

S. NO.	DRG. NO.	DESCRIPTION
1	RDSO/B - 10444	GENERAL ARRANGEMENT
2	RDSO/B - 10444/1	GENERAL ARRANGEMENT
3	RDSO/B - 10444/2	DETAILS OF CAMBER
4	RDSO/B - 10444/3	DETAILS OF BOTTOM CHORDS
5	RDSO/B - 10444/4	DETAILS OF END RAKER
6	RDSO/B - 10444/5	DETAILS OF TOP CHORDS
7	RDSO/B - 10444/5/1	DETAILS OF TOP CHORDS
8	RDSO/B - 10444/5/2	DETAILS OF TOP CHORDS
9	RDSO/B - 10444/6	DETAILS OF VERTICAL MEMBERS
10	RDSO/B - 10444/7	DETAILS OF DIAGONAL MEMBERS
11	RDSO/B - 10444/8	DETAILS OF PORTAL GIRDER AND SWAY GIRDER
12	RDSO/B - 10444/9	DETAILS OF BOTTOM CHORD JOINT-L0
13	RDSO/B - 10444/9/1	DETAILS OF BOTTOM CHORD JOINT-L1
14	RDSO/B - 10444/9/2	DETAILS OF BOTTOM CHORD JOINT-L2
15	RDSO/B - 10444/9/3	DETAILS OF BOTTOM CHORD JOINT-L3
16	RDSO/B - 10444/9/4	DETAILS OF BOTTOM CHORD JOINT-L4
17	RDSO/B - 10444/10	DETAILS OF TOP CHORD JOINT-U1
18	RDSO/B - 10444/10/1	DETAILS OF TOP CHORD JOINT-U2
19	RDSO/B - 10444/10/2	DETAILS OF TOP CHORD JOINT-U3
20	RDSO/B - 10444/10/3	DETAILS OF TOP CHORD JOINT-U4
21	RDSO/B - 10444/11	DETAILS OF END CROSS GIRDER
22	RDSO/B - 10444/12	DETAILS OF INTERMEDIATE CROSS GIRDER
23	RDSO/B - 10444/13	DETAILS OF STRINGER
24	RDSO/B - 10444/14	DETAILS OF TOP LATERAL BRACING
25	RDSO/B - 10444/14/1	DETAILS OF TOP LATERAL BRACING
26	RDSO/B - 10444/15	DETAILS OF BOTTOM LATERAL BRACING
27	RDSO/B - 10444/16	DETAILS OF CONCRETE DECK SLAB
28	RDSO/B - 10444/17	BEARING LOAD DETAILS

#### NOTES:

- ALL DIMENSIONS ARE IN mm. UNLESS OTHERWISE MENTIONED.
- NO DIMENSIONS SHALL BE SCALED FROM THIS DRAWING. ONLY WRITTEN DIMENSION SHALL BE FOLLOWED.
- THIS BRIDGE SPAN IS DESIGNED FOR ONE LANE OF CLASS 70R OR TWO LANE OF CLASS A AS PER IRC-6-2017, LATEST AMENDMENT & SPECIAL CLASS LOADING OF 385 TON.
- THIS BRIDGE SPAN IS DESIGNED FOR SEISMIC ZONE V & BASIC WIND SPEED OF 55m/s.
- ANALYSIS AND DESIGN OF STEEL TRUSS IS AS PER IRC-24-2010.
- ANALYSIS AND DESIGN OF COMPOSITE CONCRETE DECK IS AS PER IRC-22-2015.
- ALL STEEL PLATES USED IN FABRICATION OF THIS BRIDGE ARE OF GRADE E350 F440 (QUALITY B0) AND ALL ROLLED SECTIONS SHALL BE OF GRADE E250 F410 (QUALITY B0) CONFORMING TO IS 2082-2011.
- GRADE OF CONCRETE FOR DECK SLAB AND CRASH BARRIER SHALL BE M40.
- ALL STUDS SHALL HAVE A CHARACTERISTIC YIELD STRENGTH OF 485MPa AS PER IRC-22-2015.
- SPECIAL CONGESTION CONDITION AS PER CLAUSE NO. 204.4 OF IRC-6-2017, HAS BEEN CONSIDERED IN THIS DESIGN.
- ALL MATERIALS SHALL PASS TESTS / ANALYSIS PRESCRIBED BY RELEVANT BIS SPECIFICATIONS.
- ALL STEEL FABRICATION WORK SHALL BE DONE IN ACCORDANCE WITH IRISIS CODES AND SPECIFICATIONS.
- ALL CONNECTIONS MADE IN THE FABRICATION YARD SHALL BE WELDED AND ALL CONNECTIONS MADE AT SITE SHALL BE BY HSFG BOLTS UNLESS SPECIFIED OTHERWISE.
- ALL OBSTUSE ANGLE CUTTING SHOULD BE DONE IN PROPER SHAPE AND WITHOUT DAMAGE.
- ALL MEMBERS SHALL BE SUITABLY SUPPORTED TO AVOID DISTORTION DURING TRANSPORTATION.
- STEEL MEMBERS SHALL BE FREE FROM IMPERFECTION (MILL SCALES, SLAG INTRUSIONS, LAMINATION, PITTING, RUSTING ETC.) THAT SHALL IMPAIR STRENGTH, DURABILITY AND APPEARANCE. ALL MATERIALS SHALL BE TESTED FOR QUALITY.
- STEEL SURFACES SHALL BE TREATED AS PER IRISIS SPECIFICATIONS.
- ALL WORKSHOP FABRICATION SHALL BE DONE USING SAW (SUBMERGED ARC WELDING) PROCESS ONLY. IN DIFFICULT LOCATIONS FCWV (FLUX CRYSTALLINE WELDING) PROCESS MAY BE ADOPTED.
- THE ASSEMBLY AND ERECTION SCHEME SHALL BE GOT APPROVED FROM THE COMPETENT AUTHORITY PRIOR TO COMMENCEMENT OF WORK. SAFETY OF THE BRIDGE DURING ERECTION SHALL BE THE SOLE RESPONSIBILITY OF THE EXECUTING AGENCY.
- MEMBERS SHALL BE RIGIDLY SECURED IN JIGS & FIXTURES, WITH TEMPORARY BOLT, DURING WELDING, TO AVOID DISTORTION.
- ALL THE MEMBERS MEETING AT A JOINTS SHOULD BE CONNECTED AS PER DETAILS.
- CONNECTIONS USING HSFG BOLTS SHOULD CONFORM TO IRC-24-2010 / IS-800-2007 WITH LATEST REVISION.
- SHEAR CONNECTION STUD SHOULD BE WELDED BY ARC STUD WELDING METHOD AS PER GUIDELINES OF RDSO BS-115 (LATEST REVISION) AS CORRECTED FROM TIME TO TIME.
- PIER AND FOUNDATION USED HERE ARE TO REPRESENT ARRANGEMENT ONLY. ACTUAL DIMENSION OF PIER AND FOUNDATION IS SITE SPECIFIC.
- ALL HSFG BOLTS SHALL BE 22 & 24 DIA. IN 23.5 / 25.5 DIA. HOLES RESPECTIVELY.
- ALL HIGH STRENGTH FRICTION GRIP (HSFG) BOLTS SHALL BE OF PROPERTY CLASS 10.9 IN CONFORMITY WITH IS-4000/IS-111 (RAILWAY STANDARD) LATEST REVISION.
- HEIGHT GAUGE SHALL BE PROVIDED ON THE BOTH APPROACHES AS PER DRAWING NO. CBS-0051
- PIER AND FOUNDATION USED HERE ONE TO REPRESENT ARRANGEMENT ONLY. ACTUAL DIMENSION OF PIER AND FOUNDATION IS SITE SPECIFIC.

**R. D. S. O.**

ROAD OVER BRIDGE  
CAMEL BACK TYPE TRUSS GIRDER  
60m. CLEAR SPAN  
TWO LANE TWO WAY  
7.50 M CARRIAGEWAY WIDTH WITH BOTH SIDE FOOTPATH  
HAVING TOTAL DECK WIDTH OF 11.950M.  
(WITH SPECIAL CLASS LOADING OF 385 TON)  
GENERAL ARRANGEMENT

PROVISIONAL  
RDSO / B - 10444

DESIGN CONSULTANT:  
**SPARSH ENGINEERING COMPANY PRIVATE LIMITED**  
H-55, Harmu Housing Colony, Near Nigam Park,  
Ranchi, Jharkhand - 834 002, PH- 0651-2340859

CLIENT:  
**DEDICATED FREIGHT CORRIDOR CORPORATION OF INDIA LIMITED**  
(A Govt. of India Enterprise)  
Ministry of Railway.

ESTIMATED WEIGHT OF STEEL: 535 TONNES  
1. WEIGHT OF RAILING IS NOT INCLUDED. WEIGHT OF STUDS (15/16" T) IS INCLUDED.  
2. WEIGHT OF BOLTING IS TAKEN AS 3% OF THE TOTAL WEIGHT OF STEEL FRAME AS PER CLAUSE 45.2 OF IRIS B1.  
3. THIS VALUE IS APPROXIMATE SO SHOULD NOT BE USED FOR PAYMENT PURPOSE.

DESIGN CHECKED BY: **S.N. GUPTA (SSE)**  
DRAWING CHECKED BY: **A.K. SAH (SSE)**  
SCRUTINIZED & CHECKED BY: **A.K. PANDEY (DD/SB-I)**  
SCRUTINIZED & CHECKED BY: **MANISH KUMAR (DBS/SB-I)**

ALT:

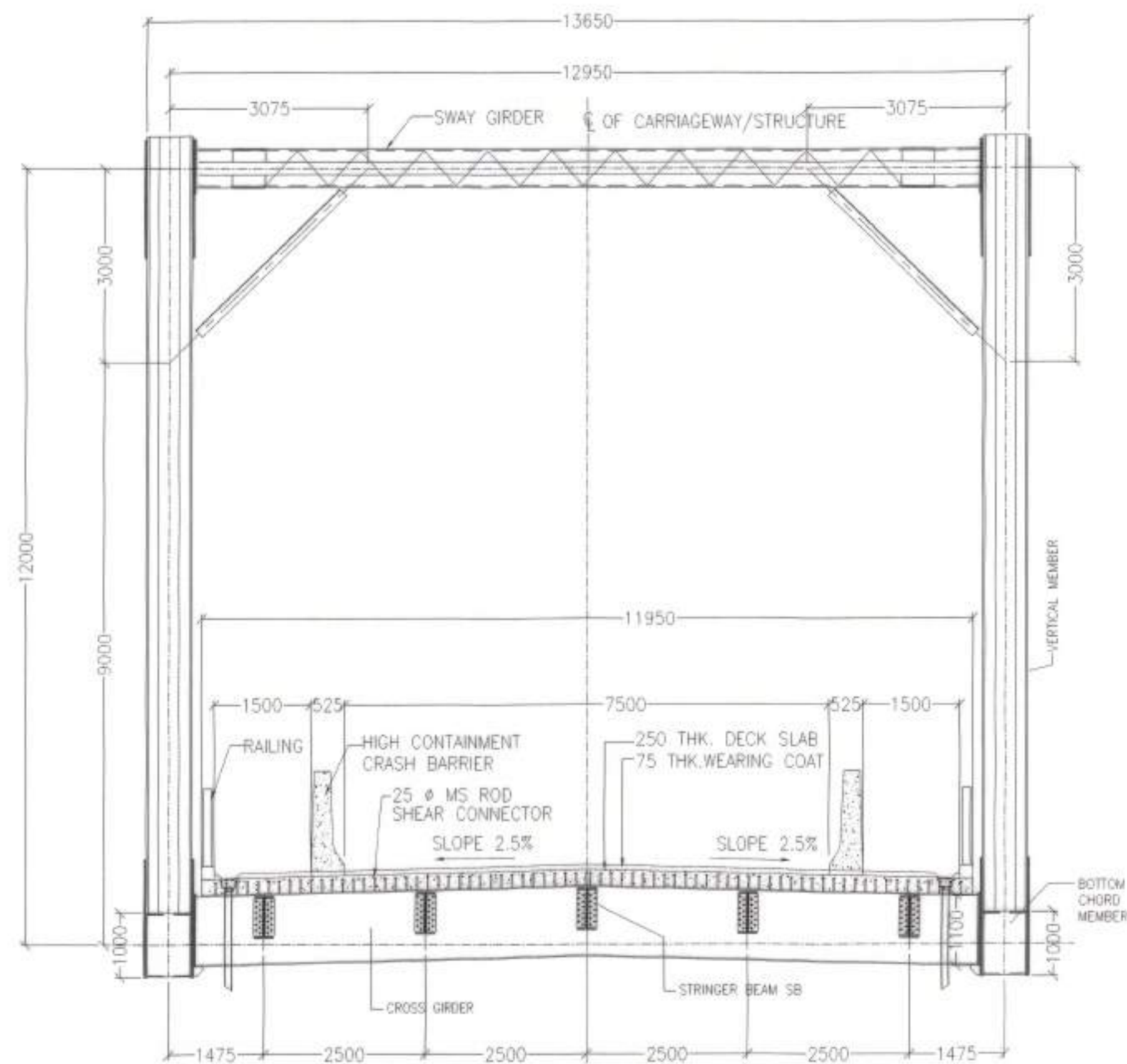
DESCRIPTION

DATE

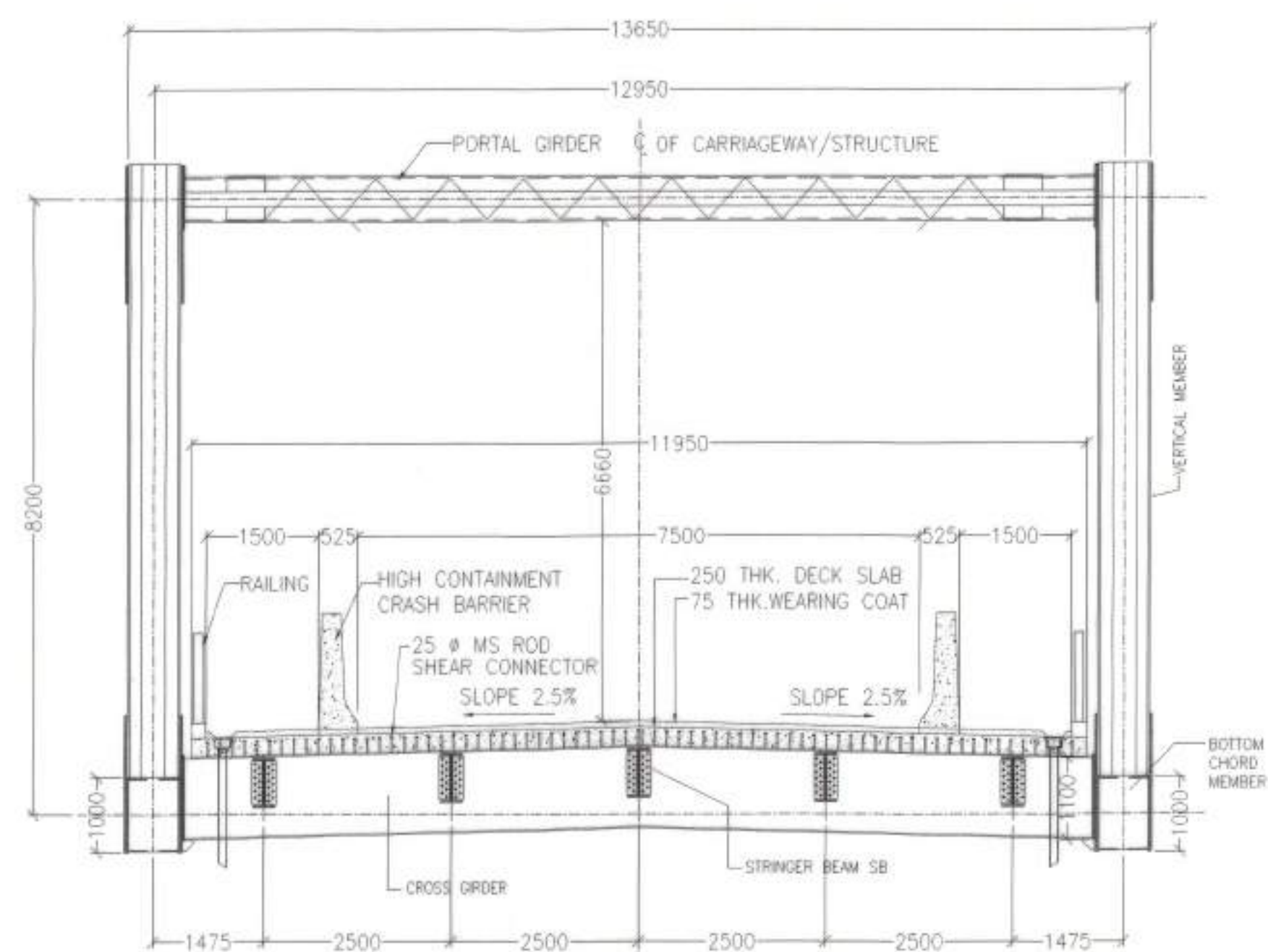
APPROVED BY:  
**R.K. SRIVASTAVA (EDBS)**

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SECTION A-A  
(SCALE 1:50)



SECTION B-B  
(SCALE 1:50)

MEMBER	CROSS SECTION (TYP.)	TYPE	TC1	TC2	TC3
01 TOP CHORD		TOP FLANGE	t1	20	20
		WEB	t2	20	20
		BOTTOM FLANGE	t3	20	20
		TOP FLANGE WIDTH	b1	730	730
		WEB HEIGHT	b2	980	980
		BOTTOM FLANGE WIDTH	w1	200	200

MEMBER	CROSS SECTION (TYP.)	TYPE	BC1	BC2
02 BOTTOM CHORD		TOP FLANGE	t1	20
		WEB	t2	20
		BOTTOM FLANGE	t3	20
		WEB HEIGHT	b2	1000
		BOTTOM FLANGE WIDTH	w1	200

MEMBER	CROSS SECTION (TYP.)	TYPE	EC
03 END RACKER BEAM (ER)		TOP FLANGE	t1
		WEB	t2
		BOTTOM FLANGE	t3
		TOP FLANGE WIDTH	b1
		WEB HEIGHT	b2
		BOTTOM FLANGE WIDTH	w1

MEMBER	CROSS SECTION (TYP.)	TYPE	D1	D2	D3
12 DIAGONAL		FLANGE	t2	25	20
		WEB	t1	25	20
		TOP FLANGE WIDTH	b1	200	200
		WEB WIDTH	b2	600	600

MEMBER	CROSS SECTION (TYP.)	TYPE	V1	V2	V3	V4
13 VERTICAL		FLANGE	t2	32	20	20
		WEB	t1	32	20	20
		FLANGE WIDTH	b1	200	200	200
		WEB WIDTH	b2	1000	600	600

MEMBER	CROSS SECTION (TYP.)
04 END CROSS GIRDER (ECG)	

MEMBER	CROSS SECTION (TYP.)
05 INTERMEDIATE CROSS GIRDER (ICG)	

MEMBER	CROSS SECTION (TYP.)
06 STRINGER BEAM (SB)	

MEMBER	CROSS SECTION (TYP.)
07 TOP CHORD HORIZONTAL (PG)	

MEMBER	CROSS SECTION (TYP.)
08 TOP CHORD HORIZONTAL (SG)	

MEMBER	CROSS SECTION (TYP.)
09 TOP CHORD BRACING (TBE)	
10 TOP LATERAL BRACING (TLB)	

MEMBER	CROSS SECTION (TYP.)
14 KNEE BRACING (KB)	
15 BOTTOM BRACING (BB)	

#### NOTES:

- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.
- ALL STRUCTURAL STEEL PLATES SHALL BE E350 Fy 480 (QUALITY B3) AND ROLLED SECTION SHALL BE E350 Fy 410 (QUALITY B3) CONFORMING TO IS 2062-2011.
- NO DIMENSIONS SHALL BE SCALED FROM THIS DRAWING. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH OTHER RELEVANT DRAWINGS.

**R. D. S. O.**

ROAD OVER BRIDGE  
CAMEL BACK TYPE TRUSS GIRDER  
60m. CLEAR SPAN  
TWO LANE TWO WAY  
7.50 M CARRIAGEWAY WIDTH WITH BOTH SIDE FOOTPATH  
HAVING TOTAL DECK WIDTH OF 11.950M.  
(WITH SPECIAL CLASS LOADING OF 385 TON)  
GENERAL ARRANGEMENT

PROVISIONAL

RDSO / B - 10444 / 1

DESIGN CONSULTANT:



**SPARSH ENGINEERING COMPANY PRIVATE LIMITED**  
H-55, Harmu Housing Colony, Near Nigam Park,  
Ranchi, Jharkhand - 834 002, PH- 0651-2340859

CLIENT:



**DEDICATED FREIGHT CORRIDOR  
CORPORATION OF INDIA LIMITED**  
(A Govt. of India Enterprise)  
Ministry of Railway.

DRAWN BY:  
SANDY BEHA

DESIGNED BY:  
RAVI PRASAD

CHECKED BY:  
SUDHIR KUMAR

S.K. MUKHERJEE  
DY. PM/CIVIL/IKKK

SOUVIK SENGUPTA  
GM/CIVIL/IKKK

AJAY KUMAR  
COM/CIVIL/IKKK

DESIGN CHECKED BY:  
S.N. GUPTA (SSE)

DRAWING CHECKED BY:  
A.K. SAH (SSE)

SCRUTINIZED & CHECKED BY:  
A.K. PANDEY (DD/SB-I)

SCRUTINIZED & CHECKED BY:  
MANISH KUMAR (DBS/SB-I)

ALT:

DESCRIPTION

DATE

APPROVED BY:  
R.K. SRIVASTAVA (EDBS)

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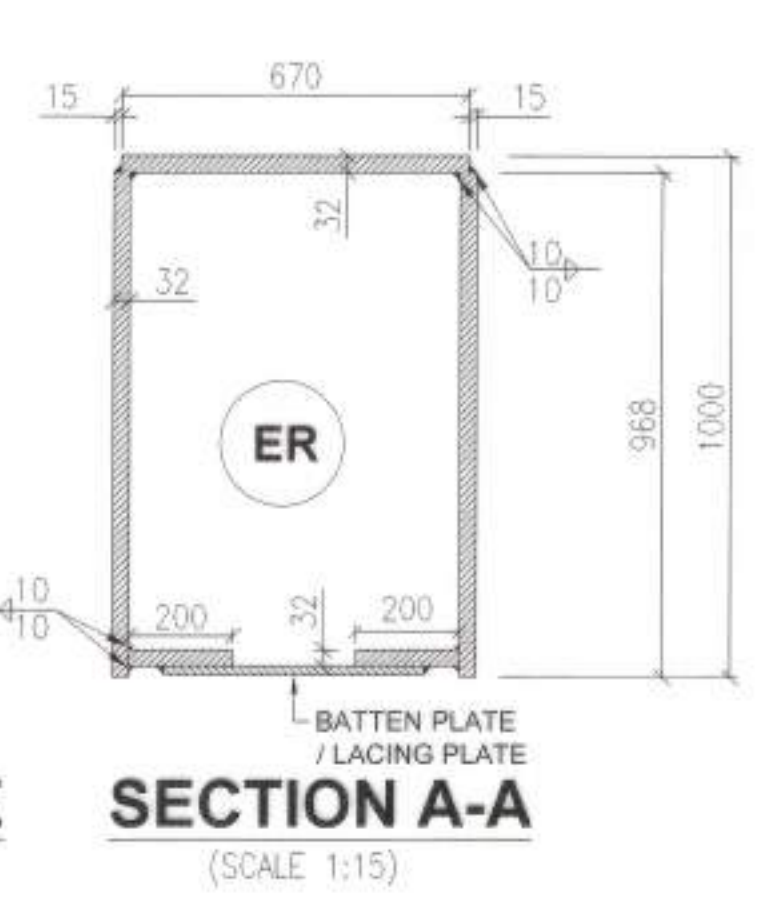
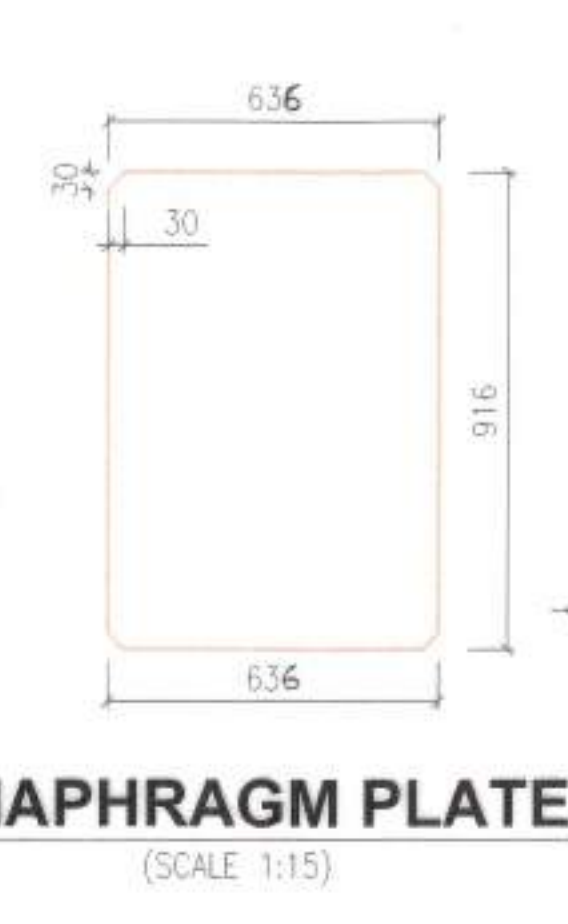
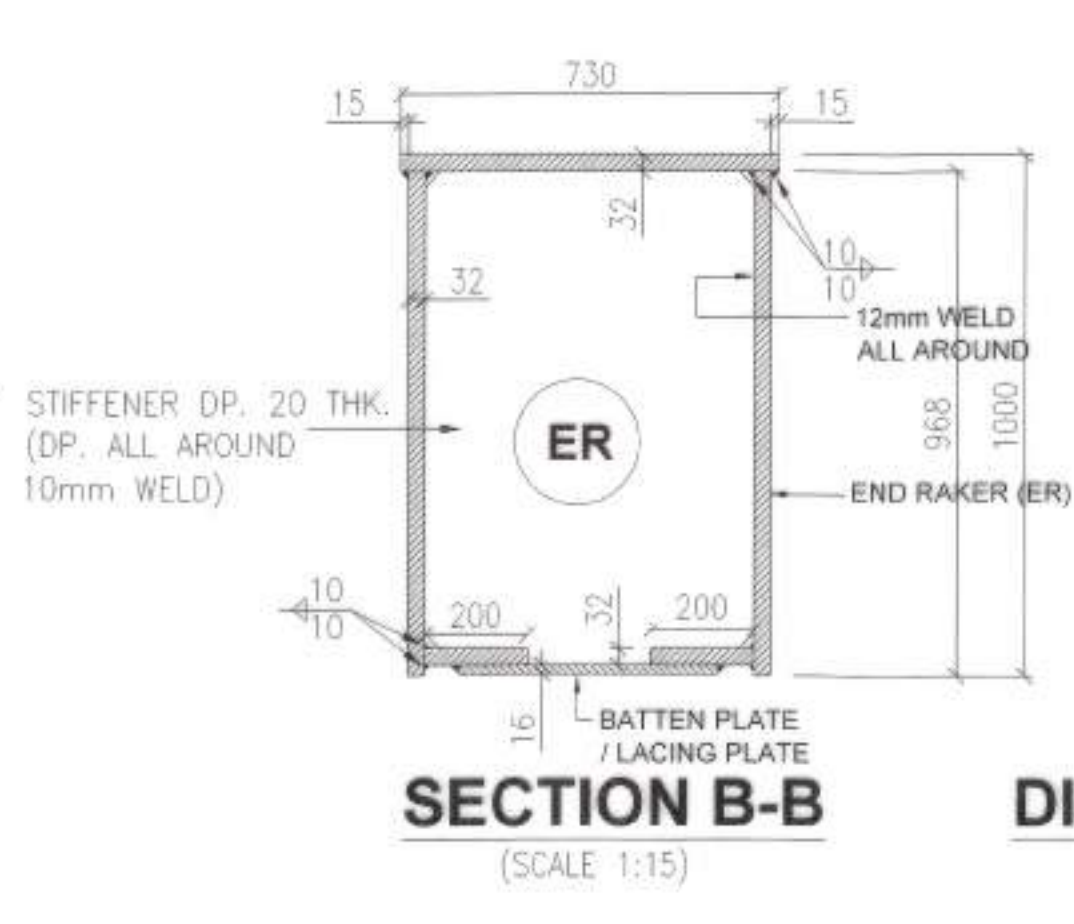
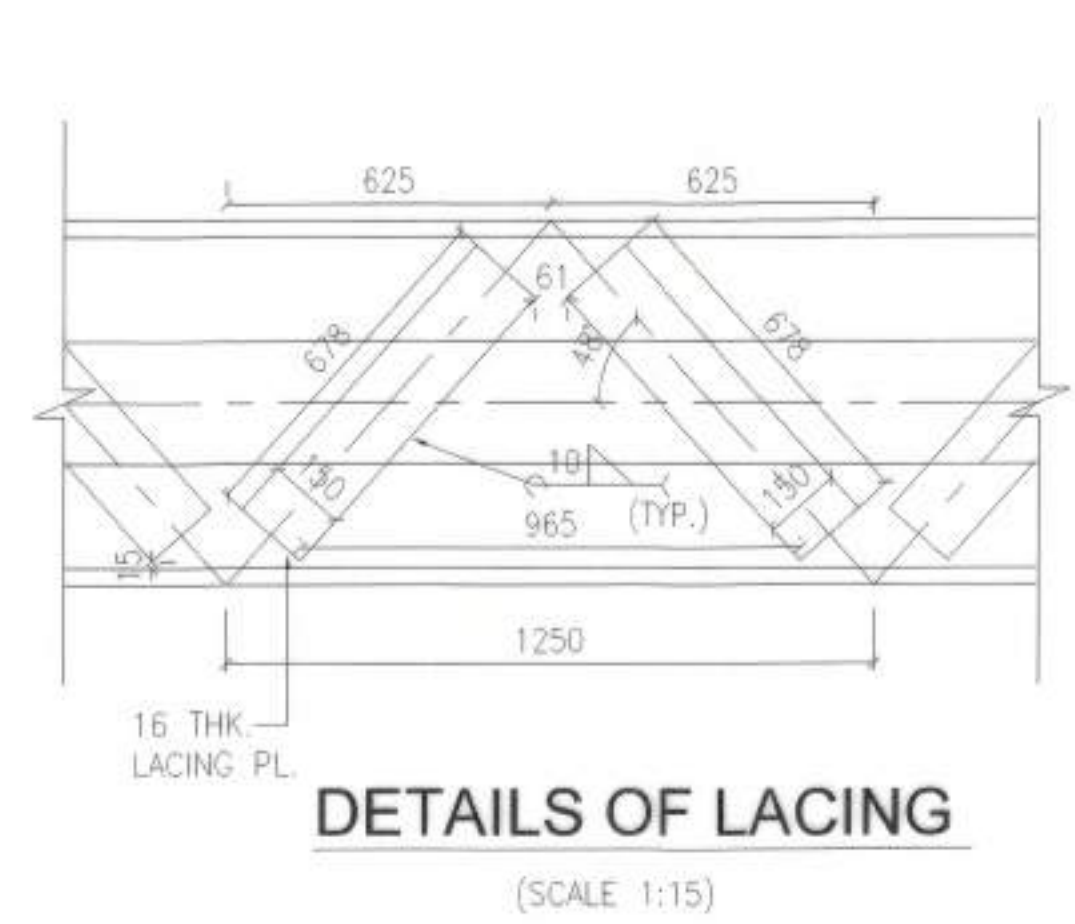
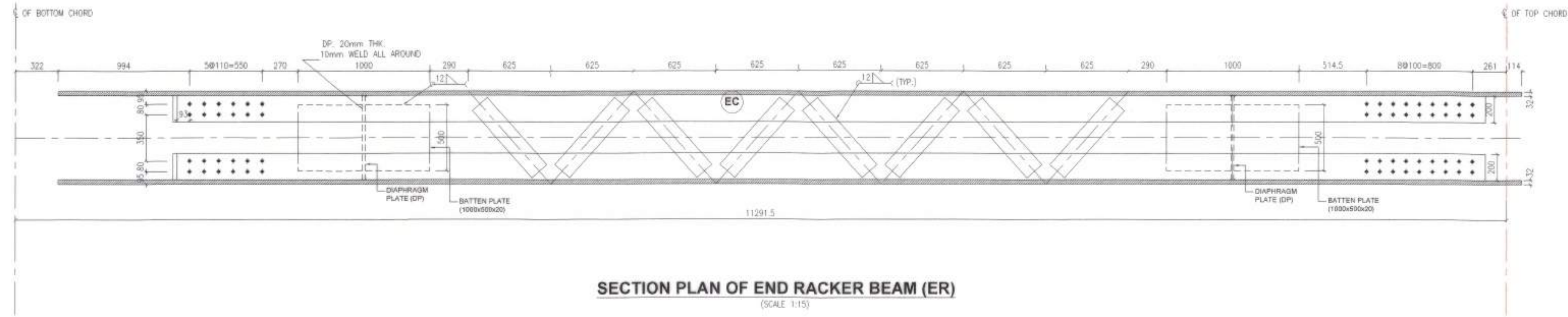
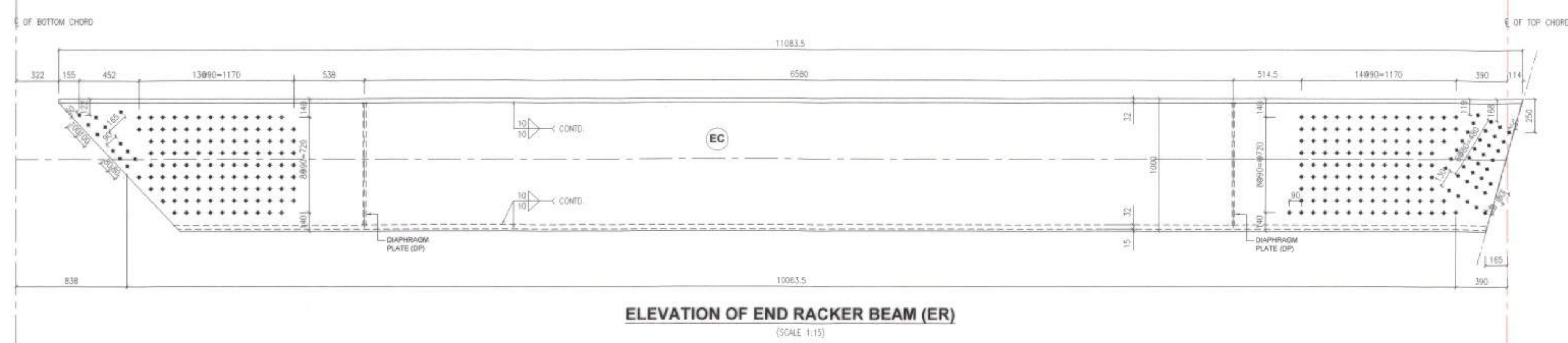
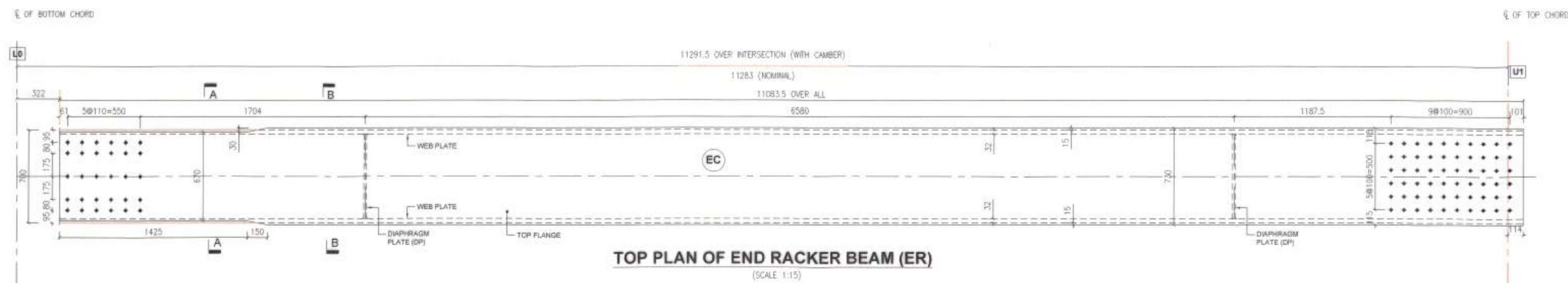












- NOTES:**
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.
  2. ALL STRUCTURAL STEEL PLATES SHALL BE E250 IN 490 (QUALITY B0) AND ROLLED SECTION SHALL BE E250 IN 410 (QUALITY B0) CONFORMING TO IS 2062-2011.
  3. ALL HIGH STRENGTH FRICTION GRIP (HSFG) BOLTS SHALL BE OF PROPERTY CLASS 10.9 IN CONFORMITY WITH IS-4000/BS-111 (RAILWAY STANDARD) LATEST REVISION.
  4. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH OTHER RELEVANT DRAWINGS.
  5. ALL HSFG BOLTS SHALL BE 24 DIA. IN 25.5 DIA. HOLES, EXCEPT IN TOP BRACING, BOTTOM BRACING & KNEE BRACING WHICH SHALL BE OF 20 DIA. IN 21.5 DIA. HOLES.
  6. ALL EDGES TO BE MACHINED OR CONTROL TORCH FLAME CUT.

**LEGENDS:**

DESCRIPTION	FIELD
HSFG BOLT	
TURNED BOLTS	

<b>DESIGN CONSULTANT:</b>  SPARSH ENGINEERING COMPANY PRIVATE LIMITED H-55, Harmu Housing Colony, Near Nigam Park, Ranchi, Jharkhand - 834 002, PH- 0651-2340659			<b>CLIENT:</b>  DEDICATED FREIGHT CORRIDOR CORPORATION OF INDIA LIMITED (A Govt. of India Enterprise) Ministry of Railway.		
<b>DRAWN BY:-</b>  SANJOY BERA	<b>DESIGNED BY:-</b>  RAVINDRA PRASAD	<b>CHECKED BY:-</b>  SUDHIR KUMAR	<b>DESIGN CHECKED BY:</b>  A.K. SAH (SSE)	<b>DRAWING CHECKED BY:</b>  V.K. PANDEY (SSE)	<b>SCRUTINIZED &amp; CHECKED BY:</b>  A.K. PANDEY (DD/SB-I)
<b>BY: PJCIVIL/KKK</b> S.K. MUKHERJEE 28/06/2025			<b>BY: PJCIVIL/KKK</b> SOUVIK SENGUPTA 28/06/2025 AJAY KUMAR 28/06/2025 COMECIVIL/KKK		

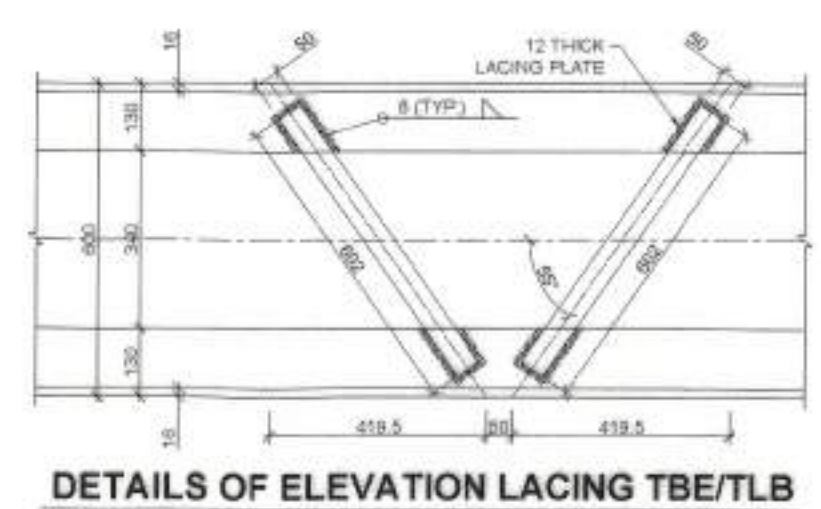
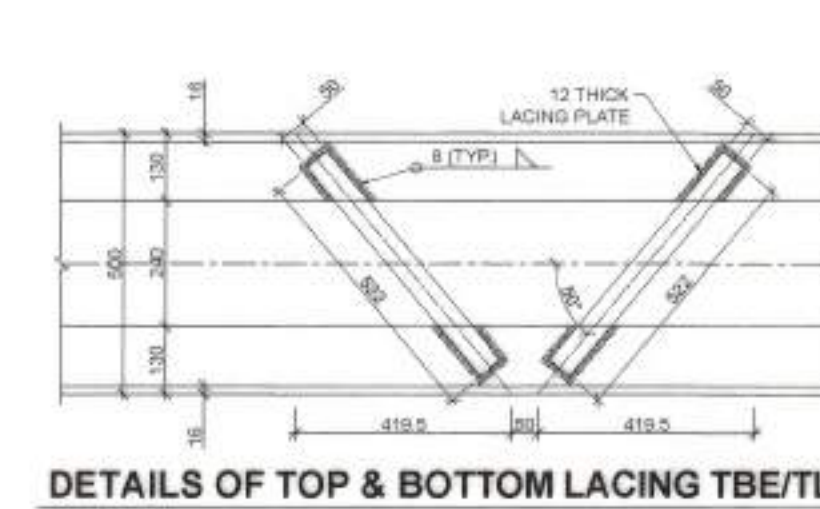
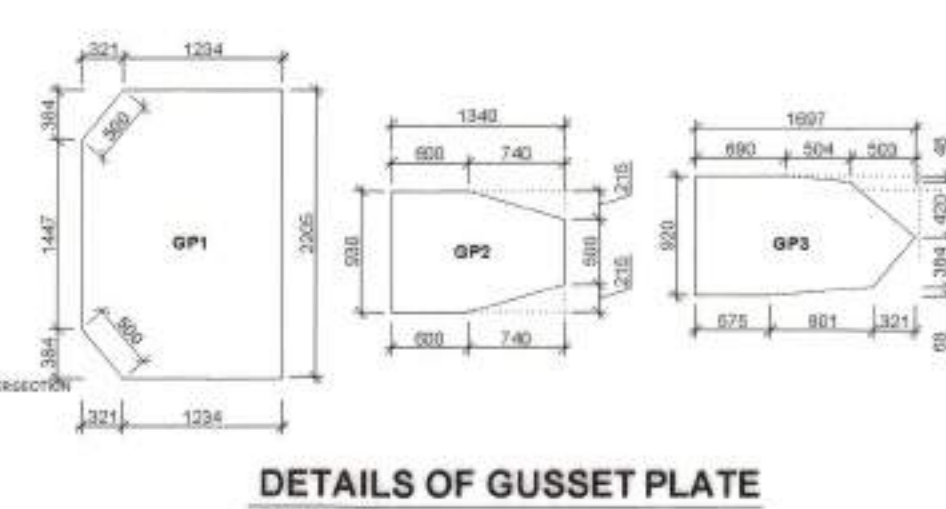
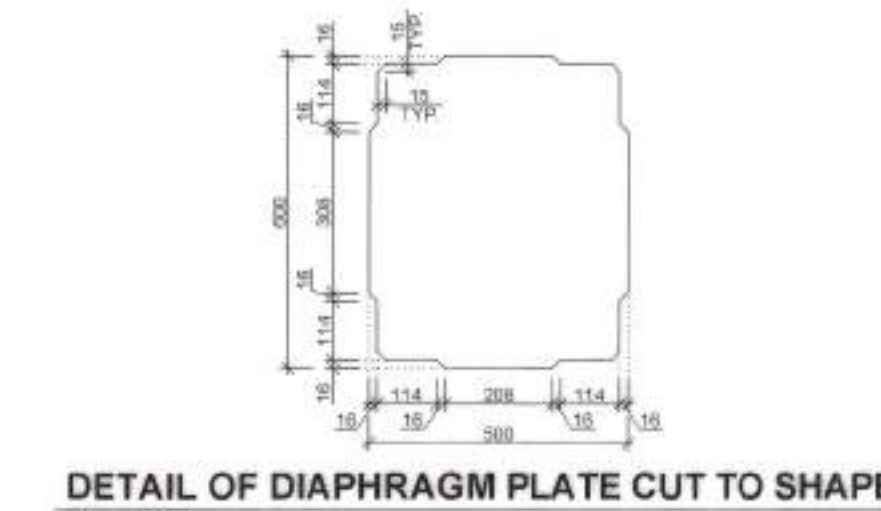
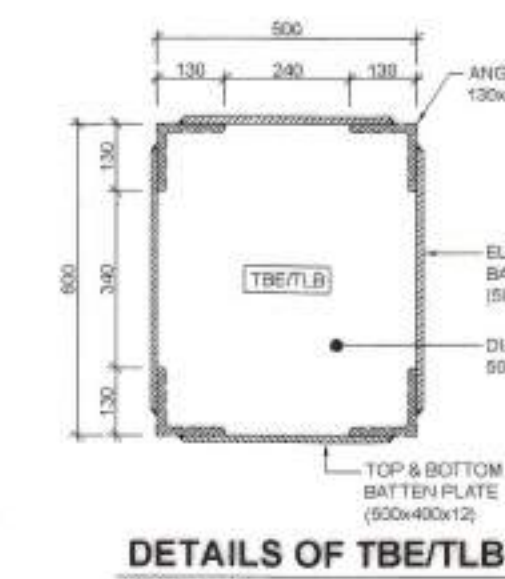
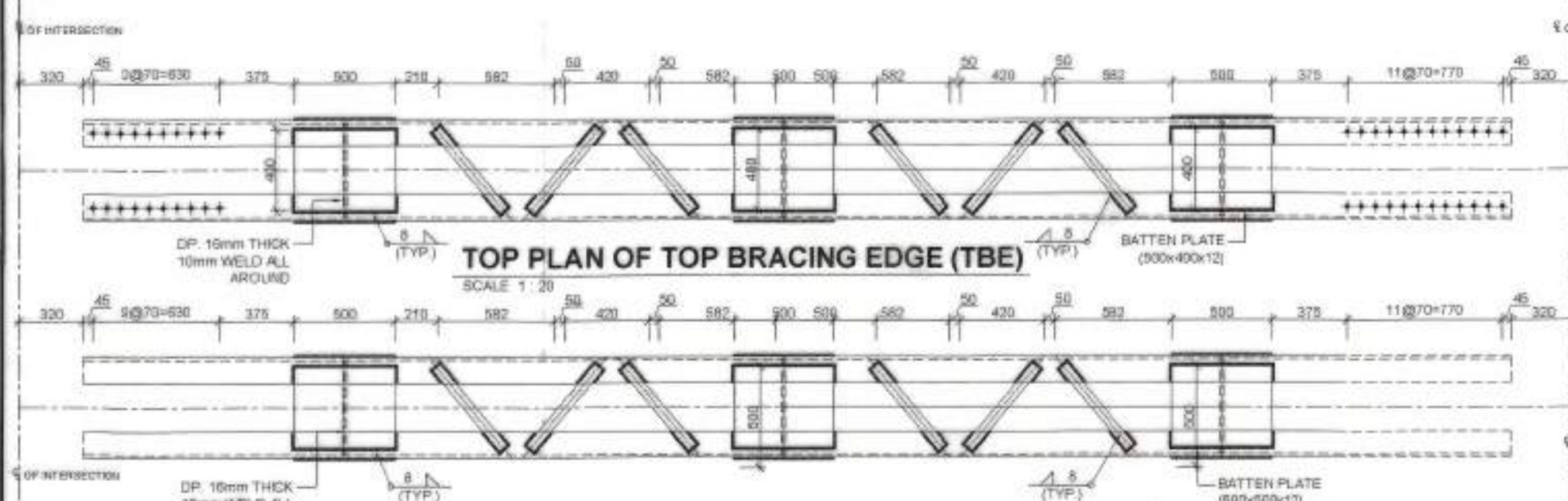
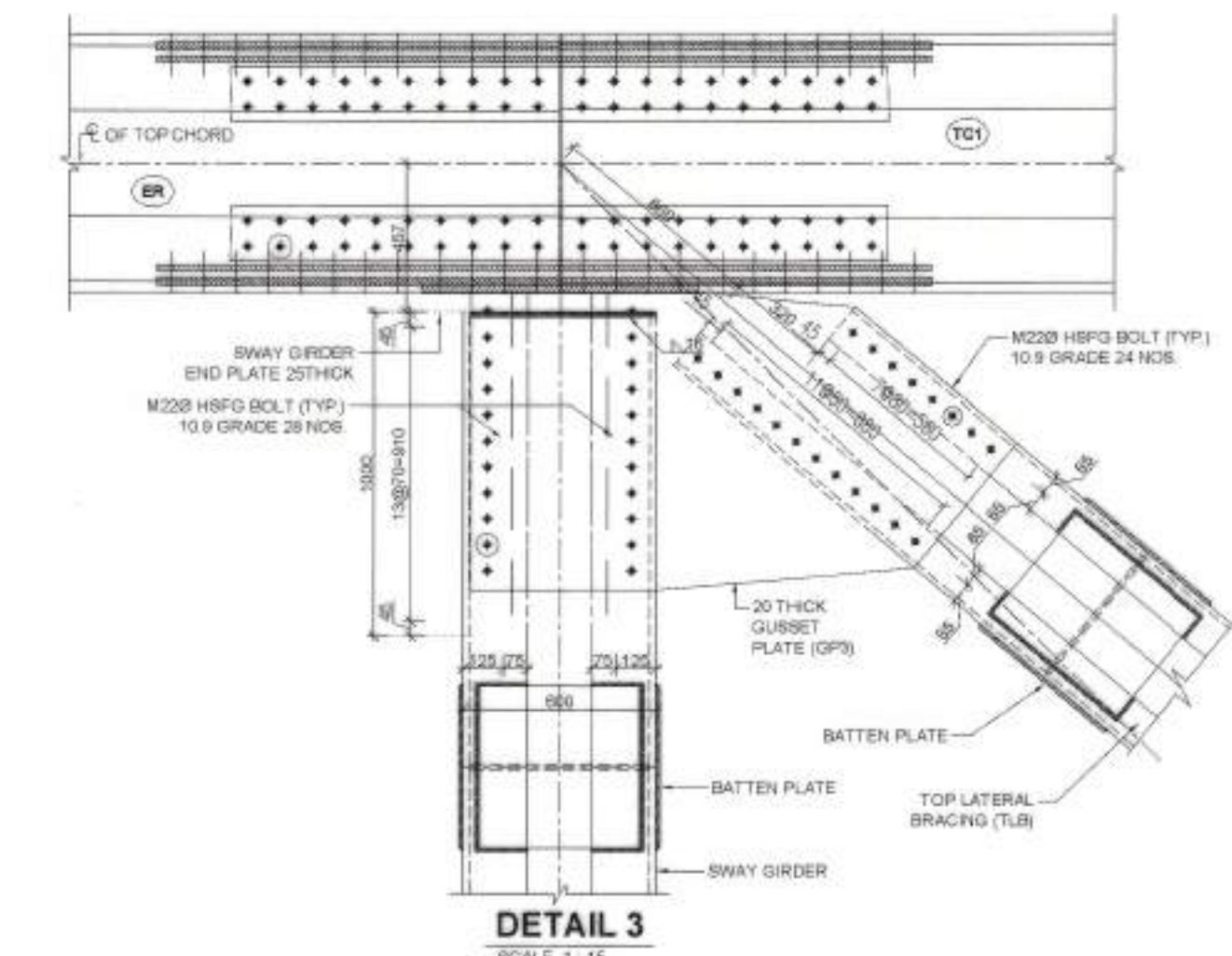
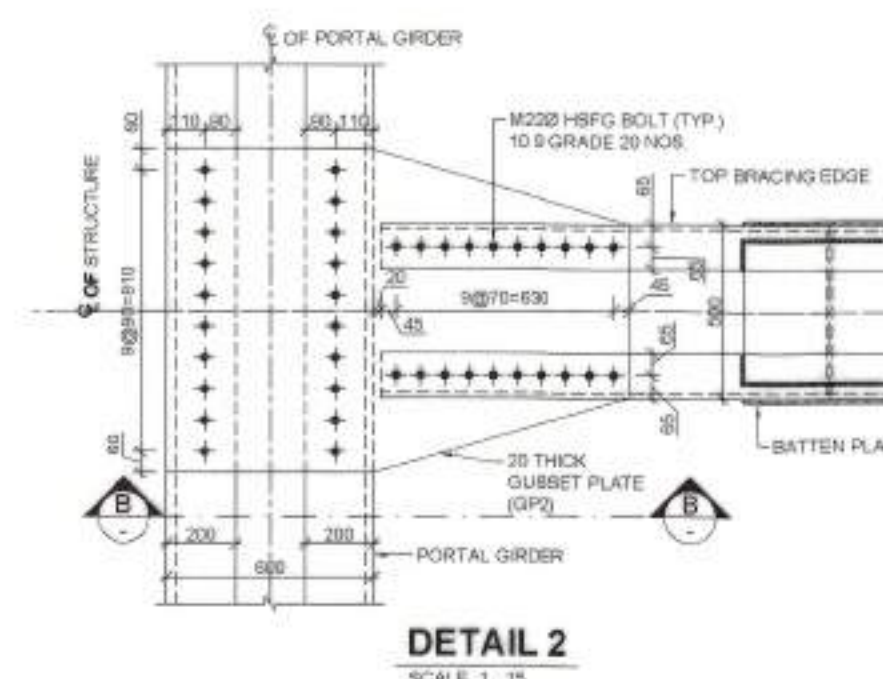
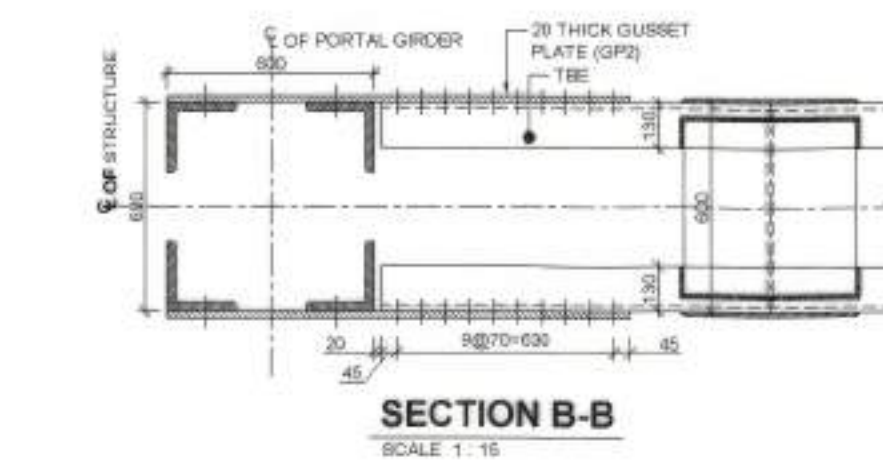
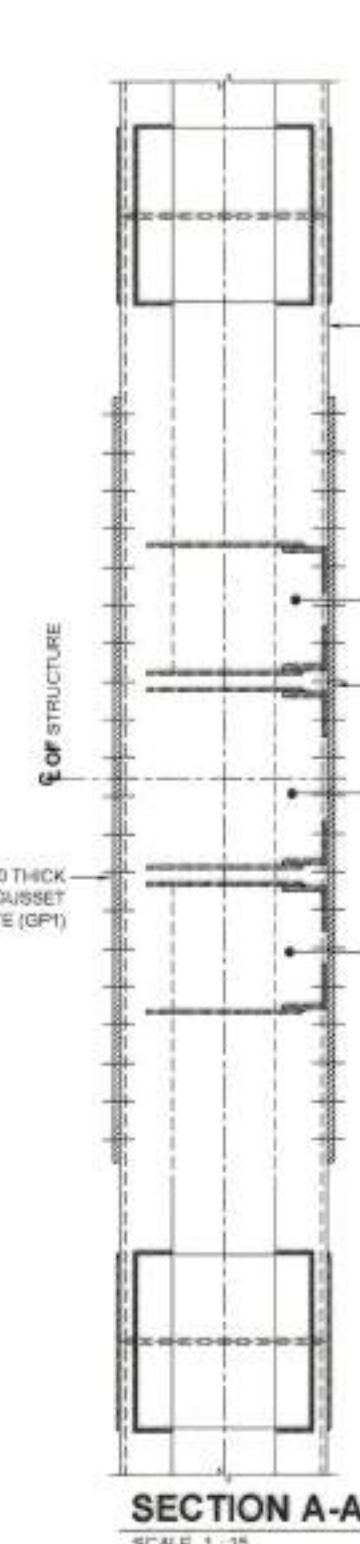
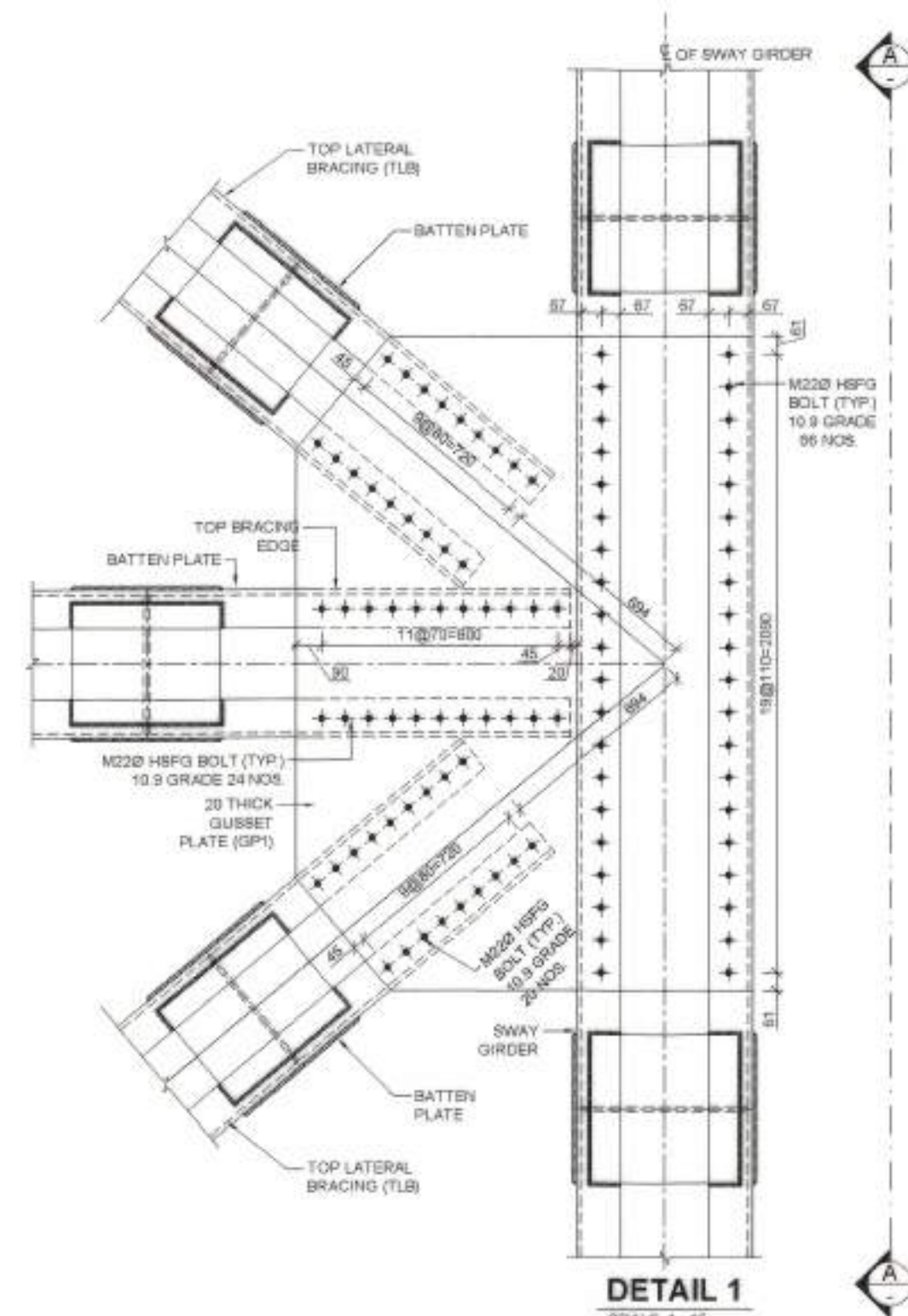
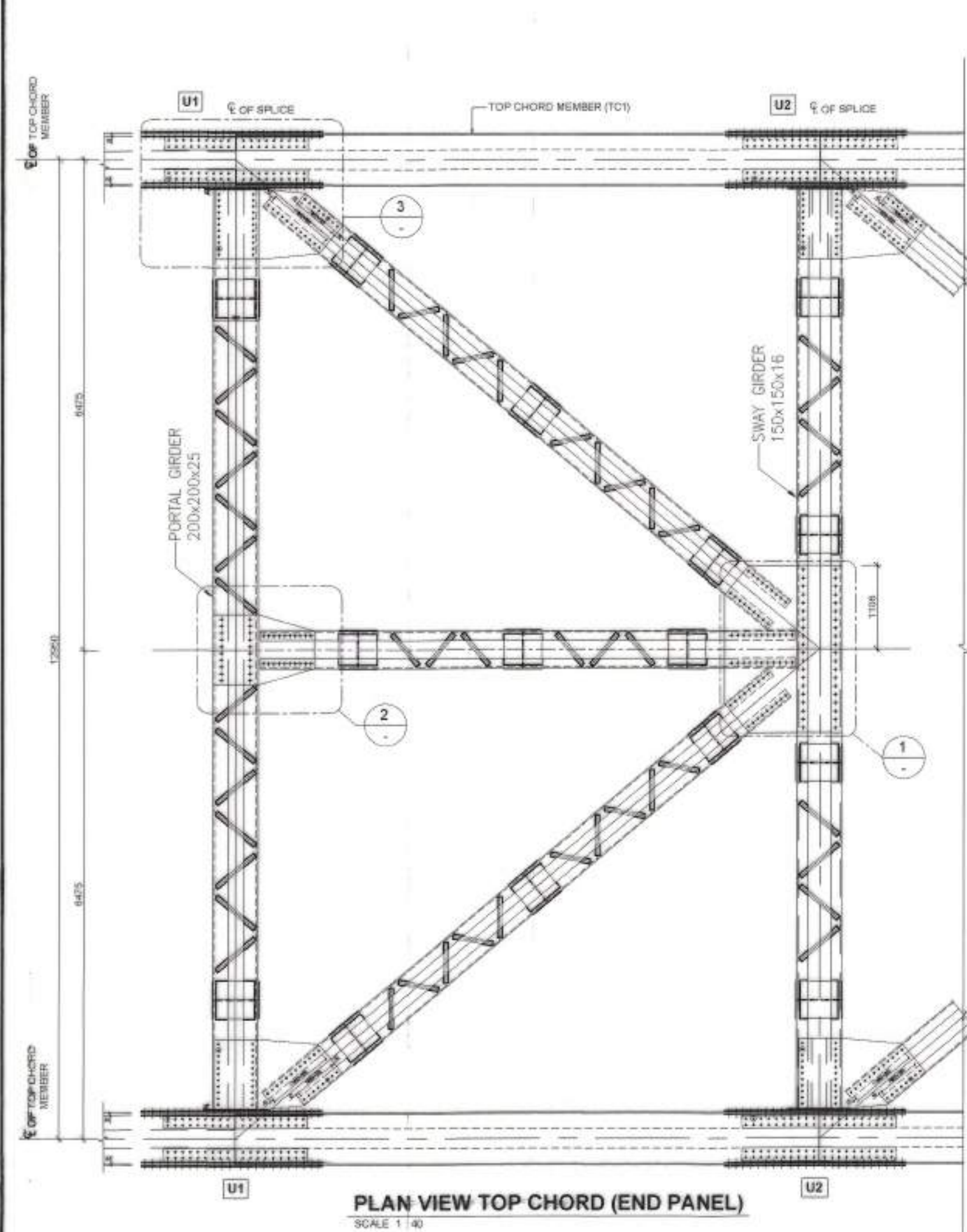
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<b>APPROVED BY:</b>  R.K. SRIVASTAVA (EDBS)								
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**R. D. S. O.**  
 ROAD OVER BRIDGE  
 CAMEL BACK TYPE TRUSS GIRDER  
 60m. CLEAR SPAN  
 TWO LANE TWO WAY  
 7.50 M CARRIAGEWAY WIDTH WITH BOTH SIDE FOOTPATH  
 HAVING TOTAL DECK WIDTH OF 11.950M.  
 (WITH SPECIAL CLASS LOADING OF 385 TON)  
 DETAILS OF END RAKER  
**PROVISIONAL**  
**RDSO/B-10444/4**

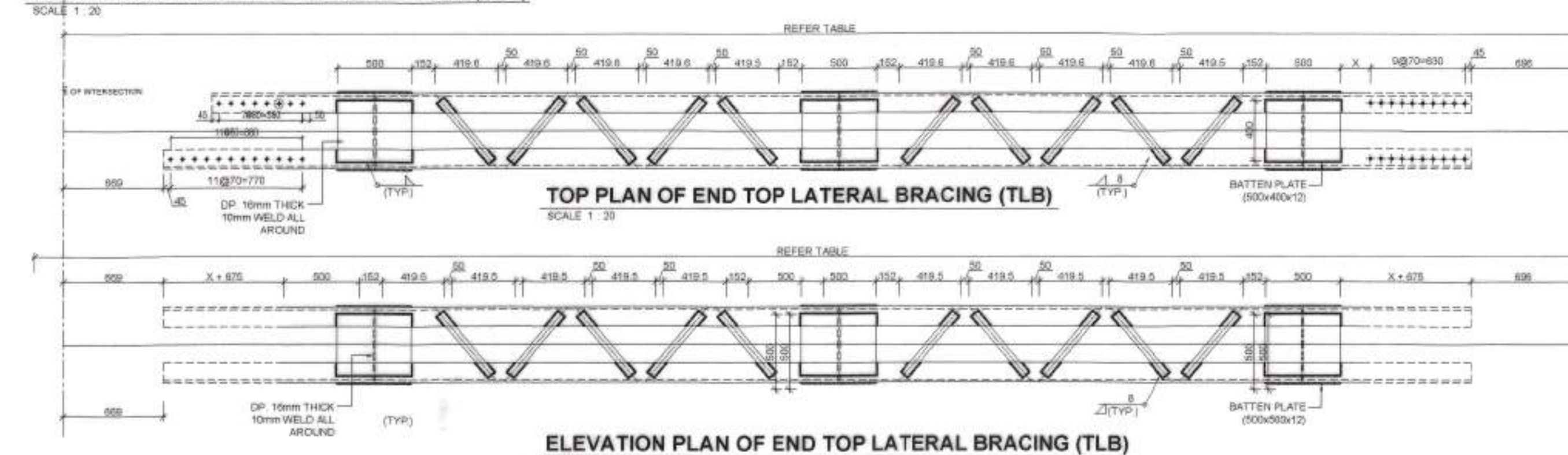








ELEVATION PLAN OF TOP BRACING EDGE (TBE) SCALE 1:20



ELEVATION PLAN OF END TOP LATERAL BRACING (TLB) SCALE 1:20

DESCRIPTION	FIELD
HSFG BOLT	+
TURNED BOLT	⊕

DESIGN CONSULTANT:  
SPARSH ENGINEERING COMPANY PRIVATE LIMITED  
H-55, Harma Housing Colony, Near Nigam Park,  
Ranchi, Jharkhand - 834 002, PH- 0651-2340859

CLIENT:  
DEDICATED FREIGHT CORRIDOR  
CORPORATION OF INDIA LIMITED  
(A Govt. of India Enterprise)  
Ministry of Railway.

DRAWN BY: SANDHY DEBA  
DESIGNED BY: RAVI PRASAD  
CHECKED BY: SUDHIR KUMAR

S.K. MUKHERJEE  
DY. PM/CIVIL/IKKK  
SOUVIK SENGUPTA  
GM/CIVIL/IKKK  
AJAY KUMAR  
CGM/CIVIL/IKKK

DESIGN CHECKED BY: S.N. GUPTA (SSE)

DRAWING CHECKED BY: V.K. PANDEY (SSE)

SCRUTINIZED & CHECKED BY: A.K. PANDEY (DD/SB-I)

SCRUTINIZED & CHECKED BY: MANISH KUMAR (DBS/SB-I)

APPROVED BY: R.K. SRIVASTAVA (EDBS)

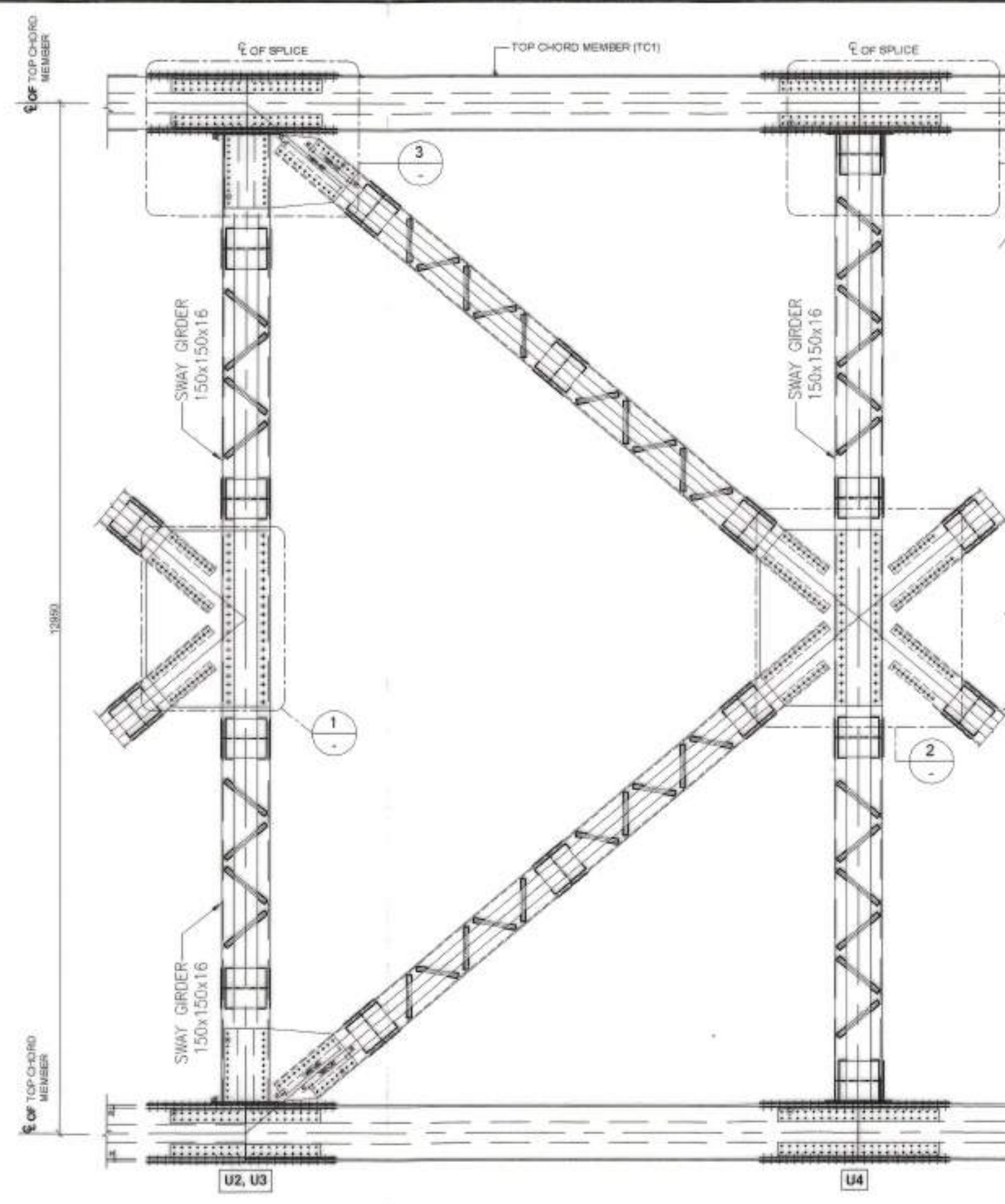
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4. ALL HSFG BOLTS SHALL BE 22 DIA. & 24 DIA. IN 23.5 DIA & 25.5 DIA HOLES RESPECTIVELY AS MENTIONED IN THE DRAWING.

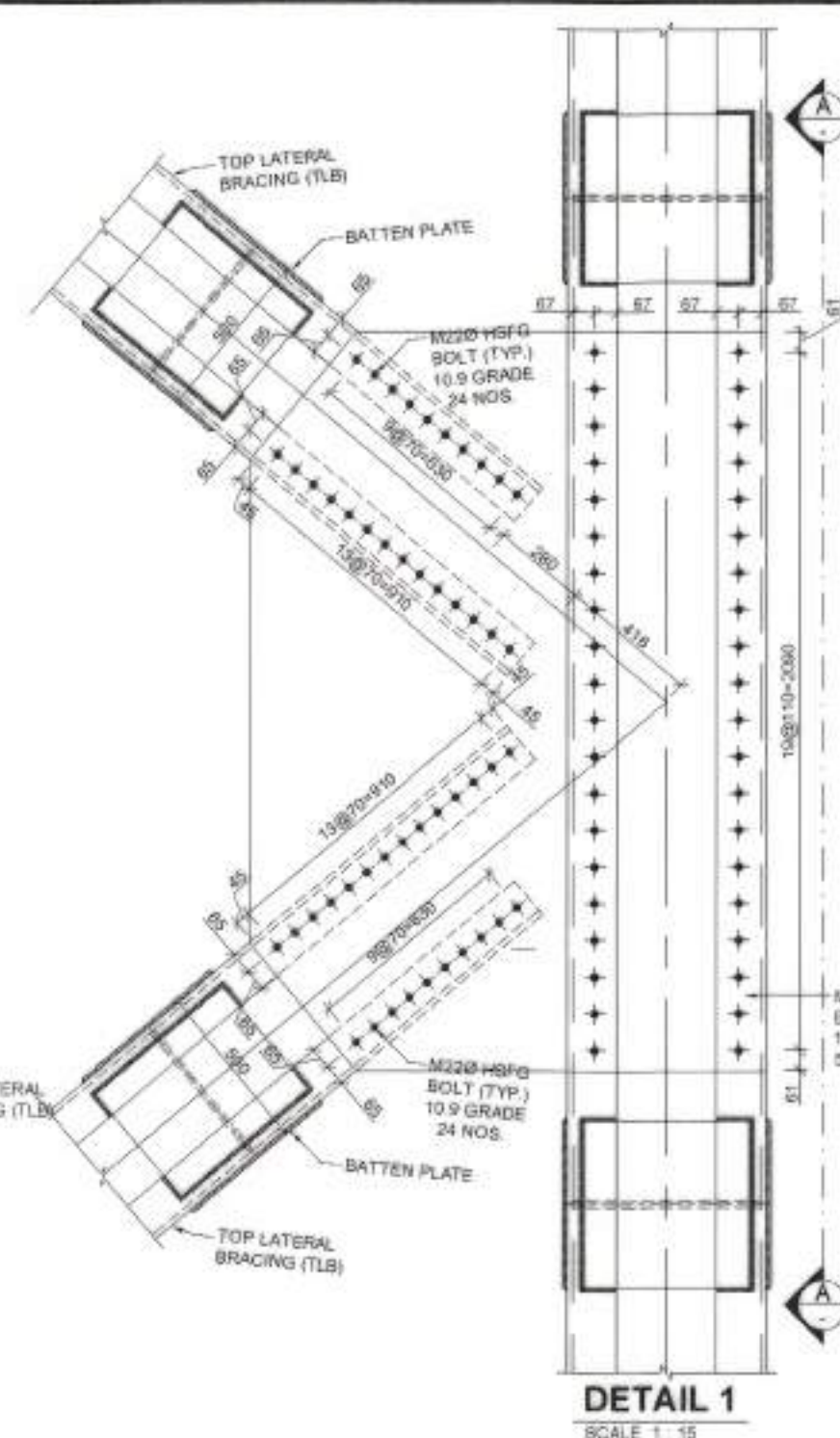
R. D. S. O.			
ROAD OVER BRIDGE			
CAMEL BACK TYPE TRUSS GIRDER			
60m. CLEAR SPAN			
TWO LANE TWO WAY			
7.50 M CARRIAGEWAY WIDTH WITH BOTH SIDE FOOTPATH			
HAVING TOTAL DECK WIDTH OF 11.950M.			
(WITH SPECIAL CLASS LOADING OF 385 TON)			
DETAILS OF TOP LATERAL BRACING			
PROVISIONAL			
RDSO / B - 10444 / 14			

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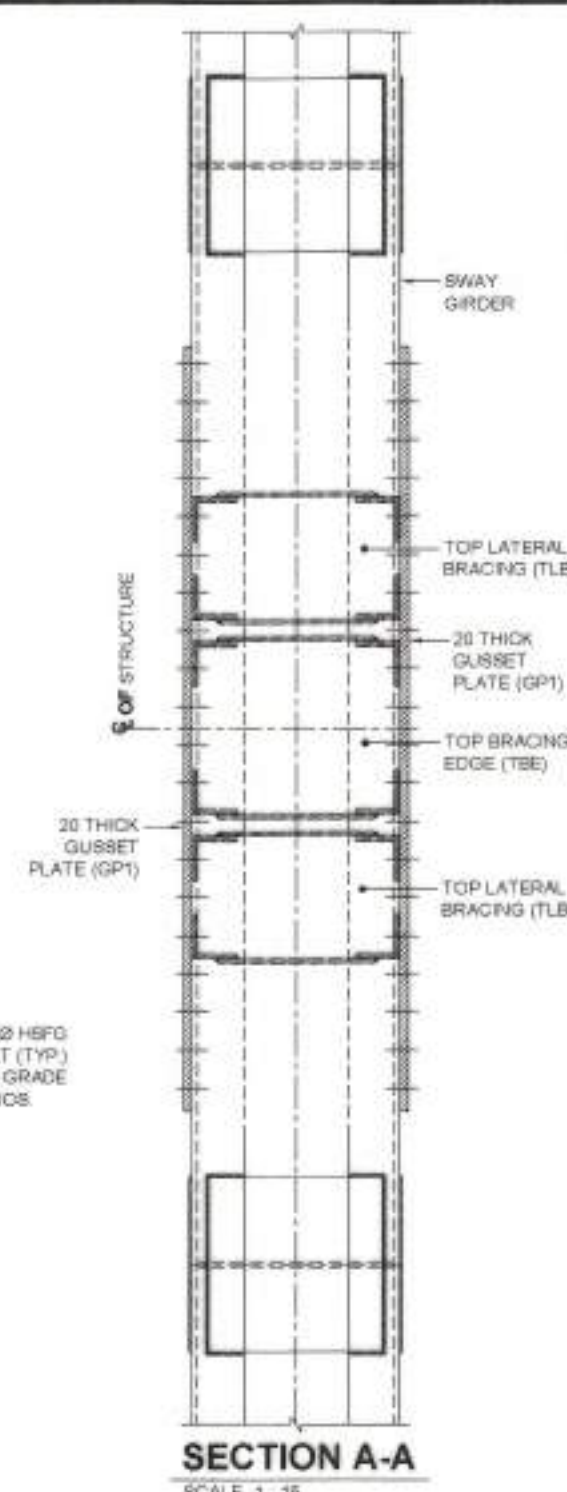




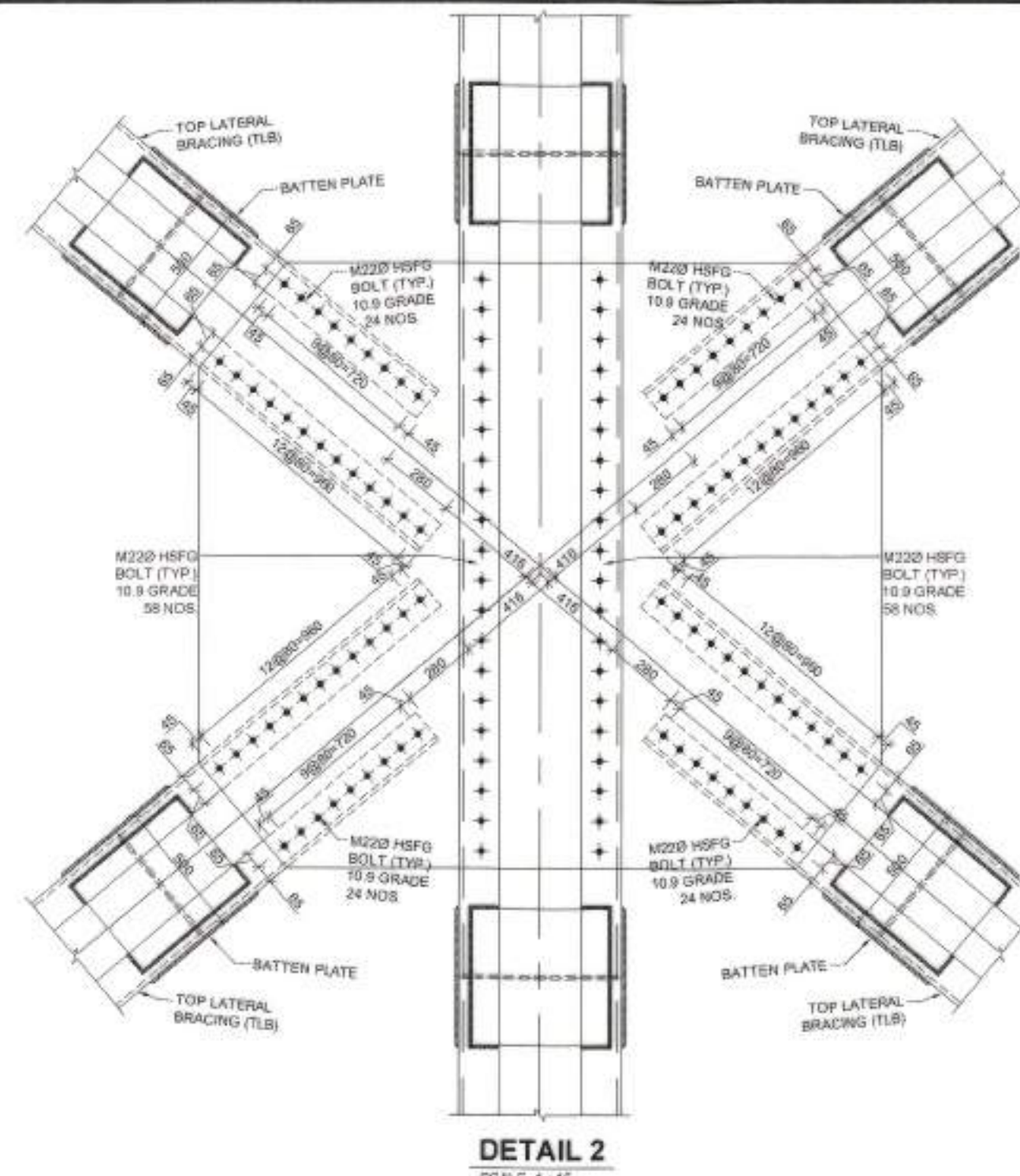
PLAN VIEW TOP CHORD (INTERMEDIATE PANEL)  
SCALE 1:40



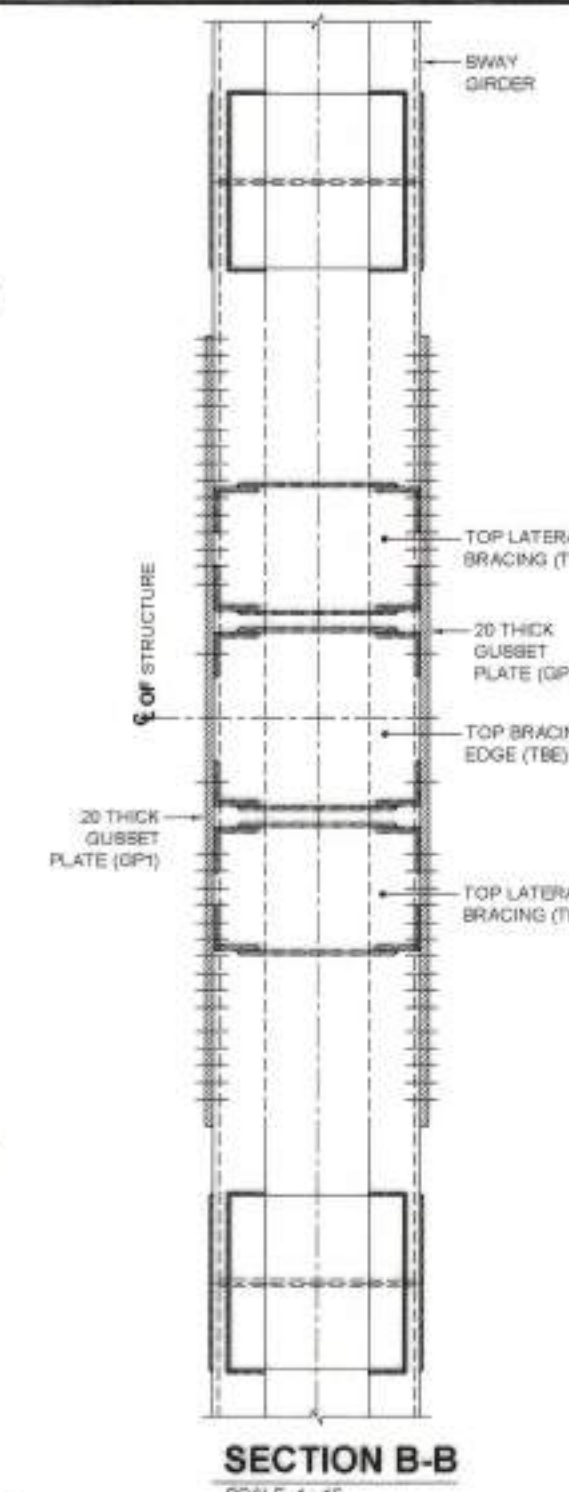
DETAIL 1  
SCALE 1:15



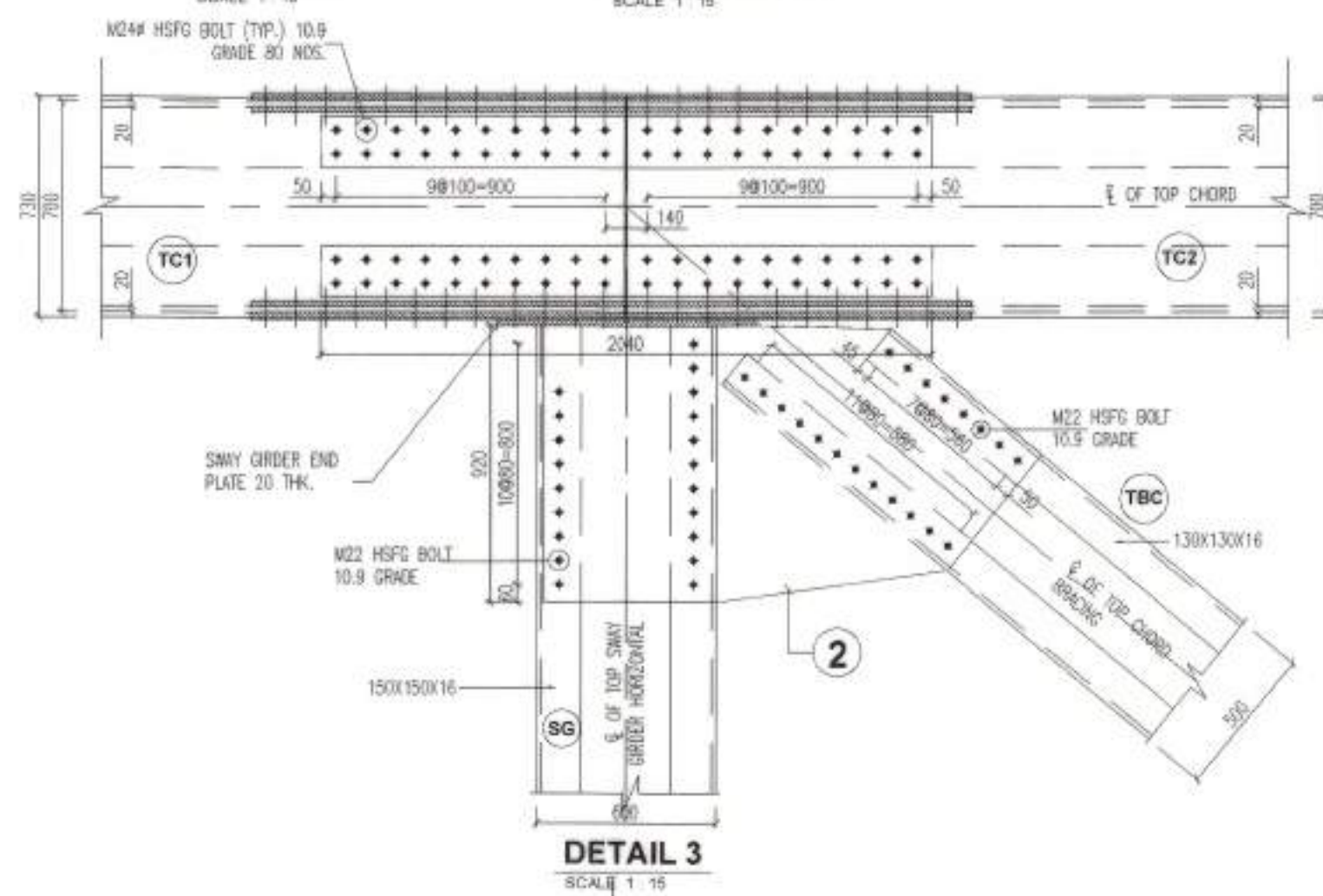
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SCALE 1:15



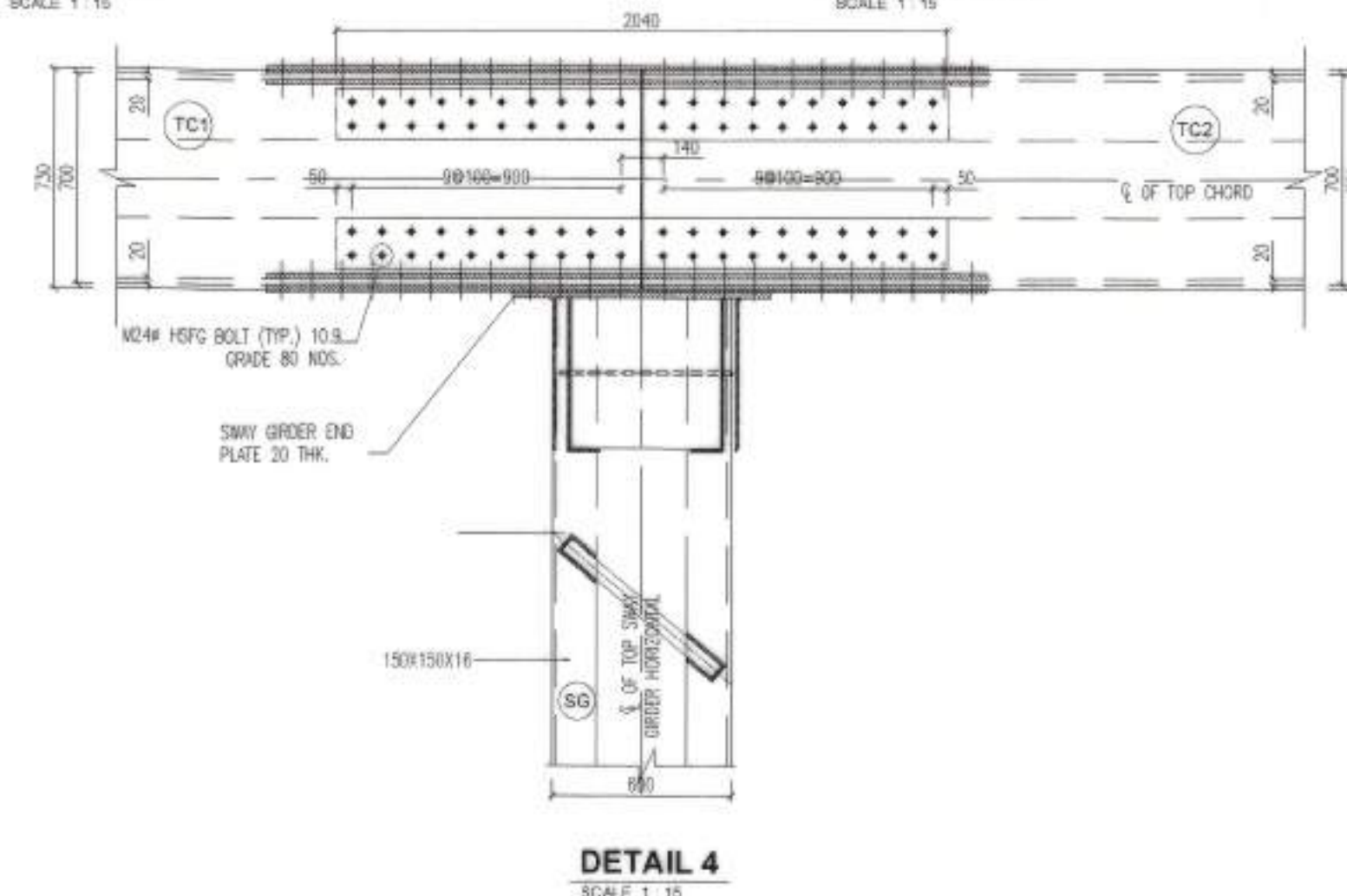
DETAIL 2  
SCALE 1:15



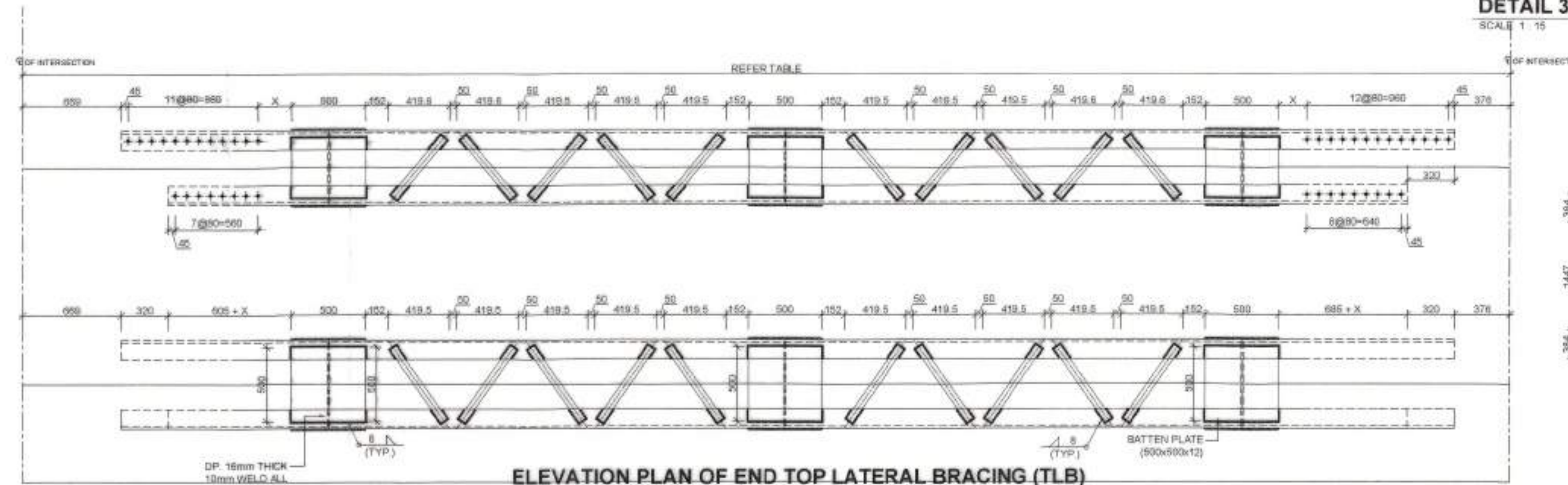
SECTION B-B  
SCALE 1:15



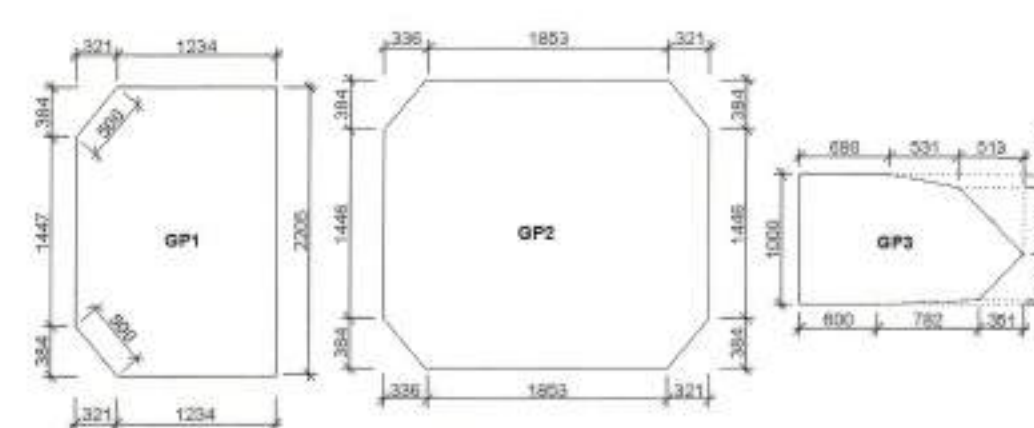
DETAIL 3  
SCALE 1:15



DETAIL 4  
SCALE 1:15



ELEVATION PLAN OF END TOP LATERAL BRACING (TLB)  
SCALE 1:20

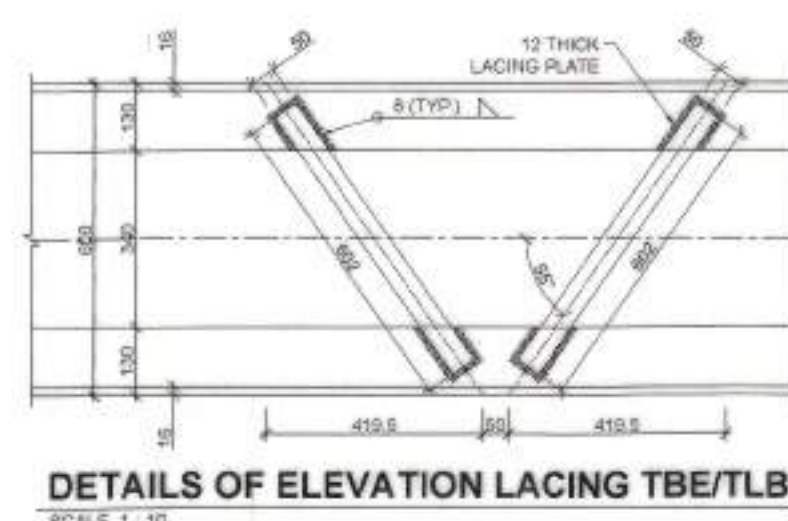


DIMENSION DETAILS OF GUSSET PLATE  
SCALE 1:40

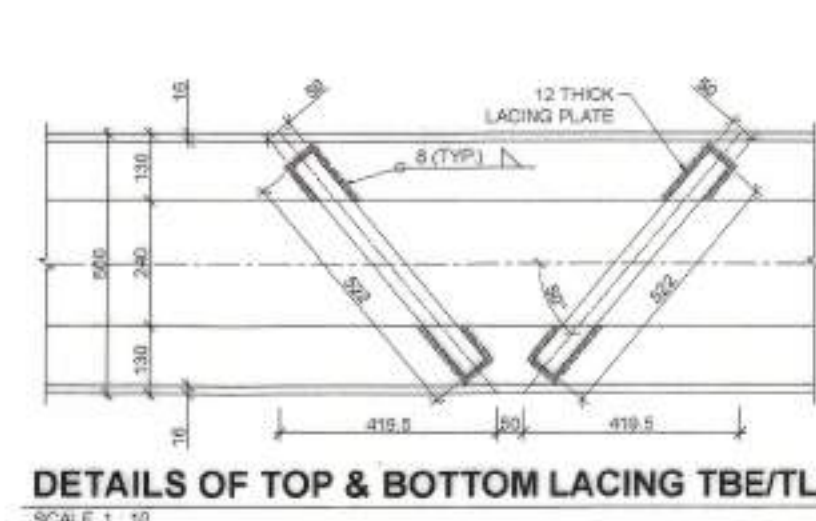
MEMBER & LOCATION	C/C OF CENTER LINE OF CG	LENGTH		X
		PLAN	INCLINED	
TLB1	U1-U2	10099	10322	TO BE ADJUSTED AS PER ACTUAL LAY OUT
TLB2	U2-U3	10099	10176	
TLB3	U3-U4	10099	10107	
TBE	U1-U2	7750	8039	

- NOTES:**
1. ALL DIMENSIONS ARE IN mm. UNLESS OTHERWISE MENTIONED.
  2. NO DIMENSIONS SHALL BE SCALED FROM THIS DRAWING. ONLY WRITTEN DIMENSION SHALL BE FOLLOWED.
  3. ALL STRUCTURAL STEEL PLATES USED IN FABRICATION OF THIS BRIDGE ARE OF GRADE E350 Fe490 (QUALITY B0) AND ALL ROLLED SECTIONS SHALL BE OF GRADE E250 Fe410 (QUALITY B0) CONFORMING TO IS 2062-2011.
  4. ALL HSFG BOLTS SHALL BE 22 DIA. & 24 DIA. IN 23.5 DIA & 25.5 DIA HOLES RESPECTIVELY AS MENTIONED IN THE DRAWINGS.

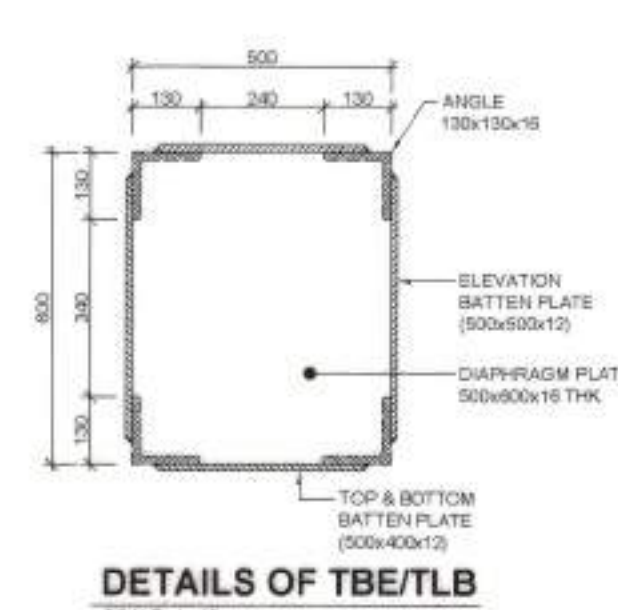
LEGENDS	
DESCRIPTION	FIELD
HSFG BOLT	+
TURNED BOLT	⊕



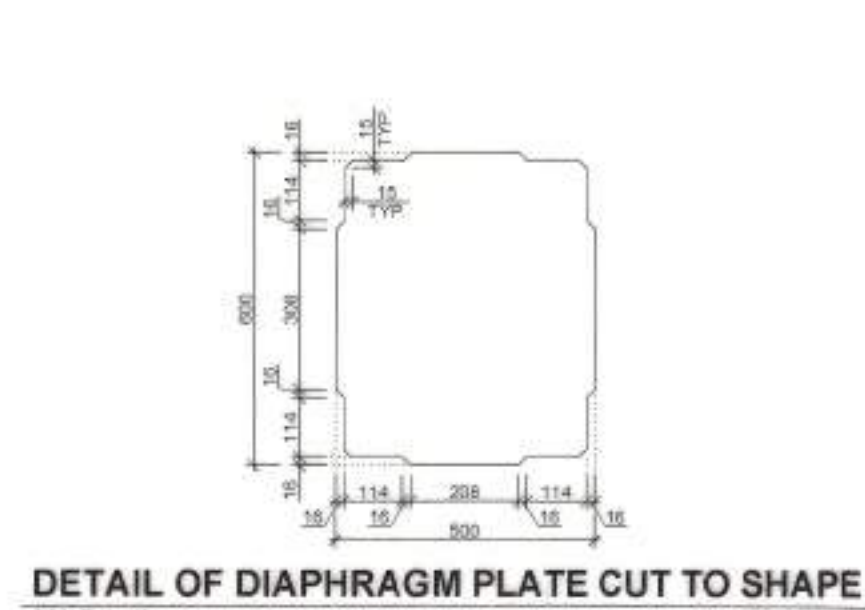
DETAILS OF ELEVATION LACING TBE/TLB  
SCALE 1:10



DETAILS OF TOP & BOTTOM LACING TBE/TLB  
SCALE 1:10



DETAILS OF TBE/TLB  
SCALE 1:10



DETAIL OF DIAPHRAGM PLATE CUT TO SHAPE  
SCALE 1:10

DESIGN CONSULTANT:  
**SPARSH ENGINEERING COMPANY PRIVATE LIMITED**  
H-55, Harmu Housing Colony, Near Nigam Park,  
Ranchi, Jharkhand - 834 002, PH- 0651-2340859

CLIENT:  
**DFE**  
उद्योगिक फ्रेट कॉरिडोर

DEDICATED FREIGHT CORRIDOR  
CORPORATION OF INDIA LIMITED  
(A Govt. of India Enterprise)  
Ministry of Railway.

DESIGN CHECKED BY:  
S.N. GUPTA (SSE)

DRAWING CHECKED BY:  
V.K. PANDEY (SSE)

SCRUTINIZED & CHECKED BY:  
A.K. PANDEY (DD/SB-I)

SCRUTINIZED & CHECKED BY:  
MANISH KUMAR (DBS/SB-I)

APPROVED BY:  
R.K. SRIVASTAVA (EDBS)

**R. D. S. O.**

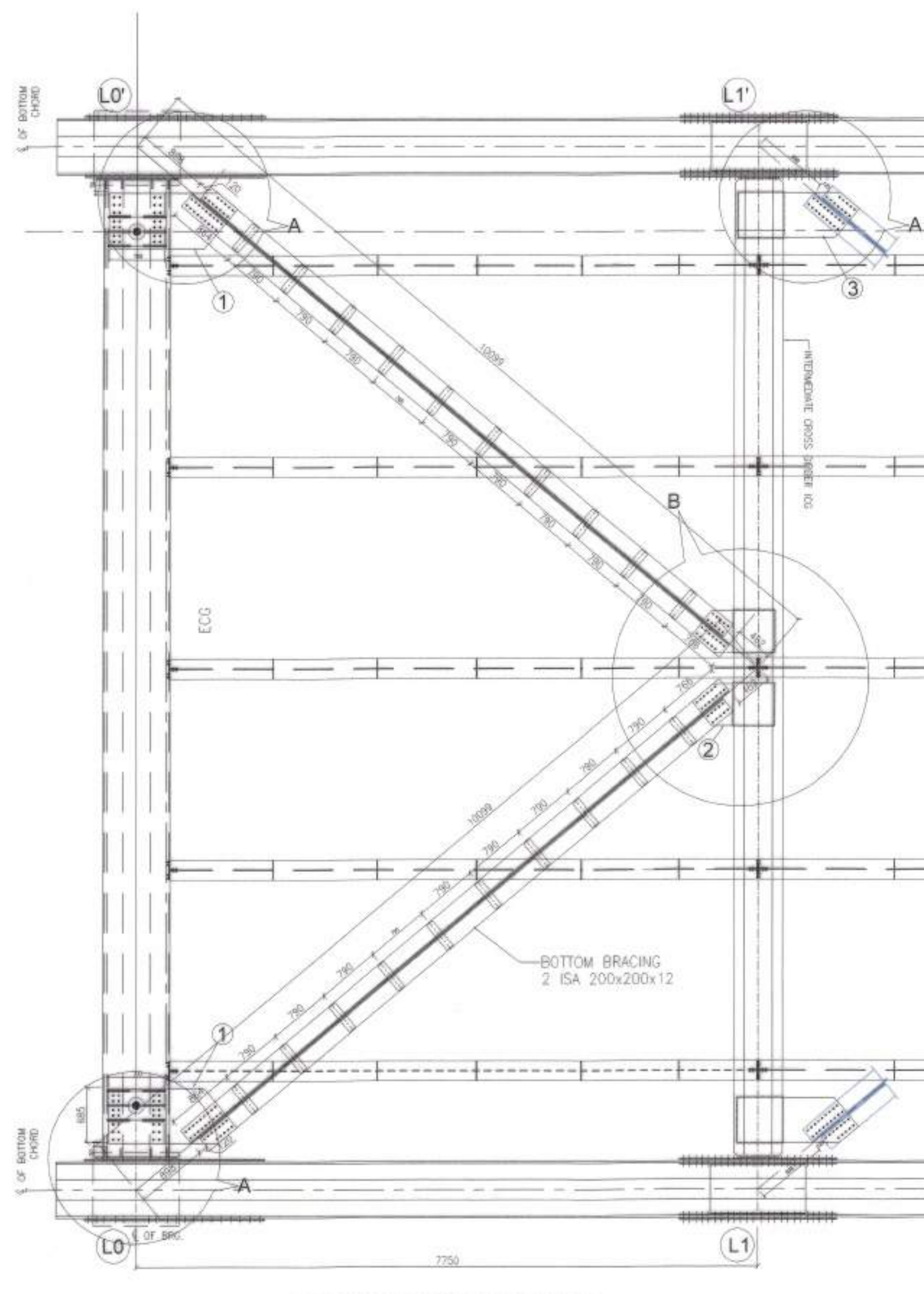
ROAD OVER BRIDGE  
CAMEL BACK TYPE TRUSS GIRDER  
60m. CLEAR SPAN  
TWO LANE TWO WAY  
7.50 M CARRIAGEWAY WIDTH WITH BOTH SIDE FOOTPATH  
HAVING TOTAL DECK WIDTH OF 11.950M.  
(WITH SPECIAL CLASS LOADING OF 385 TON)  
DETAILS OF TOP LATERAL BRACING

PROVISIONAL

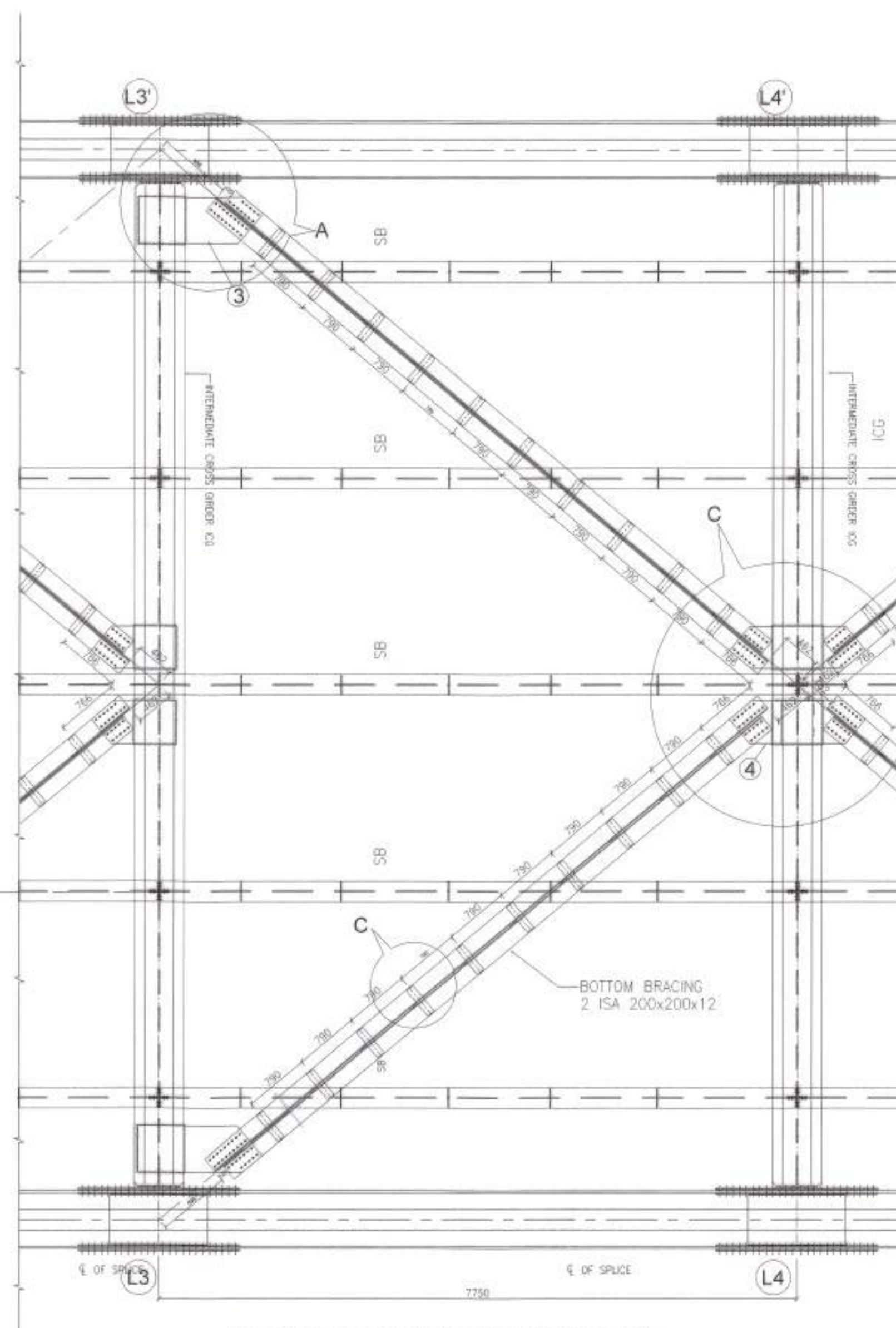
RDSO / B - 10444 / 14 / 1

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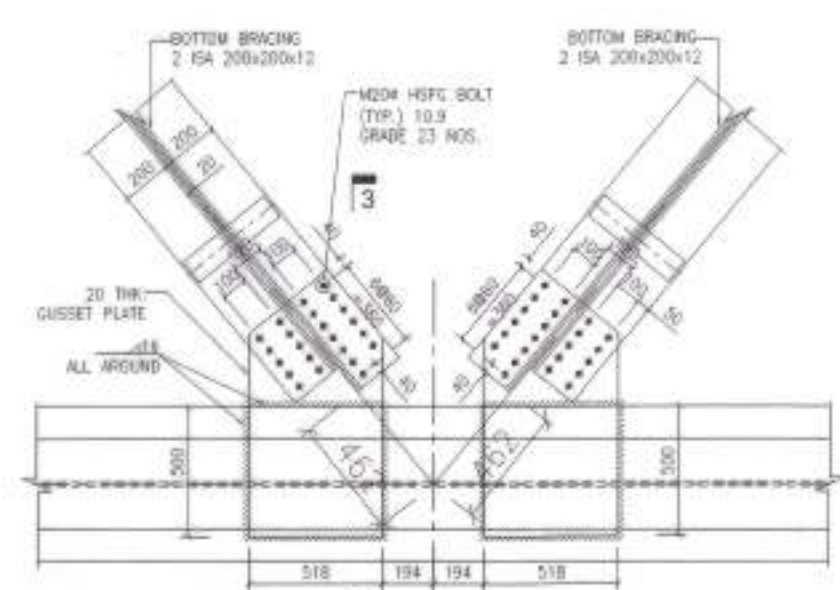




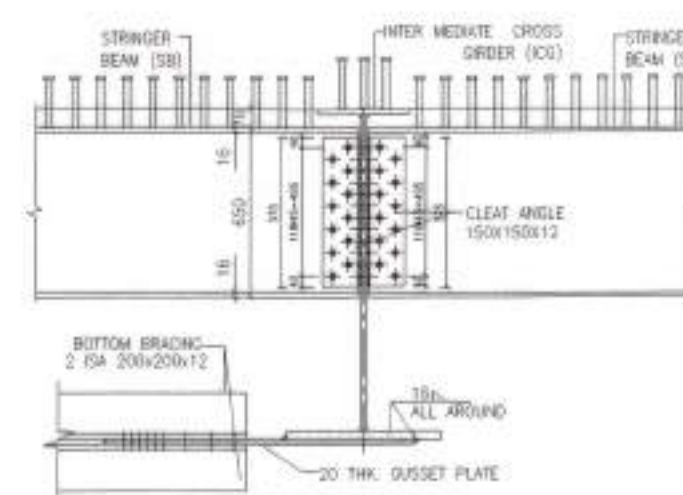
**BRACING PLAN AT END PANEL**  
(SCALE 1:40)



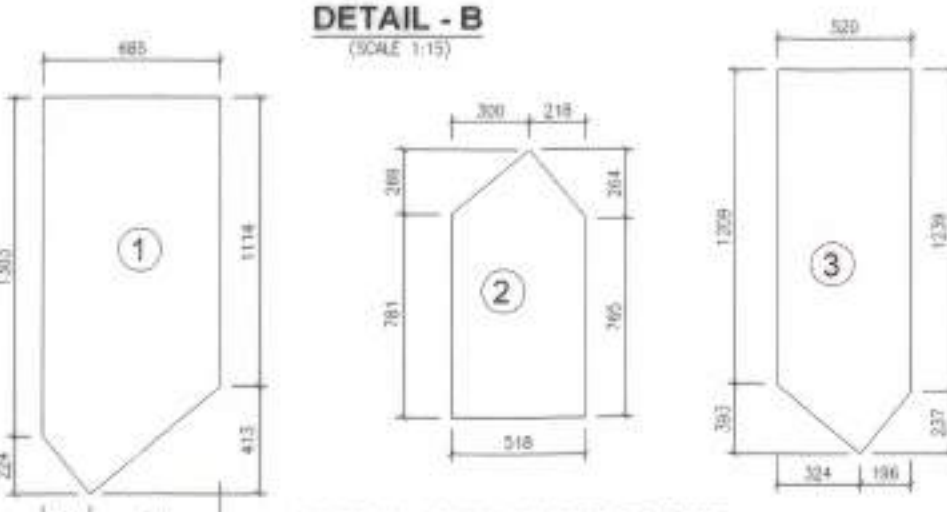
**BRACING PLAN AT INTERMEDIATE PANEL**  
(SCALE 1:40)



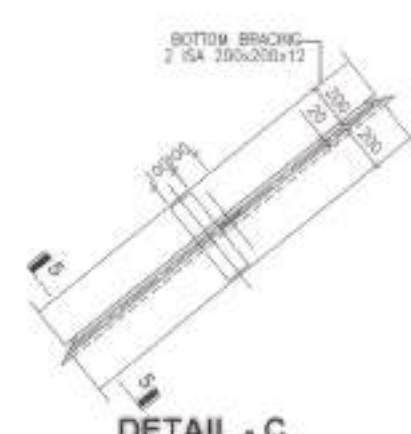
**DETAIL - B**  
(SCALE 1:15)



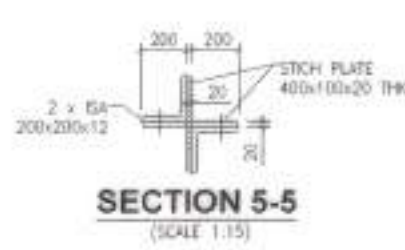
**SECTION 3-3**  
(SCALE 1:15)



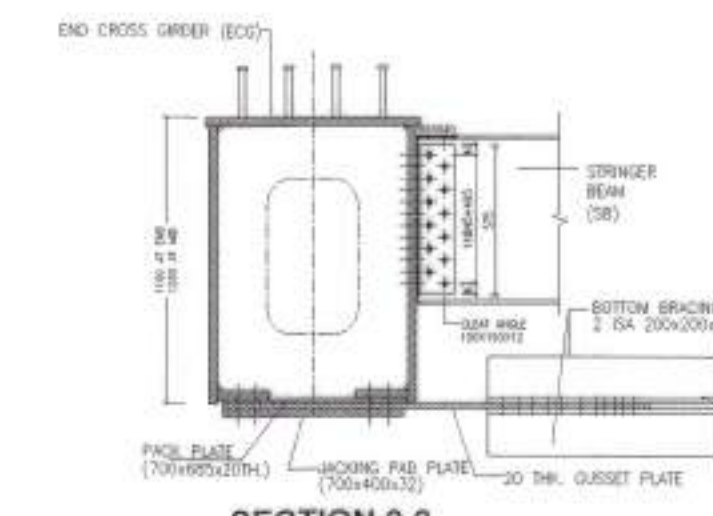
**DETAIL OF GUSSET PLATE**  
(SCALE 1:15)



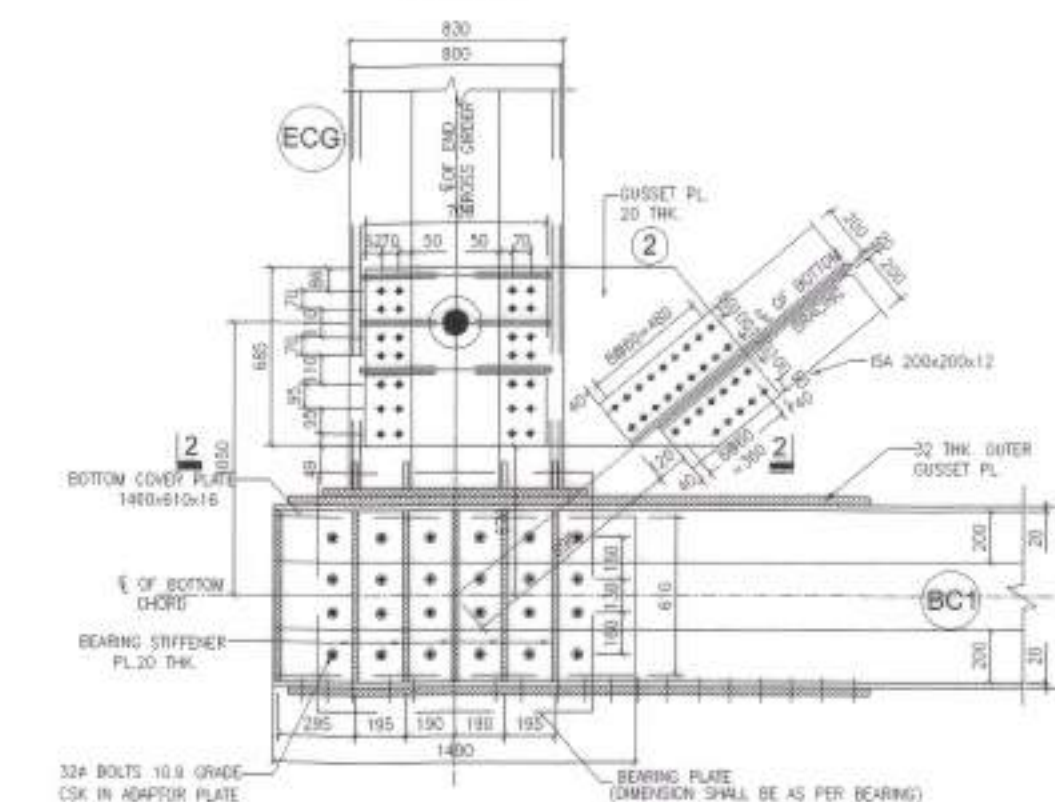
**DETAIL - C**  
(SCALE 1:15)



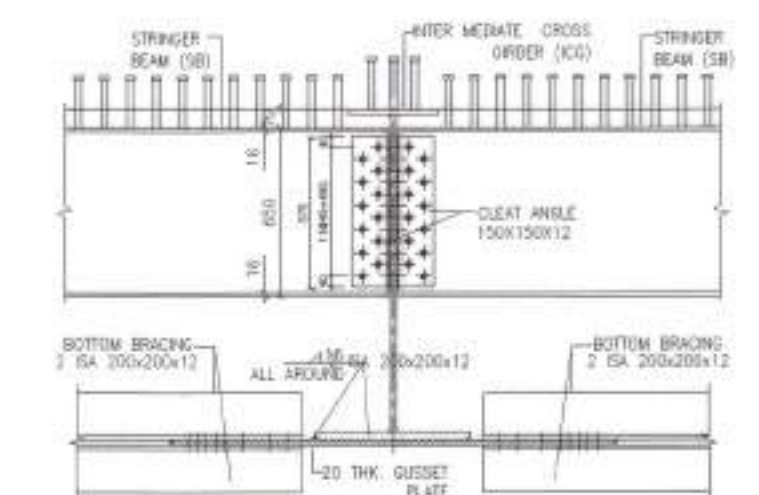
**SECTION 5-5**  
(SCALE 1:15)



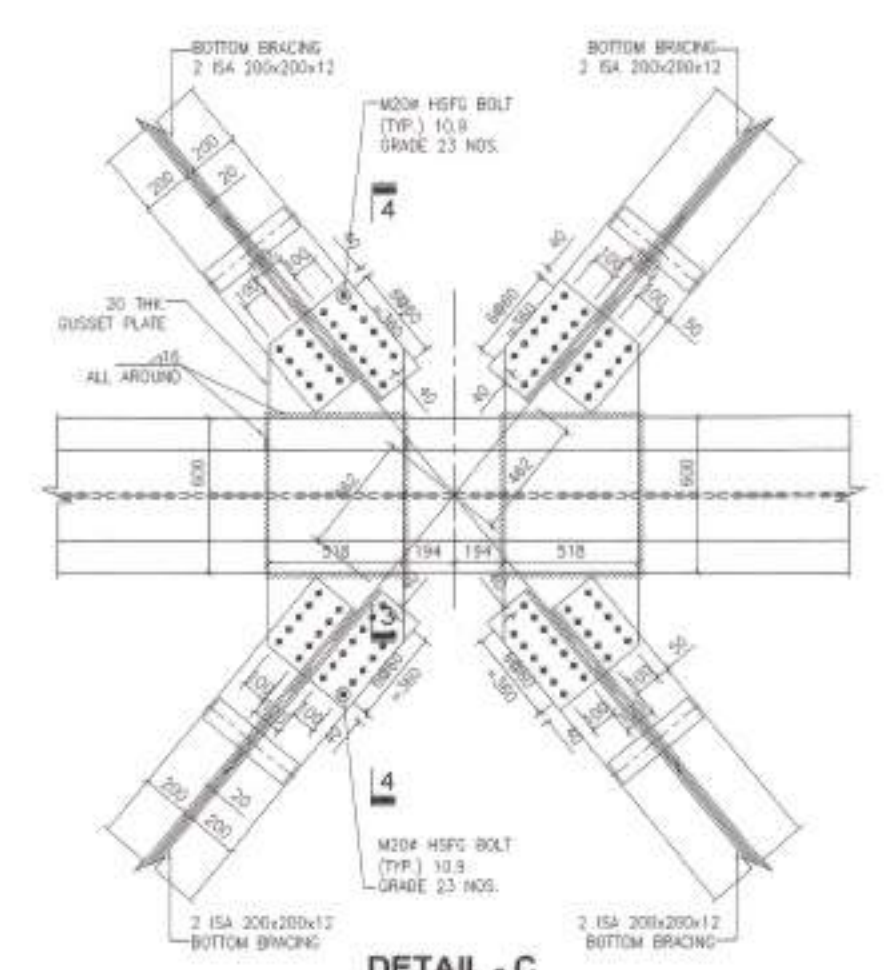
**SECTION 2-2**  
(SCALE 1:15)



**DETAIL - A**  
(SCALE 1:15)



**SECTION 4-4**  
(SCALE 1:15)



**DETAIL - C**  
(SCALE 1:15)

# **NOTES :-**

- ALL DIMENSIONS ARE IN mm. UNLESS OTHERWISE MENTIONED.
- NO DIMENSIONS SHALL BE SCALED FROM THIS DRAWING. ONLY WRITTEN DIMENSION SHALL BE FOLLOWED.
- ALL HSFG BOLTS SHALL BE 24 DIA. IN 25.5 DIA. HOLES, EXCEPT IN TOP BRACING, BOTTOM BRACING & KNEE BRACING WHICH SHALL BE OF 20 DIA. IN 21.5 DIA. HOLES.
- ALL HIGH STRENGTH FRICTION GRIP (HSFG) BOLTS SHALL BE OF PROPERTY CLASS 10.9 IN CONFORMITY WITH IS-4000/BS-111 (RAILWAY STANDARD) LATEST REVISION.

**R. D. S. O.**

**ROAD OVER BRIDGE  
CAMEL BACK TYPE TRUSS GIRDER  
60m. CLEAR SPAN  
TWO LANE TWO WAY  
7.50 M CARRIAGEWAY WIDTH WITH BOTH SIDE FOOTPATH  
HAVING TOTAL DECK WIDTH OF 11.950M.  
(WITH SPECIAL CLASS LOADING OF 385 TON)  
DETAILS OF BOTTOM BRACING**

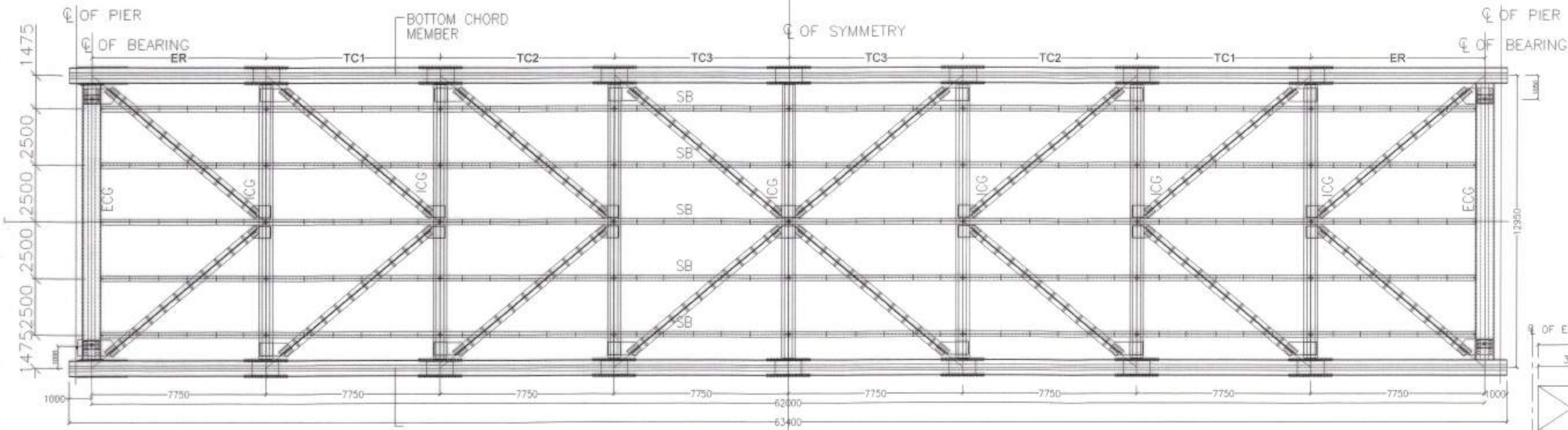
**PROVISIONAL  
RDSO/B-10444/15**

DESIGN CONSULTANT :			CLIENT :		
 <b>SPARSH ENGINEERING COMPANY PRIVATE LIMITED</b> H-55, Harmu Housing Colony, Near Nigam Park, Ranchi, Jharkhand - 834 002, PH- 0651-2340659			 <b>DEDICATED FREIGHT CORRIDOR CORPORATION OF INDIA LIMITED</b> (A Govt. of India Enterprise) Ministry of Railway.		
DRAWN BY:-  SANDIP BERA	DESIGNED BY:-  RAVI PRASAD	CHECKED BY:-  SUDHIR KUMAR	S.K. MUKHERJEE DY.MCIVIL/IKKK	SOUVIR SEN GUPTA GM.CIVIL/IKKK	S.S.SINGH (SSE) COM.CIVIL/IKKK

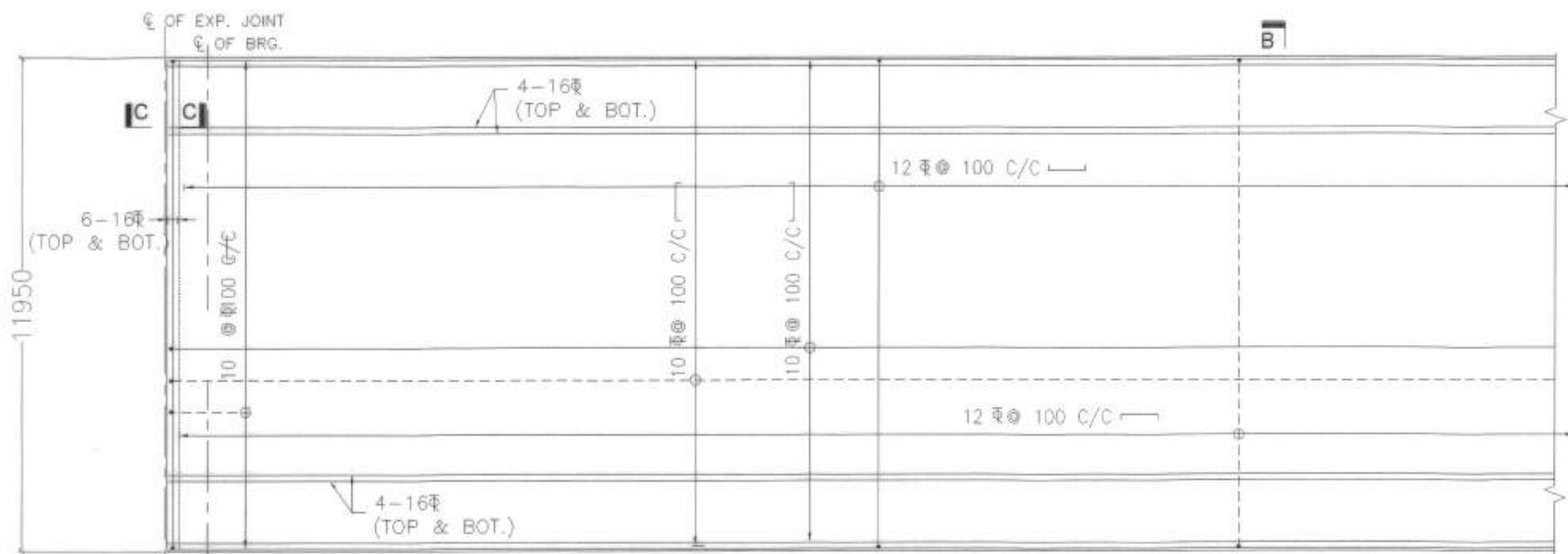
DESIGN CHECKED BY:  S.S.SINGH (SSE)	DRAWING CHECKED BY:  A.K.SAH (SSE)	SCRUTINIZED & CHECKED BY:  A.K.PANDEY (DD/SB-I)	SCRUTINIZED & CHECKED BY:  MANISH KUMAR (DBS/SB-I)	APPROVED BY:  R.K.SRIVASTAVA (EDBS)
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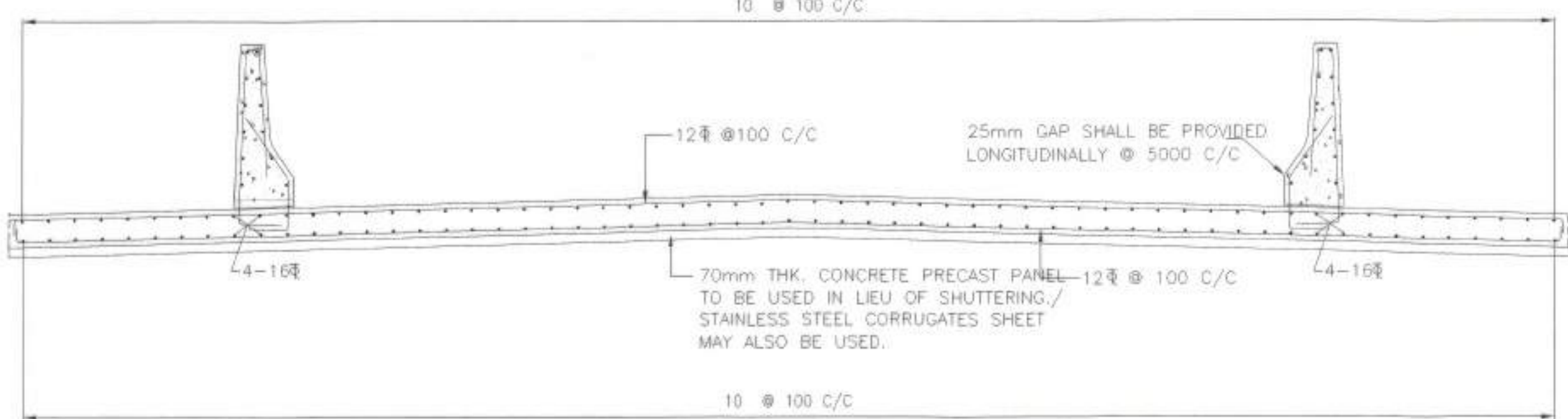




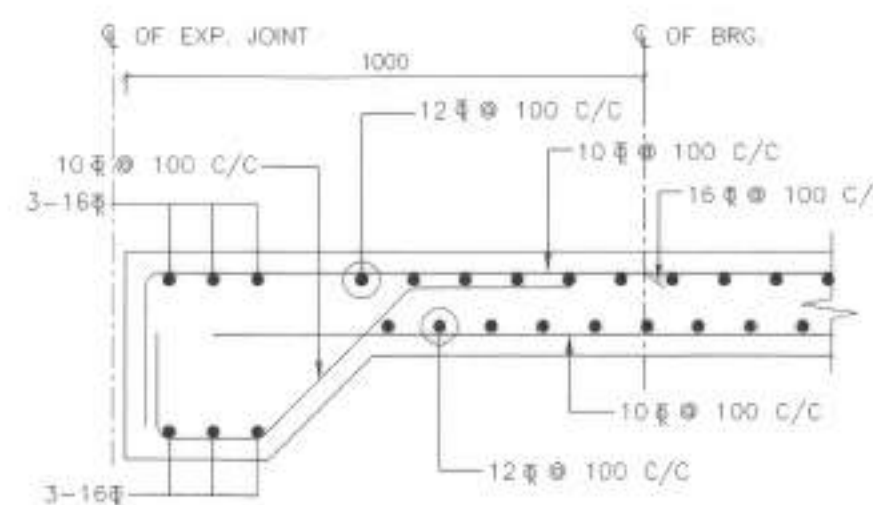
**BOTTOM PLAN**  
(SCALE 1:150)



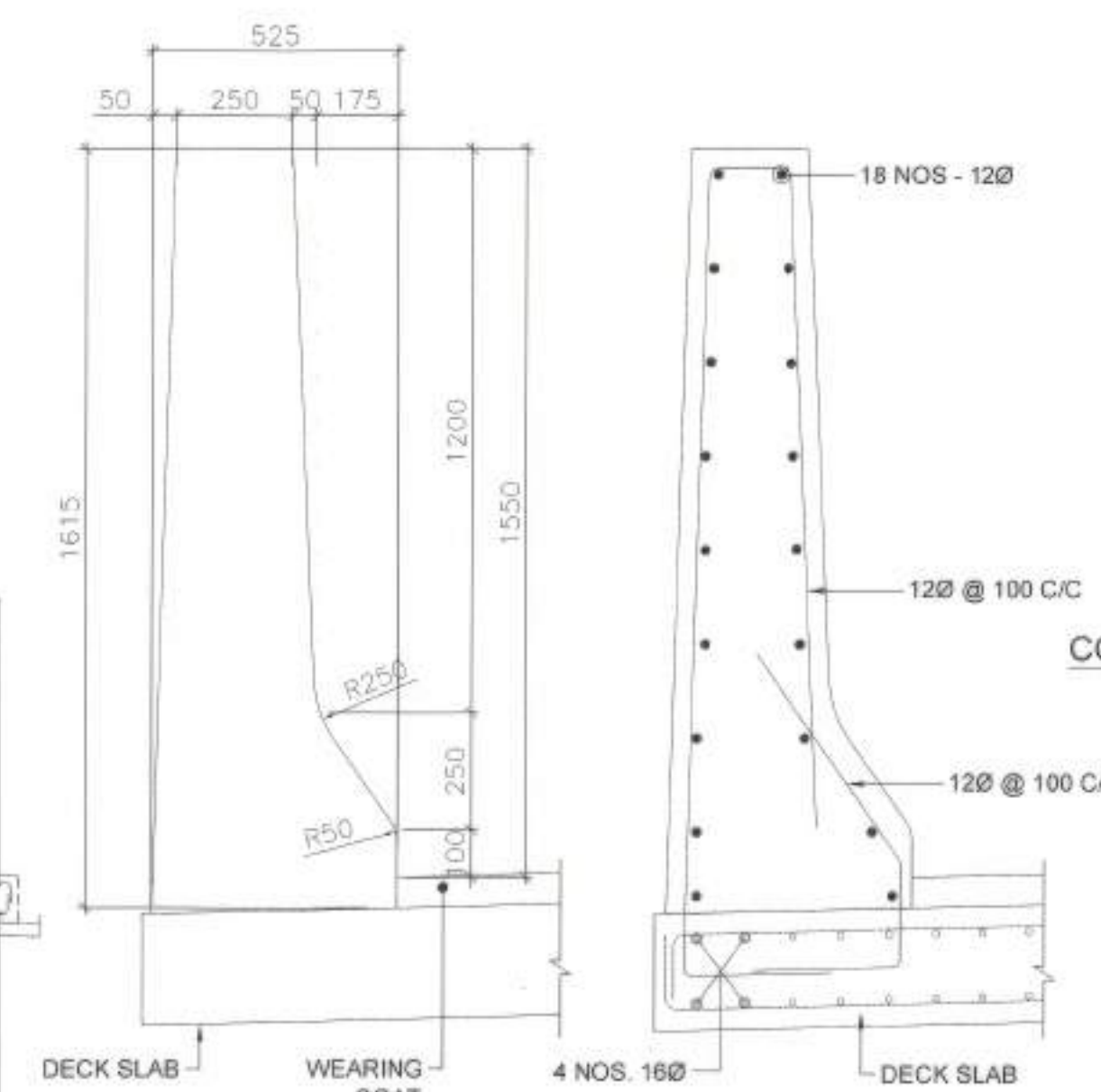
**NUMERATION OF DECK SLAB - PLAN**  
(SCALE 1:75)



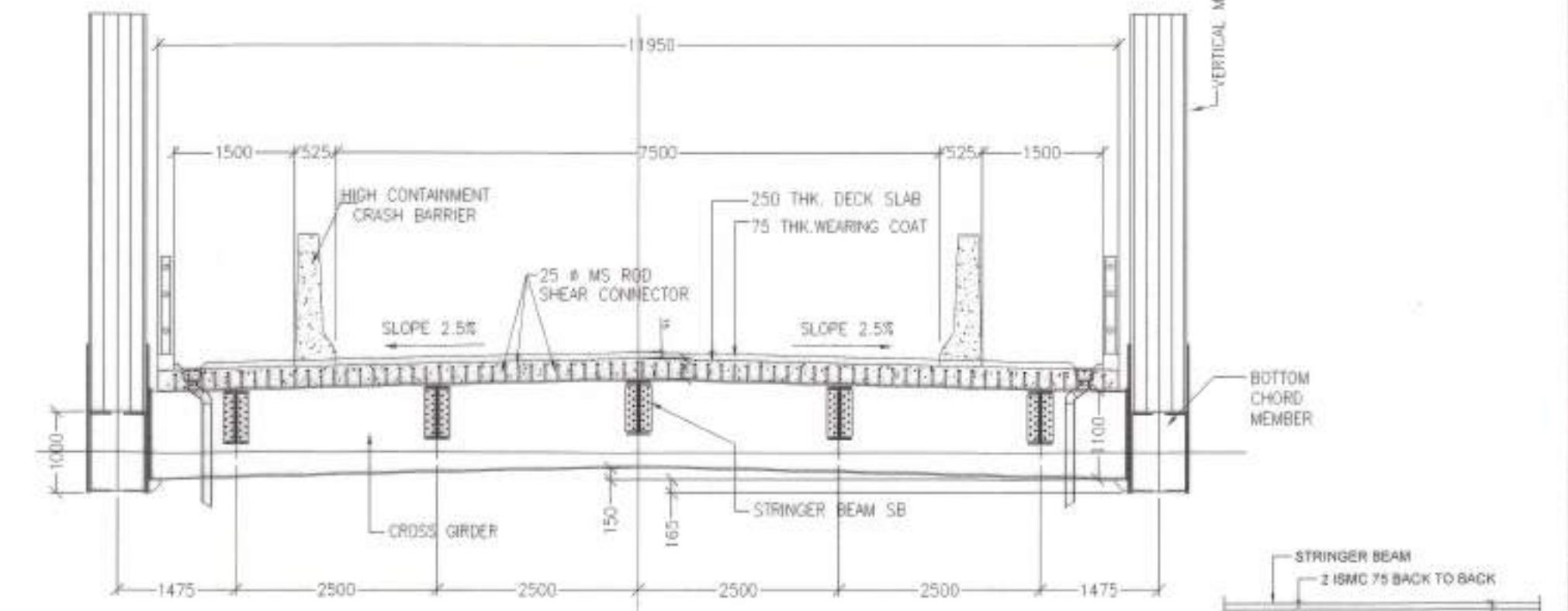
**SECTION B-B**  
(SCALE 1:25)



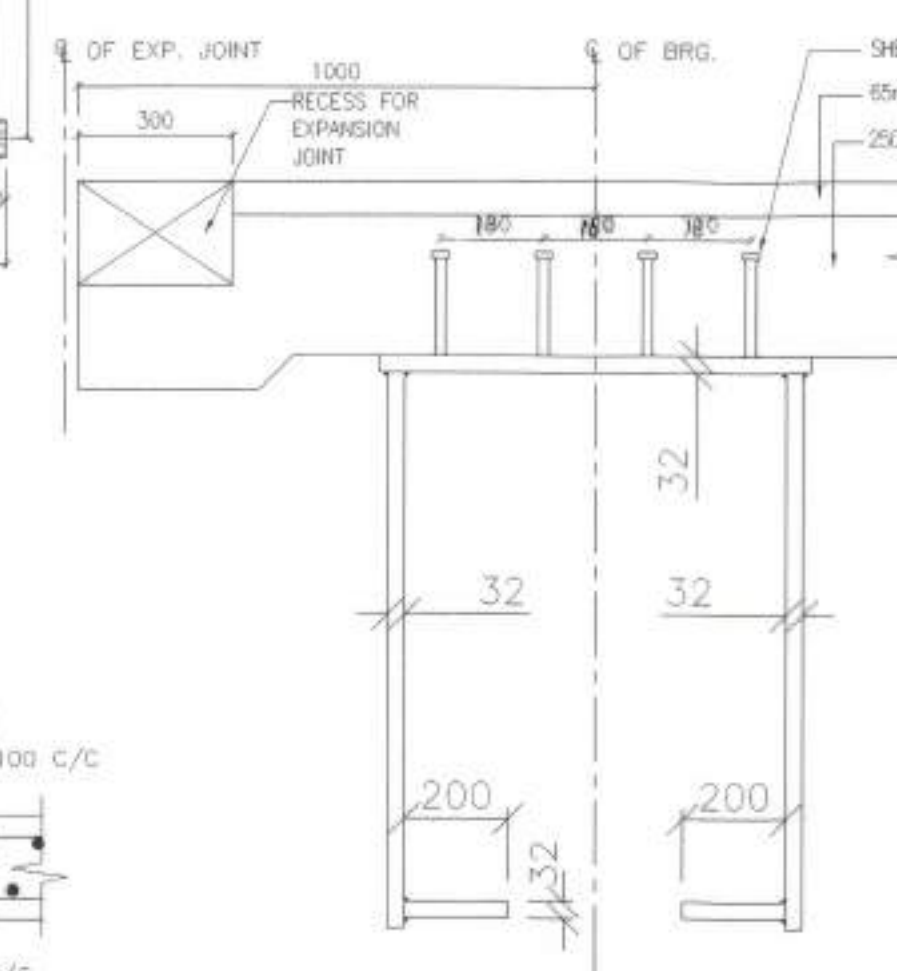
**SECTION C-C**  
(SCALE 1:10)



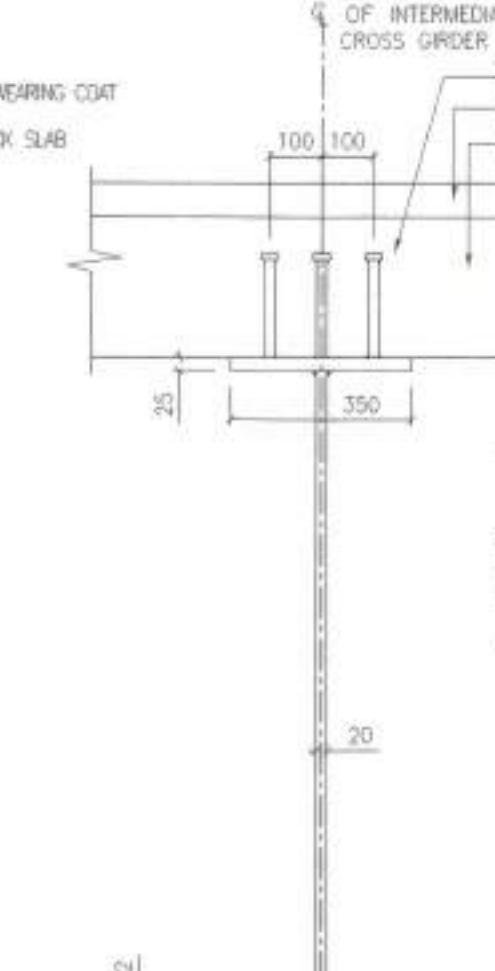
**CONCRETE DIMENSIONS REINFORCEMENT DETAILS**  
**NUMERATION DETAILS OF RCC CRASH BARRIER**  
(SCALE 1:10)



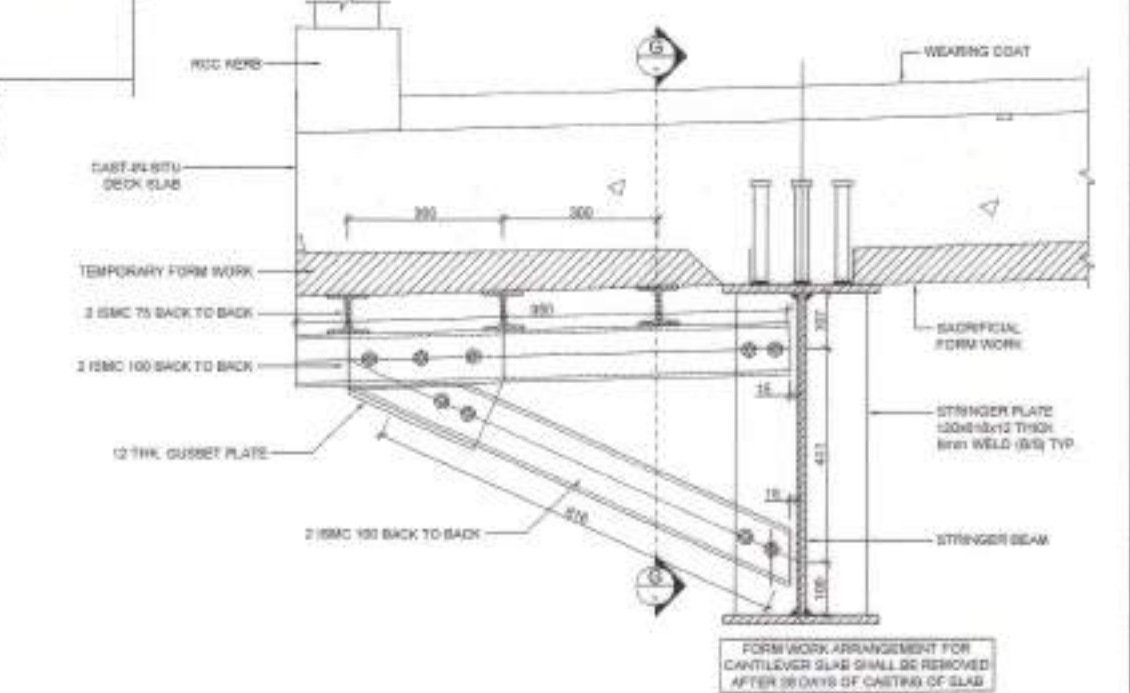
**SECTION A-A**  
(SCALE 1:50)



**SECTION D-D**  
(SCALE 1:10)



**SECTION G-G**  
(SCALE 1:10)



**TYPICAL DETAILS OF BRACKET AT (LOWER SIDE) END STRINGERS**  
(SCALE 1:10)

- NOTES:**
1. ALL DIMENSIONS ARE IN mm. UNLESS OTHERWISE MENTIONED.
  2. NO DIMENSIONS SHALL BE SCALED FROM THIS DRAWING. ONLY WRITTEN DIMENSION SHALL BE FOLLOWED.
  3. GRADE OF CONCRETE FOR DECK SLAB, RCC CRASH BARRIER SHALL BE M40.
  4. GRADE OF REINFORCEMENT SHALL BE Fe500 FOR SEISMIC ZONE II AND Fe500D FOR SEISMIC ZONES III, IV AND V AS PER IRC-112:2019 AS CORRECTED FROM TIME TO TIME.
  5. MINIMUM CLEAR COVER FOR ANY REINFORCEMENT SHALL BE 50 mm.
  6. LAP AND ANCHORAGE LENGTH FOR REINFORCEMENT SHALL BE AS PER IRC 112:2019. NOT MORE THAN 50% REINFORCEMENT SHALL BE LAPPED AT ANY SECTION.
  7. ALL MATERIALS SHALL PASS TESTS / ANALYSIS PRESCRIBED BY RELEVANT BIS SPECIFICATIONS.
  8. 25mm GAP SHALL BE PROVIDED LONGITUDINALLY @ 5000 C/C IN RCC CRASH BARRIER.
  9. IN REPLACEMENT OF 70mm THK PRECAST PANEL GLASS FIBER REINFORCED CONCRETE OR STAINLESS STEEL CORRUGATED SHEET OR ANY OTHER PERMANENT SHUTTERING (CORROSION RESISTANT CAN BE USED OF SUFFICIENT STRENGTH TO CATER DECK AND CONSTRUCTION LIVE LOAD).
  10. FOR RCC CRASH BARRIER DETAILING REFER IRC:5 2015, CLAUSE 109.6.3 FIGURE 3 AND FOR W-BEAM METALLIC CRASH BARRIER REFER IRC:5 2015 FIGURE 4 (b) AND IRC:9-2015.
  11. AT FREE END, EXPANSION GAP SHALL BE PROVIDED TO CATER FOR ±35mm MOVEMENT OF THIS SPAN FROM ITS MEAN POSITION (TOTAL 70 mm) PLUS EXPANSION / CONTRACTION REQUIREMENT OF THE ADJACENT SPAN.
  12. AT FIXED END EXPANSION GAP SHALL BE PROVIDED TO CATER FOR ±10 mm NOMINAL MOVEMENT OF THIS SPAN FOR ITS MEAN POSITION (TOTAL 20 mm) PLUS EXPANSION / CONTRACTION REQUIREMENT OF ADJACENT SPAN.
  13. PROPER DRAINAGE ARRANGEMENT SHALL BE PROVIDED FOR STORM WATER DISCHARGE THROUGH PIPES / CONNECTORS.
  14. THE WATER COLLECTED IN DRAINAGE SYSTEM SHALL NOT BE LEAD TO TRACKS IN ANY CASE. IT SHALL BE CONNECTED TO PROPER STORM WATER DRAINAGE, OR PREFERABLY GROUND WATER DISCHARGE ARRANGEMENT.
  15. STAINLESS STEEL REINFORCEMENT MAY BE PROVIDED AS PER CLAUSE 7.1.5 OF IRS CBC, IF REQUIRED.

**R. D. S. O.**

**ROAD OVER BRIDGE**  
**CAMEL BACK TYPE TRUSS GIRDER**  
**60m. CLEAR SPAN**  
**TWO LANE TWO WAY**  
**7.50 M CARRIAGEWAY WIDTH WITH BOTH SIDE FOOTPATH**  
**HAVING TOTAL DECK WIDTH OF 11.950M.**  
**(WITH SPECIAL CLASS LOADING OF 385 TON)**

**DETAILS OF CONCRETE DECK SLAB**

**PROVISIONAL**

**RDSO/B-10444/16**

DESIGN CONSULTANT:  
**SPARSH ENGINEERING COMPANY PRIVATE LIMITED**  
H-55, Harmu Housing Colony, Near Nigam Park,  
Ranchi, Jharkhand - 834 002, PH- 0651-2340659

CLIENT:  
**DFE**  
DEDICATED FREIGHT CORRIDOR  
CORPORATION OF INDIA LIMITED  
(A Govt. of India Enterprise)  
Ministry of Railway.

LEGEND :-  
TOP BARS SHOWN THUS  
BOTTOM BARS SHOWN THUS

DRAWN BY:-  
DESIGNED BY:-  
CHECKED BY:-

DESIGN CHECKED BY:  
DRAWING CHECKED BY:  
SCRUTINIZED & CHECKED BY:

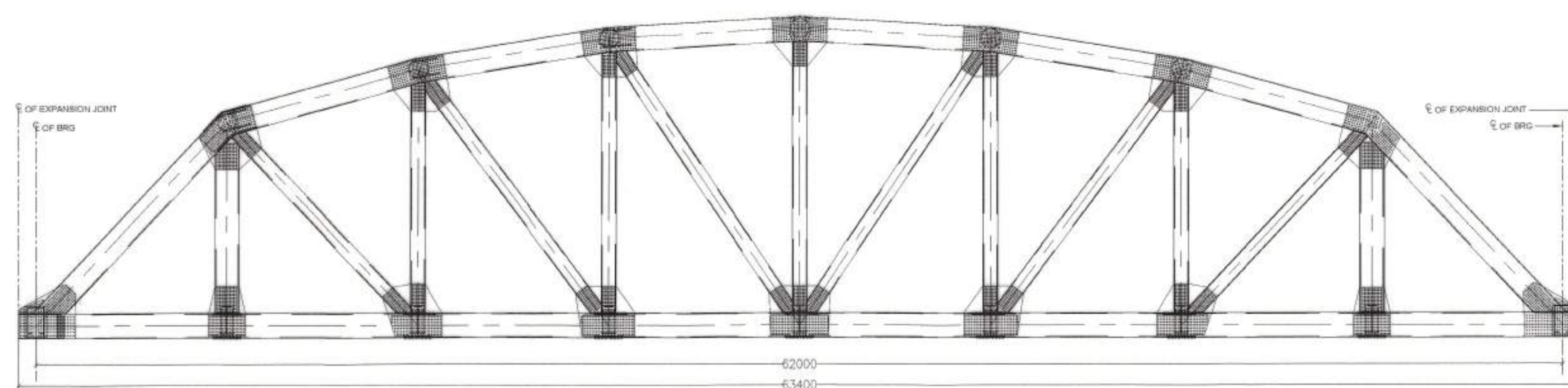
SCRUTINIZED & CHECKED BY:

APPROVED BY:

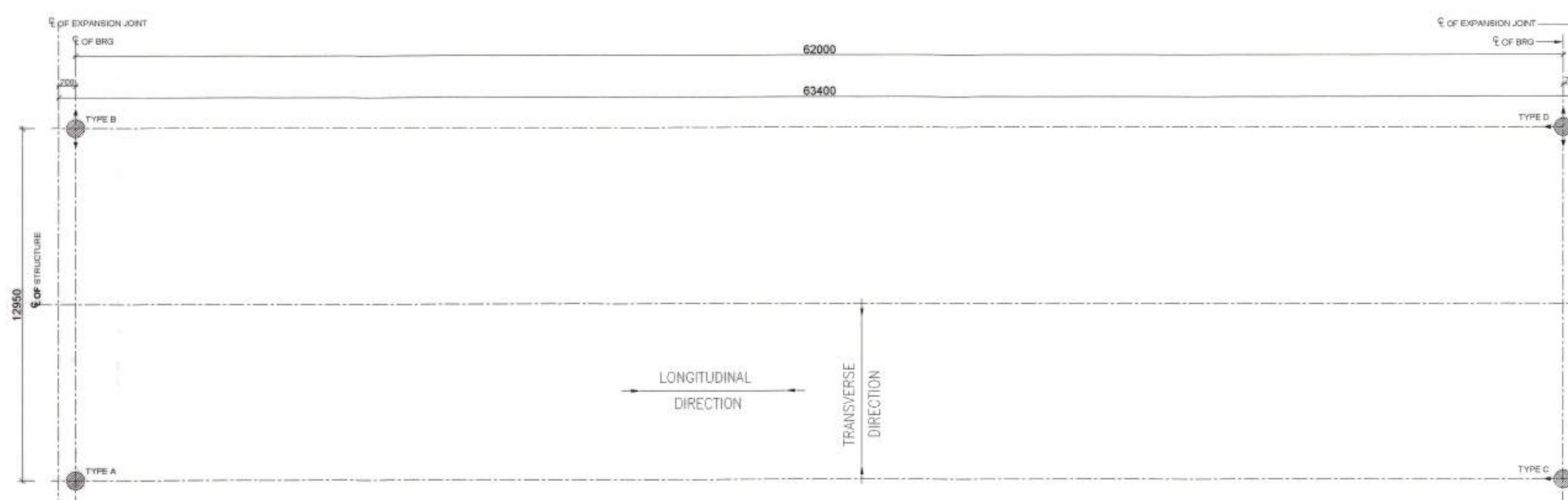
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LEGEND		
	FIXED BEARING	TYPE A
	TRANSVERSE GUIDED BEARING	TYPE B
	LONGITUDINAL GUIDED BEARING	TYPE C
	FREE BEARING	TYPE D



ELEVATION  
SCALE 1 : 100



BEARING LAYOUT  
SCALE 1 : 100

BEARING TYPE AND LOAD DETAILS				FIXED	GUIDED SLIDING ASSEMBLY (TRANSVERSE FREE)	GUIDED SLIDING ASSEMBLY (LONGITUDINAL FREE)	FREE SLIDING
BEARING IDENTIFICATION MARK/NUMBER				A	B	C	D
TOTAL QUANTITY REQUIRED FOR STEEL CAMEL BACK TRUSS BRIDGE				1	1	1	1
SEATING MATERIAL	UPPER SURFACE			STEEL	STEEL	STEEL	STEEL
	LOWER SURFACE			CONCRETE	CONCRETE	CONCRETE	CONCRETE
ALLOWABLE CONTACT PRESSURE (Mpa)	UPPER SURFACE			E350	E350	E350	E350
	LOWER SURFACE			M40	M40	M40	M40
DESIGN LOAD (KN)	SERVICEABILITY LIMIT STATE	VERTICAL	MAX.	6654.0	6319.0	6648.0	6325.0
			PERMANENT	4092.0	4092.0	4092.0	4092.0
		MIN.		3717.0	3717.0	3717.0	3717.0
		LONGITUDINAL		409.0	409.0	$\dot{u}(Rg+Rq)$	$\dot{u}(Rg+Rq)$
		TRANSVERSE		1714.0	$\dot{u}(Rg+Rq)$	1714.0	$\dot{u}(Rg+Rq)$
	ULTIMATE LIMIT STATE	VERTICAL	MAX.	9300.0	8623.0	9170.0	8631.0
			MIN.	3993.0	4273.0	4080.0	4319.0
		LONGITUDINAL	MAX.	8294.0	8294.0	$\dot{u}(Rg+Rq)$	$\dot{u}(Rg+Rq)$
			MIN.	0.0	0.0	$\dot{u}(Rg+Rq)$	$\dot{u}(Rg+Rq)$
		TRANSVERSE	MAX.	8909.0	$\dot{u}(Rg+Rq)$	8901.0	$\dot{u}(Rg+Rq)$
			MIN.	0.0	$\dot{u}(Rg+Rq)$	0.0	$\dot{u}(Rg+Rq)$
TRANSLATION (mm)	SERVICEABILITY LIMIT STATE	IRREVERSIBLE	LONGITUDINAL	0.0	0.0	-35.0	-54.0
			TRANSVERSE	0.0	-4.0	0.0	-4.0
		REVERSIBLE	LONGITUDINAL	0.0	0.0	35.0	54.0
			TRANSVERSE	0.0	4.0	0.0	4.0
	ULTIMATE LIMIT STATE	IRREVERSIBLE	LONGITUDINAL	0.0	0.0	-35.0	-54.0
			TRANSVERSE	0.0	-6.0	0.0	-6.0
		REVERSIBLE	LONGITUDINAL	0.0	0.0	35.0	54.0
			TRANSVERSE	0.0	6.0	0.0	6.0
ROTATION (Rad)	SERVICEABILITY LIMIT STATE	IRREVERSIBLE	LONGITUDINAL	0.0100	0.0100	0.0100	0.0100
			TRANSVERSE	0.0100	0.0100	0.0100	0.0100
		REVERSIBLE	LONGITUDINAL	0.0100	0.0100	0.0100	0.0100
			TRANSVERSE	0.0100	0.0100	0.0100	0.0100

- NOTES:**
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS SPECIFIED OTHERWISE.
  - DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
  - BEARING SHALL BE PROCURED FROM THE LIST OF APPROVED MANUFACTURERS.
  - BEARING SHALL CONFORM TO LATEST MORTH'S / IRC SPECIFICATIONS AND TENDER STIPULATION IF ANY AND IRC-83-PART IV (2014).
  - THE TESTING OF RAW MATERIALS, METALLIC COMPONENTS, ELASTOMER & PTFE AND ACCEPTANCE TESTS ON BEARINGS SHALL CONFORM TO MORTH'S / IRC SPECIFICATIONS/TENDER SPECIFICATIONS.
  - MANUFACTURER SHALL SUBMIT THE CERTIFICATES FOR LOAD TESTING AND DIMENSIONS OF BEARINGS.
  - SUITABLE ERECTION CLAMPS FOR SAFE TRANSPORTATION & HANDLING ALONG WITH TEMPLATE FOR ALIGNMENT SHALL BE PROVIDED BY THE MANUFACTURER.
  - THE SUPERSTRUCTURE HAS BEEN DESIGNED BY TAKING MAXIMUM SPECTRAL ACCELERATION VALUE OF 2.5 FROM THE RESPONSE SPECTRA. THE SUB STRUCTURE SHALL BE DESIGNED BY CALCULATING THE EARTHQUAKE FORCE BASED UPON TIME PERIOD OF THE BRIDGE STRUCTURE WHICH IN TURN IS BASED UPON STIFFNESS OF PIER AND LUMPED MASS OF SUPERSTRUCTURE ON PIER TOP AS PER IRC 6.
  - IF SEISMIC ARRESTORS ARE PROVIDED TO TAKE THE HORIZONTAL LOADS, BEARINGS ARE NOT REQUIRED TO BE DESIGNED FOR SEISMIC LOADS. IN THAT CASE BEARINGS ARE TO BE DESIGNED FOR FRICTION AND BRAKING / TRACTIVE FORCES ONLY.
  - BEARING LOADS HAS BEEN CALCULATED FOR SEISMIC ZONE V, WIND SPEED 55 m/s, SV LOADING AND CONGESTION FACTOR.
  - THE CONTRACTOR SHALL SUBMIT DESIGN/DRAWINGS OF INDIVIDUAL BEARINGS BASED ON FORCES, TRANSLATION & ROTATION AS GIVEN IN THIS DRAWING.

**R. D. S. O.**

ROAD OVER BRIDGE  
CAMEL BACK TYPE TRUSS GIRDER  
60m. CLEAR SPAN  
TWO LANE TWO WAY  
7.50 M CARRIAGEWAY WIDTH WITH BOTH SIDE FOOTPATH  
HAVING TOTAL DECK WIDTH OF 11.950M.  
(WITH SPECIAL CLASS LOADING OF 385 TON)

BEARING LOAD DETAILS

PROVISIONAL

RDSO / B - 10444 / 17

DESIGN CONSULTANT :



SPARSH ENGINEERING COMPANY PRIVATE LIMITED  
H-55, Harmu Housing Colony, Near Nigam Park,  
Ranchi, Jharkhand - 834 002, PH- 0651-2340659

CLIENT :



DEDICATED FREIGHT CORRIDOR  
CORPORATION OF INDIA LIMITED  
(A Govt. of India Enterprise)  
Ministry of Railway.

DRAWN BY:-  
SANDHYA BERA

DESIGNED BY:-  
RAVI PRASAD

CHECKED BY:-  
SUDHIR KUMAR

S.K. MUKHERJEE  
DY PW/CIVIL/IIKKK

SOUVIK SENGUPTA  
OM/CIVIL/IIKKK

AJAY KUMAR  
COM/CIVIL/IIKKK

DESIGN CHECKED BY:-  
S.N. GUPTA (SSE)

DRAWING CHECKED BY:-  
S.S. SINGH (SSE)

SCRUTINIZED & CHECKED BY:-  
A.K. PANDEY (DD /SB-I)

SCRUTINIZED & CHECKED BY:-  
MANISH KUMAR (DBS /SB-I)

APPROVED BY:-  
R.K. SRIVASTAVA (EDBS)

ALT:

DESCRIPTION

DATE

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