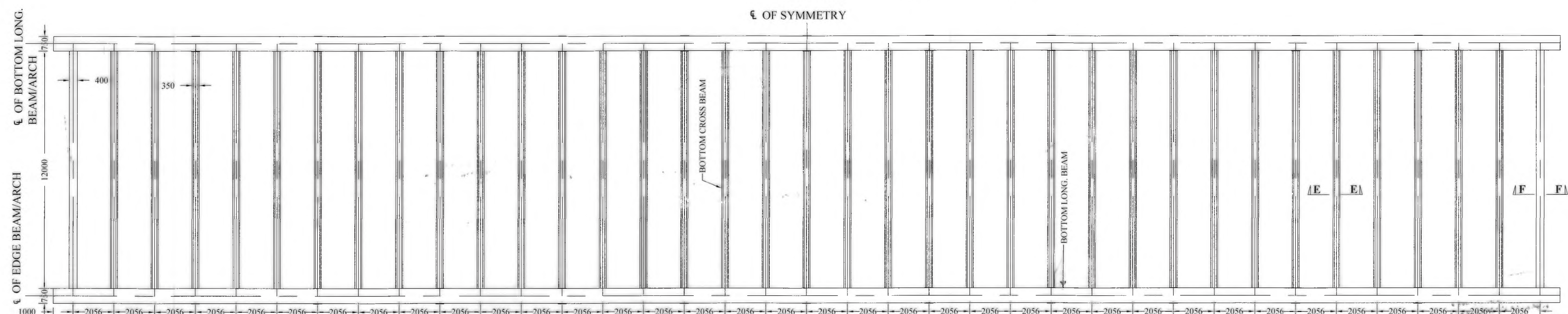
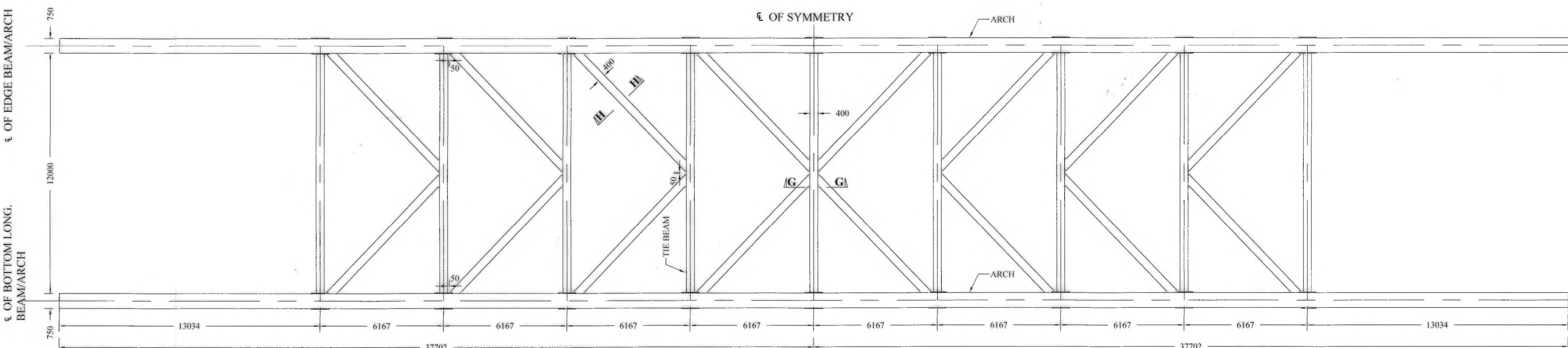


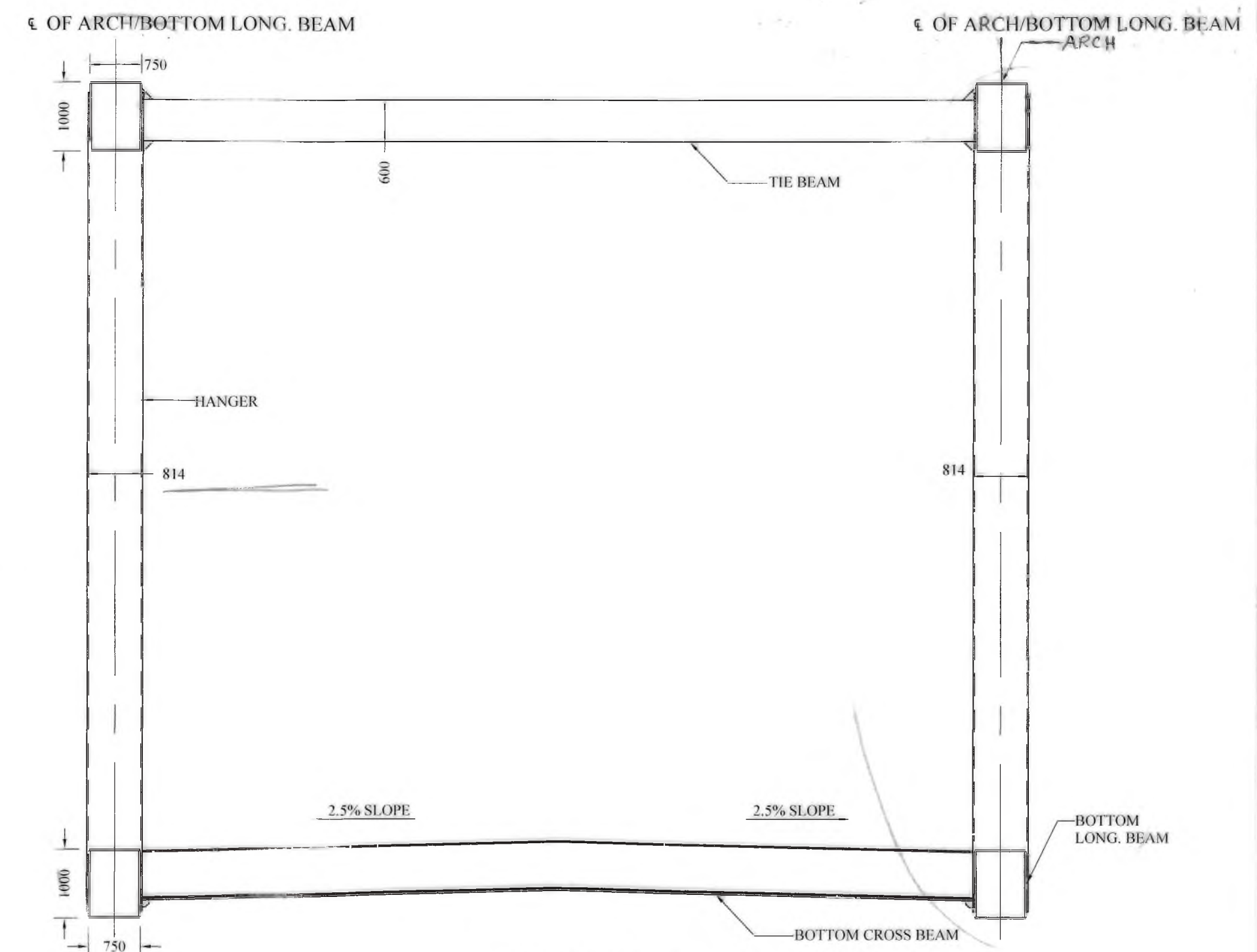
ELEVATION
(SCALE 1:120)



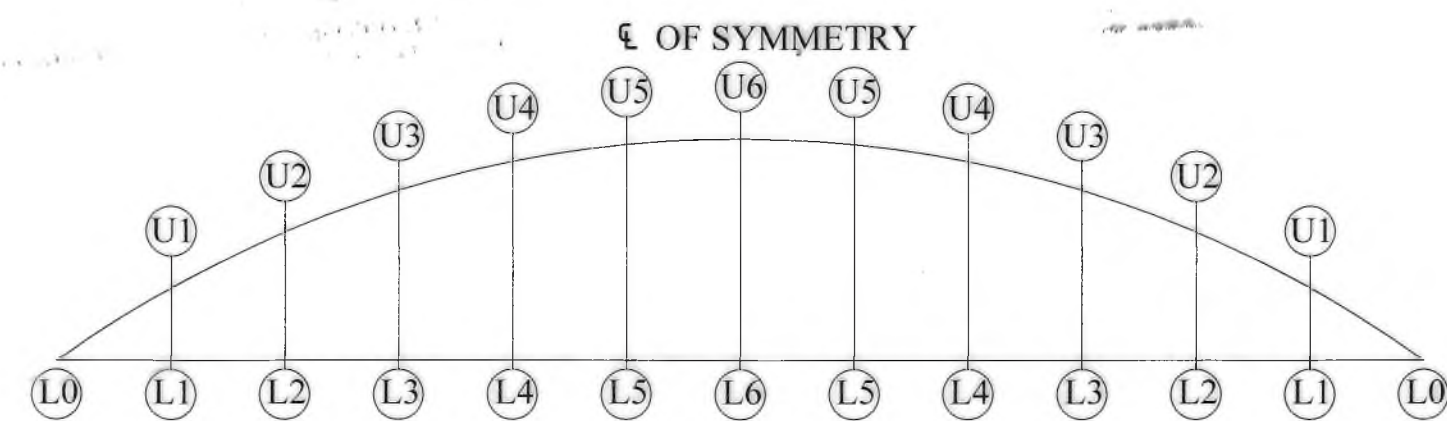
BOTTOM PLAN
(SCALE 1:120)



TOP PLAN
(SCALE 1:120)



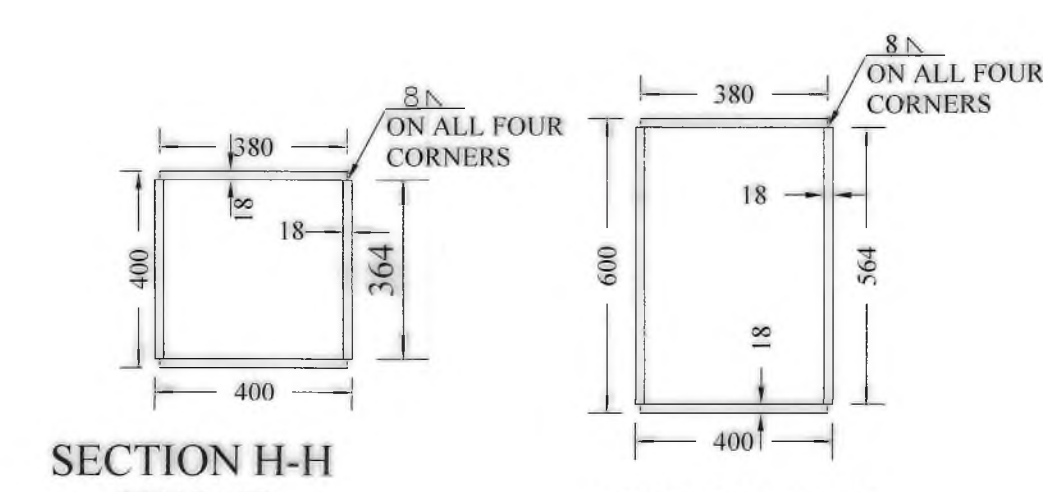
SECTION A-A
(SCALE 1:70)



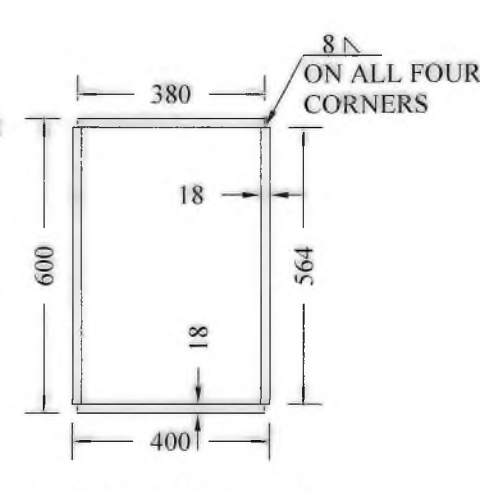
KEY ELEVATION - BOW STRING GIRDER
(SCALE 1:400)

NOTE:

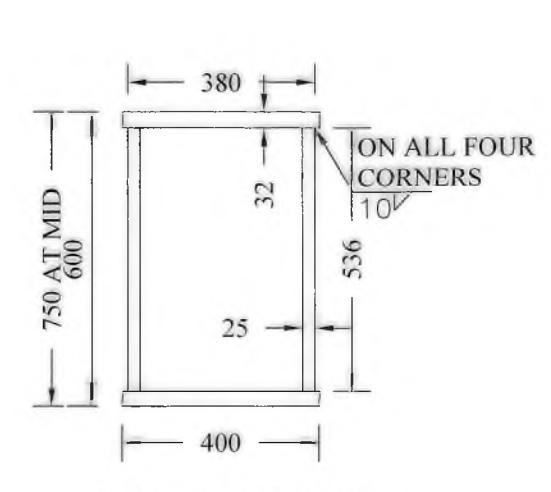
1. All dimensions are in mm.
2. No dimensions shall be scaled from this drawing, only written dimension shall be followed.
3. All steel plates used in fabrication of this bridge are of grade Fe 490B/490. Only ISMB 600 is of grade Fe 410.
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6. All workshop fabrication shall be done using SAW (Submerged Arc Welding) process.
7. Splicing of members shall be done as shown in detailed drawings.



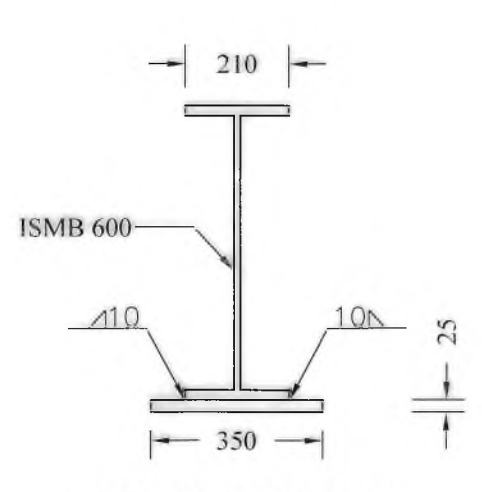
SECTION H-H
(SCALE 1:15)



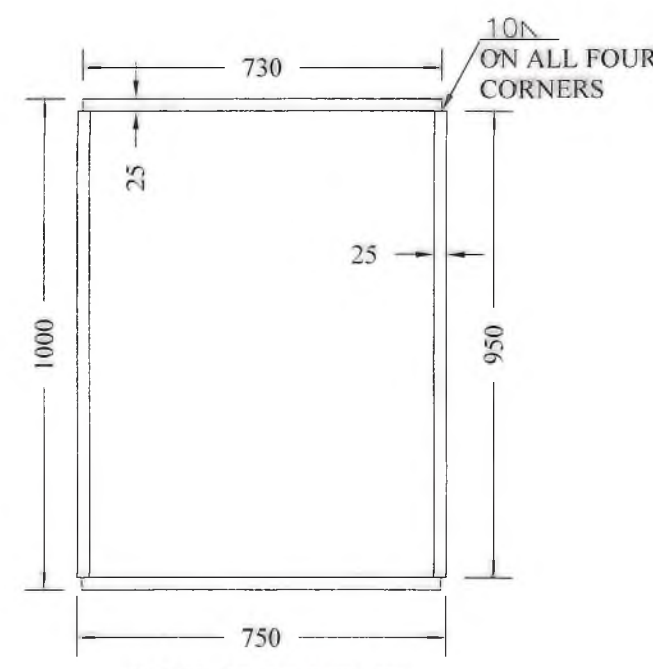
SECTION G-G
(SCALE 1:15)



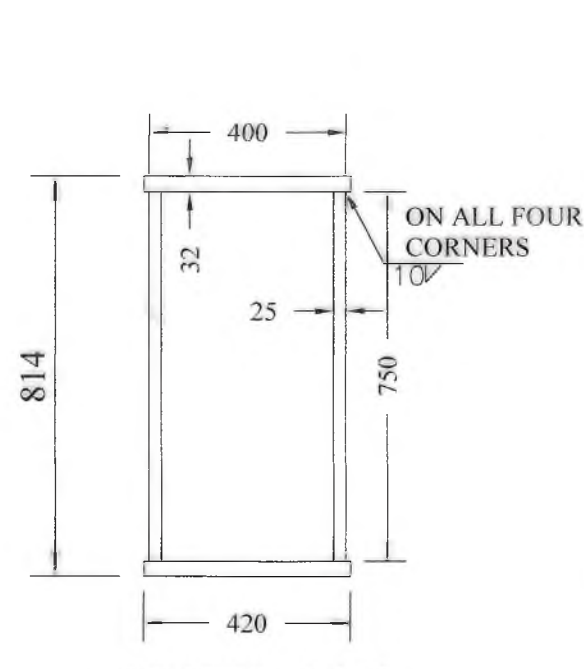
SECTION F-F
(SCALE 1:15)



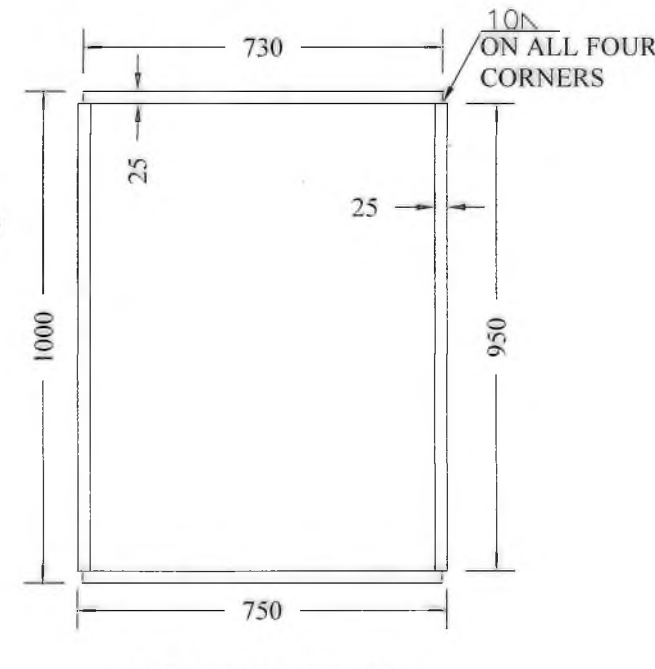
SECTION E-E
(SCALE 1:15)



SECTION D-D
(SCALE 1:15)



SECTION C-C
(SCALE 1:15)



SECTION B-B
(SCALE 1:15)

R. D. S. O.

ROAD OVER BRIDGE
BOW STRING STEEL GIRDER
72m CLEAR SPAN

DETAILS OF STEEL FRAME

PROVISIONAL

RDSO/B - 10412/1R

CALCULATION REGISTER NO. DD-2016/12
AUTO CAD FILE NO.: B-10412

DRAWN BY: M/S Abhinav Associates
CHECKED BY: MAHESH PRASAD (SSE)

DESIGNED BY: S.N.GUPTA (SSE)
DESIGNED CHECKED BY: T.HOLY.COM (SSE)

DRAWING REVISED BY: PRAMOD SAH (SSE)
CHECKED BY: S. A. ANSARI (SSE)

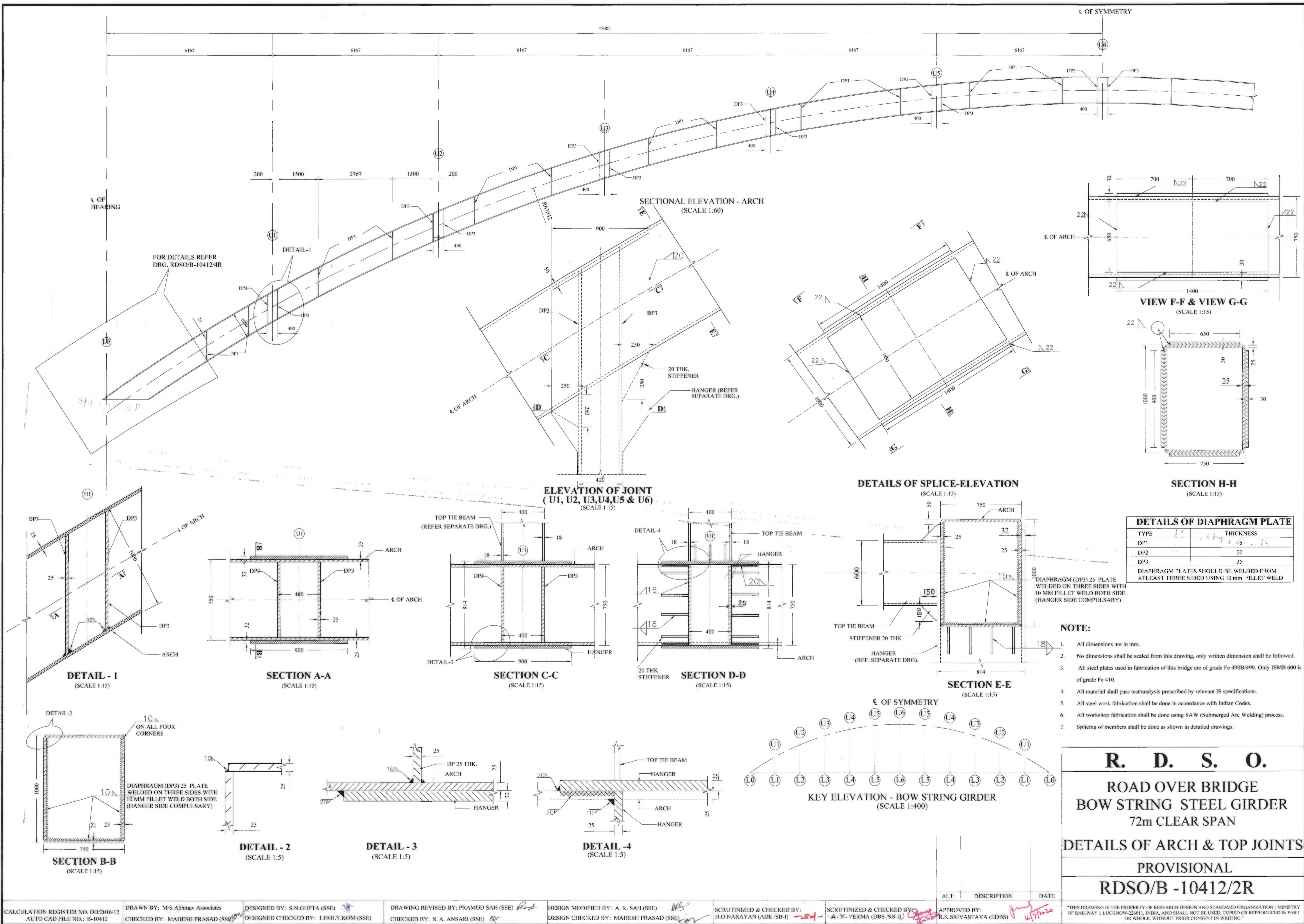
DESIGN MODIFIED BY: A. K. SAH (SSE)
DESIGN CHECKED BY: MAHESH PRASAD (SSE)

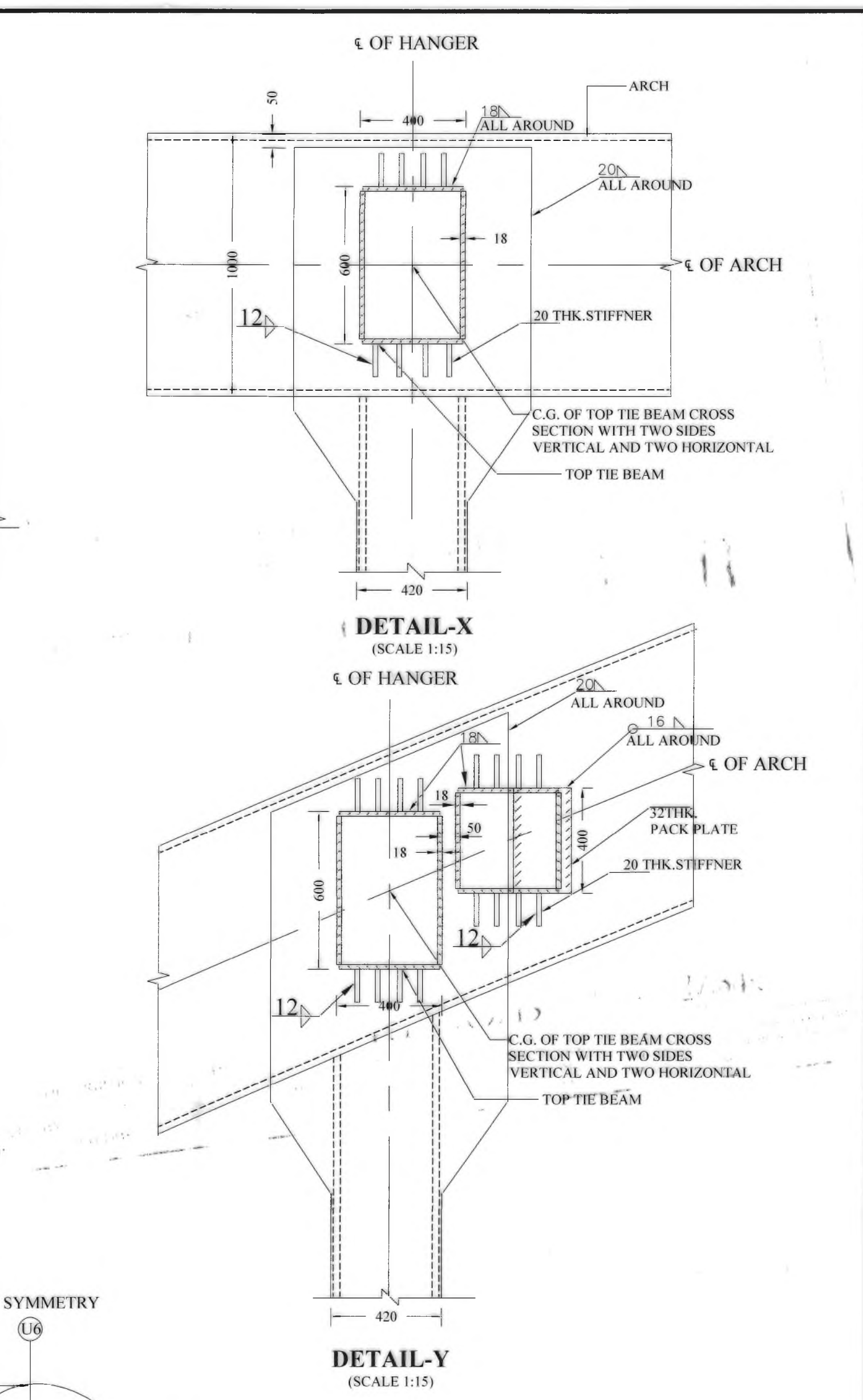
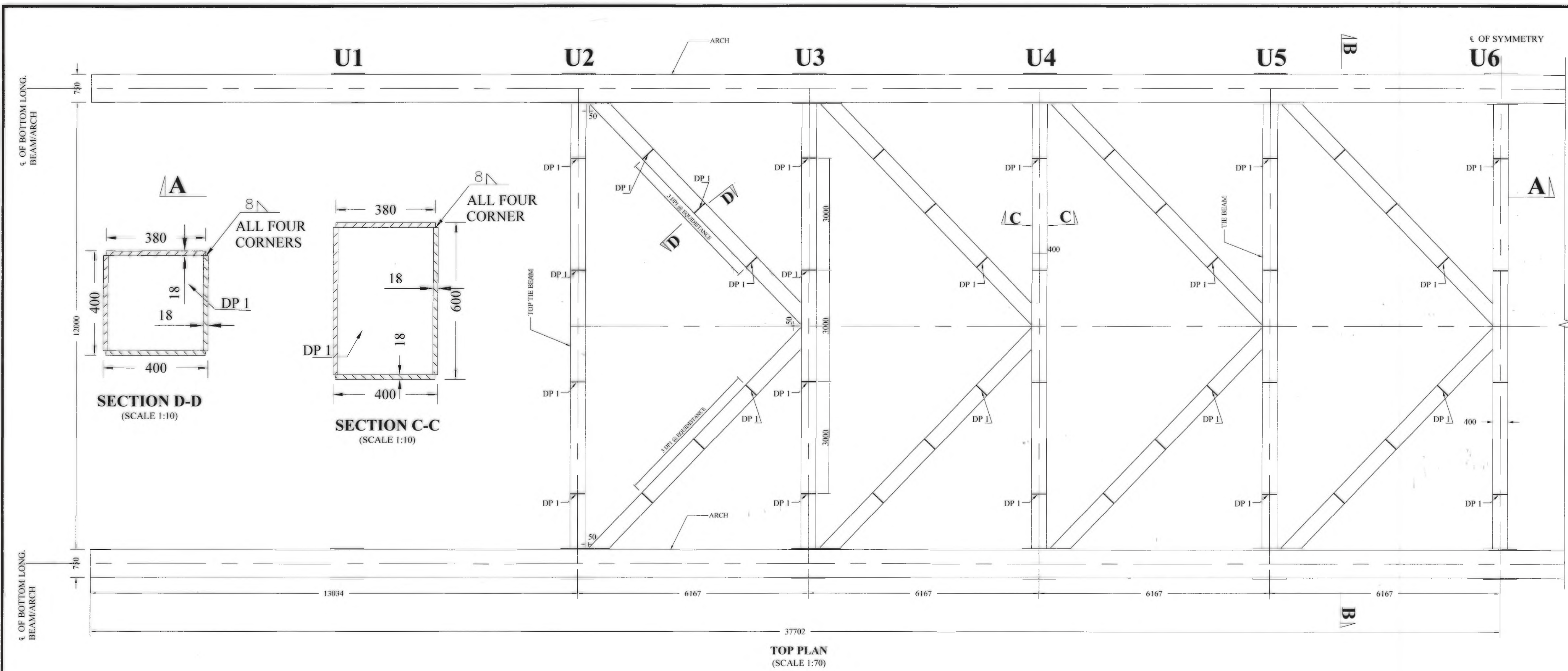
SCRUTINIZED & CHECKED BY:
H.O.NARAYAN (ADE/SB-I)

SCRUTINIZED & CHECKED BY:
A. K. VERMA (DBS/SB-II)

APPROVED BY:
R.K.SRIVASTAVA (EDBS)

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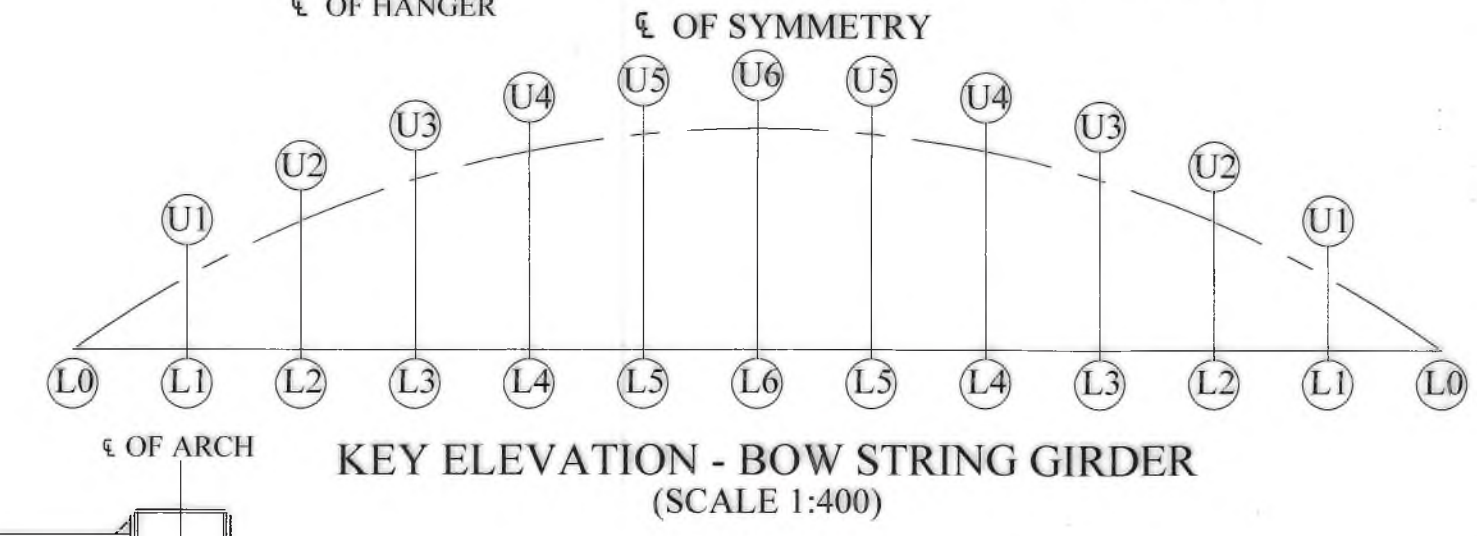
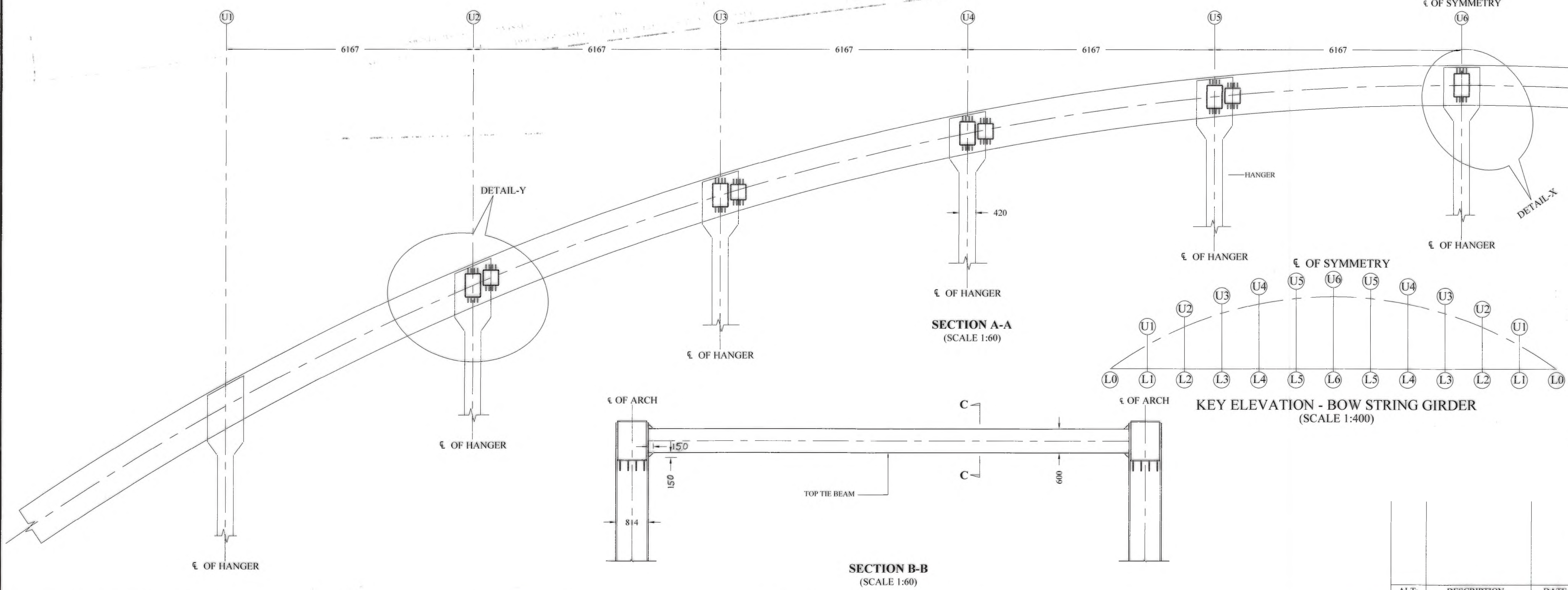


DETAILS OF DIAPHRAGM PLATE	
TYPE	THICKNESS
DP1	16
DP2	20
DP3	25

DIAPHRAGM PLATES SHOULD BE WELDED FROM ATLEAST THREE SIDED USING 10 mm. FILLET WELD

NOTE:

- All dimensions are in mm.
- No dimensions shall be scaled from this drawing, only written dimension shall be followed.
- All steel plates used in fabrication of this bridge are of grade Fe 490B/490. Only ISMB 600 is of grade Fe 410.
- All material shall pass test/analysis prescribed by relevant IS specifications.
- All steel work fabrication shall be done in accordance with Indian Codes.
- All workshop fabrication shall be done using SAW (Submerged Arc Welding) process.
- Splicing of members shall be done as shown in detailed drawings.



R. D. S. O.

ROAD OVER BRIDGE

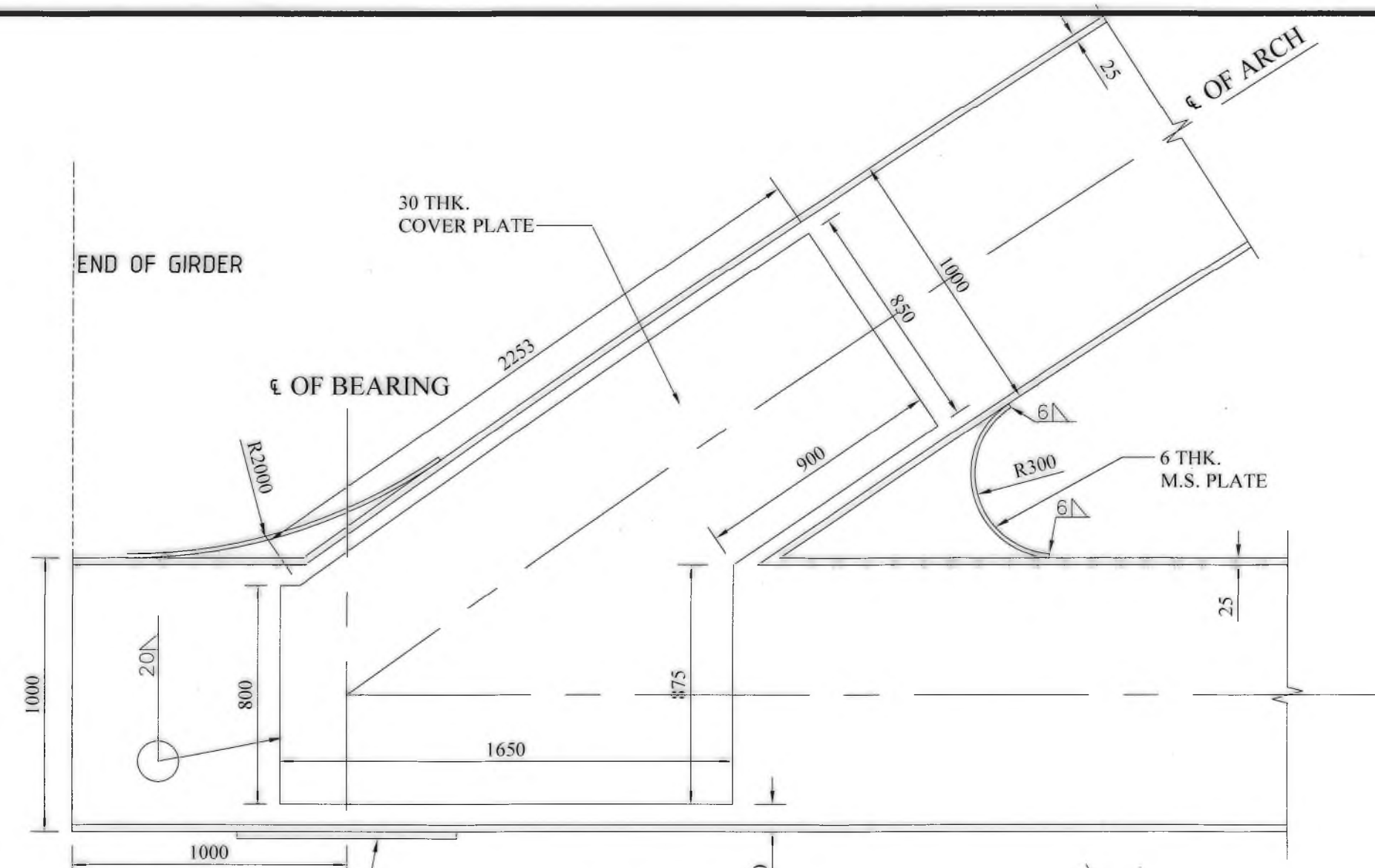
BOW STRING STEEL GIRDER

72m CLEAR SPAN

DETAILS OF TOP TIE BEAM

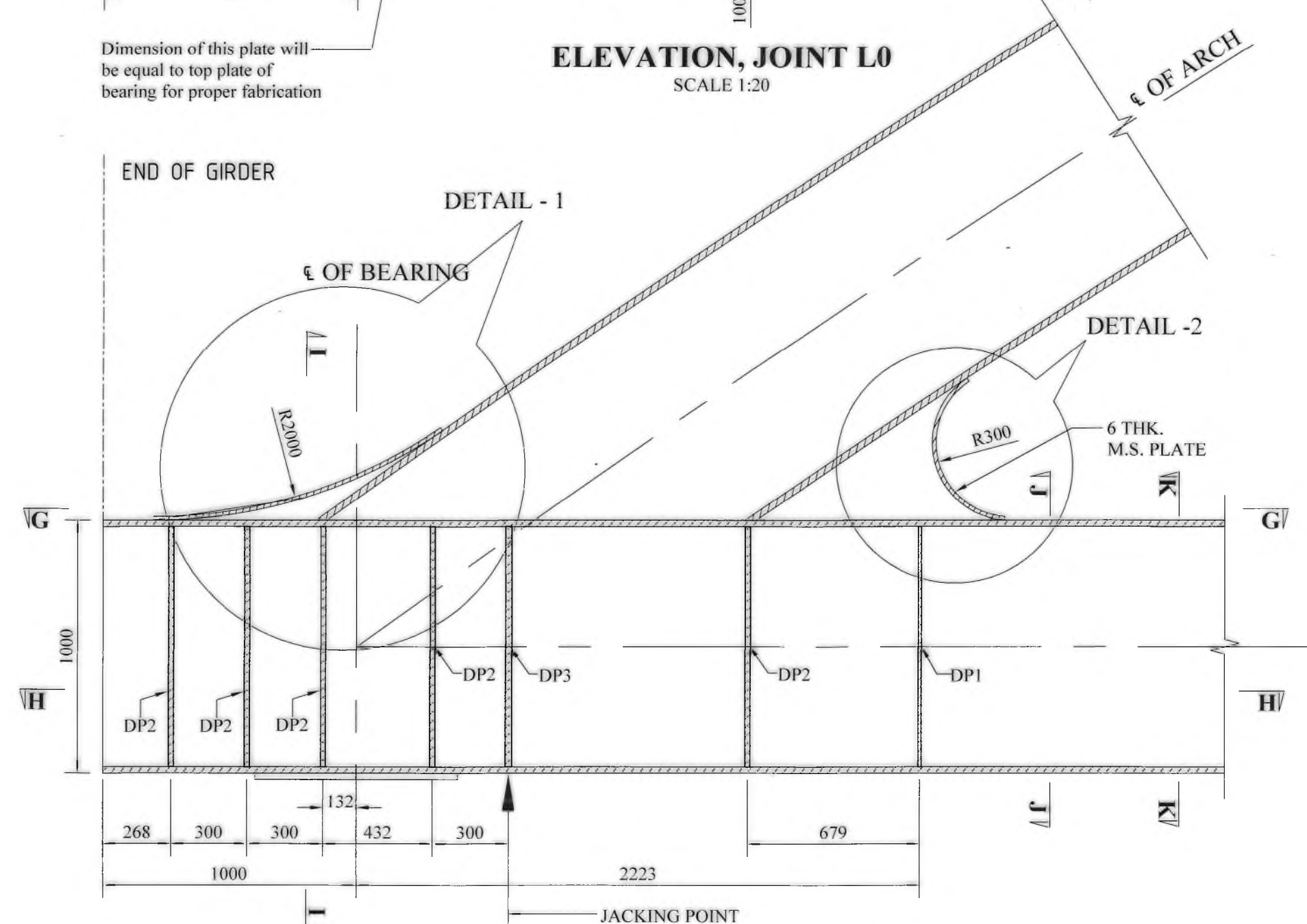
PROVISIONAL

RDSO/B -10412/3R

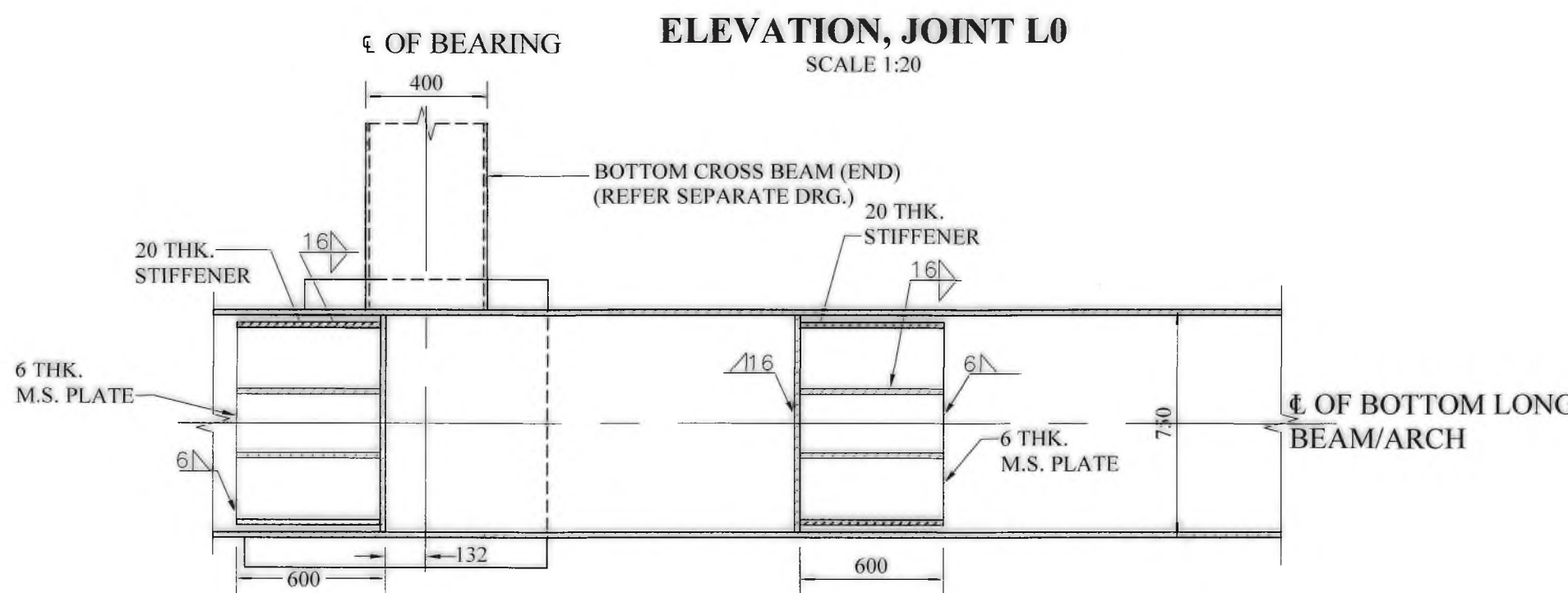


ELEVATION, JOINT L0
SCALE 1:20

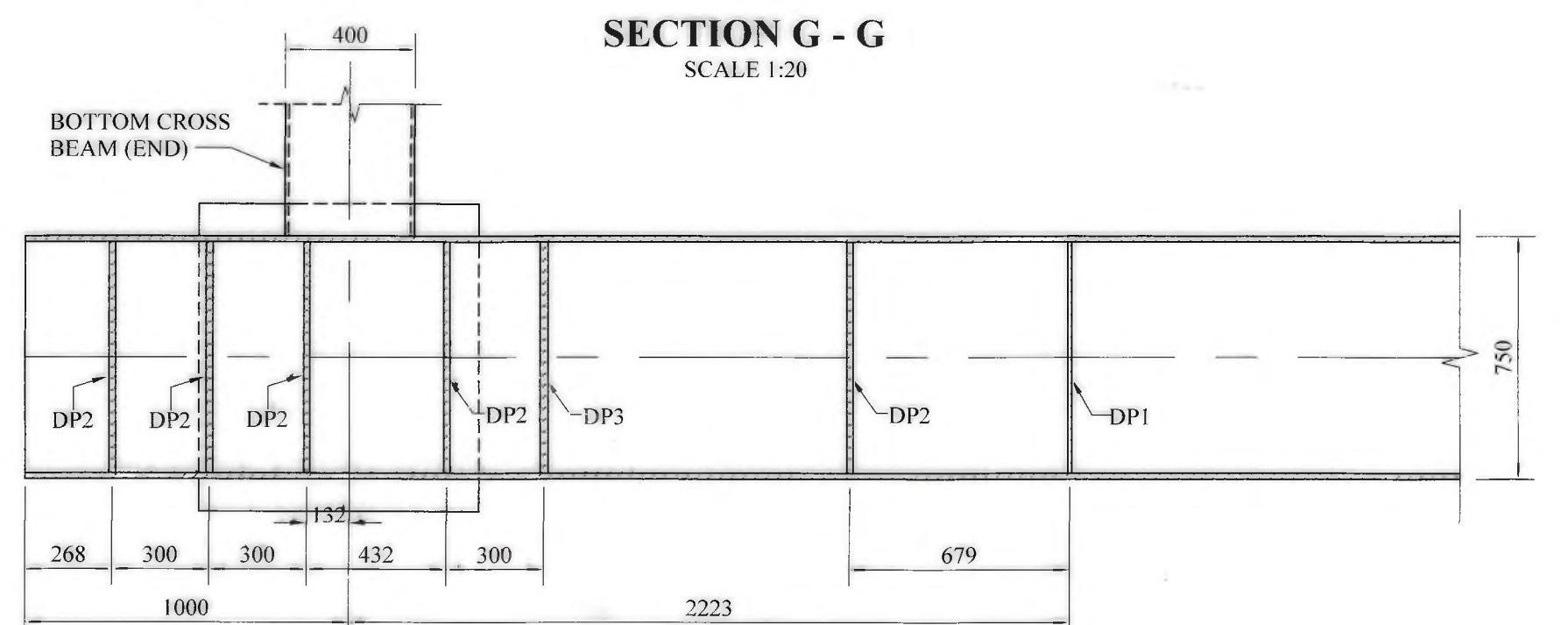
Dimension of this plate will be equal to top plate of bearing for proper fabrication



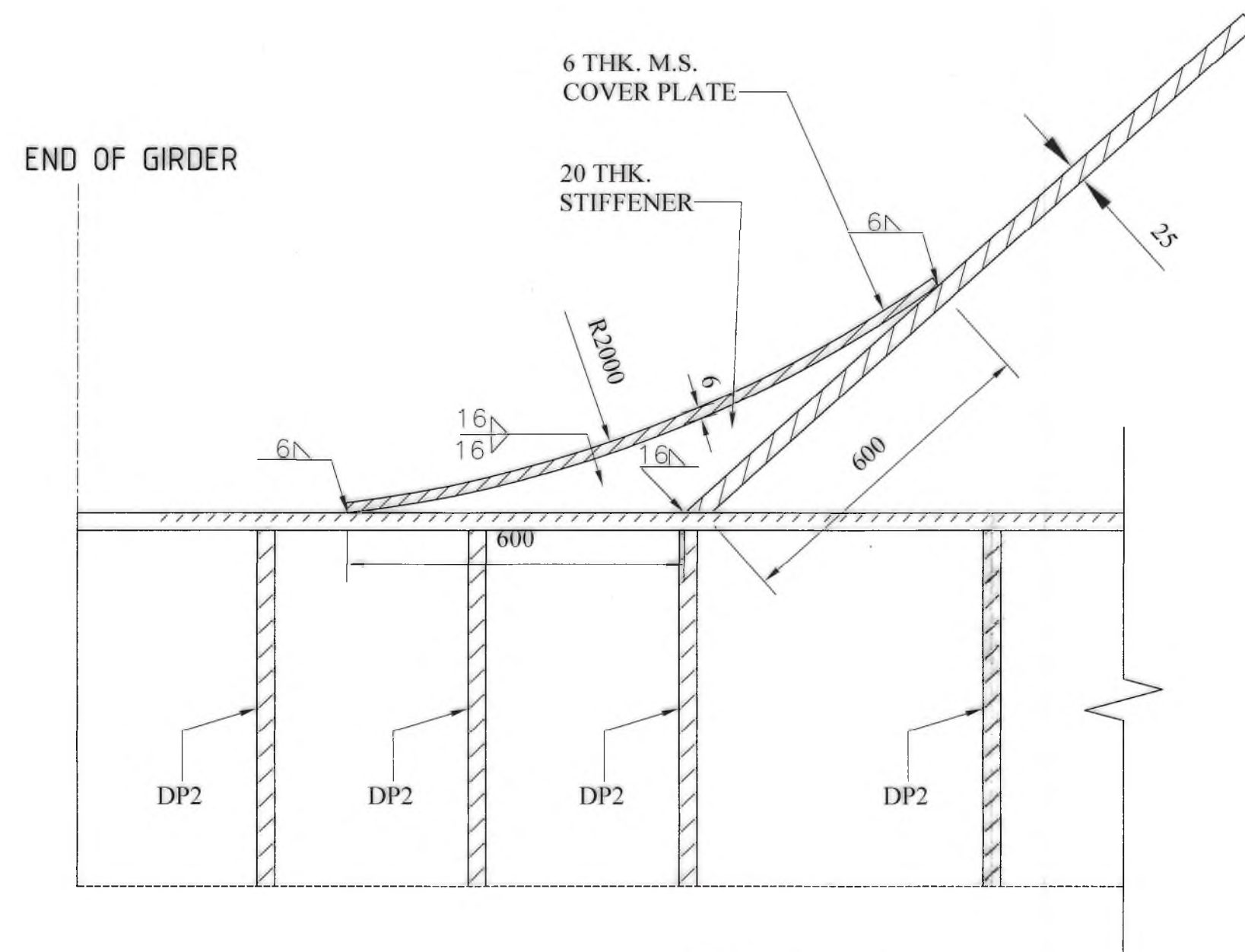
ELEVATION, JOINT L0
SCALE 1:20



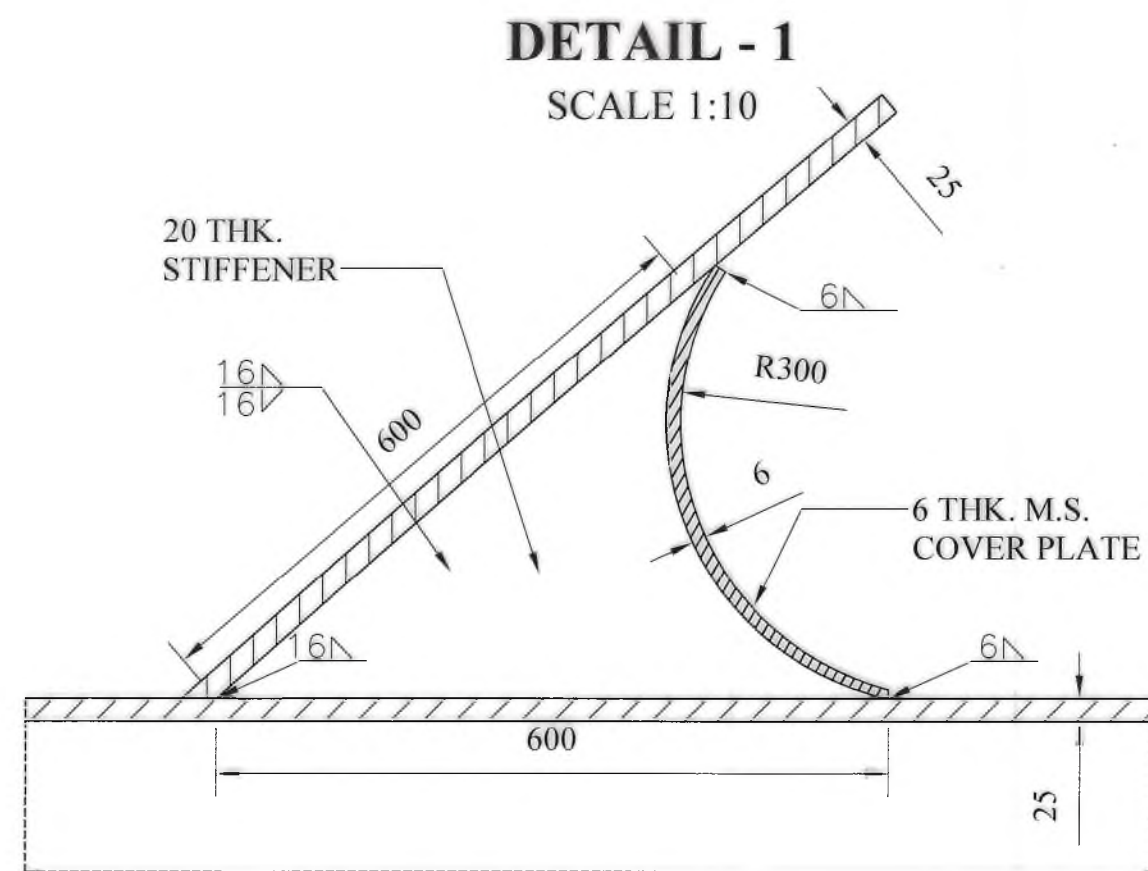
SECTION G - G
SCALE 1:20



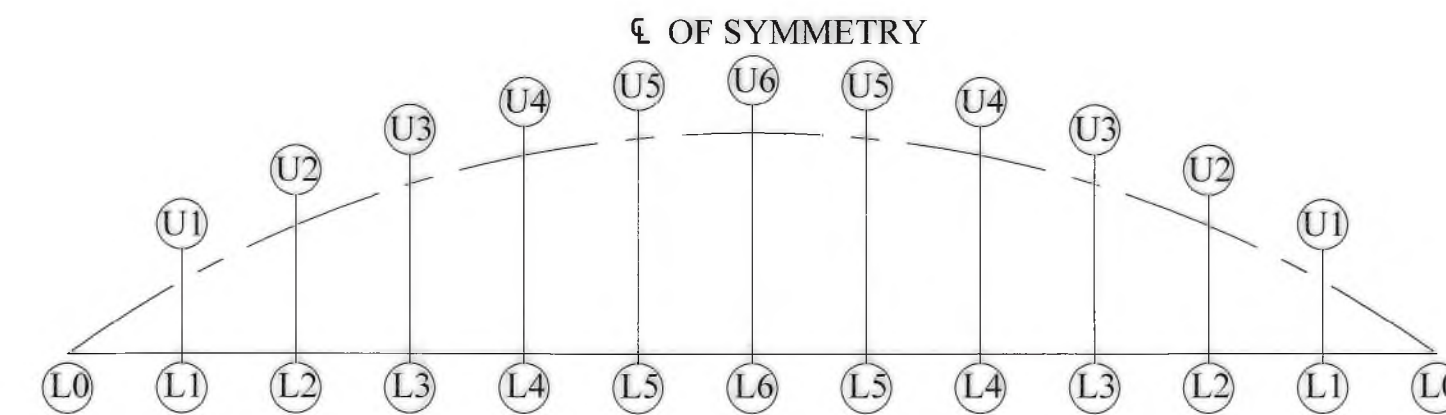
SECTION H - H
SCALE 1:20



DETAIL - 1
SCALE 1:10



DETAIL - 2
SCALE 1:10



KEY ELEVATION - BOW STRING GIRDER
(SCALE 1:400)

DETAILS OF DIAPHRAGM PLATE

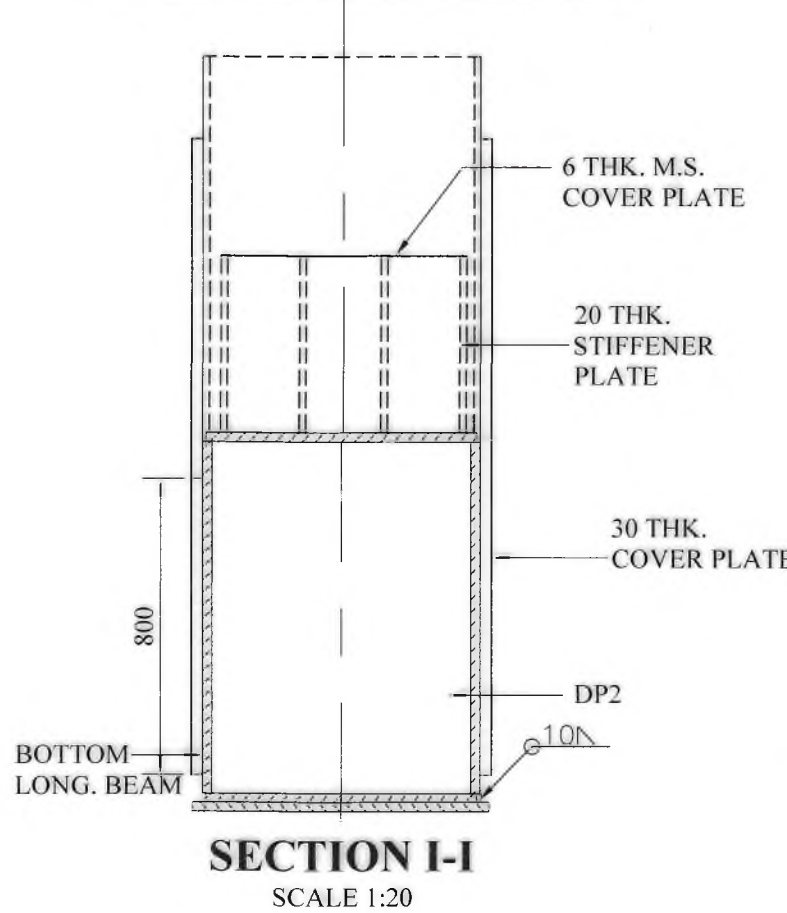
TYPE	THICKNESS
DP1	16
DP2	20
DP3	25

DIAPHRAGM PLATES SHOULD BE WELDED FROM ATLEAST THREE SIDED USING 10 mm. FILLET WELD

NOTE:

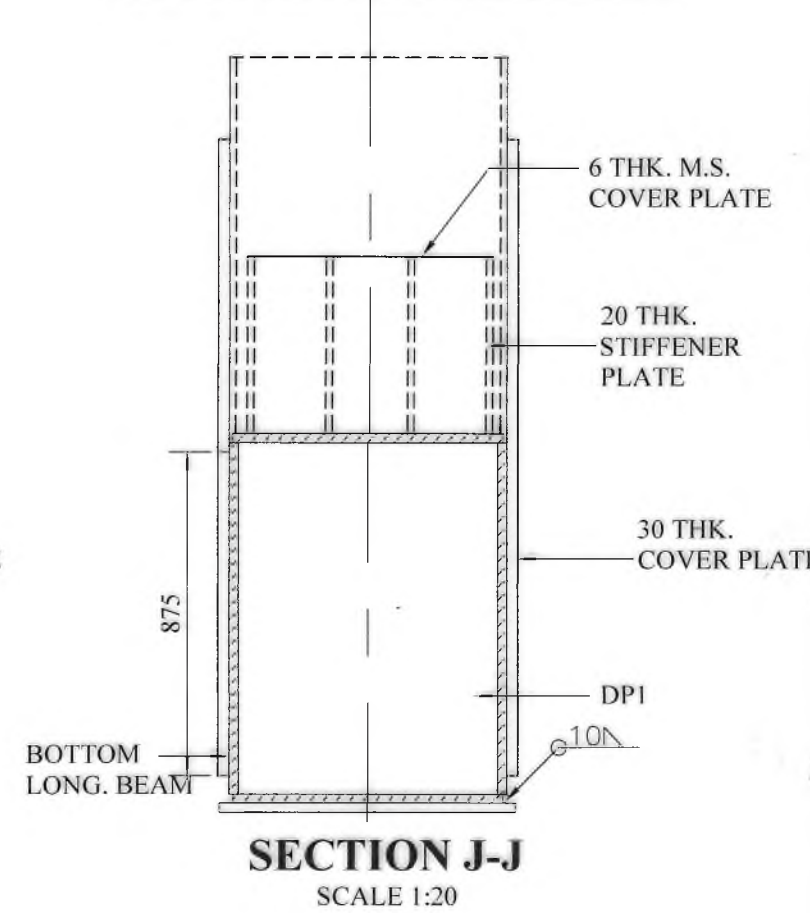
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- All workshop fabrication shall be done using SAW (Submerged Arc Welding) process.
- Splicing of members shall be done as shown in detailed drawings.

CL OF BOTTOM LONG. BEAM/ARCH



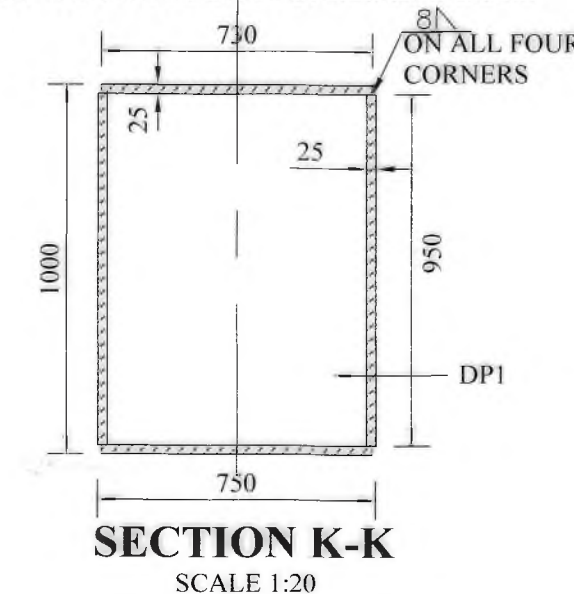
SECTION I-I
SCALE 1:20

CL OF BOTTOM LONG. BEAM/ARCH



SECTION J-J
SCALE 1:20

CL OF BOTTOM LONG. BEAM/ARCH



SECTION K-K
SCALE 1:20

R. D. S. O.

**ROAD OVER BRIDGE
BOW STRING STEEL GIRDER
72m CLEAR SPAN**

DETAILS OF JOINT L0

PROVISIONAL

RDSO/B - 10412/4R

CALCULATION REGISTER NO. DD/2016/12
AUTO CAD FILE NO.: B-10412

DRAWN BY: M/S Abhinav Associates
CHECKED BY: MAHESH PRASAD (SSE)

DESIGNED BY: S.N.GUPTA (SSE)
DESIGNED CHECKED BY: T.HOLY.KOM (SSE)

DRAWING REVISED BY: PRAMOD SAH (SSE)
CHECKED BY: S. A. ANSARI (SSE)

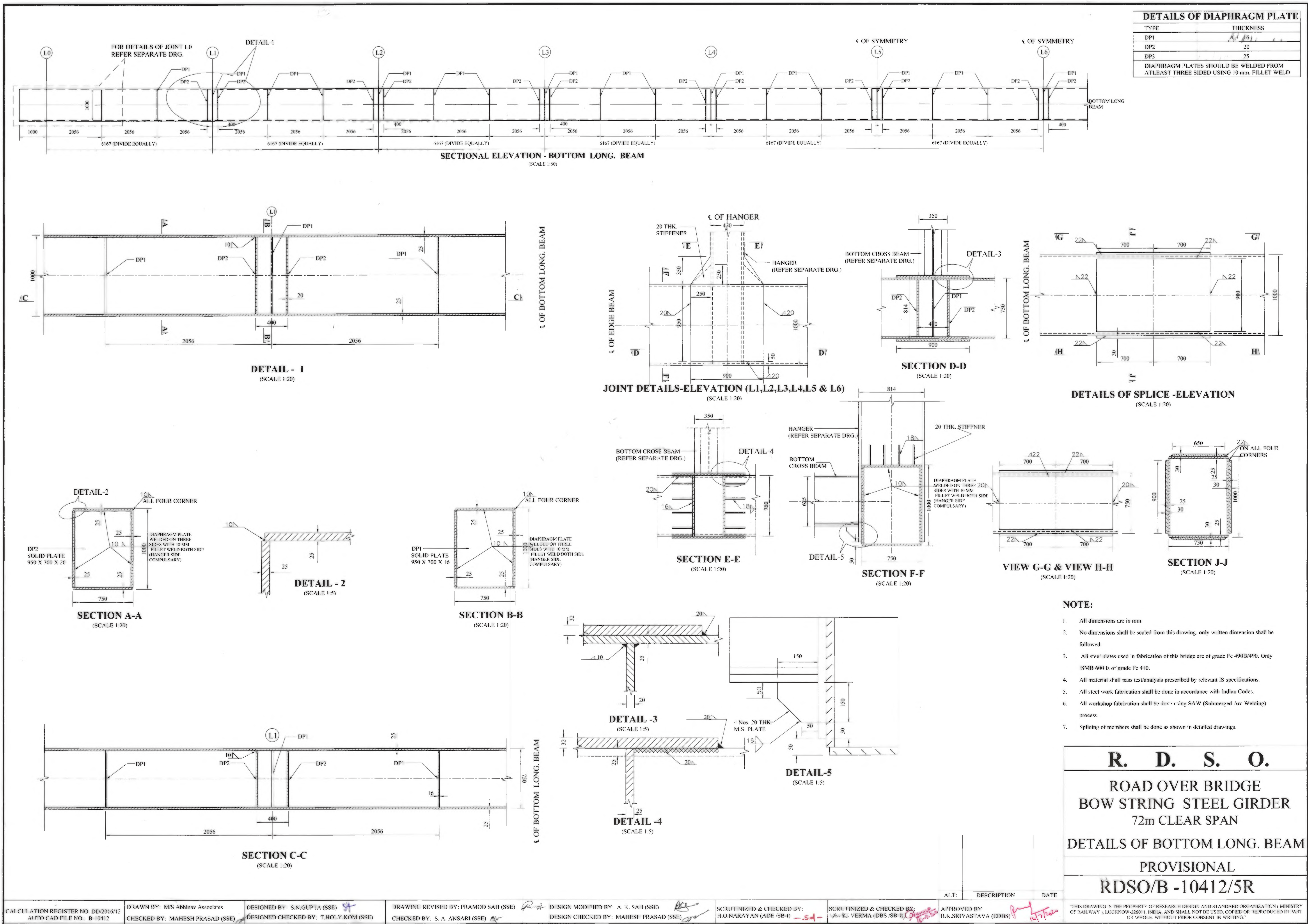
DESIGN MODIFIED BY: A. K. SAH (SSE)
DESIGN CHECKED BY: MAHESH PRASAD (SSE)

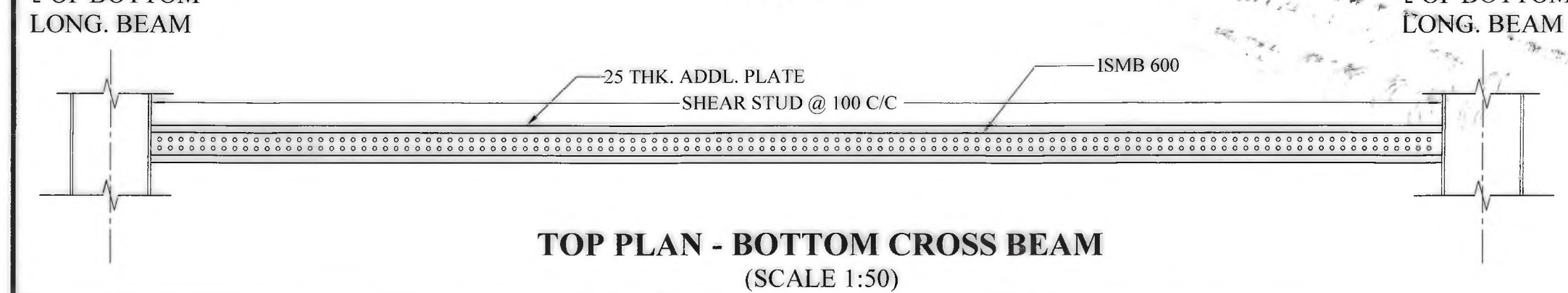
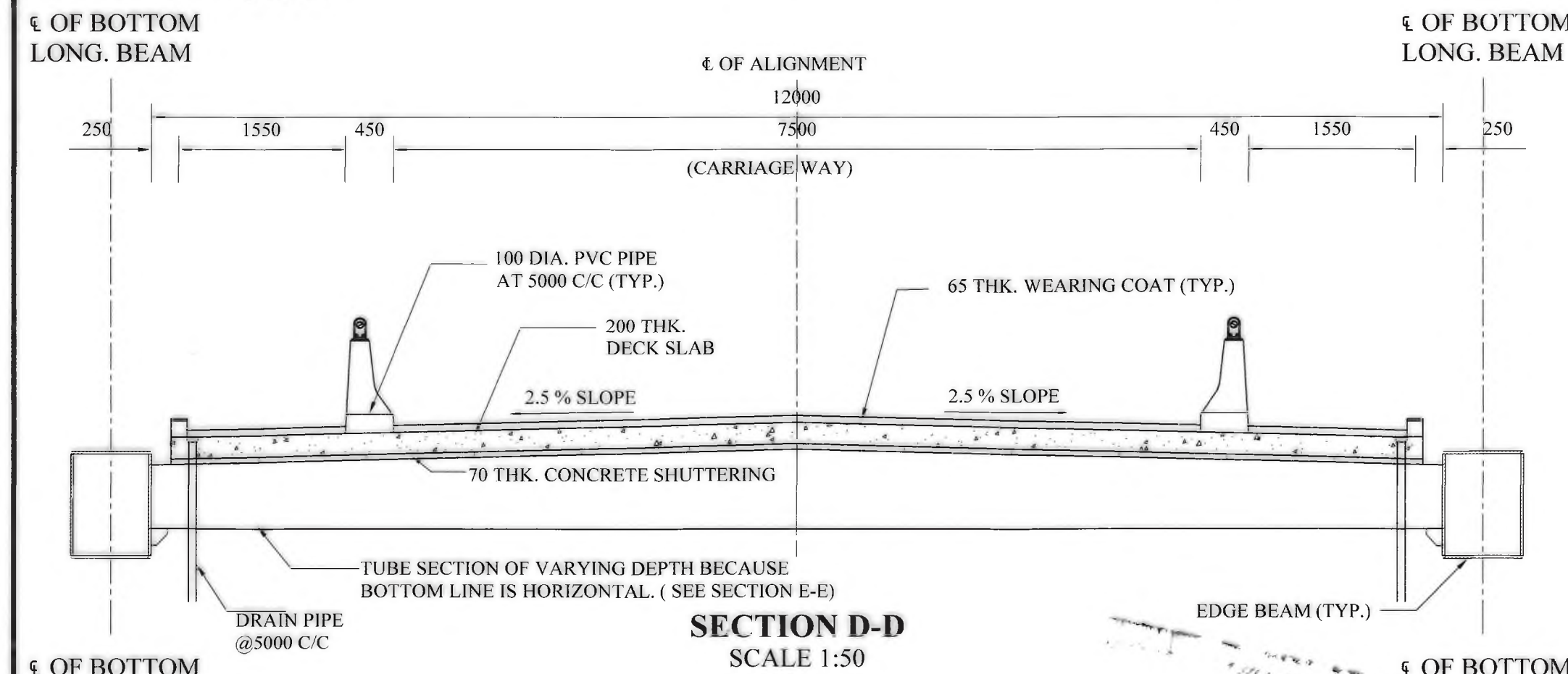
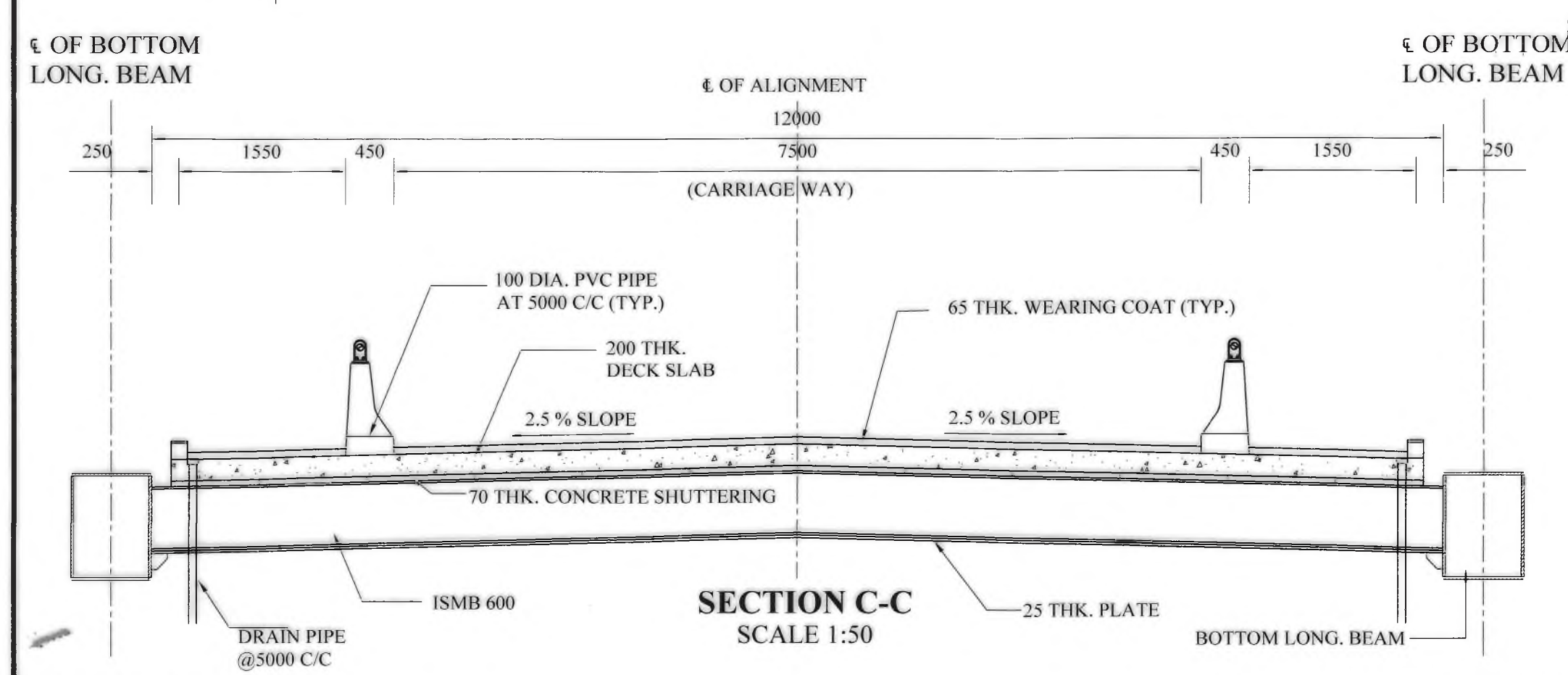
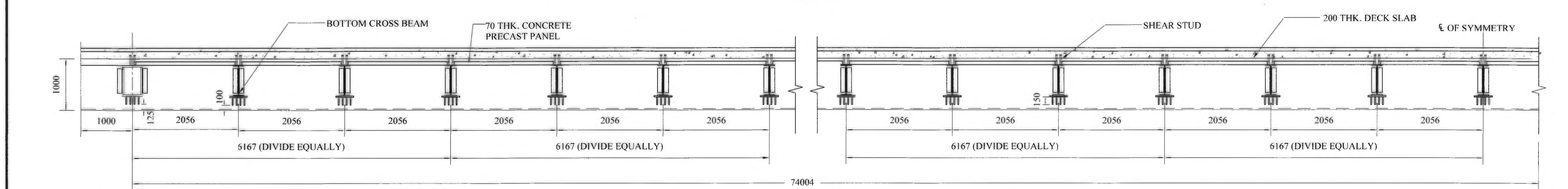
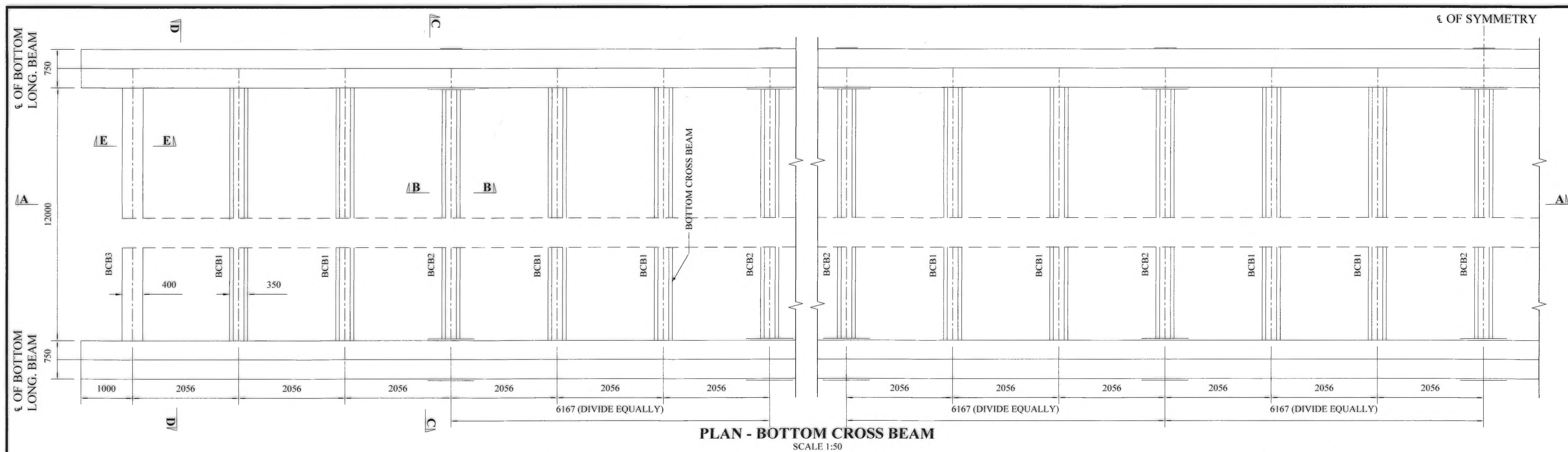
SCRUTINIZED & CHECKED BY: H.O.NARAYAN (ADE/SB-I)

SCRUTINIZED & CHECKED BY: A. K. VERMA (DBS/SB-II)

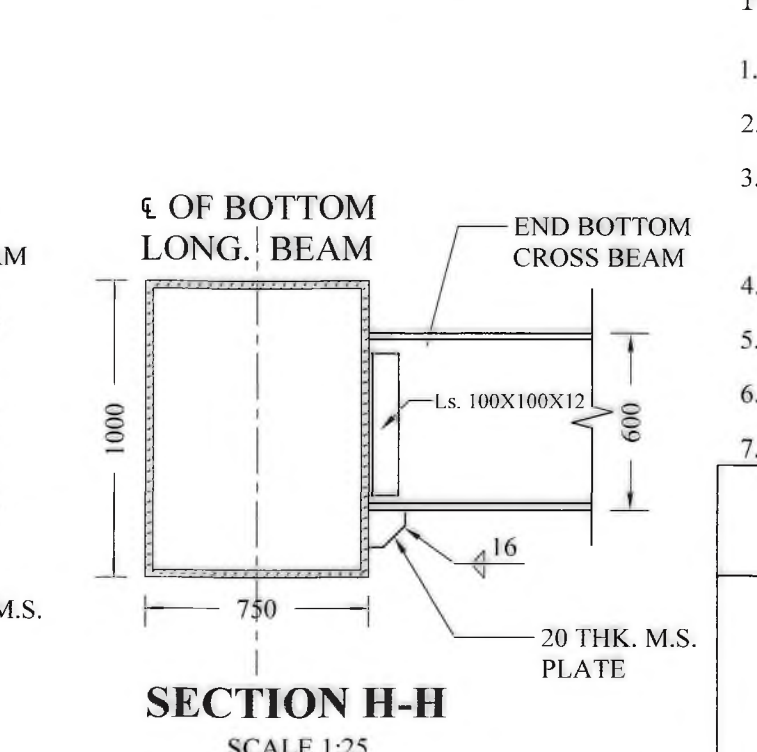
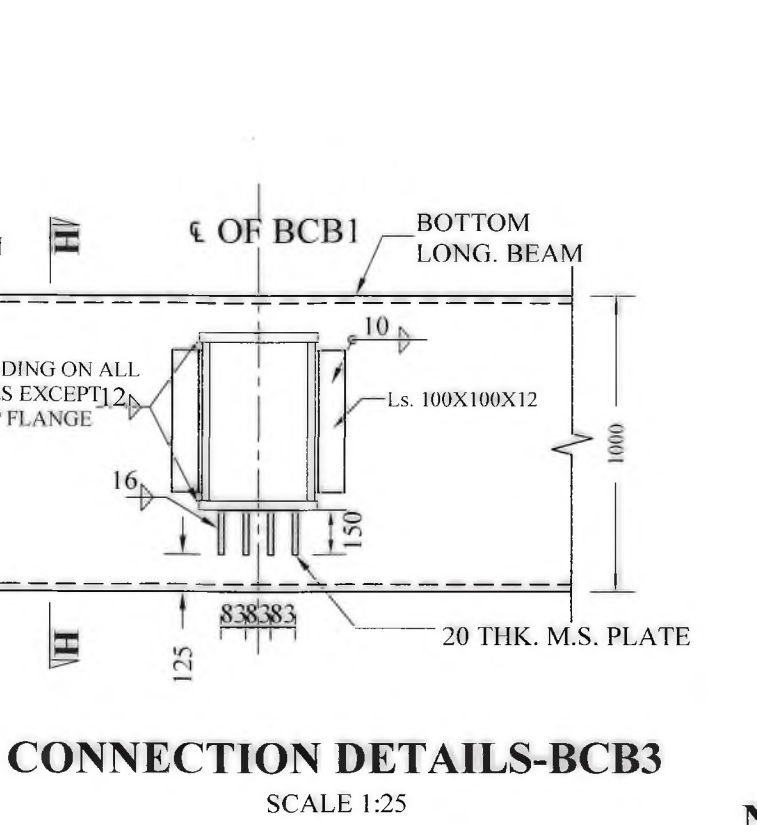
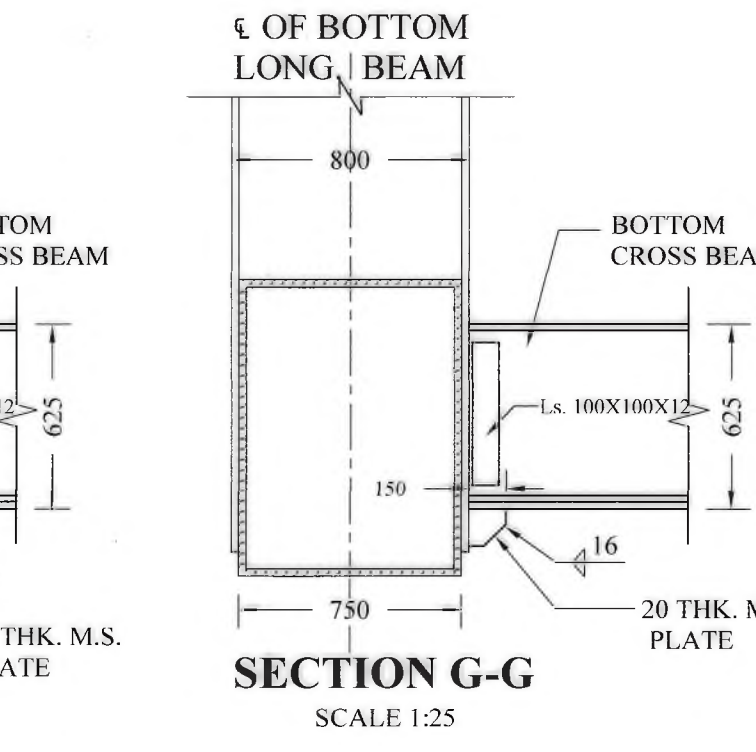
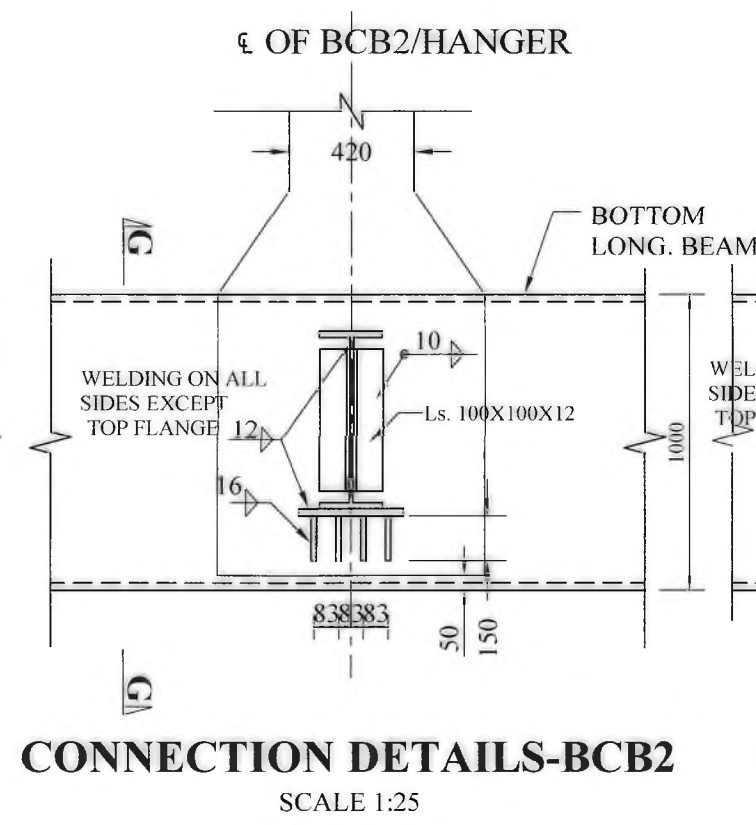
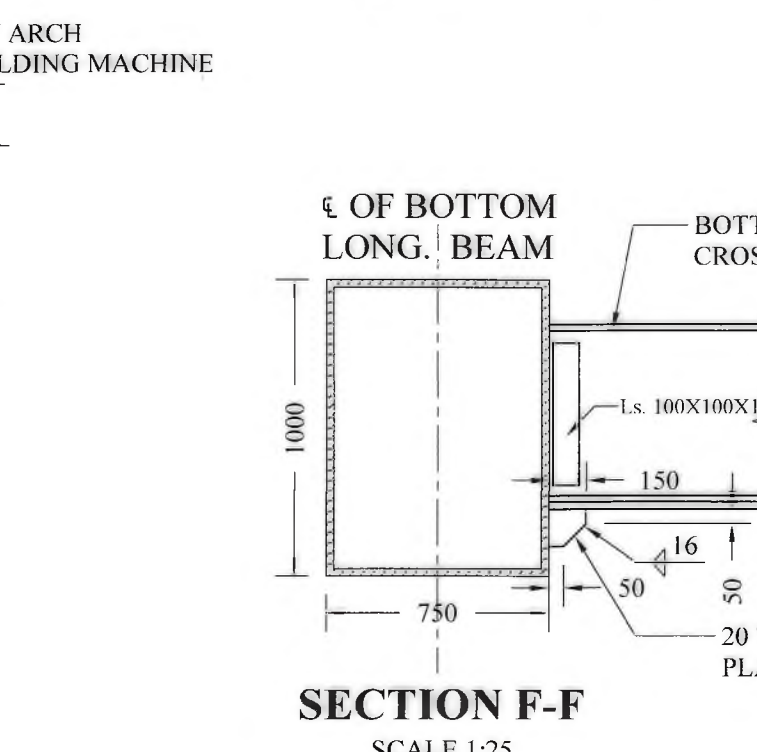
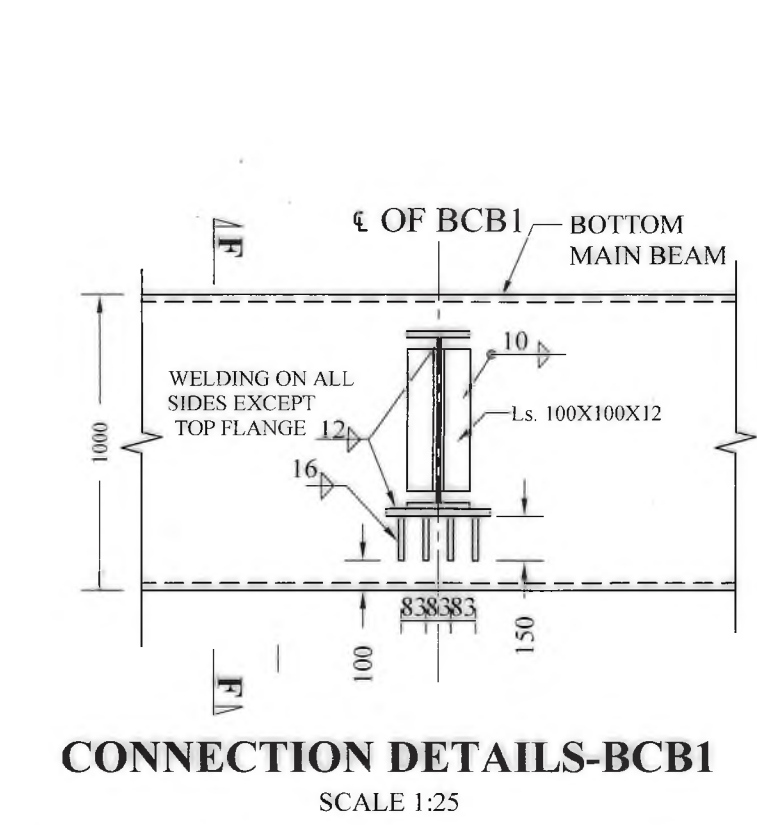
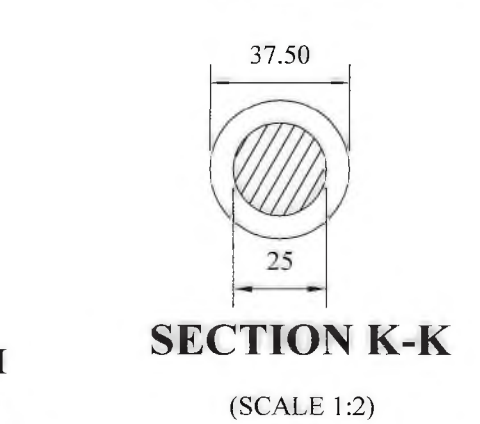
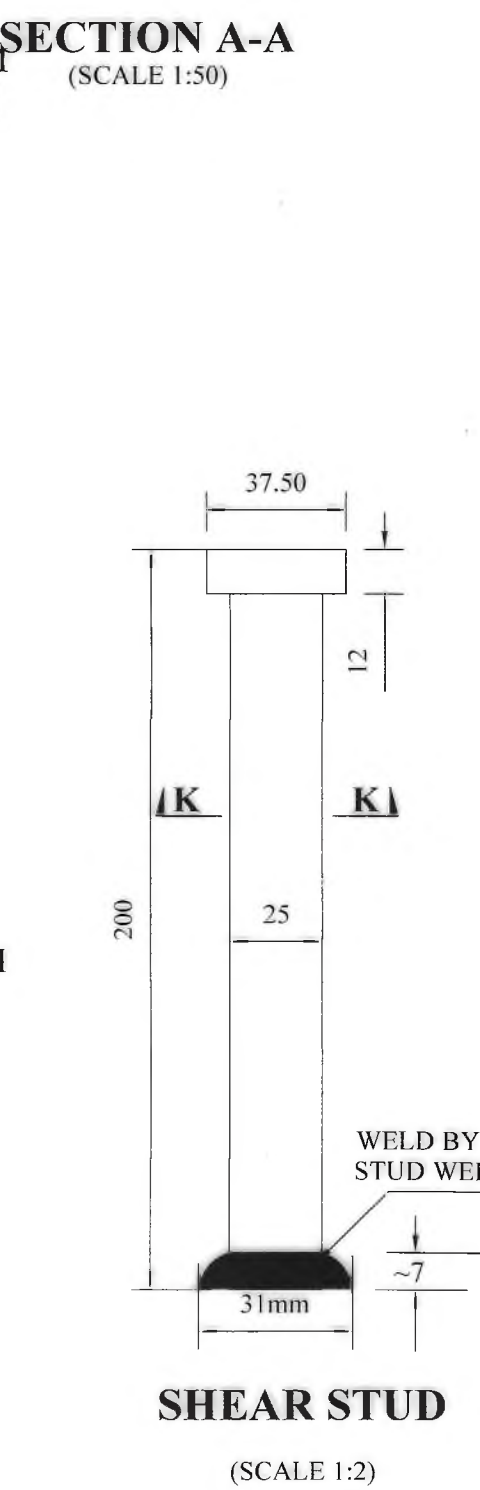
APPROVED BY: R.K.SRIVASTAVA (EDBS)

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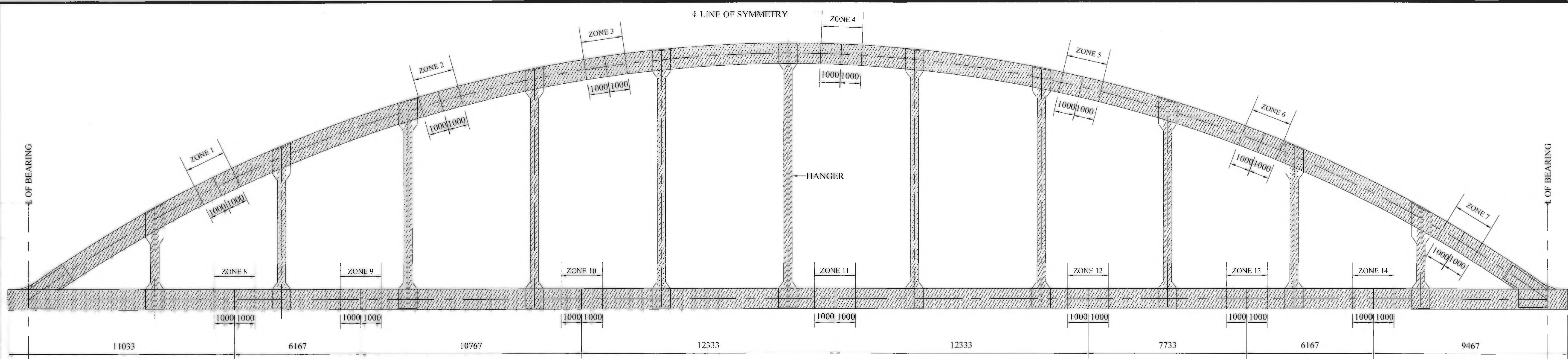
CALCULATION REGISTER NO. DD/2016/12
AUTO CAD FILE NO.: B-10412



- NOTE:**
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 - All steel plates used in fabrication of this bridge are of grade Fe 490B/490. Only ISMB 600 of grade Fe 410.
 - All material shall pass test/analysis prescribed by relevant IS specifications.
 - All steel work fabrication shall be done in accordance with Indian Codes.
 - All workshop fabrication shall be done using SAW (Submerged Arc Welding) process.
 - Splicing of members shall be done as shown in detailed drawings.

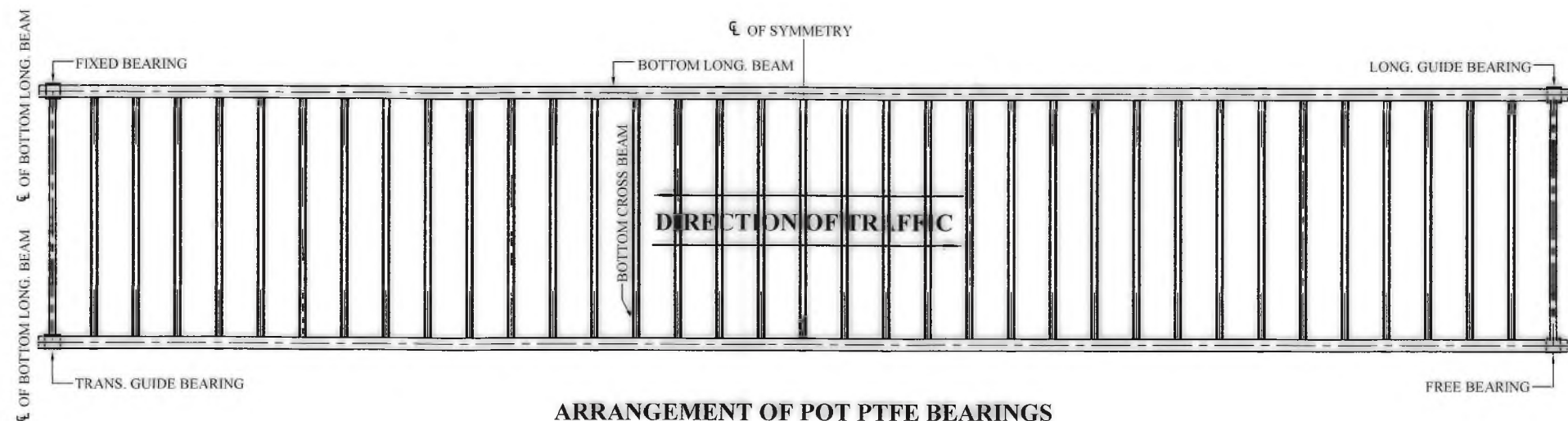
R. D. S. O.
ROAD OVER BRIDGE
BOW STRING STEEL GIRDER
72m CLEAR SPAN
DETAILS OF BOTTOM CROSS BEAM
PROVISIONAL
RDSO/B -10412/6R

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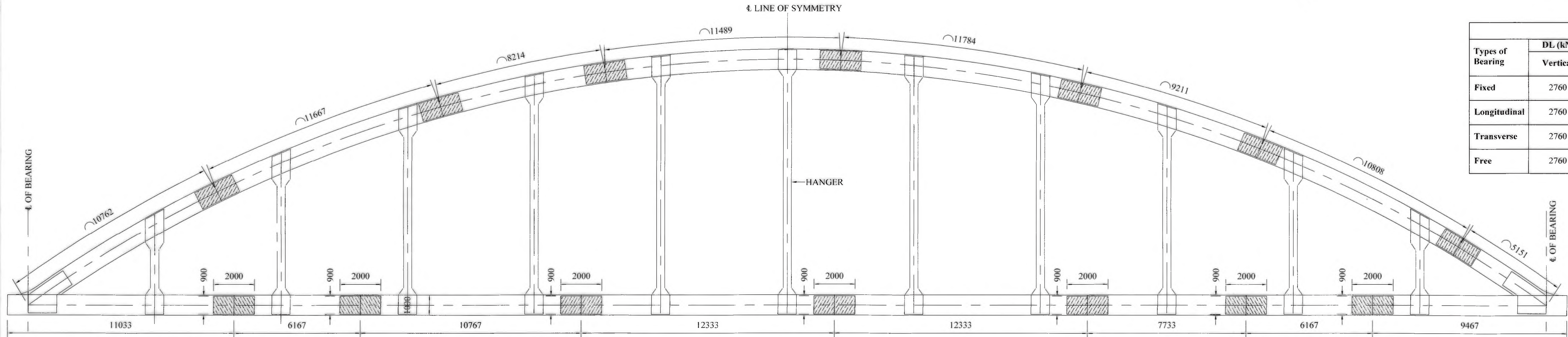


SPLICING SECTION MAY VARY WITH IN THE ZONES MARKED IN THE ABOVE DRAWING.
DETAILS OF SPLICING IS GIVEN IN DRAWING NO. RDSO/B-10412/2/R & RDSO/B-10412/5/R.

SPLICE LOCATION
(SCALE 1:120)



ARRANGEMENT OF POT PTFE BEARINGS
(SCALE 1:200)



DETAILS OF SPLICING IS GIVEN IN DRAWING NO. RDSO/B-10412/2/R & RDSO/B-10412/5/R.

ELEVATION
(SCALE 1:120)

Types of Bearing	LOADING ON BEARINGS					Earthquake loading
	DL (kN) Vertical	SIDL (kN) Vertical	Along the traffic	Perpendicular to the traffic	Live Load (kN) Vertical	
Fixed	2760	912	250	4	1166	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.
Longitudinal	2760	912	-	4	1166	
Transverse	2760	912	250	-	1166	
Free	2760	912	250	-	1166	

LAUNCHING METHODS:

1. Launching Schemes shall be decided by executing agencies based upon site conditions.
2. The forces already considered in the design includes 50 % overhang of the Bow String Girder in cantilever launching and two point lifting by crane.
3. For any unusual launching or erection, the launching scheme may be got checked by the RDSO.

NOTE:

1. All dimensions are in mm.
2. No dimensions shall be scaled from this drawing, only written dimension shall be followed.
3. All steel plates used in fabrication of this bridge are of grade Fe 490B/490, Only ISMB 600 is of grade Fe 410.
4. All material shall pass test/analysis prescribed by relevant IS specifications.
5. All steel work fabrication shall be done in accordance with Indian Codes.
6. All workshop fabrication shall be done using SAW (Submerged Arc Welding) process.

R. D. S. O.
ROAD OVER BRIDGE
BOW STRING STEEL GIRDER
72m CLEAR SPAN
SPLICING LOCATIONS
PROVISIONAL
RDSO/B -10412/8R

CALCULATION REGISTER NO. DD/2016/12
AUTO CAD FILE NO.: B-10412

DRAWN BY: M/S Abhinav Associates
CHECKED BY: MAHESH PRASAD (SSE)

DESIGNED BY: S.N.GUPTA (SSE)
DESIGNED CHECKED BY: T.HOLY.KOM (SSE)

DRAWING REVISED BY: PRAMOD SAH (SSE)
CHECKED BY: S. A. ANSARI (SSE)

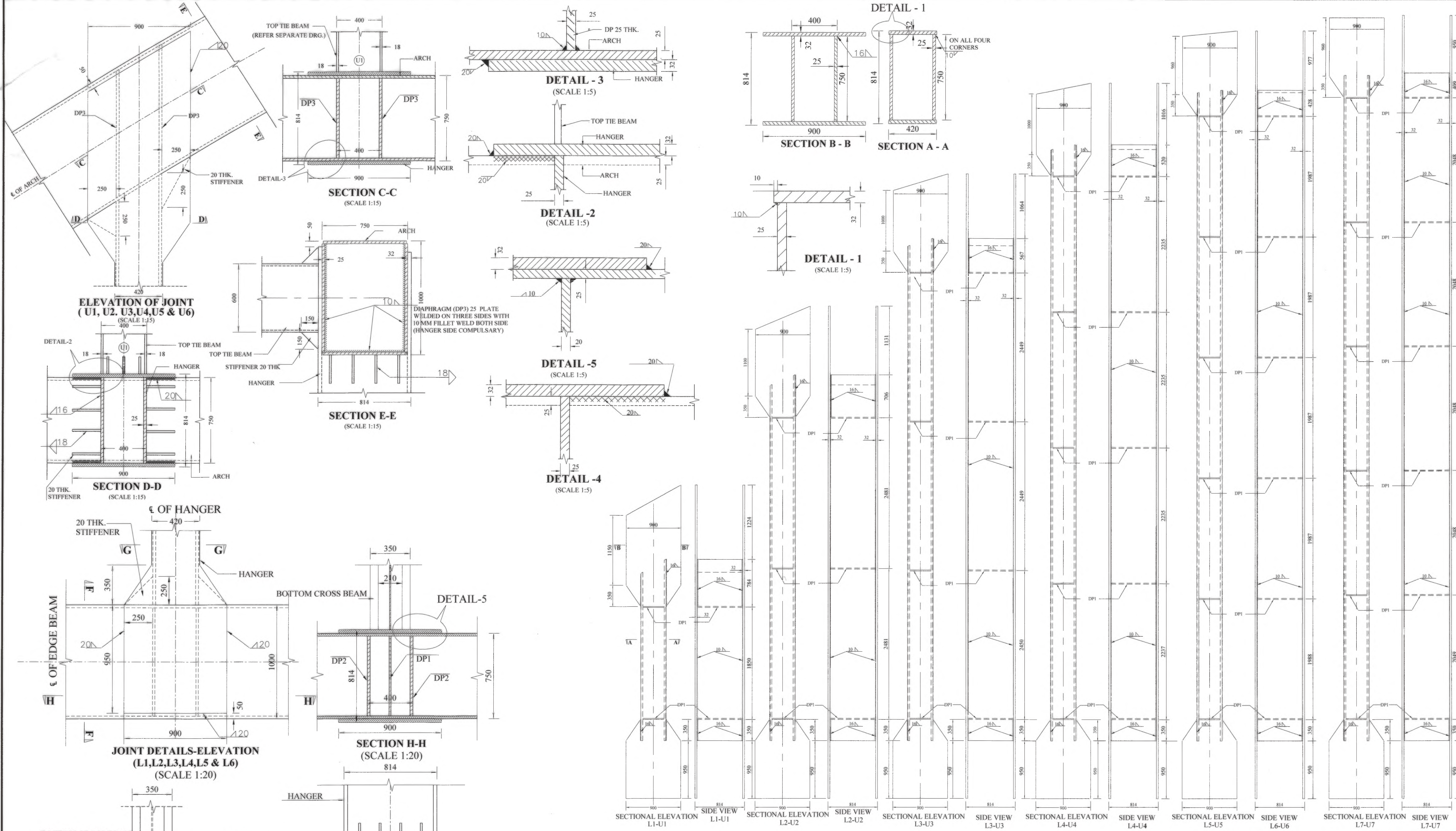
DESIGN MODIFIED BY: A. K. SAH (SSE)
DESIGN CHECKED BY: MAHESH PRASAD (SSE)

SCRUTINIZED & CHECKED BY:
H.O.NARAYAN (ADE /SB-I)

SCRUTINIZED & CHECKED BY:
A. K. VERMA (DBS /SB-II)

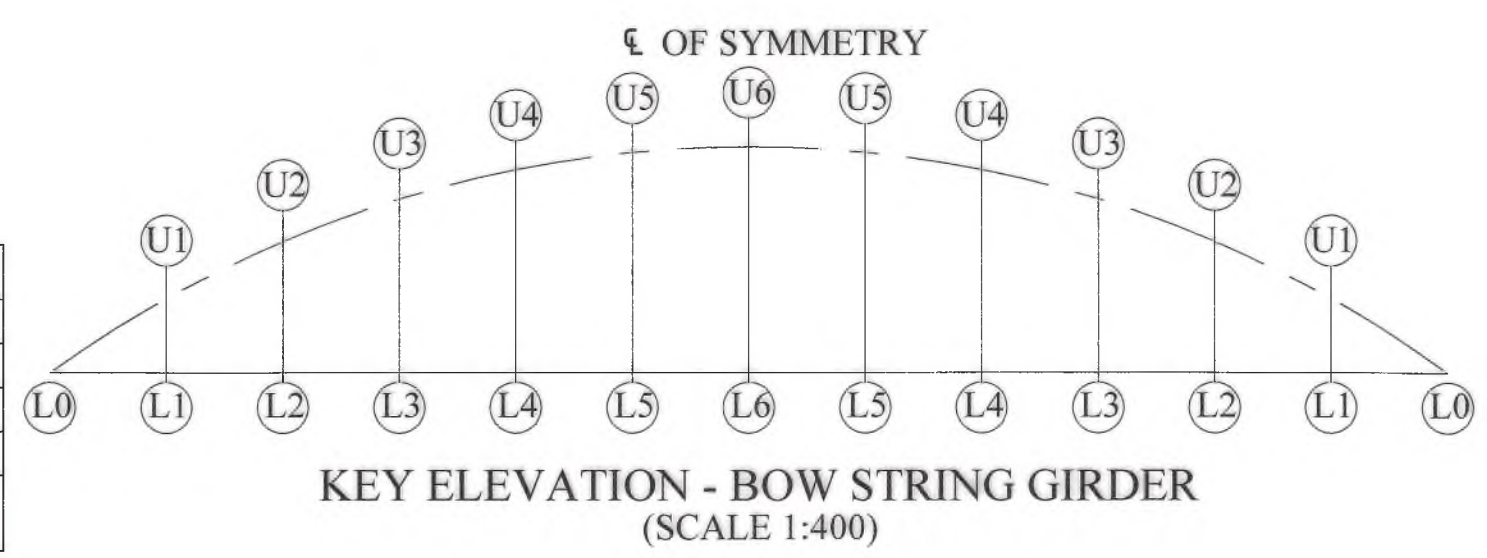
APPROVED BY:
R.K.SRIVASTAVA (EDBS)

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DETAILS OF DIAPHRAGM PLATE	
TYPE	THICKNESS
DP1	16
DP2	20
DP3	25

DIAPHRAGM PLATES SHOULD BE WELDED FROM AT LEAST THREE SIDED USING 10 mm. FILLET WELD



R. D. S. O.

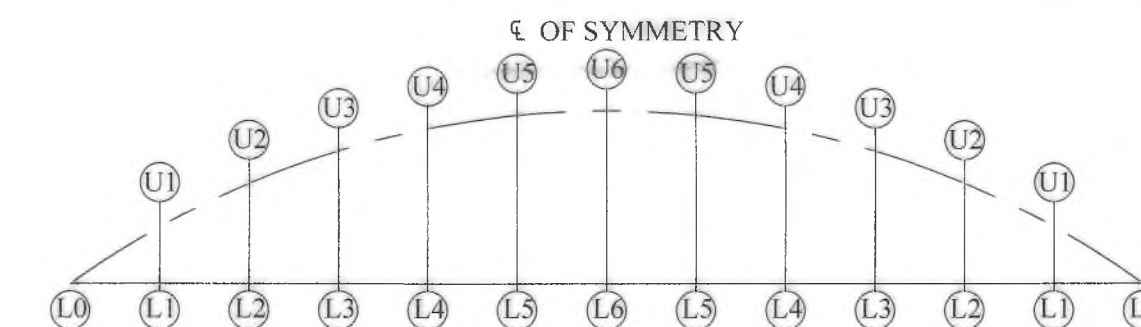
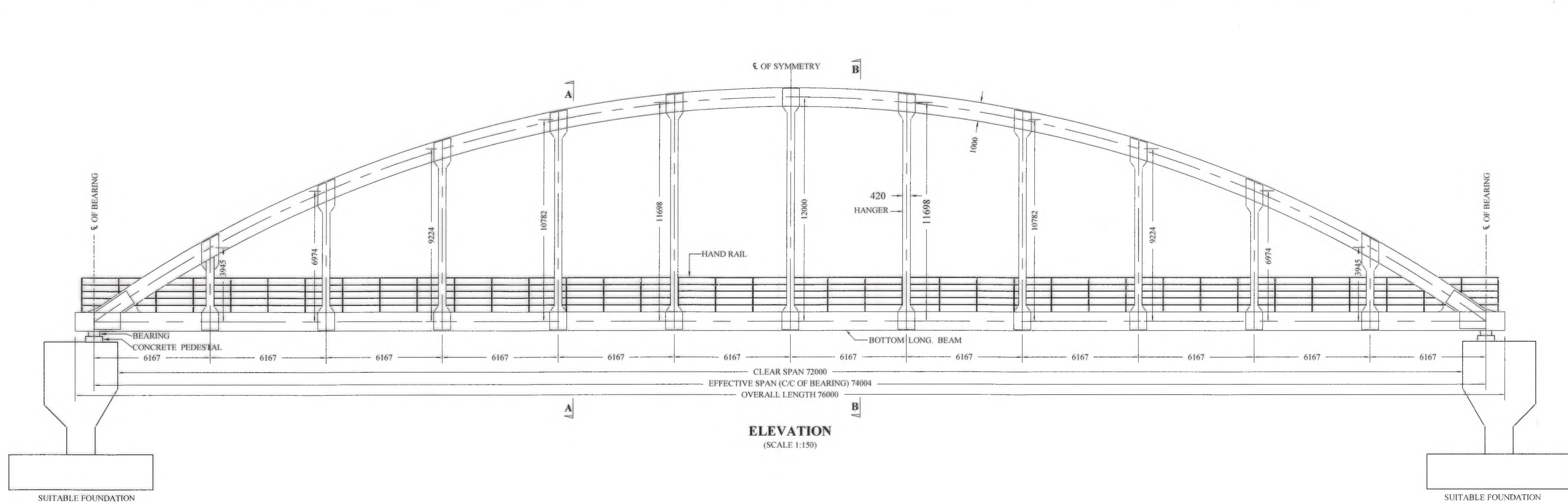
ROAD OVER BRIDGE
BOW STRING STEEL GIRDER
72m CLEAR SPAN

DETAILS OF HANGER JOINTS

PROVISIONAL

RDSO/B - 10412/10

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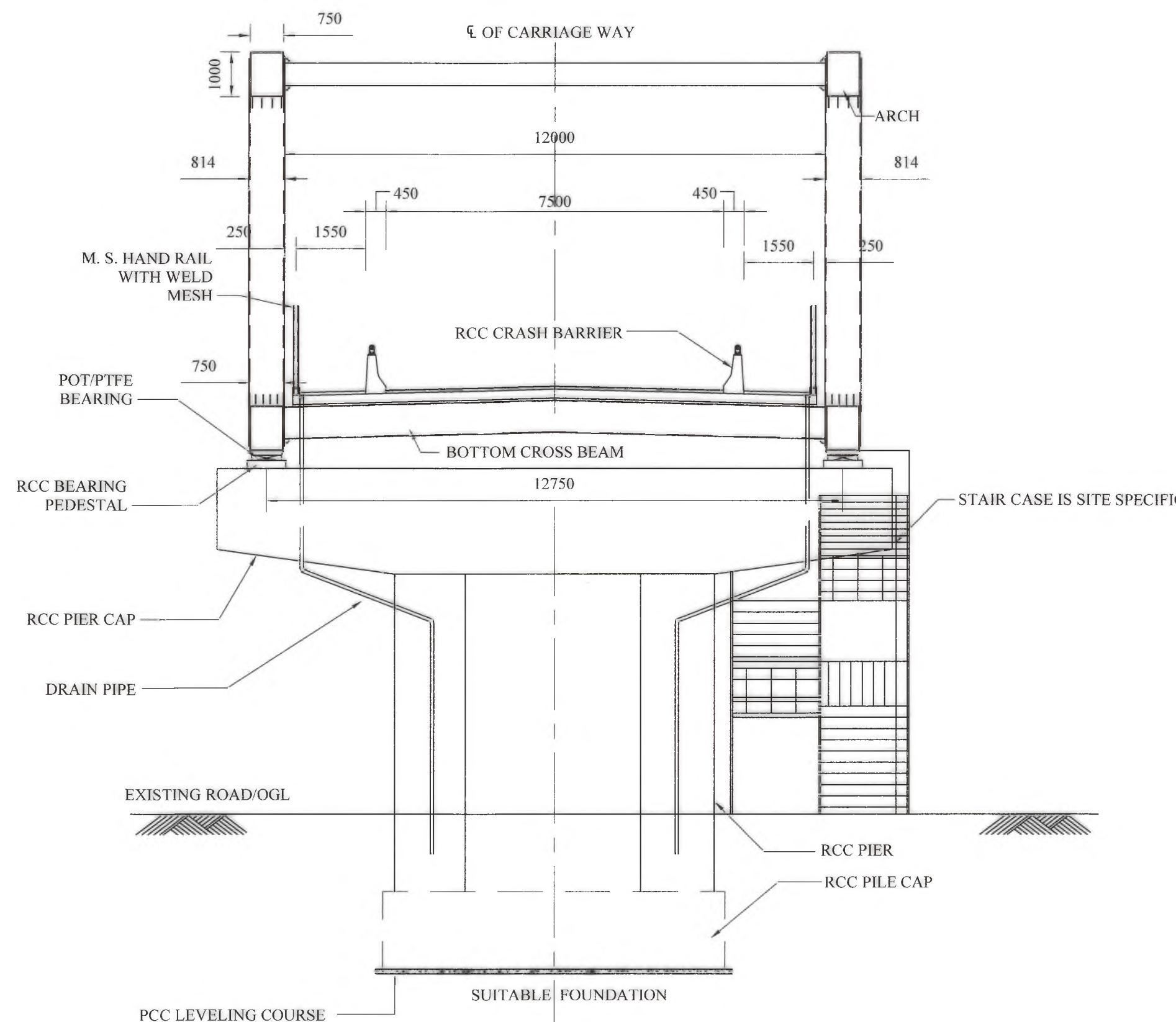
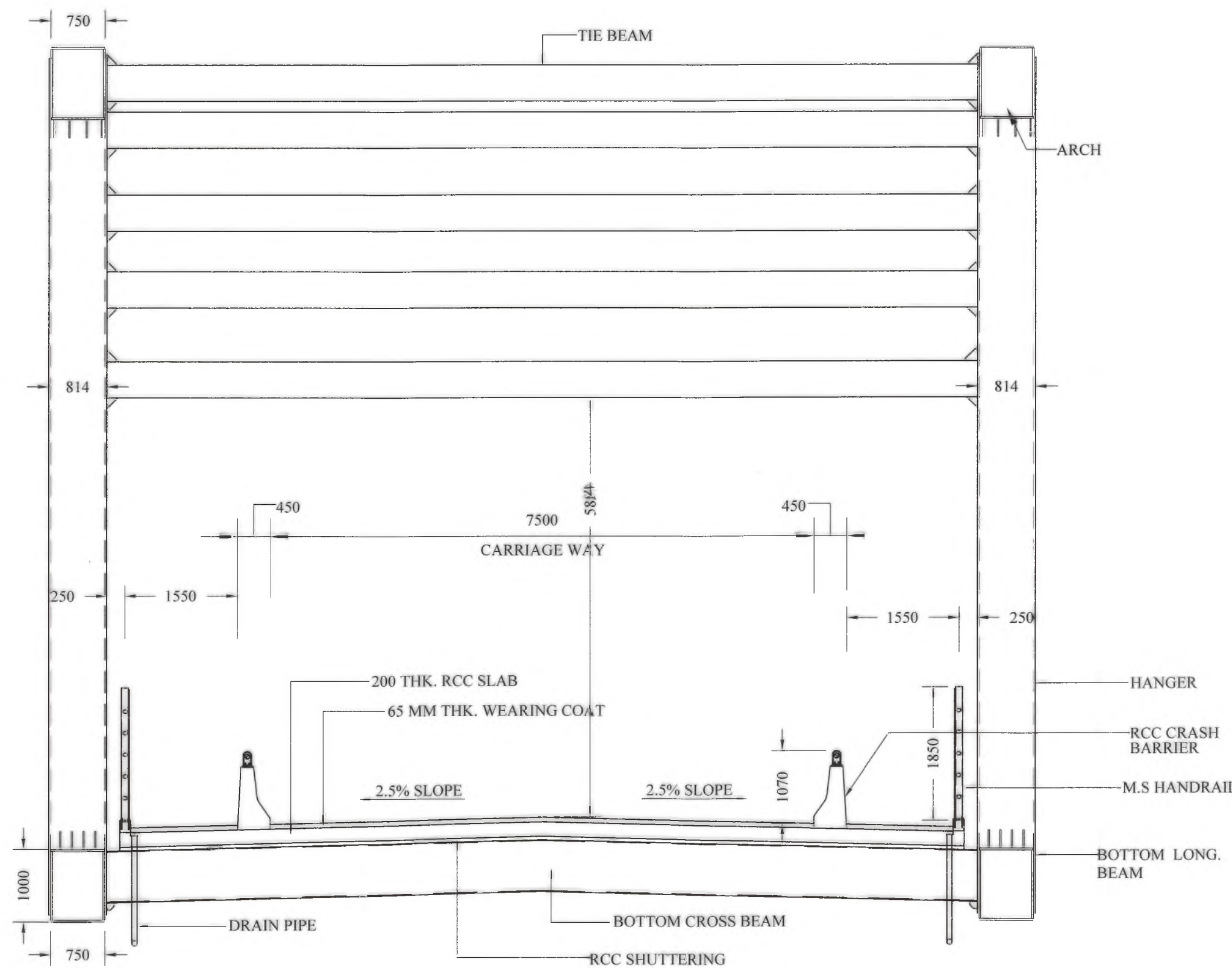


S.NO.	DRG. NO.	DESCRIPTION
1.	RDSO/B - 10412/R	GENERAL ARRANGEMENT
2.	RDSO/B - 10412/1R	DETAILS OF STEEL FRAME
3.	RDSO/B - 10412/2R	DETAILS OF ARCH & TOP JOINTS
4.	RDSO/B - 10412/3R	DETAILS OF TOP TIE BEAM
5.	RDSO/B - 10412/4R	DETAILS OF JOINT L0
6.	RDSO/B - 10412/5R	DETAILS OF BOTTOM LONG. BEAM
7.	RDSO/B - 10412/6R	DETAILS OF BOTTOM CROSS BEAM
8.	RDSO/B - 10412/7	DETAILS OF CONCRETE DECK SLAB
9.	RDSO/B - 10412/8R	SPLICING LOCATIONS
10.	RDSO/B - 10412/9	DETAILS OF BEARINGS
11.	RDSO/B - 10412/10	DETAILS OF HANGER & JOINTS

NOTE:-

- All dimensions are in mm.
- No dimensions shall be scaled from this drawing, only written dimension shall be followed.
- This bridge span is designed for 70R and A-class loading as per IRC:6-2010.
- This bridge span is designed for earthquake zone IV.
- Analysis and design of steel frame is as per IRC:24-2001.
- Analysis and design of composite concrete deck is as per IRC:22-1986.
- This bridge shall not be converted into three lane after removal of RCC crash barrier because it is designed for two lane loading only (as per IRC:6-2010).
- All steel plates used in fabrication of this bridge are of grade Fe 490B/490. Only ISMB 600 is of grade Fe 410.
- Grade of concrete for deck, crash barrier and concrete panels shall be M40.
- All material shall pass test/analysis prescribed by relevant IS specifications.
- All steel work fabrication shall be done in accordance with Indian Codes.
- Workshop welding:
 - All workshop fabrication shall be done using SAW (Submerged Arc Welding) process only.
- On site welding:
 - All welding, other than workshop welding, shall be done through Gas Shielded FCAW (Flux Core Arc Welding) process. FCAW wire to be used shall be flux core tubular consumable electrode to generate flux gas in addition to gas cover of CO₂, Argon or CO₂-Argon mixture only. SMAW (Shielded Metal Arc Welding) also known as Manual Metal Arc Welding shall NOT be permitted anywhere in the structure.
 - The gas Shield to be used in the FCAW process may be CO₂, Argon or CO₂-Argon mixture.
 - In FCAW process, wind screen and/or enclosures shall be provided around the welding location to prevent shielding gas from blown out.
 - Welding shall be performed on prepared metal surfaces free from rust, dust, moisture etc. and before every new pass, slag must be carefully chipped off from weld surface.
- Weld quality shall be tested as per welded Bridge Code.
- Pier and foundation used here are to represent arrangement of bow string girder. Actual dimensions of pier and foundation is site specific.
- Staircase is optional and may be modified as per site requirement.
- All tublar members shall be air tight to prevent from internal corrosion.
- This design has not considered the special congestion condition of clause no 204.4 of IRC-6-2017.

ESTIMATED WEIGHT OF STEEL	REMARKS
505 ton (Aprox.)	THIS VALUE IS APPROXIMATE SO SHOULD NOT BE USED FOR PAYMENT PURPOSE



SECTION B-B
(SCALE 1:50)

SECTION A-A
(SCALE 1:100)

R. D. S. O.
ROAD OVER BRIDGE
BOW STRING STEEL GIRDER
72m CLEAR SPAN
GENERAL ARRANGEMENT
PROVISIONAL
RDSO/B - 10412/R

CALCULATION REGISTER NO. DD/2016/12
AUTO CAD FILE NO.: B-10412

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