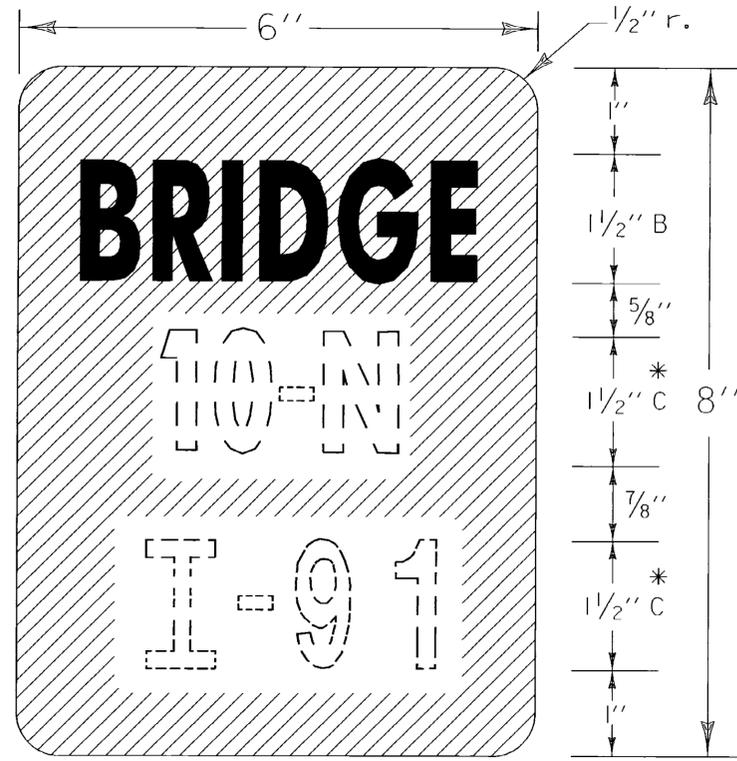
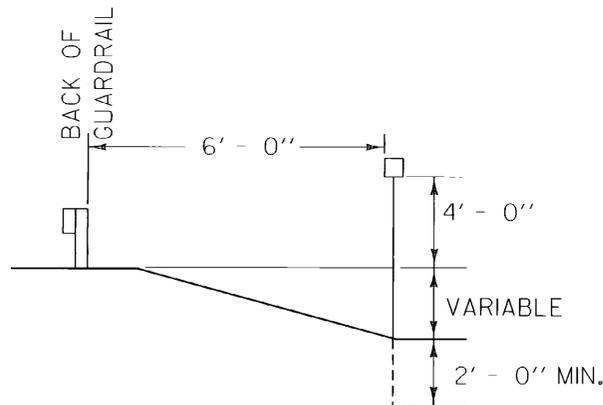
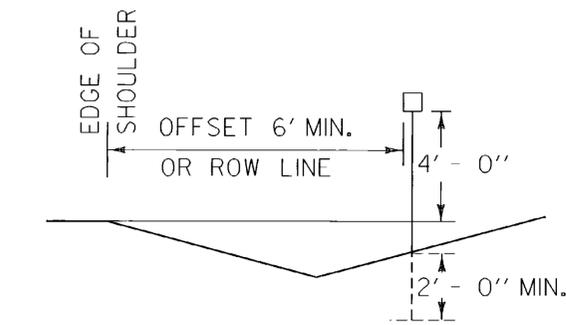


I-91
 ← 2" →

HYPHENATED WORD DETAIL

FOR EXAMPLE, ROUTE NUMBERS
 SHALL APPEAR AS: I-91, US5, VT22



VD-701

* OPTICALLY SPACE BRIDGE
 AND ROUTE NUMBERS.
 SERIES B LETTERS MAY
 BE USED TO MAINTAIN
 VISUAL INTEGRITY.

NOTES:

GENERAL:
 DOTTED LINES AND NUMERALS INDICATE TEXT THAT VARIES.

PAYMENT:
 BRIDGE PLAQUES SHALL BE PAID AS TRAFFIC SIGNS, TYPE 'A',
 AND POSTS PAID AS FLANGED CHANNEL STEEL SIGN POSTS.

MATERIAL:
 THE SIGN BASE MATERIAL SHALL BE 0.04" FLAT SHEET ALUMINUM.

COLORS:
 THE SIGN SHALL HAVE A REFLECTORIZED WHITE TEXT ON REFLECTORIZED
 GREEN BACKGROUND. THE COLORS SHALL CONFORM WITH THOSE FOUND
 IN STANDARD COLOR TOLERANCE CHARTS AS APPROVED BY THE U.S.
 DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION.

LETTERING:
 LETTERS AND DIGITS SHALL CONFORM WITH THE STANDARD ALPHABETS
 FOR HIGHWAY SIGNS AS PRINTED BY THE FEDERAL HIGHWAY ADMINISTRATION.

POSTS:
 FLANGED CHANNEL STEEL 2#/FT POSTS SHALL BE USED WHEN THE POST LENGTH
 EXCEEDS 7 FEET. FOR LENGTH OF 7 FEET OR LESS, A 1.12#/FT STEEL SIGN POST
 SHALL BE USED.

**OTHER STDS.
 REQUIRED:**

REVISIONS AND CORRECTIONS

DEC. 17, 1989 - DATE OF ORIGINAL ISSUE
 AUG. 08, 1995 - MISC NOTE REVISIONS

APPROVED

Gordon S. MacArthur
 DIRECTOR OF ENGINEERING

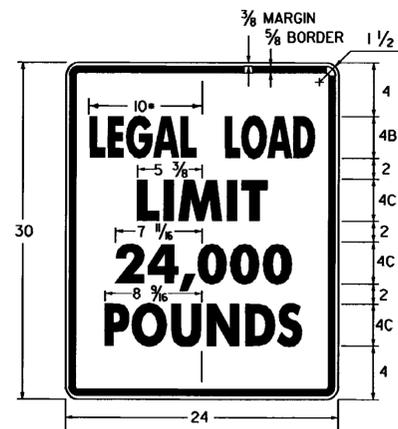
David A. Ross
 TRAFFIC AND SAFETY ENGINEER

BRIDGE NUMBER PLAQUE

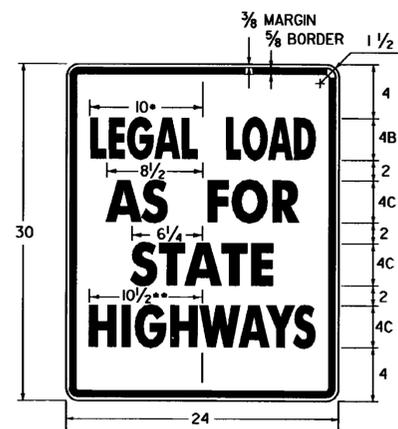


**STANDARD
 E-134**

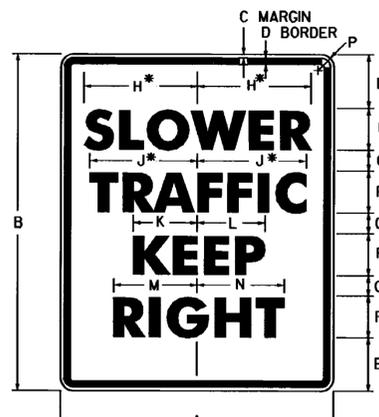
APPROVED FOR THIS PROJECT
 AND/OR DESIGN IMPLEMENTATION,
 FHWA FINAL APPROVAL PENDING.



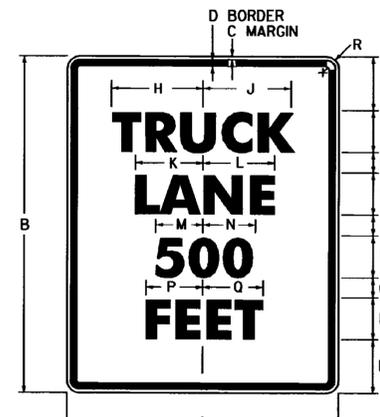
* REDUCE SPACING 50 %
LINE 3 ALTERNATE - 16,000
VR-017



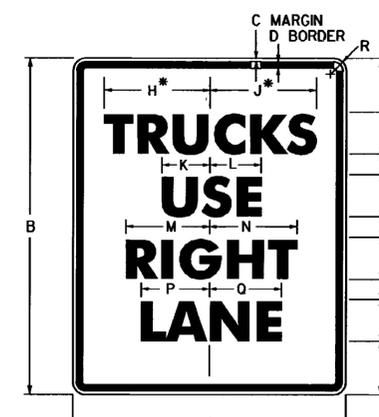
* REDUCE SPACING 50 %
** REDUCE SPACING 38 %
VR-079



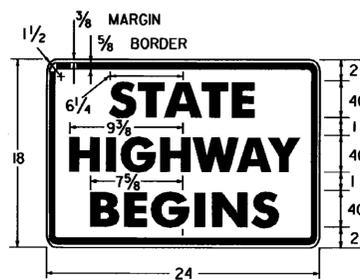
* REDUCE SPACING 25 %
R4-3



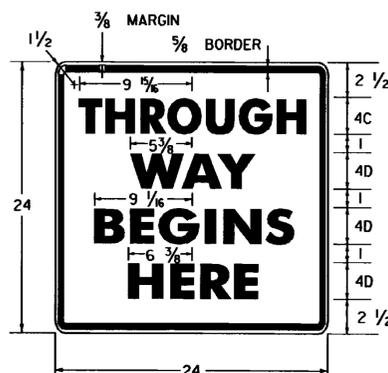
R4-6



* REDUCE SPACING 32 %
R4-5



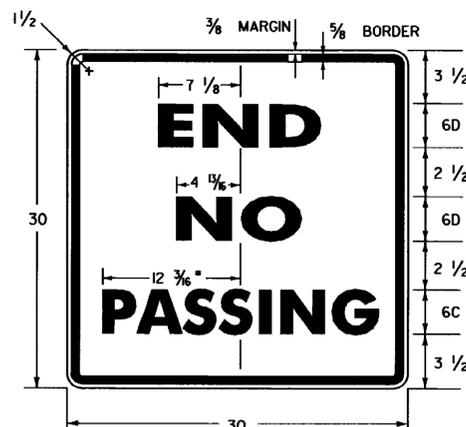
VR-039



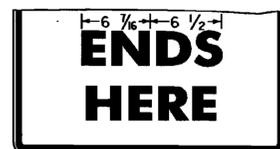
VR-041



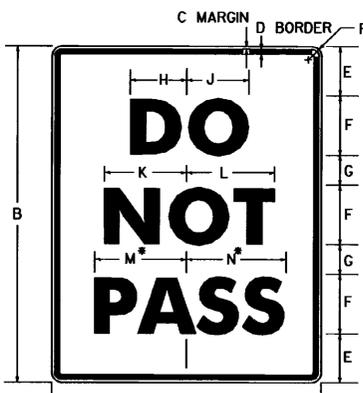
VR-038



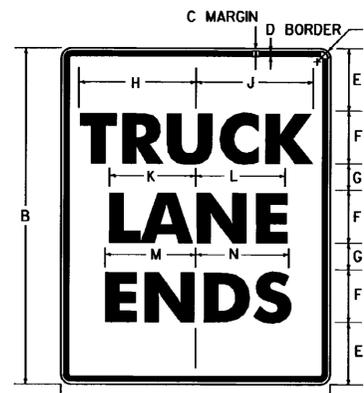
* REDUCE SPACING 50 %
VR-417



VR-040



* REDUCE SPACING 40 %
R4-1



VR-186

SIGN	DIMENSIONS (INCHES)													
	A	B	C	D	E	F	G	H	J	K	L	M	N	P
STD.	24	30	3/8	5/8	3 3/8	4D	2 1/4	9 3/4	10	6	6 3/8	7 1/8	7 3/8	1 1/2
EXPWY.	36	48	5/8	7/8	6	6D	4	14 5/8	15	9	9 1/8	10 1/8	11 3/8	2 1/4
FWY.	48	60	3/4	1 1/4	7 1/4	8D	4 1/2	19 1/2	20	12	13 3/8	14 1/4	15 1/4	3

SIGN	DIMENSIONS (INCHES)															
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
STD.	24	30	3/8	5/8	3 3/8	4E	2 1/4	9 1/8	9 1/8	7 3/8	7 1/8	5 1/8	5 1/8	6 7/8	7 1/8	1 1/2
EXPWY.	36	48	5/8	7/8	6	6E	4	14 3/4	14 1/2	11 5/8	11 1/2	8 1/2	8 3/4	10 5/8	10 5/8	2 1/4
FWY.	48	60	3/4	1 1/4	7 1/4	8E	4 1/2	19 5/8	19 3/8	15 1/8	15 3/8	11 3/8	11 5/8	13 3/4	14 1/8	3

SIGN	DIMENSIONS (INCHES)																	
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R		
STD.	24	30	3/8	5/8	3 3/8	4D	2 1/4	9 1/8	9 3/8	4 3/4	5	7 1/8	7 3/8	6 1/4	6 5/8	1 1/2		
EXPWY.	36	48	5/8	7/8	6	6D	4	14 5/8	13 3/8	7 1/8	7 1/2	10 1/8	11 3/8	9 3/8	9 5/8	2 1/4		
FWY.	48	60	3/4	1 1/4	7 1/4	8D	4 1/2	19 1/8	18 3/8	9 1/2	10	14 1/4	15 1/4	12 1/2	13 1/4	3		

GENERAL:

1. ALL DIMENSIONS IN INCHES.

COLORS:

THE REGULATORY SIGNS SHOWN ON THIS SHEET SHALL HAVE BLACK TEXT ON REFLECTORIZED WHITE BACKGROUND, UNLESS OTHERWISE NOTED. THE COLORS SHALL CONFORM WITH THE COLORS ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS AND APPROVED BY THE DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION.

MATERIALS:

THE SIGN BASE MATERIALS USED FOR REGULATORY SIGNS SHOWN ON THIS SHEET MAY BE ANY OF THE FOLLOWING OF THE MINIMUM THICKNESS NOTED.

24' X 18'	
24' X 24'	
24' X 30'	36' X 48'
30' X 30'	48' X 60'
0.080"	0.100"
1/2" GAGE	5/8" GAGE
16 GAGE	14 GAGE

FLAT SHEET ALUMINUM
HIGH DENSITY OVERLAID PLYWOOD
GALVANIZED FLAT SHEET STEEL

THE REFLECTIVE MATERIAL FOR GROUND MOUNTED SIGNS SHALL BE AASHTO TYPE II OR III WHITE REFLECTIVE SHEETING APPLIED TO THE ENTIRE BACKGROUND OF THE SIGN. THE TEXT OF THE SIGNS MAY BE LETTERING FILM, SILK SCREENED OR HAND PAINTED. HAND PAINTING MUST BE COMPARABLE IN QUALITY TO THE RESULTS OBTAINED BY SILK SCREENING.

SPECIFICATIONS:

REGULATORY SIGNS SHALL MEET THE VERMONT STANDARD SPECIFICATIONS FOR TRAFFIC SIGNS.

TEXT DESIGN:

LETTERS, DIGITS, ARROWS, SPACING AND TEXT DIMENSIONS SHALL CONFORM WITH THE "STANDARD ALPHABET FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS" AND DESIGNS PRESCRIBED IN THE STANDARD HIGHWAY SIGNS AS SPECIFIED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

OTHER STDS. : NONE REQUIRED

REVISIONS AND CORRECTIONS

OCT. 30, 1987 - DATE OF ORIGINAL ISSUE
SEPT. 20, 1995 - ADDED AND DELETED SIGN DETAIL,
ADDED SIGN ID NUMBERS, MINOR NOTE REVISIONS.

APPROVED FOR THIS PROJECT
AND/OR DESIGN IMPLEMENTATION.
FHWA FINAL APPROVAL PENDING.

APPROVED

Stephen D. MacArthur
DIRECTOR OF ENGINEERING

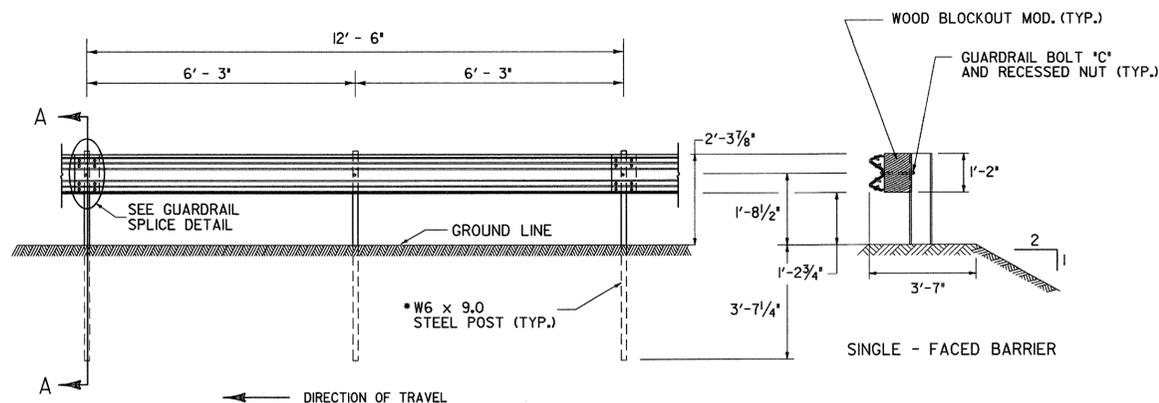
David A. Ross
TRAFFIC AND SAFETY ENGINEER

**REGULATORY SIGN
DETAILS**

/traf/std/stdel4l.dgn : stdel4l.l

**STANDARD
E-141**

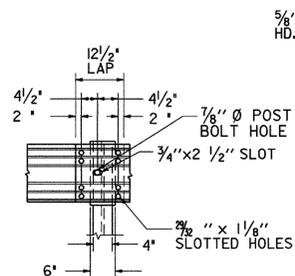
"W" BEAM GUARDRAIL WITH STEEL POSTS



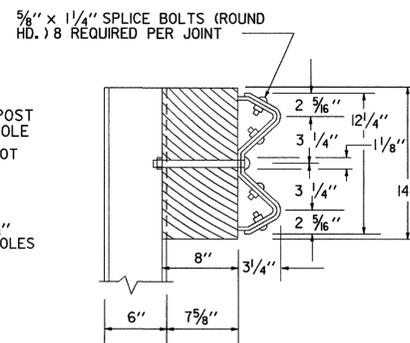
ELEVATION FROM CL OF ROAD

DOUBLE - FACED BARRIER

SECTION A - A

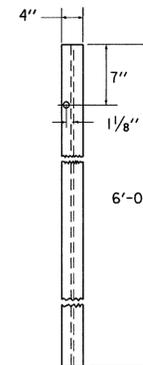


ELEVATION

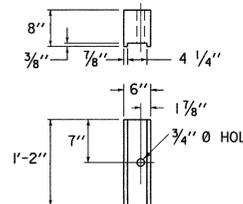


SECTION

GUARDRAIL SPLICE DETAIL



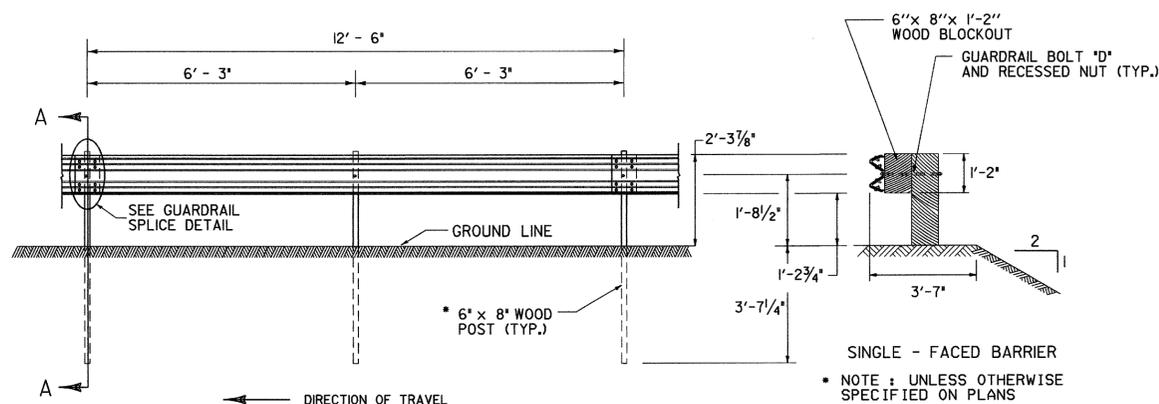
FRONT FACE STEEL POST



POST FACE
MODIFIED WOOD BLOCKOUT - ROUTED
6" X 8" X 1 1/2"
FOR USE W/ STEEL POSTS ONLY

- NOTES:
- BLOCKS SHALL BE MADE OF TIMBER WITH A STRESS GRADE OF 1200 PSI OR MORE. TESTING SHALL BE IN ACCORDANCE WITH WEST COAST LUMBER INSPECTION BUREAU, SOUTHERN PINE INSPECTION BUREAU OR OTHER APPROPRIATE ASSOCIATION. TIMBER FOR BLOCKS SHALL BE ROUGH SAWN (UNPLANED) WITH DIMENSIONS INDICATED. THE SIZE TOLERANCE OF ROUGH SAWN BLOCKS IN THE DIRECTION OF THE BOLT HOLES SHALL BE NOT MORE THAN $\pm 1/4$ ".
 - SUPPLY WOOD BLOCKS PER AASHTO M 168.
 - TREAT WITH PRESERVATIVE PER AASHTO M 133.
 - BLOCKOUTS MAY ALSO BE MADE OF APPROVED ALTERNATIVE MATERIAL.

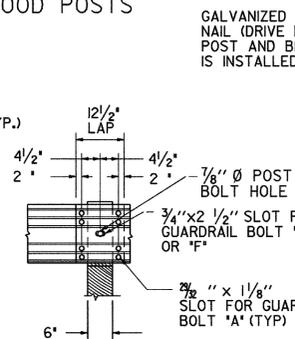
"W" BEAM GUARDRAIL WITH WOOD POSTS



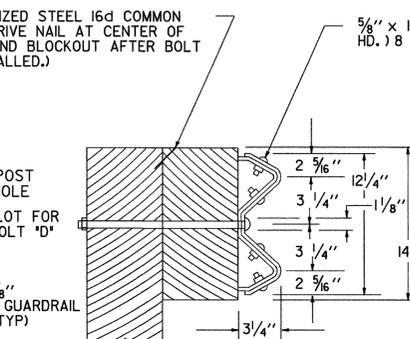
ELEVATION FROM CL OF ROAD

DOUBLE - FACED BARRIER

SECTION A - A

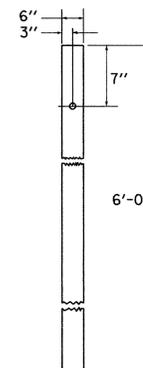


ELEVATION

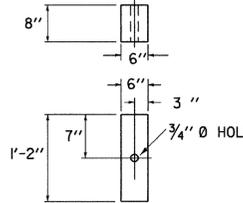


SECTION

GUARDRAIL SPLICE DETAIL



FRONT FACE WOOD POST

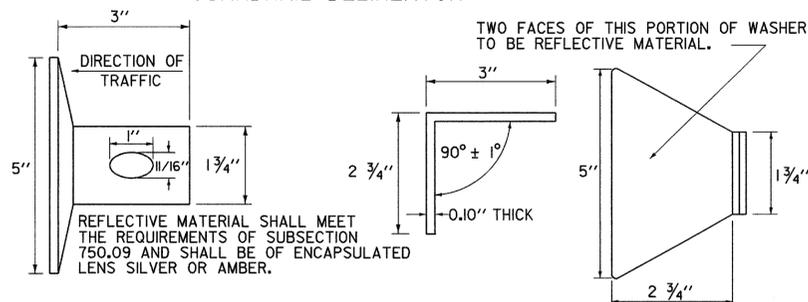


POST FACE
WOOD BLOCKOUT
6" X 8" X 1 1/2"

- NOTES:
- BLOCKS SHALL BE MADE OF TIMBER WITH A STRESS GRADE OF 1200 PSI OR MORE. TESTING SHALL BE IN ACCORDANCE WITH WEST COAST LUMBER INSPECTION BUREAU, SOUTHERN PINE INSPECTION BUREAU OR OTHER APPROPRIATE ASSOCIATION. TIMBER FOR BLOCKS SHALL BE ROUGH SAWN (UNPLANED) WITH DIMENSIONS INDICATED. THE SIZE TOLERANCE OF ROUGH SAWN BLOCKS IN THE DIRECTION OF THE BOLT HOLES SHALL BE NOT MORE THAN $\pm 1/4$ ".
 - SUPPLY WOOD BLOCKS PER AASHTO M 168.
 - TREAT WITH PRESERVATIVE PER AASHTO M 133.
 - BLOCKOUTS MAY ALSO BE MADE OF APPROVED ALTERNATIVE MATERIAL.

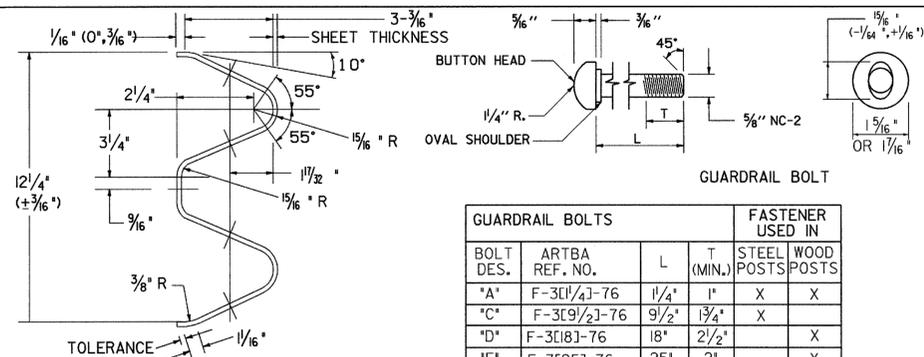
* NOTE : UNLESS OTHERWISE SPECIFIED ON PLANS

GUARDRAIL DELINEATOR



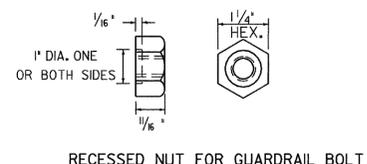
REFLECTIVE MATERIAL SHALL MEET THE REQUIREMENTS OF SUBSECTION 750.09 AND SHALL BE OF ENCAPSULATED LENS SILVER OR AMBER.

THIS REFLECTORIZED ALUMINUM WASHER IS TO BE PLACED IN VALLEY OF BEAM WHEN MOUNTING BEAM ONTO EACH FIFTH POST. WASHER SHALL MEET SPECIFICATION REQUIREMENTS FOR A.S.T.M. B-209 ALLOY 5052-H32

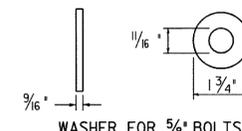


ARTBA RE-3[206]-3[12]-6" CLASS A, TYPE 13-73
TYPICAL GUARDRAIL SECTION

BOLT DES.	ARTBA REF. NO.	L	T (MIN.)	FASTENER USED IN	
				STEEL POSTS	WOOD POSTS
*A	F-3[114]-76	1 1/4"	1"	X	X
*C	F-3[92]-76	9/2"	1 3/4"	X	
*D	F-3[18]-76	18"	2 1/2"		X
*F	F-3[25]-76	25"	2"		X



RECESSED NUT FOR GUARDRAIL BOLT



WASHER FOR 5/8" BOLTS

NOTE: WASHER IS USED UNDER RECESSED NUT WHERE GUARDRAIL BOLT IS USED WITH WOOD POSTS.

GENERAL NOTES:

- GUARDRAIL SHALL MEET THE REQUIREMENTS OF AASHTO M 180, CLASS A, TYPE 1, UNLESS OTHERWISE DESIGNATED
- GUARDRAIL SHALL BE SINGLE FACED UNLESS OTHERWISE DESIGNATED
- GUARDRAIL SECTIONS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC FLOW FOR THE LANE NEAREST THE GUARDRAIL.
- FOR DESCRIPTION AND SPECIFICATION OF PARTS IDENTIFIED BY (ARTBA ...) AND OTHER DETAILS OF POSTS, POST ACCESSORIES, FASTENERS & RAIL ELEMENTS, SEE AASHTO-AGC-ARTBA JOINT TASK FORCE NO. 13, TITLED "A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE", LATEST EDITION.
- STANDARD STEEL BEAM TO BE 1/8" AND THE HEAVY DUTY TO BE 3/8" THICK.

OTHER STANDARD REQUIRED G-1d

REVISIONS AND CORRECTIONS
JUNE 1, 1994 - REISSUED, WITHOUT CHANGE,
UNDER NEW SIGNATURES.
JAN.3.2000 - UPDATED TO REFLECT METRIC STD.
CHANGES

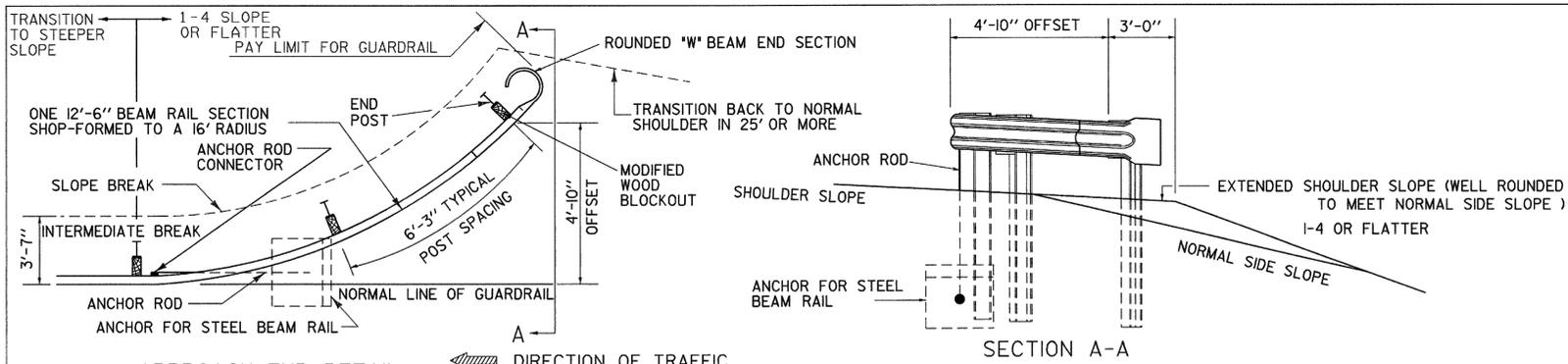
APPROVED

Robert Steel
DIRECTOR OF PROJECT DEVELOPMENT
Robert Steel
ROADWAY AND TRAFFIC DESIGN ENGINEER

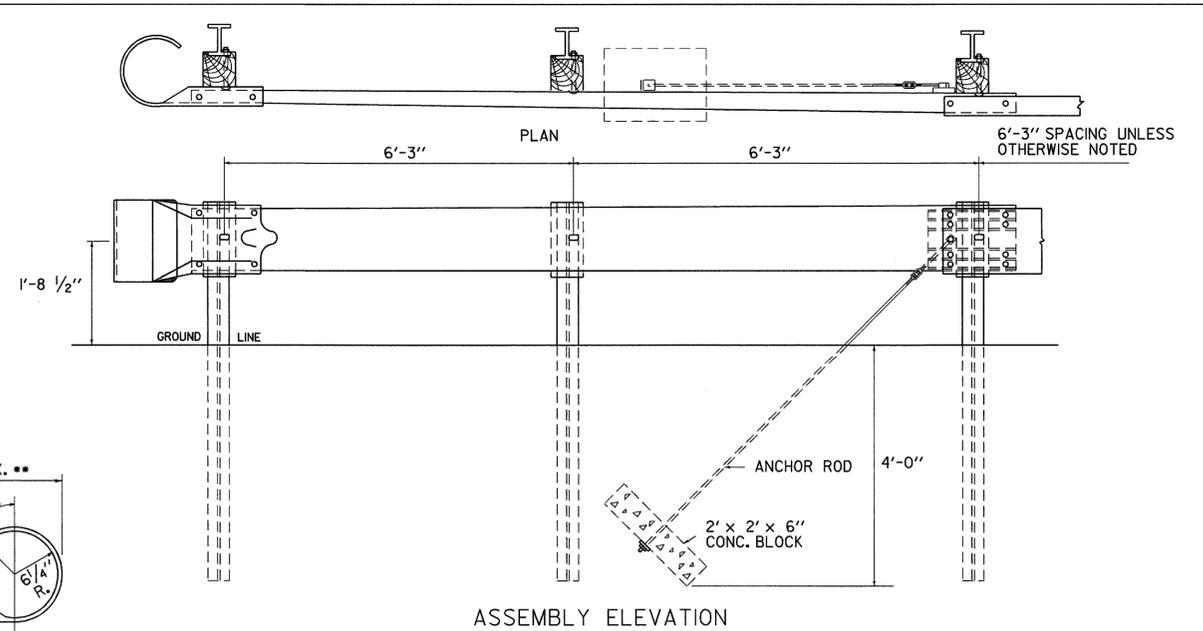
STEEL BEAM GUARDRAIL WITH STEEL POSTS
STEEL BEAM GUARDRAIL WITH WOOD POSTS



STANDARD
G-1



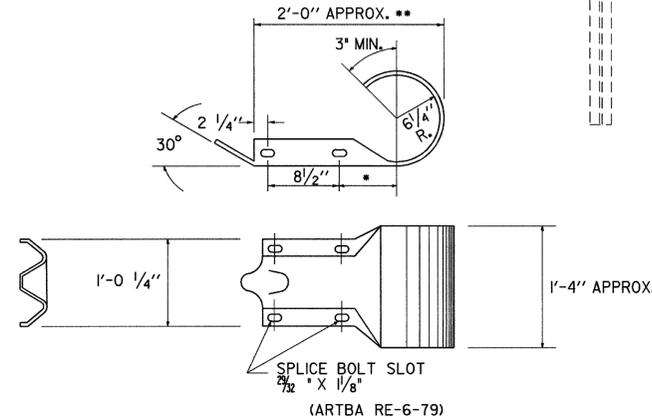
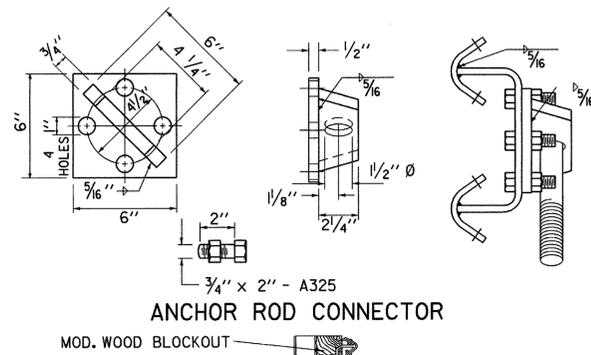
APPROACH END DETAIL
NHS APPROVED FOR USE WHERE DESIGN SPEED IS 40 OR LESS MPH
NON-NHS APPROVED FOR USE WHERE DESIGN SPEED IS 50 OR LESS MPH



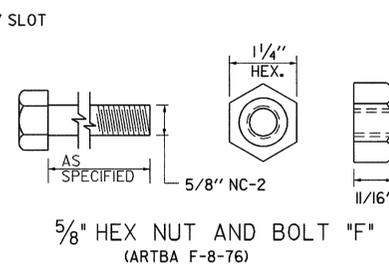
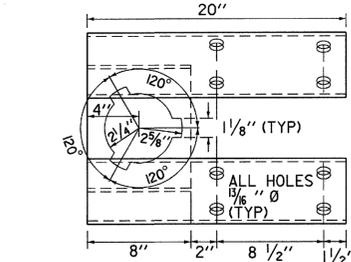
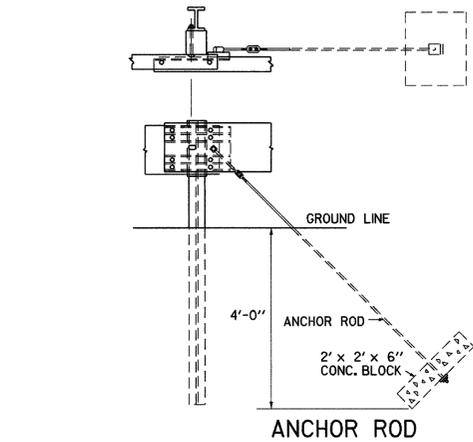
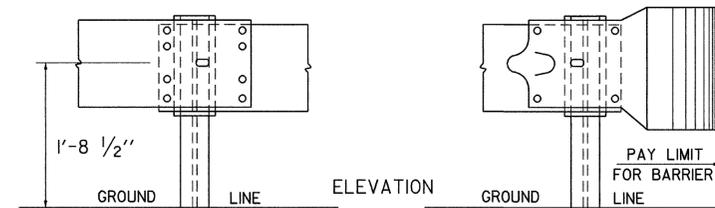
TRAILING END TERMINAL FOR USE ON ONE-WAY HIGHWAYS

GENERAL NOTES:

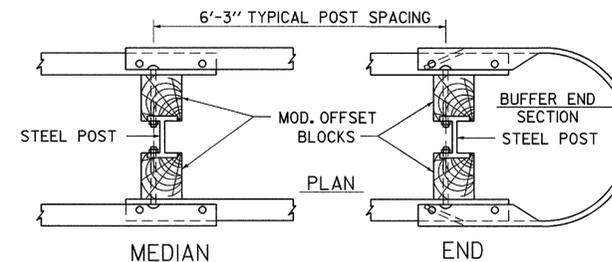
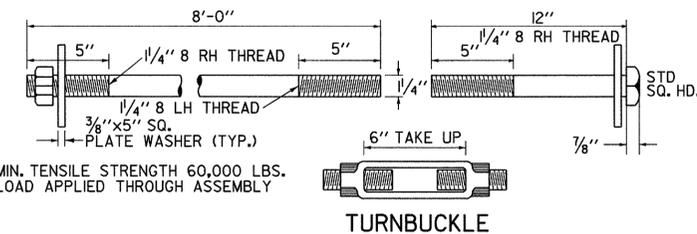
1. ALL METAL PARTS SHALL BE GALVANIZED.
2. ALL WOOD POSTS SHALL BE GIVEN A PRESERVATIVE TREATMENT.
3. DETAILS PERTINENT TO THE STANDARD INSTALLATION OF "W" BEAM SECTIONS WILL BE FOUND ON STANDARD DRAWING G-1.
4. FOR DESCRIPTION AND SPECIFICATIONS OF PARTS IDENTIFIED BY "ARTBA..." AND OTHER DETAILS OF POSTS, POST ACCESSORIES, FASTENERS AND RAIL ELEMENTS, SEE AASHTO-AGC-ARTBA JOINT TASK FORCE NO. 13, TITLED "A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE", LATEST EDITION.



* THIS DIMENSION IS 7 1/2" INRE-7-79. IF THE DIMENSION IS USED IN THIS PART, IT WILL GIVE AN ACCEPTABLE OVERALL LENGTH (**) OF APPROXIMATELY 2'- 11/2".



FASTENER DETAILS



STEEL BEAM MEDIAN BARRIER
NOTE: TO BE USED OUTSIDE CLEAR ZONE ONLY.

OTHER STANDARD REQUIRED G-1

REVISIONS AND CORRECTIONS
JUNE 1, 1994 - REISSUED, WITHOUT CHANGE, UNDER NEW SIGNATURES.
JAN.3,2000 - UPDATED TO REFLECT METRIC STD. CHANGES

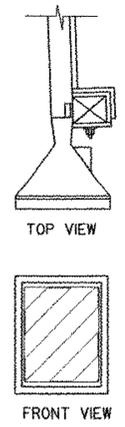
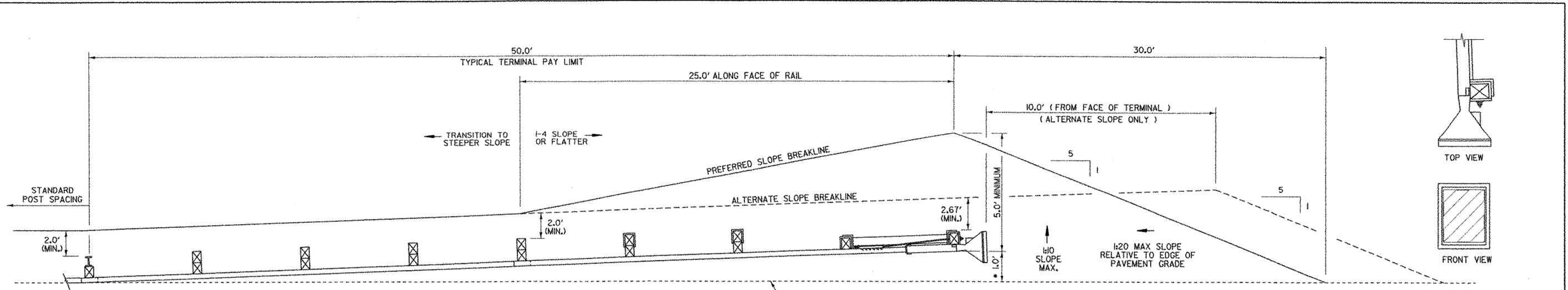
APPROVED

[Signature]
DIRECTOR OF PROJECT DEVELOPMENT
[Signature]
ROADWAY AND TRAFFIC DESIGN ENGINEER

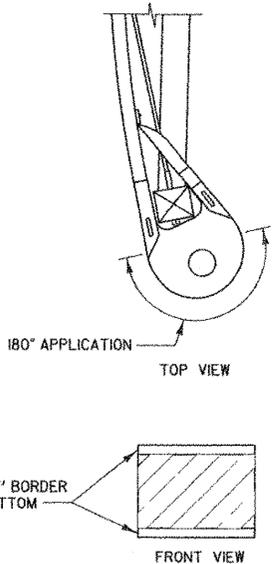
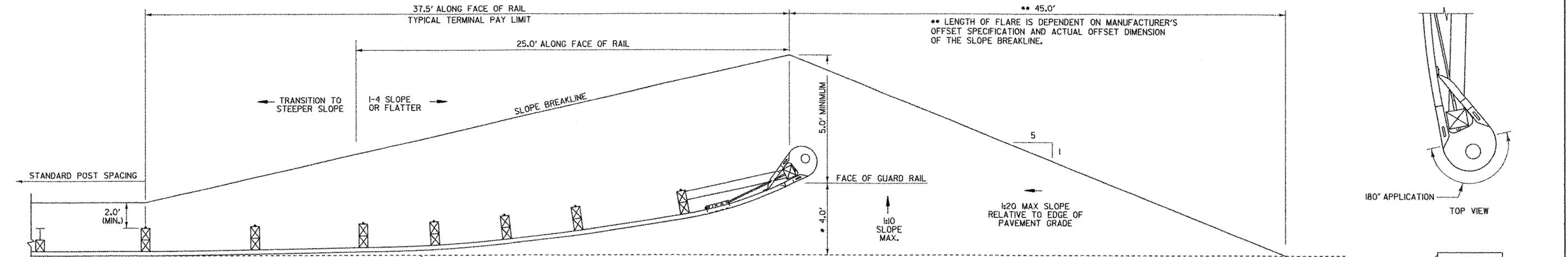
STEEL BEAM GUARDRAIL APPROACH END TERMINAL
STEEL BEAM GUARDRAIL TRAILING END TERMINAL
ANCHOR FOR STEEL BEAM GUARDRAIL
STEEL BEAM MEDIAN BARRIER



STANDARD
G-1d



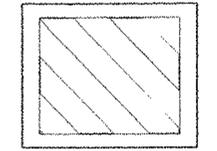
TANGENTIAL TERMINAL



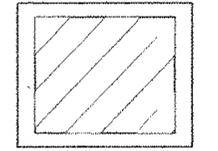
FLARED TERMINAL

GENERAL NOTES

- ① THE AREA IMMEDIATELY BEHIND AND BEYOND THE TERMINAL SHOULD BE REASONABLY TRAVERSABLE AND FREE FROM FIXED-OBJECT HAZARDS TO THE EXTENT PRACTICABLE. IF A CLEAR RUNOUT PATH IS NOT ATTAINABLE, THIS AREA SHOULD AT LEAST BE SIMILAR IN CHARACTER TO UPSTREAM/UNSHIELDED ROADSIDE AREAS.
- ② REFLECTIVE SHEETING SHALL BE PLACED ON THE TERMINAL END OF ALL TANGENT END TERMINALS. THIS SHALL BE OBJECT MARKER MATERIAL (TYPE 3 - STRIPED MARKER OM-3L AND OM-3R) CONSISTING OF A SQUARE OR RECTANGULAR SHAPE WITH ALTERNATING BLACK AND RETROREFLECTIVE YELLOW STRIPES SLOPING DOWNWARD AT AN ANGLE OF 45 DEGREES TOWARDS TRAFFIC. THE MINIMUM WIDTH OF THE YELLOW STRIPE SHALL BE 3 INCHES. THE DIMENSIONS OF THE MARKER SHALL EXTEND FOR THE FULL WIDTH OF THE FACE PLATE ON THE TERMINAL HEAD AND BE SUFFICIENT IN HEIGHT (DEPENDENT ON THE TYPE OF END TERMINAL AND HEAD SIZE). REFLECTIVE MATERIAL SHALL MEET THE REQUIREMENTS OF SUBSECTION 750.08 (BX3) TYPE 1110R HIGHER (AASHTO M 268 (ASTM 4956)). THE COST SHALL BE INCLUDED IN THE COST OF THE END TERMINAL.
- ③ REFLECTIVE SHEETING SHALL BE PLACED ON THE END OF FLARED TERMINALS WHICH ARE LOCATED 6 FEET OR LESS FROM THE EDGE OF SHOULDER (NORMAL FACE OF GUARDRAIL). THIS SHALL BE THE SAME OBJECT MARKER MATERIAL SPECIFIED IN NOTE 2. THE COST OF THE REFLECTIVE SHEETING SHALL BE INCLUDED IN THE COST OF THE END TERMINAL.
- ④ FOR THE FLARED TERMINAL, WITH AN OFFSET BETWEEN 4 FEET AND 6 FEET FROM THE NORMAL FACE OF GUARDRAIL, THE FOLLOWING SHALL PERTAIN; A REFLECTIVE BUTTON, MOUNTED ON A STANDARD DELINEATOR POST, SHALL BE INSTALLED AT THE NORMAL FACE OF GUARDRAIL, DIRECTLY OPPOSITE THE LEAD END OF THE TERMINAL. THE BUTTON SHALL BE WHITE FOR THE RIGHT SIDE OF THE ROAD AND YELLOW FOR THE LEFT SIDE. ANY DELINEATORS INSTALLED SHALL BE PAID FOR BY THE APPROPRIATE PAY ITEMS.



ORIENTATION OF REFLECTIVE SHEETING FOR LEFT SIDE OF ROAD HAZARD.



ORIENTATION OF REFLECTIVE SHEETING FOR RIGHT SIDE OF ROAD HAZARD.

NOT TO SCALE

REVISIONS AND CORRECTIONS
 OCT. 21, 1998 ORIGINAL APPROVAL
 NOV. 15, 2002 MODIFIED SLOPE BREAKLINE,
 REFLECTIVE SHEETING ADDED

APPROVED

 DIRECTOR OF PROJECT DEVELOPMENT

 ROADWAY DESIGN ENGINEER

 FEDERAL HIGHWAY ADMINISTRATION

**GENERIC PLANS FOR
 GUARDRAIL END TERMINALS**



STANDARD
 G-19

1. TRAFFIC CONTROL DEVICES NOT DETAILED IN THE VERMONT AGENCY OF TRANSPORTATION (VAOT) "STANDARD DRAWINGS" OR THE PROJECT PLANS SHALL BE IN ACCORDANCE WITH THE "MANUAL ON TRAFFIC CONTROL DEVICES" (MUTCD) AND THE "STANDARD HIGHWAY SIGNS AND MARKINGS" BOOK (SHSM) PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION (FHWA).
2. CONSTRUCTION SIGNS SHALL BE ERECTED BEFORE THE START OF ANY WORK AND SHALL BE COVERED UNTIL WORK COMMENCES, DURING PERIODS OF INACTIVITY OR UPON COMPLETION OF THE WORK. EACH SIGN SHALL BE ERECTED IN A NEAT AND WORKMANLIKE MANNER.
3. CONSTRUCTION SIGN COVERS SHALL CONSIST OF A PANEL, PAINTED FLAT BLACK, THE SAME SIZE AS THE SIGN IT COVERS. THE PANEL SHALL BE OF WOOD, PLYWOOD, HARDBOARD OR ANY MATERIAL SATISFACTORY TO THE ENGINEER. NO MATERIAL WILL BE APPROVED THAT WILL DETERIORATE BY EXPOSURE TO THE WEATHER DURING THE PROJECT. MOUNTING OF THE PANEL SHALL BE DONE IN SUCH A WAY AS NOT TO DAMAGE THE SIGN FACE MATERIAL.
4. SIGNS SHALL BE MAINTAINED IN A CLEAN AND LEGIBLE CONDITION SATISFACTORY TO THE ENGINEER. THEY SHALL BE KEPT PLUMB AND LEVEL, AND ALWAYS PRESENT A NEAT APPEARANCE. DAMAGED, DEFACED OR DIRTY SIGNS SHALL BE REPAIRED, CLEANED OR REPLACED AS ORDERED BY THE ENGINEER.
5. NO CROSS-BRACING OR BACK-BRACING TO KEEP POSTS PLUMB WILL BE ALLOWED. CONCRETE FOUNDATIONS, COLLARS OR SOIL BEARING PLATES ARE NOT PERMITTED. CONSTRUCTION SIGNS SHALL BE PLACED ON TWO POSTS.
6. CONSTRUCTION SIGNS INSTALLED ON POSTS SHALL BE SET SECURELY IN THE GROUND. THE BOTTOM OF A SIGN SHALL BE AT LEAST FIVE FEET ABOVE THE EDGE OF PAVEMENT AND THE NEAREST EDGE OF A SIGN SHALL BE AT LEAST SIX FEET OUTSIDE THE SHOULDER POINT, FOUR FEET OUTSIDE GUARDRAIL, OR TWO FEET OUTSIDE CURBING OR SIDEWALK. THE INSTALLATION OF SIGNS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER. IN URBAN AREAS, THE BOTTOM OF THE SIGN SHALL BE AT LEAST SEVEN FEET ABOVE THE SIDEWALK OR EDGE OF PAVEMENT, WHICHEVER IS HIGHER.
7. PORTABLE SIGNS SHALL BE PLACED ON THE EDGE OF ROADWAY AND A MINIMUM OF ONE FOOT ABOVE THE TRAVELED WAY. ALL VEGETATION THAT INTERFERES WITH VISIBILITY OF THE SIGNS SHALL BE REMOVED. WHEN PLACED BEHIND GUARDRAIL, THE BOTTOM OF THE SIGN FACE SHALL BE ABOVE THE TOP OF THE GUARDRAIL.
8. SIGNS SHALL BE REMOVED UPON COMPLETION OF THE WORK AT THE DISCRETION OF THE ENGINEER.
9. ROLL UP CONSTRUCTION SIGNS SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING THE "AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS" (AASHTO) M 268 ["AMERICAN SOCIETY FOR TESTING AND MATERIALS" (ASTM) D 4956] TYPE VI AND TYPE VII UNLESS OTHERWISE NOTED.
10. SOLID SUBSTRATE CONSTRUCTION SIGNS SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING THE "AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS" (AASHTO) M 268 ["AMERICAN SOCIETY FOR TESTING AND MATERIALS" (ASTM) D 4956] TYPE VIII OR IX REQUIREMENTS UNLESS OTHERWISE NOTED.
11. WHERE CONSTRUCTION SIGN INSTALLATIONS ARE NOT PROTECTED BY GUARDRAIL OR OTHER APPROVED TRAFFIC BARRIERS, ALL SIGN STANDS AND POST INSTALLATIONS SHALL MEET "NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM" (NCHRP) REPORT 350 OR THE AASHTO "MANUAL FOR ASSESSING SAFETY HARDWARE" (MASH). THE APPROPRIATE RESOURCE SHALL BE DETERMINED AS DESCRIBED IN THE MASH PUBLICATION. NO SIGN POSTS SHALL EXTEND OVER THE TOP OF THE SIGN INSTALLED ON SAID POSTS. WHEN ANCHORS ARE INSTALLED, STUBS SHALL NOT BE GREATER THAN FOUR INCHES ABOVE EXISTING GROUND.
12. ROADWAY AND SHOULDER WIDTHS DEPICTED ON THE STANDARD DRAWINGS MAY VARY.
13. THESE STANDARD DRAWINGS ARE INTENDED TO SERVE AS VTRANS STANDARD OPERATING PROCEDURE. IT IS NOTED THAT COMPONENT PARTS OF A TEMPORARY TRAFFIC CONTROL WORK ZONE MAY BE MODIFIED DUE TO FIELD CONDITIONS, AT THE DISCRETION OF THE ENGINEER.

OTHER STDS. REQUIRED: **NONE**

REVISIONS AND CORRECTIONS
AUG. 6, 2012 - ORIGINAL APPROVAL DATE

APPROVED
W.A.P.
HIGHWAY SAFETY & DESIGN ENGINEER
Rubén J. Huante
DIRECTOR OF PROGRAM DEVELOPMENT
Mark D. Richter
FEDERAL HIGHWAY ADMINISTRATION

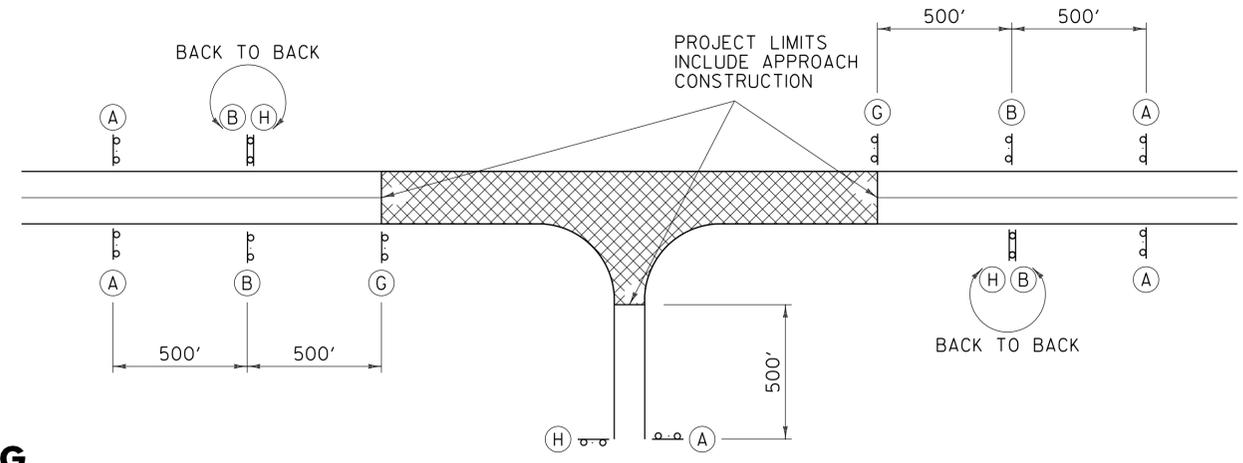
TRAFFIC CONTROL GENERAL NOTES



STANDARD
T-1

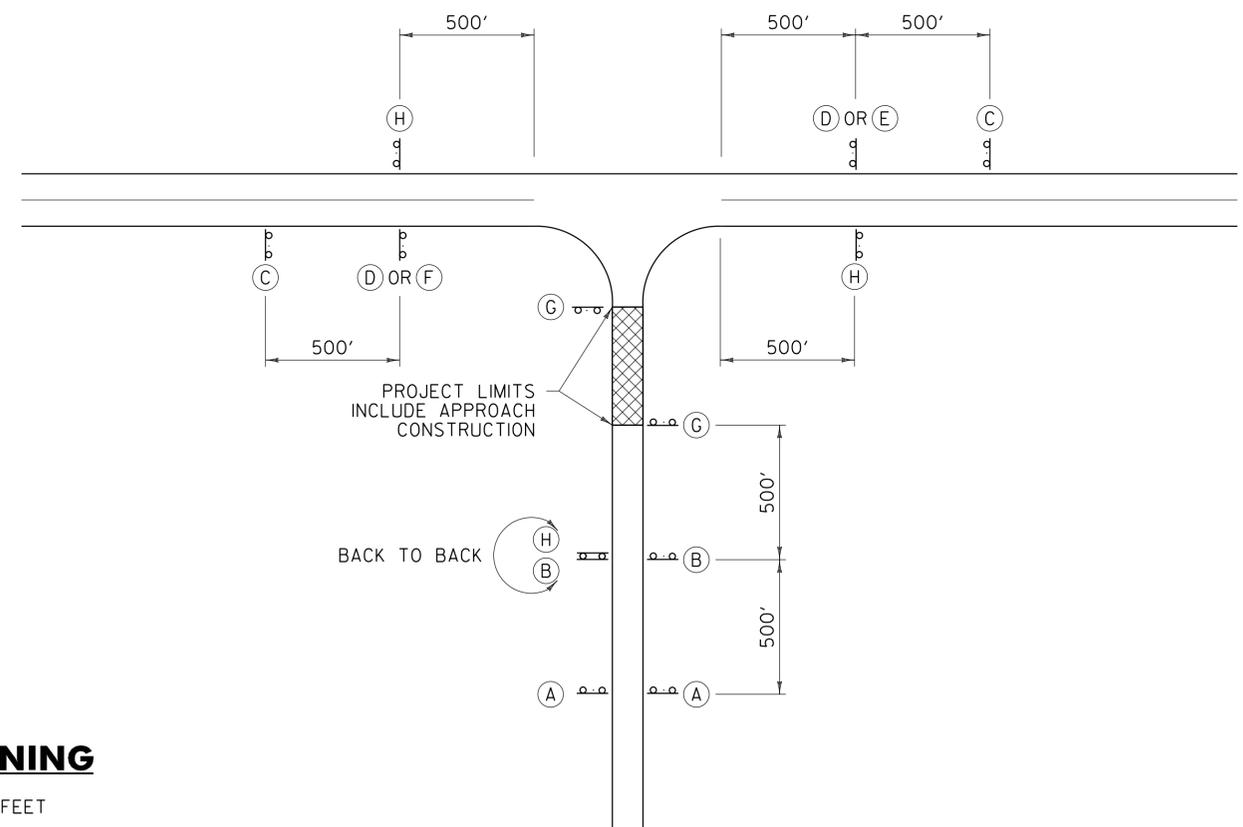
LEGEND

- (A)  ROAD WORK AHEAD
W20-1
- (B)  ROAD WORK 500 FT
W20-1
- (C)  SIDE ROAD WORK AHEAD
VC-869
- (D)  SIDE ROAD WORK 500 FT
VC-869
- (E)  SIDE ROAD WORK LEFT
VC-869
- (F)  SIDE ROAD WORK RIGHT
VC-869
- (G)  ROAD WORK NEXT XX MILES
G20-1
- (H)  END ROAD WORK
G20-2



TYPICAL APPROACH SIGNING

FIELD CONDITIONS MAY DICTATE THE ACTUAL PLACEMENT.



SIDE ROAD APPROACH SIGNING

TO BE USED WHEN CONSTRUCTION IS UP TO 1000 FEET FROM THE INTERSECTION. FIELD CONDITIONS MAY DICTATE THE ACTUAL PLACEMENT.

GENERAL NOTES:

1. SIGNS SHOWN ON THIS SHEET ARE INTENDED FOR USE IN PROVIDING ADVANCE WARNING AND INFORMATION ON CONSTRUCTION PROJECTS OVER WHICH TRAFFIC WILL BE MAINTAINED. WHEN ADDITIONAL APPROACH SIGNS OR OTHER TYPES OF ADVANCE SIGNING OR CONTROL ARE NECESSARY, THE PLANS AND/OR THE SPECIFICATIONS FOR THAT PROJECT WILL GIVE THE DETAILS OF THE SIGNS AND DEVICES REQUIRED. FOR ON-PROJECT CONSTRUCTION SIGNS, REFER TO APPROPRIATE STANDARD SHEETS.
2. THE "ROAD WORK NEXT XX MILES" SIGN (G20-1) SHALL BE INSTALLED IN ADVANCE OF TEMPORARY TRAFFIC CONTROL ZONES THAT ARE MORE THAN TWO MILES IN LENGTH OR AS DIRECTED BY THE ENGINEER. DISTANCES SHALL BE STATED TO THE NEAREST WHOLE MILE.
3. SIGNS SHALL BE LOCATED AS DETAILED ON THIS SHEET OR AS OTHERWISE SHOWN ON THE PLANS. THEY SHALL APPEAR AT EACH END OF THE HIGHWAY UNDER CONSTRUCTION AND ON ALL INTERSECTING PUBLIC HIGHWAYS. THE ENGINEER SHALL DETERMINE THE EXACT LOCATIONS.

OTHER STDS. REQUIRED: T-1, T-28

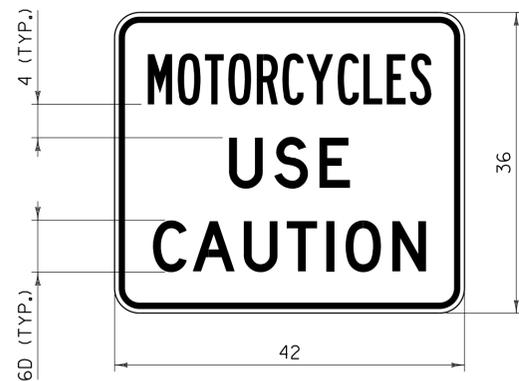
REVISIONS AND CORRECTIONS
AUG. 6, 2012 - ORIGINAL APPROVAL DATE

APPROVED
[Signature]
HIGHWAY SAFETY & DESIGN ENGINEER
[Signature]
DIRECTOR OF PROGRAM DEVELOPMENT
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MARK D. RICHTER
FEDERAL HIGHWAY ADMINISTRATION

**CONVENTIONAL ROADS
CONSTRUCTION APPROACH
SIGNING**



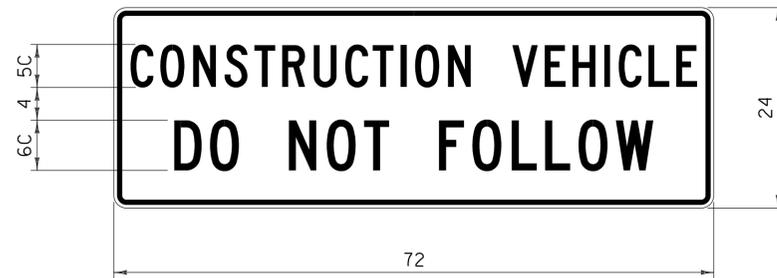
STANDARD
T-10



VC-004P

NOTES:

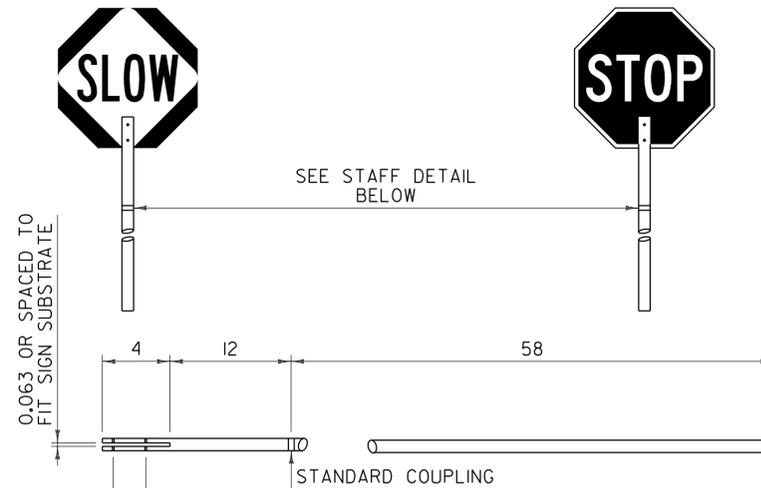
1. CORNERS SHALL BE ROUNDED TO A THREE INCH RADIUS.
2. THE BORDER SHALL BE 3/4 INCH WIDE WITH A 1/2 INCH INDENT FROM THE EDGE OF THE SIGN.
3. "MOTORCYCLES" SHALL HAVE A SPECIFIED WIDTH OF 34 INCHES.
4. "USE" SHALL HAVE A SPECIFIED WIDTH OF 14 1/2 INCHES.
5. "CAUTION" SHALL HAVE A SPECIFIED WIDTH OF 32 3/4 INCHES.
6. SIGN SHALL ONLY BE INSTALLED AS A SUPPLEMENTAL TO A PARENT WARNING SIGN AND SHALL NOT BE INSTALLED BY ITSELF.



VC-007

NOTES:

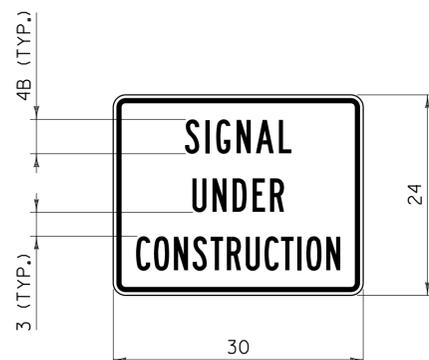
1. CORNERS SHALL BE ROUNDED TO A 1 1/2 INCH RADIUS.
2. THE BORDER SHALL BE 5/8 INCH WIDE WITH A 3/8 INCH INDENT FROM THE EDGE OF THE SIGN.
3. "CONSTRUCTION VEHICLE" SHALL HAVE A SPECIFIED WIDTH OF 68 INCHES.
4. "DO NOT FOLLOW" SHALL HAVE A SPECIFIED WIDTH OF 57 1/2 INCHES.
5. SIGN SHALL BE MOUNTED IN A CONSPICUOUS LOCATION ON THE REAR OF THE CONSTRUCTION VEHICLE.
6. THE SIGN SHALL BE MOUNTED AS NOT TO INTERFERE WITH THE VISIBILITY OF DIRECTIONAL SIGNALS OR TAIL LIGHTS AS REQUIRED BY LAW.
7. SIGN SHALL BE COVERED OR REMOVED WHEN NOT IN USE.



STOP-SLOW PADDLE & STAFF DETAIL

NOTES:

1. REFER TO THE "STANDARD HIGHWAY SIGNS AND MARKINGS" BOOK (SHSM) "TEMPORARY TRAFFIC CONTROL - WARNING SIGNS" FOR THE STOP-SLOW PADDLE DESIGN.
2. COLORS FOR THE SLOW SIDE OF THE PADDLE SHALL BE BLACK LEGEND AND BORDER ON A FLUORESCENT ORANGE DIAMOND WITH RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING AASHTO M 268 [ASTM D 4956] TYPE VII, VIII OR IX REQUIREMENTS.
3. COLORS FOR THE STOP SIDE OF THE PADDLE SHALL BE WHITE RETROREFLECTIVE LEGEND AND BORDER ON A RED RETROREFLECTIVE OCTAGON. BOTH COLORS SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING AASHTO M 268 [ASTM D 4956] TYPE III.
4. SIGN SUBSTRATE MATERIALS SHALL BE ALUMINUM, ACRYLONITRILE BUTADIENE STYRENE (ABS) PLASTIC OR EQUIVALENT.
5. THE STAFF MAY BE RIGID ABS PLASTIC OR WOOD WITH A ONE TO 1 1/2 INCH DIAMETER.
6. SIGNS SHALL BE MAINTAINED IN A CLEAN AND LEGIBLE CONDITION SATISFACTORY TO THE ENGINEER. THEY SHALL BE COMPLETELY VISIBLE TO APPROACHING TRAFFIC AT ALL TIMES. THEY SHALL BE KEPT PLUMB AND LEVEL, AND ALWAYS PRESENT A NEAT APPEARANCE. DAMAGED, DEFACTED OR DIRTY SIGNS SHALL BE REPAIRED, CLEANED OR REPLACED AS ORDERED BY THE ENGINEER.



VC-820

NOTES:

1. CORNERS SHALL BE ROUNDED TO A 1 1/2 INCH RADIUS.
2. THE BORDER SHALL BE 5/8 INCH WIDE WITH A 3/8 INCH INDENT FROM THE EDGE OF THE SIGN.
3. "SIGNAL" SHALL HAVE A SPECIFIED WIDTH OF 12 3/4 INCHES.
4. "UNDER" SHALL HAVE A SPECIFIED WIDTH OF 11 INCHES.
5. "CONSTRUCTION" SHALL HAVE A SPECIFIED WIDTH OF 24 1/2 INCHES.
6. SIGN SHALL ONLY BE INSTALLED AS A SUPPLEMENTAL TO A PARENT WARNING SIGN AND SHALL NOT BE INSTALLED BY ITSELF.

GENERAL NOTES:

1. ALL LEGEND SHALL BE CENTERED VERTICALLY AND HORIZONTALLY UNLESS OTHERWISE NOTED.
2. COLORS FOR SIGNS SHALL BE BLACK LEGEND AND BORDER ON FLUORESCENT ORANGE BACKGROUND UNLESS OTHERWISE NOTED.
3. ALL DIMENSIONS IN INCHES.

OTHER STDS. REQUIRED: T-1

REVISIONS AND CORRECTIONS
AUG. 6, 2012 - ORIGINAL APPROVAL DATE

APPROVED
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MARK D. RICHTER
FEDERAL HIGHWAY ADMINISTRATION

CONSTRUCTION SIGN
DETAILS



STANDARD
T-30

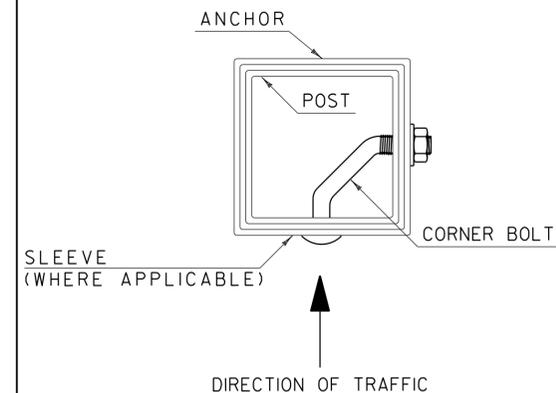
POST AND ANCHOR SELECTION CHART

POST SIZE (IN.)	POST THICKNESS (IN.)	POST WEIGHT (LBS./FT.)	POST GAGE	SECTION MODULUS (IN. ³)	ONE POST SV	TWO POST SV	THREE POST SV	POSTS PERMITTED IN 8' PATH	ANCHOR SIZE (IN.)	ANCHOR GAGE	MINIMUM ANCHOR LENGTH
1.75	.083	1.88	14	0.222	45	90	135	TWO	2.00	12	30
2.00	.109	2.42	12	0.393	80	160	240	TWO	2.25	12	48
2.50	.109	3.35	12	0.673	137	274	411	ONE	3.00	7	48

NOTES:

- ALL SIGN POSTS SHALL HAVE $\frac{7}{16}$ INCH HOLES EVERY ONE INCH ON CENTER (ALL FOUR SIDES).
- THE NUMBER OF SIGN POSTS PERMITTED WITHIN AN EIGHT FOOT PATH ASSUMES THAT THE SIGN ASSEMBLY IS NOT PROTECTED BY GUARDRAIL OR IS LOCATED WITHIN A GUARDRAIL'S DEFLECTION DISTANCE DETERMINED PER THE CURRENT "AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS" (AASHTO) ROADSIDE DESIGN GUIDE. ADDITIONAL POSTS MAY BE INSTALLED USING SLIP BASES THAT MEET "NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM" (NCHRP) REPORT 350 OR THE AASHTO "MANUAL FOR ASSESSING SAFETY HARDWARE" (MASH). THE APPROPRIATE RESOURCE SHALL BE DETERMINED AS DESCRIBED IN THE MASH PUBLICATION.
- TO USE THE SELECTION VALUE (SV) COLUMNS IN THE TABLE ABOVE, MULTIPLY A SIGN'S SURFACE AREA IN SQUARE FEET ($H \times L$) BY THE SIGN'S HEIGHT IN FEET MEASURED FROM THE GROUND TO THE CENTROID OF THE SIGN ASSEMBLY (h). THIS RESULT MUST BE LESS THAN OR EQUAL TO THE CORRESPONDING SELECTION VALUE. NOTE THAT FOR SIGNS WITH MULTIPLE POSTS, THE LARGEST HEIGHT DIMENSION SHALL BE USED TO CALCULATE THE POST SELECTION VALUE.
- THE DESIGN CRITERIA UTILIZED IN SIGN POST AND ANCHOR SELECTION IS AS FOLLOWS: WIND SPEED OF 70 MPH (10 YEAR MEAN RECURRENCE INTERVAL), WIND PRESSURE OF 19 PSF, STEEL MINIMUM YIELD OF 55,000 PSI, AND AN ALLOWABLE STRESS OF 1.4 (0.60 F_y).

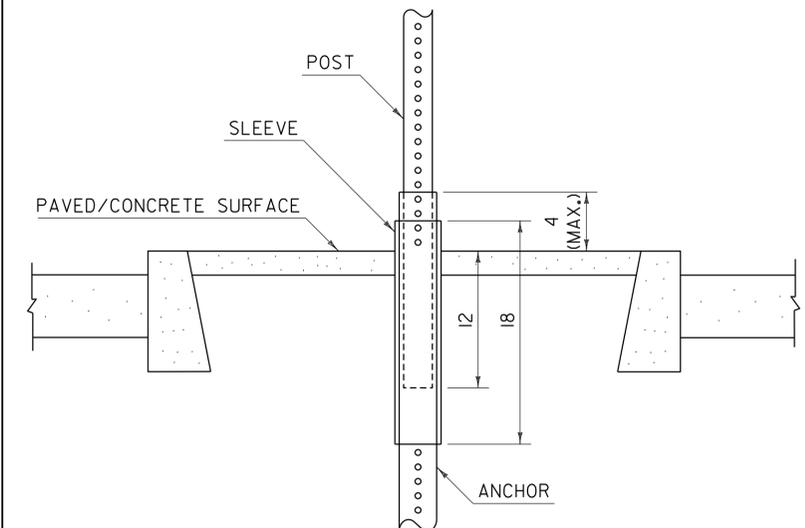
CORNER BOLT INSTALLATION DETAIL



NOTES:

- CORNER BOLTS SHALL BE $\frac{5}{16}$ INCH DIAMETER WITH 18 THREADS PER INCH AND DIMENSIONS SHALL BE DETERMINED BASED ON THE OUTERMOST DIMENSION OF THE SLEEVE, ANCHOR OR POST. THREAD EXPOSURE MUST EXCEED THE CORRESPONDING NUT WIDTH. THE CORNER BOLT AND CORRESPONDING HARDWARE SHALL BE ZINC PLATED, MEETING OR EXCEEDING THE REQUIREMENTS OF THE "AMERICAN SOCIETY FOR TESTING AND MATERIALS" (ASTM) A307.

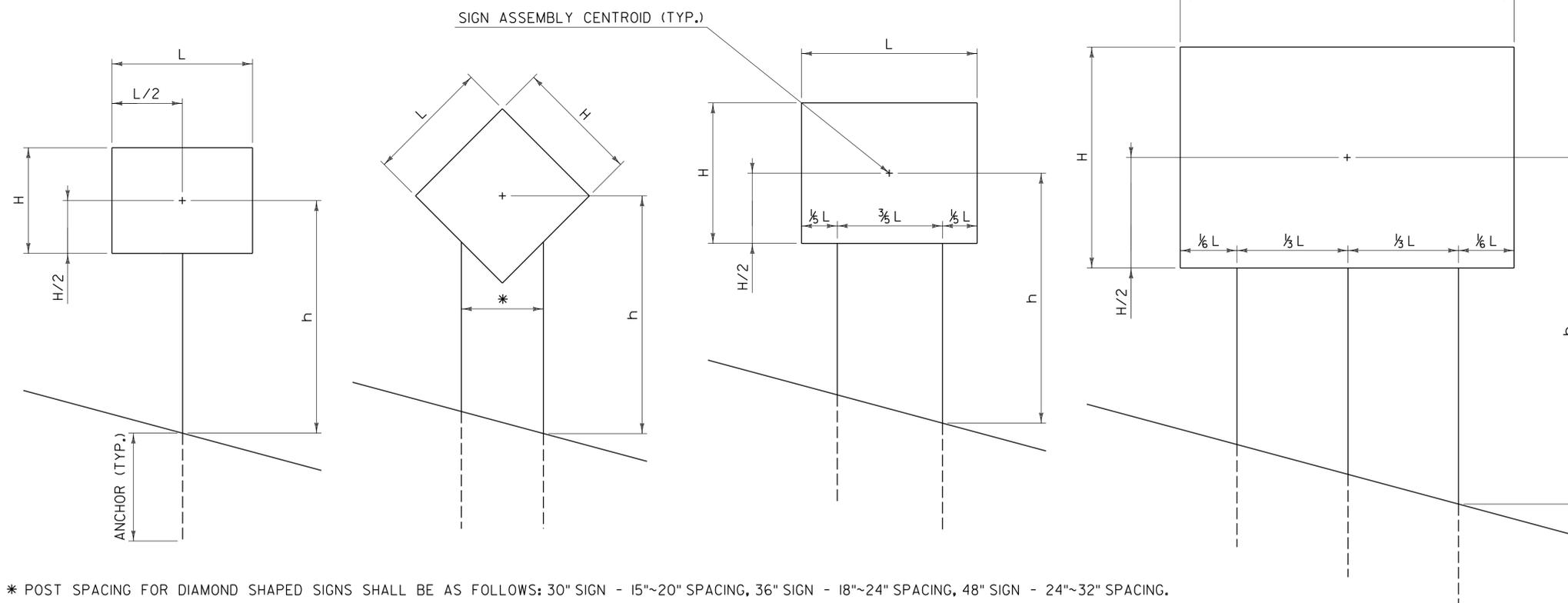
SLEEVE /ANCHOR INSTALLATION DETAIL



NOTES:

- A SLEEVE SHALL BE INSTALLED FOR SIGN INSTALLATIONS IN CONCRETE OR PAVEMENT.
- THE SLEEVE SHALL BE 18 INCHES MINIMUM IN LENGTH.
- THREE INCH SLEEVES THAT DO NOT HAVE HOLES WILL REQUIRE THAT $\frac{7}{16}$ INCH HOLES ARE DRILLED TO FACILITATE CONNECTIONS.
- REFER TO CURRENT EDITION OF THE "VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION" FOR MATERIAL REQUIREMENTS.

POST SPACING DETAILS



GENERAL NOTES:

- ALL SQUARE TUBE STEEL POSTS AND ANCHORS SHALL BE FORMED INTO A SIZE AND SHAPE IN SUCH A MANNER THAT NEITHER FLASH NOR WELD SHALL INTERFERE WITH THE TELESCOPING PROPERTIES, NOR DAMAGE THE GALVANIZING.
- ANCHORS MAY BE DRIVEN OR SET INTO A DUG HOLE AND BACKFILLED. IF DRIVEN, A DRIVING CAP SHALL BE USED. THE DUG HOLE INSTALLATION METHOD SHALL BE UTILIZED IN AREAS WITH POOR SOIL CONDITIONS OR AS DIRECTED BY THE ENGINEER. BACKFILL SHALL BE COMPACTED AS DIRECTED BY THE ENGINEER.
- THE TOPS OF SIGN POSTS SHALL BE AT OR NEAR THE TOP OF SIGN. THE POST SHALL NOT EXTEND ABOVE THE TOP OF SIGN.
- SIGN POSTS SHALL BE INSTALLED A MINIMUM OF ONE FOOT BELOW GROUND, INSIDE THE ANCHOR. THE LENGTH OF ANCHOR EXPOSED ABOVE GROUND SHALL NOT EXCEED FOUR INCHES.
- ALL DIMENSIONS SHOWN IN INCHES.

OTHER STDS. REQUIRED: NONE

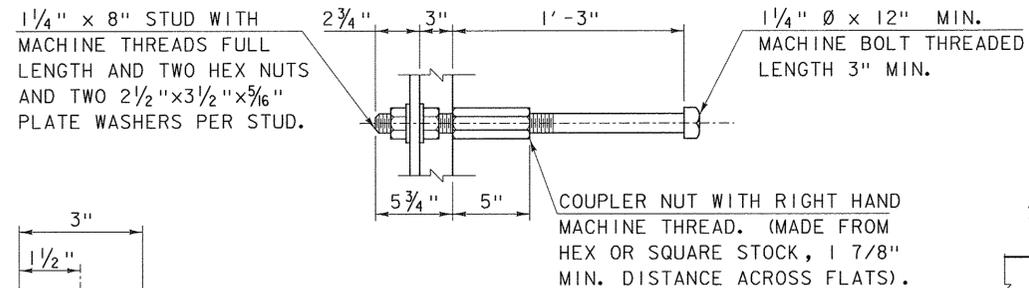
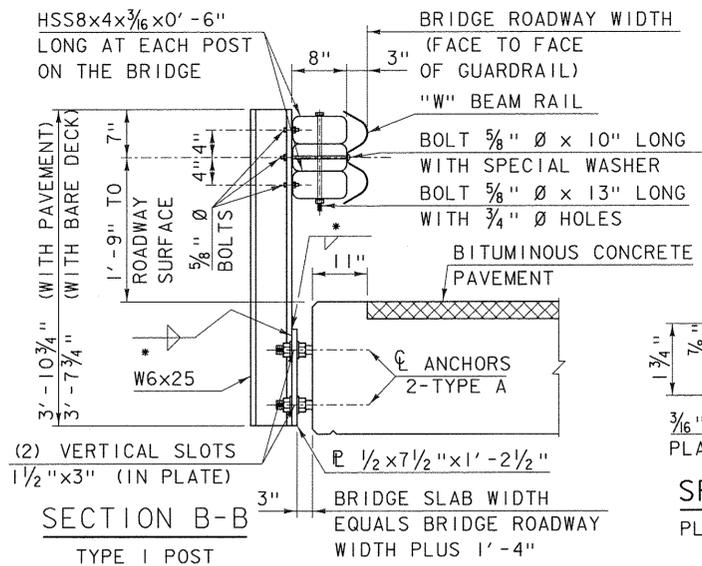
REVISIONS AND CORRECTIONS
JAN. 2, 2013 - ORIGINAL APPROVAL DATE

APPROVED
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HIGHWAY SAFETY & DESIGN ENGINEER
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DIRECTOR OF PROGRAM DEVELOPMENT
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MARK D. RICHTER
FEDERAL HIGHWAY ADMINISTRATION

SQUARE TUBE SIGN POST AND ANCHOR



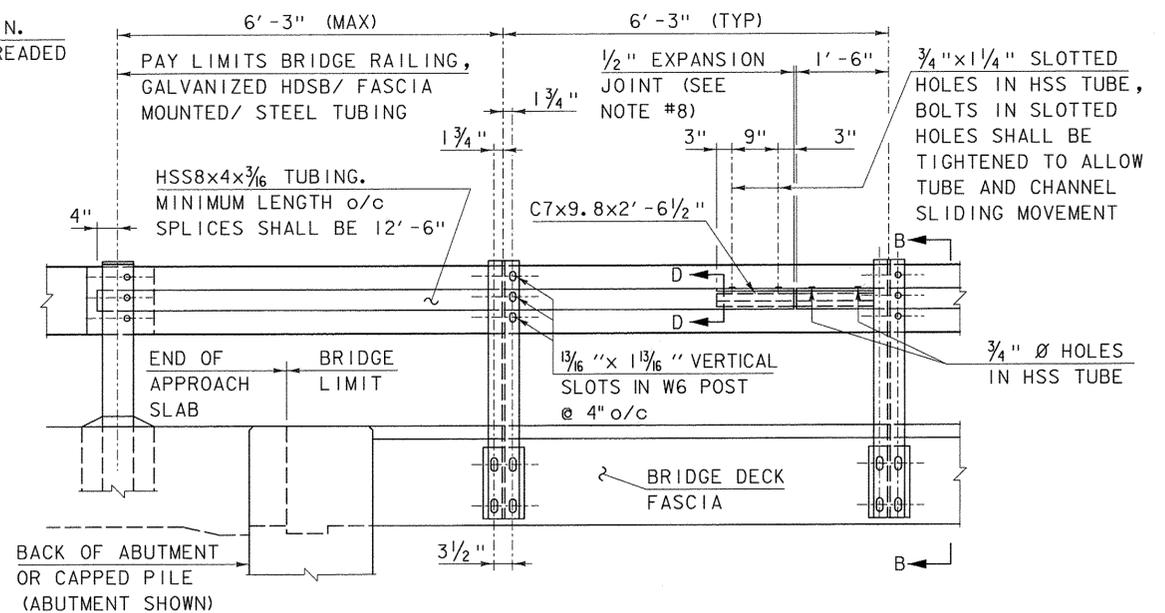
STANDARD T-45



TYPE A ANCHOR DETAIL

DIMENSION ① IS 6" OR 8" DEPENDING ON BOX BEAM DEPTH. SEE PROJECT PLANS AND POST ANCHORAGE DETAILS. DIMENSION ② DETAILED BY FABRICATOR, SEE PROFILE AND CAMBER DETAILS. MINIMUM POST LENGTH IS 3'-6 1/2" AND MAXIMUM POST LENGTH IS 4'-1 1/4".

(FOR USE WITH PRESTRESSED CONCRETE BOX BEAMS)

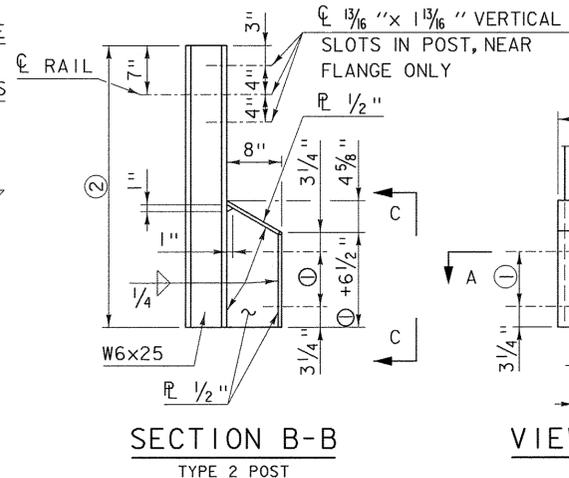
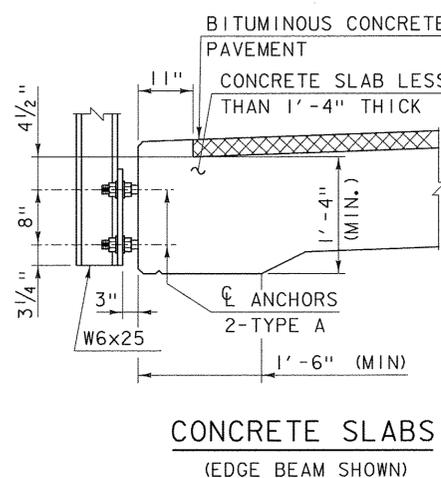
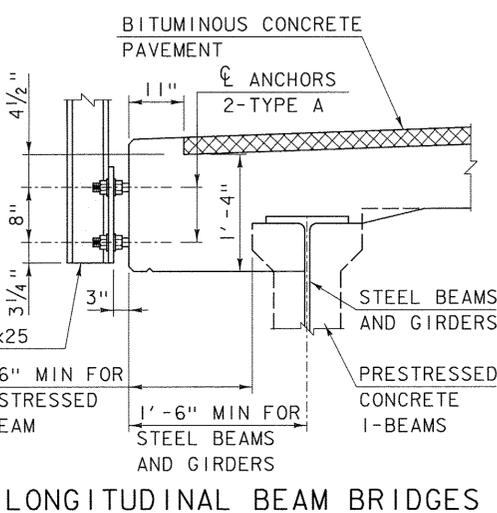


RAILING ELEVATION

(TYPE I POSTS SHOWN)

NOTES:

1. ALL WORK AND MATERIALS SHALL CONFORM TO SECTION 525.
2. TYPE B ANCHOR INSERTS OF A DIFFERENT TYPE MAY BE PROVIDED, IF APPROVED BY THE ENGINEER.
3. PRIOR TO GALVANIZING THE ASSEMBLED POST, GRIND ALL EDGES TO A MINIMUM RADIUS OF 1/16".
4. ALL POSTS SHALL BE SET NORMAL TO GRADE.
5. SPLICES FOR THE STEEL BEAM GUARDRAIL SHALL LAP IN THE DIRECTION OF TRAFFIC.
6. A RAILING JOINT SPLICE SHALL BE PROVIDED IN ANY RAIL BAY SPANNING THE END OF AN INTEGRAL ABUTMENT BRIDGE AND AT ALL SUPERSTRUCTURE EXPANSION JOINTS.
7. SEE STANDARD DRAWING G-1 FOR DETAILS OF DELINEATORS. A DELINEATOR SHALL BE INSTALLED AT 30 FOOT SPACING OR THE NEAREST POST. WHITE IS TO BE INSTALLED ON THE DRIVER'S RIGHT. FOR ONE WAY BRIDGES, YELLOW IS TO BE INSTALLED ON THE DRIVER'S LEFT.
8. THE 1/2" EXPANSION JOINT SHOWN IN THE RAILING ELEVATION IS DESIGNED FOR BRIDGE LENGTHS UP TO 80 FEET, ANY LONGER SPANS WILL HAVE TO BE MODIFIED TO ACCOUNT FOR THEIR MOVEMENT.
9. FOR RADIUS LESS THAN 950 FEET, HSS8x4 TUBES SHALL BE SHOP BENT TO FIT THE APPLICABLE CURVE.
10. THE MINIMUM DISTANCE FROM THE LAST POST TO THE END OF SLAB IS 1'-6".
11. FERRULES SHALL BE 12L14 COLD DRAWN CARBON STEEL.
12. HOLES IN RAIL FOR RAIL TUBE ATTACHMENT MAY BE FIELD DRILLED. HOLES SHALL BE COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO INSTALLATION.
13. THIS RAILING MEETS THE REQUIREMENTS FOR A TL-2 SERVICE LEVEL.

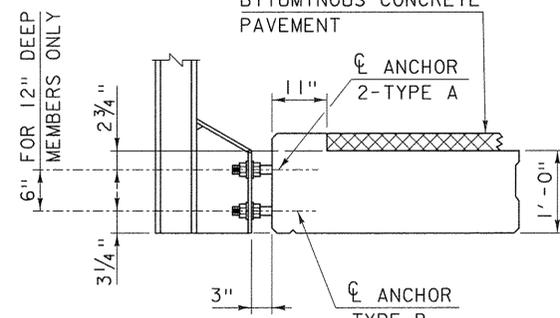
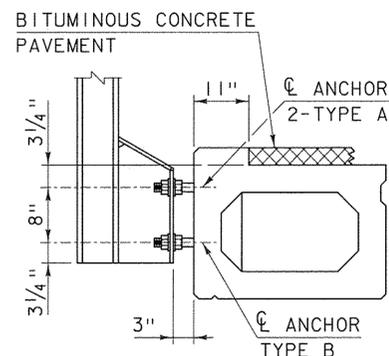


VIEW C-C

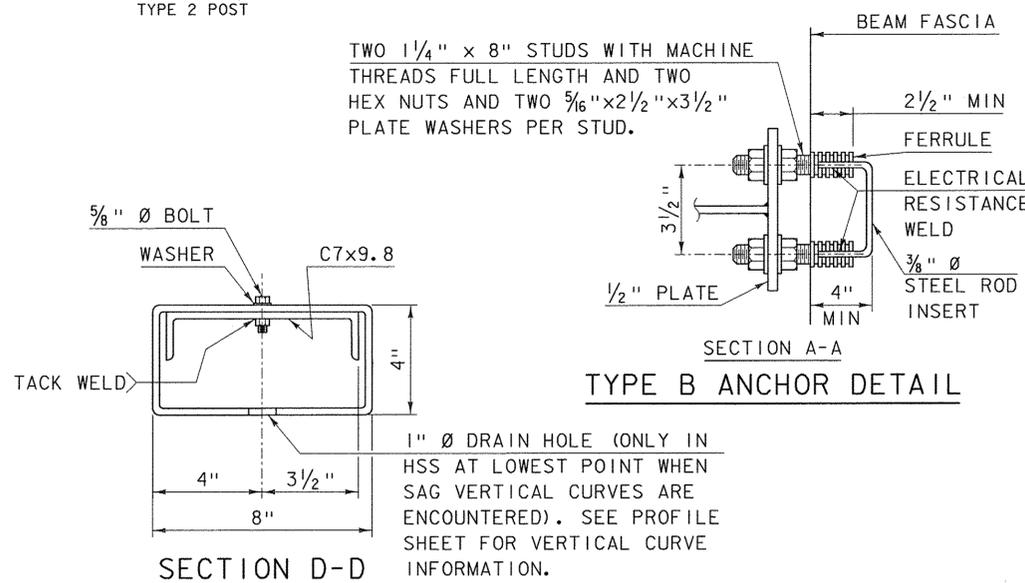
SECTION B-B TYPE 2 POST

POST ANCHORAGE DETAILS

(NOT FOR USE WITH PRESTRESSED BOX BEAMS)



POST ANCHORAGE DETAILS (PRECAST CONCRETE)



TYPE B ANCHOR DETAIL

SECTION D-D

REVISIONS AND CORRECTIONS
MAY 24, 2012 - ORIGINAL APPROVAL

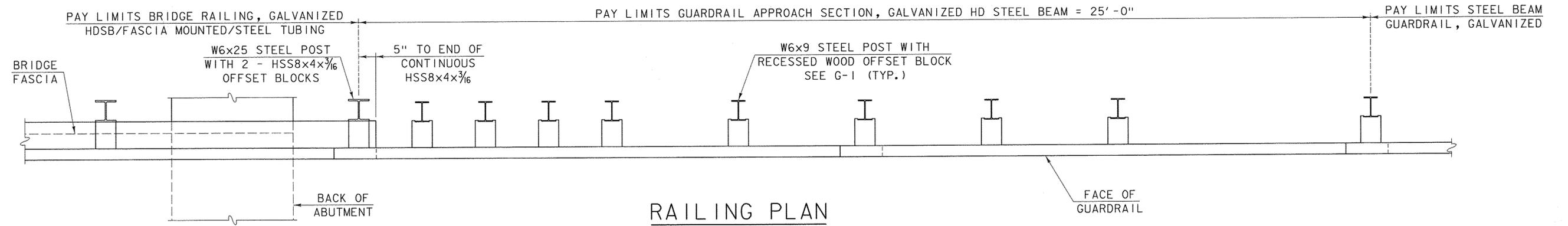
APPROVED
Wm. Michael Hedys
STRUCTURES ENGINEER
Rick Johnson 6/5/12
DIRECTOR OF PROGRAM DEVELOPMENT
Mark D. Richter 6-11-2012
FEDERAL HIGHWAY ADMINISTRATION

BRIDGE RAILING, GALVANIZED
HDSB/FASCIA MOUNTED/
STEEL TUBING

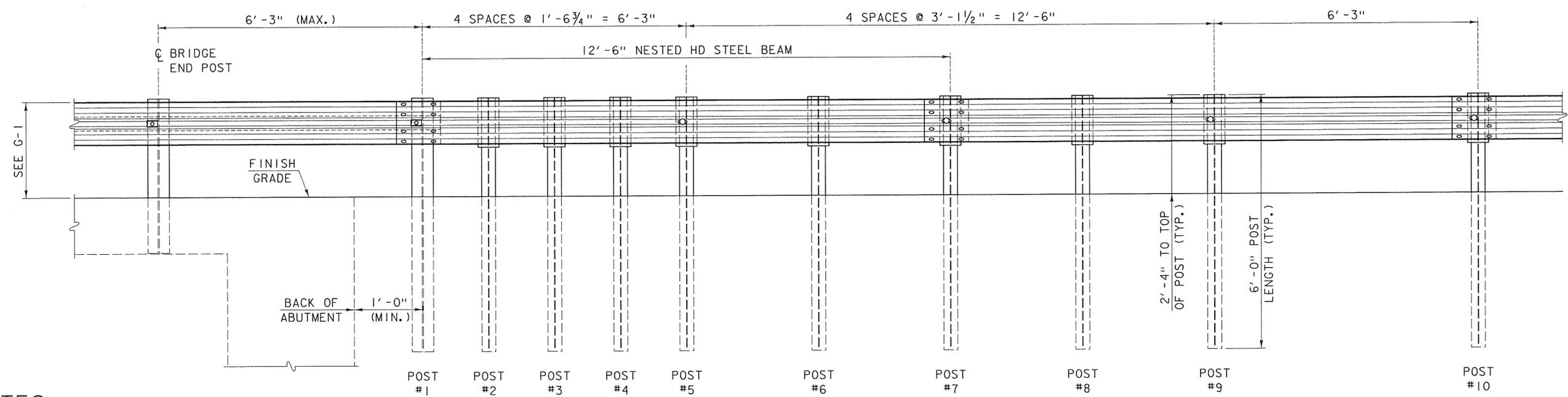
OTHER STDS. REQUIRED: G-1



STANDARD
S-367A



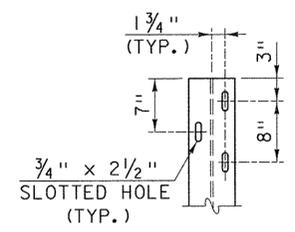
RAILING PLAN



RAILING ELEVATION

NOTES

1. PAYMENT FOR POST #1, HSS8x4x3/16 OFFSET BLOCKS AND TUBULAR BACKUP RAIL EXTENDING TO POST #1 OFF THE BRIDGE SHALL BE MADE UNDER BRIDGE RAILING, GALVANIZED HDSB/FASCIA MOUNTED/STEEL TUBING.
2. BLOCKOUTS SHALL BE RECESSED WOOD ONLY. STEEL OR PLASTIC BLOCKOUTS ARE NOT PERMITTED.
3. GUARDRAIL IS NOT ATTACHED TO POST NUMBERS 2-4, 6 AND 8. THERE SHALL BE NO GAP BETWEEN THE POSTS THAT ARE NOT ATTACHED AND THE RAIL. OFFSET BLOCKS SHALL BE ATTACHED TO POST WITH STANDARD POST BOLT.
4. POSTS MAY BE SET IN DRILLED HOLES OR DRIVEN TO GRADE.
5. THIS RAILING MEETS THE REQUIREMENTS FOR A NCHRP REPORT 350 TL-3 SERVICE LEVEL.



POST #1 HOLE DETAIL

OTHER STDS. REQUIRED: **G-1**

REVISIONS AND CORRECTIONS
MAY 24, 2012 - ORIGINAL APPROVAL

APPROVED
Don Michael Hedys
 STRUCTURES ENGINEER
Richard Fehrn 6-5-12
 DIRECTOR OF PROGRAM DEVELOPMENT
Mark D. Richter 6-11-2012
 FEDERAL HIGHWAY ADMINISTRATION

GUARDRAIL APPROACH SECTION,
GALVANIZED HD STEEL BEAM



STANDARD
S-367B