

SHY-LINE OFFSET AND FLARE RATE TABLE

DESIGN SPEED (MPH)	SHY-LINE OFFSET (FT)	BARRIER FLARE RATE	
		INSIDE SHY LINE	AT OR BEYOND SHY LINE
80	12	30:1	15:1
70	9	30:1	15:1
60	8	26:1	14:1
55	7	24:1	12:1
50	6.5	21:1	11:1
45	6	18:1	10:1
40	5	16:1	8:1
30	4	13:1	7:1

DEFLECTION TABLE

APPLICATION	POST SPACING	WORKING WIDTH
NORMAL SPACING	6'-3"	54"
1/2 SPACING	3'-1 1/2"	46"
1/4 SPACING	1'-6 3/4"	38"
STEEP SLOPE	6'-3"	56"
HINGE POINT	6'-3"	78"
LONG SPAN	≤ 25'	96"

REVISIONS

NO.	DATE	BY	NO.	DATE	BY	NO.	DATE	BY
1	08-18	RDL						
2	03-19	RDL						
3	03-20	RDL						

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY

CADD FILE NAME: 612-1_0420.dgn

DRAWING DATE: JUNE, 2017

IDAHO TRANSPORTATION DEPARTMENT

BOISE IDAHO

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DESIGN/TRAFFIC SERVICES ENGINEER

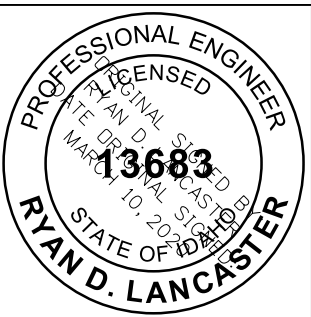
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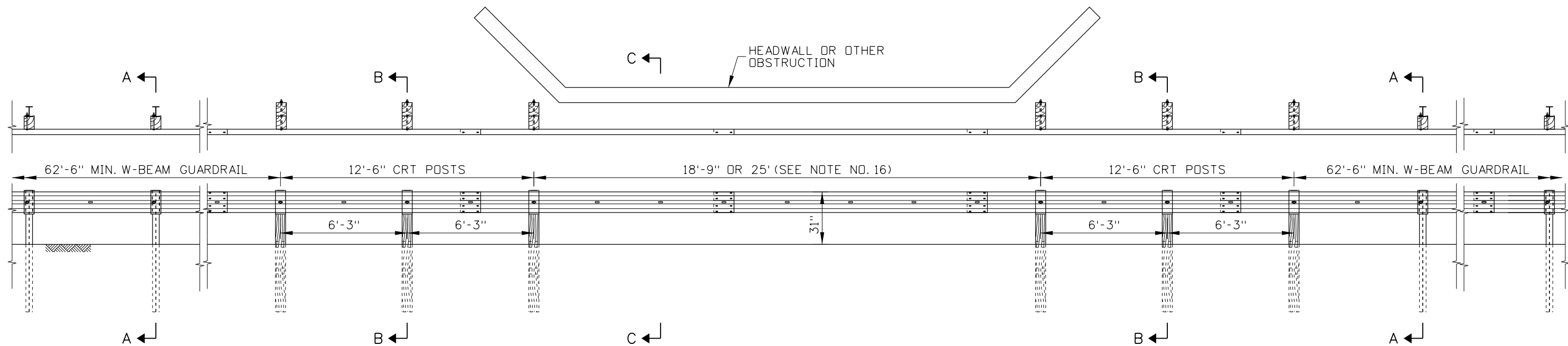
31" W-BEAM GUARDRAIL

English

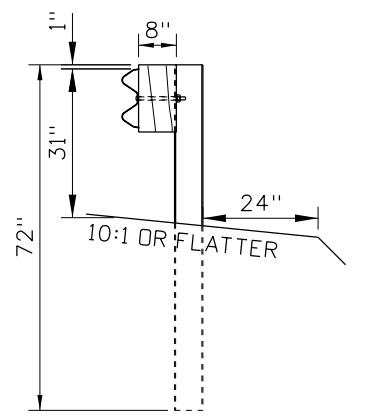
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SHEET 1 OF 5

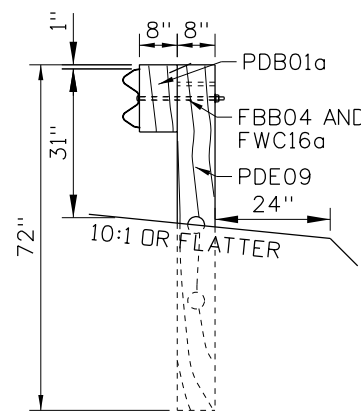




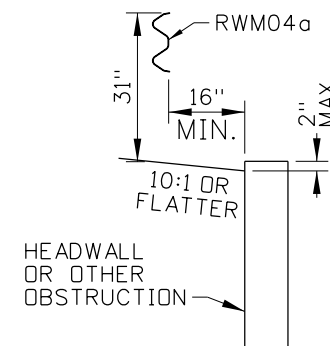
31" LONG-SPAN APPLICATION
SEE NOTE NOS. 17 AND 18



SECTION A-A
WIDE-FLANGE OR TIMBER POST



SECTION B-B



SECTION C-C

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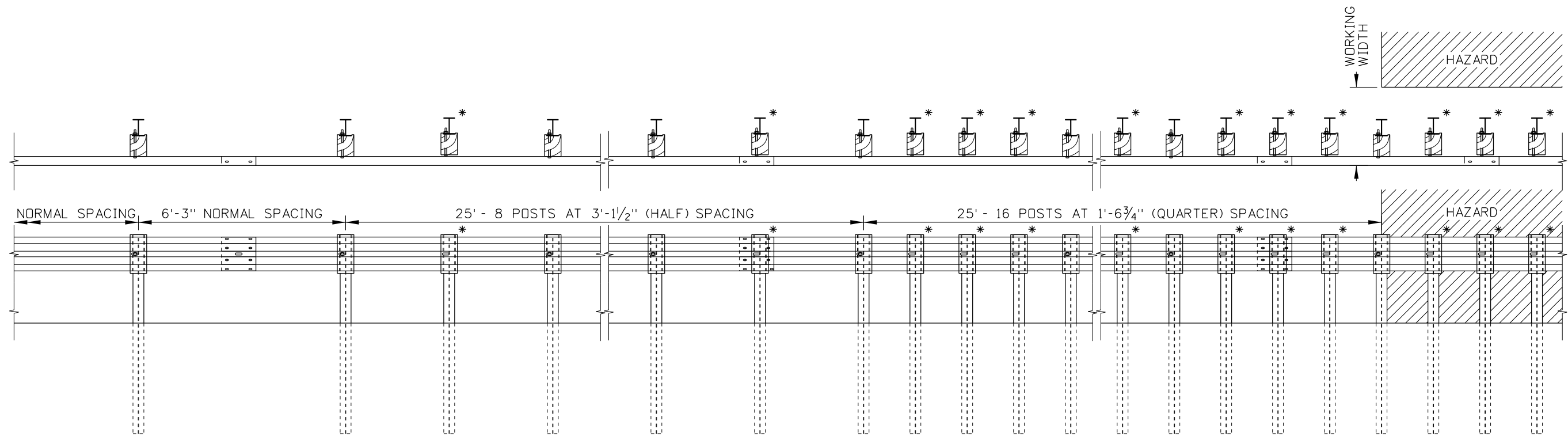
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31" W-BEAM GUARDRAIL

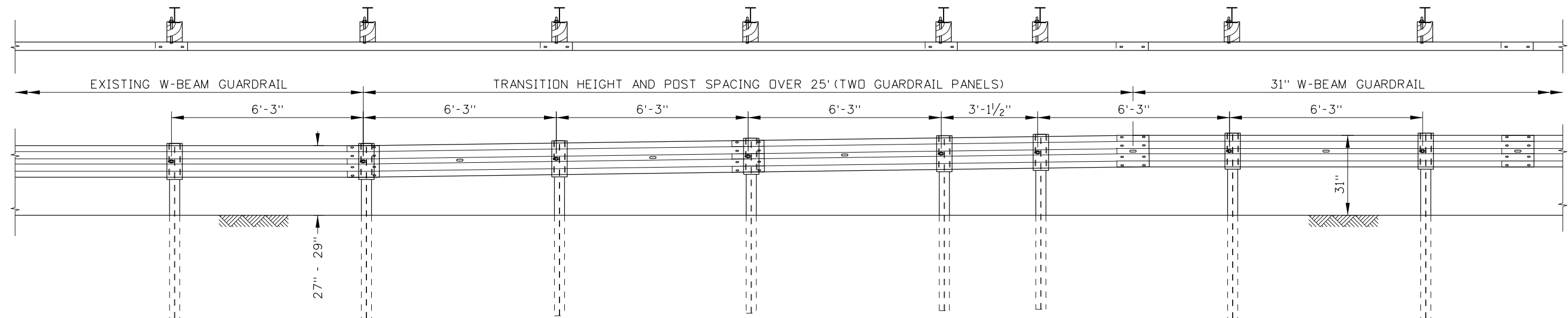
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SHEET 2 OF 5

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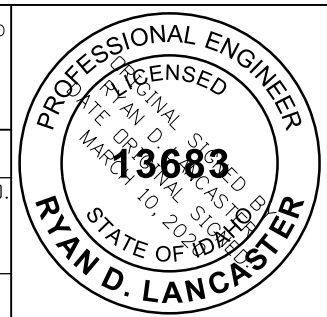
REDUCED POST SPACING
SEE NOTE NO. 7

LEGEND:
* EXTRA POSTS.
BOLT BLOCKOUT TO POST, BUT
DO NOT BOLT TO GUARDRAIL



TRANSITION TO 31" W-BEAM GUARDRAIL
SEE NOTE NO. 19

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Boise, Idaho



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3	03-20	RDL						

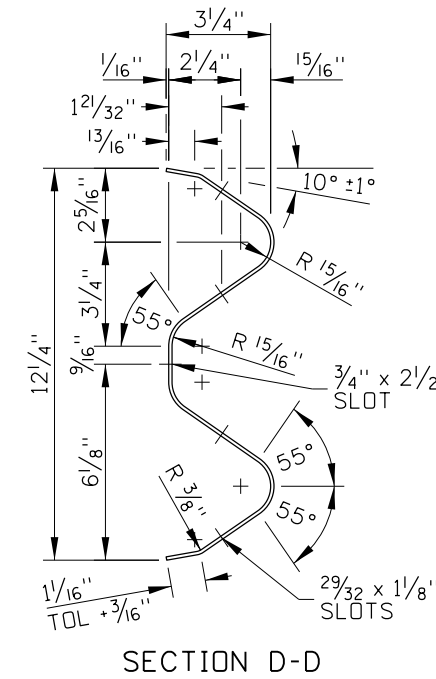
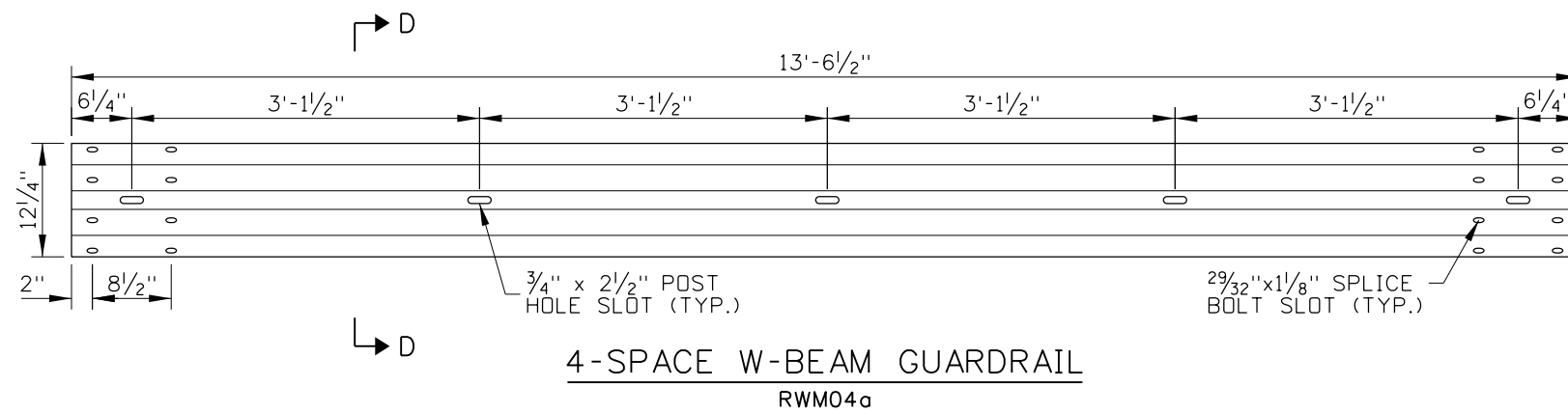
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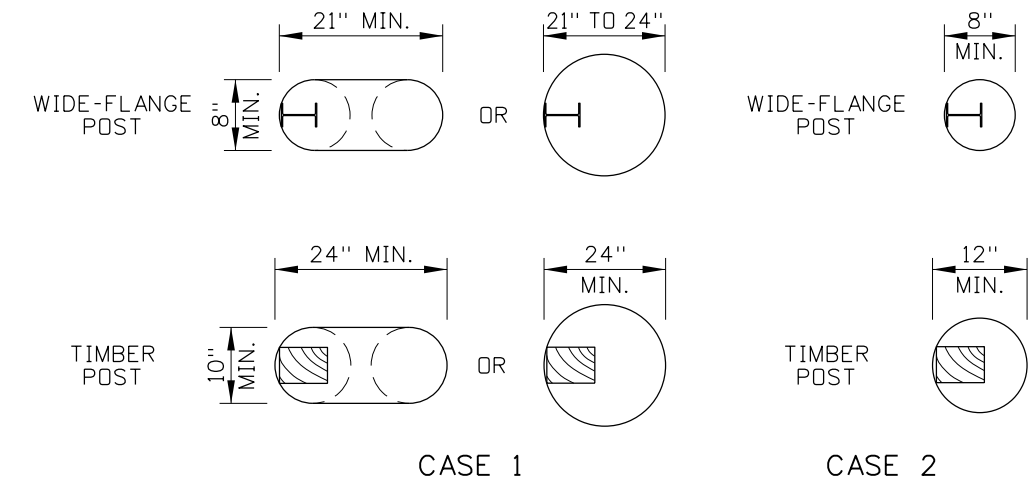
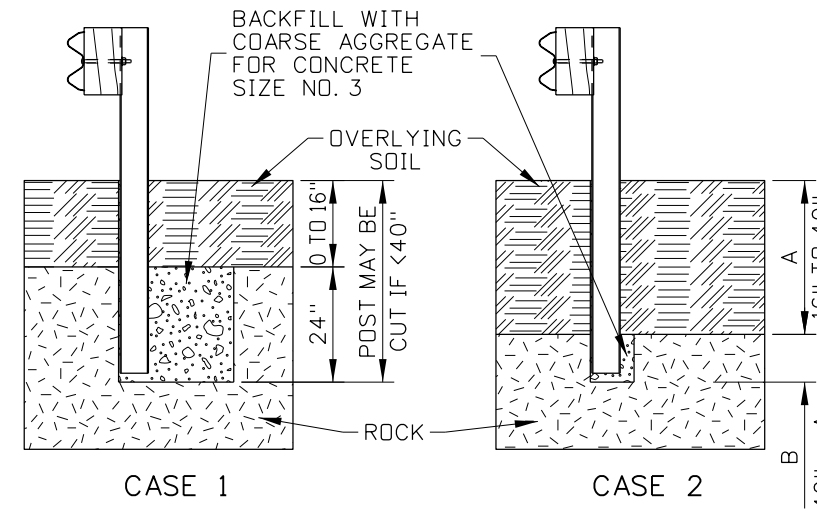
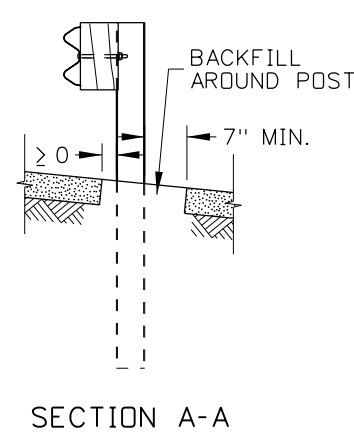
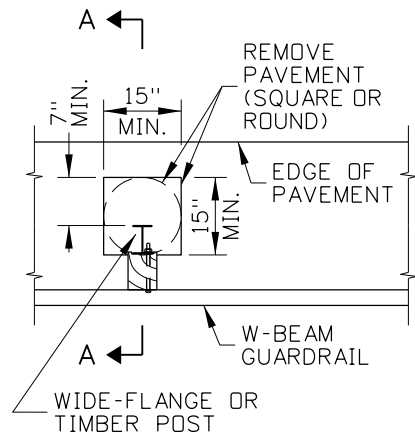
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STANDARD DRAWING
31" W-BEAM GUARDRAIL

English
STANDARD DRAWING NO.
612-1
SHEET 3 OF 5



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
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



GUARDRAIL POST IN PAVEMENT
SEE NOTE NO. 9

GUARDRAIL POST IN ROCK FORMATION
SEE NOTE NO. 9

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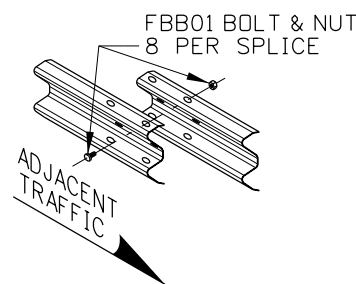
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31" W-BEAM GUARDRAIL

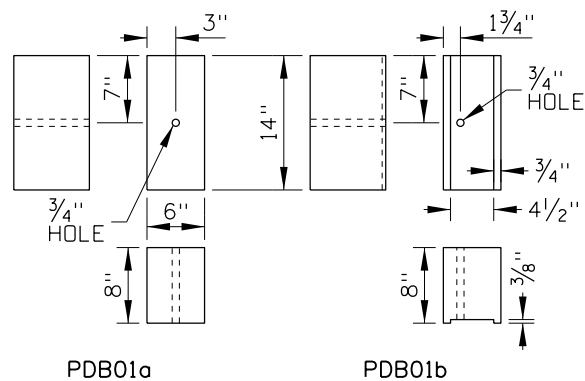
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SHEET 4 OF 5

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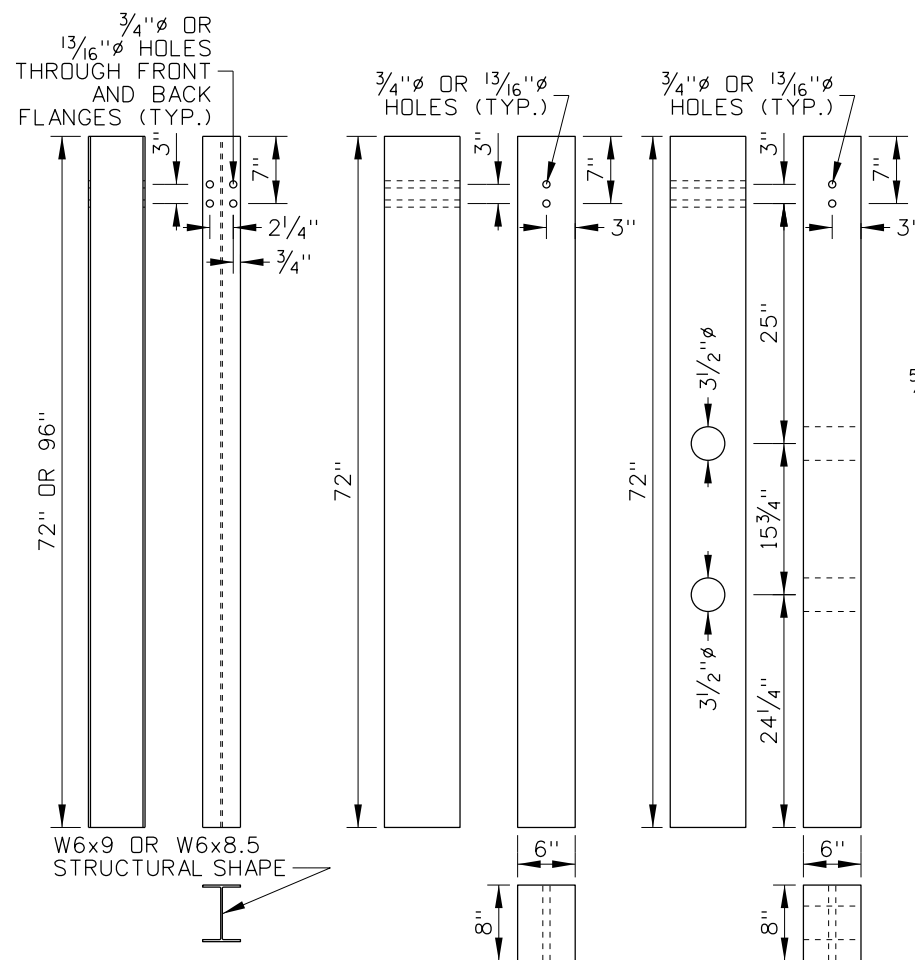
PROFESSIONAL ENGINEER
LICENSED
13683
RYAN D. LANCASTER
STATE OF IDAHO



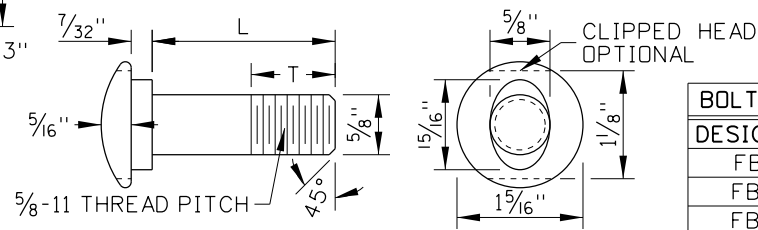
W-BEAM SPLICE DETAIL
SEE NOTE NO. 14



W-BEAM TIMBER BLOCKOUTS

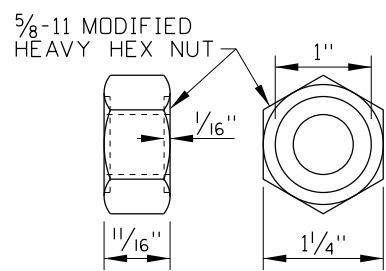


GUARDRAIL POSTS
WIDE-FLANGE PWE01, PWE--
TIMBER PDE02, PDE--
CRT TIMBER POST PDE09

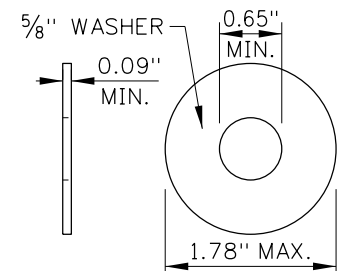


GUARDRAIL BOLT (BUTTON-HEADED)
FBB01, FBB03, FBB04

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



RECESSED NUT



PLAIN ROUND WASHER
FWC16a

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 INDICATED 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. SEE THE SHY-LINE OFFSET AND FLARE RATE TABLE.
6. PROVIDE ADEQUATE DEFLECTION DISTANCE TO OBSTRUCTIONS BEHIND THE GUARDRAIL BY PROVIDING THE WORKING WIDTH SHOWN ON THE PLACEMENT DETAIL AND IN THE DEFLECTION TABLE.
7. DECREASE DEFLECTION BY REDUCING POST SPACING. INTRODUCE EACH REDUCTION IN POST SPACING OVER 25' OR MORE. DO NOT BOLT THE GUARDRAIL TO THE EXTRA POSTS.
8. WIDE-FLANGE OR TIMBER POSTS MAY BE USED UNLESS OTHERWISE INDICATED ON THE PROJECT PLANS. USE THE SAME POST MATERIAL FOR THE PROJECT LENGTH (EXCEPT IN THE 31" LONG-SPAN APPLICATION).
9. REMOVE PAVEMENT AND ROCK 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). THE WIDE-FLANGE POST NORMAL APPLICATION CAN BE CONSTRUCTED WITHOUT BLOCKOUTS IF INDICATED ON THE PROJECT PLANS OR IF APPROVED BY THE ENGINEER.
11. INSTALL THE BLOCKOUT AND W-BEAM GUARDRAIL USING THE HOLE 7" FROM THE TOP OF THE POST. THE HIGHER HOLE IS RESERVED FOR FUTURE GUARDRAIL HEIGHT ADJUSTMENT.
12. NAIL TIMBER BLOCKOUTS TO TIMBER POSTS TO RESTRICT BLOCK ROTATION. NAIL THROUGH THE SIDES OF THE BLOCKOUT AND POST.
13. 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.
14. SPLICE 31" W-BEAM GUARDRAIL BETWEEN POSTS. OVERLAP SPLICES SO THAT THE EXPOSED W-BEAM EDGE IS DOWNSTREAM OF THE ADJACENT TRAFFIC.
15. 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.
16. DELINEATE GUARDRAILS WITH TYPE 9 DELINEATORS. SEE THE DELINEATOR STANDARD DRAWING FOR DELINEATOR SPACING.
17. ONE POST CAN BE OMITTED WITHOUT OTHER MODIFICATION IF APPROVED BY THE ENGINEER. THE LONG-SPAN APPLICATION CAN BE USED WHERE TWO POSTS (18'-9" SPAN) OR THREE POSTS (25' SPAN) ARE OMITTED.
18. WHEN THE LONG-SPAN APPLICATION (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.
19. 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".
20. DRAWING NOT TO SCALE.

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31" W-BEAM GUARDRAIL

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English

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SHEET 5 OF 5