COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
1401 EAST BROAD STREET
RICHMOND, VIRGINIA 23219 2000

Charles A. Kilpatrick, P.E.
Commissioner

January 29, 2015

MEMORANDUM

To: All Holders of the Virginia Department of Transportation's 2008 Road and Bridge Standards

The following is a list of sheets contained in the 2008 Road and Bridge Standards that have been revised. Please add these pages to your copy of the standards. An interim standard sheet will not be required in plan assemblies for the following sheets only. Changes to these sheets will not affect the basis of payment or estimates.

PAGE	REVISION
1300.01	Revised index to include added standards.
1300.02	Revised index to include added standards.
1300.03	New index page to include added standards.
1300.04	New index page to include added standards.
1330.40	PM-4 Standard has been voided. It is replaced with sheet 1330.31of standard PM-3.

The following is a list of revised standards to the 2008 Road and Bridge Standards that ***require*** an interim standard sheet to be in included in your plan assembly until the next edition of the standards is published. Please add these pages to your copy of the standards. The respective interim standard sheet number has been placed with the revised standard. The interim standard sheets are available on VDOT's web site, on the FTP server, and in Falcon DMS for VDOT personnel. Note that the revised Interim Standard Sheets dated 01/15 will be applicable to Tier 1 projects going to Advertisement on April 28, 2015 (Non Federally Eligible), May 12, 2015 (Federally Eligible) and Tier 2 projects going to Advertisement on August 11, 2015.

PAGE	INTERIM	STANDARD	REVISION
101.32	IIS01_16	EW-12	ADDED DIMENSIONS FOR STRUCTURES ON 3:1 SLOPES. ADJUSTED CONCRETE QUANTITIES.

PAGE	INTERIM	STANDARD	REVISION
108.08	IIS01_01	UD-5	REVISED INSPECTION PORT DETAILS, ADJUSTED CONNECTION TO OUTLET PIPE DETAILS TO SHOW THE OULET PIPE AT 90 DEGREES TO THE EDGEDRAIN. REPLACED "ARE TO" WITH "SHALL" ON NOTES 2, 3, & 5.
501.39	IIS05_08	GR-INS	REVISED TABLE I AND TABLE II TO CLARIFY EDGE OF PAVEMENT AS TRAVELED WAY IN THE "O" COLUMN. PROVIDED A NOTE FOR "Ps" COLUMN TO CLARIFY THAT THE PAVED SHOULDER WIDTH SHOWN IS MINIMUM AND TO SEE THE STD. MC-4 FOR PAVING UNDER GUARDRAIL.
1003.06	1003_06	BCD-02	CORRECTED CLASS A4 CONCRETE QUANTITY FOR THE 10x10 CULVERT
1321.10	IIS13_1321.10	STP-1	NEW REQUIREMENTS FOR MINIMUM AND MAXIMUM MOUNTING HEIGHT. NEW REQUIREMENTS FOR LATERAL PLACEMENT FROM EDGE OF ROAD.
1321.11	IIS13_1321.11	STP-1	REVISED SIGN POST SIZES/GAGES. TABLE HAS BEEN EXPANDED TO ALLOW CENTROIDS UP TO 14 FEET. REVISED TABLE APPLIES ONLY TO EASTERN PORTIONS OF HAMPTON ROADS DISTRICT. INNER 2 3/16" POST SHALL BE 6', NOT 6' MINIMUM, IN LENGTH.
1321.12	IIS13_1321.12	STP-1	NEW SHEET SHOWING MAXIMUM AREA OF SIGN PER POST FOR ALL AREAS OF THE STATE EXCEPT EASTERN PORTIONS OF HAMPTON ROADS DISTRICT.
1321.13	IIS13_1321.13	STP-1	FOUNDATIONS HAVE BEEN CLASSIFIED AS TYPES A THROUGH G. ADDITIONAL DETAILS REGARDING SIZE OF ANCHOR SLEEVE AND TYPE OF SHOULDER BOLT. PREAPPROVED BAG MIX MAY BE USED IN LIEU OF CLASS A3 CONCRETE.

PAGE	INTERIM	STANDARD	REVISION
1321.14	IIS13_1321.14	STP-1	NEW DETAIL ADDED SHOWING DIMENSIONS OF COMBINATION ANCHOR/SLIP-BASE PLATE. PREAPPROVED BAG MIX MAY BE USED IN LIEU OF CLASS A3 CONCRETE.
1321.15	IIS13_1321.15	STP-1	NEW SHEET SHOWING NEW FOUNDATION OPTION.
1321.16	IIS13_1321.16	STP-1	NEW SHEET SHOWING ADDITIONAL DETAILS FOR TYPE B AND TYPE C FOUNDATIONS.
1321.17	IIS13_1321.17	STP-1	NEW SHEET SHOWING NEW FOUNDATION OPTIONS.
1321.18	IIS13_1321.18	STP-1	NEW SHEET SHOWING NEW FOUNDATION OPTION.
1321.19	IIS13_1321.19	STP-1	NEW SHEET SHOWING REQUIREMENTS FOR SIGN SHEETING BRACING AND ATTACHMENT DETAILS WHEN POST IS ATTACHED TO A BRACED SIGN.
1321.20	IIS13_1321.20	STP-1	NEW SHEET SHOWING BRACING REQUIREMENTS. NEW REQUIREMENT THAT SIGNS 36" OR GREATER IN WIDTH SHALL REQUIRE BRACING.
1321.21	IIS13_1321.21	STP-1	REVISED DRAWINGS TO SHOW 3' MINIMUM MOUNTING HEIGHT (NOT 2') FOR WRONG WAY/DO NOT ENTER/ONE WAY SIGNS, AND CLARIFIED PLACEMENT OF ONE WAY & DO NOT ENTER SIGNS WHEN PLACED ON THE BACKSIDE OF A STOP OR YIELD SIGN.

PAGE	INTERIM	STANDARD	REVISION
1322.10	IIS13_1322.10	SSP-VA	REVISED REQUIREMENTS FOR MINIMUM AND MAXIMUM MOUNTING HEIGHT. REVISED REQUIREMENTS FOR LATERAL CLEARANCE FROM ROAD. CLARIFY THAT FOUNDATION STUB POST SHALL BE 2'0". REVISED TO INCLUDE FOUNDATION STUB POST AS PART OF THE VA POST PAY ITEM. ADDED NOTE REQUIRING FOUNDATION LOCATION TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION.
1322.11	IIS13_1322.11	SSP-VA	NEW VA-N AND VA-O STRUCTURE OPTIONS TO ALLOW LARGER SIGNS (SUCH AS EXIT GORE SIGNS) TO BE MOUNTED ON SSP-VA POSTS. ADDED NOTE CLARIFYING THAT POST LENGTHS LISTED IN THE TABLE ARE APPROXIMATE, AND ACTUAL POST LENGTHS ARE DETERMINED BY THE CONTRACTOR IN THE FIELD. CLARIFIED THAT FOUNDATION DEPTH ("f") IS MEASURED ON THE LOW SIDE OF THE FOUNDATION.
1322.12	IIS13_1322.12	SSP-VA	REVISED PAYMENT LIMITS FOR SIGN POST TO INCLUDE FOUNDATION STUB POST.
1322.13	IIS13_1322.13	SSP-VA	USERS NOW REFERRED TO SSP-VIA STANDARDS FOR SHIM DETAIL.
1323.10	IIS13_1323.10	SSP-VIA	REVISED REQUIREMENTS FOR MINIMUM AND MAXIMUM MOUNTING HEIGHT. REVISED REQUIREMENTS FOR LATERAL CLEARANCE FROM ROAD. ESTABLISHED MAXIMUM HEIGHT FOR EXIT PLAQUE THAT CAN BE USED WITHOUT REQUIRING A SPECIAL DETAIL. ADDED NOTE REQUIRING FOUNDATION LOCATIONS TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION.

PAGE	INTERIM	STANDARD	REVISION
1323.11	IIS13_1323.11	SSP-VIA	REVISED TO INCLUDE FOUNDATION STUB POST AS PART OF THE VA POST PAY ITEM. CLARIFY THAT FOUNDATION STUB POST SHALL BE SAME SHAPE AS THE REST OF THE POST.
1323.12	IIS13_1323.12	SSP-VIA	MINOR GRAPHICAL REVISIONS TO USE CORRECT LINE STYLE FOR CENTERLINES.
1323.13	IIS13_1323.13	SSP-VIA	SIMPLIFIED THE NUMBER OF OPTIONS FOR FOUNDATION SIZES (DIAMETER/DEPTH). REVISED THE FOUNDATION ELEVATION DETAIL TO IMPROVE CLARITY. ADDED NEW DETAIL FOR DETERMINING MAXIMUM PROJECTION OF STUB POST.
1323.14	IIS13_1323.14	SSP-VIA	ADDED NOTE CLARIFYING THAT POST LENGTHS LISTED IN THE TABLE ARE APPROXIMATE, AND ACTUAL POST LENGTHS ARE DETERMINED BY THE CONTRACTOR IN THE FIELD. ADDED NOTE CLARIFYING PAYMENT FOR FOUNDATION STUB POST.
1323.15	IIS13_1323.15	SSP-VIA	ADDED NOTE CLARIFYING THAT POST LENGTHS LISTED IN THE TABLE ARE APPROXIMATE, AND ACTUAL POST LENGTHS ARE DETERMINED BY THE CONTRACTOR IN THE FIELD. ADDED NOTE CLARIFYING PAYMENT FOR FOUNDATION STUB POST.
1323.16	IIS13_1323.16	SSP-VIA	ADDED NOTE CLARIFYING THAT POST LENGTHS LISTED IN THE TABLE ARE APPROXIMATE, AND ACTUAL POST LENGTHS ARE DETERMINED BY THE CONTRACTOR IN THE FIELD. ADDED NOTE CLARIFYING PAYMENT FOR FOUNDATION STUB POST.

PAGE	INTERIM	STANDARD	REVISION
1325.40	IIS13_1325.40	SPD-4	MIDDLE TOP DETAIL ALSO APPLIES TO VA-N AND VA-O STRUCTURE TYPES.
1325.41	IIS13_1325.41	SPD-4	ADDED TEE BAR SPACING DETAILS FOR VA-N AND VA-O STRUCTURE TYPES.
1325.60	IIS13_44	SPD-6	ADDED DETAILS FOR VA-N AND VA-O STRUCTURE TYPES.
1330.10	IIS13_1330.10	PM-1	REVISED DOTTED LINE PATTERN FOR ACCEL AND DECEL LANES. INCREASED SPACING BETWEEN GORE AREA HATCHES. EDGE LINES SHALL BE 6" WIDE ON FREEWAYS AS WELL AS INTERSTATES.
1330.20	IIS13_1330.20	PM-2	GRAPHICAL CHANGES TO DEPICTION OF DOTTED LINES, REMOVED REFERENCES TO NONSTANDARD "ELEPHANT TRACKS" TERMINOLOGY, AND REVISED TO USE 9' GAPS (INSTEAD OF 12' GAPS) IN THE DOTTED LINES.
1330.30	IIS13_1330.30	PM-3	ADDED DETAILS REGARDING CROSSWALK PLACEMENT AND STOP LINE PLACEMENT BEHIND THE CROSSWALK. REVISED TO HAVE THE YELLOW EDGE LINE WRAP AROUND THE NOSE OF THE MEDIAN.
1330.31	IIS13_1330.31	PM-3	(FORMERLY PM-4) PM-4 STANDARD HAS BEEN VOIDED; SIGNALIZED INTERSECTION DETAILS ARE NOW INCLUDED WITH PM-3. ADDED DETAILS REGARDING CROSSWALK PLACEMENT AND STOP LINE PLACEMENT BEHIND THE CROSSWALK. ADDED DETAIL FOR MANDATORY TURN MOVEMENT LANE DROPS. ADDED DETAIL CLARIFYING THAT STAGGERING OF STOP LINES IS OPTIONAL ON A CASE-BY-CASE BASIS.

PAGE	INTERIM	STANDARD	REVISION
1330.32	IIS13_1330.32	PM-3	NEW SHEET SHOWING DETAILS REGARDING TURN ARROWS, DUAL TURN LANES, AND DOTTED EXTENSIONS THROUGH INTERSECTIONS. REVISED STANDARD ALLOW FOR JUST ONE TURN ARROW IN TURN LANES < 100 FT. IN LENGTH.
1330.33	IIS13_1330.33	PM-3	NEW SHEET SHOWING CROSSWALK LAYOUT AND INSTALLATION DETAILS.
1330.50	IIS13_1330.50	PM-5	REPLACED 36" YELLOW HATCH WITH 24" YELLOW HATCH AT THE START OF THE NEUTRAL ZONE IN THE RIGHT-HAND DETAIL. REVISED LONGITUDINAL MARKING PATTERNS TO MATCH THE STANDARDS USED FOR TURN LANES NOT PART OF A LEFT-TURN MARKED MEDIAN.
1330.51	IIS13_1330.51	PM-5	NEW SHEET SHOWING DETAILS FOR PAVEMENT MARKINGS WITHIN TWO-WAY LEFT TURN LANES (TWLTL'S).
1330.60	IIS13_1330.60	PM-6	NEW DETAILS SHOWING MINIMUM WIDTHS OF BICYCLE LANES. SECOND DOTTED LINE TO BE USED WHERE BICYCLE LANE CROSSES THE TAPER FOR A RIGHT-TURN LANE.
1330.61	IIS13_1330.61	PM-6	NEW SHEET SHOWING BICYCLE LANE PAVEMENT MARKINGS WHEN CARRIED THROUGH INTERSECTIONS, AND NEW DETAILS ON SHARED LANE MARKING PLACEMENT.

PAGE	INTERIM	STANDARD	REVISION
1330.70	IIS13_1330.70	PM-7	CLARIFIED THAT THE 24" TRANSVERSE LINES ARE NOT PART OF THE RAILROAD CROSSING SYMBOL MARKING. REVISED TO SHOW DOUBLE YELLOW LINE APPROACHING THE CROSSING. CLARIFIED THAT 15' SETBACK FOR STOP LINE IS MEASURED FROM THE CENTER OF THE RAIL, NOT THE EDGE OF THE RAILROAD TIE.
1330.80	IIS13_1330.80	PM-8	REVISED STANDARD ALLOWS FOR 80' SPACING BETWEEN MARKERS ON ROADWAY SEGMENTS WITH < 3 DEGREES OF CURVATURE. NEW REQUIREMENT THAT MARKERS BE PLACED AT LEAST 2" FROM ANY CRACK, SEAM OR JOINT. NEW DETAIL SHOWING MARKER PLACEMENT BETWEEN DOUBLE YELLOW LINES. CENTER TURN LANE DETAIL REVISED TO SHOW MARKER PLACEMENT NEXT TO SOLID WHITE LANE LINE APPROACHING THE STOP LINE. NEW TABLE SHOWING LENS COLORS FOR FRONTS AND BACKS OF DIFFERENT MARKER TYPES. NEW NOTE REGARDING MARKER PLACEMENT ON BRIDGE DECKS.
1330.81	IIS13_1330.81	PM-8	NEW DETAILS EXPLAINING, ON UNDIVIDED ROADS, WHEN MARKERS SHOULD BE PLACED BETWEEN THE DOUBLE YELLOW LINES VS. USING PAIRS OF MARKERS ON THE OUTSIDE OF THE DOUBLE YELLOW LINES. REVISED STANDARD ALLOWS FOR 80' SPACING BETWEEN MARKERS ON ROADWAY SEGMENTS WITH < 3 DEGREES OF CURVATURE. NEW "TYPE J" DETAIL. EXIT RAMP AND ENTRANCE RAMP MARKER PLACEMENT IS BASED ON THEORETICAL GORE, NOT PHYSICAL GORE.

PAGE	INTERIM	STANDARD	REVISION
1330.90	IIS13_1330.90	PM-9	PREVIOUS PM-9 STANDARD (RELATED TO PAVEMENT MARKERS) HAS BEEN INCORPORATED INTO PM-8 STANDARD. NEW PM-9 STANDARD PROVIDES DETAILS ON LINE PATTERNS FOR DOUBLE SOLID AND PARALLEL SOLID/BROKEN LINES.
1340.10	IIS13_1340.10	PM-10	NEW STANDARD SHOWING SHAPES OF PAVEMENT MARKING NUMERALS AND LETTERS.
1340.11	IIS13_1340.11	PM-10	NEW STANDARD SHOWING SQUARE FOOTAGES FOR INSTALLATION AND ERADICATION OF PAVEMENT MARKING SYMBOL/MESSAGE MARKINGS.
1340.12	IIS13_1340.12	PM-10	NEW STANDARD SHOWING SQUARE FOOTAGES FOR INSTALLATION AND ERADICATION OF PAVEMENT MARKING SYMBOL/MESSAGE MARKINGS.
1340.13	IIS13_1340.13	PM-10	NEW STANDARD SHOWING SHAPES OF PAVEMENT MARKING SYMBOLS.
1340.14	IIS13_1340.14	PM-10	NEW STANDARD SHOWING SHAPES OF PAVEMENT MARKING SYMBOLS.
1340.15	IIS13_1340.15	PM-10	NEW STANDARD SHOWING SHAPES OF PAVEMENT MARKING SYMBOLS.
1340.16	IIS13_1340.16	PM-10	NEW STANDARD SHOWING SHAPES OF PAVEMENT MARKING SYMBOLS.
1340.17	IIS13_1340.17	PM-10	NEW STANDARD SHOWING SHAPES OF PAVEMENT MARKING SYMBOLS.
1340.18	IIS13_1340.18	PM-10	NEW STANDARD SHOWING SHAPES OF PAVEMENT MARKING SYMBOLS.
1340.19	IIS13_1340.19	PM-10	NEW STANDARD SHOWING SHAPES OF PAVEMENT MARKING SYMBOLS.

PAGE	INTERIM	STANDARD	REVISION
1340.20	IIS13_1340.20	PM-10	NEW STANDARD SHOWING SQUARE FOOTAGES FOR INSTALLATION AND ERADICATION OF PAVEMENT MARKING ROUTE SHIELDS.
1340.21	IIS13_1340.21	PM-10	NEW STANDARD SHOWING PAVEMENT MARKING ROUTE SHIELD DETAILS.
1340.22	IIS13_1340.22	PM-10	NEW STANDARD SHOWING PAVEMENT MARKING ROUTE SHIELD DETAILS.
1340.23	IIS13_1340.23	PM-10	NEW STANDARD SHOWING PAVEMENT MARKING ROUTE SHIELD DETAILS.
1340.24	IIS13_1340.24	PM-10	NEW STANDARD SHOWING PAVEMENT MARKING ROUTE SHIELD DETAILS.

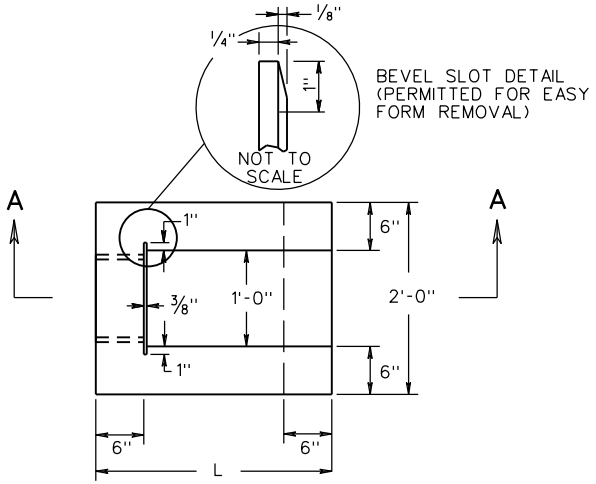
If you have any questions or comments regarding this revision, please contact Chuck Patterson P.E., at (804) 786-1805, of the Standards and Special Design Section.

Sincerely,

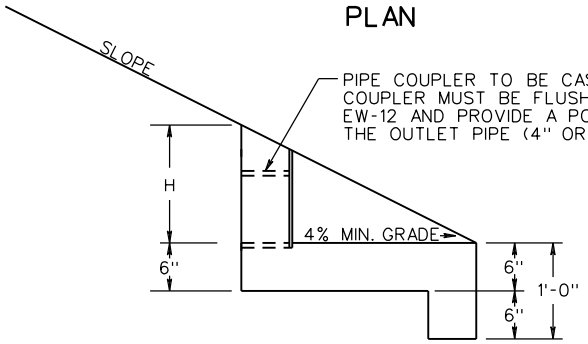
Signature on file Date: January 30, 2015

B. A. Thrasher, P.E.
State Location & Design Engineer

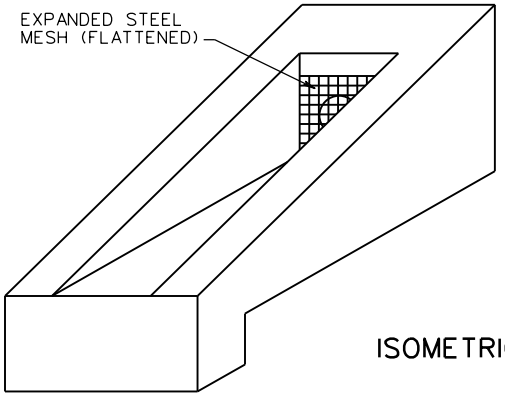
EW-12



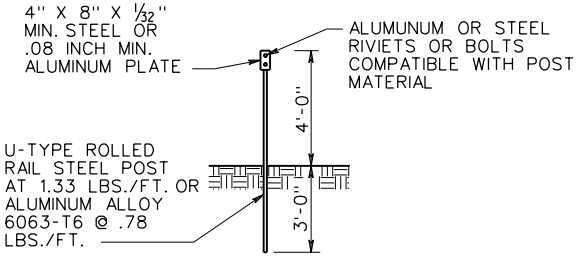
PLAN



SECTION A-A



ISOMETRIC



UNDERDRAIN OUTLET
MARKER DETAIL

PIPE I.D.	SLOPE	DIMENSIONS		CLASS A3 CONCRETE CUBIC YARDS
		L	H	
4"	2:1	2'-5 1/2"	1'-2 3/4"	0.19
4"	3:1	3'-5 1/4"	1'-1 3/4"	0.25
4"	4:1	4'-5"	1'-1 1/4"	0.30
6"	2:1	2'-10 1/2"	1'-5 1/4"	0.20
6"	3:1	4'-3/4"	1'-4 1/4"	0.30
6"	4:1	5'-3"	1'-3 3/4"	0.38

NOTES:

1. TYPICAL ENDWALL TO BE PLACED AT THE ENDS OF ALL UNDERDRAIN OUTLETS, BARRING LOCATIONS WHERE UNDERDRAIN IS TIED INTO OTHER DRAINAGE STRUCTURES. ENDWALL TO BE INSTALLED PERPENDICULAR TO ROADWAY AND FLUSH WITH THE SLOPE.
2. OUTLET PIPES SHALL BE RIGID NONPERFORATED, SMOOTH-BORE PIPE, MEETING THE REQUIREMENTS OF 70 PSI TESTED ACCORDING TO ASTM 2412.
3. EXPANDED STEEL MESH (FLATTENED) SHALL HAVE OPENINGS OF APPROX. 1/2" X 1" AND WEIGH APPROX. 0.82 LBS. PER SQ. FT. MESH SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A-123. THE MESH SHALL EXTEND A MINIMUM OF 1" ABOVE THE O.D. OF THE PIPE, AND IS A BARRIER FOR RODENTS, ETC. THE SLOT FOR THE STEEL MESH IS TO BE CONSTRUCTED SO THAT THE MESH CAN BE REMOVED FOR CLEANOUT PURPOSES.
4. THIS ITEM MAY BE PRECAST OR CAST IN PLACE.
5. STEEL POSTS AND PLATES TO BE PAINTED OR GALVANIZED IN ACCORDANCE WITH THE ROAD AND BRIDGE SPECIFICATIONS. IF PAINTED THE FINAL COAT SHALL BE NO. 13 ALUMINUM PAINT OR NO. 11 WHITE PAINT.
6. MARKER TO BE PLACED AT ALL EW-12 UNDERDRAIN INSTALLATIONS.
7. MARKER WILL BE PAID FOR IN ACCORDANCE WITH SECTION 501 OF THE ROAD AND BRIDGE SPECIFICATIONS.

VDOT
ROAD AND BRIDGE STANDARDS

SHEET 1 OF 1 | REVISION DATE 01/15

101.32

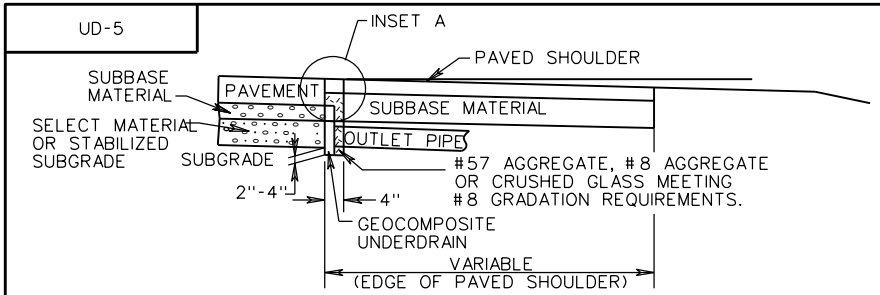
A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

STANDARD ENDWALL FOR PIPE UNDERDRAIN

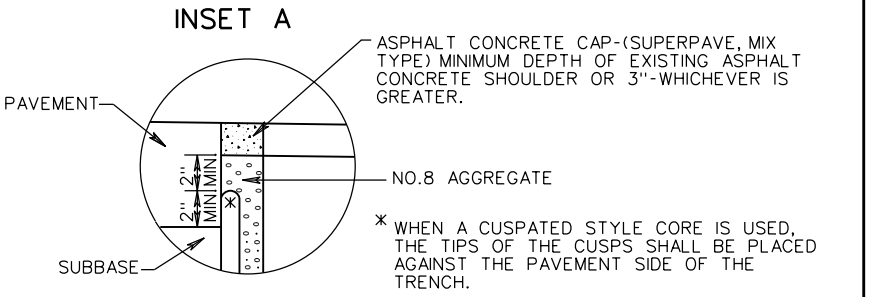
VIRGINIA DEPARTMENT OF TRANSPORTATION

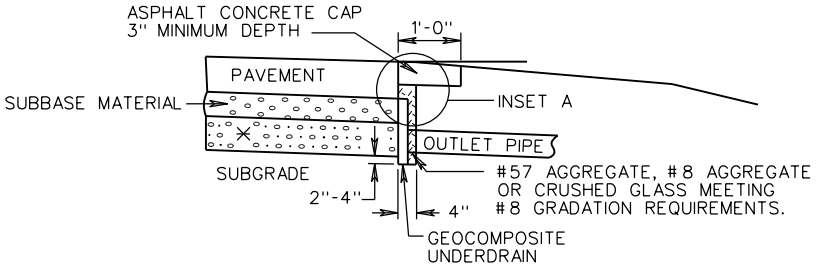
SPECIFICATION REFERENCE
105
233
302
501

UD-5



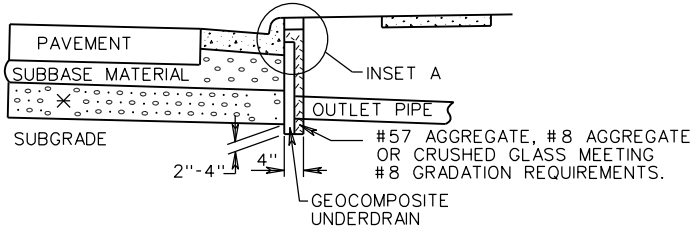
PAVED SHOULDER SECTION





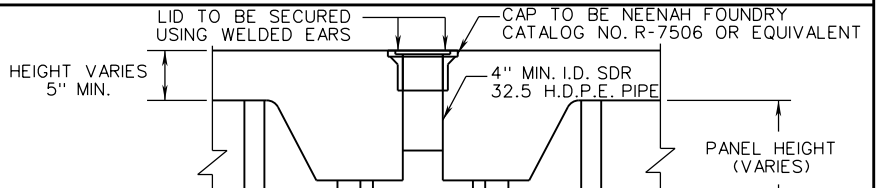
UNPAVED SHOULDER SECTION

* SELECT MATERIAL OR STABILIZED SUBGRADE MATERIAL

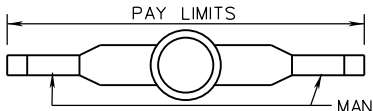


CURB AND GUTTER SECTION

* SELECT MATERIAL OR STABILIZED SUBGRADE MATERIAL

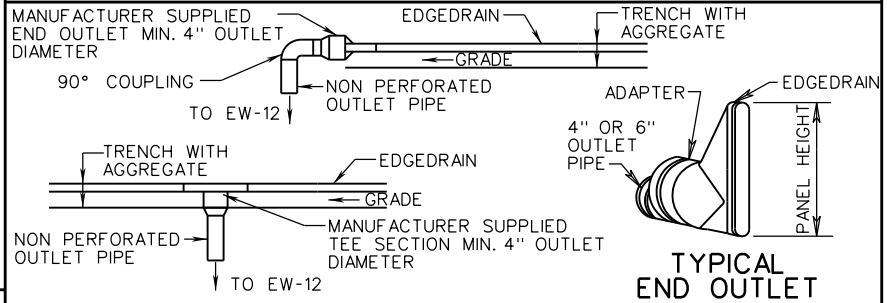


ELEVATION VIEW



PLAN VIEW

UD - 5 INSPECTION PORT



TYPICAL END OUTLET

EDGEDRAIN CONNECTION TO OUTLET PIPE

NOTES:

1. INVERT ELEVATION AT OUTLET END OF OUTLET PIPE TO BE A MINIMUM OF 1'-0" ABOVE INVERT ELEVATION OF RECEIVING DRAINAGE DITCH OR STRUCTURE.
2. ALL CONNECTIONS (ELBOWS, WYES, ETC.) WITHIN PAY LIMITS FOR OUTLET PIPE SHALL BE OF THE SAME CRUSHING STRENGTH AS THE OUTLET PIPE.
3. OUTLET PIPES SHALL BE INSTALLED ON 2% MIN. (3% DESIRABLE) GRADE AND LOCATED EVERY 350' MAXIMUM OR AS NOTED ON PLANS.
4. OUTLET PIPE TO BE SECURELY CONNECTED TO EW-12 OR OTHER DRAINAGE STRUCTURE.
5. UD-5 INSPECTION PORTS SHALL BE LOCATED WHERE SPECIFIED ON THE PLANS.

NON-PERFORATED OUTLET PIPE

TYPE OF PIPE	CRUSHING STRENGTH			
	* W.T.	4" NOM. DIAMETER	* W.T.	6" NOM. DIAMETER
CORRUGATED ALUMINUM			0.048	
SMOOTH WALL PVC	.103		0.153	
SMOOTH WALL PE		70 PSI ***		70 PSI ***

* WALL THICKNESS (MIN) - INCHES

*** TESTED ACCORDING TO ASTM D-2412 AT 5% DEFLECTION.

VDOT
ROAD AND BRIDGE STANDARDS

A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

PREFABRICATED GEOCOMPOSITE RETROFIT PAVEMENT EDGEDRAIN

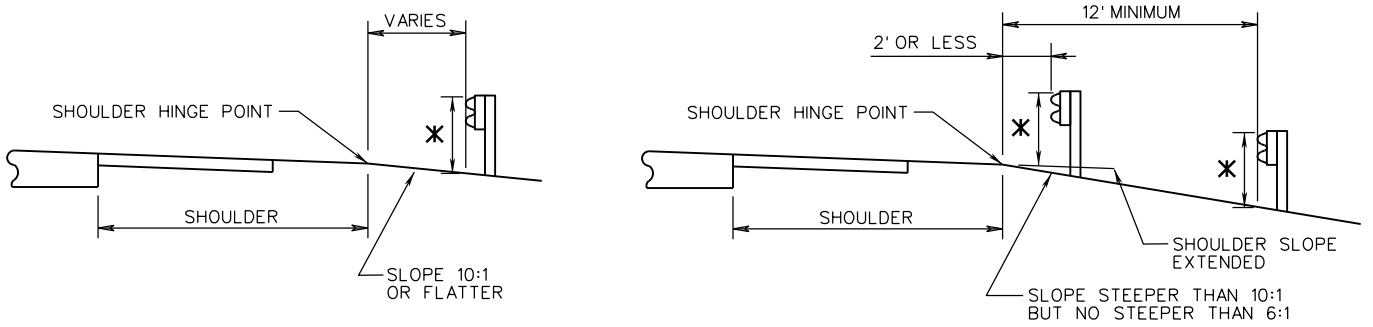
VIRGINIA DEPARTMENT OF TRANSPORTATION

SHEET 1 OF 1	REVISION DATE
108.08	01/15

SPECIFICATION REFERENCE

240
501
701

GR-INS



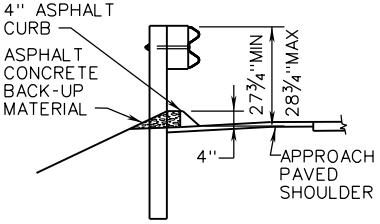
* HEIGHT PER STANDARD GR-2 OR GR-8

MEASURING GUARDRAIL HEIGHT ON FRONT SLOPE RELATIVE TO SHOULDER HINGE POINT

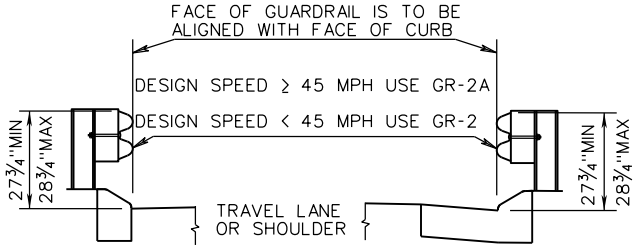
FACE OF GUARDRAIL IS TO BE ALIGNED WITH FACE OF CURB.

DESIGN SPEED ≥ 45 MPH
USE GR-2A

DESIGN SPEED < 45 MPH
USE GR-2.



ASPHALT CURB SECTION



GR-2 INSTALLATION WITH CG-3 OR CG-7 CURB

FOR GUARDRAIL DESIGN POLICIES USING CURB & GUTTER OR URBAN DESIGNS WITH SIDEWALK OR SIDEWALK SPACE SEE APPENDIX I OF THE ROAD DESIGN MANUAL

TABLE I

NORMAL GUARDRAIL LOCATION-THROUGH TRAFFIC LANES LEFT OF TRAFFIC

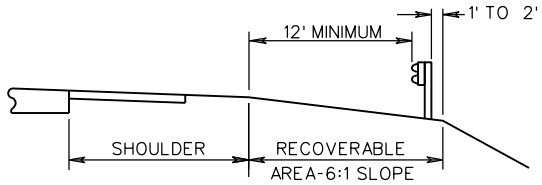
TOTAL SHOULDER WIDTH (S) (PAVED & GRADED)	PAVED SHOULDER WIDTH (P_S) (SEE NOTE)	OFFSET FROM EDGE OF TRAVELED WAY TO FACE OF GUARDRAIL (O)
17'	12'	14'
15'	3', 4', OR 10'	12'
13'	3' or 4'	10'
11'	3' or 4'	8'
9'	3' or 4'	6'
8'	3' or 4'	5'

TABLE II

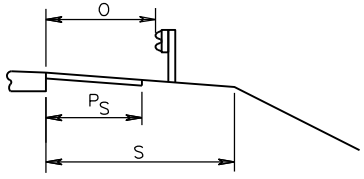
NORMAL GUARDRAIL LOCATION-THROUGH TRAFFIC LANES RIGHT OF TRAFFIC

TOTAL SHOULDER WIDTH (S) (PAVED & GRADED)	PAVED SHOULDER WIDTH (P_S) (SEE NOTE)	OFFSET FROM EDGE OF TRAVELED WAY TO FACE OF GUARDRAIL (O)
17'	12'	14'
15'	6' or 10'	12'
13'	8'	10'
11'	3', 4' or 6'	8'
9'	3' or 4'	6'
8'	3'	5'
7'	0 or 2'	4'
5'	0	2'

NORMAL GUARDRAIL LOCATION



GUARDRAIL LOCATION ON RECOVERABLE SLOPE



NOTE:
PAVED SHOULDER WIDTHS SHOWN ARE MINIMUM. THE PAVED SHOULDER MAY BE EXTENDED TO THE FACE OF THE RAIL. THE PAVED WIDTH USED SHALL BE IN ACCORDANCE WITH THE ROADWAY CLASSIFICATION AS DEFINED IN THE ROAD DESIGN MANUAL.

SEE STANDARD MC-4 FOR PAVING UNDER GUARDRAIL.

SPECIFICATION REFERENCE
221 505

A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

W-BEAM GUARDRAIL INSTALLATION CRITERIA

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT
ROAD AND BRIDGE STANDARDS

REVISION DATE	SHEET 6 OF 8
01/15	501.39

FOR TYPICAL SECTION, NOTES AND OTHER DETAILS, REFER TO STANDARD BCD-DT.

SPAN	HGHT	REINFORCING STEEL												QUAN./LF		HEADWALLS								
		BT I														G	HW I								
(FT.)	(FT.)	SIZE	SPACING c-c	a	b	c	d	e	f	g	LENGTH	NO. BL1 #4 BARS	NO. BL2 #3 BARS	REINFORCING STEEL (LBS/LONG. JT)	CONCRETE CLASS A4 (CY/LF)	REINFORCING STEEL (LBS/LF)	HEADWALL LENGTH	SIZE	LENGTH	NO. HW2 BARS	NO. HW3 BARS	INLET CONCRETE CL. A4 (CY)	INLET REINFORCING STEEL (LBS)	OUTLET CONCRETE CL. A4 (CY)	OUTLET REINFORCING STEEL (LBS)	WINGWALL
3	3	4	12"	2'- 8 7/8"	0'- 4 1/2"	1'- 6 5/8"	0'- 5 7/8"	0'- 3 3/4"	7'- 7 7/8"	-----	7'-11"	38	12	35.966	0.694	83.447	9'- 6"	6	9'- 2"	1	4	1.433	67.988	1.425	55.073	A
3	4	4	12"	2'- 8 3/4"	0'- 4 3/4"	1'- 6 3/8"	0'- 6 1/4"	0'- 4"	7'- 7 7/8"	-----	7'-11"	38	18	38.084	0.780	89.711	9'- 6"	6	9'- 2"	1	5	1.530	71.439	1.516	55.073	C
4	3	4	12"	3'- 6 3/8"	0'- 4 3/4"	1'-11 1/4"	0'- 6 1/4"	0'- 4"	9'- 8"	-----	9'-11"	48	12	44.316	0.807	99.018	11'- 6"	6	11'- 2"	1	4	1.632	80.004	1.631	67.089	A
4	4	4	12"	3'- 6 1/4"	0'- 5"	1'-11"	0'- 6 1/2"	0'- 4 1/4"	9'- 8"	-----	9'-11"	48	18	46.434	0.896	104.741	11'- 6"	6	11'- 2"	1	5	1.728	83.455	1.721	67.089	C
4	5	4	12"	3'- 6 1/4"	0'- 5"	1'-11"	0'- 6 1/2"	0'- 4 1/4"	9'- 8"	-----	9'-11"	48	24	48.552	0.970	111.005	11'- 6"	6	11'- 2"	1	6	1.827	86.907	1.813	67.089	E
4	6	4	12"	3'- 6 1/4"	0'- 5"	1'-11"	0'- 6 1/2"	0'- 4 1/4"	9'- 8"	-----	9'-11"	48	30	50.670	1.044	117.269	11'- 6"	6	11'- 2"	1	7	1.926	90.358	1.906	67.089	G
5	3	4	12"	4'- 3 7/8"	0'- 5"	2'- 3 3/4"	0'- 6 1/2"	0'- 4 1/4"	11'- 8"	-----	11'-11"	58	12	52.666	0.927	113.062	13'- 6"	6	13'- 2"	1	4	1.828	92.020	1.834	79.105	A
5	4	4	11"	4'- 3 7/8"	0'- 5"	2'- 3 3/4"	0'- 6 1/2"	0'- 4 1/4"	11'- 8"	-----	11'-11"	58	18	54.784	1.000	124.802	13'- 6"	6	13'- 2"	1	5	1.927	95.471	1.927	79.105	C
5	5	4	11"	4'- 3 7/8"	0'- 5"	2'- 3 3/4"	0'- 6 1/2"	0'- 4 1/4"	11'- 8"	-----	11'-11"	58	24	56.902	1.073	131.187	13'- 6"	6	13'- 2"	1	6	2.026	98.923	2.019	79.105	E
5	6	4	11"	4'- 3 7/8"	0'- 5"	2'- 3 3/4"	0'- 6 1/2"	0'- 4 1/4"	11'- 8"	-----	11'-11"	58	30	59.020	1.147	137.572	13'- 6"	6	13'- 2"	1	7	2.125	102.374	2.112	79.105	G
5	7	4	11"	4'- 3 3/4"	0'- 5 1/4"	2'- 3 1/2"	0'- 6 7/8"	0'- 4 1/2"	11'- 8"	-----	12'- 0"	58	36	61.138	1.239	144.545	13'- 6"	6	13'- 2"	1	8	2.220	105.825	2.200	79.105	I
6	4	4	10"	5'- 1 1/2"	0'- 5"	2'- 8 1/2"	0'- 6 1/2"	0'- 4 1/4"	13'- 8"	-----	13'-11"	68	18	63.134	1.103	152.761	15'- 6"	6	15'- 2"	1	5	2.127	107.487	2.133	91.121	C
6	5	4	10"	5'- 1 3/8"	0'- 5 1/4"	2'- 8 1/4"	0'- 6 7/8"	0'- 4 1/2"	13'- 8"	-----	14'- 0"	68	24	65.252	1.198	159.848	15'- 6"	6	15'- 2"	1	6	2.220	110.939	2.219	91.121	E
6	6	4	9"	5'- 1 3/8"	0'- 5 1/4"	2'- 8 1/4"	0'- 6 7/8"	0'- 4 1/2"	13'- 8"	-----	14'- 0"	68	30	67.370	1.271	178.326	15'- 6"	6	15'- 2"	1	7	2.319	114.390	2.312	91.121	G
6	7	4	9"	5'- 1 3/8"	0'- 5 1/4"	2'- 8 1/4"	0'- 6 7/8"	0'- 4 1/2"	13'- 8"	-----	14'- 0"	68	36	69.488	1.344	184.438	15'- 6"	6	15'- 2"	1	8	2.417	117.841	2.405	91.121	I
6	8	4	9"	5'- 1 3/8"	0'- 5 1/4"	2'- 8 1/4"	0'- 6 7/8"	0'- 4 1/2"	13'- 8"	-----	14'- 0"	68	42	71.606	1.418	191.367	15'- 6"	6	15'- 2"	1	9	2.516	121.293	2.498	91.121	K
7	4	4	9"	5'-11"	0'- 5 1/4"	3'- 1 1/8"	0'- 6 7/8"	0'- 4 1/2"	15'- 8 1/8"	-----	16'- 0"	78	18	71.484	1.229	203.219	17'- 6"	6	17'- 2"	1	5	2.318	119.503	2.331	103.137	C
7	6	4	8"	5'-11"	0'- 5 1/4"	3'- 1 1/8"	0'- 6 7/8"	0'- 4 1/2"	15'- 8 1/8"	-----	16'- 0"	78	30	75.720	1.375	231.339	17'- 6"	6	17'- 2"	1	7	2.516	126.406	2.516	103.137	G
7	8	4	8"	5'-11"	0'- 5 1/4"	3'- 1 1/8"	0'- 6 7/8"	0'- 4 1/2"	15'- 8 1/8"	-----	16'- 0"	78	42	79.956	1.521	247.159	17'- 6"	6	17'- 2"	1	9	2.714	133.309	2.702	103.137	K
7	10	5	12"	5'-10 7/8"	0'- 5 5/8"	3'- 7/8"	0'- 7 3/8"	0'- 4 3/4"	15'- 8 1/8"	-----	16'- 0"	78	54	84.192	1.693	259.878	17'- 6"	6	17'- 2"	1	11	2.904	140.211	2.880	103.137	O
8	4	5	11"	6'- 8 1/2"	0'- 5 3/8"	3'- 5 7/8"	0'- 7"	0'- 4 1/2"	17'- 7 7/8"	-----	17'-11"	88	18	79.834	1.333	249.914	19'- 6"	6	19'- 2"	1	5	2.516	131.519	2.535	115.153	C
8	6	5	11"	6'- 8 1/2"	0'- 5 3/8"	3'- 5 7/8"	0'- 7"	0'- 4 1/2"	17'- 7 7/8"	-----	17'-11"	88	30	84.070	1.480	265.269	19'- 6"	6	19'- 2"	1	7	2.714	138.422	2.721	115.153	G
8	8	5	11"	6'- 8 3/8"	0'- 5 5/8"	3'- 5 5/8"	0'- 7 3/8"	0'- 4 3/4"	17'- 7 7/8"	-----	18'- 0"	88	42	88.306	1.655	280.192	19'- 6"	6	19'- 2"	1	9	2.903	145.325	2.897	115.153	K
8	10	5	10"	6'- 8 3/8"	0'- 5 5/8"	3'- 5 5/8"	0'- 7 3/8"	0'- 4 3/4"	17'- 7 7/8"	-----	18'- 0"	88	54	92.542	1.800	313.547	19'- 6"	6	19'- 2"	1	11	3.101	152.227	3.083	115.153	O
9	4	5	10"	7'- 6 1/8"	0'- 5 3/8"	3'-10 3/4"	0'- 7"	0'- 4 1/2"	19'- 8"	-----	20'- 0"	98	18	88.184	1.438	290.162	21'- 6"	6	21'- 2"	1	5	2.714	143.535	2.740	127.169	C
9	6	5	9"	7'- 6 1/8"	0'- 5 3/8"	3'-10 3/4"	0'- 7"	0'- 4 1/2"	19'- 8"	-----	20'- 0"	98	30	92.420	1.584	322.802	21'- 6"	6	21'- 2"	1	7	2.912	150.438	2.925	127.169	G
9	8	5	10"	7'- 5 3/4"	0'- 6 1/8"	3'-10"	0'- 8 1/8"	0'- 5 1/4"	19'- 8"	-----	20'- 0"	98	42	96.656	1.825	321.303	21'- 6"	6	21'- 2"	1	9	3.096	157.341	3.097	127.169	L
9	10	5	9"	7'- 5 5/8"	0'- 6 3/8"	3'- 9 3/4"	0'- 8 3/8"	0'- 5 1/2"	19'- 8"	-----	20'- 0"	98	54	100.892	2.000	361.853	21'- 6"	6	21'- 2"	1	11	3.284	164.243	3.272	127.169	P
9	12	6	12"	7'- 5 5/8"	0'- 6 1/2"	3'- 9 3/4"	0'- 8 1/2"	0'- 5 1/2"	19'- 8"	-----	20'- 0"	98	66	105.128	2.145	409.925	21'- 6"	6	21'- 2"	1	13	3.482	171.146	3.458	127.169	T
10	4	5	9"	8'- 3 3/8"	0'- 6 1/8"	4'- 2 3/4"	0'- 8 1/8"	0'- 5 1/4"	21'- 8"	-----	22'- 0"	108	18	96.534	1.645	333.154	23'- 6"	6	23'- 2"	1	5	2.894	155.551	2.926	139.185	D
10	6	5	9"	8'- 3 3/8"	0'- 6 1/8"	4'- 2 3/4"	0'- 8 1/8"	0'- 5 1/4"	21'- 8"	-----	22'- 0"	108	30	100.770	1.791	356.023	23'- 6"	6	23'- 2"	1	7	3.092	162.454	3.112	139.185	H
10	8	6	12"	8'- 3 1/4"	0'- 6 1/2"	4'- 2 1/2"	0'- 8 1/2"	0'- 5 1/2"	21'- 8"	-----	22'- 0"	108	42	105.006	1.970	395.204	23'- 6"	6	23'- 2"	1	9	3.277	169.357	3.285	139.185	L
10	10	5	8"	8'- 3 1/4"	0'- 6 3/8"	4'- 2 1/2"	0'- 8 3/8"	0'- 5 1/2"	21'- 8"	-----	22'- 0"	108	54	109.242	2.116	423.807	23'- 6"	6	23'- 2"	1	11	3.475	176.259	3.471	139.185	P
10	12	5	8"	8'- 3 1/8"	0'- 6 5/8"	4'- 2 1/4"	0'- 8 3/4"	0'- 5 3/4"	21'- 8"	-----	22'- 1"	108	66	113.478	2.296	454.858	23'- 6"	6	23'- 2"	1	13	3.661	183.162	3.644	139.185	T
12	6	6	12"	9'-10 1/8"	0'- 7 1/4"	4'-11 3/8"	0'- 9 5/8"	0'- 6 1/4"	25'- 8 1/8"	-----	26'- 1"	128	30	117.470	2.181	423.583	27'- 6"	6	27'- 2"	1	7	3.417	186.486	3.450	163.217	H
12	8	5	8"	9'-10"	0'- 7 3/8"	4'-11 1/8"	0'- 9 7/8"	0'- 6 1/2"	25'- 8 1/8"	-----	26'- 1"	128	42	121.706	2.366	468.309	27'- 6"	6	27'- 2"	1	9	3.600	193.389	3.621	163.217	L
12	10	6	10"	9'-10"	0'- 7 1/2"	4'-11 1/8"	0'- 9 7/8"	0'- 6 1/2"	25'- 8 1/8"	-----	26'- 1"	128	54	125.942	2.509	535.040	27'- 6"	6	27'- 2"	1	11	3.798	200.291	3.806	163.217	P
12	12	6	9"	9'- 9 7/8"	0'- 7 3/4"	4'-10 7/8"	0'-10 1/4"	0'- 6 3/4"	25'- 8 1/8"	-----	26'- 1"	128	66	130.178	2.696	546.448	27'- 6"	6	27'- 2"	1	13	3.980	207.194	3.976	163.217	T

A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

SPECIFICATION REFERENCE

DOUBLE BOX CULVERTS

0 TO 2 FT. FILLS

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT

ROAD AND BRIDGE STANDARDS

REVISION DATE 01/15

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1003.06

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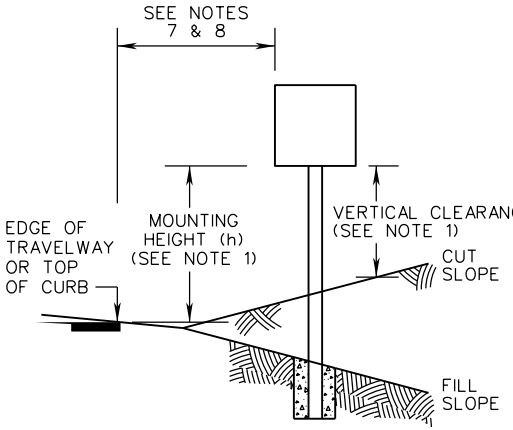
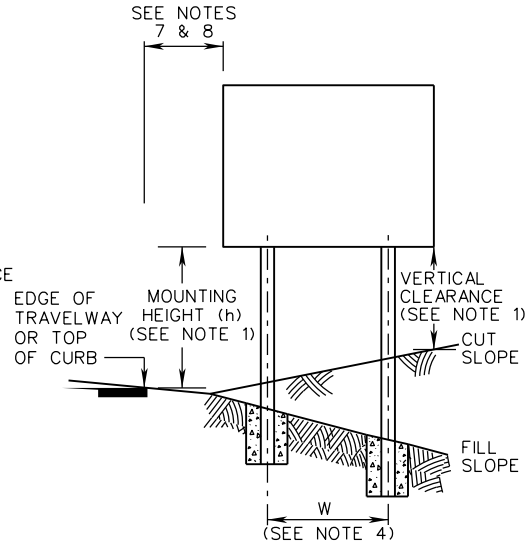
SECTION 1300 - TRAFFIC CONTROL

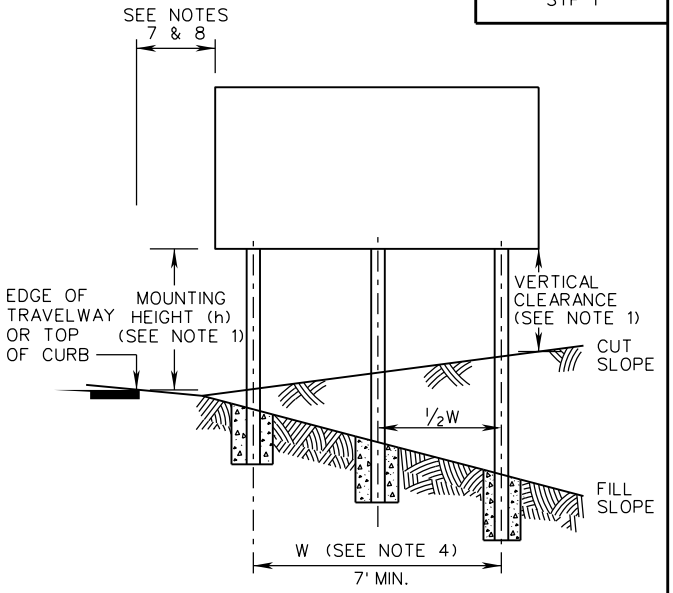
VIRGINIA DEPARTMENT OF TRANSPORTATION



SINGLE POST
INSTALLATIONS



TWO POST
INSTALLATIONS



THREE POST
INSTALLATIONS

NOTES:

1. FOR ALL SIGNS EXCEPT STREET NAME SIGNS:
   A. MINIMUM MOUNTING HEIGHT (h) SHALL BE IN ACCORDANCE WITH THE "MINIMUM MOUNTING HEIGHT" TABLE ON THIS SHEET.
   B. MAXIMUM MOUNTING HEIGHT (h) FOR THE BOTTOM-MOST SIGN PANEL(S) SHALL BE 8 FEET, EXCEPT WHEN NECESSARY TO ACHIEVE MINIMUM VERTICAL CLEARANCE BENEATH SIGN PANEL AS PER NOTE 1C.
   C. MINIMUM VERTICAL CLEARANCE (DISTANCE BETWEEN BOTTOM OF SIGN PANEL AND FINISHED GRADE BENEATH THE PANEL) SHALL BE 7 FEET FOR ANY PORTION OF THE SIGN WITHIN THE CLEAR ZONE. THIS MINIMUM VERTICAL CLEARANCE MAY BE REDUCED TO 5 FEET FOR EITHER OF THE FOLLOWING CONDITIONS:
      - WHEN SIGNS OR PORTIONS OF SIGNS ARE LOCATED MORE THAN 10 FEET UP A CUT SLOPE GREATER THAN 3:1, OR
      - WHEN THE SIGN IS LOCATED AT LEAST THE MINIMUM DISTANCE BEHIND CURB, BARRIER, OR GUARDRAIL AS PER NOTES 7 AND 8.
2. MOUNTING HEIGHT (h) FOR STREET NAME SIGNS SHALL BE BETWEEN 8'-6" AND 9'-0".
3. A SECONDARY SIGN IS CONSIDERED TO BE A SIGN MOUNTED BELOW ANOTHER SIGN, EXCEPT A ROUTE MARKER WITH AN AUXILIARY PLATE IS CONSIDERED TO BE A SINGLE SIGN. A SECONDARY SIGN SHALL NOT BE MOUNTED LOWER THAN 7 FEET ABOVE A PEDESTRIAN SIDEWALK OR PATHWAY IF IT WILL PROJECT INTO THE PEDESTRIAN FACILITY.
4. W = (0.60) X (SIGN PANEL WIDTH)
5. SQUARE TUBE SIGN POSTS REQUIRING A BREAKAWAY SUPPORT SYSTEM SHALL BE AN FHWA APPROVED BREAKAWAY SUPPORT SYSTEM CONFORMING TO AASHTO'S STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINIARIES AND TRAFFIC SIGNALS.

MINIMUM MOUNTING HEIGHT (h)
(SEE NOTE 1)

SIGN TYPES	FREEWAYS, EXPRESSWAYS, AND FULL CONTROL ACCESS HIGHWAYS	OTHER HIGHWAYS	
		RURAL AREAS	NON-RURAL AREAS
DIRECTIONAL SIGNS	7'	5'	7'
ROUTE MARKERS, WARNING AND REGULATORY SIGNS	7'	5'	7'
SECONDARY SIGNS (SEE NOTE 3)	5'	4'	7'

6. FOR SIGNS LOCATED IN AREAS WHERE PEDESTRIAN MOVEMENTS ARE LIKELY TO OCCUR OR ON-STREET PARKING IS PERMITTED, THE HEIGHT FROM THE LOWEST PORTION OF THE SIGN PANEL TO THE FINISHED SURFACE SHALL HAVE A MINIMUM CLEARANCE OF 7 FEET.
7. THE LATERAL CLEARANCE TO THE SIGN PANEL SHALL BE A MINIMUM OF 2 FEET FROM THE FACE OF CURB OR 4 FEET FROM FACE OF BARRIER, IF PRESENT.
8. UNLESS OTHERWISE APPROVED BY THE ENGINEER, SIGNS PLACED BEHIND GUARDRAIL SHALL BE LOCATED SUCH THAT THE NEAR SIDE EDGE OF THE SIGN PANEL IS OUTSIDE OF THE GUARDRAIL DEFLECTION DISTANCE.

SPECIFICATION REFERENCE	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.	VDOT ROAD AND BRIDGE STANDARDS
700	# SQUARE TUBE SIGN POST VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE 01/15 · SHEET 1 OF 12 · 1321.10

TABLE 1
FOR HAMPTON ROADS DISTRICT (SEE NOTE 5)

SIZE OF POST	CENTROID (FT)	MAXIMUM AREA (TOTAL OF SIGN PANELS) (FT^2)			COMMENTS
		SINGLE-POST	TWO-POST	THREE-POST	
2 INCH 14 GA.	8	5.8			TYPE A, TYPE D, OR TYPE F FOUNDATION AS SPECIFIED IN THE CONTRACT DOCUMENTS.
	9	5.1			
	10	4.6			
	11	4.2			
	12	3.8			
	13	3.5			
	14	3.3			
2½ INCH 12 GA.	8	11.8	23.6		SINGLE POST: TYPE A OR TYPE E FOUNDATION. MULTI-POST: TYPE B OR TYPE C FOUNDATION. AS SPECIFIED IN THE CONTRACT DOCUMENTS.
	9	10.5	21.0		
	10	9.4	18.8		
	11	8.6	17.2		
	12	7.8	15.6		
	13	7.2	14.5		
	14	6.7	13.5		
2½ INCH 10 GA.	8	13.6	27.2	40.8	TYPE B OR TYPE C FOUNDATION AS SPECIFIED IN THE CONTRACT DOCUMENTS.
	9	12.1	24.2	36.3	
	10	10.9	21.8	32.7	
	11	9.9	19.8	29.7	
	12	9.1	18.2	27.3	
	13	8.4	16.8	25.2	
	14	7.8	15.6	23.4	
2½ INCH 10 GA. WITH 2 3/16 INCH 10 GA. INNER POST (SEE NOTE 1)	8	23.9	47.8	71.7	TYPE B OR TYPE C FOUNDATION AS SPECIFIED IN THE CONTRACT DOCUMENTS.
	9	21.2	42.4	63.6	
	10	19.1	38.2	57.3	
	11	17.4	34.8	52.2	
	12	15.9	31.8	47.7	
	13	14.7	29.4	44.1	
	14	13.6	27.2	40.8	

NOTES:

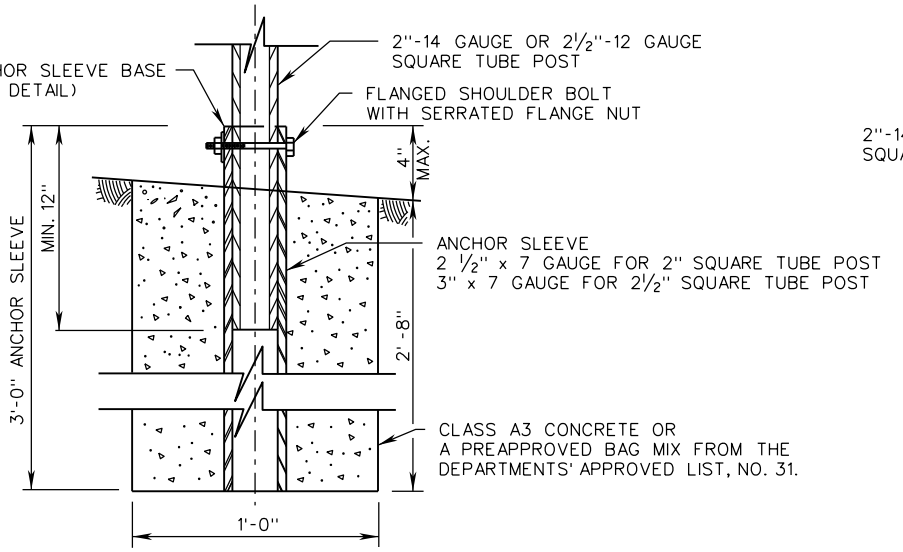
1. THE INNER POST SHALL BE 6 FEET IN LENGTH.
2. CENTROID SHALL BE DETERMINED IN ACCORDANCE WITH PCS-1.
3. MINIMUM COLD FORMED YIELD STRENGTH SHALL BE:
   14 GA. AND 12 GA. = 60 KSI
   10 GA. = 55 KSI
4. FOLLOW SIGN BRACING DETAILS (SEE SHEET 11 OF 12) FOR MAXIMUM SIGN PANEL WIDTHS AND SIGN BRACING SPACING.
5. TABLE 1 SHALL BE USED FOR THE HAMPTON ROADS DISTRICT, EXCEPT THE CITY OF EMPORIA AND COUNTIES OF GREENSVILLE, SUSSEX, AND SOUTHAMPTON SHALL USE TABLE 2.

TABLE 2
FOR BRISTOL, SALEM, LYNCHBURG, RICHMOND, FREDERICKSBURG, CULPEPER, STAUNTON, AND NORTHERN VIRGINIA DISTRICTS (SEE NOTE 5)

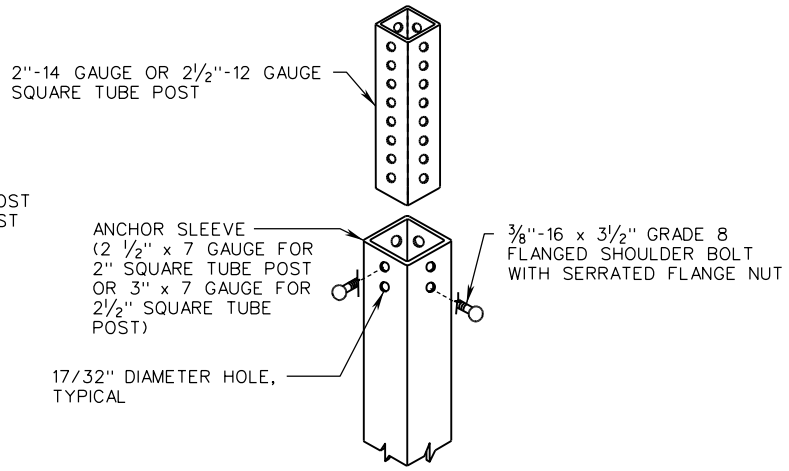
SIZE OF POST	CENTROID (FT)	MAXIMUM AREA (TOTAL OF SIGN PANELS) (FT^2)			COMMENTS
		SINGLE-POST	TWO-POST	THREE-POST	
2 INCH 14 GA.	8	10.7	21.4		TYPE A, TYPE D, OR TYPE F FOUNDATION AS SPECIFIED IN THE CONTRACT DOCUMENTS.
	9	9.5	19.0		
	10	8.5	17.0		
	11	7.7	15.4		
	12	7.1	14.2		
	13	6.5	13.0		
	14	6.1	12.2		
2½ INCH 12 GA.	8	21.5			TYPE A OR TYPE E FOUNDATION.
	9	19.1			
	10	17.2			
	11	15.6			
	12	14.3			
	13	13.2			
	14	12.3			
2½ INCH 10 GA.	8	24.8	49.6	74.4	TYPE B OR TYPE C FOUNDATION AS SPECIFIED IN THE CONTRACT DOCUMENTS.
	9	22.0	44.0	66.0	
	10	19.8	39.6	59.4	
	11	18.0	36.0	54.0	
	12	16.5	33.0	49.5	
	13	15.2	30.4	45.6	
	14	14.1	28.2	42.3	
2½ INCH 10 GA. WITH 2 3/16 INCH 10 GA. INNER POST (SEE NOTE 1)	8	43.4	86.8	130.2	TYPE B OR TYPE C FOUNDATION AS SPECIFIED IN THE CONTRACT DOCUMENTS.
	9	38.6	77.2	115.8	
	10	34.7	69.4	104.1	
	11	31.6	63.2	94.8	
	12	28.9	57.8	86.7	
	13	26.7	53.4	80.1	
	14	24.8	49.6	74.4	

NOTES:

1. THE INNER POST SHALL BE 6 FEET IN LENGTH.
2. CENTROID SHALL BE DETERMINED IN ACCORDANCE WITH PCS-1.
3. MINIMUM COLD FORMED YIELD STRENGTH SHALL BE:
   14 GA. AND 12 GA. = 60 KSI
   10 GA. = 55 KSI
4. FOLLOW SIGN BRACING DETAILS (SEE SHEET 11 OF 12) FOR MAXIMUM SIGN PANEL WIDTHS AND SIGN BRACING SPACING.
5. TABLE 2 SHALL ALSO BE USED FOR THE CITY OF EMPORIA AND COUNTIES OF GREENSVILLE, SUSSEX, AND SOUTHAMPTON IN HAMPTON ROADS DISTRICT.

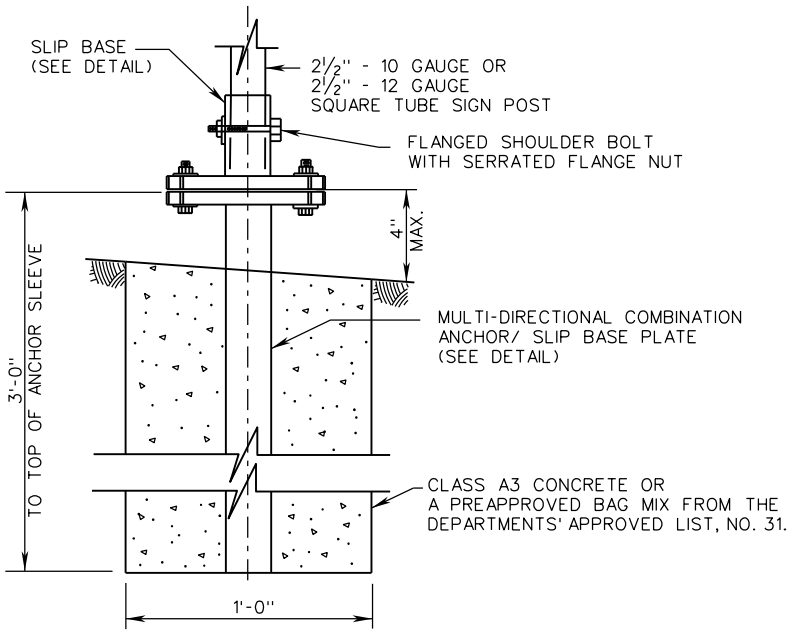


FOUNDATION TYPE A

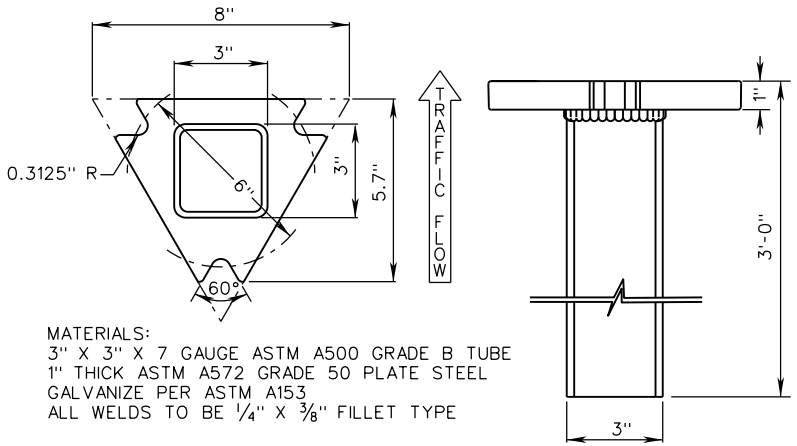


ANCHOR SLEEVE BASE DETAIL

VDOT ROAD AND BRIDGE STANDARDS	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.		SPECIFICATION REFERENCE
SHEET 4 OF 12 1321.13	SQUARE TUBE SIGN POST FOUNDATION TYPE A DETAILS VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE NEW 01/15	700



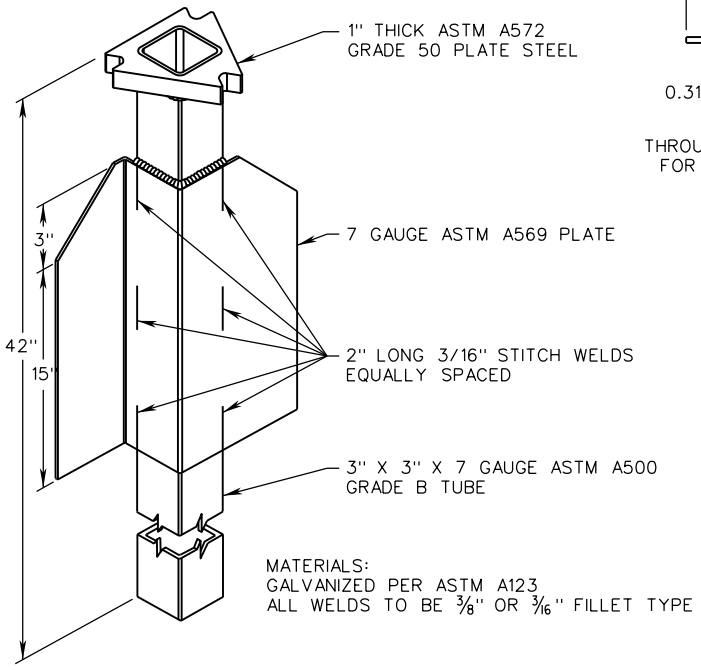
FOUNDATION TYPE B



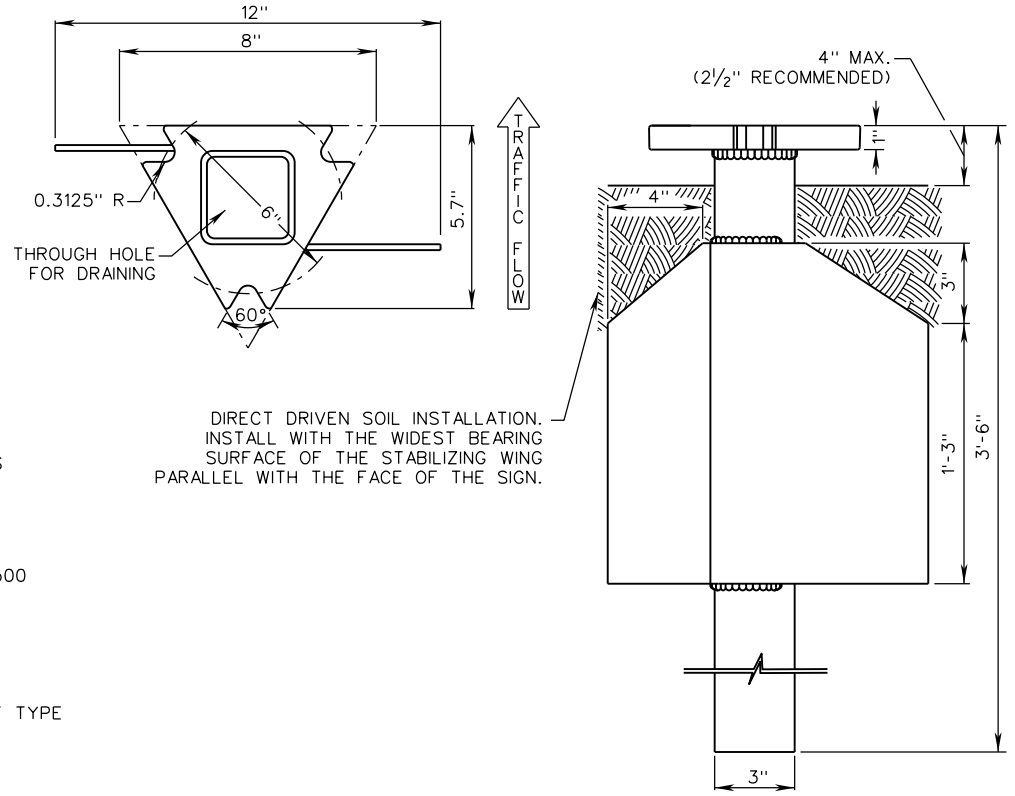
MATERIALS:
3" X 3" X 7 GAUGE ASTM A500 GRADE B TUBE
1" THICK ASTM A572 GRADE 50 PLATE STEEL
GALVANIZE PER ASTM A153
ALL WELDS TO BE ¼" X ⅜" FILLET TYPE

MULTI-DIRECTIONAL COMBINATION
ANCHOR/SLIP BASE PLATE

SPECIFICATION REFERENCE	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.	VDOT ROAD AND BRIDGE STANDARDS
700	SQUARE TUBE SIGN POST FOUNDATION TYPE B DETAILS VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE NEW 01/15
		SHEET 5 OF 12
		1321.14

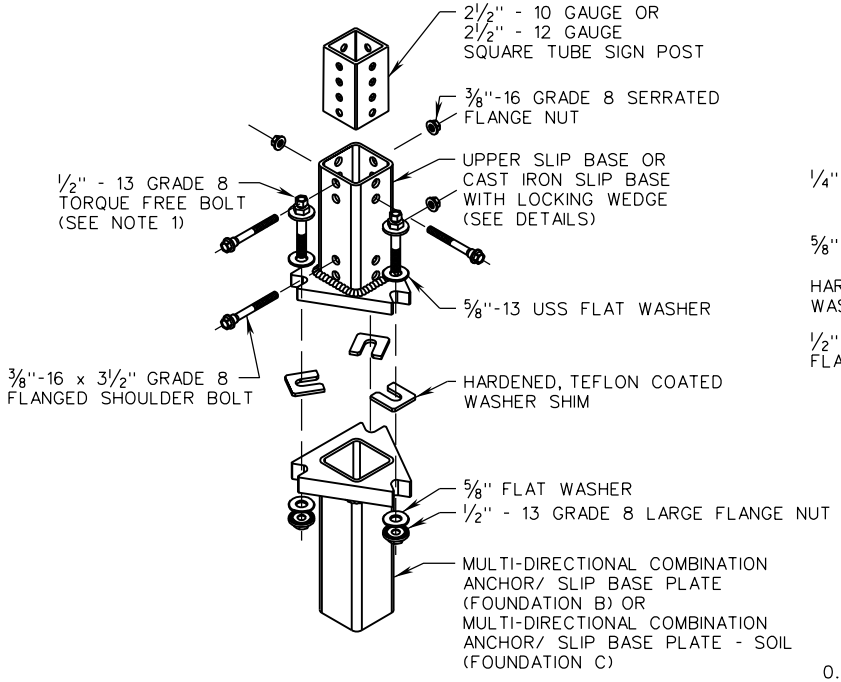


FOUNDATION TYPE C

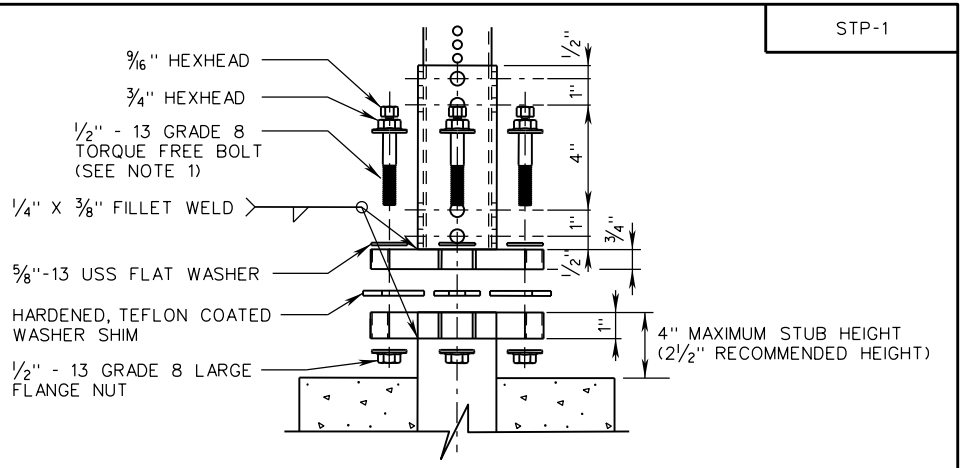


8" TRIANGULAR MULTI-DIRECTIONAL
COMBINATION ANCHOR/SLIP BASE PLATE - SOIL

VDOT ROAD AND BRIDGE STANDARDS	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE. SQUARE TUBE SIGN POST FOUNDATION TYPE C DETAILS VIRGINIA DEPARTMENT OF TRANSPORTATION		SPECIFICATION REFERENCE
SHEET 6 OF 12	REVISION DATE		700
1321.15	NEW 01/15		

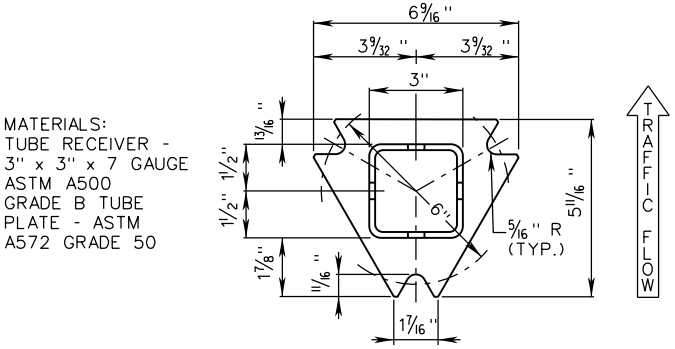


SLIP BASE BREAKAWAY DETAIL

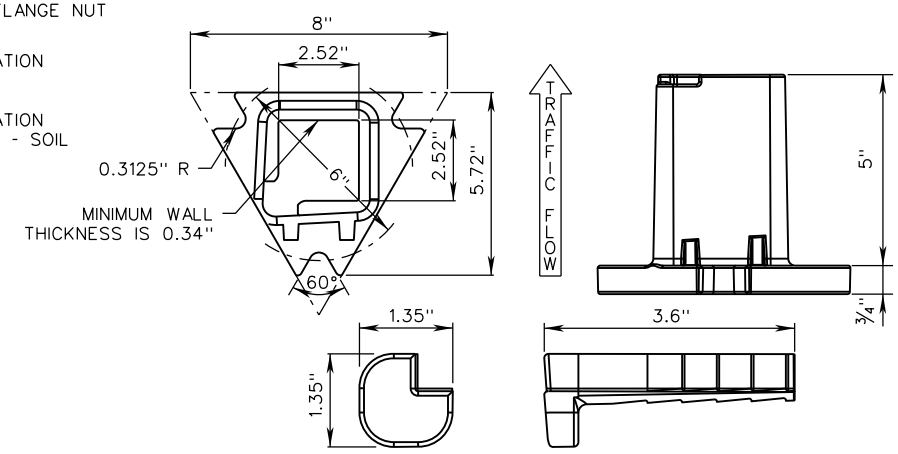


SLIP BASE BREAKAWAY PROFILE DETAIL

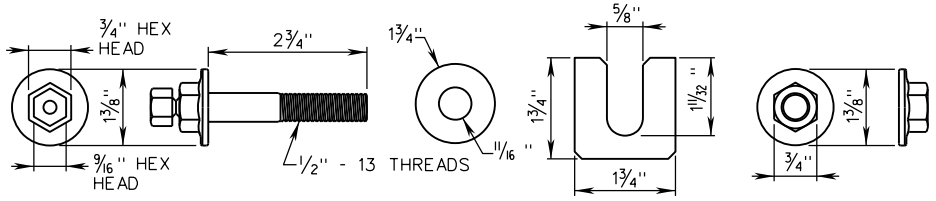
MATERIALS:
TUBE RECEIVER -
3" x 3" x 7 GAUGE
ASTM A500
GRADE B TUBE
PLATE - ASTM
A572 GRADE 50



TOP POST RECEIVER/
FOR 2½" SQUARE POST



REDI-TORQUE MULTI-DIRECTIONAL BOLT ON SAE1035 STEEL FORGING SLIP BASE TOP FOR 2½" SQUARE POST WITH CAST IRON LOCKING WEDGE

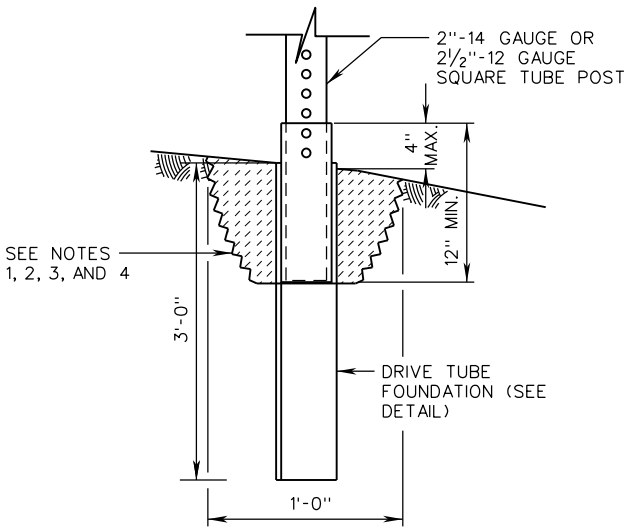


TORQUE FREE MATCH PLATE HARDWARE

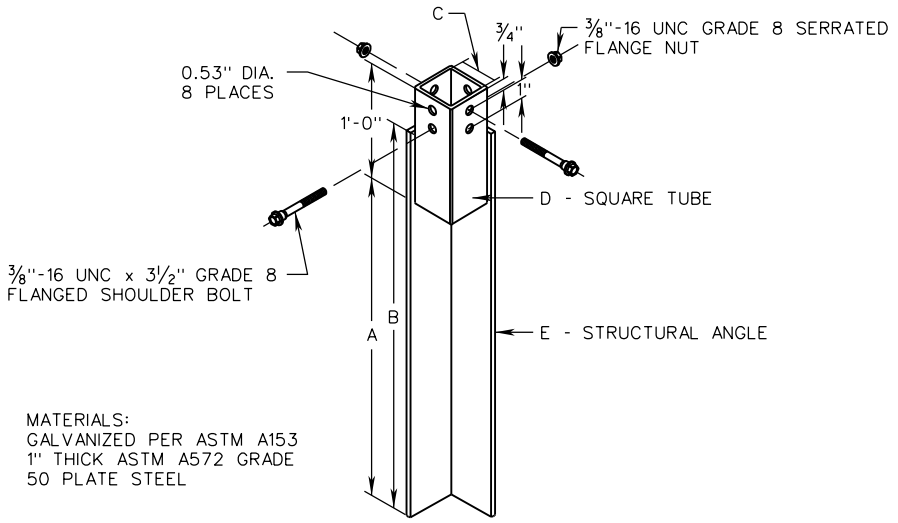
NOTES:

1. TIGHTEN THE TORQUE FREE BOLT USING THE LARGER ¾" HEX HEAD, THEN LOOSEN THE BOLTS BY THREE COMPLETE TURNS USING THE ¾" HEX HEAD. RETIGHTEN EACH TORQUE BOLT USING THE SMALLER 9/16" HEX HEAD UNTIL THE 9/16" HEX HEAD TWISTS OFF.

SPECIFICATION REFERENCE	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.	VDOT ROAD AND BRIDGE STANDARDS
700	SQUARE TUBE SIGN POST FOUNDATION TYPE B AND C DETAILS VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE: NEW 01/15 SHEET 7 OF 12 1321.16



FOUNDATION TYPE D AND E



DRIVE TUBE FOUNDATION DETAIL

NOTES:

1. EXCAVATE TO A DEPTH OF NO LESS THAN 8" AND NO GREATER THAN 12" PRIOR TO INSTALLATION OF DRIVE TUBE FOUNDATION.
2. THE EXCAVATED AREA SHALL BE BACKFILLED WITH A CEMENTITIOUS MATERIAL AND SHALL BE TAPPED WITH EACH 6" LIFT.
3. THE SQUARE TUBE POST SHALL BE INSERTED INTO THE SLEEVE OF THE DRIVE TUBE FOUNDATION A MINIMUM OF 12".
4. DRIVE CAP SHALL BE UTILIZED FOR INSTALLATION OF DRIVE TUBE FOUNDATION. WHEN USING A POWER DRIVER, A SHANK SHALL ALSO BE REQUIRED.

DRIVE TUBE FOUNDATION TABLE

FOUNDATION TYPE	SIZE OF POST	DRIVE TUBE FOUNDATION DIMENSION	
TYPE D	2 INCH 14 GA.	A	27"
		B	36"
		C	2⅛"
		D	2½" X 2½" X 3/16" ASTM A500 GRADE B
		E	2½" X 2½" X 3/16" ASTM A36
TYPE E	2½ INCH 12 GA.	A	27"
		B	36"
		C	2⅝"
		D	3" X 3" X 3/16" ASTM A500 GRADE B
		E	3" X 3" X 3/16" ASTM A36

VDOT
ROAD AND BRIDGE STANDARDS

SHEET 8 OF 12 | REVISION DATE NEW 01/15
1321.17

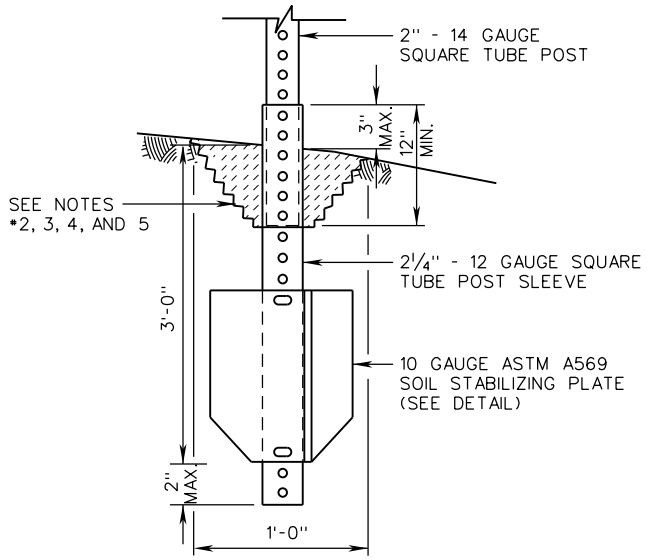
A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

SQUARE TUBE SIGN POST

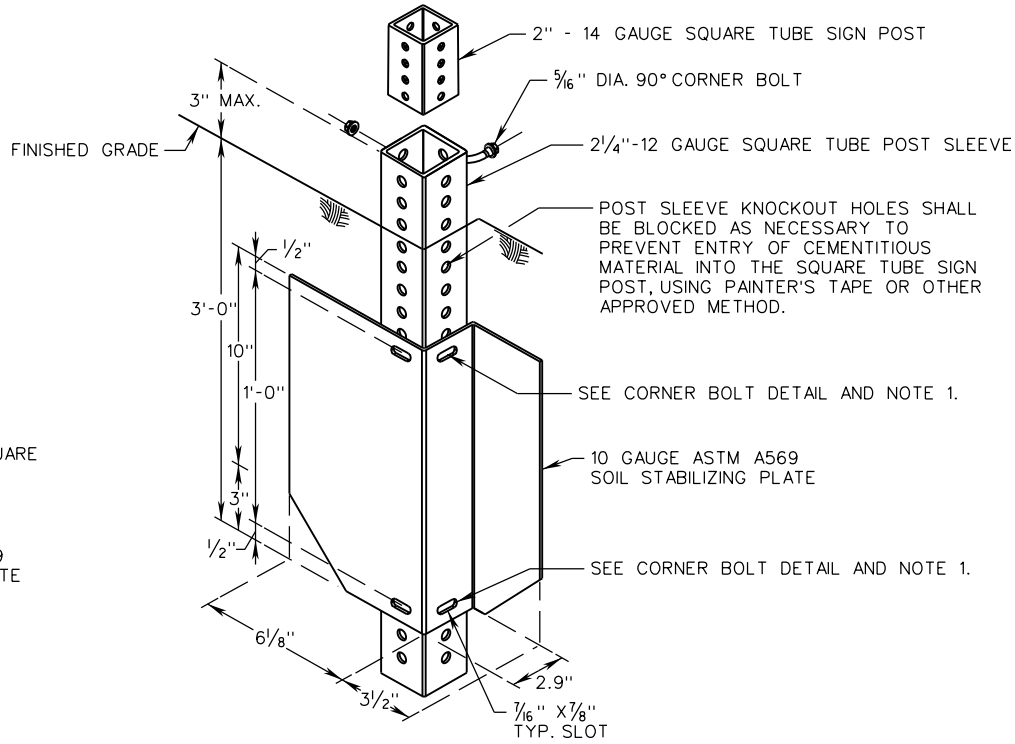
FOUNDATION TYPE D AND E DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

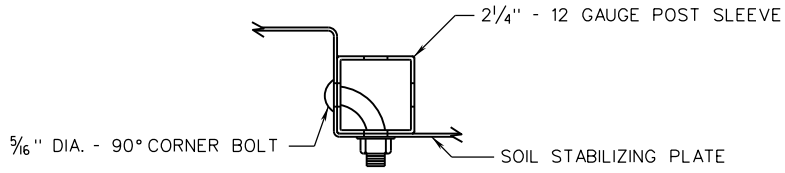
SPECIFICATION REFERENCE
700



FOUNDATION TYPE F



SOIL STABILIZING PLATE FOUNDATION DETAIL

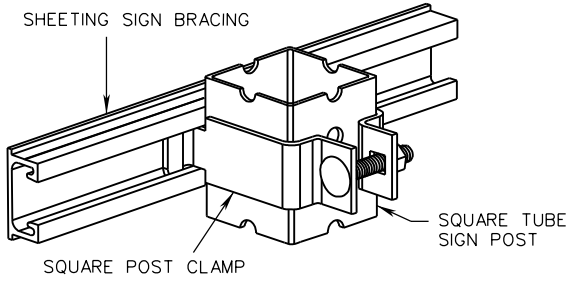


CORNER BOLT DETAIL

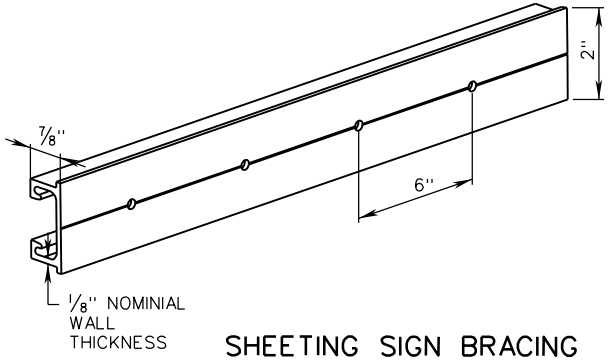
NOTES:

1. CORNER BOLTS SHALL BE 5/16" DIA. TRUSS HEAD BOLT WITH SERRATED FLANGE NUT. TWO CORNER BOLTS WILL BE REQUIRED TO CONNECT THE 2¼" POST SLEEVE TO THE SOIL STABILIZING PLATE.
2. EXCAVATE TO A DEPTH OF NO LESS THAN 8" AND NO GREATER THAN 12" PRIOR TO INSTALLATION OF SOIL STABILIZING PLATE FOUNDATION.
3. THE EXCAVATED AREA SHALL BE BACKFILLED WITH A CEMENTITIOUS MATERIAL AND SHALL BE TAPPED WITH EACH 6" LIFT.
4. THE 2" SQUARE TUBE POST SHALL BE INSERTED INTO THE 2¼" POST SLEEVE A MINIMUM OF 12".
5. DRIVE CAP SHALL BE UTILIZED FOR INSTALLATION OF DRIVE TUBE FOUNDATION. WHEN USING A POWER DRIVER, A SHANK SHALL ALSO BE REQUIRED.

SPECIFICATION REFERENCE	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.	VDOT ROAD AND BRIDGE STANDARDS
700	# SQUARE TUBE SIGN POST ## FOUNDATION TYPE F DETAILS VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE: NEW 01/15
		SHEET 9 OF 12
		1321.18



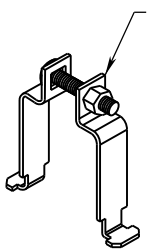
SQUARE POST CLAMP & BRACE (CONNECTING JUNCTION)



ALUMINUM SIGN BRACING 2" MOUNTING SURFACE x 7/8" DEPTH x 1/8" NOMINAL WALL THICKNESS

6061-T6 ALUMINUM ALLOY, PUNCHED WITH 3/16" DIAMETER HOLES ON 6" CENTERS FOR ATTCHMENT OF SIGN SUBSTRATE USING SIGN PANEL 3/16" DRIVE RIVETS, OR 3/8" DIAMETER HOLES ON 12" CENTERS WHEN USING 3/8" DRIVE RIVETS.

SHEETING SIGN BRACING

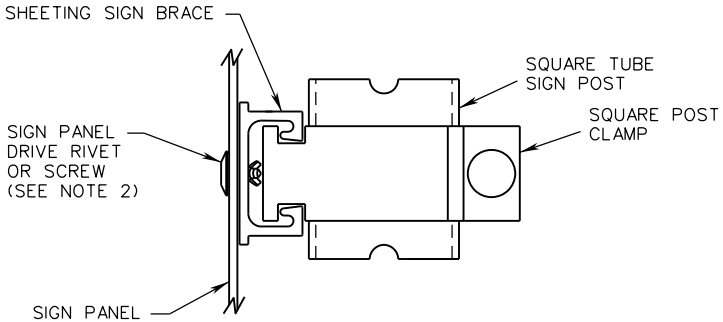


11 GAUGE, TYPE 304, #2B FINISHED STAINLESS STEEL WITH STAINLESS STEEL CARRIAGE BOLT

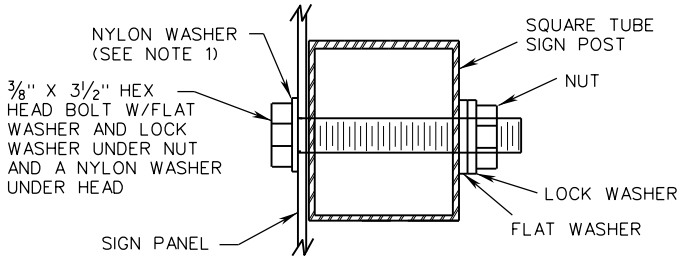
CLAMPS CAN BE TWIST LOCKED INTO PLACE WITHOUT SLIDING THE CLAMPS FROM AN OPEN END OF THE CHANNEL BRACE

CLAMP IS TO BE SIZED TO FIT THE SQUARE TUBE POST, 2" OR 2 1/2"

SQUARE POST CLAMP DETAIL



SIGN PANEL ATTACHMENT DETAILS FOR SIGN POSTS REQUIRING BRACING



SIGN PANEL ATTACHMENT DETAILS FOR SIGN POSTS NOT REQUIRING BRACING

NOTES:

1. NYLON WASHER SHALL BE 1/16" THICK MINIMUM WITH AN OUTSIDE DIAMETER OF 1" AND AN INSIDE DIAMETER OF 7/16".
2. DRIVE RIVET SHALL BE 3/16" OR 3/8" ALUMINUM FLAT HEAD RIVET WITH NYLON OR RUBBER WASHER.
3. THE HEAD OF ALL DRIVE RIVETS AND HEX HEAD BOLTS SHALL BE POWDER COATED TO MATCH THE COLOR OF THE SIGN SHEETING.
4. DRIVE RIVET SHALL NOT BE USED FOR SIGNS WITHOUT BRACING.

VDOT
ROAD AND BRIDGE STANDARDS

SHEET 10 OF 12 | REVISION DATE NEW 01/15

1321.19

A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

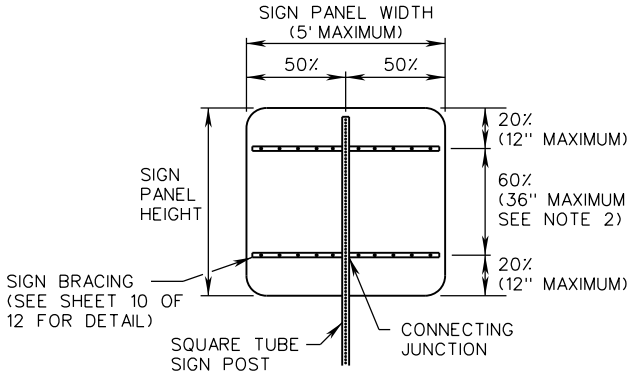
SQUARE TUBE SIGN POST

SIGN BRACING AND SIGN PANEL ATTACHMENT DETAILS

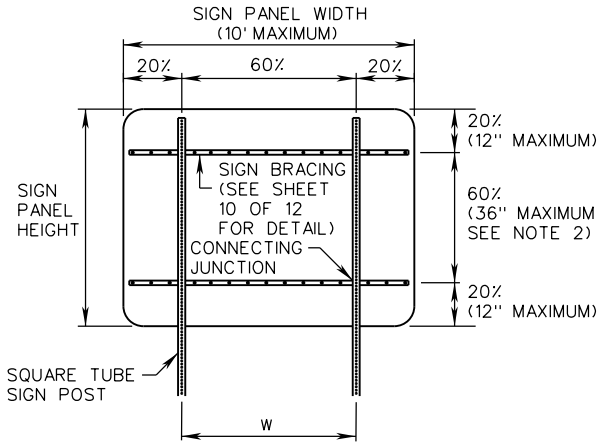
VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE

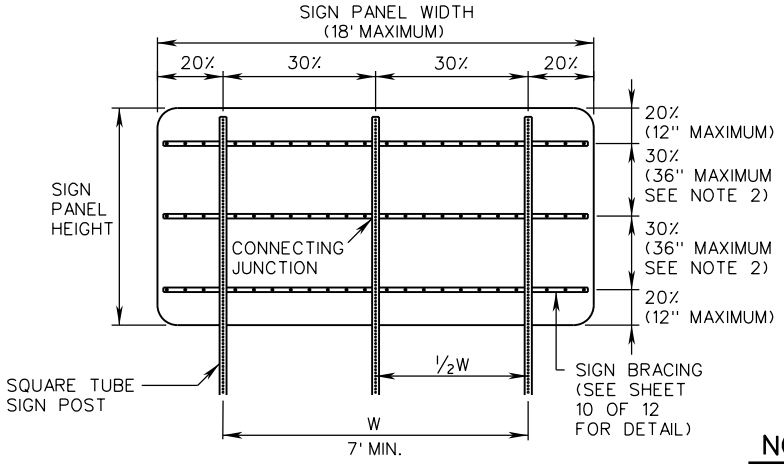
700



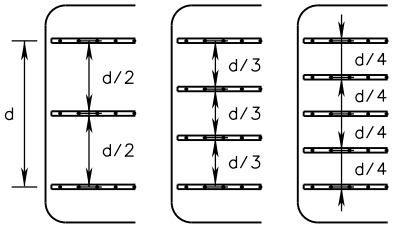
SINGLE POST - BRACING DIAGRAM
TYPICAL - TWO BRACE



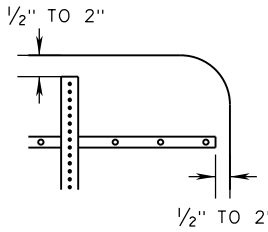
TWO POST - BRACING DIAGRAM
TYPICAL - TWO BRACE



THREE POST - BRACING DIAGRAM
TYPICAL - THREE BRACE



DETAIL A - SPACING OF MULTIPLE BRACING



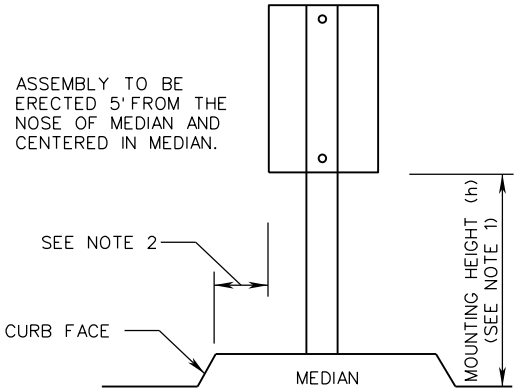
DETAIL B - INSTALLATION TOLERANCES

NOTES:

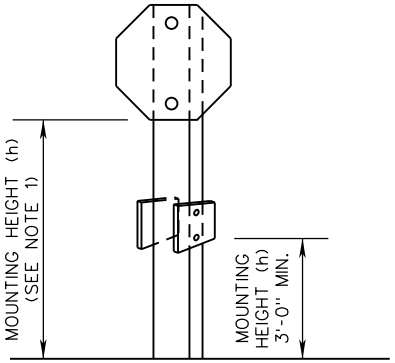
1. SIGN PANEL WIDTHS 36" OR GREATER SHALL REQUIRE SIGN BRACING.
2. VERTICAL SPACING OF SIGN BRACING SHALL NOT EXCEED 12" FROM THE TOP OR BOTTOM EDGE OF SIGN PANEL TO FIRST BRACE AND 36" BETWEEN BRACES. IF THE SPACING BETWEEN BRACES EXCEEDS 36" THEN ADDITIONAL SIGN BRACING SHALL BE ADDED. ALL SIGN BRACING SHALL BE EQUALLY SPACED BETWEEN THE TOP AND BOTTOM BRACE. SEE DETAIL A.
3. MAXIMUM SIGN PANEL AREA PER POST TO BRACE JUNCTION SHALL BE 10 SQ. FT. ADDITIONAL SIGN BRACING SHALL BE INSTALLED IF 10 SQ. FT PER POST TO BRACE JUNCTION IS EXCEEDED.
4. ONE SPLICE PER BRACE WILL BE PERMITTED. BRACE SPLICE SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. BRACING SHALL NOT BE SPLICED WITHIN 6" OF A BRACE TO POST JUNCTION. SPLICES SHALL NOT BE IN VERTICAL ALIGNMENT BUT SHALL BE OFFSET NO LESS THAN 12" FROM EACH OTHER.
5. TOP OF SIGN PANEL SHALL BE MOUNTED ½" TO 2" WITH THE TOP OF THE POST AND ½" TO 2" WITH THE SIDE OF THE SIGN BRACING. SEE DETAIL B.
6. SIGN PANEL WIDTHS SHALL NOT EXCEED MAXIMUM SPECIFIED.

SPECIFICATION REFERENCE	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.	VDOT ROAD AND BRIDGE STANDARDS
700	# SQUARE TUBE SIGN POST ## SIGN BRACING DETAILS VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE NEW 01/15
		SHEET 11 OF 12
		1321.20

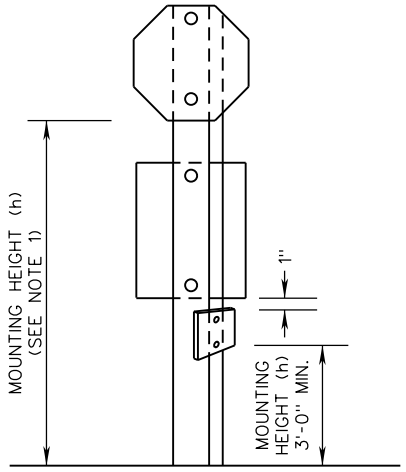
STP-1



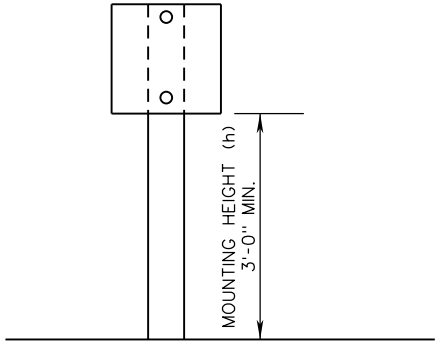
SINGLE POST
MEDIAN INSTALLATIONS



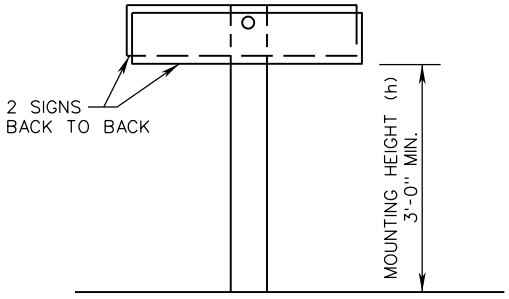
ONE WAY SIGNS
ON EXIT RAMPS
WITH STOP SIGN



STOP OR YIELD SIGNS AND
DO NOT ENTER SIGN
(AT EXIT RAMPS ONLY)



WRONG WAY SIGNS/
DO NOT ENTER SIGNS
(AT EXIT RAMPS ONLY)



ONE WAY SIGNS
ON EXIT RAMPS

NOTES:

1. MOUNTING HEIGHT (h) SHALL BE IN ACCORDANCE WITH STP-1 SHEET 1 OF 12 EXCEPT AS NOTED ON THIS SHEET.
2. 2' MINIMUM FOR MEDIANS OVER 10' IN WIDTH. 12" MINIMUM FOR MEDIANS 10' OR LESS IN WIDTH UNLESS SHOWN OTHERWISE IN THE CONTRACT DOCUMENTS.
3. MOUNTING HEIGHTS (h) ARE MEASURED FROM BOTTOM OF SIGN PANEL TO ROADWAY ELEVATION AT EDGE OF TRAVELWAY OR TOP OF CURB.

VDOT
ROAD AND BRIDGE STANDARDS

SHEET 12 OF 12 | REVISION DATE NEW 01/15
1321.21

A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

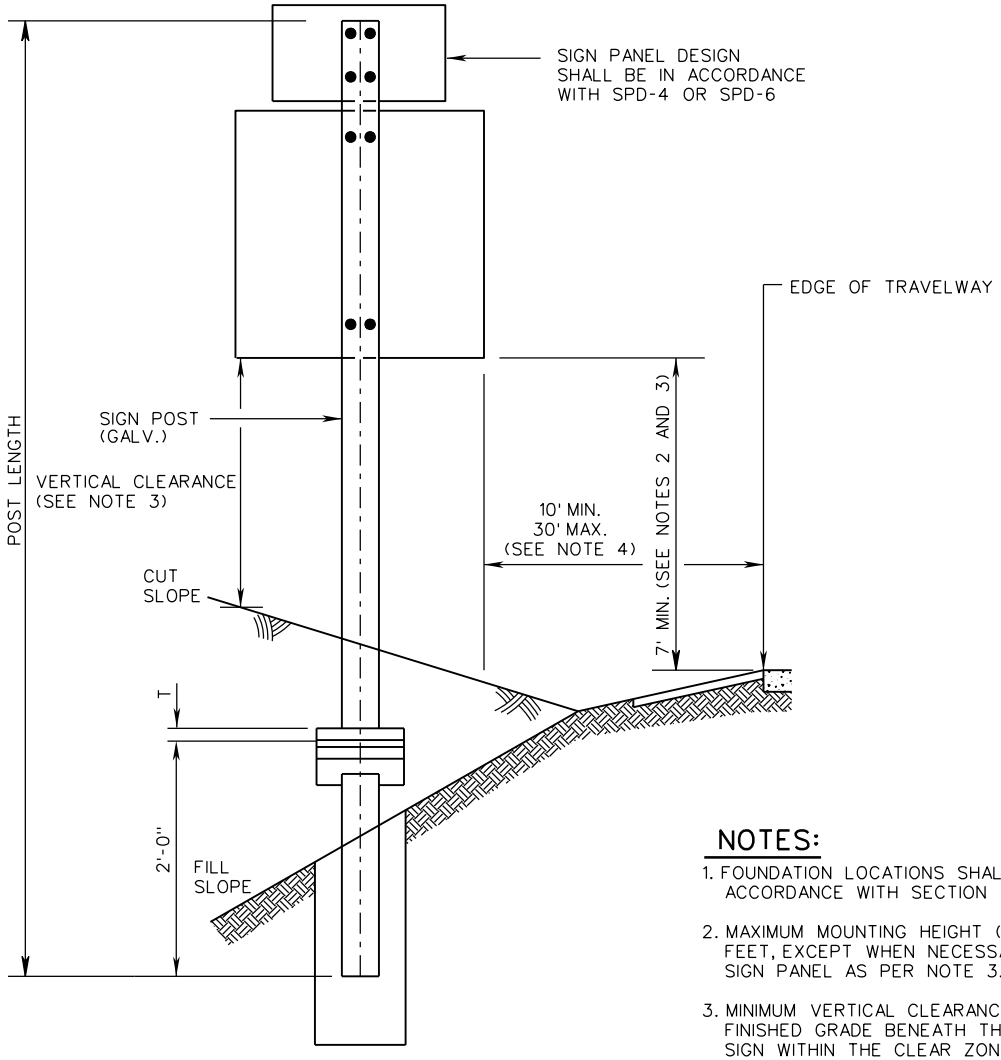
SIGN POST

MOUNTING HEIGHTS OF SIGN INSTALLATIONS

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE
700

SSP-VA



NOTES:

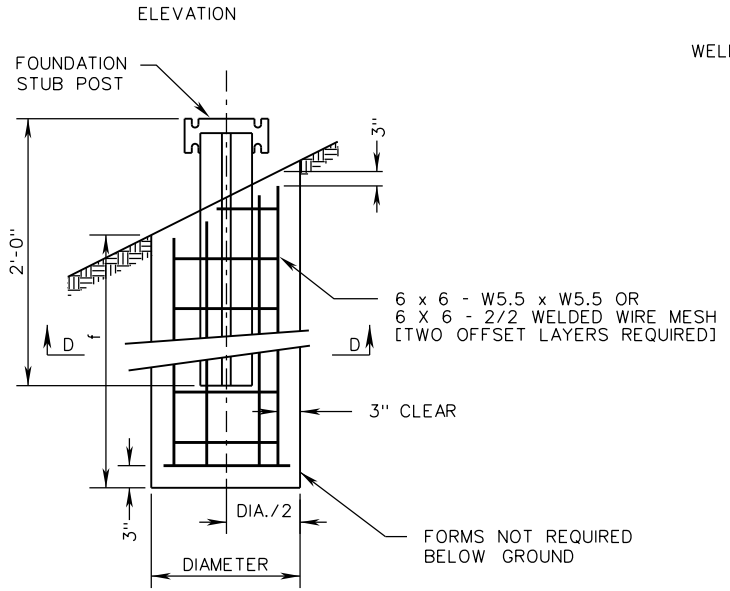
1. FOUNDATION LOCATIONS SHALL BE APPROVED BY ENGINEER PRIOR TO INSTALLATION IN ACCORDANCE WITH SECTION 700.

2. MAXIMUM MOUNTING HEIGHT (h) FOR THE BOTTOM-MOST SIGN PANEL(S) SHALL BE 8 FEET, EXCEPT WHEN NECESSARY TO ACHIEVE MINIMUM VERTICAL CLEARANCE BENEATH SIGN PANEL AS PER NOTE 3.

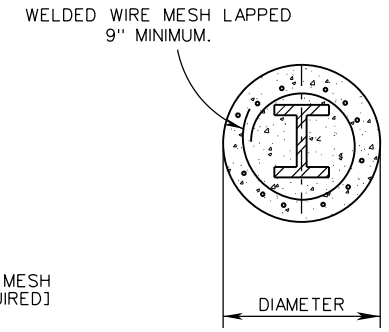
3. MINIMUM VERTICAL CLEARANCE (DISTANCE BETWEEN BOTTOM OF SIGN PANEL AND FINISHED GRADE BENEATH THE PANEL) SHALL BE 7 FEET FOR ANY PORTION OF THE SIGN WITHIN THE CLEAR ZONE. THIS MINIMUM VERTICAL CLEARANCE MAY BE REDUCED TO 5 FEET FOR EITHER OF THE FOLLOWING CONDITIONS:
   - WHEN SIGNS OR PORTIONS OF SIGNS ARE LOCATED MORE THAN 10 FEET UP A CUT SLOPE GREATER THAN 3:1, OR
   - WHEN THE SIGN IS LOCATED AT LEAST THE MINIMUM DISTANCE BEHIND CURB, BARRIER, OR GUARDRAIL AS PER NOTE 4.

4. THE LATERAL CLEARANCE TO THE SIGN PANEL SHALL BE A MINIMUM OF 2 FEET FROM THE FACE OF CURB OR 4 FEET FROM FACE OF BARRIER, IF PRESENT. UNLESS OTHERWISE APPROVED BY THE ENGINEER, SIGNS PLACED BEHIND GUARDRAIL SHALL BE LOCATED SUCH THAT THE NEAR SIDE EDGE OF THE SIGN PANEL IS OUTSIDE OF THE GUARDRAIL DEFLECTION DISTANCE.

VDOT ROAD AND BRIDGE STANDARDS	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE. # VA SIGN STRUCTURE ## INSTALLATION DETAILS VIRGINIA DEPARTMENT OF TRANSPORTATION	SPECIFICATION REFERENCE 700
SHEET 1 OF 4 1322.10	REVISION DATE 01/15	



FOUNDATION



SECTION D-D

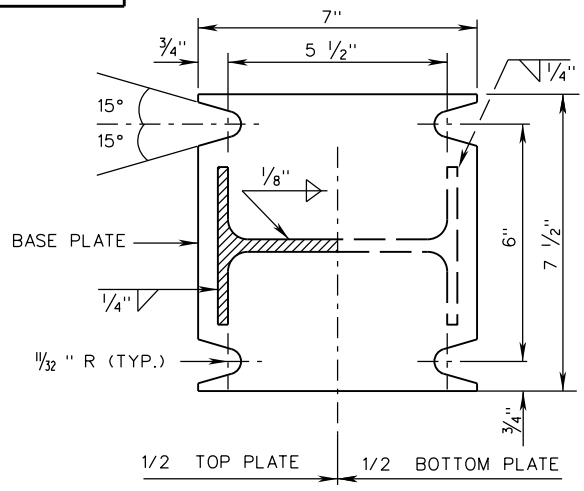
NOTES:

1. POST LENGTH IS FOR ESTIMATING PURPOSES ONLY. THE CONTRACTOR SHALL DETERMINE THE ACTUAL POST LENGTH AT THE FIELD LOCATION OF THE SIGN STRUCTURE BASED ON FINISHED GRADE ELEVATION.
2. TOTAL POST LENGTH QUANTITY = LENGTH OF POST ABOVE THE BOLT KEEPER PLATE + THE FOUNDATION STUB POST LENGTH (2'-0").

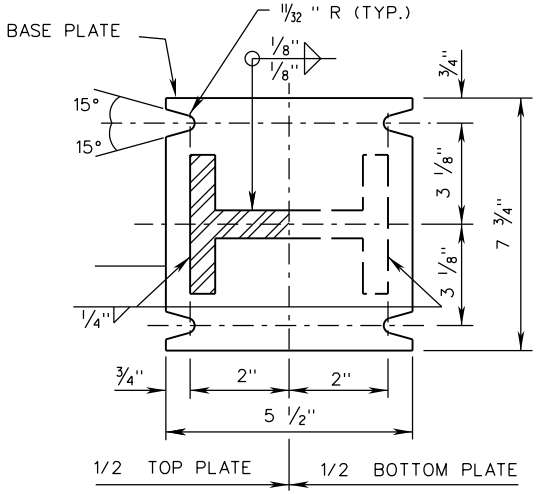
SIGN POST AND FOUNDATION DETAILS

STRUCTURE TYPE	SIGN PANEL DIMENSIONS		SIGN POST	POST LENGTH DIMENSIONS (SEE NOTES 1 & 2)	FOUNDATION DIMENSIONS		WELDED WIRE MESH		STEEL BASE PLATE
	W	H		SLOPE 3:1 TO 2:1	f	DIAMETER	LENGTH	SQ. FT.	T (THICKNESS)
VA-A	3'	3'	S3 x 5.7	12'-3"	3'-0"	1'-0"	2'-6"	5	1/2"
VA-B	4'	4'	W4 x 13	12'-3"	4'-6"	1'-9"	4'-4"	20	1"
VA-C	4'	5'		13'-3"					
VA-D	5'	3'		12'-9"					
VA-E	6'	5'		13'-9"					
VA-F	4'	-		13'-9"					
VA-G	5'	-		13'-0"					
VA-K	4'	5'		17'-3"					
VA-K	4'	4'		-					
VA-L	6'	6'		14'-6"					
VA-M	5'	5'		13'-9"					
VA-A2	6'	3'	W6 x 12	13'-9"					
VA-N	7'	7'	W6 x 12	15'-9"	6'-0"	2'-6"	5'-6"	40	1"
VA-O	13'	5'	W6 x 12	15'-9"	7'-0"	2'-6"	6'-6"	47	1"

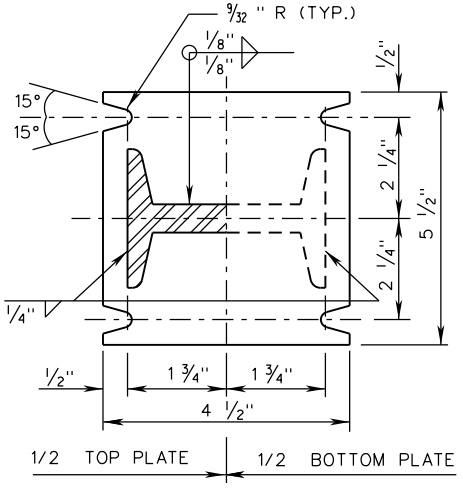
SSP-VA



SECTION A-A
FOR W6 x 12 POST

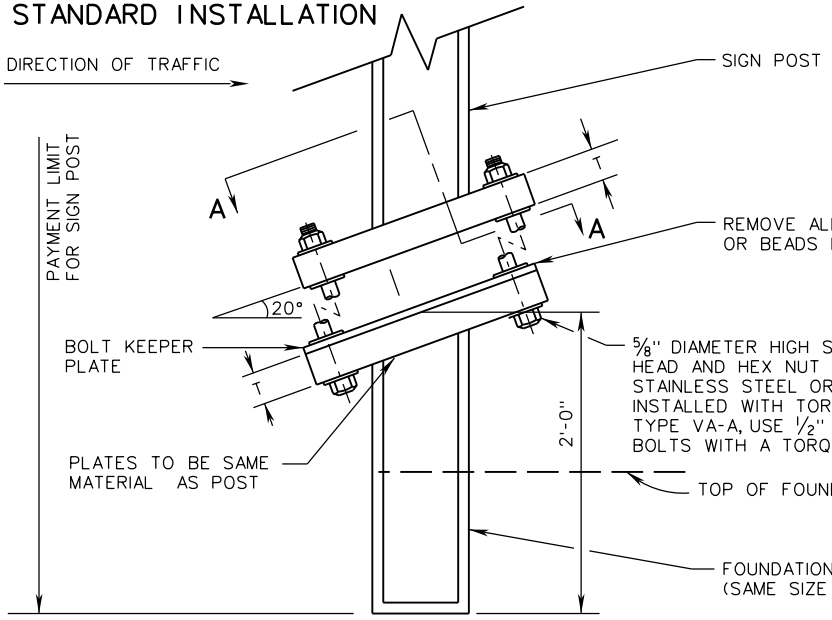


SECTION A-A
FOR W4 x 13 POST

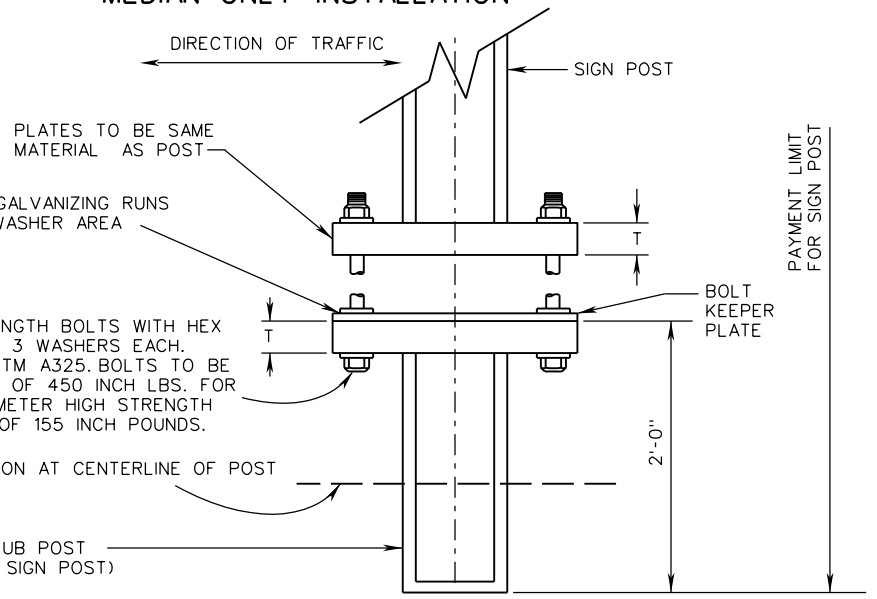


SECTION A-A
FOR S3 x 5.7 POST

STANDARD INSTALLATION



MEDIAN ONLY INSTALLATION



REMOVE ALL GALVANIZING RUNS OR BEADS IN WASHER AREA

5/8" DIAMETER HIGH STRENGTH BOLTS WITH HEX HEAD AND HEX NUT AND 3 WASHERS EACH. STAINLESS STEEL OR ASTM A325. BOLTS TO BE INSTALLED WITH TORQUE OF 450 INCH LBS. FOR TYPE VA-A, USE 1/2" DIAMETER HIGH STRENGTH BOLTS WITH A TORQUE OF 155 INCH POUNDS.

TOP OF FOUNDATION AT CENTERLINE OF POST

FOUNDATION STUB POST (SAME SIZE AS SIGN POST)

VDOT
ROAD AND BRIDGE STANDARDS

SHEET 3 OF 4
1322.12

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01/15

A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

VA SIGN STRUCTURE

INSTALLATION DETAILS

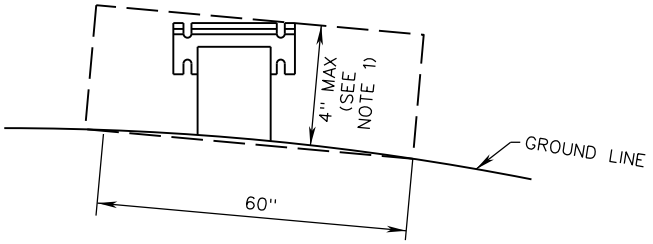
VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE

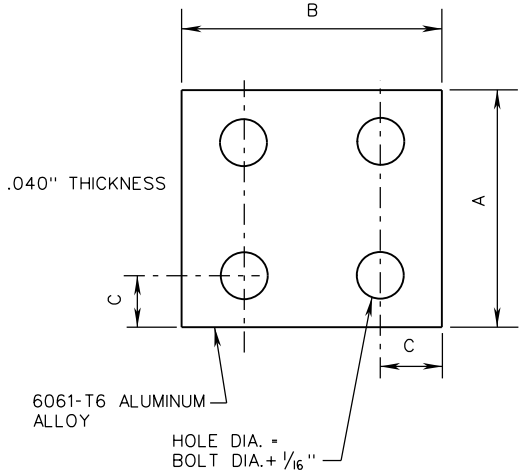
700

NOTES:

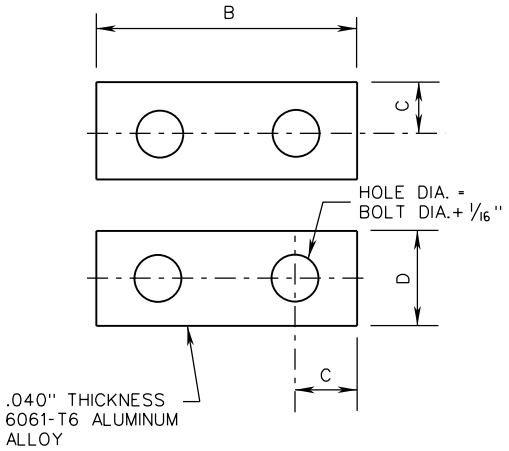
1. 4" MAXIMUM PROJECTION WHEN MEASURED ABOVE A 60" CHORD ALIGNED RADIALLY TO THE CENTERLINE OF THE HIGHWAY AND CONNECTING ANY POINT, WITHIN THE LENGTH OF THE CHORD, ON THE GROUND SURFACE ON THE OTHER SIDE.
2. SEE STANDARD SSP-VIA FOR SHIM DETAIL.



METHOD TO DETERMINE
MAXIMUM PROJECTION OF FOUNDATION STUB POST



BOLT KEEPER PLATE



ALTERNATE BOLT KEEPER PLATE

BOLT KEEPER PLATE DATA

POST SHAPE	A	B	C	D
S3 x 5.7	5 1/2"	4 1/2"	1/2"	1"
W4 x 13	7 3/4"	5 1/2"	3/4"	1 1/2"
W6 x 12	7 1/2"	7"	3/4"	1 1/2"

SPECIFICATION REFERENCE	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.	VDOT ROAD AND BRIDGE STANDARDS
700	VA SIGN STRUCTURE INSTALLATION DETAILS VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE 01/15 SHEET 4 OF 4 1322.13

SSP-VIA

NOTES:

1. FOUNDATION LOCATIONS SHALL BE APPROVED BY ENGINEER PRIOR TO INSTALLATION IN ACCORDANCE WITH SECTION 700.

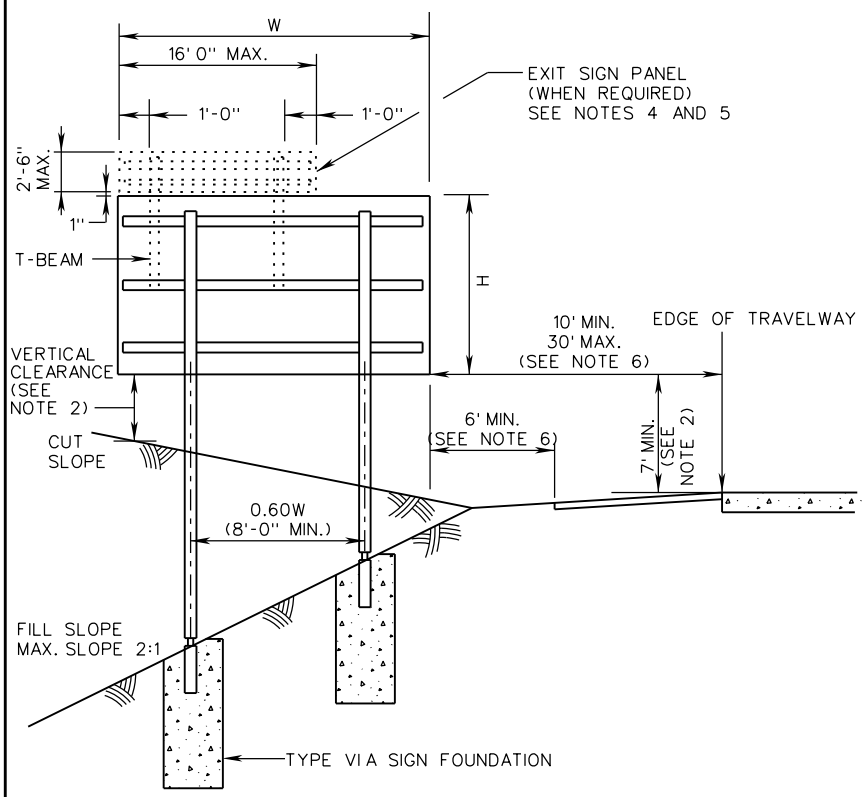
2. MINIMUM VERTICAL CLEARANCE (DISTANCE BETWEEN BOTTOM OF SIGN PANEL AND FINISHED GRADE BENEATH THE PANEL) SHALL BE 7 FEET FOR ANY PORTION OF THE SIGN WITHIN THE CLEAR ZONE. THIS MINIMUM VERTICAL CLEARANCE MAY BE REDUCED TO 5 FEET FOR EITHER OF THE FOLLOWING CONDITIONS:
   - WHEN SIGNS OR PORTIONS OF SIGNS ARE LOCATED MORE THAN 10 FEET UP A CUT SLOPE GREATER THAN 3:1, OR
   - WHEN THE SIGN IS LOCATED AT LEAST THE MINIMUM DISTANCE BEHIND CURB, BARRIER, OR GUARDRAIL AS PER NOTE 6.

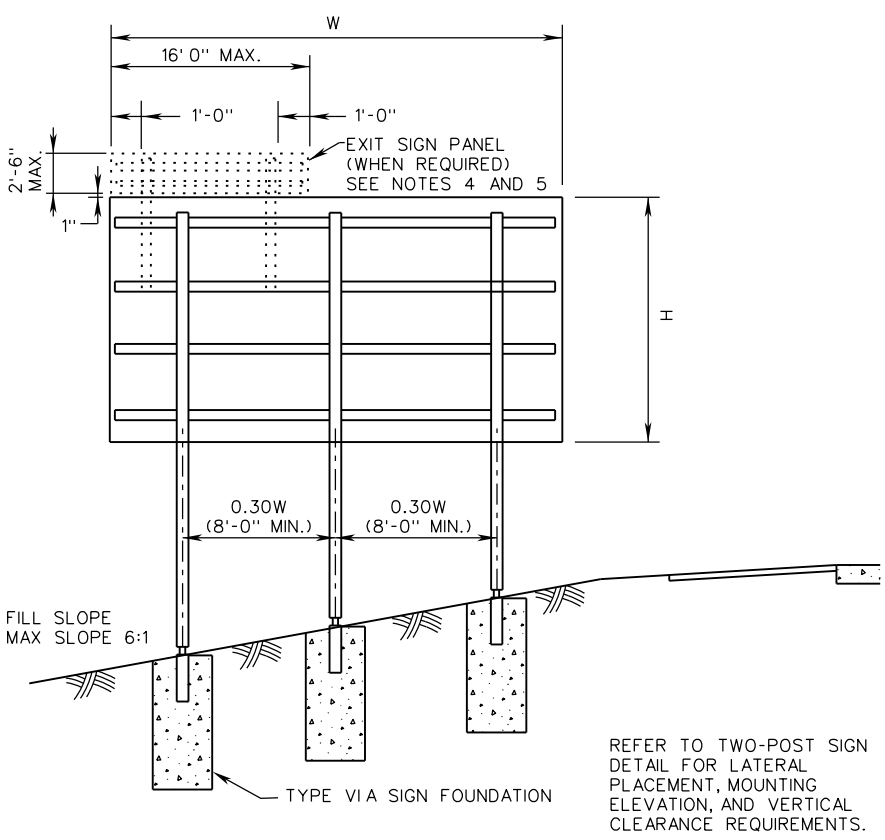
3. SIGN PANEL SHALL BE DESIGNED IN ACCORDANCE WITH SPD-2, SPD-3 OR SPD-7.

4. THE VERTICAL T-BEAM SHALL BE 2"W X 2"D X 1/4" THICK STRUCTURAL ALUMINUM ALLOY 6061-T6AT A MINIMUM LENGTH OF 6'-0" AND EXTENDED TO THE NEXT HORIZONTAL SUPPORT BAR ON THE SSP-VIA STRUCTURE.

5. THE T-BEAM SHALL BE ATTACHED TO THE SSP-VIA STRUCTURE BY THE FOLLOWING METHODS:
   - T-BEAM FOR THE SPD-2 SIGN PANEL SHALL BE ATTACHED BY USING A MINIMUM OF TWO POST CLIP BOLTS AT EACH CROSS MEMBER.
   - T-BEAM FOR THE SPD-3 SIGN PANEL SHALL BE ATTACHED BY USING TWO ASTM F593, ALLOY 304 STAINLESS STEEL 3/8" DIAMETER-16 UNC BOLT WITH STAINLESS STEEL NUT AND FLAT WASHER AT ZEE BAR CONNECTIONS AND TWO POST CLAMP AND BOLT AT EACH TEE-BAR CONNECTION.
   - T-BEAM FOR THE SPD-7 SIGN PANEL SHALL BE ATTACHED BY USING A MINIMUM OF TWO POST CLAMP AND POST CLAMP BOLTS AT EACH STIFFENER.

6. THE LATERAL CLEARANCE TO THE SIGN PANEL SHALL BE A MINIMUM OF 2 FEET FROM THE FACE OF CURB OR 4 FEET FROM FACE OF BARRIER, IF PRESENT. UNLESS OTHERWISE APPROVED BY THE ENGINEER, SIGNS PLACED BEHIND GUARDRAIL SHALL BE LOCATED SUCH THAT THE NEAR SIDE EDGE OF THE SIGN PANEL IS OUTSIDE OF THE GUARDRAIL DEFLECTION DISTANCE.





REFER TO TWO-POST SIGN DETAIL FOR LATERAL PLACEMENT, MOUNTING ELEVATION, AND VERTICAL CLEARANCE REQUIREMENTS.

VDOT
ROAD AND BRIDGE STANDARDS

SHEET 1 OF 10 | REVISION DATE 01/15
1323.10

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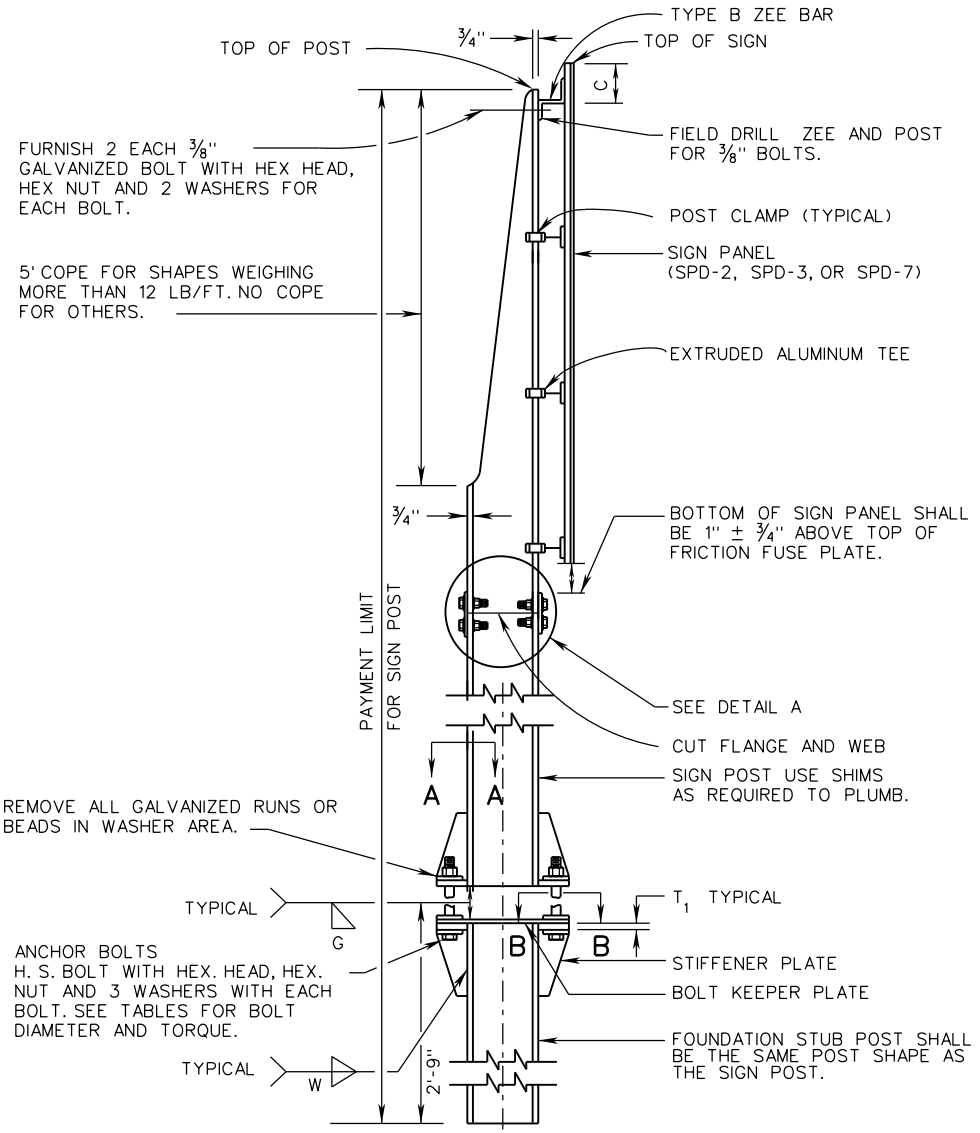
INTERSTATE SIGN STRUCTURE

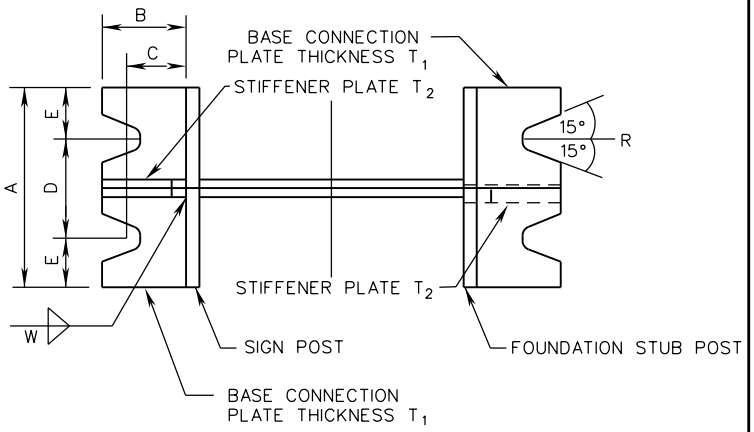
INSTALLATION DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

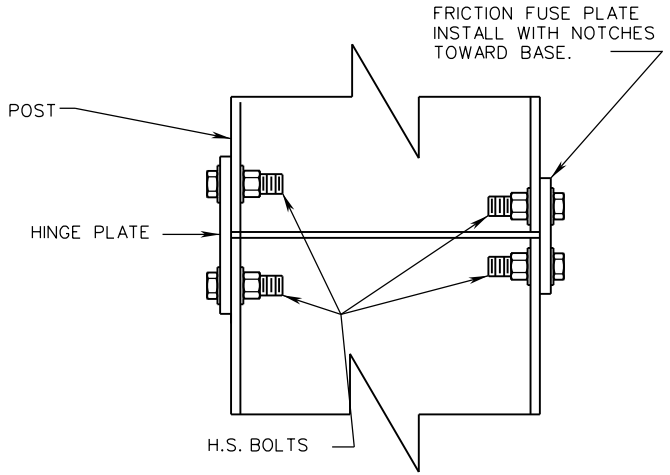
SPECIFICATION REFERENCE
700



SIGN POST AND FOUNDATION STUB POST ELEVATION



SECTION A-A SECTION B-B



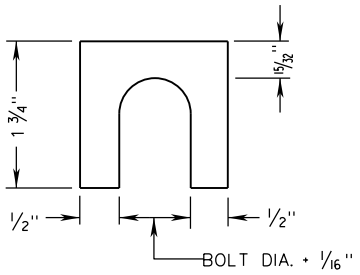
DETAIL A

DIRECTION OF TRAFFIC

NOTES:

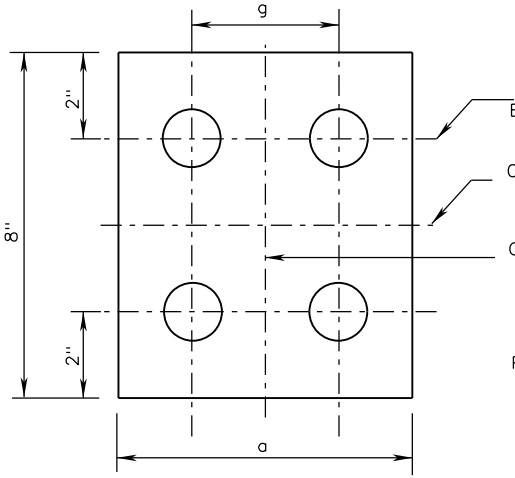
1. ALL POST LENGTHS SHALL BE FIELD CHECKED BY CONTRACTOR PRIOR TO FABRICATION.

SPECIFICATION REFERENCE	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.	VDOT ROAD AND BRIDGE STANDARDS
700	INTERSTATE SIGN STRUCTURE INSTALLATION DETAILS VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE 01/15 SHEET 2 OF 10 1323.11

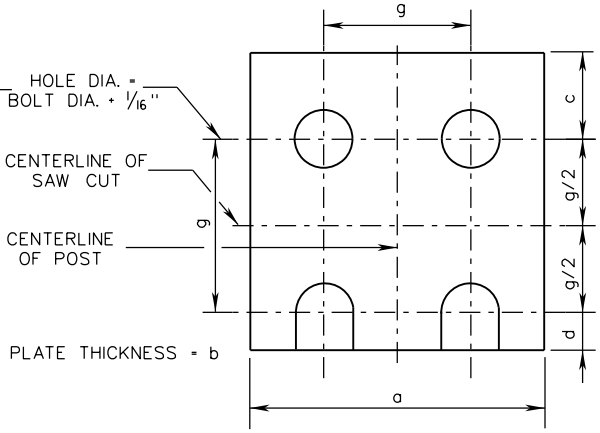


FURNISH 2 EACH .063"± AND 2 EACH .032"± THICK SHIMS PER POLE. SHIMS SHALL BE FABRICATED FROM BRASS CONFORMING TO ASTM B36 OR FROM STAINLESS STEEL WITH A MINIMUM CHROMIUM CONTENT OF 11.50% . NO MORE THAN 2 SHIMS SHALL BE USED PER BOLT WITH A MAXIMUM OF 4 SHIMS PER POST.

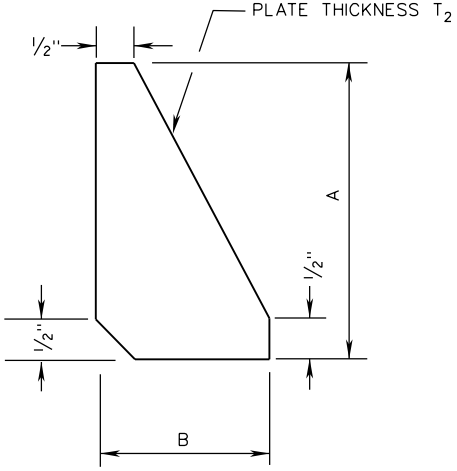
SHIM DETAIL



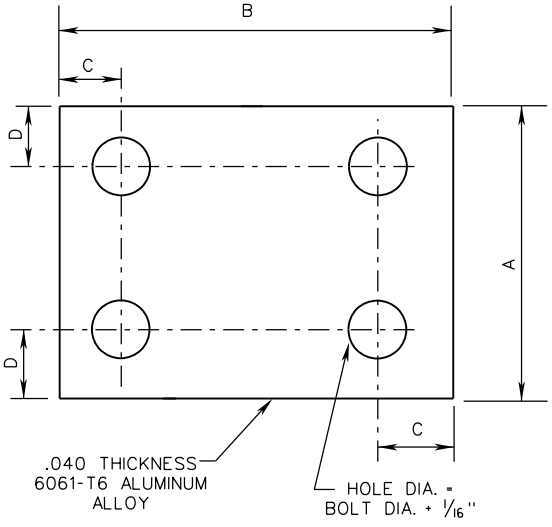
HINGE PLATE DETAIL



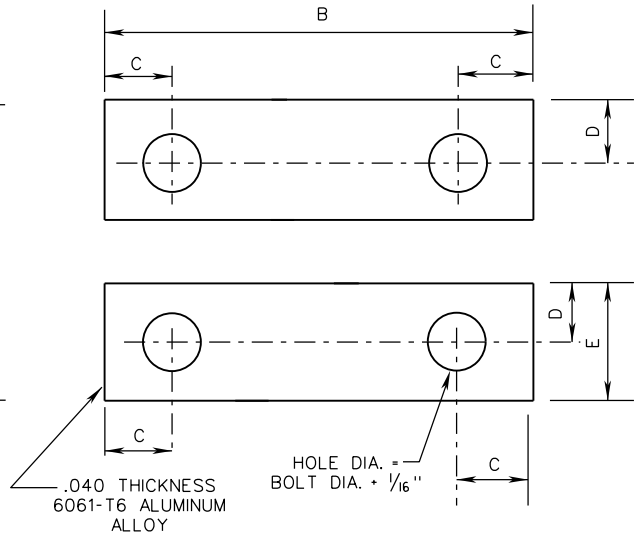
FUSE PLATE DETAIL



STIFFENER PLATE



BOLT KEEPER PLATE



ALTERNATE BOLT KEEPER PLATE

VDOT
ROAD AND BRIDGE STANDARDS

SHEET 3 OF 10 | REVISION DATE 01/15
1323.12

A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

INTERSTATE SIGN STRUCTURE

INSTALLATION DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE

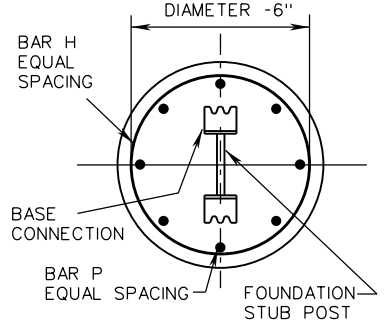
700

TYPE VI A	FOOTING DIMENSIONS		BAR P			BAR H		
	D	d	LENGTH	BAR SIZE	NO.	BAR SIZE	NO.	LENGTH
A	2'-3"	4'-6"	4'-1"	# 4	8	# 4	5	6'-7"
B								
C								
D								
E								
F	3'-0"	7'-0"	6'-7"	# 6	8	# 4	8	9'-0"
G								
H								
J								
K								
L								
M	3'-6"	9'-0"	8'-7"	# 7	8	# 4	10	10'-7"
N								
O								
P								
Q	3'-0"	7'-0"	6'-7"	# 6	8	# 4	8	9'-0"
R								
S								
T								
U								
V								
W								
X	3'-0"	8'-0"	7'-7"	# 6	8	# 4	9	9'-0"
Y	3'-6"	9'-0"	8'-7"	# 7	8	# 4	10	10'-7"
Z								
AA								
BB								
CC	3'-0"	7'-0"	6'-7"	# 6	8	# 4	8	9'-0"
DD								
EE								
FF								
GG	3'-6"	9'-0"	8'-7"	# 7	8	# 4	10	10'-7"
HH								
JJ								
KK								
LL	3'-6"	10'-0"	9'-7"	# 8	8	# 4	11	10'-7"
MM								
NN								

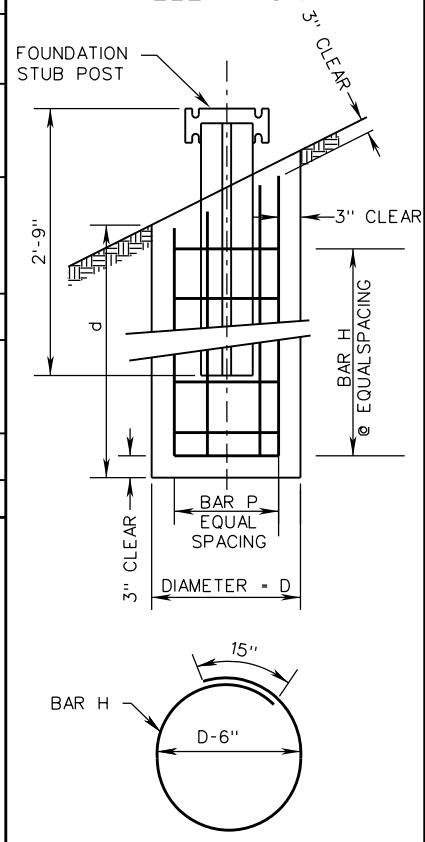
TYPE VI A	FOOTING DIMENSIONS		BAR P			BAR H		
	D	d	LENGTH	BAR SIZE	NO.	BAR SIZE	NO.	LENGTH
OO	3'-0"	7'-0"	6'-7"	# 6	8	# 4	8	9'-0"
PP								
QQ								
RR								
SS								
TT	3'-0"	8'-0"	7'-7"	# 6	8	# 4	9	9'-0"
UU	3'-6"	9'-0"	8'-7"	# 7	8	# 4	10	10'-7"
VV								
WW								
XX								
YY	3'-6"	10'-0"	9'-7"	# 8	8	# 4	11	10'-7"
ZZ	3'-0"	7'-0"	6'-7"	# 6	8	# 4	8	9'-0"
AB	3'-0"	8'-0"	7'-7"	# 6	8	# 4	9	9'-0"
AC	3'-6"	9'-0"	8'-7"	# 7	8	# 4	10	10'-7"
AD								
AE								
AF	3'-6"	10'-0"	9'-7"	# 8	8	# 4	11	10'-7"
AG								
AH	4'-0"	12'-0"	11'-7"	# 9	8	# 4	13	12'-1"
AJ								
AK								
AL	4'-0"	9'-6"	9'-1"	# 7	8	# 4	10	12'-1"
AM								
AN								
AO								
AP	4'-0"	12'-0"	11'-7"	# 9	8	# 4	13	12'-1"
AQ								
AR								
AS								
AT								
AU	4'-0"	9'-6"	9'-1"	# 7	8	# 4	10	12'-1"
AV								
AW	4'-0"	12'-0"	11'-7"	# 9	8	# 4	13	12'-1"
AX								
AY								
AZ								
BC	4'-0"	13'-6"	13'-1"	# 10	8	# 4	14	12'-1"
BD								

PLAN

PARALLEL TO FACE AT FOOTING

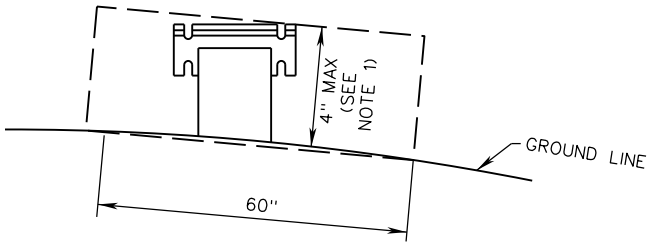


ELEVATION



NOTES:

1. 4" MAXIMUM PROJECTION WHEN MEASURED ABOVE A 60" CHORD ALIGNED RADIALLY TO THE CENTERLINE OF THE HIGHWAY AND CONNECTING ANY POINT, WITHIN THE LENGTH OF THE CHORD, ON THE GROUND SURFACE ON THE OTHER SIDE.



METHOD TO DETERMINE
MAXIMUM PROJECTION OF FOUNDATION STUB POST

SPECIFICATION REFERENCE
700

A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

INTERSTATE SIGN STRUCTURE

INSTALLATION DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT
ROAD AND BRIDGE STANDARDS

REVISION DATE	SHEET 4 OF 10
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SIGN STRUCTURE TYPE VIA	SIGN PANEL DIMENSIONS		POST SHAPE	POST LENGTH (SEE NOTE 1)			ANCHOR BOLTS	
	W	H		NO. 1	NO. 2	NO. 3	DIA.	TORQUE IN.-LBS.
A	---	---	---	---	---	---	---	---
B	12′	4′	W10X12	13′-1″	16′-5″	---	½″	200
C	11′	5′	W10X12	14′-1″	16′-7″	---	½″	200
D	---	---	---	---	---	---	---	---
E	10′	6′	W10X12	15′-0″	17′-9″	---	½″	200
F	12′	6′	W12X14	15′-5″	18′-5″	---	⅝″	600
G	14′	6′	W12X16	15′-9″	19′-1″	---	⅝″	600
H	16′	6′	W12X19	15′-8″	20′-2″	---	⅝″	600
J	18′	6′	W12X19	15′-11″	20′-11″	---	¾″	900
K	20′	6′	W12X22	16′-2″	21′-8″	---	¾″	900
L	22′	6′	W14X26	16′-4″	22′-6″	---	¾″	900
M	24′	6′	W14X26	16′-7″	23′-3″	---	⅞″	1000
N	26′	6′	W14X26	16′-9″	24′-0″	---	⅞″	1000
O	28′	6′	W16X31	17′-1″	24′-10″	---	⅞″	1000
P	30′	6′	W16X31	17′-3″	25′-7″	---	⅞″	1000
Q	---	---	---	---	---	---	---	---
R	10′	8′	W12X14	16′-8″	19′-4″	---	⅝″	600
S	12′	8′	W12X16	16′-9″	20′-1″	---	⅝″	600
T	14′	8′	W12X19	17′-0″	20′-10″	---	¾″	900
U	16′	8′	W12X22	17′-2″	21′-8″	---	¾″	900
V	18′	8′	W14X22	17′-5″	22′-5″	---	¾″	900
W	20′	8′	W14X26	17′-8″	23′-2″	---	⅞″	1000
X	22′	8′	W16X26	17′-10″	24′-0″	---	⅞″	1000
Y	24′	8′	W16X31	18′-1″	24′-9″	---	⅞″	1000
Z	26′	8′	W14X34	18′-4″	25′-6″	---	1″	1500

NOTES:

1. POST LENGTH IS FOR ESTIMATING PURPOSES ONLY. THE CONTRACTOR SHALL DETERMINE THE ACTUAL POST LENGTH AT THE FIELD LOCATION OF THE SIGN STRUCTURE BASED ON FINISHED GRADE ELEVATION.
2. TOTAL POST LENGTH QUANTITY = LENGTH OF POST ABOVE THE BOLT KEEPER PLATE + THE FOUNDATION STUB POST LENGTH (2′-9″).

A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

INTERSTATE SIGN STRUCTURE

INSTALLATION DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

SIGN STRUCTURE TYPE VIA	SIGN PANEL DIMENSIONS		POST SHAPE	POST LENGTH (SEE NOTE 1)			ANCHOR BOLTS	
	W	H		NO. 1	NO. 2	NO. 3	DIA.	TORQUE IN.-LBS.
AA	28′	8′	W18X35	18′-6″	26′-3″	---	1″	1500
BB	30′	8′	W18X40	18′-9″	27′-1″	---	1″	1500
CC	10′	10′	W12X19	18′-6″	21′-3″	---	5/8″	600
DD	12′	10′	W14X22	18′-9″	22′-1″	---	3/4″	900
EE	14′	10′	W14X22	19′-0″	22′-10″	---	3/4″	900
FF	16′	10′	W14X26	19′-2″	23′-8″	---	7/8″	1000
GG	18′	10′	W16X31	19′-5″	24′-5″	---	7/8″	1000
HH	20′	10′	W16X31	19′-8″	25′-2″	---	1″	1500
JJ	22′	10′	W18X35	19′-10″	26′-0″	---	1″	1500
KK	24′	10′	W18X40	20′-1″	26′-9″	---	1″	1500
LL	26′	10′	W21X44	20′-4″	27′-6″	---	1″	1500
MM	28′	10′	W21X44	20′-6″	28′-3″	---	1″	1500
NN	30′	10′	W21X44	21′-0″	28′-9″	---	1 1/8″	2540
OO	10′	9′	W12X16	17′-6″	20′-3″	---	5/8″	600
PP	12′	9′	W12X19	17′-9″	21′-1″	---	3/4″	900
QQ	14′	9′	W12X22	18′-0″	21′-10″	---	3/4″	900
RR	16′	9′	W14X26	18′-2″	22′-8″	---	3/4″	900
SS	18′	9′	W14X26	18′-5″	23′-5″	---	7/8″	1000
TT	20′	9′	W16X31	18′-8″	24′-2″	---	7/8″	1000
UU	22′	9′	W16X31	18′-10″	25′-0″	---	7/8″	1000
VV	24′	9′	W18X35	19′-1″	25′-9″	---	1″	1500
WW	26′	9′	W18X35	19′-4″	26′-6″	---	1″	1500
XX	28′	9′	W18X40	19′-10″	27′-0″	---	1″	1500
YY	30′	9′	W21X44	20′-4″	27′-6″	---	1″	1500
ZZ	12′	12′	W14X26	20′-9″	24′-1″	---	7/8″	1000

NOTES:

1. POST LENGTH IS FOR ESTIMATING PURPOSES ONLY. THE CONTRACTOR SHALL DETERMINE THE ACTUAL POST LENGTH AT THE FIELD LOCATION OF THE SIGN STRUCTURE BASED ON FINISHED GRADE ELEVATION.

2. TOTAL POST LENGTH QUANTITY = LENGTH OF POST ABOVE THE BOLT KEEPER PLATE + THE FOUNDATION STUB POST LENGTH (2′-9″).

SIGN STRUCTURE TYPE VIA	SIGN PANEL DIMENSIONS		POST SHAPE	POST LENGTH (SEE NOTE 1)			ANCHOR BOLTS	
	W	H		NO. 1	NO. 2	NO. 3	DIA.	TORQUE IN.-LBS.
AB	14′	12′	W16X26	21′-0″	24′-10″	---	7/8″	1000
AC	16′	12′	W16X31	21′-2″	25′-8″	---	7/8″	1000
AD	18′	12′	W14X34	21′-5″	26′-5″	---	1″	1500
AE	20′	12′	W16X40	21′-5″	26′-11″	---	1″	1500
AF	22′	12′	W18X40	21′-7″	27′-9″	---	1 1/8″	2540
AG	24′	12′	W21X44	21′-10″	28′-6″	---	1 1/8″	2540
AH	26′	12′	W18X35	19′-5″	20′-11″	22′-5″	1″	1500
AJ	28′	12′	W18X35	19′-6″	21′-2″	22′-9″	1″	1500
AK	30′	12′	W18X40	19′-6″	21′-3″	23′-0″	1″	1500
AL	14′	14′	W16X31	23′-0″	26′-10″	---	1″	1500
AM	16′	14′	W18X35	23′-2″	27′-8″	---	1″	1500
AN	18′	14′	W18X40	23′-5″	28′-5″	---	1″	1500
AO	20′	14′	W21X44	23′-8″	29′-2″	---	1 1/8″	2540
AP	22′	14′	W16X40	21′-4″	22′-8″	23′-11″	1″	1500
AQ	24′	14′	W18X35	21′-4″	22′-9″	24′-2″	1″	1500
AR	26′	14′	W18X40	21′-5″	22′-11″	24′-5″	1″	1500
AS	28′	14′	W21X44	21′-6″	23′-2″	24′-9″	1″	1500
AT	30′	14′	W21X44	21′-6″	23′-3″	25′-0″	1″	1500
AU	16′	16′	W18X40	25′-2″	29′-8″	---	1 1/8″	2540
AV	18′	16′	W21X44	25′-5	30′-5″	---	1 1/8″	2540
AW	20′	16′	W18X35	23′-1″	24′-4″	25′-7″	1″	1500
AX	22′	16′	W18X40	23′-4″	24′-8″	25′-11″	1″	1500
AY	24′	16′	W21X44	23′-6″	24′-10″	26′-2″	1″	1500
AZ	26′	16′	W21X44	23′-6″	25′-0″	26′-6″	1″	1500
BC	28′	16′	W21X44	23′-6″	25′-2″	26′-9″	1″	1500
BD	30′	16′	W21X44	23′-6″	25′-3″	27′-0″	1 1/8″	2540

NOTES:

1. POST LENGTH IS FOR ESTIMATING PURPOSES ONLY. THE CONTRACTOR SHALL DETERMINE THE ACTUAL POST LENGTH AT THE FIELD LOCATION OF THE SIGN STRUCTURE BASED ON FINISHED GRADE ELEVATION.

2. TOTAL POST LENGTH QUANTITY = LENGTH OF POST ABOVE THE BOLT KEEPER PLATE + THE FOUNDATION STUB POST LENGTH (2′-9″).

A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

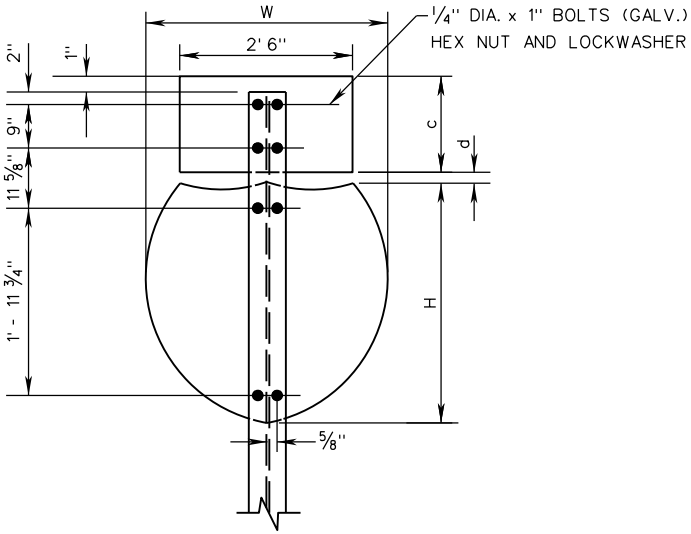
INTERSTATE SIGN STRUCTURE

INSTALLATION DETAILS

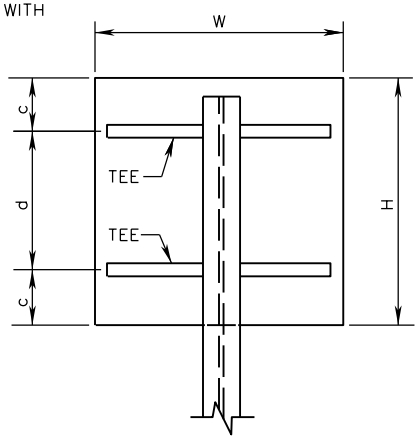
VIRGINIA DEPARTMENT OF TRANSPORTATION

SPD-4

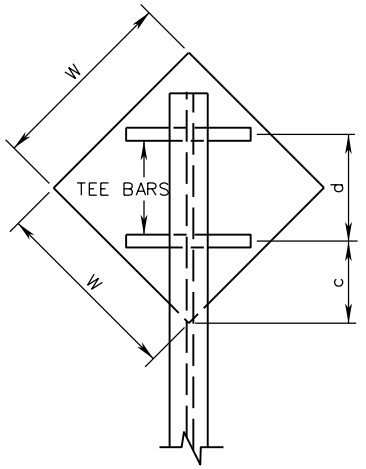
TYPE VA-A



TYPES VA-B, VA-C, VA-D, VA-E, VA-L, VA-M, VA-N AND VA-O

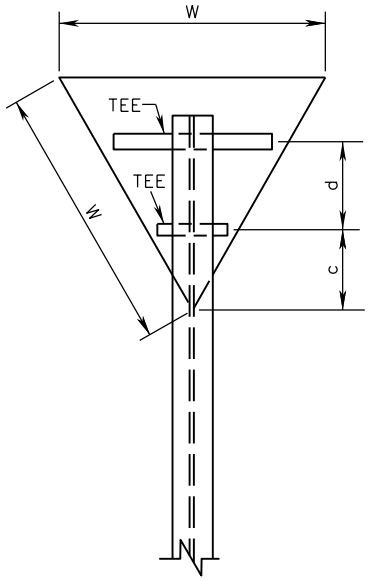


TYPE VA-F

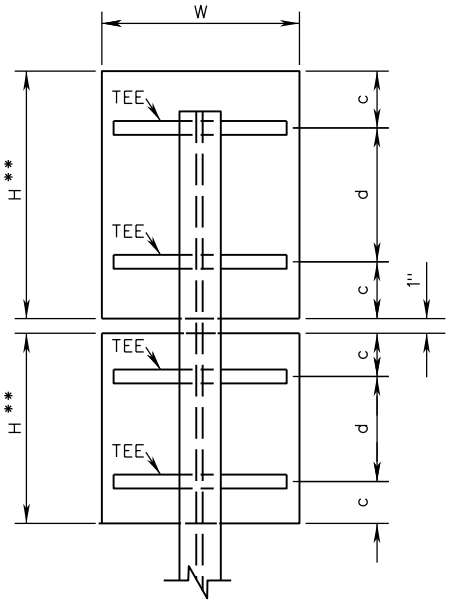


UNLESS OTHERWISE NOTED THE TOP OF THE SIGN PANEL SHALL NOT EXTEND ABOVE THE SIGN POST NO GREATER THAN THE DISTANCE OF 1/2 c.

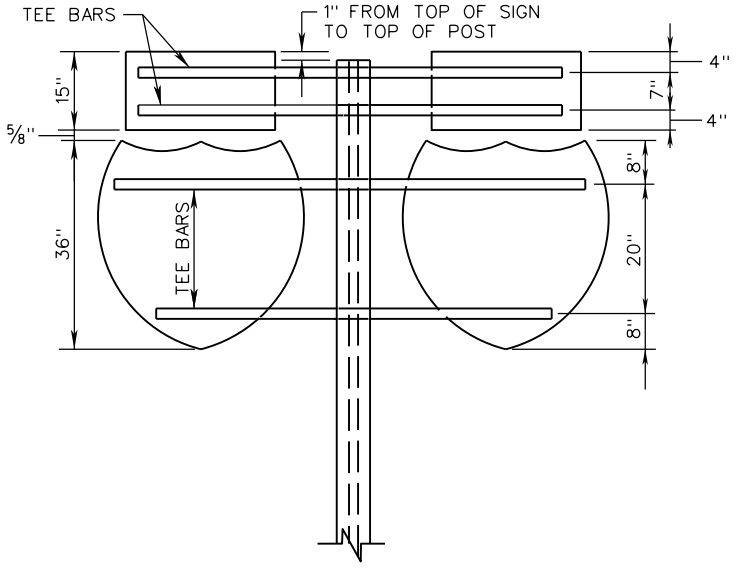
TYPE VA-G



TYPE VA-K

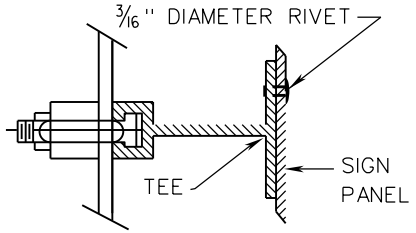


TYPE VA-A2



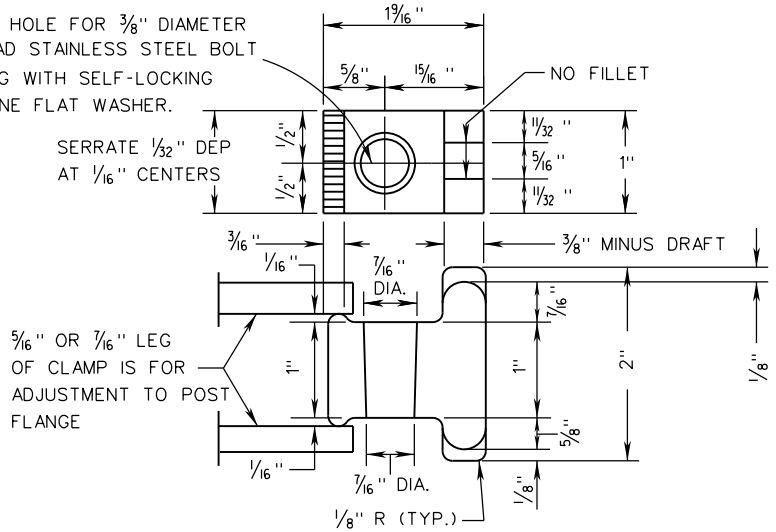
VDOT ROAD AND BRIDGE STANDARDS	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.		SPECIFICATION REFERENCE
	# SIGN PANEL DESIGN		
SHEET 1 OF 2		REVISION DATE	701
1325.40	VIRGINIA DEPARTMENT OF TRANSPORTATION	01/15	

FASTENING



RIVETS SHALL BE DOME HEAD, BREAK MANDREL, BLIND RIVETS CONFORMING TO INDUSTRIAL FASTENERS INSTITUTE STANDARD IFI-114, STYLE 1, GRADES 10 OR 11 EXCEPT THAT THE MINIMUM ULTIMATE TENSILE STRENGTH SHALL BE 360 POUNDS. RIVETS SHALL HAVE A GRIP RANGE ACCOMMODATING THE COMBINED THICKNESS OF THE SIGN PANEL AND ZEE BAR AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

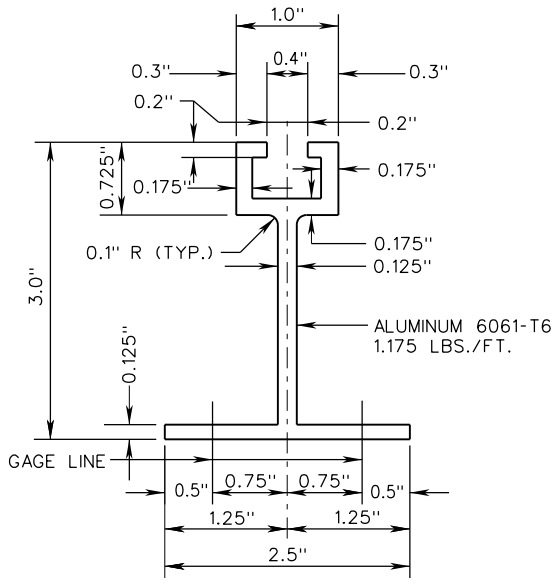
POST CLAMP DETAIL



TEE BAR SPACING CHART

STRUCTURE TYPE	SIGN PANEL DIMENSIONS				TEE 6061-T6 2.5 x 3.0 @ 1.175 LB/FT.		
	W	H	c	d	NUMBER	LENGTH	CLAMP
VA-A	3'	3'	1'-3"	5/8"	-	-	-
VA-B	4'	4'	1'-2"	1'-8"	2	3'-0"	4
VA-C	4'	5'	1'-3"	2'-6"	2	3'-0"	4
VA-D	5'	3'	0'-8"	1'-8"	2	4'-0"	4
VA-E	6'	5'	1'-3"	2'-6"	2	5'-0"	4
VA-F	4'	-	1'-8"	2'-4"	2	2'-10"	4
VA-G	5'	-	1'-8"	-	1 EACH	2'-10" & 1'-4"	4
VA-K	4'	5'	1'-3"	2'-6"	2	3'-0"	4
VA-K	4'	4'	1'-2"	1'-8"	2	3'-0"	4
VA-L	6'	6'	1'-6"	3'-0"	2	5'-0"	4
VA-M	5'	5'	1'-3"	2'-6"	2	4'-0"	4
VA-A2	6'	3'	-	-	4	5'-0"	-
VA-N	7'	7'	1'-0"	2'-6"	3	6'-0"	6
VA-O	13'	5'	1'-3"	2'-6"	2	4'-0"	4

TEE CROSS SECTION



SPECIFICATION REFERENCE
701

A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

SIGN PANEL DESIGN

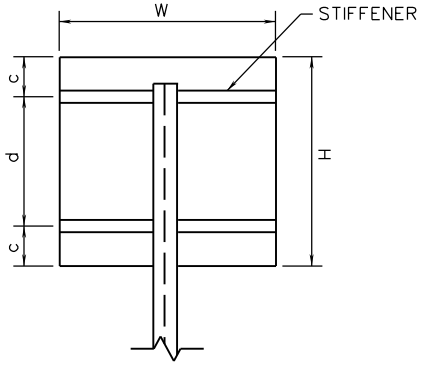
VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT
ROAD AND BRIDGE STANDARDS

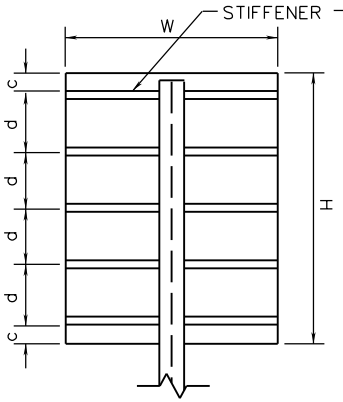
REVISION DATE	SHEET 2 OF 2
01/15	1325.41

SPD-6

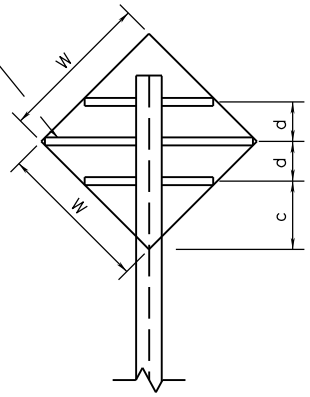
TYPES VA-B, VA-C, VA-D, VA-L AND VA-M



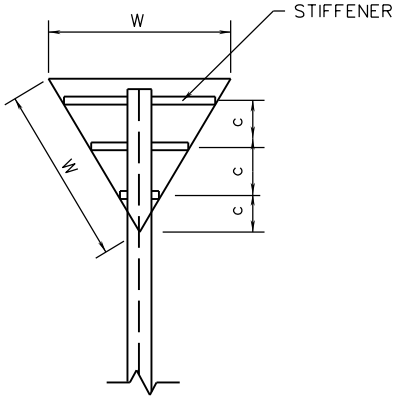
TYPES VA-E, VA-N AND VA-O

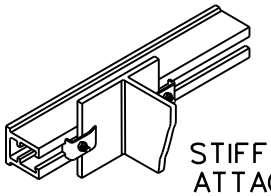


TYPES VA-F



TYPES VA-G





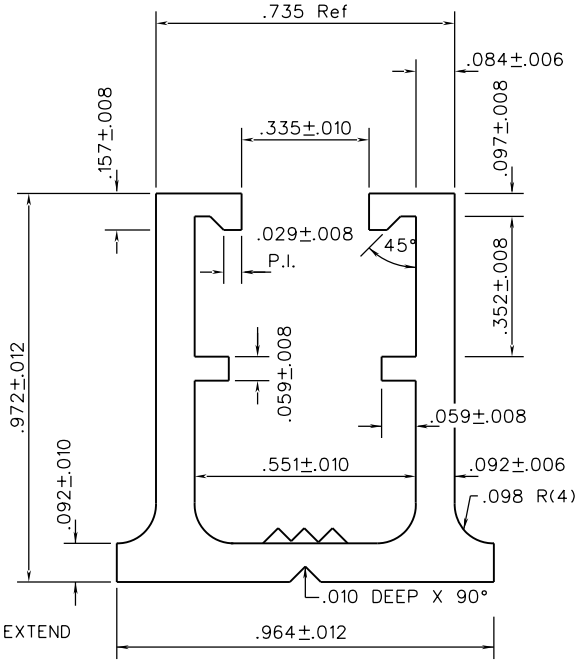
STIFFENER TO POST ATTACHMENT DETAIL

STRUCTURE TYPE	W	H	c	d	STIFFENERS NO.	STIFFENERS SIZE
VA-B	4'	4'	6½"	2'-11"	2	MEDIUM
VA-C	4'	5'	12½"	2'-11"	2	MEDIUM
VA-D	5'	3'	7"	1'-10"	2	MEDIUM
VA-E	6'	5'	0"	1'-3"	5	MEDIUM
VA-F	4'	——	8"	2'-2"	3	MEDIUM
VA-G	5'	——	1'-4"	——	3	MEDIUM
VA-K	4'	5'	12½"	2'-11"	2	MEDIUM
	4'	4'	6½"	2'-11"	2	MEDIUM
VA-L	6'	6'	6"	1'-3"	5	MEDIUM
VA-M	5'	5'	8"	1'-10"	3	MEDIUM
VA-N	7'	7'	5¼"	10½"	8	MEDIUM
VA-O	13'	5'	1½"	3"	20	MEDIUM

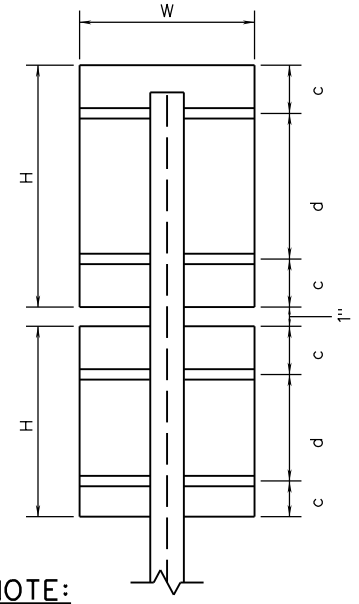
SEE STANDARD SPD-4 FOR POST CLAMP AND BOLT DETAILS.

UNLESS OTHERWISE NOTED THE TOP OF THE SIGN PANEL SHALL NOT EXTEND ABOVE THE SIGN POST NO GREATER THAN THE DISTANCE OF ½ c.

MEDIUM STIFFENER DETAIL



TYPES VA-K



NOTE:

RIVETS SHALL BE USED FOR SECURING THE STIFFENERS TO THE SIGN UNLESS OTHERWISE SPECIFIED OR APPROVED, AND SHALL BE 3/16" MINIMUM DIAMETER BY ½" LONG ALUMINUM AND CAPABLE OF WITHSTANDING A MINIMUM SHEAR FORCE OF 460LBS. RIVET SPACING FOR ATTACHING THE STIFFENERS TO THE SIGN PANEL SHALL BE 6" MAXIMUM BEGINNING 1½" FROM THE ENDS OF THE SIGN PANEL.

VDOT
ROAD AND BRIDGE STANDARDS

SHEET 1 OF 1

1325.60

REVISION DATE
01/15

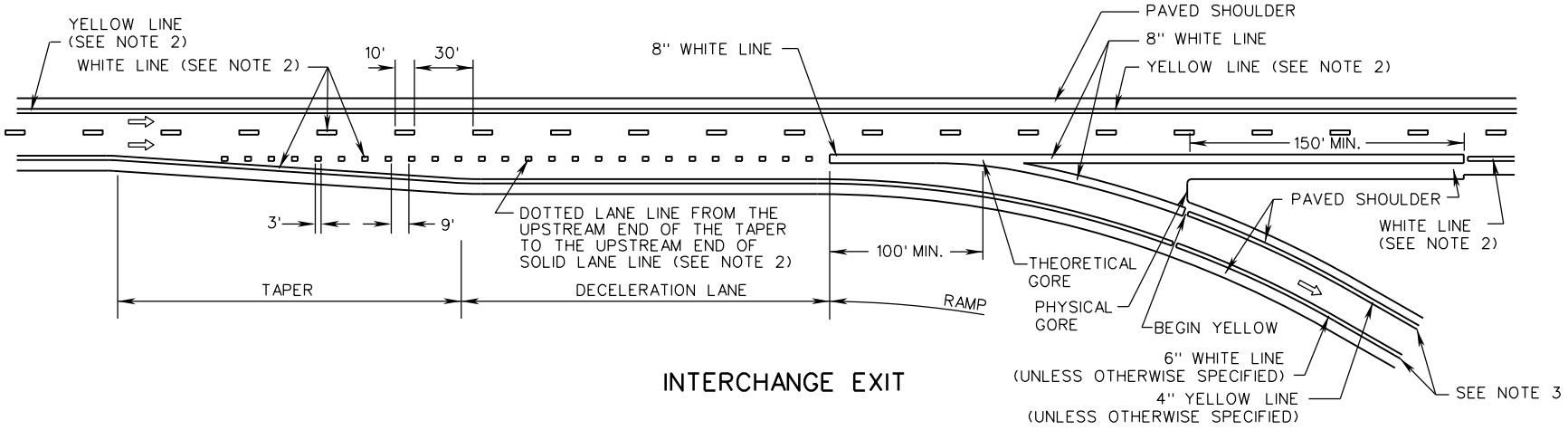
A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

SIGN PANEL DESIGN

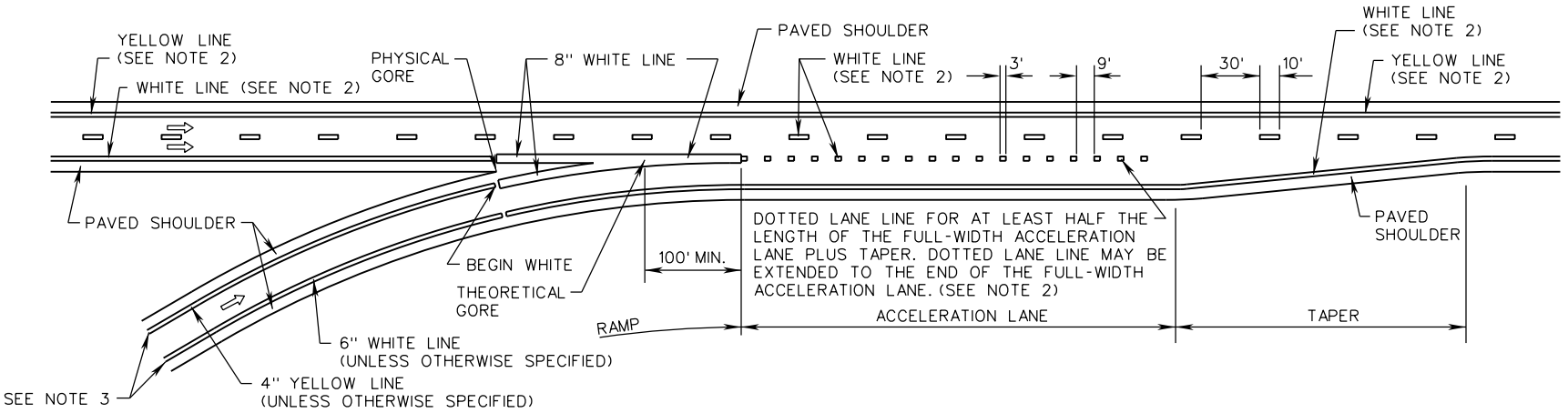
VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE

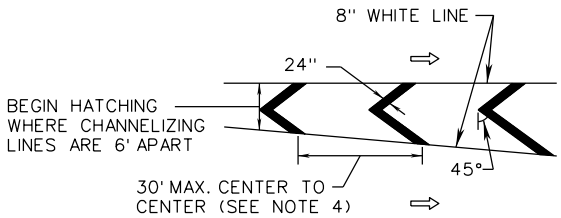
701



INTERCHANGE EXIT



INTERCHANGE ENTRANCE



GORE AREA HATCHING (OPTIONAL)

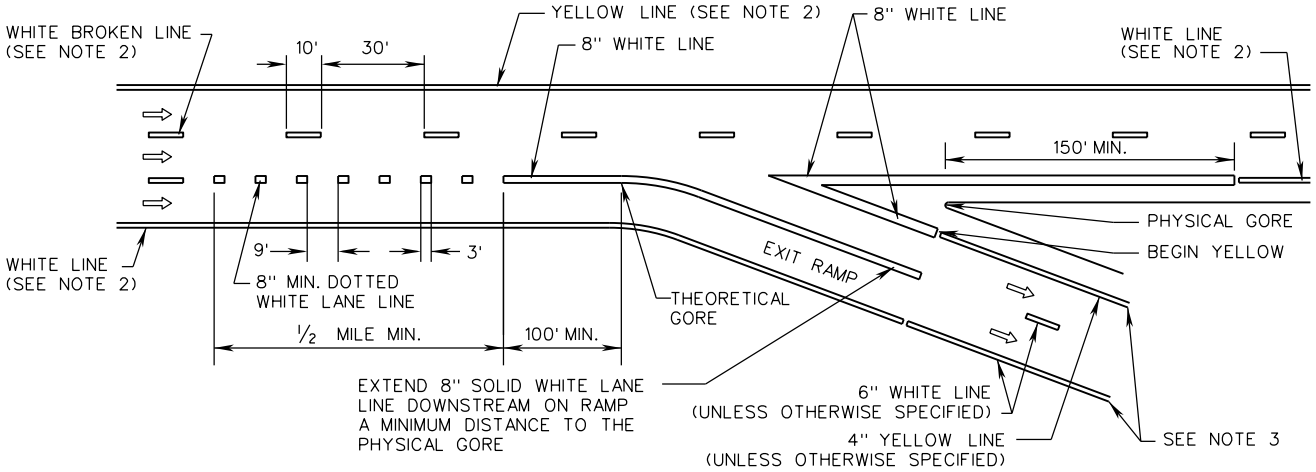
⇨ INDICATES DIRECTION OF TRAVEL

NOTES:

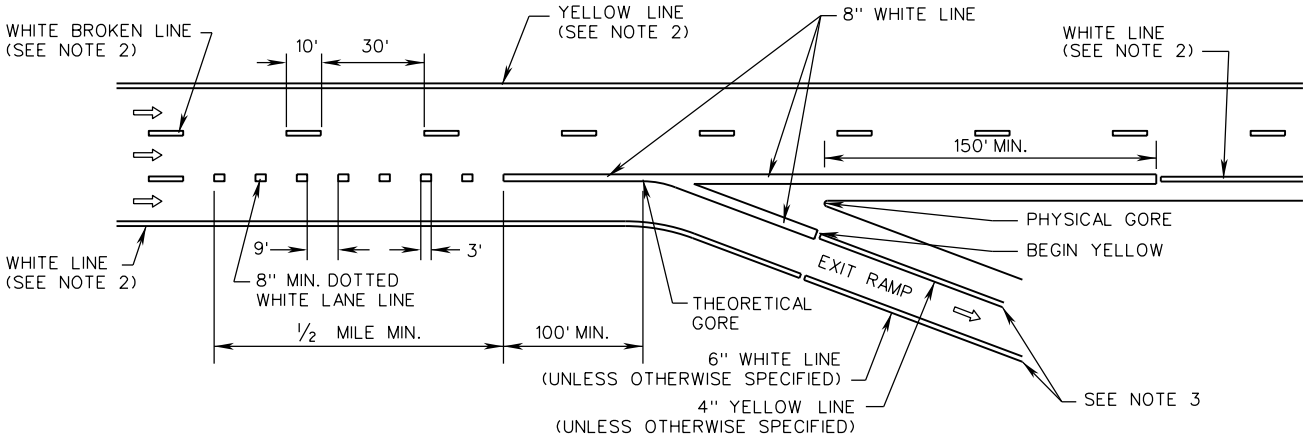
1. ALL PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH THESE STANDARDS, THE MUTCD, AND THE VIRGINIA SUPPLEMENT TO THE MUTCD, UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.
2. THE PAVEMENT MARKING FOR THE LANE LINE AND EDGE LINE MARKINGS OF INTERSTATE HIGHWAYS AND FREEWAYS SHALL BE 6" WIDE; ALL OTHER HIGHWAYS THE PAVEMENT MARKING SHALL BE 4" WIDE UNLESS OTHERWISE NOTED IN THE CONTRACT DOCUMENTS.
3. CONTINUE EDGELINE WIDTH TO THE TERMINATION POINT SPECIFIED IN THE CONTRACT DOCUMENTS.
4. IF GORE AREA HATCHING IS PROVIDED, THERE SHALL BE A MINIMUM OF THREE CHEVRONS. SPACING MAY BE REDUCED IN ORDER TO FIT THIS MINIMUM.

SPECIFICATION REFERENCE	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.	VDOT ROAD AND BRIDGE STANDARDS
704	# TYPICAL PAVEMENT MARKING INTERCHANGE VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE 01/15
		SHEET 1 OF 1
		1330.10

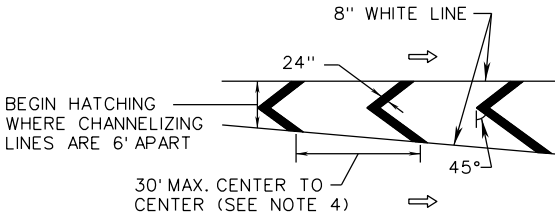
PM-2



LANE DROP EXIT RAMP
BESIDE OPTIONAL EXIT LANE



LANE DROP EXIT RAMP



GORE AREA HATCHING (OPTIONAL)

⇨ INDICATES DIRECTION OF TRAVEL

NOTES:

1. ALL PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH THESE STANDARDS, THE MUTCD AND THE VIRGINIA SUPPLEMENT TO THE MUTCD, UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.
2. THE PAVEMENT MARKING FOR THE LANE LINE AND EDGE LINE MARKINGS OF INTERSTATE HIGHWAYS AND FREEWAYS SHALL BE 6" WIDE; ALL OTHER HIGHWAYS THE PAVEMENT MARKING SHALL BE 4" WIDE UNLESS OTHERWISE NOTED IN THE CONTRACT DOCUMENTS.
3. CONTINUE EDGELINE WIDTH TO THE TERMINATION POINT SPECIFIED IN THE CONTRACT DOCUMENTS.
4. IF GORE AREA HATCHING IS PROVIDED, THERE SHALL BE A MINIMUM OF THREE CHEVRONS. SPACING MAY BE REDUCED IN ORDER TO FIT THIS MINIMUM.

VDOT
ROAD AND BRIDGE STANDARDS

SHEET 1 OF 1 | REVISION DATE 01/15

1330.20

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TYPICAL PAVEMENT MARKING
INTERCHANGE LANE DROPS

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE

704

PATTERNS OF LONGITUDINAL LINES

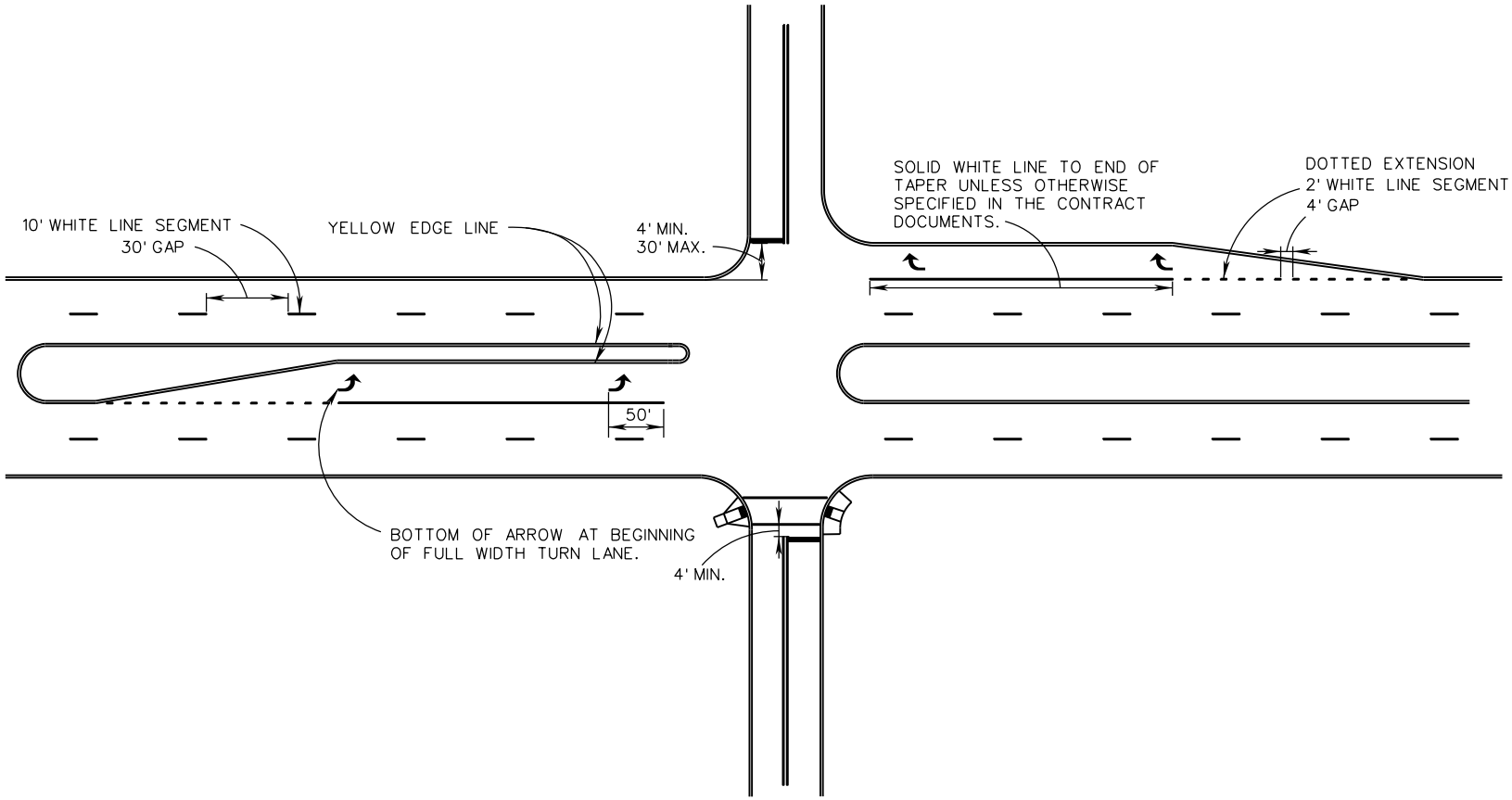
THRU LANES: USE BROKEN LINE (10' LINE SEGMENTS / 30' GAPS).

TAPERS MORE THAN 100': USE DOTTED EXTENSION (2' LINE SEGMENTS / 4' GAPS).

TAPERS 100' OR LESS: DO NOT USE DOTTED EXTENSION UNLESS SPECIFIED IN THE CONTRACT DOCUMENTS.

NOTES:

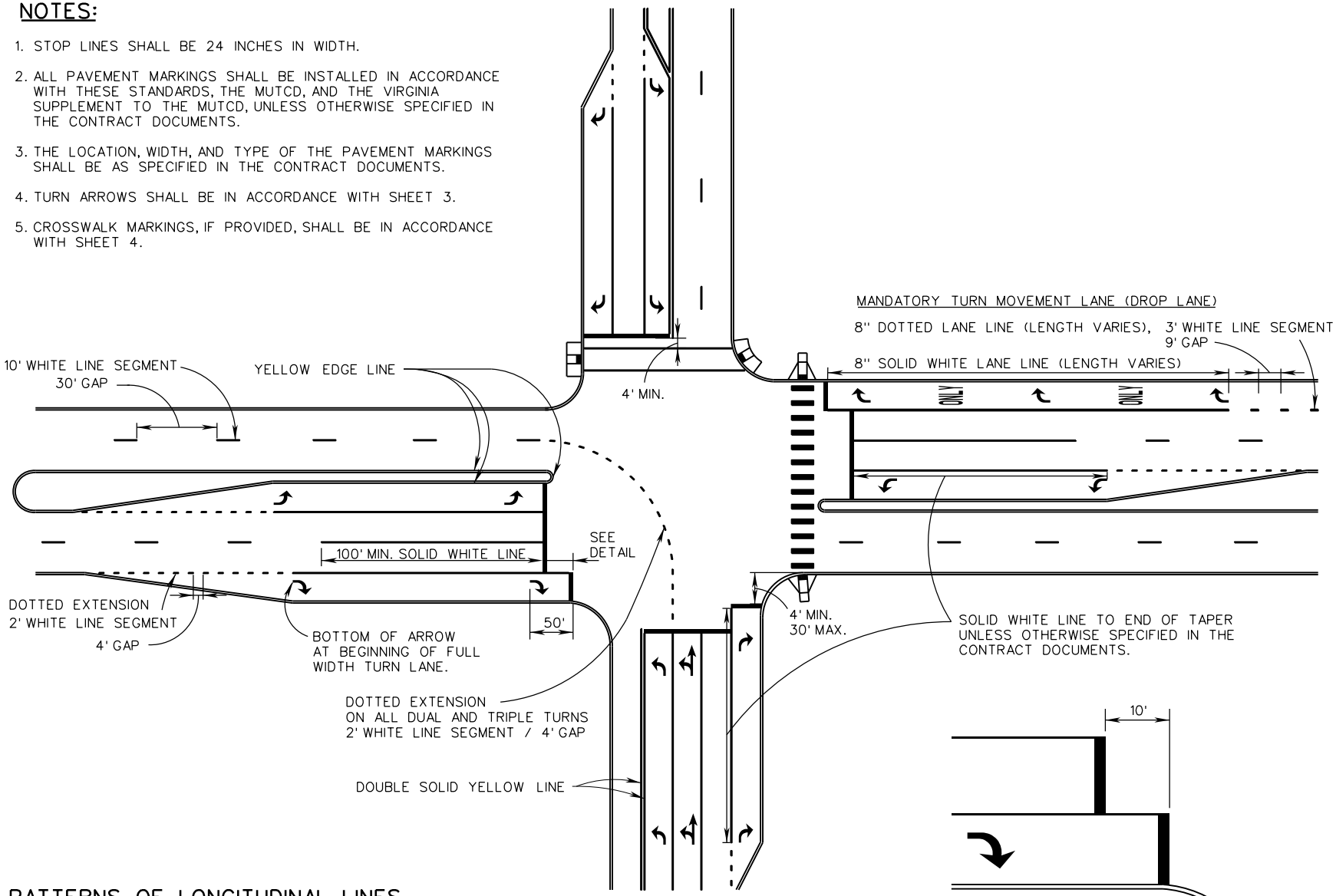
1. STOP LINES SHALL BE 24 INCHES IN WIDTH.
2. ALL PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH THESE STANDARDS, THE MUTCD, AND THE VIRGINIA SUPPLEMENT TO THE MUTCD, UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.
3. THE LOCATION, WIDTH, AND TYPE OF THE PAVEMENT MARKINGS SHALL BE AS SPECIFIED IN THE CONTRACT DOCUMENTS.
4. TURN ARROWS SHALL BE IN ACCORDANCE WITH SHEET 3.
5. CROSSWALK MARKINGS, IF PROVIDED, SHALL BE IN ACCORDANCE WITH SHEET 4.



SPECIFICATION REFERENCE	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.	VDOT ROAD AND BRIDGE STANDARDS
704	TYPICAL PAVEMENT MARKING UNSIGNALIZED INTERSECTIONS VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE 01/15 SHEET 1 OF 4 1330.30

NOTES:

1. STOP LINES SHALL BE 24 INCHES IN WIDTH.
2. ALL PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH THESE STANDARDS, THE MUTCD, AND THE VIRGINIA SUPPLEMENT TO THE MUTCD, UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.
3. THE LOCATION, WIDTH, AND TYPE OF THE PAVEMENT MARKINGS SHALL BE AS SPECIFIED IN THE CONTRACT DOCUMENTS.
4. TURN ARROWS SHALL BE IN ACCORDANCE WITH SHEET 3.
5. CROSSWALK MARKINGS, IF PROVIDED, SHALL BE IN ACCORDANCE WITH SHEET 4.



DETAIL FOR OPTIONAL STAGGERED STOP LINES (ON A LANE-BY-LANE BASIS)

PATTERNS OF LONGITUDINAL LINES

THRU LANES: USE BROKEN LINE (10' LINE SEGMENTS / 30' GAPS).

TAPERS MORE THAN 100': USE DOTTED EXTENSION (2' LINE SEGMENTS / 4' GAPS).

TAPERS 100' OR LESS: DO NOT USE DOTTED EXTENSION UNLESS SPECIFIED IN THE CONTRACT DOCUMENTS.

VDOT
ROAD AND BRIDGE STANDARDS

SHEET 2 OF 4 | REVISION DATE
1330.31 | NEW 01/15

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TYPICAL PAVEMENT MARKING

SIGNALIZED INTERSECTIONS

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE
704

TURN ARROWS

TURN ARROWS REQUIRED IN ACCORDANCE WITH THE FOLLOWING, UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.

TURN LANE LENGTH	NUMBER AND POSITION OF ARROWS
LESS THAN 100' (EXCLUSIVE OF TAPER): 1 ARROW	1 ARROW LOCATED AT THE BEGINNING OF THE SOLID LANE LINE.
100' TO 300' (EXCLUSIVE OF TAPER): 2 ARROWS	1 ARROW LOCATED AT BEGINNING OF FULL WIDTH TURN LANE. 1 ARROW LOCATED 50' BACK FROM STOP LINE OR END OF LANE LINE.
GREATER THAN 300' (EXCLUSIVE OF TAPER): 3 ARROWS	1 ARROW LOCATED AT BEGINNING OF FULL WIDTH TURN LANE. 1 ARROW LOCATED 50' BACK FROM STOP LINE OR END LANE LINE. 1 ARROW LOCATED AT MIDPOINT BETWEEN THE OTHER TWO ARROWS.

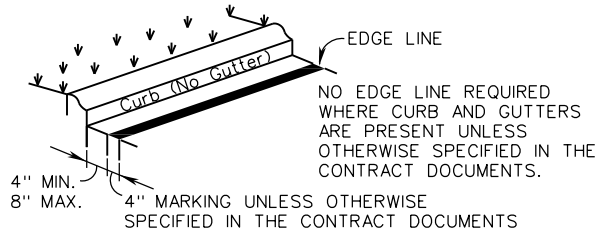
NOTES:

1. ALL PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH THESE STANDARDS, THE MUTCD, AND THE VIRGINIA SUPPLEMENT TO THE MUTCD, UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.
2. THE LOCATION, WIDTH, AND TYPE OF THE PAVEMENT MARKINGS SHALL BE AS SPECIFIED IN THE CONTRACT DOCUMENTS.
3. WHEN "ONLY" WORD MARKINGS ARE USED, THESE MARKINGS SHALL BE SPACED MIDWAY BETWEEN THE TURN ARROWS.
4. CROSSWALK MARKINGS, IF PROVIDED, SHALL BE IN ACCORDANCE WITH SHEET 4.

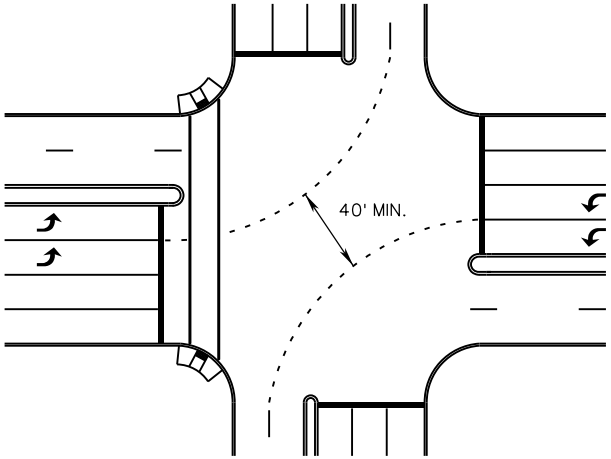
MANDATORY TURN MOVEMENT LANES (DROP LANE)

MARKINGS REQUIRED IN ACCORDANCE WITH THE FOLLOWING, UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.

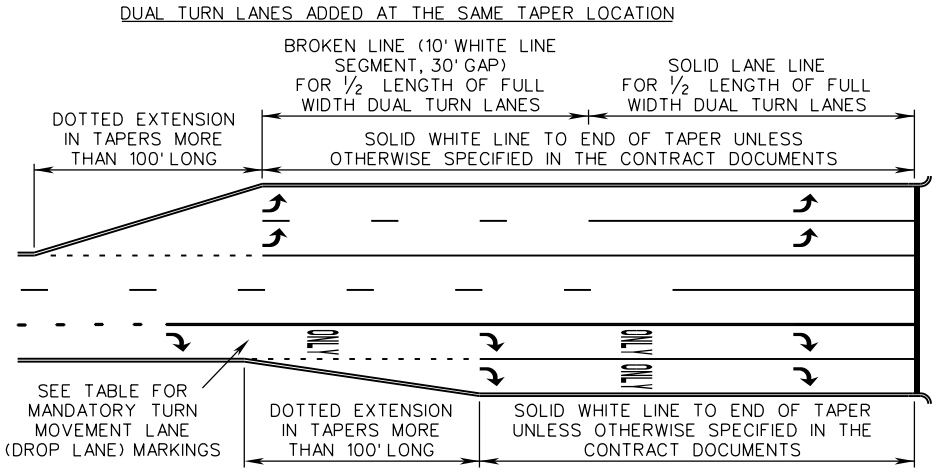
TURN ARROWS	1 ARROW LOCATED AT BEGINNING WIDE WHITE SOLID LANE LINE. 1 ARROW LOCATED 50' BACK FROM STOP LINE. 1 ARROW LOCATED AT MIDPOINT OF 8" WHITE SOLID LANE LINE.
ONLY WORD MARKINGS	SPACED MIDWAY BETWEEN ARROWS.



DETAIL FOR LOCATION OF EDGE LINES ON CURB SECTIONS OF ROADWAY (NO GUTTER)

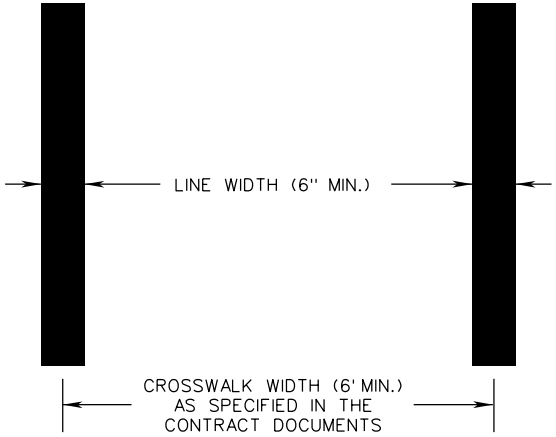


DETAIL FOR DOTTED EXTENSION THROUGH INTERSECTION AT DUAL TURN LANES



DETAIL FOR LANE LINE MARKINGS AT DUAL TURN LANES

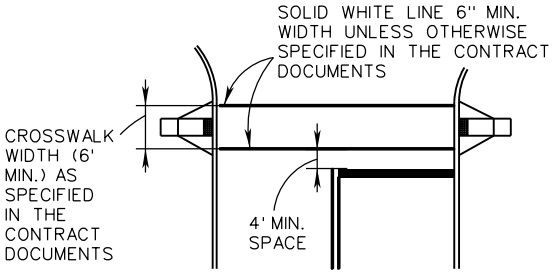
SPECIFICATION REFERENCE	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.	VDOT ROAD AND BRIDGE STANDARDS
704	TYPICAL PAVEMENT MARKING INTERSECTION DETAILS VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE NEW 01/15 SHEET 3 OF 4 1330.32



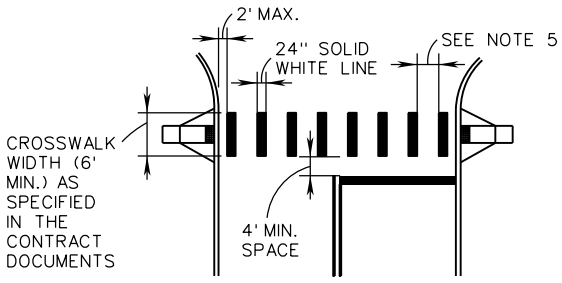
CROSSWALK WIDTH
(TRANSVERSE LINES)

NOTES:

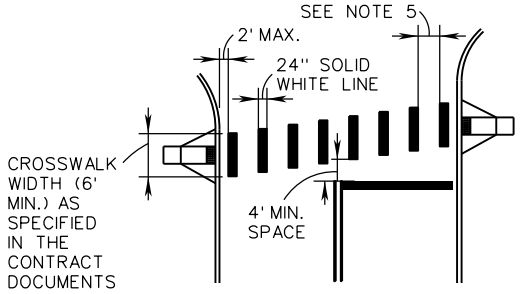
1. ALL PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH THESE STANDARDS, THE MUTCD AND THE VIRGINIA SUPPLEMENT TO THE MUTCD, UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.
2. THE LOCATION, WIDTH, AND TYPE OF THE PAVEMENT MARKINGS SHALL BE AS SPECIFIED IN THE CONTRACT DOCUMENTS.
3. CROSSWALKS SHALL ALIGN WITH CURB RAMPS IN ACCORDANCE WITH STANDARD CG-12. THE CROSSWALK SHALL BE AT LEAST AS WIDE AS THE LEVEL LANDING AREA OF THE CURB RAMP.
4. WHEN LONGITUDINAL LINES ARE SPECIFIED FOR THE CROSSWALK, THE LONGITUDINAL LINES SHALL BE PARALLEL TO THE PATH OF THRU TRAFFIC.
5. GAPS BETWEEN LONGITUDINAL LINES SHALL BE BETWEEN 2 - 5 FEET. GAP SPACING MAY VARY IN ORDER TO ALIGN LINES SUCH THAT THEY ARE OUTSIDE THE WHEEL PATHS OF THRU TRAFFIC. THE FIRST AND LAST LINES SHALL BE 2' MAXIMUM FROM EDGE OF SHOULDER OR EDGE OF GUTTER PAN.



TRANSVERSE LINES



LONGITUDINAL LINES



LONGITUDINAL LINES
AT SKEWED INTERSECTIONS
(SEE NOTE 4)

VDOT
ROAD AND BRIDGE STANDARDS

SHEET 4 OF 4 | REVISION DATE
1330.33 | NEW 01/15

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TYPICAL PAVEMENT MARKING

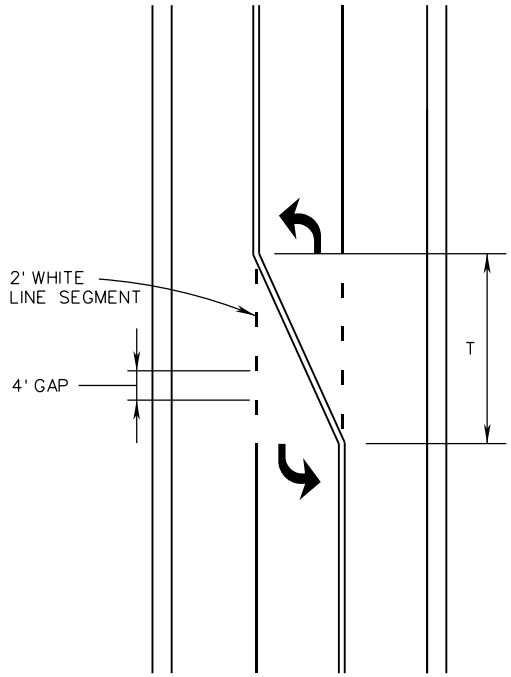
CROSSWALK MARKINGS

VIRGINIA DEPARTMENT OF TRANSPORTATION

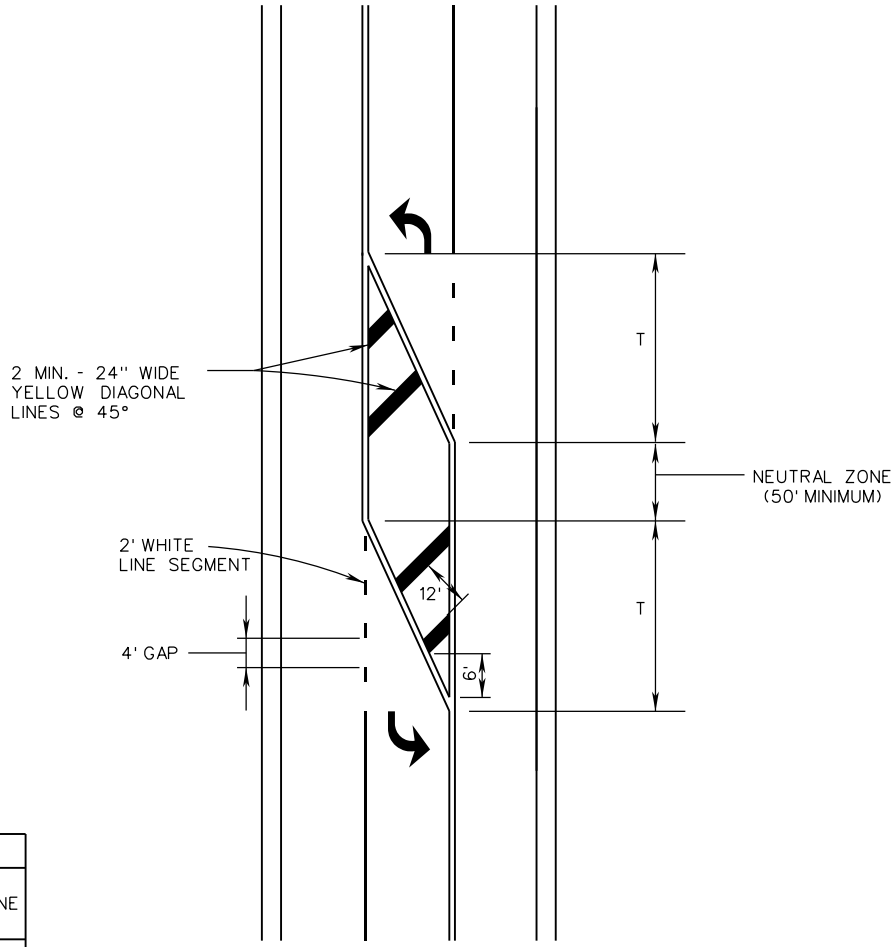
SPECIFICATION REFERENCE
704

NOTES:

1. ALL PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH THESE STANDARDS, THE MUTCD, AND THE VIRGINIA SUPPLEMENT TO THE MUTCD, UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.
2. TAPER LENGTH SHALL BE PER THESE STANDARDS UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.
3. TAPERS MORE THAN 100': USE DOTTED EXTENSION (2' LINE SEGMENTS / 4' GAPS).
   TAPERS 100' OR LESS: DO NOT USE DOTTED EXTENSION UNLESS SPECIFIED IN THE CONTRACT DOCUMENTS.
4. TURN ARROWS SHALL BE IN ACCORDANCE WITH PM-3.
5. THE PAVEMENT MARKINGS SHALL BE 4" WIDE UNLESS OTHERWISE NOTED IN THE CONTRACT DOCUMENTS.



WITHOUT NEUTRAL ZONE

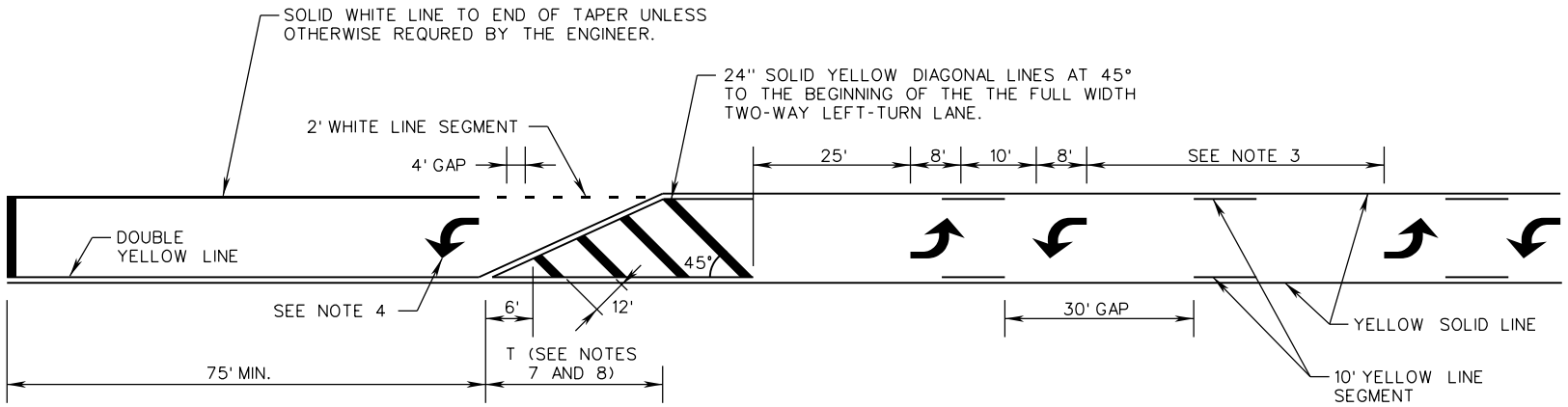


WITH NEUTRAL ZONE

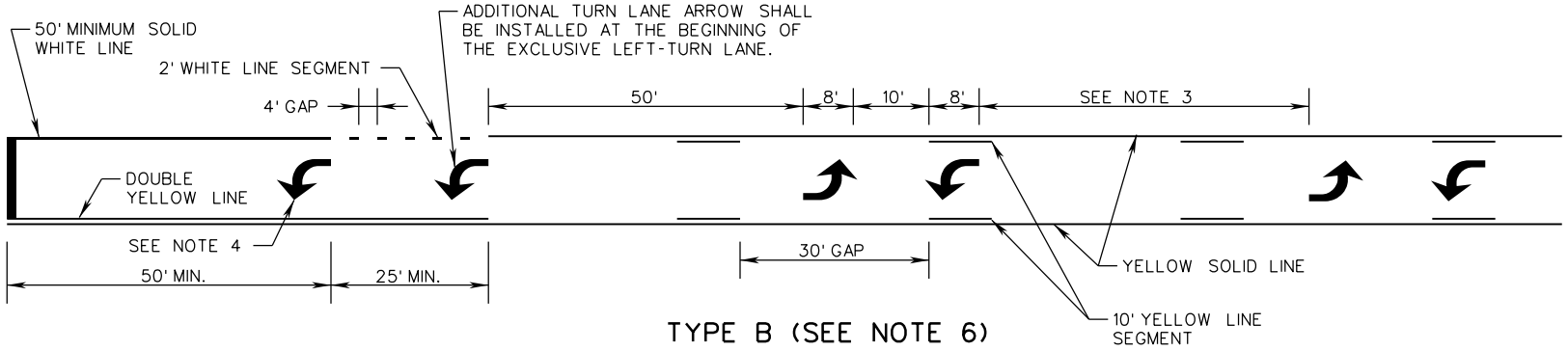
TAPER LENGTH (T) TABLE

		T		
SPEED	TAPER RATIO	10 FT TURN LANE WIDTH	11 FT TURN LANE WIDTH	12 FT TURN LANE WIDTH
≤ 30 MPH	8:1	80'	90'	100'
> 30 MPH	15:1	150'	175'	200'

SPECIFICATION REFERENCE	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.	VDOT ROAD AND BRIDGE STANDARDS
704	# TYPICAL PAVEMENT MARKING ## LEFT TURN PAVEMENT MARKED MEDIAN VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE 01/15 SHEET 1 OF 2 1330.50



TYPE A (PREFERRED)



TYPE B (SEE NOTE 6)

NOTES:

1. ALL PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH THESE STANDARDS, THE MUTCD, AND THE VIRGINIA SUPPLEMENT TO THE MUTCD, UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.
2. THE PAVEMENT MARKINGS SHALL BE 4" WIDE UNLESS OTHERWISE NOTED IN THE CONTRACT DOCUMENTS.
3. TYPICAL SPACING BETWEEN OPPOSING TURN ARROWS SHALL BE 300 FEET. SPACING CAN BE INCREASED OR DECREASED AS DETERMINED BY THE ENGINEER.
4. TURN ARROWS SHALL BE IN ACCORDANCE WITH PM-3.
5. STOP LINES SHALL BE 24 INCHES IN WIDTH. STOP LINES SHALL ONLY BE USED AT SIGNALIZED INTERSECTIONS OR ON STOP-CONTROLLED APPROACHES.
6. THE DETAIL FOR TYPE B MAY BE USED IN AREAS WHERE THE AVAILABLE STORAGE LENGTH IS LIMITED.
7. REFER TO THE TAPER LENGTH TABLE ON SHEET 1 FOR "T". TAPER LENGTH SHALL BE AS SPECIFIED IN THE CONTRACT DOCUMENTS.
8. TAPERS MORE THAN 100': USE DOTTED EXTENSION (2' LINE SEGMENTS / 4' GAPS). TAPERS 100' OR LESS: DO NOT USE DOTTED EXTENSION UNLESS SPECIFIED IN THE CONTRACT DOCUMENTS.

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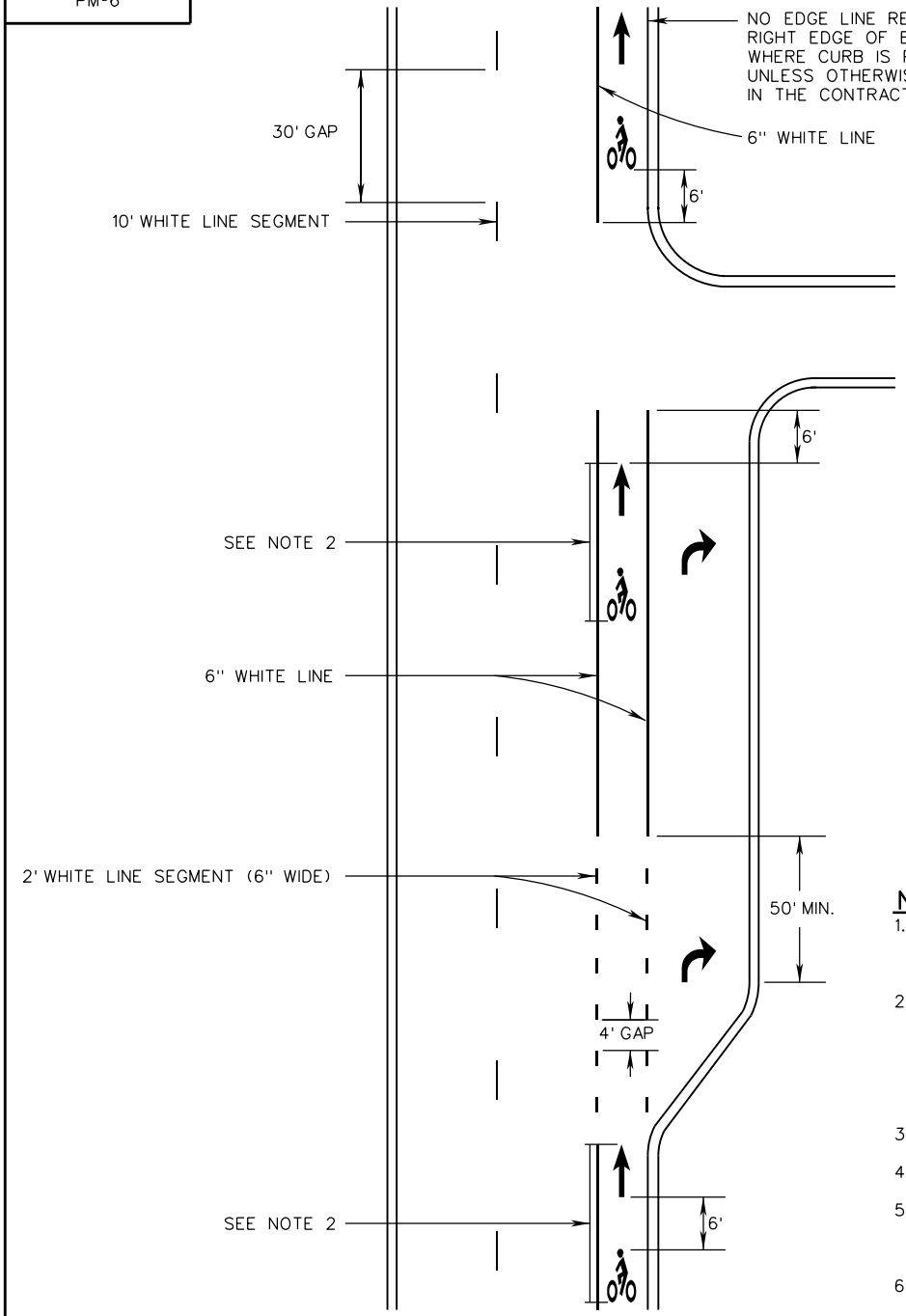
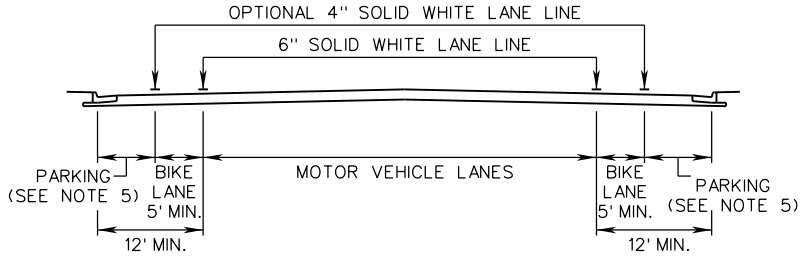
TYPICAL PAVEMENT MARKING

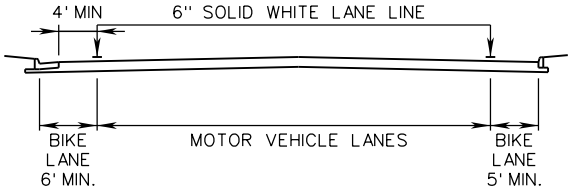
TWO-WAY LEFT-TURN LANE

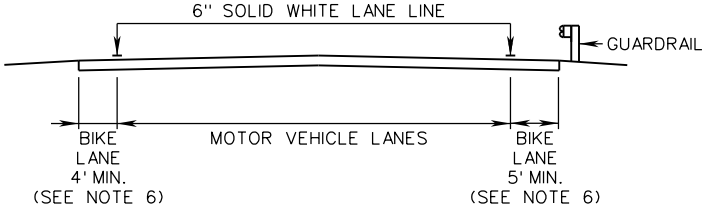
VIRGINIA DEPARTMENT OF TRANSPORTATION

PM-6









TYPICAL BIKE LANE CROSS SECTIONS

NOTES:

1. ALL PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH THESE STANDARDS, THE MUTCD, AND THE VIRGINIA SUPPLEMENT TO THE MUTCD, UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.
2. PAVEMENT MARKINGS CONSISTING OF BICYCLIST THRU ARROW AND HELMETED BICYCLIST SYMBOL SHALL BE PLACED JUST PRIOR TO THE BEGINNING OF THE RIGHT TURN LANE TAPER AS SHOWN. THEY SHALL ALSO BE PLACED 6' FROM THE END OF THE SOLID WHITE LINE AT RIGHT TURN LANES IF THE SOLID WHITE LINE SEPARATING THE BICYCLE LANE FROM THE RIGHT TURN LANE IS GREATER THAN 100' IN LENGTH.
3. BICYCLE LANE SYMBOLS SHALL BE PLACED A MAXIMUM OF 500' APART.
4. SEE PM-10 FOR HELMETED BICYCLIST SYMBOL AND ARROW DETAILS.
5. PARKING LANE WIDTH SHALL BE 7' FOR RESIDENTIAL STREETS AND 8' FOR COMMERCIAL AND MIXED-USE STREETS. REFER TO THE VDOT ROAD DESIGN MANUAL FOR ADDITIONAL REQUIREMENTS.
6. DELINEATING BICYCLE LANES WITHIN THE LIMITS OF A REQUIRED PAVED SHOULDER AREA IS NOT PERMITTED.

VDOT
ROAD AND BRIDGE STANDARDS

SHEET 1 OF 2 | REVISION DATE 01/15
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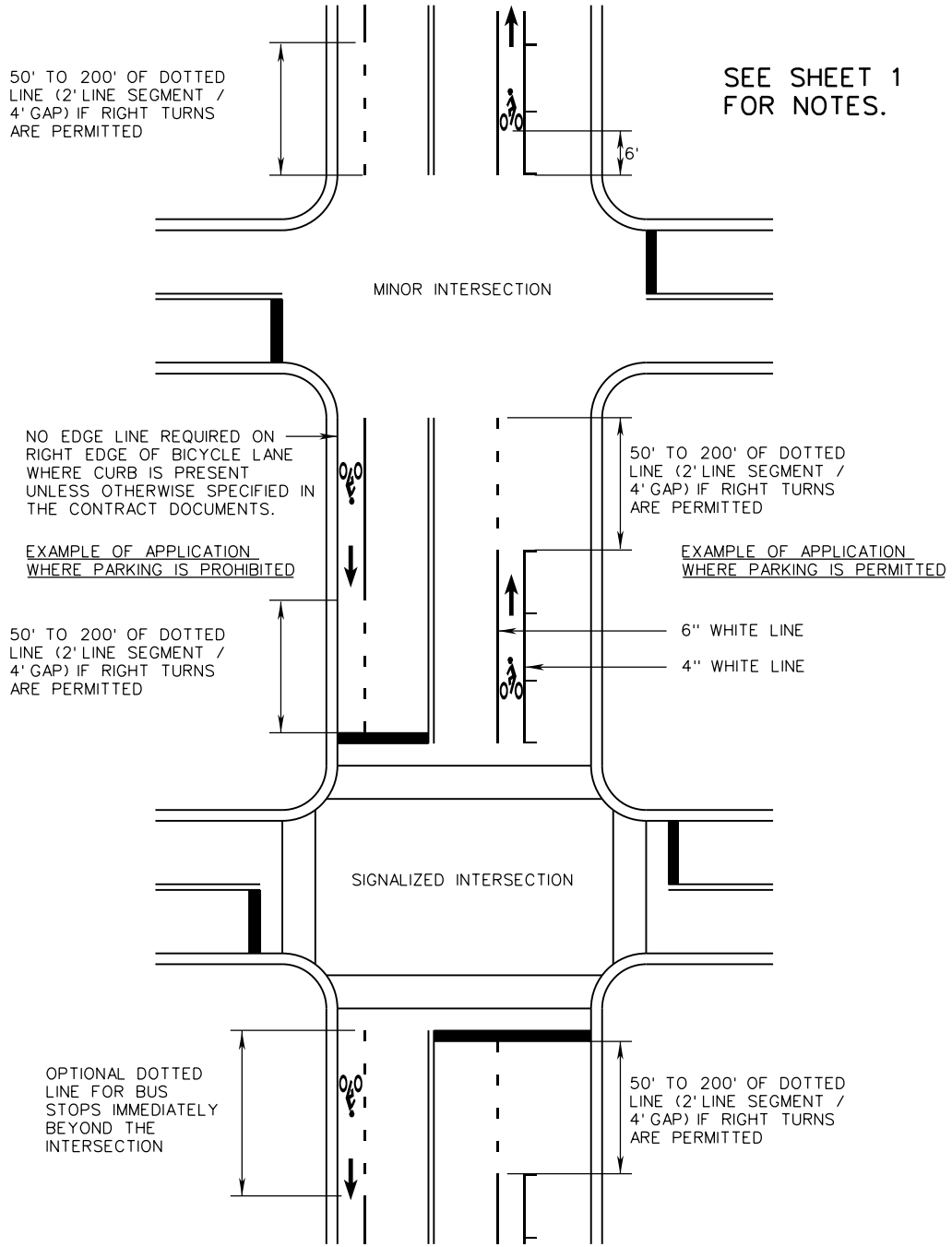
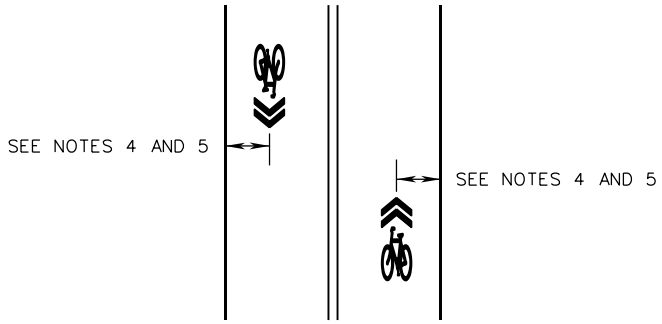
TYPICAL PAVEMENT MARKING

BICYCLE LANE

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE
704



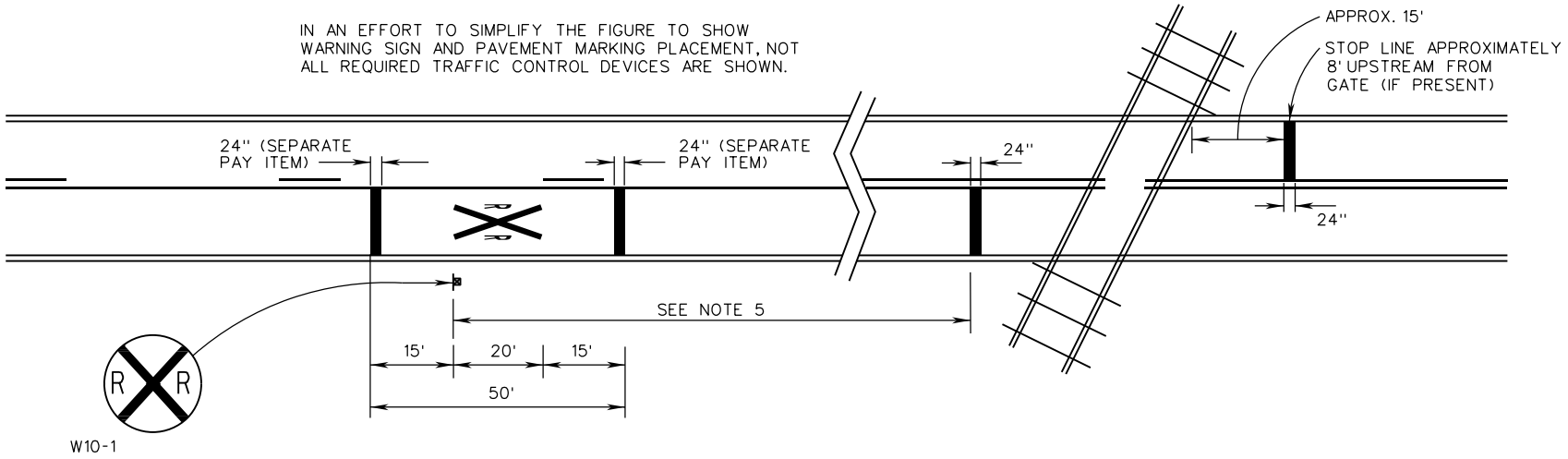


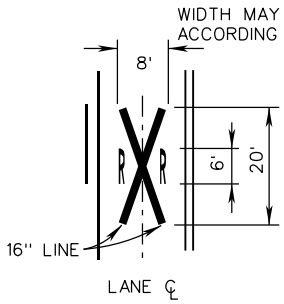
MARKED SHARED LANE

NOTES:

1. ALL PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH THESE STANDARDS, THE MUTCD, AND THE VIRGINIA SUPPLEMENT TO THE MUTCD, UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.
2. SHARED LANE MARKINGS SHALL NOT BE USED IN PAVED SHOULDERS, IN BICYCLE LANES, OR ON ROADWAYS THAT HAVE A SPEED LIMIT ABOVE 35 MPH.
3. SHARED LANE MARKINGS SHALL BE PLACED IMMEDIATELY AFTER AN INTERSECTION AND SPACED AT INTERVALS NOT GREATER THAN 250 FEET.
4. IN SHARED LANES WITH ON-STREET PARALLEL PARKING, THE CENTER OF THE SHARED LANE MARKINGS SHALL BE AT LEAST 11' FROM THE FACE OF CURB, OR FROM THE EDGE OF PAVEMENT WHERE THERE IS NO CURB.
5. ON STREETS WITHOUT ON-STREET PARKING AND AN OUTSIDE TRAVEL LANE LESS THAN 14' WIDE, THE CENTER OF THE SHARED LANE MARKINGS SHALL BE AT LEAST 4' FROM THE FACE OF CURB, OR FROM THE EDGE OF PAVEMENT WHERE THERE IS NO CURB.
6. SEE PM-10 FOR SHARED LANE MARKING SYMBOL DETAILS.

SPECIFICATION REFERENCE	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.	VDOT ROAD AND BRIDGE STANDARDS
704	# TYPICAL PAVEMENT MARKING ## BICYCLE LANE AND MARKED SHARED LANE VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE NEW 01/15
		SHEET 2 OF 2 1330.61



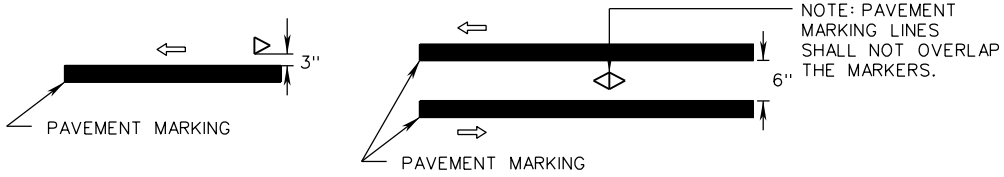


A PORTION OF THE PAVEMENT MARKING SYMBOL SHOULD BE DIRECTLY OPPOSITE THE ADVANCE WARNING SIGN (W10-1). IF NEEDED, SUPPLEMENTAL PAVEMENT MARKING SYMBOLS MAY BE PLACED BETWEEN THE ADVANCE WARNING SIGN AND THE CROSSING, BUT SHOULD BE AT LEAST 50' FROM THE STOP OR YIELD LINE.

NOTES:

1. ALL PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH THESE STANDARDS, THE MUTCD, AND THE VIRGINIA SUPPLEMENT TO THE MUTCD, UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.
2. ON MULTI-LANE ROADS THE TRANSVERSE BANDS SHALL EXTEND ACROSS ALL APPROACH LANES, AND INDIVIDUAL RAILROAD CROSSING (RXR) SYMBOLS SHALL BE USED IN EACH APPROACH LANE.
3. SEE PM-10 FOR RAILROAD CROSSING (RXR) SYMBOLS DETAILS.
4. REFER TO THE MUTCD FOR SIGNING REQUIREMENTS AT PASSIVE GRADE CROSSINGS (NO AUTOMATED TRAFFIC CONTROL DEVICES).
5. THE PLACEMENT OF THE GRADE CROSSING ADVANCE WARNING (W10-1) SIGN SHALL BE IN ACCORDANCE WITH SECTION 2C.05 AND TABLE 2C-4 (CONDITION B) OF THE MUTCD.
6. YIELD LINES MAY BE USED INSTEAD OF STOP LINES AT PASSIVE GRADE CROSSINGS WITH YIELD SIGNS INSTALLED.

SPECIFICATION REFERENCE	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.	VDOT ROAD AND BRIDGE STANDARDS
704	TYPICAL PAVEMENT MARKING RAILROAD - HIGHWAY GRADE CROSSING VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE 01/15
		SHEET 1 OF 1
		1330.70

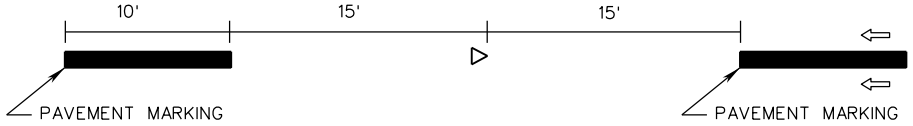


MARKERS ADJACENT TO SOLID LINE

MARKERS BETWEEN DOUBLE SOLID LINES

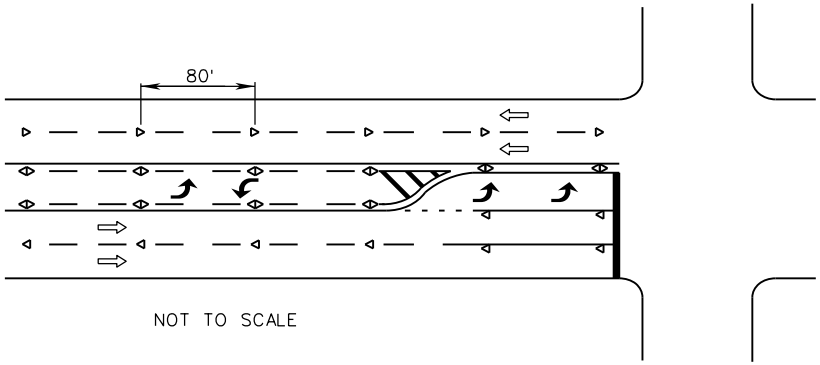
KEY:

- TWO WAY TRAFFIC MARKER, WITH POINTS INDICATING RETROREFLECTIVE FACE
- ONE WAY TRAFFIC MARKER, WITH POINT INDICATING RETROREFLECTIVE FACE
- INDICATES DIRECTION OF TRAVEL



MARKERS SUPPLEMENTING BROKEN LINES

GENERAL PLACEMENT



TWO-WAY LEFT TURN LANE AND CENTER LANE LEFT TURN

NOTES:

1. EXACT LOCATIONS OF THE MARKERS SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
2. TYPICAL SPACING SHALL BE 80' C-C WHEN USED ON A TANGENT SECTION OF ROADWAY OR ON HORIZONTAL CURVES LESS THAN 3°, AND SHALL BE 40' C-C WHEN USED ON HORIZONTAL CURVES OF 3° OR MORE, UNLESS OTHERWISE SHOWN IN THE CONTRACT DOCUMENTS OR AS DIRECTED BY THE ENGINEER. SEE SHEET 2 FOR SPECIFIC EXAMPLES.
3. ALL RAISED PAVEMENT MARKERS SHALL BE INSTALLED AT LEAST 2 INCHES FROM ANY SEAM OR PAVEMENT JOINT.
4. RAISED PAVEMENT MARKERS SHALL BE THE SAME COLOR AS THE ADJACENT PAVEMENT MARKING. THE COLOR OF THE BACKSIDE OF RAISED PAVEMENT MARKERS SHALL BE AS SHOWN IN THE TABLE BELOW.
5. ALL RAISED PAVEMENT MARKERS SHALL BE SNOWPLOWABLE RAISED PAVEMENT MARKERS (SRPMS) UNLESS OTHERWISE NOTED IN THE CONTRACT DOCUMENTS.
6. RAISED PAVEMENT MARKERS SHALL BE OMITTED ON BRIDGE DECKS UNLESS OTHERWISE NOTED IN THE CONTRACT DOCUMENTS.

RAISED PAVEMENT MARKER COLOR		
MARKER TYPE		BACKSIDE COLOR
ONE WAY TRAFFIC	WHITE SNOWPLOWABLE RAISED	RED
	TEMPORARY	BLANK
	YELLOW SNOWPLOWABLE RAISED	BLANK
TWO WAY TRAFFIC	ALL TYPES	MATCH ADJACENT PAVEMENT MARKING

VDOT
ROAD AND BRIDGE STANDARDS

SHEET 1 OF 2

REVISION DATE 01/15

1330.80

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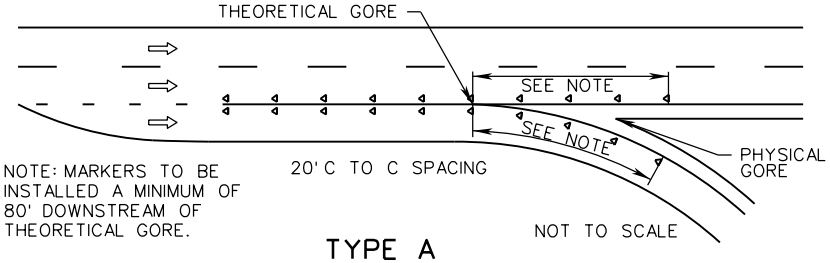
TYPICAL RAISED PAVEMENT MARKER

LOCATION DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

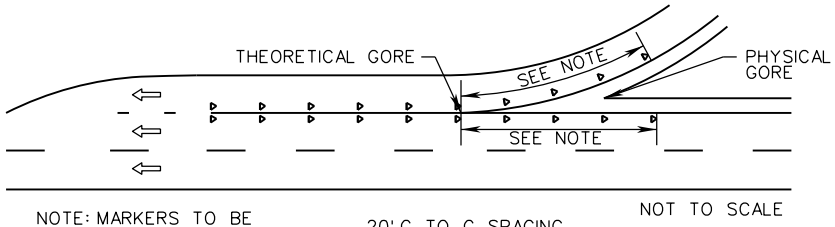
SPECIFICATION REFERENCE

704



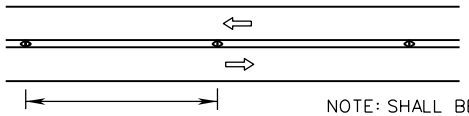
NOTE: MARKERS TO BE INSTALLED A MINIMUM OF 80' DOWNSTREAM OF THEORETICAL GORE.

TYPE A
EXIT RAMP



NOTE: MARKERS TO BE INSTALLED A MINIMUM OF 80' UPSTREAM OF THEORETICAL GORE.

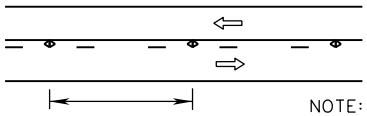
TYPE B
ENTRANCE RAMP



80' C-C ON TANGENTS
40' C-C ON HORIZONTAL CURVES OF 3° OR MORE

NOTE: SHALL BE USED WHEN SEAM IS NOT LOCATED BETWEEN DOUBLE YELLOW LINE, OR WHEN DIRECTED BY THE ENGINEER OR CONTRACT DOCUMENTS.

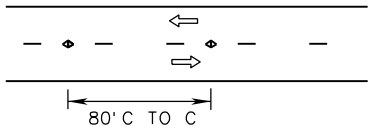
TYPE C
TWO OR MULTI-LANE UNDIVIDED HIGHWAY



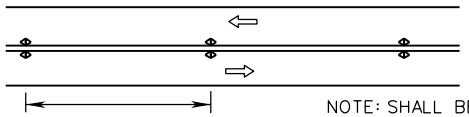
80' C-C ON TANGENTS
40' C-C ON HORIZONTAL CURVES OF 3° OR MORE

NOTE: SHALL BE USED WHEN SEAM IS NOT LOCATED BETWEEN YELLOW LINE AND BROKEN YELLOW LINE, OR WHEN DIRECTED BY THE ENGINEER OR CONTRACT DOCUMENTS.

TYPE D
ONE-WAY PASSING ZONE



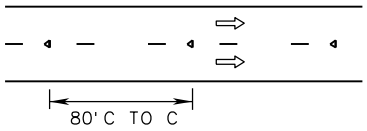
TYPE E
TWO-WAY PASSING ZONE



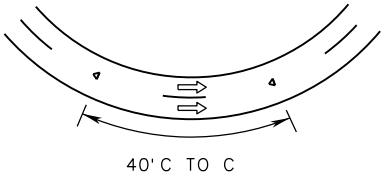
80' C-C ON TANGENTS
40' C-C ON HORIZONTAL CURVES OF 3° OR MORE

NOTE: SHALL BE USED WHEN SEAM IS LOCATED BETWEEN DOUBLE YELLOW LINE, OR WHEN DIRECTED BY THE ENGINEER OR CONTRACT DOCUMENTS.

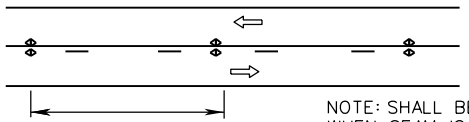
TYPE F
TWO OR MULTI-LANE UNDIVIDED HIGHWAY



TYPE G
MULTI-LANE HIGHWAY TANGENT



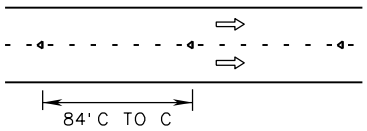
TYPE H
MULTI-LANE HIGHWAY HORIZONTAL CURVES OF 3° OR MORE



80' C-C ON TANGENTS
40' C-C ON HORIZONTAL CURVES OF 3° OR MORE

NOTE: SHALL BE USED WHEN SEAM IS LOCATED BETWEEN YELLOW LINE AND BROKEN YELLOW LINE, OR WHEN DIRECTED BY THE ENGINEER OR CONTRACT DOCUMENTS.

TYPE I
ONE-WAY PASSING ZONE



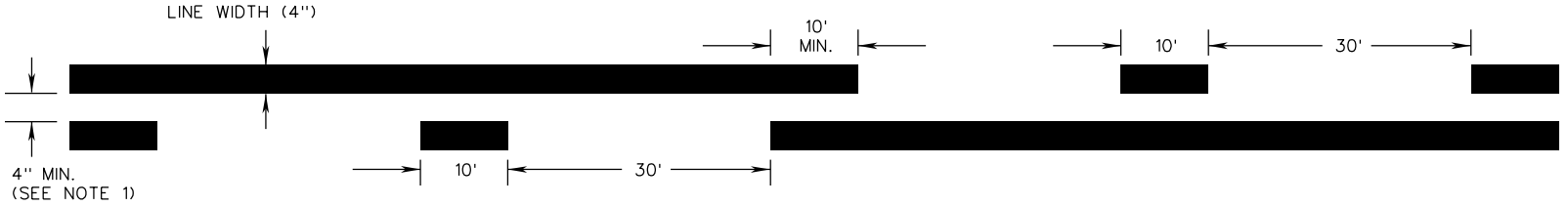
TYPE J
MULTI-LANE HIGHWAY LANE DROP OR AUXILIARY LANE

KEY:

- ◆ TWO WAY TRAFFIC MARKER, WITH POINTS INDICATING RETROREFLECTIVE FACE
- ◁ ONE WAY TRAFFIC MARKER, WITH POINT INDICATING RETROREFLECTIVE FACE
- ⇨ INDICATES DIRECTION OF TRAVEL

SPECIFICATION REFERENCE	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.	VDOT ROAD AND BRIDGE STANDARDS
704	# TYPICAL RAISED PAVEMENT MARKER ## LOCATION DETAILS VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE NEW 01/15 · SHEET 2 OF 2 · 1330.81

PARALLEL SOLID LINE SPACING (NO PASSING ZONE)

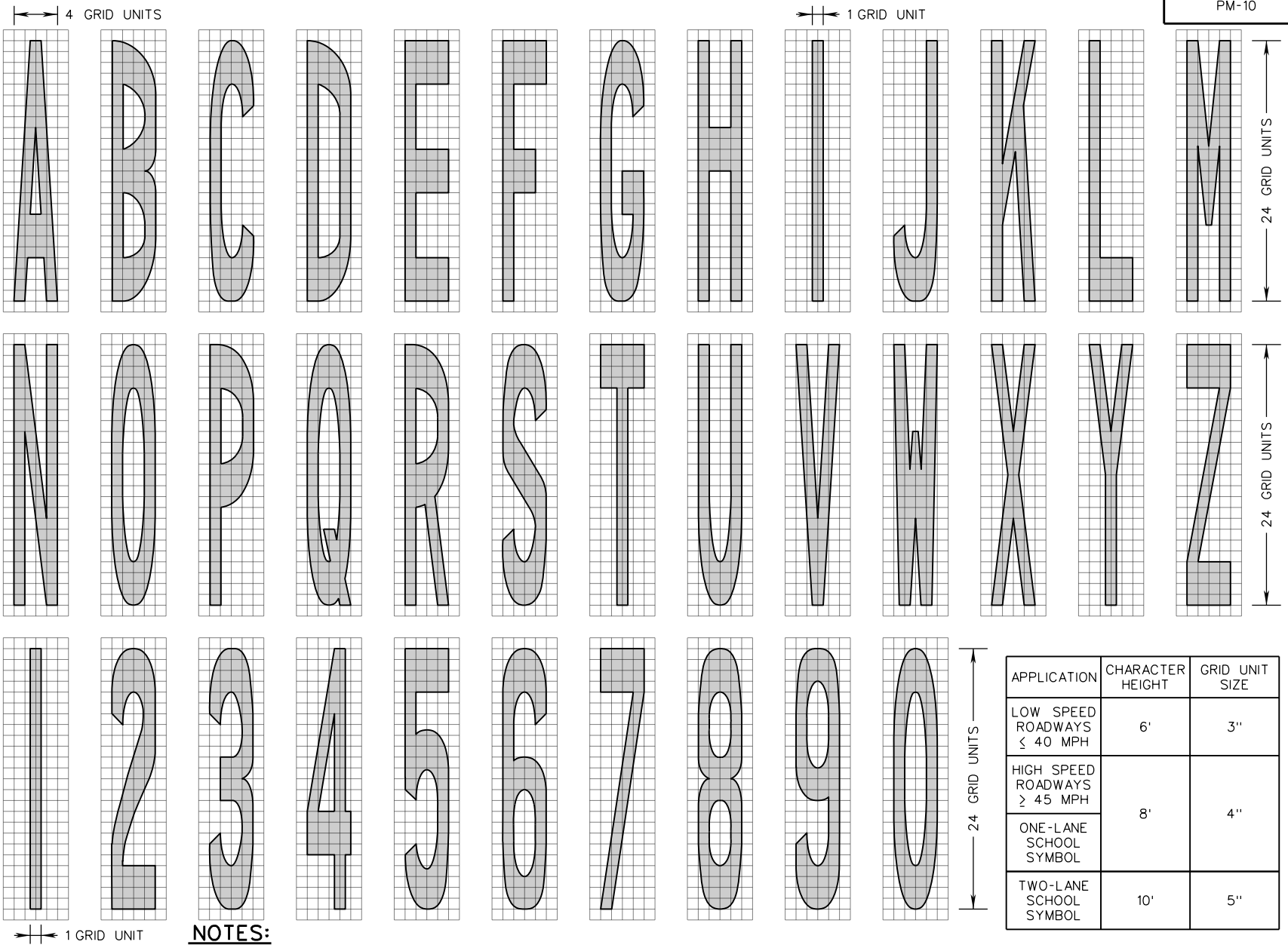


PARALLEL SOLID AND BROKEN LINES
(ONE-WAY PASSING ZONE)

NOTES:

1. THE SPACE BETWEEN TWO PARALLEL LINES SHALL BE 6" WIDE IF RAISED PAVEMENT MARKERS ARE PRESENT BETWEEN THE TWO PARALLEL LINES.

VDOT ROAD AND BRIDGE STANDARDS		A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE. PAVEMENT MARKING LOCATION DETAILS VIRGINIA DEPARTMENT OF TRANSPORTATION	SPECIFICATION REFERENCE
SHEET 1 OF 1	REVISION DATE		704
1330.90	01/15		



APPLICATION	CHARACTER HEIGHT	GRID UNIT SIZE
LOW SPEED ROADWAYS ≤ 40 MPH	6'	3"
HIGH SPEED ROADWAYS ≥ 45 MPH	8'	4"
ONE-LANE SCHOOL SYMBOL		
TWO-LANE SCHOOL SYMBOL	10'	5"

NOTES:

1. STANDARD CHARACTERS ARE 24 GRID UNITS HIGH AND 4 GRID UNITS WIDE (EXCEPT LETTER "I" AND THE NUMBER "1" WHICH ARE 1 GRID UNIT WIDE).
2. VERTICAL STROKES ARE 1 UNIT WIDE, HORIZONTAL STROKES ARE 4 UNITS HIGH.
3. SPACE 1 GRID UNIT MINIMUM BETWEEN CHARACTERS OR AS OTHERWISE SHOWN (OPTICAL SPACING MAY BE USED).

SPECIFICATION REFERENCE	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.	VDOT ROAD AND BRIDGE STANDARDS
704	# PAVEMENT WORD, SYMBOL, AND ARROW MARKINGS ## LETTERS AND NUMERALS DETAILS VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE NEW 01/15 · SHEET 1 OF 15 · 1340.10

SQUARE FOOT AREAS OF PAVEMENT WORD MARKINGS

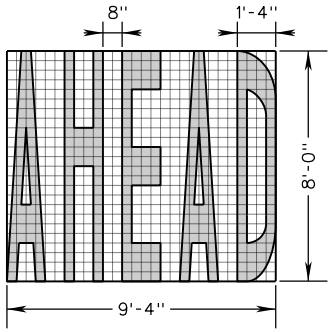
LEGEND	PAINT APPLICATION		ERADICATION	
	6' HIGH	8' HIGH	6' HIGH	8' HIGH
AHEAD	17.5	30.5	42.0	75.0
AREA	14.0	24.5	33.0	59.0
BIKE	13.0	23.0	28.5	51.0
BUMP	15.0	26.5	33.0	59.0
EAST	13.0	22.5	33.0	59.0
ENDS	15.0	27.0	33.0	59.0
FT	5.0	9.0	15.0	27.0
HUMP	14.5	25.5	33.0	59.0
LANE	13.5	23.5	33.0	59.0
LEFT	11.0	20.0	33.0	59.0
MERGE	19.0	34.0	42.0	75.0
MPH	11.0	19.5	24.0	43.0
NO	8.0	13.5	15.0	27.0
NORTH	17.5	30.5	42.0	75.0

SQUARE FOOT AREAS OF PAVEMENT WORD MARKINGS

LEGEND	PAINT APPLICATION		ERADICATION	
	6' HIGH	8' HIGH	6' HIGH	8' HIGH
ONLY	12.0	21.5	30.5	53.5
PED	11.0	19.0	24.0	43.0
RIGHT	14.5	26.0	37.5	67.0
SCHOOL	(SEE NOTES 1 AND 2)	34.5 (ONE LANE)	(SEE NOTES 1 AND 2)	91.0 (ONE LANE)
SIGNAL	15.5	28.0	46.5	83.0
SLOW	13.5	24.0	33.0	59.0
SOUTH	16.5	29.0	42.0	75.0
STOP	12.5	22.5	33.0	59.0
TO	6.0	10.5	15.0	27.0
TURN	13.5	24.0	33.0	59.0
US	7.0	12.5	15.0	27.0
WEST	14.0	24.5	33.0	59.0
XING	12.0	21.0	28.5	51.0
YIELD	13.5	24.0	37.5	67.0

NOTES:

1. ONE-LANE APPLICATION OF "SCHOOL" SYMBOL IS 8' HIGH. WHEN INSTALLED IN A SINGLE LANE WITH A WIDTH LESS THAN 10.5', THE LETTERS SHALL BE SEPARATED BY THREE INCHES. WHEN INSTALLED IN A SINGLE LANE WITH A WIDTH GREATER THAN 10.5', THE LETTERS SHALL BE SEPARATED BY FOUR INCHES.
2. TWO-LANE APPLICATION OF "SCHOOL" SYMBOL IS 10' HIGH WITH PAINT APPLICATION AREA OF 53.5 SQ.FT. AND ERADICATION AREA OF 193.0 SQ.FT.
3. NON-LINEAR ERADICATION AREA IS BASED ON A "THEORETICAL BOX" DEFINED BY THE OUTERMOST LIMITS OF THE NON-LINEAR PAVEMENT MARKING THAT INCLUDES BOTH THE PAINTED AND NON-PAINTED AREAS THAT ENCOMPASS THE TOTAL WORD MESSAGE OR SYMBOL. SEE EXAMPLE.
4. ON UNDIVIDED ROADWAYS, SYMBOL AND MESSAGE PAVEMENT MARKINGS SHALL NOT EXTEND BEYOND THE CENTERLINE INTO OPPOSING TRAVEL LANES.



ERADICATION AREA = 8'-0" x 9'-4" ≈ 74.7 SQ.FT.

THEORETICAL BOX ERADICATION AREA EXAMPLE (8' LETTERS)

A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

PAVEMENT WORD, SYMBOL, AND ARROW MARKINGS

WORDS DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

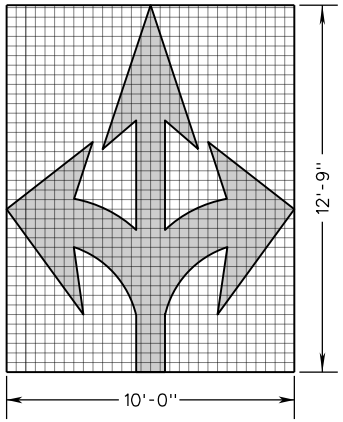
SPECIFICATION REFERENCE
704

SQUARE FOOT AREAS OF SYMBOLS AND ARROWS

SYMBOL	DESCRIPTION	PAINT APPLICATION	ERADICATION
	THRU ARROW	12.0	23.0
OR	SINGLE TURN ARROW (LEFT OR RIGHT)	17.5	51.0
OR	DOUBLE TURN ARROW (LEFT/THROUGH OR RIGHT/THROUGH)	28.5	96.0
	TRIPLE TURN ARROW (LEFT/THROUGH/RIGHT)	37.5	127.5
	DOUBLE TURN ARROW ARROW (LEFT/RIGHT)	27.0	80.0
OR	LANE-REDUCTION ARROW (LEFT OR RIGHT)	44.0	99.0
	WRONG-WAY ARROW	24.0	133.5
	FISH-HOOK LANE-USE ARROW FOR ROUNDABOUTS (LEFT)	20.5	81.0
	FISH-HOOK LANE-USE ARROW FOR ROUNDABOUTS (LEFT/THROUGH)	31.0	114.5
	FISH-HOOK LANE-USE ARROW FOR ROUNDABOUTS (LEFT/THROUGH/RIGHT)	39.5	195.0
	FISH-HOOK LANE-USE ARROW FOR ROUNDABOUTS (THROUGH/RIGHT)	31.5	142.0
	OPTIONAL OVAL FOR FISH-HOOK LANE-USE ARROW FOR ROUNDABOUTS	3.5	4.5
	HOV DIAMOND SYMBOL (ASPHALT SURFACE)	11.5	39.0
	HOV DIAMOND CONTRAST SYMBOL (CONCRETE SURFACE)	35.5	70.0
	YIELD LINE TRIANGLE (1' x 1.5')	0.75 (EACH)	1.5 (EACH)
	YIELD LINE TRIANGLE (2' x 3')	3.0 (EACH)	6.0 (EACH)

SQUARE FOOT AREAS OF SYMBOLS AND ARROWS

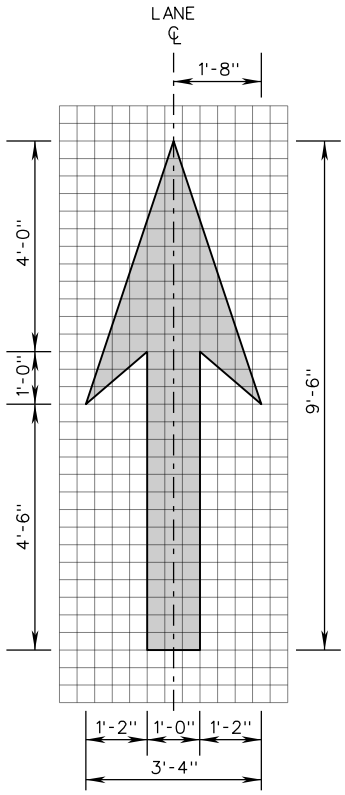
SYMBOL	DESCRIPTION	PAINT APPLICATION	ERADICATION
	BICYCLIST THRU ARROW	5.0	12.0
OR	BICYCLIST TURN ARROW (LEFT OR RIGHT)	9.5	29.0
	HELMETED BICYCLIST SYMBOL	6.5	20.0
	SHARED LANE MARKING SYMBOL	10.0	31.5
	SMALL YIELD AHEAD TRIANGLE	26.0	78.0
	LARGE YIELD AHEAD TRIANGLE	37.0	120.0
	RAILROAD CROSSING SYMBOL	60.0	160.0
	INTERNATIONAL SYMBOL OF ACCESSIBILITY - SPECIAL SIZED	22.0	22.5



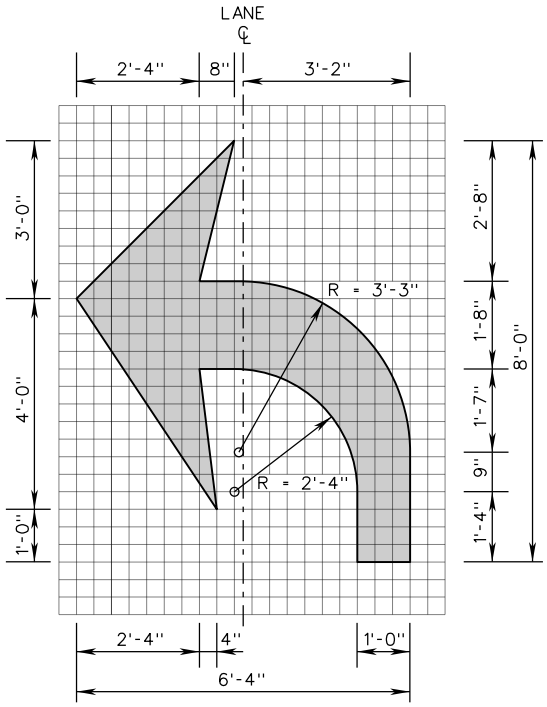
ERADICATION AREA = 12'-9" x 10'-0" ≈ 127.5 SQ.FT.

THEORETICAL BOX
ERADICATION AREA EXAMPLE (TRIPLE TURN ARROW)

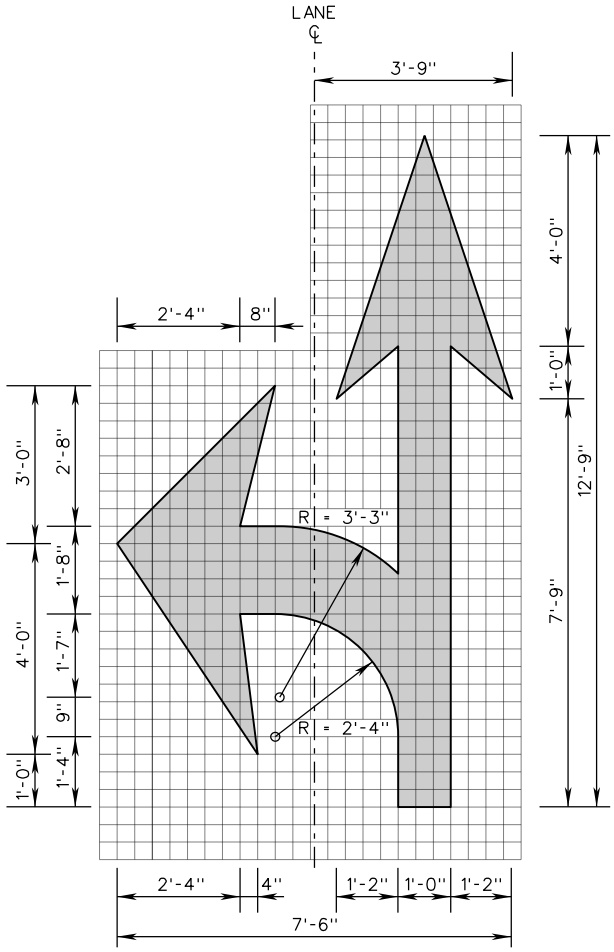
SPECIFICATION REFERENCE	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.	VDOT ROAD AND BRIDGE STANDARDS
704	PAVEMENT WORD, SYMBOL, AND ARROW MARKINGS SQUARE FOOT AREAS OF SYMBOLS AND ARROWS VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE NEW 01/15
		SHEET 3 OF 15
		1340.12



THRU ARROW



SINGLE TURN ARROW
(LEFT OR RIGHT)



DOUBLE TURN ARROW
(LEFT/THRU OR
RIGHT/THRU)

NOTES:

1. 1 GRID UNIT = 4 INCHES
2. ALL SYMBOLS/LEGEND SHALL BE WHITE UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.

VDOT
ROAD AND BRIDGE STANDARDS

SHEET 4 OF 15 | REVISION DATE
1340.13 | NEW 01/15

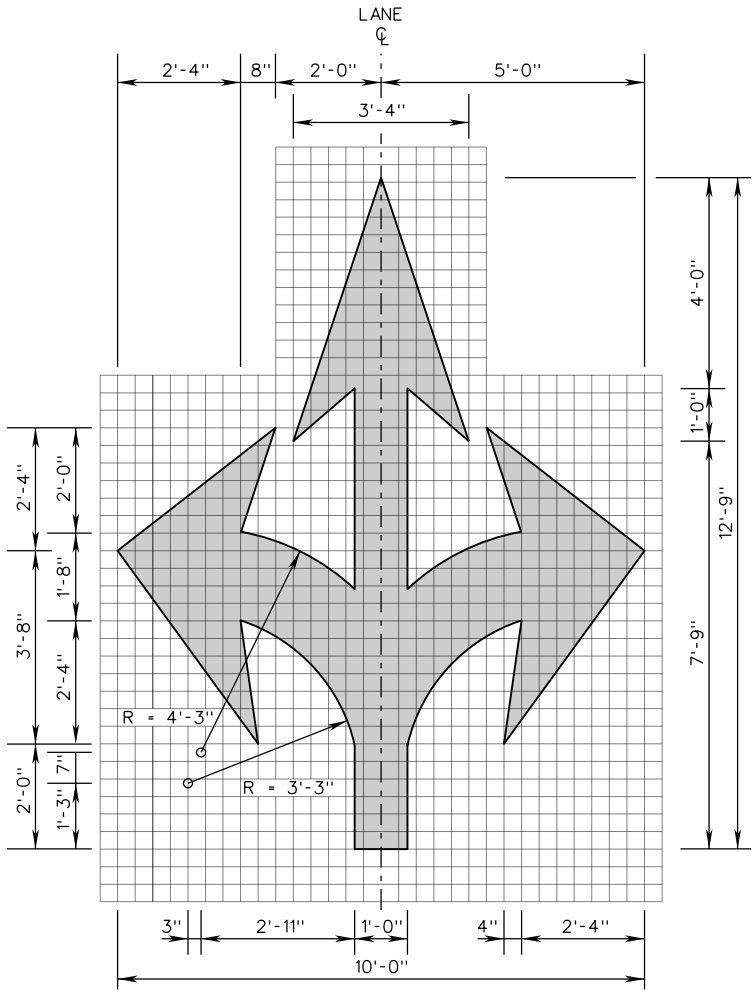
A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

PAVEMENT WORD, SYMBOL, AND ARROW MARKINGS

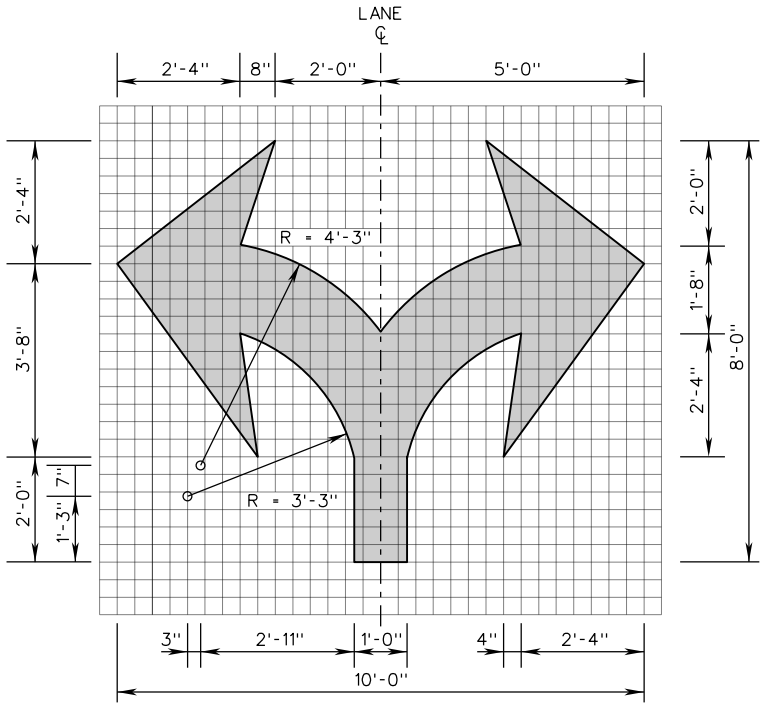
ARROW DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE
704



TURN TURN ARROW
(LEFT/THRU/RIGHT)



DOUBLE TURN ARROW
(LEFT/RIGHT)

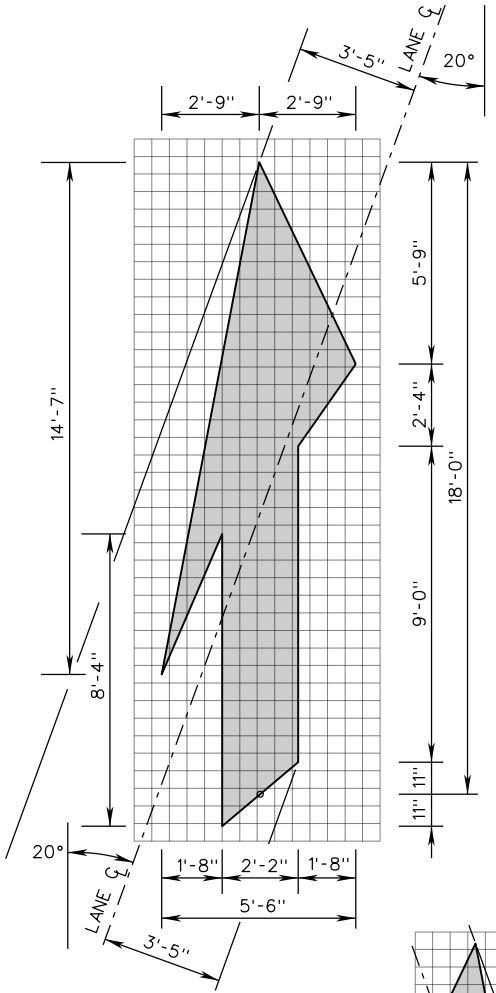
NOTES:

1. 1 GRID UNIT = 4 INCHES
2. ALL SYMBOLS/LEGEND SHALL BE WHITE UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.

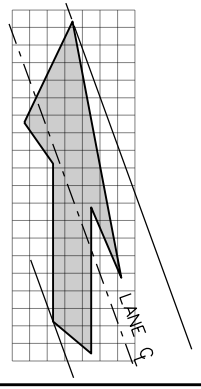
SPECIFICATION REFERENCE	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.	VDOT ROAD AND BRIDGE STANDARDS	
704	PAVEMENT WORD, SYMBOL, AND ARROW MARKINGS ARROW DETAILS VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE NEW 01/15	SHEET 5 OF 15 1340.14

NOTES:

1. 1 GRID UNIT = 6 INCHES
2. ALL SYMBOLS/LEGEND SHALL BE WHITE UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.

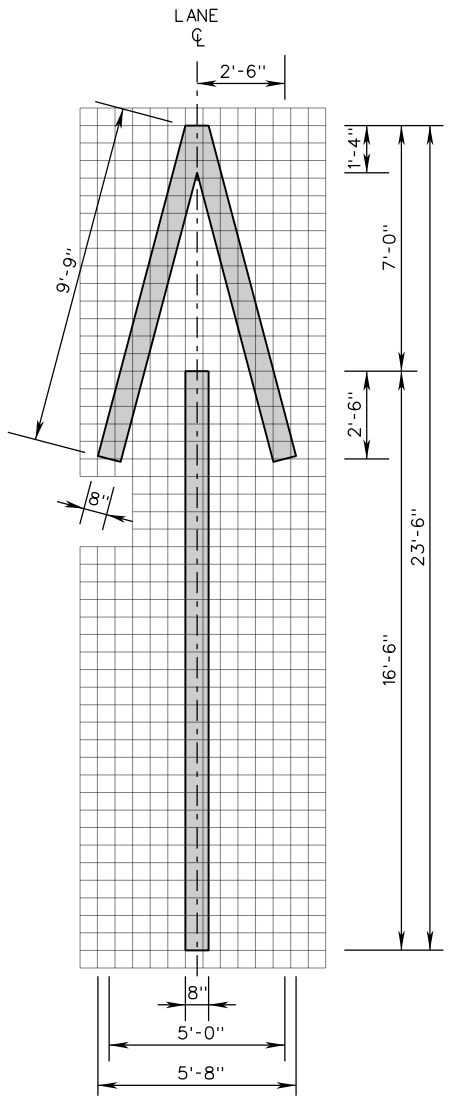


LANE REDUCTION ARROW (LEFT)

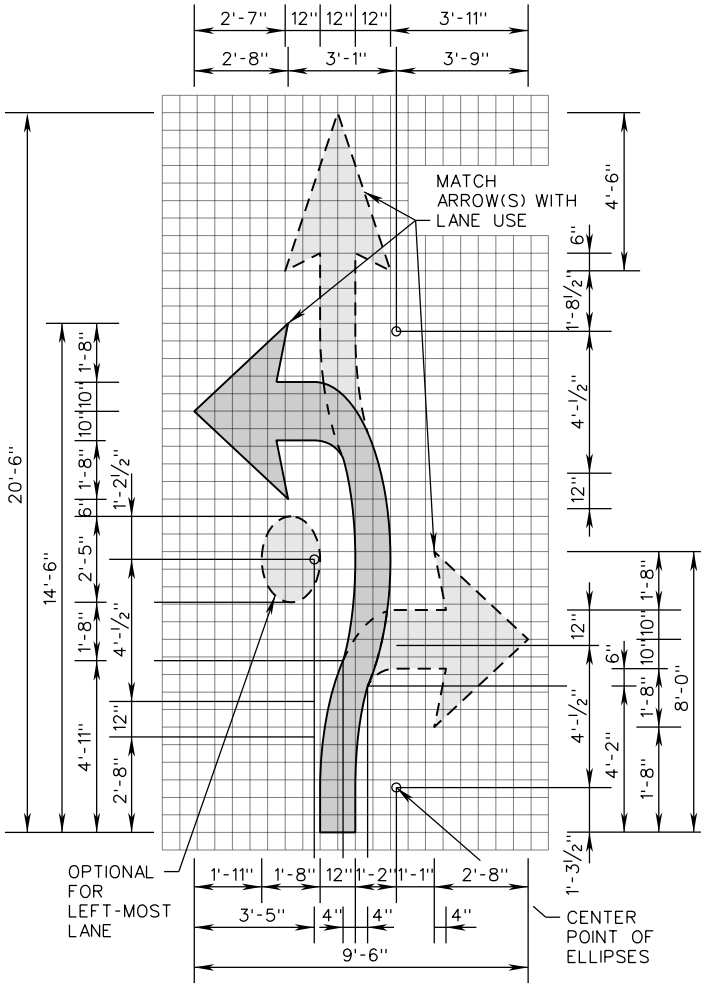


LANE REDUCTION ARROW (RIGHT)

SHOWN FOR CLARITY
1 GRID UNIT = 1 FOOT



WRONG-WAY ARROW



FISH-HOOK LANE-USE ARROW FOR ROUNDABOUTS

VDOT
ROAD AND BRIDGE STANDARDS

A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

PAVEMENT WORD, SYMBOL, AND ARROW MARKINGS

ARROW DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

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1340.15	01/15

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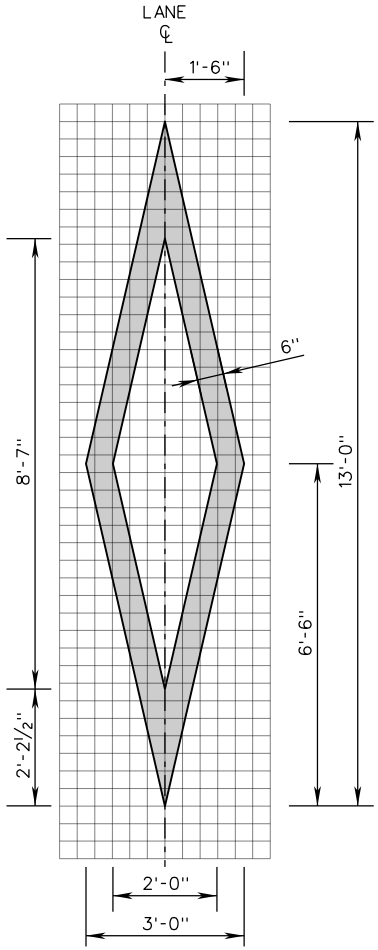
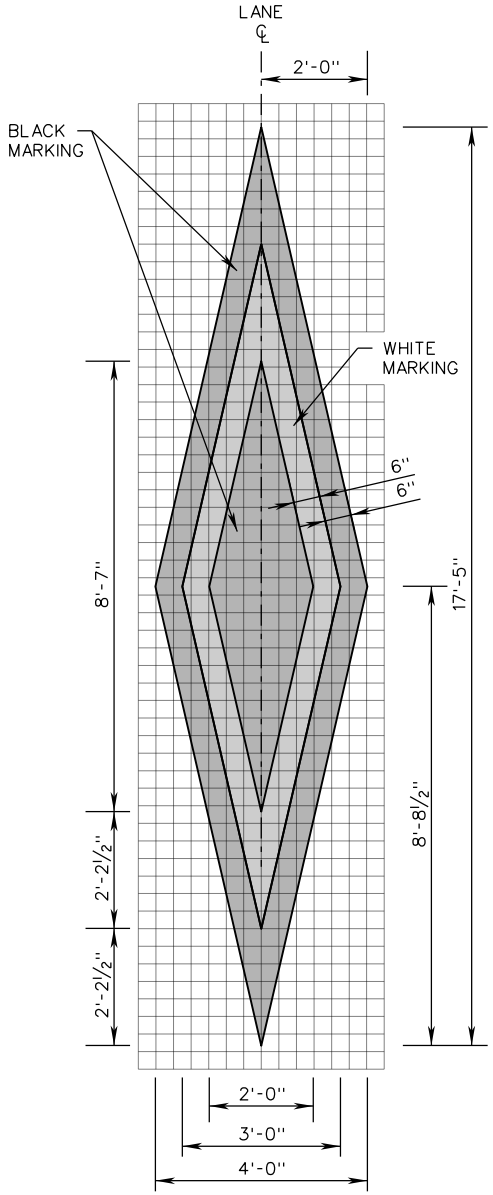
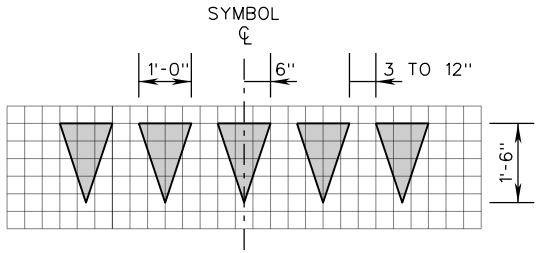


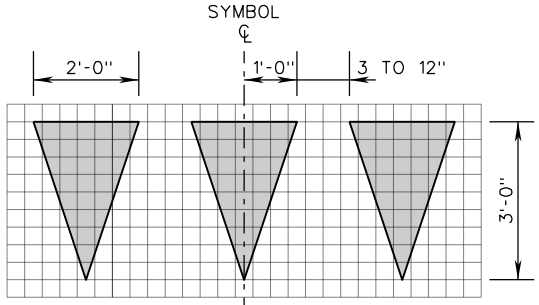
HOV DIAMOND SYMBOL
(ASPHALT SURFACE)



HOV DIAMOND
CONTRAST SYMBOL
(CONCRETE SURFACE)



YIELD TRIANGLE LINE
LAYOUT
(1' x 1.5' TRIANGLES)

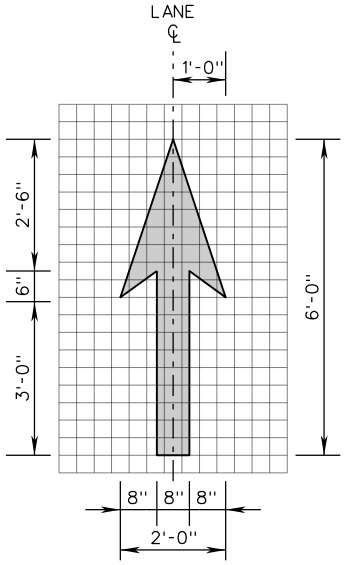


YIELD TRIANGLE LINE
LAYOUT
(2' x 3' TRIANGLES)

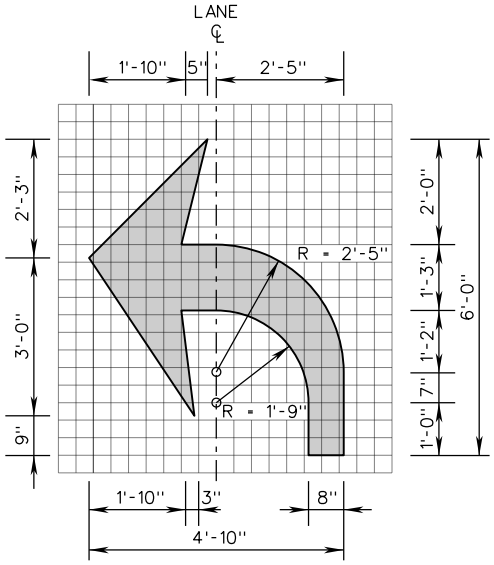
NOTES:

1. 1 GRID UNIT = 4 INCHES
2. ALL SYMBOLS/LEGEND SHALL BE WHITE UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.

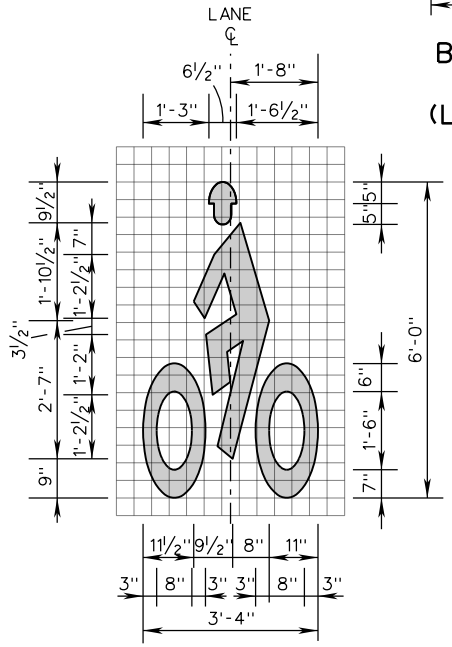
SPECIFICATION REFERENCE	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.	VDOT ROAD AND BRIDGE STANDARDS
704	PAVEMENT WORD, SYMBOL, AND ARROW MARKINGS SYMBOL DETAILS VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE NEW 01/15 SHEET 7 OF 15 1340.16



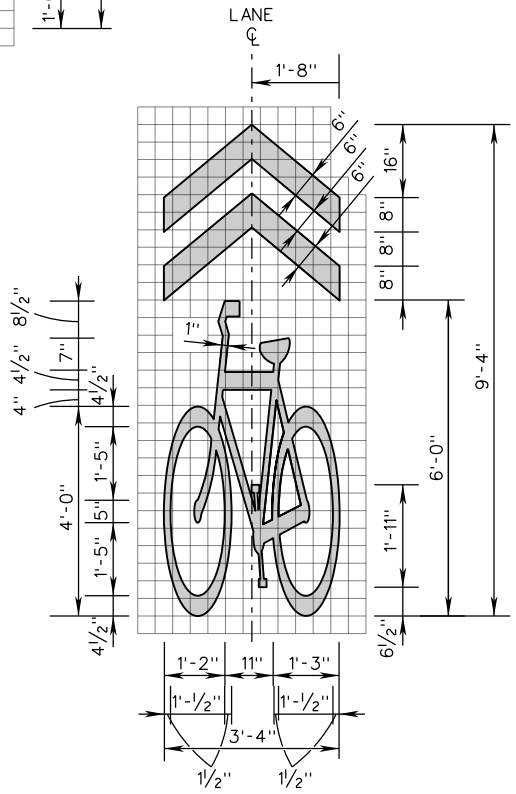
BICYCLIST THRU ARROW



BICYCLIST THRU ARROW (LEFT OR RIGHT)



HELMETED BICYCLIST SYMBOL



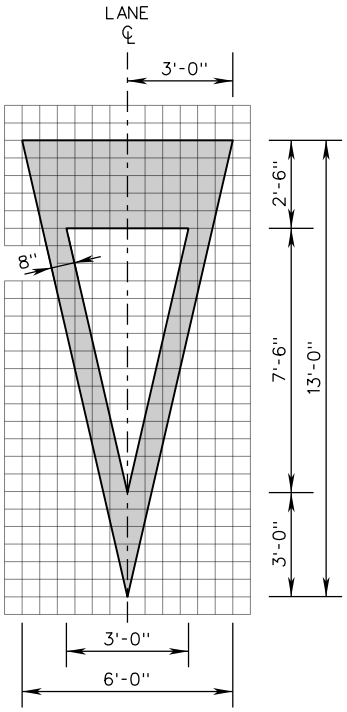
SHARED LANE MARKING SYMBOL

NOTES:

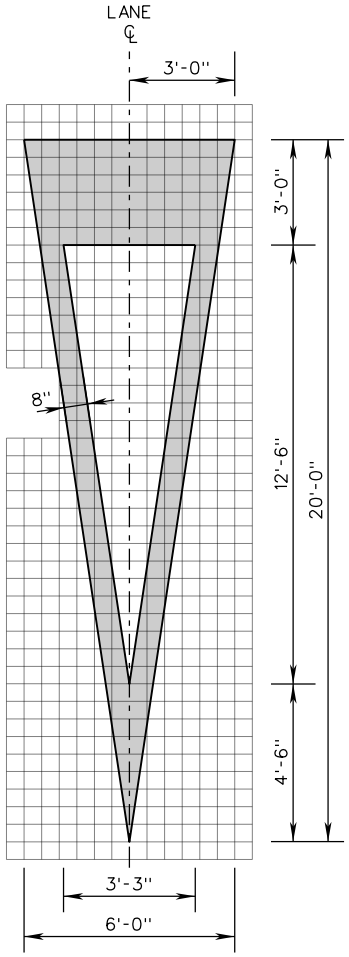
1. 1 GRID UNIT = 4 INCHES
2. ALL SYMBOLS/LEGEND SHALL BE WHITE UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.

NOTES:

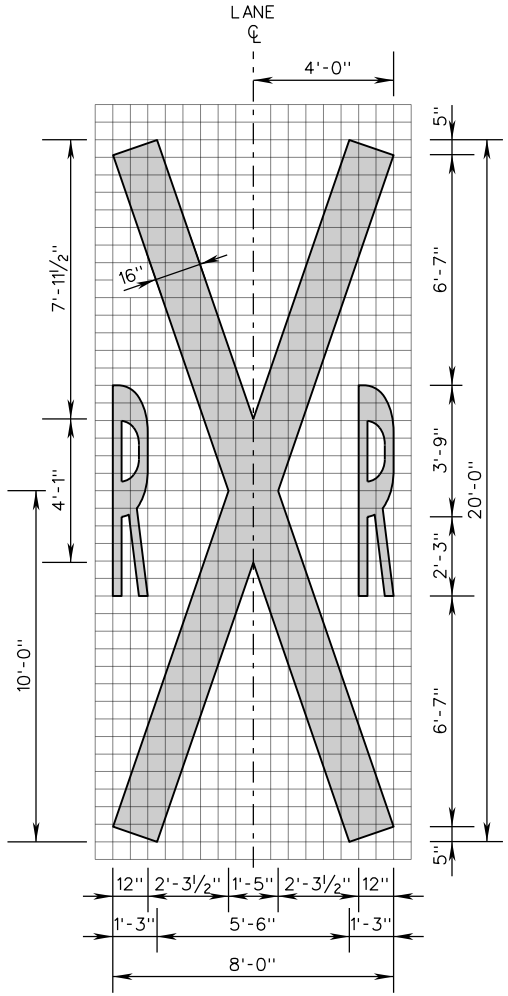
1. 1 GRID UNIT = 6 INCHES
2. ALL SYMBOLS/LEGEND SHALL BE WHITE UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.



YIELD AHEAD
TRIANGLE - SMALL

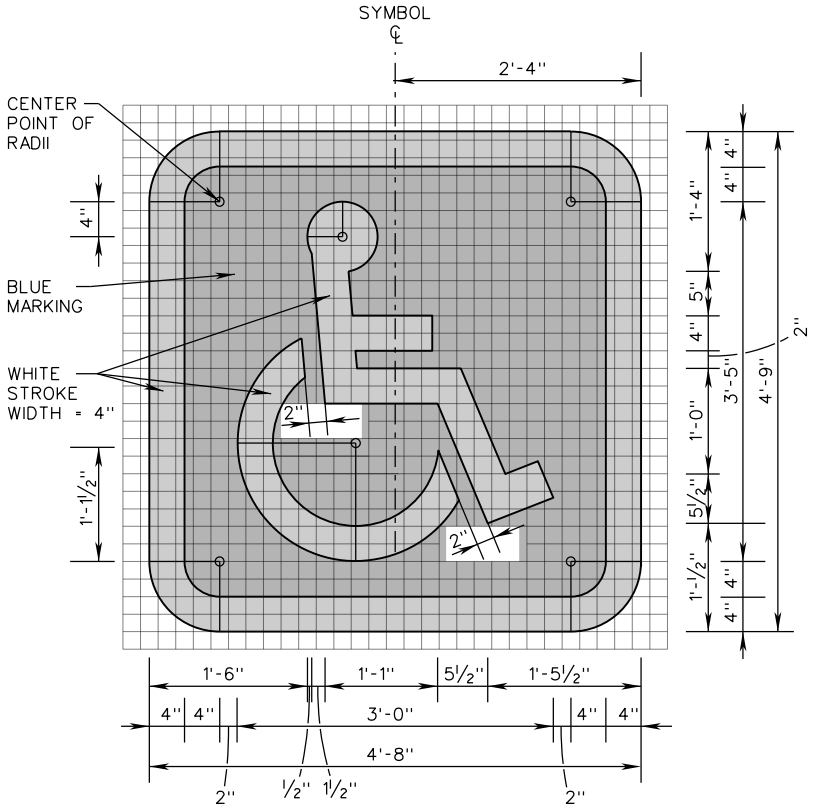


YIELD AHEAD
TRIANGLE - LARGE



RAILROAD CROSSING
SYMBOL

SPECIFICATION REFERENCE	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.	VDOT ROAD AND BRIDGE STANDARDS
704	PAVEMENT WORD, SYMBOL, AND ARROW MARKINGS SYMBOL DETAILS VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE NEW 01/15 SHEET 9 OF 15 1340.18

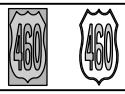
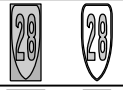
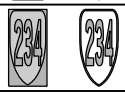
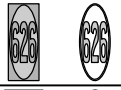
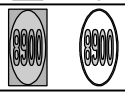


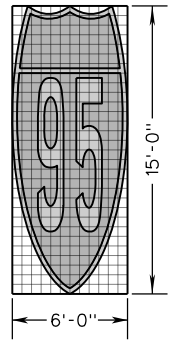
INTERNATIONAL SYMBOL OF ACCESSIBILITY - SPECIAL SIZED

NOTES:

1. 1 GRID UNIT = 2 INCHES
2. ALL SYMBOLS/LEGEND SHALL BE WHITE UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.

SQUARE FOOT AREAS OF ROUTE SHIELD SYMBOLS

	DESCRIPTION	PAINT APPLICATION			ERADICATION		
	SYMBOL HEIGHT	15.0 FT	17.5 FT	20.0 FT	15.0 FT	17.5 FT	20.0 FT
	2 DIGITS INTERSTATE SHIELD (ON LIGHT OR DARK PAVEMENT)	72.0	98.0	128.0	90.0	122.5	160.0
	3 DIGITS INTERSTATE SHIELD (ON LIGHT OR DARK PAVEMENT)	90.0	122.5	160.0	112.5	153.5	200.0
	1 OR 2 DIGITS U.S. ROUTE SHIELD						
	ON LIGHT PAVEMENT	27.5	37.5	49.0	90.0	122.5	160.0
	ON DARK PAVEMENT	90.0	122.5	160.0			
	3 DIGITS U.S. ROUTE SHIELD						
	ON LIGHT PAVEMENT	37.5	50.5	66.0	112.5	153.5	200.0
	ON DARK PAVEMENT	112.5	153.5	200.0			
	2 DIGITS VA PRIMARY RTE SHIELD						
	ON LIGHT PAVEMENT	27.5	37.0	48.5	90.0	122.5	160.0
	ON DARK PAVEMENT	90.0	122.5	160.0			
	3 DIGITS VA PRIMARY RTE SHIELD						
	ON LIGHT PAVEMENT	37.0	50.5	65.5	112.5	153.5	200.0
	ON DARK PAVEMENT	112.5	153.5	200.0			
	3 DIGITS VA SECONDARY RTE SHIELD						
	ON LIGHT PAVEMENT	30.0	41.0	53.5	90.0	122.5	160.0
	ON DARK PAVEMENT	90.0	122.5	160.0			
	4 DIGITS VA SECONDARY RTE SHIELD						
	ON LIGHT PAVEMENT	31.0	42.0	55.0	112.5	153.5	200.0
	ON DARK PAVEMENT	112.5	153.5	200.0			



ERADICATION AREA = 15'-0" x 6'-0" ≈ 90.0 SQ.FT.

THEORETICAL BOX
ERADICATION AREA EXAMPLE
(15' SYMBOL HEIGHT)

SPECIFICATION REFERENCE

704

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PAVEMENT WORD, SYMBOL, AND ARROW MARKINGS

SQUARE FOOT AREAS OF ROUTE SHIELD SYMBOLS

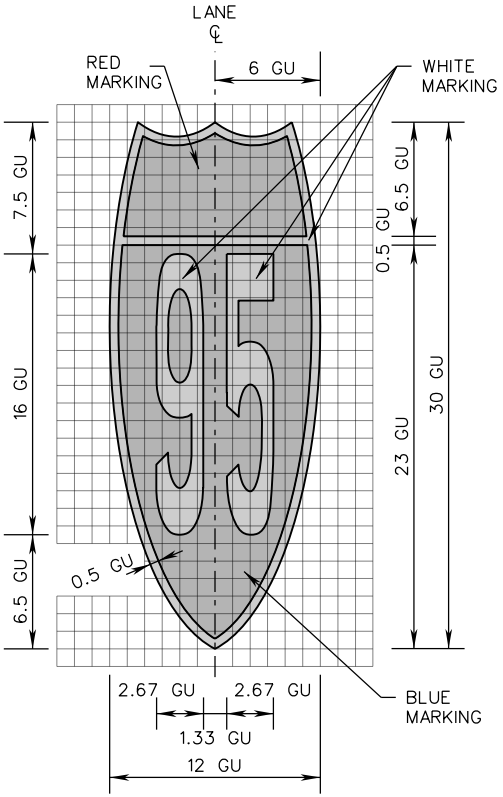
VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT
ROAD AND BRIDGE STANDARDS

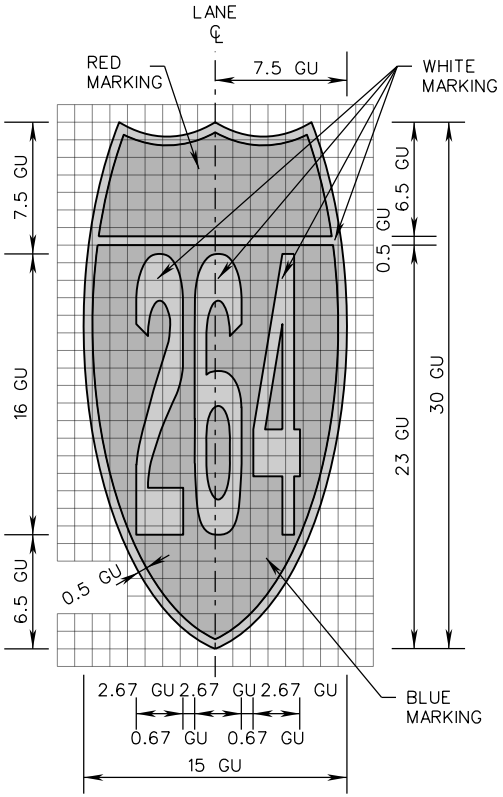
REVISION DATE
NEW 01/15

SHEET 11 OF 15

1340.20



2 DIGITS INTERSTATE SHIELD ON DARK OR LIGHT PAVEMENT



3 DIGITS INTERSTATE SHIELD ON DARK OR LIGHT PAVEMENT

NOTES:

1. SEE TABLE FOR GRID UNIT (GU) SIZE AND SHIELD AND NUMERIAL DIMENSIONS.
2. FOR THE NUMBER "1", DIVIDE NUMERAL WIDTH BY 4.

GRID UNIT (GU) SIZE	SHIELD HEIGHT	SHIELD WIDTH		NUMERAL DIMENSIONS	
		2 DIGITS	3 DIGITS	HEIGHT	WIDTH (SEE NOTE 2)
6"	15'-0"	6'-0"	7'-6"	8'-0"	1'-4"
7"	17'-6"	7'-0"	8'-9"	9'-4"	1'-6⅔"
8"	20'-0"	8'-0"	10'-0"	10'-8"	1'-9⅓"

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PAVEMENT WORD, SYMBOL, AND ARROW MARKINGS

ROUTE SHIELD DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE

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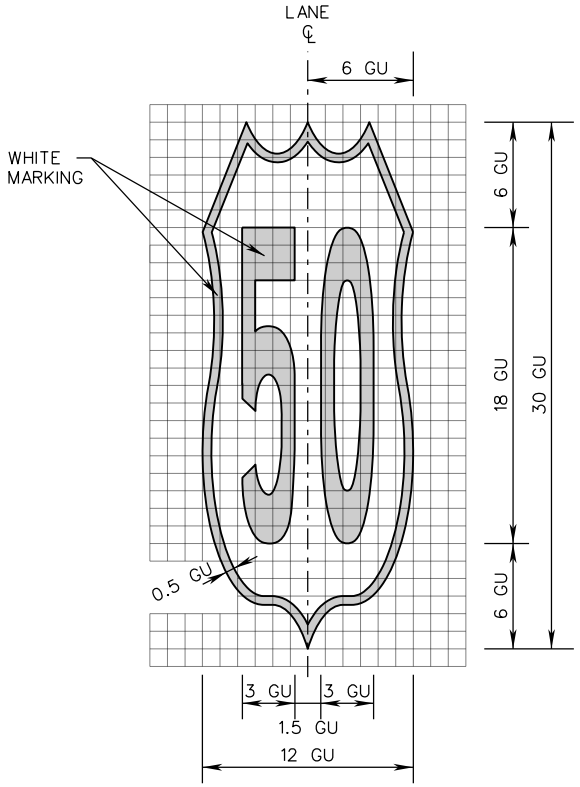
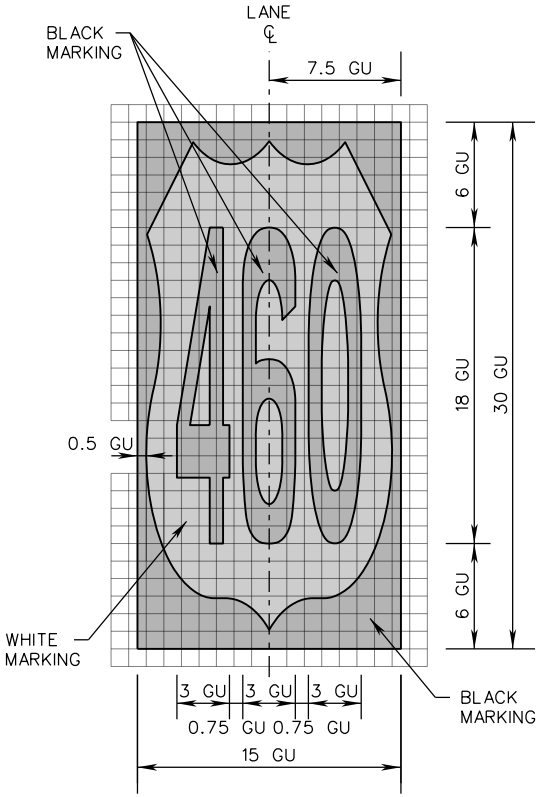


1 OR 2 DIGITS U.S. ROUTE SHIELD ON DARK PAVEMENT



3 DIGITS U.S. ROUTE SHIELD ON LIGHT PAVEMENT

NOTES:

1. SEE TABLE FOR GRID UNIT (GU) SIZE AND SHIELD AND NUMERIAL DIMENSIONS.
2. FOR THE NUMBER "1", DIVIDE NUMERAL WIDTH BY 4.

GRID UNIT (GU) SIZE	SHIELD HEIGHT	SHIELD WIDTH		NUMERAL DIMENSIONS	
		2 DIGITS	3 DIGITS	HEIGHT	WIDTH (SEE NOTE 2)
6"	15'-0"	6'-0"	7'-6"	9'-0"	1'-6"
7"	17'-6"	7'-0"	8'-9"	10'-6"	1'-9"
8"	20'-0"	8'-0"	10'-0"	12'-0"	2'-0"

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PAVEMENT WORD, SYMBOL, AND ARROW MARKINGS

ROUTE SHIELD DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT
ROAD AND BRIDGE STANDARDS

REVISION DATE
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SHEET 13 OF 15

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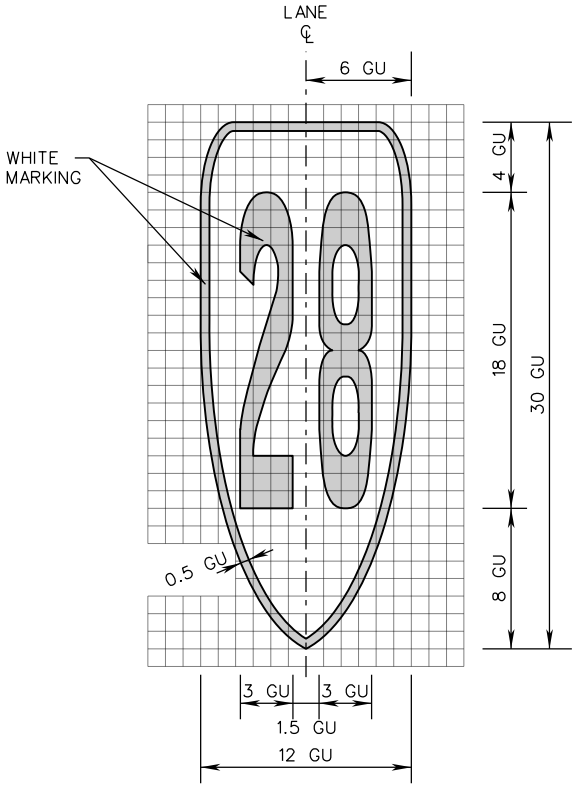
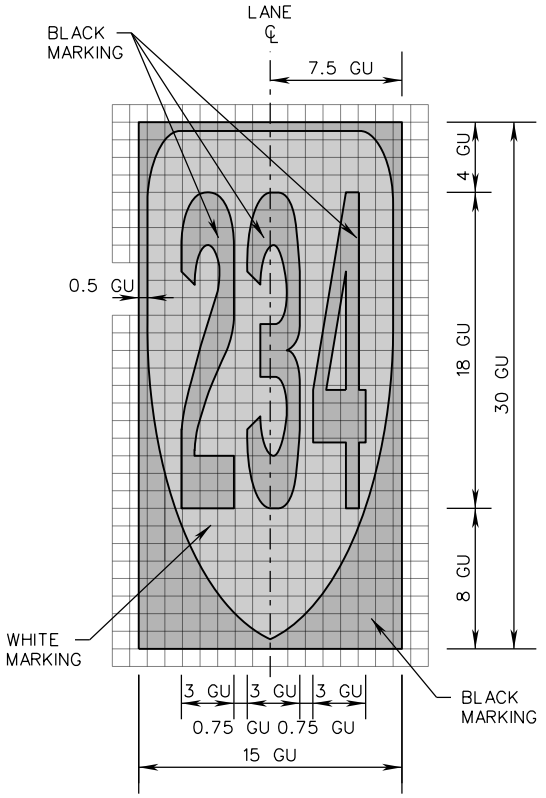


2 DIGITS VIRGINIA
PRIMARY ROUTE SHIELD
ON DARK PAVEMENT



3 DIGITS VIRGINIA
PRIMARY ROUTE SHIELD
ON LIGHT PAVEMENT

NOTES:

1. SEE TABLE FOR GRID UNIT (GU) SIZE AND SHIELD AND NUMERIAL DIMENSIONS.
2. FOR THE NUMBER "1", DIVIDE NUMERAL WIDTH BY 4.

GRID UNIT (GU) SIZE	SHIELD HEIGHT	SHIELD WIDTH		NUMERAL DIMENSIONS	
		2 DIGITS	3 DIGITS	HEIGHT	WIDTH (SEE NOTE 2)
6"	15'-0"	6'-0"	7'-6"	9'-0"	1'-6"
7"	17'-6"	7'-0"	8'-9"	10'-6"	1'-9"
8"	20'-0"	8'-0"	10'-0"	12'-0"	2'-0"

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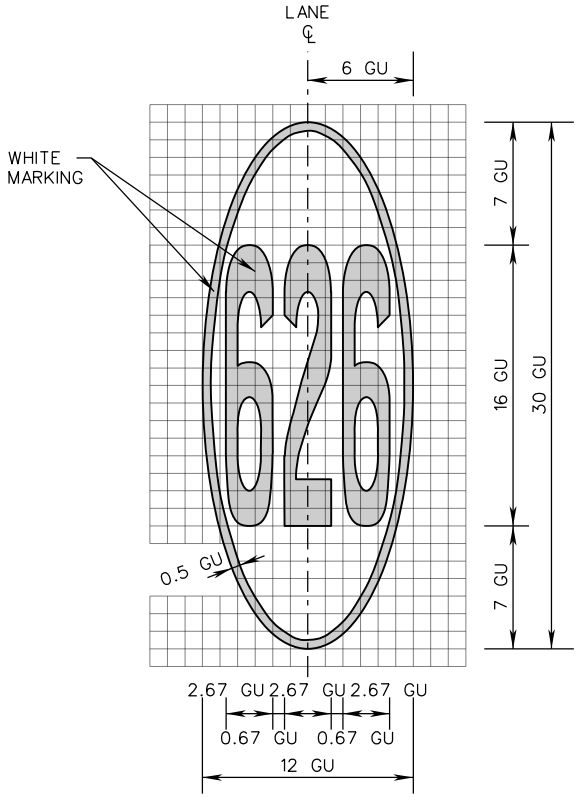
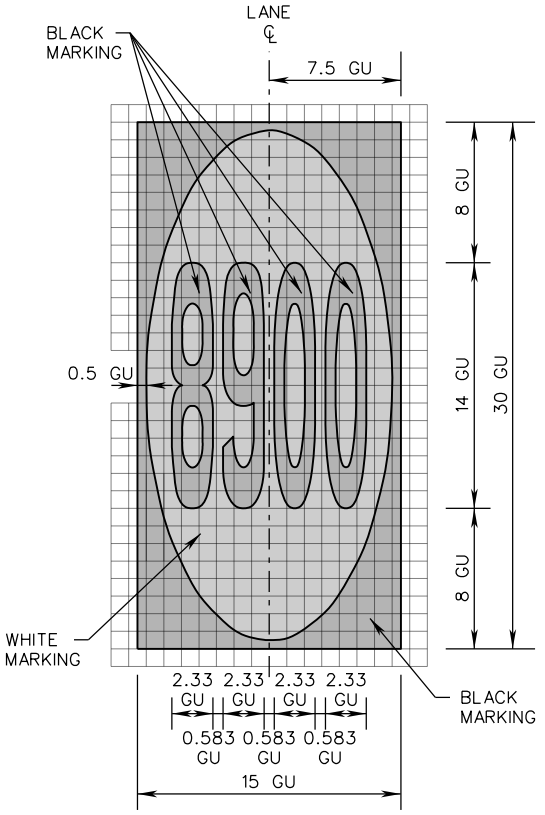
PAVEMENT WORD, SYMBOL, AND ARROW MARKINGS

ROUTE SHIELD DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION



3 DIGITS VIRGINIA
SECONDARY ROUTE SHIELD
ON DARK PAVEMENT



4 DIGITS VIRGINIA
SECONDARY ROUTE SHIELD
ON LIGHT PAVEMENT

NOTES:

1. SEE TABLE FOR GRID UNIT (GU) SIZE AND SHIELD AND NUMERIAL DIMENSIONS.
2. FOR THE NUMBER "1", DIVIDE NUMERAL WIDTH BY 4.

GRID UNIT (GU) SIZE	SHIELD HEIGHT	SHIELD WIDTH		NUMERAL DIMENSIONS			
				3 DIGITS		4 DIGITS	
		3 DIGITS	4 DIGITS	HEIGHT	WIDTH (SEE NOTE 2)	HEIGHT	WIDTH (SEE NOTE 2)
6"	15'-0"	6'-0"	7'-6"	8'-0"	1'-4"	7'-0"	1'-2"
7"	17'-6"	7'-0"	8'-9"	9'-4"	1'-6⅔"	8'-2"	1'-4⅓"
8"	20'-0"	8'-0"	10'-0"	10'-8"	1'-9⅓"	9'-4"	1'-6⅔"

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ROUTE SHIELD DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

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ROAD AND BRIDGE STANDARDS

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