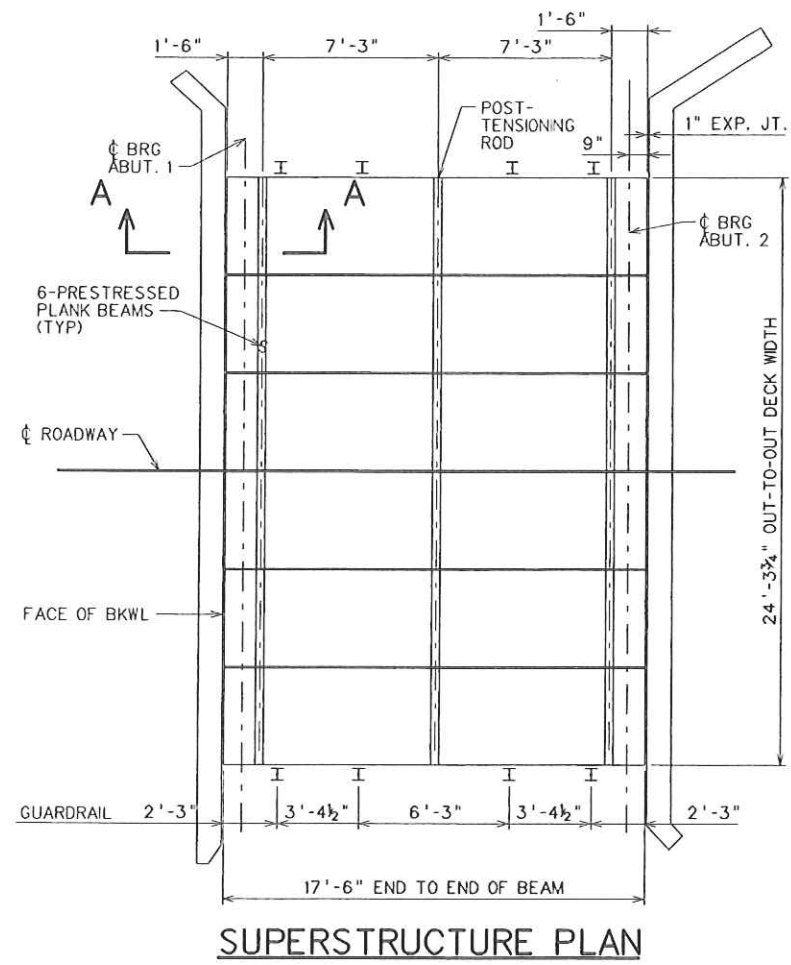
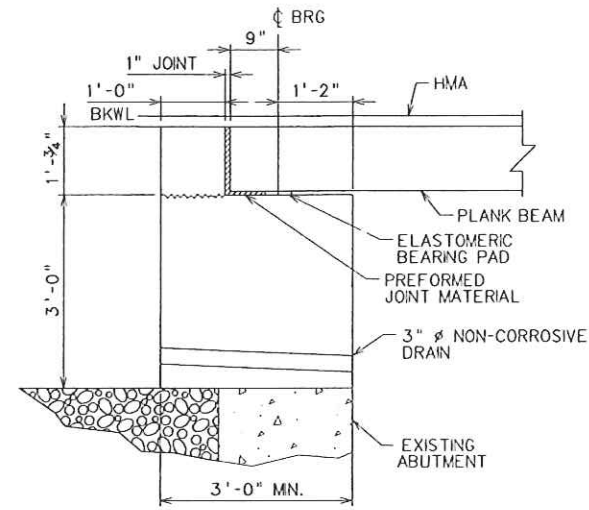


Public Recds. Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
W. V.	8	42-11-0.51		2013	RANDOLPH	4	10

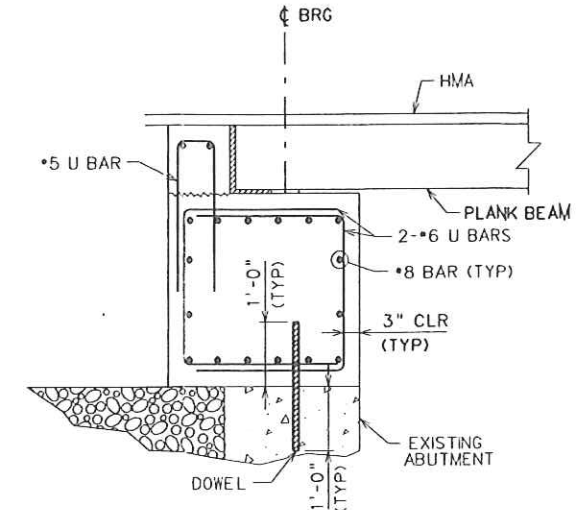


SUPERSTRUCTURE PLAN

SCALE : 0 4 ft.

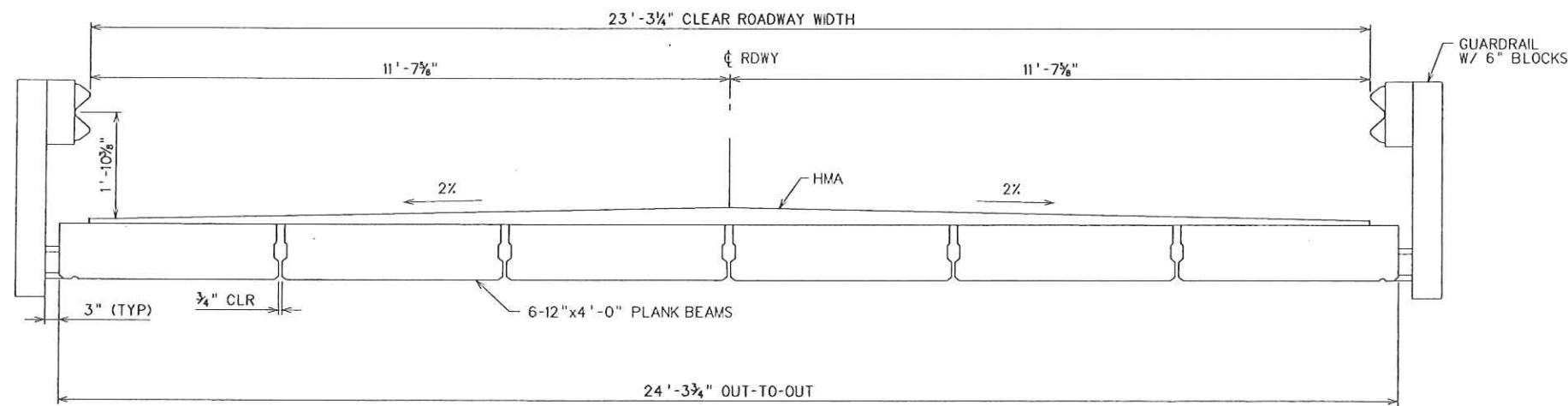


SECTION A-A



SECTION A-A REINFORCEMENT

NOTES:
1. SLOPE BEARING SEAT TO MATCH PROFILE GRADE.

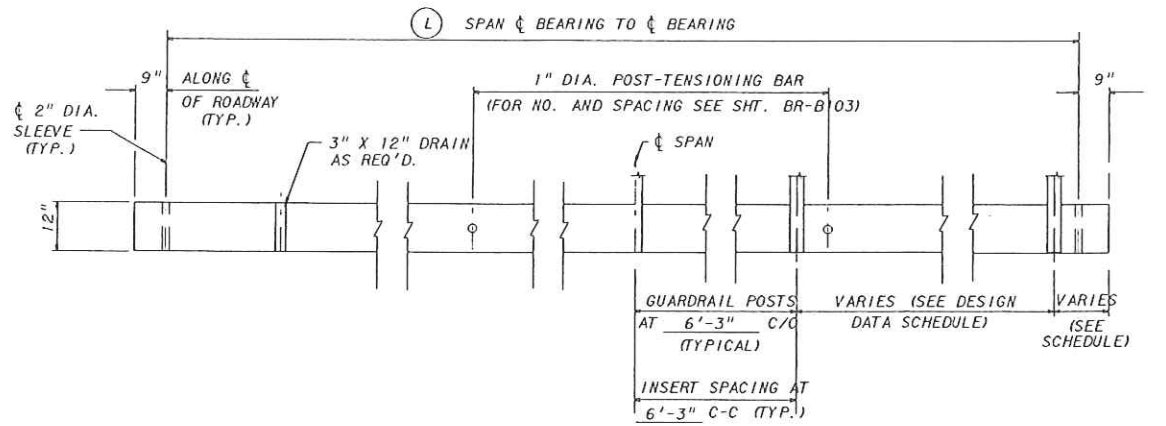


ESTIMATE OF QUANTITIES		
12" x 4'-0" PLANK BEAMS	LF	105
	SF	420
CLASS B CONCRETE	CY	?
ELASTOMERIC BEARING PADS	EA	12
GUARDRAIL	LF	100
GUARDRAIL POSTS	EA	6

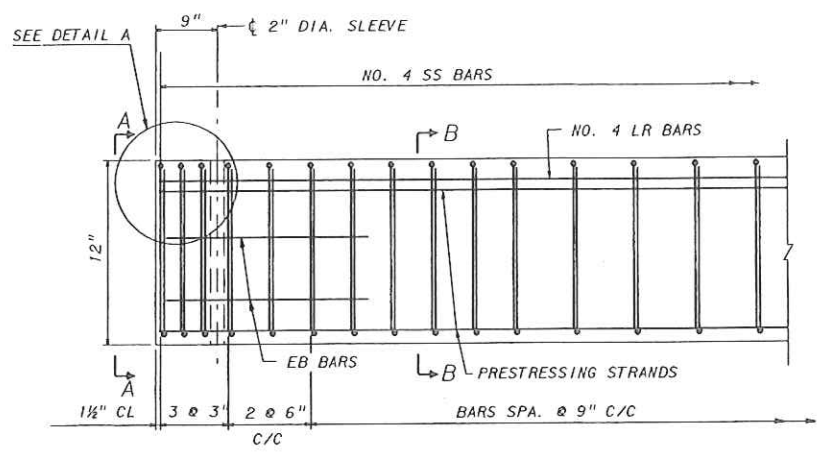
REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
SUPERSTRUCTURE PLAN

PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS
W.VA.	8	42-11-0.51	RANDOLPH	5	10



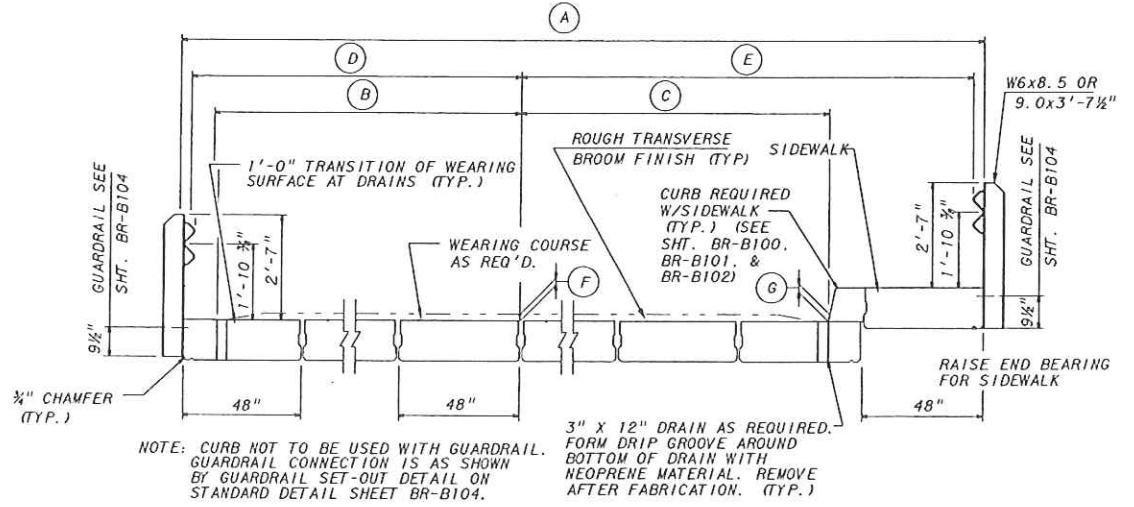
1/2 LONGITUDINAL SECTION 1/2 ELEVATION



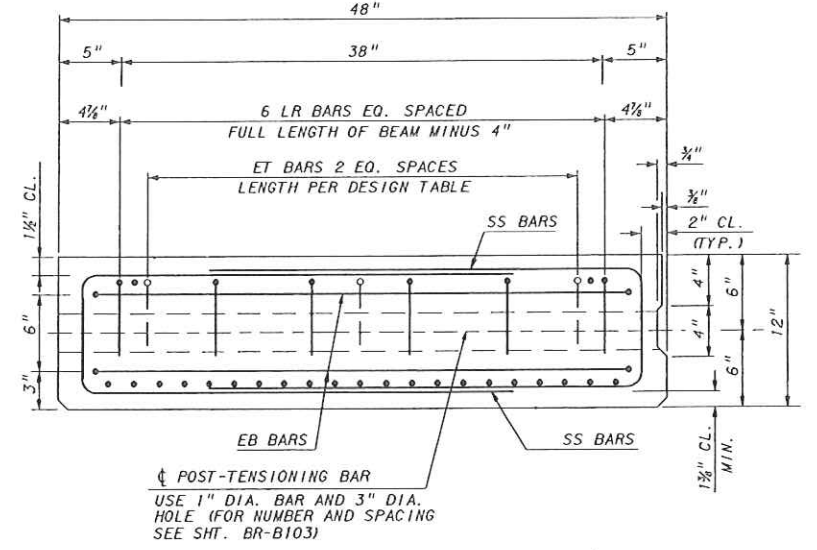
REINFORCING STEEL ELEV. VIEW

- NOTES:
- ALL NON-PRESTRESSING REINFORCING BARS SHALL BE GRADE 60.
 - ALL LAP SPLICE LENGTHS, EXCEPT WHERE SHOWN, SHALL BE AS IN TABLE ON SHEET BR-B101.
 - ALL REINFORCING STEEL BARS SHALL BE EPOXY COATED.
 - ALL STRANDS SHALL BE ENCLOSED INSIDE STIRRUP CAGE ENTIRE LENGTH OF BEAM.
 - THIS SHEET TO BE USED WITH STANDARD SHEET NUMBERS BR-1 OR BR-1A, BR-S12B, BR-B100, BR-B101, BR-B102, BR-B103, AND BR-B104.
 - WHEN STRAND NO. 23 IS USED, SEE SHEET BR-B101 FOR DETAIL OF 2" DIA. ANCHOR SLEEVE. OPTION NO. 2 IS NOT PERMITTED FOR THIS SECTION.

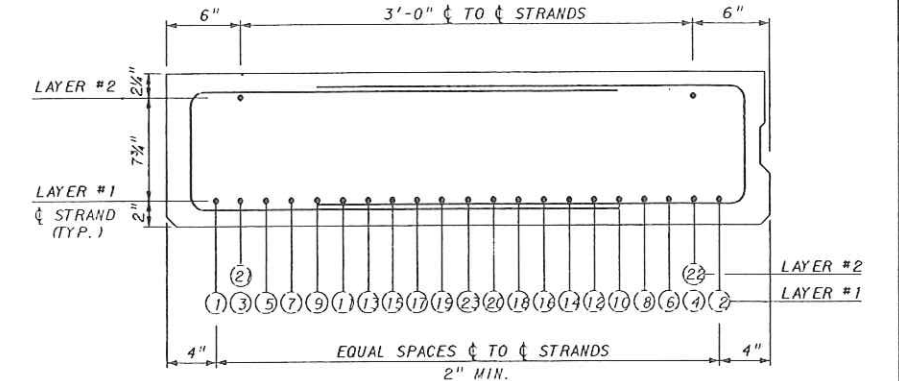
NOTE: SEE SHEET BR-B101 FOR REINFORCING BAR DETAILS AND FOR REINFORCEMENT LAYOUT DETAILS FOR SKEWED BEAMS.



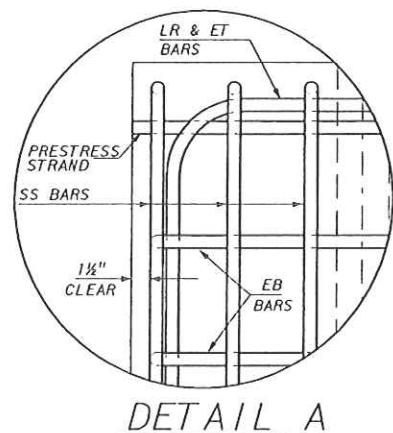
TYPICAL CROSS-SECTION (AT MID-SPAN)



SECTION A-A TYPICAL BEAM REINFORCEMENT



SECTION B-B TYPICAL BEAM PRESTRESSING



DETAIL A

CONTROL DIMENSIONS		
CODE	DESCRIPTION	VALUE
(A)	DECK WIDTH, OUT TO OUT	24'-3 1/4"
(B)	DISTANCE FROM CL ROADWAY TO FACE OF CURB (NO SIDEWALK)	N/A
(C)	DISTANCE FROM CL ROADWAY TO FACE OF CURB (WITH SIDEWALK)	N/A
(D)	DISTANCE FROM CL ROADWAY TO FACE OF GUARDRAIL (NO SIDEWALK)	11'-7 1/2"
(E)	DISTANCE FROM CL ROADWAY TO FACE OF GUARDRAIL (WITH SIDEWALK)	N/A
(F)	THICKNESS OF WEARING COURSE AT CL ROADWAY	3 1/4"
(G)	THICKNESS OF WEARING COURSE AT FACE OF CURB	1"
(L)	SPAN LENGTH, CL BEARING TO CL BEARING	16'-0"
	OPTIONAL 10" CURB TO BE INCLUDED (YES OR NO)	NO
	OPTIONAL PARAPET TO BE INCLUDED (REQUIRES SPECIAL DESIGN) (YES OR NO)	NO
	TOE PLATE REQUIRED (YES OR NO)	YES

DESCRIPTION	VALUE
HOT-LAID BITUMINOUS CONCRETE REQUIRED (YES OR NO)	YES
GUARDRAIL REQUIRED (YES OR NO)	YES
DRAINS REQUIRED (YES OR NO)	NO
CURTAIN WALL REQUIRED (YES OR NO)	YES
GUARDRAIL SETOUT REQUIRED (YES OR NO)	YES
GUARDRAIL BLOCKOUT REQUIRED (YES OR NO)	YES

STRANDS TO BE MOVED TO RESPECTIVELY TO ACCOMMODATE DRAIN.

APPROVED _____ DIRECTOR, STRUCTURES DIVISION DATE _____

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS-STRUCTURES 12"x4'-0" PRESTRESSED CONCRETE PLANK BEAMS

DESIGN & ASSEMBLY DETAILS STANDARD SHEET BR-S12A

PREPARED: 9-96

REVISED:

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS-STRUCTURES

NELLA'S DRAINAGE STRUCTURE OVER TRIBUTARY OF LEADING CREEK IN RANDOLPH COUNTY

12"x4'-0" PRESTRESSED PLANK BEAM DESIGN & ASSEMBLY DETAILS

DESIGNED BY: ANK/J

DRAWN BY: JRB/DNW

CHECKED BY:

REVIEWED BY:

DATE:

SCALE: NONE

SHEET NO. OF

BRIDGE NUMBER

Z:\One Ign. Project\16116's Dwg\12x4'0" Prestressed Plank Beam\BR-S12A.DWG

PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS.
W. VA.	8	42-11-0.51	RANDOLPH	6	10

MIN. CONCRETE STRENGTH @ DETENSION = 4,000 PSI.
 MIN. CONCRETE STRENGTH @ 28 DAYS = 5,000 PSI.
 JACKING FORCE / LOW RELAX STRAND = 30,980 LBS.

DESIGN DATA FOR 12" X 4'-0" PLANK BEAM

		(4)	(4)	(4)	(4)												
(L) SPAN LENGTH ϕ TO ϕ BEARING	10'	11'	12'	13'	14'	15'	16'	17'	18'	19'	20'	21'	22'				
OVERALL LENGTH ALONG ϕ ROADWAY	11'-6"	12'-6"	13'-6"	14'-6"	15'-6"	16'-6"	17'-6"	18'-6"	19'-6"	20'-6"	21'-6"	22'-6"	23'-6"				
NO. OF GRADE 270, 1/2" DIA. LOW-RELAX. STRANDS. AREA/STRAND= 0.153 SQ. IN.	7	8	8	8	8	9	9	10	10	11	12	12	13				
STRAND POSITION NUMBER	1, 2, 11, 12, 21, 22 & 23	1, 2, 9, 10, 17, 18, 21 & 22	1, 2, 9, 10, 17, 18, 21 & 22	1, 2, 9, 10, 17, 18, 21 & 22	1, 2, 9, 10, 17, 18, 21 & 22	1, 2, 7, 8, 15, 16, 21, 22 & 23	1, 2, 7, 8, 15, 16, 21, 22 & 23	1, 2, 7, 8, 13, 14, 19, 20, 21 & 22	1, 2, 5, 6, 13, 14, 19, 20, 21 & 22	1, 2, 7, 8, 13, 14, 19, 20, 21, 22 & 23	1, 2, 5, 6, 9, 10, 13, 14, 17, 18, 21 & 22	1, 2, 5, 6, 9, 10, 13, 14, 17, 18, 21 & 22	1, 2, 5, 6, 9, 10, 13, 14, 17, 18, 21, 22 & 23				
PRESTRESSING FORCE AT DETENSION (KIPS/BEAM)	212	241	241	241	241	271	271	300	300	329	358	358	386				
FINAL PRESTRESSING FORCE (KIPS/BEAM)	197	223	223	223	223	249	249	274	275	300	324	325	349				
ULTIMATE DESIGN MOMENT (FT-KIPS/BEAM)	123	135	147	160	173	186	199	213	227	241	255	270	285				
ULTIMATE RESISTING MOMENT (FT-KIPS/BEAM)	162	189	189	189	189	215	215	240	240	264	288	288	310				
TOTAL NUMBER OF DEBONDED STRANDS	-	-	-	-	-	-	-	-	-	-	-	-	-				
LAYER 1-DEBONDED STRAND POSITION NUMBER AND LENGTH FROM EACH END	-	-	-	-	-	-	-	-	-	-	-	-	-				
LAYER 2-DEBONDED STRAND POSITION NUMBER AND LENGTH FROM EACH END	-	-	-	-	-	-	-	-	-	-	-	-	-				
END TENSION STEEL EACH END (SIZE & LENGTH)	3-#4 x 3'-0"	3-#4 x 3'-0"	3-#4 x 3'-0"	3-#4 x 3'-0"	3-#4 x 3'-6"	3-#4 x 3'-6"	3-#4 x 4'-0"	3-#4 x 4'-0"	3-#4 x 4'-0"	3-#4 x 4'-0"	3-#4 x 4'-6"	3-#4 x 4'-6"	3-#4 x 5'-0"	3-#4 x 5'-0"			
CAMBER (3)	DETENSION, INCHES +=UPWARD (1in)	0.02	0.04	0.04	0.05	0.05	0.07	0.08	0.11	0.11	0.15	0.19	0.20	0.25			
	ERECTION, INCHES +=UPWARD (1in)	0.04	0.07	0.07	0.08	0.08	0.12	0.13	0.18	0.18	0.24	0.31	0.32	0.40			
	FINAL, INCHES +=UPWARD (1in)	0.05	0.08	0.09	0.09	0.10	0.15	0.15	0.21	0.21	0.28	0.36	0.36	0.45			
WEIGHT OF TYPICAL BEAM (TONS) (1), (2)	3.4	3.7	4.0	4.3	4.6	4.9	5.2	5.5	5.8	6.1	6.3	6.6	6.9				
NUMBER AND SPACING OF GUARDRAIL INSERTS	NO. OF INSERTS	4	4	5	5	5	6	8	6	7	7	7	8	8			
	END OF BEAM TO ϕ OF FIRST INSERT EACH END	1'-9"	1'-9"	1'-9"	1'-9"	1'-9"	1'-9"	2'-3"	1'-9"	1'-9"	1'-9"	1'-9"	1'-9"	1'-9"			
	ϕ OF FIRST INSERT TO ϕ SECOND INSERT EACH END	2'-5 1/4"	2'-11 1/4"	1'-10 1/2"	2'-4 1/2"	2'-10 1/2"	1'-9 1/4"	3'-4 1/2"	2'-9 1/4"	1'-9"	2'-3"	2'-9"	1'-8 1/4"	2'-2 1/4"			

NOTES:

- BEAM WEIGHTS LISTED IN DESIGN TABLES IS APPROXIMATE AND IS BASED ON ZERO SKEW.
- FOR STANDARD CURB, ADD 93 LBS. (0.05 TON) PER CURB, PER FOOT OF BEAM.
- CAMBER VALUES LISTED IN DESIGN TABLE ARE APPROXIMATE AND ARE FOR COMPARISON PURPOSES ONLY. NOT TO BE USED FOR INSPECTION PURPOSES UNLESS PERMITTED BY THE DIRECTOR OF STRUCTURES DIVISION.
- DATA LISTED IN THE DESIGN TABLE MAY NOT BE VALID FOR SPAN LENGTHS THAT FALL BETWEEN THE SPAN LENGTHS LISTED. IF DIFFERENCES ARE ENCOUNTERED, CALCULATE AND ENTER SPECIFIC DATA FOR BEAM LENGTH REQUIRED IN THIS COLUMN.
- THIS SHEET TO BE USED WITH STANDARD SHEET NUMBERS BR-1 OR BR-1A, BR-S12A, BR-B100, BR-B101, BR-B102, BR-B103, AND BR-B104.
- MAXIMUM BEAM SKEW SHALL BE 30 DEGREES.
- DESIGNER, FABRICATOR AND ERECTOR SHALL BE AWARE THAT SKEWED BEAM ENDS MAY TWIST OR WARP, CAUSING UNEVEN BEAM SEATING AT THE BEARINGS. CONTRACTOR IS REQUIRED TO CORRECT AT THE TIME OF BEAM ERECTION, BEFORE BEAMS ARE SECURED IN PLACE. METHOD OF CORRECTION SHALL PROVIDE EVEN TOTAL BEARING ON THE PADS AND A LEVEL TOP BEAM SURFACE. METHOD SHALL BE A PRE-APPROVED METHOD BY DIRECTOR OF STRUCTURES DIVISION.
- BEAM FABRICATOR SHALL NOTIFY CONTRACTOR THAT BEAM ENDS ARE TWISTED PRIOR TO SHIPPING OF BEAMS.
- DEBONDING OF STRANDS IS NOT PERMITTED FOR THIS BEAM SECTION.

APPROVED _____ DATE _____
 DIRECTOR, STRUCTURES DIVISION

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS-STRUCTURES
 DESIGN TABLE FOR 12" X 4'-0"
 PRESTRESSED PLANK BEAM

STANDARD SHEET BR-S12B

PREPARED: 9-96
 REVIEWED: _____

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS-STRUCTURES

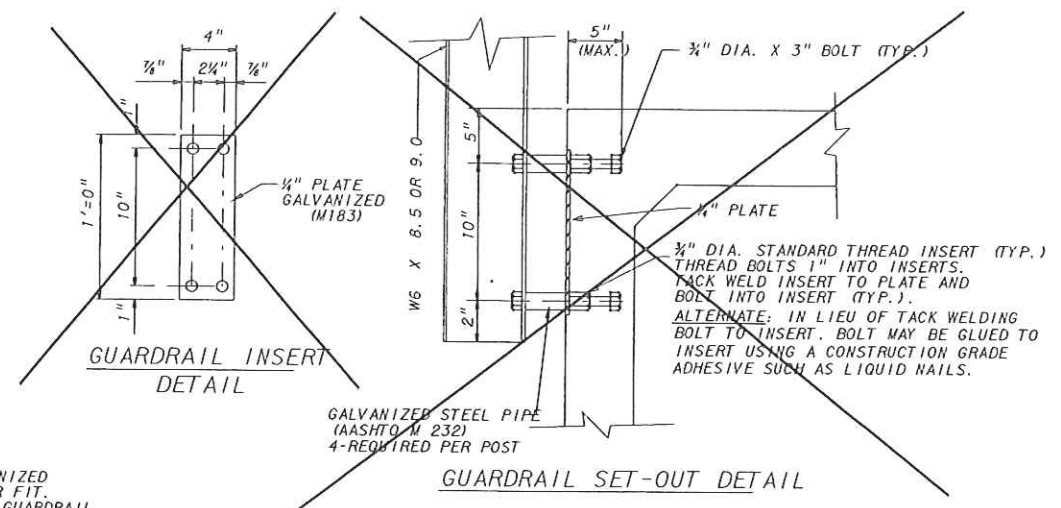
NELLA'S DRAINAGE STRUCTURE
 OVER
 TRIBUTARY OF LEADING CREEK
 IN
 RANDOLPH COUNTY

DESIGN TABLE FOR 12" X 4'-0"
 PRESTRESSED PLANK BEAM

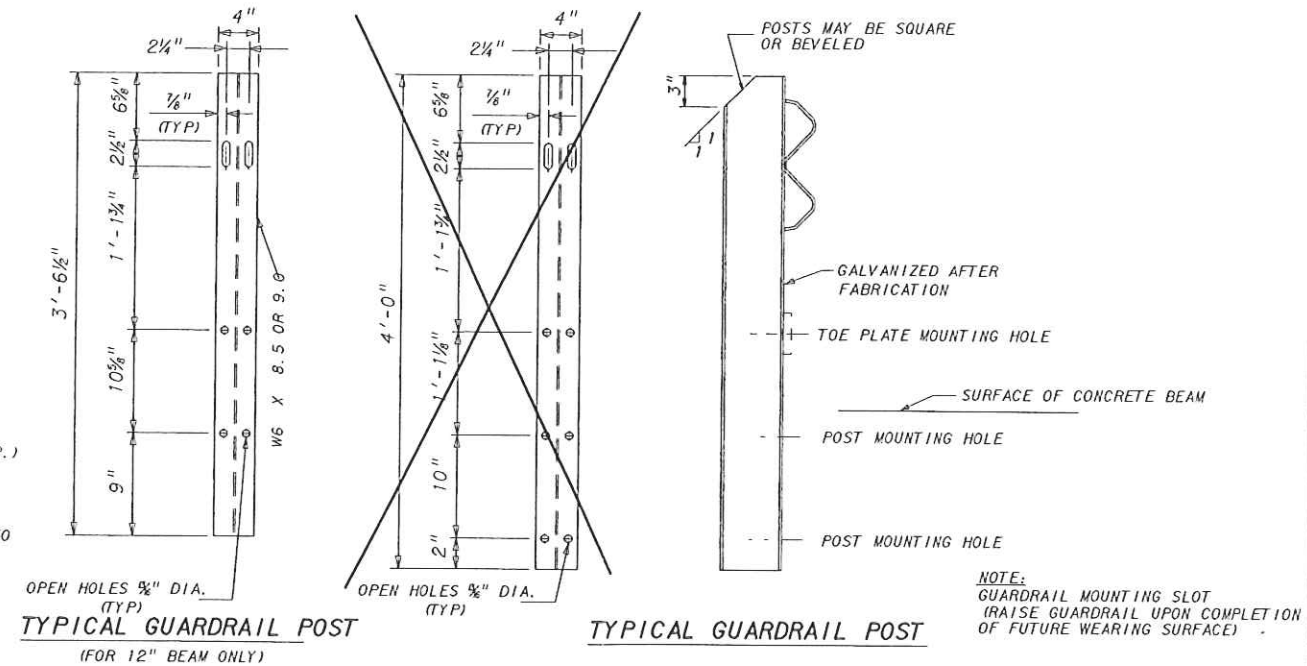
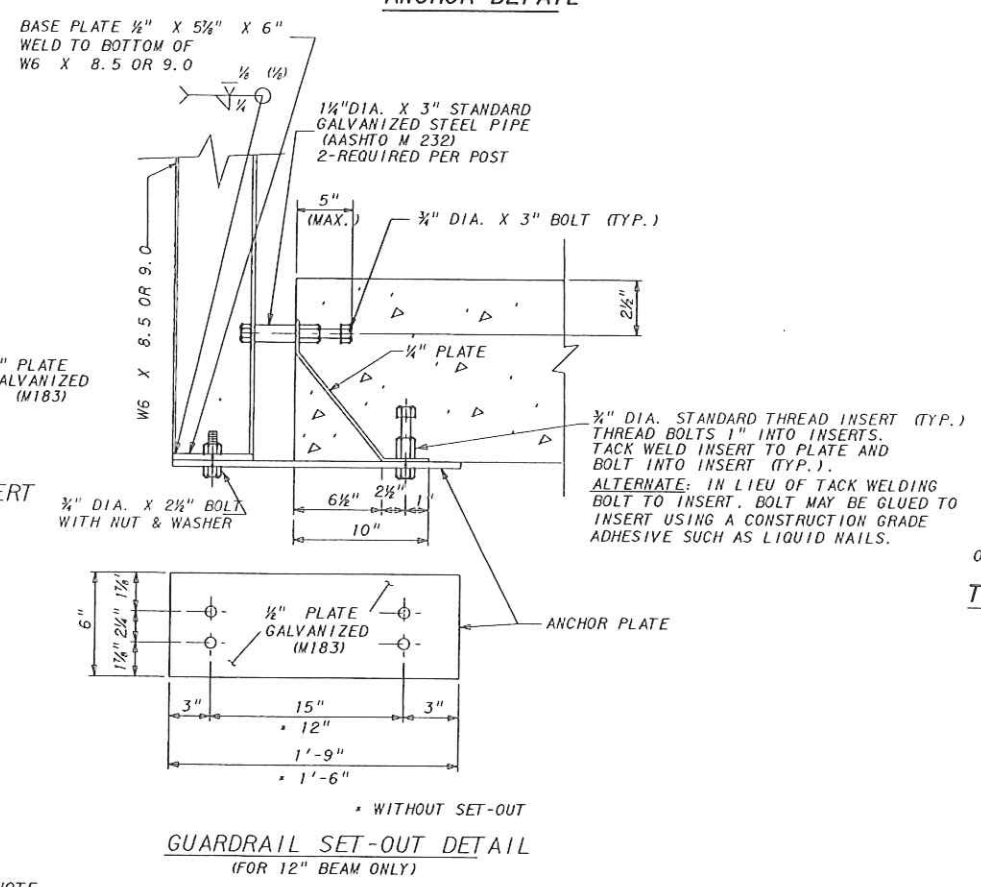
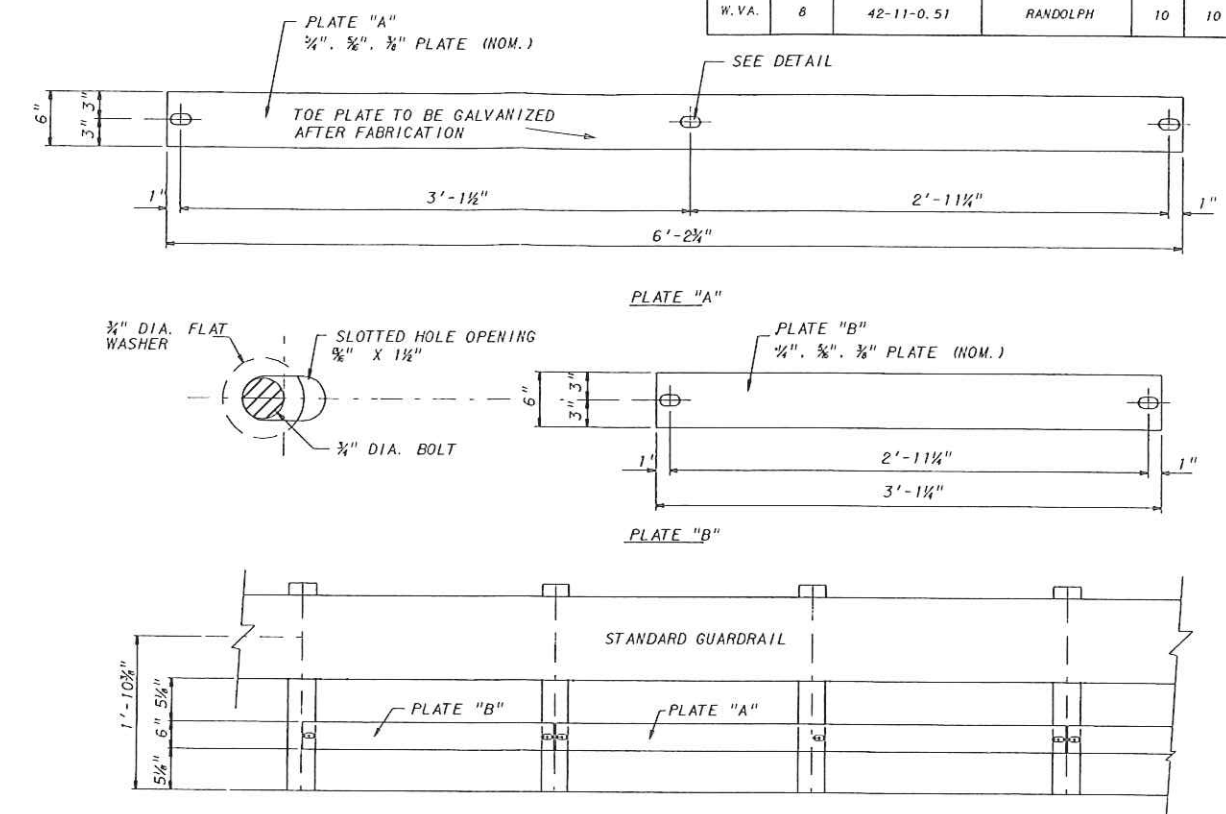
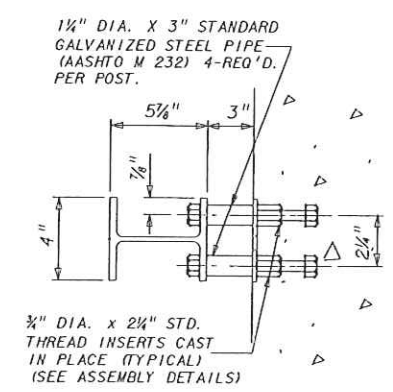
DESIGNED BY: ANK/
 DRAWN BY: DWJ/
 CHECKED BY: _____
 DATE: _____
 SCALE: NONE
 SHEET NO. _____ OF _____
 BRIDGE NUMBER _____

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PUBLIC ROADS DIV.	STATE DIST. NO.	PROJECT NUMBER	COUNTY	SHEET NO.	TOTAL SHTS.
W.VA.	8	42-11-0.51	RANDOLPH	10	10



- NOTES:**
- ENTIRE ASSEMBLY IS TO BE HOT-DIPPED GALVANIZED AFTER FABRICATION. RETAP THREADS FOR PROPER FIT. ALTERNATE: IN LIEU OF HOT-DIP GALVANIZING, GUARDRAIL INSERT ASSEMBLY MAY BE ELECTRO-DEPOSITED ZINC COATED AFTER FABRICATION IN ACCORDANCE WITH ASTM B-633, TYPE 2, CLASSIFICATION NO. 25.
 - ANY DAMAGE TO GALVANIZED AREAS SHALL BE TOUCHED WITH GALVICON, OR EQUAL.
 - WHEN THE GUARDRAIL POST IS LOCATED OVER THE BRIDGE SEAT (ON 12" BEAMS ONLY) THE ANCHOR PLATE AND FOUR BOLTS SHALL BE OMITTED. INSTALL IN ACCORDANCE WITH THE "GUARDRAIL ANCHOR OVER BRIDGE SEAT" DETAIL THIS SHEET.



Z:\Design Projects\Nella's Drainage\Structure\Drawings\Structure\Drawings\WV-11a - BR-B104.dgn

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS-STRUCTURES

NELLA'S DRAINAGE STRUCTURE
 OVER
 TRIBUTARY OF LEADING CREEK
 IN
 RANDOLPH COUNTY

PRESTRESSED CONCRETE BEAM
 DESIGN & ASSEMBLY DETAILS

STANDARD SHEET BR-B104

APPROVED: _____ DIRECTOR, STRUCTURES DIVISION DATE: _____

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS-STRUCTURES
 PRESTRESSED CONCRETE BEAM
 DESIGN & ASSEMBLY DETAILS

PREPARED: 11-15-95
 REVISED: 3-96
 9-96

DESIGNED BY: _____
 DRAWN BY: DWN, LBF
 CHECKED BY: RCK
 REVIEWED BY: _____
 DATE: 3/2013
 SCALE: NONE
 SHEET NO.: 10 of 10
 BRIDGE NUMBER: N.A.