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 24, 2014
SECTION E FINISHES PACKAGE

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

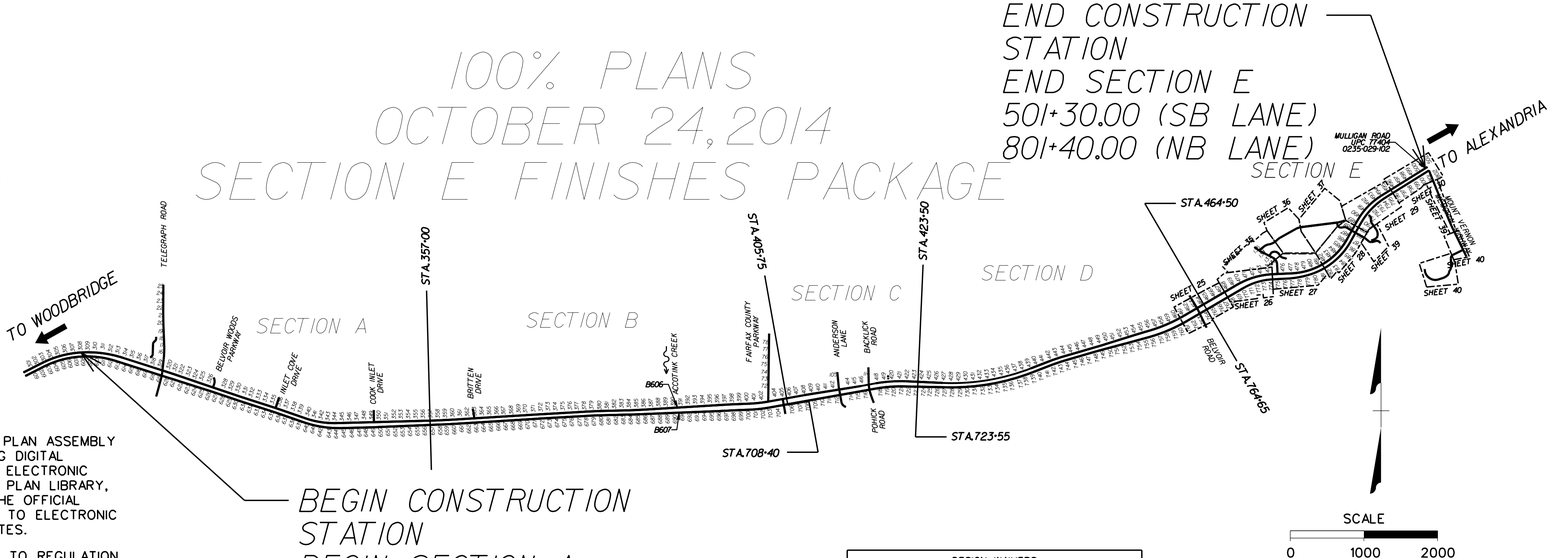
Telegraph Rd. - Urban Minor Arterial	
Fr.: 0.228 Miles North of US 1 To: 0.026 Miles South of US 1	
ADT (2010)	24,000
ADT (2040)	20,000
DHV	2,424
D (%) (design hour)	81/19
T (%) (design hour)	3
V (MPH)	45

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



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.

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

STATE PROJECT NO.	SECTION	FEDERAL AID PROJECT NO.	TYPE CODE	UPC NO.	EQUALITIES FEET	LENGTH INCLUDING BRIDGE(S) FEET	LENGTH INCLUDING BRIDGE(S) MILES	LENGTH EXCLUDING BRIDGE(S) FEET	LENGTH EXCLUDING BRIDGE(S) MILES	BRIDGE PROJECT NO.	TYPE PROJECT	DESCRIPTION
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

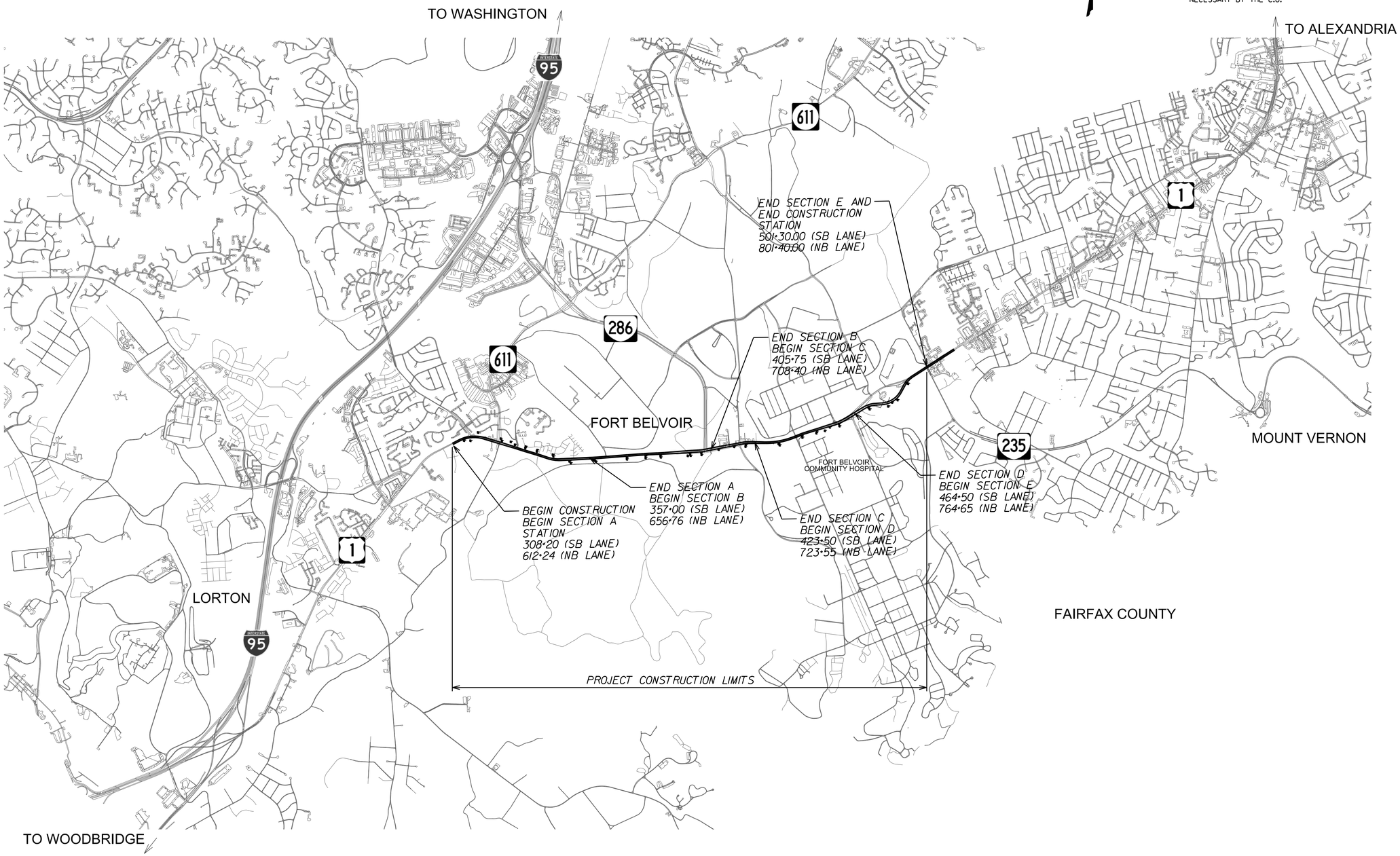
APPROVED FOR CONSTRUCTION	
DATE	SENIOR PROJECT MANAGER FEDERAL HIGHWAY ADMINISTRATION EASTERN FEDERAL LANDS HIGHWAY DIVISION

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.

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

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

TITLE SHEET	1
LOCATION MAP	1A
INDEX OF SHEETS	1B
NOT INCLUDED IN THIS SET	2A - 2B(6)
FENCE DETAILS	2B(7)
NOT INCLUDED IN THIS SET	3 - 41
SIGNING & MARKING NOTES	42(1) - 42(1A)
NOT INCLUDED IN THE SET	42(2) - 42(13)
SIGNING & MARKING PLAN SHEETS	42(14) - 42(17)
NOT INCLUDED IN THIS SET	42(18) - 42(27)
SIGNING & MARKING PLAN DETAILS	42(28) - 42(32)
NOT INCLUDED IN THIS SET	42(33) - 42(36)
SIGNING & MARKING SIGN SCHEDULES	42(37) - 42(38)
NOT INCLUDED IN THIS SET	43
TRAFFIC SIGNAL NOTES	44(1) - 44(1A)
INCLUDED IN THIS SET	44(2) - 44(8)
TRAFFIC SIGNAL PLANS	44(9) - 44(10)
NOT INCLUDED IN THIS SET	45 - 46B(5)
SWM PLANTING PLANS	46B(6) - 46B(8)
PLANTING DETAILS	46C(1) - 46C(3)

VDOT STANDARD DETAILS AND INSERTABLE SHEETS SUBMITTED UNDER SEPERATE COVER

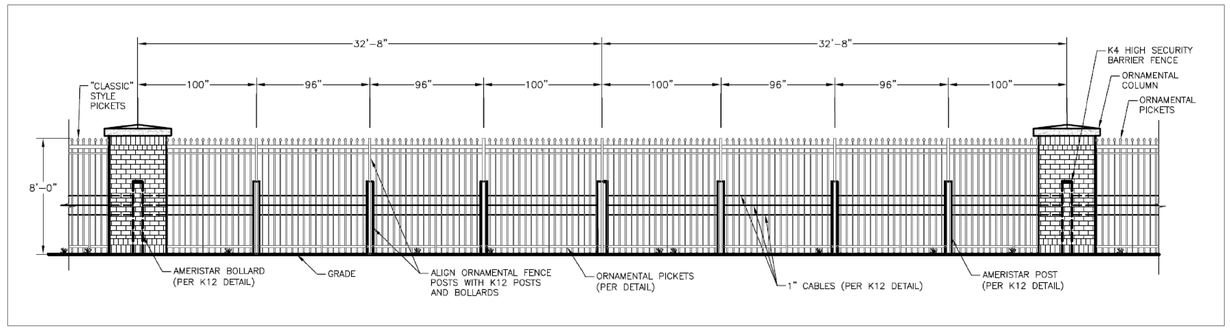
SHEETS NOTED AS NOT INCLUDED IN THIS SET ARE NOT RELEVANT FOR THIS SUBMISSION.

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

FENCE DETAILS

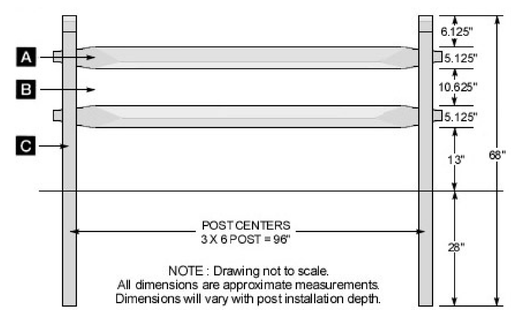
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	2B(7)

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



FORT BARRIER FENCE

Fence details to be provided by Fort Belvoir



WOOD FENCE DETAIL FOR NATIONAL TRUST FOR HISTORIC PRESERVATION IN THE UNITED STATES PROPERTY

Hoover Fence Co.- 2 Rail Split Rail Style - 3' High - White

Alternate fencing may be proposed by Contractor and approved as a shop drawing.

10/16/2014
11:57:30 AM

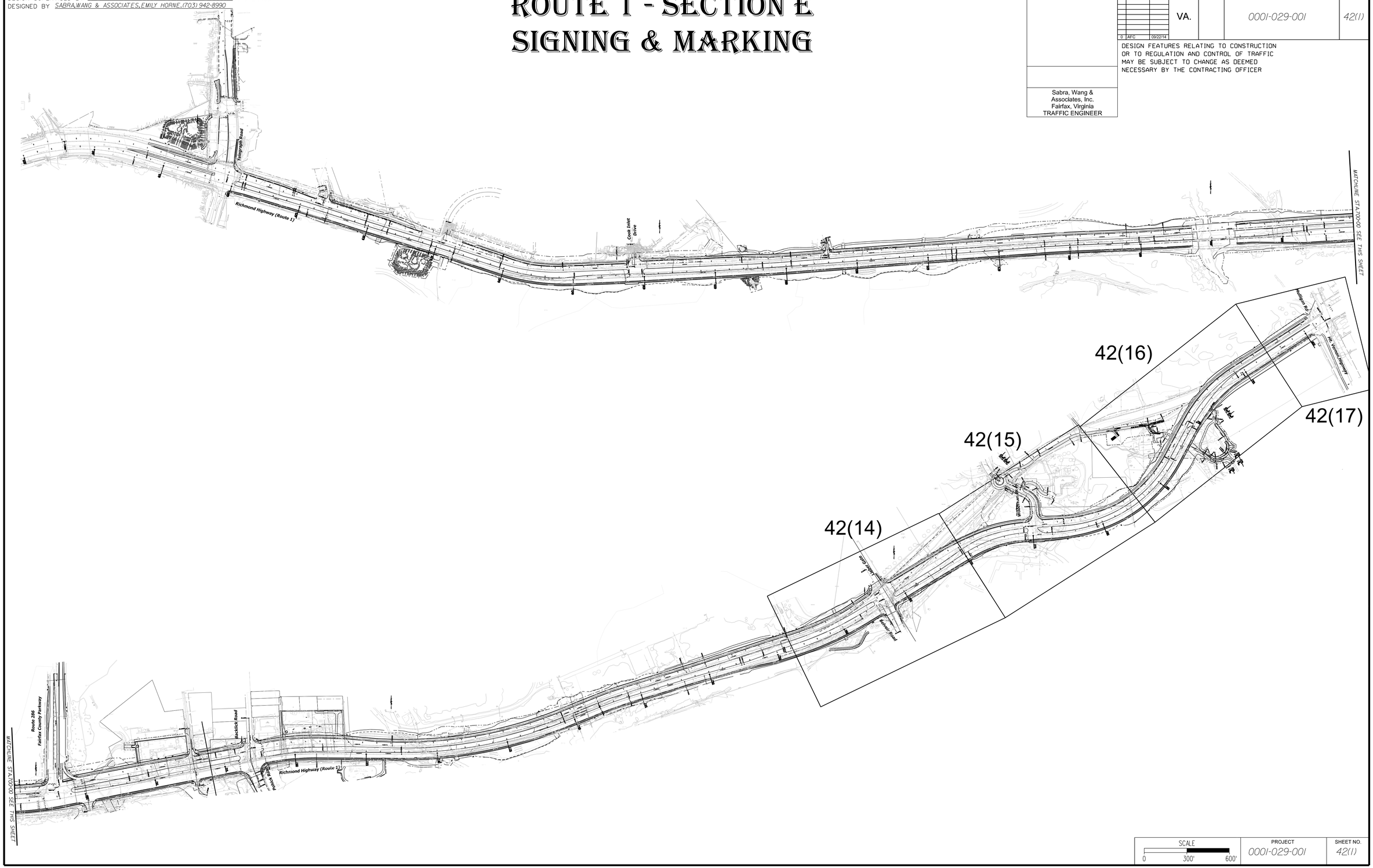
PROJECT MANAGER LAURA MEHIEL, A MORTON THOMAS & ASSOC.
SURVEYED BY, DATE FHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY SABRA,WANG & ASSOCIATES,JYOTHI PALADUGU,(703) 942-8990
DESIGNED BY SABRA,WANG & ASSOCIATES,EMILY HORNE,(703) 942-8990

ROUTE 1 - SECTION E
SIGNING & MARKING

REVISED			STATE	STATE		SHEET NO.
No.	Description	Date		ROUTE	PROJECT	
0	AFC	09/22/14	VA.		0001-029-001	42(1)

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



SCALE	PROJECT	SHEET NO.
0 300' 600'	0001-029-001	42(1)

10/23/2014
6:04:58 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
DESIGNED BY SABRA,WANG & ASSOCIATES,EMILY HORNE,(703) 942-8990

GENERAL NOTES

1. THE REMOVAL OF EXISTING SIGN PANELS, STRUCTURE, OR FOUNDATIONS SHALL CONFORM TO SECTION 510 OF VDOT SPECIFICATIONS.

2. UNLESS OTHERWISE APPROVED BY THE CONTRACTING OFFICER OR INDICATED IN THE MAINTENANCE OF TRAFFIC PLANS, EXISTING TRAFFIC SIGNS WHICH ARE TO BE RELOCATED SHALL REMAIN IN PLACE UNTIL THE NEW SIGN STRUCTURES ARE IN PLACE. EXISTING SIGNS TO BE REMOVED OR RELOCATED CAN BE REMOVED AND STORED AFTER TRAFFIC IS SWITCHED WITHOUT THE APPROVAL OF THE CONTRACTING OFFICER.

3. NEW MATERIALS AND ITEMS REQUIRED TO COMPLETE THE REMOVAL OF EXISTING ITEMS SHALL BE SUBMITTED TO THE CONTRACTING OFFICER FOR REVIEW AND APPROVAL IN ACCORDANCE WITH THE RFP.

4. ALL EXISTING AND PROPOSED SIGN LOCATIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR. ALL PROPOSED SIGN LOCATIONS SHALL BE STAKED BY THE CONTRACTOR AND APPROVED BY THE CONTRACTING OFFICER. ALL SIGN LOCATIONS SHALL BE VERIFIED BY THE CONTRACTING OFFICER.

5. SIGN POSTS SHALL BE SQUARE TUBE SIGN POSTS UNLESS OTHERWISE NOTED.

6. EXISTING SIGNS WITHIN THE LIMIT OF THE CONTRACT WHICH HAVE NOT BEEN ACCOUNTED FOR IN THE PLANS SHALL BE RELOCATED OR REMOVED AS DIRECTED BY THE CONTRACTING OFFICER.

7. ALL PAVEMENT LINE MARKINGS WILL BE TYPE B, CLASS VI. TYPE B, CLASS VI CONTRAST MARKINGS WILL BE USED ON CONCRETE SURFACES. ALL PAVEMENT MARKING MESSAGES WILL BE TYPE B, CLASS I.

8. EXISTING PAVEMENT MARKINGS AND/OR MARKERS THAT CONFLICT WITH THE PROPOSED MARKINGS AND/OR MARKERS SHALL BE ERADICATED BY APPROVED METHOD, ACCORDING TO VDOT 2007 ROAD AND BRIDGE SPECIFICATION 512.03.

9. LIMITS OF PROPOSED PAVEMENT MARKINGS ARE APPROXIMATE AND SHALL BE MODIFIED IN THE FIELD UNTIL EXISTING MARKINGS CAN BE MATCHED.

10. RAISED PAVEMENT MARKERS WILL BE LOCATED PER VDOT STANDARD PM-8 ON ROUTE 1.

11. ALL STRIPING WHERE "MATCH EXISTING PAVEMENT MARKING" IS SHOWN SHALL BE PLACED IN ACCORDANCE WITH VDOT 2008 ROAD AND BRIDGE STANDARDS.

12. INTERSECTION STRIPING SHALL BE COORDINATED WITH THE TRAFFIC SIGNAL INSTALLATIONS.

Section Limits

SECTION	SB STATION NO.	NB STATION NO.
SECTION A	STA.300+00' TO 357+20'	STA.600+00' TO 632+70'
SECTION B	STA.357+20' TO 405+75'	STA.632+70' TO 708+40'
SECTION C	STA.405+75' TO 423+50'	STA.708+40' TO 723+65'
SECTION D	STA.423+50' TO 464+50'	STA.723+65' TO 764+50'
SECTION E	STA.464+50' TO 501+50'	STA.764+50' TO 801+25'

Index (Section E)

DESCRIPTION	SHEET
NOTES & LEGEND	42(1A)
SIGNING AND PAVEMENT MARKING PLANS	42(14) - 42(17)
SIGN PANEL LAYOUT	42(29) - 42(32)
PERMANENT SIGN SCHEDULE	42(37) - 42(38)

Pavement Marking Legend

DESCRIPTION	
TYPE B, CLASS VI, WHITE, 4" WIDTH	A
TYPE B, CLASS VI, WHITE, 4" WIDTH, 10' LONG, 30' SPACE	B
TYPE B, CLASS VI, WHITE, 4" WIDTH, 3' LONG, 9' SPACE	C
TYPE B, CLASS VI, WHITE, 4" WIDTH, 2' LONG, 4' SPACE	D
TYPE B, CLASS VI, WHITE, 6" WIDTH	E
TYPE B, CLASS VI, WHITE, 8" WIDTH	F
TYPE B, CLASS VI, WHITE, 8" WIDTH 2' LONG, 4' SPACE	G
TYPE B, CLASS VI, WHITE, 24" WIDTH	H
TYPE B, CLASS VI, YELLOW, 4" WIDTH	J
TYPE B, CLASS VI, YELLOW, 4" WIDTH, DOUBLE LINE, 4" SPACE	K
TYPE B, CLASS I, WHITE, ELONGATED ARROW, LEFT	L
TYPE B, CLASS I, WHITE, ELONGATED ARROW, RIGHT	M
TYPE B, CLASS I, WHITE, ELONGATED ARROW, U-TURN	N
TYPE B, CLASS I, WHITE, COMBINATION ARROW	P
TYPE B, CLASS I, WHITE, MERGE ARROW	Q
TYPE B, CLASS I, WHITE, WORD MESSAGE "ONLY"	R
SNOWPLOWABLE RAISED PAVEMENT MARKER	S
TYPE B, CLASS I, WHITE, BICYCLE LANE SYMBOL	T
TYPE B, CLASS I, WHITE, BICYCLE LANE ARROW	U
TYPE B, CLASS I, WHITE, ELONGATED ARROW, STRAIGHT	V
TYPE B, CLASS I, WHITE, YIELD PAVEMENT MARKINGS	W
TYPE B, CLASS VI, WHITE, 6" WIDTH, 2' LONG, 4' SPACE	X
TYPE B, CLASS VI, 4" WIDTH, 10' LONG, 30' SPACE CONTRAST MARKINGS	Y
TYPE B, CLASS VI, 6" WIDTH CONTRAST MARKINGS	Z
TYPE B, CLASS VI, YELLOW, 24" WIDTH	AA
DIRECTIONAL TRAFFIC ARROW	RECEIVES NO CALLOUT

Signing Legend

DESCRIPTION	SYMBOL
SIGN LOCATION (ONE POST)	●
SIGN LOCATION (TWO POSTS)	●●
SIGN NO. / TEXT NO.	406 / 29
"A" INDICATES TYPES OF STRUCTURE (SEE 'DEFINITION OF STRUCTURE TYPES') "B" INDICATES THE ACTION DESCRIPTIONS (SEE 'ACTION DESCRIPTIONS')	A / B
EXAMPLE: SINGLE WOOD POST / REMOVE THE EXISTING SIGN	WP-1 / A

STATE	ROUTE	PROJECT	SHEET NO.
VA.	1	0001-029-001	42(1A)

REVISED: No. | Description | Date

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

Definition of Structure Types

TYPE	DESCRIPTION	SIZE
SP-1	SIGN PANEL	0 - 100 S.F.
WP-1	SINGLE WOOD POST	EA.
WP-2	TWO WOOD POSTS	EA.
MP-1	METAL POST	EA.

Definition of Actions

TYPE	DESCRIPTION
A	REMOVE EXISTING SIGN & POST
B	EXISTING SIGN TO REMAIN
C	EXISTING SIGN TO REMAIN (INSTALLED PRIOR IN FHWA PROJECT VA-A-AD-48(2) MULLIGAN ROAD PHASE II)
D	EXISTING SIGN TO BE RELOCATED

SIGNING & MARKING
GENERAL NOTES & LEGEND

PROJECT 0001-029-001 | SHEET NO. 42(1A)

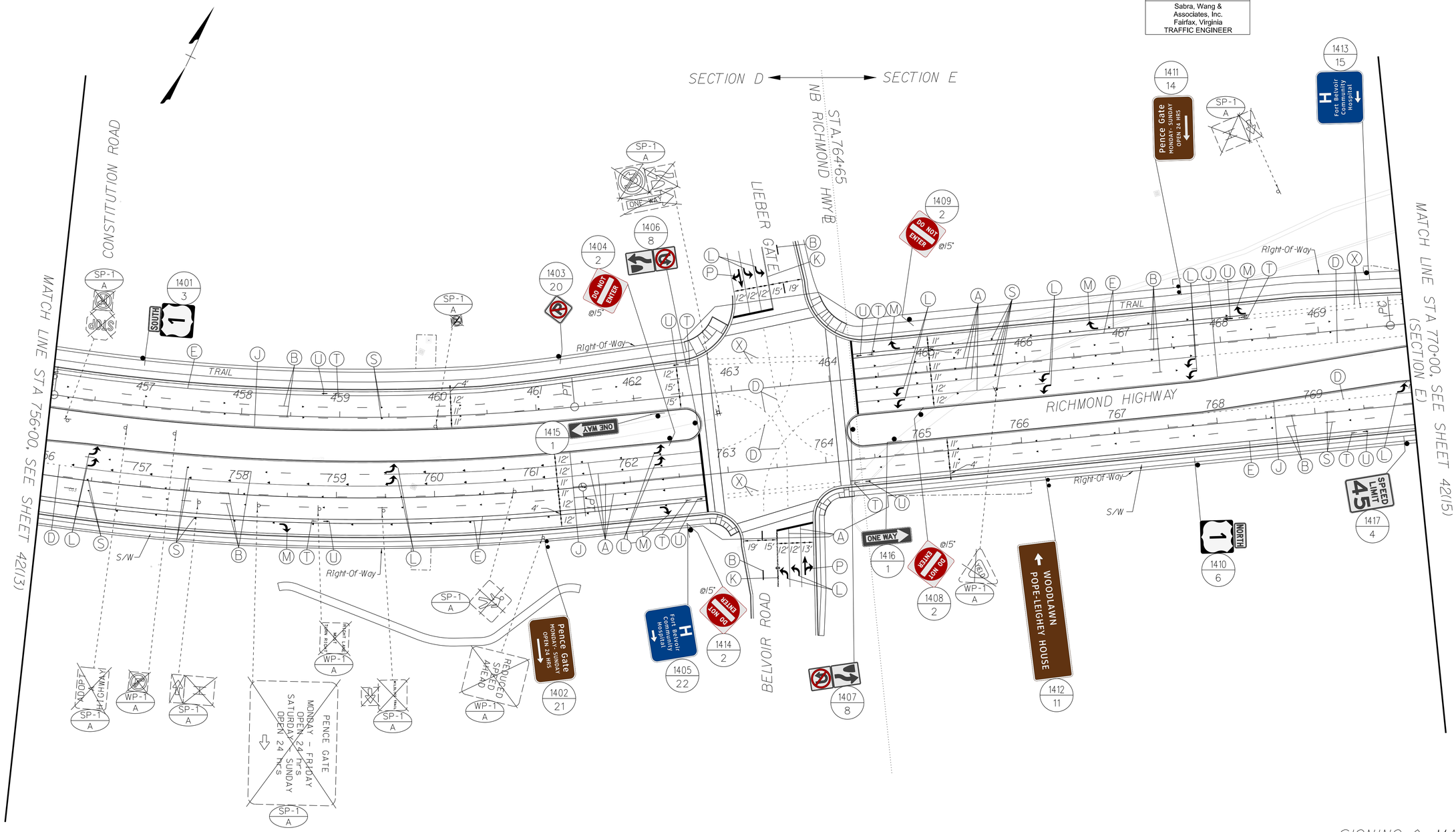
10/17/2014
9:51:46 AM

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
DESIGNED BY SABRA, WANG & ASSOCIATES, EMILY HORNE, (703) 942-8990

REVISED No.	Description	Date	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
0			VA.	1	0001-029-001	42(14)

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



NOTES:
1. PAVEMENT MARKING LEGEND LOCATED ON SHEET 42(1A).
2. FOR TRAFFIC SIGNAL RELATED CROSSWALKS AND STOP LINES FOR ROUTE 1 AND BELVOIR ROAD/LIEBER GATE, SEE SHEET 44(08) (SECTION D).

SIGNING & MARKING
PLAN SHEET

SCALE	PROJECT	SHEET NO.
0 50' 100'	0001-029-001	42(14)

10/17/2014
10:51:26 AM

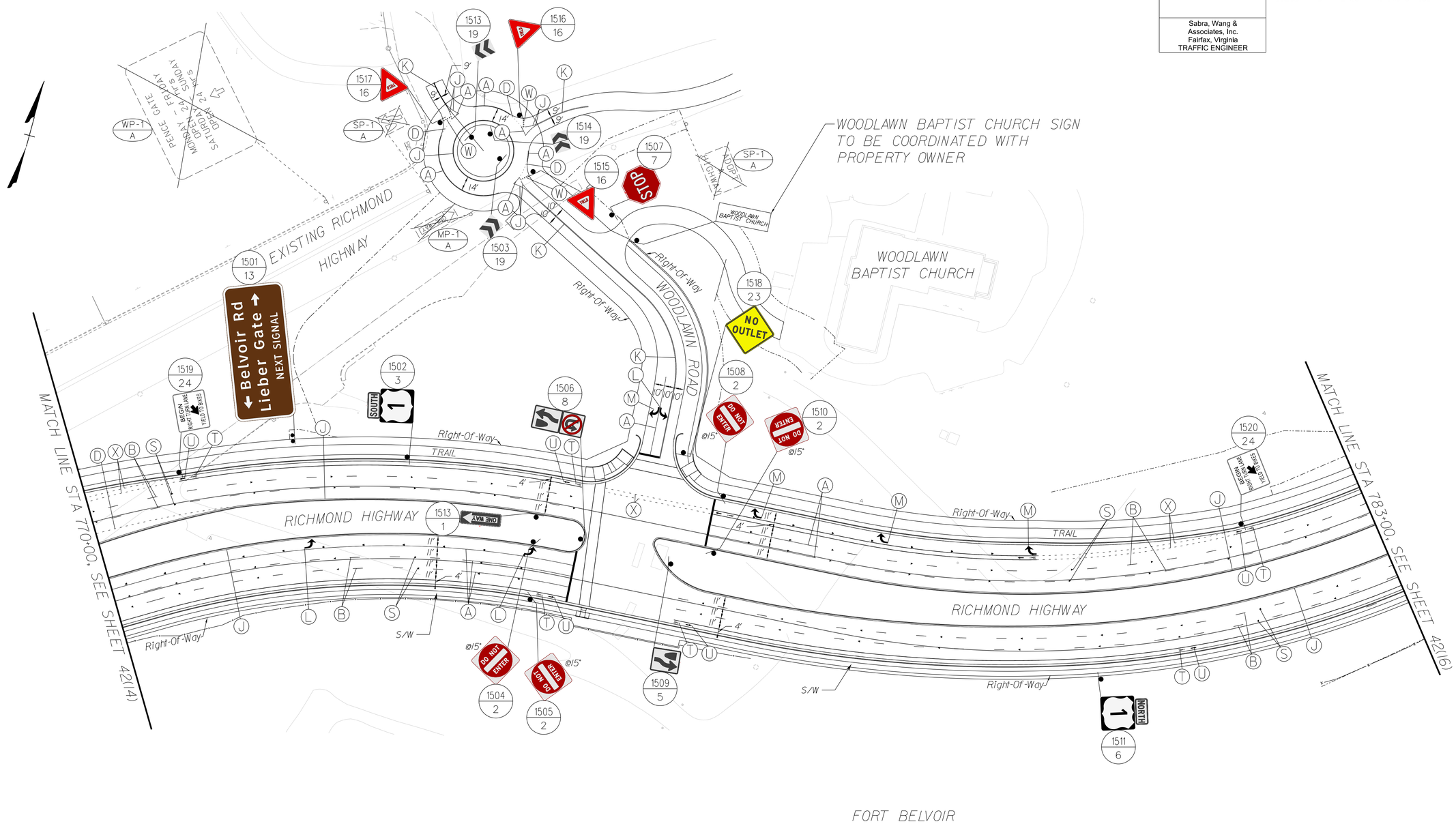
PROJECT MANAGER LAURA MEHIEL, A MORTON THOMAS & ASSOC.
SURVEYED BY, DATE FHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY SABRA,WANG & ASSOCIATES,JYOTHI PALADUGU,(703) 942-8990
DESIGNED BY SABRA,WANG & ASSOCIATES,EMILY HORNE,(703) 942-8990

REVISED No.	Description	Date
0		

STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	1	0001-029-001	42(15)

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



NOTES:
1. PAVEMENT MARKING LEGEND LOCATED ON SHEET 42(1A).
2. FOR TRAFFIC SIGNAL RELATED CROSSWALKS AND STOP LINES FOR ROUTE 1 AND WOODLAWN ROAD, SEE SHEET 44(09) (SECTION E).

SIGNING & MARKING
PLAN SHEET

SCALE	PROJECT	SHEET NO.
0 50' 100'	0001-029-001	42(15)

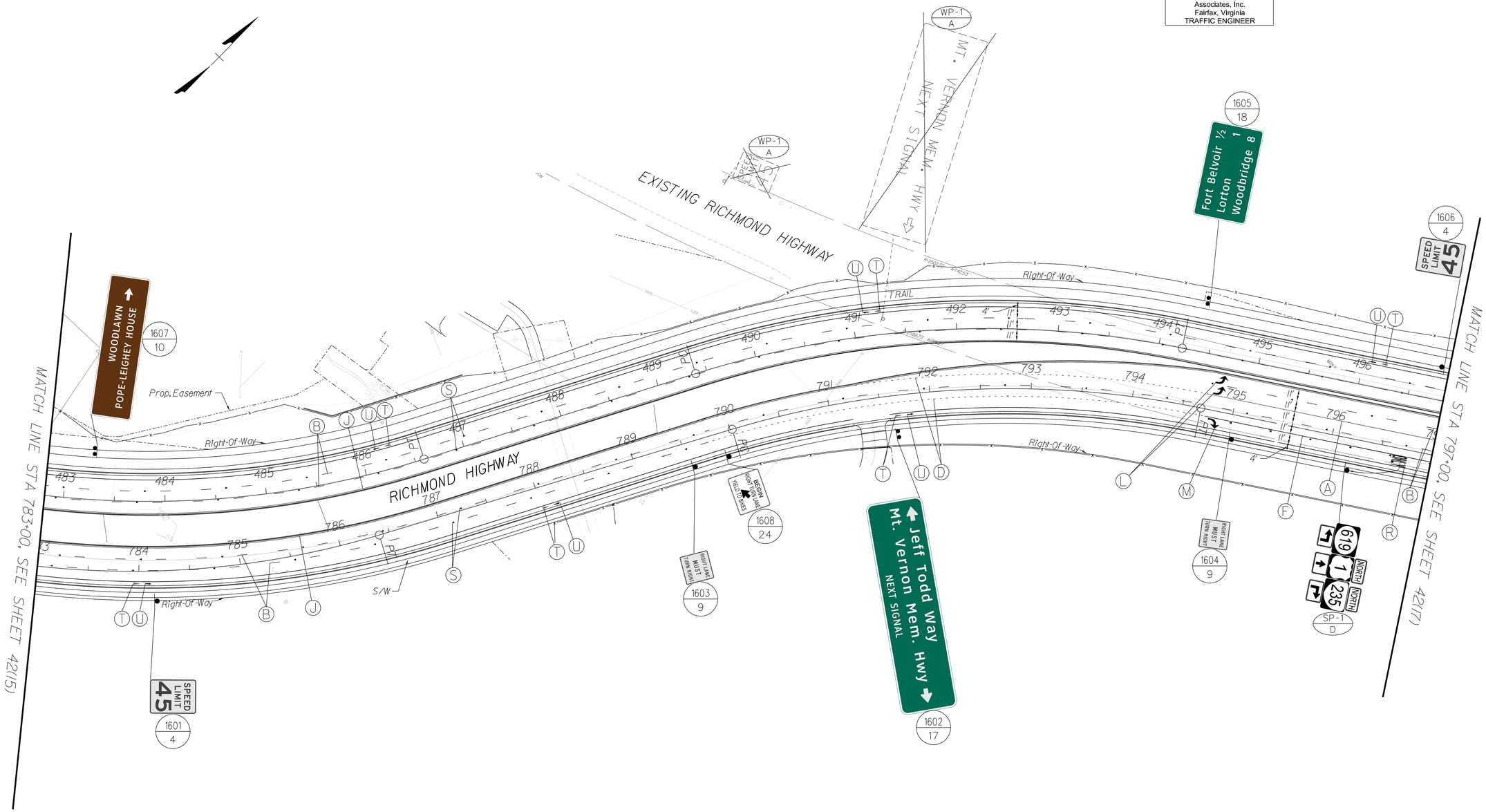
10/17/2014
9:56:01 AM

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
DESIGNED BY SABRA,WANG & ASSOCIATES,EMILY HORNE,(703) 942-8990

REVISED No.	Description	Date	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
0			VA.	1	0001-029-001	42(16)

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



SIGNING & MARKING
PLAN SHEET

NOTE: PAVEMENT MARKING LEGEND LOCATED ON SHEET 42(1A).

SCALE	PROJECT	SHEET NO.
0 50' 100'	0001-029-001	42(16)

10/17/2014
3:47:27 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,EMILY HORNE,(703) 942-8990

REVISED No.	Description	Date
0		

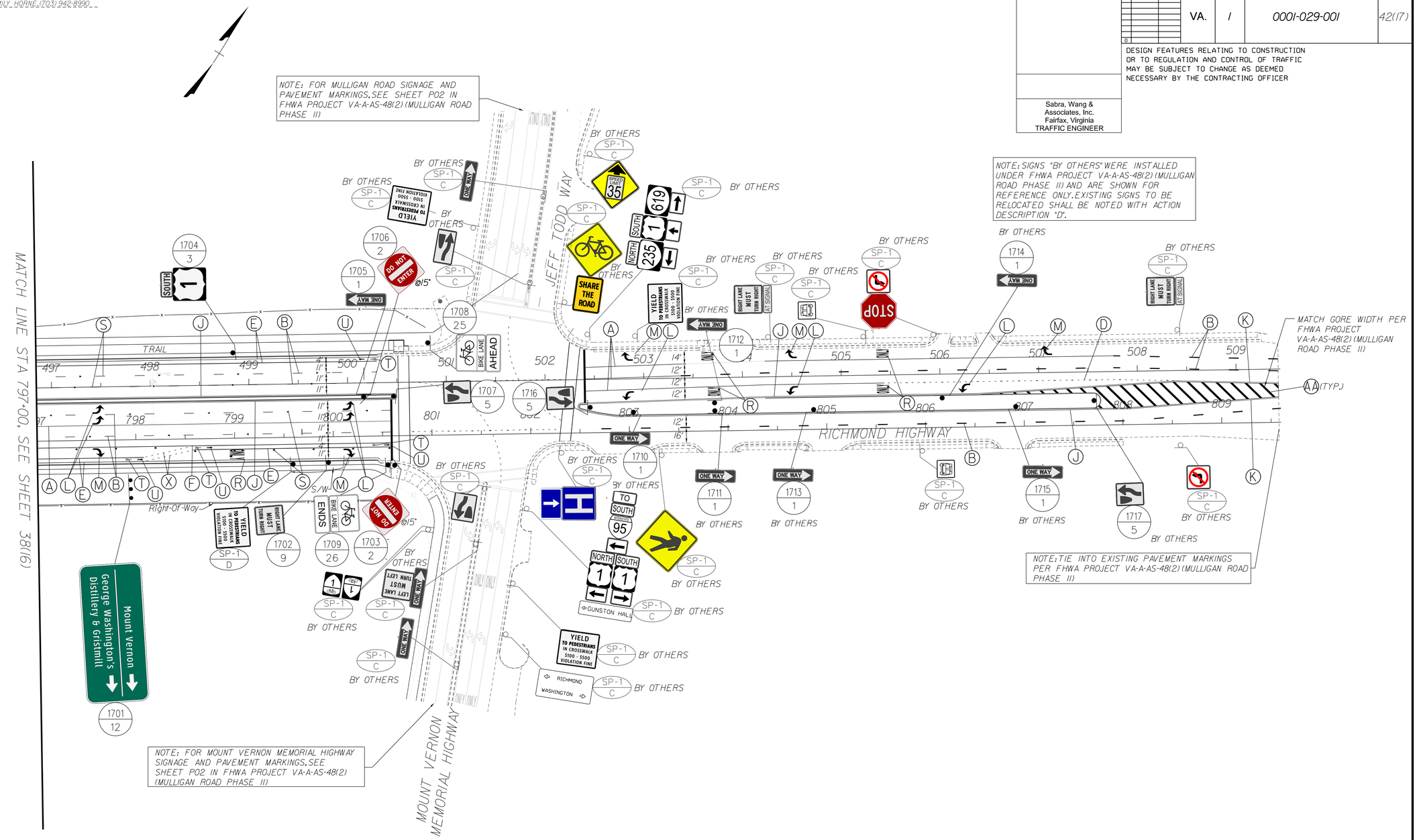
STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	1	0001-029-001	42(17)

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

NOTE: FOR MULLIGAN ROAD SIGNAGE AND PAVEMENT MARKINGS,SEE SHEET P02 IN FHWA PROJECT VA-A-AS-48(2) (MULLIGAN ROAD PHASE II)

NOTE: SIGNS "BY OTHERS" WERE INSTALLED UNDER FHWA PROJECT VA-A-AS-48(2) (MULLIGAN ROAD PHASE II) AND ARE SHOWN FOR REFERENCE ONLY.EXISTING SIGNS TO BE RELOCATED SHALL BE NOTED WITH ACTION DESCRIPTION "D".



NOTES:
1. PAVEMENT MARKING LEGEND LOCATED ON SHEET 42(1A).
2. FOR SIGNAL RELATED CROSSWALKS AND STOP LINES AT ROUTE 1 & JEFF TODD WAY,SEE SHEET 44(10)

SIGNING & MARKING
PLAN SHEET

SCALE	PROJECT	SHEET NO.
0 50' 100'	0001-029-001	42(17)

10/17/2014
9:39:15 AM

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
DESIGNED BY SABRA, WANG & ASSOCIATES, EMILY HORNE, (703) 942-8990

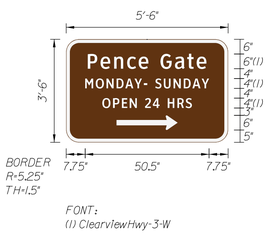
REVISED No.	Description	Date	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
0			VA.	1	0001-029-001	42(28)

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

SIGN DETAIL

1:5



FONT:
(1) ClearviewHwy-3-W

Panel Style: Fort Belvoir.ssi
M.U.T.C.D.: 2009 Edition

SIGN NUMBER	1402	
WIDTH x HGHT.	5'-6" x 3'-6"	
BORDER WIDTH	1.5"	
CORNER RADIUS	5.25"	
MOUNTING	GROUND	
BACKGROUND	TYPE:	REFLECTIVE
	COLOR:	BROWN
LEGEND/BORDER	TYPE:	REFLECTIVE
	COLOR:	WHITE

SYMBOL	ROT	X	Y	WID	HT
AR_Type D	270	20.5	5	6	25

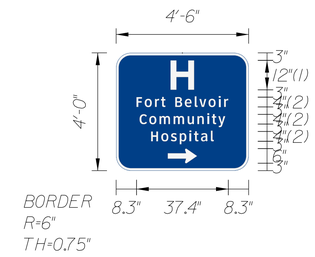
Panel Style: Fort Belvoir.ssi
Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)

																						LENGTH	SERIES/SIZE
P	e	n	c	e		G	a	t	e														ClearviewHwy-3-W
8.8	14	19.6	24.8	29.6	33.5	38.5	44.4	49.4	53.2													48.4	6/4.9
M	O	N	D	A	Y	–		S	U	N	D	A	Y										ClearviewHwy-3-W
7.7	12.1	16.4	20.6	24.1	27.9	31.7	33	36.3	39.8	43.8	47.9	51.5	55.2									50.5	4
O	P	E	N		2	4		H	R	S													ClearviewHwy-3-W
14.7	19.1	22.7	25.9	28.8	32.1	35.3	38.1	41.4	45.3	48.7												36.5	4

SIGN DETAIL



FONT:
(1) ClearviewHwy-6-W
(2) ClearviewHwy-4-W

SIGN NUMBER	1405	
WIDTH x HGHT.	4'-6" x 4'-0"	
BORDER WIDTH	0.75"	
CORNER RADIUS	6"	
MOUNTING	GROUND	
BACKGROUND	TYPE:	REFLECTIVE
	COLOR:	BLUE
LEGEND/BORDER	TYPE:	REFLECTIVE
	COLOR:	WHITE

SYMBOL	ROT	X	Y	WID	HT
AR_Type D	270	21	3	6	12

Panel Style: Hospital.ssi
Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)

																						LENGTH	SERIES/SIZE
H																							ClearviewHwy-6-W
22.2																						9.7	12
F	o	r	t		B	e	l	v	o	i	r												ClearviewHwy-4-W
8.3	11.6	15.8	18.3	20.1	24.1	28	32	33.9	37.6	41.8	44											37.4	43.3
C	o	m	m	u	n	i	t	y															ClearviewHwy-4-W
9.5	13.5	17.7	23.4	29.1	33.1	37.1	39	41.6														35	43.3
H	o	s	p	i	t	a	l																ClearviewHwy-4-W
14.2	18.4	22.3	25.9	29.8	31.7	34.6	38.6															25.5	43.3

SIGNING & MARKING
SIGN DETAILS

PROJECT	SHEET NO.
0001-029-001	42(28)

10/17/2014
11:03:09 AM

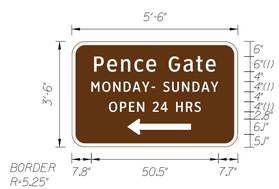
PROJECT MANAGER LAURA MEHIEL, A. MORTON THOMAS & ASSOC.
SURVEYED BY, DATE FHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY SABRA,WANG & ASSOCIATES,JYOTHI PALADUGU,(703) 942-8990
DESIGN BY SABRA,WANG & ASSOCIATES,EMILY HORNE,(703) 942-8990

REVISED No.	Description	Date	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
0			VA.	1	0001-029-001	42(29)

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

SIGN DETAIL
1:5



FONT:
(1) ClearviewHwy-3-W

Panel Style: Fort Belvoir.ssi
M.U.T.C.D.: 2009 Edition

SIGN NUMBER	1411
WIDTH x HGHT.	5'-6" x 3'-6"
BORDER WIDTH	1.5"
CORNER RADIUS	5.25"
MOUNTING	GROUND
BACKGROUND	TYPE: REFLECTIVE
	COLOR: BROWN
LEGEND/BORDER	TYPE: REFLECTIVE
	COLOR: WHITE

SYMBOL	ROT	X	Y	WID	HT
Long Arrow	90	22.2	5	6.1	25.1

Panel Style: Fort Belvoir.ssi
Dimensions are in inches.tenths
Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)

																					LENGTH	SERIES/SIZE
P	e	n	c	e		G	a	t	e													ClearviewHwy-3-W
8.8	14	19.6	24.9	29.6	33.6	38.5	44.4	49.4	53.2												48.4	6/4.9
M	O	N	D	A	Y	-		S	U	N	D	A	Y									ClearviewHwy-3-W
7.8	12.1	16.4	20.6	24.1	27.9	31.7	33	36.3	39.8	43.8	47.9	51.5	55.2								50.5	4
O	P	E	N		2	4		H	R	S												ClearviewHwy-3-W
14.8	19.1	22.8	25.9	28.9	32.1	35.3	38.1	41.4	45.4	48.7											36.5	4

SIGN DETAIL
1:5

FONT:
(1) ClearviewHwy-5-W
(2) ClearviewHwy-3-W

Panel Style: guide_exp_recreational.ssi
M.U.T.C.D.: 2009 Edition

SIGN NUMBER	1501
WIDTH x HGHT.	9'-0" x 4'-0"
BORDER WIDTH	1.5"
CORNER RADIUS	6"
MOUNTING	GROUND
BACKGROUND	TYPE: REFLECTIVE
	COLOR: BROWN
LEGEND/BORDER	TYPE: REFLECTIVE
	COLOR: WHITE

SYMBOL	ROT	X	Y	WID	HT
AR_Type D	90	9.8	33.5	6.7	10
AR_Type D	270	90.9	19.4	6.7	10

Panel Style: guide_exp_recreational.ssi
Dimensions are in inches.tenths
Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)

																					LENGTH	SERIES/SIZE
B	e	l	v	o	i	r		R	d													ClearviewHwy-5-W
25.8	34.3	42.9	46.9	54.7	63.5	68.2	71.9	80.7	89.1												69.1	8/6.5
L	i	e	b	e	r		G	a	t	e												ClearviewHwy-5-W
7.1	14.1	18.5	27.1	35.3	43.9	47.6	56.1	65.3	73	79											77.9	8/6.5
N	E	X	T		S	I	G	N	A	L												ClearviewHwy-3-W
30.9	37.1	41.3	46.6	50.4	54.8	60.1	62.7	68.9	74.5	80.7											52.8	6

SIGNING & MARKING
SIGN DETAILS

PROJECT	SHEET NO.
0001-029-001	42(29)

10/17/2014
11:04:59 AM

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
DESIGNED BY SABRA,WANG & ASSOCIATES,EMILY HORNE,(703) 942-8990

REVISED No.	Description	Date	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
0			VA.	1	0001-029-001	42(30)

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

SIGN DETAIL
1:5

FONT:
(I) ClearviewHwy-3-W

Panel Style: guide_con_destination_brown.ssi
M.U.T.C.D.: 2009 Edition

SIGN NUMBER	1607
WIDTH x HGHT.	7'-0" x 2'-0"
BORDER WIDTH	0.75"
CORNER RADIUS	3"
MOUNTING	GROUND
BACKGROUND	TYPE: REFLECTIVE
	COLOR: BROWN
LEGEND/BORDER	TYPE: REFLECTIVE
	COLOR: WHITE

SYMBOL	ROT	X	Y	WID	HT
AR_Type D	270	70	9.3	5	7.5

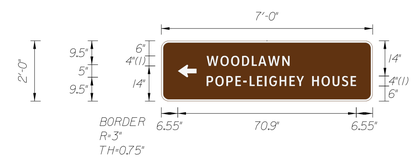
Panel Style: guide_con_destination_brown.ssi
Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)

																					LENGTH	SERIES/SIZE
W	O	O	D	L	A	W	N															ClearviewHwy-3-W
33	38.5	42.7	47.1	51	53.5	57.4	63.1														33	4
P	O	P	E	-	L	E	I	G	H	E	Y		H	O	U	S	E					ClearviewHwy-3-W
6.5	10	14.4	18	21.1	23.6	26.5	29.7	31.4	35.5	39.4	42.2	45.3	48.5	52.2	56.6	60.3	63.8				59.5	4

SIGN DETAIL
1:5



FONT:
(I) ClearviewHwy-3-W

Panel Style: guide_con_destination_brown.ssi
M.U.T.C.D.: 2009 Edition

SIGN NUMBER	1412
WIDTH x HGHT.	7'-0" x 2'-0"
BORDER WIDTH	0.75"
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	TYPE: Reflective
	COLOR: Brown
LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White

SYMBOL	ROT	X	Y	WID	HT
AR_Type D	90	6.5	9.5	5	7.5

Panel Style: guide_con_destination_brown.ssi
Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)

																					LENGTH	SERIES/SIZE
W	O	O	D	L	A	W	N															ClearviewHwy-3-W
18	23.5	27.7	32.1	36	38.5	42.4	48.1														33	4
P	O	P	E	-	L	E	I	G	H	E	Y		H	O	U	S	E					ClearviewHwy-3-W
18	21.5	25.9	29.5	32.6	35.1	38	41.2	42.9	47	50.9	53.7	56.7	59.9	63.7	68.1	71.8	75.3				59.5	4

SIGNING & MARKING
SIGN DETAILS

PROJECT	SHEET NO.
0001-029-001	42(30)

10/17/2014
11:17:59 AM

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
DESIGNED BY SABRA, WANG & ASSOCIATES, EMILY HORNE, (703) 942-8990

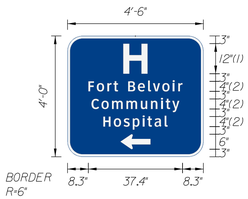
REVISED No.	Description	Date
0		

STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	1	0001-029-001	42(31)

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

SIGN DETAIL
1:5



FONT:
(1) ClearviewHwy-6-W
(2) ClearviewHwy-4-W

Panel Style: Hospital.ssi
M.U.T.C.D.: 2009 Edition

SIGN NUMBER	1405
WIDTH x HGHT.	4'-6" x 4'-0"
BORDER WIDTH	1"
CORNER RADIUS	6"
MOUNTING	Ground
BACKGROUND	TYPE: Reflective
	COLOR: Blue
LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White

SYMBOL	ROT	X	Y	WID	HT
AR_Type D	90	21	3	6	12

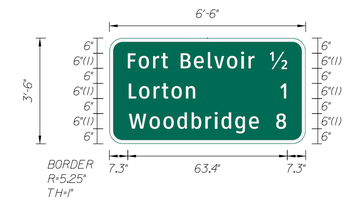
Panel Style: Hospital.ssi
Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)

																						LENGTH	SERIES/SIZE
H																							Clearview Hwy-6-W
22.2																						9.7	12
F	o	r	t		B	e	l	v	o	i	r												Clearview Hwy-4-W
8.3	11.6	15.8	18.3	20.1	24.1	28	32	33.9	37.7	41.8	44											37.4	4/3.3
C	o	m	m	u	n	i	t	y															Clearview Hwy-4-W
9.5	13.5	17.7	23.4	29.1	33.1	37.1	39	41.6														35	4/3.3
H	o	s	p	i	t	a	l																Clearview Hwy-4-W
14.2	18.4	22.3	25.9	29.8	31.7	34.6	38.6															25.5	4/3.3

SIGN DETAIL
1:5



FONT:
(1) ClearviewHwy-3-W

Panel Style: guide_con_street_VA.ssi
M.U.T.C.D.: 2009 Edition

SIGN NUMBER	1605
WIDTH x HGHT.	6'-6" x 3'-6"
BORDER WIDTH	1"
CORNER RADIUS	5.25"
MOUNTING	GROUND
BACKGROUND	TYPE: REFLECTIVE
	COLOR: GREEN
LEGEND/BORDER	TYPE: REFLECTIVE
	COLOR: WHITE

SYMBOL	ROT	X	Y	WID	HT

Panel Style: guide_con_street_VA.ssi
Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)

																						LENGTH	SERIES/SIZE
F	o	r	t		B	e	l	v	o	i	r	12											Clearview Hwy-3-W
7.3	11.6	17.4	20.6	23.2	28.3	33.6	39.1	41.6	46.7	52.3	55.3	63.7										63.4	6/4.9
L	o	r	t	o	n	1																	Clearview Hwy-3-W
7.7	11.8	17.6	20.8	24.7	30.4	67.9																62.6	6/4.9
W	o	o	d	b	r	i	d	g	e	8													Clearview Hwy-3-W
7.7	16	21.5	27	32.7	38.1	41.8	44.5	50	55.5	66.3												62.6	6/4.9

SIGNING & MARKING
SIGN DETAILS

PROJECT	SHEET NO.
0001-029-001	42(31)

10/17/2014
1:36:47 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
DESIGNED BY SABRA,WANG & ASSOCIATES,EMILY HORNE,(703) 942-8990

REVISED No.	Description	Date	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
0			VA.	1	0001-029-001	42(32)

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

SIGN DETAIL
1:5

FONT:
(1) ClearviewHwy-2-W

Panel Style: guide_exp_recreation.ssi
M.U.T.C.D.: 2009 Edition

SIGN NUMBER	1701
WIDTH x HGHT.	10'-0" x 4'-6"
BORDER WIDTH	1"
CORNER RADIUS	6.75"
MOUNTING	GROUND
BACKGROUND	TYPE: REFLECTIVE
	COLOR: GREEN
LEGEND/BORDER	TYPE: REFLECTIVE
	COLOR: WHITE

SYMBOL	ROT	X	Y	WID	HT
AR_Type D	270	96.4	35	10	15
AR_Type D	270	96.4	17.5	10	15

Panel Style: guide_exp_recreation.ssi
Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)

																					LENGTH	SERIES-SIZE
M	o	u	n	t		V	e	r	n	o	n											ClearviewHwy-2-W
37.8	43.5	48.6	53.5	58	60.1	64	69	74	77.3	82	87.2										52.6	6/4.9
G	e	o	r	g	e		W	a	s	h	i	n	g	t	o	n	'	s				ClearviewHwy-2-W
8.6	13.8	18.5	23.7	26.8	31.7	35.2	39.4	46.5	51.1	55.3	60.1	62.8	67.5	72.2	75.4	80.6	85.3	87.5			81.8	6/4.9
D	i	s	t	i	l	l	e	r	y		&		G	r	i	s	t	m	i	l	l	ClearviewHwy-2-W
10.7	15.7	17.9	21.8	25.1	27.8	30.5	33.1	38.1	40.9	44.4	48.4	52.4	56.4	61.7	65	67.2	71	74.5	81.5	84.2	86.9	6/4.9

SIGN DETAIL
1:5

FONT:
(1) ClearviewHwy-5-W
(2) ClearviewHwy-3-W

Panel Style: guide_con_street_VA.ssi
M.U.T.C.D.: 2009 Edition

SIGN NUMBER	1602
WIDTH x HGHT.	15'-0" x 4'-0"
BORDER WIDTH	1.5"
CORNER RADIUS	6"
MOUNTING	GROUND
BACKGROUND	TYPE: REFLECTIVE
	COLOR: GREEN
LEGEND/BORDER	TYPE: REFLECTIVE
	COLOR: WHITE

SYMBOL	ROT	X	Y	WID	HT
ARROW	90	7.5	32.9	9.4	12
ARROW	270	160.8	18.9	9.4	12

Panel Style: guide_con_street_VA.ssi
Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)

																					LENGTH	SERIES-SIZE
J	e	f	f		T	o	d	d		W	a	y										ClearviewHwy-5-W
25.1	32.4	40.3	45.9	49.7	57.7	65.5	74.1	82.6	88.4	97.1	109.6	117.1									98.3	8/6.5
M	t	.		V	e	r	n	o	n		M	e	m	.		H	w	y				ClearviewHwy-5-W
7.2	16.8	22.8	24.8	33	41.7	50.3	56.3	64.6	73.5	79	88.6	98.7	107.3	119	121	130.1	138.5	149			148.1	8/6.5
N	E	X	T		S	I	G	N	A	L												ClearviewHwy-3-W
61.6	67.9	72.1	77.3	81.1	85.6	90.8	93.4	99.6	105.2	111.5											52.8	6

SIGNING & MARKING
SIGN DETAILS

PROJECT	SHEET NO.
0001-029-001	42(32)

10/17/2014
11:25:18 AM

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
DESIGNED BY SABRA,WANG & ASSOCIATES,EMILY HORNE,(703) 942-8990

REVISED No.	Description	Date	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
0			VA.	1	0001-029-001	42(37)

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

SECTION E - NB STA.764+65 TO STA.801+25

TEXT NO.	TEXT	SIGN NO.	SIGN STRUCT. STD.	PANEL SIZE IN FT - IN W	PANEL SIZE IN FT - IN H	LETTER TYPE	COLOR COMB.	STD. NO.	QUANTITY	SIGN AREA SQ.FT.EA	REMARKS
1	ONE WAY	1415,1416,1513,1705,1710, 1711,1712,1713,1714,1715	2" 12 GA.	4'-6"	1'-6"	L-1 or L-2	C-16	R6-1R	4	6.75	
2	DO NOT ENTER	1404,1408,1409, 1414,1504,1505, 1508,1510,1703, 1706	2 3/16" 10 GA.	3'-0"	3'-0"	L-1 or L-2	C-20	R5-1	10	9	
3	SOUTH 1	1401,1502,1704	2 3/16" 10 GA.	2'-0" 2'-0"	1'-0" 2'-0"	L-1 or L-2	C-1	M3-1 M1-4	3	6	
4	SPEED LIMIT 45	1417,1601,1606	2 3/16" 10 GA.	2'-6"	3'-0"	L-1 or L-2	C-1	R2-1	3	7.5	
5		1509,1707,1716,1717	2 3/16" 10 GA.	2'-6"	3'-0"	L-1 or L-2	C-1	R4-7	2	7.5	
6	NORTH 1	1410,1511	2 3/16" 10 GA.	2'-0" 2'-0"	1'-0" 2'-0"	L-1 or L-2	C-1	M3-1 M1-4	2	6	
7	STOP	1507	2 3/16" 10 GA.	3'-0"	3'-0"	L-1 or L-2	C-10	R1-1	1	9	
8		1406,1407,1506	2 3/16" 10 GA.	2'-6" 2'-0"	3'-0" 2'-0"	L-1 or L-2	C-1 C-21	R4-7 R3-4	3	11.5	
9	RIGHT LANE MUST TURN RIGHT	1603,1604,1702	2 3/16" 12 GA.	3'-0"	3'-0"	L-1 or L-2	C-1	R3-7	3	9	
10	WOODLAWN POPE-LEIGHEY HOUSE →	1607	2" 12 GA.	7'-0'	2'-0'	L-3	C-22	SPECIAL	1	14	SHEET 42(30)
11	← WOODLAWN POPE-LEIGHEY HOUSE	1412	2" 12 GA.	7'-0'	2'-0'	L-3	C-22	SPECIAL	1	14	SHEET 42(30)
12	Mount Vernon → George Washington's Distillery & Gristmill →	1701	**2 3/16" & 2 1/2" 10 GA.	10'-0	4'-6"	L-3	C-22	SPECIAL	1	45	SHEET 42(32)
13	← Belvoir Rd Lieber Gate → NEXT SIGNAL	1501	**2 3/16" & 2 1/2" 10 GA.	9'-0"	4'-0"	L-3	C-22	SPECIAL	1	36	SHEET 42(29)
14	Pence Gate MONDAY- SUNDAY OPEN 24 HRS ←	1411	**2 3/16" & 2 1/2" 10 GA.	5'-6"	3'-0"	L-3	C-22	SPECIAL	1	16.5	SHEET 42(29)

NOTE: UNLESS OTHERWISE NOTED, ALL SIGNS WILL BE SHEET ALUMINUM.
**THE INNER POST SHALL BE NO LESS THAN 6 FEET IN LENGTH

SIGNING & MARKING
SIGN SCHEDULES

PROJECT	SHEET NO.
0001-029-001	42(37)

10/17/2014
11:45:30 AM

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
DESIGNED BY SABRA,WANG & ASSOCIATES,EMILY HORNE,(703) 942-8990

SECTION E CONT.- NB STA.764+50 TO STA.801+25

TEXT NO.	TEXT	SIGN NO.	SIGN STRUCT. STD.	PANEL SIZE IN FT - IN W	PANEL SIZE IN FT - IN H	LETTER TYPE	COLOR COMB.	STD. NO.	QUANTITY	SIGN AREA SQ.FT.EA	REMARKS
15		1413	***2 3/16" & 2 1/2" 10 GA.	4'-6"	4'-0"	L-3	C-12	SPECIAL	1	18	SEE SHEET 42(31)
16		1515,1516,1517	2" 12 GA.	3'-0"	3'-0"	L-1 or L-2	C-2	W1-8	3	4.5	
17		1602	VIA-H	15'-0"	4'-0"	L-3	C-7	SPECIAL	1	60	SEE SHEET 42(32)
18		1605	***2 3/16" & 2 1/2" 10 GA.	6'-6"	3'-6"	L-3	C-7	SPECIAL	1	22.75	SEE SHEET 42(31)
19		1503,1513,1514	2" 12 GA.	2'-0"	2'-6"	L-1 or L-2	C-1	R6-4	3	5	
20		1403	2" 12 GA.	3'-0"	3'-0"	L-1 or L-2	C-21	R8-3	1	9	
21		1402	***2 3/16" & 2 1/2" 10 GA.	5'-6"	3'-0"	L-3	C-22	SPECIAL	1	16.5	SEE SHEET 42(28)
22		1405	***2 3/16" & 2 1/2" 10 GA.	4'-6"	4'-0"	L-3	C-12	SPECIAL	1	18	SEE SHEET 42(28)
23		1518	2 3/16" 10 GA.	3'-0"	3'-0"	L-1 or L-2	C-8	W14-2	1	9	
24		1519,1520,1608	2 3/16" 10 GA.	3'-0"	2'-6"	L-1 or L-2	C-1	R4-4	3	7.5	
25		1708	2" 12 GA.	2'-0" 2'-0"	1'-6" 0'-8"	L-1 or L-2	C-1	R3-17 R3-17aP	1	4.33	
26		1709	2" 12 GA.	2'-0" 2'-0"	1'-6" 0'-8"	L-1 or L-2	C-1	R3-17 R3-17bP	1	4.33	

NOTE: UNLESS OTHERWISE NOTED, ALL SIGNS WILL BE SHEET ALUMINUM.
**THE INNER POST SHALL BE NO LESS THAN 6 FEET IN LENGTH

REVISED No.	Description	Date	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
0			VA.	1	0001-029-001	42(38)

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

SIGNING & MARKING

SIGN SCHEDULES

PROJECT	SHEET NO.
0001-029-001	42(38)

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

TRAFFIC GENERAL NOTES

SIGNAL NOTES

A. POLES AND FOUNDATIONS

1. MAST ARM LENGTH IS TO BE SHOWN ON PLAN AND ALL MAST ARMS ARE TO BE FIELD DRILLED ONLY.
2. SIGNAL POLE, ARM AND FOUNDATION SHALL BE DESIGNED TO ACCOMMODATE AN ADDITIONAL 5-SECTION SIGNAL HEAD FOUR FEET FROM THE TIP (FREE END) OF THE ARM AND AN ADDITIONAL MUTCD R10-12 (24" X 30") SIGN ONE FOOT FROM THE TIP OF THE ARM.
3. ALL BREAKAWAY POLES SHALL HAVE BREAKAWAY FUSES.

B. CONTROLLERS AND FOUNDATION

1. THE CONTROLLER CABINET FOUNDATION SHALL BE STD. CF-3 TO INCLUDE TWO 4" CONDUITS, ONE SPARE 3" CONDUIT TIED INTO THE JB-S3.
2. THE CONTROLLER CABINET FOUNDATION SHALL HAVE A SEPARATE 1 57/64 " CONDUIT TIED INTO THE SERVICE METER EQUIPMENT.
3. THE 6-15-2009 REVISION OF THE 2008 VDOT R&B STANDARDS FOR THE CF-3 SHALL BE USED FOR ALL CONTROLLER CABINET FOUNDATIONS.
4. THE CONTRACTOR/SUBCONTRACTOR IS RESPONSIBLE FOR OBTAINING A 2070-CONTROLLER AND CABINET THROUGH THE VDOT NORTHERN REGIONAL OPERATIONAL INSTALLATION & CONSTRUCTION (NROIC) SECTION. PAYMENT(S) FOR THE CONTROLLER AND CABINET IS REQUIRED PRIOR TO THE CONTRACTOR/SUBCONTRACTOR RECEIVING THE EQUIPMENT. TO AVOID DELAYS IN OBTAINING THE CONTROLLER AND CABINET, NROIC REQUIRES NOTIFICATION AND PAYMENT TWO (2) MONTHS PRIOR TO THE START OF ANY CONSTRUCTION. THE CONTRACTOR/SUBCONTRACTOR SHALL CONTACT NROIC (JERRY GRAY @ 703-334-0205) TO ARRANGE THE PURCHASE AND PICK-UP OF THE CONTROLLER AND CABINET. TWO (2) WEEKS PRIOR TO THE AGREED UPON PICK-UP DATE, THE CONTRACTOR/SUBCONTRACTOR SHALL CONTACT NROIC TO VERIFY EQUIPMENT AVAILABILITY. THE CONTRACTOR/SUBCONTRACTOR SHALL PICK-UP THE CONTROLLER AND CABINET AT NROIC'S TFO FACILITY AT 8010 MASON KING COURT, MANASSAS VA 20109. UPON RECEIPT OF THE 2070-CONTROLLER AND CABINET FROM VDOT, THE CONTRACTOR'S/SUBCONTRACTOR'S QUALIFIED REPRESENTATIVE SHALL WIRE THE CABINET, PROGRAM AND TEST THE PHASING OF THE INTERSECTION AS SHOWN ON THE PLAN. THE CONTRACTOR/SUBCONTRACTOR SHALL PROVIDE A CERTIFICATION LETTER TO VDOT INDICATING THAT THE WORK IS IN COMPLIANCE WITH VDOT STANDARDS AND IS CONSISTENT WITH THE PHASING AS PER THE SIGNAL PLAN. AS PART OF THE INSTALLATION, THE CONTRACTOR/SUBCONTRACTOR IS RESPONSIBLE FOR PROVIDING THE PHONE COMPANY ACCESS COMPARTMENT SHOWN AS CC-2. THE CONTRACTOR/SUBCONTRACTOR SHALL FURNISH AND INSTALL AN APPROVED BATTERY BACK-UP SYSTEM (UNINTERRUPTIBLE POWER SUPPLY/UPS). THE UPS ASSEMBLY (CABINET) SHALL BE TYPE B AND SHALL MOUNT DIRECTLY TO THE CONTROLLER CABINET.
5. THE CONTRACTOR/SUBCONTRACTOR SHALL PROVIDE,INSTALL AND ADJUST CONTROLLER TIMINGS TO PROVIDE AN ORDERLY FLOW OF TRAFFIC OR AS DIRECTED BY THE CONTRACTING OFFICER.
6. THE PROJECT SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING COMMUNICATION TO THE TRAFFIC SIGNAL CONTROLLER AT ALL TIMES. THE PROJECT IS RESPONSIBLE FOR ANY COSTS ASSOCIATED WITH PROVIDING COMMUNICATION TO THE TRAFFIC SIGNAL. THE PROJECT SHALL BE RESPONSIBLE FOR COORDINATING THE LOCATION AND THE INSTALLATION OF THE COMMUNICATION CIRCUIT CONDUIT(S) TO THE TRAFFIC SIGNAL CONTROLLER CABINET WITH THE DESIGNATED COMMUNICATION PROVIDER. THE PROJECT SHALL CONTACT VDOT'S NORTHERN REGION OPERATIONS COMMUNICATIONS GROUP (GIDGET RAY AT 703-334-0882 GIDGET.RAY@VDOT.VIRGINIA.GOV OR TIM TERRY 703-334-0362 (TIM.TERRY@VDOT.VIRGINIA.GOV) ONE HUNDRED TWENTY (120) DAYS PRIOR TO THE START OF THE TRAFFIC SIGNAL CONSTRUCTION TO ESTABLISH THE COMMUNICATION PROVIDER AND TO COORDINATE THE COMMUNICATION ACTIVITIES."THE 1" METAL CONDUIT THAT IS INSTALLED AS PART OF THE COMMUNICATION CIRCUIT (ST'D CC-2 ON THE CONTROLLER CABINET) SHALL BE TERMINATED INTO A ST'D JB-S1 JUNCTION BOX LOCATED 12" TO 24" FROM THE CONTROLLER CABINET FOUNDATION. THE 2" CONDUIT FROM THE DESIGNATED COMMUNICATION PROVIDER CONNECTION POINT TO THE CONTROLLER CABINET SHALL BE TERMINATED INTO THIS JB-S1. THE REQUIRED GROUND ELECTRODE FOR THE COMMUNICATION CIRCUIT SHALL BE INSTALLED IN THIS JB-S1. THE COVER SHALL HAVE "COMM" CAST IN THE DEPRESSION ON TOP AS DETAILED IN THE ST'D JB-S1. PULL ROPE RATED AT 1100 LBS. SHALL BE INSTALLED IN ALL COMMUNICATION CONDUITS." THE 1"METAL CONDUIT THAT IS INSTALLED AS PART OF THE COMMUNICATION CIRCUIT (ST'D CC-2 FOR THE 2070 CABINET) SHALL BE TERMINATED INTO A ST'D JB-S1 JUNCTION BOX ADJACENT TO THE CONTROLLER CABINET FOUNDATION. THE TWO INCH CONDUIT FROM THE VERIZON CONNECTION POINT TO THE CONTROLLER CABINET SHALL BE TERMINATED INTO THIS JB-S1. THE REQUIRED GROUND ELECTRODE FOR THE COMMUNICATION CIRCUIT SHALL BE INSTALLED IN THIS JB-S1. THE COVER SHALL HAVE "UTILITY"CAST IN THE DEPRESSION ON TOP AS DETAILED IN THE ST'D JB-S1.
7. PULL ROPE RATED AT 1100 LBS. SHALL BE INSTALLED IN ALL COMMUNICATION CONDUITS.
8. A 72 HOUR NOTICE IS REQUIRED PRIOR TO DISCONNECTING THE CONTROLLER COMMUNICATION FOR ANY REASON.

C. TRAFFIC SIGNAL HEADS

1. ALL TRAFFIC SIGNAL HEAD SECTIONS (VEHICLE AND PEDESTRIAN) SHALL BE CAST ALUMINUM.
2. ALL VEHICLE SIGNAL HEADS SHALL HAVE POLYCARBONATE BACKPLATES. BACKPLATE HARDWARE SHALL BE STAINLESS STEEL.
3. HANGER ASSEMBLY BRACKETS FOR ANGLED TRAFFIC SIGNAL HEADS SHALL BE SUCH THAT BACKPLATES CAN BE INSTALLED WITHOUT ALTERATION OR MODIFICATION.
4. ALL TRAFFIC SIGNAL HEAD SECTIONS SHALL BE LED PER VDOT'S SPECIFICATIONS.

D. DETECTORS

1. 6' X 40' LOOP DETECTORS SHALL BE INSTALLED IN ACCORDANCE WITH ST'D TD-1C AND SHALL BE PLACED 5' IN FRONT OF THE STOP LINE.
2. 6' X 6' LOOP DETECTORS SHALL BE INSTALLED IN ACCORDANCE WITH ST'D. TD-1B 14/1 ENCLOSED CONDUCTOR CABLE LEAD-IN REQUIRES 5/8" SAW CUT.
3. LOOP DETECTOR MODULES SHALL BE ONE FOR EACH LOOP EXCEPT THAT, WHEN THERE ARE SETS OF 6' X 6' LOOPS, ONLY THE SET FARTHEST FROM THE STOP BAR SHALL HAVE SEPARATE DETECTOR UNITS, ALL OTHER SETS SHALL BE SPLICED IN SERIES.
4. ALL PROPOSED LOOP DETECTORS SHALL BE CUT INTO AND PLACED IN INTERMEDIATE ASPHALT LAYER AND THEN OVERLAID WITH SURFACE.

E. CONDUIT, CONDUCTORS & ELECTRICAL

1. FOR INSTALLATION OF CONDUIT, NO OPEN CUT WILL BE ALLOWED IN ROADWAY SURFACE.
2. JUNCTION BOX COVERS SHALL HAVE THE LETTERS "TRAF" CAST IN THE TOP SURFACE DEPRESSION FOR ALL TRAFFIC SIGNAL RELATED JUNCTIONS BOXES CONTAINING CABLE WITH LESS THAN 50 VOLTS. ALL OTHER JUNCTION BOX COVERS SHALL HAVE THE LETTERS "ELEC" CAST IN THE TOP DEPRESSION.
3. NO JB-S1, S2 OR S3 JUNCTION BOXES SHALL BE INSTALLED IN PAVED SHOULDER, SIDEWALK OR MULTI-USE TRAIL. IF ALONG THE ROUTE 1 WIDENING, IT BECOMES IMPOSSIBLE TO KEEP THE JUNCTION BOX OUTSIDE OF THE CONCRETE WALKWAY / ASPHALT WALKWAY, THEN THE JUNCTION BOX SHALL BE KEPT OUT OF THE CLEAR WALKWAY i.e. IT SHOULD BE PLACED IN LINE WITH THE SECTION RESERVED FOR TREE PITS AND LIGHT POLES.
4. DIMENSIONS USED FOR LOCATING EQUIPMENT (SUCH AS SIGNAL HEAD ASSEMBLIES, SIGNS, PREEMPTOR, CAMERAS, ETC.) ON MAST ARMS ARE MEASURED TO THE CENTER OF THE SYMBOLS USED TO INDICATE THAT EQUIPMENT.
5. ALL JUNCTIONS BOXES SHALL BE INSTALLED IN ACCORDANCE WITH ST'D JB-S2, UNLESS OTHERWISE INDICATED.
6. ELECTRICAL SERVICE SHALL BE METERED.
7. THE CONTRACTOR/SUBCONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING ELECTRICAL SERVICE TO THE CONTROLLER AT ALL TIMES. THE CONTRACTOR/SUBCONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH PROVIDING ELECTRICAL SERVICE TO THE TRAFFIC SIGNAL. THE CONTRACTOR/SUBCONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE LOCATION AND THE INSTALLATION OF THE ELECTRICAL SERVICE FOR THE TRAFFIC SIGNAL WITH THE LOCAL UTILITY COMPANY. ELECTRICAL SERVICE SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD SE-5 AS SHOWN ON THE PLAN AND SECTION 238.02 (H) OF THE VDOT ROADS AND BRIDGES SPECIFICATIONS WHICH SHALL INCLUDE TWO 60 AMP BREAKERS.

F. TIMING SUBMISSION PROCESS

1. FOR THE CONTRACTOR/SUBCONTRACTOR IS RESPONSIBLE FOR SUBMITTING TRAFFIC SIGNAL TIMING DATA A MINIMUM OF 60 DAYS PRIOR TO ACTIVATION OF THE NEW SIGNAL INSTALLATION; THIS INCLUDES EIGHT (8) TIME-OF-DAY TIMING PLANS TO REFLECT CYCLE LENGTHS NECESSARY TO ACCOMMODATE CHANGES IN TRAFFIC PATTERNS FOR WEEKDAYS AND WEEKENDS. THE 8 TIMING PLANS CONSIST OF 4 TIMING PLANS FOR WEEKDAYS (AM, MID, PM, OFF-PEAK) AND 4 TIMING PLANS FOR WEEKENDS (SATURDAY PEAK, SUNDAY PEAK, WEEKEND BEFORE PEAK, AND WEEKEND AFTER PEAK). THESE TIMING PLANS ARE TO BE SUBMITTED TO THE VDOT PERMITS SECTION FOR REVIEW AND APPROVAL BY THE NRO TRAFFIC SIGNAL OPERATIONS SECTION. THIS INFORMATION IS TO BE PROVIDED IN AN ELECTRONIC FILE FORMAT COMPATIBLE WITH THE SYNCHRO PROGRAM USED BY VDOT. AFTER APPROVAL, THE TIMING PLAN FILE NEEDS TO BE FORMATTED INTO THE 2070 FORMAT FOR IMPLEMENTATION BY THE CONTRACTOR/SUBCONTRACTOR.

G. SIGNS AND PAVEMENT MARKINGS

1. PAVEMENT MARKINGS SHALL BE MODIFIED TO REFLECT THE MARKINGS SHOWN ON THIS PLAN WHEN THE SIGNAL IS INSTALLED
2. ANY EXISTING PAVEMENT MARKINGS WHICH CONFLICT WITH PROPOSED PAVEMENT MARKINGS SHALL BE COMPLETELY ERADICATED.
3. LIMITS SHOWN ON PROPOSED MARKINGS ARE APPROXIMATE AND SHALL BE MODIFIED IN THE FIELD TO ENSURE THAT PROPOSED PAVEMENT MARKINGS CONTINUE UNTIL EXISTING PAVEMENT MARKINGS CAN BE MATCHED.
4. PEDESTRIAN SIGNS SHALL BE MUTCD R10-3E.

NOTE FOR MAST ARM INSTALLATION

1. UNLESS OTHERWISE INDICATED, ALL MAST ARMS SHALL BE MP-1, 20'.

NOTES FOR SPAN WIRE INSTALLATION

1. TEMPORARY SIGNAL POLES SHALL BE LOCATED AND SIZED SO THAT SPAN WIRE AND TETHER WIRE HAVE A MINIMUM CLEARANCE OF 17.5' OVER THE ROADWAY.

GENERAL NOTE FOR PERMANENT SIGNAL EQUIPMENT

1. THE DISTANCE BETWEEN ALL PERMANENT CONTROLLER FOUNDATIONS AND THE RIGHT OF WAY LINE AND/OR PERMANENT EASEMENT LINE SHALL BE A MINIMUM OF 5 FEET UNLESS OTHERWISE NOTED.

REVISED			STATE	STATE		SHEET NO.
No.	Description	Date		ROUTE	PROJECT	
0	AFC	09/22/14	VA.	1	0001-029-001	44(1)

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

TRAFFIC SIGNAL NOTES

SCALE	PROJECT	SHEET NO.
0 25' 50'	0001-029-001	44(1)

10/23/2014
5:31:06 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
DESIGNED BY SABRA, WANG & ASSOCIATES, MICHAEL MONROE, (703) 942-8990

DEVICE LEGEND

REVISED			STATE	STATE		SHEET NO.
No.	Description	Date		ROUTE	PROJECT	
0	AFC	09/22/14	VA.	1	0001-029-001	44(1A)

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	Proposed	Proposed and/or Relocated (As per plan)	Description
			Traffic Signal Head
			Overhead Sign
			Overhead Street Name Sign
			Dome CCTV Camera
			Preemption Sensor with Indicator Light
VDZ 6' x 40'		VDZ 6' x 40'	Video Detection Zone
			Video Detection Camera
			Pedestrian Signal Head
P.B.	P.B.		Pedestrian Push Button
			Mast Arm Pole with Foundation
			Temporary Wood Utility Pole
			Temporary Class II Wooden Pole with Guy Wire
			Pedestal Pole with Foundation (As per plan)
			Service Meter
C	C		Junction Box
C	C		Traffic Signal Control Cabinet (Pole Mounted)
C 3	UPS C 3		Traffic Signal Control Cabinet and Foundation (Base Mounted)
			Conduit
			Temporary Overhead Utility Line (As shown per plan)

TRAFFIC DEVICE LEGEND

PROJECT	SHEET NO.
0001-029-001	44(1A)

10/17/2014
3:44:31 PM

PROJECT MANAGER LAURA MEHIEL, A MORTON THOMAS & ASSOC.
SURVEYED BY, DATE FHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
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DESIGNED 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(9)

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

SIGNAL CABLE & CONDUIT LEGEND

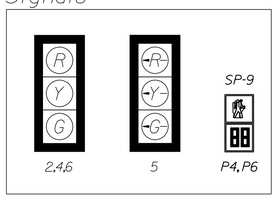
- (A) 3-1" CONDUIT (M)
- (B) 2-1" CONDUIT (M)
- (C) 1-1" CONDUIT (M)
- (D) 1-3" CONDUIT 3-14/2C(S) FOR DETECTORS
- (E) 1-3" CONDUIT 4-14/2C(S) FOR DETECTORS
- (F) 1-3" CONDUIT 2-14/2C(S) FOR DETECTORS
- (G) 1-3" CONDUIT 1-14/7C FOR PED HEAD P6 1-14/2C FOR PUSHBUTTON 1-#6 EGC
- (H) 1-4" CONDUIT 4-14/2C(S) FOR DETECTORS 1-14/7C FOR PED HEAD P6 1-14/2C FOR PUSHBUTTON 1-#6 EGC
- (J) 1-3" CONDUIT 6-14/2C(S) FOR DETECTORS 2-14/7C FOR PED HEAD P6 2-14/2C FOR PUSHBUTTON 1-#6 EGC
- (K) 1-3" CONDUIT 1-14/7C FOR SIGNAL HEADS 6 1-14/7C FOR PED HEADS P4 1-14/2C FOR PUSHBUTTON 1-#6 EGC
- (L) 1-4" CONDUIT 6-14/2C(S) FOR DETECTORS 1-14/7C FOR SIGNAL HEADS 6 3-14/7C FOR PED HEADS P4,P6 3-14/2C FOR PUSHBUTTON 1-#6 EGC
- (M) 1-1" CONDUIT 1-#6 EGC FOR SYSTEM GROUNDING
- (N) 1-4" CONDUIT 10-14/2C(S) FOR DETECTORS 1-14/7C FOR SIGNAL HEADS 6 4-14/7C FOR PED HEADS P4,P6 4-14/2C FOR PUSHBUTTON 1-#6 EGC
- (P) 1-3" CONDUIT 1-14/7C FOR PED HEADS P4 1-14/2C FOR PUSHBUTTON 1-#6 EGC
- (Q) 1-3" CONDUIT 3-14/7C FOR SIGNAL HEADS 2,4,5 1-#6 EGC
- (R) 2-4" CONDUITS 10-14/2C(S) FOR DETECTORS 4-14/7C FOR SIGNAL HEADS 2,4,5,6 4-14/7C FOR PED HEADS P4,P6 4-14/2C FOR PUSHBUTTON 2-#6 EGC
- (S) 1-1 1/4" CONDUIT (M) 3-#6 EGC FOR ELECTRICAL SERVICE
- (T) 1-1" CONDUIT (M) FOR COMMUNICATION 1-1100 LB RATED PULL LINE
- (U) 1-2" CONDUIT FOR COMMUNICATION 1-1100 LB RATED PULL LINE
- (V) 1-2" CONDUIT FOR POWER COMPANY 1-1100 LB RATED PULL LINE
- (W) 1-2" CONDUIT 2-16/4C FOR EVP-2,EVP-6 1-#6 EGC
- (X) 1-2" CONDUIT 1-16/4C FOR EVP-2 1-#6 EGC
- (Y) 1-2" CONDUIT 1-16/4C FOR EVP-6 1-#6 EGC

EGC - EQUIPMENT GROUNDING CONDUCTOR
(M) - METAL CONDUIT
(S) - SHIELDED CABLE

LIGHTING CONDUIT & CABLE LEGEND

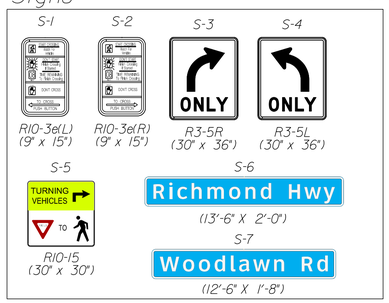
- (AA) 1-2" CONDUIT 1-#6 AWG 1-#6 EGC
- (BB) 1-2" CONDUIT 2-#6 AWG 1-#6 EGC

Signals



ALL SIGNAL HEADS SHALL BE 12" LED WITH POLYCARBONATE BACKPLATES

Signs



Pavement Marking Legend

- [A] Type B,Class VI,White 24" Width
- [B] Type B,Class VI,White 6" Width
- [C] Elongated Turn Arrow

POSTED SPEED LIMITS

WOODLAWN ROAD	25 MPH
RICHMOND HIGHWAY	45 MPH

Pole Locations

MAST ARMS

- (1) 60' COMBINATION MAST ARM AND LUMINAIRE STA.474+90.5 48.3' LT WB ROUTE 1
- (2) 55' & 60' COMBINATION DUAL MAST ARM AND LUMINAIRE STA.775+56.6 38.6' RT EB ROUTE 1

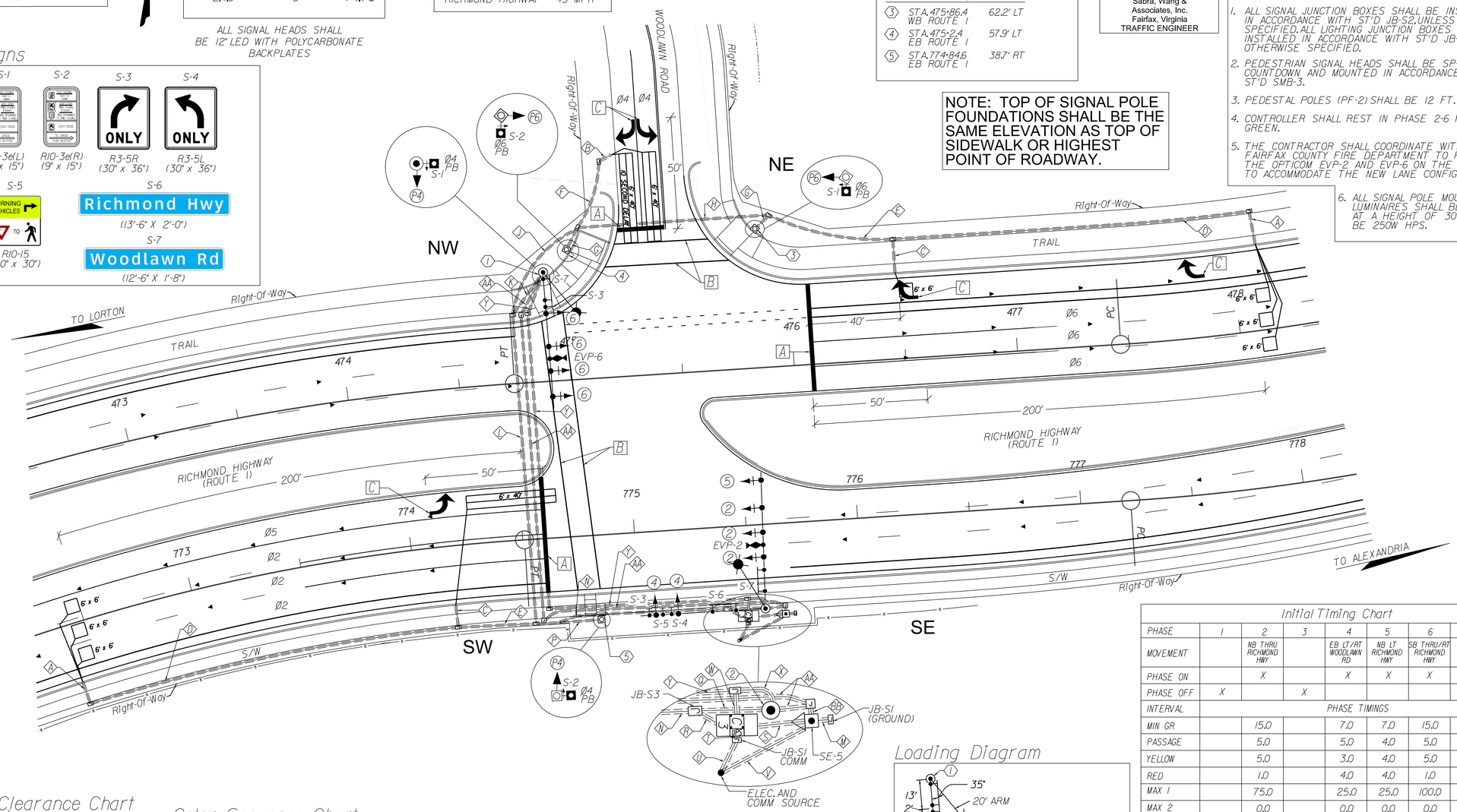
PED.POLES PF-2.12'

- (3) STA.475+86.4 62.2' LT WB ROUTE 1
- (4) STA.475+2.4 57.9' LT EB ROUTE 1
- (5) STA.774+84.6 38.7' RT EB ROUTE 1

NOTE: TOP OF SIGNAL POLE FOUNDATIONS SHALL BE THE SAME ELEVATION AS TOP OF SIDEWALK OR HIGHEST POINT OF ROADWAY.

General Notes

1. ALL SIGNAL JUNCTION BOXES SHALL BE INSTALLED IN ACCORDANCE WITH ST'D JB-S2,UNLESS OTHERWISE SPECIFIED.ALL LIGHTING JUNCTION BOXES SHALL BE INSTALLED IN ACCORDANCE WITH ST'D JB-R1,UNLESS OTHERWISE SPECIFIED.
2. PEDESTRIAN SIGNAL HEADS SHALL BE SP-9 LED COUNTDOWN AND MOUNTED IN ACCORDANCE WITH ST'D SMB-3.
3. PEDESTAL POLES (PF-2) SHALL BE 12 FT.IN HEIGHT.
4. CONTROLLER SHALL REST IN PHASE 2-6 MINIMUM GREEN.
5. THE CONTRACTOR SHALL COORDINATE WITH THE FAIRFAX COUNTY FIRE DEPARTMENT TO RELOCATE THE OPTICOM EVP-2 AND EVP-6 ON THE MAST ARM TO ACCOMMODATE THE NEW LANE CONFIGURATION.
6. ALL SIGNAL POLE MOUNTED LUMINAIRES SHALL BE MOUNTED AT A HEIGHT OF 30' AND SHALL BE 250W HPS.



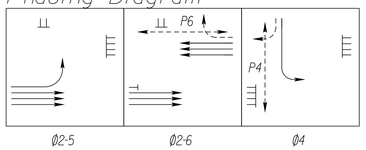
Clearance Chart

R / W	CLEARANCE 1	CLEARANCE 2	NEXT PHASE
G	Y	R	R
G	G	G	G
◄G	◄Y	◄R	◄R
◄G	◄G	◄G	◄G
W	FDW	DW	DW

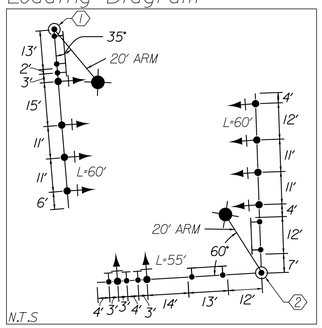
Color Sequence Chart

SIGNAL	PHASES 2	4	5	6	COMBINATIONS 2-5	2-6	FLASH
2	G				G	G	Y
4		G					R
5			◄G		◄G		◄R
6				G		G	Y
P4	DW	W	DW	DW	DW	DW	BLANK
P6	DW	DW	DW	W	DW	W	BLANK

Phasing Diagram



Loading Diagram



Initial Timing Chart

PHASE	1	2	3	4	5	6	7	8
MOVEMENT		NB THRU RICHMOND HWY		EB LT/RT WOODLAWN RD	NB LT RICHMOND HWY	SB THRU/RT RICHMOND HWY		
PHASE ON		X		X	X	X		
PHASE OFF	X		X				X	X
INTERVAL	PHASE TIMINGS							
MIN GR		15.0		7.0	7.0	15.0		
PASSAGE		5.0		5.0	4.0	5.0		
YELLOW		5.0		3.0	4.0	5.0		
RED		1.0		4.0	4.0	1.0		
MAX 1		75.0		25.0	25.0	100.0		
MAX 2		0.0		0.0	0.0	0.0		
MIN GAP		5.0		5.0	4.0	5.0		
TIME BEFORE REDUCTION		0.0		0.0	0.0	0.0		
TIME TO REDUCE		0.0		0.0	0.0	0.0		
PED WALK		7.0		8.0	0.0	0.0		
PED CLEARANCE		10.0		32.0	0.0	0.0		
MODE		MIN RECALL		NON-LOCK	NON-LOCK	MIN RECALL		

RICHMOND HIGHWAY (US ROUTE 1) & WOODLAWN ROAD
TRAFFIC SIGNAL PLANS - ULTIMATE

SCALE	PROJECT	SHEET NO.
0 25' 50'	0001-029-001	44(9)

10/16/2014
1:56:19 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
DESIGNED BY SABRA,WANG & ASSOCIATES,EMILY HORNE,(703) 942-8990

REVISED			STATE	STATE		SHEET NO.
No.	Description	Date		ROUTE	PROJECT	
0			VA.	1	0001-029-001	44(9A)

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

Sabra, Wang & Associates, Inc.
Fairfax, Virginia
TRAFFIC ENGINEER

SIGN DETAIL
1:5

Panel Style: blue st name.ssi
Dimensions are in inches.tenths
Letter locations are panel edge to lower left corner

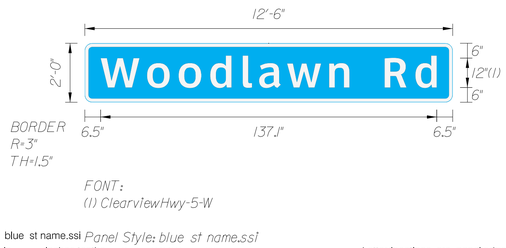
SIGN NUMBER	S-8
WIDTH x HGHT.	13'-6" x 2'-0"
BORDER WIDTH	1.5"
CORNER RADIUS	3"
MOUNTING	Overhead
BACKGROUND	TYPE: Reflective
	COLOR: Light Blue
LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White

SYMBOL	ROT	X	Y	WID	HT

LETTER POSITIONS (X)

R	i	c	h	m	o	n	d		H	w	y										LENGTH	SERIES/SIZE
7	19.8	26.4	38.1	51	68.6	82	94.4	103.1	117.4	130	145.6										148	ClearviewHwy-5-W 129.8

SIGN DETAIL
1:5



Panel Style: blue st name.ssi
Dimensions are in inches.tenths
Letter locations are panel edge to lower left corner

SIGN NUMBER	name
WIDTH x HGHT.	12'-6" x 2'-0"
BORDER WIDTH	0"
CORNER RADIUS	3"
MOUNTING	Overhead
BACKGROUND	TYPE: Reflective
	COLOR: Light Blue
LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White

SYMBOL	ROT	X	Y	WID	HT

LETTER POSITIONS (X)

W	o	o	d	l	a	w	n		R	d											LENGTH	SERIES/SIZE
6.5	25.4	38.3	51.1	64.4	71.1	82.5	99.7	108	122.3	134.8											137.1	ClearviewHwy-5-W 129.8

SIGN DETAIL
TRAFFIC SIGNAL PLAN

PROJECT	SHEET NO.
0001-029-001	44(9A)

10/16/2014
3:38:38 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	09/23/14	VA.	1	0001-029-001	44(10)

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	45 MPH
JEFF TODD WAY	40 MPH
MT.VERNON MEM.HWY	45 MPH

Existing Signals To Remain

2.4.8 3.7 2A.4A P2.P4.P6.P8

Existing Signals To Be Relocated

2.6 1.5

Proposed Signal

5

ALL SIGNALS HEADS SHALL BE 12" LED WITH POLYCARBONATE BACKPLATES

Proposed Sign

S-7 ONLY
R3-5R 30"X36"

Existing Signs To Remain

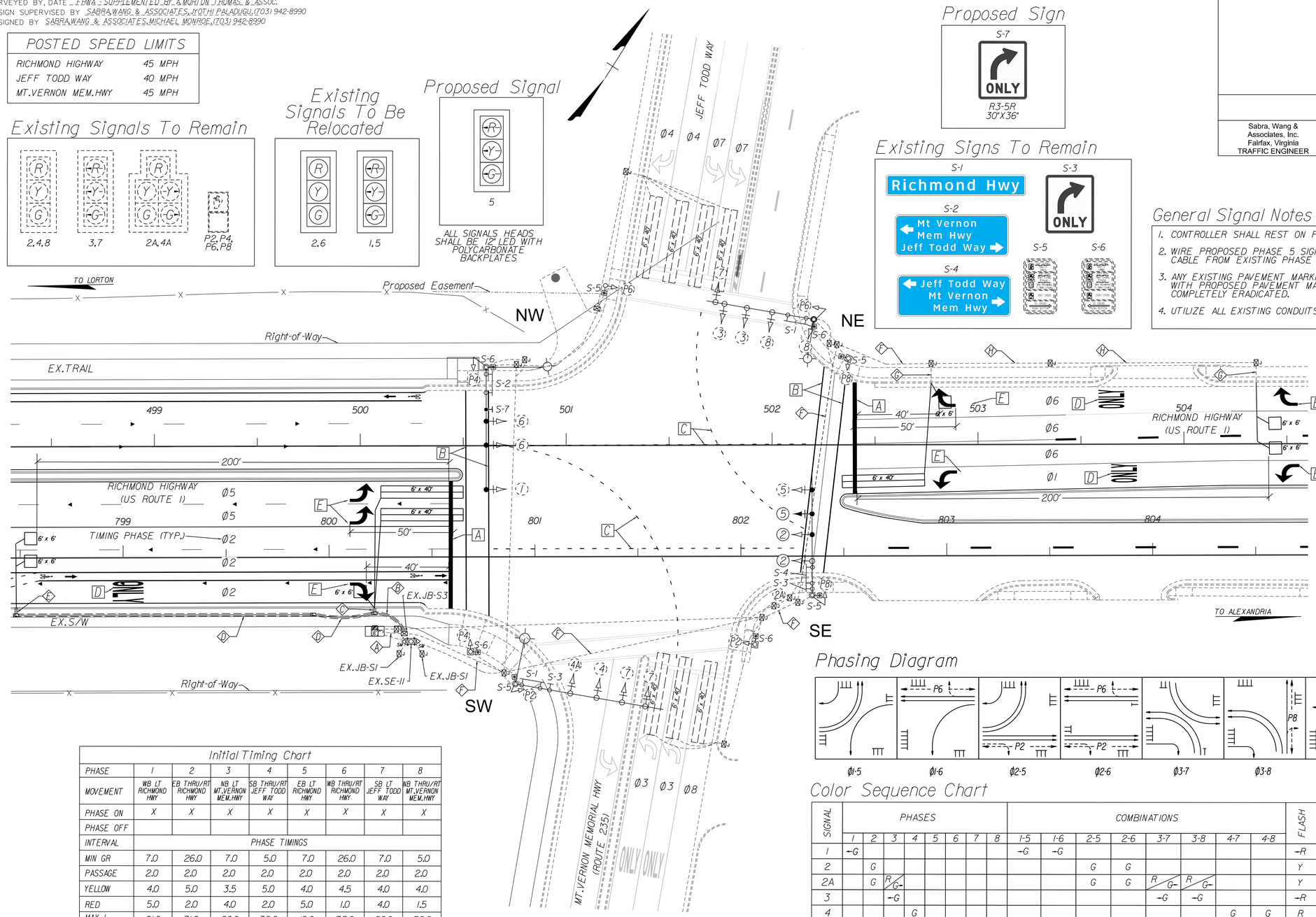
S-1 Richmond Hwy
S-2 Mt Vernon Mem Hwy Jeff Todd Way
S-3 ONLY
S-4 Jeff Todd Way Mt Vernon Mem Hwy
S-5 S-6

General Signal Notes

1. CONTROLLER SHALL REST ON PHASE 2-6.
2. WIRE PROPOSED PHASE 5 SIGNAL WITH JUMPER CABLE FROM EXISTING PHASE 5 SIGNAL.
3. ANY EXISTING PAVEMENT MARKINGS WHICH CONFLICT WITH PROPOSED PAVEMENT MARKINGS SHALL BE COMPLETELY ERADICATED.
4. UTILIZE ALL EXISTING CONDUITS AND CABLES.

Cable & Conduit Legend

- A USE EXISTING CONDUIT USE EXISTING CABLES 9-14/2C(S) FOR DETECTORS
- B 1-3" CONDUIT 5-14/2C(S) FOR DETECTORS
- C 3-1" CONDUIT (M)
- D 1-3" CONDUIT 2-14/2C(S) FOR DETECTORS
- E 2-1" CONDUIT (M)
- F USE EXISTING CONDUIT USE EXISTING CABLES 4-14/2C(S) FOR DETECTORS
- G USE EXISTING CONDUIT (M)
- H USE EXISTING CONDUIT USE EXISTING CABLES 2-14/2C(S) FOR DETECTORS



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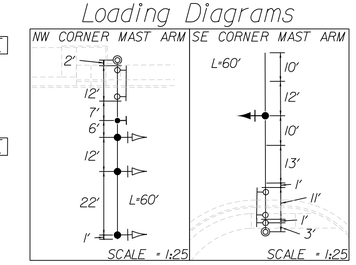
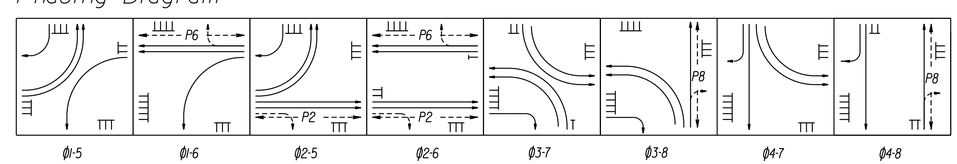


Clearance Chart

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

Phasing Diagram



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 I, 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

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.

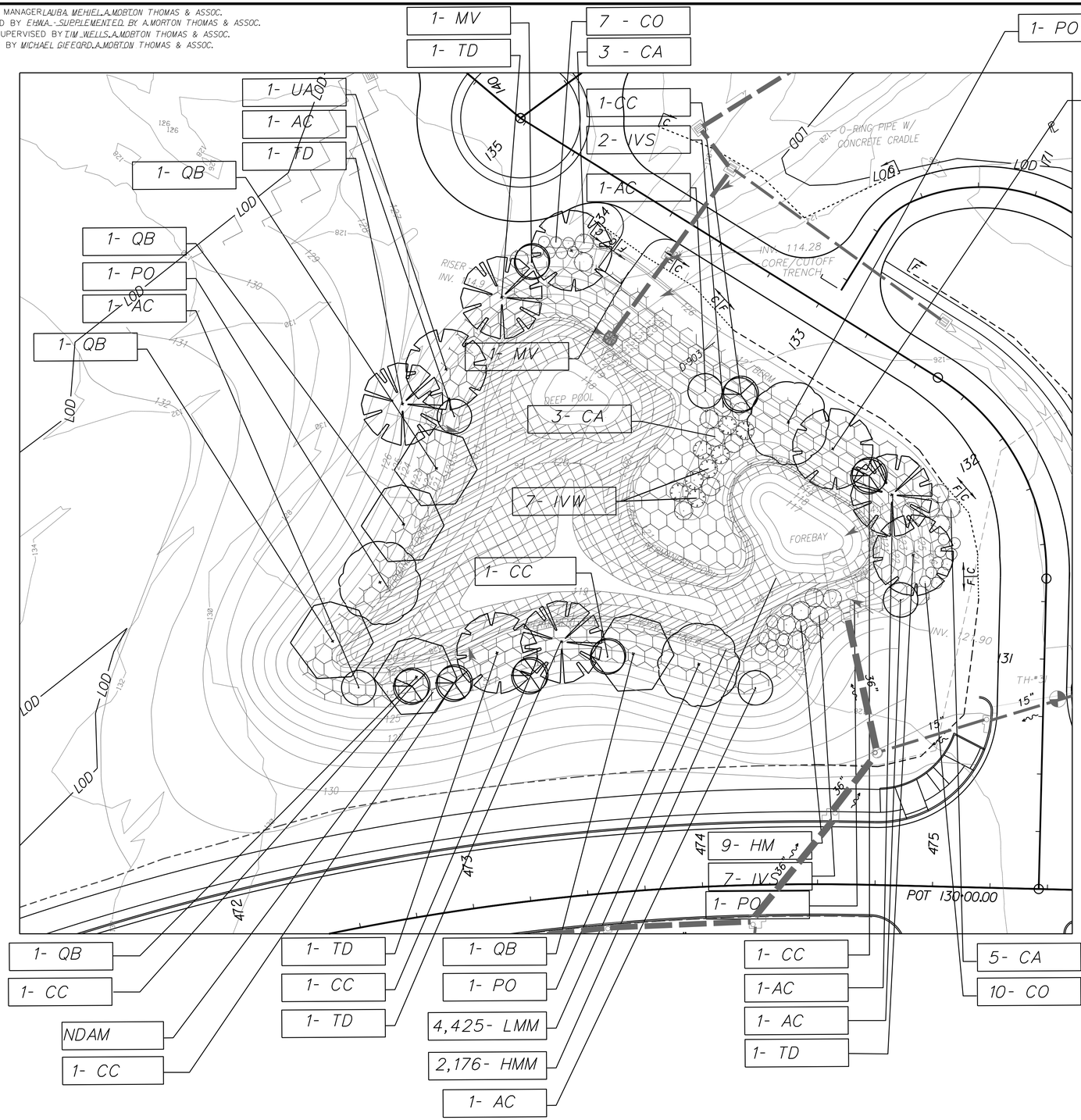
RICHMOND HIGHWAY (US ROUTE 1)
& JEFF TODD WAY &
MT.VERNON MEMORIAL HIGHWAY
TRAFFIC SIGNAL PLANS - ULTIMATE

SCALE	PROJECT	SHEET NO.
0 25' 50'	0001-029-001	44(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 P101, R201, C501	46b(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.



PLANT KEY
(SEE SUMMARY SHEET FOR SIZES)
(SEE TYPICAL PLANTING DETAIL ON SHEET 46C)

TREES

- QB- SWAMP WHITE OAK (5)
- TD- BALD CYPRESS (5)
- PO- AMERICAN SYCAMORE (3)
- AC- SHADBLOW SERVICEBERRY MULTITRUNK (5)
- MV- SWEET BAY MAGNOLIA (2)
- UA- American Elm (2)
- CC- CERCIS CANADENSIS (6)

MEADOW MIX

- LMM- LOW MARSH 6-18" 24" O.C. (4,425 PLANTS)
- HMM- HIGH MARSH 0-6" 24" O.C. (2,176 PLANTS)
- NDAM- ERNMX-183 Native Detention Area Mix (10,006 SF)

SHRUBS

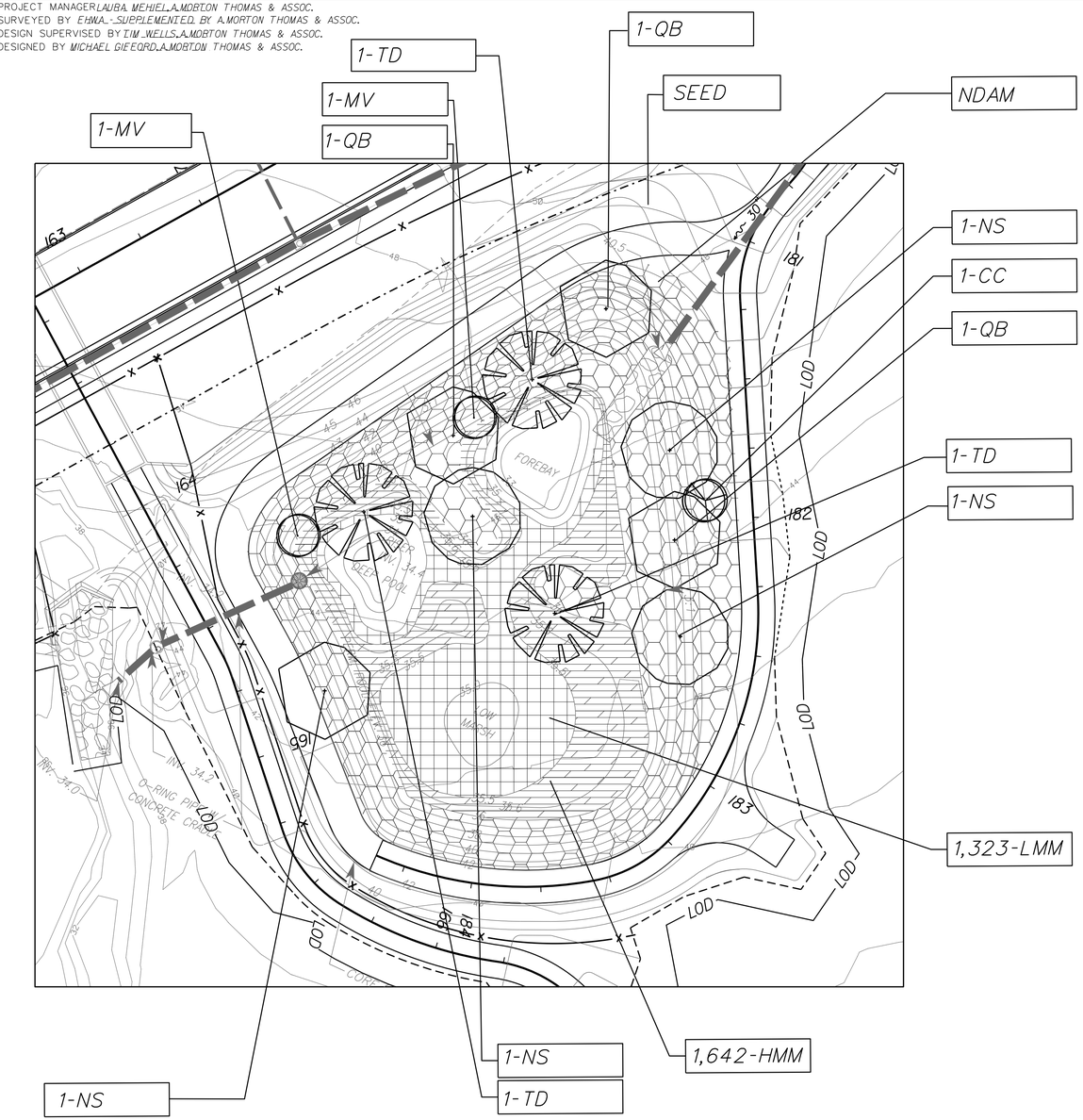
- CO- BUTTONBUSH (17)
- HM- ROSE MALLOW (9)
- IVS- 'SOUTHERN GENTLEMEN' WINTERBERRY HOLLY (2)
- IVW- 'WINTER RED' WINTERBERRY HOLLY (14)
- CA- AMERICAN BEAUTYBERRY (13)

SWM POND 5A

SCALE 0 25' 50'

PROJECT	SHEET NO.
0001-029-001	46b(6)

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	46b(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.

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

PLANT KEY
(SEE SUMMARY SHEET FOR SIZES)
(SEE TYPICAL PLANTING DETAIL ON SHEET 46c(1))

TREES

NS- Black Gum (4)

QB- Swamp White Oak (3)

TD- Bald Cypress (3)

MV- Sweet Bay Magnolia (2)

CC- Eastern Redbud (1)

MEADOW MIX

LMM- LOW MARSH MIX 6-18" 24" O.C. (1,323 PLANTS)

HMM- HIGH MARSH 0-6" 24" O.C. (1,642 PLANTS)

NDAM- ERNMX-183 Native Detention Area Mix (16,778 SF)

SWM POND 6B

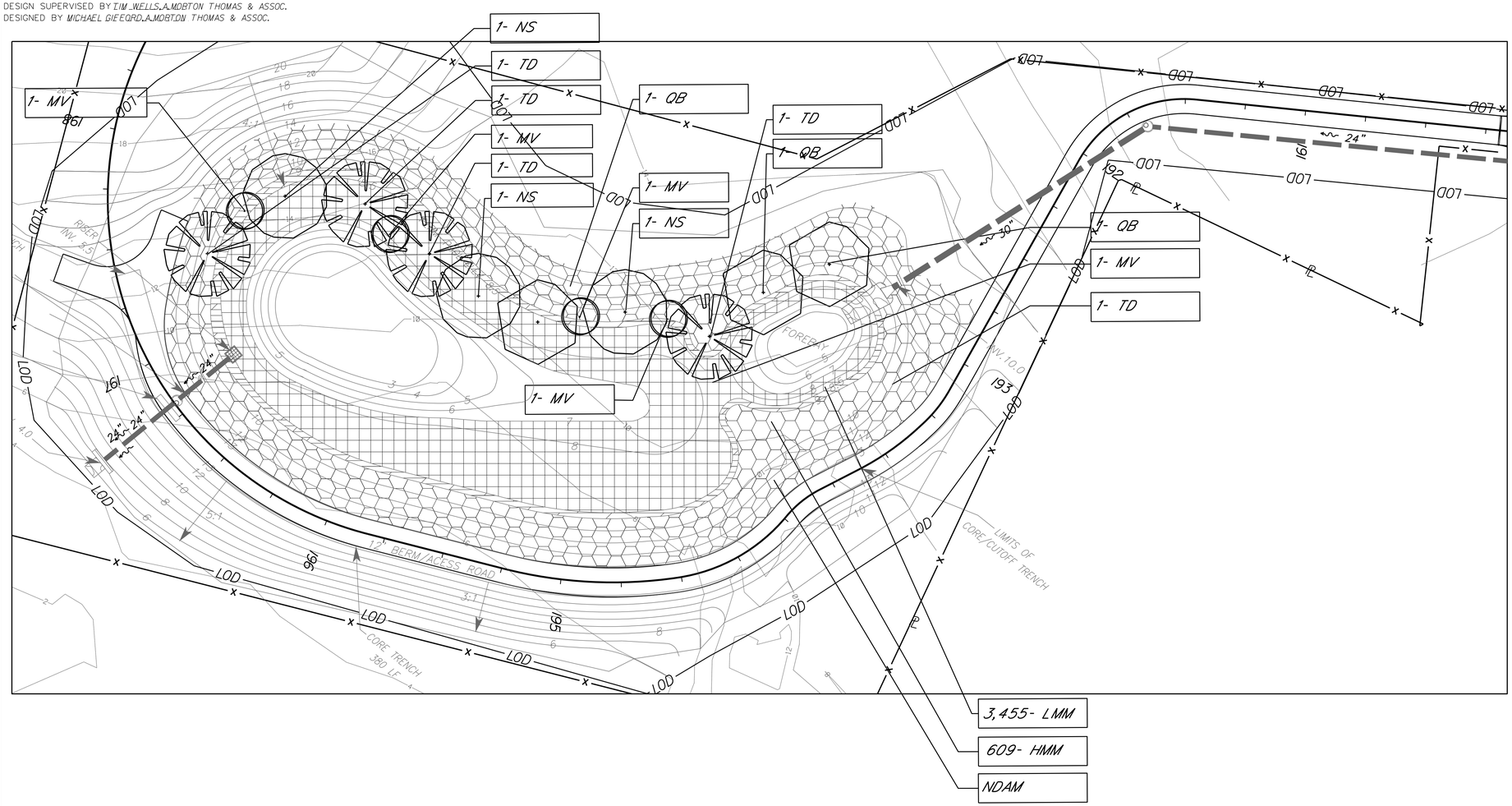
SCALE
0 25' 50'

PROJECT	SHEET NO.
0001-029-001	46b(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 GIEGORD, A.MORTON THOMAS & ASSOC.

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	46b(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.



PLANT KEY
(SEE SUMMARY SHEET FOR SIZES)
(SEE TYPICAL PLANTING DETAIL ON SHEET 46c(1))

TREES

NS- BLACK GUM (3)

QB- SWAMP WHITE OAK (3)

TD- BALD CYPRESS (5)

MV- MAGNOLIA VIRGINIANA (5)

MEADOW MIX

LMM- LOW MARSH 6-18" 24" O.C. (3,455 PLANTS)

HMM- HIGH MARSH 0-6" 24" O.C. (609 PLANTS)

NDAM- ERNMX-183 Ernst Native DETENTION AREA MIX (16,880 SF)

SWM POND 6A

SCALE
0 25' 50'

PROJECT	SHEET NO.
0001-029-001	46b(8)

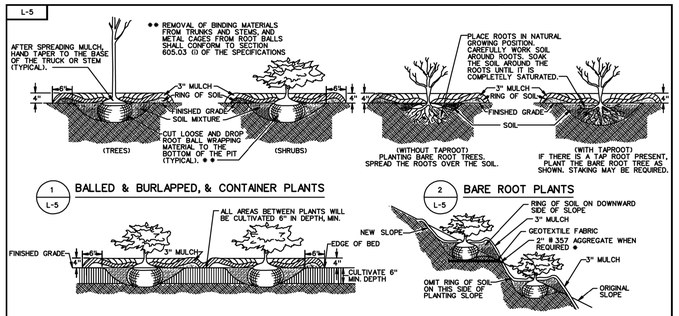
PROJECT MANAGER LAURA MEHIEL, A.MORTON THOMAS & ASSOC.
SURVEYED BY EHWA - SUPPLEMENTED BY A.MORTON THOMAS & ASSOC.
DESIGN SUPERVISED BY TIM WELLS, A.MORTON THOMAS & ASSOC.
DESIGNED BY MICHAEL GIEGORD, A.MORTON THOMAS & ASSOC.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	46c(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.

VDOT STANDARD LANDSCAPE DESIGN DETAILS

L-5



1 L-5 BALLED & BURLAPPED, & CONTAINER PLANTS

3 L-5 BED PLANTING

- WHEN A PORTION OF A PLANT BED EXTENDS INTO AN AREA STEEPER THAN 4:1, CULTIVATION OF THAT PORTION SHALL BE OMITTED AND THE ENTIRE AREA BETWEEN PLANTS SHALL BE MULCHED TO BLEND IN WITH THE CULTIVATED BED.
- PLANTING BEDS (CULTIVATED AND NON-CULTIVATED) SHALL BE CUT TO A MAXIMUM 4" IN HEIGHT BY MOWING, AND SHALL AFTERWARDS BE TREATED WITH HERBICIDE AS APPROVED AND DIRECTED BY THE ENGINEER AT LEAST 2 WEEKS PRIOR TO CULTIVATION, PLANTING, OR MULCHING.
- WHEN BARE ROOT PLANTS ARE USED IN BEDS, SHRUB AND ROOT PLACEMENT SHALL CONFORM TO DETAIL 2/L-5.
- SFM FOLLOWING BED DESIGNATION STANDS FOR SQUARE FEET OF MULCH AT THE INDICATED QUANTITY.

2 L-5 BARE ROOT PLANTS

4 L-5 SLOPE PLANTING

- WHEN BARE ROOT PLANTS ARE USED ON SLOPE, SHRUB AND ROOT PLACEMENT SHALL CONFORM TO DETAIL 2/L-5.
- ON SLOPES STEEPER THAN 3:1, THE FRONT CENTER OF THE PIT SHALL BE MODIFIED WHEN REQUIRED * TO INCLUDE A "V" CUT THE FULL DEPTH OF THE PIT. THE PIT SHALL BE DUG 2" DEEPER THAN SHOWN ON THE SUMMARY SHEET AND BACKFILLED WITH 2" OF #357 AGGREGATE, DAYLIGHTED TO THE SLOPE FACE, AND COVERED WITH GEOTEXTILE FABRIC PRIOR TO BACKFILLING WITH SOIL MIXTURE.

* SEE NOTE FOR PIT DRAINAGE MODIFICATION FOR SLOPE PLANTING SHEET 1201.06.

GENERAL NOTES:

1. SEE LANDSCAPE SUMMARY SHEET FOR PIT SIZES.
2. ROOT BALL SHALL BE POSITIONED LEVEL WITH FINISHED GRADE. SOIL MIXTURE SHALL TAPER ONTO BUT NOT OVER TOP OF THE ROOT BALL. MULCH SHALL EXTEND AT THE PROPER DEPTH OVER THE ENTIRE ROOT BALL AND PLANTING PIT, AND SHALL BE HAND TAPERED TO THE BASE OF ALL TRUNKS AND STEMS AFTER SPREADING.
3. THIS RULE SHALL GOVERN WITH THE FOLLOWING EXCEPTIONS:
   A. SLOPE PLANTINGS - SEE SLOPE PLANTING DETAILS.
   B. INCLUSION OF PIT DRAINAGE SYSTEM - POSITION TOP OF ROOT BALL THE SAME AS FINISHED GRADE.
   C. TREE GRATE PLANTING - SEE TREE GRATE PLANTING DETAILS IN PLANS.

PLANTING DETAILS

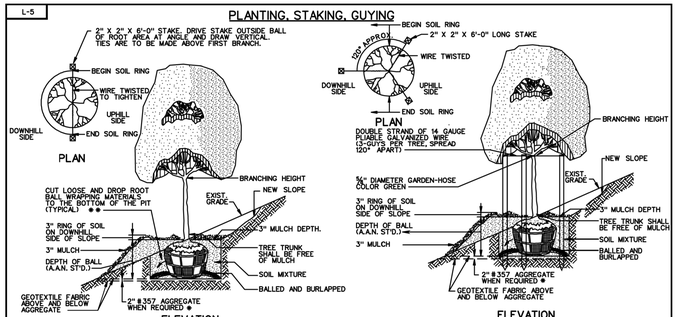
VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE
605
245
203

1201.04

L-5

PLANTING, STAKING, GUYING



GENERAL NOTES

1. ALL DECIDUOUS TREES 2" IN CALIPER OR MORE, AND ALL EVERGREEN TREES OVER 4' IN HEIGHT SHALL BE STAKED OR GUYED AS SHOWN.
2. MULTIPLE STEMED DECIDUOUS TREES OVER 4' IN HEIGHT SHALL BE STAKED WITH 3 STAKES IN SUCH A MATTER AS TO STABILIZE 3 MAINSTEMS
3. THE WOOD STAKES SHALL BE CONSTRUCTION GRADE, ROUGH OR DRESSED, OF SOUND HARDWOOD, DECAY RESISTANT, AND OF THE SIZE INDICATED IN THE DETAILS.
4. THE WIRE TIES SHALL BE 14 GAUGE GALVANIZED WIRE OR OTHER APPROVED MATERIAL AND BE PROVIDED WITH A 1 PIECE OF GREEN RUBBER HOSE PLACED TO PREVENT INJURY TO THE BARK. THERE SHOULD BE A 1" - 3" SWAY IN THE TREE (THE WIRES SHOULD NOT BE PULLED TIGHT) FOR BEST ESTABLISHMENT. OTHER ANCHORING METHODS AND MATERIALS MAY BE APPROVED FOR USED BY THE ENGINEER.
5. ON SLOPES STEEPER THAN 3:1, THE FRONT CENTER OF THE PIT SHALL BE MODIFIED WHEN REQUIRED * TO INCLUDE A "V" CUT THE FULL DEPTH OFTHE PIT. THE PIT SHALL BE DUG 2" DEEPER THAN SHOWN IN THE SUMMARY SHEET AND BACKFILLED WITH 2" OF #357 AGGREGATE DAYLIGHTED TO THE SLOPE FACE, AND COVERED WITH GEOTEXTILE FABRIC PRIOR TO BACK- FILLING WITH SOIL MIXTURE.

* PIT DRAINAGE MODIFICATION FOR SLOPE PLANTING (WHEN REQUIRED)

* * REMOVAL OF BINDING MATERIALS FROM TRUNK AND STEMS AND METAL CAGES FROM ROOT BALLS SHALL CONFORM TO SECTION 605.03 (I) OF THE SPECS.

A. PRIOR TO THE PLANTING ON A SLOPE THE CONTRACTOR SHALL TEST NO MORE THAN 3 PITS FOR PERCOLATION.

B. PERCOLATION TEST SHALL CONSIST OF FILLING THE PIT WITH APPROXIMATELY 6" OF WATER. THE ENGINEER SHALL DETERMINE IF PIT DRAINAGE IS REQUIRED.

C. PAYMENT FOR AGGREGATE, GEOTEXTILE FABRIC, AND PIT MODIFICATION WILL BE MADE IN ACCORDANCE WITH THE ROAD AND BRIDGE SPECS.

SLOPE PLANTING DETAILS

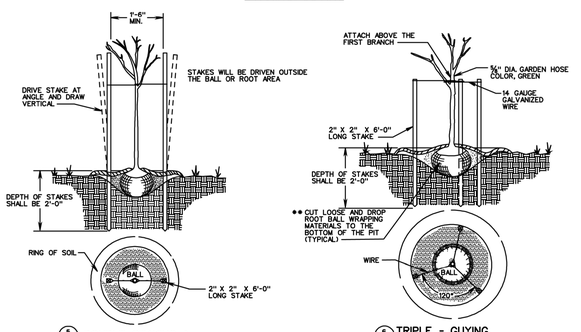
VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE
203
245
605

1201.06

L-5

STAKING, GUYING



5 L-5 DOUBLE STAKING & STAKE PLACEMENT

DECIDUOUS TREES LESS THAN 2" IN CALIPER
EVERGREEN TREES LESS THAN 4 FEET IN HEIGHT
SHRUBS 4 FEET OR MORE IN HEIGHT.

6 L-5 TRIPLE - GUYING

DECIDUOUS TREES 2" IN CALIPER OR GREATER
EVERGREEN TREES 4 FEET IN HEIGHT OR GREATER

GENERAL NOTES

1. ALL DECIDUOUS TREES OVER 4 FT. IN HEIGHT AND ALL EVERGREEN TREES OVER 4 FT. IN HEIGHT OR TALLER SHALL BE STAKED AND GUYED WITH 3 STAKES AS SHOWN.
2. MULTIPLE STEMMED DECIDUOUS TREES 4 FT. IN HEIGHT SHALL BE STAKED WITH 3 STAKES IN SUCH A MANNER AS TO STABILIZE 3 MAINSTEMS.
3. THE WOOD STAKES SHALL BE 2"X2"X6'-0" LONG DRESSED HARDWOOD AND DECAY RESISTANT.

THE WIRE TIES SHALL BE 14 GAUGE GALVANIZED WIRE, AND BE PROVIDED WITH A ONE FOOT PIECE OF GREEN RUBBER HOSE PLACED TO PREVENT INJURY TO THE BARK. THERE SHOULD BE A 1" - 3" SWAY IN THE TREE (THE WIRES SHOULD NOT BE PULLED TIGHT) FOR BEST ESTABLISHMENT. OTHER ANCHORING METHODS AND MATERIALS MAY BE APPROVED FOR USE BY THE ENGINEER.

* * REMOVAL OF BINDING MATERIALS FROM TRUNKS AND STEMS AND METAL CAGES FROM ROOT BALLS SHALL CONFORMTO THE CURRENT ROAD & BRIDGE SPECS.

SPECIFICATION REFERENCE
605
244

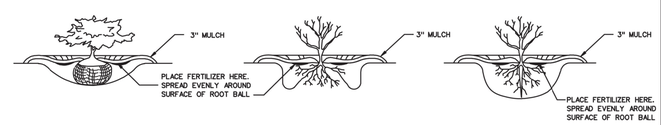
PLANTING DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

1201.05

L-6

FERTILIZER PLACEMENT



BALLED & BURLAPPED & CONTAINER PLANTS

BARE ROOT PLANTS WITHOUT TAPROOT

BARE ROOT PLANTS WITH TAPROOT

FERTILIZER MATERIALS

FERTILIZER MATERIALS SHALL CONFORM TO THE SECTION 244.02 (d) OF THE VDOT ROAD AND BRIDGE SPECIFICATIONS.

THE FOLLOWING INFORMATION SHALL BE SHOWN ON A TAG ATTACHED TO FERTILIZER BAG:

1. THE NAME AND ADDRESS OF MANUFACTURER
2. NAME OF MATERIAL
3. NUMBER OF NET POUNDS OF READY MIXED MATERIALS IN THE PACKAGE
4. CHEMICAL COMPOSITION AND ANALYSIS
5. GUARANTEED ANALYSIS (VA. DEPARTMENT OF AGRICULTURE)

MULCHING MATERIALS

BARK SHALL BE DOUBLE SHREDDED HARDWOOD BARK, DISEASE FREE, BROWN IN COLOR AND SHALL CONFORM TO THE NATIONAL BARK AND SOIL PRODUCER ASSOC. STANDARDS FOR CLASSIFICATION, PARTICLE SIZE, PERCENTAGE WOOD CONTENT, MOISTURE RETENTION AND PH RATING. OTHER MULCH MATERIAL MAY BE USED WITH APPROVAL FROM THE ENGINEER.

FERTILIZER RATES

2 OUNCES PER VINE AND GROUND COVER UP TO ONE GALLON CONTAINER.

8 OUNCES PER SHRUB BARE ROOT OR ONE GALLON CONTAINER.

16 OUNCES PER SHRUB, BALLED AND BURLAPPED OR 2 THROUGH FIVE GALLON CONTAINER.

24 OUNCES PER TREE UNDER 2" CALIPER (INCLUDES MULTI-STEMMED AND EVERGREEN TREES UNDER 8")

32 OUNCES PER TREE OVER 2" CALIPER (INCLUDES MULTI-STEMMED AND EVERGREEN TREES OVER 8' IN HEIGHT)

THE FERTILIZER SHALL BE APPLIED AS A SURFACE APPLICATION. SPREAD EVENLY OVER TOP OF THE ROOT BALL AND PLANT PIT SOIL PRIOR TO MULCHING.

FERTILIZER SHALL NOT BE MIXED WITH THE SOIL MIXTURE.

APPROVED MULCHES

TYPE	DEPTH
DOUBLE SHREDDED HARDWOOD BARK	3"

SPECIFICATION REFERENCE
605
244

FERTILIZER AND MULCH

VIRGINIA DEPARTMENT OF TRANSPORTATION

1201.07

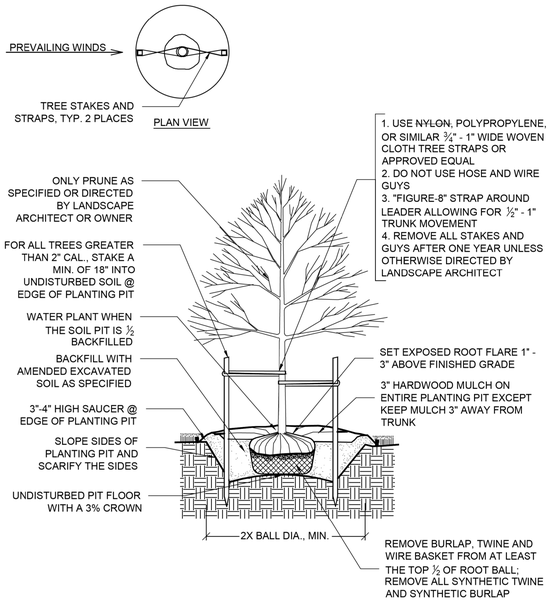
NOTE: REFERENCES TO "ENGINEER" IN THE DETAILS ON THIS SHEET WILL BE REPLACED WITH "CONTRACTING OFFICER". REFERENCES TO "THE DEPARTMENT" WILL BE REPLACED WITH "THE GOVERNMENT".

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.

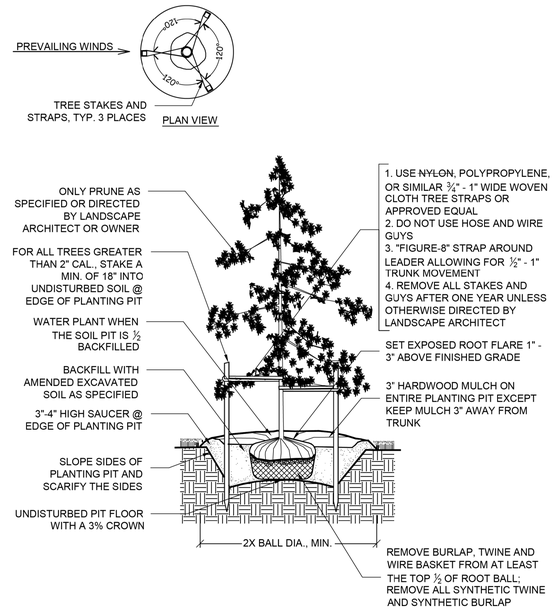
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	1	0001-029-001 P101, R201, C501	46c(2)

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

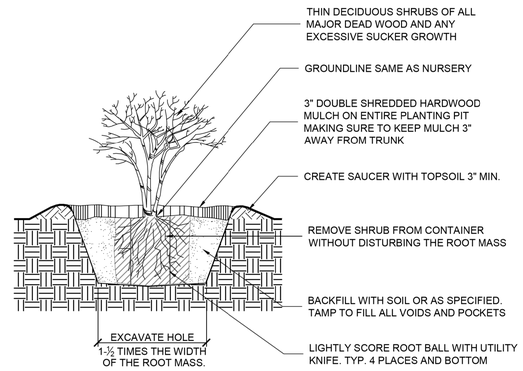
ALTERNATE LANDSCAPE DESIGN DETAILS



(1) DECIDUOUS TREE PLANTING

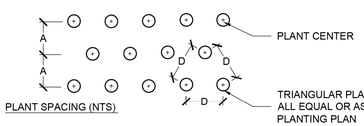


(2) CONIFEROUS TREE PLANTING



NOTE:
1. REMOVE ALL NON-ORGANIC MATERIAL FROM THE SOIL PIT AND HAND TAMP LOOSE SOIL AT BOTTOM OF THE PIT
2. PLANT EVERGREEN AND DECIDUOUS SHRUBS USING THE SAME METHOD

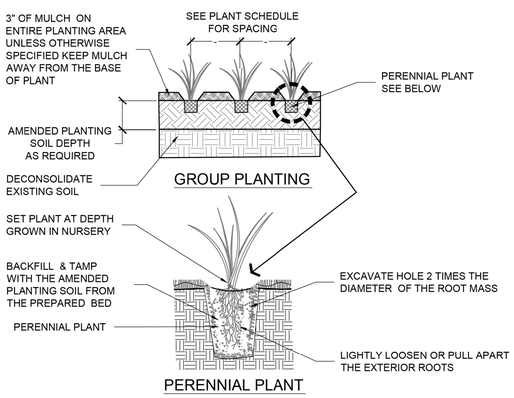
(3) SHRUB PLANTING



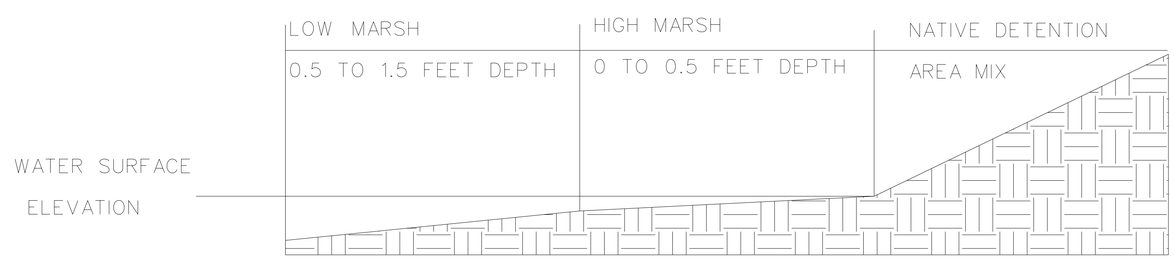
PLANT SPACING (NTS)

SPACING "D"	ROW "A"	PLANTS PER 10 SQ. FT.
8" O.C.	6.93"	26
12" O.C.	10.4"	11.5
18" O.C.	15.6"	5.12
20" O.C.	17.3"	2.42
24" O.C.	20.8"	2.9
36" O.C.	30.0"	1.28

NOTE:
QUANTITY OF PERENNIALS AND SPACING AS NOTED IN PLANT SCHEDULE



(4) HERBACEOUS GRASS/PERENNIAL PLUG PLANTING



(5) TYPICAL PLANTING SECTION OF SWM PONDS

PROJECT	SHEET NO.
0001-029-001	46c(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.

SECTION E LANDSCAPE NOTES & SCHEDULE

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	I	0001-029-001 P101, R201, C501	46c(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.

GENERAL PLANTING NOTES

P-1 ALL PLANTING SHALL BE IN ACCORDANCE WITH VDOT ROAD AND BRIDGE SPECIFICATIONS, DATED 2008 AND ANSI Z60.1-2004.

P-2 ALL PLANTING AND SITE WORK SHALL BE WITHIN THE RIGHT OF WAY EASEMENTS OR RIGHT OF ENTRY.

P-3 THE PLANTING SEASONS FOR THIS PROJECT ARE AS FOLLOWS:
TREES AND SHRUBS: OCTOBER 15 THROUGH MARCH 15
HERBACEOUS PERENNIALS AND GRASSES: SEPTEMBER 1 THROUGH APRIL 15
SEED MIXES: MARCH 1 THROUGH MAY 15, AUGUST 15 THROUGH OCTOBER 31
CONTRACTOR MUST VERIFY SEED PLANTING SEASONS PER MANUFACTURER'S SPECIFICATIONS
THE CONTRACTOR SHALL MULCH AND WATER ALL PLANTS ON THE DAY THEY ARE PLANTED PER THE AMOUNTS SPECIFIED IN THE SUBSEQUENT NOTE.

P-4 PLANTS SHALL BE SET IN THE PLANTING PIT, AT THE PROPER DEPTH, ON TAMPED SOIL MIX. SOIL MIX SHALL THEN BE FILLED AROUND THE ROOTS TO APPROXIMATELY 75% OF THE DEPTH OF THE PIT, TAMPED, AND THOROUGHLY WATERED. AFTER SETTLEMENT OF THE SOIL, THE REMAINDER OF THE PIT SHALL BE FILLED WITH SOIL MIX, FERTILIZED, TAMPED, AND AGAIN WATERED, ALL WITHIN THE SAME DAY OF PLANTING. THE SAME PROCEDURE SHALL BE FOLLOWED IN PLANTING REPLACEMENTS.

P-5 THE ESTABLISHMENT PERIOD IS 12 MONTHS. DURING THE ESTABLISHMENT PERIOD, THE CONTRACTOR SHALL WATER EACH PLANT WITH THE FOLLOWING MINIMUM QUANTITIES OF WATER FOR EACH WATERING, UNLESS OTHERWISE DIRECTED BY THE LANDSCAPE ARCHITECT.
(A) DECIDUOUS TREES OVER 10' HT. - 12 GALLONS PER PIT
(B) DECIDUOUS TREES 10' HT. OR LESS - 6 GALLONS PER PIT
(C) SHRUBS - 2 GALLONS PER PIT
(D) GROUND COVERS/PERENNIALS - 1 GALLON PER PIT
(E) SEEDING AREAS - 1" ON SURFACE

THE CONTRACTOR SHALL WATER ALL PLANTS EVERY 4 WEEKS DURING THE PERIOD BETWEEN APRIL 1 AND MAY 31; EVERY 2 WEEKS DURING THE PERIOD BETWEEN JUNE 1 AND SEPTEMBER 30; EVERY 4 WEEKS DURING THE PERIOD BETWEEN OCTOBER 1 AND NOVEMBER 30. IF THERE IS 1" OR MORE OF RAINFALL IN THE 7 DAY PERIOD PRIOR TO A SCHEDULED WATERING, THE WATERING SHALL BE POSTPONED TO THE FOLLOWING WEEK. MULTIPLE POSTPONEMENTS BASED ON THE 1" RAINFALL CRITERIA SHALL BE ALLOWED.

P-6 THE CONTRACTING OFFICER SHALL BE GIVEN THE OPPORTUNITY TO INSPECT AND APPROVE ALL PLANT MATERIAL AT ITS SOURCE PRIOR TO DIGGING OR DELIVERY. IF THIS OPPORTUNITY IS WAIVED, DIGITAL IMAGES OF PLANT MATERIAL OR A REPRESENTATIVE SAMPLE OF EACH SPECIES MAY BE REQUIRED FOR APPROVAL PRIOR TO THE SHIPMENT OF THE TOTAL QUANTITY.

P-7 PRIOR TO ANY CONSTRUCTION, EXCAVATION, OR LANDSCAPING, THE CONTRACTOR SHALL ASSUME RESPONSIBILITY OF LOCATING AND VERIFYING ALL UTILITIES, ABOVE AND/OR BELOW GROUND, PUBLIC AND/OR PRIVATE THAT MAY EXIST AND CROSS THROUGH THE AREAS OF CONSTRUCTION.

P-8 LOCATION OF PLANT MATERIALS SHOWN ON THE PLANS ARE SCHEMATIC ONLY AND SHALL BE ADJUSTED AS REQUIRED FOR CHANGES DUE TO ACTUAL FIELD CONDITIONS WHEN DIRECTED BY LANDSCAPE ARCHITECT.

P-9 ON CENTER SPACING OF PLANT MATERIAL SHALL BE AS INDICATED IN THE LANDSCAPE SUMMARY OR PLAN.

P-10 MULCHING FOR PLANTS AND PLANT BEDS SHALL BE:
DOUBLE-SHREDDED HARDWOOD BARK
(SEE STANDARD 1201.07 FOR MULCH SPECIFICATIONS)

P-11 DEFINITION OF ABBREVIATION:
CAL. - CALIPER
HGT. - HEIGHT
B&B - BALLED AND BURLAPPED
CONT. - CONTAINER
B.R. - BAREROOT
EA. - EACH
L.F. - LINEAR FEET
C.Y. - CUBIC YARD
S.F. - SQUARE FEET
HR - HOUR
O.C. - ON CENTER (SPACING)

P-12 PLANTING PITS FOR CONTAINER MATERIAL SHALL BE TWICE THE WIDTH OF THE CONTAINER AND EQUAL TO THE DEPTH OF THE CONTAINER.

P-13 THE CONTRACTOR MUST INSTALL A MULCH BED AROUND EACH TREE. CONTRACTOR MUST PROVIDE A MULCH BED IN SHRUB/PERENNIAL/BULB MASSINGS AS SHOWN ON PLANS. MULCH MUST BE UNIFORM IN COLOR, AND FREE OF FOREIGN MATERIAL. THE CONTRACTOR SHALL APPLY THE MULCH UNIFORMLY TO A 4 INCH DEPTH. MULCH MUST BE KEPT 3 TO 4" AWAY FROM ALL TRUNKS AND WOODY STEMS. MULCH MUST MEET THE REQUIREMENTS ESTABLISHED IN STANDARD 1201.07.

P-14 SEE ROADSIDE DEVELOPMENT SHEET FOR ADDITIONAL INFORMATION

P-15 REFORESTATION PLANTING ON PORTIONS OF THE DISTURBED AREA IS CURRENTLY IN DESIGN AND REVIEW WITH FORT BELVOIR. REFORESTATION WILL BE ADDED TO THE LANDSCAPE PLANS AS A FUTURE DESIGN REVISION.

P-16 SEED TO BE APPLIED AS FOLLOWS:
PER SWM POND PLANTING PLANS, AS SHOWN. OTHERWISE:
A) AREAS LESS THAN 4:1 SLOPE, MEDIANS SOUTH OF BELVOIR ROAD, AND SPACE BETWEEN CURB AND HINGE POINT TO SLOPE: REGULAR SEED
B) AREAS STEEPER THAN 4:1 SLOPE: ERNMX 111
C) AREAS UNDER BRIDGE DECK BEYOND RIPRAP/SCOUR PROTECTON AREAS: EC-3 MATING WITH ERNMX 132-1
D) AREAS IN THE MEDIAN NORTH OF WOODLAWN ROAD: ERNMX 111

HIGH MARSH MIX 0-6" DEPTH

LOW MARSH MIX 6-18" DEPTH

ERNMX-183 Native Detention Area Mix

CANOPY TREES & ORNAMENTAL TREES:

PLANT KEY	BOTANICAL NAME	COMMON NAME (PAY ITEMS)	UNIT	SIZE	O.C. SPACING	WATERING KEY (SEE NOTE P-5)	ROOT	ADDITIONAL REMARKS
AC	*Amelanchier canadensis*	SHADBLOW SERVICEBERRY	EA.	6-7' HT.	14'	A	B&B	MULTI-STEM
CC	*Cercis canadensis*	EASTERN REDBUD	EA.	2" CAL.	22'	A	B&B	
MV	*Magnolia virginiana*	SWEET BAY	EA.	6-7' HT.	20'	A	B&B	MULTI-STEM
NS	*Nyssa sylvatica*	BLACK GUM	EA.	2" CAL.	14'	A	B&B	
PO	*Platanus occidentalis*	AMERICAN SYCAMORE	EA.	2" CAL.	22'	A	B&B	
QB	*Quercus bicolor*	SWAMP WHITE OAK	EA.	2" CAL.	20'	A	B&B	
TD	*Taxodium distichum*	BALDCYPRESS	EA.	2" CAL.	14'	A	B&B	
UA	*Ulmus americana 'Valley Forge'*	AMERICAN ELM	EA.	2" CAL.	25'	A	B&B	

*SEE INDIVIDUAL PLAN SHEETS FOR QUANTITIES

SHRUBS:

PLANT KEY	BOTANICAL NAME	COMMON NAME (PAY ITEMS)	UNIT	SIZE	WATERING KEY (SEE NOTE P-5)	O.C. SPACING	ROOT	ADDITIONAL REMARKS
CA	*Callicarpa americana*	BEAUTYBERRY	EA.	3 GAL.	C	5'	CONT.	-
CO	*Cephalanthus occidentalis*	BUTTONBUSH	EA.	3 GAL.	C	6'	CONT.	-
CS	*Cornus sericea 'Cardinal'*	'CARDINAL' RED-TWIG DOGWOOD	EA.	3 GAL.	C	8'	CONT.	-
HB	*Hibiscus moscheutos*	MARSH HIBISCUS	EA.	3 GAL.	C	8'	CONT.	-
IVS	*Ilex verticillata 'Southern Gentleman'*	'SOUTHERN GENTLEMAN' WINTERBERRY	EA.	3 GAL.	C	6'	CONT.	-
IVW	*Ilex verticillata 'Winter Red'*	'WINTER RED' WINTERBERRY	EA.	3 GAL.	C	6'	CONT.	-

*SEE INDIVIDUAL PLAN SHEETS FOR QUANTITIES

SEED MIXES AND GROUNDCOVER ESTABLISHMENT

PLANT KEY	NAME (PAY ITEMS)	UNIT	RATE	WATERING KEY	ADDITIONAL REMARKS
LMM	LOW MARSH MIX	EA.	2"x2"x5" PLUG @ 24" O.C.	D	SEE LIST THIS SHEET. FOR USE IN SWM 5A, 5B, AND 6A.
HMM	HIGH MARSH MIX	EA.	2"x2"x5" PLUG @ 24" O.C.	D	SEE LIST THIS SHEET. FOR USE IN SWM 5A, 5B, AND 6A.
NDAM	ERNMX-183 Ernst Native detention mix	SF.	20 LBS PURE LIVE SEED PER ACRE	E	SEE SEED MIX THIS SHEET.
NHSM	ERNMX-111 Ernst Native habitat for strip mines mix	SF.	20 LBS PURE LIVE SEED PER ACRE	E	SEE SEED MIX THIS SHEET.
SEED	TURF GRASS - REGULAR SEED	SF.	200 LBS PURE LIVE SEED PER ACRE	E	SEE SHEET 46C(4) ROADSIDE DEVELOPMENT SHEET FOR SEED MIX (CORE MIX AN ADDITIVES).

LOW MARSH 6-18" DEPTH 24" O.C.

19%	*Alisma subcordatum*	American Water Plantain
20%	*Peltandra virginica*	Arrow Arum
19%	*Pontederia cordata*	Pickerelweed
14%	*Sagittaria latifolia*	Duck Potato
14%	*Saururus cernuus*	Lizard's Tail
14%	*Scirpus tabernaemontani*	Softstem bulrush

HIGH MARSH 0-6" DEPTH 24" O.C.

15%	*Acorus americanus*	Sweet Flag
15%	*Carex stricta*	Tussock Sedge
15%	*Eleocharis obtusa*	Blunt Spikerush
15%	*Hibiscus moscheutos*	Marsh Hibiscus
15%	*Iris versicolor*	Blue Flag Iris
15%	*Leersia oryzoides*	Rice Cutgrass
10%	*Scirpus fluviatilis*	River Bulrush

ERNMX-183 Native Detention Area Mix

32%	*Panicum varigatum 'shawnee'*	Switchgrass
32%	*Panicum rigidulum*	Redtop Panicgrass
20%	*Elymus virginicus*	Virginia Wildrye
5%	*Scirpus atrovirens*	Green Bulrush
5%	*Agrostis perennans*	Autumn Bentgrass
3%	*Juncus effusus*	Soft Rush
2%	*Agrostis scabra*	Ticklegrass
1%	*Juncus tenuis*	Path Rush

ERNMX-111 Ernst Native Habitat for Strip Mines Mix

32%	ANDROPOGON GERARDII 'PRARIE VIEW'	Big Bluestem
23%	PANICUM VIRGATUM	Switchgrass
15%	ELYMUS VIRGINICUS	Virginia Wildrye
10%	SORGHASTRUM NUTANS	Indiangrass
6%	CHAMAECRISTA FASCICULATA	Partridge Pea
4%	AGROSTIS PRENNANS	Autumn Bentgrass
4%	SENNA HEBECARPA	Wild Senna
3%	RUDBECKIA HIRTA	Blackeyed Susan
2%	HELIOPSIS HELIANTHOIDES	Oxeye Sunflower
1%	DESMODIUM CANADENSE	Showy ticktrefoil

ERNMX-132-1 Ernst Right-of-Way Native Woods Mix w/Annual Ryegrass

20%	LOLIUM MULTIFLORUM	Annual Ryegrass
20%	ELYMUS VIRGINICUS	Virginia Wildrye
18%	PANICUM RIGIDULUM	Redtop Panicgrass
16%	PANICUM VIRGATUM, 'SHAWNEE'	Switchgrass, 'Shawnee'
11%	FESTUCA RUBRA	Creeping Red Fescue
10%	AGROSTIS PERENNANS	Autumn Bentgrass
5%	CHAMAECRISTA FASCICULATA	Partridge Pea

NOTE to reviewers:
Comments received 10/17/14 related to the general planting notes as part of Section BCD submission have not yet been incorporated, but will be following comment resolution and agreed upon path forward for the final notes.

Also, the Roadside Development Sheet is under revision and will be submitted under separate cover.