

F.A. SHEETS	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	*	VARIOUS	37	1
FED. ROAD DIST. NO.		ILLINOIS	CONTRACT NO. 66C18	
* D-3 HIGHWAY DAMAGE REPAIR 2013				

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- 17-37 PRE-MGS GUARDRAIL STANDARDS EFFECTIVE APRIL 1, 2006

DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

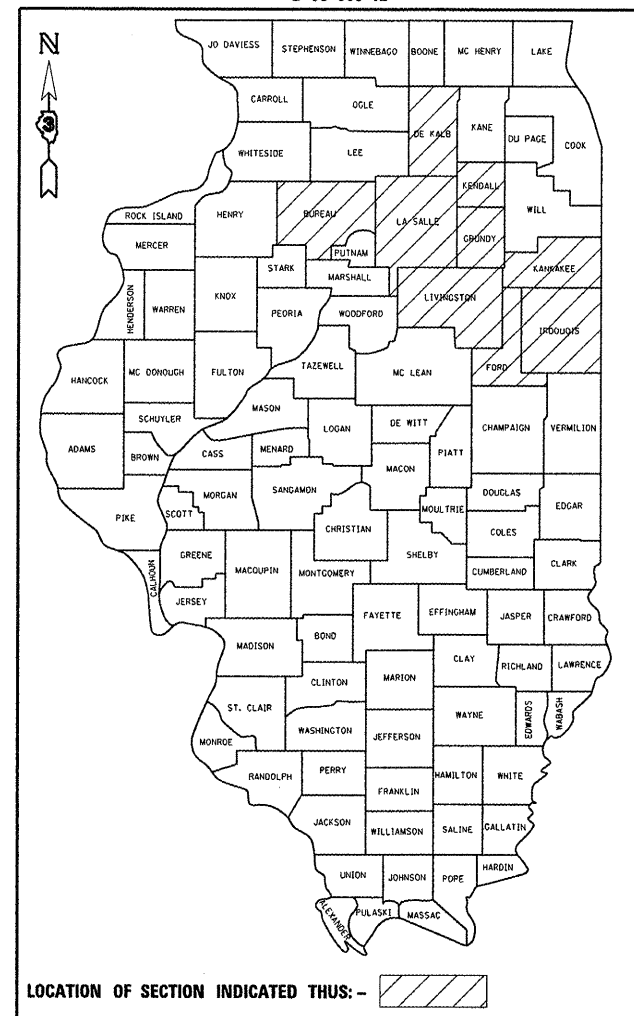
PROPOSED HIGHWAY PLANS

VARIOUS ROUTES
D-3 HIGHWAY DAMAGE REPAIR 2013
VARIOUS COUNTIES

C - 93 - 111 - 12

REPAIRING MOTORIST CAUSED DAMAGE TO HIGHWAY FACILITIES

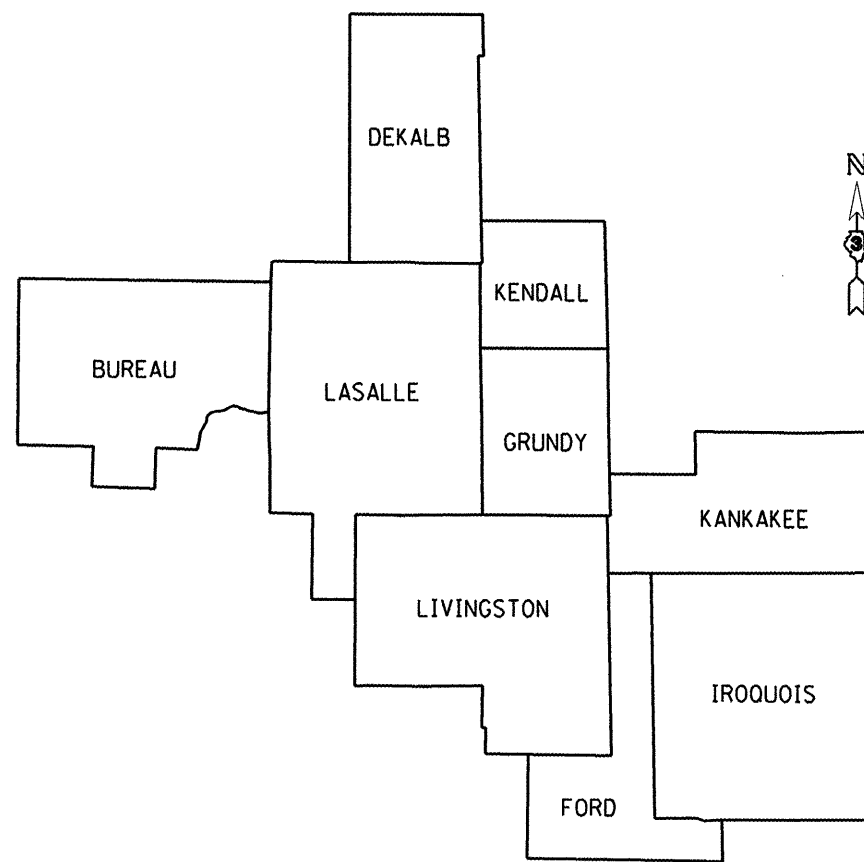
D-93-006-12



HIGHWAY STANDARDS

SEE PAGE 2 FOR LIST OF HIGHWAY STANDARDS
EFFECTIVE JANUARY 1, 2012

MICROFILMED _____
REEL NUMBER _____
AWARDED _____
RESIDENT ENGINEER _____
AS BUILT CHANGES WERE MADE
ON THE FOLLOWING SHEETS _____



DISTRICT 3

LOCATION MAP
NOT TO SCALE

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

SAFETY AND CLAIMS MANAGER : KRIS FOGARTY
UNIT CHIEF : MARK JONES, P.E.

DISTRICT 3 NO. (815) 434-6131
CONTRACT NO. 66C18

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED 3-29 20 12
Eric S. Thakalangan
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

May 11 20 12
John D. Baranzelli, P.E.
ENGINEER OF DESIGN AND ENVIRONMENT

May 11 20 12
William R. Frey, Jr.
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

HIGHWAY STANDARDS
EFFECTIVE JANUARY 1, 2012

509001-02	TUBULAR THRIE BEAM RETROFIT RAIL FOR BRIDGES
630001-10	STEEL PLATE BEAM GUARDRAIL
630101-09	GUARDRAIL MOUNTED ON EXISTING CULVERTS
630106	LONG-SPAN GUARDRAIL OVER CULVERT
630301-05	SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
631011-08	TRAFFIC BARRIER TERMINAL, TYPE 2
631026-05	TRAFFIC BARRIER TERMINAL, TYPE 5
631031-10	TRAFFIC BARRIER TERMINAL, TYPE 6
631032-07	TRAFFIC BARRIER TERMINAL, TYPE 6A
631033-04	TRAFFIC BARRIER TERMINAL, TYPE 6B
631036-05	TRAFFIC BARRIER TERMINAL, TYPE 8
631041-03	TRAFFIC BARRIER TERMINAL, TYPE 9
631046-04	TRAFFIC BARRIER TERMINAL, TYPE 10
631056-02	TRAFFIC BARRIER TERMINAL, TYPE 12
635001-01	DELINEATORS
635011-02	REFLECTOR MARKER AND MOUNTING DETAILS
635006-03	REFLECTOR AND TERMINAL MARKER PLACEMENT
643001	SAND MODULE IMPACT ATTENUATORS
664001-02	CHAIN LINK FENCE
665001-02	WOVEN WIRE FENCE
701001-02	OFF-ROAD OPERATIONS 2L, 2W, MORE THAN 15' (4.5 m) AWAY
701006-03	OFF-ROAD OPERATIONS 2L, 2W, 15' (4.5 m) TO 24" (600 mm) FROM PAVEMENT EDGE
701101-02	OFF-ROAD OPERATIONS MULTILANE, 15' (4.5 m) TO 24" (600 mm) FROM PAVEMENT EDGE
701106-02	OFF-ROAD OPERATIONS, MULTILANE, MORE THAN 15' (4.5 m) AWAY
701201-04	LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS **e** 45 MPH
701301-04	LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIONS
701400-05	APPROACH TO LANE CLOSURE, FREEWAY/EXPRESSWAY
701406-06	LANE CLOSURE, FREEWAY/EXPRESSWAY, DAY OPERATIONS ONLY
701411-08	LANE CLOSURE, MULTILANE, AT ENTRANCE OR EXIT RAMP FOR SPEEDS **e** 45 MPH
701421-04	LANE CLOSURE, MULTILANE, DAY OPERATIONS ONLY, FOR SPEEDS **e** 45 MPH TO 55 MPH
701426-04	LANE CLOSURE, MULTILANE INTERMITTENT OR MOVING OPERATION, FOR SPEEDS **e** 45 MPH
701456-02	PARTIAL EXIT RAMP CLOSURE FREEWAY/EXPRESSWAY
701501-06	URBAN LANE CLOSURE, 2L, 2W, UNDIVIDED
701502-04	URBAN LANE CLOSURE 2L, 2W, WITH BIDIRECTIONAL LEFT TURN LANE
701601-07	URBAN LANE CLOSURE, MULTILANE, 1W OR 2W WITH NONTRAVERSABLE MEDIAN
701602-05	URBAN LANE CLOSURE, MULTILANE, 2W WITH BIDIRECTIONAL LEFT TURN LANE
701606-08	URBAN LANE CLOSURE, MULTILANE, 2W WITH MOUNTABLE MEDIAN
701701-08	URBAN LANE CLOSURE, MULTILANE INTERSECTION
701801-05	LANE CLOSURE, MULTILANE 1W OR 2W CROSSWALK OR SIDEWALK CLOSURE
701901-02	TRAFFIC CONTROL DEVICES

GENERAL NOTES
(Revised May 13, 2009)

ANY REFERENCE TO A STANDARD IN THESE PLANS SHALL BE INTERPRETED TO MEAN THE EDITION AS INDICATED BY THE SUBNUMBER SHOWN IN THE LIST OF STANDARDS OR THE COPY INCLUDED IN THESE PLANS.

THE CONTRACTOR IS ADVISED THAT THERE MAYBE PRESENCE OF DEPARTMENT-OWNED UNDERGROUND ELECTRICAL CABLE WITHIN THE LIMITS OF THE PROPOSED IMPROVEMENT. THE CONTRACTOR SHALL REQUEST THE ILLINOIS DEPARTMENT OF TRANSPORTATION IN OTTAWA (815-434-8417) TO LOCATE THE UNDERGROUND FACILITIES, PROVIDING A MINIMUM OF 72 HOURS NOTICE. THE DEPARTMENT IS NOT A MEMBER OF THE JOINT UTILITY LOCATING INFORMATION FOR EXCAVATORS (JULIE) SYSTEM.

ALL DAMAGE TO DEPARTMENT OWNED UNDERGROUND FACILITIES, CAUSED BY THE CONTRACTOR SHALL BE REPAIRED TO THE SATISFACTION OF THE DEPARTMENT AT THE CONTRACTOR'S EXPENSE. THIS SHALL INCLUDE ALL TEMPORARY REPAIRS REQUIRED TO KEEP THE FACILITY OPERATIONAL WHILE MATERIAL IS BEING OBTAINED TO MAKE PERMANENT REPAIRS. SPLICING OF ELECTRIC CABLE SHALL NOT BE ALLOWED. ELECTRIC CABLE SHALL BE REPLACED FROM POLE TO POLE OR CONTROLLER.

THE CONTRACTOR IS REMINDED TO CAREFULLY EXAMINE THIS CONTRACT FOR NEW OR CHANGED CONDITIONS FROM ANY PRVIOUS VERSION HE MAY HAVE EXAMINED.

THE REMOVAL OF DAMAGED GUARDRAIL AND DAMAGED POSTS SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED INCLUDED IN THE COST OF THE VARIOUS REPLACEMENT PAY ITEMS.

THE TRAFFIC CONTROL REQUIRED FOR THE REPAIRS OR INSTALLATION OF GUARDRAIL OR FENCE SHALL BE CONSIDERED INCIDENTAL TO THE VARIOUS PAY ITEMS OF WORK, AND SHALL BE IN ACCORDANCE WITH THE TRAFFIC CONTROL STANDARDS INCLUDED HEREIN.

ALL HARDWARE (NUTS, BOLTS, WASHERS, STAPLES, WIRES, TIES, ETC.) REQUIRED FOR THE REPAIRS TO OR INSTALLATION OF GUARDRAIL AND FENCE SHALL BE CONSIDERED INCIDENTAL TO THE VARIOUS PAY ITEMS OF WORK IN THIS CONTRACT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING UTILITY PROPERTY FROM CONSTRUCTION OPERATIONS AS OUTLINED IN ARTICLE 107.31 OF THE STANDARD SPECIFICATIONS. THE J.U.L.I.E. NUMBER IS 1-800-892-0123. A MINIMUM OF 48 HOURS ADVANCE NOTICE IS REQUIRED.

HIGH TENSION CABLE BARRIER SYSTEM REPAIR SCHEDULE

LOCATION / COUNTY / SYSTEM	SYSTEM TYPE	REPAIR	REPLACE	HTC SYSTEM	REMOVE &	REMOVE &	F&I HTC	FURNISH & DRIVE
		HTC	HTC	MAINTENANCE	REPLACE	REPLACE	FOUNDATION	METAL SOCKET
			END SECTION		HTC POST	HTC POST (HD)	& POST	with POST
I-55, MP 227-233 / GRUNDY / BRIFEN	socketed	1	2	3	4		6	7
I-57, MP 277-292 / IROQUIOS / NUCOR	driven	1	2	3	4			
I-57, MP 316-324 / KANKAKEE / GIBRALTAR	driven	1	2	3	4			
I-80, MP 97-105 / LASALLE & GRUNDY / TRINITY	driven (heavy duty)	1	2	3		5		
I-80, MP 80-92 / LASALLE / TRINITY	driven (heavy duty)	1	2	3		5		

TABLE SHOWS WHAT PAY ITEMS GET USED FOR REPAIRING EACH SYSTEM

REPAIR PAY ITEMS

- 1 = REPAIR HIGH TENSION CABLE
- 2 = REPLACE HIGH TENSION CABLE END SECTION
- 3 = HIGH TENSION CABLE SYSTEM MAINTENANCE
- 4 = REMOVE AND REPLACE HIGH TENSION CABLE POST
- 5 = REMOVE AND REPLACE HIGH TENSION CABLE POST (HEAVY DUTY)
- 6 = FURNISH AND INSTALL HIGH TENSION CABLE FOUNDATION AND POST
- 7 = FURNISH AND DRIVE METAL SOCKET WITH POST

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DISTRICT THREE

PREPARED BY: Tom Bonvil
DISTRICT STUDIES & PLANS ENGINEER

DATE: 3-29-12

EXAMINED BY: Robert K. Jones
DISTRICT CONSTRUCTION ENGINEER

Wayne L. Phillips
DISTRICT MATERIALS ENGINEER

Russell A. Hooker
DISTRICT OPERATIONS ENGINEER

• D-3 HIGHWAY DAMAGE REPAIR 2013

FILE NAME =	USER NAME = jonesm	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL NOTES	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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PLOT SCALE = 1/8" = 1'-0"		CHECKED -	REVISED -			CONTRACT NO. 66C18					
PLOT DATE = 3/29/2012		DATE -	REVISED -			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					
SCALE: SHEET NO. OF SHEETS STA. TO STA.											

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	07MOA	07E0A,01	07E0A,02
				CONSTR. CODE	CONSTR. CODE	CONSTR. CODE
				100% MCHD	100% STATE	100% STATE
				MCHD	CONTR. MAINT.	HTC BARRIER
				SAFTEY	SAFTEY	SAFTEY
				0021	0021	0021
63100045	TRAFFIC BARRIER TERMINAL, TYPE 2	EACH	2	2	0	0
63100070	TRAFFIC BARRIER TERMINAL, TYPE 5	EACH	1	1	0	0
63100085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	1	1	0	0
63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	1	1	0	0
63100089	TRAFFIC BARRIER TERMINAL, TYPE 6B	EACH	1	1	0	0
63100095	TRAFFIC BARRIER TERMINAL, TYPE 8	EACH	1	1	0	0
63100101	TRAFFIC BARRIER TERMINAL, TYPE 9	EACH	1	1	0	0
63100105	TRAFFIC BARRIER TERMINAL, TYPE 10	EACH	1	1	0	0
63100115	TRAFFIC BARRIER TERMINAL, TYPE 12	EACH	1	1	0	0
63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	35	20	15	0
63100169	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) FLARED	EACH	3	2	1	0
63301210	REMOVE AND REERECT STEEL PLATE BEAM GUARDRAIL, TYPE A	FOOT	150	0	150	0
63301215	REMOVE AND REERECT STEEL PLATE BEAM GUARDRAIL, TYPE B	FOOT	50	0	50	0
63400105	GUARD POSTS	EACH	100	50	50	0

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTR. CODE	CONSTR. CODE	CONSTR. CODE
				100% MCHD	100% STATE	100% STATE
				MCHD	CONTR. MAINT.	HTC BARRIER
				SAFTEY	SAFTEY	SAFTEY
				0021	0021	0021
X6610200	HOT-MIX ASPHALT CURB REPAIR	FOOT	100	100	0	0
66400105	CHAIN LINK FENCE, 4'	FOOT	300	150	150	0
66400305	CHAIN LINK FENCE, 6'	FOOT	350	200	150	0
66500105	WOVEN WIRE FENCE, 4'	FOOT	10000	5000	5000	0
67100100	MOBILIZATION	L SUM	1	0.5	0.5	0
78200410	GUARDRAIL MARKERS, TYPE A	EACH	225	125	100	0
X0321563	REPAIR TRAFFIC BARRIER TERMINAL TYPE 1 SPECIAL	EACH	30	10	20	0
X0322878	TIMBER CURB	FOOT	32	32	0	0
X0326126	WOOD TERMINAL POST	EACH	1	1	0	0
X6640502	CHAIN LINK FENCE POST	EACH	21	15	6	0
Z0008760	EMERGENCY WORK CALL OUT	EACH	170	70	50	50
Z0012752	CONCRETE STRUCTURE REPAIR	CU FT	15	15	0	0
Z0020210	PULL POST ARRANGEMENT	EACH	25	10	15	0

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PLOT SCALE = 100.6205' / in.		CHECKED -	REVISED -
PLOT DATE = 3/29/2012		DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SUMMARY OF QUANTITIES			
SCALE:	SHEET NO.	OF SHEETS	STA. TO STA.

• 0 - 3 HIGHWAY DAMAGE REPAIR 2013

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	*	VARIOUS	37	4
CONTRACT NO. 66C18			ILLINOIS FED. AID PROJECT	

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTR. CODE	CONSTR. CODE	CONSTR. CODE
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				MCHD	CONTR. MAINT.	HTC BARRIER
				SAFTEY	SAFTEY	SAFTEY
				0021	0021	0021
X6300215	RAIL ELEMENT PLATES	EACH	560	320	240	0
X6331101	TUBULAR THRIE BEAM	FOOT	150	100	50	0
Z0026305	FURNISHING AND MAINTAINING AUTOMOTIVE VEHICLES	CAL MO	12	12	0	0
X6300230	STEEL POSTS	EACH	600	300	300	0
X6331105	STEEL POSTS, MODIFIED	EACH	5	5	0	0
X6331110	STEEL POSTS, SPECIAL	EACH	50	0	50	0
64300260	IMPACT ATTENUATORS (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	2	1	1	0
Z0030390	IMPACT ATTENUATORS, REPLACEMENT (NON- REDIRECTIVE), TEST LEVEL 3	EACH	190	150	40	0
Z0052400	REPAIR TRAFFIC BARRIER TERMINAL, TYPE 1	EACH	2	1	1	0
Z0052600	REPAIR TRAFFIC BARRIER TERMINAL, TYPE 2	EACH	1	1	0	0
Z0052700	REPAIR TRAFFIC BARRIER TERMINAL, TYPE 3	EACH	1	1	0	0
Z0052800	REPAIR TRAFFIC BARRIER TERMINAL, TYPE 3A	EACH	1	1	0	0
Z0052900	REPAIR TRAFFIC BARRIER TERMINAL, TYPE 4	EACH	1	1	0	0
Z0053000	REPAIR TRAFFIC BARRIER TERMINAL, TYPE 5	EACH	1	1	0	0

• 0 - 3 HIGHWAY DAMAGE REPAIR 2013

FILE NAME =	USER NAME = jonesme	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUMMARY OF QUANTITIES			F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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PLOT DATE = 3/29/2012	DATE -	REVISED -	ILLINOIS FED. AID PROJECT									

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTR. CODE	CONSTR. CODE	CONSTR. CODE
				100% MCHD	100% STATE	100% STATE
				MCHD	CONTR. MAINT.	HTC BARRIER
				SAFTEY	SAFTEY	SAFTEY
				0021	0021	0021
Z0053200	REPAIR TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	2	2	0	0
Z0053210	REPAIR TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	2	2	0	0
Z0053220	REPAIR TRAFFIC BARRIER TERMINAL, TYPE 6B	EACH	2	2	0	0
Z0053400	REPAIR TRAFFIC BARRIER TERMINAL, TYPE 8	EACH	1	1	0	0
Z0053500	REPAIR TRAFFIC BARRIER TERMINAL, TYPE 9	EACH	1	1	0	0
Z0053575	REPAIR TRAFFIC BARRIER TERMINAL, TYPE 12	EACH	1	1	0	0
X0327278	REPAIR HIGH TENSION CABLE	FOOT	2300	1800	0	500
X0327279	REPLACE HIGH TENSION CABLE END SECTION	EACH	3	1	0	2
Z0029657	HIGH TENSION CABLE SYSTEM MAINTENANCE	EACH	1400	600	0	800
X0327281	REMOVE AND REPLACE HIGH TENSION CABLE POST	EACH	1100	600	0	500
X0327282	REMOVE AND REPLACE HTC POST (HEAVY DUTY)	EACH	150	50	0	100
Z0029659	FURNISH AND INSTALL HIGH TENSION CABLE FOUNDATION AND POST	EACH	45	20	0	25
Z0029660	FURNISH AND DRIVE METAL SOCKET WITH POST	EACH	20	10	0	10
Z0029665	REPAIR TRAFFIC BARRIER TERMINAL, TYPE 1 SPECIAL - RAIL ELEMENT PLATE	FOOT	500	0	500	0

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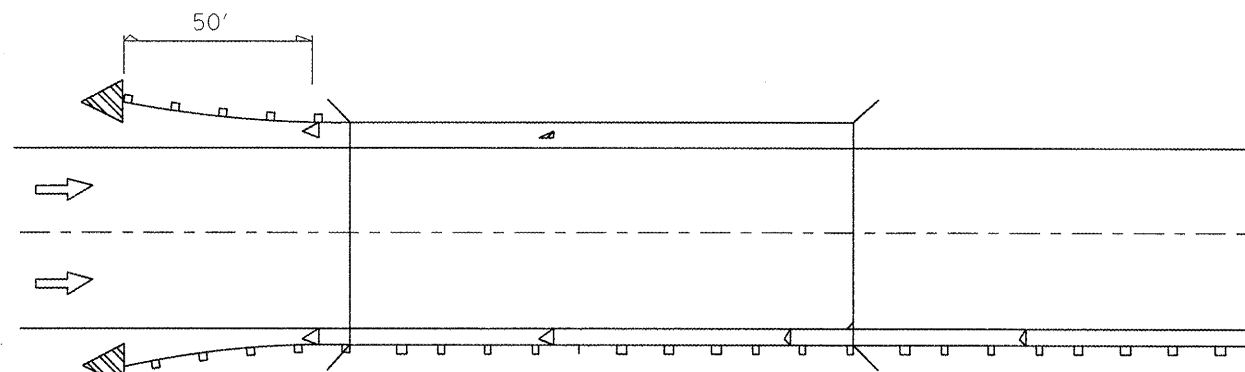
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SUMMARY OF QUANTITIES

SCALE: SHEET NO. OF SHEETS STA. TO STA.

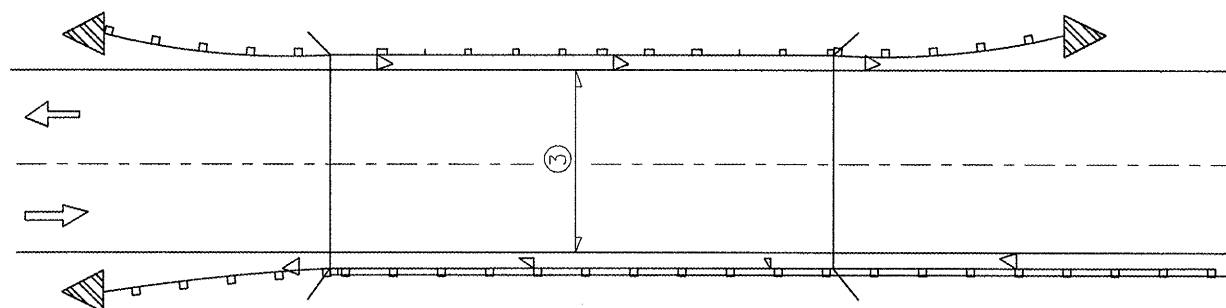
* D - 3 HIGHWAY DAMAGE REPAIR 2013

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	*	VARIOUS	37	6
CONTRACT NO. 66C18			ILLINOIS FED. AID PROJECT	



Reflectors are not to be placed on Terminal End Sections.
(min. 3 reflectors regardless of length).
After 400 ft transition, match existing delineator spacing.

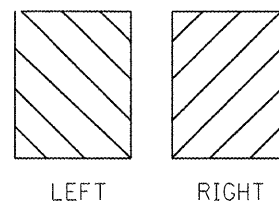
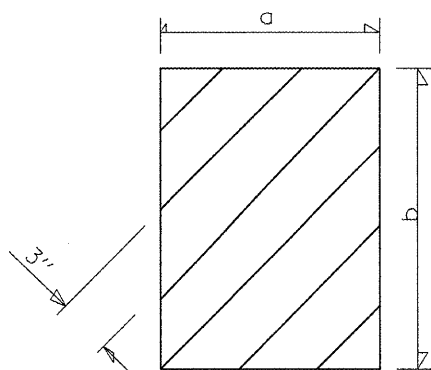
ONE-WAY TRAFFIC



③ Bidirectional silver/silver should be used in lieu of monodirectional silver on both sides of two-lane bridges where the pavement is less than 24" wider than the pavement approaching the bridge.

- ◁ Monodirectional silver
- ◀ Monodirectional amber
- ▴ Terminal Marker - Black/Yellow
Left or Right as appropriate

TWO-WAY TRAFFIC

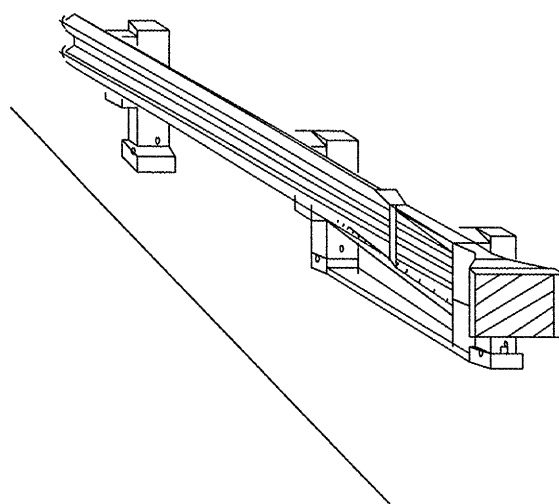


DIMENSION	CASE I	CASE II
a	*	450 (18)
b	*	406 (16)

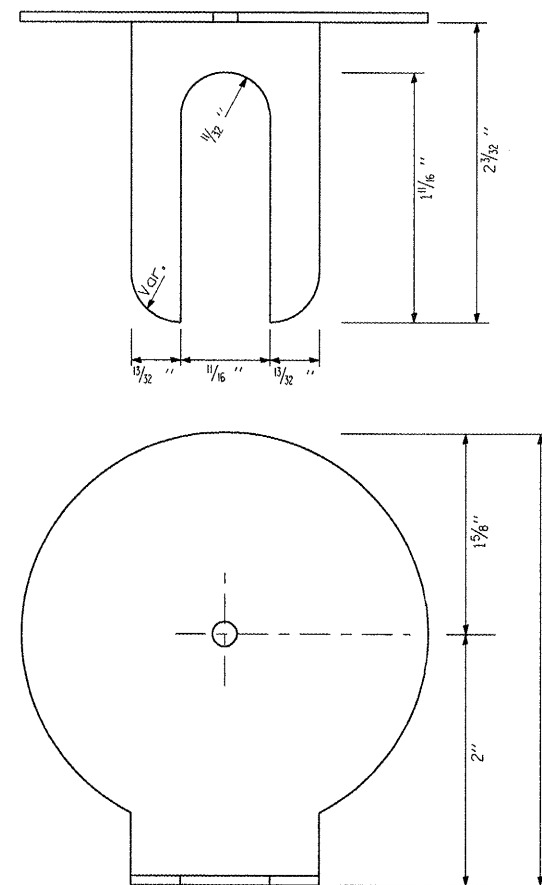
* The width and height (a, b) of the terminal marker shall be within approximately 25 mm (1 inch) of the outer edge of the terminal end, with a minimum reflective area of 0.18 m² (288 sq. in.)

TERMINAL MARKER DETAILS

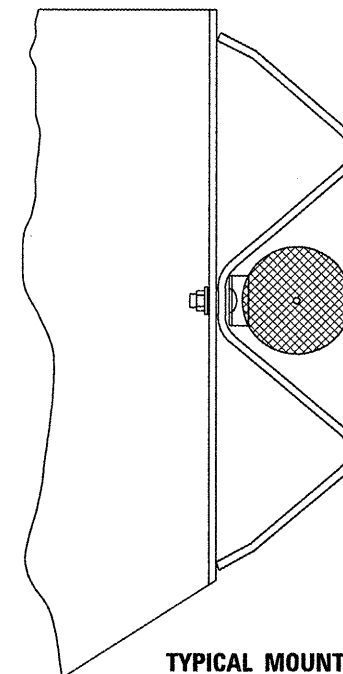
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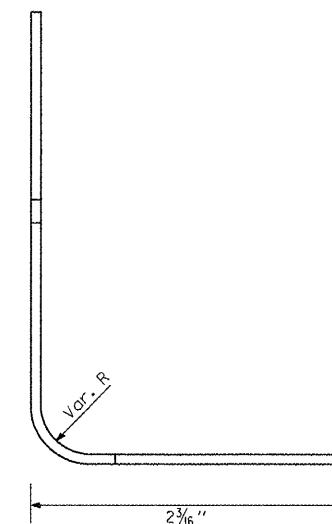
**REFLECTOR AND
TERMINAL MARKER PLACEMENT**



REFLECTOR MARKER TYPE A



**TYPICAL MOUNTING
WITH REFLECTOR**



NOTES:

1. BRACKET IS TO BE FABRICATED FROM 12 GA. (MIN) STEEL GALVANIZED IN ACCORDANCE WITH AASHTO M III.
2. MIN. 3 REFLECTORS PER SIDE.
3. BRACKET "FOOT" SHALL BE PLACED BETWEEN THE BOLT HEAD AND THE PLATE WASHER (IF PRESENT).
4. ON THRIE BEAM RAIL, THE BRACKETS SHALL BE ATTACHED TO THE UPPER SPLICE BOLTS.
5. USE CRYSTAL COLOR, BI-DIRECTIONAL REFLECTORS USE AMBER (LEFT) AND CRYSTAL (RIGHT), MONODIRECTIONAL REFLECTORS ON INTERSTATES
6. ALL DIMENSIONS SHOWN ARE MINIMUM

REFLECTOR DETAIL

• D-3 HIGHWAY DAMAGE REPAIR 2013

FILE NAME =	USER NAME = quigleyml	DESIGNED -	REVISED -
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PLOT DATE = 3/26/2012		DATE -	REVISED -

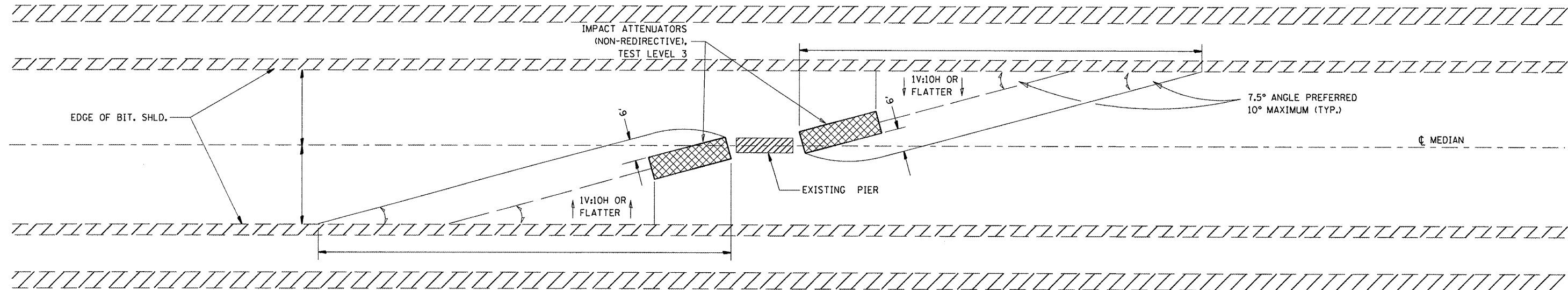
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

REFLECTOR AND TERMINAL MARKER PLACEMENT DETAIL			
SCALE:	SHEET NO. OF SHEETS	STA. TO STA.	

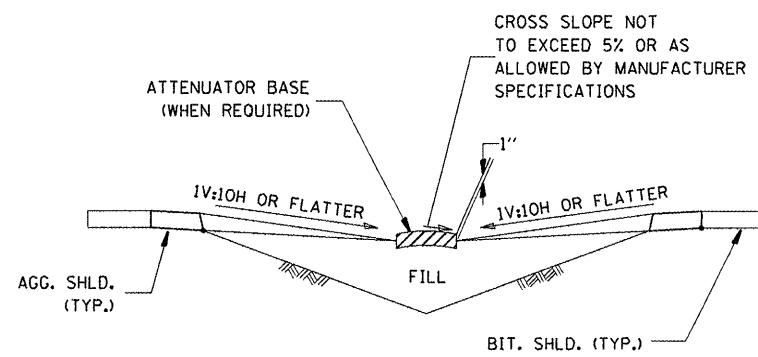
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.		VAR.	37	7
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
CONTRACT NO. 66C18				

GENERAL NOTES

1. THE 10:1 SLOPE CONTROLS NOSE OF ATTENUATOR BASE ELEVATION.
2. ATTENUATOR BASE GRADE PARALLELS EDGE OF PAVEMENT GRADE.
3. SLOPE ADJACENT TO ATTENUATOR BASE SHALL BE 10:1 OR FLATTER.



IMPACT ATTENUATOR LAYOUT AND GRADING PLAN

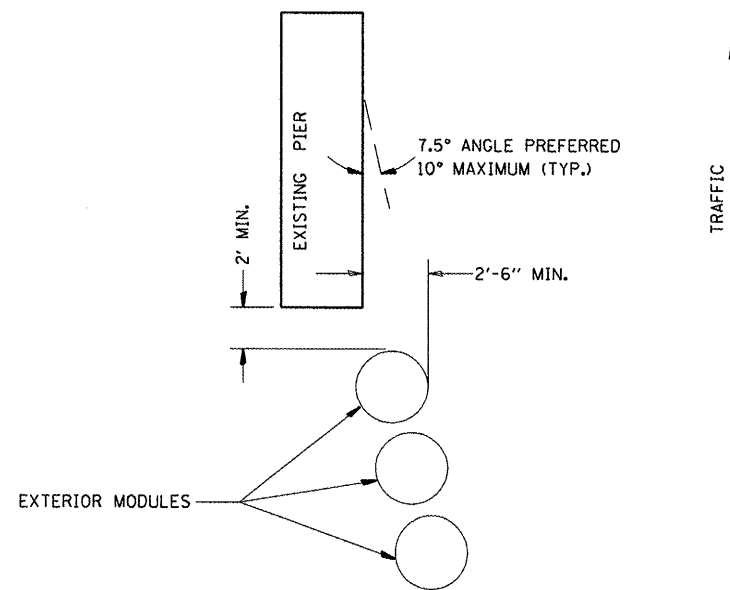


SECTION A - A

NOTE:

ATTENUATOR BASE SHALL BE PER MANUFACTURER SPECIFICATIONS EXCEPT SAND MODULE SYSTEMS SHALL HAVE THE FOLLOWING ADDITIONAL REQUIREMENTS:

1. ATTENUATOR BASE SHALL PROVIDE A 1' BUFFER ALONG THE SIDES AND FRONT OF THE ARRAY.
2. SAND MODULE SYSTEMS SHALL BE PLACED ON A HMA OR CONCRETE BASE.



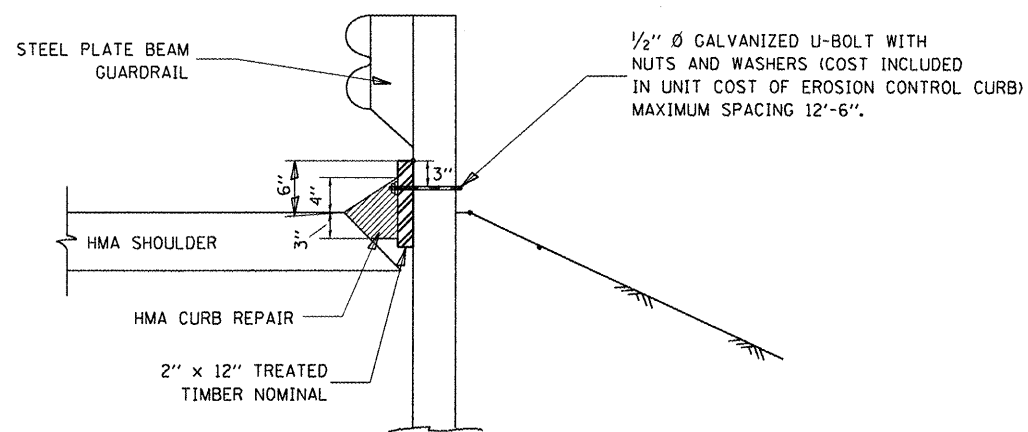
TYPICAL EXTERIOR MODULE LAYOUT

NOTES:

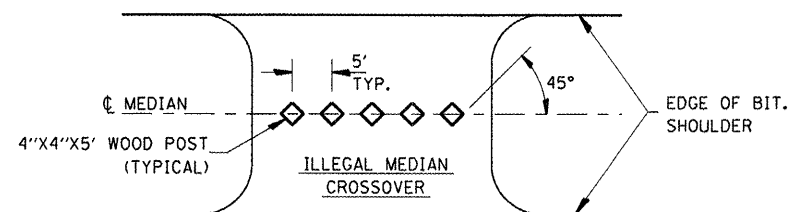
1. THE PAY ITEM "IMPACT ATTENUATORS, REPLACEMENT (NON-REDIRECTIVE), TEST LEVEL 3" HAS BEEN INCLUDED TO REPLACE INDIVIDUAL DAMAGED SAND MODULES.
2. REPLACEMENT MODULES SHALL MATCH THE KIND OF MODULES THAT ARE REMAINING.
3. IMPACT ATTENUATORS SHALL BE IN ACCORDANCE WITH THE BDE SPECIAL PROVISION FOR IMPACT ATTENUATORS, EFFECTIVE: NOVEMBER 1, 2003 REVISED NOVEMBER 1, 2012
4. THIS SHEET SHOWS THE LAYOUT INFORMATION FOR REPLACEMENT OF SAND MODULES (IMPACT ATTENUATORS) AT A TYPICAL INTERSTATE LOCATION.
5. ADJACENT SAND MODULE IMPACT ATTENUATORS THAT ARE NOT DAMAGED, BUT HAVE BEEN SHIFTED Laterally FROM THEIR ORIGINAL POSITION SHALL BE REALIGNED OR MOVED BACK TO THEIR ORIGINAL POSITION, AS DIRECTED BY THE ENGINEER. REALIGNMENT OR MOVING OF ADJACENT UNDAMAGED MODULES SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED INCLUDED IN THE COST OF REPLACEMENT. THE WORK TO REALIGN OR SHIFT UP TO 2 MODULES SHALL BE INCLUDED WITH EACH REPLACED SAND MODULE IMPACT ATTENUATOR.

FILE NAME =	USER NAME = quigleyml	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IMPACT ATTENUATOR INSTALLATION & NON-REDIRECTIVE DETAIL	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
ca:\pwork\pwork\quigleyml\d0380964\0380964-18-shd-details.dgn	DRAWN -	REVISED -	VAR.			*	VAR.	37	8	
PLOT SCALE = 1/8" = 1'-0"	CHECKED -	REVISED -	CONTRACT NO. 66C18							
PLOT DATE = 3/26/2012	DATE -	REVISED -	FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT							
					SCALE:	SHEET NO.	OF	SHEETS	STA.	TO STA.

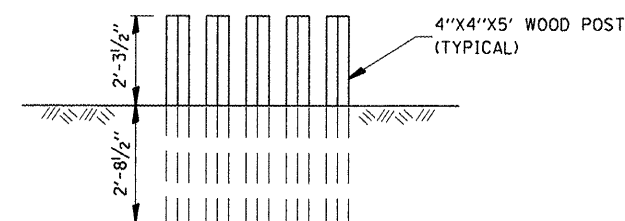
• D-3 HIGHWAY DAMAGE REPAIR 2013



SIDE VIEW

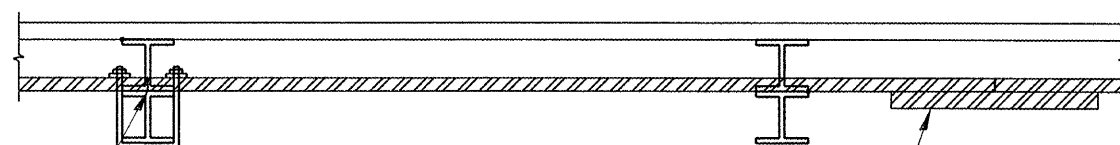


PLAN



ELEVATION

WOOD POST DETAIL



TOP VIEW

SPlice AT GUARDRAIL POST
(U-BOLT MUST BE USED)

SPlice PLATE 2" x 12", 2' LONG WITH #16
GALVANIZED NAIL TO THE TREATED TIMBER
CURB (COST INCLUDED). SPlice PLATE TO
BE TREATED TIMBER.

NOTE:
THE TREATED TIMBER SHALL BUTT TOGETHER AT THE GUARDRAIL POST OR SPLICED AS SHOWN ON THE DETAIL.

THE TREATED TIMBER SHALL BE TREATED IN ACCORDANCE TO ARTICLE 1007.12 AND ALL PRESERVATIVES SPECIFIED IN THE ARTICLE WILL BE ALLOWED.

THE PRICE FOR EROSION CONTROL CURB SHALL INCLUDE THE U-BOLTS ATTACHING THE TREATED TIMBER TO THE GUARDRAIL POSTS, TREATED TIMBER, AND THE NECESSARY GRADING TO COMPLETE THIS WORK.

HMA CURB REPAIR SHALL BE MEASURED AND PAID FOR AT CONTRACT UNIT PRICE PER TON.

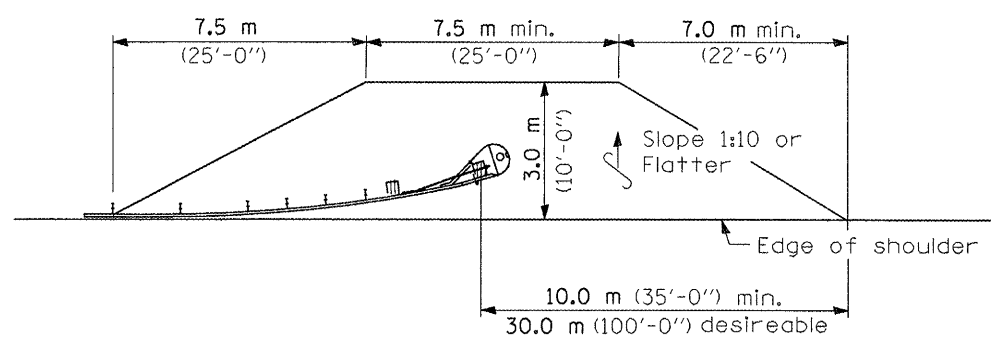
HMA CURB REPAIR SHALL BE IN ACCORDANCE WITH SECTION 408 OF THE STANDARD SPECIFICATIONS.

TIMBER CURB & HMA CURB REPAIR

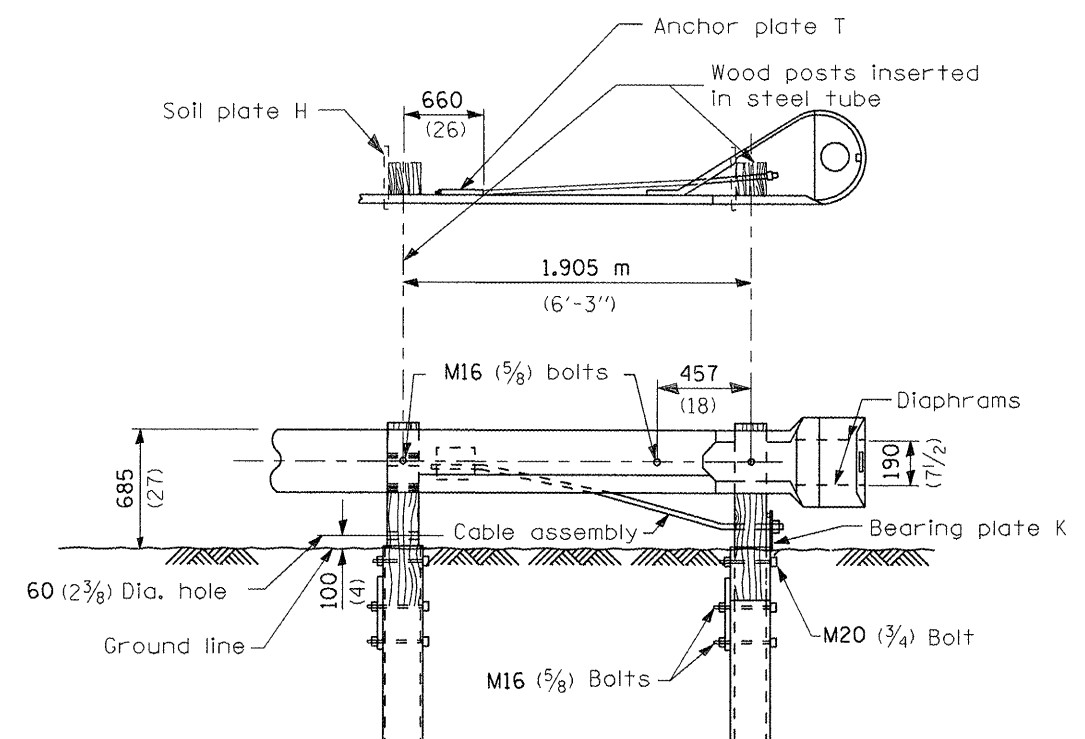
• D-3 HIGHWAY DAMAGE REPAIR 2013

FILE NAME =	USER NAME = quigleyml	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TIMBER CURB & BITUMINOUS CURB REPAIR & GUARD POST DETAIL	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
c:\pw_work\p\idot\quigleyml\d0300564\0305818-sht-details.dgn		DRAWN -	REVISED -			VAR.		VAR.	37	9	
PLOT SCALE = 100.0000' / 1" =		CHECKED -	REVISED -			CONTRACT NO. 66B29					
PLOT DATE = 3/26/2012		DATE -	REVISED -			SCALE:	SHEET NO. OF SHEETS	STA. TO STA.	FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT		

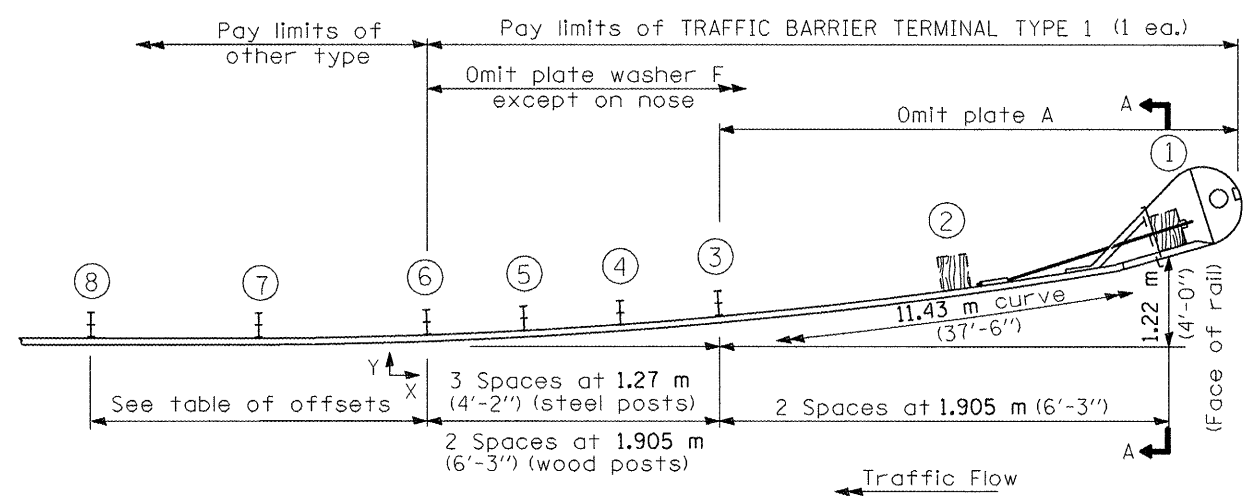
OFFSETS TO FACE OF RAIL		
Post	X (ft)	Y (ft)
①	11.345 (37.22)	1.22 (4.0)
②	9.475 (31.09)	0.850 (2.79)
③	7.595 (24.92)	0.545 (1.79)
④	6.335 (20.79)	0.380 (1.25)
⑤	5.070 (16.64)	0.245 (0.80)
⑥	3.805 (12.49)	0.135 (0.45)
⑦	1.905 (6.25)	0.035 (0.11)
⑧	0 (0.00)	0 (0.00)



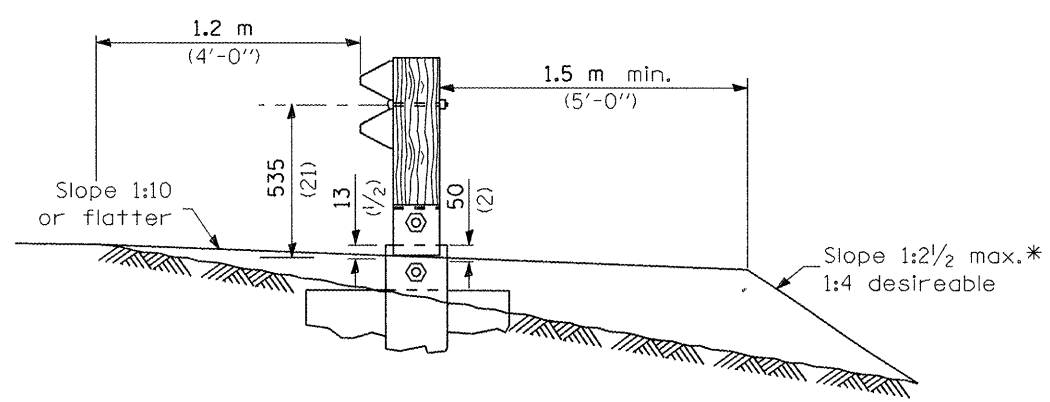
SHOULDER WIDENING TRANSITION



WOOD BREAKAWAY POSTS
TUBULAR STEEL FOUNDATIONS



PLAN



SECTION A-A

* If fill height exceeds 1.5 m (5'-0") use 1:3 max.

**DETAIL INCLUDED
FOR REPAIR ONLY**

GENERAL NOTES

See Standard 630001 for details of guardrail not shown.

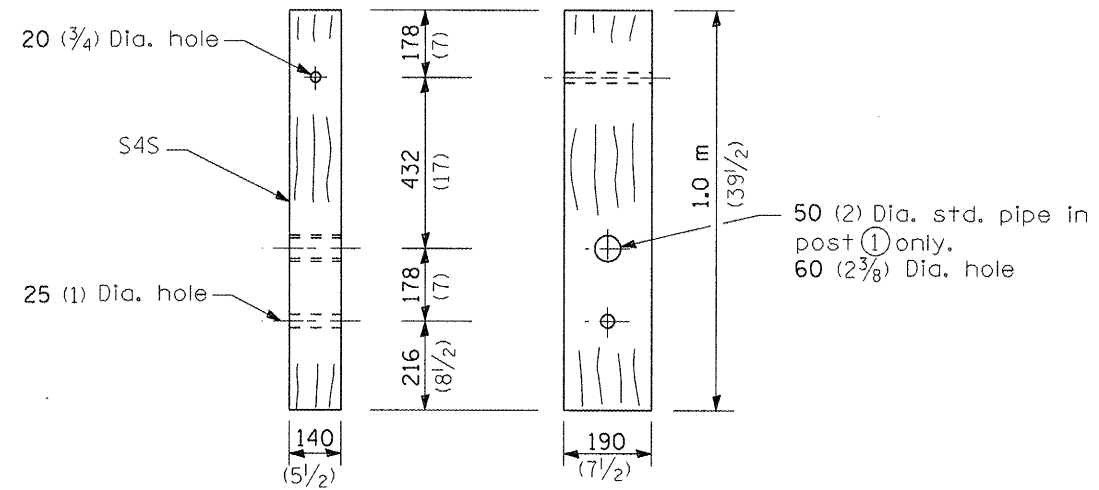
Posts at location 1 & 2 shall be wood breakaway posts. Posts other than 1 & 2 may be either standard wood posts or steel posts, at the option of the Contractor. If standard wood posts are used, one post shall be located midway between and in lieu of posts 4 & 5. The offset (Y) for this post shall be 300 mm (12 inches).

A two-piece assembly may be substituted for the one piece nose shown above.

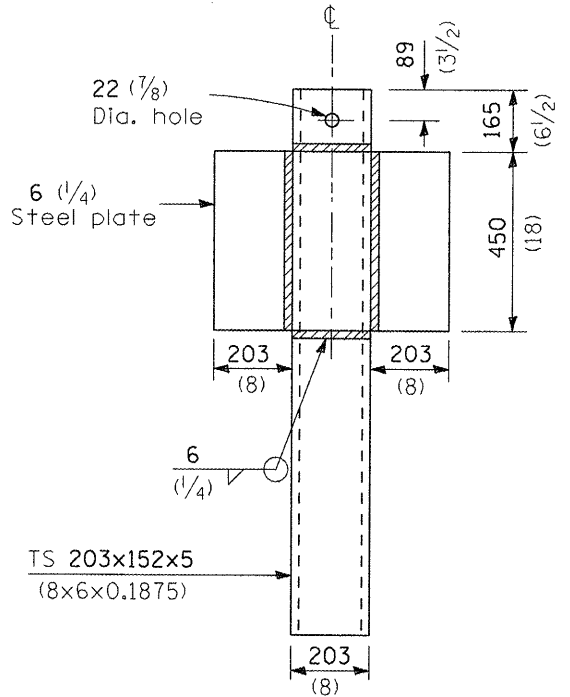
The bearing plate K shall be held in position by (2) two eightpenny nails driven into the post and bent over the top of the plate.

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

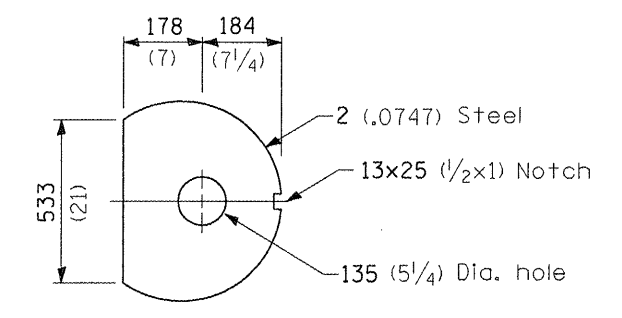
All dimensions are in millimeters (inches) unless otherwise shown.



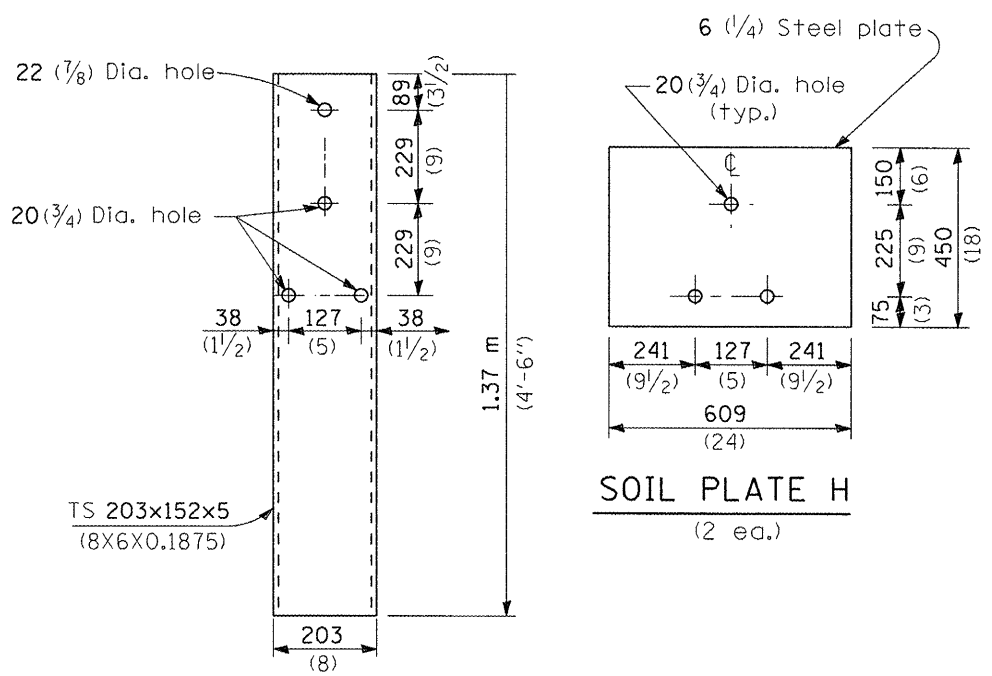
WOOD BREAKAWAY POST
(2 ea.)



ALTERNATE SOIL PLATE CONNECTION

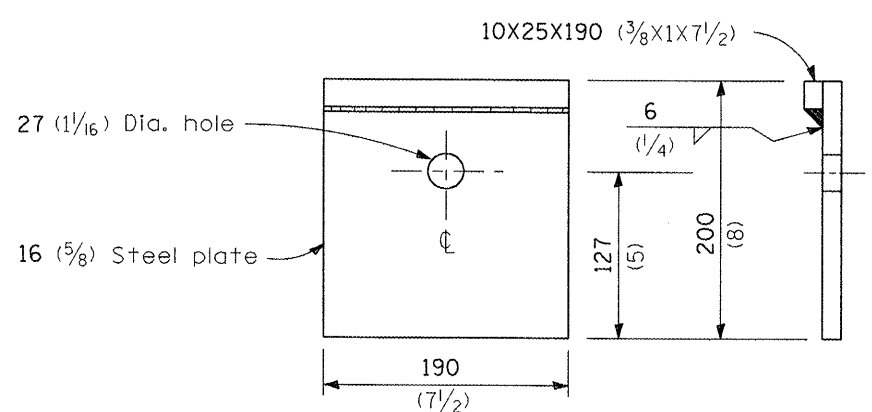


DIAPHRAGM
(2 ea.)

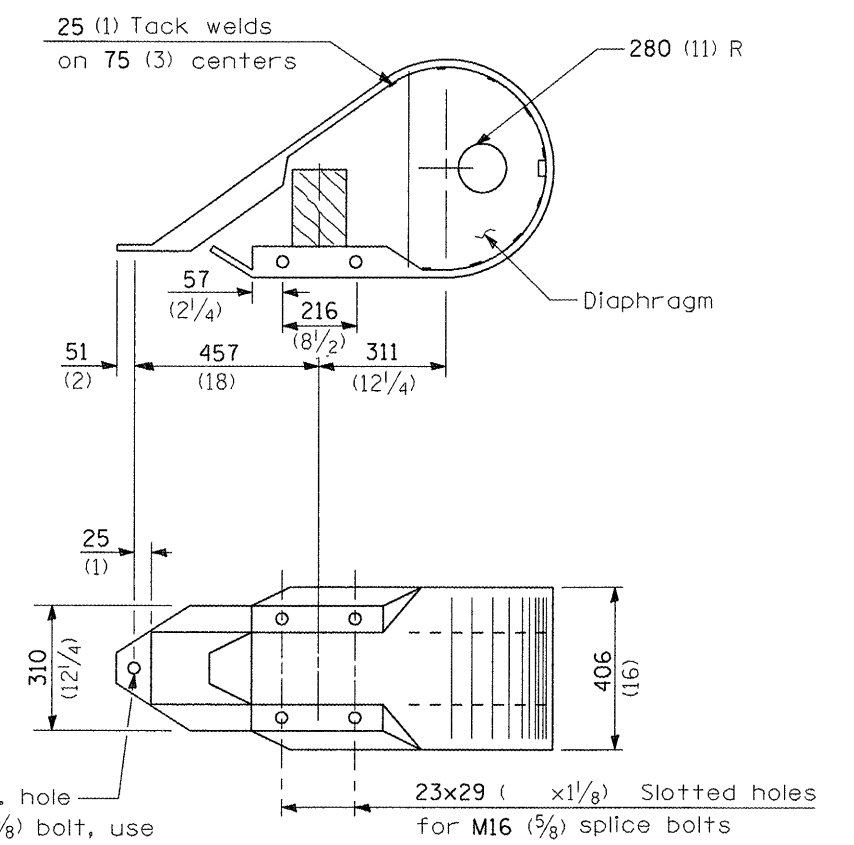


STEEL TUBE
(2 ea.)

SOIL PLATE H
(2 ea.)



BEARING PLATE K
(1 ea.)



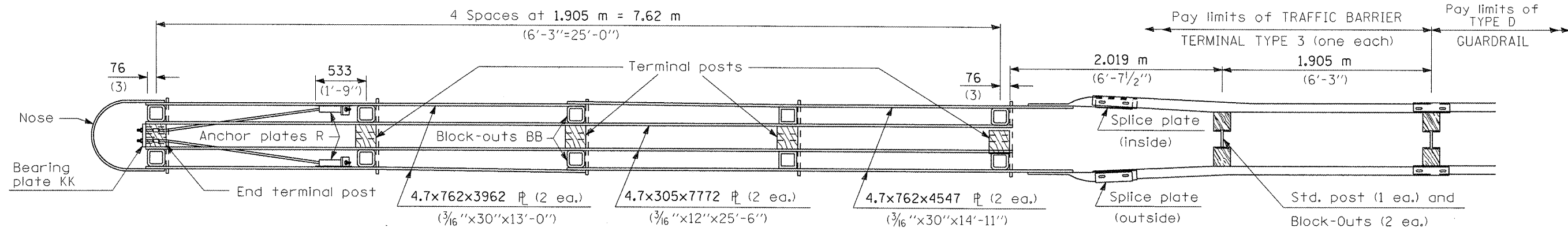
NOSE
(1 ea.)

DETAIL INCLUDED FOR REPAIR ONLY

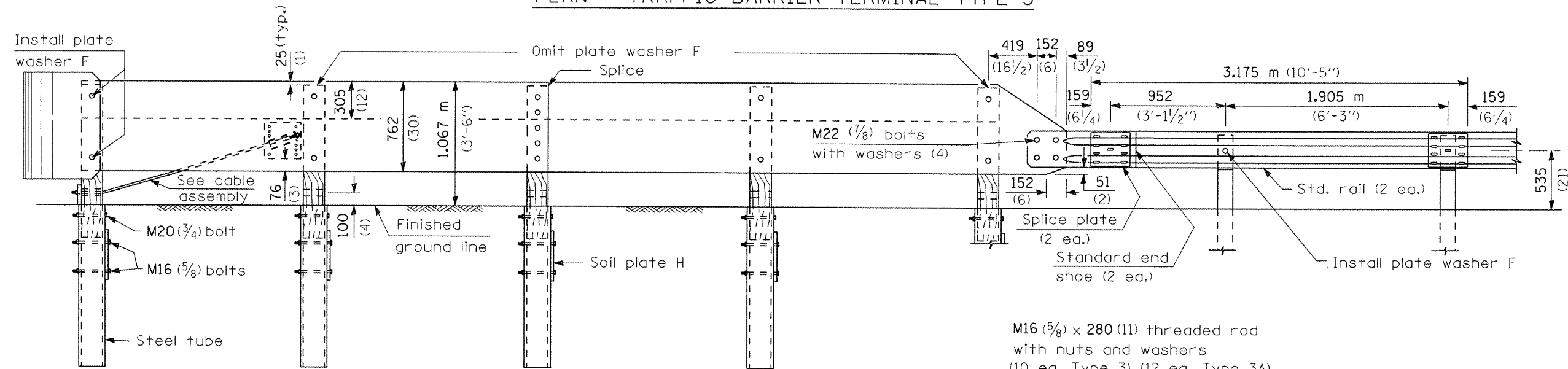
All dimensions are in millimeters (inches) unless otherwise shown.

FILE NAME =	USER NAME = quigleyml	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TRAFFIC BARRIER TERMINAL TYPE 1 STANDARD B.L.R. 23	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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	PLOT DATE = 3/26/2012	DATE -	REVISED -			CONTRACT NO. 66B29					
						FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					

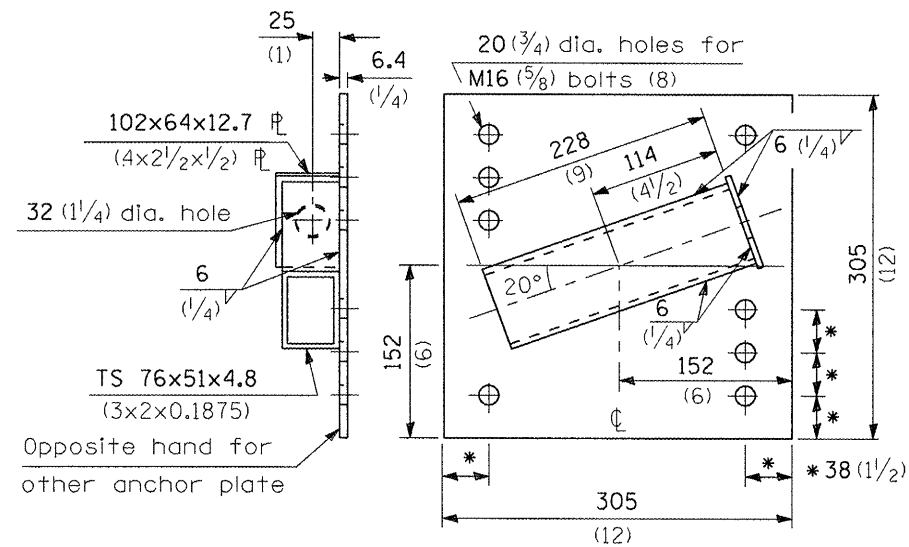
• D-3 HIGHWAY DAMAGE REPAIR 2013



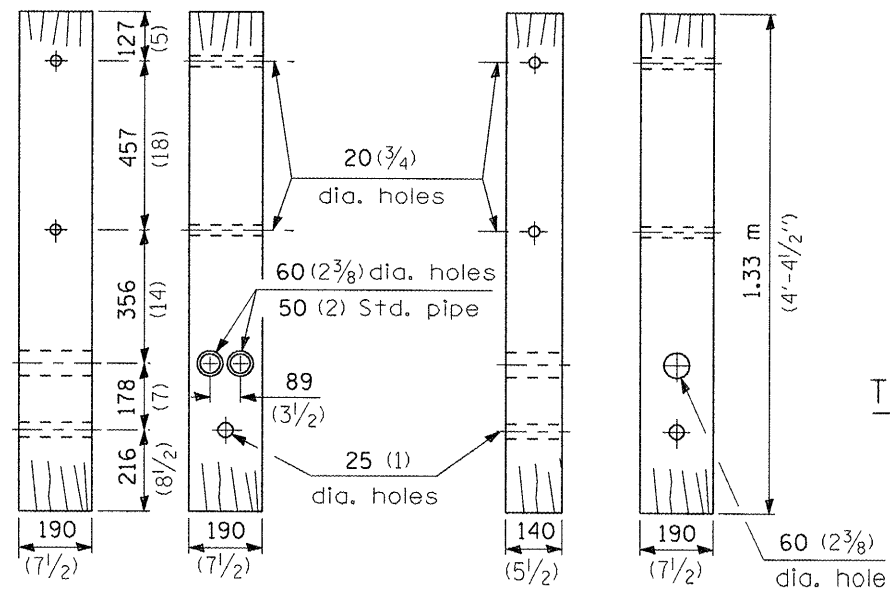
PLAN - TRAFFIC BARRIER TERMINAL TYPE 3



ELEVATION



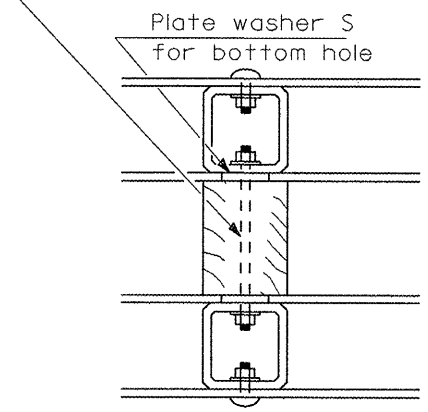
ANCHOR PLATE R
(1 ea. lt. hd. & 1 ea. rt. hd.)



END TERMINAL POST
(1 ea.)

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

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



TYPICAL BLOCK-OUT/POST ATTACHMENT

GENERAL NOTES

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

See Standard 630001 for details of guardrail elements not shown.

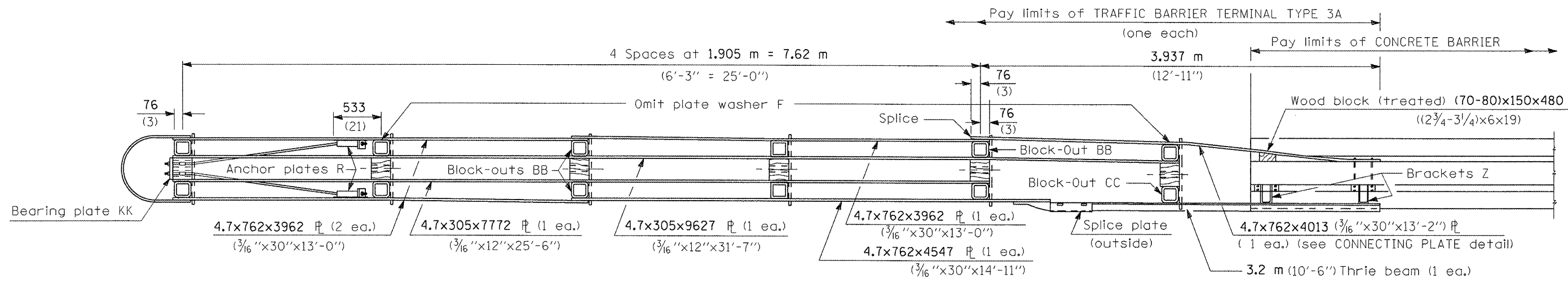
Unless otherwise shown all bolts and nuts shall be Standard Post and Splice Bolts and Nuts (See Standard 630001).

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

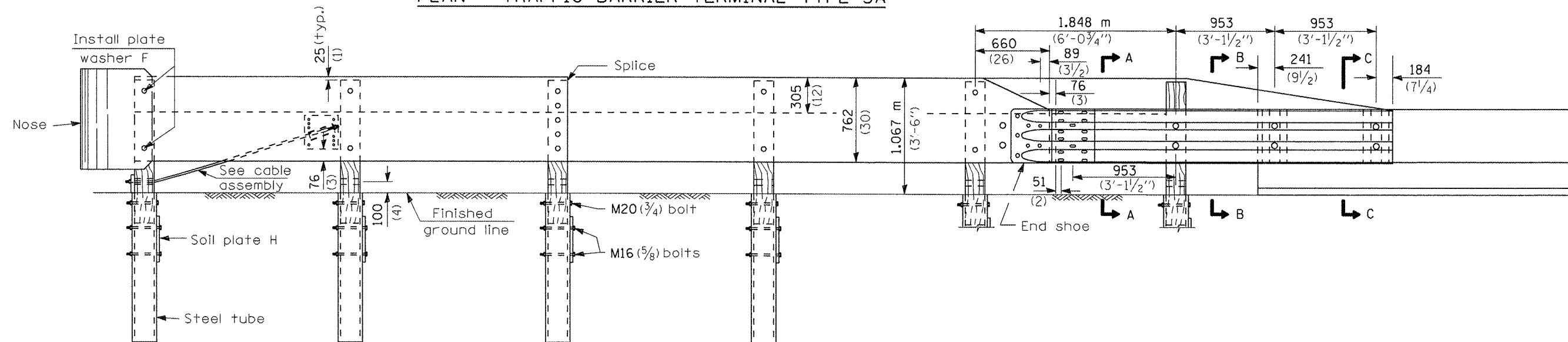
DETAIL INCLUDED FOR REPAIR ONLY

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

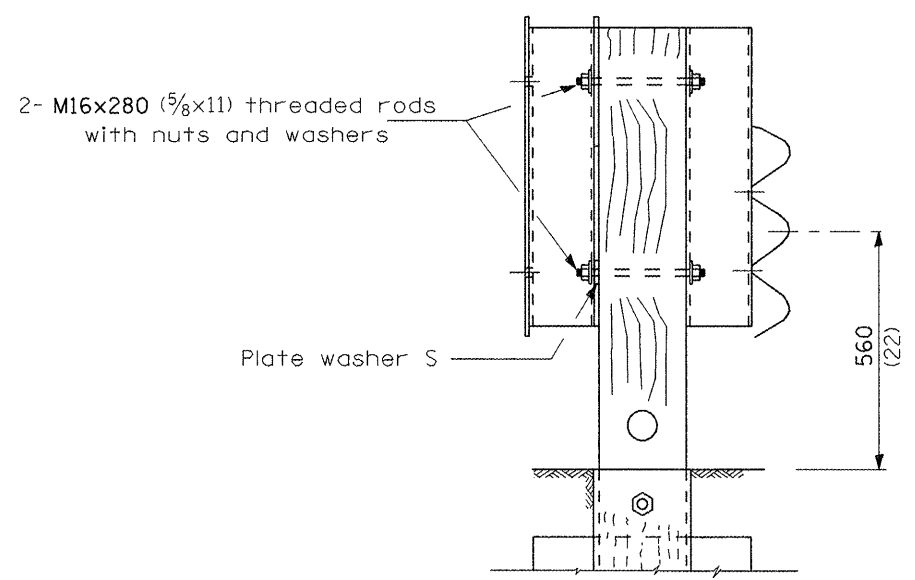
FILE NAME =	USER NAME = quigleyml	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TRAFFIC BARRIER TERMINAL TYPE 3 & 3A	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
ca:\pw_work\p\p\quigleyml\d0380564\0380564.dgn	SC18-shr-detailed.dgn	DRAWN -	REVISED -			VAR.	*	VAR.	37	12
PLOT SCALE = 100.0000 / 1 in.	CHECKED -	REVISED -	REVISED -			CONTRACT NO. 66C18				
PLOT DATE = 3/26/2012	DATE -	REVISED -	REVISED -			SCALE:	SHEET NO. OF SHEETS	STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT



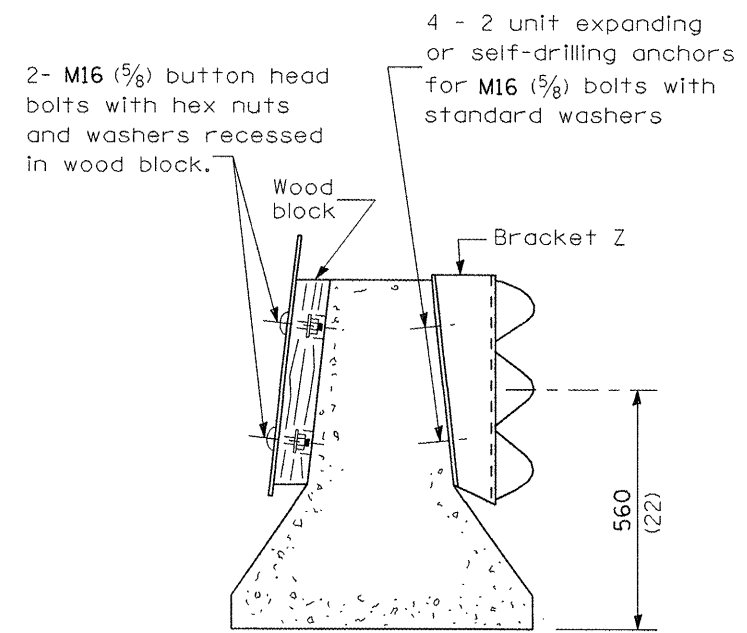
PLAN - TRAFFIC BARRIER TERMINAL TYPE 3A



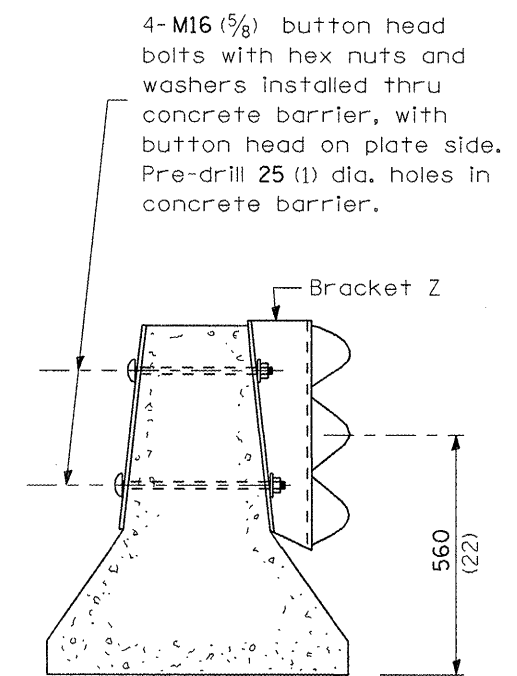
ELEVATION



SECTION A-A



SECTION B-B



SECTION C-C

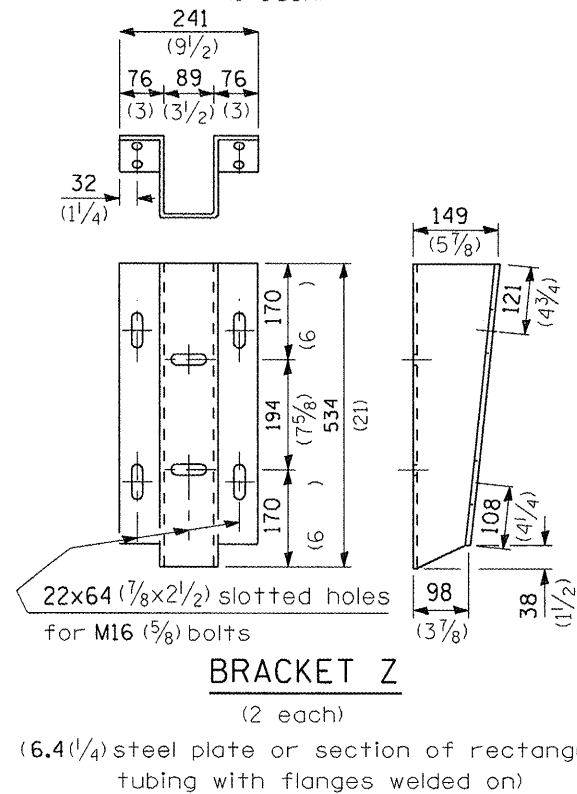
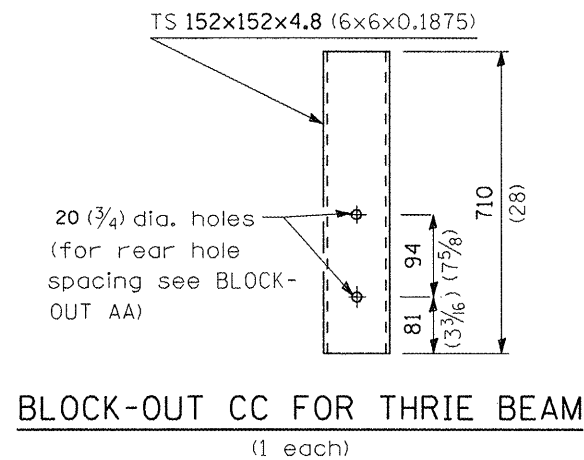
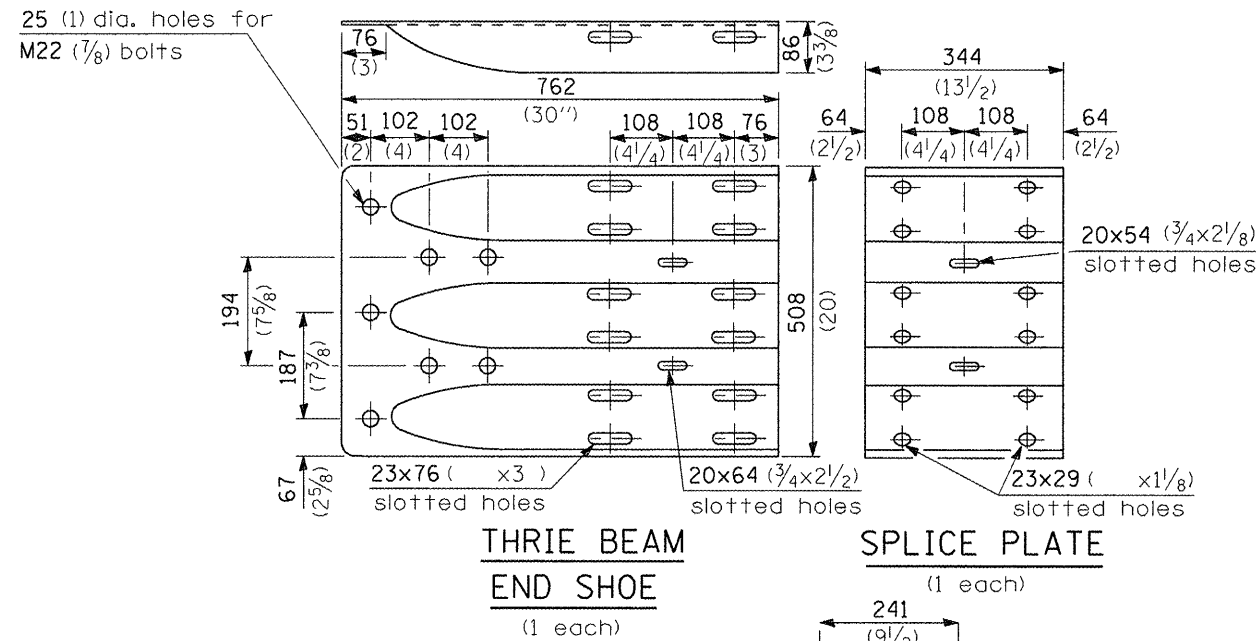
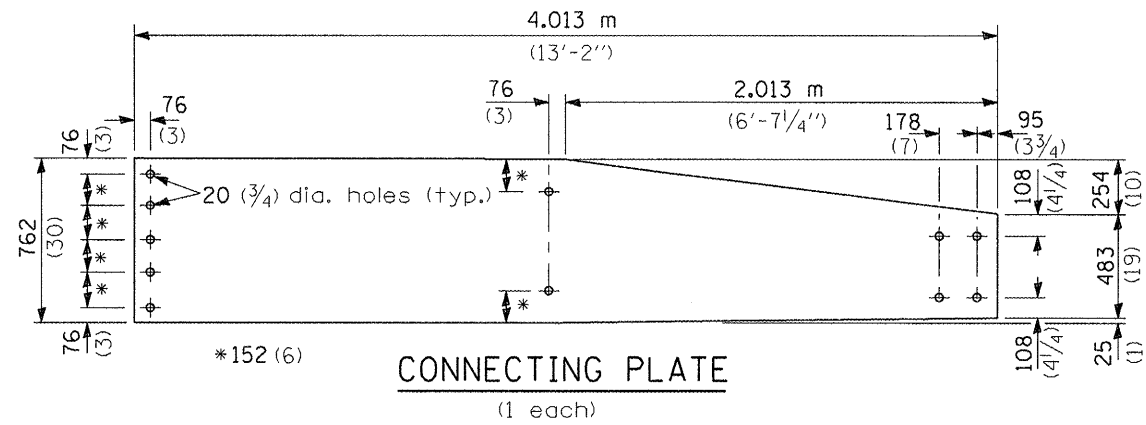
DETAIL INCLUDED FOR REPAIR ONLY

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

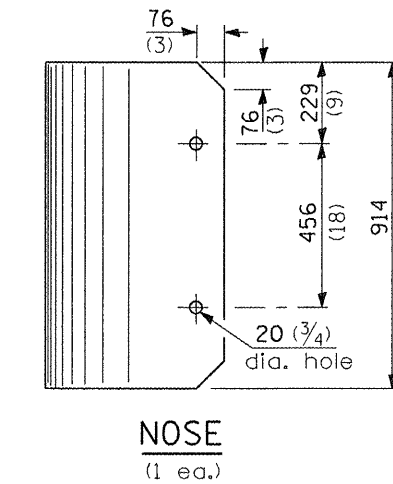
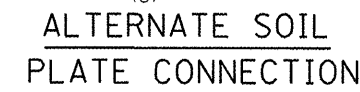
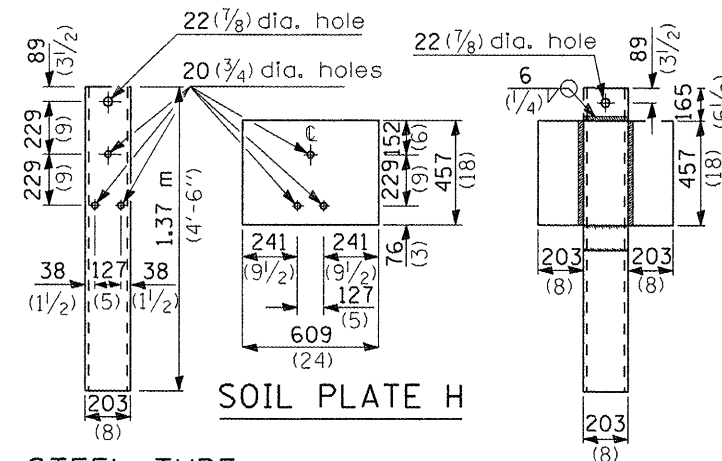
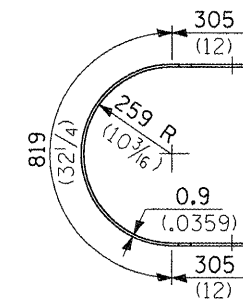
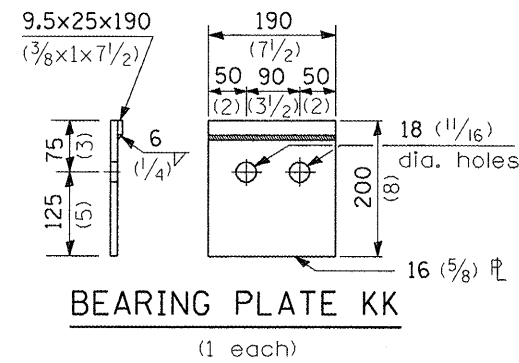
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PLOT SCALE = 100,0000 / in.		CHECKED -		REVISED -		REVISED -								CONTRACT NO. 66C18		FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT					
PLOT DATE = 3/26/2012		DATE -		REVISED -		REVISED -								SCALE:		SHEET NO. OF SHEETS STA.		TO STA.					

D-3 HIGHWAY DAMAGE REPAIR 2013

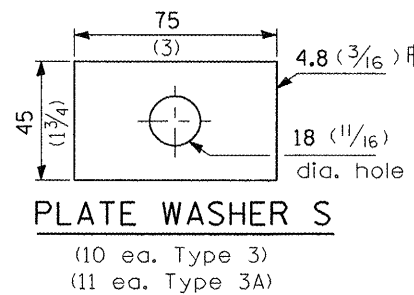
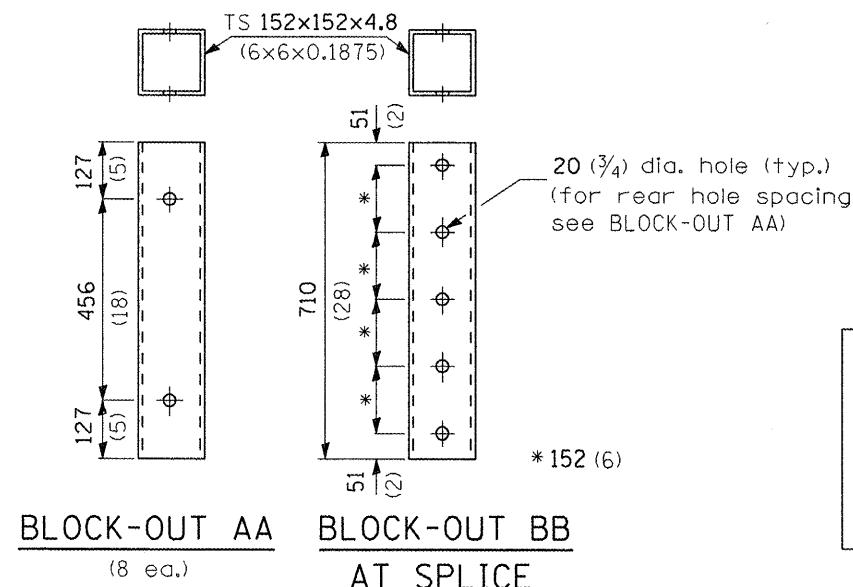
TYPE 3A ONLY



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.

FILE NAME =	USER NAME = quigleyml	DESIGNED -	REVISED -
o:\pwwork\pwwork\quigleyml\d0300564\0300564.dwg	BC18-sht-details.dgn	DRAWN -	REVISED -
PLOT SCALE = 100.0000 / 1 in.		CHECKED -	REVISED -
PLOT DATE = 3/26/2012		DATE -	REVISED -

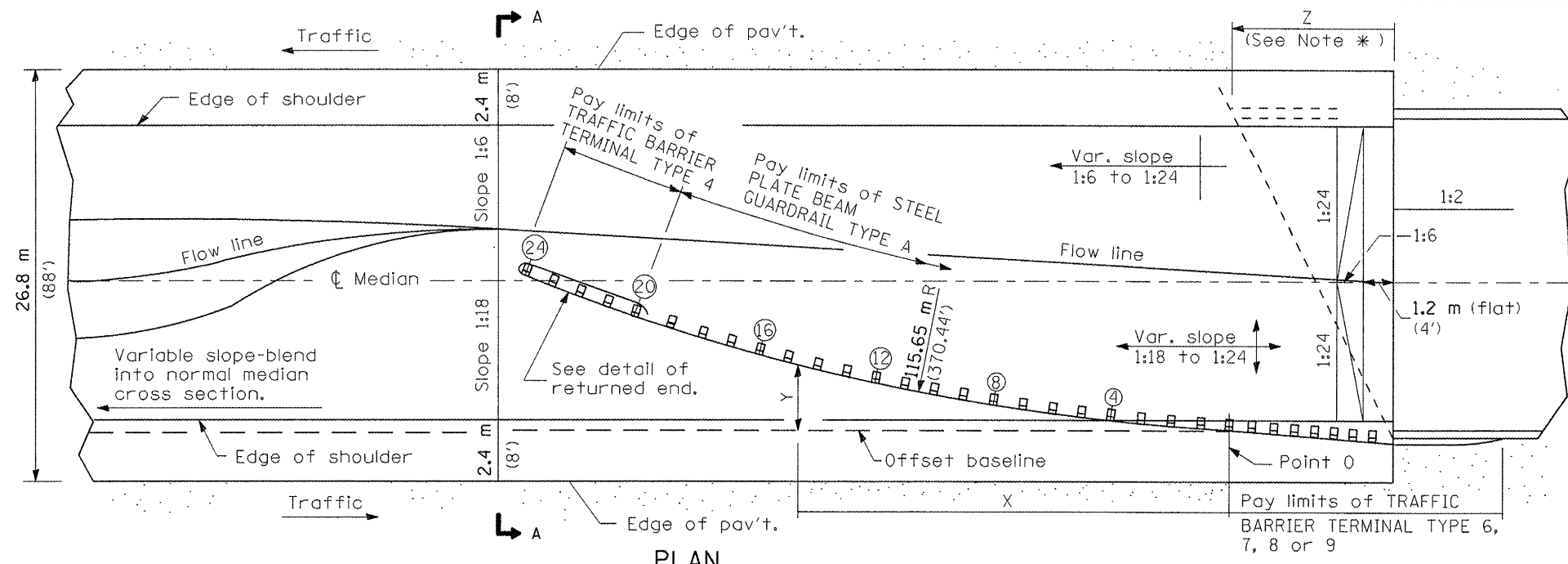
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

TRAFFIC BARRIER TERMINAL TYPE 3 & 3A

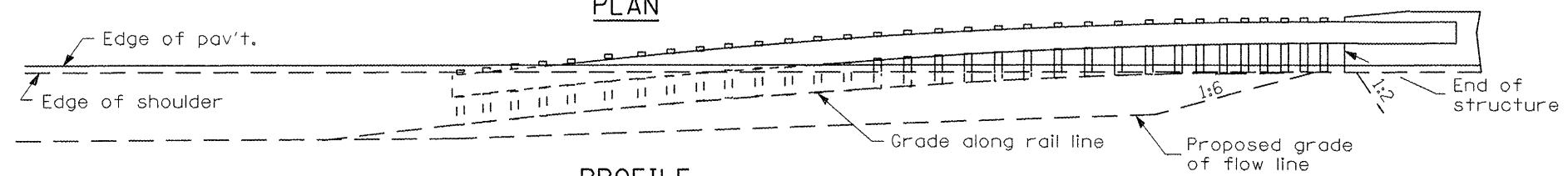
SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.		VAR.	37	14
CONTRACT NO. 66C18				
FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT				

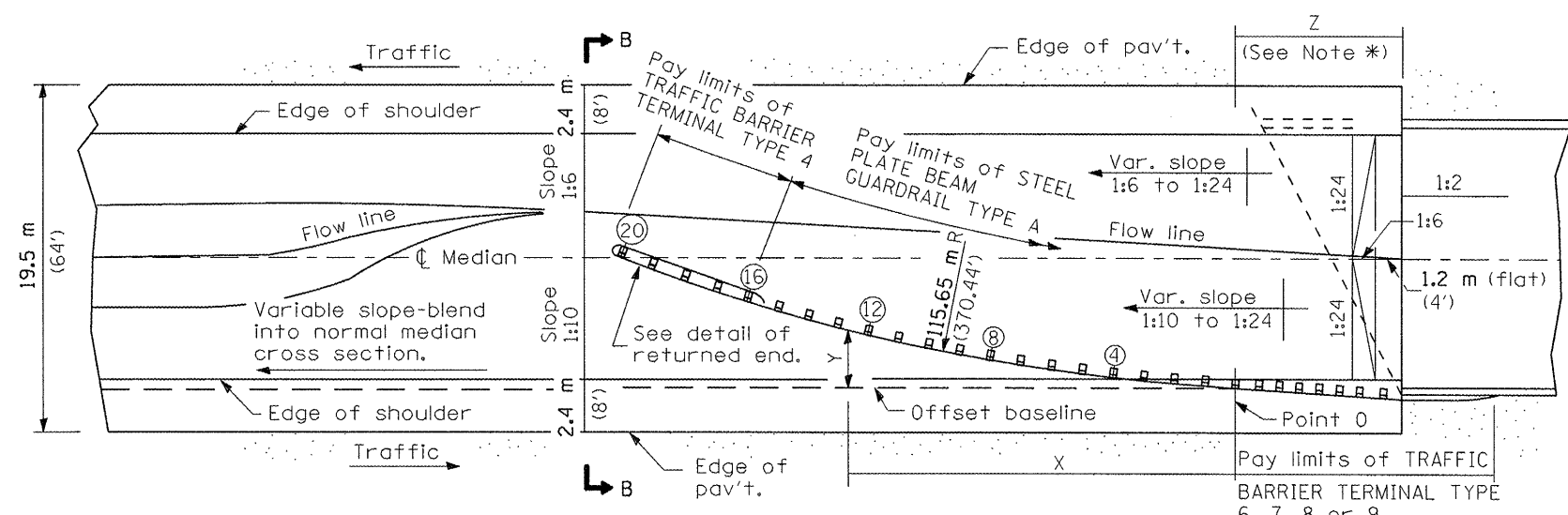
D-3 HIGHWAY DAMAGE REPAIR 2013



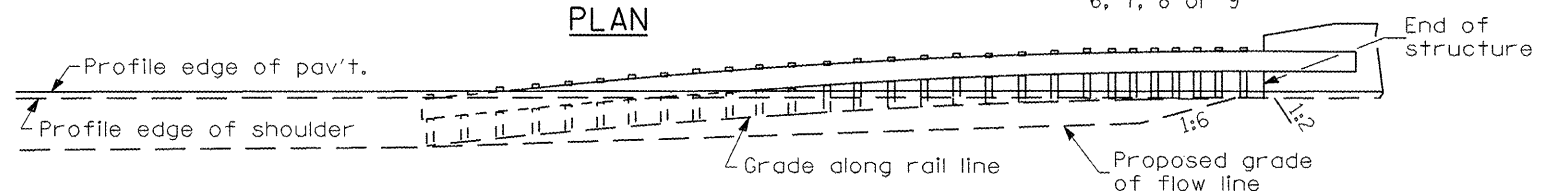
PLAN



PROFILE
ASSEMBLY FOR 26.8 m (88 ft.) MEDIAN



PLAN



PROFILE
ASSEMBLY FOR 19.5 m (64 ft.) MEDIAN

OFFSETS TO FACE OF RAIL		
POST	DISTANCE X (m) (ft.)	OFFSET Y (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)
⑰	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 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.

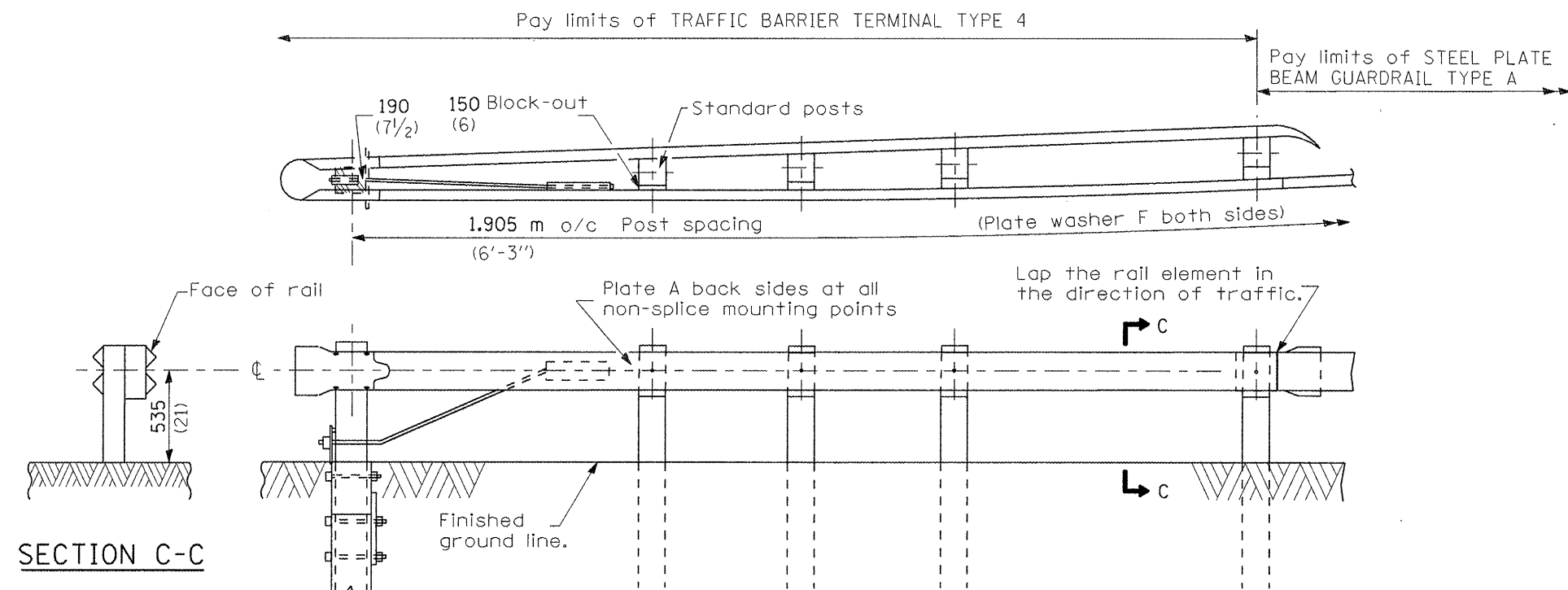
The bearing plate K shall be held in position by (2) two eight penny nails driven into the post and bent over the top of the plate.

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.

DETAIL INCLUDED FOR REPAIR ONLY

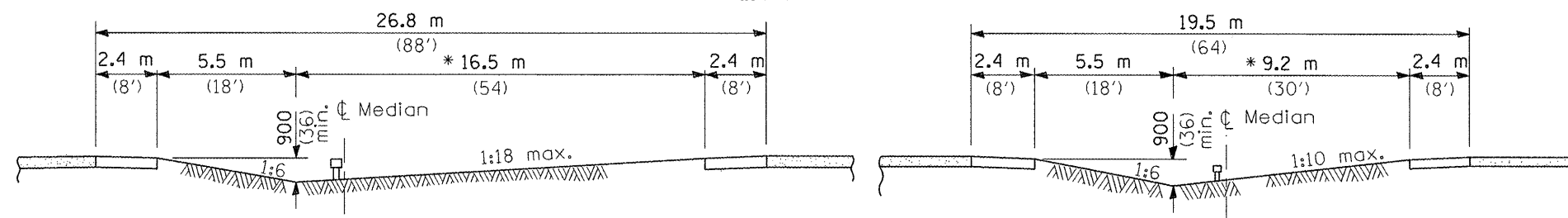
All dimensions are in millimeters (inches) unless otherwise shown.



SECTION C-C

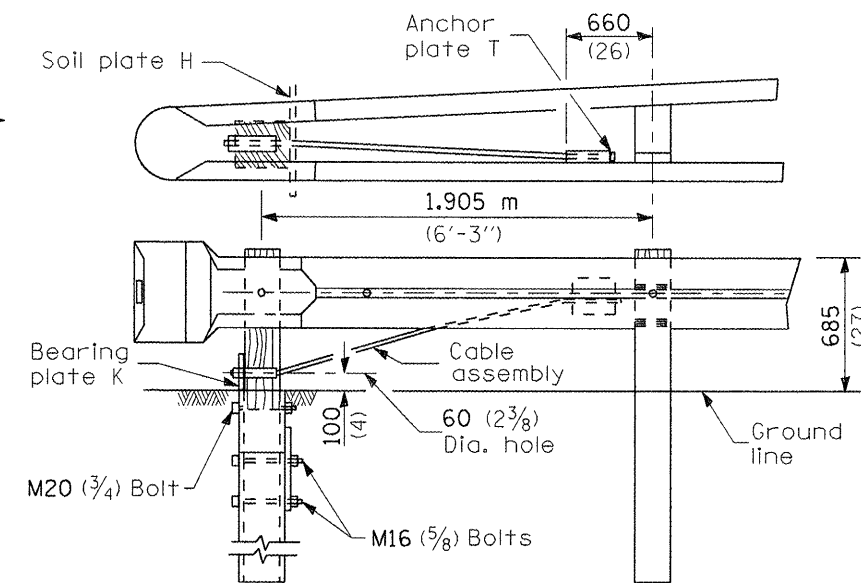
RETURNED END DETAIL

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

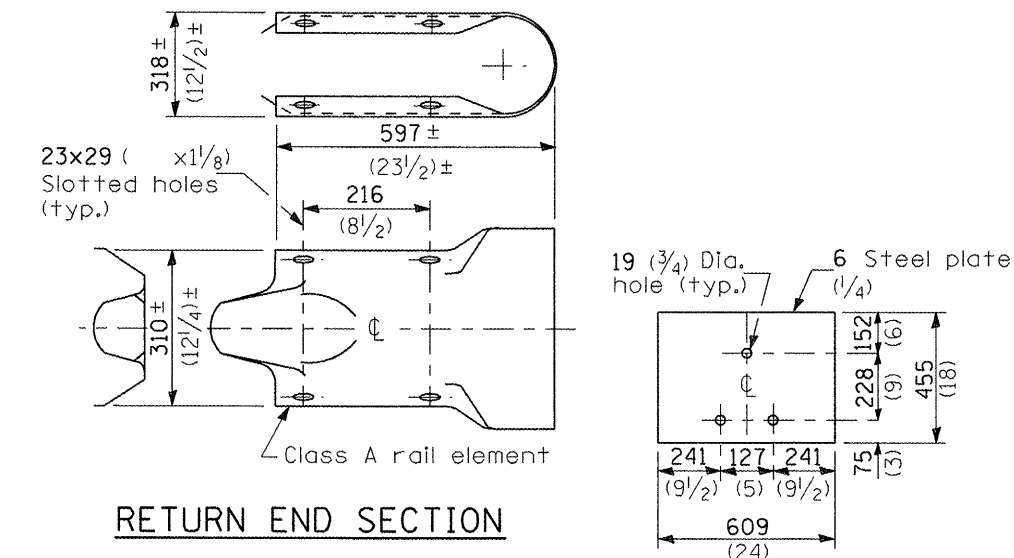


SECTION A-A

SECTION B-B

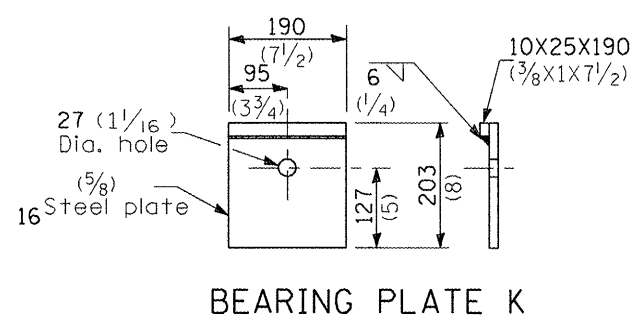


WOOD POST TUBULAR STEEL FOUNDATION

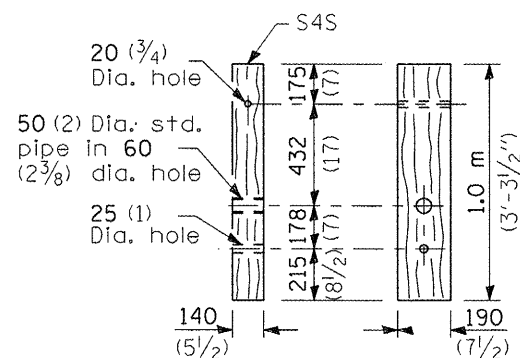


RETURN END SECTION

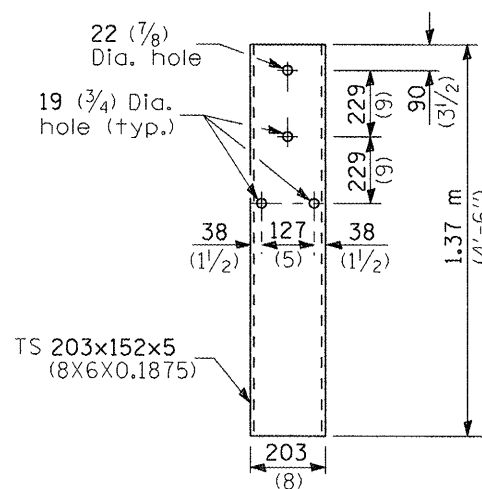
SOIL PLATE H



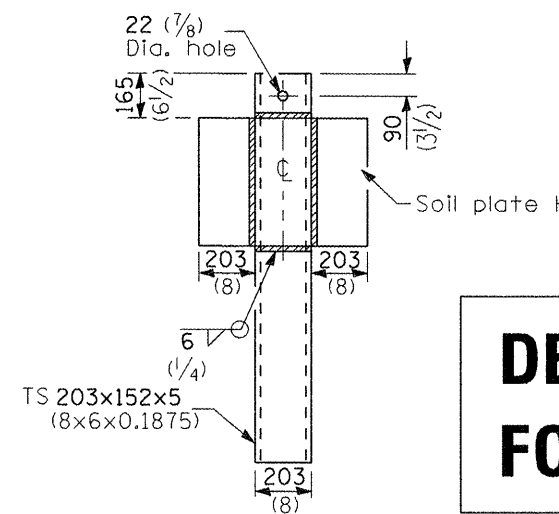
BEARING PLATE K



WOOD BREAKAWAY POST



STEEL TUBE



ALTERNATE SOIL PLATE CONNECTION

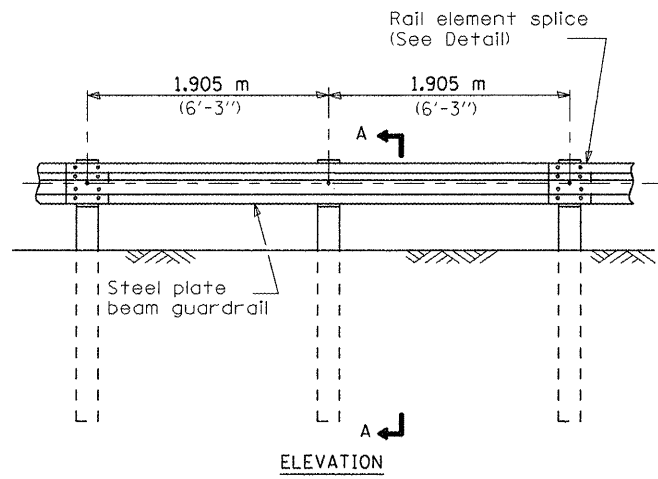
DETAIL INCLUDED FOR REPAIR ONLY

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

FILE NAME =	USER NAME = quigleyml	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TRAFFIC BARRIER TERMINAL TYPE 4	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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	PLOT DATE = 3/26/2012	CHECKED -	REVISED -			CONTRACT NO. 66C18					
		DATE -	REVISED -			FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT					

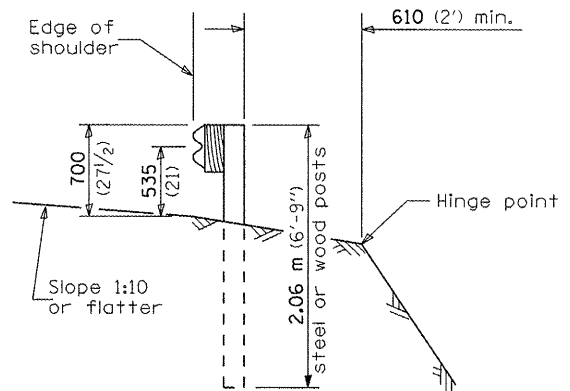
D-3 HIGHWAY DAMAGE REPAIR 2013

SCALE: SHEET NO. OF SHEETS STA. TO STA.

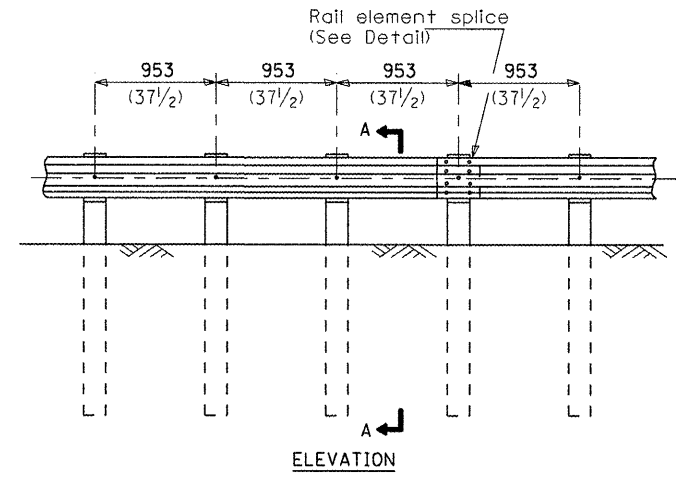


TYPE A

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

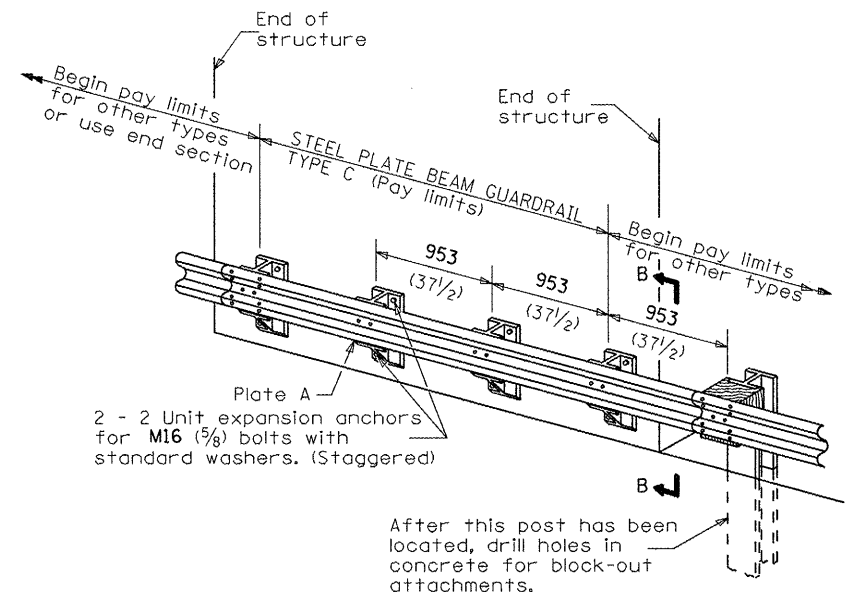


SECTION A-A



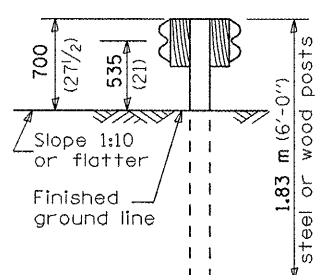
TYPE B

953 (37 1/2) Closed post spacing

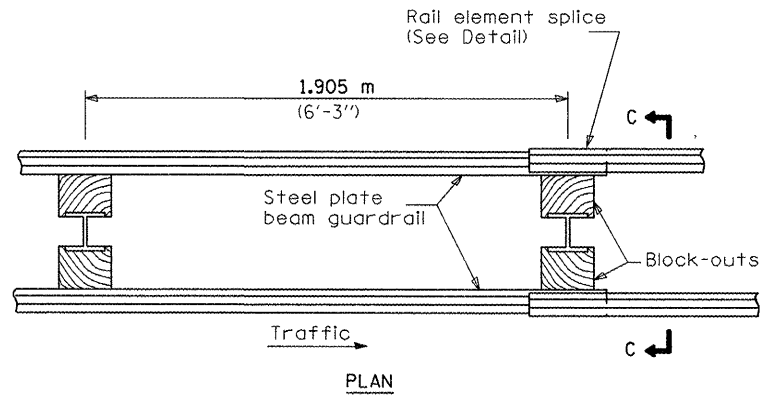


TYPE C

953 (37 1/2) Block-out spacing

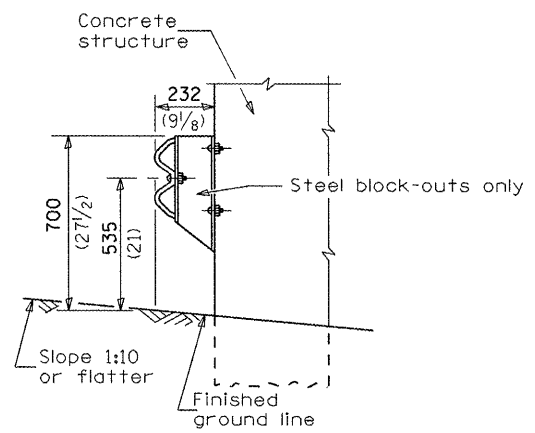


SECTION C-C



TYPE D

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

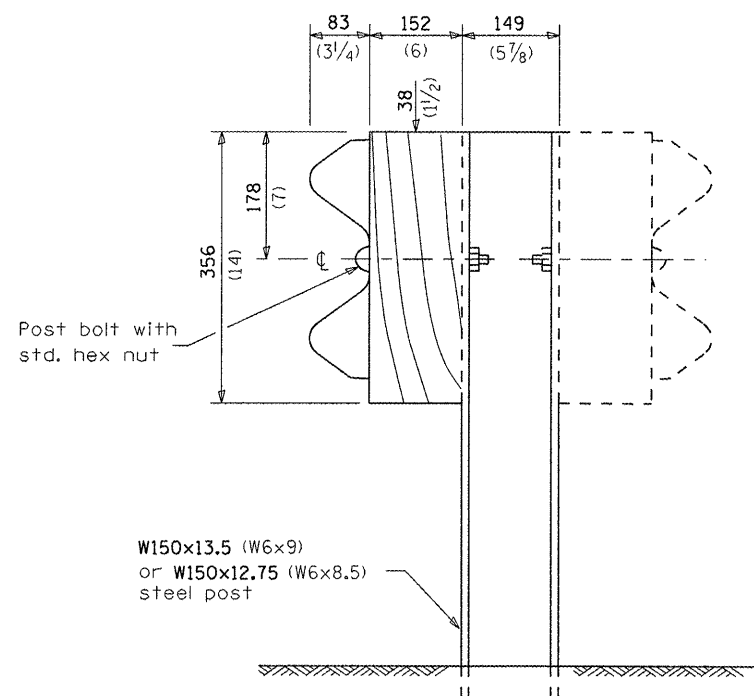


SECTION B-B

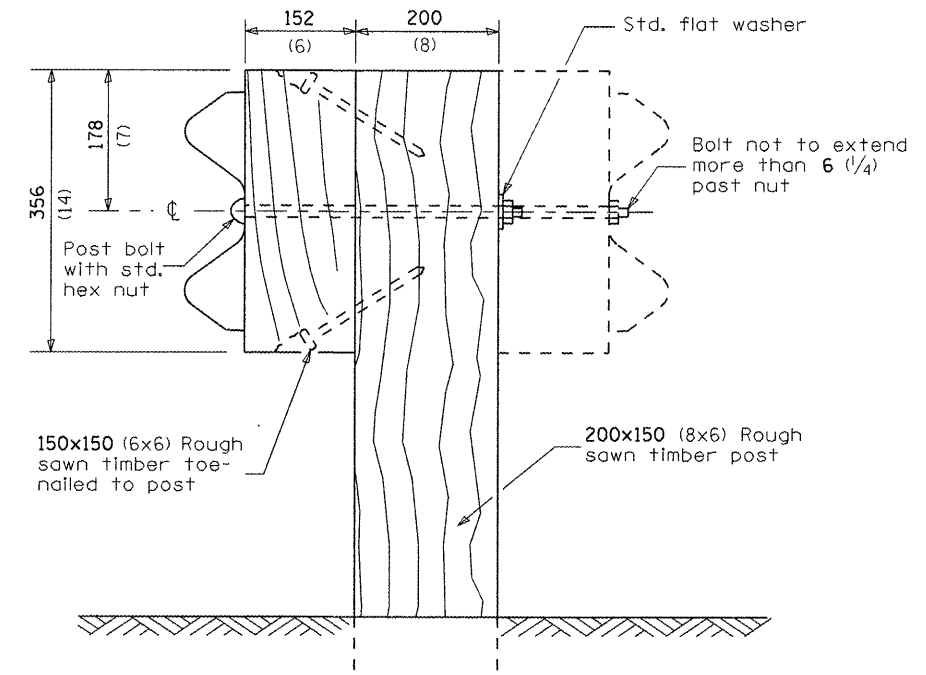
GENERAL NOTES

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.

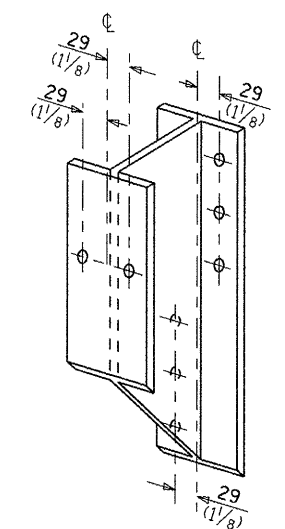
<p>FILE NAME * USER NAME * quigleyml DESIGNED - REVISIONS -</p>				<p align="center">STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</p>				<p align="center">PRE-MGS EFFECTIVE 4-1-06 STEEL PLATE BEAM GUARDRAIL STANDARD 630001-06</p>				<p>F.A. RTE. SECTION COUNTY TOTAL SHEETS SHEET NO.</p>	
<p>es\pwwork\pwwork\quigleyml\d0300564\0300564.dgn DRAWN - REVISIONS -</p>								<p align="center">(Sheet 1 of 4)</p>				<p>VAR. VAR. VAR. 37 17</p>	
<p>PLOT SCALE = 100.0000 ' / in. CHECKED - REVISIONS -</p>								<p>SCALE: SHEET NO. OF SHEETS STA. TO STA.</p>				<p>CONTRACT NO. 66C18</p>	
<p>PLOT DATE = 3/26/2012 DATE - REVISIONS -</p>								<p>FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT</p>					



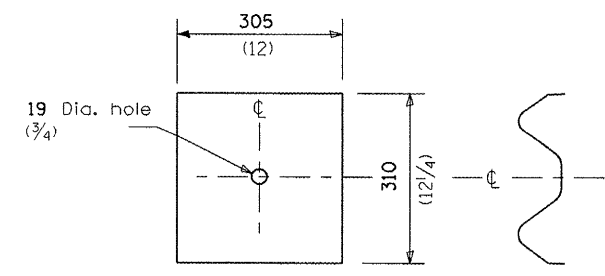
STEEL POST CONSTRUCTION



WOOD POST CONSTRUCTION



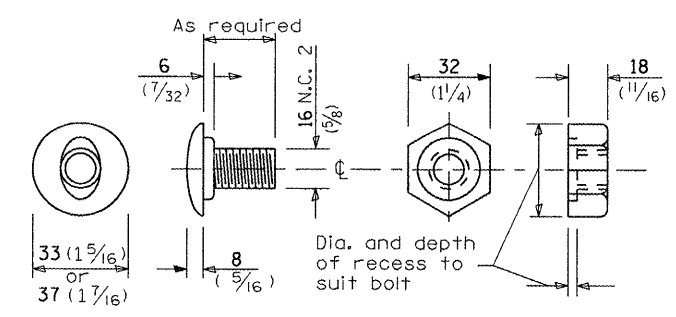
STEEL BLOCK-OUT DETAIL



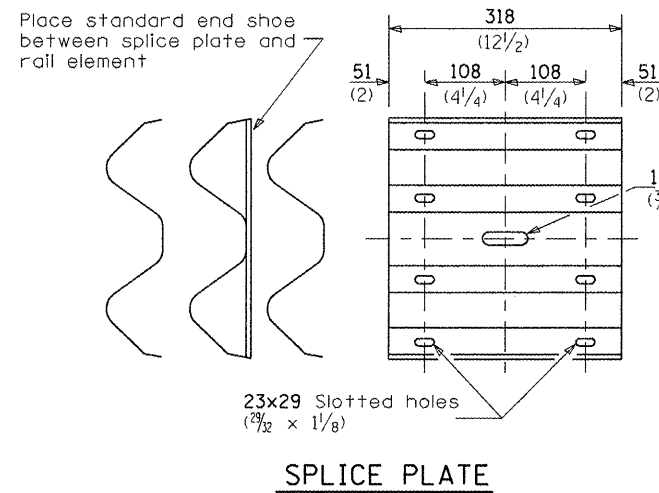
NOTE

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

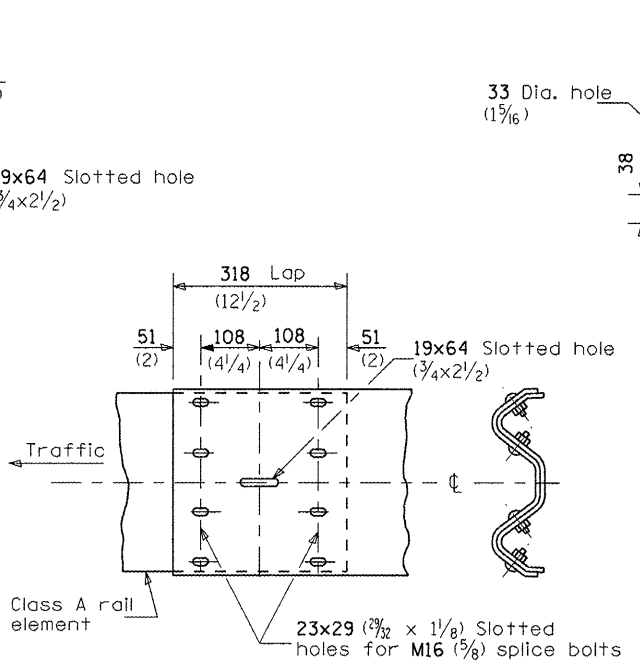
PLATE A



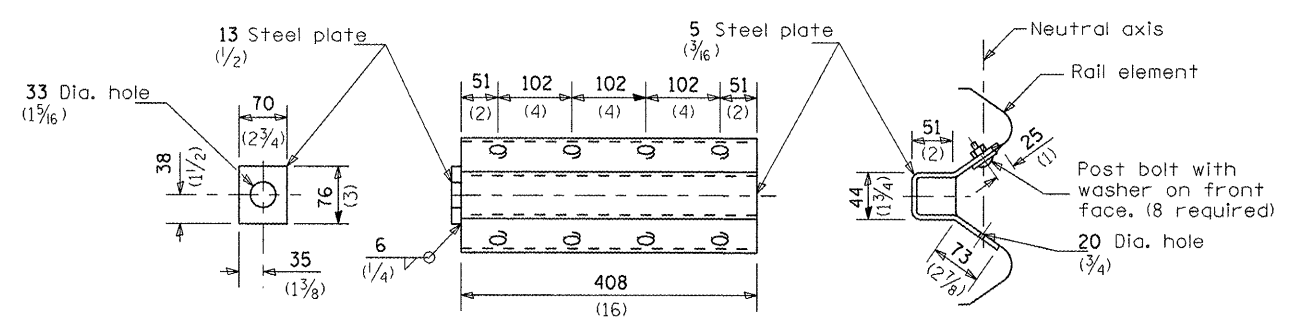
POST OR SPLICE BOLT & NUT



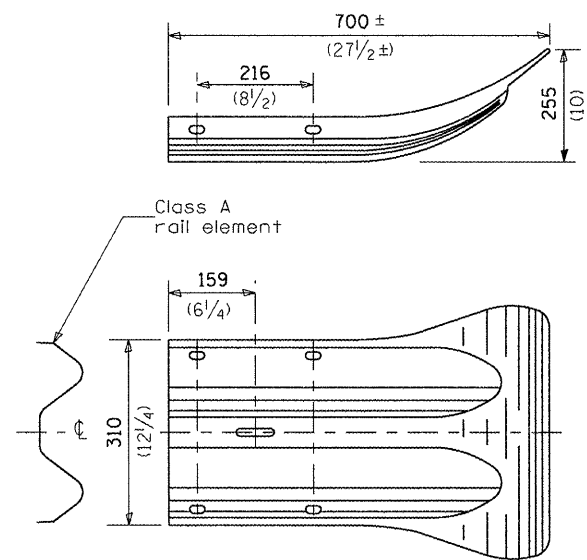
SPLICE PLATE



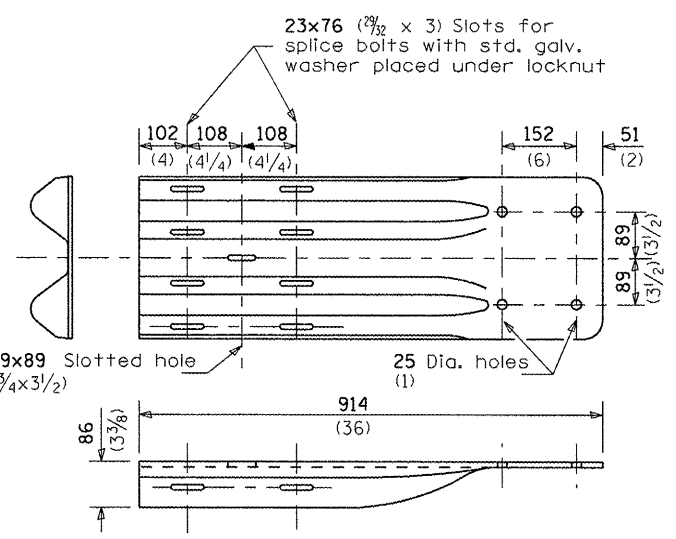
RAIL ELEMENT SPLICE



ANCHOR PLATE T DETAILS



END SECTION



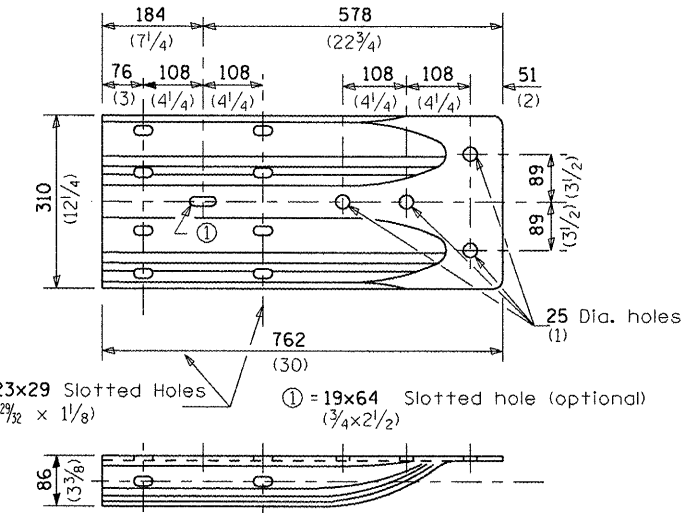
NOTE

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.

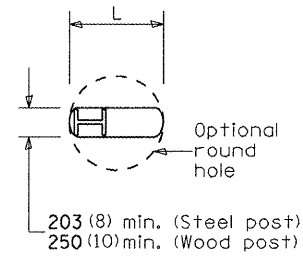
The standard end shoe shall be attached to the concrete with pre-drilled or self-drilling anchor bolts. The anchor cone shall be set flush with the surface of the concrete.

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

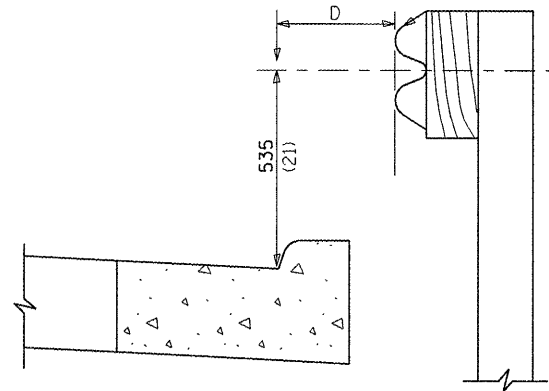
END SHOE



ALTERNATE END SHOE



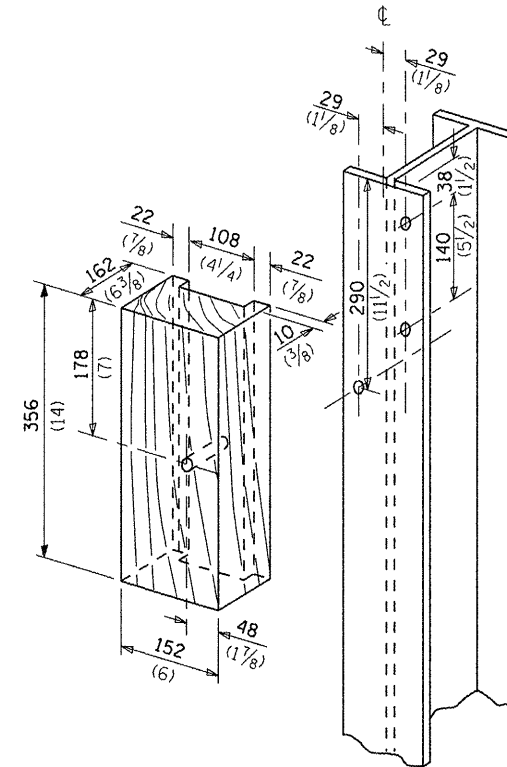
PLAN



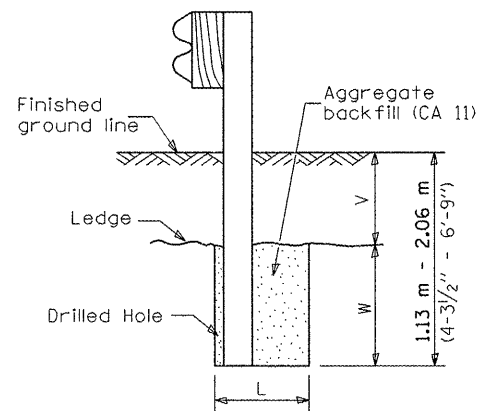
Note:
If it is necessary for D to be more than 300 (12) and less than 3.0 m (10'-0") type M-5 (M-2) curb and gutter (Std. 606001) shall be used in front of and in advance of the guardrail.

GUARDRAIL PLACED BEHIND CURB

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



WOOD BLOCK-OUT AND STEEL POST DETAILS

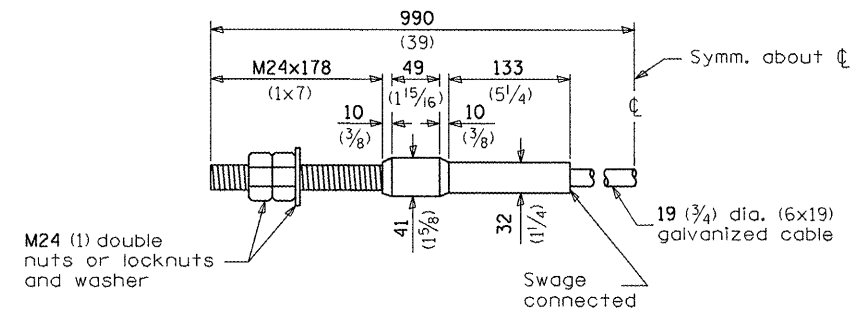


Note:
Ledge line is top of rock ledge or hard slag fill.

ELEVATION

FOOTING FOR POST WHEN IMPERVIOUS MATERIAL IS ENCOUNTERED

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



CABLE ASSEMBLY

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

• D-3 HIGHWAY DAMAGE REPAIR 2013

FILE NAME =	USER NAME = quigleyml	DESIGNED -	REVISED -
e:\pw_work\p\idot\quigleyml\d0380564\036	66C18-sht-details.dgn	DRAWN -	REVISED -
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	PLOT DATE = 3/26/2012	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

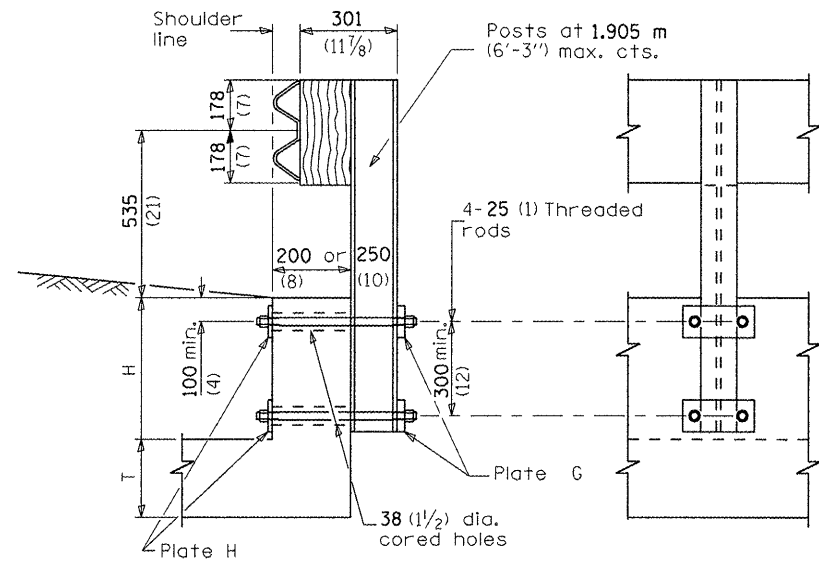
PRE-MGS EFFECTIVE 4-1-06
STEEL PLATE BEAM GUARDRAIL
STANDARD 630001-06

(Sheet 4 of 4)

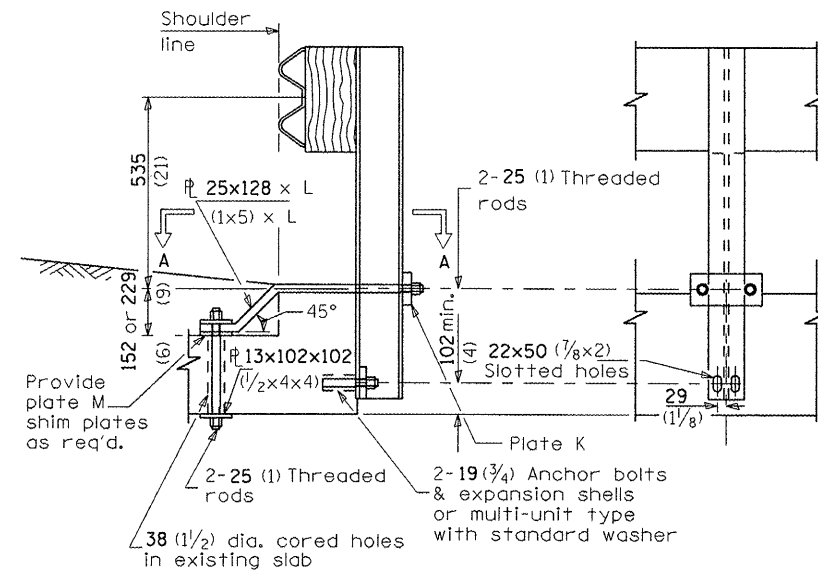
SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.		VAR.	37	20
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

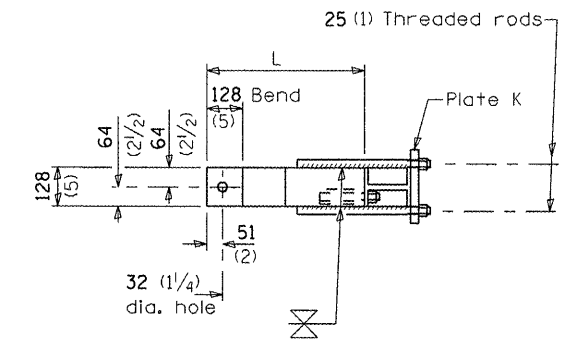
CONTRACT NO. 66C18



CROSS SECTION **ELEVATION**
CONDITION H > 450 (18)



CROSS SECTION **ELEVATION**
CASE II
MOUNTED ON TOP HEADWALL
WITH SQUARE TIP



SECTION A-A

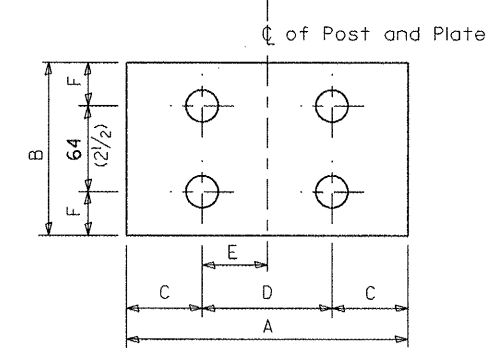
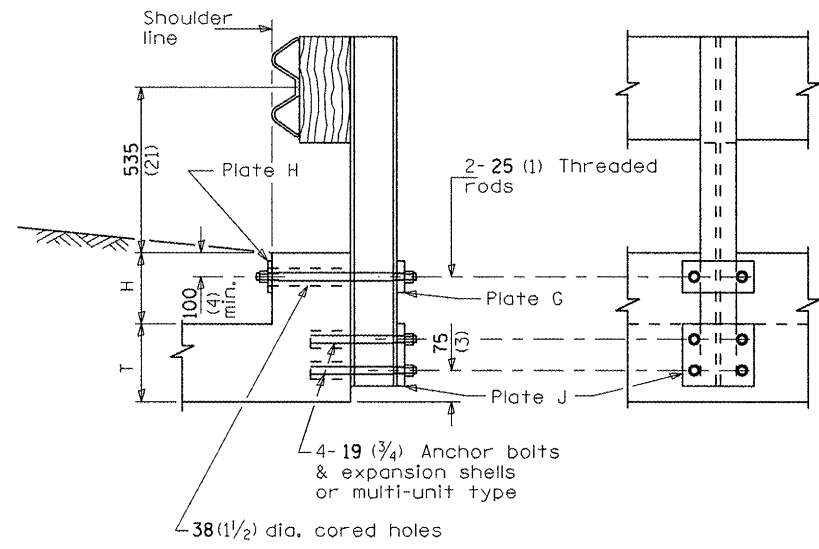


PLATE TYPE J



CROSS SECTION **ELEVATION**
CONDITION H < 450 (18) & H+T ≥ 510 (20)

CASE I
MOUNTED ON
RAISED HEADWALL

PLATE DIMENSIONS								
Type	A	B	C	D	E	F	Hole Dia.	Thick-ness
G	230 (9)	100 (4)	40 (1 1/2)	150 (6)	75 (3)	50 (2)	29 (1 1/8)	25 (1)
H	230 (9)	100 (4)	40 (1 1/2)	150 (6)	75 (3)	50 (2)	29 (1 1/8)	13 (1/2)
J	230 (9)	126 (5)	40 (1 1/2)	150 (6)	75 (3)	31 (1 1/4)	22 (7/8)	25 (1)
K	230 (9)	100 (4)	40 (1 1/2)	150 (6)	75 (3)	50 (2)	29 (1 1/8)	32 (1 1/4)
M	100 (4)	100 (4)	50 (2)	N/A	N/A	50 (2)	32 (1 1/8)	13 (1/2)

GENERAL NOTES

Except as noted, dimensions and notes specified for case II, III, and IV are the same as specified for case I.
 For details of guardrail elements not shown, see Standard 630001.
 All threaded rods shall be installed with heavy hex nuts and standard washers.

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

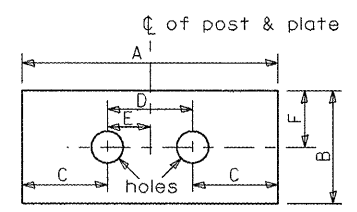


PLATE TYPES G, H & K

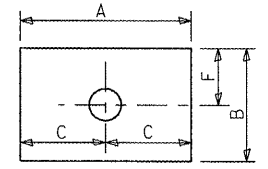
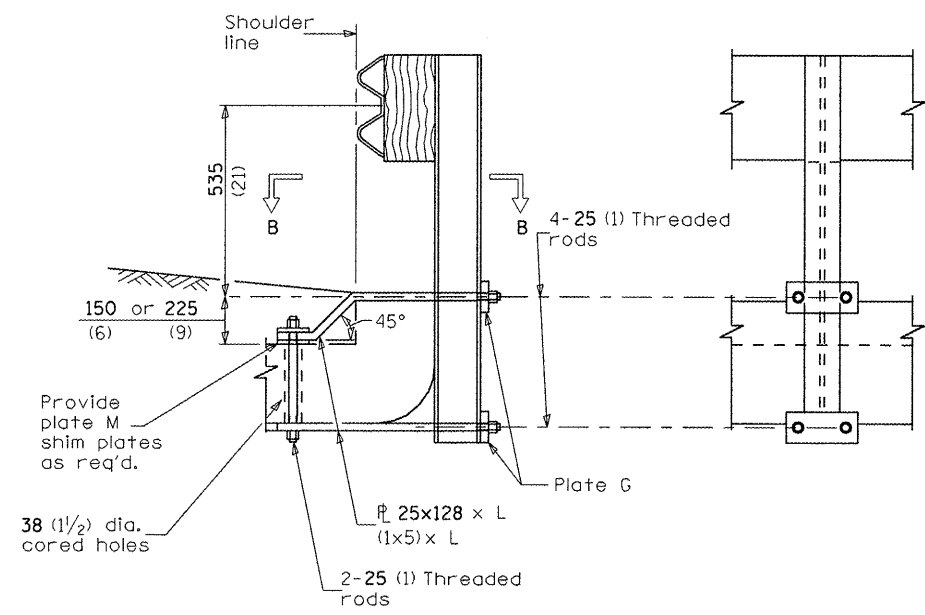
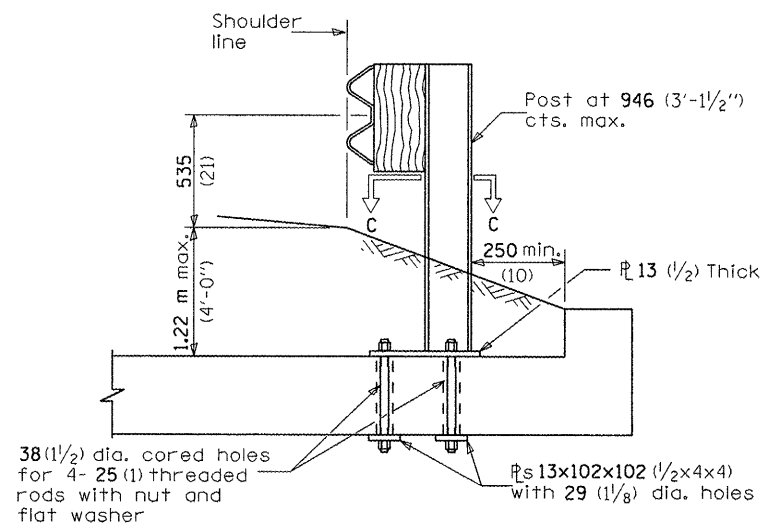


PLATE TYPE M

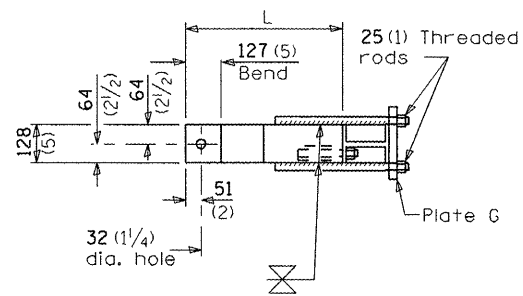


CROSS SECTION

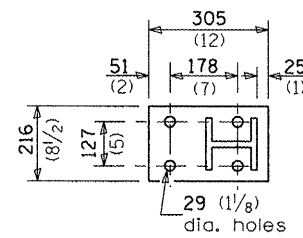
ELEVATION



CROSS SECTION



SECTION B-B



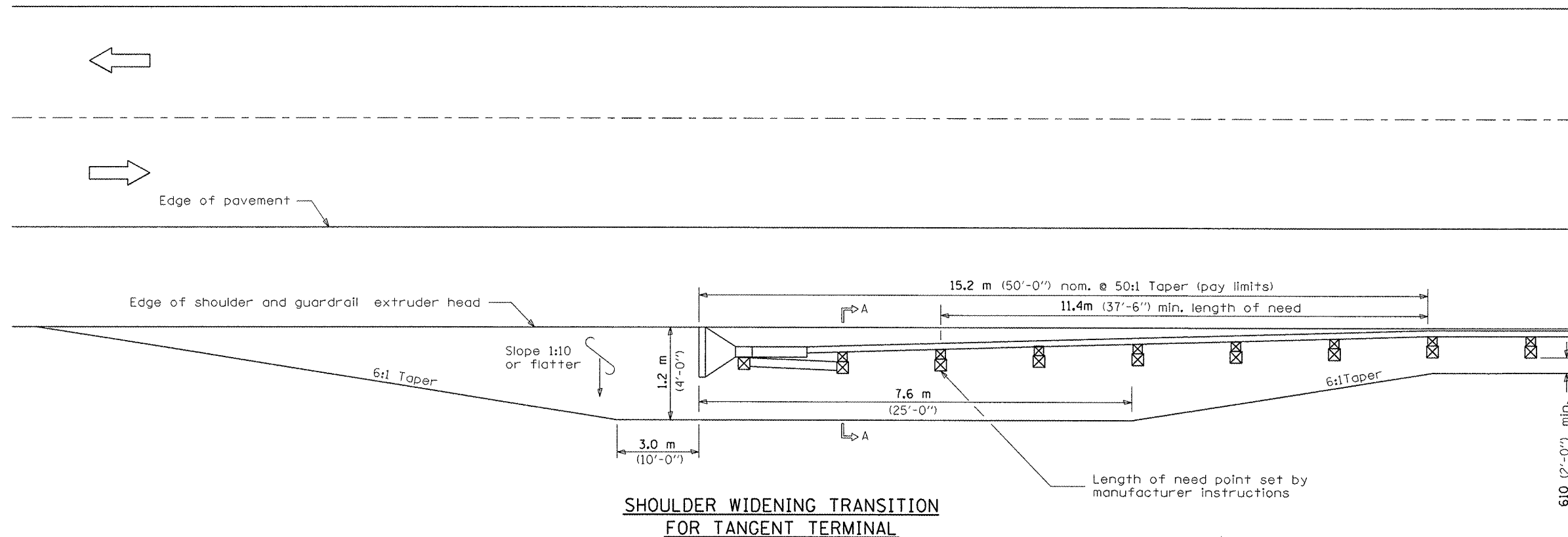
SECTION C-C

CASE III
MOUNTED ON HEADWALL
WITH CURVED OR DEMOLISHED TIP

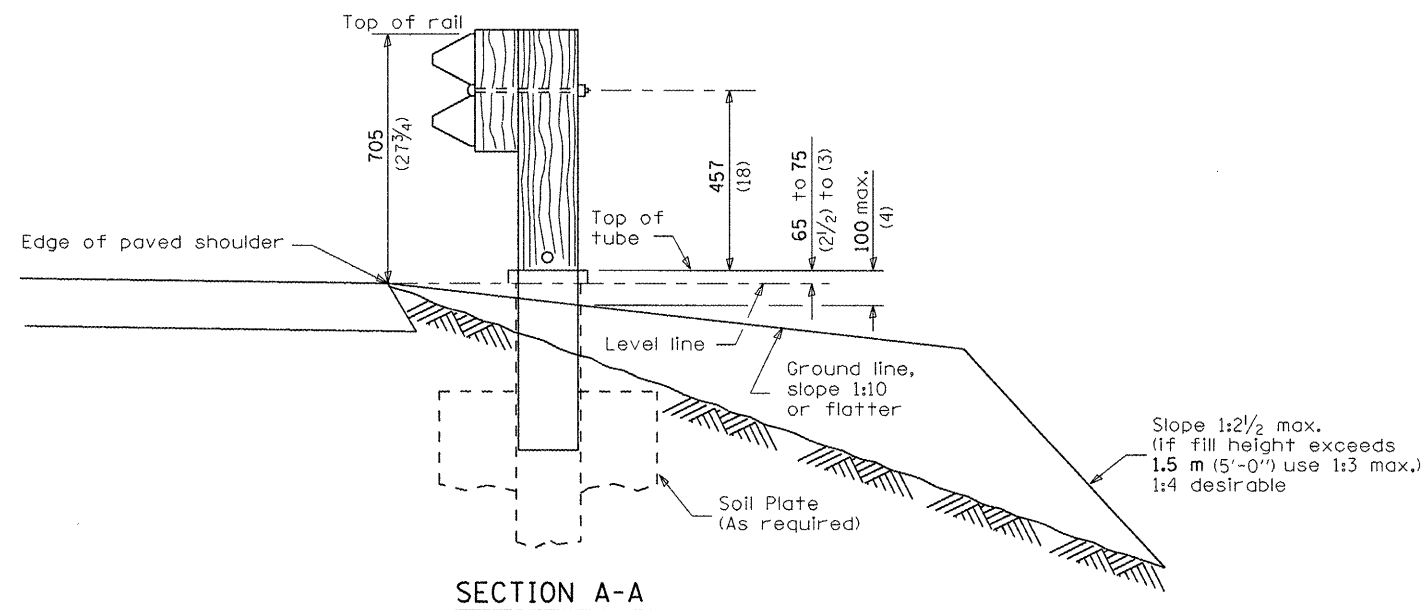
CASE IV
MOUNTED ON SLAB

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

FILE NAME = USER NAME = quigleyml DESIGNED - DRAWN - PLOT SCALE = 100.0000 / in. PLOT DATE = 3/26/2012				REVISIONS REVISION NO. / DATE / BY / DESCRIPTION REVISION 1 / / / / REVISION 2 / / / / REVISION 3 / / / /				STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION				PRE-MGS EFFECTIVE 4-1-06 GUARDRAIL MOUNTED ON EXISTING CULVERTS STANDARD 630101-06 (Sheet 2 of 2)				F.A. RTE. SECTION COUNTY TOTAL SHEETS SHEET NO.	
				SCALE: SHEET NO. OF SHEETS STA. TO STA.				VAR.		CONTRACT NO. 66C18		FED. ROAD DIST. NO. ILLINDIS FED. AID PROJECT					



**SHOULDER WIDENING TRANSITION
FOR TANGENT TERMINAL**



SECTION A-A

GENERAL NOTES

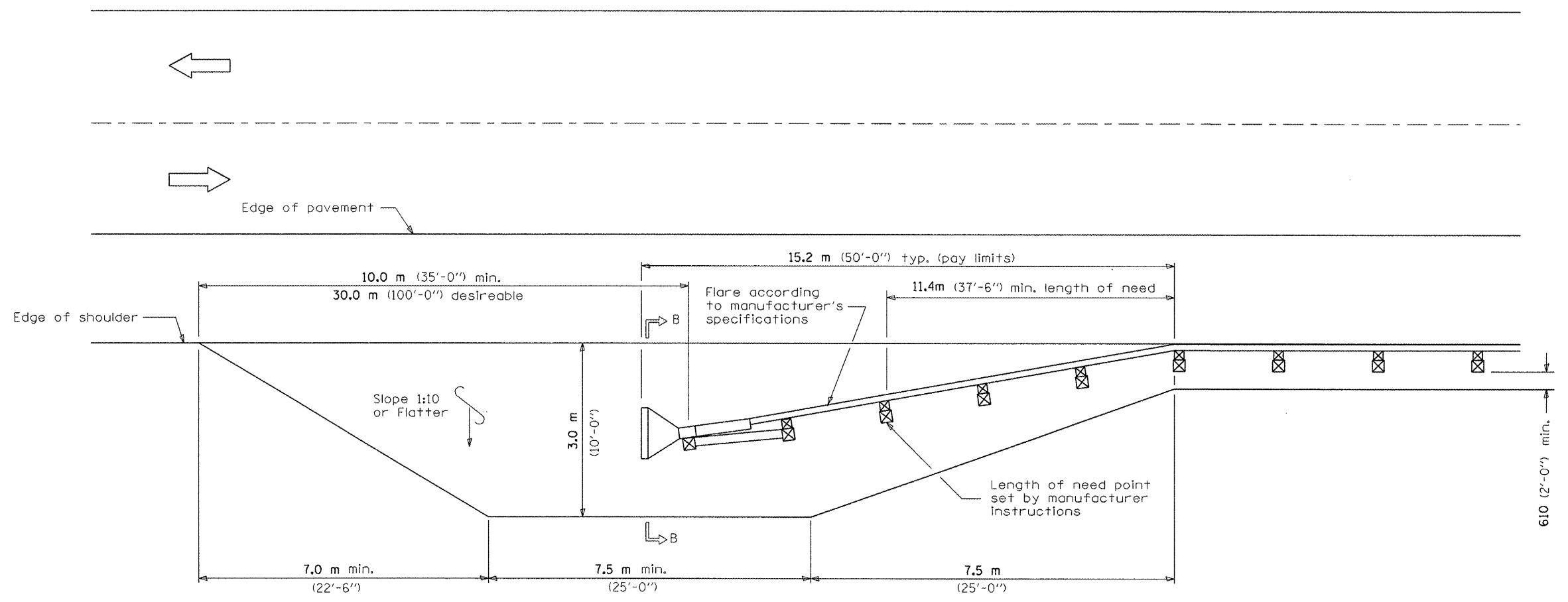
50:1 Taper required so the guardrail head will not encroach on the shoulder.

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

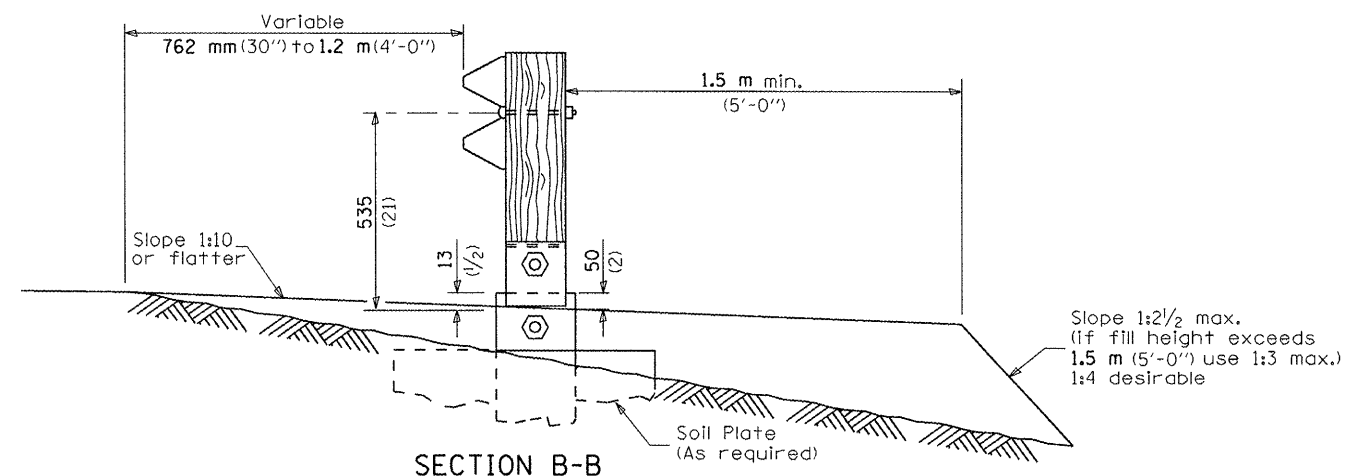
All dimensions are in millimeters (Inches) unless otherwise shown.

FILE NAME =				USER NAME = quigleyml				DESIGNED -				REVISED -				<p align="center">STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</p> <p align="center">PRE-MGS EFFECTIVE 4-1-06 SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS STANDARD 630301-03</p> <p align="center">(Sheet 1 of 2)</p>				F.A. RTE.		SECTION		COUNTY		TOTAL SHEETS		SHEET NO.	
o:\pwork\pwork\quigleyml\d8300564\03618-sht-details.dgn				DRAWN -				REVISED -				VAR.																	
PLOT SCALE = 100.0000' / in.				CHECKED -				REVISED -																					
PLOT DATE = 3/26/2012				DATE -				REVISED -																					
																SCALE:		SHEET NO. OF SHEETS		STA. TO STA.		FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT					
																						CONTRACT NO. 66C18							

• D-3 HIGHWAY DAMAGE REPAIR 2013



**SHOULDER WIDENING TRANSITION
FOR FLARED TERMINAL**



SECTION B-B
(End section omitted for clarity.)

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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

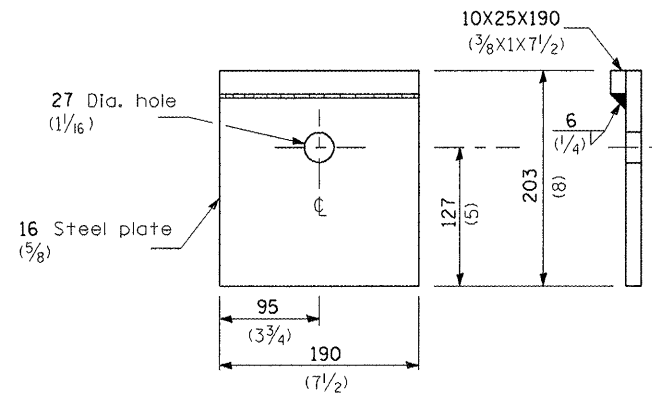
**PRE-MGS EFFECTIVE 4-1-06
SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
STANDARD 630301-03**
(Sheet 2 of 2)

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	

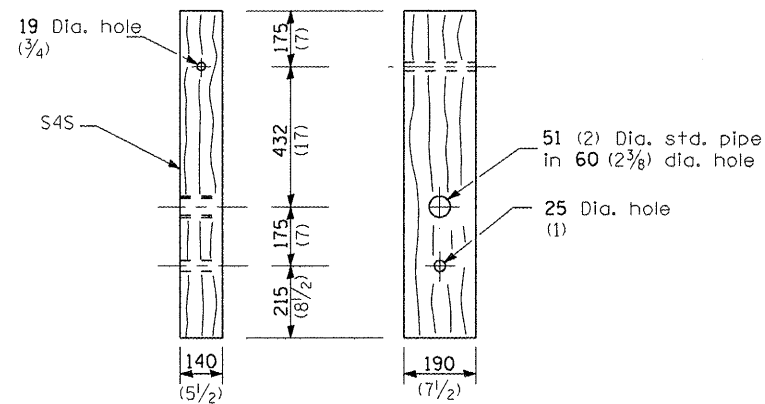
• D-3 HIGHWAY DAMAGE REPAIR 2013

SCALE: SHEET NO. OF SHEETS STA. TO STA.

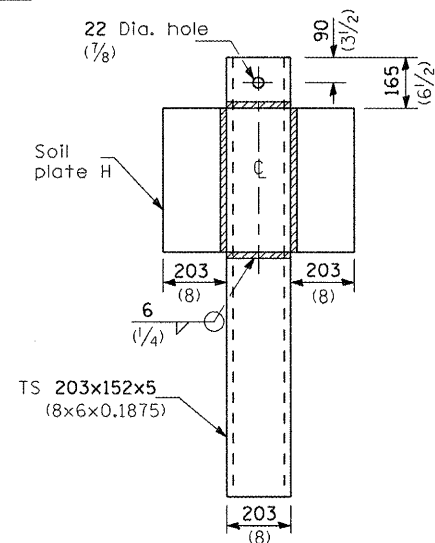
CONTRACT NO. 66C18



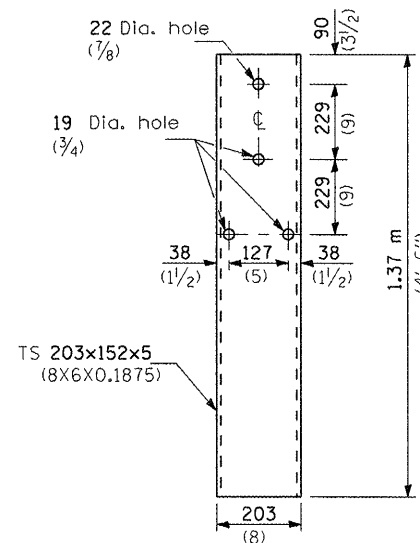
BEARING PLATE K



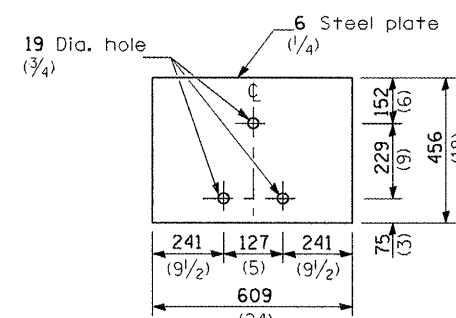
WOOD POST



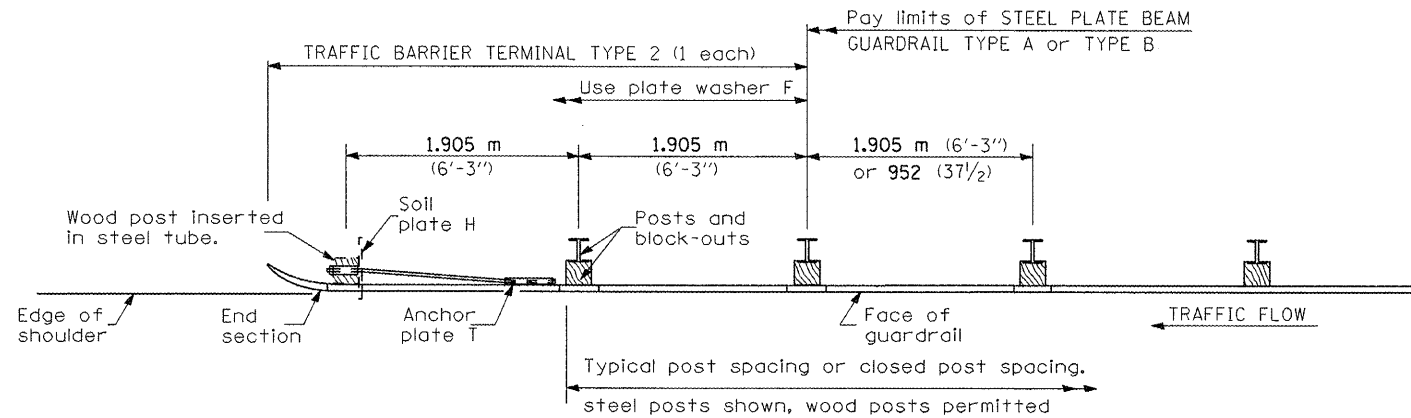
ALTERNATE SOIL PLATE CONNECTION



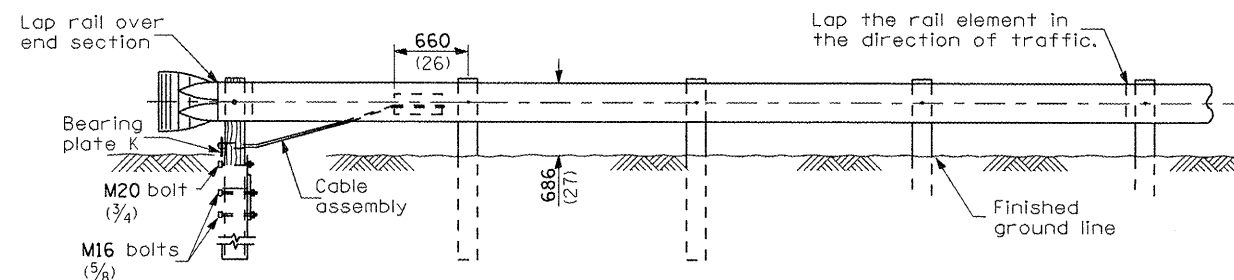
STEEL TUBE



SOIL PLATE H



PLAN



ELEVATION

GENERAL NOTES

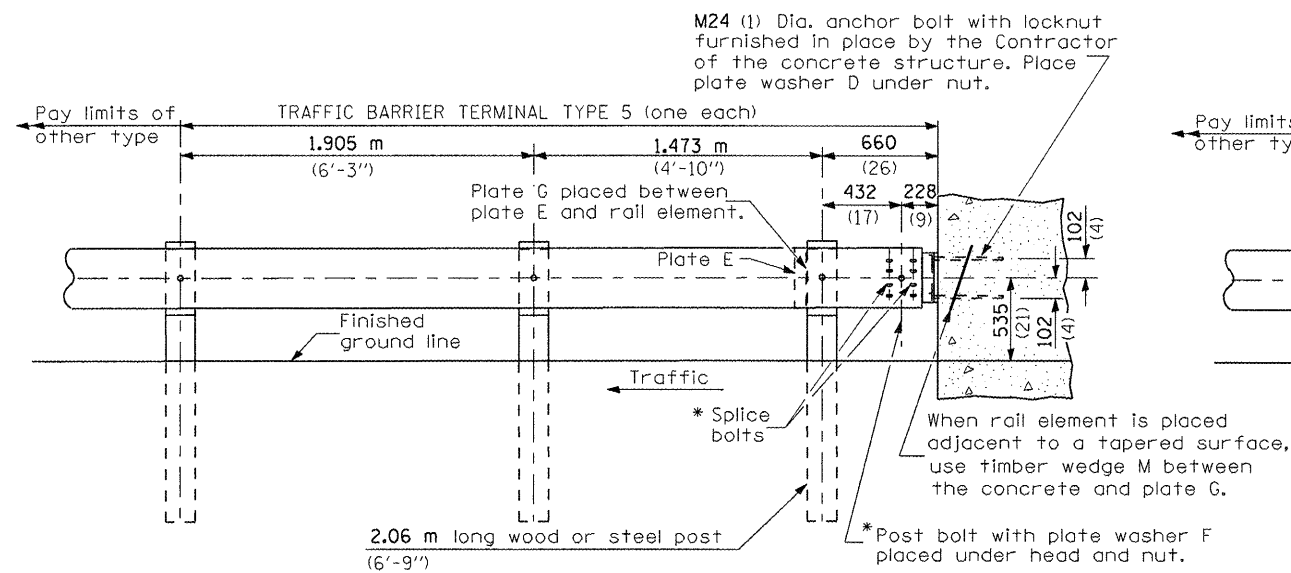
See Standard 630001 for details of guardrail not shown.

Use plate washer F at all posts.

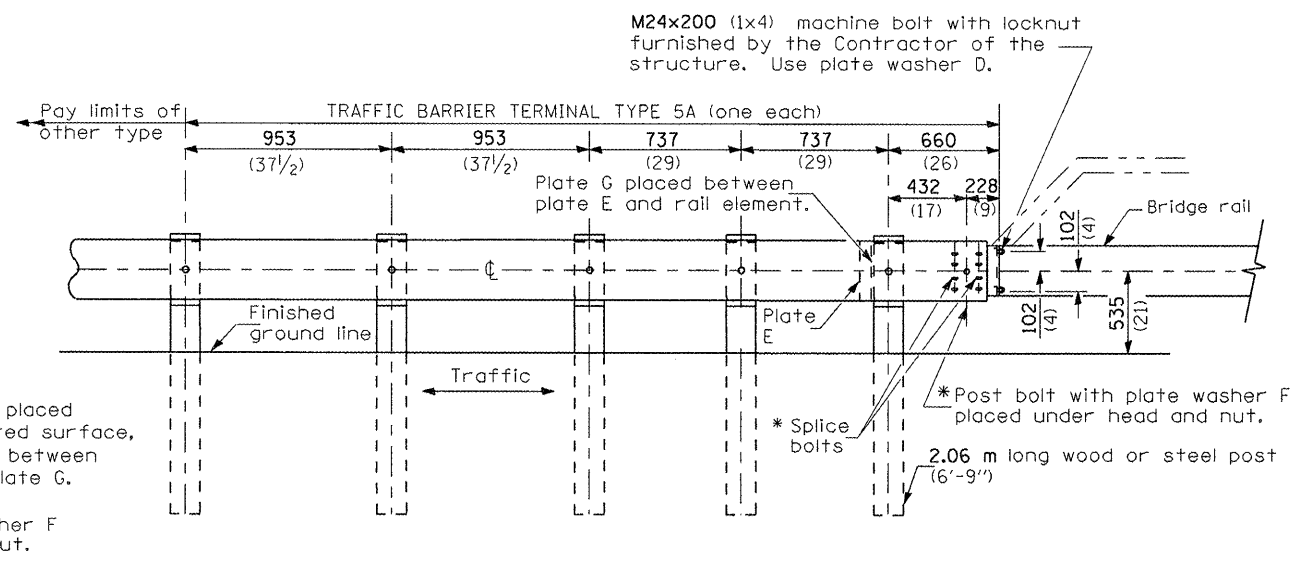
The bearing plate K shall be held in position by (2) two eight penny nails driven into the post and bent over the top of the plate.

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

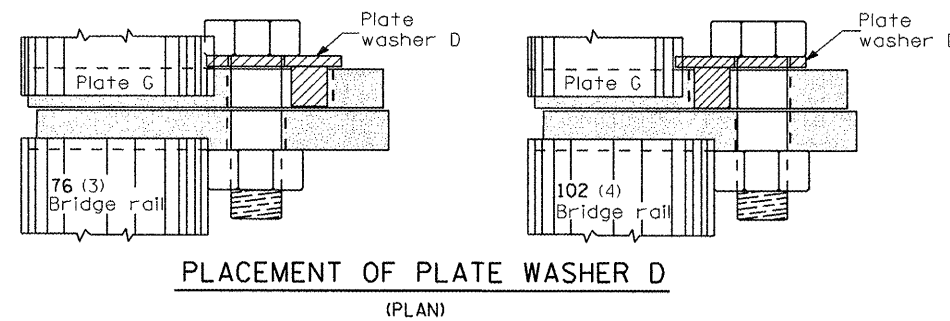
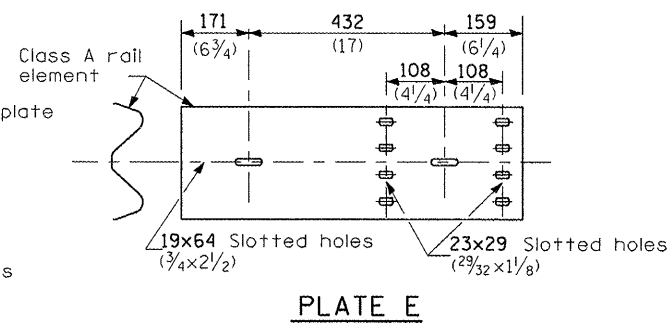
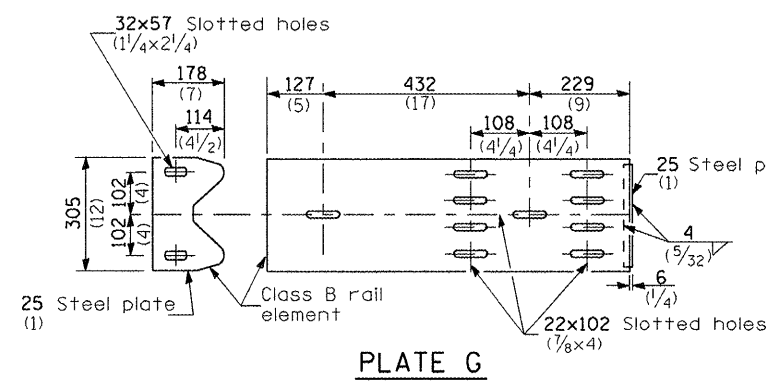
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		DATE -	REVISED -			SCALE:	SHEET NO.	OF SHEETS	STA.	TO STA.	FED. ROAD DIST. NO.



TYPE 5 - CONCRETE BRIDGE PARAPET



TYPE 5A - STEEL BRIDGE RAIL



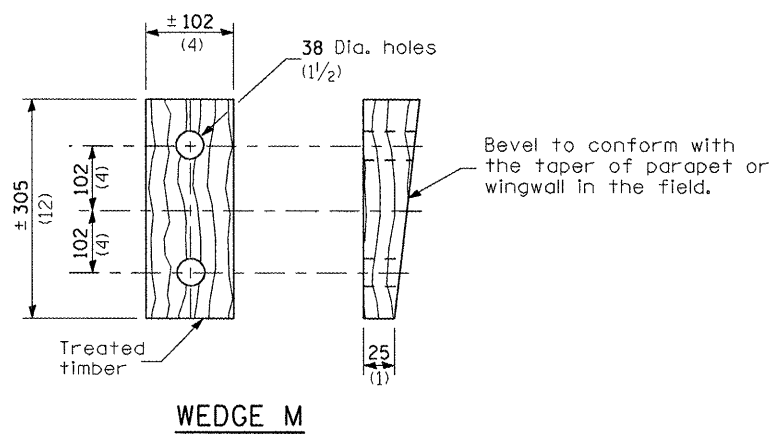
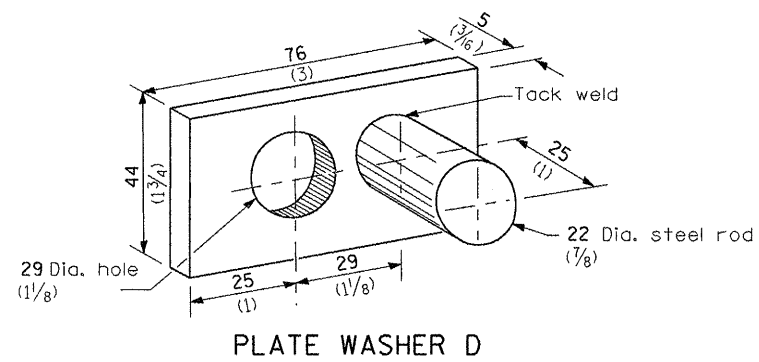
GENERAL NOTES

Install plate washer D so that the 25 mm (1") projection fills the remainder of the slotted holes in the 25 mm (1") end plate on plate G after the M24 (1") dia. bolts are in place.

* Bolts shall be provided with locknut or double nut and shall be tightened only to a point that will allow plate G to be free to move when an expansion joint exists below the connector.

See Standard 630001 for details of guardrail not shown.

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



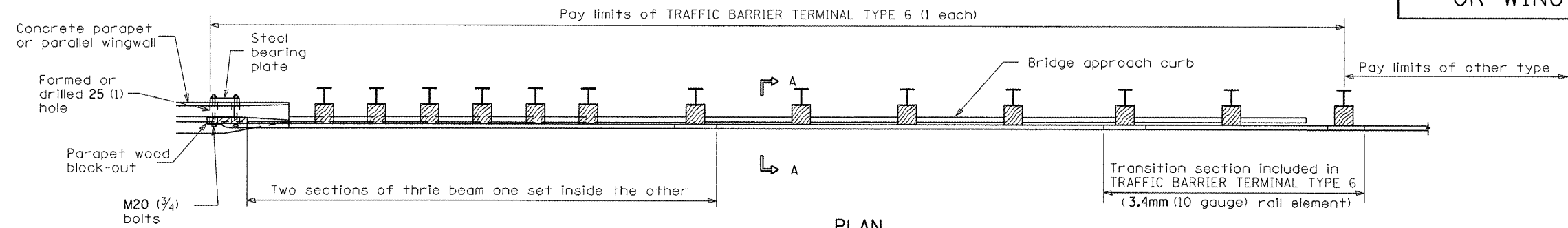
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PLOT DATE = 3/26/2012		DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

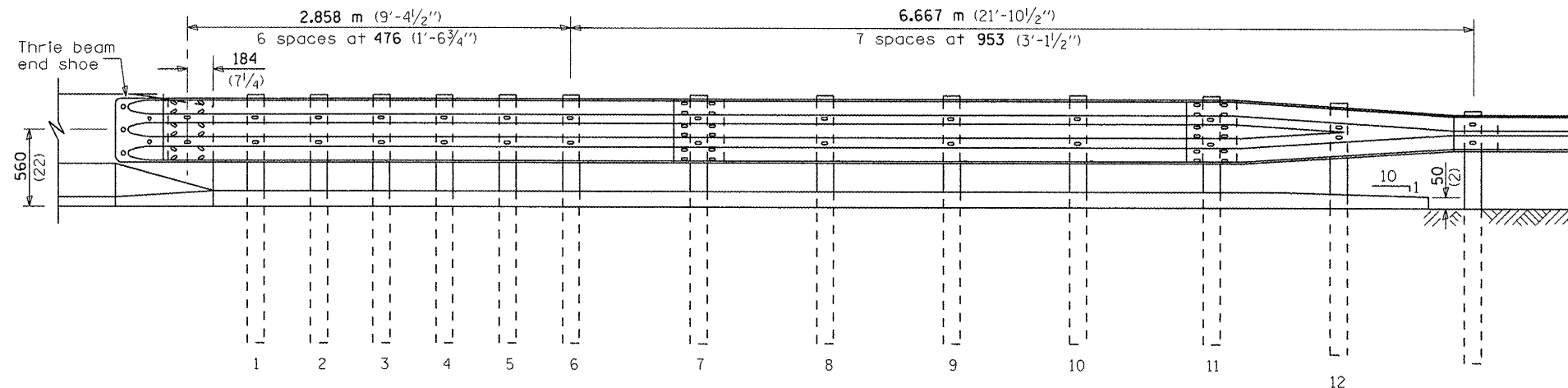
**PRE-MGS EFFECTIVE 4-1-06
TRAFFIC BARRIER TERMINAL TYPE 5 & 5A
STANDARD 631026-02**

SCALE: SHEET NO. OF SHEETS STA. TO STA.

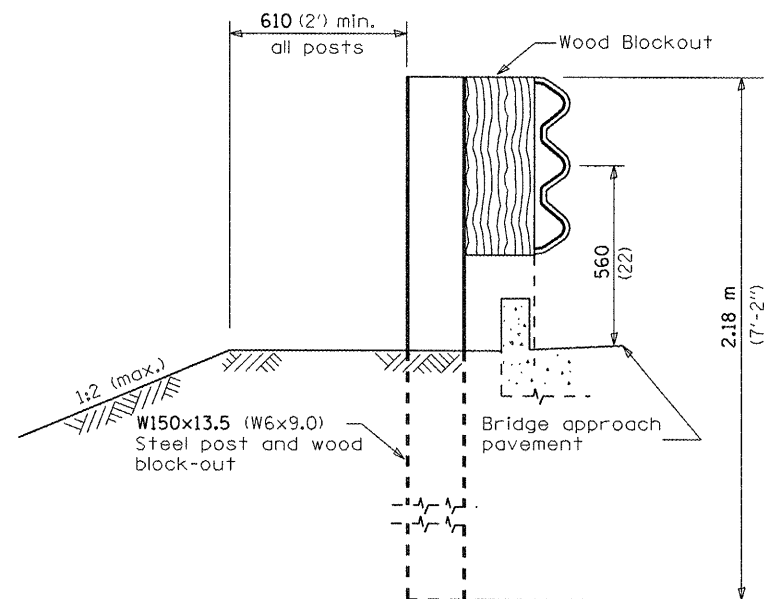
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	*	VAR.	37	26
CONTRACT NO. 66C18				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				



PLAN



ELEVATION



SECTION A-A

PARAPET OR WINGWALL

GENERAL NOTES

See Standard 630001 for details of guardrail not shown.

Thrie beam rail shall be bolted to block-out at all posts.

See Standard 420401 for details of bridge approach pavement.

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.

FILE NAME =	USER NAME = quigleyml	DESIGNED -	REVISED -
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PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -	REVISED -
PLOT DATE = 3/26/2012	DATE -	REVISED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PRE-MGS EFFECTIVE 4-1-06
TRAFFIC BARRIER TERMINAL, TYPE 6
STANDARD 631031-05

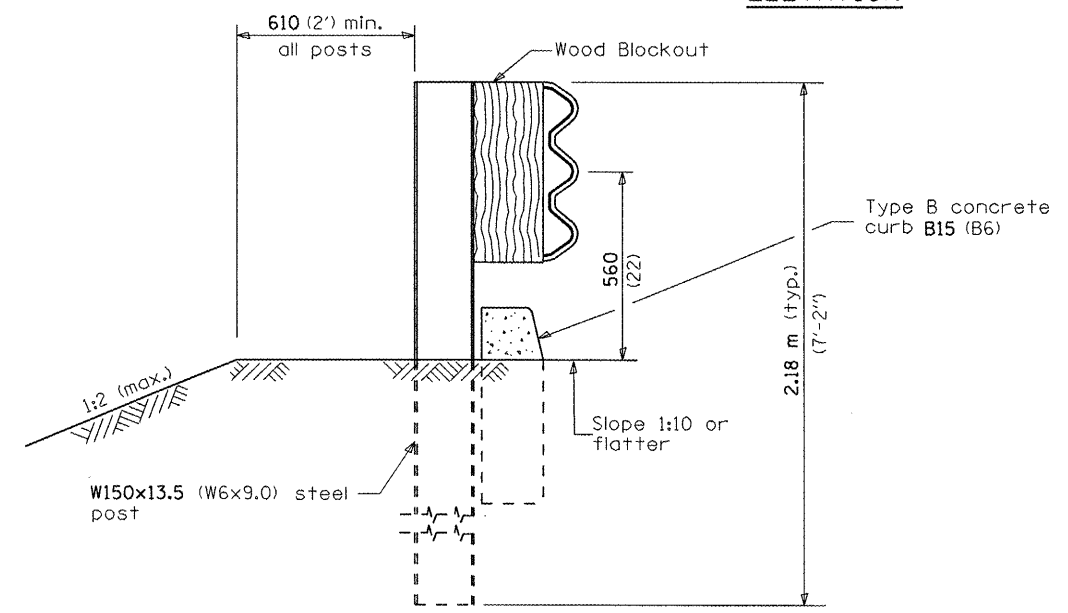
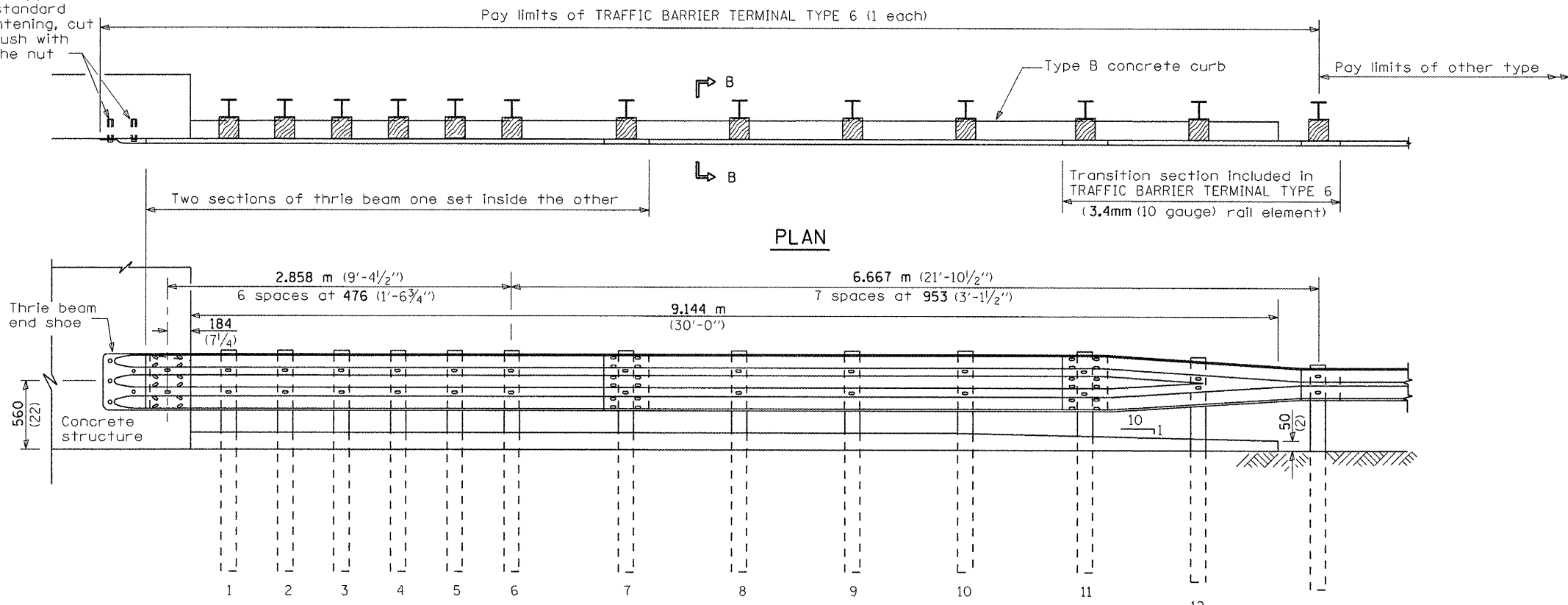
Sheet 1 of 3

SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	.	VAR.	37	27
CONTRACT NO. 66C18				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

5 Epoxy grouted M20 (3/4") anchor bolts with standard washers. After tightening, cut the anchor bolts flush with nuts, and damage the nut to prevent it from loosening.

OTHER CONCRETE STRUCTURE

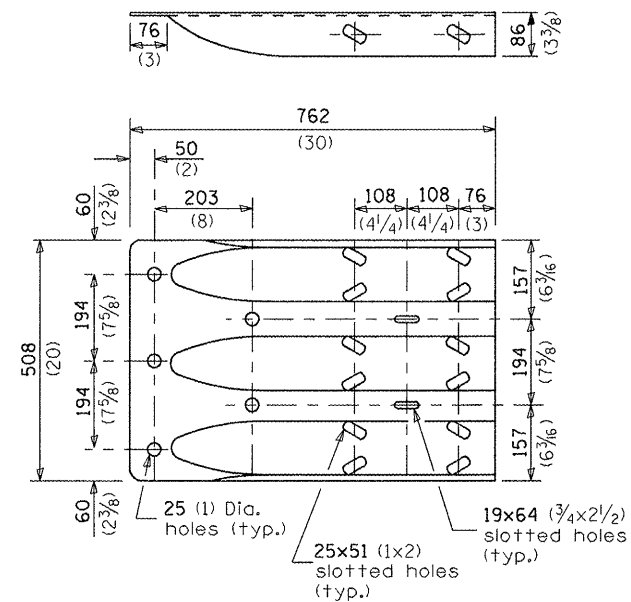


SECTION B-B

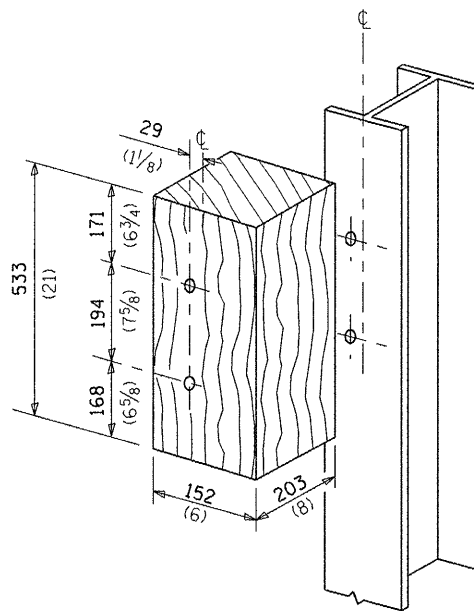
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SCALE: SHEET NO. OF SHEETS STA. TO STA.										Sheet 2 of 3 FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT															

D-3 HIGHWAY DAMAGE REPAIR 2013

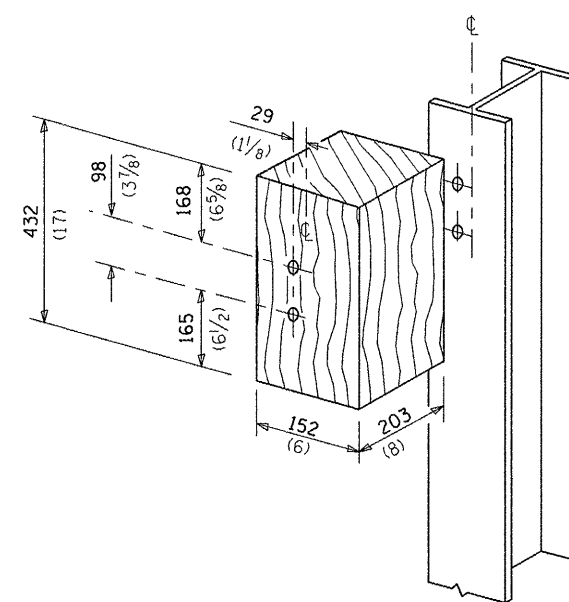
CONTRACT NO. 66C18



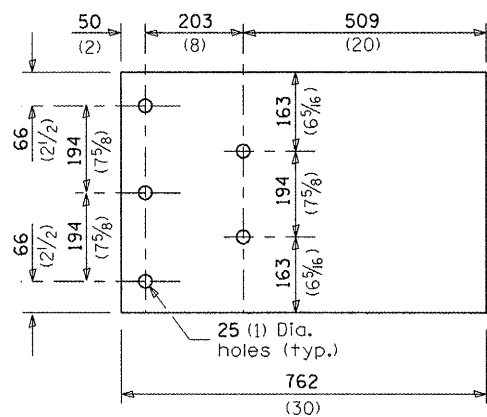
THRIE BEAM END SHOE DETAIL



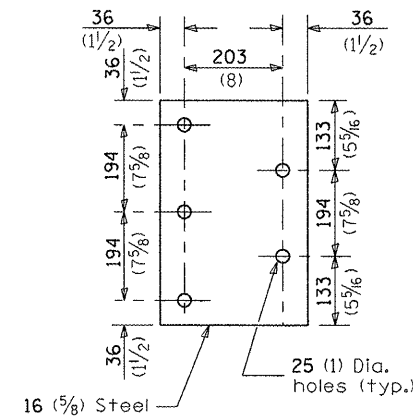
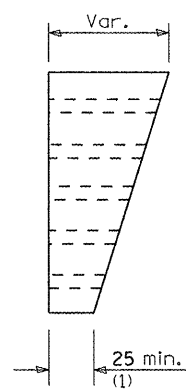
POSTS 1-11 WOOD BLOCKOUT DETAIL



POST 12 WOOD BLOCKOUT DETAIL



PARAPET WOOD BLOCK-OUT DETAIL



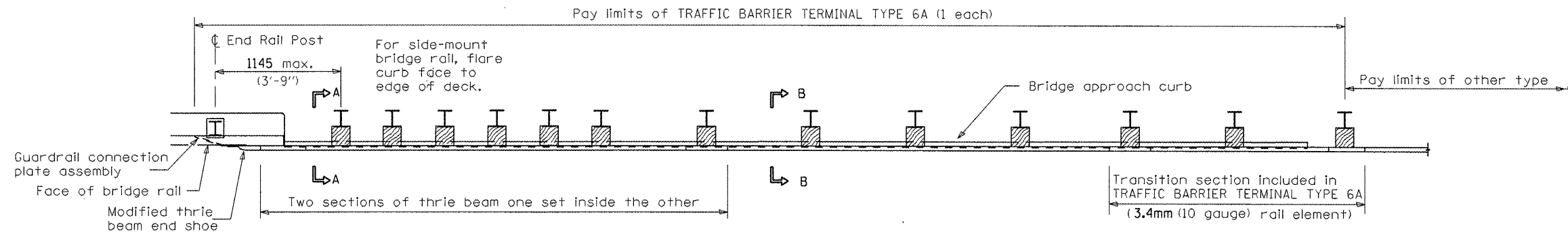
PARAPET STEEL BEARING PLATE DETAIL

(5 each individual 125x125x16 (5x5x5/8) steel plates with centered 25 (1) holes may be substituted for the plate shown.)

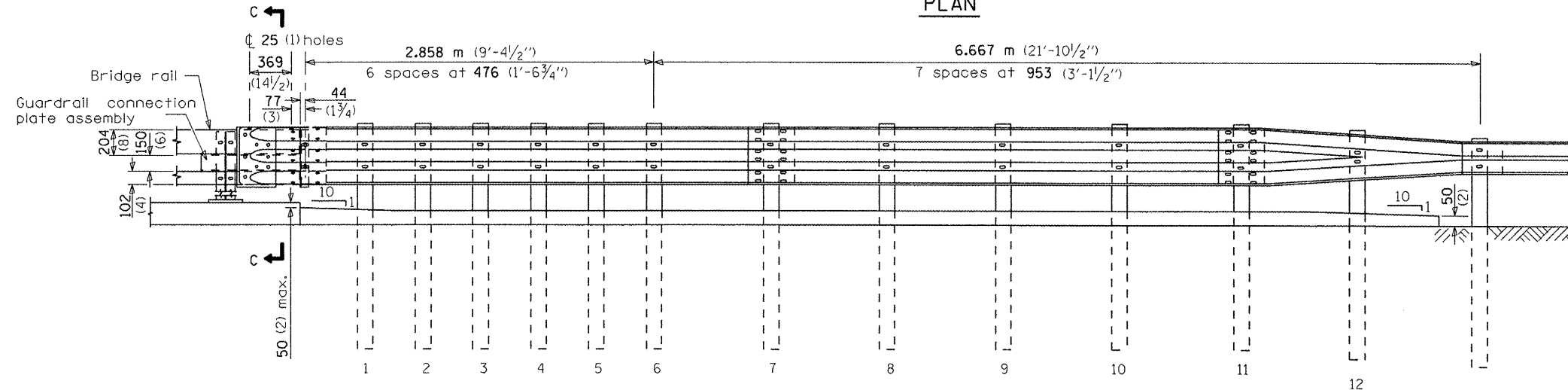
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PLOT SCALE = 100.0000 / / in.		CHECKED -	REVISED -			CONTRACT NO. 66C18				
PLOT DATE = 3/26/2012		DATE -	REVISED -			SCALE:	SHEET NO. OF SHEETS STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT	

• D-3 HIGHWAY DAMAGE REPAIR 2013

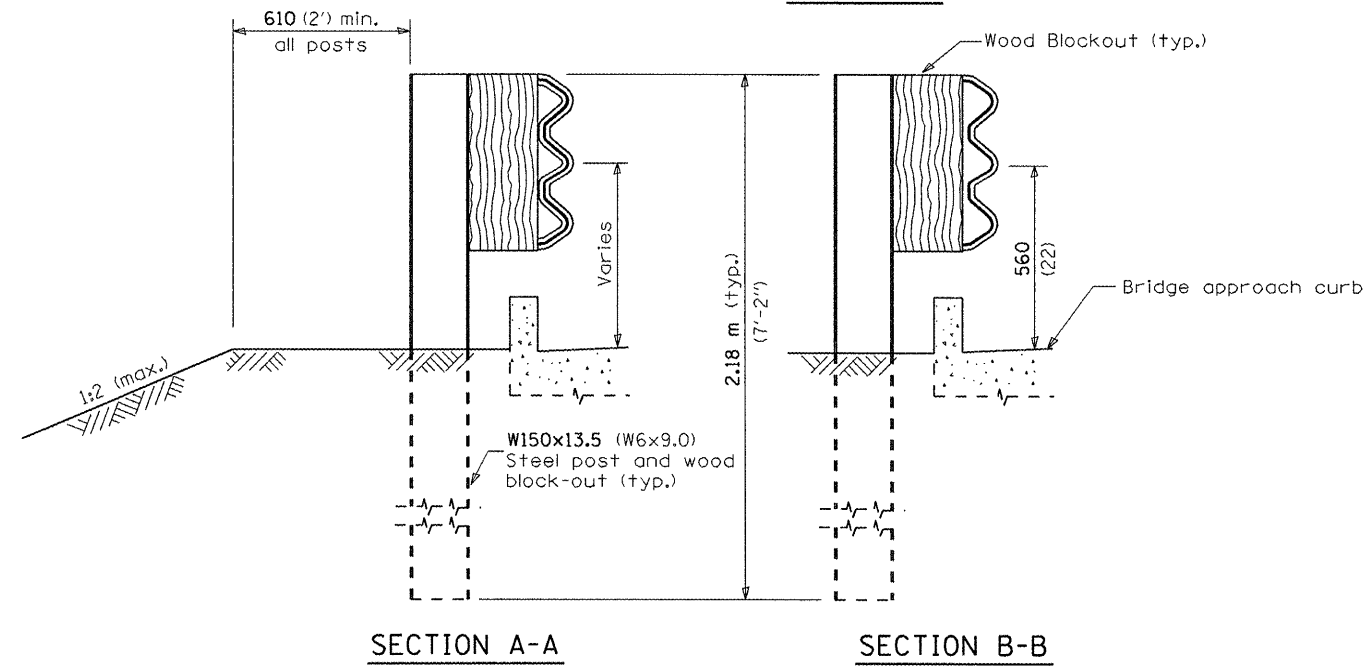
Sheet 3 of 3



PLAN



ELEVATION



GENERAL NOTES

This standard shows attachment to curb mounted bridge rail. Attachment to side mounted bridge rail is similar.

See Standard 630001 for details of guardrail not shown.

Thrie beam rail shall be bolted to block-out at all posts.

See Standard 420401 for details of bridge approach pavement.

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.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

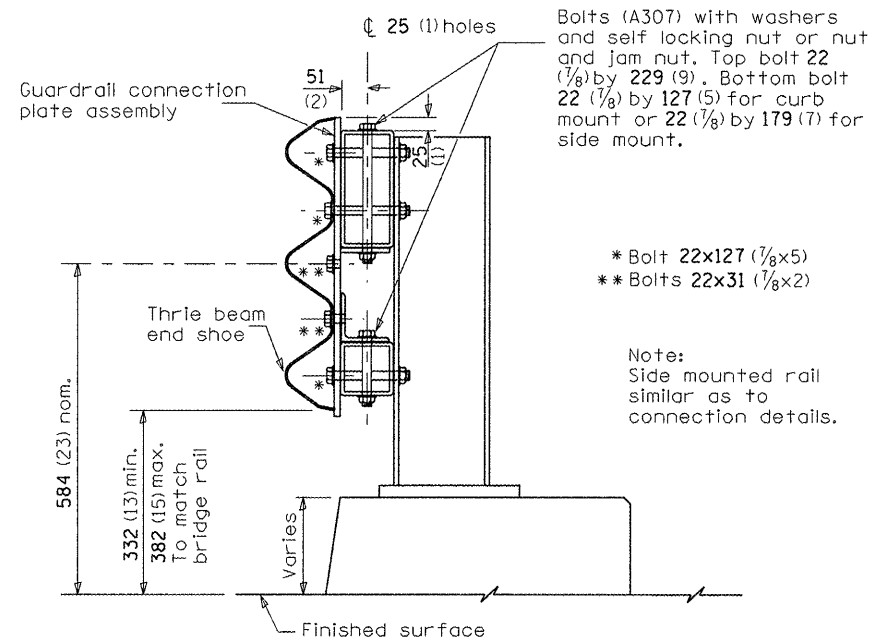
PRE-MGS EFFECTIVE 4-1-06
TRAFFIC BARRIER TERMINAL, TYPE 6A
STANDARD 631032-02

Sheet 1 of 3

SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A. RTE.		SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.				37	30
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		CONTRACT NO. 66C18	

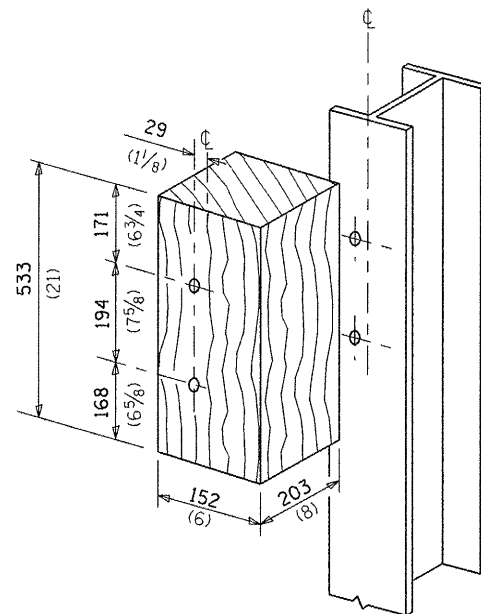
D-3 HIGHWAY DAMAGE REPAIR 2013



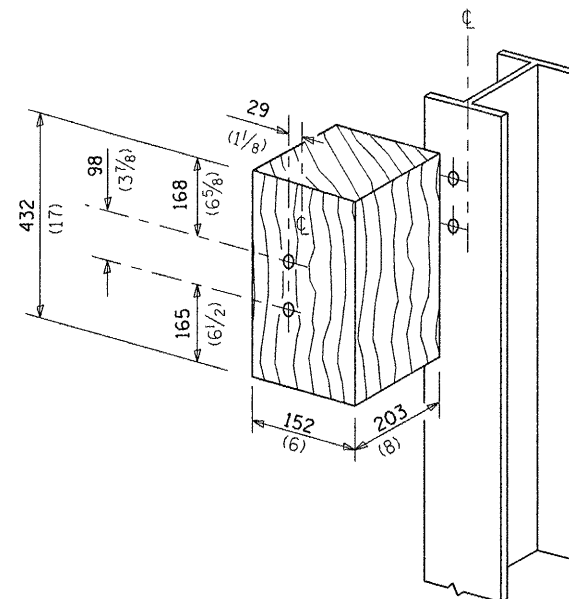
SECTION C-C

* Bolt 22x127 (7/8x5)
** Bolts 22x31 (7/8x2)

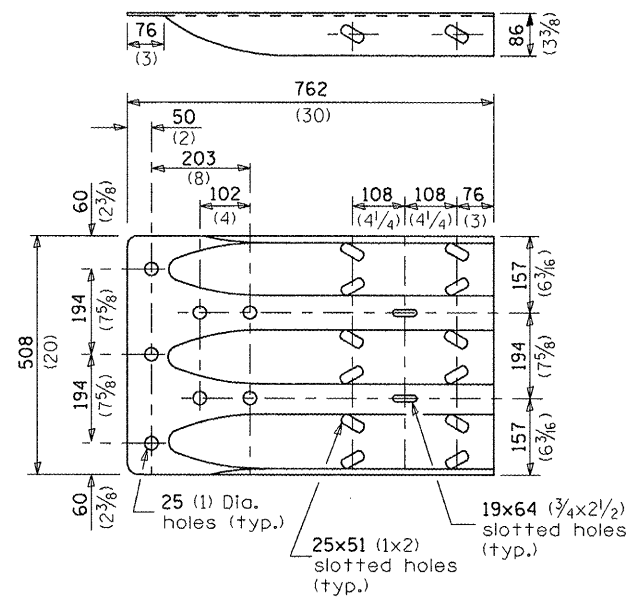
Note:
Side mounted rail
similar as to
connection details.



POSTS 1-11 WOOD BLOCKOUT DETAIL



POST 12 WOOD BLOCKOUT DETAIL



MODIFIED THRIE BEAM END SHOE DETAIL

FILE NAME =	USER NAME = quigleyml	DESIGNED -	REVISED -
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PLOT SCALE = 100.0000 ' / in.		CHECKED -	REVISED -
PLOT DATE = 3/26/2012		DATE -	REVISED -

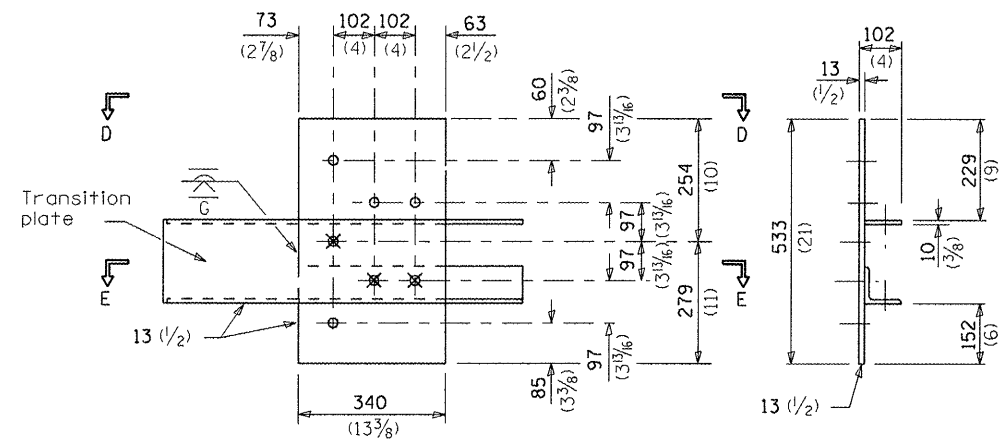
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PRE-MGS EFFECTIVE 4-1-06
TRAFFIC BARRIER TERMINAL, TYPE 6A
STANDARD 631032-02

SCALE: SHEET NO. OF SHEETS STA. TO STA. Sheet 2 of 3

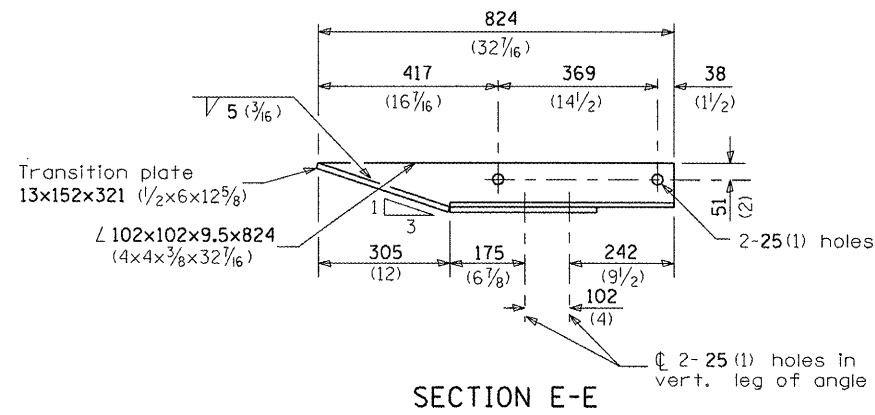
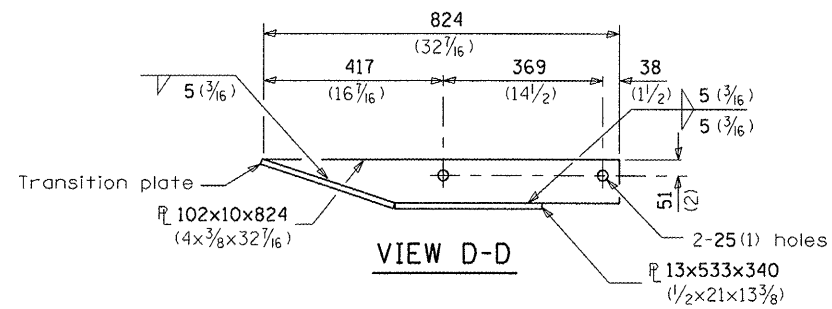
F.A. RTE.		SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.		*	VAR.	37	31
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
CONTRACT NO. 66C18					

D-3 HIGHWAY DAMAGE REPAIR 2013



GUARDRAIL CONNECTION PLATE ASSEMBLY DETAILS

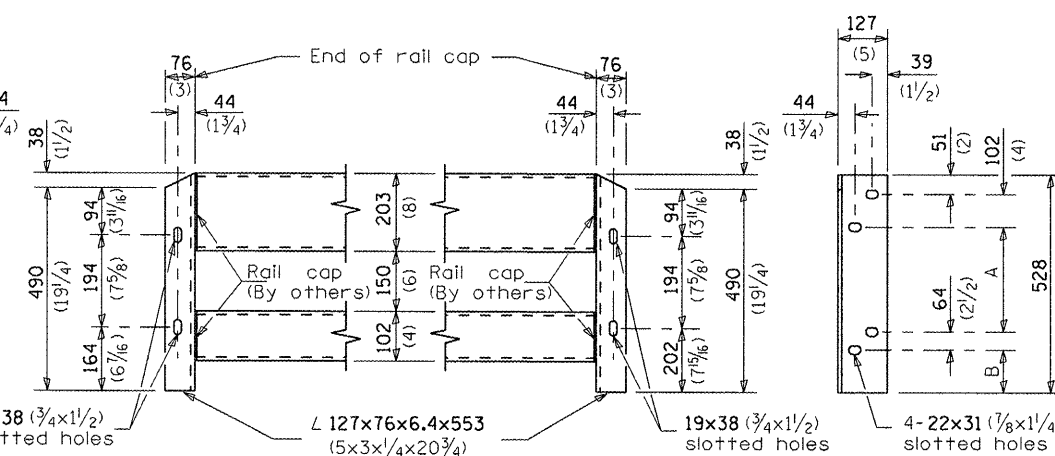
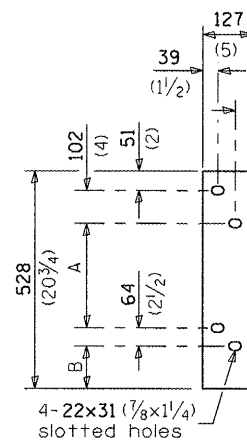
(Mirror for opposite end)



- ϕ 4-25 (1) holes for 22 (7/8) H.S. bolts and nuts
- \otimes Drill and tap 3 holes for 22 (7/8) H.S. bolts.

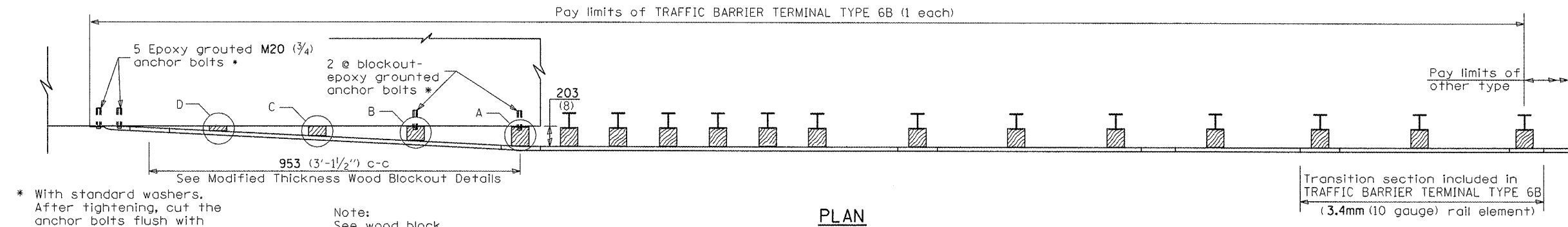
LEGEND

Dimensions	A	B
For Curb Mounted Rail	222 (8 3/4)	89 (3 1/2)
For Side Mounted Rail	247 (9 3/4)	64 (2 1/2)



(Install angles to rail caps using 19 (5/8) washers and self-locking nuts or nuts and jam nuts, to be provided by others)

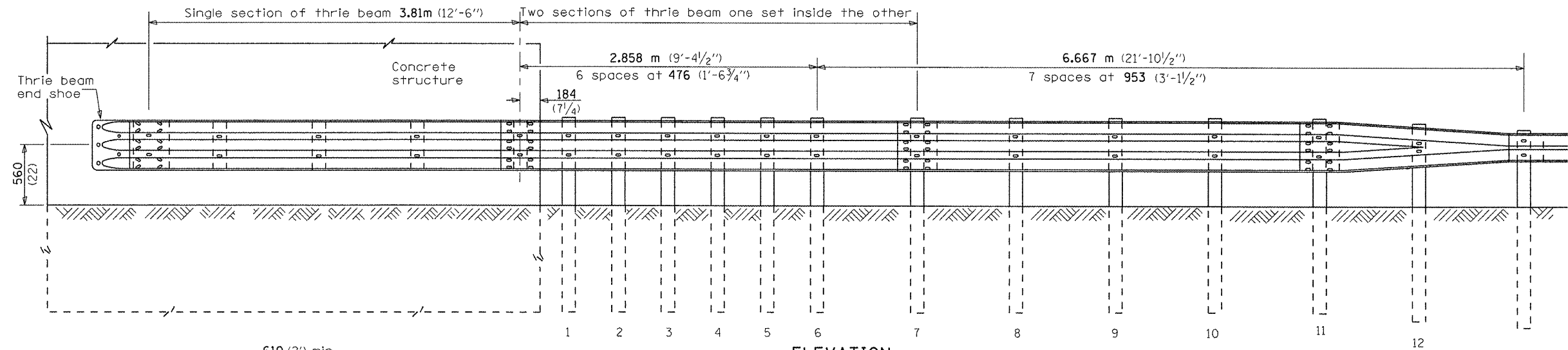
APPROACH END VIEW



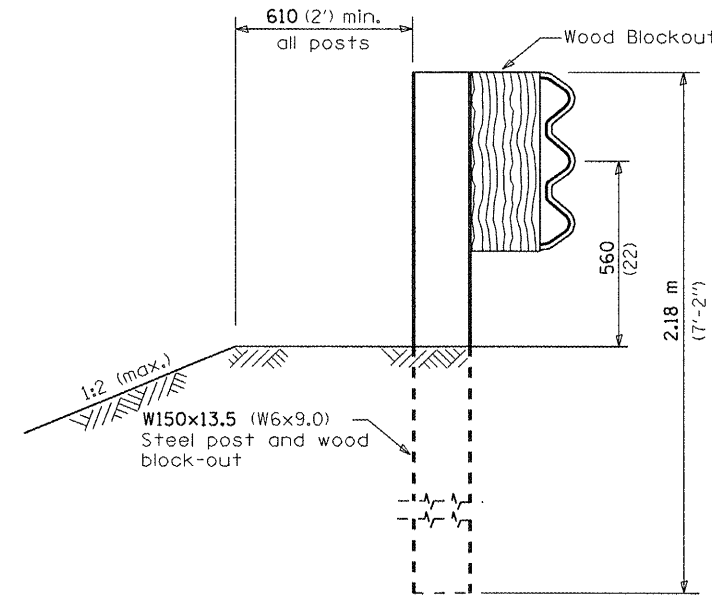
* With standard washers. After tightening, cut the anchor bolts flush with nuts, and damage the nut to prevent it from loosening.

Note: See wood block details A, B, C, & D

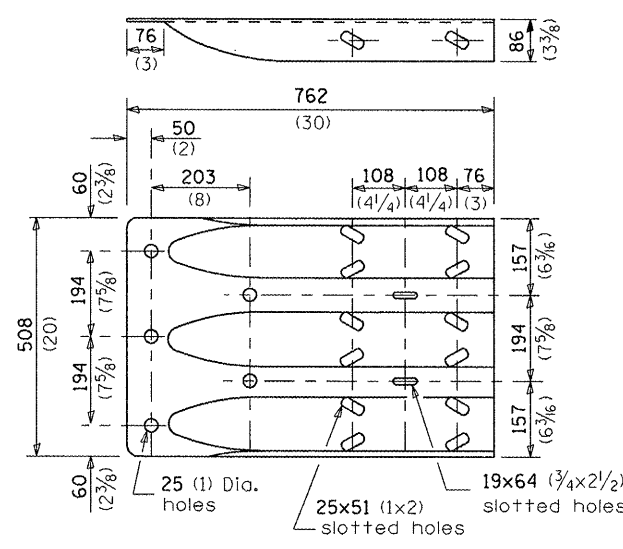
PLAN



ELEVATION



SECTION A-A



THRIE BEAM END SHOE DETAIL

GENERAL NOTES

See Standard 630001 for details of guardrail not shown.

Thrie beam rail shall be bolted to block-out at all posts.

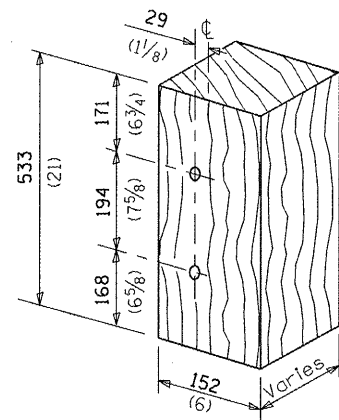
All slope ratios are expressed as units of vertical displacement to units of horizontal displacement (V:H).

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

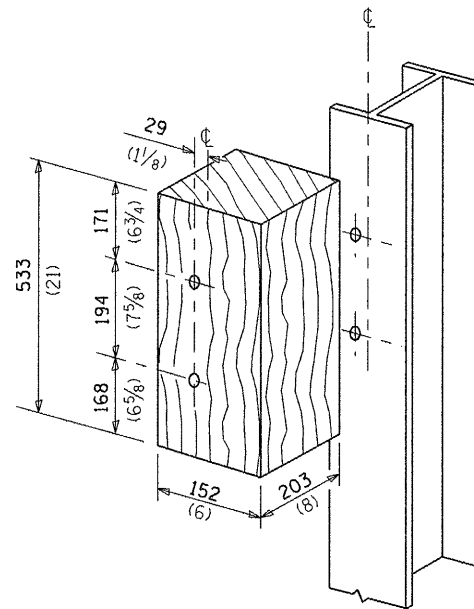
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PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -	CONTRACT NO. 66C18								
PLOT DATE = 3/26/2012	DATE -	REVISED -	CONTRACT NO. 66C18								
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D-3 HIGHWAY DAMAGE REPAIR 2013

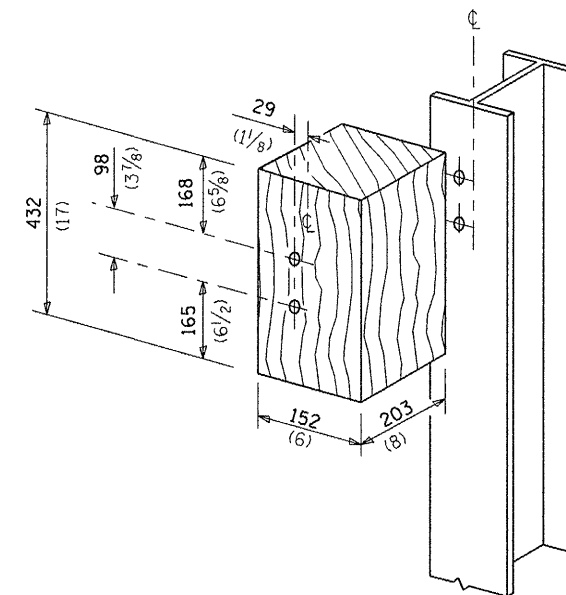
Sheet 1 of 2



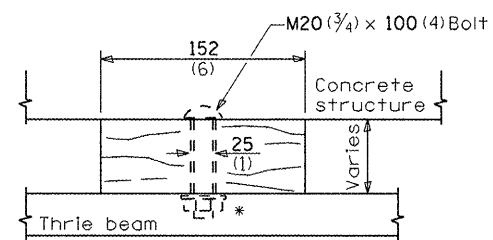
MODIFIED THICKNESS WOOD BLOCKOUT DETAIL



POSTS 1-11 WOOD BLOCKOUT DETAIL

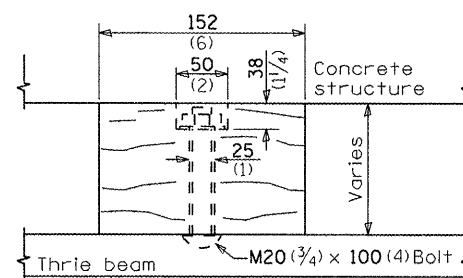


POST 12 WOOD BLOCKOUT DETAIL

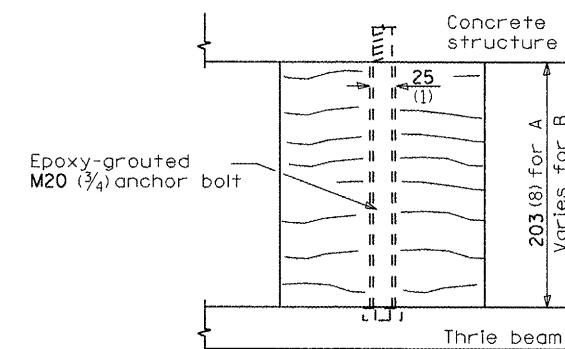


WOOD BLOCKOUT D

Bolt to thrie beam with M20 (3/4) by 100 (4) bolt, washer & nut. Reverse direction of insertion. *



WOOD BLOCKOUT C



WOOD BLOCKOUT A & B

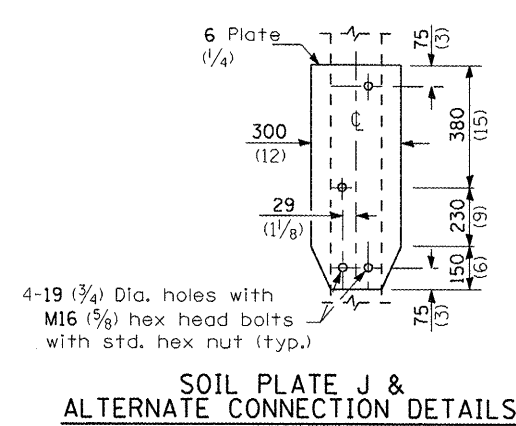
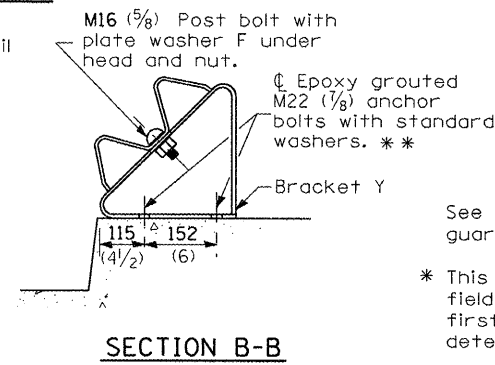
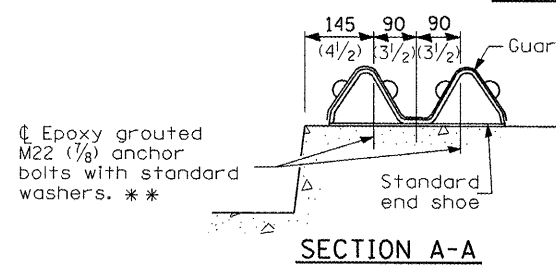
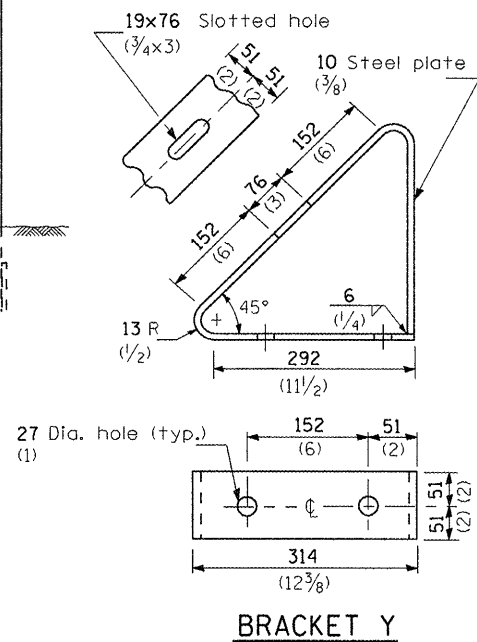
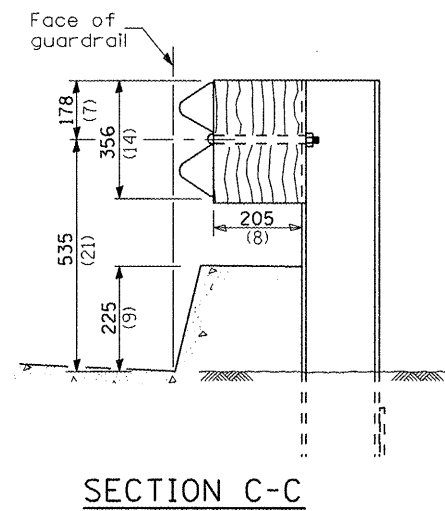
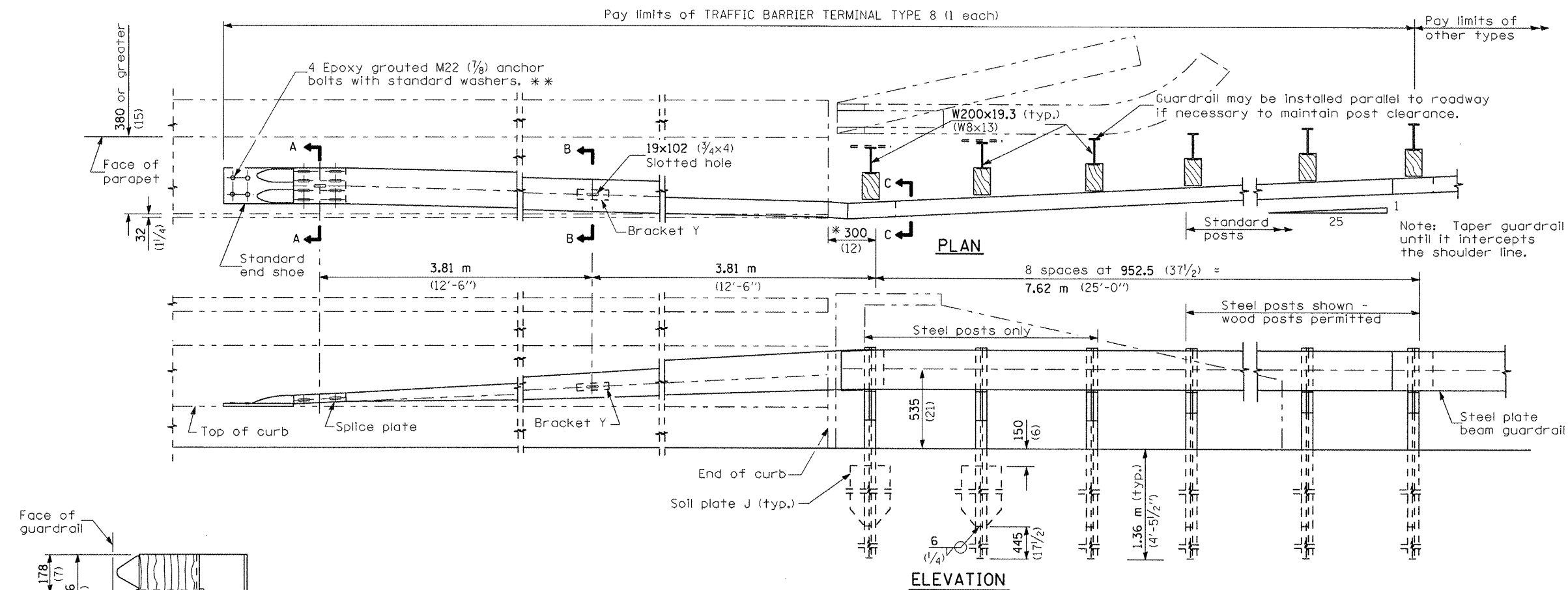
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PRE-MGS EFFECTIVE 4-1-06
TRAFFIC BARRIER TERMINAL, TYPE 6B
STANDARD 631033-01**

SCALE: SHEET NO. OF SHEETS STA. TO STA.

• D-3 HIGHWAY DAMAGE REPAIR 2013				
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	•	VAR.	37	34
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 66C18	



GENERAL NOTES

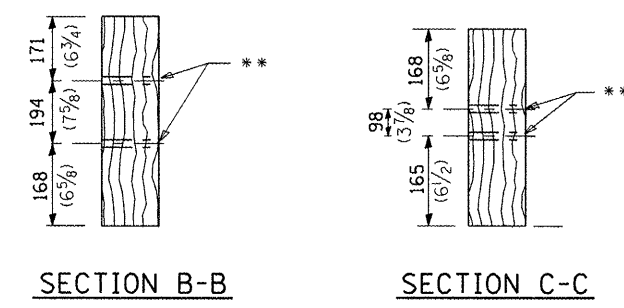
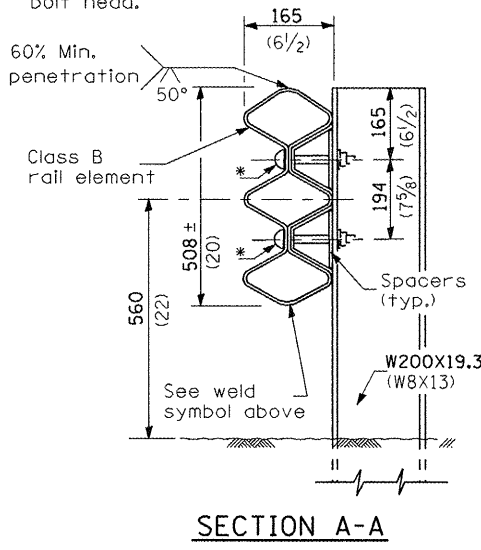
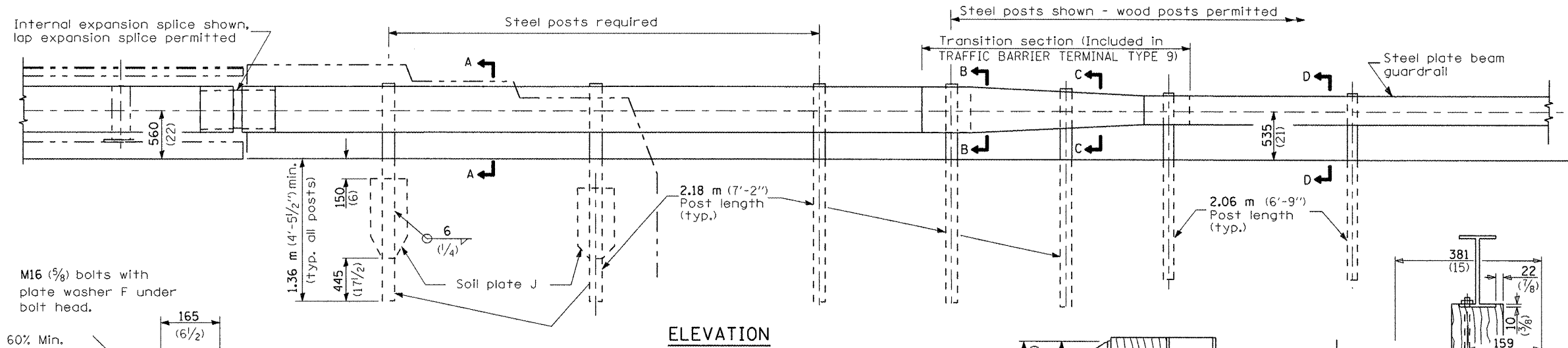
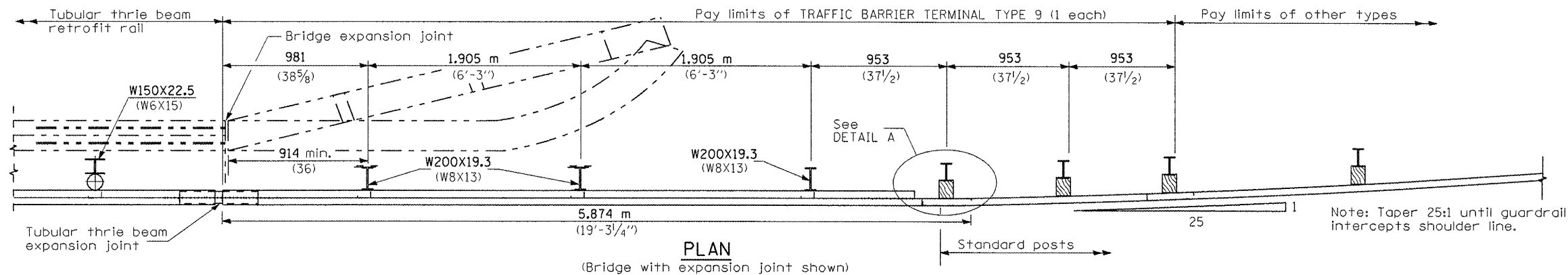
See Standard 630001 for details of guardrail not shown.

* 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 millimeters (inches) unless otherwise shown.

FILE NAME =	USER NAME = quigleyml	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PRE-MGS EFFECTIVE 4-1-06 TRAFFIC BARRIER TERMINAL TYPE 8 STANDARD 631036-04			F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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PLOT DATE = 3/26/2012		DATE -	REVISED -										
• D-3 HIGHWAY DAMAGE REPAIR 2013												CONTRACT NO. 66C18	
										ILLINOIS FED. AID PROJECT			

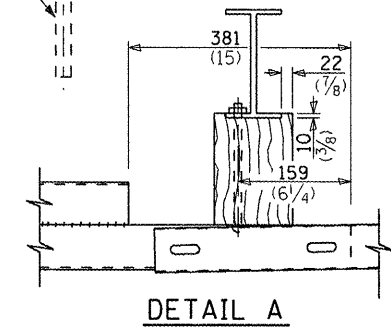
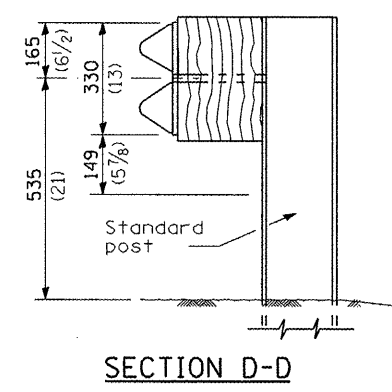


DETAILS of BLOCK-OUTS

** \varnothing 19 (3/4) Dia. hole

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

SOIL PLATE J & ALTERNATE CONNECTION DETAILS



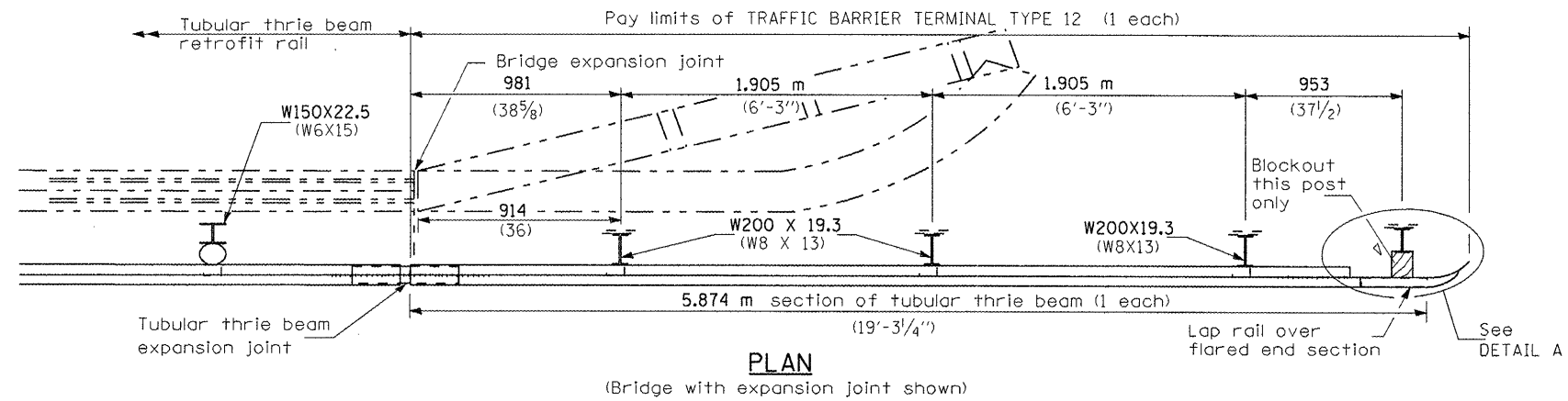
GENERAL NOTES

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

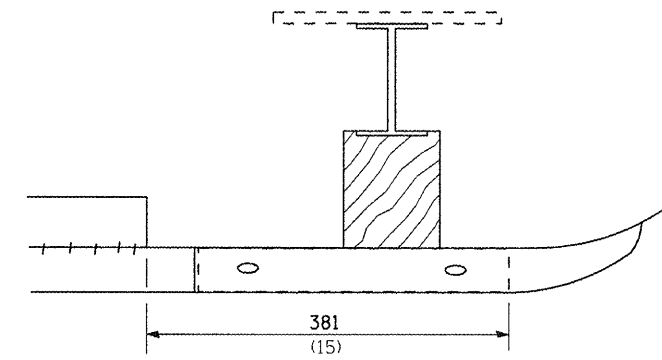
The type 9 terminal shall be installed after the posts for the bridge retrofit rail have been located as shown on Standard 509001.

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

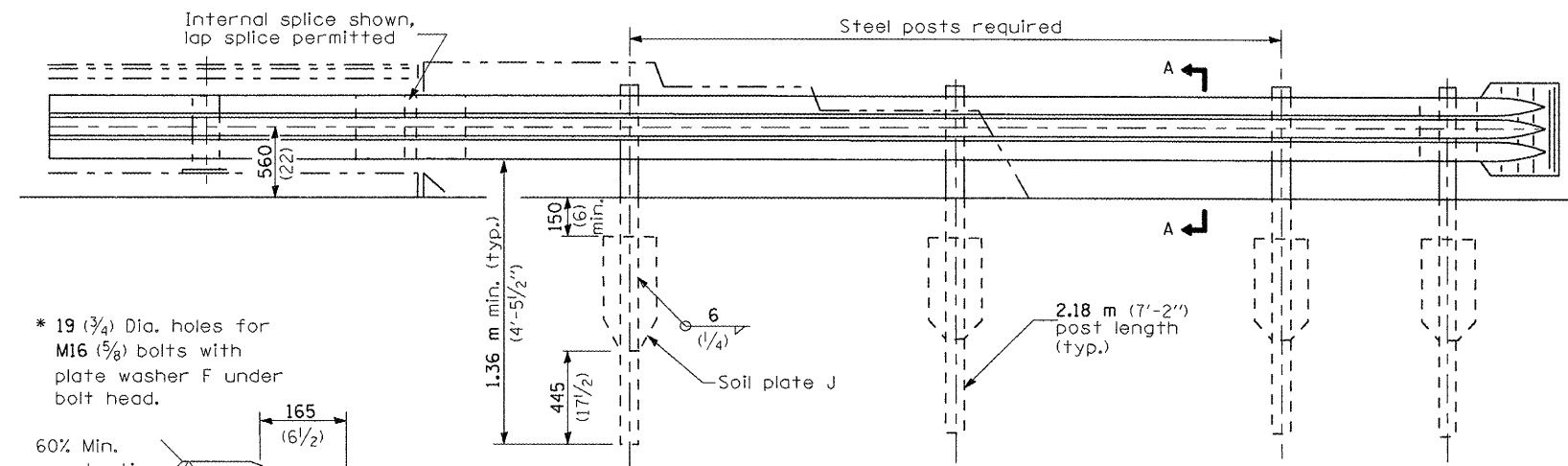
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• D-3 HIGHWAY DAMAGE REPAIR 2013													
CONTRACT NO. 66C18													



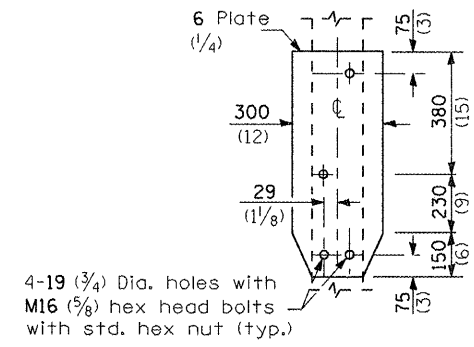
PLAN
(Bridge with expansion joint shown)



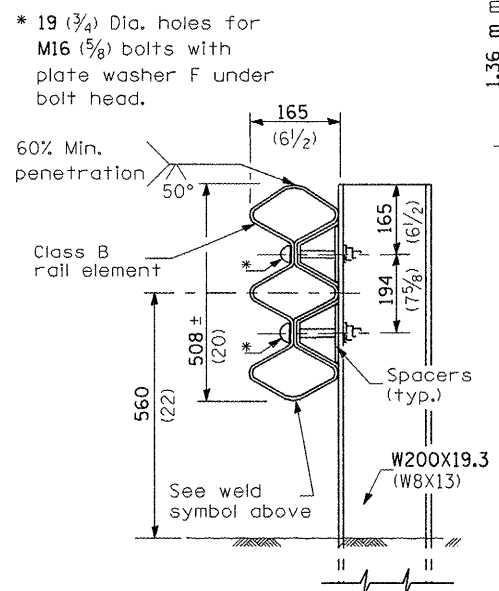
DETAIL A



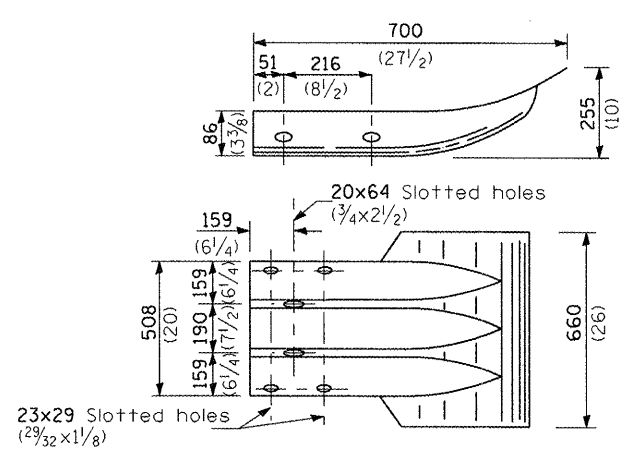
ELEVATION



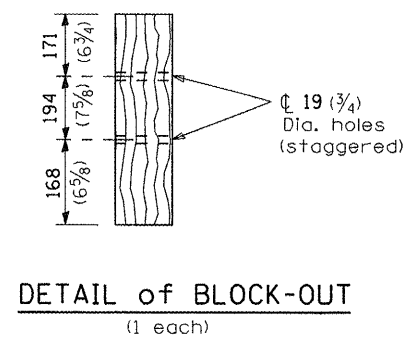
SOIL PLATE J & ALTERNATE CONNECTION DETAILS



SECTION A-A



THRIE BEAM FLARED END SECTION



DETAIL of BLOCK-OUT
(1 each)

GENERAL NOTES

See Standard 509001 and 630001 for details of guardrail elements not shown.
The type 12 terminal shall be installed after the posts for the bridge retrofit rail have been located as shown on Standard 509001.

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

FILE NAME =	USER NAME = quigleyml	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PRE-MGS EFFECTIVE 4-1-06 TRAFFIC BARRIER TERMINAL TYPE 12 STANDARD 631056-01	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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	PLOT DATE = 3/26/2012	CHECKED -	REVISED -			CONTRACT NO. 66C18					
		DATE -	REVISED -			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					