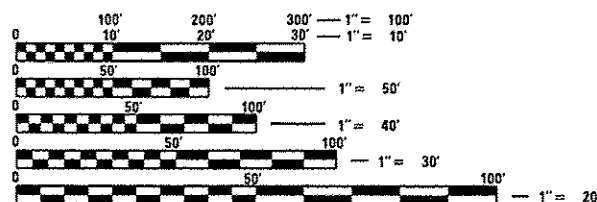


1. COVER SHEET
2. JOB SPECIFIC NOTES & COMMITMENTS
- 3-6. SUMMARY OF QUANTITIES
7. SAMPLE WORK FORM
8. EXISTING V.A.T. SYSTEM
9. PROPOSED C.A.T. SYSTEM
- 10-12. EXISTING TRAFFIC BARRIER, TERMINAL TYPE 3 & TYPE 3A
- 13-14. EXISTING TYPE 4 TERMINAL
- 15-17. EXISTING CABLE MEDIAN BARRIER (CABLE ROAD GUARD)
18. EXISTING GIBRALTAR CABLE BARRIER DETAIL
- 19-22. STEEL PLATE BEAM GUARDRAIL, TYPE A, 6.75 FOOT POSTS
STANDARD 630011-D4
23. EXISTING TRAFFIC BARRIER TERMINAL TYPE 8
24. EXISTING TRAFFIC BARRIER TERMINAL TYPE 9
- 25-27. EXISTING TUBULAR THRIE BEAM RETROFIT RAIL FOR BRIDGES

VARIOUS ROUTES
SECTION D4 GUARDRAIL REPAIRS 2016-MCHD

C-94-099-15

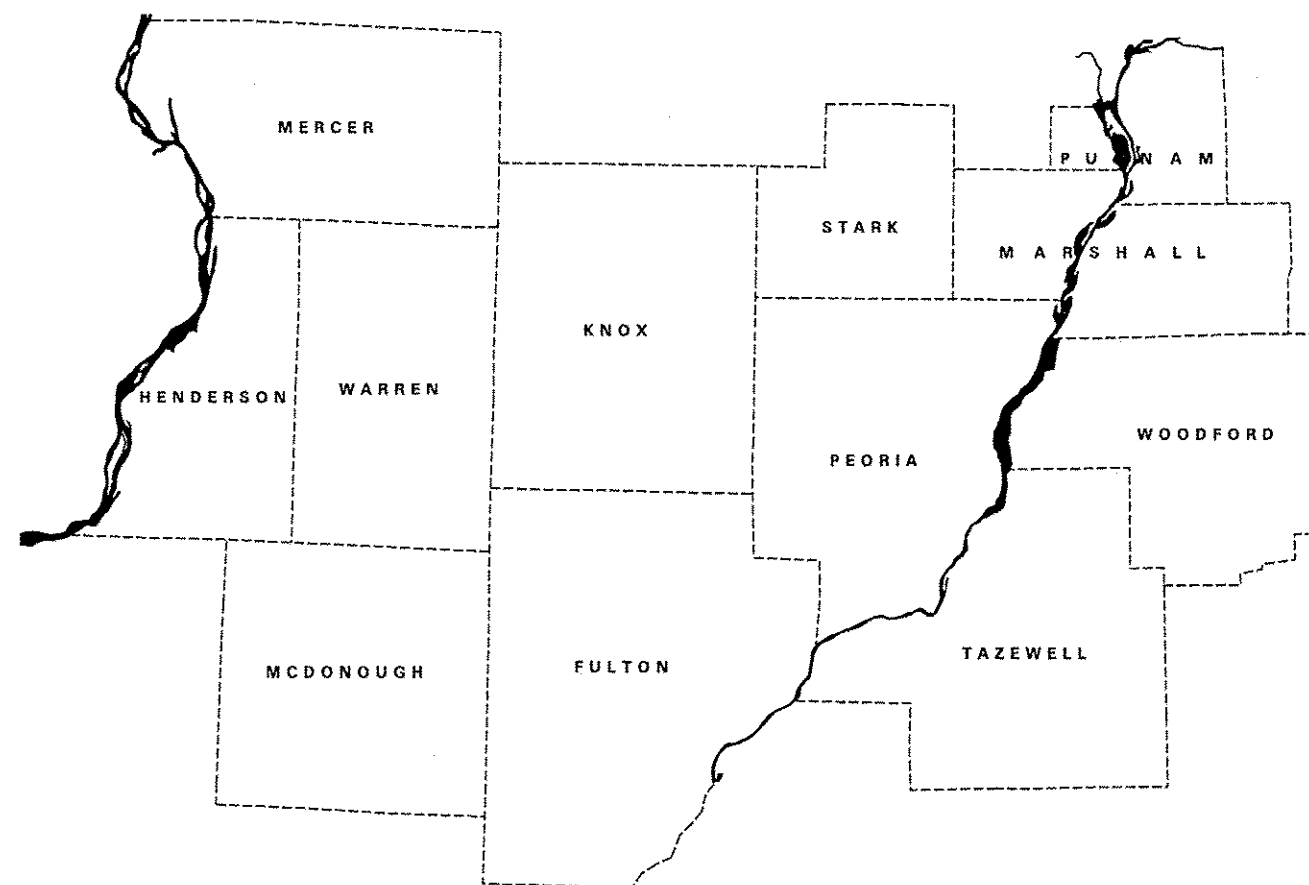
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631011-09	701400-08
631026-06	701406-10
631031-14	701411-09
631046-04	701428-01
635001-02	701456-03
635006-05	701601-09
635011-02	701606-10
664001-02	701701-10
665001-02	701901-05
701006-05	BLR-23-04
725001	
782006	



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
1-800-892-0123
OR 811

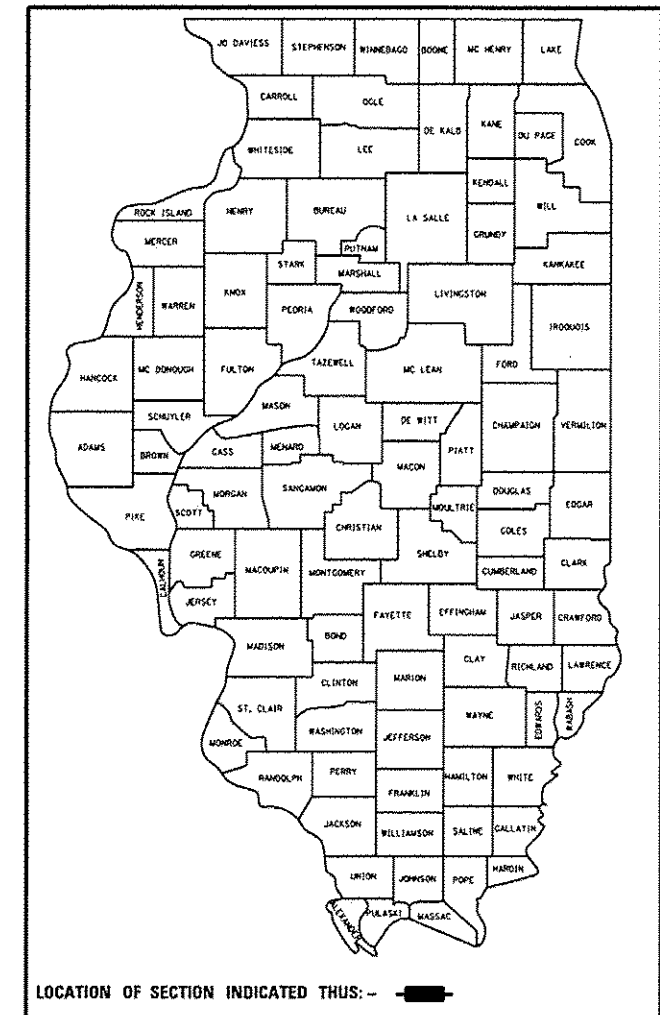
PROJECT ENGINEER CHRIS MAUSHARD (309) 671-3453
PROJECT MANAGER RAYMOND SAMARA /SOBHI LABABIDI (309) 671-3459
CATALOG NO. 035313-00D
CONTRACT NO. 68C77



GROSS LENGTH = N/A
NET LENGTH = N/A

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	04 GUARDRAIL REPAIRS 2016-MCHD	VARIOUS	27	1
		ILLINOIS	CONTRACT NO. 68C77	

D-94-059-15



DESCRIPTION:
GUARDRAIL REPAIRS CAUSED BY MOTORISTS AT
VARIOUS LOCATIONS THROUGHOUT DISTRICT 4

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED February 8 20 16
Bara A. Jansen
 DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER
March 18 20 16
Maureen M. Adz P.E.
 acting ENGINEER OF DESIGN AND ENVIRONMENT
March 18 20 16
Omer Osman P.E.
 DIRECTOR OF HIGHWAYS | CHIEF ENGINEER

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

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.

FILE NAME : D480C77-CADD.dgn Default	USER NAME : kashbr	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	JOB SPECIFIC NOTES & COMMITMENTS	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED -			VAR	D4 GUARDRAIL REPAIRS 2016-MCHD	VARIOUS	27	2
	PLOT SCALE : 10.0000' / 1" =	CHECKED -	REVISED -			CONTRACT NO. 68C77				
	PLOT DATE : 2/9/2016	DATE -	REVISED -			ILLINOIS FED. AID PROJECT				
SCALE: SHEET 1 OF 1 SHEETS STA. TO STA.										

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	SEQ 1	SEQ 2	SEQ 3
				03MO	CONSTRUCTION CODE	
				VARIOUS COUNTIES	VARIOUS COUNTIES	VARIOUS COUNTIES
				100% STATE	100% STATE	100% STATE
				MCHD	CONT. MAINT.	HTMCB
				0021	0021	0021
63100045	TRAFFIC BARRIER TERMINAL, TYPE 2	EACH	6	4	2	
63100070	TRAFFIC BARRIER TERMINAL, TYPE 5	EACH	6	4	2	
63100085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	4	3	1	
63100095	TRAFFIC BARRIER TERMINAL, TYPE 8	EACH	6	4	2	
63100101	TRAFFIC BARRIER TERMINAL, TYPE 9	EACH	6	4	2	
63100105	TRAFFIC BARRIER TERMINAL, TYPE 10	EACH	6	4	2	
63100115	TRAFFIC BARRIER TERMINAL, TYPE 12	EACH	2	1	1	
63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	21	13	8	
63100169	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) FLARED	EACH	5	4	1	
63400105	GUARD POSTS	EACH	7	5	2	
64300260	IMPACT ATTENUATORS (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	2	1	1	
64300320	IMPACT ATTENUATORS (FULLY REDIRECTIVE, RESETTABLE), TEST LEVEL 3	EACH	1	1		
64300370	IMPACT ATTENUATORS (FULLY REDIRECTIVE, WIDE), TEST LEVEL 3	EACH	2	1	1	
64300450	IMPACT ATTENUATORS (NON- REDIRECTIVE), TEST LEVEL 3	EACH	4	3	1	

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE		
				VARIOUS COUNTIES	VARIOUS COUNTIES	VARIOUS COUNTIES
				100% STATE	100% STATE	100% STATE
				MCHD	CONT. MAINT.	HTMCB
				0021	0021	0021
64300770	IMPACT ATTENUATORS (SEVERE USE, NARROW), TEST LEVEL 3	EACH	3	2	1	
66400105	CHAIN LINK FENCE, 4'	FOOT	7	5	2	
66400305	CHAIN LINK FENCE, 6'	FOOT	400	280	120	
66500105	WOVEN WIRE FENCE, 4'	FOOT	500	350	150	
72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	40	28	12	
78200005	GUARDRAIL REFLECTORS, TYPE A	EACH	20	14	6	
X0301372	REPAIR/UPGRADE EXISTING VAT TO CAT	EACH	6	4	2	
X0325264	REPAIR IMPACT ATTENUATORS (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	6	4	2	
X0325899	REPAIR HIGH TENSION CABLE (GIBRALTAR)	FOOT	800			800
X0325900	REPAIR HIGH TENSION BARRIER TERMINAL (GIBRALTAR)	EACH	2			2
X0325902	REMOVE AND REPLACE POSTS (GIBRALTAR)	EACH	80			80
X0325903	REPAIR CABLE ROAD GUARD, THREE STRANDS	FOOT	150			150
X0327382	REPAIR HAIRPINS (GIBRALTAR)	EACH	100			100
X0327383	REPAIR LOCK PLATES (GIBRALTAR)	EACH	100			100

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE		
				VARIOUS COUNTIES	VARIOUS COUNTIES	VARIOUS COUNTIES
				100% STATE	100% STATE	100% STATE
				MCHD	CONT. MAINT.	HTMCB
				0021	0021	0021
X6300210	GUARDRAIL BLOCKS	EACH	200	140	60	
X6300215	RAIL ELEMENT PLATES	EACH	64	48	16	
X6300230	STEEL POSTS	EACH	100	70	30	
X6330900	VERTICAL ADJUSTMENT OF GUARDRAIL	FOOT	400	280	120	
X6331101	TUBULAR THRIE BEAM	FOOT	200	140	60	
X6331110	STEEL POSTS, SPECIAL	EACH	6	4	2	
X6640502	CHAIN LINK FENCE POST	EACH	10	6	4	
X7010216	TRAFFIC CONTROL AND PROTECTION (SPECIAL)	L SUM	1	1		
Z0008760	EMERGENCY WORK CALL OUT	EACH	20	14	6	
Z0020210	PULL POST ARRANGEMENT	EACH	6	4	2	
Z0051400	REMOVING AND RESETTNG POSTS	EACH	100	70	30	
Z0052410	REPAIR TRAFFIC BARRIER TERMIAL, TYPE 1 SPECIAL (TANGENT)	EACH	26	20	6	
Z0052415	REPAIR TRAFFIC BARRIER TERMIAL, TYPE 1 SPECIAL (FLARED)	EACH	5	2	3	
Z0052600	REPAIR TRAFFIC BARRIER TERMINAL, TYPE 2	EACH	4	3	1	

TO: _____

FY

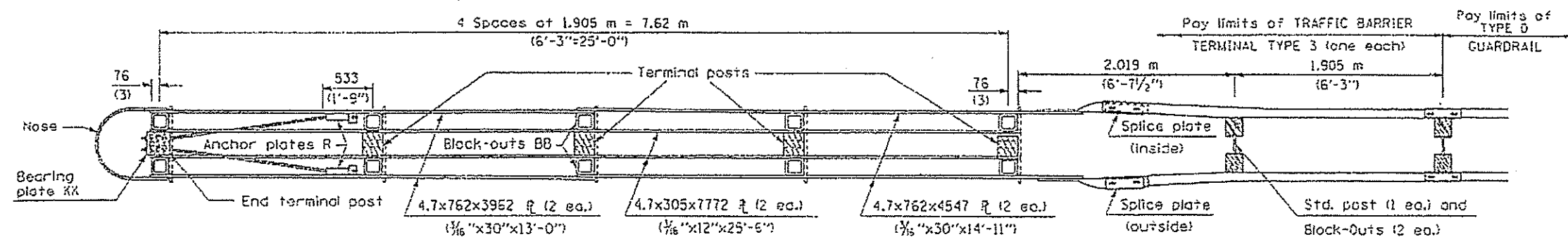
CLAIM NUM: _____

<u>CODE NUM</u>	<u>ITEM</u>	<u>UNIT</u>	<u>QTY</u>	<u>UNIT PRICE</u>	<u>AMOUNT</u>
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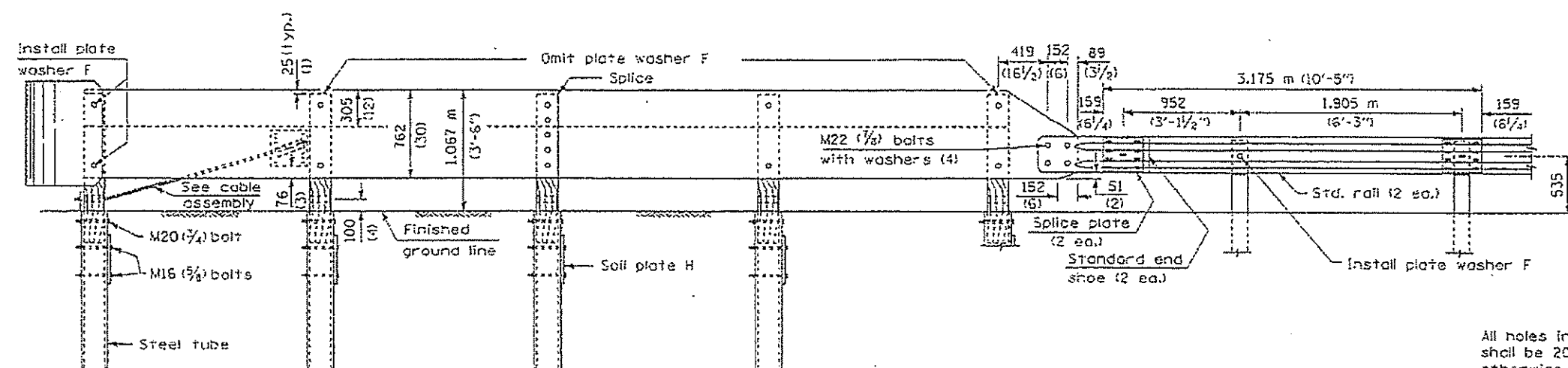
SPECIAL INSTRUCTIONS:

DATE _____

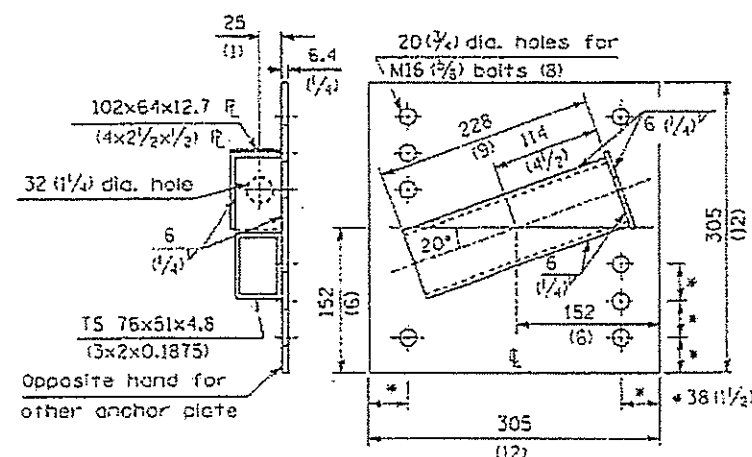
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pw:\IL0848BID\Intelligence\Illinois.gov\FWIDOT\Documents\IOT Offices\District 4\Projects\04-68C77\04-68C77-CADD.dwg			REVISED -			VAR	04 GUARDRAIL REPAIRS 2016-MCHD	VARIOUS	27	7	
Default	PLOT SCALE = 0.0000 ' / in.	CHECKED -	REVISED -			CONTRACT NO. 68C77					
	PLOT DATE = 2/8/2016	DATE -	REVISED -			ILLINOIS FED. AID PROJECT					
SCALE:						SHEET 1	OF 1	SHEETS	STA.	TO STA.	



PLAN - TRAFFIC BARRIER TERMINAL TYPE 3

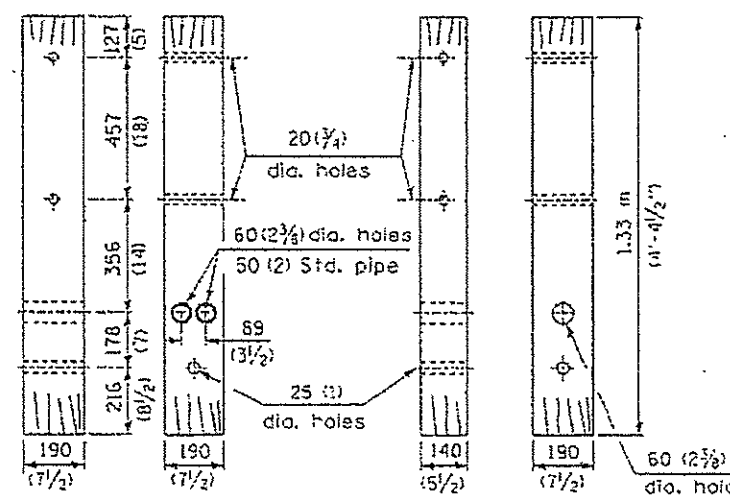


ELEVATION



ANCHOR PLATE R

(1 ea. lt. hd. & 1 ea. rt. hd.)



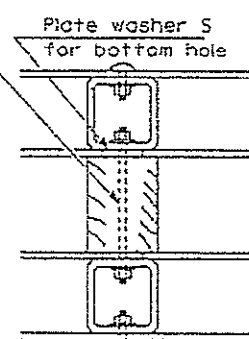
END TERMINAL POST

(1 ea.)

TERMINAL POST

(4 ea. Type 3)
(5 ea. Type 3A)

M16 (5/8) x 260 (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.

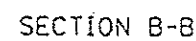
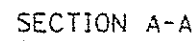
Unless otherwise shown all bolts and nuts shall be Standard Post and Splice Bolts and Nuts (See Standard 630001).

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.

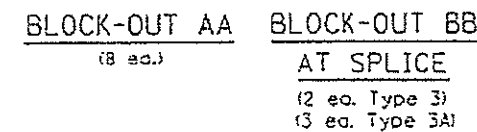
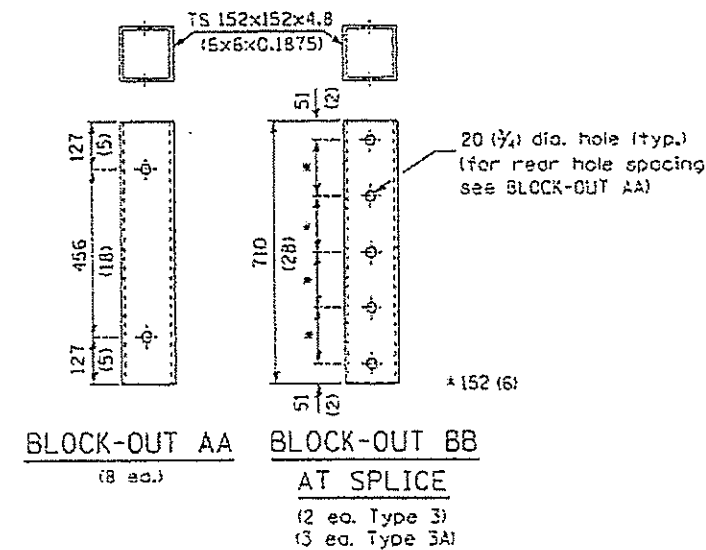
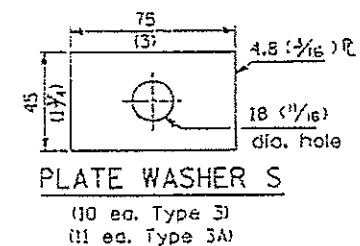
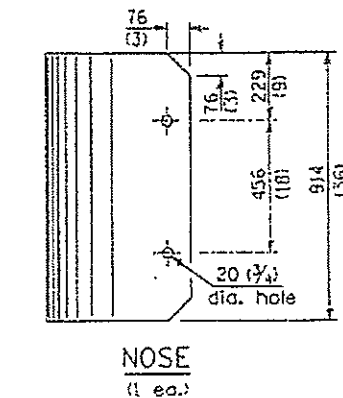
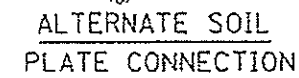
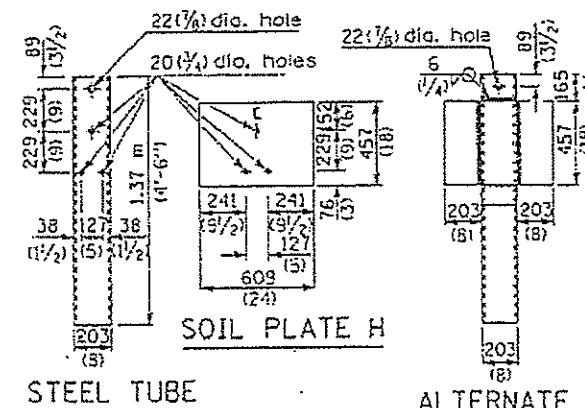
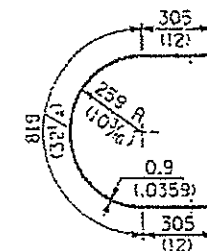
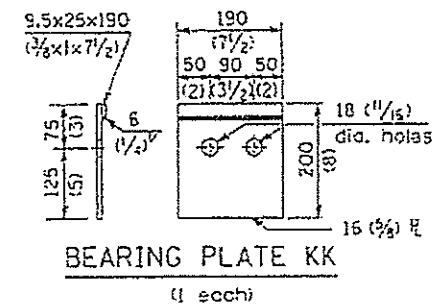
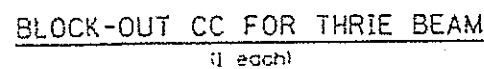
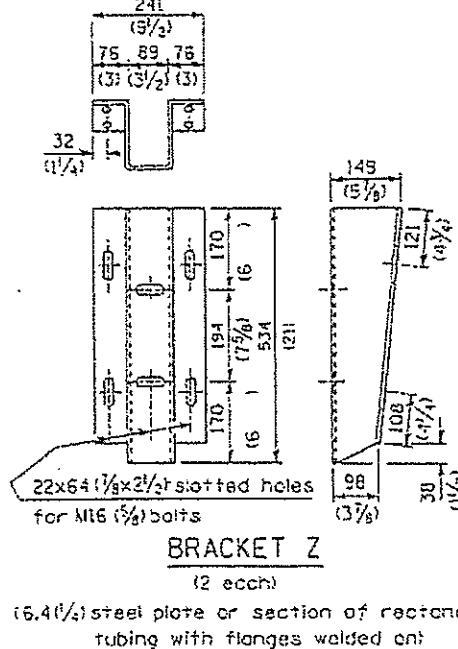
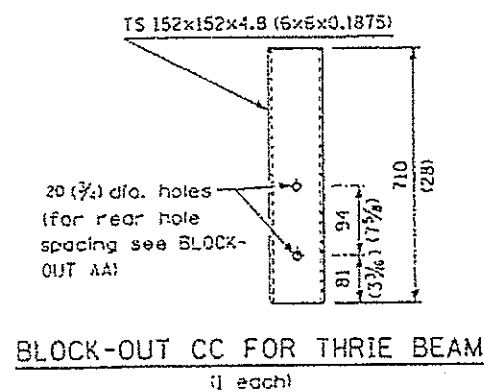
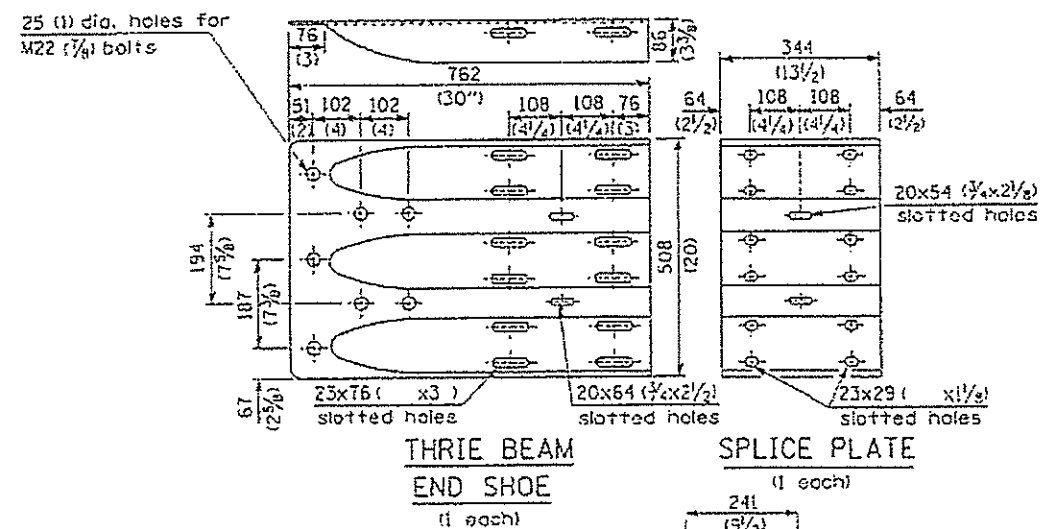
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PLOT DATE = 1/7/2016		DATE -	REVISED -											
Default														
										CONTRACT NO. 68C77				
										ILLINOIS FED. AID PROJECT				



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

FILE NAME =	USER NAME = hofnerom	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION										EXISTING TRAFFIC BARRIER TERMINAL					F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.					
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	PLOT SCALE = 41.985' / 1in.	CHECKED -	REVISED -																CONTRACT NO. 68C77									
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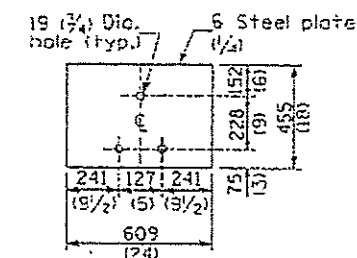
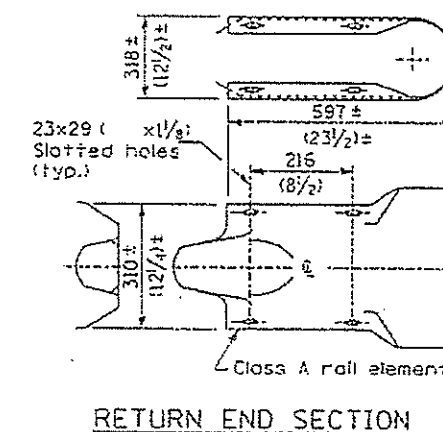
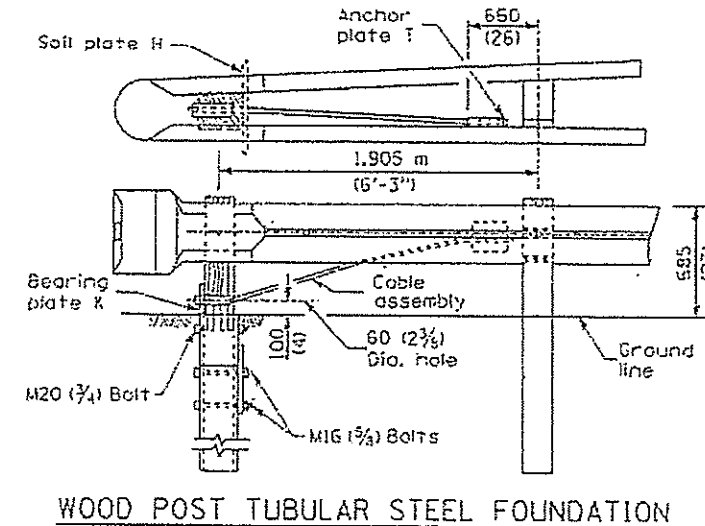
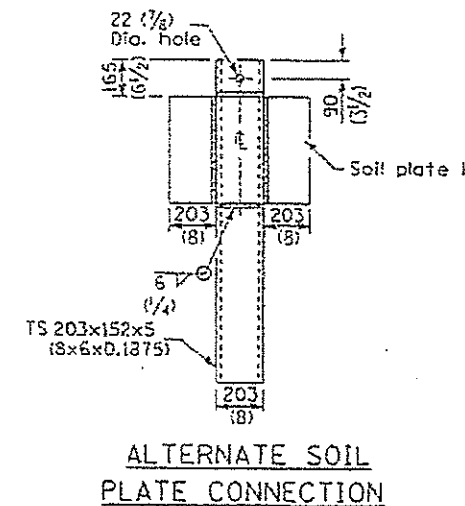
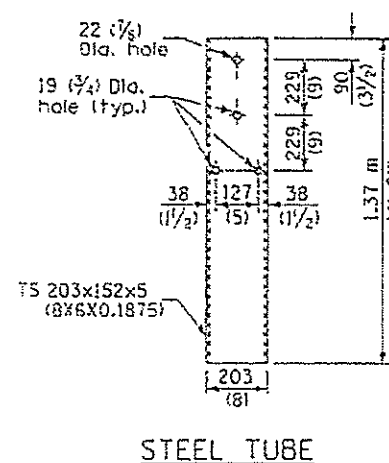
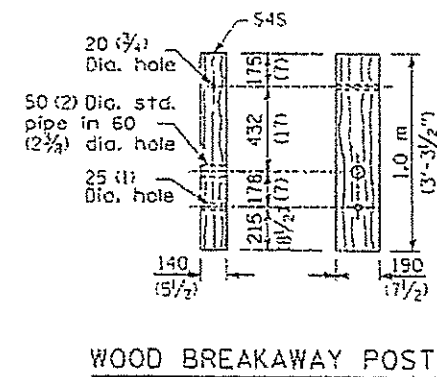
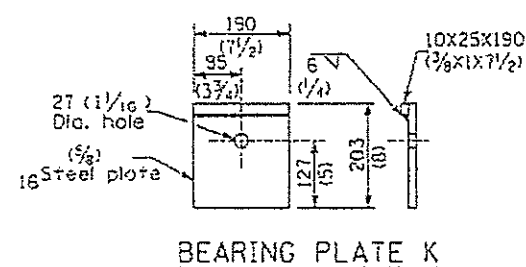
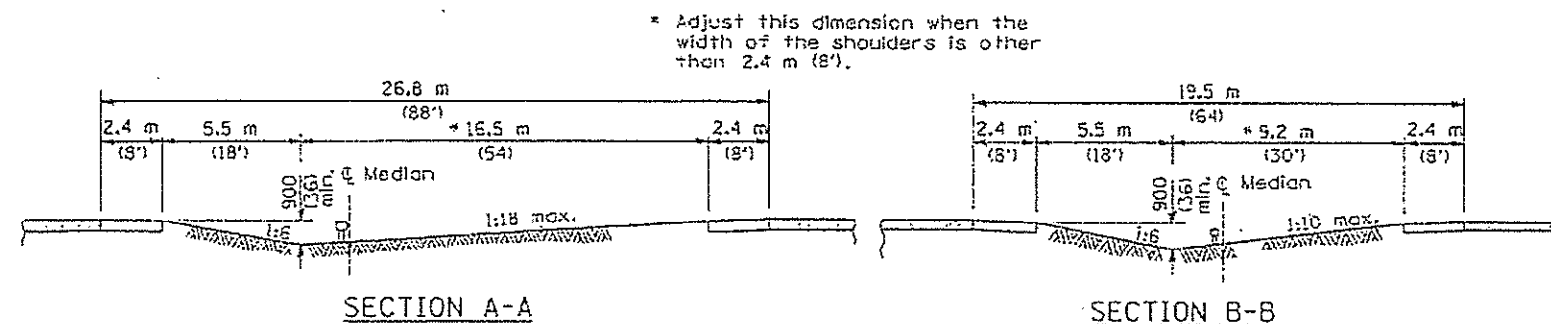
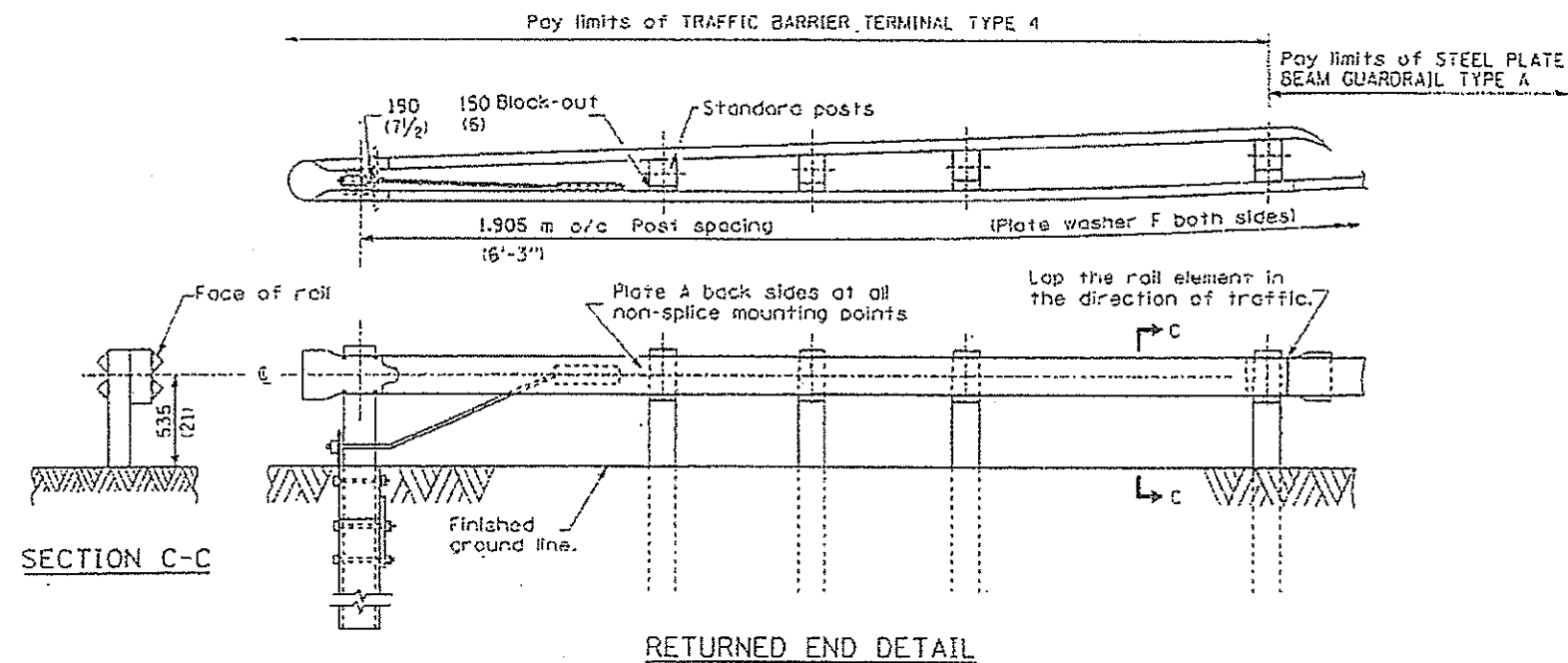
Technical drawing of a connecting plate. The drawing shows a rectangular plate with a tapered section on the right side. Dimensions are given in meters (m) and feet-inches (ft-in). The total length is 4.013 m (13'-2"). The width of the left end is 76 (3). The width of the right end is 95 (3 1/2). The distance from the left end to the start of the taper is 2.013 m (6'-7 1/4"). The distance from the start of the taper to the right end is 178 (7). The plate has 20 (1/2) dia. holes (typ.) along its length. The plate is labeled "CONNECTING PLATE" and "(1 each)".



**DETAIL INCLUDED
FOR REPAIR ONLY**

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

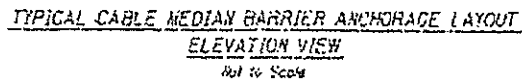
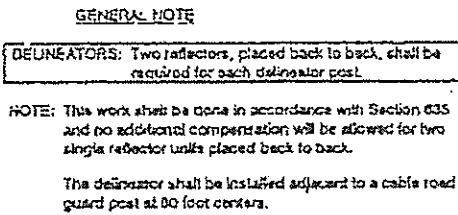
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\\11084E8BID\INTEG.illinois.gov\PIWD\T Documents\DOT Offices\District 4\Projects\04-60\WORK\Drawings\CA0Drawings\0468C77-CA00.d		REVIEWED -	REVISOR -		VAR	D4 QUADRANT REPAIRS 2016-MCH	VARIOUS	27	12				
PLOT SCALE = 41.1985' / 1" =	CHECKED -	REVISED -	DATE		SCALE:	SHEET 3	OF 3	SHEETS STA.	TO STA.	ILLINOIS FED. AID PROJECT CONTRACT NO. 68C77			
PLOT DATE = 1/7/2016	DATE	REVISED -											



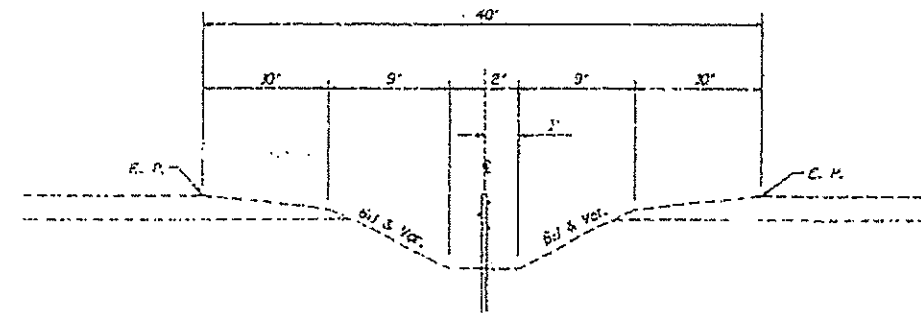
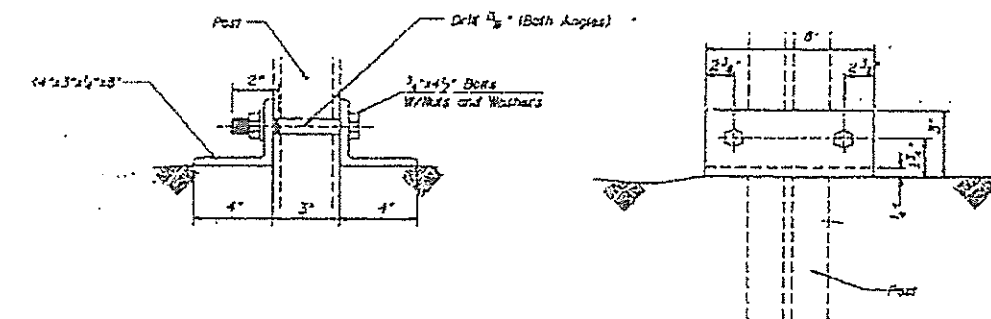
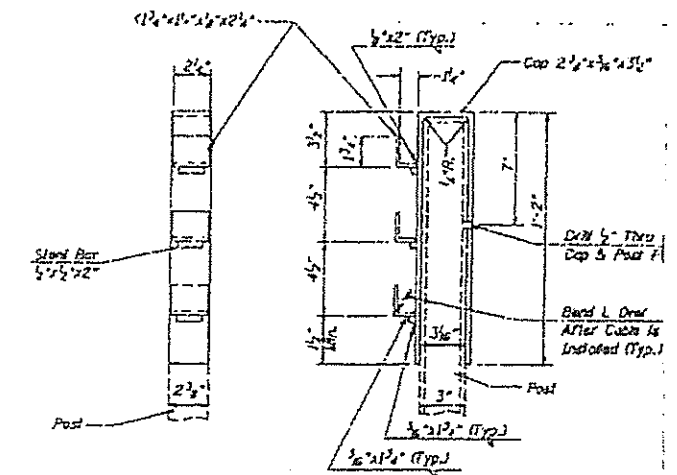
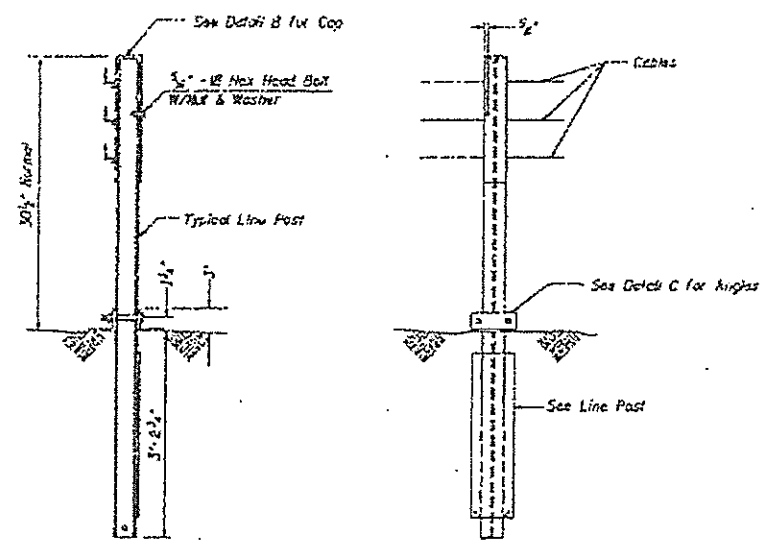
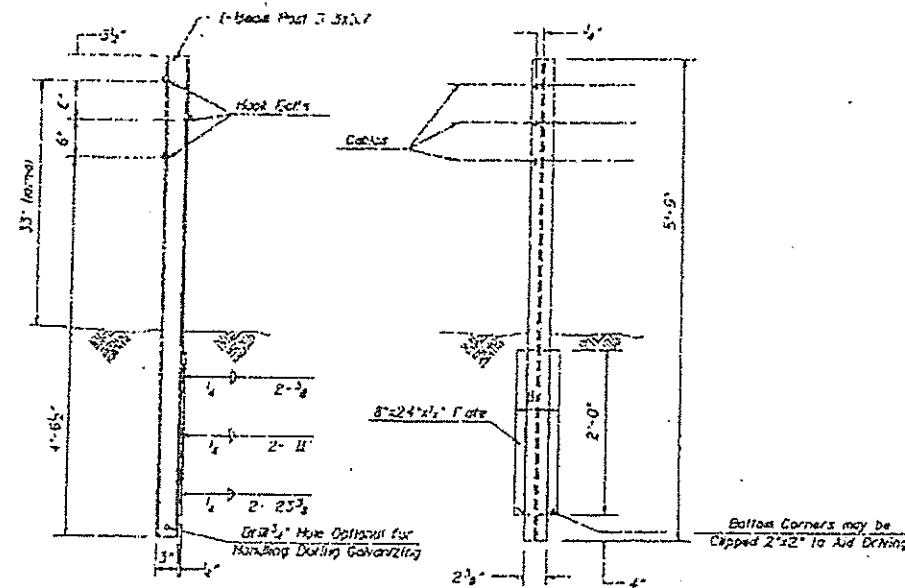
**DETAIL INCLUDED
FOR REPAIR ONLY**

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

FILE NAME =	USER NAME = hofneram	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING TYPE 4 TERMINAL	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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Default	PLOT SCALE = 41:1/85 ' / in.	DATE -	REVISED -			CONTRACT NO. 68C77					
	PLOT DATE = 1/7/2016	DATE -	REVISED -			ILLINOIS FED. AID PROJECT					



FILE NAME =	USER NAME = hofnerom	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING CABLE MEDIAN BARRIER (CABLE ROAD GUARD)	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
p:\illob4EBIDINTEG\illinois.gov\PWIDOT\Documents\VIDOT Offices\District 4\Projects\04-EDRAWINGData\CADDrawings\0468C77-CADD.dwg		CHECKED -	REVISED -			VAR	D4 GUARDRAIL REPAIRS 2016-MCHD	VARIOUS	27	15	
Default	PLOT SCALE = 41.1985' / 1in.	DATE -	REVISED -			CONTRACT NO. 68C77					
	PLOT DATE = 1/7/2016					ILLINOIS/FED. AID PROJECT					
					SCALE:	SHEET 1	OF 3	SHEETS	STA.	TO STA.	



- NOTES
1. At all locations where the cable is connected to a cable socket 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.
 2. Compressing devices shall have spring 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.
 3. Socket brackets shall be designed for use with the wedge detailed in these Standards.
 4. Alternate hardware designs will be considered for approval provided inter connection details, for the purpose of maintenance substitutions, are compatible with the details of these standards and inter operating characteristics are similar to those of the hardware shown.
 5. Threads of externally threaded parts shall be UNC, Class 2A Tolerances (A.N.S.I. B1.1). Internally threaded parts shall meet the dimensional requirements of ASTM A 563.
 6. All fittings (including 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 "A" rated cable (25,000 lbs.).
 7. For arrangement of spring coiled and assemblies (compressing devices) and turnbuckle cable and assemblies, the following criteria shall apply:
Length of Cable Runs
To 3000" - the compressing cable and assembly on any end and turnbuckle cable and assembly on the other end of each individual cable.
Over 3000" to 2000" - the compressing cable and assembly on each end of each individual cable.
 8. All assembly parts and joints are to be galvanized and no punching, cutting or welding will be permitted after galvanizing.
 9. Dimensional tolerances not shown or implied are intended to be those consistent with the proper functioning of the part, including its appearance, and accepted manufacturing practices.
 10. Prior to final acceptance by the user the following procedures shall be used to inspect the turnbuckle, depending on the temperature of the time of inspection in accordance with the following table.

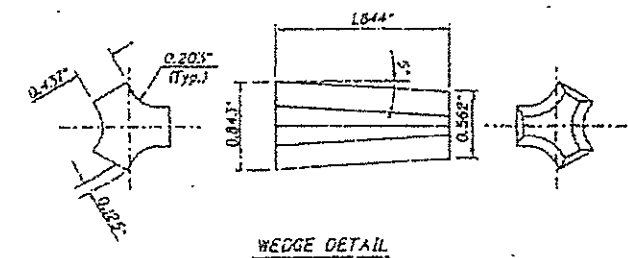
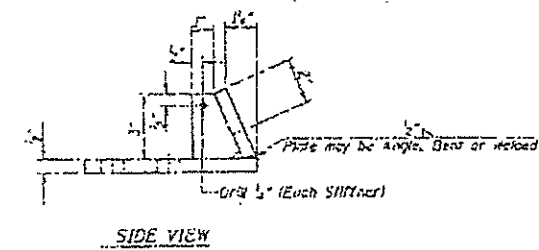
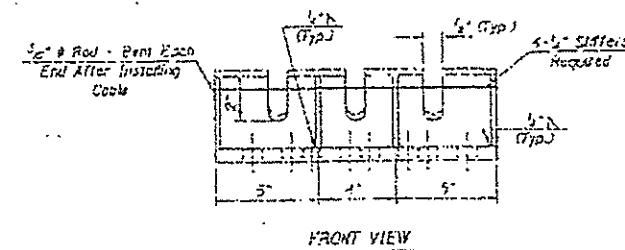
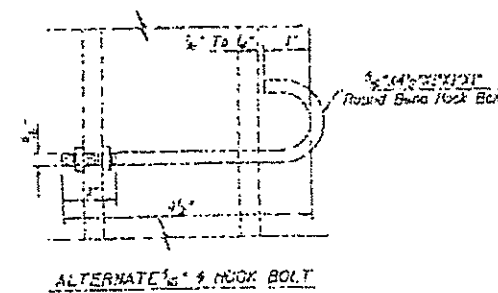
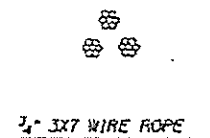
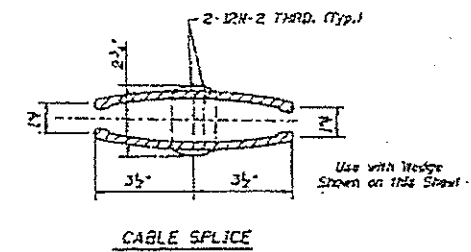
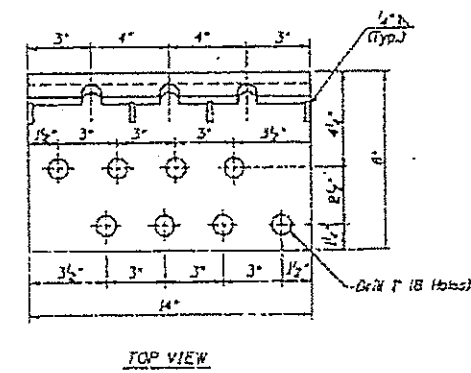
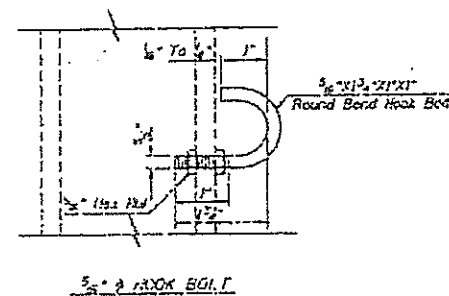
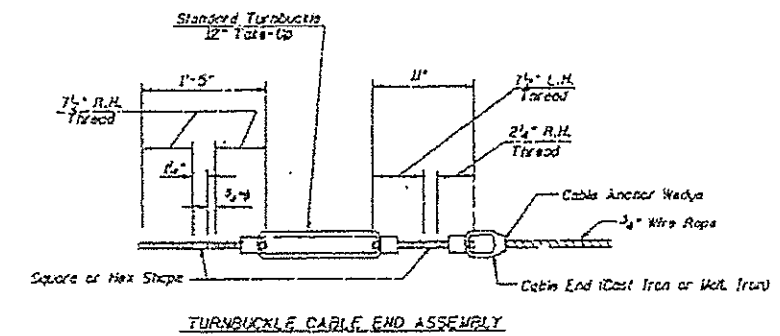
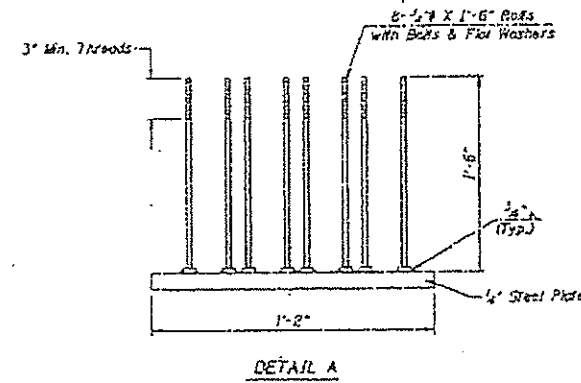
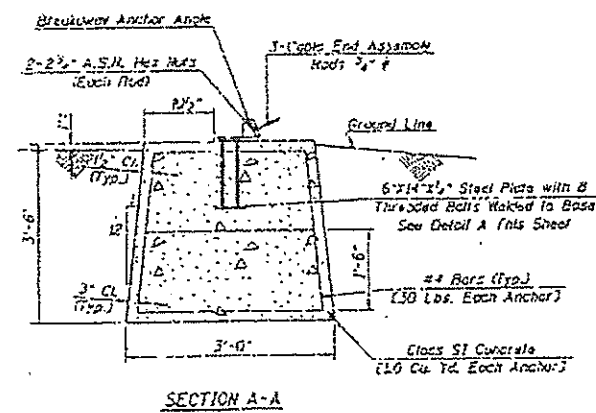
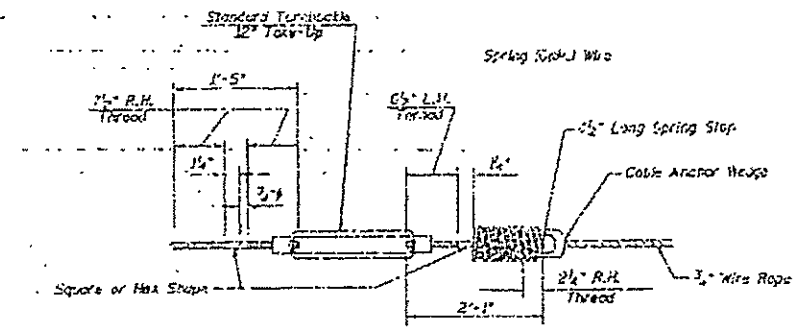
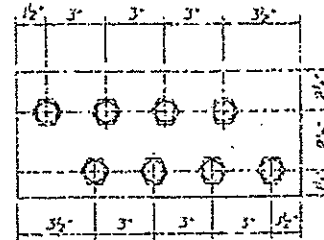
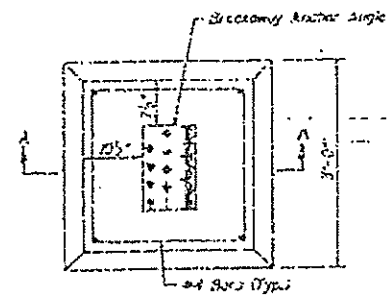
Temperature	13°	10°	16°	10°	33°	19°	1°
	220°	95°	75°	50°	20°	10°	0°
	250°	180°	60°	40°	20°	10°	-20°

Spring Compression
From Unstressed Position

	1°	15°	2°	2 1/2°	3°	5 1/2°	4°
--	----	-----	----	--------	----	--------	----

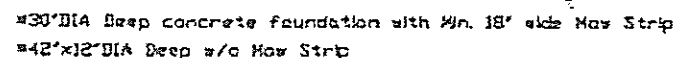
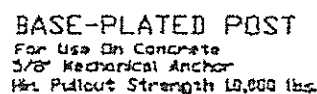
in each spring

FILE NAME =	USER NAME = haineram	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION EXISTING CABLE MEDIAN BARRIER (CABLE ROAD GUARD)	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
p:\IL08468ID\INTEG.Illinois.gov\PIDOT\Documents\DOT Offices\District 4\Projects\04-68468\Drawings\CADD\Drawings\04-68C77-CADD.dwg		REVISED -	REVISED -		VAR	D4 GUARDRAIL REPAIRS 2016-MCHD	VARIOUS	27	16	
Default	PLOT SCALE = 41.1985' = 1 in.	CHECKED -	REVISED -		CONTRACT NO. 68C77					
	PLOT DATE = 1/7/2016	DATE -	REVISED -		SCALE:	SHEET 2	OF 3	SHEETS	STA.	TO STA.
				ILLINOIS DEPT. OF TRANSPORTATION						



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FILE NAME =	USER NAME = hnfarnam	DESIGNED =	REVISED =	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION										EXISTING CABLE MEDIAN BARRIER (CABLE ROAD GUARD)										F.A. RTE.	SECTION		COUNTY	TOTAL SHEETS	SHEET NO.
pm\VL084E8D\INTEG.illinois.gov\PWDDT\Documents\DOT Offices\District 4\Projects\04_04\ROAD\DOTData\CADDrawings\0468C77-CADD.d		EDWARD	REVISED =																					VAR	ON GUARDRAIL REPAIRS 2016-MCHD		VARIOUS	27	17
	PLOT SCALE = 41.1985 ' / in.	CHECKED =	REVISED =																					CONTRACT NO. 68C77					
Default	PLOT DATE = 1/7/2016	DATE =	REVISED =											SCALE: SHEET 3 OF 3 SHEETS STA. TO STA.										ILLINOIS FED. AID PROJECT					

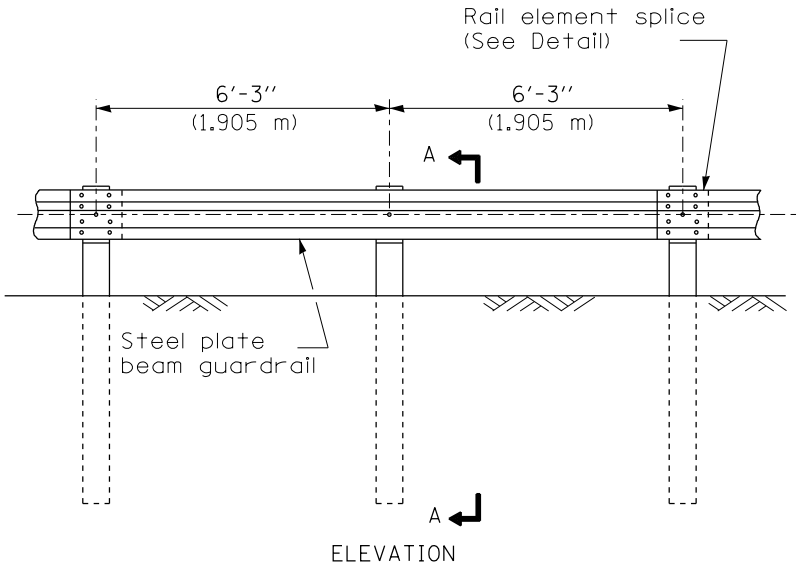


- | Cable Tension | |
|---------------|------|
| -10F | 8000 |
| 0 | 7600 |
| 10 | 7200 |
| 20 | 6800 |
| 30 | 6400 |
| 40 | 6000 |
| 50 | 5600 |
| 60 | 5200 |
| 70 | 4800 |
| 80 | 4400 |
| 90 | 4000 |
| 100 | 3600 |
| 110 | 3200 |

Allowable Deviation
from Chart ± 200
lbs/force

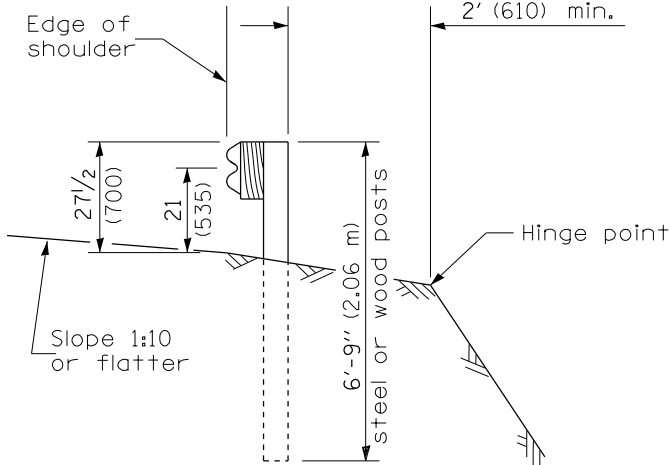
Deflection	Post Spacing
9'3"	30.FT
9'	28.FT
8'	20.FT
7'	12.FT
6'8"	10.FT

Use this CADD Standard when removing and re-erecting existing non-MGS guardrail that installed prior to January 1, 2007 or to replace existing rail to match existing non-MGS rail. Note this is removing and re-erecting so the 27 1/2" height is maintained. If installing the new style MGS guardrail use the State Standard.

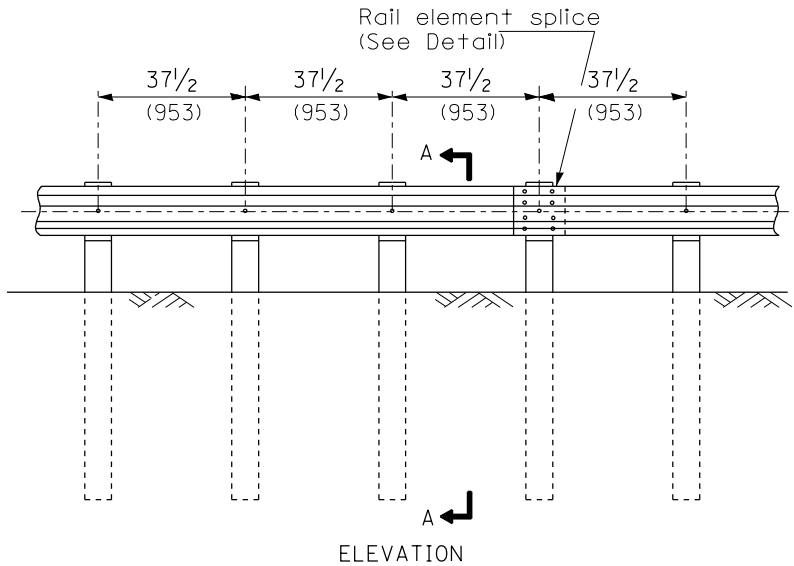


TYPE A

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

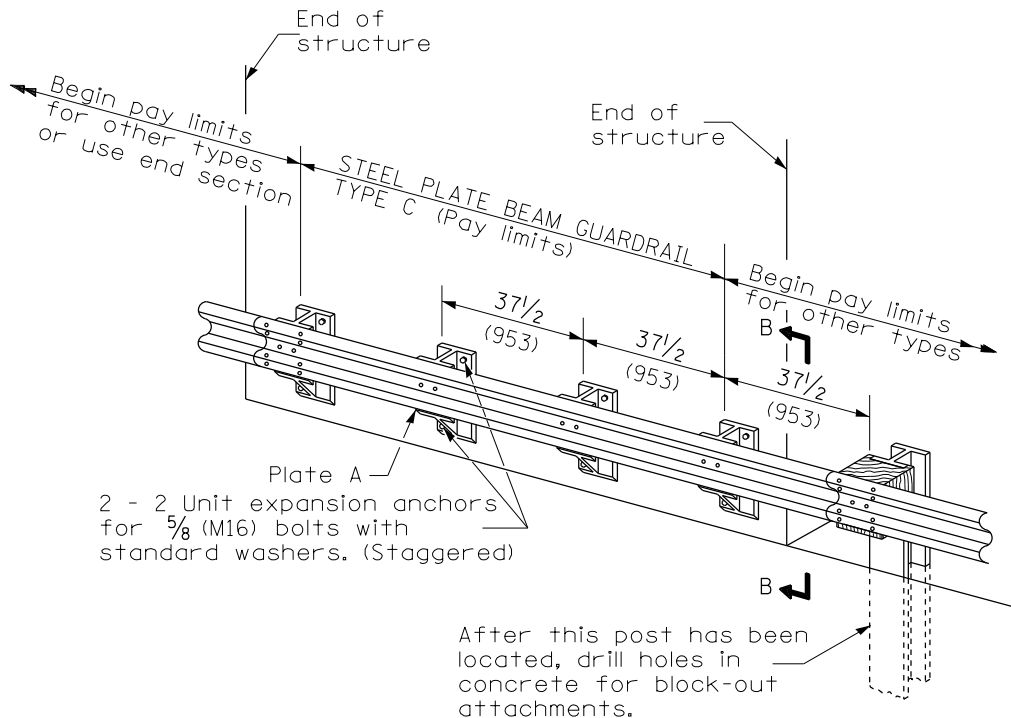


SECTION A-A



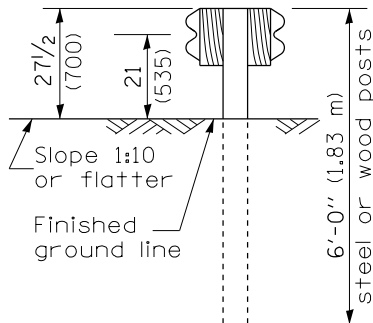
TYPE B

37½ (953) Closed post spacing

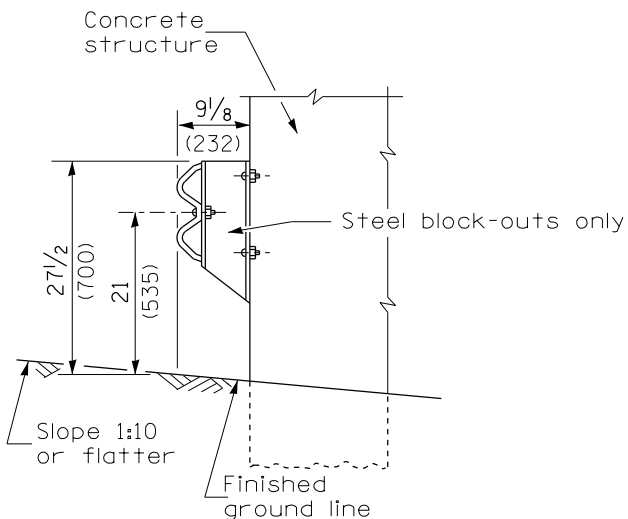


TYPE C

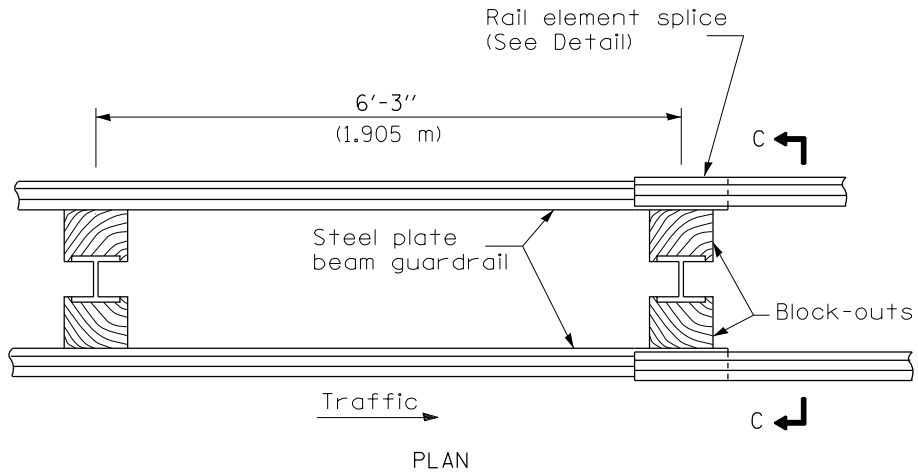
37½ (953) Block-out spacing



SECTION C-C



SECTION B-B



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).

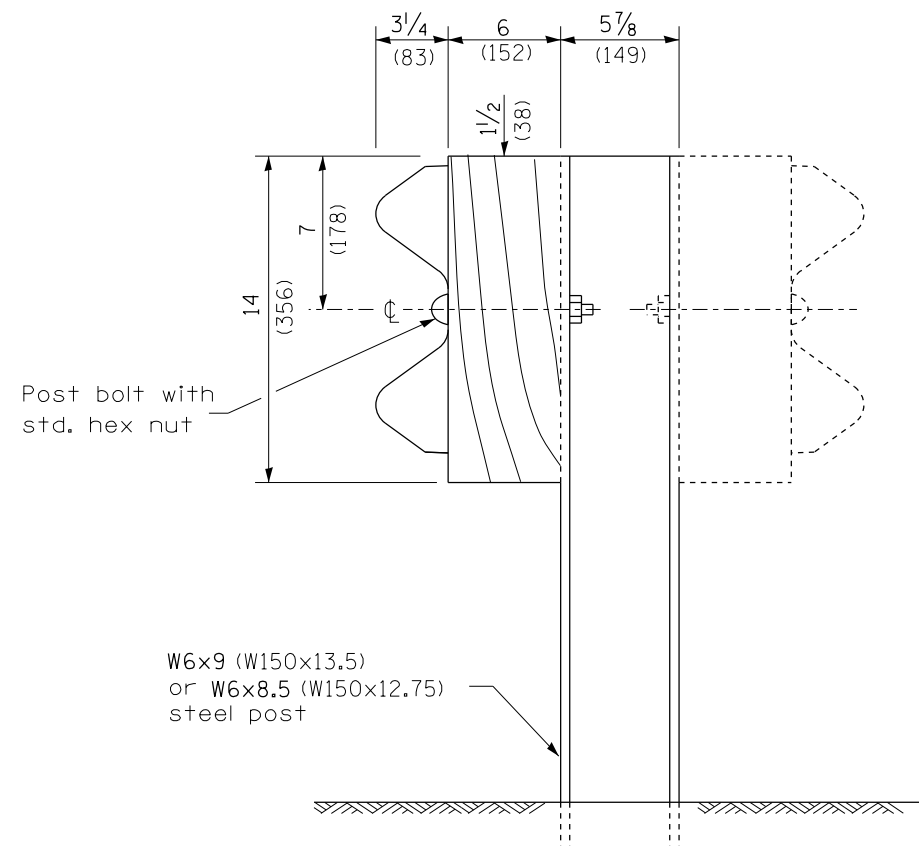
All dimensions are in millimeters (inches) unless otherwise shown.

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.

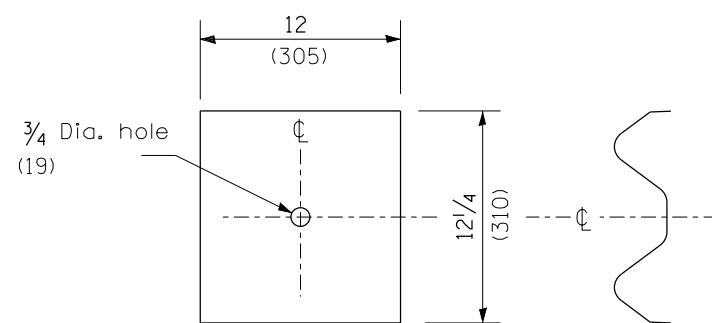
This detail is applicable to the guardrail system used prior to January 1, 2007. For details on the Midwest Guardrail System, see Standard 630001.

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

[illegible]



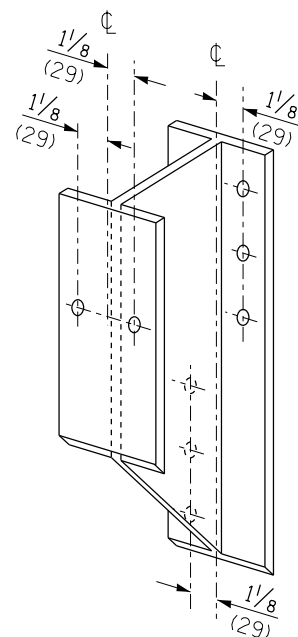
STEEL POST CONSTRUCTION



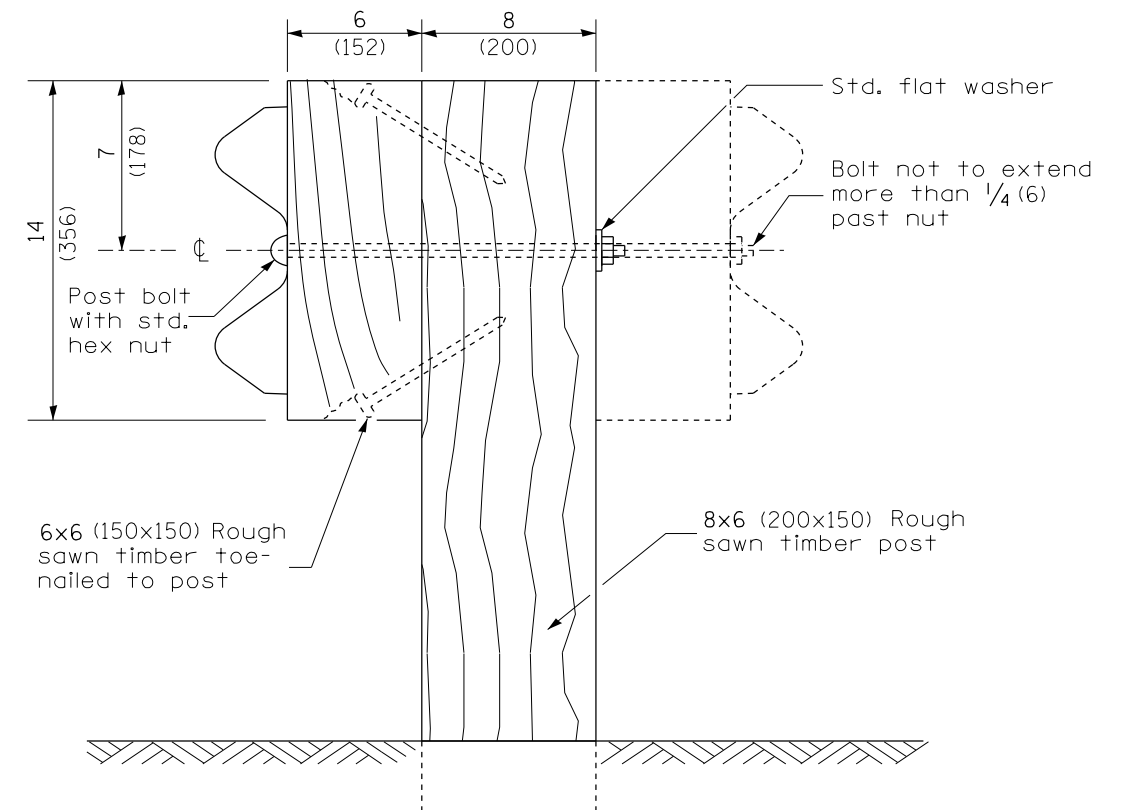
NOTE

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

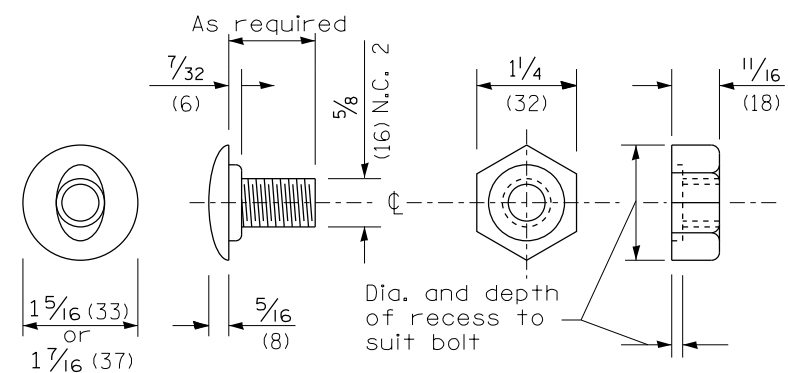
PLATE A



STEEL BLOCK-OUT DETAIL



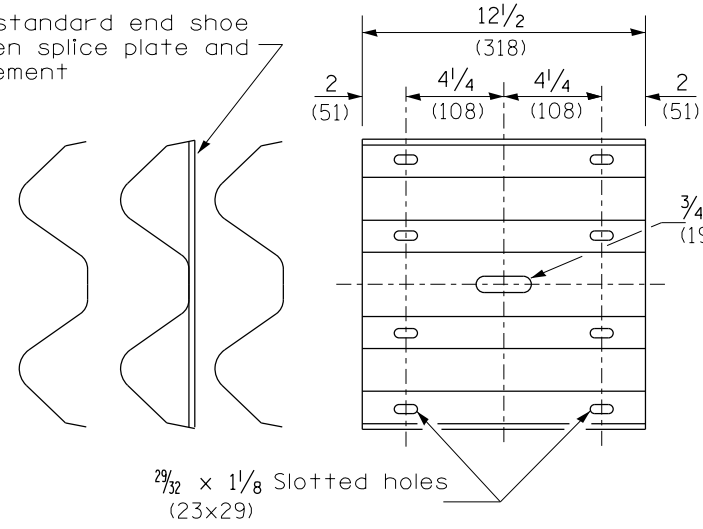
WOOD POST CONSTRUCTION



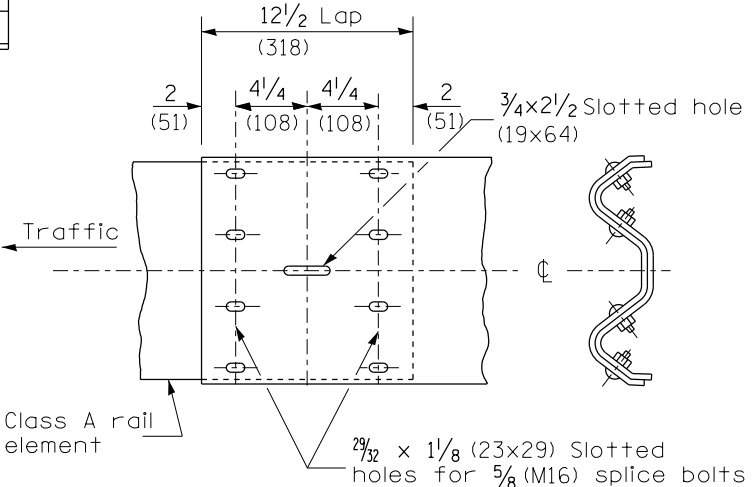
POST OR SPLICE BOLT & NUT

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

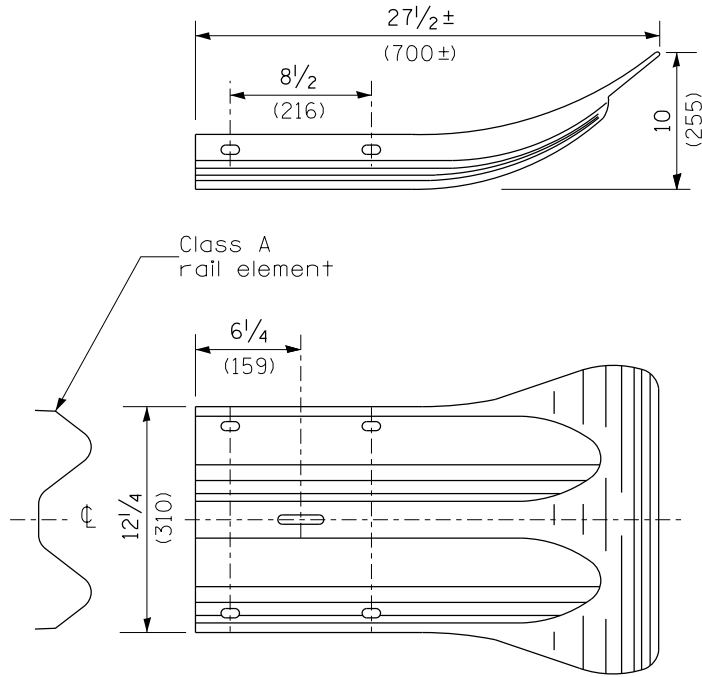
Place standard end shoe between splice plate and rail element



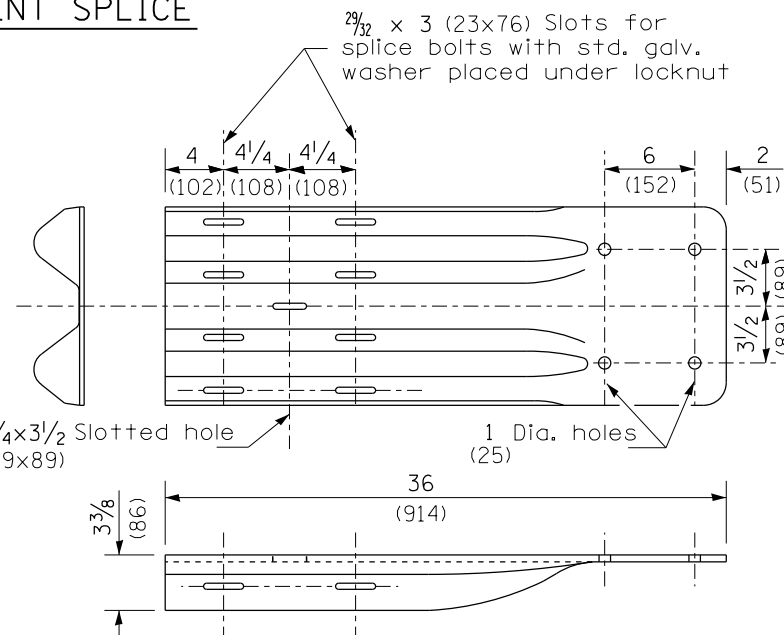
SPLICE PLATE



RAIL ELEMENT SPLICE



END SECTION



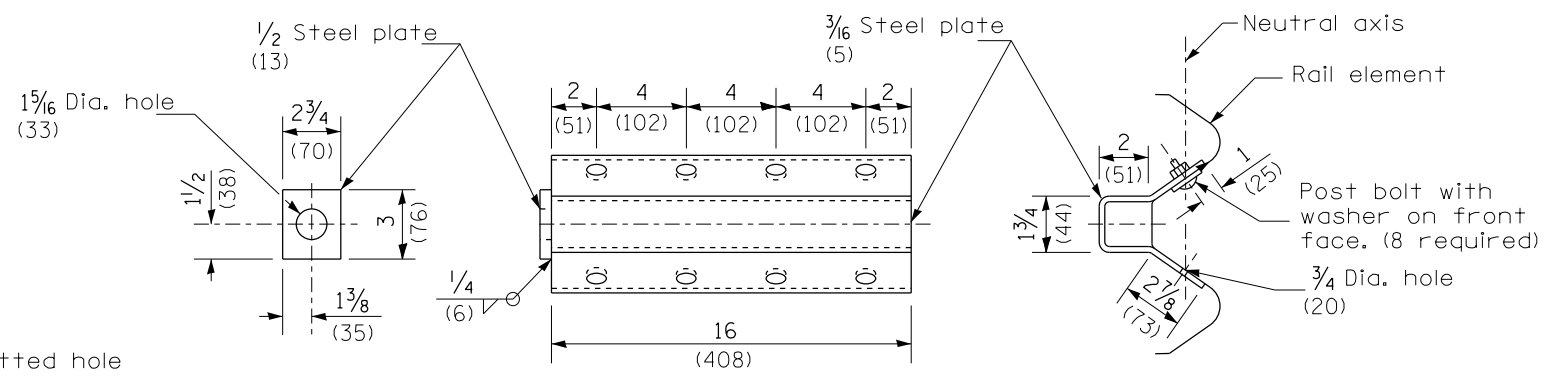
END SHOE

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.

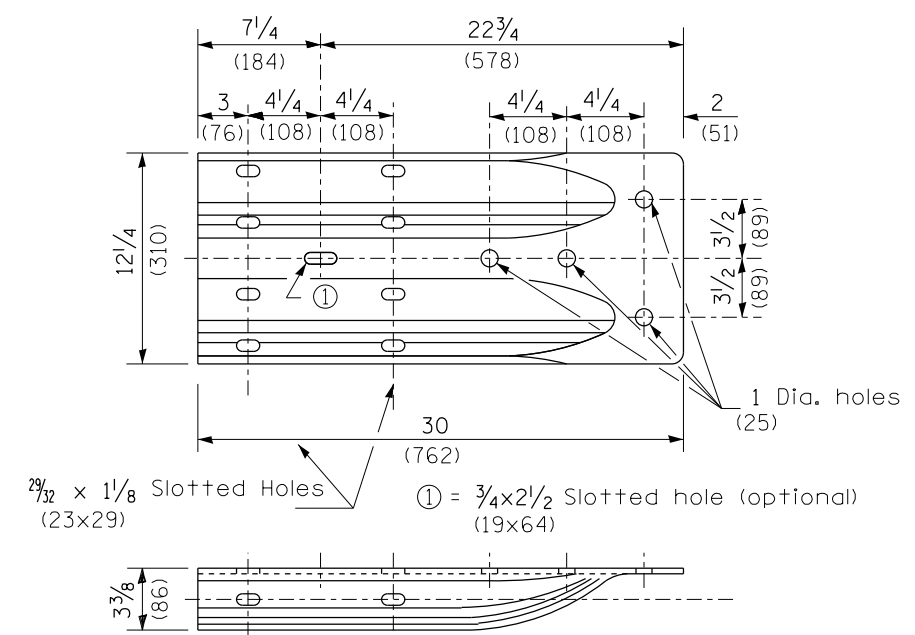
Externally threaded studs protruding from the surface of the concrete will not be permitted.

END SHOE



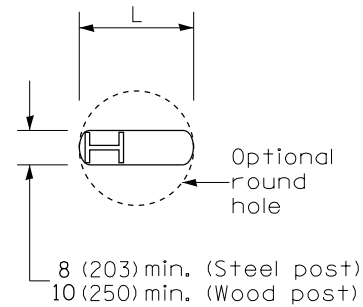
NOTE
Anchor plate T shall be used to attach cable assembly to guardrail when required on traffic barrier terminals.

ANCHOR PLATE T DETAILS

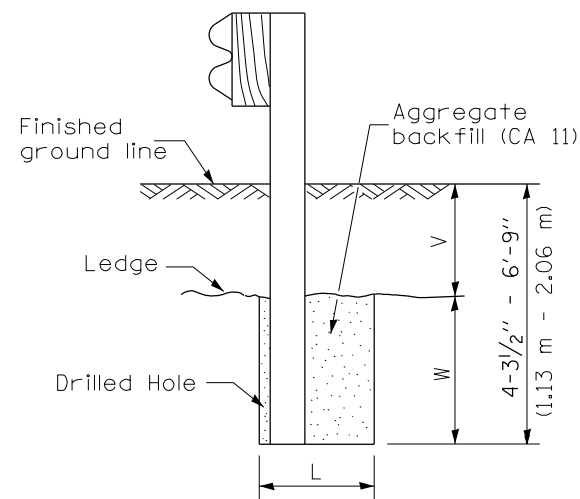


ALTERNATE END SHOE

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



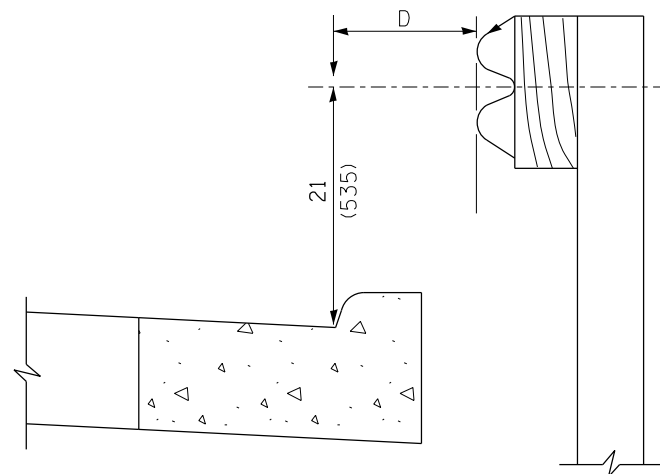
PLAN



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

ELEVATION

FOOTING FOR POST WHEN IMPERVIOUS MATERIAL IS ENCOUNTERED

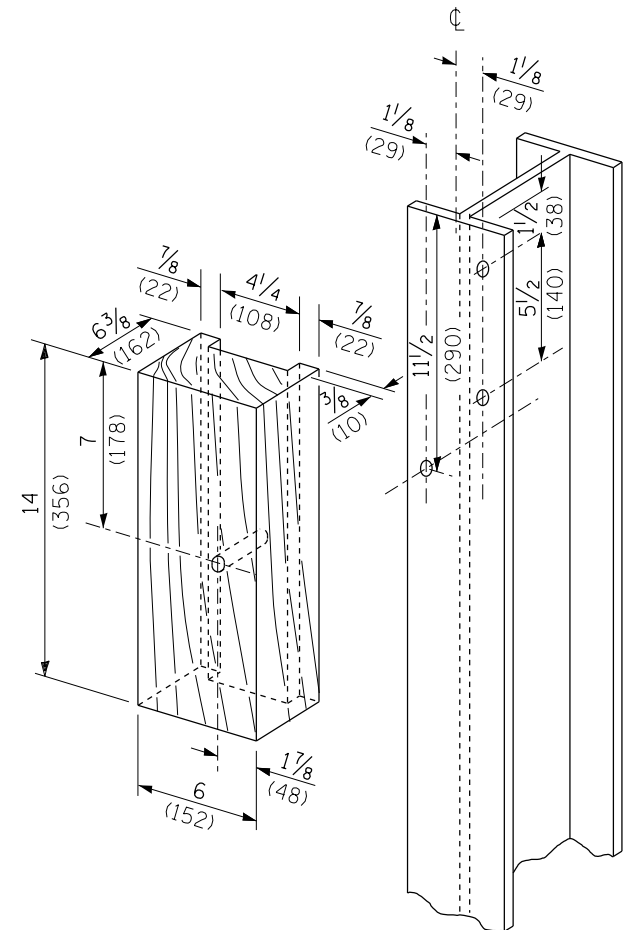


Note:
If it is necessary for D to be more than 12 (300) and less than 10'-0" (3.0 m) type M-2 (M-5) curb and gutter (Std. 606001) shall be used in front of and in advance of the guardrail.

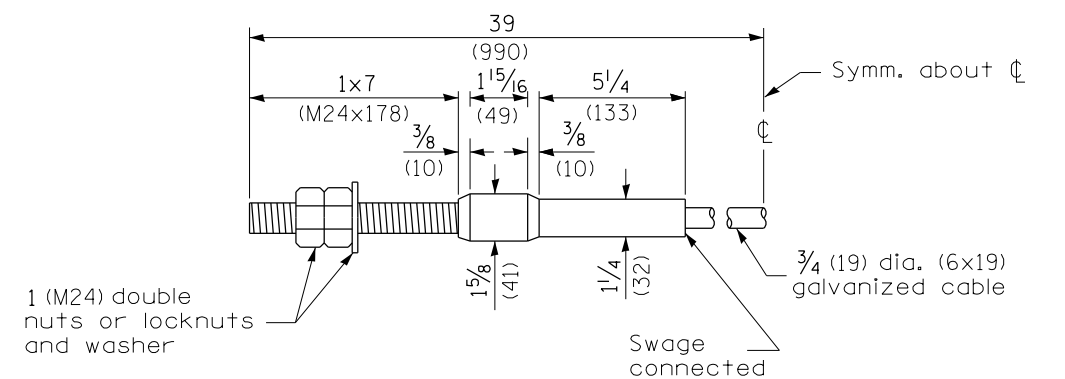
GUARDRAIL PLACED BEHIND CURB

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

V	W	L	
		Steel Post	Wood Post
0 - 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 - 1.13 m)	12 - 0 (305 - 0)	8 (203)	10 (250)



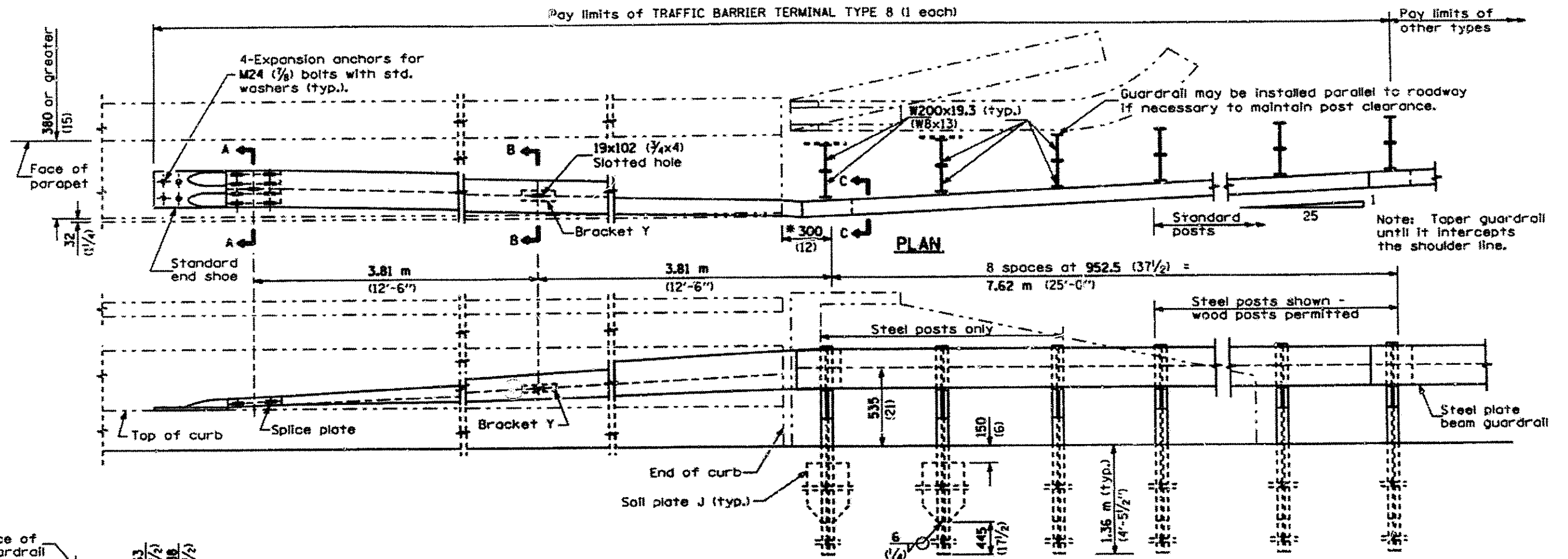
WOOD BLOCK-OUT AND STEEL POST DETAILS



CABLE ASSEMBLY

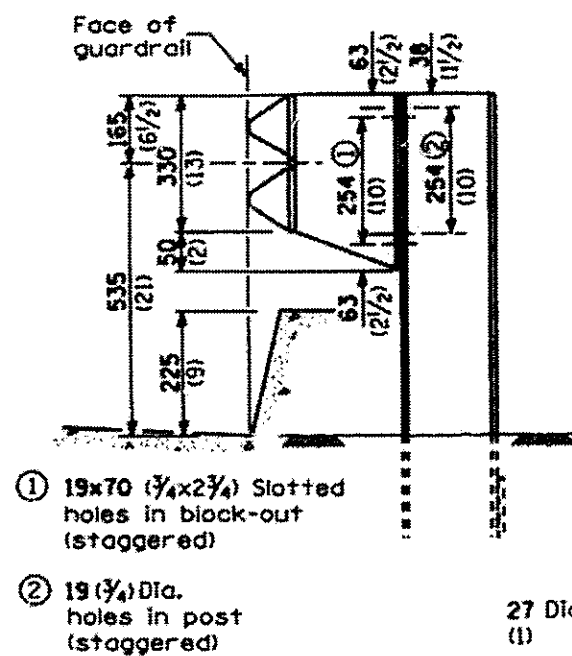
(18,100 kg (40,000 lbs.) min. breaking strength)
Tighten to taut tension.

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

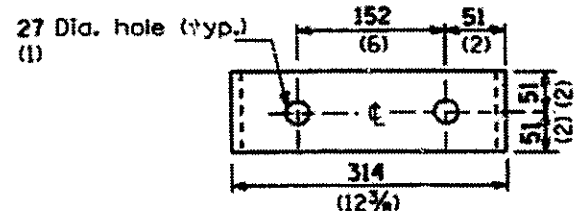
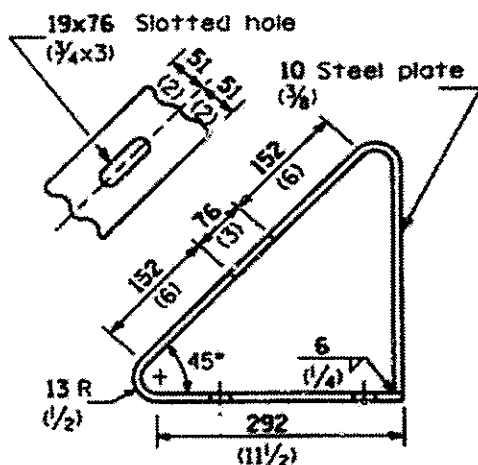


PLAN

ELEVATION

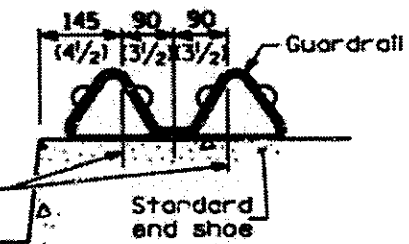


SECTION C-C

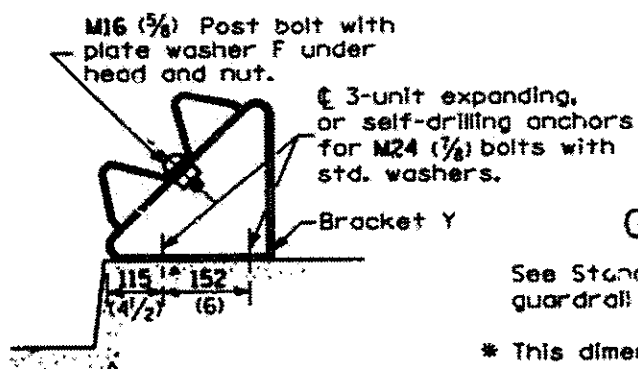


BRACKET Y

3-unit expanding, or self-drilling anchors for M24 (3/8) bolts with std. washers.



SECTION A-A



SECTION B-B

4-19 (3/4) Dia. holes with M16 (3/8) hex head bolts with std. hex nut (typ.)

SOIL PLATE J & ALTERNATE CONNECTION DETAILS

GENERAL NOTES

See Standard 2230 for details of guardrail not shown.

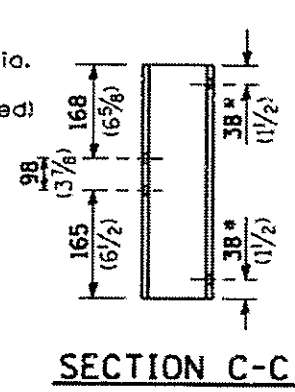
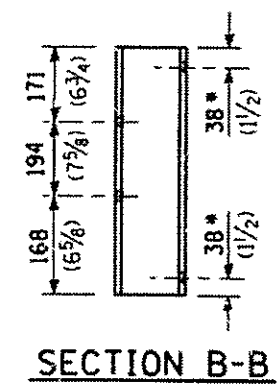
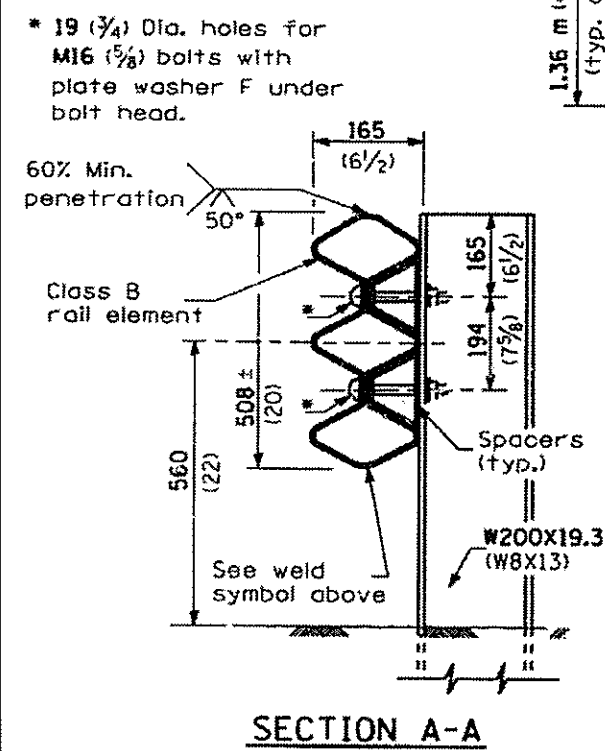
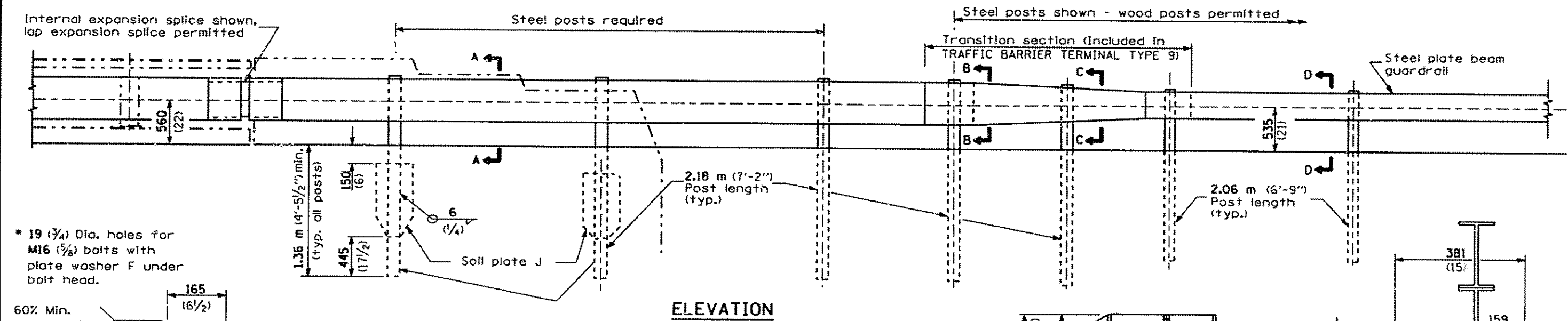
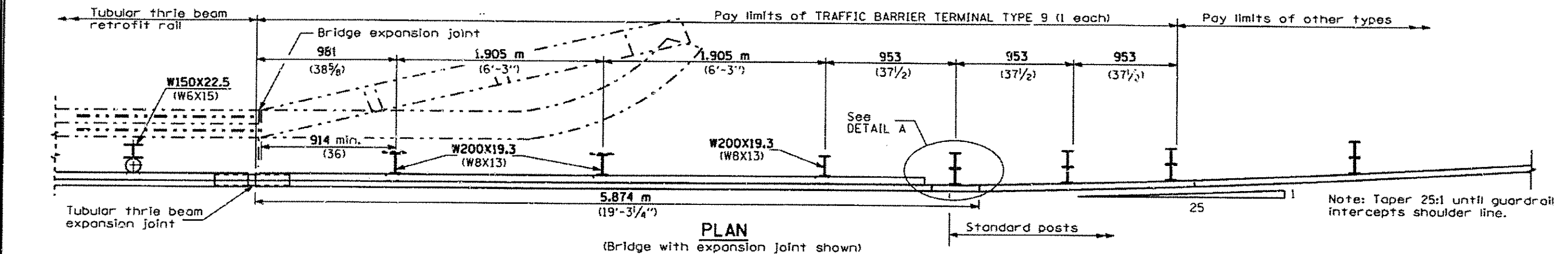
* This dimension may be increased to fit field conditions. This post shall be located first. The layout of the terminal shall be determined by its location.

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

(UN)

DETAIL INCLUDED FOR REPAIR ONLY

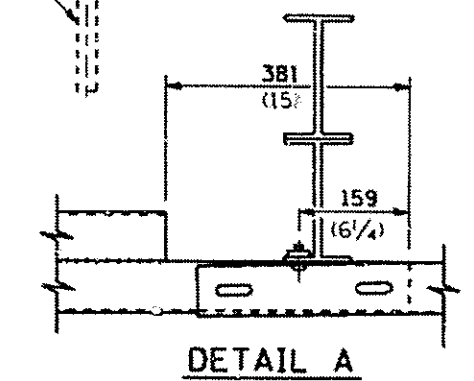
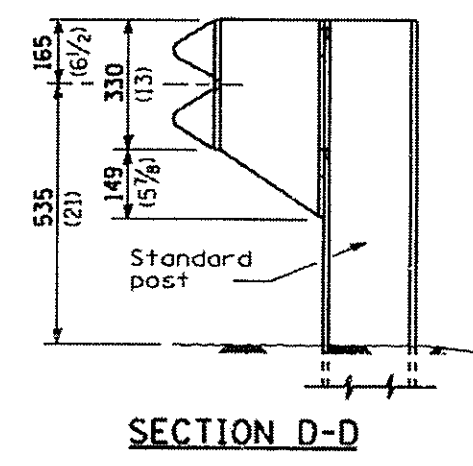
FILE NAME =	USER NAME = hafnerm	DESIGNED =	REVISED =	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING TRAFFIC BARRIER TERMINAL TYPE 8	F.A. RTE.	SECTION D4 GUARDRAIL REPAIRS 2016-MCHD	COUNTY VARIOUS	TOTAL SHEETS 27	SHEET NO. 23
per\11084E81DINTEG\Illinois.gov\PI001\Documents\DOT Offices\District 4\Projects\04-16\04-16-001\04-16-001-001.dwg		04-16-001-001.dwg	04-16-001-001.dwg							
PLT SCALE = 40.0000 1/4 in.	CHECKED =	REVISOR =	REVISOR =							
PLT DATE = 1/8/2016	DATE =	REVISOR =	REVISOR =							
Default					SCALE: SHEET 1 OF 1 SHEETS STA. TO STA.					
										ILLINOIS FED. AID PROJECT CONTRACT NO. 68C77



DETAILS of BLOCK-OUTS

4-19 (3/4) Dia. holes with M16 (5/8) hex head bolts with std. hex nut (typ.)

SOIL PLATE J & ALTERNATE CONNECTION DETAILS



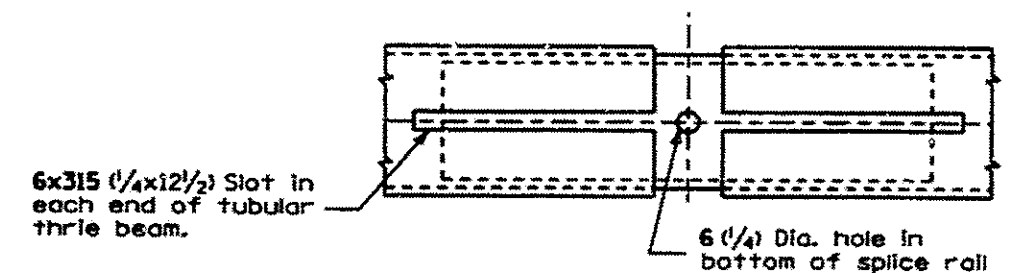
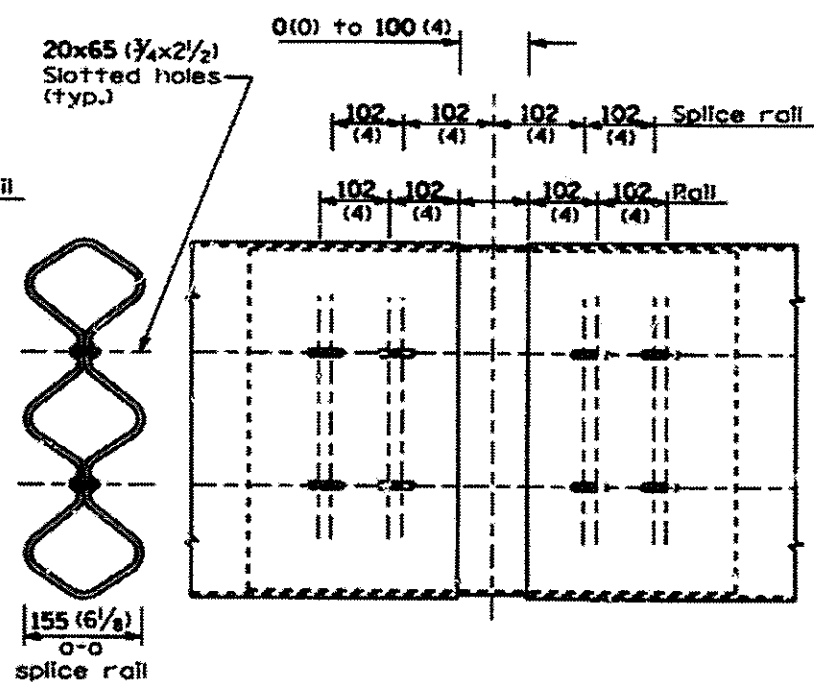
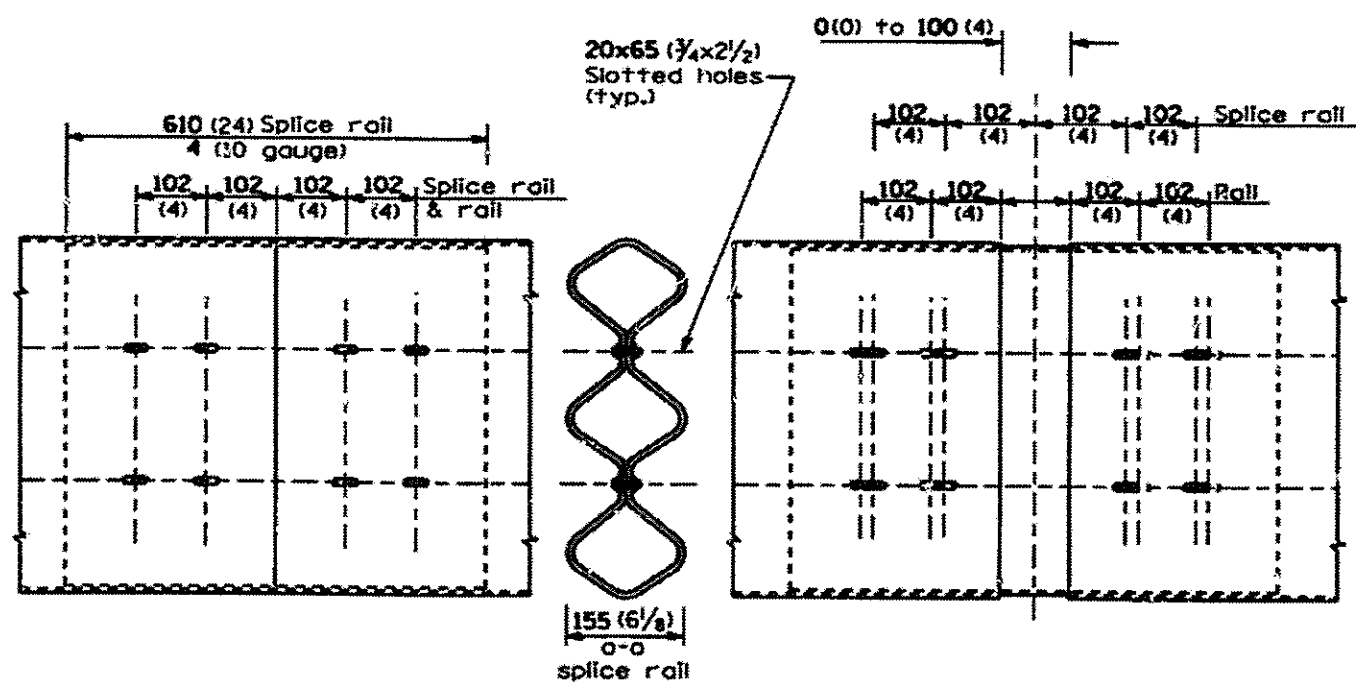
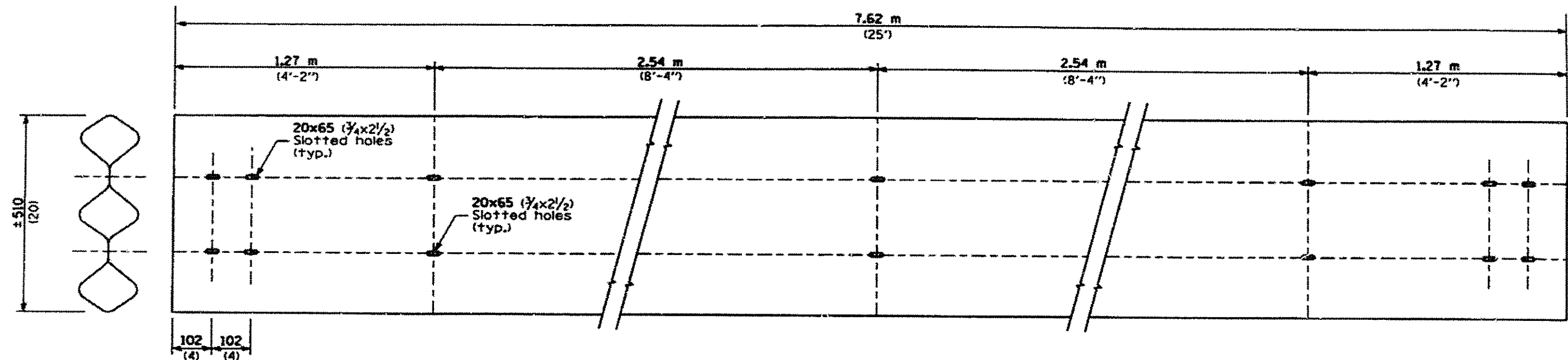
GENERAL NOTES

See Standards 2230 and 2348 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 2348.

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

DETAIL INCLUDED FOR REPAIR ONLY



BOTTOM VIEW OF INTERNAL
EXPANSION SPLICE JOINT

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

DN

**DETAIL INCLUDED
FOR REPAIR ONLY**

FILE NAME =	USER NAME = hofnerom	DESIGNED =	REVISED =	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING TUBULAR THRIE BEAM RETROFIT RAIL FOR BRIDGES	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
pw\\IL084EBID\INTEG\Illinois.gov\PIDOT\Documents\DOT Offices\District 4\Projects\04_08\Drawings\CADD\Drawings\0468C77-CADD		REVISED =				VAR	D4 GUARDRAIL REPAIRS 2016-NCRD	VARIOUS	27	25	
PLOT SCALE = 40.0000 ' / in.	CHECKED =	REVISED =				CONTRACT NO. 68C77					
PLOT DATE = 1/8/2016	DATE =	REVISED =				SCALE:	SHEET 1	OF 3 SHEETS	STA.	TO STA.	ILLINOIS FED. AID PROJECT



**DETAIL INCLUDED
FOR REPAIR ONLY**

FILE NAME =	USER NAME = hofneram	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING TUBULAR THRIE BEAM RETROFIT RAIL FOR BRIDGES				F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
pwt\VL084EBID\INTEG\Illinois.gov\PIDOT\Documents\PIDOT Offices\District 4\Projects\DA468C77-CA00.d		CHECKED -	REVISED -						VAR	D4 GUARDRAIL REPAIRS 2016-MCHD	VARIOUS	27	26
PLOT SCALE = 40.0000' / in.		DATE = 1/8/2016			SCALE: SHEET 2 OF 3 SHEETS STA. TO STA.				ILLINOIS FED. AID PROJECT CONTRACT NO. 68C77				
Default													

