

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2018-MCHD	VARIOUS	27	1
		ILLINOIS	CONTRACT NO. 68E08	

INDEX OF SHEETS:

- 1 COVER SHEET
- 2 JOB SPECIFIC NOTES & COMMITMENTS
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- 7 SAMPLE WORK FORM
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- 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

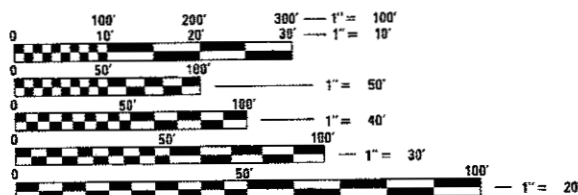
**PROPOSED
HIGHWAY PLANS**

VARIOUS ROUTES
SECTION D4 GUARDRAIL REPAIRS 2018-MCHD
PROJECT
CONTRACT MAINTENANCE
VARIOUS COUNTIES

C-94-032-18

HIGHWAY STANDARDS:

630001-12	701011-04
630101-10	701101-05
630301-08	701201-04
631006-08	701301-04
631011-10	701400-09
631026-06	701406-11
631031-15	701411-09
631046-04	701428-01
635001-02	701456-05
725001-01	701601-09
782006	701606-10
664001-02	701701-10
665001-02	701901-07
701006-05	BLR-23-04

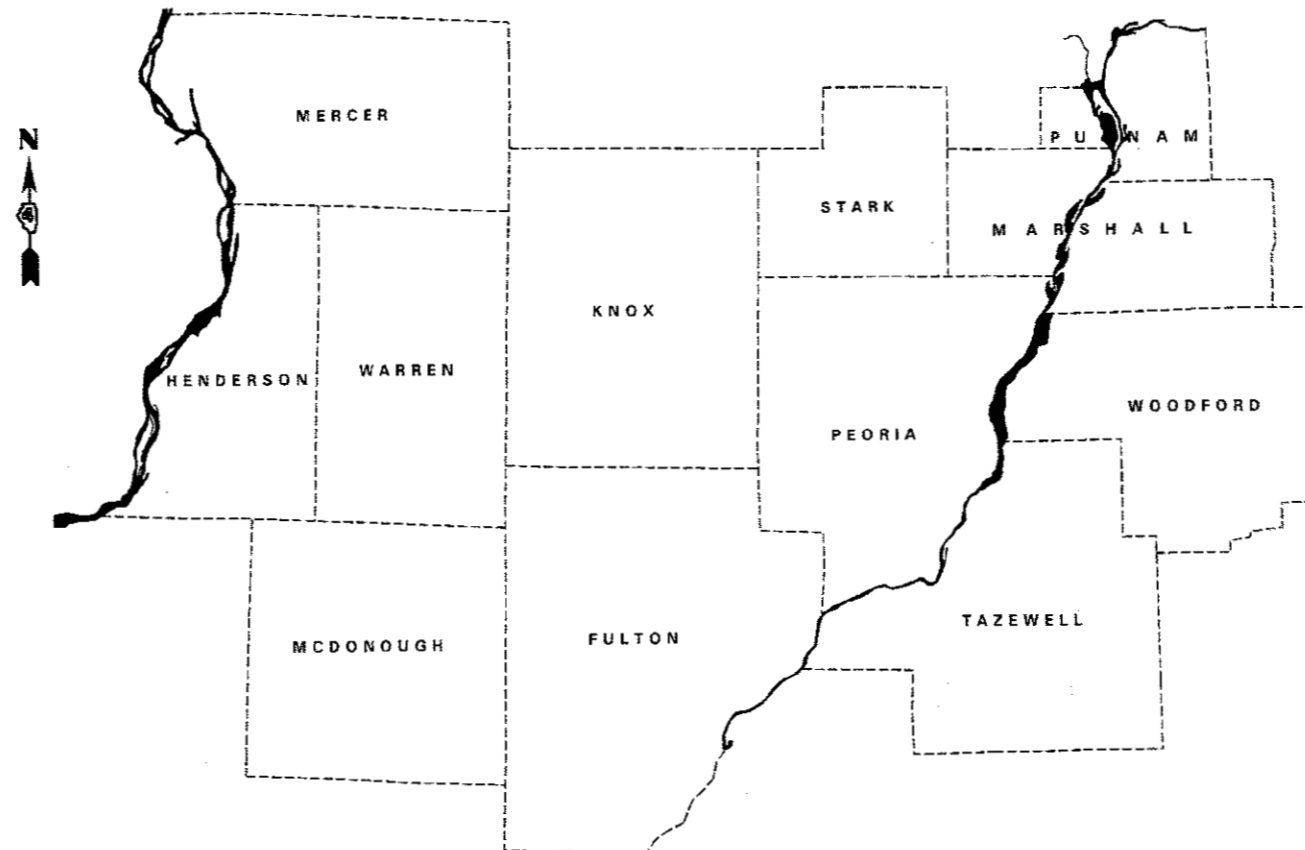


FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

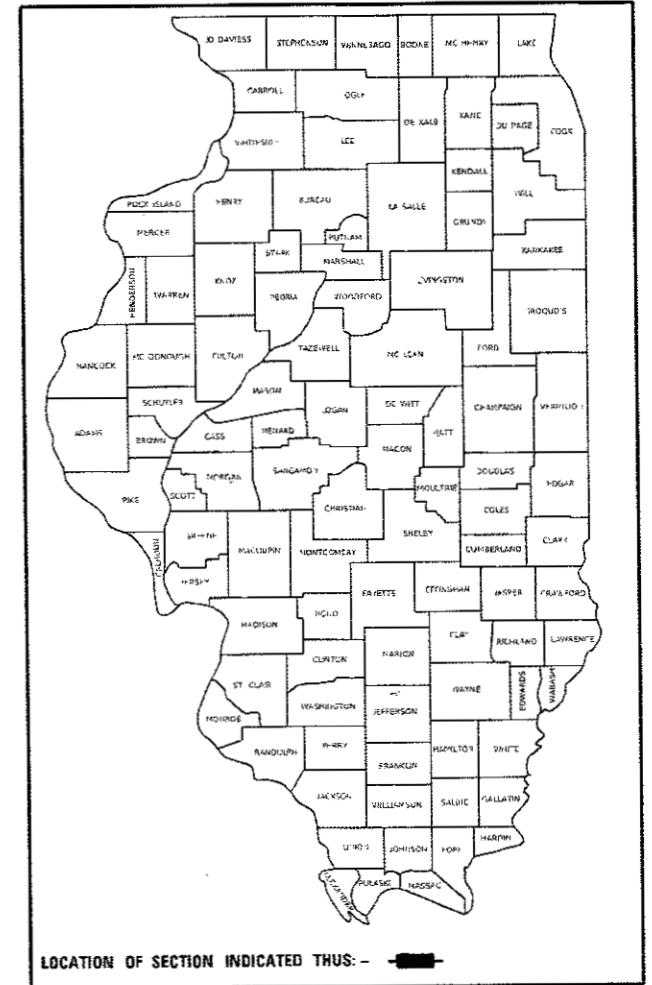
J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
OR 811

PROJECT ENGINEER MIKE LEWIS (309) 671-3454
PROJECT MANAGER RAYMOND SAMARA / SOBHI LABABIDI (309) 671-3459
CATALOG NO. 035555-00D
CONTRACT NO. 68E08

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



D-94-021-18



DESCRIPTION:
GUARDRAIL REPAIRS CAUSED BY MOTORISTS
AND CABLE GAURDRAIL REPAIRS AT
VARIOUS LOCATIONS IN DISTRICT 4

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED February 5, 2018
Raymond Samara
REGION THREE ENGINEER

March 23, 2018
Raymond P. Jones
ENGINEER OF DESIGN AND ENVIRONMENT

March 23, 2018
Raymond P. Jones
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

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.

MODEL: Default
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	DRAWN -	REVISED -
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PLOT DATE = 2/6/2018	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

JOB SPECIFIC NOTES AND COMMITMENTS

SCALE: SHEET OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2018-MCHD	VARIOUS	27	2
			CONTRACT NO. 68E08	
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 0021	CONT. MAINT. 0021	HTMCB 0021
63000001	STEEL PLATE BEAM GUARD RAIL, TYPE A, 6 FOOT POSTS	FOOT	50	50		
63000003	STEEL PLATE BEAM GUARD RAIL, TYPE A, 9 FOOT POSTS	FOOT	50	50		
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	5	4	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	32	20	12	
63100169	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) FLARED	EACH	7	5	2	
63400105	GUARD POSTS	EACH	7	5	2	
64300260	IMPACT ATTENUATORS (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	4	3	1	
64300320	IMPACT ATTENUATORS (FULLY REDIRECTIVE, RESETTABLE), TEST LEVEL 3	EACH	2	2		

14

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PLOT DATE = 2/5/2018	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 2018-MCHD	VARIOUS	27	3
			CONTRACT NO. 68E08	
ILLINOIS FED. AID PROJECT				

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE		
				VARIOUS COUNTIES	VARIOUS COUNTIES	VARIOUS COUNTIES
				100 % STATE	100 % STATE	100 % STATE
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64300370	IMPACT ATTENUATORS (FULLY REDIRECTIVE, WIDE), TEST LEVEL 3	EACH	3	2	1	
64300450	IMPACT ATTENUATORS (NON- REDIRECTIVE), TEST LEVEL 3	EACH	4	3	1	
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	480	360	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	9	6	3	
X0325899	REPAIR HIGH TENSION CABLE (GIBALTAR)	FOOT	950			950
X0325900	REPAIR HIGH TENSION BARRIER TERMINAL (GIBALTAR)	EACH	2			2
X0325902	REMOVE AND REPLACE POSTS (GIBALTAR)	EACH	100			100
X0325903	REPAIR CABLE ROAD GUARD, THREE STRANDS	FOOT	150			150

14

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	DRAWN -	REVISED -
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PLOT DATE = 2/6/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2018-MCHD	VARIOUS	27	4
			CONTRACT NO. 68E08	
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
X0327382	REPAIR HAIRPINS (GIBRALTAR)	EACH	100			100
X0327383	REPAIR LOCK PLATES (GIBRALTAR)	EACH	100			100
X6300210	GUARDRAIL BLOCKS	EACH	200	140	60	
X6300215	RAIL ELEMENT PLATES	EACH	80	60	20	
X6300230	STEEL POSTS	EACH	130	90	40	
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	31	24	7	

14

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	DRAWN -	REVISED -
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PLOT DATE = 2/6/2018	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SUMMARY OF QUANTITIES

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2018 MCHD	VARIOUS	27	5
CONTRACT NO. 68E08			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>
-----------------	-------------	-------------	------------	-------------------	---------------

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

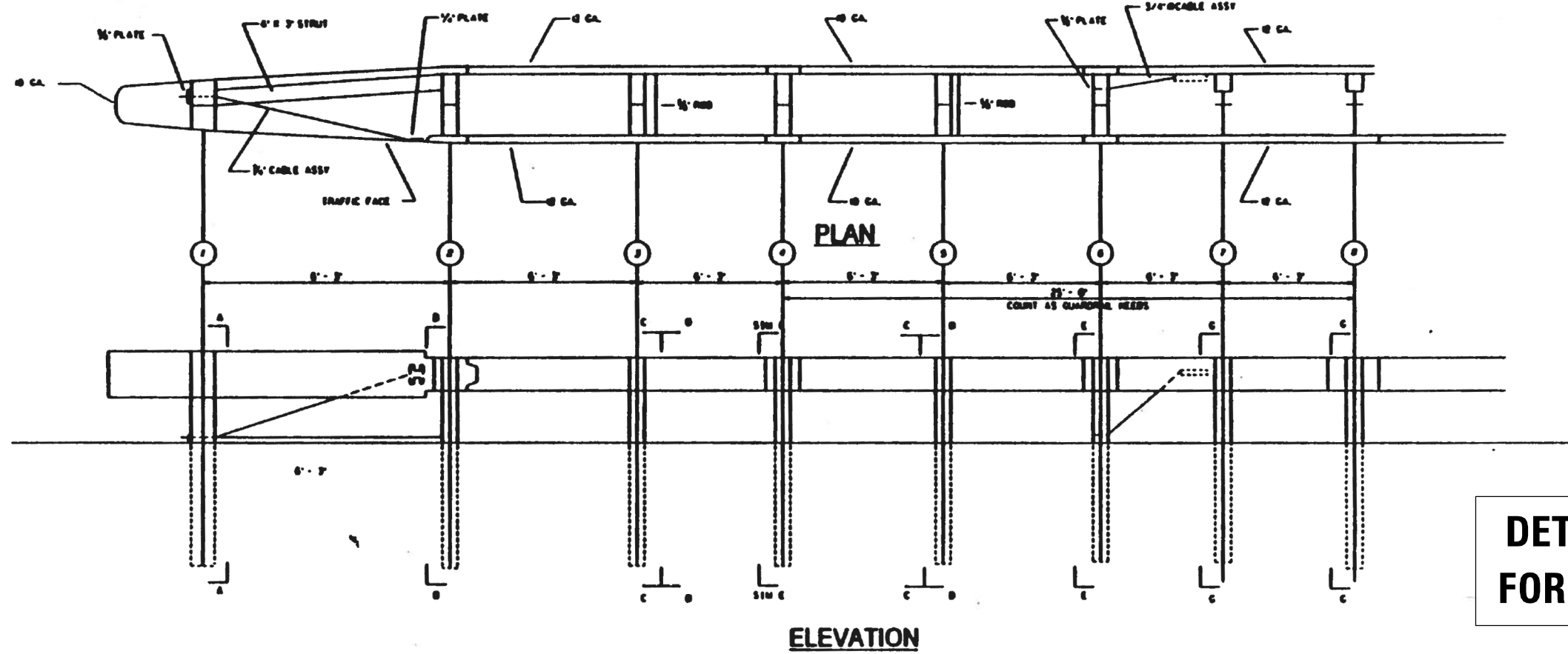
PAYMENT: _____ BY: _____ ACCEPTED: _____ BY: _____

VERIFICATION OF WORK ORDER COMPLETED: _____ BY: _____

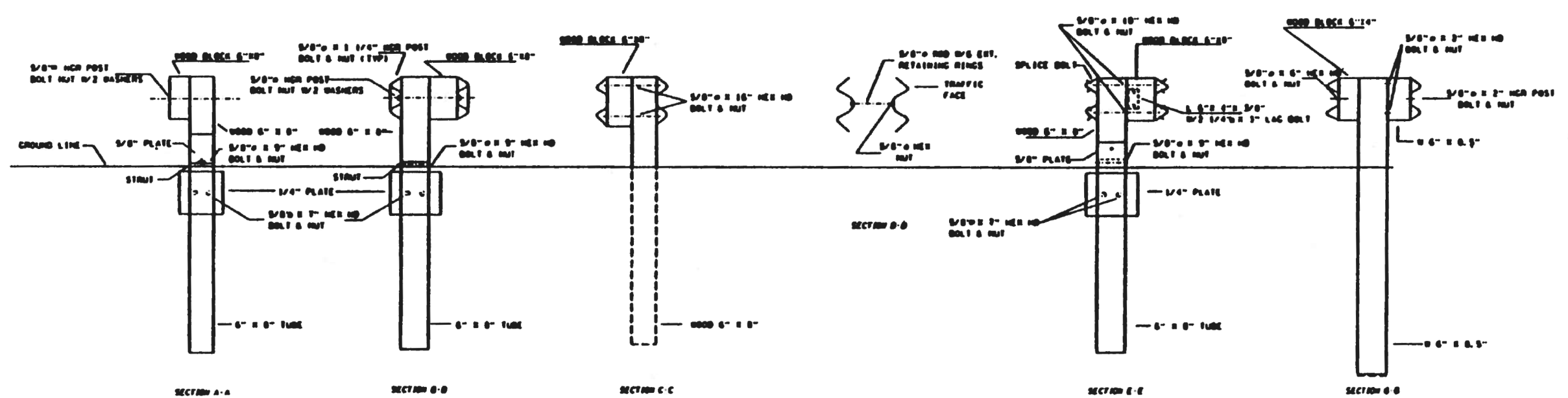
APPROVED FOR PAYMENT

DATE

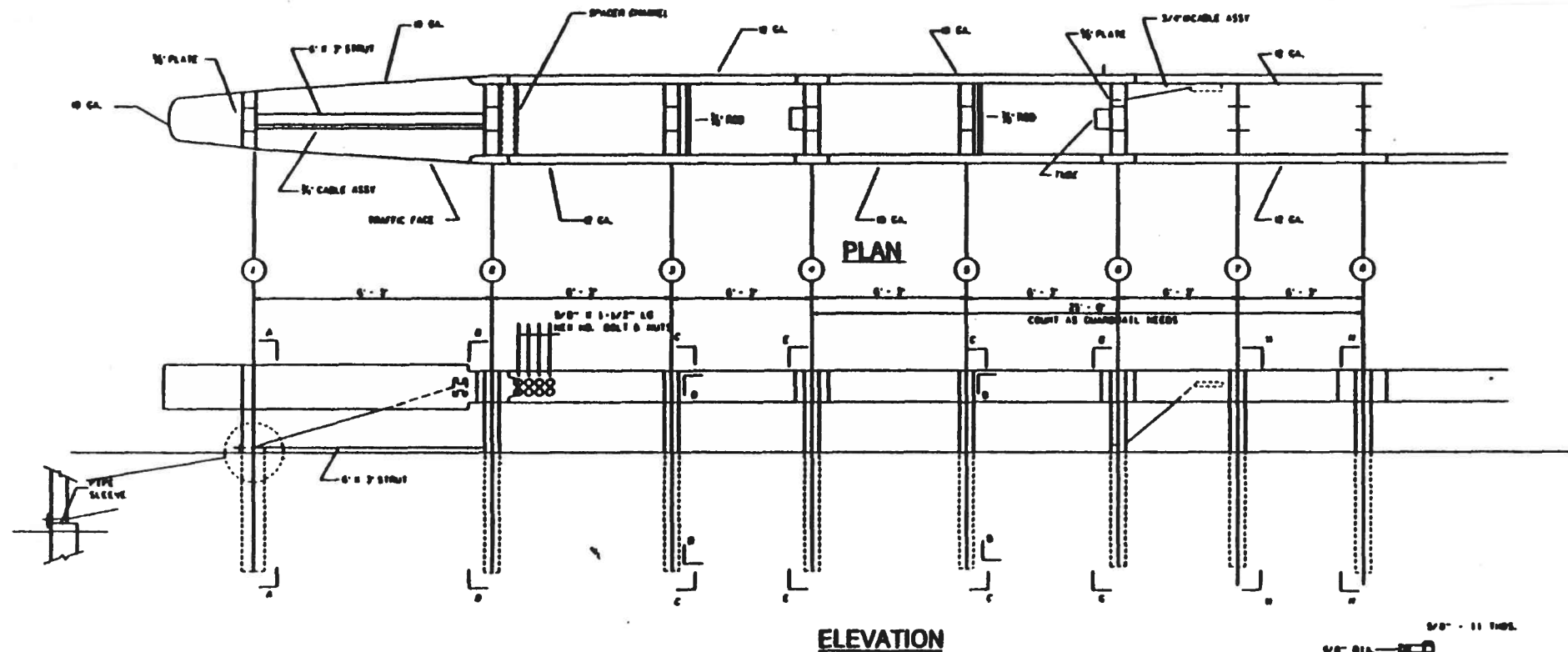
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Drawn	Drawn	REVISIONS	VAR			D4 GUARDRAIL REPAIRS 2018-MCHD	TAZEWELL	27	7	
PLOT SCALE = 40.0000' / in.	CHECKED -	REVISED -	CONTRACT NO. 68E08							
Default	DATE -	REVISED -	SCALE:			SHEET 1 OF 1 SHEETS	STA. TO STA.	ILLINOIS FED. AID PROJECT		



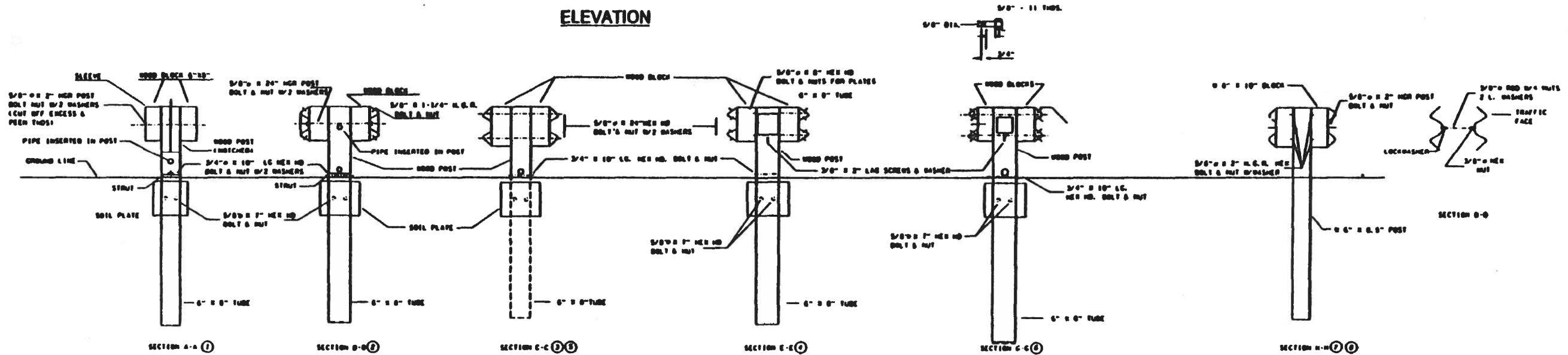
**DETAIL INCLUDED
FOR REPAIR ONLY**



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		DATE -	REVISED -		ILLINOIS FED. AID PROJECT							



**DETAIL INCLUDED
FOR REPAIR ONLY**



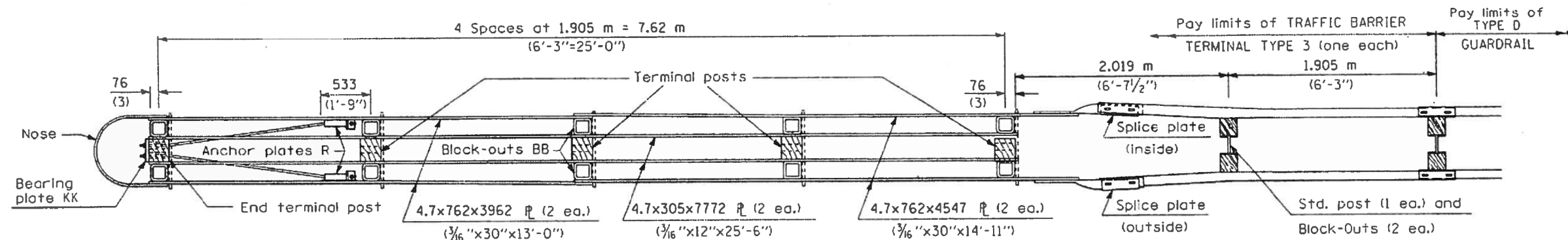
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

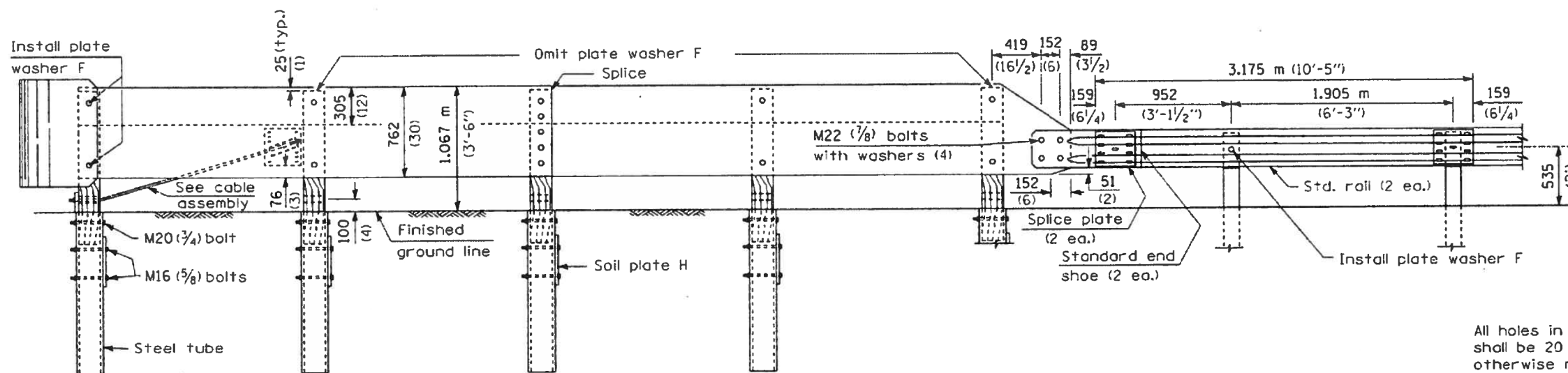
PROPOSED C.A.T. SYSTEM

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2018-MCHD	TAZEWELL	27	9
			CONTRACT NO. 68E08	
ILLINOIS FED. AID PROJECT				



PLAN - TRAFFIC BARRIER TERMINAL TYPE 3



ELEVATION

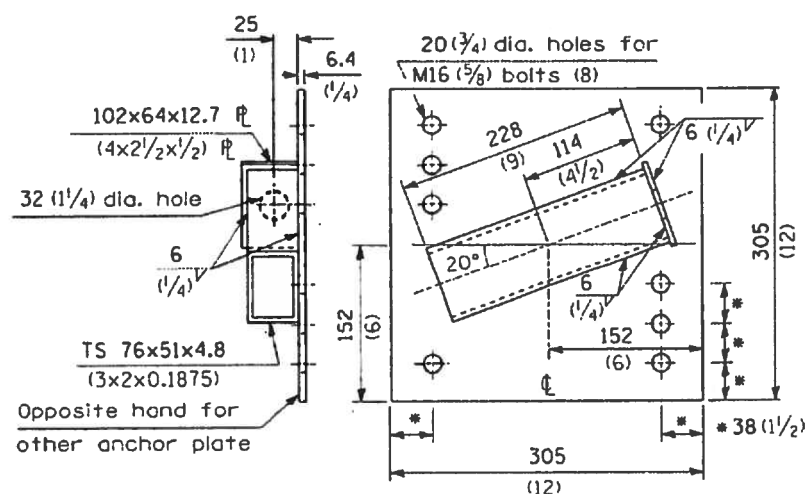
GENERAL NOTES

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.

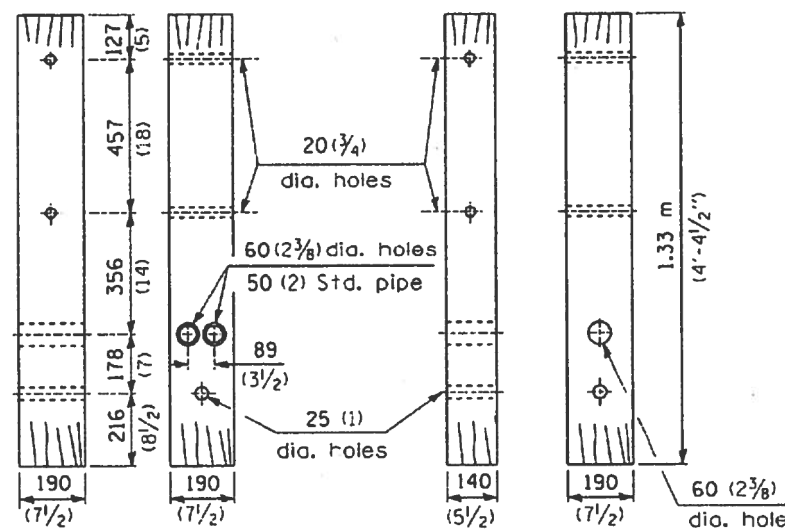
Unless otherwise shown all bolts and nuts shall be Standard Post and Splice Bolts and Nuts (See Standard 630001).

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



ANCHOR PLATE R

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



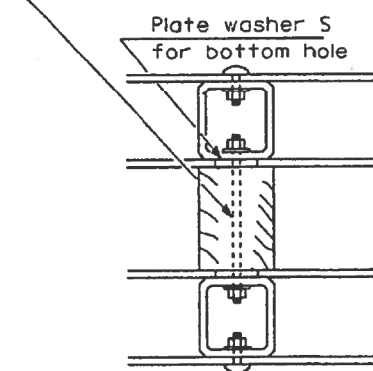
END TERMINAL POST

(1 ea.)

TERMINAL POST

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

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



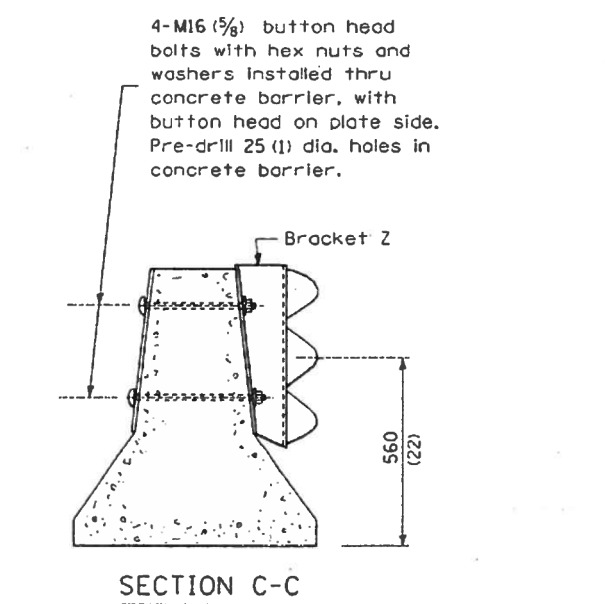
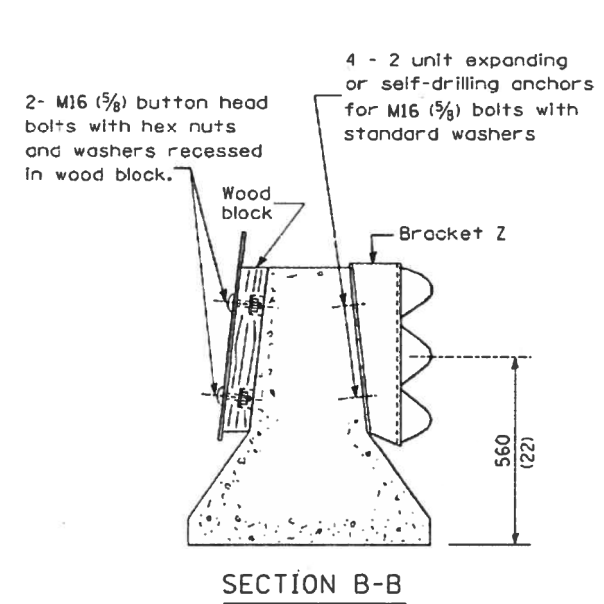
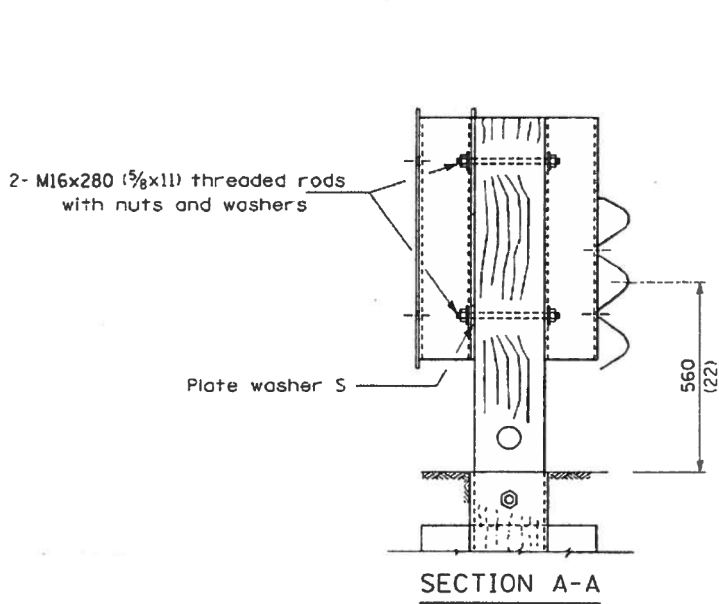
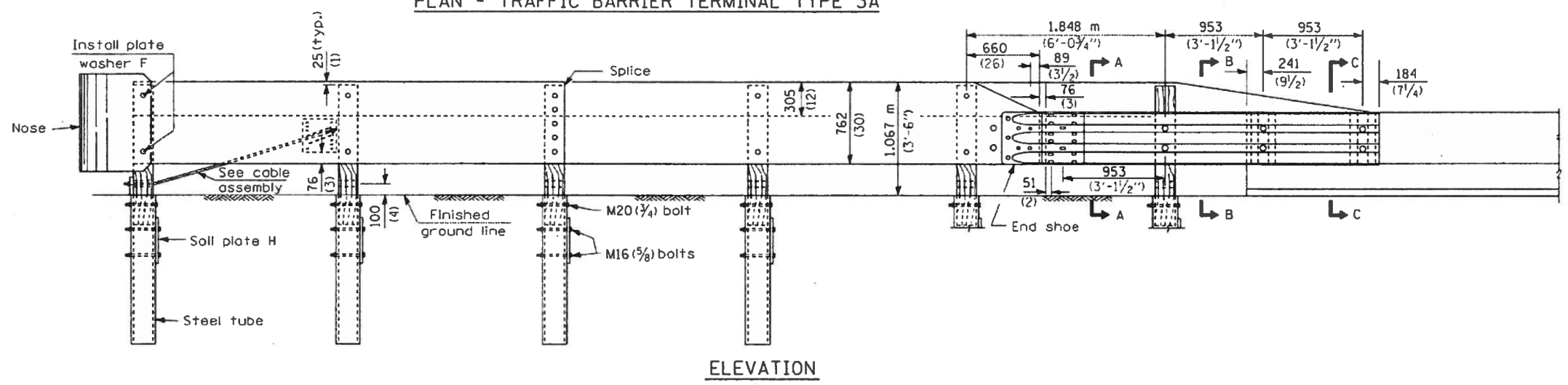
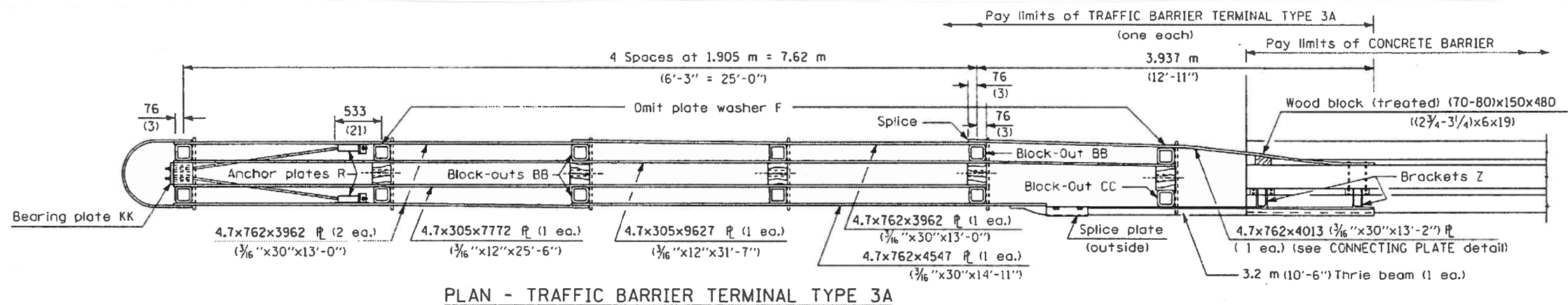
TYPICAL BLOCK-OUT/POST ATTACHMENT

DETAIL INCLUDED FOR REPAIR ONLY

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

FILE NAME =	USER NAME = lababidism	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.	
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Default	PLOT SCALE = 40.0000' / in.	CHECKED -	REVISED -			CONTRACT NO. 68E08					
	PLOT DATE = 2/6/2018	DATE -	REVISED -			ILLINOIS FED. AID PROJECT					

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

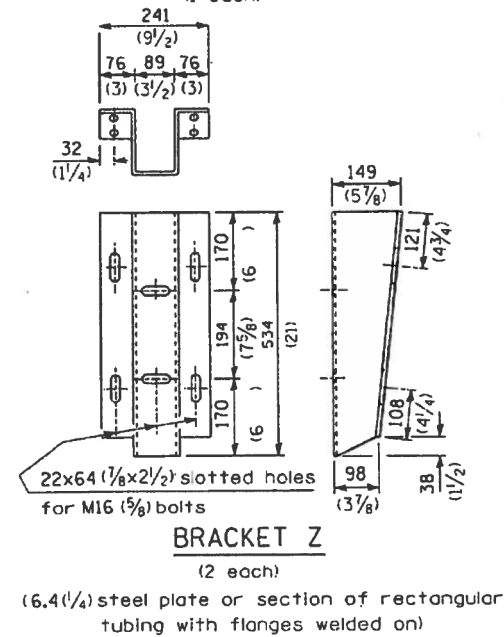
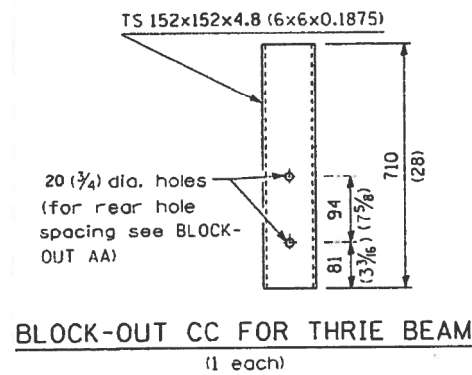
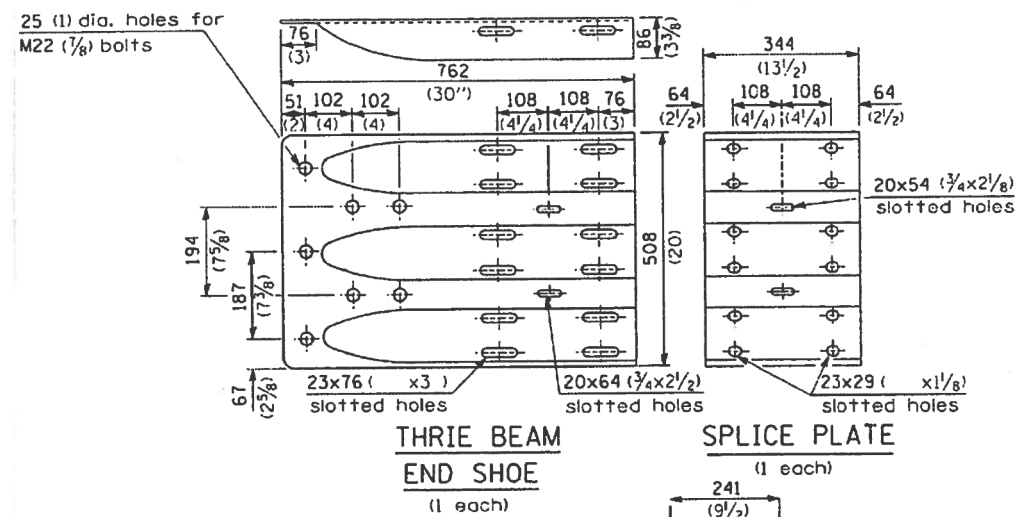
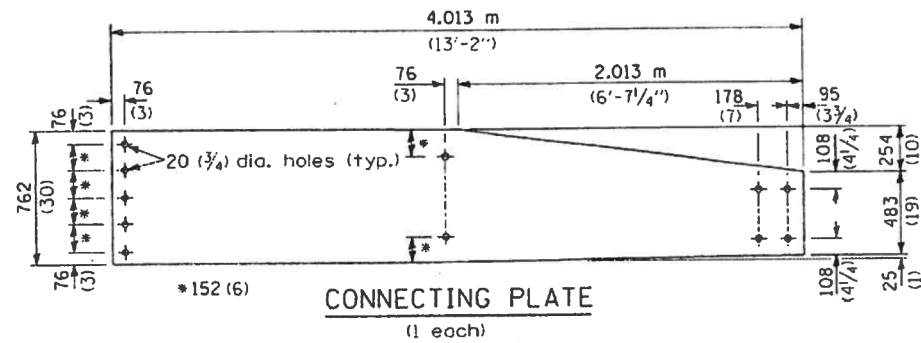


DETAIL INCLUDED FOR REPAIR ONLY

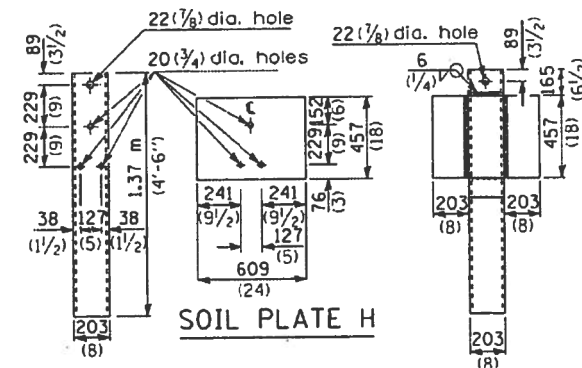
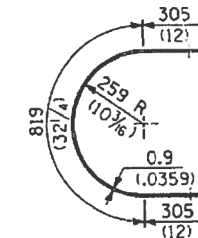
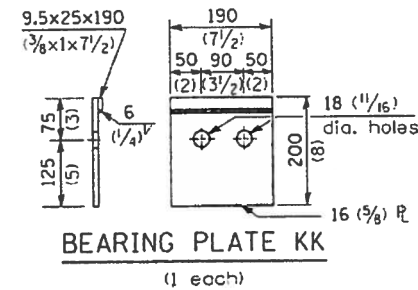
All dimensions are in millimeters (inches) unless otherwise shown.

FILE NAME =	USER NAME = lababidism	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.	
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Default	PLOT SCALE = 40.0000' / in.	CHECKED -	REVISED -			CONTRACT NO. 68E08					
	PLOT DATE = 2/6/2018	DATE -	REVISED -			SCALE:	SHEET 2	OF 3 SHEETS	STA.	TO STA.	ILLINOIS FED. AID PROJECT

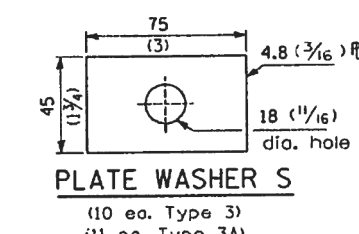
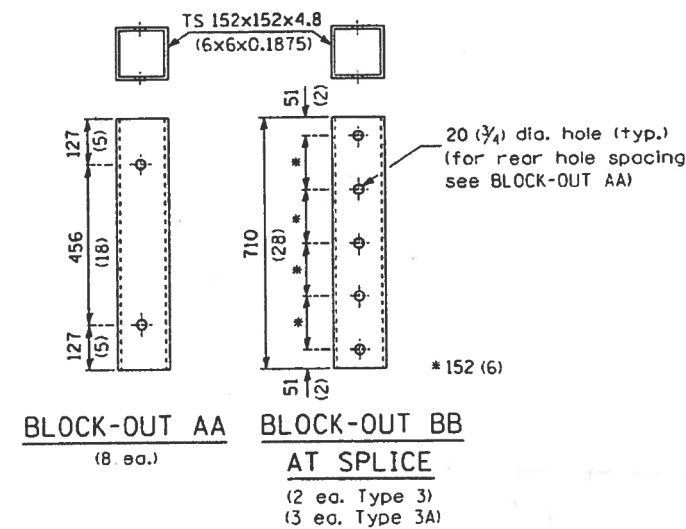
TYPE 3A ONLY



TYPE 3 & 3A



TS 203x203x4.8 (8x8x0.1875)
(end terminal post) (1 ea.)
TS 203x152x4.8 (8x6x0.1875)
(terminal post) (4 ea. Type 3)
(5 ea. Type 3A)



DETAIL INCLUDED FOR REPAIR ONLY

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

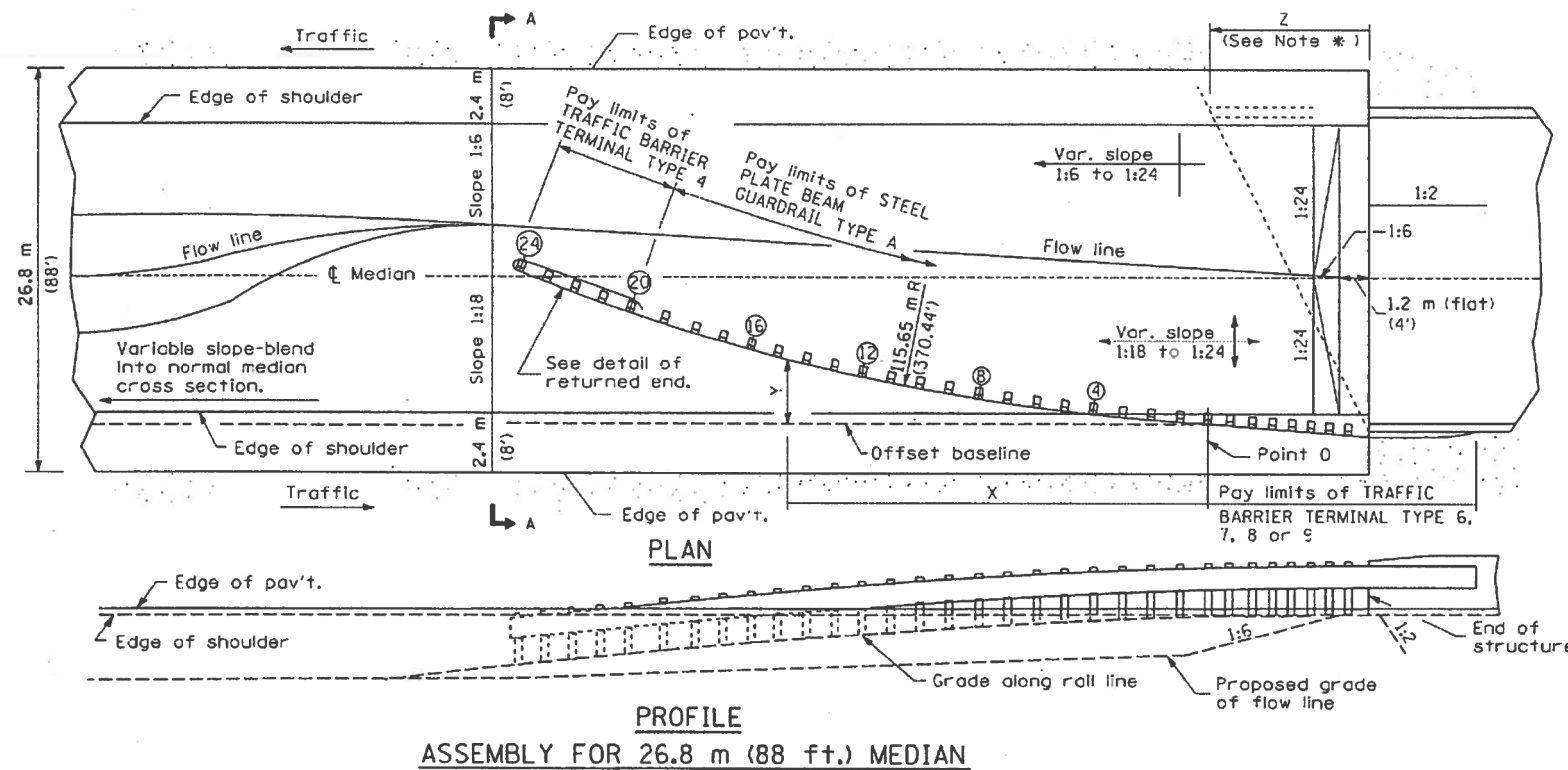
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Default	PLOT SCALE = 40.0000' / in.	CHECKED -	REVISED -
	PLOT DATE = 2/6/2018	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**EXISTING TRAFFIC BARRIER TERMINAL
TYPE 3 & TYPE 3A**

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2017-MCHD	TAZEWELL	27	12
			CONTRACT NO. 68E08	
ILLINOIS FED. AID PROJECT				



OFFSETS TO FACE OF RAIL		
POST	DISTANCE X (ft.)	OFFSET Y (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)
⑰	29.94 (98.23)	5.20 (17.05)
⑳	37.13 (121.83)	7.71 (25.3)
㉔	44.14 (144.83)	10.70 (35.09)

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

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

GENERAL NOTES

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

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

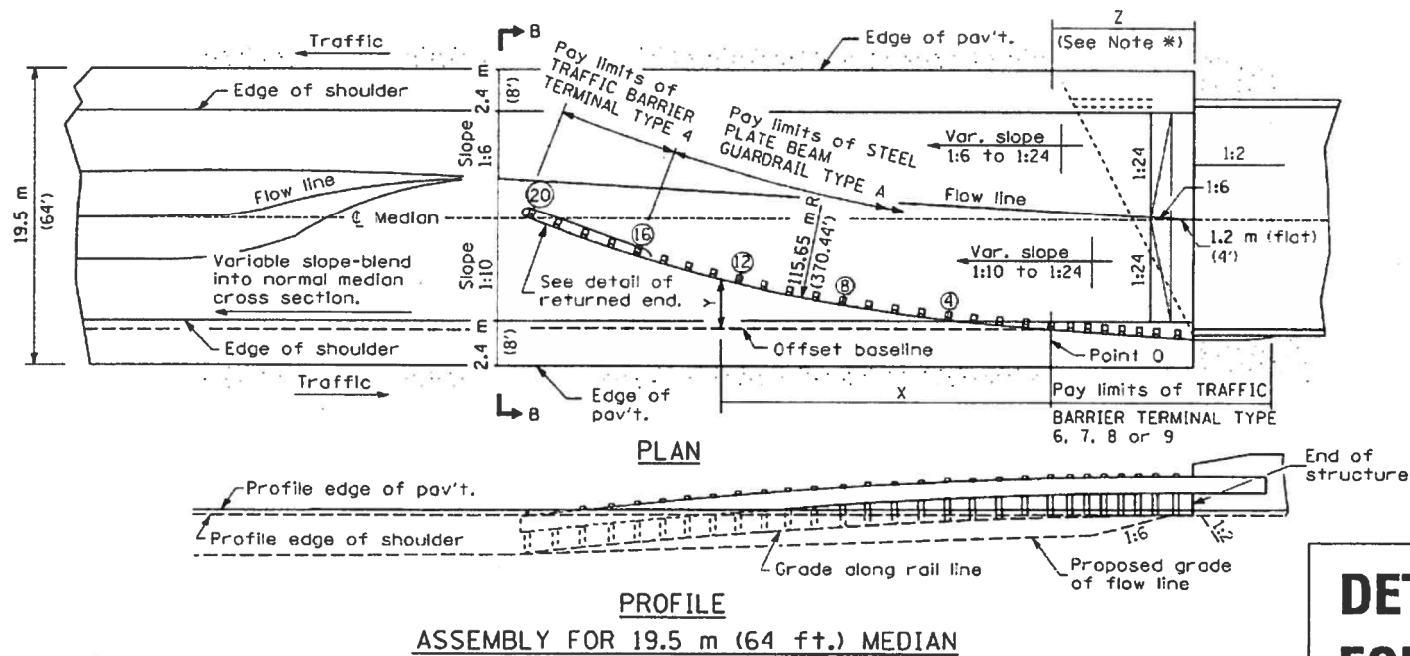
For dual structures that are 90° or skewed left forward, the length of guardrail is appropriate.

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

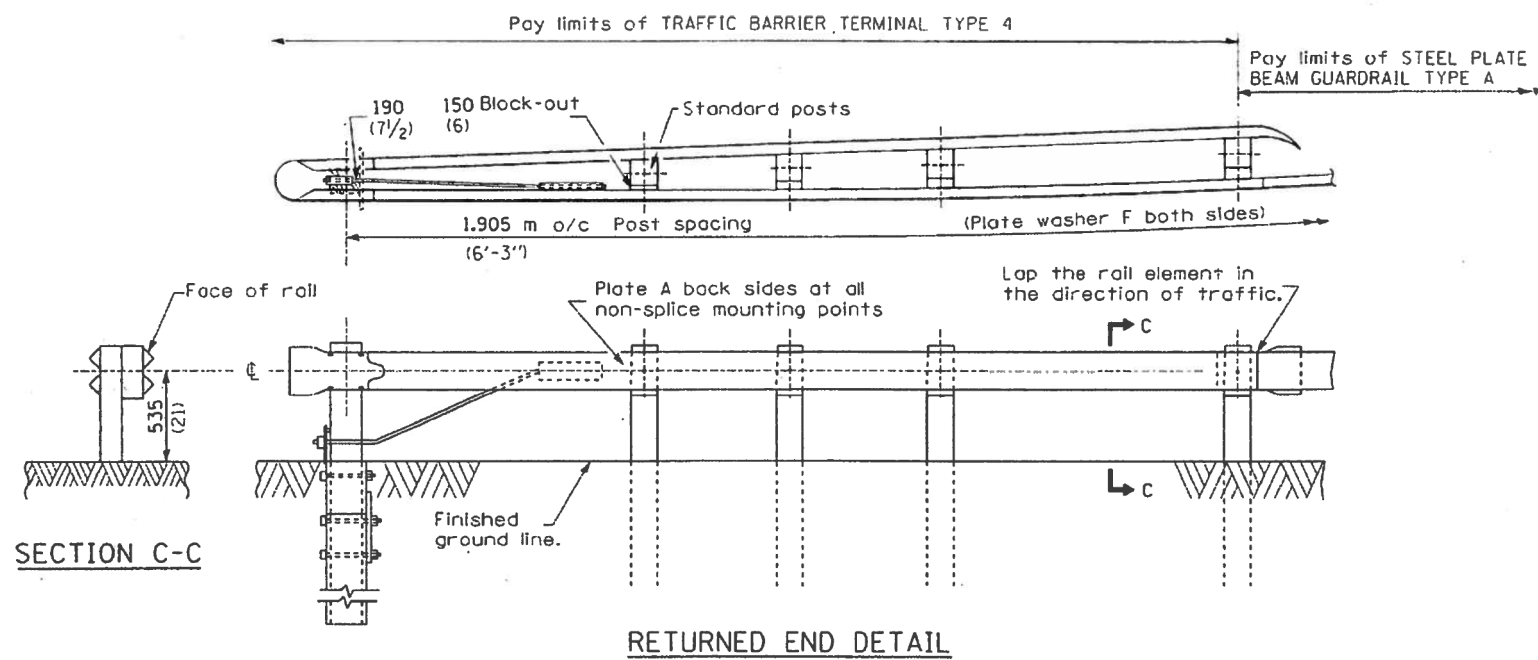
All slopes are expressed as units of vertical displacement to units of horizontal displacement (V:H).

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

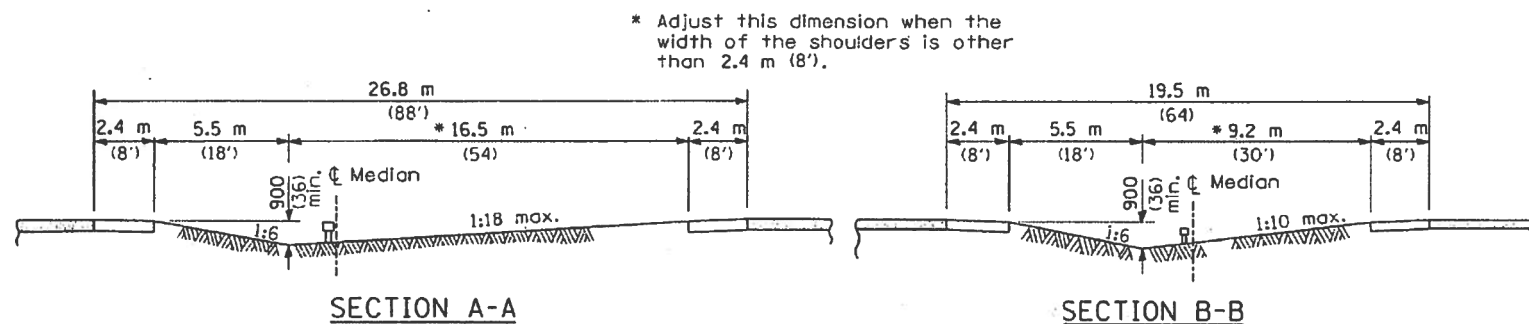
All dimensions are in millimeters (inches) unless otherwise shown.



DETAIL INCLUDED FOR REPAIR ONLY

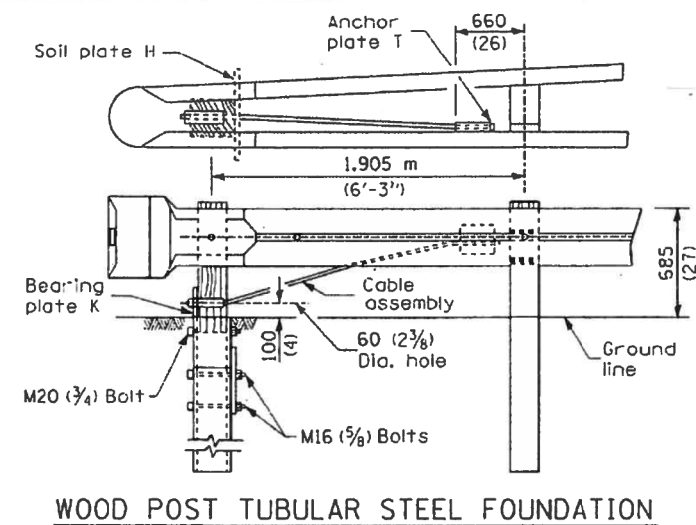


RETURNED END DETAIL

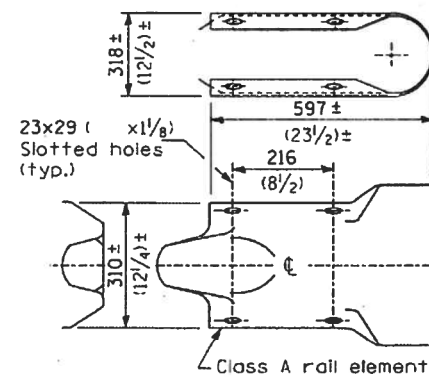


SECTION A-A

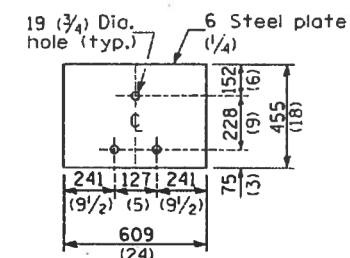
SECTION B-B



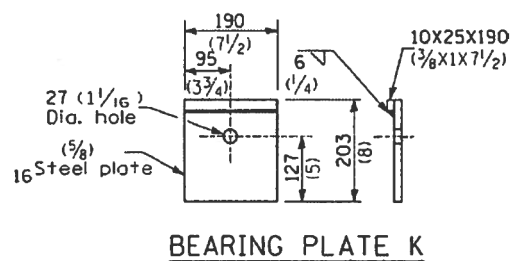
WOOD POST TUBULAR STEEL FOUNDATION



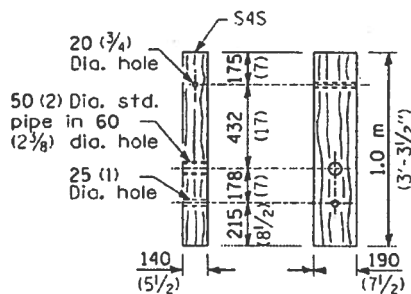
RETURN END SECTION



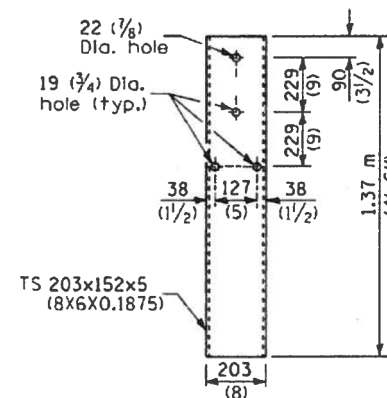
SOIL PLATE H



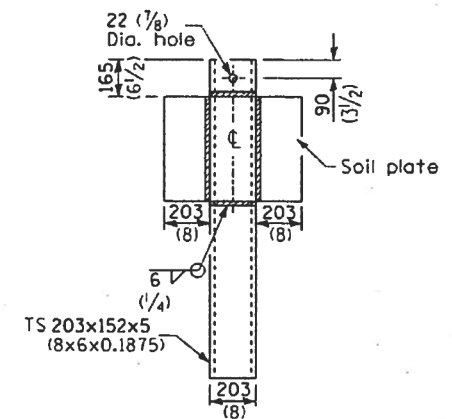
BEARING PLATE K



WOOD BREAKAWAY POST



STEEL TUBE

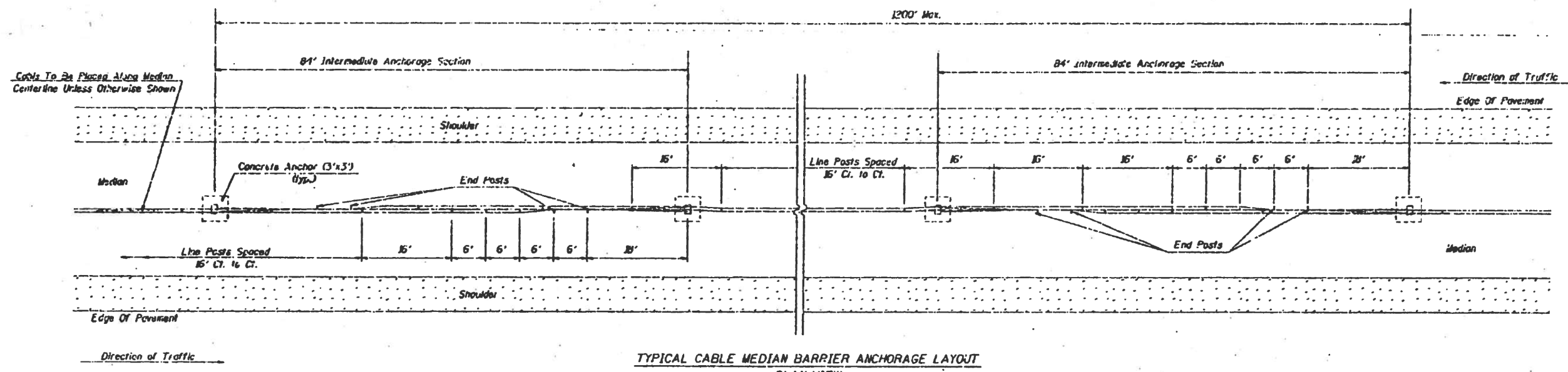


ALTERNATE SOIL PLATE CONNECTION

DETAIL INCLUDED FOR REPAIR ONLY

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

FILE NAME =	USER NAME = lababidism	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING TYPE 4 TERMINAL		F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S:\GEN\DRAW\STD&PLNS\SQUAD 0\68E08	2018\04\68E08-CADD.dgn	DRAWN -	REVISED -		VAR	D4 GUARDRAIL REPAIRS 2017-MCHD	TAZEWELL	27	14	CONTRACT NO. 68E08	
Default	PLOT SCALE = 40.0000' / in.	CHECKED -	REVISED -		SCALE:	SHEET 2	OF 2 SHEETS	STA.	TO STA.	ILLINOIS FED. AID PROJECT	
	PLOT DATE = 2/6/2018	DATE -	REVISED -								



TYPICAL CABLE MEDIAN BARRIER ANCHORAGE LAYOUT
 PLAN VIEW
 Not to Scale

GENERAL NOTE

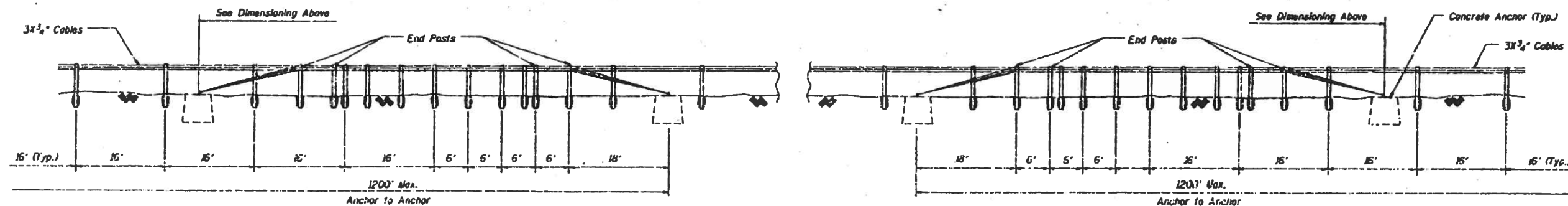
DELINEATORS: Two reflectors, placed back to back, shall be required for each delineator post.

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.

DETAIL INCLUDED FOR REPAIR ONLY

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



TYPICAL CABLE MEDIAN BARRIER ANCHORAGE LAYOUT
 ELEVATION VIEW
 Not to Scale

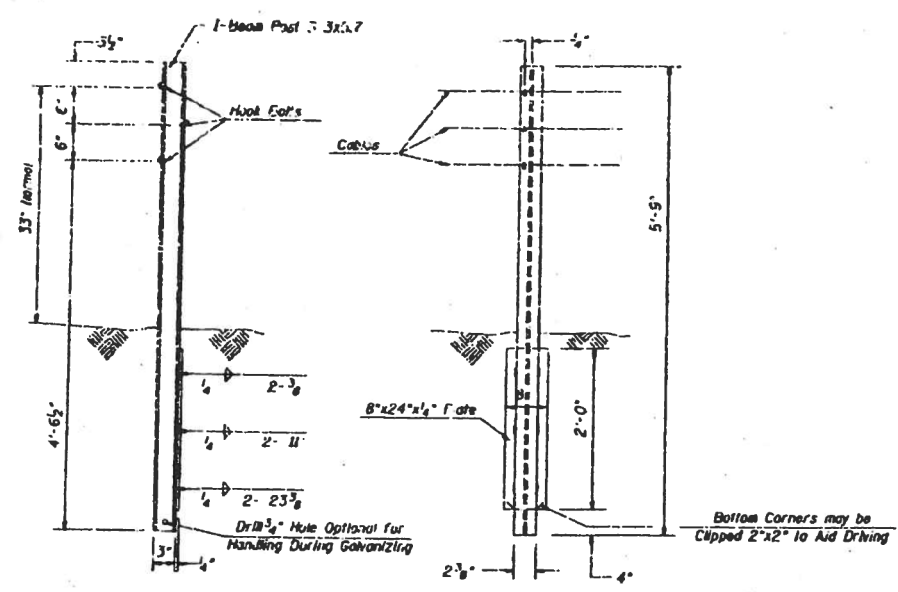
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STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

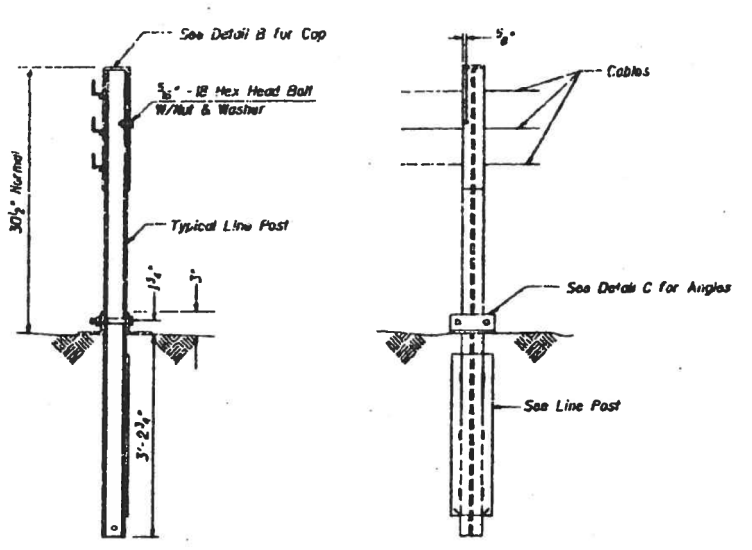
EXISTING CABLE MEDIAN BARRIER (CABLE ROAD GUARD)

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

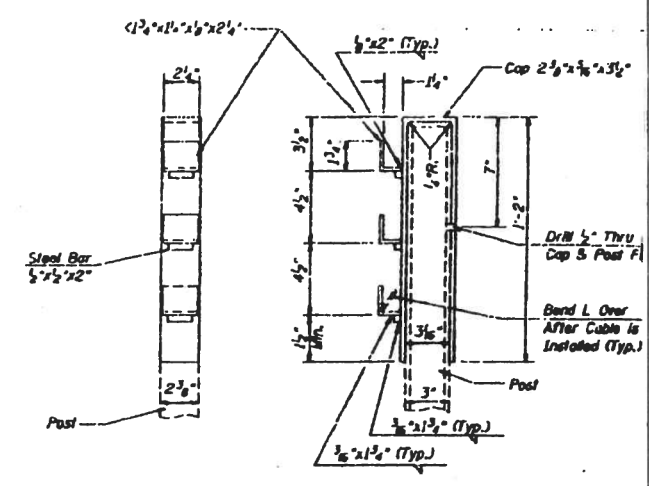
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR 04	GUARDRAIL REPAIRS 2017-MCHD	TAZEWELL	27	15
			CONTRACT NO. 68E08	
ILLINOIS FED. AID PROJECT				



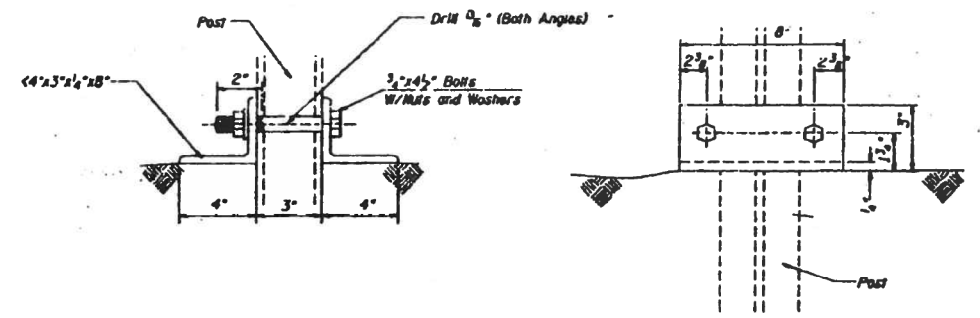
LINE POST DETAIL



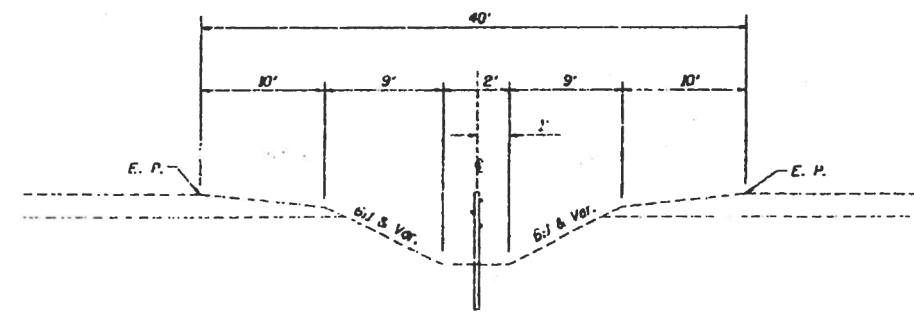
END POST DETAIL



DETAIL B



DETAIL C



CABLE MEDIAN BARRIER TYPICAL SECTION

DETAIL INCLUDED FOR REPAIR ONLY

NOTES

- 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.
- Compensating 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.
- 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 maintenance 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.S.I. E11). Internally threaded parts shall meet the dimensional requirements of ASTM A 563.
- 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 3/4 inch round cable (25,000 lbs.).
- For arrangement of spring cable end assemblies (compensating devices) and turnbuckle cable end assemblies, the following criteria shall apply:
Length of Cable Runs:
To 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 2000' - Use compensating cable end assembly on each end of each individual cable.
- All assembly parts and posts are to be galvanized and no punching, cutting or welding will be permitted after galvanizing.
- 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.
- Prior to final acceptance by the State the following procedure shall be used to tighten the turnbuckles, depending on the temperature at the time of adjustment in accordance with the following table:
Temperature: 120° 99° 79° 59° 39° 19° 1°
10 10 10 10 10 10 10
100° 80° 60° 40° 20° 1° -20°
Spring Compression from unloaded position in each spring: 1 1/2" 2" 2 1/2" 3" 3 1/2" 4"

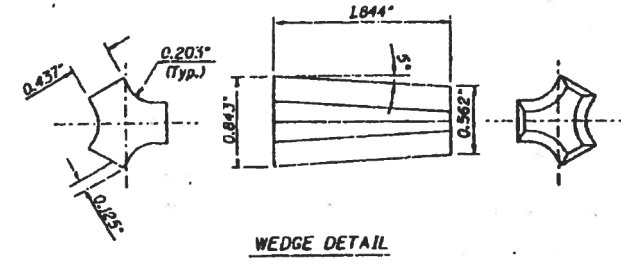
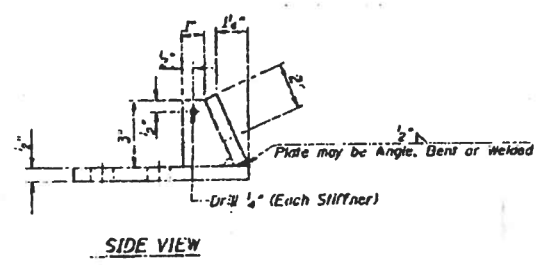
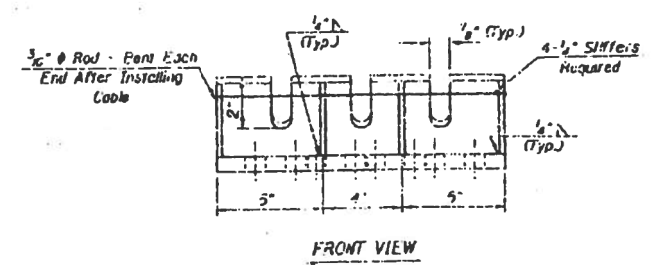
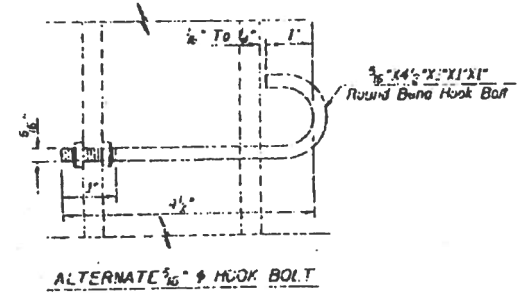
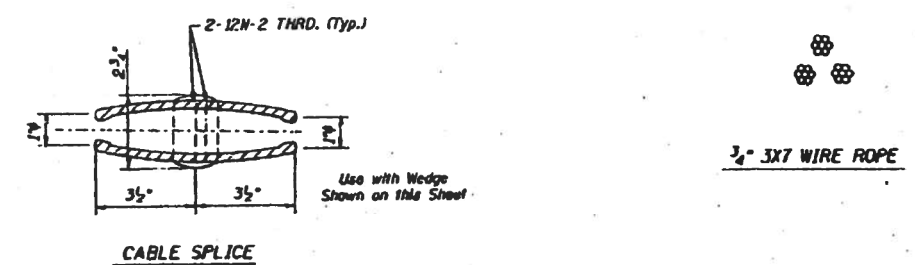
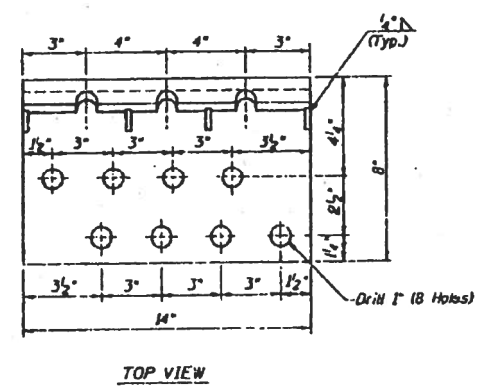
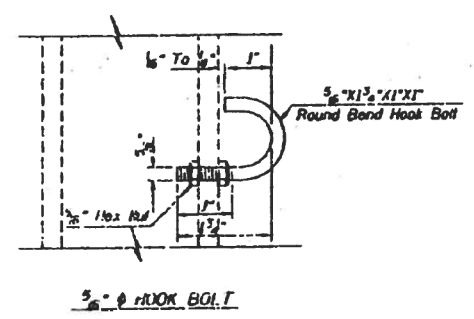
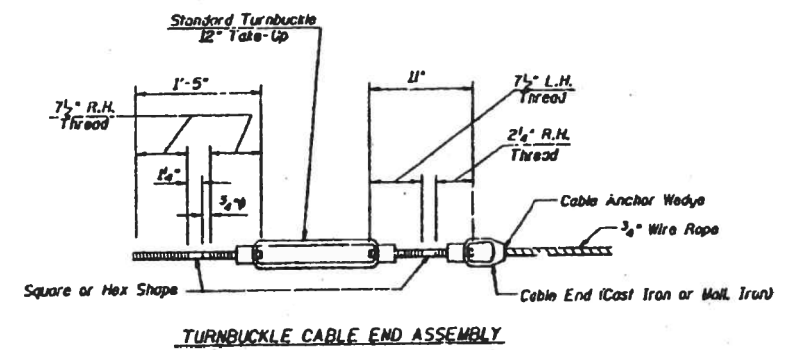
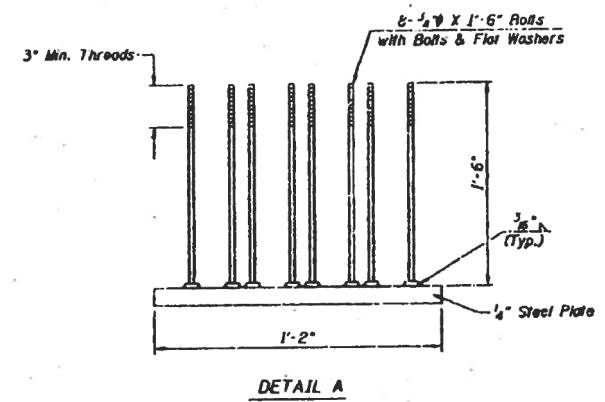
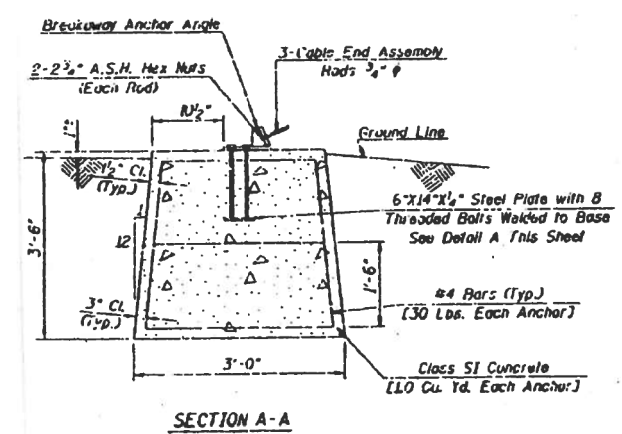
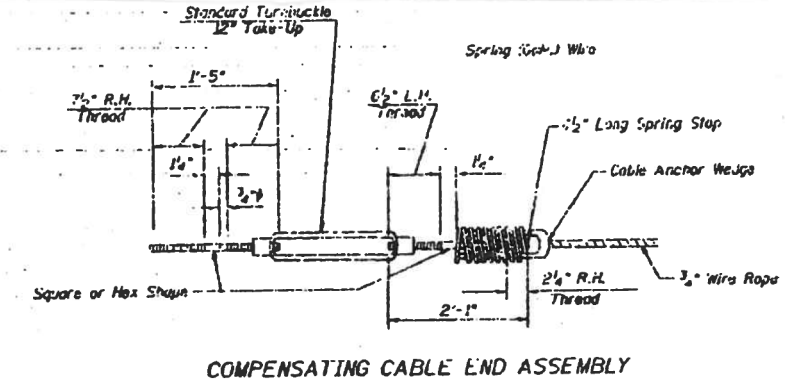
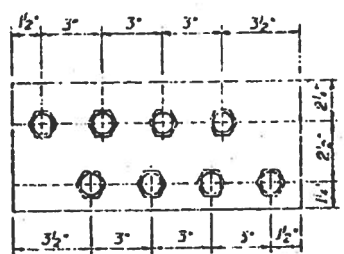
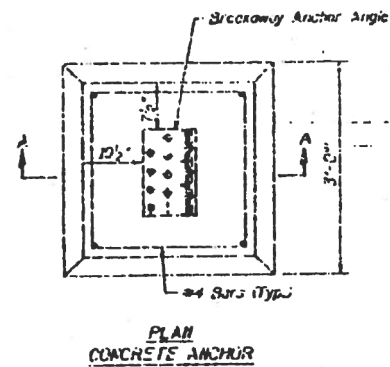
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	PLOT DATE = 2/6/2018	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

EXISTING CABLE MEDIAN BARRIER (CABLE ROAD GUARD)

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

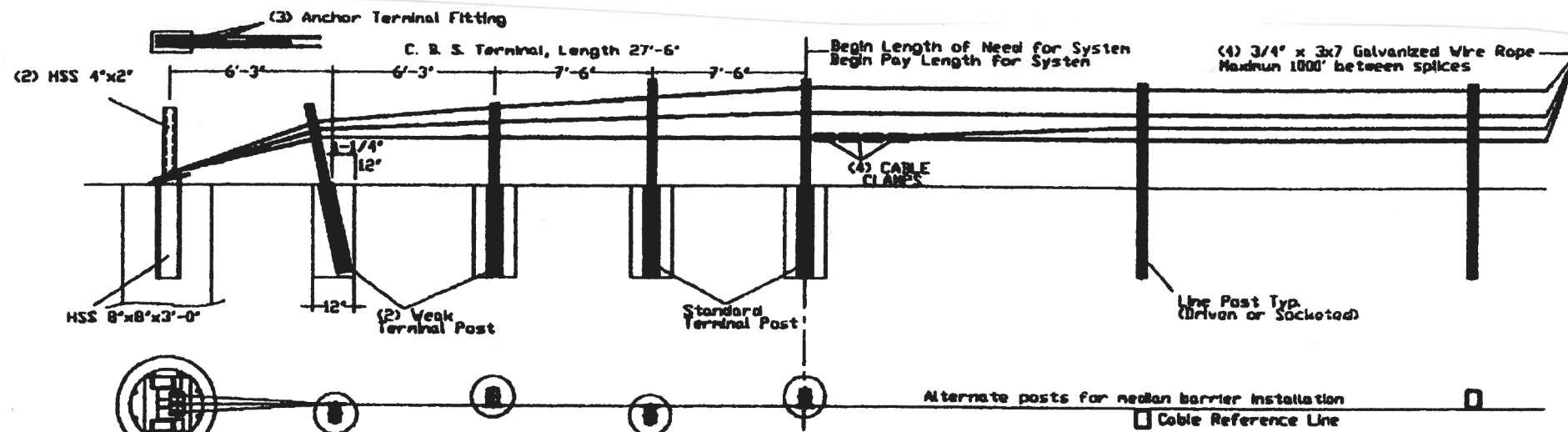
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR 04	GUARDRAIL REPAIRS 2017-MCHD	TAZEWELL	27	16
			CONTRACT NO. 68E08	
ILLINOIS FED. AID PROJECT				



DETAIL INCLUDED FOR REPAIR ONLY

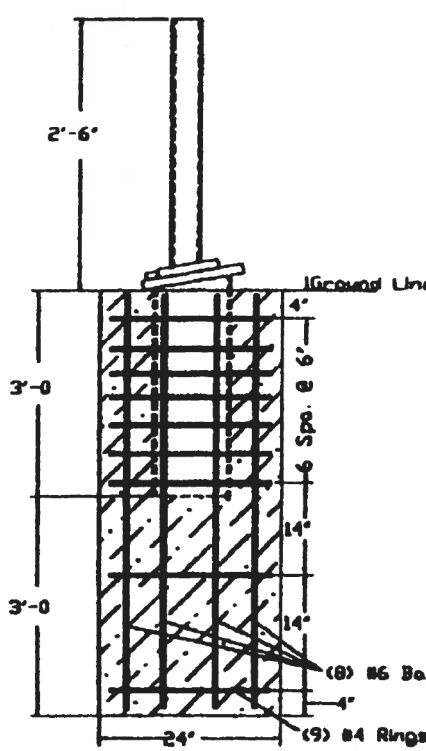
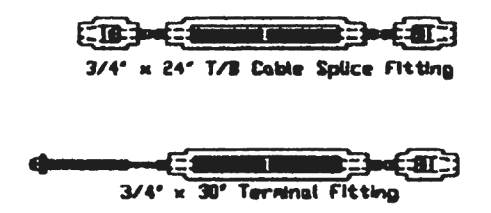
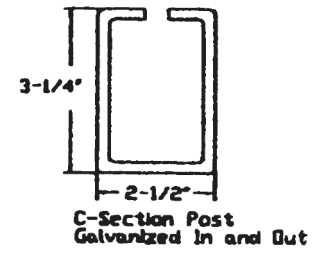
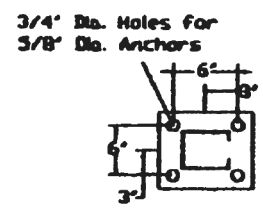
BREAKAWAY ANCHOR ANGLE

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Default	2018\04\11 2018\04\11 2018\04\11 2018\04\11	DRAWN -	REVISED -									VAR	D4 GUARDRAIL REPAIRS 2017-MCHD	TAZEWELL	27	17		
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	PLOT DATE = 2/6/2018	DATE -	REVISED -									ILLINOIS FED. AID PROJECT						

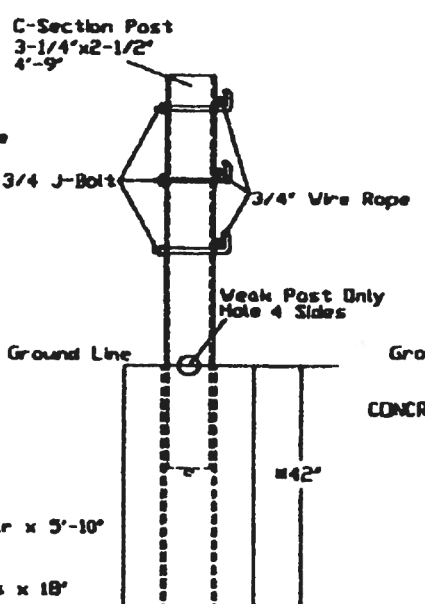


- ### GENERAL NOTES
- For additional information contact Gibraltar, Inc. at 1-800-493-8937, or see the manufacturer's product manual.
 - All concrete shall be minimum 2500 PSI.
 - Alternate Post for bi-directional traffic flow. If installed for traffic in one direction install cables on traffic side 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 10' 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.

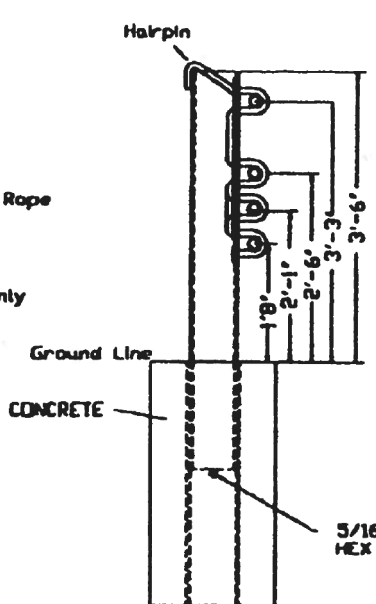
BASE-PLATED POST
 For Use On Concrete
 5/8" Mechanical Anchor
 Min. Pullout Strength 10,000 lbs.



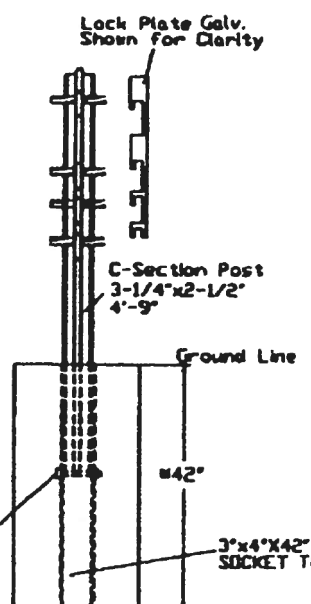
Cable Release Anchor Post



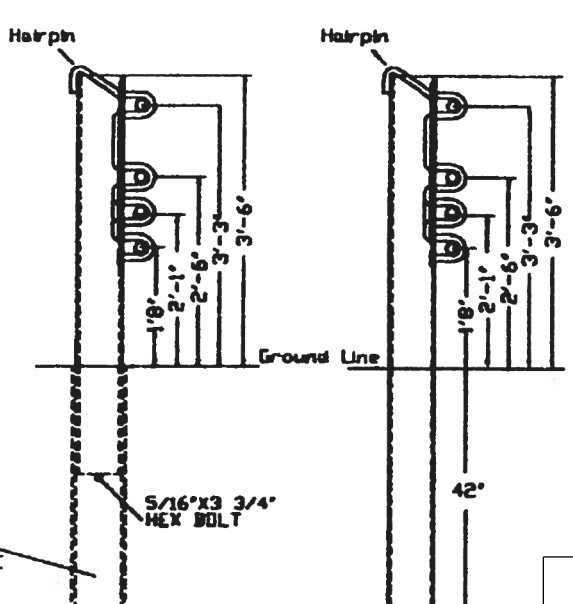
Terminal Post



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

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

DETAIL INCLUDED FOR REPAIR ONLY

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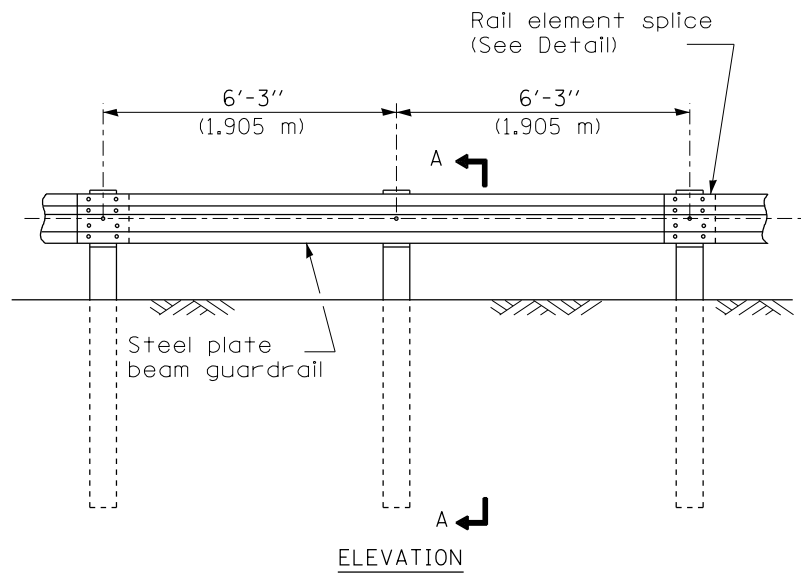
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING GIBRALTAR CABLE BARRIER DETAIL

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

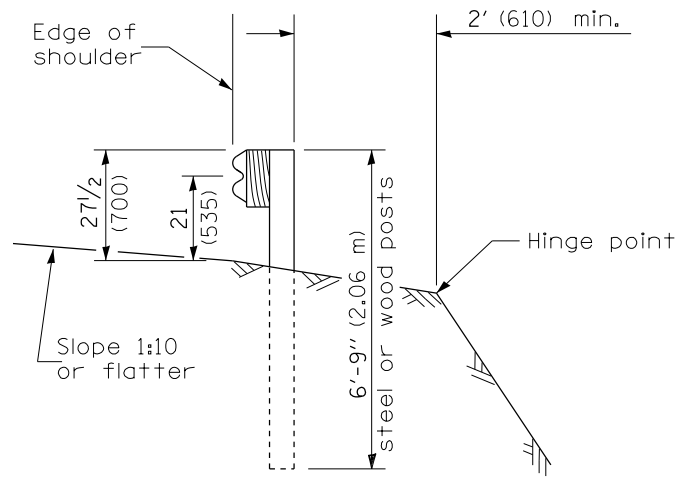
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2017-MCHD	TAZEWELL	27	18
			CONTRACT NO. 68E08	
ILLINOIS FED. AID PROJECT				

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.

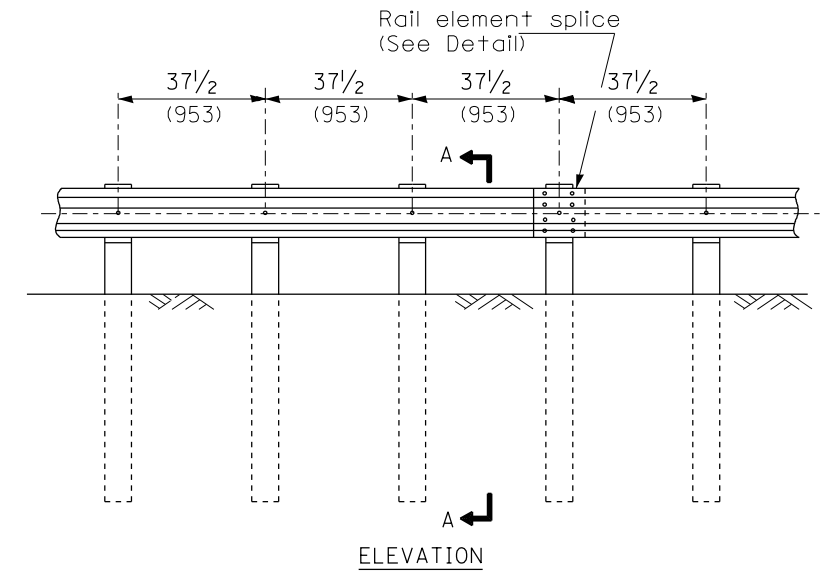


TYPE A

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

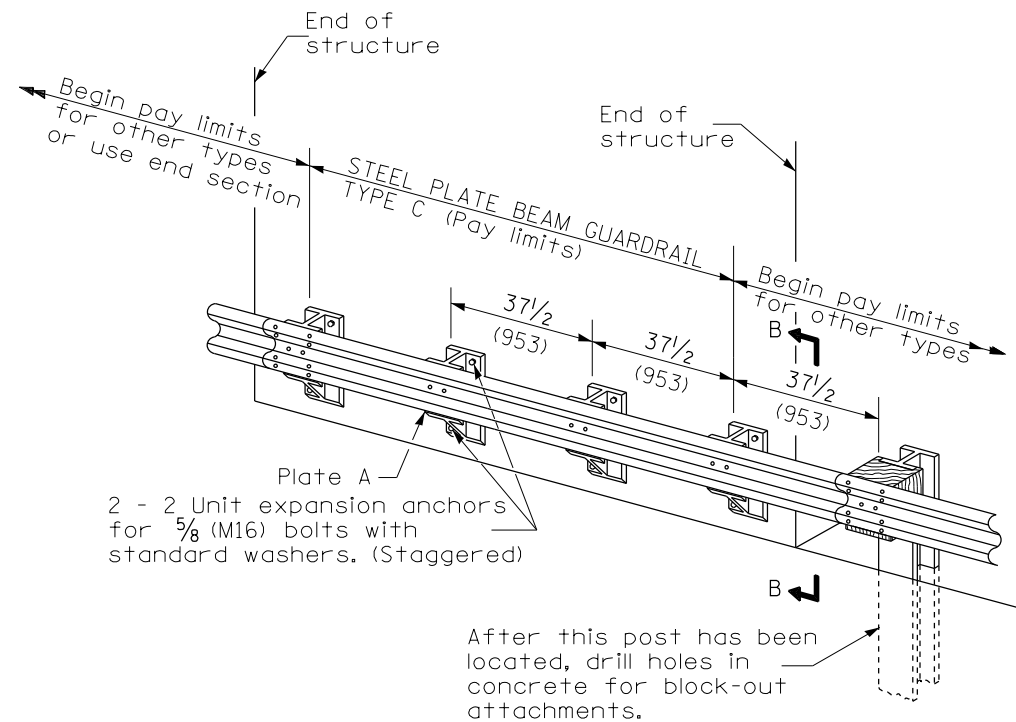


SECTION A-A



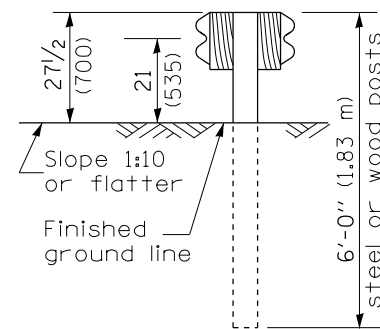
TYPE B

37 1/2 (953) Closed post spacing

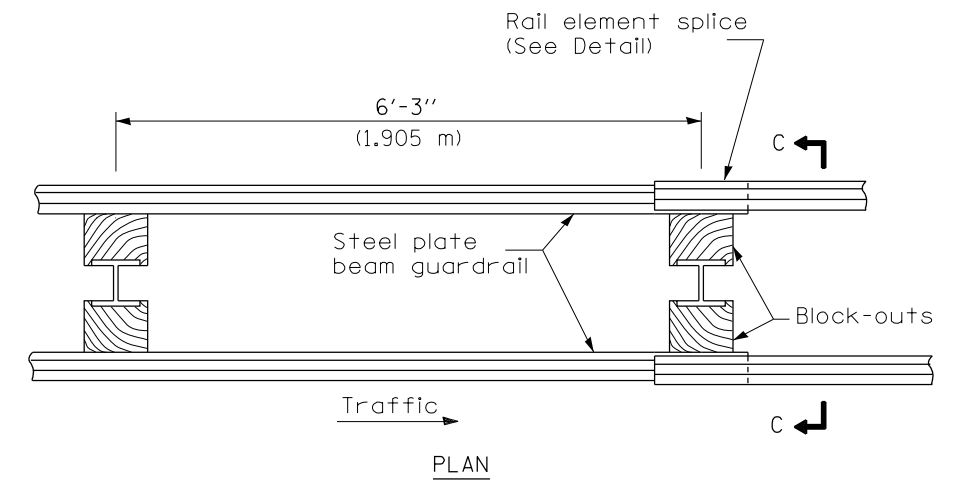


TYPE C

37 1/2 (953) Block-out spacing

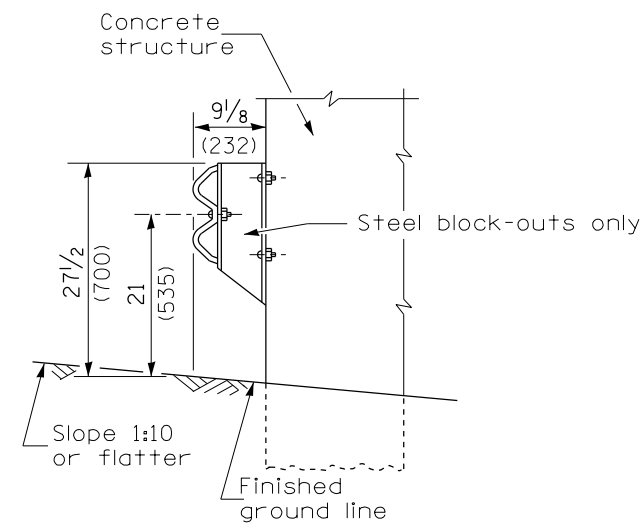


SECTION C-C



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.

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

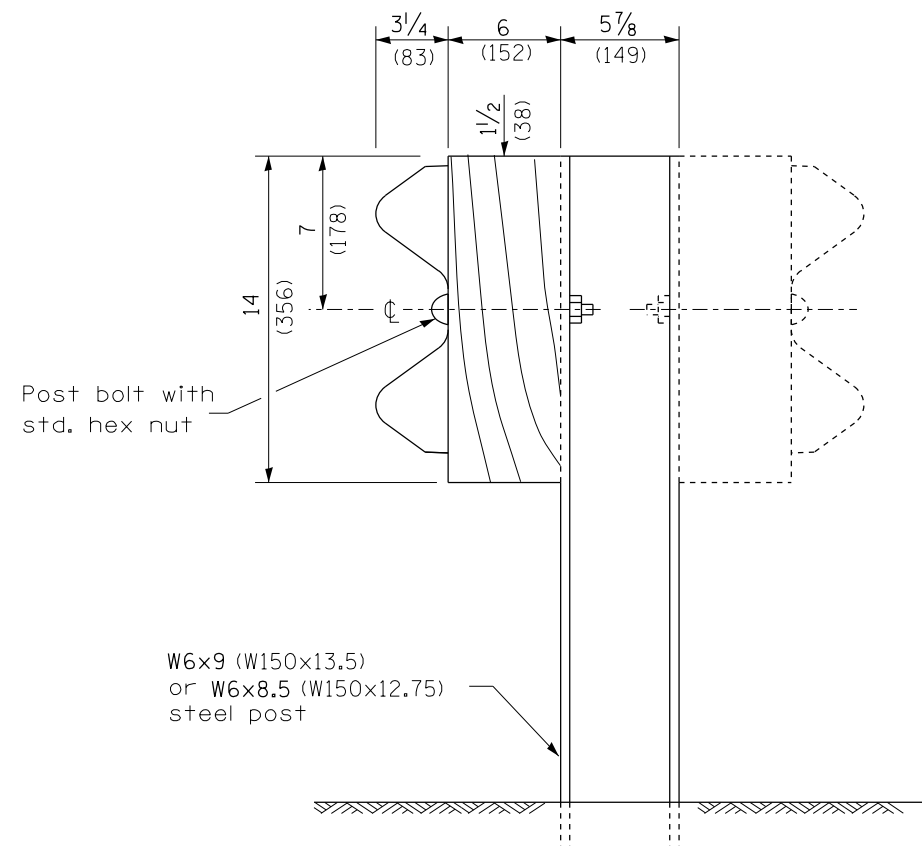
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

NOT TO SCALE

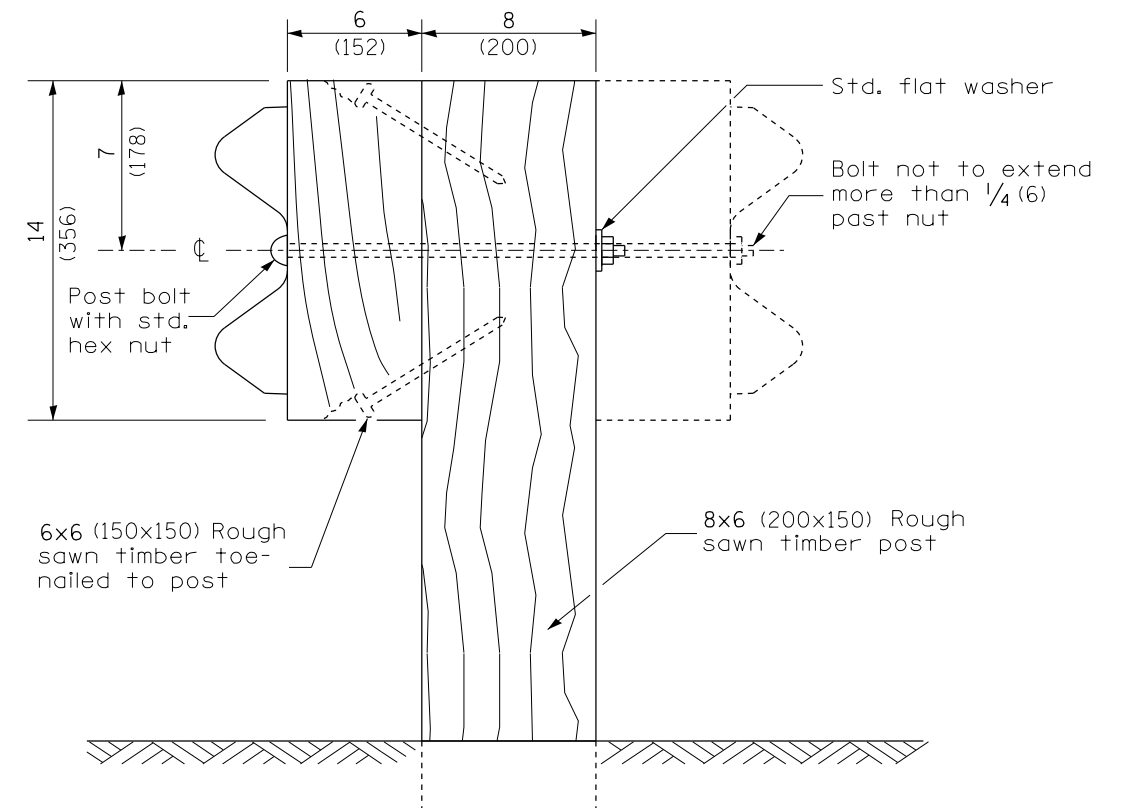
**STEEL PLATE BEAM GUARDRAIL, TYPE A,
6.75 FOOT POSTS**

SHT. 1 OF 4
CADD STD. 630011-D4

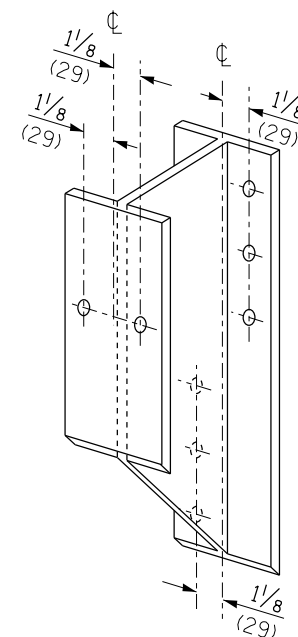
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D4 GUARDRAIL REPAIRS 2018-MCHD	TAZEWELL	27	19
FED. ROAD DIST. NO.			CONTRACT NO. 68E08	
ILLINOIS FED. AID PROJECT				



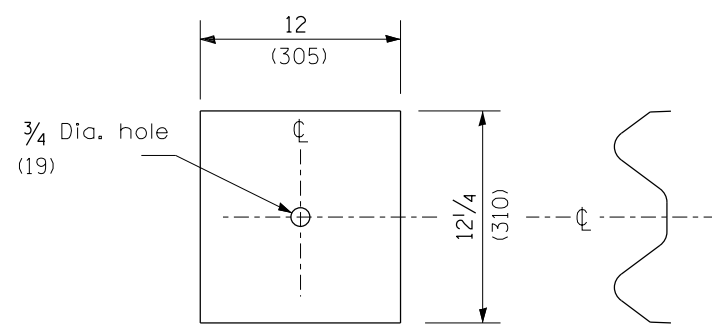
STEEL POST CONSTRUCTION



WOOD POST CONSTRUCTION



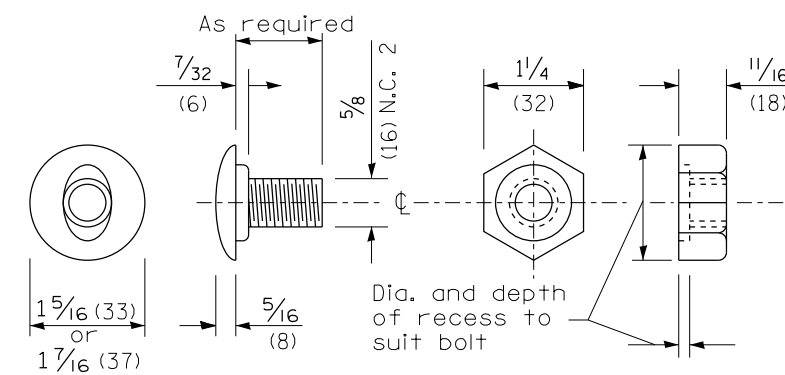
STEEL BLOCK-OUT DETAIL



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

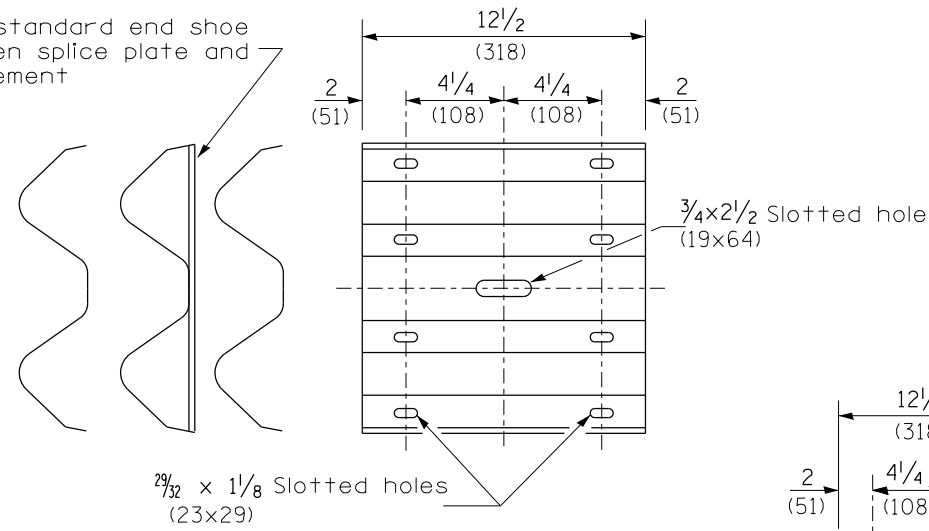
STEEL PLATE BEAM GUARDRAIL, TYPE A,
6.75 FOOT POSTS

NOT TO SCALE

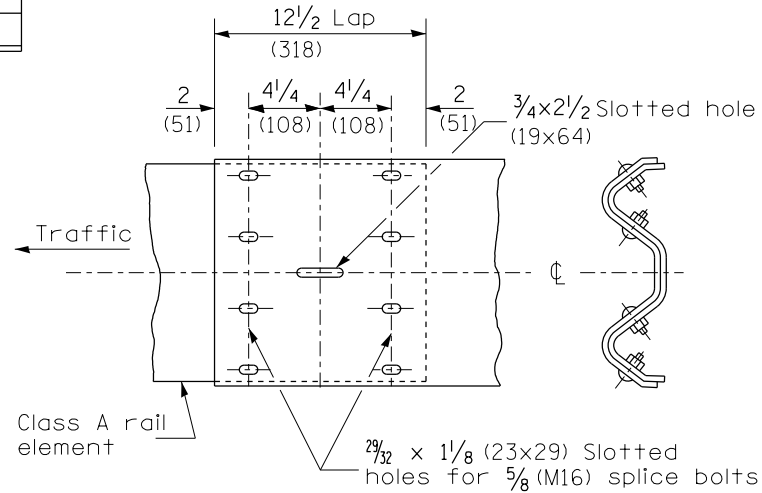
SHT. 2 OF 4
CADD STD. 630011-D4

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR D4	GUARDRAIL REPAIRS 2018-MCHD	TAZEWELL	27	20
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 68E08	

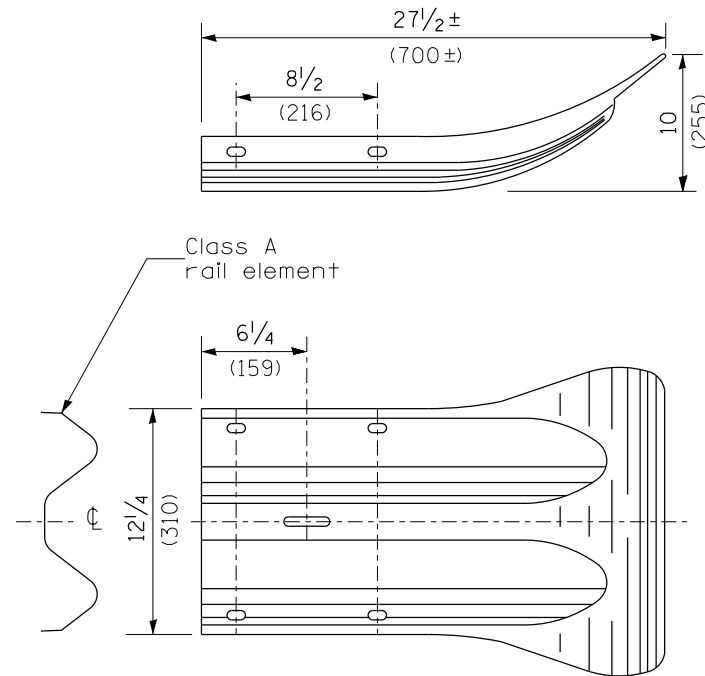
Place standard end shoe between splice plate and rail element



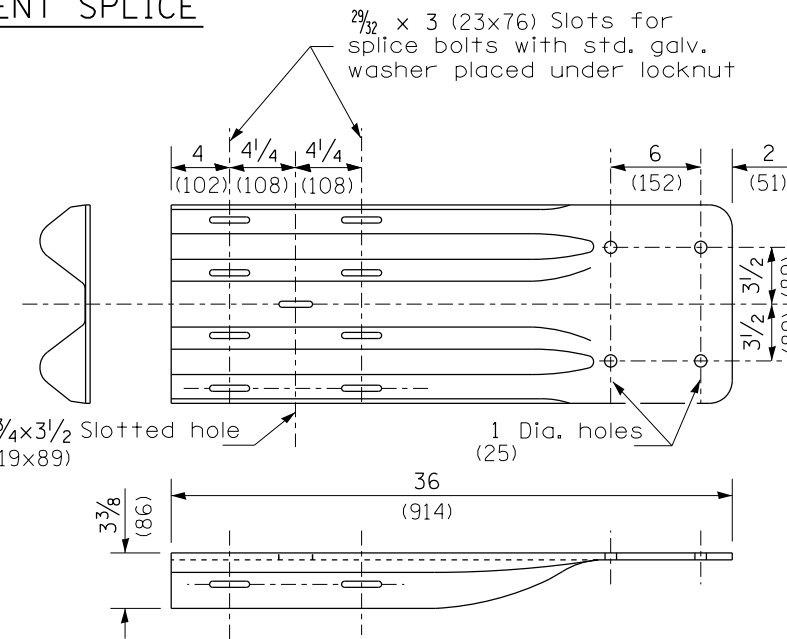
SPLICE PLATE



RAIL ELEMENT SPLICE



END SECTION



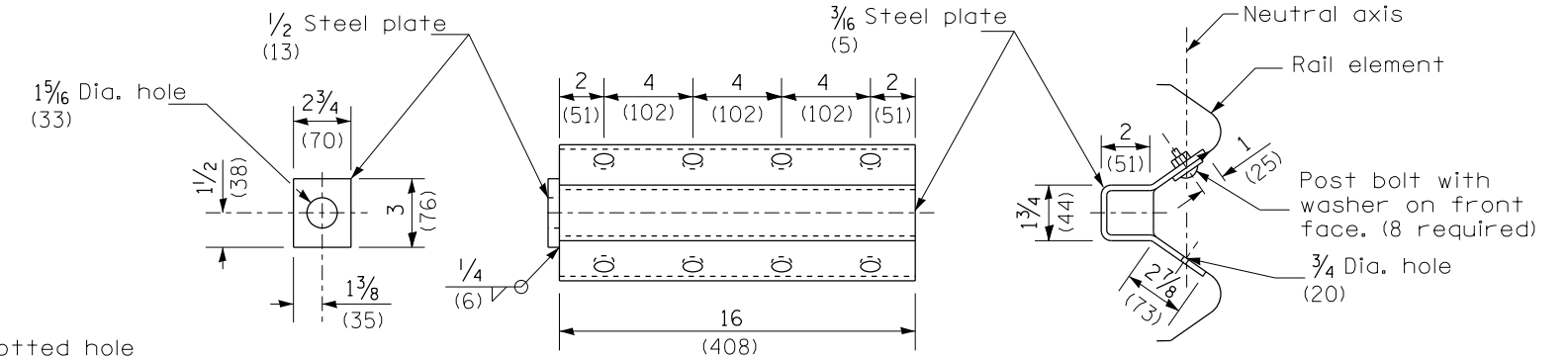
NOTE

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.

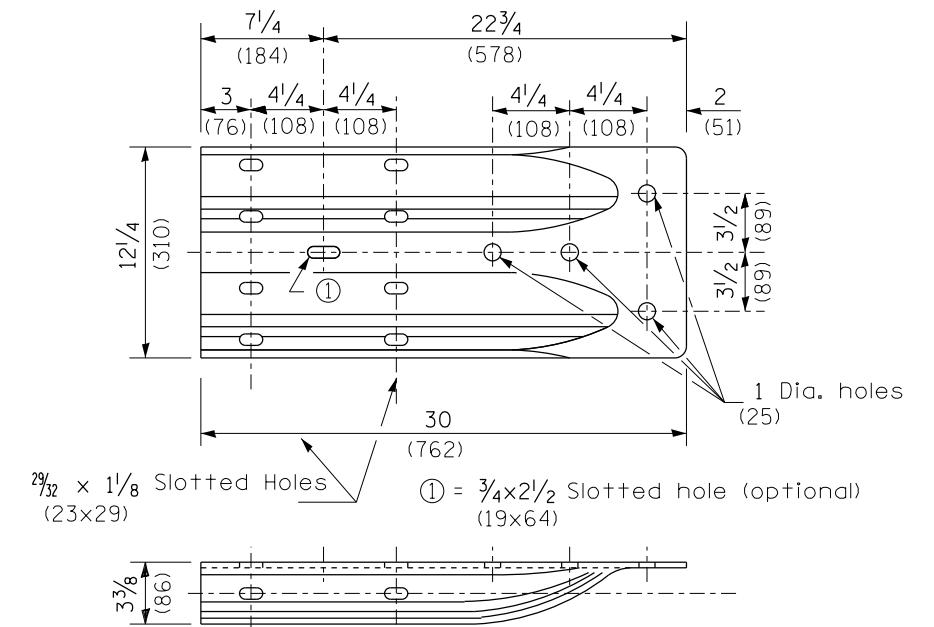
END SHOE



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.

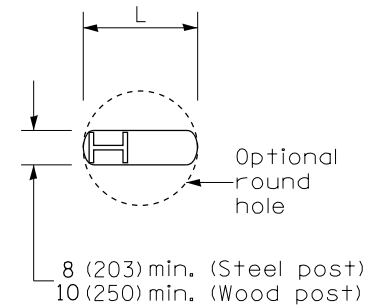
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL PLATE BEAM GUARDRAIL, TYPE A,
6.75 FOOT POSTS

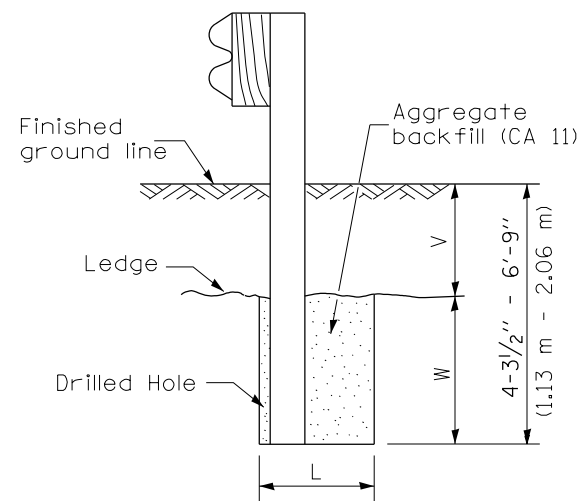
NOT TO SCALE

SHT. 3 OF 4
CADD STD. 630011-D4

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR D4	GUARDRAIL REPAIRS 2018-MCHD	TAZEWELL	27	21
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 68E08	



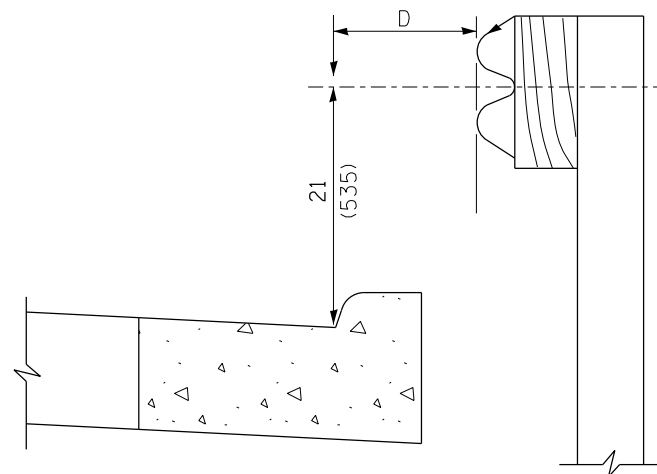
PLAN



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

ELEVATION

FOOTING FOR POST WHEN IMPERVIOUS MATERIAL IS ENCOUNTERED



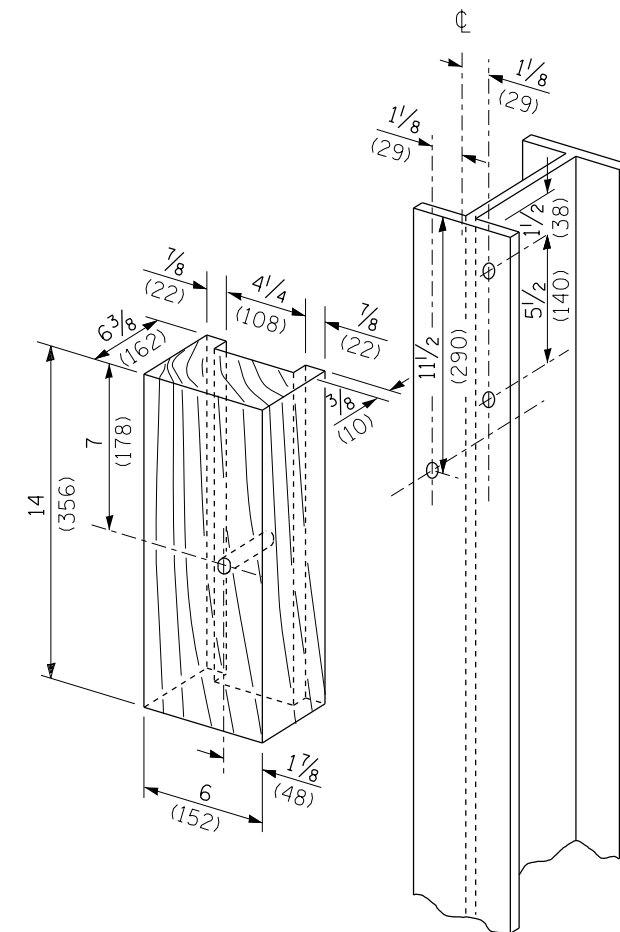
Note:

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.

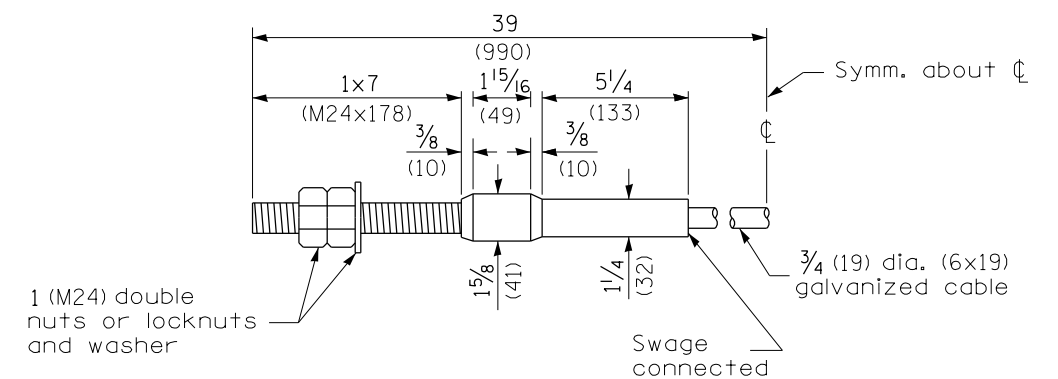
GUARDRAIL PLACED BEHIND CURB

(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



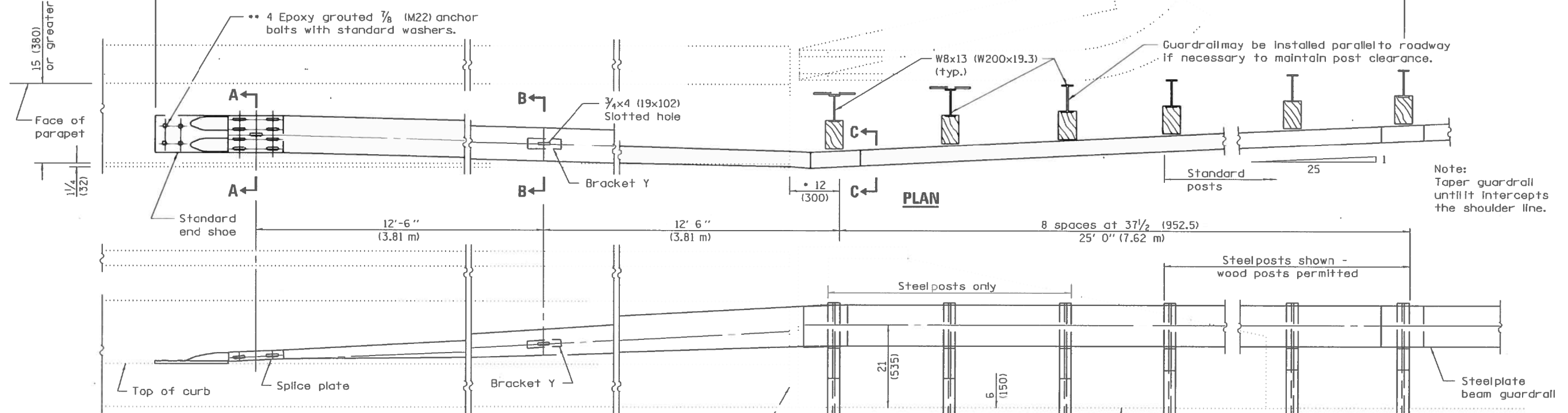
CABLE ASSEMBLY

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

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

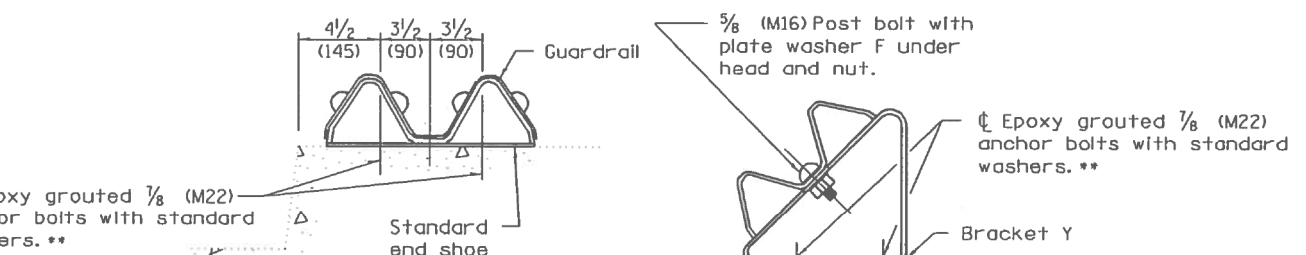
Pay limits of TRAFFIC BARRIER TERMINAL TYPE 8 (1 each)

Pay limits of other types



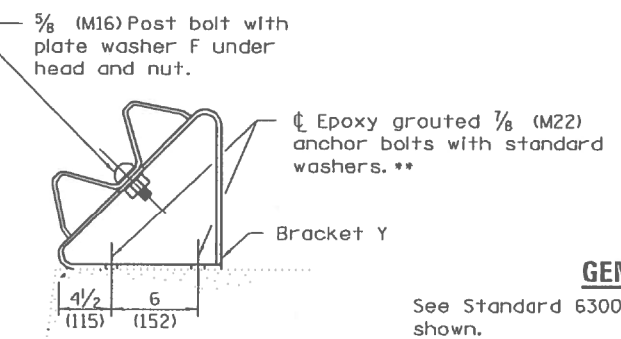
Note: Taper guardrail until it intercepts the shoulder line.

ELEVATION



SECTION A-A

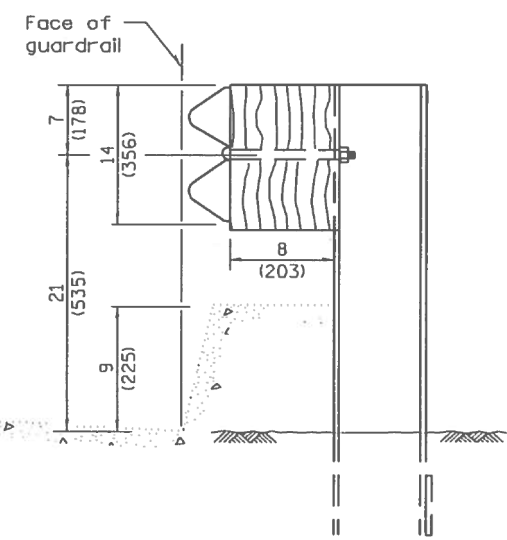
SECTION B-B



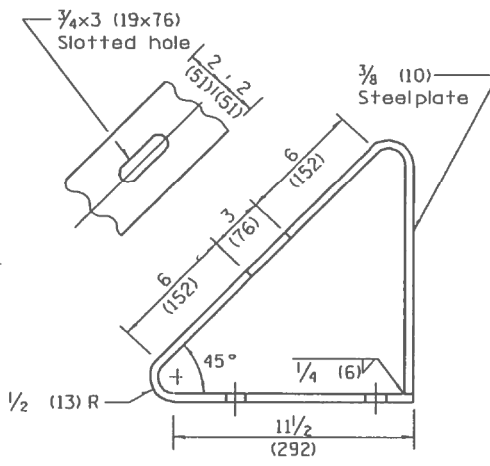
GENERAL NOTES

- 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.

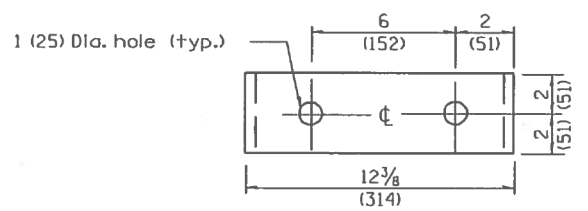
DETAIL INCLUDED FOR REPAIR ONLY



SECTION C-C



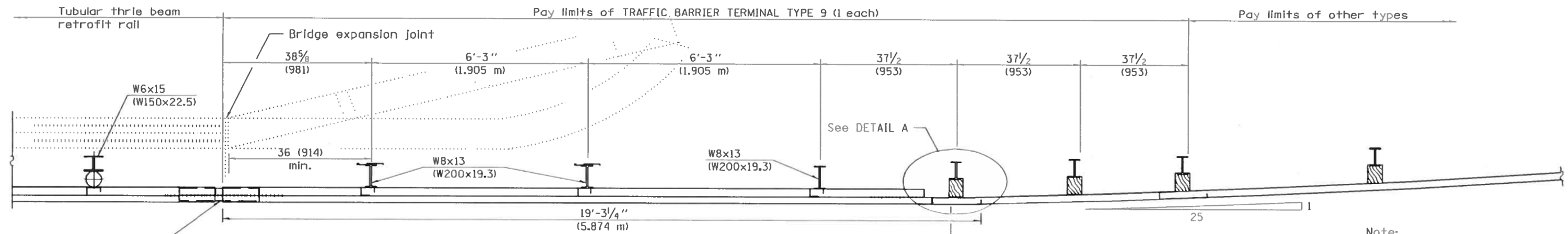
BRACKET Y



SOIL PLATE J & ALTERNATE CONNECTION DETAILS

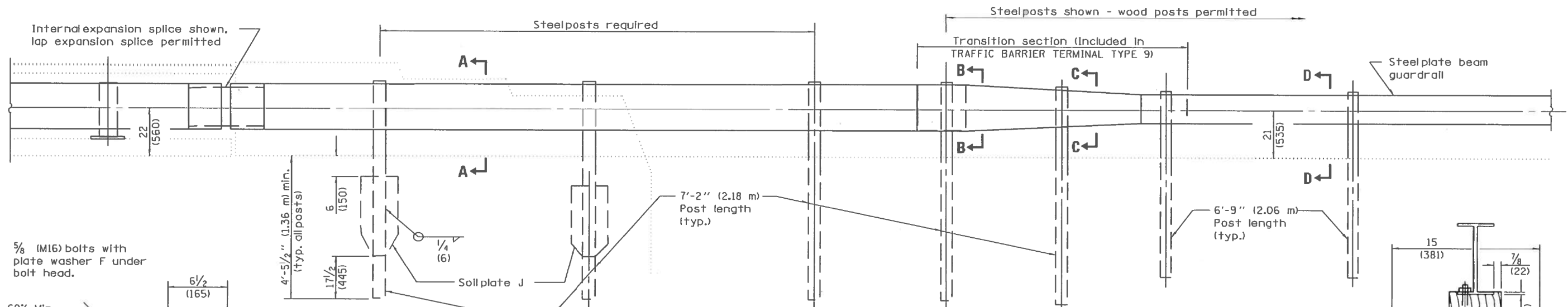
4 - 3/4 (19) Dia. holes with 5/8 (M16) hex head bolts with std. hex nut (typ.)

FILE NAME =	USER NAME = lababidism	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING TRAFFIC BARRIER TERMINAL TYPE 8 (STANDARD 631036)	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
S:\GEN\DRAW\STD&PLNS\SQUAD 0\68E08	2018\04\68E08-CADD.dgn	DRAWN -	REVISED -			VAR	D4 GUARDRAIL REPAIRS 2018-MCHD	TAZEWELL	27	23	
Default	PLOT SCALE = 40.0000' / in.	CHECKED -	REVISED -			CONTRACT NO. 68E08					
	PLOT DATE = 2/6/2018	DATE -	REVISED -			ILLINOIS FED. AID PROJECT					

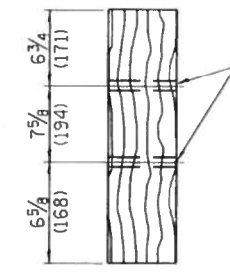
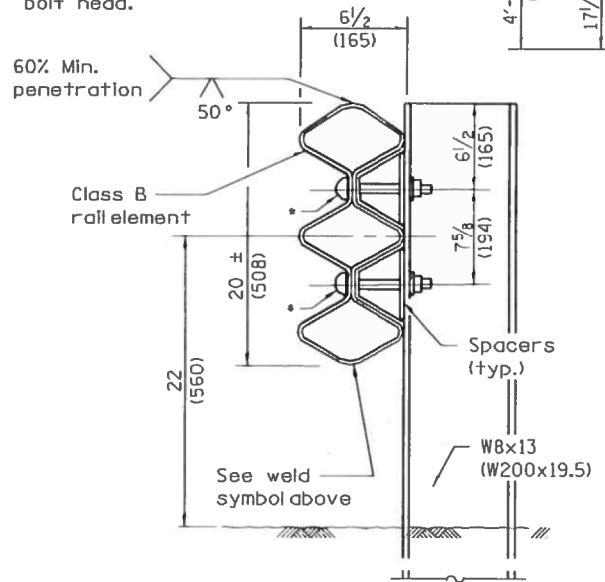


PLAN
(Bridge with expansion joint shown)

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

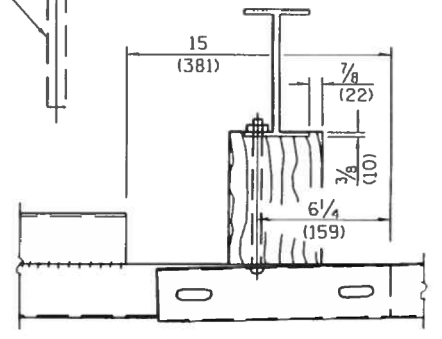
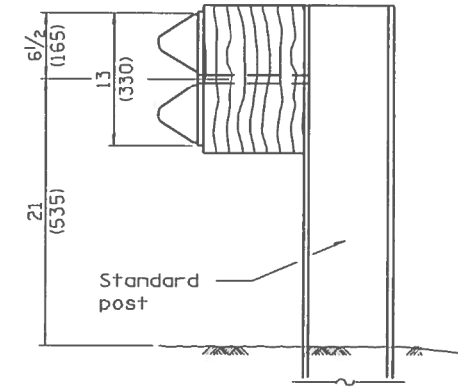
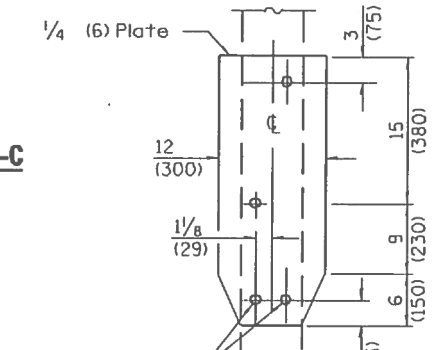
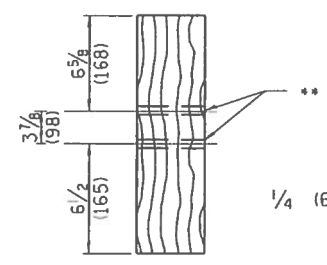


ELEVATION



DETAILS of BLOCK-OUTS

•• ⌀ 3/4 (19) Dia. hole



GENERAL NOTES

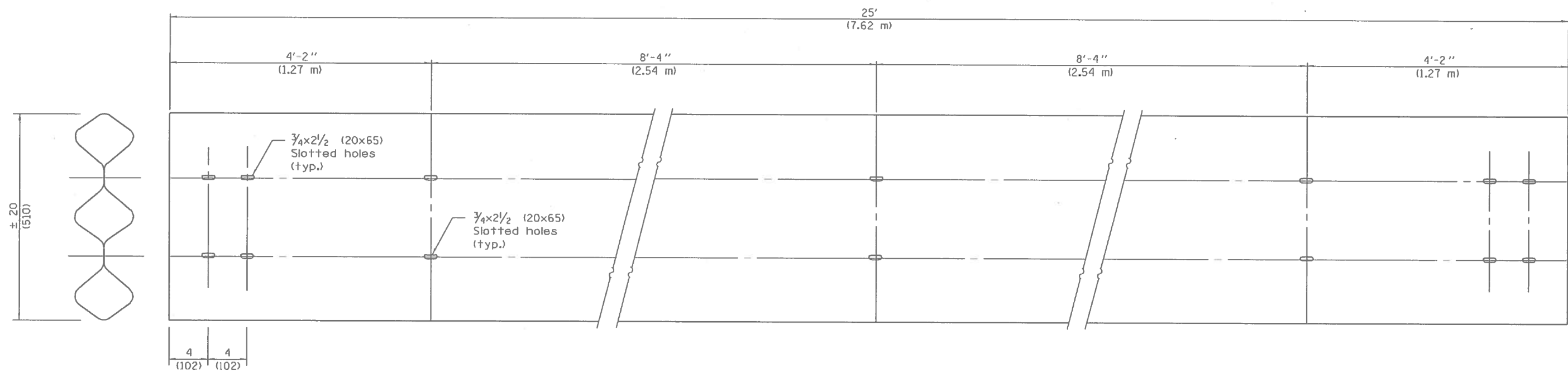
See Standards 509001 and 630001 for details of guardrail elements not shown.

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

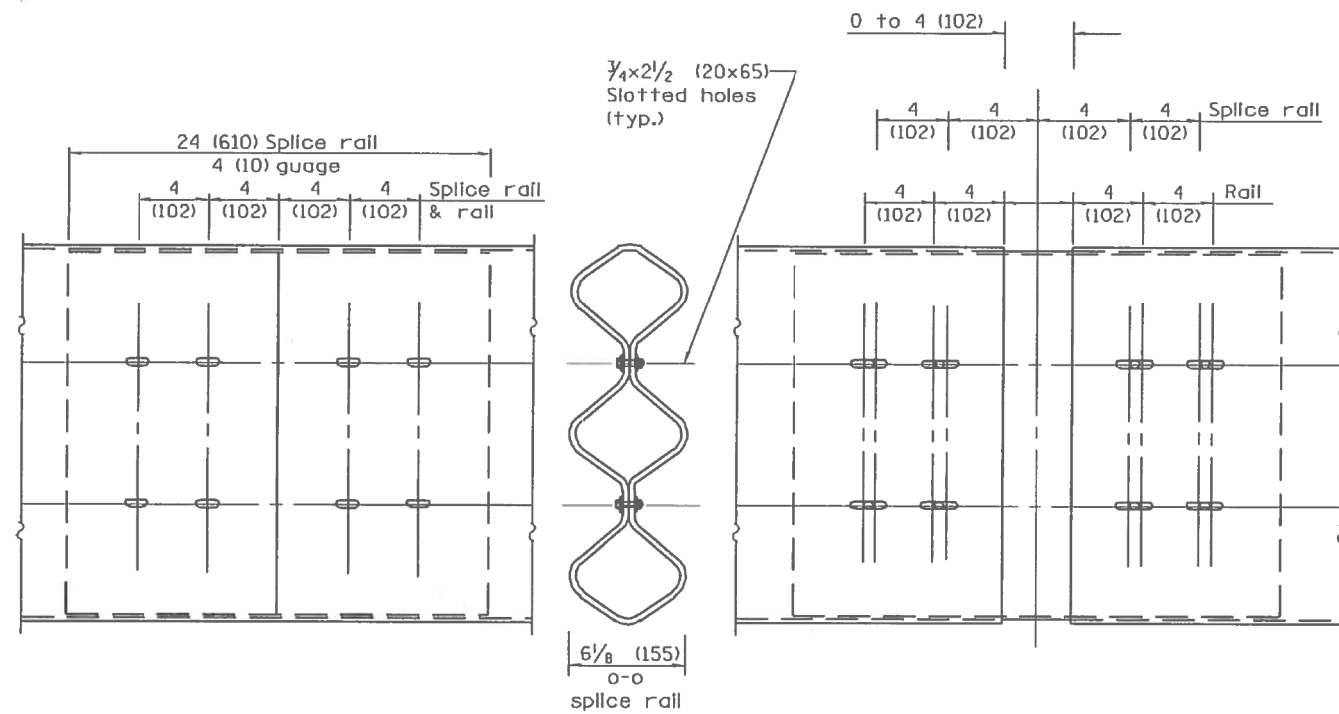
All dimensions are in inches (millimeters) unless otherwise shown.

DETAIL INCLUDED FOR REPAIR ONLY

FILE NAME =	USER NAME = lababidism	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING TRAFFIC BARRIER TERMINAL TYPE 9 (STANDARD 631041)		F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S:\GEN\DRAW\STD&PLNS\SQUAD 0\68E08	2018\04\68E08-CADD.dgn	DRAWN -	REVISED -				VAR	D4 GUARDRAIL REPAIRS 2018-MCHD	TAZEWELL	27	24
Default	PLOT SCALE = 40.0000' / in.	CHECKED -	REVISED -				CONTRACT NO. 68E08				
	PLOT DATE = 2/6/2018	DATE -	REVISED -				ILLINOIS FED. AID PROJECT				
				SCALE:	SHEET 1	OF 1 SHEETS	STA.	TO STA.			

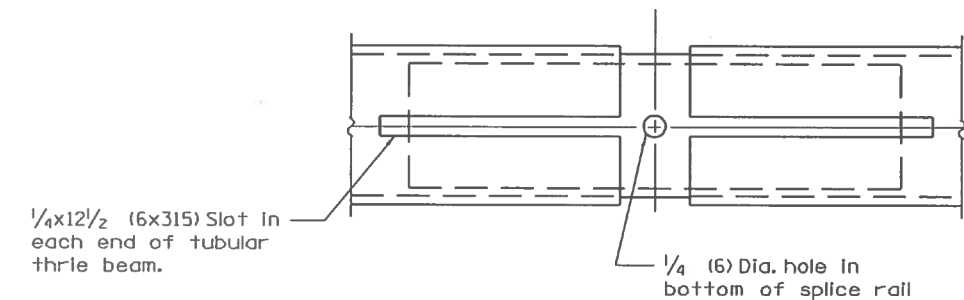


TUBULAR THRIE BEAM FOR INTERNAL SPLICE JOINT



INTERNAL SPLICE JOINT

INTERNAL EXPANSION SPLICE JOINT



BOTTOM VIEW OF INTERNAL EXPANSION SPLICE JOINT

DETAIL INCLUDED FOR REPAIR ONLY

GENERAL NOTES

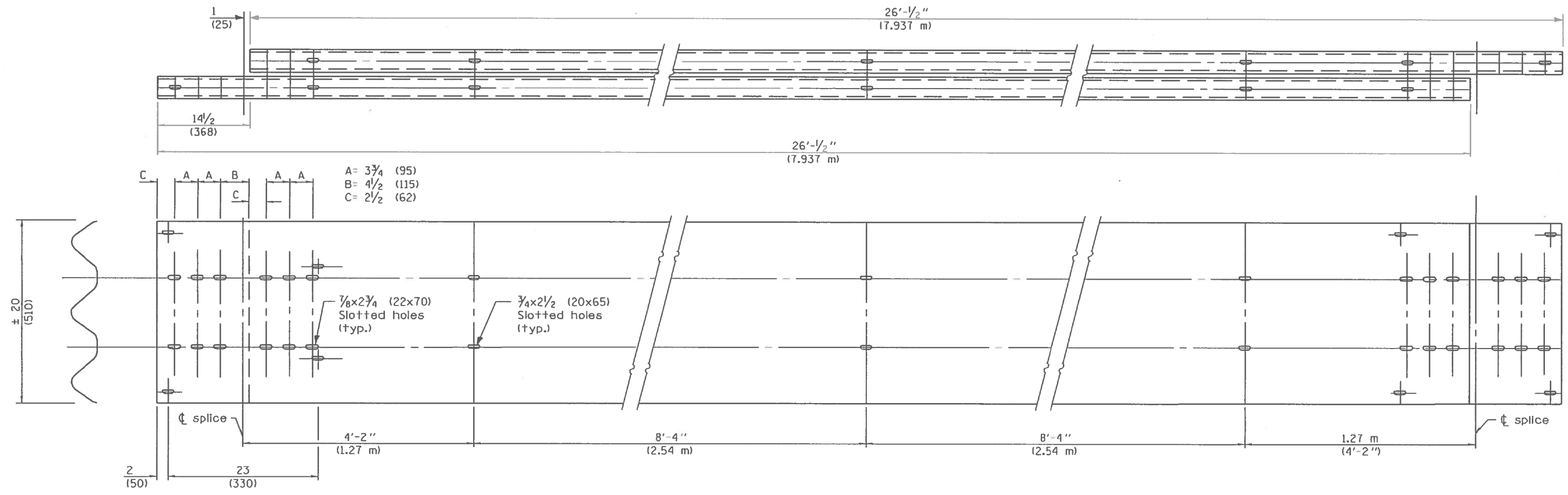
Plate Washers B are to be placed under both heads and nuts of splicing bolts for internal splice and internal expansion splice joint.

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

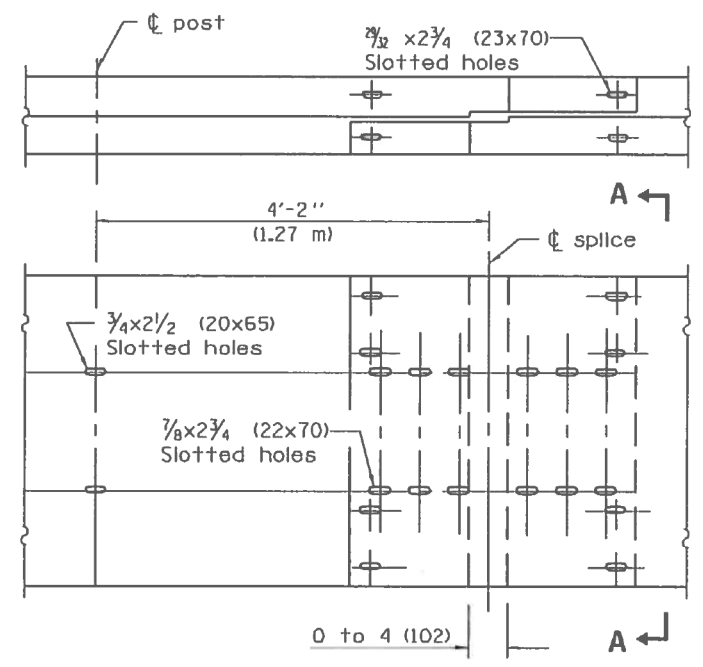
See Standard 630001 for details of guardrail not shown.

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

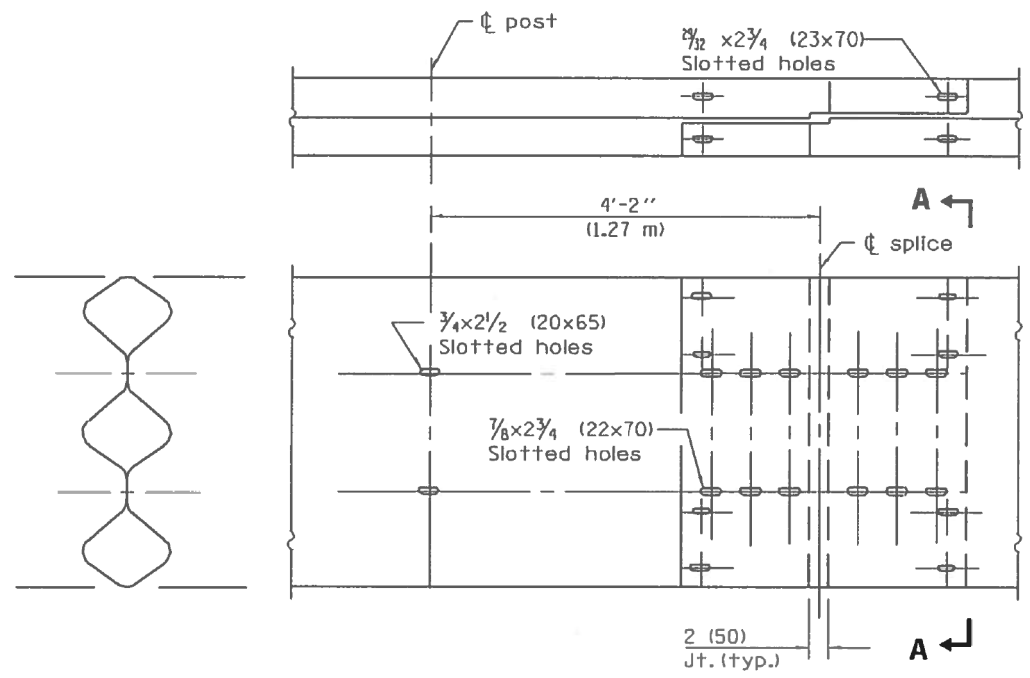
FILE NAME =	USER NAME = lababidism	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING TUBULAR THRIE BEAM RETROFIT RAIL FOR BRIDGES (STANDARD 509001)			F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S:\GEN\DRAW\STD&PLNS\SQUAD 0\68E08	2018\04\06\08-CADD.dgn	DRAWN -	REVISED -					VAR	D4 GUARDRAIL REPAIRS 2018-MCHD	TAZEWELL	27	25
Default	PLOT SCALE = 40.0000' / in.	CHECKED -	REVISED -		SCALE: SHEET 1 OF 3 SHEETS STA. TO STA.			CONTRACT NO. 68E08				
	PLOT DATE = 2/6/2018	DATE -	REVISED -		ILLINOIS FED. AID PROJECT							



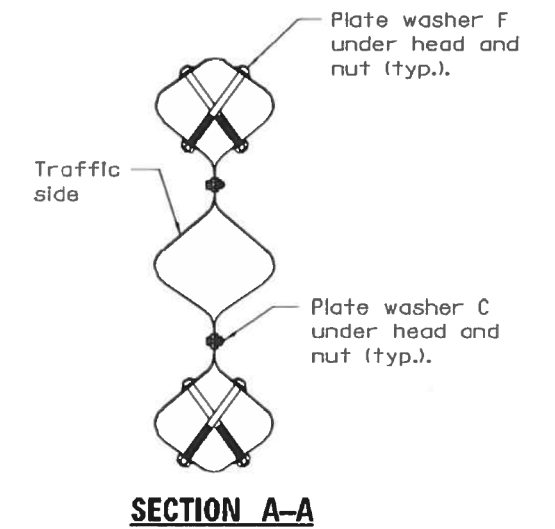
TUBULAR THRIE BEAM FOR LAP SPLICE JOINT



LAP EXPANSION SPLICE JOINT

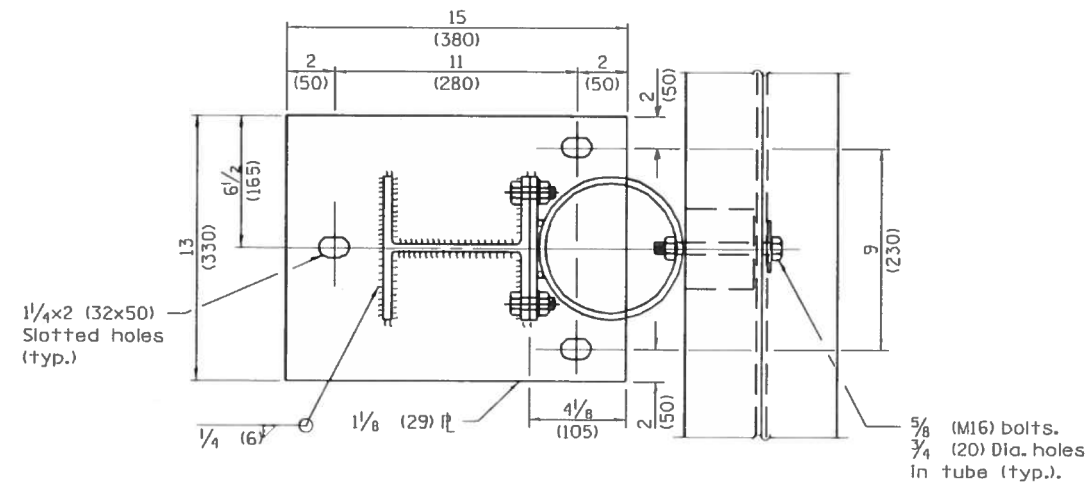


LAP SPLICE JOINT

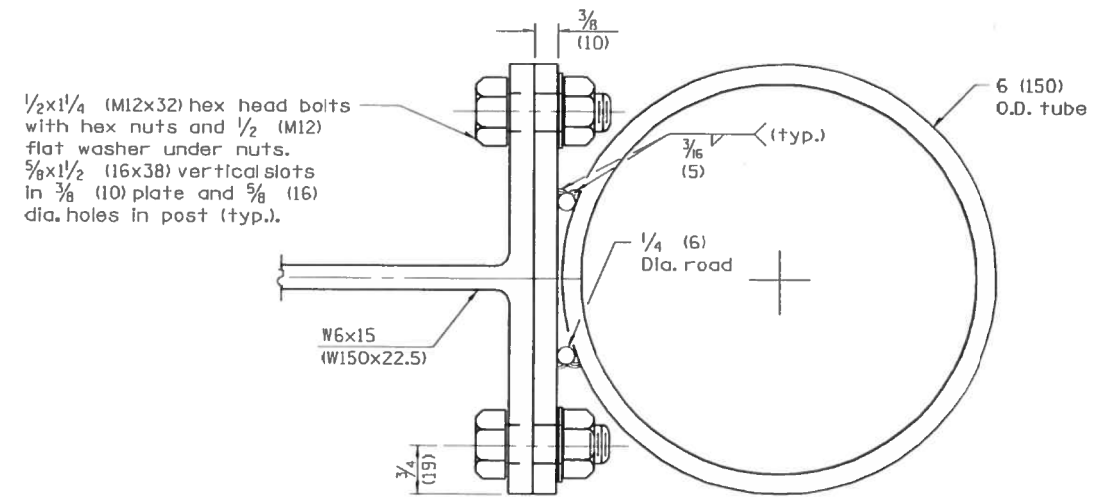


DETAIL INCLUDED FOR REPAIR ONLY

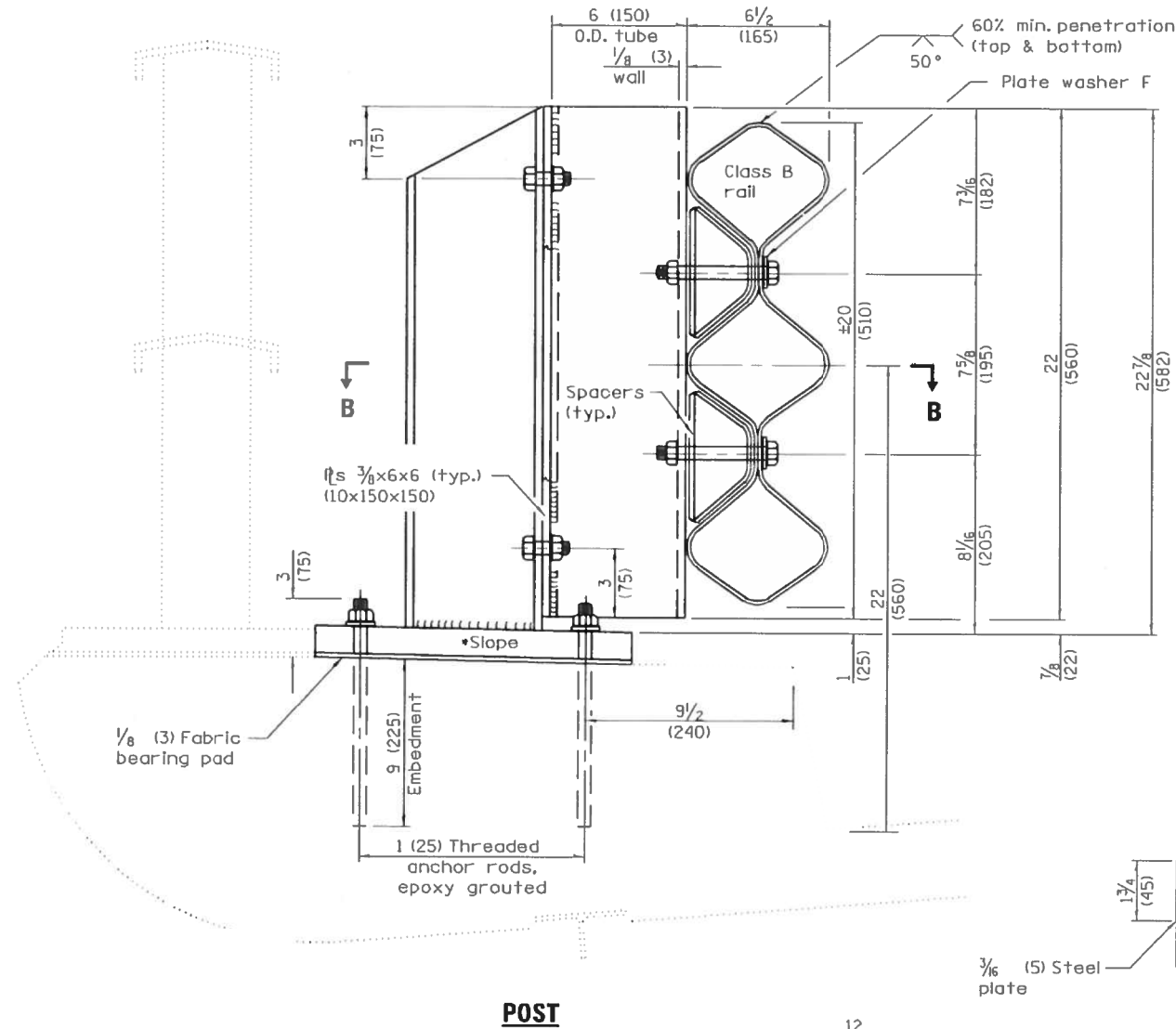
FILE NAME =	USER NAME = lababidism	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING TUBULAR THRIE BEAM RETROFIT RAIL FOR BRIDGES (STANDARD 509001)	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
S:\GEN\DRIFT\STD&PLNS\SQUAD 0\68E08	dra1 2018\0468E08-CADD.dgn	DRAWN -	REVISED -			VAR	D4 GUARDRAIL REPAIRS 2018-MCHD	TAEWELL	27	26	
Default	PLOT SCALE = 40.0000' / in.	CHECKED -	REVISED -			CONTRACT NO. 68E08					
	PLOT DATE = 2/6/2018	DATE -	REVISED -			ILLINOIS FED. AID PROJECT					



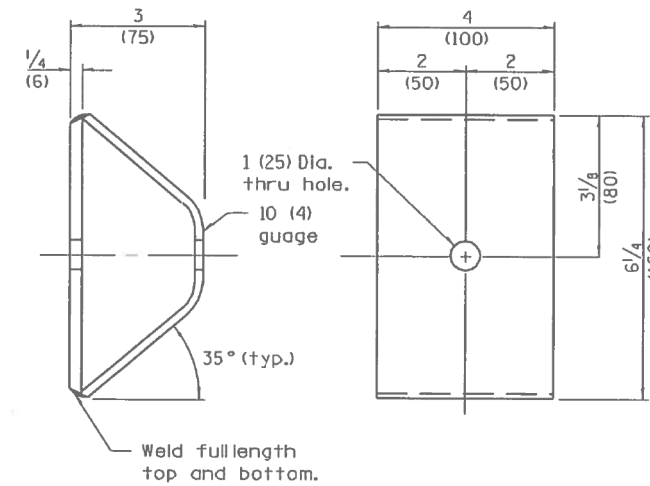
SECTION B-B



TUBE TO POST ATTACHMENT



POST



SPACER

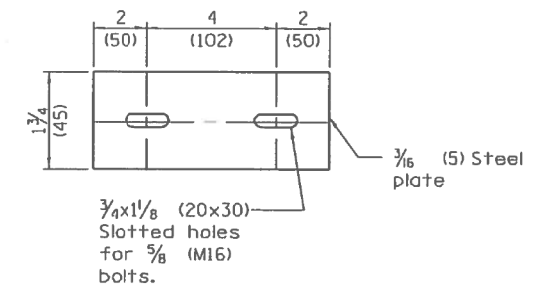


PLATE WASHER B

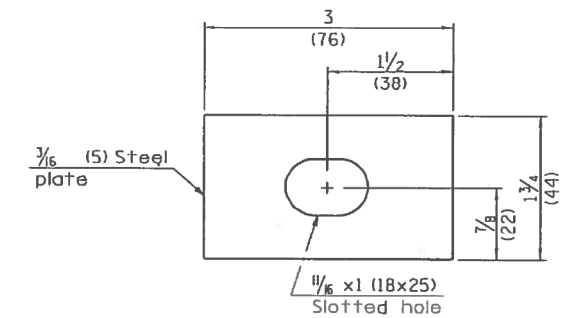


PLATE WASHER F

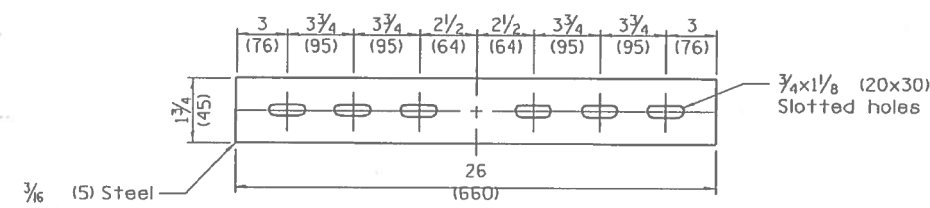


PLATE WASHER C

DETAIL INCLUDED FOR REPAIR ONLY

FILE NAME = S:\GEN\DRIFT\STD&PLNS\SQUAD 0\68E08	USER NAME = lababidism	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING TUBULAR THRIE BEAM RETROFIT RAIL FOR BRIDGES (STANDARD 509001)			F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
Default	Plot Date = 2/6/2018	DRAWN -	REVISED -					VAR	D4 GUARDRAIL REPAIRS 2018-MCHD	TAZEWELL	27	27
		CHECKED -	REVISED -					CONTRACT NO. 68E08			ILLINOIS FED. AID PROJECT	
		DATE -	REVISED -					SCALE:	SHEET 3	OF 3 SHEETS	STA.	TO STA.