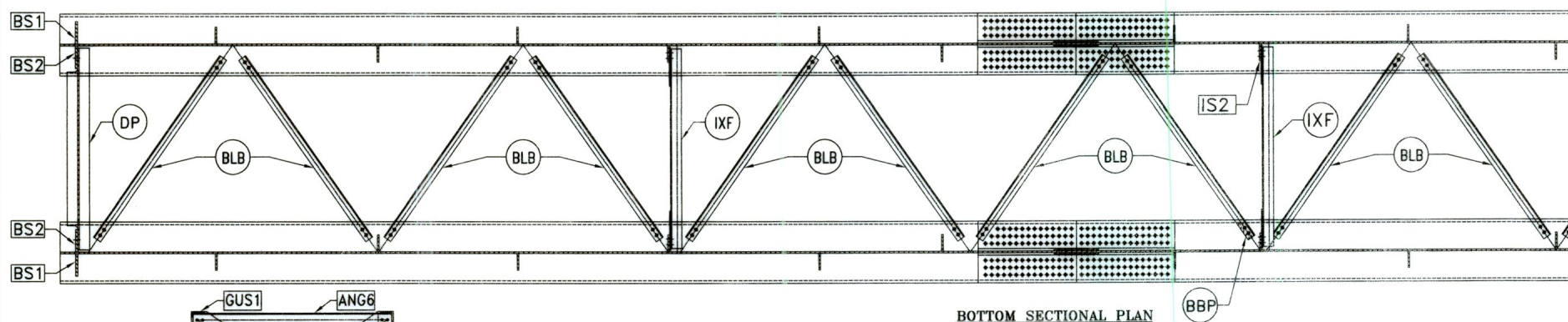
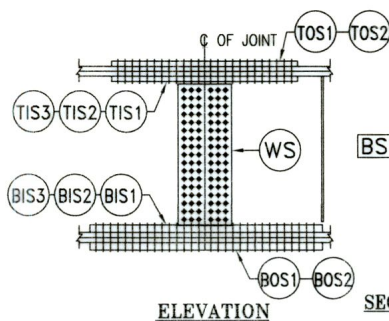
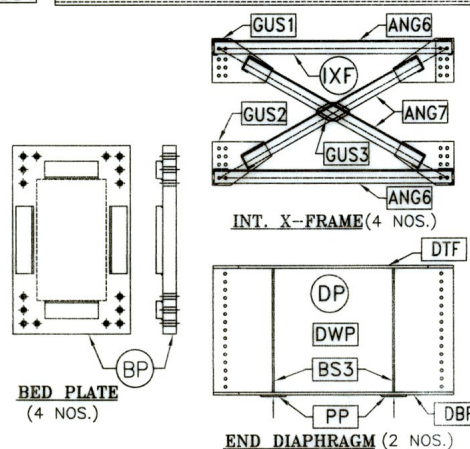


TOP PLAN



BOTTOM SECTIONAL PLAN



ELEVATION

SECTION AT A-A

SECTION AT B-B

SECTION AT C-C

MAIN DRAWING

DESCRIPTION	REFERENCE
GENERAL ARRANGEMENT	RDSO/B-11039R

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(MINISTRY OF RAILWAYS)
LUCKNOW-226011(INDIA)
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R. D. S. O.

"25t LOADING-2008"
RESTRICTED HEIGHT (RH) PLATE GIRDER
WELDED TYPE FOR TEMPORARY WORKS
26.8m OVERALL LENGTH
ASSEMBLY DRAWING

PROVISIONAL DATE-25.03.2014

RDSO/B-11039/2R

6. ASSEMBLY MAY BE DONE AS PER SHIPPING LIST NOS. AND ARRANGEMENT GIVEN ABOVE FOR GENERAL ARRANGEMENT IN DETAILED REFER DRAWING NO. RDSO/B-11039/R.
5. MATCH MARKING MAY BE DONE WHEREVER NECESSARY BEFORE SHIPPING MEMBERS.
4. SHIPPING MARKS ARE TO BE PAINTED IN WHITE LETTERS 100 mm HIGH (OR AS LARGE AS THE MEMBERS WILL PERMIT) ON EACH MEMBER BEFORE DESPATCH FROM THE WORKS AS THUS ----- (ZA)
3. FOR PART-6 CONSTITUTING COMPLETE SHIPPING UNIT, SEPARATE PART NO. HAS NOT BEEN GIVEN.
2. SHIPPING MARK SHOWN THUS ----- ○
1. PART LIST NOS. SHOWN THUS ----- □

NOTES

SPECIFICATION

(SIZE A3)
NOT TO SCALE

SCALE

ALT.

DESCRIPTION DATE

CALCULATION REGISTER No. DD/2014/3

PAGES

1 TO 42

DONE BY-NILESH KUMAR (J.R.E.)

CHECKED BY-UMA SHANKER (J.E.)

DRAWN BY - MOHD. AZHAR (S.S.E.)

CHECKED BY-NILESH KUMAR (J.R.E.)

MADE/SB-II

SCRUTINISED & CHECKED BY-

SCRUTINISED & CHECKED BY-

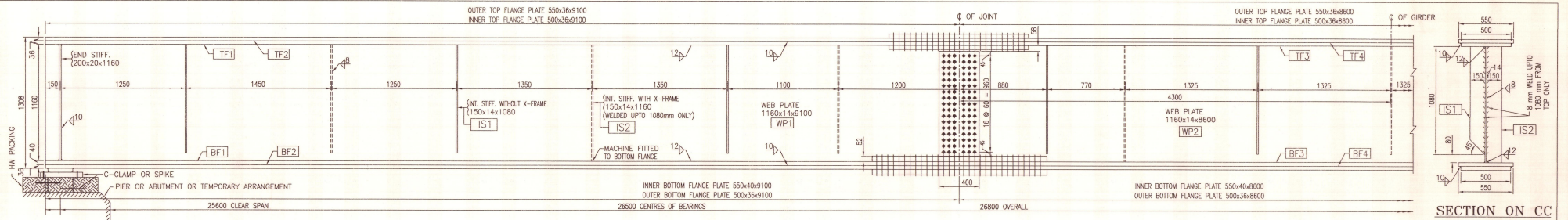
DBS/SB-II

APPROVED BY-

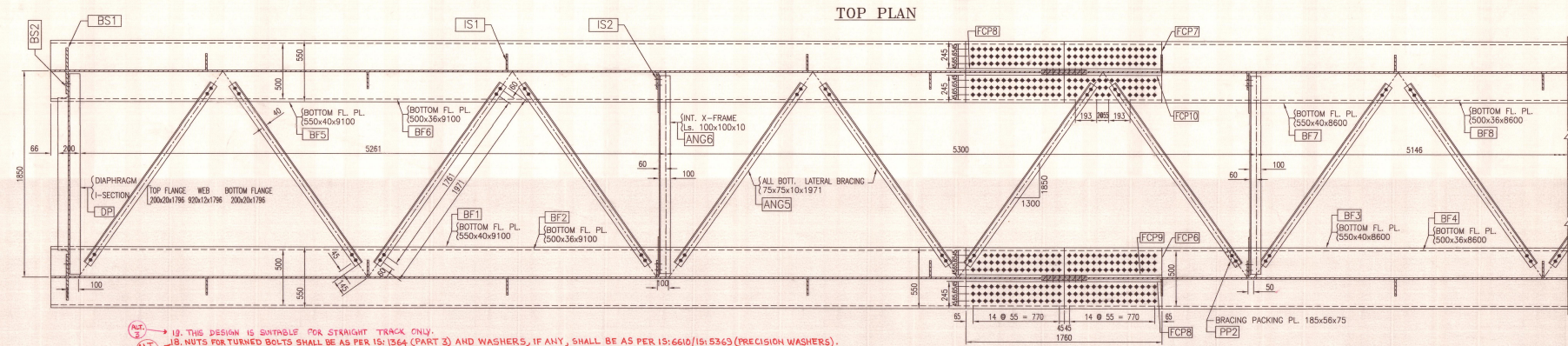
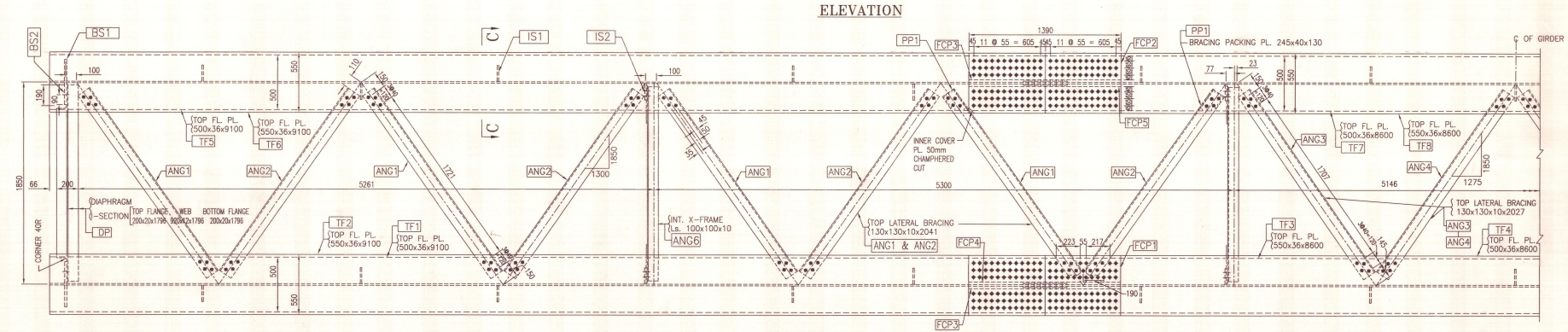
EDBS

AutoCAD FILE No. B11039-2

NOTIFICATION No.



SECTION ON CC



RELATED DRAWINGS

DESCRIPTION	REFERENCE
DETAILS OF SPICE, DIAPHRAGM, Y-FRAME, BEARINGS, PART AND DESPATCH LIST	RDSO/B-11039/1/R
ASSEMBLY DRAWINGS	RDSO/B-11039/2/R
WELDING SEQUENCE	RDSO/B-11039/3

WEIGHT OF SPAN IN TONNES		
SPAN	BED PLATE	TOTAL
50.46	0.555	51.02

THE TOTAL WEIGHT OF SPAN INCLUDES WEIGHT OF BOLTS & WELDS @ 2%.

BOTTOM SECTIONAL PLAN

18. THIS DESIGN IS SUITABLE FOR STRAIGHT TRACK ONLY.
19. NUTS FOR TURNED BOLTS SHALL BE AS PER IS: 1364 (PART 3) AND WASHERS, IF ANY, SHALL BE AS PER IS: 6610/IS: 5363 (PRECISION WASHERS).
20. THE DESIGN IS AS PER NEW FATIGUE CRITERIA FOR 100 YEARS, 5 CM/LIFE.

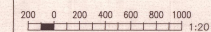
- IN ADDITION TO WELDING TO GIRDER WEB, BEARING STIFFENERS SHALL BE WELDED TO TOP/BOTTOM FLANGE WHEREAS INTERMEDIATE STIFFENERS SHALL BE MACHINE-FIT WITH FLANGE(S).
- CALCULATED DEFLECTION UNDER DESIGN LOADS IS 68.89mm WHICH IS MORE THAN THE MAXIMUM PERMITTED DEFLECTION 44.17mm AS PER SBC CLAUSE 4.17. HOWEVER THE SAME HAS BEEN CONSIDERED OK FOR THE SLOW SPEEDS OVER RH GIRDER, IN ORDER TO REDUCE THE WEIGHT OF GIRDER.
- THE RAIL JOINT AT TEMPORARY PIERS SHALL BE AVOIDED AND SHALL BE MINIMUM 3m AWAY FROM THE CENTER LINE OF PIER.
- THE APPROACH TRACK WHERE THE RH GIRDER IS USED SHALL BE COMPLIANT TO PROVISIONS OF PARA 277 OF IRPM. IT SHALL SPECIALLY BE ENSURED THAT THERE IS NO RAIL JOINT WITHIN 3m OF CENTER LINE OF ABUTMENT.
- GUARD RAILS SHALL BE PROVIDED ON THE BRIDGE AS PER PARA 275 OF IRPM AND EXTENDED STRAIGHT FOR THE LENGTH OF 15m BEYOND THE ABUTMENTS (TEMPORARY OR PERMANENT) OF THE BRIDGE.
- THE GIRDER SHALL BE INSPECTED BY A BRIDGE INSPECTOR AS PER IRPM PARA 1107 ONCE IN FIVE YEARS. IF THE RH GIRDER IS IN USE IN TRACK FOR MORE THAN SIX MONTHS CONTINUOUSLY, THEN IT SHALL BE INSPECTED IN DETAIL BY THE BRIDGE INSPECTOR ONCE AGAIN.
- BEFORE USE OF THE GIRDER FOR ANY WORK, THE FOLLOWING SHALL BE CHECKED/ENSURED:
 - THAT THE ASSEMBLY OF GIRDER LEAVES HAS BEEN DONE PROPERLY. FOR THIS PURPOSE, CROSS-LEVELS OF THE GIRDER, AND PROPER FIXING OF TOP LATERAL BRACING, CROSS FRAMES AND SPLICES SHALL BE ENSURED.
 - THAT BOLTS HAVE BEEN PROVIDED AND TIGHTENED PROPERLY.
 - THAT THE GIRDERS AND ITS COMPONENTS ARE NOT EXCESSIVELY CORRODED.
- THE GIRDERS, WHEN NOT IN USE, IN TRACK, SHALL BE KEPT PROPERLY ON WOODEN PACKING/CRIB STAGING SUFFICIENTLY AWAY FROM GROUND SO THAT THE RAIN SPLASHES, SOIL, VEGETATION etc. DO NOT CORRODE THE GIRDER COMPONENTS.
- THE GIRDERS SHALL BE PROVIDED WITH LONG LIFE PAINTS SUCH AS METALLISING DURING INITIAL FABRICATION AND REGULARLY PAINTED SUBSEQUENTLY WHEN SIGNS OF CORROSION APPEAR.
- ALL BOLTS ARE 22mm NOMINAL DIAMETER (BOLT ACTUAL DIA. 22.39 mm). HOLES DIA. SHALL BE 23.5 mm.
- BEING EMERGENCY RELIEFING GIRDER THE SPLICES, BRACING, AND CROSS FRAMES ARE PROVIDED WITH CLOSE FITTED TURNED BOLTS TO IS:3640 PROPERTY CLASS 4.6 TO FACILITATE FAST ASSEMBLY AND EASY TRANSPORTATION. SPLICES HAVE BEEN PROVIDED SQUARE SO THAT THE GIRDERS, CAN BE SEPARATED INTO THREE PARTS, WHILE TRANSPORTING THE INDIVIDUAL PARTS MAY NOT BE OPENED OUT COMPLETELY. WHEN OVER GIRDERS ARE ASSEMBLED, THE ASSEMBLY DRAWING AND SHIPPING LIST MAY BE REFERRED.
- THE MAIN FILET WELDS CONNECTING FLANGES WITH WEB SHALL BE DONE USING AUTOMATIC SUBMERGED ARC WELDING WITH WIRE-FLUX COMBINATION TO IRS M-39 SPECIFICATIONS. THE WELDS IN STIFFENERS AND TACK WELDS SHALL BE MADE PREFERABLY BY CO₂ WELDING, OR BY GOOD QUALITY MANUAL METAL ARC WELDING.
- ALL STEEL SHALL BE AS PER: IS-2062, GRADE E250 (QUALITY B0) FULLY KILLED AND NORMALIZED, OR AS SPECIFIED IN IRS B1.
- THIS DESIGN IS AS PER BRIDGE RULES, STEEL BRIDGE CODE AND WELDED BRIDGE CODE.
- THIS DESIGN IS FOR TEMPORARY RELIEFING GIRDER: FIT FOR 25t LOADING-2008 WITH MAXIMUM SPEED 50 Kmph.
- ALL DIMENSIONS ARE IN MILLIMETRES.

DESCRIPTION	SYMBOL
FILLET WELD (ONE SIDE)	
FILLET WELD (BOTH SIDES)	
CLOSE FITTING TURNED BOLTS	
ANCHOR BOLTS	

NOTE

SPECIFICATION

MILLIMETRES



SCALE

DESCRIPTION

DATE

RDSO/B-11039R

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R. D. S. O.

"25t LOADING-2008"
RESTRICTED HEIGHT (RH) PLATE GIRDER
WELDED TYPE FOR TEMPORARY WORKS
26.8m OVERALL LENGTH
GENERAL ARRANGEMENT

PROVISIONAL DATE 25-03-2014

TOP PLAN

ELEVATION

SECTIONAL PLAN

SECTION AA

INT. X-FRAME

(4 NOS.)

BED PLATE

BEARING PLATE

END DIAPHRAGM

(2 NOS.)



10 | 1

TURNED BOLT DIA. ALTERED

DATE _____

COMPONENT PARTS		NOS PER SHIPPING MARK	SHIPPING MARK/ NAME	DIMENSIONS (L x B x H) MM x MM x MM	TOTAL NOS PER SPAN				
PART LIST NO/ PART NAME	SHIPPING MARK					ARRANGEMENT			
TF1/ TOP FLANGE	1	ZA/ GIRDER COMPLETE	9100 x 550 x 1358	2					
TF2/ TOP FLANGE	1								
BF1/ BOTTOM FLANGE	1								
BF2/ BOTTOM FLANGE	1								
WP1/ WEB PLATE	1								
IS1/INTERMEDIATE STIFFENER	5								
IS2/INTERMEDIATE STIFFENER	1								
BS1/BEARING STIFFENER	1								
BS2/BEARING STIFFENER	1								
BEARING PLATE (A)	1								
TF3/ TOP FLANGE	1	ZB/ GIRDER COMPLETE	8600 x 550 x 1308	1					
TF4/ TOP FLANGE	1								
BF3/ BOTTOM FLANGE	1								
BF4/ BOTTOM FLANGE	1								
WP2/ WEB PLATE	1								
IS1/INTERMEDIATE STIFFENER	5								
IS2/INTERMEDIATE STIFFENER	2								
TF1/ TOP FLANGE	1								
TF2/ TOP FLANGE	1								
BF1/ BOTTOM FLANGE	1								
BF2/ BOTTOM FLANGE	1	ZC/ GIRDER COMPLETE	9100 x 550 x 1358	2					
WP1/ WEB PLATE	1								
IS1/INTERMEDIATE STIFFENER	5								
IS2/INTERMEDIATE STIFFENER	1								
BS1/BEARING STIFFENER	1								
BS2/BEARING STIFFENER	1								
BEARING PLATE (A)	1								
TF3/ TOP FLANGE	1								
TF4/ TOP FLANGE	1								
BF3/ BOTTOM FLANGE	1					ZD/ GIRDER COMPLETE	8600 x 550 x 1308	1	
BF4/ BOTTOM FLANGE	1								
WP2/ WEB PLATE	1								
IS1/INTERMEDIATE STIFFENER	5								
IS2/INTERMEDIATE STIFFENER	2								
DTF/ DIAPHRAGM TOP FLANGE	1								
DBF/ DIAPHRAGM BOTTOM FLANGE	1								
DWP/ DIAPHRAGM WEB PLATE	1								
BS3/BEARING STIFFENER	4								
PP/RAD PLATE	2	DP/ END DIAPHRAGM	1796 x 200 x 972	2					
ANG 6/TOP & BOTTOM ANGLE	2								
ANG 7/ DIAGONAL ANGLE	2								
GUS1/ GUSSET	2					IXE/ INTERMEDIATE CROSS FRAME	1806 x 1090 x 210	4	
GUS2/ GUSSET	2								
GUS3/ GUSSET	1								
ANG1/ ANGLE	1								
ANG1/ ANGLE	1								
ANG1/ ANGLE	1								
ANG1/ ANGLE	1								
PP1/PACKING PLATE	1								
ANG5/ ANGLE	1								
PP2/PACKING PLATE	1	TLB1/TOP LATERAL BRACING	2041 x 130 x130X10	8					
FCP1/ TOP FLANGE OUTER COVER PLATE	1								
FCP2/ TOP FLANGE OUTER COVER PLATE	1								
FCP3/ TOP FLANGE INNER COVER PLATE	1								
FCP4/ TOP FLANGE INNER COVER PLATE	1								
FCP5/ TOP FLANGE INNER COVER PLATE	1								
FCP6/ BOTT. FLANGE OUTER COVER PLATE	1								
FCP7/ BOTT. FLANGE OUTER COVER PLATE	1								
FCP8/ BOTT. FLANGE INNER COVER PLATE	1								
FCP9/ BOTT. FLANGE INNER COVER PLATE	1								
FCP10/ BOTT. FLANGE INNER COVER PLATE	1	TS1/ TOP INNER SPUCE PLATE	1390x 220 x 40	2					
WP3/ WEB COVER PLATE	1								
RFD PLATE ASSEMBLY	1								
WS/ WEB SPUCE PLATE	1								
RP/BD PLATE	1								
BS1/BOTTOM OUTER SPUCE PLATE	1								
BS2/BOTTOM OUTER SPUCE PLATE	1								
BIS1/BOTTOM INNER SPUCE PLATE	1								
BIS2/BOTTOM INNER SPUCE PLATE	1								
BIS3/BOTTOM INNER SPUCE PLATE	1								
WS/ WEB SPUCE PLATE	1	TS1/ TOP INNER SPUCE PLATE	1390x 220 x 40	2					
BS1/BOTTOM OUTER SPUCE PLATE	1								
BS2/BOTTOM OUTER SPUCE PLATE	1								
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MAIN DRAWING

DESCRIPTION	REFERENCE
GENERAL ARRANGEMENT	RDSO/B-11039R





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R. D. S. O.

"25t LOADING-2008"
RESTRICTED HEIGHT (RH) PLATE GIRDER
WELDED TYPE FOR TEMPORARY WORKS
26.8m OVERALL LENGTH
DETAILS OF SPLICE JOINT, DIAPHRAGMS, X-FRAME,
BEARINGS, PART AND DESPATCH LIST

PROVISIONAL DATE 25-03-2014

RDS0/B-11039/1R

DESCRIPTION	SYMBOL
FILLET WELD (ONE SIDE)	
FILLET WELD (BOTH SIDES)	
CLOSED FITTING TURNED BOLTS	
HOLES FOR C-SPIKES	

7. THE CROSS FRAMES SHALL BE PRE-FABRICATED WITH WELDING COMPLETED IN WORK-SHOP BEFORE DESPATCH.
 8. LIFTING OF ORDER SHALL BE DONE SIMULTANEOUSLY AT TWO JACKING POINTS AT ONE END OF SPAN.
 9. MAXIMUM PRESSURE, BELOW BED PLATE IS 0.786 kg/cm^2
 10. BEFORE LOWERING THE GIRDERS IN POSITION, THE BED PLATE SHALL BE CLEANED PROPERLY AND GRADE GRADE 3 AS PER IS:5038 SHALL BE APPLIED TO ENSURE PROPER FUNCTIONING OF BEARING.
 11. THE BED PLATE MUST BE KEPT IN POSITION BY PROVIDING SUFFICIENT NUMBER OF C-CLAMPS OR WOODEN SPIKES CONNECTING THE BED PLATE TO THE GIRDERS OR PROVIDING ANCHORAGE DETAILS.
 12. THE BED PLATE MUST BE PROVIDED BELOW THE BEARING TO DISTRIBUTE THE LOAD TO MINIMUM THREE WOODEN BLOCKS. THE WOODEN BLOCKS DIRECTLY UNDER BED PLATE SHALL BE OF GOOD QUALITY HARD-WOOD WHICH SHALL NOT GET CRACKED/CRUSHED UNDER LOADS.
 13. UNITS ARE: 23.5 DIA. BLOCKS (ACTUAL BLOCK DIAMETER) 23.5 ± 0.5 (ALT)
 14. ALL DIMENSIONS ARE IN MILLIMETRES

NOTE

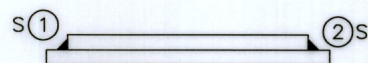
SPECIFICATION

SCALE

ALT.	
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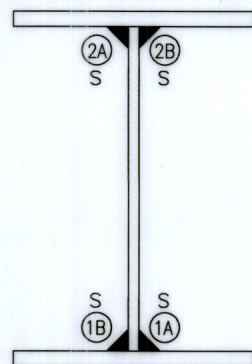
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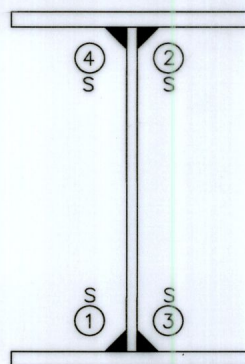


FILLET WELDING OF MULTIPLE
FLANGE PLATES (IF ANY)

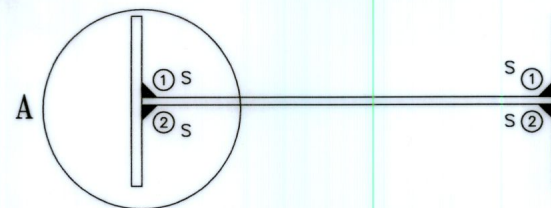
WELDING STAGE I



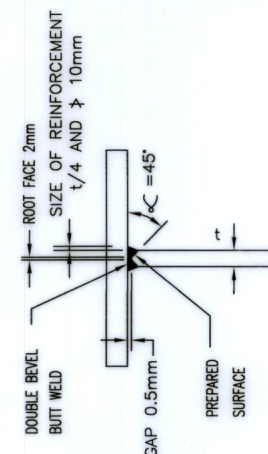
APPLICATION OF DOUBLE HEAD
MACHINE ON GIRDERS ON
VERTICAL POSITION.



APPLICATION OF SINGLE
HEAD MACHINE



APPLICATION OF DOUBLE HEAD
MACHINE ON GIRDERS: LAID FLAT.



DETAILS AT 'A'
EDGE PREPARATION IF DOUBLE
BEVEL BUTT WELD TO BE
PROVIDED AS PER DESIGN

WELDING STAGE I: {FILLET WELDING OF MULTIPLE FLANGE PLATES (IF ANY)}

SEQUENCE AND POSITION OF WELDING.

1. ALL THE WELDING IS TO BE DONE ENTIRELY IN DOWN HAND POSITION. S INDICATES SUBMERGED ARC WELDING.
2. RUN-ON AND RUN-OFF PIECES SHALL BE PROVIDED.
3. AFTER EACH RUN OF WELDING, PLATES SHALL BE CHECKED FOR DEFORMATION.

WELDING STAGE II: (WELDING OF WEB WITH FLANGE PLATES)

1. SEQUENCE AND POSITION OF WELDING.

ALL THE WELDING IS TO BE DONE ENTIRELY IN DOWN HAND POSITION. S INDICATES SUBMERGED ARC WELDING. Nos. 1, 2, 3 ETC. NEXT TO ABOVE NOTATION INDICATE SEQUENCE BY WHICH THE WELDING IS TO BE PERFORMED. RUN-ON AND RUN-OFF PIECES SHALL BE PROVIDED. FOR DOUBLE BEVEL BUTT WELD, IF PROVIDED BY DESIGNER, DETAILS AT 'A' SHALL BE FOLLOWED.

2. APPLICATION OF SINGLE HEAD MACHINE.

TO WELD GIRDERS WITH SINGLE HEAD MACHINE, FLANGES AND WEBS ARE TO BE SET IN FIXTURE AND TACKED.

3. APPLICATION OF DOUBLE HEAD MACHINE ON GIRDERS LAID FLAT.

TWO WELDS ARE DEPOSITED ON ONE FACE OF WEB AT A TIME. THIS ARRANGEMENT DOES NOT REQUIRE REMOVAL OF THE ASSEMBLY FROM THE FIXTURE AFTER TACKING. THE FLANGE PLATES ARE SET AGAINST THE WEB IN THE FIXTURE AND TACKED MAIN WELDS, EACH JOINING FLANGE WITH THE WEB, ARE TO BE LAID WHILE ASSEMBLY IS STILL IN THE FIXTURE. AFTER COMPLETION OF FIRST FACE WELDING OF WEB, THE ASSEMBLY IS TO BE TURNED OVER AND WELDING OF THE SECOND FACE DONE.

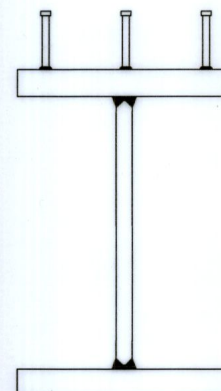
4. APPLICATION OF DOUBLE HEAD MACHINE ON GIRDERS IN VERTICAL POSITION.

IN THIS CASE TWO WELDS ARE LAID JOINING EACH FLANGE WITH THE WEB AT A TIME. THIS WILL REQUIRE TACKING OF THE FLANGES WITH THE WEB, WHICH ARE PREVIOUSLY SET IN FIXTURE SPECIALLY MADE FOR THE PURPOSE. THE ASSEMBLY IS TO BE REMOVED FROM THE FIXTURE AFTER TACKING IS COMPLETED AND POSITIONED IN A MANIPULATOR, THE TWO WELDING HEADS ARE OPERATED IN SUCH A WAY ONE HEAD WILL BE AWAY BY 600 mm, BOTH THE HEADS TRAVELLING AT THE SAME SPEED. IT IS ADVISABLE TO LIMIT THE SINGLE RUN WELD TO 6 mm SIZE.

- 5 AFTER EACH RUN OF WELDING, THE FABRICATED ARTICLE SHALL BE CHECKED FOR ANY DEFORMATION. IN CASE OF DEFORMATION BEYOND PERMISSIBLE LIMITS, THE SAME SHALL BE RECTIFIED BEFORE NEXT STAGE WELDING IS TAKEN UP.

WELDING STAGE III: (PROVIDING STUD SHEAR CONNECTORS, IF ANY)

1. STUD WELDING CAN BE DONE IN WORKSHOP OR AT SITE AS PER CONVENIENCE AND FEASIBILITY.
2. IF GIRDERS ARE TO BE HANDLED AFTER WELDING OF STUD SHEAR CONNECTORS, THE STUDS SHALL BE PROTECTED SUITABLY TO ENSURE THAT THERE IS NO DAMAGE TO THEM.



STUDS (IF ANY) TO BE WELDED
AFTER COMPLETE FABRICATION
OF GIRDER AT WORKSHOP OR
SITE AS DESIRED

WELDING STAGE III:

MAIN DRAWING

DESCRIPTION	REFERENCE
GENERAL ARRANGEMENT	RDSO/B-11039R

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R. D. S. O.

"25t LOADING-2008"
RESTRICTED HEIGHT (RH) PLATE GIRDER
WELDED TYPE FOR TEMPORARY WORKS
26.8m OVERALL LENGTH
WELDING SEQUENCE

PROVISIONAL DATE-25.03.2014

RDSO/B-11039/3

NOTES

SPECIFICATION

(SIZE A3)
NOT TO SCALE

SCALE

ALT

DESCRIPTION

DATE

CALCULATION REGISTER No. DD/2014/3

PAGES

1 TO 42

DONE BY-NILESH KUMAR (J.R.E.)

CHECKED BY-UMA SHANKER (J.E.)

DRAWN BY - MOHD. AZHAR (S.S.E.)

CHECKED BY-NILESH KUMAR (J.R.E.)

SCRUTINISED & CHECKED BY-

ADE/SB-II

SCRUTINISED & CHECKED BY-

DBS/SB-II

APPROVED BY-

EDBS

AutoCAD File No. B11039-3

NOTIFICATION No.