

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**PROPOSED
HIGHWAY PLANS**

VARIOUS ROUTES
SECTION D4 GUARDRAIL REPAIRS 2014-MCHD

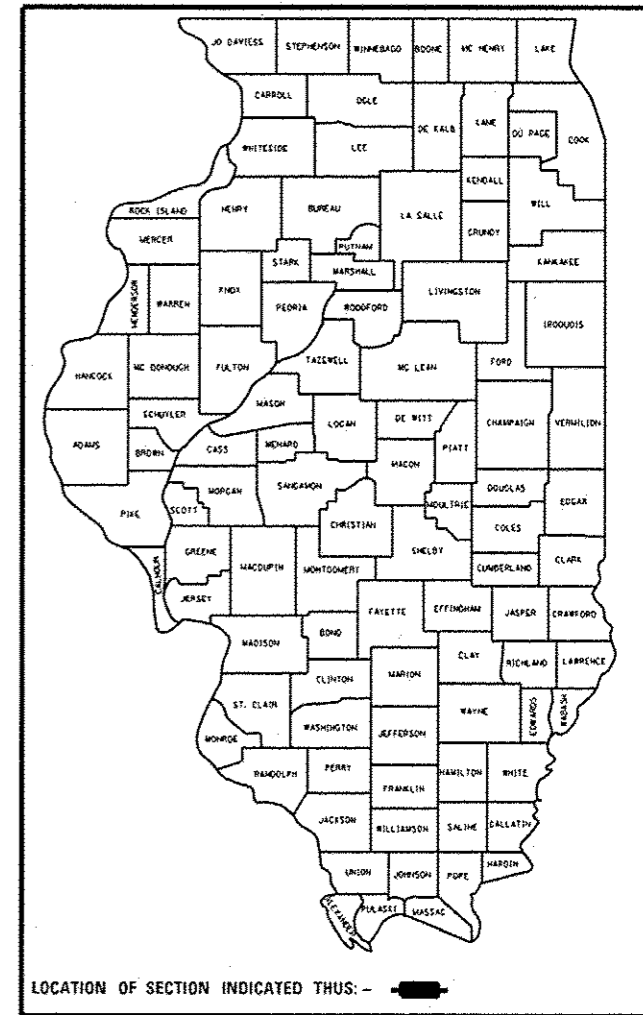
CONTRACT MAINTENANCE
VARIOUS COUNTIES

C-94-116-14

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D4 GUARDRAIL REPAIRS 2014-MCHD	VARIOUS	22	1
ILLINOIS			CONTRACT NO. 68C17	

22+5 = 27 TOTAL SHEETS

D-94-059-14



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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED Dec 5 20 14
Kenneth A. Gurnett
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

Jan 30 20 15
John D. Baranzelli PE, LE
ENGINEER OF DESIGN AND ENVIRONMENT

Jan 30 20 15
Omer Osman PE, LE
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

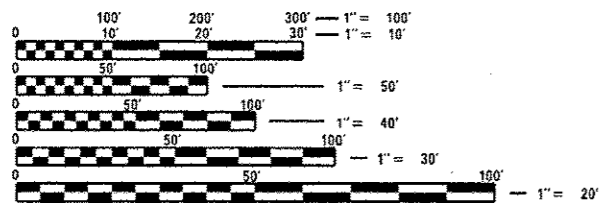
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OF THE STATE OF ILLINOIS

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18. EXISTING GIBRALTAR CABLE BARRIER DETAIL
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STANDARD 630011-D4
23. EXISTING TYPE 8 TERMINAL
24. EXISTING TYPE 9 TERMINAL
- 25-27. EXISTING TUBULAR THREE BEAM RETROFIT RAIL FOR BRIDGES

HIGHWAY STANDARDS

630001-10	701011-04
630101-09	701101-04
630301-06	701201-04
631006-08	701301-04
631011-09	701400-08
631026-06	701406-09
631031-13	701411-09
631046-04	701428
635001-01	701601-09
635006-03	701606-10
635011-02	701701-09
664001-02	701901-04
665001-02	BLR-23-04
701006-05	

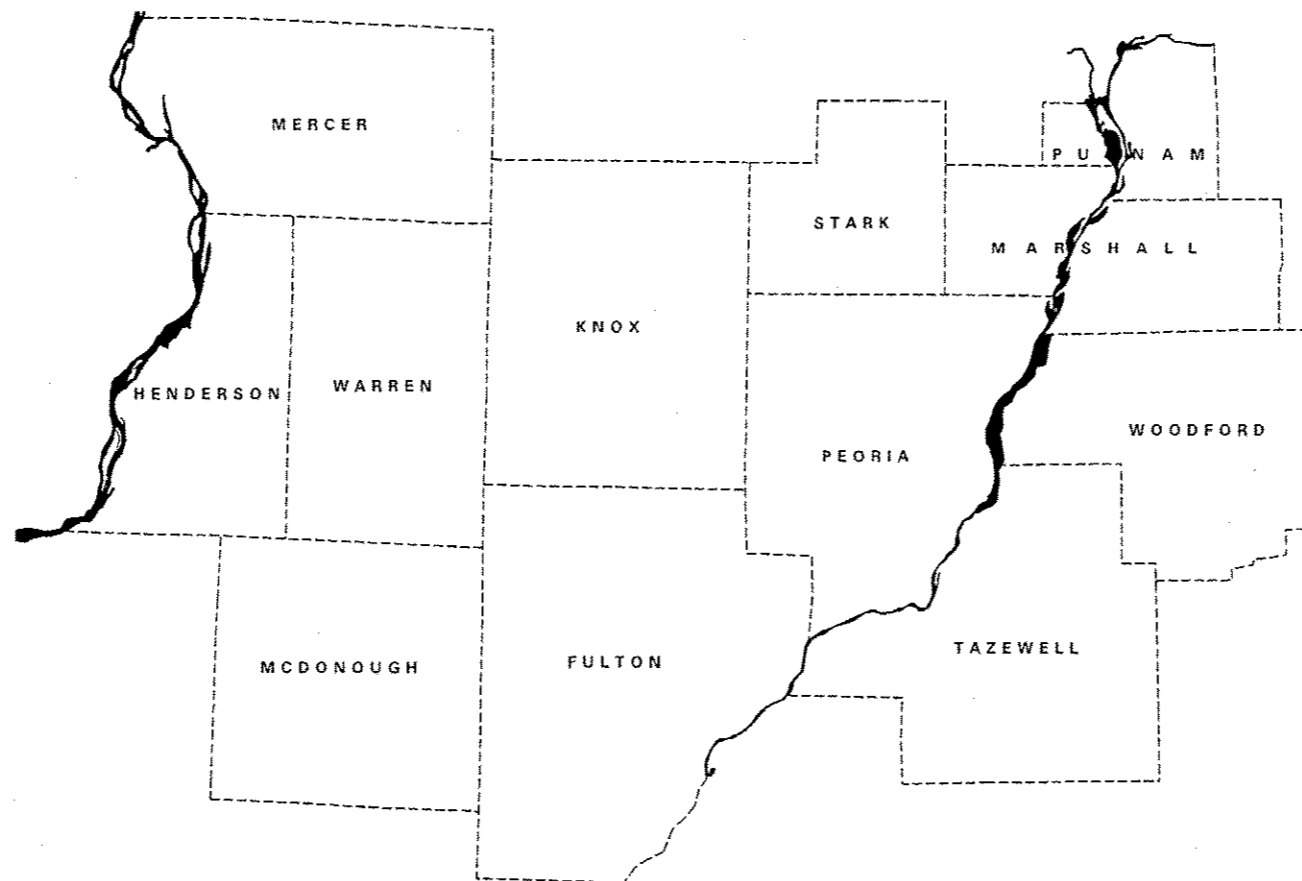


FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD
ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT
CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS
ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
OR 811

PROJECT ENGINEER MIKE LEWIS (309) 671-3454
PROJECT MANAGER RAYMOND SAMARA (309) 671-3459
CATALOG NO. 035155-00D
CONTRACT NO. 68C17

GROSS LENGTH = NA
NET LENGTH = NA



COMMITMENTS

NO COMMITMENTS HAVE BEEN MADE FOR THIS PROJECT.

JOB SPECIFIC NOTES

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.

TRAFFIC BARRIER TERMINAL TYPE 1 SPECIAL (TANGENT) OR (FLARED) SHALL BE INSTALLED ACCORDING TO HIGHWAY STANDARD 630301 UNLESS OTHERWISE DIRECTED BY THE RESIDENT ENGINEER.

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

FILE NAME * 0468C17-topo.dgn	USER NAME * abuhammad	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	JOB SPECIFIC NOTES & COMMITMENTS	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
Default		DRAWN -	REVISED -			VAR	D4 GUARDRAIL REPAIRS 2014-MCHD	VARIOUS	22	2	
	PLOT SCALE * 40.1826' / in.	CHECKED -	REVISED -			SCALE: SHEET 1 OF 1 SHEETS STA. TO STA.		CONTRACT NO. 68C17			
	PLOT DATE * 11/17/2014	DATE -	REVISED -			[ILLINOIS] FED. AID PROJECT					

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE		
				VARIOUS COUNTIES 100% STATE	VARIOUS COUNTIES 100% STATE	VARIOUS COUNTIES 100% STATE
				MCHD 0021	CONT. MAINT. 0021	HTMCB 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	

FILE NAME = 0468C17-ropo.dgn

USER NAME = abuhanna

DESIGNED -

REVISED -

DRAWN -

REVISED -

PLOT SCALE = 48,1825 1/16 in.

CHECKED -

REVISED -

PLOT DATE = 11/12/2014

DATE -

REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2014-MCHD	VARIOUS	22	3
CONTRACT NO. 68C17			ILLINOIS FED. AID PROJECT	

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	
78200410	GUARDRAIL MARKERS, TYPE A	EACH	20	14	6	
78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	40	28	12	
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

FILE NAME =
0468C17-10po.dgn

USER NAME = ebuhanov

DESIGNED -

REVISED -

DRAWN -

REVISED -

PLOT SCALE = 48.1826' / in.

CHECKED -

REVISED -

PLOT DATE = 11/12/2014

DATE -

REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2014-MCHD	VARIOUS	22	4
			CONTRACT NO. 68C17	
ILLINOIS FED. AID PROJECT				

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE		
				VARIOUS COUNTIES 100% STATE	VARIOUS COUNTIES 100% STATE	VARIOUS COUNTIES 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 RESETTING 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	

FILE NAME *
0468C17-topo.dgn

USER NAME = abuhannov

DESIGNED -

REVISED -

PLOT SCALE = 40.1826' / in.

DRAWN -

REVISED -

PLOT DATE = 11/12/2014

CHECKED -

REVISED -

DATE -

REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2014-MCHD	VARIOUS	22	5
			CONTRACT NO. 68C17	

ILLINOIS FED. AID PROJECT

ILLINOIS DEPT OF TRANSPORTATION - DIST 4 - WORK ORDER

TO: _____

D/A: _____

MOTORIST-CAUSED DAMAGE REPAIR

FY

JOB NUM: _____

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>
-----------------	-------------	-------------	------------	-------------------	---------------

LIN E

TOTAL CHARGES (This Work Order)\$

SPECIAL INSTRUCTIONS:

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

WORK ORDER COMPLETED: _____ DATE: _____

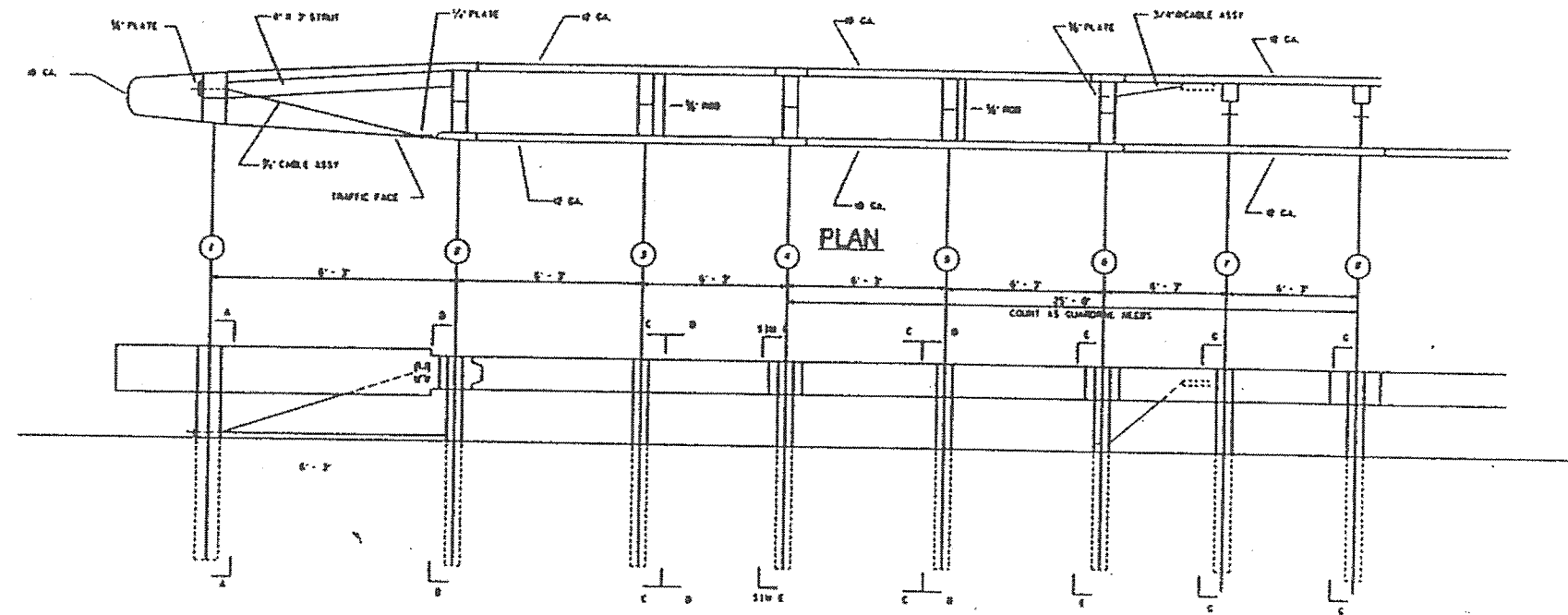
I/WE CERTIFY WORK HAS BEEN PERFORMED ACCORDING TO THE CONTRACT AND HEREBY REQUEST

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

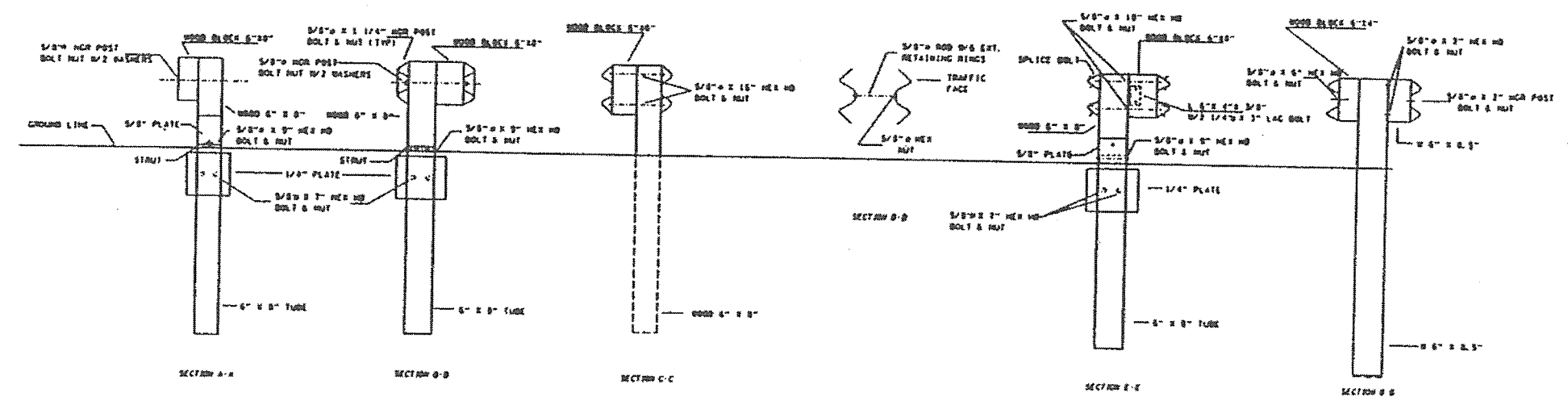
VERIFICATION OF WORK ORDER COMPLETED: _____ BY: _____

APPROVED FOR PAYMENT

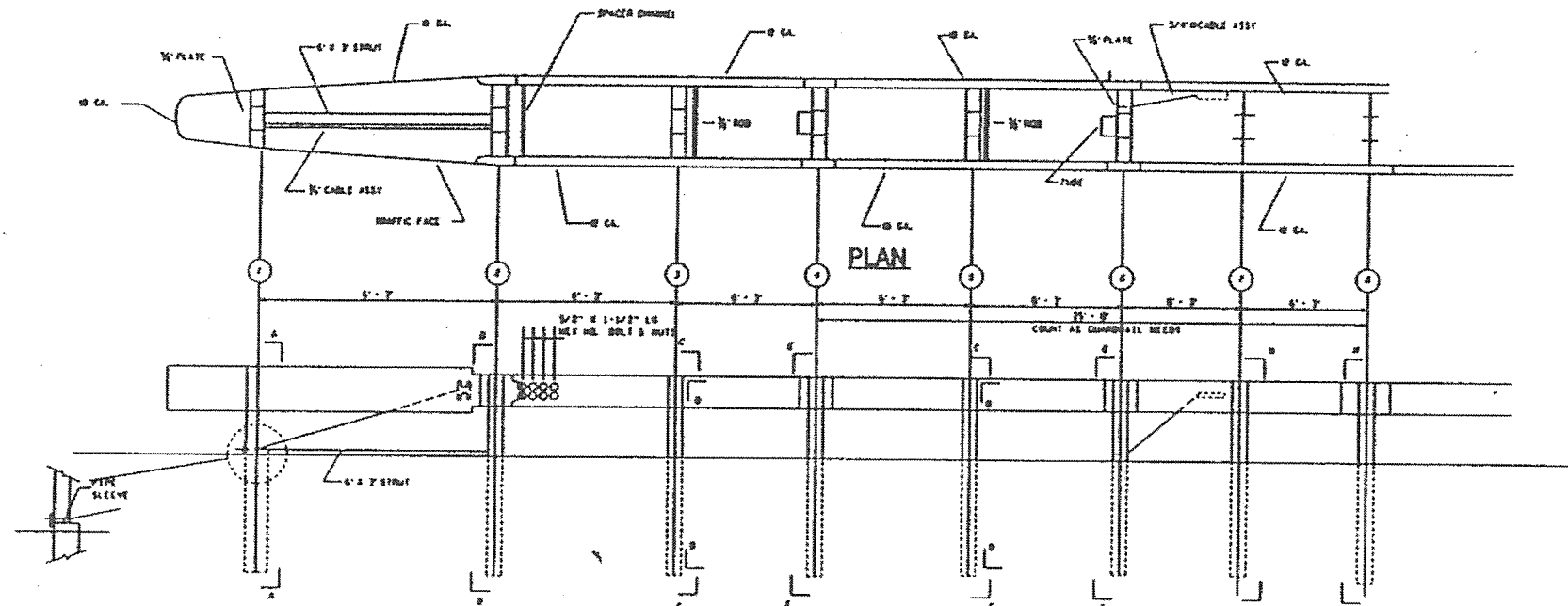
DATE



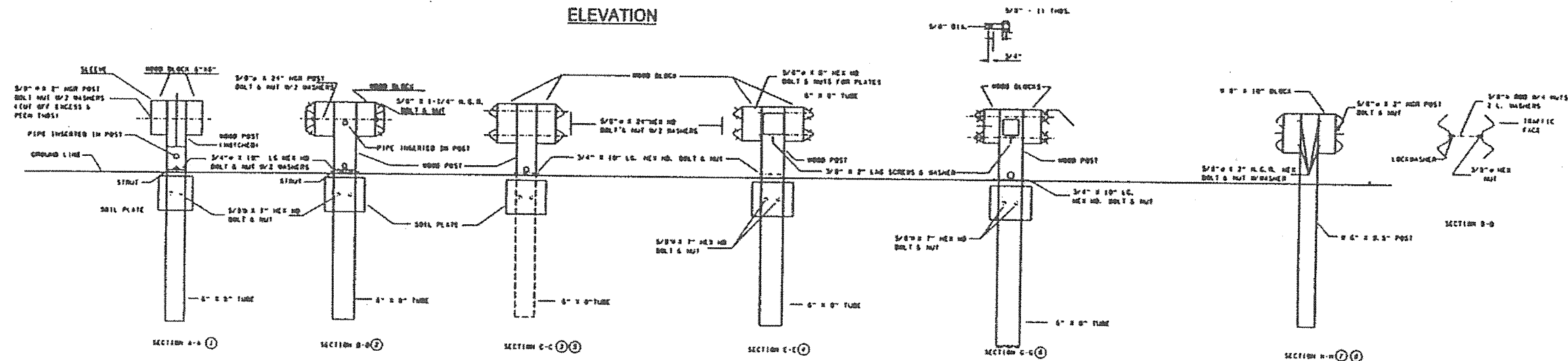
ELEVATION



FILE NAME = 0468C17-topo.dgn	USER NAME = abuhanna*	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING V.A.T. SYSTEM		F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.		
	PLOT SCALE = 40.0000' / in.	CHECKED -	REVISED -		SCALE: 1" = 10'	SHEET 1	OF 1 SHEETS	STA.	TO STA.	VAR	D4 GUARDRAIL REPAIRS 2014-MCHO	VARIOUS	22
Default	PLOT DATE = 11/12/2014	DATE -	REVISED -							CONTRACT NO. 68C17		ILLINOIS FED. AID PROJECT	



ELEVATION



FILE NAME =
0468C17-topo.dgn
Default

USER NAME = abuhannov
PLOT SCALE = 40.0000' / in.
PLOT DATE = 11/12/2014

DESIGNED -
DRAWN -
CHECKED -
DATE -

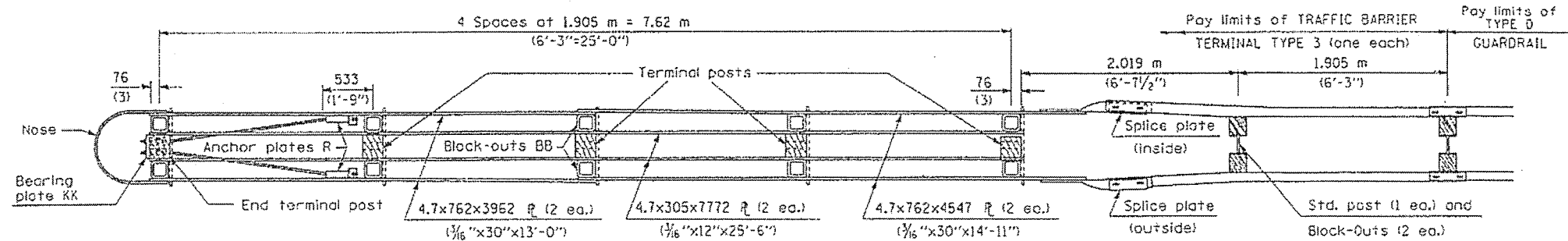
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

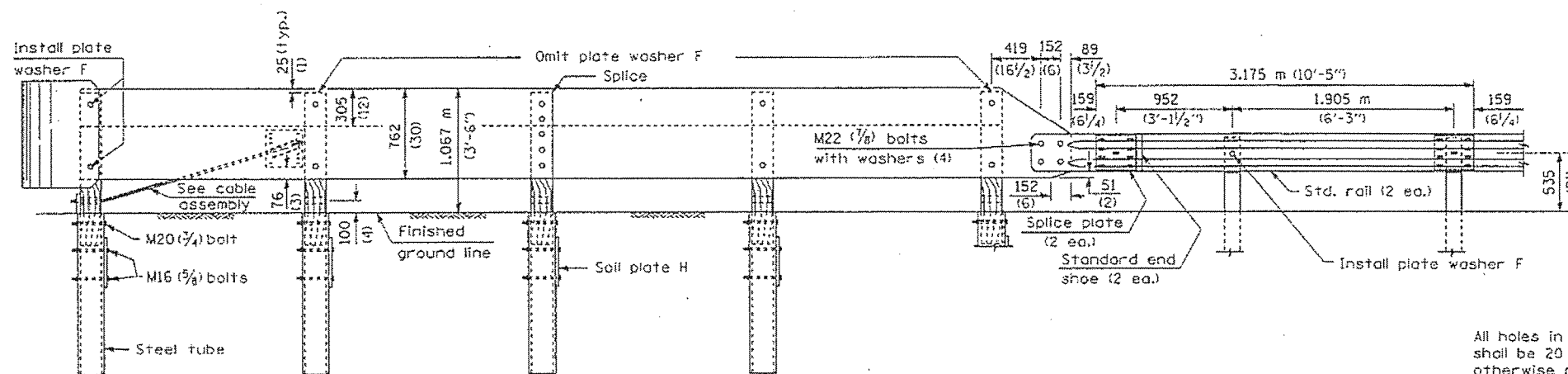
PROPOSED C.A.T. SYSTEM

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	04 GUARDRAIL REPAIRS 2014-MCHO	VARIOUS	22	9
CONTRACT NO. 68C17			ILLINOIS FED. AID PROJECT	



PLAN - TRAFFIC BARRIER TERMINAL TYPE 3



ELEVATION

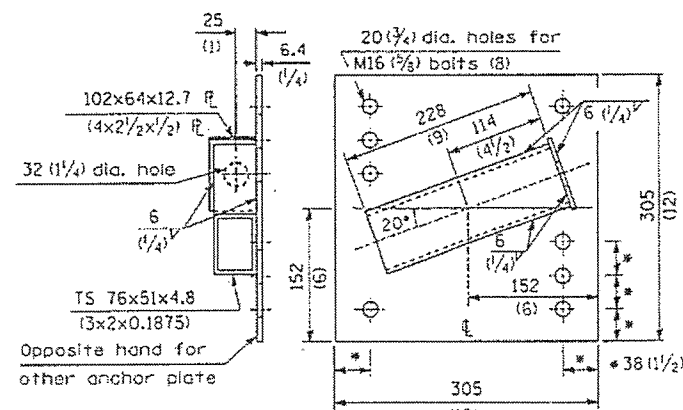
GENERAL NOTES

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

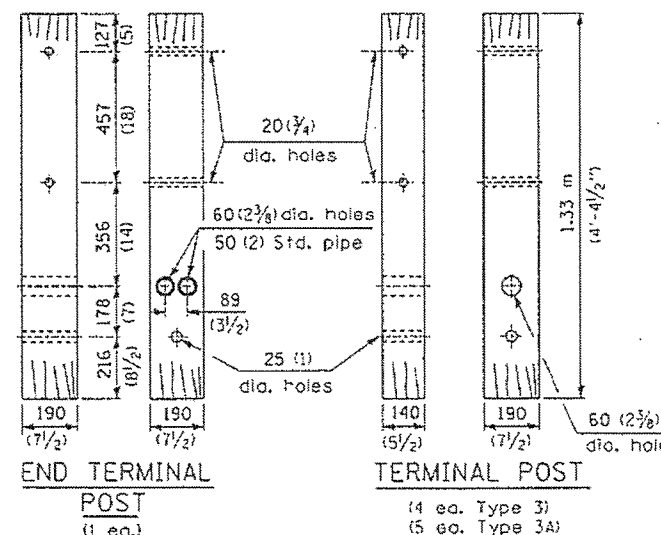
See Standard 630001 for details of guardrail elements not shown.

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

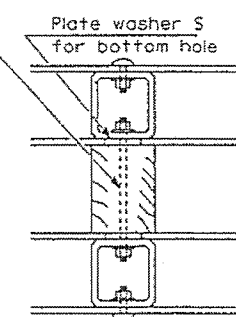
Block-Out AA shall be used at all locations unless otherwise noted.



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)

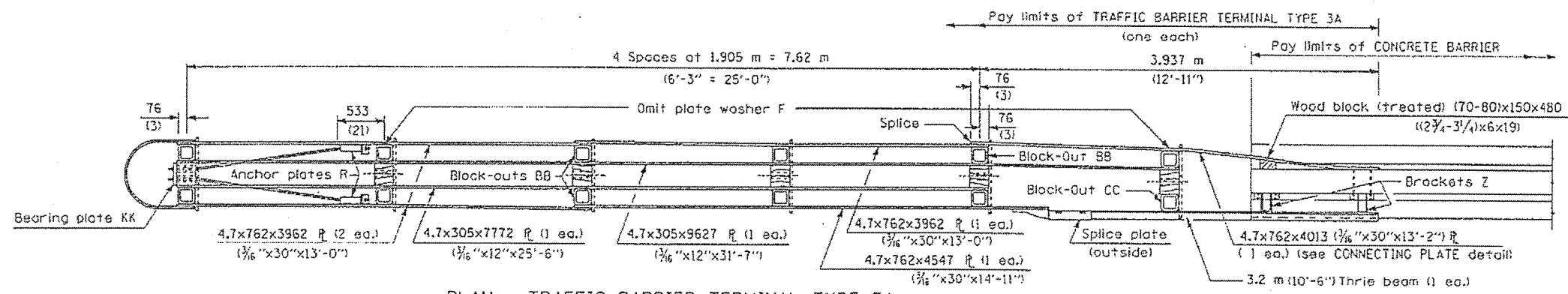


TYPICAL BLOCK-OUT/POST ATTACHMENT

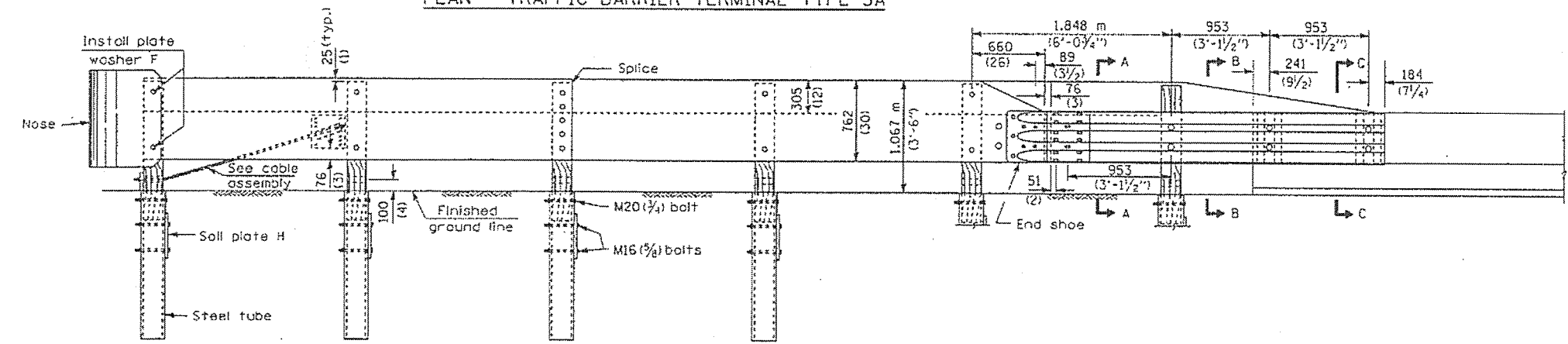
DETAIL INCLUDED FOR REPAIR ONLY

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

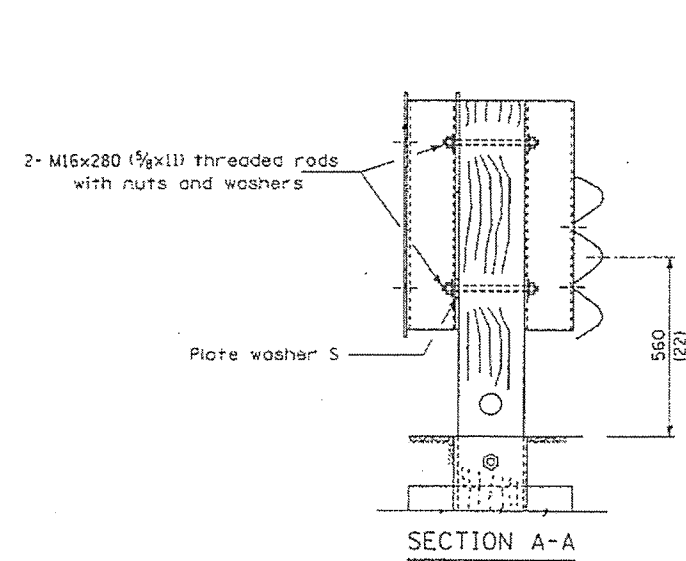
FILE NAME = 0468C17-topo.dgn	USER NAME = abuhannaw	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING TRAFFIC BARRIER TERMINAL TYPE 3 & TYPE 3A				F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.		
PLDT SCALE = 40,0000 / in.	PLDT DATE = 11/17/2014	DRAWN -	REVISED -		SCALE:	SHEET 1	OF 3	SHEETS	STA.	TO STA.	VAR	04 GUARDRAIL REPAIRS 2014-MCHO	VARIOUS	22	10
Default		CHECKED -	REVISED -												
		DATE -	REVISED -												



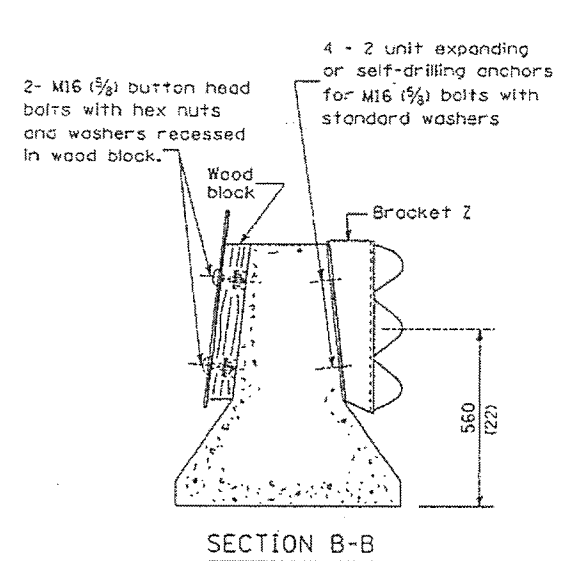
PLAN - TRAFFIC BARRIER TERMINAL TYPE 3A



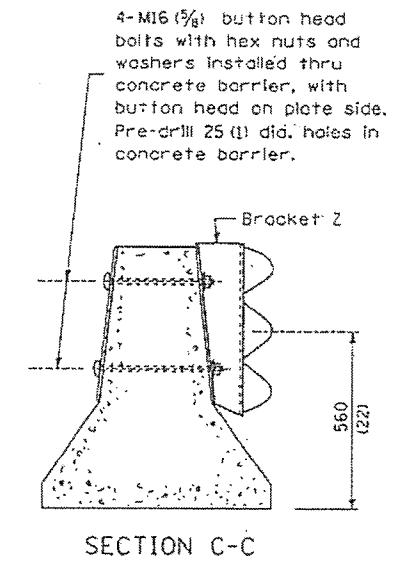
ELEVATION



SECTION A-A



SECTION B-B



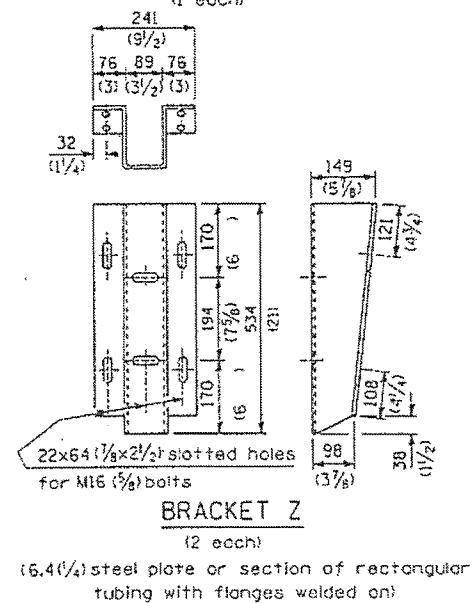
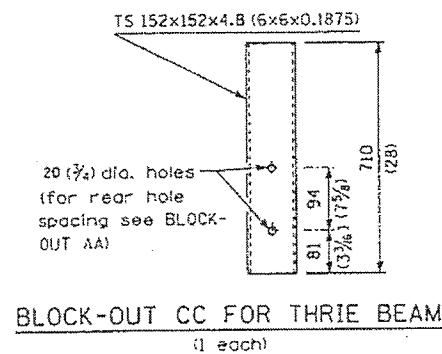
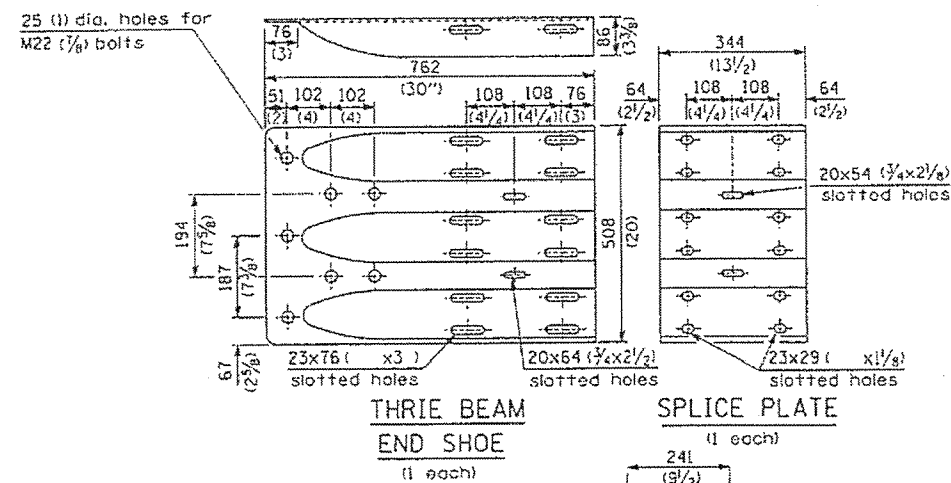
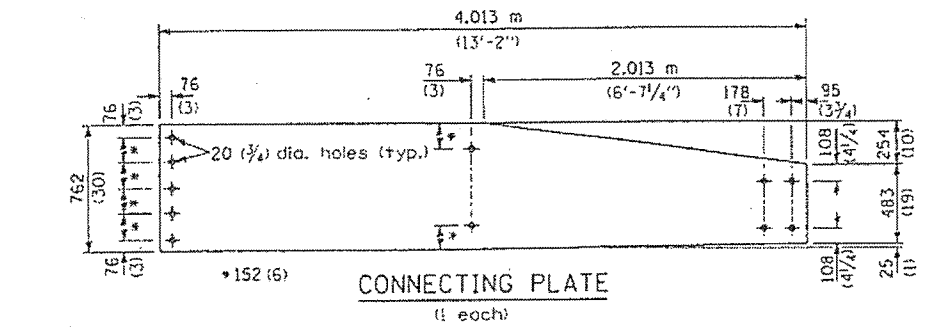
SECTION C-C

DETAIL INCLUDED FOR REPAIR ONLY

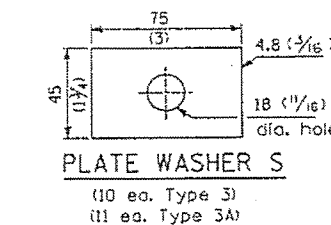
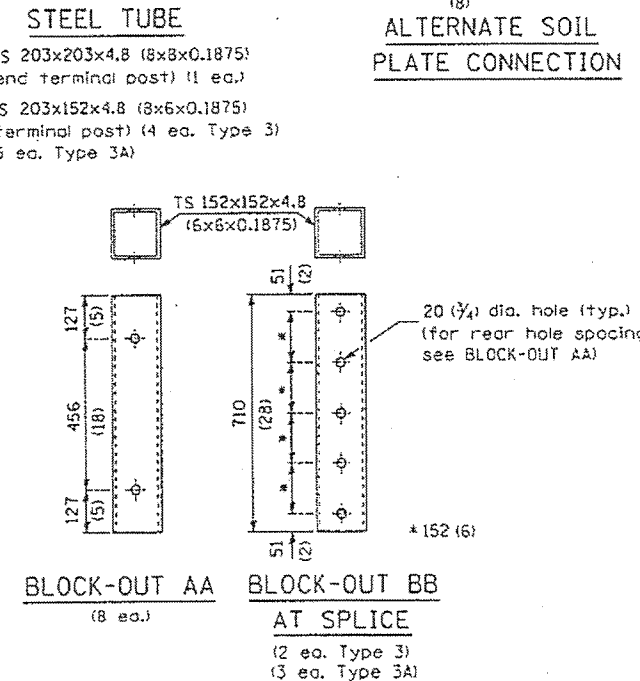
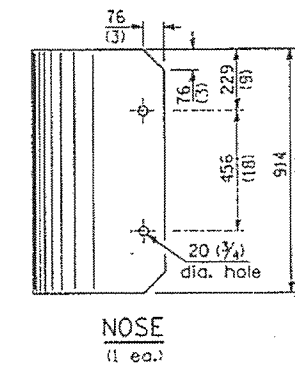
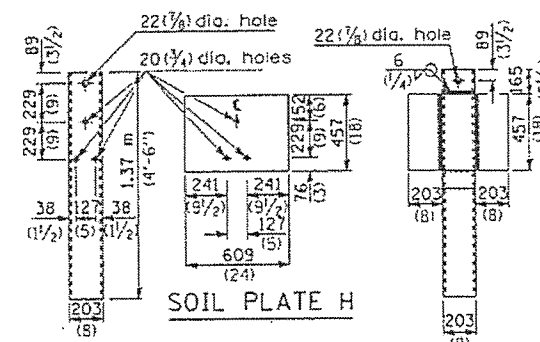
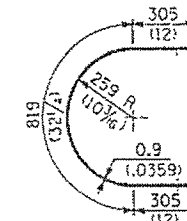
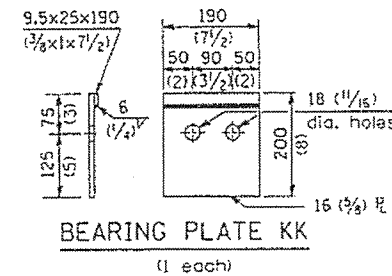
All dimensions are in millimeters (inches) unless otherwise shown.

FILE NAME = 0468C17-topo.dgn	USER NAME = abuhannaw	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING TRAFFIC BARRIER TERMINAL TYPE 3 & TYPE 3A				F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.		
Default	PLOT SCALE = 40.0000' / 1"	CHECKED -	REVISED -		SCALE:	SHEET 2	OF 3	SHEETS	STA.	TO STA.	VAR	D4 GUARDRAIL REPAIRS 2014-MCHD	VARIOUS	22	11
	PLOT DATE = 11/17/2014	DATE -	REVISED -												
															CONTRACT NO. 68C17

TYPE 3A ONLY



TYPE 3 & 3A

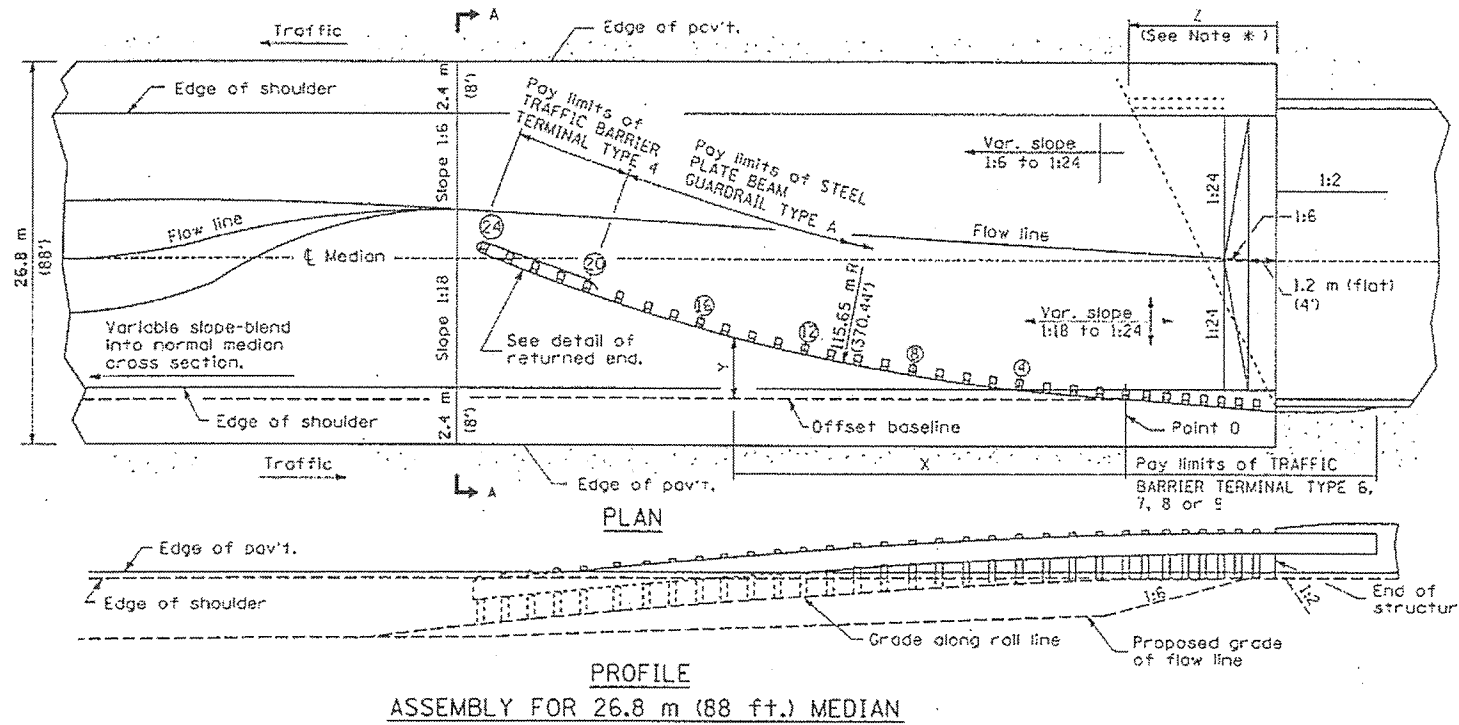


DETAIL INCLUDED FOR REPAIR ONLY

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

FILE NAME = D468C17-topo.dgn	USER NAME = abuhanna	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING TRAFFIC BARRIER TERMINAL TYPE 3 & TYPE 3A			F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.		
		DRAWN -	REVISED -		SCALE:	SHEET 3	OF 3 SHEETS	STA.	TO STA.	VAR	D4 GUARDRAIL REPAIRS 2014-MCHO	VARIOUS	22	12
		CHECKED -	REVISED -											
		DATE -	REVISED -											
Default	PLOT SCALE = 40.0000 1/ in. PLOT DATE = 11/17/2014													

ILLINOIS FED. AID PROJECT
CONTRACT NO. 68C17



OFFSETS TO FACE OF RAIL		
POST	DISTANCE m (ft.)	OFFSET m (ft.)
POINT 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)
⑮	29.94 (98.23)	5.20 (17.05)
⑳	37.13 (121.83)	7.71 (25.3)
㉑	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 guardrail 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").

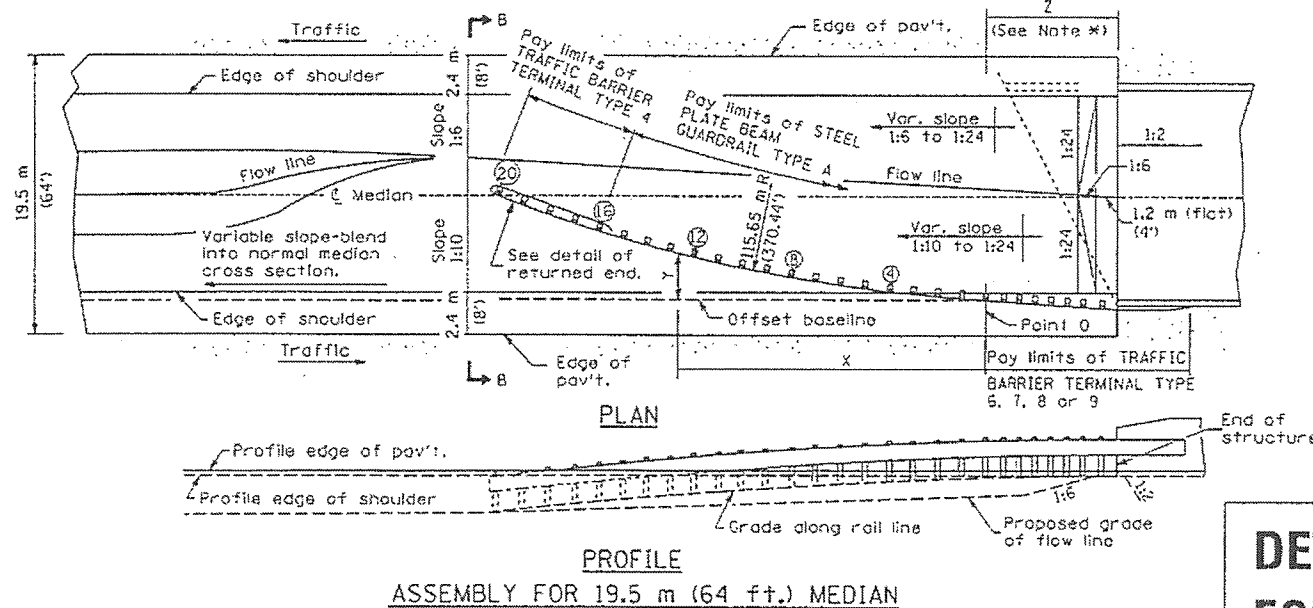
For dual structures that are 90° or skewed left forward, the length of guardrail is appropriate.

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.

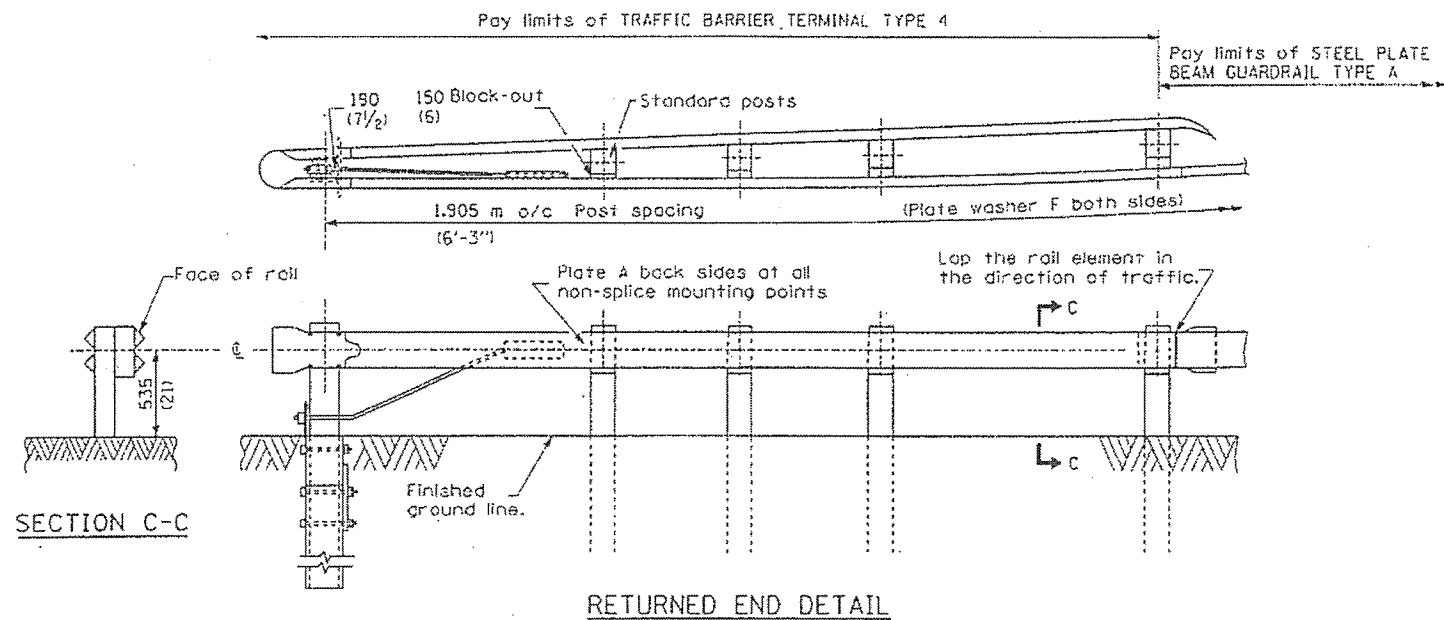
All slopes are expressed as units of vertical displacement to units of horizontal displacement (V:H).

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

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

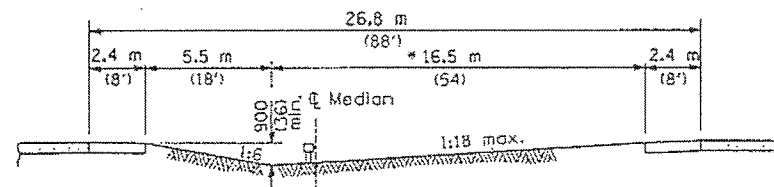


**DETAIL INCLUDED
FOR REPAIR ONLY**

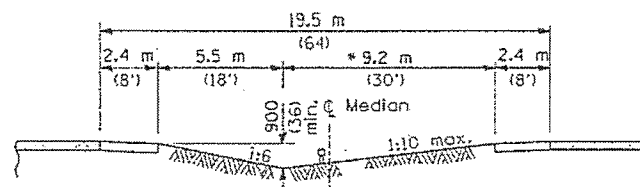


RETURNED END DETAIL

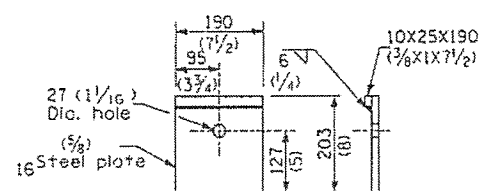
* Adjust this dimension when the width of the shoulders is other than 2.4 m (8').



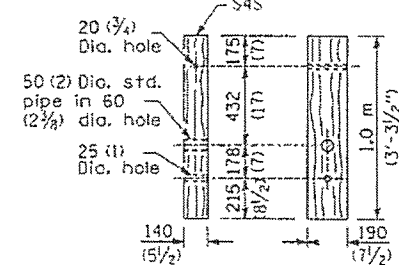
SECTION A-A



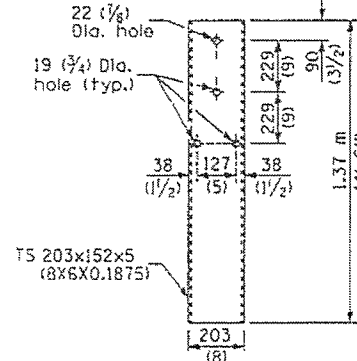
SECTION B-B



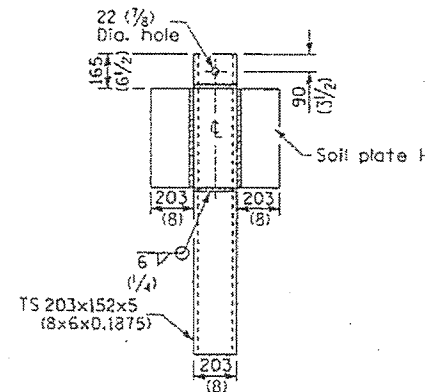
BEARING PLATE K



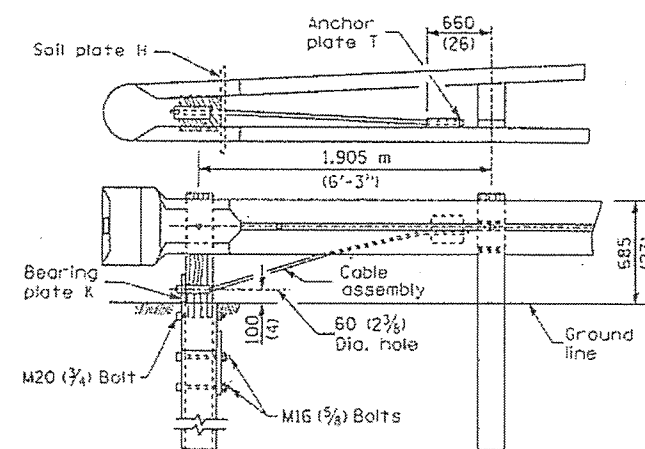
WOOD BREAKAWAY POST



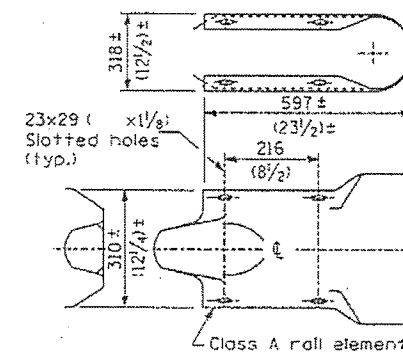
STEEL TUBE



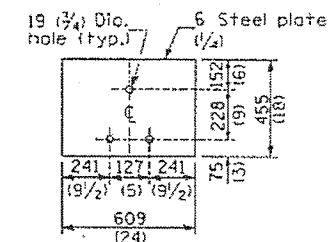
ALTERNATE SOIL PLATE CONNECTION



WOOD POST TUBULAR STEEL FOUNDATION



RETURN END SECTION

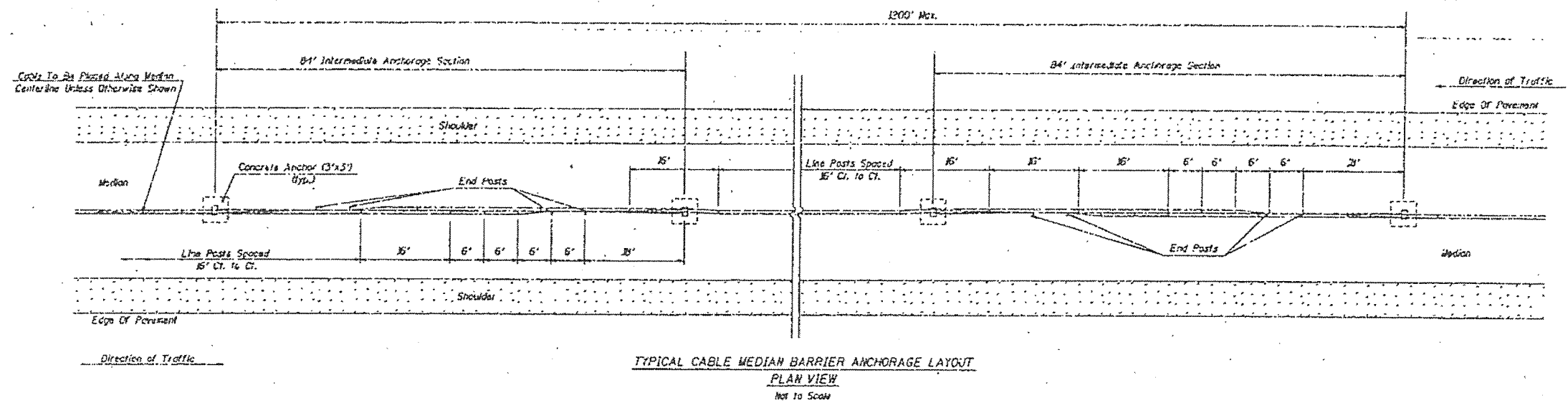


SOIL PLATE H

DETAIL INCLUDED FOR REPAIR ONLY

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

FILE NAME = D468C17-topo.dgn	USER NAME = abuhanna	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING TYPE 4 TERMINAL		F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED -		VAR	D4 GUARDRAIL REPAIRS 2014-MCHD	VARIOUS	22	14		
		CHECKED -	REVISED -		SCALE: SHEET 2 OF 2 SHEETS STA. TO STA.			CONTRACT NO. 68C17			
		DATE -	REVISED -		ILLINOIS FED. AID PROJECT						



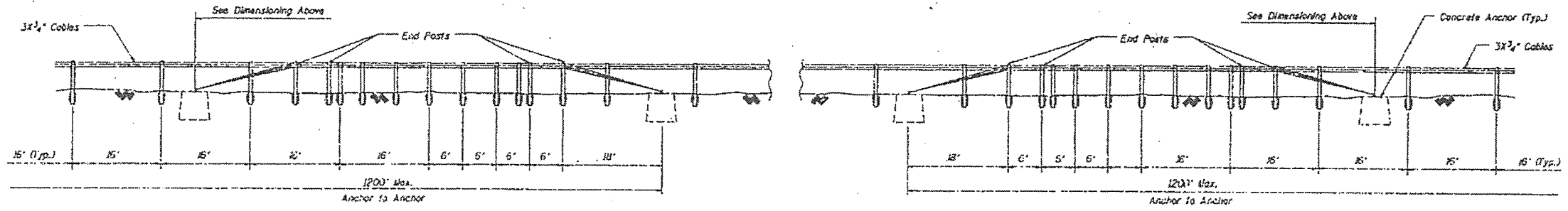
GENERAL NOTE

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

NOTE: This work shall be done in accordance with Section 635 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 line posts unless otherwise specified.
 2. See detail sheets for Post, Concrete Anchor and Assembly Parts specifications.



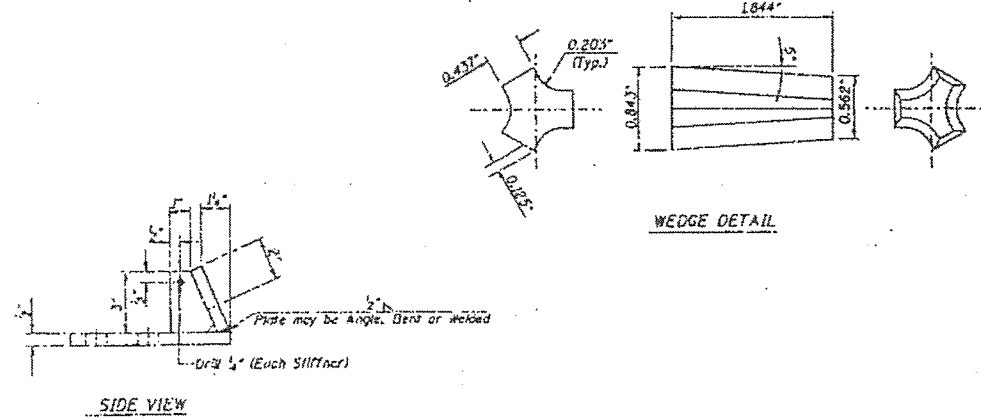
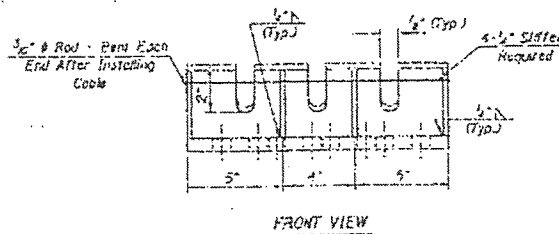
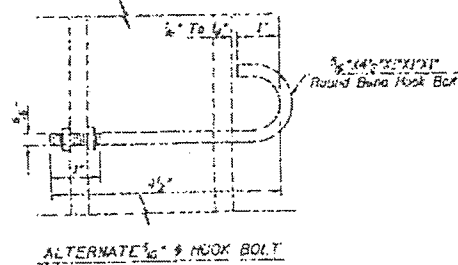
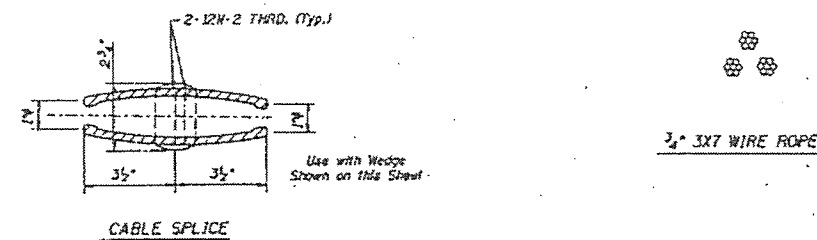
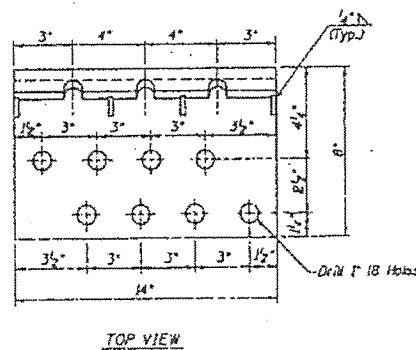
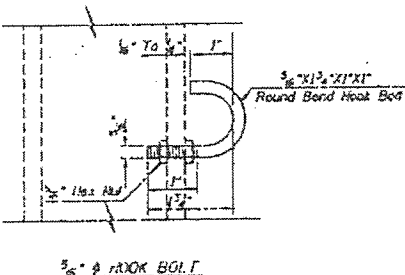
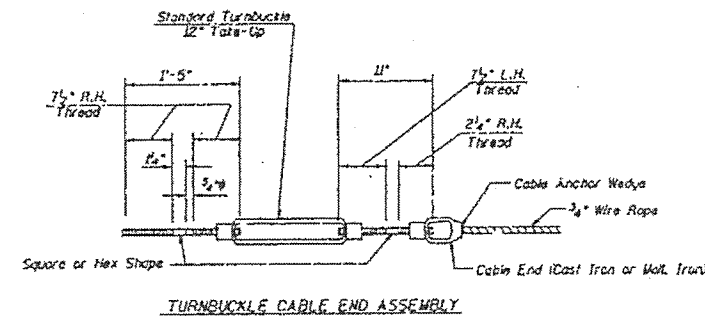
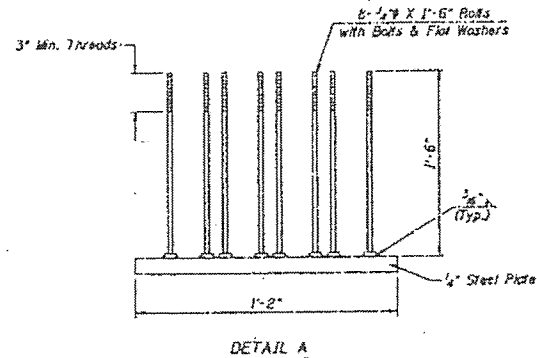
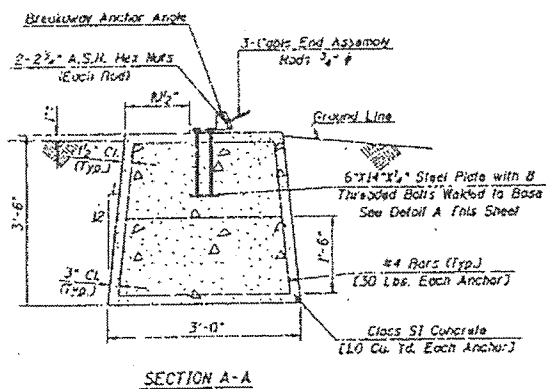
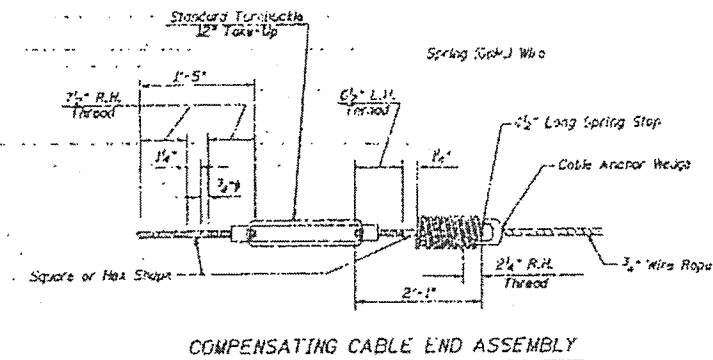
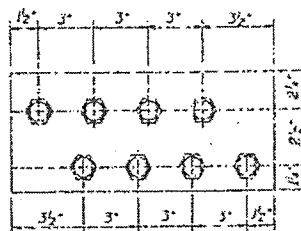
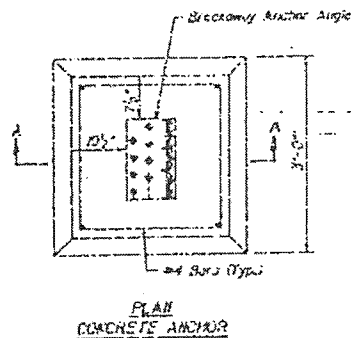
FILE NAME = D468C17-topo.dgn	USER NAME = abuhannaw	DESIGNED -	REVISED -
	PLOT SCALE = 40.0000' / 1" =	DRAWN -	REVISED -
Default	PLOT DATE = 11/12/2014	CHECKED -	REVISED -
		DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING CABLE MEDIUM BARRIER (CABLE ROAD GUARD)

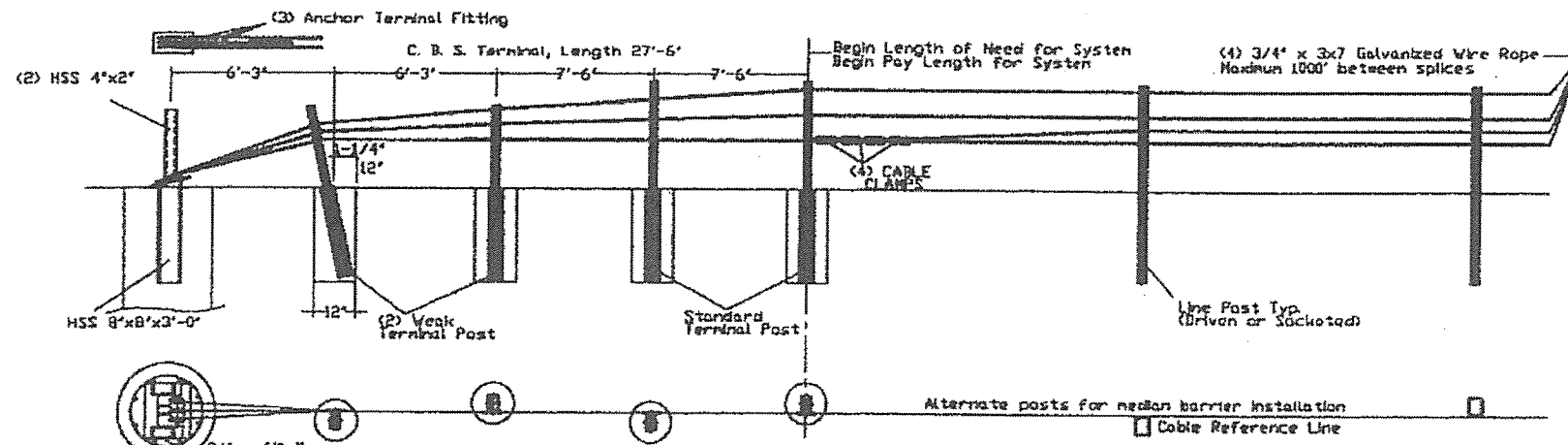
SCALE: SHEET 1 OF 3 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2014-MCHD	VARIOUS	22	15
CONTRACT NO. 68C17				
ILLINOIS FED. AID PROJECT				



BREAKAWAY ANCHOR ANGLE

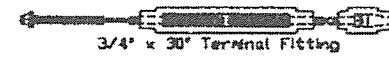
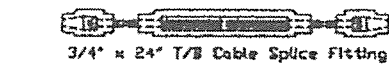
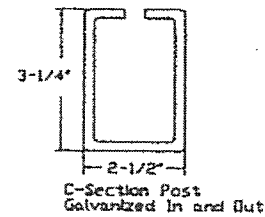
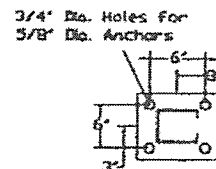
FILE NAME = 0468C17-topo.dgn	USER NAME = abuhanna	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING CABLE MEDIAN BARRIER (CABLE ROAD GUARD)			F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.			
Default		DRAWN -	REVISED -		SCALE:	SHEET 3	OF 3	SHEETS	STA.	TO STA.	VAR	D4 GUARDRAIL REPAIRS 2014-MCHD	VARIOUS	22	17
		CHECKED -	REVISED -												
		DATE -	REVISED -												
		PLOT SCALE = 40.0000 1 / in.													
		PLOT DATE = 11/12/2014													
											CONTRACT NO. 68C17				
											ILLINOIS FED. AID PROJECT				



GENERAL NOTES

- For additional information contact Gibraltar, Inc. at 1-800-495-8957, or see the manufacturer's product manual.
- All concrete shall be minimum 2500 PSI.
- Alternate Post for bi-directional traffic flow. If installed for traffic in one direction install cables on traffic side of posts.
- The Cable Barrier System shall be installed on median shoulders or on depressed medians with slopes of 6:1 or flatter.
- The Cable Barrier System is accepted by the FHWA Test Level - 4.
- See the MUTCD for proper "Barrier" delineation.
- Rock Clause: Where solid rock is encountered
 - For socketed post, continue digging 12" diameter, 15' deep into rock or the required plan depth whichever comes first.
 - For driven post, core drill a 4" diameter hole 18" deep into rock or the required plan depth, whichever comes first.
 - For Anchor post, continue digging 24" diameter, 30' deep into rock or the required plan depth, whichever comes first.
- Every component to be galvanized.

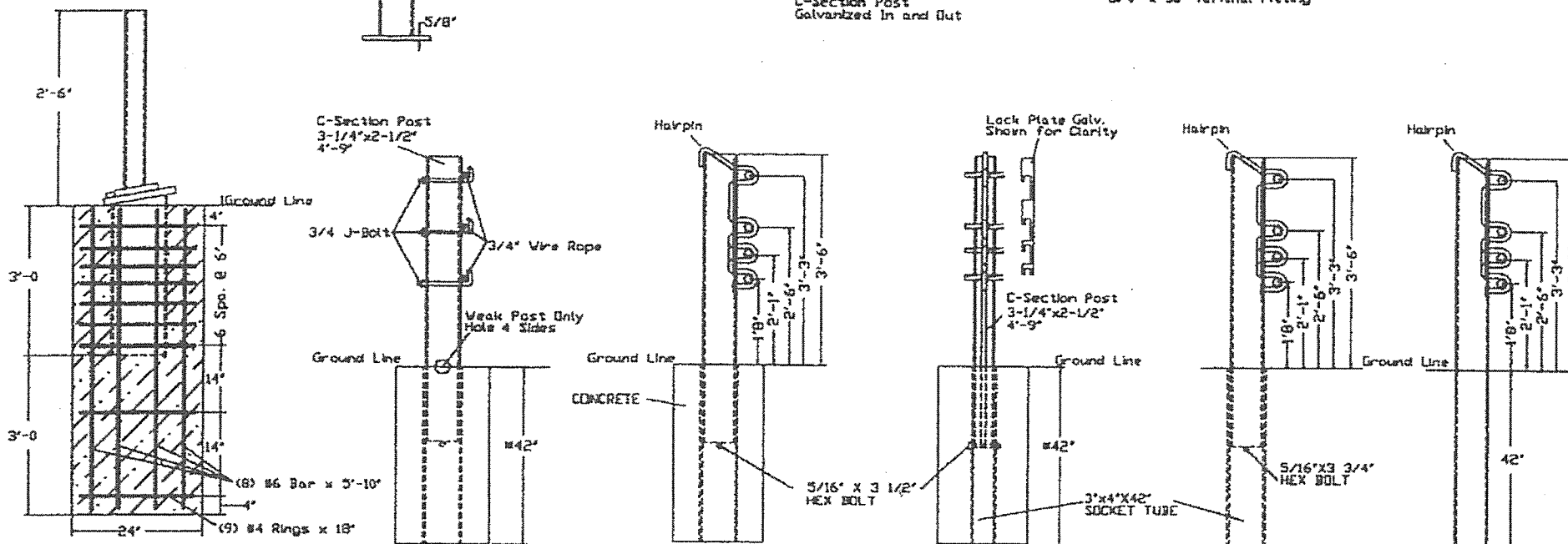
BASE-PLATED POST
For use on Concrete
5/8" Mechanical Anchor
Min. Pullout Strength 10,000 lbs.



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'	26.FT
7'	12.FT
6'8"	10.FT



Cable Release Anchor Post

Terminal Post

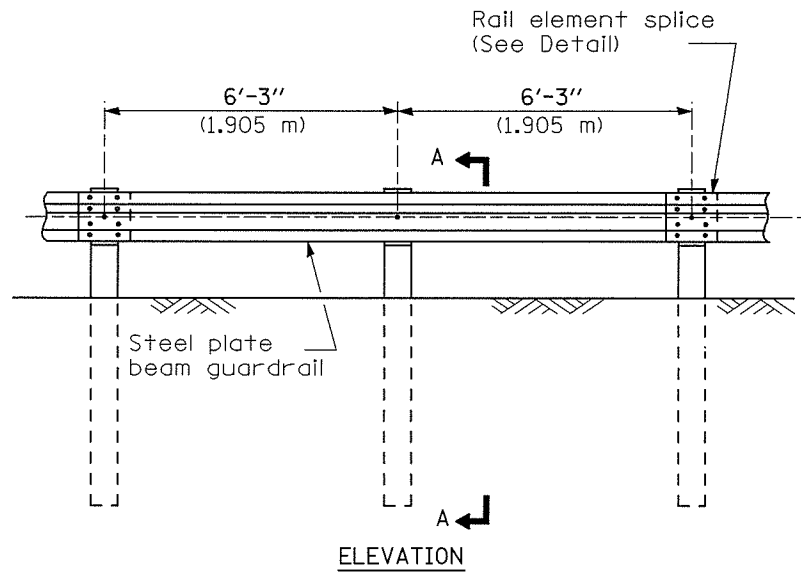
Line Post (Socketed)

Socketed Line Post (Driven)

Line Post (Driven)

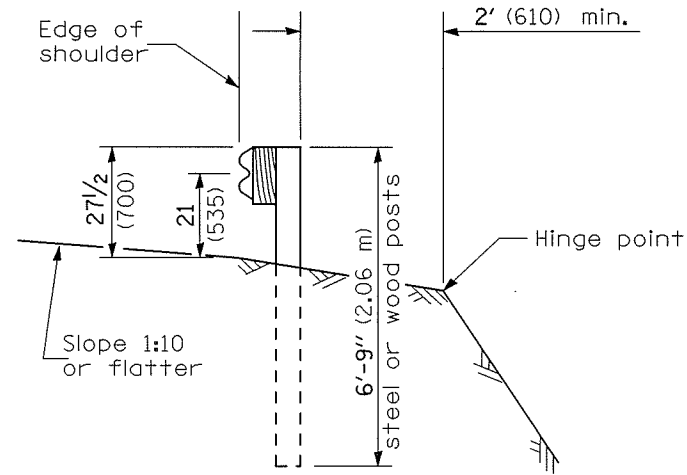
#30"DIA Deep concrete foundation with Min. 18" wide Max Strip
#42"x12"DIA Deep w/o Max Strip

DESIGNER NOTE: Use this CADD Standard when removing and re-erecting existing non-MGS guardrail that was originally 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.

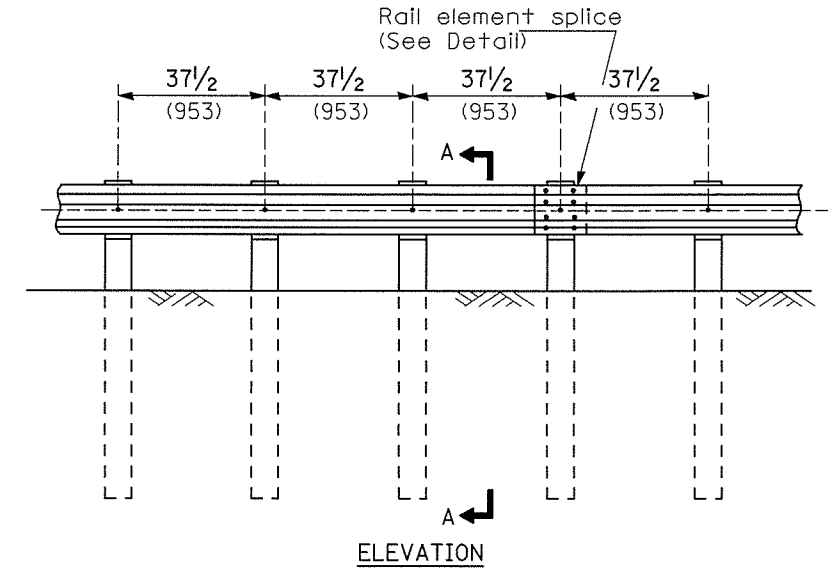


TYPE A

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

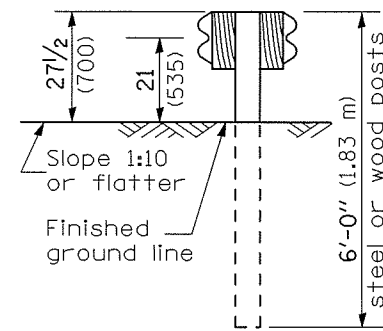


SECTION A-A

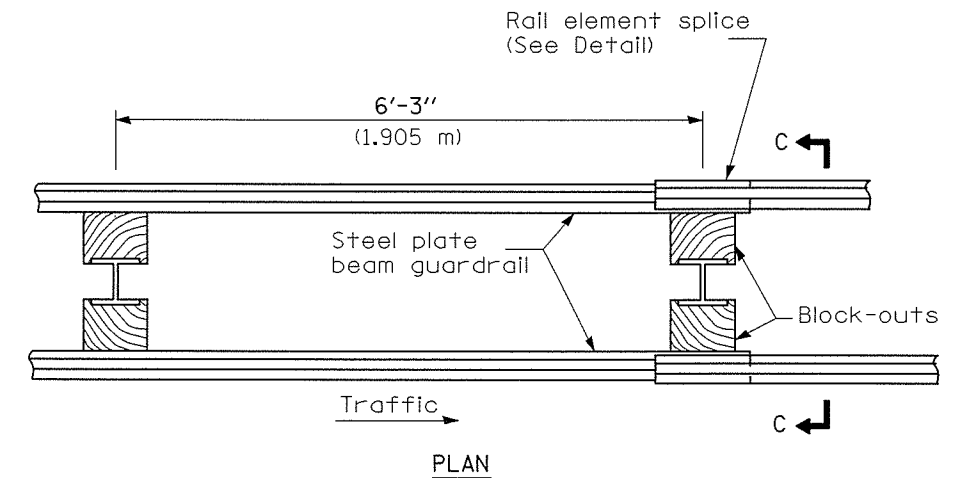


TYPE B

37 1/2 (953) Closed post spacing

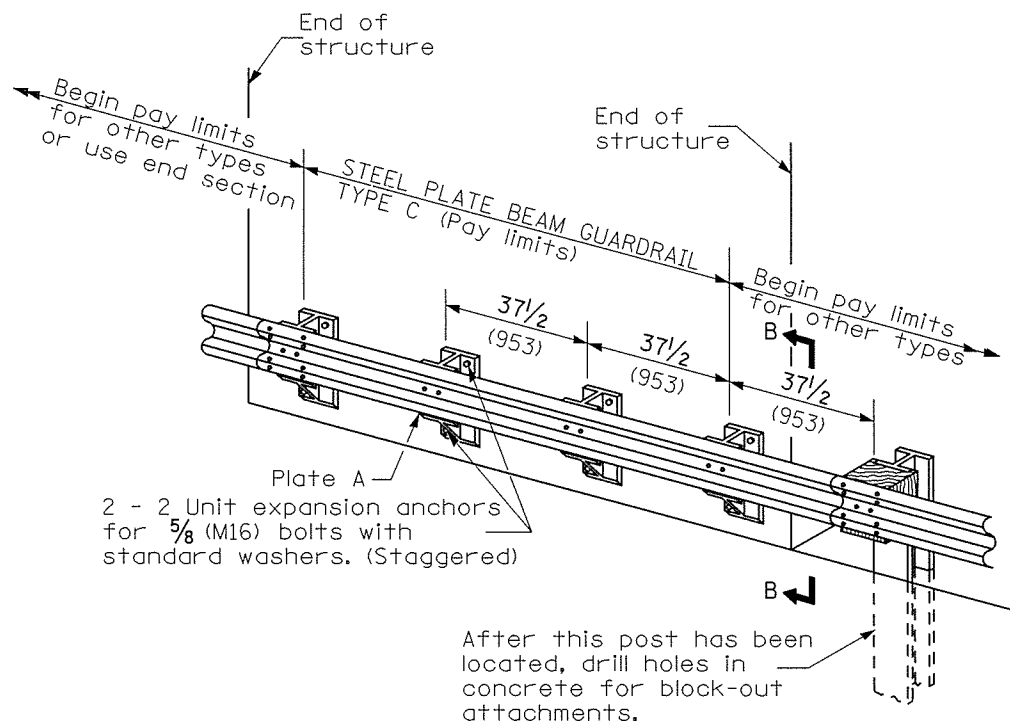


SECTION C-C



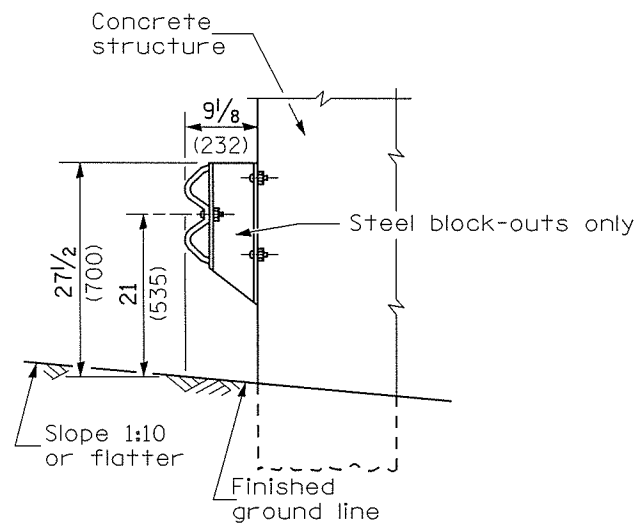
TYPE D

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



TYPE C

37 1/2 (953) Block-out 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.

03-01-07	NEW DETAIL	RJD
03-07-11	Revised designer note	RJD

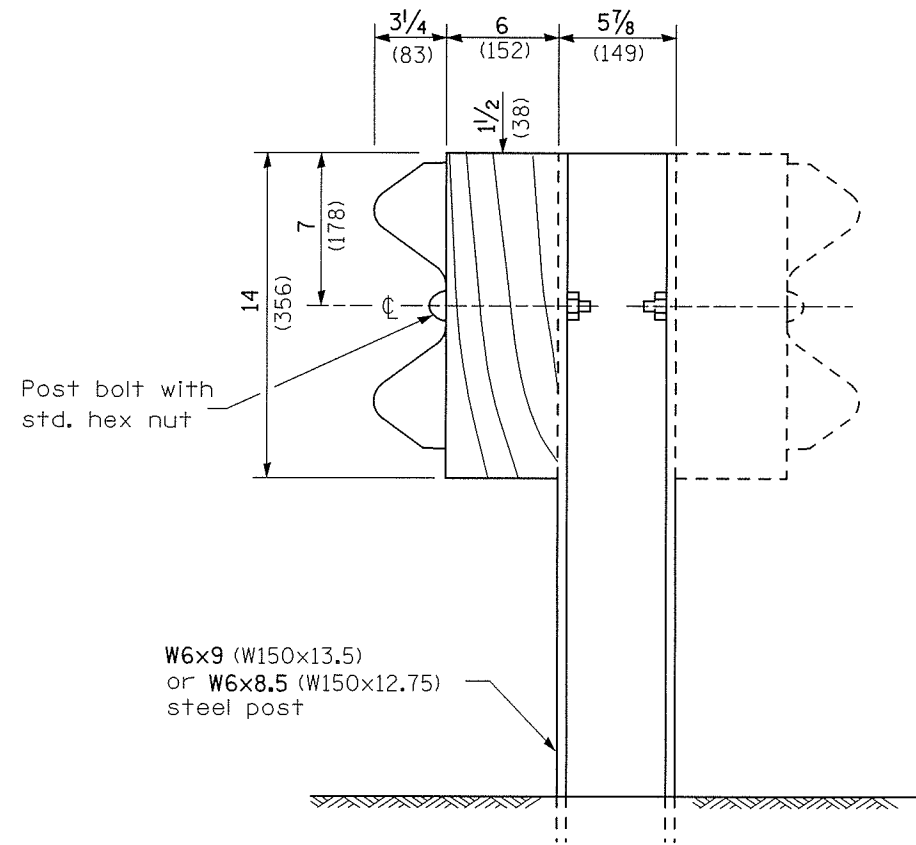
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**STEEL PLATE BEAM GUARDRAIL, TYPE A,
6.75 FOOT POSTS**

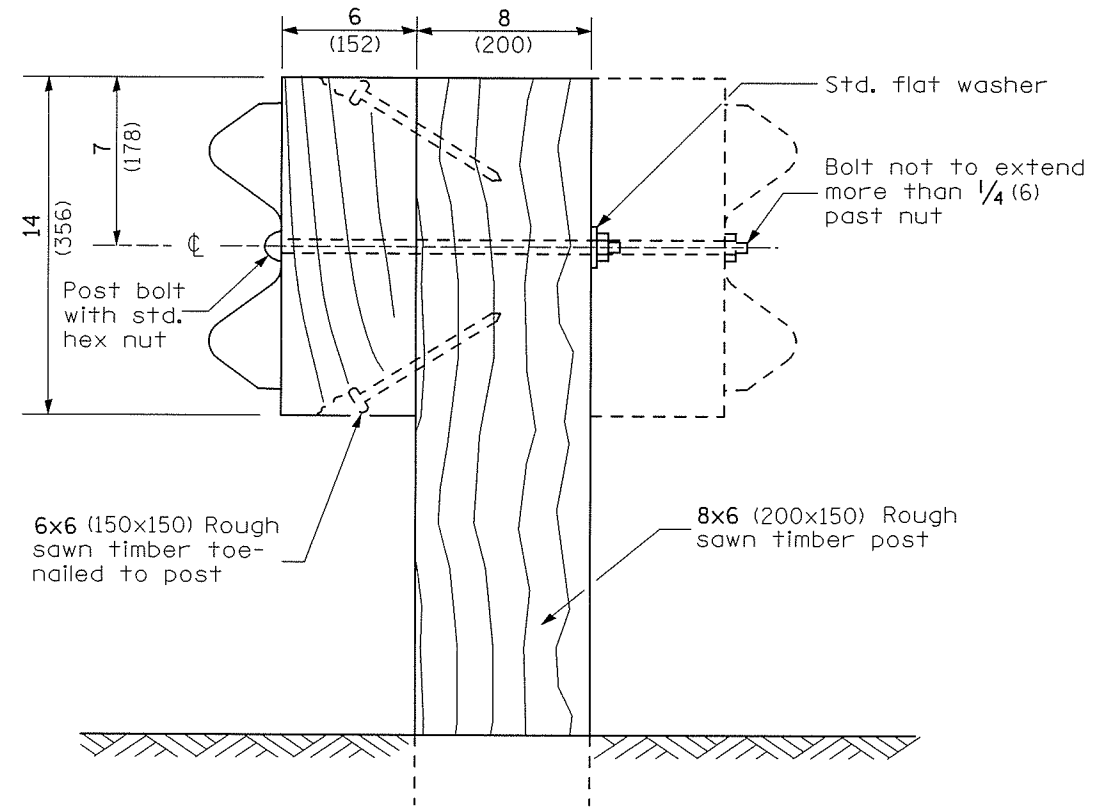
NOT TO SCALE

SHT. 1 OF 4
CADD STD. 630011-D4

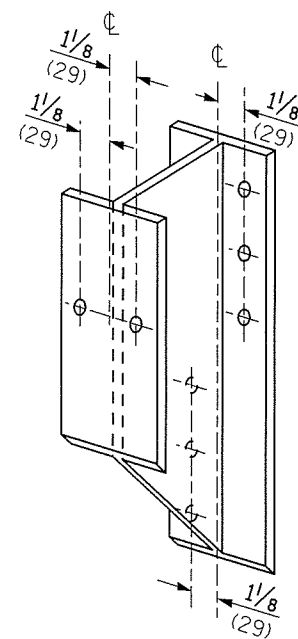
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2014-MCHD	VARIOUS	22	19
CONTRACT NO. 68C17				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				



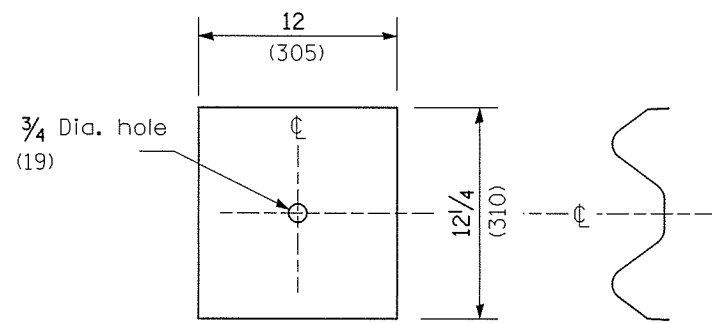
STEEL POST CONSTRUCTION



WOOD POST CONSTRUCTION



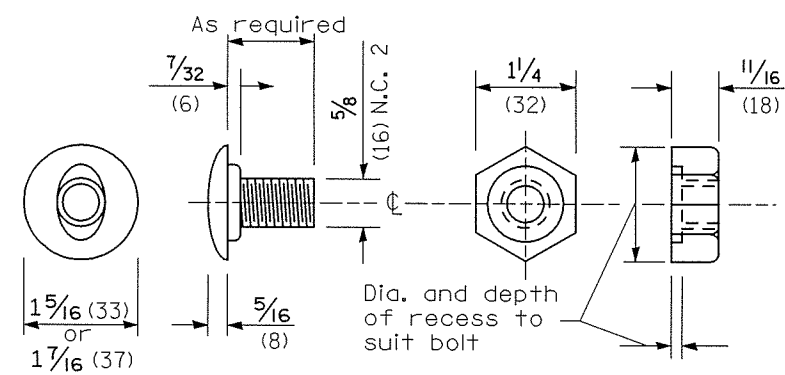
STEEL BLOCK-OUT DETAIL



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

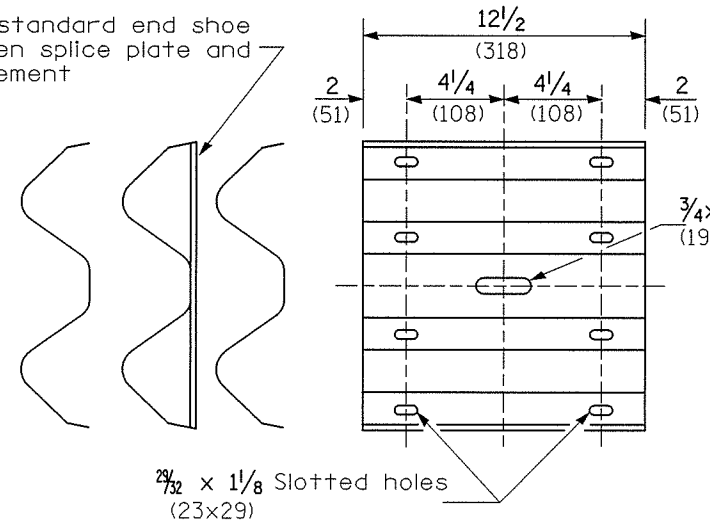


POST OR SPLICE BOLT & NUT

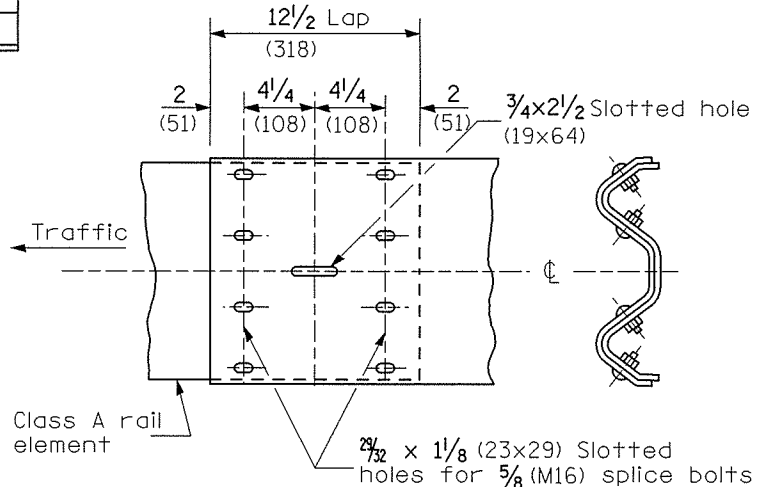
All dimensions are in inches (millimeters) unless otherwise noted.

				STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		STEEL PLATE BEAM GUARDRAIL, TYPE A, 6.75 FOOT POSTS		SHT. 2 OF 4 CADD STD. 630011-D4		CONTRACT NO. 68C17	
				NOT TO SCALE		F.A. RTE. VAR		SECTION D4 GUARDRAIL REPAIRS 2014-MCHD		COUNTY VARIOUS	
								TOTAL SHEETS 22		SHEET NO. 20	
								FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT	

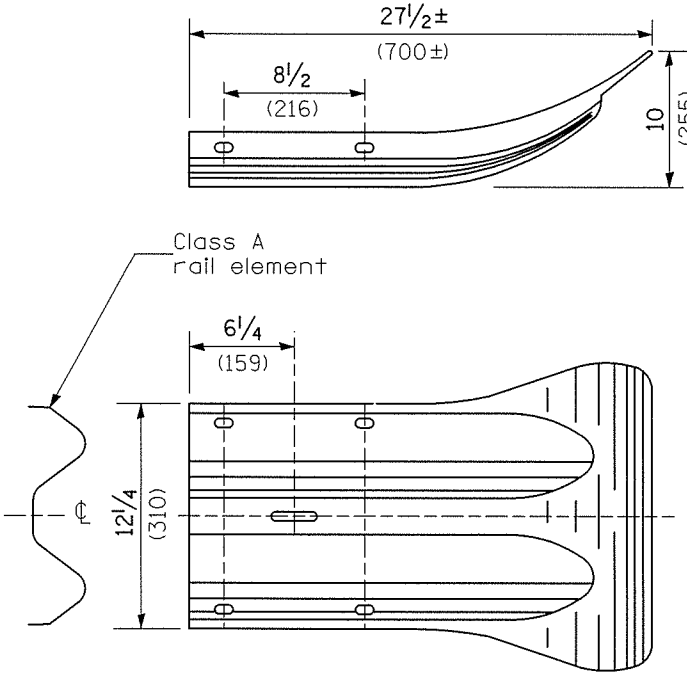
Place standard end shoe between splice plate and rail element



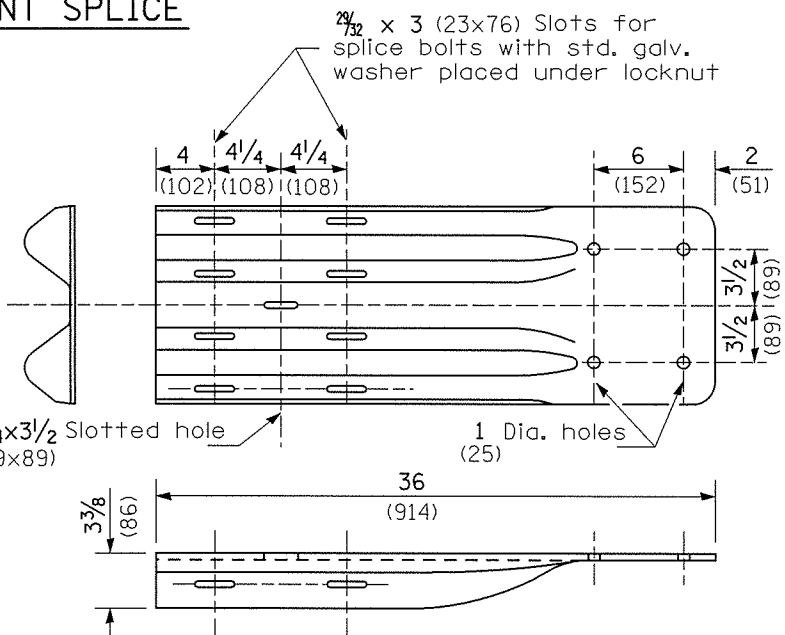
SPLICE PLATE



RAIL ELEMENT SPLICE



END SECTION



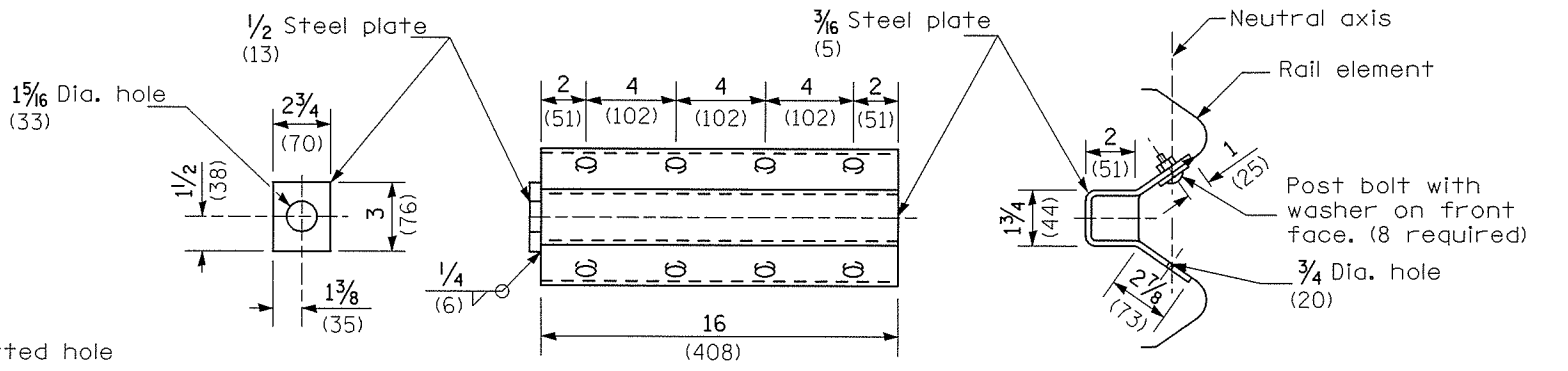
NOTE

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.

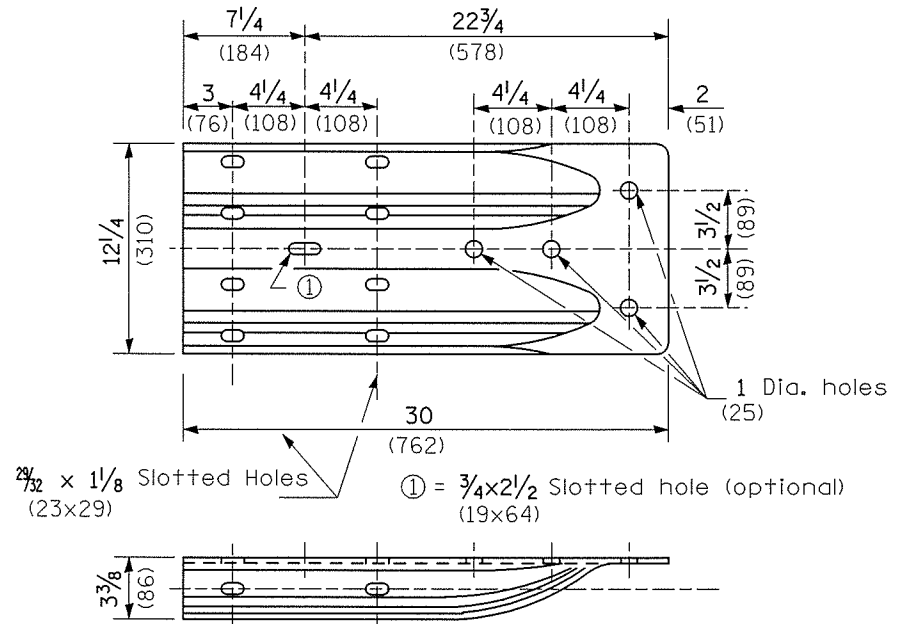
END SHOE



NOTE

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

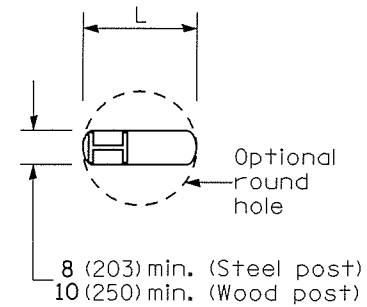
ANCHOR PLATE T DETAILS



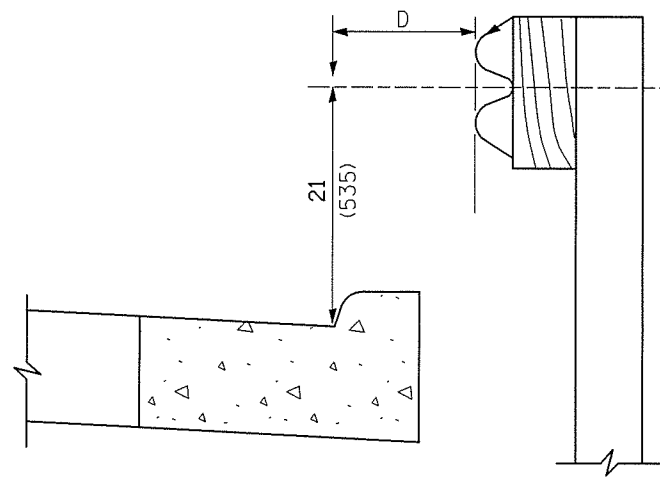
ALTERNATE END SHOE

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				F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
								VAR	D4 GUARDRAIL REPAIRS 2014-MCHD	VARIOUS	22	21
NOT TO SCALE				SHT. 3 OF 4 CADD STD. 630011-D4				CONTRACT NO. 68C17				
								FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				



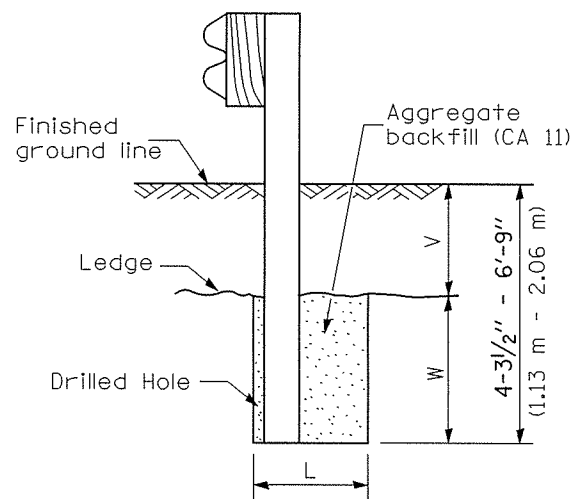
PLAN



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)

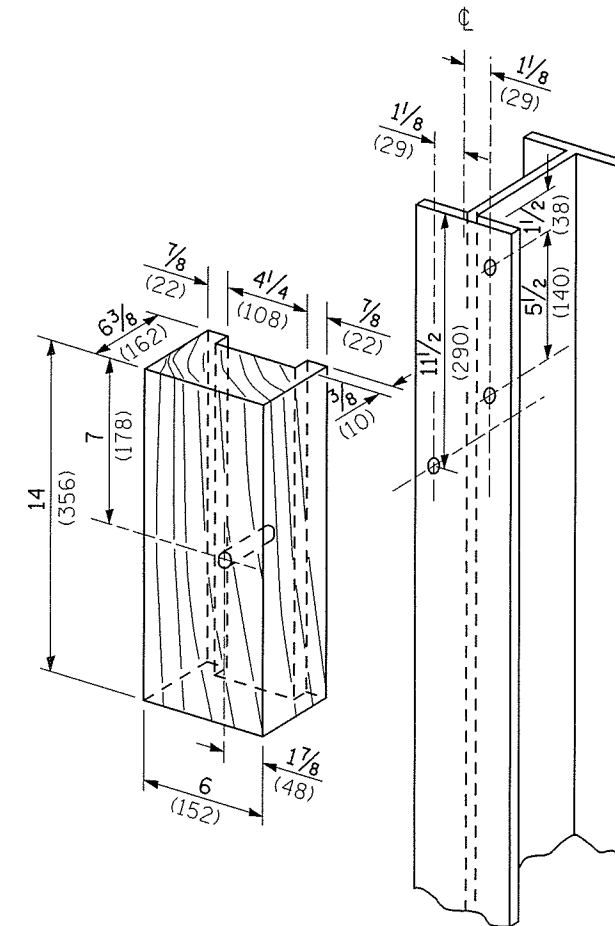


Note:
Ledge line is top of rock ledge or hard slag fill.

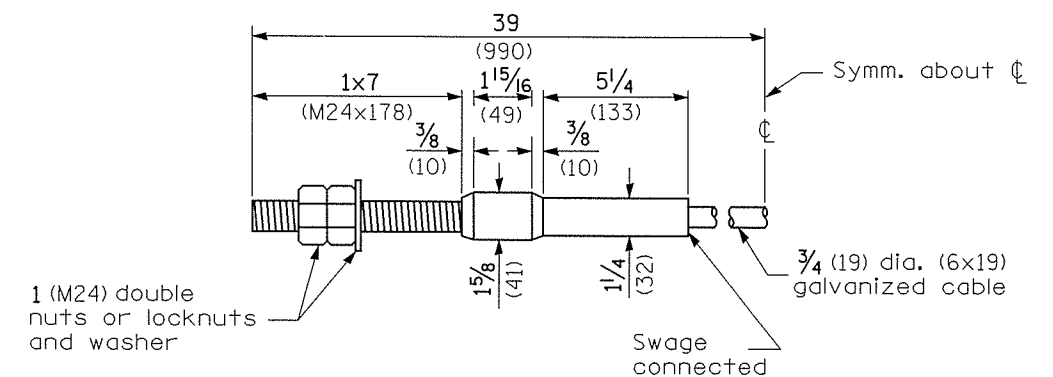
ELEVATION

FOOTING FOR POST WHEN IMPERVIOUS MATERIAL IS ENCOUNTERED

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)

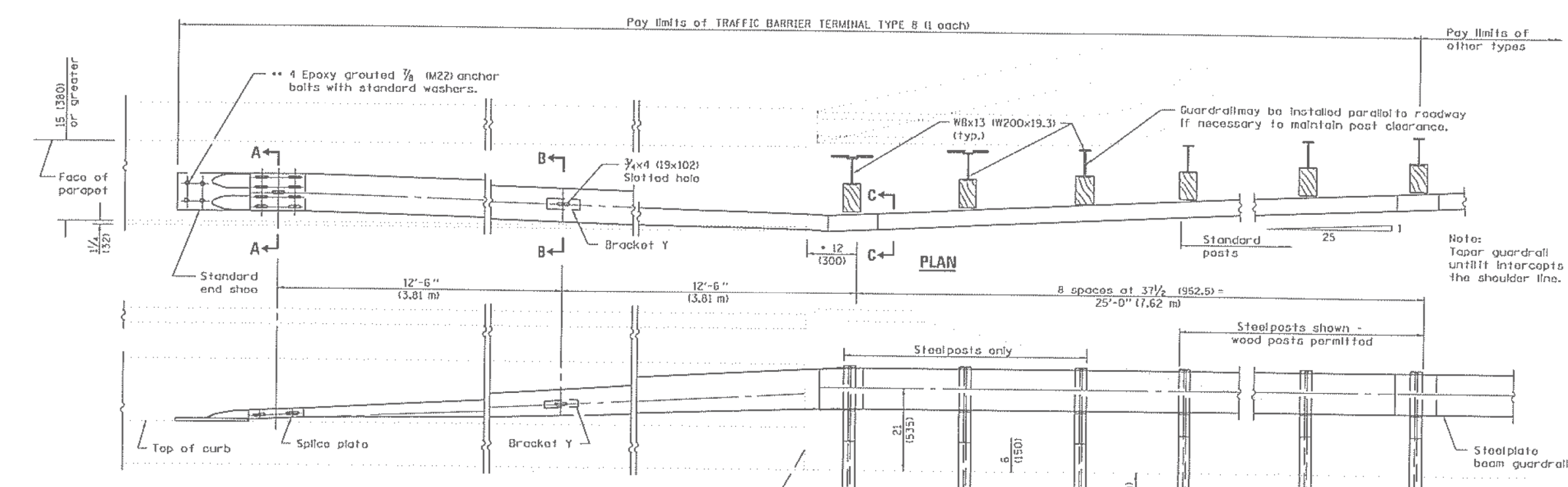


WOOD BLOCK-OUT AND STEEL POST DETAILS

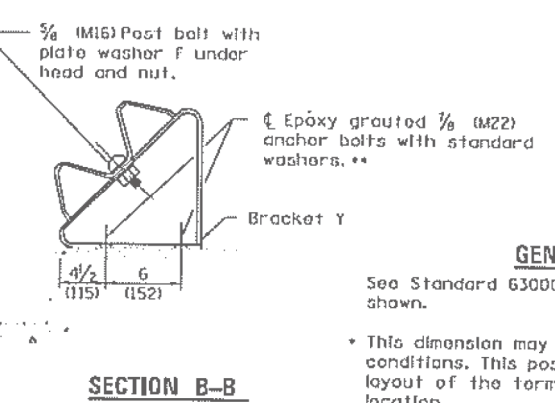
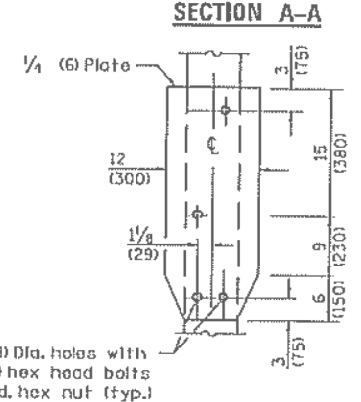
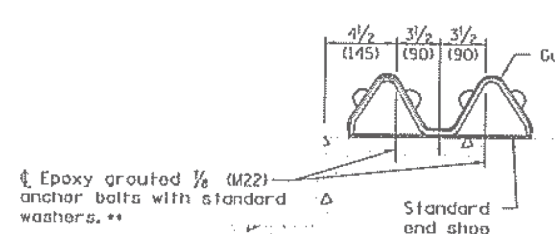
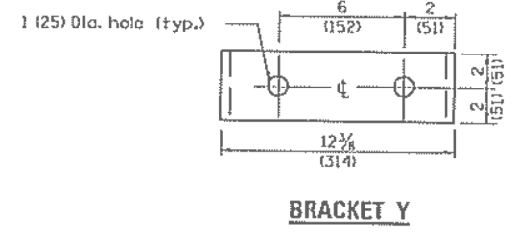
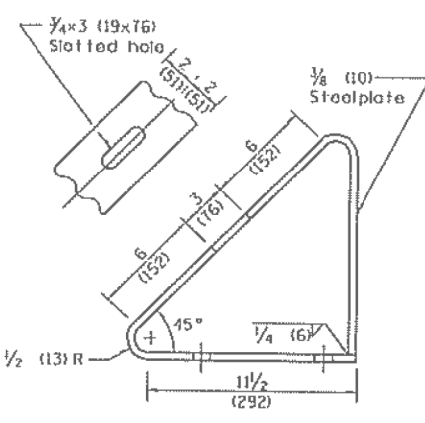
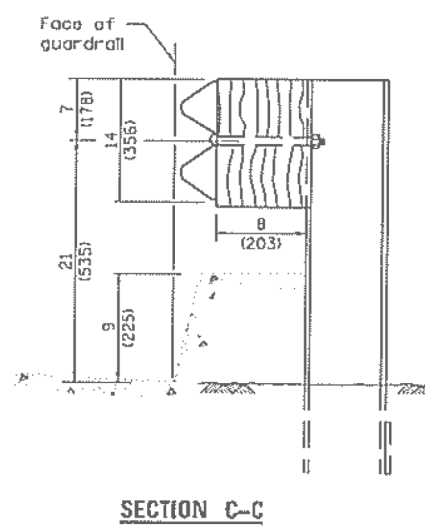


CABLE ASSEMBLY
(18,100 kg (40,000 lbs.) min. breaking strength)
Tighten to taut tension.

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



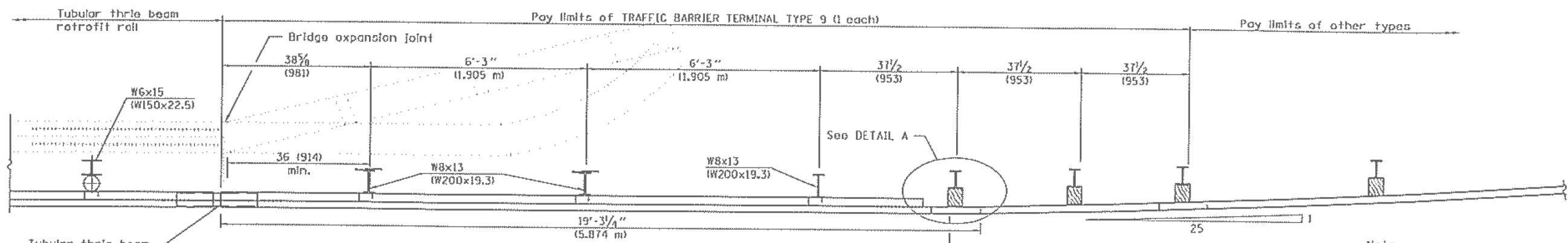
DETAIL INCLUDED FOR REPAIR ONLY



GENERAL NOTES

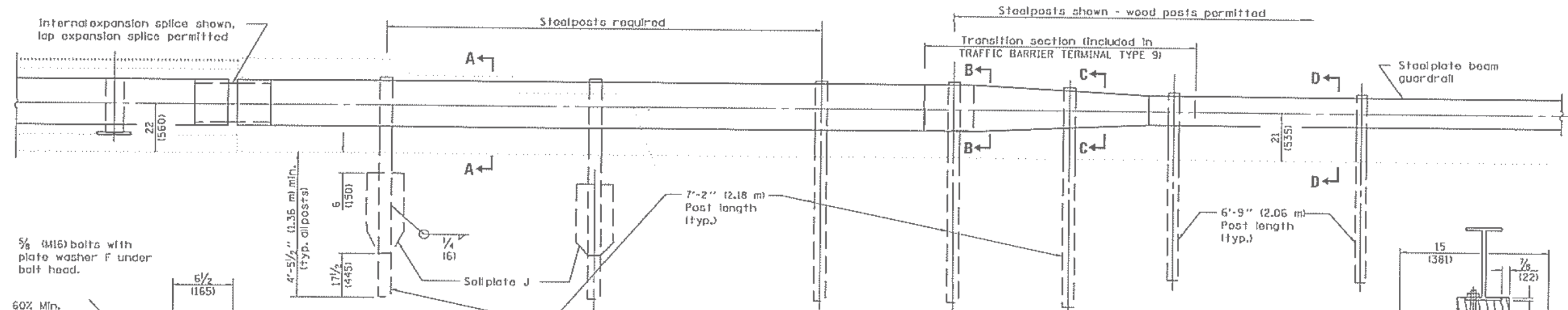
- See Standard 630001 for details of guardrail not shown.
- This dimension may be increased to fit field conditions. This post shall be located first. The layout of the terminal shall be determined by its location.
- After tightening, cut the anchor bolts flush with nuts, and damage the bolt head to prevent them from loosening.
- All dimensions are in inches (millimeters) unless otherwise shown.

FILE NAME =	USER NAME = abuhannaw	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING TRAFFIC BARRIER TERMINAL TYPE 8			F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
ca:\pwork\pwork\abuhannaw\d0418896\0468C17-topo.dgn	PLOT SCALE = 48.0000' / in.	DRAWN -	REVISED -					VAR	D4 GUARDRAIL REPAIRS 2014-MCHD	VARIOUS	27	23	
Default	PLOT DATE = 1/26/2015	CHECKED -	REVISED -					SCALE: SHEET 1 OF 1 SHEETS STA. TO STA.			CONTRACT NO. 68C17		
		DATE -	REVISED -					ILLINOIS FED. AID PROJECT					



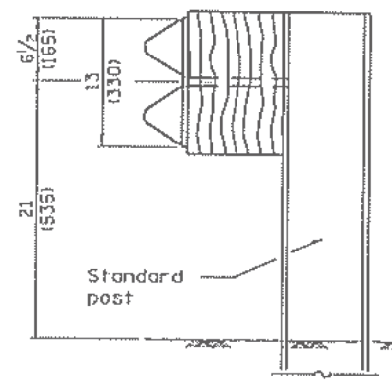
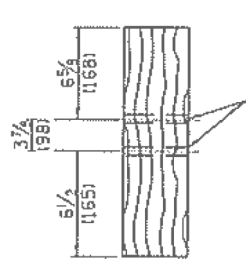
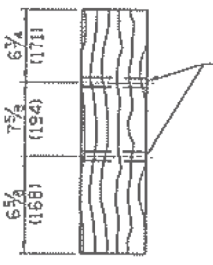
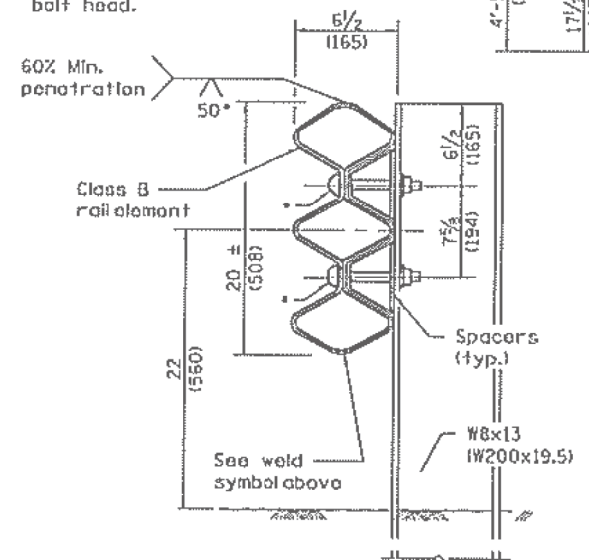
PLAN
(Bridge with expansion joint shown)

Note:
Taper 25:1 until guardrail intercepts shoulder line.



ELEVATION

DETAIL A



DETAILS of BLOCK-OUTS
** ⌀ 3/4 (19) Dia. hole

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

SOIL PLATE J & ALTERNATE CONNECTION DETAILS

DETAIL INCLUDED FOR REPAIR ONLY

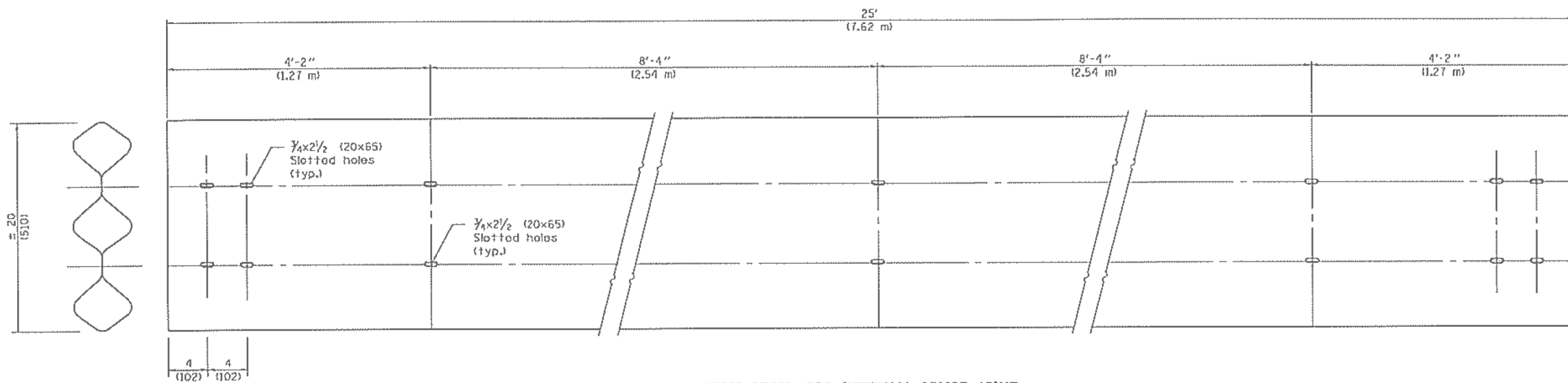
GENERAL NOTES

See Standards 509001 and 630001 for details of guardrail elements not shown.

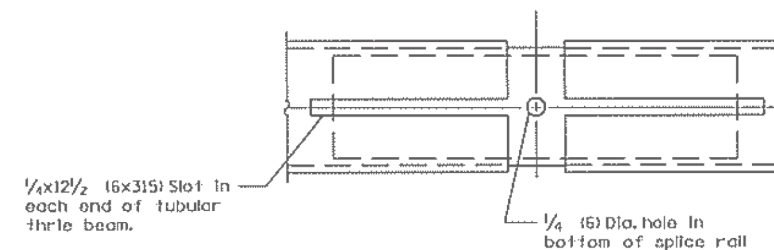
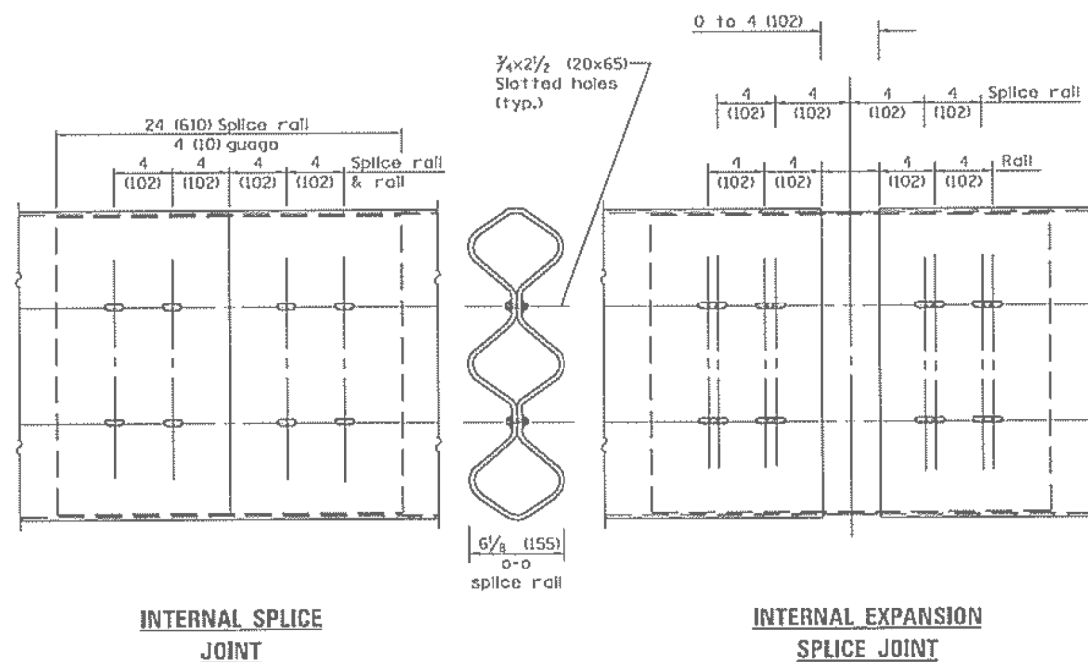
The Type 9 terminal shall be installed after the posts for the bridge retrofit rail have been located as shown on Standard 509001.

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

FILE NAME =	USER NAME = abuhannaw	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING TRAFFIC BARRIER TERMINAL TYPE 9	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
ca:\pwork\work\pwork\abuhannaw\d0418896\0468C17-topo.dgn	PLOT SCALE = 40.0000' / in.	DRAWN -	REVISED -			VAR	D4 GUARDRAIL REPAIRS 2014-MCHD	VARIOUS	27	24	
Default	PLOT DATE = 1/26/2015	CHECKED -	REVISED -			CONTRACT NO. 68C17					
		DATE -	REVISED -			ILLINOIS FED. AID PROJECT					



TUBULAR THRIE BEAM FOR INTERNAL SPLICE JOINT



BOTTOM VIEW OF INTERNAL EXPANSION SPLICE JOINT

DETAIL INCLUDED FOR REPAIR ONLY

GENERAL NOTES

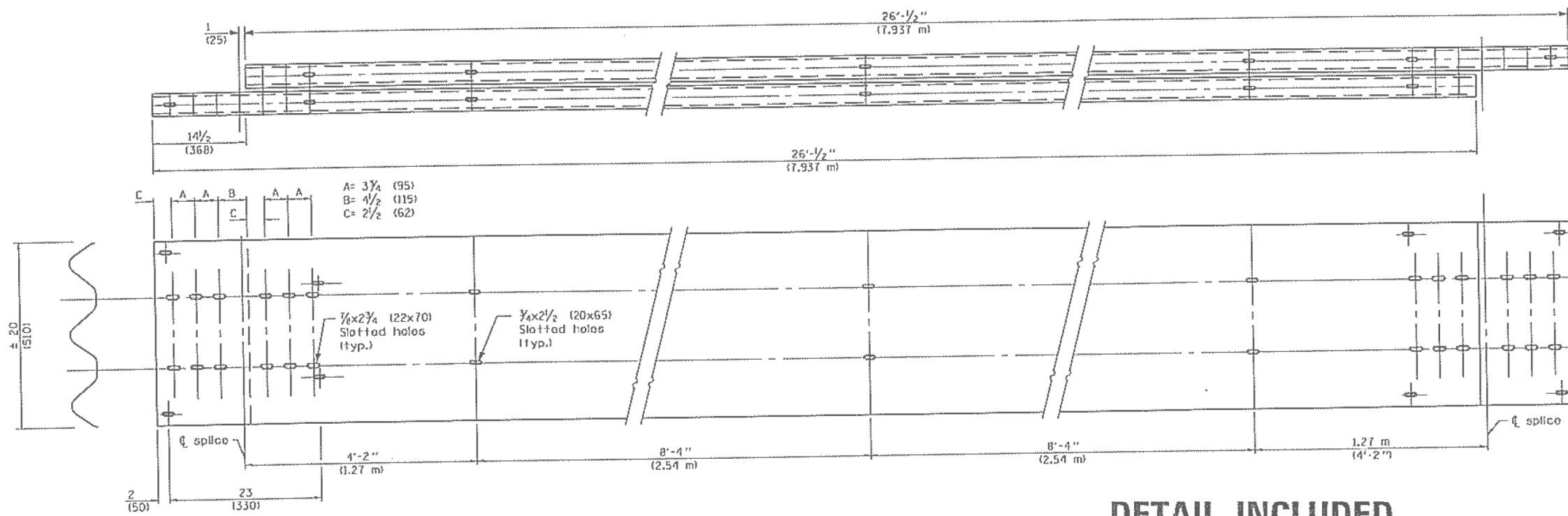
Plate Washers B are to be placed under both heads and nuts of splicing bolts for internal splice and internal expansion splice joint.

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 63000 for details of guardrail not shown.

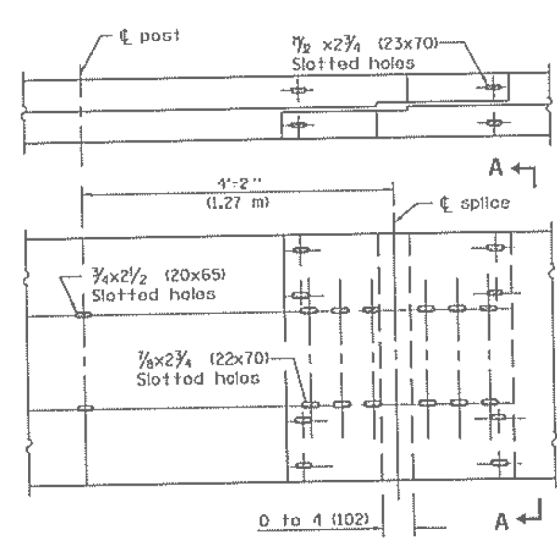
All dimensions are in inches (millimeters) unless otherwise shown.

FILE NAME =	USER NAME = abuhannaw	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.	
c:\pwork\pwork\abuhannaw\d0418896\0468C17-topo.dgn	PLOT SCALE = 48.0000' / in.	DRAWN -	REVISED -			VAR	D4 GUARDRAIL REPAIRS 2014-MCHD	VARIOUS	27	25	
Default	PLOT DATE = 1/26/2015	CHECKED -	REVISED -			CONTRACT NO. 68C17					
		DATE -	REVISED -			SCALE:	SHEET 1	OF 3	SHEETS	STA.	TO STA.

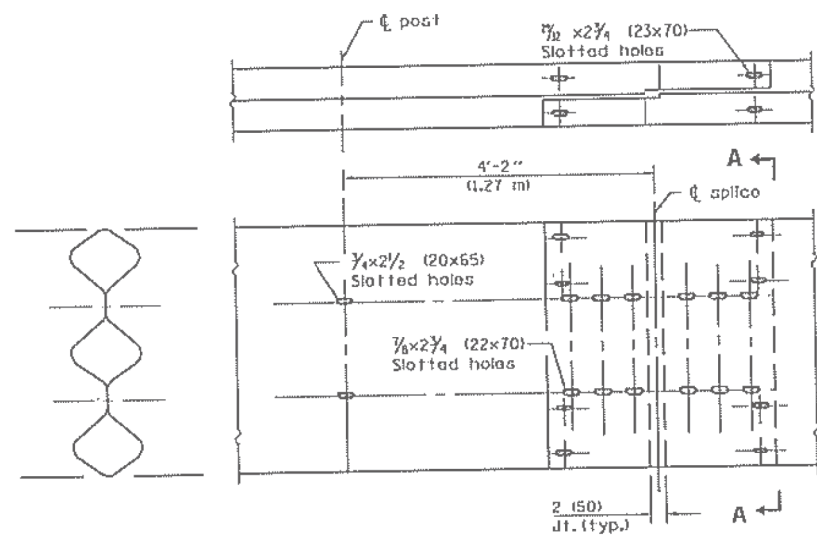


TUBULAR THRIE BEAM FOR LAP SPLICE JOINT

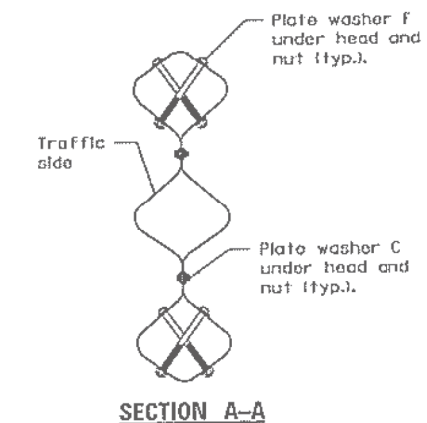
DETAIL INCLUDED FOR REPAIR ONLY



LAP EXPANSION SPLICE JOINT



LAP SPLICE JOINT

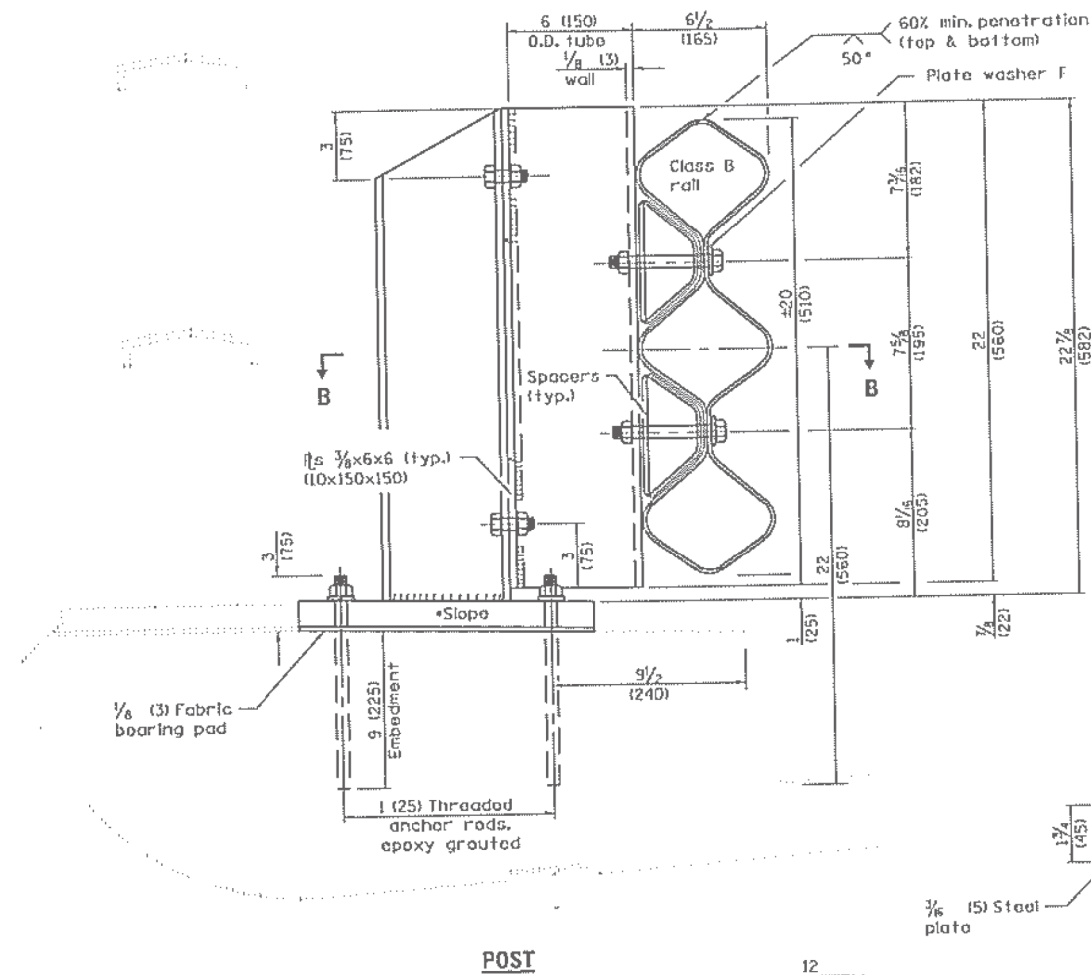
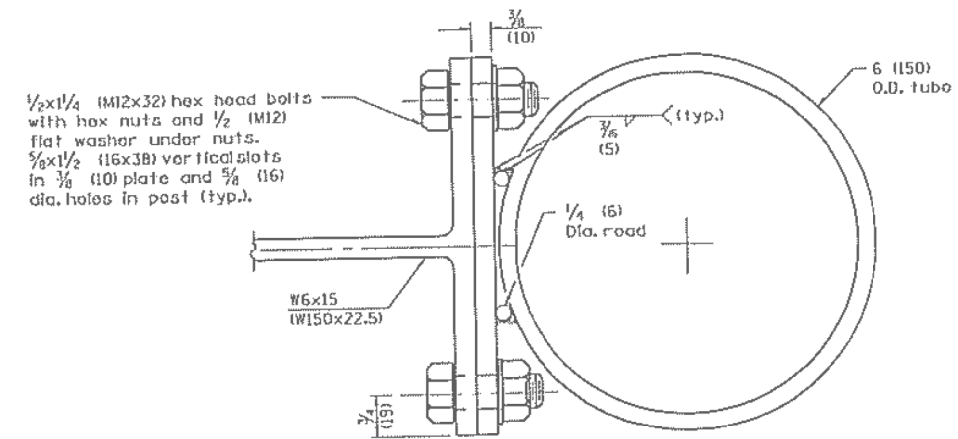
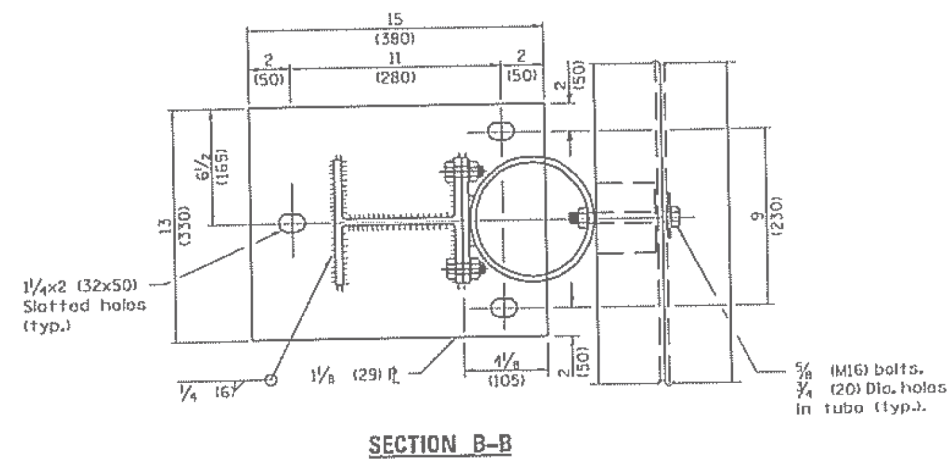


FILE NAME =	USER NAME = abuhannaw	DESIGNED -	REVISED -
ca:\pwork\pwork\abuhannaw\d0418896\0468C17-topo.dgn		DRAWN -	REVISED -
Default	PLOT SCALE = 48.0000' / in.	CHECKED -	REVISED -
	PLOT DATE = 1/26/2015	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING TUBULAR THRIE BEAM RETROFIT RAIL FOR BRIDGES
SCALE: SHEET 2 OF 3 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2014-MCHD	VARIOUS	27	26
			CONTRACT NO. 68C17	
ILLINOIS FED. AID PROJECT				



TUBE TO POST ATTACHMENT

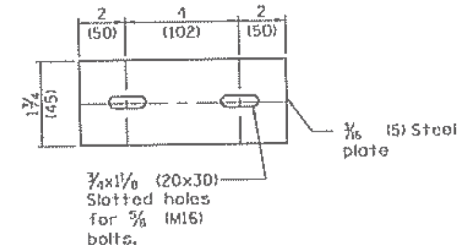
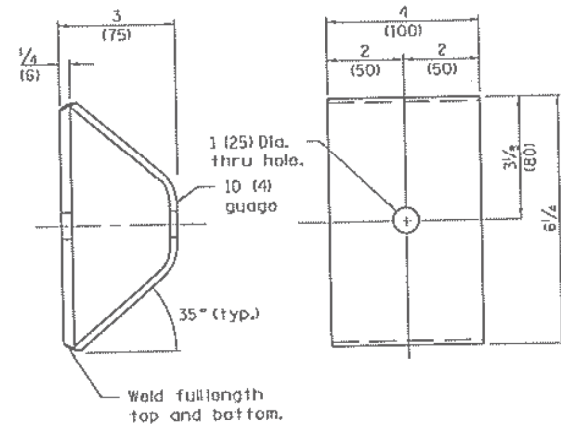


PLATE WASHER B

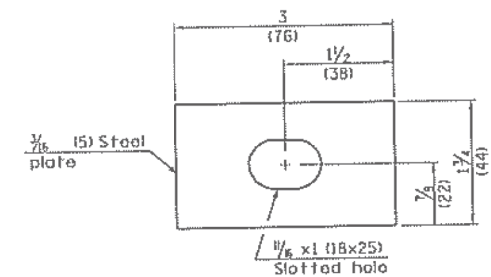


PLATE WASHER F

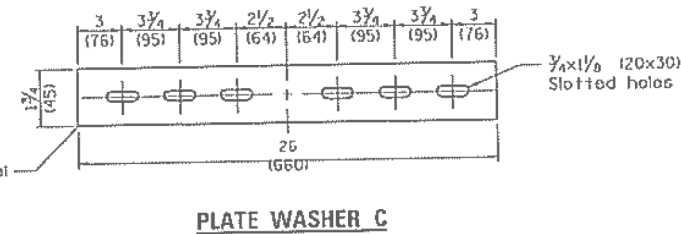


PLATE WASHER C

DETAIL INCLUDED FOR REPAIR ONLY

FILE NAME =	USER NAME = abuhannaw	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.	
et:\pwork\pwork\abuhannaw\d0418896\0468C17-topo.dgn	PLOT SCALE = 48.0000' / in.	DRAWN -	REVISED -			VAR	D4 GUARDRAIL REPAIRS 2014-MCHO	VARIOUS	27	27	
Default	PLOT DATE = 1/26/2015	CHECKED -	REVISED -			CONTRACT NO. 68C17					
		DATE -	REVISED -			ILLINOIS FED. AID PROJECT					