

FOR INDEX OF SHEETS & STATE STANDARDS
SEE SHEET NO. 2

01-15-2021 LETTING ITEM 020

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

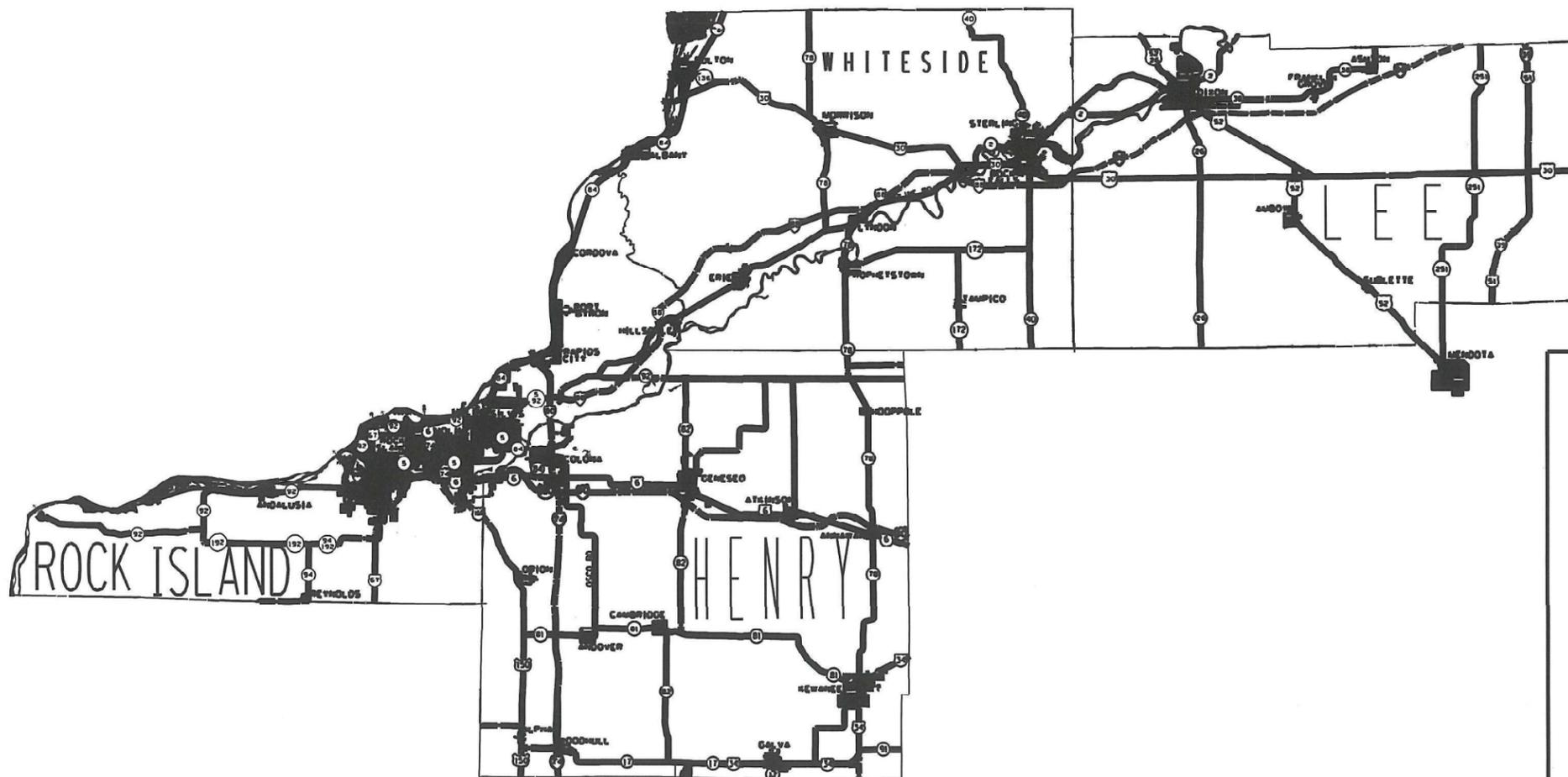
**PROPOSED
HIGHWAY PLANS**

VARIOUS ROUTES
SECTION D2 GR (SOUTH) 2021
PROJECT
VARIOUS COUNTIES
C-92-069-20

F.A. RTE. VAR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
**	**	VARIOUS	26	1

**D2 GR (SOUTH) 2021

CONTRACT NO. 64P45
D-92-049-20



J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123

CONTRACT NO. 64P45

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED October 05, 2020
[Signature]
REGION ENGINEER

December 4, 2020
[Signature]
ENGINEER OF DESIGN AND ENVIRONMENT

December 4, 2020
[Signature]
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

PROJECT ENGINEER: SCOTT KULLERSTRAND

SQUAD LEADER: LANCE NICKLAUS 815-284-5407

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- 701428-01 Traffic Control, Setup and Removal, Freeway/Expressway
- 701501-06 Typical Application of Traffic Control Devices
- 701502-09 Typical Application of Traffic Control Devices
- 701601-09 Typical Application of Traffic Control Devices
- 701602-10 Typical Application of Traffic Control Devices
- 701606-10 Typical Application of Traffic Control Devices
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- 701901-08 Traffic Control Devices
- 720011-01 Metal Posts For Signs, Markers, & Delineators
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- 729001-01 Application of Type A and B Metal Posts
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SUMMARY OF QUANTITIES

VARIOUS ROUTES
SECTION D2 GR (SOUTH) 2021
VARIOUS COUNTIES
CONTRACT # 64P45
SHEET 3 OF 26

100% State
0021

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	MHTMCB	MCHD FUND	CONTRACT MAINT
20400800	FURNISHED EXCAVATION	CU YD	50		25	25
63100045	TRAFFIC BARRIER TERMINAL, TYPE 2	EACH	3		2	1
63100085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	3		2	1
63100105	TRAFFIC BARRIER TERMINAL, TYPE 10	EACH	2		1	1
63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	30		20	10
63100169	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) FLARED	EACH	15		10	5
63301210	REMOVE AND RE-ERECT STEEL PLATE BEAM GUARDRAIL, TYPE A	FOOT	50		25	25
63500105	DELINEATORS	EACH	25		15	10
66400105	CHAIN LINK FENCE, 4'	FOOT	250		50	200
66400305	CHAIN LINK FENCE, 6'	FOOT	150		75	75
66500105	WOVEN WIRE FENCE, 4'	FOOT	300		250	50
78200005	GUARDRAIL REFLECTORS, TYPE A	EACH	65		60	5

SUMMARY OF QUANTITIES

VARIOUS ROUTES
SECTION D2 GR (SOUTH) 2021
VARIOUS COUNTIES
CONTRACT # 64P45
SHEET 4 OF 26

100% State
0021

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	MHTMCB	MCHD FUND	CONTRACT MAINT
X0325899	REPAIR HIGH TENSION CABLE (GIBRALTAR)	FOOT	180	180		
X0325900	REPAIR HIGH TENSION BARRIER TERMINAL (GIBRALTAR)	EACH	3	3		
X0325902	REMOVE AND REPLACE POSTS (GIBRALTAR)	EACH	50	50		
X0327382	REPAIR HAIRPINS (GIBRALTAR)	EACH	50	50		
X0327383	REPAIR LOCK PLATES (GIBRALTAR)	EACH	50	50		
X6320310	LONG POST FOR STEEL PLATE BEAM GUARDRAIL	EACH	10		5	5
X6330725	STEEL PLATE BEAM GUARDRAIL (SHORT RADIUS)	FOOT	75		25	50
X6331101	TUBULAR THRIE BEAM	FOOT	25		12.5	12.5
X6331110	STEEL POSTS SPECIAL	EACH	30		20	10
X6432110	REPLACE IMPACT ATTENUATORS (NON-REDIRECTIVE), TEST LEVEL 3	EACH	20		15	5
X6640594	CHAIN LINK FENCE POST 4'	EACH	25		10	15
X6640601	CHAIN LINK FENCE POST 6'	EACH	25		15	10
Z0008760	EMERGENCY WORK CALL OUT	EACH	10		5	5
Z0012752	CONCRETE STRUCTURE REPAIR	CU FT	24		16	8
Z0020210	PULL POST ARRANGEMENT	EACH	10		5	5
Z0029658	REPAIR TRAFFIC BARRIER TERMINAL TYPE 1 SPECIAL - POST	EACH	40		20	20

SUMMARY OF QUANTITIES

VARIOUS ROUTES
SECTION D2 GR (SOUTH) 2021
VARIOUS COUNTIES
CONTRACT # 64P45
SHEET 5 OF 26

100% State
0021

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	MHTMCB	MCHD FUND	CONTRACT MAINT
Z0052000	REPAIR STEEL PLATE BEAM GUARDRAIL, TYPE A	FOOT	3000		2250	750
Z0052100	REPAIR STEEL PLATE BEAM GUARDRAIL, TYPE B	FOOT	25		12.5	12.5
Z0052410	REPAIR TRAFFIC BARRIER TERMINAL, TYPE 1 SPECIAL (TANGENT)	EACH	25		15	10
Z0052415	REPAIR TRAFFIC BARRIER TERMINAL, TYPE 1 SPECIAL (FLARED)	EACH	6		3	3
Z0052600	REPAIR TRAFFIC BARRIER TERMINAL, TYPE 2	EACH	6		3	3
Z0053000	REPAIR TRAFFIC BARRIER TERMINAL, TYPE 5	EACH	2		1	1
Z0053200	REPAIR TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	3		2	1

GENERAL NOTES

When posts are required to be placed through bituminous shoulders, all costs to do so shall be considered included in the contract unit cost of the work being done. The final top 3 inches of the area around the post shall be capped with either bituminous material or grout.

Standard 631021 (Traffic Barrier Terminal, Type 4) is obsolete and can no longer be installed. Typically, a Type 4 Terminal was used in the median of multi-lane divided highway. They are, however, still in use and when damage to one occurs, it is to be removed and replaced with a Traffic Barrier Terminal, Type 1, Special that is to be at least 12 feet off the edge of the pavement. To obtain the 12 foot distance, the existing SPBGR Type A will have to be removed and re-erected with a flair rate of 1:30 until the face of the guardrail is 12 feet out from the edge of the pavement. At this point, (where the SPBGR Type A is 12 feet off the edge of pavement), a new Traffic Barrier Terminal Type 1, Special (Tangent or Flared) is to be installed

The Contractor shall supply the Resident Engineer with the manufacturer's installation requirements for the Traffic Barrier Terminal Type 1, Special to be used on this contract, both tangent and flared.

Wood blockouts on wood posts shall be connected with one nail to prevent the blockout from moving.

All disturbed areas in the right of way, caused by the Contractors operations, shall be seeded with class 2A salt tolerant roadside mixture as stated in Section 250, Article 250.07 of the Standard Specifications for Road and Bridge Construction. All costs for seeding shall be considered included in the unit cost of the work being performed.

If the Contractor would like the work locations listed with GPS coordinates on the work orders, we can do that with units provided by the Contractor. We would require seven (7) units for this contract, one for each of our field engineers and field technicians. The Contractor would be responsible for all costs to keep the units in an operational condition. Please note that if the same contractor wins both guardrail repair contracts for our District, the total number of GPS units required would be ten (10).

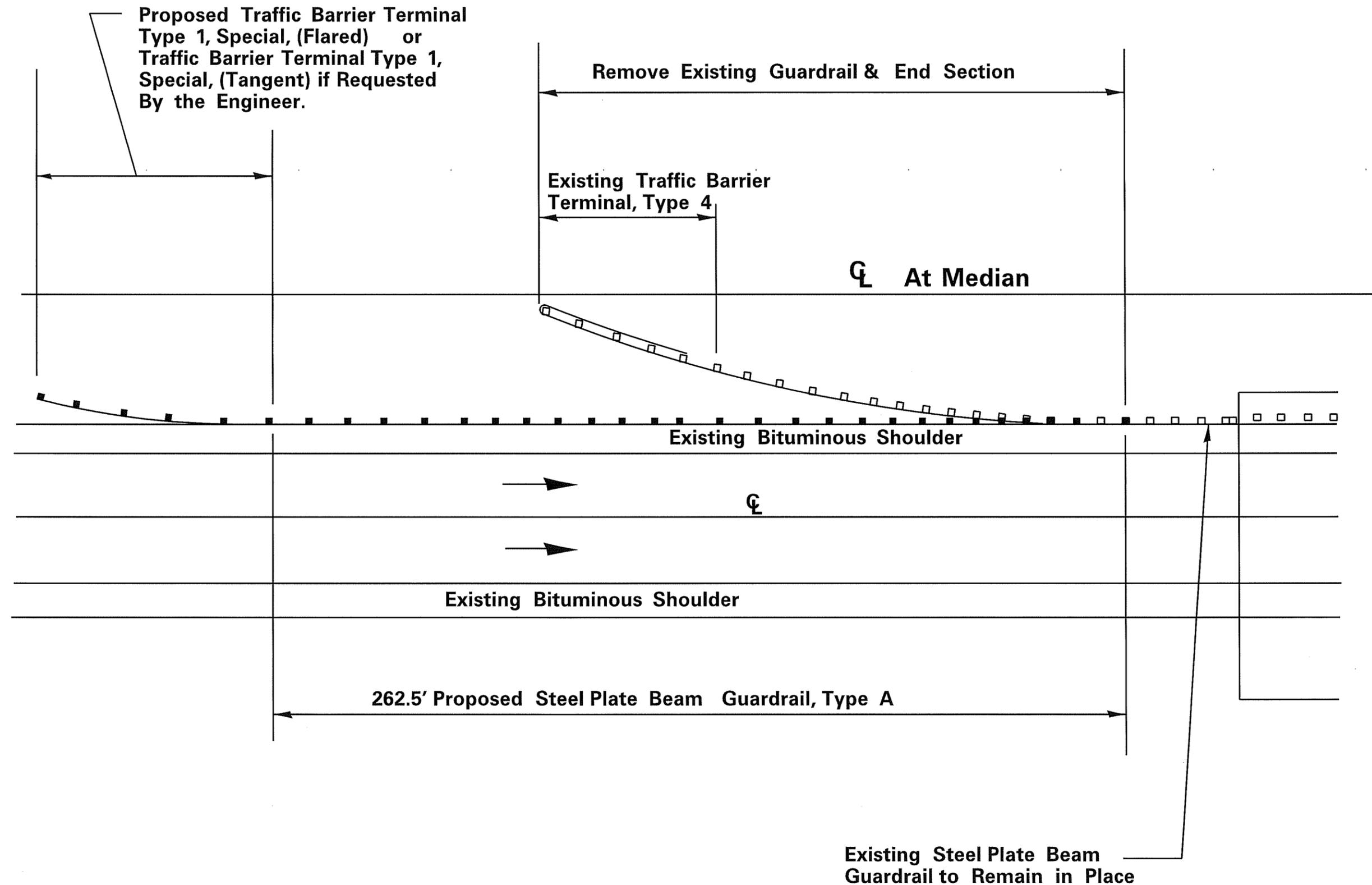
Delineators shall be installed as shown in Standard 635001, except that the post shall be rotated 180° and only metal-backed delineators shall be permitted. Delineators shall be placed at the ends of approach guardrail terminal sections. This work will be paid for at the contract unit price each for DELINEATORS.

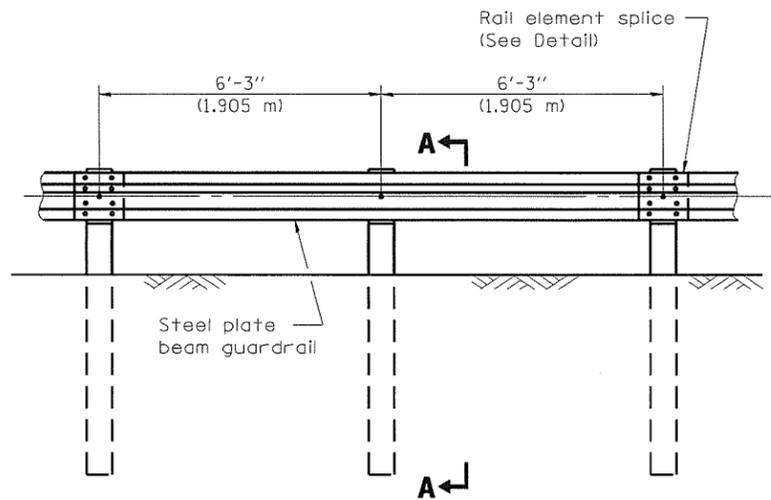
The Contractor shall be responsible for protecting utility property during construction operations as outlined in Article 107.31 of the Standard Specifications. A minimum of 48 hours advance notice is required for non-emergency work. The JULIE number is 800-892-0123.

IDOT is not a member of JULIE. If you are near any overhead lighting, intersection lighting or traffic signals, contact the IDOT Traffic Office at 815/284-5469 at least 48 hours prior to work.

Additional Options for Repair to Damaged Obsolete Traffic Barrier Terminal Type 4

Various Routes
D2 GR (South) 2021
Various Counties
Sheet 7 of 26
Contract Number: 64P45

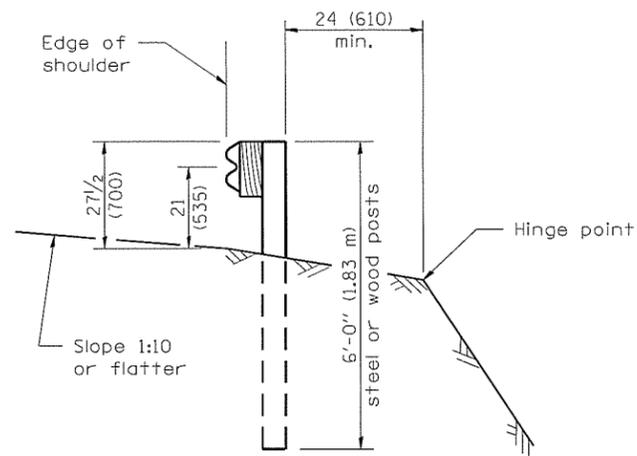




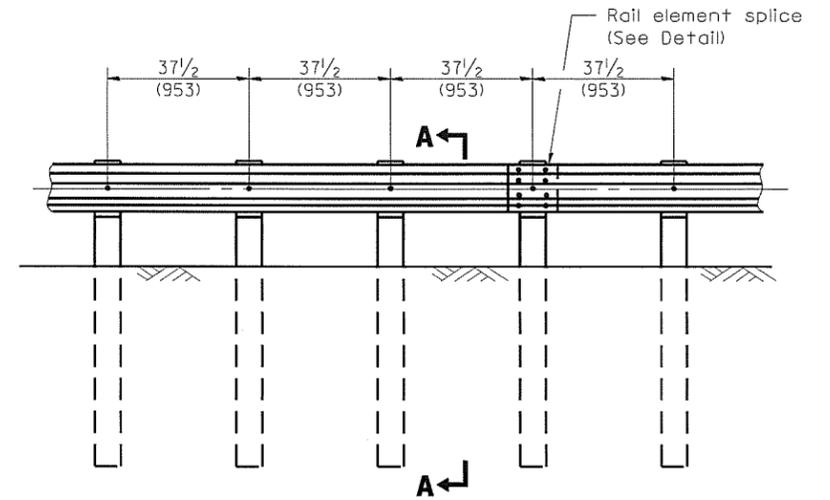
ELEVATION

TYPE A

6'-3" (1.905 m) Typical post spacing



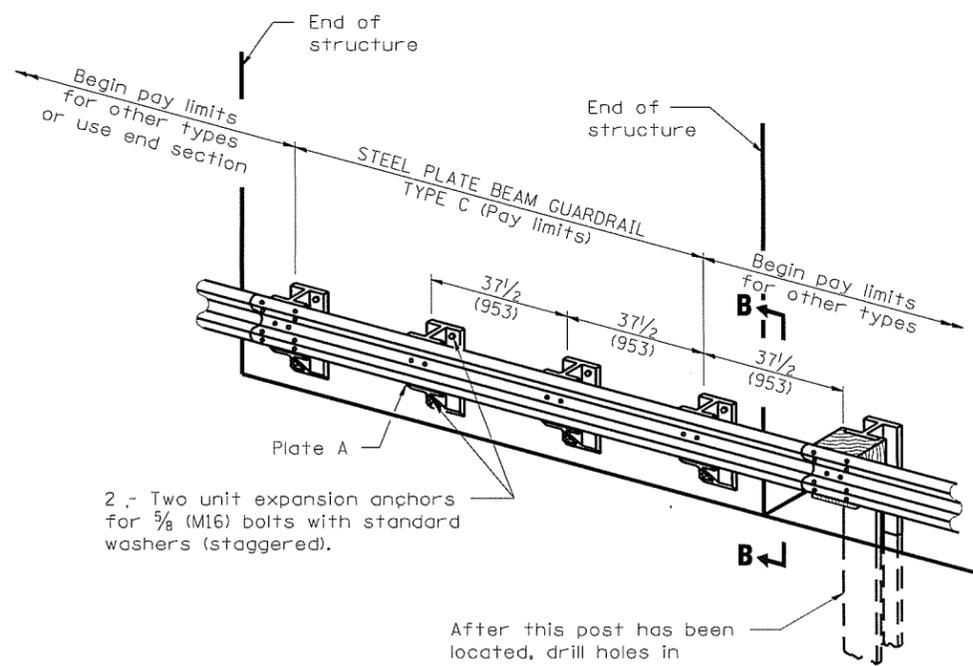
SECTION A-A



ELEVATION

TYPE B

37 1/2 (953) Closed post spacing

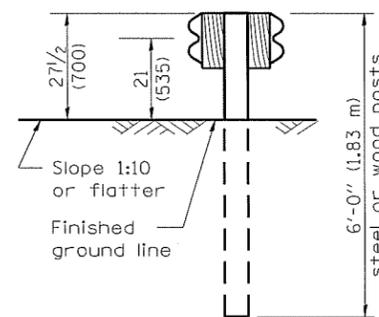


2 - Two unit expansion anchors for 5/8 (M16) bolts with standard washers (staggered).

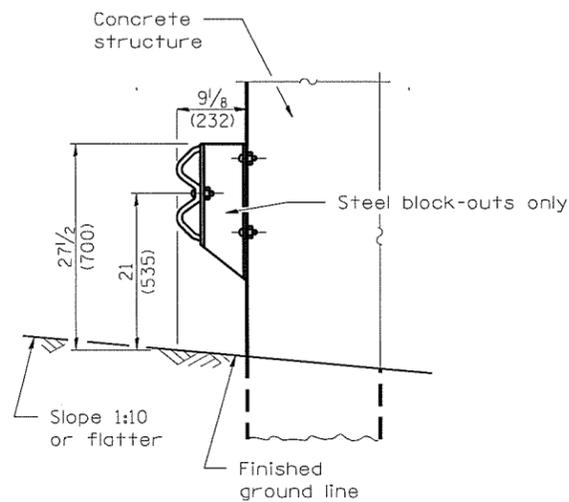
After this post has been located, drill holes in concrete for block-out attachments.

TYPE C

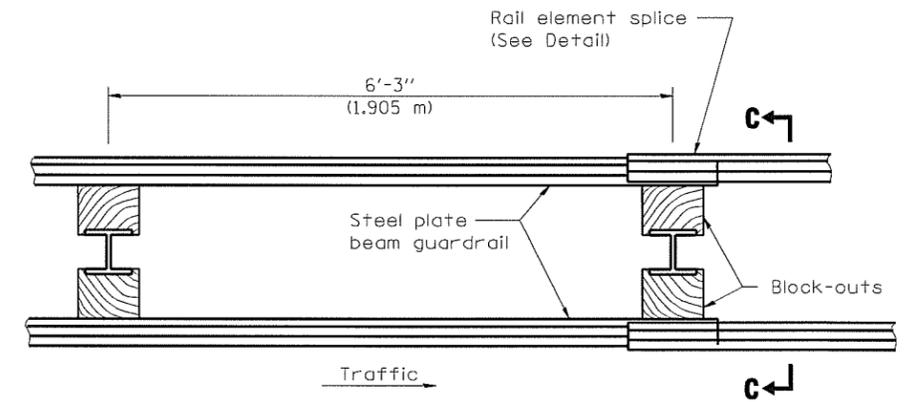
37 1/2 (953) Block-out spacing



SECTION C-C



SECTION B-B



PLAN

TYPE D

Double steel plate beam guardrail
6'-3" (1.905 m) typical post spacing

GENERAL NOTES

All slope ratios are expressed as units of vertical displacement to units of horizontal displacement (V:H).

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation

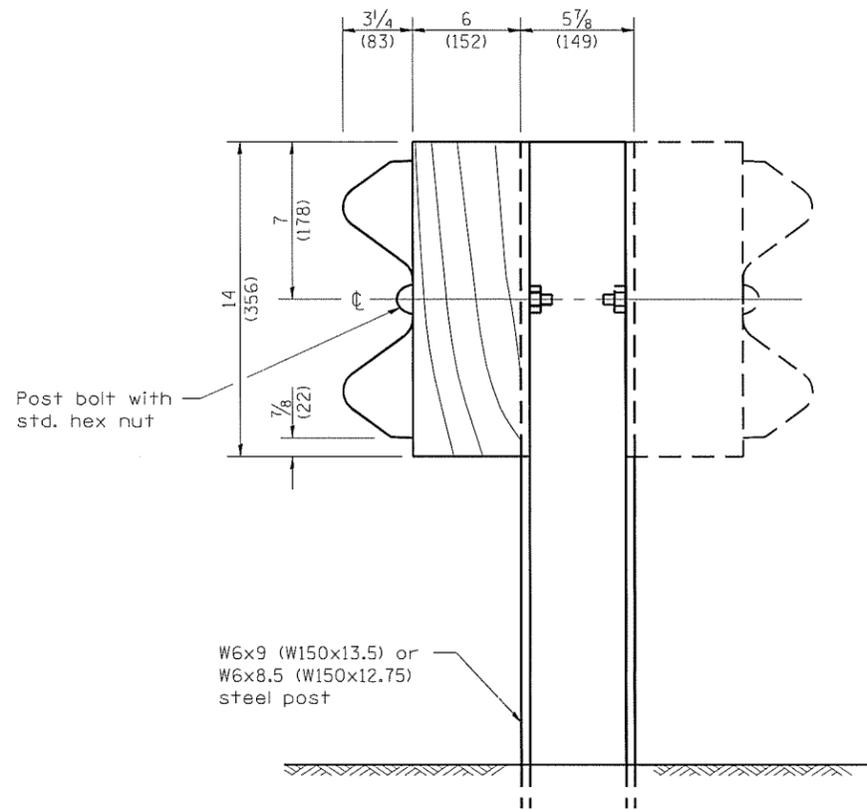
APPROVED January 1, 2010
Darrell Lewis
 ENGINEER OF LOCAL ROADS AND STREETS

APPROVED January 1, 2010
Charles J. Longwell
 ENGINEER OF DESIGN AND ENVIRONMENT

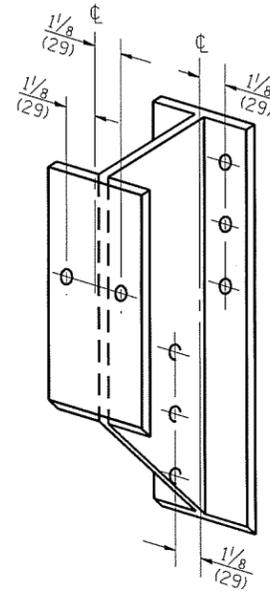
ISSUED 1-1-08

DATE	REVISIONS
1-1-10	Changed post length from 6'-9" to 6'-0".
	Modified table on sh. 4.
1-1-09	Switched units to English (metric).

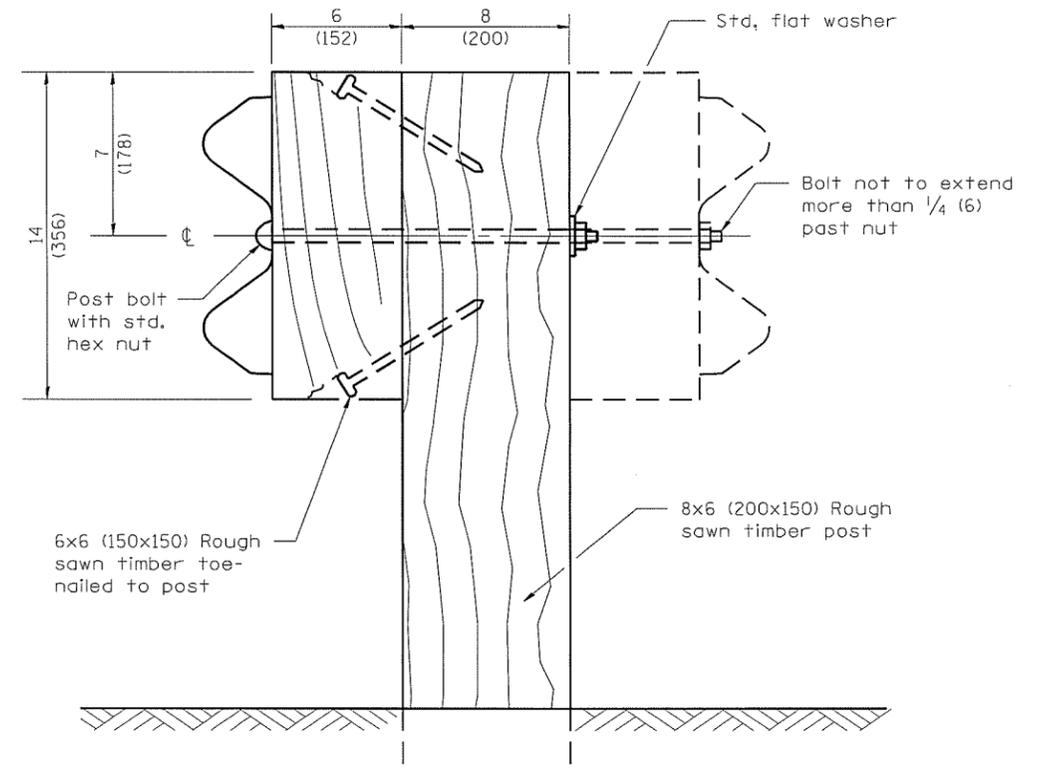
STEEL PLATE BEAM GUARDRAIL
27 1/2" (700mm) HEIGHT
 (Sheet 1 of 4)
STANDARD B.L.R. 26-2



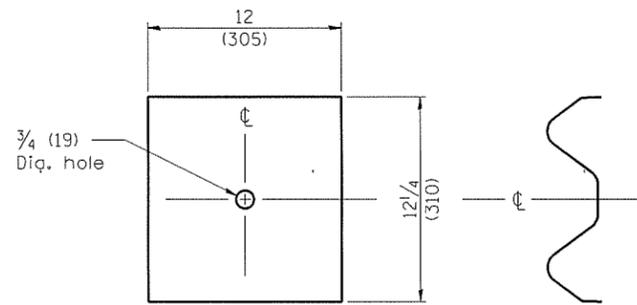
STEEL POST CONSTRUCTION



STEEL BLOCK-OUT DETAIL

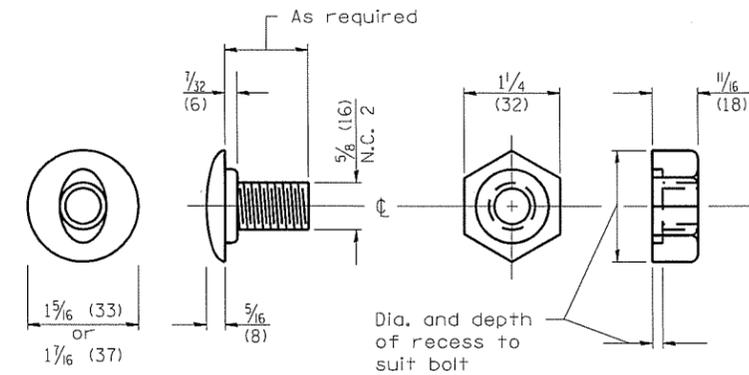


WOOD POST CONSTRUCTION



NOTE
Plate A shall be placed between rail element and block-out at non-splice mounting points only when steel block-outs are used.

PLATE A



POST OR SPLICE BOLT & NUT

STEEL PLATE BEAM GUARDRAIL
27 1/2" (700mm) HEIGHT

(Sheet 2 of 4)

STANDARD B.L.R. 26-2

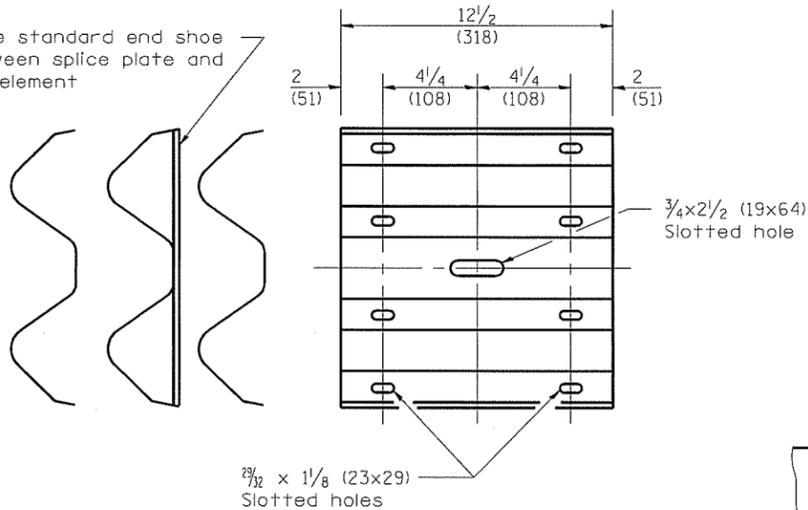
Illinois Department of Transportation

APPROVED January 1, 2010
David Lewis
ENGINEER OF LOCAL ROADS AND STREETS

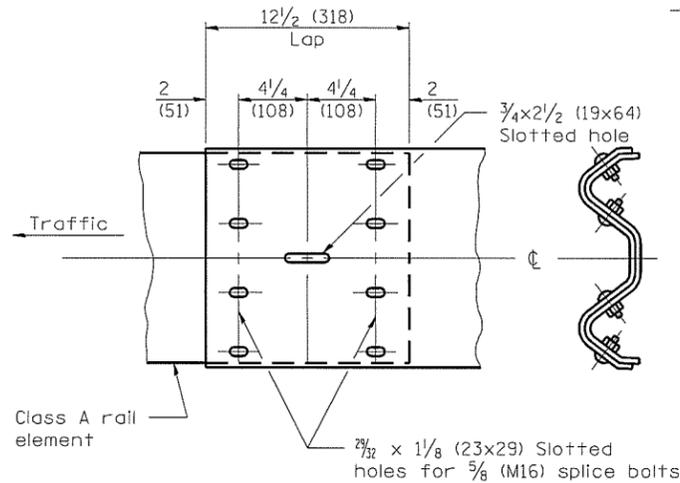
APPROVED January 1, 2010
Charles J. Longmire
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-08

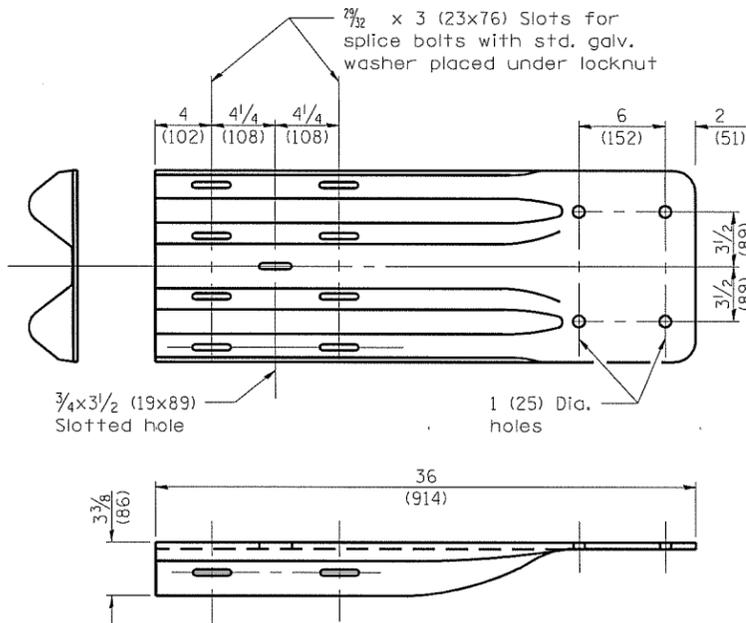
Place standard end shoe between splice plate and rail element



SPLICE PLATE



RAIL ELEMENT SPLICE

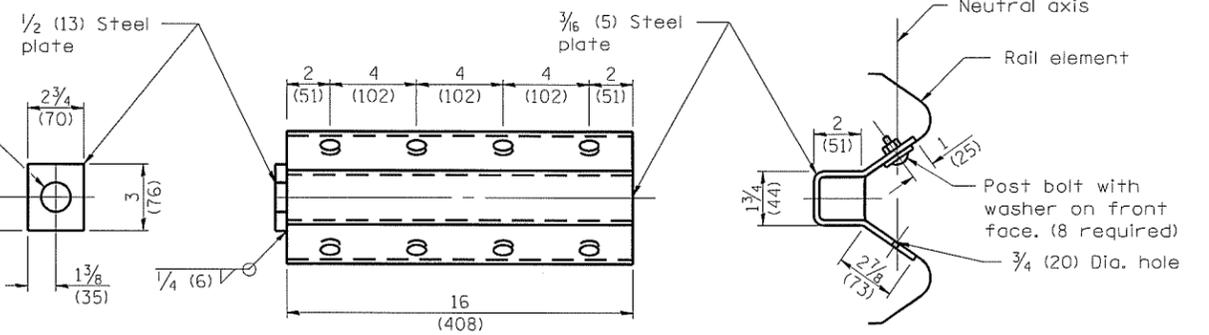


NOTE
When end shoe is attached to a bridge parapet which has an expansion joint, the bolts shall be provided with a locknut or double nut and shall be tightened only to a point that will allow guardrail movement.

The standard end shoe shall be attached to the concrete with pre-drilled or self-drilling anchor bolts. The anchor cone shall be set flush with the surface of the concrete.

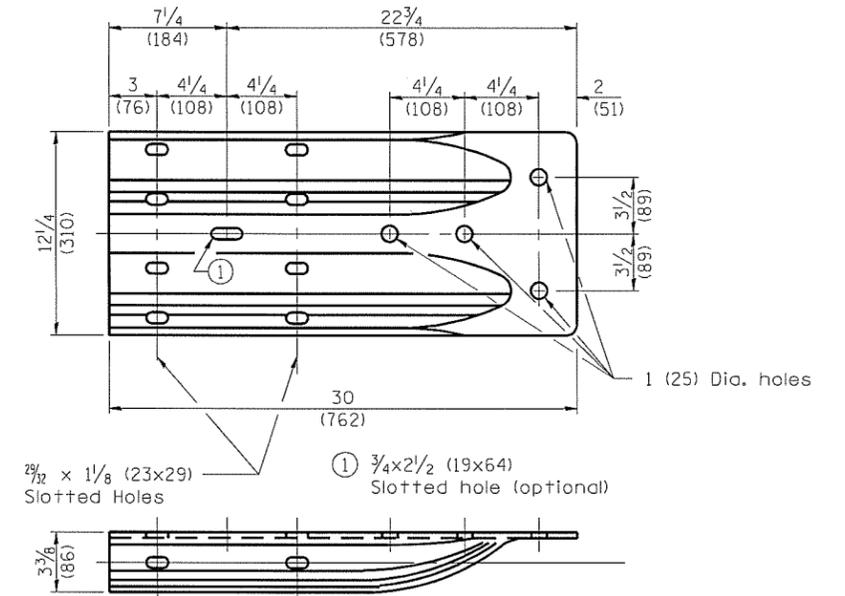
Externally threaded studs protruding from the surface of the concrete will not be permitted.

END SHOE

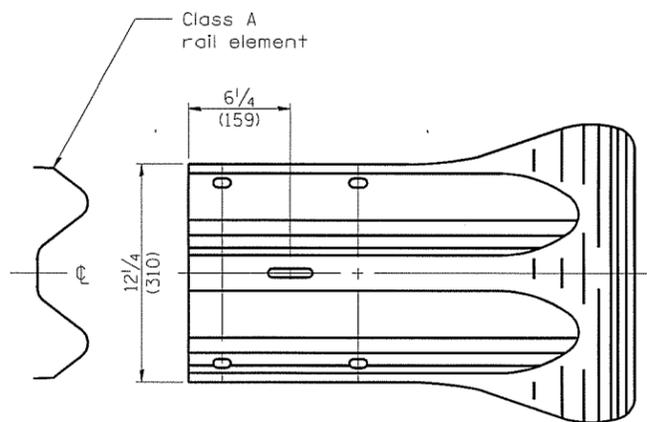


NOTE
Anchor plate T shall be used to attach cable assembly to guardrail when required on traffic barrier terminals.

ANCHOR PLATE T DETAILS



ALTERNATE END SHOE



END SECTION

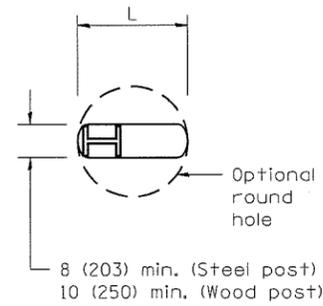
Illinois Department of Transportation

APPROVED January 1, 2010
Darrell Lewis
 ENGINEER OF LOCAL ROADS AND STREETS

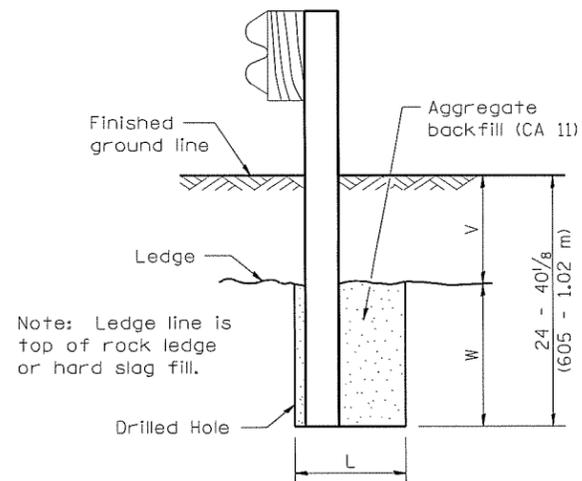
APPROVED January 1, 2010
Charles J. Roganelli
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-08

STEEL PLATE BEAM GUARDRAIL
27 1/2" (700mm) HEIGHT
 (Sheet 3 of 4)
STANDARD B.L.R. 26-2

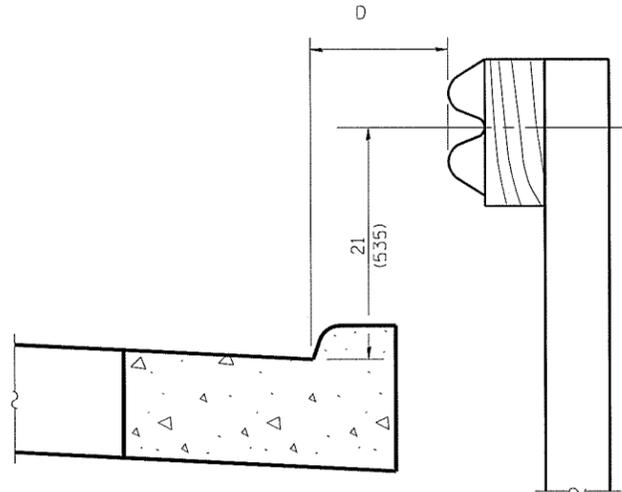


PLAN



ELEVATION

FOOTING FOR POST WHEN IMPERVIOUS MATERIAL IS ENCOUNTERED

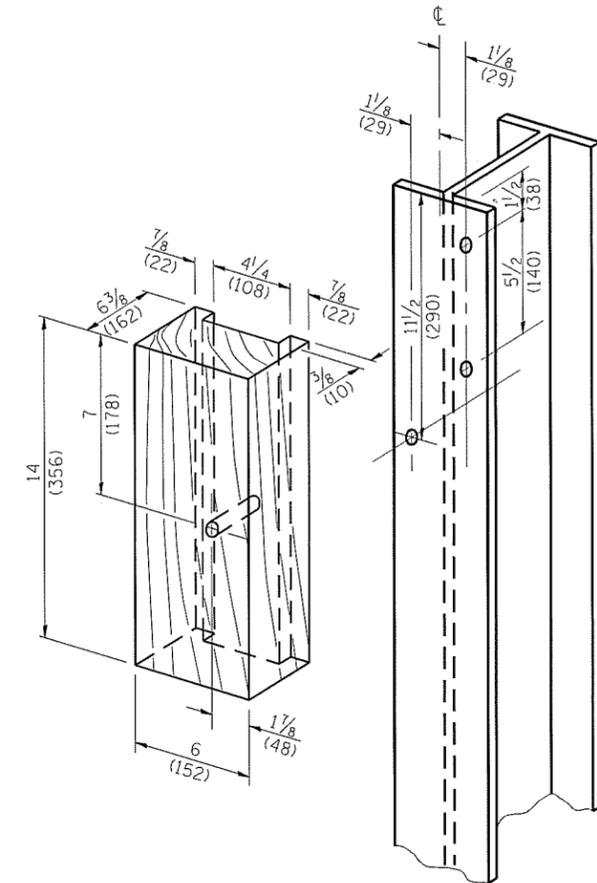


Note:
If it is necessary for D to be more than 12 (300) and less than 10'-0" (3.0 m) Type M-2 (M-5) curb and gutter (Std. 606001) shall be used in front of and in advance of the guardrail.

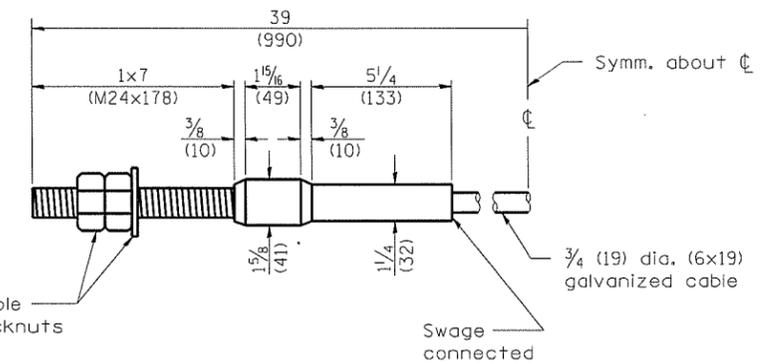
GUARDRAIL PLACED BEHIND CURB

(D = 0 desirable to 12 (300) maximum)

V	W	L	
		Steel Post	Wood Post
0 - 16 1/8 (0 - 410)	24 (610)	21 (530)	23 (580)
>16 1/8 - 28 1/8 (>410 - 714)	12 (305)	8 (203)	10 (250)
>28 1/8 - 40 1/8 (>714 - 1.02 m)	12 - 0 (305 - 0)	8 (203)	10 (250)



WOOD BLOCK-OUT AND STEEL POST DETAILS



CABLE ASSEMBLY

(40,000 lbs. (18,100 kg) min. breaking strength)
Tighten to taut tension.

STEEL PLATE BEAM GUARDRAIL

27 1/2" (700mm) HEIGHT

(Sheet 4 of 4)

STANDARD B.L.R. 26-2

Illinois Department of Transportation

APPROVED January 1, 2010

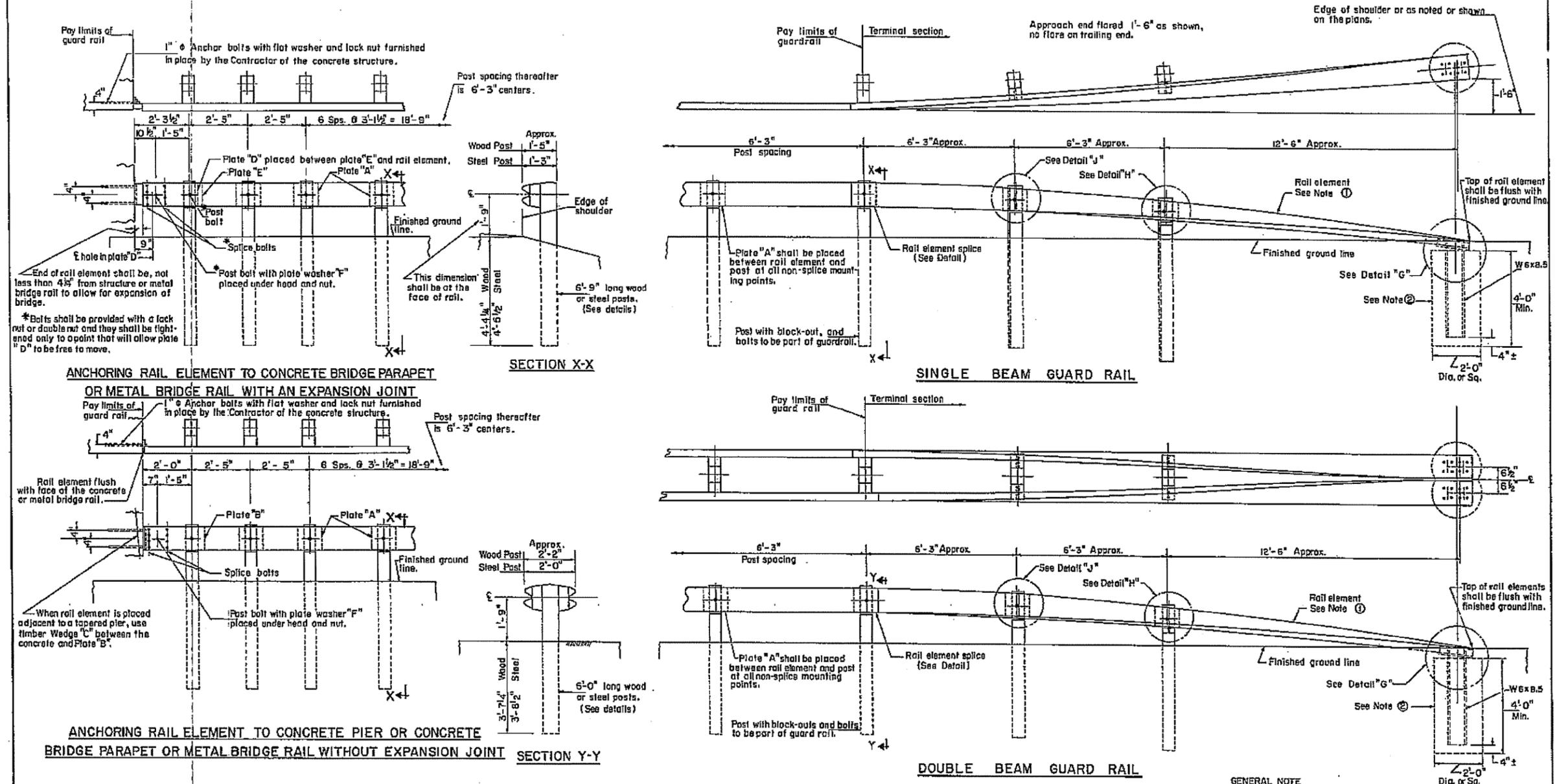
Donnell Lewis
ENGINEER OF LOCAL ROADS AND STREETS

APPROVED January 1, 2010

Charles J. Thompson
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-08

STANDARD DESIGN STEEL PLATE BEAM GUARD RAIL



GENERAL NOTE

① Rail element shall be twisted 90° in 25 feet. Care shall be exercised to provide a smooth curve with no kinks.

② Rail element and post may be assembled and positioned to proper alignment prior to placing concrete around post.

Rail element, steel post, and all the steel supports, fastenings and accessories shall be galvanized.

Steel brackets Detail "H" and "J", steel block-outs, and steel posts may be provided with additional holes so that these items will not be required to be made right and left handed.

Steel brackets Detail "H" and "J" may be fabricated from W 6 x 8.5 beam in lieu of the 3/8" plate specified, by cutting web of beam as shown dotted and welding together on both sides.

All concrete, reinforcement bars, and accessories used in the placing of the guard rail shall be incidental to the contract.

At the option of the Contractor, the rail elements may be furnished in either 12'-6" or 25'-0" nominal length.

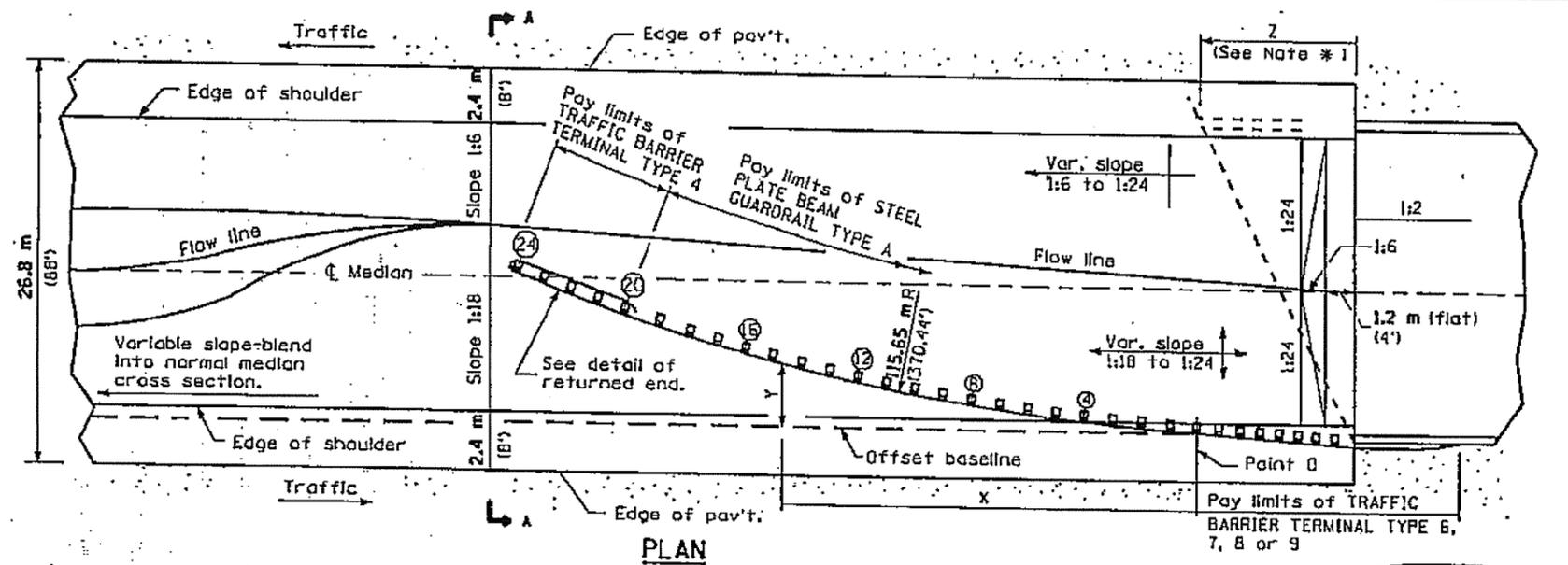
See Standard 2231 for Typical Applications of the Steel Plate Beam Guard Rail.

STATE OF ILLINOIS		ISSUED 2-11-66	
DEPARTMENT OF TRANSPORTATION		REVISIONS	
PASSED August 6 1975	D.W.W. 7-11-74		
Approved August 8 1975	D.W.W. 8-5-75		
THOMAS A. SMITH Engineer of Design			

REDRAWN 7-11-74

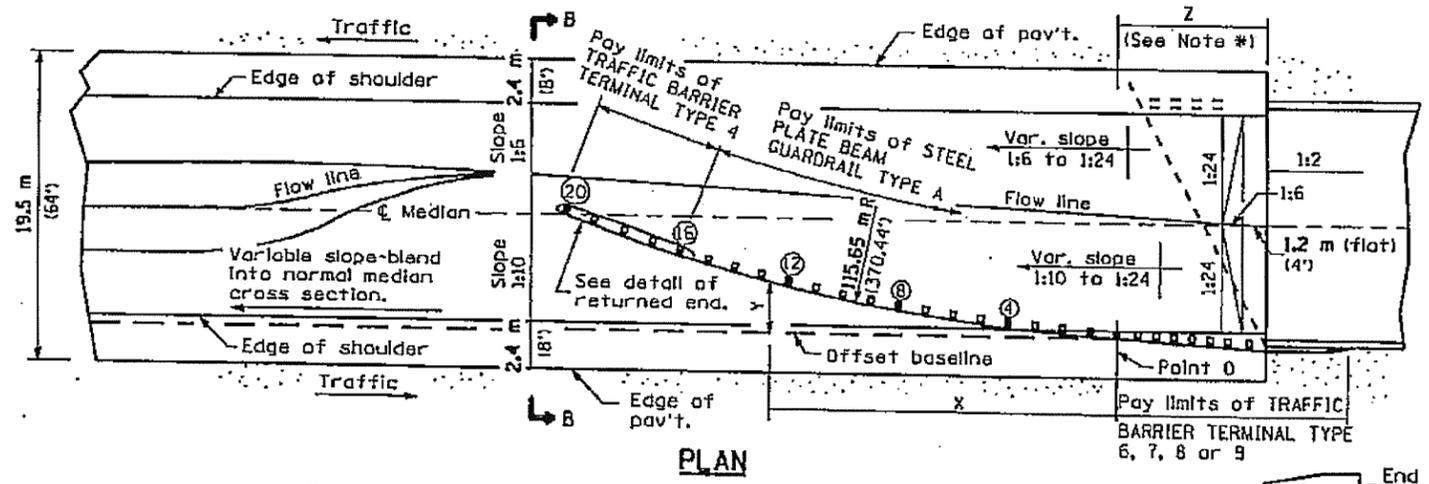
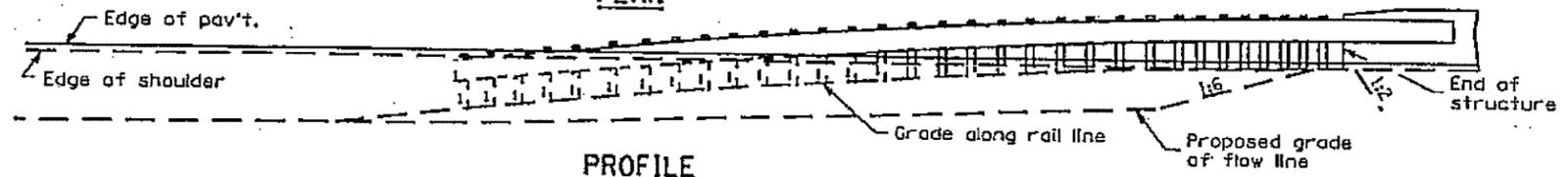
(Sheet 1 of 2 Sheets)
STANDARD 2230-10
Full Size DWG.

E-311



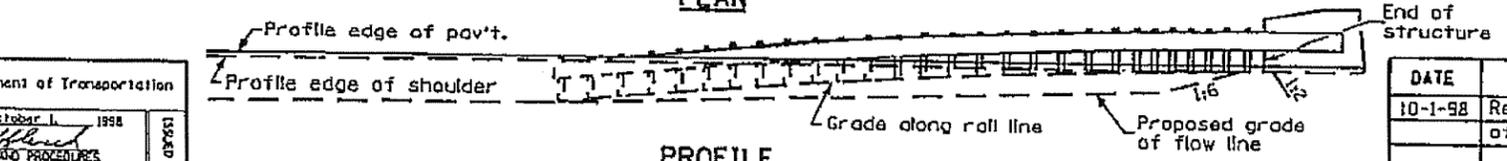
PLAN

PROFILE
ASSEMBLY FOR 26.8 m (88 ft.) MEDIAN



PLAN

PROFILE
ASSEMBLY FOR 19.5 m (64 ft.) MEDIAN



OFFSETS TO FACE OF RAIL		
POST POINT	DISTANCE X (m) (ft.)	OFFSET Y (m) (ft.)
0	0 (0)	0 (0)
4	7.60 (24.93)	0.56 (1.83)
8	15.14 (49.68)	1.60 (5.28)
12	22.60 (74.16)	3.16 (10.37)
16	29.94 (98.23)	5.20 (17.05)
20	37.13 (121.83)	7.71 (25.3)
24	44.14 (144.83)	10.70 (35.09)

Offsets (Y) are measured between the face of rail and the offset baseline, which is parallel to the pavement edge and passes through point 0.

The location of point 0 will vary, being dependent on structure details and the type of traffic barrier terminal utilized.

GENERAL NOTES

See Standard 630001 for details of guard-rail not shown.

* For dual structures skewed right forward, the nose of the Type 4 terminal shall be positioned longitudinally away from the structure for a distance equal to dimension Z. Appropriate adjustments to the length of the Type A guardrail and its offsets (Y) shall be calculated and used. All additional lengths of guardrail shall be in increments of 3.87 m (12'-6").

For dual structures that are 90°, or skewed left forward, the length of guardrail is appropriate.

The bearing plate K shall be held in position by (2) two eight penny nails driven into the post and bent over the top of the plate.

All slopes are expressed as units of vertical displacement to units of horizontal displacement (V:H).

All dimensions are in millimeters (inches) unless otherwise shown.

Illinois Department of Transportation

PASSED October 1, 1998
Charles K. Johnson
ENGINEER OF POLICY AND PROCEDURES

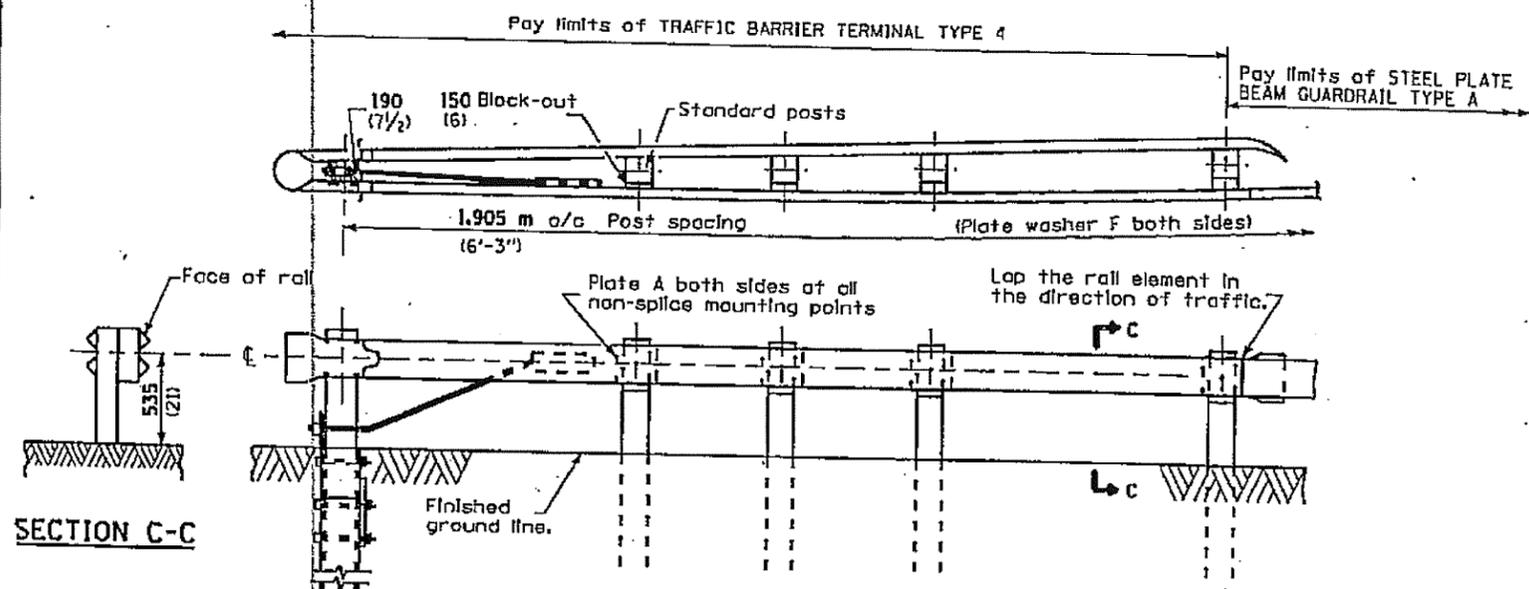
APPROVED October 1, 1998
Bill Swanson
ENGINEER OF DESIGN AND ENVIRONMENT

DATE	REVISIONS
10-1-98	Revised distance in offset table.
1-1-97	Renum. Standard 2339-4.

TRAFFIC BARRIER TERMINAL TYPE 4

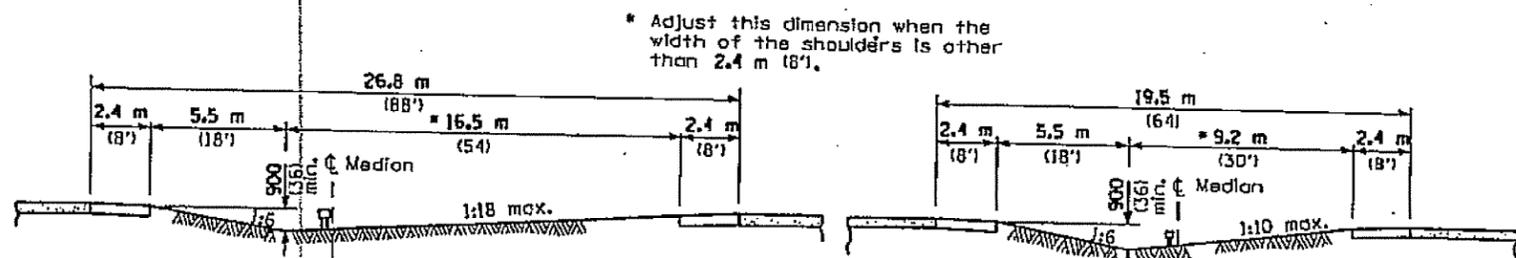
(Sheet 1 of 2)

STANDARD 631021-01



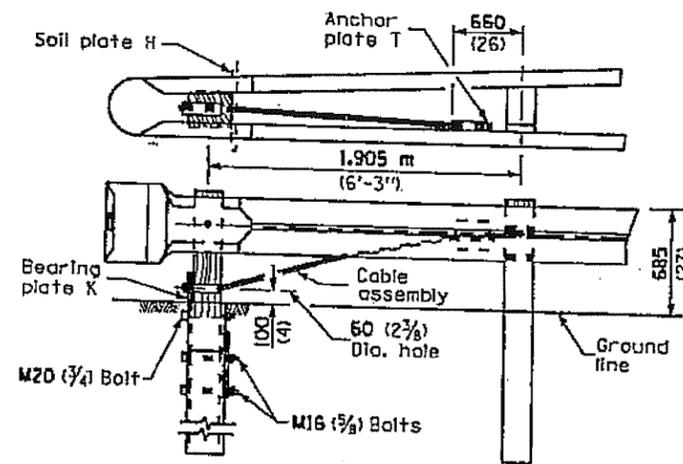
SECTION C-C

RETURNED END DETAIL

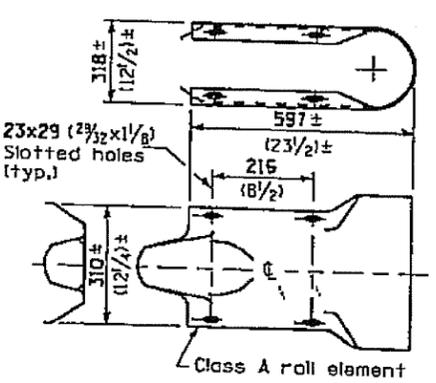


SECTION A-A

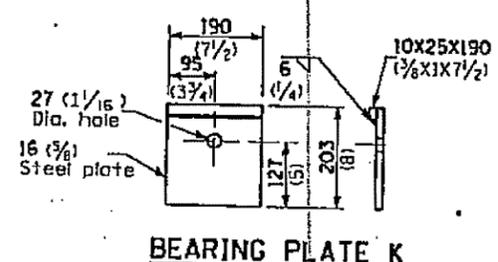
SECTION B-B



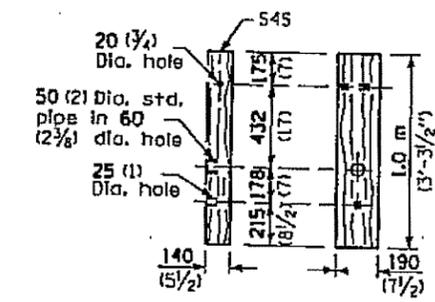
WOOD POST TUBULAR STEEL FOUNDATION



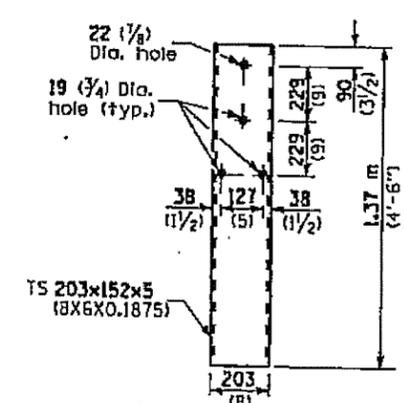
RETURN END SECTION



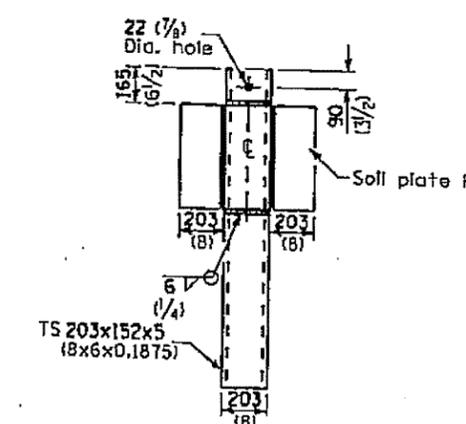
BEARING PLATE K



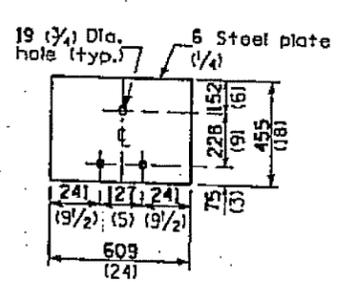
WOOD BREAKAWAY POST



STEEL TUBE



ALTERNATE SOIL PLATE CONNECTION

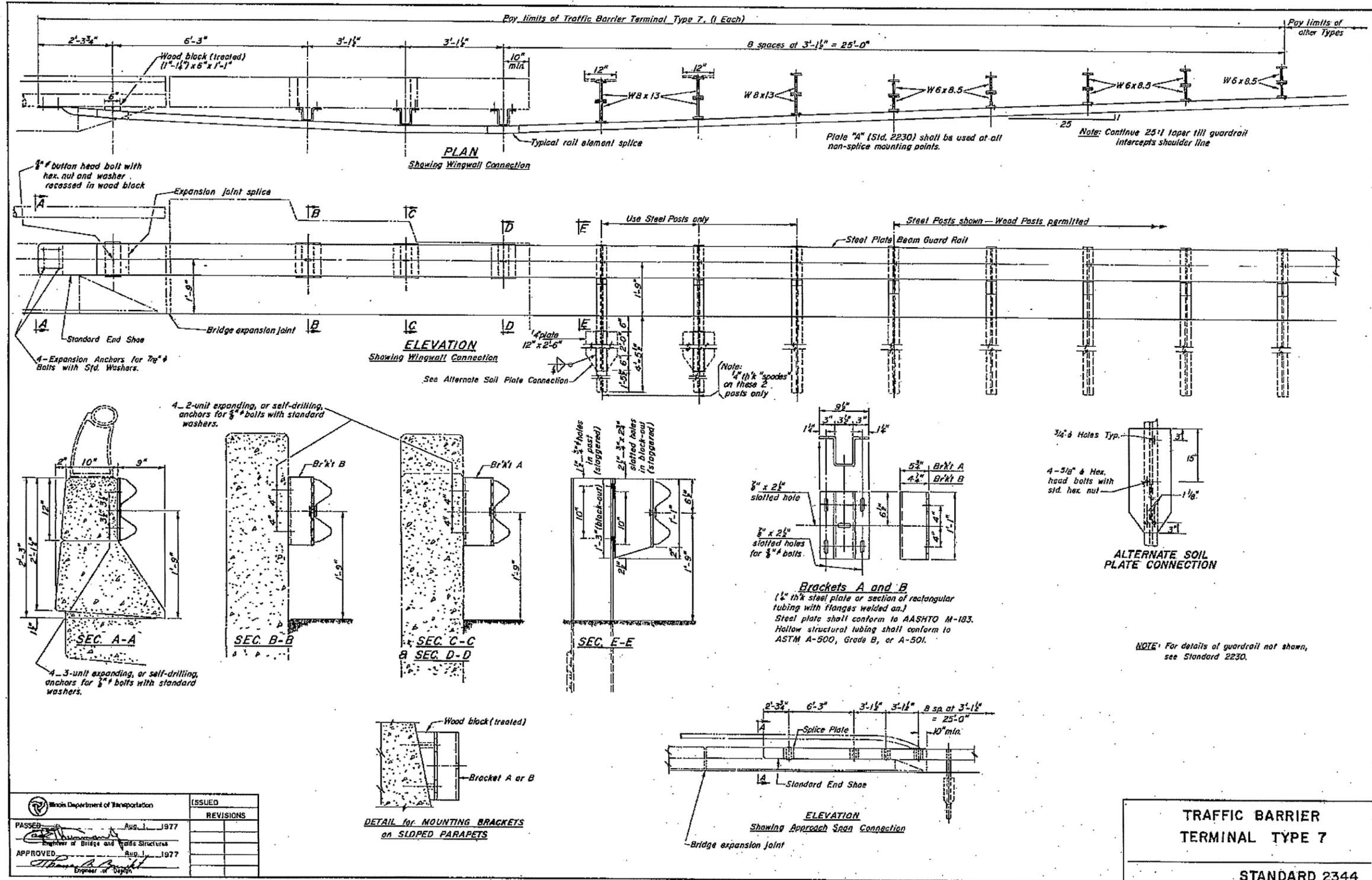


SOIL PLATE H

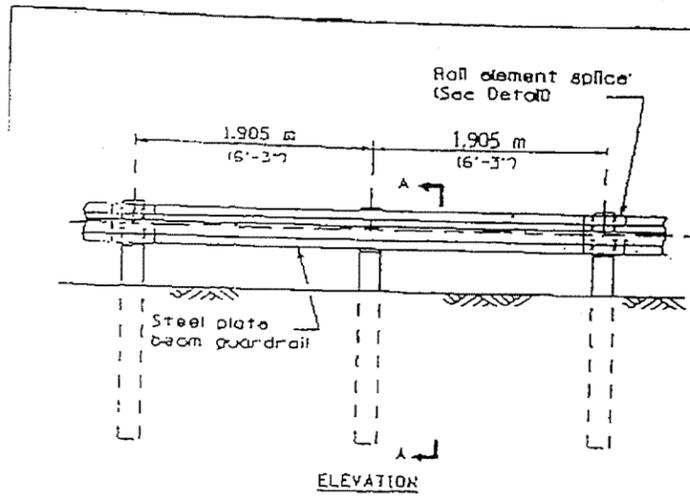
All dimensions are in millimeters (inches) unless otherwise shown.

Illinois Department of Transportation
 PASSED October 1, 1998
Charles Kallfleck
 ENGINEER OF POLICY AND PROCEDURES
 APPROVED October 1, 1999
Bill Sander
 ENGINEER OF DESIGN AND ENVIRONMENT

TRAFFIC BARRIER
 TERMINAL TYPE 4
 (Sheet 2 of 2)
 STANDARD 631021-01

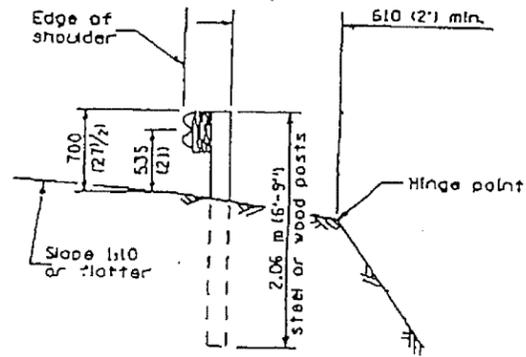


E-331

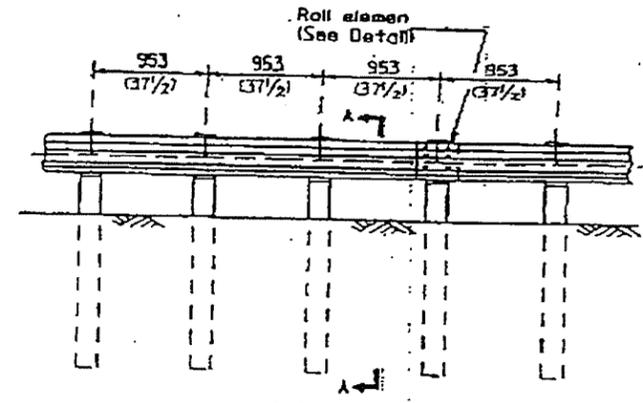


TYPE A

1.905 m (6'-3") Typical post spacing

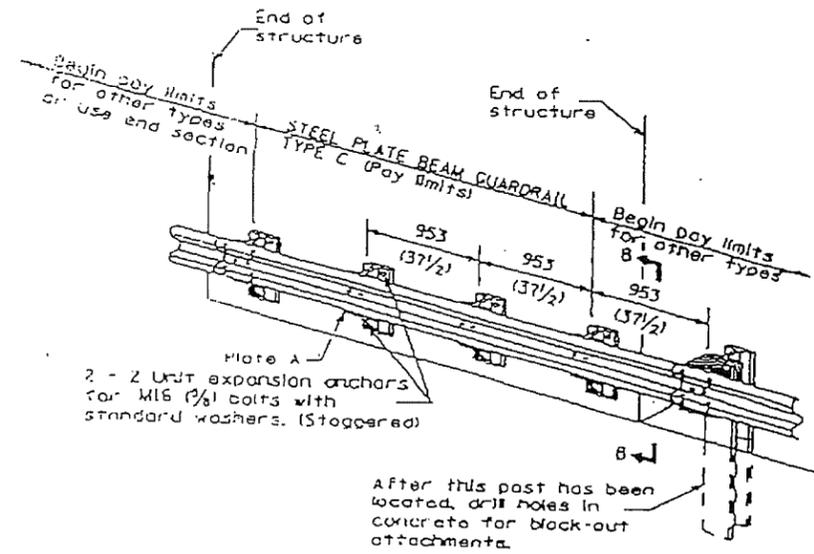


SECTION A-A



TYPE B

953 (37 1/2) Closed post spacing

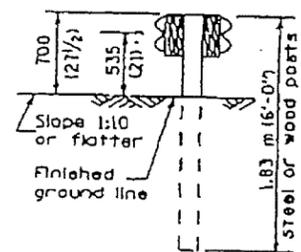


TYPE C

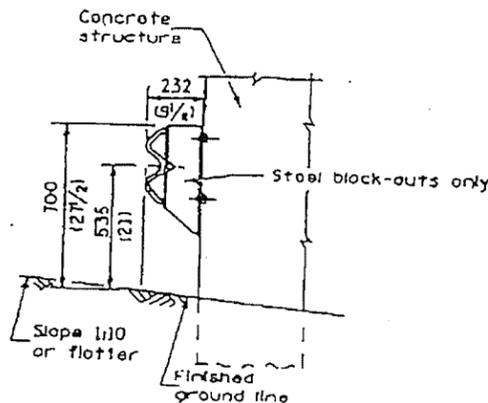
953 (37 1/2) Block-out spacing

2 - 2 UNF expansion anchors for M16 (5/8) bolts with standard washers. (Staggered)

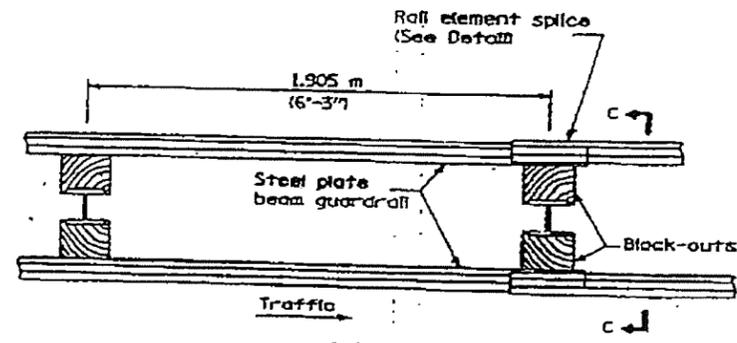
After this post has been located, drill holes in concrete for block-out attachments.



SECTION C-C



SECTION B-B



TYPE D

Double steel plate beam guardrail
1.905 m (6'-3") typical post spacing

GENERAL NOTES

All slope ratios are expressed as units of vertical displacement to units of horizontal displacement (V:H).

All dimensions are in millimeters (inches) unless otherwise shown.

The existing steel posts may be drilled to match the bolt pattern shown herein for the wood block-out, or a new steel post shall be provided.

This detail is applicable to the guardrail system used prior to January 1, 2007. For details on the Midwest Guardrail System, see Standard 63000.

**REMOVE AND REERECT
STEEL PLATE BEAM GUARDRAIL**

(Sheet 1 of 4)

DETAIL

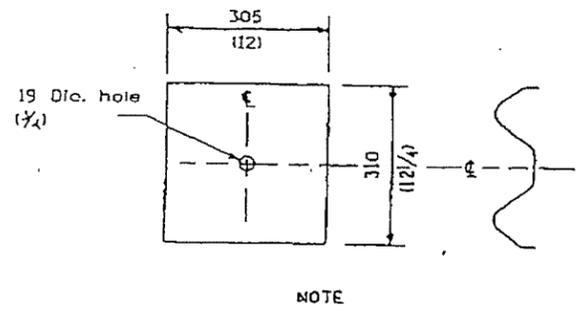
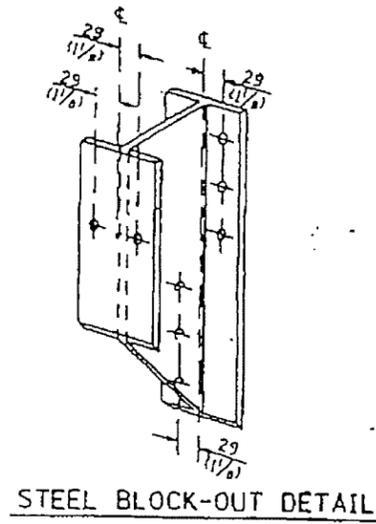
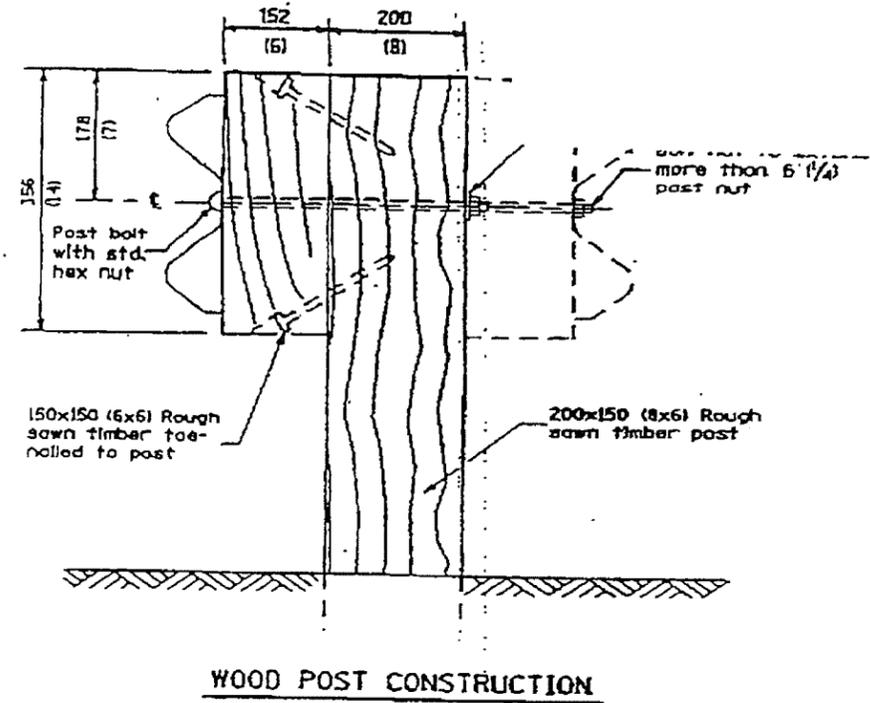
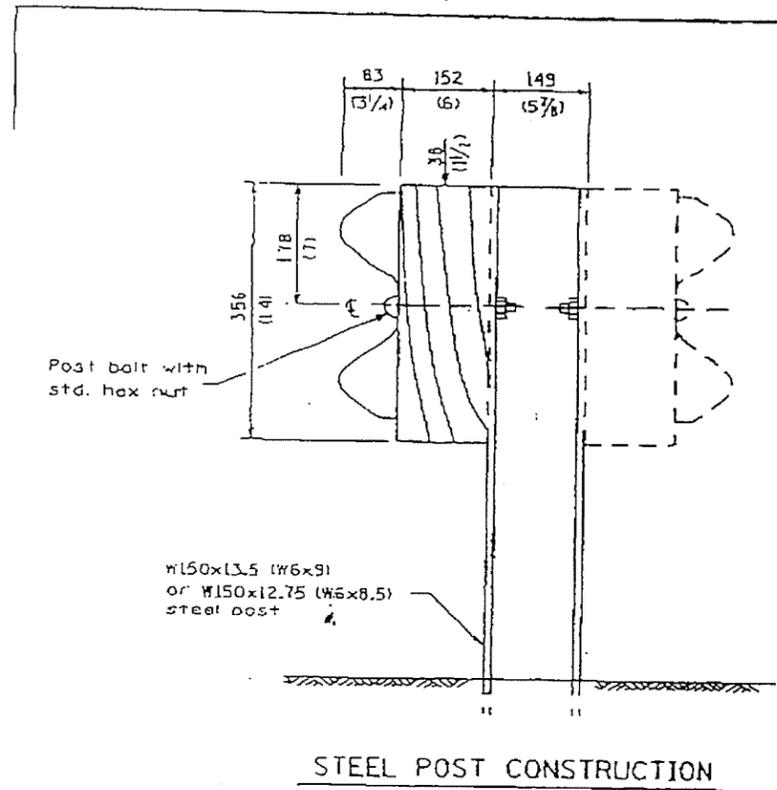
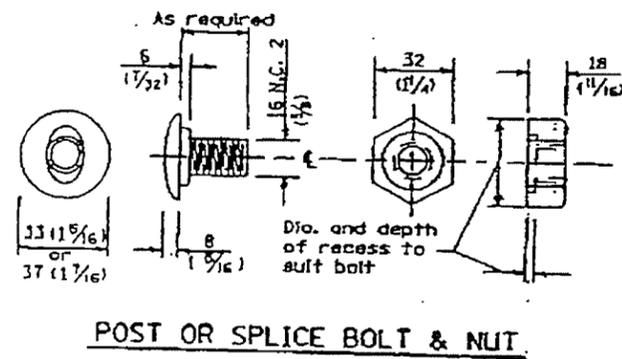


Plate A shall be placed between rail element and block-out at non-splice mounting points only when steel block-outs are used.

PLATE A

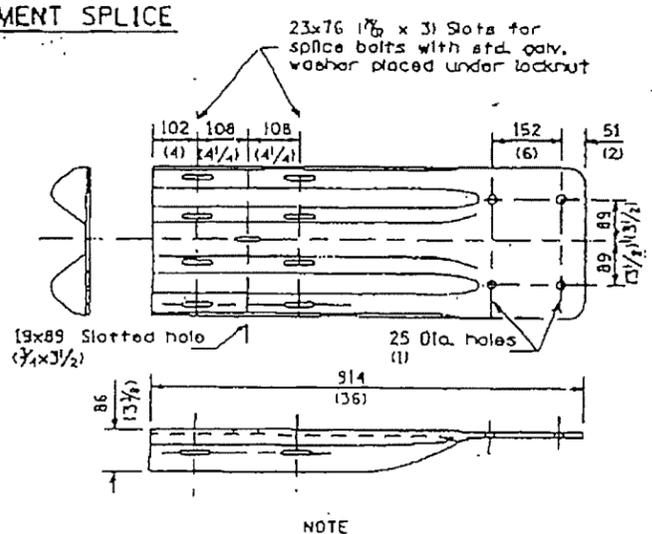
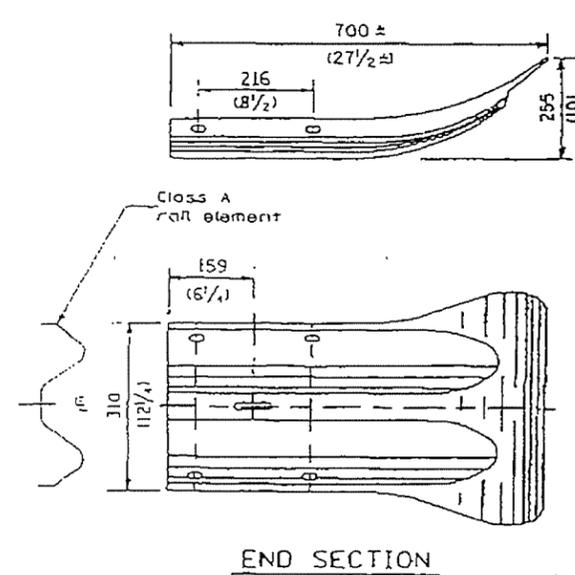
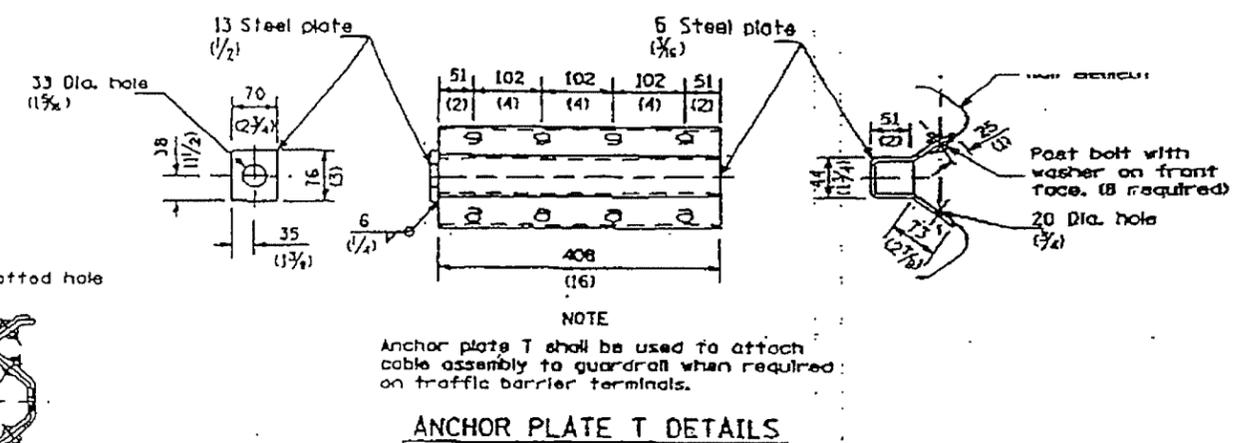
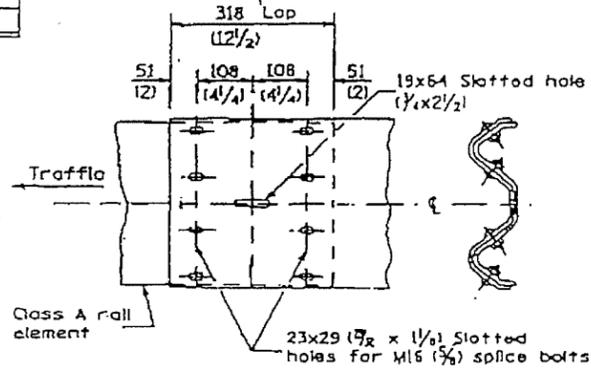
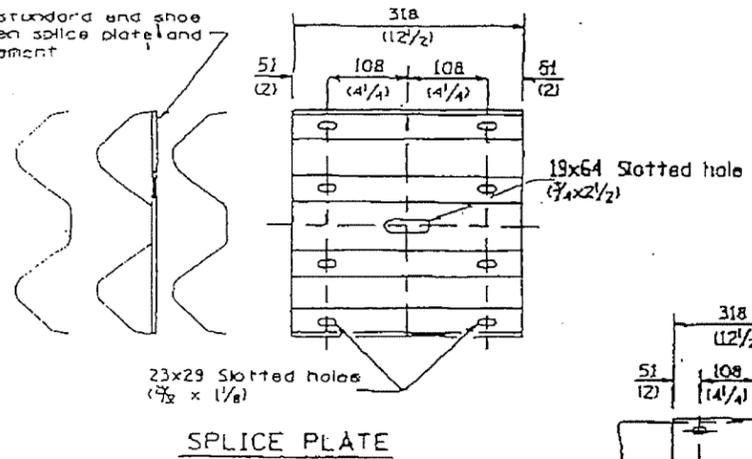


REMOVE AND REERECT
STEEL PLATE BEAM GUARDRAIL

(Sheet 2 of 4)

DETAIL

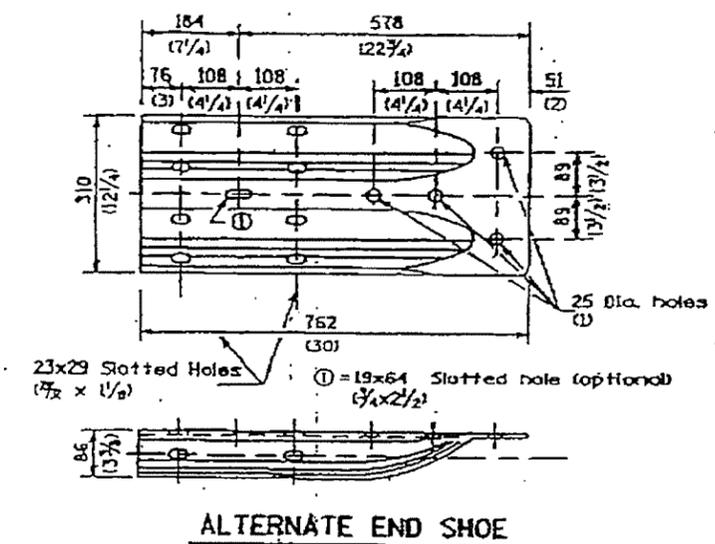
Place standard end shoe between splice plate and rail element



When end shoe is attached to a bridge parapet which has an expansion joint, the bolts shall be provided with a locknut or double nut and shall be tightened only to a point that will allow guardrail movement.

The standard end shoe shall be attached to the concrete with pre-drilled or self-drilling anchor bolts. The anchor cone shall be set flush with the surface of the concrete.

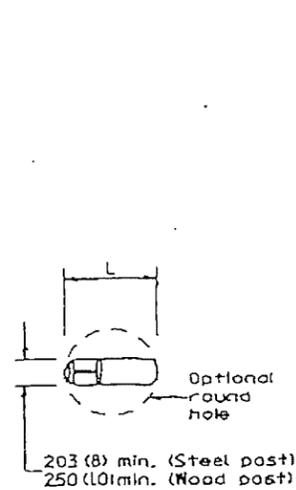
Externally threaded studs protruding from the surface of the concrete will not be permitted.



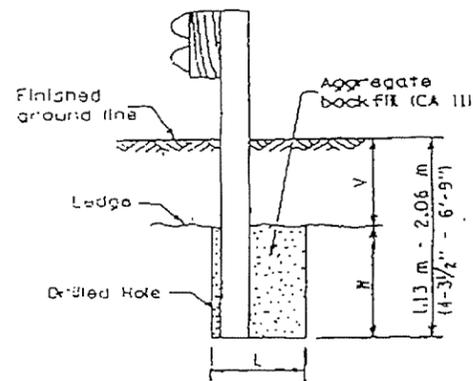
REMOVE AND REERECT STEEL PLATE BEAM GUARDRAIL

(Sheet 3 of 4)

DETAIL



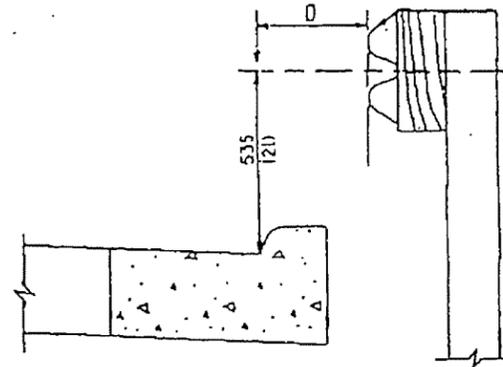
PLAN



Note:
Ledge line is top of rock ledge or hard slag fill.

ELEVATION

FOOTING FOR POST WHEN IMPERVIOUS MATERIAL IS ENCOUNTERED

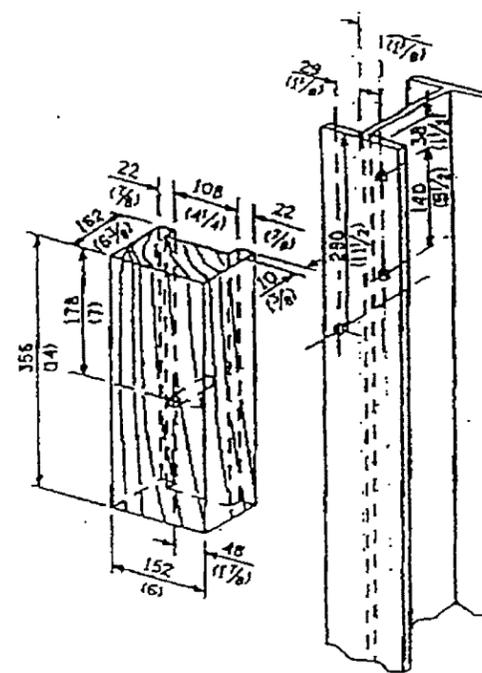


Notes
If it is necessary for D to be more than 300 (12) and less than 3.0 m (10'-0") type M-5 (M-2) curb and gutter (Std. 60600) shall be used in front of and in advance of the guardrail.

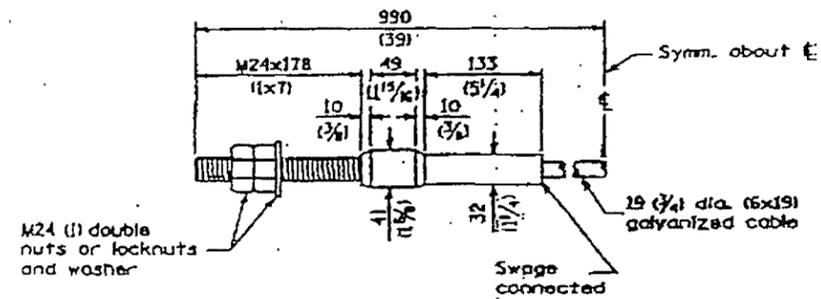
GUARDRAIL PLACED BEHIND CURB

D = 0 desirable to 300 (12) maximum

V	W	L	
		Steel Post	Wood Post
0 - 460 (0 - 18)	610 (24)	530 (21)	580 (23)
>460 - 825 (18 - 41.5)	305 (12)	203 (8)	250 (10)
>825 - 1.13 m (41.5 - 53.5)	305 - 0 (12 - 0)	203 (8)	250 (10)



WOOD BLOCK-OUT AND STEEL POST DETAILS



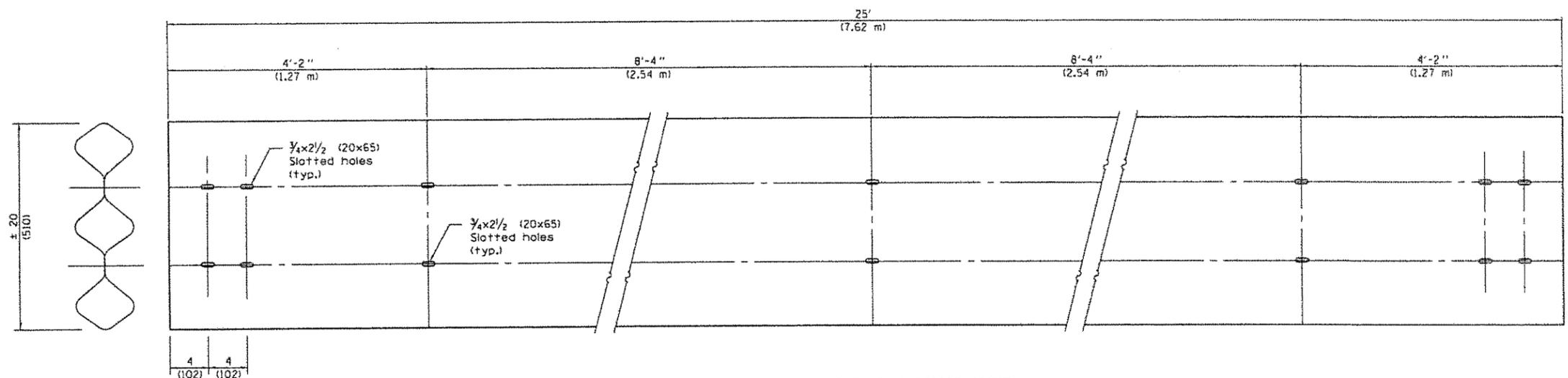
CABLE ASSEMBLY

(18,100 kg (40,000 lbs.) min. breaking strength)
Tighten to full tension.

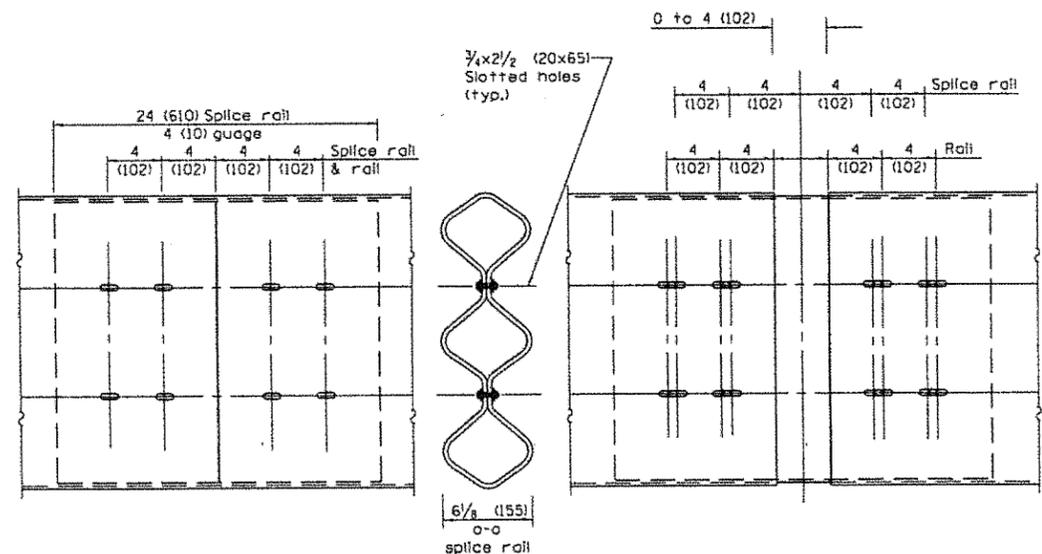
REMOVE AND REERECT STEEL PLATE BEAM GUARDRAIL

(Sheet 4 of 4)

DETAIL

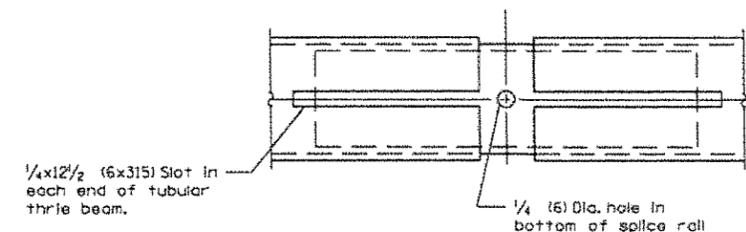


TUBULAR THRIE BEAM FOR INTERNAL SPLICE JOINT



INTERNAL SPLICE JOINT

INTERNAL EXPANSION SPLICE JOINT



BOTTOM VIEW OF INTERNAL EXPANSION SPLICE JOINT

GENERAL NOTES

Plate Washers B are to be placed under both heads and nuts of splicing bolts for internal splice and internal expansion splice joint.

Plate Washers C are to be placed under both heads and nuts of splicing bolts for lap expansion and internal lap splice joint.

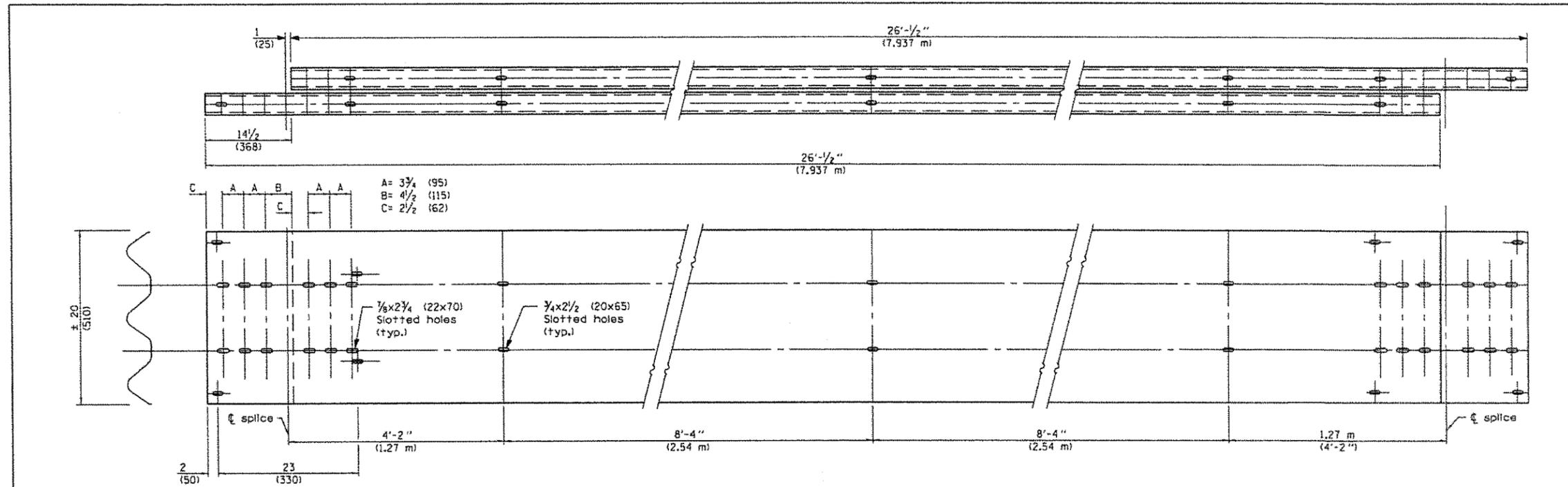
See Standard 630001 for details of guardrail not shown.

All dimensions are in inches (millimeters) unless otherwise shown.

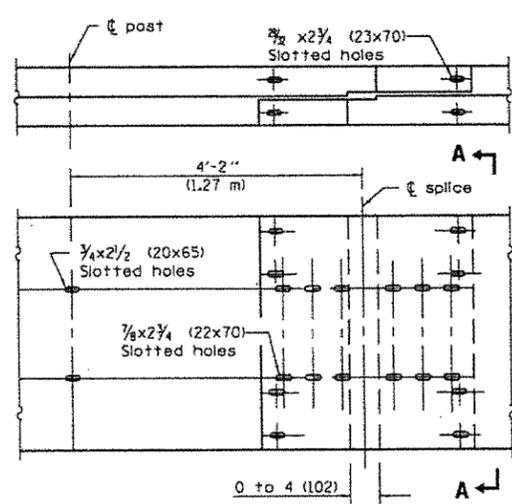
Illinois Department of Transportation
 PASSED January 1, 2011
 ENGINEER OF POLICY AND PROCEDURES
 APPROVED January 1, 2011
 ENGINEER OF DESIGN AND ENVIRONMENT

DATE	REVISIONS
1-1-11	Corrected note on "Plate Washer B" detail.
1-1-09	Switched units to English (metric). Added Plate Washer F detail.

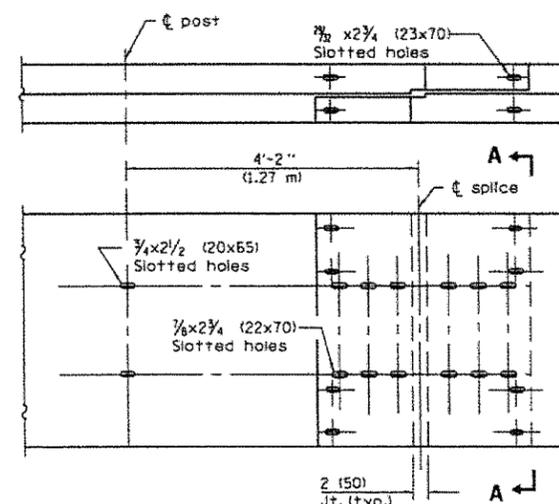
TUBULAR THRIE BEAM RETROFIT RAIL FOR BRIDGES
 (Sheet 1 of 3)
STANDARD 509001-02



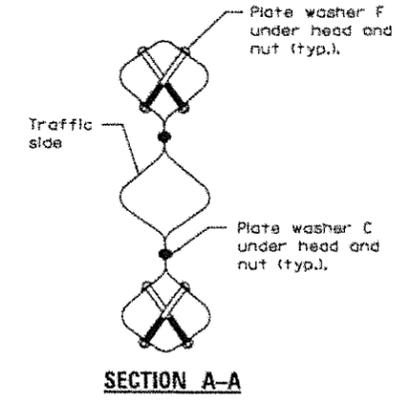
TUBULAR THRIE BEAM FOR LAP SPLICE JOINT



LAP EXPANSION SPLICE JOINT



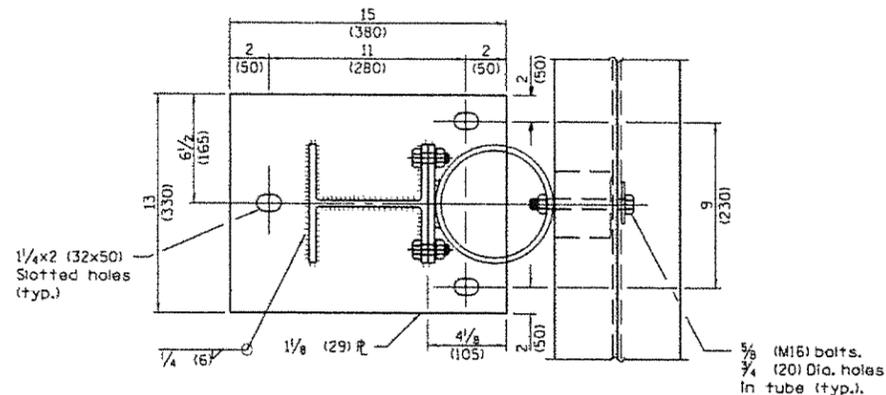
LAP SPLICE JOINT



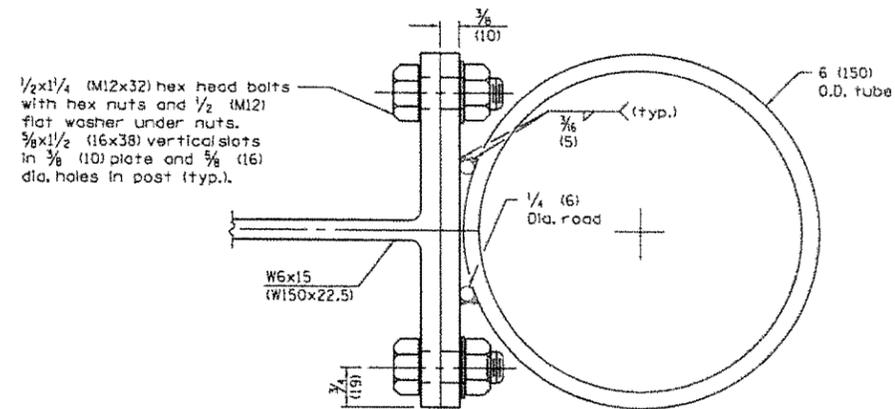
SECTION A-A

Illinois Department of Transportation
 PASSED January 1, 2011
 Michael Beard
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 APPROVED January 1, 2011
 ENGINEER OF DESIGN AND ENVIRONMENT

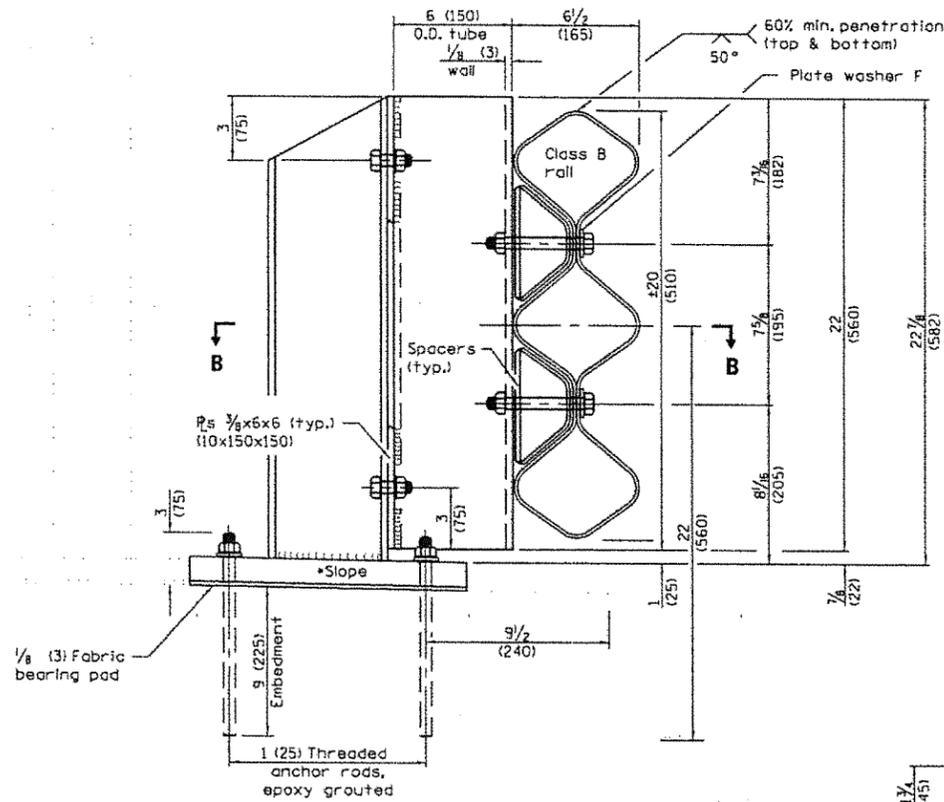
**TUBULAR THRIE BEAM
 RETROFIT RAIL FOR BRIDGES**
 (Sheet 2 of 3)
 STANDARD 509001-02



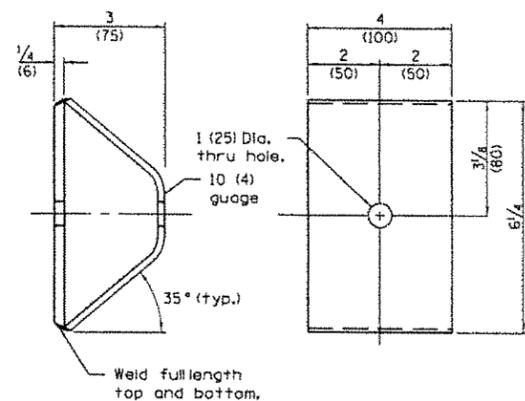
SECTION B-B



TUBE TO POST ATTACHMENT



POST



SPACER

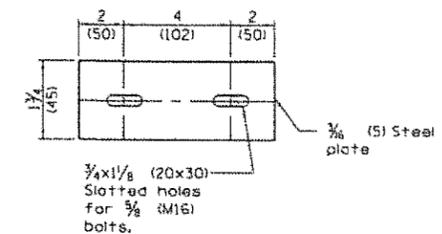


PLATE WASHER B

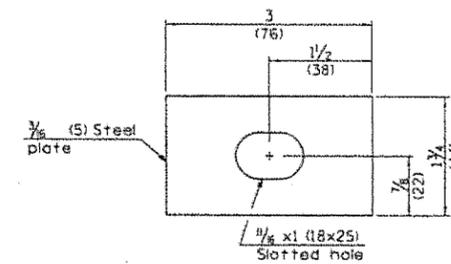


PLATE WASHER F

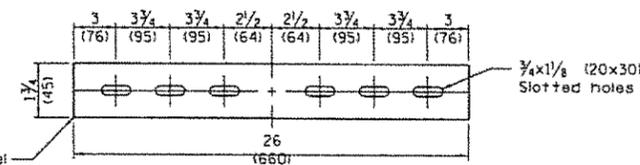
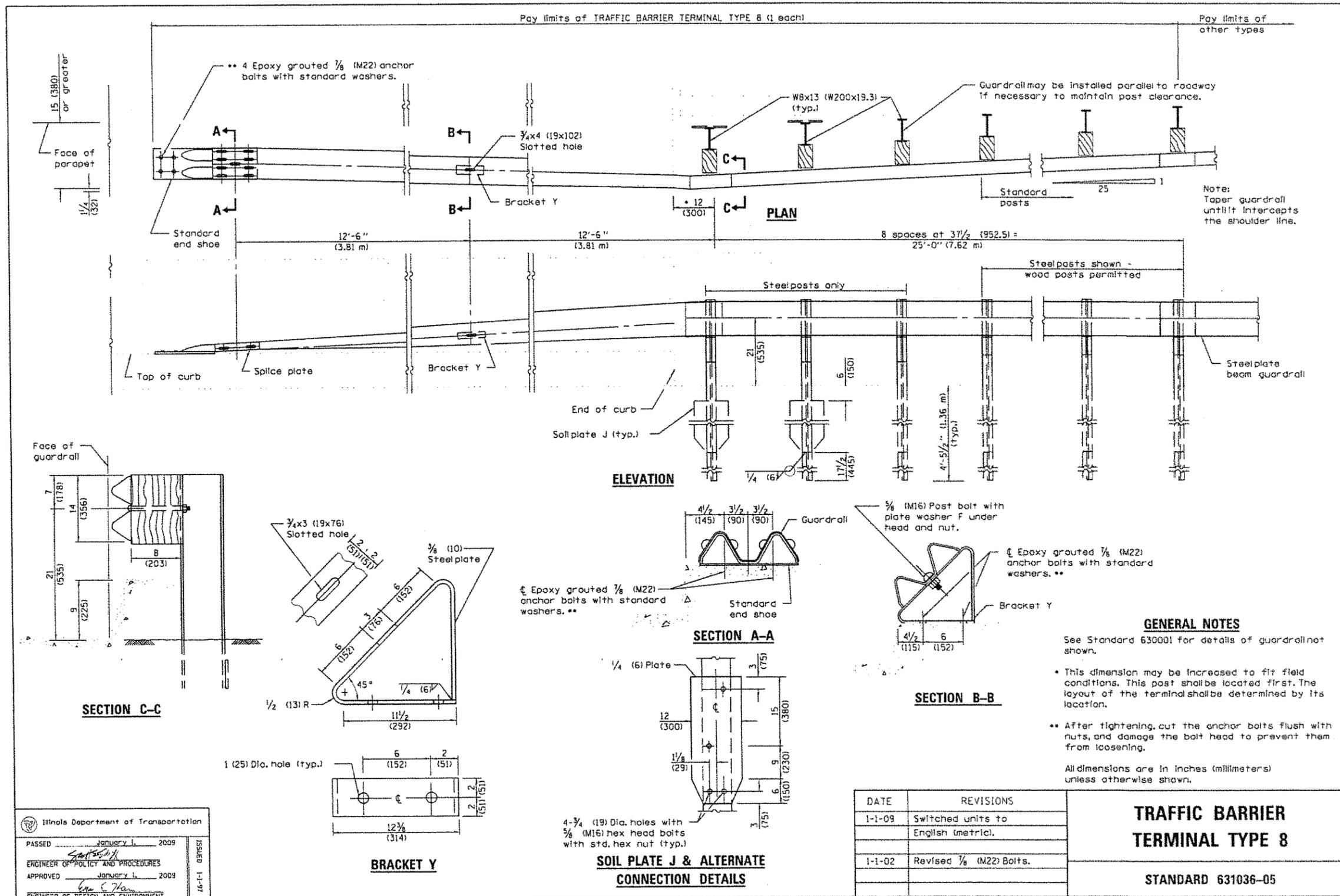


PLATE WASHER C

12
1/4
• Cut bottom of post to slope

Illinois Department of Transportation
 PASSED January 1, 2011
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**TUBULAR THRIE BEAM
 RETROFIT RAIL FOR BRIDGES**
 (Sheet 3 of 3)
 STANDARD 509001-02



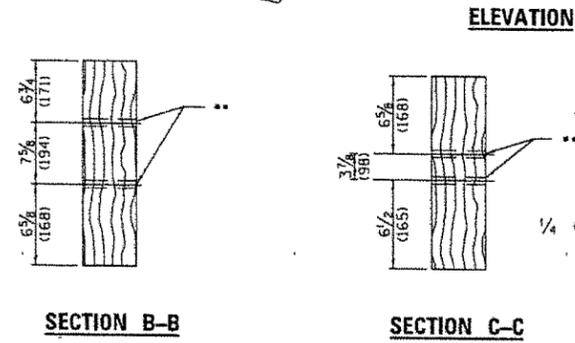
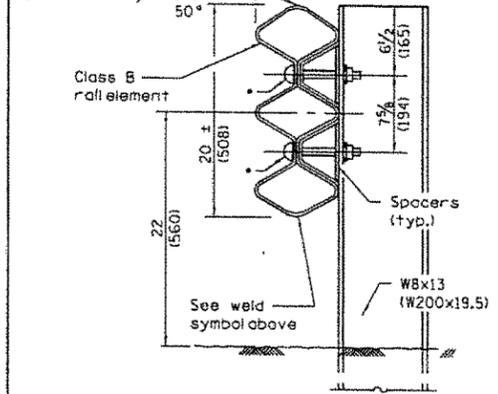
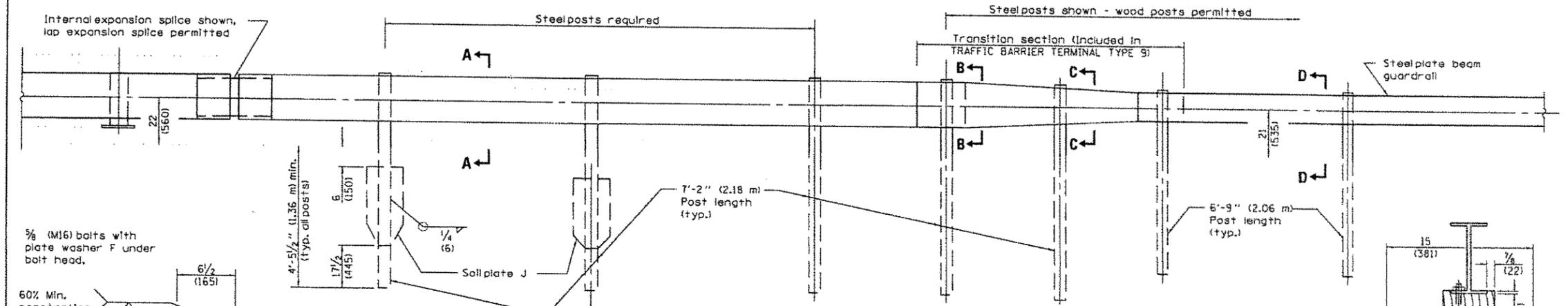
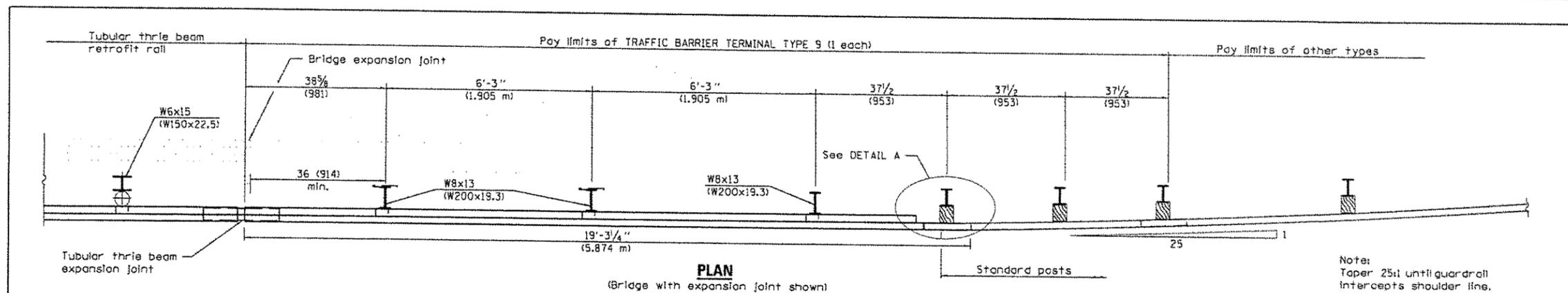
Illinois Department of Transportation

PASSED January 1, 2009

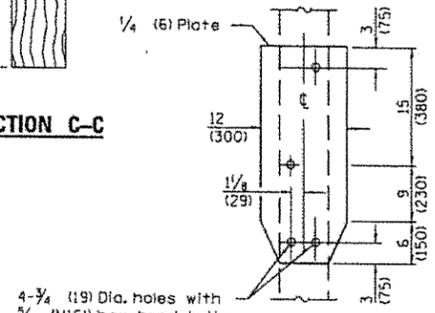
ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 2009

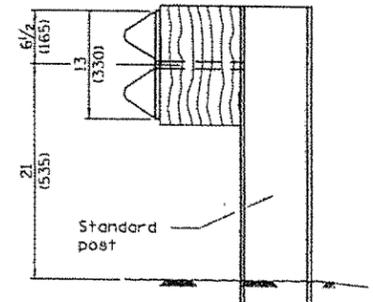
ENGINEER OF DESIGN AND ENVIRONMENT



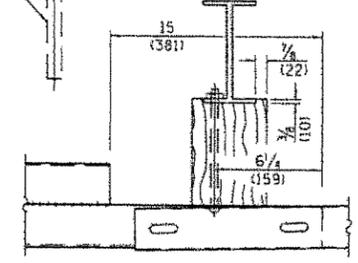
DETAILS of BLOCK-OUTS
 •• \varnothing 3/4 (19) Dia. hole



SOIL PLATE J & ALTERNATE CONNECTION DETAILS



SECTION D-D



DETAIL A

GENERAL NOTES
 See Standards 509001 and 630001 for details of guardrail elements not shown.
 The Type 9 terminal shall be installed after the posts for the bridge retrofit rail have been located as shown on Standard 509001.
 All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation
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 ENGINEER OF POLICY AND PROCEDURES
 APPROVED January 1, 2011
 ENGINEER OF DESIGN AND ENVIRONMENT

DATE	REVISIONS
1-1-11	Omitted 5 3/8 (149) dimension from Section D-D.
1-1-09	Switched units to English (metric).

TRAFFIC BARRIER TERMINAL TYPE 9

STANDARD 631041-03