

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D9 GUARDRAIL REPAIR FY25-1	VARIOUS	21	1
		ILLINOIS	CONTRACT NO. 78A63	

D-99-042-24

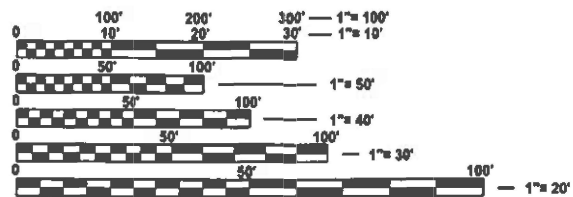
FOR INDEX OF SHEETS, SEE SHEET NO. 3

PROPOSED
HIGHWAY PLANS

VARIOUS ROUTES
SECTION D9 GUARDRAIL REPAIR FY25-1

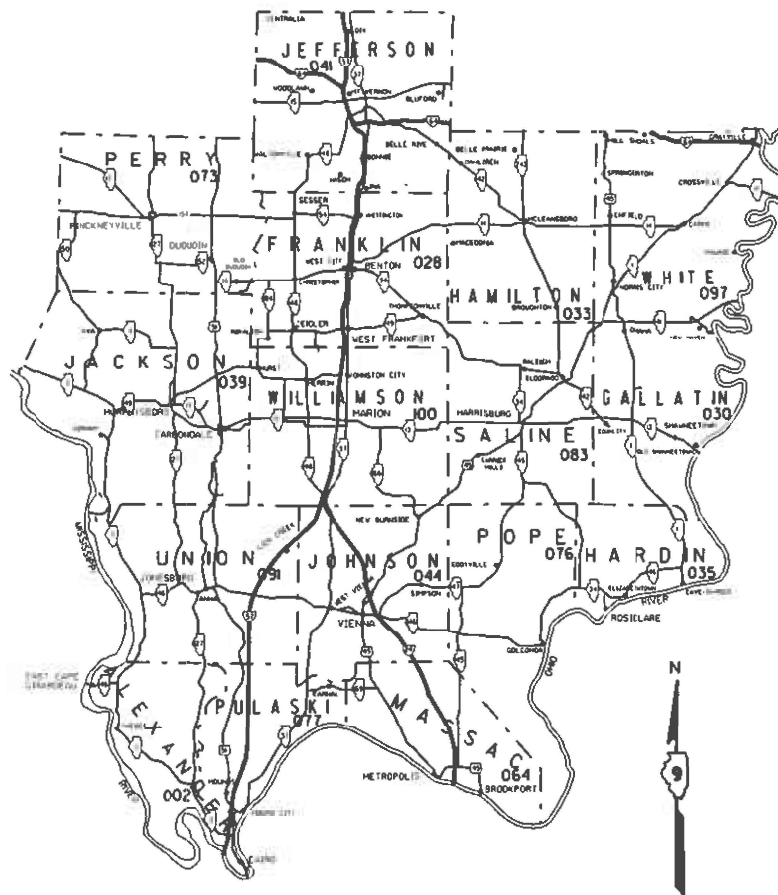
GUARDRAIL REPAIR
VARIOUS COUNTIES

C-99-088-24



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 MARCO ANDRESEN
PROJECT MANAGER SEAN GREENLEE

CONTRACT NO. 78A63

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED May 1 2024
Kirk H. Brown
REGIONAL ENGINEER

June 28, 2024 [Signature]
ENGINEER OF DESIGN AND ENVIRONMENT

June 28, 2024 [Signature]
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

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OF THE STATE OF ILLINOIS

MODEL: 02-Signature [Sheet]
FILE NAME: c:\pw\work\pav\illinois.gov\marco_andresen\09686441076463-ShA-Cover_Sig.dgn

Prepared By: *Susan P*
DISTRICT STUDIES & PLANS ENGINEER

Examined By: *Nancy Hoo*
DISTRICT LAND ACQUISITION ENGINEER

Examined By: *Car M*
DISTRICT PROGRAM DEVELOPMENT ENGINEER

Examined By: *[Signature]*
DISTRICT OPERATIONS ENGINEER

Examined By: *Daryl M*
DISTRICT PROJECT IMPLEMENTATION ENGINEER

Examined By: *Daryl M*
DISTRICT CONSTRUCTION ENGINEER

Examined By: *Ann Hay*
DISTRICT MATERIALS ENGINEER

USER NAME	• Marco.Andresen	DESIGNED	-	REVISED	-
		DRAWN	-	REVISED	-
PLOT SCALE	= 0.18696633 / in.	CHECKED	-	REVISED	-
PLOT DATE	= 2/15/2024	DATE	-	REVISED	-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SIGNATURE SHEET

SCALE: SHEET 2 OF 21 SHEETS STA. TO STA.

F.A.* RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D9 GUARDRAIL REPAIR FY25-1	VARIOUS	21	2
CONTRACT NO. 78A83				
ILLINOIS FED. AID PROJECT				

INDEX OF SHEETS

SHEET NO	DESCRIPTION
1	COVER SHEET
2	SIGNATURE SHEET
3-4	INDEX OF SHEETS, HIGHWAY STANDARDS, AND GENERAL NOTES
5-7	SUMMARY OF QUANTITIES
8-11	STEEL PLATE BEAM GUARDRAIL STANDARD
12-15	TRAFFIC BARRIER TERMINAL, TYPE 6
16-18	TRAFFIC BARRIER TERMINAL, TYPE 6A
19-20	TRAFFIC BARRIER TERMINAL, TYPE 6B
21	CRASH-CUSHION ATTENUATING TERMINAL (C-A-T)

HIGHWAY STANDARDS

- 000001-08 STANDARDSYMBOLSABBREVIATIONS-PATTERNS-001
- 001006 DECIMALOFINCH-FOOT
- 630006-01 NON-BLOCKED STEEL PLATE BEAM GUARDRAIL
- 630116 BACK SIDE PROTECTION OF GUARDRAIL
- 630101-11 STRONG POST GUARDRAIL ATTACHED TO CULVERT
- 630301-09 SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
- 631011-10 TRAFFIC BARRIER TERMINAL, TYPE 2
- 631026-06 TRAFFIC BARRIER TERMINAL, TYPE 5
- 636001-02 CABLE ROAD GUARD SINGLE STRAND
- 643001-02 SAND MODULE IMPACT ATTENUATORS
- 664001-02 CHAIN LINK FENCE
- 665001-02 WOVEN WIRE FENCE
- 701001-02 OFF ROAD OPERATIONS, 2L, 2W, MORE THAN 15' AWAY
- 701006-05 OFF ROAD OPERATIONS, 2L, 2W, 15' TO 24" FROM PAVEMENT EDGE
- 701011-04 OFF ROAD OPERATIONS, 2L, 2W, DAY ONLY

HIGHWAY STANDARDS

- 701101-05 OFF ROAD OPERATIONS, MULTILANE, 15' TO 24" FROM PAVEMENT EDGE
- 701106-02 OFF ROAD OPERATIONS. MULTILANE, MORE THAN 15' AWAY
- 701201-05 LANE CLOSURE, 2L, 2W, DAY ONLY FOR SPEEDS GREATER OR EQUAL TO 45 MPH
- 701301-04 LANE CLOSURE, 2L, 2W, SHORT TERM OPERATIONS
- 701400-12 APPROACH TO LANE CLOSURE, FREEWAY/EXPRESSWAY
- 701401-13 LANE CLOSURE, FREEWAY/EXPRESSWAY
- 701406-13 LANE CLOSURE, FREEWAY/EXPRESSWAY, DAY OPERATIONS ONLY
- 701421-08 LANE CLOSURE, MULTILANE, DAY OPERATIONS ONLY FOR SPEEDS GREATER OR EQUAL TO 45 MPH
- 701422-10 LANE CLOSURE, MULTILANE, FOR SPEEDS GREATER THAN OR EQUAL TO 45 MPH TO 55 MPH
- 701428-01 TRAFFIC CONTROL SETUP AND REMOVAL FREEWAY/EXPRESSWAY
- 701451-05 RAMP CLOSURE FREEWAY EXP
- 701456-05 PARTIAL EXIT RAMP CLOSURE FREEWAY/EXPRESSWAY
- 701501-06 URBAN LANE CLOSURE, 2L, 2W, UNDIVIDED
- 701502-09 URBAN LANE CLOSURE, 2L, 2W WITH BIDIRECTIONAL LEFT TURN LANE
- 701601-09 URBAN LANE CLOSURE, MULTILANE, 1W AND 2W WITH NONTRAVERSABLE MEDIAN
- 701602-10 URBAN LANE CLOSURE, MULTILANE, 2W WITH BIDIRECTIONAL LEFT TURN LANE
- 701606-10 URBAN SINGLE LANE CLOSURE, MULTILANE, 2W WITH MOUNTABLE MEDIAN
- 701701-10 URBAN LANE CLOSURE, MULTILANE INTERSECTION
- 701901-09 TRAFFIC CONTROL DEVICE
- 725001-01 OBJECT AND TERMINAL MARKERS
- 782006-01 GUARDRAIL AND BARRIER WALL REFLECTOR MOUNTING DETAILS

REV. - MS

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INDEX OF SHEETS AND
HIGHWAY STANDARDS

SCALE: SHEET 3 OF 21 SHEETS STA. TO STA.

F.A. * RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D9 GUARDRAIL REPAIR FY25-1	VARIOUS	21	3
			CONTRACT NO. 78A63	
ILLINOIS ID. AID PROJE. CT				

GENERAL NOTES

COMMITMENTS

BEFORE ORDERING THE IMPACT ATTENUATORS, THE CONTRACTOR MUST CONTACT THE RESIDENT ENGINEER TO RECEIVE APPROVAL OF THE PROPOSED INSTALLATION.

NONE

ALL WORK IS TO BE REPLACED IN KIND OR AS INDICATED ON THE CONTRACT PLANS OR SPECIAL PROVISIONS.

THE LOCATIONS OF THE REPAIR AREAS SHALL BE DETERMINED BY THE ENGINEER.

GUARDRAIL WORK WILL INCLUDE ALIGNMENT AS NECESSARY TO RESTORE THE RAIL TO THE ORIGINAL CONDITIONS.

REMOVAL OF DAMAGED MATERIALS WILL INCLUDE DISMANTLING, LOADING, HAULING AND DISPOSAL. THE WORK SITE WILL BE LEFT IN A SAFE AND ORDERLY CONDITION.

THE LIMITS OF THE DAMAGED GUARDRAIL WILL BE MARKED WITH PAINT. THE REPLACEMENT PARTS AND THE QUANTITIES INDICATED ARE WITHIN THESE LIMITS AS MARKED.

REMOVED GUARDRAIL THAT IS NOT REPLACED ON THE SAME DAY MUST BE DELINEATED WITH LIGHTED BARRICADES. NO LOCATIONS WILL BE LEFT WITHOUT EITHER LIGHTED BARRICADES OR RESTORED GUARDRAIL AT ANY TIME.

ILLINOIS STATE LAW ENFORCES A 48-HOUR NOTICE TO BE GIVEN TO UTILITIES BEFORE DIGGING. FIELD MARKING OF FACILITIES MAY BE OBTAINED BY CONTACTING J.U. L. I.E. (PHONE: 800 892-0123) OR FOR NON-MEMBER, THE UTILITY COMPANY DIRECTLY.

THE CONTRACTOR SHALL BE ADVISED THAT THE GUARDRAIL PAY ITEMS INCLUDED IN THE PLANS MAY BE USED TO REPLACE/REPAIR SPBGR AND TRAFFIC BARRIER TERMINAL INSTALLED PRIOR TO JAN.1, 2007 AS SHOWN IN THE PLAN DETAILS. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR UTILIZING THE CURRENT MIDWEST STANDARDS.

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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**GENERAL NOTES AND
COMMITMENTS**

SCALE: SHEET 4 OF 21 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D9 GUARDRAIL REPAIR FY25-1	VARIOUS	21	4
			CONTRACT NO. 78A63	
ILLINOIS FED. AID PROJECT				

SUMMARY OF QUANTITIES

COUNTY:	VARIOUS	VARIOUS	VARIOUS
ROUTE:	VARIOUS	VARIOUS	VARIOUS
FUNDING:	100% STATE	100% STATE	100% STATE
LOCATION:	RURAL/URBAN	RURAL/URBAN	RURAL/URBAN
	MCHD	HIT AND RUN	HIGH TENSION CABLE
	0021	0021	0021

CODE NUMBER	ITEM DESCRIPTION	UNIT	TOTAL QUANTITY	MCHD 0021	HIT AND RUN 0021	HIGH TENSION CABLE 0021
25000100	SEEDING, CLASS 1	ACRE	14	5.00	4.00	5.00
63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	62	55.00	7.00	
63100169	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) FLARED	EACH	12	8.00	4.00	
64300260	IMPACT ATTENUATORS (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	7	4.00	3.00	
64401300	HIGH TENSION CABLE MEDIAN BARRIER TERMINALS	EACH	51	7.00	6.00	38.00
67100100	MOBILIZATION	L SUM	1	1.00		
X6300210	GUARDRAIL BLOCKS	EACH	442	328.00	114.00	
X6300215	RAIL ELEMENT PLATES	EACH	196	175.00	21.00	
X6300217	RAIL ELEMENT PLATES (RADIUS)	EACH	13	9.00	4.00	
X6300220	EXTRUDER HEAD	EACH	8	5.00	3.00	
X6300230	STEEL POSTS	EACH	201	179.00	22.00	
X6300231	STEEL POST, ATTACHED TO STRUCTURES	EACH	4	4.00		
X6300235	WOOD POSTS	EACH	34	18.00	16.00	

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	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES			
SCALE:	SHEET 5	OF 21 SHEETS	STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D9 GUARDRAIL REPAIR FY25-1	VARIOUS	21	5
CONTRACT NO. 78A63			ILLINOIS FED. AID PROJECT	

SUMMARY OF QUANTITIES - CONT

COUNTY:	VARIOUS	VARIOUS	VARIOUS
ROUTE:	VARIOUS	VARIOUS	VARIOUS
FUNDING:	100% STATE	100% STATE	100% STATE
LOCATION:	RURAL/URBAN	RURAL/URBAN	RURAL/URBAN

CODE NUMBER	ITEM DESCRIPTION	UNIT	TOTAL QUANTITY	MCHD	HIT AND RUN	HIGH TENSION CABLE
				0021	0021	0021
X6310088	TRAFFIC BARRIER TERMINAL TYPE 6A (SPECIAL)	EACH	6	6.00		
X6310176	TRAFFIC BARRIER TERMINAL, TYPE 2 (SPECIAL)	EACH	6	6.00		
X6310179	TRAFFIC BARRIER TERMINAL, TYPE 5 (SPECIAL)	EACH	1	1.00		
X6310214	TRAFFIC BARRIER TERMINAL, TYPE 6 (SPECIAL)	EACH	7	7.00		
X6311215	TRAFFIC BARRIER TERMINAL (C-A-T)	EACH	9	6.00	3.00	
X6311217	TRAFFIC BARRIER TERMINAL, TYPE 6B (SPECIAL)	EACH	7	7.00		
X6331110	STEEL POSTS (SPECIAL)	EACH	5	5.00		
X6430210	REMOVE AND REINSTALL IMPACT ATTENUATORS	EACH	29	23.00	6.00	
X6440130	REPAIR HIGH TENSION CABLE (GIBALTAR)	FOOT	1545	200.00	145.00	1200.00
X6440131	REPAIR HIGH TENSION BARRIER TERMINAL (GIBALTAR)	EACH	51	7.00	3.00	41.00
X6440134	REMOVE AND REPLACE POSTS (GIBALTAR)	EACH	400	38.00	32.00	330.00
X6440160	REPAIR HIGH TENSION CABLE (TRINITY)	FOOT	1334	194.00	140.00	1000.00
X6440163	REPAIR POSTS (TRINITY)	EACH	180	34.00	24.00	122.00

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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**SUMMARY OF QUANTITIES
CONT**

SCALE: SHEET 6 OF 21 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 78A63			ILLINOIS FED. AID PROJECT	

SUMMARY OF QUANTITIES - CONT

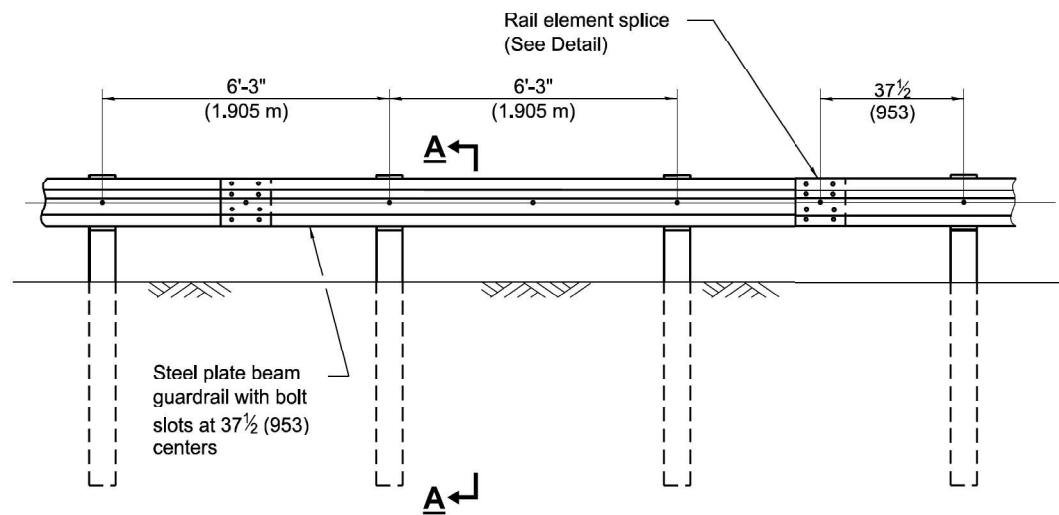
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ROUTE:	VARIOUS	VARIOUS	VARIOUS
FUNDING:	100% STATE	100% STATE	100% STATE
LOCATION:	RURAL/URBAN	RURAL/URBAN	RURAL/URBAN
	MCHD	HIT AND RUN	HIGH TENSION CABLE
	0021	0021	0021

CODE NUMBER	ITEM DESCRIPTION	UNIT	TOTAL QUANTITY	MCHD	HIT AND RUN	HIGH TENSION CABLE
				0021	0021	0021
X6440166	REPAIR HIGH TENSION CABLE SYSTEM END SECTION (TRINITY)	EACH	56	6.00	5.00	45.00
X6640298	CHAIN LINK FENCE (SPECIAL)	FOOT	180	112.00	68.00	
X6650208	WOVEN WIRE FENCE REMOVAL AND REPLACEMENT	FOOT	112	112.00		
X7010102	NIGHTTIME WORK ZONE LIGHTING	EACH	46	25.00	21.00	
X7011834	TRAFFIC CONTROL AND PROTECTION, CALL OUT WORK	EACH	41	30.00	11.00	
X7011836	TRAFFIC CONTROL AND PROTECTION, FREEWAY/EXPRESSWAY, CALL OUT WORK	EACH	52	30.00	10.00	12.00
X6310302	REPAIR TRAFFIC BARRIER TERMINAL, TYPE 1 SPECIAL (TANGENT)	EACH	17	12.00	5.00	
X6310304	REPAIR TRAFFIC BARRIER TERMINAL, TYPE 1 SPECIAL (FLARED)	EACH	9	6.00	3.00	
X6310330	REPAIR TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	8	5.00	3.00	
X6310332	REPAIR TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	6	6.00		
X6310334	REPAIR TRAFFIC BARRIER TERMINAL, TYPE 6B	EACH	6	6.00		

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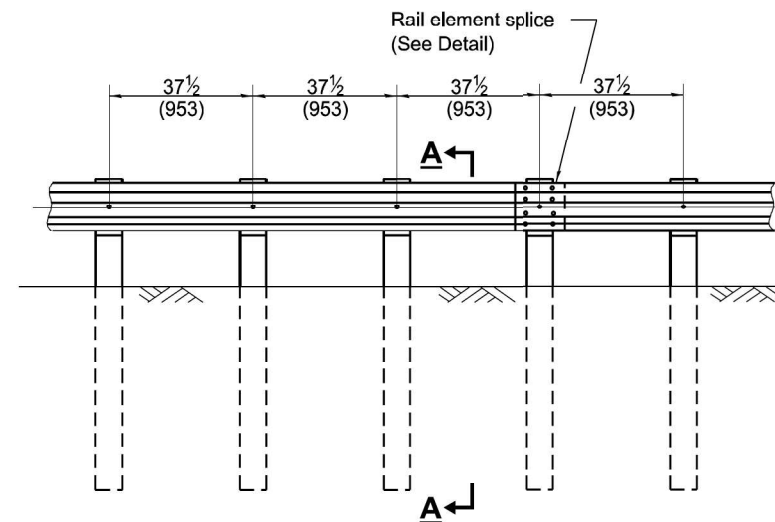
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	CHECKED -	REVISED -		CONTRACT NO. 78A63									
PLOT DATE = 4/26/2024	DATE -	REVISED -		ILLINOIS FED. AID PROJECT									



ELEVATION

TYPE A

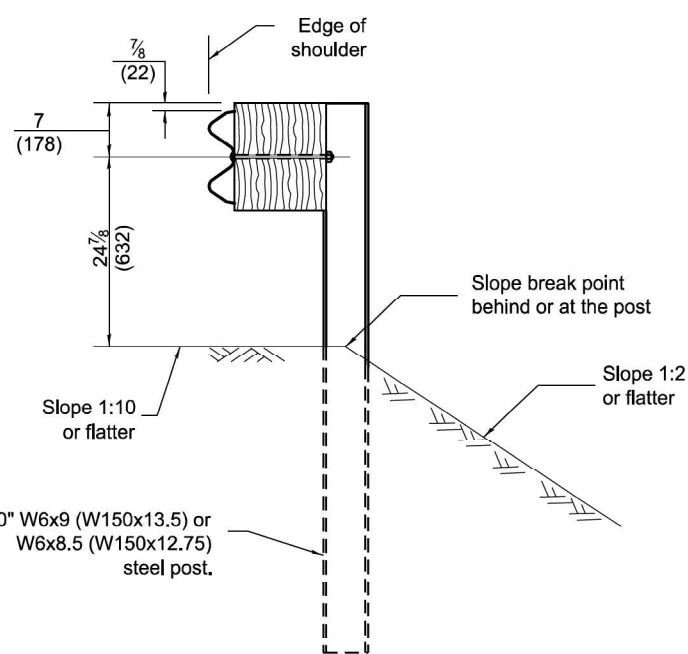
6'-3" (1.905 m) Typical post spacing



ELEVATION

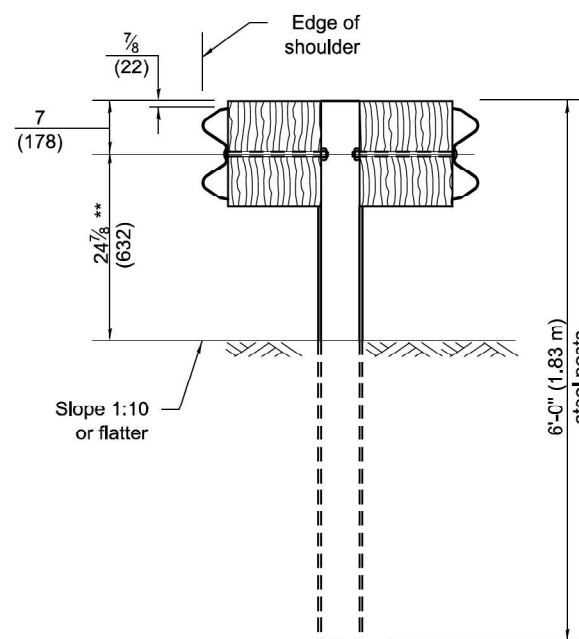
TYPE B

37 1/2 (953) Closed post spacing



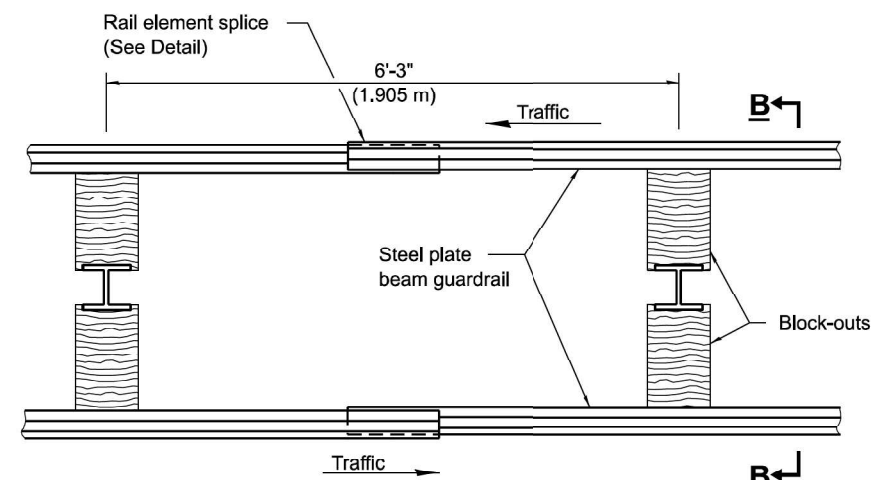
SECTION A-A

6'-0" W6x9 (W150x13.5) or W6x8.5 (W150x12.75) steel post.



SECTION B-B

** When connecting Type D guardrail to an impact attenuator, adjust this dimension to match over a distance of 25'-0" (7.62 m) from point of connection if necessary.



PLAN

TYPE D

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

GENERAL NOTES

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

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

Illinois Department of Transportation

APPROVED January 1, 2024
Marshall K. Woodall
ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 2024
Scott C. ...
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-24

USER NAME = Marco.Andresen	DESIGNED -	REVISED -
	DRAWN -	REVISED -
	CHECKED -	REVISED -
PLOT DATE = 2/15/2024	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**STEEL PLATE BEAM
GUARDRAIL STANDARD**

SCALE: SHEET 8 OF 21 SHEETS STA. TO STA.

DATE	REVISIONS
1-1-24	Revised Section A-A to allow 6' posts at or behind the slope break point.
1-1-18	Revised steel post to have four holes in each flange.

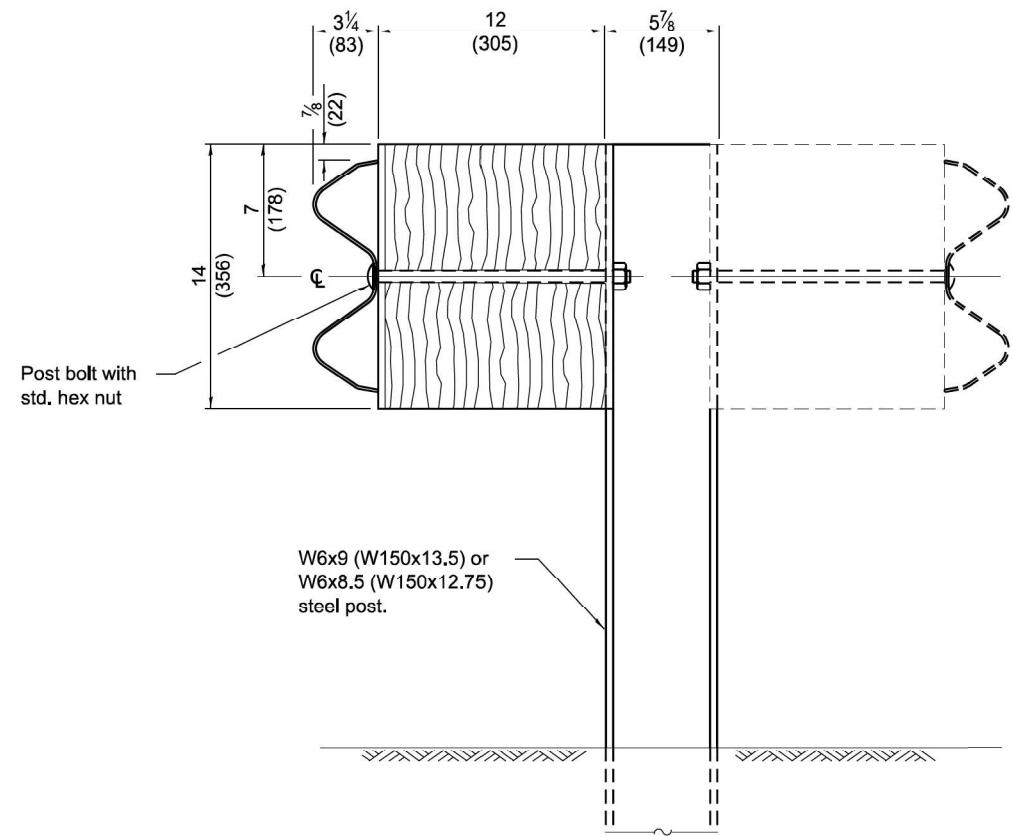
**STEEL PLATE BEAM
GUARDRAIL**

(Sheet 1 of 4)

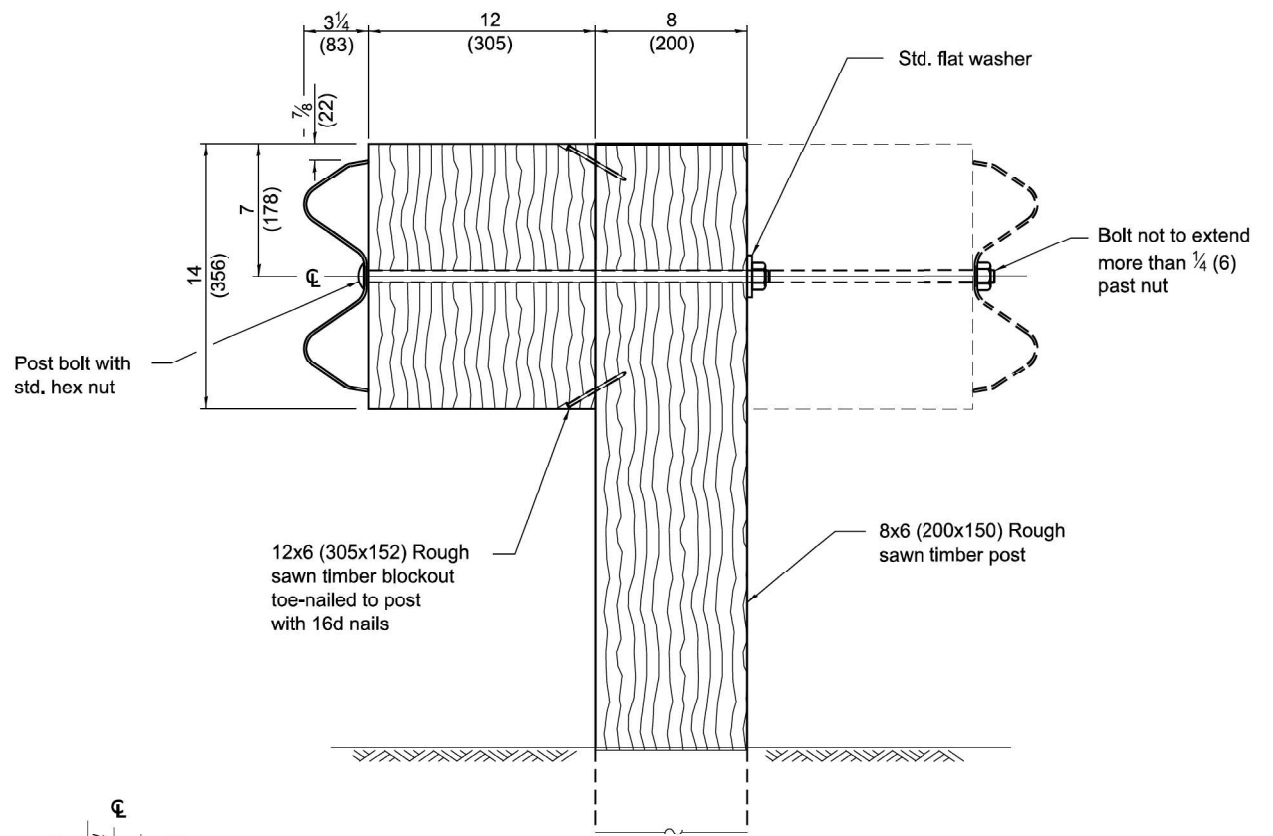
STANDARD 630001-13

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D9 GUARDRAIL REPAIR FY25-1	VARIOUS	21	8
CONTRACT NO. 78A63				
ILLINOIS FED. AID PROJECT				

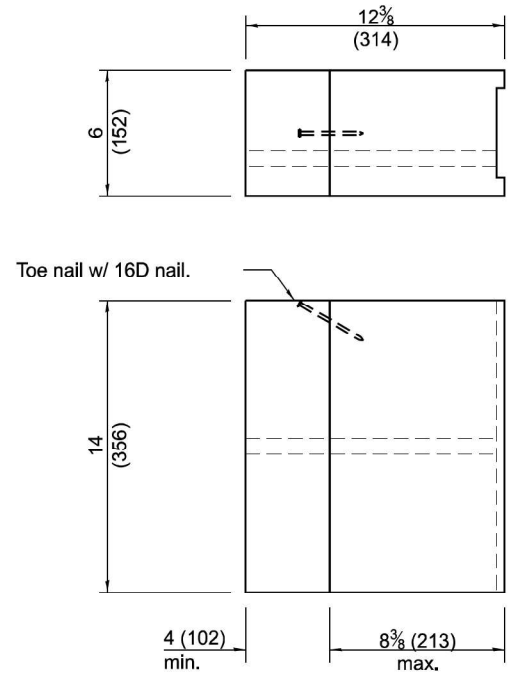
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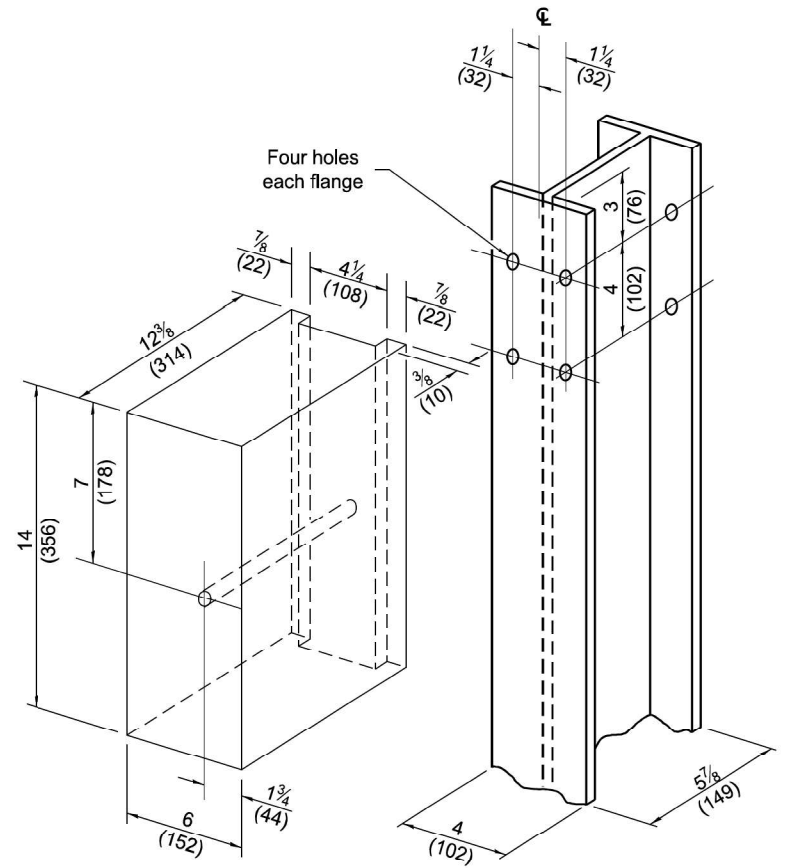
STEEL POST CONSTRUCTION



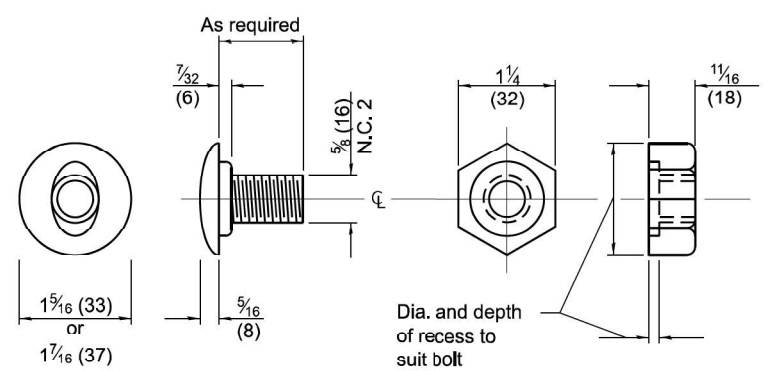
WOOD POST CONSTRUCTION



TWO-PIECE WOOD BLOCKOUT OPTION



WOOD BLOCK-OUT AND STEEL POST DETAILS



POST OR SPLICE BOLT & NUT

STEEL PLATE BEAM GUARDRAIL

(Sheet 2 of 4)

STANDARD 630001-13

Illinois Department of Transportation

APPROVED January 1, 2024
Marshall L. Mobley
 ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 2024
Scott C. ...
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-2024

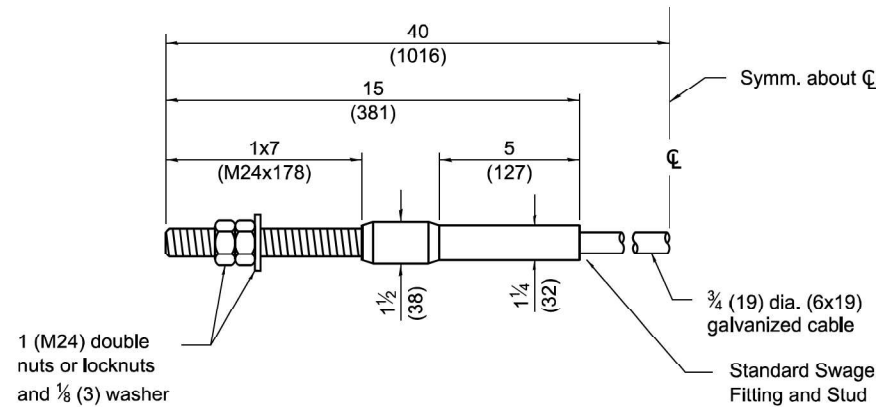
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

STEEL PLATE BEAM GUARDRAIL STANDARD	
SCALE:	SHEET 9 OF 21 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D9 GUARDRAIL REPAIR FY25-1	VARIOUS	21	9
CONTRACT NO. 78A63				
ILLINOIS FED. AID PROJECT				

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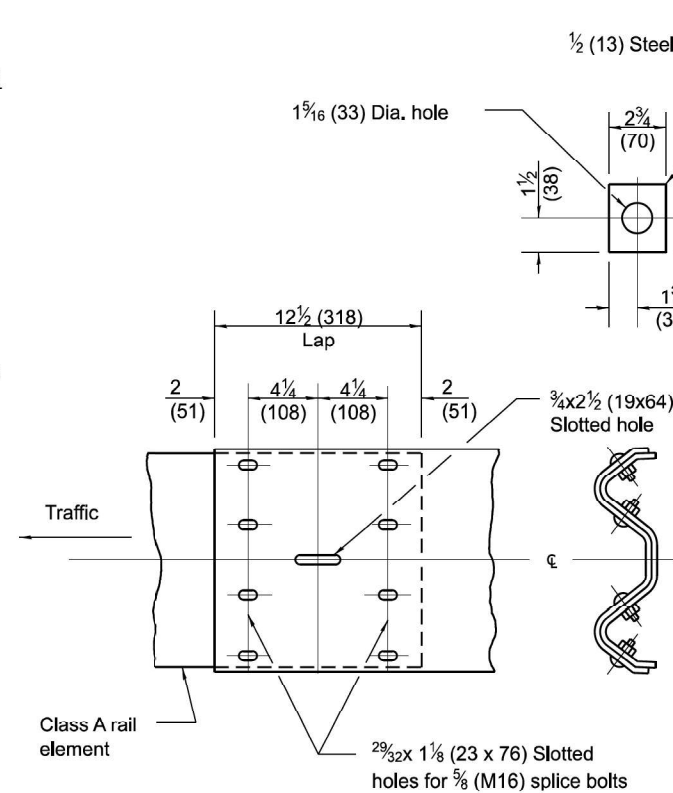


1 (M24) double nuts or locknuts and 1/2 (3) washer

CABLE ASSEMBLY

(42,800 lbs. (190 kN) min. breaking strength)
Tighten to taut tension.

Standard Swage Filling and Stud (stud threaded entire length)

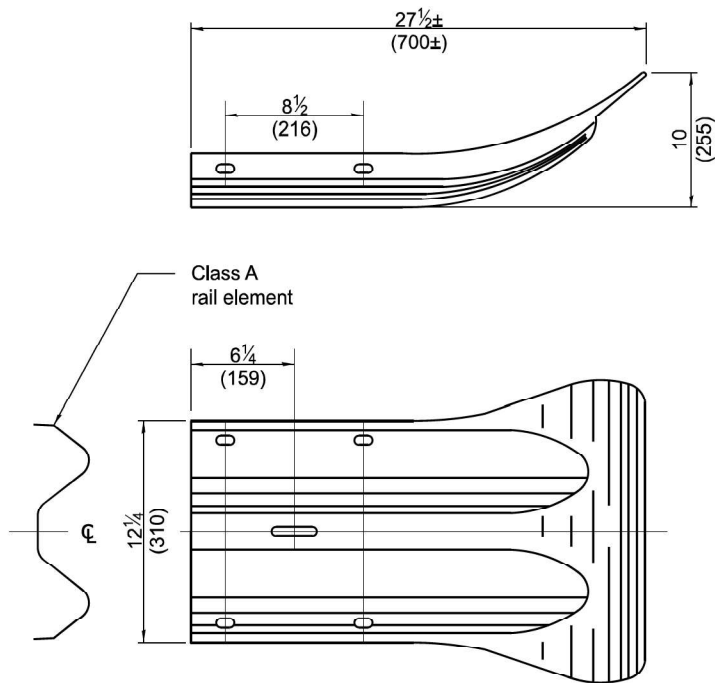
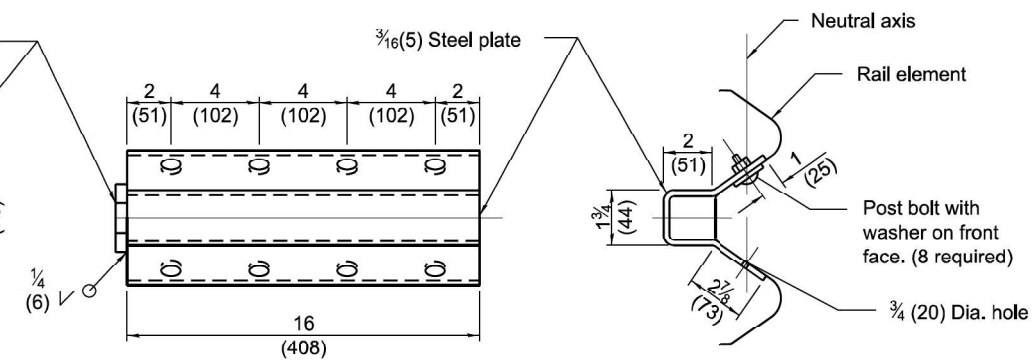


RAIL ELEMENT SPLICE

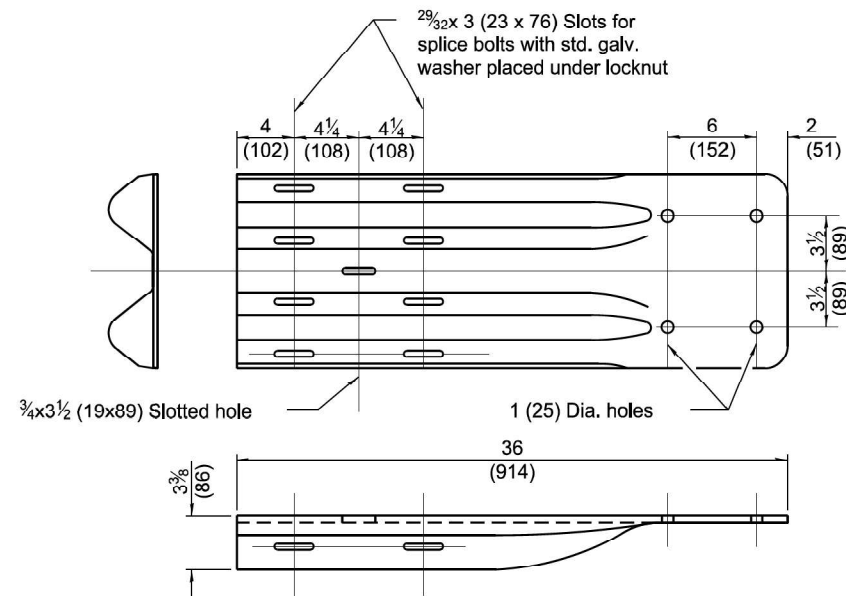
NOTE

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

ANCHOR PLATE T DETAILS



END SECTION



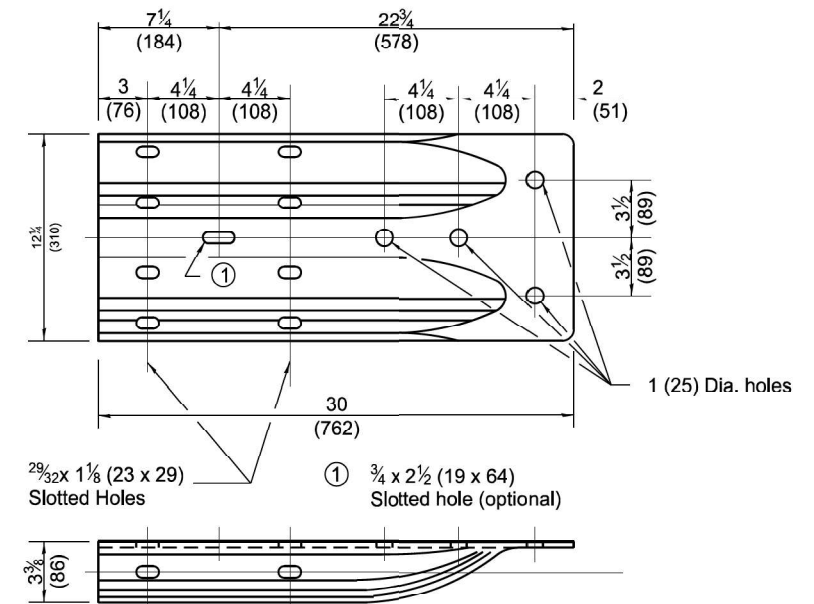
NOTE

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

STEEL PLATE BEAM GUARDRAIL

(Sheet 3 of 4)

STANDARD 630001-13

Illinois Department of Transportation

APPROVED January 1, 2024
Marshall K. Metcalf
ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 2024
Jeffrey C. ...
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-24

USER NAME = Marco.Andresen	DESIGNED -	REVISED -
	DRAWN -	REVISED -
	CHECKED -	REVISED -
PLOT DATE = 2/15/2024	DATE -	REVISED -

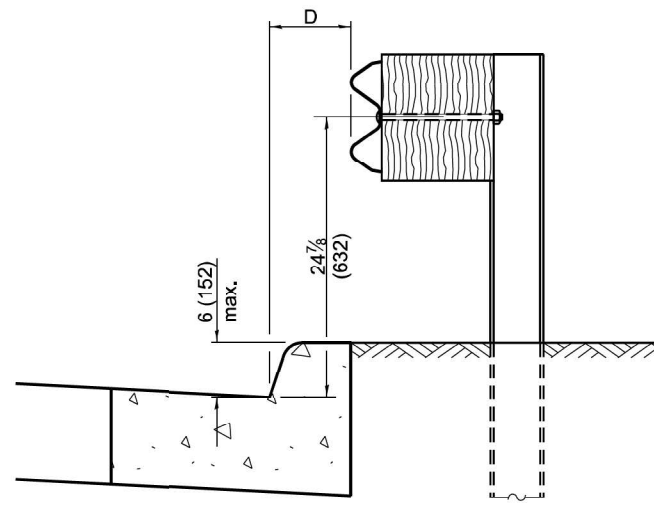
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL PLATE BEAM
GUARDRAIL STANDARD

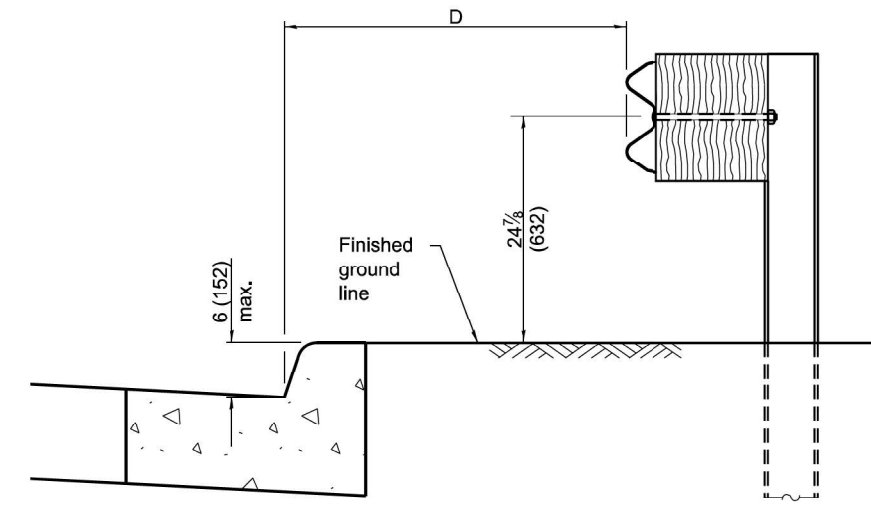
SCALE: SHEET 10 OF 21 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D9 GUARDRAIL REPAIR FY25-1	VARIOUS	21	10
CONTRACT NO. 78A63				
ILLINOIS FED. AID PROJECT				

MODEL: 09-Standards (Sheet)
FILE NAME: c:\p\work\std\illinois.gov\40969664\1076A63-SPIC-SoG.dgn



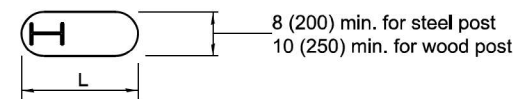
$0 \leq D < 6 (150 \text{ m})$



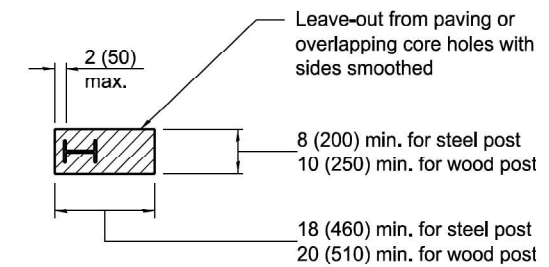
$4'-0'' (1.2 \text{ m}) \leq D \leq 12'-0'' (3.7 \text{ m})$

GUARDRAIL PLACED BEHIND CURB

Note: 'D' shall not exceed 6 (152) for design speeds greater than 45 mph.

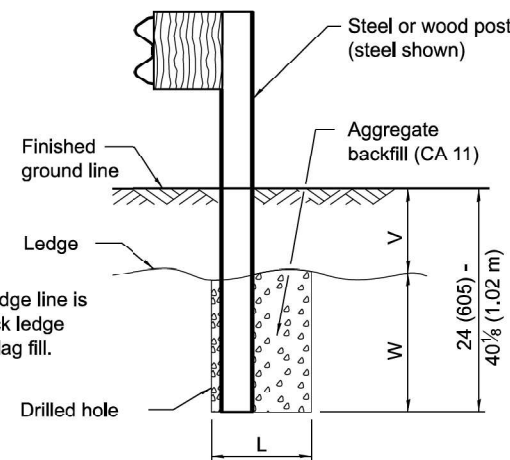


PLAN



PLAN

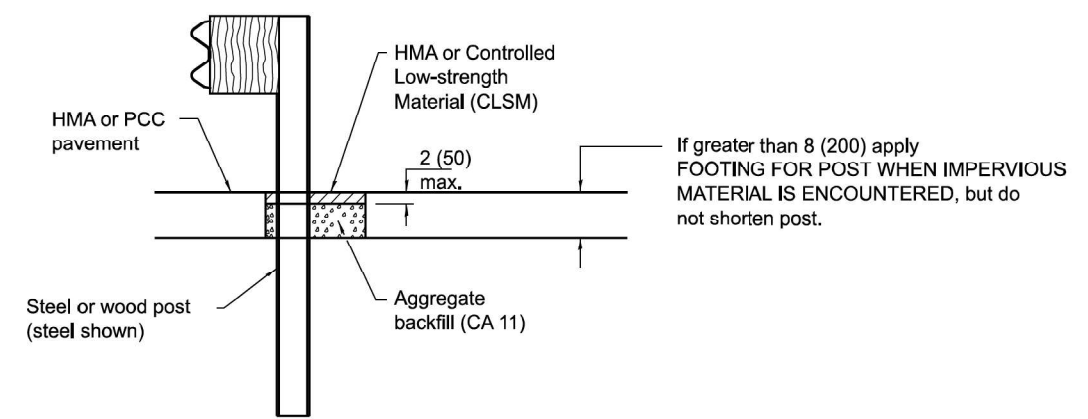
V	W	L	
		Steel Post	Wood Post
0 - 6 (0 - 152)	24 (610)	21 (530)	23 (580)
> 6 - 18 (> 152 - 458)	18 (458)	14 1/2 (368)	16 1/2 (419)
> 18 - 31 (> 458 - 787)	12 (305)	8 (203)	10 (250)
> 31 - 40 1/2 (> 787 - 1.02 m)	12 - 0 (305 - 0)	8 (203)	10 (250)



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

ELEVATION

FOOTING FOR POST WHEN IMPERVIOUS MATERIAL IS ENCOUNTERED



ELEVATION

LEAVE-OUT FOR POST WHEN PAVED MATERIAL IS ENCOUNTERED

STEEL PLATE BEAM GUARDRAIL

(Sheet 4 of 4)

STANDARD 630001-13

Illinois Department of Transportation

APPROVED January 1, 2024
Marshall Wood
 ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 2024
John C. ...
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-24

USER NAME = Marco.Andresen	DESIGNED -	REVISED -
	DRAWN -	REVISED -
	CHECKED -	REVISED -
PLOT DATE = 2/15/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

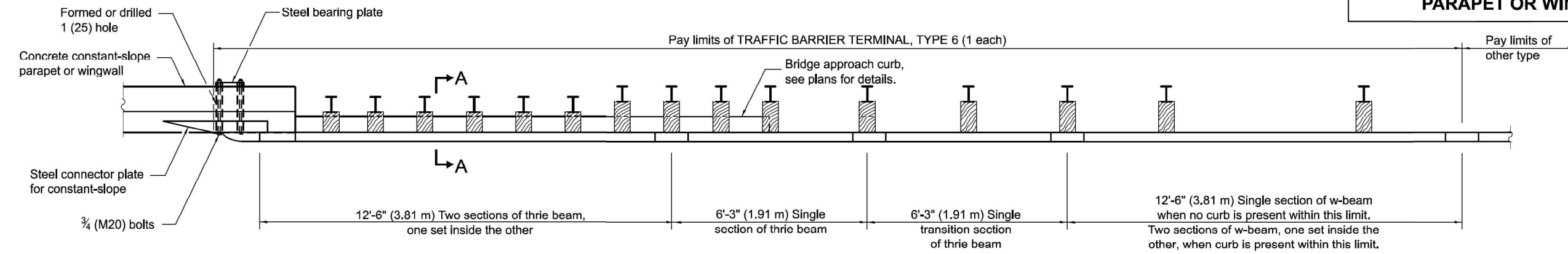
STEEL PLATE BEAM
GUARDRAIL STANDARD

SCALE: SHEET 11 OF 21 SHEETS STA. TO STA.

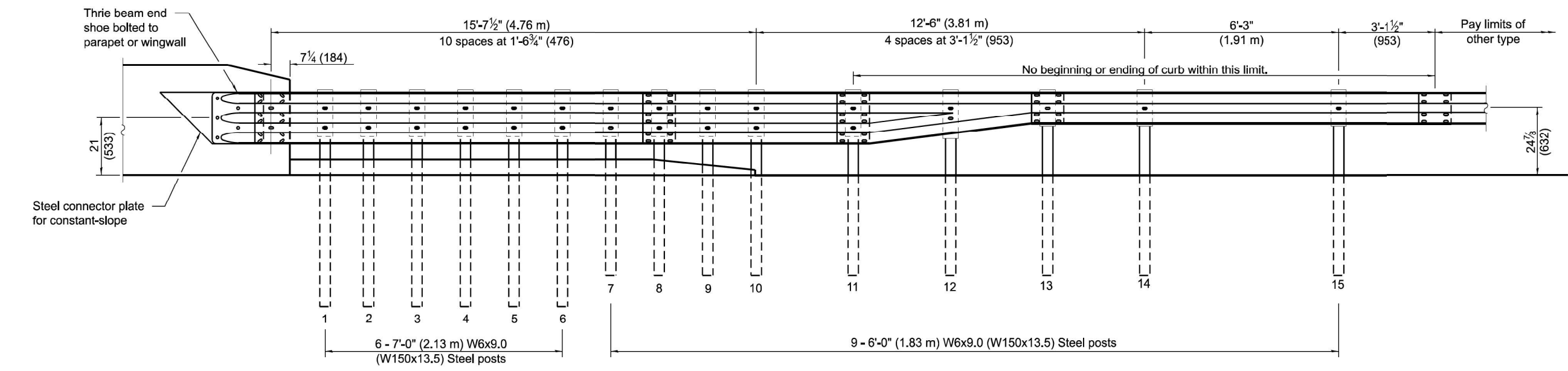
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D9 GUARDRAIL REPAIR FY25-1	VARIOUS	21	11
CONTRACT NO. 78A63				
ILLINOIS FED. AID PROJECT				

MODEL: 10-Standards (Sheet) FILE NAME: c:\p\work\std\illinois.gov\marco.andresen@illinois.gov\4096964\107663-Std-SoQ.dgn

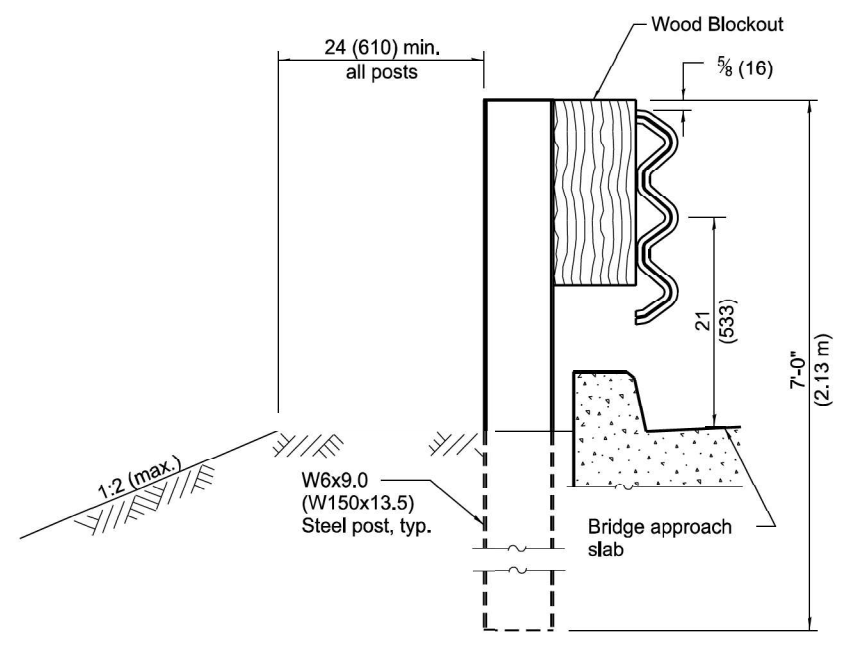
PARAPET OR WINGWALL



PLAN



ELEVATION



SECTION A-A

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 inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-23	Removed two posts, revised blockouts, and removed notes on sheet 4.
1-1-21	Added Detail A and revised plate dimensions on sheet 4.

TRAFFIC BARRIER TERMINAL, TYPE 6

(Sheet 1 of 4)

STANDARD 631031-18

Illinois Department of Transportation

APPROVED January 1, 2023
Carol Watt
 ENGINEER OF SAFETY PROG. AND ENGINEERING

APPROVED January 1, 2023
Scott Cole
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-23

USER NAME = Marco.Andresen	DESIGNED -	REVISED -
	DRAWN -	REVISED -
	CHECKED -	REVISED -
PLOT DATE = 2/15/2024	DATE -	REVISED -

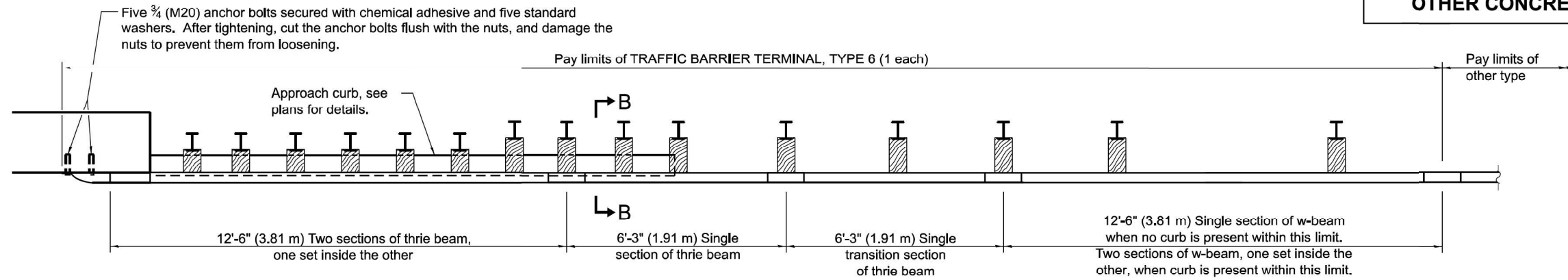
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TRAFFIC BARRIER TERMINAL
TYPE 6 STANDARD**

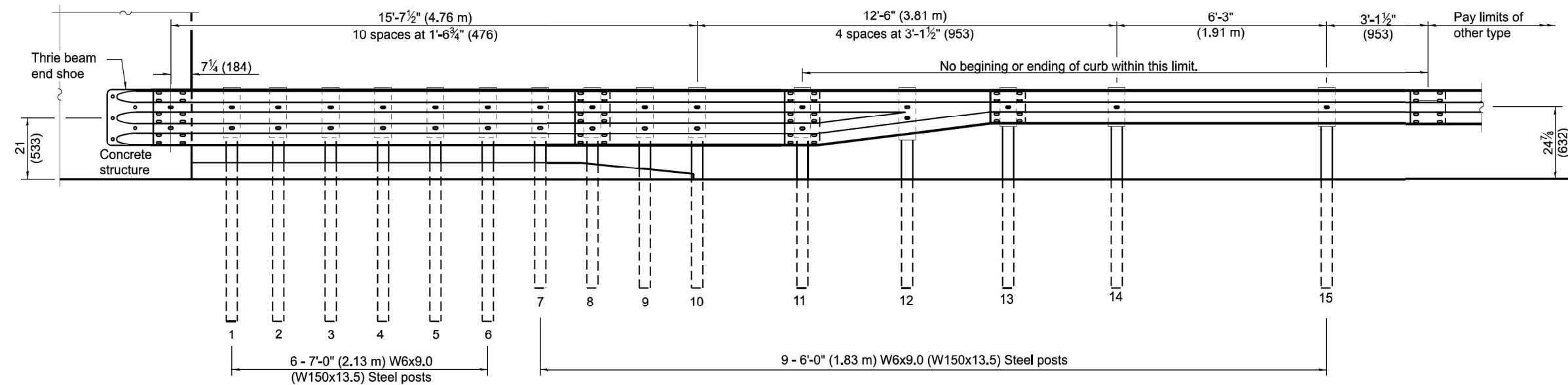
SCALE: SHEET 12 OF 21 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D9 GUARDRAIL REPAIR FY25-1	VARIOUS	21	12
CONTRACT NO. 78A63				
ILLINOIS FED. AID PROJECT				

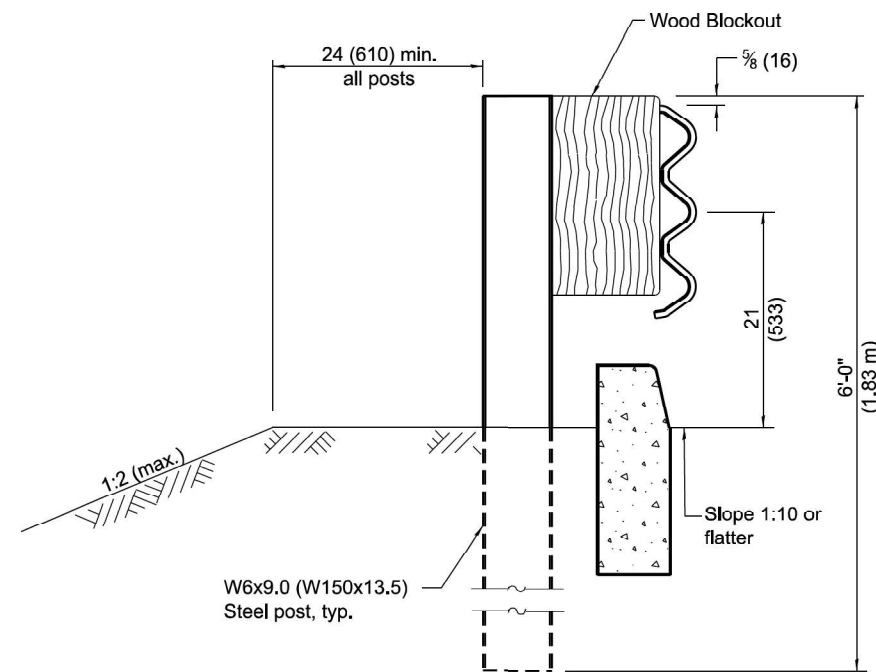
MODEL: 11-Standards (Sheet) FILE NAME: c:\p\work\std\illinois.gov\marco.andresen@illinois.gov\4096864\107663-SH1C-SoO.dgn



PLAN



ELEVATION



SECTION B-B

**TRAFFIC BARRIER
TERMINAL, TYPE 6**

(Sheet 2 of 4)

STANDARD 631031-18

Illinois Department of Transportation

APPROVED January 1, 2023
Carole A. [Signature]
 ENGINEER OF SAFETY PROG. AND ENGINEERING

APPROVED January 1, 2023
[Signature]
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-24

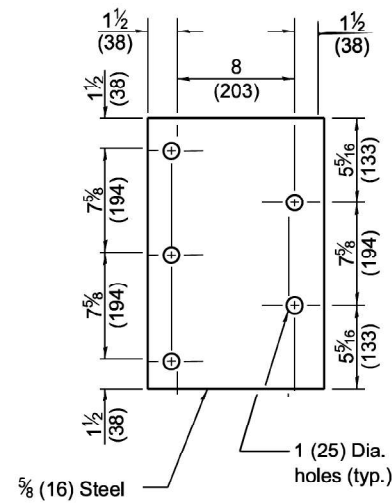
USER NAME = MarcoAndresen	DESIGNED -	REVISED -
	DRAWN -	REVISED -
	CHECKED -	REVISED -
PLOT DATE = 2/15/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC BARRIER TERMINAL
TYPE 6 STANDARD

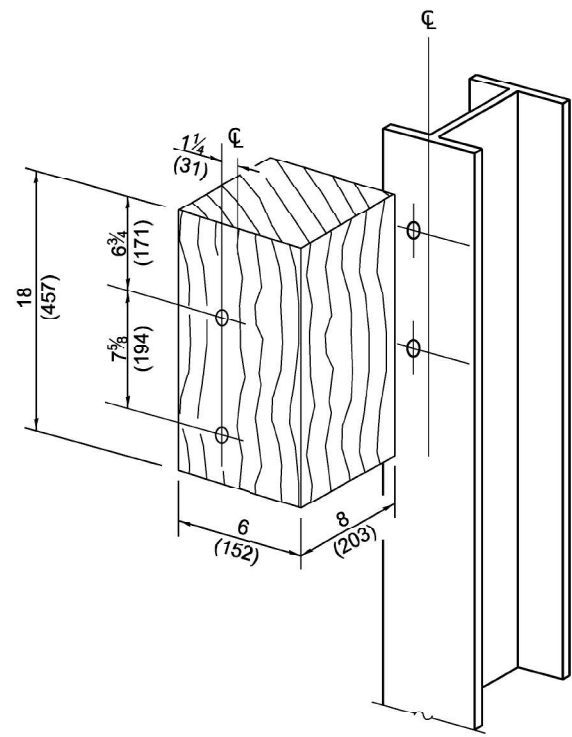
SCALE: SHEET 13 OF 21 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D9 GUARDRAIL REPAIR FY25-1	VARIOUS	21	13
CONTRACT NO. 78A63				
ILLINOIS FED. AID PROJECT				

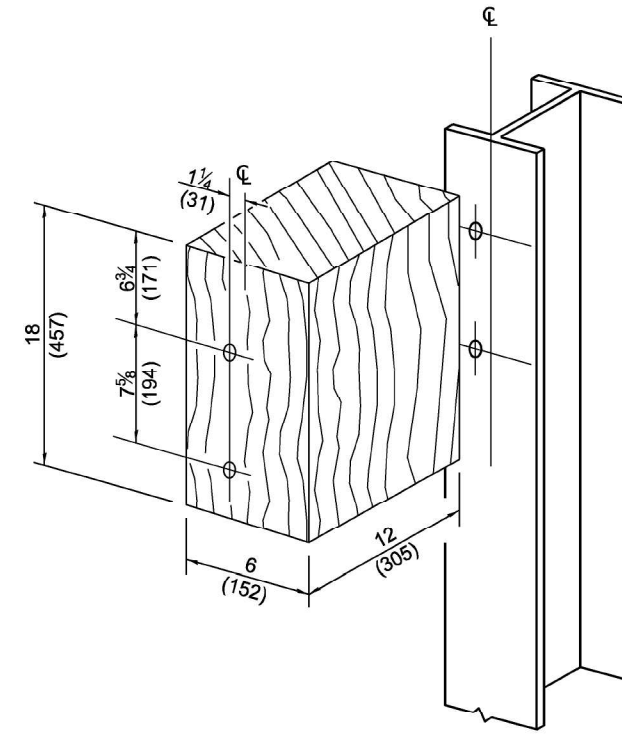


STEEL BEARING PLATE FOR F-SHAPE PARAPET

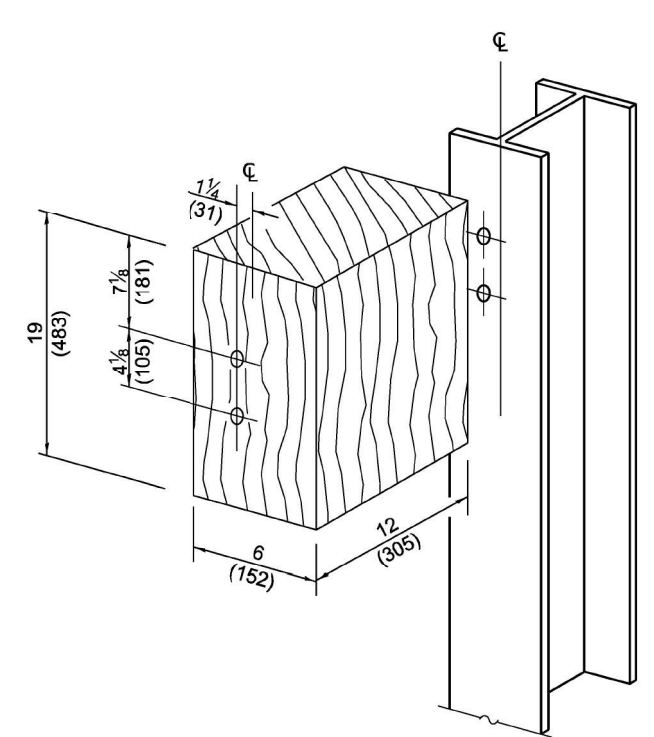
(5 each individual 5x5x5/8 (125x125x16) steel plates with centered 1 (25) holes may be substituted for the plate shown.)



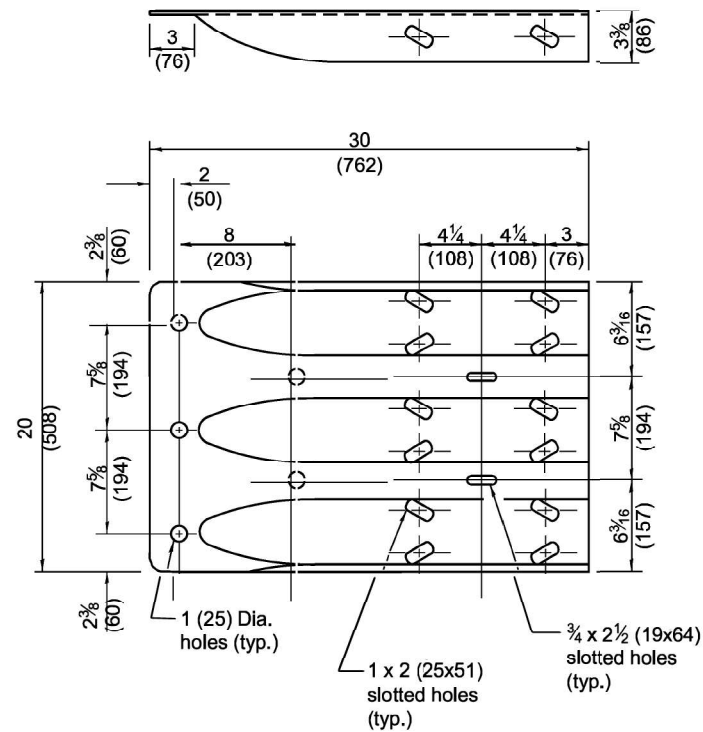
POSTS 1-6 WOOD BLOCKOUT DETAIL



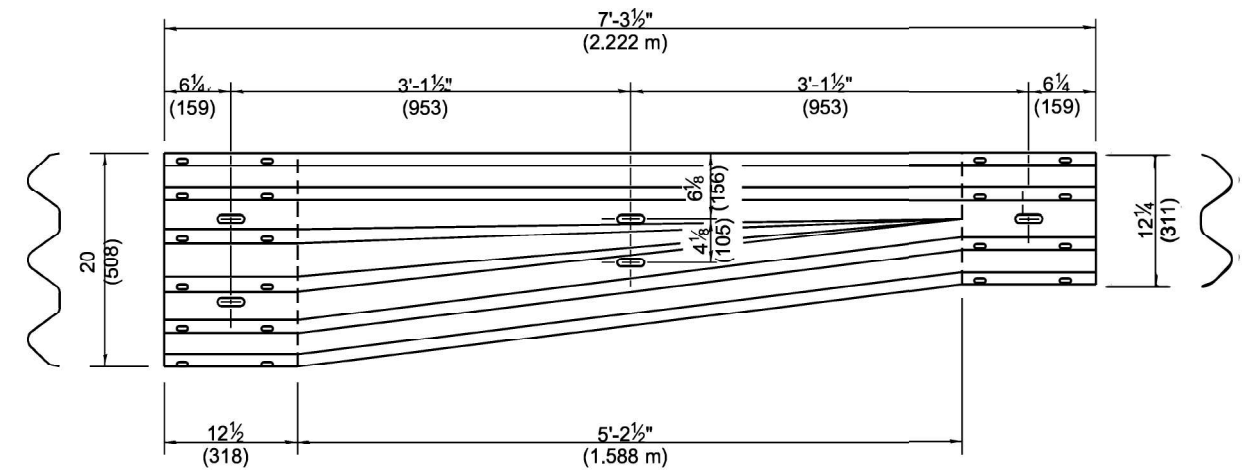
POSTS 7-11 WOOD BLOCKOUT DETAIL



POST 12 WOOD BLOCKOUT DETAIL



THRIE BEAM END SHOE DETAIL



TRANSITION SECTION
(10 gauge (3.4) rail element)

**TRAFFIC BARRIER
TERMINAL, TYPE 6**

(Sheet 3 of 4)

STANDARD 631031-18

Illinois Department of Transportation

APPROVED January 1, 2023
Carroll Dett
ENGINEER OF SAFETY PROG. AND ENGINEERING

APPROVED January 1, 2023
Johnnie
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-23
78-1-17

USER NAME = Marco.Andresen	DESIGNED -	REVISED -
	DRAWN -	REVISED -
	CHECKED -	REVISED -
PLOT DATE = 2/15/2024	DATE -	REVISED -

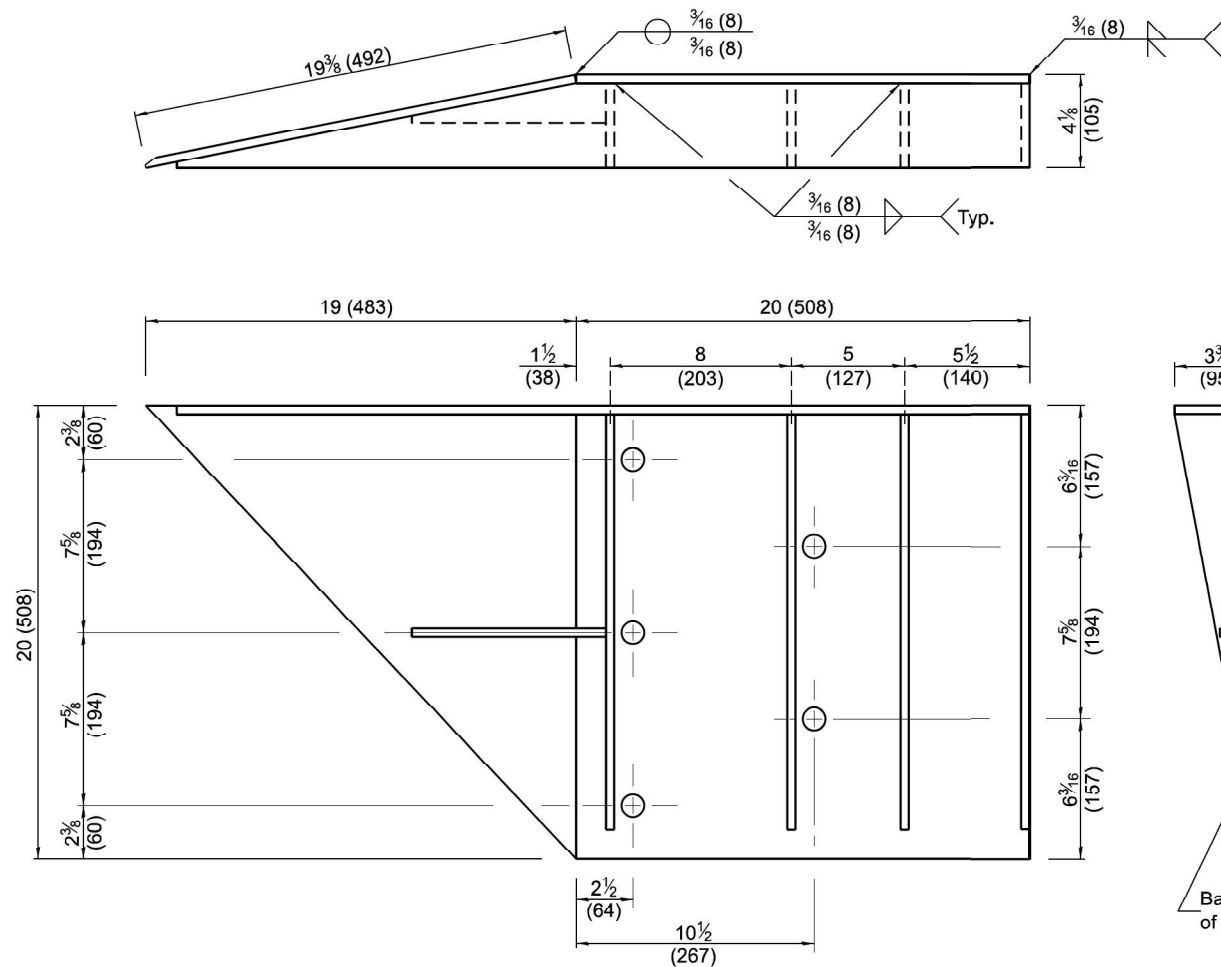
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TRAFFIC BARRIER TERMINAL
TYPE 6 STANDARD**

SCALE: SHEET 14 OF 21 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D9 GUARDRAIL REPAIR FY25-1	VARIOUS	21	14
CONTRACT NO. 78A63			ILLINOIS FED. AID PROJECT	

MODEL: 14-Standards (Sheet)
FILE NAME: c:\p\work\std\illinois.gov\marco.andresen\4098664\1037663-SHIC-SoG.dgn



WELDING INSTRUCTION
(Back side of plate shown)

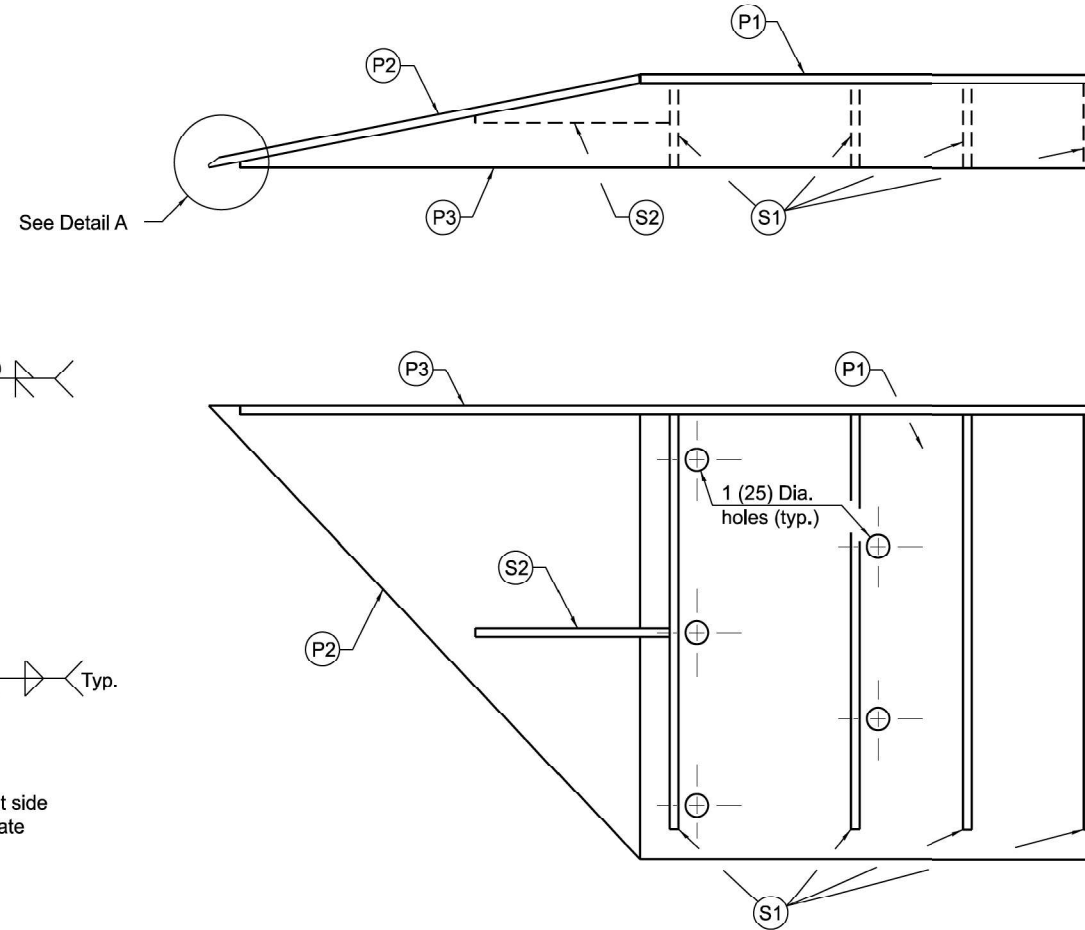
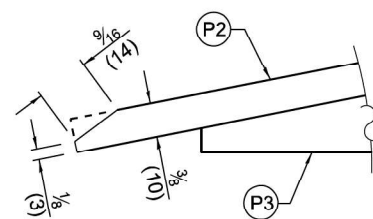


PLATE AND STIFFENER IDENTIFICATION
(Back side of plate shown)



DETAIL A
(Bevel front corner of plate P2
as shown for handling purposes.)

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)				
PLATE	QUANTITY	SHAPE	SIZE A x B x C x D x E	THICKNESS
P1	1		20 x 20 (508 x 508)	3/8 (10)
P2	1		19 3/8 x 20 x 27 13/16 (492 x 508 x 706)	3/8 (10)
P3	1		20 x 3 3/4 x 37 5/8 x 1/4 x 17 15/16 (508 x 95 x 956 x 6 x 456)	3/8 (10)
S1	4		18 5/16 x 1/4 x 18 5/8 x 3 3/4 (465 x 6 x 473 x 95)	3/8 (10)
S2	1		1 5/16 x 1 3/4 x 8 1/16 x 3/8 x 6 7/8 (33 x 44 x 205 x 10 x 175)	3/8 (10)

Illinois Department of Transportation

APPROVED January 1, 2023
Carson Watt
ENGINEER OF SAFETY PROG. AND ENGINEERING

APPROVED January 1, 2023
Jeffrey
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-23

STEEL CONNECTOR PLATE FOR CONSTANT SLOPE PARAPET

**TRAFFIC BARRIER
TERMINAL, TYPE 6**
(Sheet 4 of 4)

STANDARD 631031-18

MODEL: 15-Standards (Sheet)
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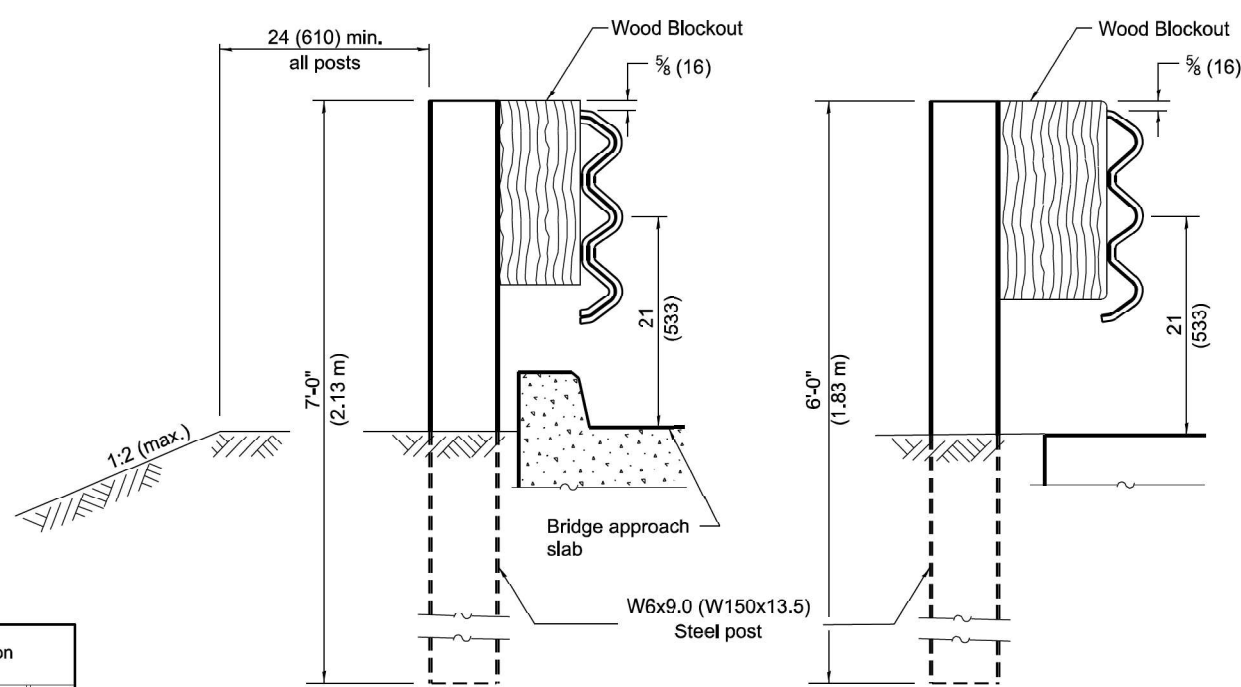
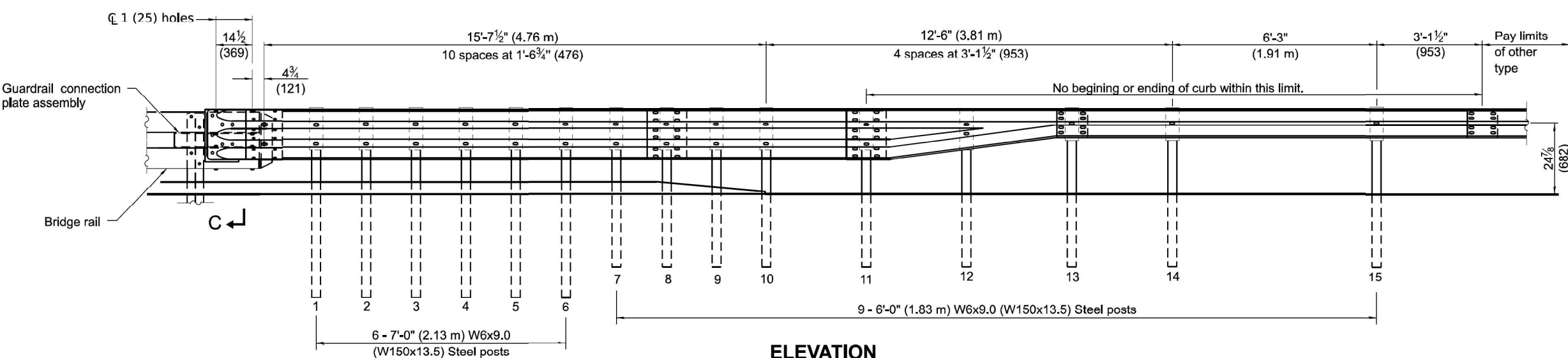
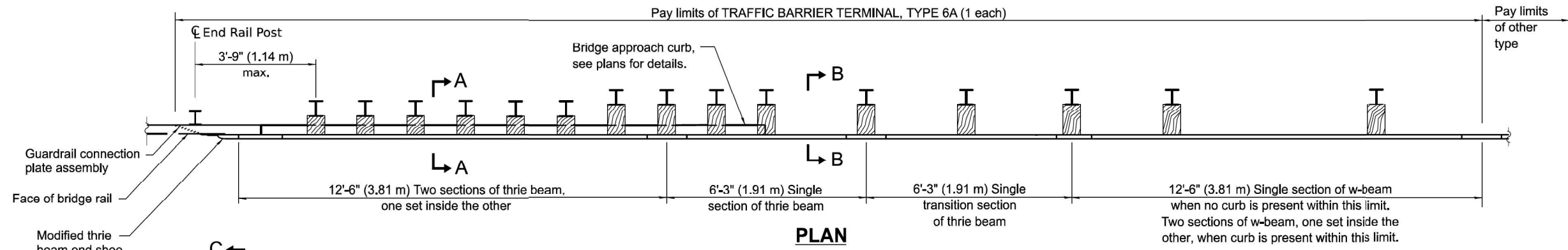
USER NAME = Marco.Andresen	DESIGNED -	REVISED -
	DRAWN -	REVISED -
	CHECKED -	REVISED -
PLOT DATE = 2/15/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC BARRIER TERMINAL
TYPE 6 STANDARD

SCALE: SHEET 15 OF 21 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D9 GUARDRAIL REPAIR FY25-1	VARIOUS	21	15
CONTRACT NO. 78A63				
ILLINOIS FED. AID PROJECT				



GENERAL NOTES

This standard shows attachment to side mounted bridge rail, Type SMX. Side mounted bridge rail, Type SM is similar.

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 inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-23	Updated bridge rail connection to match the new Type SMX. Revised post spacing, blockouts, and details to match other TBTs.
1-1-17	Revised length of thrie beam. Revised length of posts.

TRAFFIC BARRIER TERMINAL, TYPE 6A

(Sheet 1 of 3)

STANDARD 631032-10

Illinois Department of Transportation

APPROVED January 1, 2023

 ENGINEER OF SAFETY PROG. AND ENGINEERING

ISSUED 1-1-23

APPROVED January 1, 2023

 ENGINEER OF DESIGN AND ENVIRONMENT

USER NAME = Marco.Andresen	DESIGNED -	REVISED -
	DRAWN -	REVISED -
	CHECKED -	REVISED -
PLOT DATE = 2/15/2024	DATE -	REVISED -

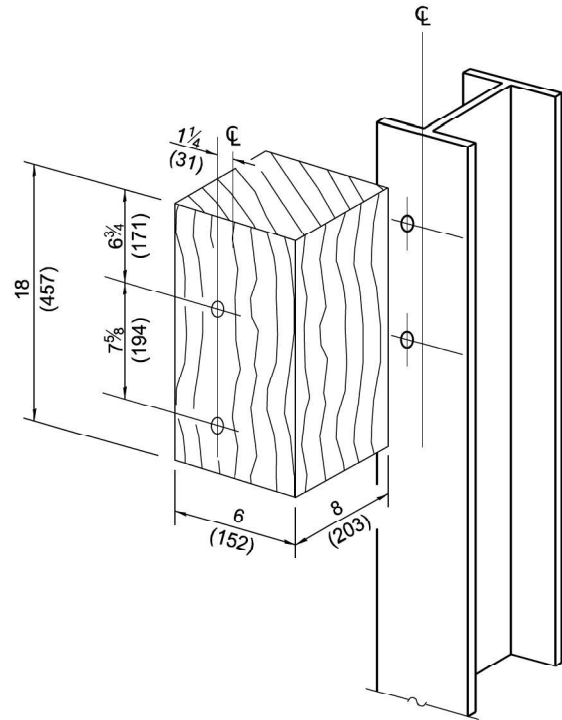
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC BARRIER TERMINAL
TYPE 6A STANDARD

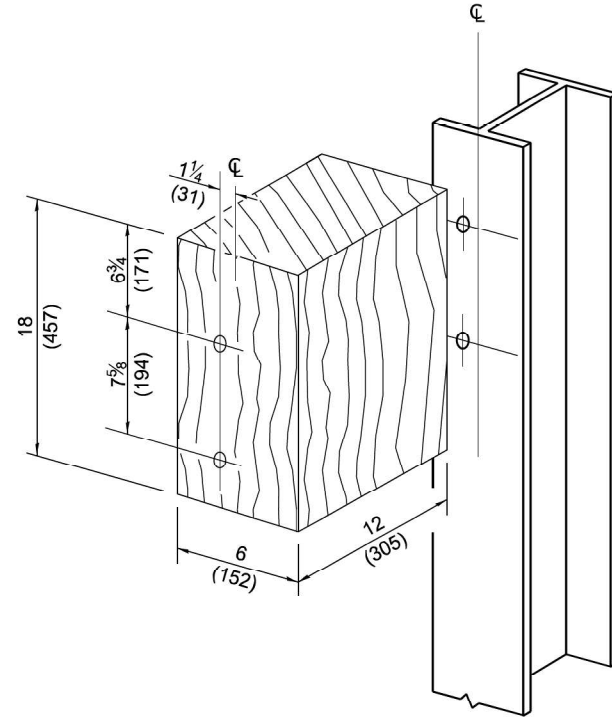
SCALE: SHEET 16 OF 21 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D9 GUARDRAIL REPAIR FY25-1	VARIOUS	21	16
			CONTRACT NO. 78A63	
ILLINOIS FED. AID PROJECT				

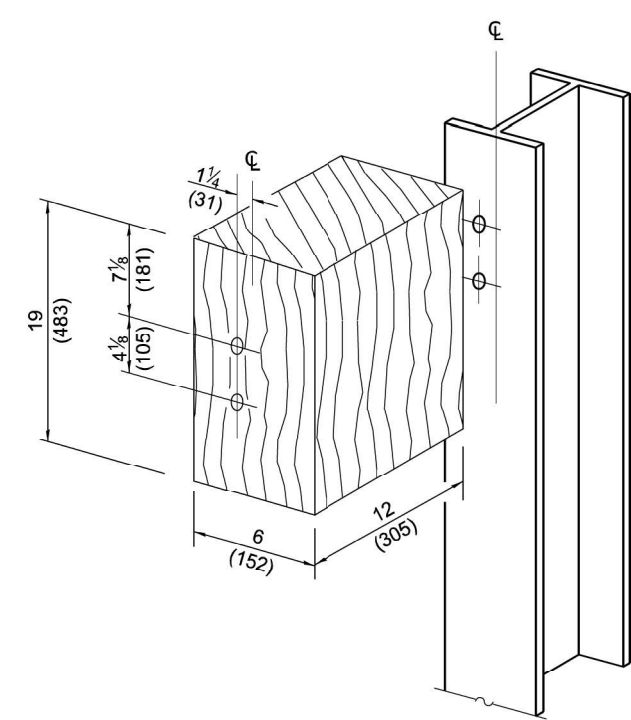
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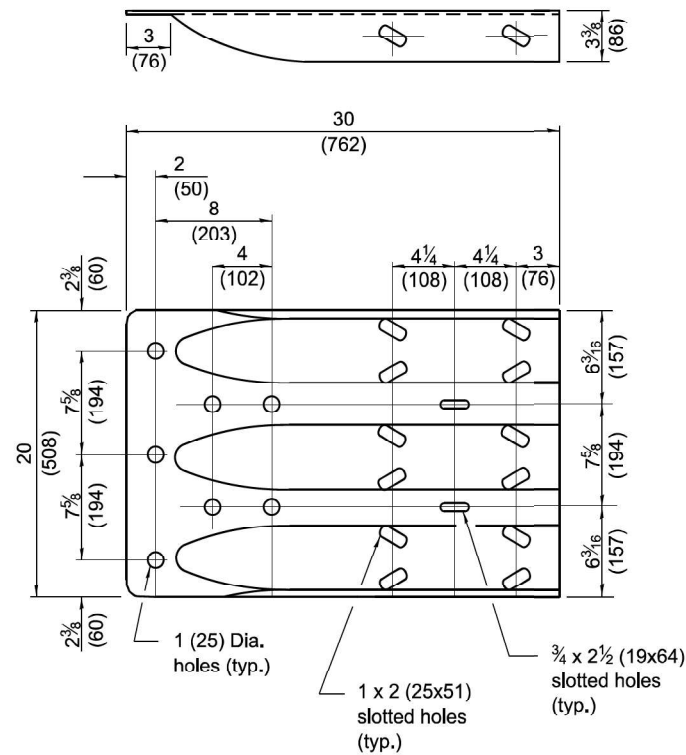
POSTS 1-6 WOOD BLOCKOUT DETAIL



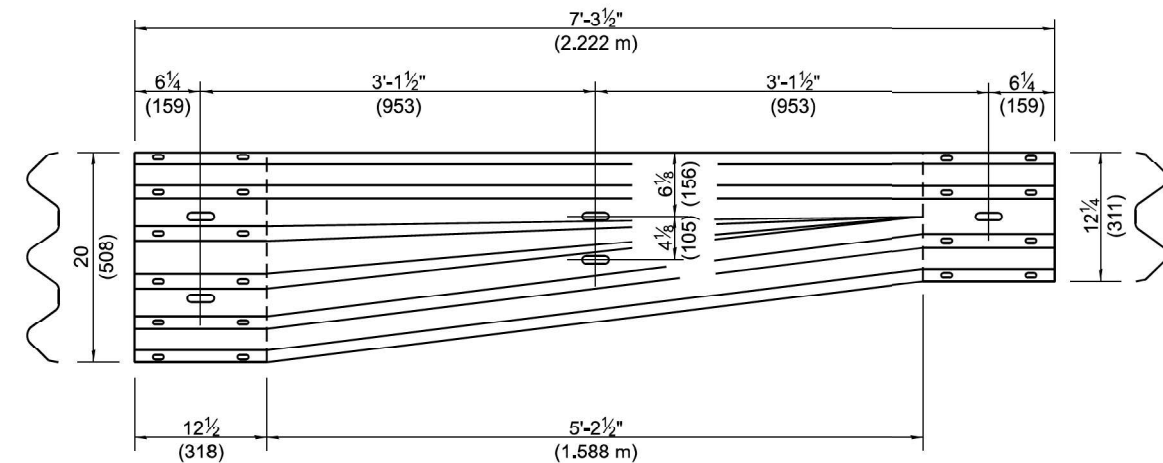
POSTS 7-11 WOOD BLOCKOUT DETAIL



POST 12 WOOD BLOCKOUT DETAIL



MODIFIED THRIE BEAM END SHOE DETAIL



TRANSITION SECTION
(10 gauge (3.4) rail element)

**TRAFFIC BARRIER
TERMINAL, TYPE 6A**

(Sheet 2 of 3)

STANDARD 631032-10

Illinois Department of Transportation

APPROVED January 1, 2023
Cynthia Abbott
 ENGINEER OF SAFETY PROG. AND ENGINEERING

APPROVED January 1, 2023
Scott Cole
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-23

USER NAME = Marco.Andresen	DESIGNED -	REVISED -
	DRAWN -	REVISED -
	CHECKED -	REVISED -
PLOT DATE = 2/15/2024	DATE -	REVISED -

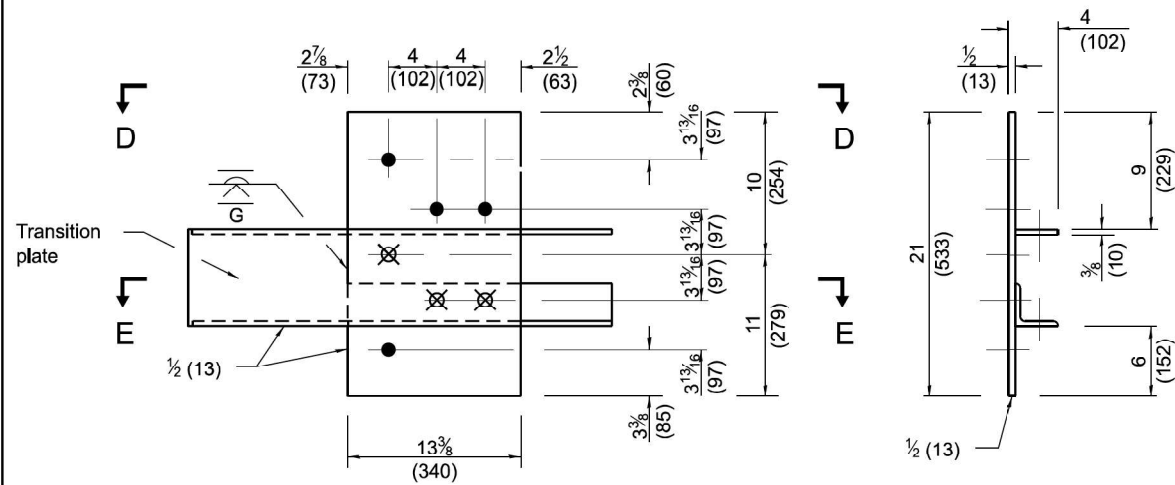
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TRAFFIC BARRIER TERMINAL
TYPE 6A STANDARD**

SCALE: SHEET 17 OF 21 SHEETS STA. TO STA.

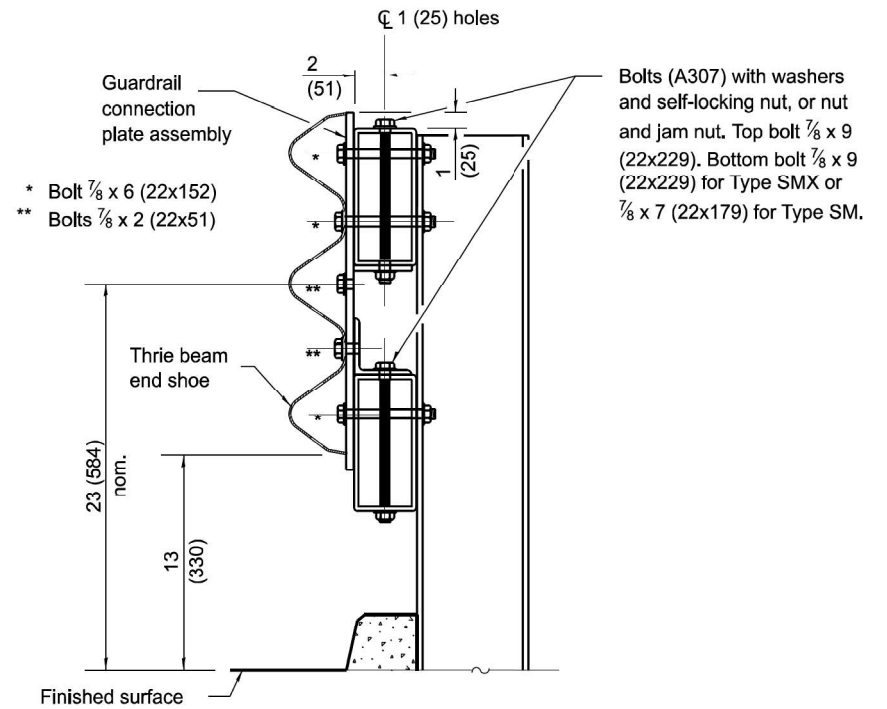
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D9 GUARDRAIL REPAIR FY25-1	VARIOUS	21	17
			CONTRACT NO. 78A63	
ILLINOIS FED. AID PROJECT				

MODEL: 17-Standards (Sheet)
 FILE NAME: c:\p\work\std\illinois.gov_marco.andresen@illinois.gov\098664\107663-SHTC-SoO.dgn



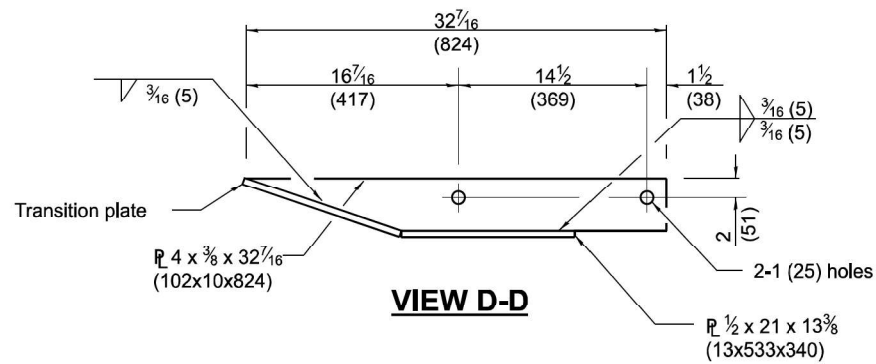
GUARDRAIL CONNECTION PLATE ASSEMBLY DETAILS
(Mirror for opposite end)

- LEGEND**
- 1 (25) dia. hole for 7/8 (22) dia. H.S. bolt with washer and nut.
 - ⊗ Drill and tap hole for 7/8 (22) dia. H.S. bolt.

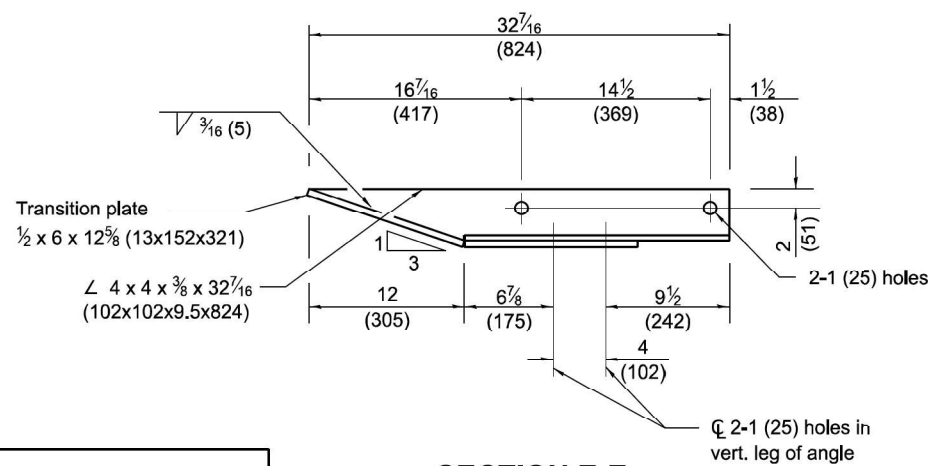


SECTION C-C

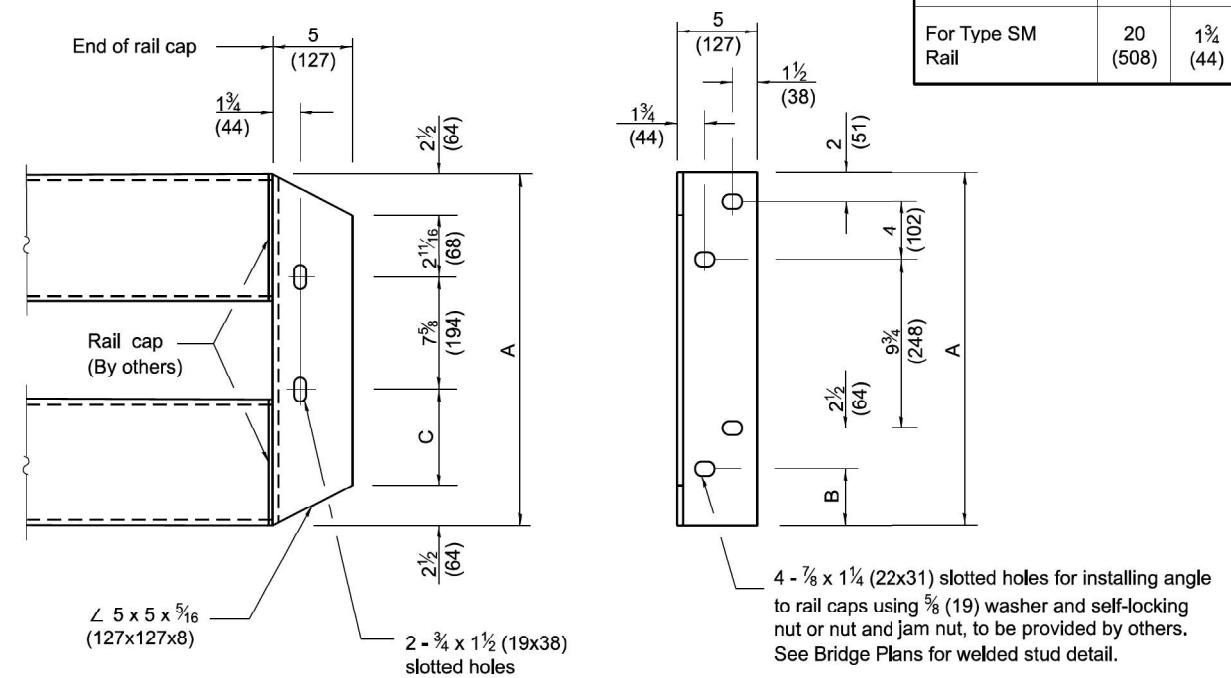
Dimensions	A	B	C
For Type SMX Rail	22 (560)	3 3/4 (95)	6 1/16 (170)
For Type SM Rail	20 (508)	1 3/4 (44)	4 1/16 (119)



VIEW D-D



SECTION E-E



TRANSITION ANGLE
(Mirror for opposite end.)

TRAFFIC BARRIER TERMINAL, TYPE 6A

(Sheet 3 of 3)

STANDARD 631032-10

Illinois Department of Transportation

APPROVED January 1, 2023

 ENGINEER OF SAFETY PROG. AND ENGINEERING

APPROVED January 1, 2023

 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-23

USER NAME = MarcoAndresen	DESIGNED -	REVISED -
	DRAWN -	REVISED -
	CHECKED -	REVISED -
PLOT DATE = 2/15/2024	DATE -	REVISED -

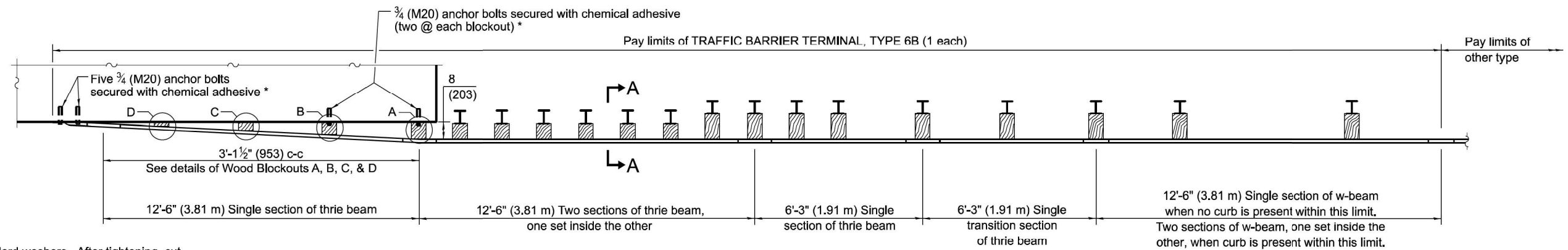
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

TRAFFIC BARRIER TERMINAL TYPE 6A STANDARD

SCALE: SHEET 18 OF 21 SHEETS STA. TO STA.

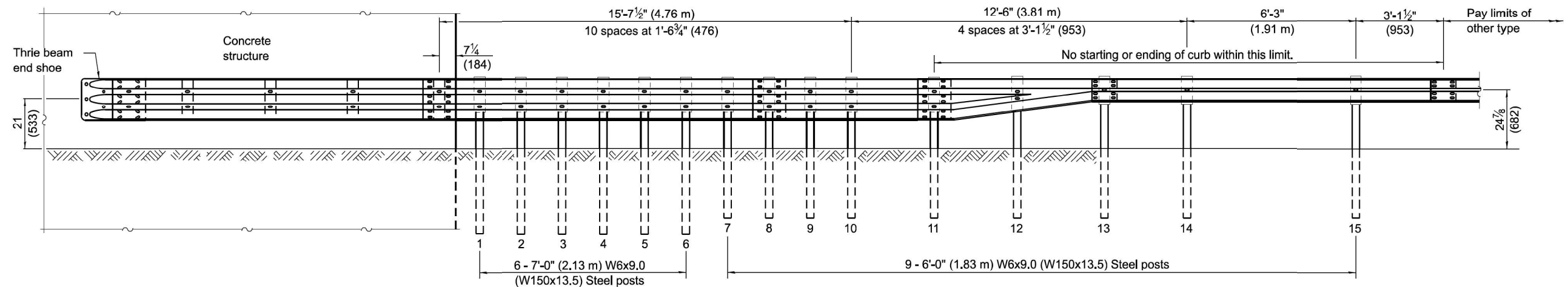
F.A.* RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D9 GUARDRAIL REPAIR FY25-1	VARIOUS	21	18
CONTRACT NO. 78A63			ILLINOIS FED. AID PROJECT	

MODEL: 18-Standards (Sheet)
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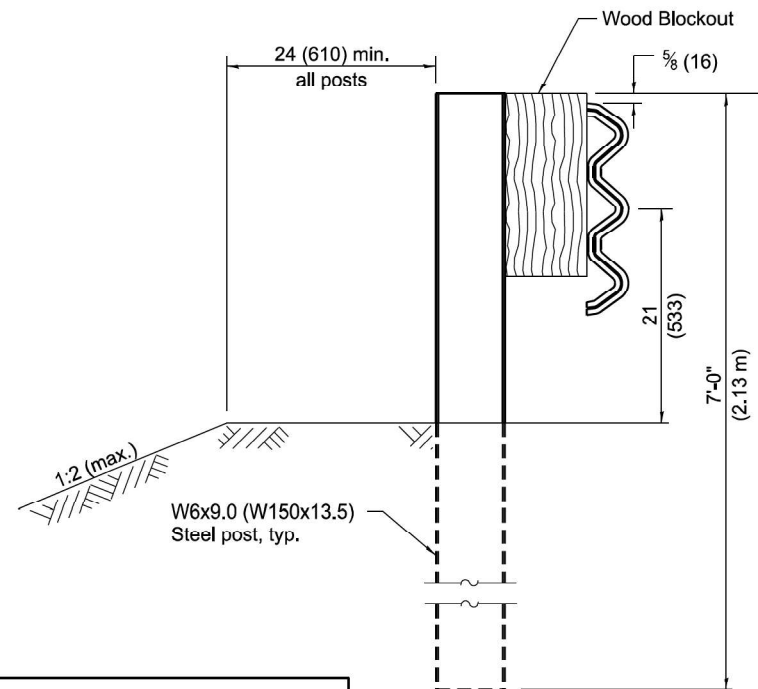


* With standard washers. After tightening, cut the anchor bolts flush with the nuts and damage the nuts to prevent them from loosening.

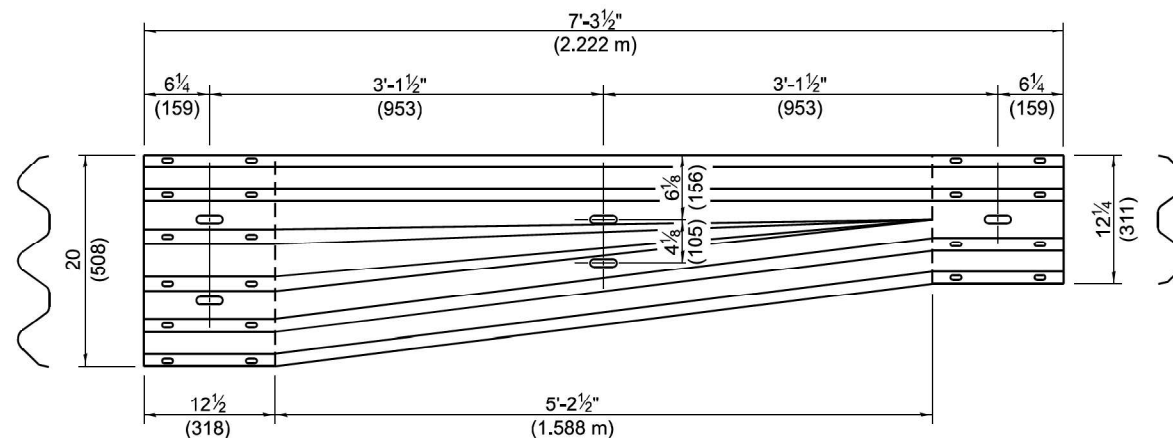
PLAN



ELEVATION



SECTION A-A



TRANSITION SECTION
(10 gauge (3.4) rail element)

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 inches (millimeters) unless otherwise shown.

Illinois Department of Transportation

APPROVED January 1, 2023

 ENGINEER OF SAFETY PROG. AND ENGINEERING

APPROVED January 1, 2023

 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-23

TRAFFIC BARRIER TERMINAL, TYPE 6B

(Sheet 1 of 2)

STANDARD 631033-09

DATE	REVISIONS
1-1-23	Removed two posts and revised blockouts to be consistent with other TBTs.
1-1-20	Added two posts and revised length of posts.

USER NAME	DESIGNED	REVISIONS
Marco Andresen	-	-
	DRAWN -	REVISIED -
	CHECKED -	REVISIED -
	DATE -	REVISIED -

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

TRAFFIC BARRIER TERMINAL TYPE 6B STANDARD

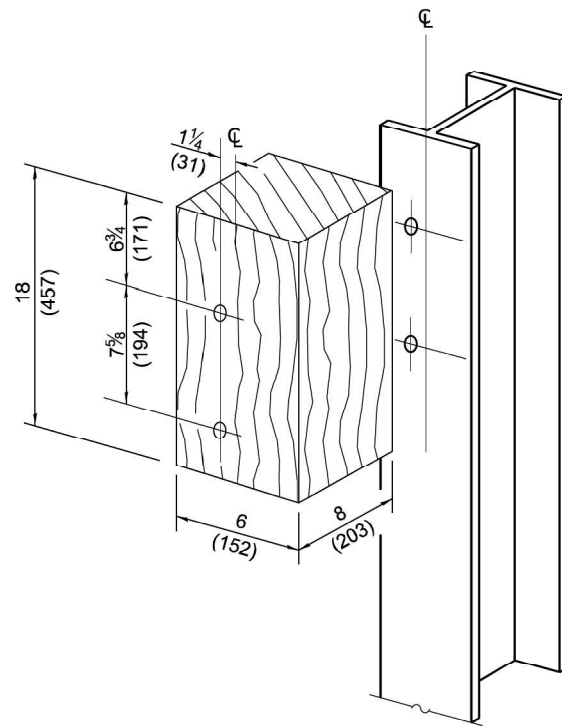
SCALE: SHEET 19 OF 21 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D9 GUARDRAIL REPAIR FY25-1	VARIOUS	21	19

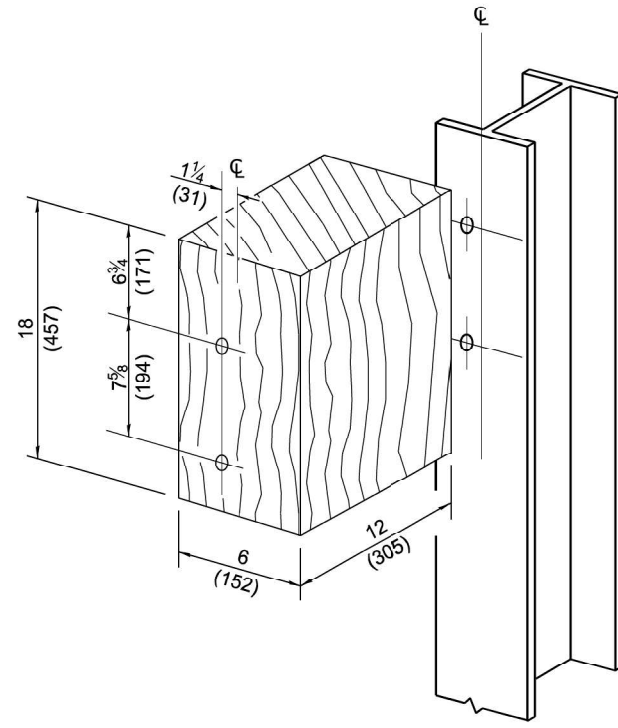
CONTRACT NO. 78A63

ILLINOIS FED. AID PROJECT

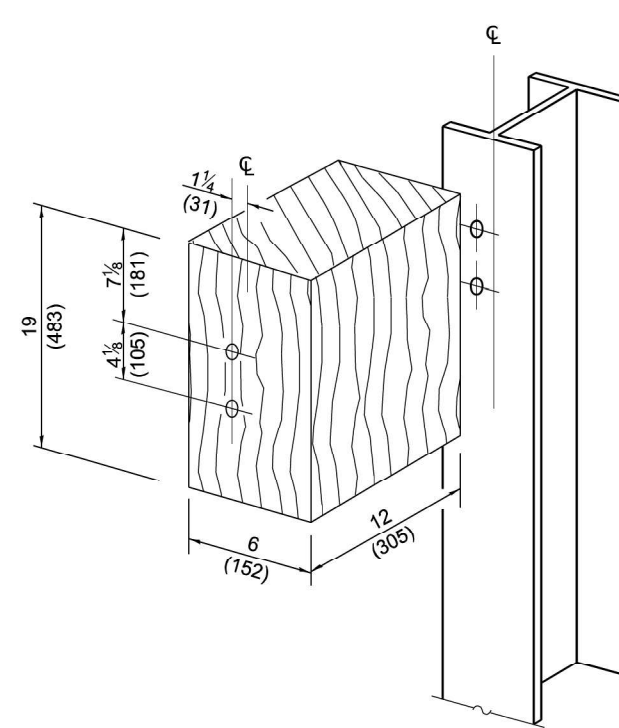
MODEL: 19-Standards (Sheet)
 FILE NAME: c:\p\work\std\illinois.gov\40969664\1976A63-SHTC-SoO.dgn



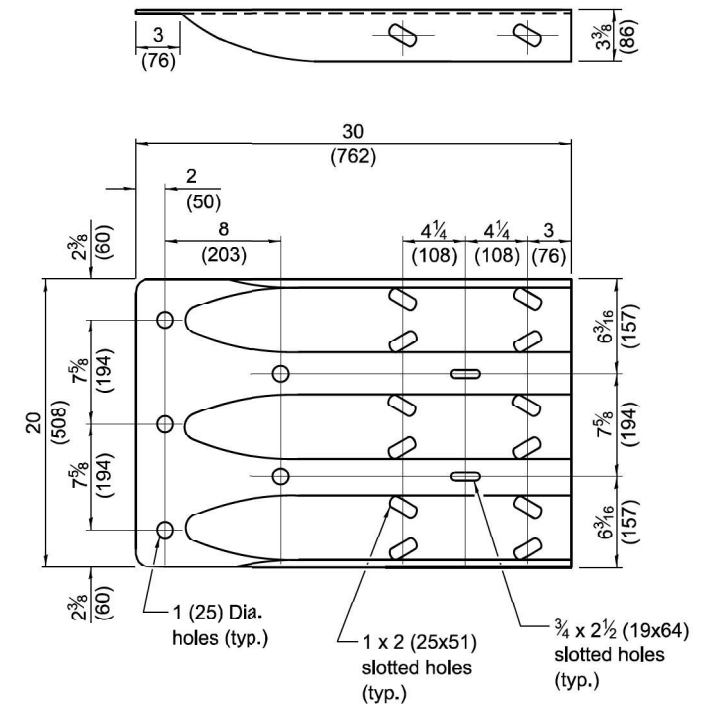
POSTS 1-6 WOOD BLOCKOUT DETAIL



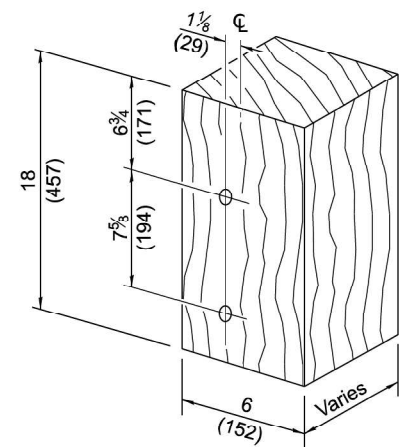
POSTS 7-11 WOOD BLOCKOUT DETAIL



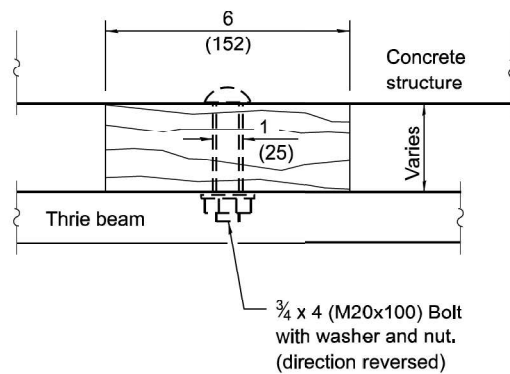
POSTS 12 WOOD BLOCKOUT DETAIL



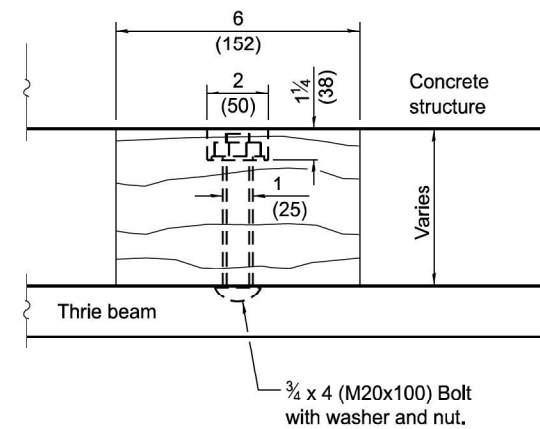
THRIE BEAM END SHOE DETAIL



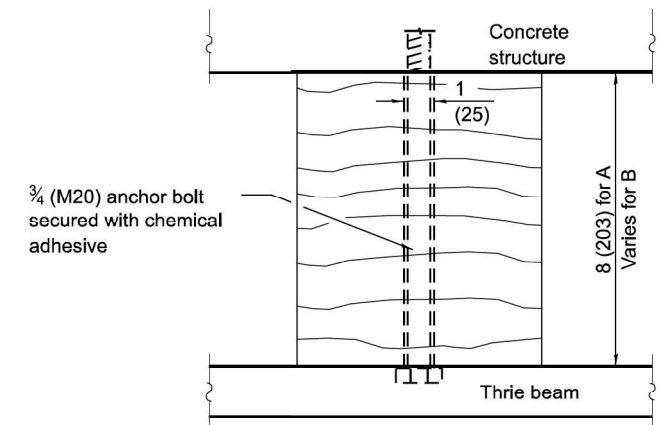
**MODIFIED THICKNESS DETAIL
WOOD BLOCKOUTS A, B, C, & D**



WOOD BLOCKOUT D



WOOD BLOCKOUT C



WOOD BLOCKOUT A & B

**TRAFFIC BARRIER
TERMINAL, TYPE 6B**

(Sheet 2 of 2)

STANDARD 631033-09

Illinois Department of Transportation

APPROVED January 1, 2023
Marco Andresen
ENGINEER OF SAFETY PROG. AND ENGINEERING

APPROVED January 1, 2023
Scott Che
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-23

USER NAME = Marco Andresen	DESIGNED -	REVISED -
	DRAWN -	REVISED -
	CHECKED -	REVISED -
PLOT DATE = 2/15/2024	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TRAFFIC BARRIER TERMINAL
TYPE 6B STANDARD**

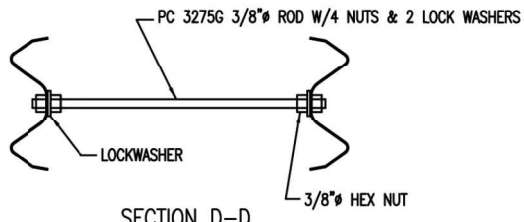
SCALE: SHEET 20 OF 21 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D9 GUARDRAIL REPAIR FY25-1	VARIOUS	21	20
CONTRACT NO. 78A63				
ILLINOIS FED. AID PROJECT				

MODEL: 20_Standards (Sheet)
FILE NAME: c:\p\work\std\illinois.gov\4098664\10376A63-SHTC-SoQ.dgn

C-A-T BILL OF MATERIAL		
PRODUCT CODE	QTY	DESCRIPTION
31G	2	12/12/6/0 CAT (GUARDRAIL)
130A	2	10/12/6/5/10:6/8/SP CAT (GUARDRAIL)
705G	1	2" x 5 1/2" PIPE
740G	6	4" TUBE SLEEVE
769G	6	1/4 x 18 x 24 SOIL PLATE
782G	1	5/8" x 8" x 8" BEARING PLATE
983G	1	10/NOSE PLATE/CAT/ROLLED
984G	2	10/SIDE PLATE CAT
3012G	1	CABLE 3/4 x 8'0/DBL SWG
3074B	5	WD 3'6 POST #2, 3, 4, 5, 6 CAT
3075B	1	WD 3'6 POST #1 CAT
3100B	2	WD BLOCK 1'2 #1 CAT
3101B	10	WD BLOCK 1'2 #2-6 CAT
3255G	4	3/8" FLAT WASHER
3263G	4	3/8" x 2" LAG SCREW
3275G	2	3/8" x 24 1/2" RESTRAINT ROD
3300G	20	5/8" FLAT WASHER
3320G	4	3/16" x 1 3/4" x 3" RECT WASHER
3340G	85	5/8" G.R. NUT
3360G	16	5/8" x 1 1/4" G.R. BOLT
3380G	8	5/8" x 1 1/2" HEX BOLT
3395G	32	5/8" x 1 3/4" HEX BOLT CAT
3478G	13	5/8" x 7 1/2" HEX BOLT
3497G	6	5/8" x 9 1/2" HEX BOLT
3650G	2	5/8" x 25" G.R. BOLT
3900G	2	1" FLAT WASHER
3910G	4	1" HEX NUT
4252G	8	3/8" HEX NUT
4258G	4	3/8" LOCK WASHER
4640G	8	5/8" x 24" HEX BOLT
9852A	1	CHANNEL STRUT x 6'-6"
9915A	1	SPACER CHANNEL CAT
9916A	1	10/BENT PLATE SLEEVE
9921G	2	6" SLEEVE 6 x 8
19259G	32	3/16" x 2" x 10" PLATE WASHER
19261G	2	1/2 x 3 x 7 POST PLATE
19271G	1	1" x 2 1/2" PIPE SLEEVE CAT

NOTE: FINAL STAGE AND BACKUP MAY BE VARIED DEPENDING UPON EXISTING RAILING SYSTEM OR WHEN USED AS A CRASH CUSHION ATTENUATOR



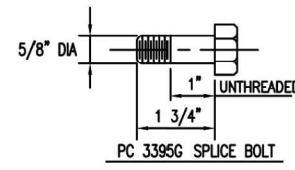
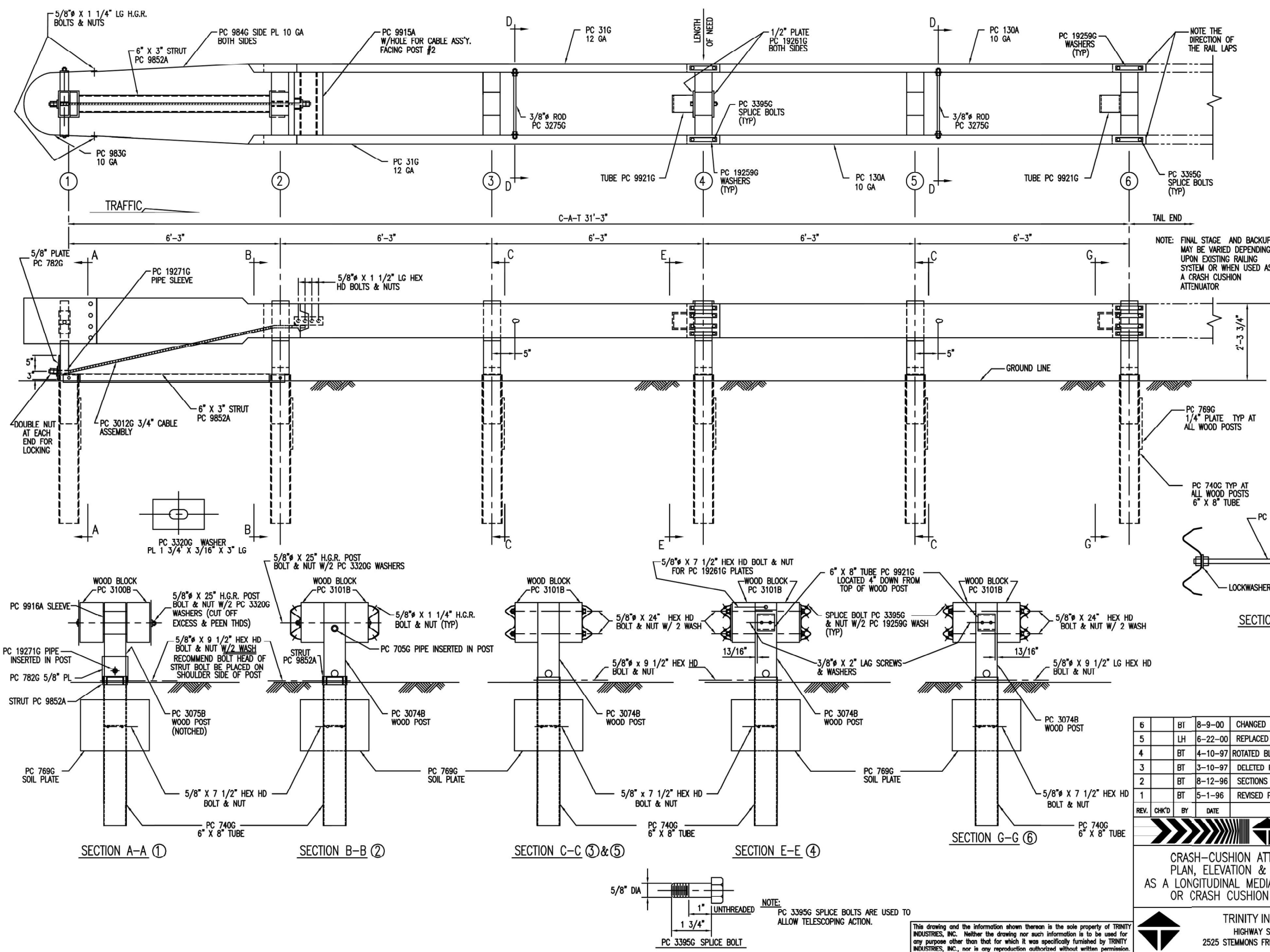
REV.	CHK'D	BY	DATE	REMARKS
6	BT		8-9-00	CHANGED SYSTEM HEIGHT, WAS 2'-3"
5	LH		6-22-00	REPLACED PC 766 WITH PC 769, CHANGED TITLE BLOCK
4	BT		4-10-97	ROTATED BLOCK PC 9921 90° AT POST 4 & 6
3	BT		3-10-97	DELETED PC 3072, 3073, 4470, CHG QTY 3074 & 3478
2	BT		8-12-96	SECTIONS A-A & B-B, CORRECTED PIPE SLEEVE PC No
1	BT		5-1-96	REVISED PC No 31G & 130A

C-A-T

CRASH-CUSHION ATTENUATING TERMINAL PLAN, ELEVATION & SECTIONS FOR USE AS A LONGITUDINAL MEDIAN BARRIER TERMINAL OR CRASH CUSHION ATTENUATOR

TRINITY INDUSTRIES, INC.
HIGHWAY SAFETY PRODUCTS
2525 STEMMONS FREEWAY, DALLAS, TX 75207

DRAWN	BT
CHECKED	EN
SCALE	N.T.S.
DATE	7-15-94
ENG. FILE #	SS245-01E
SHT. NO.	E1 OF 1
DRAWING NO.	SS-245
REV.	6



NOTE: PC 3395G SPLICE BOLTS ARE USED TO ALLOW TELESCOPING ACTION.

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MODEL: 21-Standard (Sheet) FILE NAME: c:\p\work\illinois\gov\4098664\10976A63-SH-C-SoCo.dgn

USER NAME	= marco.andresen	DESIGNED	-	REVISED	-
		DRAWN	-	REVISED	-
		CHECKED	-	REVISED	-
PLOT DATE	= 3/4/2024	DATE	-	REVISED	-

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**CRASH-CUSHION ATTENUATING TERMINAL
(C-A-T)**

SCALE: SHEET 21 OF 21 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	D9 GUARDRAIL REPAIR FY25-1	VARIOUS	21	21
CONTRACT NO. 78A63				
ILLINOIS FED. AID PROJECT				