

DESIGN SPEED (MPH)	SHY-LINE OFFSET (FT)
80	12
70	9
60	8
55	7
50	6.5
45	6
40	5
30	4

APPLICATION	POST SPACING	DEFLECTION DISTANCE
NORMAL SPACING	6'-3"	44"
1/2 SPACING	3'-1/2"	29"
1/4 SPACING	1'-6 3/4"	18"
STEEP SLOPE	6'-3"	66"
LONG SPAN	≤ 25'	96"

ORIGINAL STORED AT: ITD, Headquarters 3311 West State Boise, Idaho

ORIGINAL SIGNED BY: RYAN D. LANCASTER
DATE ORIGINAL SIGNED: AUGUST 22, 2018

NO.	DATE	BY	NO.	DATE	BY	NO.	DATE	BY
1	08-18	RDL						

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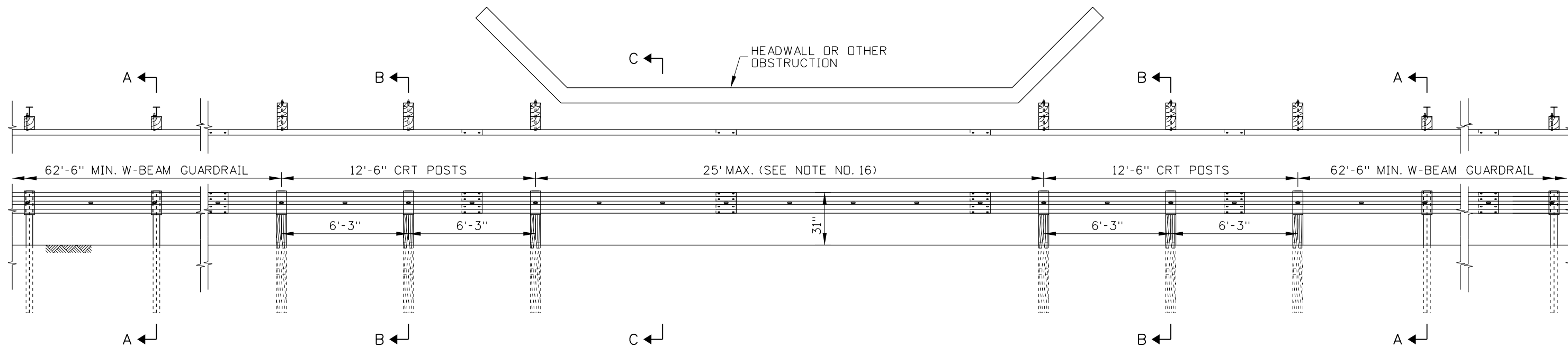
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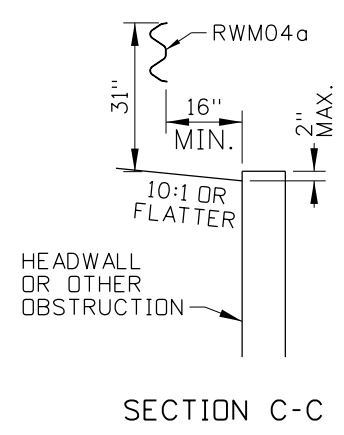
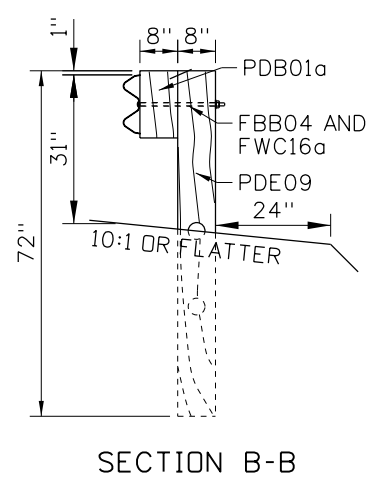
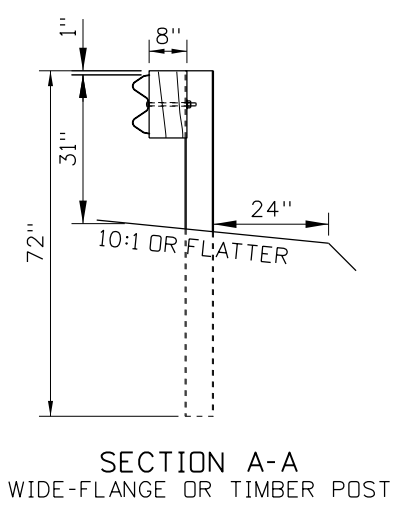
ORIGINAL SIGNED BY: KEVIN SABLAN
DESIGN/TRAFFIC SERVICES ENGINEER

STANDARD DRAWING
31" W-BEAM GUARDRAIL
REQUIRES SHEETS 2 OF 4, 3 OF 4, & 4 OF 4

English
STANDARD DRAWING NO.
612-1
SHEET 1 OF 4



31" LONG-SPAN APPLICATION
SEE NOTE NOS. 16 & 17



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Boise, Idaho

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RYAN D. LANCASTER
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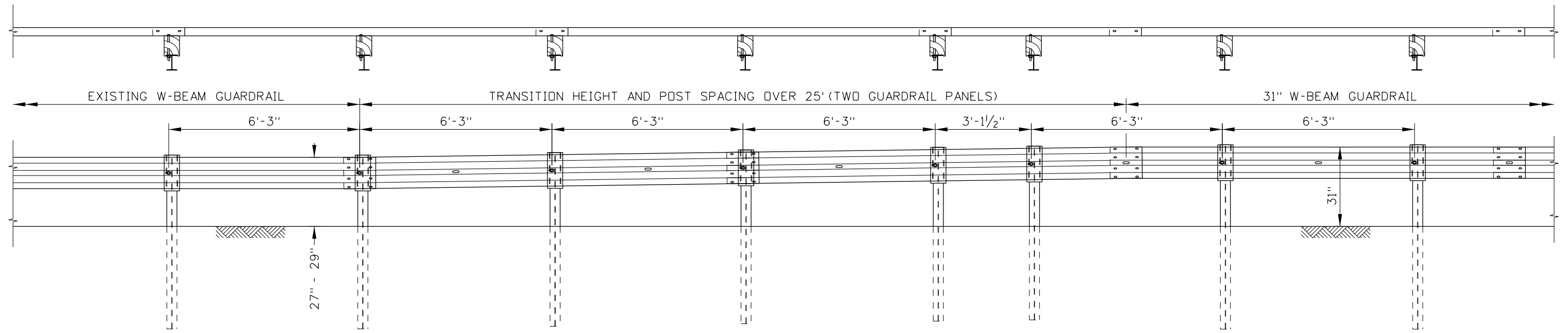
31" W-BEAM GUARDRAIL

REQUIRES SHEETS 1 OF 4, 3 OF 4, & 4 OF 4

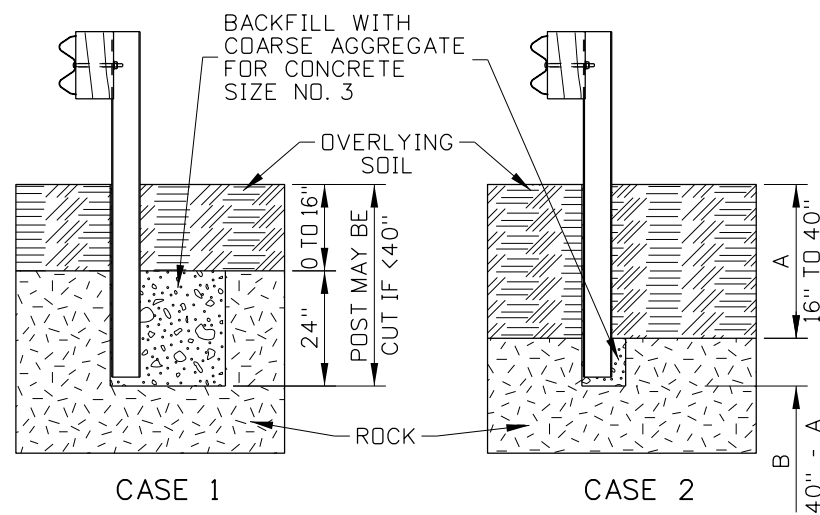
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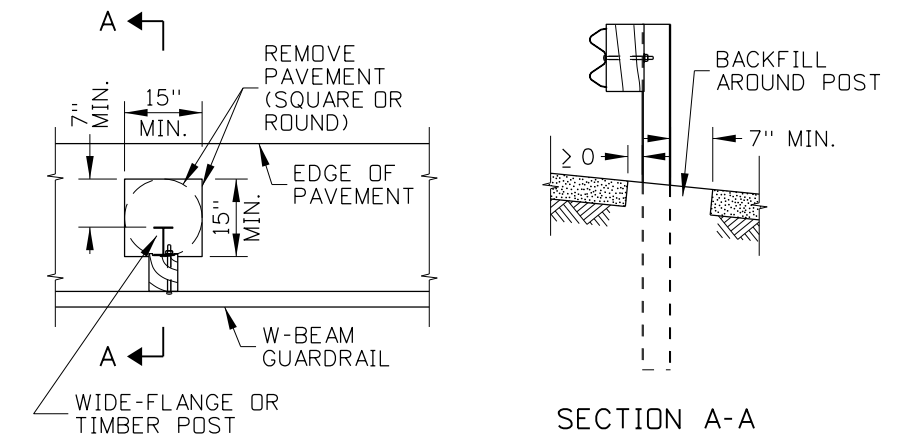
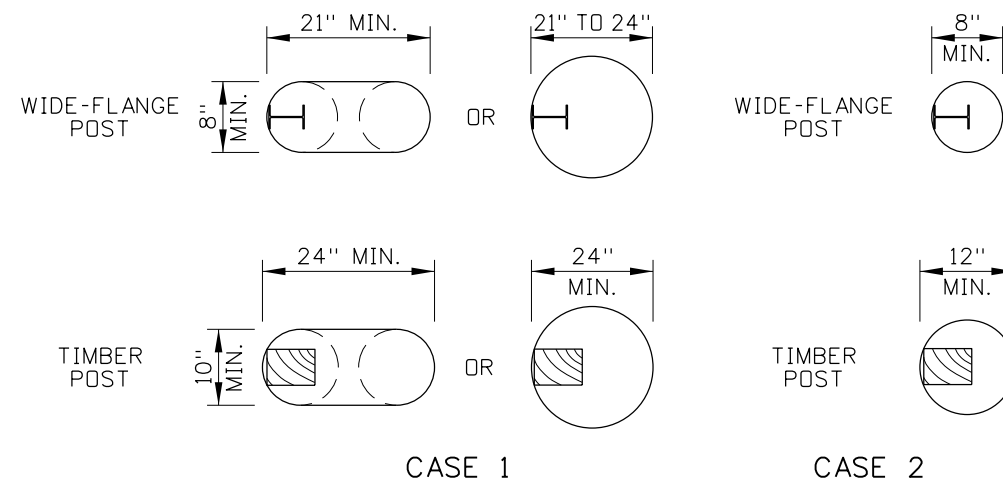
SHEET 2 OF 4



TRANSITION TO 31" W-BEAM GUARDRAIL
SEE NOTE NO. 18



GUARDRAIL POST IN ROCK FORMATION
SEE NOTE NO. 9



GUARDRAIL POST IN PAVEMENT
SEE NOTE NO. 9

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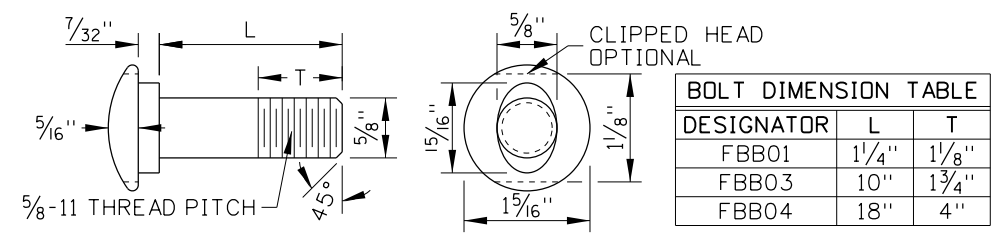
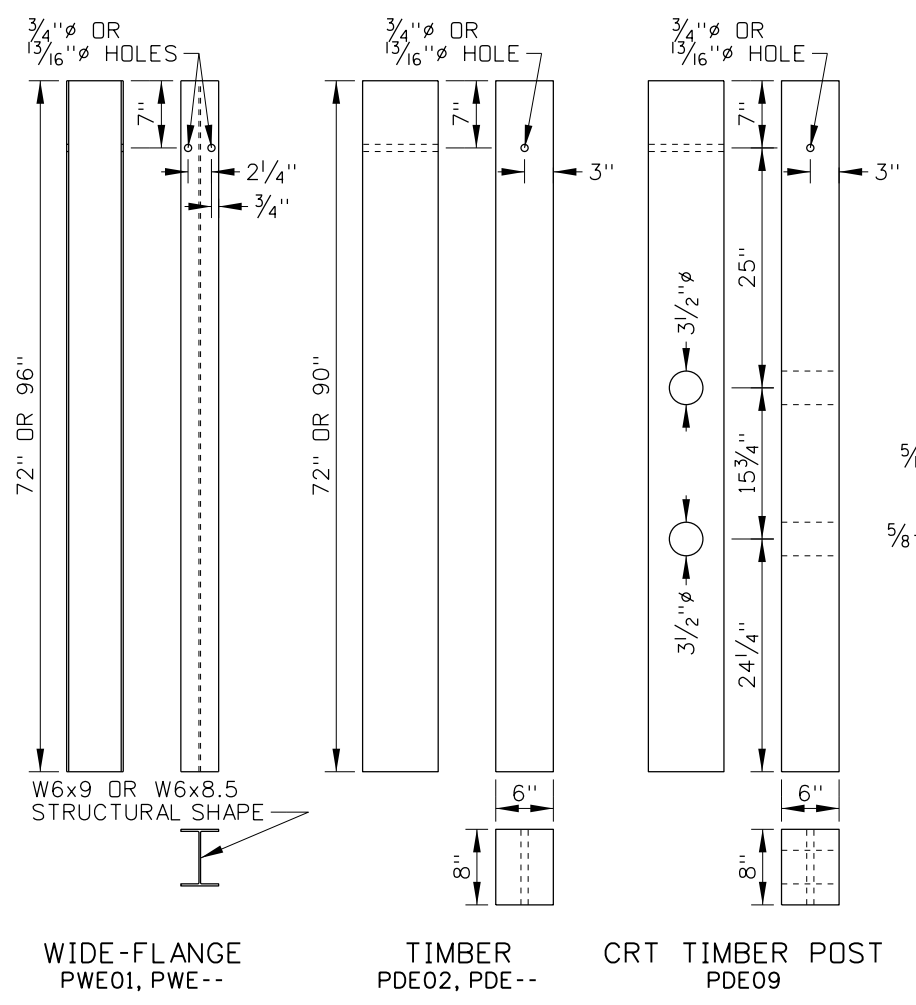
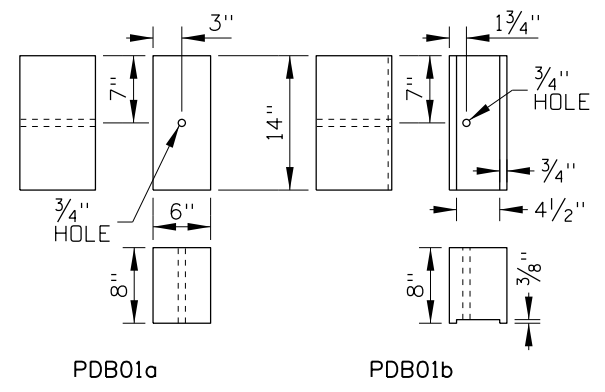
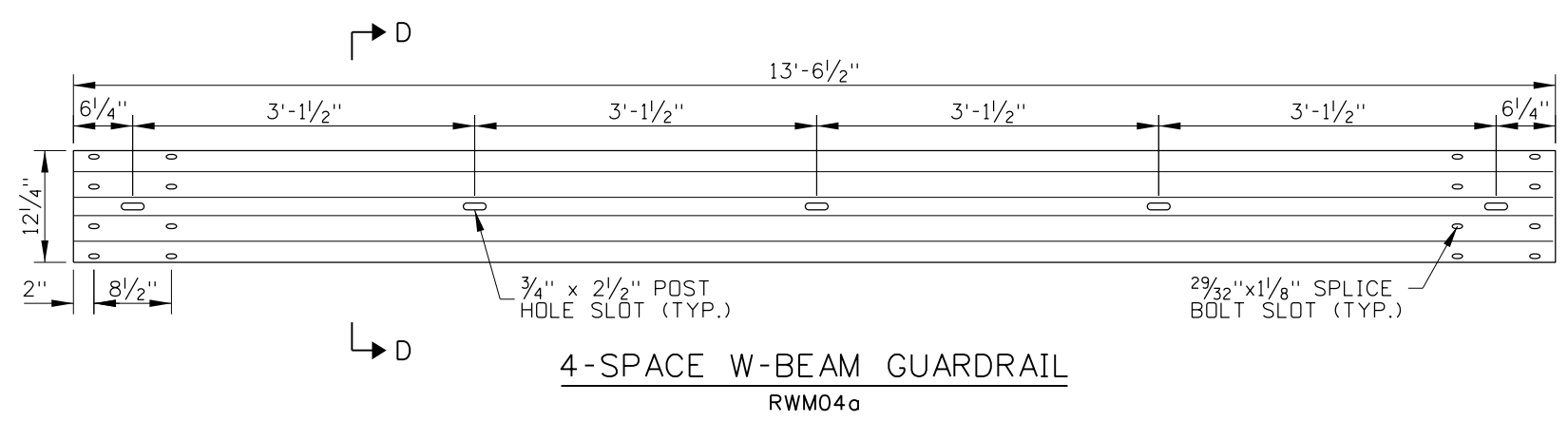
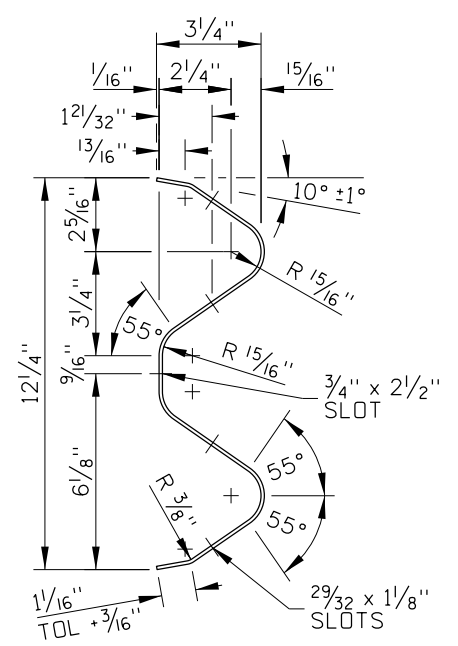
STANDARD DRAWING
31" W-BEAM GUARDRAIL
REQUIRES SHEETS 1 OF 4, 2 OF 4, & 4 OF 4

English
STANDARD DRAWING NO.
612-1
SHEET 3 OF 4

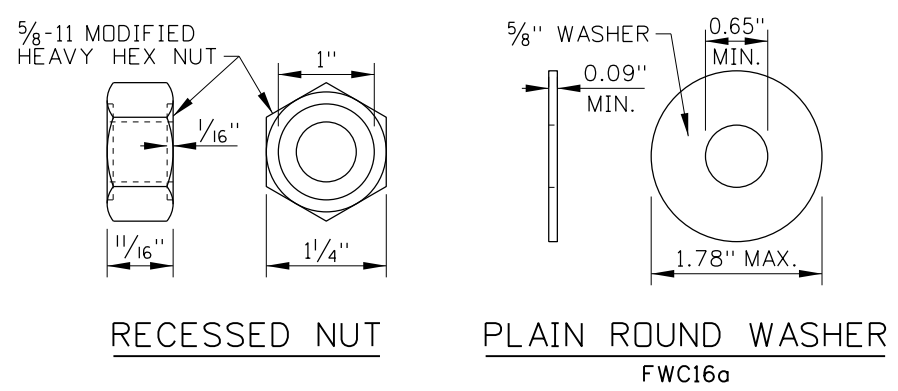
31" W-BEAM GUARDRAIL HARDWARE COMPONENTS TABLE		
COMPONENT DESCRIPTION	WIDE-FLANGE POST	TIMBER POST
4-SPACE W-BEAM GUARDRAIL	RWM04a	RWM04a
WIDE-FLANGE GUARDRAIL POSTS	PWE01, PWE--	-
TIMBER GUARDRAIL POSTS	-	PDE02, PDE--
CRT TIMBER GUARDRAIL POST	-	PDE09
W-BEAM BLOCKOUT	PDB01b OR POLYETHYLENE	PDB01a
5/8" GUARDRAIL SPLICE BOLT AND RECESSED NUT	FBB01	FBB01
5/8" GUARDRAIL BOLT AND RECESSED NUT	FBB03	FBB04
5/8" PLAIN ROUND WASHER	FWC16a	FWC16a
16D GALVANIZED NAIL	-	N/A

NOTES

1. THE 31" W-BEAM GUARDRAIL SYSTEM SHOWN IS A MASH TEST LEVEL 3 BARRIER SYSTEM.
2. PROVIDE BARRIER HARDWARE AS SHOWN AND AS SPECIFIED IN THE PUBLICATION "A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE." WHERE THE GUIDE AND PLANS CONFLICT, PROVIDE HARDWARE COMPONENTS AS SHOWN ON THE PLANS.
3. INSTALL GUARDRAIL AS SHOWN IN THE NORMAL APPLICATION UNLESS OTHERWISE SHOWN ON THE PROJECT PLANS. THE CURB APPLICATIONS CAN BE USED WITH ANY OF THE CURB AND GUTTER OR CURB TYPES SHOWN ON THE CURB AND GUTTER STANDARD DRAWING.
4. PLACE 31" W-BEAM GUARDRAIL AS FAR FROM THE TRAVELED WAY AS PRACTICAL. WHERE PRACTICAL PROVIDE THE SHY-LINE OFFSET DISTANCE SHOWN IN THE SHY-LINE OFFSET TABLE.
5. WHERE PRACTICAL, FLARE THE 31" W-BEAM GUARDRAIL AWAY FROM THE TRAVELED WAY WHEN THE GUARDRAIL IS TO BE PLACED CLOSER THAN THE SHY-LINE OFFSET DISTANCE OR TO SHORTEN THE LENGTH OF NEED. FLARE THE GUARDRAIL AT A 15:1 RATE WITHIN THE SHY-LINE OFFSET. FLARE THE GUARDRAIL AT A 5:1 OR FLATTER RATE OUTSIDE THE SHY-LINE OFFSET.
6. PROVIDE ADEQUATE DEFLECTION DISTANCE TO OBSTRUCTIONS BEHIND THE GUARDRAIL. SEE THE DEFLECTION DETAIL AND TABLE.
7. NORMAL POST SPACING IS 6'-3". POST SPACING MAY BE DECREASED TO REDUCE GUARDRAIL DEFLECTION DISTANCES. GUARDRAIL DEFLECTION CAN ALSO BE REDUCED BY NESTING THE W-BEAM ELEMENT.
8. WIDE-FLANGE OR TIMBER POSTS MAY BE USED UNLESS OTHERWISE INDICATED. USE THE SAME POST MATERIAL FOR THE PROJECT LENGTH (EXCEPT IN THE 31" LONG-SPAN APPLICATION).
9. REMOVE ROCK AND PAVEMENT AROUND GUARDRAIL POSTS.
10. USE TIMBER OR POLYETHYLENE BLOCKOUTS WITH WIDE-FLANGE POSTS. USE TIMBER BLOCKOUTS WITH TIMBER POSTS. USE THE SAME BLOCKOUT MATERIAL FOR THE PROJECT LENGTH (EXCEPT IN THE 31" LONG-SPAN APPLICATION).
11. NAIL TIMBER BLOCKOUTS TO TIMBER POSTS TO RESTRICT BLOCK ROTATION.
12. WHEN WIDE-FLANGE POSTS ARE USED AND WHEN PRACTICAL, INSTALL THE BOLT (FBB03) ON THE UPSTREAM SIDE OF THE POST IN RELATION TO THE ADJACENT TRAFFIC.
13. SPLICE 31" W-BEAM GUARDRAIL BETWEEN POSTS. OVERLAP SPLICES SO THAT THE EXPOSED W-BEAM EDGE IS DOWNSTREAM OF THE ADJACENT TRAFFIC.
14. BEGIN AND END 31" W-BEAM GUARDRAIL WITH A TERMINAL, ANCHOR, OR TRANSITION. CONSTRUCT TERMINALS OR TRANSITIONS USING THE SAME POST MATERIAL AS THE GUARDRAIL WHEN PRACTICAL. SOME ANCHORS AND TERMINALS ARE ONLY AVAILABLE WITH TIMBER OR WIDE-FLANGE POSTS.
15. DELINEATE GUARDRAILS. SEE THE DELINEATOR STANDARD DRAWING FOR DELINEATOR TYPES AND SPACING.
16. THE LONG-SPAN APPLICATION CAN BE USED WHERE ONE POST (12'-6" SPAN), TWO POSTS (18'-9" SPAN), OR THREE POSTS (25' SPAN) ARE OMITTED.
17. WHEN THE LONG-SPAN APPLICATION (12'-6", 18'-9", OR 25') IS USED, INSTALL THREE CRT TIMBER POSTS (PDE09) WITH TIMBER BLOCKOUTS ADJACENT TO THE UPSTREAM AND DOWNSTREAM ENDS OF THE UNSUPPORTED SECTION. DO NOT NEST THE 4-SPACE W-BEAM GUARDRAIL IN THE UNSUPPORTED SECTION. INSTALL AT LEAST 62'-6" OF 31" W-BEAM GUARDRAIL UPSTREAM AND DOWNSTREAM OF THE CRT POSTS.
18. WHEN CONNECTING TO EXISTING GUARDRAIL, TRANSITION THE GUARDRAIL HEIGHT TO 31". REPLACE THE EXISTING W-BEAM GUARDRAIL IF THE TOP OF GUARDRAIL HEIGHT IS LESS THAN 27".
19. DRAWING NOT TO SCALE.



BOLT DIMENSION TABLE		
DESIGNATOR	L	T
FBB01	1 1/4"	1 1/8"
FBB03	10"	1 3/4"
FBB04	18"	4"



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