

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PA RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2026	VARIOUS	27	1
ILLINOIS CONTRACT NO. 68K91				

D-94-006-26



DESCRIPTION:
GUARDRAIL AND CABLE RAIL REPAIRS AT
VARIOUS LOCATIONS IN DISTRICT 4

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED October 8 2025
Kenneth A. Darnett
REGIONAL ENGINEER

January 23 2026
Scott E. Etkin
ENGINEER OF DESIGN AND ENVIRONMENT

January 23 2026
Quarry
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

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 - 2 JOB SPECIFIC NOTES & COMMITMENTS
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 - 15-17 EXISTING CABLE MEDIAN BARRIER (CABLE ROAD GUARD)
 - 18 EXISTING GIBRALTAR CABLE BARRIER DETAIL
 - 19 EXISTING TRAFFIC BARRIER TERMINAL TYPE 8
 - 20 EXISTING TRAFFIC BARRIER TERMINAL TYPE 9
 - 21-23 EXISTING TUBULAR THIRIE BEAM RETROFIT RAIL FOR BRIDGES
 - 24-27 STEEL PLATE BEAM GUARDRAIL, TYPE A, 6.75 FOOT POSTS
STANDARD 630011-D4

PROPOSED
HIGHWAY PLANS

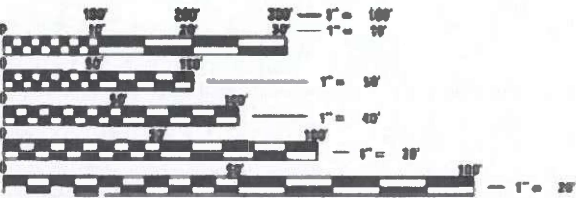
VARIOUS ROUTES
D4 GUARDRAIL REPAIRS 2026 – MCHD
VARIOUS COUNTIES
C-94-007-26

HIGHWAY STANDARDS:

630001-13	631046-04	701201-05	701456-05
630101-11	635001-02	701301-04	701601-09
630301-09	664001-02	701400-12	701606-10
631006-08	665001-02	701406-13	701701-10
631011-10	701006-05	701411-09	701901-11
631026-06	701011-04	701423-01	BLR-23-04
631031-18	701101-05		

DISTRICT STANDARDS:

630011-D4



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING
SCALES. REDUCED SIZED PLANS WILL NOT
CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS
ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

JULIE
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-6123
OR 811

PROJECT ENGINEER BEN TELLEFSON (309) 671-3333
PROJECT MANAGER BEN TELLEFSON (309) 671-3333
CATALOG NO. 036732-00D
CONTRACT NO. 68K91



GROSS LENGTH = NA
NET LENGTH = NA

COMMITMENTS

NO COMMITMENTS HAVE BEEN MADE FOR THIS PROJECT.

TRAFFIC BARRIER TERMINAL, TYPE 1 SPECIAL:

ANY TYPE 1, 1A, OR 1B TERMINAL REQUIRING REPLACEMENT UNDER THIS CONTRACT SHALL BE REPLACED BY A TYPE 1 (SPECIAL) TERMINAL AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER FORTY-EIGHT (48) HOURS PRIOR TO PERFORMING WORK.

MODEL: Default
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	DRAWN -	REVISED -
PLOT SCALE = 1:100	CHECKED -	REVISED -
PLOT DATE = 10/21/2022	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

JOB SPECIFIC NOTES AND COMMITMENTS

SCALE: SHEET 1 OF 1 SHEETS, STA. TO STA.

PA RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2026	VARIOUS	27	2
		ILLINOIS	CONTRACT NO. 68K91	

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ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	VARIOUS
				COUNTIES
				100% STATE
				MCHD
				21
63000001	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	FOOT	1750	1750
63000003	STEEL PLATE BEAM GUADRAIL, TYPE A, 9 FOOT POSTS	FOOT	475	475
63100045	TRAFFIC BARRIER TERMINAL, TYPE 2	EACH	26	26
63100070	TRAFFIC BARRIER TERMINAL, TYPE 5	EACH	5	5
63100085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	3	3
63100101	TRAFFIC BARRIER TERMINAL, TYPE 9	EACH	5	5
63100105	TRAFFIC BARRIER TERMINAL, TYPE 10	EACH	5	5
63100115	TRAFFIC BARRIER TERMINAL, TYPE 12	EACH	5	5
63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	30	30
63100169	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) FLARED	EACH	13	13
63200310	GUARDRAIL REMOVAL	FOOT	3500	3500
63400105	GUARD POSTS	EACH	50	50
64300260	IMPACT ATTENUATORS (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	2	2
64300320	IMPACT ATTENUATORS (FULLY REDIRECTIVE, RESETTABLE), TEST LEVEL 3	EACH	2	2
64300370	IMPACT ATTENUATORS (FULLY REDIRECTIVE, WIDE), TEST LEVEL 3	EACH	1	1

USER NAME = \$USER\$	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 1:100	CHECKED -	REVISED -
PLOT DATE = 10/21/2022	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: SHEET 1 OF 4 SHEETS, STA. TO STA.

PA RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2026	VARIOUS	27	3
		ILLINOIS	CONTRACT NO. 68K91	

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ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	VARIOUS
				COUNTIES
				100% STATE
				MCHD
				21
64300450	IMPACT ATTENUATORS (NON-REDIRECTIVE), TEST LEVEL 3	EACH	4	4
64300770	IMPACT ATTENUATORS (SEVERE USE, NARROW), TEST LEVEL 3	EACH	1	1
66400105	CHAIN LINK FENCE, 4'	FOOT	120	120
66400305	CHAIN LINK FENCE, 6'	FOOT	500	500
66500105	WOVEN WIRE FENCE, 4'	FOOT	500	500
72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	37	37
78200005	GUARDRAIL REFLECTORS, TYPE A	EACH	32	32
X0301372	REPAIR/UPGRADE EXISTING VAT TO CAT	EACH	5	5
X5091765	PIPE HANDRAIL (SPECIAL)	FOOT	100	100
X6300210	GUARDRAIL BLOCKS	EACH	50	50
X6300215	RAIL ELEMENT PLATES	EACH	80	80
X6300230	STEEL POSTS	EACH	135	135
X6300239	STEEL POSTS 9'	EACH	30	30
X6310302	REPAIR TRAFFIC BARRIER TERMINAL, TYPE 1 SPECIAL (TANGENT)	EACH	14	14
X6310304	REPAIR TRAFFIC BARRIER TERMINAL, TYPE 1 SPECIAL (FLARED)	EACH	5	5

USER NAME = \$USER\$	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 1:100	CHECKED -	REVISED -
PLOT DATE = 10/21/2022	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: SHEET 1 OF 4 SHEETS, STA. TO STA.

PA RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2026	VARIOUS	27	4
		ILLINOIS	CONTRACT NO. 68K91	

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ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	VARIOUS
				COUNTIES
				100% STATE
				MCHD
				21
X6310316	REPAIR TRAFFIC BARRIER TERMINAL, TYPE 2	EACH	6	6
X6310318	REPAIR TRAFFIC BARRIER TERMINAL, TYPE 3	EACH	4	4
X6310324	REPAIR TRAFFIC BARRIER TERMINAL, TYPE 4	EACH	4	4
X6310326	REPAIR TRAFFIC BARRIER TERMINAL, TYPE 5	EACH	4	4
X6310330	REPAIR TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	4	4
X6310336	REPAIR TRAFFIC BARRIER TERMINAL, TYPE 8	EACH	4	4
X6310338	REPAIR TRAFFIC BARRIER TERMINAL, TYPE 9	EACH	4	4
X6330900	VERTICAL ADJUSTMENT OF GUARDRAIL	FOOT	320	320
X6331101	TUBULAR THRIE BEAM	FOOT	200	200
X6360123	REPAIR CABLE ROAD GUARD, THREE STRANDS	FOOT	45	45
X6432213	REPAIR IMPACT ATTENUATORS (FULLY REDIRECTIVE, WIDE), TEST LEVEL 3	EACH	1	1
X6432223	REPAIR IMPACT ATTENUATORS (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	3	3
X6432233	REPAIR IMPACT ATTENUATORS (SEVERE USE, NARROW) TEST LEVEL 3	EACH	1	1
X6440130	REPAIR HIGH TENSION CABLE (GIBALTAR)	FOOT	500	500
X6440131	REPAIR HIGH TENSION BARRIER TERMINAL (GIBALTAR)	EACH	10	10

USER NAME = \$USER\$	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 1:100	CHECKED -	REVISED -
PLOT DATE = 10/21/2022	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: SHEET 2 OF 4 SHEETS, STA. TO STA.

PA RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2026	VARIOUS	27	5
		ILLINOIS	CONTRACT NO. 68K91	

TO: _____

D/A: _____

FY

CONTRACT NUM:

CLAIM NUM: _____

ROAD: _____ LOCATION: _____ COUNTY: _____

<u>CODE NUM</u>	<u>ITEM</u>	<u>UNIT</u>	<u>QTY</u>	<u>UNIT PRICE</u>	<u>AMOUNT</u>
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TOTAL CHARGES (This Work Order)\$

SPECIAL INSTRUCTIONS:

WORK ORDER ISSUED: _____ BY: _____ ACCEPTED: _____ BY: _____

WORK ORDER COMPLETED: _____ DATE: _____

I/WE CERTIFY WORK HAS BEEN PERFORMED ACCORDING TO THE CONTRACT AND HEREBY REQUEST

PAYMENT: _____ BY: _____ ACCEPTED: _____ BY: _____

VERIFICATION OF WORK ORDER COMPLETED: _____ BY: _____

APPROVED FOR PAYMENT

DATE _____

USER_NAME = \$USER\$	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 1:100	CHECKED -	REVISED -
PLOT DATE = 10/21/2022	DATE -	REVISED -

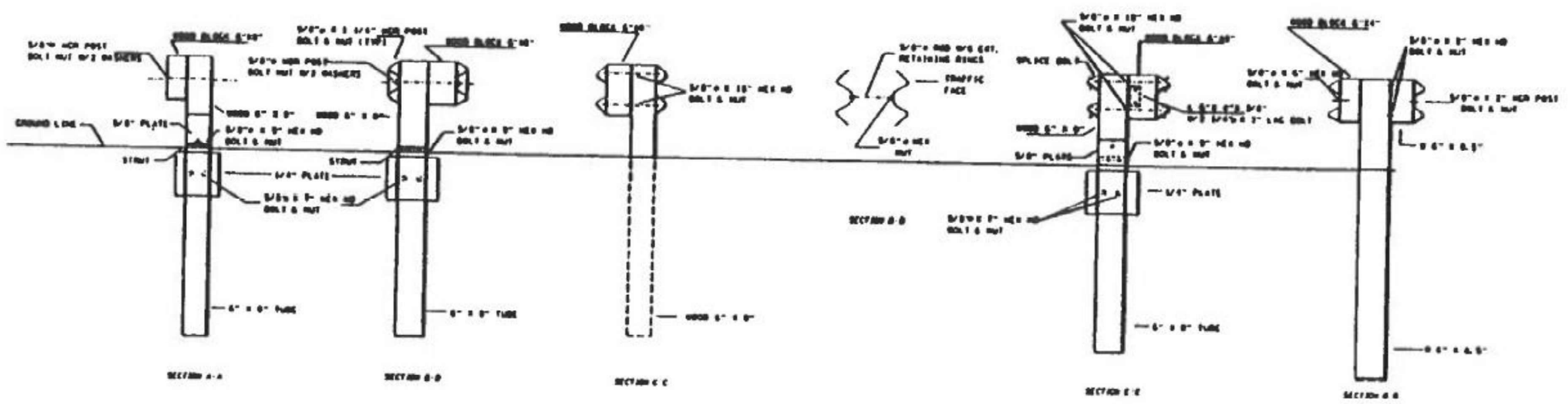
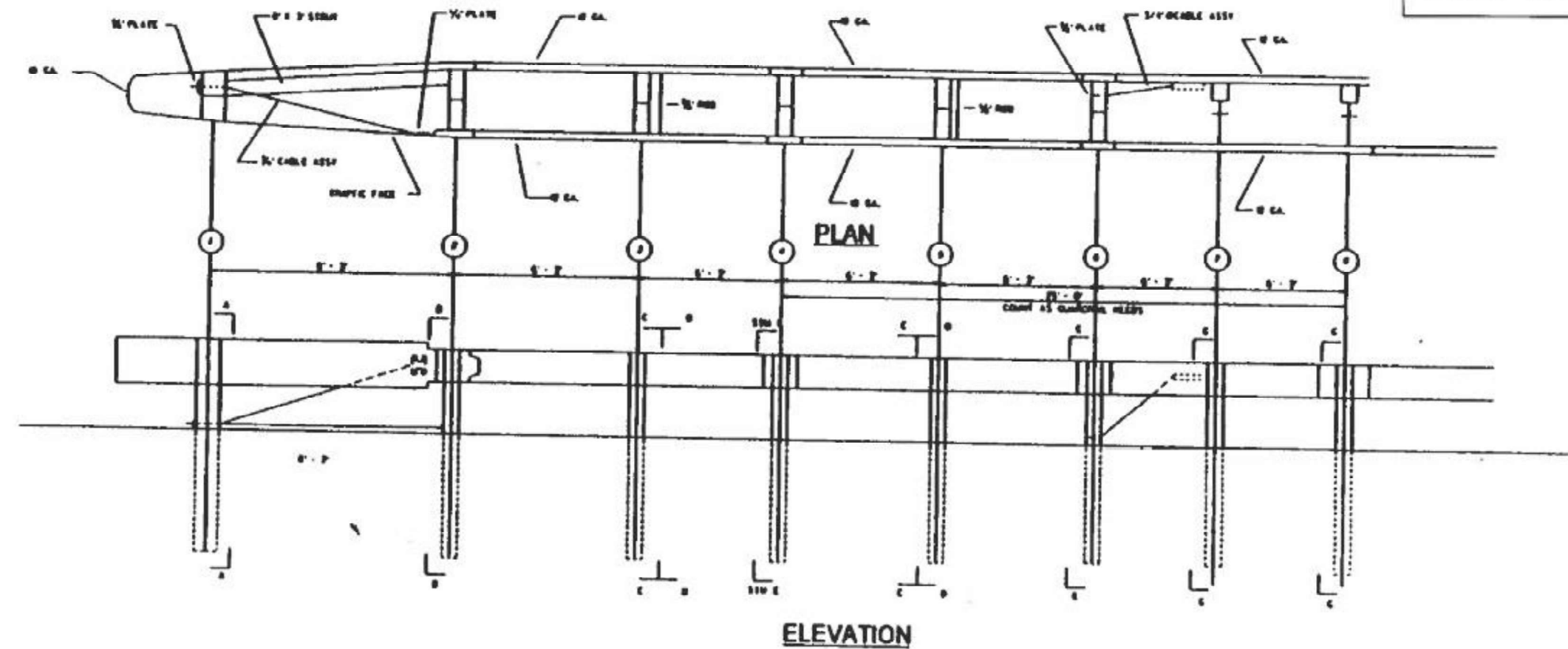
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT 4 – SAMPLE WORK ORDER

SCALE:	SHEET 1	OF 1	SHEETS	STA.	TO STA.
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F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2025	VARIOUS	27	7
		ILLINOIS CONTRACT NO. 68J37		

DETAIL INCLUDED
FOR REPAIR ONLY



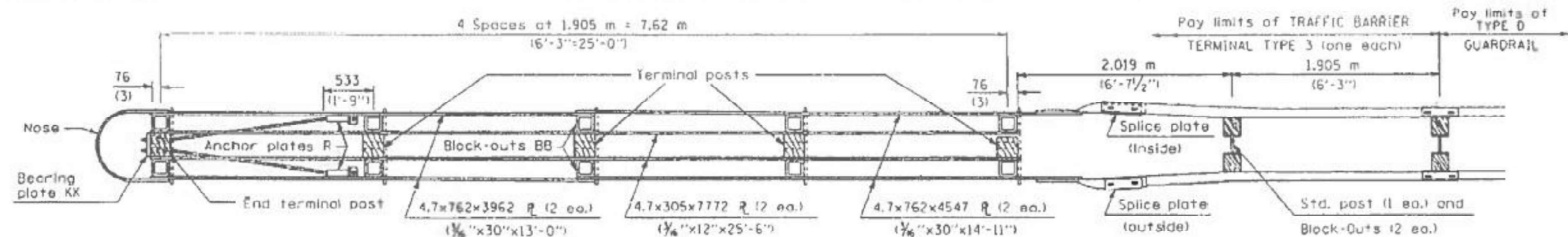
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PLOT DATE = 10/21/2022	DATE -	REVISED -

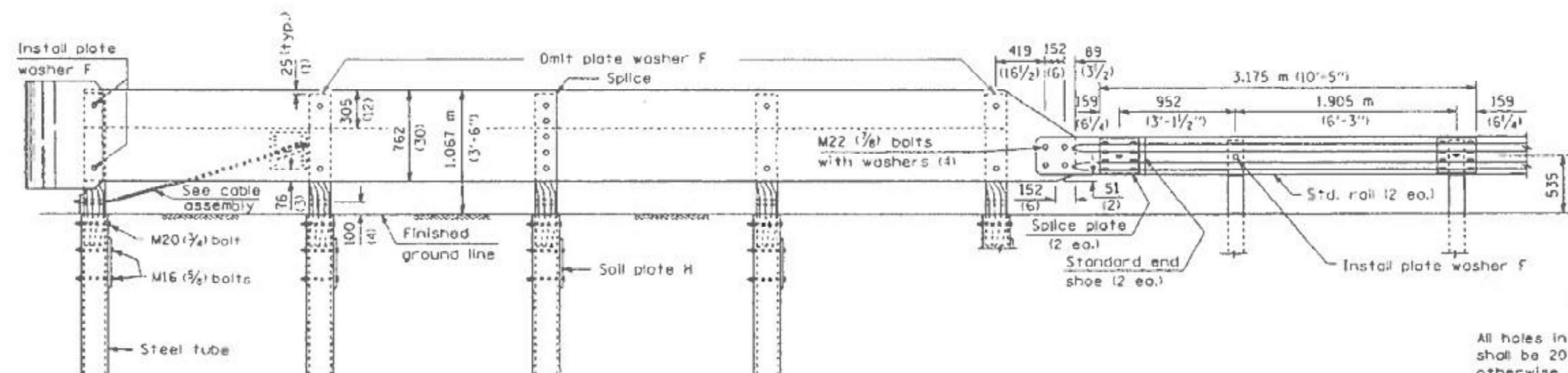
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING V.A.T. SYSTEM			
SCALE:	SHEET 1	OF 1	SHEETS
	STA.		TO STA.

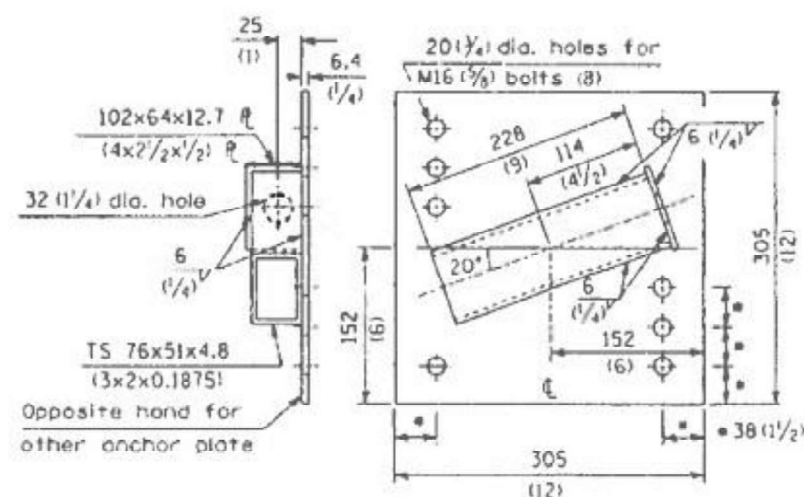
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VAR	D4 GUARDRAIL REPAIRS 2026	VARIOUS	27	8
ILLINOIS CONTRACT NO. 68K91				



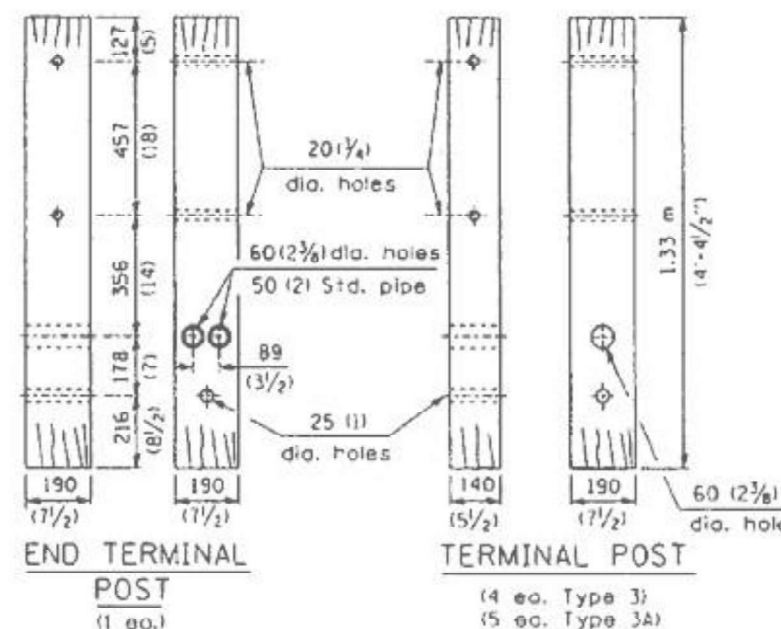
PLAN - TRAFFIC BARRIER TERMINAL TYPE 3



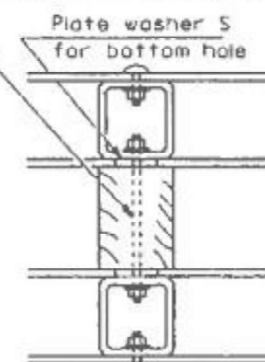
ELEVATION



ANCHOR PLATE R
(1 ea. lt. hd. & 1 ea. rt. hd.)



M16 (5/8) x 280 (11) threaded rod with nuts and washers (10 ea. Type 3) (12 ea. Type 3A)



TYPICAL BLOCK-OUT/POST ATTACHMENT

GENERAL NOTES

All holes in Posts, Block-Outs and Plates shall be 20 mm (3/4") diameter unless otherwise noted.

See Standard 630001 for details of guardrail elements not shown.

Unless otherwise shown all bolts and nuts shall be Standard Post and Splice Bolts and Nuts (See Standard 630001).

Block-Out AA shall be used at all locations unless otherwise noted.

DETAIL INCLUDED FOR REPAIR ONLY

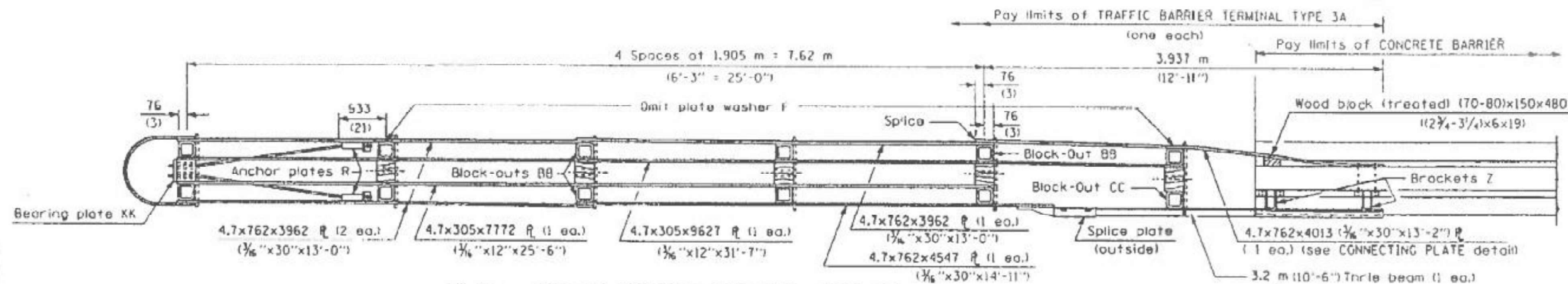
All dimensions are in millimeters (inches) unless otherwise shown.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

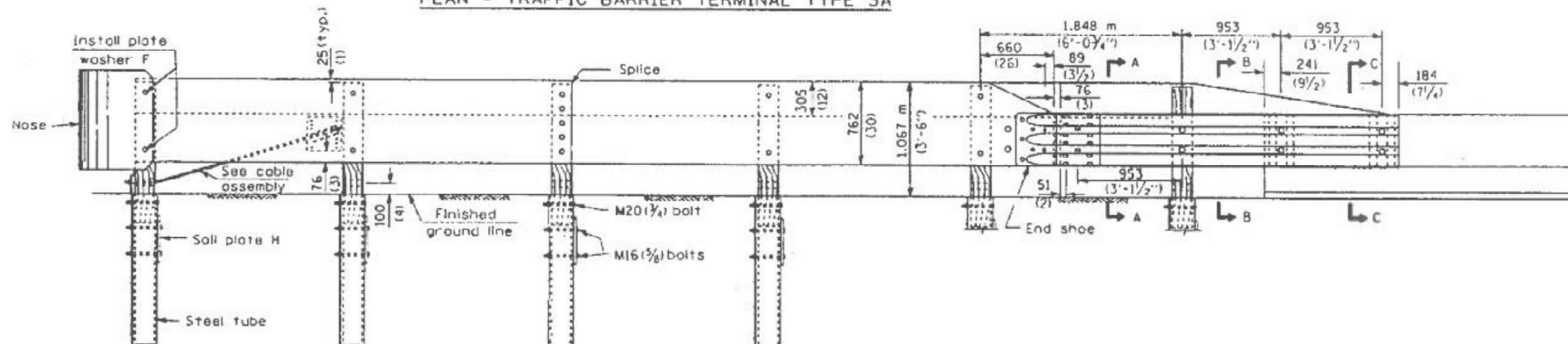
EXISTING TRAFFIC BARRIER TERMINAL
TYPE 3 & TYPE 3A

SCALE: SHEET 1 OF 3 SHEETS STA. TO STA.

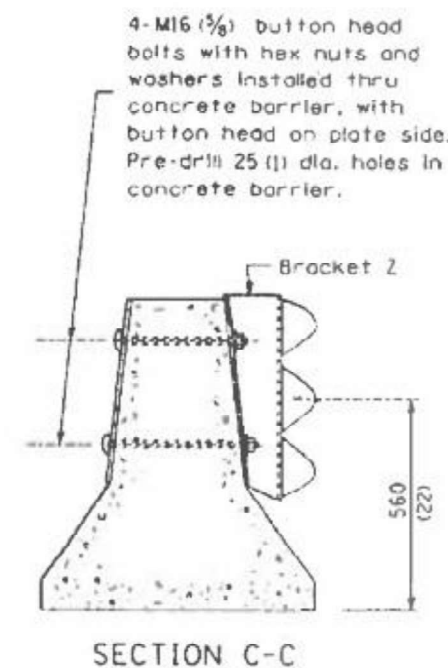
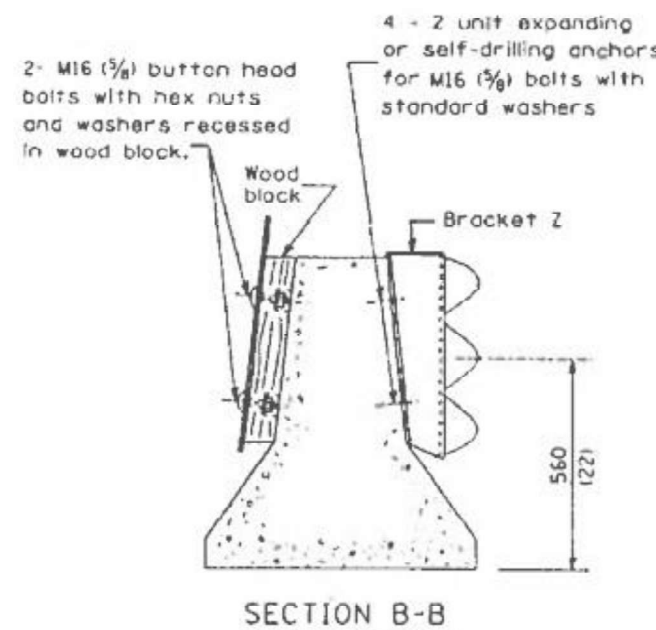
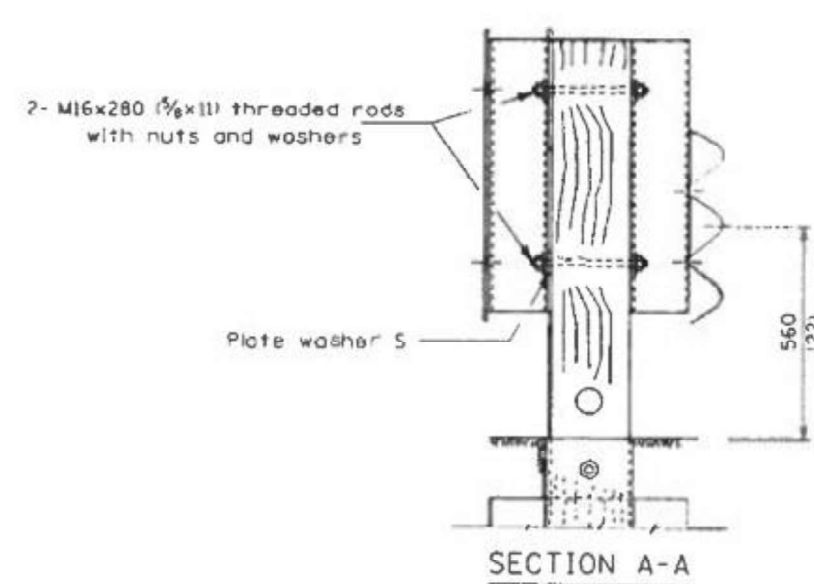
PA	SECTION	COUNTY	TOTAL	SHEET
VAR	D4 GUARDRAIL REPAIRS 2026	VARIOUS	27	10
		ILLINOIS	CONTRACT NO. 68K91	



PLAN - TRAFFIC BARRIER TERMINAL TYPE 3A



ELEVATION



**DETAIL INCLUDED
FOR REPAIR ONLY**

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

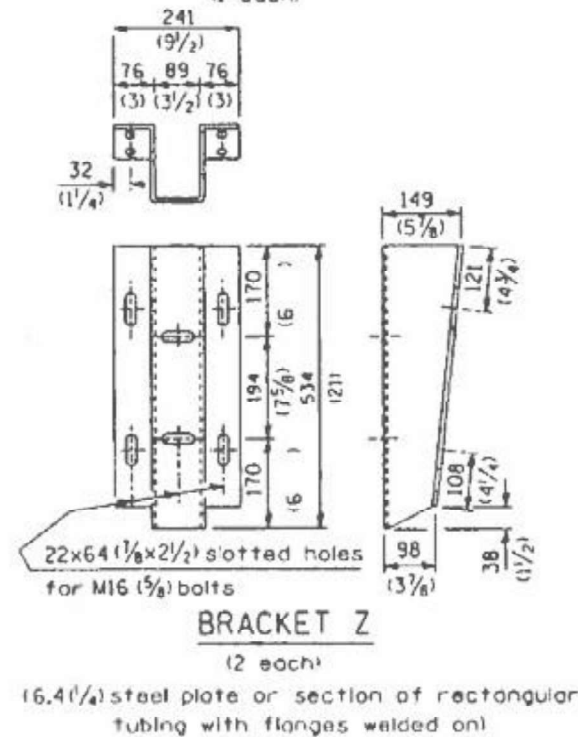
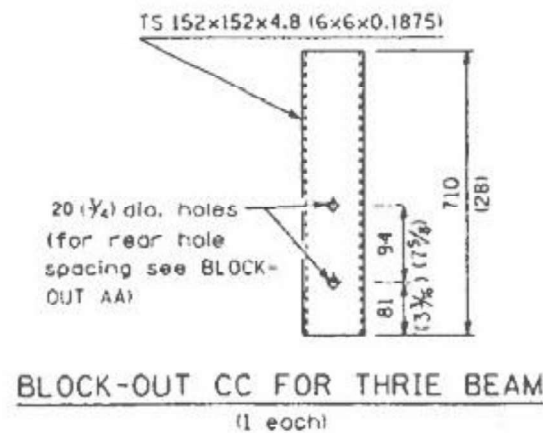
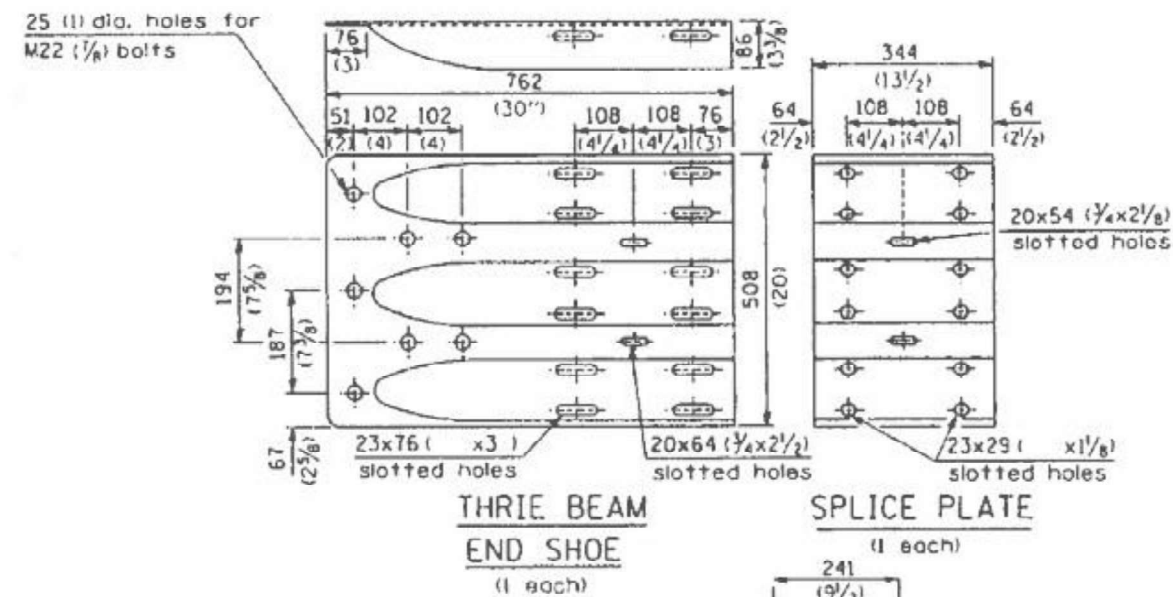
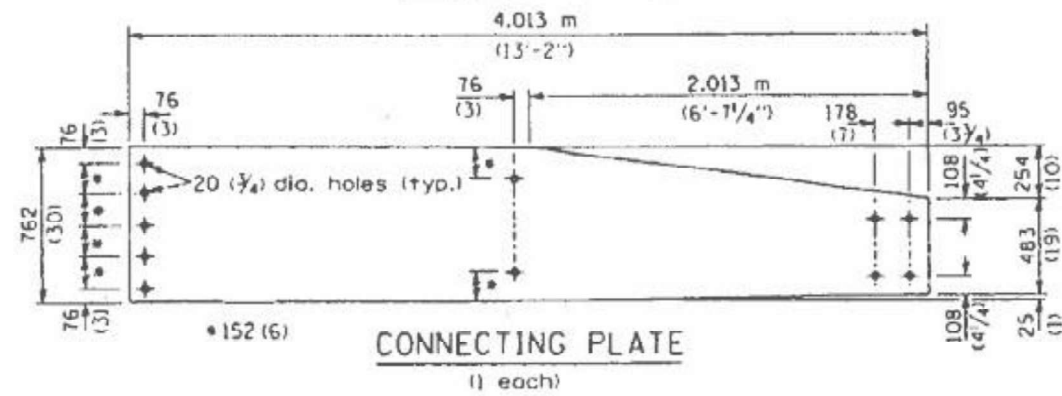
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING TRAFFIC BARRIER TERMINAL
TYPE 3 & TYPE 3A

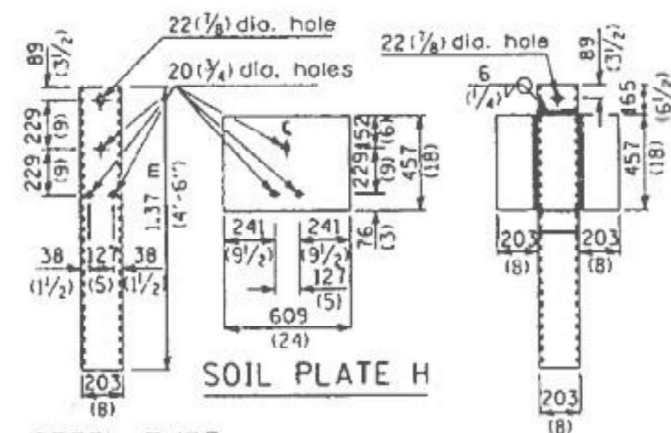
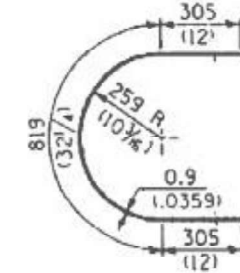
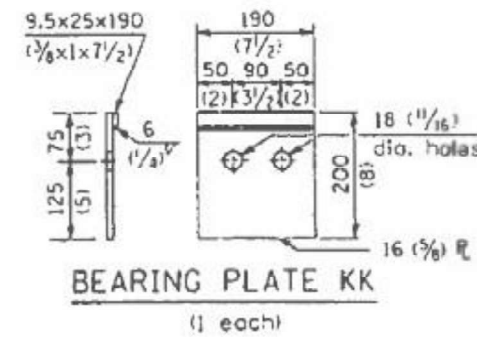
SCALE: SHEET 2 OF 3 SHEETS, STA. TO STA.

FA RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2026	VARIOUS	27	11
ILLINOIS CONTRACT NO. 68K91				

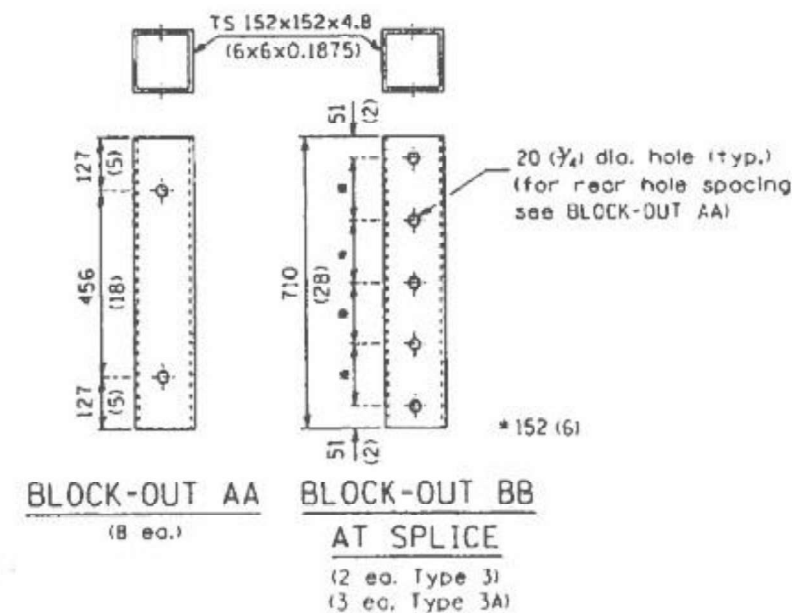
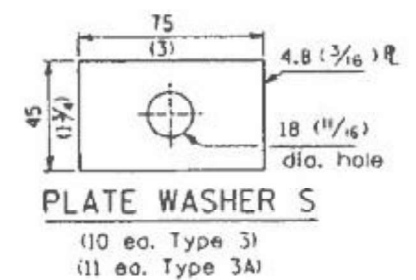
TYPE 3A ONLY



TYPE 3 & 3A



ALTERNATE SOIL PLATE CONNECTION



**DETAIL INCLUDED
FOR REPAIR ONLY**

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

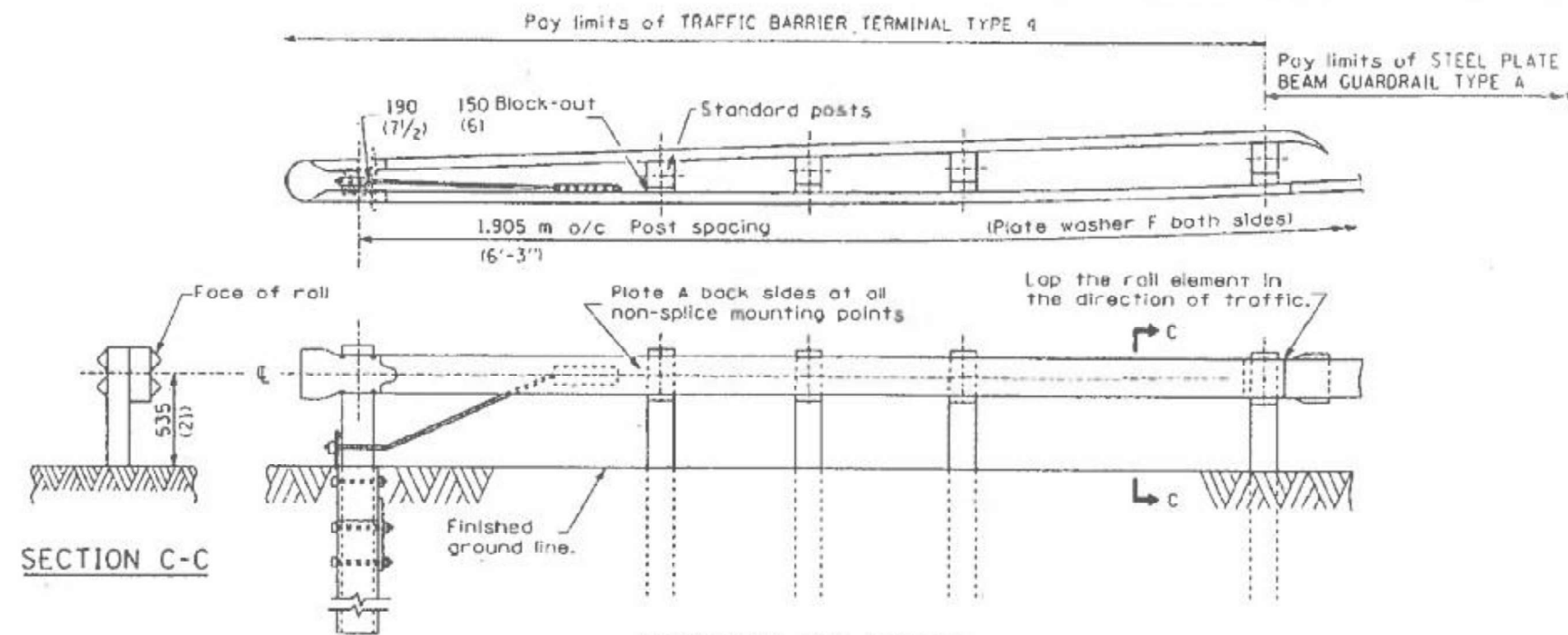
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING TRAFFIC BARRIER TERMINAL
TYPE 3 & TYPE 3A

SCALE: SHEET 3 OF 3 SHEETS, STA. TO STA.

PA	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2026	VARIOUS	27	12
ILLINOIS CONTRACT NO. 68K91				

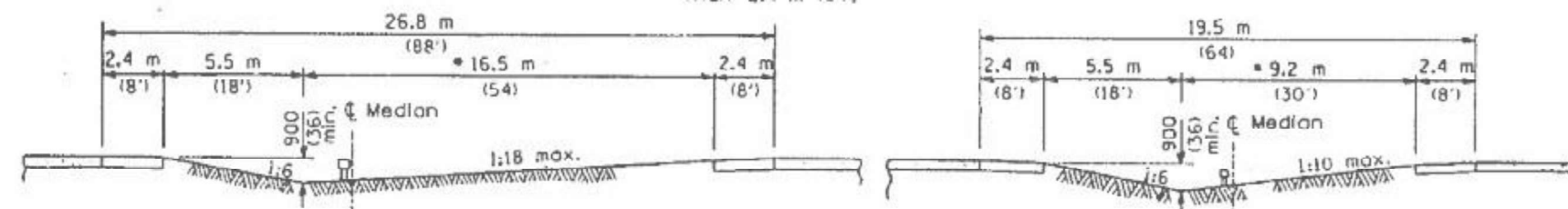
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	DATE -	REVISED -



SECTION C-C

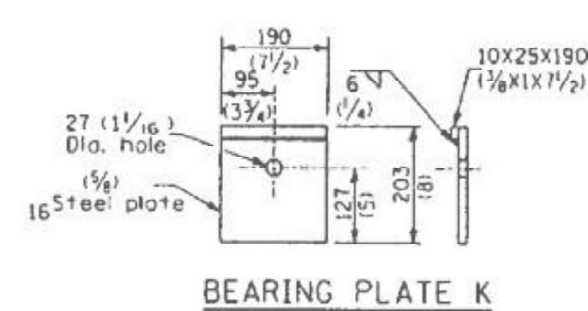
RETURNED END DETAIL

* Adjust this dimension when the width of the shoulders is other than 2.4 m (8').

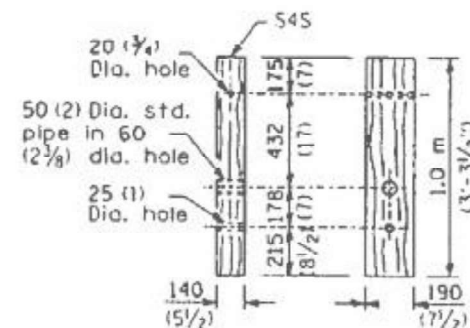


SECTION A-A

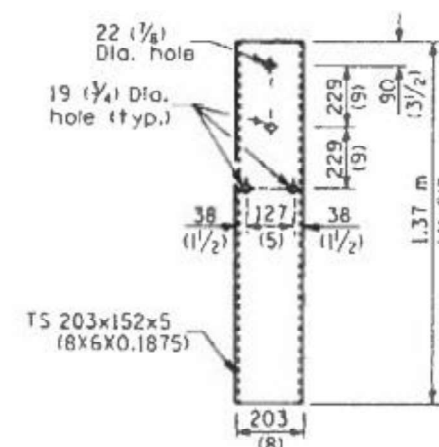
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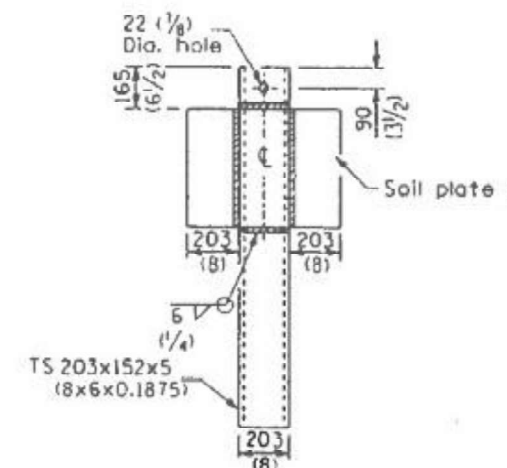
BEARING PLATE K



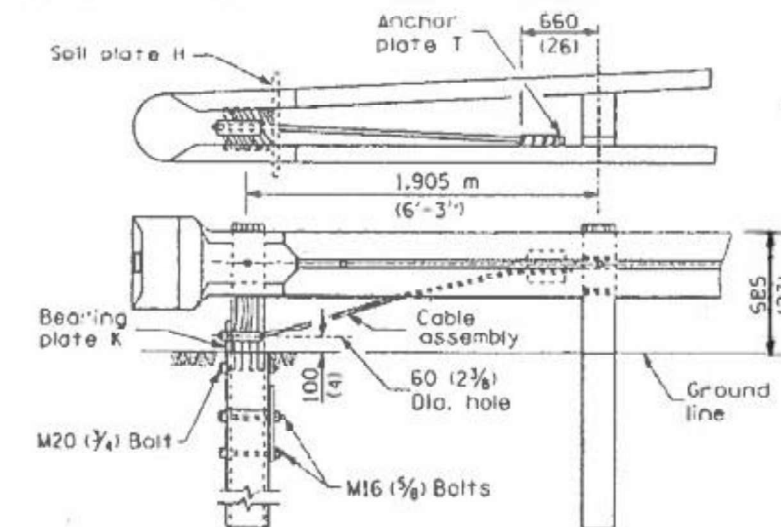
WOOD BREAKAWAY POST



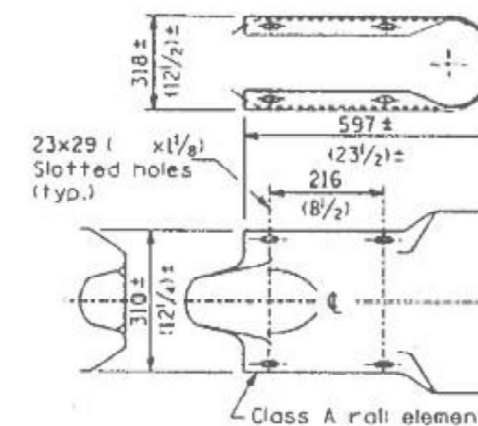
STEEL TUBE



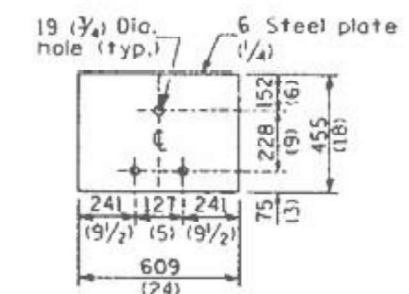
ALTERNATE SOIL PLATE CONNECTION



WOOD POST TUBULAR STEEL FOUNDATION



RETURN END SECTION



SOIL PLATE H

**DETAIL INCLUDED
FOR REPAIR ONLY**

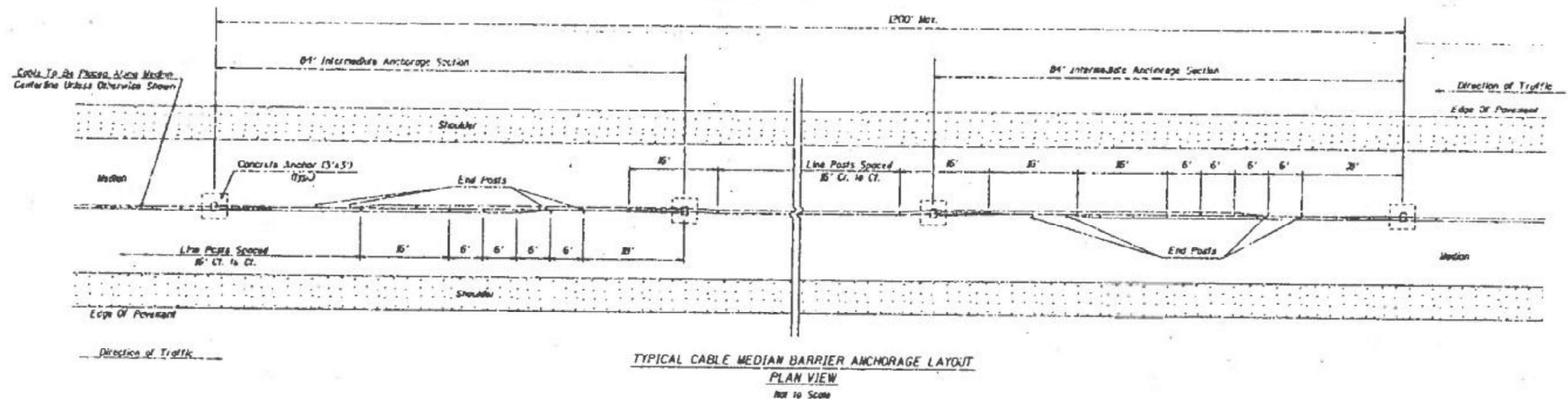
All dimensions are in millimeters (inches) unless otherwise shown.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING TYPE 4 TERMINAL

SCALE: SHEET 2 OF 2 SHEETS STA. TO STA.

FA RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2026	VARIOUS	27	14
		ILLINOIS	CONTRACT NO. 68K91	



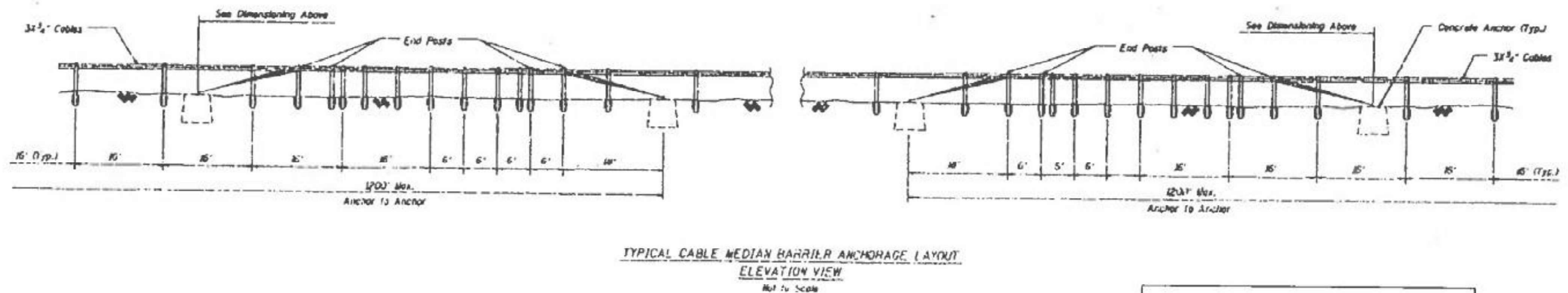
GENERAL NOTE

DELINEATORS: Two reflectors, placed back to back, shall be required for each delineator post.

NOTE: This work shall be done in accordance with Section 803 and no additional compensation will be allowed for two single reflector units placed back to back.

The delineator shall be installed adjacent to a cable road guard post at 80 foot centers.

Notes:
 1. All posts are the posts unless otherwise specified.
 2. See detail sheets for Post, Concrete Anchor and Assembly Parts specifications.



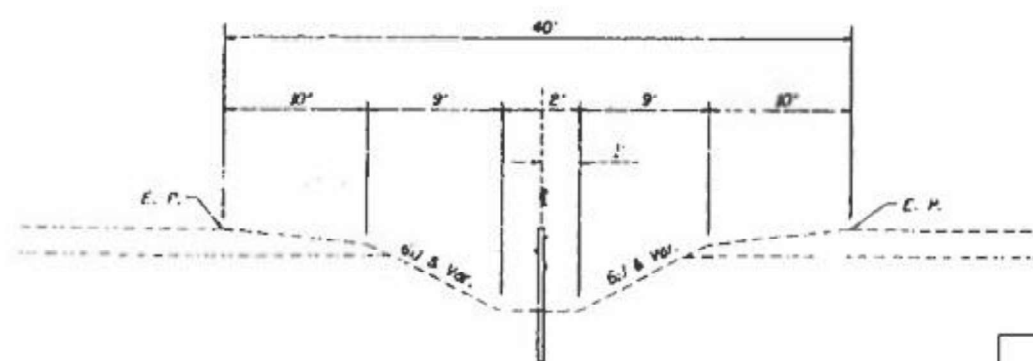
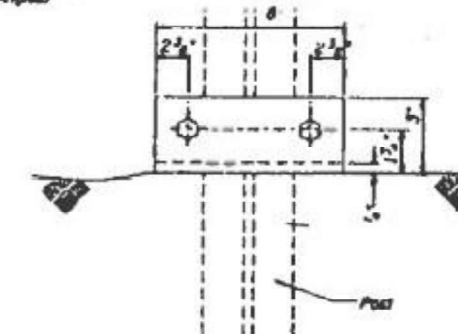
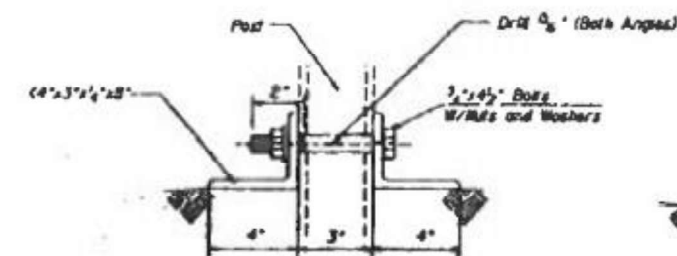
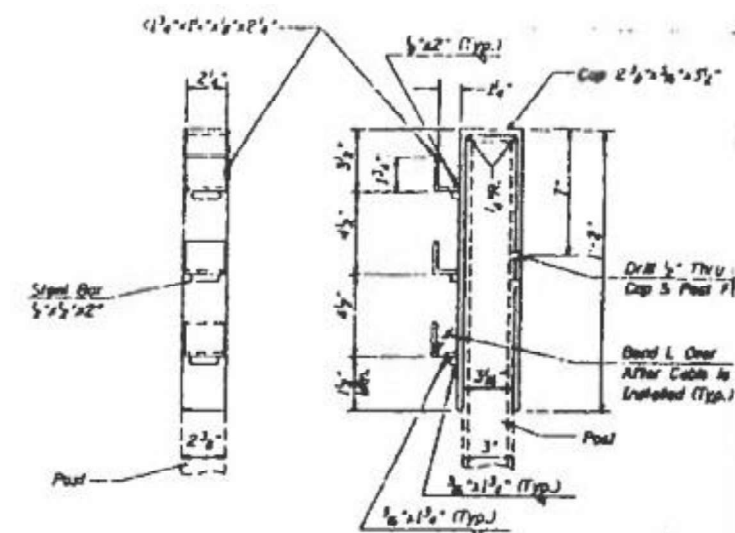
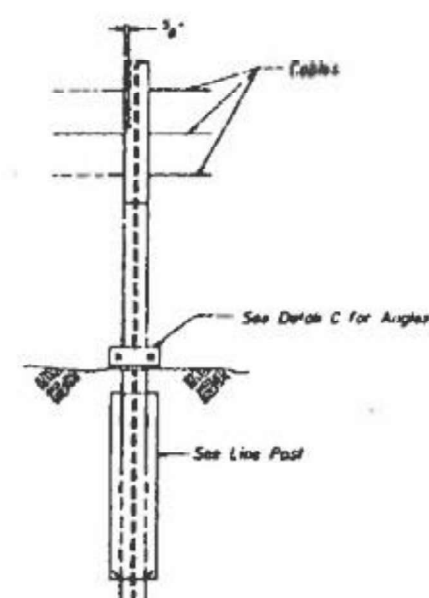
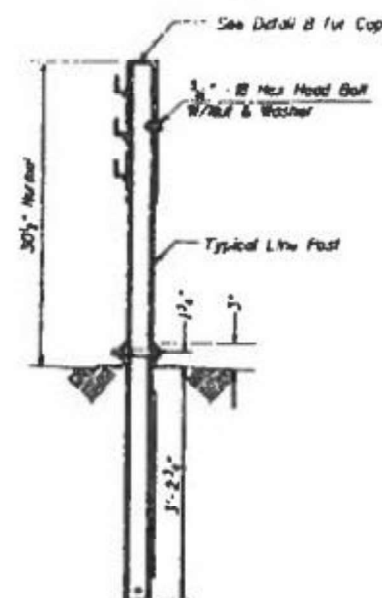
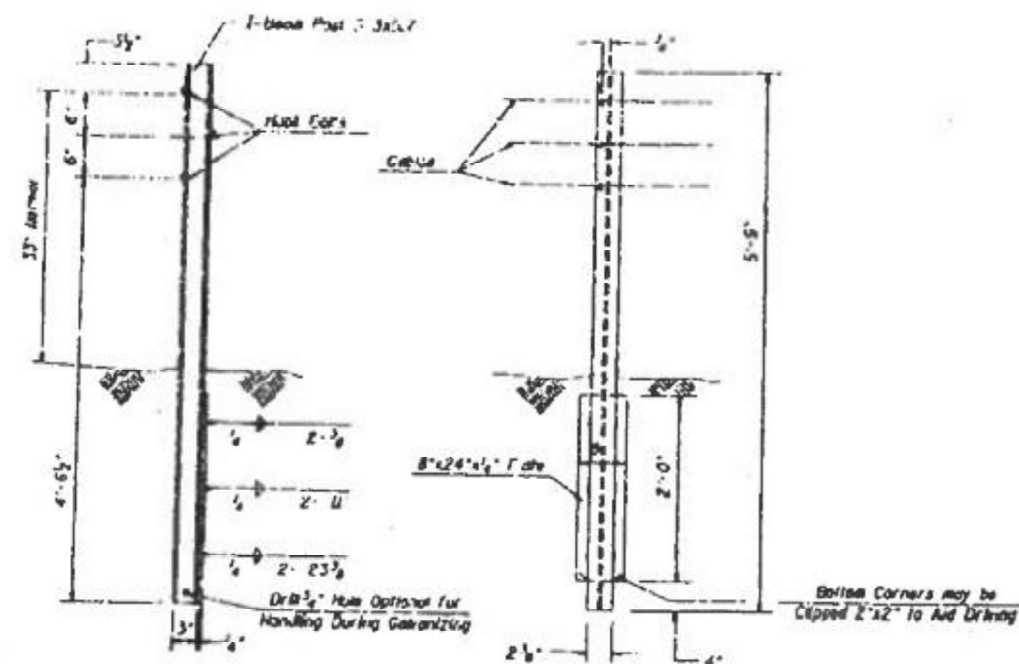
**DETAIL INCLUDED
 FOR REPAIR ONLY**

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING CABLE MEDIAN BARRIER (CABLE ROAD GUARD)

SCALE: SHEET 1 OF 3 SHEETS, STA. TO STA.

FA RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2026	VARIOUS	27	15
ILLINOIS CONTRACT NO. 68K91				



**DETAIL INCLUDED
FOR REPAIR ONLY**

- ### NOTES
- At all locations where the cable is connected to a cable anchor with a wedge type connection, one wire of the wire rope shall be crimped over the base of the wedge to hold it firmly in place.
 - Compensating devices shall have constants of 450 Pounds Per Inch, plus or minus 50 Pounds Per Inch, and permit a travel of 5 inches, plus or minus 1 inch.
 - Socket baskets shall be designed for use with the wedge detailed in these Standards.
 - Alternate hardware designs will be considered for approval provided their connection details, for the purpose of equivalence substitutions, are compatible with the details of these standards and their operating characteristics are similar to those of the hardware shown.
 - Threads of externally threaded parts shall be UNC, Class 2A tolerance (A.N.S.I. B1.1). Internally threaded parts shall meet the dimensional requirements of ASTM A 563.
 - All fittings (excluding splices) shall be so designed to use the wedge shown in the wedge detail and shall be of such section as to develop the full strength of the $\frac{5}{8}$ " round cable (25,000 lbs.).
 - For arrangement of spring cable and assemblies (compensating devices, and turnbuckle cable end assemblies, the following criteria shall apply:
Length of Cable Run
 For 1000' Use compensating cable and assembly on one end and turnbuckle cable end assembly on the other end of each individual cable.
 Over 1000' to 2700' Use compensating cable end assembly on each end of each individual cable.
 - All assembly parts and joints are to be galvanized and no punching, cutting or welding shall be permitted after galvanizing.
 - Dimensional tolerances not shown or implied are assumed to be those consistent with the proper functioning of the part, including its appearance and accepted manufacturing practices.
 - Prior to final acceptance by the State the following procedures shall be used to insure the correctness, depending on the temperature at the time of adjustment in accordance with the following table:

Temperature	120°	95°	75°	55°	35°	15°	1°
	10	10	10	10	10	10	10
	100°	100°	60°	40°	20°	10°	20°

 Spring Compression
 (Use standard method in each spring)

	1"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"
--	----	--------	----	--------	----	--------	----

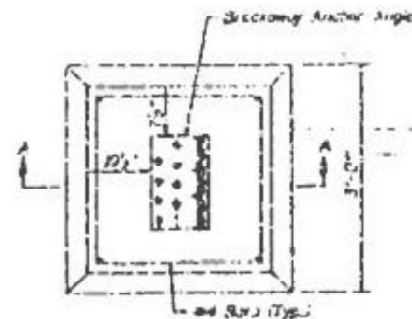
USER NAME = \$USER\$	DESIGNED -	REV\$ED -
	DRAWN -	REV\$ED -
PLOT SCALE = 1:100	CHECKED -	REV\$ED -
PLOT DATE = 10/21/2022	DATE -	REV\$ED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

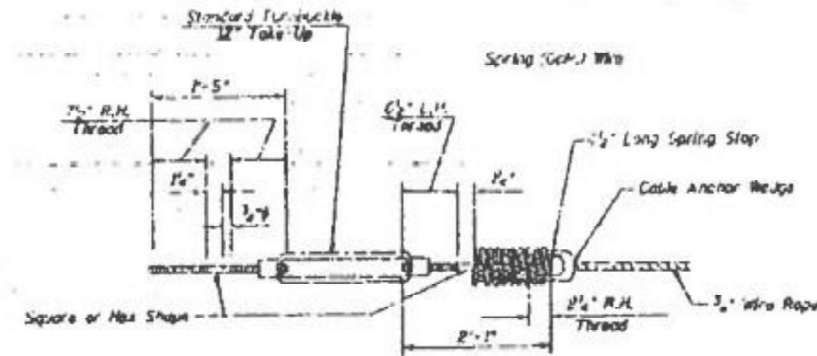
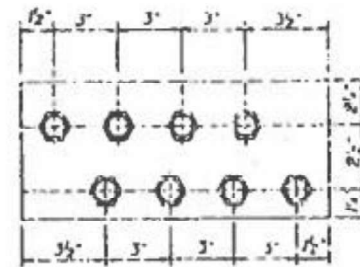
EXISTING CABLE MEDIAN BARRIER (CABLE ROAD GUARD)

SCALE:	SHEET 2	OF 3	SHEETS	STA.	TO STA.
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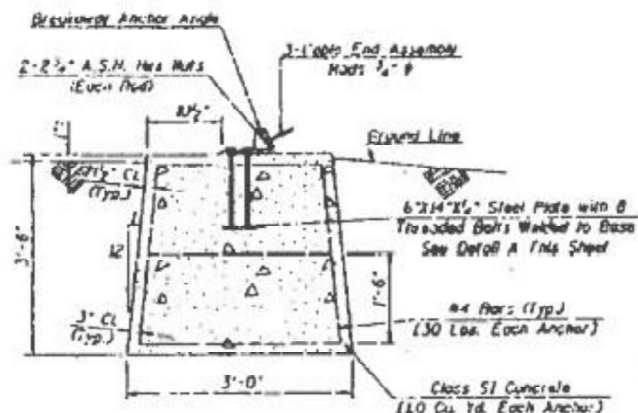
F.A. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2026	VARIOUS	27	16
		ILLINOIS	CONTRACT NO. 68K91	



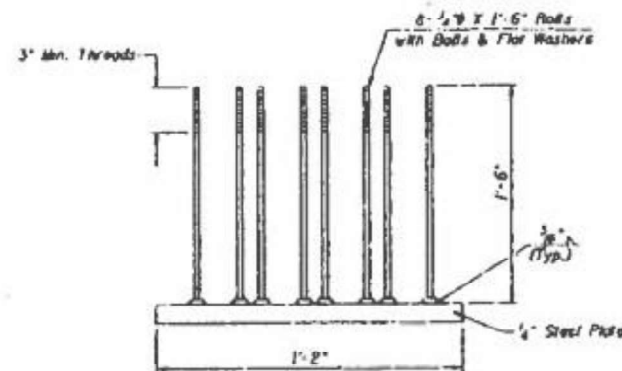
PLAN
CONCRETE ANCHOR



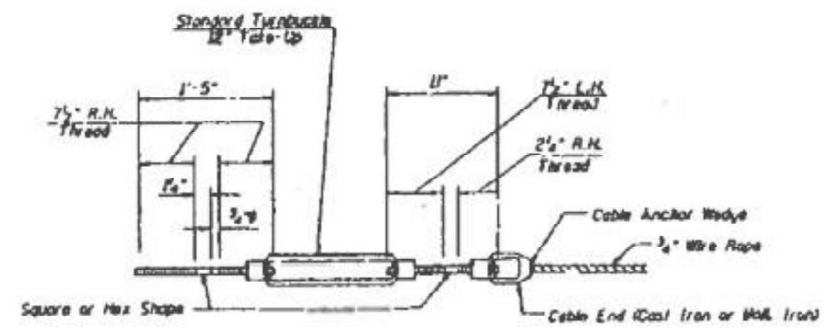
COMPENSATING CABLE END ASSEMBLY



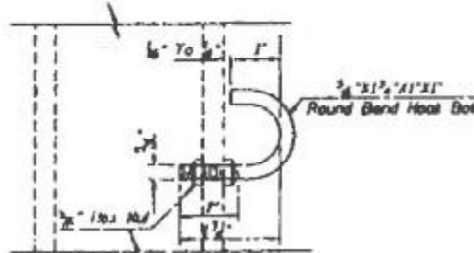
SECTION A-A



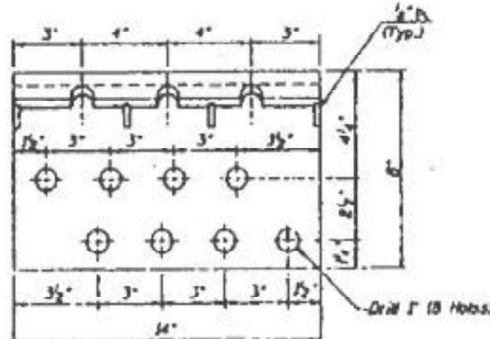
DETAIL A



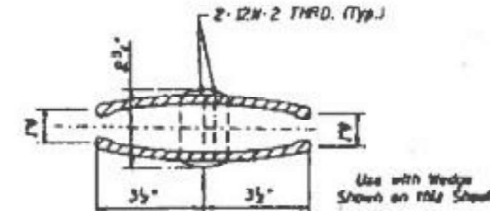
TURNBUCKLE CABLE END ASSEMBLY



3/4" x 1 1/2" x 1 1/2" HOOK BOLT



TOP VIEW



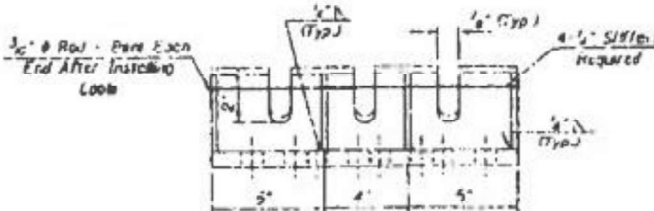
CABLE SPLICE



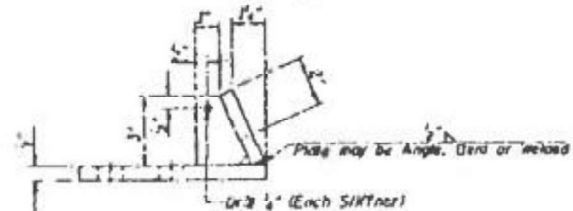
3/4" x 1 1/2" x 1 1/2" HOOK BOLT



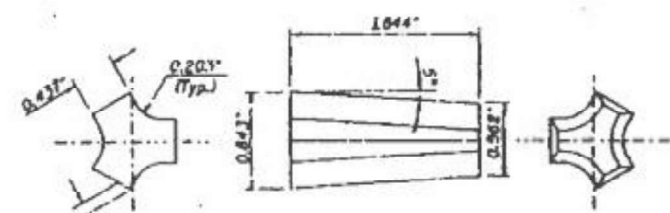
ALTERNATE 3/4" x 1 1/2" x 1 1/2" HOOK BOLT



FRONT VIEW



SIDE VIEW



WEDGE DETAIL

**DETAIL INCLUDED
FOR REPAIR ONLY**

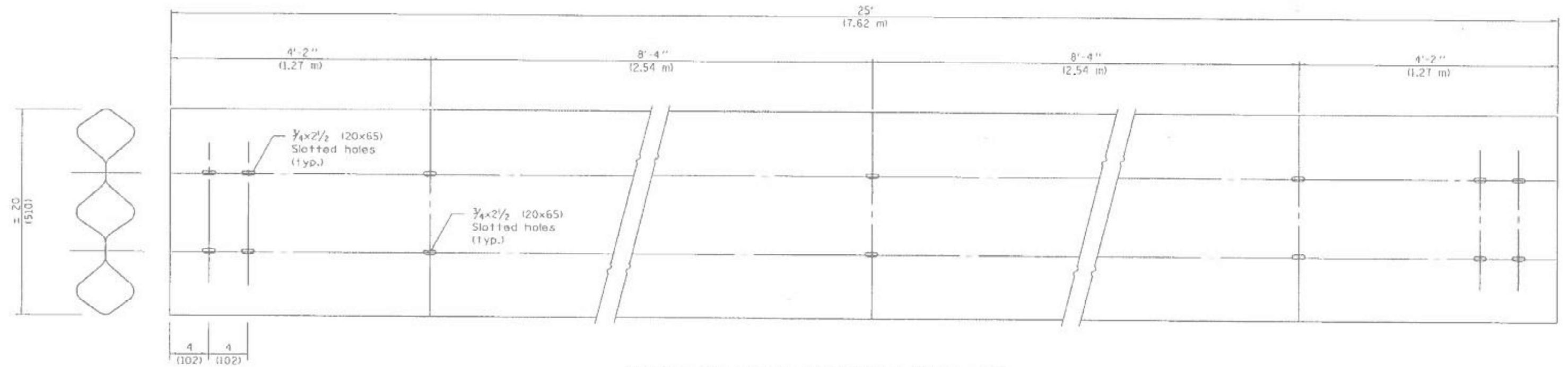
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING CABLE MEDIAN BARRIER (CABLE ROAD GUARD)

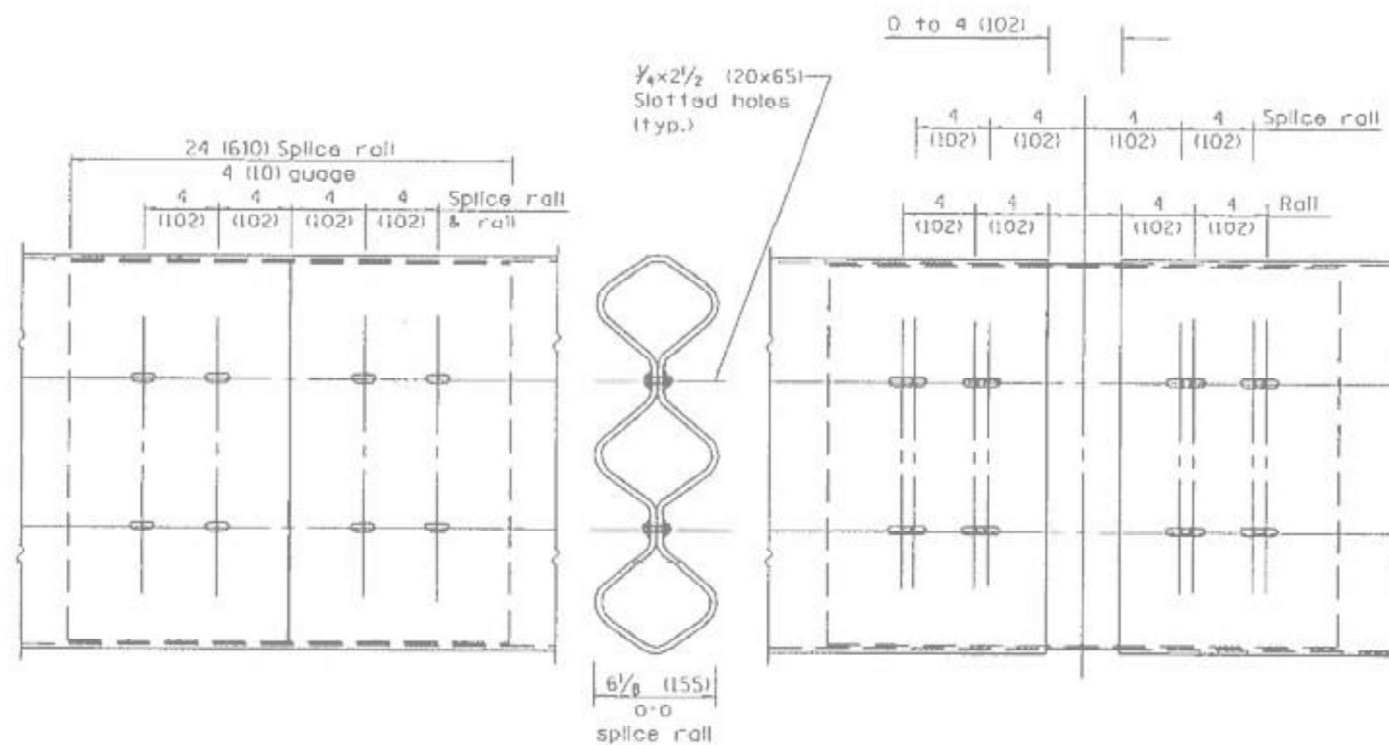
SCALE: SHEET 3 OF 3 SHEETS STA. TO STA.

FA RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2026	VARIOUS	27	17
		ILLINOIS	CONTRACT NO. 68K91	

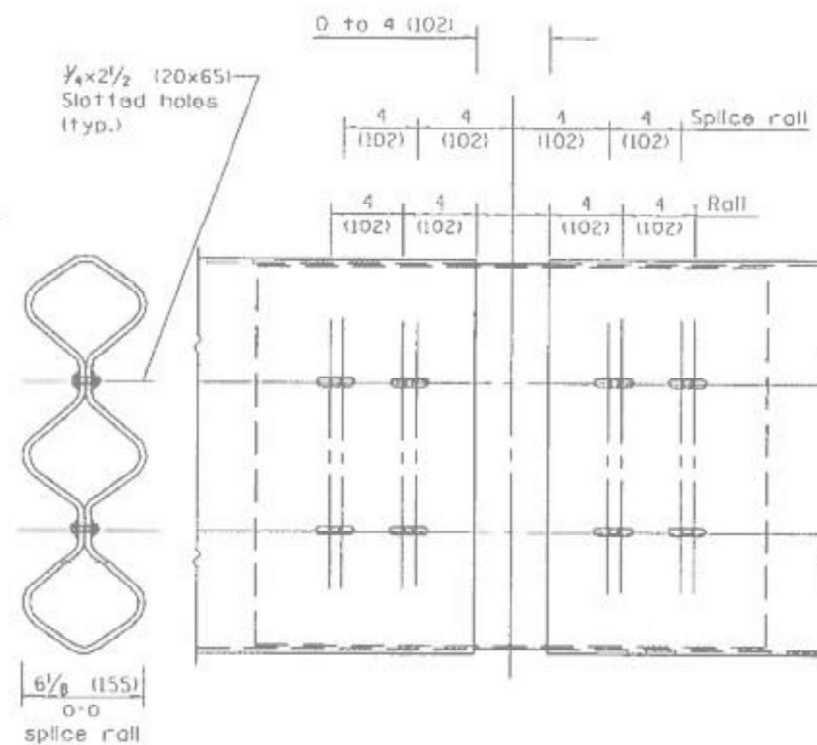
FA RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2026	VARIOUS	27	18
		ILLINOIS	CONTRACT NO. 68K91	



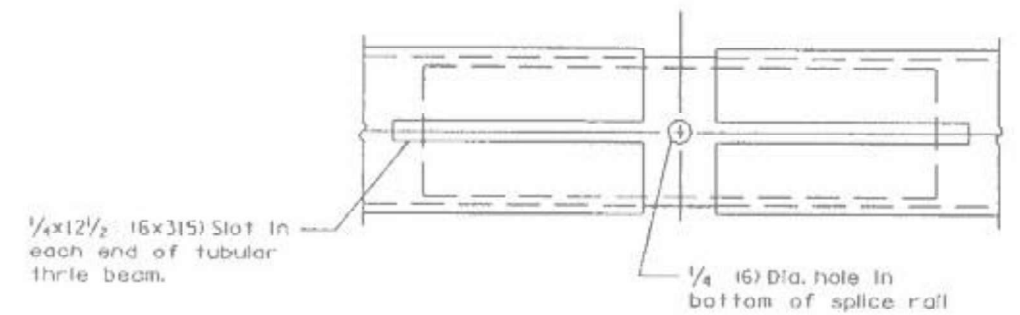
TUBULAR THRIE BEAM FOR INTERNAL SPLICE JOINT



INTERNAL SPLICE JOINT



INTERNAL EXPANSION SPLICE JOINT



BOTTOM VIEW OF INTERNAL EXPANSION SPLICE JOINT

DETAIL INCLUDED FOR REPAIR ONLY

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.

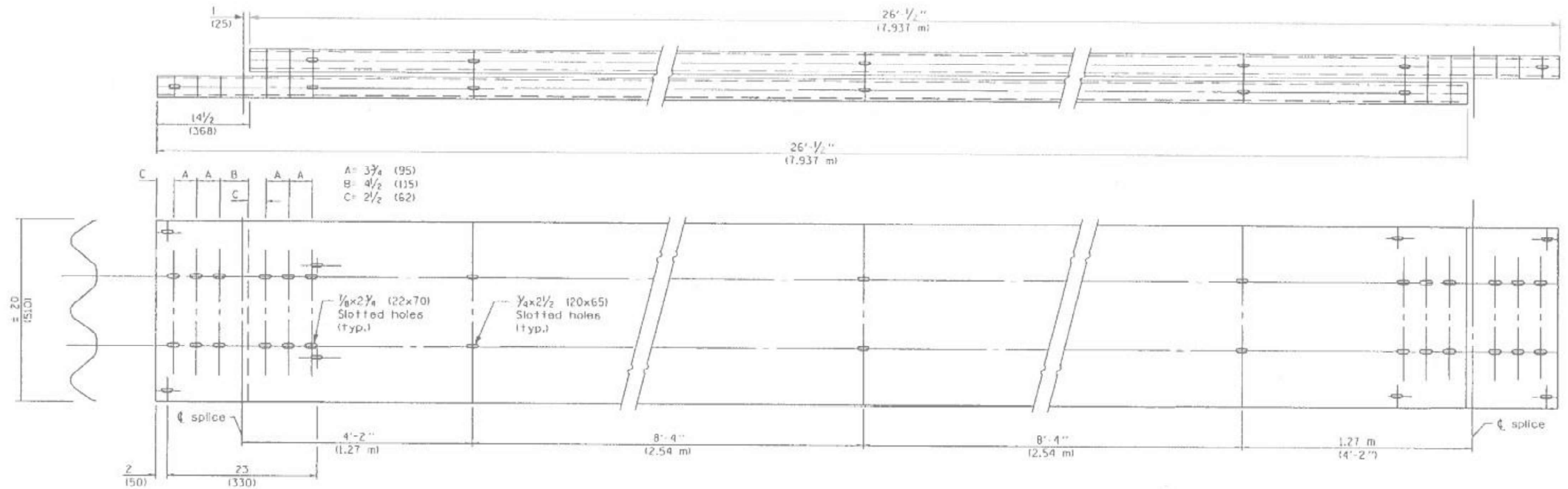
All dimensions are in inches (millimeters) unless otherwise shown.

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

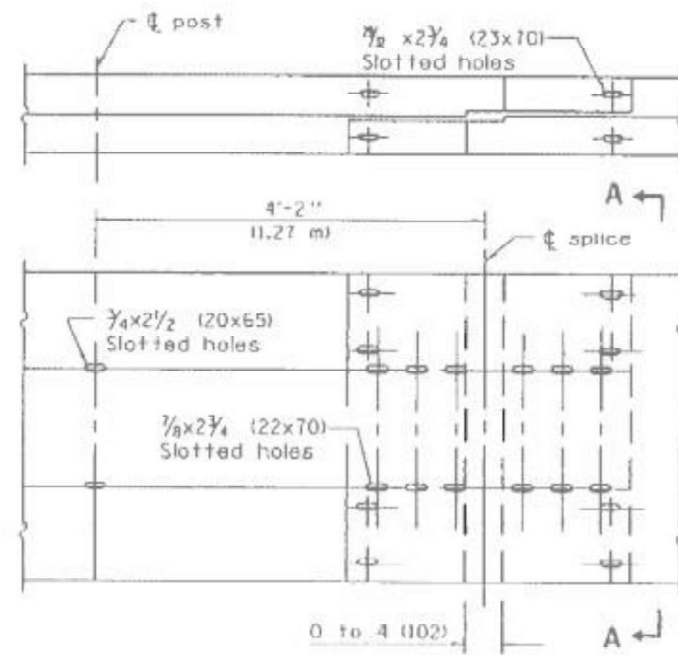
**EXISTING TUBULAR THRIE BEAM RETROFIT RAIL FOR BRIDGES
(STANDARD 509001)**

SCALE: SHEET 1 OF 3 SHEETS, STA. TO STA.

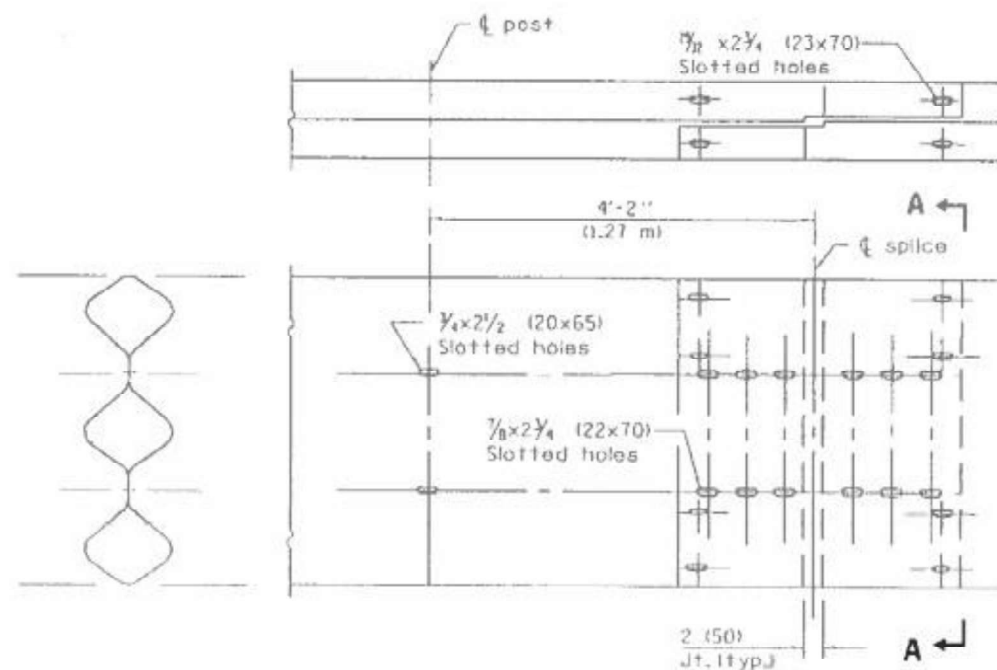
FA RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2026	VARIOUS	27	21
ILLINOIS CONTRACT NO. 68K91				



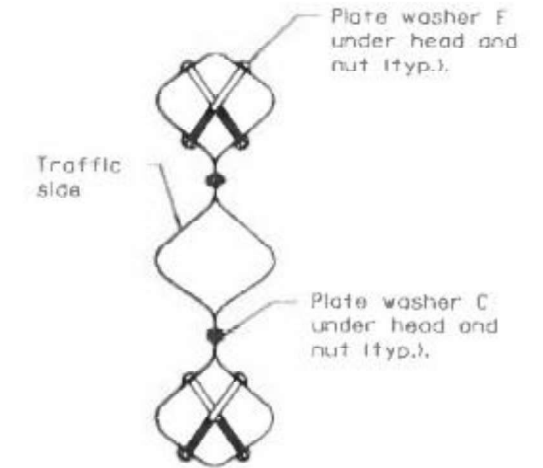
TUBULAR THRIE BEAM FOR LAP SPLICE JOINT



LAP EXPANSION SPLICE JOINT



LAP SPLICE JOINT



SECTION A-A

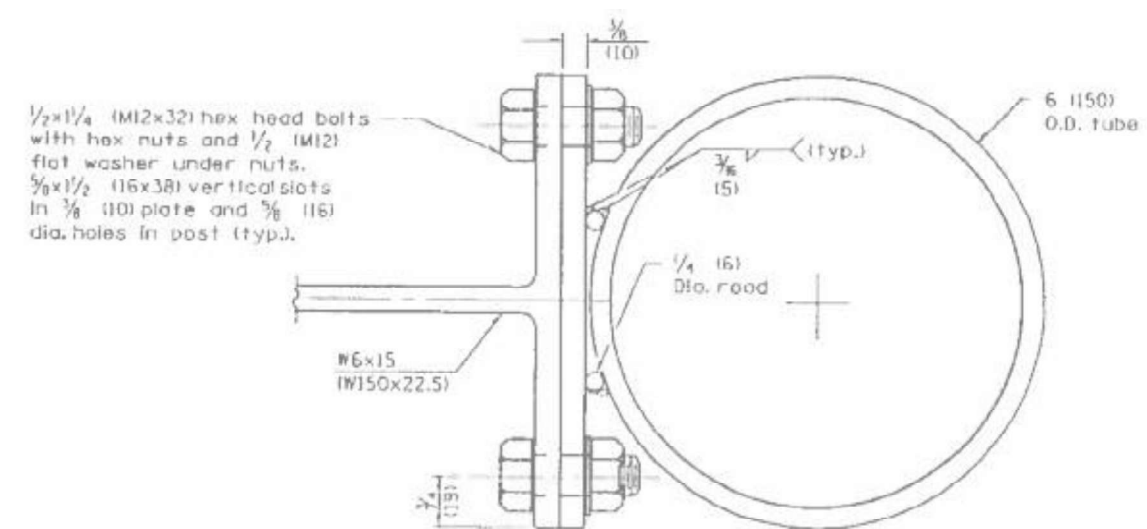
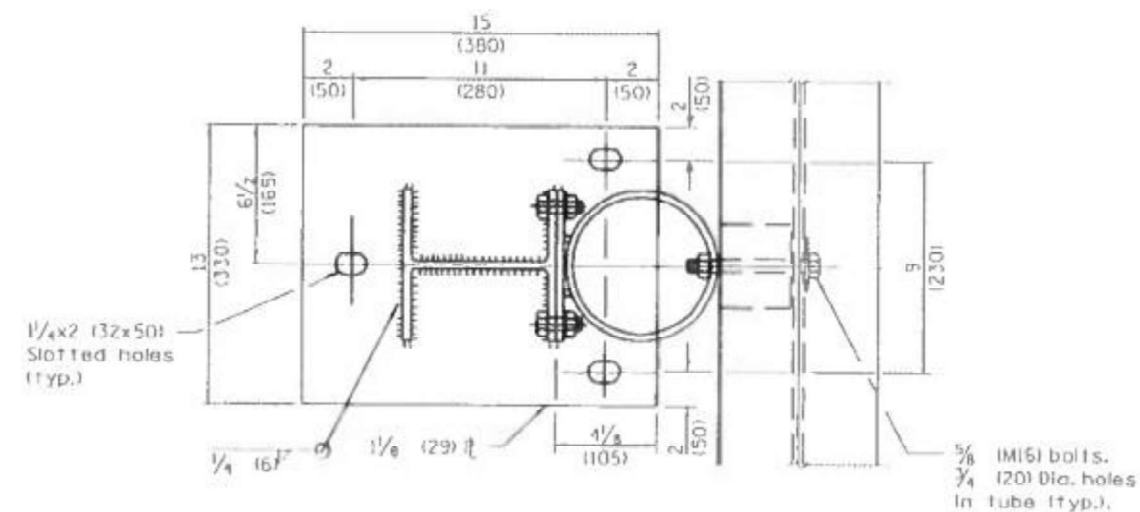
**DETAIL INCLUDED
FOR REPAIR ONLY**

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

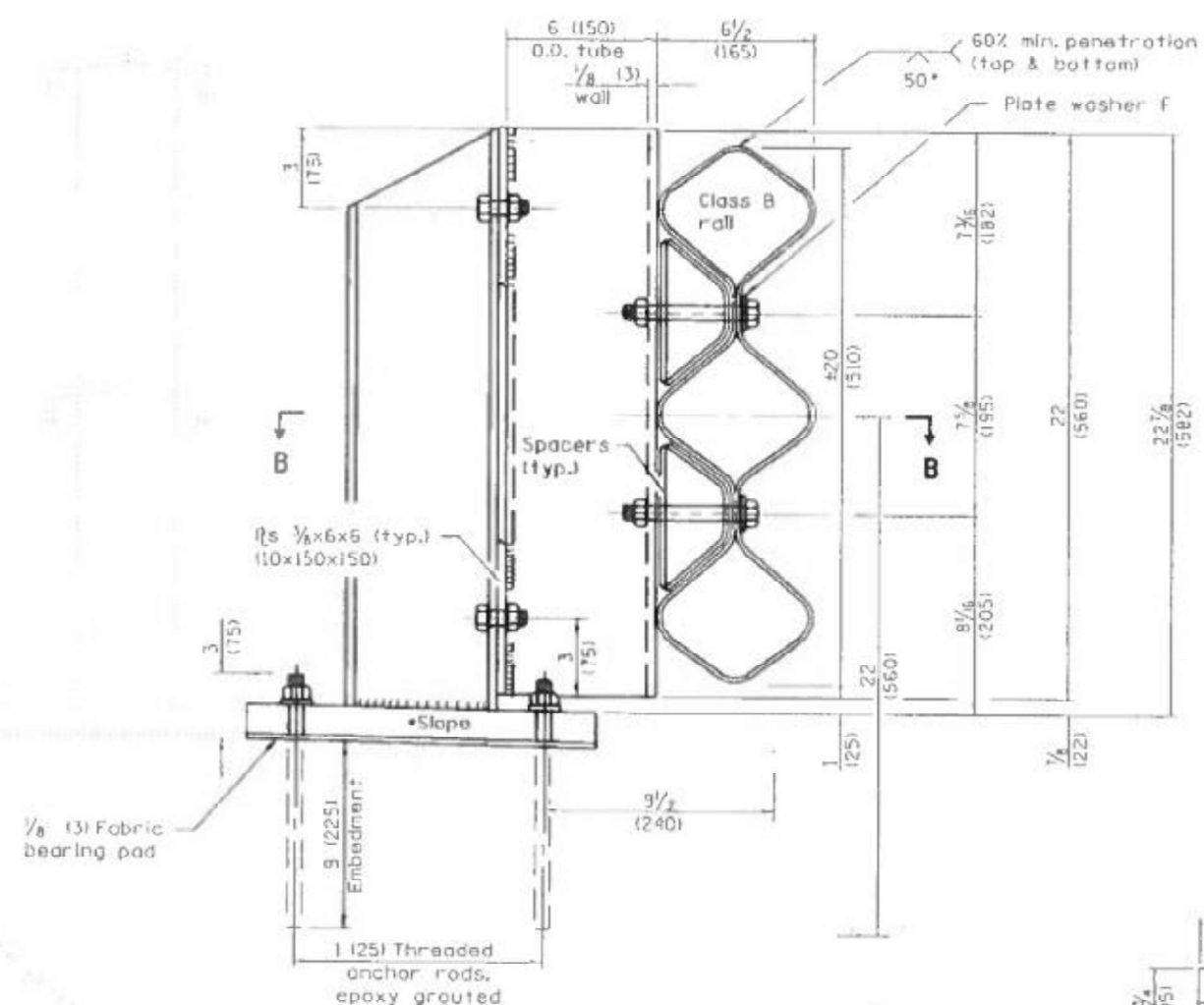
**EXISTING TUBULAR THRIE BEAM RETROFIT RAIL FOR BRIDGES
(STANDARD 509001)**

SCALE: SHEET 2 OF 3 SHEETS, STA. TO STA.

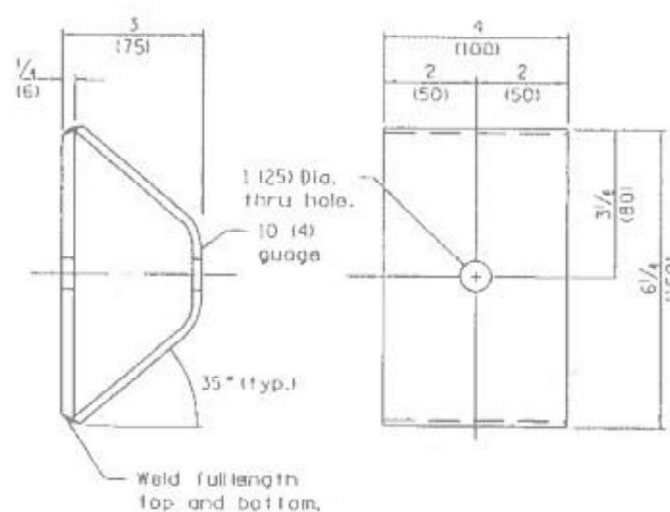
FA RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2026	VARIOUS	27	22
		ILLINOIS	CONTRACT NO. 68K91	



TUBE TO POST ATTACHMENT



POST



SPACER

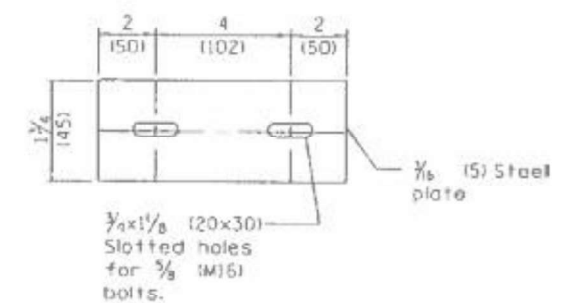


PLATE WASHER B

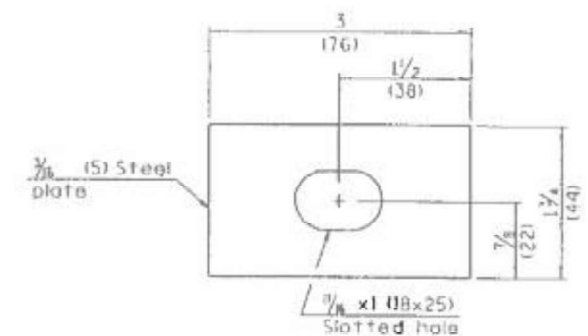


PLATE WASHER F

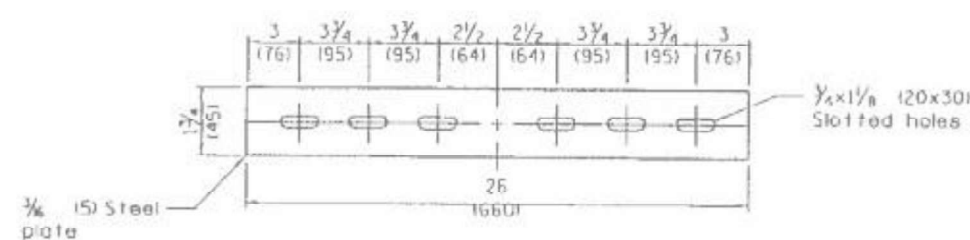


PLATE WASHER C

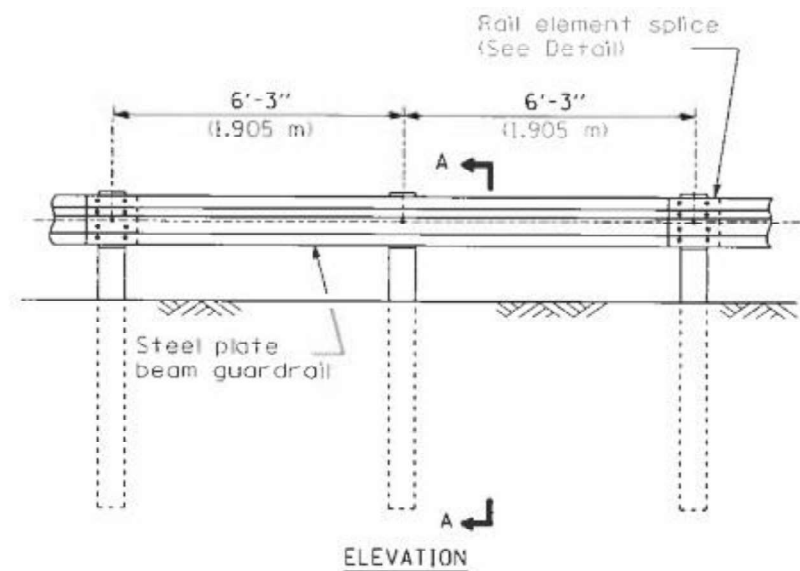
DETAIL INCLUDED FOR REPAIR ONLY

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING TUBULAR THRIE BEAM RETROFIT RAIL FOR BRIDGES
(STANDARD 509001)

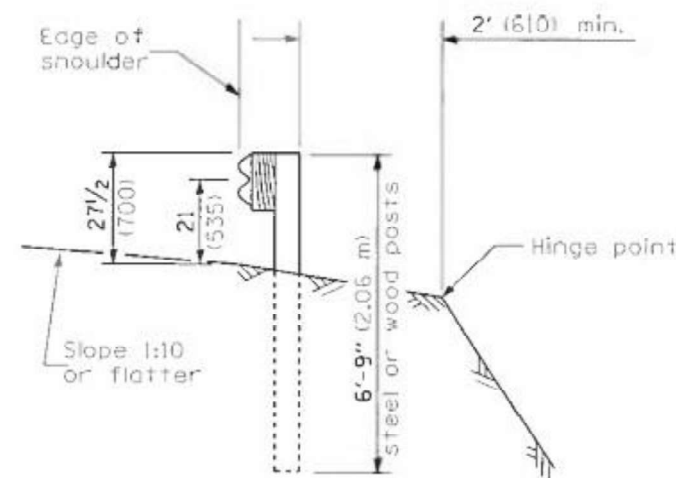
SCALE: SHEET 3 OF 3 SHEETS, STA. TO STA.

FA RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2026	VARIOUS	27	23
		ILLINOIS	CONTRACT NO. 68K91	

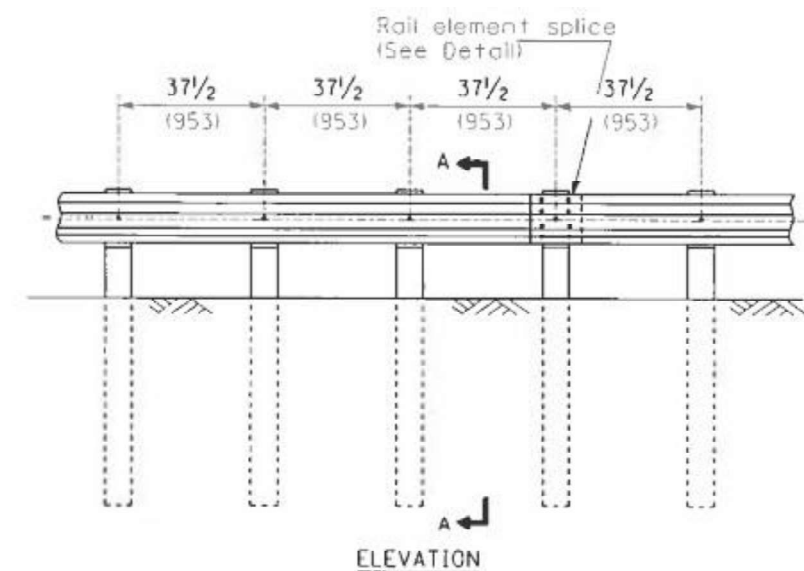


TYPE A

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

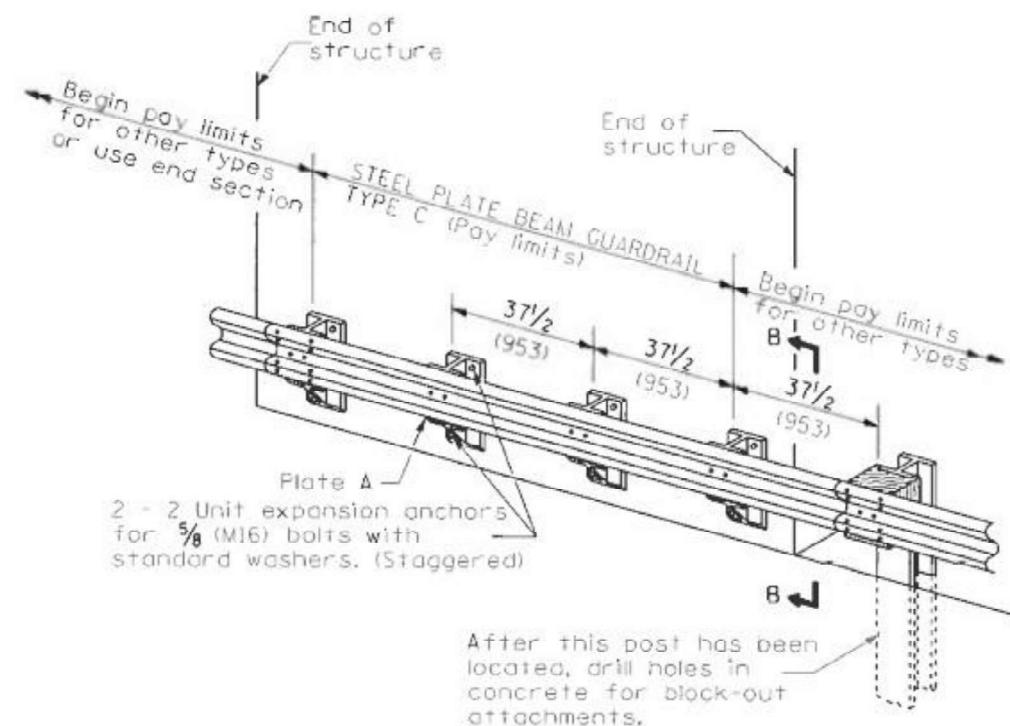


SECTION A-A



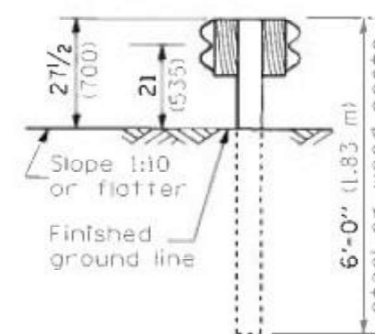
TYPE B

37 1/2 (953) Closed post spacing

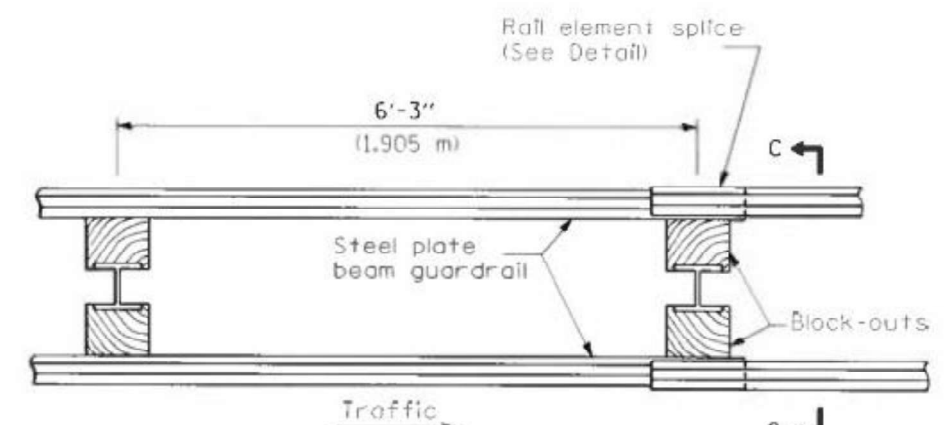


TYPE C

37 1/2 (953) Block-out spacing

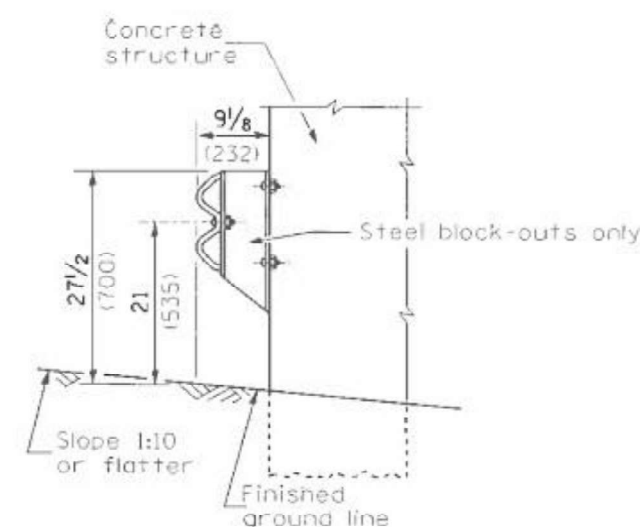


SECTION C-C



TYPE D

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



SECTION B-B

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 630001.

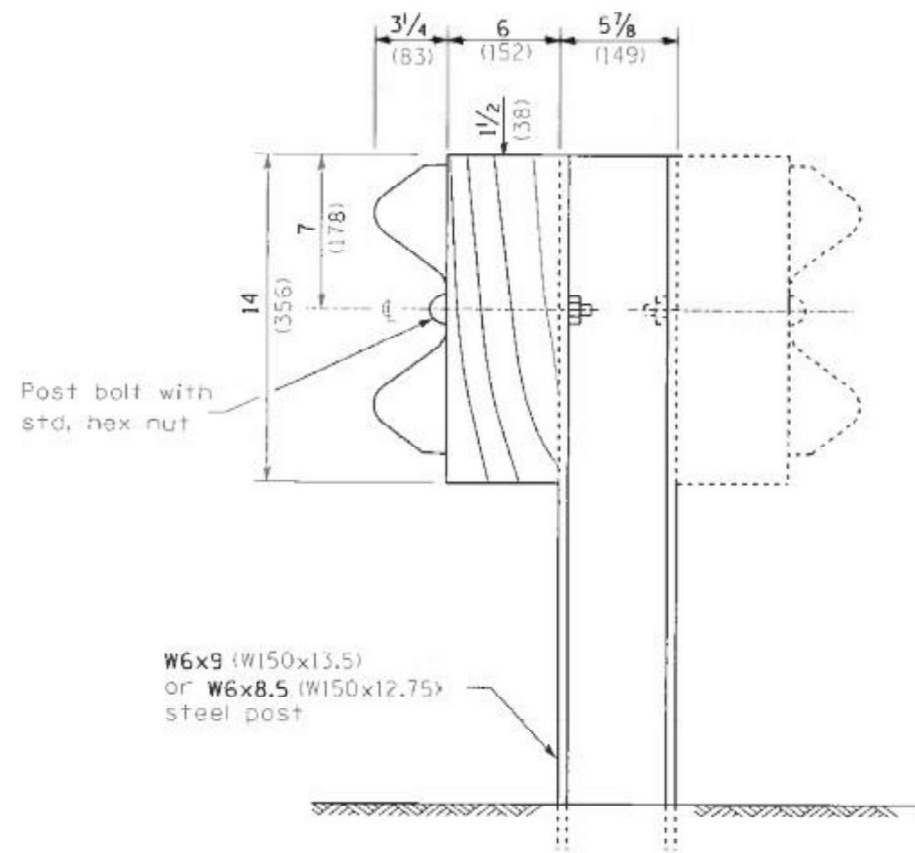
All dimensions are in inches (millimeters) unless otherwise noted.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

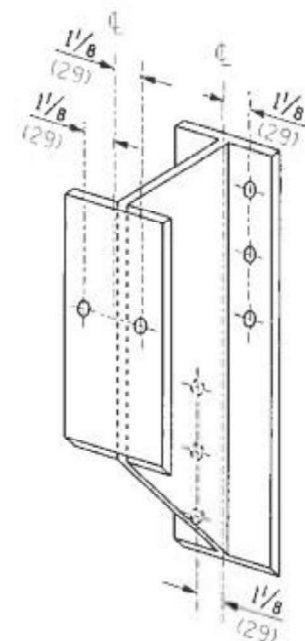
STEEL PLATE BEAM GUARDRAIL, TYPE A,
6.75 FOOT POSTS

SCALE: SHEET 1 OF 4 SHEETS, STA. TO STA.

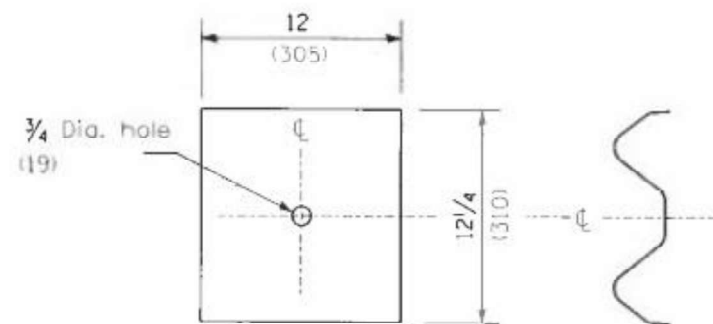
FA RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2026	VARIOUS	27	24
		ILLINOIS	CONTRACT NO. 68K91	



STEEL POST CONSTRUCTION



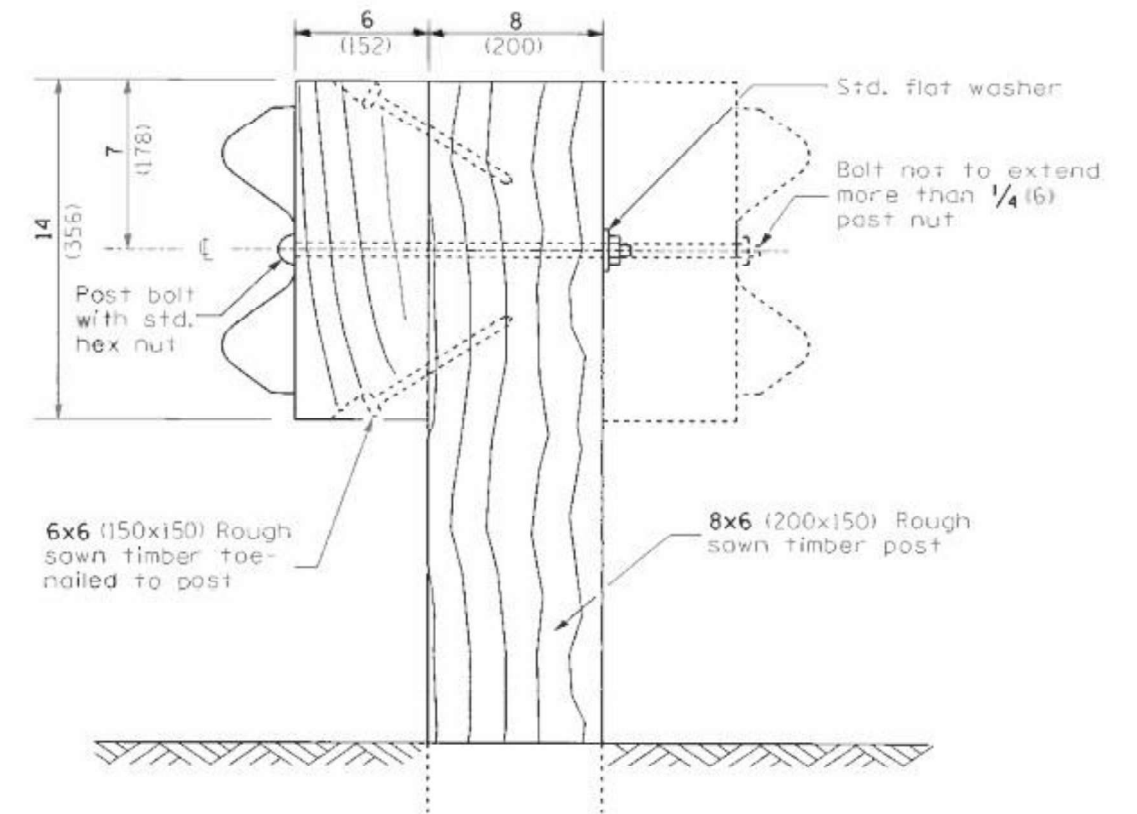
STEEL BLOCK-OUT DETAIL



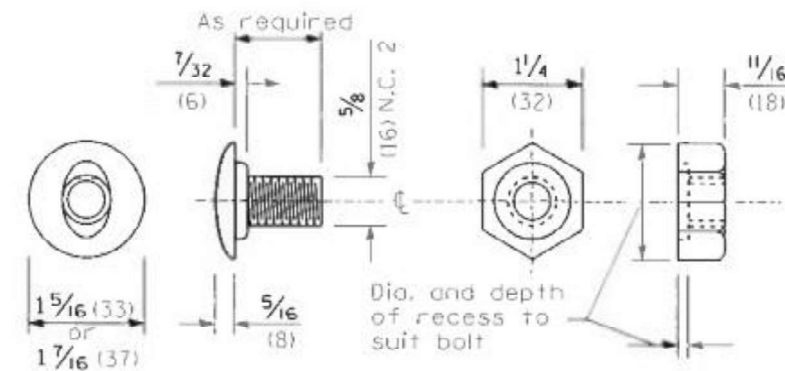
NOTE

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



WOOD POST CONSTRUCTION



POST OR SPLICE BOLT & NUT

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL PLATE BEAM GUARDRAIL, TYPE A,
6.75 FOOT POSTS

SCALE: SHEET 2 OF 4 SHEETS, STA. TO STA.

FA RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2026	VARIOUS	27	25
ILLINOIS CONTRACT NO. 68K91				

standard end shoe
 open splice plate and
 cement

12 1/2
 (318)

2
 (51)

4 1/4
 (108)

4 1/4
 (108)

2
 (51)

7/16 x 1/8 Slotted holes
 (23x29)

Y
 (1)

Technical drawing of a Class A rail element. The drawing includes the following dimensions and labels:

- Top Dimensions:**
 - Overall width: $12\frac{1}{2}$ Lap (318)
 - Distance from end to first splice: 2 (51)
 - Distance between splices: $4\frac{1}{4}$ (108) and $4\frac{1}{4}$ (108)
 - Distance from last splice to end: 2 (51)
- Splice Details:**
 - Splice type: $\frac{3}{4} \times 2\frac{1}{2}$ Slotted hole (19x64)
 - Splice holes: $\frac{7}{16} \times \frac{1}{8}$ (23x29) Slotted holes for $\frac{5}{8}$ (M16) splice bolts
- Other Labels:**
 - Traffic (indicated by an arrow pointing left)
 - Class A rail element
 - Centerline (indicated by a dashed line and the letter 'C')

Technical drawing of a splice plate showing top and side views with dimensions and labels.

Top View Dimensions:

- Overall length: 102 (108)
- End distance: 4
- Distance between first two holes: $4\frac{1}{4}$ (108)
- Distance between last two holes: $4\frac{1}{4}$ (108)
- Distance between last hole and end: 6 (152)
- End distance: 2 (51)
- Overall width: $3\frac{1}{2}$

Labels:

- $\frac{7}{32} \times 3$ (23x76) Slots for splice bolts with std. galv. washer placed under locknut
- 1 Dia. holes (25)
- $\frac{1}{4} \times 3\frac{1}{2}$ Slotted hole (9x89)

Side View Dimensions:

- Overall length: 36 (914)
- End distance: $3\frac{3}{8}$ (86)

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.

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

Technical drawing of a 16' long steel plate girder. The drawing includes three views: a front view (left), a side view (middle), and a detail view of the end connection (right).

Front View (Left): Shows a square end view of the girder. Dimensions include a 1 5/16" diameter hole (33), a 1/2" thickness (38), a 2 3/4" width (70), a 3" height (76), and a 1 3/8" offset (35).

Side View (Middle): Shows the 16' (408") length of the girder. It features two 1/2" steel plates (13) on the top and bottom flanges, and a 3/16" steel plate (5) on the web. The web has a 1/4" thickness (6). The flanges have a 2" (51") width at the ends and a 4" (102") width in the middle. The total width of the flanges is 16" (408").

Detail View (Right): Shows the end connection of the girder. It includes a neutral axis, a rail element, a post bolt with washer on the front face (8 required), a 3/4" diameter hole (20), and a 2 3/8" (73") offset. The detail view also shows a 2" (51") width and a 1 3/4" (44") offset.

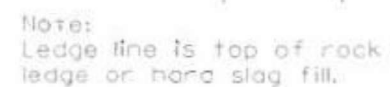
Anchor plate T shall be used to attach cable assembly to guardrail when required on traffic barrier terminals.

[illegible]

<div style="text-align: center;"> STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION </div>	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6.75 FOOT POSTS					FA- RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
						VAR	D4 GUARDRAIL REPAIRS 2026	VARIOUS	27	26
							ILLINOIS	CONTRACT NO. 68K91		
SCALE:		SHEET 3	OF 4	SHEETS	STA. TO STA.					

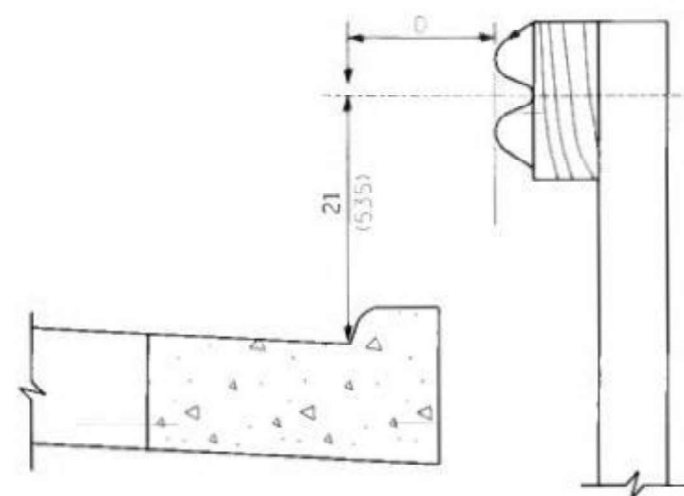
All dimensions are in inches (millimeters) unless otherwise noted.

F.A. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2026	VARIOUS	27	26
		ILLINOIS	CONTRACT NO. 68K91	



ELEVATION

FOOTING FOR POST WHEN IMPERVIOUS MATERIAL IS ENCOUNTERED

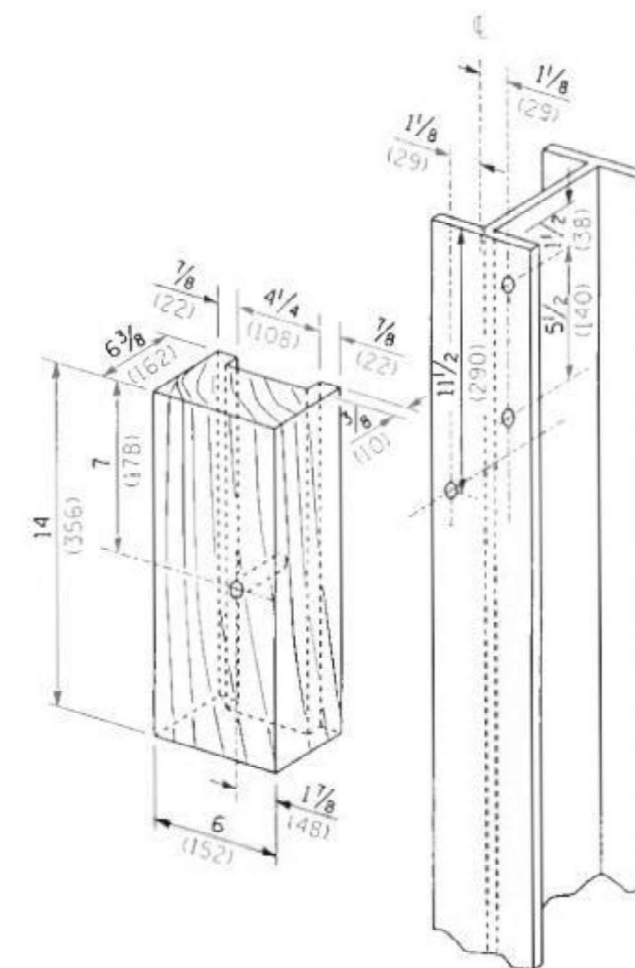


If it is necessary for D to be more than 12 (300) and less than 10'-0" (3.0 m) type M-2 (M-5) curb and gutter (Std. 606001) shall be used in front of and in advance of the guardrail.

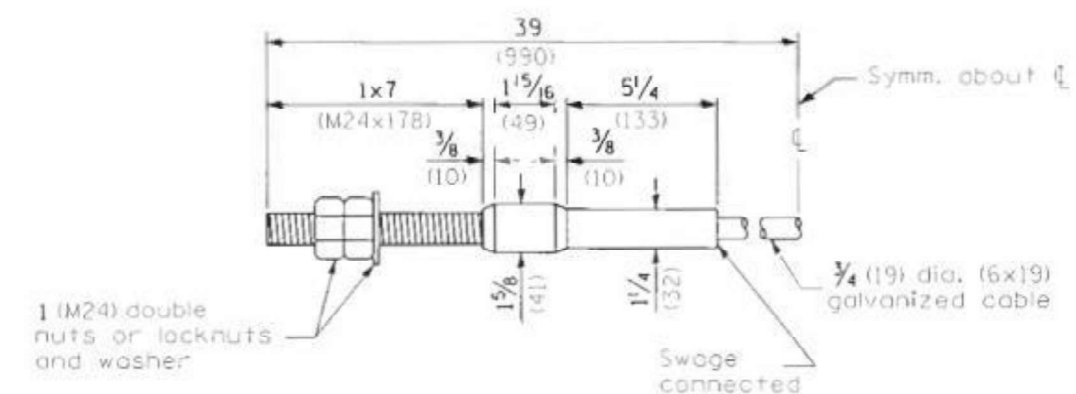
GUARDRAIL PLACED BEHIND CURB

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

V	W	L	
		Steel Post	Wood Post
0 - 18 (0' - 460)	24 (610)	21 (530)	23 (580)
>18 - 41.5 (>460 - 825)	12 (305)	8 (203)	10 (250)
>41.5 - 53.5 (>825 - 1,113 m)	12 - 0 (305 - 0)	8 (203)	10 (250)



WOOD BLOCK-OUT AND
STEEL POST DETAILS



CABLE ASSEMBLY

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL PLATE BEAM GUARDRAIL, TYPE A, 6.75 FOOT POSTS

SCALE:	SHEET 4	OF 4	SHEETS	STA.	TO STA.
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F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2026	VARIOUS	27	27
		ILLINOIS	CONTRACT NO. 68K91	