minimum Care Lawn	
- Commercial or Residential	
- Kentucky 31 or Turf-Type Tall Fescue	175-200 lbs.
or	
- Common Bermudagrass **	75 lbs.
High-Maintenance Lawn	
- Kentucky 31 or Turf-Type Tall Fescue	200-250 lbs.
or	
- Hybrid Bermudagrass (seed) **	40 lbs. (unhulled)
or	30 lbs. (hulled)
- Hybrid Bermudagrass (by other vegetative establishment method, see Std. & Spec. 3.34)	
General Slope (3:1 or less)	
- Kentucky 31 Fescue	128 lbs.
- Red Top Grass	2 lbs.
- Seasonal Nurse Crop *	20 lbs.
	150 lbs.
Low Maintenance Slope (Steeper than 3:1)	
- Kentucky 31 Tall Fescue	93-108 lbs.
- Common Bermudagrass **	0-15 lbs.
- Red Top Grass	2 lbs.
- Seasonal Nurse Crop *	20 lbs.
- Sericea Lespedeza **	20 lbs.
	150 lbs.

* Use seasonal nurse crop in accordance with seeding dates as stated below:

February, March through April ..... Annual Rye
May 1st through August ..... Foxtail Millet
September, October through November 15th ..... Annual Rye
November 16th through January ..... Winter Rye

** May through October, use hulled seed. All other seeding periods, use unhulled seed. Weeping Lovegrass may be added to any slope or low-maintenance mix during warmer seeding periods; add 10-20 lbs./acre in mixes.

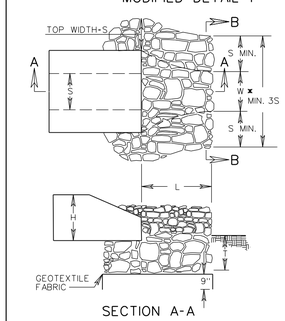
TABLE 3.35-A

ORGANIC MULCH MATERIALS AND APPLICATION RATES

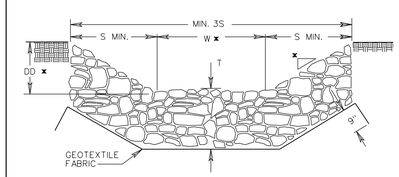
MULCHES:	RATES: Per Acre	RATES: Per 1000 sq. ft.	NOTES:
Straw or Hay	1½ - 2 tons (Minimum 2 tons for winter cover)	70 - 90 lbs.	Free from weeds and coarse matter. Must be anchored. Spread with mulch blower or by hand.
Fiber Mulch	Minimum 1500 lbs.	35 lbs.	Do not use as mulch for winter cover or during hot, dry periods.* Apply as slurry.
Corn Stalks	4 - 6 tons	185 - 275 lbs.	Cut or shredded in 4-6" lengths. Air-dried. Do not use in fine turf areas. Apply with mulch blower or by hand.
Wood Chips	4 - 6 tons	185 - 275 lbs.	Free of coarse matter. Air-dried. Treat with 12 lbs nitrogen per ton. Do not use in fine turf areas. Apply with mulch blower, chip handler, or by hand.
Bark Chips or Shredded Bark	50 - 70 cu. yds.	1-2 cu. yds.	Free of coarse matter. Air-dried. Do not use in fine turf areas. Apply with mulch blower, chip handler, or by hand.

* When fiber mulch is the only available mulch during periods when straw should be used, apply at a minimum rate of 2000 lbs./ac. or 45 lbs./1000 sq. ft.

MODIFIED DETAIL 1



SECTION A-A



SECTION B-B

TYPE OF OUTLET PROTECTION MATERIAL		MAXIMUM OUTLET VELOCITY (FOR DESIGN STORM)	MINIMUM "T" (INCHES)
CLASS A1	CLASS A1 DRY RIPRAP	8 fps	18
CLASS I	CLASS I DRY RIPRAP	14 fps	24
CLASS II	CLASS II DRY RIPRAP	19 fps	36

NOTES:

1. FOR MULTIPLE LINE INSTALLATIONS, DIMENSION S IS TO GOVERN THE PROTECTION OUTSIDE THE CHANNEL WIDTH (W).
2. ON ANY INSTALLATION REQUIRING CULVERT OUTLET PROTECTION WHERE NO ENDWALL OR ENDSECTION IS SPECIFIED ON THE PLANS, CONSTRUCTION IS TO BE IN ACCORDANCE WITH DETAIL 2 SHOWN ABOVE.
3. GEOTEXTILE FABRIC TO BE INSTALLED UNDER CLASS A1, I, AND II MATERIALS IN ACCORDANCE WITH THE SPECIFICATIONS.
4. S = DIAMETER OF CIRCULAR CULVERT OR SPAN FOR BOX, ELLIPTICAL OR ARCH CULVERT. H = DIAMETER OF CIRCULAR CULVERT OR RISE/HEIGHT FOR BOX, ELLIPTICAL OR ARCH CULVERT.

x USE TYPICAL SECTION SHOWN ON PLANS FOR SIDE SLOPE, BOTTOM WIDTH AND DEPTH OF CHANNEL OR MATCH EXISTING DITCH OR NATURAL GROUND.

OUTLET PROTECTION MINUMUM LENGTH (L)	
TYPE A INSTALLATION	3H
TYPE B INSTALLATION	5H

SPECIFICATION REFERENCE
204 245 303 414

DITCH OUTLET PROTECTION (MODIFIED)

VIRGINIA DEPARTMENT OF TRANSPORTATION

EC-1

NOTE: REFERENCES TO "ENGINEER" IN THE DETAILS ON THIS SHEET WILL BE REPLACED WITH "CONTRACTING OFFICER". REFERENCES TO "THE DEPARTMENT" WILL BE REPLACED WITH "THE GOVERNMENT".

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PROJECT MANAGER LAURA MEHIEL A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS A.MORTON THOMAS & ASSOC.
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COMMONWEALTH OF VIRGINIA
MATTHEW H. WILLEMS
Lic. No. 0402 036144
PROFESSIONAL ENGINEER

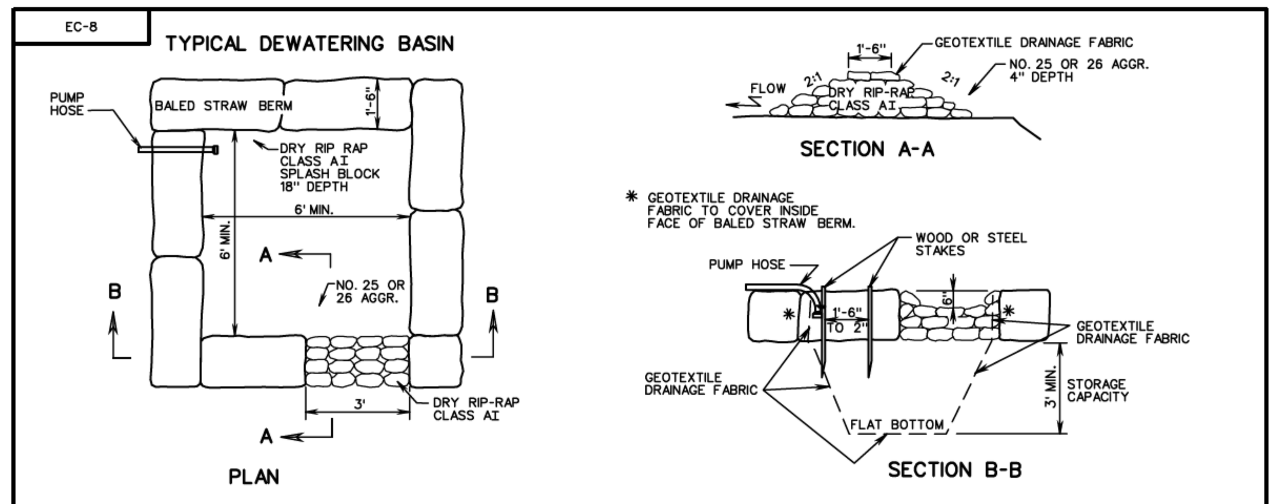
A. Morton Thomas & Assoc.
Chantilly, Virginia
(HYDRAULIC DISCIPLINE)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	1G(8)

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

EC-8

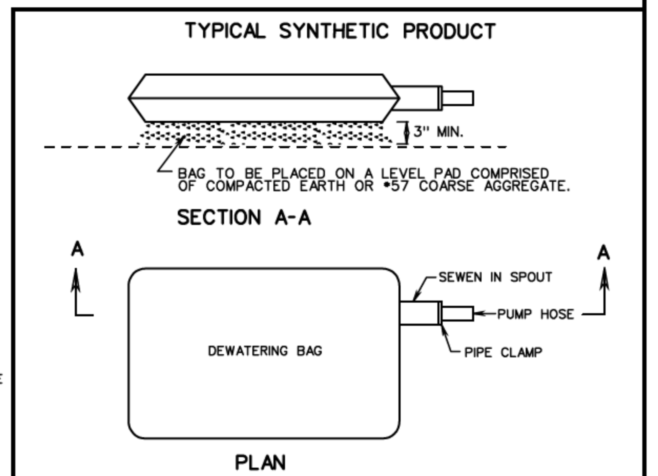
TYPICAL DEWATERING BASIN



NOTES:

1. DEWATERING BASIN SIZE SHALL BE DETERMINED BY THE FORMULA 16 X GAL./MIN. OF PUMP = CU. FT. OF STORAGE CAPACITY.
2. THIS WORK SHALL CONSIST OF THE CONSTRUCTION OF A DEWATERING BASIN FOR THE PURPOSE OF RECEIVING SEDIMENT-LADENED WATER PUMPED FROM A CONSTRUCTION SITE TO ALLOW FOR FILTRATION BEFORE IT REENTERS THE WATERWAY. PUMPING INTO THESE BASINS SHALL CEASE WHEN THE FLOW FROM THE BASIN BECOMES SEDIMENT-LADENED.
3. SURFACE WATER FLOW SHALL BE DIVERTED AROUND THIS DEVICE.
4. THE OUTFALL FROM THE BASIN(S) SHALL HAVE A STABILIZED CONVEYANCE TO RECEIVING WATERS.
5. ONCE THE DEWATERING BASIN BECOMES FILLED TO HALF OF THE STORAGE CAPACITY, ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED DISPOSAL AREA OUTSIDE OF THE 100-YEAR FLOODPLAIN UNLESS OTHERWISE APPROVED ON THE PLANS.
6. SEDIMENT CONTROL DEVICES ARE TO REMAIN IN PLACE UNTIL ALL DISTURBED AREAS ARE STABILIZED AND THE ENGINEER APPROVES THEIR REMOVAL. GROUND CONTOURS SHALL BE RETURNED TO THEIR ORIGINAL CONDITION UNLESS SPECIFICALLY APPROVED OTHERWISE BY THE ENGINEER.
7. SYNTHETIC PRODUCTS THAT HAVE BEEN APPROVED FOR USE ON VDOT PROJECTS AND FOUND ON VDOT'S SPEL LIST MAY BE USED IN LIEU OF THIS DESIGN. HOWEVER, VDOT WILL ONLY COMPENSATE THE CONTRACTOR UP TO THE BID PRICE PER EACH AT EACH SITE.

TYPICAL SYNTHETIC PRODUCT



VDOT ROAD AND BRIDGE STANDARDS — SHEET 1 OF 1 — REVISION DATE — 113.12

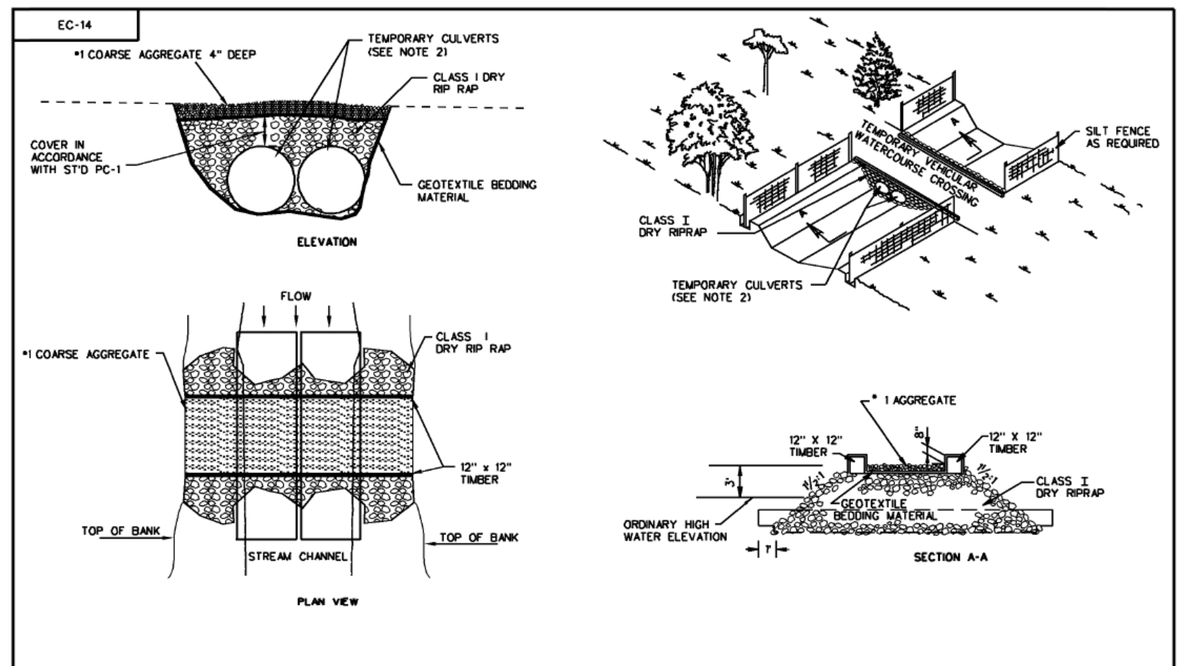
DEWATERING BASIN

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE: 107, 303

DEWATERING BAG AND DEWATERING BASIN

EC-14



NOTE:

1. THE CULVERT(S) SHALL BE SIZED TO CONVEY THE FLOW OF A TWO YEAR STORM EVENT. THE ELEVATION OF THE TWO YEAR EVENT SHALL BE AT OR BELOW THE LOWEST SURFACE ELEVATION OF THE CROSSING. THE REQUIRED HYDRAULIC OPENINGS SHOULD BE DETERMINED USING THE APPROPRIATE HYDROLOGIC/HYDRAULIC DESIGN TECHNIQUES. A TEMPORARY VEHICULAR WATERCOURSE CROSSING SHOULD ONLY BE UTILIZED WHERE THE DRAINAGE AREA IS NO GREATER THAN 1 SQUARE MILE. THE DEPTH OF STONE COVER OVER THE CULVERT(S) SHALL BE IN ACCORDANCE WITH STANDARD PC-1.

2. AN ALTERNATIVE TEMPORARY VEHICULAR WATERCOURSE CROSSING DESIGN MAY BE USED PROVIDED IT IS SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL IN ACCORDANCE WITH ROAD AND BRIDGE SPECIFICATIONS 105.10 AND 107.02.

VDOT ROAD AND BRIDGE STANDARDS — SHEET 1 OF 1 — REVISION DATE 4/09 — 113.18

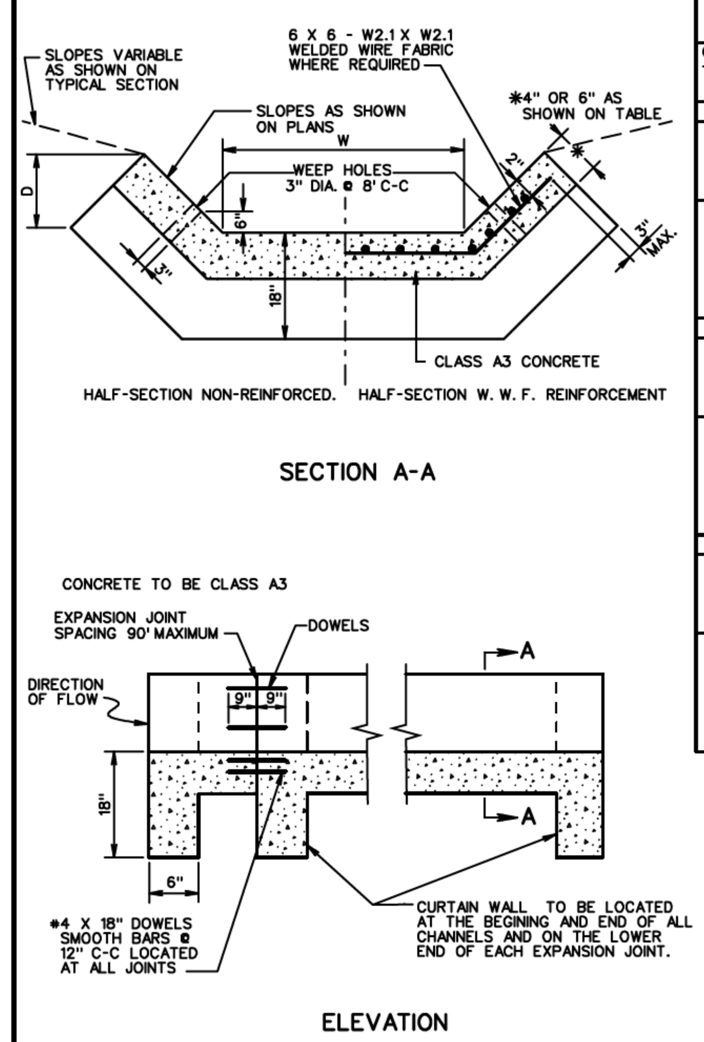
TEMPORARY VEHICULAR WATERCOURSE CROSSING

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE: 302, 303, 414

PG-5

▨ INDICATES CHANNEL WHERE WIRE MESH REINFORCEMENT IS NOT REQUIRED.



SQUARE YARDS PER LIN. FT. OF PAVED CHANNEL

CONC. THICK-NESS	D	W 1'	2'	3'	4'	5'	6'	7'	8'	9'	10'
1:1 SIDE SLOPES											
4"	1'	0.425	0.536	0.648	0.759	0.870	0.981	1.092	1.203	1.314	1.425
	2'	0.740	0.851	0.962	1.073	1.184	1.295	1.406	1.517	1.629	1.740
	3'	1.054	1.165	1.276	1.387	1.498	1.609	1.721	1.832	1.943	2.054
	4'	1.368	1.479	1.590	1.702	1.813	1.924	2.035	2.146	2.257	2.368
6"	5'	1.682	1.794	1.905	2.016	2.127	2.238	2.349	2.460	2.571	2.682
	6'	1.997	2.108	2.219	2.330	2.441	2.552	2.663	2.774	2.886	2.997
	7'	23.11	2.422	2.533	2.644	2.755	2.866	2.977	3.089	3.200	3.311
	8'	2.625	2.736	2.848	2.959	3.070	3.181	3.292	3.403	3.514	3.625
	9'	2.940	3.051	3.162	3.273	3.384	3.495	3.606	3.717	3.828	3.939
	10'	3.254	3.365	3.476	3.587	3.698	3.809	3.920	4.032	4.143	4.254
1.5:1 SIDE SLOPES											
4"	1'	0.512	0.623	0.734	0.845	0.956	1.067	1.178	1.290	1.401	1.512
	2'	0.912	1.023	1.135	1.246	1.357	1.468	1.579	1.690	1.801	1.912
	3'	1.313	1.424	1.535	1.646	1.757	1.869	1.980	2.091	2.202	2.313
	4'	1.714	1.825	1.936	2.047	2.158	2.269	2.380	2.491	2.602	2.714
6"	5'	2.114	2.225	2.336	2.448	2.559	2.670	2.781	2.892	3.003	3.114
	6'	2.515	2.626	2.737	2.848	2.959	3.070	3.181	3.293	3.404	3.515
	7'	2.915	3.027	3.138	3.249	3.360	3.471	3.582	3.693	3.804	3.915
	8'	3.316	3.427	3.538	3.649	3.760	3.872	3.983	4.094	4.205	4.316
	9'	3.717	3.828	3.939	4.050	4.161	4.272	4.383	4.494	4.606	4.717
	10'	4.117	4.228	4.340	4.451	4.562	4.673	4.784	4.895	5.006	5.117
2:1 SIDE SLOPES											
4"	1'	0.608	0.719	0.830	0.941	1.052	1.164	1.275	1.386	1.497	1.608
	2'	1.105	1.216	1.327	1.438	1.549	1.660	1.772	1.883	1.994	2.105
	3'	1.602	1.713	1.824	1.935	2.046	2.157	2.268	2.380	2.491	2.602
	4'	2.099	2.210	2.321	2.432	2.543	2.654	2.765	2.876	2.988	3.099
6"	5'	2.596	2.707	2.818	2.929	3.040	3.151	3.262	3.373	3.485	3.596
	6'	3.093	3.204	3.315	3.426	3.537	3.648	3.759	3.870	3.981	4.093
	7'	3.589	3.701	3.812	3.923	4.034	4.145	4.256	4.367	4.478	4.589
	8'	4.086	4.197	4.309	4.420	4.531	4.642	4.753	4.864	4.975	5.086
	9'	4.583	4.694	4.805	4.917	5.028	5.139	5.250	5.361	5.472	5.583
	10'	5.080	5.191	5.302	5.413	5.525	5.636	5.747	5.858	5.969	6.080

NOTES:
DEPTH (D) AND WIDTH (W) TO BE AS SHOWN ON PLANS.
WEEP HOLES ARE TO BE PROVIDED ON ALL CHANNELS WHERE W IS EQUAL TO OR GREATER THAN 4' AND D IS EQUAL TO OR GREATER THAN 2'.
WEEP HOLE WITH 12" X 12" PLASTIC HARDWARE CLOTH, 1/4" MESH OR GALVANIZED STEEL WIRE DIAMETER 0.03 INCH, NUMBER 4 MESH, HARDWARE CLOTH ANCHORED FIRMLY TO THE BOTTOM OF THE CHANNEL.

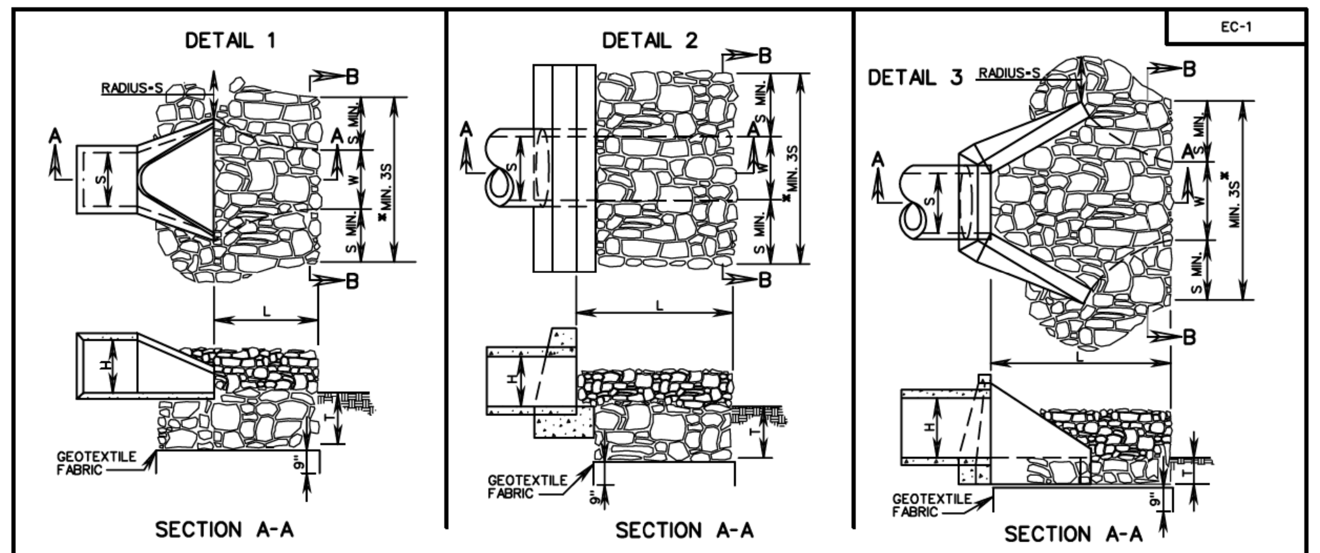
VDOT ROAD AND BRIDGE STANDARDS — SHEET 1 OF 1 — REVISION DATE — 109.04

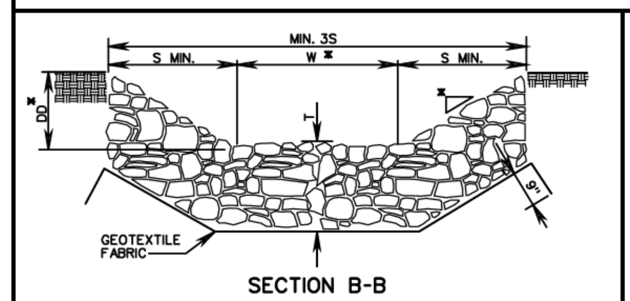
STANDARD PAVED DITCHES

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE: 502

EC-1





TYPE OF OUTLET PROTECTION MATERIAL		MAXIMUM OUTLET VELOCITY (FOR DESIGN STORM)	MINIMUM "T" (INCHES)
CLASS A1	CLASS A1 DRY RIPRAP	8 fps	18
CLASS I	CLASS I DRY RIPRAP	14 fps	24
CLASS II	CLASS II DRY RIPRAP	19 fps	36

NOTES:

1. FOR MULTIPLE LINE INSTALLATIONS, DIMENSION S IS TO GOVERN THE PROTECTION OUTSIDE THE CHANNEL WIDTH (W).
2. ON ANY INSTALLATION REQUIRING CULVERT OUTLET PROTECTION WHERE NO ENDWALL OR ENDSECTION IS SPECIFIED ON THE PLANS, CONSTRUCTION IS TO BE IN ACCORDANCE WITH DETAIL 2 SHOWN ABOVE.
3. GEOTEXTILE FABRIC TO BE INSTALLED UNDER CLASS A1, I, AND II MATERIALS IN ACCORDANCE WITH THE SPECIFICATIONS.
4. S = DIAMETER OF CIRCULAR CULVERT OR SPAN FOR BOX, ELLIPTICAL OR ARCH CULVERT. H = DIAMETER OF CIRCULAR CULVERT OR RISE/HEIGHT FOR BOX, ELLIPTICAL OR ARCH CULVERT.

* USE TYPICAL SECTION SHOWN ON PLANS FOR SIDE SLOPE, BOTTOM WIDTH AND DEPTH OF CHANNEL OR MATCH EXISTING DITCH OR NATURAL GROUND.

OUTLET PROTECTION MINUMUM LENGTH (L)	
TYPE A INSTALLATION	3H
TYPE B INSTALLATION	5H

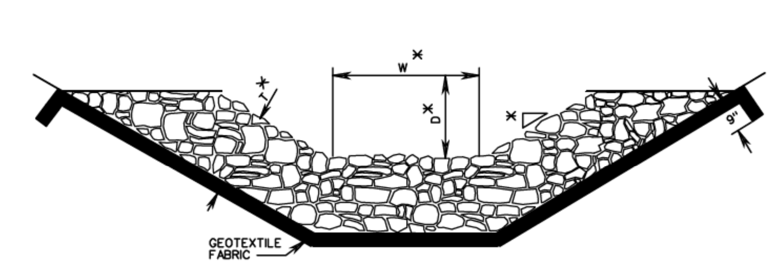
SPECIFICATION REFERENCE: 204, 245, 303, 414

CULVERT OUTLET PROTECTION

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT ROAD AND BRIDGE STANDARDS — REVISION DATE — SHEET 1 OF 1 — 113.01

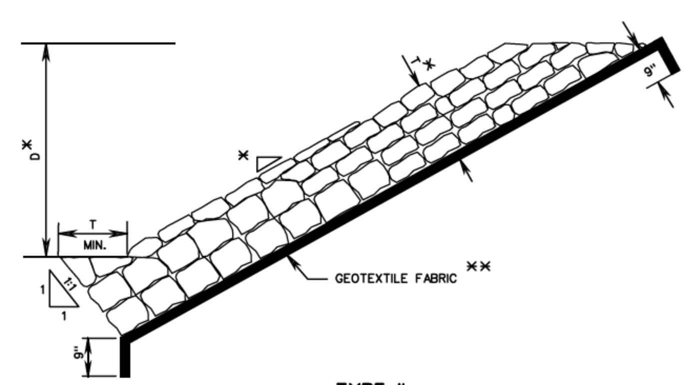
PG-3



TYPE I
RIPRAP DITCH PROTECTION

MINIMUM THICKNESS "T"

RIP RAP CLASS	MINIMUM "T"
CLASS AI	20"
CLASS I	26"
CLASS II	38"
CLASS III	53"



TYPE II
RIPRAP SLOPE PROTECTION

NOTES:

** RIP RAP BEDDING MATERIAL

GEOTEXTILE FABRIC TO BE PROVIDED UNDER ALL RIPRAP INSTALLATIONS CLASS AI, CLASS I AND CLASS II UNLESS OTHERWISE NOTED ON THE PLANS OR DIRECTED BY THE ENGINEER.

RIPRAP INSTALLATIONS OF CLASS III SHALL HAVE AN INTERMEDIATE AGGREGATE BEDDING LAYER(S) AS SPECIFIED ON THE PLANS BASED ON GEOTECHNICAL RECOMMENDATIONS.

* SEE TYPICAL SECTION SHOWN ON PLANS FOR SIDE SLOPE, BOTTOM WIDTH AND DEPTH OF CHANNEL AND RIPRAP THICKNESS.

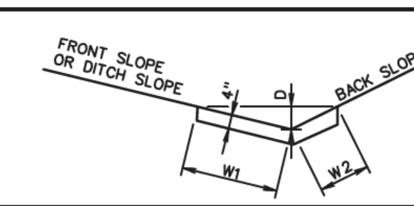
VDOT ROAD AND BRIDGE STANDARDS — SHEET 1 OF 1 — REVISION DATE — 109.02

STANDARD RIP RAP DITCH & SLOPE PROTECTION PG-3

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE: 245, 414

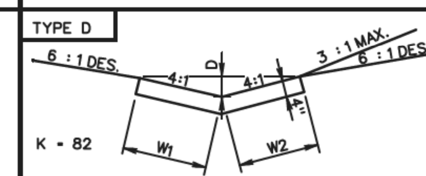
OUTSIDE ROAD DITCHES



TYPE	D	FRONT SLOPE	BACK SLOPE	W1	W2	K	SQ. YDS. SURFACE AREA/LIN. FT.
A1	6"	6:1	4:1	3'-0"	2'-1"	48	0.565
A1	8"	6:1	4:1	4'-1"	2'-9"	104	0.759
A2	6"	6:1	3:1	3'-0"	1'-7"	42	0.509
A2	8"	6:1	3:1	4'-1"	2'-1"	92	0.685
A3	6"	6:1	2:1	3'-0"	1'-2"	38	0.463
A3	8"	6:1	2:1	4'-1"	1'-6"	82	0.620
B1	6"	4:1	4:1	2'-1"	2'-1"	38	0.463
B1	8"	4:1	4:1	2'-9"	2'-9"	82	0.611
B2	8"	4:1	3:1	2'-9"	2'-1"	72	0.537
B2	10"	4:1	3:1	3'-5"	2'-8"	130	0.676
B3	8"	4:1	2:1	2'-9"	1'-6"	60	0.472
B3	10"	4:1	2:1	3'-5"	1'-10"	111	0.583
B4	8"	4:1	1½:1	2'-9"	1'-2"	55	0.435
B4	10"	4:1	1½:1	3'-5"	1'-6"	101	0.546
C1	8"	3:1	2:1	2'-1"	1'-6"	50	0.398
C1	10"	3:1	2:1	2'-8"	1'-10"	92	0.500
C2	10"	3:1	1½:1	2'-8"	1'-6"	80	0.463
C3	10"	3:1	1:1	2'-8"	1'-2"	70	0.426

MEDIAN DITCH

TYPE D

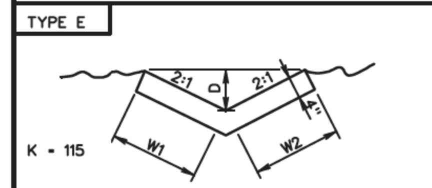


K = 82

D = DEPTH	W_1	W_2	SQ. YDS. SURFACE AREA PER LIN. FT
8"	2'-9"	2'-9"	0.611

DITCH AT TOE OF FILL OR TOP OF CUT

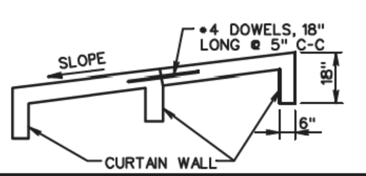
TYPE E



K = 115

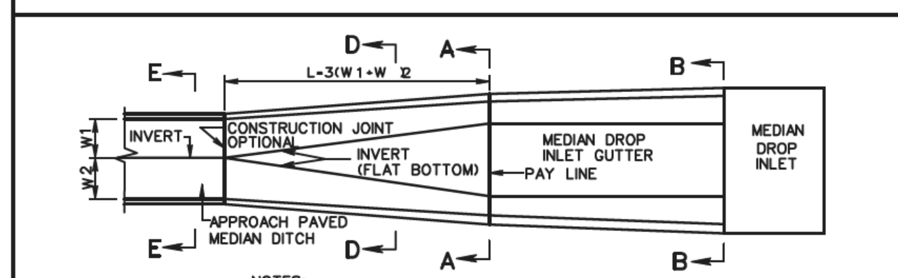
D = DEPTH	W_1	W_2	SQ. YDS. SURFACE AREA PER LIN. FT
12"	2'-3"	2'-3"	0.500

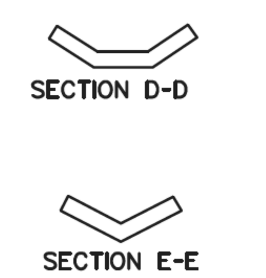
CURTAIN WALL DETAIL



CURTAIN WALL TO BE LOCATED AT BEGINNING AN END OF ALL CHANNELS AND ON THE LOWER END OF EACH EXPANSION JOINT.

PLAN FOR TRANSITION OF PAVED MEDIAN DITCH TO MEDIAN DROP INLET GUTTER





NOTES:
FOR SECTION A-A AND B-B SEE STANDARDS DI-7, 7A AND 7B.
TRADITIONAL PORTION OF PAVED DITCH TO BE PAID FOR AT THE SAME PRICE BID PER SQ. YARD FOR APPROACH PAVED MEDIAN DITCH.
STANDARD PG-2A DITCHES TO BE CLASS A3 CONCRETE.

ALTERNATE METHOD OF FORMING DITCHES

NOTE:
ALL DITCHES MAY BE CONSTRUCTED WITH VERTICAL SIDES AT THE OPTION OF THE CONTRACTOR.

SPECIFICATION REFERENCE: 502

STANDARD PAVED DITCHES

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT ROAD AND BRIDGE STANDARDS — REVISION DATE — SHEET 1 OF 1 — 109.01

AFC DATE: 06/19/2014
NDC NO.11: 09/22/2014

PROJECT	SHEET NO.
0001-029-001	1G(8)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

STORM DRAINAGE DESCRIPTIONS

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	I	0001-029-001 P101, R201, C501	1H(8)

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

A. Morton Thomas & Assoc.
Chantilly, Virginia
(HYDRAULIC DISCIPLINE)

Plan Sheet No.22 (Cont'd)

22-5 — 22-6: 154'- 36" Storm Sewer Pipe Req'd.(8' Cover)
Inv.(In) 101.00 Inv.(Out) 99.44

22-13 — 22-5: 209'- 30" Storm Sewer Pipe Req'd.(7' Cover)
Inv.(In) 109.00 Inv.(Out) 106.50

22-6: 12.02 Lin.Ft.St'd MH-1 or MH-2 Req'd
1 St'd MH-1 Frame & Cover Req'd
Inv.=98.67
1 St'd SL-1 Req'd

22-7: 8.75 Lin.Ft.St'd MH-1 or MH-2 Req'd
1 St'd MH-1 Frame & Cover Req'd
Inv.=106.11
1 St'd SL-1 Req'd

22-7 — 22-6: 137'- 36" Storm Sewer Pipe Req'd.(9' Cover)
Inv.(In) 106.11 Inv.(Out) 105.00

22-8: 1 Modified DI-7B Req'd.Grate A Type III Req'd.
H=4.7' Inv.=106.46
Use 60" Diameter MH as Base

22-8 — 22-7: 24'- 36" Storm Sewer Pipe Req'd.(6' Cover)
Inv.(In) 106.46 Inv.(Out) 106.21

22-9: 1 St'd DI-3B (Type A Nose) Req'd
L=12', H=4.2' Inv.=108.00
Connect UD-4 to DI

22-9 — 22-2: 284'- 18" Storm Sewer Pipe Req'd.(3 Cover)
Inv.(In) 108.00 Inv.(Out) 102.20

22-11 — 22-9: 295'- 15" Storm Sewer Pipe Req'd.(3' Cover)
Inv.(In) 117.00 Inv.(Out) 108.71

22-10: 1 St'd DI-3B (Type A Nose) Req'd
L=10', H=5.3' Inv.=114.10
Connect UD-4 to DI

22-10 — 22-3: 220'- 18" Storm Sewer Pipe Req'd.(5' Cover)
Inv.(In) 114.10 Inv.(Out) 109.30

23-1 — 22-10: 161'- 18" Storm Sewer Pipe Req'd.(4' Cover)
Inv.(In) 117.75 Inv.(Out) 114.90

22-11: 1 St'd DI-3B (Type A Nose) Req'd
L=10', H=4.3' Inv.=117.00
Connect UD-4 to DI

23-3 — 22-11: 294'- 15" Storm Sewer Pipe Req'd.(3' Cover)
Inv.(In) 125.30 Inv.(Out) 117.84

22-12: 1 St'd DI-7B Req'd.Grate A Type III Req'd.
H=4.2' Inv.=115.50

22-12 — 22-13: 219'- 24" Storm Sewer Pipe Req'd.(7' Cover)
Inv.(In) 115.50 Inv.(Out) 111.90

22-13: 9.28 Lin.Ft.St'd MH-1 or MH-2 Req'd
1 St'd MH-1 Frame & Cover Req'd
Inv.=109.00

Plan Sheet No.23

23-1: 1 St'd DI-3B (Type A Nose) Req'd
L=10', H=5.2' Inv.=117.75
Connect UD-1 to DI

23-2 — 23-1: 198'- 15" Storm Sewer Pipe Req'd.(4' Cover)
Inv.(In) 123.20 Inv.(Out) 118.75

23-2: 1 St'd DI-3B (Type A Nose) Req'd
L=12', H=4.6' Inv.=123.20
Connect UD-4 to DI

23-4 — 23-2: 287'- 15" Storm Sewer Pipe Req'd.(3' Cover)
Inv.(In) 130.30 Inv.(Out) 123.30

23-3: 1 St'd DI-3B (Type A Nose) Req'd
L=10', H=4.1' Inv.=125.30
Connect UD-4 to DI

23-5 — 23-3: 299'- 15" Storm Sewer Pipe Req'd.(3' Cover)
Inv.(In) 131.90 Inv.(Out) 125.95

23-4: 1 St'd DI-3B (Type A Nose) Req'd
L=12', H=4.5' Inv.=130.30
Connect UD-4 to DI

24-1 — 23-4: 283'- 15" Storm Sewer Pipe Req'd.(4' Cover)
Inv.(In) 136.40 Inv.(Out) 130.40

23-5: 1 St'd DI-3B (Type A Nose) Req'd
L=12', H=5.7' Inv.=131.90
Connect UD-4 to DI

24-2A — 23-5: 277'- 15" Storm Sewer Pipe Req'd.(6' Cover)
Inv.(In) 136.40 Inv.(Out) 132.60

Plan Sheet No.24

24-1: 1 St'd DI-3B (Type A Nose) Req'd
L=10', H=5.2' Inv.=136.40
Connect UD-1 to DI

24-2 — 24-2A: 74'- 15" Storm Sewer Pipe Req'd.(6' Cover)
Inv.(In) 137.20 Inv.(Out) 136.50

24-2: 1 St'd DI-3B (Type A Nose) Req'd
L=12', H=6.8' Inv.=137.20
Connect UD-4 to DI

24-2A: 7.0 Lin.Ft.St'd MH-1 or MH-2 Req'd
1 St'd MH-1 Frame & Cover Req'd
Inv.=136.40

24-3: 1 St'd DI-3B (Type A Nose) Req'd
L=10', H=4.1' Inv.=140.15
Connect UD-4 to DI

24-3 — 24-4: 117'- 15" Storm Sewer Pipe Req'd.(3' Cover)
Inv.(In) 140.15 Inv.(Out) 139.35

24-4: 1 St'd DI-3B (Type A Nose) Req'd
L=10', H=4.1' Inv.=139.25
Connect UD-4 to DI

24-4 — 24-5: 70'- 15" Storm Sewer Pipe Req'd.(4' Cover)
Inv.(In) 139.25 Inv.(Out) 138.41

24-5: 1 St'd DI-3B (Type A Nose) Req'd
L=8', H=4.6' Inv.=138.26
Connect UD-4 to DI

24-5 — 25-3: 238'- 15" Storm Sewer Pipe Req'd.(4' Cover)
Inv.(In) 138.26 Inv.(Out) 135.61

Plan Sheet No.24 (Cont'd)

24-6: 1 St'd DI-7 Req'd Grate A Type III Req'd.
H=3.28' Inv.=129.97
Connect to Existing RCP

24-7: 1 St'd 15" ES-1 Req'd
Inv.=139.90

24-7 — 24-6: 224'- 15" Storm Sewer Pipe Req'd.(7' Cover)
Inv.(In) 139.90 Inv.(Out) 130.07

24-8: 1 St'd DI-3B (Type A Nose) Req'd
L=6', H=4.5', Inv.=139.90
Connect UD-4 to DI

24-8 — 24-2: 176'- 15" Storm Sewer Pipe Req'd.(6' Cover)
Inv.(In) 139.90 Inv.(Out) 137.30

Plan Sheet No.25

25-1: 1 St'd DI-3B (Type A Nose) Req'd
L=10', H=4.2' Inv.=138.00
Connect UD-4 to DI

25-1 — 25-2: 87'- 15" Storm Sewer Pipe Req'd.(5' Cover)
Inv.(In) 138.00 Inv.(Out) 137.10

25-2: 1 St'd DI-3B (Type A Nose) Req'd
L=8', H=5.8' Inv.=136.30
Connect UD-4 to DI

25-2 — 25-3: 88'- 15" Storm Sewer Pipe Req'd.(5' Cover)
Inv.(In) 136.30 Inv.(Out) 135.61

25-4 — 25-2: 99'- 15" Storm Sewer Pipe Req'd.(4' Cover)
Inv.(In) 136.94 Inv.(Out) 136.40

25-3: 1 St'd DI-3B (Type A Nose) Req'd
L=8', H=5.1' Inv.=135.51
Connect UD-4 to DI

25-3 — 25-5: 209'- 24" Storm Sewer Pipe Req'd.(3' Cover)
Inv.(In) 135.51 Inv.(Out) 133.52

25-4: 1 St'd DI-3B (Type A Nose) Req'd
L=6', H=4.1' Inv.=136.94
Connect UD-4 to DI

25-5: 1 St'd DI-3B (Type A Nose) Req'd
L=6', H=5.0' Inv.=133.42
Connect UD-4 to DI

25-5 — 25-6: 175'- 24" Storm Sewer Pipe Req'd.(3' Cover)
Inv.(In) 133.42 Inv.(Out) 131.56

25-6: 1 St'd DI-3B (Type A Nose) Req'd
L=8', H=6.4' Inv.=130.15
Connect UD-1 to DI

25-6 — 26-1: 189'- 24" Storm Sewer Pipe Req'd.(4' Cover)
Inv.(In) 130.15 Inv.(Out) 128.70

25-7: 1 St'd DI-3B (Type A Nose) Req'd
L=8', H=4.8' Inv.=134.50
Connect UD-4 to DI

25-7 — 25-8: 237'- 15" Storm Sewer Pipe Req'd.(4' Cover)
Inv.(In) 134.50 Inv.(Out) 131.80

25-10 — 25-7: 63'- 15" Storm Sewer Pipe Req'd.(5' Cover)
Inv.(In) 135.50 Inv.(Out) 134.60

Plan Sheet No.25 (Cont'd)

25-8: 1 St'd DI-3B (Type A Nose) Req'd
L=10', H=5.0' Inv.=131.70

25-8 — 26-3: 169'- 15" Storm Sewer Pipe Req'd.(3' Cover)
Inv.(In) 131.70 Inv.(Out) 128.80

25-9: 1 St'd DI-3B (Type A Nose) Req'd
L=4', H=4.0' Inv.=137.00
Connect UD-4 to DI

25-9 — 25-10: 78'- 15" Storm Sewer Pipe Req'd.(5' Cover)
Inv.(In) 137.00 Inv.(Out) 136.00

25-10: 1 St'd DI-3B (Type A Nose) Req'd
L=6', H=5.1' Inv.=135.50
Connect UD-4 to DI

Plan Sheet No.34

34-1: 1 St'd DI-7 Req'd.Grate A Type III Req'd.
H=4.2' Inv.=22.80
1 St'd IS-1 Req'd.

34-1 — 34-2: 240'- 15" Storm Sewer Pipe Req'd.(4' Cover)
Inv.(In) 22.80 Inv.(Out) 19.23

34-2: 5.35 Lin.Ft.St'd MH-1 or MH-2 Req'd
1 St'd MH-1 Frame & Cover Req'd
Inv.=19.13
1 St'd IS-1 Req'd.
Connect to Existing RCP

Notes:

In accordance with 2007 VDOT Standard Specifications 302.03(a)2.b. and 2008 VDOT Road and Bridge Standards PB-1 bedding material for drainage pipe and culvert foundations, including foundations in soft, yielding or unsuitable material shall consist of No.25 or 26 aggregate except where standing or running water is present in the pipe foundation excavation, then pipe bedding material shall be No.57. The bedding material shall be uniformly compacted and shall be at least 4 inches in depth. Furthermore, the bedding material shall contact at least 10 percent of the overall height of the pipe. The backfill shall be installed to prevent the migration of fines where located at or near the groundwater table. Geotextile such as Mirafi 140N (or equal) may be considered as an alternative to prevent the migration of these fines. These bedding recommendations are applicable to all pipe and culvert locations.

Backfill around drainage pipe and culverts shall be placed in such a way as to prevent damage to the pipe and culvert. The use of heavy vibratory rollers should not be permitted until a minimum of 3 ft of backfill has been placed and compacted with the use of light compaction equipment over the pipe.

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIFFORD, A.MORTON THOMAS & ASSOC.

STORM DRAINAGE DESCRIPTIONS

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001	IH(9)

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

A. Morton Thomas & Assoc. Chantilly, Virginia (ROADWAY DISCIPLINE)

A. Morton Thomas & Assoc. Chantilly, Virginia (HYDRAULIC DISCIPLINE)

Plan Sheet No. 26

26-1
1 St'd DI-3B (Type A Nose) Req'd
L=8', H=6.1' Inv.=128.60

26-1 — 26-16
110' - 24" Storm Sewer Pipe Req'd (3' Cover)
Inv.(In) 128.60 Inv.(Out) 127.72

26-2
1 St'd DI-3B (Type A Nose) Req'd
L=8', H=6.8' Inv.=127.02
1 St'd IS-1 Req'd.
Connect UD-4 to DI

26-2 — 26-9
89' - 24" Storm Sewer Pipe Req'd.(4' Cover)
Inv.(In) 127.02 Inv.(Out) 126.31

26-3
1 St'd DI-3B (Type A Nose) Req'd
L=12', H=6.2' Inv.=128.70
Connect UD-4 to DI

26-3 — 26-12
167' - 18" Storm Sewer Pipe Req'd.(4' Cover)
Inv.(In) 128.70 Inv.(Out) 127.20

26-4
1 St'd DI-3B (Type A Nose) Req'd
L=8', H=6.4' Inv.=125.20
1 St'd IS-1 Req'd.
Connect UD-4 to DI

26-4 — 26-13
132' - 30" Storm Sewer Pipe Req'd.(4' Cover)
Inv.(In) 125.20 Inv.(Out) 124.16

26-5
1 St'd DI-3C (Type A Nose) Req'd.
L=16', H=6.8' Inv.=123.51
1 St'd IS-1 Req'd.
Connect UD-4 to DI

26-5 — 26-8
61' - 30" Storm Sewer Pipe Req'd.(4' Cover)
Inv.(In) 123.51 Inv.(Out) 122.98

26-6
1 St'd DI-3B (Type A Nose) Req'd
L=10', H=4.9' Inv.=124.80

26-6 — 26-14
64' - 15" Storm Sewer Pipe Req'd.(2' Cover)
Inv.(In) 124.80 Inv.(Out) 124.05

26-7
1 St'd DI-3B (Type A Nose) Req'd
L=12', H=4.2' Inv.=126.55

26-7 — 26-6
136' - 15" Storm Sewer Pipe Req'd.(3' Cover)
Inv.(In) 126.55 Inv.(Out) 124.90

26-14 — 26-8
79' - 15" Storm Sewer Pipe Req'd.(5' Cover)
Inv.(In) 123.95 Inv.(Out) 122.88

26-8
1 St'd DI-4B (Type A Nose) Req'd
L=6', H=7.7' Inv.=122.78
1 St'd IS-1 Req'd.
Connect UD-4 to DI

26-8 — 26-15
54' - 36" Storm Sewer Pipe Req'd.(5' Cover)
Inv.(In) 122.78 Inv.(Out) 122.50

26-9
1 St'd DI-3B (Type A Nose) Req'd
L=8', H=6.3' Inv.=126.21
1 St'd IS-1 Req'd.
Connect UD-4 to DI

26-12 — 26-9
94' - 18" Storm Sewer Pipe Req'd.(3' Cover)
Inv.(In) 127.10 Inv.(Out) 126.31

26-9 — 26-4
114' - 30" Storm Sewer Pipe Req'd.(3' Cover)
Inv.(In) 126.21 Inv.(Out) 125.30

26-10
61 Lin.Ft. St'd MH-1 or MH-2 Req'd
1 St'd MH-1 Frame & Cover Req'd
Inv.=122.15
1 St'd IS-1 Req'd.

26-10 — 26-11
60' - 36" Storm Sewer Pipe Req'd.(5' Cover)
Inv.(In) 122.14 Inv.(Out) 121.90

Plan Sheet No. 26 (Cont'd)

26-11
1 St'd 36" ES-1 Req'd
Inv.=121.90
8 Cu.Yds. St'd. EC-1 Class A1 Req'd. Type B Installation

26-12
1 St'd DI-3B (Type A Nose) Req'd
L=8', H=5.8' Inv.=127.10
Connect UD-4 to DI

26-13
1 St'd DI-3B (Type A Nose) Req'd
L=8', H=6.3' Inv.=124.06
1 St'd IS-1 Req'd.
Connect UD-4 to DI

26-13 — 26-5
55' - 30" Storm Sewer Pipe Req'd.(5' Cover)
Inv.(In) 124.06 Inv.(Out) 123.61

26-14
1 St'd DI-3C (Type A Nose) Req'd
L=8', H=5.5' Inv.=123.95

27-1 — 26-14
70' - 15" Storm Sewer Pipe Req'd.(5' Cover)
Inv.(In) 125.45 Inv.(Out) 124.05

26-15
1 St'd DI-4BB (Type A Nose) Req'd
L=6', H=9.2' Inv.=122.40
1 St'd IS-1 Req'd.

26-15 — 26-10
30' - 36" Storm Sewer Pipe Req'd.(5' Cover)
Inv.(In) 122.40 Inv.(Out) 122.25

26-16
1 St'd DI-3B (Type A Nose) Req'd
L=6', H=7.1' Inv.=127.62

26-16 — 26-2
63' - 24" Storm Sewer Pipe Req'd.(5' Cover)
Inv.(In) 127.62 Inv.(Out) 127.12

Plan Sheet No. 27

27-1
1 St'd DI-3B (Type A Nose) Req'd
L=6', H=4.1' Inv.=125.45

27-2
1 St'd DI-3B (Type A Nose) Req'd
L=12', H=4.2' Inv.=124.20
Connect UD-4 to DI

27-2 — 27-3
91' - 15" Storm Sewer Pipe Req'd.(3' Cover)
Inv.(In) 124.20 Inv.(Out) 122.30

27-3
1 St'd DI-3B (Type A Nose) Req'd
L=8', H=5.3' Inv.=122.20

27-3 — 27-4
147' - 15" Storm Sewer Pipe Req'd.(3' Cover)
Inv.(In) 122.20 Inv.(Out) 117.80

27-4
1 St'd DI-3B (Type A Nose) Req'd
L=10', H=5.3' Inv.=116.30

27-4 — 27-6
135' - 15" Storm Sewer Pipe Req'd.(3' Cover)
Inv.(In) 116.30 Inv.(Out) 110.70

27-5
1 St'd DI-3B (Type A Nose) Req'd
L=10', H=4.0' Inv.=120.60
Connect UD-4 to DI

27-5 — 27-4
84' - 15" Storm Sewer Pipe Req'd.(3' Cover)
Inv.(In) 120.60 Inv.(Out) 117.80

27-6
1 St'd DI-3BB (Type A Nose) Req'd
L=12', H=4.0' Inv.=103.79

Plan Sheet No. 27 (Cont'd)

27-7 — 27-6
79' - 15" Storm Sewer Pipe Req'd.(3' Cover)
Inv.(In) 113.45 Inv.(Out) 110.40

27-7
1 St'd DI-3B (Type A Nose) Req'd
L=10', H=4.0' Inv.=113.45
Connect UD-4 to DI

27-6 — 27-8
167' - 15" Storm Sewer Pipe Req'd.(3' Cover)
Inv.(In) 103.79 Inv.(Out) 100.45

27-8
1 St'd DI-3BB (Type A Nose) Req'd
L=14', H=12.3' Inv.=91.64
1 St'd SL-1 Req'd.
1 St'd IS-1 Req'd.

27-8 — 28-1
197' - 18" Storm Sewer Pipe Req'd.(4' Cover)
Inv.(In) 91.64 Inv.(Out) 87.70

27-9
1 St'd DI-3B (Type A Nose) Req'd
L=12', H=4.0' Inv.=103.30
Connect UD-4 to DI

27-9 — 27-8
69' - 15" Storm Sewer Pipe Req'd.(3' Cover)
Inv.(In) 103.30 Inv.(Out) 100.60

27-10
1 St'd DI-3B (Type A Nose) Req'd
L=14', H=10.4' Inv.=104.69

27-10 — 27-9
41' - 15" Storm Sewer Pipe Req'd.(3' Cover)
Inv.(In) 104.69 Inv.(Out) 103.50

27-11
1 St'd DI-3B (Type A Nose) Req'd
L=6', H=4.8' Inv.=122.70

27-11 — 26-10
47' - 15" Storm Sewer Pipe Req'd.(4' Cover)
Inv.(In) 122.70 Inv.(Out) 122.24

27-12
1 St'd DI-3B (Type A Nose) Req'd
L=6', H=3.9' Inv.=123.63

27-12 — 27-11
37' - 15" Storm Sewer Pipe Req'd.(3' Cover)
Inv.(In) 123.63 Inv.(Out) 122.80

Plan Sheet No. 28

28-1
1 St'd DI-3BB (Type A Nose) Req'd
L=14', H=13.5' Inv.=78.09
1 St'd SL-1 Req'd.
1 St'd IS-1 Req'd.

28-2 — 28-1
70' - 15" Storm Sewer Pipe Req'd.(3' Cover)
Inv.(In) 90.21 Inv.(Out) 88.10

28-2
1 St'd DI-3B (Type A Nose) Req'd
L=12', H=4.0' Inv.=90.21
Connect UD-4 to DI

28-1 — 28-3
186' - 24" Storm Sewer Pipe Req'd.(5' Cover)
Inv.(In) 78.09 Inv.(Out) 75.30

28-3
1 St'd DI-3B (Type A Nose) Req'd
L=12', H=4.7' Inv.=75.20

28-3 — 28-4
70' - 24" Storm Sewer Pipe Req'd.(5' Cover)
Inv.(In) 75.20 Inv.(Out) 74.60

28-4
1 St'd DI-3BB (Type A Nose) Req'd
L=14', H=12.3' Inv.=68.60
1 St'd SL-1 Req'd.
1 St'd IS-1 Req'd.
Connect UD-4 to DI

Plan Sheet No. 28 (Cont'd)

28-4 — 28-11
177' - 24" Storm Sewer Pipe Req'd.(5' Cover)
Inv.(In) 68.60 Inv.(Out) 65.70

28-5
1 St'd DI-3BB (Type A Nose) Req'd
L=10', H=12.0' Inv.=58.50
1 St'd IS-1 Req'd.

28-5 — 29-1
157' - 30" Storm Sewer Pipe Req'd.(5' Cover)
Inv.(In) 58.50 Inv.(Out) 56.15

28-6
251' - 60" Storm Sewer Pipe Req'd.(5' Cover)
(30° Skew)
6" Countersink Inv.(In) 48.00 Inv.(Out) 35.30
Connect Through Retaining Wall
1 - Modified EW-7S
42 Cu.Yds. St'd EC-1 Class II Req'd. Type B Installation
1005 Cu.Yds. Minor Structure Excavation

Culvert bedding shall consist of 12 inches of No.2 aggregate wrapped in woven subgrade geotextile fabric, and topped with 6 inches of No.25 or 26 aggregate. This should extend 3 ft on either side of the pipe.

28-8 — 28-8A
52' - 30" Gasketed Concrete Pipe Req'd.(5' Cover)
Inv.(In) 34.40 Inv.(Out) 34.20
O Ring Pipe with Concrete Cradle Req'd.

28-8A
41 Lin.Ft. St'd MH-1 or MH-2 Req'd
1 St'd MH-1 Frame & Cover Req'd
Inv.=34.20
1 St'd IS-1 Req'd

28-8A — 28-7
16' - 30" Gasketed Concrete Pipe Req'd.(5' Cover)
Inv.(In) 34.20 Inv.(Out) 34.00
O Ring Pipe with Concrete Cradle Req'd.

28-7
1 St'd 30" ES-1
Inv.=34.00
3 Cu.Yds. St'd EC-1 Class A1 Req'd.
Type A Installation

28-8
4.6 St'd. SWM-1 Req'd.
30" Dia. Inv.(Out) 34.40
2.5" Dia. Water Quality Orifice Req'd., Inv. 36.00
60" Dia. Riser Top Req'd. Inv. 39.00
1 St'd IS-1 Req'd

28-9
1 St'd DI-3B (Type A Nose) Req'd
L=10', H=4.0' Inv.=60.60

28-9 — 28-10
76' - 15" Storm Sewer Pipe Req'd.(3' Cover)
Inv.(In) 60.60 Inv.(Out) 57.98

28-10
1 St'd DI-3B (Type A Nose) Req'd
L=10', H=4.0' Inv.=57.88
Connect UD-4 to DI

28-10 — 29-1
69' - 15" Storm Sewer Pipe Req'd.(3' Cover)
Inv.(In) 57.88 Inv.(Out) 57.00

SCALE
0 25' 50'

PROJECT	SHEET NO.
001-029-001	IH(9)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGN BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

STORM DRAINAGE DESCRIPTIONS

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001	1H(10)

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

A. Morton Thomas & Assoc. Chantilly, Virginia (ROADWAY DISCIPLINE)

A. Morton Thomas & Assoc. Chantilly, Virginia (HYDRAULIC DISCIPLINE)

Plan Sheet No. 28 (Cont'd)

28-11: 1 St'd DI-3B (Type A Nose) Req'd
L=16', H=4.8' Inv.=65.60
1 St'd IS-1 Req'd.

28-11 — 28-5: 41'- 24" Storm Sewer Pipe Req'd.(5' Cover)
Inv.(In) 65.60 Inv.(Out) 65.19

28-12: 1 St'd DI-7 Req'd Grate A Type III Req'd.
H=4.3' Inv.=49.73

28-12 — 28-13: 40'- 15" Storm Sewer Pipe Req'd.(3' Cover)
Inv.(In) 49.73 Inv.(Out) 49.34

28-13: 1 St'd DI-7 Req'd Grate A Type III Req'd.
H=5.0' Inv.=49.24

28-13 — 28-14: 128'- 18" Storm Sewer Pipe Req'd.(3' Cover)
Inv.(In) 49.24 Inv.(Out) 48.60

28-14: 1 St'd 18" ES-1
Inv.=48.60
1 Cu.Yds. St'd EC-1 Class AI Req'd.
Type A Installation

Plan Sheet No. 29

29-1: 1 St'd DI-3BB (Type A Nose) Req'd
L=12', H=9.7' Inv.=51.40
1 St'd IS-1 Req'd.

29-1 — 29-2: 173'- 30" Storm Sewer Pipe Req'd.(7' Cover)
Inv.(In) 51.40 Inv.(Out) 49.00

29-2: 1 St'd DI-3B (Type A Nose) Req'd
L=10', H=6.9' Inv.=47.00
1 St'd IS-1 Req'd.

29-3 — 29-2: 83'- 15" Storm Sewer Pipe Req'd.(3' Cover)
Inv.(In) 52.40 Inv.(Out) 50.40

29-3: 1 St'd DI-3B (Type A Nose) Req'd
L=14', H=4.0' Inv.=52.40
Connect UD-4 to DI

29-2 — 29-4: 46'- 30" Storm Sewer Pipe Req'd.(5' Cover)
Inv.(In) 47.00 Inv.(Out) 46.60

29-4: 10.0 Lin.Ft. St'd MH-1 or MH-2 Req'd
1 St'd MH-1 Frame & Cover Req'd
Inv.=41.50
1 St'd IS-1 Req'd.

29-4 — 29-5: 89'- 30" Storm Sewer Pipe Req'd.(8' Cover)
Inv.(In) 41.50 Inv.(Out) 40.50

29-5: 1 St'd 30" ES-1 Req'd
Inv.=40.50
5 Cu.Yds. St'd.EC-1 Class I Req'd.Type A Installation
1 St'd IS-1 Req'd.

29-6: 1 St'd DI-3B (Type A Nose) Req'd
L=12', H=4.3' Inv.=47.48
Connect UD-4 to DI

29-6 — 29-11: 69'- 15" Storm Sewer Pipe Req'd.(3' Cover)
Inv.(In) 47.48 Inv.(Out) 46.10

29-11 — 29-7: 187'- 15" Storm Sewer Pipe Req'd.(3' Cover)
Inv.(In) 46.00 Inv.(Out) 40.69

29-7: 1 St'd DI-3B (Type A Nose) Req'd
L=8', H=5.7' Inv.=39.69
Connect UD-4 to DI

29-7 — 29-8: 154'- 15" Storm Sewer Pipe Req'd.(3' Cover)
Inv.(In) 39.69 Inv.(Out) 38.00

29-8: 1 St'd DI-3B (Type A Nose) Req'd
L=8', H=6.9' Inv.=35.90

29-8 — 30-1: 228'- 15" Storm Sewer Pipe Req'd.(3' Cover)
Inv.(In) 35.90 Inv.(Out) 31.40

Plan Sheet No. 29 (Cont'd)

29-9: 1 St'd DI-3B (Type A Nose) Req'd
L=12', H=4.8' Inv.=41.40
Connect UD-4 to DI

29-9 — 29-10: 42'- 15" Storm Sewer Pipe Req'd.(3' Cover)
Inv.(In) 41.40 Inv.(Out) 41.10

29-10: 5.8 Lin.Ft. St'd MH-1 or MH-2 Req'd
1 St'd MH-1 Frame & Cover Req'd
Inv.=41.00

29-10 — 30-7: 152'- 15" Storm Sewer Pipe Req'd.(3' Cover)
Inv.(In) 41.00 Inv.(Out) 38.40

29-11: 1 St'd DI-3B (Type A Nose) Req'd
L=8', H=4.2' Inv.=46.00

Plan Sheet No. 30

30-1: 1 St'd DI-3BB (Type A Nose) Req'd
L=10', H=12.9' Inv.=22.80
1 St'd SL-1 Req'd.

30-1 — 30-4: 187'- 24" Storm Sewer Pipe Req'd.(5' Cover)
Inv.(In) 22.80 Inv.(Out) 21.70

30-2 — 30-1: 107'- 18" Storm Sewer Pipe Req'd.(4' Cover)
Inv.(In) 23.65 Inv.(Out) 22.90

30-2: 1 St'd DI-3BB (Type A Nose) Req'd
L=10', H=11.9' Inv.=23.65

30-3: 1 St'd DI-3B (Type A Nose) Req'd
L=10', H=5.0' Inv.=24.91

30-3 — 30-2: 187'- 15" Storm Sewer Pipe Req'd.(3' Cover)
Inv.(In) 24.91 Inv.(Out) 23.65

30-4: 1 St'd DI-3BB (Type A Nose) Req'd
L=10', H=8.5' Inv.=21.60

30-4 — 30-5: 77'- 24" Storm Sewer Pipe Req'd.(6' Cover)
Inv.(In) 21.60 Inv.(Out) 20.86

30-6: 10.1 Lin.Ft. St'd MH-1 or MH-2 Req'd
1 St'd MH-1 Frame & Cover Req'd
1 St'd.IS-1 Req'd
Inv.=20.13

30-5 — 30-6: 76'- 24" Storm Sewer Pipe Req'd.(6' Cover)
Inv.(In) 20.76 Inv.(Out) 20.23

30-5: 9.2 Lin.Ft. St'd MH-1 or MH-2 Req'd
1 St'd MH-1 Frame & Cover Req'd
1 St'd.IS-1 Req'd
Inv.=20.76

30-6 — 39-1: 254'- 24" Storm Sewer Pipe Req'd.(5' Cover)
Inv.(In) 20.13 Inv.(Out) 18.36

30-7: 1 St'd DI-3B (Type A Nose) Req'd
L=12', H=7.3' Inv.=34.50

30-7 — 30-2: 198'- 15" Storm Sewer Pipe Req'd.(6' Cover)
Inv.(In) 34.50 Inv.(Out) 32.00

Plan Sheet No. 35

35-1: 1 St'd DI-5 Req'd.Grate A Type III Req'd.
Std.PG-2A Type CI
H=8.9' Inv.=114.15
1 St'd IS-1 Req'd.

35-1 — 35-2: 44'- 24" Gasketed Concrete Pipe Req'd.(7' Cover)
Inv.(In) 114.15 Inv.(Out) 113.47
O Ring Pipe with Concrete Cradle Req'd.

35-2: 1 St'd DI-5 Req'd.Grate A Type III Req'd.
Std.PG-2A Type CI
H=6.6' Inv.=111.90
1 St'd.IS-1 Req'd

35-2 — 35-8: 19'- 24" Storm Sewer Pipe Req'd.(6' Cover)
Inv.(In) 111.90 Inv.(Out) 111.70

Plan Sheet No. 35 (Cont'd)

35-3: 7.1' St'd.SWM-1 Req'd.
24" Dia.Inv.(Out) 117.00
2.5" Dia.Water Quality Orifice Req'd.Inv.120.50
60" Dia.Riser Top Req'd.Inv.122.00
1 St'd.IS-1 Req'd

35-3 — 35-1: 41'- 24" Gasketed Concrete Pipe Req'd.(9' Cover)
Inv.(In) 114.90 Inv.(Out) 114.28
O Ring Pipe with Concrete Cradle Req'd.

35-4: Modify Existing Curb Inlet
Adjust to Grade, Lower 0.36'
Add DI-7 Grate A Type III Req'd.
Proposed Top Elev.125.89

35-5: 1 St'd DI-5 Req'd.Grate A Type III Req'd.
Std.PG-2A Type CI
H=4.5' Inv.=120.00
1 St'd.IS-1 Req'd

35-5 — 35-2: 111'- 15" Storm Sewer Pipe Req'd.(2' Cover)
Inv.(In) 120.00 Inv.(Out) 115.00

35-6: Modify Existing Curb Inlet
Adjust to Grade, Lower 0.33'
Add DI-7 Grate A Type III Req'd.
Proposed Top Elev.122.95

35-7: Modify Existing Curb Inlet
Adjust to Grade, Lower 0.33'
Add DI-7 Grate A Type III Req'd.
Proposed Top Elev.122.39

35-8: 1 St'd DI-7 Req'd Grate A Type III Req'd.
H=7.8' Inv.=113.00
1 St'd IS-1 Req'd.

35-8 — 35-9: 57'- 24" Storm Sewer Pipe Req'd.(4' Cover)
Inv.(In) 113.00 Inv.(Out) 112.22

35-9: 1 St'd DI-7 Req'd Grate A Type III Req'd.
H=5.6' Inv.=110.60
1 St'd IS-1 Req'd.

35-9 — 35-10: 62'- 24" Storm Sewer Pipe Req'd.(2' Cover)
Inv.(In) 110.60 Inv.(Out) 109.69

35-10: 1 St'd DI-7 Req'd Grate A Type III Req'd.
H=9.6' Inv.=104.10
1 St'd IS-1 Req'd.

35-10 — 35-12: 95'- 24" Storm Sewer Pipe Req'd.(7' Cover)
Inv.(In) 104.10 Inv.(Out) 102.82

35-11: Modify Existing Curb Inlet
Adjust to Grade, Lower 0.33'
Add DI-7 Grate A Type III Req'd.
Proposed Top Elev.111.33

35-12: 1 St'd DI-7 Req'd Grate A Type III Req'd.
H=6.8' Inv.=102.72
1 St'd IS-1 Req'd.

35-12 — 35-13: 94'- 24" Storm Sewer Pipe Req'd.(5' Cover)
Inv.(In) 102.72 Inv.(Out) 101.37

35-13: 1 St'd 24" ES-1 Req'd.
Inv.=101.37
3 Cu.Yds. St'd.EC-1 Class I Req'd.Type A Installation.

Plan Sheet No. 39

39-1: 16.3 Lin.Ft. St'd MH-1 or MH-2 Req'd
1 St'd MH-1 Frame & Cover Req'd
1 St'd SL-1 Req'd.
1 St'd IS-1 Req'd.
Inv.=18.26

39-1 — 39-2: 282'- 24" Storm Sewer Pipe Req'd.(8' Cover)
Inv.(In) 18.26 Inv.(Out) 16.35

39-2: 20.0 Lin.Ft. St'd MH-1 or MH-2 Req'd
1 St'd MH-1 Frame & Cover Req'd
1 St'd SL-1 Req'd.
1 St'd IS-1 Req'd.
Inv.=16.25

39-2 — 40-1: 290'- 24" Storm Sewer Pipe Req'd.(6' Cover)
Inv.(In) 16.25 Inv.(Out) 13.55

Plan Sheet No. 40

40-1: 15.1 Lin.Ft. St'd MH-1 or MH-2 Req'd
1 St'd MH-1 Frame & Cover Req'd
1 St'd SL-1 Req'd.
1 St'd IS-1 Req'd.
Inv.=13.45

40-1 — 40-2: 201'- 24" Storm Sewer Pipe Req'd.(6' Cover)
Inv.(In) 13.45 Inv.(Out) 11.80

40-2: 11.3 Lin.Ft. St'd MH-1 or MH-2 Req'd
1 St'd MH-1 Frame & Cover Req'd
Inv.=11.70
1 St'd IS-1 Req'd.

40-2 — 40-3: 153'- 24" Storm Sewer Pipe Req'd.(6' Cover)
Inv.(In) 11.70 Inv.(Out) 10.75

40-3: 10.7 Lin.Ft. St'd MH-1 or MH-2 Req'd
1 St'd MH-1 Frame & Cover Req'd
1 St'd SL-1 Req'd.
1 St'd IS-1 Req'd.
Inv.=10.62

40-3 — 40-4: 123'- 30" Storm Sewer Pipe Req'd.(5' Cover)
Inv.(In) 10.62 Inv.(Out) 10.00

40-4: 1 St'd 30" ES-1 Req'd.
Inv.=10.00
4 Cu.Yds. St'd.EC-1 Class AI Req'd.Type A Installation.
1 St'd IS-1 Req'd.

40-5: 4.0' St'd.SWM-1 Req'd.
24" Dia.Inv.(Out) 5.50
2- 3'x6" OPENING Water Quality Req'd., Inv.8.50
4'x4' Riser Top Req'd.Inv.9.50
1 St'd.IS-1 Req'd

40-5 — 40-6: 42'- 26" Gasketed Concrete Pipe Req'd.(5' Cover)
Inv.(In) 5.50 Inv.(Out) 4.11
O Ring Pipe with Concrete Cradle Req'd.

40-6: 8.9 Lin.Ft. St'd MH-1 or MH-2 Req'd
1 St'd MH-1 Frame & Cover Req'd
1 St'd.IS-1 Req'd
Inv.=4.11

40-6 — 40-7: 22'- 37" Gasketed Concrete Pipe Req'd.(5' Cover)
Inv.(In) 4.11 Inv.(Out) 4.00
O Ring Pipe with Concrete Cradle Req'd.

40-7: 1 St'd 24" EW-1 Req'd.
Inv.=4.00
3 Cu.Yds. St'd.EC-1 Class I Req'd.
Type A Installation.

SCALE
0 25' 50'

PROJECT	SHEET NO.
001-029-001	1H(10)

PROJECT MANAGER LAURA_MEHIEL_A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM_WELLS_A.MORTON THOMAS & ASSOC.
DESIGNED BY A.MORTON_THOMAS_& ASSOC.

TMP SUGGESTED SOC

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101,R201,C501	IJ(1A)

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

A. Morton Thomas & Associates
Chantilly, Virginia
(TRAFFIC ENGINEER)

Overall Project Sequence of Construction Narrative

This package consists of the following sections:

Section E --
US Route 1 NB Lanes from Sta.764+65 to Jeff Todd Way/Mount Vernon Memorial Highway (NBL);
US Route 1 SB Lanes from Sta.Sta.464+50 to Jeff Todd Way/Mount Vernon Memorial Highway (SBL);

TMP Suggested SOC

Construction of the new alignment and work outside of existing curb lines in Section E may run consistent with the construction of Section D during Section D MOT Phases 1A through 1D. For the purposes of this SOC, Section E MOT begins in Phase 2A.

At the beginning of each phase/stage of construction, install all project signs in accordance with Virginia Work Area Protection Manual (VWAPM) TTC-53.0 "Signing for Project Limits" and as shown in these plans. Length and placement of VWAPM Sign G20-1 (Road Work XX Miles) may change depending on Contractor's concurrent work locations. The locations of these signs are to be coordinated with work progressing in the other sections of the project.

Multiple design sections will be under construction at the same time. Access to project areas will be dependent on right-of-way and utility relocations. Project limit signage shall be adjusted as project work limits change. PCMS will be utilized beyond the project limits and on connecting roads and throughout the project limits to convey upcoming shifts of traffic, lane closure schedule, and major construction events.

Unless otherwise approved or directed by the C.O., the Contractor shall plan and prosecute the work in accordance with the following:

PHASE 1D

Note: No plans are provided for this phase.

1. Remove existing median curb and construct temporary pavement on north side and eradicate and re-stripe pavement markings on the south side of US Route 1 / Jeff Todd Way to accommodate future traffic shifts in Phases 2A through 2D. Implement VWAPM TTC-26.0 "Near Side of an Intersection", VWAPM TTC-27.0 "Far Side of an Intersection", and VWAPM TTC-28.0 "Operation in an Intersection" as required.

PHASE 2A

Construction to be coordinated with Section D construction phasing. Section E work may progress at the contractors discretion during Section D Phases 1A through 1D in available work areas as shown on the plans.

1. Construct new NB and SB lanes on new alignment from SB Station 468+50 to Station 491+00 and NB Station 768+50 to Station 793+00. Grade and construct new SB curb from Sta.493+00 to Jeff Todd Way. Construct new NB curb line and RT lane from NB Station 793+00 to Jeff Todd Way.

2. Construct temporary pavement from SB Station 494+00 to tie in with existing SB US Route 1 alignment as shown on plans.

3. Construct new Woodlawn Road connection. Maintain access to the Woodlawn Baptist Church at all times. Implement VWAPM TTC-26.0 Near Side of an Intersection, VWAPM TTC-27.0 Far Side of an Intersection, and VWAPM TTC-28.0 Operation in an Intersection as required to complete Intersection work at the existing US Route 1 / Woodlawn Road Intersection.

4. Implement VWAPM TTC-16.0 "Outside Lane Closure Operation on a Four-Lane Roadway" for the outside US Route 1 lanes as required. Implement VWAPM TTC-27.0 "Lane Closure Operation - Far Side of an Intersection" as required.

5. Per Section D Phase 2A, Contractor to complete installation of temporary span wire signal at US Route 1 and Belvoir Road Intersection, and switch traffic onto the new US Route 1 SBL and temporary crossover built in Phase 1D. Implement VWAPM TTC-6.0 "Shoulder Closure with Barrier Operation" on the outside shoulder of the shifted US Route 1 NBL to build NBL improvements between Stations 727+48 and 764+65.

6. Per Section D Phase 1D, Install temporary pavement at US Route 1/Belvoir Road Intersection to accommodate shift of NB traffic to new alignment in Phase 2A. Contractor to implement VWAPM TTC 26.0 on inside NB lane of US Route 1 and VWAPM TTC 27.0 on inside SB lane of US Route 1 to construct temporary pavement. Contractor to implement VWAPM TTC 29.0 on inside turn lane from SB US Route 1 to SB Belvoir Road and VWAPM TTC 27.0 on inside NB lane of US Route 1 to construct temporary pavement.

7. Contractor shall maintain access to adjacent properties.

PHASE 2B

Step 1

1. Contractor to match Section D Phase 2B MOT at US Route 1 / Belvoir Road Intersection.

2. Shift SB US Route 1 traffic to new alignment and temporary pavement from Jeff Todd Way to SB Station 491+00 as shown on plans. SB US Route 1 to remain on existing alignment.

3. Shift NB US Route 1 traffic onto two outside lanes of new alignment.

4. Modify access at Woodlawn Road to accommodate shift in traffic patterns. Adjust existing signal operations as necessary. Maintain access to the Woodlawn Baptist Church at all times. Implement VWAPM TTC-26.0 Near Side of an Intersection, VWAPM TTC-27.0 Far Side of an Intersection, and VWAPM TTC-28.0 Operation in an Intersectionas required to complete Intersection work at the existing US Route 1 / Woodlawn Road Intersection.

5. Construct new interior lane pavement section and alignment from SB Station 491+00 to Jeff Todd Way as shown on plans.

6. Temporarily modify signal head positions and lane striping for SB US Route 1 approach at Jeff Todd Way Intersection to accommodate shift in SB US Route 1 traffic. Implement VWAPM TTC-28.0 Operation in an Intersectionas required.

7. Contractor shall maintain access to adjacent properties.

Step 2

1. Shift SB US Route 1 traffic to existing NB lanes as shown on the plans. Complete SB alignment from SB Station 491+00 to 493+00 as shown on plans.

2. Shift SB US Route 1 traffic back to existing SB lanes prior to Woodlawn Road Intersection. Maintain MOT at Woodlawn Road Intersection per Phase 2B Step 1.

PHASE 2C

1. Complete tie-in work at Belvoir Road to new roadway completed in Section D Phase 2C MOT as shown on plans. Shift SB US Route 1 traffic to two exterior lanes on new alignment. NB US Route 1 traffic to remain as Phase 2B.

2. Shift traffic lanes at Jeff Todd Way Intersection to allow for the continued completion of interior lanes as shown on the plans.

3. Remove temporary asphalt from Phase 2B and complete final construction of new outside SB US Route 1 lane, curb and multi-use path between SB Stations 491+00 to 493+00 as needed. Utilize VWAPM TTC-4.0 "Stationary Operation on a Shoulder" and TTC 16.0 "Outside Lane Closure Operation on a Four-Lane Roadway" as required.

4. Close existing US Route 1 alignment between Belvoir Road and Jeff Todd Way to through traffic. Maintain access to Woodlawn Road. Activate new signal at Woodlawn Road. Construct new cul-de-sac at existing Woodlawn Road / US Route 1 and Stable Driveway. Implement VWAPM TTC-31.0, Flagging Operation on a Single Lane Roundabout, and VWAPM TTC 28.0 "Operation at an Intersection" as required to complete cul-de-sac work. Maintain traffic utilizing channelizing devices as needed on existing US Route 1 to construct new Stable Driveway.

5. Restripe lanes as needed on north side of Jeff Todd Way Intersection to accommodate lane shifts through Intersection. Implement VWAPM TTC-26.0 Near Side of an Intersection, VWAPM TTC-27.0 Far Side of an Intersection, and VWAPM TTC-28.0 Operation in an Intersection as required to complete Intersection work at the US Route 1 / Jeff Todd Way Intersection.

6. Temporarily modify signal head positions and lane striping at US Route 1 / Jeff Todd Way Intersection to accommodate lane shifts in US Route 1 traffic as needed. Implement VWAPM TTC-28.0 Operation in an Intersection as required.

7. Complete tie-in to relocated sewer line.

8. Begin demolition of existing US Route 1 between Belvoir Road and Woodlawn Road.

PHASE 2D

1. Complete tie-in work at Belvoir Road to new roadway completed in Section D Phase 2D MOT as shown on plans. SB and NB US Route 1 traffic to remain in lanes as Phase 2C.

2. Shift traffic lanes at Jeff Todd Way Intersection to allow for the completion of interior lanes as shown on the plans.

3. Temporarily modify signal head positions and lane striping at US Route 1 / Jeff Todd Way Intersection to accommodate lane shifts in US Route 1 traffic as needed. Implement VWAPM TTC-28.0 Operation in an Intersection as required.

4. Complete demolition of existing US Route 1 between Belvoir Road and Jeff Todd Way.

5. Complete new access to Stable Driveway.

6. Complete modifications at existing US Route 1 / Woodlawn Road Intersection. Implement VWAPM TTC-26.0 Near Side of an Intersection, VWAPM TTC-27.0 Far Side of an Intersection, and VWAPM TTC-28.0 Operation in an Intersection as required.

7. Restore curb, pavement and pavement markings to final design configurations as needed on north side of Jeff Todd Way Intersection once lane construction is completed and traffic is shifted into final configuration. Restore signal heads to final design locations once NB US Route 1 approach lanes are completed. Implement VWAPM TTC-26.0 Near Side of an Intersection, VWAPM TTC-27.0 Far Side of an Intersection, and VWAPM TTC-28.0 Operation in an Intersection as required to complete Intersection work at the US Route 1 / Jeff Todd Way Intersection.

8. Open all lanes once all median and tie-in work is completed.

9. Per Section D Phase 2D MOT, remove temporary span wire poles at US Route 1 / Belvoir Road Intersection once permanent signals are operational and all turn lanes are complete.

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY A.MORTON THOMAS & ASSOC.

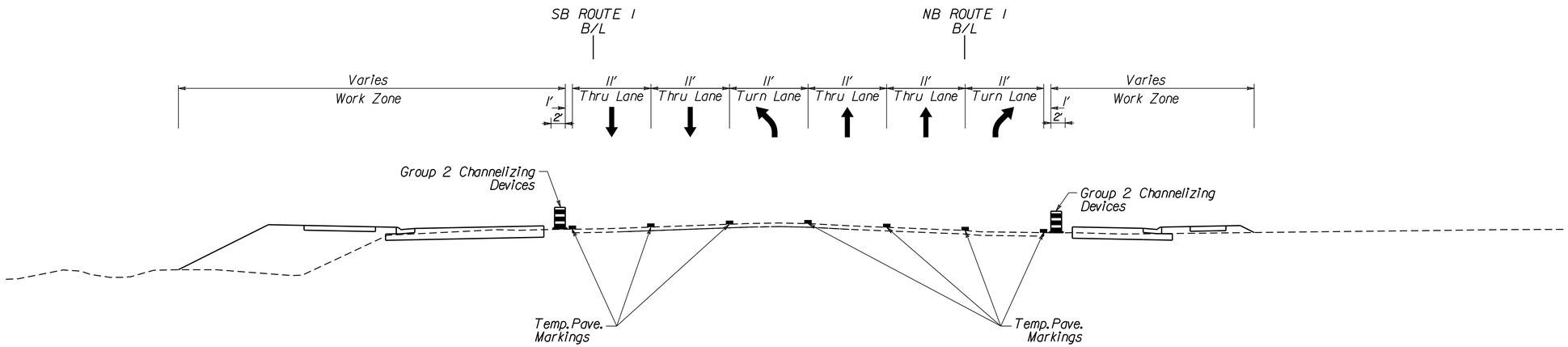
TMP TYPICAL SECTIONS

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	1J(A8)

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

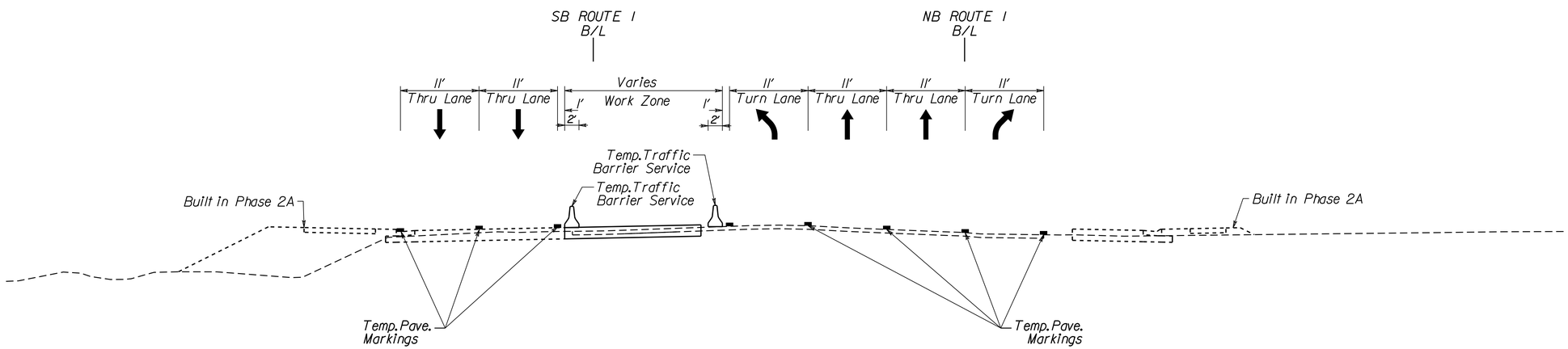
A. Morton Thomas & Associates
Chantilly, Virginia
(TRAFFIC ENGINEER)

PHASE 2A



Richmond Highway (US Route 1)
Phase 2A - US Route 1 Construction
Sta. 497+50 (SBL)

PHASE 2B



Richmond Highway (US Route 1)
Phase 2B - US Route 1 Construction
Sta. 497+50 (SBL)

PROJECT	SHEET NO.
0001-029-001	1J(A8)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY A.MORTON THOMAS & ASSOC.

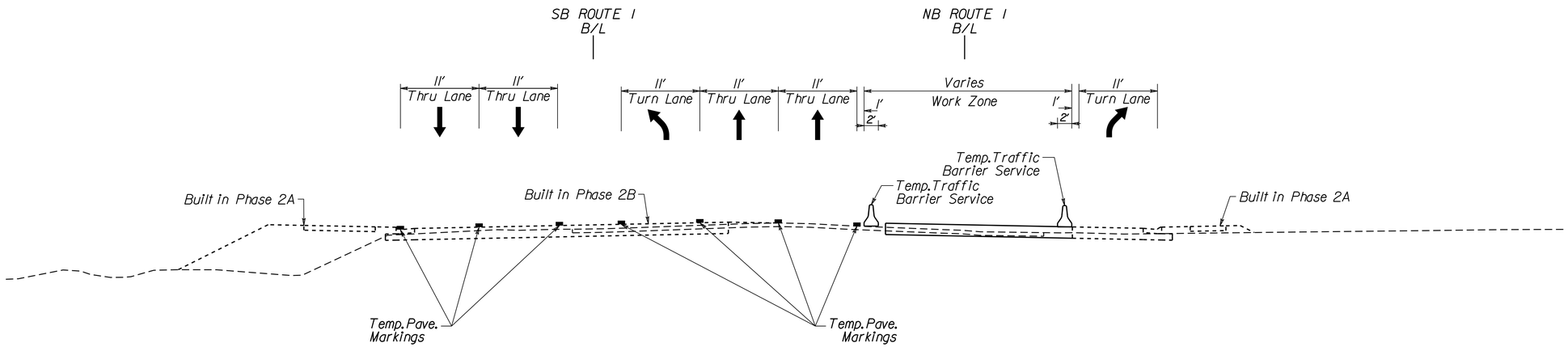
TMP TYPICAL SECTIONS

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	I	0001-029-001 P101, R201, C501	IJ(A8)

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

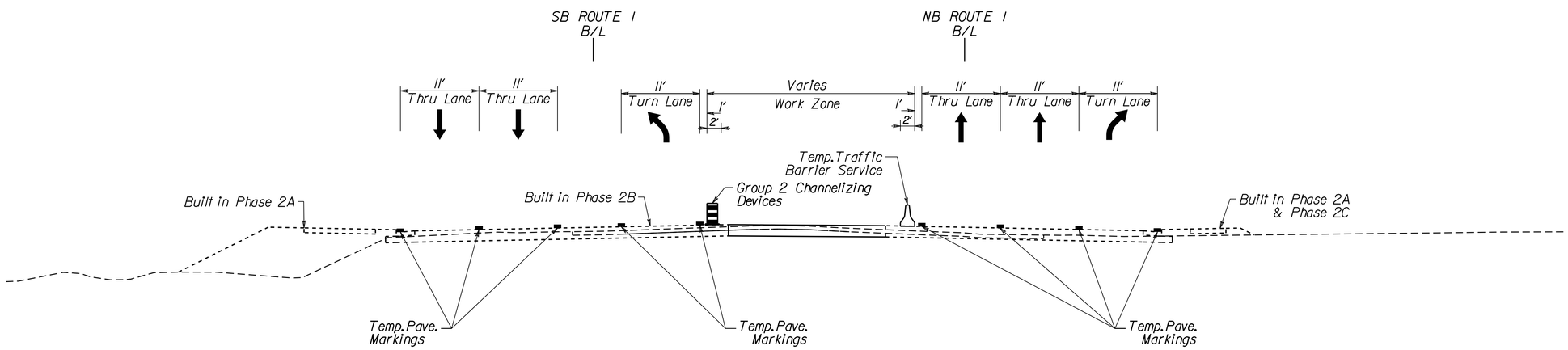
A. Morton Thomas & Associates
Chantilly, Virginia
(TRAFFIC ENGINEER)

PHASE 2C



Richmond Highway (US Route 1)
Phase 2C - US Route 1 Construction
Sta. 497+50 (SBL)

PHASE 2D



Richmond Highway (US Route 1)
Phase 2D - US Route 1 Construction
Sta. 497+50 (SBL)

PROJECT	SHEET NO.
0001-029-001	IJ(A8)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY A.MORTON THOMAS & ASSOC.

TMP / SOC PHASE 2A

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	1P(A1)

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

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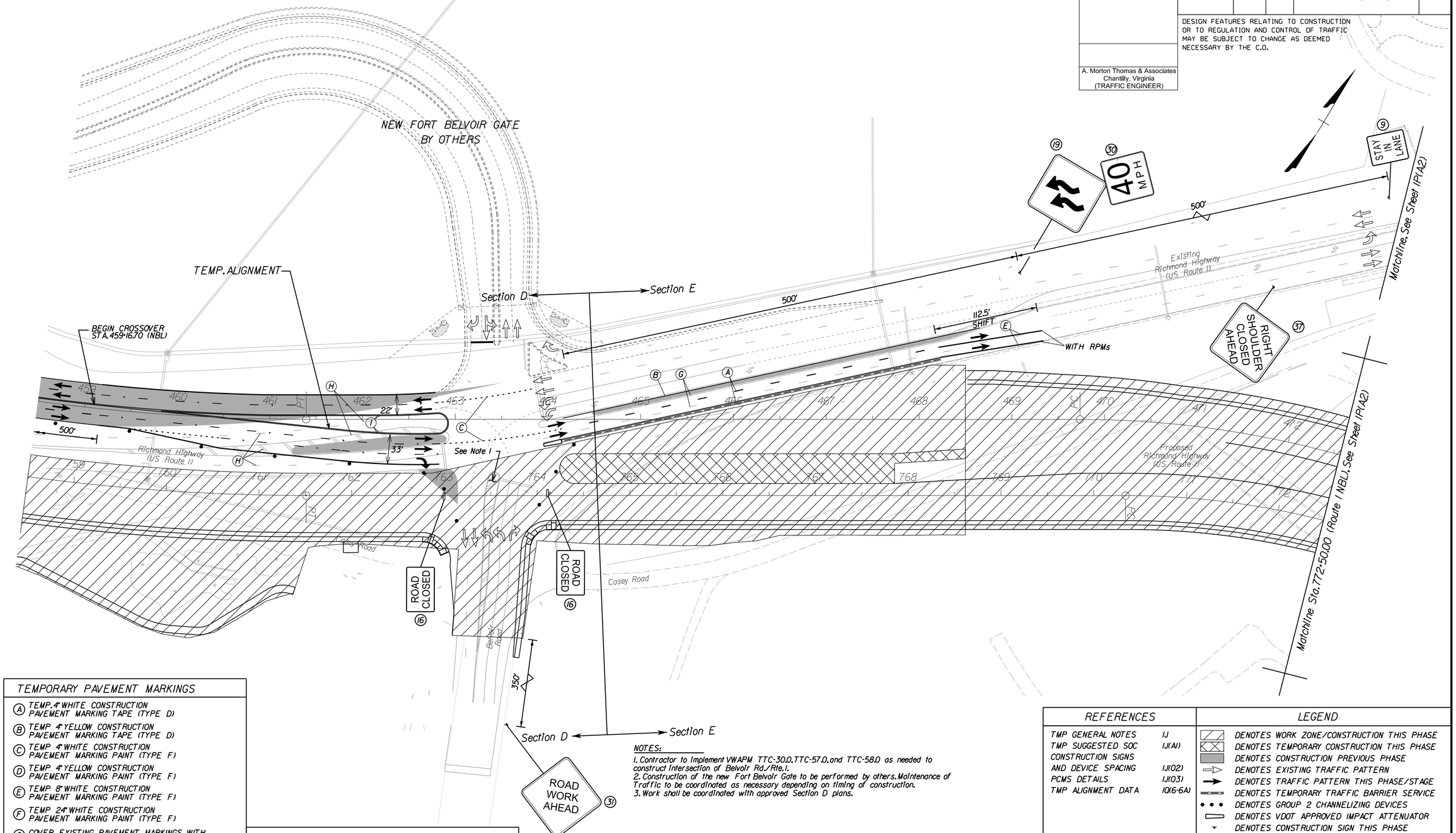
(TRAFFIC ENGINEER)



TEMPORARY PAVEMENT MARKINGS

- (A) TEMP. 4" WHITE CONSTRUCTION PAVEMENT MARKING TAPE (TYPE D)
- (B) TEMP 4" YELLOW CONSTRUCTION PAVEMENT MARKING TAPE (TYPE D)
- (C) TEMP 4" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (D) TEMP 4" YELLOW CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (E) TEMP 8" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (F) TEMP 24" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (G) COVER EXISTING PAVEMENT MARKINGS WITH TEMP. NON-RETROREFLECTIVE BLACK TAPE (TYPE E)
- (H) ERADICATE EXISTING PAVEMENT MARKINGS
- (I) TEMP 8" SOLID YELLOW CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)

LINE TYPE LEGEND

- SOLID MARKING LINE
- SKIP MARKING LINE - 10' STRIPE, 30' SKIP
- PUPPY TRACK MARKING LINE - 2' STRIPE, 4' SKIP
- TEMPORARY RAISED PAVEMENT MARKINGS 40' SPACING

NOTES:

1. Contractor to implement VWAPM TTC-30.0, TTC-57.0, and TTC-58.0 as needed to construct intersection of Belvoir Rd./Rte. 1.
2. Construction of the new Fort Belvoir Gate to be performed by others. Maintenance of Traffic to be coordinated as necessary depending on timing of construction.
3. Work shall be coordinated with approved Section D plans.

REFERENCES

TMP GENERAL NOTES	1J
TMP SUGGESTED SOC	1J(A1)
CONSTRUCTION SIGNS AND DEVICE SPACING	1J(02)
PCMS DETAILS	1J(03)
TMP ALIGNMENT DATA	1Q(6-6A)

LEGEND

- DENOTES WORK ZONE/CONSTRUCTION THIS PHASE
- DENOTES TEMPORARY CONSTRUCTION THIS PHASE
- DENOTES CONSTRUCTION PREVIOUS PHASE
- DENOTES EXISTING TRAFFIC PATTERN
- DENOTES TRAFFIC PATTERN THIS PHASE/STAGE
- DENOTES TEMPORARY TRAFFIC BARRIER SERVICE
- DENOTES GROUP 2 CHANNELIZING DEVICES
- DENOTES VDOT APPROVED IMPACT ATTENUATOR
- DENOTES CONSTRUCTION SIGN THIS PHASE
- DENOTES TYPE III BARRICADE

SCALE
0 50' 100'

PROJECT	SHEET NO.
0001-029-001	1P(A1)

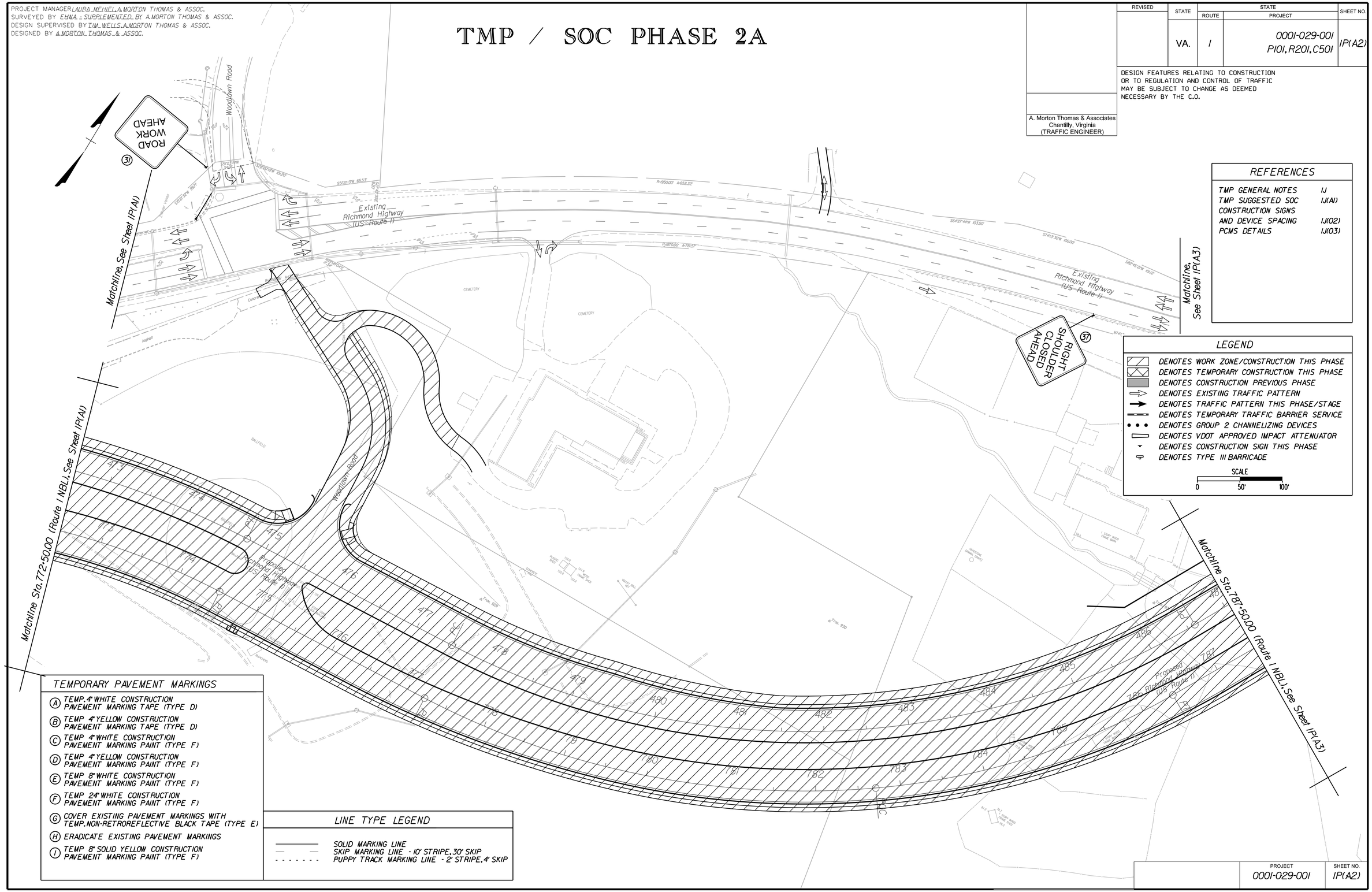
PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY A.MORTON THOMAS & ASSOC.

TMP / SOC PHASE 2A

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	1P(A2)

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

A. Morton Thomas & Associates
Chantilly, Virginia
(TRAFFIC ENGINEER)



REFERENCES

TMP GENERAL NOTES	1J
TMP SUGGESTED SOC	1J(A1)
CONSTRUCTION SIGNS AND DEVICE SPACING	1J(02)
PCMS DETAILS	1J(03)

LEGEND

- DENOTES WORK ZONE/CONSTRUCTION THIS PHASE
- DENOTES TEMPORARY CONSTRUCTION THIS PHASE
- DENOTES CONSTRUCTION PREVIOUS PHASE
- DENOTES EXISTING TRAFFIC PATTERN
- DENOTES TRAFFIC PATTERN THIS PHASE/STAGE
- DENOTES TEMPORARY TRAFFIC BARRIER SERVICE
- DENOTES GROUP 2 CHANNELIZING DEVICES
- DENOTES VDOT APPROVED IMPACT ATTENUATOR
- DENOTES CONSTRUCTION SIGN THIS PHASE
- DENOTES TYPE III BARRICADE

SCALE 0 50' 100'

TEMPORARY PAVEMENT MARKINGS

- (A) TEMP. 4" WHITE CONSTRUCTION PAVEMENT MARKING TAPE (TYPE D)
- (B) TEMP 4" YELLOW CONSTRUCTION PAVEMENT MARKING TAPE (TYPE D)
- (C) TEMP 4" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (D) TEMP 4" YELLOW CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (E) TEMP 8" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (F) TEMP 24" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (G) COVER EXISTING PAVEMENT MARKINGS WITH TEMP. NON-RETROREFLECTIVE BLACK TAPE (TYPE E)
- (H) ERADICATE EXISTING PAVEMENT MARKINGS
- (I) TEMP 8" SOLID YELLOW CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)

LINE TYPE LEGEND

- SOLID MARKING LINE
- SKIP MARKING LINE - 10' STRIPE, 30' SKIP
- PUPPY TRACK MARKING LINE - 2' STRIPE, 4' SKIP

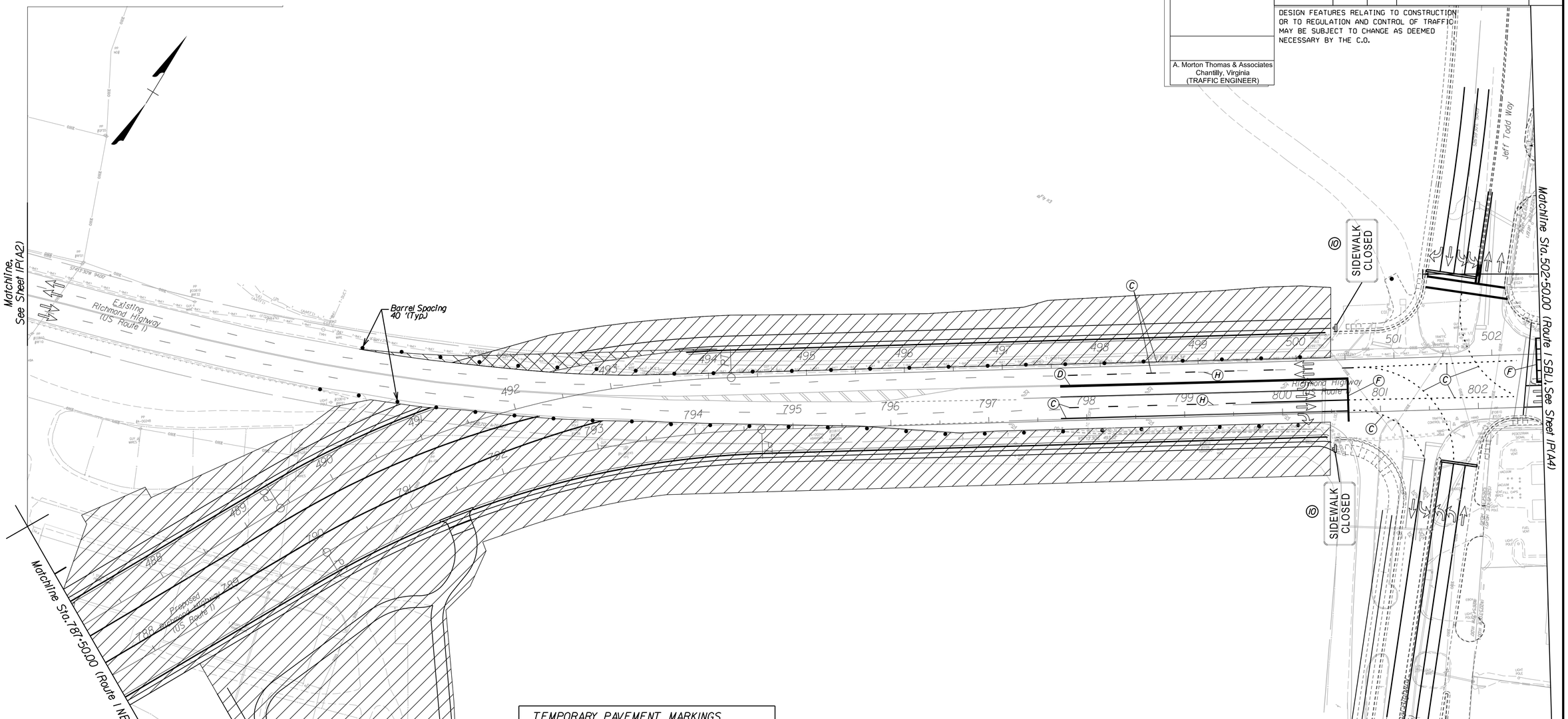
PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY A.MORTON THOMAS & ASSOC.

TMP / SOC PHASE 2A

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	1P(A3)

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

A. Morton Thomas & Associates
Chantilly, Virginia
(TRAFFIC ENGINEER)



TEMPORARY PAVEMENT MARKINGS

- (A) TEMP. 4" WHITE CONSTRUCTION PAVEMENT MARKING TAPE (TYPE D)
- (B) TEMP. 4" YELLOW CONSTRUCTION PAVEMENT MARKING TAPE (TYPE D)
- (C) TEMP 4" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (D) TEMP 4" YELLOW CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (E) TEMP 8" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (F) TEMP 24" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (G) COVER EXISTING PAVEMENT MARKINGS WITH TEMP. NON-RETROREFLECTIVE BLACK TAPE (TYPE E)
- (H) ERADICATE EXISTING PAVEMENT MARKINGS
- (I) TEMP 8" SOLID YELLOW CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)

LINE TYPE LEGEND

- SOLID MARKING LINE
- SKIP MARKING LINE - 10' STRIPE, 30' SKIP
- PUPPY TRACK MARKING LINE - 2' STRIPE, 4' SKIP

REFERENCES

TMP GENERAL NOTES	1J
TMP SUGGESTED SOC	1J(A1)
CONSTRUCTION SIGNS AND DEVICE SPACING	1J(02)
PCMS DETAILS	1J(03)
TMP TYP. SECTIONS	1J(A8)

LEGEND

- DENOTES WORK ZONE/CONSTRUCTION THIS PHASE
- DENOTES TEMPORARY CONSTRUCTION THIS PHASE
- DENOTES CONSTRUCTION PREVIOUS PHASE
- DENOTES EXISTING TRAFFIC PATTERN
- DENOTES TRAFFIC PATTERN THIS PHASE/STAGE
- DENOTES TEMPORARY TRAFFIC BARRIER SERVICE
- DENOTES GROUP 2 CHANNELIZING DEVICES
- DENOTES VDOT APPROVED IMPACT ATTENUATOR
- DENOTES CONSTRUCTION SIGN THIS PHASE
- DENOTES TYPE III BARRICADE

SCALE
0 50' 100'

PROJECT	SHEET NO.
0001-029-001	1P(A3)

PROJECT MANAGER LAURA_MEHIEL_A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM_WELLS_A.MORTON THOMAS & ASSOC.
DESIGNED BY A.MORTON_THOMAS_& ASSOC.

TMP / SOC PHASE 2A

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101,R201,C501	1P(A4)

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

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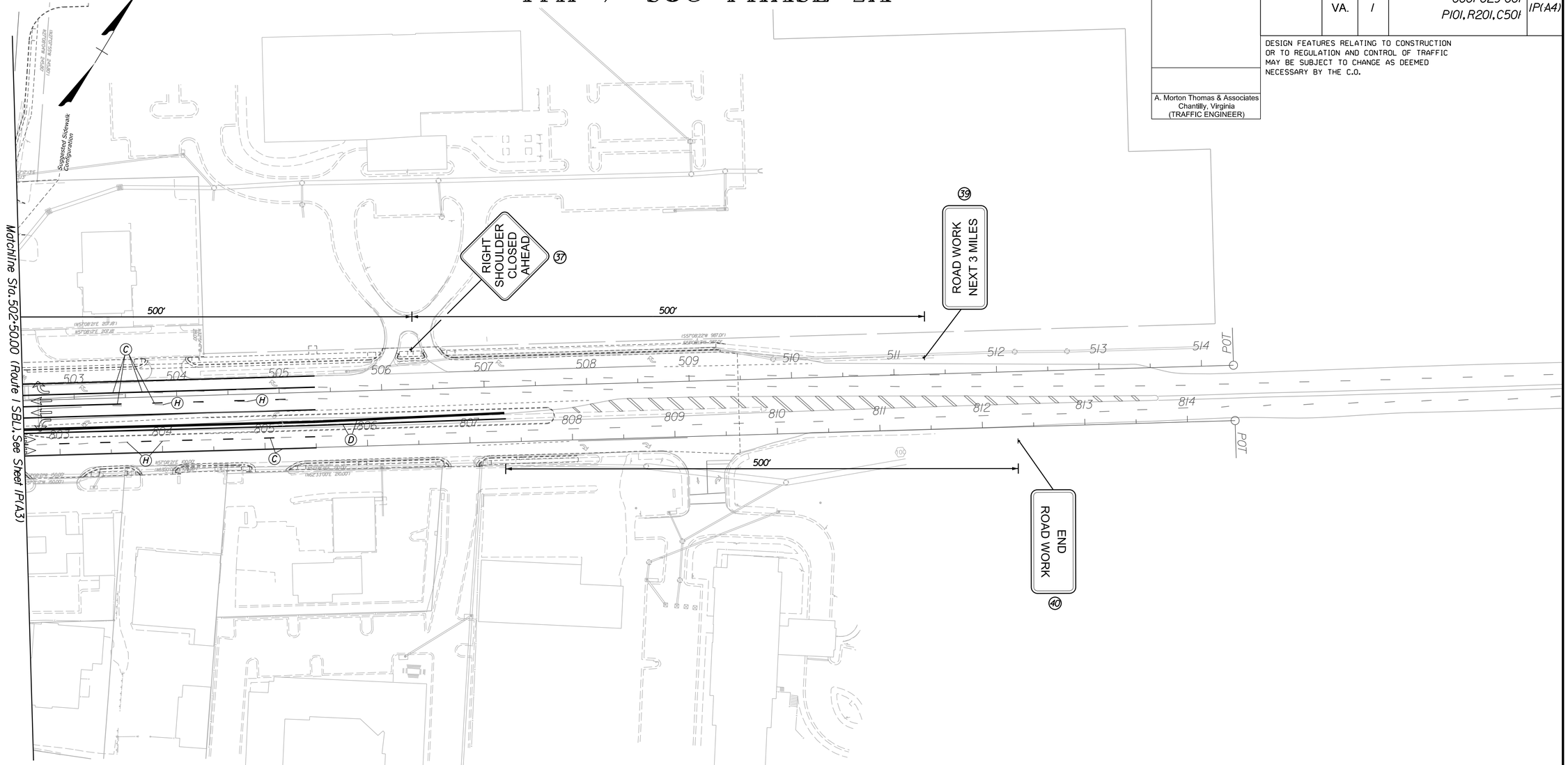
Chantilly, Virginia
(TRAFFIC ENGINEER)



TEMPORARY PAVEMENT MARKINGS

- (A) TEMP. 4" WHITE CONSTRUCTION PAVEMENT MARKING TAPE (TYPE D)
- (B) TEMP 4" YELLOW CONSTRUCTION PAVEMENT MARKING TAPE (TYPE D)
- (C) TEMP 4" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (D) TEMP 4" YELLOW CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (E) TEMP 8" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (F) TEMP 24" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (G) COVER EXISTING PAVEMENT MARKINGS WITH TEMP. NON-RETROREFLECTIVE BLACK TAPE (TYPE E)
- (H) ERADICATE EXISTING PAVEMENT MARKINGS
- (I) TEMP 8" SOLID YELLOW CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)

LINE TYPE LEGEND

- SOLID MARKING LINE
- SKIP MARKING LINE - 10' STRIPE, 30' SKIP
- PUPPY TRACK MARKING LINE - 2' STRIPE, 4' SKIP

REFERENCES

TMP GENERAL NOTES	1J
TMP SUGGESTED SOC	1J(A1)
CONSTRUCTION SIGNS AND DEVICE SPACING	1J(02)
PCMS DETAILS	1J(03)

LEGEND

- DENOTES WORK ZONE/CONSTRUCTION THIS PHASE
- DENOTES TEMPORARY CONSTRUCTION THIS PHASE
- DENOTES CONSTRUCTION PREVIOUS PHASE
- DENOTES EXISTING TRAFFIC PATTERN
- DENOTES TRAFFIC PATTERN THIS PHASE/STAGE
- DENOTES TEMPORARY TRAFFIC BARRIER SERVICE
- DENOTES GROUP 2 CHANNELIZING DEVICES
- DENOTES VDOT APPROVED IMPACT ATTENUATOR
- DENOTES CONSTRUCTION SIGN THIS PHASE
- DENOTES TYPE III BARRICADE

SCALE
0 50' 100'

PROJECT	SHEET NO.
0001-029-001	1P(A4)

PROJECT MANAGER LAURA MEHIEL A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS A.MORTON THOMAS & ASSOC.
DESIGNED BY A.MORTON THOMAS & ASSOC.

TMP / SOC PHASE 2B

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	1P(B1)

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

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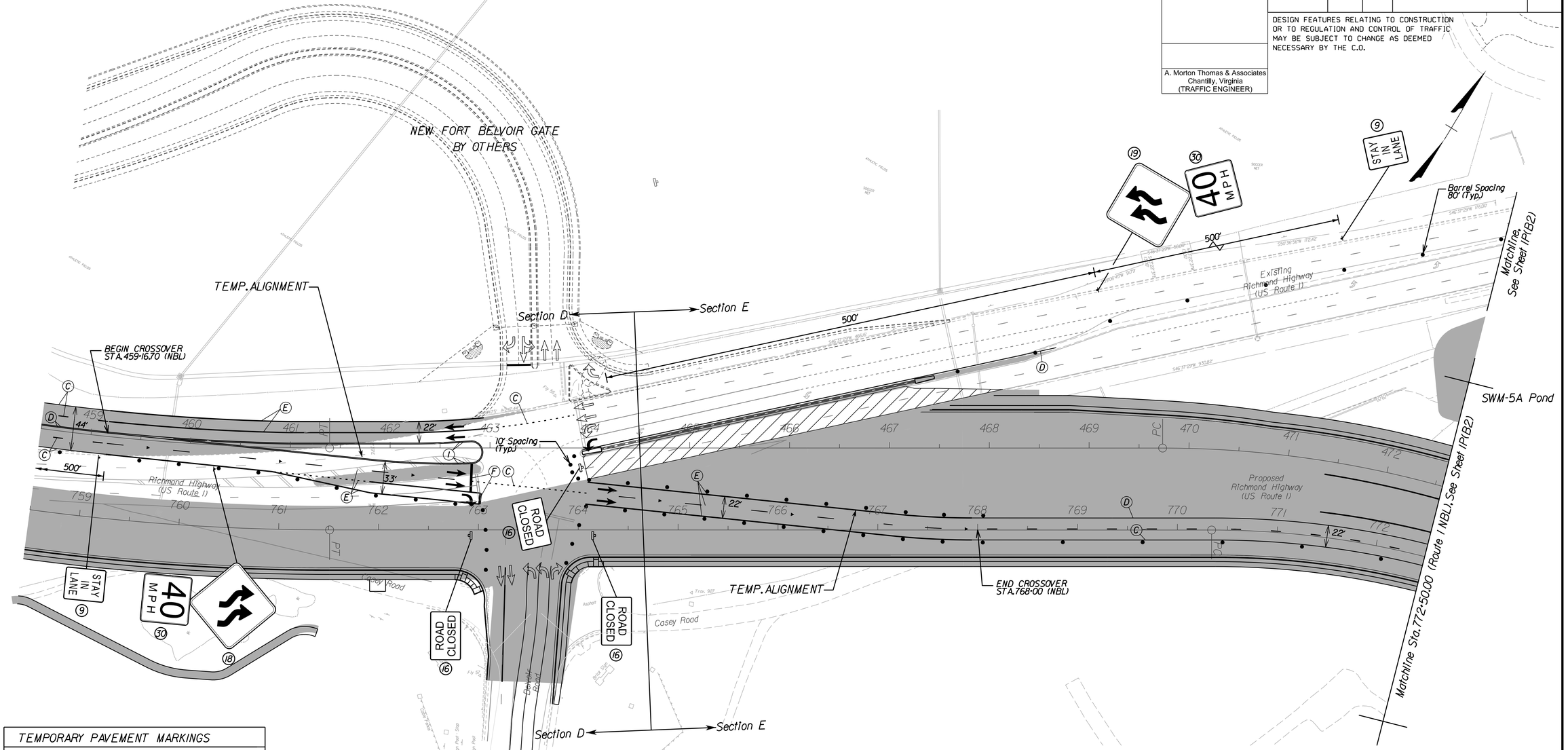
Chantilly, Virginia
(TRAFFIC ENGINEER)



TEMPORARY PAVEMENT MARKINGS

- (A) TEMP. 4" WHITE CONSTRUCTION PAVEMENT MARKING TAPE (TYPE D)
- (B) TEMP 4" YELLOW CONSTRUCTION PAVEMENT MARKING TAPE (TYPE D)
- (C) TEMP 4" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (D) TEMP 4" YELLOW CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (E) TEMP 8" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (F) TEMP 24" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (G) COVER EXISTING PAVEMENT MARKINGS WITH TEMP. NON-RETROREFLECTIVE BLACK TAPE (TYPE E)
- (H) ERADICATE EXISTING PAVEMENT MARKINGS
- (I) TEMP 8" SOLID YELLOW CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)

LINE TYPE LEGEND

- SOLID MARKING LINE
- SKIP MARKING LINE - 10' STRIPE, 30' SKIP
- PUPPY TRACK MARKING LINE - 2' STRIPE, 4' SKIP
- TEMPORARY RAISED PAVEMENT MARKINGS 40' SPACING

NOTES:
1. Construction of the new Fort Belvoir Gate to be performed by others. Maintenance of Traffic to be coordinated as necessary depending on timing of construction.
2. Work shall be coordinated with approved Section D plans.

REFERENCES

TMP GENERAL NOTES	1J
TMP SUGGESTED SOC	1J(A1)
CONSTRUCTION SIGNS AND DEVICE SPACING	1J(02)
PCMS DETAILS	1J(03)
TMP ALIGNMENT DATA	1Q(7-7A)

LEGEND

- DENOTES WORK ZONE/CONSTRUCTION THIS PHASE
- DENOTES TEMPORARY CONSTRUCTION THIS PHASE
- DENOTES CONSTRUCTION PREVIOUS PHASE
- DENOTES EXISTING TRAFFIC PATTERN
- DENOTES TRAFFIC PATTERN THIS PHASE/STAGE
- DENOTES TEMPORARY TRAFFIC BARRIER SERVICE
- DENOTES GROUP 2 CHANNELIZING DEVICES
- DENOTES VDOT APPROVED IMPACT ATTENUATOR
- DENOTES CONSTRUCTION SIGN THIS PHASE
- DENOTES TYPE III BARRICADE

SCALE
0 50' 100'

PROJECT	SHEET NO.
0001-029-001	1P(B1)

PROJECT MANAGER LAURA MEHIEL A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS A.MORTON THOMAS & ASSOC.
DESIGNED BY A.MORTON THOMAS & ASSOC.

TMP / SOC PHASE 2B

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101,R201,C501	1P(B2)

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

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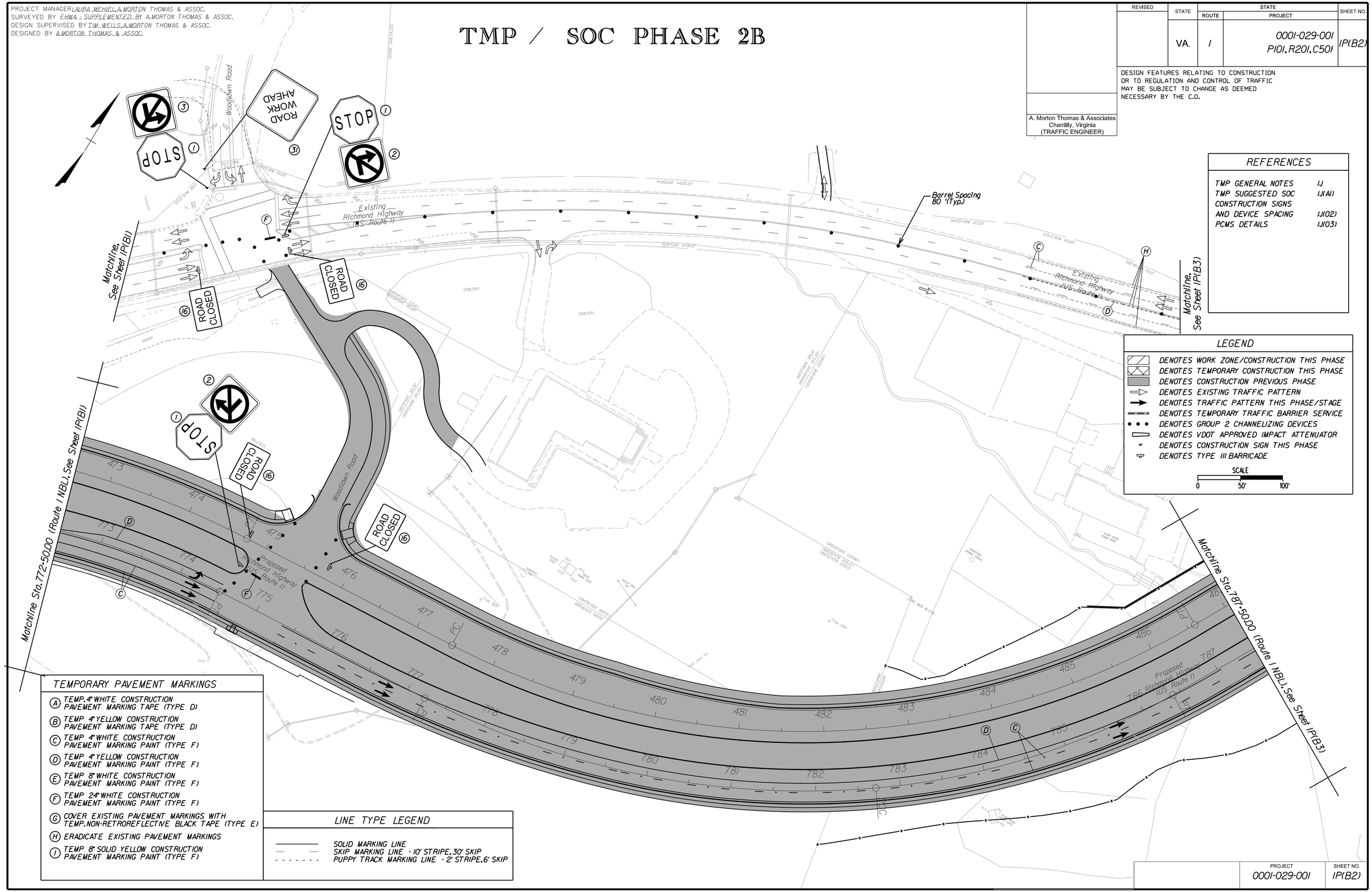

REFERENCES

TMP GENERAL NOTES	1J
TMP SUGGESTED SOC	1J(A1)
CONSTRUCTION SIGNS AND DEVICE SPACING	1J(02)
PCMS DETAILS	1J(03)

LEGEND

- DENOTES WORK ZONE/CONSTRUCTION THIS PHASE
- DENOTES TEMPORARY CONSTRUCTION THIS PHASE
- DENOTES CONSTRUCTION PREVIOUS PHASE
- DENOTES EXISTING TRAFFIC PATTERN
- DENOTES TRAFFIC PATTERN THIS PHASE/STAGE
- DENOTES TEMPORARY TRAFFIC BARRIER SERVICE
- DENOTES GROUP 2 CHANNELIZING DEVICES
- DENOTES VDOT APPROVED IMPACT ATTENUATOR
- DENOTES CONSTRUCTION SIGN THIS PHASE
- DENOTES TYPE III BARRICADE

SCALE 0 50' 100'

TEMPORARY PAVEMENT MARKINGS

- (A) TEMP.4" WHITE CONSTRUCTION PAVEMENT MARKING TAPE (TYPE D)
- (B) TEMP 4" YELLOW CONSTRUCTION PAVEMENT MARKING TAPE (TYPE D)
- (C) TEMP 4" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (D) TEMP 4" YELLOW CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
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- (F) TEMP 24" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (G) COVER EXISTING PAVEMENT MARKINGS WITH TEMP.NON-RETROREFLECTIVE BLACK TAPE (TYPE E)
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- (I) TEMP 8" SOLID YELLOW CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)

LINE TYPE LEGEND

- SOLID MARKING LINE
- SKIP MARKING LINE - 10' STRIPE,30' SKIP
- PUPPY TRACK MARKING LINE - 2' STRIPE,6' SKIP

PROJECT	SHEET NO.
0001-029-001	1P(B2)

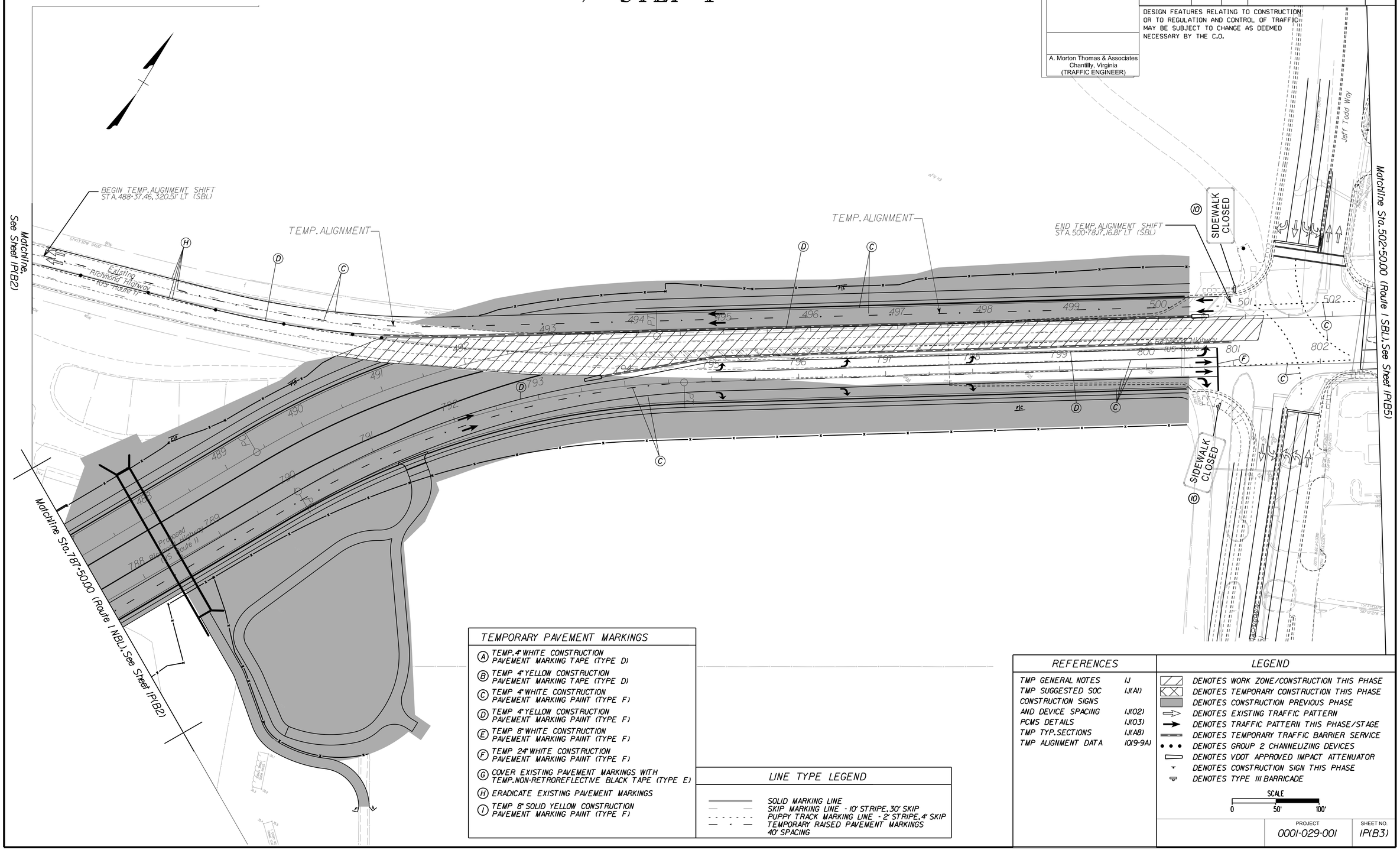
PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY A.MORTON THOMAS & ASSOC.

TMP / SOC PHASE 2B / STEP 1

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	1P(B3)

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

A. Morton Thomas & Associates
Chantilly, Virginia
(TRAFFIC ENGINEER)



TEMPORARY PAVEMENT MARKINGS

- (A) TEMP. 4" WHITE CONSTRUCTION PAVEMENT MARKING TAPE (TYPE D)
- (B) TEMP 4" YELLOW CONSTRUCTION PAVEMENT MARKING TAPE (TYPE D)
- (C) TEMP 4" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (D) TEMP 4" YELLOW CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (E) TEMP 8" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (F) TEMP 24" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (G) COVER EXISTING PAVEMENT MARKINGS WITH TEMP. NON-RETROREFLECTIVE BLACK TAPE (TYPE E)
- (H) ERADICATE EXISTING PAVEMENT MARKINGS
- (I) TEMP 8" SOLID YELLOW CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)

LINE TYPE LEGEND

- SOLID MARKING LINE
- SKIP MARKING LINE - 10' STRIPE, 30' SKIP
- PUPPY TRACK MARKING LINE - 2' STRIPE, 4' SKIP
- TEMPORARY RAISED PAVEMENT MARKINGS 40' SPACING

REFERENCES

TMP GENERAL NOTES	1J
TMP SUGGESTED SOC	1J(A1)
CONSTRUCTION SIGNS AND DEVICE SPACING	1J(02)
PCMS DETAILS	1J(03)
TMP TYP. SECTIONS	1J(A8)
TMP ALIGNMENT DATA	10(9-9A)

LEGEND

- DENOTES WORK ZONE/CONSTRUCTION THIS PHASE
- DENOTES TEMPORARY CONSTRUCTION THIS PHASE
- DENOTES CONSTRUCTION PREVIOUS PHASE
- DENOTES EXISTING TRAFFIC PATTERN
- DENOTES TRAFFIC PATTERN THIS PHASE/STAGE
- DENOTES TEMPORARY TRAFFIC BARRIER SERVICE
- DENOTES GROUP 2 CHANNELIZING DEVICES
- DENOTES VDOT APPROVED IMPACT ATTENUATOR
- DENOTES CONSTRUCTION SIGN THIS PHASE
- DENOTES TYPE III BARRICADE

SCALE
0 50' 100'

PROJECT	SHEET NO.
0001-029-001	1P(B3)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY A.MORTON THOMAS & ASSOC.

TMP / SOC PHASE 2B / STEP 2

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	1P(B4)

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

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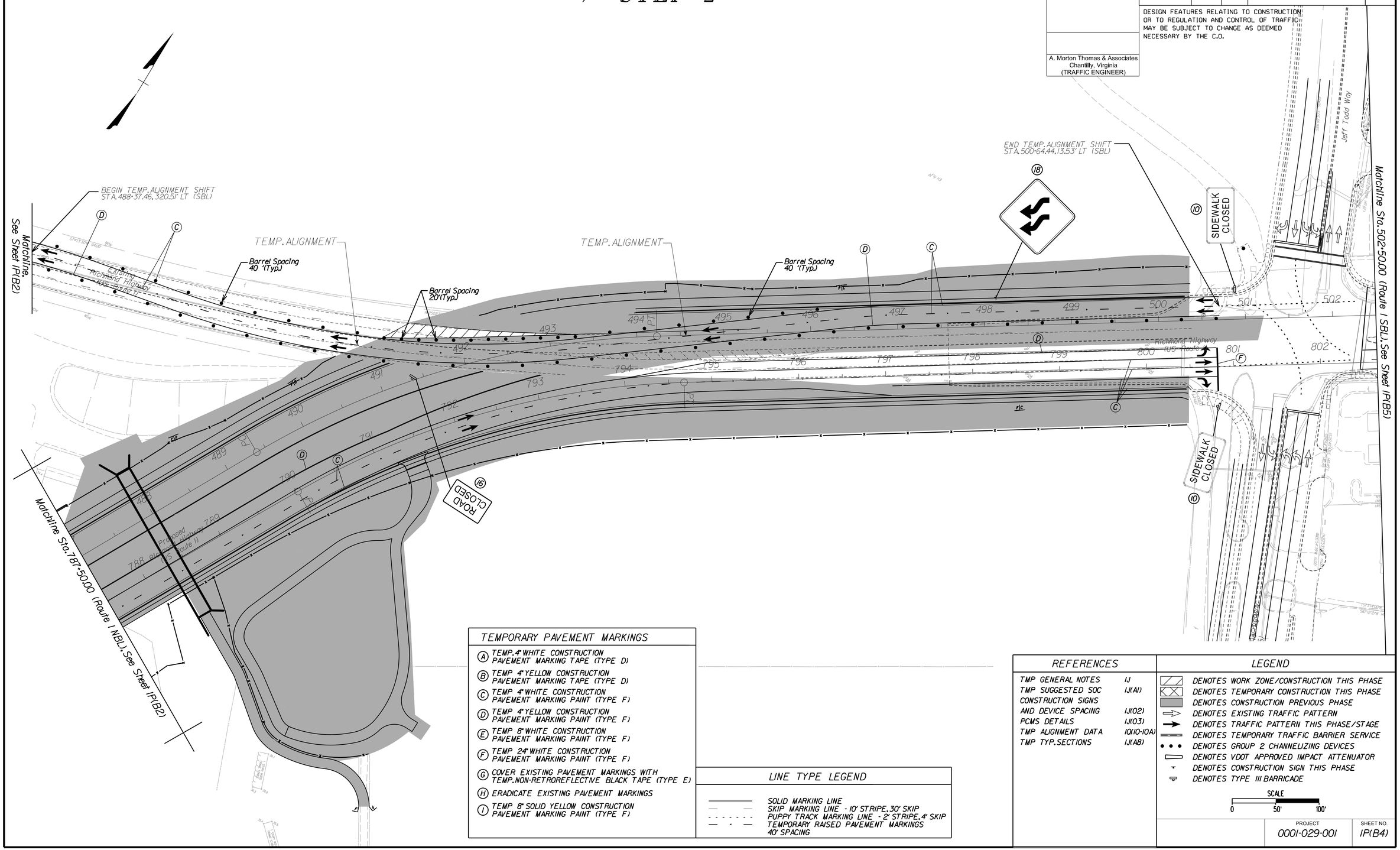
(TRAFFIC ENGINEER)



TEMPORARY PAVEMENT MARKINGS

- (A) TEMP. 4" WHITE CONSTRUCTION PAVEMENT MARKING TAPE (TYPE D)
- (B) TEMP 4" YELLOW CONSTRUCTION PAVEMENT MARKING TAPE (TYPE D)
- (C) TEMP 4" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (D) TEMP 4" YELLOW CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (E) TEMP 8" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (F) TEMP 24" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (G) COVER EXISTING PAVEMENT MARKINGS WITH TEMP. NON-RETROREFLECTIVE BLACK TAPE (TYPE E)
- (H) ERADICATE EXISTING PAVEMENT MARKINGS
- (I) TEMP 8" SOLID YELLOW CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)

LINE TYPE LEGEND

- SOLID MARKING LINE
- SKIP MARKING LINE - 10' STRIPE, 30' SKIP
- PUPPY TRACK MARKING LINE - 2' STRIPE, 4' SKIP
- TEMPORARY RAISED PAVEMENT MARKINGS 40' SPACING

REFERENCES

TMP GENERAL NOTES	1J
TMP SUGGESTED SOC	1J(A1)
CONSTRUCTION SIGNS AND DEVICE SPACING	1J(02)
PCMS DETAILS	1J(03)
TMP ALIGNMENT DATA	1Q(10-10A)
TMP TYP. SECTIONS	1J(A8)

LEGEND

- DENOTES WORK ZONE/CONSTRUCTION THIS PHASE
- DENOTES TEMPORARY CONSTRUCTION THIS PHASE
- DENOTES CONSTRUCTION PREVIOUS PHASE
- DENOTES EXISTING TRAFFIC PATTERN
- DENOTES TRAFFIC PATTERN THIS PHASE/STAGE
- DENOTES TEMPORARY TRAFFIC BARRIER SERVICE
- DENOTES GROUP 2 CHANNELIZING DEVICES
- DENOTES VDOT APPROVED IMPACT ATTENUATOR
- DENOTES CONSTRUCTION SIGN THIS PHASE
- DENOTES TYPE III BARRICADE

SCALE
0 50' 100'

PROJECT	SHEET NO.
0001-029-001	1P(B4)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY A.MORTON THOMAS & ASSOC.

TMP / SOC PHASE 2B

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	1P(B5)

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

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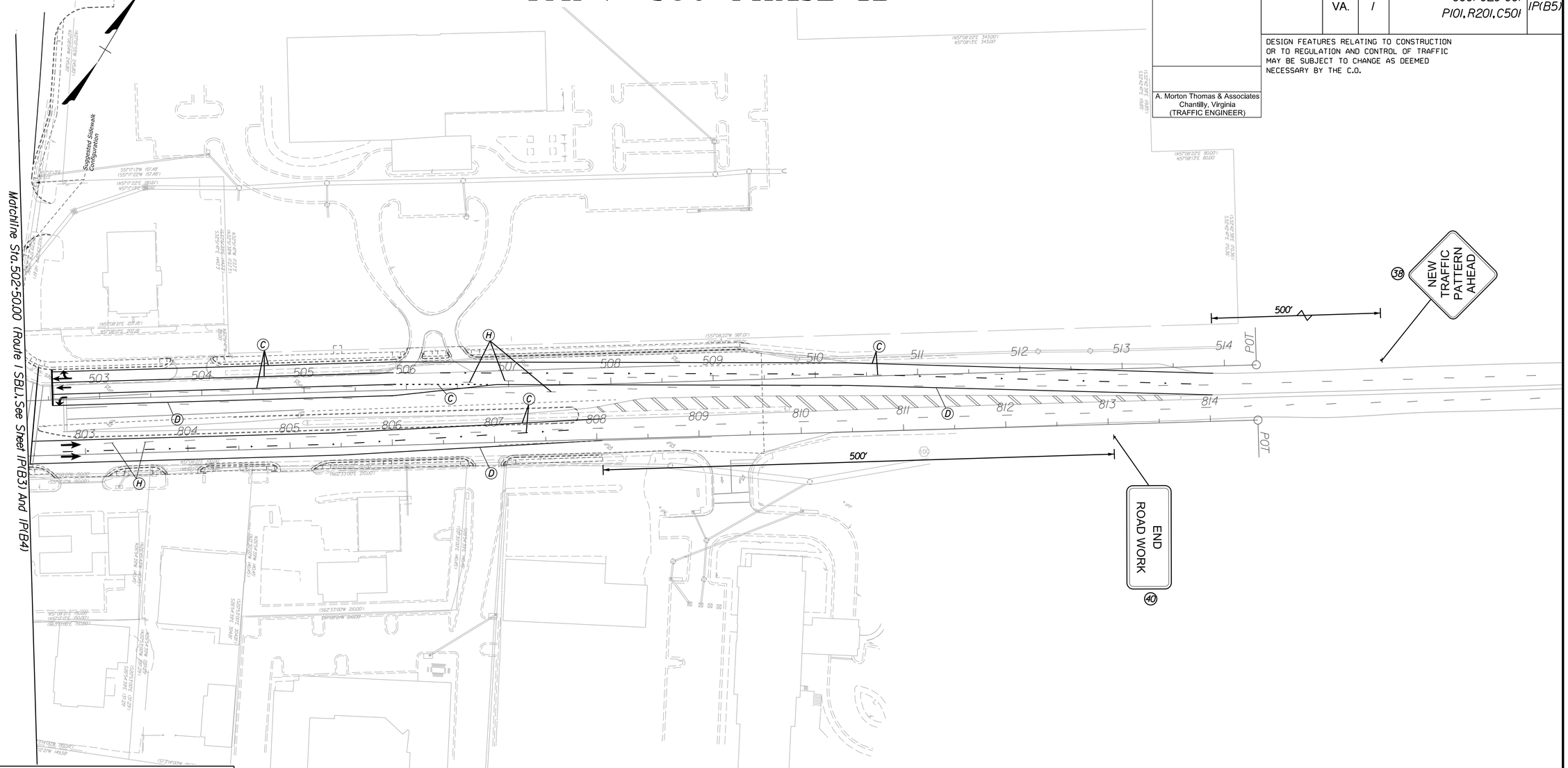
(TRAFFIC ENGINEER)



TEMPORARY PAVEMENT MARKINGS

- (A) TEMP. 4" WHITE CONSTRUCTION PAVEMENT MARKING TAPE (TYPE D)
- (B) TEMP 4" YELLOW CONSTRUCTION PAVEMENT MARKING TAPE (TYPE D)
- (C) TEMP 4" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (D) TEMP 4" YELLOW CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (E) TEMP 8" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (F) TEMP 24" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (G) COVER EXISTING PAVEMENT MARKINGS WITH TEMP. NON-RETROREFLECTIVE BLACK TAPE (TYPE E)
- (H) ERADICATE EXISTING PAVEMENT MARKINGS
- (I) TEMP 8" SOLID YELLOW CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)

LINE TYPE LEGEND

- SOLID MARKING LINE
- SKIP MARKING LINE - 10' STRIPE, 30' SKIP
- PUPPY TRACK MARKING LINE - 2' STRIPE, 4' SKIP
- TEMPORARY RAISED PAVEMENT MARKINGS 40' SPACING

REFERENCES

TMP GENERAL NOTES	1J
TMP SUGGESTED SOC	1J(A1)
CONSTRUCTION SIGNS AND DEVICE SPACING	1J(02)
PCMS DETAILS	1J(03)

LEGEND

- DENOTES WORK ZONE/CONSTRUCTION THIS PHASE
- DENOTES TEMPORARY CONSTRUCTION THIS PHASE
- DENOTES CONSTRUCTION PREVIOUS PHASE
- DENOTES EXISTING TRAFFIC PATTERN
- DENOTES TRAFFIC PATTERN THIS PHASE/STAGE
- DENOTES TEMPORARY TRAFFIC BARRIER SERVICE
- DENOTES GROUP 2 CHANNELIZING DEVICES
- DENOTES VDOT APPROVED IMPACT ATTENUATOR
- DENOTES CONSTRUCTION SIGN THIS PHASE
- DENOTES TYPE III BARRICADE

SCALE
0 50' 100'

PROJECT	SHEET NO.
0001-029-001	1P(B5)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY A.MORTON THOMAS & ASSOC.

TMP / SOC PHASE 2C

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	1P(C1)

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

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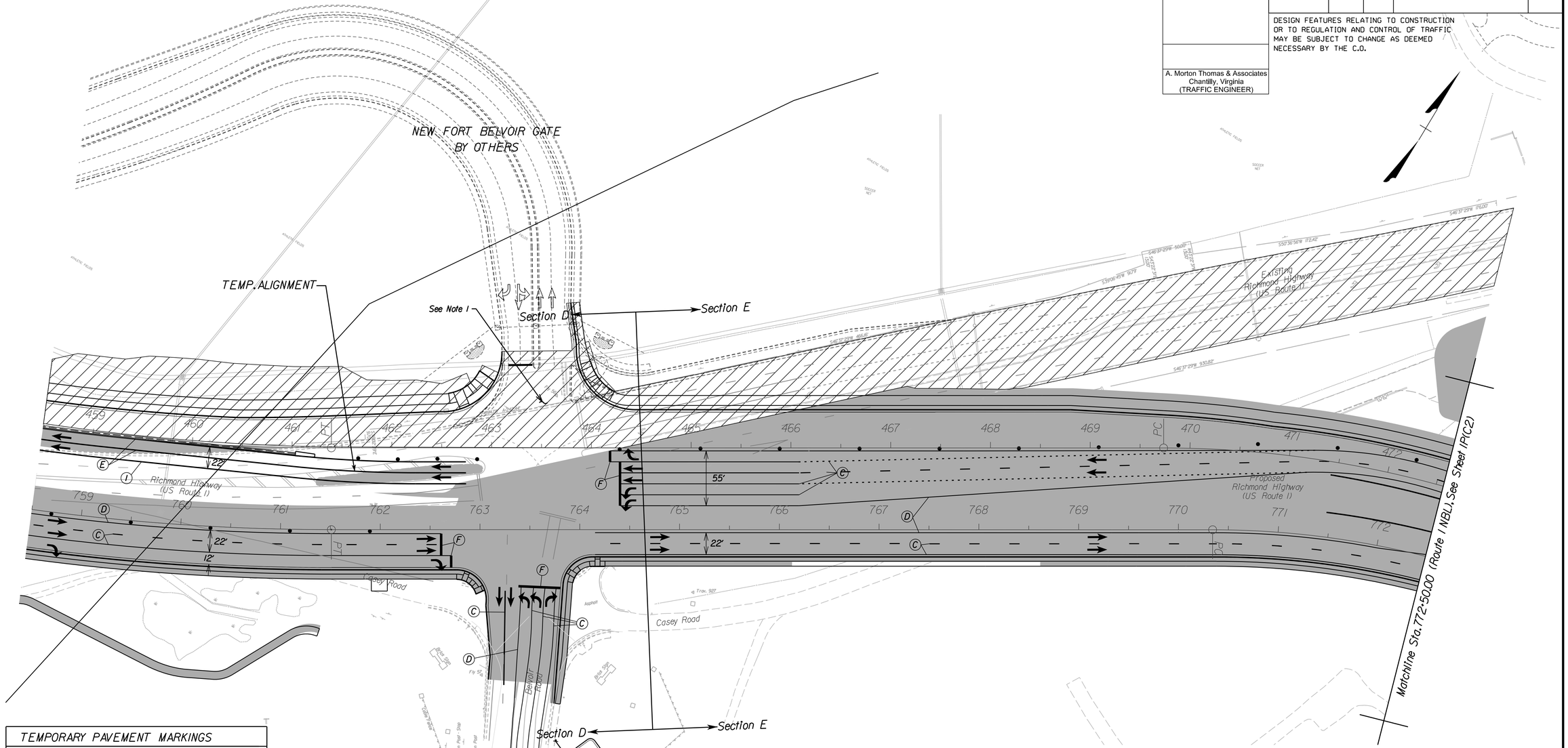

TEMPORARY PAVEMENT MARKINGS

- (A) TEMP. 4" WHITE CONSTRUCTION PAVEMENT MARKING TAPE (TYPE D)
- (B) TEMP 4" YELLOW CONSTRUCTION PAVEMENT MARKING TAPE (TYPE D)
- (C) TEMP 4" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (D) TEMP 4" YELLOW CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (E) TEMP 8" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (F) TEMP 24" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (G) COVER EXISTING PAVEMENT MARKINGS WITH TEMP. NON-RETROREFLECTIVE BLACK TAPE (TYPE E)
- (H) ERADICATE EXISTING PAVEMENT MARKINGS
- (I) TEMP 8" SOLID YELLOW CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)

LINE TYPE LEGEND

- SOLID MARKING LINE
- SKIP MARKING LINE - 10' STRIPE, 30' SKIP
- PUPPY TRACK MARKING LINE - 2' STRIPE, 4' SKIP

NOTES:
1. Contractor to Implement VWAPM TTC-30.0, TTC-57.0, and TTC-58.0 as needed to construct intersection of Belvoir Rd./Rte.1.
2. Construction of the new Fort Belvoir Gate to be performed by others. Maintenance of traffic to be coordinated as necessary depending on timing of construction.
3. Work shall be coordinated with approved Section D plans.

REFERENCES

TMP GENERAL NOTES	1J
TMP SUGGESTED SOC	1J(A1)
CONSTRUCTION SIGNS AND DEVICE SPACING	1J(02)
PCMS DETAILS	1J(03)
TMP ALIGNMENT DATA	1Q(8-8A)

LEGEND

- DENOTES WORK ZONE/CONSTRUCTION THIS PHASE
- DENOTES TEMPORARY CONSTRUCTION THIS PHASE
- DENOTES CONSTRUCTION PREVIOUS PHASE
- DENOTES EXISTING TRAFFIC PATTERN
- DENOTES TRAFFIC PATTERN THIS PHASE/STAGE
- DENOTES TEMPORARY TRAFFIC BARRIER SERVICE
- DENOTES GROUP 2 CHANNELIZING DEVICES
- DENOTES VDOT APPROVED IMPACT ATTENUATOR
- DENOTES CONSTRUCTION SIGN THIS PHASE
- DENOTES TYPE III BARRICADE

SCALE
0 50' 100'

PROJECT	SHEET NO.
0001-029-001	1P(C1)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY A.MORTON THOMAS & ASSOC.

TMP / SOC PHASE 2C

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	I	0001-029-001 P101, R201, C501	1P(C2)

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

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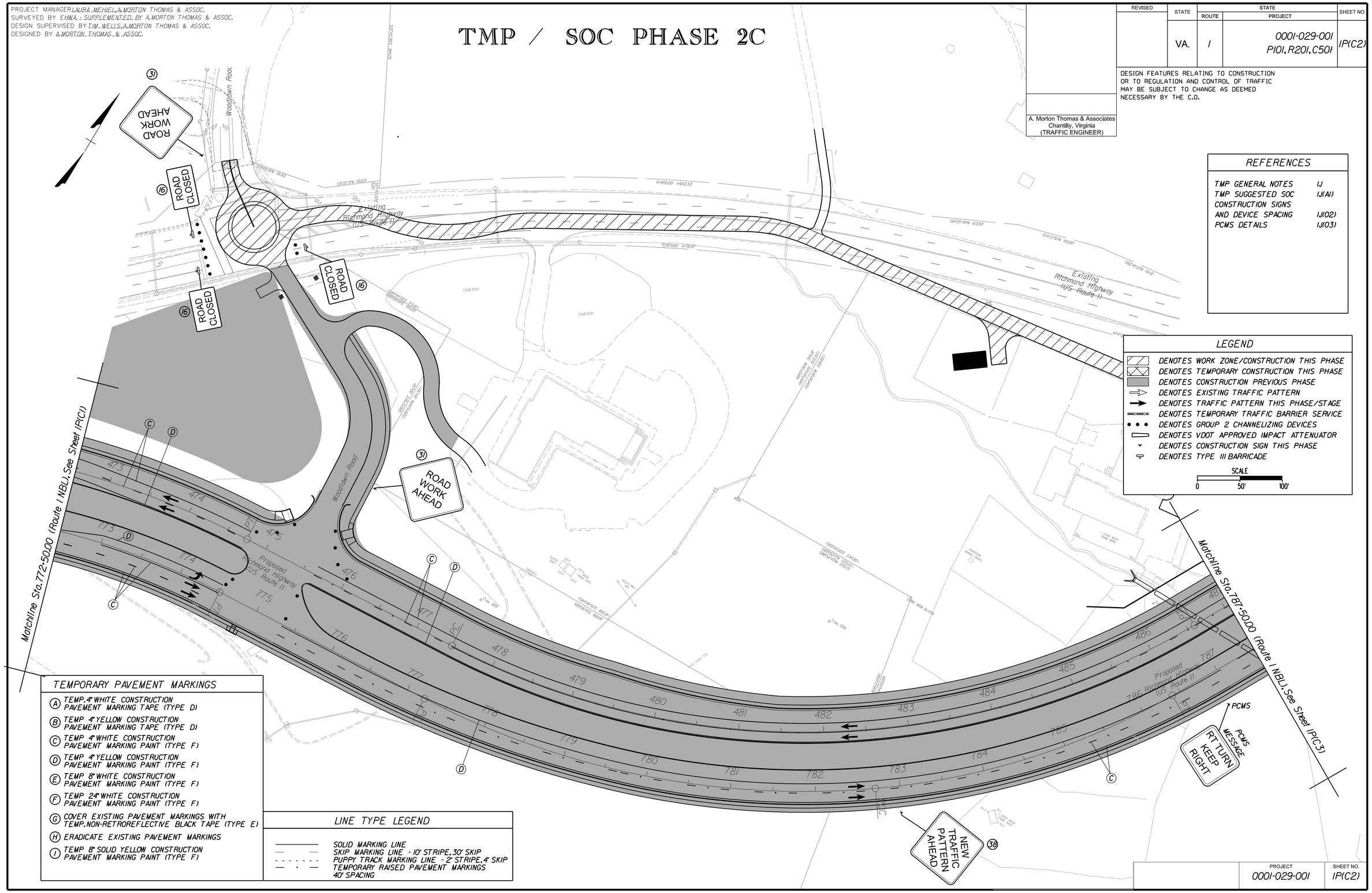

REFERENCES

TMP GENERAL NOTES	1J
TMP SUGGESTED SOC	1J(A1)
CONSTRUCTION SIGNS AND DEVICE SPACING	1J(02)
PCMS DETAILS	1J(03)

LEGEND

- DENOTES WORK ZONE/CONSTRUCTION THIS PHASE
- DENOTES TEMPORARY CONSTRUCTION THIS PHASE
- DENOTES CONSTRUCTION PREVIOUS PHASE
- DENOTES EXISTING TRAFFIC PATTERN
- DENOTES TRAFFIC PATTERN THIS PHASE/STAGE
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- DENOTES GROUP 2 CHANNELIZING DEVICES
- DENOTES VDOT APPROVED IMPACT ATTENUATOR
- DENOTES CONSTRUCTION SIGN THIS PHASE
- DENOTES TYPE III BARRICADE

SCALE 0 50' 100'

TEMPORARY PAVEMENT MARKINGS

- (A) TEMP. 4" WHITE CONSTRUCTION PAVEMENT MARKING TAPE (TYPE D)
- (B) TEMP 4" YELLOW CONSTRUCTION PAVEMENT MARKING TAPE (TYPE D)
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- (I) TEMP 8" SOLID YELLOW CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)

LINE TYPE LEGEND

- SOLID MARKING LINE
- SKIP MARKING LINE - 10' STRIPE, 30' SKIP
- PUPPY TRACK MARKING LINE - 2' STRIPE, 4' SKIP
- TEMPORARY RAISED PAVEMENT MARKINGS 40' SPACING

PROJECT	SHEET NO.
0001-029-001	1P(C2)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY A.MORTON THOMAS & ASSOC.

TMP / SOC PHASE 2C

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	1P(C3)

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

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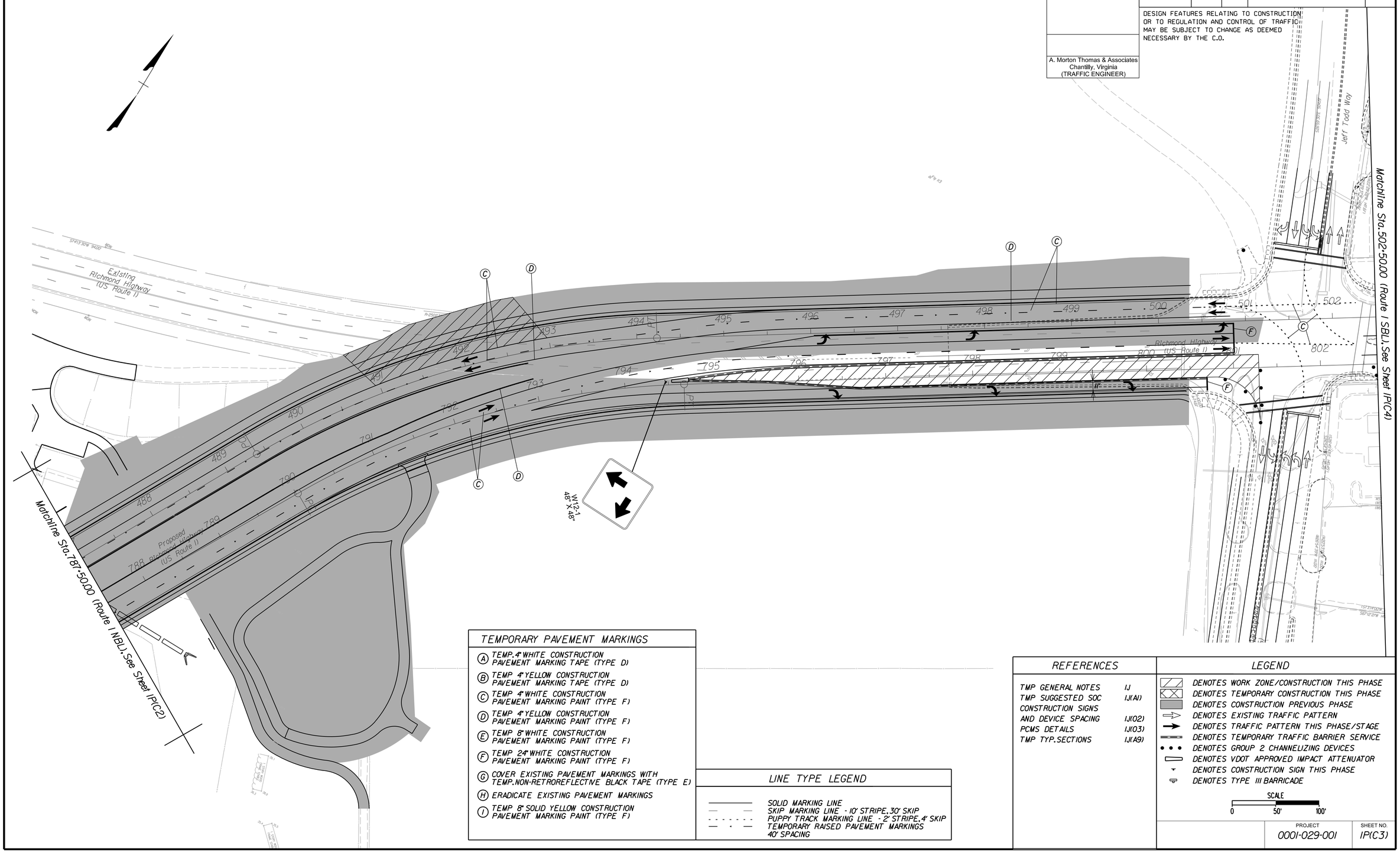

TEMPORARY PAVEMENT MARKINGS

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- (E) TEMP 8" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (F) TEMP 24" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
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LINE TYPE LEGEND

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- SKIP MARKING LINE - 10' STRIPE, 30' SKIP
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- TEMPORARY RAISED PAVEMENT MARKINGS 40' SPACING

REFERENCES

TMP GENERAL NOTES	1J
TMP SUGGESTED SOC	1J(A1)
CONSTRUCTION SIGNS AND DEVICE SPACING	1J(02)
PCMS DETAILS	1J(03)
TMP TYP. SECTIONS	1J(A9)

LEGEND

- DENOTES WORK ZONE/CONSTRUCTION THIS PHASE
- DENOTES TEMPORARY CONSTRUCTION THIS PHASE
- DENOTES CONSTRUCTION PREVIOUS PHASE
- DENOTES EXISTING TRAFFIC PATTERN
- DENOTES TRAFFIC PATTERN THIS PHASE/STAGE
- DENOTES TEMPORARY TRAFFIC BARRIER SERVICE
- DENOTES GROUP 2 CHANNELIZING DEVICES
- DENOTES VDOT APPROVED IMPACT ATTENUATOR
- DENOTES CONSTRUCTION SIGN THIS PHASE
- DENOTES TYPE III BARRICADE

SCALE
0 50' 100'

PROJECT	SHEET NO.
0001-029-001	1P(C3)

PROJECT MANAGER LAURA MEHIEL A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS A.MORTON THOMAS & ASSOC.
DESIGNED BY A.MORTON THOMAS & ASSOC.

TMP / SOC PHASE 2C

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101,R201,C501	1P(C4)

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

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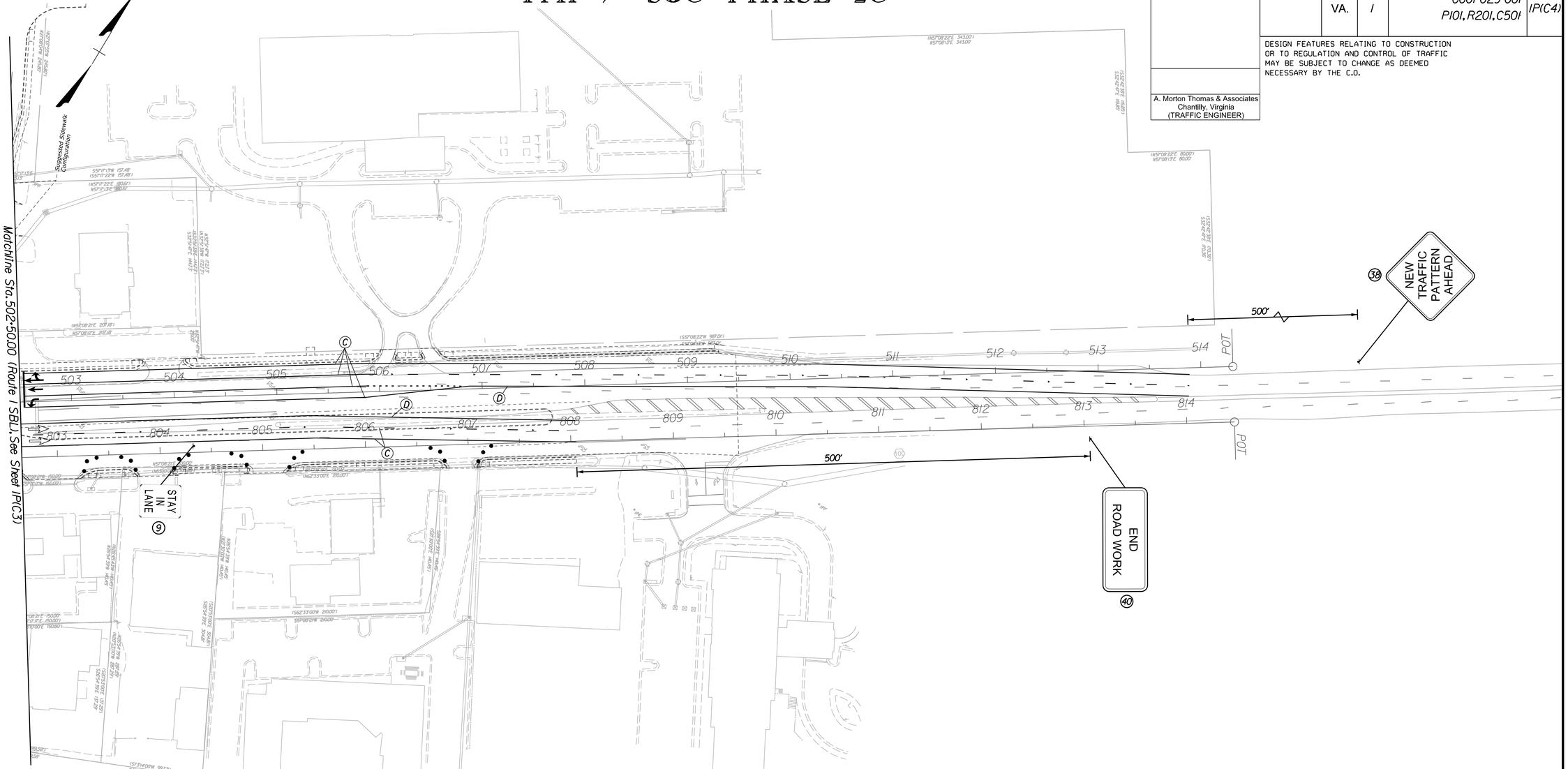

TEMPORARY PAVEMENT MARKINGS

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- (G) COVER EXISTING PAVEMENT MARKINGS WITH TEMP. NON-RETROREFLECTIVE BLACK TAPE (TYPE E)
- (H) ERADICATE EXISTING PAVEMENT MARKINGS
- (I) TEMP 8" SOLID YELLOW CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)

LINE TYPE LEGEND

- SOLID MARKING LINE
- SKIP MARKING LINE - 10' STRIPE, 30' SKIP
- PUPPY TRACK MARKING LINE - 2' STRIPE, 4' SKIP
- TEMPORARY RAISED PAVEMENT MARKINGS 40' SPACING

REFERENCES

TMP GENERAL NOTES	1J
TMP SUGGESTED SOC	1J(A1)
CONSTRUCTION SIGNS AND DEVICE SPACING	1J(02)
PCMS DETAILS	1J(03)

LEGEND

- DENOTES WORK ZONE/CONSTRUCTION THIS PHASE
- DENOTES TEMPORARY CONSTRUCTION THIS PHASE
- DENOTES CONSTRUCTION PREVIOUS PHASE
- DENOTES EXISTING TRAFFIC PATTERN
- DENOTES TRAFFIC PATTERN THIS PHASE/STAGE
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- DENOTES GROUP 2 CHANNELIZING DEVICES
- DENOTES VDOT APPROVED IMPACT ATTENUATOR
- DENOTES CONSTRUCTION SIGN THIS PHASE
- DENOTES TYPE III BARRICADE

SCALE
0 50' 100'

PROJECT	SHEET NO.
0001-029-001	1P(C4)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY A.MORTON THOMAS & ASSOC.

TMP / SOC PHASE 2D

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	1P(D1)

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

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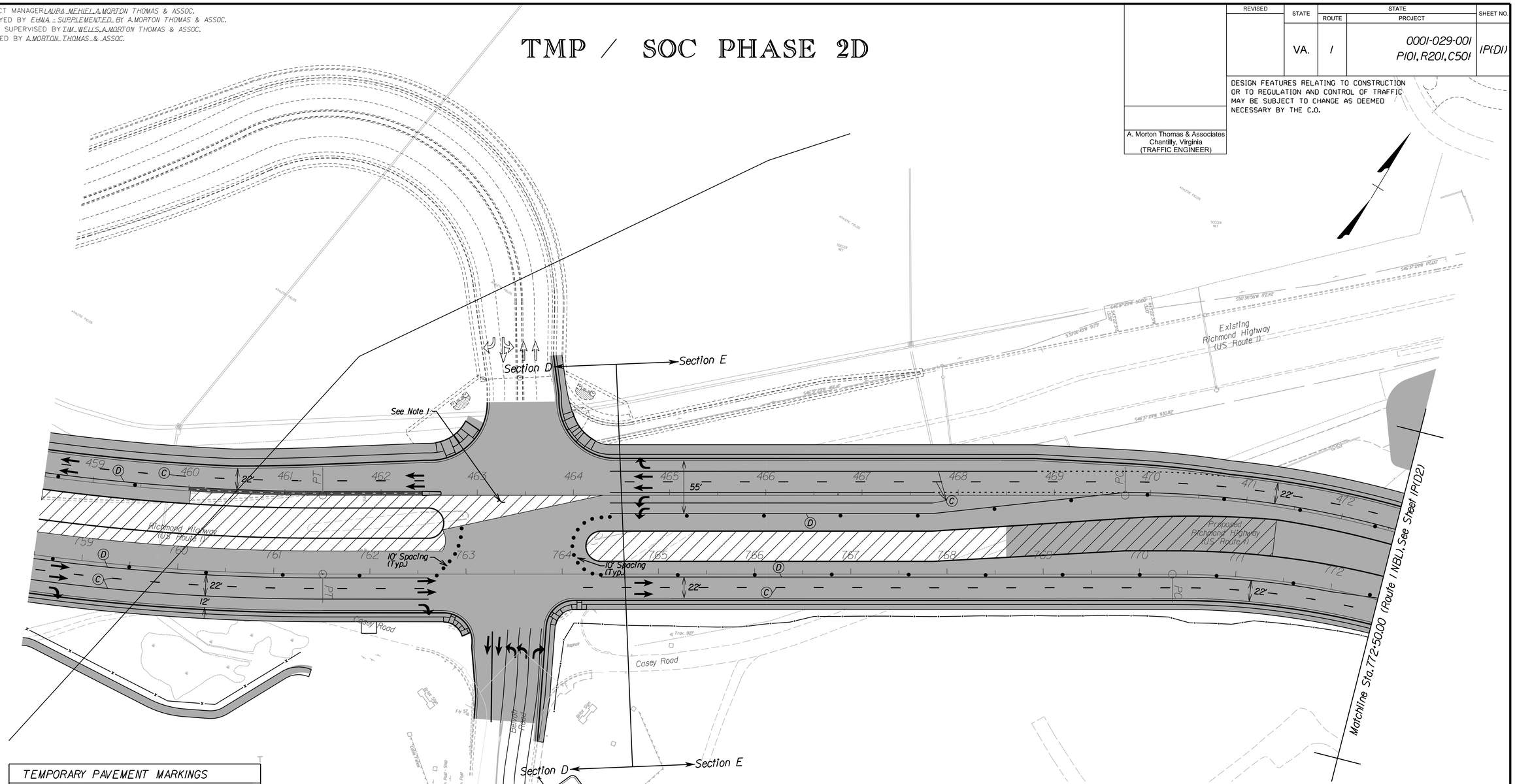

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- (H) ERADICATE EXISTING PAVEMENT MARKINGS
- (I) TEMP 8" SOLID YELLOW CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)

LINE TYPE LEGEND

- SOLID MARKING LINE
- SKIP MARKING LINE - 10' STRIPE, 30' SKIP
- PUPPY TRACK MARKING LINE - 2' STRIPE, 4' SKIP

NOTES:

1. Contractor to implement VWAPM TTC-30.0, TTC-57.0, and TTC-58.0 as needed to construct intersection of Belvoir Rd./Rte.1.
2. Construction of the new Fort Belvoir Gate to be performed by others. Maintenance of Traffic to be coordinated as necessary depending on timing of construction.
3. Work shall be coordinated with approved Section D plans.

REFERENCES

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TMP SUGGESTED SOC	1J(A1)
CONSTRUCTION SIGNS AND DEVICE SPACING	1J(02)
PCMS DETAILS	1J(03)
TMP TYP. SECTIONS	1J(A9)

LEGEND

- DENOTES WORK ZONE/CONSTRUCTION THIS PHASE
- DENOTES TEMPORARY CONSTRUCTION THIS PHASE
- DENOTES CONSTRUCTION PREVIOUS PHASE
- DENOTES EXISTING TRAFFIC PATTERN
- DENOTES TRAFFIC PATTERN THIS PHASE/STAGE
- DENOTES TEMPORARY TRAFFIC BARRIER SERVICE
- DENOTES GROUP 2 CHANNELIZING DEVICES
- DENOTES VDOT APPROVED IMPACT ATTENUATOR
- DENOTES CONSTRUCTION SIGN THIS PHASE
- DENOTES TYPE III BARRICADE

SCALE
0 50' 100'

PROJECT	SHEET NO.
0001-029-001	1P(D1)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY A.MORTON THOMAS & ASSOC.

TMP / SOC PHASE 2D

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	1P(D2)

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

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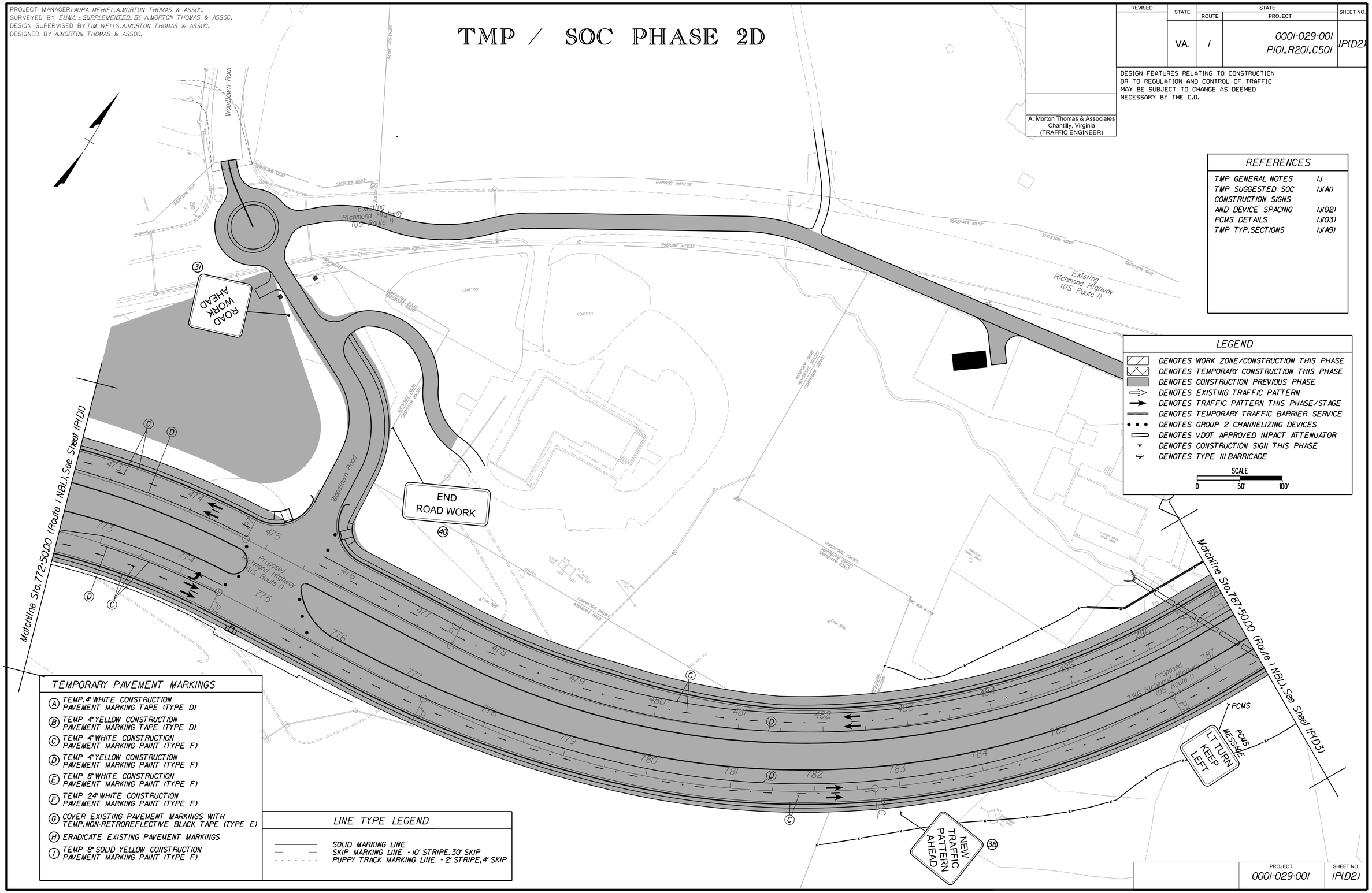


REFERENCES

TMP GENERAL NOTES	1J
TMP SUGGESTED SOC	1J(A1)
CONSTRUCTION SIGNS AND DEVICE SPACING	1J(02)
PCMS DETAILS	1J(03)
TMP TYP. SECTIONS	1J(A9)

LEGEND

- DENOTES WORK ZONE/CONSTRUCTION THIS PHASE
- DENOTES TEMPORARY CONSTRUCTION THIS PHASE
- DENOTES CONSTRUCTION PREVIOUS PHASE
- DENOTES EXISTING TRAFFIC PATTERN
- DENOTES TRAFFIC PATTERN THIS PHASE/STAGE
- DENOTES TEMPORARY TRAFFIC BARRIER SERVICE
- DENOTES GROUP 2 CHANNELIZING DEVICES
- DENOTES VDOT APPROVED IMPACT ATTENUATOR
- DENOTES CONSTRUCTION SIGN THIS PHASE
- DENOTES TYPE III BARRICADE

SCALE 0 50' 100'

TEMPORARY PAVEMENT MARKINGS

- (A) TEMP. 4" WHITE CONSTRUCTION PAVEMENT MARKING TAPE (TYPE D)
- (B) TEMP 4" YELLOW CONSTRUCTION PAVEMENT MARKING TAPE (TYPE D)
- (C) TEMP 4" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (D) TEMP 4" YELLOW CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (E) TEMP 8" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (F) TEMP 24" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (G) COVER EXISTING PAVEMENT MARKINGS WITH TEMP. NON-RETROREFLECTIVE BLACK TAPE (TYPE E)
- (H) ERADICATE EXISTING PAVEMENT MARKINGS
- (I) TEMP 8" SOLID YELLOW CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)

LINE TYPE LEGEND

- SOLID MARKING LINE
- SKIP MARKING LINE - 10' STRIPE, 30' SKIP
- PUPPY TRACK MARKING LINE - 2' STRIPE, 4' SKIP

PROJECT	SHEET NO.
0001-029-001	1P(D2)

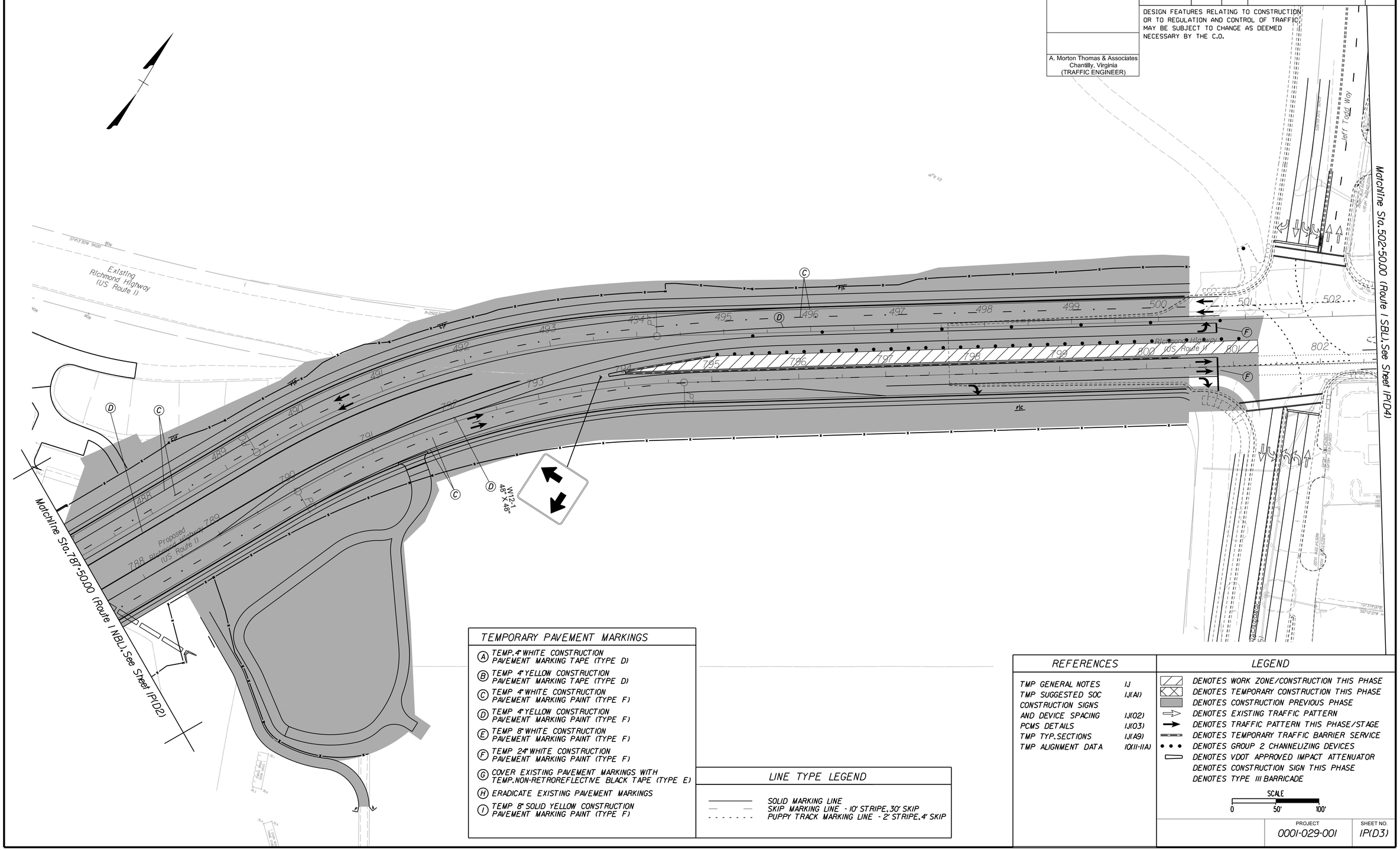
PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY A.MORTON THOMAS & ASSOC.

TMP / SOC PHASE 2D

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	1P(D3)

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

A. Morton Thomas & Associates
Chantilly, Virginia
(TRAFFIC ENGINEER)



TEMPORARY PAVEMENT MARKINGS

- (A) TEMP. 4" WHITE CONSTRUCTION PAVEMENT MARKING TAPE (TYPE D)
- (B) TEMP 4" YELLOW CONSTRUCTION PAVEMENT MARKING TAPE (TYPE D)
- (C) TEMP 4" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (D) TEMP 4" YELLOW CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (E) TEMP 8" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (F) TEMP 24" WHITE CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)
- (G) COVER EXISTING PAVEMENT MARKINGS WITH TEMP. NON-RETROREFLECTIVE BLACK TAPE (TYPE E)
- (H) ERADICATE EXISTING PAVEMENT MARKINGS
- (I) TEMP 8" SOLID YELLOW CONSTRUCTION PAVEMENT MARKING PAINT (TYPE F)

LINE TYPE LEGEND

- SOLID MARKING LINE
- SKIP MARKING LINE - 10' STRIPE, 30' SKIP
- PUPPY TRACK MARKING LINE - 2' STRIPE, 4' SKIP

REFERENCES

TMP GENERAL NOTES	1J
TMP SUGGESTED SOC	1J(A1)
CONSTRUCTION SIGNS AND DEVICE SPACING	1J(02)
PCMS DETAILS	1J(03)
TMP TYP. SECTIONS	1J(A9)
TMP ALIGNMENT DATA	1Q(11-11A)

LEGEND

- DENOTES WORK ZONE/CONSTRUCTION THIS PHASE
- DENOTES TEMPORARY CONSTRUCTION THIS PHASE
- DENOTES CONSTRUCTION PREVIOUS PHASE
- DENOTES EXISTING TRAFFIC PATTERN
- DENOTES TRAFFIC PATTERN THIS PHASE/STAGE
- DENOTES TEMPORARY TRAFFIC BARRIER SERVICE
- DENOTES GROUP 2 CHANNELIZING DEVICES
- DENOTES VDOT APPROVED IMPACT ATTENUATOR
- DENOTES CONSTRUCTION SIGN THIS PHASE
- DENOTES TYPE III BARRICADE

SCALE
0 50' 100'

PROJECT	SHEET NO.
0001-029-001	1P(D3)

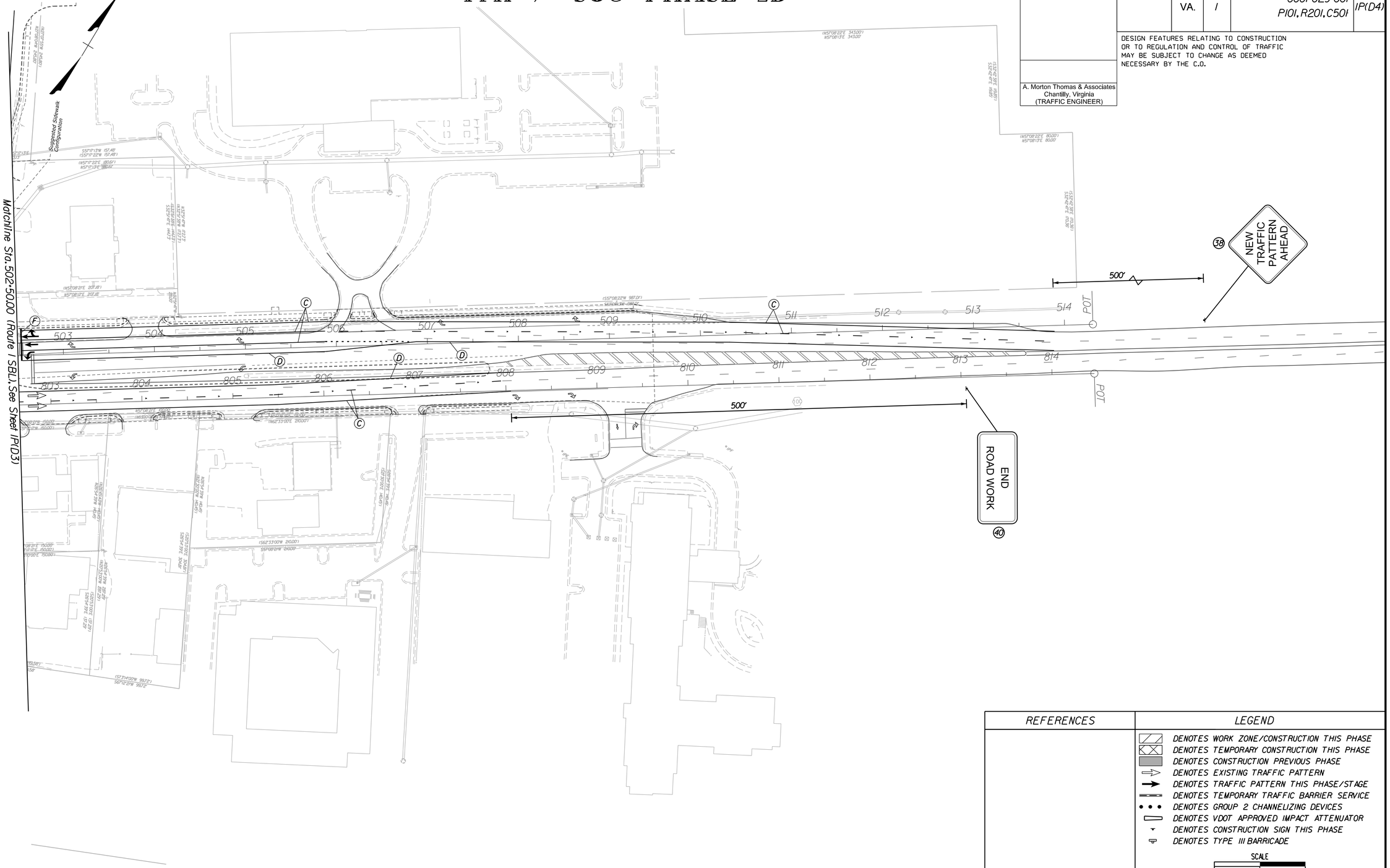
PROJECT MANAGER LAURA MEHIEL A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS A.MORTON THOMAS & ASSOC.
DESIGNED BY A.MORTON THOMAS & ASSOC.

TMP / SOC PHASE 2D

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101,R201,C501	1P(D4)

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

A. Morton Thomas & Associates
Chantilly, Virginia
(TRAFFIC ENGINEER)



REFERENCES	LEGEND
	DENOTES WORK ZONE/CONSTRUCTION THIS PHASE
	DENOTES TEMPORARY CONSTRUCTION THIS PHASE
	DENOTES CONSTRUCTION PREVIOUS PHASE
	DENOTES EXISTING TRAFFIC PATTERN
	DENOTES TRAFFIC PATTERN THIS PHASE/STAGE
	DENOTES TEMPORARY TRAFFIC BARRIER SERVICE
	DENOTES GROUP 2 CHANNELIZING DEVICES
	DENOTES VDOT APPROVED IMPACT ATTENUATOR
	DENOTES CONSTRUCTION SIGN THIS PHASE
	DENOTES TYPE III BARRICADE

SCALE
0 50' 100'

PROJECT	SHEET NO.
0001-029-001	1P(D4)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY A.MORTON THOMAS & ASSOC.

HORIZONTAL ALIGNMENT DATA - TMP/SOC PHASE 2B, STEP 1

STATION	POINT	NORTHING	EASTING	BEARING
1+00.00	POT	6,946,379.72	11,871,742.65	N 73° 11' 12" E
3+00.47	PC	6,946,437.71	11,871,934.55	N 73° 11' 12" E
4+39.76	PI	6,946,478.00	11,872,067.88	
5+77.22	PT	6,946,553.54	11,872,184.90	N 57° 09' 12" E
14+74.02	POT	6,947,039.96	11,872,938.33	N 57° 09' 12" E

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	10(9)

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

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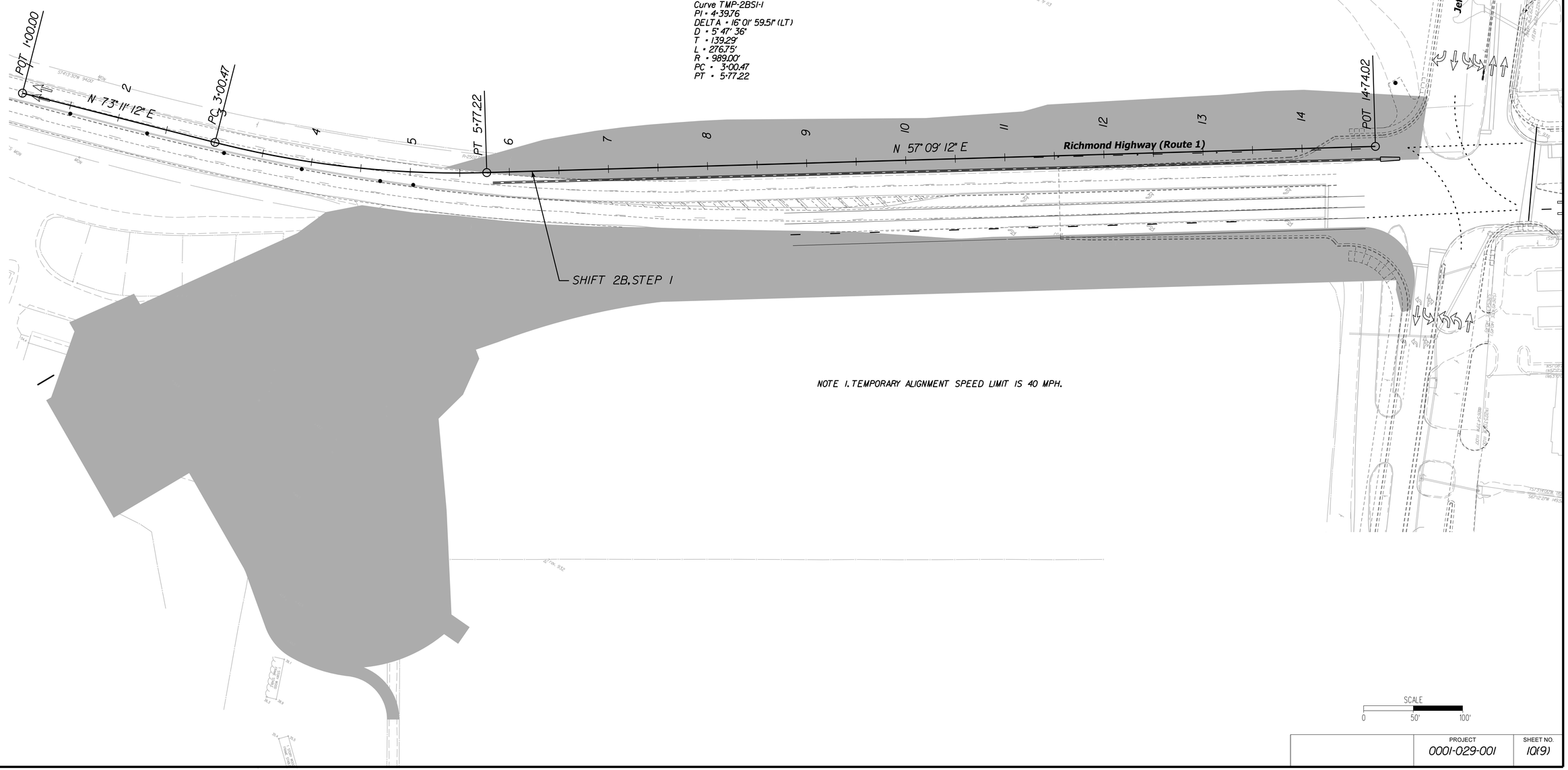


Curve TMP-2BSI-1
PI = 4+39.76
DELTA = 16°01' 59.51" (LT)
D = 5°47' 36"
T = 139.29'
L = 276.75'
R = 989.00'
PC = 3+00.47
PT = 5+77.22

NOTE 1. TEMPORARY ALIGNMENT SPEED LIMIT IS 40 MPH.

PROJECT	SHEET NO.
0001-029-001	10(9)

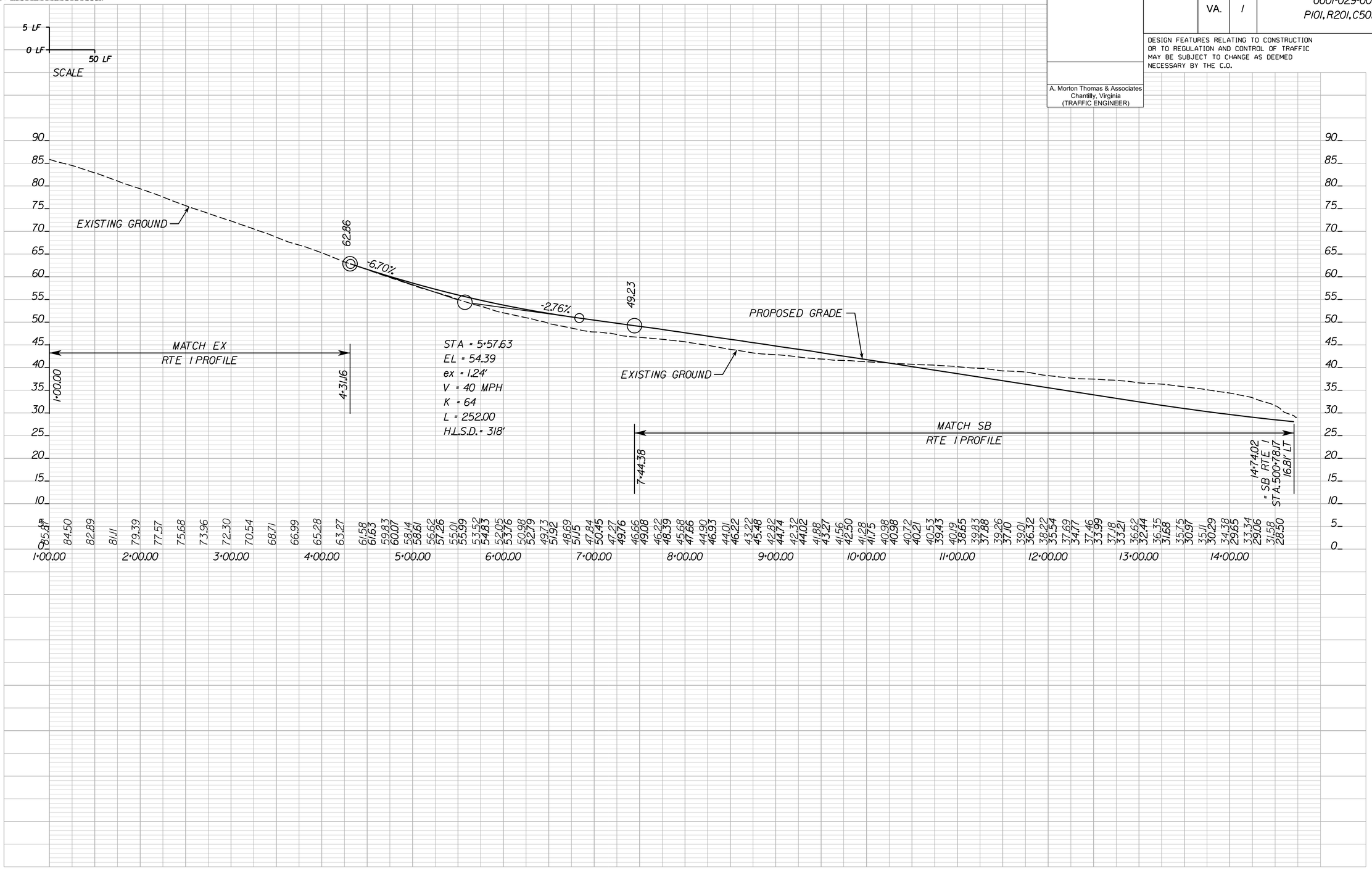
PROJECT MANAGER LAURA MEHIEL A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS A.MORTON THOMAS & ASSOC.
DESIGNED BY A.MORTON THOMAS & ASSOC.

VERTICAL ALIGNMENT DATA - TMP/SOC PHASE 2B, STEP 1

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	10(9A)

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

A. Morton Thomas & Associates
Chantilly, Virginia
(TRAFFIC ENGINEER)



PROJECT	SHEET NO.
0001-029-001	10(9A)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY A.MORTON THOMAS & ASSOC.

HORIZONTAL ALIGNMENT DATA - TMP/SOC PHASE 2B, STEP 2

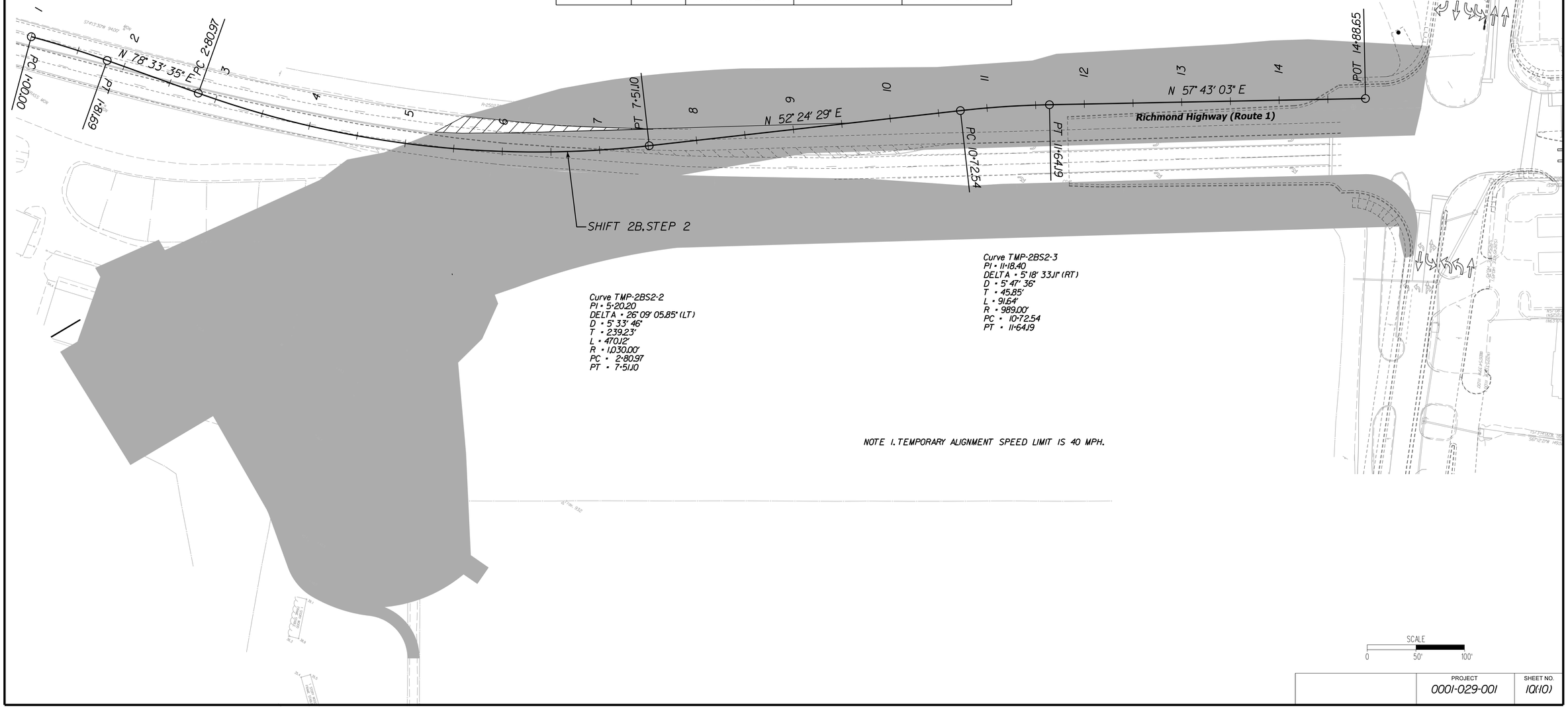
STATION	POINT	NORTHING	EASTING	BEARING
1+00.00	PC	6,946,375.33	11,871723.80	N 73° 49' 38" E
1+40.87	PI	6,946,386.72	11,871,763.05	
1+81.69	PT	6,946,394.82	11,871,803.11	N 78° 33' 35" E
2+80.97	PC	6,946,414.52	11,871,900.42	N 73° 33' 35" E
5+20.20	PI	6,946,461.97	11,872,134.90	
7+51.10	PT	6,946,607.90	11,872,324.46	N 52° 24' 29" E
10+72.54	PC	6,946,804.00	11,872,579.16	N 52° 24' 29" E
11+18.40	PI	6,946,831.97	11,872,615.50	
11+64.19	PT	6,946,856.46	11,872,654.26	N 57° 43' 03" E
14+88.65	POT	6,947,029.75	11,872,928.57	N 57° 43' 03" E

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	10(10)

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

A. Morton Thomas & Associates
Chantilly, Virginia
(TRAFFIC ENGINEER)

Curve TMP-2BS2-1
PI = 1+40.87
DELTA = 4° 43' 57.54" (RT)
D = 5° 47' 36"
T = 40.87'
L = 81.69'
R = 989.00'
PC = 1+00.00
PT = 1+81.69



Curve TMP-2BS2-2
PI = 5+20.20
DELTA = 26° 09' 05.85" (LT)
D = 5° 33' 46"
T = 239.23'
L = 470.12'
R = 1,030.00'
PC = 2+80.97
PT = 7+51.10

Curve TMP-2BS2-3
PI = 11+18.40
DELTA = 5° 18' 33.11" (RT)
D = 5° 47' 36"
T = 45.85'
L = 91.64'
R = 989.00'
PC = 10+72.54
PT = 11+64.19

NOTE 1. TEMPORARY ALIGNMENT SPEED LIMIT IS 40 MPH.

SCALE
0 50' 100'

PROJECT	SHEET NO.
0001-029-001	10(10)

PROJECT MANAGER LAURA_MEHIEL_A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM_WELLS_A.MORTON THOMAS & ASSOC.
DESIGN BY A.MORTON_THOMAS_& ASSOC.

VERTICAL ALIGNMENT DATA - TMP/SOC PHASE 2B, STEP 1

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	10(10A)

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

A. Morton Thomas & Associates
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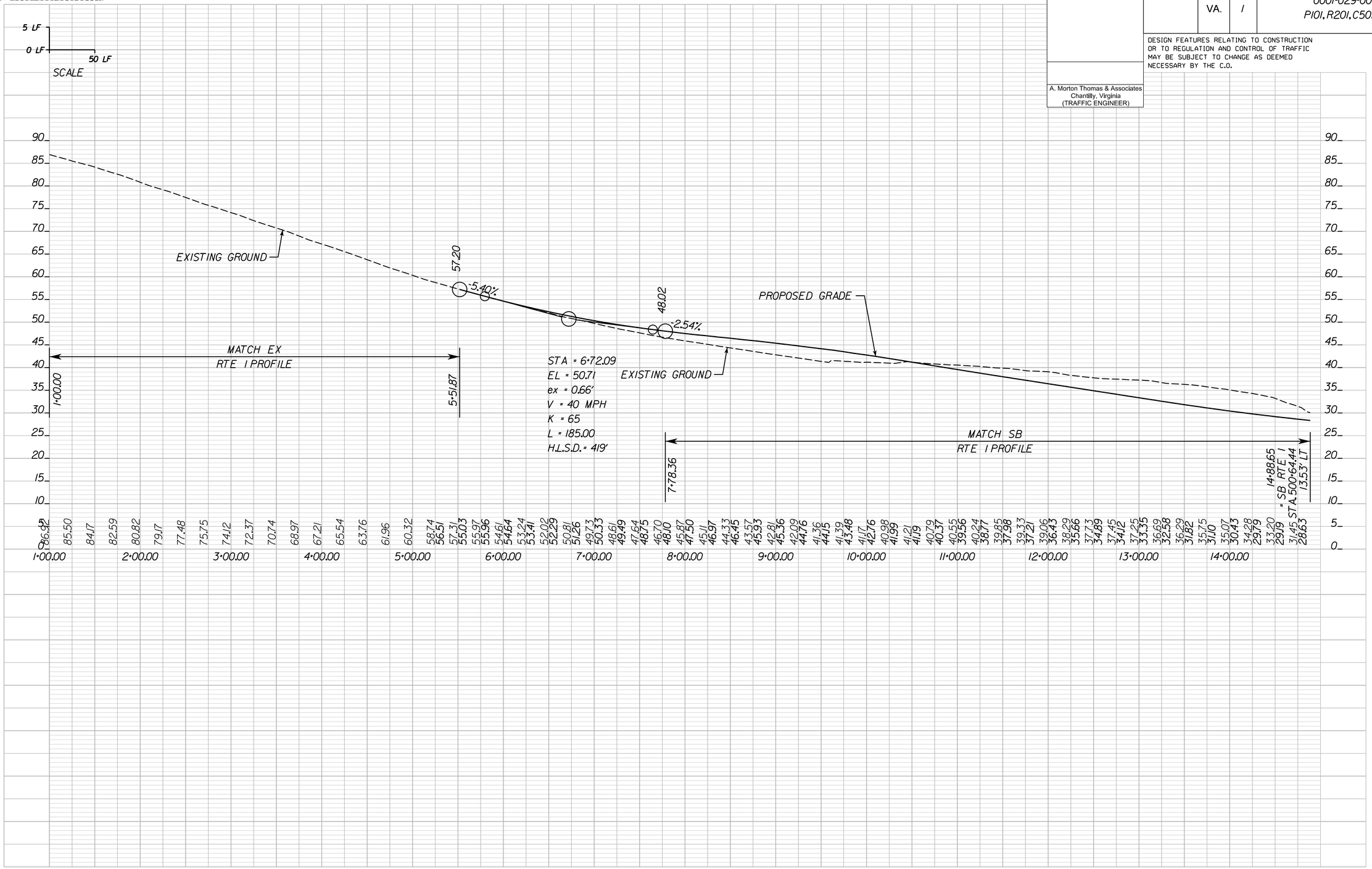


PROJECT	SHEET NO.
0001-029-001	10(10A)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY A.MORTON THOMAS & ASSOC.

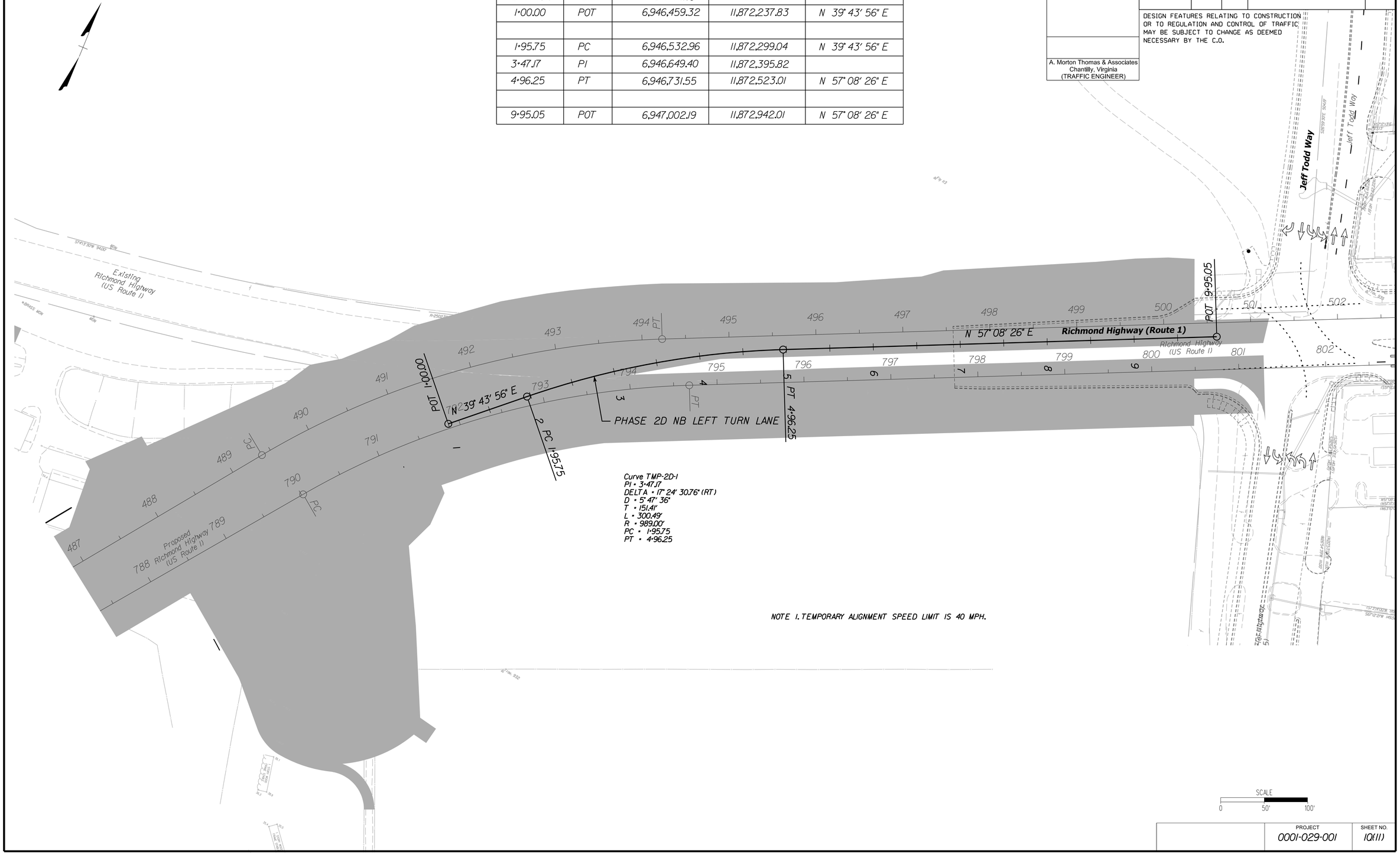
HORIZONTAL ALIGNMENT DATA - TMP/SOC PHASE 2D NB LT TURN LANE

STATION	POINT	NORTHING	EASTING	BEARING
1+00.00	POT	6,946,459.32	11,872,237.83	N 39° 43' 56" E
1+95.75	PC	6,946,532.96	11,872,299.04	N 39° 43' 56" E
3+47.17	PI	6,946,649.40	11,872,395.82	
4+96.25	PT	6,946,731.55	11,872,523.01	N 57° 08' 26" E
9+95.05	POT	6,947,002.19	11,872,942.01	N 57° 08' 26" E

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	1Q(11)

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

A. Morton Thomas & Associates
Chantilly, Virginia
(TRAFFIC ENGINEER)



PROJECT	SHEET NO.
0001-029-001	1Q(11)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY A.MORTON THOMAS & ASSOC.

VERTICAL ALIGNMENT DATA - TMP/SOC PHASE 2D NB LT TURN LANE

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	1Q(11A)

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

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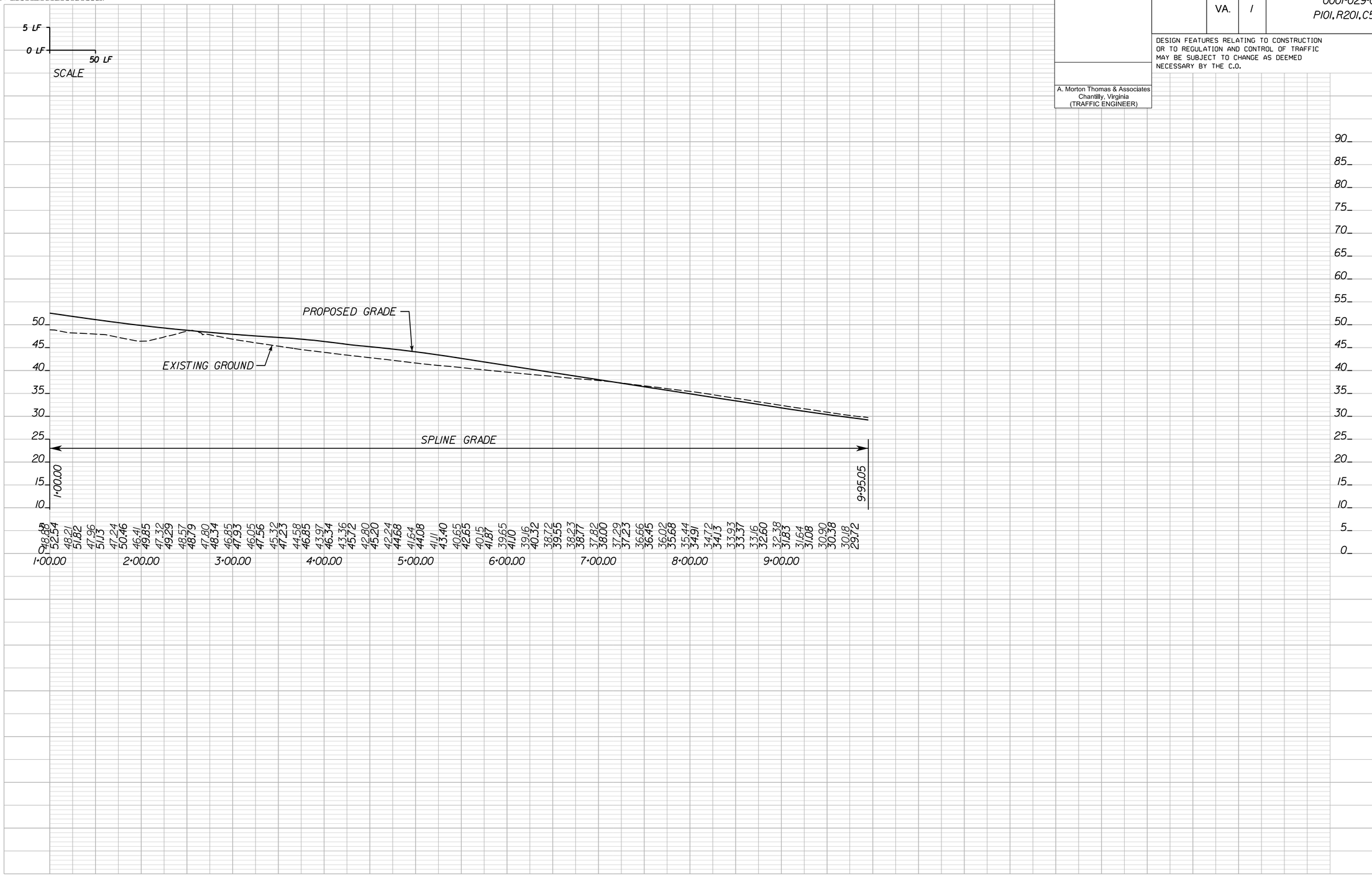

PROJECT	SHEET NO.
0001-029-001	1Q(11A)

PROJECT MANAGER LAURA MEHIEL, AMORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY AMORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, AMORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIFFORD, AMORTON THOMAS & ASSOC.

GENERAL NOTES

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	2

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

GRADING

G-1 The grade line denotes top of finished pavement unless shown otherwise on typical sections or plans.

G-5 The high-plasticity soils should be removed to a depth of 3 ft below pavement subgrades or in their entirety to competent subgrade material, whichever is less, and replaced with suitable fill. High moisture content soils are also considered unsuitable for direct support of pavements and should be evaluated during construction by the project Geotechnical and / or QA/QC team.

G-6 The borrow material for this project shall be a minimum CBR value of 5 or as approved by the Materials Engineer. All borrow materials shall have a liquid limit (LL) value of less than 45 and plasticity index (PI) value of less than 25 in their natural state.

G-7 Material from regular excavation which is suitable for stabilization with hydraulic cement (lime) shall be placed in the top portion of the subgrade.

G-8 See Geotechnical Report and included working drawigns for H pile soil stabilization locations.

DRAINAGE

D-1 The horizontal location of all drainage structures shown on these plans is approximate only, with the exception of structures showing specific stations, special design bridges and storm sewer systems.

D-2 The horizontal location and invert elevations shown for proposed culverts and storm sewer outfall pipes are based on existing survey data and required design criteria. If during construction, it is found that the horizontal location or invert elevations shown on the plans differ significantly from the horizontal location or elevations of the stream or swale in which the culvert or storm sewer outfall pipe is to be placed, the CO shall confer with the applicable VDOT District Drainage Engineer prior to installing the culvert or storm sewer outfall pipe.

D-3 The "H" dimensions shown on plans for drop inlets and junction boxes and the "L.F." dimensions shown for manholes are for estimating purposes and are based on the proposed invert elevations shown for the structure and the anticipated top (rim) elevation based on existing or proposed finished grade. The actual "H" or "L.F." dimensions are to be determined by the contractor from field conditions.

D-6 Pipes shall conform to any of the allowable types shown on sheet number 1H(2), within the applicable height of cover limitations.
For strength, sheet thickness, or class designation; available sizes; height of cover limitationsand other restrictions for a particular pipe type or height of cover, see the VDOT Road and Bridge Standard PC-1. Structural plate pipe may be substituted for corrugated pipe of the same size, provided the substitution complies with the applicable sections of the VDOT Road and Bridge Standards PC-1.

D-10 The proposed riprap may be omitted by the CO if the slope designated for placement of riprap is found to be comprised of solid rock or closely consolidated boulders with soundness, size and weight equal to, or exceeding, the specifications for the proposed riprap.

D-12 All existing drainage facilities labeled "To Be Abandoned" shall be left in place, plugged and backfilled in accordance with the VDOT Road and Bridge Standard PP-1.

D-13 Existing drainage facilities being utilized as a part of the drainage system, and designated on the plans "To Be Cleaned Out" shall be cleaned as directed by the CO.

D-16 When CG-6 or CG-7 is specified on a radius (such as at a street intersection), the CO may approve a decrease in the cross slope of the gutter to facilitate proper drainage.

D-17 St'd. SL-1 Safety Slab locations are based on the assumed use of precast structures. If cast-in-place structures are utilized, and the interior chamber dimensions (length and width, or diameter) are less than 4 feet, the safety slabs shall not be installed.

INCIDENTALS

I-3 Service Roads are to be constructed, and private entrances connected thereto prior to the permanent severing of private entrances by other phases of the proposed construction.

I-6 Certain trees shall be preserved as noted on plans or as directed by the CO.

I-7 Where Standard slope roundoffs would damage trees, bushes or other desirable vegetation, they shall be omitted when so ordered by the CO.

I-8A Clearing and grubbing shall be confined to those areas needed for construction. No trees or shrubs in ungraded areas shall be cut without the permission of the CO.

I-9 When no centerline alignment is shown for a proposed entrance, the entrance shall be constructed in the same location as the existing entrance.

I-10 St'd. RM-2 Right of Way monuments shall be set by the Contractor.

I-17 For method of constructing Straight-Line Taper Lanes in curb and/or curb and gutter sections, see typical details on Sheet 2A(9).

I-18 All pavement markings and traffic flow arrows shown on the roadway construction plans are schematic only. The actual location and application of pavement markings shall be in accordance with Section 704 of the applicable VDOT Road and Bridge Specifications, MUTCD, sequence of construction/traffic control plans, pavement marking plan sheets and as directed by the CO.

I-20 The Official Electronic PDF Version of the plans will override the paper copies or prints of specific layers.

I-21 All electronic plan assemblies will include the construction plans in two formats: PDF files and MicroStation format (.dgn) files. Only the PDF files will be considered as part of the official plan assembly.

STORMWATER MANAGEMENT

S-1 CLEARING AND GRUBBING OF SWM BASIN SITE - The area where the dam is to be constructed and the area upstream of the dam, to an elevation equal to the crest of the dam (maximum ponded water elevation), shall be cleared and grubbed in accordance with Section 301 of the applicable VDOT Road and Bridge Specifications.

S-2 SWM BASIN DAM CONSTRUCTION - The dam for detention basins (no permanent pool) shall conform to the details contained in the plans and shall be constructed in accordance with Section 303 of the applicable VDOT Road and Bridge Specifications. The native material on which the dam will set shall meet the specifications for AASHTO Type A-4 or finer material. Where the native material does not meet this requirement, the area beneath the dam is to be excavated a minimum of 4' and backfilled with a material meeting the AASHTO Type A-4 or finer classification, unless otherwise specified in the plans. The material used for the embankment of the dam shall be AASHTO Type A-4 or finer or as otherwise specified in the plans. Dams with foundation and embankment material not meeting the above requirements, dams greater than 15' in height, or dams for retention basins (permanent pool) shall incorporate a membrane-lined trench, a homogenous embankment with seepage controls, a zoned embankment or other such approved designs as specified in the plans.

S-3 SWM BASIN OUTLET PIPE - The pipe culvert under or through the dam for detention basins (no permanent pool) shall be reinforced concrete pipe with rubber gaskets in accordance with Section 232 and 212 of the applicable VDOT Road and Bridge Specifications. A concrete cradle shall extend the full length of the pipe culvert in accordance with the Standard Drawings. The connection between the pipe culvert and the SWM-1 Drainage Structure (or other control structure) shall be made watertight as approved by the CO.

S-4 The SWM-1 Drainage Structure (or other control structure) shall have 4" high numbers and 1" wide stripes painted at 1' intervals as shown on the Standard Drawings or detail sheets. The numbers and stripes are to be installed at the time of the initial installation of the SWM-1 Drainage Structure (or other control structure). Paint and application shall be in accordance with Section 231 and 411 of the applicable VDOT Road and Bridge Specifications.

S-5 All SWM Basins designated for use as temporary sediment basins shall be constructed during the initial phase of earth moving activities or as specified by the plans or directed by the CO. During project construction, the SWM-1 Drainage Structure (or other control structure) shall be modified in accordance with the Standard Drawings or plan details in order to provide a temporary sediment basin with both a "wet" storage volume (permanent pool) and a "dry" storage volume. Sediment accumulated in the basin shall be removed when the volume of the "wet" storage (permanent pool) has been reduced by 50%. Sediment shall be disposed of in accordance with Section 106.04 of the applicable VDOT Road and Bridge Specifications. When project construction is complete to a stage where no additional sediment from the project is expected to enter the basin, as determined by the CO, the basin shall be cleaned out and restored to the original design elevations, the area stabilized and all temporary modifications to the SWM-1 Drainage Structure (or other control structure) removed.

STORMWATER MANAGEMENT BASIN LINER (LOW PERMEABILITY)

S-6 SWM liner soil shall be classified as CL, CH or MH in accordance with ASTM D 2487 and shall have a maximum coefficient of permeability of 1×10^{-5} cm/sec in accordance with ASTM D 5084, after compaction. The maximum size shall be three inches in its largest dimension. Natural soils, which do not meet these specifications, may be blended with bentonite to provide the specified permeability characteristics.

S-7 Geosynthetic Clay Liner shall have a maximum coefficient of permeability of 1×10^{-8} cm/sec in accordance with ASTM D 5887.

S-8 The contractor shall submit the following for each type of liner material for review and approval prior to use:

a) Soil classification test and permeability test (ASTM D 5084) results of unmodified soils proposed for use as SWM liners.

b) A mix design supported by laboratory testing for soils modified with bentonite.

c) A Source of Materials and Manufacturer's Certification for geosynthetic liners.

S-9 It shall be the Contractor's option as to the type of impervious liner to be used, i.e. natural clay, blended soil or geosynthetic material. All areas to receive the impervious liner shall be free of organic, frozen, wet, soft or loose soils, fractured rock, or other deleterious materials. These areas shall be evaluated by the Quality Assurance Manager prior to placement of the lining material.

S-10 Natural clay liners shall have a final compacted thickness of no less than 12 inches. All lining material shall be placed in loose lifts with a maximum depth of 8 inches prior to compaction and shall be compacted to a minimum 90% of the maximum dry density (VTM-1) at, or up to 30% above, the optimum moisture content. Remove all stones larger than 1 inches in its maximum dimension from the liner subgrade or low permeability soil liner material.

S-11 Ensure adequate moisture is present when using blended materials for liner. Any material that does not meet the above moisture or compaction requirements shall be reworked, recompacted and retested until the required moisture content and density are achieved. The Contractor shall complete Construction Quality Control field density and moisture tests at the rate of one test for every 500 square yards of material placed for low permeability liner construction. Complete a minimum of one compaction test for every lift of fill placed per day.

STORMWATER MANAGEMENT BASIN LINER (LOW PERMEABILITY)(CONT'D.)

S-12 During construction, the Contractor shall protect the liner material from excessive drying. Place a minimum 12-inch layer of topsoil or other approved material over the liner.

EROSION AND SEDIMENT CONTROL (ESC)

E-1 If the removal of Brush Silt Barrier is specified by the plans or required by the CO.

E-2 Rock for Check Dams, Inlet Protection, Erosion Control Stone and Riprap shall be in accordance with Section 203 and Section 414 of the applicable VDOT Road and Bridge Specifications.

E-3 The following symbols are used to depict Erosion Control items in the plan assembly:

EC-2	Denotes Protective Covering, St'd. EC-2 (See Sheet 1G(1)
EC-3A	Denotes Soil Stabilization Mat. St'd. EC-3 Type A, B or C
EC-3B EC-3C	(See Sheet 1G(1)
TFB	Denotes Temporary Filter Barrier, St'd EC-5
TSF	Denotes Temporary Silt Fence, St'd EC-5
SSF	Denotes Super Silt Fence
TDC	Denotes Temporary Diversion Channel, St'd EC-12
DD	Denotes Temporary Diversion Dike, St'd EC-9
PDC	Denotes Permanent Grass Diversion Channel (See Sheet 1G(1)
LOD	Denotes Limit Of Disturbance
ST	Denotes Sediment Trap, St'd EC-7
TC-1	Denotes Turbidity Curtain, Type - Impervious
TC-P	Denotes Turbidity Curtain, Type - Pervious
RCD-1	Denotes Rock Check Dam, Type I: St'd EC-4
RCD-2	Denotes Rock Check Dam, Type II: St'd EC-4
DIST-A	Denotes Inlet Protection, Type A: St'd EC-6
DIST-B	Denotes Inlet Protection, Type B: St'd EC-6
EC-11	Denotes Temporary Construction Entrance
EC-1	Denotes Rip Rap Pad (Class I Rip Rap UNO)
	Denotes Proposed Power Pole (With Or Without Guy Wires) In Future Phase, By Others
OCF	Denotes Orange Construction Fence
TSD	Denotes Temporary Slope Drain, St'd EC-10
EC-8	Denotes Dewatering Basin
EC-14	Denotes Temporary Vehicle Watercourse Crossing

E-4 Durable sandstone from regular excavation may be used for specified riprap and erosion control stone.

E-5 All ESC control measure locations are approximate and final location to be determined in the field and coordinated with the CO.

GROUNDWATER CONTAMINATION

GC-1 Based on the close proximity to the Cullum Woods Landfill, there is potential in encountering landfill gases during earth moving activities. The contractor is responsible for the safety of its workers and should evaluate the potential for landfill gas presence.

GC-2 If evidence of groundwater contamination (odor, staining) is found, contractor shall cease ground disturbance and contact Fort Belvoir immediately to determine future action including safety requirements.

GC-3 There are groundwater wells, landfill gas probes, and other sampling point immediately adjacent to their project. The contractor shall make every effort to avoid damage to these facilities.

GC-4 Ground Water Table shown in these plans was taken from a 3D plane developed from the ground water elevations observed in the project geotechnical borings. Ground water elevation recorded are based on a stabilized elevation from observations over at least 48 hours. All boring and observations were made between July and October of 2013.

American Water Military Services Group
6035 16th Street
Building 739
Ft.Belvoir,VA 22060
Contact: Lenny White
Phone: 571-339-8088
e-mail: lenny.white@amwater.org

AT&T Communications
777 Leesburg Pike
Suite 100N
Falls Church,VA
Contact: Deborah Tullpano
Phone: 703-751-9977
e-mail: d1239440@att.com

Comcast
4931 Dale Boulevard
Woodbridge,VA 22193
Contact: Ken Marshall
Phone: 434-951-3830 ext.636-9348

Cox Communications
7741 Southern Drive
Springfield,VA 22150
Contact: Quincy Henderson
Phone: 703-480-7860
e-mail: quincy.henderson@cox.com

Dominion Virginia Power
3072 Centreville Road
Herndon,VA 20171
Contact: Fred Parry
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e-mail: fred.parry@dom.com

Fairfax County Dept.of Public Works and Environmental Service
12000 Government Center Parkway Suite 463
Fairfax,VA 22035
Contact: Natasha Schmidt
Phone: 703-324-5080
e-mail: natasha.schmidt@fairfaxcounty.gov

Fairfax Water
8560 Arlington Boulevard
Fairfax,VA 22031
Contact: Robert Catten
Phone: 703-289-6310
e-mail: rcatten@fairfaxwater.org

Fort Belvoir Communications
10105 Gridley Road
Suite 203
Fort Belvoir,VA 22060
Contact: Rondell Briggs
Phone: 703-704-1005
e-mail: rondell.a.briggs.civ@mail.mil

Verizon
4242 Duke Street
Alexandia,VA
Contact: Scott Sisk
Phone: 703-886-6530
e-mail: scott.n.sisk@verizon.com

Washington Gas
6801 Industrial Road
Springfield,VA 22151
Contact: Allan Melliza
Phone: 703-750-4256
e-mail: amelliza@washgas.com

AFC DATE: 04/30/2014 NDC NO.8:	PROJECT 0001-029-001	SHEET NO. 2

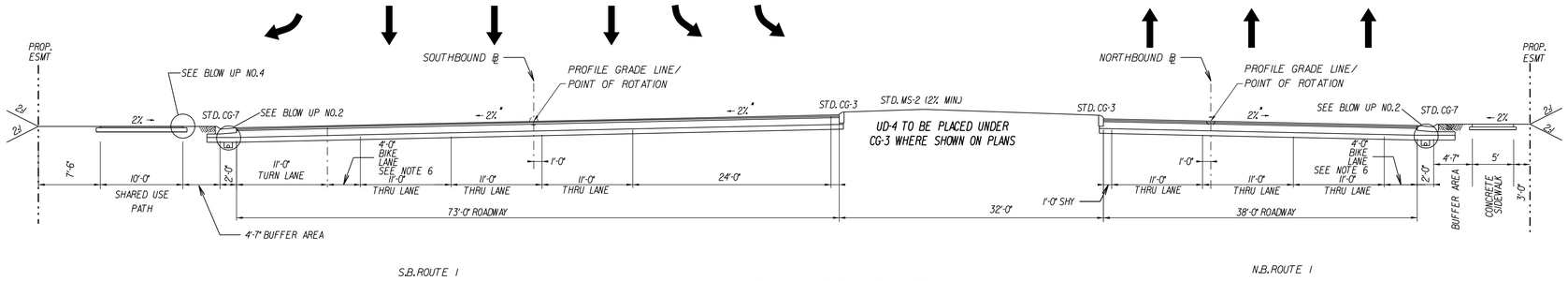
PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

TYPICAL SECTIONS

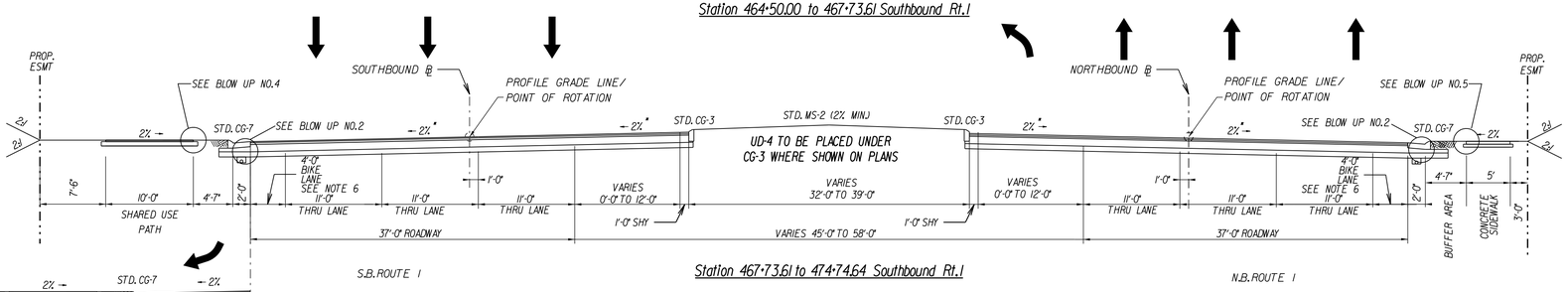
REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	2A(7)

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

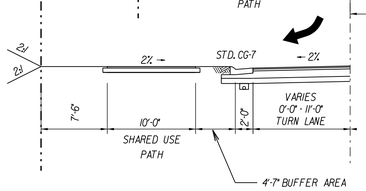
* ROADWAY CROSS SLOPE VARIES FROM 2% NORMAL CROWN TO 4.0% SUPERELEVATED TO CORRESPOND TO HORIZONTAL CURVATURE FOR 45 MPH DESIGN SPEED.



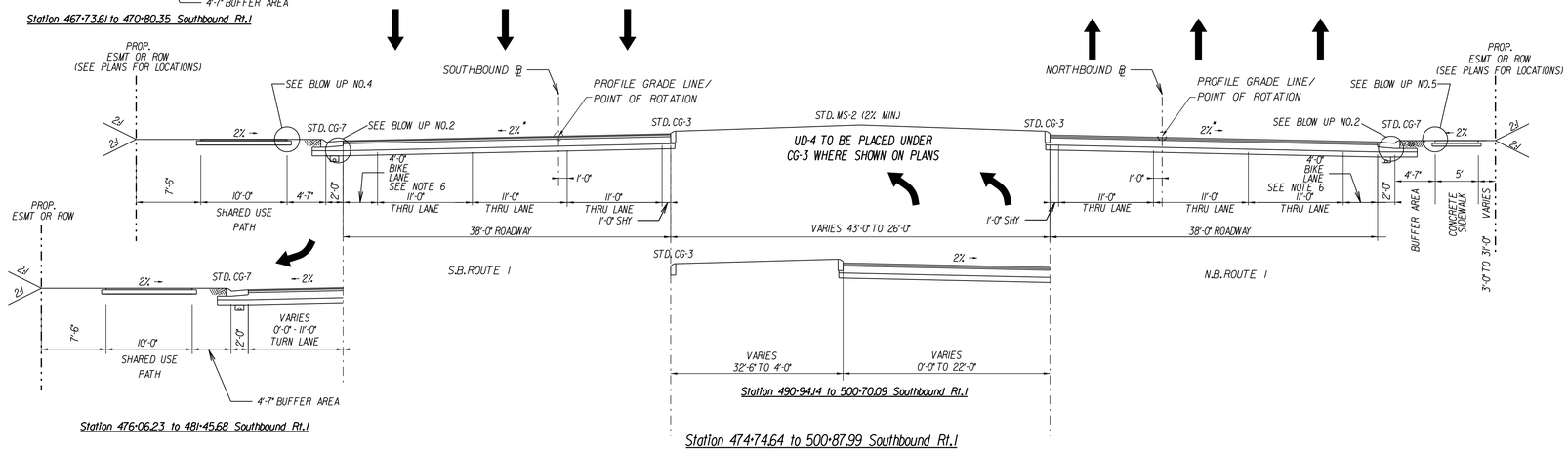
Station 464+50.00 to 467+73.61 Southbound Rt.1



Station 467+73.61 to 474+74.64 Southbound Rt.1



Station 467+73.61 to 470+80.35 Southbound Rt.1



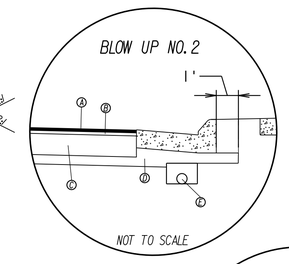
Station 476+06.23 to 481+45.68 Southbound Rt.1

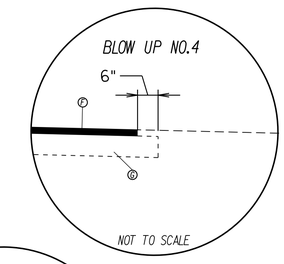
Station 490+94.14 to 500+70.09 Southbound Rt.1

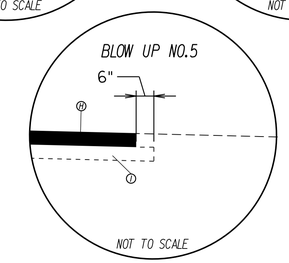
Station 474+74.64 to 500+87.99 Southbound Rt.1

NOTE:

1. PROVIDE FULL DEPTH SAW CUT AT A LOCATION 12" FROM EXISTING EDGE OF PAVEMENT.
2. IN ACCORDANCE WITH VDOT STANDARD WP-2 AND AS SHOWN ON ROADWAY PLANS, MILL EXISTING PAVEMENT TO A DEPTH OF 2.0" AND RESURFACE WITH 2.0" OF SM 9.5A.
3. SEE ROADWAY PLANS FOR LOCATIONS OF UNDERDRAINS AND FENCE
4. PAVEMENT SECTION PER APPROVED GEOTECHNICAL REPORT RECOMMENDATIONS.
5. TOTAL BIKE LANE WIDTH IS 6 FEET, CONSIDERING 4 FT ASPHALT AND 2 FT GUTTER PAN
6. MS-2 MINIMUM SLOPES SUPERCEDE SLOPES DEPICTED IN THE CROSS SECTIONS.







Ⓐ 1.5" - ASPHALT CONCRETE TYPE SM-9.5A

Ⓑ 2.5" - ASPHALT CONCRETE TYPE IM-19.0A

Ⓒ 10.0" ASPHALT CONCRETE TYPE BM-25.0A

Ⓓ 7" AGGREGATE BASE MATERIAL TYPE I, SIZE NO.21B (For Subbase)

Ⓔ VDOT STANDARD UD-4 OR MODIFIED UD-1 EDGEDRAIN ON LOW SIDE OF PAVEMENT CROSS SLOPE ONLY (OMIT ON HIGH SIDE WHEN NOT IN A HIGH CUT SITUATION) -SEE NOTE 3

Ⓕ 2.0" - ASPHALT CONCRETE TYPE SM-9.5A

Ⓖ 6" AGGREGATE BASE MATERIAL TYPE I, SIZE NO.21B (For Base)

Ⓗ 4.0" - VDOT CLASS A3 CONCRETE

Ⓘ 4" AGGREGATE BASE MATERIAL TYPE I, SIZE NO.21A OR 21B (For Base)

NOT TO SCALE

	PROJECT	SHEET NO.
	0001-029-001	2A(7)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIFFORD, A.MORTON THOMAS & ASSOC.

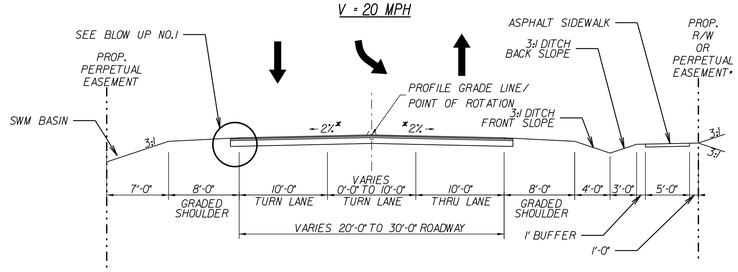
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	2A(8)

RIGHT OF WAY PLANS

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

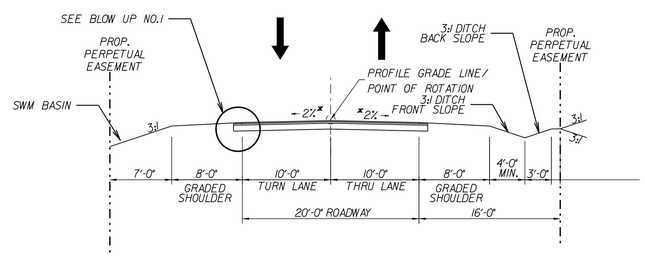
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE C.O.

WOODLAWN ROAD
URBAN LOCAL STREET
V = 20 MPH

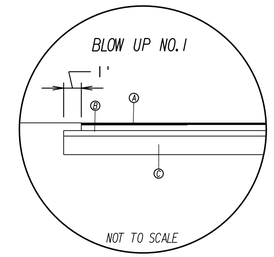


*PROP. PERPETUAL EASEMENT BEGINS AT STA.132+77.72

Station 130+75.00 to 133+73.30 Woodlawn Road



Station 133+73.30 TO 135+33.82 Woodlawn Road



Ⓐ 1.5" - ASPHALT CONCRETE TYPE SM-9.5A

Ⓑ 2.0" - ASPHALT CONCRETE TYPE IM-19.0A

Ⓒ 8.0" ASPHALT CONCRETE TYPE BM-25.0A

NOT TO SCALE

	PROJECT	SHEET NO.
	0001-029-001	2A(8)

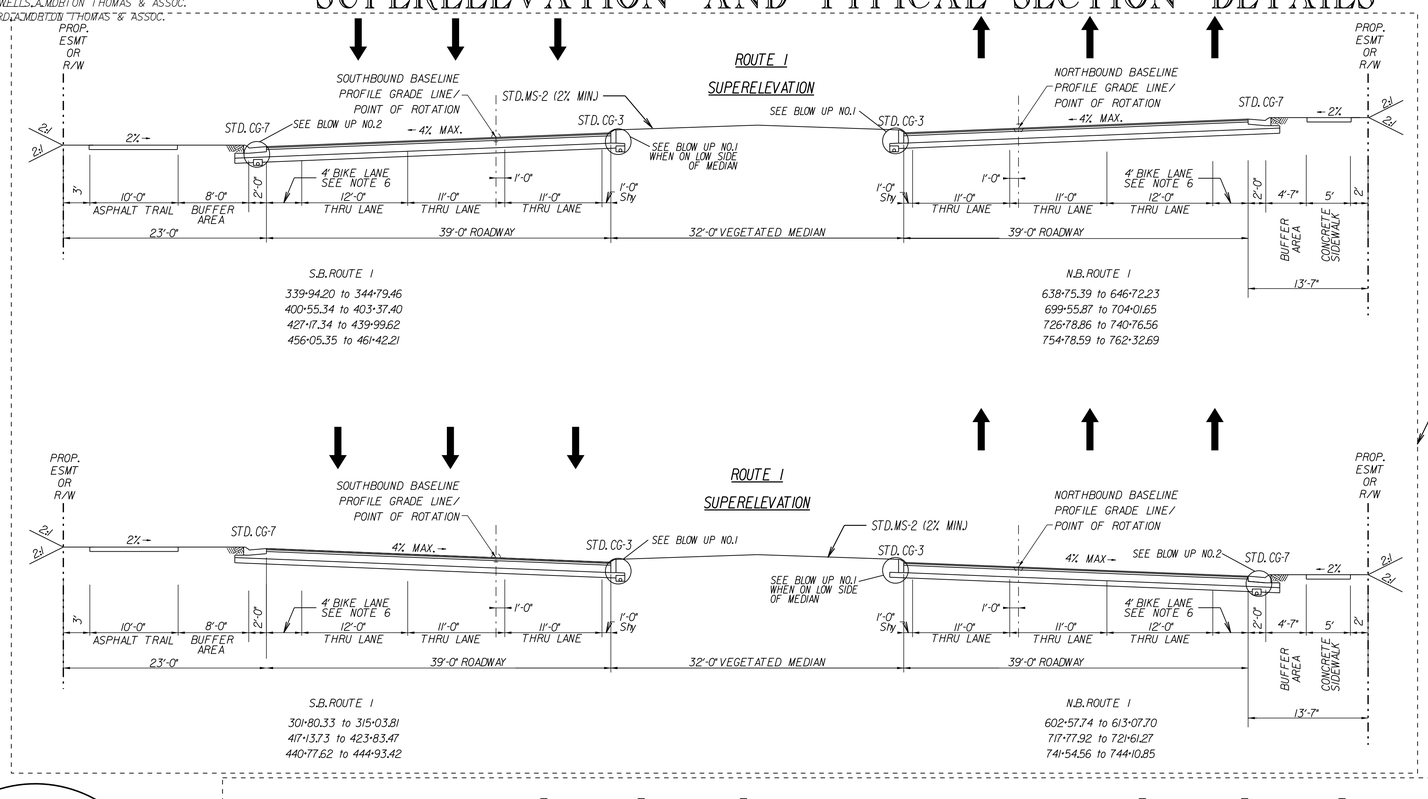
PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY FHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

SUPERELEVATION AND TYPICAL SECTION DETAILS

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	2A(9)

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

A. Morton Thomas & Assoc.
Chantilly, Virginia
(ROADWAY DISCIPLINE)

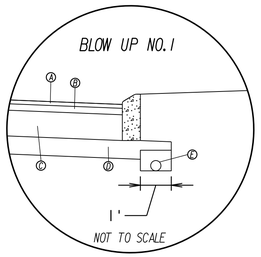


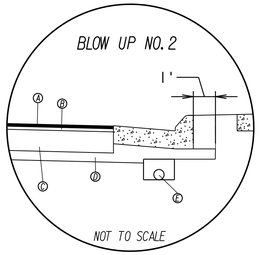
SUPERELEVATION DETAILS FOR SECTIONS A,B,C,AND D

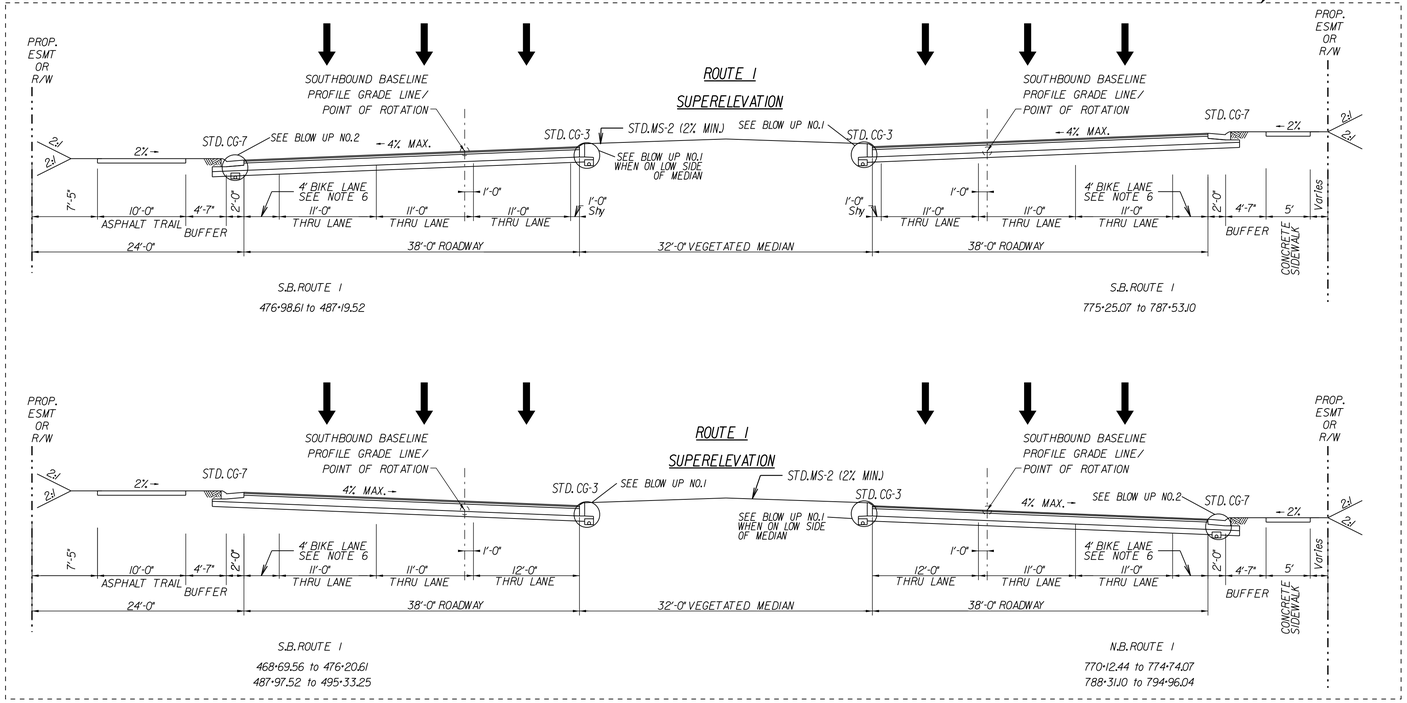
NOTES:

1. PROVIDE FULL DEPTH SAW CUT AT A LOCATION 12" FROM EXISTING EDGE OF PAVEMENT.
2. IN ACCORDANCE WITH VDOT STANDARD WP-2 AND AS SHOWN ON ROADWAY PLANS, MILL EXISTING PAVEMENT TO A DEPTH OF 2.0" AND RESURFACE WITH 2.0" OF SM 9.5A.
3. SEE ROADWAY PLANS FOR LOCATIONS OF UNDERDRAINS AND FENCE
4. LANE WIDTHS SHOWN REQUIRE A DESIGN WAIVER TO PROVIDE THE BIKE LANE AS SHOWN AND ARE SUBJECT TO VDOT APPROVAL.
5. PAVEMENT SECTION PER APPROVED GEOTECHNICAL REPORT RECOMMENDATIONS.
6. TOTAL BIKE LANE WIDTH IS 6 FEET, CONSIDERING 4 FT ASPHALT AND 2 FT GUTTER PAN.
7. MS-2 MINIMUM SLOPES SUPERCEDE SLOPES DEPICTED IN THE CROSS SECTIONS.

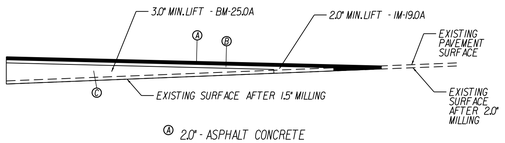
SUPERELEVATION DETAILS FOR SECTION E







PAVEMENT BUILD UP & OVERLAY DETAIL



Ⓐ 2.0" - ASPHALT CONCRETE TYPE SM-9.5A

Ⓑ VARYING DEPTH - MAX 3" ASPHALT CONCRETE TYPE IM-19.0A

Ⓒ VARYING DEPTH - MAX 4" ASPHALT CONCRETE TYPE BM-25.0A, IN 4" MAX. LIFTS

Station 308+20.00 to 338+00.00

Ⓐ 1.5" - ASPHALT CONCRETE TYPE SM-9.5A

Ⓑ 2.5" - ASPHALT CONCRETE TYPE IM-19.0A

Ⓒ 10.0" ASPHALT CONCRETE TYPE BM-25.0A

Ⓓ 7" AGGREGATE BASE MATERIAL TYPE I, SIZE NO.21B (For Subbase)

Ⓔ VDOT STANDARD UD-4.4" EDGEDRAIN ON LOW SIDE OF PAVEMENT CROSS SLOPE ONLY (OMIT ON HIGH SIDE EXCEPT IN HIGH CUT SITUATIONS) -SEE NOTE 3

NOT TO SCALE

PROJECT	SHEET NO.
0001-029-001	2A(9)

PROJECT MANAGER LAURA MEHIEL A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS A.MORTON THOMAS & ASSOC.
DESIGN BY MICHAEL GIFFORD A.MORTON THOMAS & ASSOC.

TYPICAL SECTION DETAILS

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	2A(12)

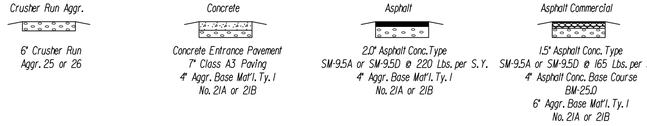
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE C.O.

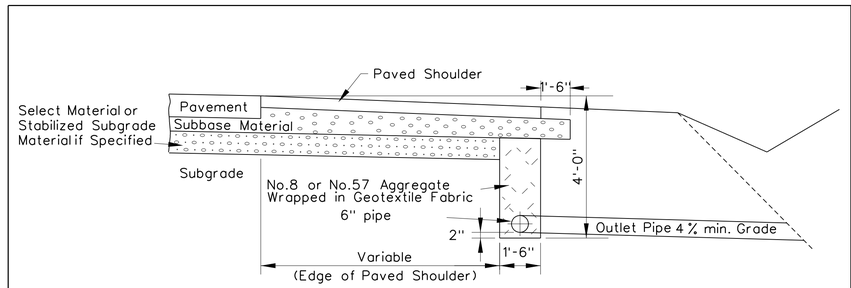
A. Morton Thomas & Assoc.
Chantilly, Virginia
(ROADWAY DISCIPLINE)

VDOT STANDARD PE-1

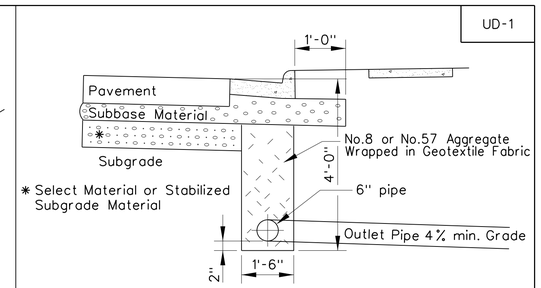
PRIVATE AND COMMERCIAL ENTRANCES

NOT TO SCALE

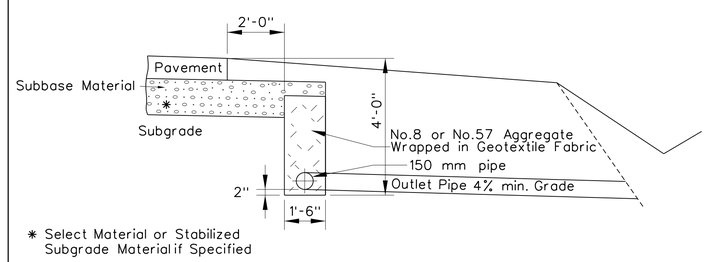




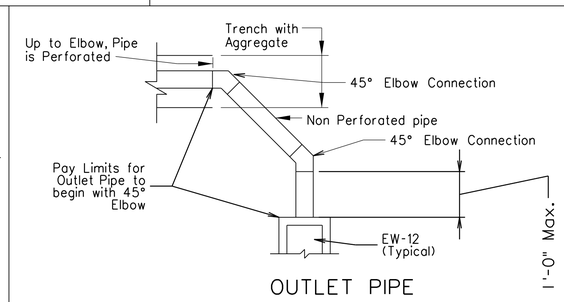
PAVED SHOULDER SECTION



CURB AND GUTTER SECTION



WITHOUT PAVED SHOULDER



OUTLET PIPE

LONGITUDINAL PERFORATED PIPE

Type of Pipe	Crushing Strength	
	*W.T.	6" Nom. Dia.
Smooth Wall PVC	.153	
Corrugated PE		AASHTO M-252

NON-PERFORATED OUTLET PIPE

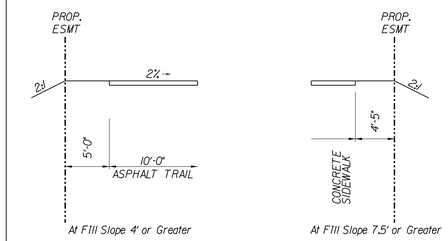
Type of Pipe	Crushing Strength	
	*W.T.	6" Nom. Dia.
Smooth Wall PVC	.153	
Smooth Wall PE		70 PSI ***

* Wall Thickness (min) - inches
*** Tested according to ASTM D-4212 at 5% deflection.

Notes:

1. WHEN THE LONGITUDINAL PIPE CONNECTS DIRECTLY INTO A DRAINAGE STRUCTURE (DROP INLET, MANHOLE, ECT.), NON-PERFORATED OUTLET PIPES ARE NOT REQUIRED.
2. INVERT ELEVATION AT OUTLET END OF OUTLET PIPE TO BE A MINIMUM OF 1'-0" ABOVE INVERT ELEVATION OF RECEIVING DRAINAGE DITCH OR STRUCTURE.
3. ALL CONNECTIONS (ELBOWS, WYES, ETC.) WITHIN PAY LIMITS FOR OUTLET PIPE ARE TO BE OF THE SAME CRUSHING STRENGTH AS THE OUTLET PIPE.
4. OUTLET PIPE ARE TO BE INSTALLED ON 2% MIN. (3% DESIRABLE) GRADE.
5. THE NORMAL DEPTH OF UNDERDRAIN IS TO BE 4'-0" BELOW THE NEAR EDGE OF PAVEMENT AS SHOWN. THE LONGITUDINAL GRADE OF THE UNDERDRAIN SHALL FOLLOW THAT OF THE ROADWAY WITH A MINMUM GRADE OF 0.2%.
6. WHERE THE BOTTOM OF SELECT MATERIAL IS GREATER THAN 4'-0" BELOW THE PAVEMENT. THE BOTTOM OF THE UNDERDRAIN IS TO BE COINCIDENT WITH THE BOTTOM OF SELECT MATERIAL AND THE TRENCH DEPTH AND BACKFILL QUANTITY INCREASED ACCORDINGLY.
7. WHEN USED WITH STABILIZED OPEN-GRADED DRAINAGE LAYER. THE BOTTOM OF THE CURB AND GUTTER SHALL BE CONSTRUCTED PARALLEL TO THE SLOPE OF SUBBASE COURSES OUT TO THE DEPTH OF THE PAVEMENT.
8. OUTLET PIPE TO BE SECURELY CONNECTED TO EW-12 OR OTHER DRAINAGE STRUCTURE.
9. OUTLET PIPE CONFIGURATION TO PROVIDE FOR PASSAGE OF INSPECTION CAMERA WITH 2 1/2" I.D. HEAD.

FILL SLOPE HINGE POINT EXTENSION DETAIL



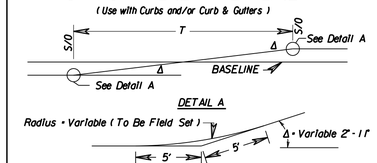
	S.B. ROUTE 1		N.B. ROUTE 1	
	331+00 to 333+75		330+75 to 332+75	SECTION A
	352+00 to 352+75	SECTION A	375+25	
	355+50 to 358+00		386+25 to 396+00	SECTION B
SECTION B	360+25 to 362+75		428+25 to 430+25	
	364+00 to 372+50		458+50 to 461+25	SECTION C
	386+50 to 397+50		481+25 to 489+50	SECTION D
	406+25 to 408+75	SECTION C		
	419+00 to 423+25			
	432+25 to 438+00			
SECTION D	449+25 to 454+75			
	457+75 to 462+00			
	474+75 to 475+00			
	476+00 to 476+25	SECTION E		
	483+75 to 489+00			

SUMMARY OF UNDERCUT DEPTHS

Approximate Expected Undercut Depth (ft)	Expected Undercut Length	Station Range
3.0	180 ft	(403+60 to 405+40)
0.5	85 ft	(410+30 to 411+15)
0.5	100 ft	(414+30 to 415+30)
0.7	100 ft	(416+25 to 417+25)
3.0	135 ft	(424+50 to 425+85)
3.0	190 ft	(425+85 to 427+75)
3.0	145 ft	(427+75 to 429+20)
3.0	105 ft	(433+25 to 434+30)
2.0	130 ft	(438+40 to 439+70)
0.6	100 ft	(448+25 to 449+25)
3.0	205 ft	(454+30 to 456+35)
1.5	100 ft	(456+35 to 457+35)
3.0	145 ft	(461+75 to 463+20)
3.0	130 ft	(463+20 to 464+50)
3.0	85 ft	(464+50 to 465+35)
2.5	105 ft	(465+35 to 466+40)
2.7	100 ft	(469+30 to 470+30)
1.6	105 ft	(470+30 to 471+35)
0.9	95 ft	(471+35 to 472+30)
2.0	105 ft	(483+90 to 494+95)
2.0	120 ft	(490+30 to 491+50)
2.0	150 ft	(492+95 to 494+45)
2.0	145 ft	(494+45 to 495+90)
3.0	95 ft	(496+95 to 497+90)

TYPICAL STRAIGHT - LINE TAPER LANE

(Use with Curbs and/or Curb & Gutters)



SPECIFICATION REFERENCE
240
501
701

MODIFIED GROUNDWATER UNDERDRAIN

NOT TO SCALE

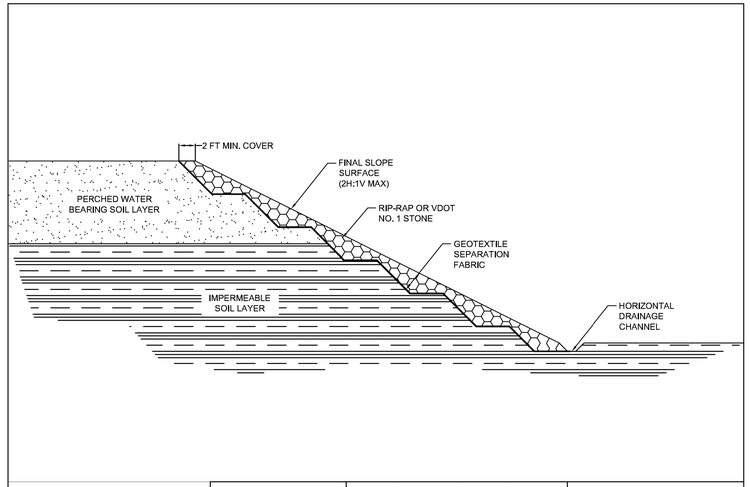
PROJECT	SHEET NO.
0001-029-001	2A(12)

PROJECT MANAGER LAURA MEHIEL A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIFFORD A.MORTON THOMAS & ASSOC.

METHOD FOR HANDLING PERCHED WATER TABLE

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	2B(6)

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



Schnabel ENGINEERING	ROUTE 1 IMPROVEMENTS AT FORT BELVOIR FAIRFAX COUNTY, VIRGINIA PROJECT NO. 13612045.01	SLOPE DRAINAGE DETAIL FIGURE 5

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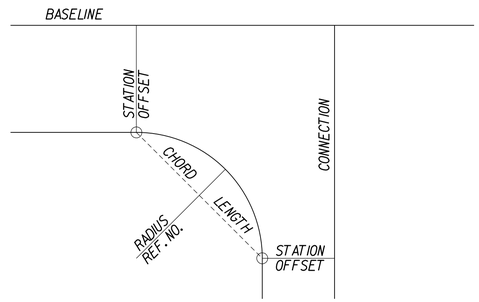
SLOPE DRAINAGE DETAIL SHALL BE USED AS NEEDED FROM NORTHBOUND STATION 773+00 TO 777+25.

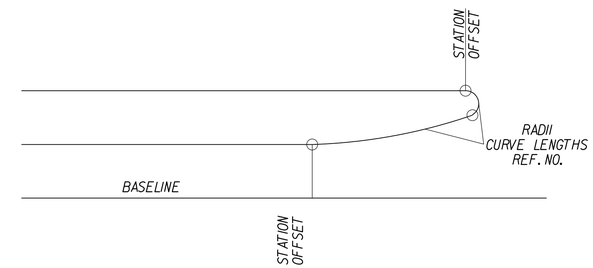
PROJECT MANAGER LAURA MEHIEL, A. MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A. MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A. MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEEORD, A. MORTON THOMAS & ASSOC.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	2D(1)

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

RADIAL OFFSETS / BULLET NOSE DATA





LOCATION (REF. NO.)	BASELINE		CONNECTION		RADIUS LENGTH	CHORD LENGTH	CURVE LENGTH
SHEET - ITEM	STATION	OFFSET	STATION	OFFSET	FEET	FEET	FEET
11-1	362+77.63	28.0	60+61.85	12.0	30.0	44.30	49.83
11-2	363+61.93	28.0	60+54.81	12.0	30.0	40.76	44.81
16-1	402+20.30	40.0	70+61.16	60.0	50.0	65.76	71.78
16-2	402+30.50	13.0	702+14.31	37.0	16.0	32.00	50.27
16-3	70+66.98	3.0	70+66.98	10.0	3.5	7.00	11.00
16-4	71+21.84	42.0	71+22.67	45.82	2.0	3.91	5.42
16-5	403+72.10	29.82	70+40.88	42.0	2.0	3.12	3.57
16-6	405+05.96	40.0	71+72.46	55.0	100.0	154.23	176.14
16-7	404+47.04	35.46	71+22.67	45.82	120.0	95.69	98.42
16-8	404+46.11	31.72	404+47.04	35.46	2.0	3.86	5.21
16-9	404+33.64	25.0	704+15.95	28.09	15.0	29.45	41.36
16-10	704+15.95	28.09	704+51.42	20.83	100.0	36.21	36.41
17-1	704+36.60	52.0	90+20.27	22.0	50.0	71.50	79.66
17-2	705+80.60	52.0	90+19.51	22.0	50.0	72.02	80.41
18-1	412+38.30	40.0	103+54.95	13.0	50.0	68.69	75.72
18-2	413+63.49	40.0	103+62.00	12.0	50.0	72.68	81.36
18-3	712+44.23	52.0	101+12.71	12.0	30.0	41.90	46.38
18-4	713+28.23	52.0	101+09.99	12.00	30.0	43.80	49.10
18-5	416+38.73	48.0	113+45.74	31.0	50.0	65.06	70.84
18-6	416+12.83	13.0	716+00.65	25.0	16.0	32.00	50.27
18-7	715+81.86	52.0	110+82.81	47.0	75.0	96.26	104.52
18-8	417+91.61	42.0	113+63.25	21.0	50.0	75.94	86.23
18-9	418+06.99	23.0	717+94.51	13.0	16.0	32.00	50.27
18-10	717+99.94	28.0	110+82.81	39.0	60.0	92.27	105.26
25-1	462+50.66	36.0	123+93.36	30.0	60.0	85.42	95.06
25-2	462+49.48	13.0	762+61.10	37.0	16.0	32.00	50.27
25-3	762+76.53	40.0	121+38.82	36.0	30.0	43.99	49.38
25-4	464+44.64	38.0	123+92.75	44.0	60.0	84.28	93.44
25-5	464+28.70	37.0	764+40.31	13.0	16.0	32.00	50.27
25-6	764+12.91	27.0	121+62.01	39.0	30.0	40.80	44.87

LOCATION (REF. NO.)	BASELINE		CONNECTION		RADIUS LENGTH	CHORD LENGTH	CURVE LENGTH
SHEET - ITEM	STATION	OFFSET	STATION	OFFSET	FEET	FEET	FEET
27-1	474+74.25	27.0	130+77.00	22.0	50.0	70.70	78.52
27-2	476+08.23	38.0	130+88.00	12.0	50.0	70.71	78.54
27-3	474+73.38	13.0	774+49.88	24.0	16.0	32.00	50.26
27-4	475+63.63	13.0	775+35.08	46.0	6.0	10.57	12.92
27-5	775+35.08	46.0	775+97.68	13.0	75.0	71.09	74.07
30-1	500+30.15	27.0	500+31.17	27.3	2.0	1.02	1.04
30-2	500+47.00	13.0	800+54.49	35.0	2.0	4.00	6.28
30-3	800+36.14	27.0	800+37.69	27.7	2.0	1.72	1.78

LOCATION (REF. NO.)	BASELINE		CONNECTION		RADIUS LENGTH	CHORD LENGTH	CURVE LENGTH
SHEET - ITEM	STATION	OFFSET	STATION	OFFSET	FEET	FEET	FEET

SCALE
0 25' 50'

PROJECT	SHEET NO.
0001-029-001	2D(1)

PROJECT MANAGER LAURA MEHIEL A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEGORD A.MORTON THOMAS & ASSOC.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	2E(1)

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

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)
GENERAL INFORMATION SHEET

The information contained in the SWPPP General Information sheets is intended to comply with the requirements of the VSMP General Permit For Discharges Of Stormwater From Construction Activities (the VSMP Construction Permit) issued July 1, 2009 and VDOT's approved Annual ESC and SWM Standards and Specifications.

The SWPPP General Information sheets are to be completed and included in the construction plan set (or other such documents) for land disturbance activities that disturb an area equal to or greater than 10,000 square feet, or equal to or greater than 2,500 square feet in the area defined as Tidewater, Virginia in the Virginia Chesapeake Bay Preservation Act.

Information shown on the SWPPP General Information sheets is to be updated/revised by the CO as necessary in order to reflect changes that may occur during the construction phase of the land disturbing activity. The updated/revised sheets shall be maintained with the designated record set of plans for the land disturbance activity.

✱ Denotes information that is to be provided/completed by the CO
✱✱ Denotes information that is to be provided/completed by the contractor.

Note: Effective July 1, 2013, responsibility for the VSMP General Permit For Discharges Of Stormwater From Construction Activities (the VSMP Construction Permit) was transferred from the DCR to the DEQ.

SECTION I GENERAL INFORMATION

1. Activity Description - The Project consists of widening of a 3.68 mile segment of the existing U.S. Route 1 from Telegraph Road (Route 611) to Mount Vernon Highway (Route 235) in Fairfax County, Virginia. Proposed improvements include, but are not limited to, widening the existing roadway from four (4) lanes to six (6) lanes, left and right turn lanes at intersections and connecting roadways, traffic signalization, a multi-use trail, pedestrian sidewalk, and on-road bicycle accomodations. In addition, the project includes the reservation of a median for future transit. The intent of the project is to improve traffic operations on Route 1 and access to a new Army Hospital located on Fort Belvoir.

2. This land disturbance activity site is located in Fairfax County, Virginia and approximately 127.4 acres will be disturbed by excavation, grading or other construction activities. 95.4 acres (of 127.4) are disturbed in the Accotink Watershed and 32.0 acres are disturbed in the Dogue Creek Watershed.

3. This proposed activity disturbs one acre or greater (2,500 square feet or greater in a designated Chesapeake Bay Preservation Area) and requires coverage under the VSMP General Permit For Discharges Of Stormwater From Construction Activities (the VSMP Construction Permit) as issued by the DEQ.

4. The ESC and SWM plans (where applicable) for this land disturbance activity have been developed in accordance with VDOT's Annual Erosion and Sediment Control and Stormwater Management Standards and Specifications as approved by the DEQ.

5. The Project Superintendent is designated as the RLD for this land disturbance activity.

6. Critical areas (e.g., wetlands, surface water bodies, etc) adjacent to this land disturbance activity site and not otherwise identified in the construction plan set (or other such documents) are as follows: Accotink Creek, Mason Run, Douge Creek and their unnamed tributaries.

7. Stormwater run-off from the disturbed areas of this land disturbance activity will flow into the following streams: Accotink Creek, Mason Run, Douge Creek and their unnamed tributaries.

8. Locations where stormwater discharges from this land disturbance activity site to a surface water (as defined in section 9VAC25-870-10 of the VSMP Regulations) are identified in the construction plan set (or other such documents).

SECTION II EROSION AND SEDIMENT CONTROL

1. The following variances to the Virginia ESC Regulations have been approved by the DEQ for this land disturbance activity: (list all approved variances; include a brief description of the variance, the date approved and the approving DEQ Office)

✱✱ 2. The intended sequence and timing of activities that disturb soils at the site (e.g., grubbing, excavation, grading, utilities and infrastructure installation, etc.) shall be provided by the contractor in accordance with Section 108.03 of the VDOT R&B Specifications and will be included with the other SWPPP documents for this land disturbance activity.

3. Directions of stormwater flow and approximate slopes anticipated after major grading activities are identified in the construction plan set (or other such documents) for this land disturbance activity.

4. Areas of soil disturbance and areas of the site which will not be disturbed are identified in the construction plan set (or other such documents) for this land disturbance activity.

5. Locations of major structural and nonstructural ESC measures identified in the SWPPP, including those that will be permanent controls that will remain after construction activities have been completed, are identified in the construction plan set (or other such documents) for this land disturbance activity.

6. Locations where stabilization practices are expected to occur are identified in the construction plan set (or other such documents) for this land disturbance activity.

7. A description of interim and permanent stabilization practices for the site are identified in the applicable sections of the documents identified in the Note 1 of Section III.

✱✱ 8. A record of the dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated will be provided by the contractor and maintained with the SWPPP documents for this land disturbance activity.

9. A description of structural practices to divert flows from exposed soils, retain/detain flows or otherwise limit runoff and the discharge of pollutants from exposed areas of the construction site are identified in the applicable sections of the documents identified in Note 1 of Section III.

10. A description and schedule of procedures to maintain vegetation, erosion and sediment control measures and other protective measures in good and effective operating conditions during construction are identified in Sections 107.16 and 303.03 of the VDOT R&B Specifications.

11. All engineering calculations supporting the design of erosion and sediment control measures are contained in the project drainage file located in the contractor's on-site office and will be made available for review upon request during normal working business hours.

12. The temporary erosion and siltation control items shown on the ESC Plan for this land disturbing activity are intended to provide a general plan for controlling erosion and sediment within the project limits. The ESC Plan is based on field conditions at the time of plan development and an assumed sequence of construction for the project. The contractor, in conjunction with the CO. and/or ESC Inspector, shall adjust the location, quantity and type of erosion and sediment control items required based on the actual field conditions encountered at the time of construction and the actual scheduling and sequencing of the construction activities. Significant changes to the proposed ESC Plan (e.g., those that require an engineering analysis) shall be submitted to the applicable VDOT District Hydraulics Engineer through the CO for review and approval. Any changes to the proposed ESC Plan must be noted on the designated record set of plans which shall be retained on the project site and made available upon request during normal working business hours.

13. The areas beyond the project's construction area are to be protected from siltation. Perimeter controls such as filter barrier, silt fence, diversion dikes, turbidity curtains, etc. shall be installed prior to any grubbing operations or other earth moving activities.

14. Temporary earthen structures such as dikes and berms are to be stabilized immediately upon installation. Stabilization may include temporary or permanent seeding, riprap, aggregate, sod, mulching, and/or soil stabilization blankets and matting in conjunction with seeding.

15. All channel relocations are to be constructed during the earliest stage of construction and shall be constructed in accordance with all applicable permit requirements and shall be constructed in the dry wherever possible. Stabilization or vegetation shall be established before flow is redirected through the constructed area as directed by the CO.

ACRONYMS

DCR - Department of Conservation and Recreation
DEQ - Department of Environmental Quality
EPA - U.S. Environmental Protection Agency
ESC - Erosion and Sediment Control
R&B - Road and Bridge
RLD - Responsible Land Disturber
SWM - Stormwater Management
SWPPP - Stormwater Pollution Prevention Plan
VDOT - Virginia Department of Transportation
VSMP - Virginia Stormwater Management Program
EFLHD - Eastern Federal Lands Highway Division
CO - Contracting Officer

Revised 8/8/13

AFC DATE: 04/30/2014 NDC : TBD	PROJECT 0001-029-001	SHEET NO. 2E(1)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	2E(2)

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

A. Morton Thomas & Assoc.
Chantilly, Virginia
(HYDRAULIC DISCIPLINE)

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)
GENERAL INFORMATION SHEET

The information contained in the SWPPP General Information sheets is intended to comply with the requirements of the VSMP General Permit For Discharges Of Stormwater From Construction Activities (the VSMP Construction Permit) issued July 1, 2009 and VDOT's approved Annual ESC and SWM Standards and Specifications.

The SWPPP General Information sheets are to be completed and included in the construction plan set (or other such documents) for land disturbance activities that disturb an area equal to or greater than 10,000 square feet, or equal to or greater than 2,500 square feet in the area defined as Tidewater, Virginia in the Virginia Chesapeake Bay Preservation Act.

Information shown on the SWPPP General Information sheets is to be updated/revised by the CO as necessary in order to reflect changes that may occur during the construction phase of the land disturbing activity. The updated/revised sheets shall be maintained with the designated record set of plans for the land disturbance activity.

✱ Denotes information that is to be provided/completed by the CO.
✱✱ Denotes information that is to be provided/completed by the contractor.

Note: Effective July 1, 2013, responsibility for the VSMP General Permit For Discharges Of Stormwater From Construction Activities (the VSMP Construction Permit) was transferred from the DCR to the DEQ.

SECTION III SWPPP

1. All documents related to the SWPPP for this land disturbance activity shall be maintained at the activity site and shall be readily available for review upon request during normal working business hours. Such documents include, but are not limited to, the construction plans (or other such documents), the ESC Plan, the post construction SWM Plan (if applicable), the VDOT R&B Standards and Specifications, Supplemental Specifications, Special Provisions and Special Provision Copied Notes. Documents related to stormwater pollution prevention which are not a part of those documents referenced above, such as a copies of the VSMP Construction Permit coverage letter (when applicable) and the DCR General Permit For Discharges Of Stormwater From Construction Activities (when applicable) and those required to be developed by the contractor for stormwater pollution prevention associated with any support facilities being included in the VSMP Construction Permit coverage for this land disturbance activity are to be maintained at the activity site with the other SWPPP documents. Where no facilities are available at the activity site to maintain the SWPPP documents, they are to be kept by or with the designated RLD at a location convenient to the activity site where they would be made available for review upon request during normal business working hours.

2. Other than construction at the activity site, there are no discharges associated with industrial activity (e.g., from dedicated asphalt plants or dedicated concrete plants) produced by this land disturbance activity or (where applicable) included in the VSMP Construction Permit coverage for this land disturbance activity.

✱✱ 3. Documents identifying the locations of support facilities (e.g., waste or borrow areas, material or equipment storage areas etc.) associated with or (where applicable) included in the VSMP Construction Permit coverage for this land disturbance activity shall be provided by the contractor in accordance with Section 107.16 of the VDOT R&B Specifications and will be maintained with the other SWPPP documents for this land disturbance activity.

✱✱ 4. A description of all pollution control measures that will be implemented as a part of this construction activity to control pollutants in stormwater discharges are identified and described in the contractor supplied documents, the construction plan set (or other such documents) and applicable sections of the VDOT R&B Specifications and Standards, including but not limited to, Specifications 107.16, 303.03, 603, 604 and 606 and Standards 113.01 through 114.08.

✱✱ 5. The name of the individual(s) or contractor(s) responsible for the installation and maintenance of the pollution control measures shall be supplied by the contractor and maintained with the other SWPPP documents for this land disturbance activity.

6. Requirements for the prevention of the discharge of solid materials, including building materials, garbage, and debris, to surface waters of the state, except as authorized by a Clean Water Act 404 permit, are contained in Sections 106.04, 107.02 and 107.16 of the VDOT R&B Specifications.

7. Requirements for compliance with applicable state or local waste disposal, sanitary sewer or septic system regulations are contained in Sections 106.04 and 107.18 of the VDOT R&B Specifications.

✱✱ 8. A description of construction and waste materials expected to be stored on-site, or at off-site support facilities included in the VSMP Construction Permit coverage for this land disturbance activity, and a description of controls to reduce pollutants from these materials, including storage practices to minimize exposure of the materials to stormwater and practices for spill prevention and response, shall be supplied by the contractor and maintained with the other SWPPP documents for this land disturbance activity.

✱✱ 9. For any support areas that will be included in the VSMP Construction Permit coverage for this land disturbance activity, a description of potential pollutant sources from such areas and a description of controls and measures that will be implemented at those sites to minimize pollutant discharges shall be supplied by the contractor and maintained with the other SWPPP documents for this land disturbance activity.

✱ 10. By completing and submitting the SWPPP Certification form LD-445E, the RLD, or his authorized representative, certifies that all documents identified herein to be supplied by the contractor will be reviewed, approved and included with the other SWPPP documents for this land disturbance activity prior to start of work in those areas identified by such information.

✱ 11. The name of the agents of CO responsible for the inspection of the erosion and sediment control measures on the land disturbance activity is identified on the LD-445E form which will be maintained with the other SWPPP documents for this land disturbance activity (Note: Individual(s) shall be certified through the DEQ ESC Inspector Certification Program).

12. For those land disturbing activities requiring coverage under the VSMP General Permit For The Discharge Of Stormwater From Construction Activities, the SWPPP shall be made available for review upon the request of the DEQ, the EPA, local government officials or the operator of a municipal separate storm sewer system (MS4) receiving discharge from the construction site.

✱ 13. For those land disturbing activities requiring coverage under the VSMP General Permit For The Discharge Of Stormwater From Construction Activities, the VDOT RLD shall post, or have posted, a copy of the General Permit coverage letter and a copy of a completed LD-445A form, noting the name and contact information for the person responsible for the land disturbing activity and its SWPPP, outside the project's construction office along with other Federal and State mandated information. Where there is no construction office (e.g., a maintenance activity), the permit coverage letter and the LD-445A form are to be maintained with the other SWPPP documents for the land disturbing activity.

14. For those land disturbing activities requiring coverage under the VSMP General Permit For The Discharge Of Stormwater From Construction Activities on or after July 1, 2009 that have not been previously covered by a VSMP permit, the SWPPP shall be made available for review by the public upon request. Such reviews shall be at a time and publicly accessible location convenient to the VDOT and shall be scheduled during normal business hours and no less than once a month.

SECTION IV POST CONSTRUCTION STORMWATER MANAGEMENT

~~1. This land disturbance activity does not require permanent water quality SWM facilities because the post development percent impervious of the site is less than~~ 16%.

~~2. The following outfalls do not require a permanent water quality SWM facility because the post development percent impervious of the site draining to each noted outfall is less than 16%. (List all applicable locations)~~

~~3. This land disturbing activity is designated a Category 2 project and complies~~ with ~~post development water quality requirements in accordance with the provisions of the VDOT Stormwater Program Advisory SWPA 12-01.~~

~~4. This land disturbing activity complies with post development water quality requirements in accordance with the provisions of the VDOT Stormwater Program Advisory SWPA 12-02.~~

~~5. An exception for (number) pounds of phosphorus removal has been granted by the DEQ in its letter dated (date).~~

6. This land disturbance activity is grandfathered under the Part IIC (old) technical criteria (i.e., Performance or Technology Based, MS 19, etc.) in Section 9VAC25-870-10 et seq. of the VSMP Regulations.

~~7. This land disturbance activity utilizes the Part IIB (new) technical criteria (i.e., Runoff Reduction Method, Energy Balance Equation, etc.) in Section 9VAC25-870-10 et seq. of the VSMP Regulations.~~

8. The permanent SWM facilities proposed to meet the water quality/quantity requirements for this land disturbance activity are listed in Section VI.

Outfall to Accotink Creek - Extended detention basin-enhanced, structure number Pond 1A
Outfall to Accotink Creek - Extended detention basin-enhanced, structure number Pond 1B
Outfall to Accotink Creek - Extended detention basin-enhanced, structure number Pond 3B
Outfall to Accotink Creek - Extended detention basin-enhanced, structure number Pond 4A
Outfall to Accotink Creek - Extended detention basin-enhanced, structure number Pond 4B

Outfall to Douge Creek - Extended detention basin-enhanced, structure number Pond 5A
Outfall to Douge Creek - Retention basin III, structure number Pond 6A
Outfall to Douge Creek - Extended detention basin-enhanced, structure number Pond 6B

9. A description of all post-construction stormwater management measures that will be installed during the construction process to control pollutants in stormwater discharges after construction operations have been completed is included in the construction plan set (or other such documents) for this land disturbance activity.

10. All engineering calculations supporting the design of the post-construction stormwater management measures, including an explanation of the technical basis used to select the practices, are contained in the project drainage file located in the Route 1 Field Office at 7025 Newington Road, Lorton, VA 22079, and will be made available for review upon request during normal working business hours.

Struck through notes (~~sample~~) are not applicable to this project.

ACRONYMS

DCR - Department of Conservation and Recreation
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EPA - U.S. Environmental Protection Agency
ESC - Erosion and Sediment Control
R&B - Road and Bridge
RLD - Responsible Land Disturber
SWM - Stormwater Management
SWPPP - Stormwater Pollution Prevention Plan
VDOT - Virginia Department of Transportation
VSMP - Virginia Stormwater Management Program
EFLHD - Eastern Federal Lands Highway Division
CO - Contracting Officer

Revised 6/25/13

AFC DATE: 04/30/2014	PROJECT	SHEET NO.
	0001-029-001	2E(2)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	2E(3)

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

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)
GENERAL INFORMATION SHEET

The information contained in the SWPPP General Information sheets is intended to comply with the requirements of the VSMP General Permit For Discharges Of Stormwater From Construction Activities (the VSMP Construction Permit) issued July 1, 2009 and VDOT's approved Annual ESC and SWM Standards and Specifications.

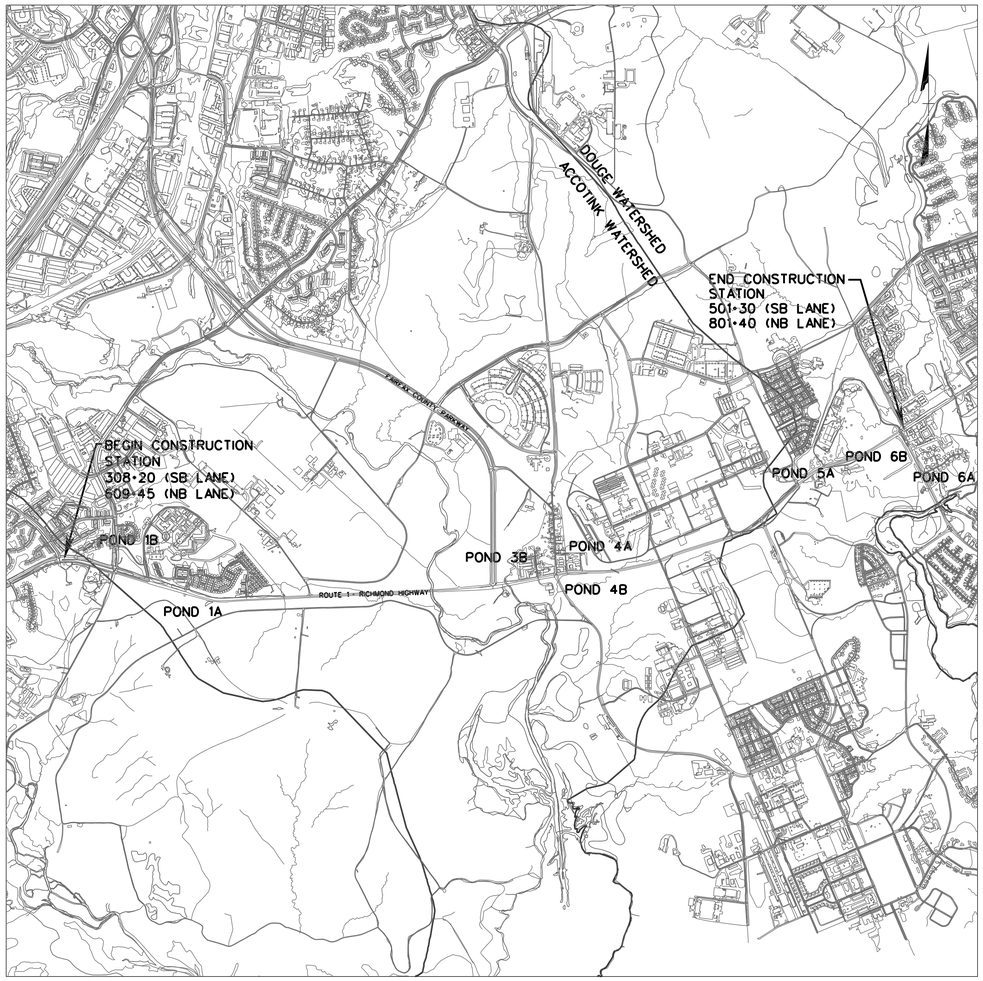
The SWPPP General Information sheets are to be completed and included in the construction plan set (or other such documents) for land disturbance activities that disturb an area equal to or greater than 10,000 square feet, or equal to or greater than 2,500 square feet in the area defined as Tidewater, Virginia in the Virginia Chesapeake Bay Preservation Act.

Information shown on the SWPPP General Information sheets is to be updated/revised by the EFLHD CO as necessary in order to reflect changes that may occur during the construction phase of the land disturbing activity. The updated/revised sheets shall be maintained with the designated record set of plans for the land disturbance activity.

✱ Denotes information that is to be provided/completed by the CO.
✱✱ Denotes information that is to be provided/completed by the contractor.

Note: Effective July 1, 2013, responsibility for the VSMP General Permit For Discharges Of Stormwater From Construction Activities (the VSMP Construction Permit) was transferred from the DCR to the DEQ.

SECTION V - LOCATION MAP



SECTION VI - PERMANENT BMP INFORMATION △

INSTALLED BMP INFORMATION
Table A
(VDOT Owned/Operated)

BMP Type (See Table 1)	County or City	Latitude/Longitude (1) LAT	LONG	State Hydrologic Unit Code (7)	Receiving Stream Name (2)	Acres Treated Per BMP (3) Impervious	Pervious
POND 1A- EXTENDED DETENTION BASIN-ENHANCED	FAIRFAX CO.	38° 42' 30" N	77° 11' 15" W	PL-30	UNNAMED TRIBUTARY TO ACCOTINK CREEK	3.1 AC.	4.0 AC.
POND 1B- EXTENDED DETENTION BASIN-ENHANCED	FAIRFAX CO.	38° 42' 30" N	77° 11' 30" W	PL-30	UNNAMED TRIBUTARY TO ACCOTINK CREEK	8.1 AC.	5.5 AC.
POND 3B- EXTENDED DETENTION BASIN-ENHANCED	FAIRFAX CO.	38° 42' 30" N	77° 09' 45" W	PL-30	MASON RUN	4.9 AC.	3.4 AC.
POND 4A- EXTENDED DETENTION BASIN-ENHANCED	FAIRFAX CO.	38° 42' 30" N	77° 09' 30" W	PL-30	UNNAMED TRIBUTARY TO ACCOTINK CREEK	4.6 AC.	7.9 AC.
POND 4B- EXTENDED DETENTION BASIN-ENHANCED	FAIRFAX CO.	38° 42' 30" N	77° 09' 15" W	PL-30	UNNAMED TRIBUTARY TO ACCOTINK CREEK	3.8 AC.	4.6 AC.
POND 5A- EXTENDED DETENTION BASIN-ENHANCED	FAIRFAX CO.	38° 42' 45" N	77° 08' 30" W	PL-27	UNNAMED TRIBUTARY TO DOUGE CREEK	5.3 AC.	4.4 AC.
POND 6A- RETENTION BASIN III	FAIRFAX CO.	38° 42' 45" N	77° 07' 45" W	PL-27	UNNAMED TRIBUTARY TO DOUGE CREEK	2.7 AC.	0.8 AC.
POND 6B- EXTENDED DETENTION BASIN-ENHANCED	FAIRFAX CO.	38° 43' 00" N	77° 08' 00" W	PL-27	UNNAMED TRIBUTARY TO DOUGE CREEK	3.8 AC.	3.8 AC.

ALTERNATIVE BMP INFORMATION
Table B

BMP Type (See Table 2)	Name of Nutrient Bank or Broker (6)	County or City (5)	Latitude/Longitude (1) (5) LAT	LONG	State Hydrologic Unit Code (5) (7)	Project Acres Treated Per BMP (3) Impervious	Pervious	Nutrient Credits (lbs./acre/year) Acquired (3) (6)

ACRONYMS

DCR - Department of Conservation and Recreation
DEQ - Department of Environmental Quality
EPA - U.S. Environmental Protection Agency
ESC - Erosion and Sediment Control
R&B - Road and Bridge
RLD - Responsible Land Disturber
SWM - Stormwater Management
SWPPP - Stormwater Pollution Prevention Plan
VDOT - Virginia Department of Transportation
VSMP - Virginia Stormwater Management Program
EFLHD - Eastern Federal Lands Highway Division
CO - Contracting Officer

Table 1: Permanent BMP Types
Bio-Retention Basin
Bio-Retention Filter
Constructed Stormwater Wetlands
Extended Detention Basin
Extended Detention Basin Enhanced
Grassed Swale
Infiltration Basin
Infiltration Trench
Manufactured Treatment Device
Retention Basin I
Retention Basin II
Retention Basin III
Sand Filter
Vegetated Filter Strip
Other Approved Types (List Type)

Table 2: Alternative BMP Types
Comprehensive SWM Plan (Regional) Facility
Pollutant Loading Pro Rata Share Program
Purchase of Nutrients Credits
Other Approved Options (List Type) (4)

△ The information shown in the BMP tables is based on the proposed pre-construction SWM Plan. Any changes to the proposed SWM Plan or BMPs necessitated during the construction phase of the project shall be coordinated by the CO with the appropriate VDOT District Hydraulics Engineer. The CO is to have the information in the BMP tables and plans formally revised to reflect any authorized/approved changes to the proposed SWM Plan and BMPs. Prior to submitting for termination of coverage under the VSMP General Permit For The Discharge Of Stormwater From Construction Activities, the CO shall review with the Design Build Project Manager the BMPs installed with the project (Table A) for acceptance of maintenance responsibility and obtain a Maintenance ID number for each BMP listed in Table A. The CO shall use the information in Tables A and B along with the assigned Maintenance ID number and the date that the BMP became functional as a permanent control measure (for BMPs in Table A only) to complete the LD-445D form when submitting for termination of coverage under the VSMP General Permit For The Discharge Of Stormwater From Construction Activities.

NOTES:
(1) In degrees, minutes and seconds to the nearest 15 seconds.
(2) For streams with no names, list "Unnamed Tributary to (closest stream name)".
(3) Show acres treated or pounds purchased to the nearest one tenth.
(4) Include agreements with off-site BMP owners.
(5) Information pertains to the alternative BMP option location, where applicable.
(6) Applies to the purchase on nutrient credits only.
(7) 4th Order for Nutrient Credit Banks and 6th order for all other BMP types.

Revised 6/25/13

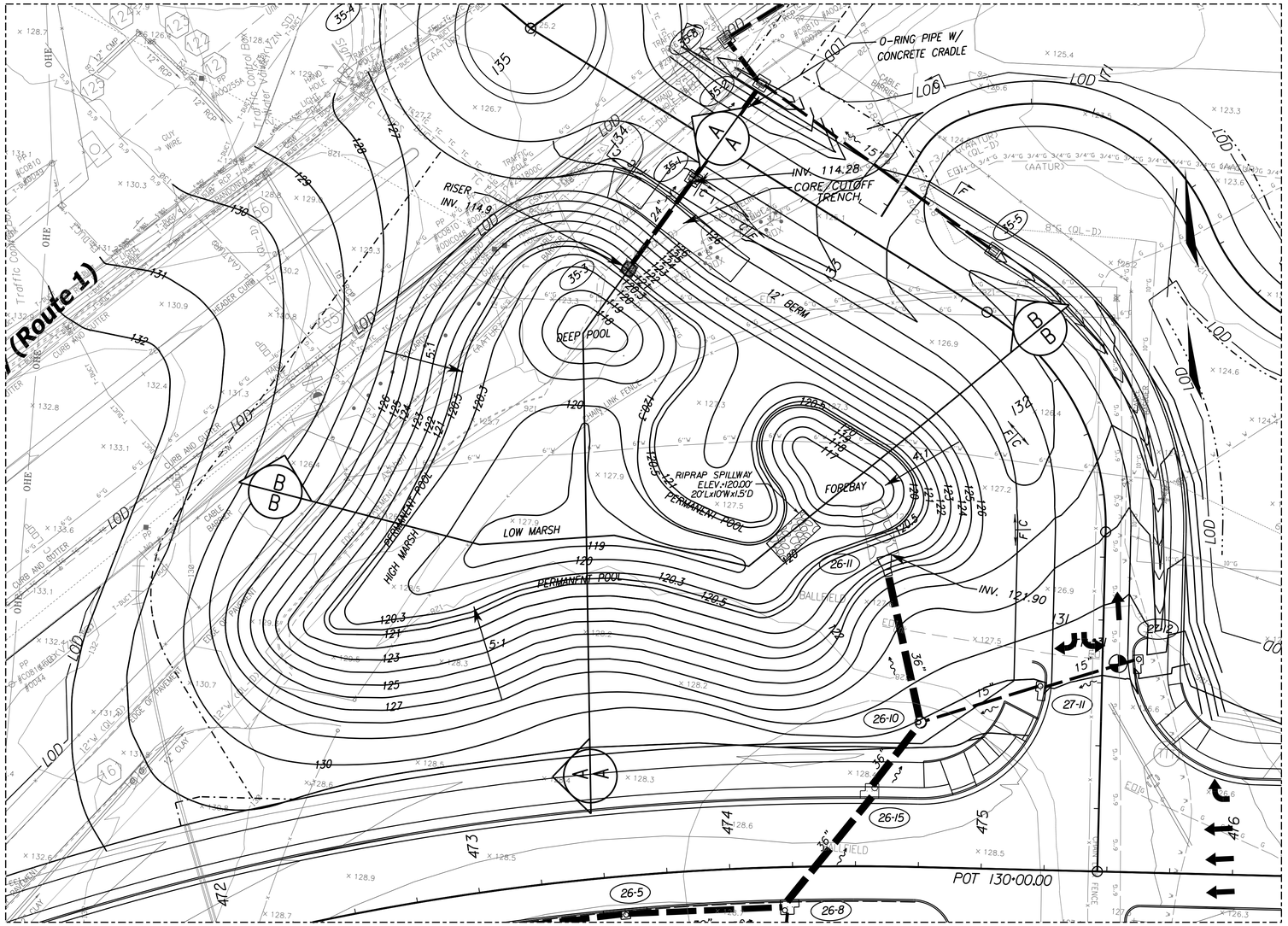
PROJECT	PROJECT	SHEET NO.
AFC DATE: 04/30/2014 NDC NO.II: 09/22/2014	0001-029-001	2E(3)

PROJECT MANAGER LAURA MEHIEL A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIFFORD A.MORTON THOMAS & ASSOC.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001	2F(9)

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

A. Morton Thomas & Assoc. Chantilly, Virginia (ROADWAY DISCIPLINE)	A. Morton Thomas & Assoc. Chantilly, Virginia (HYDRAULIC DISCIPLINE)



ENHANCED EXTENDED-DETENTION BASIN SWM-05A PLAN VIEW

25' 0' 25' 50' 75'
GRAPHIC SCALE

ENHANCED EXTENDED DETENTION BASIN SWM-05A SUMMARY TABLE

DRAINAGE AREA =	10.21 AC.
SEDIMENT FOREBAY #1 IMPERVIOUS DRAINAGE AREA =	5.21 AC.
DEEP POOL (SEDIMENT FOREBAY #1) MIN. VOLUME REQUIRED =	1,891 CF.
DEEP POOL (SEDIMENT FOREBAY #1) VOLUME PROVIDED =	4,483 CF.
BOTTOM OF BASIN (SEDIMENT FOREBAY)=	117.00 FT
TOP OF RISER =	122.00 FT
1ST STAGE WQv 2.5" ORIFICE ELEVATION =	120.50 FT
1 YR WATER SURFACE ELEVATIONS (WSEL) =	121.92 FT
2 YR WATER SURFACE ELEVATIONS (WSEL) =	122.03 FT
10 YR WATER SURFACE ELEVATIONS (WSEL) =	122.46 FT
100 YR WATER SURFACE ELEVATIONS (WSEL) =	123.55 FT
PRINCIPLE SPILLWAY ELEVATION =	114.90 FT
TOP OF EMBANKMENT =	126.00 FT
FREEBOARD PROVIDED =	2.45 FT
DEEP POOL SURFACE AREA 20% TARGET =	3,405 SF.
DEEP POOL SURFACE AREA PROVIDED =	3,473 SF
LOW MARSH SURFACE AREA 35% TARGET =	5,960 SF.
LOW MARSH SURFACE AREA PROVIDED =	5,826 SF.
HIGH MARSH SURFACE AREA 45% TARGET =	7,662 SF
HIGH MARSH SURFACE AREA PROVIDED =	7,728 SF.
1X WQv SHALLOW MARSH REQ'D =	9,456 SF
1X WQv SHALLOW MARSH PROVIDED =	14,496 CF
1X WQv 30-HR DRAWDOWN REQ'D =	9,456 SF.
1X WQv 30-HR DRAWDOWN PROVIDED =	9,456 CF

NOTES:

1. THE CONTRACTOR SHALL PROVIDE 'AS-BUILT' DRAWINGS OF ALL STORMWATER MANAGEMENT FACILITIES. THE 'AS-BUILT' DRAWINGS SHALL SHOW THE ACTUAL FINISHED GROUND CONTOURS, OUTLET STRUCTURE DIMENSIONS AND ELEVATIONS, ETC. AS THEY EXIST AT THE COMPLETION OF THE PROJECT.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE PROPOSED BMP'S ONCE ALL CONNECTIONS HAVE BEEN COMPLETED, AND SHALL CERTIFY THAT THE BMP HAS BEEN MAINTAINED PER MANUFACTURER'S MAINTENANCE GUIDELINES (OR RELEVANT INDUSTRY STANDARDS) PRIOR TO TRANSFER TO VDOT.

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
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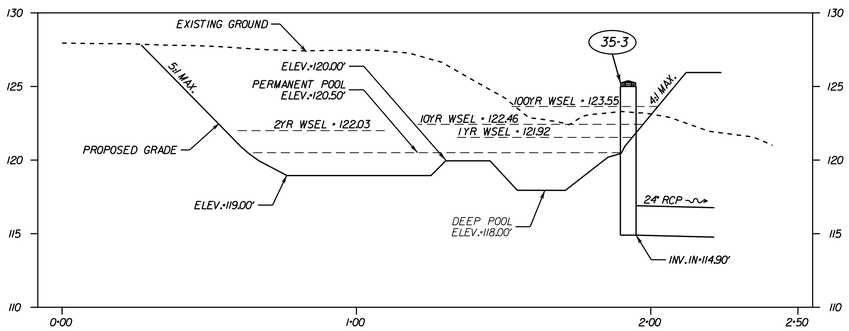
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIFFORD, A.MORTON THOMAS & ASSOC.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001	2F(9A)

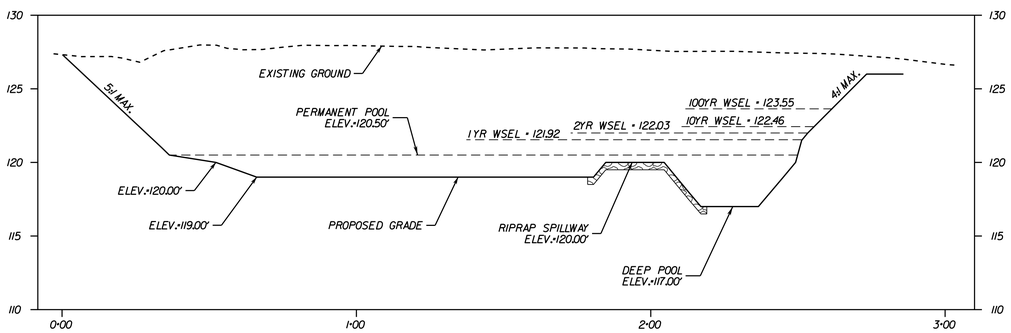
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE C.O.

A. Morton Thomas & Assoc. Chantilly, Virginia (ROADWAY DISCIPLINE)	A. Morton Thomas & Assoc. Chantilly, Virginia (HYDRAULIC DISCIPLINE)



ENHANCED EXTENDED-DETENTION BASIN SWM-05A - SECTION A-A

25' 0' 25' 50' 75'
GRAPHIC SCALE



ENHANCED EXTENDED-DETENTION BASIN SWM-05A - SECTION B-B

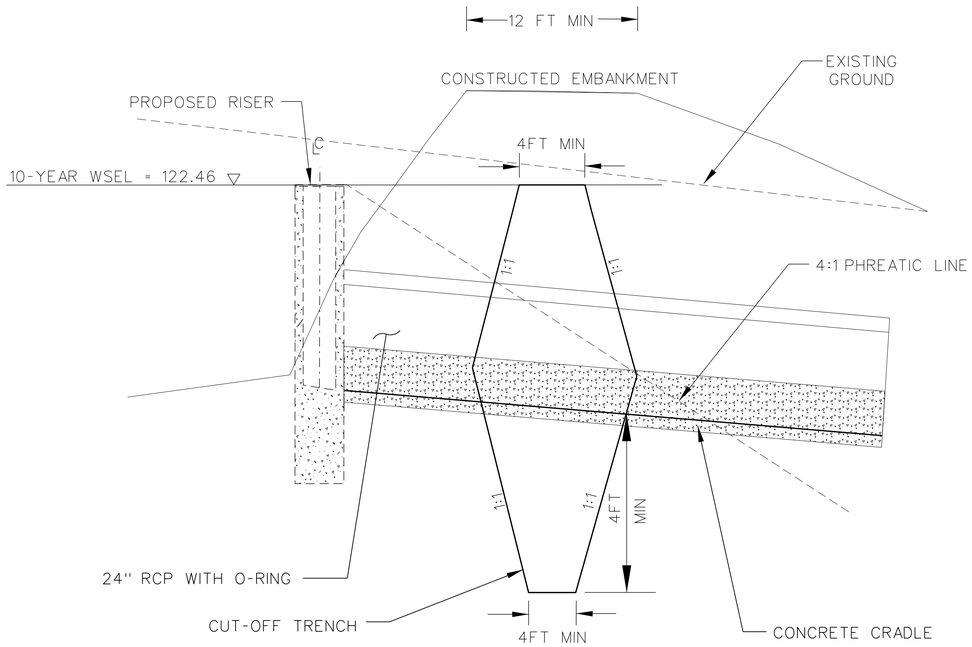
25' 0' 25' 50' 75'
GRAPHIC SCALE

PROJECT	SHEET NO.
0001-029-001	2F(9A)

INITIALS	DATE
DESIGNER:	
CHECKED:	
CHECKED:	
DRAFTED:	
VERIFIED:	

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA, -SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

ENHANCED EXTENDED-DETENTION BASIN SWM-05A NOTES AND DETAILS



CORE TRENCH DETAIL
NOT TO SCALE

NOTES:

1) WHEN INSTALLING THE STEPS AND TRASH RACK TO THE CONTROL STRUCTURE, THE CONTRACTOR SHALL ENSURE THAT THE STEPS AND TRASH RACK HINGED ACCESS DOOR ARE ORIENTED TO THE EMBANKMENT SIDE OF THE CONTROL STRUCTURE, AND ARE TO THE EXTENT POSSIBLE, IN DIRECT ALIGNMENT WITH EACH OTHER.

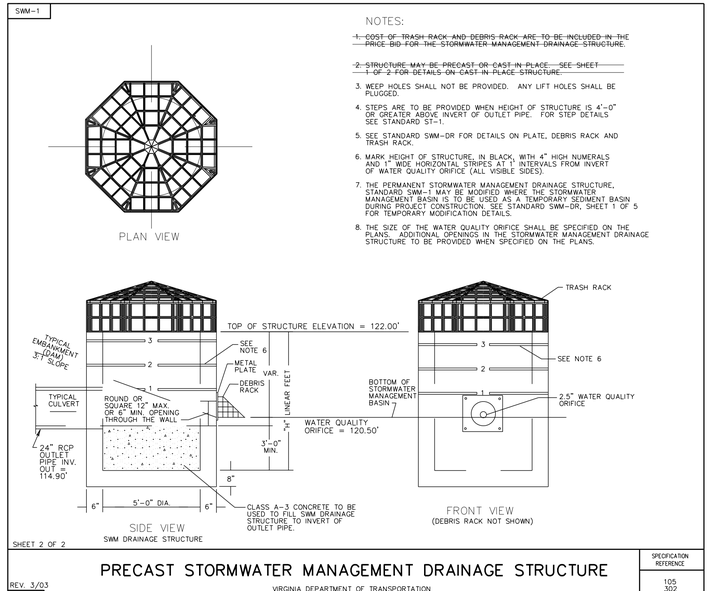
2) REFERENCES TO "THE ENGINEER" IN THE DETAILS ON THIS SHEET WILL BE REPLACED WITH "CONTRACTING OFFICER". REFERENCES TO "THE DEPARTMENT" WILL BE REPLACED WITH "THE GOVERNMENT".

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001	2F(10)

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

A. Morton Thomas & Assoc. Chantilly, Virginia (ROADWAY DISCIPLINE)	A. Morton Thomas & Assoc. Chantilly, Virginia (HYDRAULIC DISCIPLINE)

SWM-1



NOTES:

1. ~~COST OF TRASH RACK AND DEBRIS RACK ARE TO BE INCLUDED IN THE PRICE BID FOR THE STORMWATER MANAGEMENT DRAINAGE STRUCTURE.~~
2. ~~STRUCTURE MAY BE PRECAST OR CAST IN PLACE. SEE SHEET 1 OF 2 FOR DETAILS ON CAST IN PLACE STRUCTURE.~~
3. WEEP HOLES SHALL NOT BE PROVIDED. ANY LIFT HOLES SHALL BE PLUGGED.
4. STEPS ARE TO BE PROVIDED WHEN HEIGHT OF STRUCTURE IS 4'-0" OR GREATER ABOVE INVERT OF OUTLET PIPE. FOR STEP DETAILS SEE STANDARD ST-1.
5. SEE STANDARD SWM-DR FOR DETAILS ON PLATE, DEBRIS RACK AND TRASH RACK.
6. MARK HEIGHT OF STRUCTURE, IN BLACK, WITH 4" HIGH NUMERALS AND 1" WIDE HORIZONTAL STRIPES AT 1' INTERVALS FROM INVERT OF WATER QUALITY ORIFICE (ALL VISIBLE SIDES).
7. THE PERMANENT STORMWATER MANAGEMENT DRAINAGE STRUCTURE, STANDARD SWM-1 MAY BE MODIFIED WHERE THE STORMWATER MANAGEMENT BASIN IS TO BE USED AS A TEMPORARY SEDIMENT BASIN DURING PROJECT CONSTRUCTION. SEE STANDARD SWM-DR, SHEET 1 OF 5 FOR TEMPORARY MODIFICATION DETAILS.
8. THE SIZE OF THE WATER QUALITY ORIFICE SHALL BE SPECIFIED ON THE PLANS. ADDITIONAL OPENINGS IN THE STORMWATER MANAGEMENT DRAINAGE STRUCTURE TO BE PROVIDED WHEN SPECIFIED ON THE PLANS.

SHEET 2 OF 2

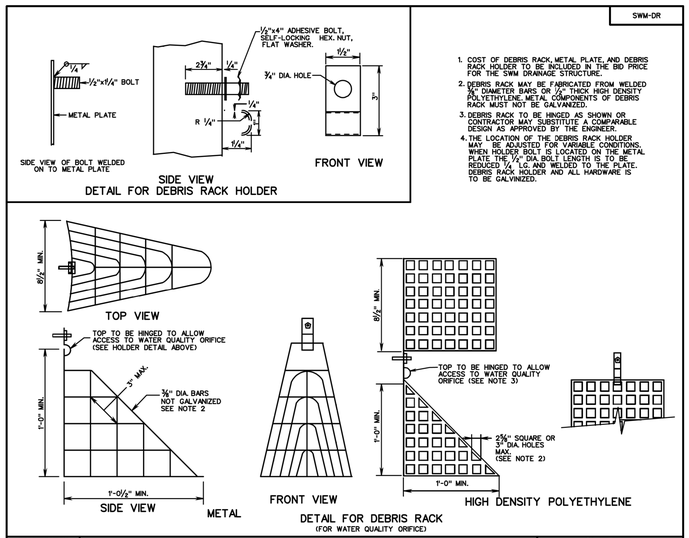
REV. 3/03
116.02

PRECAST STORMWATER MANAGEMENT DRAINAGE STRUCTURE

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE: 105, 302

SWM-DR



1. COST OF DEBRIS RACK, METAL PLATE, AND DEBRIS RACK HOLDER TO BE INCLUDED IN THE BID PRICE FOR THE SWM DRAINAGE STRUCTURE.
2. DEBRIS RACK MAY BE FABRICATED FROM WELDED 3/8" DIAMETER BARS OR 1/2" THICK HIGH DENSITY POLYETHYLENE. METAL COMPONENTS OF DEBRIS RACK MUST NOT BE GALVANIZED.
3. DEBRIS RACK TO BE HINGED AS SHOWN OR CONTRACTOR MAY SUBSTITUTE A COMPARABLE DESIGN AS APPROVED BY THE ENGINEER.
4. THE LOCATION OF THE DEBRIS RACK HOLDER MAY BE ADJUSTED FOR VARIABLE CONDITIONS. WHEN HOLDER BOLT IS LOCATED ON THE METAL PLATE THE 1/2" DIA. BOLT LENGTH IS TO BE REDUCED 1/4" LG. AND WELDED TO THE PLATE. DEBRIS RACK HOLDER AND ALL HARDWARE IS TO BE GALVINIZED.

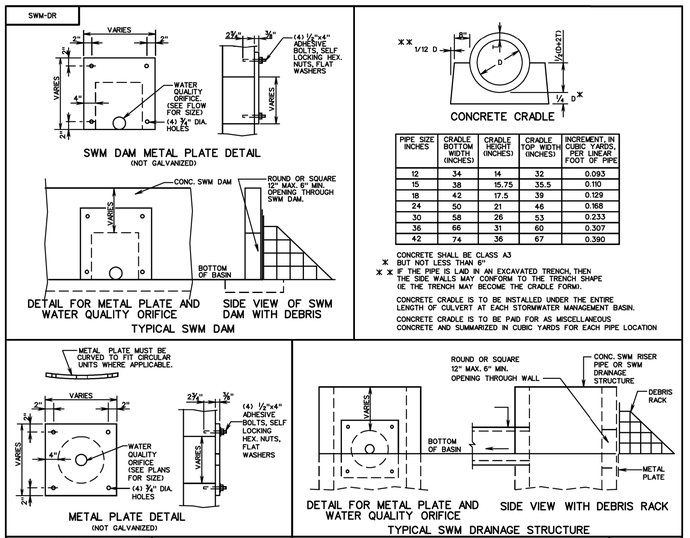
SPECIFICATION REFERENCE: 302

STORMWATER MANAGEMENT (SWM) DETAILS

DEBRIS RACK, METAL PLATE, WATER QUALITY ORIFICE, CONCRETE CRADLE
(FOR SWM DRAINAGE STRUCTURES, SWM RISER PIPES AND SWM DAMS)
VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT ROAD AND BRIDGE STANDARDS
REVISION DATE | SHEET 2 OF 5
114.05

SWM-DR



PIPE SIZE INCHES	CRADLE BOTTOM WIDTH (INCHES)	CRADLE HEIGHT (INCHES)	CRADLE TOP WIDTH (INCHES)	INCREMENT, IN CUBIC YARDS, PER LINEAR FOOT OF PIPE
12	34	14	32	0.093
15	38	15.75	35.5	0.110
18	42	17.5	39	0.129
24	50	21	46	0.168
30	58	26	53	0.233
36	66	31	60	0.307
42	74	36	67	0.390

CONCRETE SHALL BE CLASS A3
* BUT NOT LESS THAN 6"
** IF THE PIPE IS LAID IN AN EXCAVATED TRENCH, THEN THE SIDE WALLS MAY CONFORM TO THE TRENCH SHAPE (IE THE TRENCH MAY BECOME THE CRADLE FORM).

CONCRETE CRADLE IS TO BE INSTALLED UNDER THE ENTIRE LENGTH OF CULVERT AT EACH STORMWATER MANAGEMENT BASIN.

CONCRETE CRADLE IS TO BE PAID FOR AS MISCELLANEOUS CONCRETE AND SUMMARIZED IN CUBIC YARDS FOR EACH PIPE LOCATION

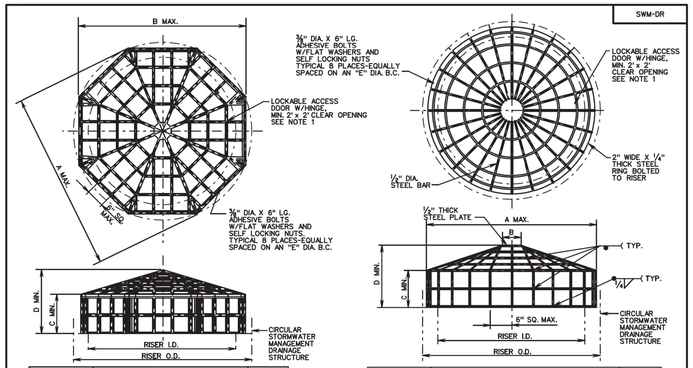
VDOT ROAD AND BRIDGE STANDARDS
SHEET 3 OF 5 | REVISION DATE
114.06

SPECIFICATION REFERENCE: 302

STORMWATER MANAGEMENT (SWM) DETAILS

DEBRIS RACK, METAL PLATE, WATER QUALITY ORIFICE, CONCRETE CRADLE
(FOR SWM DRAINAGE STRUCTURES, SWM RISER PIPES AND SWM DAMS)
VIRGINIA DEPARTMENT OF TRANSPORTATION

SWM-DR



RISER I.D.	RISER O.D.	DIMENSION A	B	C	D	E	APPROX. WT. (LBS.)
24	30	31	28 5/8	7	11	27	24
36	44	45	47 1/2	13	19	40	58
48	58	59	54 1/2	13	21	53	86
60	72	73	67 1/2	17	28	66	135
72	86	87	80 5/8	23	35	79	204
84	100	101	93 7/8	25	39	92	266
96	114	115	106 1/4	22	38	105	305

HIGH DENSITY POLYETHYLENE

RISER I.D.	RISER O.D.	DIMENSION A	B	C	D	E	SEGMENT	APPROX. WT. (LBS.)
24	30	30	6	7	10	27	15	46
36	44	42	6	13	18	40	22	82
48	58	55	9	13	20	53	29	120
60	72	68	9	17	26	66	36	169
72	86	81	9	23	34	79	42	227
84	100	94	12	25	37	92	49	290
96	114	107	12	22	36	105	56	341

METAL

NOTES:
1. A HINGED, LOCKABLE ACCESS DOOR SHALL BE PROVIDED ON ALL TRASH RACKS IF THE TOTAL WEIGHT OF THE TRASH RACK IS GREATER THAN 75 LBS OR IF THE TRASH RACK IS TO BE PLACED ON A SWM-1 WITH AN "H" DIMENSION GREATER THAN 7'-2".
2. ANTI-VORTEX PLATE IS TO BE USED WHEN SPECIFIED ON THE PLANS. COST OF FURNISHING AND PLACING THE ANTI-VORTEX PLATE IS TO BE INCLUDED IN THE BID PRICE FOR THE STRUCTURE.

SPECIFICATION REFERENCE: 302

STORMWATER MANAGEMENT DETAILS TRASH RACK FOR SWM DRAINAGE STRUCTURES

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT ROAD AND BRIDGE STANDARDS
REVISION DATE | SHEET 4 OF 5
114.07

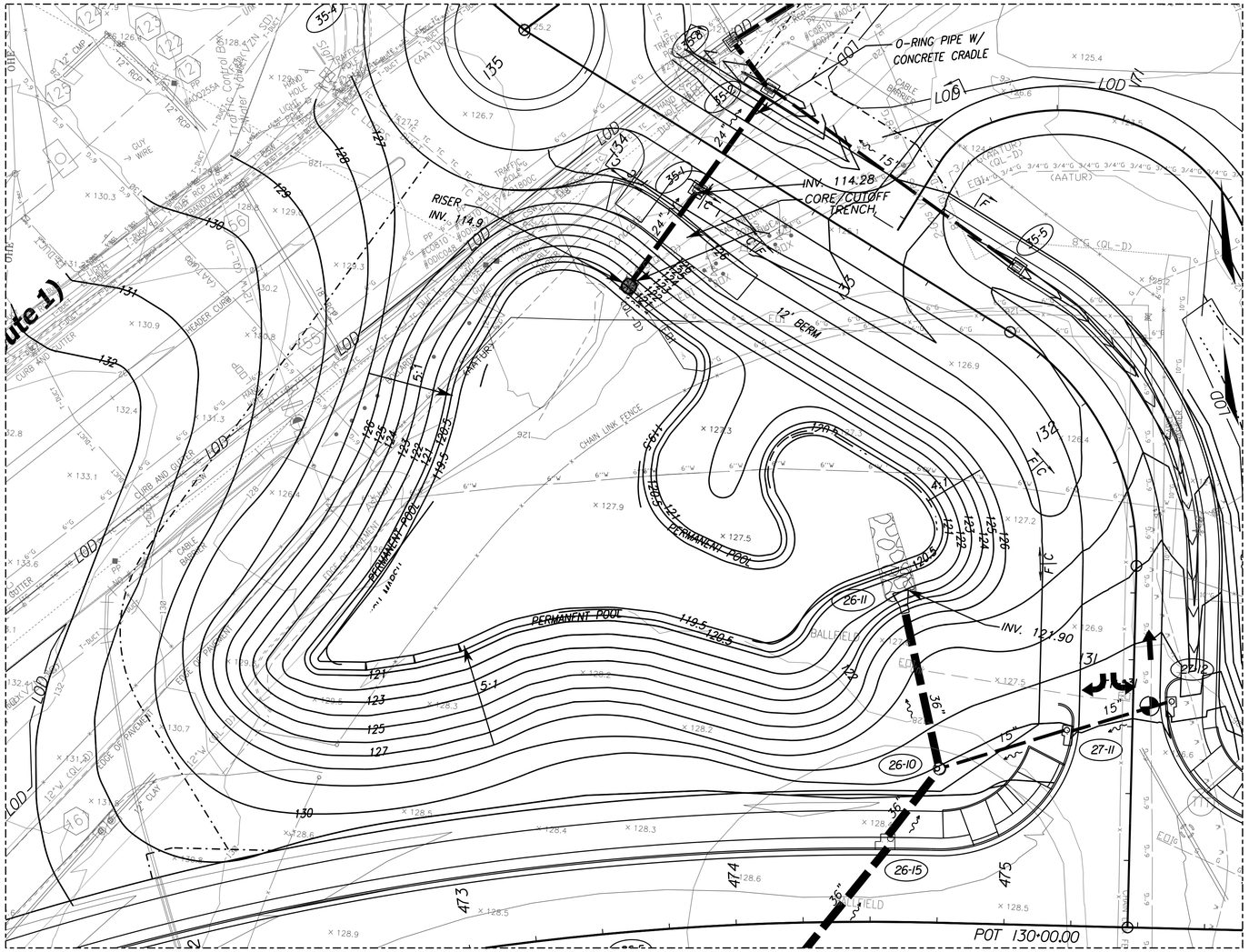
PROJECT	SHEET NO.
0001-029-001	2F(10)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001	2F(II)

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

A. Morton Thomas & Assoc. Chantilly, Virginia (ROADWAY DISCIPLINE)	A. Morton Thomas & Assoc. Chantilly, Virginia (HYDRAULIC DISCIPLINE)

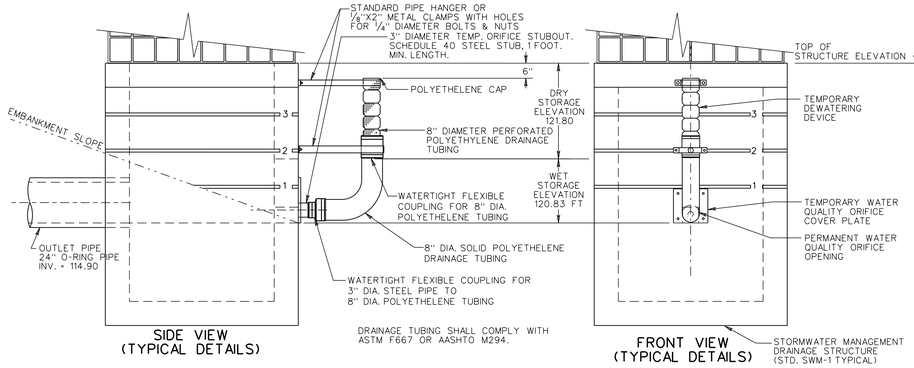


ESC BASIN-05A (FUTURE SWM POND-05A) PLAN VIEW

25' 0' 25' 50' 75'
GRAPHIC SCALE

SEDIMENT BASIN SUMMARY TABLE

MAXIMUM DRAINAGE AREA =	10.21 AC.
STORAGE REQUIRED =	18,470 CF WET, 18,470 CF DRY
STORAGE PROVIDED =	21,780 CF WET, 19,602 CF DRY
TOTAL STORAGE REQUIRED =	36,940 CF
TOTAL STORAGE PROVIDED =	41,382 CF
BOTTOM OF BASIN =	119.50 FT
TOP OF RISER =	122.00 FT
CLEANOUT ELEVATION =	121.15 FT
1ST STAGE WQv ORIFICE ELEVATION =	120.50 FT



NOTE:

1. THESE DETAILS ARE TO BE USED TO MODIFY THE PERMANENT STORMWATER MANAGEMENT DRAINAGE STRUCTURE WHERE THE STORMWATER MANAGEMENT BASIN IS TO BE USED FOR A TEMPORARY SEDIMENT BASIN DURING PROJECT CONSTRUCTION.
2. GRADE STORMWATER MANAGEMENT BASIN AS SHOWN IN PLANS.
3. ALL OPENINGS (IF ANY) IN SIDE OF STRUCTURE (OTHER THEN PERMANENT WATER QUALITY ORIFICE) ARE TO BE COVERED WITH SOLID METAL PLATES WHILE THE BASIN IS BEING USED FOR SEDIMENT CONTROL.
4. DEWATERING DEVICE AND COMPONENTS AND TEMPORARY METAL PLATES (IF ANY), AS SHOWN IN THE DETAIL, ARE TO BE REMOVED AND PERMANENT STEEL PLATE WITH WATER QUALITY ORIFICE IS TO BE INSTALLED WHEN BASIN IS NO LONGER NEEDED FOR SEDIMENT CONTROL.
5. SIMILAR DEVICE MAY ALSO BE USED ON OTHER STORMWATER MANAGEMENT DRAINAGE STRUCTURES.
6. COST OF TEMPORARY DEWATERING DEVICE AND TEMPORARY METAL PLATES (IF ANY) SHALL BE INCLUDED IN THE BID PRICE FOR STORMWATER MANAGEMENT DRAINAGE STRUCTURE.
7. THE TEMPORARY 8" DIA. POLYETHELENE DRAINAGE TUBING IS TO BE SOLID FOR THE LENGTH BELOW WET STORAGE ELEVATION AND IS TO BE PERFORATED ABOVE THE WET STORAGE ELEVATION. THE COUPLING IS TO BE WATERTIGHT.

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
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DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIFFORD, A.MORTON THOMAS & ASSOC.

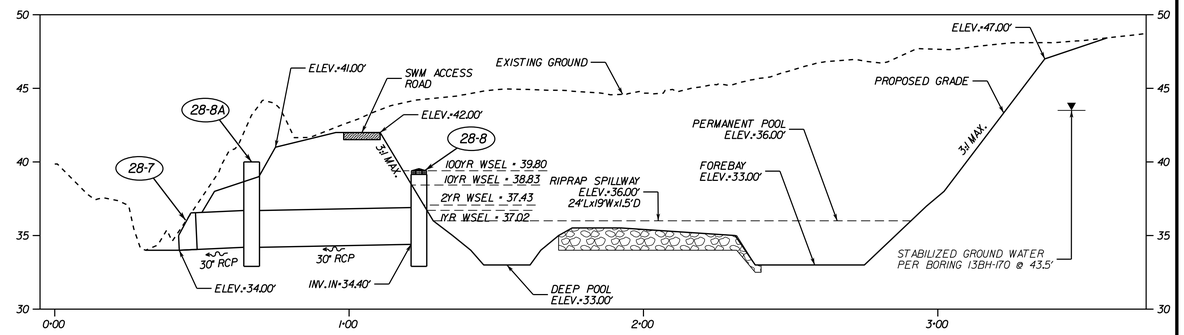
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001	2F(12)

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

A. Morton Thomas & Assoc. Chantilly, Virginia (ROADWAY DISCIPLINE)	A. Morton Thomas & Assoc. Chantilly, Virginia (HYDRAULIC DISCIPLINE)

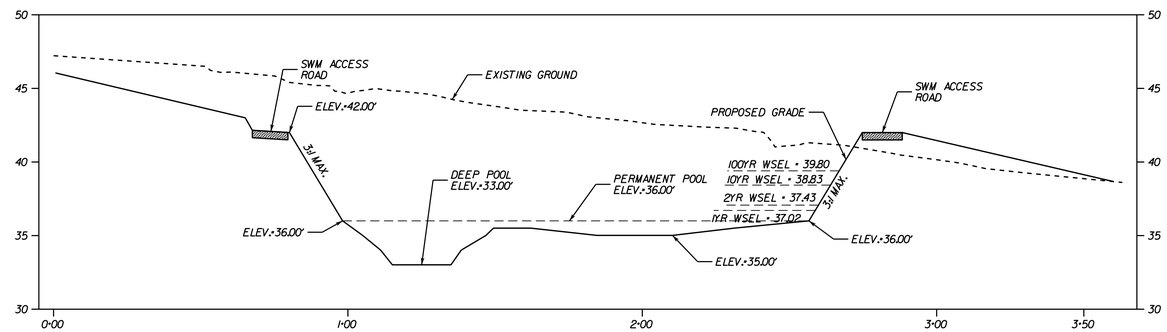
ENHANCED EXTENDED-DETENTION BASIN SWM-06B PLAN VIEW

25' 0' 25' 50' 75'
GRAPHIC SCALE



ENHANCED EXTENDED-DETENTION BASIN SWM-06B - SECTION A-A

25' 0' 25' 50' 75'
GRAPHIC SCALE



ENHANCED EXTENDED-DETENTION BASIN SWM-06B - SECTION B-B

25' 0' 25' 50' 75'
GRAPHIC SCALE

NOTES:

1. THE CONTRACTOR SHALL PROVIDE 'AS-BUILT' DRAWINGS OF ALL STORMWATER MANAGEMENT FACILITIES. THE 'AS-BUILT' DRAWINGS SHALLSHOW THE ACTUAL FINISHED GROUND CONTOURS, OUTLET STRUCTURE DIMENSIONS AND ELEVATIONS, ETC. AS THEY EXIST AT THE COMPLETION OF THE PROJECT.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE PROPOSED BMP'S ONCE ALL CONNECTIONS HAVE BEEN COMPLETED, AND SHALL CERTIFY THAT THE BMP HAS BEEN MAINTAINED PER MANUFACTURER'S MAINTENANCE GUIDELINES (OR RELEVANT INDUSTRY STANDARDS) PRIOR TO TRANSFER TO VDOT.

ENHANCED EXTENDED DETENTION BASIN SWM-06B SUMMARY TABLE

DRAINAGE AREA =	7.11 AC.
SEDIMENT FOREBAY #1 IMPERVIOUS DRAINAGE AREA =	3.85 AC.
DEEP POOL (SEDIMENT FOREBAY #1) MIN. VOLUME REQUIRED =	1,398 CF.
DEEP POOL (SEDIMENT FOREBAY #1) VOLUME PROVIDED =	3,546 CF.
BOTTOM OF BASIN (SEDIMENT FOREBAY)=	33.00 FT
TOP OF RISER =	39.00 FT
1ST STAGE WQv 2.5" ORIFICE ELEVATION =	36.00 FT
1 YR WATER SURFACE ELEVATIONS (WSEL) =	37.02 FT
2 YR WATER SURFACE ELEVATIONS (WSEL) =	37.43 FT
10 YR WATER SURFACE ELEVATIONS (WSEL) =	38.83 FT
100 YR WATER SURFACE ELEVATIONS (WSEL) =	39.80 FT
PRINCIPLE SPILLWAY ELEVATION =	34.40 FT
TOP OF EMBANKMENT =	42.00 FT
FREEBOARD PROVIDED =	2.20 FT

1X WQv SHALLOW MARSH REQ'D=	6,988 CF
1X WQv 30-HR DRAWDOWN REQ'D=	6,988 CF
1X WQv SHALLOW MARSH PROVIDED=	11,138 CF
1X WQv 30-HR DRAWDOWN PROVIDED=	6,988 CF
DEEP POOL SURFACE AREA 20% TARGET =	2,393 SF.
DEEP POOL SURFACE AREA PROVIDED =	2,497 SF
LOW MARSH SURFACE AREA 35% TARGET =	4,600 SF.
LOW MARSH SURFACE AREA PROVIDED =	4,600 SF.
HIGH MARSH SURFACE AREA 45% TARGET =	5,051 SF
HIGH MARSH SURFACE AREA PROVIDED =	5,531 SF.

INITIALS	DATE
DESIGNER:	
CHECKED:	
CHECKED:	
DRAFTED:	
VERIFIED:	

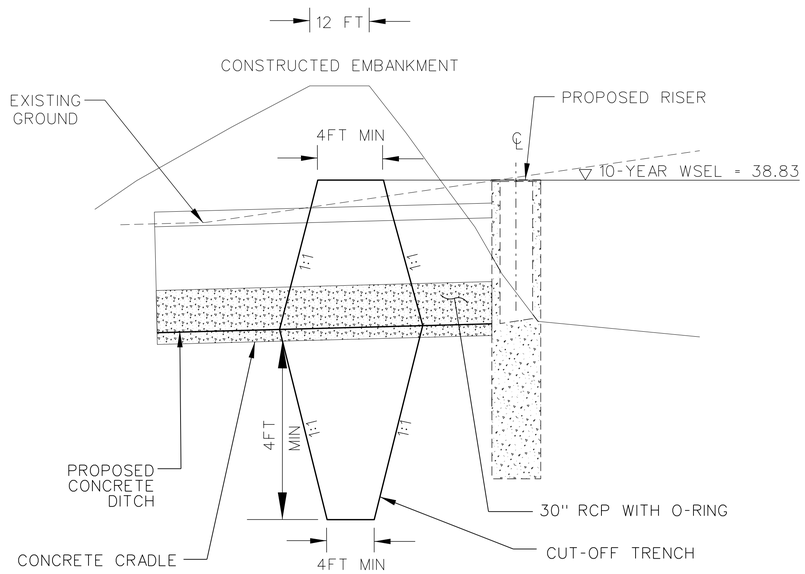
PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA, -SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

ENHANCED EXTENDED-DETENTION BASIN SWM-06B NOTES AND DETAILS

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001	2F(13)

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

A. Morton Thomas & Assoc. Chantilly, Virginia (ROADWAY DISCIPLINE)	A. Morton Thomas & Assoc. Chantilly, Virginia (HYDRAULIC DISCIPLINE)



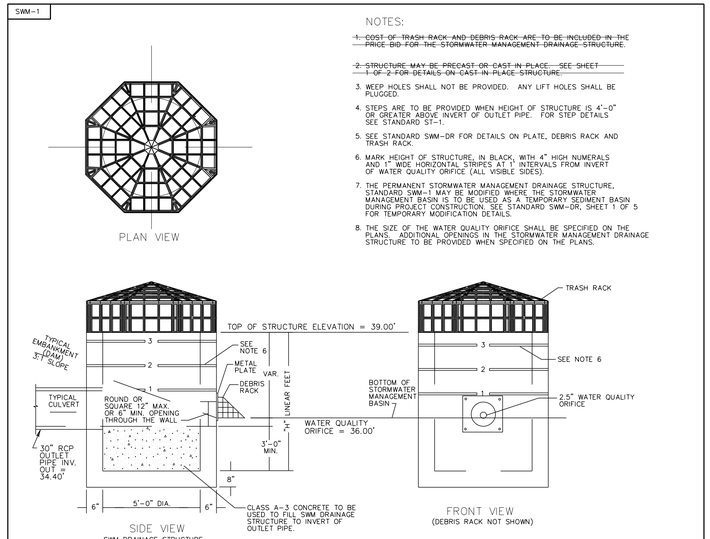
CORE TRENCH DETAIL
NOT TO SCALE

NOTES:

1) WHEN INSTALLING THE STEPS AND TRASH RACK TO THE CONTROL STRUCTURE, THE CONTRACTOR SHALL ENSURE THAT THE STEPS AND TRASH RACK HINGED ACCESS DOOR ARE ORIENTED TO THE EMBANKMENT SIDE OF THE CONTROL STRUCTURE, AND ARE TO THE EXTENT POSSIBLE, IN DIRECT ALIGNMENT WITH EACH OTHER.

2) REFERENCES TO "THE ENGINEER" IN THE DETAILS ON THIS SHEET WILL BE REPLACED WITH "CONTRACTING OFFICER". REFERENCES TO "THE DEPARTMENT" WILL BE REPLACED WITH "THE GOVERNMENT".

SWM-1



NOTES:

1. ~~COST OF TRASH RACK AND DEBRIS RACK ARE TO BE INCLUDED IN THE PRICE BID FOR THE STORMWATER MANAGEMENT DRAINAGE STRUCTURE.~~
2. ~~STRUCTURE MAY BE PRECAST OR CAST IN PLACE. SEE SHEET 1 OF 2 FOR DETAILS ON CAST IN PLACE STRUCTURE.~~
3. WEEP HOLES SHALL NOT BE PROVIDED. ANY LIFT HOLES SHALL BE PLUGGED.
4. STEPS ARE TO BE PROVIDED WHEN HEIGHT OF STRUCTURE IS 4'-0" OR GREATER ABOVE INVERT OF OUTLET PIPE. FOR STEP DETAILS SEE STANDARD ST-1.
5. SEE STANDARD SWM-DR FOR DETAILS ON PLATE, DEBRIS RACK AND TRASH RACK.
6. MARK HEIGHT OF STRUCTURE, IN BLACK, WITH 4" HIGH NUMERALS AND 1" WIDE HORIZONTAL STRIPES AT 1' INTERVALS FROM INVERT OF WATER QUALITY ORIFICE (ALL VISIBLE SIDES).
7. THE PERMANENT STORMWATER MANAGEMENT DRAINAGE STRUCTURE, STANDARD SWM-1 MAY BE MODIFIED WHERE THE STORMWATER MANAGEMENT BASIN IS TO BE USED AS A TEMPORARY SEDIMENT BASIN DURING PROJECT CONSTRUCTION. SEE STANDARD SWM-DR, SHEET 1 OF 5 FOR TEMPORARY MODIFICATION DETAILS.
8. THE SIZE OF THE WATER QUALITY ORIFICE SHALL BE SPECIFIED ON THE PLANS. ADDITIONAL OPENINGS IN THE STORMWATER MANAGEMENT DRAINAGE STRUCTURE TO BE PROVIDED WHEN SPECIFIED ON THE PLANS.

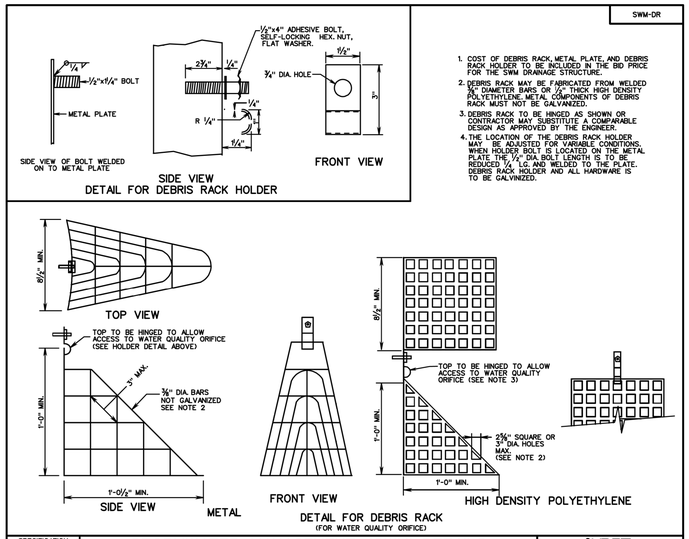
SHEET 2 OF 2

REV. 3/03
116.02

PRECAST STORMWATER MANAGEMENT DRAINAGE STRUCTURE
VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE: 105, 302

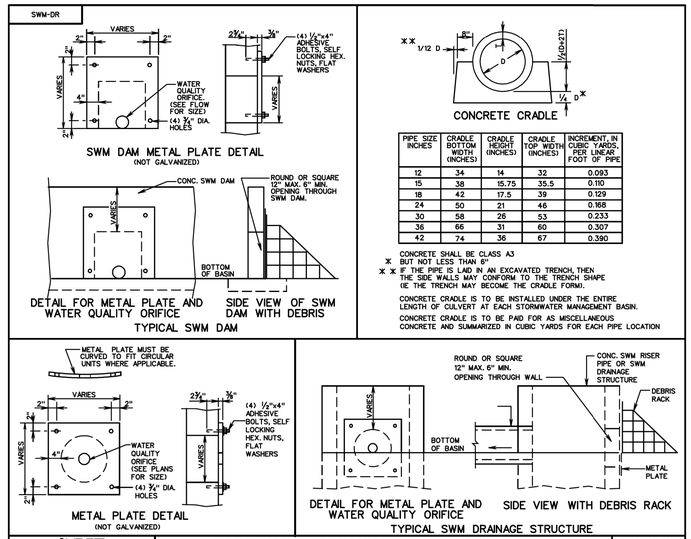
SWM-DR



1. COST OF DEBRIS RACK, METAL PLATE, AND DEBRIS RACK HOLDER TO BE INCLUDED IN THE BID PRICE FOR THE SWM DRAINAGE STRUCTURE.
2. DEBRIS RACK MAY BE FABRICATED FROM WELDED 3/4" DIAMETER BARS OR 1/2" THICK HIGH DENSITY POLYETHYLENE. METAL COMPONENTS OF DEBRIS RACK MUST NOT BE GALVANIZED.
3. DEBRIS RACK TO BE HINGED AS SHOWN OR CONTRACTOR MAY SUBSTITUTE A COMPARABLE DESIGN AS APPROVED BY THE ENGINEER.
4. THE LOCATION OF THE DEBRIS RACK HOLDER MAY BE ADJUSTED FOR VARIABLE CONDITIONS. WHEN HOLDER BOLT IS LOCATED ON THE METAL PLATE THE 1/4" DIA. BOLT LENGTH IS TO BE REDUCED 1/4" LG. AND WELDED TO THE PLATE. DEBRIS RACK HOLDER AND ALL HARDWARE IS TO BE GALVINIZED.

SPECIFICATION REFERENCE	STORMWATER MANAGEMENT (SWM) DETAILS	VDOT ROAD AND BRIDGE STANDARDS	
302	DEBRIS RACK, METAL PLATE, WATER QUALITY ORIFICE, CONCRETE CRADLE (FOR SWM DRAINAGE STRUCTURES, SWM RISER PIPES AND SWM DAMS) VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE	SHEET 2 OF 5 114.05

SWM-DR



PIPE SIZE INCHES	CRADLE BOTTOM WIDTH (INCHES)	CRADLE HEIGHT (INCHES)	CRADLE TOP WIDTH (INCHES)	INCREMENT, IN CUBIC YARDS, PER LINEAR FOOT OF PIPE
12	34	14	32	0.093
15	38	15.75	35.5	0.110
18	42	17.5	39	0.129
24	50	21	46	0.168
30	58	26	53	0.233
36	66	31	60	0.307
42	74	36	67	0.390

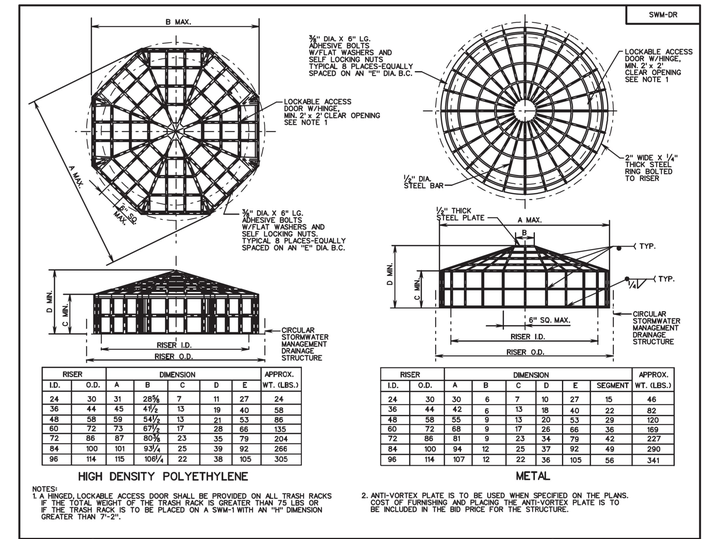
CONCRETE SHALL BE CLASS A3
* BUT NOT LESS THAN 6"
** IF THE PIPE IS LAID IN AN EXCAVATED TRENCH, THEN THE SIDE WALLS MAY CONFORM TO THE TRENCH SHAPE (IE THE TRENCH MAY BECOME THE CRADLE FORM).

CONCRETE CRADLE IS TO BE INSTALLED UNDER THE ENTIRE LENGTH OF CULVERT AT EACH STORMWATER MANAGEMENT BASIN.

CONCRETE CRADLE IS TO BE PAID FOR AS MISCELLANEOUS CONCRETE AND SUMMARIZED IN CUBIC YARDS FOR EACH PIPE LOCATION

VDOT ROAD AND BRIDGE STANDARDS	STORMWATER MANAGEMENT (SWM) DETAILS	SPECIFICATION REFERENCE
SHEET 3 OF 5 / REVISION DATE / 114.06	DEBRIS RACK, METAL PLATE, WATER QUALITY ORIFICE, CONCRETE CRADLE (FOR SWM DRAINAGE STRUCTURES, SWM RISER PIPES AND SWM DAMS) VIRGINIA DEPARTMENT OF TRANSPORTATION	302

SWM-DR



RISER I.D.	RISER O.D.	DIMENSION A	B	C	D	E		APPROX. WT. (LBS.)
24	30	31	28 5/8	7	11	27		24
36	44	45	41 1/2	13	19	40		58
48	58	59	54 1/2	13	21	53		86
60	72	73	67 1/2	17	28	66		135
72	86	87	80 7/8	23	35	79		204
84	100	101	93 1/4	25	39	92		266
96	114	115	106 1/4	22	38	105		305

HIGH DENSITY POLYETHYLENE

RISER I.D.	RISER O.D.	DIMENSION A	B	C	D	E	SEGMENT	APPROX. WT. (LBS.)
24	30	30	6	7	10	27	15	46
36	44	42	6	13	18	40	22	82
48	58	55	9	13	20	53	29	120
60	72	68	9	17	26	66	36	169
72	86	81	9	23	34	79	42	227
84	100	94	12	25	37	92	49	290
96	114	107	12	22	36	105	56	341

METAL

NOTES:
1. A HINGED, LOCKABLE ACCESS DOOR SHALL BE PROVIDED ON ALL TRASH RACKS IF THE TOTAL WEIGHT OF THE TRASH RACK IS GREATER THAN 75 LBS OR IF THE TRASH RACK IS TO BE PLACED ON A SWM-1 WITH AN "H" DIMENSION GREATER THAN 7'-2".
2. ANTI-VORTEX PLATE IS TO BE USED WHEN SPECIFIED ON THE PLANS. COST OF FURNISHING AND PLACING THE ANTI-VORTEX PLATE IS TO BE INCLUDED IN THE BID PRICE FOR THE STRUCTURE.

SPECIFICATION REFERENCE	STORMWATER MANAGEMENT DETAILS TRASH RACK FOR SWM DRAINAGE STRUCTURES	VDOT ROAD AND BRIDGE STANDARDS	
302	VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE	SHEET 4 OF 5 114.07

PROJECT	SHEET NO.
0001-029-001	2F(13)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIFFORD, A.MORTON THOMAS & ASSOC.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001	2F(14)

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

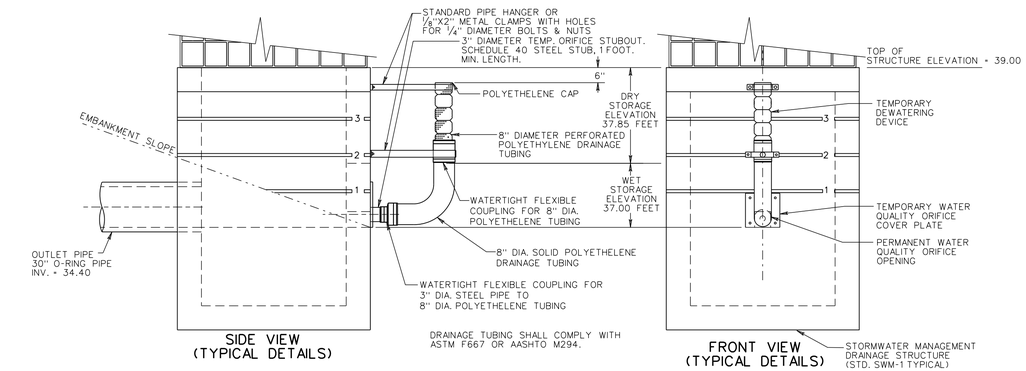
A. Morton Thomas & Assoc. Chantilly, Virginia (ROADWAY DISCIPLINE)	A. Morton Thomas & Assoc. Chantilly, Virginia (HYDRAULIC DISCIPLINE)

SEDIMENT BASIN ESC-06B (FUTURE SWM-06B) PLAN VIEW

25' 0' 25' 50' 75'
GRAPHIC SCALE

SEDIMENT BASIN SUMMARY TABLE

MAXIMUM DRAINAGE AREA =	7.11 AC.
STORAGE REQUIRED =	12,798 CF WET, 12,798 CF DRY
STORAGE PROVIDED =	13,068 CF WET, 13,068 CF DRY
TOTAL STORAGE REQUIRED =	25,596 CF
TOTAL STORAGE PROVIDED =	26,136 CF
BOTTOM OF BASIN =	36.00 FT
TOP OF RISER =	39.00 FT
CLEANOUT ELEVATION =	37.43 FT
1ST STAGE WQV ORIFICE ELEVATION =	36.00 FT



NOTE:

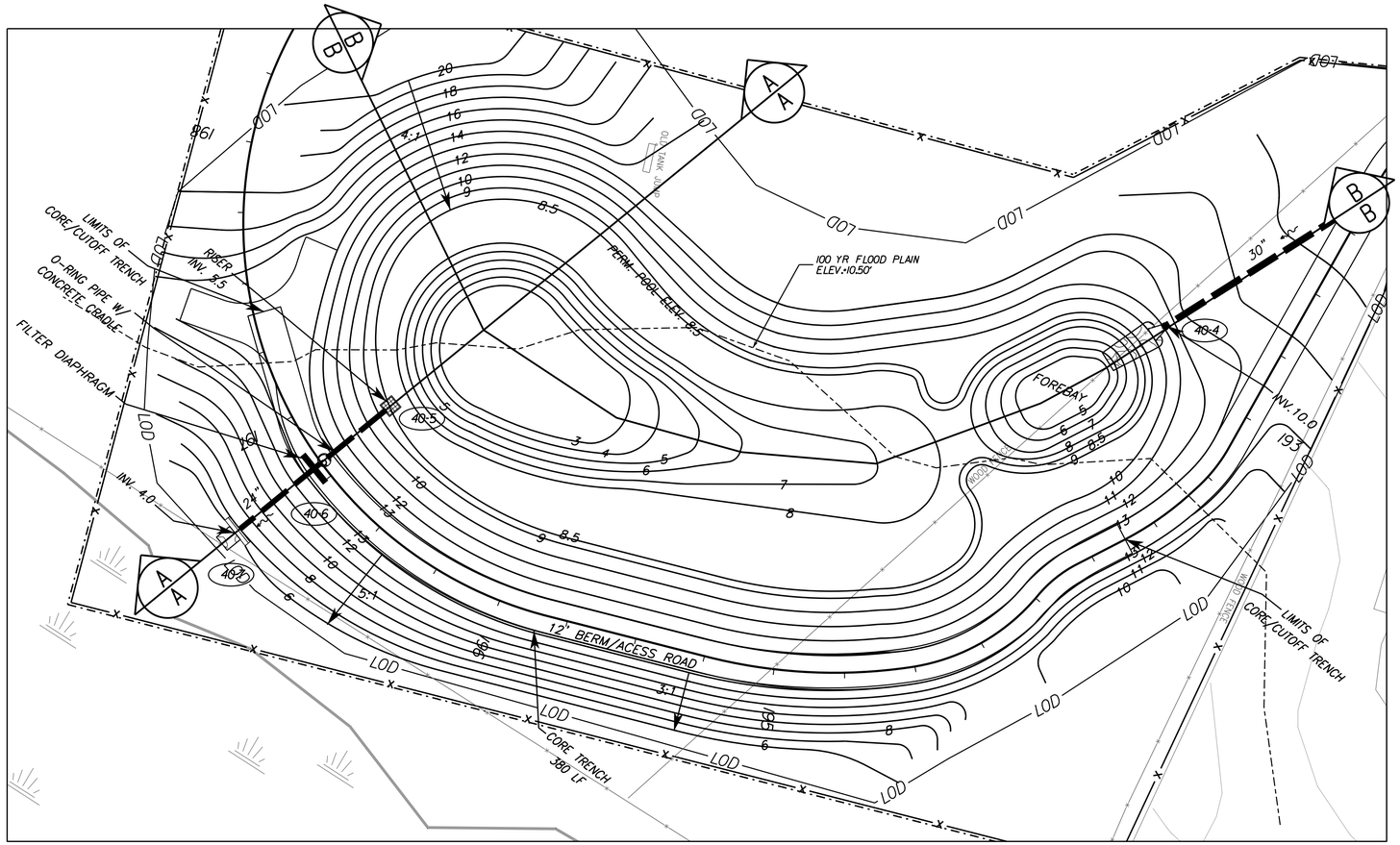
1. THESE DETAILS ARE TO BE USED TO MODIFY THE PERMANENT STORMWATER MANAGEMENT DRAINAGE STRUCTURE WHERE THE STORMWATER MANAGEMENT BASIN IS TO BE USED FOR A TEMPORARY SEDIMENT BASIN DURING PROJECT CONSTRUCTION.
2. GRADE STORMWATER MANAGEMENT BASIN AS SHOWN IN PLANS.
3. ALL OPENINGS (IF ANY) IN SIDE OF STRUCTURE (OTHER THEN PERMANENT WATER QUALITY ORIFICE) ARE TO BE COVERED WITH SOLID METAL PLATES WHILE THE BASIN IS BEING USED FOR SEDIMENT CONTROL.
4. DEWATERING DEVICE AND COMPONENTS AND TEMPORARY METAL PLATES (IF ANY), AS SHOWN IN THE DETAIL, ARE TO BE REMOVED AND PERMANENT STEEL PLATE WITH WATER QUALITY ORIFICE IS TO BE INSTALLED WHEN BASIN IS NO LONGER NEEDED FOR SEDIMENT CONTROL.
5. SIMILAR DEVICE MAY ALSO BE USED ON OTHER STORMWATER MANAGEMENT DRAINAGE STRUCTURES.
6. COST OF TEMPORARY DEWATERING DEVICE AND TEMPORARY METAL PLATES (IF ANY) SHALL BE INCLUDED IN THE BID PRICE FOR STORMWATER MANAGEMENT DRAINAGE STRUCTURE.
7. THE TEMPORARY 8" DIA. POLYETHELENE DRAINAGE TUBING IS TO BE SOLID FOR THE LENGTH BELOW WET STORAGE ELEVATION AND IS TO BE PERFORATED ABOVE THE WET STORAGE ELEVATION. THE COUPLING IS TO BE WATERTIGHT.

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA, -SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGN BY MICHAEL GIFFORD, A.MORTON THOMAS & ASSOC.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001	2F(15)

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

A. Morton Thomas & Assoc. Chantilly, Virginia (ROADWAY DISCIPLINE)	A. Morton Thomas & Assoc. Chantilly, Virginia (HYDRAULIC DISCIPLINE)



RETENTION BASIN SWM-06A PLAN VIEW

25' 0' 25' 50' 75'
GRAPHIC SCALE

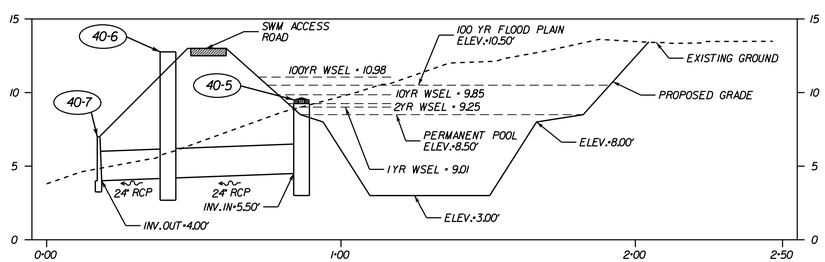
RETENTION BASIN SWM-06A SUMMARY TABLE

DRAINAGE AREA =	14.43 AC.
SEDIMENT FOREBAY #1 IMPERVIOUS DRAINAGE AREA =	2.81 AC.
DEEP POOL (SEDIMENT FOREBAY #1) MIN. VOLUME REQUIRED =	1,020 CF.
DEEP POOL (SEDIMENT FOREBAY #1) VOLUME PROVIDED =	2,651 CF.
BOTTOM OF BASIN (SEDIMENT FOREBAY)=	5.00 FT
TOP OF RISER =	9.50 FT
1ST STAGE WQv 2-3'x6" OPENINGS ELEVATION =	8.50 FT
1 YR WATER SURFACE ELEVATIONS (WSEL) =	9.01 FT
2 YR WATER SURFACE ELEVATIONS (WSEL) =	9.25 FT
10 YR WATER SURFACE ELEVATIONS (WSEL) =	9.85 FT
100 YR WATER SURFACE ELEVATIONS (WSEL) =	10.98 FT
PRINCIPLE SPILLWAY ELEVATION =	5.50 FT
TOP OF EMBANKMENT =	13.00 FT
FREEBOARD PROVIDED =	2.02 FT

NOTES:

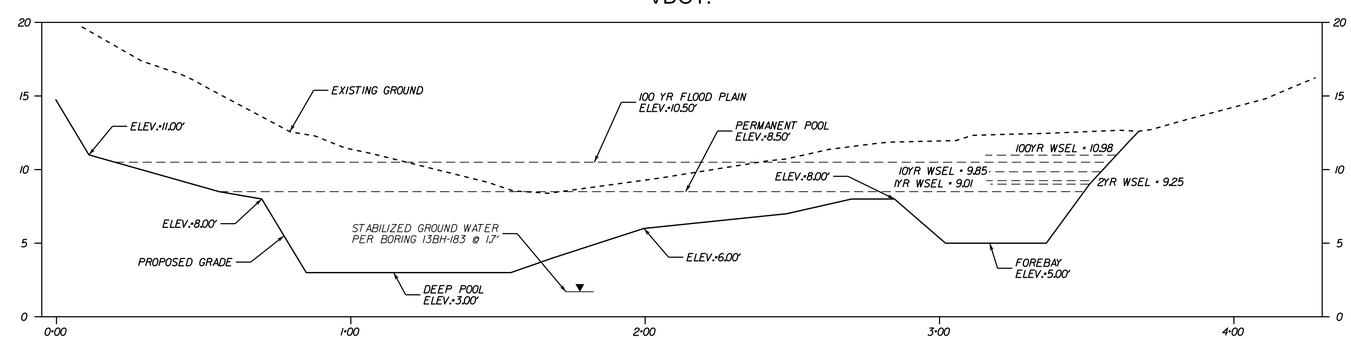
1. THE CONTRACTOR SHALL PROVIDE 'AS-BUILT' DRAWINGS OF ALL STORMWATER MANAGEMENT FACILITIES. THE 'AS-BUILT' DRAWINGS SHALL SHOW THE ACTUAL FINISHED GROUND CONTOURS, OUTLET STRUCTURE DIMENSIONS AND ELEVATIONS, ETC. AS THEY EXIST AT THE COMPLETION OF THE PROJECT.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE PROPOSED BMP'S ONCE ALL CONNECTIONS HAVE BEEN COMPLETED, AND SHALL CERTIFY THAT THE BMP HAS BEEN MAINTAINED PER MANUFACTURER'S MAINTENANCE GUIDELINES (OR RELEVANT INDUSTRY STANDARDS) PRIOR TO TRANSFER TO VDOT.



RETENTION BASIN SWM-06A - SECTION A-A

25' 0' 25' 50' 75'
GRAPHIC SCALE



RETENTION BASIN SWM-06A - SECTION B-B

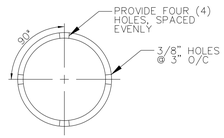
25' 0' 25' 50' 75'
GRAPHIC SCALE

PROJECT	SHEET NO.
0001-029-001	2F(15)

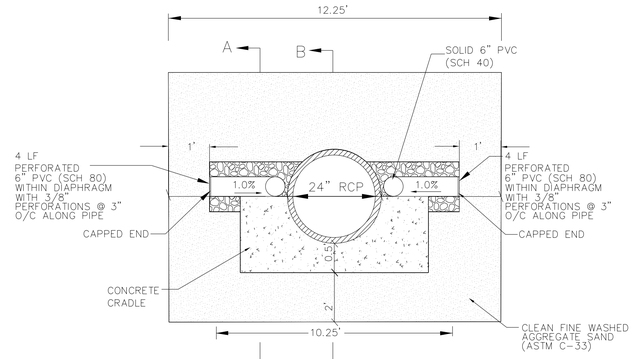
INITIALS	DATE
DESIGNER:	
CHECKED:	
CHECKED:	
DRAFTED:	
VERIFIED:	

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA, -SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIFFORD, A.MORTON THOMAS & ASSOC.

RETENTION BASIN SWM-06A NOTES AND DETAILS



PERFORATED PVC PIPE DETAIL
NOT TO SCALE



GRADED FILTER DIAPHRAGM
NOT TO SCALE

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001	2F(16)

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

A. Morton Thomas & Assoc. Chantilly, Virginia (ROADWAY DISCIPLINE)	A. Morton Thomas & Assoc. Chantilly, Virginia (HYDRAULIC DISCIPLINE)

NOTES:

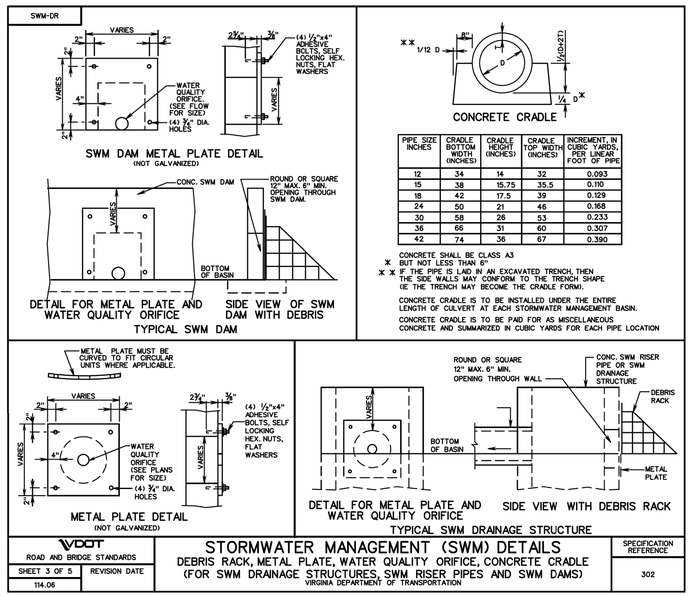
1) WHEN INSTALLING THE STEPS AND TRASH RACK TO THE CONTROL STRUCTURE, THE CONTRACTOR SHALL ENSURE THAT THE STEPS AND TRASH RACK HINGED ACCESS DOOR ARE ORIENTED TO THE EMBANKMENT SIDE OF THE CONTROL STRUCTURE, AND ARE TO THE EXTENT POSSIBLE, IN DIRECT ALIGNMENT WITH EACH OTHER.

2) REFERENCES TO "THE ENGINEER" IN THE DETAILS ON THIS SHEET WILL BE REPLACED WITH "CONTRACTING OFFICER". REFERENCES TO "THE DEPARTMENT" WILL BE REPLACED WITH "THE GOVERNMENT".

NOTES:

1. ~~COST OF TRASH RACK AND DEBRIS RACK ARE TO BE INCLUDED IN THE PRICE BID FOR THE STORMWATER MANAGEMENT DRAINAGE STRUCTURE.~~
2. ~~STRUCTURE MAY BE PRECAST OR CAST IN PLACE. SEE SHEET 1 OF 2 FOR DETAILS ON CAST IN PLACE STRUCTURE.~~
3. WEEP HOLES SHALL NOT BE PROVIDED. ANY LIFT HOLES SHALL BE PLUGGED.
4. STEPS ARE TO BE PROVIDED WHEN HEIGHT OF STRUCTURE IS 4'-0" OR GREATER ABOVE INVERT OF OUTLET PIPE. FOR STEP DETAILS SEE STANDARD ST-1.
5. SEE STANDARD SWM-DR FOR DETAILS ON PLATE, DEBRIS RACK AND TRASH RACK.
6. MARK HEIGHT OF STRUCTURE, IN BLACK, WITH 4" HIGH NUMERALS AND 1" WIDE HORIZONTAL STRIPES AT 1' INTERVALS FROM INVERT OF WATER QUALITY ORIFICE (ALL VISIBLE SIDES).
7. THE PERMANENT STORMWATER MANAGEMENT DRAINAGE STRUCTURE, STANDARD SWM-1 MAY BE MODIFIED WHERE THE STORMWATER MANAGEMENT BASIN IS TO BE USED AS A TEMPORARY SEDIMENT BASIN DURING PROJECT CONSTRUCTION. SEE STANDARD SWM-DR, SHEET 1 OF 5 FOR TEMPORARY MODIFICATION DETAILS.
8. THE SIZE OF THE WATER QUALITY ORIFICE SHALL BE SPECIFIED ON THE PLANS. ADDITIONAL OPENINGS IN THE STORMWATER MANAGEMENT DRAINAGE STRUCTURE TO BE PROVIDED WHEN SPECIFIED ON THE PLANS.

SWM-DR



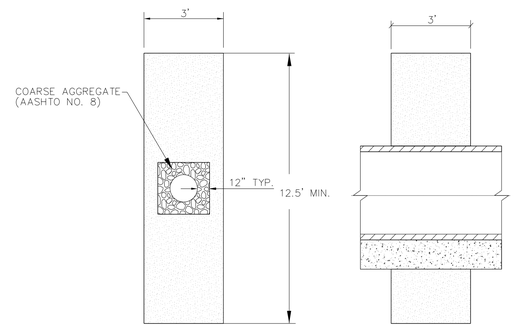
PIPE SIZE INCHES	CRADLE BOTTOM WIDTH (INCHES)	CRADLE HEIGHT (INCHES)	CRADLE TOP WIDTH (INCHES)	INCREMENT, IN CUBIC YARDS, PER LINEAR FOOT OF PIPE
12	34	14	32	0.093
15	38	15.75	35.5	0.110
18	42	17.5	39	0.129
24	50	21	46	0.188
30	58	26	53	0.233
36	66	31	60	0.307
42	74	36	67	0.390

CONCRETE SHALL BE CLASS A3
* BUT NOT LESS THAN 6"
** IF THE PIPE IS LAID IN AN EXCAVATED TRENCH, THEN THE SIDE WALLS MAY CONFORM TO THE TRENCH SHAPE (IE THE TRENCH MAY BECOME THE CRADLE FORM).

CONCRETE CRADLE IS TO BE INSTALLED UNDER THE ENTIRE LENGTH OF CULVERT AT EACH STORMWATER MANAGEMENT BASIN.

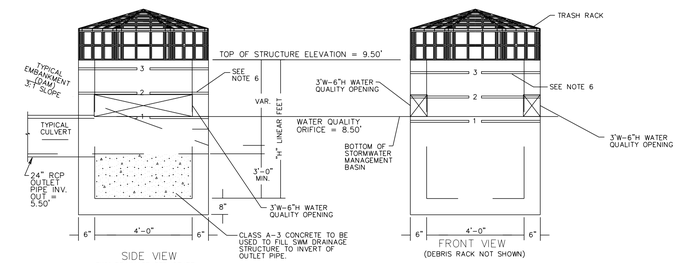
CONCRETE CRADLE IS TO BE PAID FOR AS MISCELLANEOUS CONCRETE AND SUMMARIZED IN CUBIC YARDS FOR EACH PIPE LOCATION

VDOT ROAD AND BRIDGE STANDARDS		STORMWATER MANAGEMENT (SWM) DETAILS	SPECIFICATION REFERENCE
SHEET 3 OF 5	REVISION DATE	DEBRIS RACK, METAL PLATE, WATER QUALITY ORIFICE, CONCRETE CRADLE (FOR SWM DRAINAGE STRUCTURES, SWM RISER PIPES AND SWM DAMS) VIRGINIA DEPARTMENT OF TRANSPORTATION	302
114.06			

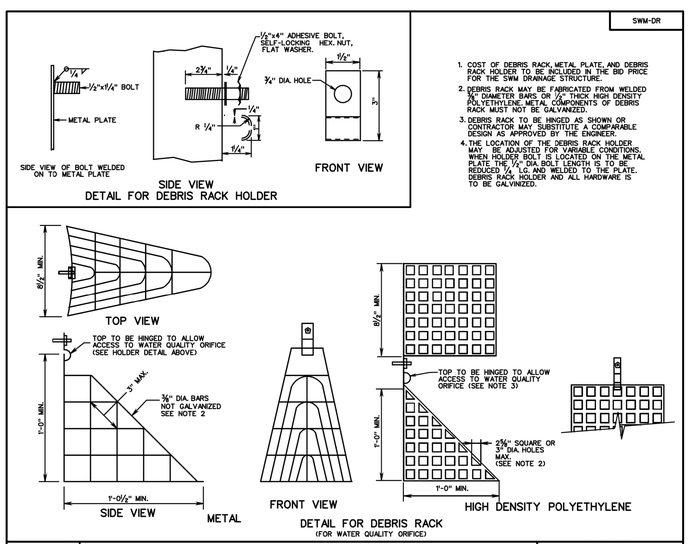


SECTION A-A
NOT TO SCALE

SECTION B-B
NOT TO SCALE



SWM-DR



1. COST OF DEBRIS RACK, METAL PLATE, AND DEBRIS RACK HOLDER TO BE INCLUDED IN THE BID PRICE FOR THE SWM DRAINAGE STRUCTURE.
2. DEBRIS RACK MAY BE FABRICATED FROM WELDED 3/4" DIAMETER BARS OR 1/2" THICK HIGH DENSITY POLYETHYLENE METAL COMPONENTS OF DEBRIS RACK MUST NOT BE GALVANIZED.
3. DEBRIS RACK TO BE HINGED AS SHOWN OR CONTRACTOR MAY SUBSTITUTE A COMPARABLE DESIGN AS APPROVED BY THE ENGINEER.
4. THE LOCATION OF THE DEBRIS RACK HOLDER MAY BE ADJUSTED FOR VARIABLE CONDITIONS. WHEN HOLDER BOLT IS LOCATED ON THE METAL PLATE THE 1/4" DIA. BOLT LENGTH IS TO BE REDUCED 1/4 LG. AND WELDED TO THE PLATE. DEBRIS RACK HOLDER AND ALL HARDWARE IS TO BE GALVANIZED.

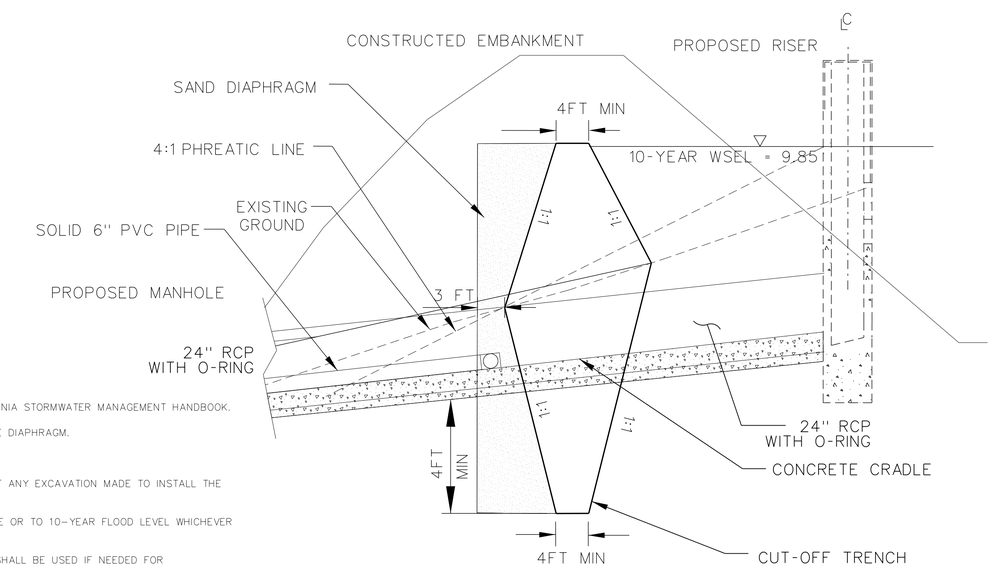
SPECIFICATION REFERENCE	STORMWATER MANAGEMENT (SWM) DETAILS	VDOT ROAD AND BRIDGE STANDARDS	
302	DEBRIS RACK, METAL PLATE, WATER QUALITY ORIFICE, CONCRETE CRADLE (FOR SWM DRAINAGE STRUCTURES, SWM RISER PIPES AND SWM DAMS) VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE	SHEET 2 OF 5
			114.05

FILTER DIAPHRAGM GRADATION

SIEVE	MASS PERCENT PASSING
9.5 MM (3/8-INCH)	100
4.75 MM (NO. 4)	95-100
1.18 MM (NO. 16)	45-80
0.300 MM (NO. 50)	10-30
0.150 MM (NO. 100)	2-10

FILTER DIAPHRAGM SPECIFICATION

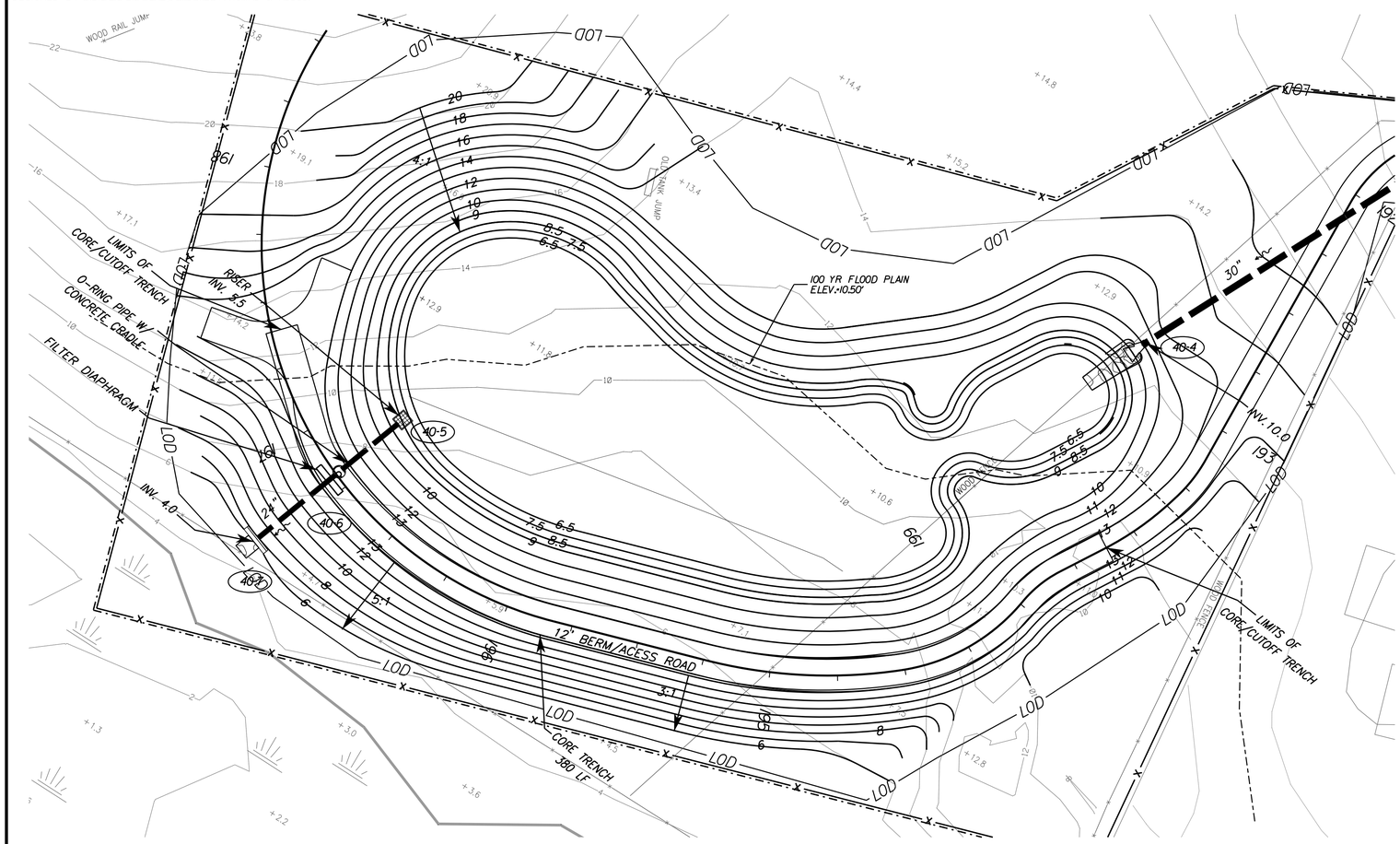
1. FILTER DIAPHRAGM SHALL BE DESIGNED IN ACCORDANCE WITH PROCEDURES OUTLINED IN THE VIRGINIA STORMWATER MANAGEMENT HANDBOOK.
2. A REGISTERED GEOTECHNICAL PROFESSIONAL ENGINEER SHALL INSPECT THE CONSTRUCTION OF THE DIAPHRAGM.
3. FILTER DIAPHRAGM SHALL EXTEND 2 FEET BELOW THE BOTTOM OF THE CRADLE OR BEDDING.
4. FILTER DIAPHRAGM SHALL BE DESIGNED TO EXTEND NO MORE THAN 5 FEET BEYOND THE SIDES OF ANY EXCAVATION MADE TO INSTALL THE CONDUIT.
5. FILTER DIAPHRAGM SHALL EXTEND A MINIMUM OF 3 TIMES THE OUTSIDE DIAMETER ABOVE THE PIPE OR TO 10-YEAR FLOOD LEVEL WHICHEVER IS LARGER.
6. THE THICKNESS OF THE DIAPHRAGM SHALL BE A MINIMUM OF 3.0 FEET. ADDITIONAL THICKNESS SHALL BE USED IF NEEDED FOR ACCOMMODATING CONSTRUCTION METHODS AND/OR ADDITIONAL SEEPAGE CAPACITY.
7. FILTER DIAPHRAGM SHALL BE INSTALLED IN HORIZONTAL LIFTS OF NOT MORE THAN 1 FOOT AND SHALL NOT BE WITHIN 2-FT OF FINISHED GRADE.
8. COMPACTION OF SAND TO USE HYDRO COMPACTION WITH CLEAN WATER AND VIBRATOR JUST AFTER WATER DROPS BELOW THE SAND SURFACE.
9. GRAVEL MATERIAL SURROUNDING THE 6" PVC SHALL MEET REQUIREMENTS FOR AASHTO NO. 8



CORE TRENCH DETAIL
NOT TO SCALE

PROJECT	SHEET NO.
0001-029-001	2F(16)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIFFORD, A.MORTON THOMAS & ASSOC.



SEDIMENT BASIN ESC-06A (FUTURE SWM-06A) PLAN VIEW

25' 0' 25' 50' 75'
GRAPHIC SCALE

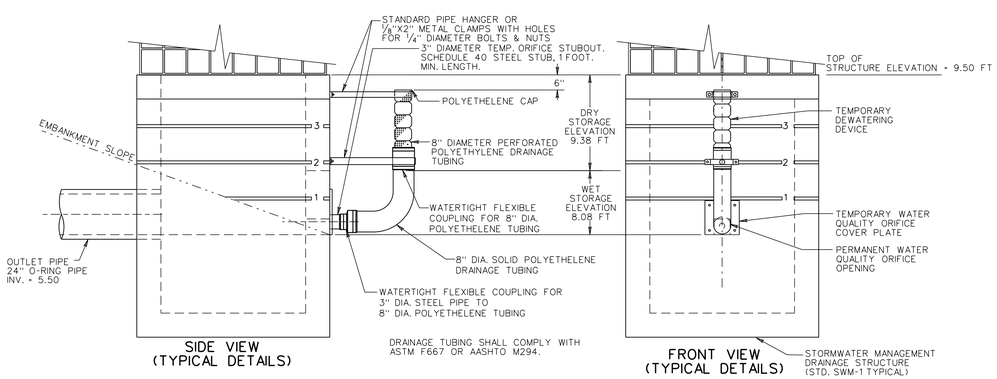
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001	2F(17)

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

A. Morton Thomas & Assoc. Chantilly, Virginia (ROADWAY DISCIPLINE)	A. Morton Thomas & Assoc. Chantilly, Virginia (HYDRAULIC DISCIPLINE)

SEDIMENT BASIN SUMMARY TABLE

MAXIMUM DRAINAGE AREA =	14.43 AC.
STORAGE REQUIRED =	26,104 CF WET, 26,104 CF DRY
STORAGE PROVIDED =	28,314 CF WET, 28,314 CF DRY
TOTAL STORAGE REQUIRED =	52,208 CF
TOTAL STORAGE PROVIDED =	56,628 CF
BOTTOM OF BASIN =	6.50 FT
TOP OF RISER =	9.50 FT
CLEANOUT ELEVATION =	8.73 FT
TEMPORARY 6 INCH SEDIMENT CONTROL ORIFICE ELEVATION =	8.08 FT



SIDE VIEW (TYPICAL DETAILS)

DRAINAGE TUBING SHALL COMPLY WITH ASTM F667 OR AASHTO M294.

FRONT VIEW (TYPICAL DETAILS)

NOTE:

1. THESE DETAILS ARE TO BE USED TO MODIFY THE PERMANENT STORMWATER MANAGEMENT DRAINAGE STRUCTURE WHERE THE STORMWATER MANAGEMENT BASIN IS TO BE USED FOR A TEMPORARY SEDIMENT BASIN DURING PROJECT CONSTRUCTION.
2. GRADE STORMWATER MANAGEMENT BASIN AS SHOWN IN PLANS.
3. ALL OPENINGS (IF ANY) IN SIDE OF STRUCTURE (OTHER THEN PERMANENT WATER QUALITY ORIFICE) ARE TO BE COVERED WITH SOLID METAL PLATES WHILE THE BASIN IS BEING USED FOR SEDIMENT CONTROL.
4. DEWATERING DEVICE AND COMPONENTS AND TEMPORARY METAL PLATES (IF ANY), AS SHOWN IN THE DETAIL, ARE TO BE REMOVED AND PERMANENT STEEL PLATE WITH WATER QUALITY ORIFICE IS TO BE INSTALLED WHEN BASIN IS NO LONGER NEEDED FOR SEDIMENT CONTROL.
5. SIMILAR DEVICE MAY ALSO BE USED ON OTHER STORMWATER MANAGEMENT DRAINAGE STRUCTURES.
6. COST OF TEMPORARY DEWATERING DEVICE AND TEMPORARY METAL PLATES (IF ANY) SHALL BE INCLUDED IN THE BID PRICE FOR STORMWATER MANAGEMENT DRAINAGE STRUCTURE.
7. THE TEMPORARY 8" DIA. POLYETHELENE DRAINAGE TUBING IS TO BE SOLID FOR THE LENGTH BELOW WET STORAGE ELEVATION AND IS TO BE PERFORATED ABOVE THE WET STORAGE ELEVATION. THE COUPLING IS TO BE WATERTIGHT.

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIFFORD, A.MORTON THOMAS & ASSOC.

SHARPE STABLES SITE GRADING DETAIL

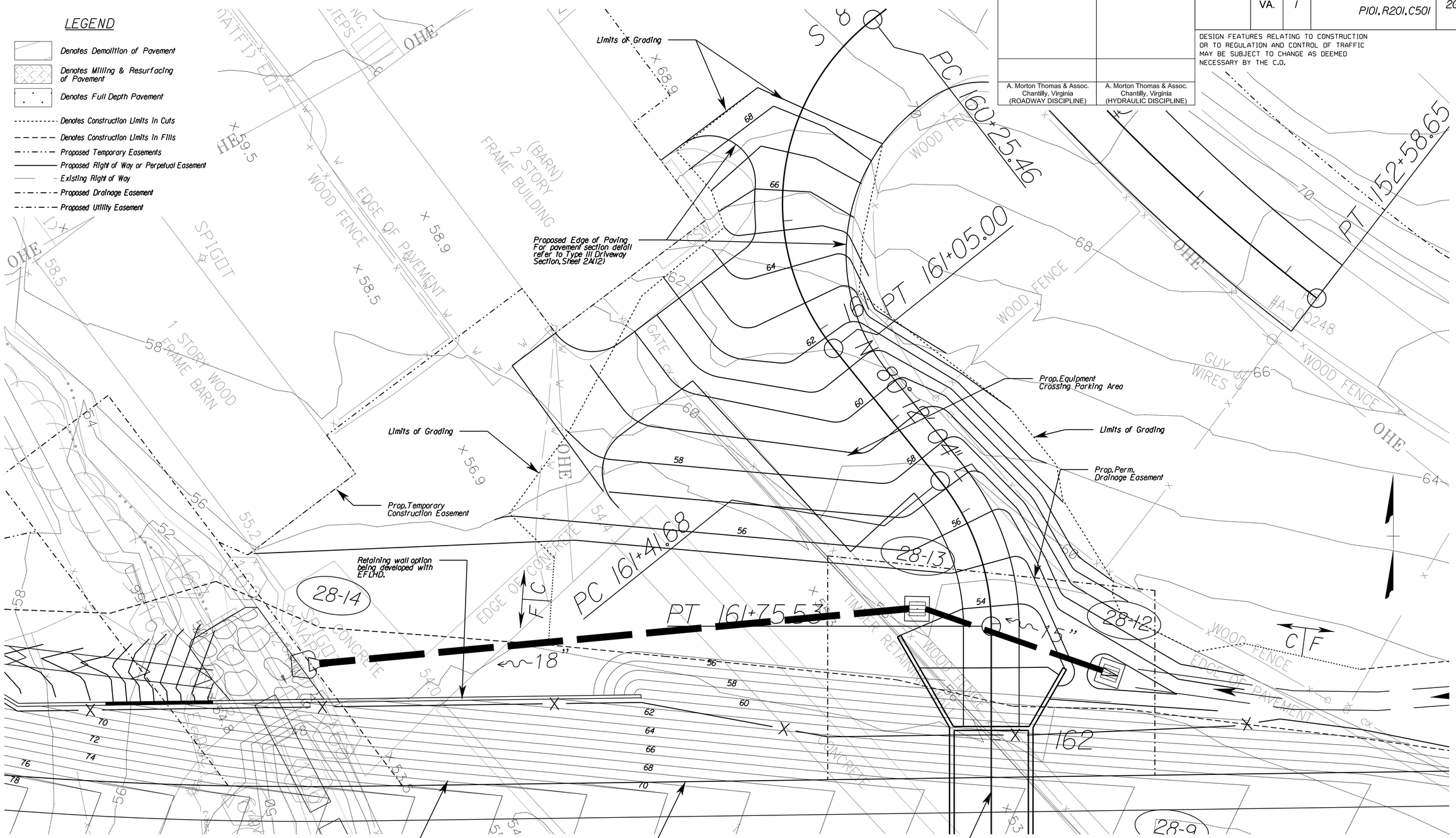
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	2G

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

A. Morton Thomas & Assoc. Chantilly, Virginia (ROADWAY DISCIPLINE)	A. Morton Thomas & Assoc. Chantilly, Virginia (HYDRAULIC DISCIPLINE)

LEGEND

- Denotes Demolition of Pavement
- Denotes Milling & Resurfacing of Pavement
- Denotes Full Depth Pavement
- Denotes Construction Limits In Cuts
- Denotes Construction Limits In Fills
- Proposed Temporary Easements
- Proposed Right of Way or Perpetual Easement
- Existing Right of Way
- Proposed Drainage Easement
- Proposed Utility Easement



	PROJECT	SHEET NO.
	0001-029-001	2G

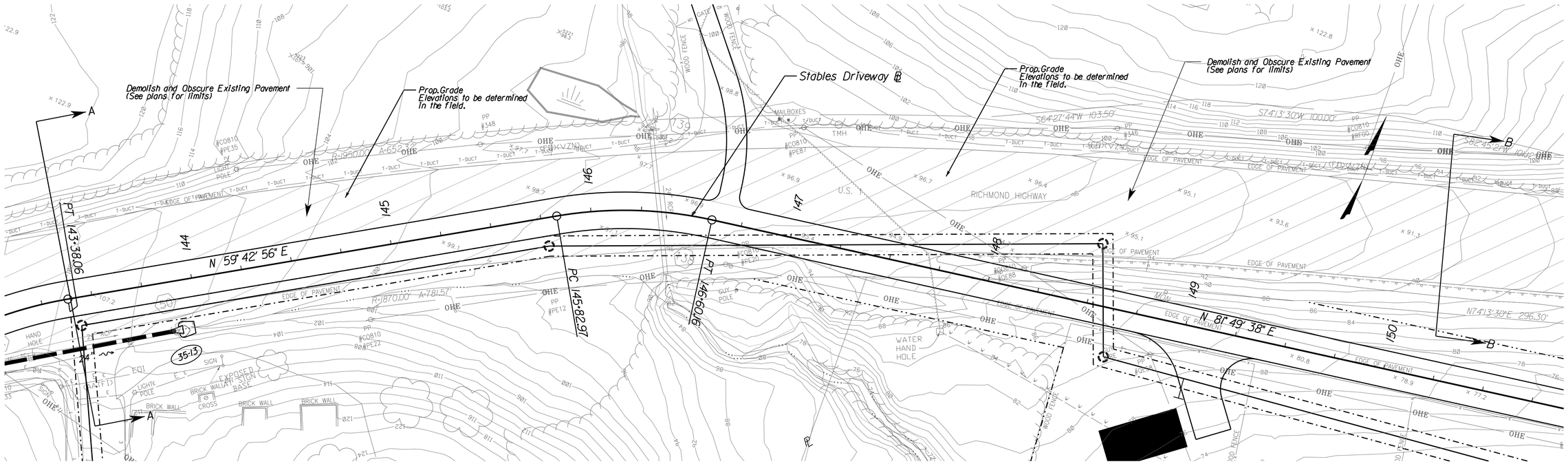
PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

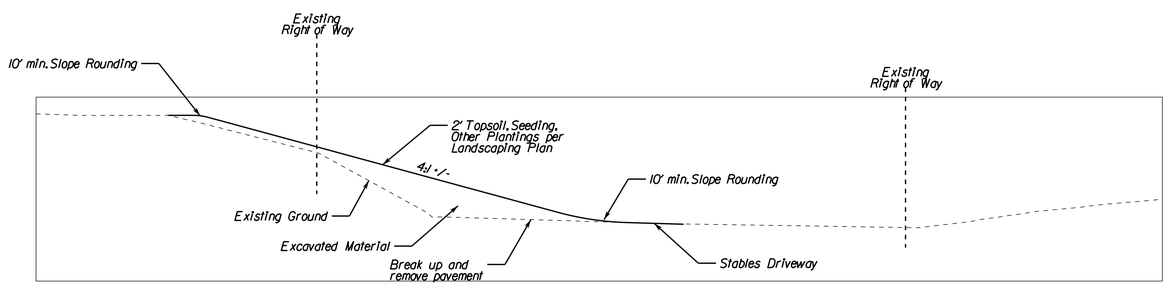
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	2H

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

A. Morton Thomas & Assoc. Chantilly, Virginia (ROADWAY DISCIPLINE)	A. Morton Thomas & Assoc. Chantilly, Virginia (HYDRAULIC DISCIPLINE)

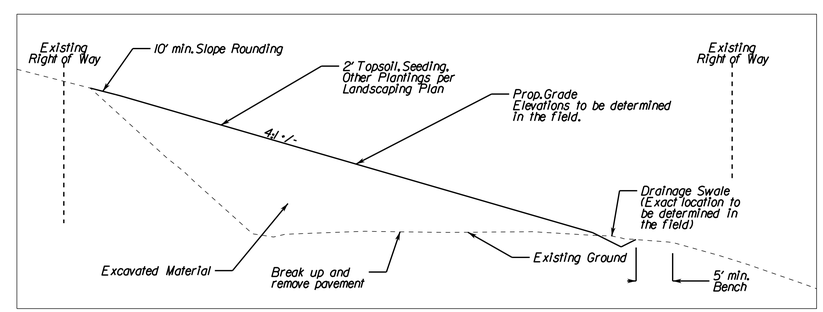
EXISTING ROUTE 1 DEMOLITION AND FILL DETAIL





Section A-A

SCALE
0 10' 20'



Section B-B

SCALE
0 10' 20'

PROJECT	SHEET NO.
0001-029-001	2H

STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	—	·	1	P101,R201,C501	2J(1)

INDEX OF SHEETS

Sheet No.	Description
1	MSE Wall Section, General Notes, and Index of Sheets
2	MSE-1 Plan and Profile

GENERAL NOTES

The Contractor shall use one of the earth retaining wall systems approved by VDOT and construct the walls per VDOT requirements.

The contractor shall design the MSE retaining wall structure, including internal and external stability, per all applicable AASHTO LRFD specifications, 6th Edition, and VDOT Modifications and Standards. The design shall be performed/sealed by a Licensed Engineer in the Commonwealth of Virginia.

The minimum wall strip length shall be 0.75 H, where H is the total height of the wall above the leveling pad.

Complete working drawings/shop plans and design calculations shall be submitted to the Engineer for review and approval prior to beginning of wall work.

All panel and types reinforcing strips, and other related elements shall be detailed on shop drawings.

Reinforcing steel in concrete wall coping shall be Corrosion Resistant Reinforcing Steel- low Carbon/ Chromium.

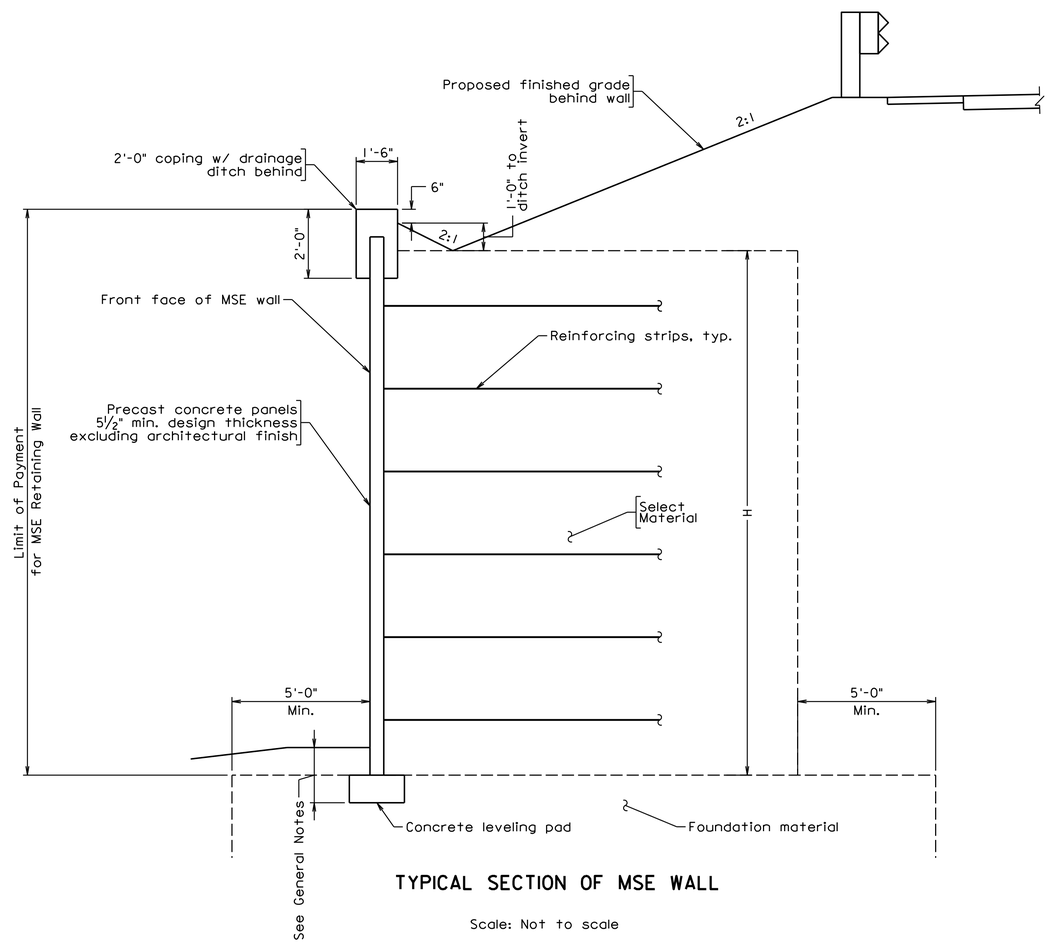
Prior to wall construction, the foundation shall be compacted with a smooth wheel vibratory roller. The drums of the roller should be ballast and each pass of the roller should overlap one half the width of the previous pass. The roller shall make at least ten passes over the proposed wall foundation zone. Any foundation soils found to be unsuitable shall be removed and replaced with selected material Type I minimum CBR of 30.

An impervious membrane shall be placed below the roadway pavement and just above the first row of reinforcement to intercept any flows containing deicing chemicals. The membrane shall be sloped to drain away from the facing to an intercepting longitudinal drain outleted beyond the reinforced zone.

A geotextile shall be used as a separator between the mechanically stabilized earth mass and the subbase.

Corrosion resistant reinforcing steel shall be used in wall copings.

Provide drainage details such as perforated pipe underdrain and/or drainage blanket based upon field conditions. All panel types and other related elements shall be detailed on shop drawings.



TYPICAL SECTION OF MSE WALL

Scale: Not to scale

10/15/2014

VDOT S&B DIVISION
RICHMOND, VA
STRUCTURAL ENGINEER

© 2013, Commonwealth of Virginia

No.	Description	Date
	Revisions	

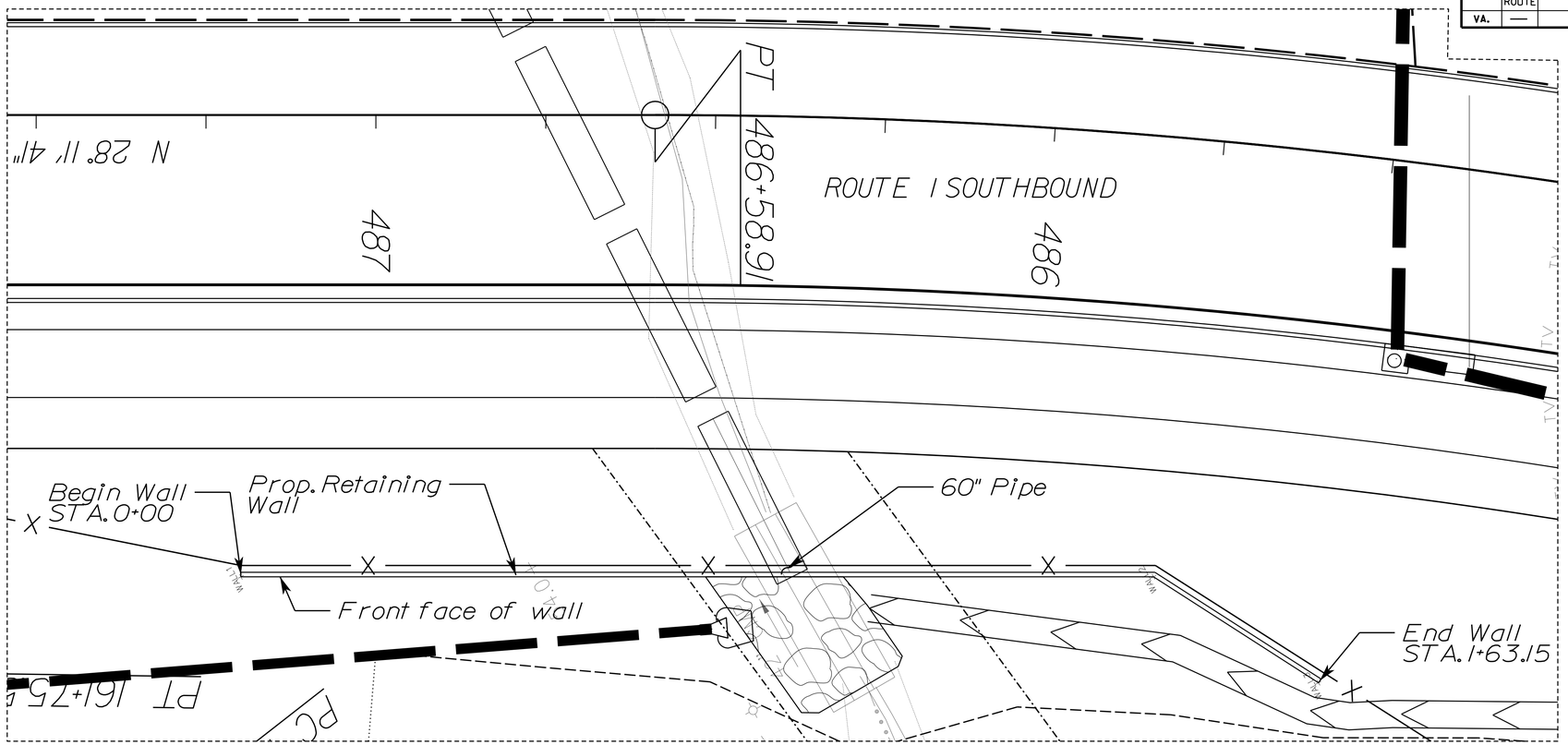
COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

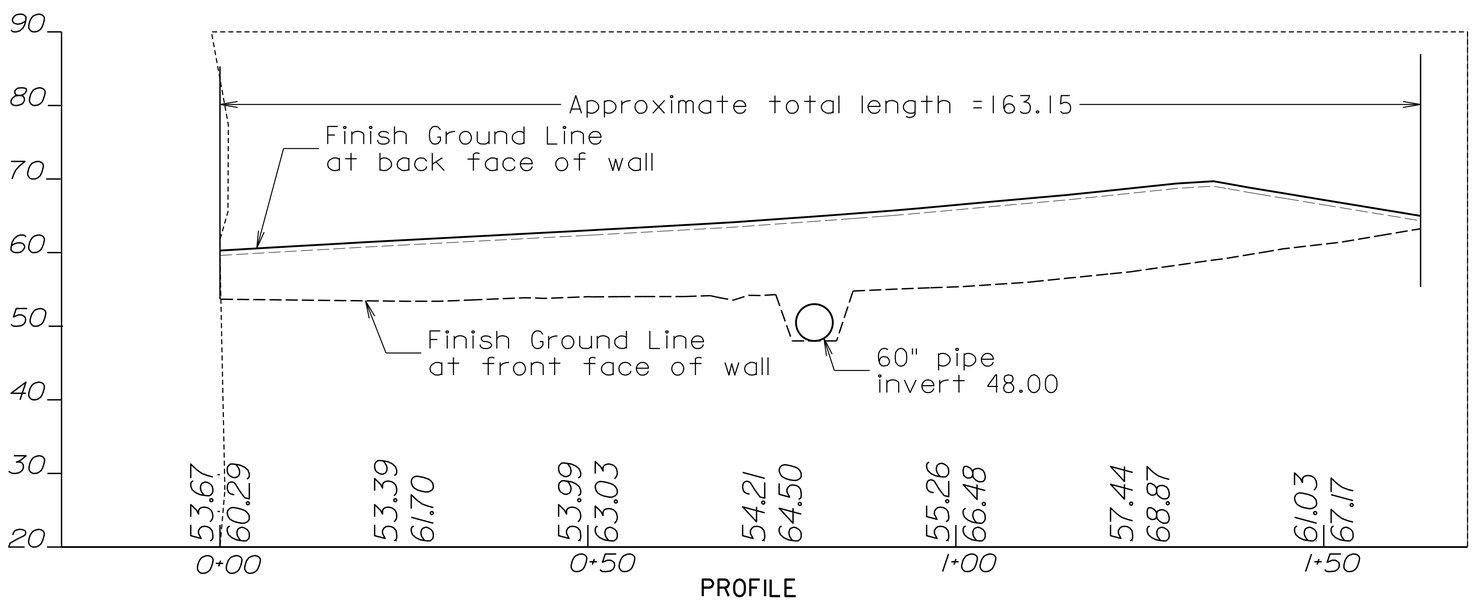
MSE WALL SECTION, GENERAL NOTES, AND INDEX OF SHEETS

Designed: MW	Date	Plan No.	Sheet No.
Drawn: MW	October 2014	·	2J(1)
Checked: J.S.			

STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	—	·	1	P101,R201,C501	2(12)



PLAN



PROFILE

Wall Sta. 0+00 to Sta. 1+63.15

Scale: 1" = 10'-0" unless otherwise shown

© 2013, Commonwealth of Virginia

10/15/2014

VDOT S&B DIVISION
RICHMOND, VA
STRUCTURAL ENGINEER

No.	Description	Date

Revisions

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

RETAINING WALL PLAN & PROFILE

Designed:	Date	Plan No.	Sheet No.
Drawn:			
Checked:	October 2014		

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIFFORD, A.MORTON THOMAS & ASSOC.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	I	0001-029-001 P101, R201, C501	25

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

A. Morton Thomas & Assoc. Chantilly, Virginia (ROADWAY DISCIPLINE)	A. Morton Thomas & Assoc. Chantilly, Virginia (HYDRAULIC DISCIPLINE)

Note: The Army/US Gov't is granting a Right of Entry to Corman-Wagman for construction. Temporary construction easements on Army property are not required, since right of entry is sufficient for construction access.

LEGEND

- Denotes Demolition of Pavement
- Denotes Milling & Resurfacing of Pavement
- Denotes Full Depth Pavement
- Denotes 4" Hydraulic Cement
- C Denotes Construction Limits In Cuts
- F Denotes Construction Limits In Fills
- Proposed Temporary Easements
- Proposed Right of Way
- Existing Right of Way
- Proposed Drainage Easement
- Proposed Utility Easement

Southbound Sta. 464+50.00
Northbound Sta. 764+65.00

Section D Submitted and Reviewed Separately

Section E

Curve SB-22
PI = 458+75.13
DELTA = 14° 05' 31.55" (LT)
D = 2° 39' 09"
T = 266.98'
L = 531.26'
R = 2,160.00'
PC = 456+08.15
PT = 461+39.41
Lr = SEE PROFILE SHEET
V = 50 MPH
E = 3.10%

Curve NB-20
PI = 758+57.36
DELTA = 15° 05' 50.58" (LT)
D = 2° 33' 20"
T = 297.10'
L = 590.76'
R = 2,242.00'
PC = 755+60.26
PT = 761+51.03
Lr = SEE PROFILE SHEET
V = 50 MPH
E = 3.10%

Curve BE-1
PI = 121+63.02
DELTA = 9° 03' 25.18" (LT)
D = 3° 08' 02"
T = 144.80'
L = 289.00'
R = 1,828.23'
PC = 120+18.22
PT = 123+07.21

001
UNITED STATES OF AMERICA
GENERAL SERVICES ADMINISTRATION
FORT BELVOIR
MILITARY RESERVATION
PIN 1152-01-0001

POI Sta. 463+41.55 SB Route 1 = Sta. 122+96.14 Belvoir Road

POI Sta. 763+48.01 NB Route 1 = Sta. 122+13.98 Belvoir Road

PC 123+24.79

PC 122+53.94

Richmond Highway (US Route 1)

Route 1 Northbound

Route 1 Southbound

Belvoir Road

N 58° 50' 21" E

S 46° 37' 29" W 466.16'

MATCHLINE STATION 467+75.00
ROUTE 1 SOUTHBOUND B/L
SEE SHEET 26

MATCHLINE STATION 460+75.00
ROUTE 1 SOUTHBOUND B/L
SEE SHEET 24

Proposed By Others
Top of Curb Elev. = 137.29
Top of Curb Elev. = 137.40
Elev. = 138.98
Elev. = 139.18
Elev. = 139.50
Elev. = 139.67
Elev. = 137.71
Elev. = 138.12
Elev. = 138.32
Elev. = 138.07
Elev. = 138.50
Elev. = 137.56
Elev. = 137.30
Elev. = 137.45
Elev. = 138.37
Elev. = 137.84
Elev. = 137.99
Elev. = 138.35
Top of Curb Elev. = 138.48
Elev. = 140.42
Elev. = 140.57
Elev. = 139.71
Elev. = 139.98
Elev. = 140.05
Elev. = 139.55
Top of Curb Elev. = 140.49
Prop. Perpetual Roadway Easement
Abandon Pipe
Obscure and Demolish Existing Roadway
Prop. Perpetual Roadway Easement
Prop. 10' Wide Share Use Path
Prop. Permanent Sign Easement
Prop. 4" Conduit
Ex. Perpetual Easement
Prop. Perpetual Roadway Easement
Prop. Permanent Sign Easement
Prop. 5' Wide Sidewalk
Prop. 8' K-12 Rated Fence
Prop. Water Line
Prop. Permanent VDOT Utility Easement
Obscure and Demolish Existing Roadway
Prop. Permanent VDOT Utility Easement
Prop. Washington Gas Improvement
Elev. = 139.12
Elev. = 139.07
Elev. = 139.43
Elev. = 139.53
Elev. = 139.48
Elev. = 139.58
Elev. = 139.98
Elev. = 140.06
Elev. = 140.22
Elev. = 140.08
Elev. = 140.16
Top of Curb Elev. = 141.00
Elev. = 141.00
Elev. = 141.18
Elev. = 140.68
Elev. = 140.69
Elev. = 141.15
Elev. = 141.22
Elev. = 140.73
Elev. = 140.81
Top of Curb Elev. = 141.40
Top of Curb Elev. = 139.48
Elev. = 139.59
Elev. = 139.65
Prop. 30' Wide Utility Corridor Easement
Prop. Washington Gas Improvement
Prop. 12' x 16' Concrete Pad Replace In-Kind Relocate Historical Markers
8' Gravel Path
Proposed K-12 Cable Barrier

REFERENCES (PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)	
Drain. Descript.	1H(1) - 1H(9)
Typ. Sections	2A(1) - 2A(11)
Radial Offsets	2D(2)
Right-Of-Way	25RW
US Route 1 Prof.	25A(1)
Belvoir Road Prof.	25A(2)

SCALE 0 25' 50'

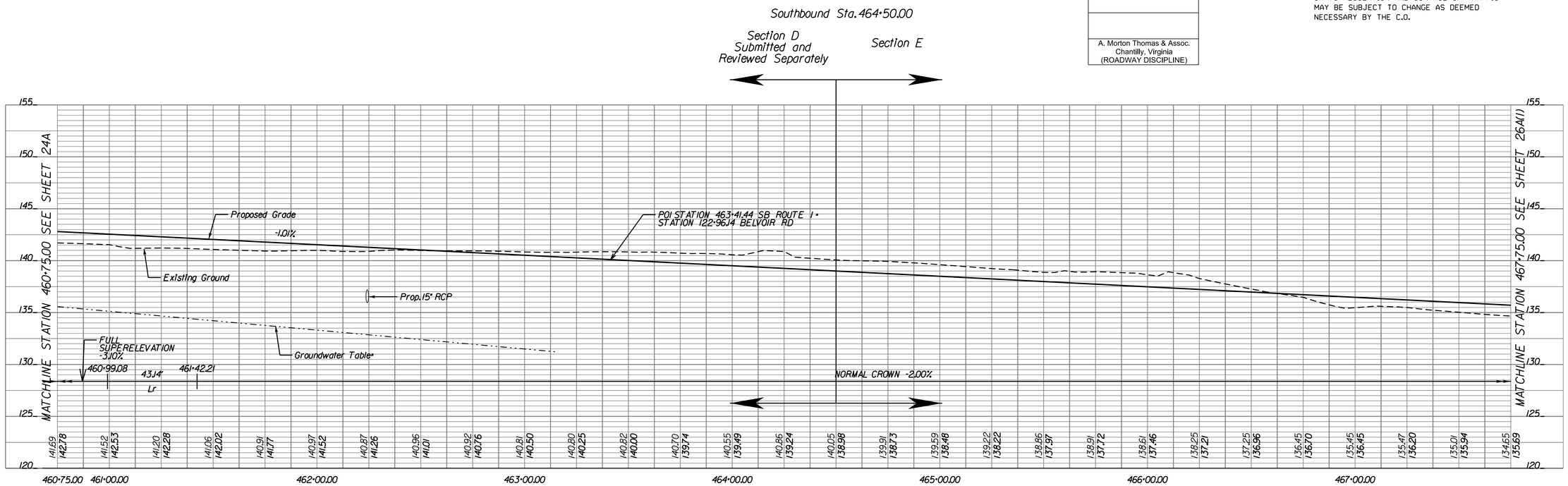
AFC: 09/22/2014	PROJECT 0001-029-001	SHEET NO. 25

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

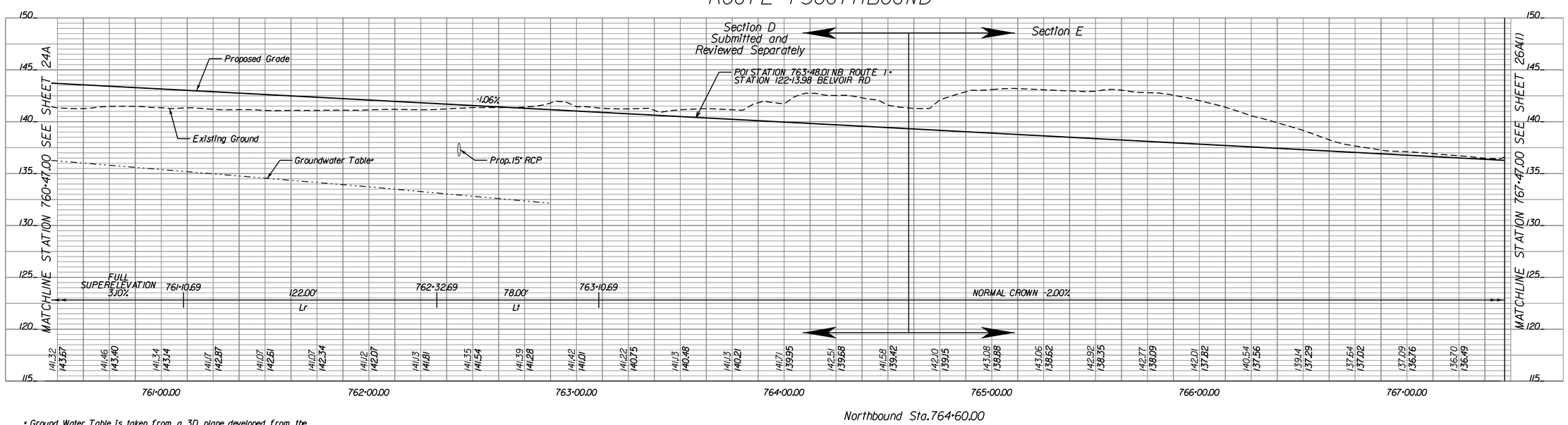
A. Morton Thomas & Assoc.
Chantilly, Virginia
(ROADWAY DISCIPLINE)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	I	0001-029-001 P101, R201, C501	25A(1)

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



ROUTE 1 SOUTHBOUND



ROUTE 1 NORTHBOUND

* Ground Water Table is taken from a 3D plane developed from the ground water elevations observed in the project geotechnical borings. Ground water elevation recorded are based on a stabilized elevation from observations over at least 48 hours. All boring and observations were made between July and October of 2013.

SCALE H=25', V=5'
0 25' 50'
0 1' 2'

AFC: 09/22/2014	PROJECT 0001-029-001	SHEET NO. 25A(1)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

E-3 The following symbols are used to depict Erosion Control items in the plan assembly:

- EC-2 — Denotes Protective Covering, St'd. EC-2 (See Sheet 1G(1)
- EC-3A — Denotes Soil Stabilization Mat. St'd. EC-3 Type A, B or C
- EC-3B, EC-3C — (See Sheet 1G(1)
- TFB — Denotes Temporary Filter Barrier, St'd EC-5
- TSF — Denotes Temporary Silt Fence, St'd EC-5
- SSF — Denotes Super Silt Fence
- TDC — Denotes Temporary Diversion Channel, St'd EC-12
- DD — Denotes Temporary Diversion Dike, St'd EC-9
- PDC — Denotes Permanent Grass Diversion Channel (See Sheet 1G(1)
- LOD — Denotes Limit Of Disturbance
- ST — Denotes Sediment Trap, St'd EC-7
- TC-1 — Denotes Turbidity Curtain, Type - Impervious
- TC-P — Denotes Turbidity Curtain, Type - Pervious
- RCD-1 — Denotes Rock Check Dam, Type I: St'd EC-4
- RCD-2 — Denotes Rock Check Dam, Type II: St'd EC-4
- DIST-A — Denotes Inlet Protection, Type A: St'd EC-6
- DIST-B — Denotes Inlet Protection, Type B: St'd EC-6
- EC-11 — Denotes Temporary Construction Entrance
- EC-1 — Denotes Rip Rap Pad
- Denotes Proposed Power Pole (With Or Without Guy Wires) In Future Phase, By Others
- Denotes Orange Construction Fence
- TSD — Denotes Temporary Slope Drain, St'd EC-10

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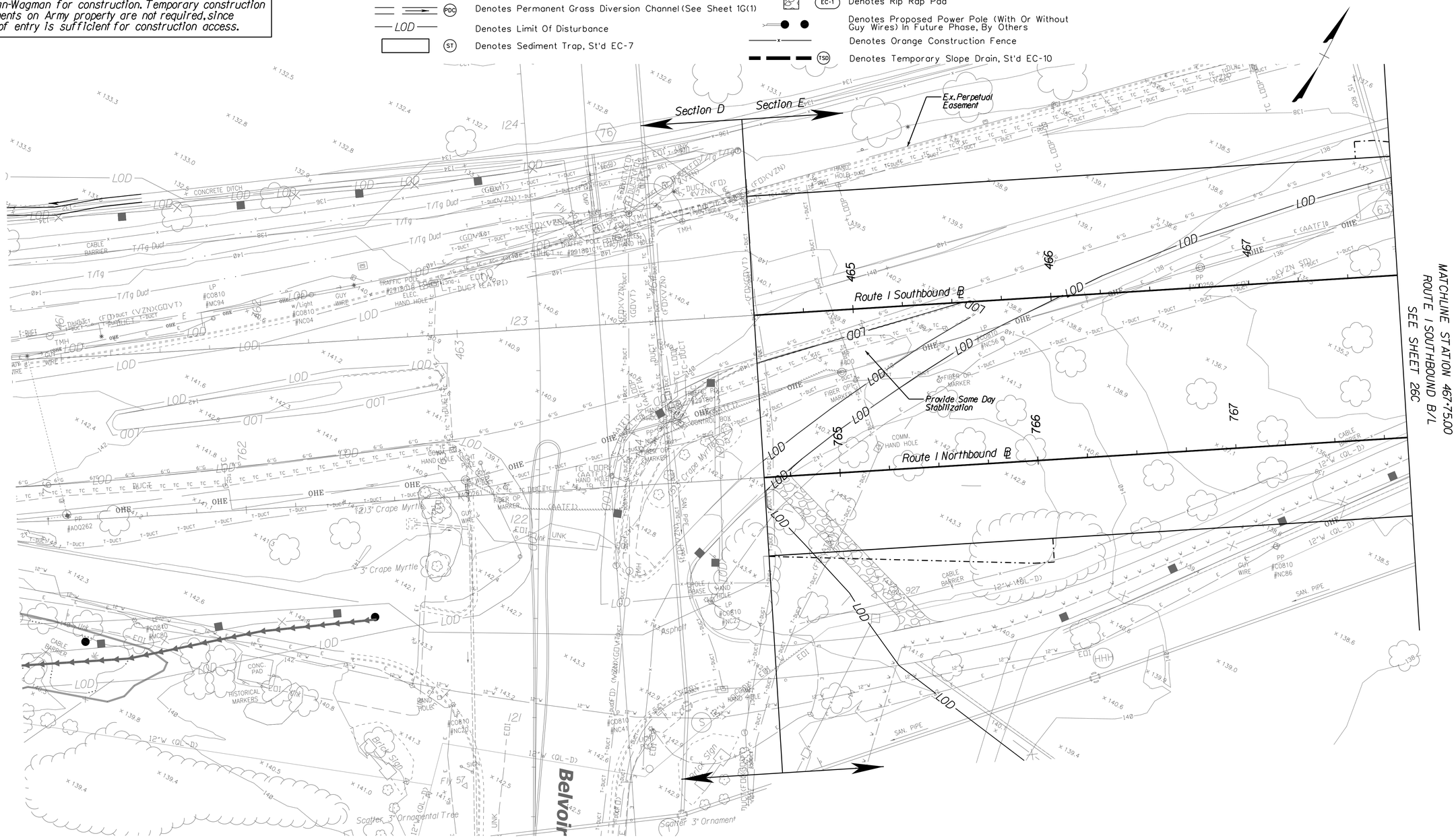
COMMONWEALTH OF VIRGINIA
MATTHEW H. WILLEMS
Lic. No. 0402 036144
PROFESSIONAL ENGINEER

A. Morton Thomas & Assoc.
Chantilly, Virginia
(HYDRAULIC DISCIPLINE)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	I	0001-029-001 P101, R201, C501	25C

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



E AND S INITIAL PHASE

SCALE 0 25' 50'

PROJECT	SHEET NO.
0001-029-001	25C

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

E-3 The following symbols are used to depict Erosion Control items in the plan assembly:

- EC-2 Denotes Protective Covering, St'd. EC-2 (See Sheet 1G(1)
- EC-3A Denotes Soil Stabilization Mat. St'd. EC-3 Type A, B or C
- EC-3B EC-3C (See Sheet 1G(1)
- TFB Denotes Temporary Filter Barrier, St'd EC-5
- TSF Denotes Temporary Silt Fence, St'd EC-5
- SSF Denotes Super Silt Fence
- TDC Denotes Temporary Diversion Channel, St'd EC-12
- DD Denotes Temporary Diversion Dike, St'd EC-9
- PDC Denotes Permanent Grass Diversion Channel (See Sheet 1G(1)
- LOD Denotes Limit Of Disturbance
- ST Denotes Sediment Trap, St'd EC-7
- TC-1 Denotes Turbidity Curtain, Type - Impervious
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- RCD-2 Denotes Rock Check Dam, Type II: St'd EC-4
- DIST-A Denotes Inlet Protection, Type A: St'd EC-6
- DIST-B Denotes Inlet Protection, Type B: St'd EC-6
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- CF Denotes Orange Construction Fence
- TSD Denotes Temporary Slope Drain, St'd EC-10

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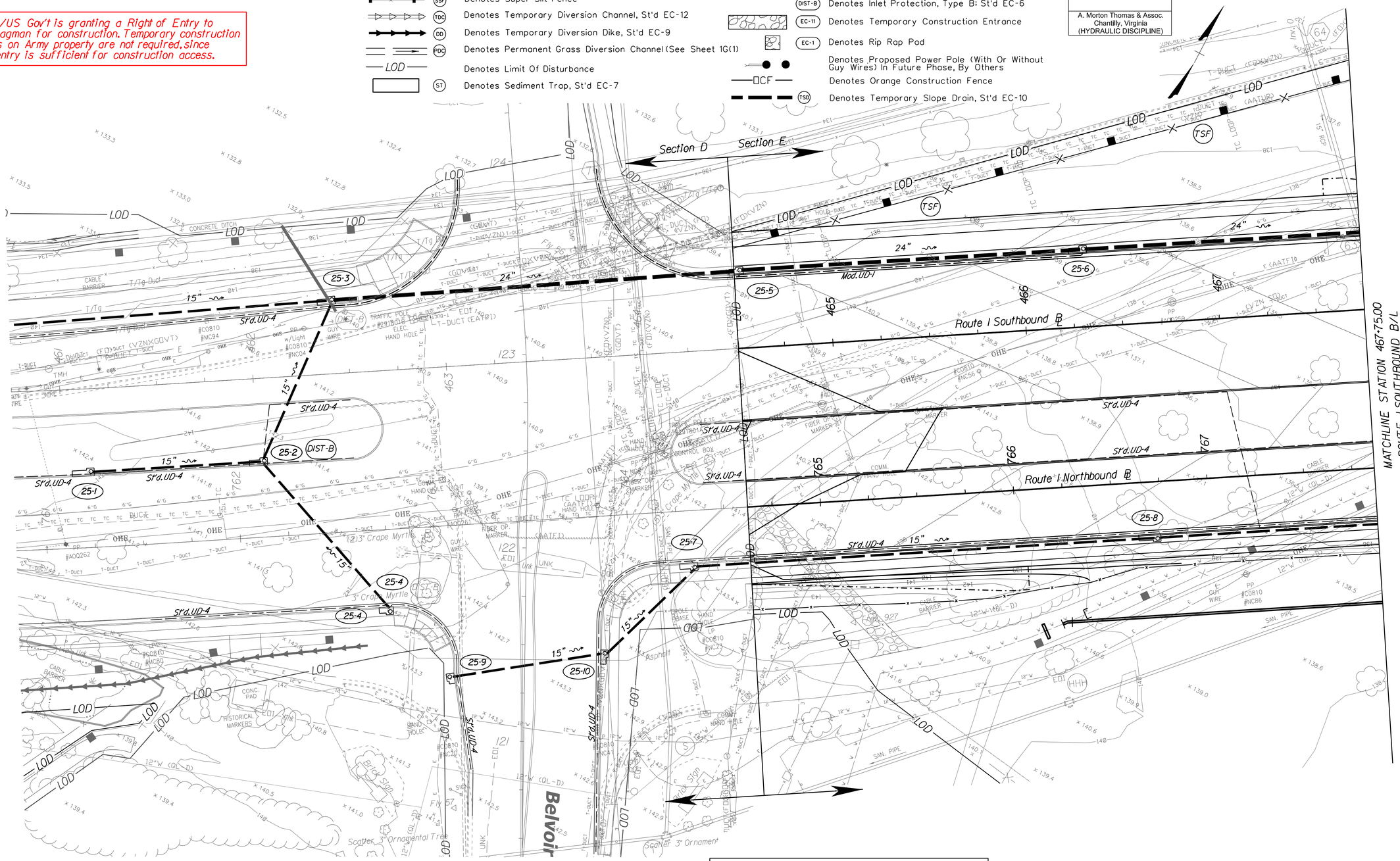
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	I	0001-029-001 P101, R201, C501	25E

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

A. Morton Thomas & Assoc.
Chantilly, Virginia
(HYDRAULIC DISCIPLINE)



E AND S FINAL PHASE

SCALE 0 25' 50'

PROJECT	SHEET NO.
0001-029-001	25E

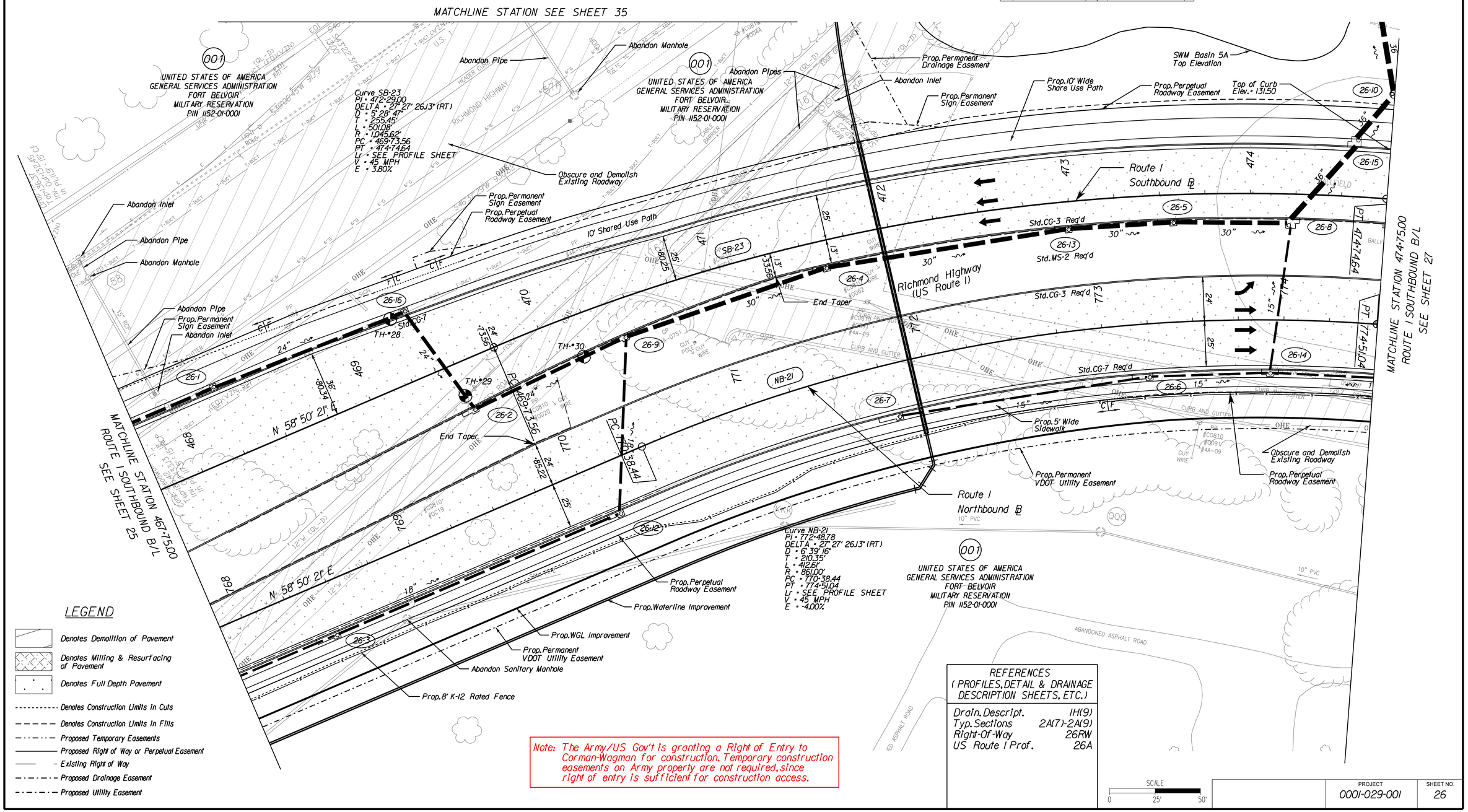
PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	26

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

A. Morton Thomas & Assoc. Chantilly, Virginia (ROADWAY DISCIPLINE)

A. Morton Thomas & Assoc. Chantilly, Virginia (HYDRAULIC DISCIPLINE)



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REFERENCES (PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)	
Drain. Descript.	1H(9)
Typ. Sections	2A(7)-2A(9)
Right-Of-Way	26RW
US Route 1 Prof.	26A

SCALE 0 25' 50'

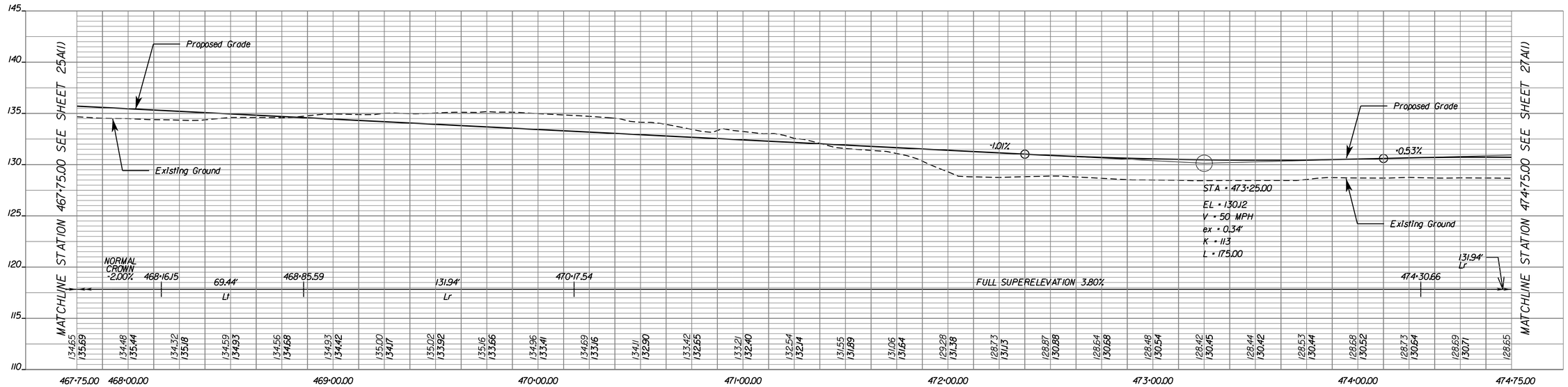
PROJECT	SHEET NO.
0001-029-001	26

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

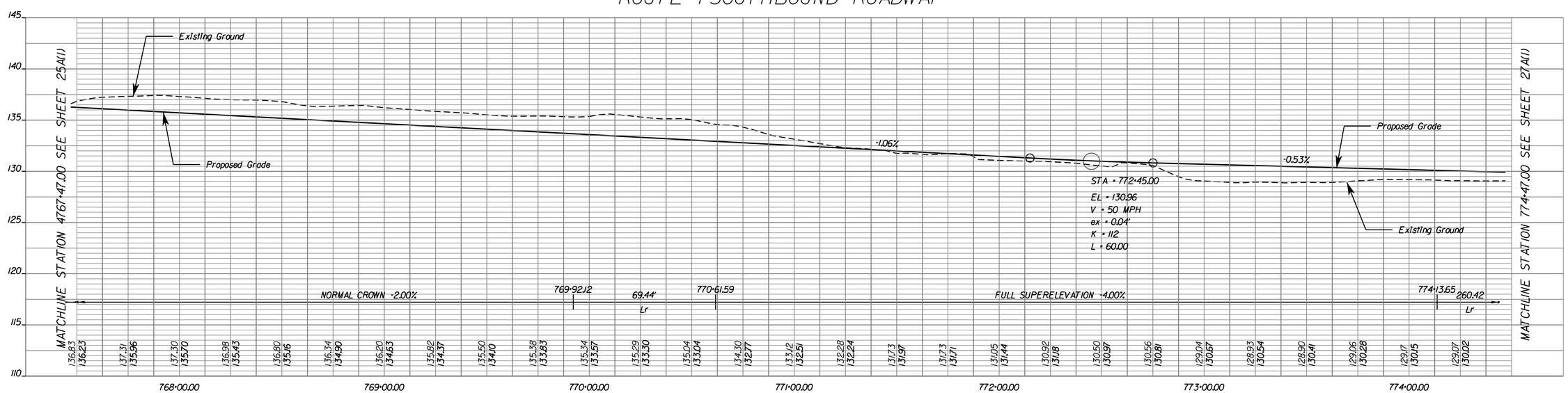
A. Morton Thomas & Assoc.
Chantilly, Virginia
(ROADWAY DISCIPLINE)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	26A

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



ROUTE 1 SOUTHBOUND ROADWAY



ROUTE 1 NORTHBOUND ROADWAY

SCALE H=25', V=5'
0 25' 50'

PROJECT	SHEET NO.
0001-029-001	26A

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

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COMMONWEALTH OF VIRGINIA
MATTHEW H. WILLEMS
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PROFESSIONAL ENGINEER

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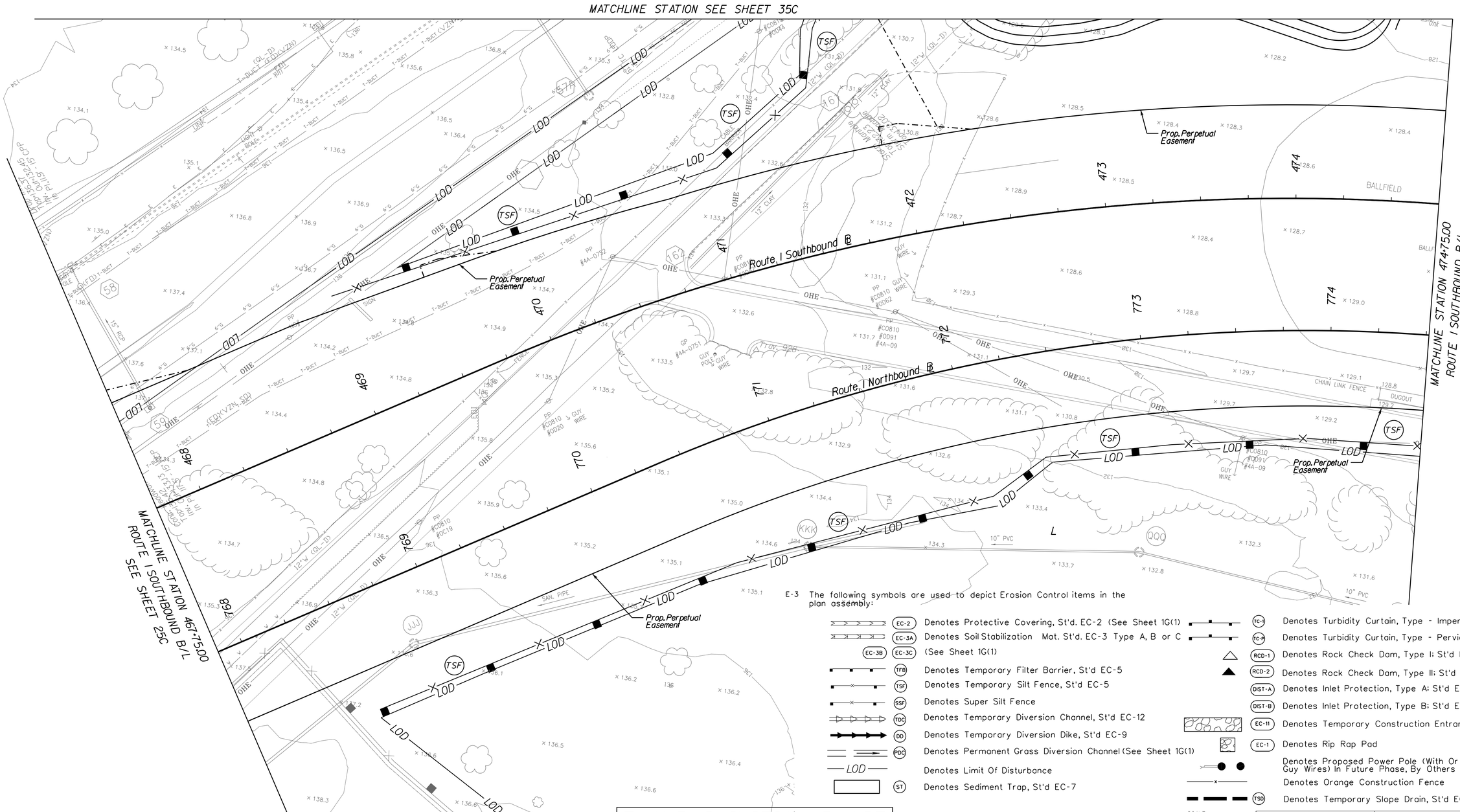
(HYDRAULIC DISCIPLINE)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	I	0001-029-001 P101, R201, C501	26C

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



E-3 The following symbols are used to depict Erosion Control items in the plan assembly:

- EC-2 Denotes Protective Covering, St'd. EC-2 (See Sheet 1G(1)
- EC-3A Denotes Soil Stabilization Mat. St'd. EC-3 Type A, B or C
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- TSF Denotes Temporary Silt Fence, St'd EC-5
- SSF Denotes Super Silt Fence
- TDC Denotes Temporary Diversion Channel, St'd EC-12
- DD Denotes Temporary Diversion Dike, St'd EC-9
- PDC Denotes Permanent Grass Diversion Channel (See Sheet 1G(1)
- LOD Denotes Limit Of Disturbance
- ST Denotes Sediment Trap, St'd EC-7
- TC-I Denotes Turbidity Curtain, Type - Impervious
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- RCD-1 Denotes Rock Check Dam, Type I; St'd EC-4
- RCD-2 Denotes Rock Check Dam, Type II; St'd EC-4
- DIST-A Denotes Inlet Protection, Type A; St'd EC-6
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- EC-11 Denotes Temporary Construction Entrance
- EC-1 Denotes Rip Rap Pad
- Denotes Proposed Power Pole (With Or Without Guy Wires) In Future Phase, By Others
- Denotes Orange Construction Fence
- TSD Denotes Temporary Slope Drain, St'd EC-10

SCALE 0 25' 50'

E AND S INITIAL PHASE

PROJECT	SHEET NO.
0001-029-001	26C

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

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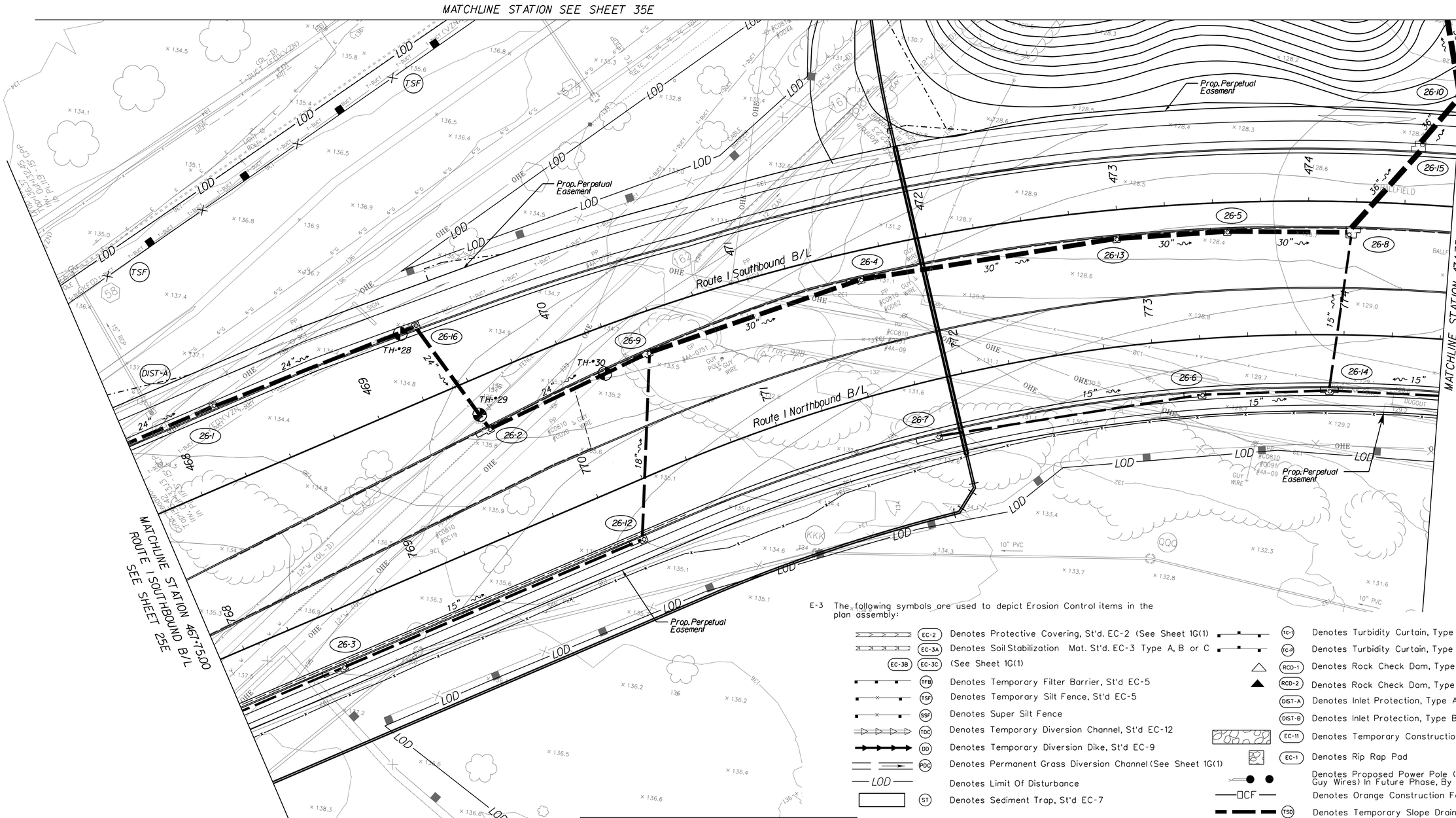
PROFESSIONAL ENGINEER

A. Morton Thomas & Assoc.
Chantilly, Virginia
(HYDRAULIC DISCIPLINE)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	I	0001-029-001 P101, R201, C501	26E

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



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- SSF Denotes Super Silt Fence
- TDC Denotes Temporary Diversion Channel, St'd EC-12
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- TC-I Denotes Turbidity Curtain, Type - Impervious
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- RCD-1 Denotes Rock Check Dam, Type I: St'd EC-4
- RCD-2 Denotes Rock Check Dam, Type II: St'd EC-4
- DIST-A Denotes Inlet Protection, Type A: St'd EC-6
- DIST-B Denotes Inlet Protection, Type B: St'd EC-6
- EC-11 Denotes Temporary Construction Entrance
- EC-1 Denotes Rip Rap Pad
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- CF Denotes Orange Construction Fence
- TSD Denotes Temporary Slope Drain, St'd EC-10

SCALE 0 25' 50'

E AND S FINAL PHASE

PROJECT	SHEET NO.
0001-029-001	26E

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY FHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIFFORD, A.MORTON THOMAS & ASSOC.

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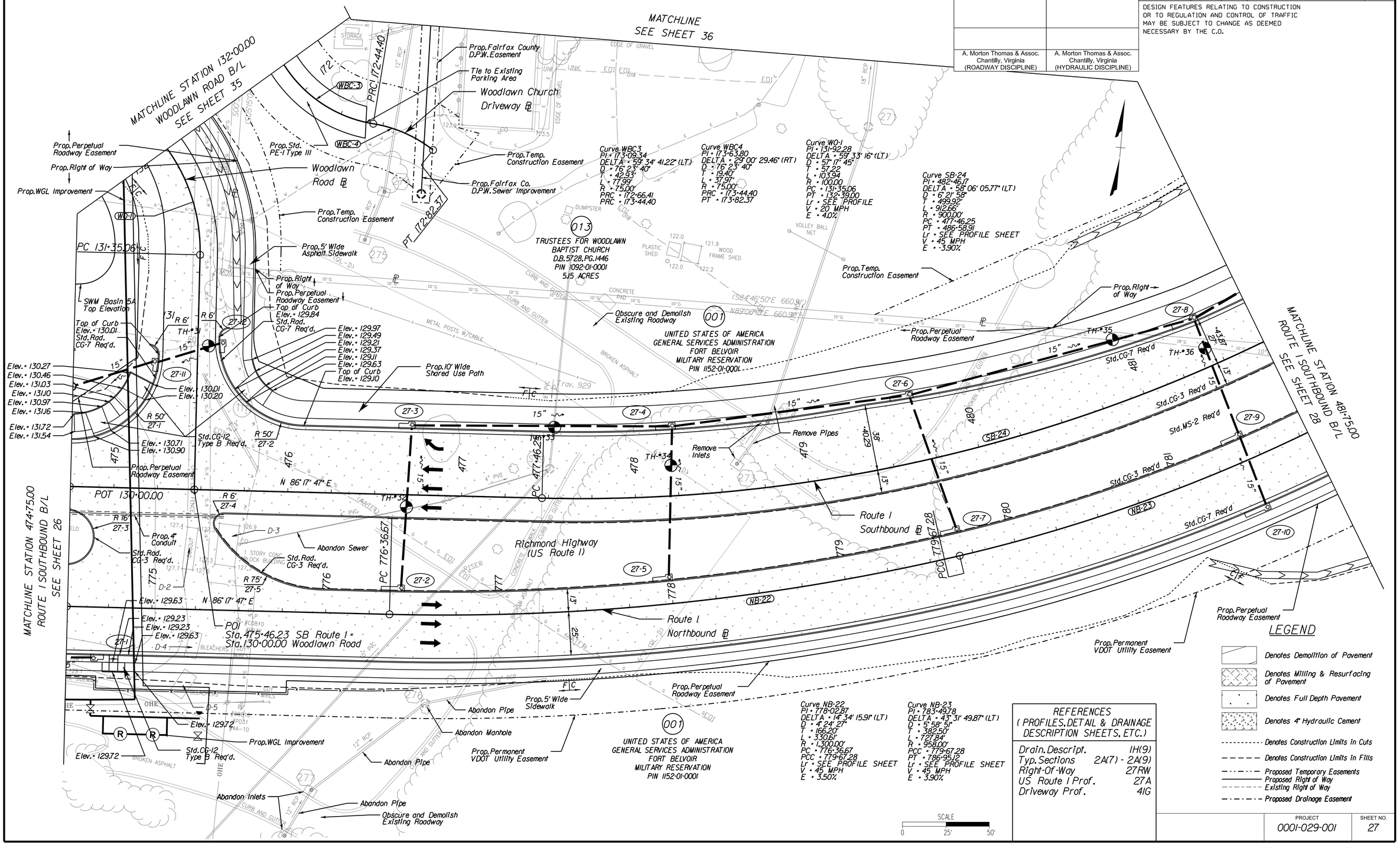
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	27

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

A. Morton Thomas & Assoc. Chantilly, Virginia (ROADWAY DISCIPLINE)

A. Morton Thomas & Assoc. Chantilly, Virginia (HYDRAULIC DISCIPLINE)



REFERENCES (PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)

Drain. Descript.	1H(9)
Typ. Sections	2A(7) - 2A(9)
Right-Of-Way	27RW
US Route 1 Prof.	27A
Driveway Prof.	41G

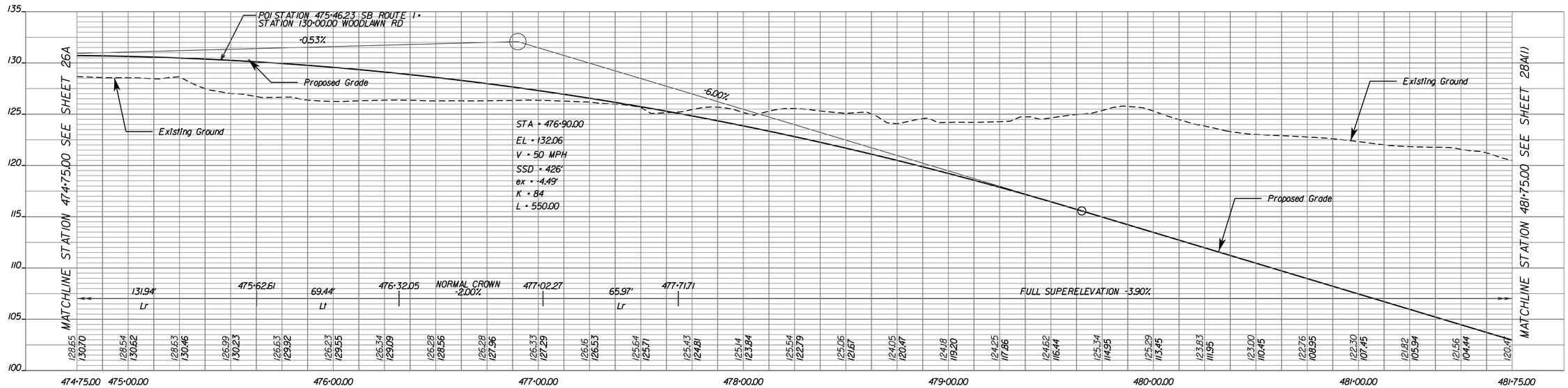
PROJECT	SHEET NO.
0001-029-001	27

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

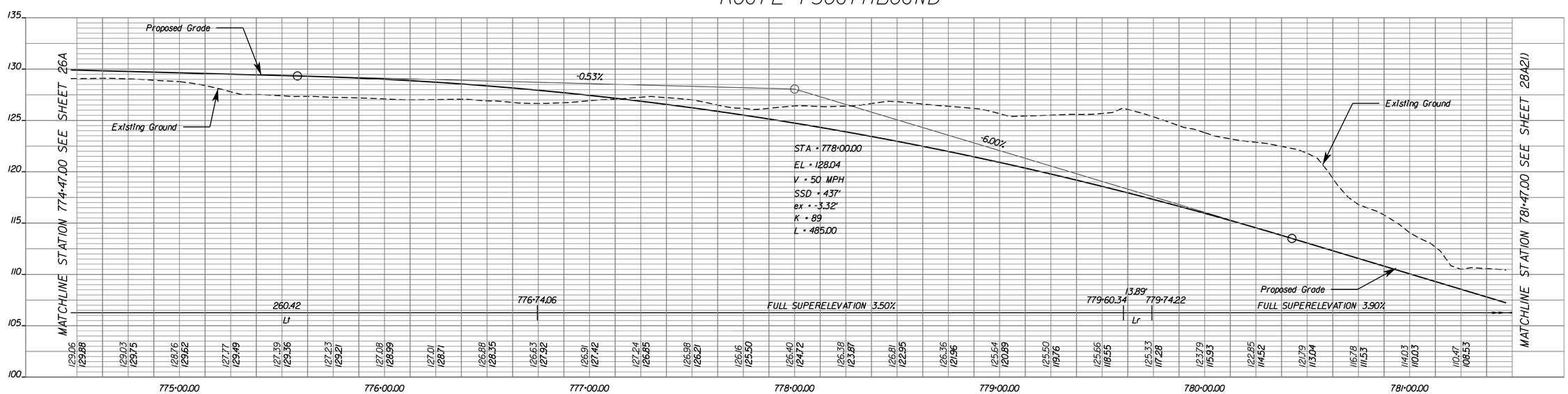
A. Morton Thomas & Assoc.
Chantilly, Virginia
(ROADWAY DISCIPLINE)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	27A(1)

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



ROUTE 1 SOUTHBOUND



ROUTE 1 NORTHBOUND

SCALE H=25', V=5'
0 25' 50'
0 1' 2'

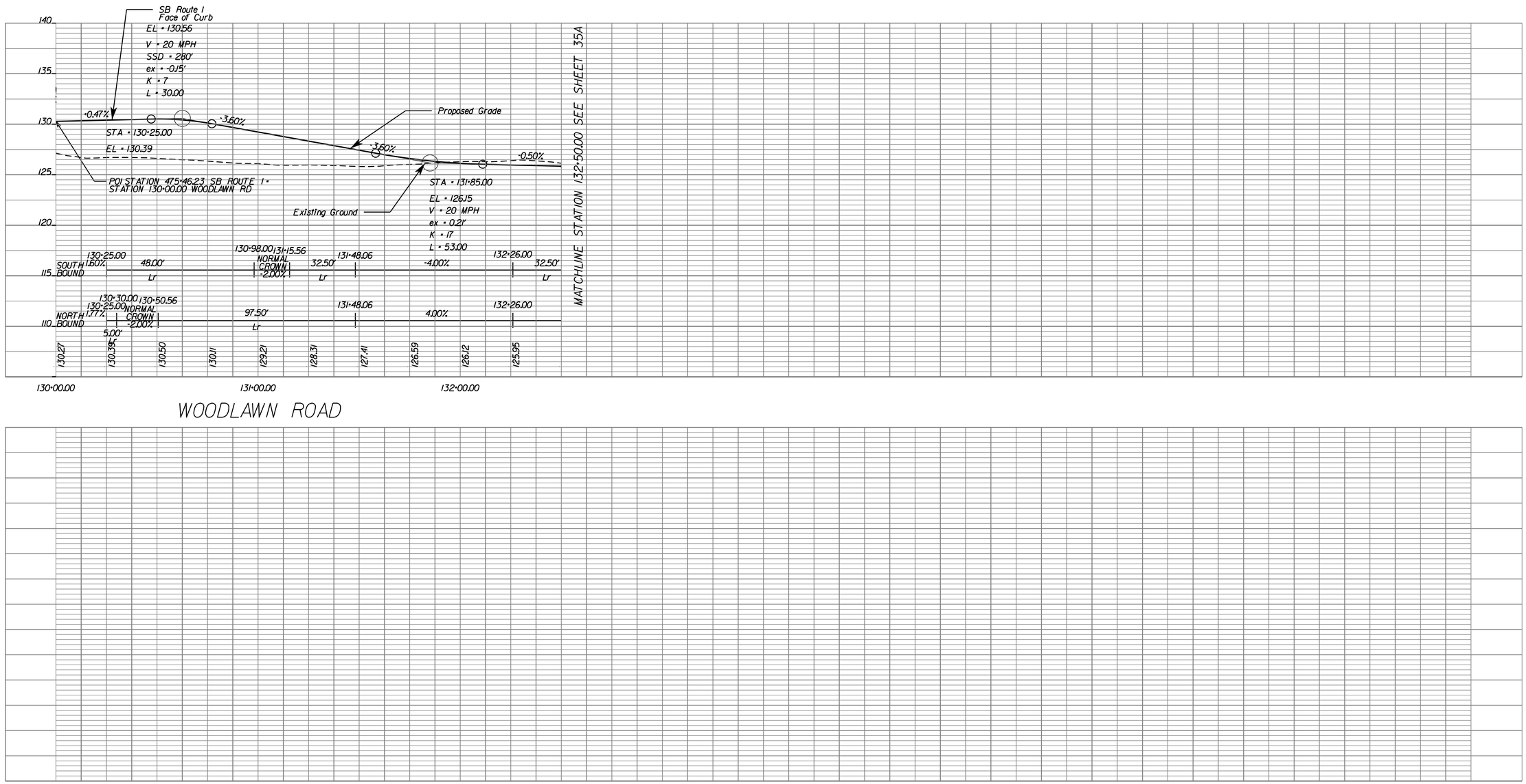
PROJECT	SHEET NO.
0001-029-001	27A(1)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

A. Morton Thomas & Assoc.
Chantilly, Virginia
(ROADWAY DISCIPLINE)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	27A(2)

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



SCALE H=25', V=5'
0 25' 50'
0 2.5' 5'

PROJECT	SHEET NO.
0001-029-001	27A(2)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA, - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

E-3 The following symbols are used to depict Erosion Control items in the plan assembly:

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- TFB — Denotes Temporary Filter Barrier, St'd EC-5
- TSF — Denotes Temporary Silt Fence, St'd EC-5
- SSF — Denotes Super Silt Fence
- TDC — Denotes Temporary Diversion Channel, St'd EC-12
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- DIST-A — Denotes Inlet Protection, Type A: St'd EC-6
- DIST-B — Denotes Inlet Protection, Type B: St'd EC-6
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- TSD — Denotes Temporary Slope Drain, St'd EC-10

COMMONWEALTH OF VIRGINIA
MATTHEW H. WILLEMS
Lic. No. 0402 036144
PROFESSIONAL ENGINEER

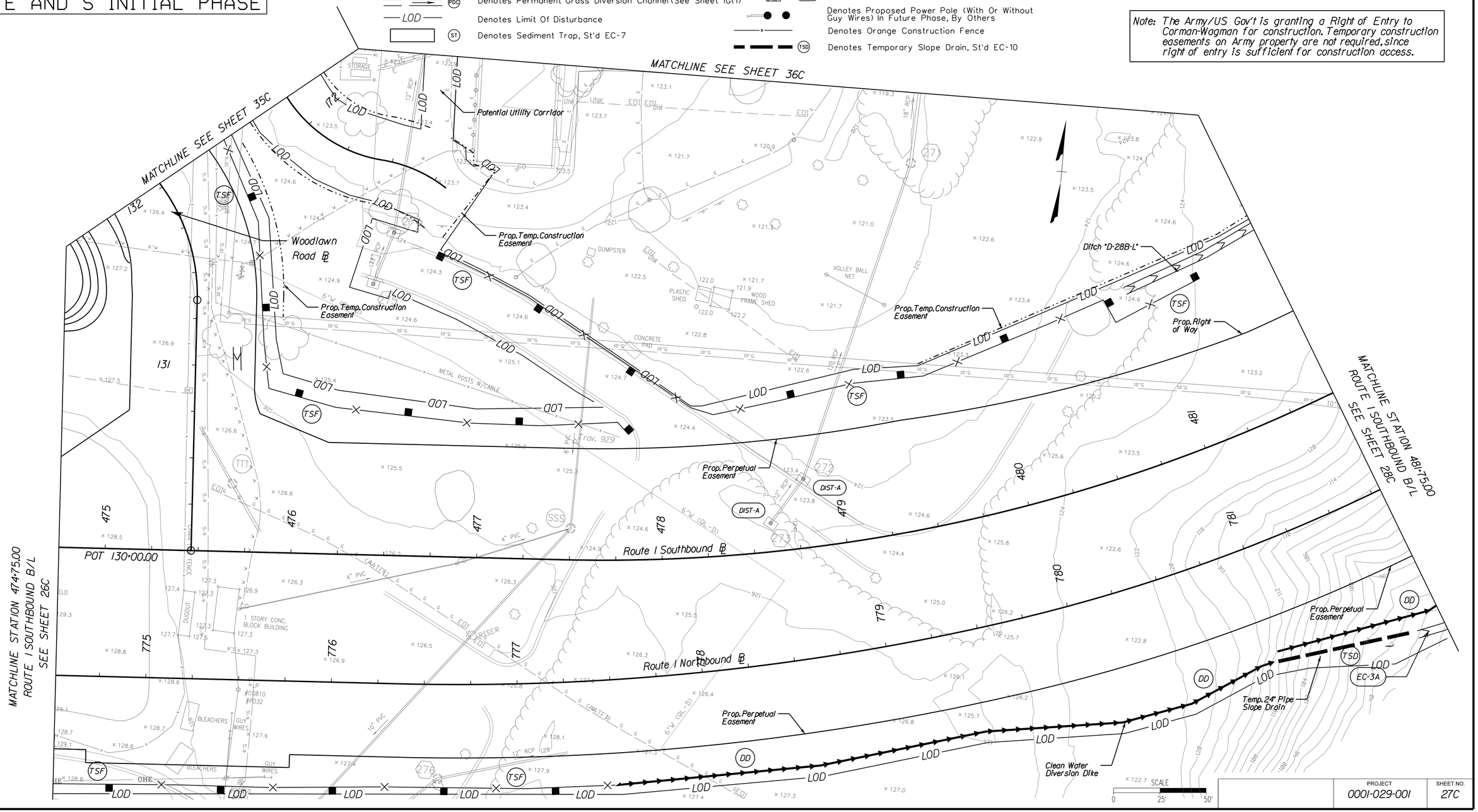
A. Morton Thomas & Assoc.
Chantilly, Virginia
(HYDRAULIC DISCIPLINE)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	27C

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

E AND S INITIAL PHASE

Note: The Army/US Gov't is granting a Right of Entry to Corman-Wagman for construction. Temporary construction easements on Army property are not required, since right of entry is sufficient for construction access.



PROJECT	SHEET NO.
0001-029-001	27C

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA, - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGN BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

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- TSF Denotes Temporary Silt Fence, St'd EC-5
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REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	27E

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

A. Morton Thomas & Assoc.
Chantilly, Virginia
(HYDRAULIC DISCIPLINE)

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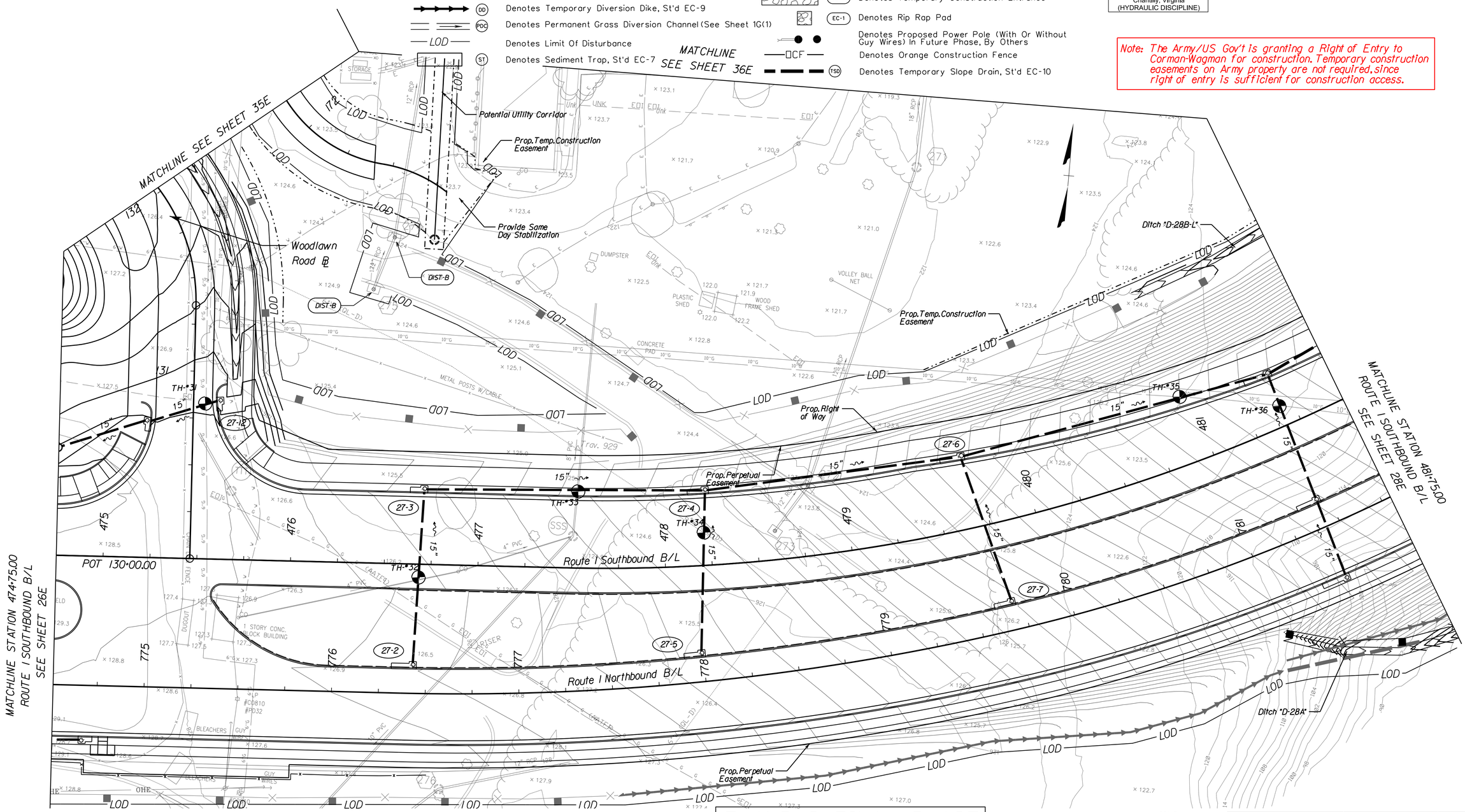


E AND S FINAL PHASE

PROJECT	SHEET NO.
0001-029-001	27E

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	28

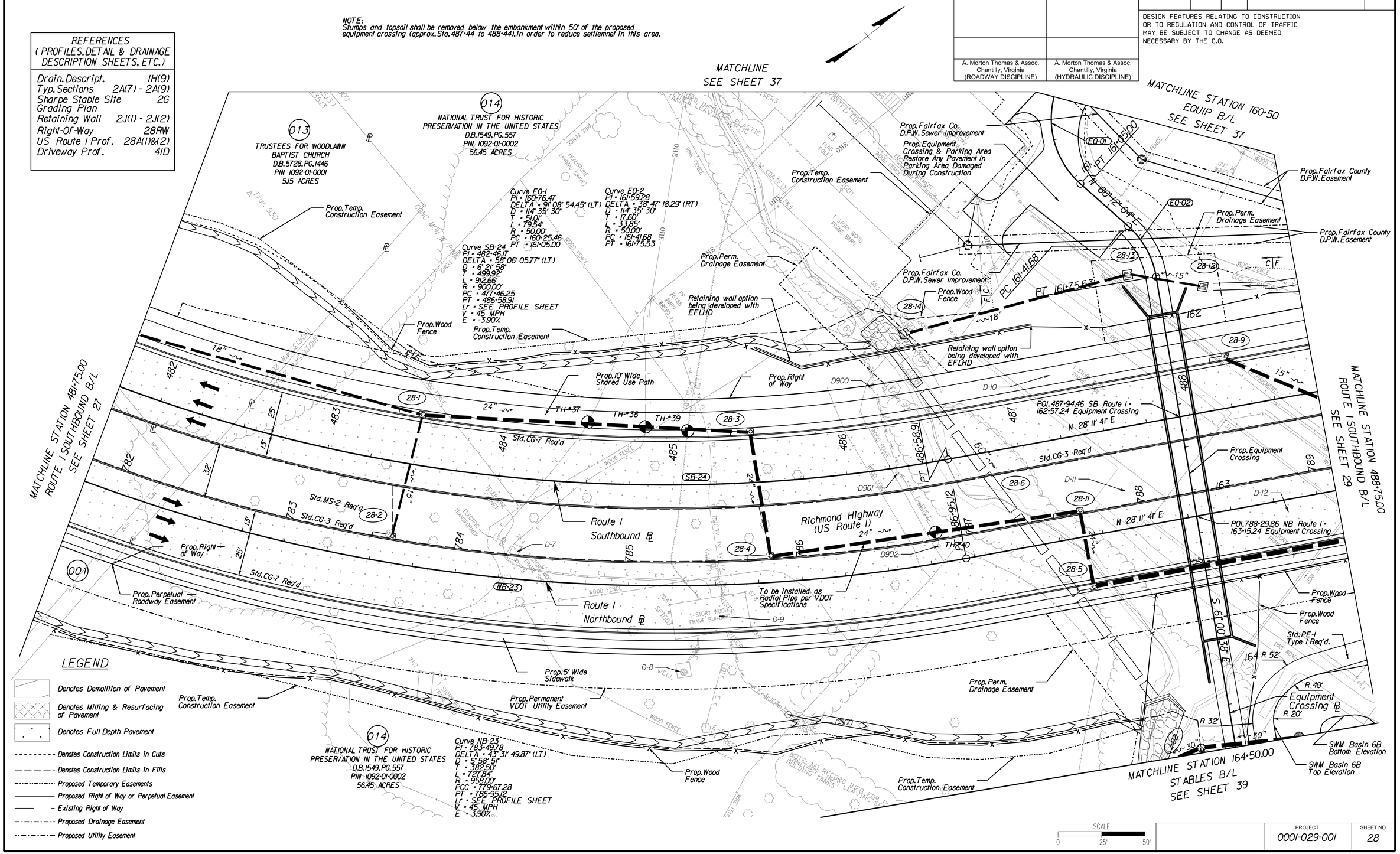
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE C.O.

A. Morton Thomas & Assoc. Chantilly, Virginia (ROADWAY DISCIPLINE)

A. Morton Thomas & Assoc. Chantilly, Virginia (HYDRAULIC DISCIPLINE)

REFERENCES (PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)	
Drain. Descript.	1H(9)
Typ. Sections	2A(7) - 2A(9)
Sharpe Stable Site	2G
Grading Plan	
Retaining Wall	2J(1) - 2J(2)
Right-Of-Way	28RW
US Route 1 Prof.	28A(1)&(2)
Driveway Prof.	41D

NOTE:
Stumps and topsoil shall be removed below the embankment within 50' of the proposed equipment crossing (approx. Sta. 487+44 to 488+44), in order to reduce settlemnet in this area.



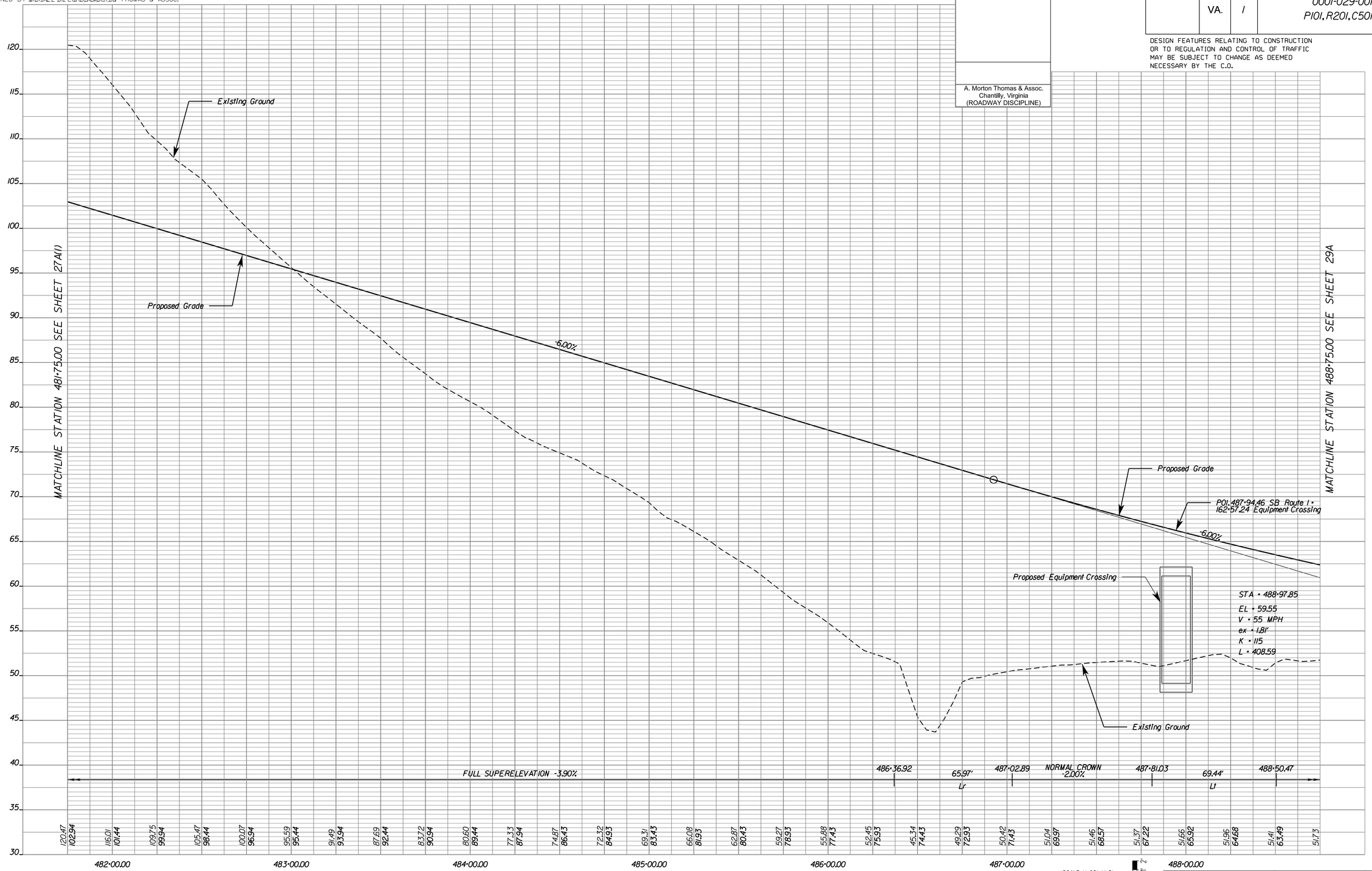
PROJECT	SHEET NO.
0001-029-001	28

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIFFORD, A.MORTON THOMAS & ASSOC.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	28A(1)

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

A. Morton Thomas & Assoc.
Chantilly, Virginia
(ROADWAY DISCIPLINE)



ROUTE 1 SOUTHBOUND

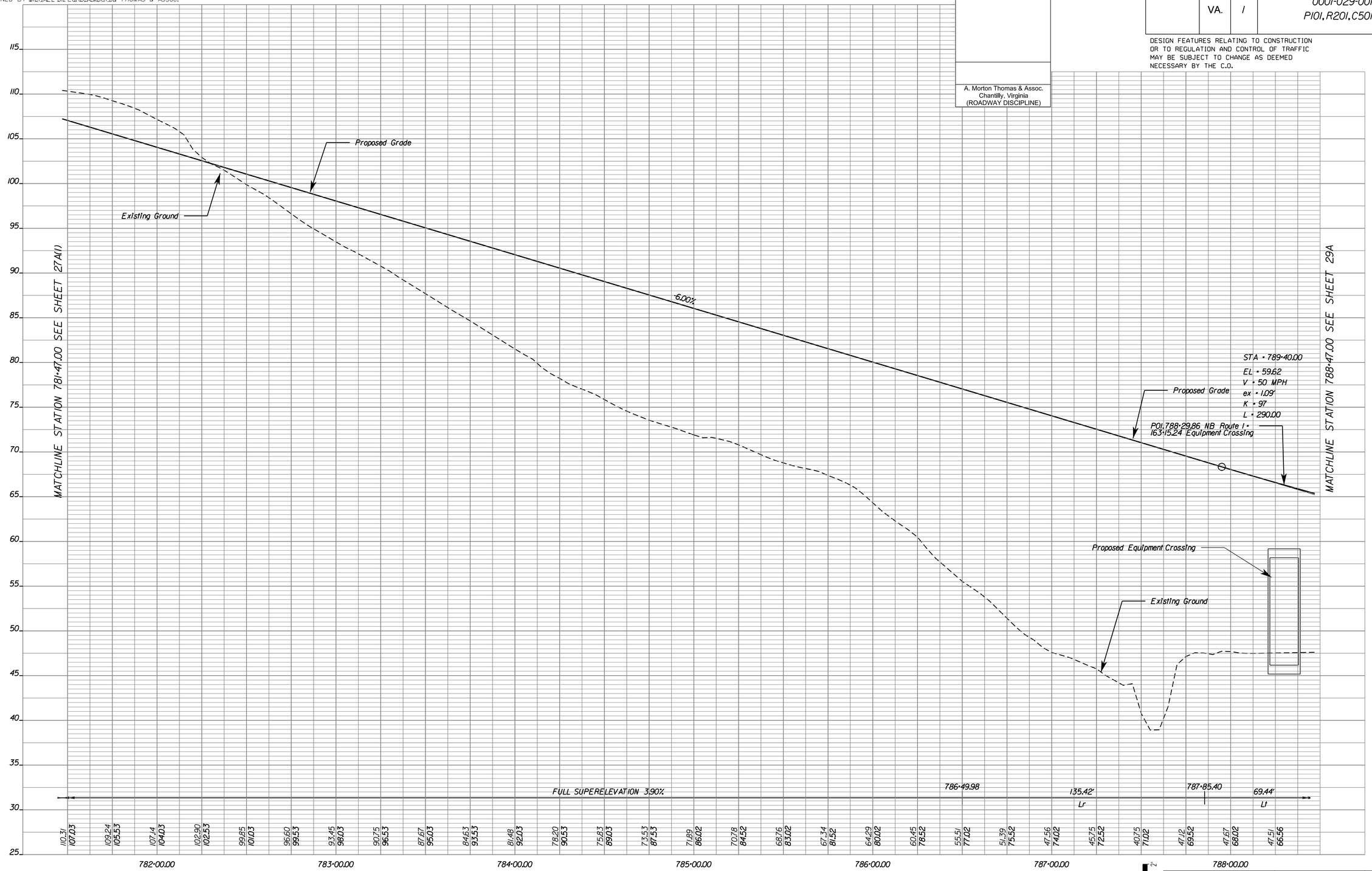
PROJECT	SHEET NO.
0001-029-001	28A(1)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGN BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	28A(2)

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

A. Morton Thomas & Assoc.
Chantilly, Virginia
(ROADWAY DISCIPLINE)



ROUTE 1 NORTHBOUND

PROJECT	SHEET NO.
0001-029-001	28A(2)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
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E-3 The following symbols are used to depict Erosion Control items in the plan assembly:

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- EC-3A / EC-3B / EC-3C — Denotes Soil Stabilization Mat. St'd. EC-3 Type A, B or C (See Sheet 1G(1)
- TFB — Denotes Temporary Filter Barrier, St'd EC-5
- TSF — Denotes Temporary Silt Fence, St'd EC-5
- SSF — Denotes Super Silt Fence
- TDC — Denotes Temporary Diversion Channel, St'd EC-12
- DD — Denotes Temporary Diversion Dike, St'd EC-9
- PDC — Denotes Permanent Grass Diversion Channel (See Sheet 1G(1)
- LOD — Denotes Limit Of Disturbance
- ST — Denotes Sediment Trap, St'd EC-7
- TC-I — Denotes Turbidity Curtain, Type - Impervious
- TC-P — Denotes Turbidity Curtain, Type - Pervious
- RCD-1 — Denotes Rock Check Dam, Type I; St'd EC-4
- RCD-2 — Denotes Rock Check Dam, Type II; St'd EC-4
- DIST-A — Denotes Inlet Protection, Type A; St'd EC-6
- DIST-B — Denotes Inlet Protection, Type B; St'd EC-6
- EC-11 — Denotes Temporary Construction Entrance
- EC-1 — Denotes Rip Rap Pad
- Denotes Proposed Power Pole (With Or Without Guy Wires) In Future Phase, By Others
- Denotes Orange Construction Fence
- TSD — Denotes Temporary Slope Drain, St'd EC-10

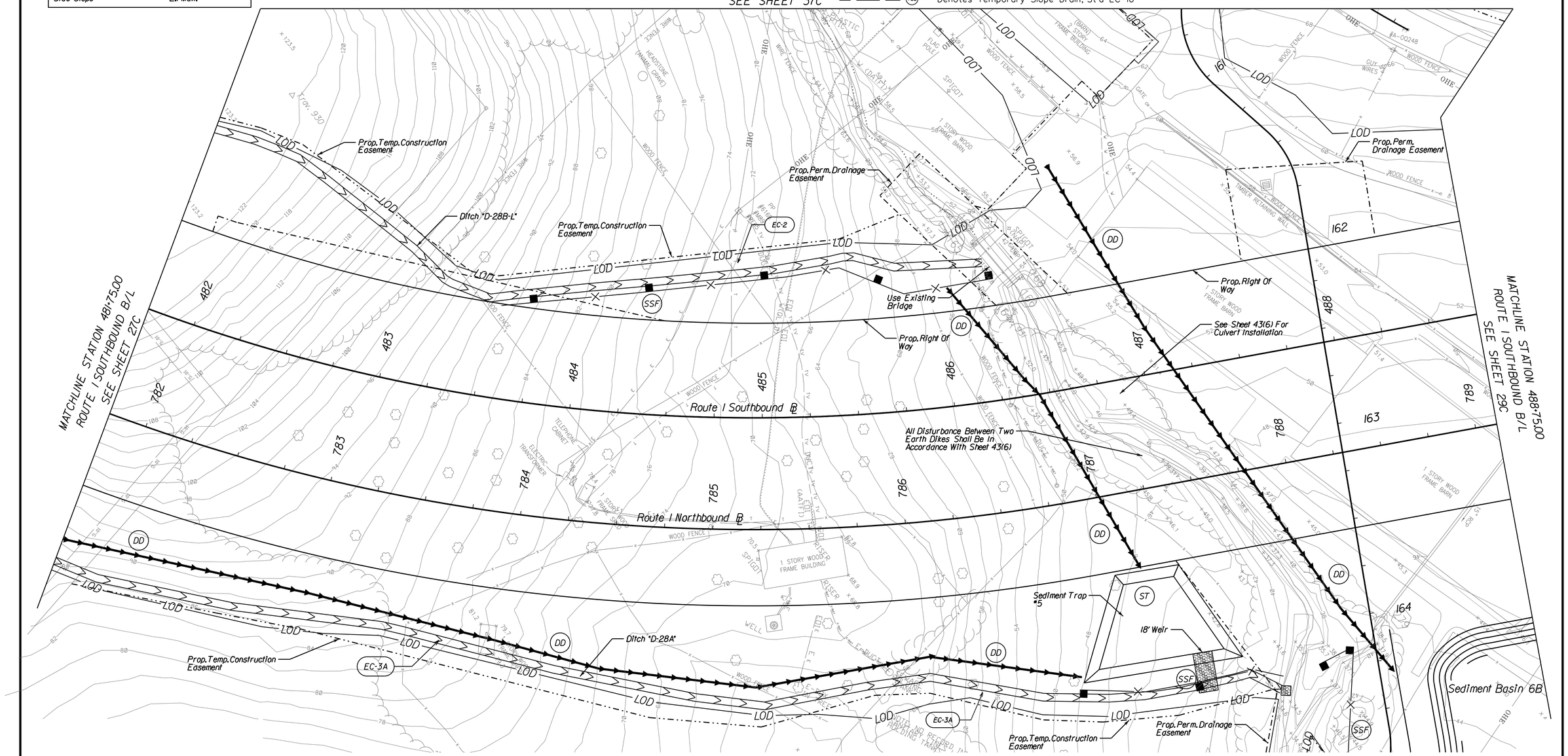
MATCHLINE SEE SHEET 37C

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	I	0001-029-001 P101, R201, C501	28C

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

A. Morton Thomas & Assoc.
Chantilly, Virginia
(HYDRAULIC DISCIPLINE)

SEDIMENT TRAP #5	
D.A.	3.0 Acres
Storage Req'd./Prov'd.	10854 cf/10889 cf
Trap Dimension	66'B, 26'T, 4'Hx4'
Top Elevation	44.00
Weir Elevation	42.33
Bottom Elevation	40.00
Side Slope	2:1 Max.



E AND S INITIAL PHASE

SCALE 0 25' 50'

PROJECT	SHEET NO.
0001-029-001	28C

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
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- (See Sheet 1G(1)
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- TSF — Denotes Temporary Silt Fence, St'd EC-5
- SSF — Denotes Super Silt Fence
- TDC — Denotes Temporary Diversion Channel, St'd EC-12
- DD — Denotes Temporary Diversion Dike, St'd EC-9
- PDC — Denotes Permanent Grass Diversion Channel (See Sheet 1G(1)
- LOD — Denotes Limit Of Disturbance
- ST — Denotes Sediment Trap, St'd EC-7
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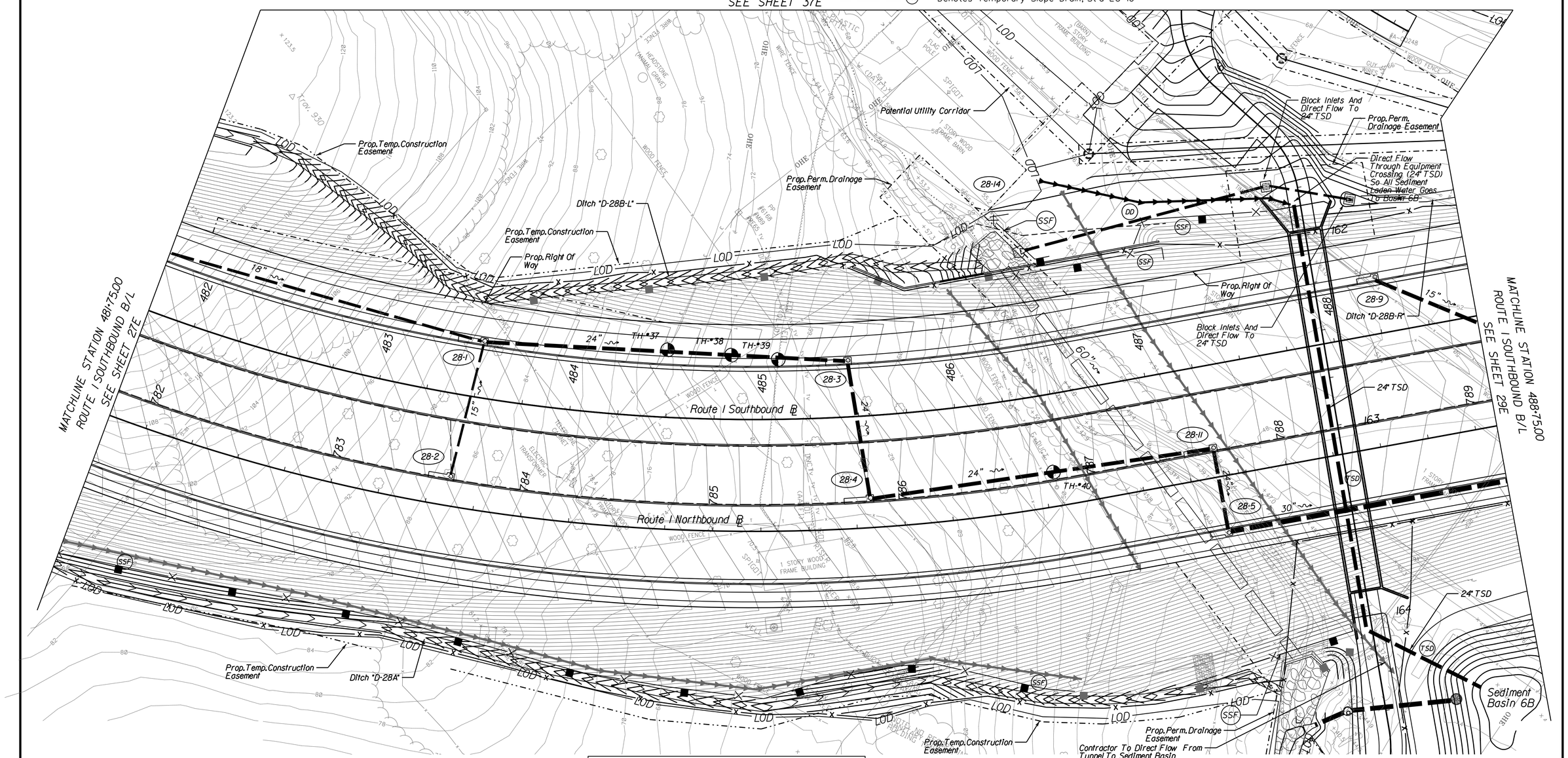
- TC-P — Denotes Turbidity Curtain, Type - Pervious
- RCD-1 — Denotes Rock Check Dam, Type I: St'd EC-4
- RCD-2 — Denotes Rock Check Dam, Type II: St'd EC-4
- DIST-A — Denotes Inlet Protection, Type A: St'd EC-6
- DIST-B — Denotes Inlet Protection, Type B: St'd EC-6
- EC-11 — Denotes Temporary Construction Entrance
- EC-1 — Denotes Rip Rap Pad
- Denotes Proposed Power Pole (With Or Without Guy Wires) In Future Phase, By Others
- CF — Denotes Orange Construction Fence
- TSD — Denotes Temporary Slope Drain, St'd EC-10

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	I	0001-029-001 P101, R201, C501	28E

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

A. Morton Thomas & Assoc.
Chantilly, Virginia
(HYDRAULIC DISCIPLINE)



E AND S FINAL PHASE

PROJECT	SHEET NO.
0001-029-001	28E

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
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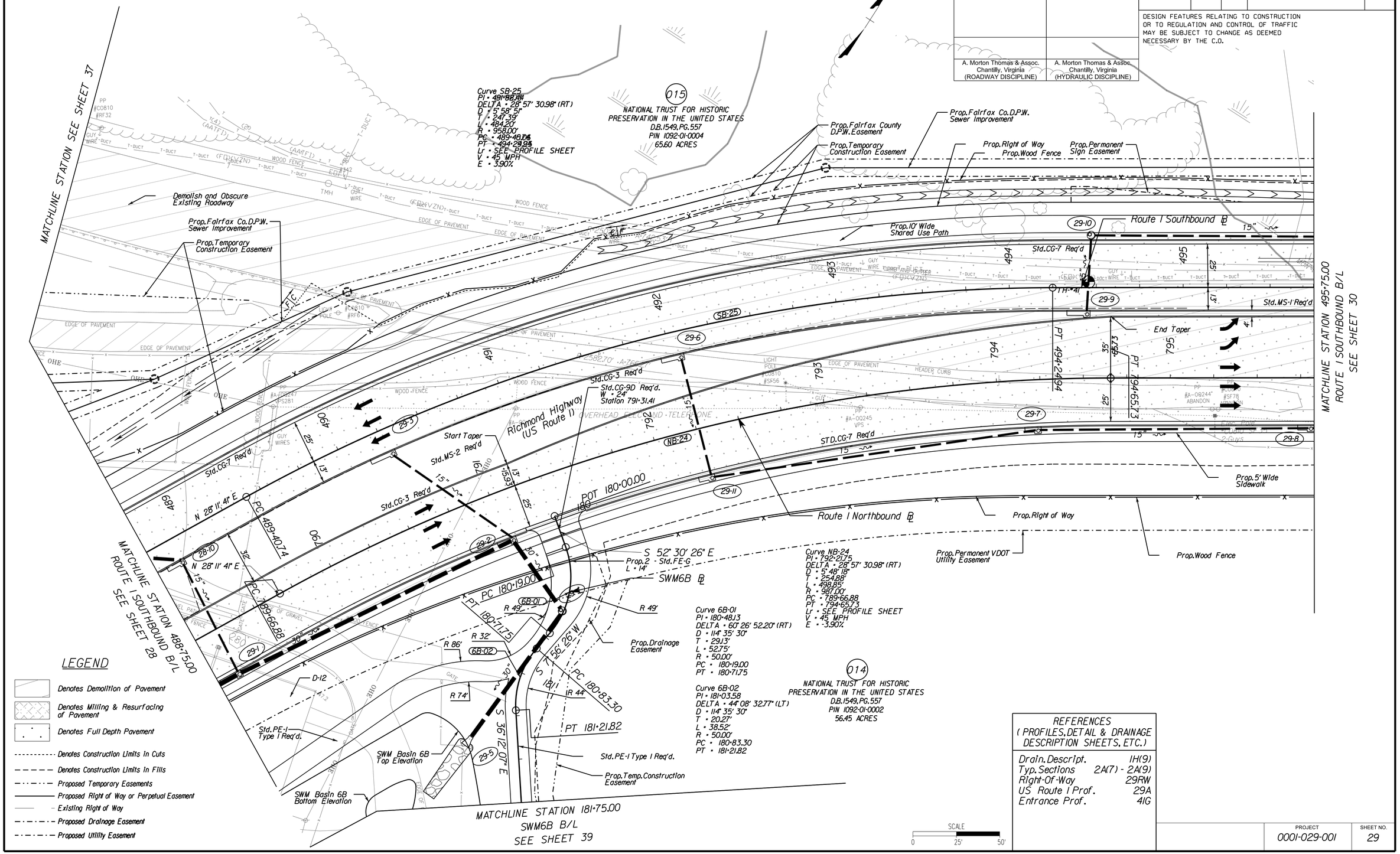
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	29

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

A. Morton Thomas & Assoc. Chantilly, Virginia (ROADWAY DISCIPLINE)	A. Morton Thomas & Assoc. Chantilly, Virginia (HYDRAULIC DISCIPLINE)



REFERENCES
(PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)

Drain. Descript.	1H(9)
Typ. Sections	2A(7) - 2A(9)
Right-Of-Way	29RW
US Route 1 Prof.	29A
Entrance Prof.	41G

PROJECT	SHEET NO.
0001-029-001	29

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
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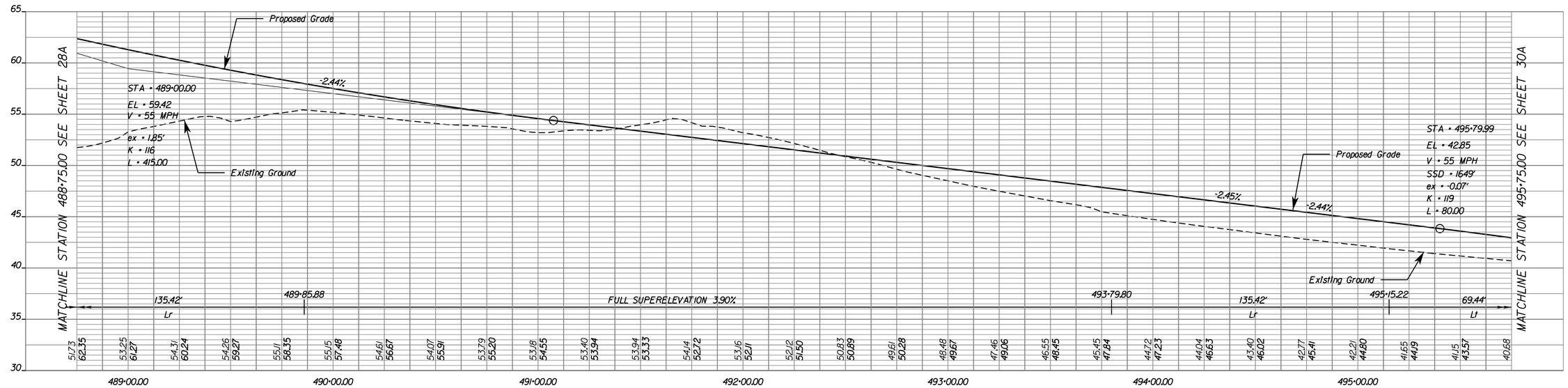
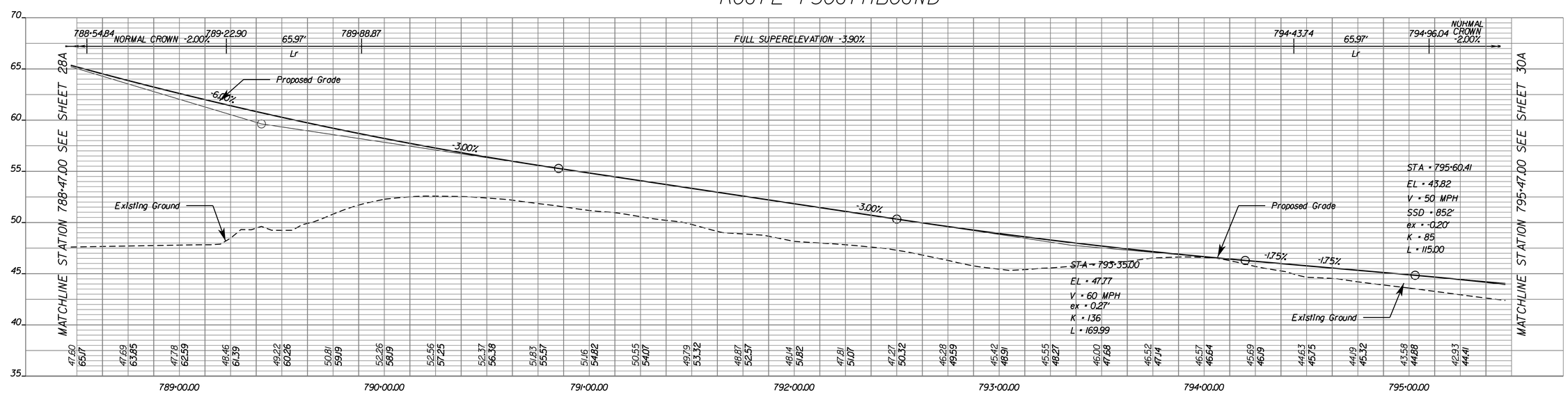
A. Morton Thomas & Assoc.
Chantilly, Virginia
(ROADWAY DISCIPLINE)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	I	0001-029-001 P101, R201, C501	29A

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



ROUTE I SOUTHBOUND



ROUTE I NORTHBOUND

SCALE H=25', V=5'
0 25' 50'
0 1' 2'

PROJECT	SHEET NO.
0001-029-001	29A

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
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- TSF — Denotes Temporary Silt Fence, St'd EC-5
- SSF — Denotes Super Silt Fence
- TDC — Denotes Temporary Diversion Channel, St'd EC-12
- DD — Denotes Temporary Diversion Dike, St'd EC-9
- PDC — Denotes Permanent Grass Diversion Channel (See Sheet 1G(1)
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- DIST-A — Denotes Inlet Protection, Type A; St'd EC-6
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- EC-1 — Denotes Rip Rap Pad
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REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	I	0001-029-001 P101, R201, C501	29C

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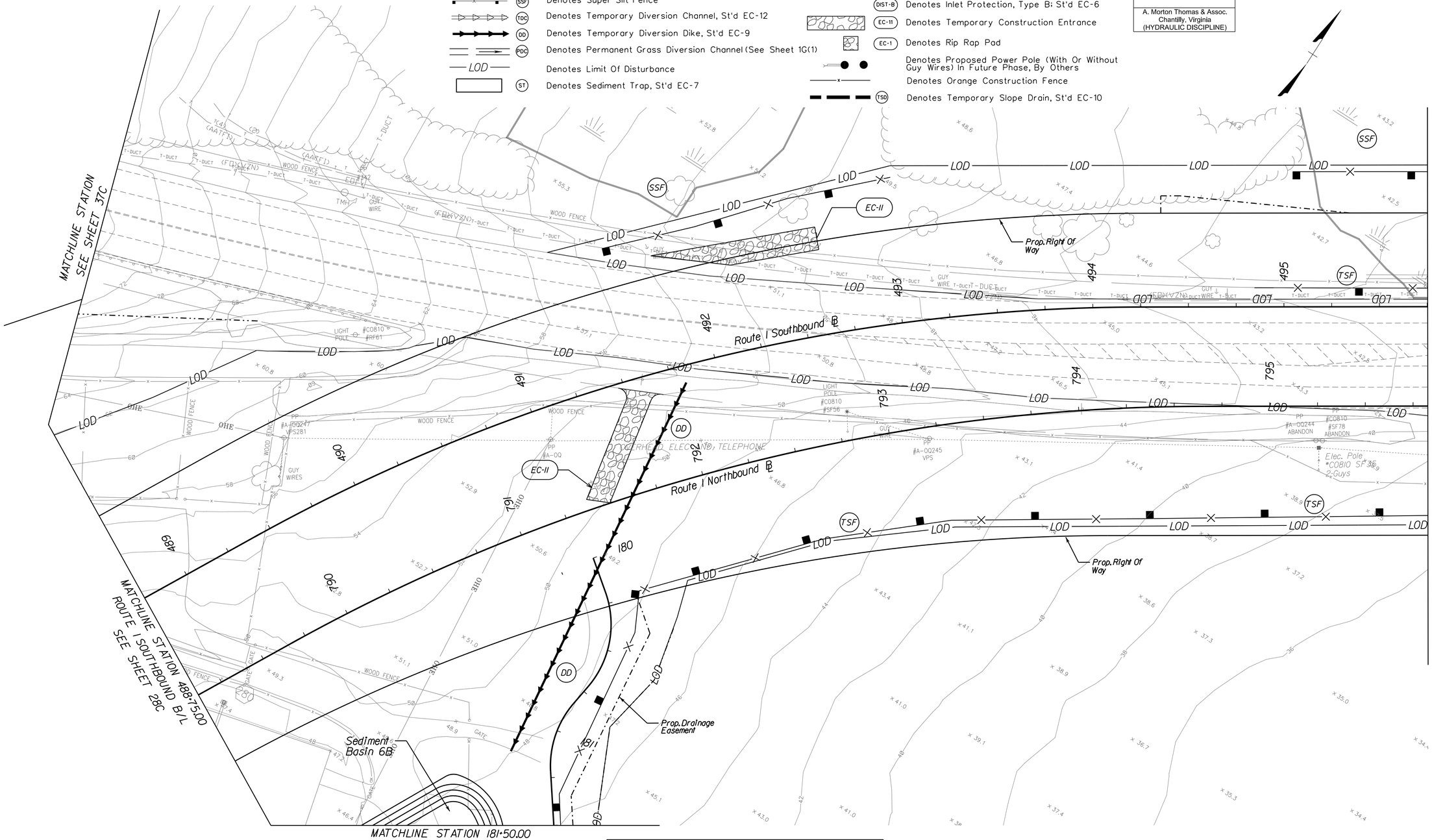
A. Morton Thomas & Assoc.
Chantilly, Virginia
(HYDRAULIC DISCIPLINE)



E AND S INITIAL PHASE

SCALE 0 25' 50'

PROJECT	SHEET NO.
0001-029-001	29C

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
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REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	29E

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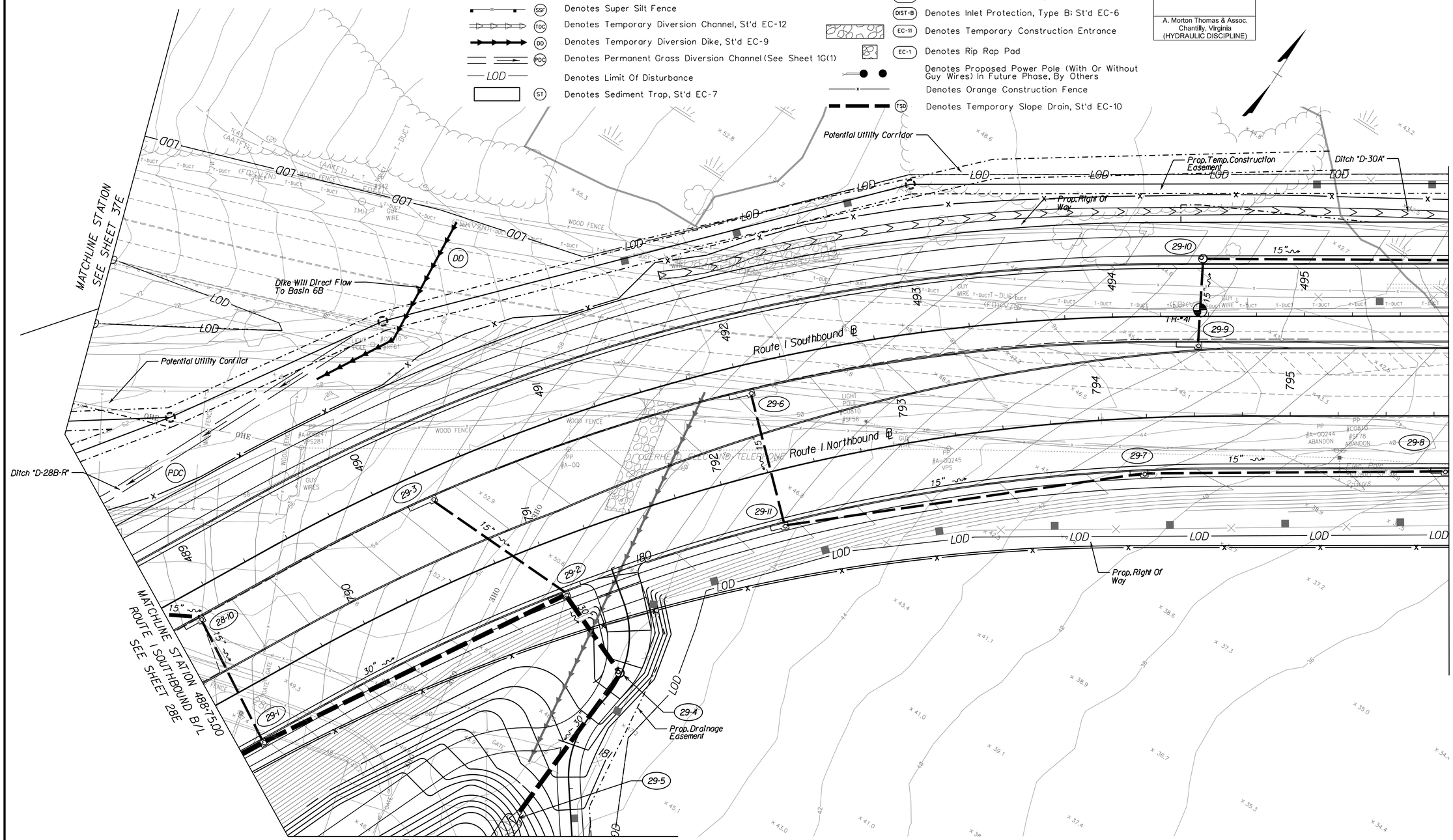

E AND S INITIAL PHASE

SCALE 0 25' 50'

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0001-029-001	29E

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REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	30

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

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Chantilly, Virginia
(ROADWAY DISCIPLINE)

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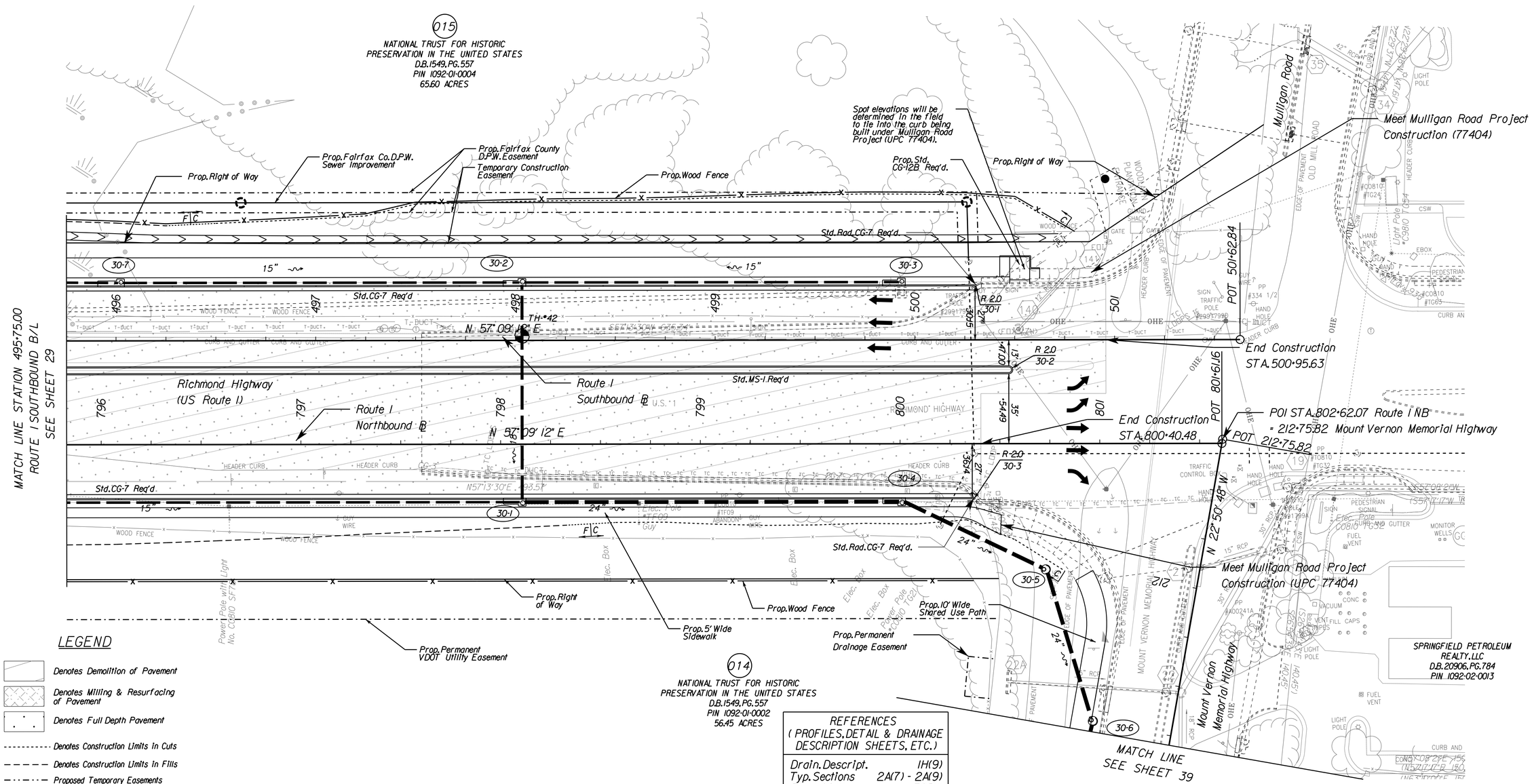

LEGEND

- Denotes Demolition of Pavement
- Denotes Milling & Resurfacing of Pavement
- Denotes Full Depth Pavement
- Denotes Construction Limits In Cuts
- Denotes Construction Limits In Fills
- Proposed Temporary Easements
- Proposed Right of Way or Perpetual Easement
- Existing Right of Way
- Proposed Drainage Easement
- Proposed Utility Easement

REFERENCES (PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)	
Drain. Descript.	1H(9)
Typ. Sections	2A(7) - 2A(9)
Right-Of-Way	30RW
US Route 1 Prof.	30A

PROJECT	SHEET NO.
0001-029-001	30

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REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	30A

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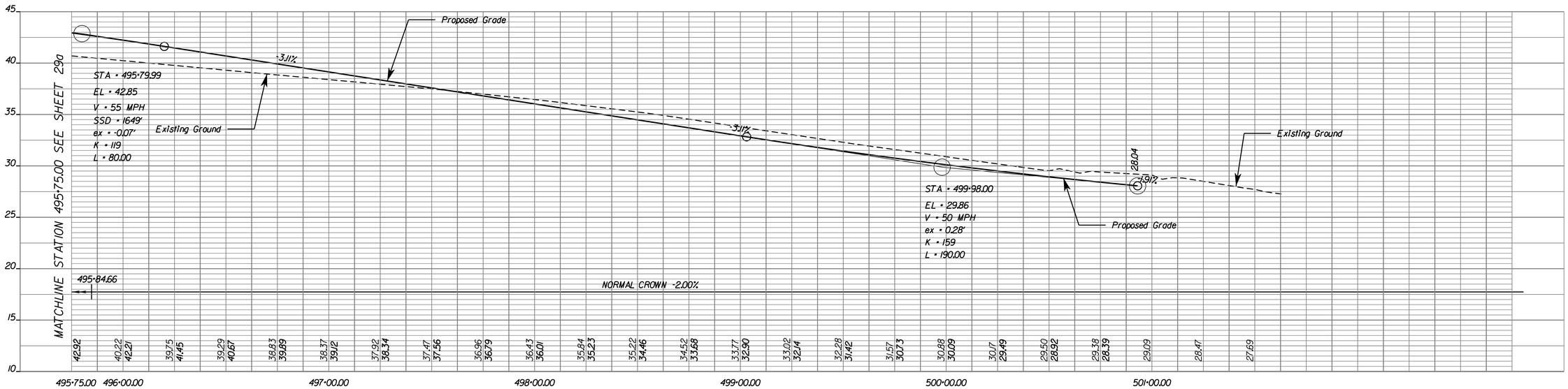
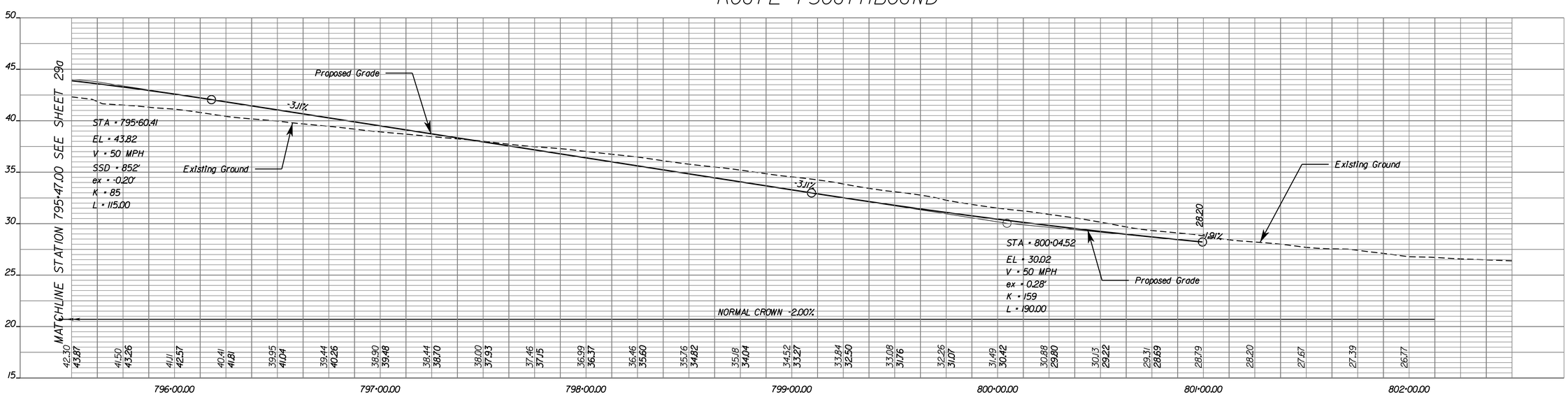


ROUTE 1 SOUTHBOUND



ROUTE 1 NORTHBOUND

SCALE H:25', V:5'
0 25' 50'
0 1' 2'

PROJECT	SHEET NO.
0001-029-001	30A

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REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	30C

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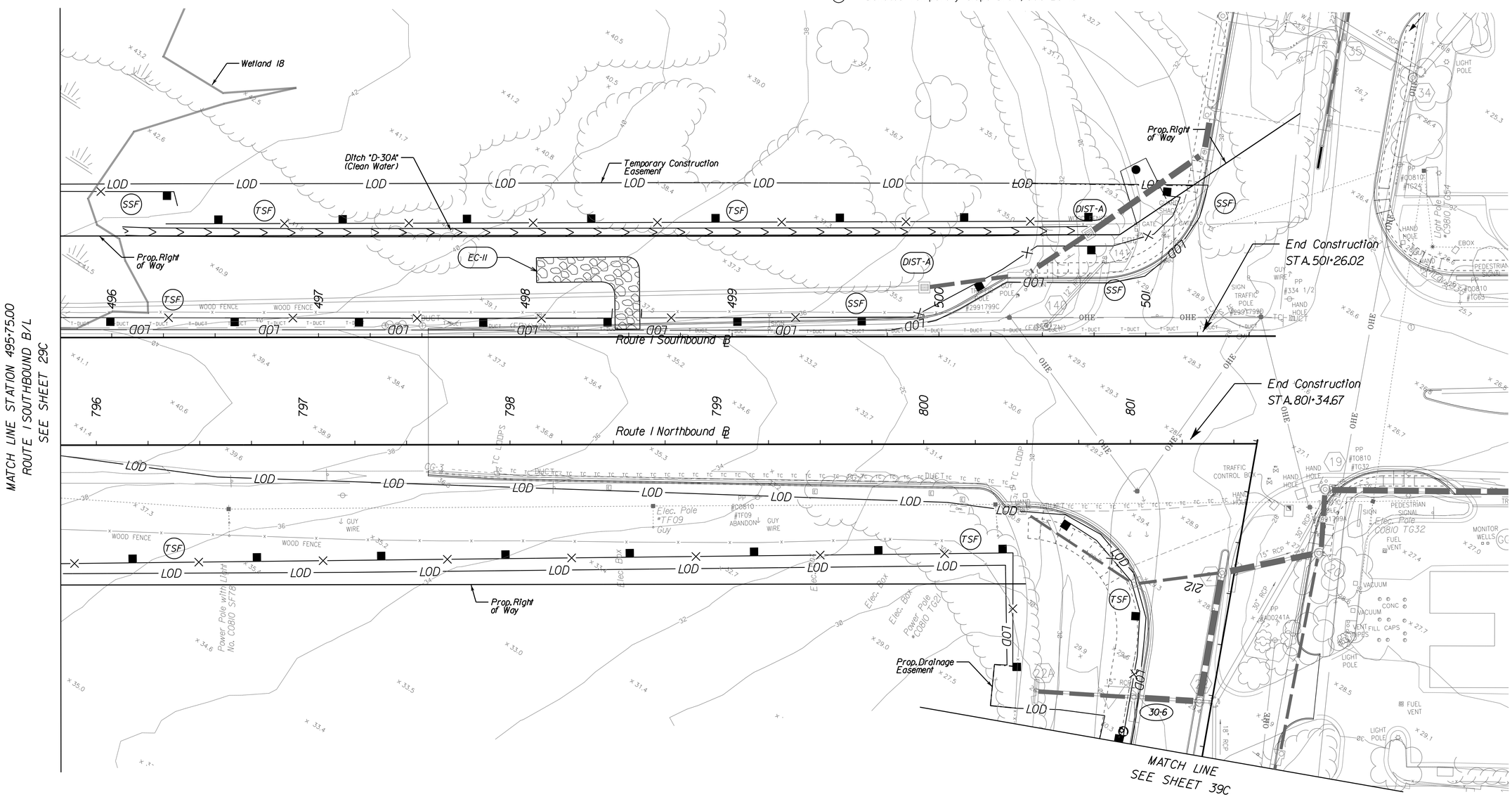
Chantilly, Virginia
(HYDRAULIC DISCIPLINE)



E AND S INITIAL PHASE

SCALE 0 25' 50'

PROJECT	SHEET NO.
0001-029-001	30C

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
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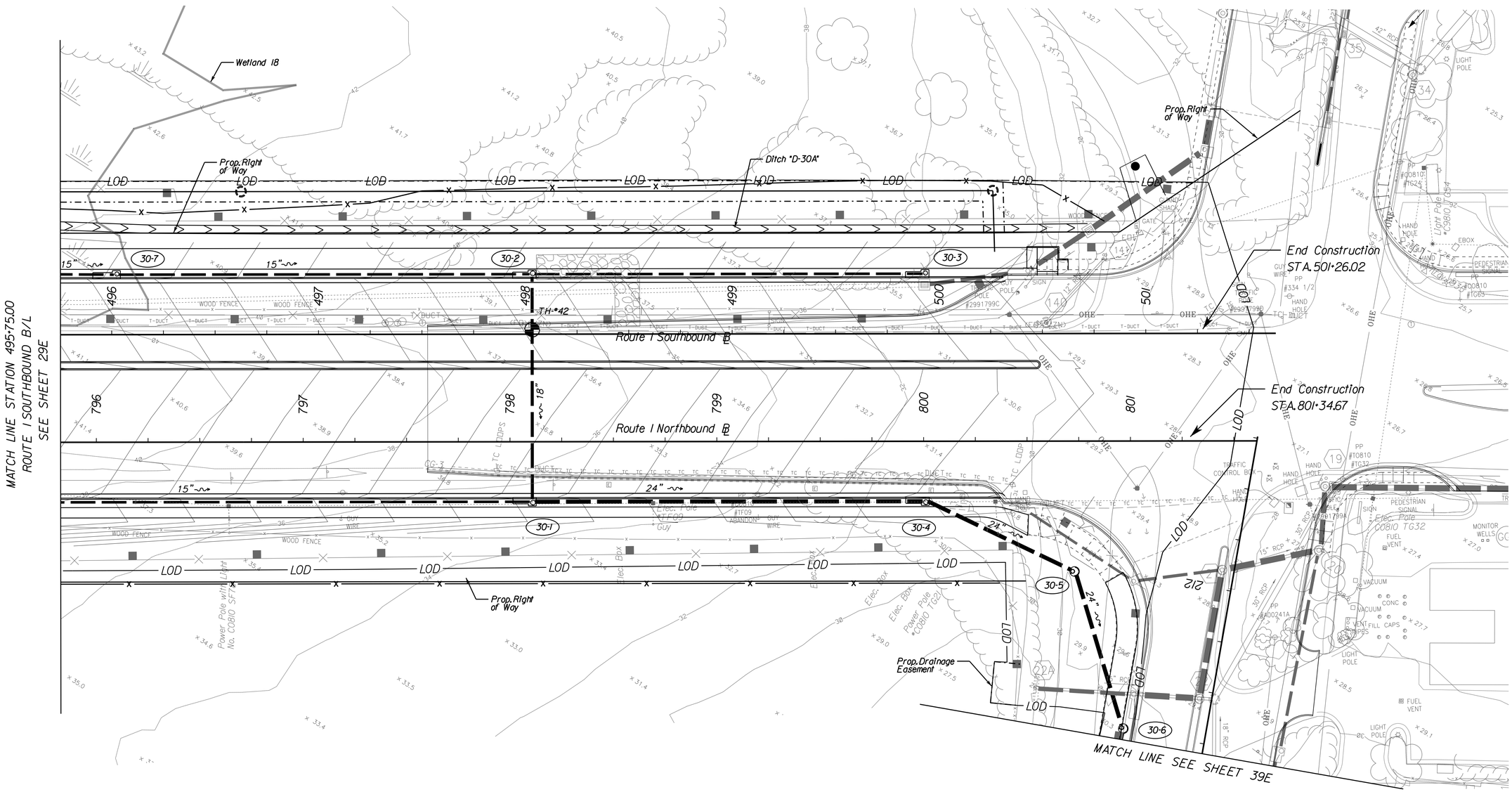
REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	30E

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

A. Morton Thomas & Assoc.
Chantilly, Virginia
(HYDRAULIC DISCIPLINE)



E AND S FINAL PHASE

SCALE 0 25' 50'

PROJECT	SHEET NO.
0001-029-001	30E

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEGERD, A.MORTON THOMAS & ASSOC.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	35

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

A. Morton Thomas & Assoc. Chantilly, Virginia (ROADWAY DISCIPLINE)	A. Morton Thomas & Assoc. Chantilly, Virginia (HYDRAULIC DISCIPLINE)

Curve WO-1
PI = 131+95.22
DELTA = 59° 33' 16.08" (LT)
D = 57° 17' 45"
T = 57.22'
L = 103.94'
R = 100.00'
PC = 131+38.00
PT = 132+41.94
V = 20 MPH
E = 4.0%

Curve WO-2
PI = 135+65.05
DELTA = 15° 55' 41.84" (RT)
D = 42° 26' 29"
T = 18.89'
L = 37.53'
R = 135.00'
PC = 135+46.17
PT = 135+83.70
V = N/A
E = N/A

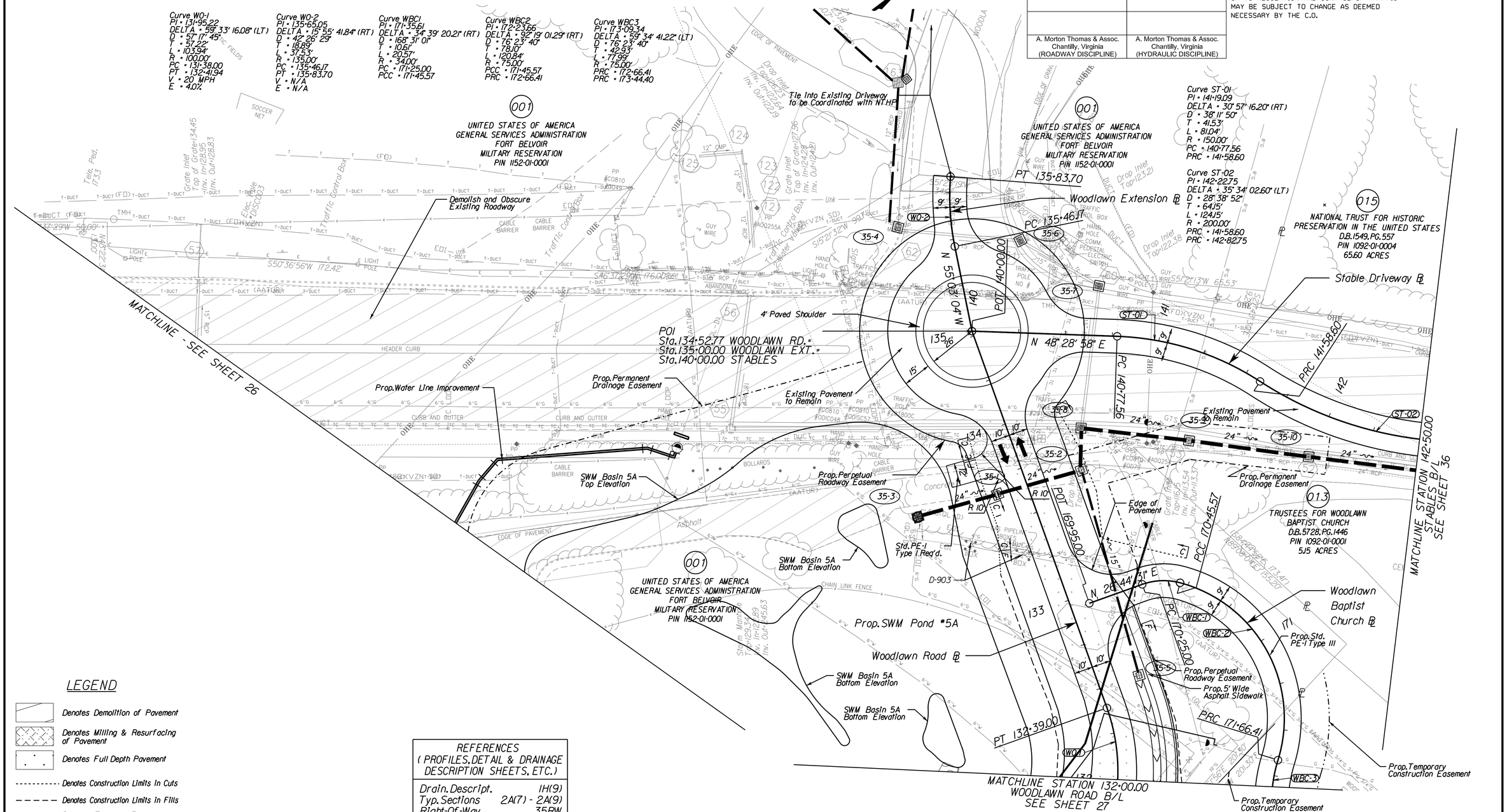
Curve WBC1
PI = 171+35.61
DELTA = 34° 39' 20.21" (RT)
D = 168° 31' 01"
T = 10.61'
L = 20.57'
R = 34.00'
PC = 171+25.00
PCC = 171+45.57

Curve WBC2
PI = 172+23.66
DELTA = 92° 19' 01.29" (RT)
D = 76° 23' 40"
T = 78.10'
L = 120.84'
R = 75.00'
PCC = 171+45.57
PRC = 172+66.41

Curve WBC3
PI = 173+09.34
DELTA = 59° 34' 41.22" (LT)
D = 76° 23' 40"
T = 42.93'
L = 77.99'
R = 75.00'
PRC = 172+66.41
PRC = 173+44.40

Curve ST-01
PI = 141+19.09
DELTA = 30° 57' 16.20" (RT)
D = 38° 11' 50"
T = 41.53'
L = 81.04'
R = 150.00'
PC = 140+77.56
PRC = 141+58.60

Curve ST-02
PI = 142+22.75
DELTA = 35° 34' 02.60" (LT)
D = 28° 38' 52"
T = 64.15'
L = 124.15'
R = 200.00'
PRC = 141+58.60
PRC = 142+82.75



LEGEND

- Denotes Demolition of Pavement
- Denotes Milling & Resurfacing of Pavement
- Denotes Full Depth Pavement
- Denotes Construction Limits In Cuts
- Denotes Construction Limits In Fills
- Proposed Temporary Easements
- Proposed Right of Way or Perpetual Easement
- Existing Right of Way
- Proposed Drainage Easement
- Proposed Utility Easement

REFERENCES (PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)	
Drain. Descript.	1H(9)
Typ. Sections	2A(7) - 2A(9)
Right-Of-Way	35RW
Woodlawn Prof.	35A
Driveway Prof.	41D - 41F

SCALE 0 25' 50'

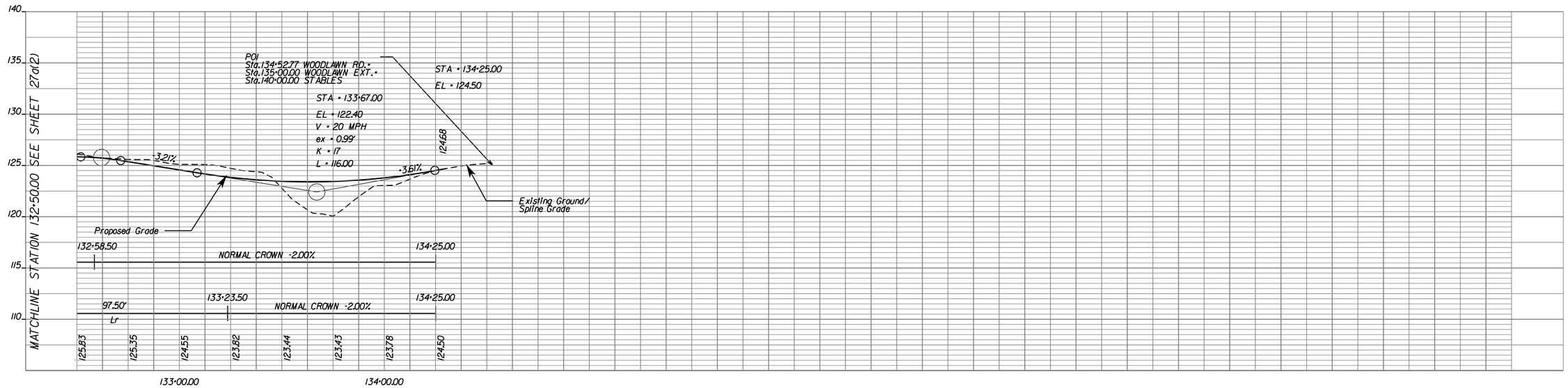
PROJECT	SHEET NO.
0001-029-001	35

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

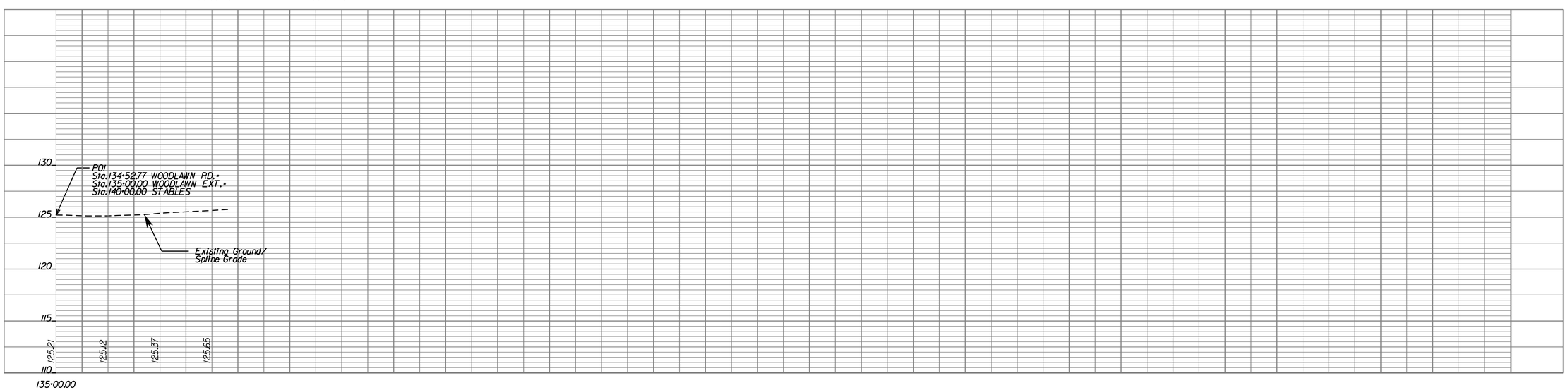
A. Morton Thomas & Assoc.
Chantilly, Virginia
(ROADWAY DISCIPLINE)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	35A(1)

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



WOODLAWN ROAD



WOODLAWN ROAD EXTENSION

SCALE H=25', V=5'
0 25' 50'
0 1' 2'

PROJECT	SHEET NO.
0001-029-001	35A(1)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

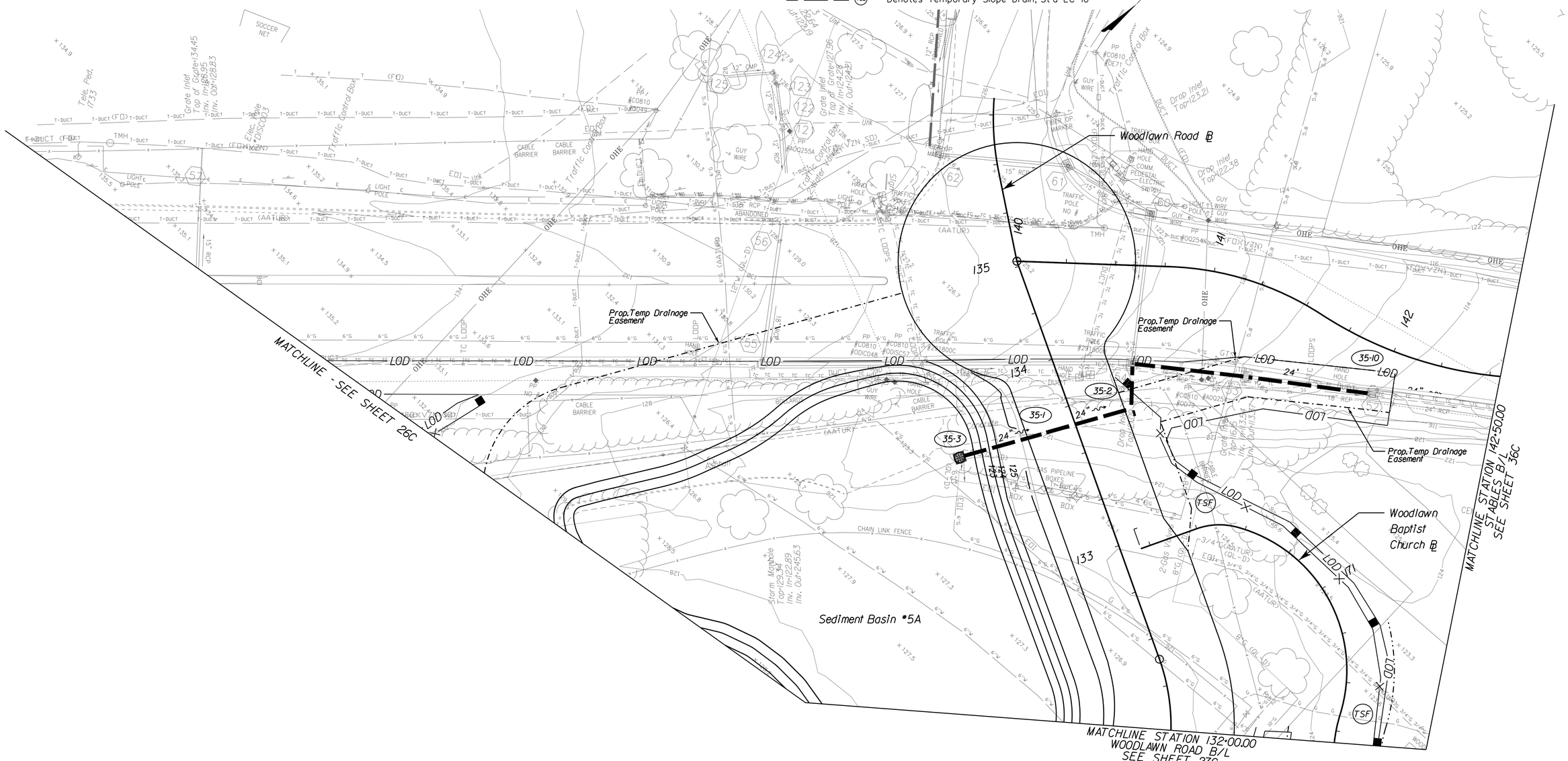
E-3 The following symbols are used to depict Erosion Control items in the plan assembly:

- EC-2 / EC-3A / EC-3B / EC-3C — Denotes Protective Covering, St'd. EC-2 (See Sheet 1G(1)
- Denotes Soil Stabilization Mat. St'd. EC-3 Type A, B or C (See Sheet 1G(1)
- TFB — Denotes Temporary Filter Barrier, St'd EC-5
- TSF — Denotes Temporary Silt Fence, St'd EC-5
- SSF — Denotes Super Silt Fence
- TDC — Denotes Temporary Diversion Channel, St'd EC-12
- DD — Denotes Temporary Diversion Dike, St'd EC-9
- PDC — Denotes Permanent Grass Diversion Channel (See Sheet 1G(1)
- LOD — Denotes Limit Of Disturbance
- ST — Denotes Sediment Trap, St'd EC-7
- TC-1 — Denotes Turbidity Curtain, Type - Impervious
- TC-P — Denotes Turbidity Curtain, Type - Pervious
- RCD-1 — Denotes Rock Check Dam, Type I: St'd EC-4
- RCD-2 — Denotes Rock Check Dam, Type II: St'd EC-4
- DIST-A — Denotes Inlet Protection, Type A: St'd EC-6
- DIST-B — Denotes Inlet Protection, Type B: St'd EC-6
- EC-11 — Denotes Temporary Construction Entrance
- EC-1 — Denotes Rip Rap Pad
- Denotes Proposed Power Pole (With Or Without Guy Wires) In Future Phase, By Others
- Denotes Orange Construction Fence
- TSD — Denotes Temporary Slope Drain, St'd EC-10

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	35C

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

A. Morton Thomas & Assoc.
Chantilly, Virginia
(HYDRAULIC DISCIPLINE)



E AND S INITIAL PHASE

PROJECT	SHEET NO.
0001-029-001	35C

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
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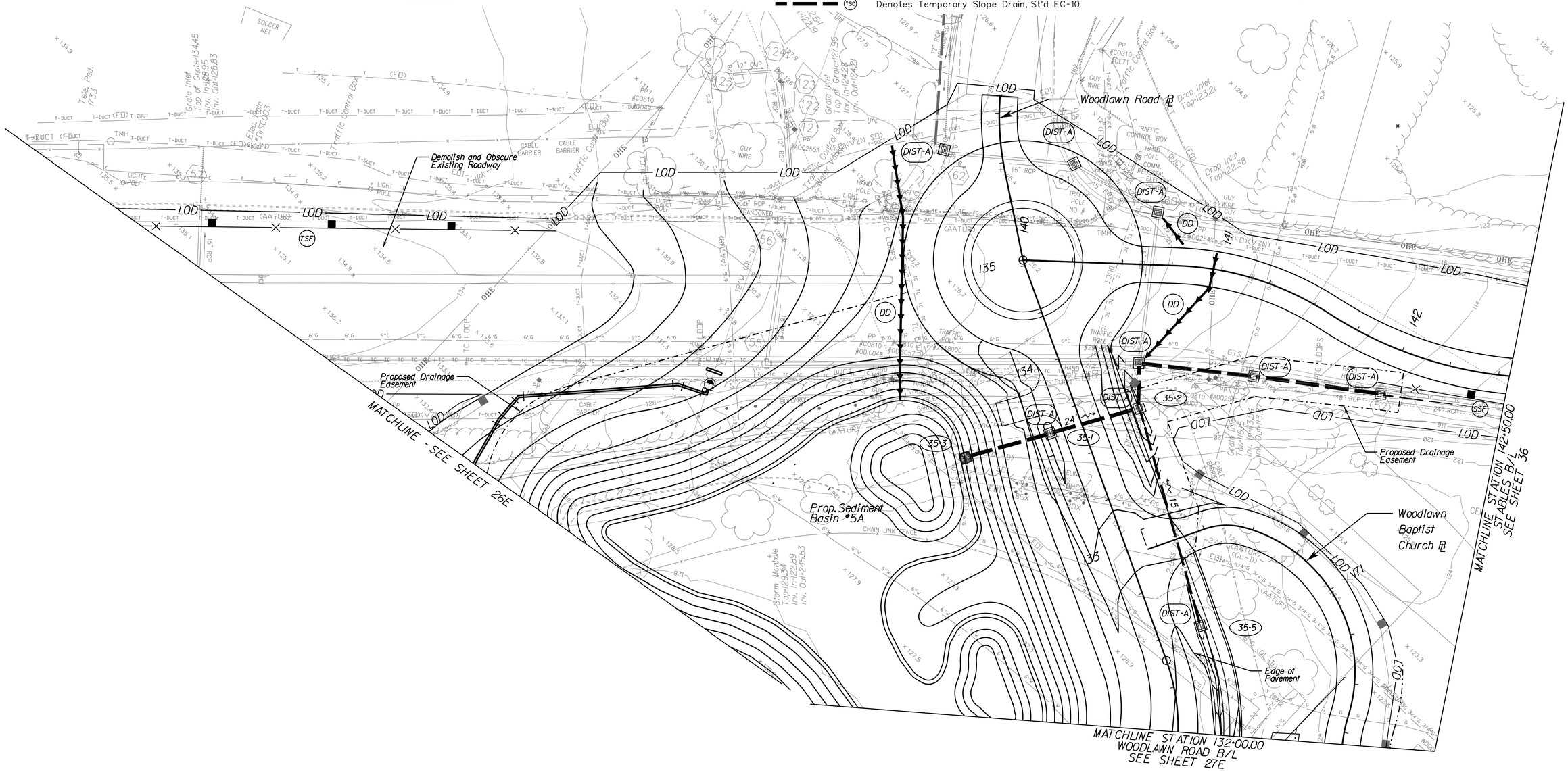
- TSF — Denotes Temporary Silt Fence, St'd EC-5
- SSF — Denotes Super Silt Fence
- TDC — Denotes Temporary Diversion Channel, St'd EC-12
- DD — Denotes Temporary Diversion Dike, St'd EC-9
- PDC — Denotes Permanent Grass Diversion Channel (See Sheet 1G(1)
- LOD — Denotes Limit Of Disturbance
- ST — Denotes Sediment Trap, St'd EC-7
- TC-I — Denotes Turbidity Curtain, Type - Impervious
- TC-P — Denotes Turbidity Curtain, Type - Pervious
- RCD-1 — Denotes Rock Check Dam, Type I; St'd EC-4
- RCD-2 — Denotes Rock Check Dam, Type II; St'd EC-4
- DIST-A — Denotes Inlet Protection, Type A; St'd EC-6
- DIST-B — Denotes Inlet Protection, Type B; St'd EC-6
- EC-11 — Denotes Temporary Construction Entrance
- EC-1 — Denotes Rip Rap Pad
- Denotes Proposed Power Pole (With Or Without Guy Wires) In Future Phase, By Others
- CF — Denotes Orange Construction Fence
- TSD — Denotes Temporary Slope Drain, St'd EC-10

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	35E

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

A. Morton Thomas & Assoc.
Chantilly, Virginia
(HYDRAULIC DISCIPLINE)



E AND S FINAL PHASE

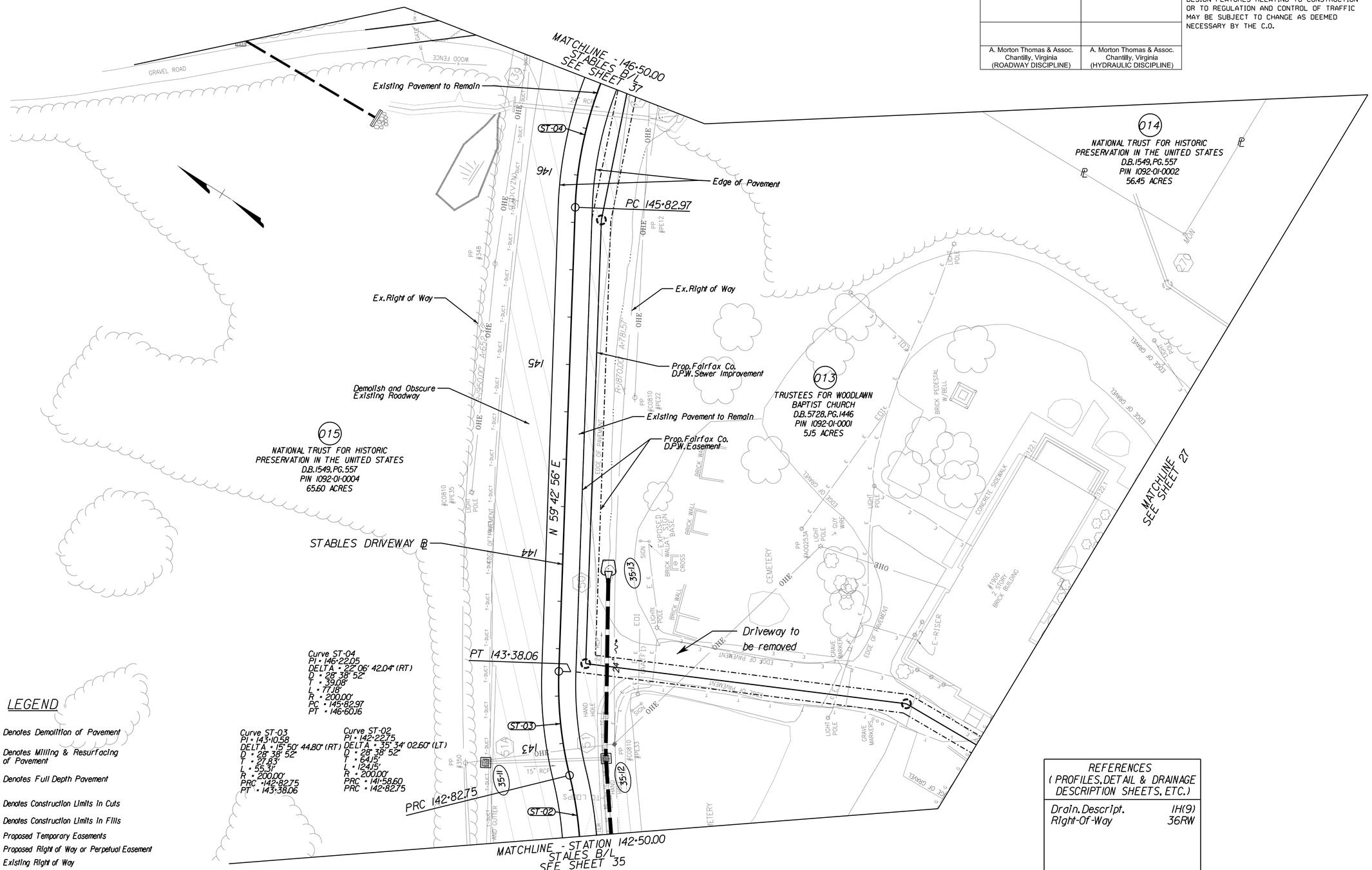
PROJECT	SHEET NO.
0001-029-001	35E

PROJECT MANAGER LAURA MEHIEL, A. MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A. MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A. MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEEORD, A. MORTON THOMAS & ASSOC.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	36

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

A. Morton Thomas & Assoc. Chantilly, Virginia (ROADWAY DISCIPLINE)	A. Morton Thomas & Assoc. Chantilly, Virginia (HYDRAULIC DISCIPLINE)



Curve ST-04
PI = 146+22.05
DELTA = 22° 06' 42.04" (RT)
D = 28° 38' 52"
T = 39.08'
L = 77.18'
R = 200.00'
PC = 145+82.97
PT = 146+60.16

Curve ST-03
PI = 143+10.58
DELTA = 15° 50' 44.80" (RT)
D = 28° 38' 52"
T = 27.83'
L = 55.31'
R = 200.00'
PRC = 142+82.75
PT = 143+38.06

Curve ST-02
PI = 142+22.75
DELTA = 35° 34' 02.60" (LT)
D = 28° 38' 52"
T = 64.15'
L = 124.15'
R = 200.00'
PRC = 141+58.60
PRC = 142+82.75

LEGEND

- Denotes Demolition of Pavement
- Denotes Milling & Resurfacing of Pavement
- Denotes Full Depth Pavement
- Denotes Construction Limits In Cuts
- Denotes Construction Limits In Fills
- Proposed Temporary Easements
- Proposed Right of Way or Perpetual Easement
- Existing Right of Way
- Proposed Drainage Easement
- Proposed Utility Easement

REFERENCES
(PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)

Drain. Descript.	1H(9)
Right-Of-Way	36RW

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

COMMONWEALTH OF VIRGINIA
MATTHEW H. WILLEMS
Lic. No. 0402 036144
PROFESSIONAL ENGINEER

A. Morton Thomas & Assoc.
Chantilly, Virginia
(HYDRAULIC DISCIPLINE)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	I	0001-029-001 P101, R201, C501	36C

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

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- TSF — Denotes Temporary Silt Fence, St'd EC-5
- SSF — Denotes Super Silt Fence
- TDC — Denotes Temporary Diversion Channel, St'd EC-12
- DD — Denotes Temporary Diversion Dike, St'd EC-9
- PDC — Denotes Permanent Grass Diversion Channel (See Sheet 1G(1)
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- ST — Denotes Sediment Trap, St'd EC-7
- TC-I — Denotes Turbidity Curtain, Type - Impervious
- TC-P — Denotes Turbidity Curtain, Type - Pervious
- RCD-1 — Denotes Rock Check Dam, Type I; St'd EC-4
- RCD-2 — Denotes Rock Check Dam, Type II; St'd EC-4
- DIST-A — Denotes Inlet Protection, Type A; St'd EC-6
- DIST-B — Denotes Inlet Protection, Type B; St'd EC-6
- EC-11 — Denotes Temporary Construction Entrance
- EC-1 — Denotes Rip Rap Pad
- Denotes Proposed Power Pole (With Or Without Guy Wires) In Future Phase, By Others
- Denotes Orange Construction Fence
- TSD — Denotes Temporary Slope Drain, St'd EC-10

E AND S INITIAL PHASE

SCALE
0 25' 50'

PROJECT	SHEET NO.
0001-029-001	36C

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
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REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	36E

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

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Chantilly, Virginia
(HYDRAULIC DISCIPLINE)

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- TSF — Denotes Temporary Silt Fence, St'd EC-5
- SSF — Denotes Super Silt Fence
- TDC — Denotes Temporary Diversion Channel, St'd EC-12
- DD — Denotes Temporary Diversion Dike, St'd EC-9
- PDC — Denotes Permanent Grass Diversion Channel (See Sheet 1G(1)
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- TC-P — Denotes Turbidity Curtain, Type - Pervious
- RCD-1 — Denotes Rock Check Dam, Type I; St'd EC-4
- RCD-2 — Denotes Rock Check Dam, Type II; St'd EC-4
- DIST-A — Denotes Inlet Protection, Type A; St'd EC-6
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- CF — Denotes Orange Construction Fence
- TSD — Denotes Temporary Slope Drain, St'd EC-10

E AND S FINAL PHASE

SCALE 0 25' 50'

PROJECT	SHEET NO.
0001-029-001	36E

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIFFORD, A.MORTON THOMAS & ASSOC.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	37

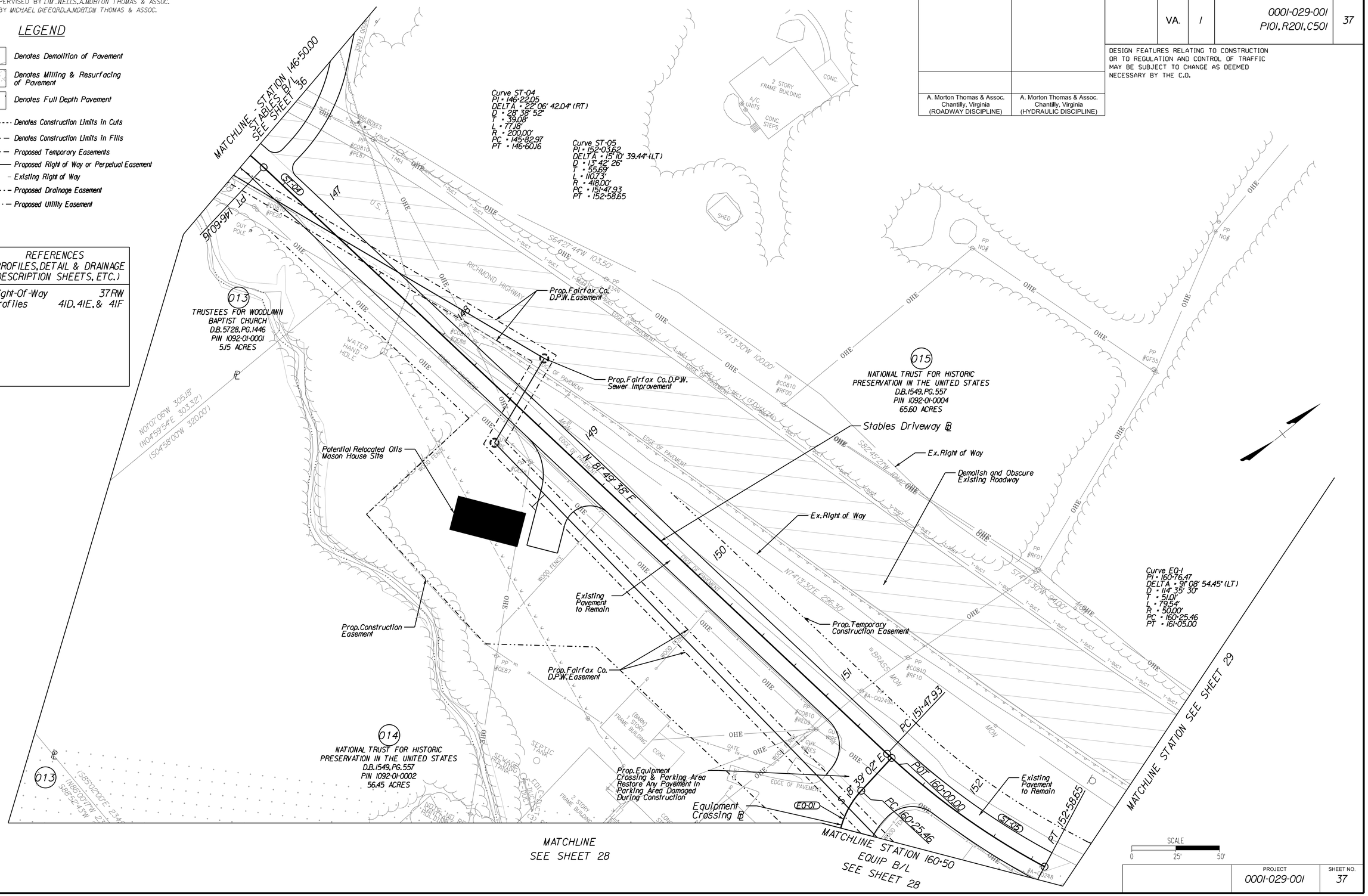
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE C.O.

A. Morton Thomas & Assoc. Chantilly, Virginia (ROADWAY DISCIPLINE)	A. Morton Thomas & Assoc. Chantilly, Virginia (HYDRAULIC DISCIPLINE)

LEGEND

- Denotes Demolition of Pavement
- Denotes Milling & Resurfacing of Pavement
- Denotes Full Depth Pavement
- Denotes Construction Limits in Cuts
- Denotes Construction Limits in Fills
- Proposed Temporary Easements
- Proposed Right of Way or Perpetual Easement
- Existing Right of Way
- Proposed Drainage Easement
- Proposed Utility Easement

REFERENCES (PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)	
Right-Of-Way	37RW
Profiles	41D, 41E, & 41F



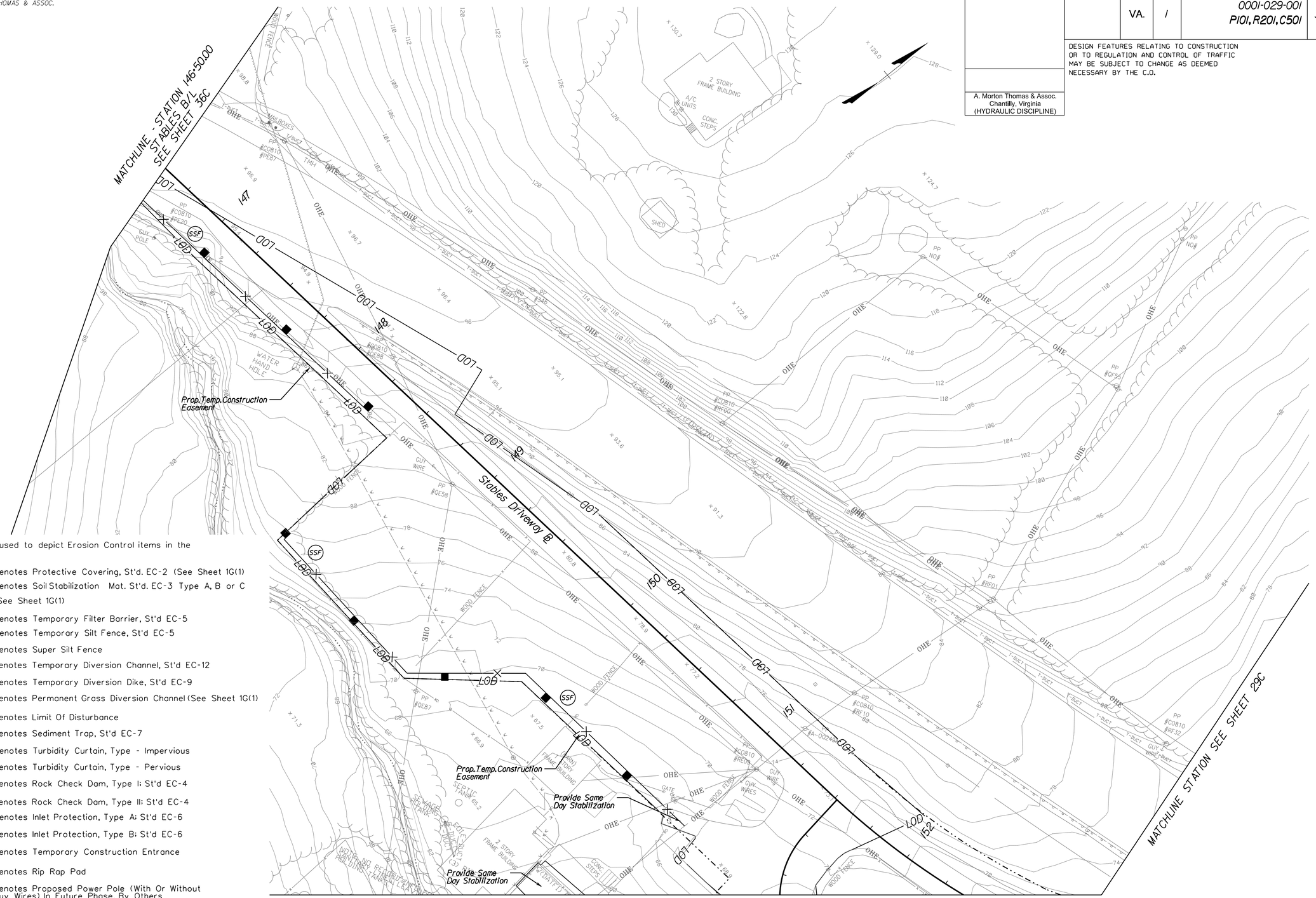
PROJECT	SHEET NO.
0001-029-001	37

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIFFORD, A.MORTON THOMAS & ASSOC.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	37C

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

A. Morton Thomas & Assoc.
Chantilly, Virginia
(HYDRAULIC DISCIPLINE)



E-3 The following symbols are used to depict Erosion Control items in the plan assembly:

- EC-2 — Denotes Protective Covering, St'd. EC-2 (See Sheet 1G(1)
- EC-3A, EC-3B, EC-3C — Denotes Soil Stabilization Mat. St'd. EC-3 Type A, B or C (See Sheet 1G(1)
- TFB — Denotes Temporary Filter Barrier, St'd EC-5
- TSF — Denotes Temporary Silt Fence, St'd EC-5
- SSF — Denotes Super Silt Fence
- TDC — Denotes Temporary Diversion Channel, St'd EC-12
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- PDC — Denotes Permanent Grass Diversion Channel (See Sheet 1G(1)
- LOD — Denotes Limit Of Disturbance
- ST — Denotes Sediment Trap, St'd EC-7
- TC-I — Denotes Turbidity Curtain, Type - Impervious
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- Denotes Proposed Power Pole (With Or Without Guy Wires) In Future Phase, By Others
- Denotes Orange Construction Fence
- TSD — Denotes Temporary Slope Drain, St'd EC-10

E AND S INITIAL PHASE

SCALE 0 25' 50'

PROJECT	SHEET NO.
0001-029-001	37C

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
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REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	37E

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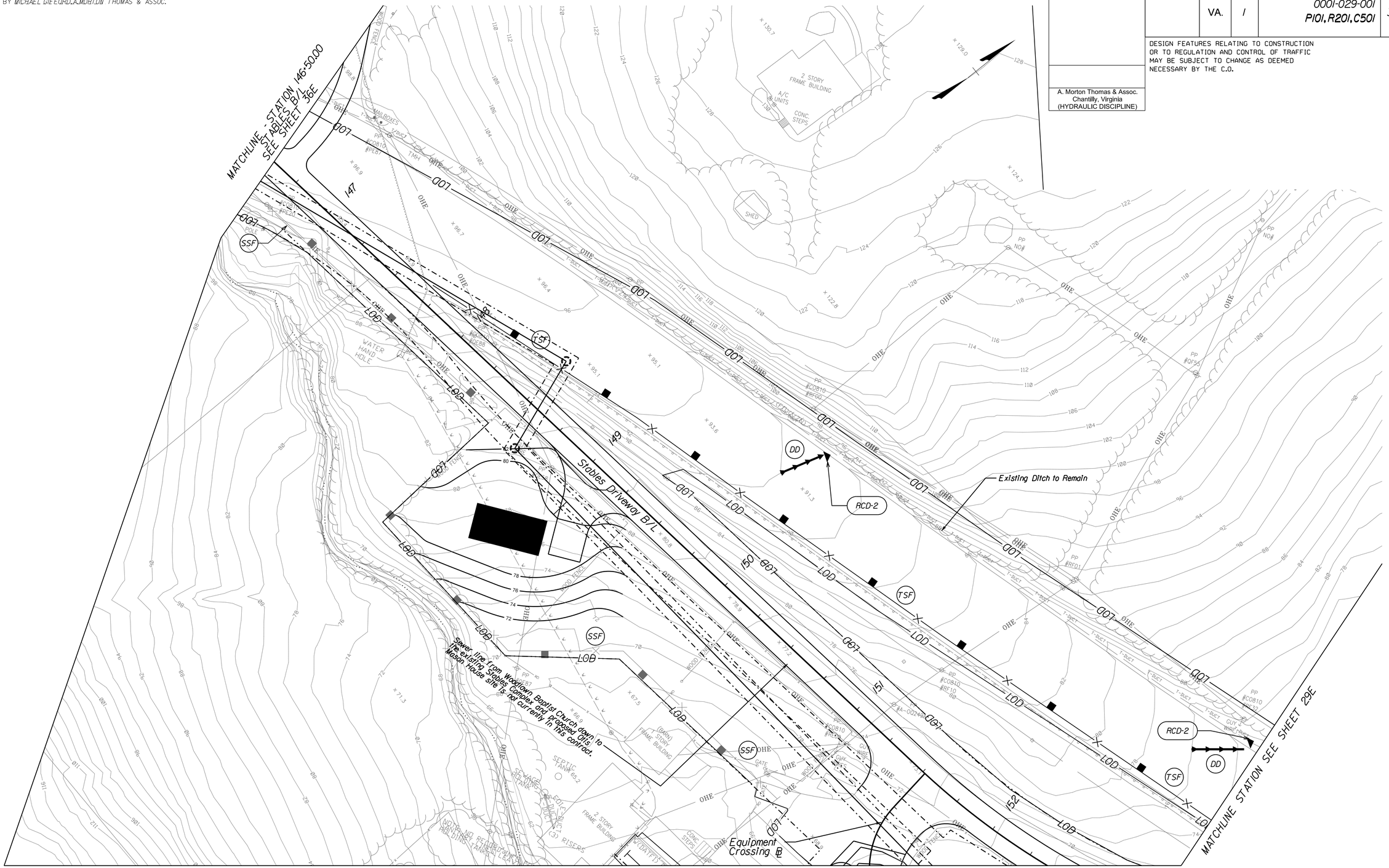

E AND S FINAL PHASE

SCALE 0 25' 50'

PROJECT	SHEET NO.
0001-029-001	37E

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
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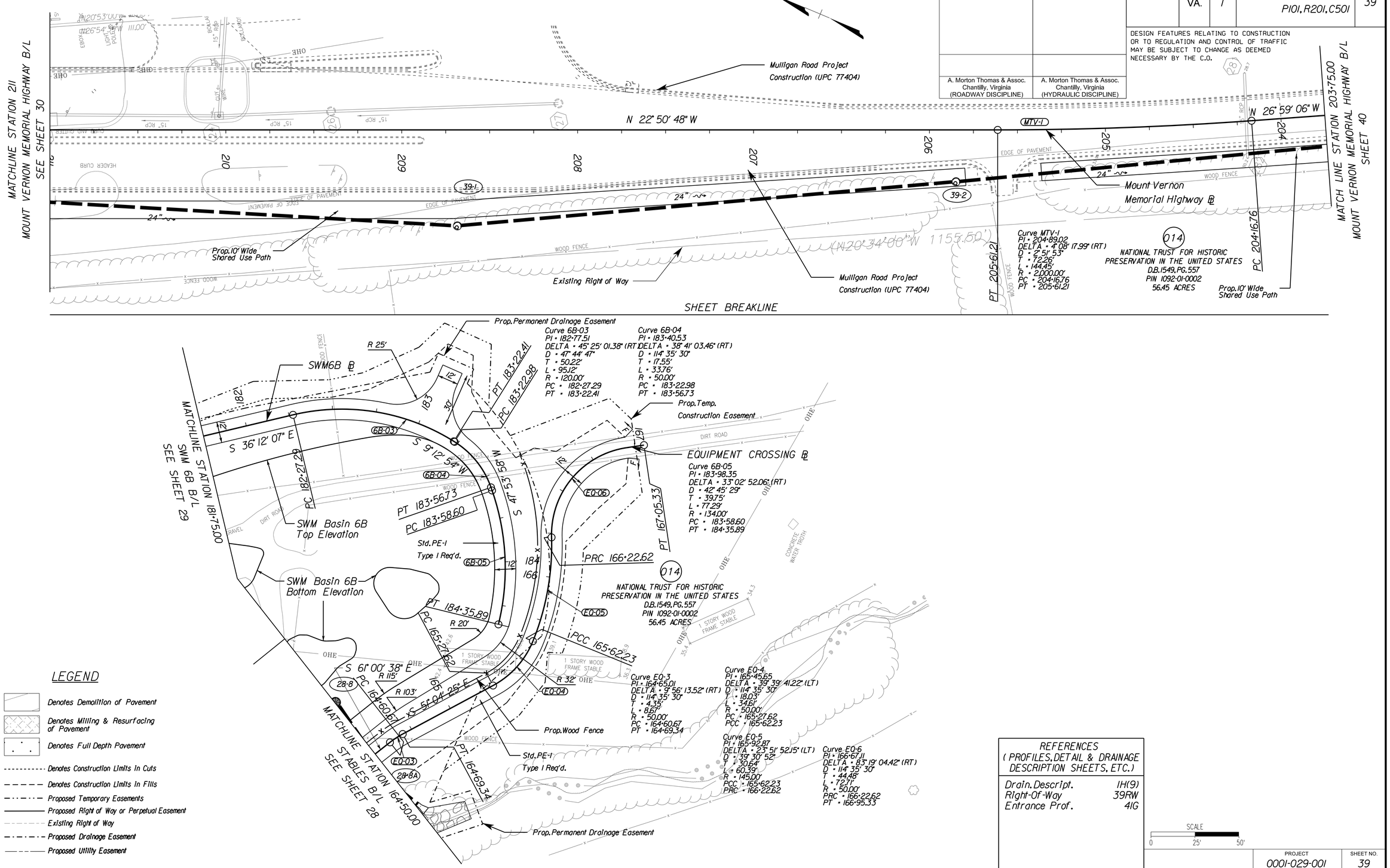
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	39

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

A. Morton Thomas & Assoc. Chantilly, Virginia (ROADWAY DISCIPLINE)

A. Morton Thomas & Assoc. Chantilly, Virginia (HYDRAULIC DISCIPLINE)



REFERENCES
(PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)

Drain. Descript.	1H(9)
Right-Of-Way	39RW
Entrance Prof.	41G

SCALE 0 25' 50'

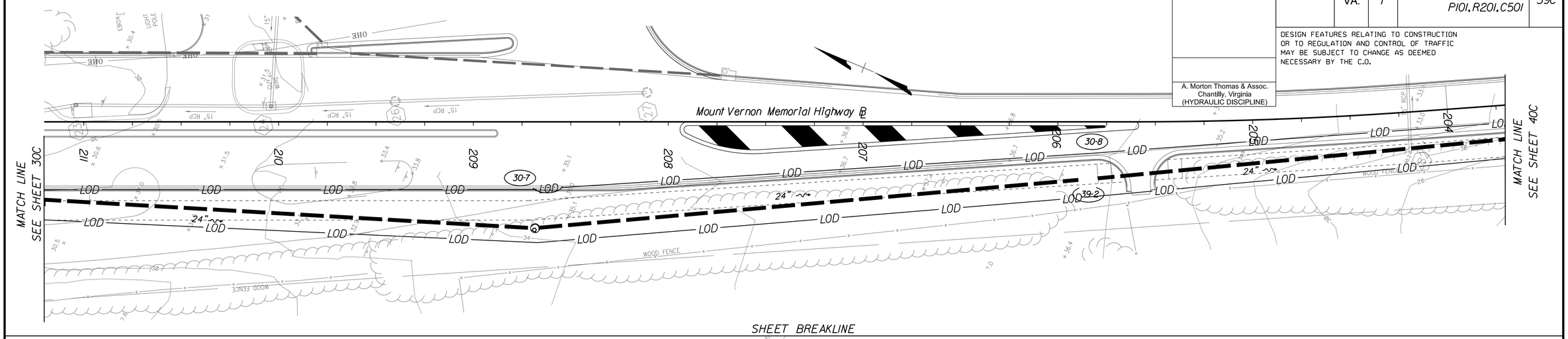
PROJECT	SHEET NO.
0001-029-001	39

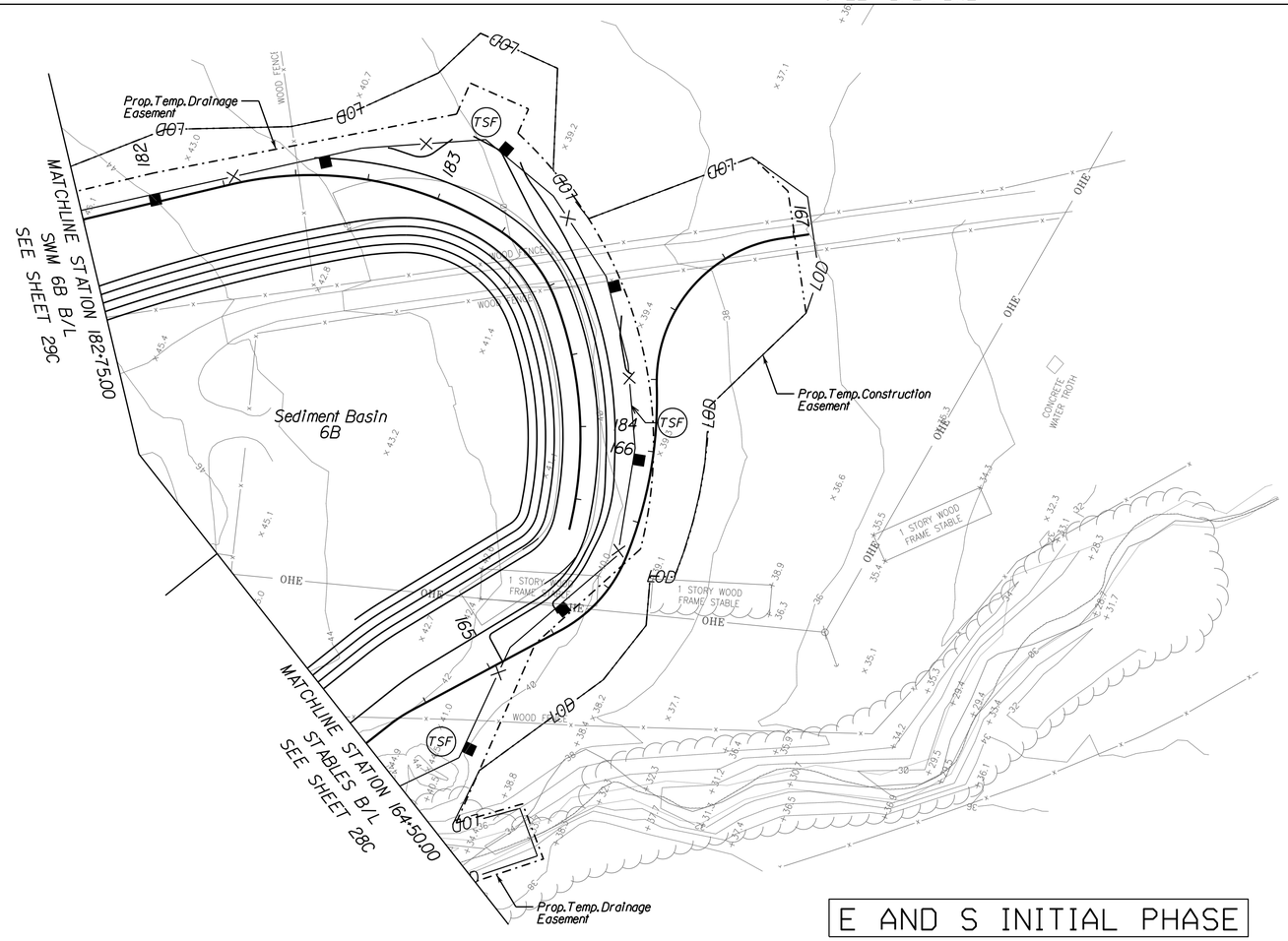
PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY FHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	39C

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

A. Morton Thomas & Assoc.
Chantilly, Virginia
(HYDRAULIC DISCIPLINE)





E-3 The following symbols are used to depict Erosion Control items in the plan assembly:

- EC-2 / EC-3A / EC-3B / EC-3C — Denotes Protective Covering, St'd. EC-2 (See Sheet 1G(1) Denotes Soil Stabilization Mat. St'd. EC-3 Type A, B or C (See Sheet 1G(1)
- TFB — Denotes Temporary Filter Barrier, St'd EC-5
- TSF — Denotes Temporary Silt Fence, St'd EC-5
- SSF — Denotes Super Silt Fence
- TDC — Denotes Temporary Diversion Channel, St'd EC-12
- DD — Denotes Temporary Diversion Dike, St'd EC-9
- PDC — Denotes Permanent Grass Diversion Channel (See Sheet 1G(1)
- LOD — Denotes Limit Of Disturbance
- ST — Denotes Sediment Trap, St'd EC-7
- TC-I — Denotes Turbidity Curtain, Type - Impervious
- TC-P — Denotes Turbidity Curtain, Type - Pervious
- RCD-1 — Denotes Rock Check Dam, Type I; St'd EC-4
- RCD-2 — Denotes Rock Check Dam, Type II; St'd EC-4
- DIST-A — Denotes Inlet Protection, Type A; St'd EC-6
- DIST-B — Denotes Inlet Protection, Type B; St'd EC-6
- EC-11 — Denotes Temporary Construction Entrance
- EC-1 — Denotes Rip Rap Pad
- Denotes Proposed Power Pole (With Or Without Guy Wires) In Future Phase, By Others
- Denotes Orange Construction Fence
- TSD — Denotes Temporary Slope Drain, St'd EC-10

E AND S INITIAL PHASE

SCALE 0 25' 50'

PROJECT	SHEET NO.
0001-029-001	39C

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
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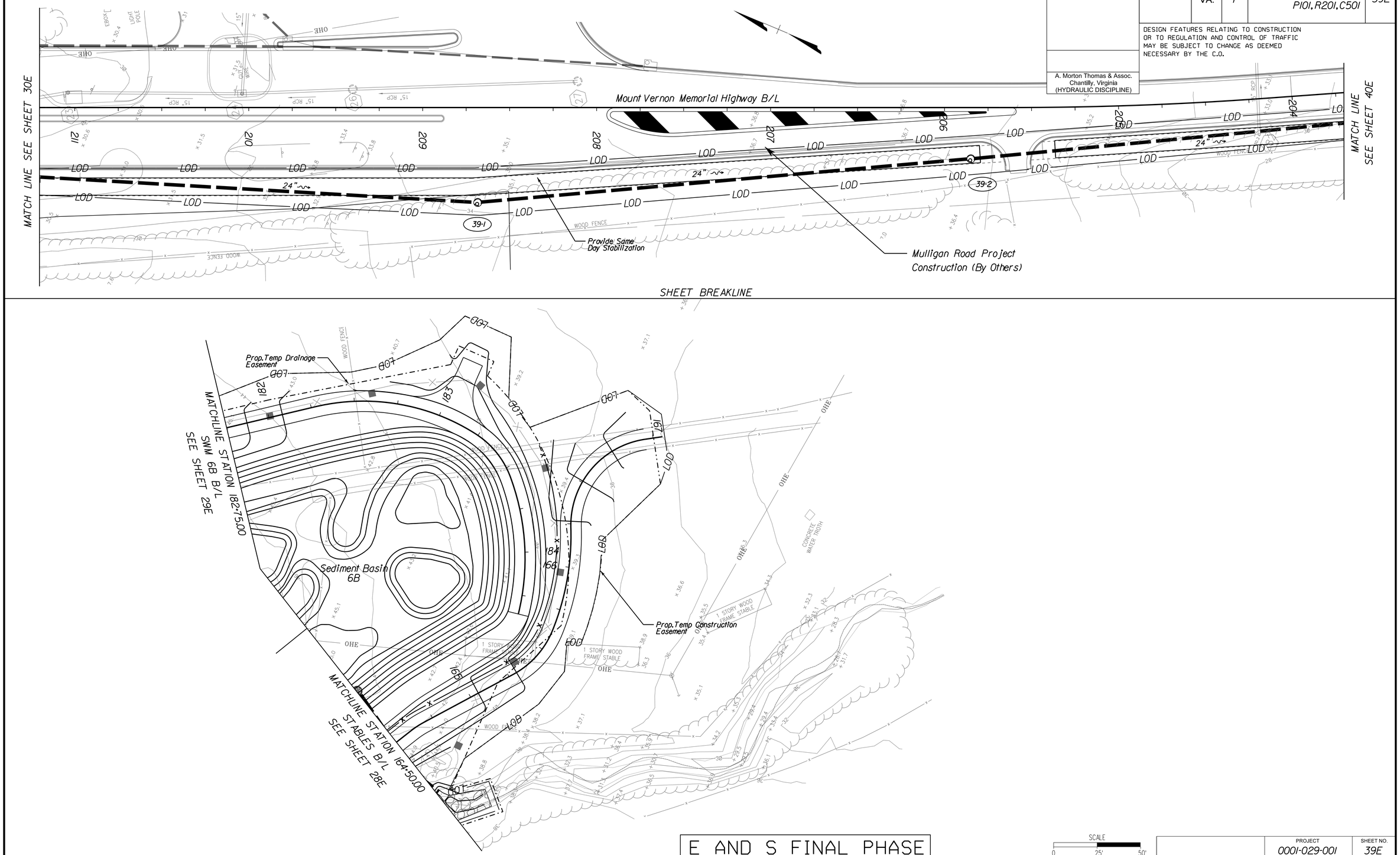
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	39E

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

A. Morton Thomas & Assoc.
Chantilly, Virginia
(HYDRAULIC DISCIPLINE)



E AND S FINAL PHASE

SCALE 0 25' 50'

PROJECT	SHEET NO.
0001-029-001	39E

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
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REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	40

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

A. Morton Thomas & Assoc. Chantilly, Virginia (ROADWAY DISCIPLINE)	A. Morton Thomas & Assoc. Chantilly, Virginia (HYDRAULIC DISCIPLINE)

Curve 6A01
PI = 191+78.16
DELTA = 66° 23' 14.44" (LT)
D = 114° 35' 30"
T = 32.71'
L = 57.93'
R = 50.00'
PC = 191+45.45
PT = 192+03.38

Curve 6A02
PI = 193+21.25
DELTA = 17° 56' 21.17" (RT)
D = 102° 18' 50"
T = 8.84'
L = 17.53'
R = 56.00'
PC = 193+12.41
PT = 193+29.94

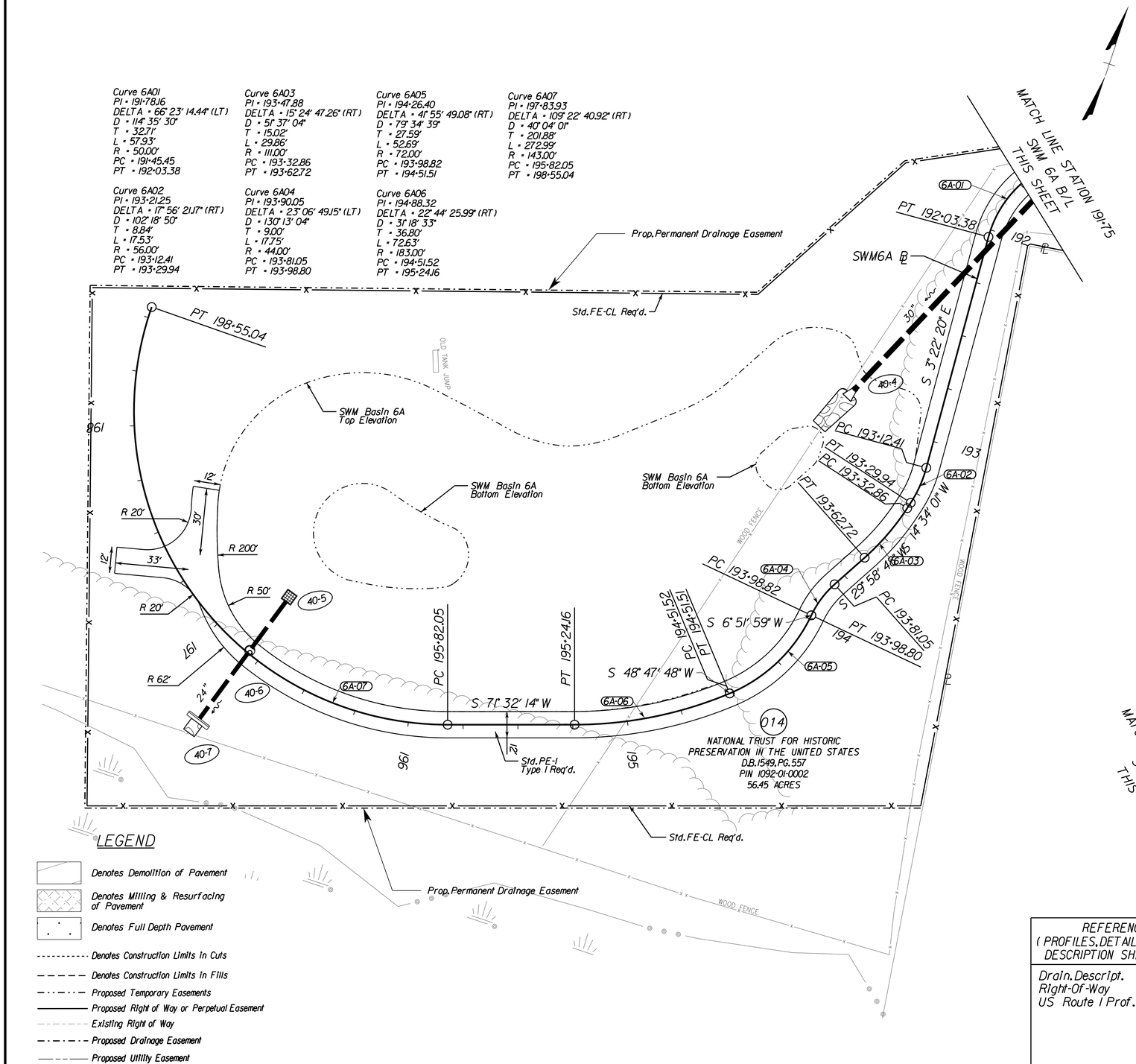
Curve 6A03
PI = 193+47.88
DELTA = 15° 24' 47.26" (RT)
D = 51° 37' 04"
T = 15.02'
L = 29.86'
R = 111.00'
PC = 193+32.86
PT = 193+62.72

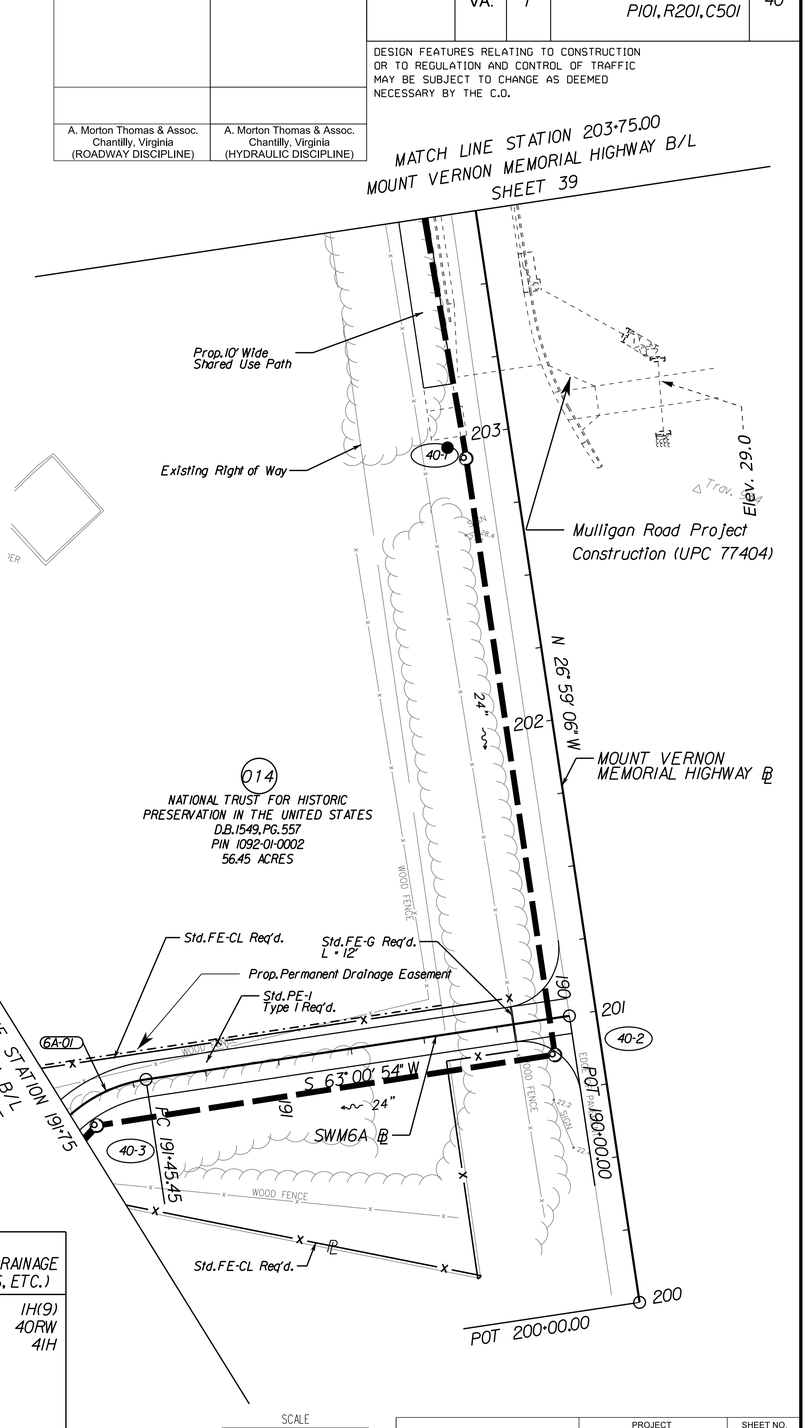
Curve 6A04
PI = 193+90.05
DELTA = 23° 06' 49.15" (LT)
D = 130° 13' 04"
T = 9.00'
L = 17.75'
R = 44.00'
PC = 193+81.05
PT = 193+98.80

Curve 6A05
PI = 194+26.40
DELTA = 41° 55' 49.08" (RT)
D = 79° 34' 39"
T = 27.59'
L = 52.69'
R = 72.00'
PC = 193+98.82
PT = 194+51.51

Curve 6A06
PI = 194+88.32
DELTA = 22° 44' 25.99" (RT)
D = 37° 18' 33"
T = 36.80'
L = 72.63'
R = 183.00'
PC = 194+51.52
PT = 195+24.16

Curve 6A07
PI = 197+83.93
DELTA = 109° 22' 40.92" (RT)
D = 40° 04' 01"
T = 201.88'
L = 272.99'
R = 143.00'
PC = 195+82.05
PT = 198+55.04





LEGEND

- Denotes Demolition of Pavement
- Denotes Milling & Resurfacing of Pavement
- Denotes Full Depth Pavement
- Denotes Construction Limits In Cuts
- Denotes Construction Limits In Fills
- Proposed Temporary Easements
- Proposed Right of Way or Perpetual Easement
- Existing Right of Way
- Proposed Drainage Easement
- Proposed Utility Easement

REFERENCES (PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)	
Drain. Descript.	1H(9)
Right-Of-Way	40RW
US Route 1 Prof.	41H

SCALE 0 25' 50'

PROJECT	SHEET NO.
0001-029-001	40

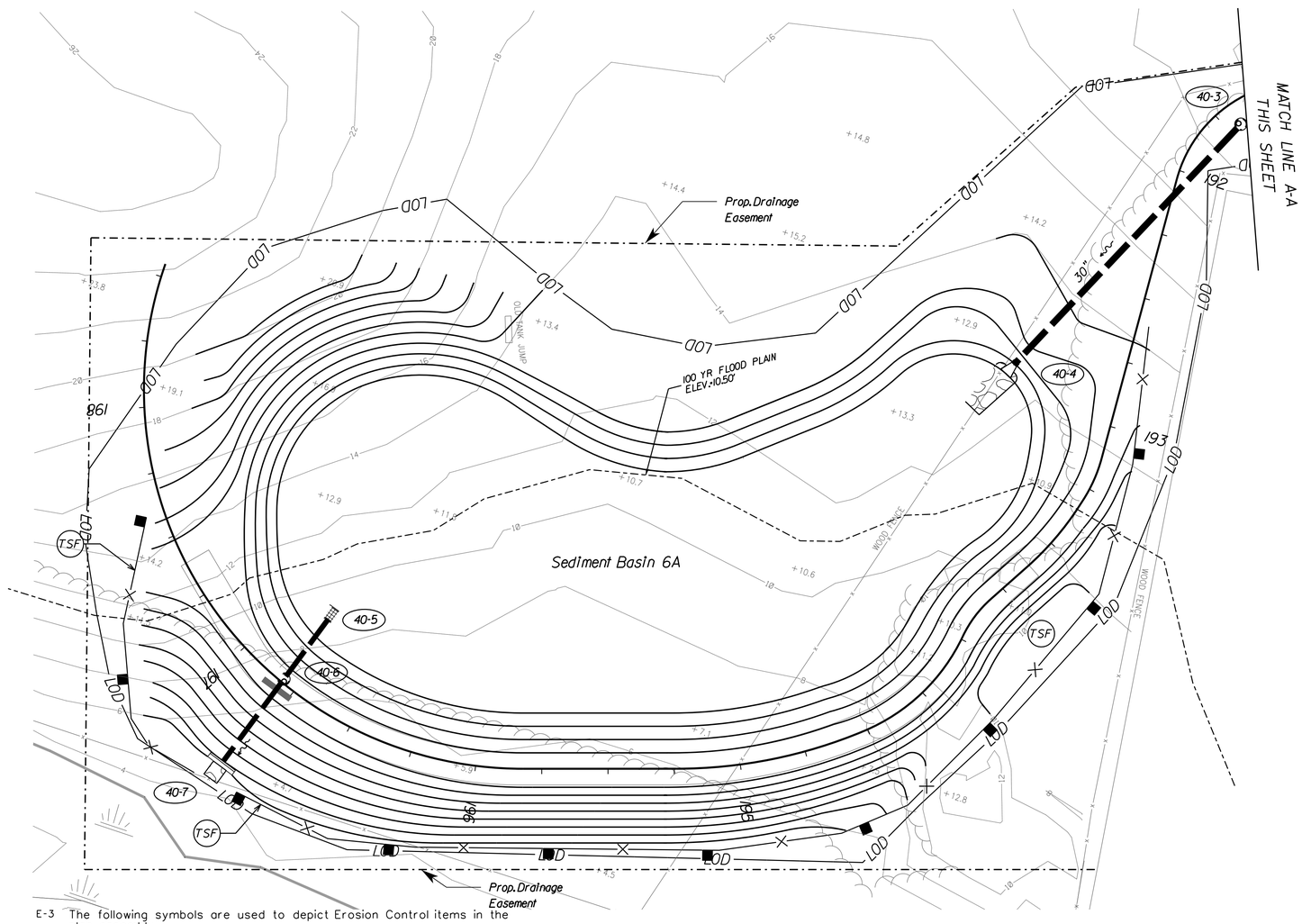
PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

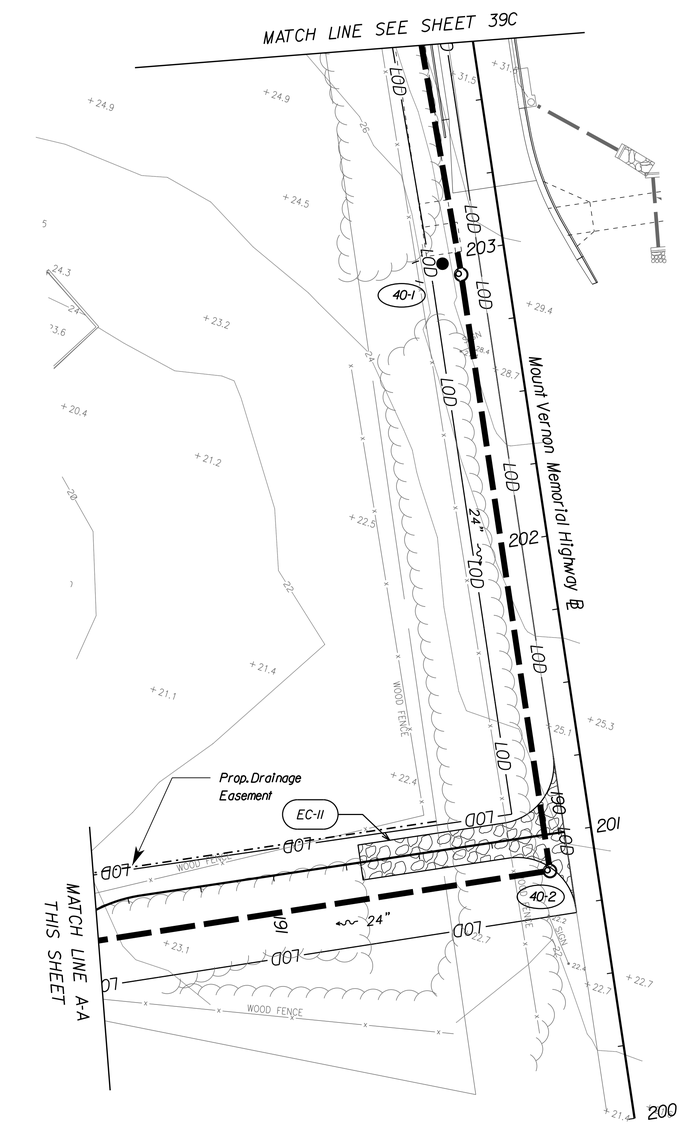
COMMONWEALTH OF VIRGINIA
MATTHEW H. WILLEMS
Lic. No. 0402 036144
PROFESSIONAL ENGINEER

A. Morton Thomas & Assoc.
Chantilly, Virginia
(HYDRAULIC DISCIPLINE)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	40C

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





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- Denotes Orange Construction Fence
- TSD — Denotes Temporary Slope Drain, St'd EC-10

E AND S INITIAL PHASE

SCALE 0 25' 50'

PROJECT	SHEET NO.
0001-029-001	40C

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
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COMMONWEALTH OF VIRGINIA
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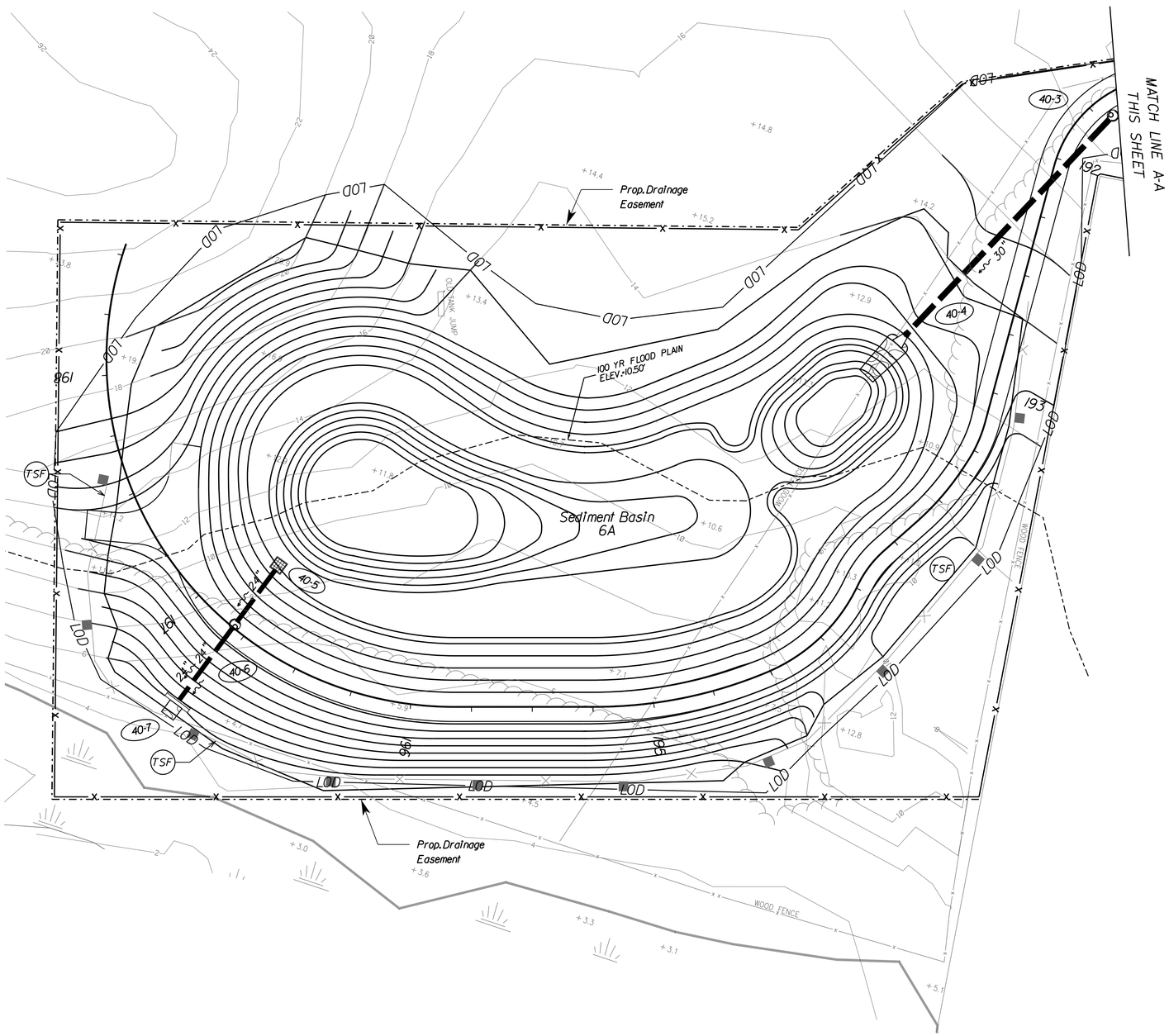
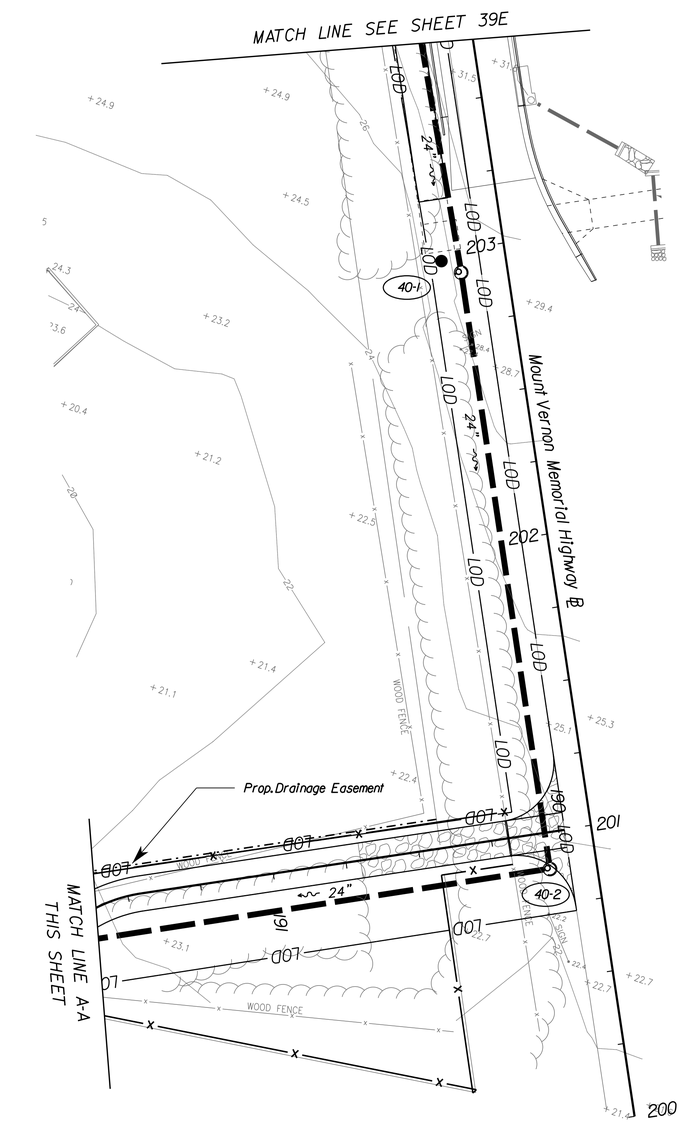
Lic. No. 0402 036144
PROFESSIONAL ENGINEER

A. Morton Thomas & Assoc.
Chantilly, Virginia
(HYDRAULIC DISCIPLINE)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	40E

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





E AND S FINAL PHASE

SCALE 0 25' 50'

PROJECT	SHEET NO.
0001-029-001	40E

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
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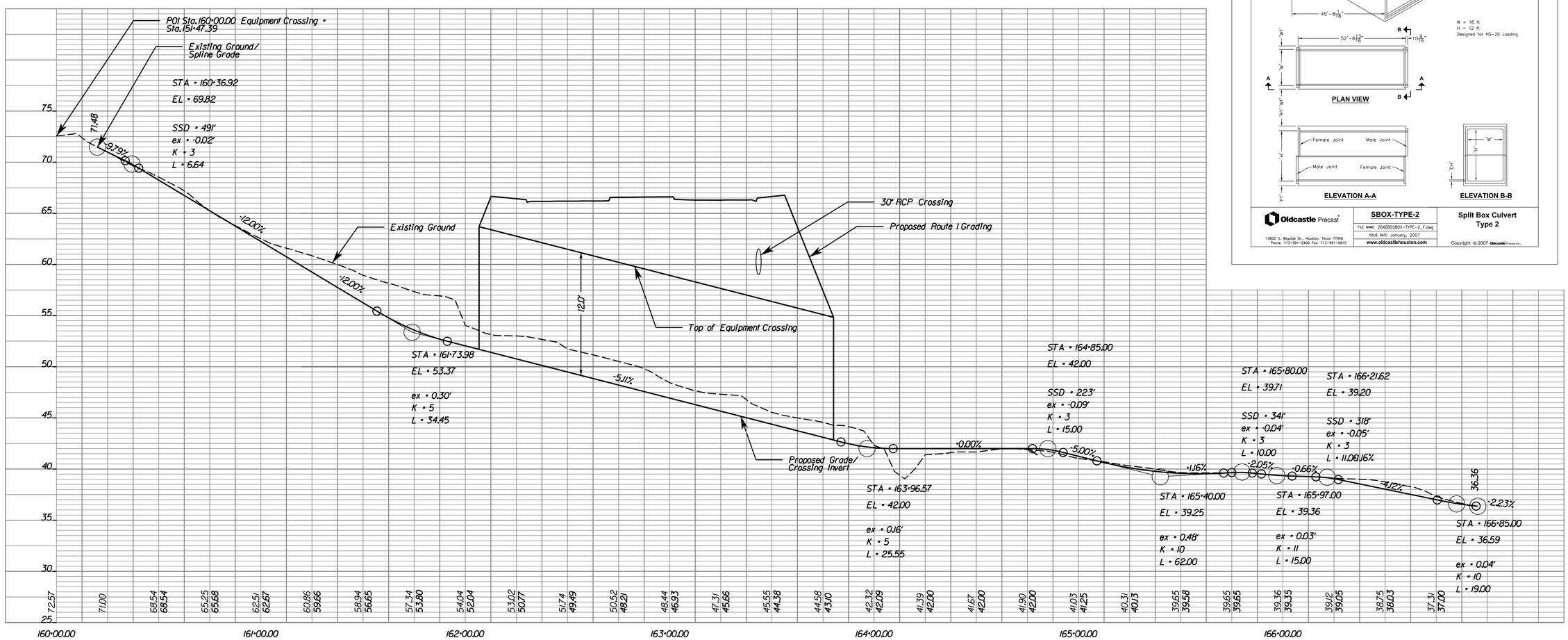
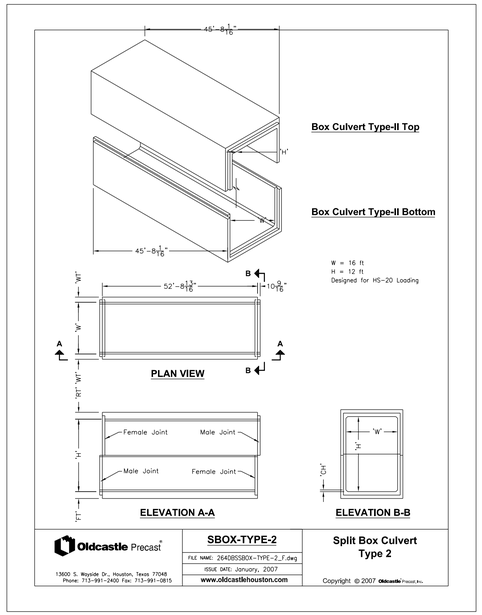
A. Morton Thomas & Assoc.
Chantilly, Virginia
(ROADWAY DISCIPLINE)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	41D

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

Note:
Equipment Crossing structure and headwalls to be designed by vendor and submitted as shop drawings.
Wingwalls to receive formliner finish which will be coordinated with EFLHD, VDOT and the adjacent property owner.





EQUIPMENT CROSSING

SCALE H=25', V=5'
0 25' 50'
0 1' 2'

PROJECT	SHEET NO.
0001-029-001	41D

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
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A. Morton Thomas & Assoc.
Chantilly, Virginia
(ROADWAY DISCIPLINE)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	41E

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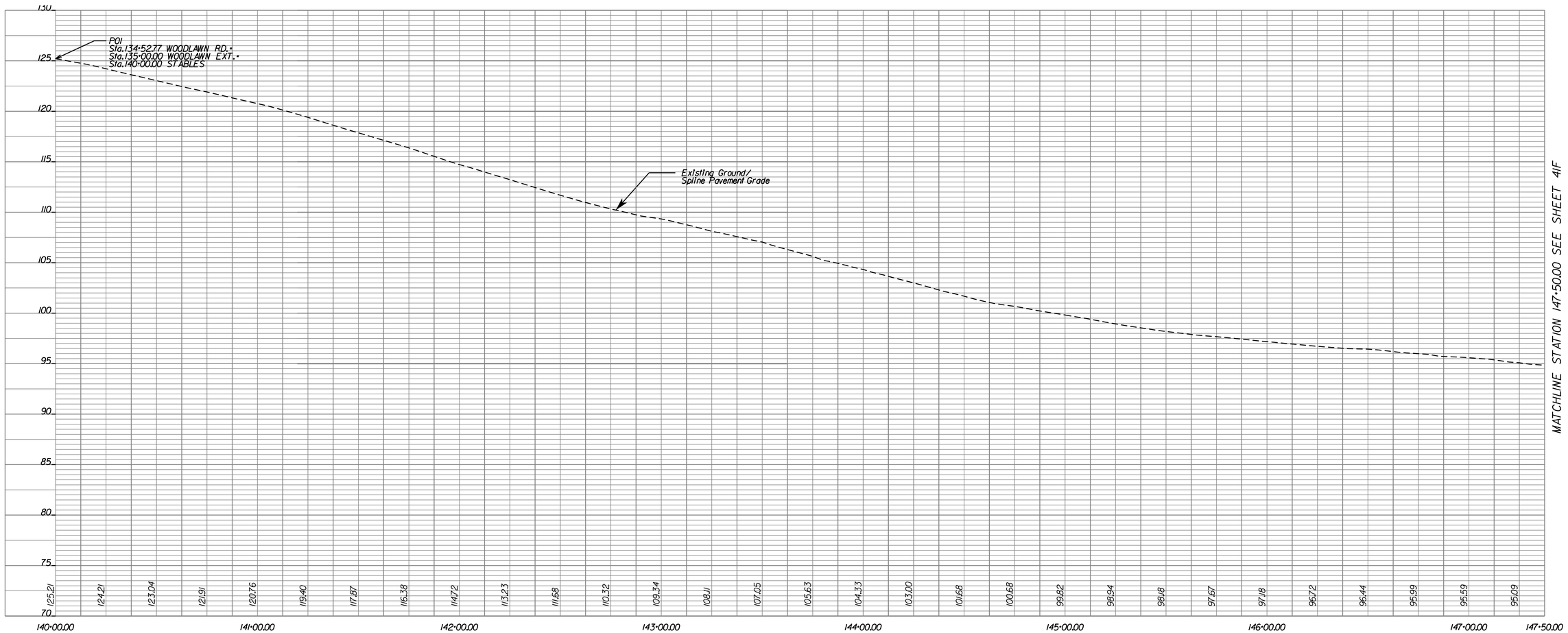


STABLES DRIVEWAY

SCALE H=25', V=5'
0 25' 50'
0 1 2"

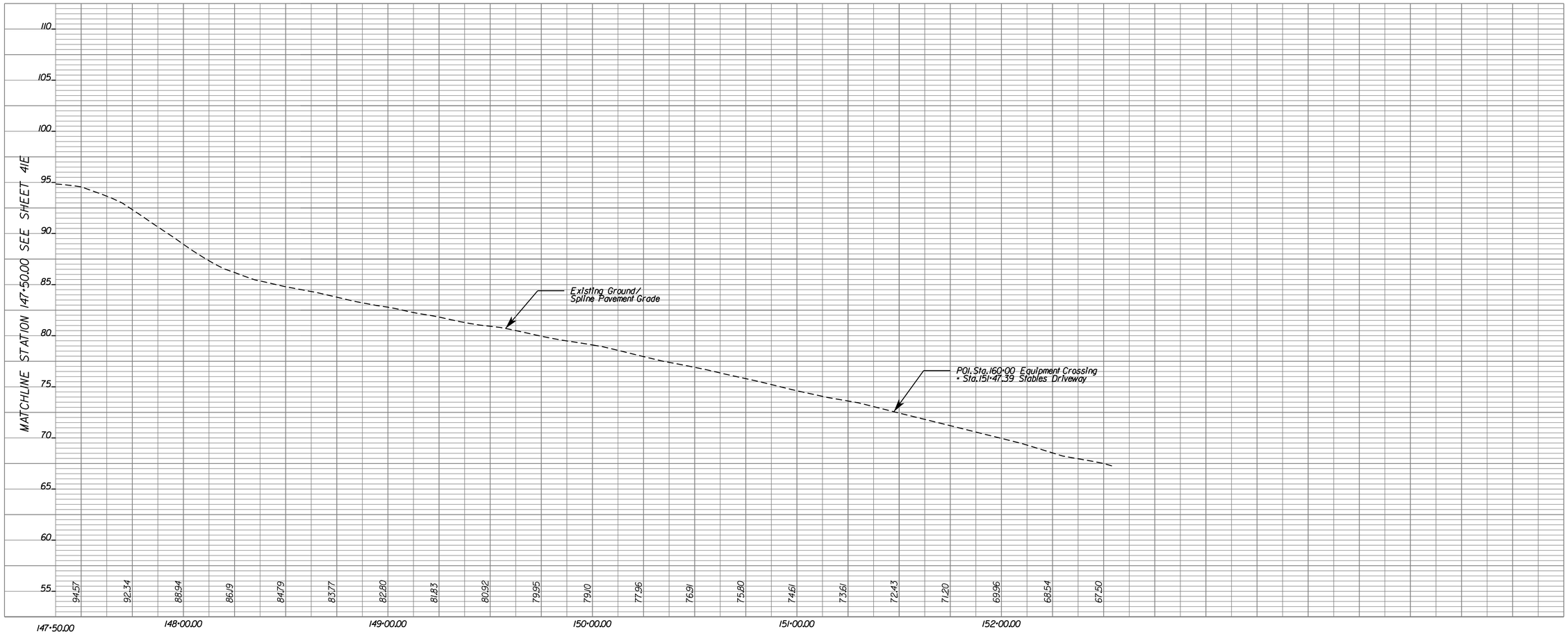
PROJECT	SHEET NO.
0001-029-001	41E

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

A. Morton Thomas & Assoc.
Chantilly, Virginia
(ROADWAY DISCIPLINE)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	41F

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



STABLES DRIVEWAY

SCALE H=25', V=5'
0 25' 50'
0 1' 2'

PROJECT	SHEET NO.
0001-029-001	41F

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
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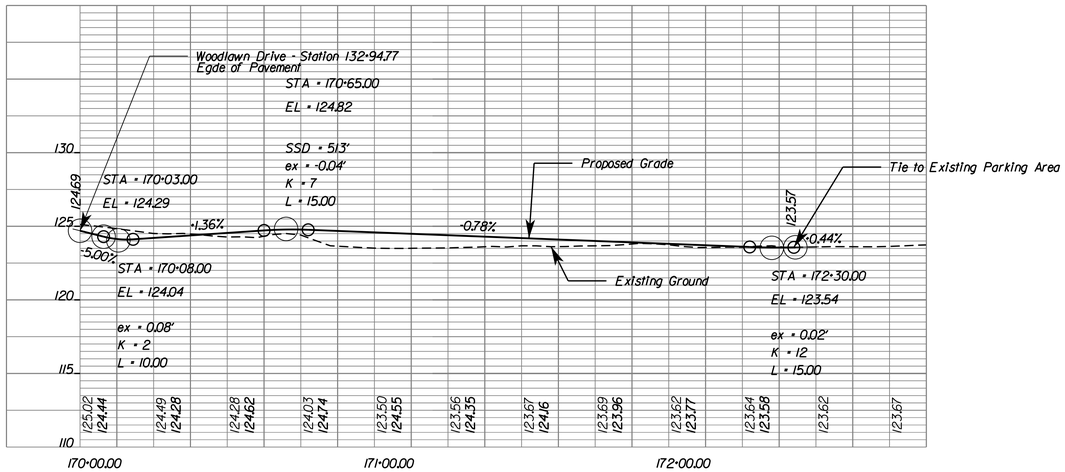
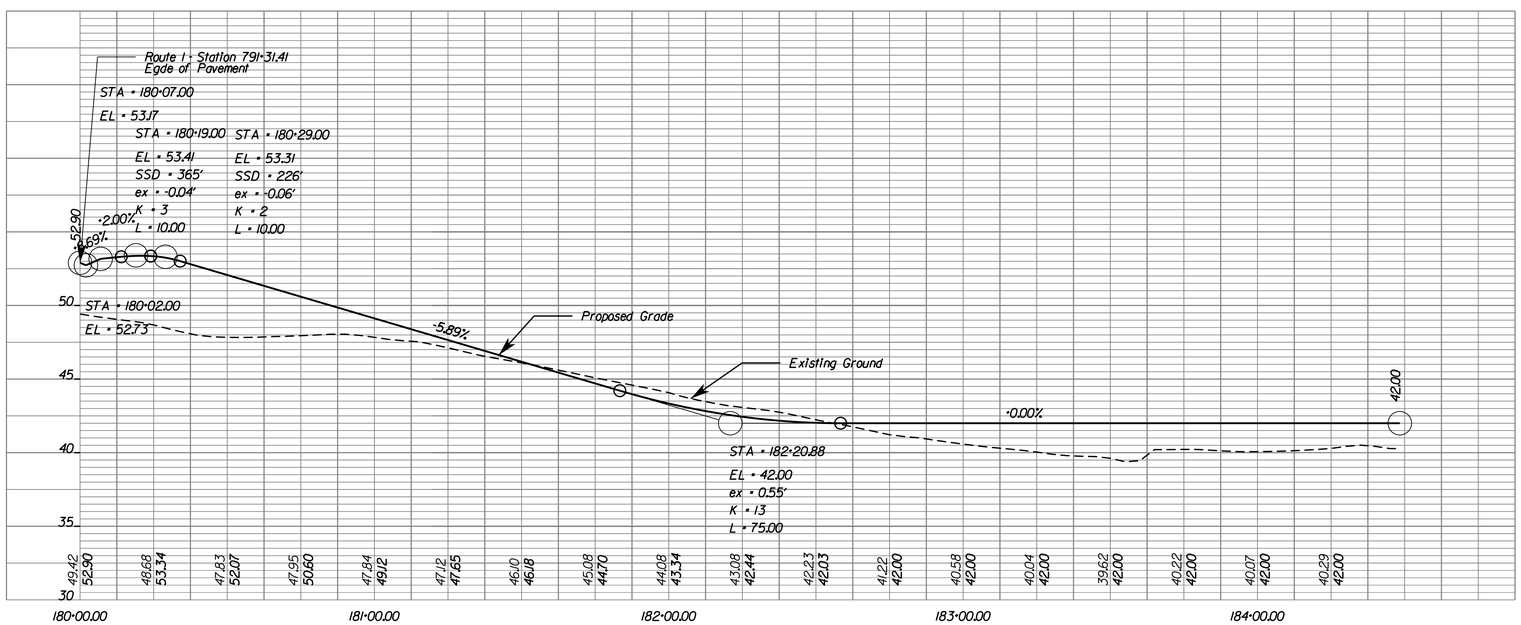
A. Morton Thomas & Assoc.
Chantilly, Virginia
(ROADWAY DISCIPLINE)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	41G

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



WOODLAWN BAPTIST CHURCH DRIVEWAY



POND 6B ACCESS

SCALE H=25', V=5'
0 25' 50'
0 1' 2'

PROJECT	SHEET NO.
0001-029-001	41G

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY FHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
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Chantilly, Virginia
(ROADWAY DISCIPLINE)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	41H

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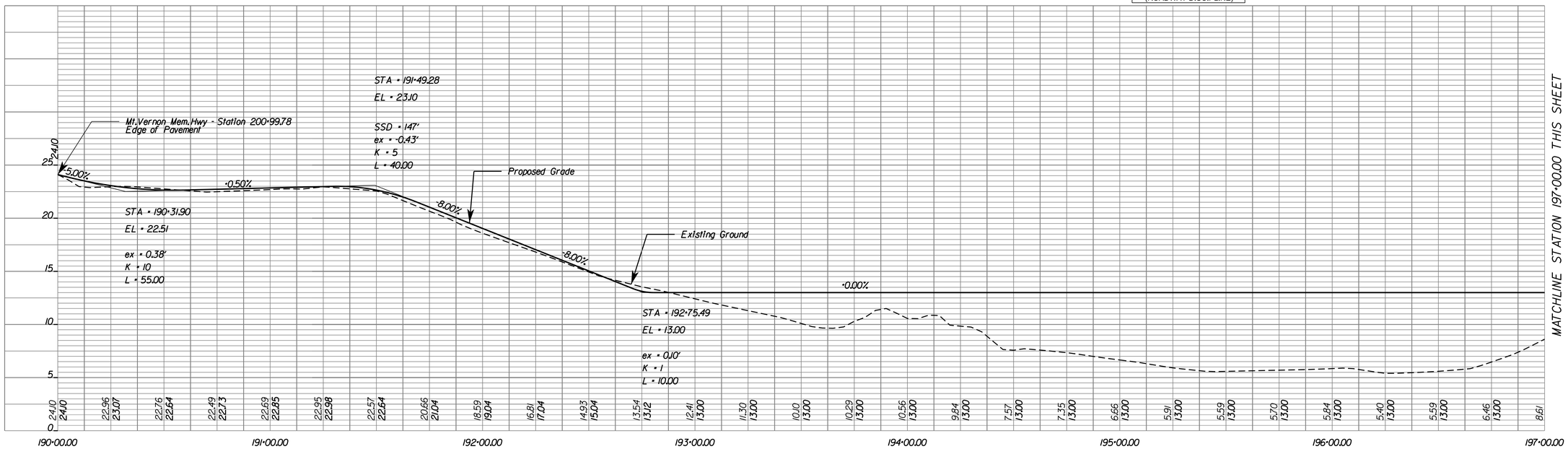
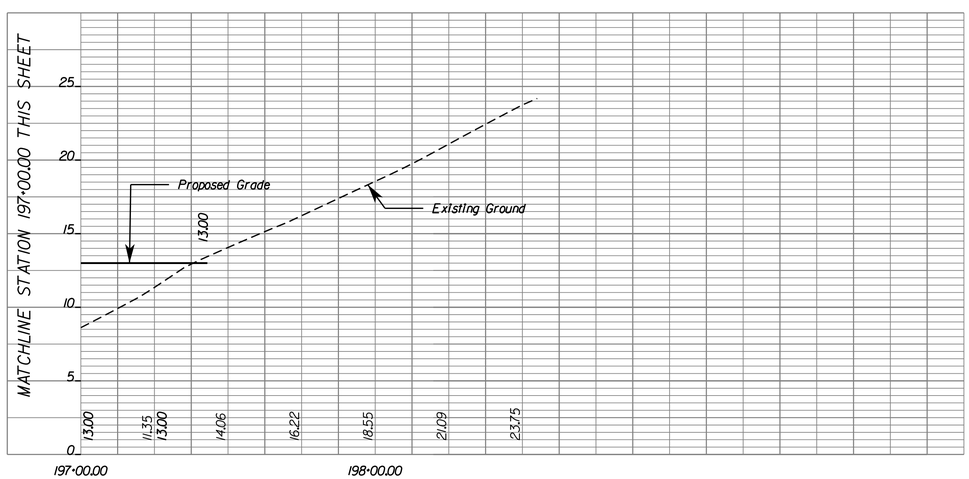


POND 6A ACCESS



POND 6A ACCESS

SCALE H=25', V=5'
0 25' 50'
0 1' 2'

PROJECT	SHEET NO.
0001-029-001	41H

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
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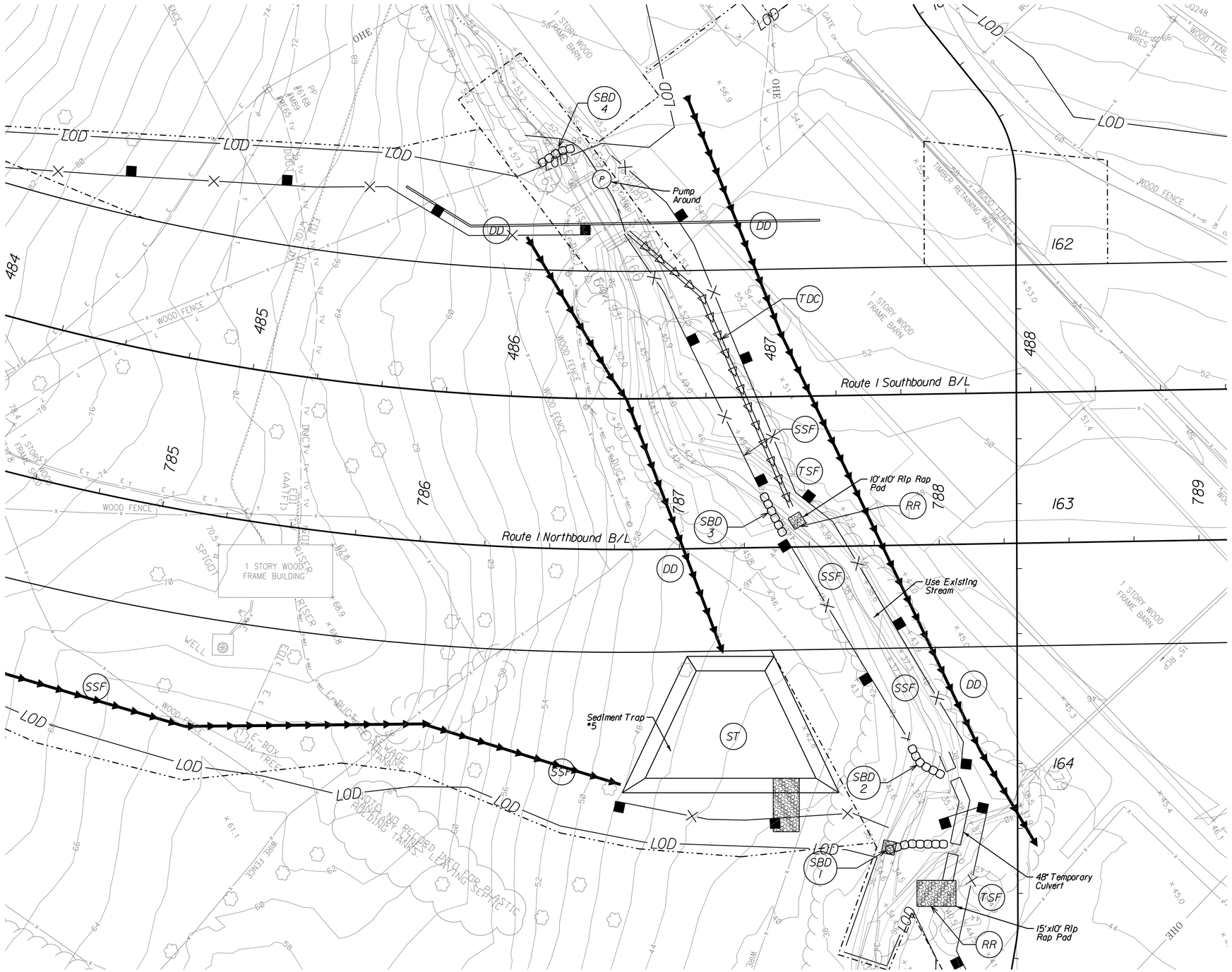
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	43(6)

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



Phase I/II (Initial Phase)

CULVERT INFORMATION

PHASE I:

1. PRIOR TO BEGINNING CULVERT CONSTRUCTION, INSTALL EROSION AND SEDIMENT CONTROLS AS SHOWN ON INITIAL PHASE PLAN (PERIMETER SILT FENCE, STABILIZED CONSTRUCTION ENTRANCE, EARTH DIKES, SILT FENCE AROUND ALL WATERWAYS).

2. ONCE WORK AREA HAS BEEN CLEARED AND GRUBBED, INSTALL SAND BAG DAM #1 TO #2 AND TEMPORARY 48" CULVERT FROM DOWNSTREAM TO UPSTREAM. PLACE SSF.

3. INSTALL TEMPORARY DIVERSION CHANNEL (TDC) FROM UPSTREAM TO DOWNSTREAM. INSTALL SAND BAG DAM #3 AND DIRECT FLOW FROM EXISTING TRIPLE CULVERT TO TEMPORARY DIVERSION CHANNEL.

4. DISCHARGE FROM EXISTING TRIPLE CULVERT MAY BE DIRECTED TO COMPLETED TDC UNTIL SUCH TIME AS NEW 60" RCP CONSTRUCTION REQUIRES REMOVAL OF EXISTING BRIDGE.

5. PLACE SAND BAG DAM #4 AND PUMP AROUND AFTER APPROXIMATELY 225' OF CULVERT IS INSTALLED. COMPLETE 60" RCP AND HEADWALL.

SCALE
0 20' 40'

PROJECT	SHEET NO.
0001-029-001	43(6)

9/29/2014
1:35:22 PM

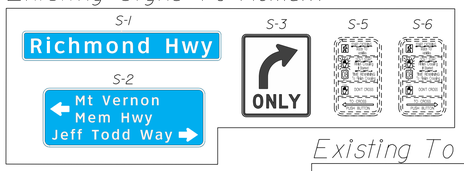
PROJECT MANAGER LAURA MEHIEL, A. MORTON THOMAS & ASSOC.
SURVEYED BY, DATE FHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY SABRA,WANG & ASSOCIATES,JYOTHI PALADUGU,(703) 942-8990
DESIGN BY SABRA,WANG & ASSOCIATES,MICHAEL MONROE,(703) 942-8990

REVISED			STATE	STATE		SHEET NO.
No.	Description	Date		ROUTE	PROJECT	
0	AFC	09/22/14	VA.	1	0001-029-001	44(10A)

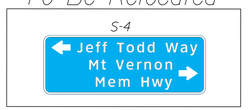
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE CONTRACTING OFFICER

Sabra, Wang & Associates, Inc.
Fairfax, Virginia
TRAFFIC ENGINEER

Existing Signs To Remain



Existing Signs To Be Relocated



Existing To Be Relocated

Existing To Remain

General Signal Notes

1. CONTROLLER SHALL REST ON PHASE 2-6.
2. THE ORIGINAL CLEARANCE INTERVAL TIMINGS SHALL BE USED AT THIS INTERSECTION DURING MOT PHASE 2A.
3. ANY EXISTING PAVEMENT MARKINGS WHICH CONFLICT WITH PROPOSED PAVEMENT MARKINGS SHALL BE COMPLETELY ERADICATED.
4. PHASE 3,4,7,& 8 LOOPS SHALL BE MAINTAINED FOR THE ULTIMATE SIGNAL CONFIGURATION.CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGE TO THE EXISTING PHASE 3,4,7,8 LOOPS DURING CONSTRUCTION.
5. CONTRACTOR SHALL PROVIDE ENOUGH SLACK FOR FUTURE RELOCATION OF SIGNALS ALONG MAST ARM FOR MOT PHASES 2B,2C AND 2D.

Loading Diagram

Clearance Chart

R / W	CLEARANCE 1	CLEARANCE 2	NEXT	PHASE
G	Y	R	R	
G	G	G	G	
←G	←Y	←R	←R	
←G	←G	←G	←G	
R G←	R G←	R G←	R G←	
R G←	R Y←	R	R	
G G←	R Y←	R	G	
G	Y	R	R G←	
W	W	W	W	
W	FDW	DW	DW	

POSTED SPEED LIMITS

RICHMOND HIGHWAY	50 MPH
JEFF TODD WAY	40 MPH
MT.VERNON MEM.HWY	45 MPH

Pavement Marking Legend

- A Type B,Class VI,White 24" Width
- B Type B,Class VI,White,4" Width,2' Long,4' Space
- C Type B,Class VI,White,6" Width
- D Elongated Turn Arrow
- E Eradicate Pavement Marking
- F Type B,Class VI,White,Word Message "ONLY"

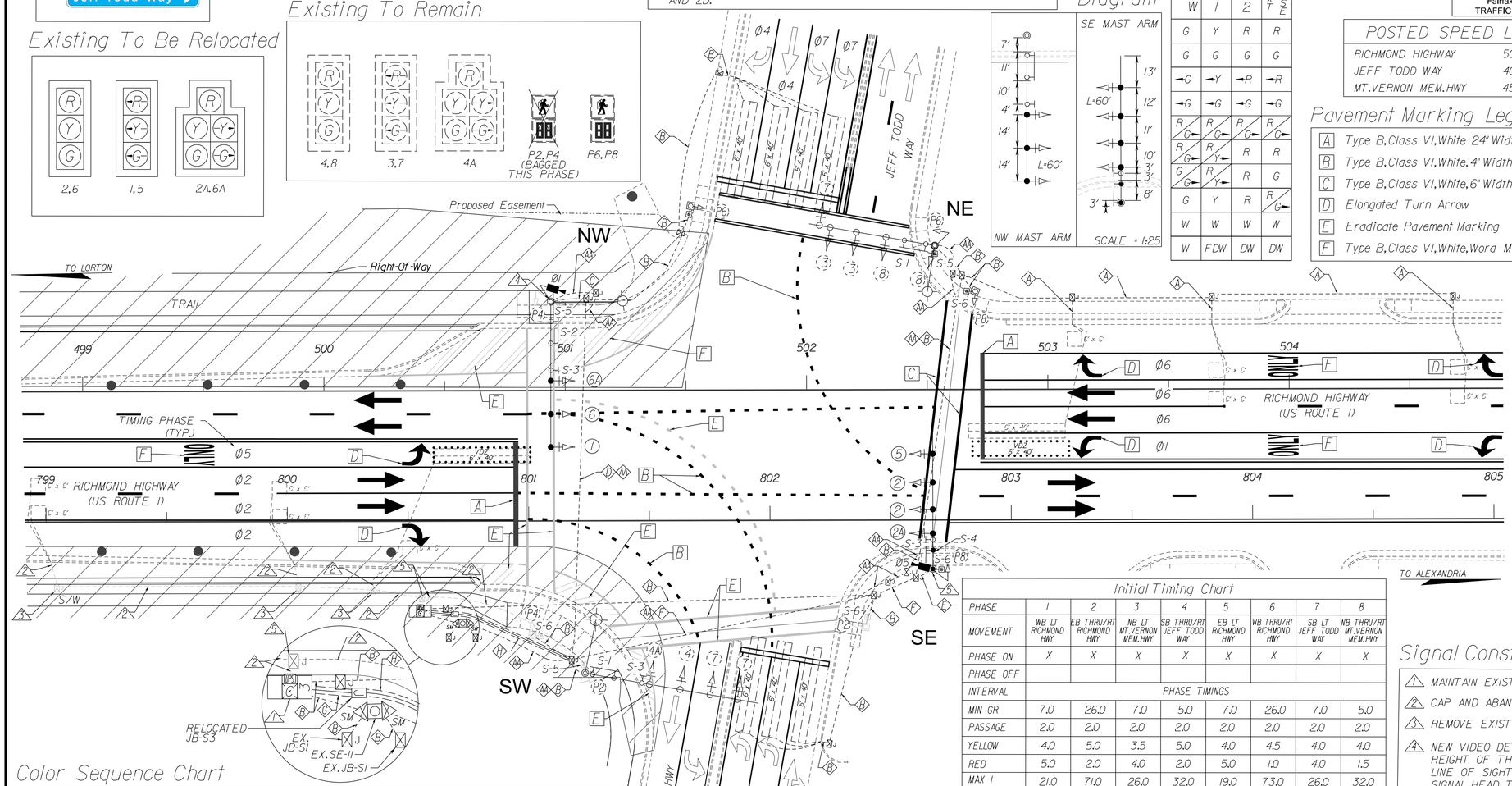
Conduit and Cable Legend

- (A) CAP AND MAINTAIN EXISTING CONDUIT
- (B) USE EXISTING CONDUIT
  USE EXISTING CABLE
- (C) USE EXISTING CONDUIT
  3 - #4/7C FOR HEADS 1,6,6A
  1 - 7/C SIAMESE FOR VIDEO DETECTION
  1 - #6 EGC
- (D) USE EXISTING CONDUIT
  USE EXISTING CABLE FOR LOOP DETECTORS
  USE EXISTING CABLE FOR PED EQUIPMENT
  3 - #4/7C FOR HEADS 1,6,6A
  1 - 7/C SIAMESE FOR VIDEO DETECTION
  1 - #6 EGC
- (E) USE EXISTING CONDUIT
  USE EXISTING CABLES FOR PED EQUIPMENT
  3 - #4/7C FOR HEADS 2,2A,5
  1 - 7/C SIAMESE FOR VIDEO DETECTION
  1 - #6 EGC
- (F) USE EXISTING CONDUIT
  USE EXISTING CABLES FOR PED EQUIPMENT
  USE EXISTING CABLES FOR HEADS 3,7,8
  USE EXISTING CABLES FOR LOOP DETECTION
  3 - #4/7C FOR HEADS 2,2A,5
  1 - 7/C SIAMESE FOR VIDEO DETECTION
  1 - #6 EGC
- (G) 3 - 4" CONDUIT
  1 - 4" CONDUIT (SPARE)
  1 - 3" CONDUIT (SPARE)
  USE EXISTING CABLES FOR PED EQUIPMENT
  USE EXISTING CABLES FOR HEADS 3,4,7,8
  USE EXISTING CABLES FOR LOOP DETECTION
  6 - #4/7C FOR HEADS 1,2,2A,5,6,6A
  2 - 7/C SIAMESE FOR VIDEO DETECTION
  1 - #6 EGC
- (H) 3 - 4" CONDUIT
  USE EXISTING CABLES FOR PED EQUIPMENT
  USE EXISTING CABLES FOR HEADS 3,4,7,8
  USE EXISTING CABLES FOR LOOP DETECTION
  6 - #4/7C FOR HEADS 1,2,2A,5,6,6A
  2 - 7/C SIAMESE FOR VIDEO DETECTION
  1 - #6 EGC

Lighting Cables and Conduit Legend

- (A) USE EXISTING CONDUIT
  USE EXISTING CABLE

EGC - EQUIPMENT GROUNDING CONDUCTOR
(M) - METAL CONDUIT



Initial Timing Chart

PHASE	1	2	3	4	5	6	7	8
MOVEMENT	WB LT RICHMOND HWY	EB THRU/RT RICHMOND HWY	NB LT MT.VERNON MEM.HWY	SB THRU/RT JEFF TODD WAY	EB LT RICHMOND HWY	WB THRU/RT RICHMOND HWY	SB LT JEFF TODD WAY	NB THRU/RT MT.VERNON MEM.HWY
PHASE ON	X	X	X	X	X	X	X	X
PHASE OFF								
INTERVAL	PHASE TIMINGS							
MIN GR	7.0	26.0	7.0	5.0	7.0	26.0	7.0	5.0
PASSAGE	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
YELLOW	4.0	5.0	3.5	5.0	4.0	4.5	4.0	4.0
RED	5.0	2.0	4.0	2.0	5.0	1.0	4.0	1.5
MAX 1	21.0	71.0	26.0	32.0	19.0	73.0	26.0	32.0
MAX 2								
MIN GAP	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
TIME BEFORE REDUCTION	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TIME TO REDUCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PED WALK	0.0	0.0	0.0	0.0	0.0	7.0	0.0	7.0
PED CLEARANCE	0.0	0.0	0.0	0.0	0.0	19.0	0.0	24.0
MODE	NON-LOCK	MIN RECALL	NON-LOCK	NON-LOCK	NON-LOCK	MIN RECALL	NON-LOCK	NON-LOCK

Signal Construction Notes

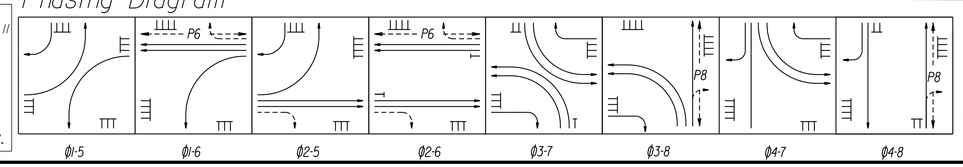
1. MAINTAIN EXISTING CF-3 CABINET AND CONTROLLER.
2. CAP AND ABANDON EXISTING CONDUIT.
3. REMOVE EXISTING JUNCTION BOX 12 INCHES BELOW GRADE AND BACKFILL.
4. NEW VIDEO DETECTION CAMERA SHALL BE INSTALLED ON THE EXISTING UPRIGHT.THE HEIGHT OF THE NEW VIDEO DETECTION CAMERA SHALL BE ADJUSTED TO ENSURE A LINE OF SIGHT TO PHASE (1) VIDEO DETECTION ZONE.RELOCATE EXISTING PHASE (1) SIGNAL HEAD TO ALIGN WITH THE WB LEFT TURN LANE.RELOCATE EXISTING PHASE (6) AND (6A) SIGNAL HEADS TO ALIGN WITH THE WB THROUGH LANES.
5. NEW VIDEO DETECTION CAMERA SHALL BE INSTALLED ON THE EXISTING UPRIGHT.THE HEIGHT OF THE NEW VIDEO DETECTION CAMERA SHALL BE ADJUSTED TO ENSURE A LINE OF SIGHT TO PHASE (5) VIDEO DETECTION ZONE.RELOCATE EXISTING PHASE (5) SIGNAL HEAD TO ALIGN WITH EB LEFT TURN LANE.RELOCATE EXISTING PHASE (2) AND (2A) SIGNAL HEADS TO ALIGN WITH THE EB THROUGH LANES.
6. RELOCATE EXISTING JB-S3.REROUTE CABLES INTO PROPOSED CONDUIT AS SHOWN PER PLAN.LOCATON OF JB-S3 IS DIAGRAMATIC AND SHOULD BE PLACED IN A POSITION THAT WOULD ALLOW FOR A FEASIBLE BEND FROM THE EXISTING CONDUIT EXITING THE CF-3 FOUNDATION TO THE RELOCATED JB-S3.

Color Sequence Chart

SIGNAL	PHASES 1	2	3	4	5	6	7	8	COMBINATIONS 1-5	1-6	2-5	2-6	3-7	3-8	4-7	4-8	FLASH
1	←G								←G	←G							←R
2		G									G	G					Y
2A		G	R/G-								G	G	R G-	R G-			Y
3			←G										←G	←G			←R
4				G											G	G	R
4A				G	R/G-				R G-		R G-				G	G	R
5					←G				←G		←G						←R
6						G				G		G					Y
6A						G	R/G-			G		G	R G-		R G-		Y
7							←G						←G		←G		←R
8								G						G		G	R
P6	DW	DW	DW	DW	DW	W	DW	DW	DW	W	DW	W	DW	DW	DW	DW	BLANK
P8	DW	DW	DW	DW	DW	DW	DW	W	DW	DW	DW	DW	DW	W	DW	W	BLANK

NOTE:
PER THE MULLIGAN ROAD - PHASE II TRAFFIC SIGNAL PLAN,THE SIGNAL POLE,ARM,AND FOUNDATIONS HAVE BEEN DESIGNED TO ACCOMMODATE AN ADDITIONAL 5-SECTION SIGNAL HEAD FOUR FEET FROM THE TIP OF THE ARM AND AN ADDITIONAL MUTCD R10-12 (30" X 36") SIGN ONE FOOT FROM THE TIP OF THE ARM.

Phasing Diagram



RICHMOND HIGHWAY (US ROUTE 1)
& JEFF TODD WAY &
MT.VERNON MEMORIAL HIGHWAY
TRAFFIC SIGNAL PLAN - MOT PHASE 2A

SCALE	PROJECT	SHEET NO.
0 25' 50'	0001-029-001	44(10A)

9/29/2014
1:17:20 PM

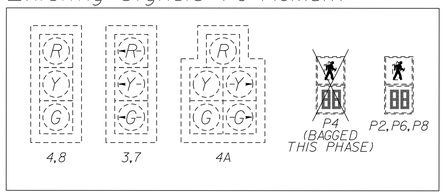
PROJECT MANAGER LAURA MEHIEL, A. MORTON THOMAS & ASSOC.
SURVEYED BY, DATE FHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY SABRA,WANG & ASSOCIATES,JYOTHI PALADUGU,(703) 942-8990
DESIGN BY SABRA,WANG & ASSOCIATES,MICHAEL MONROE,(703) 942-8990

REVISED			STATE	STATE		SHEET NO.
No.	Description	Date		ROUTE	PROJECT	
0	AFC	09/22/14	VA.	1	0001-029-001	44(10B)

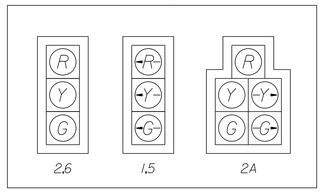
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE CONTRACTING OFFICER

Sabra, Wang & Associates, Inc.
Fairfax, Virginia
TRAFFIC ENGINEER

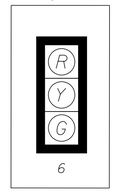
Existing Signals To Remain



Existing Signals To Be Relocated

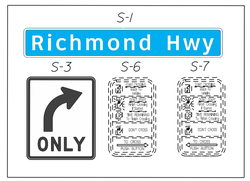


Proposed Signal

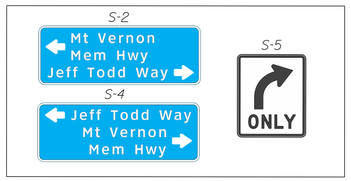


ALL SIGNAL HEADS SHALL BE 12" LED WITH POLYCARBONATE BACKPLATES

Existing Signs To Remain



Existing Signs To Be Relocated



POSTED SPEED LIMITS

RICHMOND HIGHWAY	50 MPH
JEFF TODD WAY	40 MPH
MT.VERNON MEM.HWY	45 MPH

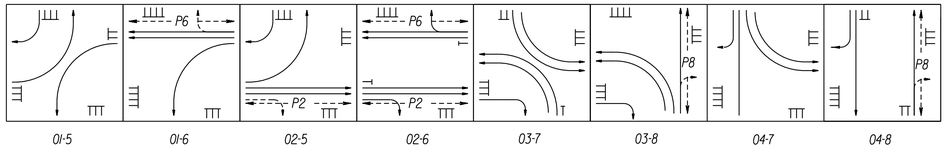
General Signal Notes

1. CONTROLLER SHALL REST ON PHASE 2-6.
2. THE ORIGINAL CLEARANCE INTERVAL TIMINGS SHALL BE USED AT THIS INTERSECTION DURING MOT PHASE 2B.
3. ANY EXISTING PAVEMENT MARKINGS WHICH CONFLICT WITH PROPOSED PAVEMENT MARKINGS SHALL BE COMPLETELY ERADICATED.
4. UTILIZE ALL EXISTING CONDUIT AND CABLES.

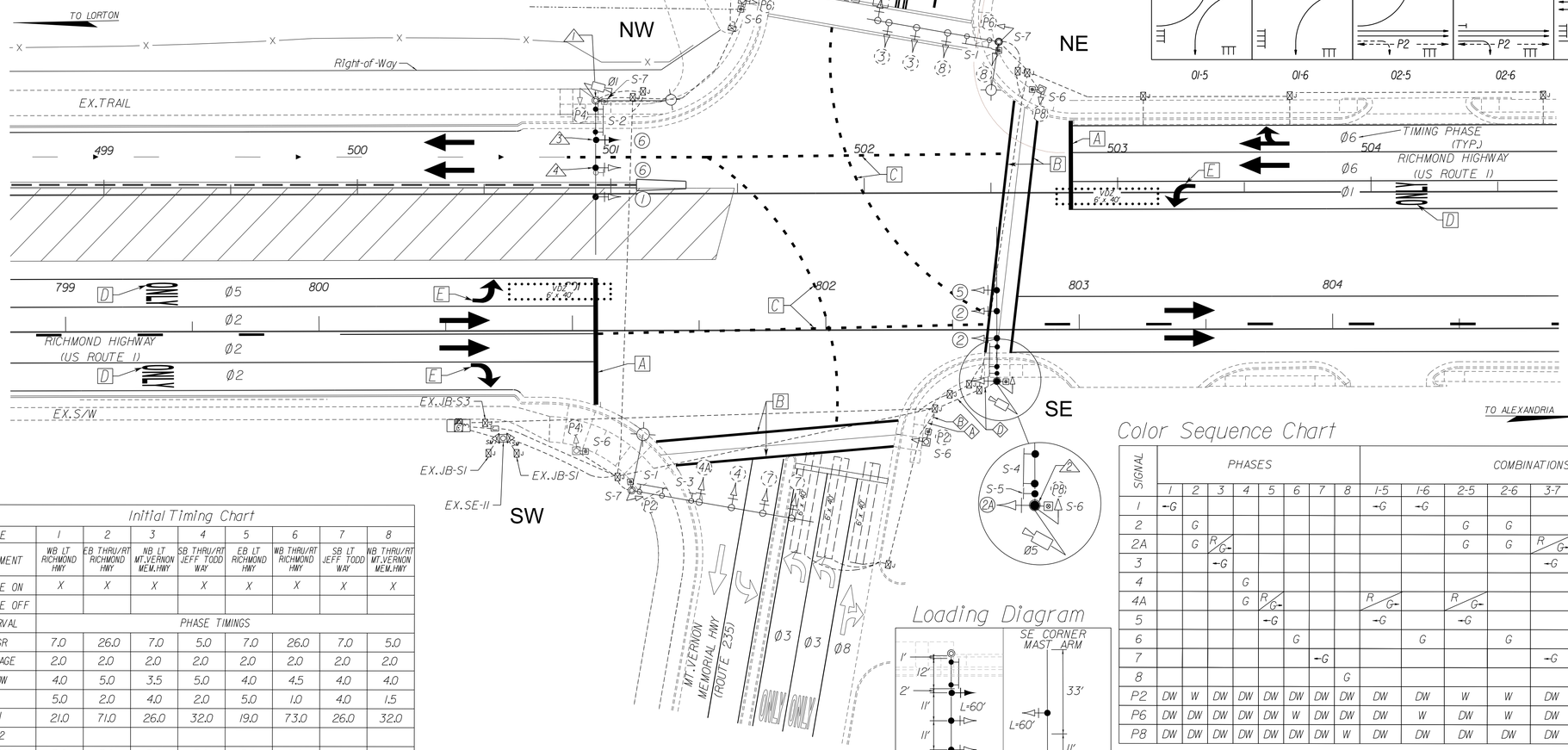
Signal Construction Notes

1. THE HEIGHT OF THE EXISTING VIDEO DETECTION CAMERA SHALL BE ADJUSTED TO ENSURE A LINE OF SIGHT TO PHASE (1) VIDEO DETECTION ZONE. RELOCATE EXISTING PHASE (1) AND (6) SIGNAL HEADS TO ALIGN WITH SB LANE CONFIGURATION.
2. THE HEIGHT OF THE EXISTING VIDEO DETECTION CAMERA SHALL BE ADJUSTED TO ENSURE A LINE OF SIGHT TO PHASE (5) VIDEO DETECTION ZONE. RELOCATE EXISTING PHASE (2) AND (5) SIGNAL HEADS TO ALIGN WITH NB LANE CONFIGURATION.
3. REPLACE 5-SECTION HEAD WITH 3-SECTION HEAD. RE-USE EXISTING CABLE. IN THE CABINET. REWIRE TO DISABLE THE PHASE 6 RIGHT TURN GREEN ARROW AND YELLOW ARROW.
4. REMOVE EXISTING R3-5R FROM MAST ARM.

Phasing Diagram



PER THE MULLIGAN ROAD - PHASE II TRAFFIC SIGNAL PLAN, THE SIGNAL POLE, ARM, AND FOUNDATIONS HAVE BEEN DESIGNED TO ACCOMMODATE AN ADDITIONAL 5-SECTION SIGNAL HEAD FOUR FEET FROM THE TIP OF THE ARM AND AN ADDITIONAL MUTCD R10-12 (30" X 36") SIGN ONE FOOT FROM THE TIP OF THE ARM.



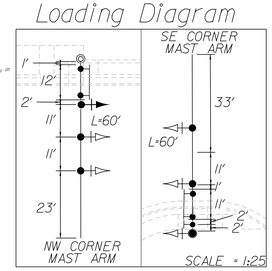
Pavement Marking Legend

- A Type B, Class VI, White 24" Width
- B Type B, Class VI, White, 6" Width
- C Type B, Class VI, White, 4" Width, 2' Long, 4' Space
- D Type B, Class VI, White, Word Message "ONLY"
- E Englongated Turn Arrow

Initial Timing Chart

PHASE	1	2	3	4	5	6	7	8
MOVEMENT	WB LT RICHMOND HWY	EB THRU/RT RICHMOND HWY	NB LT MT.VERNON MEM.HWY	SB THRU/RT JEFF TODD WAY	EB LT RICHMOND HWY	WB THRU/RT RICHMOND HWY	SB LT JEFF TODD WAY	NB THRU/RT MT.VERNON MEM.HWY
PHASE ON	X	X	X	X	X	X	X	X
PHASE OFF								
INTERVAL	PHASE TIMINGS							
MIN GR	7.0	26.0	7.0	5.0	7.0	26.0	7.0	5.0
PASSAGE	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
YELLOW	4.0	5.0	3.5	5.0	4.0	4.5	4.0	4.0
RED	5.0	2.0	4.0	2.0	5.0	1.0	4.0	1.5
MAX 1	21.0	71.0	26.0	32.0	19.0	73.0	26.0	32.0
MAX 2								
MIN GAP	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
TIME BEFORE REDUCTION	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TIME TO REDUCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PED WALK	0.0	7.0	0.0	0.0	0.0	7.0	0.0	7.0
PED CLEARANCE	0.0	23.0	0.0	0.0	0.0	19.0	0.0	24.0
MODE	NON-LOCK	MIN RECALL	NON-LOCK	NON-LOCK	NON-LOCK	MIN RECALL	NON-LOCK	NON-LOCK

Loading Diagram



Color Sequence Chart

SIGNAL	PHASES 1	2	3	4	5	6	7	8	COMBINATIONS 1-5	1-6	2-5	2-6	3-7	3-8	4-7	4-8	FLASH
1	→G								→G	→G							→R
2		G									G	G					Y
2A		G	R/G→								G	G	R/G→	R/G→			Y
3			→G										→G	→G			→R
4				G											G	G	R
4A				G	R/G→				R/G→		R/G→				G	G	R
5					→G				→G		→G						→R
6						G				G		G					Y
7							→G						→G		→G		→R
8								G						G		G	R
P2	DW	W	DW	DW	DW	DW	DW	DW	DW	DW	W	W	DW	DW	DW	DW	BLANK
P6	DW	DW	DW	DW	DW	W	DW	DW	DW	W	DW	W	DW	DW	DW	DW	BLANK
P8	DW	DW	DW	DW	DW	DW	DW	W	DW	DW	DW	DW	DW	W	DW	W	BLANK

Clearance Chart

R / W	CLEARANCE 1	2	NEXT PHASE
G	Y	R	R
G	G	G	G
→G	→Y	→R	→R
→G	→G	→G	→G
R/G→	R/G→	R/G→	R/G→
R/G→	R/Y→	R	R
G/G→	R/Y→	R	G
G	Y	R	R/G→
W	W	W	W
W	FDW	DW	DW

RICHMOND HIGHWAY (US ROUTE 1)
& JEFF TODD WAY &
MT.VERNON MEMORIAL HWY
TRAFFIC SIGNAL PLAN - MOT PHASE 2B

SCALE	PROJECT	SHEET NO.
0 25' 50'	0001-029-001	44(10B)

9/29/2014
1:24:26 PM

PROJECT MANAGER LAURA MEHIEL, A. MORTON THOMAS & ASSOC.
SURVEYED BY, DATE FHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY SABRA,WANG & ASSOCIATES,JYOTHI PALADUGU,(703) 942-8990
DESIGN BY SABRA,WANG & ASSOCIATES,MICHAEL MONROE,(703) 942-8990

REVISED No.	Description	Date	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
0	AFC	09/22/14	VA.	1	0001-029-001	44(10C)

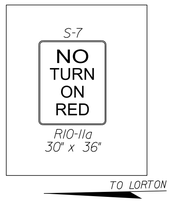
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE CONTRACTING OFFICER

Sabra, Wang & Associates, Inc.
Fairfax, Virginia
TRAFFIC ENGINEER

Existing Signals To Remain

Existing Signals To Be Relocated

Proposed Signs



Existing Signs To Remain

POSTED SPEED LIMITS

RICHMOND HIGHWAY	50 MPH
JEFF TODD WAY	40 MPH
MT.VERNON MEM.HWY	45 MPH

PER THE MULLIGAN ROAD - PHASE II TRAFFIC SIGNAL PLAN, THE SIGNAL POLE, ARM, AND FOUNDATIONS HAVE BEEN DESIGNED TO ACCOMMODATE AND AN ADDITIONAL 5-SECTION SIGNAL HEAD FOUR FEET FROM THE TIP OF THE ARM AN ADDITIONAL MUTCD R10-12 (30" X 36") SIGN ONE FOOT FROM THE TIP OF THE ARM.

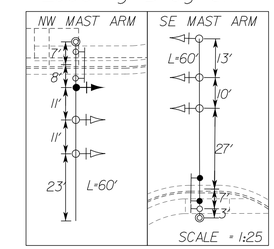
Construction Notes

1. THE HEIGHT OF THE EXISTING VIDEO DETECTION CAMERA SHALL BE ADJUSTED TO ENSURE A LINE OF SIGHT TO PHASE 5 VIDEO DETECTION ZONE. RELOCATE EXISTING PHASE 2 SIGNAL HEAD TO ALIGN WITH NB THRU LANES. RELOCATE EXISTING PHASE 5 SIGNAL HEAD TO SLIGHT WITH THE NB LEFT TURN LANE.
2. INSTALL R10-11a ON TO UPRIGHT.

Pavement Marking Legend

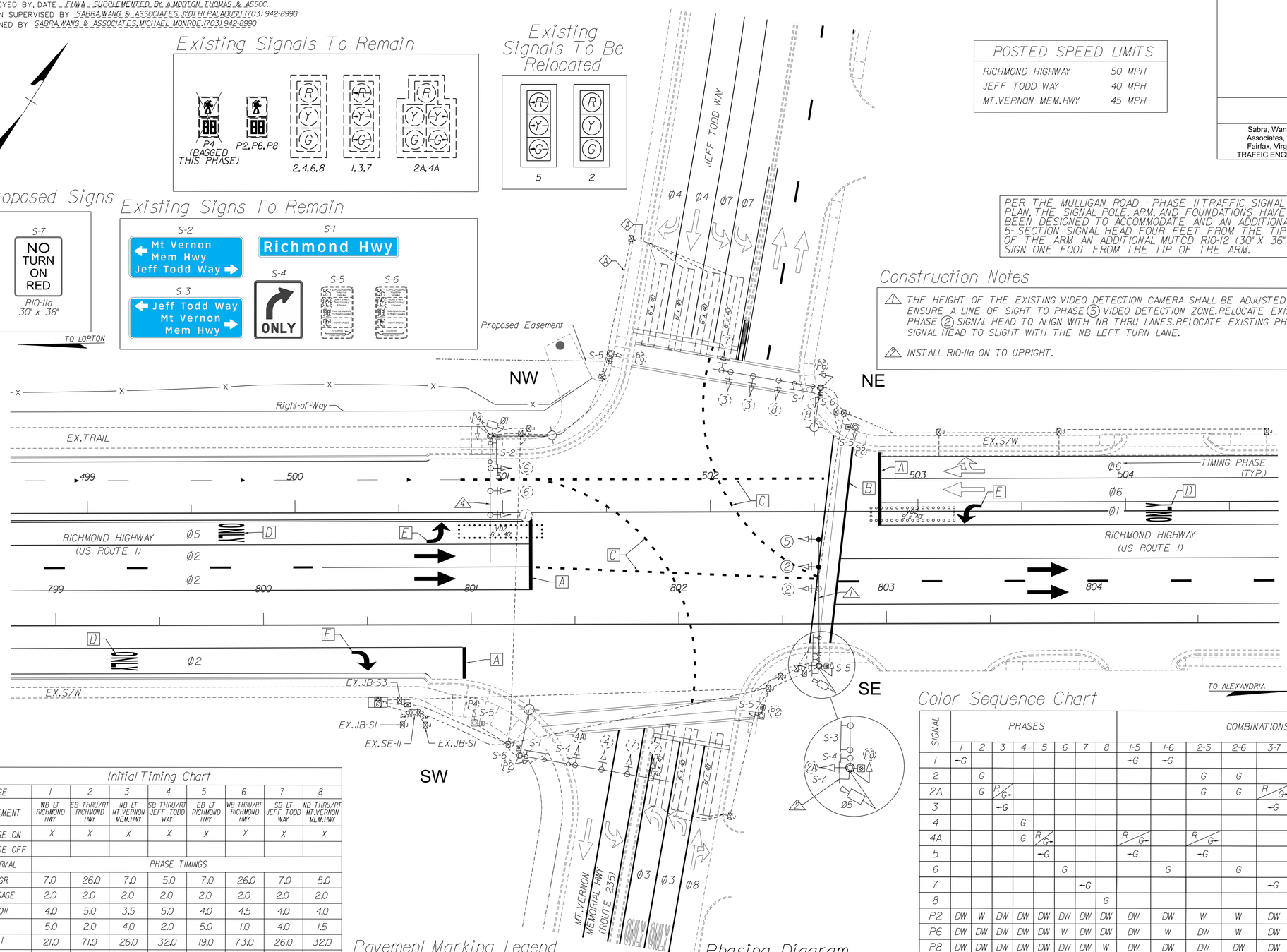
- A Type B, Class VI, White 24" Width
- B Type B, Class VI, White, 6" Width
- C Type B, Class VI, White, 4" Width, 2' Long, 4' Space
- D Type B, Class VI, White, Word Message "ONLY"
- E Elongated Turn Arrow

Loading Diagram



General Signal Notes

1. CONTROLLER SHALL REST ON PHASE 2+6.
2. THE ORIGINAL CLEARANCE INTERVAL TIMINGS SHALL BE USED AT THIS INTERSECTION DURING MOT PHASE 2C.
3. ANY EXISTING PAVEMENT MARKINGS WHICH CONFLICT WITH PROPOSED PAVEMENT MARKINGS SHALL BE COMPLETELY ERADICATED.
4. UTILIZE ALL EXISTING CONDUITS AND CABLES.



Color Sequence Chart

SIGNAL	PHASES 1	2	3	4	5	6	7	8	COMBINATIONS 1-5	1-6	2-5	2-6	3-7	3-8	4-7	4-8	FLASH
1	→G								→G	→G							→R
2		G									G	G					Y
2A		G	R/G→								G	G	R/G→	R/G→			Y
3			→G										→G	→G			→R
4				G											G	G	R
4A				G	R/G→				R/G→		R/G→				G	G	R
5					→G				→G		→G						→R
6						G				G		G					Y
7							→G						→G		→G		→R
8								G						G		G	R
P2	DW	W	DW	DW	DW	DW	DW	DW	DW	DW	W	W	DW	DW	DW	DW	BLANK
P6	DW	DW	DW	DW	DW	W	DW	DW	DW	W	DW	W	DW	DW	DW	DW	BLANK
P8	DW	DW	DW	DW	DW	DW	DW	W	DW	DW	DW	DW	DW	W	DW	W	BLANK

Clearance Chart

R / W	CLEARANCE 1	2	NEXT PHASE
G	Y	R	R
G	G	G	G
→G	→Y	→R	→R
→G	→G	→G	→G
R/G→	R/G→	R/G→	R/G→
R/G→	R/Y→	R	R
G/G→	R/Y→	R	G
G	Y	R	R/G→
W	W	W	W
W	FDW	DW	DW

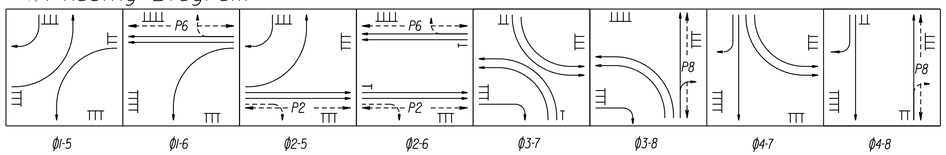
Initial Timing Chart

PHASE	1	2	3	4	5	6	7	8
MOVEMENT	WB LT RICHMOND HWY	EB THRU/RT RICHMOND HWY	NB LT MT.VERNON MEM.HWY	SB THRU/RT JEFF TODD WAY	EB LT RICHMOND HWY	WB THRU/RT RICHMOND HWY	SB LT JEFF TODD WAY	NB THRU/RT MT.VERNON MEM.HWY
PHASE ON	X	X	X	X	X	X	X	X
PHASE OFF								
INTERVAL	PHASE TIMINGS							
MIN GR	7.0	26.0	7.0	5.0	7.0	26.0	7.0	5.0
PASSAGE	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
YELLOW	4.0	5.0	3.5	5.0	4.0	4.5	4.0	4.0
RED	5.0	2.0	4.0	2.0	5.0	1.0	4.0	1.5
MAX 1	21.0	71.0	26.0	32.0	19.0	73.0	26.0	32.0
MAX 2								
MIN GAP	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
TIME BEFORE REDUCTION	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TIME TO REDUCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PED WALK	0.0	7.0	0.0	0.0	0.0	7.0	0.0	7.0
PED CLEARANCE	0.0	23.0	0.0	0.0	0.0	19.0	0.0	24.0
MODE	NON-LOCK	MIN RECALL	NON-LOCK	NON-LOCK	NON-LOCK	MIN RECALL	NON-LOCK	NON-LOCK

Pavement Marking Legend

- A Type B, Class VI, White 24" Width
- B Type B, Class VI, White 6" Width
- C Type B, Class VI, White 4" Width, 2' Skip, 4' Gap
- D Type B, Class VI, White, Word Message "ONLY"
- E Elongated Turn Arrow

Phasing Diagram



RICHMOND HIGHWAY (US ROUTE 1)
& JEFF TODD WAY &
MT.VERNON MEMORIAL HIGHWAY

TRAFFIC SIGNAL PLAN - MOT PHASE 2C

SCALE	PROJECT	SHEET NO.
0 25' 50'	0001-029-001	44(10C)

9/29/2014
1:29:50 PM

PROJECT MANAGER LAURA MEHIEL, A. MORTON THOMAS & ASSOC.
SURVEYED BY, DATE FHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY SABRA,WANG & ASSOCIATES,JYOTHI PALADUGU,(703) 942-8990
DESIGN BY SABRA,WANG & ASSOCIATES,MICHAEL MONROE,(703) 942-8990

REVISED			STATE	STATE		SHEET NO.
No.	Description	Date		ROUTE	PROJECT	
0	AFC	09/22/14	VA.	1	0001-029-001	44(10D)

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

Sabra, Wang & Associates, Inc.
Fairfax, Virginia
TRAFFIC ENGINEER

POSTED SPEED LIMITS

RICHMOND HIGHWAY	50 MPH
JEFF TODD WAY	40 MPH
MT.VERNON MEM.HWY	45 MPH

Existing To Remain

Existing To Be Relocated

Loading Diagram

Existing Signs To Remain

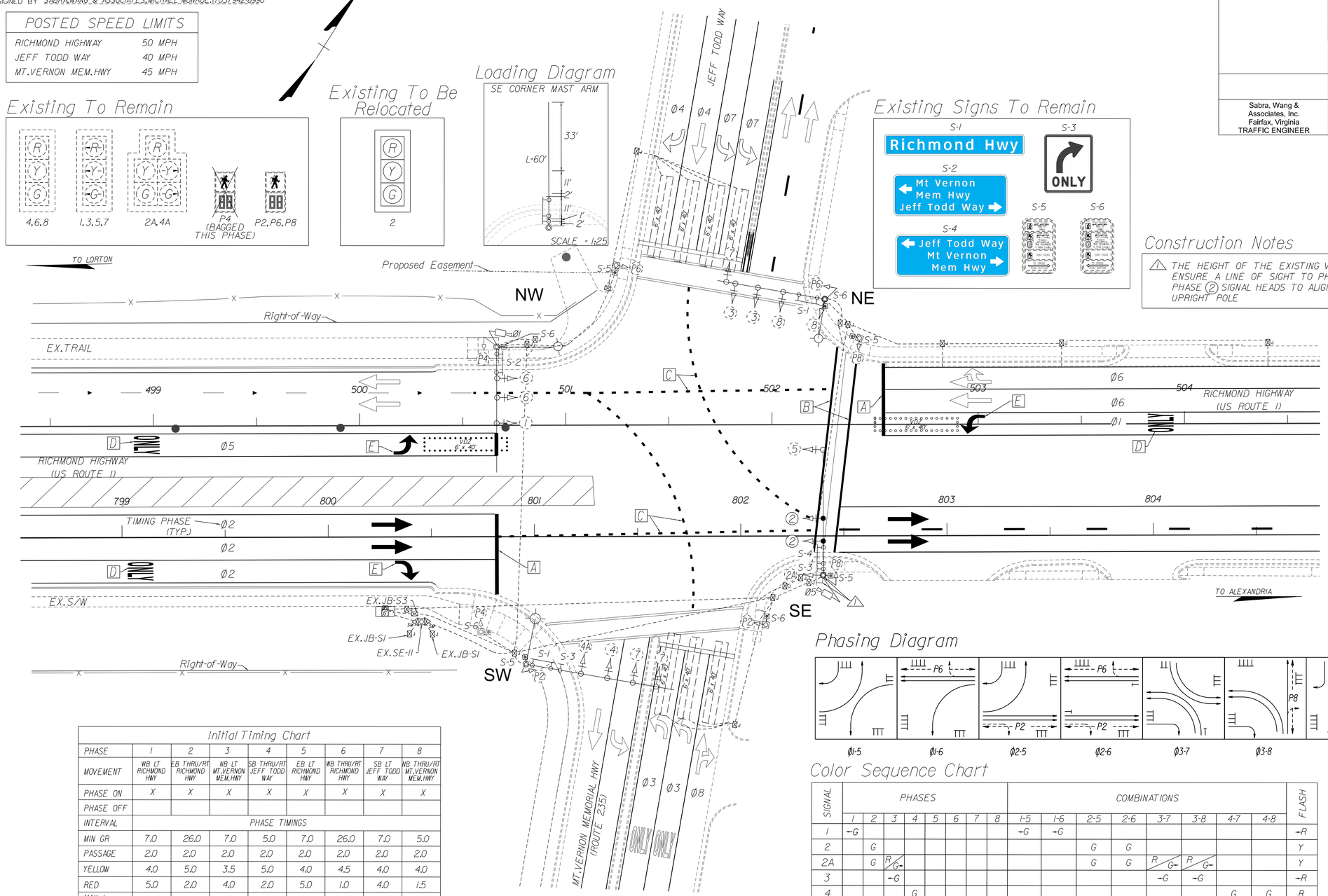
General Signal Notes

1. CONTROLLER SHALL REST ON PHASE 2+6.
2. THE ORIGINAL CLEARANCE INTERVAL TIMINGS SHALL BE USED AT THIS INTERSECTION DURING MOT PHASE 2D.
3. ANY EXISTING PAVEMENT MARKINGS WHICH CONFLICT WITH PROPOSED PAVEMENT MARKINGS SHALL BE COMPLETELY ERADICATED.
4. UTILIZE ALL EXISTING CONDUITS AND CABLES.

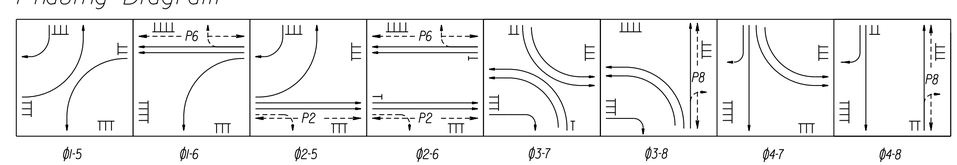
Construction Notes

⚠ THE HEIGHT OF THE EXISTING VIDEO DETECTION CAMERA SHALL BE ADJUSTED TO ENSURE A LINE OF SIGHT TO PHASE 5 VIDEO DETECTION ZONE. RELOCATE EXISTING PHASE 2 SIGNAL HEADS TO ALIGN WITH NB THRU LANES. REMOVE EXISTING R10-11a FROM UPRIGHT POLE

PER THE MULLIGAN ROAD - PHASE II TRAFFIC SIGNAL PLAN, THE SIGNAL POLE, ARM, AND FOUNDATIONS HAVE BEEN DESIGNED TO ACCOMMODATE AN ADDITIONAL 5-SECTION SIGNAL HEAD FOUR FEET FROM THE TIP OF THE ARM AND AN ADDITIONAL MUTCD R10-12 (30" X 36") SIGN ONE FOOT FROM THE TIP OF THE ARM.



Phasing Diagram



Clearance Chart

R / W	CLEARANCE 1	CLEARANCE 2	NEXT PHASE
G	Y	R	R
G	G	G	G
←G	←Y	←R	←R
←G	←G	←G	←G
R/←G	R/←G	R/←G	R/←G
R/←G	R/←Y	R	R
G/←G	R/←Y	R	G
G	Y	R	R/←G
W	W	W	W
W	FDW	DW	DW

Initial Timing Chart

PHASE	1	2	3	4	5	6	7	8
MOVEMENT	WB LT RICHMOND HWY	EB THRU/RT RICHMOND HWY	NB LT MT.VERNON MEM.HWY	SB THRU/RT JEFF TODD WAY	EB LT RICHMOND HWY	WB THRU/RT RICHMOND HWY	SB LT JEFF TODD WAY	NB THRU/RT MT.VERNON MEM.HWY
PHASE ON	X	X	X	X	X	X	X	X
PHASE OFF								
INTERVAL	PHASE TIMINGS							
MIN GR	7.0	26.0	7.0	5.0	7.0	26.0	7.0	5.0
PASSAGE	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
YELLOW	4.0	5.0	3.5	5.0	4.0	4.5	4.0	4.0
RED	5.0	2.0	4.0	2.0	5.0	1.0	4.0	1.5
MAX 1	21.0	71.0	26.0	32.0	19.0	73.0	26.0	32.0
MAX 2								
MIN GAP	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
TIME BEFORE REDUCTION	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TIME TO REDUCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PED WALK	0.0	7.0	0.0	0.0	0.0	7.0	0.0	7.0
PED CLEARANCE	0.0	23.0	0.0	0.0	0.0	19.0	0.0	24.0
MODE	NON-LOCK	MIN RECALL	NON-LOCK	NON-LOCK	NON-LOCK	MIN RECALL	NON-LOCK	NON-LOCK

Pavement Marking Legend

- [A] Type B, Class VI, White 24" Width
- [B] Type B, Class VI, White 6" Width
- [C] Type B, Class VI, White 4" Width, 2' Skip, 4' Gap
- [D] Type B, Class VI, White, Word Message "ONLY"
- [E] Elongated Turn Arrow

Color Sequence Chart

SIGNAL	PHASES 1	2	3	4	5	6	7	8	COMBINATIONS 1-5	1-6	2-5	2-6	3-7	3-8	4-7	4-8	FLASH
1	←G								←G	←G							←R
2		G									G	G					Y
2A		G	R/G←								G	G	R/G←	R/G←			Y
3			←G										←G	←G			←R
4				G											G	G	R
4A				G	R/G←				R/G←		R/G←				G	G	R
5					←G				←G		←G						←R
6						G				G		G					Y
7							←G						←G		←G		←R
8								G						G		G	R
P2	DW	W	DW	DW	DW	DW	DW	DW	DW	DW	W	W	DW	DW	DW	DW	BLANK
P6	DW	DW	DW	DW	DW	W	DW	DW	DW	W	DW	W	DW	DW	DW	DW	BLANK
P8	DW	DW	DW	DW	DW	DW	DW	W	DW	DW	DW	DW	DW	W	DW	W	BLANK

RICHMOND HIGHWAY (US ROUTE 1)
& JEFF TODD WAY &
MT.VERNON MEMORIAL HIGHWAY
TRAFFIC SIGNAL PLAN - MOT PHASE 2D

SCALE	PROJECT	SHEET NO.
0 25' 50'	0001-029-001	44(10D)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY KEITH SINCLAIR, A.MORTON THOMAS & ASSOC.
DESIGNED BY DARON DORAN, A.MORTON THOMAS & ASSOC.

GENERAL NOTES

G1. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM, WHERE APPLICABLE, TO THE CURRENT EDITION OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS, AS WELL AS PLAN NOTES AND DETAILS.

G2. THE CONTRACTOR SHALL NOTE THAT THE UTILITY PLAN SHEETS ARE FOR WATER AND SEWER RELOCATION AND ADJUSTMENT ONLY. THE CONTRACTOR SHALL REFER TO THE ROADWAY PLANS FOR ROADWAY AND DRAINAGE DESIGN.

G3. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF OWNER AND AT NO EXPENSE TO THE GOVERNMENT. ANY DAMAGES, EMERGENCY SITUATIONS OR UNSCHEDULED INTERRUPTION OF SERVICE SHALL BE REPORTED IMMEDIATELY.

A. GRAVITY SANITARY SEWER MAINS BETWEEN NORTH BOUND STA. 707+00 AND SOUTHBOUND STA. 423+80 INDICATED TO BE ABANDONED, RELOCATED OR REMOVED ARE OWNED AND OPERATED BY FAIRFAX COUNTY DEPARTMENT OF PUBLIC WORKS AND ENVIRONMENTAL SERVICES WASTEWATER DIVISION (FCWD). THE CONTRACTOR IS TO NOTIFY FCWD 5 BUSINESS DAYS PRIOR TO THE START OF CONSTRUCTION TO THE SANITARY SEWER. IT IS THE CONTRACTOR'S RESPOSIBILITY TO MAINTAIN FLOW AT ALL TIMES. ALSO, ACCESS TO MANHOLES SHOULD BE MAINTAINED AT ALL TIMES FOR MAINTENANCE VEHICLES DURING THE CONSTRUCTION OF THE SANITARY SEWER FOR EMERGENCY PURPOSES. FCWD PHONE NUMBERS: NON-EMERGENCY 703-250-2003 / EMERGENCY 703-323-1211.

ACCESS SHOULD BE MAINTAINED AT ALL TIMES TO THE FCWD ACCOTINK PUMP STATION LOCATED AT 9201 RICHMOND HIGHWAY.

WATER UTILITIES WILL REQUIRE A 10' SEPARATION OUTSIDE TO OUTSIDE PIPE.

WHEN A TOP ELEVATION ADJUSTMENT TO AN EXISTING FCWD SANITARY SEWER MANHOLE IS NECESSARY, THERE IS A MAXIMUM 12" TOP ADJUSTMENT BETWEEN THE CASTING AND THE CONE OF THE MANHOLE.

B. 24" WATER MAIN (BETWEEN STA. 386+00 AND STA. 686+95) AND 8" AND 12" SANITARY GRAVITY SEWERS (BETWEEN STA. 394+61 AND STA. 697+00) AND 12" WATER MAIN BETWEEN STA. 722+80 AND STA. 424+80 INDICATED TO BE ABANDONED, RELOCATED OR REMOVED IS OWNED AND OPERATED BY AMERICAN WATER MILITARY SERVICES GROUP (AWMSG). CONTACT (FIRST) FORT BELVOIR 24-HOUR EMERGENCY NUMBER AT 703-806-3109 (EMERGENCIES ONLY); (SECOND) MR. MARVIN BOWMAN (AWMSG) AT 571-499-3862; AND (THIRD) MR. LENNY WHITE (AWMSG) AT 571-499-3278 FOR REQUIRED COORDINATION AND/OR EMERGENCY SITUATIONS.

G4. THE LOCATIONS, DEPTHS AND SIZES OF EXISTING UTILITIES SHOWN ON THESE PLANS HAVE BEEN OBTAINED FROM AVAILABLE UTILITY RECORDS AND FIELD UTILITY SURVEYS AND ARE NOT GUARANTEED. THE CONTRACTOR SHALL FIELD VERIFY, WITH TEST HOLES, THE EXACT LOCATION, ELEVATION, TYPE, ROUNDNESS AND SIZE OF ALL EXISTING UNDERGROUND UTILITIES AT POINTS OF CONNECTION PRIOR TO ORDERING OF MATERIALS, EXCAVATION AND INSTALLATION FOR THIS PROJECT. ALL COSTS ASSOCIATED WITH ADDITIONAL UNDERGROUND UTILITY LOCATING SHALL BE INCLUDED IN THE APPROPRIATE UNIT PRICE BID.

G5. THE CONTRACTOR SHALL NOTIFY MISS UTILITY AT 811 TO REQUEST FIELD UTILITY LOCATIONS AT LEAST 72 HOURS BEFORE BEGINNING ANY EXCAVATION OR CONSTRUCTION SHOWN ON THESE PLANS.

G6. A SEQUENCE OF CONSTRUCTION SHALL BE DEVELOPED IN SUCH A MANNER THAT WATER AND SANITARY SEWER SERVICE IS MAINTAINED AT ALL TIMES DURING CONSTRUCTION, EXCEPT DURING TIE-INS AND CONNECTIONS. THE CONTRACTOR SHALL SUBMIT A PLAN OF OPERATIONS FOR CONSTRUCTING THE WATER AND SANITARY SEWER RELOCATIONS AT THE PRECONSTRUCTION CONFERENCE OR 14 DAYS PRIOR TO BEGINNING CONSTRUCTION, WHICHEVER COMES FIRST:

A. THE CONTRACTOR'S SEQUENCE OF CONSTRUCTION SHALL CONSIST OF A PRELIMINARY LIST OF DATES FOR UTILITY TIE-INS, CONNECTIONS, AND SHUTDOWNS. ALL UTILITY TIE-INS, FLUSHING, CONNECTIONS AND SHUTDOWNS OF THE MAINS SHALL OCCUR MONDAY THROUGH FRIDAY, UNLESS OTHERWISE ALLOWED BY THE FWCD OR AWMSG.

B. PRIOR TO SYSTEM SHUTDOWN, THE CONTRACTOR SHALL HAVE CONSTRUCTED THE NEW UTILITY TO A POINT AS NEAR TO THE TIE-IN POINT AS POSSIBLE. PRIOR TO CUTTING INTO ANY WATER MAIN, THE CONTRACTOR SHALL HAVE ALL FITTINGS, VALVES AND PIPES AT THE SITE AND SHALL VERIFY, IN THE PRESENCE OF THE CO AND THE AWMSG INSPECTOR, THROUGH FIELD MEASUREMENTS, THAT ALL PIPING, FITTINGS AND VALVES WILL ALIGN AND FIT PROPERLY WITH THE EXISTING FACILITIES. FURTHERMORE, ALL NEWLY CONSTRUCTED PIPE AND APPURTENANCES SHALL HAVE PASSED ALL NECESSARY TESTS IN THE PRESENCE OF THE AWMSG INSPECTOR AND THE CO. CONNECTION TO EXISTING LINES SHALL BE MADE ONLY AFTER THE PROPOSED LINE IS INSTALLED, TESTED AND APPROVED BY THE CO OR UTILITY OWNER. CONNECTION TO EXISTING WATER MAINS AND THE ASSOCIATED SHUTDOWN SHALL OCCUR MONDAY THROUGH FRIDAY, 8:30 AM TO 5:00 PM. ALL WORK MUST BE COMPLETED WITHIN THIS SPECIFIED TIME FRAME.

G7. FORTY EIGHT (48) HOURS PRIOR TO THE ACTUAL SHUT-OFF OF ANY LINE, THE CONTRACTOR SHALL NOTIFY THE AFFECTED PUBLIC IN WRITING.

G8. PROCEDURE FOR ACCOMPLISHING EACH INSTALLATION SHALL BE THE CONTRACTOR'S RESPONSIBILITY. ALL MATERIALS, EQUIPMENT, LABOR APPURTENANCES (SHALL INCLUDE BUT NOT BE LIMITED TO: EXCAVATING, TESTING, DISINFECTING, BACKFILLING, COMPACTING, DEWATERING, DISPOSING OF SURPLUS AND UNSUITABLE MATERIAL, SHEETING AND SHORING, BEDDING MATERIAL, INSTALLING PIPE, CONNECTING TO EXISTING LINES, BYPASS PUMPING AND PUMP AND HAUL OPERATIONS) REQUIRED TO ACCOMPLISH INSTALLATIONS IN ACCORDANCE WITH SEQUENCE OF CONSTRUCTION SHALL BE INCLUDED IN THE COST FOR THE ASSOCIATED PAY ITEM. AN ALTERNATE SEQUENCE MAY BE PREPARED BY THE CONTRACTOR AND SUBMITTED TO THE CO FOR APPROVAL.

G9. DURING INSTALLATION OF NEW WATER MAINS AND SERVICES, THE CONTRACTOR SHALL DO WHAT IS NECESSARY TO PROTECT EXISTING UTILITIES, PIPELINES AND FACILITIES AGAINST DAMAGE CAUSED BY CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL PROVIDE ANY NEEDED TEMPORARY SUPPORTS REQUIRED TO INSTALL THE NEW UTILITIES WHILE MAINTAINING THE EXISTING UTILITIES AND FACILITIES IN OPERATION. TEMPORARY SUPPORT AND/OR FACILITIES, INCLUDING MATERIALS, LABOR AND EQUIPMENT NEEDED TO COMPLETE THE WORK AS DEFINED ON THE PLANS, ARE CONSIDERED INCIDENTAL TO CONSTRUCTION AT NO ADDITIONAL COST TO THE GOVERNMENT.

G10. ALL RELOCATED WATER MAINS MUST HAVE A MINIMUM FINAL COVER OF 42 INCHES, UNLESS OTHERWISE NOTED ON THE PLANS. ALL UTILITIES MUST HAVE A MINIMUM TEMPORARY COVER DURING CONSTRUCTION OF 24 INCHES.

G11. CONTRACTOR SHALL PERFORM UTILITY RELOCATION WORK PRIOR TO OR CONCURRENT WITH GRADING OR EXCAVATION.

G12. THE CONTRACTOR SHALL NOT PERFORM ANY GRADING OPERATIONS OVER EXISTING WATER AND SANITARY FACILITIES WITHIN THE PROJECT WHICH WOULD IN ANY WAY JEOPARDIZE SERVICES UNTIL THE PROPOSED FACILITIES ARE INSTALLED AND PLACED INTO OPERATION AND EXISTING WATER FACILITIES ARE ABANDONED. ANY DEVIATION MUST BE APPROVED BY THE CO.

GENERAL NOTES (CONT'D)

G13. ALL ITEMS OF MATERIAL, LABOR, SUPPLIES OR EQUIPMENT THAT ARE NOT SPECIFICALLY ENUMERATED FOR PAYMENT AS SEPARATE ITEMS, BUT WHICH ARE REQUIRED TO COMPLETE THE WORK AS SHOWN ON THE DRAWINGS AND AS DESCRIBED IN THE SPECIFICATIONS ARE CONSIDERED SUBSIDIARY OBLIGATIONS OF THE CONTRACTOR.

G14. THE CONTRACTOR, WITH HIS ASSOCIATED MATERIALS SUPPLIERS, SHALL PROVIDE CERTIFICATION ACCEPTABLE TO THE CO, THAT ALL PIPE MATERIALS SUPPLIED ON THE PROJECT MEET OR EXCEED THE SPECIFICATIONS.

G15. THE CONTRACTOR SHALL MAINTAIN A SET OF RECORD DRAWINGS ON SITE TO BE SUBMITTED TO THE VDOT PROJECT INSPECTOR PRIOR TO PRESUMPTIVE COMPLETION. THEY SHALL REFLECT THE AS-BUILT FIELD MEASUREMENTS INVERTS, STATIONS, ETC.) FOR THE CONSTRUCTED WATER MAINS AND SANITARY SEWER FACILITIES.

G16. FOR WATER AND SANITARY SEWER CONSTRUCTION DETAILS, REFER TO SHEETS 45(29) THRU 45(32).

G17. CONTRACTOR SHALL ADHERE TO LOCATIONS AND DIMENSIONS INDICATED ON PLANS.

G18. ALL PIPE ELEVATIONS SHOWN ARE INVERT UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS.

G19. ITEMS DESIGNATED "T.B.A." AND/OR ARE TO BE ABANDONED.
ITEMS DESIGNATED "AATUR" AND/OR HAVE BEEN PREVIOUSLY ABANDONED.
ITEMS DESIGNATED "T.B.R." AND/OR ARE TO BE REMOVED.
ABANDONMENT OR REMOVAL OF EXISTING WATER FACILITIES SHALL CONFORM TO SECTION 520 OF THE CURRENT VDOT ROAD AND BRIDGE SPECIFICATIONS AND ALL COSTS FOR ABANDONMENT OR REMOVAL OF ANY EXISTING FACILITIES SHALL BE INCLUDED IN THE WORK.

G20. ALL CONCRETE SHALL BE CLASS A3 IF CAST-IN-PLACE AND CLASS A4 IF PRECAST.

WATER MATERIAL / CONSTRUCTION NOTES (AWMSG)

W1. NO VALVES OR OTHER CONTROLS ON THE EXISTING WATER SYSTEM SHALL BE OPERATED FOR ANY PURPOSE BY THE CONTRACTOR. AWMSG PERSONNEL WILL OPERATE ALL VALVES, HYDRANTS, BLOW-OFF'S, ETC. A 48 HOUR ADVANCE NOTIFICATION TO AWMSG IS REQUIRED.

W2. CONTRACTOR SHALL PROVIDE WRITTEN NOTICE TO AWMSG (5) WORKING DAYS PRIOR TO THE FOLLOWING EVENTS:

A. TRANSFER OF SERVICES, RELOCATE AND SET ALL WATER METERS.
B. PICK UP FIRE HYDRANTS REMOVED BY THE CONTRACTOR.
C. VALVE ABANDONMENT.
D. COORDINATION MEETING FOR SHUTDOWN AND TIE-INS.
E. ALL SHUTDOWNS AND TIE-INS, INCLUDING REQUIRED VALVE OPENING AND CLOSING.
F. TESTING, DISINFECTION, AND FLUSHING.
G. CUTTING AND CAPPING OF ACTIVE MAINS.

W3. AWMSG DOES NOT GUARANTEE A 100 PERCENT SHUTDOWN OF THE WATER DISTRIBUTION SYSTEM. THE CONTRACTOR SHALL ANTICIPATE CUT AND PLUG OPERATIONS UNDER PARTIAL PRESSURE.

W4. THE COSTS FOR ALL PIPE FITTINGS, SLEEVES, RESTRAINED JOINT MECHANISMS, ETC., FOR WATER MAINS ARE TO BE INCLUDED IN THE WORK.

W5. THE COSTS FOR INSTALLING, OPERATING, AND REMOVING TEMPORARY PIPING REQUIRED TO MAINTAIN CONTINUOUS WATER SERVICE DURING WATER MAIN TIE-INS, SHALL BE INCLUDED IN THE CONTRACTOR'S WORK.

W6. THE CONTRACTOR SHALL NOT INSTALL WATER MAIN JOINTS BENEATH PROPOSED OR EXISTING UTILITIES OR PROPOSED VDOT STORM DRAINAGE. WHEN CROSSING UNDER THESE STRUCTURES, A MINIMUM OF 24 INCHES BEYOND THE OUTSIDE OF THE FOREIGN PIPE OR UTILITY SHALL BE REQUIRED WHEN PLACING JOINTS, UNLESS OTHERWISE SHOWN ON THE PLANS.

W7. WATER MAIN PIPE SHALL BE LAID WITH BELL ENDS FACING THE DIRECTION OF LAYING. WHERE GRADE IS 10 PERCENT OR GREATER, PIPE SHALL BE LAID UPHILL WITH BELL ENDS UPGRADE.

W8. ALL THRUST PROTECTION INSTALLED UNDER THIS CONTRACT SHALL BE PLACED BEFORE BACKFILLING OF THE TRENCH AND INSPECTED BY THE C.O. TEMPORARY BUTTRESSING FOR TESTING SHALL BE PROVIDED BY THE CONTRACTOR.

W9. ALL BENDS, TEES, PLUGS, CAPS, VALVES, SLEEVES, PIPE, ETC. SHALL BE PROPERLY RESTRAINED UTILIZING ONE OR MORE OF THE METHODS DESCRIBED IN WATER CONSTRUCTION NOTE W15-E. CONTRACTOR SHALL RESTRAIN EXISTING PIPING AT CONNECTIONS TO PROPOSED PIPING. WHERE FULLY-RESTRAINED, MECHANICAL JOINT PIPE IS INDICATED ON THE PLANS, THRUST BLOCKS SHALL NOT BE PERMITTED AS THE SOLE METHOD OF RESTRAINT. ALL COSTS FOR JOINT RESTRAINING SYSTEMS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PROPOSED D. I. WATER MAIN.

W10. ABANDONMENT: THE END OF WATER MAINS TO BE ABANDONED SHALL BE PLUGGED OR CAPPED IN ACCORDANCE WITH AWMSG AND VDOT STANDARDS. ALL IN-LINE VALVES ON ABANDONED WATER MAINS SHALL BE ABANDONED BY HAVING AWMSG'S MAINTENANCE STAFF CLOSE THE VALVE. THE CONTRACTOR SHALL REMOVE THE OPERATING NUT AND CASTING, BACKFILL WITH SELECT MATERIAL AND PERFORM THE NECESSARY RESTORATION. ABANDONMENT OF IN-LINE VALVES SHALL BE SCHEDULED AFTER COMPLETION OF THE ABANDONMENT OF THE END SECTIONS OF THE MAIN. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION AND SHALL BE INCLUDED IN THE COST OF THE PROPOSED BID ITEMS.

W11. THE COST FOR REMOVAL OF EXISTING FIRE HYDRANTS, VALVES, AND VALVE BOXES SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PROPOSED D. I. WATER MAIN OR FIRE HYDRANT. THIS PRICE SHALL INCLUDE REMOVAL, WITH ALL DUE CARE, AND STORING ON SITE FOR PICK UP BY AWMSG.

W12. THE CONTRACTOR SHALL CUT, CAP AND REMOVE ANY ABANDONED WATER MAIN HAVING LESS THAN 2 FEET OF FINISHED COVER REMAINING OVER THE PIPE. ALL COSTS ASSOCIATED WITH THE REMOVAL OF ABANDONED WATER MAIN SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PROPOSED WATER MAIN.

COMMONWEALTH OF VIRGINIA
J. KEITH SINCLAIR, JR.
Lic. No. 11195
PROFESSIONAL ENGINEER

A. Morton Thomas & Assoc.
Chantilly, Virginia
(UTILITY DISCIPLINE)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	45(1)

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

INDEX OF SHEETS

SHEET NO.	DESCRIPTION	ROADWAY SHEET NO.
45(1)	NOTES (GENERAL & WATER), LEGEND & SHEET INDEX	N/A
45(2)	NOTES CONTINUED	N/A
45(3)	NOTES CONTINUED	N/A
45(4) - 45(8A)	NOT IN SET (PLAN SHEETS)	N/A
45(9)	PLAN SHEET - US RTE 1 (STA. 460+75 TO STA. 467+75)	25
45(10)	PLAN SHEET - US RTE 1 (STA. 467+75 TO STA. 474+75)	26
45(11)	PLAN SHEET - WOODLAWN ROAD	35
45(12)	PLAN SHEET - US RTE 1 (STA. 474+75 TO STA. 481+75)	27
45(13)	PLAN SHEET - EXIST ROUTE 1	36
45(14)	PLAN SHEET - EXIST ROUTE 1	37
45(15)	PLAN SHEET - US RTE 1 (STA. 481+75 TO STA. 488+75)	28
45(16)	PLAN SHEET - US RTE 1 (STA. 488+75 TO STA. 495+75)	29
45(17)	PLAN SHEET - US RTE 1 (STA. 495+75 TO STA. 501+26.02)	30
45(18) - 45(21)	NOT IN SET (PLAN SHEETS)	N/A
45(22)	WATER PROFILE: 12" WATER 3 (AWMSG)	N/A
45(23)	SANITARY SEWER PROFILE: SANITARY-6 (FCWD)	N/A
45(24)	SANITARY SEWER PROFILE: SANITARY-7 AND 8 (FCWD)	N/A
45(25)	SANITARY SEWER PROFILE: SANITARY-9 (FCWD)	N/A
45(26) - 45(28)	NOT IN SET (PROFILES)	N/A
45(29)	WATER AND SANITARY SEWER CONSTRUCTION DETAILS	N/A
45(30)	WATER AND SANITARY SEWER CONSTRUCTION DETAILS (CONT'D)	N/A
45(31)	WATER AND SANITARY SEWER CONSTRUCTION DETAILS (CONT'D)	N/A
45(32)	WATER AND SANITARY SEWER CONSTRUCTION DETAILS (CONT'D)	N/A

LEGEND

- 6"SAN — SANITARY SEWER
- SFM — SANITARY SEWER FORCE MAIN
- W — WATER MAIN
- (S) SANITARY SEWER MANHOLE
- (S) AIR RELEASE VALVE
- [CAP OR PLUG
- Denotes Proposed Temporary Easements
- Denotes Proposed Permanent Easements
- Denotes Proposed Right of Way
- Denotes Existing Right of Way
- C Denotes Construction Limits in Cuts
- F Denotes Construction Limits in Fills

Note : Figures in parenthesis and dot - dot - dashed lines denote Temporary Easements.
Note : Figures in brackets and dot - dashed lines denote Permanent Easements.
Note : Figures in double brackets and dot - dashed lines denote Permanent Utility Easements.

UTILITY ADJUSTMENT PLANS

WATER AND SANITARY SEWER FACILITIES
US ROUTE 1 IMPROVEMENTS AT FORT BELVOIR
FAIRFAX COUNTY, VIRGINIA

AFC DATE: 08/22/2014 NDC NO.1: 09/22/2014	PROJECT	SHEET NO.
	0001-029-001	45(1)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA, -SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY KEITH SINCLAIR, A.MORTON THOMAS & ASSOC.
DESIGNED BY DARON DORAN, A.MORTON THOMAS & ASSOC.

WATER MATERIAL / CONSTRUCTION NOTES (CONT'D)

W13. DUCTILE IRON WATER MAIN OR OFFSETS OF EXISTING MAINS SHALL CONFORM TO AWWA C150 AND C151. CLASS OF PIPE SHALL BE SPECIAL CLASS 51 FOR DIP IN ACCORDANCE WITH AWWA C150 TABLE 50.15. FOR BURIAL DEPTHS EXCEEDING THOSE ALLOWED BY THE CLASS, PIPE AND FITTINGS OF SUFFICIENT WALL THICKNESS SHALL BE PROVIDED. DUCTILE IRON FITTINGS SHALL CONFORM WITH AWWA C110 OR AWWA C153. THE MINIMUM ACCEPTABLE PRESSURE RATING SHALL BE 250 PSI. IF COMPACT FITTINGS ARE USED, THEN THE MINIMUM ACCEPT ABLE PRESSURE RATING SHALL BE 350 PSI. DUCTILE IRON PIPE SHALL BE AS MANUFACTURED BY:

1. AMERICAN CAST IRON PIPE COMPANY
2. U.S. PIPE AND FOUNDRY COMPANY
3. GRIFFIN PIPE PRODUCTS

A. JOINTS: USE PUSH-ON OR MECHANICAL JOINTS CONFORMING WITH ALL APPLICABLE PROVISIONS OF AWWA C111, OR RESTRAINED JOINTS AS SPECIFIED BELOW. WHERE FLANGED JOINT PIPE OR FLANGED FITTINGS ARE REQUIRED FOR CONNECTIONS, VERIFY AND COORDINATE BOLT HOLE DRILLING WITH MANUFACTURER.

B. DEFLECTION: ALLOWABLE DEFLECTION SHALL BE 50% OF THE MAXIMUM DEFLECTION ALLOWED BY AWWA C600 TABLE 4 AND 5 IN AREAS WHERE PIPE IS DEFLECTED.

C. EXTERIOR COATING OF ALL DUCTILE IRON PIPE, JOINTS AND FITTINGS SHALL BE PROVIDED AS REQUIRED BY AWWA C110, C111, C115, C151 OR C153 AS APPLICABLE. ALL PIPES, JOINTS AND FITTINGS SHALL BE EXAMINED AFTER LAYING TO DETERMINE IF THE COATING HAS BEEN DAMAGED DURING INSTALLATION. ANY DAMAGED AREAS AND ALL JOINTS SHALL BE COATED WITH APPROXIMATELY 1 MIL. OF A BITUMINOUS COATING.

D. INTERIOR LINING FOR WATER MAINS SHALL BE CEMENT MORTAR LINED IN ACCORDANCE WITH AWWA C104, STANDARD THICKNESS INCLUDING ASPHALTIC SEAL.

E. THRUST RESTRAINT FOR WATER MAINS SHALL BE PROVIDED BY ONE OR MORE OF THE FOLLOWING METHODS:

1. REACTION BLOCKING IN ACCORDANCE WITH VDOT STANDARD RB-1 AS DIRECTED BY THE CO AND AWMSG INSPECTOR.

2. POSITIVE RESTRAINT SYSTEM:
TRI-FLEX BY U.S. PIPE AND FOUNDRY COMPANY OR FLEX-RING BY AMERICAN CAST IRON PIPE COMPANY OR SNAP-LOK BY GRIFFIN PIPE PRODUCTS.

3. MECHANICAL JOINT RETAINER GLAND:

ALL PIPE WHERE RETAINER GLANDS ARE INSTALLED SHALL HAVE A BRINELL HARDNESS NUMBER (BHN) OF 180-200 TO ALLOW PROPER ACTIVATION OF GLAND. RETAINER GLAND SHALL BE U.L LISTED AS MANUFACTURED BY EBBA IRON, INC. SERIES 1100 "MEGALUG," FORD METER BOX CO., INC. SERIES 1400 "UNI-FLANGE," OR M.J. GRIPPER U.S., PIPE AND FOUNDRY.

4. CONTRACTOR SHALL SUBMIT A RESTRAINED LENGTH OF PIPE SCHEDULE FOR ALL PIPE RESTRAINED BY THE METHODS LISTED ABOVE, EXCEPT REACTION BLOCKING. RESTRAINED JOINT REQUIREMENTS ARE SHOWN ON THE PROFILES.

F. RESTRAINT OF EXISTING WATER MAIN AT OR NEAR CONNECTION POINTS SHALL BE REQUIRED IN ACCORDANCE WITH VDOT STANDARD VO-1.

G. CONNECTIONS: UNLESS OTHERWISE NOTED, CONNECTIONS TO EXISTING MAINS SHALL BE MADE USING M.J. SOLID SLEEVE FITTINGS. SLEEVES SHALL BE LONG PATTERN, SOLID TYPE M.ADE OF GRAY-IRON OR DUCTILE IRON WITH A MINIMUM PRESSURE RATING OF 120 PSI. SLEEVES SHALL HAVE MECHANICAL JOINT ENDS SUITABLE FOR USE WITH APPROVED RESTRAINING RETAINER GLANDS. SLEEVES SHALL BE MANUFACTURED BY THE DUCTILE IRON PIPE MANUFACTURER. THE CONTRACTOR IS REQUIRED TO VERIFY THE OUTSIDE DIAMETER OF THE EXISTING WATER MAINS AND COORDINATE REQUIRED MODIFICATIONS, IF ANY, TO THE SLEEVE AND GLAND (MACHINING AND OTHERWISE) WITH THE MANUFACTURER5•32S INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION.

H. WATER MAIN PIPE BEDDING SHALL BE IN ACCORDANCE WITH VDOT STANDARD DETAIL UB-1, TYPE 2, UNLESS NOTED OTHERWISE ON THE PLANS.

W14. GATE VALVES FOR WATER MAINS UP TO AND INCLUDING 12" IN DIAMETER SHALL CONFORM TO AWWA C509 -LATEST REVISION. GATE VALVES SHALL BE RESILIENT SEATED, HAVING AN ENCAPSULATED DISC RATED FOR 200 P.S.I. WORKING PRESSURE. VALVES SHALL BE EQUIPPED WITH O'RING SEALS MECHANICAL JOINTS, IRON BODY AND SUITABLE FOR BURIED SERVICE. GATE VALVES SHALL BE VERTICAL, NUT-OPERATED, NON-RISING STEM TYPE. VALVES SHALL OPEN COUNTER-CLOCKWISE AND BE PROVIDED WITH STAINLESS STEEL NUTS AND BOLTS. ALL IRON SURFACES TO BE COATED WITH 3-5 MILS OF FUSION BONDED EPOXY. VALVE EXTENSIONS SHALL BE PROVIDED FOR ANY VALVES SET MORE THAN 6' BELOW FINISHED GRADE.

RESILIENT SEATED VALVES SHALL BE:

A. U.S. PIPE METRO SEAL 250, OR
B. AMERICAN FLOW CONTROL SERIES 500, OR
C. KENNEDY VALVE -KEN SEAL

W15. ALL VALVE BOXES SHALL BE ADJUSTABLE SCREW-TYPE (VDOT TYPE A) CAST IRON WITH ROUND SHAFT, FLARED BASE AND A COAT OF BITUMINOUS PAINT APPLIED TO BOTH SURFACES. ALSO, THE HEAD SHALL BE CAST IRON, ROUND, AND HAVE THE WORD "WATER" CAST ON IT.

VALVE BOXES SHALL BE:

A. BINGHAM SO TAYLOR (FIG. NO. 49061), OR
B. TYLER PIPE (FIG. NO. 562-S), OR
C. CAPITOL FOUNDRY (PAT. NO. 3101-3107/311213152/52).

W16. TAPPING SLEEVES FOR WET TAPS OF EXISTING WATER MAINS SHALL BE IRON BODY, MECHANICAL JOINT COUPLING IN ACCORDANCE WITH AWWA C111, WITH A MINIMUM PRESSURE RATING OF 200 P.S.I. OUTLET FLANGE SHALL COMPLY WITH ANSIB16.1 AND MSS SP-60. TAPPING VALVE SHALL BE SUPPLIED BY THE SAME MANUFACTURER AS TAPPING SLEEVE WITH FLANGE X MECHANICAL JOINT ENDS. VALVE AND BOX SHALL MEET OR EXCEED THE REQUIREMENTS LISTED IN NOTES W16 THROUGH W18 ABOVE.

W17. FIRE HYDRANTS SHALL BE DRY BARREL TYPE AND SHALL BE MANUFACTURED IN COMPLETE ACCORDANCE WITH AWWA C502 -LATEST REVISION. HYDRANTS SHALL HAVE FULL 360 DEGREE REVOLVING HEADS AND SHALL OPEN BY TURNING THE OPERATING NUT TO THE LEFT (COUNTER CLOCKWISE).

INSTALLATION OF HYDRANTS SHALL BE IN ACCORDANCE WITH THE DETAIL ON SHEET 15.

HYDRANTS SHALL BE:

KENNEDY GUARDIAN (K-81A), 5 1•4" BARREL, 4 1•2" PUMPER NOZZLE, 2 1•2" HOSE NOZZLES, OR MUELLER CENTURION (A-423),5 1•4" BARREL, 4 1/2" PUMPER NOZZLE, 2 1•2" HOSE NOZZLES, OR AMERICAN DARLING (B84B), 5 1•4" BARREL, 4 1•2" PUMPER NOZZLE, 2 1•2" HOSE NOZZLES.

W18. EXISTING WATER MAINS, HYDRANTS AND WATER SERVICES SHALL REMAIN IN SERVICE UNTIL NEW MAINS AND HYDRANTS ARE PLACED INTO SERVICE AND APPROVED BY THE ENGINEER. NEW FIRE HYDRANTS SHALL REMAIN COVERED UNTIL TESTED AND PLACED INTO SERVICE.

WATER MATERIAL / CONSTRUCTION NOTES (CONT'D)

W19. ACCESS TO ALL PUBLIC AND PRIVATE FIRE HYDRANTS IN SERVICE WITHIN THE PROJECT LIMITS SHALL BE MAINTAINED AT ALL TIMES. A MINIMUM CLEAR SPACE OF 3-FOOT RADIUS AROUND THE HYDRANTS SHALL BE KEPT CLEAR OF ALL SOIL, STONE, MATERIALS, EQUIPMENT AND OTHER OBSTRUCTIONS. THE CONTRACTOR SHALL SCHEDULE HYDRANT INSTALLATION SO THAT NO TWO HYDRANTS IN LINE WILL BE OUT OF SERVICE AT THE SAME TIME. THE CONTRACTOR SHALL ALSO SEQUENCE EACH HYDRANT INSTALLATION FOR MINIMAL AMOUNT OF DOWNTIME. ALL POSSIBLE TRENCHING AND ASSEMBLY REQUIRED FOR THE NEW HYDRANT SHALL BE DONE PRIOR TO TAKING THE EXISTING HYDRANT OFF-LINE.

W20. THE CONTRACTOR SHALL COORDINATE THE FILLING, TESTING, DISINFECTION OF WATER FACILITIES WITH AWMSG. POTABLE WATER FOR FILLING AND TESTING NEW MAINS WILL BE PROVIDED BY AWMSG FROM AN EXISTING FIRE HYDRANT. CONTRACTOR SHALL BE RESPONSIBLE FOR HAULING AND PUMPING WATER INTO THE NEW WATER MAINS FOR TESTING, FLUSHING, DISINFECTION AND SAMPLING. THE CONTRACTOR SHALL NOTIFY AWMSG 24 HOURS PRIOR TO VALVE OPERATIONS, CHANGE OVER, FILLING AND MAIN, OR BACKFILLING PRE-ASSEMBLED FITTINGS.

W21. ALL TESTING, FLUSHING AND DISINFECTION SHALL BE CONTRACTORS RESPONSIBILITY AND SHALL BE CONSIDERED INCIDENTAL TO THE INSTALLATION OF THE WATER MAINS, SERVICES AND APPURTENANCES.

W22. PRESSURE AND LEAKAGE TESTING (WATER MAINS AND ACCESSORIES) SHALL BE IN ACCORDANCE WITH AWWA C600 AND THE CURRENT VDOT SPECIFICATIONS.

W23. DISINFECTION OF WATER MAINS SHALL BE IN ACCORDANCE WITH AWWA C651- LATEST REVISION AND THE CURRENT EDITION OF THE VDOT BRIDGE SPECIFICATIONS.

W24. FLUSHING OF WATER MAINS SHALL BE IN ACCORDANCE WITH AWWA C600.

W25. BACTERIOLOGICAL TESTING SHALL BE DONE IN ACCORDANCE WITH THE VIRGINIA STATE DEPARTMENT OF HEALTH (VDH) REQUIREMENTS STIPULATE THAT:

TWO WATER SAMPLES WILL BE COLLECTED AT LEAST 24 HOURS APART AND ANALYZED BY A CERTIFIED LABORATORY: THE RESULTS OF THESE SAMPLES MUST INDICATE NO COLIFORM CONTAMINATION, OTHERWISE THE DISINFECTION PROCEDURE MUST BE REPEATED.

SANITARY SEWER MATERIAL / CONSTRUCTION NOTES

S1. ALL NEW SANITARY GRAVITY SEWERS SHALL BE SDR 35 PVC OR CLASS 51 DUCTILE IRON PIPE (DIP) AS NOTED ON THE PLAN AND PROFILE SHEETS.

S2. THE PIPE SHALL HAVE MECHANICAL OR PUSH-ON JOINTS, MANUFACTURED IN ACCORDANCE WITH AWWA C151, LATEST REVISION, AND SHALL BE DOUBLE CEMENT MORTAR LINED IN ACCORDANCE WITH AWWA C104.

S3. PVC GRAVITY SEWER PIPE SHALL MEET OR EXCEED THE REQUIREMENTS OF:
A. ASTM D3034 STANDARD SPECIFICATION FOR TYPE PSM POLYVINYL CHLORIDE (PVC) SEWER PIPE AND FITTINGS, SDR 35
B. ASTM F679 STANDARD SPECIFICATION FOR POLYVINYL CHLORIDE (PVC) LARGE DIAMETER PLASTIC GRAVITY SEWER PIPE AND FITTINGS.
C. ASTM 2241 STANDARD SPECIFICATION FOR POLYVINYL CHLORIDE (PVC) PRESSURE RATED PIPE (SDR SERIES).
PIPE SHALL BE MADE OF PVC PLASTIC HAVING A CELL CLASSIFICATION AS DEFINED IN ASTM D1784 OF 12364-B. THE PIPE SHALL BE MADE AND JOINED WITH AN INTEGRAL BELL, BELL-AND-SPIGOT RUBBER GASKETED JOINT. EACH INTEGRAL BELL JOINT SHALL CONSIST OF A FORMED BELL COMPLETE WITH A SINGLE RUBBER GASKET. GASKETS SHALL CONFORM TO ASTM F 477 AND SHALL MEET D ASTM D 3212 STANDARD SPECIFICATION FOR JOINTS FOR DRAIN AND SEWER PLASTIC PIPES USING FLEXIBLE ELASTOMERIC SEAL. PIPE SHALL BE SUPPLIED IN THE SIZES NOTED ON THE PLANS AND SHALL BE FURNISHED IN STANDARD LAYING LENGTHS OF 13 AND 20 FEET. PVC PLASTIC JOINTS AND JOINTING MATERIAL SHALL CONFORM TO ASH.4 03212 AND ASTM F477.
EACH PIECE OF PIPE SHALL HAVE THE MATERIAL SIZE, PRESSURE CLASS DESIGNATION, DIMENSION RATIO, MANUFACTURER'S NAME AND PRODUCTION-RECORD CODE CONSPICUOUSLY PAINTED ON IT AS NEAR AS POSSIBLE TO THE FLANGED OR BELL END OF THE PIPE AND THESE DESIGNATIONS SHALL BE CLEARLY LEGIBLE.

S4. PIPE BEDDING AND BACKFILL FOR PVC AND DIP GRAVITY SEWERS SHALL BE IN ACCORDANCE WITH THE APPLICABLE AWMSG DETAIL MSG-ST-02 (SHEET 45(29)) OR FAIRFAX COUNTY P.F.M. PLATE NO. 19-10 (SHEET 45(31)), UNLESS OTHERWISE NOTED ON THE PLANS.

S5. CONNECTIONS TO EXISTING SANITARY MANHOLES SHALL BE CORE-DRILLED AND A RUBBER GASKET INSERTED. VOIDS AT CONNECTIONS SHALL BE FILLED FLUSH WITH MANHOLE WALLS USING NON-SHRINK GROUT. EXISTING INVERT CHANNELS SHALL BE ADJUSTED OR RESHAPED TO PROVIDE A POSITIVE FLOW THROUGH THE MANHOLE.

S6. NEW SANITARY SEWER MANHOLES SHALL BE IN ACCORDANCE WITH THE APPLICABLE AWMSG AND FCWD THE DETAILS SHOWN ON SHEETS 45(29) THRU 45(31).

S7. STANDARD MANHOLE FRAMES AND COVERS ARE IDENTIFIED AND PAID FOR AS F&C-1, AND SHALL BE IN ACCORDANCE WITH THE DETAILS ON SHEETS 45(30) AND 45(31).

S8. ADJUSTMENT OF EXISTING MANHOLE FRAMES AND COVERS SHALL CONFORM TO SECTION 510 OF THE CURRENT VDOT ROAD AND BRIDGE SPECIFICATIONS.

S9. THE CONTRACTOR SHALL CUT, CAP AND REMOVE ANY ABANDONED SANITARY SEWER PIPE HAVING LESS THAN 2 FEET OF FINISHED COVER REMAINING OVER THE PIPE. ALL COSTS ASSOCIATED WITH REMOVAL OF ABANDONED SANITARY SEWER PIPE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PROPOSED SANITARY GRAVITY SEWER.

S10. THE CONTRACTOR SHALL MAINTAIN ALL EXISTING SANITARY SEWER SERVICES, WITHOUT INTERRUPTION, OR PROVIDE TEMPORARY SERVICES (PUMP AROUND) AS APPROVED BY AWMSG AND FCWD, AS APPLICABLE. TEMPORARY SERVICES SHALL INCLUDE PROVIDING THE REQUIRED PUMPING CAPABILITY TO MAINTAIN CONTINUOUS FULL FLOW. IN ADDITION, THE CONTRACTOR MUST PROVIDE A STANDBY BACK-UP PUMP OF EQUAL CAPACITY. BOTH PUMPS SHALL BE AUTOMATIC, SELF PRIMING, REQUIRING NO FAIL SAFE PROTECTION FLOAT GEAR, OR ANY ADJUSTING AT HIGH OR LOW SUCTION LIFTS. THE PUMPS SHALL BE FULLY MAINTAINED DURING THE BYPASS REQUIREMENT.

S11. ABANDONMENT OF EXISTING SANITARY MANHOLES SHALL CONFORM TO THE APPLICABLE AWMSG OR FCWD STANDARDS AND IN ACCORDANCE WITH THE DETAILS ON SHEET 45(29) THRU 45(32).

S12. SANITARY SEWER ACCEPTANCE TESTING:
A. CONSTRUCTION TO THE APPLICABLE FCWD SANITARY SANITARY SEWER SHALL BE IN ACCORDANCE WITH THE LATEST FAIRFAX COUNTY PUBLIC FACILITIES MANUAL CHAPTER 10-0105 AND AWMSG FORT BELVOIR TECHNICAL SPECIFICATIONS SECTION 33-31-00.13.
B. ALL DRAINS SHALL BE AIR TESTED AND APPROVED IN THE PRESENCE OF A FCWD REPRESENTATIVE. ALSO A CLOSED CIRCUIT TELEVISION INSPECTION WILL NEED TO BE COMPLETED AND ANY SUCH PUNCH ITEMS NOTED, WILL NEED TO BE REPAIRED AND RE-AIR TESTED AND RE-TELEVISED, IF NECESSARY, AND ALSO WITH THE CONSENT OF THE FCWCD REPRESENTATIVE PRIOR TO THE RELEASE OF THE EXISTING SANITARY SEWER FLOW INTO THE NEW PIPE. WITH AIR UNDER LOW PRESSURE IN ACCORDANCE WITH SUBSEQUENT DESIGNATED PROCEDURES AND WILL NOT BE ACCEPTED BY THE OWNER UNTIL THE SEWERS MEET WITH THE SPECIFIED CRITERIA. PRESSURE GAUGES, STOP WATCHES, AIR COMPRESSOR, HOSE, PLUGS AND TEST SUPERVISION SHALL BE FURNISHED BY THE CONTRACTOR. ALL TESTS SHALL BE CONDUCTED BY THE CONTRACTOR IN THE PRESENCE OF REPRESENTATIVES OF THE UTILITY OWNER AND CO. THE CONTRACTOR SHALL NOT BE PERMITTED TO PLACE AIR UNDER PRESSURE IN ANY DRAIN UNDER ANY CIRCUMSTANCES EXCEPT THOSE EXPLICITLY MENTIONED HEREIN.
C. ALL DRAINS, INCLUDING MANHOLES, SHALL BE INSPCTED PRIOR TO AIR TESTING AND ANY WATER LEAKAGE INTO THE SYSTEM SUFFICIENT TO CONSTITUTE ANY NOTICEABLE TRICKLE OR DRIBBLE FIRST SHALL BE CORRECTED AND ELIMINATED PRIOR TO UNDERTAKING THE LOW PRESSURE AIR TEST.
D. WHENEVER IT HAS BEEN NECESSARY TO PLACE GRAVEL UNDER PIPELINES IN ORDER TO DEWATER THE TRENCH DURING CONSTRUCTION OF THE SEWERS, THE AIR TEST SHALL NOT BE MADE UNTIL ANY PUMPS WHICH HAVE BEEN USED IN THE DEWATERING PROCESS HAVE BEEN REMOVED FROM THE SITE.

COMMONWEALTH OF VIRGINIA
J. KEITH SINCLAIR, JR.
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Chantilly, Virginia
(UTILITY DISCIPLINE)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	I	0001-029-001 P101, R201, C501	45(2)

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

TESTING OF GRAVITY PIPELINES BY AIR (CONT'D)

E. BEFORE ANY AIR TEST IS SCHEDULED, THE CONTRACTOR MUST HAVE COMPLETED ALL BACKFILL OPERATIONS AND THE COMPACTION TEST HAVE BEEN MADE AND APPROVED BY THE CO.
F. CONTRACTOR SHALL PLUG THE PIPE AND SHALL CONDUCT A LOW PRESSURE AIR TEST TO DETERMINE THE ACCEPTABILITY OF THE COMPLETED WORK. CONTRACTOR SHALL FURNISH ALL WORKERS, MATERIALS AND SUPPLIES NECESSARY TO ASSIST IN THE CONDUCTING OF THIS TEST. THIS AIR TEST SHALL CONFORM TO UNI-BB-6-79 OR LATEST REVISION.
G. THE AIR TESTING EQUIPMENT SHALL BE AIR-LOCK, AS MANUFACTURED BY CHERNE INDUSTRIAL, INC., OR AN APPROVED EQUAL. ALL AIR USED SHALL PASS THROUGH A SINGLE CONTROL PANEL. INDIVIDUAL AIR HOSES SHALL BE USED FROM CONTROL PANEL TO PNEUMATIC PLUGS: FROM CONTROL PANEL TO SEALED LINE FOR INTRODUCING LOW PRESSURE AIR: AND FROM SEALED LINE TO CONTROL PANEL FOR CONTINUALLY MONITORING THE AIR PRESSURE IN THE SEALED LINE.
H. PNEUMATIC PLUGS SHALL HAVE A SEALING LENGTH EQUAL TO OR GREATER THAN THE DIAMETER OF THE PIPE TESTED. THE PLUGS SHALL RESIST INTERNAL TEST PRESSURES WITHOUT REQUIRING EXTERNAL BRACING OR BLOCKING. PLUGS SHALL BE TESTED PRIOR TO INSTALLATION IN THE PIPE RUN. A JOINT OF PIPE SHALL BE SEALED AT BOTH ENDS WITH THE PLUGS TO BE USED IN THE SEWER TEST. AIR SHALL BE INTRODUCED INTO THE PLUGS TO 25 PSIG. THE SEALED PIPE SHALL THEN BE PRESSURIZED TO 9 PSIG. THE PLUGS SHALL WITHSTAND THIS PRESSURE WITHOUT BRACING OR MOVEMENT. THE TESTED LINE SEGMENT SHALL BE PLUGGED AND PRESSURIZED TO 4.0 PSIGREATER THAN THE GROUNDWATER BACK PRESSURE BUT NOT TO EXCEED 9 PSIG. THE LINE SHALL BE ALLOWED TO STABILIZE FOR 2 MINUTES AFTER PRESSURIZATION. AFTER THE PRESSURE HAS STABILIZED, THE AIR PRESSURE SHALL BE DECREASED SLOWLY TO 3.5 PSI(GREATER THAN GROUNDWATER BACK PRESSURE) AND THE TIMING SHALL COMMENCE. THE TIME FOR THE PRESSURE TO DROP 1 PSIFROM 3.5 PSI SHALL BE RECORDED. THE MINIMUM ACCEPTABLE TIME DURATIONS ARE SHOWN ON TABLE 1. IF THE ELAPSED TIME TO DROP 1 PSIIS LESS THAN THAT SHOWN ON TABLE 1, THEN THE AIR LOSS SHALL BE CONSIDERED EXCESSIVE AND THE SECTION OF PIPE HAS FAILED THE TEST.
I. THE COSTS OF ALL EQUIPMENT AND MATERIALS REQUIRED TO PERFORM LOW PRESSURE AIR TESTING OF SANITARY SEWERS AND ALL EXPENSES IN CONNECTION WITH SUCH TESTS, SHALL BE BORNE BY THE CONTRACTOR.
J. IF NOT LOCATED IN THE RIGHT-OF-WAY, THE EXISTING SANITARY SEWER LINES AND EASEMENTS SHALL NOT BE ABANDONED AND VACATED UNTIL THE NEW LINES ARE INSTALLED AND APPROVED AND THE EXISTING FLOW HAS BEEN DIVERTED FROM THE EXISTING LINES TO THE NEW LINES. ALL SANITARY SEWER EASEMENTS IN WHCIH THE SANITARY SEWER STRUCTURES TO BE ABANDONED SHALL BE VACATED AND THE VACATION DULY RECORDED. THE DEED BOOK AND PAGE NUMBER FOR THE PROPOSED AND THE VACATED EASEMENTS ARE TO BE PROVIDED WITH THE SANITARY SEWER AS-BUILT PLAN.
K. THE CONTRACTOR SHALL PROVIDE A SANITARY SEWER AS-BUILT (MYLAR) TO FAIRFAX COUNTY WASTEWATER PLANNING AND MONITORING DIVISION FOR REVIEW AND APPROVAL. PREPARED, SIGNED AND SEALED BY A P.E. OR L.S SHOWING THE FOLLOWING INFORMATION: DEED BOOK AND PAGE NUMBERS OF NEW EASEMENTS, STATIONS, PIPE SIZE, PIPE TYPE, PIPE SLOPE, TOP AND INVERT ELEVATIONS, BEARINGS AND DISTANCE AND MANHOLE COORDINATES SHOWN AND/OR CONVERTED TO NAD 83.

DEFLECTION TESTING

A. THE INSTALLED PVC PIPE, PRESSURE OR GRAVITY SEWER SHALL NOT BE DEFLECTED (OUT OF ROUND) BY MORE THAN 5% OF 100% OF THE INTERIOR PIPE DIAMETER AS PER ASTM 3034.
B. THE CO WILL PERFORM VISUAL INSPECTIONS OF THE INSTALLED PIPE TO DETERMINE IF THE PIPE HAS BEEN INSTALLED OUT OF ROUND. FOLLOWING THE VISUAL INSPECTION, AT HIS OPTION, THE CO MAY REQUIRE DEFLECTION TESTING TO DETERMINE IF A SECTION OF PIPE IS SUSPECTED OF BEING DEFLECTED BEYOND THE 5% LIMIT.
C. DEFLECTION TESTING WILL BE PERFORMED BY PULLING A PROPERLY SIZED MANDREL OR SEWER BALL THROUGH THE SECTION OF PIPE TO BE TESTED. TESTING RESULTS SHALL BE GO, NO GO. IF THE MANDREL PASSES THROUGH THE PIPE THE PIPE WILL BE ACCEPTED AS NOT DEFLECTED. IF THE MANDREL FAILS TO PASS THROUGH THE TEST SECTION OF PIPE, THE SECTION SHALL BE REPLACED AND RETESTED. PIPE THAT FAILS A DEFLECTION TEST SHALL NOT BE REUSED. PASSING A DEFLECTION TEST DOES NOT GUARANTEE THAT A SECTION OF PIPE WILL NOT BE REJECTED FOR BEING OUT OF ALIGNMENT OR OFF GRADE.
D. THE MAXIMUM PULLING FORCE ON THE MANDRELL SHALL NOT BE GREATER THAN 25 FT-LB. THE MAXIMUM OUTSIDE DIAMETER OF THE MANDRELL SHALL NOT BE LESS THAT 5% OF THE AVERAGE INSIDE DIAMETER (AS PUBLISHED BY THE PIPE MANUFACTURER) OF THE PIPE TO BE TESTED.
E. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL EQUIPMENT REQUIRED FOR DEFLECTION TESTING.

MANHOLE FIELD TEST

A. ALL MANHOLES SHALL BE VACUUM TESTED AS FOLLOWS:

1. ALL PIPE OPENINGS SHALL BE PLUGGED BY PNEUMATIC OR MECHANIC PLUGS AND BRACED TO SUSTAIN 1-INCH MERCURY VACUUM. THE RIM OF CONE JOINT SHALL BE TESTED ON ALL MANHOLES WITH WATERING COVERS. NO PERSON SHALL BE INSIDE THE MANHOLE DURING TESTING. THE TEST SHALL BE AT 1-INCH MERCURY.

THE FOLLOWING TABLE INDICATES THE MINIMUM TIME TO HOLD 1 INCH MERCURY DROP:

	TEST TIME (SECONDS) FOR EACH MANHOLE DIAMETER (INCHES)						
DEPTH OF MANHOLE (FEET)	48"	60"	72"	84"	96"	108"	120"
10' OR LESS	60	75	90	105	120	135	140
GREATER THAN 10' BUT LESS THAN 15'	75	90	105	120	135	150	160
GREATER THAN 15' BUT LESS THAN 25'	90	105	120	135	150	165	175
25' AND GREATER	105	120	135	150	165	180	190

S15. INCLUDE THE COST OF SAWCUTTING AND DISPOSAL OF EXISTING CONCRETE PAVEMENT FOR INSTALLATION OF IM-19.0D TO TOP OF EXISTING GROUND SURFACE, IN THE WORK.

S16. ALL D. I. SANITARY SEWERS SHALL BE LINED WITH MIN. 40 MILS NOMINAL DR FILM THICKNESS OF PROTECTO 401 CERAMIC EPOXY.

S17. STEEL ENCASEMENT PIPE SHALL BE INSTALLED BY JACK AND BORE OR OTHER TRENCHLESS INSTALLATION METHOD AS NECESSARY IF TRAFFIC CANNOT BE MAINTAINED DURING THE ENCASEMENT AND/OR CARRIER PIPE INSTALLATIONS.

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY KEITH SINCLAIR, A.MORTON THOMAS & ASSOC.
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REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	45(3)

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

AWMSG GENERAL WATER AND SEWER NOTES

1. APPROVAL OF THIS PLAN SHALL NOT CONSTITUTE A COMMITMENT FOR SERVICE OR AN AUTHORIZATION TO BEGIN THE SITE UTILITY SYSTEM CONSTRUCTION. THE APPLICANT SHALL BE REQUIRED TO OBTAIN A DIG PERMIT FROM THE INSTALLATION PRIOR TO THE START OF CONSTRUCTION ACTIVITIES.

2. THE APPLICANT SHALL OBTAIN ALL NECESSARY PERMITS FROM ANY FEDERAL, STATE, AND / OR LOCAL PERMIT AUTHORITY HAVING JURSIDICTION OVER ANY PHASE OF CONSTRUCTION ASSOCIATED WITH THE INSTALLATION OF THIS SITE UTILITY SYSTEM.

3. THE CONTRACTOR SHALL NOTIFY THE AMERICAN WATER UTILITY MANAGER AND CO AT LEAST 48 HOURS PRIOR TO COMMENCING CONSTRUCTION.

4. BACKFLOW PREVENTION DEVICES ARE REQUIRED ON ALL CONNECTIONS TO THE EXISTING WATER SYSTEM. BACKFLOW PREVENTERS INSTALLED INSIDE ANY BUILDING SHALL REMAIN UNDER THE OWNERSHIP AND MAINTENANCE RESPONSIBILITY OF THE GOVERNMENT UNLESS OTHERWISE NOTED.

5. THE CONTRATOR SHALL VERIFY THE LOCATIONS OF ALL AMERICAN WATER FACILITIES PRIOR TO BEGINNING CONSTRCUTION. CONTRACTOR SHALL NOTIFY THE CO AND AMERICAN WATER OF ANY DISCREPANCIES FOUND IN THE FIELD OR ON THE DRAWINGS PRIOR TO CONSTRUCTION. ANY DEVIATIONS FROM THE CONSTRUCTION PLANS SHALL NEED TO BE APPROVED IN WRITING BY THE CO.

6. ALL WATER AND SANITARY SEWER CONSTRUCTION MATERIALS AND APPURTENANCES MUST ADHERE TO THE FULL REQUIREMENTS AS PUT FORTH IN AMERICAN WATER MILITARY SERVICES GROUP'S STANDARD SPECIFICATIONS FOR CONSTRUCTION OF WATER AND WASTEWATER FACILITIES, DESIGN GUIDE FOR WATER AND WASTEWATER FACILITIES, AND STANDARD CONSTRUCTION DETAILS.

7. A PROFESSIONAL ENGINEER, REGISTERED IN THE STATE WHERE CONSTRUCTION IS TAKING PLACE, SHALL BE RESPONSIBLE FOR GENERAL OVERSIGHT AND OBSERVATION OF THE SITE UTILITY SYSTEM INSTALLATION FOR COMPLIANCE WITH AMERICAN WATER STANDARDS AND TESTING REQUIREMENTS.

8. THE FOLLOWING TEST SHALL BE ADMINISTERED BY THE CONTRACTOR AND WITNESSED AND REPORTED BY THE APPLICANTS ENGINEER OR AGENT:
   - WATER - CHLORINE RESIDUAL
   - WATER - HYDROSTATIC
   - SEWER - MANDREL
     - SEWER - (GRAVITY) EXFILTRATION, INFILTRATION, AND LOW PRESSURE AIR TEST
     - SEWER - (PRESSURE) HYDROSTATIC
     - SEWER (MANHOLE) VACUUM TEST

   ALL TESTING EQUIPMENT SHALL BE FURNISHED BY THE SITE UTILITY CONTRACTOR.

9. WATER CONNECTION OF THE SITE UTILITY WATER SYSTEM TO THE EXISTING AMERICAN WATER WATER DISTRIBUTION SYSTEM IS PROHIBITED UNTIL THE CHLORINE RESIDUAL AND BACTERIOLOGICAL TESTS AS WELL AS THE REQUIRED HYDROSTATIC TESTS HAVE BEEN PERFORMED AND THE RESULTS REPORTED. THE APPLICANT SHALL SUBMIT THE TEST RESULTS TO THE AMERICAN WATER UTILITY MANAGER OR CO.

10. CONNECTION OF THE SITE UTILITY SEWER SYSTEM TO THE EXISTING AMERICAN WATER SANITARY SEWER SYSTEM IS PROHIBITED UNTIL ALL APPLICABLE TESTS HAVE BEEN PERFEORMED, THE RESULTS REPORTED, AND THE RESULTS FOUND TO COMPLY WITH ALL REQUIREMENTS. THE APPLICANT SHALL SUBMIT REPORTS TO THE AMERICAN WATER UTILITY MANAGER OR PROJECT ENGINEER.

11. SHOP DRAWINGS SHALL BE SUBMITTED TO AWMSG AND CO FOR REVIEW AND APPROVAL PRIOR TO ANY CONSTRUCTION.

12. A REGISTERED PROFESSIONAL ENGINEER'S CERTIFICATION OF THE SITE UTILITY SYSTEM AND ELECTRONIC FINAL AS-BUILT DRAWINGS, COMPATIBLE WITH AMERICAN WATER'S GIS SYSTEM, SHALL BE SUBMITTED INDICATING TO THE LOCATION OF VALVES, BENDS, MANHOLES, FIRE HYDRANTS, APPURTENANCES, ETC.

13. THE CONTRACTOR SHALL NOT OPERATE ANY VALVES LOCATED ON THE EXISTING DISTRIBUTION SYSTEM. REQUEST TO OPERATE VALVES MUST BE SUBMITTED TO THE AMERICAN WATER UTILITY MANAGER 48 HOURS IN ADVANCE. PROVIDE NOTIFICATION TO THE CO WHEN THIS REQUEST WILL BE MADE.

14. ALL MATERIALS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNLESS OTHERWISE NOTED.

15. WHEN A WATER MAIN AND A SEWER LINE ARE IN A PARALLEL ALIGMENT, THE WATER MAIN SHALL NOT BE INSTALLED WITHIN TEN FEET (10') OF THE SEWER LINE. WHEN A WATER MAIN AND SEWER LINE ARE IN A PERPENDICULAR CROSSING ALIGNMENT, THE WATER MAIN SHALL NOT BE INSTALLED WITHIN ONE AND A HALF FEET (1.5') OF THE SEWER LINE AND NO WATER MAIN JOINTS SHALL BE ALLOWED WITHIN TEN FEET (10') OF THE SEWER LINE. IF REQUIRED CLEARANCES CAN NOT BE MAINTAINED, CONCRETE ENCASEMENT SHALL BE PROVIDED.

16. SCHEDULE 40 AND SCHEDULE 80 P.V.C. PIPE ARE NOT PERMITTED UNDER ANY CIRCUMSTANCES IN CONVEYANCE AND DISTRIBUTION SYSTEMS.

PROJECT MANAGER LAURA MEHIEL A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY KEITH SINCLAIR A.MORTON THOMAS & ASSOC.
DESIGNED BY DARON DORAN A.MORTON THOMAS & ASSOC.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	I	0001-029-001 P101, R201, C501	45(9)

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

A. Morton Thomas & Assoc.
Chantilly, Virginia
(UTILITY DISCIPLINE)

Note: The Army/US Gov't is granting a Right of Entry to Corman-Wagman for construction. Temporary construction easements on Army property are not required, since right of entry is sufficient for construction access.

FOR WATER ADJUSTMENTS ONLY

LEGEND

- Denotes Building to be Demolished
- C - Denotes Construction Limits In Cuts
- F - Denotes Construction Limits In Fills
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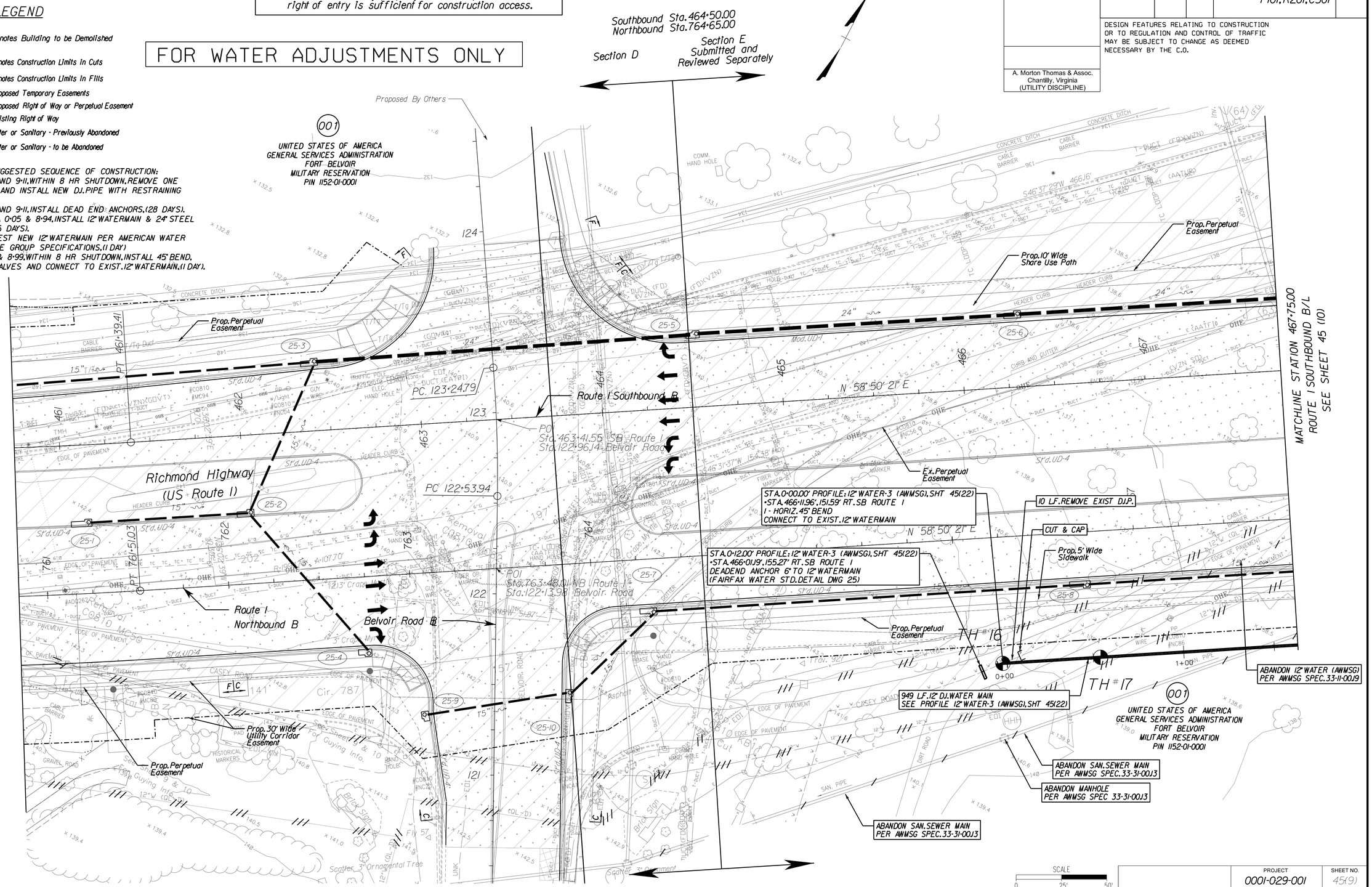
- Proposed Right of Way or Perpetual Easement
- Existing Right of Way
- /// Water or Sanitary - Previously Abandoned
- / Water or Sanitary - to be Abandoned

12" WATER-3 - SUGGESTED SEQUENCE OF CONSTRUCTION:
1. AT STA.0+12 AND 9+11, WITHIN 8 HR SHUTDOWN, REMOVE ONE PIPE SEGMENT AND INSTALL NEW DJ.PIPE WITH RESTRAINING GLAND, (1 DAY)
2. AT STA.0+12 AND 9+11, INSTALL DEAD END ANCHORS, (28 DAYS).
3. BETWEEN STA 0+05 & 8+94, INSTALL 12" WATERMAIN & 24" STEEL CASING PIPE, (135 DAYS).
5. INSPECT & TEST NEW 12" WATERMAIN PER AMERICAN WATER MILITARY SERVICE GROUP SPECIFICATIONS, (1 DAY)
6. AT STA.0+00 & 8+99, WITHIN 8 HR SHUTDOWN, INSTALL 45° BEND, 90° BEND AND VALVES AND CONNECT TO EXIST. 12" WATERMAIN, (1 DAY).



PROJECT	SHEET NO.
0001-029-001	45(9)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
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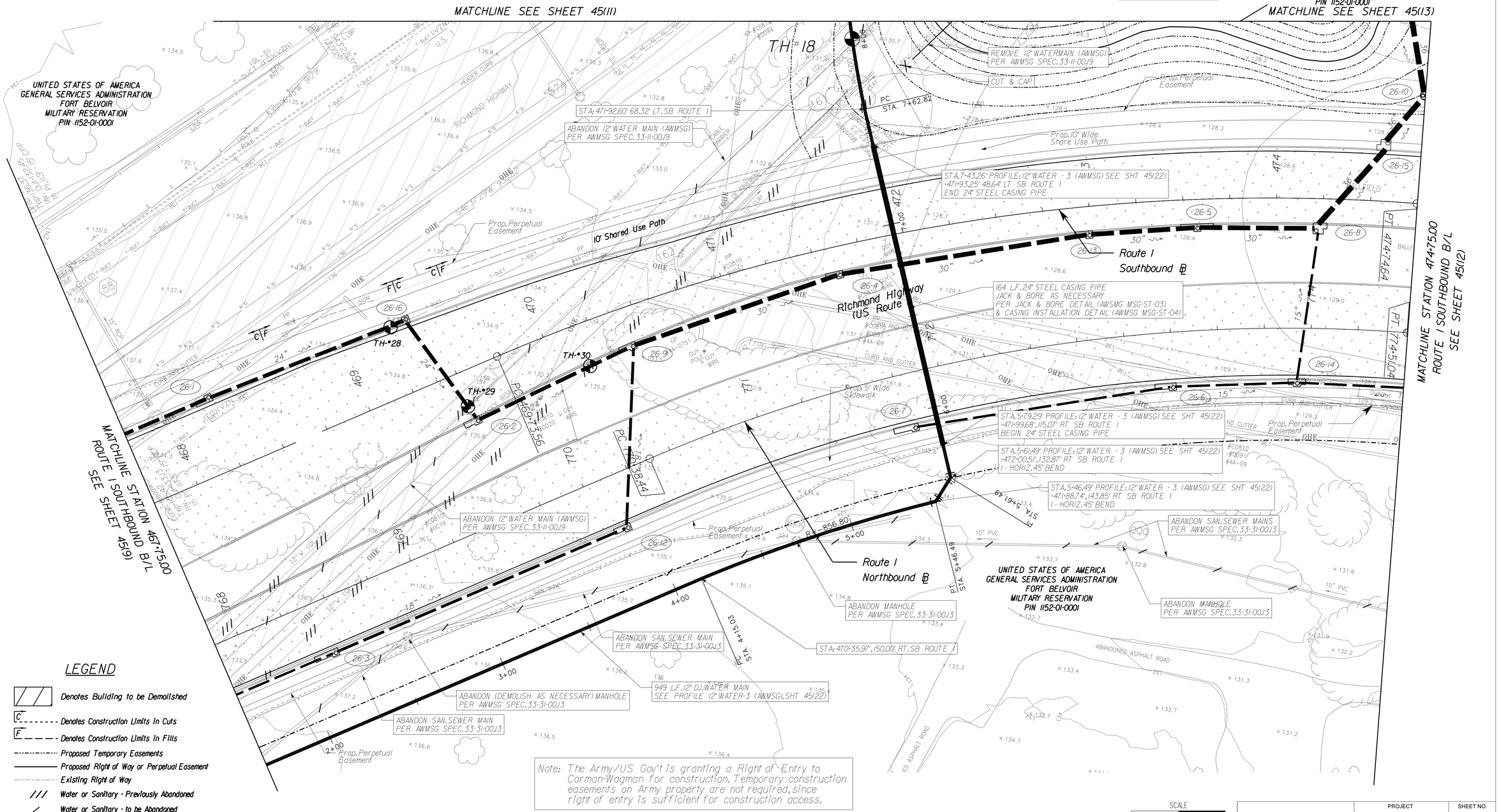
DESIGNED BY DARON DORAN, A.MORTON THOMAS & ASSOC.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	45(10)

A. Morton Thomas & Assoc.
Chantilly, Virginia
(UTILITY DISCIPLINE)

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

FOR WATER ADJUSTMENTS ONLY



Note: The Army/US Gov't is granting a Right of Entry to Corman-Wagman for construction. Temporary construction easements on Army property are not required, since right of entry is sufficient for construction access.

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- / Water or Sanitary - to be Abandoned
- X Water or Sanitary - to be Removed

SCALE 0 25' 50'

PROJECT	SHEET NO.
0001-029-001	45(10)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY FHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY KEITH SINCLAIR, A.MORTON THOMAS & ASSOC.
DESIGNED BY DARON DORAN, A.MORTON THOMAS & ASSOC.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	45(11)

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

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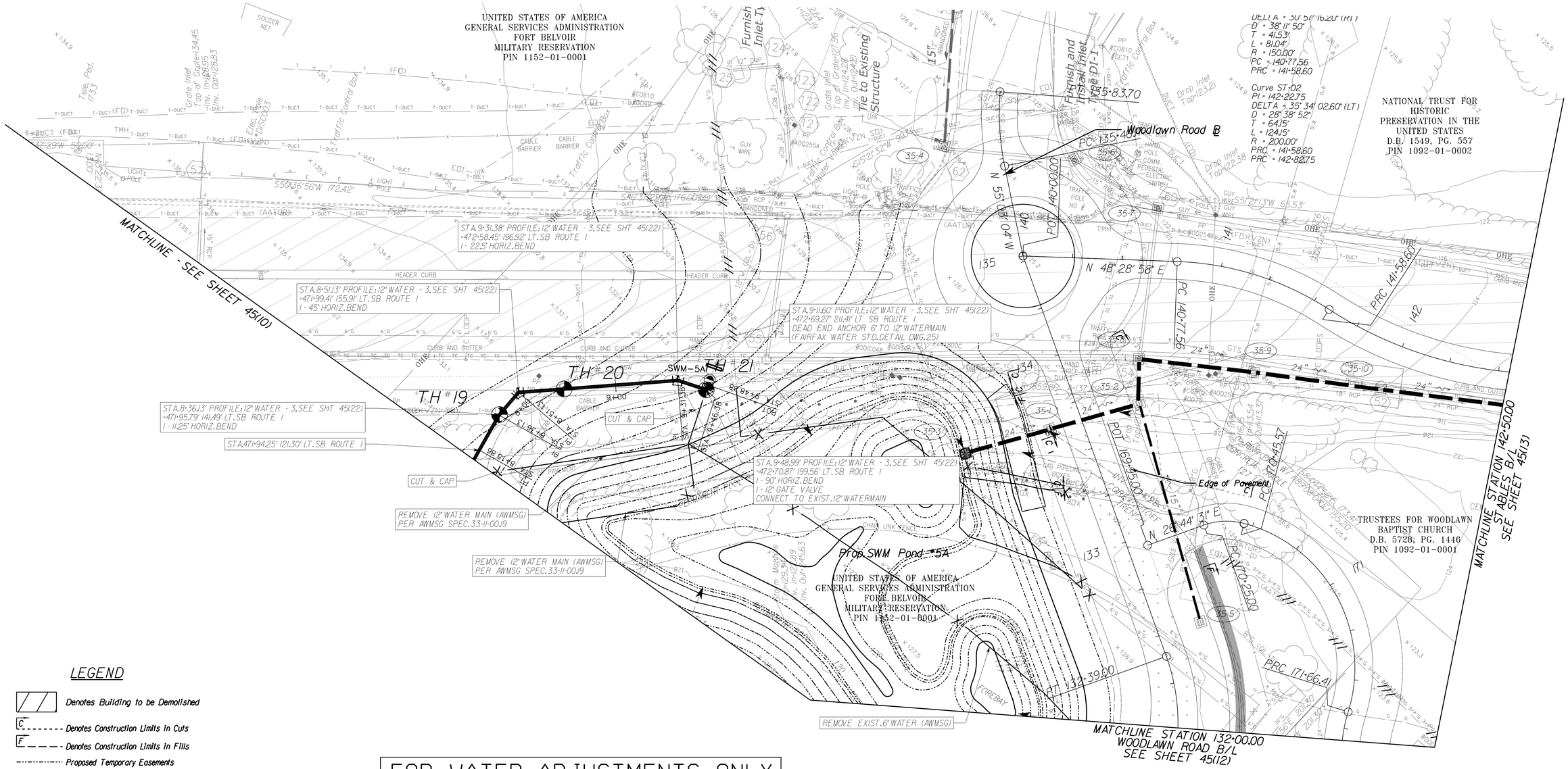

LEGEND

- Denotes Building to be Demolished
- C - - - - - - Denotes Construction Limits In Cuts
- F — — — Denotes Construction Limits In Fills
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- Proposed Right of Way or Perpetual Easement
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- × Water or Sanitary - to be Removed

FOR WATER ADJUSTMENTS ONLY

SCALE 0 25' 50'

PROJECT	SHEET NO.
0001-029-001	45(11)

PROJECT MANAGER LAURA MEHIFI, A.MORTON THOMAS & ASSOC.
SURVEYED BY FHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY KEITH SINCLAIR, A.MORTON THOMAS & ASSOC.
DESIGNED BY DARON DORAN, A.MORTON THOMAS & ASSOC.

THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	45(12)

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

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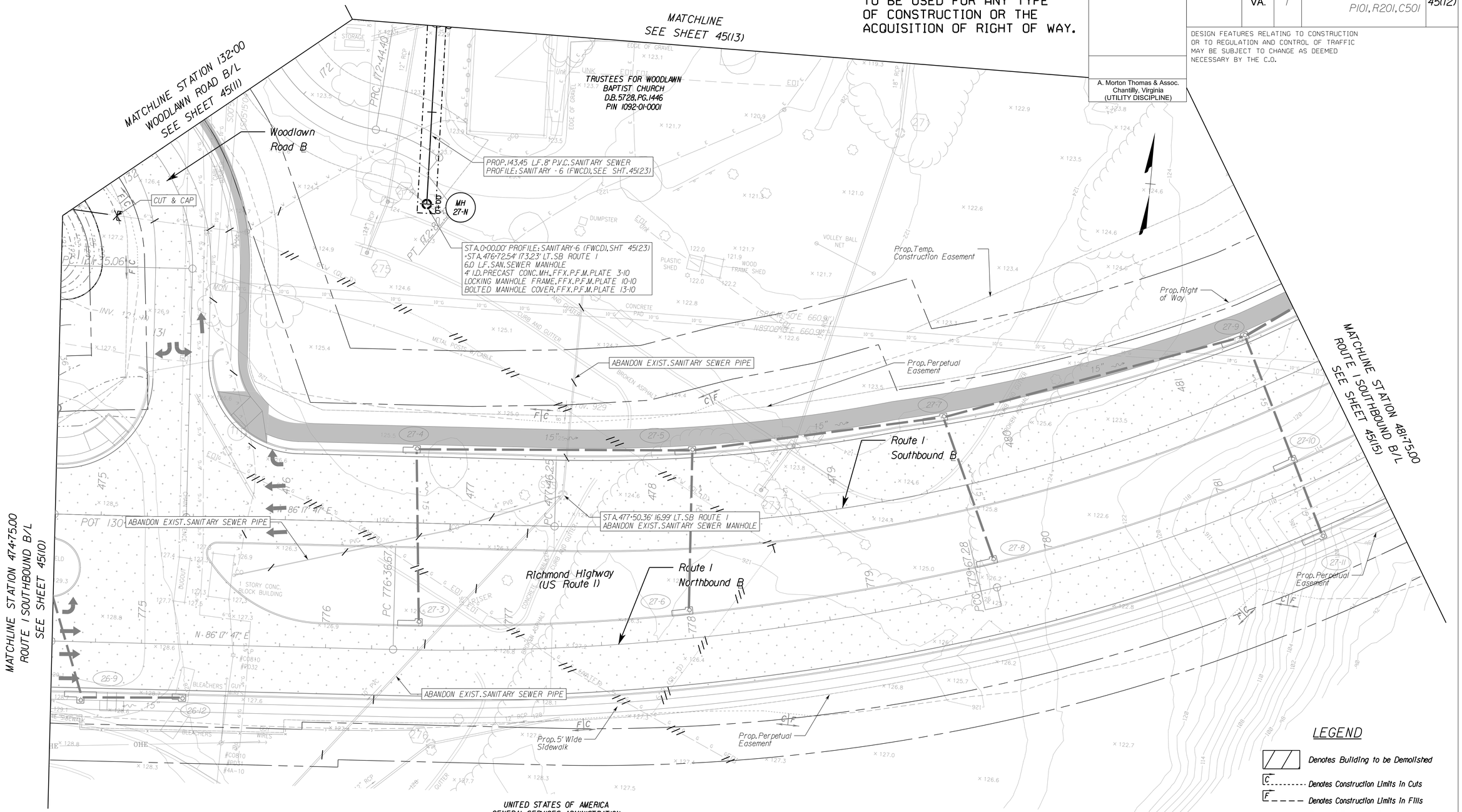
Chantilly, Virginia
(UTILITY DISCIPLINE)



FOR SANITARY ADJUSTMENTS ONLY

LEGEND

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- /// Water or Sanitary - Previously Abandoned
- / Water or Sanitary - to be Abandoned

SCALE 0 25' 50'

PROJECT	SHEET NO.
0001-029-001	45(12)

PROJECT MANAGER LAURA MEHIFI, A.MORTON THOMAS & ASSOC.
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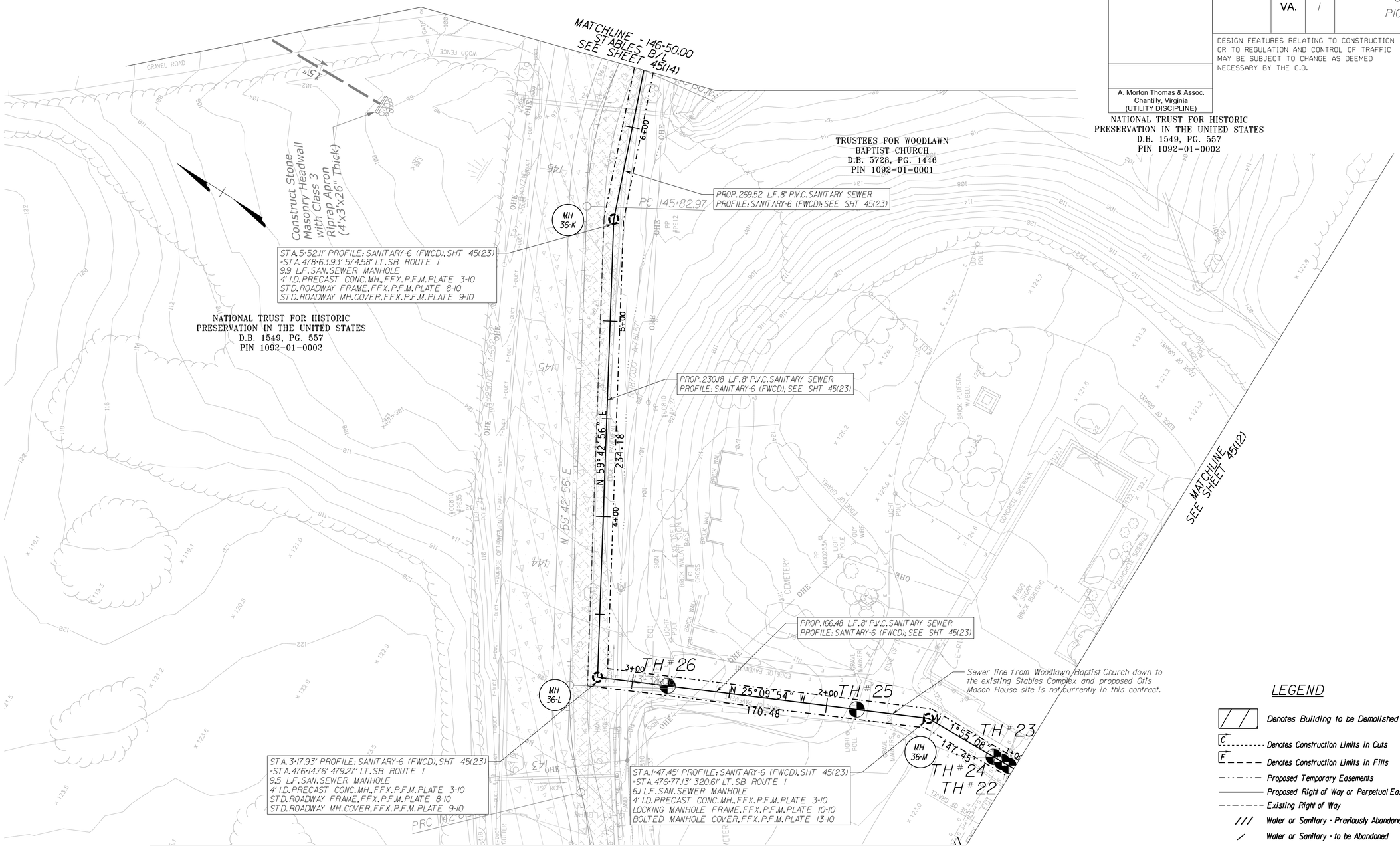
DESIGNED BY DARON DORAN, A.MORTON THOMAS & ASSOC.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	45(13)

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

A. Morton Thomas & Assoc.
Chantilly, Virginia
(UTILITY DISCIPLINE)



LEGEND

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- C ---------- Denotes Construction Limits in Cuts
- F - - - - - Denotes Construction Limits in Fills
- -·-·-·- Proposed Temporary Easements
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FOR SANITARY ADJUSTMENTS ONLY

SCALE 0 25' 50'

PROJECT	SHEET NO.
0001-029-001	45(13)

PROJECT MANAGER LAURA MEHIFI, A.MORTON THOMAS & ASSOC.
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DESIGN SUPERVISED BY KEITH SINCLAIR, A.MORTON THOMAS & ASSOC.
DESIGNED BY DARON DORAN, A.MORTON THOMAS & ASSOC.

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	45(14)

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

A. Morton Thomas & Assoc.
Chantilly, Virginia
(UTILITY DISCIPLINE)

LEGEND

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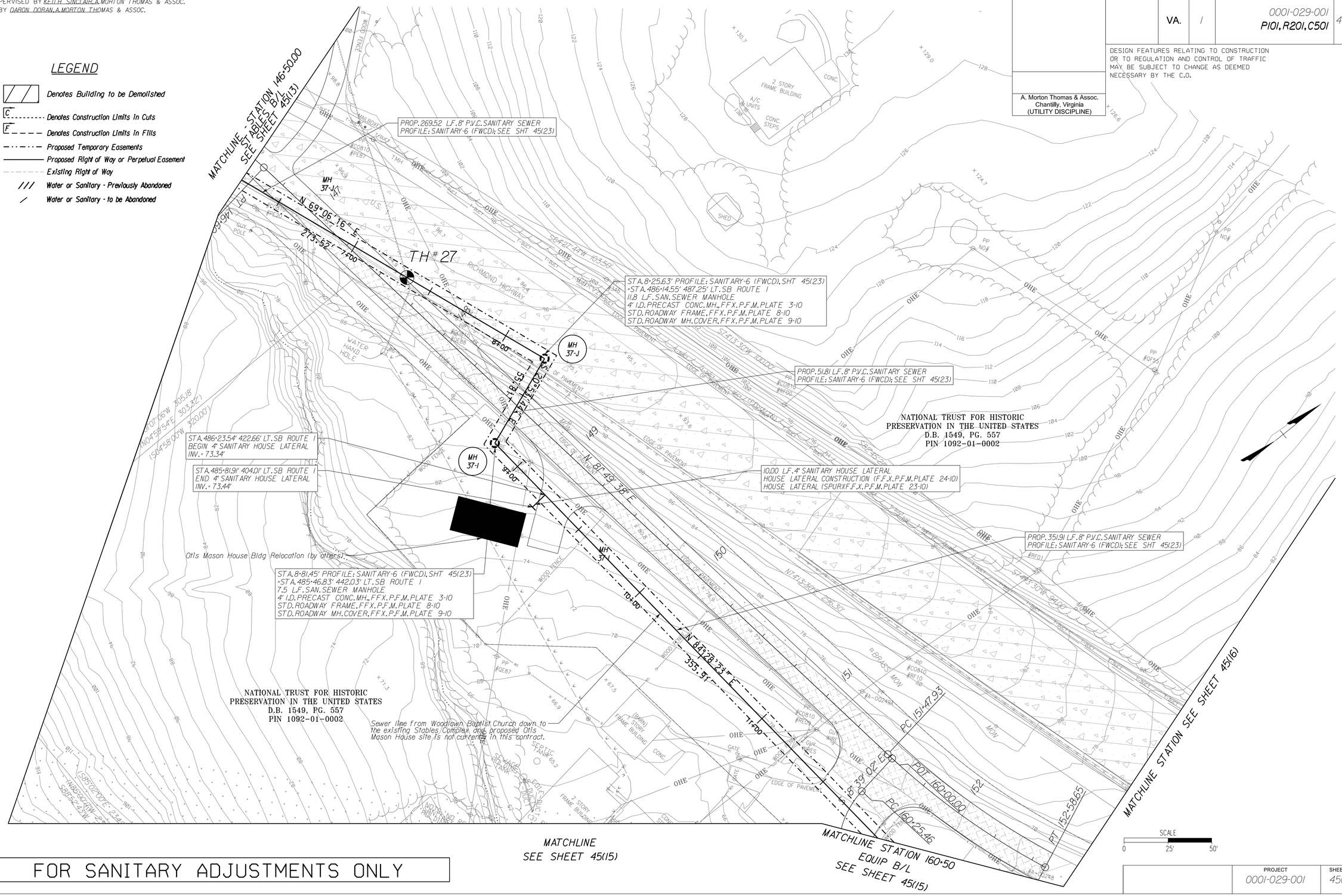

FOR SANITARY ADJUSTMENTS ONLY

PROJECT	SHEET NO.
0001-029-001	45(14)

PROJECT MANAGER LAURA MEHIFI, A.MORTON THOMAS & ASSOC.
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REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	45(15)

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

A. Morton Thomas & Assoc.
Chantilly, Virginia
(UTILITY DISCIPLINE)

LEGEND

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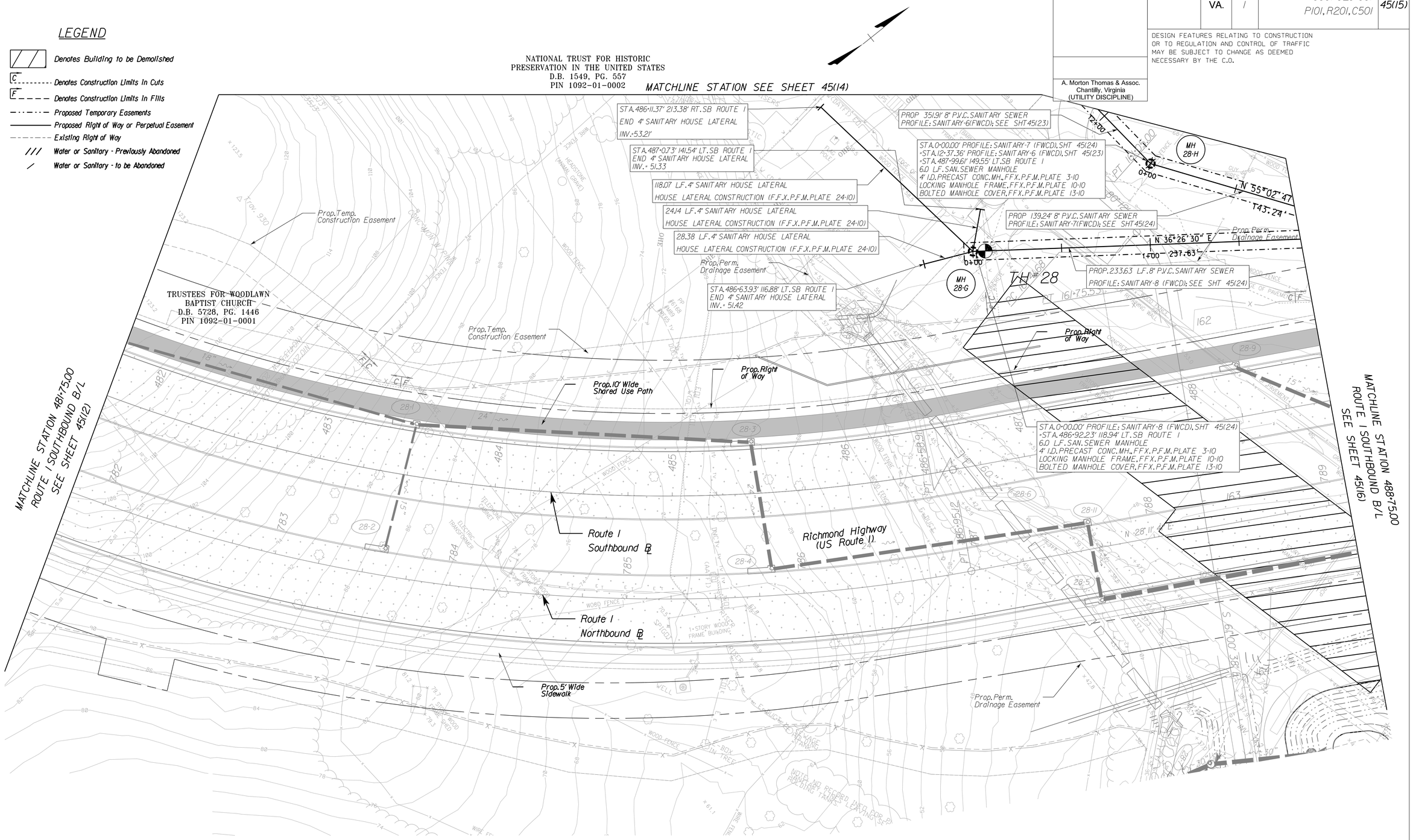


FOR WATER/SANITARY ADJUSTMENTS ONLY

SCALE 0 25' 50'

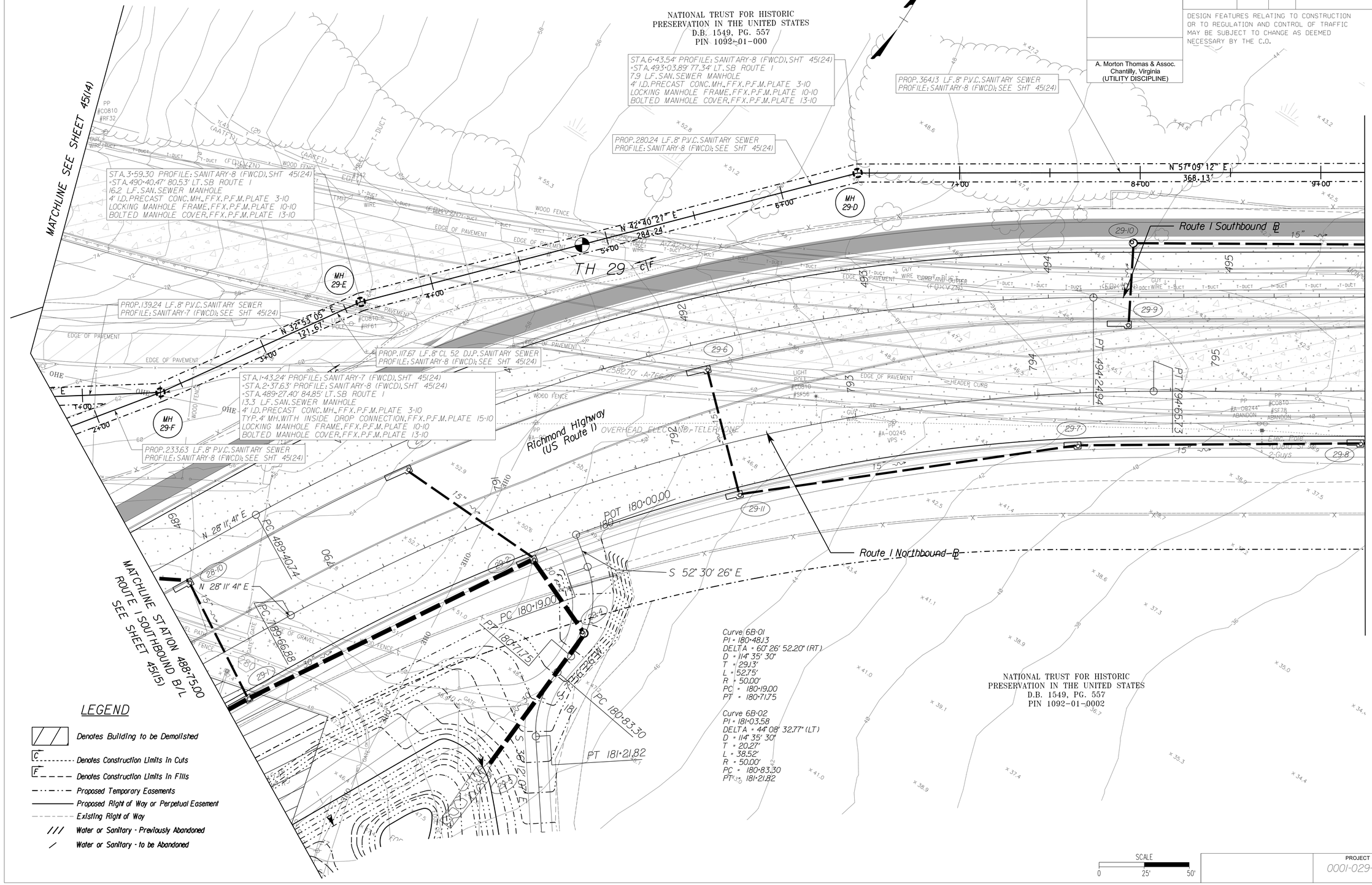
PROJECT	SHEET NO.
0001-029-001	45(15)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY FHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY KEITH SINCLAIR, A.MORTON THOMAS & ASSOC.
DESIGNED BY DARON DORAN, A.MORTON THOMAS & ASSOC.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	45(16)

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

A. Morton Thomas & Assoc.
Chantilly, Virginia
(UTILITY DISCIPLINE)



SCALE
0 25' 50'

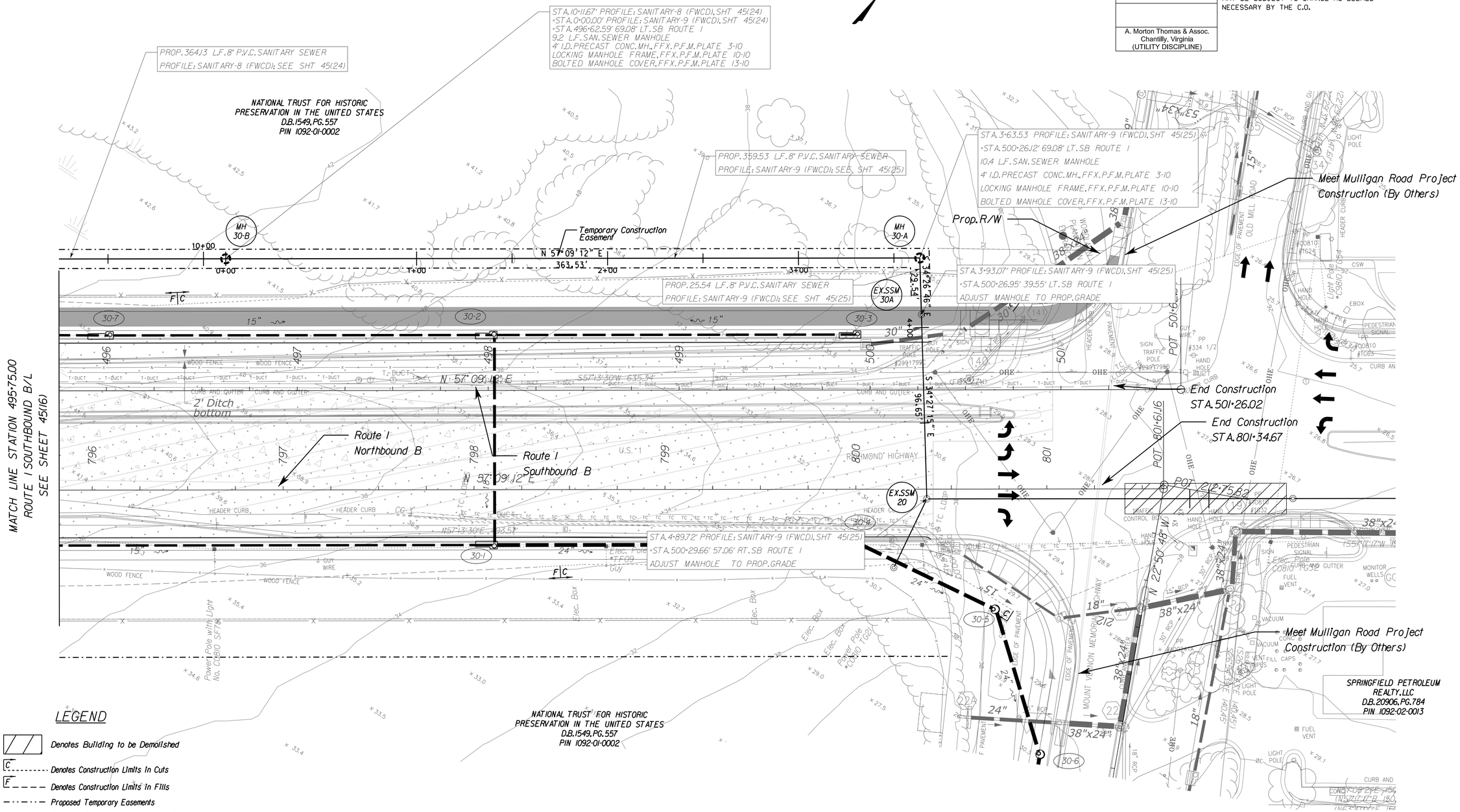
PROJECT	SHEET NO.
0001-029-001	45(16)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY KEITH SINCLAIR, A.MORTON THOMAS & ASSOC.
DESIGNED BY DARON DORAN, A.MORTON THOMAS & ASSOC.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	45(17)

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

A. Morton Thomas & Assoc.
Chantilly, Virginia
(UTILITY DISCIPLINE)



LEGEND

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- -·-·- Proposed Temporary Easements
- ——— Proposed Right of Way or Perpetual Easement
- - - - - Existing Right of Way
- /// Water or Sanitary - Previously Abandoned
- / Water or Sanitary - to be Abandoned

SCALE 0 25' 50'

PROJECT	SHEET NO.
0001-029-001	45(17)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY FHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
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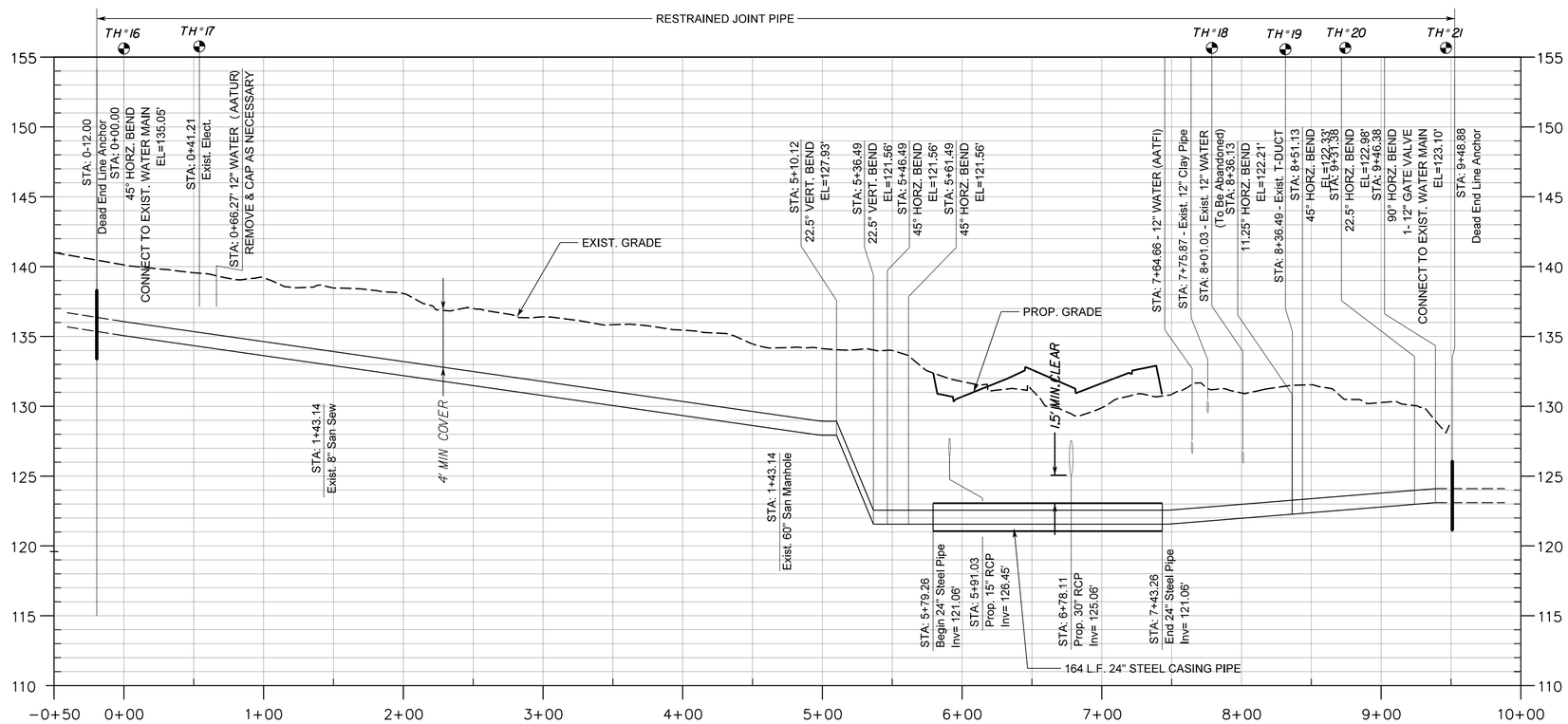
DESIGNED BY DARON DORAN, A.MORTON THOMAS & ASSOC.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	45(22)

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

A. Morton Thomas & Assoc.
Chantilly, Virginia
(UTILITY DISCIPLINE)

12" Water-3 (AWMSG)



PROJECT	SHEET NO.
0001-029-001	45(22)

PROJECT MANAGER LAURA MEHIFI, A.MORTON THOMAS & ASSOC.
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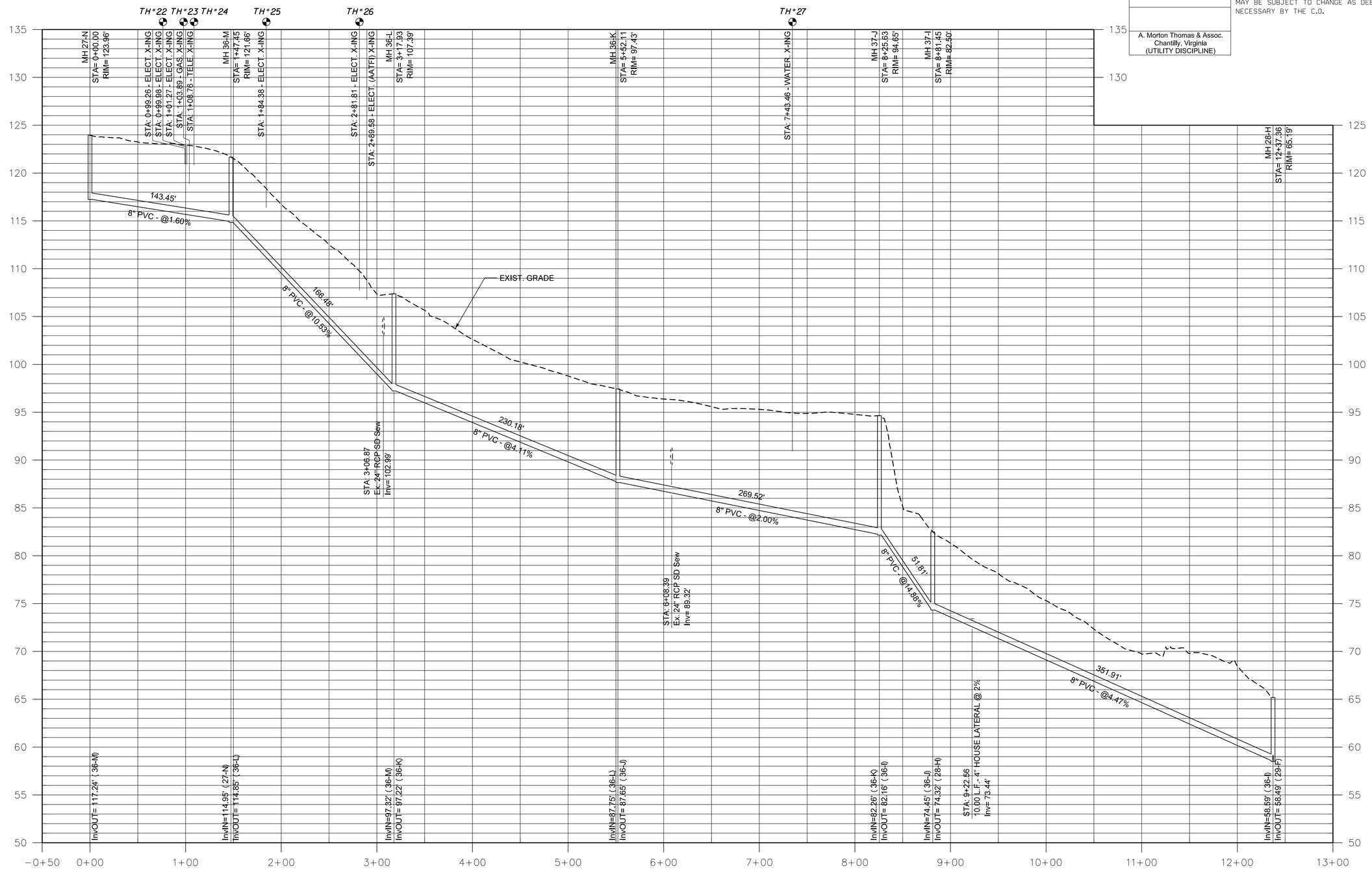
REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	45(23)

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

A. Morton Thomas & Assoc.
Chantilly, Virginia
(UTILITY DISCIPLINE)

Sanitary-6 (FCWD)



SCALE
0 50' 100'

PROJECT	SHEET NO.
0001-029-001	45(23)

PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
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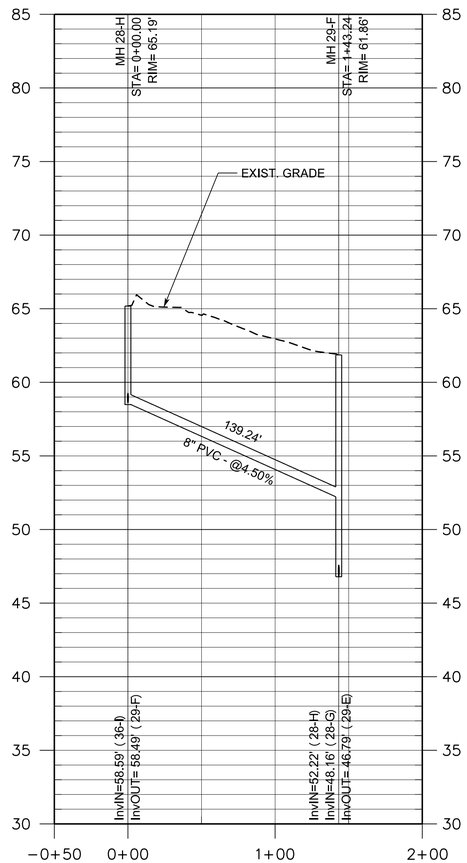
DESIGNED BY DARON DORAN, A.MORTON THOMAS & ASSOC.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	45(24)

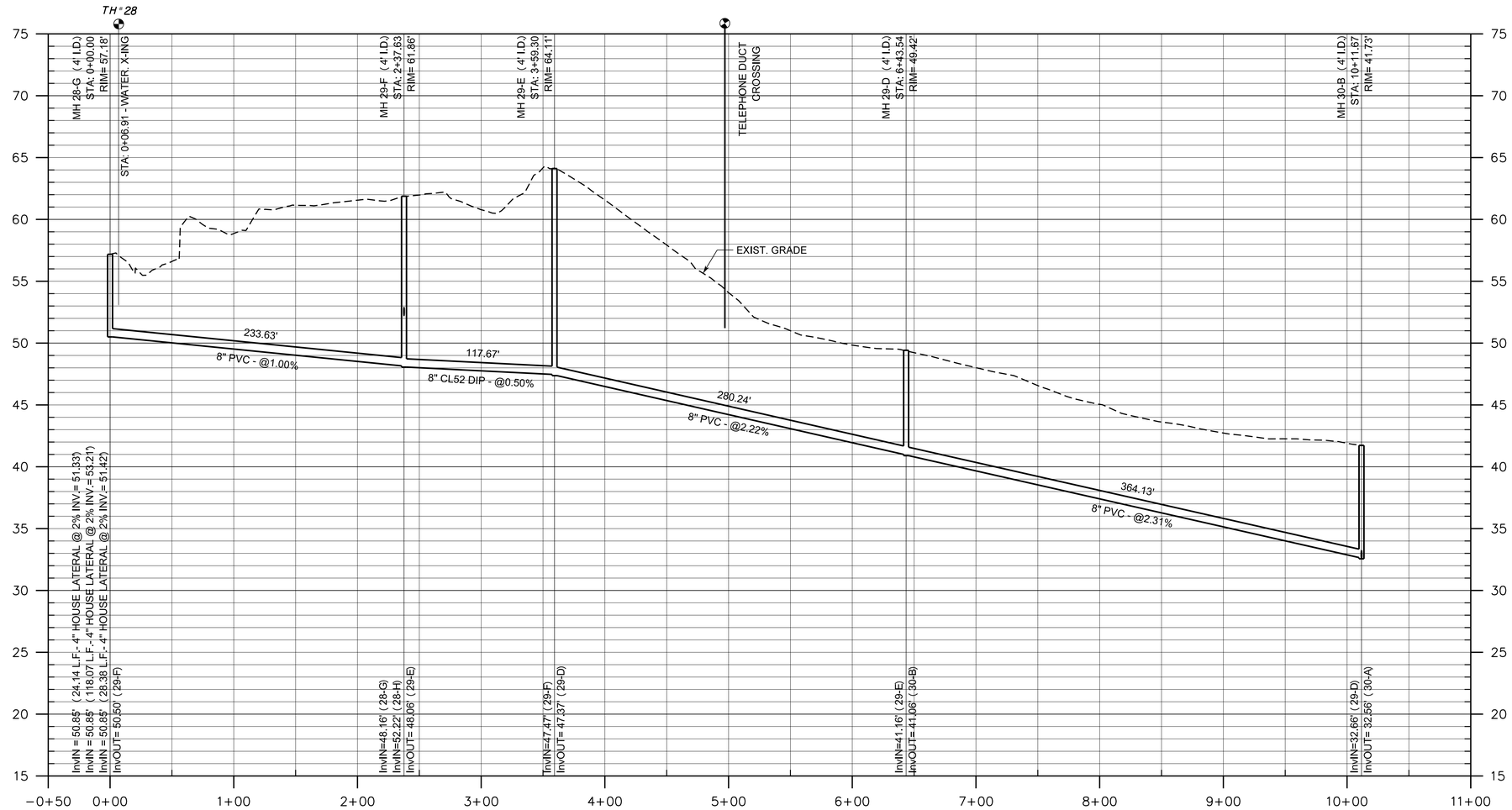
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE C.O.

A. Morton Thomas & Assoc.
Chantilly, Virginia
(UTILITY DISCIPLINE)

Sanitary-7 (FWCD)



Sanitary-8 (FWCD)



SCALE H=50', V=5'

PROJECT	SHEET NO.
0001-029-001	45(24)

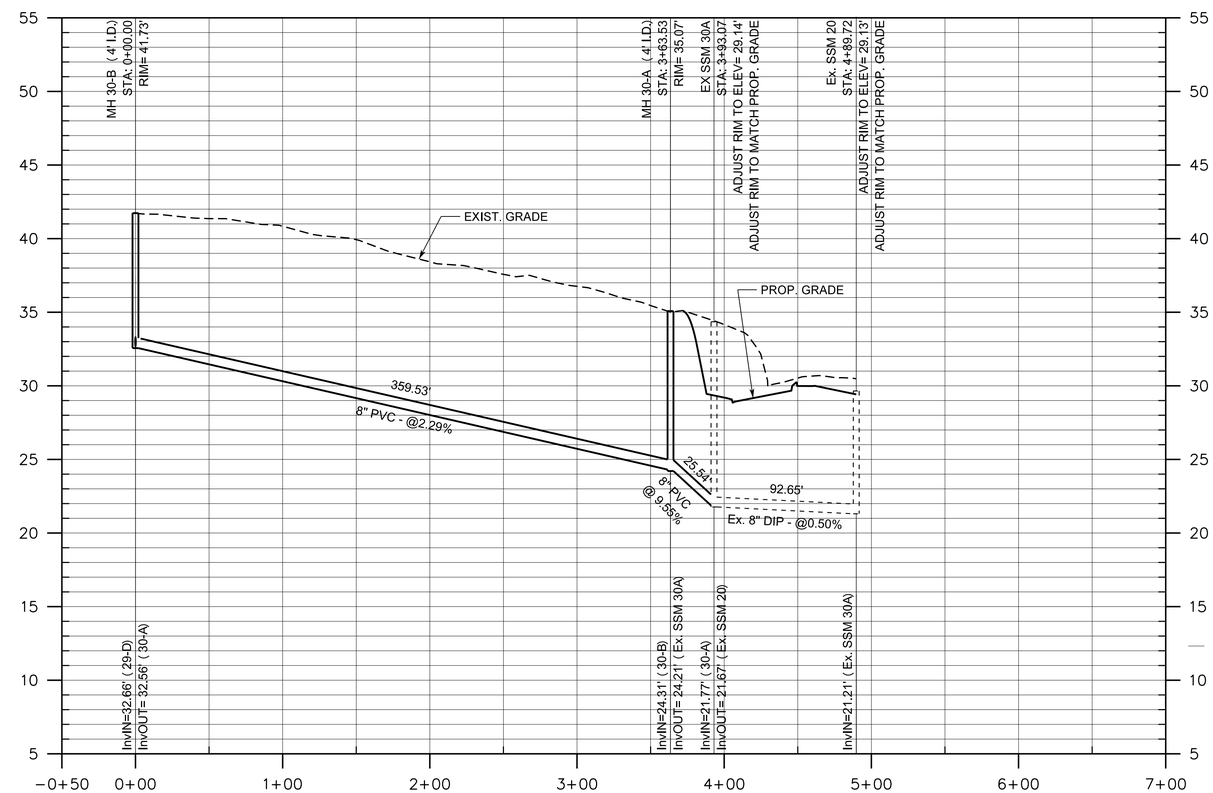
PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY FHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY KEITH SINCLAIR, A.MORTON THOMAS & ASSOC.
DESIGNED BY DARON DORAN, A.MORTON THOMAS & ASSOC.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	45(25)

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

A. Morton Thomas & Assoc.
Chantilly, Virginia
(UTILITY DISCIPLINE)

Sanitary-9 (FWCD)



SCALE: H=50', V=5'

PROJECT	SHEET NO.
0001-029-001	45(25)