



Government of Nepal
Ministry of Physical Infrastructure and Transport
Department Of Roads
Development Cooperation Implementation Division
Strategic Road Connectivity & Trade Improvement Project
(SRCTIP)

**Detailed Design of Upgradation of Kamala- Dhalkebar- Pathlaiya
Road Section (130km) of Mahendra Highway and Bridges**

Final Design Report
Volume IV
Design Report & Drawing of Bridges

Bridge Name- Barahari
Volume-2
Detailed Drawing

April, 2023

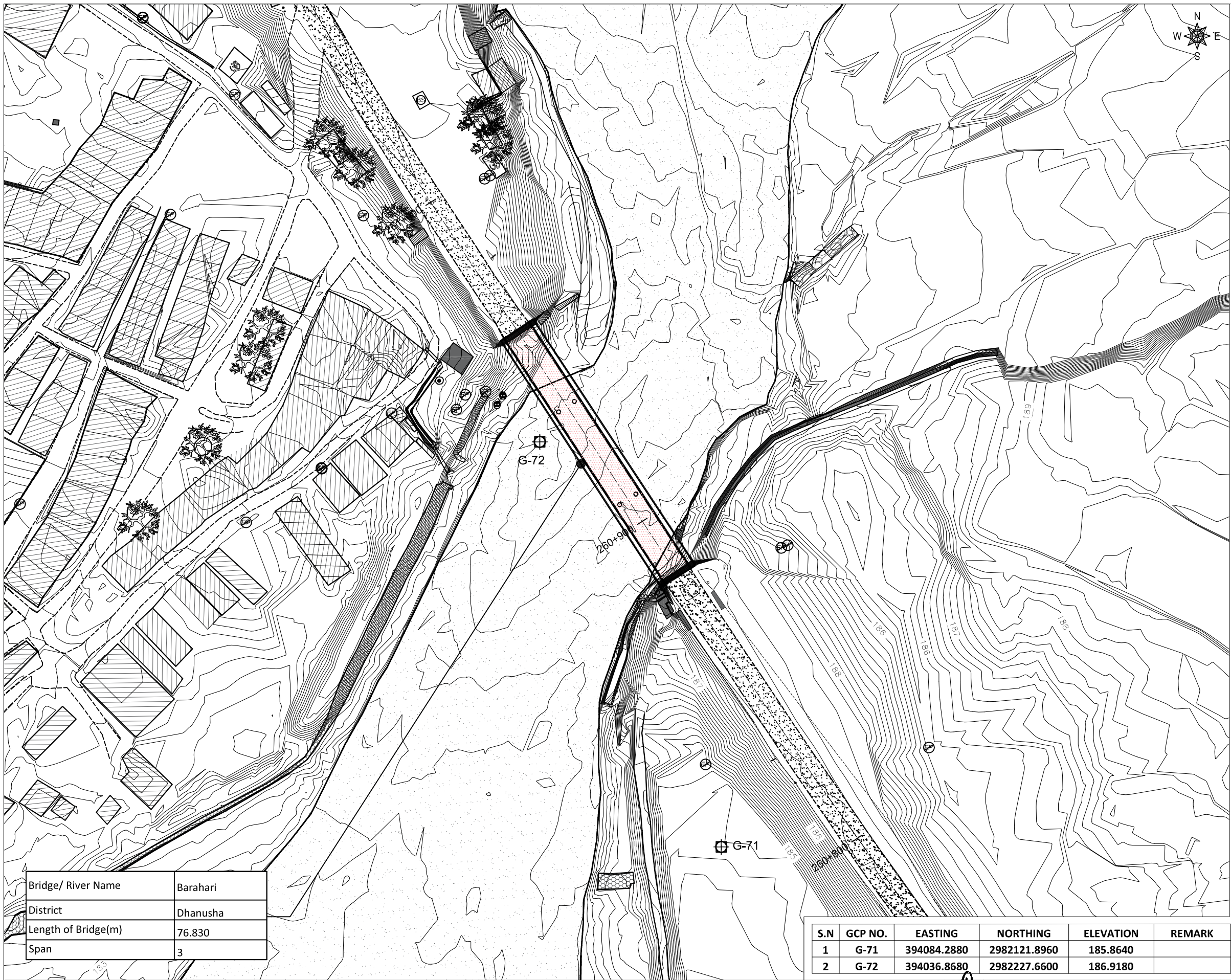
Joint Venture Of:

eptisa EPTISA Servicios De Ingenieria
Madrid, Spain

STUP STUP Consultants Private Limited
India

In Association With
Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited

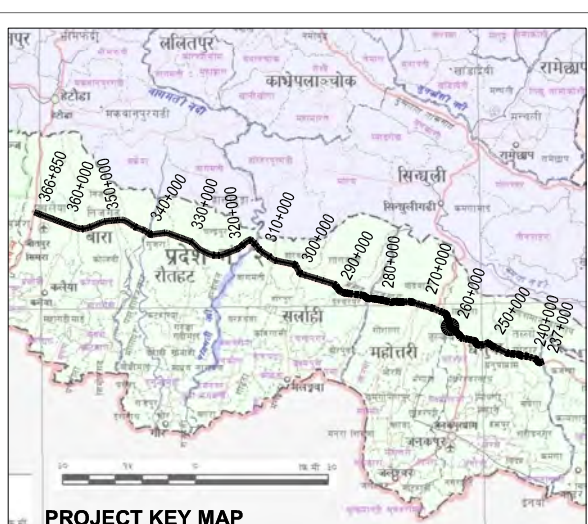
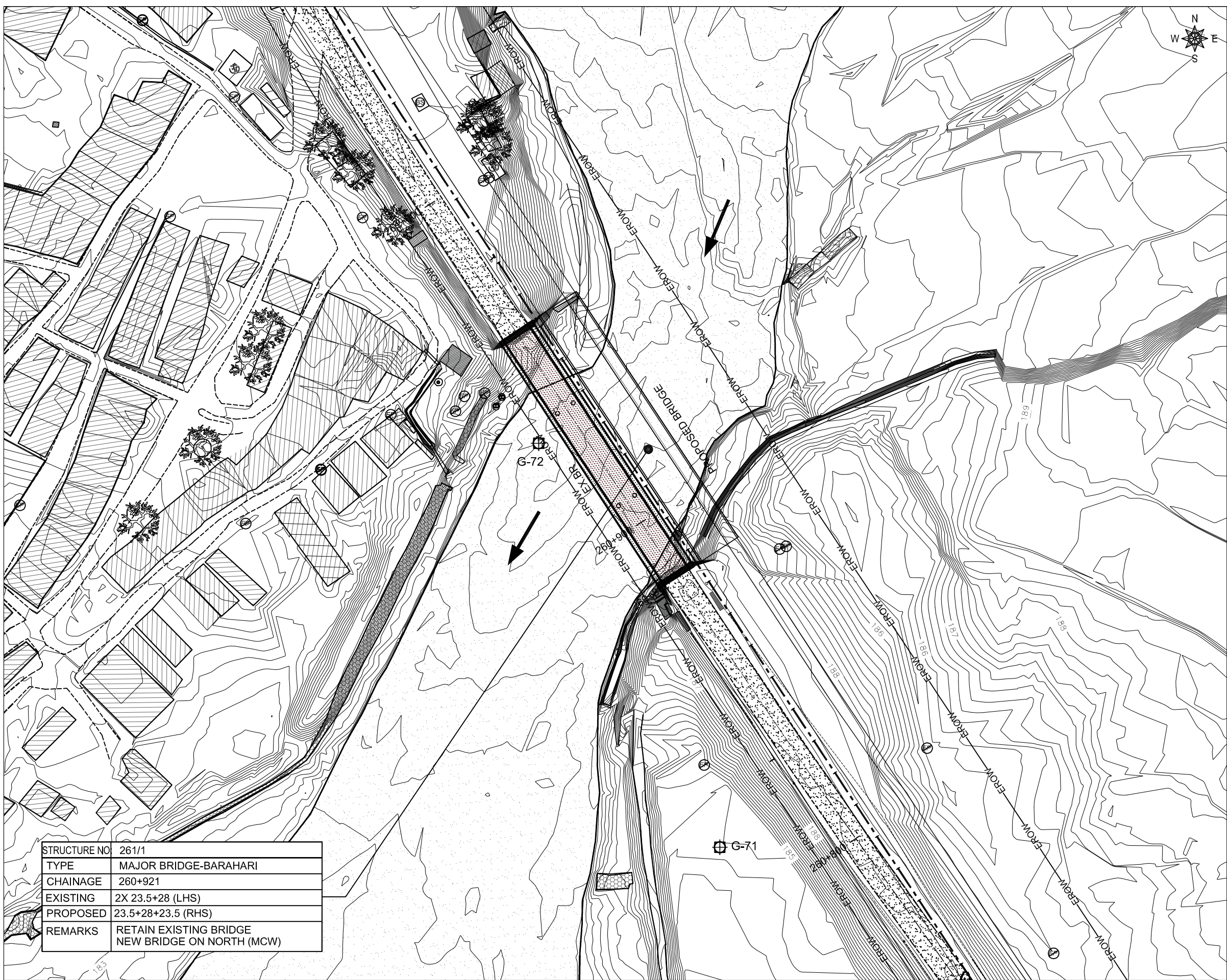
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DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL
MAIN FOOT TRAIL		ANIMAL FARM	
PLACE NAME		BAMBOO	
POLICE STATION		BIO GAS	
PETROL PUMP		BUS WAITING STATION	
Pond/ Water Body		BRIDGE	
POULTRY FARM		CONTOUR	
PROPERTY BOUNDARY		CANAL	
ROAD INFORMATION BOARD		CULVERT	
RIVER		CONTROL POINT (G)	
SPOT HEIGHT		CRUSHER	
SHED		DELINETOR	
SAFTY TANK		ELECTRIC POLE	
SCHOOL		FACTORY	
STREET LIGHT		FEEDAR ROAD	
TAP		FISH FARM	
TEMPORARY HOUSE		FLOW DIRECTION	
TREE		GABION WALL	
TRANSMISSION LINE TOWER		HOSPITAL	
WELL		HAND PUMP	
TEMPLE		HOUSE	
CGI SHEET HOUSE		HOADING BOARD	
TOILET		CARRIAGE WAY	
WOODEN HOUSE		HUT	
WATER TANK		INDEX CONTOUR	
TRANSFORMER		KILOMETER POST	
SHOULDER		MONASTERY	

S.N	GCP NO.	EASTING	NORTHING	ELEVATION	REMARK
1	G-71	394084.2880	2982121.8960	185.8640	
2	G-72	394036.8680	2982227.6600	186.9180	

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of EPTISA Servicios De Ingenieria Madrid, Spain STUP Consultants Private Limited Kolkatta, India In Association With Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited	Mr. R.D. Nec.No.4489 CIVIL/17	Drawing Name DETAILED SURVEY TOPOGRAPHIC MAP (EXISTING CONDITION) OF BRIDGE OVER RIVER BARAHARI Reference Drawings	1:1000 Chainage: 260+921	24.04.2023
			Mr. S.M.			Drawing No.- KDP/DPR/STR/BR/BARAHARI/DD- 2
			Mr. H.B.			Sheet No. 1/1



DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL
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TAP		FISH FARM	
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TREE		GABION WALL	
TRANSMISSION LINE TOWER		HOSPITAL	
WELL		HAND PUMP	
TEMPLE		HOUSE	
CGI SHEET HOUSE		HOADING BOARD	
TOILET		CARRIAGE WAY	
WOODEN HOUSE		HUT	
WATER TANK		INDEX CONTOUR	
TRANSFORMER		KILOMETER POST	
SHOULDER		MONASTERY	

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				epysaEPTISA Servicios De Ingenieria Madrid, Spain			STUP Consultants Private Limited Kolkatta, India	Mr. S.M.		Reference Drawings	Chainage:	
				In Association With		Udaya Consultancy, Geocom International, Sundar Krti Consultant and Rays Consultant Private Limited		Mr. H.B.				260+921

A. GENERAL

1. ALL DIMENSIONS ARE IN MILLIMETER AND LEVELS ARE IN METERS UNLESS NOTED OTHERWISE.
2. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED. DIMENSIONS ARE NOT TO BE SCALED.
3. THE LAYOUT OF THE BRIDGE/CULVERT SHALL BE SET AS PER RELEVANT HIGHWAY PLAN AND PROFILE DRAWING,
4. THE FORMATION LEVEL GIVEN IN THIS DRAWING SHALL BE VERIFIED FROM THE RELEVANT HIGHWAY DRAWING. IN CASE OF ANY DISCREPANCY THE HIGHWAY DRAWING SHALL BE CONSIDERED CORRECT.

B. DESIGN CRITERIA

1. THE DESIGN HAS BEEN PREPARED BASED ON THE FOLLOWING CODES:
a) NEPAL ROAD STANDARD 2070
b) IRC-5 2015
c) IRC-6 2017
d) IRC-78 2014
e) IRC-112 2020
2. TOTAL WIDTH OF THE BRIDGE DECK: 11.85 M (8 M WIDE CARRIAGEWAY + 2.5 M WIDE FOOTPATH) HOWEVER THIS BRIDGE IS DESIGNED FOR THE FOLLOWING CARRIAGEWAY LIVE LOADS AS PER IRC:6-2017
a) ONE LANE OF IRC CLASS 70R (WHEELED) FOR TWO LANES + ONE LANE OF IRC CLASS A
b) THREE LANES OF IRC CLASS A
3. SEISMIC ZONE CONSIDERED IN THE DESIGN IS ZONE-V.
4. LAYING, COMPACTION, & EXTENT OF BACKFILL BEHIND ABUTMENT & RETURN/RETAINING WALLS SHALL CONSIST OF SELECTED EARTH CONFORMING TO THE APPENDIX-6 OF IRC:78-2014 HAVING PROPERTIES C=0, =30° & DENSITY=20KN/m3.
5. 100mm DIA WEEP HOLES AT 1000mm C/C BOTH HORIZONTALLY AND VERTICALLY SHALL BE PROVIDED IN STAGGERED MANNER IN VERTICAL WALLS OF THE ABUTMENT AND RETURN WALL ABOVE GL. IN ONE OR TWO LAYERS AT A SLOPE OF 1 VERTICAL TO 20 HORIZONTAL TOWARDS THE DRAINING FACE.
- C. HYDRAULIC DATA:-
1. DESIGN DISCHARGE, (Q100) - 164.23 cumecs
2. HFL - 185.120M
3. FREE BOARD (MINIMUM) - 1M
4. MAXIMUM SCOUR LEVEL:
ABUTMENT - 181.640M
PIER - 179.790M

STRUCTURAL AND OTHER DATA:-

1. SPAN ARRANGEMENT: 23.5 + 28 + 23.5 = 75M
2. SUPERSTRUCTURE:
PRECAST PSC LONGITUDINAL GIRDERS & CAST-IN-SITU RCC CROSS GIRDERS AND DECK SLAB.
3. SUBSTRUCTURE:
A) ABUTMENT - RCC WALL TYPE
4. FOUNDATION
A) ABUTMENT - 1200 DIA BORED CAST-IN-SITU PILE
DESIGN WORKING LOAD ON PILE - 304.32TON
B) PIER - 1200 DIA BORED CAST-IN-SITU PILE
DESIGN WORKING LOAD ON PILE - 260.68 TON
RCC BORED PILES SHOULD BE CONSTRUCTED AS PER IS: 2911(PART 1/SEC 2)-2010.
5. WEARING COAT:
65 MM THICK ASPHALTIC CONCRETE WEARING COAT AS PER STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS (2073) ,
DEPARTMENT OF ROADS
6. EXPANSION JOINT -
SLAB SEAL TYPE EXPANSION JOINT OF PROVEN QUALITY SHALL BE PROVIDED IN ACCORDANCE WITH IRC:SP-69-2005 (GUIDELINES AND SPECIFICATIONS OF EXPANSION JOINT)
7. DRAINAGE SPOUTS - AS PER STANDARD SPECIFICATION FOR ROAD & BRIDGE WORKS 2073
8. RAILINGS/CRASH BARRIER:
RCC CRASH BARRIER AT EDGES OF CARRIAGEWAY AND FOOTPATH
9. FOOTPATH
2.5m WIDE FOOTPATH AT OUTER EDGE OF DECK

10. CONCRETE:-

- a. PILE..... M35 (CEMENT CONTENT AS PER SPECIFICATION)
b. PILE CAP.....M35
c. PIERM35
d. PIER CAP.....M35
e. BEARING PEDESTALS.....M40
f. ABUTMENTM35
g. RETURN WALL.....M35
h. LEVELING COURSE: I) BELOW APPROACH SLAB.....M15
a. II) BELOW PILE CAP.....M15
i. APPROACH SLABM30
j. CAST-IN-SITU CRASH BARRIERM40
k. KERBM35
l. DECK SLAB FOR PSC GIRDERS.....M45
m.PRECAST PSC GIRDERSM50
n. CAST-IN-SITU CROSS GIRDER FOR PSC.GIRDERS.....M45

12. REINFORCEMENT STEEL:-

- a. H.Y.S.D. BARS - GRADE 500 CONFORMING TO IS 1786
b. REINFORCEMENT WHERE EVER NECESSARY SHALL BE LOCALLY BENT OR ADJUSTED TO ENSURE PROPER CONCRETING.

13. PRESTRESSING STRAND -

ALL PRESTRESSING STRANDS SHALL HAVE 7 PLY UNCOATED STRESS RELIEVED HIGH TENSILE STRAND OF 15.2 MM DIA CONFORMING TO CLASS 2 OF IS 14268-2017

14. CONCRETE COVER

1. DECK SLAB, GIRDER, PEDESTAL, CAP: 40 MM
2. SUBSTRUCTURE AND FOUNDATION: 75 MM

15. LAPS (Ls) ARE TO BE STAGGERED AND MINIMUM LAP LENGTH ARE TO BE AS FOLLOWS (UNLESS NOTED OTHERWISE):

- a) FOR M 30 GRADE CONCRETE : 57.2
b) FOR M 35 GRADE CONCRETE : 51.48
c) FOR M 40 GRADE CONCRETE : 48.62
d) FOR M 45 GRADE CONCRETE : 45.76
e) FOR M 50 GRADE CONCRETE : 41.47

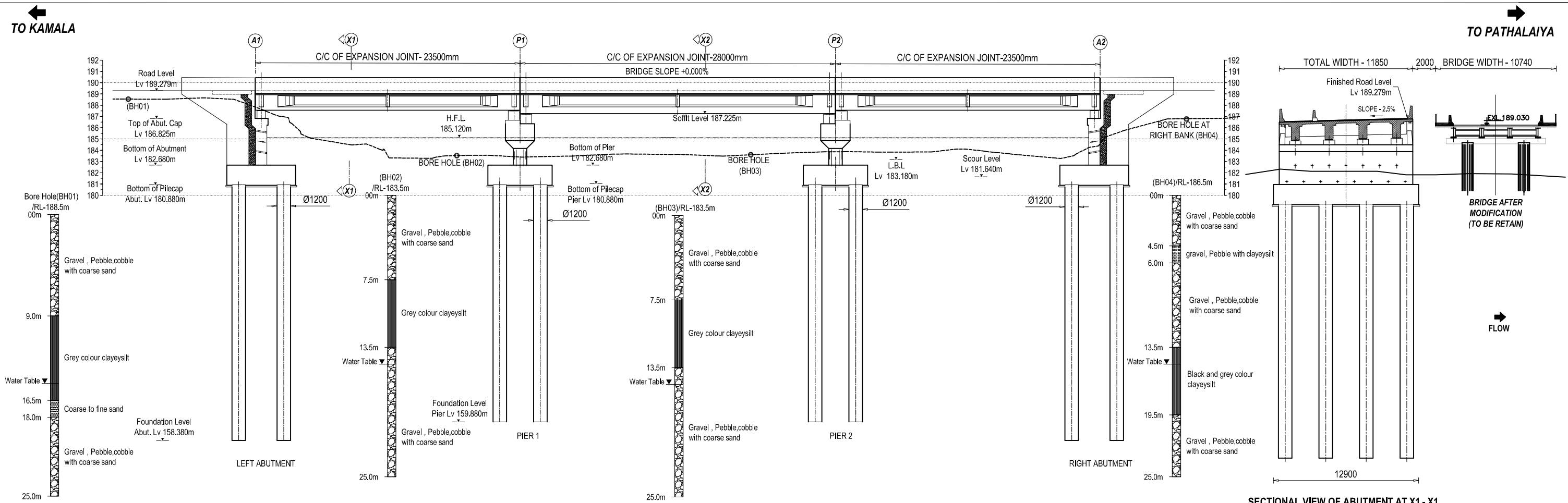
(WHERE IS THE DIAMETER OF THE BAR)

16. LAP LENGTH SHALL BE INCREASED BY A FACTOR BASED ON THE PERCENTAGE OF LAPPED BAR RELATIVE TO THE TOTAL CROSS SECTIONAL AREA. LAP LENGTH FOR DIFFERENT GRADE OF CONCRETE AS WELL AS DIFFERENT PERCENTAGE OF LAP LENGTH ARE AS FOLLOWS:

GRADE OF CONCRETE	M30	M35	M40	M45	M50
LAPPED BAR ≤25%	57.2ϕ	51.48ϕ	48.62ϕ	45.76ϕ	41.47ϕ
25%<LAPPED BAR ≤33%	65.78ϕ	62.65ϕ	55.91ϕ	52.62ϕ	47.69ϕ
33%<LAPPED BAR ≤50%	80.08ϕ	72.07ϕ	68.07ϕ	64.06ϕ	58.06ϕ
50%<LAPPED BAR	85.8ϕ	77.22ϕ	72.93ϕ	68.64ϕ	62.21ϕ

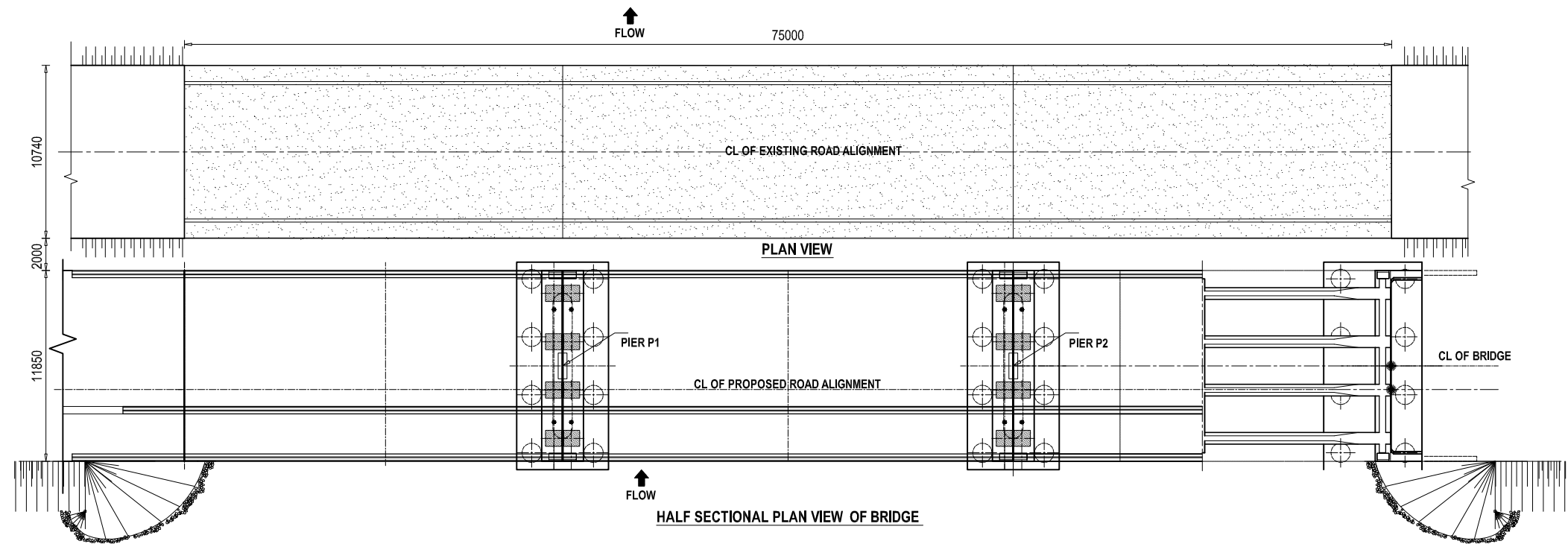
17. THE LAP LENGTH SHALL BE STAGGERED BY MINIMUM DISTANCE OF 1.3 TIMES THE LAP LENGTH.
18. HELICAL REINFORCEMENT SHALL BE LAPPED BY 1.5 TURNS.
19. INSTEAD OF LAPPING SPLICING OF REINFORCEMENT CAN BE DONE WITH WELDED JOINT AS PER CL. 15.2.5.2 OF IRC 112-2020. WELD LENGTH SHALL NOT BE LESS THAN 18D.
20. SHARP EDGES OF CONCRETE TO BE CHAMFERED MINIMUM 50 X 50

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		In Association With Udaya Consultancy, Geocom International, Sundar Krti Consultant and Rays Consultant Private Limited	Checked By	Mr. S.M.	Signature		Drawing No.- KDP/DPR/STR/BR/BARAHARI/DD-4
			Approved By	Mr. H.B.	Signature	Chainage: 250+765	Sheet No. 1 / 1

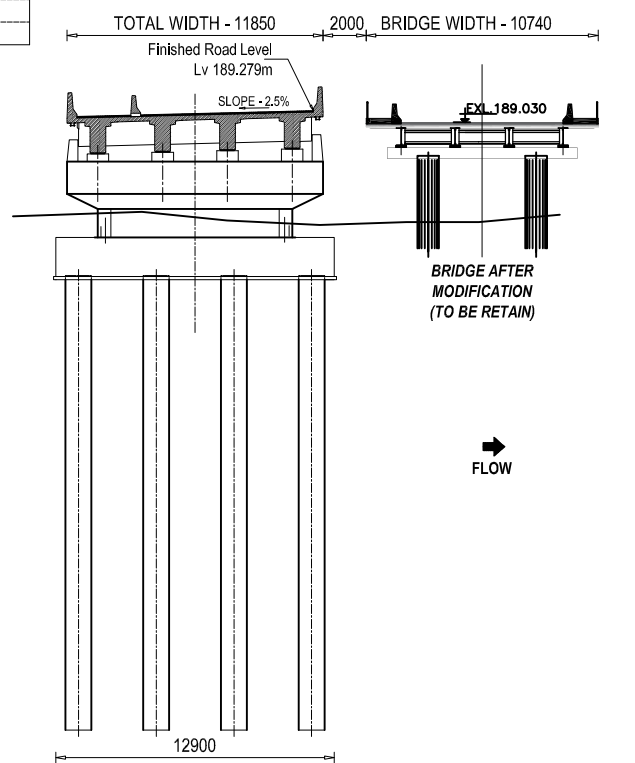


PROPOSED BRIDGE GENERAL ARRANGEMENT

Finished Road Level(D/S)	189.279	189.279	189.279	189.279
Finished Road Level (Existing Bridge)	189.030	189.030	189.030	189.030
Existing Ground Level(U/S)	187.658	183.404	183.866	184.316
Existing Ground Lv	187.253	182.546	183.005	183.982
Chainage	269+883.5	269+907	269+935	269+958.5



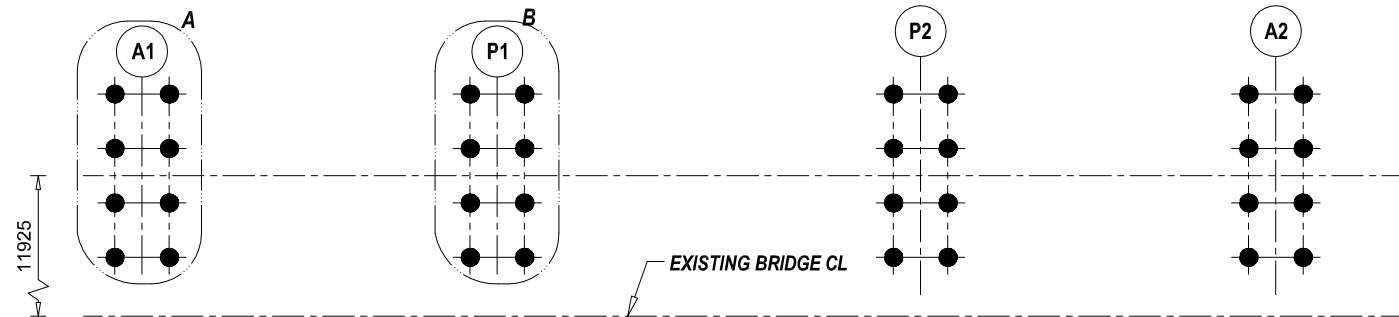
HALF SECTIONAL PLAN VIEW OF BRIDGE



SECTIONAL VIEW OF PIER AT X2-X2

(SCALE 1:350 @ A3)

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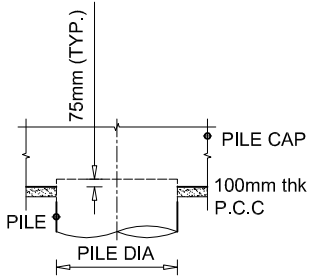


DETAILS AT PILE LAYOUT
SCALE - 1:500

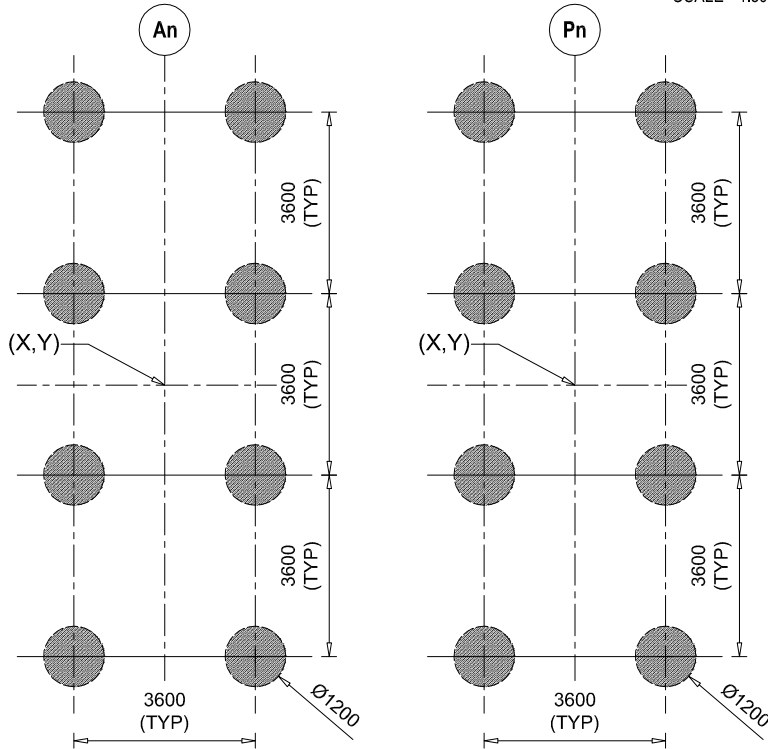
CO ORDINATES OF PILE LOCATION OF PROPOSED BRIDGE

SN.	ABUTMENT/PIER	EASTING (X)	NORTHING (Y)
1	ABUTMENT (A1)	394103.06	2982188.318
2	PIER (P1)	394090.121	2982207.935
3	PIER (P2)	394074.704	2982231.308
4	ABUTMENT (A2)	394061.765	2982250.925

PILE CAPACITY			
SN.	DESCRIPTION	DIA (mm)	CAPACITY
1	ABUTMENT	1200	304.32
2	PIER	1200	260.68



DETAIL AT 3 AND 4
SCALE - 1:75



DETAILS AT A
SCALE - 1:150

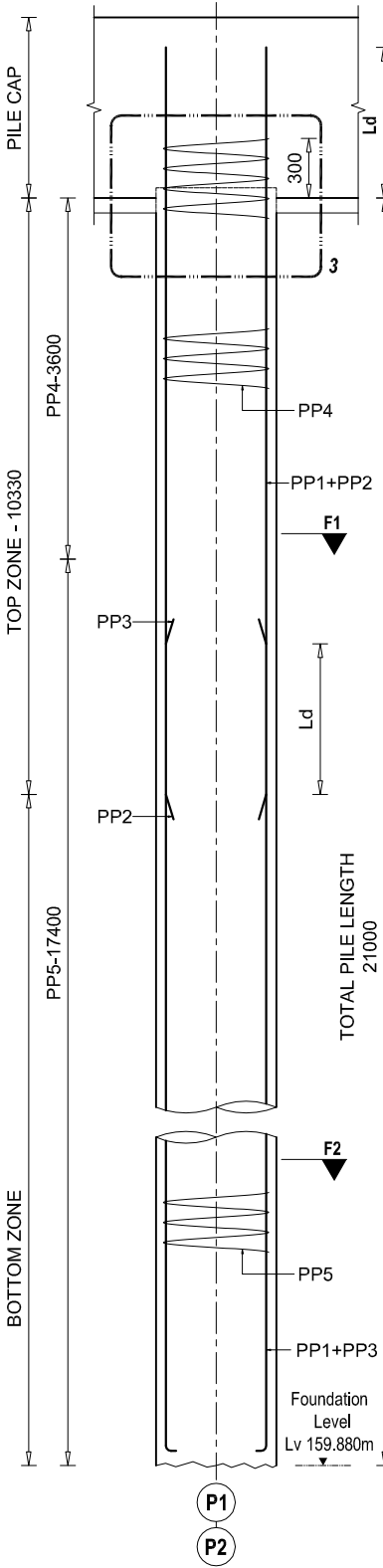
DETAILS AT B
SCALE - 1:150

BAR BENDING SCHEDULE OF ABUTMENT PILE

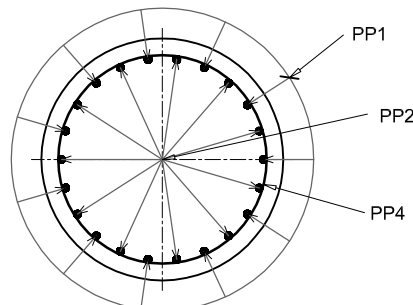
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	PA1	24150	32		24.450	9	6.321	1390.93
2	PA2	11649	32		11.649	9	6.320988	662.6987
3	PA3	13701	12		14.001	9	0.889	112.01
4	PA4	Dia. 1034 100	16	115	3.448	42	1.580	228.87
5	PA5	Dia. 1034 100	12	115	3.448	154	0.889	472.04
TOTAL (KG) :								2866.54
No. of Pile								8.00
TOTAL WEIGHT (KG) :								22932.33

BAR BENDING SCHEDULE OF PIER PILE

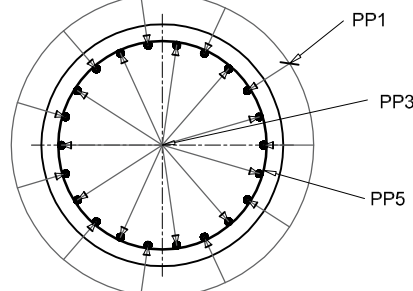
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	PP1	22650	32		22.950	11	6.321	1595.73
2	PP2	13255	32		13.255	11	6.320988	921.6316
3	PP3	11795	12		12.095	11	0.889	118.26
4	PP4	Dia. 1034 100	16	100	3.448	48	1.580	261.56
5	PP5	Dia. 1034 100	12	100	3.448	162	0.889	496.56
TOTAL (KG) :								3393.74
No. of Pile								8.00
TOTAL WEIGHT (KG) :								27149.96



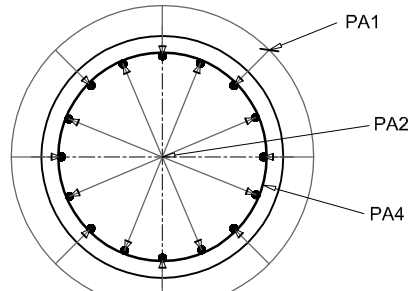
ELEVATION VIEW
BAR DETAIL AT PIER PILE
SCALE - 1:75



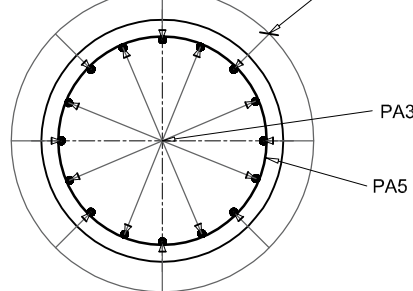
SECTIONAL VIEW AT F1 - F1
SCALE - 1:40



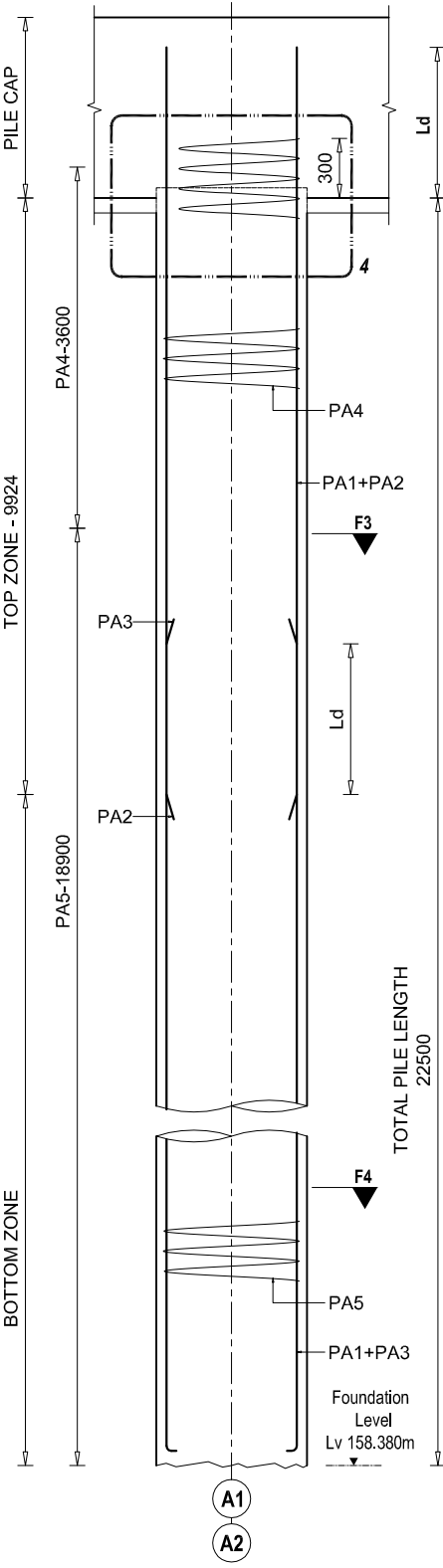
SECTIONAL VIEW AT F2 - F2
SCALE - 1:40



SECTIONAL VIEW AT F3 - F3
SCALE - 1:40



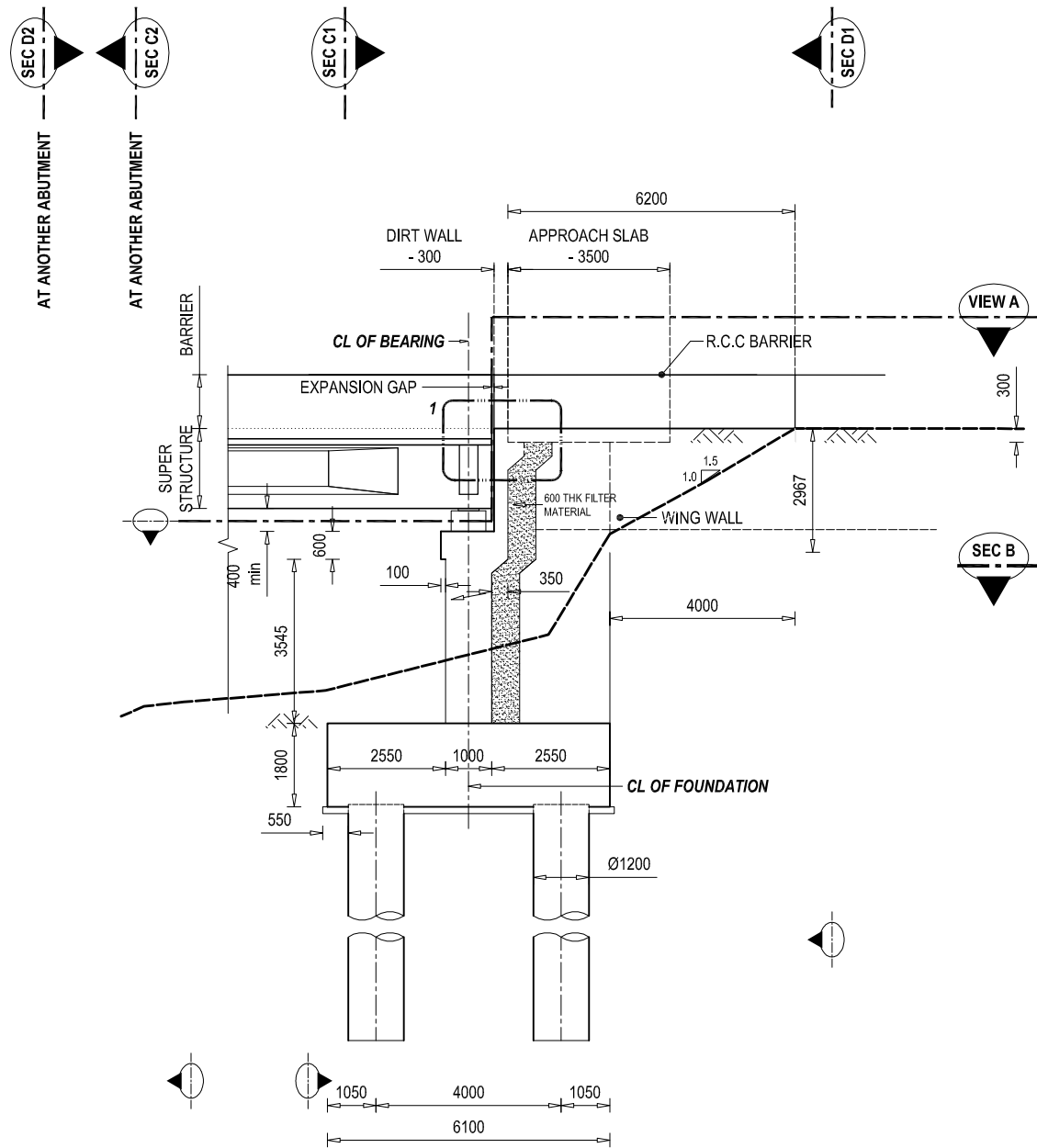
SECTIONAL VIEW AT F4 - F4
SCALE - 1:40



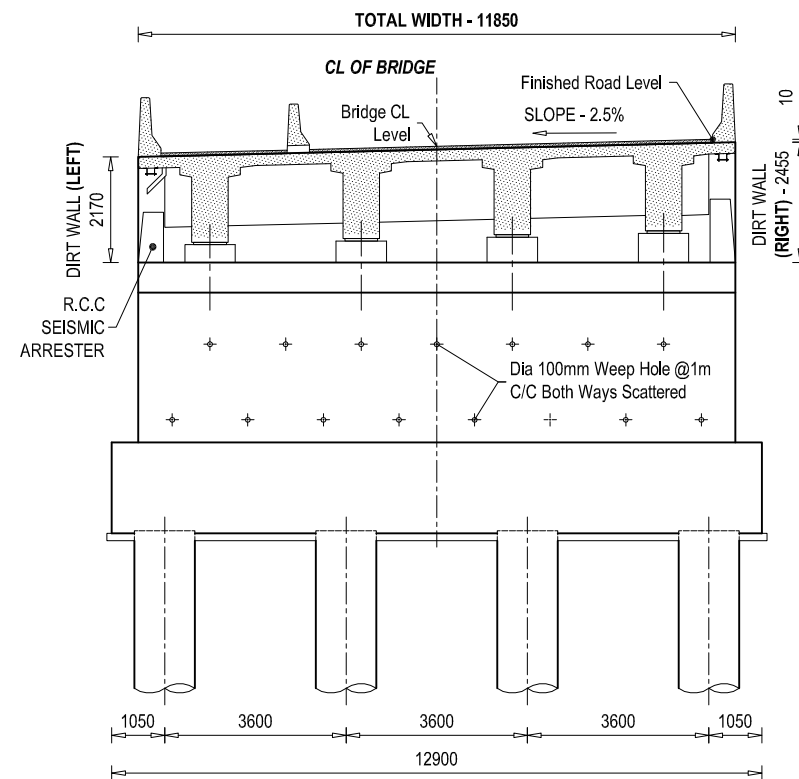
ELEVATION VIEW
BAR DETAIL AT ABUTMENT PILE
SCALE - 1:75

NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/BARAHARI/DD-4

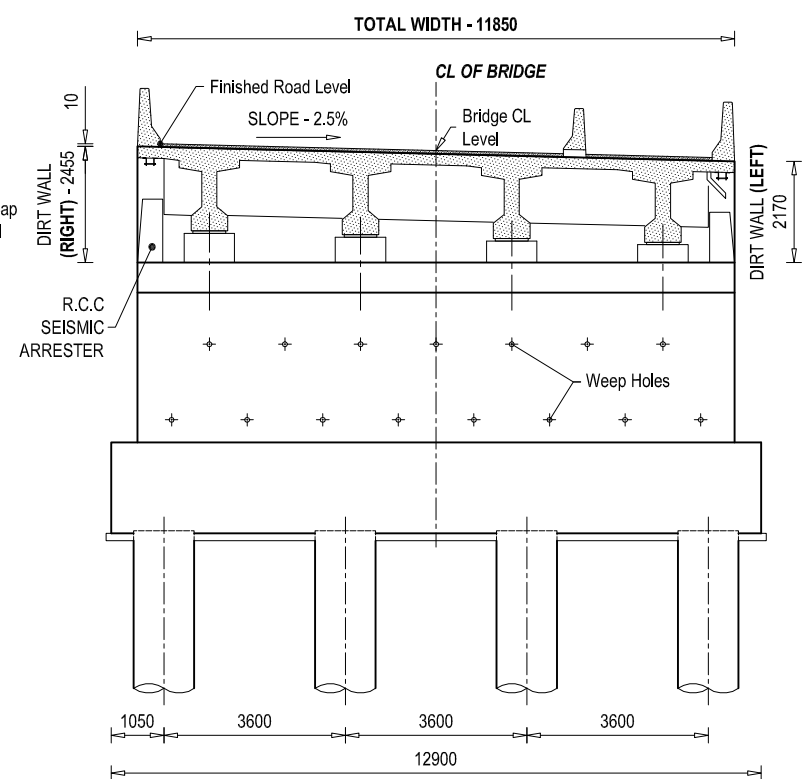
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Drawing Name	Scale:	Date:
Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamata-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of EPTISA Servicios De Ingenieria Madrid, Spain STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Krti Consultant and Rays Consultant Private Limited	Mr. R.D. Nec.No.6489 CIVIL/TA Signature Mr. S.M. Signature Mr. H.B. Signature	LAYOUT AND DETAIL OF PILE FOUNDATION FOR BRIDGE OVER RIVER BARAHARI Reference Drawings KDP/DPR/STR/BR/ BARAHARI/DD-9	AS SHOWN Chainage: 260+921	05.05.2023 Drawing No.- KDP/DPR/STR/BR/BARAHARI/DD-6 Sheet No. 1/1



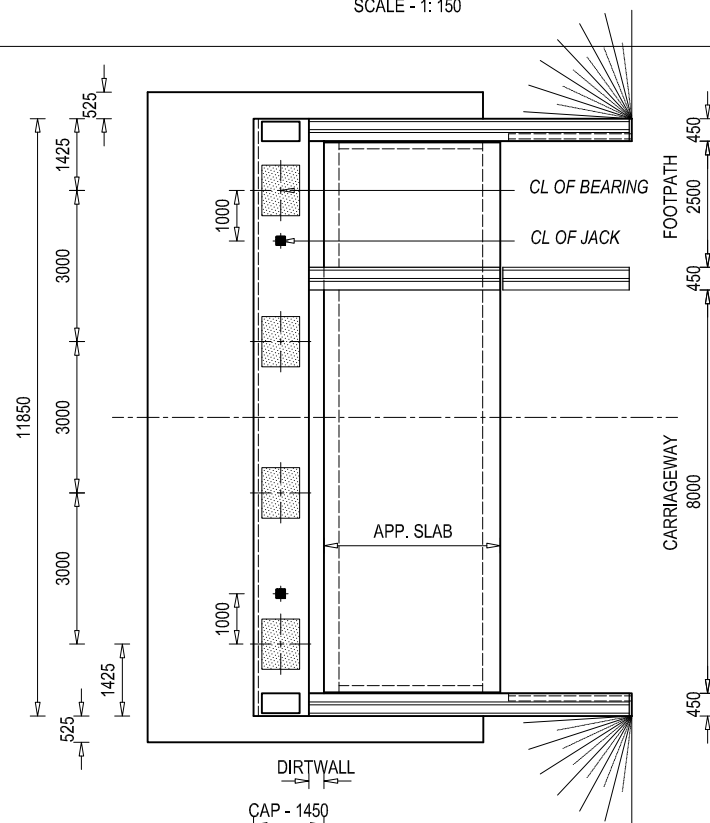
A2
OUTLINE DETAILS OF ABUTMENT
SCALE - 1: 150



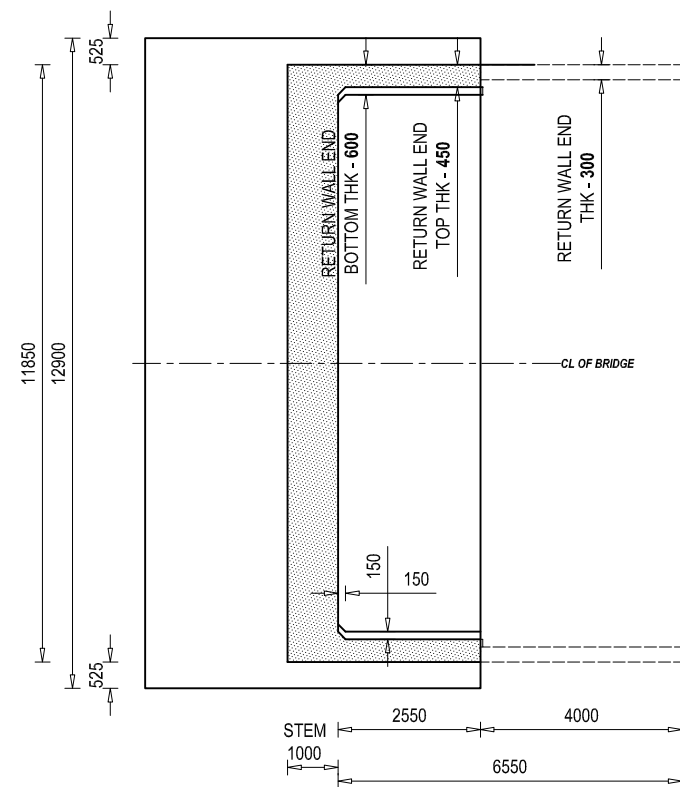
SECTIONAL VIEW AT C1 - C1
SCALE - 1: 150



SECTIONAL VIEW AT C2 - C2
SCALE - 1: 150



VIEW AT A
SCALE - 1: 150



SECTIONAL VIEW AT B - B
SCALE - 1: 150

NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/BARAHARI/DD-4



Government of Nepal
Ministry of Physical Infrastructure and Transport
Department of Roads
Development Cooperation Implementation
Division

Strategic Road Connectivity & Trade Improvement Project
(SRCTIP)
Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya
Road Section (130 KM) of Mahendra Highway and Bridges

DESIGN CONSULTANTS

Joint Venture of
ep4sa EPTISA Servicios De Ingeniera
Madrid, Spain
ow STUP Consultants Private Limited
Kolkata, India
In Association With
Udaya Consultancy, Geocom International, Sundar Kritt Consultant and Rays
Consultant Private Limited

Designed By

Mr. R.D.

Nec.No. 6489 CH/1/24

Checked By

Mr. S.M.

Approved By

Mr. H.B.

Drawing Name

ABUTMENT DETAILS OF BRIDGE OVER RIVER BARAHARI

Reference Drawings

KDP/DPR/STR/BR/BARAHARI/DD-9

Scale:

AS SHOWN

Chainage:

260+921

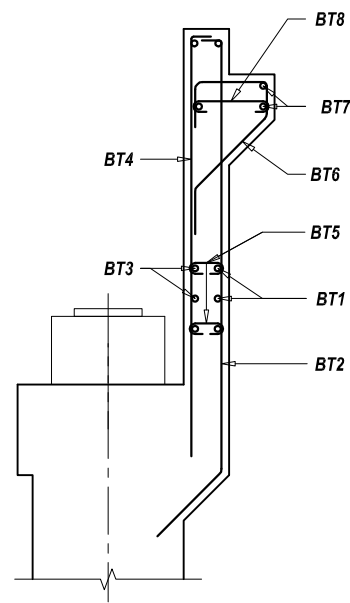
Date:

19.04.2023

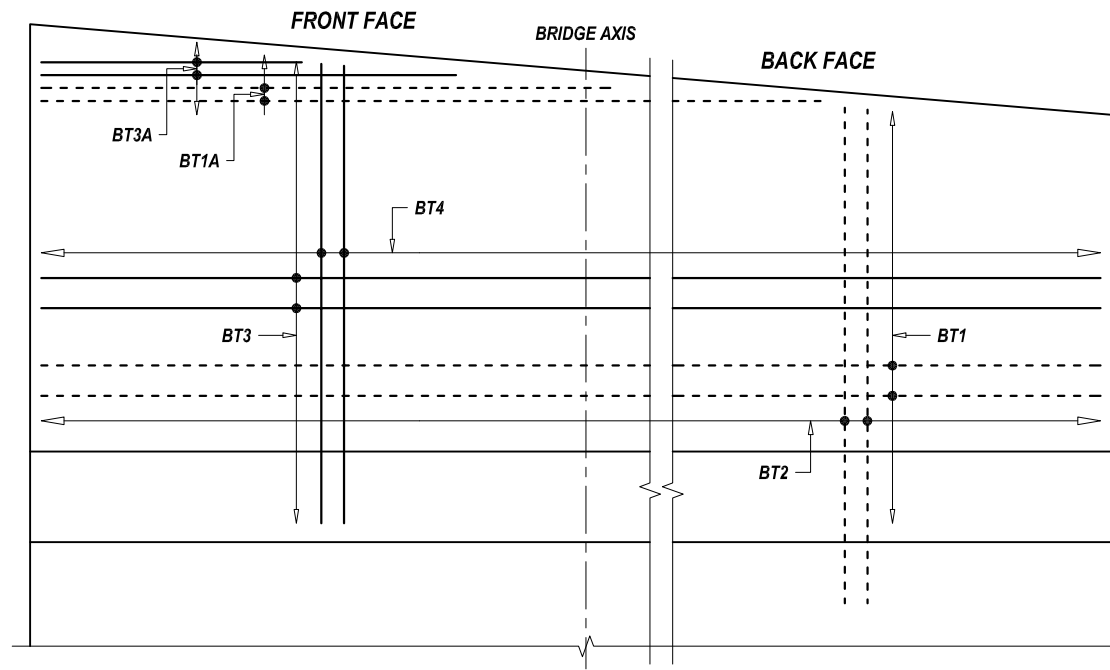
Drawing No.-

KDP/DPR/STR/BR/BARAHARI/DD- 7

Sheet No. 1 / 2



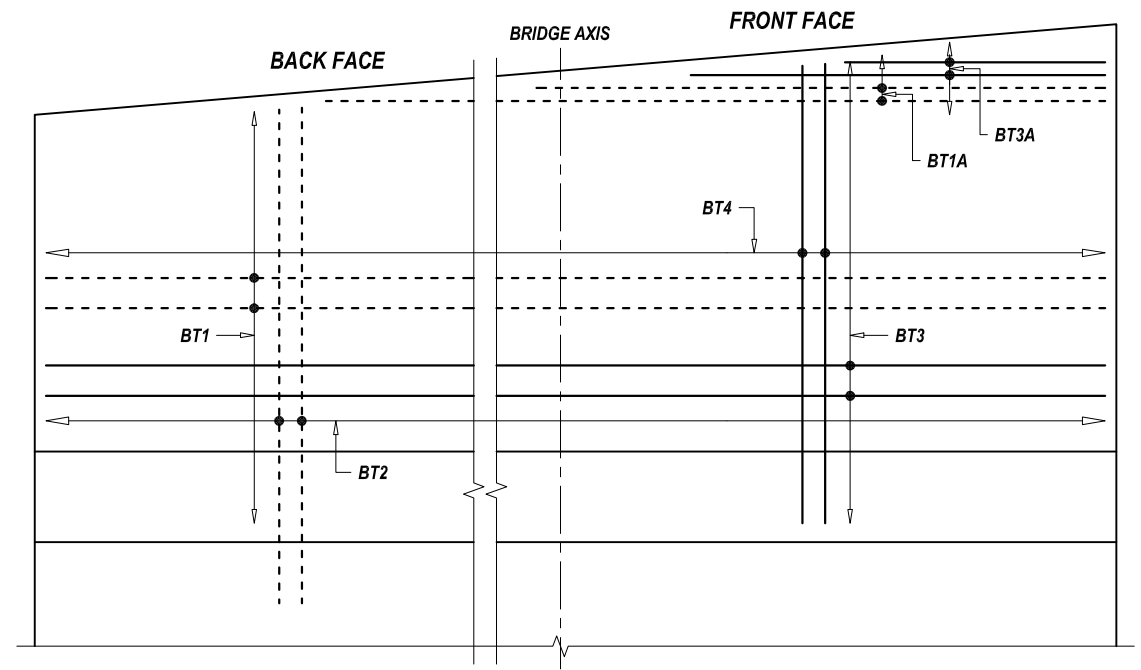
SECTIONAL SIDE VIEW



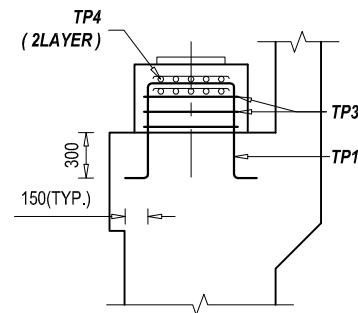
ELEVATION VIEW / VIEW AT D1

BAR DETAIL AT DIRT WALL

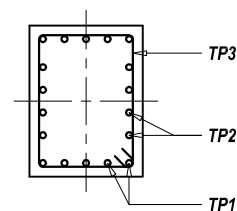
SCALE - 1 : 50



ELEVATION VIEW / VIEW AT D2



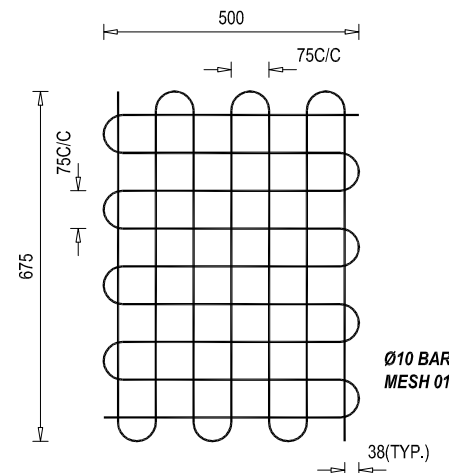
SECTIONAL SIDE VIEW



SECTIONAL PLAN VIEW
BAR DETAIL AT PEDESTAL

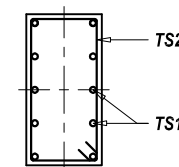
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NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/BARAHARI/DD-4

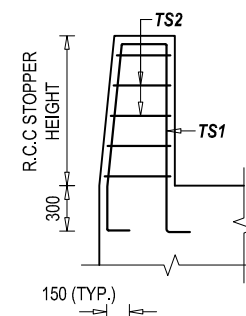


REINFORCEMENT DETAILS OF
BEARING MESH

SCALE - 1 : 50

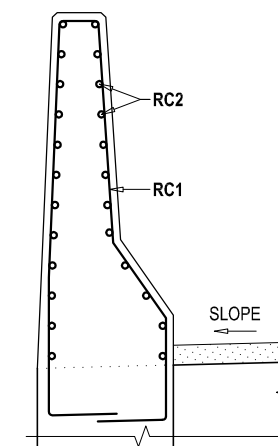


SECTIONAL PLAN VIEW



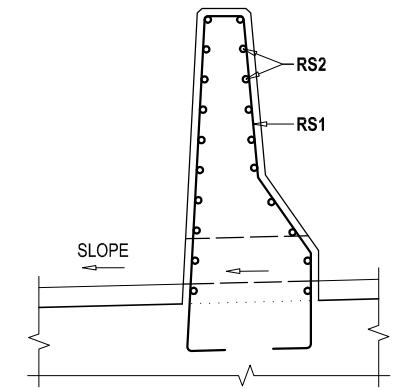
R.C.C STOPPER LEFT
ELEVATION VIEW

SCALE - 1 : 50



REINFORCEMENT DETAILS OF
R.C.C BARRIER (B)- SECTIONAL VIEW

SCALE - 1 : 25

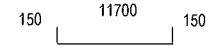
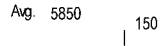
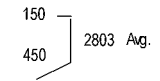
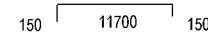
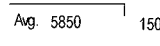
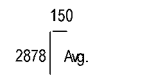
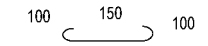
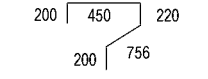
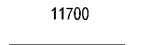
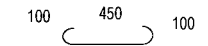


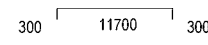
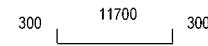
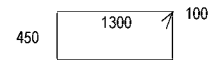
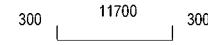
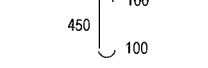
REINFORCEMENT DETAILS OF
R.C.C SEPARATOR - SECTIONAL VIEW

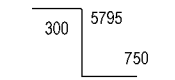
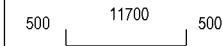
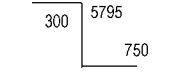
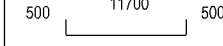
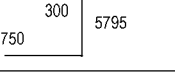
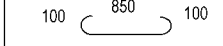
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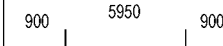
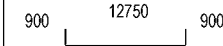
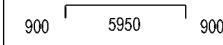
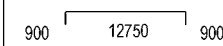
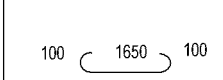
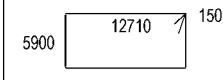
--- TOP BAR OR
NEAR FACE REINFORCEMENT
--- BOTTOM BAR OR
FAR FACE REINFORCEMENT

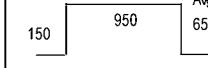
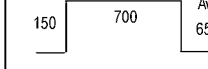
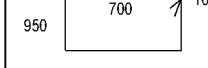
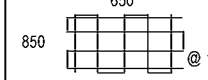
EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS			Designed By	Mr. R.D.		Drawing Name	Scale:	Date:				
	Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Joint Venture of		Checked By	Mr. S.M.								Reference Drawings	Chainage:	AS SHOWN	19.04.2023
		 EPTISA Servicios De Ingenieria Madrid, Spain	 STUP Consultants Private Limited Kolkatta, India													
		Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges		In Association With Udaya Consultancy, Geocom International, Sundar K/III Consultant and Rays Consultant Private Limited			Approved By	Mr. H.B.		KDP/DPR/STR/BR/BARAHARI/DD-9	260+921	Drawing No.- KDP/DPR/STR/BR/BARAHARI/DD- 8 Sheet No. 2 / 2				

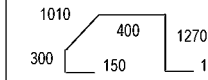
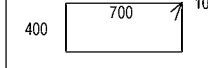
BAR BENDING SCHEDULE OF DIRT WALL								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	BT1		16	200	12.000	17	1.580	322.37
2	BT1A		16	200	6.000	3	1.580	28.44
3	BT2		16	125	3.403	96	1.580	516.25
4	BT3		16	200	12.000	13	1.580	246.52
5	BT3A		16	200	6.000	3	1.580	28.44
6	BT4		12	125	3.028	96	0.889	258.39
7	BT5		12	500	0.350	96	0.889	29.87
8	BT6		12	200	1.826	61	0.889	99.01
9	BT7		16		11.700	5	1.580	92.44
10	BT8		12	200	0.650	120	0.889	69.33
TOTAL (KG) :								1691.07

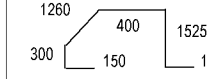
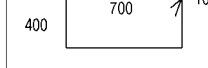
BAR BENDING SCHEDULE OF ABUTMENT CAP								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	CT1		16	150	12.300	11	1.580	213.81
2	CT2		16	150	12.300	11	1.580	213.81
3	CT3		16	150	3.700	80	1.580	467.75
4	CT4		12	150	12.300	8	0.889	87.47
5	CT5		12	Long. 150 Trans.300	0.650	382	0.889	220.71
TOTAL (KG) :								1203.55

BAR BENDING SCHEDULE OF ABUTMENT STEM									
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)	
1	ST1		25		6.845	125	3.858	3301.02	
2	ST2		16	130	12.700	28	1.580	561.94	
3	ST3		20		6.845	125	2.469	2112.65	
4	ST4		16	130	12.700	28	1.580	561.94	
5	ST5		16		6.845	14	1.580	151.44	
6	ST6		12	Ver. 130 Hor.190	1.050	1764	0.889	1646.40	
TOTAL (KG) :								8335.38	

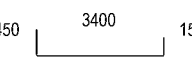
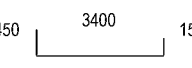
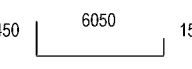
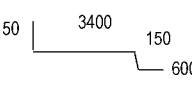
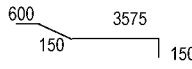
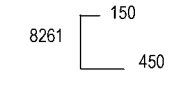
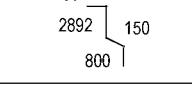
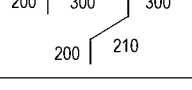
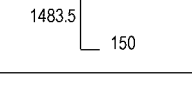
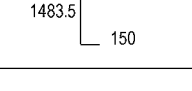
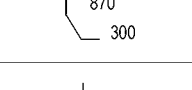
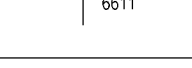
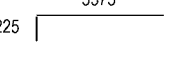
BAR BENDING SCHEDULE OF PILE CAP								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	FT1		25		7.750	100	3.858	2989.97
2	FT2		20		14.550	50	2.469	1796.30
3	FT3		16		7.750	100	1.580	1224.69
4	FT4		16		14.550	50	1.580	1149.63
5	FT5		10	Long. 250 Trans.500	1.850	607	0.617	693.18
6	FT6		16	200	37.520	8	1.580	474.33
TOTAL (KG) :								8328.09

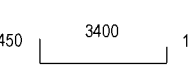
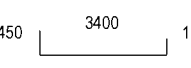
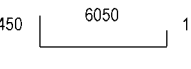
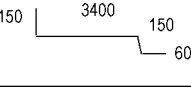
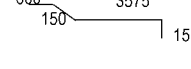
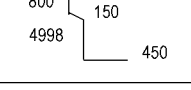
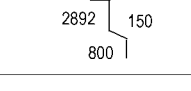
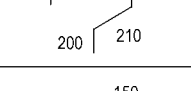
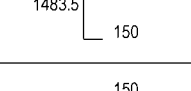
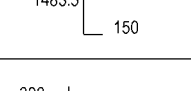
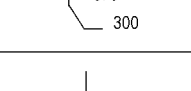
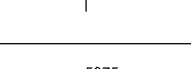
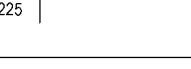
BAR BENDING SCHEDULE OF PEDESTAL								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TP1		16	150	2.850	6	1.580	27.02
1	TP2		16	150	2.350	8	1.580	29.71
2	TP3		16	150	3.500	3	1.580	16.59
1	TP4		8		13.400	2	0.395	10.59
TOTAL (KG) :								83.91

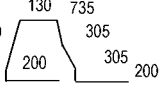
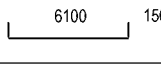
BAR BENDING SCHEDULE OF RCC SEISMIC ARRESTER - LEFT								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TS1-L		16	150	3.280	6	1.580	31.10
2	TS2-L		12	150	2.400	7	0.889	14.93
TOTAL (KG) :								46.03

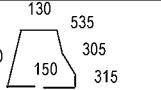
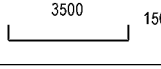
BAR BENDING SCHEDULE OF RCC SEISMIC ARRESTER - RIGHT								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TS1-R		16	150	3.785	6	1.580	35.89
2	TS2-R		12	150	3.400	9	0.889	27.20
TOTAL (KG) :								63.09

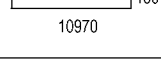
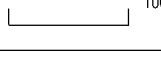
EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		Designed By		Drawing Name		Scale:		Date:	
	Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges		Joint Venture of		Mr. R.D.		ABUTMENT BAR BENDING SCHEDULE OF BRIDGE OVER RIVER BARAHARI		AS SHOWN		19.04.2023	
				ep4sa EPTISA Servicios De Ingeniera Madrid, Spain		Mr. S.M.		Reference Drawings		Chainage: 260+921		Drawing No.- KDP/DPR/STR/BR/BARAHARI/DD- 9	
				In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited		Mr. H.B.		-		260+921		Sheet No. 1 / 2	

BAR BENDING SCHEDULE OF RETURN WALL - LEFT								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RT1A		12	150	4.000	45	0.889	160.00
2	RT1B		12	150	4.000	45	0.889	160.00
3	RT2A		12	150	6.650	21	0.889	124.13
4	RT2B		12	150	4.300	21	0.889	80.27
5	RT2C		12	150	4.475	21	0.889	83.53
6	RT3A		12	150	8.861	18	0.889	141.78
7	RT3B		16	150	6.694	18	1.580	190.41
8	RT3C		16	150	3.992	18	1.580	113.55
9	RT3D		16	150	1.210	43	1.580	82.22
10	RT4A		12	150	1.784	50	0.889	79.27
11	RT4B		16	150	1.784	50	1.580	140.92
12	RT5		12	150	1.470	65	0.889	84.93
13	RT6		12		6.611	2	0.889	11.75
14	RT7		20		5.6	4	2.469	55.31
TOTAL (KG) :								1508.07

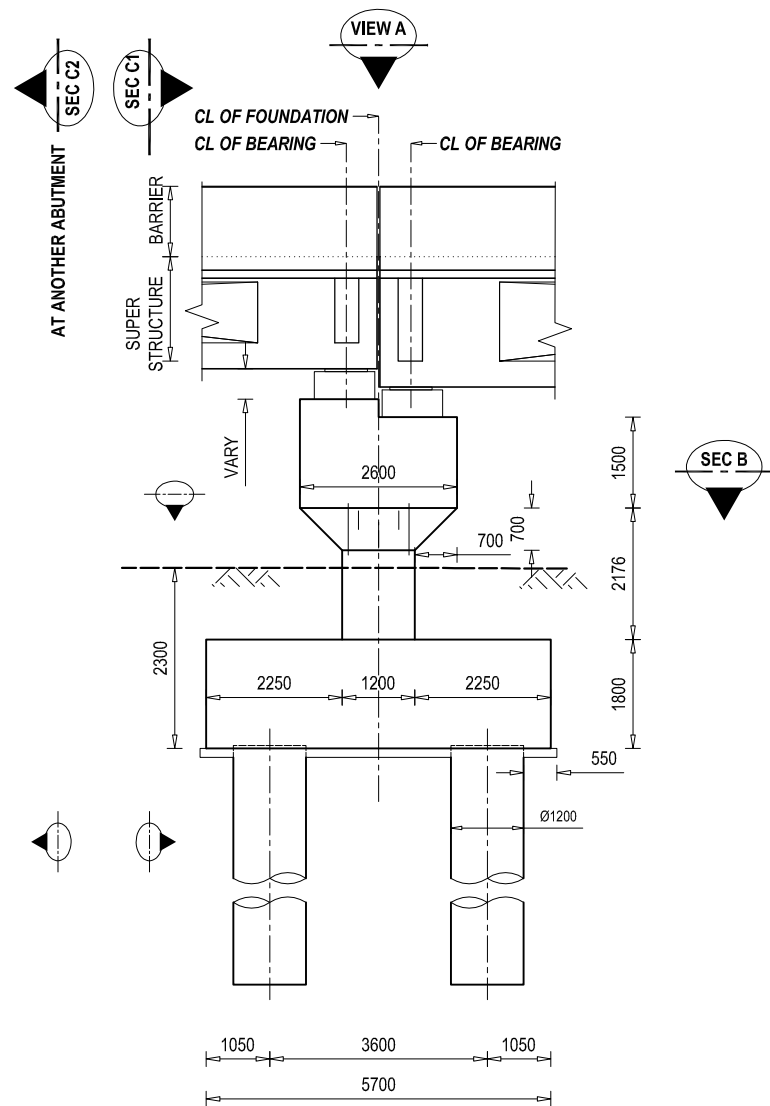
BAR BENDING SCHEDULE OF RETURN WALL - RIGHT								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RT1A		12	150	4.000	43	0.889	152.89
2	RT1B		12	150	4.000	43	0.889	152.89
3	RT2A		12	150	6.650	21	0.889	124.13
4	RT2B		12	150	4.300	21	0.889	80.27
5	RT2C		12	150	4.475	21	0.889	83.53
6	RT3A		12	150	8.565	18	0.889	137.04
7	RT3B		16	150	6.398	18	1.580	181.99
8	RT3C		16	150	3.992	18	1.580	113.55
9	RT3D		16	150	1.210	43	1.580	82.22
10	RT4A		12	150	1.784	50	0.889	79.27
11	RT4B		16	150	1.784	50	1.580	140.92
12	RT5		12	150	1.470	65	0.889	84.93
13	RT6		12		6.315	2	0.889	11.23
14	RT7		20		5.6	4	2.469	55.31
TOTAL (KG) :								1480.16

BAR BENDING SCHEDULE OF R.C.C BARRIER								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RC1		16	150	3.170	42	1.580	210.39
2	RC2		10	150	6.400	20	0.617	79.01
TOTAL (KG) :								289.41

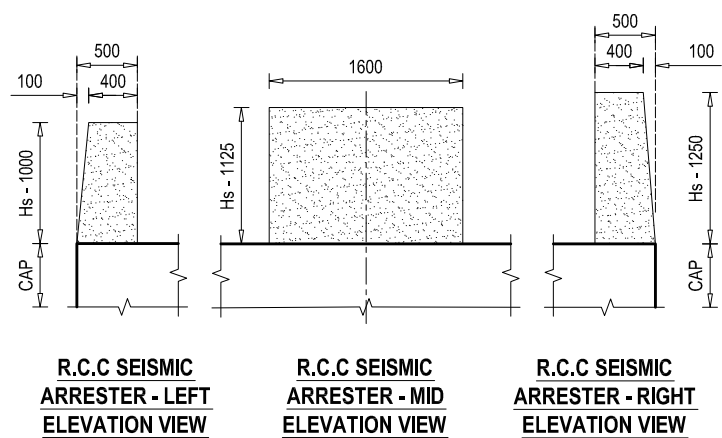
BAR BENDING SCHEDULE OF R.C.C SEPARATOR								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RS1		16	150	2.695	25	1.580	106.47
2	RS2		10	150	3.800	17	0.617	39.88
TOTAL (KG) :								146.35

BAR BENDING SCHEDULE OF APPROACH SLAB								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	1601		16	150	11.170	48	1.580	847.27
2	1202		12	150	3.620	150	0.889	482.67
TOTAL (KG) :								1329.93

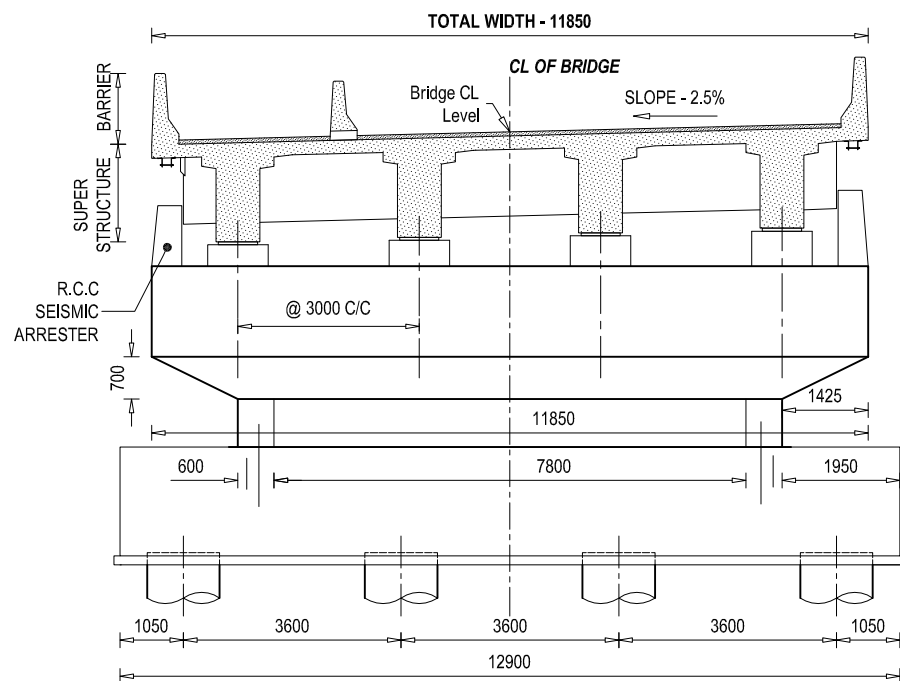
EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		Drawing Name		Scale:		Date:	
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division		Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathalaya Road Section (130 KM) of Mahendra Highway and Bridges		Joint Venture of		Designed By	Mr. R.D.	AS SHOWN		19.04.2023	
				 EPTISA Servicios De Ingeniera Madrid, Spain  STUP Consultants Private Limited Kolkatta, India		Checked By	Mr. S.M.			Drawing No.- KDP/DPR/STR/BR/BARAHARI/DD- 9	
				In Association With Udaya Consultancy, Geocom International, Sundar Kritt Consultant and Rays Consultant Private Limited		Approved By	Mr. H.B.			Sheet No. 2 / 2	



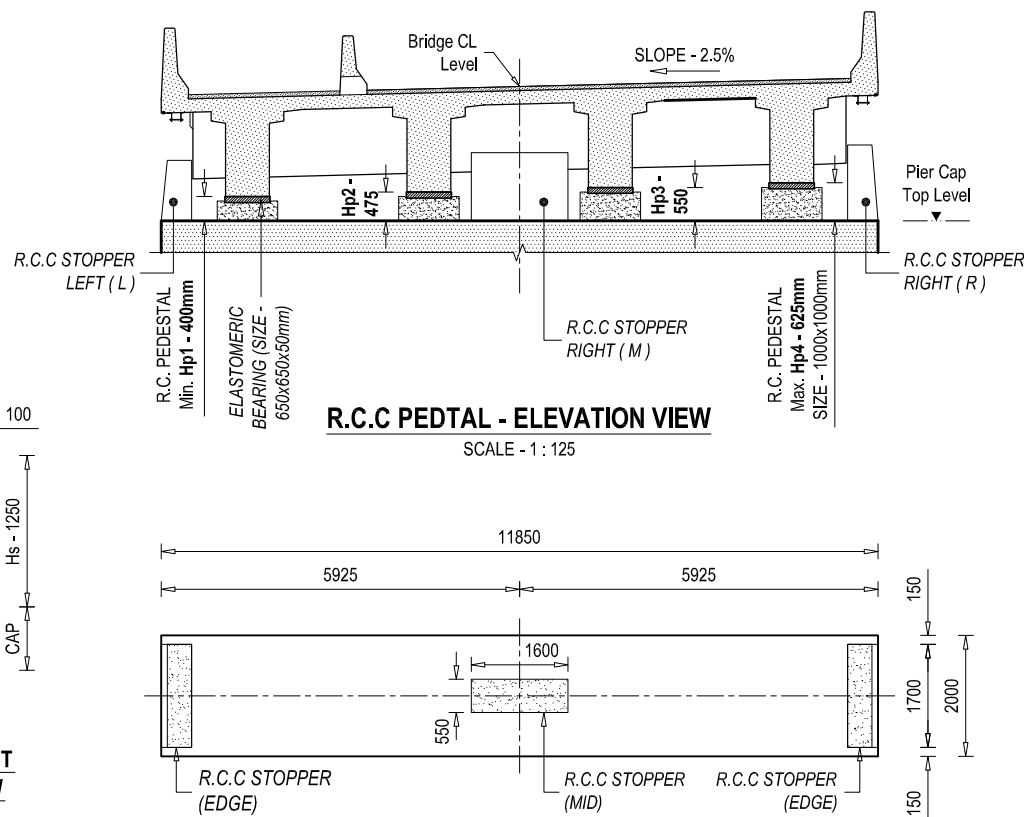
ELEVATION VIEW OF PIER
SCALE - 1: 125



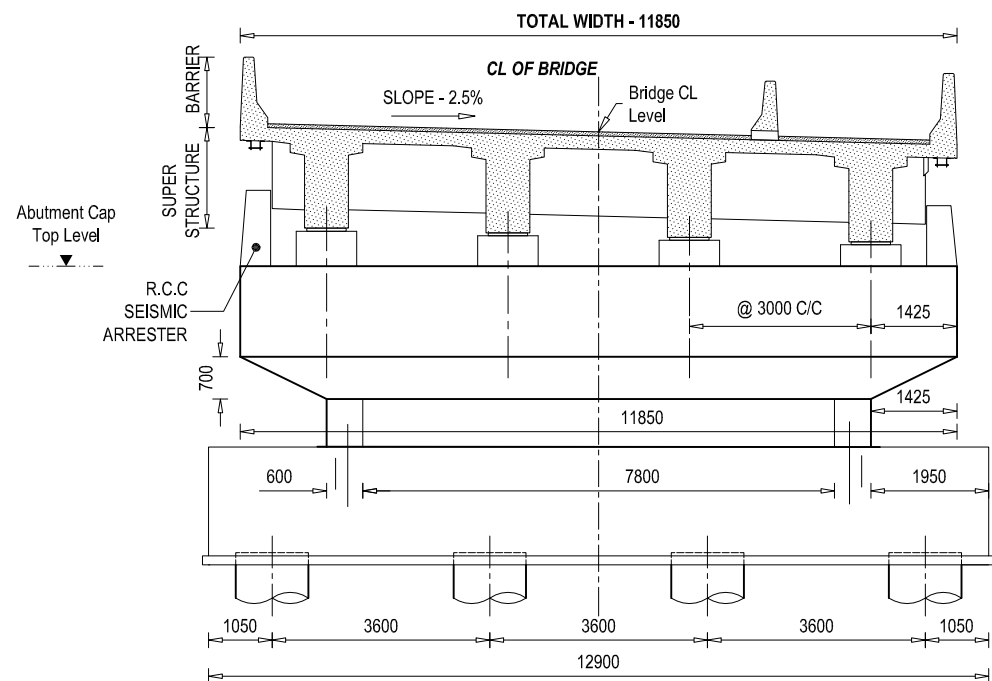
DETAIL AT PEDESTAL
SCALE - 1: 75



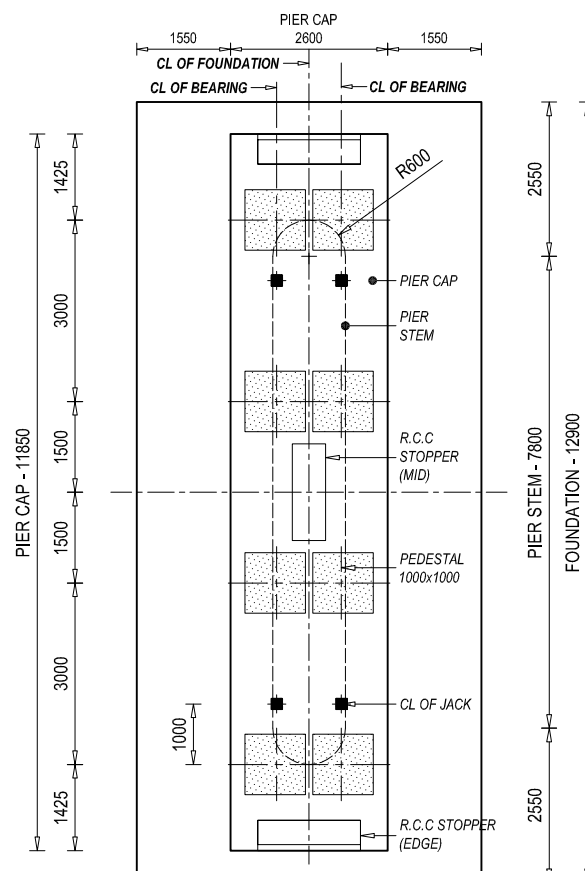
SECTIONAL VIEW AT C1 - C1
SCALE - 1: 125



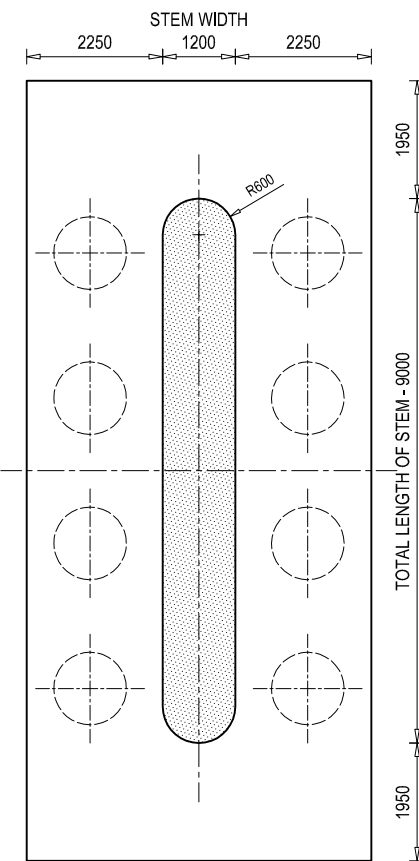
DETAIL AT R.C.C SEISMIC ARRESTER
SCALE - 1: 150



SECTIONAL VIEW AT C2 - C2
SCALE - 1: 125



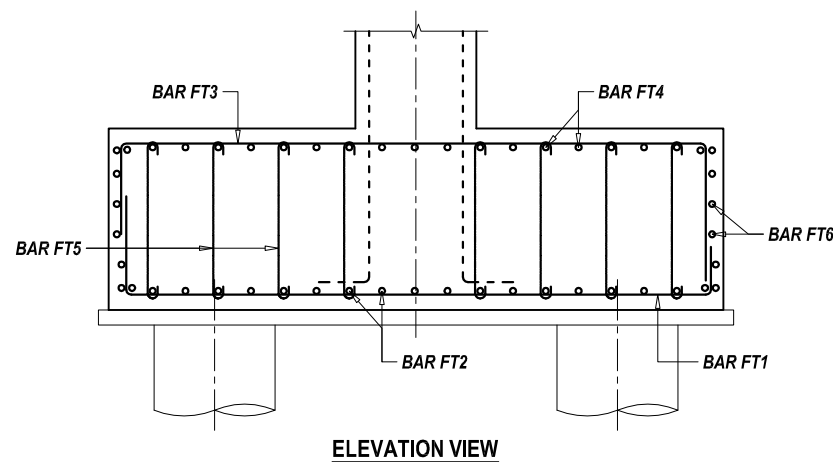
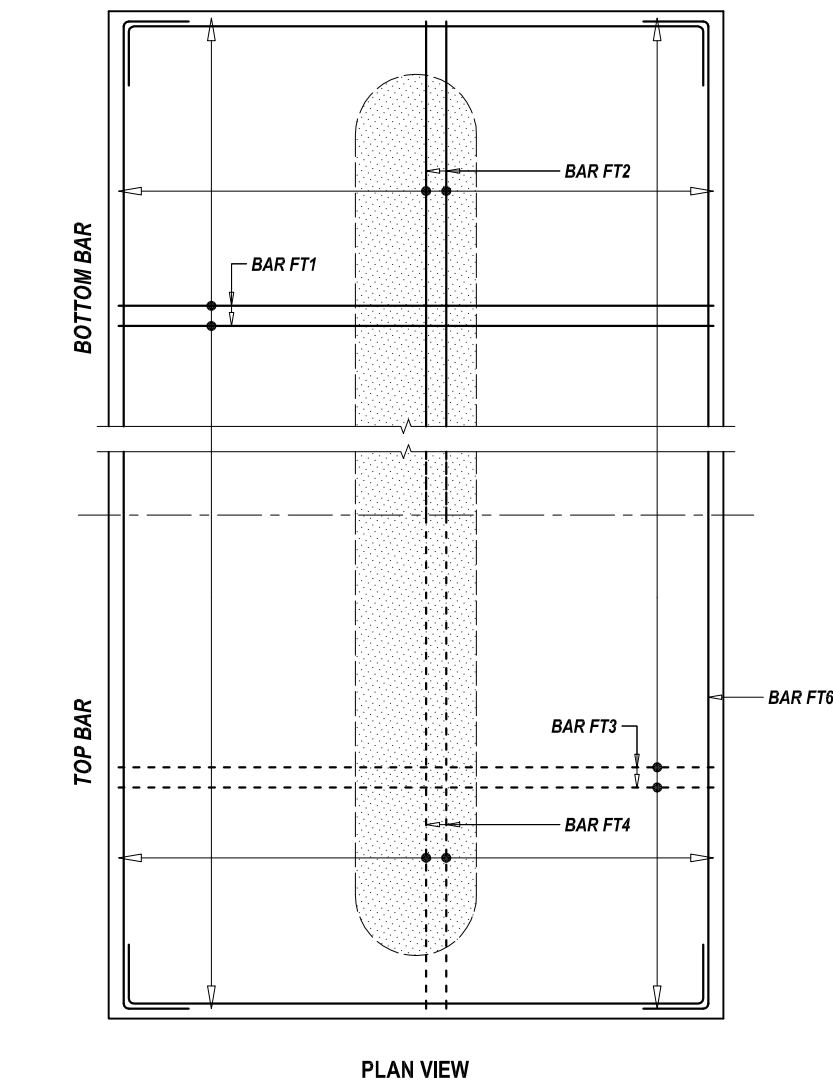
PLAN VIEW OF PIER (VIEW AT A)
SCALE - 1: 125



SECTIONAL VIEW AT B - B
SCALE - 1: 125

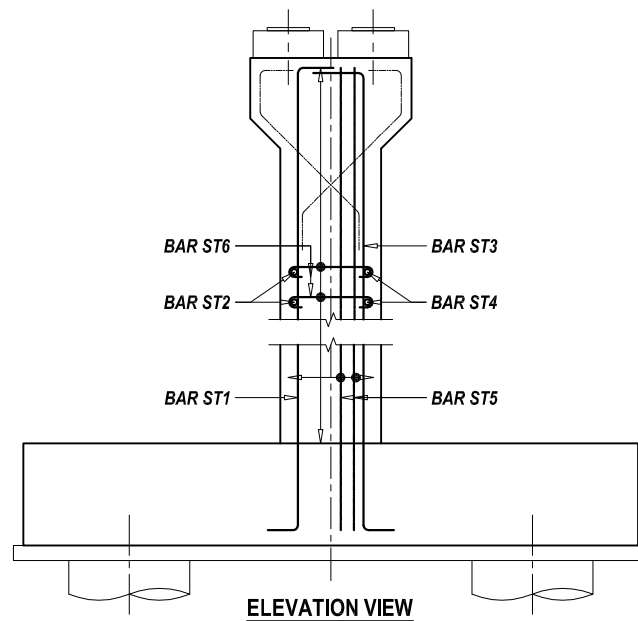
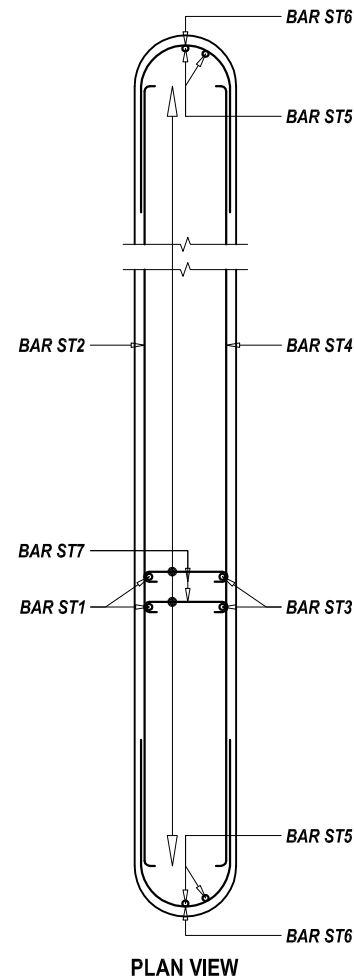
NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/BARAHARI/DD-4

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Drawing Name	Scale:	Date:
Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkhebar-Pathlajai Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of ep4sa EPTISA Servicios De Ingeniera Madrid, Spain STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kritt Consultant and Rays Consultant Private Limited	Mr. R.D. Nec.No. 6489 CH/1/24 Signature Mr. S.M. Signature Mr. H.B. Signature	PIER DETAILS OF BRIDGE OVER RIVER BARAHARI Reference Drawings KDP/DPR/STR/BR/BARAHARI/DD-12	AS SHOWN Chainage: 260+921	13.08.2023 Drawing No.- KDP/DPR/STR/BR/BARAHARI/DD- 10 Sheet No. 1/1



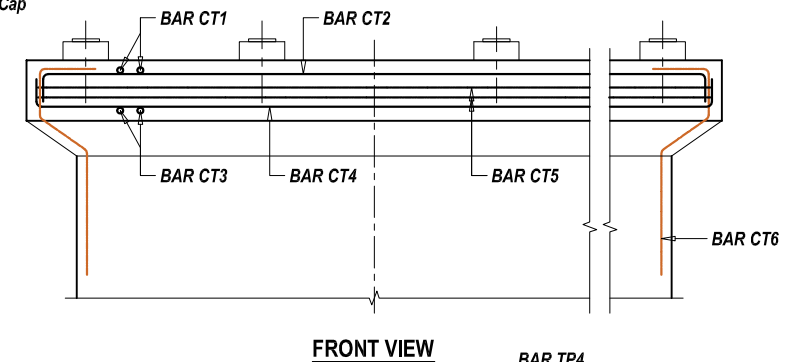
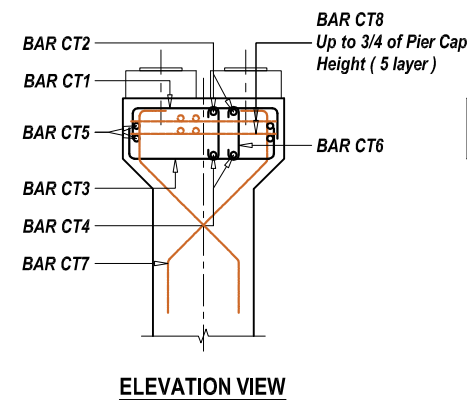
BAR DETAIL OF FOUNDATION

SCALE - 1 : 75



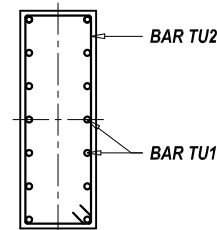
BAR DETAIL AT PIER STEM

SCALE - 1 : 75

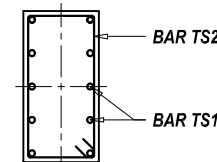


BAR DETAIL AT PIER CAP

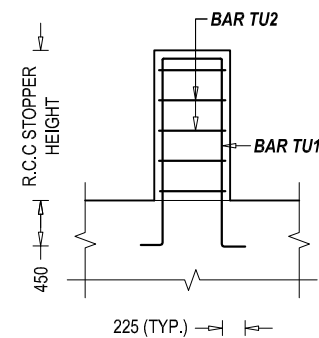
SCALE - 1 : 75



SECTIONAL PLAN VIEW



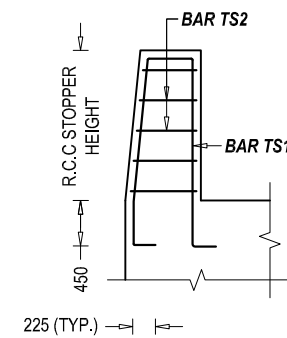
SECTIONAL PLAN VIEW



SECTIONAL ELEVATION VIEW

R.C.C STOPPER AT MID

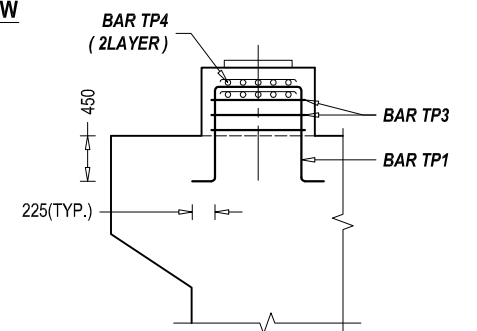
SCALE - 1 : 50



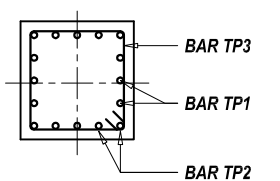
SECTIONAL ELEVATION VIEW

R.C.C STOPPER AT EDGE

SCALE - 1 : 50



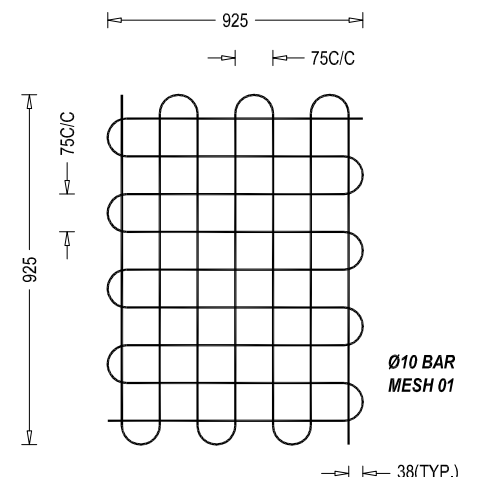
SECTIONAL SIDE VIEW



SECTIONAL PLAN VIEW

BAR DETAIL AT PEDESTAL

SCALE - 1 : 50

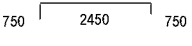
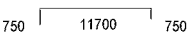
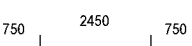
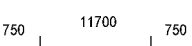
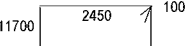
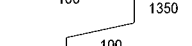
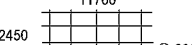


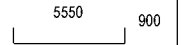
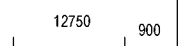
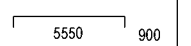
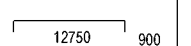
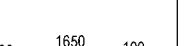
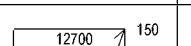
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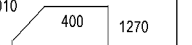
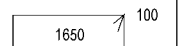
--- TOP BAR OR NEAR FACE REINFORCEMENT
--- BOTTOM BAR OR FAR FACE REINFORCEMENT

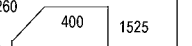
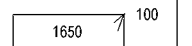
NOTE
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DRG NO. KDP/DPR/STR/BR/BARAHARI/DD-4

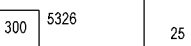
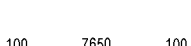
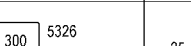
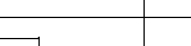
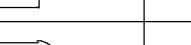
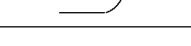
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Mr. R.D.	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of			PIER BAR DETAIL OF BRIDGE OVER RIVER BARAHARI	AS SHOWN	13.08.2023
		 EPTISA Servicios De Ingenieria Madrid, Spain	 STUP Consultants Private Limited Kolkata, India				
		In Association With					Reference Drawings
		Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited	Approved By	Mr. H.B.	KDP/DPR/STR/BR/BARAHARI/DD-12	260+921	Sheet No.1 /1

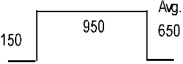
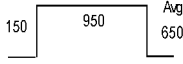
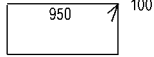
BAR BENDING SCHEDULE OF PIER CAP								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	CT1		20		3.950	50	2.469	487.65
2	CT2		20		13.200	18	2.469	586.67
3	CT3		20		3.950	50	2.469	487.65
4	CT4		20		13.200	18	2.469	586.67
5	CT5		16		150	28.500	1.580	495.41
6	CT6		16	X: 280 Y: 480	1.550	225	1.580	551.11
7	CT7		16		150	1.550	1.580	335.57
8	CT8		16		296.650	5 Layer	1.580	2343.90
TOTAL (KG) :								5874.63

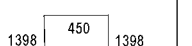
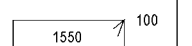
BAR BENDING SCHEDULE OF PILE CAP								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	FT1		25		7.350	98	3.858	2778.94
2	FT2		25		14.550	50	3.858	2806.71
3	FT3		25		7.350	98	3.858	2778.94
4	FT4		25		14.550	50	3.858	2806.71
5	FT5		12	Long. 225 Trans. 250	1.85	1258	0.889	2068.71
6	FT6		16	200	36.700	8	1.580	463.96
TOTAL (KG) :								13703.97

BAR BENDING SCHEDULE OF RCC SEISMIC ARRESTER - LEFT								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TS1-L		16	150	3.280	13	1.580	67.38
2	TS2-L		12	150	4.300	7	0.889	26.76
TOTAL (KG) :								94.14

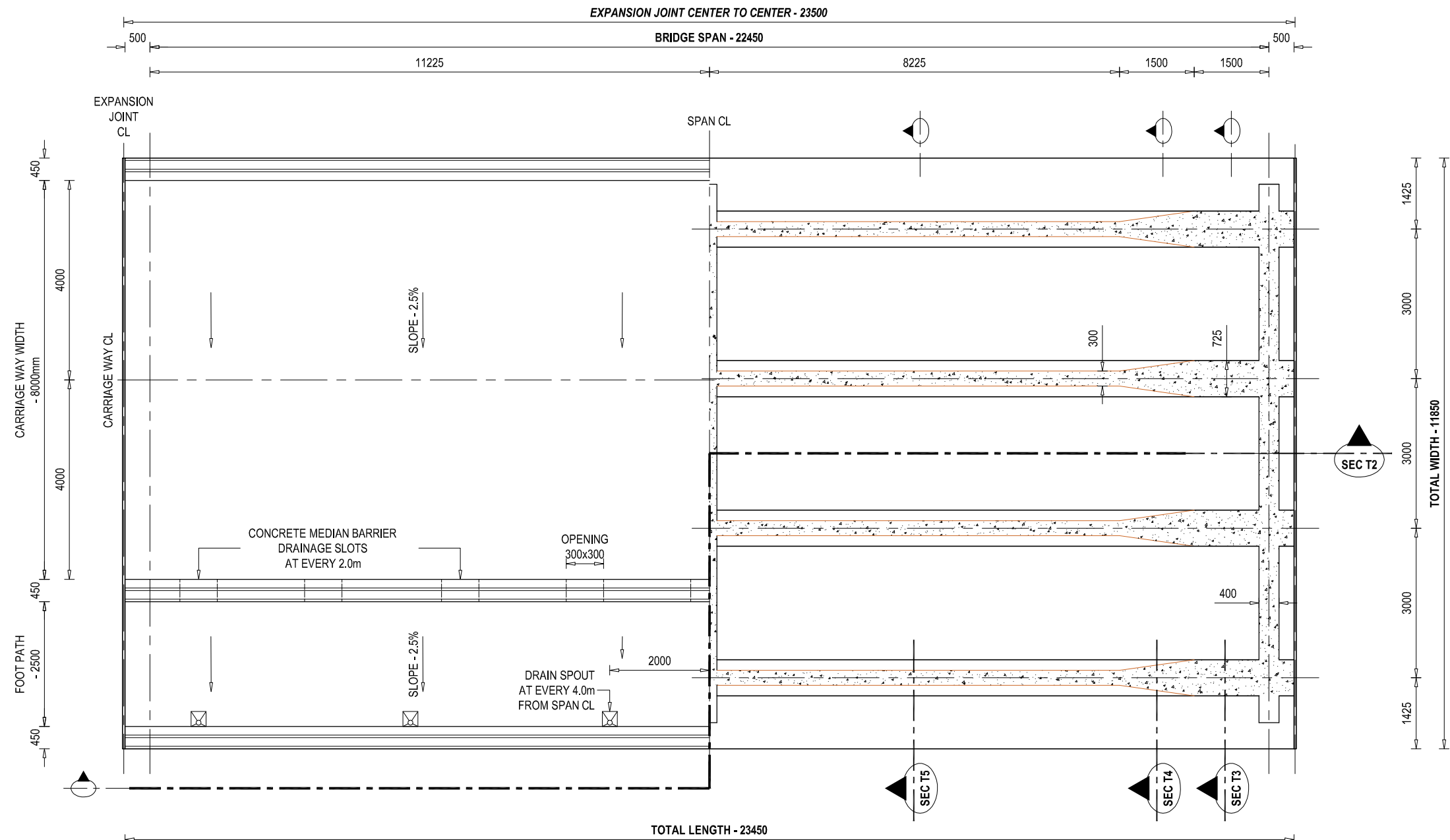
BAR BENDING SCHEDULE OF RCC SEISMIC ARRESTER - RIGHT								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TS1-R		16	150	3.785	13	1.580	77.76
2	TS2-R		12	150	4.300	9	0.889	34.40
TOTAL (KG) :								112.16

BAR BENDING SCHEDULE OF PIER STEM								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	ST1		25		6.526	50	3.858	1258.87
2	ST2		16	200	7.850	11	1.580	136.45
3	ST3		25		6.526	50	3.858	1258.87
4	ST4		16	200	7.850	11	1.580	136.45
5	ST5		25		6.526	12	3.858	302.13
5	ST6		16	200	3.325	22	1.580	115.60
6	ST7		12	Ver. 150 Hor.400	1.250	345	0.889	383.33
TOTAL (KG) :								3591.71

BAR BENDING SCHEDULE OF PEDESTAL								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA (MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TP1		16	150	2.850	8	1.580	36.03
2	TP2		16	150	2.850	8	1.580	36.03
3	TP3		16	150	4.000	3	1.580	18.96
4	TP4		10		26.000	2	0.617	32.10
TOTAL (KG) :								123.12

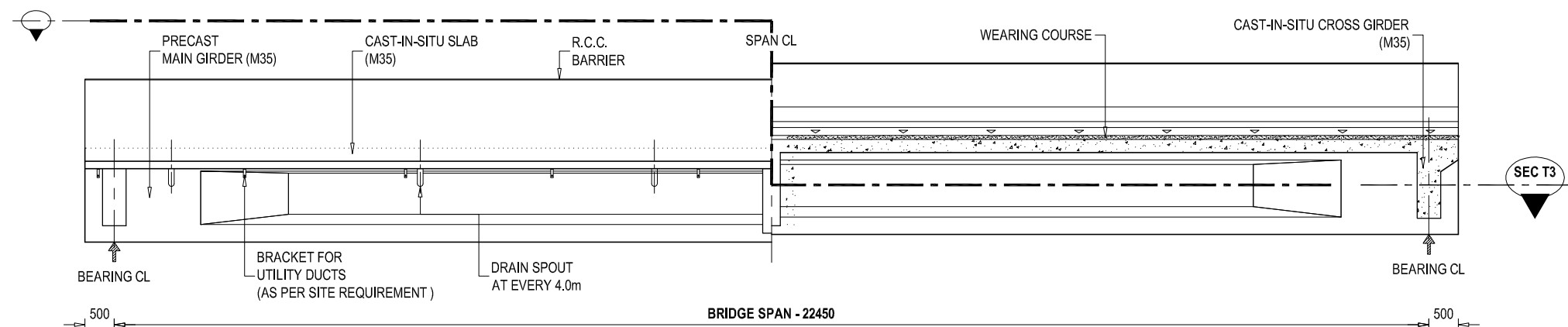
BAR BENDING SCHEDULE OF RCC SEISMIC ARRESTER - MID								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA(MM)	SPACING (MM)	BAR LENGTH (M)	No.OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TU1		16	150	3.546	13	1.580	72.85
2	TU2		12	150	4.200	8	0.889	29.87
TOTAL (KG) :								102.71

EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		Designed By	Mr. R.D. Nec.No. 6489 CH/1/17 Signature	Drawing Name BAR BENDING SCHEDULE OF PIER OF BRIDGE OVER RIVER BARAHARI	Scale: AS SHOWN	Date: 13.08.2023
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP)	Joint Venture of		Checked By	Mr. S.M. Signature					
		 EPTISA Servicios De Ingeniera Madrid, Spain	 STUP Consultants Private Limited Kolkata, India							
	Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	In Association With Udaya Consultancy, Geocom International, Sundar Kritt Consultant and Rays Consultant Private Limited		Approved By	Mr. H.B. Signature	Reference Drawings	-	Chainage: 260+921	Drawing No.- KDP/DPR/STR/BR/BARAHARI/DD- 12	Sheet No. 1 /1



HALF SECTIONAL PLAN VIEW OF SUPERSTRUCTURE AT SEC T1

SCALE - 1 : 100 @ A3 PAPER

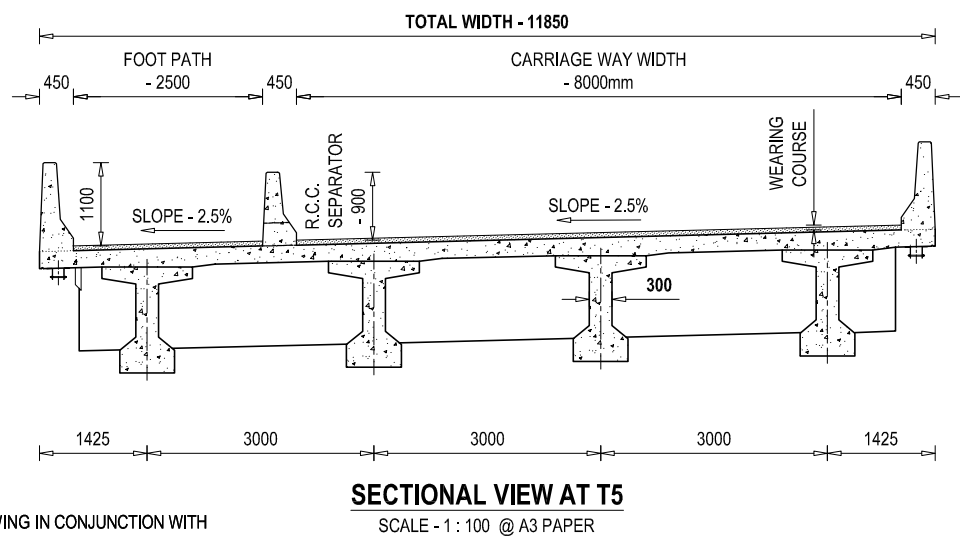
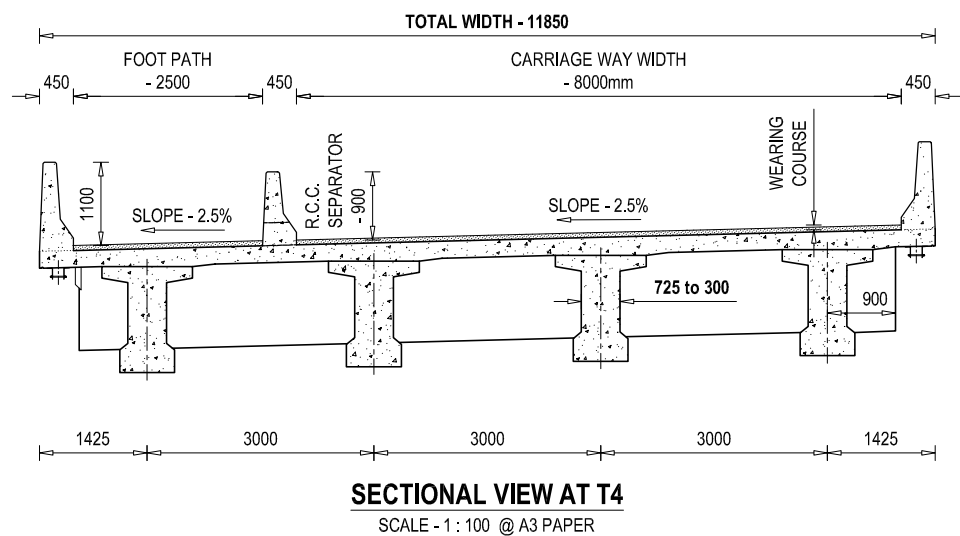
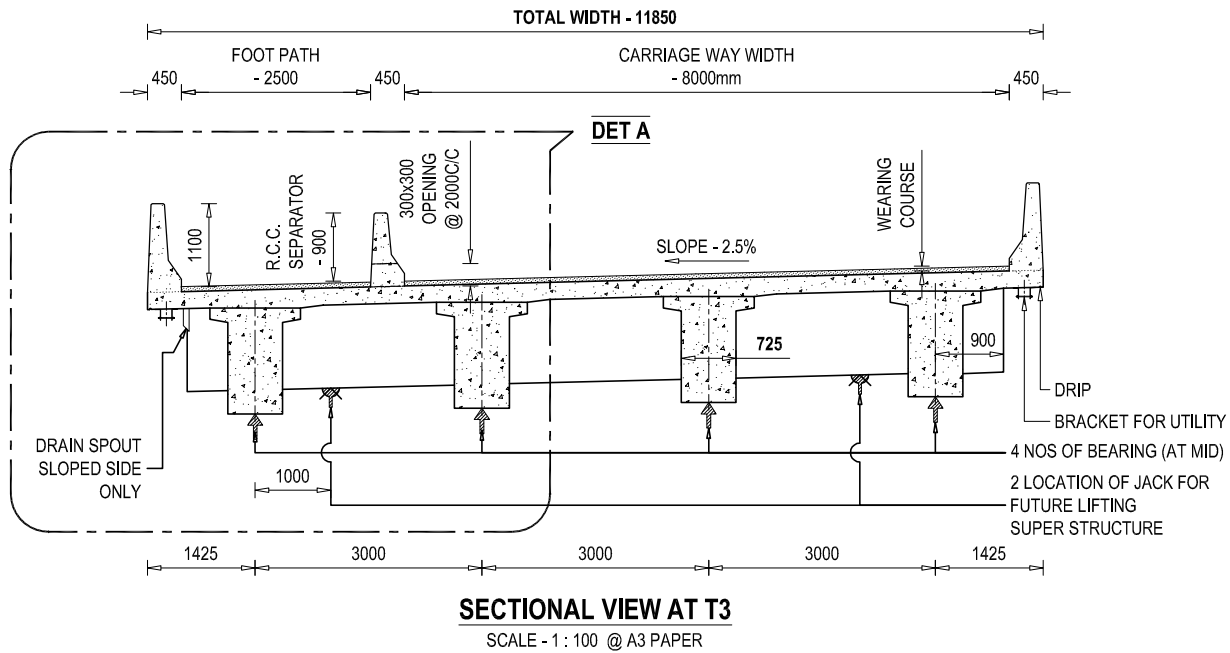


HALF ELEVATION SECTIONAL VIEW OF SUPERSTRUCTURE AT SEC T2

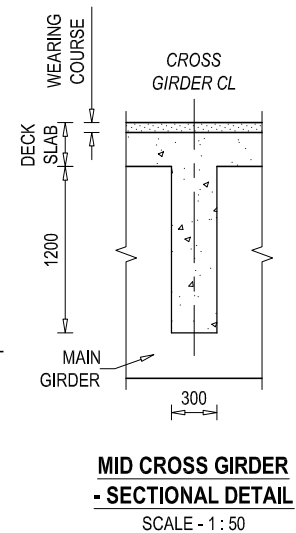
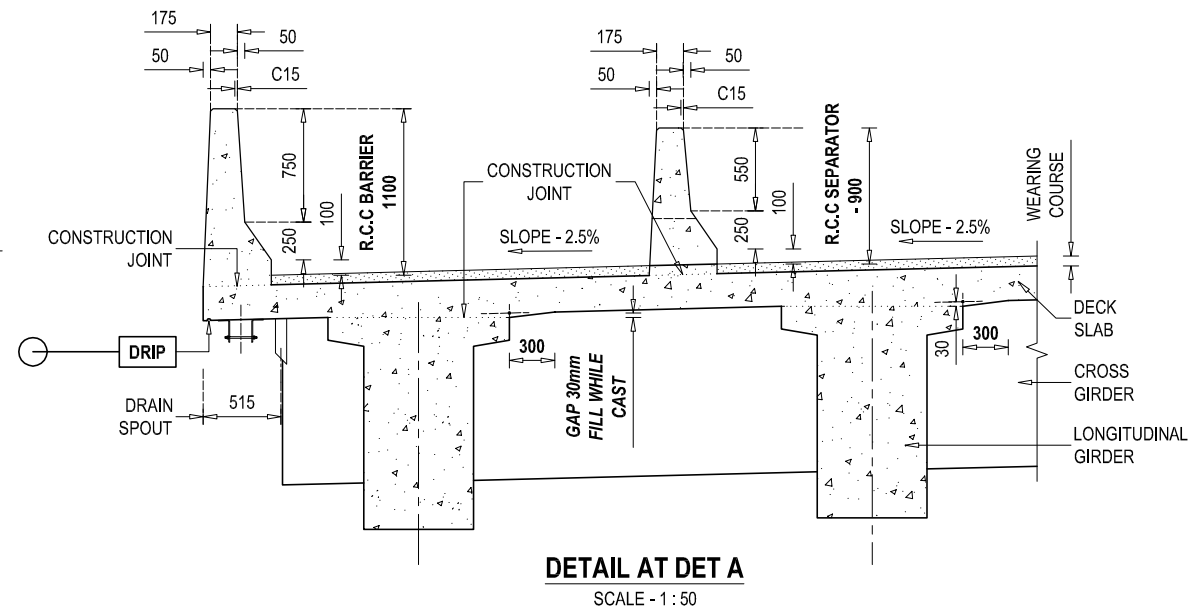
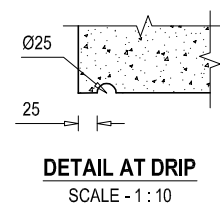
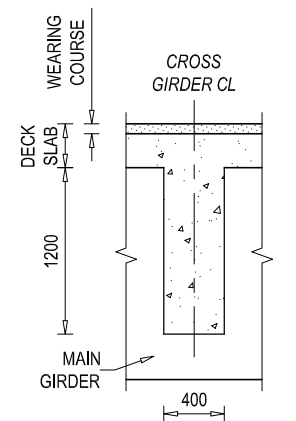
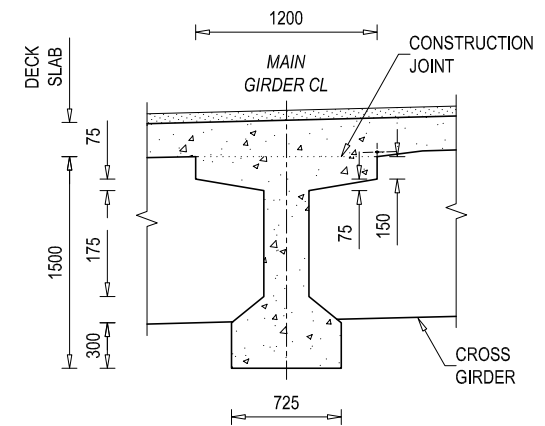
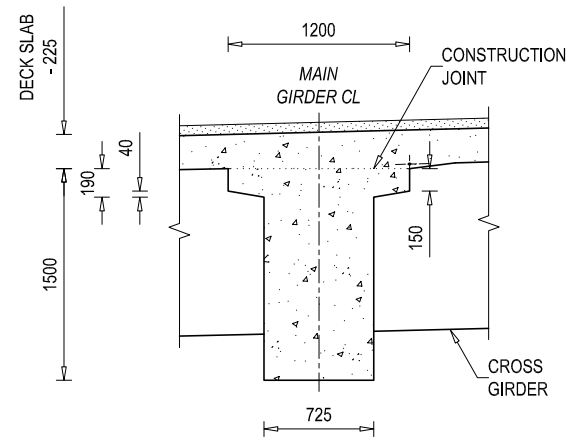
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NOTE
READ THIS DRAWING IN CONJUNCTION WITH
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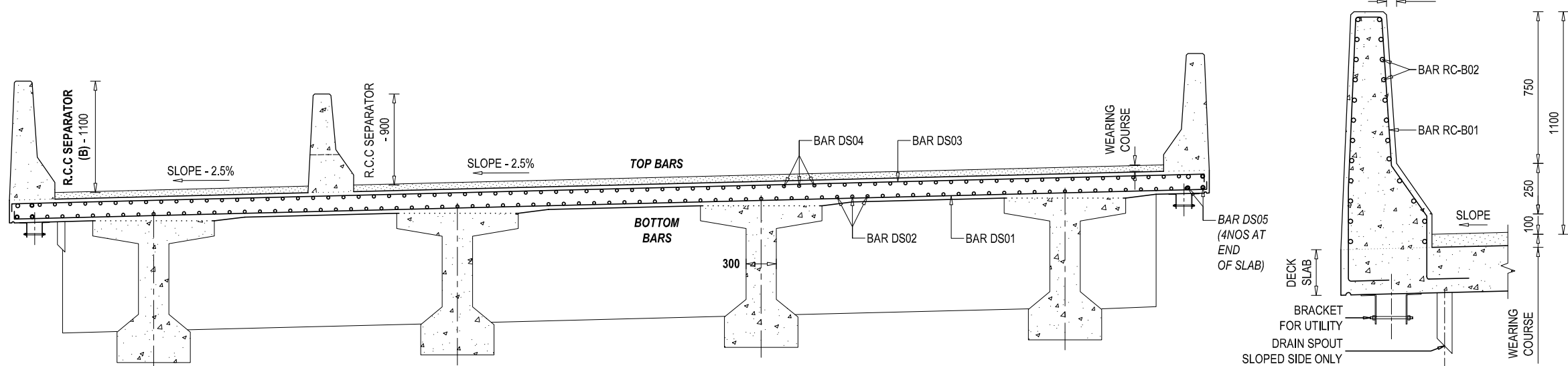
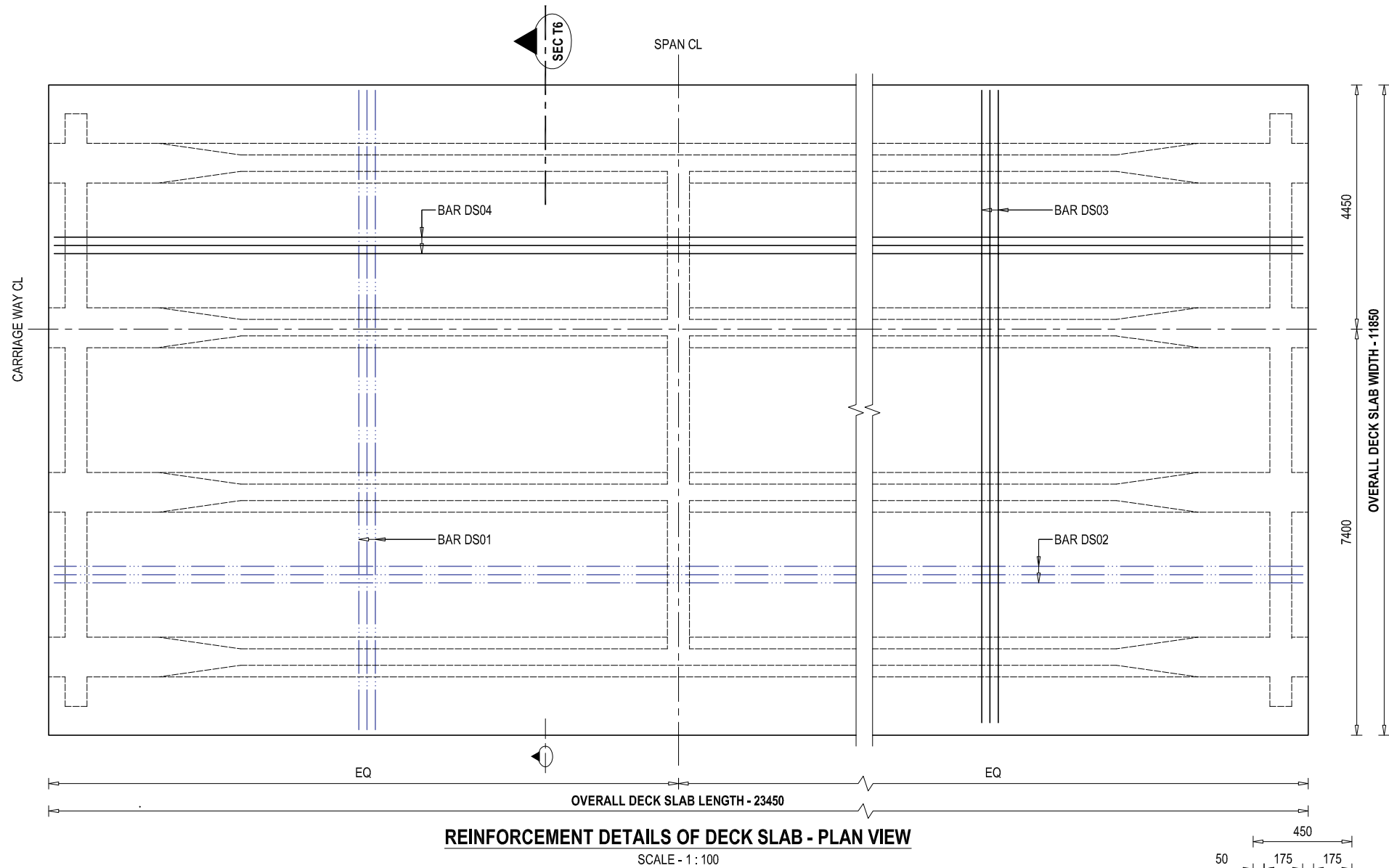
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of  EPTISA Servicios De Ingenieria Madrid, Spain  STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Mr. R.D. Nec.No. 6489 CPML/V	SUPER STRUCTURE DETAILS OF BRIDGE OVER RIVER BARAHARI	AS SHOWN	23.04.2023
			Checked By Mr. S.M.	Reference Drawings KDP/DPR/STR/BR/BARAHARI/DD-17	Chainage: 260+921	Drawing No.- KDP/DPR/STR/BR/BARAHARI/DD- 13
			Approved By Mr. H.B.			Sheet No. 1 / 2



NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/BARAHARI/DD-4



EMPLOYER Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	PROJECT NAME Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	DESIGN CONSULTANTS Joint Venture of EPTISA Servicios De Ingeniera Madrid, Spain STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Designed By Mr. R.D. Nec.No. 6489 CPM/V Checked By Mr. S.M. Approved By Mr. H.B.	Drawing Name SUPER STRUCTURE DETAILS OF BRIDGE OVER RIVER BARAHARI Reference Drawings KDP/DPR/STR/BR/BARAHARI/DD-17	Scale: AS SHOWN Chainage: 260+921	Date: 23.04.2023 Drawing No:- KDP/DPR/STR/BR/BARAHARI/DD- 13 Sheet No. 2 / 2
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NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/BARAHARI/DD-4

LEGEND FOR REINFORCEMENT BAR

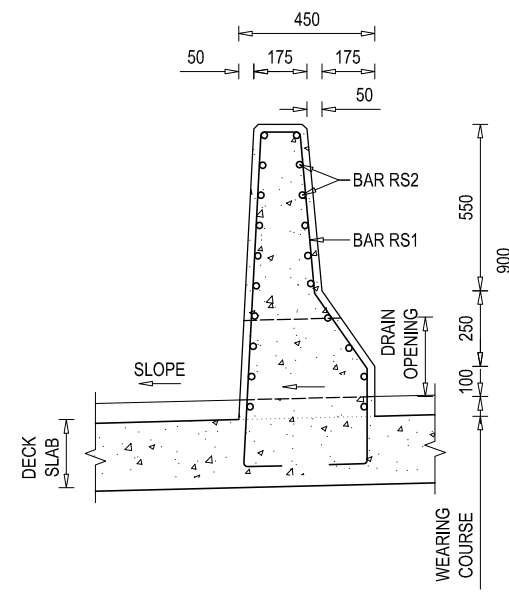
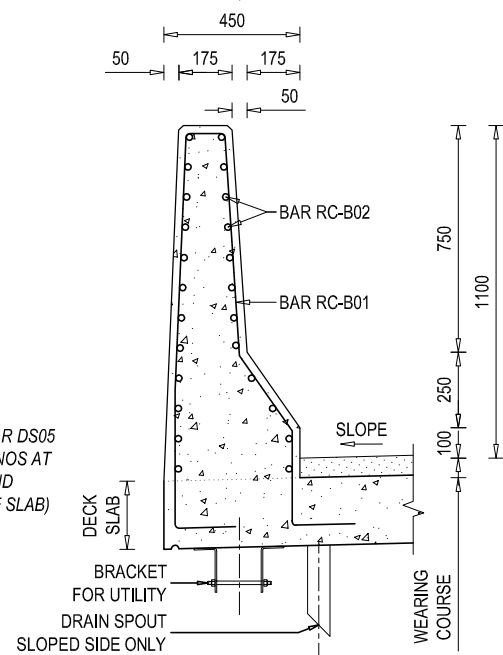
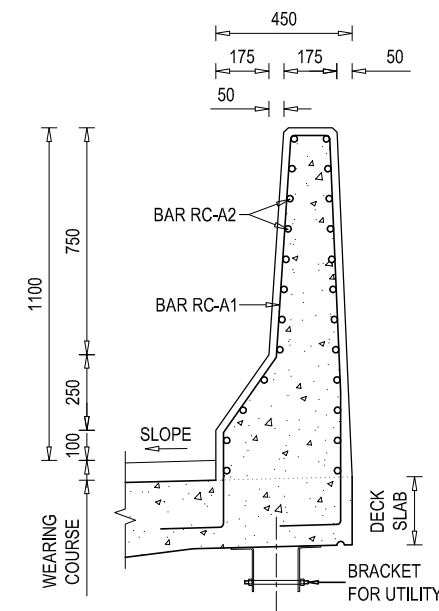
AB (M / E) 02 @ 250C/C

SPACING OF BARS (mm)
BAR SHAPE MARK
MID OR EDGE
SUPERSTRUCTURE
SHORT FORM

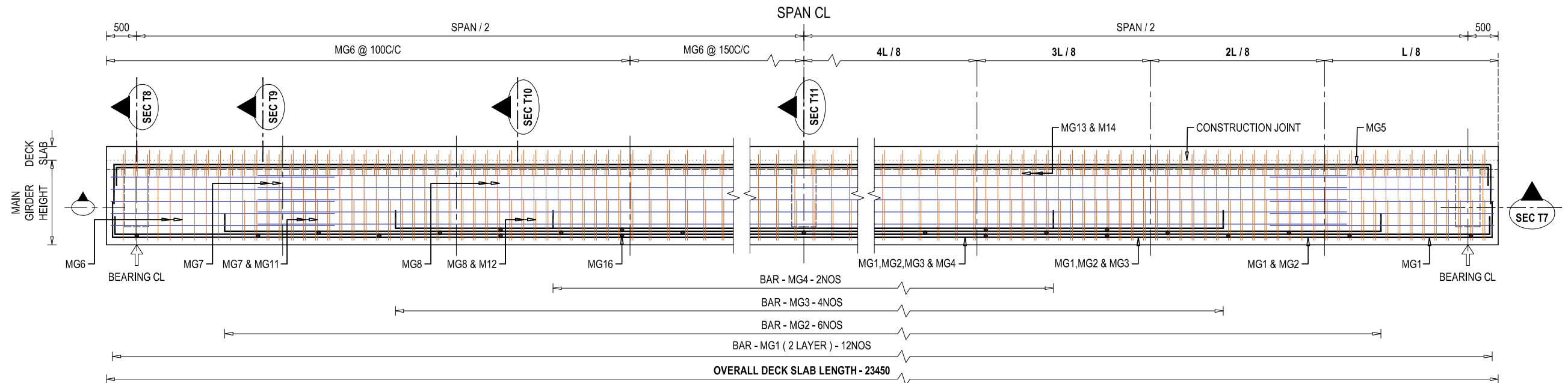
CODE FULL FORM

DS - DECK SLAB CG - CROSS GIRDER
RB - R.C.C BARRIER AS - APPROACH SLAB
RS - R.C.C SEPARATOR ST - STOPPER
MG - MAIN GIRDER ** - ***

TOP BAR OR
NEAR FACE REINFORCEMENT
BOTTOM BAR OR
FAR FACE REINFORCEMENT

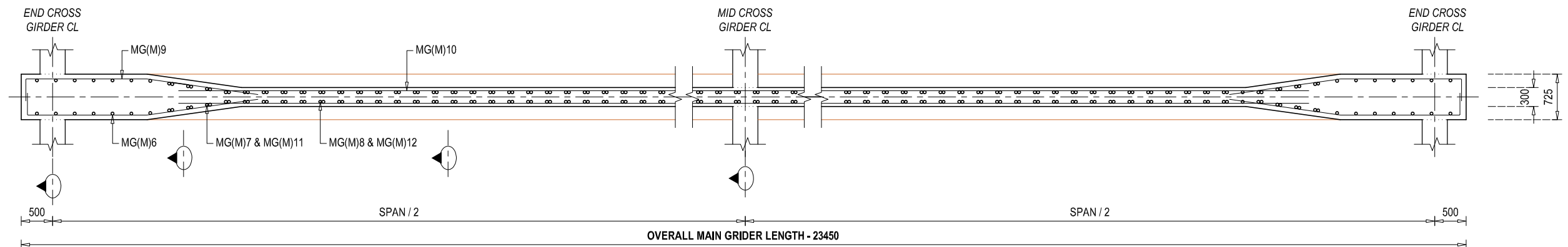


EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Mr. R.D.	Drawing Name	Scale:	Date:
Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathahiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of EPTISA Servicios De Ingeniera Madrid, Spain STUP Consultants Private Limited Kolkata, India	Mr. R.D.	Mr. S.M.	DECK SLAB DETAILS OF BRIDGE OVER RIVER BARAHARI	AS SHOWN	23.04.2023
		In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Checked By	Mr. H.B.	Reference Drawings KDP/DPR/STR/BR/BARAHARI/DD-17	Chainage: 260+921	Drawing No.- KDP/DPR/STR/BR/BARAHARI/DD- 14
			Approved By				Sheet No. 1 / 1



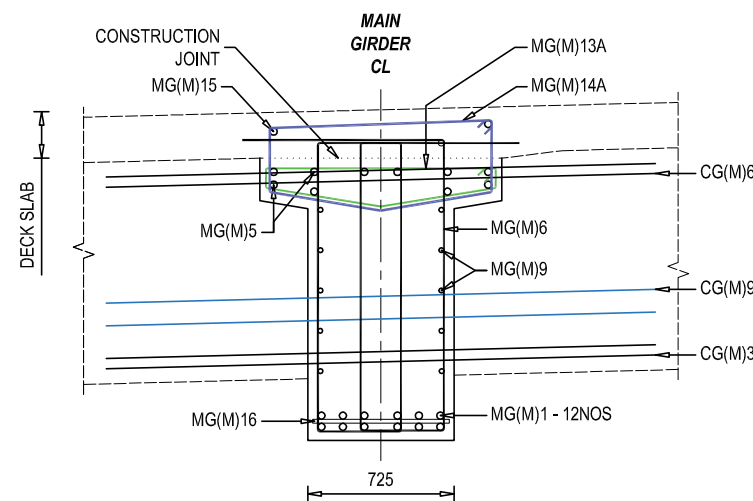
REINFORCEMENT DETAILS OF MAIN GIRDER - SECTIONAL ELEVATION VIEW

SCALE - 1 : 75



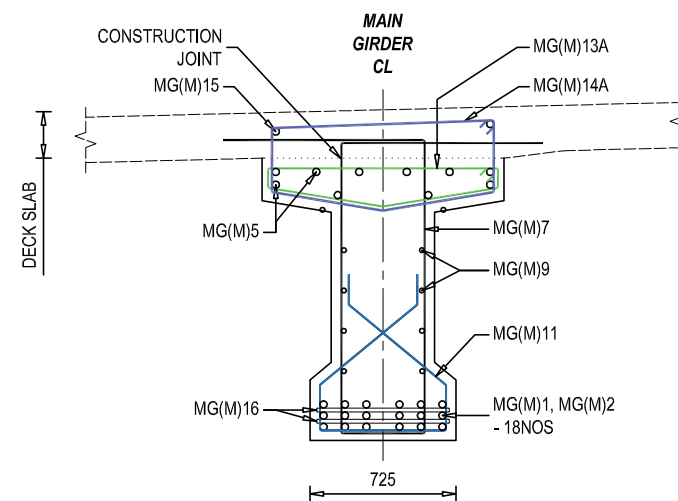
REINFORCEMENT DETAILS OF MAIN GIRDER (MID) - SECTIONAL PLAN VIEW AT T7(M)

SCALE - 1 : 75



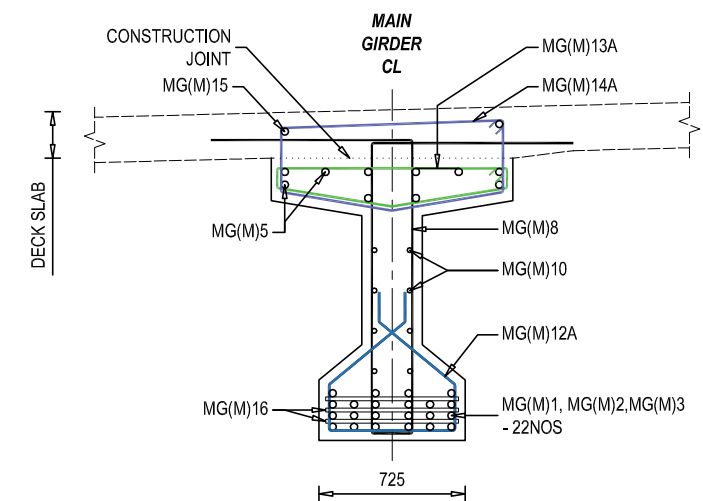
REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T8

SCALE - 1 : 50



REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T9

SCALE - 1 : 50



REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T10

SCALE - 1 : 50

NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/BARAHARI/DD-4



Government of Nepal
Ministry of Physical Infrastructure and Transport
Department of Roads
Development Cooperation Implementation
Division

PROJECT NAME
Strategic Road Connectivity & Trade Improvement Project (SRCTIP)
Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges

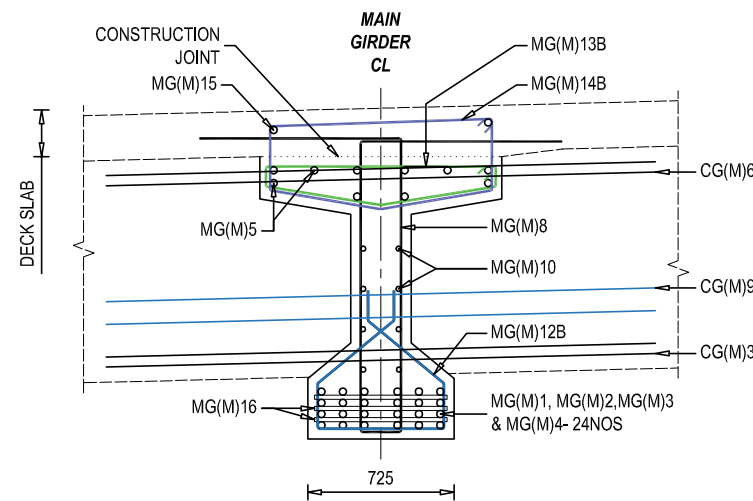
DESIGN CONSULTANTS
Joint Venture of
EPTISA Servicios De Ingeniera Madrid, Spain
STUP Consultants Private Limited Kolkata, India
In Association With
Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited

Designed By Mr. R.D.
Nec.No. 6489 CPM/V
Checked By Mr. S.M.
Approved By Mr. H.B.

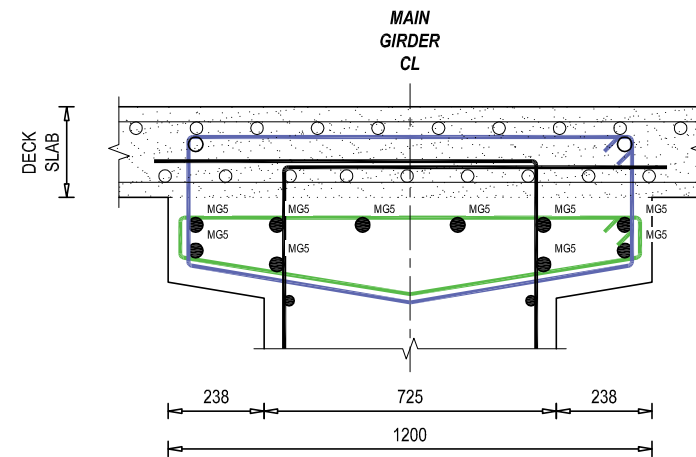
Drawing Name
MAIN GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER BARAHARI
Reference Drawings
KDP/DPR/STR/BR/BARAHARI/DD-17

Scale:
AS SHOWN
Chainage:
260+921

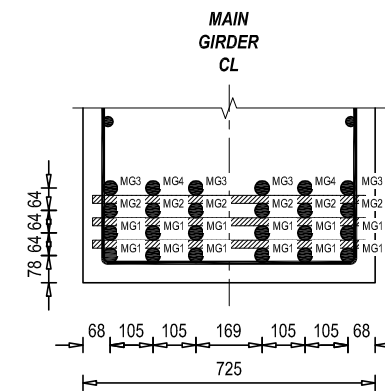
Date:
23.04.2023
Drawing No.:
KDP/DPR/STR/BR/BARAHARI/DD- 15
Sheet No. 1 / 2



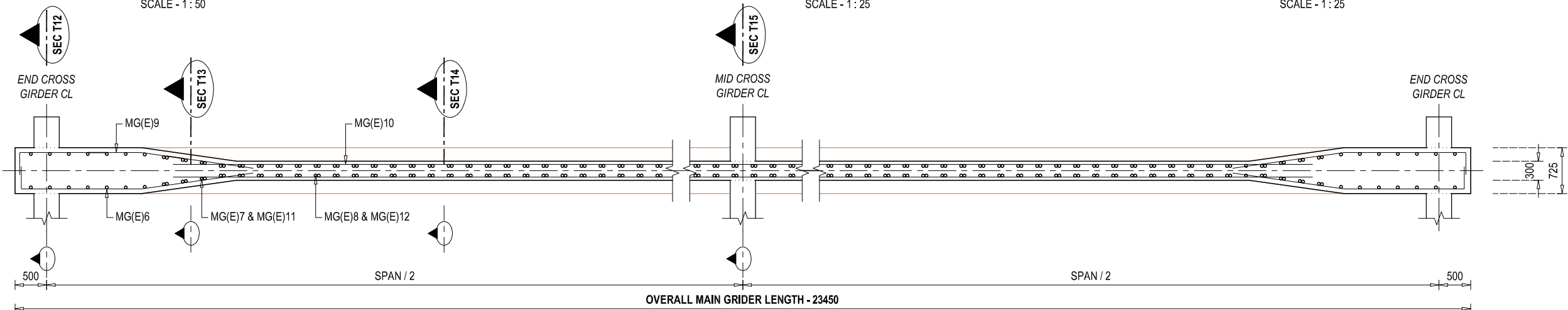
**REINFORCEMENT DETAILS OF MAIN GIRDER
SECTIONAL VIEW AT T11**
SCALE - 1 : 50



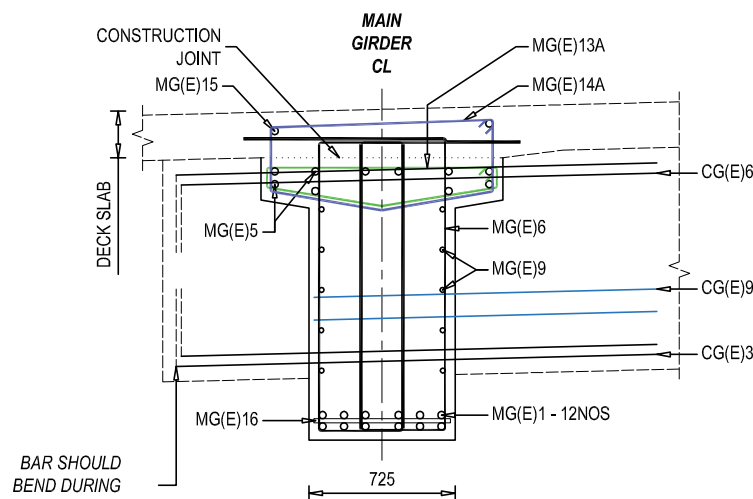
**TOP BAR WEB REINFORCEMENT DETAILS
OF MAIN GIRDER**
SCALE - 1 : 25



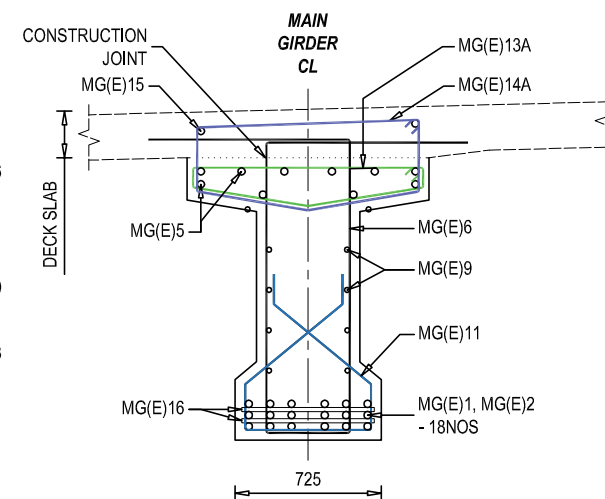
**BOTTOM BAR WEB REINFORCEMENT DETAILS
OF MAIN GIRDER**
SCALE - 1 : 25



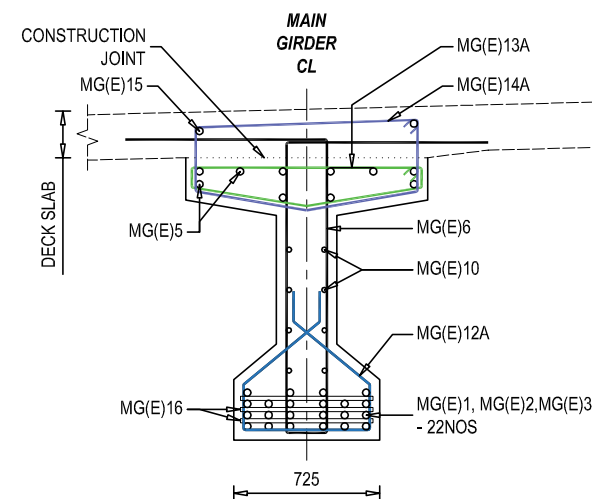
REINFORCEMENT DETAILS OF MAIN GIRDER (END) - SECTIONAL PLAN VIEW AT T7(E)
SCALE - 1 : 75



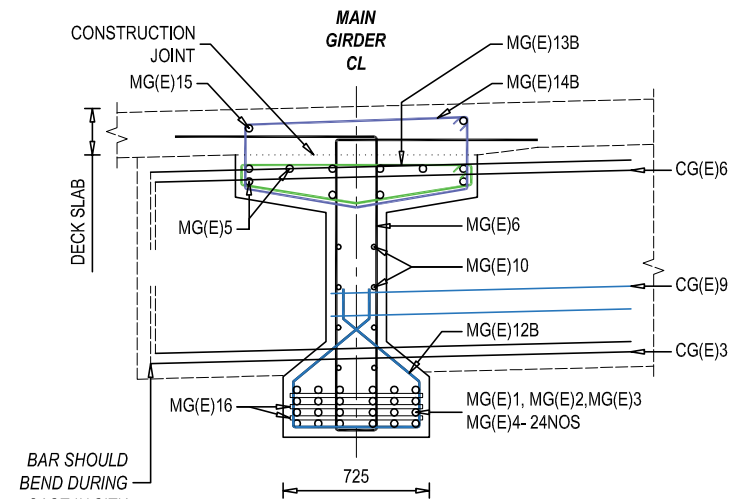
**REINFORCEMENT DETAILS OF MAIN GIRDER
SECTIONAL VIEW AT T12**
SCALE - 1 : 50



**REINFORCEMENT DETAILS OF MAIN GIRDER
SECTIONAL VIEW AT T13**
SCALE - 1 : 50



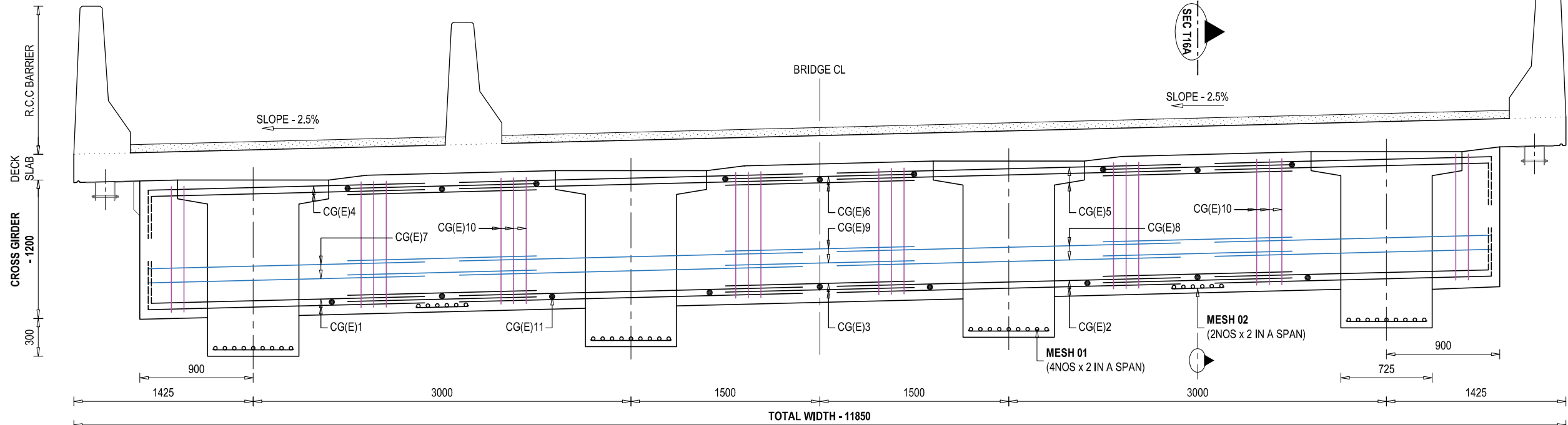
**REINFORCEMENT DETAILS OF MAIN GIRDER
SECTIONAL VIEW AT T14**
SCALE - 1 : 50



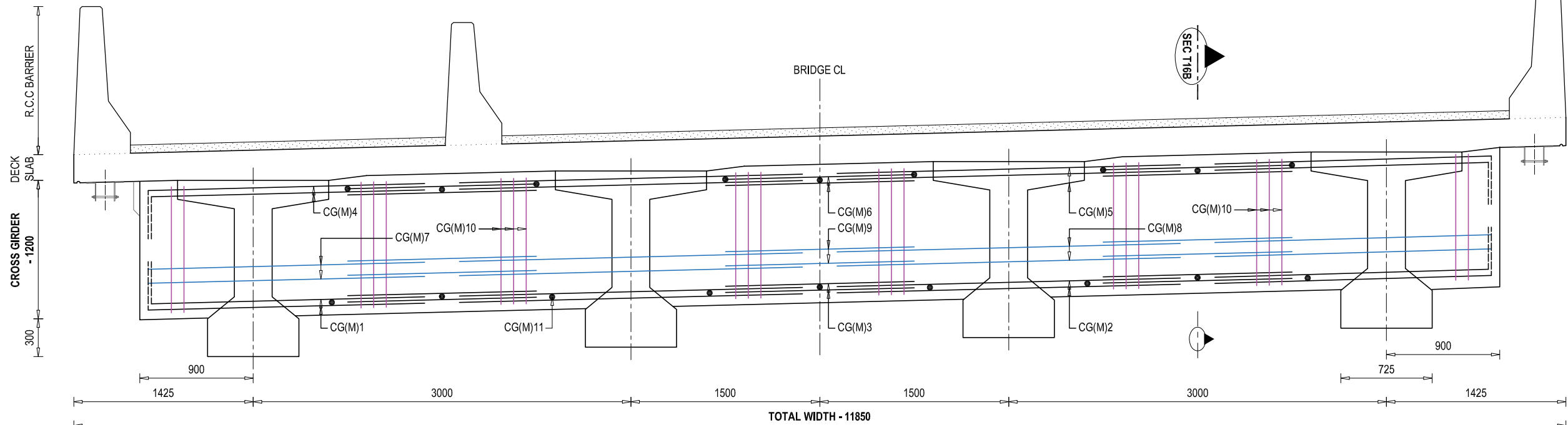
**REINFORCEMENT DETAILS OF MAIN GIRDER
SECTIONAL VIEW AT T15**
SCALE - 1 : 50

NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/BARAHARI/DD-4

EMPLOYER Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	PROJECT NAME Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	DESIGN CONSULTANTS Joint Venture of EPTISA Servicios De Ingeniera Madrid, Spain STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Designed By Mr. R.D. Nec.No. 6489 CPA/V Checked By Mr. S.M. Approved By Mr. H.B.	Drawing Name MAIN GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER BARAHARI Reference Drawings KDP/DPR/STR/BR/BARAHARI/DD-17	Scale: AS SHOWN Chainage: 260+921	Date: 23.04.2023 Drawing No.- KDP/DPR/STR/BR/BARAHARI/DD- 15 Sheet No. 2 / 2
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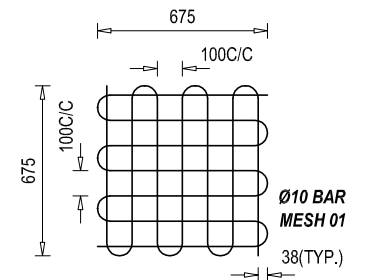


REINFORCEMENT DETAILS OF END CROSS GIRDER
SCALE - 1 : 50

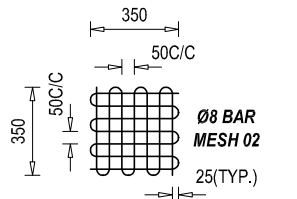


REINFORCEMENT DETAILS OF MID CROSS GIRDER
SCALE - 1 : 50

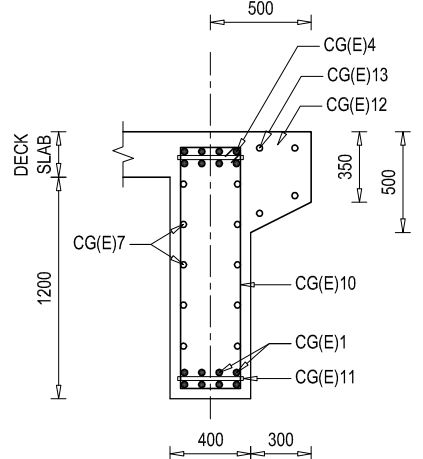
NOTE
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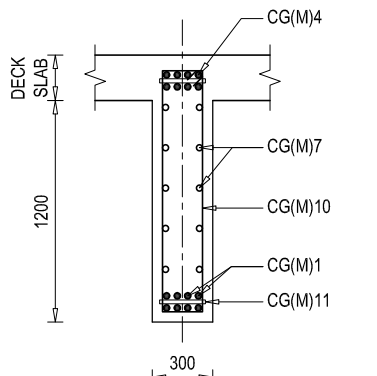
REINFORCEMENT DETAILS OF BEARING MESH
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REINFORCEMENT DETAILS OF LIFTING MESH
SCALE - 1 : 50

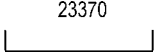
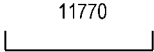
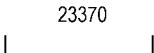
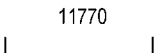
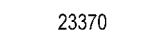


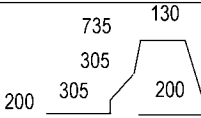
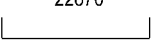
SECTIONAL REINFORCEMENT DETAILS OF END CROSS GIRDER - SEC T16A
SCALE - 1 : 50

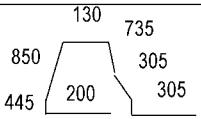
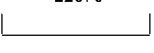


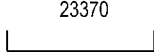
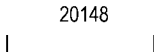
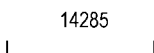
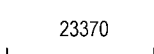
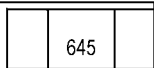
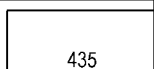
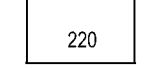
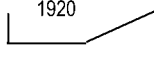
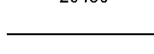
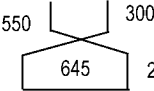
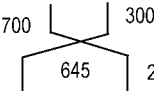
SECTIONAL REINFORCEMENT DETAILS OF MID CROSS GIRDER - SEC T16B
SCALE - 1 : 50

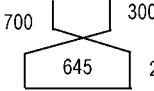
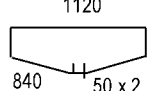
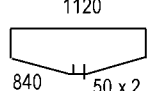
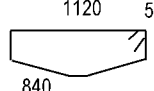
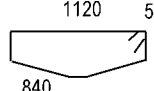
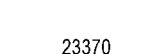
EMPLOYER Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	PROJECT NAME Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	DESIGN CONSULTANTS Joint Venture of EPTISA Servicios De Ingeniera Madrid, Spain STUP Consultants Private Limited Kolkatta, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Designed By Mr. R.D. Nec.No. 6489 CPM/V Checked By Mr. S.M. Approved By Mr. H.B.	Drawing Name CROSS GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER BARAHARI Reference Drawings KDP/DPR/STR/BR/BARAHARI/DD-17	Scale: AS SHOWN Chainage: 260+921	Date: 23.04.2023 Drawing No:- KDP/DPR/STR/BR/BARAHARI/DD- 16 Sheet No. 1 / 1
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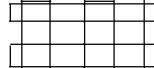
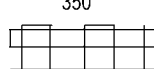
BAR BENDING SCHEDULE OF DECK SLAB (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	DS01	150  150	16	150	23.670	80	1.580	2992.36
2	DS02	150  150	10	150	12.070	153	0.617	1139.94
3	DS03	150  150	16	150	23.670	157	1.580	5872.50
5	DS04	150  150	10	150	12.070	153	0.617	1139.94
6	DS05	 23370	16		23.370	8	1.580	295.44
TOTAL (KG) :								11440.19

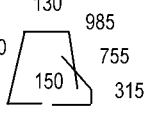
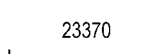
BAR BENDING SCHEDULE OF R.C.C BARRIER (A) (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RC-A1	 200	16	150	3.170	154	1.580	771.44
2	RC-A2	150  150	10	150	23.170	20	0.617	286.05
TOTAL (KG) :								1057.49

BAR BENDING SCHEDULE OF R.C.C BARRIER (B) (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RC-B1	 445	16	150	3.170	154	1.580	771.44
2	RC-B2	150  150	10	150	23.170	20	0.617	286.05
TOTAL (KG) :								1057.49

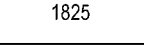
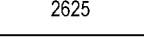
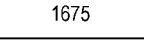
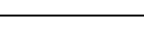
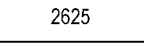
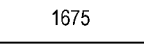
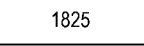
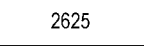
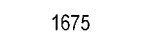
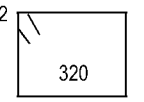
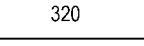
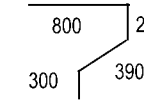
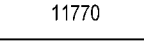
BAR BENDING SCHEDULE OF MAIN GIRDER (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	MG1	300  300	32		23.970	12	6.321	1818.17
2	MG2	300  300	32		20.748	6	6.321	786.89
3	MG3	300  300	32		14.885	4	6.321	376.35
4	MG4	300  300	32		9.023	2	6.321	114.07
5	MG5	300  300	32		23.970	10	6.321	1515.14
6	MG6	480  1530 4 LEGGED	12	100	9.660	21	0.889	180.32
7	MG7	480  1530 AVG.	12	100	5.325	16	0.889	75.73
8	MG8A	480  1530	12	100	4.680	225	0.889	936.00
9	MG8B	480  1530	12	150	4.680	41	0.889	170.56
10	MG9	370  2000	12	200	4.290	32	0.889	122.03
11	MG10	 20450	12	200	20.450	16	0.889	290.84
12	MG11	550  220 AVG.	12	100	2.785	16	0.889	39.61
13	MG12A	700  220	12	150	3.085	225	0.889	617.00

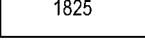
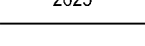
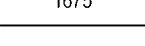
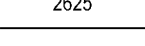
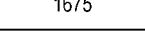
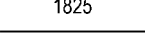
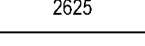
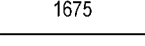
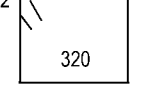
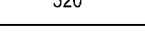
14	MG12B	 220	12	150	3.085	41	0.889	112.43
15	MG13A	 70	12	100	3.040	177	0.889	478.29
16	MG13B	 70	12	150	3.040	41	0.889	110.79
17	MG14A	 270	12	100	3.440	177	0.889	541.23
18	MG14B	 270	12	150	3.440	41	0.889	125.37
19	MG15	 23370	16		23.370	2	1.580	73.86
19	MG16	 645	32	1000	0.645	72	6.321	293.55
TOTAL (KG) :								8778.23
TOTAL NOS OF MAIN GIRDER :								4.00
TOTAL WEIGHT (KG) :								35112.91

BAR BENDING SCHEDULE OF MESH (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	MESH 01	 @ 100	10		9.450	8	0.617	46.67
2	MESH 02	 @ 50	8		4.900	4	0.395	7.74
TOTAL (KG) :								54.41

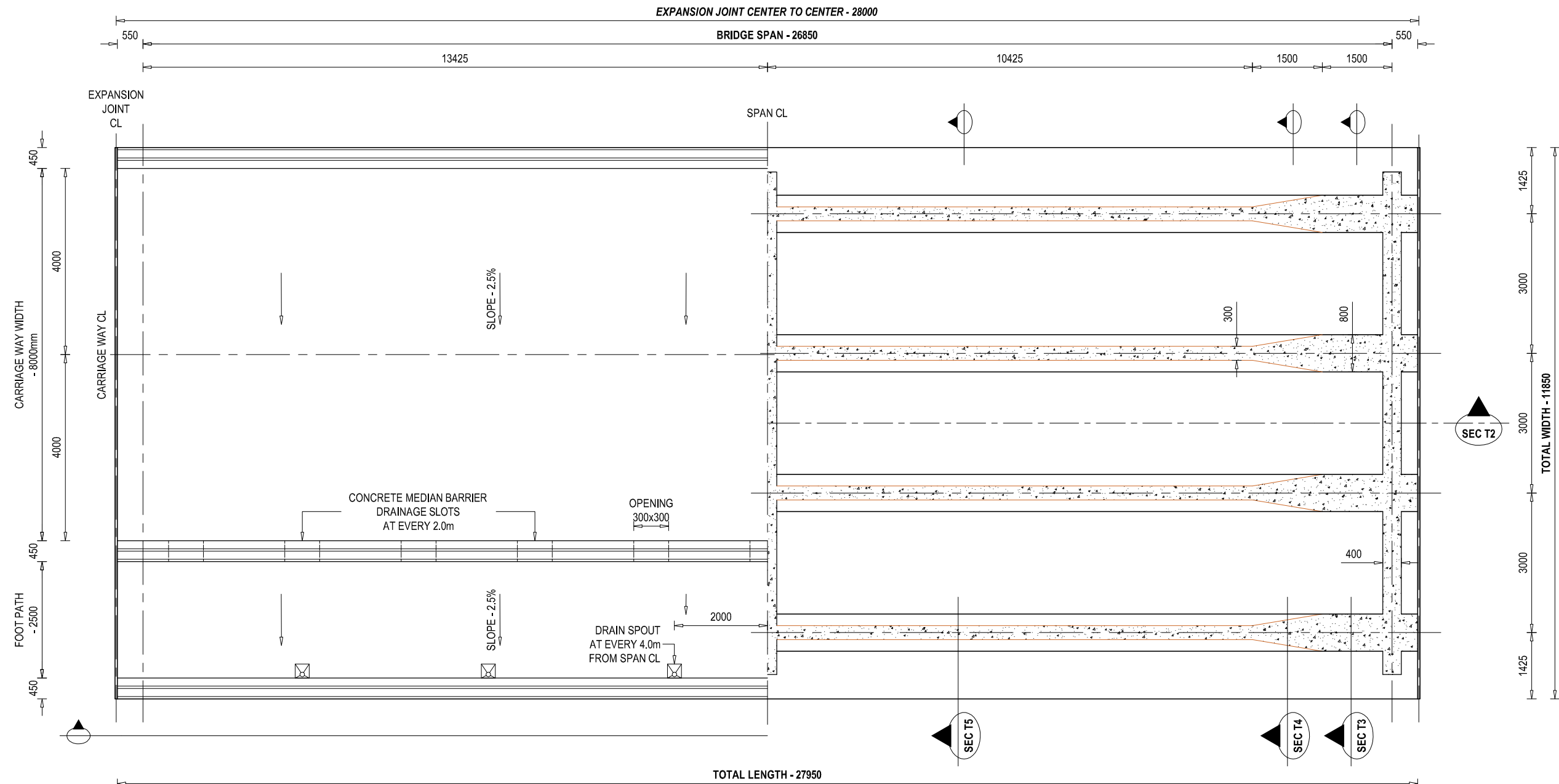
BAR BENDING SCHEDULE OF R.C.C SEPARATOR (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RS1	 315	16	150	3.745	157	1.580	929.13
2	RS2	150  150	10	150	23.670	26	0.617	379.89
TOTAL (KG) :								1309.02

EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		Drawing Name		Scale:		Date:	
	Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges		Joint Venture of		Designed By	Mr. R.D.	AS SHOWN		23.04.2023	
				 EPTISA Servicios De Ingeniera Madrid, Spain  STUP Consultants Private Limited Kolkata, India		Checked By	Mr. S.M.			Drawing No:- KDP/DPR/STR/BR/BARAHARI/DD- 17	
				In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited		Approved By	Mr. H.B.			Sheet No. 1 / 2	

BAR BENDING SCHEDULE OF END CROSS GIRDER (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	CG(E)1	300 	20		2.125	8	2.469	41.98
2	CG(E)2		20		2.625	8	2.469	51.85
3	CG(E)3		20		1.675	8	2.469	33.09
4	CG(E)4	300 	20		2.125	8	2.469	41.98
5	CG(E)5		20		2.625	8	2.469	51.85
6	CG(E)6		20		1.675	8	2.469	33.09
7	CG(E)7		12	150	1.825	8	0.889	12.98
8	CG(E)8		12	150	2.625	8	0.889	18.67
9	CG(E)9		12	150	1.675	8	0.889	11.91
10	CG(E)10	50 x 2  1320	12	200	1.740	39	0.889	60.32
11	CG(E)11		20	1000	0.320	18	2.469	14.22
12	CG(E)12		16	150	1.750	79	1.580	218.47
13	CG(E)13		12		11.770	6	0.889	62.77
TOTAL (KG) :								653.17
TOTAL NOS OF CROSS GIRDER :								2.00
TOTAL WEIGHT (KG) :								1306.33

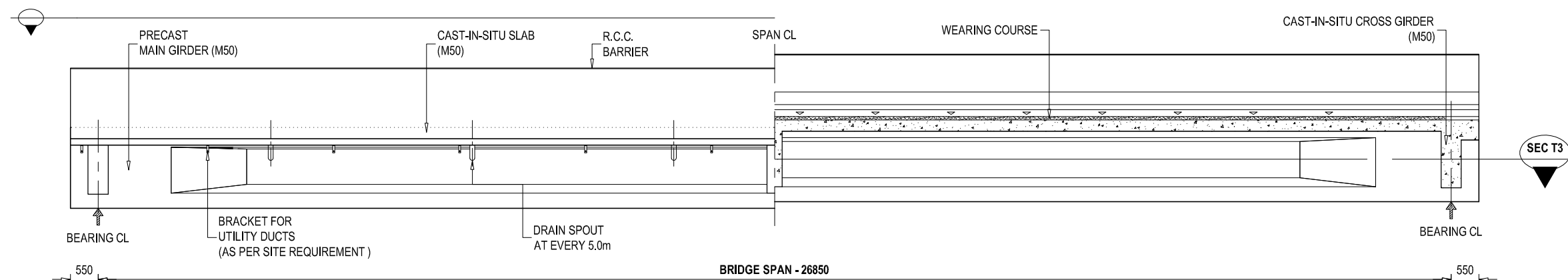
BAR BENDING SCHEDULE OF MID CROSS GIRDER (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	CG(M)1	300 	20		1.920	8	2.469	37.93
2	CG(M)2		20		2.945	8	2.469	58.17
3	CG(M)3		20		1.995	8	2.469	39.41
4	CG(M)4	300 	20		1.920	8	2.469	37.93
5	CG(M)5		20		2.625	8	2.469	51.85
6	CG(M)6		20		1.675	8	2.469	33.09
7	CG(M)7		12	150	1.620	8	0.889	11.52
8	CG(M)8		12	150	2.625	8	0.889	18.67
9	CG(M)9		12	150	1.675	8	0.889	11.91
10	CG(M)10	50 x 2  1320	12	200	1.740	39	0.889	60.32
11	CG(M)11		20	1000	0.320	18	2.469	14.22
TOTAL (KG) :								375.01

	EMPLOYER	PROJECT NAME Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	DESIGN CONSULTANTS		Designed By	Mr. R.D.		Drawing Name	Scale:	Date:
			Joint Venture of			Mr. S.M.		SUPER STRUCTURE BAR BENDING SCHEDULE OF BRIDGE OVER RIVER BARAHARI	AS SHOWN	23.04.2023
			EPTISA Servicios De Ingeniera Madrid, Spain		Checked By	Mr. H.B.		Reference Drawings	Chainage:	Drawing No.- KDP/DPR/STR/BR/BARAHARI/DD- 17
			STUP Consultants Private Limited Kolkata, India		Approved By			-	260+921	Sheet No. 2 / 2



HALF SECTIONAL PLAN VIEW OF SUPERSTRUCTURE AT SEC T1

SCALE - 1 : 100 @ A3 PAPER

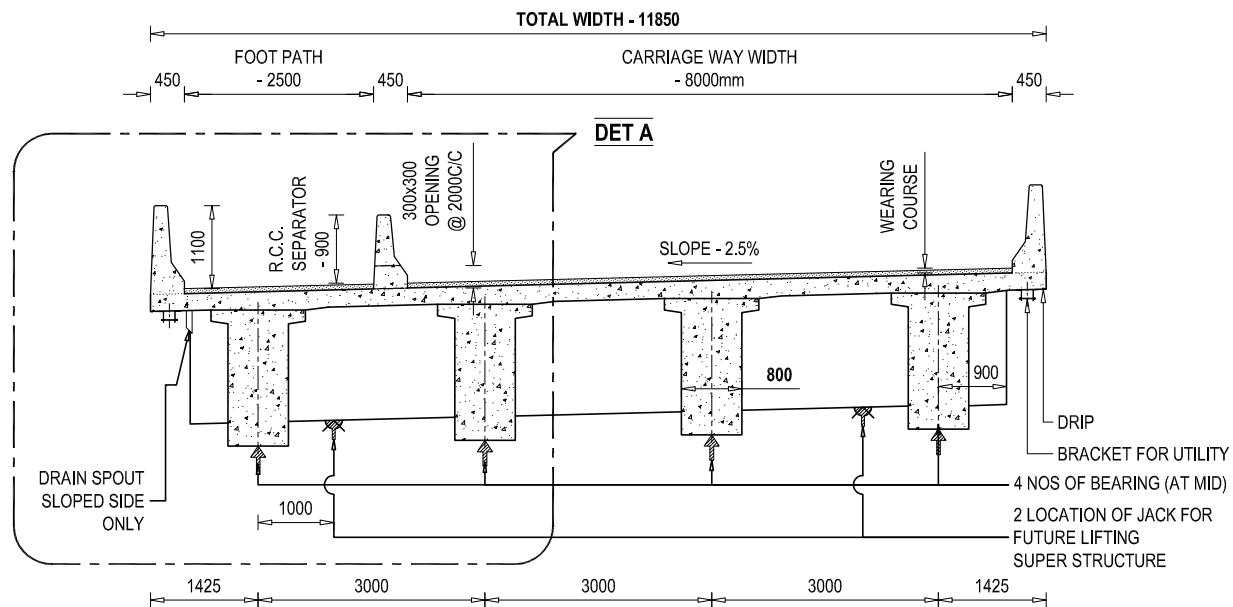


HALF ELEVATION SECTIONAL VIEW OF SUPERSTRUCTURE AT SEC T2

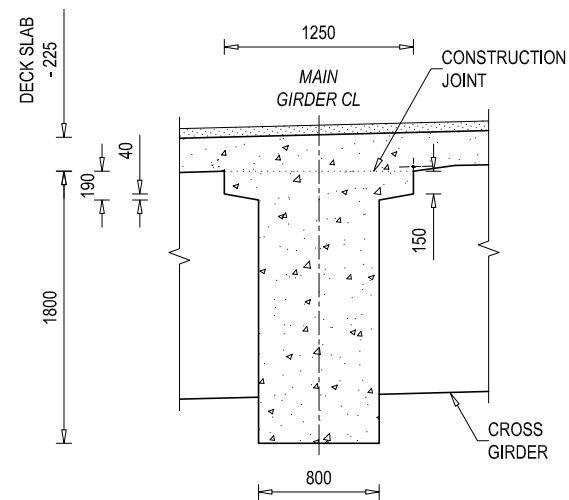
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NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/BARAHARI/DD-4

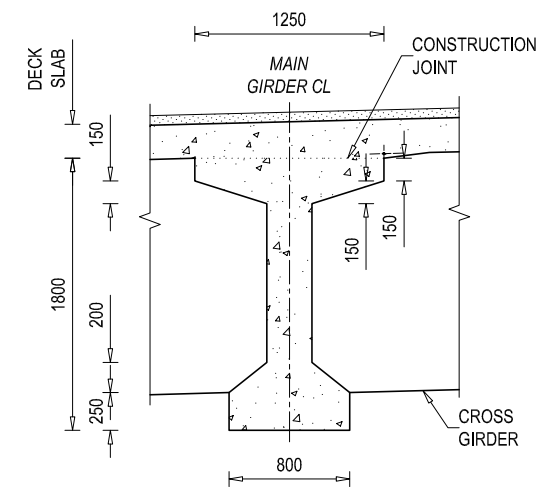
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of  EPTISA Servicios De Ingenieria Madrid, Spain  STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Mr. R.D. Nec.No. 6489 CPM/V	SUPER STRUCTURE DETAILS OF BRIDGE OVER RIVER BARAHARI	AS SHOWN	23.04.2023
			Checked By Mr. S.M.	Reference Drawings KDP/DPR/STR/BR/BARAHARI/DD-22	Chainage: 260+921	Drawing No. KDP/DPR/STR/BR/BARAHARI /DD- 18
			Approved By Mr. H.B.			Sheet No. 1 / 2



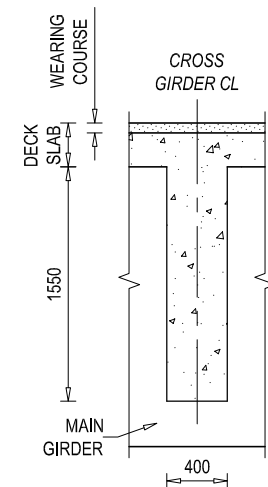
SECTIONAL VIEW AT T3
SCALE - 1 : 100 @ A3 PAPER



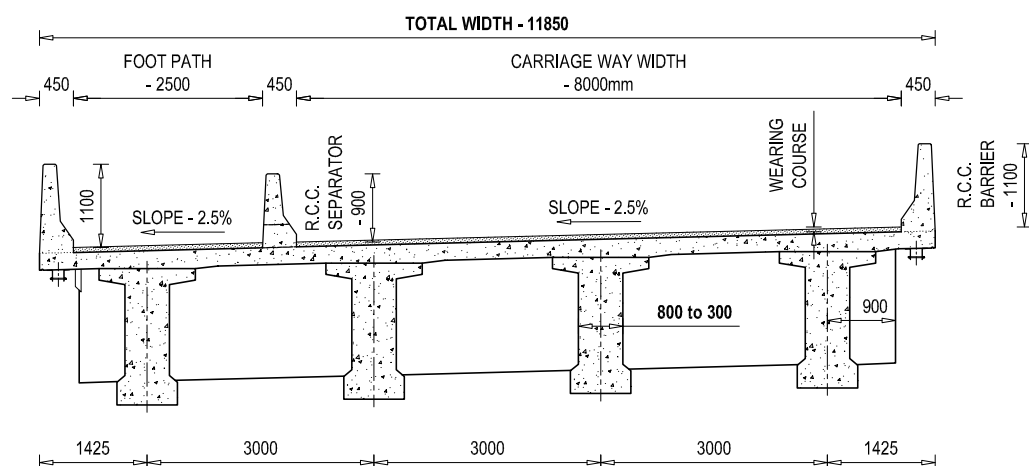
LONGITUDINAL GIRDER - SECTIONAL DETAIL AT END
SCALE - 1 : 50 @ A3 PAPER



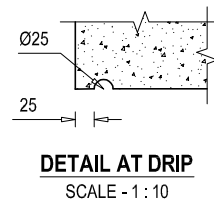
LONGITUDINAL GIRDER - SECTIONAL DETAIL AT MID
SCALE - 1 : 50 @ A3 PAPER



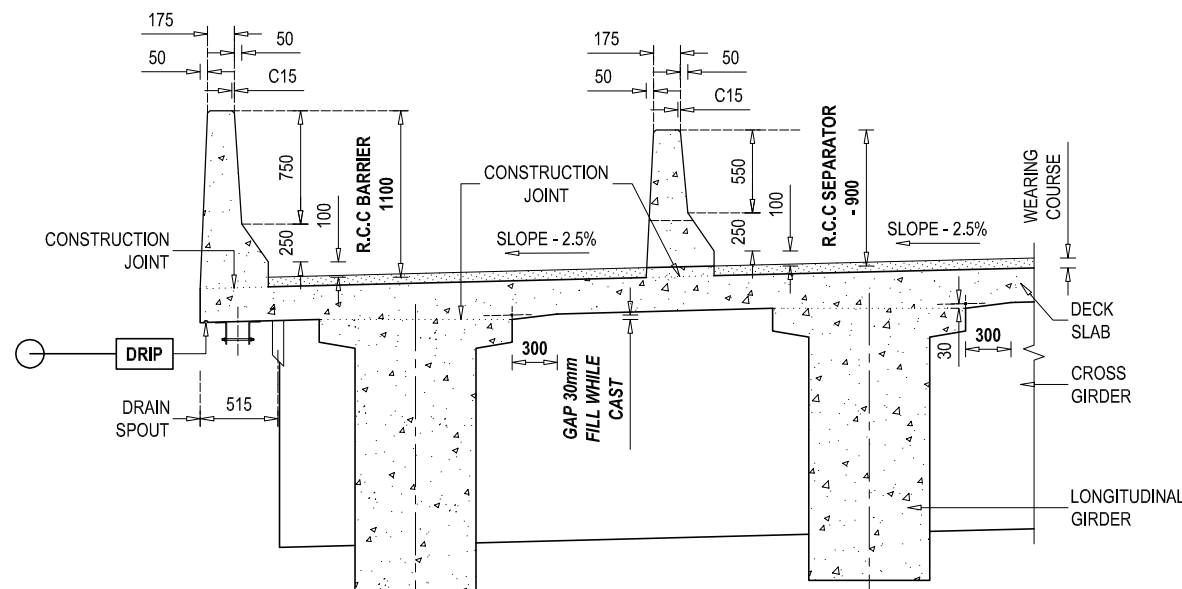
END CROSS GIRDER - SECTIONAL DETAIL
SCALE - 1 : 50



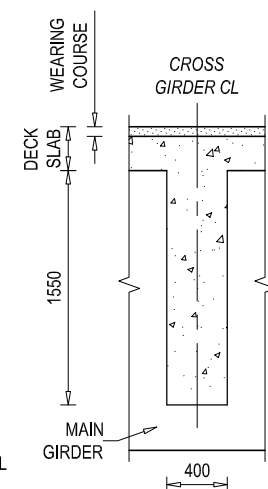
SECTIONAL VIEW AT T4
SCALE - 1 : 100 @ A3 PAPER



DETAIL AT DRIP
SCALE - 1 : 10



DETAIL AT DET A
SCALE - 1 : 50

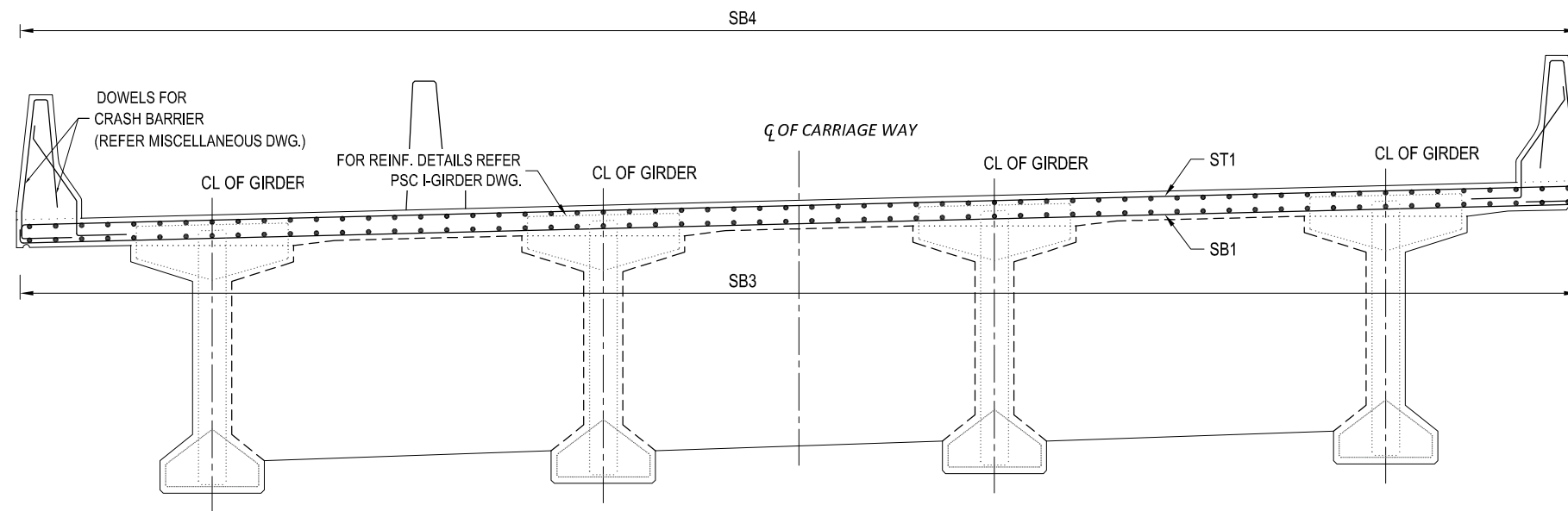


MID CROSS GIRDER - SECTIONAL DETAIL
SCALE - 1 : 50

NOTE
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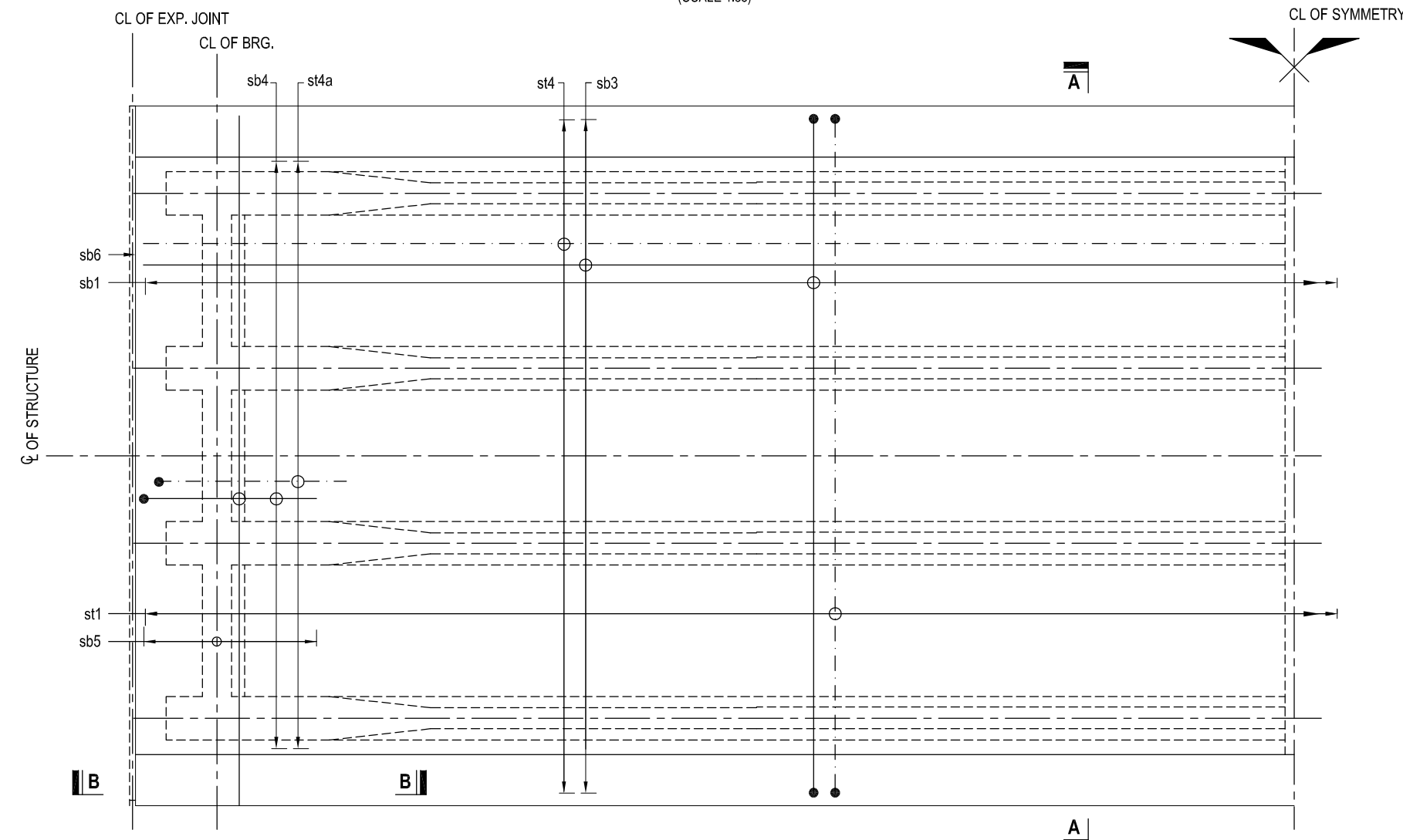
SECTIONAL VIEW AT T5
SCALE - 1 : 100 @ A3 PAPER

EMPLOYER Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	PROJECT NAME Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	DESIGN CONSULTANTS Joint Venture of  EPTISA Servicios De Ingenieria Madrid, Spain  STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Designed By Mr. R.D. Nec.No. 6489 CPM/V Signature Checked By Mr. S.M. Signature Approved By Mr. H.B. Signature	Drawing Name SUPER STRUCTURE DETAILS OF BRIDGE OVER RIVER BARAHARI Reference Drawings KDP/DPR/STR/BR/BARAHARI/DD-22	Scale: AS SHOWN Chainage: 260+921	Date: 23.04.2023 Drawing No. KDP/DPR/STR/BR/BARAHARI /DD- 18 Sheet No. 2/2
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REINFORCEMENT DETAILS OF INTERMEDIATE CROSS GIRDER

(SCALE 1:35)



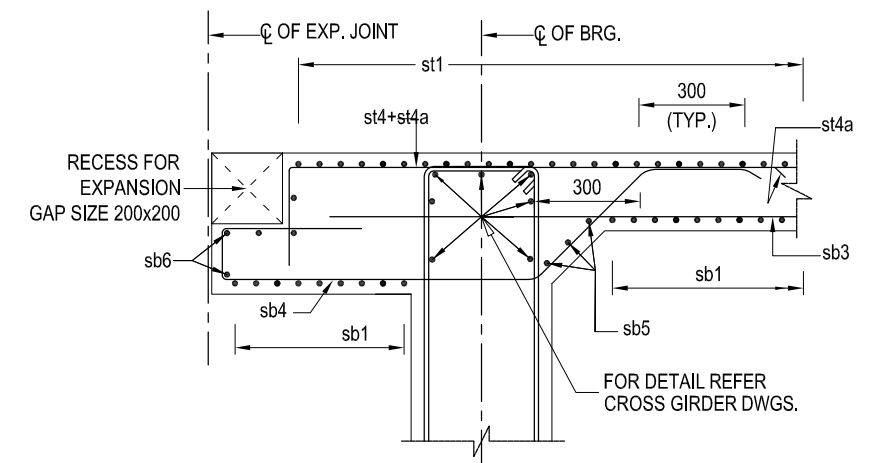
PLAN SHOWING DECK REINFORCEMENT DETAILS

(PLAN AT DECK TOP ONLY SHOWN)

(SCALE 1:75)

NOTE

READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/BARAHARI/DD-4



SECTION B-B

(SCALE - 1:25)

LEGEND :

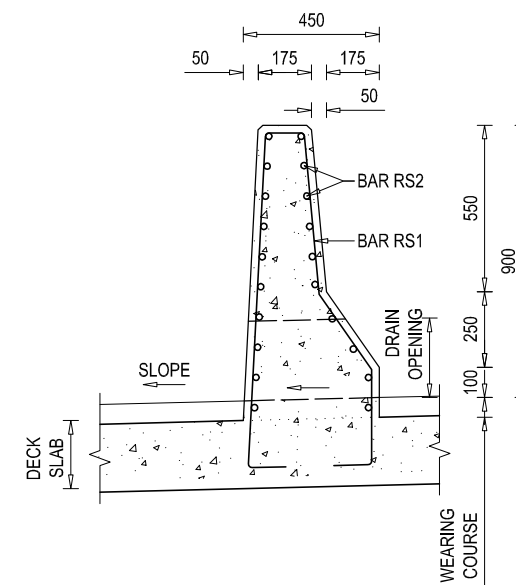
TOP BARS SHOWN THUS 
BOTTOM BARS SHOWN THUS 

NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS IN METERS, UNLESS NOTED OTHERWISE.
2. DIMENSIONS ARE NOT TO BE SCALED, ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. CLEAR COVER FOR ALL REINFORCEMENT SHALL BE 40mm. UNLESS NOTED OTHERWISE.
4. FOR ALL OTHER NOTES REFER GENERAL ARRANGEMENT DRAWING.

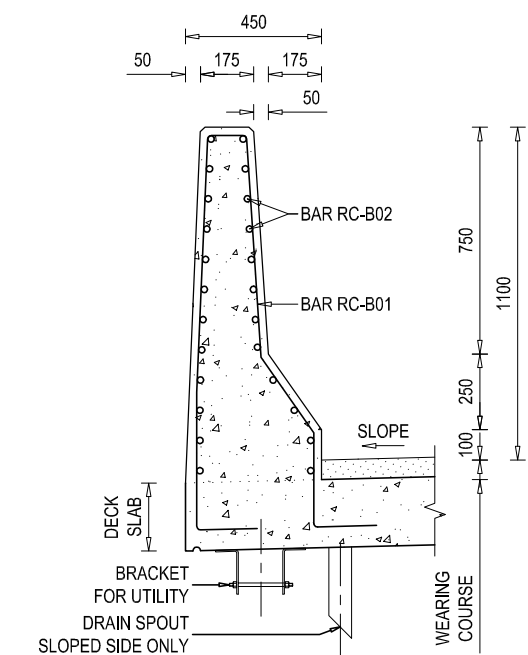
**REINFORCEMENT DETAILS OF
R.C.C BARRIER (A)- SECTIONAL VIEW**

SCALE - 1 : 25



**REINFORCEMENT DETAILS OF
R.C.C SEPARATOR - SECTIONAL VIEW**

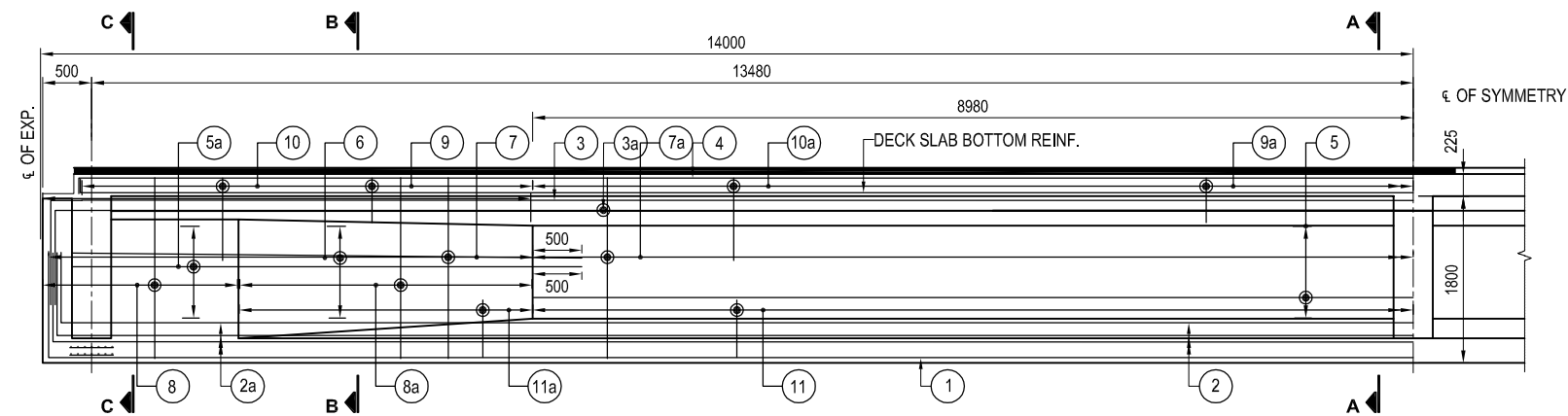
SCALE - 1 : 25



**REINFORCEMENT DETAILS OF
R.C.C BARRIER (B)- SECTIONAL VIEW**

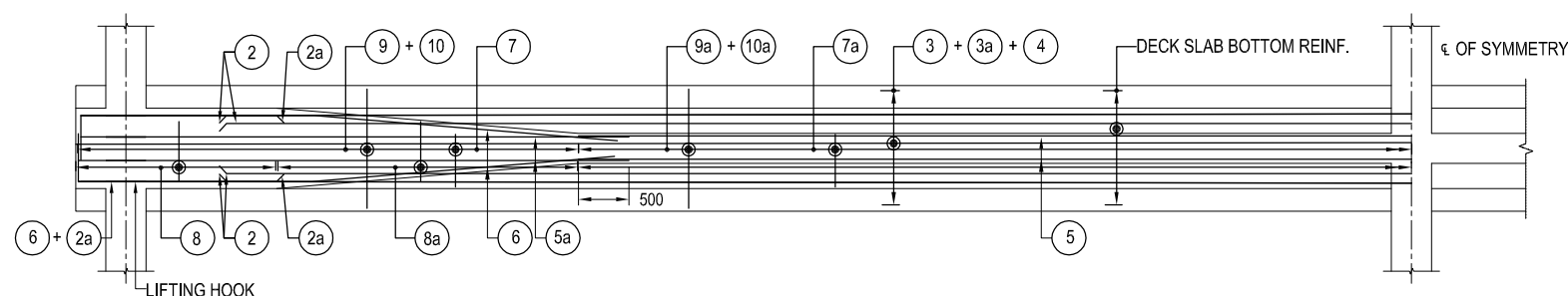
SCALE - 1 : 25

EMPLOYER Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	PROJECT NAME Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	DESIGN CONSULTANTS Joint Venture of  EPTISA Servicios De Ingenieria Madrid, Spain  STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Designed By Mr. R.D. Nec.No. 6489 CPM/V Checked By Mr. S.M. Approved By Mr. H.B.	Drawing Name DECK SLAB DETAILS OF BRIDGE OVER RIVER OVER BARAHARI Reference Drawings KDP/DPR/STR/BR/BARAHARI/DD-22	Scale: AS SHOWN Chainage: 260+921	Date: 23.04.2023 Drawing No. KDP/DPR/STR/BR/BARAHARI /DD-19 Sheet No. 1/1
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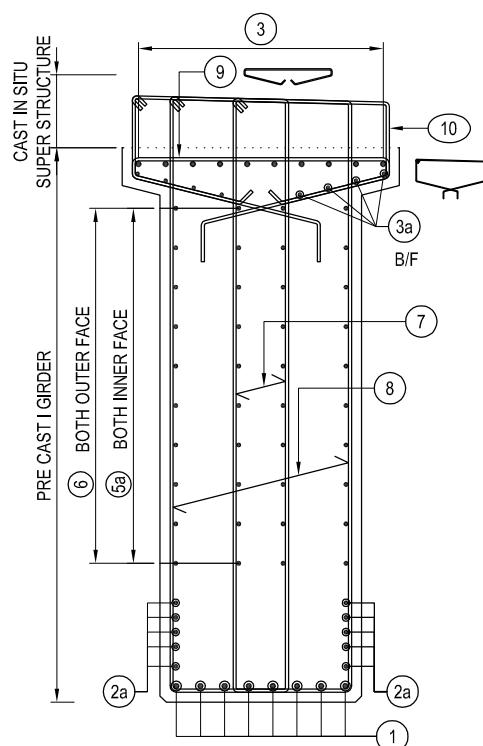
ELEVATION SHOWN REINFORCEMENT DETAIL OF LONGITUDINAL GIRDER

(SCALE 1:75)



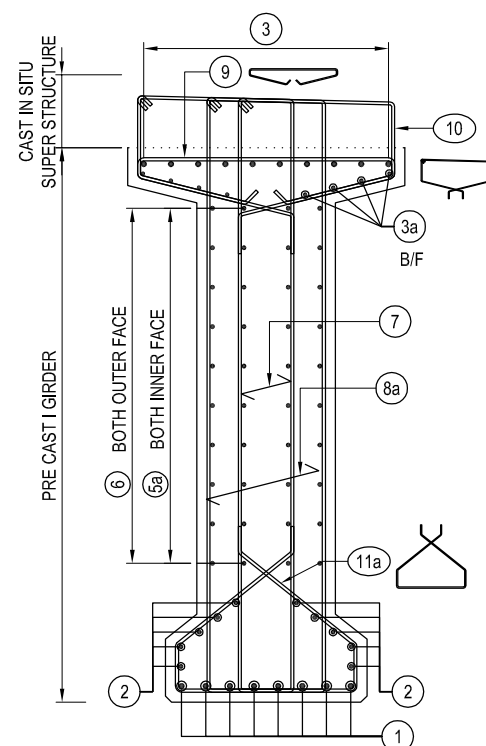
HALF PLAN SHOWING REINFORCEMENT DETAIL OF LONGITUDINAL GIRDER

(SCALE 1:75)



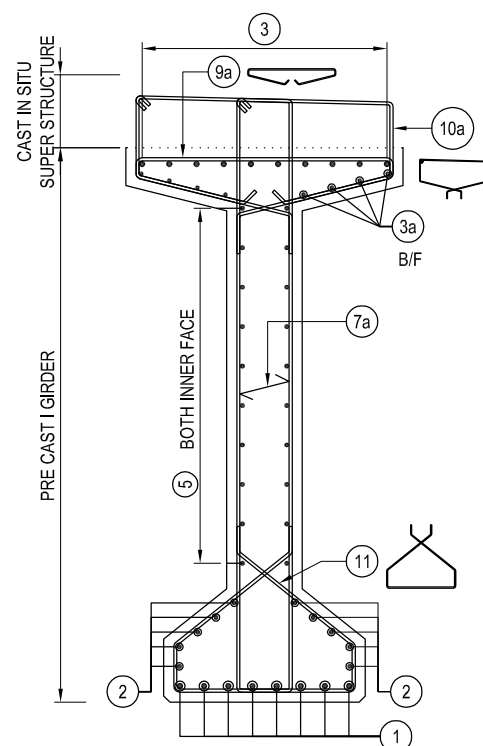
SECTION AT C-C

(SCALE 1:30)



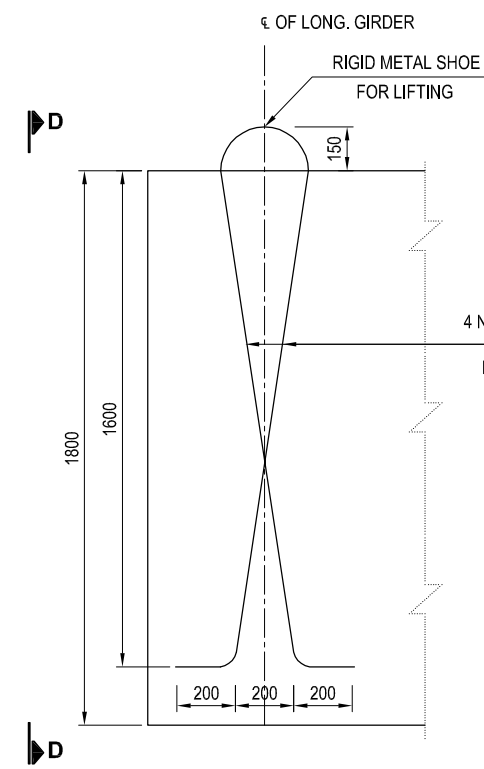
SECTION AT B-B

(SCALE 1:30)



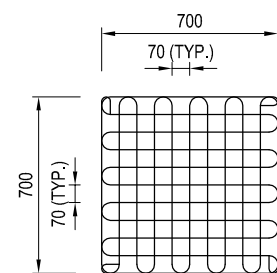
SECTION AT A-A

(SCALE 1:30)



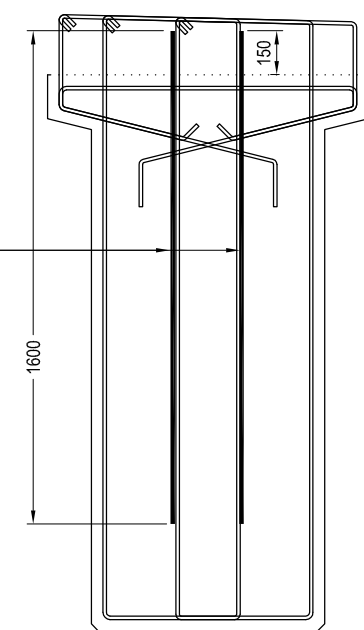
TYPICAL DETAIL OF LIFTING OF GIRDER AT EACH END OF THE GIRDER

(SCALE 1:30)



MESH TYPE "A"

80 MESH TO BE PLACED UNDER BEARING
(SCALE 1:30)



SECTION D-D

(SCALE 1:30)

NOTES :-

- ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METERS.
- DO NOT SCALE THIS DRAWING. ONLY WRITTEN DIMENSION SHALL BE FOLLOWED.
- MATERIALS:-
CONCRETE : CONFORMING TO IS :456.
PSC GIRDERM-45
DECK SLAB & CROSS GIRDER M-40
- REINFORCEMENT: Fe 500D CONFORMING TO IS 1786
- CLEAR COVER TO ANY REINFORCEMENT: 40mm.
- LAP LENGTH OF THE BARS SHALL BE AS PER IRC 112:2011 NOT MORE THEN 50% OF BARS SHALL BE LAPPED AT ONE LOCATION.
- MESH 'A' SHALL BE PROVIDED IN GIRDER AT BEARING LOCATION IN TWO LAYERS AT 20MM & 100MM FORM SOFFIT OF GIRDER. ALL MESH REINFORCEMENT SHALL BE CENTRALLY PLACED W.R.T. BEARING.
- STRANDS SHALL BE OF SAME SPECIFICATION AS PROVIDED FOR STRESSING FOR GIRDER.
- BAR/STRANDS FOR LIFTING OF GIRDER SHALL BE PROVIDED IN SUCH A WAY SO AS TO ENSURE THAT LOAD IS TRANSFERRED ON ALL BAR/STRANDS SIMULTANEOUSLY.
- WHERE ANCHORAGE AND LAPS ARE USED THE MINIMUM ANCHORAGE AND LAP LENGTHS SHALL BE PROVIDED AS BELOW.

NOTE

READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/BARAHARI/DD-4

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of  EPTISA Servicios De Ingeniera Madrid, Spain  STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Mr. R.D. Nec.No. 6489 CPAL/V	MAIN GIRDER DETAILS OF BRIDGE OVER RIVER BARAHARI	AS SHOWN	23.04.2023
			Checked By Mr. S.M.	Reference Drawings	Chainage:	Drawing No. KDP/DPR/STR/BR/BARAHARI /DD-20
			Approved By Mr. H.B.	KDP/DPR/STR/BR/BARAHARI/DD-22	260+921	Sheet No. 1/3

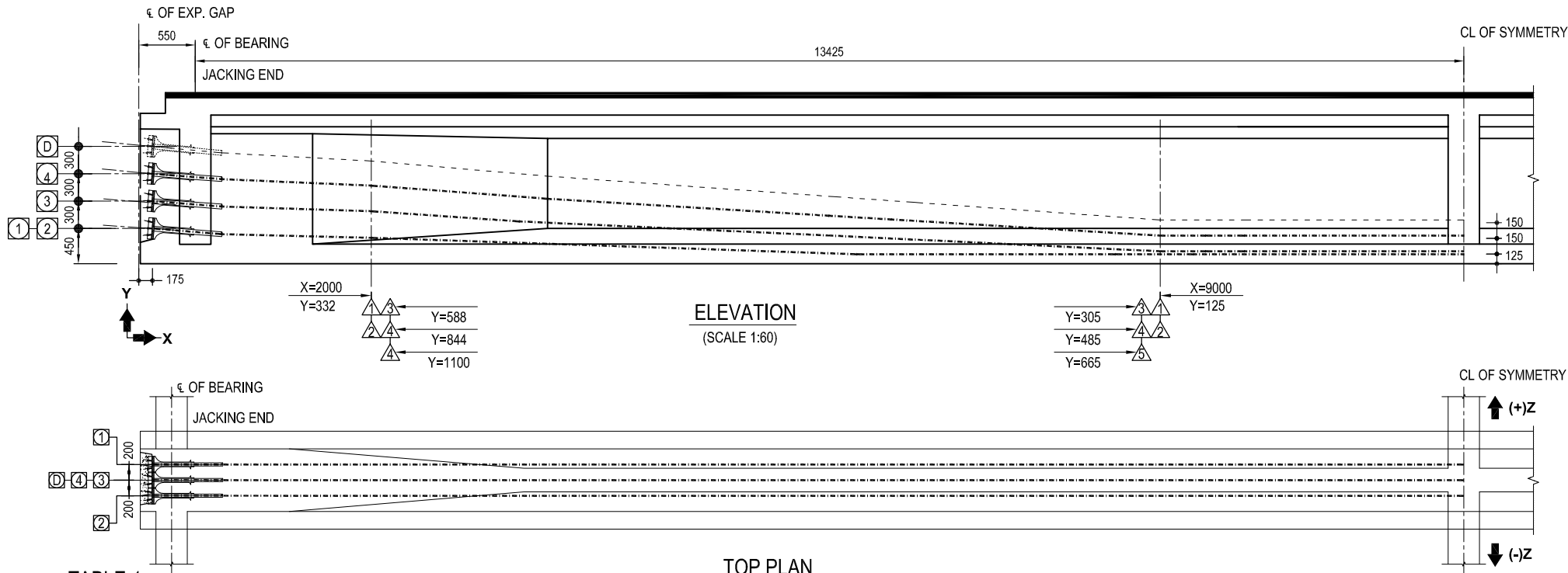
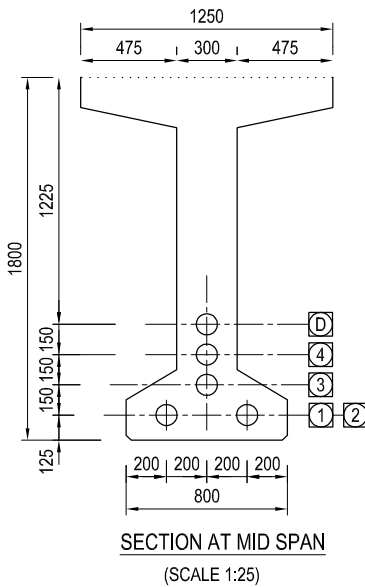
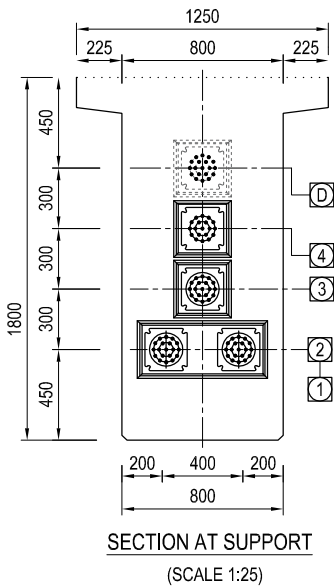


TABLE-1
'Y' & 'Z' COORDINATES AT DISTANCE 'X' FROM END OF CABLE/DUCT IN mm.

Cable No.	X	150	500	1500	2000	3000	3500	5000	6500	7500	9000	10250	10750	11250	11750	12250	12750	13250	13825
1	Y	450	420	361	332	277	252	192	151	134	125	125	125	125	125	125	125	125	125
	Z	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
2	Y	450	420	361	332	277	252	192	151	134	125	125	125	125	125	125	125	125	125
	Z	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200
3	Y	750	710	629	588	513	480	397	341	318	305	305	305	305	305	305	305	305	305
	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Y	1050	999	896	844	749	707	602	531	501	485	485	485	485	485	485	485	485	485
	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Y	1350	1288	1163	1100	984	933	807	720	685	665	665	665	665	665	665	665	665	665
	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

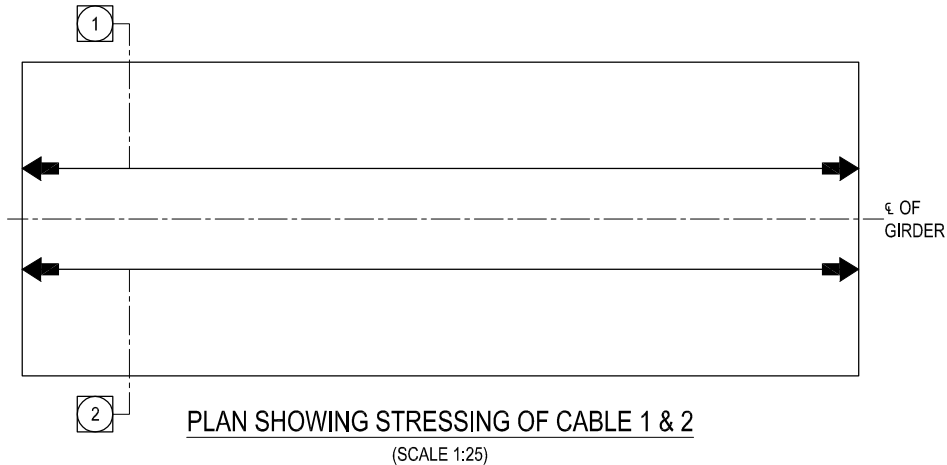
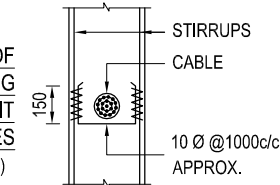
TABLE-2
SCHEDULE OF TENDON FORCE AND EXTENSION:-

Cable No.	Total Length of Cable (mm)	Theoretical Elongation at Each End (mm)	Emergence Angle of Cable	No. of Strands	No. of Strands Left for Emergency	Jacking Force (T)	Stressing Type
1	29963	104.41	3.38	19	-	272.2	Both End
2	29963	105.24	3.38	19	-	272.2	Both End
3	29975	104.21	4.63	18	1	257.9	Both End
4	29990	104.05	5.88	18	1	257.9	Both End
5	Dummy		7.12				



TYPICAL DETAIL OF SUPPORTING ARRANGEMENT FOR CABLES (SCALE 1:20)

NOTE
READ THIS DRAWING IN CONJUNCTION WITH DRG NO. KDP/DPR/STR/BR/BARAHARI/DD-4



SEQUENCE OF STRESSING :-

* CABLES SHALL BE STRESSES IN THE FOLLOWING SEQUENCE

SL.NO.	CABLE NO.	SEQUENCE OF STRESSING
1.	③	AFTER 7 DAYS OF CASTING OR AFTER CONCRETE ATTAINS 37MPa CUBIC STRENGTH, WHICHEVER IS LATER (BOTH ENDS PRESTRESSING)
2.	① & ②	AFTER 21 DAYS OF CASTING GIRDER OR CONCRETE ATTAINS 48MPa CUBIC STRENGTH. CABLE 1 & 2 SHALL BE STRESSED FROM ONE END AS SHOWN IN PLAN SIMULTANEOUSLY FROM OPPOSITE ENDS TO EACH OTHER.
3.	④	STRESS CABLE 4 (BOTH ENDS PRESTRESSING)

SEQUENCE OF CONSTRUCTION :-

SL.NO.	LOADING CASES	TIME (DAYS)
1.	CASTING OF GIRDER	0 DAYS
2.	1 st STAGE PRESTRESSING	7 DAYS OR AFTER CONCRETE ATTAINS 37mpa WHICHEVER IS LATER.
3.	2 nd STAGE PRESTRESSING	21 DAYS OR AFTER CONCRETE ATTAINS 48mpa WHICHEVER IS LATER.
4.	CASTING OF DECK SLAB	28 DAYS
5.	REMOVAL OF DECK SHUTTERING	56 DAYS
6.	CASTING OF CRASH BARRIER	56 DAYS
7.	LAYING OF ASPHALT CONCRETE & ALLOWING LIVE LOAD	63 DAYS

NOTES:-

- ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
- DIMENSIONS ARE NOT TO BE SCALED, ONLY WRITTEN DIMENSIONS ARE NOT TO BE FOLLOWED.

3. PRESTRESSING SYSTEM

- ALL PRESTRESSING STRANDS SHALL HAVE 7 PLY UNCOATED STRESS RELIEVED HIGH TENSILE STRANDS (LOW RELAXATION) OF CONFIRMING TO CLASS 2 OF IS 14268-1983.
- CORRUGATED HDPE SHEATHING SHALL BE USED FOR ALL CABLES
- THE PARAMETERS ADOPTED FOR DESIGN ARE AS FOLLOWS-
 - SLIP AT EACH END-----6mm
 - MINIMUM SHEATH DIAMETER-----90mm (I.D.)-FOR 19T13
 - CO-EFFICIENT OF FRICTION----- $\mu=0.17$ RADIAN
 - WOBBLE CO-EFFICIENT ----- $k=0.002/m$
 - NOMINAL AREA OF EACH STRANDS -- $A=98.8mm^2$
 - NOMINAL ULTIMATE BREAKING LOAD OF EACH STRANDS ----- $=183.71KN$
 - MODULUS OF ELASTICITY OF HIGH TENSILE STEEL ---- $E=1.95 \times 10^5 mpa$
- ALL THE DESIGN PARAMETERS SHALL BE VERIFIED AT SITE BEFORE USE.
- SYSTEM OF PRESTRESSING -19T13/12T13 (ISMAL)

4. PRESTRESSING OPERATION

(ALL OPERATIONS TO BE SATISFY IRC AND MOST SPECIFICATION)

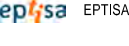
- ALL CABLES SHALL BE LAID IN SMOOTH CURVES PASSING THROUGH THE GIVEN ORDINATES AND SHALL BE SUPPORTED AT A SPACING NOT EXCEEDING 1000mm BY A 16mm DIA CROSS BAR / TACK WELDED SECURELY HELD IN POSITION WITH VERTICAL WEB REINFORCEMENT.
 - CABLE LENGTHS MENTIONED IN THE TABLE-2 OF DRAWING ARE INCLUSIVE OF 1000mm EXTRA AT EACH ANCHORAGE. TOTAL LENGTH SHALL BE VERIFIED AT SITE.
 - STRANDS OF CABLE NO. 1 & 2 SHALL BE STRESSED FROM ONE END SIMULTANEOUSLY FROM OPPOSITE ENDS TO EACH OTHER. STRANDS OF CABLE NO. 3 & 4 SHALL BE TENSIONED FROM BOTH ENDS SIMULTANEOUSLY. JACK USED FOR TENSIONING SHALL BE ISMAL 3000 RG / 4000 MG OR EQUIVALENT FOR 19T13 & J20/1000MG FOR 7T13. JACKING FORCES GIVEN IN TABLE-2 SHALL BE INCREASED BY RELEVANT PERCENTAGE TO ACCOUNT FOR ANCHORAGE AND JACK FRICTION & EFFICIENCY AS PER MANUFACTURE'S INSTRUCTIONS.
 - GROUTING OF CABLES SHALL BE DONE IN SAME SEQUENCE AS STRESSING AND SHALL CONFORM WITH IRC:112-2011 AND ALSO TO MOST SPECIFICATION.
 - ANCHORAGE POCKET SHALL BE FILLED ITH EPOXY MORTAR OR NON SHRINK CONCRETE AFTER STRESSING & GROUTING.
 - EXTENSIONS SHALL BE RECHECKED AFTER 24 HOURS AFTER ANCHORING TO OBSERVE SLOW SLIPPAGE THE MATTER SHALL BE REPORTED FOR EXCESSIVE SLIPPAGE IF ANY.
 - EXTENSIONS GIVEN IN TABLE-2 ARE FOR HALF CABLE LENGTHS (BOTH ENDS STRESSING) FULL CABLE LENGTH (ONE ENDS STRESSING) INCLUSIVE OF 750mm GRIP LENGTH AT EACH END LOSS UPTO 6mm DUE TO SLIP OF ANCHORAGES ARE NOT TO BE COMPENSATED DURING SITE OPERATIONS. JACK PRESSURE & EXTENSION OF CABLES AT EACH END GIVEN IN THE DRAWING SHALL BE VERIFIED AT SITE.
 - INITIAL SLACKNESS IN THE PRESTRESSING SHALL BE REMOVED BY APPLYING SMALL TENSION. THE INITIAL TENSION REQUIRED TO REMOVE THE INITIAL SLACKNESS SHALL BE TAKEN AS THE STARTING POINT FOR MEASURING ELONGATION AND CORRECTION SHALL BE APPLIED AS PER CLAUSE 12.2.1.3 OF IS:1343-1980.
 - IN CASE THE CALCULATED ELONGATION AND THE JACK PRESSURE ARE NOT ACHIEVED SIMULTANEOUSLY DURING PRESTRESSING OPERATION, STRESSING SHALL BE CONTINUED/DISCONTINUED AS PER NOTE NO. 8 GIVEN BELOW.
- 5) THE EXTENSION GIVEN IN TABLE-2 SHALL BE MODIFIED AT SITE IN CASE ACTUAL VALUE OF AREA OF STRAND "A" AND MODULUS OF ELASTICITY "E" VARIES FROM THOSE ASSUME IN DESIGN REVISED EXTENSION SHALL BE CALCULATED AS UNDER:

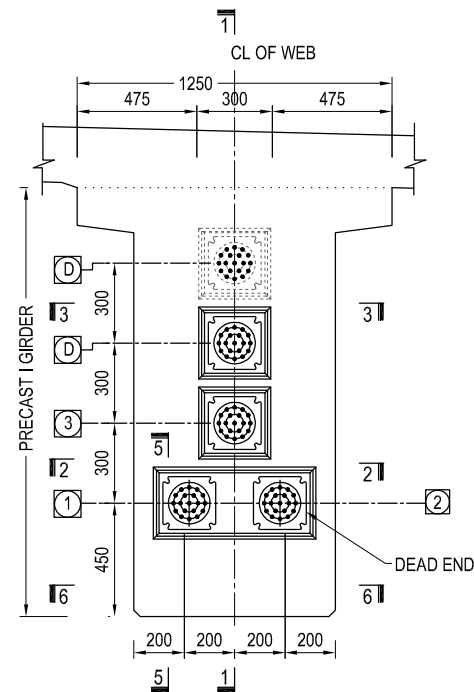
$$\text{ELONGATION} = \frac{98.7 \times 195000}{\text{NEW AREA} \times \text{NEW MODULUS}} \times \text{X ELONGATION GIVEN IN TABLE-2}$$

- THE EXTENSION OF CABLES SHALL BE VERIFIED FOR A FEW CABLES AT SITE. IN CASE THE VALUE OF AND ARE DIFFERENT THAN THOSE CONSIDERED, EXTENSION SHALL BE SUITABLY MODIFIED AFTER APPROVAL OF ENGINEER-IN-CHARGE.
- THE GRIP LENGTH FROM ANCHORAGE FACE TO GRIPPING POINT IN JACK ASSUMED IN TENSION CALCULATION IS 750mm AND THE ADDITIONAL LENGTH TAKEN FOR CUTTING IS 200mm. IF GRIP LENGTH VARIES THAN THOSE CONSIDERED, EXTENSIONS SHALL BE MODIFIED.

8. SPECIAL NOTES FOR PRESTRESSING:-

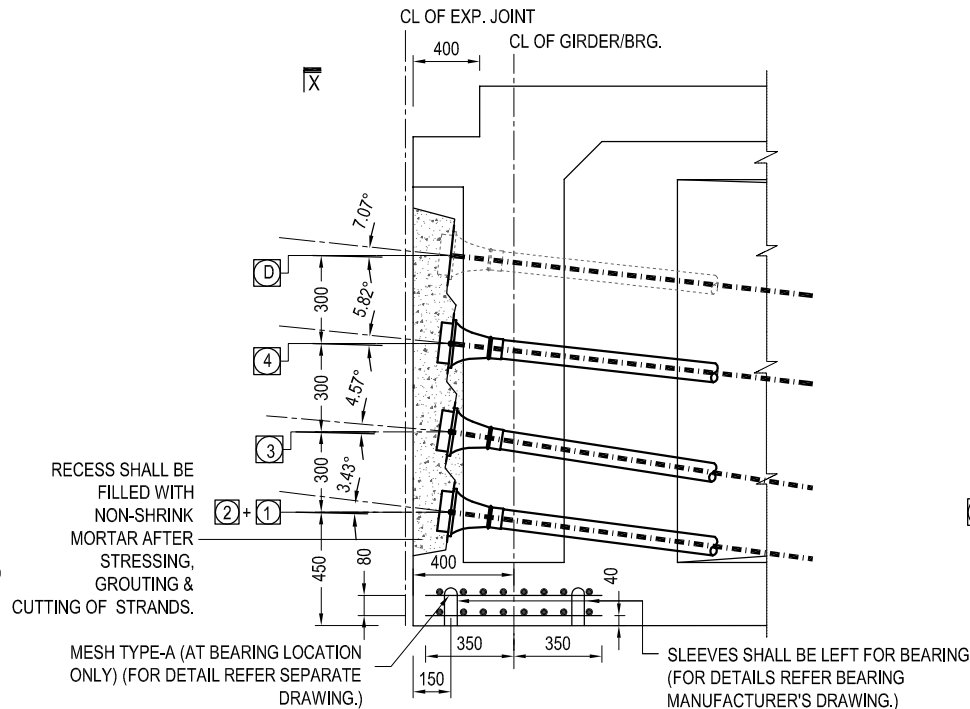
- IF THE CALCULATED ELONGATION IS REACHED BEFORE THE CALCULATED GAUGE PRESSURE IS OBTAINED CONTINUE TENSIONING TILL ATAINING THE CALCULATED GAUGE PRESSURE PROVIDED BY ELONGATION DOESNOT EXCEED 1.05 TIMES THE CALCULATED ELONGATION . IF THIS ELONGATION IS ACHIEVED BEFORE THE CALCULATED GAUGE PRESSURE IS ATTAINED STOP STRESSING & INFORM THE ENGINEER-IN-CHARGE.
- IF THE CALCULATED ELONGATION HAS NOT BEEN REACHED CONTINUE TENSIONING BY INTERVALS OF 5KG/sq cm UNTILL THE CALCULATED ELONGATION IS REACHED PROVIDED THE GAUGE PRESSURE DOES NOT EXCEED 1.05 TIMES THE CALCULATED GAUGE PRESSURE.
- IF THE ELONGATION AT 1.05 TIMES THE CALCULATED GAUGE PRESSURE IS LESS THEN 0.95 TIMES THE CALCULATED ELONGATION
 - RECALIBRATE THE PRESSURE GAUGE.
 - CHECK THE CORRECT FUNCTIONING OF THE JACK PUMP AND LEADS.
 - DE-TENSION CABLE, SLIDE IT IN ITS DUCT TO CHECK THAT IT IS NOT BLOCKED BY MORTAR WHICH HAS INTERED THROUGH HOLES IN THE SHEATH, DETENSION THE CABLE IF FOUND FREE.
- IF THE ELONGATION IS NOT OBTAINED FURTHER FINISHING OPERATIONS SUCH AS CUTTING OR SEALING SHOULD NOT BE UNDERTAKEN WITHOUT THE APPROVAL OF ENGINEER-IN-CHARGE.
- FOR CO-ORDINATES REFER TABLE 1 OF THIS DRAWING.
- FORCE IN CABLE 1 & 2 IS TO BE KEPT SAME AND UNIFORM ALWAYS, THROUGHOUT THE WHOLE PRESTRESSING OPERATION.
- DO NOT MAKE GROUTING TILL THE LOAD VS ELONGATION VALUE IS FOUND IN CONFERMITY WITH THE FORCE VS ELONGATION TABLE. OTHERWISE, SHARE LOAD VS ELONGATION VALUE TO THE DESIGNER FOR FURTHER ACTION.

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of  EPTISA Servicios De Ingeniera Madrid, Spain  STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Mr. R.D. Nec.No. 6489 CPA/V Signature	MAIN GIRDER DETAILS OF BRIDGE OVER RIVER BARAHARI	AS SHOWN	23.04.2023
			Mr. S.M. Signature	Reference Drawings	Chainage:	Drawing No. KDP/DPR/STR/BR/BARAHARI /DD-20
			Mr. H.B. Signature	KDP/DPR/STR/BR/BARAHARI/DD-22	260+921	Sheet No. 2/3



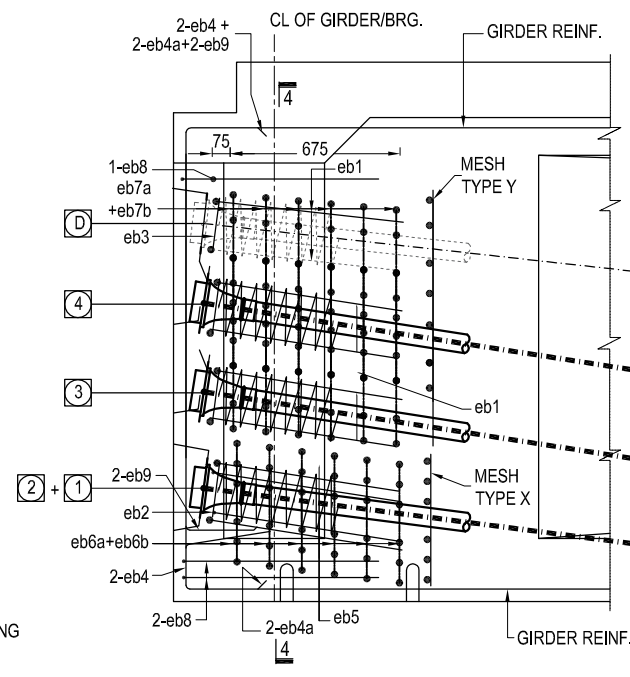
VIEW X-X

(CABLE 1 HAS A DEAD END ANCHOR AT THE OTHER END OF GIRDER)
(CABLE 2 HAS A JACKING ANCHOR AT THE OTHER END OF GIRDER)
(SCALE - 1:30)



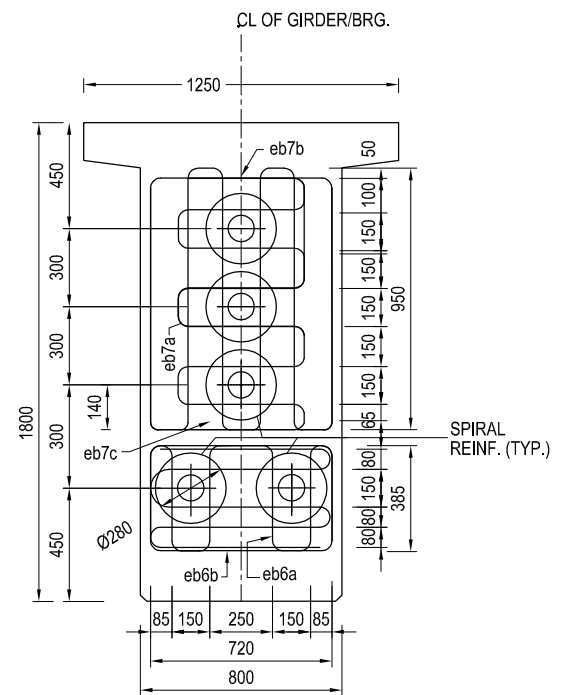
SECTION 1-1

(SHOWING DIMENSIONS ONLY)
(SCALE - 1:30)



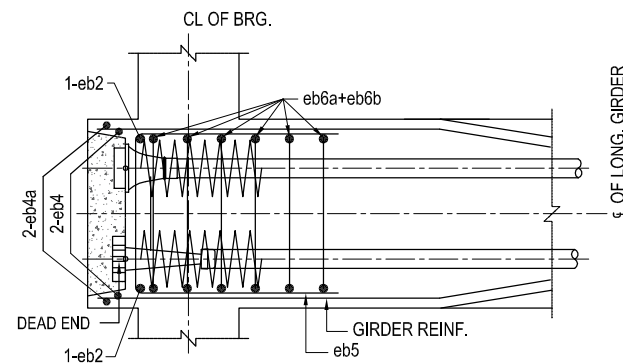
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(SHOWING REINFORCEMENT ONLY)
(SCALE - 1:30)



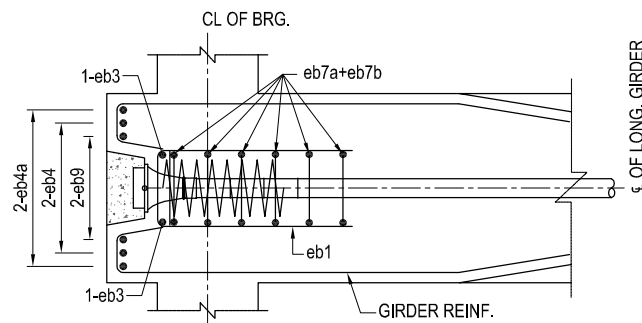
SECTION 4-4

(SCALE - 1:30)



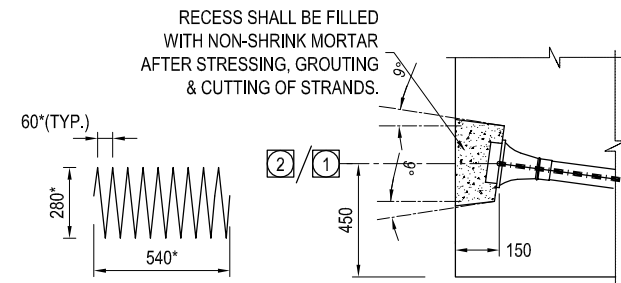
SECTION 2-2

(SCALE - 1:30)



SECTION 3-3

(SCALE - 1:30)



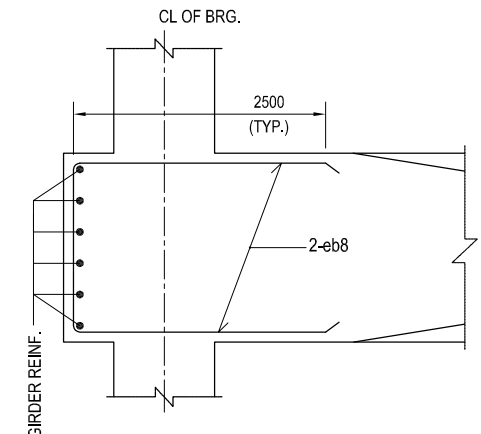
16 Ø SPIRAL

(FOR 19 T 13 CABLE)

* THE DETAIL TO BE VERIFIED AS PER THE
PRESTRESSING SYSTEM (SCALE - 1:30)

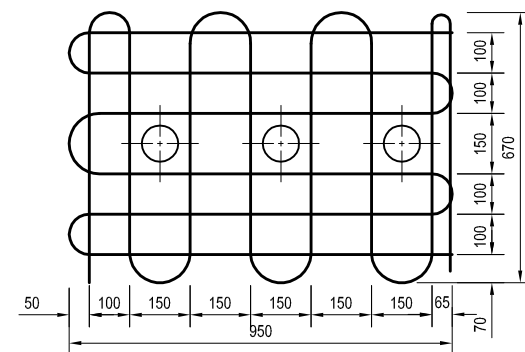
SECTION 5-5

(SHOWING DIMENSIONS ONLY)
(SCALE - 1:30)



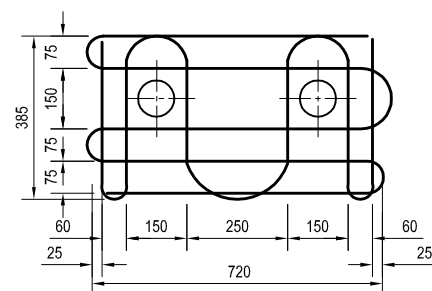
SECTION 6-6

(SCALE - 1:30)



DETAIL OF 8 Ø MESH TYPE 'Y'

(SCALE 1:15)



DETAIL OF 8 Ø MESH TYPE 'X'

(SCALE 1:15)

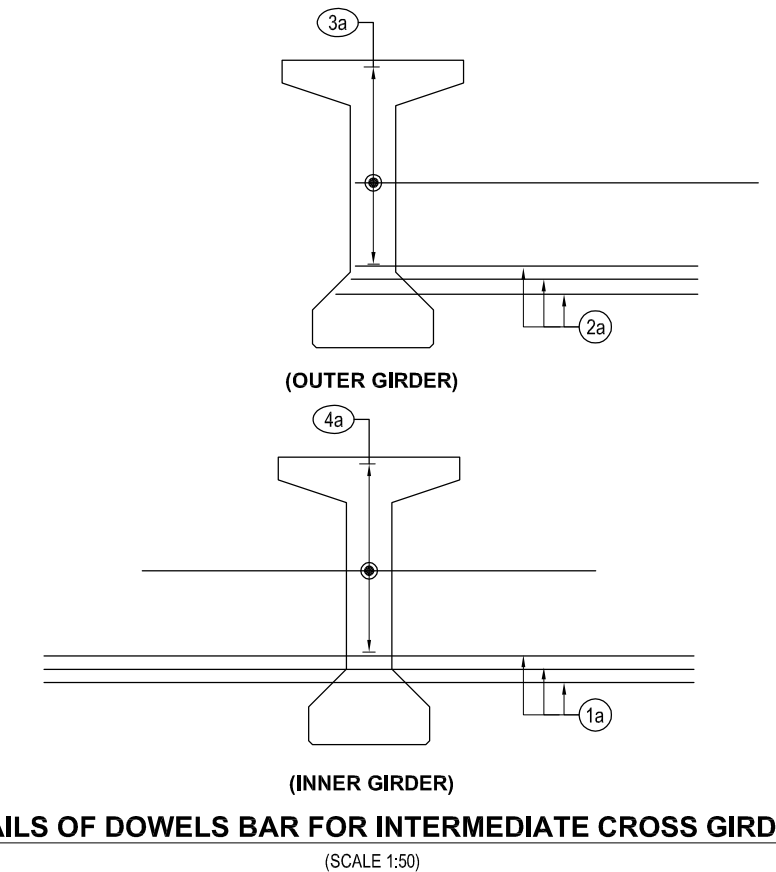
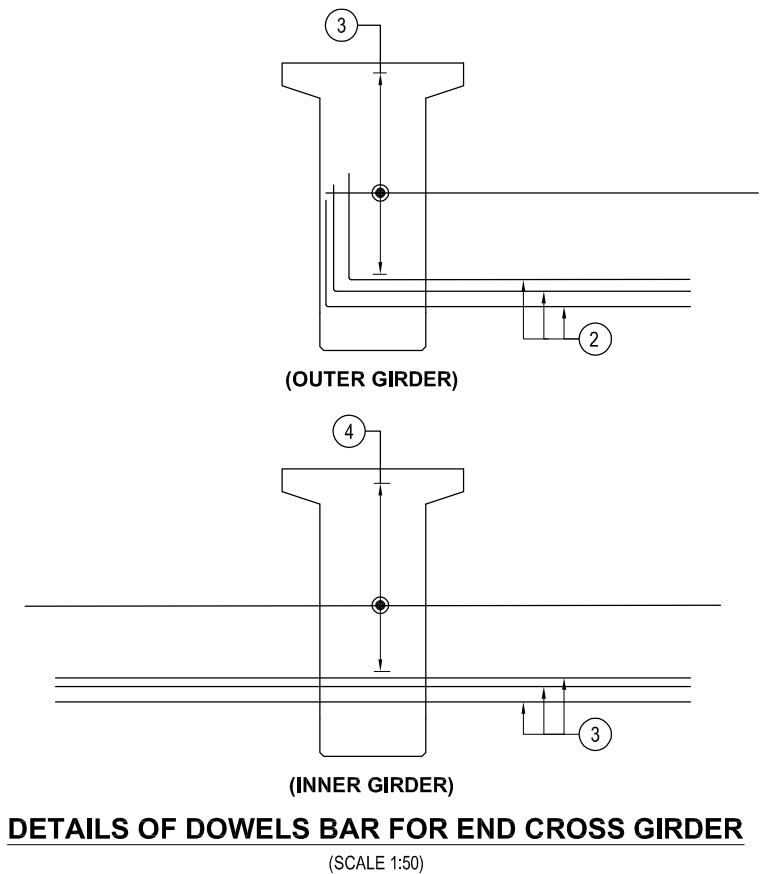
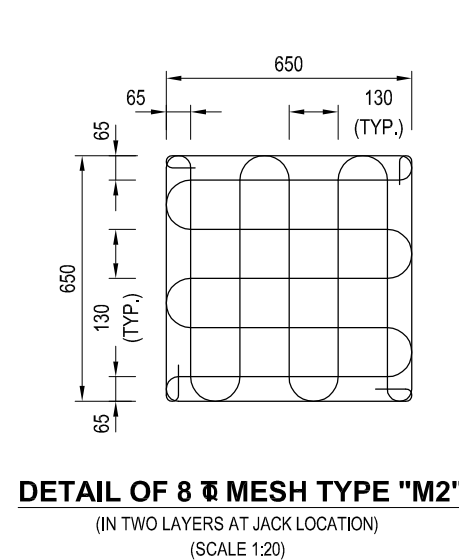
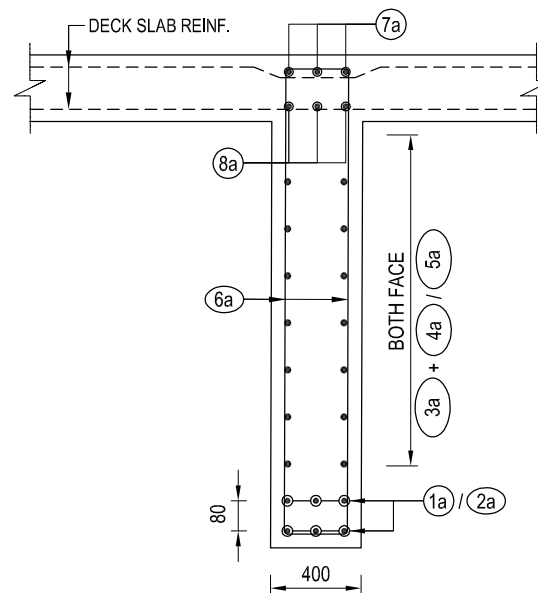
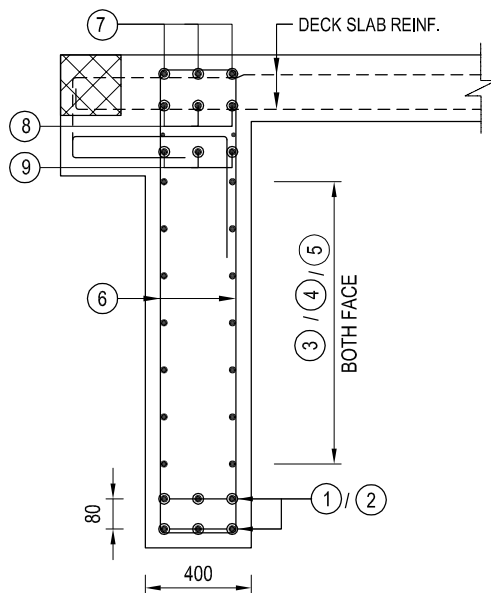
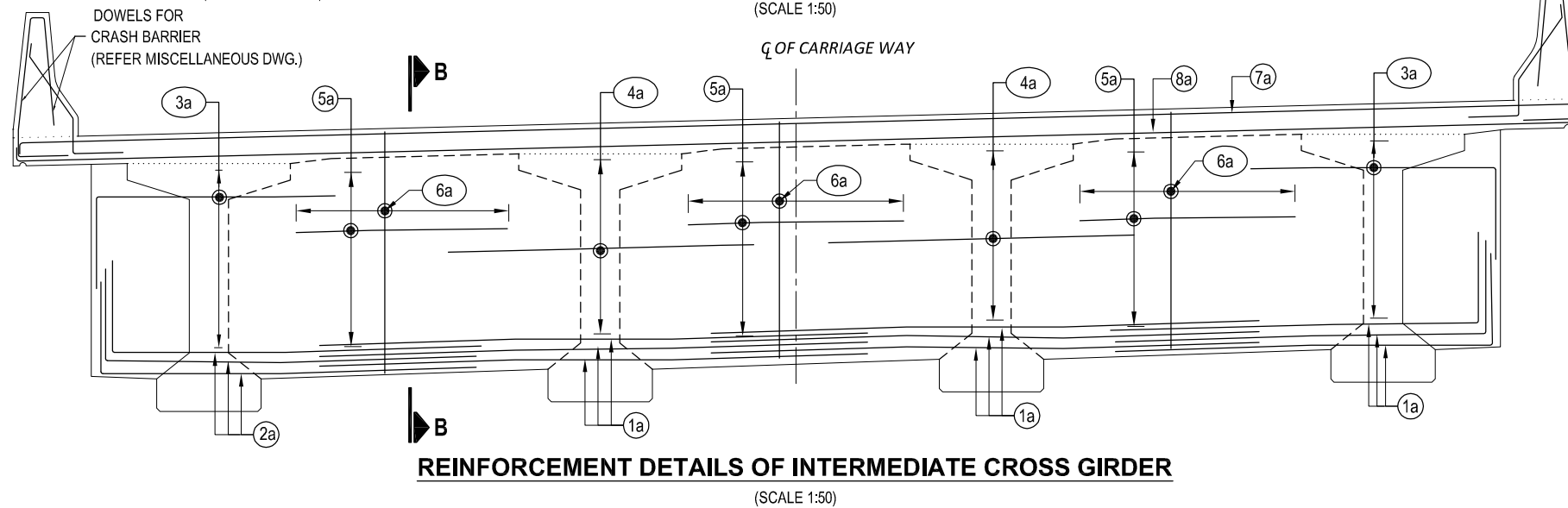
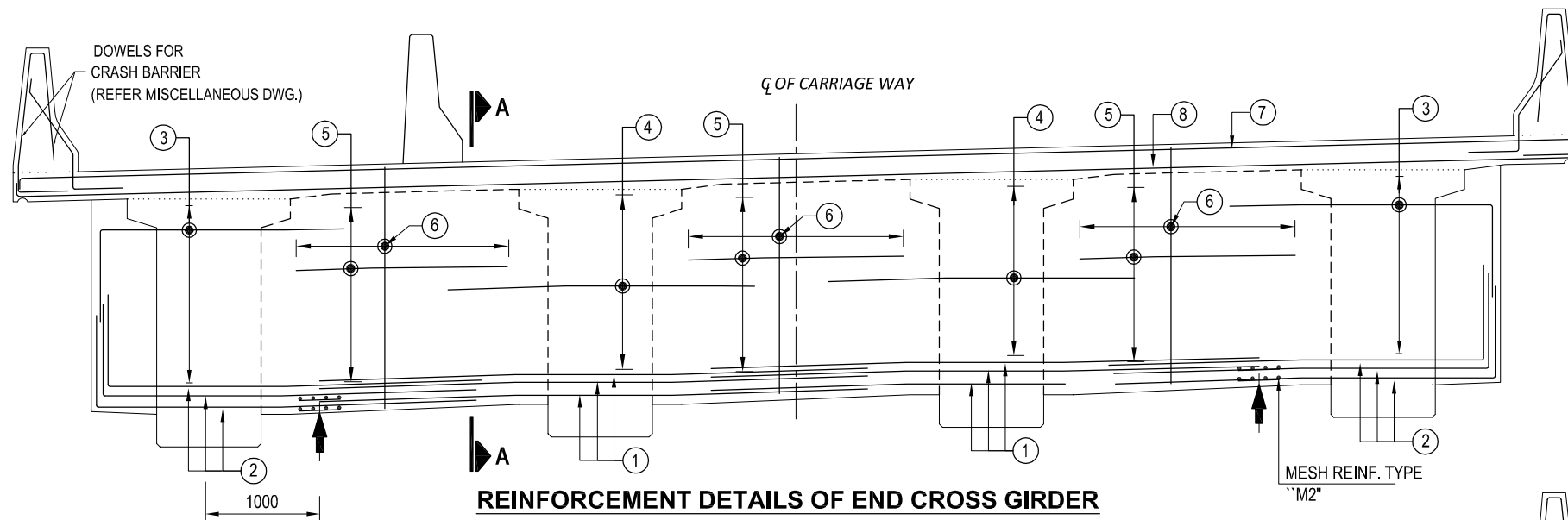
NOTE

READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/BARAHARI/DD-4

NOTES:

- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED
- DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- CLEAR COVER TO ANY REINFORCEMENT SHALL BE 40mm.
- ALL REINFORCING STEEL SHALL BE OF HIGH YIELD STRENGTH DEFORMED BARS (GRADE DESIGNATION Fe500D) CONFORMING TO IS : 1786.
- PORTION SHOWN THUS SHALL BE FILLED UP WITH PRE PACKED NON-SHRINK MORTAR AS PER SPECIFICATIONS. AFTER STRESSING & GROUTING IS COMPLETED.
- SLEEVES SHALL BE GROUTED WITH NON SHRINK FREE FLOW MORTAR AFTER PLACING OF LUGS FOR BEARING.

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Drawing Name	Scale:	Date:
Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of EPTISA Servicios De Ingeniera Madrid, Spain STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Mr. R.D. Nec.No. 6489 CPM/V Signature	MAIN GIRDER DETAILS OF BRIDGE OVER RIVER BARAHARI	AS SHOWN	23.04.2023
			Checked By Mr. S.M. Signature	Reference Drawings KDP/DPR/STR/BR/BARAHARI/DD-22	Chainage: 260+921	Drawing No. KDP/DPR/STR/BR/BARAHARI /DD-20
			Approved By Mr. H.B. Signature			Sheet No. 3/3



NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/BARAHARI/DD-4

SECTION AT A-A
(SCALE 1:25)

SECTION AT B-B
(SCALE 1:25)

DETAILS OF DOWELS BAR FOR INTERMEDIATE CROSS GIRDER
(SCALE 1:50)

EMPLOYER Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	PROJECT NAME Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	DESIGN CONSULTANTS Joint Venture of EPTISA Servicios De Ingenieria Madrid, Spain STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Designed By Mr. R.D. Nec.No. 6489 CPM/V Checked By Mr. S.M. Approved By Mr. H.B.	Drawing Name CROSS GIRDER DETAILS OF BRIDGE OVER RIVER BARAHARI Reference Drawings KDP/DPR/STR/BR/BARAHARI/DD-22	Scale: AS SHOWN Chainage: 260+921	Date: 23.04.2023 Drawing No. KDP/DPR/STR/BR/BARAHARI /DD-21 Sheet No.1/1
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BAR BENDING SCHEDULE OF GIRDER (1 NO)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	1	150 26520 150	16		26.820	6	1.580	254.29
2	2	26520	16		26.520	10	1.580	419.08
3	2a	1900 3010 500 5°	16		5.410	20	1.580	170.98
4	3	150 26520 150	16		26.820	10	1.580	423.82
5	3a	26520	16		26.520	8	1.580	335.27
6	4	SEE DECK REINFORCEMENT						
7	5	26520	12		26.520	10	0.889	235.73
8	5a	1900 3010 500 5°	12		5.410	20	0.889	96.18
9	6	1900 3010 500 5°	12		5.410	20	0.889	96.18
10	7	100 220 1845 2 Legged	12	150	4.330	68	0.889	261.72

BAR BENDING SCHEDULE OF DECK (1 NO)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	st1	350 11770 350	16	100	12.470	286	1.580	5241.71
2	st4	100 26520 100	10	150	26.720	79	0.617	1303.01
3	st4a	350 650	12	150	1.000	110	0.889	97.78
4	sb1	100 11770 100	16	100	11.970	350	1.580	6620.44
5	sb3	100 26520 100	12	150	26.720	110	0.889	2612.62
6	sb4	350 800 300 500	12	150	1.950	110	0.889	190.67
7	sb5	11770	10		11.770	3	0.617	21.80
8	sb6	11770	16		11.770	4	1.580	74.40
TOTAL :								16162.43
GRAND TOTAL (1 NO.)								16162.43

11	7a	100 220 1845 2 Legged	12	150	4.330	166	0.889	638.92
12	8	100 720 1845 2 Legged	12	150	5.330	28	0.889	132.66
13	8a	100 1845 2 Legged Avg. 470	12	150	4.830	42	0.889	180.32
14	9	1170 75 85 475	12	150	2.440	68	0.889	147.48
15	9a	1170 75 85 475	12	150	2.440	166	0.889	360.04
16	10	290 1170 935 150 51°	12	150	3.920	68	0.889	236.94
17	10a	290 1170 935 150 51°	12	150	3.920	166	0.889	578.42
18	11	150 51° 170 585 720	12	150	2.530	68	0.889	152.92
19	11a	150 51° 170 585 720	12	150	2.530	166	0.889	373.32
20	12	R150 200 1650	16		4.000	4	1.580	25.28
TOTAL :								5119.56
GRAND TOTAL (7 NO.S)								35836.89

BAR BENDING SCHEDULE OF CROSS GIRDER (PER SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	1	4200	20		4.200	60	2.469	622.22
2	2	700 2610	20		3.310	24	2.469	196.15
3	3	700 2000	12		2.700	24	0.889	57.60
4	4	2400	12		2.400	60	0.889	128.00
5	5	2000	12	72	2.000	72	0.889	128.00
6	6	100 320 1800 2 Legged	12	150	4.440	10	0.889	39.47
7	7	150 11850 150	20		12.150	6	2.469	180.00

8	8	150 11850 150	20		12.150	6	2.469	180.00
9	9	150 11850 150	20		12.150	6	2.469	180.00
10	10	650 650	12		5.130	8	0.889	36.48
TOTAL :								1747.92
GRAND TOTAL (1 NO.)								1747.92

BAR BENDING SCHEDULE OF GRIDER END (1 NO)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	eb1	800 380 800	16		1.980	2	1.580	6.26
2	eb2	1600	12		1.600	2	0.889	2.84
3	eb3	1600	12		1.600	2	0.889	2.84
4	eb4 + eb4a	550 Avg. 800 800	12		2.150	2	0.889	3.82
5	eb5	800 720 800	16		2.320	2	1.580	7.33
6	eb6	385 720	16		10.310	6	1.580	97.75
7	eb7	950 670	16		12.200	6	1.580	115.67
8	eb8	800 720 800	16		2.320	2	1.580	7.33
9	eb9	200 1800 200 3000	12		5.200	2	0.889	9.24
10	eb10	280 540	16		8.790	4	1.580	55.56
TOTAL :								308.67
GRAND TOTAL (2 x 7 NO.S)								4321.35



Government of Nepal
Ministry of Physical Infrastructure and Transport
Department of Roads
Development Cooperation Implementation
Division

PROJECT NAME
Strategic Road Connectivity & Trade Improvement Project (SRCTIP)
Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges

DESIGN CONSULTANTS
Joint Venture of
ep4sa EPTISA Servicios De Ingeniera Madrid, Spain
on STUP Consultants Private Limited Kolkata, India
In Association With
Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited

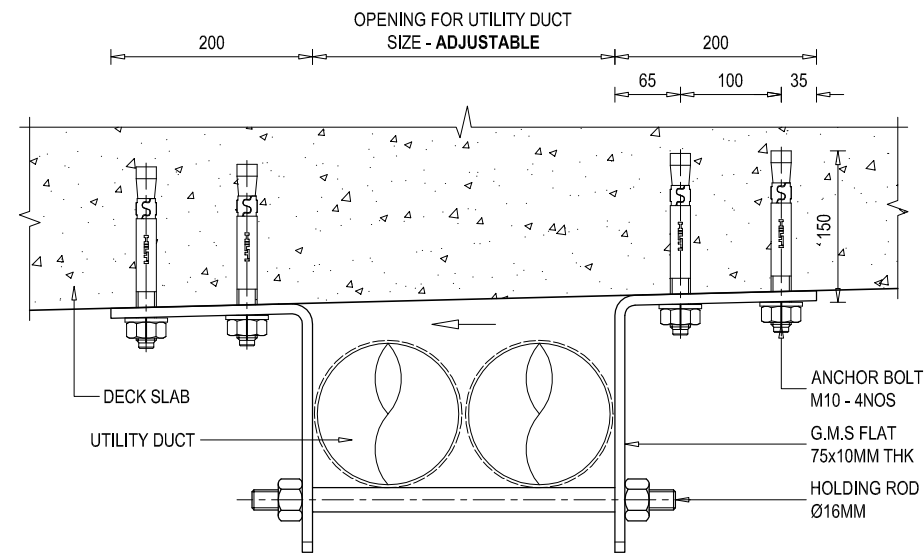
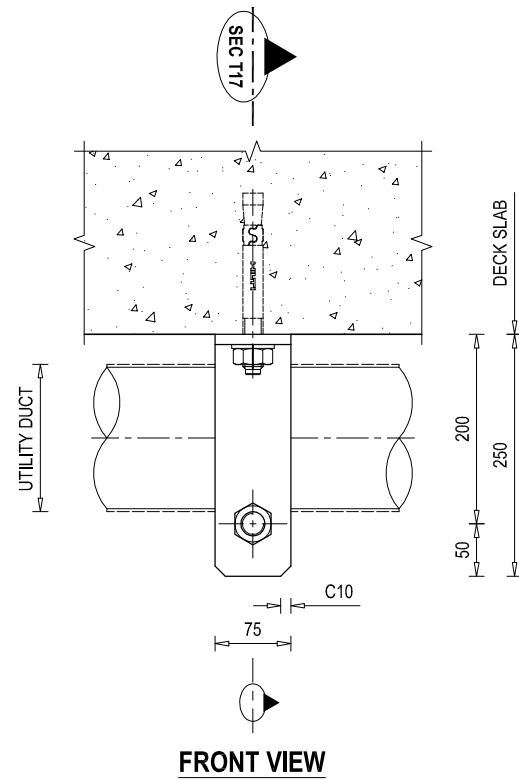
Designed By Mr. R.D.
Nec.No. 6489 CMA/V
Checked By Mr. S.M.
Approved By Mr. H.B.

Signature
Signature
Signature

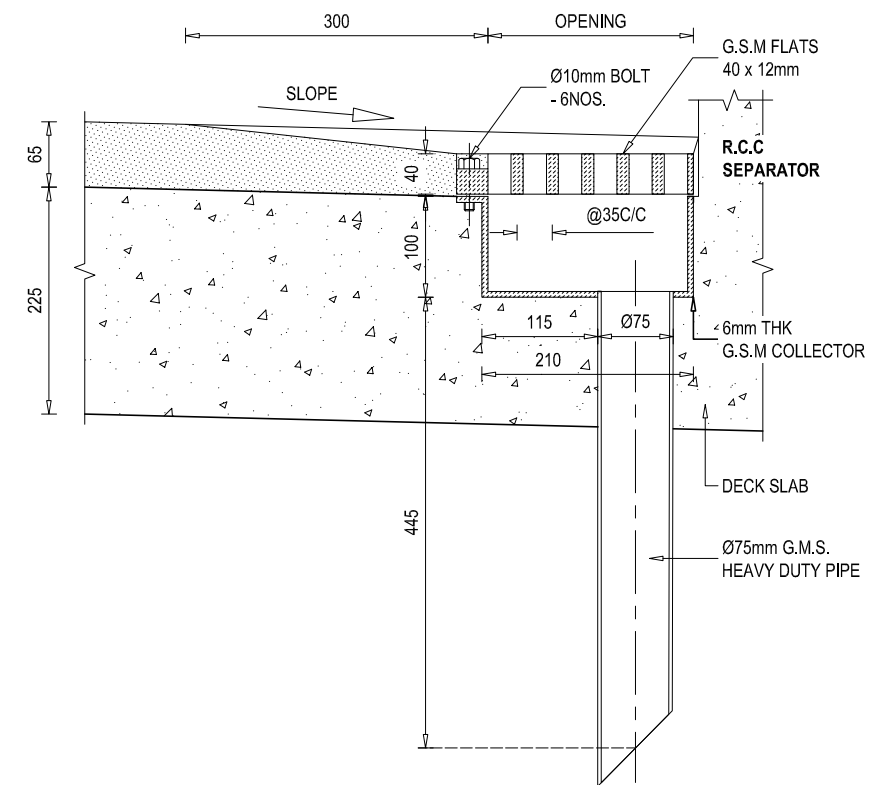
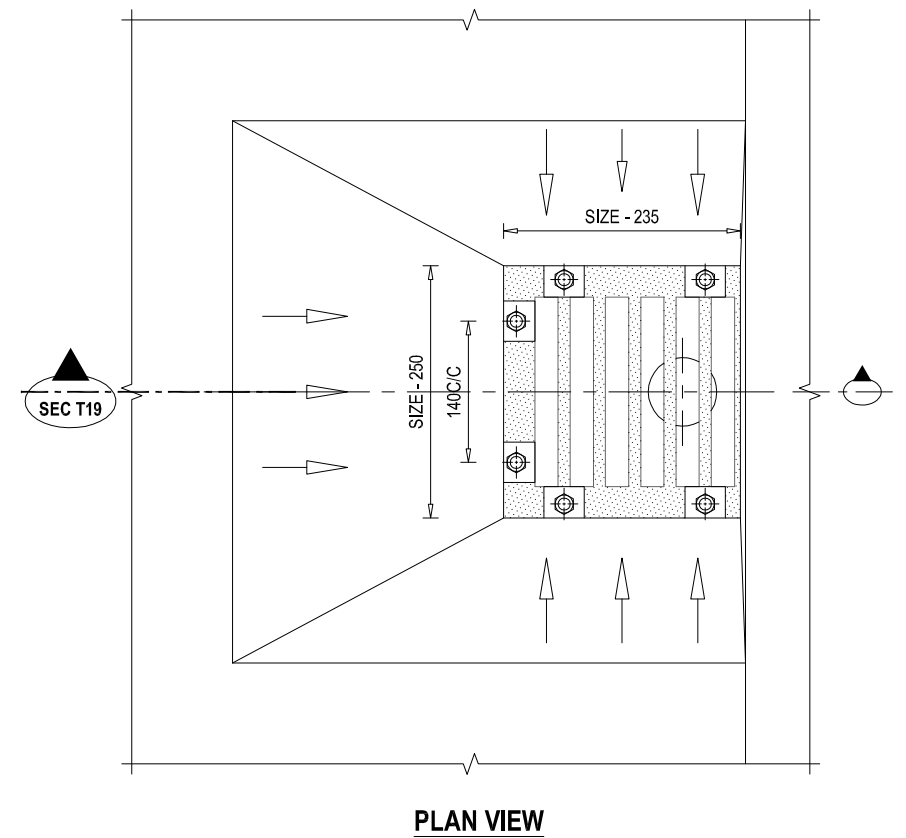
Drawing Name
SUPER STRUCTURE BAR BENDING SCHEDULE OF BRIDGE OVER RIVER BARAHARI
Reference Drawings

Scale:
AS SHOWN
Chainage:
260+921

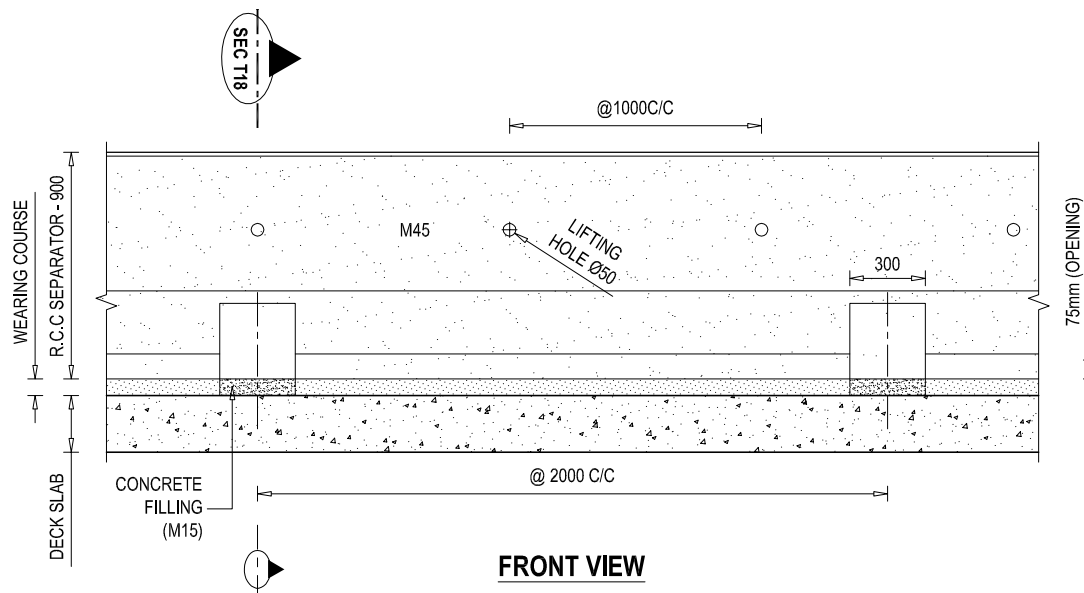
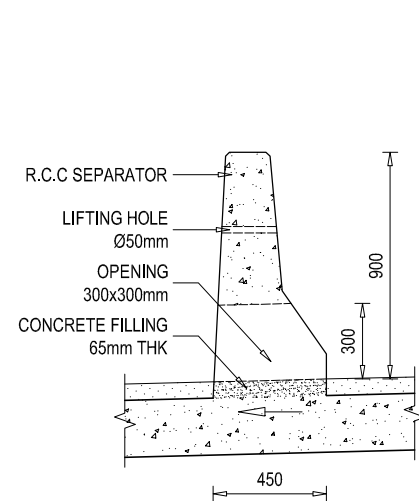
Date:
23.04.2023
Drawing No. KDP/DPR/STR/BR/BARAHARI /DD-22
Sheet No.1/1



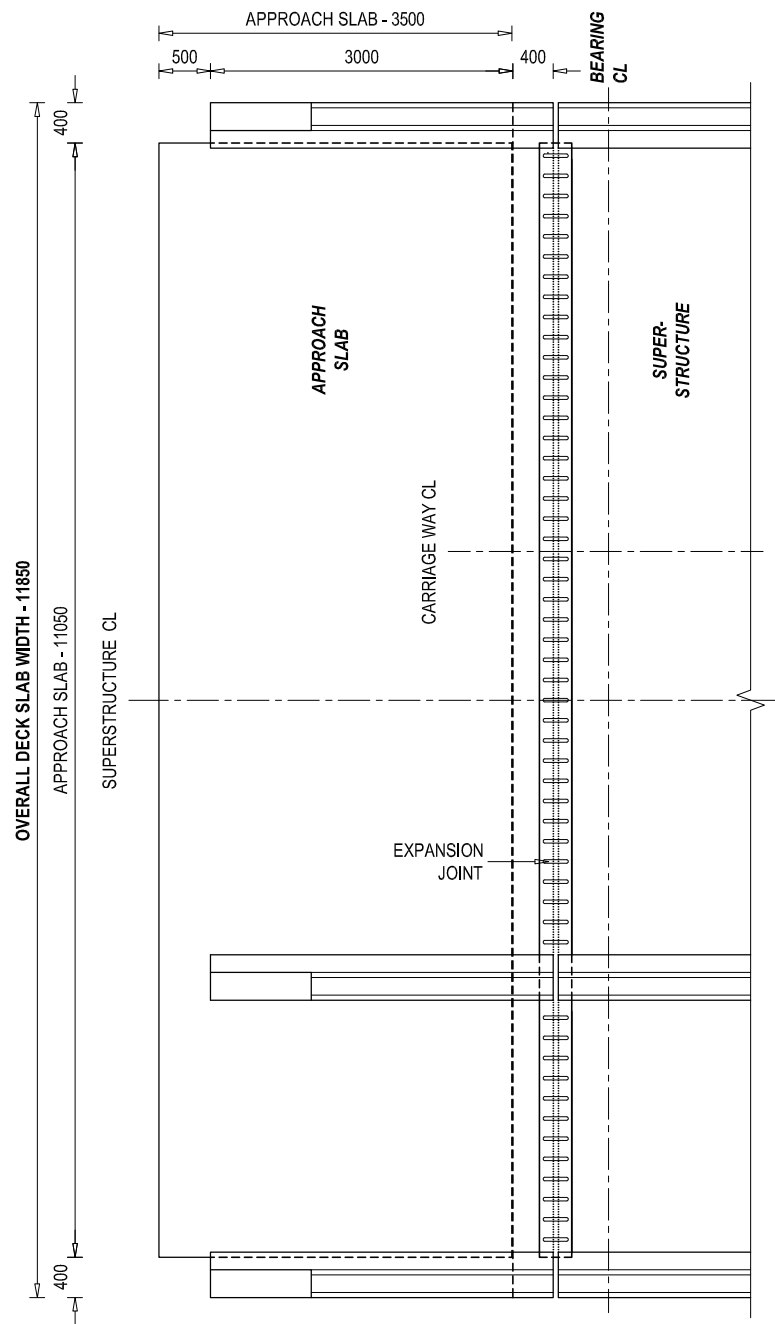
DETAILS OF GALVANIZED MILD STEEL (G.M.S)
UTILITY DUCT CLAMP
 SCALE - 1 : 10



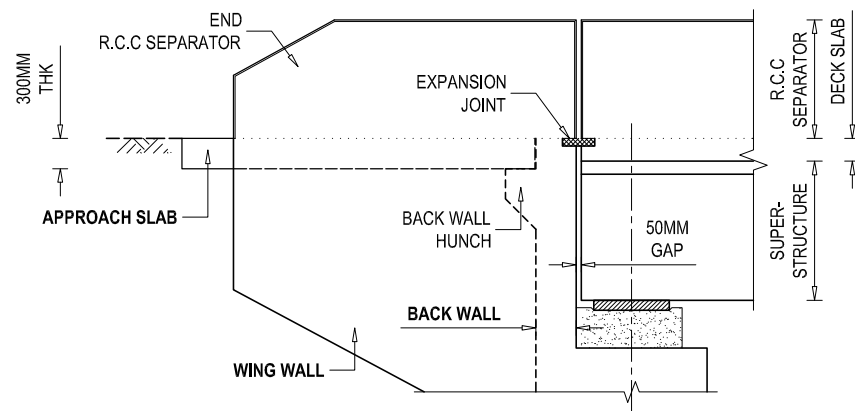
DETAILS OF GALVANIZED MILD STEEL (G.M.S)
DRAINAGE SPOUT
 SCALE - 1 : 10



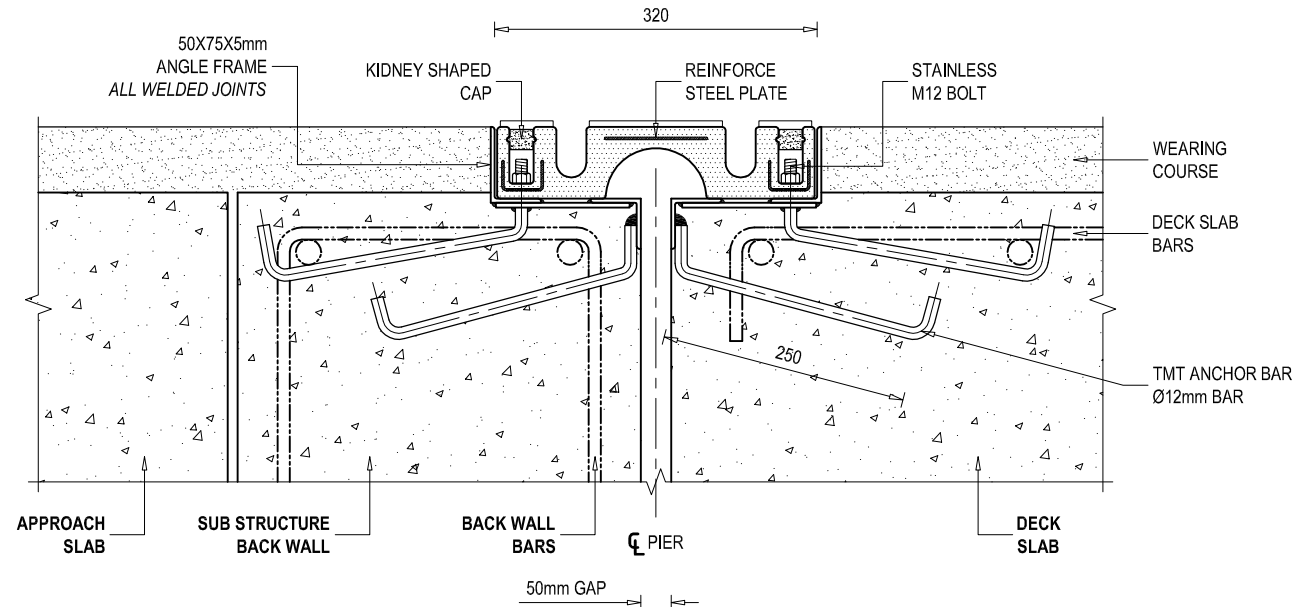
DETAIL ELEVATION VIEW AT R.C.C SEPARATOR
& IT'S DRAIN OPENING
 SCALE - 1 : 40



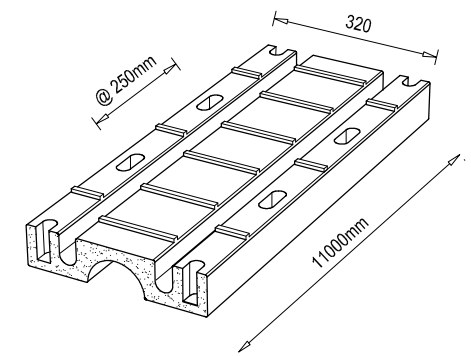
**PLAN VIEW AT EXPANSION JOINT, END R.C.C
SEPARATOR & APPROACH SLAB**



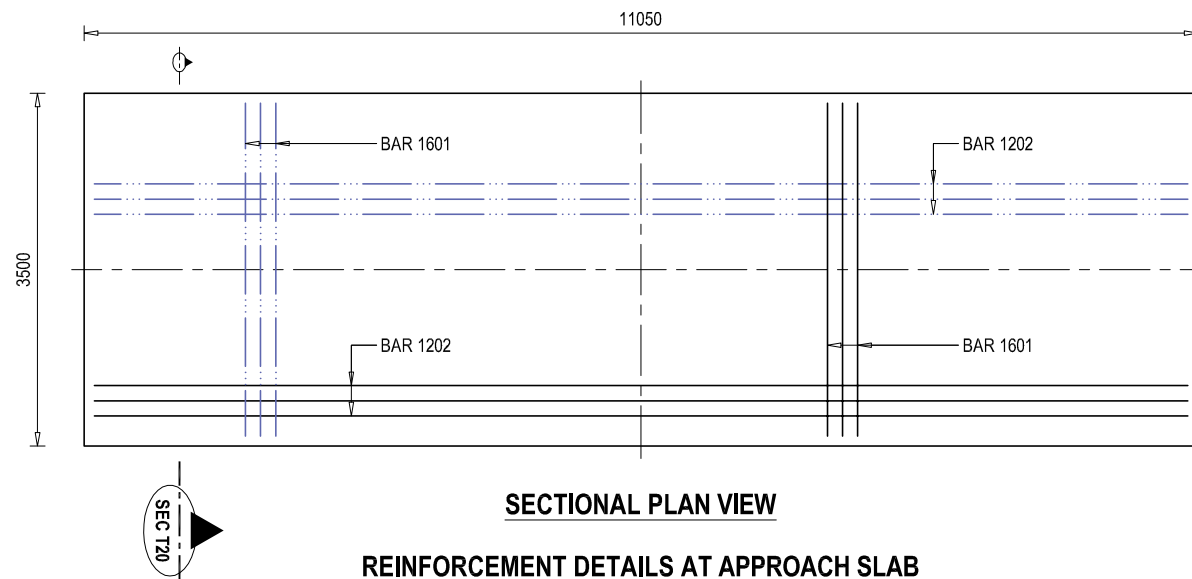
ELEVATION VIEW



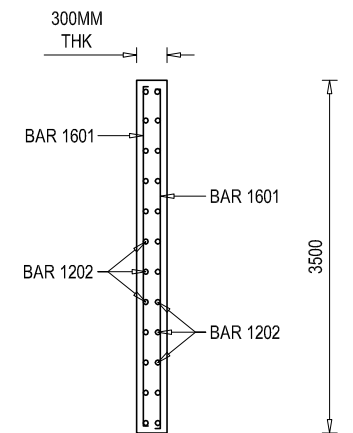
SEAL TYPE EXPANSION JOINTS ARRANGEMENT IN A CARRIAGEWAY
SCALE - 1 : 10 @ A3 PAPER



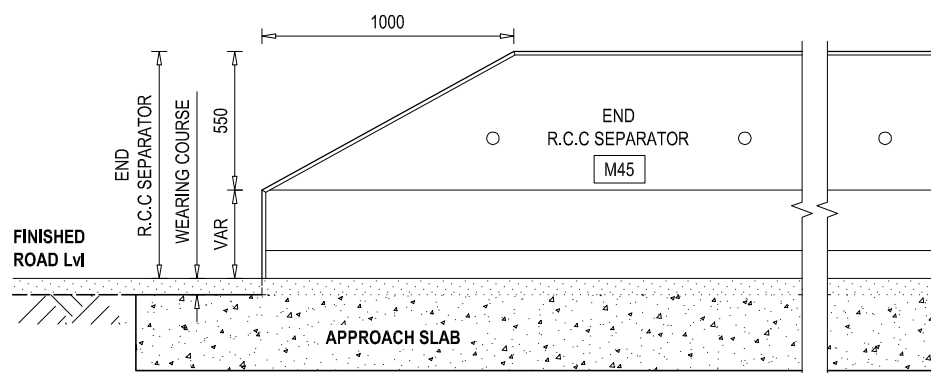
**EXPANSION JOINT ISOMETRIC VIEW
- SEAL TYPE**
SCALE - NON



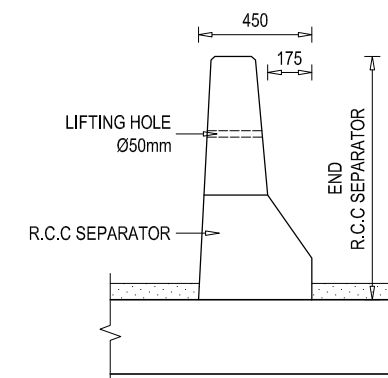
SECTIONAL PLAN VIEW
REINFORCEMENT DETAILS AT APPROACH SLAB
SCALE - 1 : 100 @ A3 PAPER



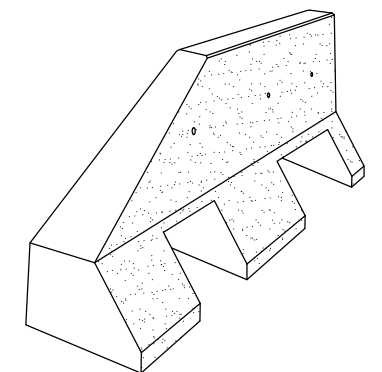
SECTIONAL ELEVATION VIEW AT SEC T20



ELEVATION VIEW OF END R.C.C SEPARATOR
SCALE - 1 : 40 @ A3 PAPER



SIDE VIEW
SCALE - 1 : 40 @ A3 PAPER

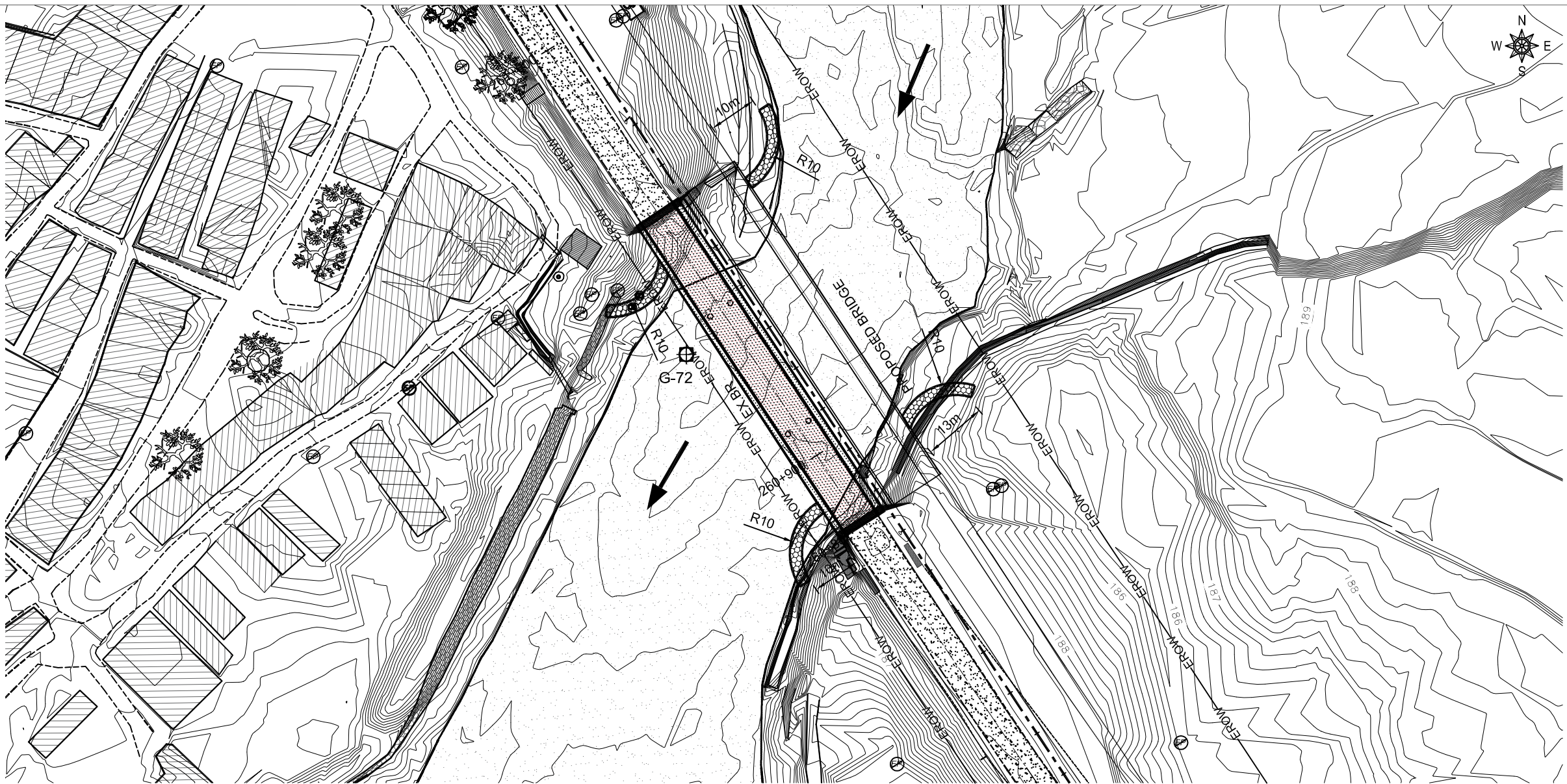


END R.C.C SEPARATOR ISOMETRIC VIEW
SCALE - NON

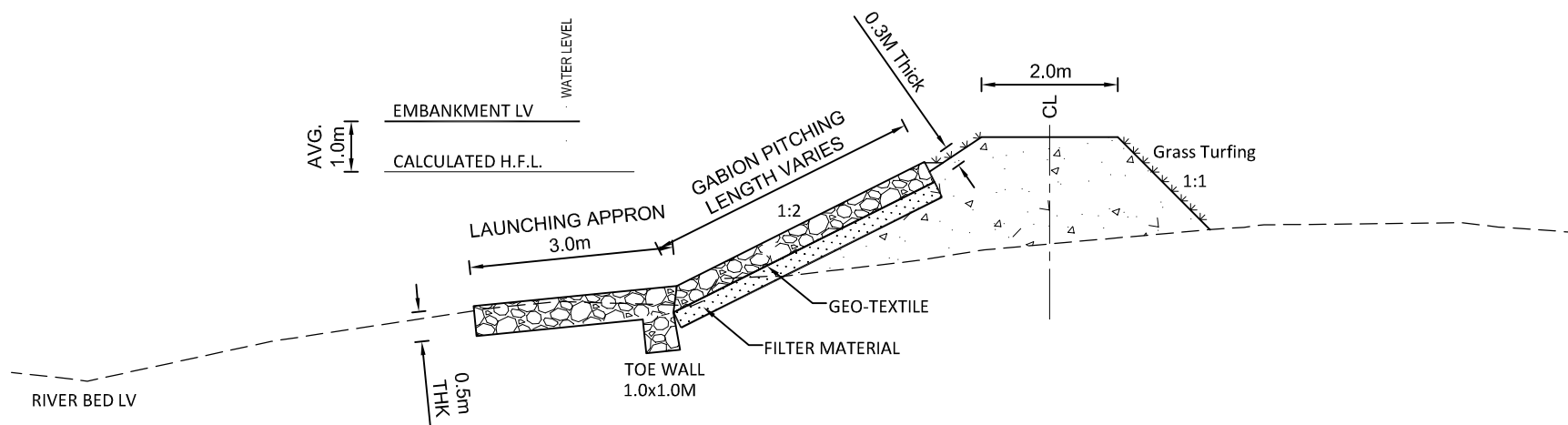
EMPLOYER  Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	PROJECT NAME Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	DESIGN CONSULTANTS Joint Venture of  EPTISA Servicios De Ingenieria Madrid, Spain  STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Designed By Mr. R.D. Nec.No. 6489 Q/IL/14/ Checked By Mr. S.M. Approved By Mr. H.B.	Drawing Name MISCELLANEOUS DETAILS OF BRIDGE OVER RIVER BARAHARI Reference Drawings KDP/DPR/STR/BR/BARAHARI/DD-9	Scale: AS SHOWN Chainage: 260+921	Date: 23.04.2023 Drawing No:- KDP/DPR/STR/BR/BARAHARI/DD-23 Sheet No.2/2
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EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Mr. R.D.	Drawing Name	Scale:	Date:			
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP)	Joint Venture of		Nec.No. 6469 CIVIL/14				Signature	AS SHOWN	23.04.2023
		 EPTISA Servicios De Ingenieria Madrid, Spain  STUP Consultants Private Limited Kolkata, India		Checked By						
	Detailed Design of Upgradation of Kamala-Dhakebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	In Association With Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited	Approved By	Mr. H.B.	Reference Drawings	Chainage:	260+921			
				Signature			Sheet No. 1 / 1			



TOPOGRAPHIC MAP



SECTION OF EMBANKMENT

SCALE - 1x : 5x

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of  EPTISA Servicios De Ingeniera Madrid, Spain  STUP Consultants Private Limited Kolkatta, India In Association With Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited	Mr. R.D. Nec.No.2489 CIVIL/24	RIVER TRAINING WORKS OF BRIDGE OVER RIVER BARAHARI	1:1000	24.04.2023
			Checked By Mr. S.M.	Reference Drawings	Chainage: 260+921	Drawing No.- KDP/DPR/STR/BR/BARAHARI/DD- 25
			Approved By Mr. H.B.			Sheet No. 1/1

Bearing Design Data for 23.5m Span and 11.85m width

Load Condition	Items	Under	On each Neoprene Bearing	Unit
Under No Live Load	V	NO EQ.	56.96	Ton
		EQ.	65.50	Ton
	H _L	NO EQ.	-	Ton
		EQ.	12.82	Ton
	H _T	NO EQ.	-	Ton
		EQ.	12.82	Ton
	θ	NO EQ.	0.00250	radian
		EQ.	0.00288	radian
	Δ		14.57	mm
Under Maximum Live Load	V	NO EQ.	98.69	Ton
		EQ.	108.49	Ton
	H _L	NO EQ.	-	Ton
		EQ.	0.00	Ton
	H _T	NO EQ.	-	Ton
		EQ.	0.00	Ton
	θ	NO EQ.	0.00388275	radian
		EQ.	0.00447	radian
	Δ		15.77	mm

Bearing Design Data for 28m Span and 11.85m width

Load Condition	Items	Under	On each Neoprene Bearing	Unit
Under No Live Load	V	NO EQ.	73.31	Ton
		EQ.	84.30	Ton
	H _L	NO EQ.	-	Ton
		EQ.	16.49	Ton
	H _T	NO EQ.	-	Ton
		EQ.	16.49	Ton
	θ	NO EQ.	0.00280	radian
		EQ.	0.00321	radian
	Δ		17.36	mm
Under Maximum Live Load	V	NO EQ.	116.22	Ton
		EQ.	128.50	Ton
	H _L	NO EQ.	-	Ton
		EQ.	0.00	Ton
	H _T	NO EQ.	-	Ton
		EQ.	0.00	Ton
	θ	NO EQ.	0.0042	radian
		EQ.	0.00480	radian
	Δ		28.64	mm