दी ब्रेथवेट बर्न एंड जेसप कंस्ट्रक्शन कंपनी लिमिटेड

THE BRAITHWAITE BURN AND JESSOP CONSTRUCTION CO. LTD.

(भारत सरकार का एक उद्यम) / (A Government of India Enterprise)

ATC No.: ATC/D-3578-3580/HBS/2162/WAT-2/G-57-2026 Date: November 4, 2026

TECHNICAL SPECIFICATION

SCOPE OF WORK/SUPPLY

1. Manufacture, Inspection, Supply and Delivery of Galvanized Steel H-Beam Sleepers, complete with all fittings, fixtures, fastenings, galvanized MS pad plates, galvanized bolts, nuts and washers, conforming to RDSO Drawing Nos. RDSO/B-1636/4/R, RDSO/B-1636/5R1, RDSO/B-1636/12 and RDSO/B-1636/12/1R1 (with latest alterations), together with all drawings and specifications referred therein, and BBJ Drawing Nos. 2162/30.5M/19 and 2162/HBS/18.3M/04, Sheet No. 1 of 2 & 2 of 2, for the Waltair Division.

2. **Total Requirement of Galvanized Standard H-Beam Sleepers (30.5M & 18.3M Span): 632 Sets**

   Total Requirement of Galvanized Short-Height H-Beam Sleepers (18.3M Span): 04 Sets

   The detailed bridge-wise breakup of the above quantities is placed herein below:

Description	Quantity
Galvanized Standard H-Beam Sleepers (30.5 m & 18.3 m Span)	**632 Sets**
Galvanized Short-Height H-Beam Sleepers (18.3 m Span)	**04 Sets**

The bridge-wise requirement is as follows:

Bridge No. 1373 DN (1 × 30.5 m)

Description	Drawing No.	Quantity
Standard H-Beam Sleepers (30.5 m Span)	BBJ Drg. No. 2162/30.5M/19	62 Sets

Bridge No. 1496 UP (4 × 30.5 m)

Description	Drawing No.	Quantity
Standard H-Beam Sleepers (30.5 m Span)	BBJ Drg. No. 2162/30.5M/19	248 Sets

Bridge No. 1496 DN (4 × 30.5 m)

Description	Drawing No.	Quantity
Standard H-Beam Sleepers (30.5 m Span)	BBJ Drg. No. 2162/30.5M/19	248 Sets

Bridge No. 1337A UP & DN (1 × 18.3 m)

Description	Drawing No.	Quantity
Standard H-Beam Sleepers (18.3 m Span)	BBJ Drg. No. 2162/HBS/18.3M/04, Sheet 1 of 2	74 Sets

ATC No.: ATC/D-3578-3580/HBS/2162/WAT-2/G-57-2026 Date: November 4, 2026

Bridge No. 1337A UP & DN (1 × 18.3 m)

Description	Drawing No.	Quantity
Short-Height H-Beam Sleepers (18.3 m Span)	BBJ Drg. No. 2162/HBS/18.3M/04, Sheet 2 of 2	4 Sets

3. H-Beam Sleepers should be made of rolled sections IS: HB 200 conforming to IS:2062, Grade E250, Quality BO and after fabrication H-Beam & Fittings shall be galvanized as per IS:4759.

4. The weldable raw structural steel sections to be supplied by the successful bidder for fabrication of H-Beam Sleepers shall conform to IS: 2062-2011 Grade B Fully Killed from SAIL, TATA and Vizag Steel Plant or any other sources approved by E. Co. Railway. The source to be declared citing non-availability of materials from aforesaid supplier.

5. The rate is also inclusive of all inspection and testing charges of all components of H-Beam sleepers including all fixtures and fastening galvanization and consumables etc. from the reputed laboratory/ organization.

6. All fittings like, Hook Bolt, Elastomeric Pads (25m/30m) and Zero Toe Load Fixtures for H-Beam Sleepers to be supplied by the successful bidder from RDSO approved firms.

7. Arranging necessary inspection & testing and getting the H-Beam Sleepers approved by E. Co. Railway or their authorized agency at their own cost and will be responsible for furnishing all test certificates.

8. The rate is also including of transportation of H-Beam Sleepers with all fittings and fixtures with consumables from their workshop to different bridge sites in Waltiar Division by providing their trucks including loading with all lead and lift, handling, re-handling, ascent, descent, crossing obstructions etc.

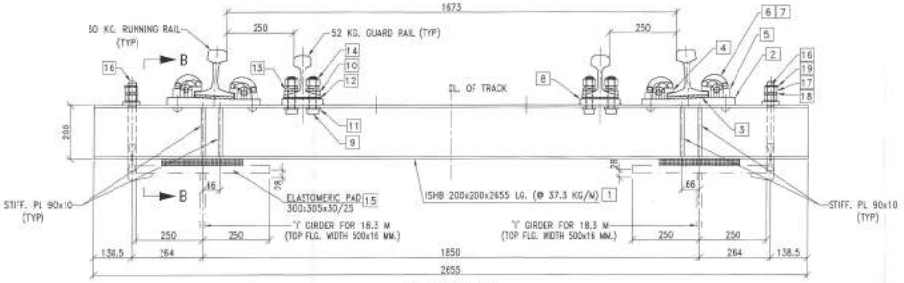
9. WPSS and QAP to be done by the contractor and getting it approved by E. Co. Railway or their nominated agency.

10. The rate is inclusive of all GST.

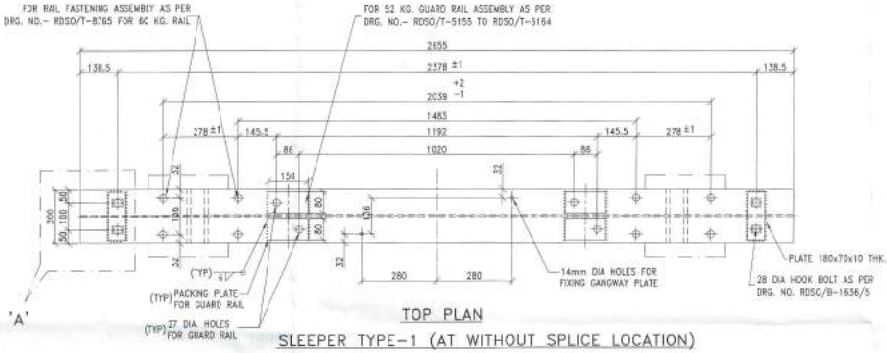
11. The work to be executed in successful bidder's approved shaded/ covered fabrication workshop by their labour, plants & machinery, equipment, welding consumables cutting gases and their inputs for successful completion of the work.

12. Fitting items to be provided in waterproof and strong box packets to avoid damage during transportation and storing.

BBJ KOLKATA
Digitally signed by SOUVIK BHATTACHARYA
Date: 2026.11.04 11:23:24 +05'30'

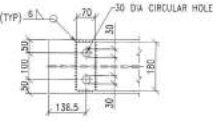


ELEVATION

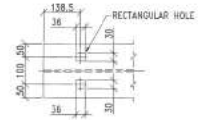


TOP PLAN

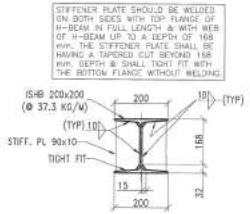
SLEEPER TYPE-1 (AT WITHOUT SPLICE LOCATION)



DETAIL AT 'A' TOP FLANGE



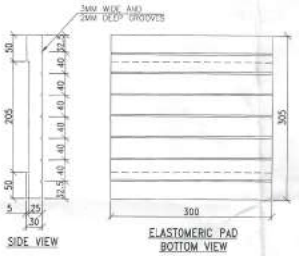
DETAIL AT 'A' BOTTOM FLANGE



SECTION ON- B-B

SETS H-BEAM SLEEPER REQUIRED PER SPAN				
ITEM NO.	DESCRIPTION	DRAWING NUMBER	SPECIFICATION	QTY. PER SLEEPER TYPE-1
1	H-BEAM STEEL SLEEPER 2655 M LENGTH	BASED ON RDSO/B-1636/4/R	GR E250, QUALITY-BO IS:2062-2011 & IS:808/809	1
2	STEEL BASE PLATE	RDSO/T-8760	GR E250, QUALITY-BO IS:2062-2011	2
3	RAIL PAD WITH EMBEDDED STEEL PLATE	RDSO/T-8761	IRS FOR 12 mm. THICK GROOVED RUBBER PAD (PROVISIONAL)	2
4	SPECIAL CAST LINER (INNER) FOR 60 kg. (UIC) RAIL	RDSO/T-8762	IRS SPECIFICATION FOR SPECIAL CAST LINER (PROVISIONAL-2019)	2
5	SPECIAL CAST LINER (OUTER) FOR 60 kg. (UIC) RAIL	RDSO/T-8763		2
6	ELASTIC RAIL CLIP MK III	RDSO/T-3701	I.R.S. T-31-2018	4
7	ELASTIC RAIL CLIP FOR FISH PLATED JOINTS (ERC-J)	RDSO/T-4158	I.R.S. T-31-2018	4 *
8	PACKING PLATE 80x150x22 (FOR GUARD RAIL)	----	IS:2062-2011 GR. BO	4
9	BOLT AND NUT (FOR GUARD RAIL)	RDSO/T-5164	IRS T-23-2021	4
10	TAPER WASHER (FOR 52 kg. GUARD RAIL)	RDSO/T-5161	IS:2062-2011 GR. BO/BR	4
11	TAPER STEEL WASHER (FOR GUARD RAIL)	RDSO/T-5162	IS:2062-2011 GR. BO/BR	4
12	6 mm. THICK GROOVED RUBBER PAD (FOR GUARD RAIL)	RDSO/T-5163	IRS Specification for 6 mm. Thick GR. Pad (Provisional-1997)	2
13	SINGLE COIL SPRING WASHER (FOR GUARD RAIL)	RDSO/T-10773	IRS T-42-2020	4
14	TAPERED SPLIT PIN FOR GUARD RAIL	SUITABLE	SUITABLE	4
15	ELASTOMERIC PAD 300x305x30/25	RDSO/B-1636/5	RDSO/M & C/RP-197/03	2
16	#28 HOOK BOLT x 378 lg.	RDSO/B-1636/5		4
17	NUT FOR #28 HOOK BOLT	RDSO/B-1636/5		8
18	SINGLE COIL SPRING WASHER FOR #28 HOOK BOLT	RDSO/B-1636/5	IS:3063-1994	12
19	TAPERED SPLIT PIN FOR HOOK BOLT	RDSO/B-1636/5	SUITABLE	4

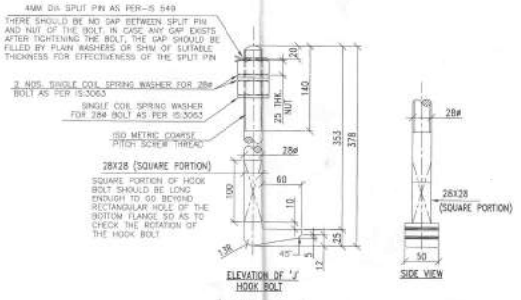
* ITEM 7 TO BE USED WHERE FISH PLATED JOINTS ARE REQUIRED.



SIDE VIEW

ELASTOMERIC PAD BOTTOM VIEW

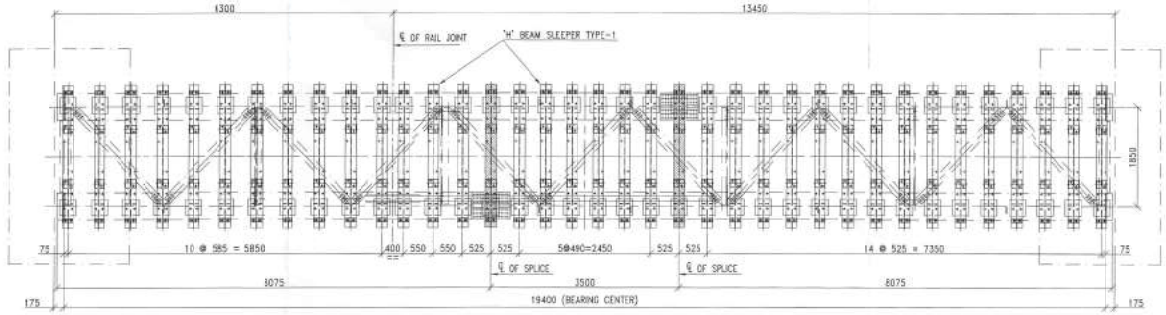
SL NO.	BRIDGE NO.	NOS. OF SPAN	NOS. OF H-BEAM SLEEPER TYPE-1	SPARE	TOTAL NOS OF SLEEPER TYPE-1
1	1337A UP	1	35	2	37
2	1337A DN	1	35	2	37



ELEVATION OF 'J' HOOK BOLT

SIDE VIEW

SECTIONAL PLAN



KEY PLAN

1 NO. EACH 18.3 M. SPAN FOR BR. NO.-1337A UP & 1337 DN

NOTES:-

1. ALL DIMENSION ARE IN MILLIMETERS.
2. THIS DRAWING IS DONE ON THE BASIS OF RDSO's DRAWING NO.- RDSO/B-1636/4/R & RDSO/B-1636/5R1
3. H-BEAM SLEEPER AND ALL FITTING ITEMS TO BE HOT DIP GALVANISED AS PER IS:4759:1996.
4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH DRAWING NO. 2162/HBS/18.3M/04 (SHEET 2 OF 2)

SPECIFICATION & CODES	
FABRICATION SPECIFICATION NO. IRS/B1-2001, REVISED-2008	
WIRE FLUX COMBINATION FOR SAW	: IRS M-39
ELECTRODES	: IRS M-28
SUBMERGED ARC WELDING	: IS: 4353-1995
METAL ARC WELDING	: IS: 9595-1996
SCHEME OF SYMBOLS FOR WELDING	: IS: 813-1986
RUBBER BEARING FOR RAIL BRIDGES	: UIC: 772-2R-1989
STEEL FOR ALL MEMBERS EXCEPT STUDS	: IS:2062-2011 Gr.BO OR EQUIVALENT AS PER IRS B1
ELASTOMERIC BEARINGS	: IRS B3 PART II - 2018

DESCRIPTION	WELDING SYMBOL	DESCRIPTION	HSFG BOLTS SHOP	HSFG BOLTS FIELD
FILLET WELD (ONE SIDE)		HEX HEAD		
FILLET WELD (BOTH SIDE)		ANCHOR BOLTS		

REV.	DATE	DESCRIPTION	BY
		REVISIONS	

THE BRAITHWAITE BURN AND JESSOP CONSTRUCTION COMPANY LIMITED
(A GOVT. OF INDIA ENTERPRISE)

CLIENT: SOUTH COAST RAILWAY

PROJECT: (1+1)x18.3 M. WELDED TYPE PLATE GIRDER (25 T. AXLE LOADING STANDARD-2008) FOR BR. NO.-1337A UP & 1337A DN. FOR NALTAIR DIVISION AT ANDHRA PRADESH

TITLE: H-BEAM STEEL SLEEPER FOR 60 KG. RUNNING RAIL AND 52 KG. GUARD RAIL FOR 18.3M SPAN AT WITHOUT SPLICE LOCATION.

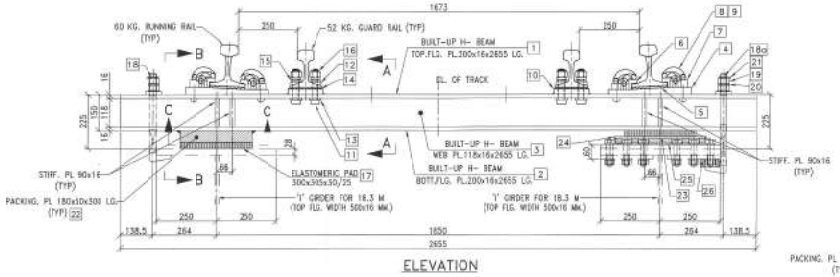
SCALE:-1:25 | NAME | DATE | B.B.J. ORDER NO.- 2162

DRAWN BY: S.SAMANTA 12.10.20 | ORG. NO. 2162/HBS/18.3M/04 | REV. 0

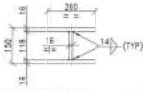
CHECKED BY: S.MAJUMDER 13.10.20

APPROVED BY:

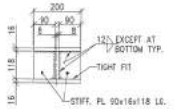
SHEET 1 OF 2 | A1



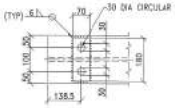
ELEVATION



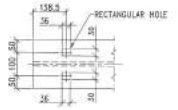
SECTION ON– A–A



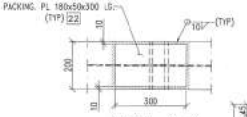
SECTION ON– B–B



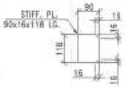
DETAIL AT 'A' TOP FLANGE



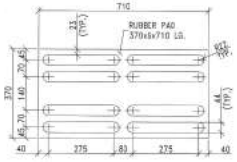
DETAIL AT 'A' BOTTOM FLANGE



VIEW– C–C



DETAIL OF STIFFNER PLATE

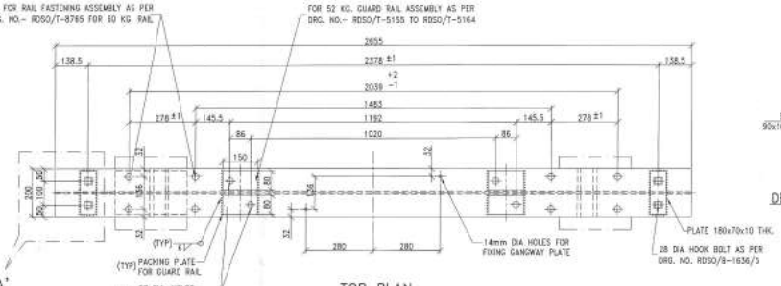


DETAIL OF ITEM NO.–25

SETS H-BEAM SLEEPER REQUIRED PER SPAN

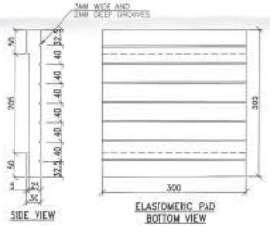
ITEM NO.	DESCRIPTION	DRAWING NUMBER	SPECIFICATION	QTY. PER SLEEPER TYPE-2
1	H-BEAM STEEL SLEEPER TOP FLANGE PLATE 200x16x2655 LG	BASED ON RDSO/B-1636/12	DR E250, QUALITY-BO IS:2062-2011 & IS:808/B09	1
2	H-BEAM STEEL SLEEPER BPTTOM FLANGE PLATE 200x16x2655 LG			1
3	H-BEAM STEEL SLEEPER WEB PLATE 118x16x2655 LG			1
4	STEEL BASE PLATE	RDSO/T-8760	DR E250, QUALITY-BO IS:2062-2011	2
5	RAIL PAD WITH EMBEDDED STEEL PLATE	RDSO/T-8761	IRS FOR 12 mm. THICK GROOVED RUBBER PAD (PROVISIONAL)	2
6	SPECIAL CAST LINER (INNER) FOR 60 kg. (UIC) RAIL	RDSO/T-8762	IRS SPECIFICATION FOR SPECIAL CAST LINER (PROVISIONAL-2019)	2
7	SPECIAL CAST LINER (OUTER) FOR 60 kg. (UIC) RAIL	RDSO/T-8763		2
8	ELASTIC RAIL CLIP MK11	RDSO/T-3701	I.R.S. T-31-2018	4
9	ELASTIC RAIL CLIP FOR FISH PLATED JOINTS (ERC-J)	RDSO/T-4158	I.R.S. T-31-2018	4 *
10	PACKING PLATE 80x150x22 (FOR GUARD RAIL)	-----	IS:2062-2011 GR. BO	4
11	BOLT AND NUT (FOR GUARD RAIL)	RDSO/T-5164	IRS T-23-2021	4
12	TAPER WASHER (FOR 52 kg. GUARD RAIL)	RDSO/T-5161	IS:2062-2011 GR. BO/BR	4
13	TAPER STEEL WASHER (FOR GUARD RAIL)	RDSO/T-5162	IS:2062-2011 GR. BO/BR	4
14	6 mm. THICK GROOVED RUBBER PAD (FOR GUARD RAIL)	RDSO/T-5163	IRS Specification for 6 mm. Thick DR. Pad (Provisional-1997)	2
15	SINGLE COIL SPRING WASHER (FOR GUARD RAIL)	RDSO/T-10773	IRS T-42-2020	4
16	TAPERED SPLIT PIN FOR GUARD RAIL	SUITABLE	SUITABLE	4
17	ELASTOMERIC PAD 300x305x30/25	RDSO/B-1636/5	RDSO/M & C/RP-197/03	2
18	#28 HOOK BOLT x 378 lg.	RDSO/B-1636/5		2
18a	#28 HOOK BOLT x 427 lg.	RDSO/B-1636/5		2
19	NUT FOR #28 HOOK BOLT	RDSO/B-1636/5		8
20	SINGLE COIL SPRING WASHER FOR #28 HOOK BOLT	RDSO/B-1636/5	IS:3063-1994	12
21	TAPERED SPLIT PIN FOR HOOK BOLT	RDSO/B-1636/5	SUITABLE	8
22	EXTRA PAD PLATE FOR WITHOUT SPLICE LOCATION (180x50x300)	-----	IS:2062-2011 GR. BO	1
23	PREFORATED PLATE FOR SPLICE LOCATION (370x20x710)	-----	IS:2062-2011 GR. BO	1
24	COVER PLATE FOR SPLICE LOCATION (370x10x710)	-----	IS:2062-2011 GR. BO	1
25	RUBBER PAD FOR SPLICE LOCATION (370x8x710)	-----		1
26	ADDITIONAL PLATE WITH HOOK BOLT FOR SPLICE LOCATION (86x81x33)	-----	IS:2062-2011 GR. BO	2

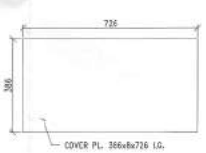
* ITEM 7 TO BE USED WHERE FISH PLATED JOINTS ARE REQUIRED.



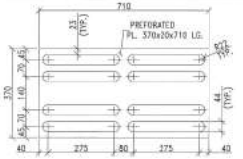
TOP PLAN

SLEEPER TYPE–2 (AT SPLICE LOCATION)

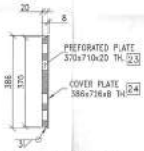




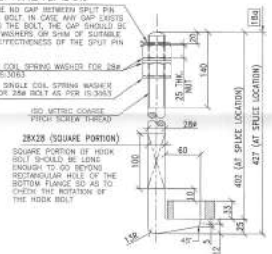
DETAIL OF ITEM NO.–24



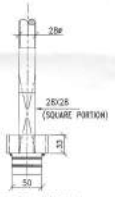
DETAIL OF ITEM NO.–23



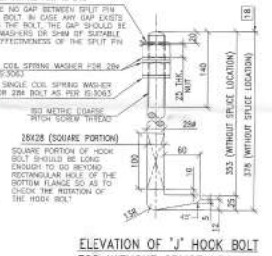
CROSS SECTION VIEW OF PREFORATED/COVER PLATE



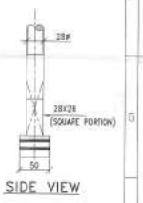
ELEVATION OF 'J' HOOK BOLT FOR SPLICE LOCATION



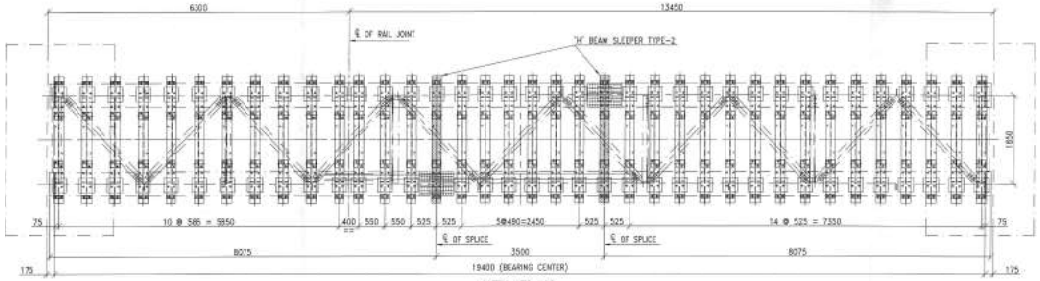
SIDE VIEW



ELEVATION OF 'J' HOOK BOLT FOR WITHOUT SPLICE LOCATION

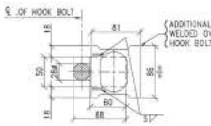


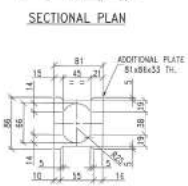
SIDE VIEW

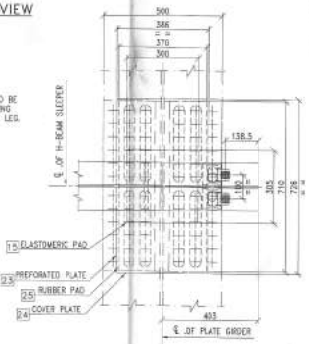


KEY PLAN

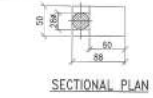
1 NO. EACH 18.3 M. SPAN FOR BR. NO.–1337A UP & 1337 DN







PLAN– C–C



SECTIONAL PLAN

SR. NO.	BRIDGE NO.	NOS. OF SPAN	NOS. OF H-BEAM SLEEPER TYPE–2	SPARE	TOTAL NOS. OF SLEEPER TYPE–2
1	1337A UP	1	2	1	3
2	1337A DN	1	2	1	3

NOTES:–

1. ALL DIMENSION ARE IN MILLIMETERS.
2. THIS DRAWING IS DONE ON THE BASIS OF RDSO's DRWING NO.– RDSO/B–1636/12, RDSO/B–1636/12/1R1, RDSO/B–1636/4/R & RDSO/B–1636/5R1
3. H–BEAM SLEEPER AND ALL FITTING ITEMS TO BE HOT DIP GALVANSED AS PER IS:4759:1996.
4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH DRAWING NO. 2162/HBS/18.3M/04 (SHEET 1 OF 2)

SPECIFICATION & CODES

FABRICATION SPECIFICATION NO. IRS/B1–2001, REVISED–2008	
WIRE FLUX COMBINATION FOR SAW	: IRS M–39
ELECTRODES	: IRS M–28
SUBMERGED ARC WELDING	: IS: 4353–1995
METAL ARC WELDING	: IS: 9595–1996
SCHEME OF SYMBOLS FOR WELDING	: IS: 813–1986
RUBBER BEARING FOR RAIL BRIDGES	: U.O. 772–29–1889
STEEL FOR ALL MEMBERS EXCEPT STUDS	: IS:2062–2011 Gr.BO OR EQUIVALENT AS PER IRS B1
ELASTOMERIC BEARINGS	: IRC 83 PART II – 2018

DESCRIPTION	WELDING SYMBOL	DESCRIPTION	HSFG BOLTS SHOP	HSFG BOLTS FIELD
FILLET WELD (ONE SIDE)		HEX HEAD		
FILLET WELD (BOTH SIDE)		ANCHOR BOLTS		

REV.	DATE	DESCRIPTION	BY
		REVISIONS	

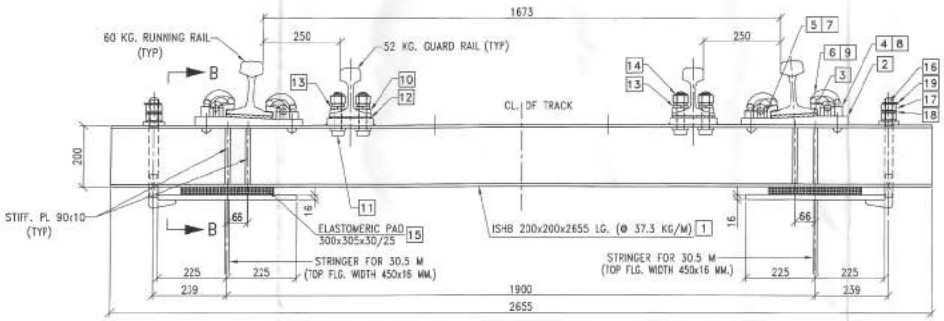
THE BRAITHWAITE BURN AND JESSOP CONSTRUCTION COMPANY LIMITED
(A GOVT. OF INDIA ENTERPRISE)

CLIENT: SOUTH COAST RAILWAY

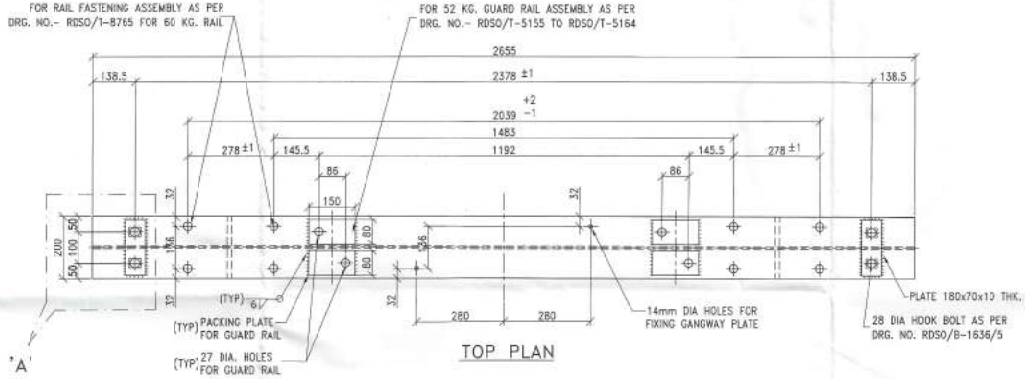
PROJECT: (1+1)x18.3 M. WELDED TYPE PLATE GIRDER (25 T. AXLE LOADING STANDARD–2008) FOR BR. NO.–1337A UP & 1337A DN. FOR WALTAIR DIVISION AT ANDHRA PRADESH

TITLE: H–BEAM STEEL SLEEPER FOR 60 KG. RUNNING RAIL AND 52 KG. GUARD RAIL FOR 18.3M SPAN AT SPLICE LOCATION.

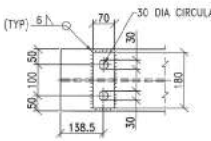
SCALE:– 1:25	NAME	DATE	B.B.J. ORDER NO:– 2162	
DRAWN BY:	S. SAMANTA	09.10.26	DRG. NO.	REV.
CHECKED BY:	S.MUKHERJEE	13.10.26	2162/HBS/18.3M/04	0
APPROVED BY:			SHEET: 2 OF 2	A1



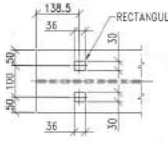
ELEVATION



TOP PLAN

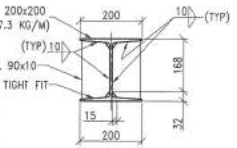


DETAIL AT 'A' TOP FLANGE



DETAIL AT 'A' BOTTOM FLANGE

STIFFENER PLATE SHOULD BE WELDED ON BOTH SIDES WITH TOP FLANGE OF H-BEAM IN FULL LENGTH & WITH WEB OF H-BEAM UP TO A DEPTH OF 168 mm. THE STIFFENER PLATE SHALL BE HAVING A TAPERED CUT BEYOND 168 mm. DEPTH & SHALL TIGHT FIT WITH THE BOTTOM FLANGE WITHOUT WELDING.

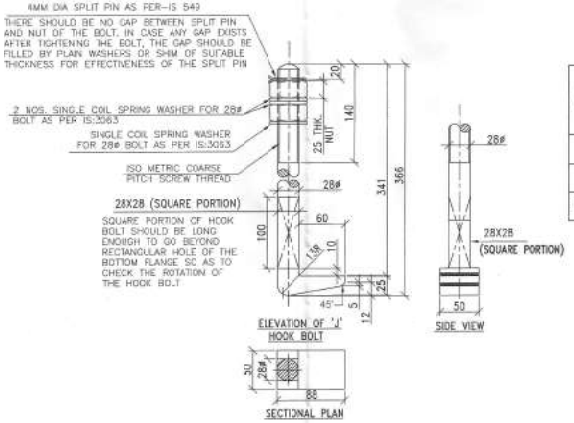


SECTION ON- B-B

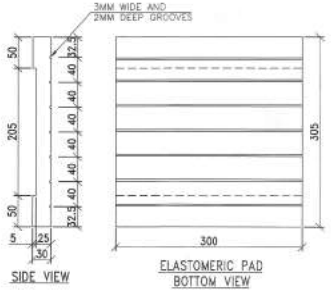
SETS H-BEAM SLEEPER REQUIRED PER SPAN

ITEM NO.	DESCRIPTION	DRAWING NUMBER	SPECIFICATION	QTY PER SLEEPER
1	H-BEAM STEEL SLEEPER 2655 M LENGTH	BASED ON RDSO/B-1636/4/R	GR E250, QUALITY-BO IS:2062-2011 & IS:808/809	1
2	STEEL BASE PLATE	RDSO/T-8760	GR E250, QUALITY-BO IS:2062-2011	2
3	RAIL PAD WITH EMBEDDED STEEL PLATE	RDSO/T-8761	IRS FOR 12 mm. THICK GROOVED RUBBER PAD (PROVISIONAL)	2
4	SPECIAL CAST LINER (INNER) FOR 60 kg. (UIC) RAIL	RDSO/T-8762	IRS SPECIFICATION FOR SPECIAL CAST LINER (PROVISIONAL-2019)	2
5	SPECIAL CAST LINER (OUTER) FOR 60 kg. (UIC) RAIL	RDSO/T-8763		2
6	ELASTIC RAIL CLIP MKIII	RDSO/T-3701	I.R.S. T-31-2018	4
7	ELASTIC RAIL CLIP FOR FISH PLATED JOINTS (ERC-J)	RDSO/T-4158	I.R.S. T-31-2018	4
8	PACKING PLATE 80x150x22 (FOR GUARD RAIL)	----	IS:2062-2011 GR. B0	4
9	BOLT AND NUT (FOR GUARD RAIL)	RDSO/T-5164	IRS T-23	4
10	TAPER WASHER (FOR 52 kg. GUARD RAIL)	RDSO/T-5161	IS:2062-2011 GR. B0/BR	4
11	TAPER STEEL WASHER (FOR GUARD RAIL)	RDSO/T-5162	IS:2062-2011 GR. B0/BR	4
12	6 mm. THICK GROOVED RUBBER PAD (FOR GUARD RAIL)	RDSO/T-5163	IRS Specification for 6 mm. Thick GR. Pad (Provisional-1997)	2
13	SINGLE COIL SPRING WASHER (FOR GUARD RAIL)	RDSO/T-10773	IRS T-42-2020	4
14	TAPERED SPLIT PIN FOR GUARD RAIL	SUITABLE	SUITABLE	4
15	ELASTOMERIC PAD 300x305x30/25	RDSO/B-1636/5	RDSO/M & C/RP-197/03	2
16	ø28 HOOK BOLT x 366 lg.	RDSO/B-1636/5		4
17	NUT FOR ø28 HOOK BOLT	RDSO/B-1636/5		8
18	SINGLE COIL SPRING WASHER FOR ø28 HOOK BOLT	RDSO/B-1636/5	IS:3063-1994	12
19	TAPERED SPLIT PIN FOR HOOK BOLT	RDSO/B-1636/5	SUITABLE	4

* ITEM 7 TO BE USED WHERE FISH PLATED JOINTS ARE REQUIRED.



SL NO.	BRIDGE NO.	NOS. OF SPAN	NOS. OF H-BEAM SLEEPER PER SPAN	SPARE	TOTAL NOS OF SLEEPER PER SPAN WITH SPARE	TOTAL NOS OF SLEEPER IN BRIDGE
1	1373	1	59	3	62	62
2	1496	8	59	3	62	496
FOR (1+4+4)= 9 x 30.5M. SPAN TOTAL NOS. OF SLEEPER = 558						



NOTES:-

1. ALL DIMENSION ARE IN MILLIMETERS.
2. THIS DRAWING IS DONE ON THE BASIS OF RDSO's DRAWING NO.- RDSO/B-1636/4/R & RDSO/B-1636/5R1
3. H-BEAM SLEEPER AND ALL FITTING ITEMS TO BE HOT DIP GALVANISED AS PER IS:4759:1996.

SIGNATURE & DATE	SIGNATURE & DATE	SIGNATURE & DATE	SIGNATURE & DATE	SIGNATURE & DATE

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SPECIFICATION

IRS. M28, M39 FOR WELDING CONSUMABLES
IRS. WELDED BRIDGE CODE - 1972
STEEL BRIDGE CODE - 1962
FABRICATION & ERECTION IRS. B1 - 2001
METAL ARC WELDING IS: 9595-1980

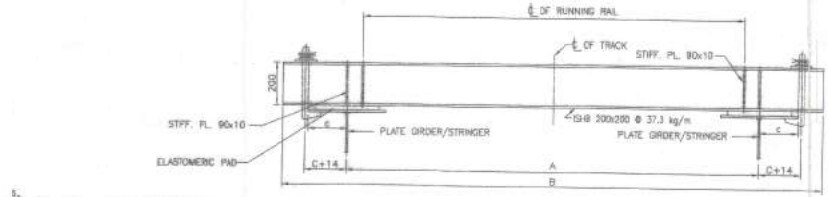
DESCRIPTION	WELDING SYMBOL	DESCRIPTION	SHOP	FIELD
FILLET WELD (ONE SIDE)		HSFG BOLTS		
FILLET WELD (BOTH SIDE)		C.S.K. ON FAR SIDE		
SQUARE BUTT WELD		C.S.K. ON NEAR SIDE		
DOUBLE V-BUTT WELD		C.S.K. ON BOTH SIDE		
		ANCHOR BOLTS		
		TURNED BOLTS		

REV.	DATE	DESCRIPTION	BY
		REVISIONS	

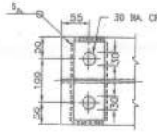
CONTRACTOR: THE BRAITHWAITE BURN AND JESSOP CONSTRUCTION COMPANY LIMITED (A GOVT. OF INDIA ENTERPRISE)
CLIENT: NORTH EASTERN RAILWAY
PROJECT: (1+4+4)=9x30.5M OPEN WEB WELDED THROUGH TYPE (25 T AXLE LOADING STANDARD-2008) FOR BRNO.- 1373 DN, 1496 UP, 1496 DN FOR WALTAIR DIVISION AT ANDHRA PRADESH
TITLE: H-BEAM STEEL SLEEPER FOR 60 KG. RUNNING RAIL AND 52 KG. GUARD RAIL FOR 30.5M SPAN

	NAME	DATE
SCALE:- 1:10		B.B.J. ORDER NO.- 2162
DRAWN BY:	S.SAMANTA	18.08.26
CHECKED BY:	R.BOSE	19.08.26
APPROVED BY:		

DRG. NO. 2162/30.5M/19 REV. 0
SHEET: 1 OF 1 A2



ELEVATION



DETAIL AT (Y)
(TOP FLANGE)

~~ZERO TOE LOAD FASTENING SYSTEM TO RDSO DRG.NO. RDSO/T-8759 TO RDSO/T-8765 FOR 60 KG (UIC) AND 52 KG RAIL.~~
~~RAIL FASTENING ASSEMBLY AS PER DRG NO. RDSO/T-3781 AND RDSO/T-8240 (WITH LATEST ALTERATION) TO RDSO/T-8245 FOR 60 KG (UIC) RAIL.~~

GUARD RAIL ASSEMBLY AS PER DRG. No.RDSO/T-5155 TO 5164

ISHB 200x200 @ 37.3 kg/m

PACKING PL.FOR GUARD RAIL

27 DIA. HOLE FOR GUARD RAIL

HOLE DIA 23.5 FOR 22 DIA. RIVET OF BEARING PLATE

℄ OF TRACK

136

PLATE 180x70x10

28 DIA. HOOK BOLT TO DRG. No. RDSO/B-1636/5

14 mm DIA. HOLES FOR FIXING GANGWAY PLATE

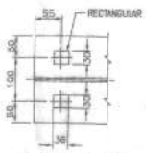
278±1 145.5 86 280 86 145.5 278±1

1192

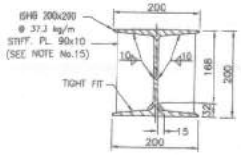
1483

2039±2

TOP PLAN



DETAIL AT (Y)
(BOTTOM FLANGE)



SECTION ON AA

FOR B.G.

DIMENSIONS	SPAN (IN m)				
	RIVETTED PLATE GIRDERS				
	24.4	18.3	12.2	9.2	6.1
A	1980	1830	1850	1850	1880
B (MIN.)*	2685	2495	2475	2475	2495
C	200	180	160	160	155
F	FLANGE WIDTH				

DIMENSIONS A, B & C, SHOWN ABOVE ARE FOR STANDARD RBG RIVETTED PLATE GIRDERS.

FOR B.G.

DIMENSIONS	SPAN (IN m)						
	WELDED PLATE GIRDERS			OPEN WEB GIRDERS			
	12.2	18.3	24.4	30.5	45.7	61.0	76.2
A	1850	1830	1980	1900	1900	1900	1900
B (MIN.) *	2655	2715	2905	2515	2515	2515	2515
C	250	290	310	155	155	155	155
F	FLANGE WIDTH						

DIMENSIONS A,B,C, SHOWN ABOVE ARE FOR STANDARD MBG WELDED PLATE GIRDER AND RBG/MBG OPEN WEB GIRDERS. FOR OTHER DESIGNS VALUES OF C&B BE CALCULATED AS BELOW.
C=HALF TOP FLANGE WIDTH
B (MIN) * = 2C + A + 305 BUT NOT LESS THAN 2440 mm
IN CASE OF B.G. ~~AS PER PARA 373 OF IRPWM~~ (ALT 1)

NOTE

4. MAXIMUM CENTRE TO CENTRE SLEEPER SPACING SHOULD BE 600 MM EXCEPT AT CROSS GIRDERS. THE CLEAR DISTANCE BETWEEN TWO SLEEPERS AT CROSS GIRDER LOCATION SHOULD NOT BE MORE THAN 450 MM. THE CLEAR DISTANCE BETWEEN TIGHT SLEEPERS SHOULD NOT BE MORE THAN 150 MM.
7. STEEL TO BE USED SHOULD BE OF GRADE E-250 BR QUALITY AS MENSIONED UNDER CLAUSE 8.2 (A) PROVIDED IN IRS M 5 DATED 30-08-2013 OF IRS, E I- 2001, AS CORRECTED FROM TIME TO TIME. (ALT 2)
19. SIZE OF FILLET WELDS ARE EXPRESSED IN LEG LENGTH.
18. IF CHIEF ENGINEER OF THE ZONAL RLY. CONSIDERS THAT THE GUARD RAIL IS STIFFER ENOUGH TO PREVENT BUNCHING OF SLEEPERS IN THE EVENT OF DERAILMENT, HE MAY SUITABLY DECIDE DISPENSATION OF TIE ANGLES ON THE STEEL H-BEAM SLEEPERS.
17. TO FACILITATE MOVEMENT OF GIRDER ENDS, FISH PLATED JOINTS IN GUARD RAILS SHOULD BE PROVIDED ON EACH PIER. WELDED GUARD RAIL SHOULD NOT BE USED.
16. THE LOCATION WHERE H-BEAM SLEEPER IS TO BE SEATED IS TO BE THOROUGHLY CLEANED AND A THICK COAT OF READY MIXED RED LEAD PAINT CONFORMING TO IS:102 IS TO BE GIVEN WELL IN ADVANCE BEFORE PROVIDING H-BEAM SLEEPER.
15. STIFFENER PLATE SHOULD BE WELDED ON BOTH SIDES WITH TOP FLANGE OF H-BEAM IN FULL LENGTH AND WITH WEB OF H-BEAM UPTO A DEPTH OF 168 mm. THE STIFFENER PLATE SHALL BE HAVING A TAPERED CUT BEYOND 168 mm DEPTH AND SHALL TIGHT FIT WITH THE BOTTOM FLANGE WITHOUT WELDING.
14. FOR RIVETTED/WELDED PLATE GIRDER, SUITABLE THICKNESS OF M. S. PACKING PLATE SHOULD BE WELDED AT THE BOTTOM FLANGE OF H-BEAM SLEEPER TO MAINTAIN THE RAIL LEVEL DUE TO THE THICKNESS OF SPLICE PLATE AND SECOND PLATE (IF PROVIDED), AS A RESULT OF PROVIDING H-BEAM SLEEPER, THE LEVEL OF TRACK SHALL BE RAISED BY 72 mm WITH 60 kg. RAIL. THE EFFECT OF SUCH RAISES OF TRACK LEVELS ON SCHEDULE OF DIMENSIONS AND EXISTING VERTICAL CLEARANCES ON ELECTRIFIED SECTIONS BE TAKEN INTO CONSIDERATION BEFORE ACTUAL GOING FOR SUCH SLEEPERS.
13. ~~FOR SUCH CASES WHERE NO STANDARD DRAWING OF RAIL FASTENING ASSEMBLY IS AVAILABLE RAILWAYS MAY FOLLOW THEIR OWN DESIGNS~~
12. FOR SEATING ARRANGEMENT FOR RIVETTED PLATE GIRDERS/STRINGERS AND ARRANGEMENT FOR FIXING GANGWAY SEE DRG. No. RDSO/B-1636/5
11. FOR NON STANDARD DESIGN, DIMENSION 'A' AS SHOWN ABOVE SHOULD NOT BE MORE THAN 1980 mm.
10. IN CASES WHERE THE CLEARANCES BETWEEN THE BRIDGE STRUCTURES AND LIVE OHE IN ELECTRIFIED SECTIONS WOULD BE DIFFERENT FROM THOSE SPECIFIED IN THE SCHEDULE OF DIMENSION, THE MATTER SHOULD BE REFERED TO THE CHIEF ELECTRICAL ENGINEER OF RAILWAY CONCERNED AND ACTION TAKEN AS PER HIS ADVICE.
9. FOR NON-STANDARD DESIGN OF OPEN WEB GIRDERS, CLEARANCE AVAILABLE ABOVE RAIL LEVEL SHOULD BE CHECKED AS PER SCHEDULE OF DIMENSIONS BEFORE LAYING STEEL H-BEAM SLEEPER.
8. GUARD RAIL SHALL BE PROVIDED AS PER PARA ~~498~~ 228 AND OTHER RELEVENT PARAS OF INDIAN RAILWAY PERMANENT WAY MANUAL, JUNE 2020. AS CORRECTED FROM TIME TO TIME. (ALT 2)
7. ~~M.S. MATERIAL TO BE WELDED SHOULD BE TO IS: 2062, GRADE B, GRADE 'A' MAY BE ALSO USED IN THE CASE OF NON AVAILABILITIES OF GRADE 'B' WITH THE APPROVAL OF CHIEF ENGINEER.~~
6. SUITABLE JIGS SHOULD BE USED TO AVOID DISTORTION DUE TO WELDING.
5. WHERE 'A' IS < 1980 mm STIFFENERS ABOVE THE GIRDER CENTRES ARE NOT TO BE PROVIDED.
4. ~~MAX. SPACING OF SLEEPERS SHALL BE 650 mm CENTRE TO CENTRE. AT RAIL JOINTS THE CLEAR SPACING BETWEEN TWO CONSECUTIVE H-BEAM SLEEPERS SHALL NOT BE MORE THAN 300MM.~~
3. THIS DESIGN IS SUITABLE FOR AXLE LOAD UPTO 30 t.
2. ALL DIMENSIONS ARE IN MILLIMETRES.
1. THIS DRAWING SUPERSEDES DRAWING NO RDSO/B-1636/4.

SPECIFICATION

4. FABRICATION OF SLEEPER SHALL BE DONE AS PER RDSO SPECIFICATION No. B5:45.
3. HOT DIP GALVANISING TO BE DONE AS PER IS:4759 TO PREVENT CORROSION. HOWEVER CBE MAY PERMIT USE OF STEEL H-BEAM SLEEPERS WITH PAINTING AS PER PARA-218 OF IRPM ON ECONOMIC AND OTHER PRACTICAL GROUNDS.
2. SPRING WASHER AS PER IS:3063.
1. IRS SPECIFICATION FOR 25 mm THICK NYLON CORD REINFORCED ELASTOMERIC PAD RDSO/M & C/RP-197/03.

SCALE

MILLIMETRES

50250 50 100 150 200 250 1:5

100500 100 200 300 400 500 1:10

ALT:	DESCRIPTION	DATE
2.	~~RAIL FASTENING ASSEMBLY DRAWING NO ALTERED AND NOTE NO 13 DELETED AND NOTE NO 7 CHANGED.~~	
1	NOTE NO 4 CHANGED AS PER IRPWM CORRECTION SLIP NO: 128 FOR PARA 218(2) OF IRPWM AND CB(E)SC1 DATED 25.11.2019.	

"THIS DRAWING IS THE PROPERTY OF RESEARCH DESIGN AND STANDARDS ORGANISATION (MINISTRY OF RAILWAYS) LUCKNOW-226 011, INDIA AND SHALL NOT BE USED COPIED OR REPRODUCED IN PART OR WHOLE WITHOUT PRIOR CONSENT IN WRITING."

R. D. S. O.

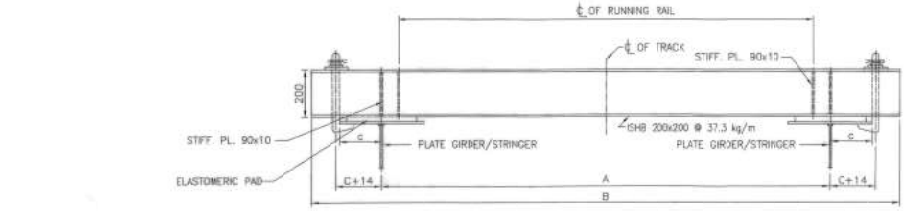
DETAILS OF H-BEAM STEEL SLEEPER FOR BRIDGES (B.G.)

~~(FOR FIELD TRIAL ONLY)~~ (ALT 1)

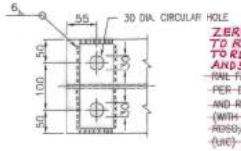
PROVISIONAL

RDSO/B-1636/4/R

CALCULATION REGISTER No. B5/2005/3
PAGES
DONE BY:
CHECKED BY:
DRAWN BY:
CHECKED BY:
COMPUTERISED BY:
CHECKED BY:
ADE/B&S/SS-III
DBS/SE-I
EDBS
AutoCAD COMPUTER FILE NAME: RDSO/B-1636/4R



ELEVATION



DETAIL AT (Y)
(TOP FLANGE)

ZERO TOE LOAD FASTENING SYSTEM TO RDSO DRG.NO. RDSO/T-8759 TO RDSO/T-8765 FOR 60 KG (UIC) AND 52 KG RAIL.

~~RAIL FASTENING ASSEMBLY AS PER DRG NO. RDSO/T-3701 AND RDSO/T-4240 (WITH LATEST ALTERATION) TO RDSO/T-8245 FOR 60 KG (UIC) RAIL.~~

GUARD RAIL ASSEMBLY AS PER DRG. No.RDSO/T-5155 TO 5164

ISHB 200x200 @ 37.3 kg/m

PACKING PL.FOR GUARD RAIL

27 DIA. HOLE FOR GUARD RAIL

HOLE DIA.33.5 FOR 22 DIA. RIVET OF BEARING PLATE

℄ OF TRACK

PLATE 180x70x10

28 DIA. HOOK BOLT TO DRG. No. RDSO/B-1636/5

14 mm DIA. HOLES FOR FIXING GANGWAY PLATE

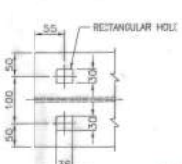
278±1 145.5 56 280 56 145.5 278±1

1192

1463

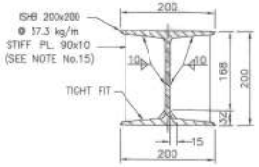
2039±2

TOP PLAN



DETAIL AT (Y)
(BOTTOM FLANGE)

10. ANTI-SKID CHEQUERED PLATES FOR GANGWAY, TROLLY REFUGE, MAN REFUGE, SIDE PATHWAY ETC. SHALL BE CONFORMING TO LATEST IS 6911, I.S.S. SYMBOL 400M, MINIMUM 6 MM THICK (EXCLUDING BEAD HEIGHT) WITH FLAT BOTTOM AND TOP PATTERN CONFORMING TO IS 3501, 1A. FOR COASTAL/CORROSIVE AREAS, THICKNESS MAY BE SUITABLY INCREASED DEPENDING UPON SEVERITY OF CORROSION. APPROPRIATE MATCHING STAINLESS STEEL GRADE FASTENERS AS RECOMMENDED BY MANUFACTURER SHALL BE USED.



SECTION ON AA

FOR B.G.

DIMENSIONS	SPAN (IN m)				
	RIVETTED PLATE GIRDERS				
	24.4	18.3	12.2	9.2	6.1
A	1980	1830	1850	1850	1880
B (MIN.)*	2685	2495	2475	2475	2495
C	200	180	160	160	155
F	FLANGE WIDTH				

DIMENSIONS A, B & C, SHOWN ABOVE ARE FOR STANDARD RBG RIVETTED PLATE GIRDERS.

FOR B.G.

DIMENSIONS	SPAN (IN m)						
	WELDED PLATE GIRDERS			OPEN WEB GIRDERS			
	12.2	18.3	24.4	30.5	45.7	61.0	76.2
A	1850	1830	1980	1900	1900	1900	1900
B (MIN.) *	2655	2715	2905	2515	2515	2515	2515
C	250	290	310	155	155	155	155
F	FLANGE WIDTH						

DIMENSIONS A,B,C, SHOWN ABOVE ARE FOR STANDARD MBG WELDED PLATE GIRDER AND RBG/MBG OPEN WEB GIRDERS FOR OTHER DESIGNS VALUES OF C&B BE CALCULATED AS BELOW.

C=HALF TOP FLANGE WIDTH

B (MIN) * = 2C + A + 305 BUT NOT LESS THAN 2440 mm IN CASE OF B.G. ~~AS PER PARA 273 OF IRPWM~~

4. MAXIMUM CENTRE TO CENTRE SLEEPER SPACING SHOULD BE 650 MM EXCEPT AT CROSS GIRDERS. THE CLEAR DISTANCE BETWEEN TWO SLEEPERS AT CROSS GIRDER LOCATION SHOULD NOT BE MORE THAN 450 MM. THE CLEAR DISTANCE BETWEEN JOINT SLEEPERS SHOULD NOT BE MORE THAN 200 MM.

7. STEEL TO BE USED SHOULD BE OF GRADE E-250 B0 QUALITY AS MENSIONED UNDER CLAUSE 8.2 (AS PROVIDED IN ACS NO 5 DATED 30-08-2013) OF IRS; B1-2011, AS CORRECTED FROM TIME TO TIME.

19. SIZE OF FILLET WELDS ARE EXPRESSED IN LEG LENGTH.
18. IF CHIEF ENGINEER OF THE ZONAL RLY. CONSIDERS THAT THE GUARD RAIL IS STIFFER ENOUGH TO PREVENT BUNCHING OF SLEEPERS IN THE EVENT OF DERAILMENT, HE MAY SUITABLY DECIDE DISPENSATION OF TIE ANGLES ON THE STEEL H-BEAM SLEEPERS.
17. TO FACILITATE MOVEMENT OF GIRDER ENDS, FISH PLATED JOINTS IN GUARD RAILS SHOULD BE PROVIDED ON EACH PIER. WELDED GUARD RAIL SHOULD NOT BE USED.
16. THE LOCATION WHERE H-BEAM SLEEPER IS TO BE SEATED IS TO BE THOROUGHLY CLEANED AND A THICK COAT OF READY MIXED RED LEAD PAINT CONFORMING TO IS:102 IS TO BE GIVEN WELL IN ADVANCE BEFORE PROVIDING H-BEAM SLEEPER.
15. STIFFENER PLATE SHOULD BE WELDED ON BOTH SIDES WITH TOP FLANGE OF H-BEAM IN FULL LENGTH AND WITH WEB OF H-BEAM UPTO A DEPTH OF 168 mm. THE STIFFENER PLATE SHALL BE HAVING A TAPERED CUT BEYOND 168 mm DEPTH AND SHALL TIGHT FIT WITH THE BOTTOM FLANGE WITHOUT WELDING.
14. FOR RIVETTED/WELDED PLATE GIRDER, SUITABLE THICKNESS OF M. S. PACKING PLATE SHOULD BE WELDED AT THE BOTTOM FLANGE OF H-BEAM SLEEPER TO MAINTAIN THE RAIL LEVEL DUE TO THE THICKNESS OF SPLICE PLATE AND SECOND PLATE (IF PROVIDED). AS A RESULT OF PROVIDING H-BEAM SLEEPER, THE LEVEL OF TRACK SHALL BE RAISED BY 72 mm WITH 60 kg. RAIL. THE EFFECT OF SUCH RAISES OF TRACK LEVELS ON SCHEDULE OF DIMENSIONS AND EXISTING VERTICAL CLEARANCES ON ELECTRIFIED SECTIONS BE TAKEN INTO CONSIDERATION BEFORE ACTUAL GOING FOR SUCH SLEEPERS.
13. ~~FOR SUCH CASES WHERE NO STANDARD DRAWING OF RAIL FASTENING ASSEMBLEY IS AVAILABLE RAILWAYS MAY FOLLOW THEIR OWN DESIGNS.~~
12. FOR SEATING ARRANGEMENT FOR RIVETTED PLATE GIRDERS/STRINGERS AND ARRANGEMENT FOR FIXING GANGWAY SEE DRG. No. RDSO/B-1636/5
11. FOR NON STANDARD DESIGN, DIMENSION 'A' AS SHOWN ABOVE SHOULD NOT BE MORE THAN 1980 mm.
10. IN CASES WHERE THE CLEARANCES BETWEEN THE BRIDGE STRUCTURES AND LIVE OHE IN ELECTRIFIED SECTIONS WOULD BE DIFFERENT FROM THOSE SPECIFIED IN THE SCHEDULE OF DIMENSION, THE MATTER SHOULD BE REFERED TO THE CHIEF ELECTRICAL ENGINEER OF RAILWAY CONCERNED AND ACTION TAKEN AS PER HIS ADVICE.
9. FOR NON-STANDARD DESIGN OF OPEN WEB GIRDERS, CLEARANCE AVAILABLE ABOVE RAIL LEVEL SHOULD BE CHECKED AS PER SCHEDULE OF DIMENSIONS BEFORE LAYING STEEL H-BEAM SLEEPER.
8. GUARD RAIL SHALL BE PROVIDED AS PER PARA ~~279~~ 228 AND OTHER RELEVENT PARAS OF INDIAN RAILWAY PERMANENT WAY MANUAL JUNE 2020. AS CORRECTED FROM TIME TO TIME.
7. ~~M.S. MATERIAL TO BE WELDED SHOULD BE TO IS:2062, GRADE B GRADE 'A' MAY BE ALSO USED IN THE CASE OF NON AVAILABILITES OF GRADE B WITH THE APPROVAL OF CHIEF ENGINEER.~~
6. SUITABLE JIGS SHOULD BE USED TO AVOID DISTORTION DUE TO WELDING.
5. WHERE 'A' IS < 1958 mm STIFFENERS ABOVE THE GIRDER CENTRES ARE NOT TO BE PROVIDED.
4. ~~MAX. SPACING OF SLEEPERS SHALL BE 650 mm CENTRE TO CENTRE. AT RAIL JOINTS THE CLEAR SPACING BETWEEN TWO CONSECUTIVE H-BEAM SLEEPERS SHALL NOT BE MORE THAN 200MM.~~
3. THIS DESIGN IS SUITABLE FOR AX.LE LOAD UPTO 30 t.
2. ALL DIMENSIONS ARE IN MILLIMETRES.
1. THIS DRAWING SUPERSEDES DRAWING NO RDSO/B-1635/4.

NOTE

4. FABRICATION OF SLEEPER SHALL BE DONE AS PER RDSO SPECIFICATION No. B5:45.
3. HOT DIP GALVANISING TO BE DONE AS PER IS:4759 TO PREVENT CORROSSION. HOWEVER CBE MAY PERMIT USE OF STEEL H-BEAM SLEEPERS WITH PAINTING AS PER PARA-218 OF IRBM ON ECONOMIC AND OTHER PRACTICAL GROUNDS.
2. SPRING WASHER AS PER IS:3063.
1. IRS SPECIFICATION FOR 25 mm THICK NYLON CORD REINFORCED ELASTOMERIC PAD RDSO/M & C/RP-197/03.

SPECIFICATION

MILLIMETRES

50250 50 100 150 200 250 1:5

100500 100 200 300 400 500 1:10

SCALE

ALT:	DESCRIPTION	DATE
3	NOTE NO 10 ADDED.	
2	RAIL FASTENING ASSEMBLY DRAWING NO ALTERED AND NOTE NO 13 DELETED AND NOTE NO 7 CHANGED.	
1	NOTE NO 4 CHANGED AS PER IRPWM CORRECTION SLIP NO: 128 FOR PARA 273(i) OF IRPWM AND CBE(SC) DATED 24.06.2020	

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R. D. S. O.

DETAILS OF H-BEAM STEEL SLEEPER FOR BRIDGES (B.G.)

~~(FOR FIELD TRIAL ONLY)~~

PROVISIONAL

RDSO/B-1636/4/R

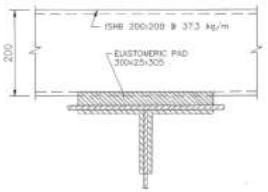
CALCULATION REGISTER No.DO/2005/6
PAGES | DONE BY: R.N.SHUKLA/SED | CHECKED BY:

DRAWN BY: PRAMOD SAH/SA | CHECKED BY: R.N.SHUKLA/SED

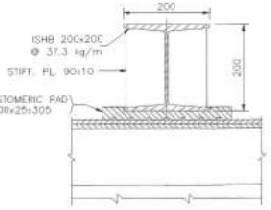
COMPUTERISED BY: PRAMOD SAH/SA | CHECKED BY: R.N.SHUKLA/SED

ADE/B&S/SS-III | DBS/SB-I | EDBS

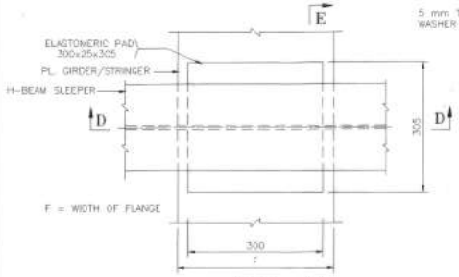
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SECTION ON D.D.

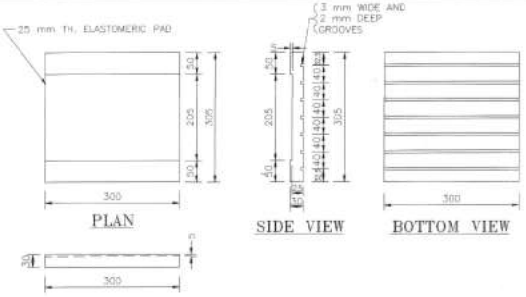


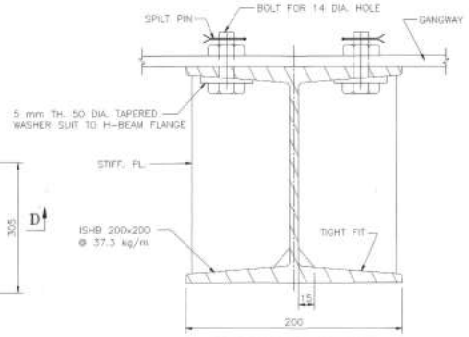
SECTION ON E.E.



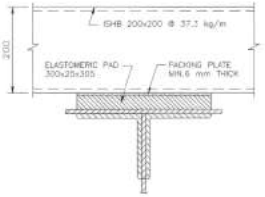
PLAN

SEATING ARRANGEMENT ON GIRDER TYPICAL FOR B.G.

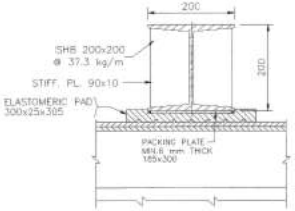




ARRANGEMENT FOR FIXING GANGWAY

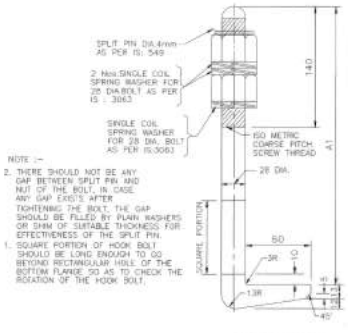


SECTION ON D.D.
(WITH PACKING PLATE)

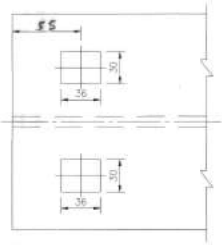


SECTION ON E.E.
TYPICAL DETAIL SHOWING PACKING PL. BELOW SLEEPER





ELEVATION SIDE VIEW



RECTANGULAR HOLE IN THE BOTTOM FLANGE

DETAIL OF HOOK BOLT

NOTE:- SCALE:- 1:2

1. PURCHASER TO SPECIFY LENGTH A1.
2. NUT DIMENSIONS SHALL CONFORM TO IS:1363.

NOTE

14. FOR DETAILS OF PLACEMENT OF H-BEAM SLEEPER AT SPLICE /JOINT LOCATION REFER DRG. NO. RDSO/B-1636/12 & RDSO/B-1636/12/1.
13. ANTI-SKID CHEQUERED PLATES FOR GANGWAY, TROLLY REFUGE, MAIN REFUGE,SIDE PATHWAY ETC. SHALL BE CONFORMING TO LATEST 'IS 6911 ISS SYMBOL 409M, MINIMUM 6MM THICK (EXCLUDING BEAD HEIGHT) WITH FLAT BOTTOM & TOP PATTERN CONFORMING TO IS 3502,1A. FOR COASTAL/ CORROSIVE AREAS, THICKNESS MAY BE SUITABLY INCREASED DEPENDING UPON SEVERITY OF CORROSION.
APPROPRIATE MATCHING STAINLESS STEEL GRADE FASTENERS AS RECOMMENDED BY MANUFACTURER SHALL BE USED.
12. ~~FOR RIVETTED/WELDED PLATE GIRDER, SUITABLE THICKNESS OF M. S. PACKING PLATE SHOULD BE WELDED ONLY AT THE BOTTOM FLANGE OF INDIVIDUAL H-BEAM OF H-BEAM SLEEPER TO MAINTAIN THE RAIL LEVEL DUE TO THE THICKNESS OF SPLICE PLATE AND SECOND PLATE (IF PROVIDED). IN CASE OF STRINGER 25 mm THICK ELASTOMERIC PAD SHOULD ALSO BE PROVIDED.~~
11. THE SURFACE OF THE M.S. PLATE TO WHICH THE ELASTOMERIC PAD IS TO BONDED SHALL BE CLEANED TO MAKE IT FREE FROM DIRT, OIL, GREASE, RUST, MILL-SCALE OR ANY OTHER EXTRANEOUS MATTER.
10. ~~HOLES IN THE ELASTOMERIC PAD SHALL BE PUNCHED FOR ACCOMODATION OF RIVETS AT SPLICES AND TOP LATERAL BRACING CONNECTION WITH TOP FLANGE OF PLATE GIRDER AS PER SITE REQUIREMENT.~~
9. THE HOLE OF SUITABLE DIA. IS TO BE PUNCHED BY PRESSURE IN THE ELASTOMERIC PAD TO ACCOMODATE RIVET HEADS AS PER SITE CONDITION.
8. THE ELASTOMERIC PAD SHALL BE JOINED IN POSITION WITH THE M.S. PLATE AND WHEREVER PRACTICABLE ROLLER PRESSURE SHALL BE APPLIED FROM ONE END SO AS TO AVOID AIR ENTRAPMENT/GAPS.
7. ~~FOR 30.5 m SPAN PSBM AND RIG GIRDERS, THERE WILL BE FOUR ROWS OF RIVET AND HOLES SHOULD BE PUNCHED ACCORDINGLY.~~
6. THE ADHESIVE SHALL BE APPLIED IN THIN LAYER UNIFORMLY SPREAD BOTH ON THE SURFACE OF THE ELASTOMERIC PAD AND M.S. PLATE TO BE BONDED. AFTER APPLICATION OF ADHESIVE, 10 TO 15 MINUTES SHALL BE ALLOWED BEFORE JOINING THE TWO SURFACES SO AS TO ALLOW THE SOLVENT TO EVAPORATE.
5. THE SURFACE OF THE ELASTOMERIC PAD TO BE BONDED SHALL BE CLEANED BY GENTLY RUBBING WITH FINE EMERY CLOTH FOR THE PURPOSE OF REMOVING ANY SUPERFICIAL LAYERS OF EXTRANEOUS MATTER SUCH AS WAX. CARE SHALL BE EXERCISED DURING RUBBING THAT THE SURFACE OF THE ELASTOMERIC PAD IS NOT DAMAGED.
4. ELASTOMERIC PAD SHALL BE JOINED TO THE TOP OF THE GIRDER USING POLYCHLOROPRENE BASED SELF-CURING ADHESIVE AS DUNLOP S-759 OF M/S DUNLOP INDIA LTD. OR PLIOBOND OF M/S GOOD YEAR INDIA LTD. OR DENTRITE PC-65 OF M/S CHANDRAS CHEMICAL ENTERPRISES PVT. LTD. OR FEVICOL SB - 97 OF M/S NABULA CHEMICAL PVT. LTD. OR SIMILAR TYPE. THE SOLID CONTENTS OF THE ADHESIVES SHALL BE 20 TO 22 % AND SHELF LIFE MIN. ONE YEAR.
3. THE SIZE AND SHAPE OF HOOK BOLT SHALL BE AS SHOWN IN THE DRAWING. THE POSITION OF THE HOOK BOLT WILL VARY FROM SPAN TO SPAN. 50 mm DIA. HOLE FOR 28 mm DIA. HOOK BOLT IN TOP PLATE WILL HAVE TO BE DRILLED AT SITE TO SUIT THE SPAN. ~~THE BOTTOM PLATE OF SIZE 138x12x100 WITH RECTANGULAR HOLE, AS SHOWN IN THE DRAWING, SHALL BE TIGHT FIT BETWEEN THE WEB OF H-BEAM SLEEPERS.~~
2. THIS DESIGN IS SUITABLE FOR AXLE LOAD UPTO 30 t.
1. ALL DIMENSIONS ARE IN MILLIMETRES.

SPECIFICATION

4. FABRICATION OF SLEEPER SHALL BE DONE AS PER RDSO SPECIFICATION No. BS : 45.
3. HOT DIP GALVANISING TO BE DONE AS PER IS : 4759 TO PREVENT CORROSION. HOWEVER CBE MAY PERMIT USE OF STEEL H-BEAM SLEEPERS WITH PAINTING AS PER PARA-218 OF IRBM ON ECONOMIC AND OTHER PRACTICAL GROUNDS.
2. SPRING WASHER AS PER IS.3063.
1. IRS SPECIFICATION FOR 25 mm THICK NYLON CORD REINFORCED ELASTOMERIC PAD RDSO/M & C/RP-197/03.

SCALE

MILLIMETRES

20 10.0 20 40 60 80 1:2

50 25.0 50 100 150 200 1:5

ALT:	DESCRIPTION	DATE
1	NOTE DELETED	ED/84

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3RD	3RD	7TH	7TH
R.	D.	S.	O.

STEEL H-BEAM SLEEPERS FOR BRIDGES

SEATING ARRANGEMENT FOR RIVETTED/WELDED PL.GIRDERS/STRINGERS AND ARRANGEMENT FOR FIXING GANGWAY

PROVISIONAL

RDSO/B-1636/5R1

DRAWN BY: S.N. SURYAVANSHI	DRAWN BY: V.K.PANDEY (SSE)	SUBCHECKED & CHECKED BY: A.K. PANDEY ( )	SUBCHECKED & CHECKED BY: MANISH KUMAR (DIR. B&S)	DESIGN BY: A.K.TIWARI (EDBS)
DESIGN CHECKED BY: S.S. SINGH (ADE)	DRAWING CHECKED BY: VATSALA DIVIVEDI (SSE)			

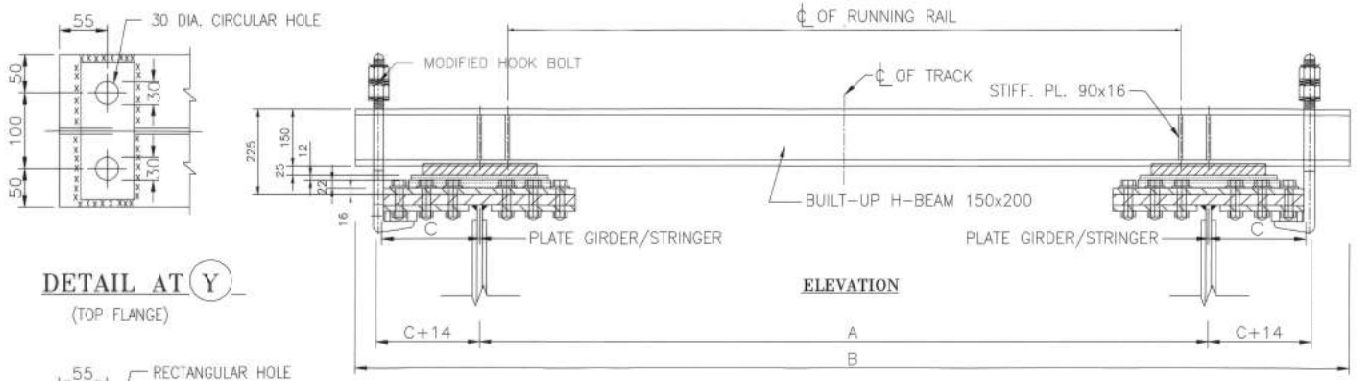
FOR B.G.

DIMENSIONS	SPAN (IN m)		
	WELDED PLATE GIRDER		UNDERSLUNG GIRDER
	18.3	24.4	30.5
A	1830	1980	2300
B (MIN.) *	2635	2785	3155
C	250	250	275
F	FLANGE WIDTH		

DIMENSIONS A,B,C, SHOWN ABOVE ARE FOR STANDARD 25 T WELDED PLATE GIRDER AND UNDERSLUNG GIRDERS. FOR OTHER DESIGNS VALUES OF C&B BE CALCULATED AS BELOW.

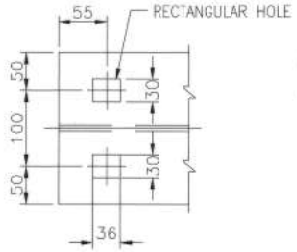
C=HALF TOP FLANGE WIDTH

B (MIN) * = 2C + A + 305 BUT NOT LESS THAN 2440 mm

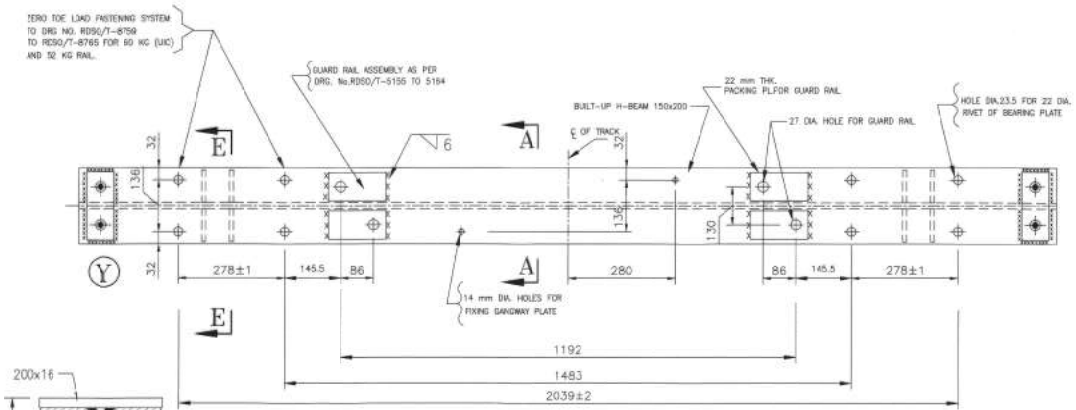


DETAIL AT (Y)
(TOP FLANGE)

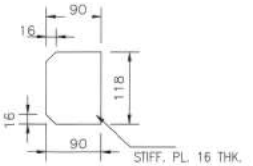
ELEVATION



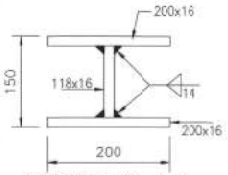
DETAIL AT (Y)
(BOTTOM FLANGE)



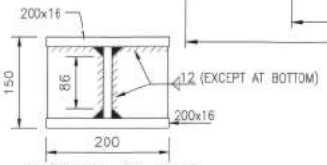
TOP PLAN



DETAIL OF STIFFENER PLATE



SECTION ON A–A



SECTION ON E–E

NOTES:–

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. NO DIMENSION SHALL BE SCALED FROM THIS DRAWING. ONLY WRITTEN DIMENSION SHALL BE FOLLOWED.
3. STEEL TO BE USED SHOULD BE OF GRADE E-250 BO QUALITY AS MENTIONED UNDER CLAUSE 8.2 (AS PROVIDED IN ACS NO.5 DATED 30.08.2013)OF IRS: B1-2001, AS CORRECTED FROM TIME TO TIME.
4. THIS DESIGN IS SUITABLE FOR AXLE LOAD UPTO 30T.
5. SUITABLE JIGS SHOULD BE USED TO AVOIE DISTORTION DUE TO WELDING.
6. FOR OTHER DETAILS REFER DRAWING NO RDSO/B-1636/5 & RDSO/B-1636/4R.
7. TO MAINTAIN LEVEL, SUITABLE THICKNESS OF PACKING PLATE MAY BE PROVIDED.
8. FOR SEATING ARRANGEMENT OVER SPLICES, REFEE DRAWING NO. RDSO/B-1636/12/1.

R. D. S. O.

150 mm HEIGHT BUILT-UP H-BEAM SLEEPER TO MAINTAIN LEVEL AT SPLICE LOCATIONS

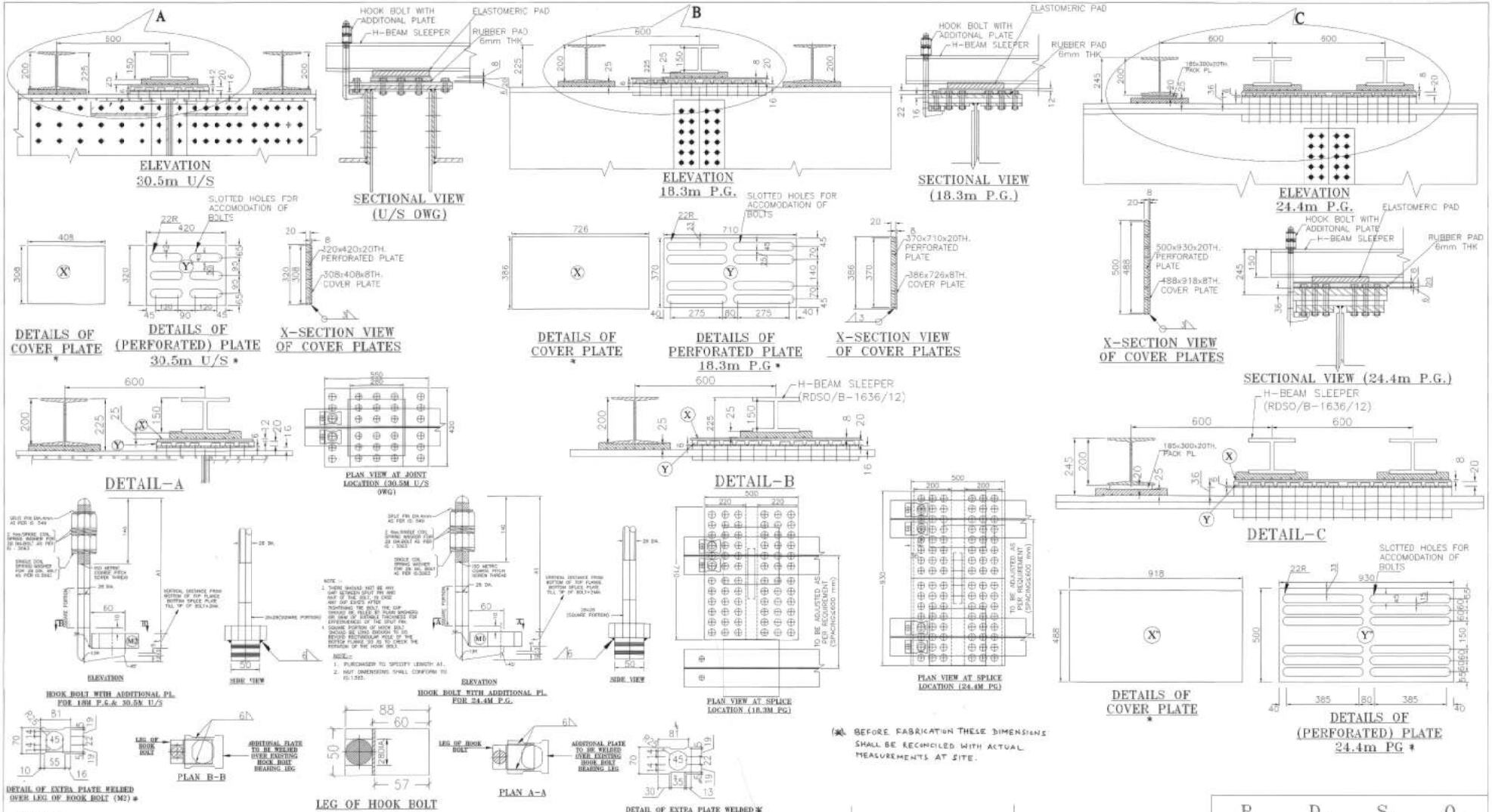
PROVISIONAL

RDSO/B - 1636/12

ALT:	DESCRIPTION	DATE

DESIGN BY: S.N.GUPTA (SSE)	DRAWING DONE BY: V. K. PANDEY (SSE)	SCRUTINIZED & CHECKED BY: A. K. PANDEY (DD /SB-I)	SCRUTINIZED & CHECKED BY: MANISH KUMAR (DBS /SB-I)	APPROVED BY: A. K.TIWARI(EDBS)
DESIGN CHECKED BY: S. S. SINGH (ADE)	DRAWING CHECKED BY: A. K. SAH (SSE)			

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(*) BEFORE FABRICATION THESE DIMENSIONS SHALL BE RECONCILED WITH ACTUAL MEASUREMENTS AT SITE.

NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. NO DIMENSION SHALL BE SCALED FROM THIS DRAWING. ONLY WRITTEN DIMENSION SHALL BE FOLLOWED.
3. STEEL TO BE USED SHOULD BE OF GRADE E-250 BO QUALITY AS MENTIONED UNDER CLAUSE 8.2(AS PROVIDED IN ACS NO.5 DATED 30.08.2013) OF IRS: B1-2001, AS CORRECTED FROM TIME TO TIME.
4. THE LOCATION WHERE H-BEAM SLEEPER IS TO BE SEATED IS TO BE THOROUGHLY CLEANED AND A THICK COAT OF READY MIXED RED LEAD PAINT CONFORMING TO IS:102 IS TO BE GIVEN WELL IN ADVANCE BEFORE PROVIDING H-BEAM SLEEPER.
5. IN CASES WHERE THE CLEARANCES BETWEEN THE BRIDGE STRUCTURES AND LIVE CHE IN ELECTRIFIED SECTIONS WOULD BE DIFFERENT FROM THOSE SPECIFIED IN THE SCHEDULE OF DIMENSION, THE MATTER SHOULD BE REFERRED TO THE CHIEF ELECTRICAL ENGINEER OF RAILWAY CONCERNED AND ACTION TAKEN AS PER HIS ADVICE.
6. FOR NON-STANDARD DESIGN OF OPEN WEB GIRDERS, CLEARANCE AVAILABLE ABOVE RAIL LEVEL SHOULD BE CHECKED AS PER SCHEDULE OF DIMENSIONS BEFORE LAYING STEEL H-BEAM SLEEPER.
7. SIZE OF FILLET WELDS ARE EXPRESSED IN LEG LENGTH.
8. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRG. NO. RDSO/B-1636/12.
9. IN CASE OF EXISTING (OLD) SLEEPER ARRANGEMENTS, WHERE MODIFICATIONS AT SPLICE LOCATIONS ARE UNDERTAKEN AND 150 MM HEIGHT BUILT-UP SLEEPERS AS PER RDSO DRG. NO. B-1636/12 ARE PROVIDED, THE RAIL LEVEL SHALL BE MAINTAINED IN CONFORMITY WITH THE ADJOINING EXISTING SLEEPER ARRANGEMENT. FOR THIS PURPOSE, ADDITIONAL PLATE TO BE PROVIDED AT SPLICE LOCATIONS SHALL BE SUITABLY ADJUSTED, DULY ACCOUNTING FOR THE THICKNESS OF EXTRA PACKING (IF ANY) PROVIDED UNDER SLEEPERS AT NON-SPLICE LOCATIONS IN THE EXISTING ARRANGEMENT.
10. HOLES IN 6MM RUBBER PAD SHALL BE PUNCHED FOR ACCOMMODATION OF BOLT HEAD AS PER SITE REQUIREMENTS.
11. FOR ADOPTION OF NEW ARRANGEMENT IN EXISTING OLD GIRDERS, THE DIMENSIONS OF PERFORATED PLATE, COVER PLATE & ADDITIONAL PLATE OVER HOOK BOLTS SHALL BE SUITABLY MODIFIED AS PER SITE REQUIREMENTS.

1. IRS SPECIFICATION FOR 25 mm & 6 mm THICK NYLON CORD REINFORCED ELASTOMERIC PAD RDSO/M & C/RP-197/2020 (AS AMENDED FROM TIME TO TIME).
2. FABRICATION OF SLEEPER SHALL BE DONE AS PER IRS B1-2001.
3. HOT DIP GALVANISING TO BE DONE AS PER IS:4759 TO PREVENT CORROSSION.
4. SPRING WASHER AS PER IS:3063.

SPECIFICATIONS	ALT:	DESCRIPTION	DATE

R. D. S. O.

TYPICAL ARRANGEMENT FOR FIXING OF STEEL SLEEPER AT JOINT/SPLICE LOCATION OF 30.5m SPAN U/S OWG, 18.3m PG & 24.4m PG

FOR BRIDGES (B.G.)

PROVISIONAL

RDSO/B - 1636/12/1R1

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