



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- Tuteshwor-2
Volume-2
Detailed Drawing

April, 2023

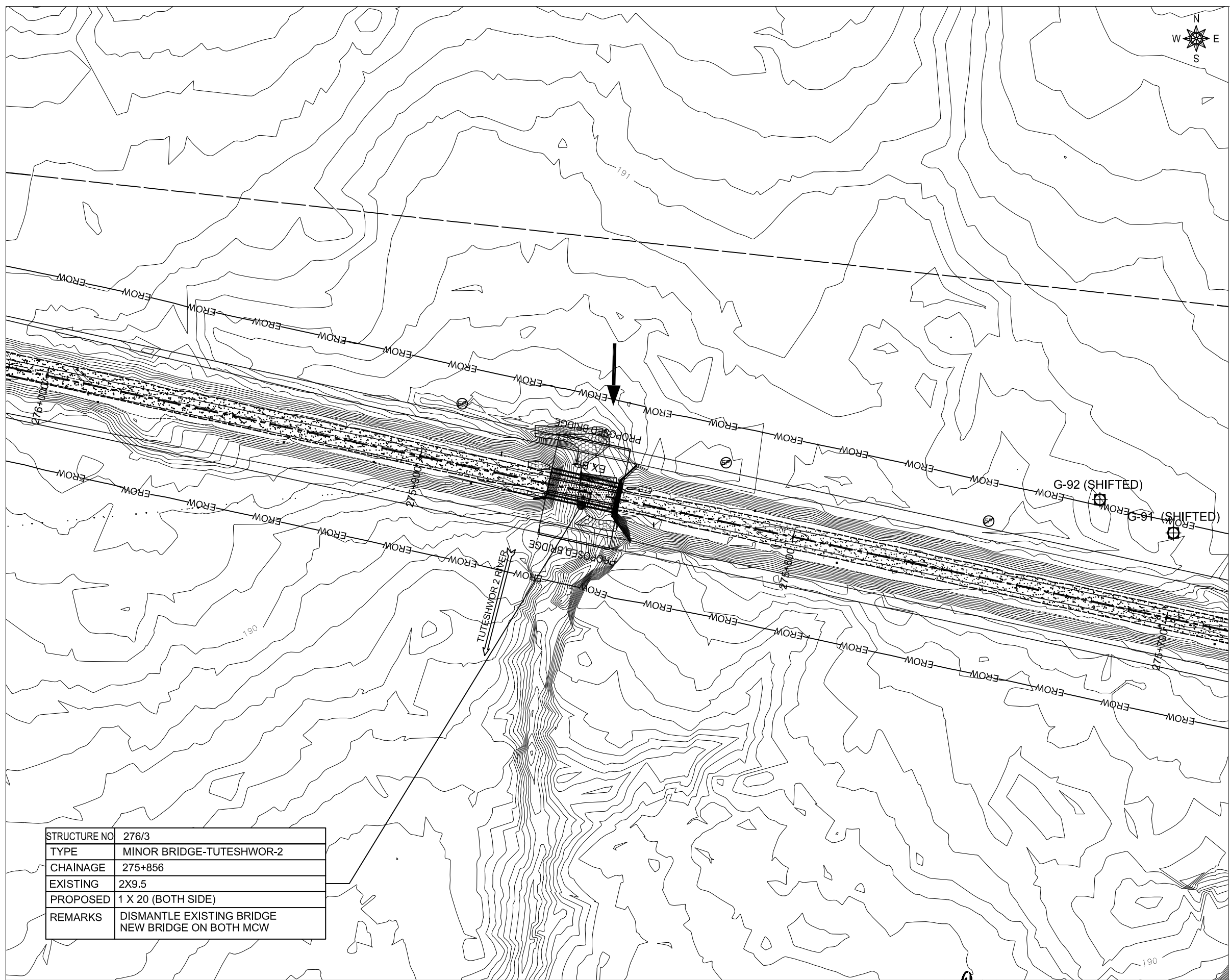
Joint Venture Of:

eptisa EPTISA Servicios De Ingenieria
Madrid, Spain

STUP STUP Consultants Private Limited
Kolkata, India

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

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STRUCTURE NO	276/3
TYPE	MINOR BRIDGE-TUTESHWOR-2
CHAINAGE	275+856
EXISTING	2X9.5
PROPOSED	1 X 20 (BOTH SIDE)
REMARKS	DISMANTLE EXISTING BRIDGE NEW BRIDGE ON BOTH MCW



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		DELINATOR	
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	

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.	275+856		26.04.2023	
				epysa EPTISA Servicios De Ingeniera Madrid, Spain		Checked By	Mr. S.M.				
				STUP Consultants Private Limited Kolkatta, India		Approved By	Mr. H.B.				
				In Association With		Reference Drawings				Drawing No.-	
				Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited						KDP/DPR/STR/BR/TUTESHWOR-2/DD- 3	
										Sheet No. 1/1	

A. GENERAL

1. ALL DIMENSIONS ARE IN MILLIMETERS 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
f) IRC SP-13 2022
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, $\phi=30^\circ$ & 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) - 13.55 CUMECs
2. HFL - 188.530 M
3. FREE BOARD (MINIMUM) - 1 M
4. MAXIMUM SCOUR LEVEL:
ABUTMENT - 185.370m

SCOUR LEVELS WERE CALCULATED AS PER IRC 78:2014 CL 703 WITH APPROPRIATELY INCREASED DESIGN DISCHARGE

D. STRUCTURAL AND OTHER DATA: -

1. SPAN ARRANGEMENT: 1 X 20 = 20 m
2. SUPERSTRUCTURE:
PRECAST RCC LONGITUDINAL GIRDERS & CAST-IN-SITU RCC CROSS GIRDERS AND DECK SLAB.
3. SUBSTRUCTURE
A) ABUTMENTS - RCC WALL TYPE
4. FOUNDATIONS
A) ABUTMENT - OPEN FOUNDATION
5. BEARINGS
ELASTOMERIC BEARINGS
6. WEARING COAT:
65 MM THICK ASPHALTIC CONCRETE WEARING COAT AS PER STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS (2073), DEPARTMENT OF ROADS
7. 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)
8. DRAINAGE SPOUTS - AS PER STANDARD SPECIFICATION FOR ROAD & BRIDGE WORKS 2073
9. RAILINGS/CRASH BARRIER:
RCC CRASH BARRIER AT EDGES OF CARRIAGEWAY AND FOOTPATH
10. FOOTPATH
2.5m WIDE FOOTPATH AT OUTER EDGE OF DECK

11. CONCRETE: -

- a. FOUNDATION PAD.....M35
b. BEARING PEDESTALS.....M40
c. ABUTMENTM35
d. RETURN WALL.....M35
e. LEVELING COURSE: I) BELOW APPROACH SLAB.....M15
II) BELOW PILE CAP.....M15
g. APPROACH SLABM30
h. CAST-IN-SITU CRASH BARRIERM40
i. KERBM35
j. DECK SLAB FOR RCC GIRDERS.....M35
k. PRECAST RCC GIRDERSM35
l. CAST-IN-SITU CROSS GIRDER FOR RCC GIRDERS.....M35

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. CONCRETE COVER

- a. DECK SLAB, GIRDER, PEDESTAL, CAP : 40 MM
b. SUBSTRUCTURE AND FOUNDATION : 75 MM

14. LAPS (Ls) ARE TO BE STAGGERED AND MINIMUM LAP LENGTH ARE TO BE AS FOLLOWS:

- a) FOR M 30 GRADE CONCRETE : 57.2 ϕ
b) FOR M 35 GRADE CONCRETE : 51.48 ϕ
c) FOR M 40 GRADE CONCRETE : 48.62 ϕ

(WHERE ϕ IS THE DIAMETER OF THE BAR)

15. 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
LAPPED BAR <25%	57.2 ϕ	51.48 ϕ	48.62 ϕ	45.76 ϕ
25% $\leq$ LAPPED BAR <33%	65.78 ϕ	62.65 ϕ	55.91 ϕ	52.62 ϕ
33% $\leq$ LAPPED BAR <50%	80.08 ϕ	72.07 ϕ	68.07 ϕ	64.06 ϕ
50% $\leq$ LAPPED BAR	85.8 ϕ	77.22 ϕ	72.93 ϕ	68.64 ϕ

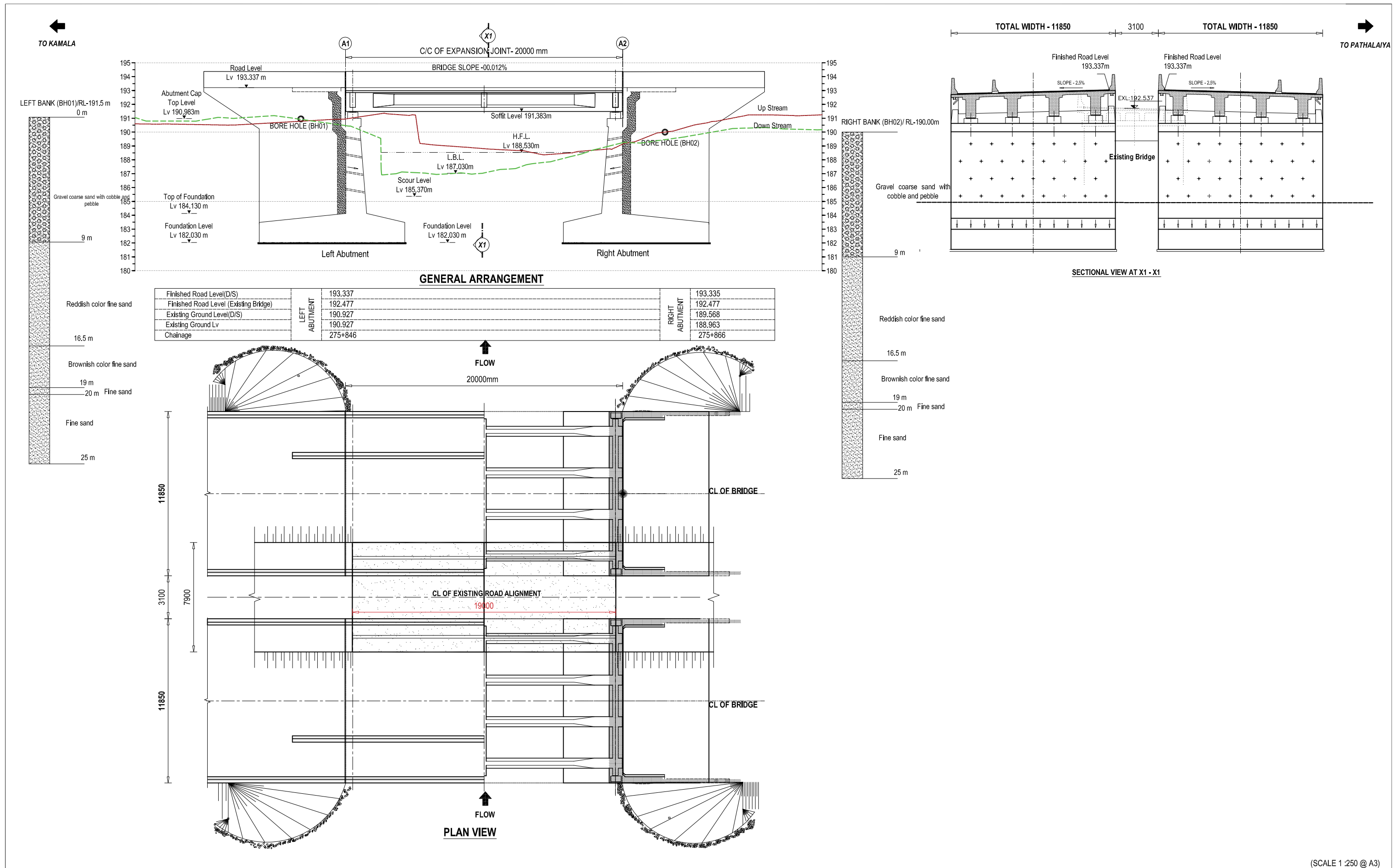
16. THE LAP LENGTH SHALL BE STAGGERED BY MINIMUM DISTANCE OF 1.3 TIMES THE LAP LENGTH.

17. HELICAL REINFORCEMENT SHALL BE LAPPED BY 1.5 TURNS.

18. 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.

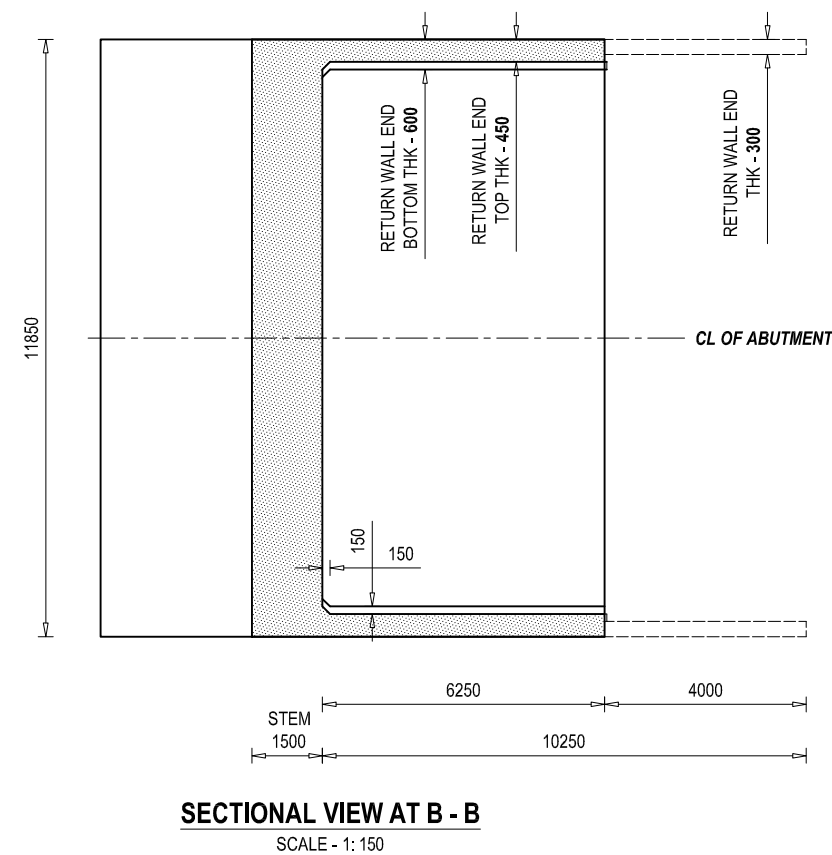
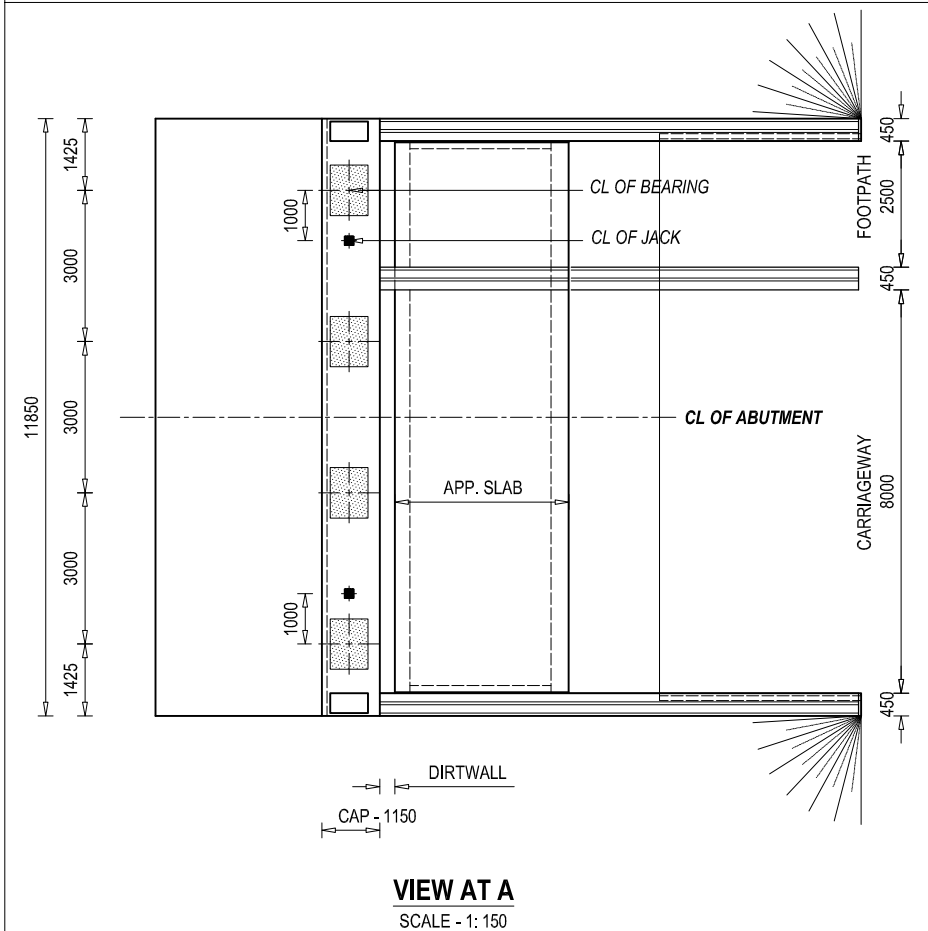
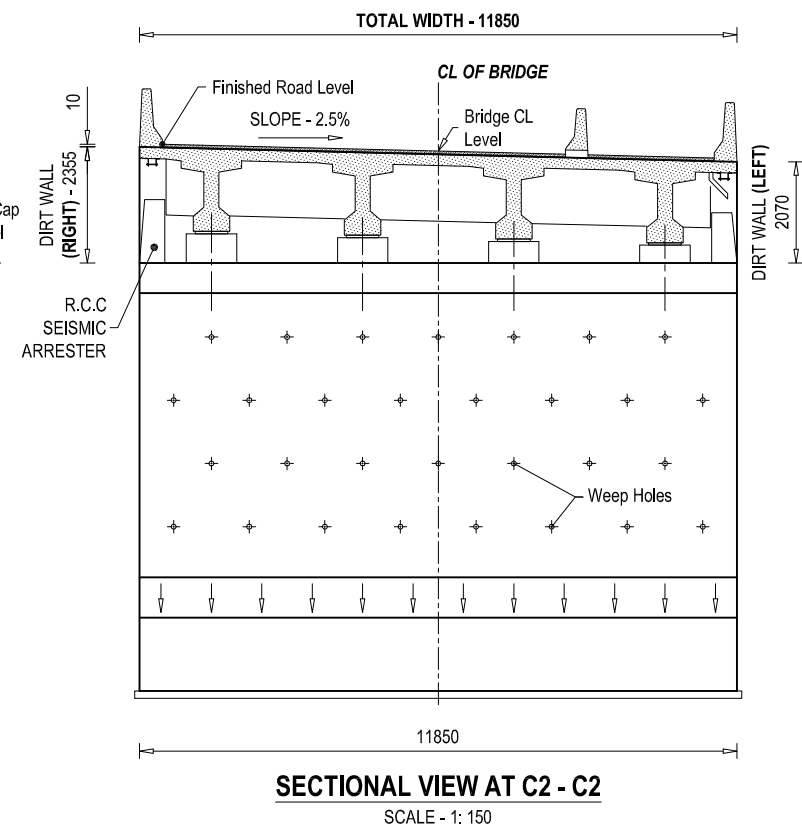
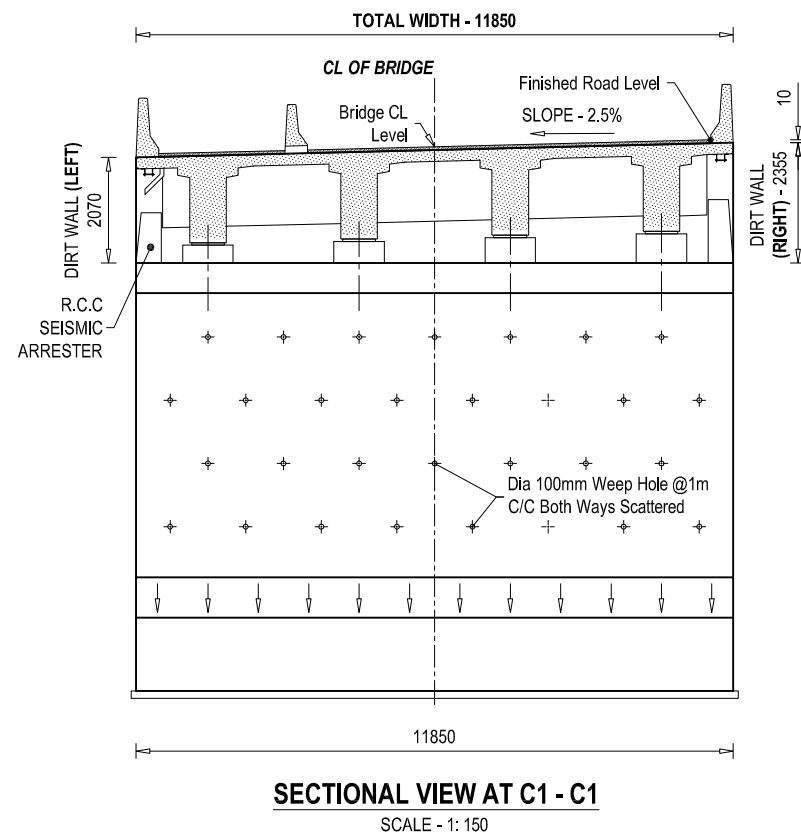
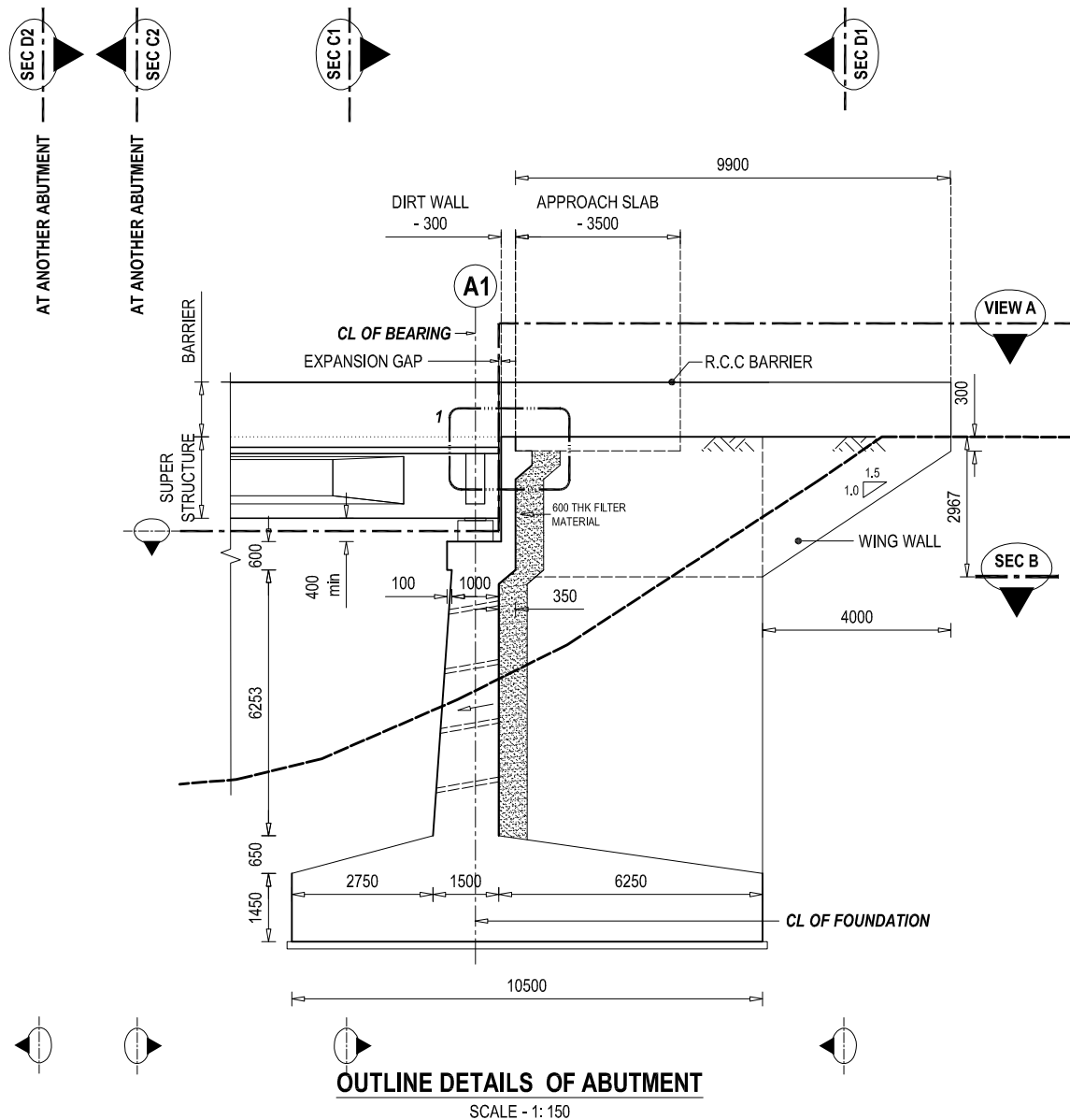
19. SHARP EDGES OF CONCRETE TO BE CHAMFERED MINIMUM 50 X 50

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  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	Signature		GENERAL NOTES OF BRIDGE OVER RIVER TUTESHWOR-2	AS SHOWN	05.05.2023
			Checked By	Mr. S.M.			Drawing No.- KDP/DPR/STR/BR/TUTESHWOR-2/DD-4
			Approved By	Mr. H.B.	Reference Drawings —	Chainage: 275+850	Sheet No. 1 / 1



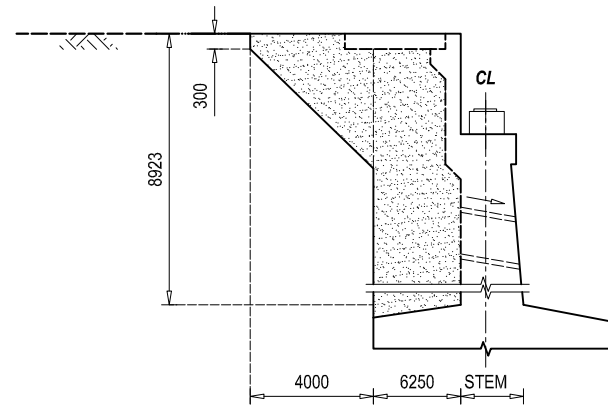
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 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	PROJECT NAME Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathalaya Road Section (130 KM) of Mahendra Highway and Bridges	DESIGN CONSULTANTS		Designed By Mr. R.D. Nec.No. 6489 CHALUKY Checked By Mr. S.M. Approved By Mr. H.B.	 Signature  Signature  Signature	Drawing Name GENERAL ARRANGEMENT OF BRIDGE OVER RIVER TUTESHWOR-2	Scale: AS SHOWN	Date: 25.04.2023
		Joint Venture of  EPTISA Servicios De Ingeniera Madrid, Spain  STUP Consultants Private Limited Kolkatta, India				Reference Drawings -		Drawing No.- KDP/DPR/STR/BR/TUTESHWOR-2/DD- 5
		In Association With Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited				Chainage: 275+856	Sheet No. 1 / 1	

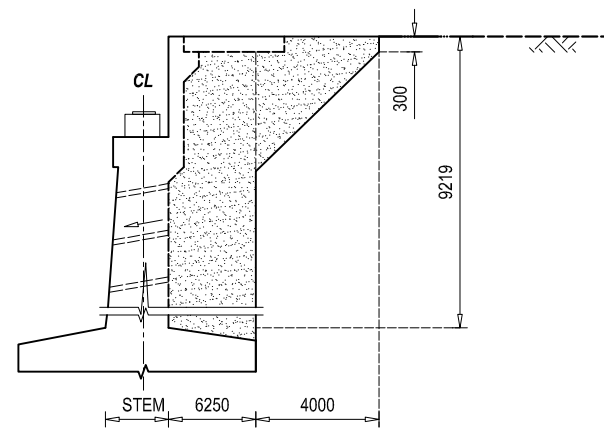


NOTE
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EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathalaya 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 Kritt Consultant and Rays Consultant Private Limited	Mr. R.D.	ABUTMENT DETAILS OF BRIDGE OVER RIVER TUTESHWOR-2	AS SHOWN	07.08.2023
			Checked By	Reference Drawings	Chainage:	Drawing No.- KDP/DPR/STR/BR/TUTESHWOR-2/DD-6
			Approved By	KDP/DPR/STR/BR/TUTESHWOR-2/DD-8	275+856	Sheet No. 1 / 2

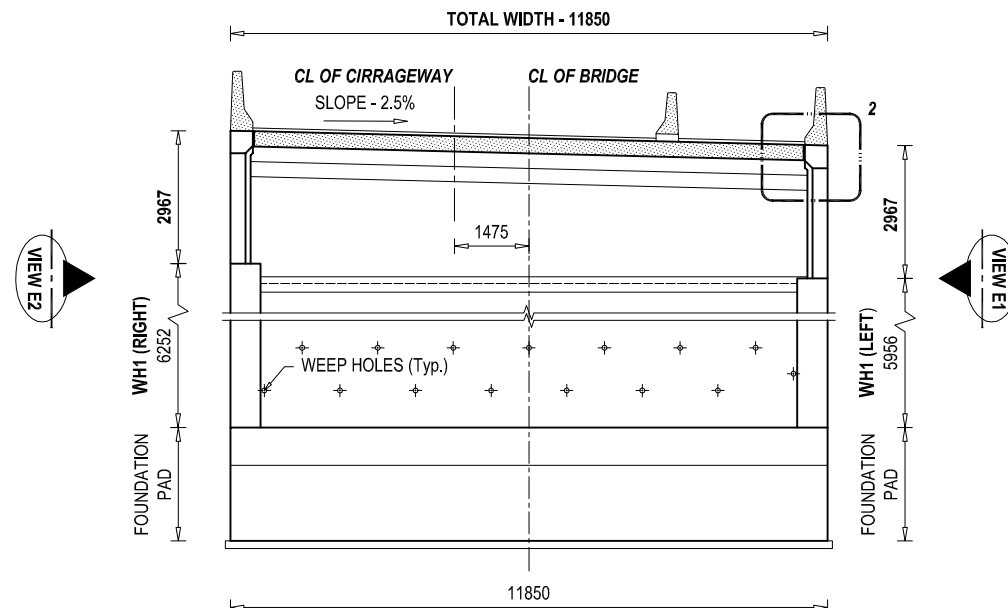


VIEW AT E1
SCALE - 1: 150

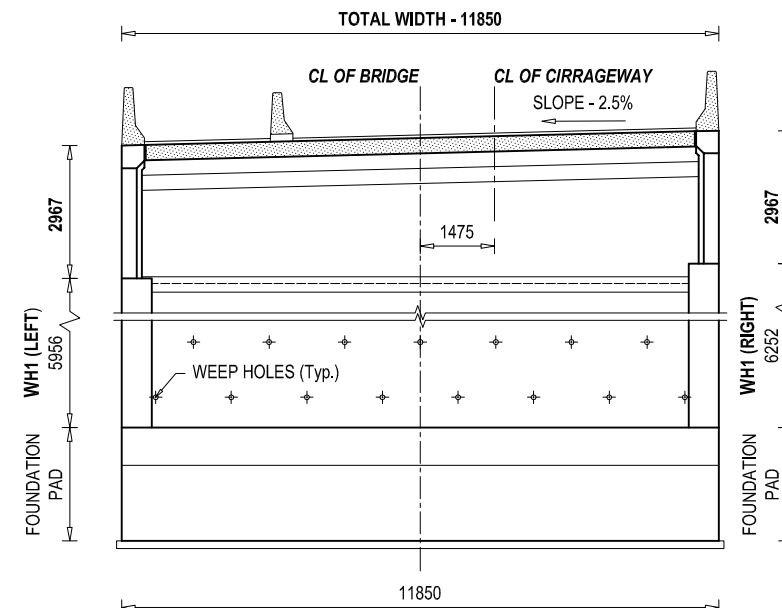


VIEW AT E2
SCALE - 1: 150

DETAIL AT RETURN WALL

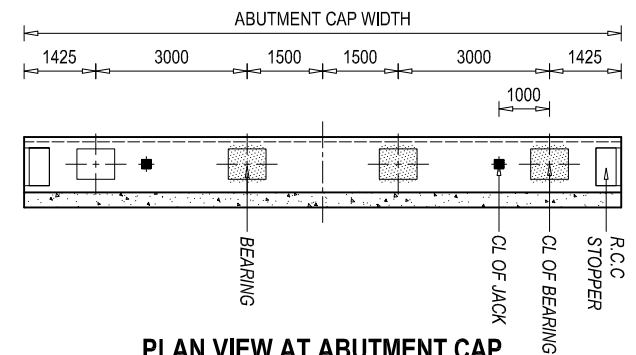


SECTIONAL VIEW AT D1 - D1
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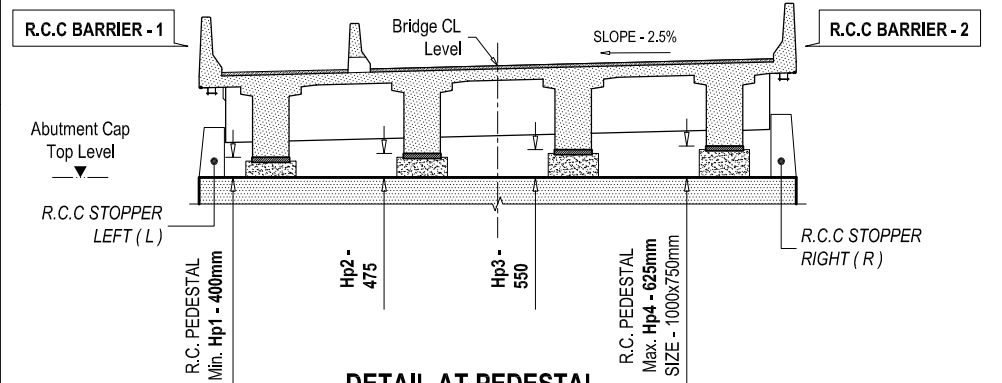


SECTIONAL VIEW AT D2 - D2
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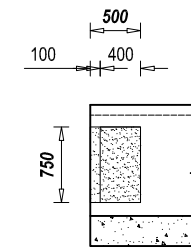
DETAIL AT DIRT WALL



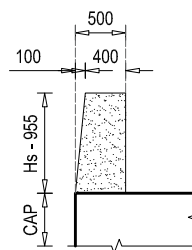
PLAN VIEW AT ABUTMENT CAP
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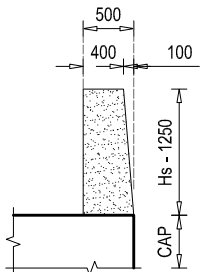
DETAIL AT PEDESTAL
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**R.C.C SEISMIC ARRESTER
PLAN VIEW**

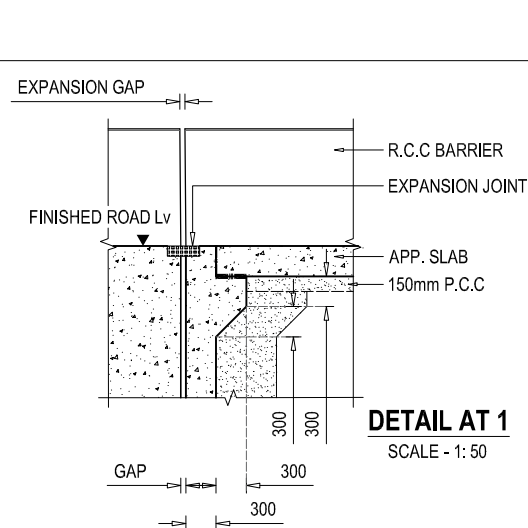


**R.C.C SEISMIC ARRESTER - LEFT
ELEVATION VIEW**



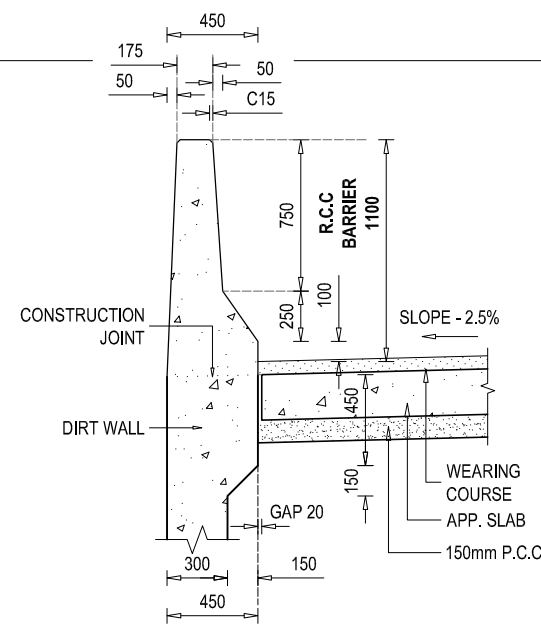
**R.C.C SEISMIC ARRESTER - RIGHT
ELEVATION VIEW**

DETAIL AT PEDESTAL
SCALE - 1: 75

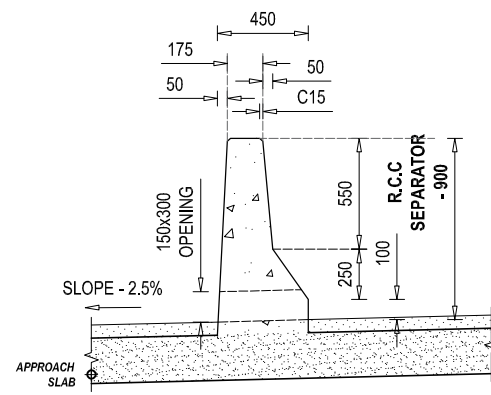


DETAIL AT 1
SCALE - 1: 50

NOTE
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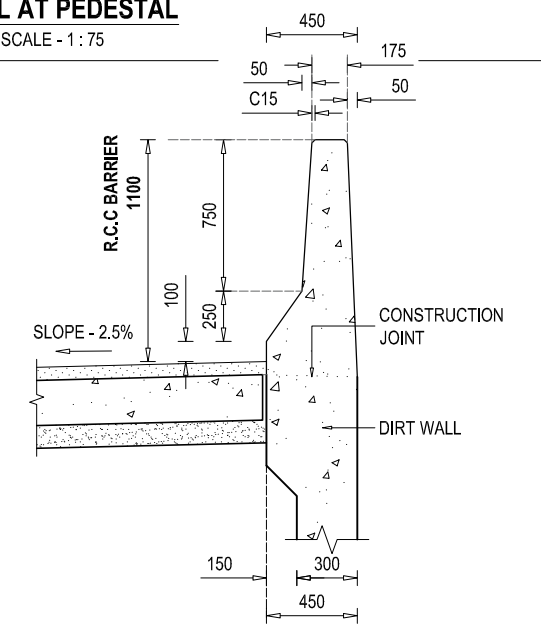


**DETAIL SECTIONAL VIEW
AT R.C.C BARRIER - 1
DETAIL AT 2**
SCALE - 1: 25

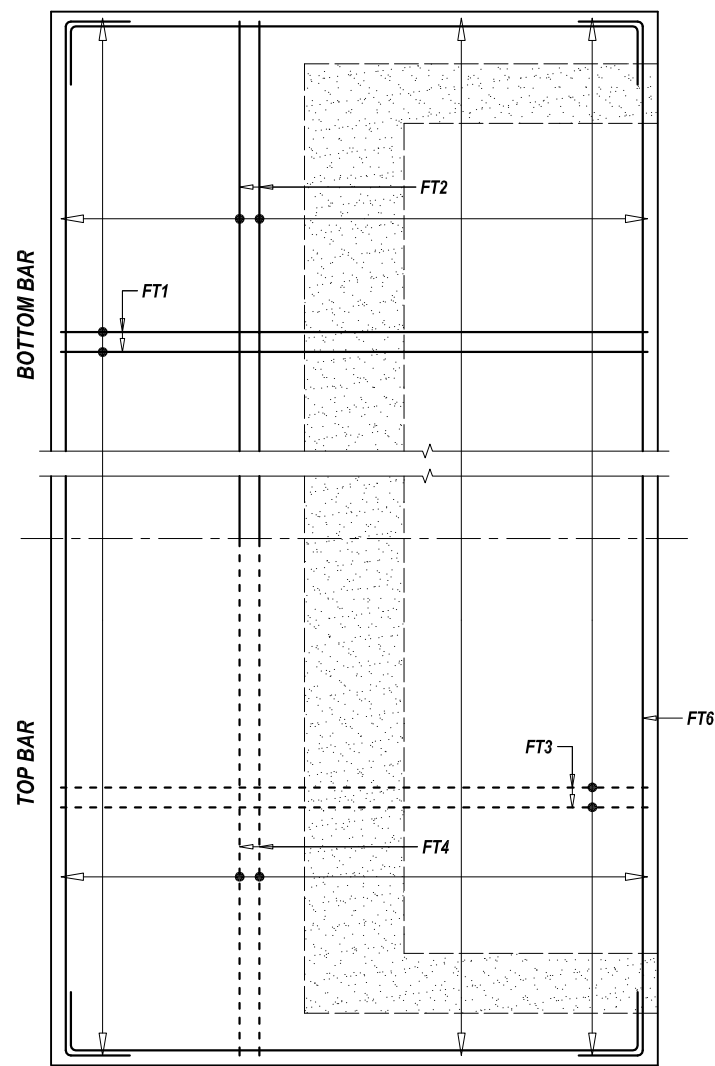


**DETAIL SECTIONAL VIEW
AT R.C.C SEPARATOR**
SCALE - 1: 25

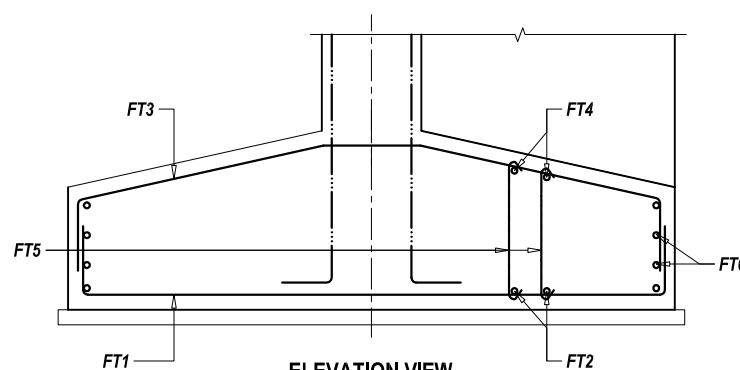
**DETAIL SECTIONAL
VIEW AT R.C.C BARRIER - 2**
SCALE - 1: 25



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-Pathlajaya Road Section (130 KM) of Mahendra Highway and Bridges	DESIGN CONSULTANTS Joint Venture of ep4sa EPTISA Servicios De Ingenieria Madrid, Spain ow STUP Consultants Private Limited Kolkatta, India In Association With Udaya Consultancy, Geocom International, Sundar Kruti Consultant and Rays Consultant Private Limited	Designed By Mr. R.D. Nec.No. 6480 CIVIL/14 Checked By Mr. S.M. Approved By Mr. H.B.	Drawing Name ABUTMENT DETAILS OF BRIDGE OVER RIVER TUTESHWOR-2 Reference Drawings KDP/DPR/STR/BR/TUTESHWOR-2/DD-8	Scale: AS SHOWN Chainage: 275+856	Date: 07.08.2023 Drawing No.- KDP/DPR/STR/BR/TUTESHWOR-2/DD-6 Sheet No. 2 / 2
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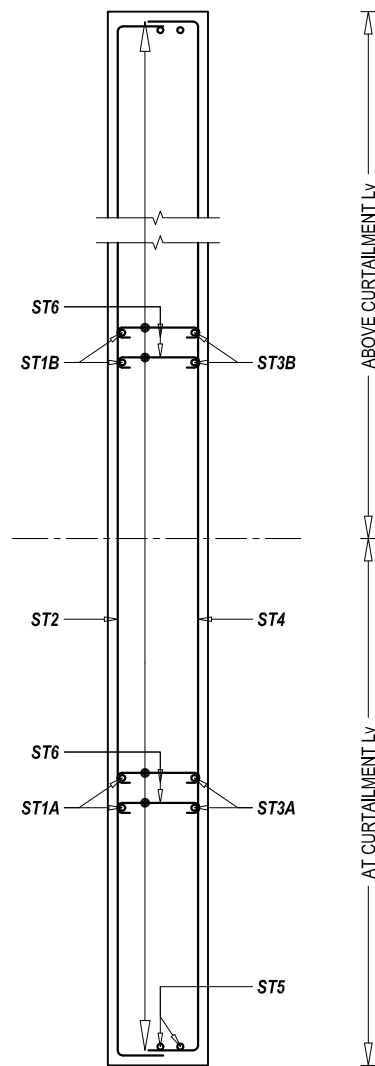


PLAN VIEW

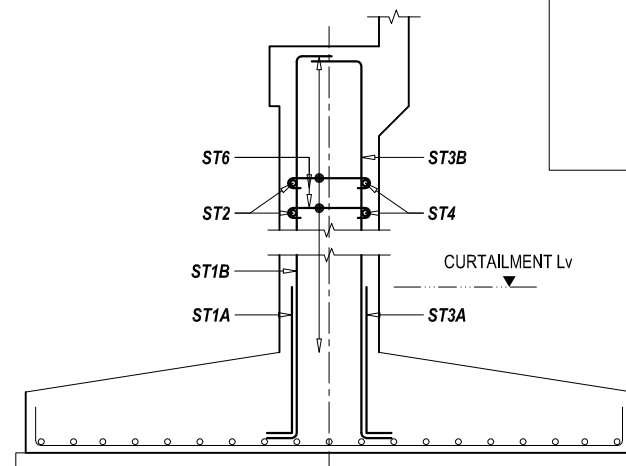


BAR DETAIL OF PILE CAP
SCALE - 1 : 75

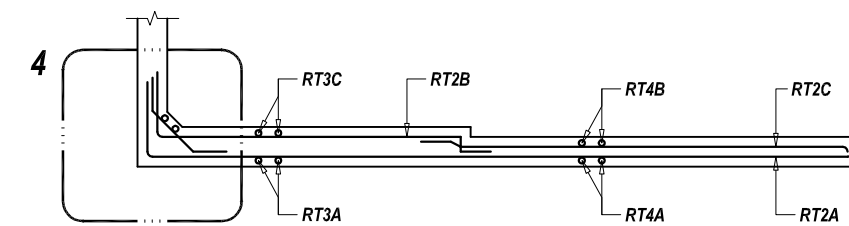
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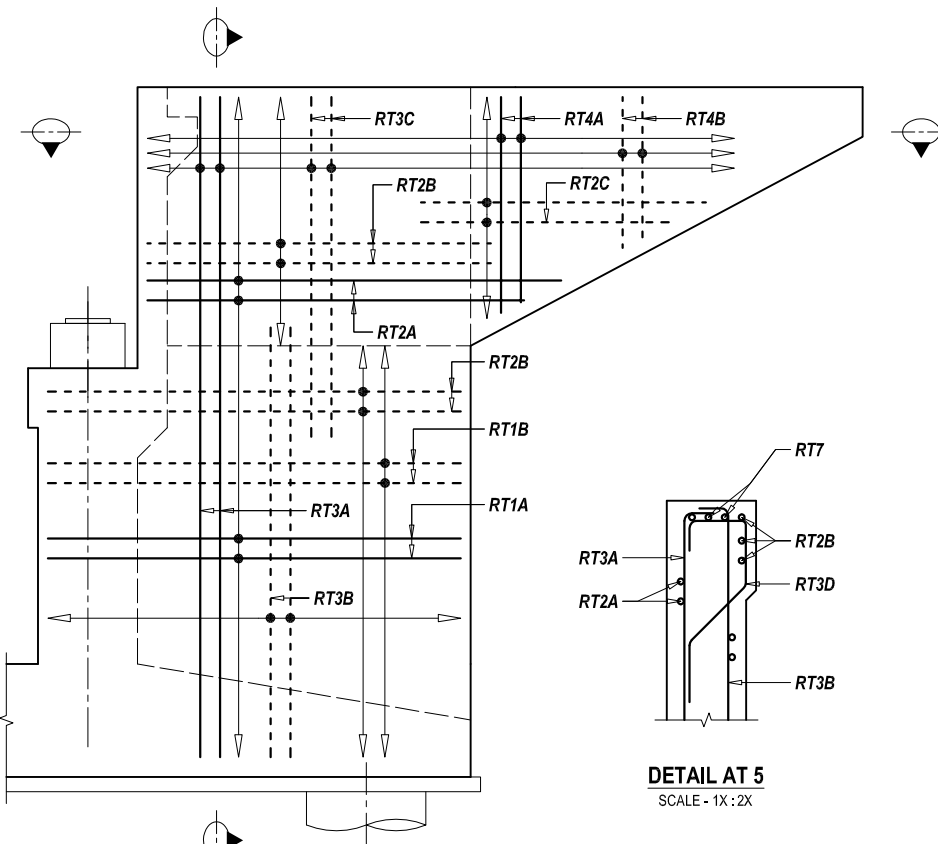
PLAN VIEW



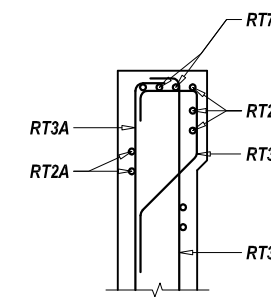
BAR DETAIL AT ABUTMENT STEM
SCALE - 1 : 75



SECTIONAL PLAN VIEW

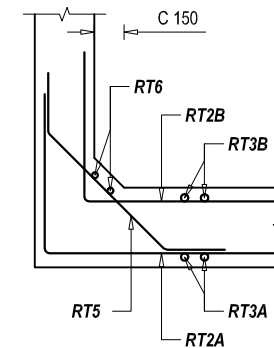


ELEVATION VIEW

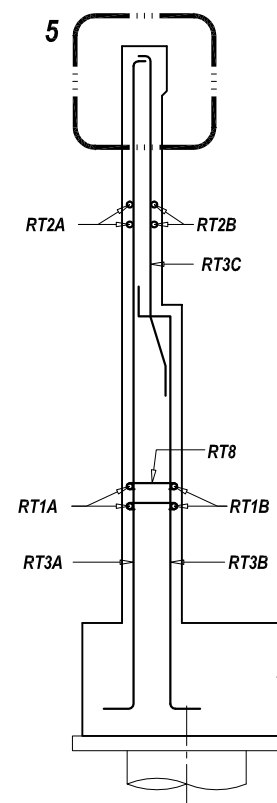


DETAIL AT 5
SCALE - 1X : 2X

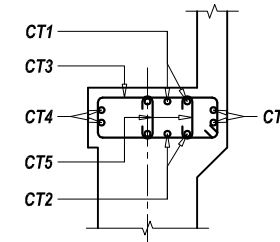
BAR DETAIL AT RETURN WALL
SCALE - 1 : 75



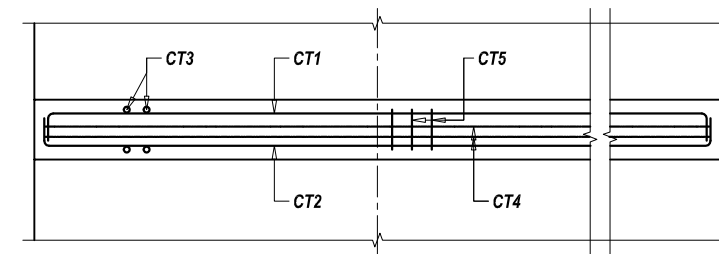
DETAILS AT 4



SECTIONAL SIDE VIEW

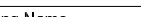


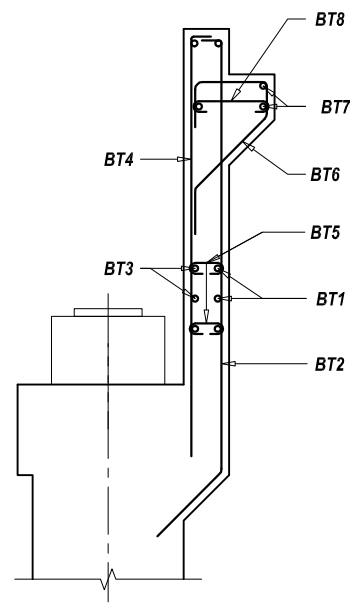
ELEVATION VIEW



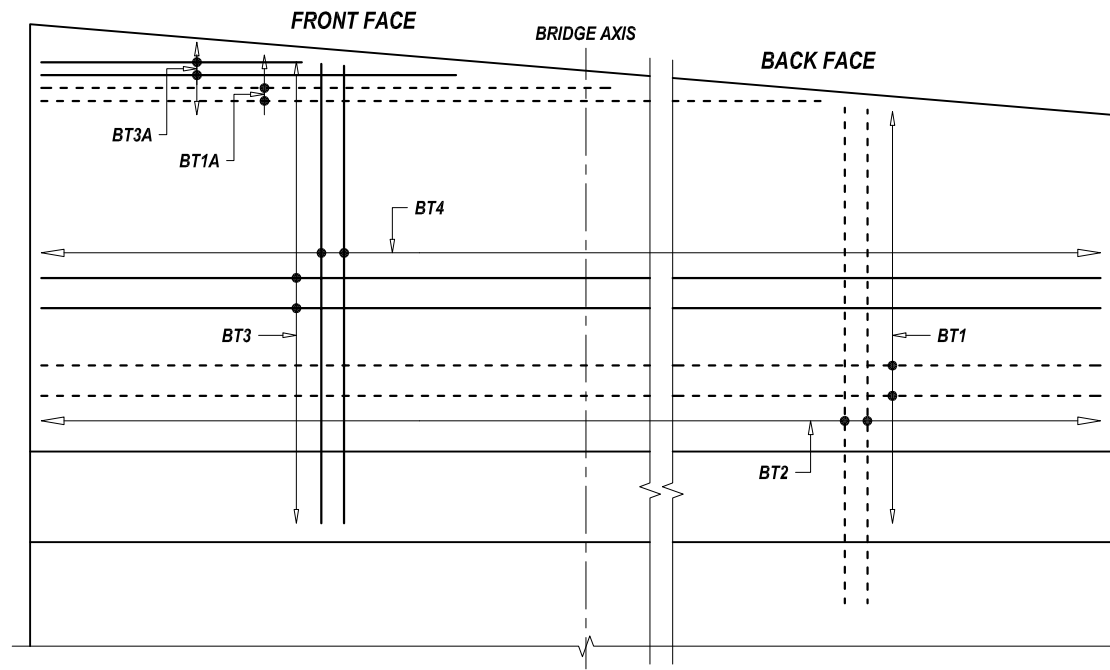
BAR DETAIL AT ABUTMENT CAP
SCALE - 1 : 75

--- 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:	AS SHOWN	Date:	07.08.2023
				Joint Venture of										
	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-Patilaia Road Section (130 KM) of Mahendra Highway and Bridges		EPTISA Servicios De Ingenieria Madrid, Spain					STUP Consultants Private Limited Kolkatta, India	Checked By	Mr. S.M.		ABUTMENT REINGORCEMENT DETAILS OF BRIDGE OVER RIVER TUTESHWOR-2
				In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited		Reference Drawings KDP/DPR/STR/BR/TUTESHWOR-2/DD-8		Chainage:	275+856	Sheet No. 1 / 2				



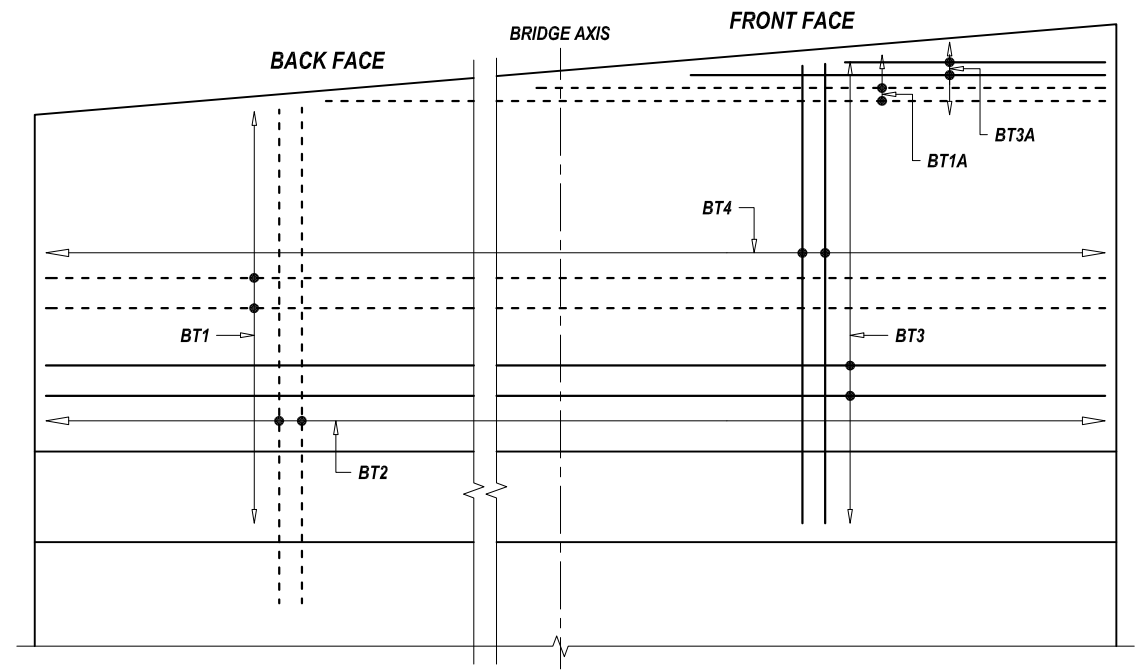
SECTIONAL SIDE VIEW



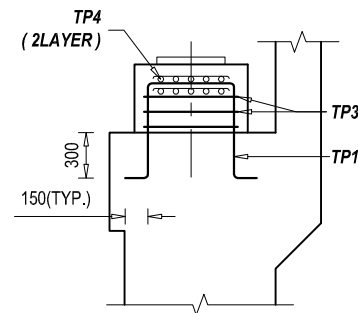
ELEVATION VIEW / VIEW AT D1

BAR DETAIL AT DIRT WALL

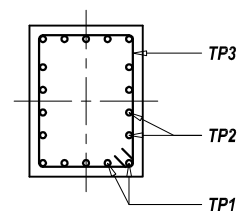
SCALE - 1 : 50



ELEVATION VIEW / VIEW AT D2



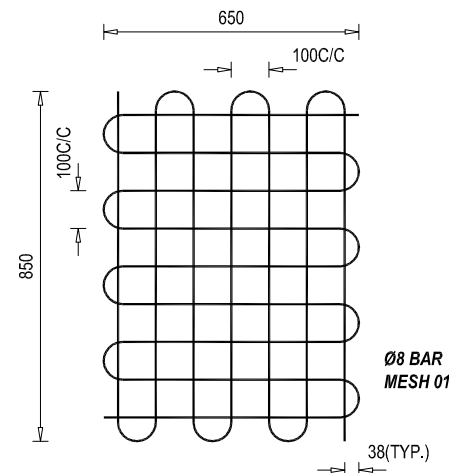
SECTIONAL SIDE VIEW



SECTIONAL PLAN VIEW
BAR DETAIL AT PEDESTAL

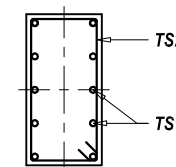
SCALE - 1 : 50

NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/TUTESHWOR-2/DD-4

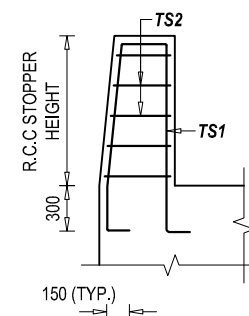


REINFORCEMENT DETAILS OF
BEARING MESH

SCALE - 1 : 50

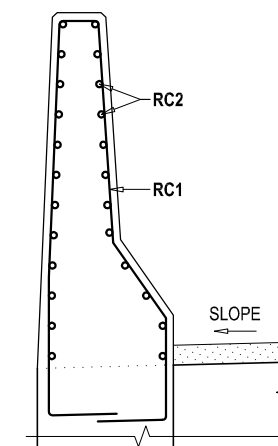


SECTIONAL PLAN VIEW



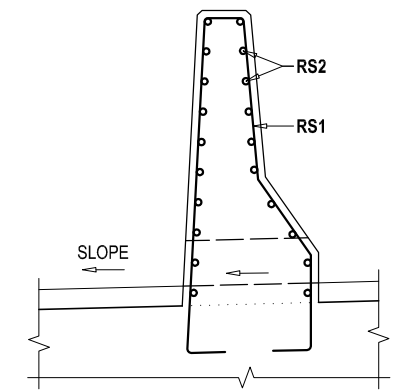
R.C.C STOPPER LEFT
ELEVATION VIEW

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

SCALE - 1 : 25

--- 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		EPTISA	EPTISA Servicios De Ingenieria Madrid, Spain	STUP Consultants Private Limited Kolkatta, India							Checked By	Mr. S.M.		ABUTMENT REINGORCEMENT DETAILS OF BRIDGE OVER RIVER TUTESHWOR-2	AS SHOWN	07.08.2023
		In Association With																

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	BT 1	150 11700 150	12	150	12.000	20	0.889	213.33
2	BT 1A	Avg. 5850 150	12	150	6.000	3	0.889	16.00
3	BT 2	150 2703 Avg. 450	16		3.303	90	1.580	469.76
4	BT 3	150 11700 150	12	150	12.000	16	0.889	170.67
5	BT 3A	Avg. 5850 150	12	150	6.000	3	0.889	16.00
6	BT 4	150 2778 Avg.	12		2.928	90	0.889	234.24
7	BT 5	100 150 100	12	500	0.350	96	0.889	29.87
8	BT 6	200 450 220 200 756	12	150	1.826	80	0.889	129.85
9	BT 7	11700	12		11.700	5	0.889	52.00
10	BT 8	100 450 100	12	150	0.650	158	0.889	91.29
TOTAL (KG) :								1423.00

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	CT 1	300 11700 300	20	140	12.300	12	2.469	364.44
2	CT 2	300 11700 300	20	140	12.300	12	2.469	364.44
3	CT 3	450 1300 100	16	150	3.700	80	1.580	467.75
4	CT 4	300 11700 300	12	150	12.000	8	0.889	85.33
5	CT 5	450 100 100	12	Long-150 Trans.300	0.650	382	0.889	220.71
TOTAL (KG) :								1502.69

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	ST 1A	5152 1125	20	180	6.277	65	2.469	1007.42
	ST 1B	300 8803 1125	20	90	10.228	65	2.469	1641.53
2	ST 2	750 11700 750	16	150	13.200	42	1.580	876.09
3	ST 3A	5152 1125	25	180	6.277	65	3.858	1574.09
	ST 3B	300 8803 1125	25	90	10.228	65	3.858	2564.89
4	ST 4	750 11700 750	16	150	13.200	42	1.580	876.09
5	ST 5	300 5152 1125	12	110	6.577	13	0.889	76.00
6	ST 6	100 1350 100	12	Ver. 130 Hor.200	1.550	2940	0.889	4050.67
TOTAL (KG) :								12666.78

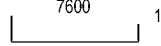
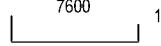
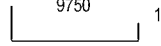
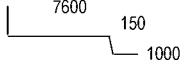
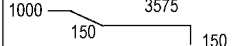
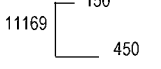
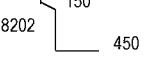
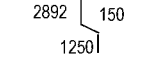
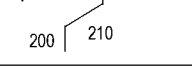
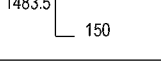
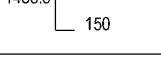
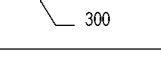
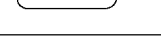
BAR BENDING SCHEDULE OF FOUNDATION								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No.OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	FT 1	725 10350 725	25	150	11.800	78	3.858	3550.93
2	FT 2	725 11700 725	16	200	13.150	53	1.580	1101.35
3	FT 3	2826 1500 6284 725 725	25	150	11.910	78	3.858	3584.03
4	FT 4	725 11700 725	16	200	13.150	53	1.580	1101.35
5	FT 5	100 1625(Avg) 100	10	Long-180 Trans.180	1.825	3738	0.617	4211.02
6	FT 6	10300 11668 150	16	200	44.236	10	1.580	699.04
TOTAL (KG) :								14247.72

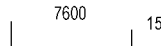
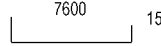
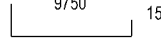
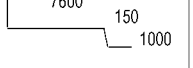
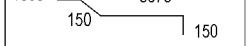
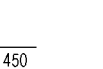
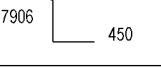
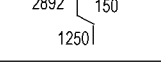
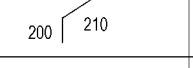
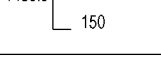
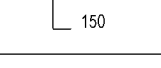
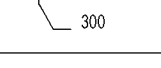
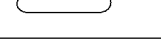
BAR BENDING SCHEDULE OF PEDESTAL								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TP 1	150 950 Avg. 650	16	150	2.850	6	1.580	27.02
1	TP 2	150 700 Avg. 650	16	150	2.350	8	1.580	29.71
2	TP 3	950 700 100	16	150	3.500	3	1.580	16.59
1	TP 4	850 650 @ 100	8		13.400	2	0.395	10.59
TOTAL (KG) :								83.91

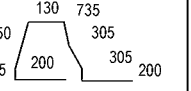
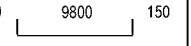
BAR BENDING SCHEDULE OF RCC SEISMIC ARRESTER - LEFT								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TS1-L	1010 400 1270 300 150	16	150	3.280	6	1.580	31.10
2	TS2-L	400 700 100	12	150	2.400	7	0.889	14.93
TOTAL (KG) :								46.03

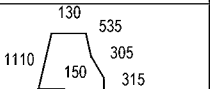
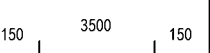
BAR BENDING SCHEDULE OF RCC SEISMIC ARRESTER - RIGHT								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TS1-R	1260 400 1525 300 150	16	150	3.785	6	1.580	35.89
2	TS2-R	400 700 100	12	150	3.400	9	0.889	27.20
TOTAL (KG) :								63.09

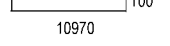
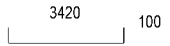
EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		Designed By		Drawing Name		Scale:		Date:	
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of		Designed By	Mr. R.D.		Mr. S.M.	ABUTMENT BAR BENDING SCHEDULE OF BRIDGE OVER RIVER TUTESHWOR-2		AS SHOWN		07.08.2023	
		 EPTISA Servicios De Ingenieria Madrid, Spain		Checked By	Mr. S.M.			Reference Drawings		Chainage: 275+856		Drawing No.- KDP/DPR/STR/BR/TUTESHWOR-2/DD-8	
		In Association With Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited		Approved By	Mr. H.B.							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	450  150	12	150	8.200	62	0.889	451.91
2	RT1B	450  150	20	150	8.200	62	2.469	1255.31
3	RT2A	450  150	12	150	10.350	21	0.889	193.20
4	RT2B	150  1000	20	150	8.900	21	2.469	461.48
5	RT2C	1000  150	20	150	4.875	21	2.469	252.78
6	RT3A	11169  450	12	150	11.769	43	0.889	449.84
7	RT3B	1250  450	25	150	10.052	43	3.858	1667.58
8	RT3C	150  150	25	150	4.442	43	3.858	736.91
9	RT3D	200  210	25	150	1.210	67	3.858	312.77
10	RT4A	1483.5  150	12	150	1.784	50	0.889	79.27
11	RT4B	1483.5  150	25	150	1.784	50	3.858	344.04
12	RT5	300  300	12	150	1.470	83	0.889	108.45
13	RT6	 9219	12		9.219	2	0.889	16.39
14	RT7	225  5375	20		5.6	4	2.469	55.31
15	RT8	100  100	12	200	0.650	978	0.889	565.07
TOTAL (KG) :								6950.29

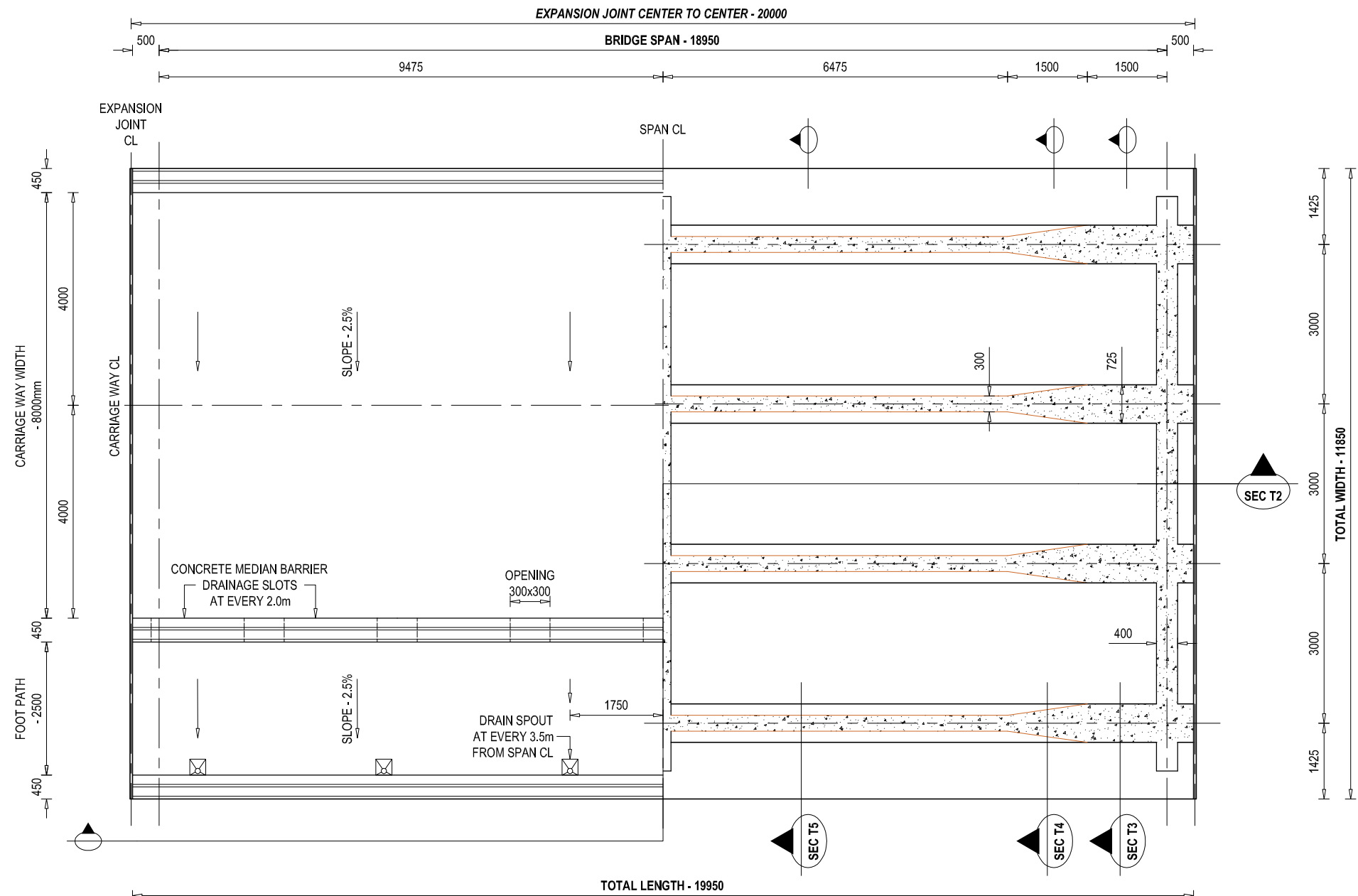
BAR BENDING SCHEDULE OF RETURN WALL - RIGHT								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RT 1A	450  150	12	150	8.200	60	0.889	437.33
2	RT 1B	450  150	20	150	8.200	60	2.469	1214.81
3	RT 2A	450  150	12	150	10.350	21	0.889	193.20
4	RT 2B	150  1000	20	150	8.900	21	2.469	461.48
5	RT 2C	1000  150	20	150	4.875	21	2.469	252.78
6	RT 3A	10873  450	12	150	11.473	43	0.889	438.52
7	RT 3B	1250  450	25	150	9.756	43	3.858	1618.47
8	RT 3C	150  150	25	150	4.442	43	3.858	736.91
9	RT 3D	200  210	25	150	1.210	67	3.858	312.77
10	RT 4A	1483.5  150	12	150	1.784	50	0.889	79.27
11	RT 4B	1483.5  150	25	150	1.784	50	3.858	344.04
12	RT 5	300  300	12	150	1.470	83	0.889	108.45
13	RT 6	 8923	12		8.923	2	0.889	15.86
14	RT 7	225  5375	20		5.6	4	2.469	55.31
15	RT 8	100  100	12	200	0.650	932	0.889	538.49
TOTAL (KG) :								6807.70

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	67	1.580	335.63
2	RC2	150  150	10	150	10.100	20	0.617	124.69
TOTAL (KG) :								460.32

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

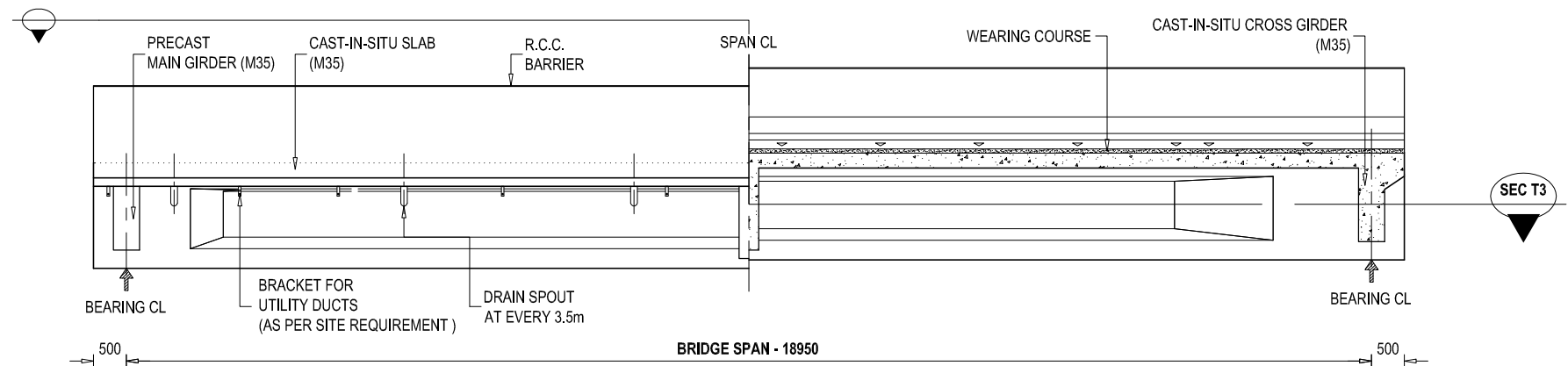
BAR BENDING SCHEDULE OF APPROACH SLAB								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	1601	100  100	16	150	11.170	48	1.580	847.27
2	1202	100  100	12	150	3.620	150	0.889	482.67
TOTAL (KG) :								1329.93

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-Pathlajaya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of		Designed By	Mr. R.D.	 Signature	Nec.No. 6489 CIVIL/14	ABUTMENT BAR BENDING SCHEDULE OF BRIDGE OVER RIVER TUTESHWOR-2		AS SHOWN		07.08.2023	
		EPTISA Servicios De Ingeniera Madrid, Spain		Checked By	Mr. S.M.							Drawing No.- KDP/DPR/STR/BR/TUTESHWOR-2/DD-8	
		In Association With Udaya Consultancy, Geocom International, Sundar Kritt Consultant and Rays Consultant Private Limited		Approved By	Mr. H.B.			Reference Drawings -		Chainage: 275+856		Sheet No.2/2	



HALF SECTIONAL PLAN VIEW OF SUPERSTRUCTURE AT SEC T1

SCALE - 1 : 100 @ A3 PAPER

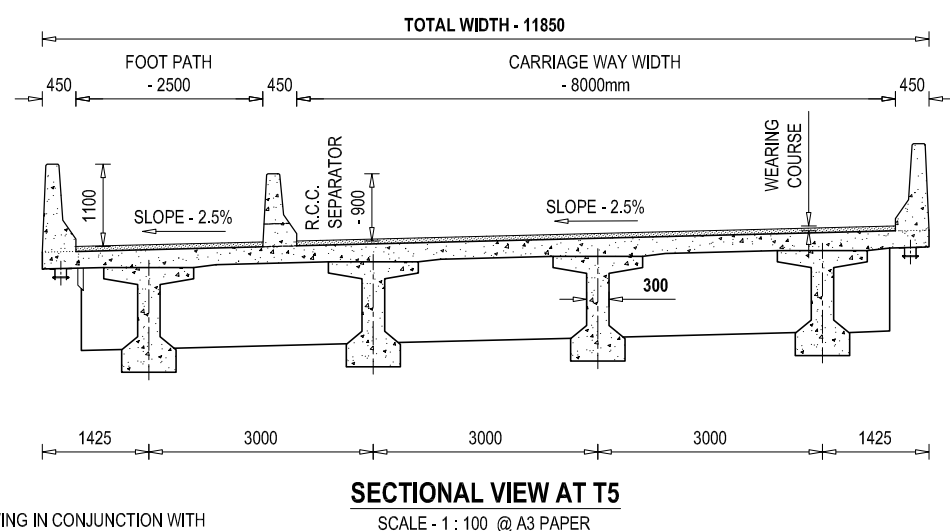
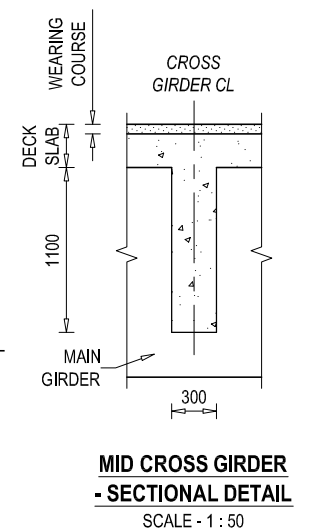
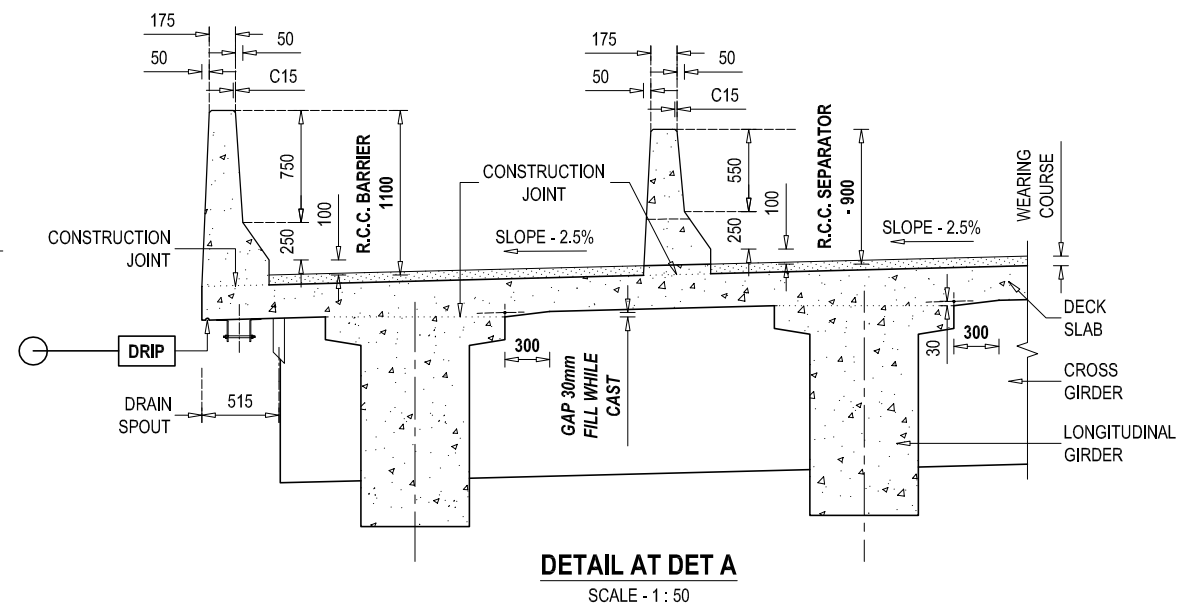
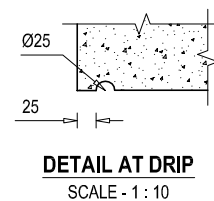
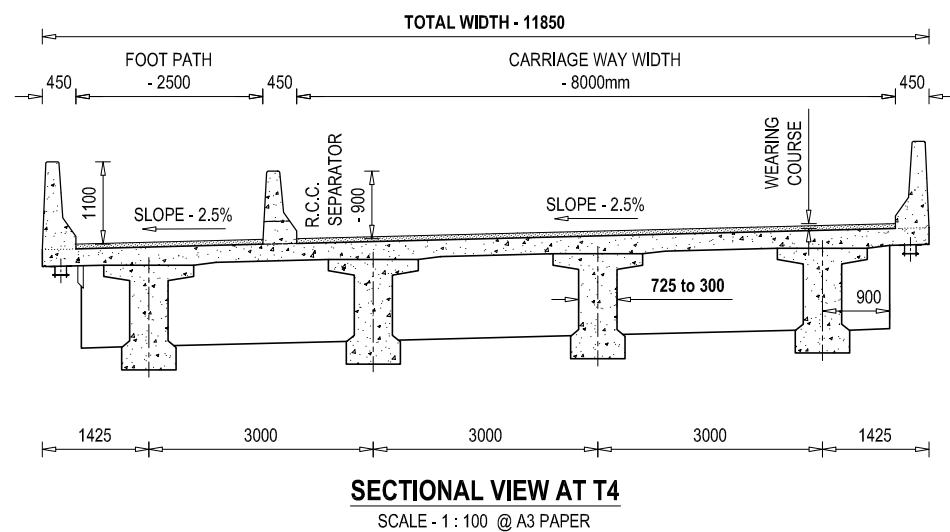
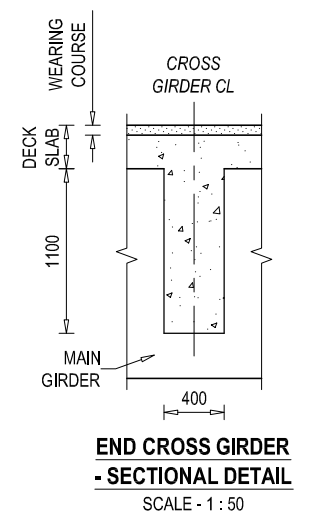
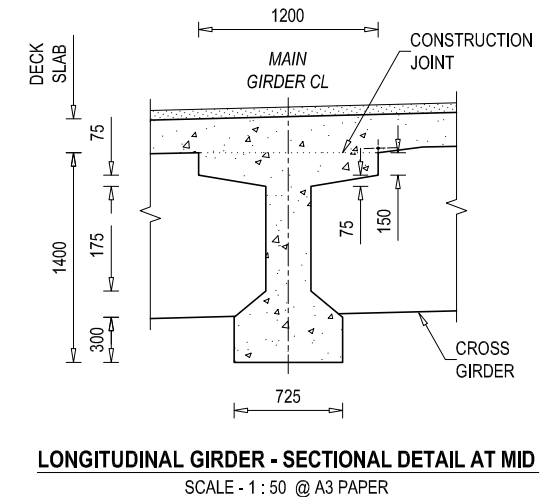
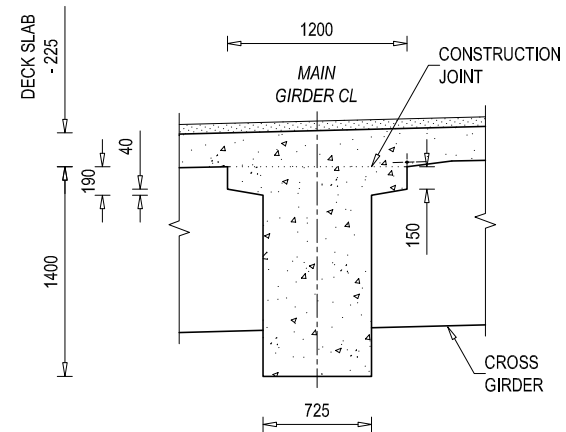
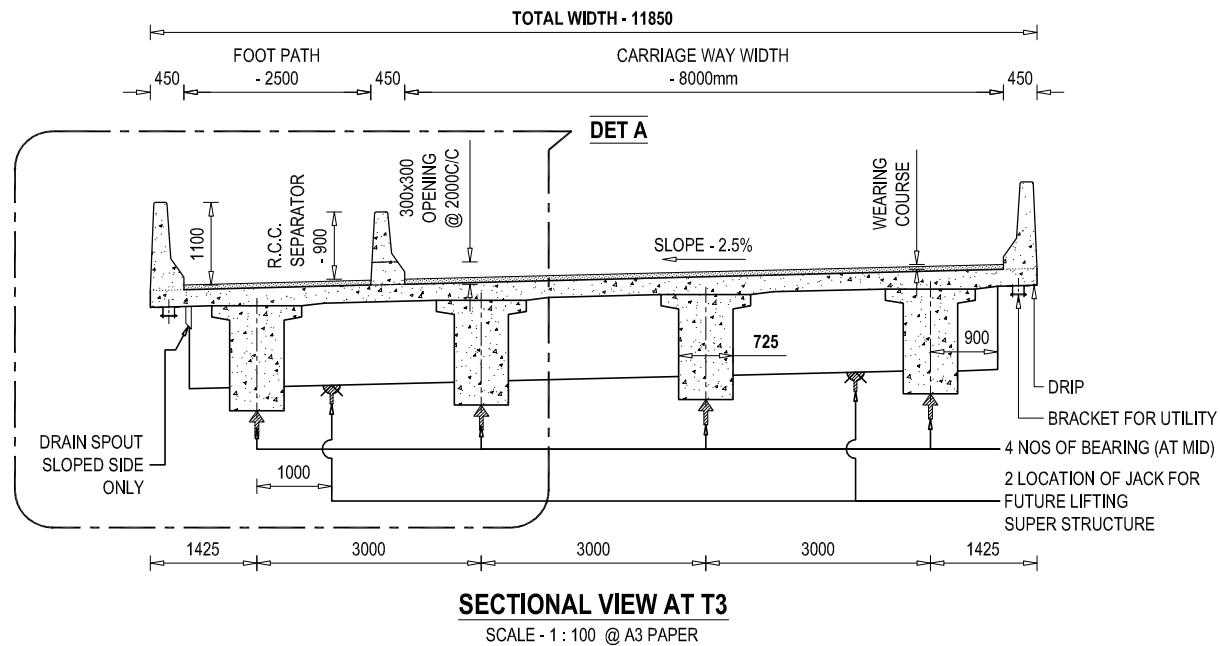


HALF ELEVATION SECTIONAL VIEW OF SUPERSTRUCTURE AT SEC T2

SCALE - 1 : 100 @ A3 PAPER

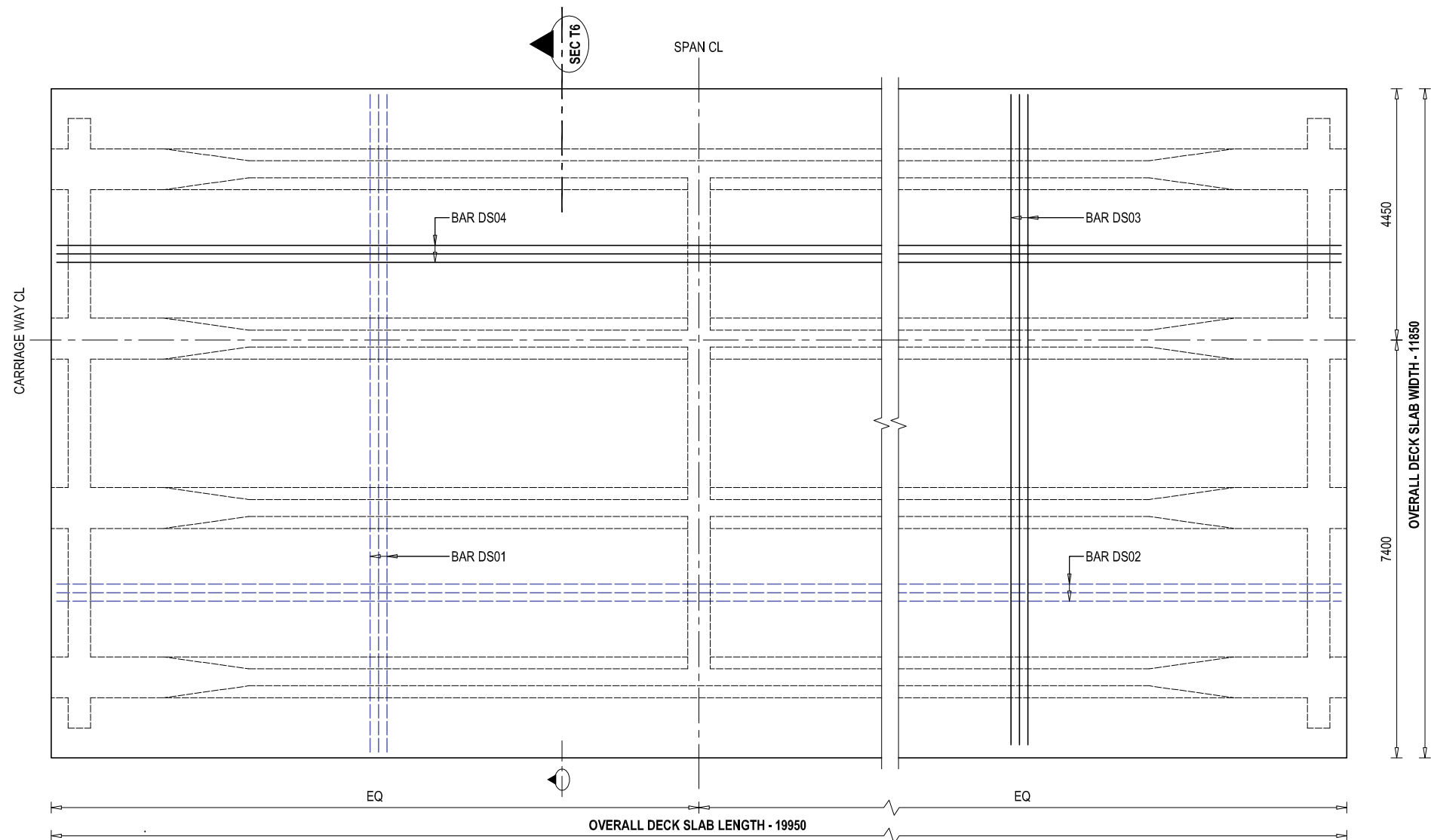
NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/TUTESHWOR-2/DD-4

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-Patthaiya 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 Kirti Consultant and Rays Consultant Private Limited	Mr. R.D. Nec.No. 6489 CHM/V	SUPER STRUCTURE DETAILS OF BRIDGE OVER RIVER TUTESHWOR-2 Reference Drawings KDP/DPR/STR/BR/TUTESHWOR-2/DD-13	AS SHOWN Chainage: 275+856	05.05.2023
			Mr. S.M. Signature			Drawing No. KDP/DPR/STR/BR/TUTESHWOR-2/DD-9
			Mr. H.B. Signature			Sheet No. 1 / 2



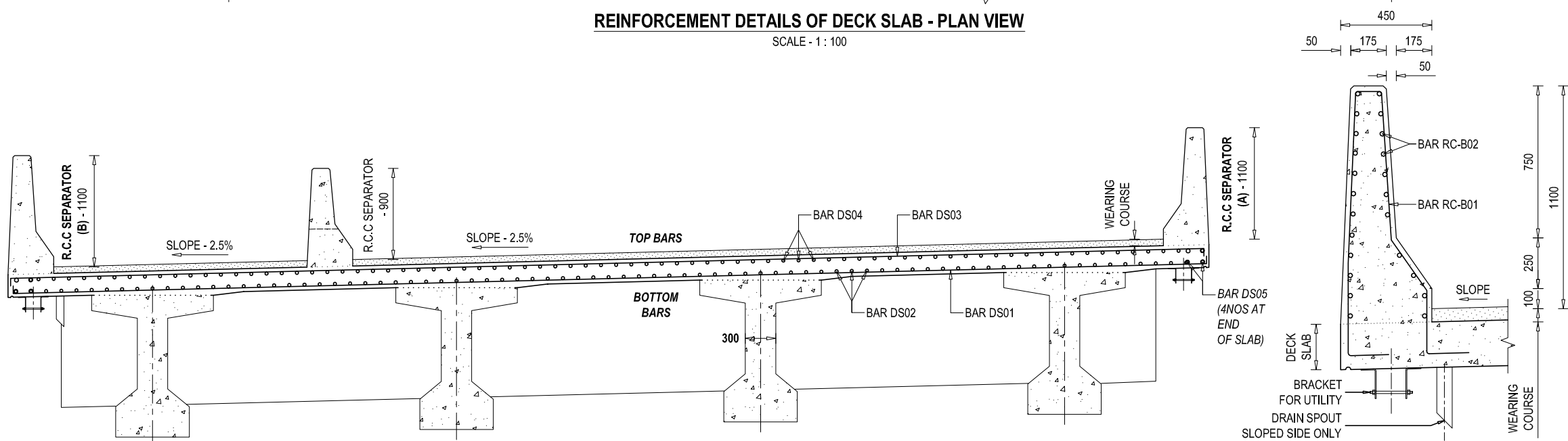
NOTE
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EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Mr. R.D.	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) 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 Kirti Consultant and Rays Consultant Private Limited	Mr. S.M.	Mr. S.M.	SUPER STRUCTURE DETAILS OF BRIDGE OVER RIVER TUTESHWOR-2 Reference Drawings KDP/DPR/STR/BR/TUTESHWOR-2/DD-13	AS SHOWN Chainage: 275+856	05.05.2023
			Mr. H.B.	Mr. H.B.			Drawing No. KDP/DPR/STR/BR/TUTESHWOR-2/DD-9
							Sheet No. 2 / 2



REINFORCEMENT DETAILS OF DECK SLAB - PLAN VIEW

SCALE - 1 : 100



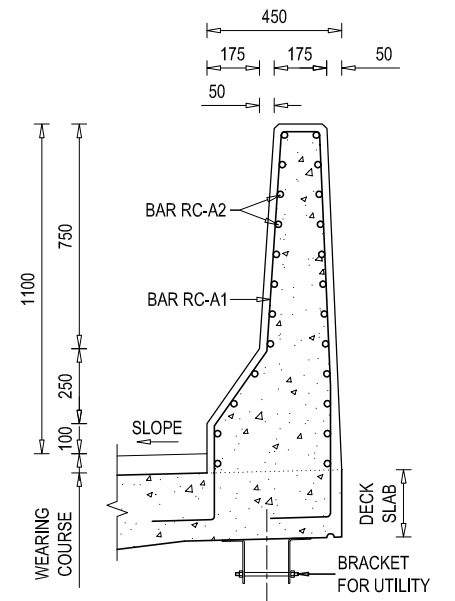
REINFORCEMENT DETAILS OF DECK SLAB - SECTIONAL VIEW AT T6

SCALE - 1 : 50

LEGEND FOR REINFORCEMENT BAR

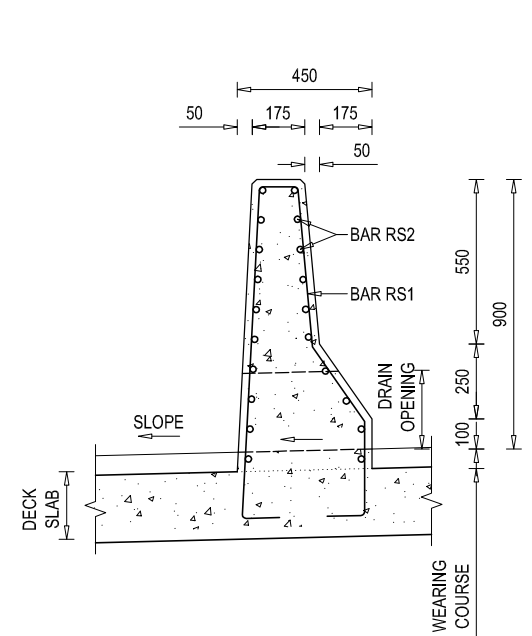
CODE	FULL FORM	CG	- CROSS GIRDER
DS	- DECK SLAB	AS	- APPROACH SLAB
RB	- R.C.C BARRIER	ST	- STOPPER
RS	- R.C.C SEPARATOR	**	- ***
MG	- MAIN GIRDER		

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



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

SCALE - 1 : 25



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

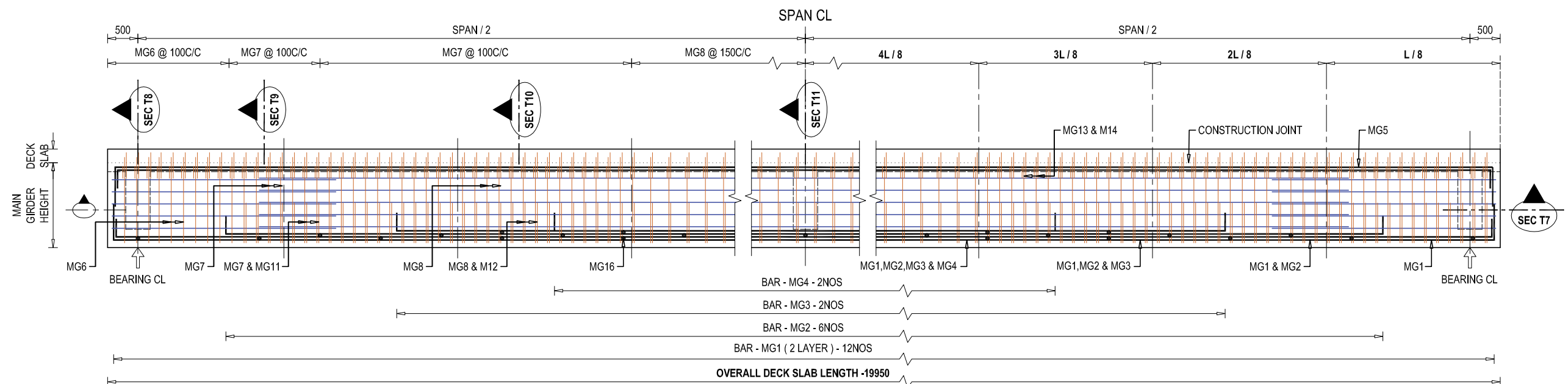
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REINFORCEMENT DETAILS OF R.C.C BARRIER (B)- SECTIONAL VIEW

SCALE - 1 : 25

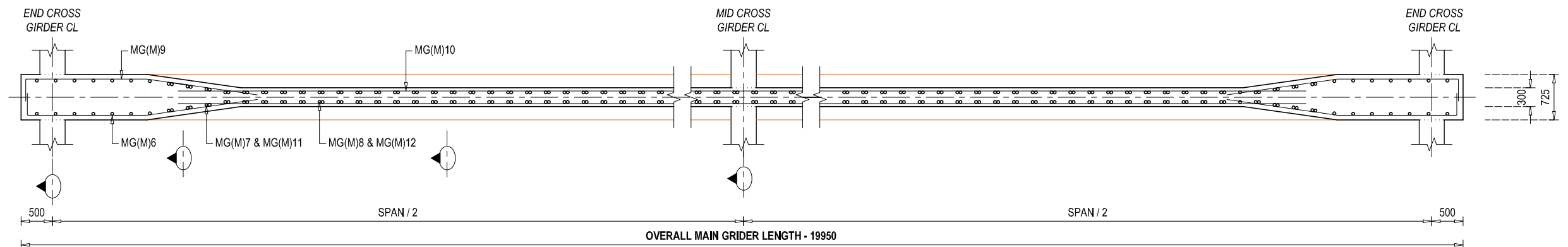
NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/TUTESHWOR-2/DD-4

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  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	Mr. S.M.	Signature	DECK SLAB DETAILS OF BRIDGE OVER RIVER TUTESHWOR-2	AS SHOWN	05.05.2023
			Mr. H.B.	Signature	Reference Drawings	Chainage:	Drawing No.:
			Mr. S.M.	Signature	KDP/DPR/STR/BR/TUTESHWOR-2/DD-13	275+856	KDP/DPR/STR/BR/TUTESHWOR-2/DD-10
			Mr. S.M.	Signature			Sheet No. 1 / 1



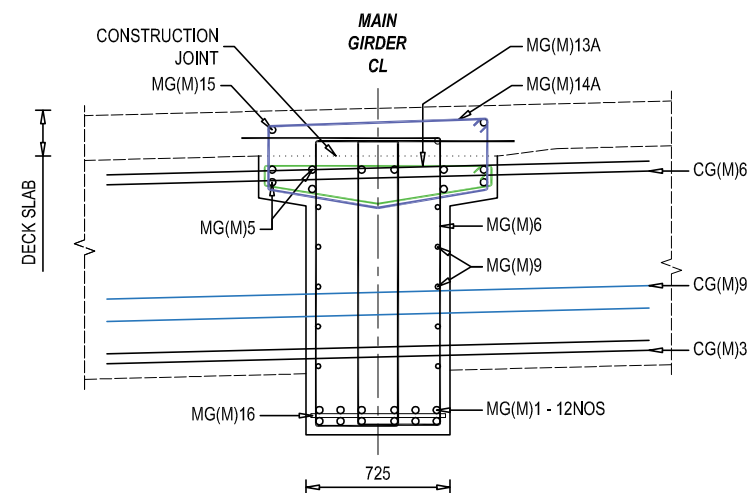
REINFORCEMENT DETAILS OF MAIN GIRDER - SECTIONAL ELEVATION VIEW

SCALE - 1 : 75



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

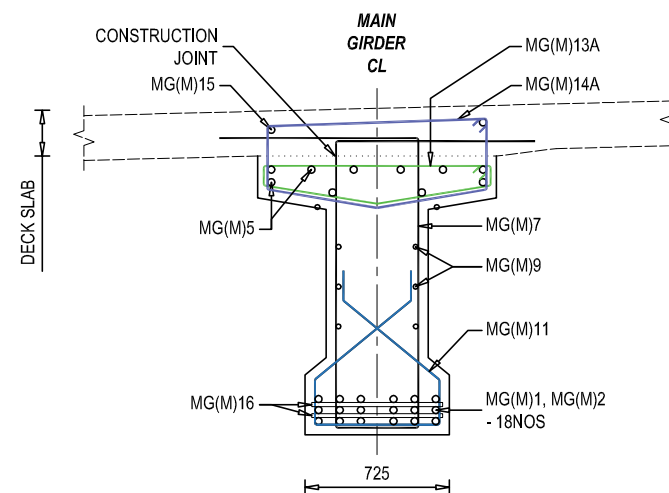
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REINFORCEMENT DETAILS OF MAIN GIRDER

SECTIONAL VIEW AT T8

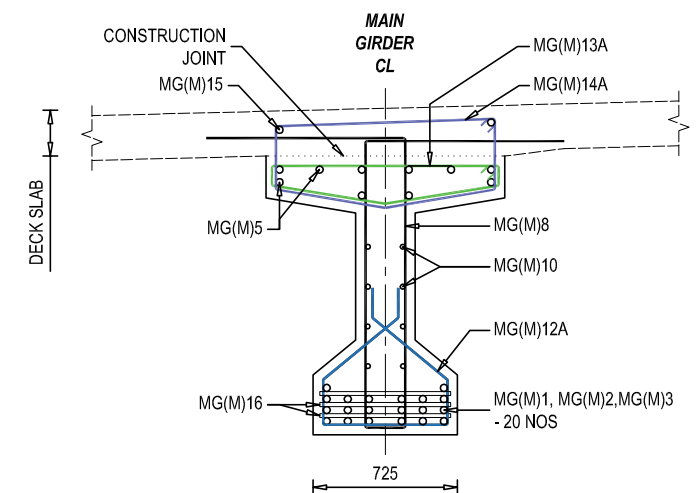
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REINFORCEMENT DETAILS OF MAIN GIRDER

SECTIONAL VIEW AT T9

SCALE - 1 : 50



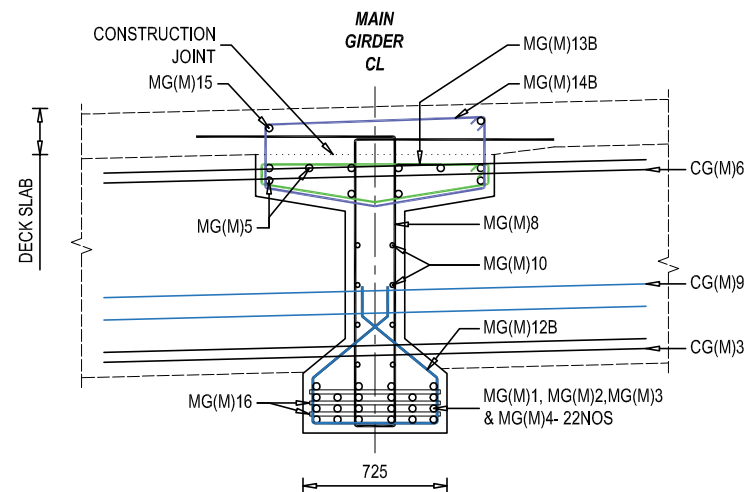
REINFORCEMENT DETAILS OF MAIN GIRDER

SECTIONAL VIEW AT T10

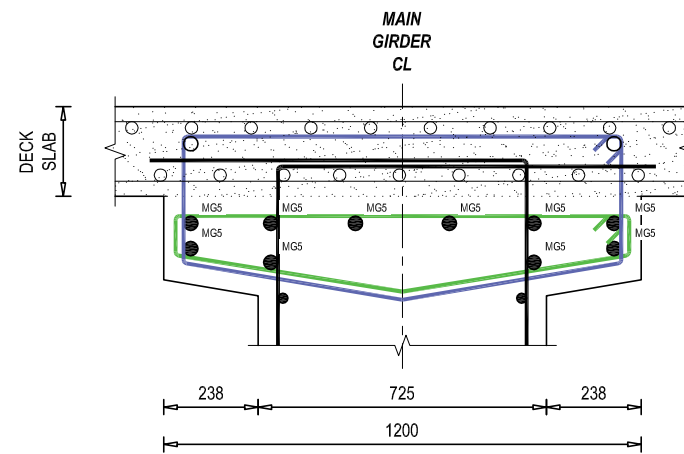
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NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/TUTESHWOR-2/DD-4

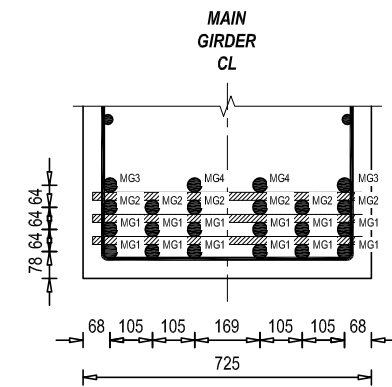
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Drawing Name	Scale:	Date:
Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamal-Dhalkebar-Pathalaya 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 Kiti Consultant and Rays Consultant Private Limited	Mr. R.D. Nec.No. 6489 CIVIL/14 Mr. S.M. Mr. H.B.	MAIN GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER TUTESHWOR-2 Reference Drawings KDP/DPR/STR/BR/TUTESHWOR-2/DD-13	AS SHOWN Chainage: 275+856	05.05.2023
						Drawing No. KDP/DPR/STR/BR/TUTESHWOR-2/DD-11
						Sheet No. 1 / 2



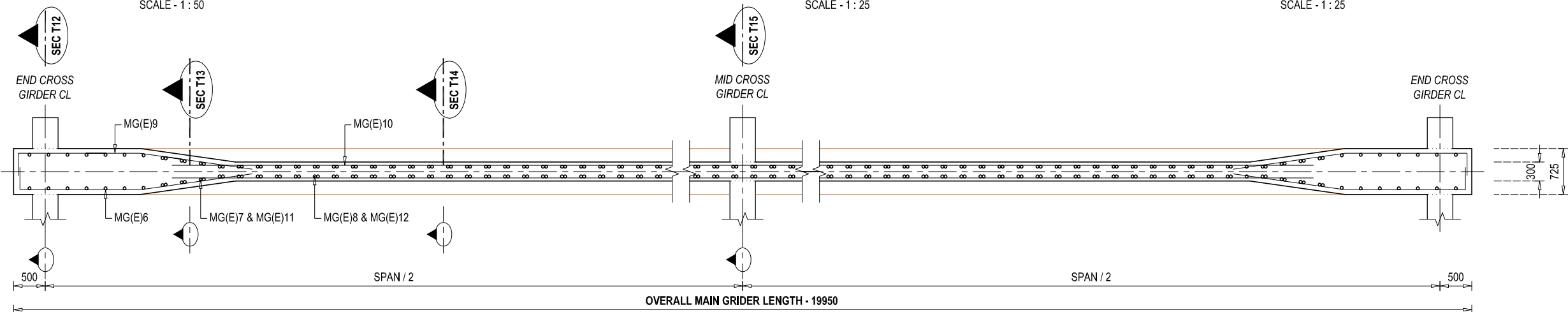
REINFORCEMENT DETAILS OF MAIN GIRDER
SECTIONAL VIEW AT T11
SCALE - 1 : 50



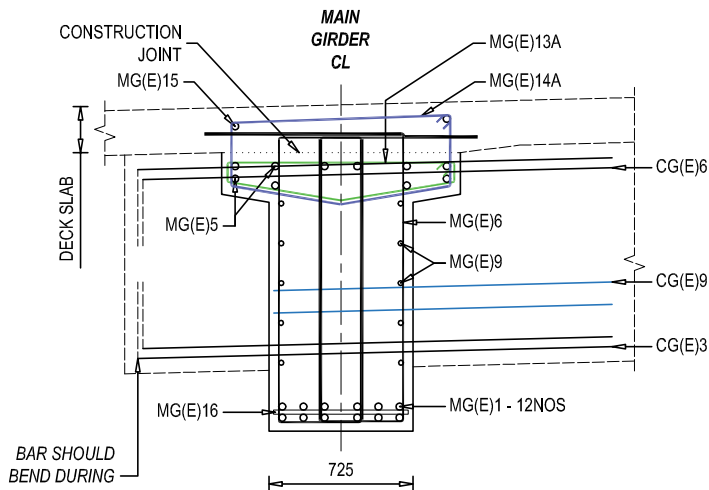
TOP BAR WEB REINFORCEMENT DETAILS
OF MAIN GIRDER
SCALE - 1 : 25



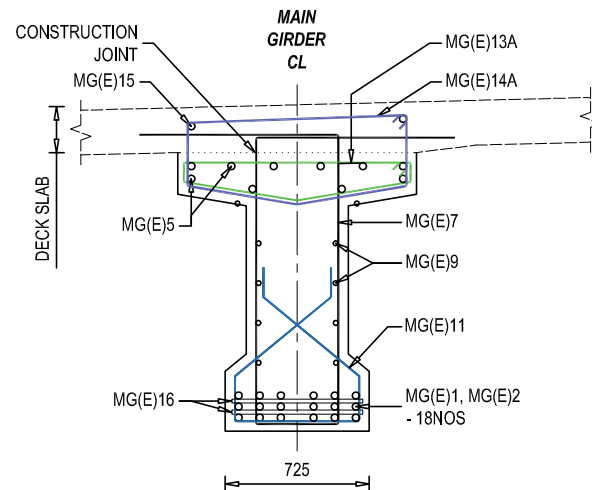
BOTTOM BAR WEB REINFORCEMENT DETAILS
OF MAIN GIRDER
SCALE - 1 : 25



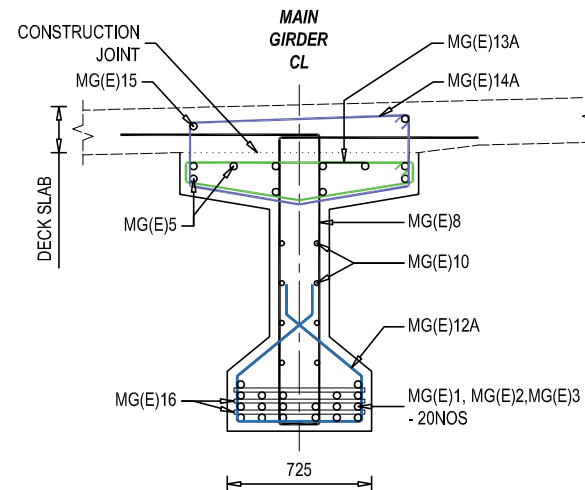
REINFORCEMENT DETAILS OF MAIN GIRDER (END) - SECTIONAL PLAN VIEW AT T7(E)
SCALE - 1 : 75



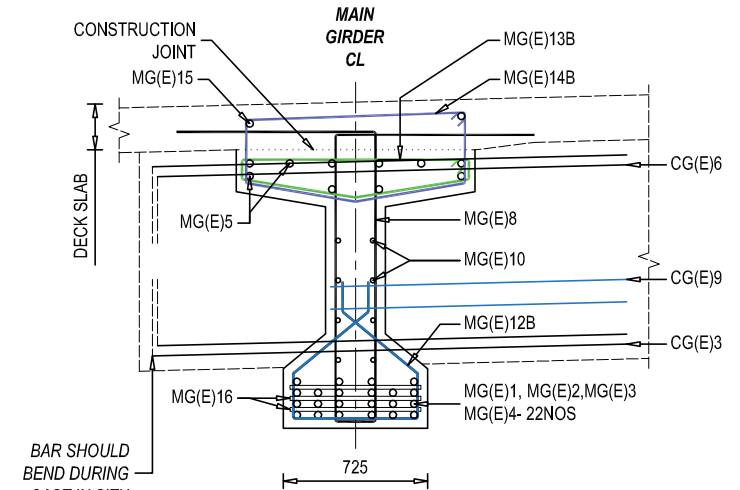
REINFORCEMENT DETAILS OF MAIN GIRDER
SECTIONAL VIEW AT T12
SCALE - 1 : 50



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



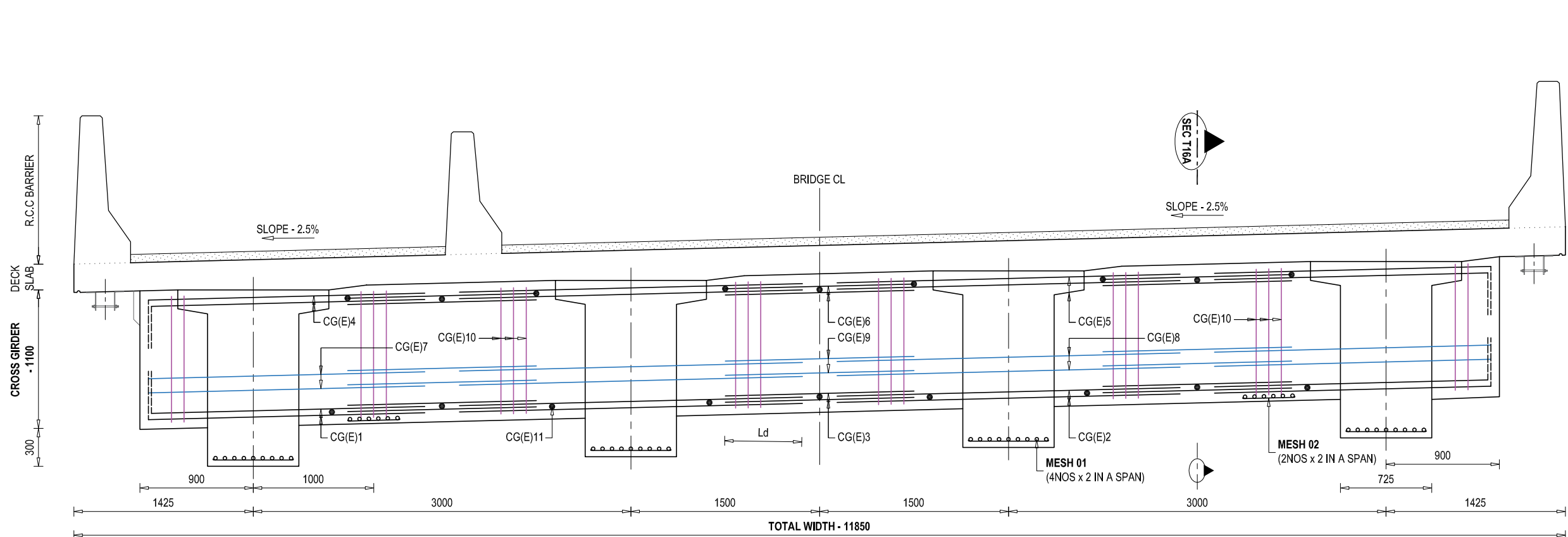
REINFORCEMENT DETAILS OF MAIN GIRDER
SECTIONAL VIEW AT T14
SCALE - 1 : 50



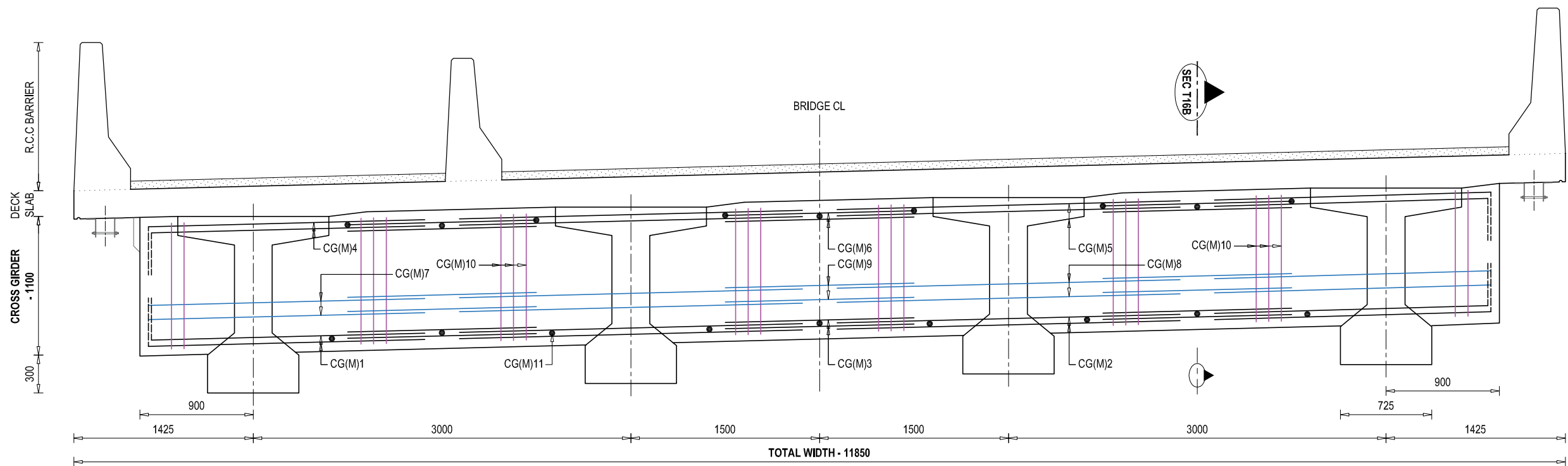
REINFORCEMENT DETAILS OF MAIN GIRDER
SECTIONAL VIEW AT T15
SCALE - 1 : 50

NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/TUTESHWOR-2/DD-4

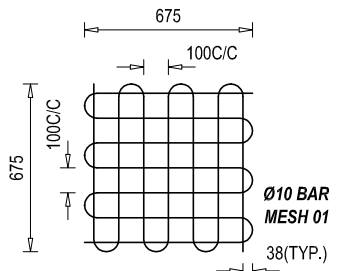
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Drawing Name	Scale:	Date:
Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamal-Dhalkebar-Pathalaya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of EPTISA Servicios De Ingeniera Madrid, Spain STUP Consultants Private Limited Kolkatta, India	Mr. R.D. Nec.No. 6489 CIVIL/14 Mr. S.M. Mr. H.B.	MAIN GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER TUTESHWOR-2 Reference Drawings KDP/DPR/STR/BR/TUTESHWOR-2/DD-13	AS SHOWN Chainage: 275+856	05.05.2023
		In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Checked By Approved By			Drawing No. KDP/DPR/STR/BR/TUTESHWOR-2/DD-11 Sheet No. 2 / 2



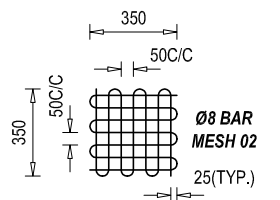
REINFORCEMENT DETAILS OF END CROSS GIRDER
SCALE - 1 : 50



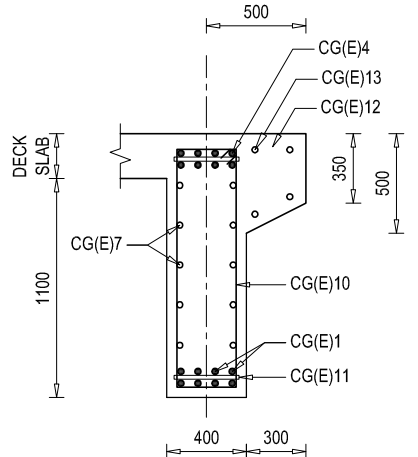
REINFORCEMENT DETAILS OF MID CROSS GIRDER
SCALE - 1 : 50



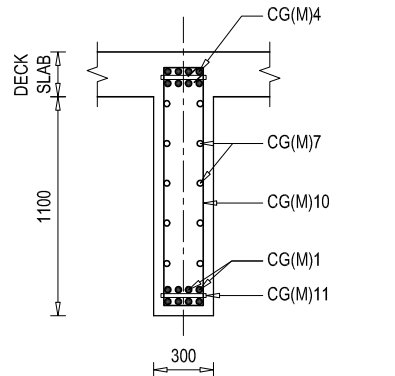
REINFORCEMENT DETAILS OF BEARING MESH
SCALE - 1 : 50



REINFORCEMENT DETAILS OF LIFTING MESH
SCALE - 1 : 50



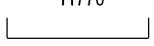
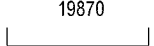
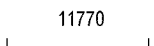
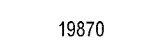
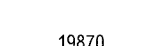
SECTIONAL REINFORCEMENT DETAILS OF END CROSS GIRDER - SEC T16A
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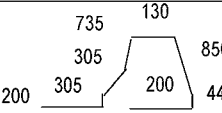
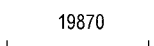


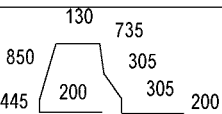
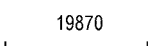
SECTIONAL REINFORCEMENT DETAILS OF MID CROSS GIRDER - SEC T16B
SCALE - 1 : 50

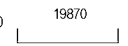
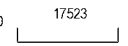
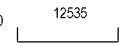
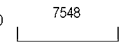
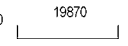
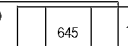
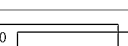
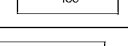
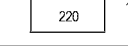
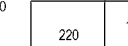
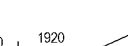
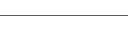
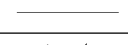
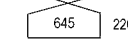
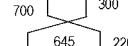
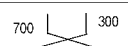
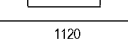
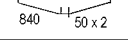
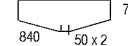
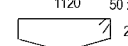
NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/TUTESHWOR-2/DD-4

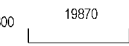
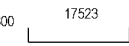
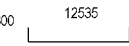
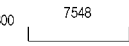
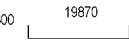
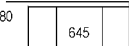
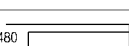
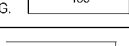
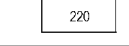
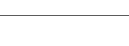
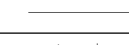
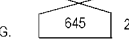
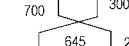
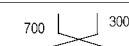
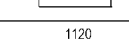
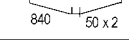
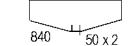
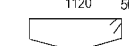
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Mr. R.D.	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamal-Dhalkebar-Pathalaya 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	Checked By	Mr. S.M.	CROSS GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER TUTESHWOR-2	AS SHOWN	05.05.2023
			Approved By	Mr. H.B.	Reference Drawings KDP/DPR/STR/BR/TUTESHWOR-2/DD-13	Chainage: 275+856	Drawing No. KDP/DPR/STR/BR/TUTESHWOR-2/DD-12
							Sheet No. 1 / 1

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	12.070	134	1.580	2555.86
2	DS02	150  150	10	150	20.170	76	0.617	946.25
3	DS03	150  150	16	150	12.070	134	1.580	2555.86
5	DS04	150  150	10	150	20.170	76	0.617	946.25
6	DS05	 19870	16		19.870	8	1.580	251.20
TOTAL (KG) :								7255.41

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		16	150	3.170	134	1.580	671.26
2	RC-A2	150  150	10	150	20.170	20	0.617	249.01
TOTAL (KG) :								920.27

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		16	150	3.170	134	1.580	671.26
2	RC-B2	150  150	10	150	20.170	20	0.617	249.01
TOTAL (KG) :								920.27

BAR BENDING SCHEDULE OF END 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	MG(E)1	300  300	32		20.470	12	6.321	1552.69
2	MG(E)2	300  300	32		18.123	6	6.321	687.33
3	MG(E)3	300  300	32		13.135	2	6.321	166.05
4	MG(E)4	300  300	32		8.148	2	6.321	103.01
5	MG(E)5	300  300	12		20.470	10	0.889	181.96
6	MG(E)6	 4 LEGGED	12	100	9.260	42	0.889	345.71
7	MG(E)7	 AVG.	12	100	5.125	32	0.889	145.78
8	MG(E)8A		12	100	4.480	81	0.889	322.56
9	MG(E)8B		12	150	4.480	35	0.889	139.38
10	MG(E)9	370 	12	200	4.290	28	0.889	106.77
11	MG(E)10		12	200	16.950	14	0.889	210.93
12	MG(E)11	 AVG.	12	100	2.785	32	0.889	79.22
13	MG(E)12A		12	150	3.085	81	0.889	222.12
14	MG(E)12B		12	150	3.085	35	0.889	95.98
15	MG(E)13A		12	100	3.040	151	0.889	408.04
16	MG(E)13B		12	150	3.040	35	0.889	94.58
17	MG(E)14A		12	100	3.440	151	0.889	461.72
18	MG14B		12	150	3.440	35	0.889	107.02
19	MG(E)15		12		19.870	2	0.889	35.32
19	MG(E)16		32	1500	0.645	42	6.321	171.24
TOTAL (KG) :								5637.40

BAR BENDING SCHEDULE OF MID 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	MG(M)1	300  300	32		20.470	12	6.321	1552.69
2	MG(M)2	300  300	32		18.123	6	6.321	687.33
3	MG(M)3	300  300	32		13.135	2	6.321	166.05
4	MG(M)4	300  300	32		8.148	2	6.321	103.01
5	MG(M)5	300  300	12		20.470	10	0.889	181.96
6	MG(M)6	 4 LEGGED	12	100	9.260	42	0.889	345.71
7	MG(M)7	 AVG.	12	100	5.125	32	0.889	145.78
8	MG(M)8A		12	100	4.480	81	0.889	322.56
9	MG(M)8B		12	150	4.480	35	0.889	139.38
10	MG(M)9	370 	12	200	4.290	28	0.889	106.77
11	MG(M)10		12	200	16.950	14	0.889	210.93
12	MG(M)11	 AVG.	12	100	2.785	32	0.889	79.22
13	MG(M)12A		12	150	3.085	81	0.889	222.12
14	MG(M)12B		12	150	3.085	35	0.889	95.98
15	MG(M)13A		12	100	3.040	151	0.889	408.04
16	MG(M)13B		12	150	3.040	35	0.889	94.58
17	MG(M)14A		12	100	3.440	151	0.889	461.72
18	MG14B		12	150	3.440	35	0.889	107.02
19	MG(M)15		12		19.870	2	0.889	35.32
19	MG(M)16		32	1500	0.645	42	6.321	171.24
TOTAL (KG) :								5637.40

EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		Designed By Mr. R.D. Nec.No. 4489 CHB/X Signature	Drawing Name SUPER STRUCTURE BAR BENDING SCHEDULE OF BRIDGE OVER RIVER TUTESHWOR-2	Scale: AS SHOWN	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		Checked By Mr. S.M. Signature				Reference Drawings -	Chainage: 275+856	Drawing No.-
			 EPTISA Servicios De Ingenieria Madrid, Spain	 STUP Consultants Private Limited Kolkata, India							KDP/DPR/STR/BR/TUTESHWOR-2/DD-13
In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited			Approved By Mr. H.B. Signature	Sheet No. 1 / 2							

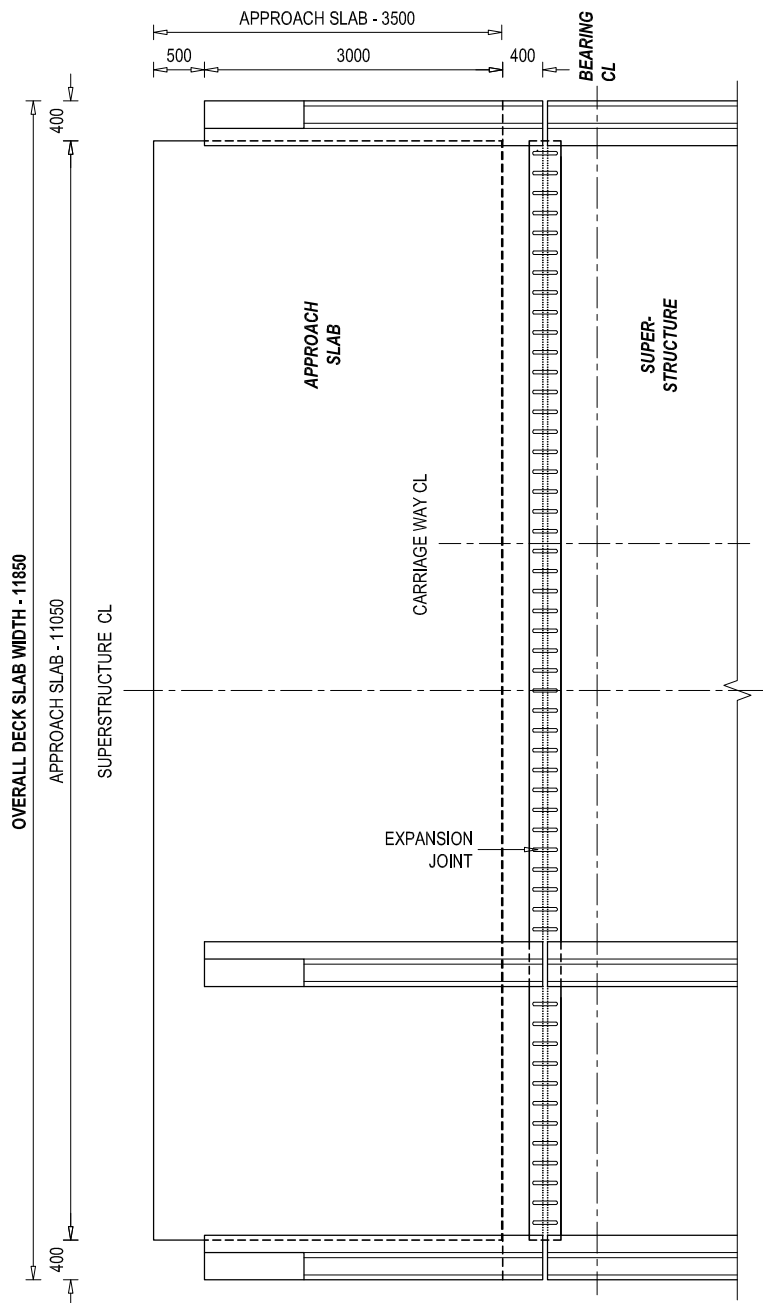
BAR BENDING SCHEDULE OF MESH (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	MESH 01	675 675 @ 100	10		9.450	8	0.617	46.67
2	MESH 02	350 350 @ 50	8		4.900	4	0.395	7.74
TOTAL (KG) :								54.41

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	130 535 1110 150 305 315	16	150	2.695	134	1.580	570.67
2	RS2	150 19870 150	10	150	20.170	17	0.617	211.66
TOTAL (KG) :								782.34

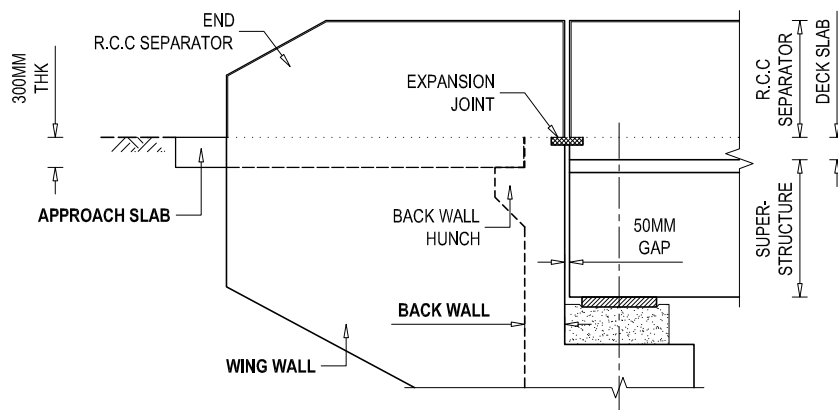
BAR BENDING SCHEDULE OF END CROSS GIRDER (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	CG(E)1	300 1825	20		2.125	8	2.469	41.98
2	CG(E)2	2625	20		2.625	8	2.469	51.85
3	CG(E)3	1675	20		1.675	8	2.469	33.09
4	CG(E)4	300 1825	20		2.125	8	2.469	41.98
5	CG(E)5	2625	20		2.625	8	2.469	51.85
6	CG(E)6	1675	20		1.675	8	2.469	33.09
7	CG(E)7	1825	12	150	1.825	8	0.889	12.98
8	CG(E)8	2625	12	150	2.625	8	0.889	18.67
9	CG(E)9	1675	12	150	1.675	8	0.889	11.91
10	CG(E)10	50 x 2 320 1220	12	200	1.640	39	0.889	56.85
11	CG(E)11	320	20	1000	0.320	18	2.469	14.22
12	CG(E)12	800 260 300 390	16	150	1.750	79	1.580	218.47
13	CG(E)13	11770	12		11.770	6	0.889	62.77
TOTAL (KG) :								649.70
TOTAL NOS OF CROSS GIRDER :								2.00
TOTAL WEIGHT (KG) :								1299.40

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 1825	20		1.920	8	2.469	37.93
2	CG(M)2	2625	20		2.945	8	2.469	58.17
3	CG(M)3	1675	20		1.995	8	2.469	39.41
4	CG(M)4	300 1825	20		1.920	8	2.469	37.93
5	CG(M)5	2625	20		2.625	8	2.469	51.85
6	CG(M)6	1675	20		1.675	8	2.469	33.09
7	CG(M)7	1825	12	150	1.620	8	0.889	11.52
8	CG(M)8	2625	12	150	2.625	8	0.889	18.67
9	CG(M)9	1675	12	150	1.675	8	0.889	11.91
10	CG(M)10	50 x 2 320 1220	12	200	1.640	39	0.889	56.85
11	CG(M)11	320	20	1000	0.320	18	2.469	14.22
TOTAL (KG) :								371.54

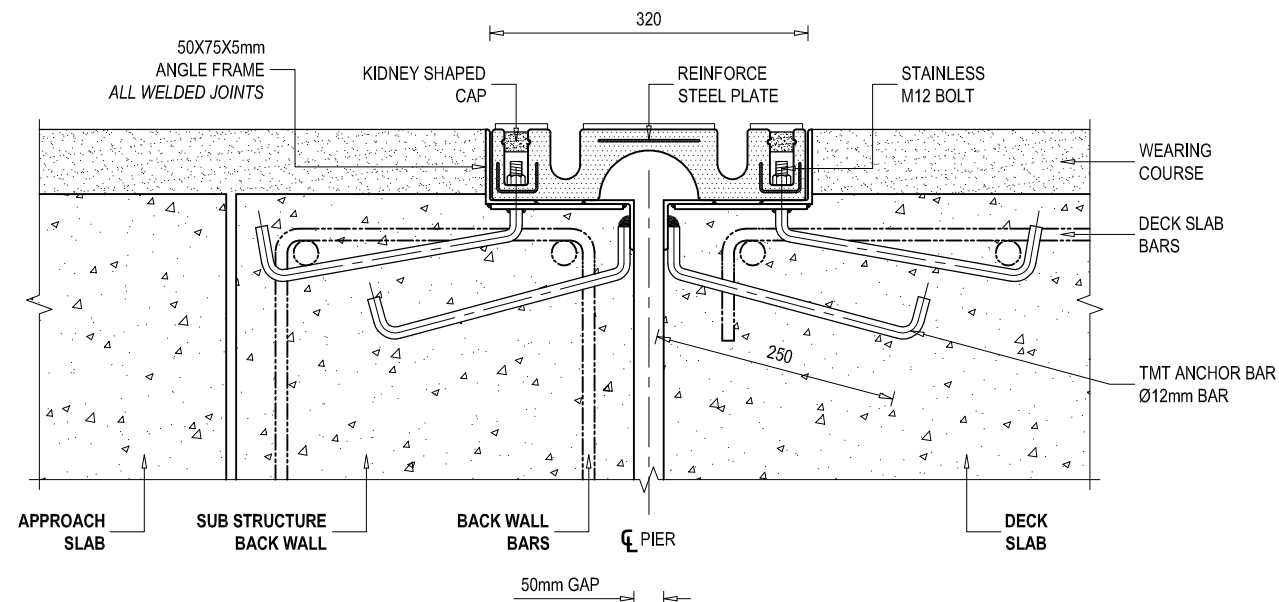
EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS			Drawing Name		Scale:	Date:		
	Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of			Designed By	Mr. R.D.	SUPER STRUCTURE BAR BENDING SCHEDULE OF BRIDGE OVER RIVER TUTESHWOR-2	AS SHOWN	05.05.2023		
			 EPTISA Servicios De Ingeniera Madrid, Spain	 STUP Consultants Private Limited Kolkata, India			Signature					
			In Association With Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited				Signature	Checked By	Mr. S.M.	Reference Drawings	Chainage:	KDP/DPR/STR/BR/TUTESHWOR-2/DD-13
								Approved By	Mr. H.B.			



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

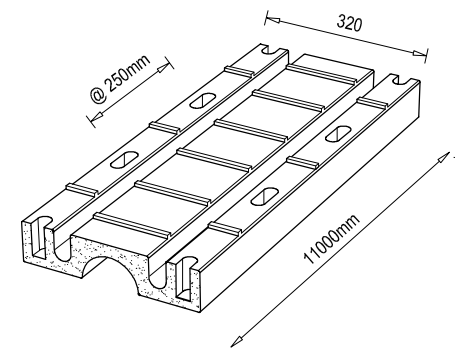


ELEVATION VIEW



SEAL TYPE EXPANSION JOINTS ARRANGEMENT IN A CARRIAGEWAY

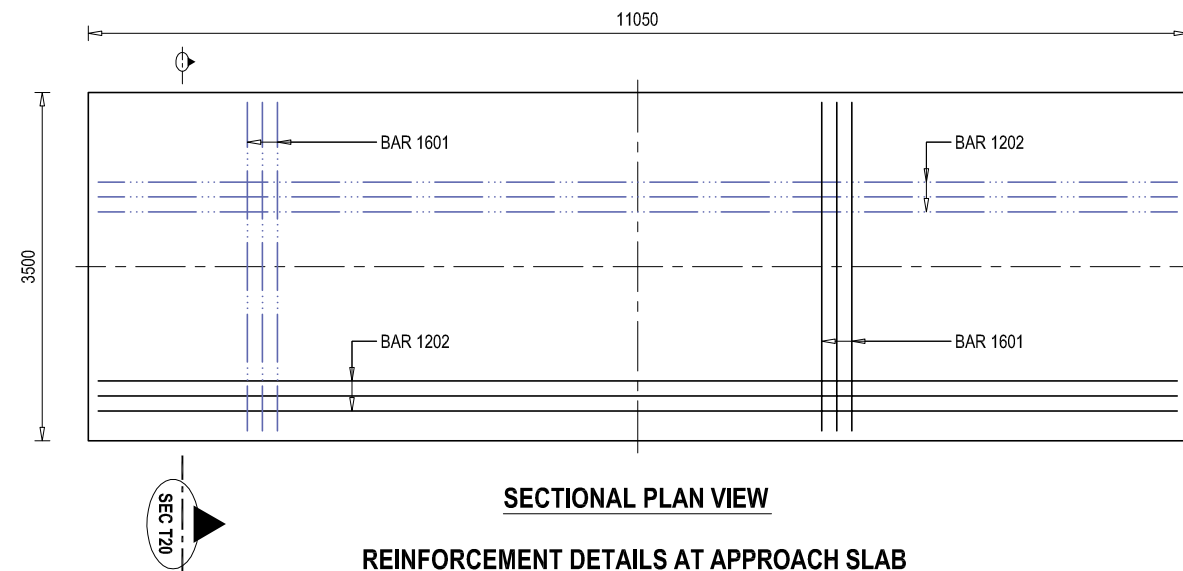
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EXPANSION JOINT ISOMETRIC VIEW

- SEAL TYPE

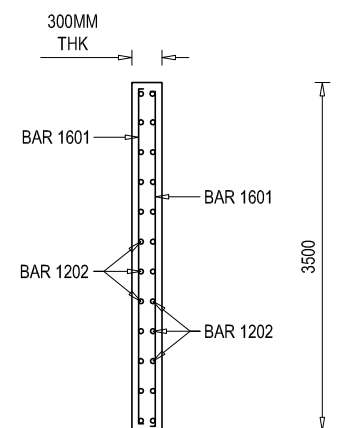
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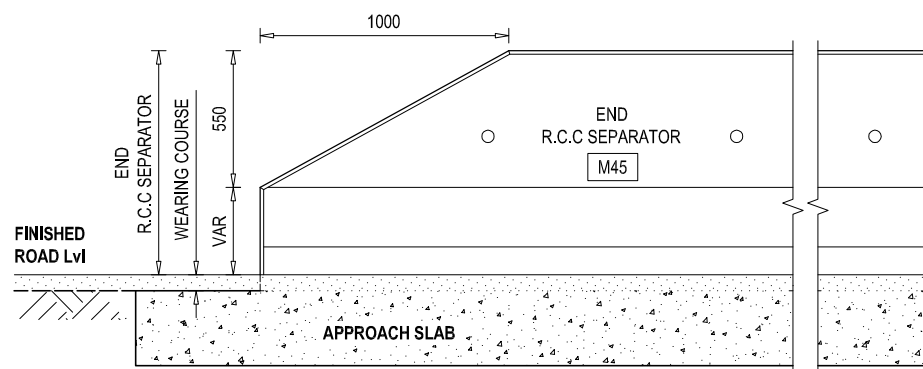
SECTIONAL PLAN VIEW

REINFORCEMENT DETAILS AT APPROACH SLAB

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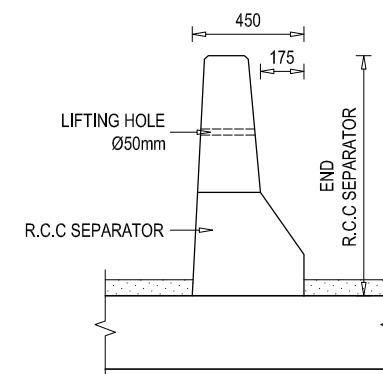


SECTIONAL ELEVATION VIEW AT SEC T20



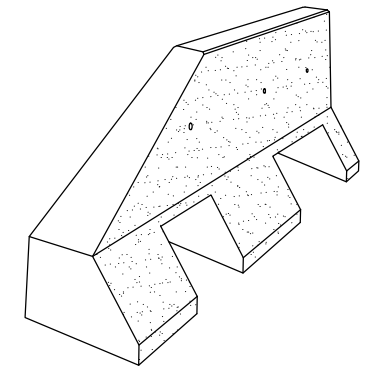
ELEVATION VIEW OF END R.C.C SEPARATOR

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SIDE VIEW

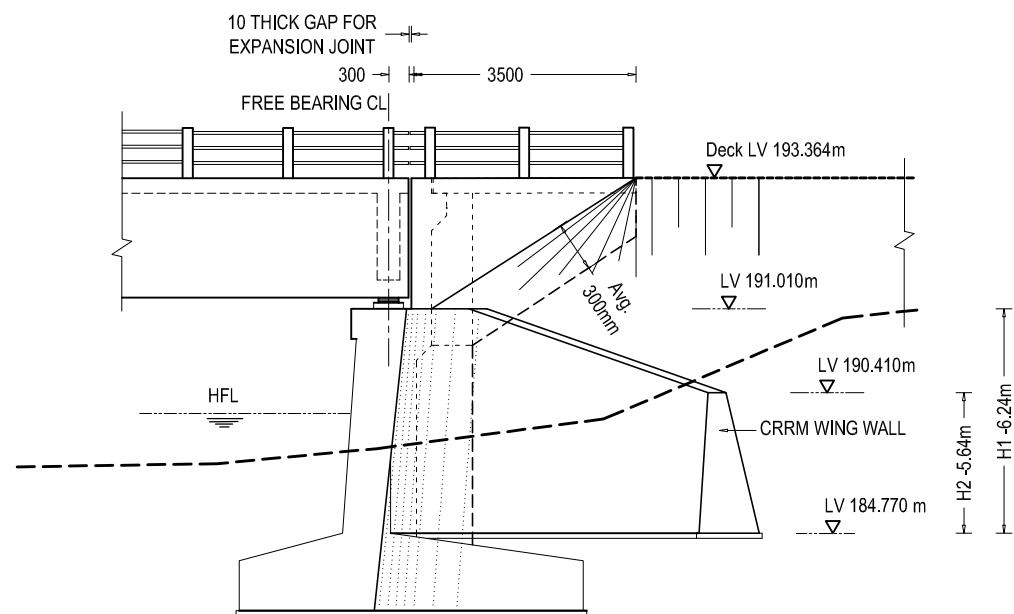
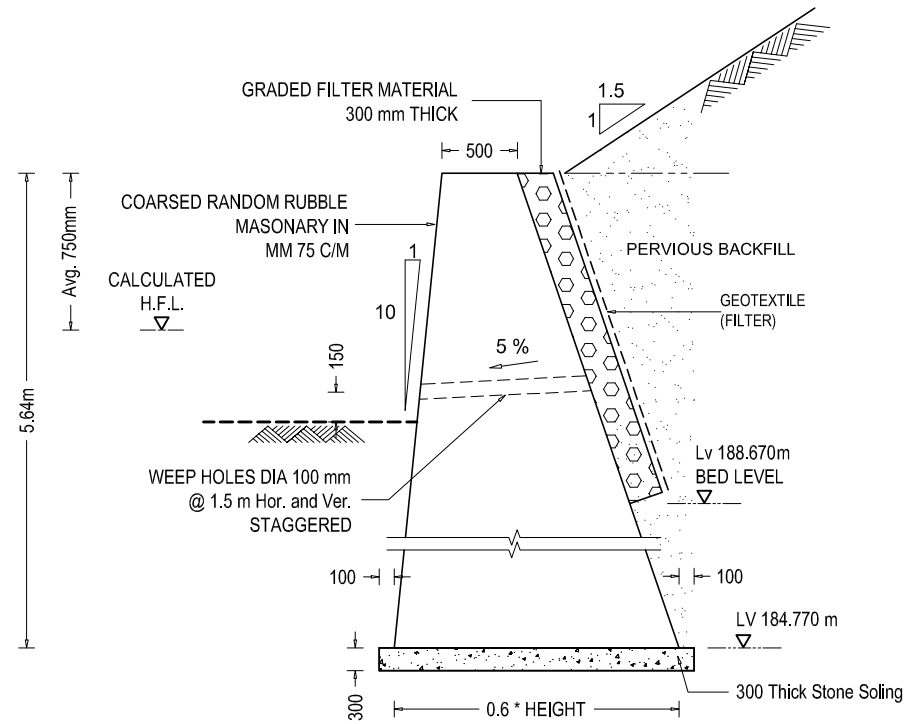
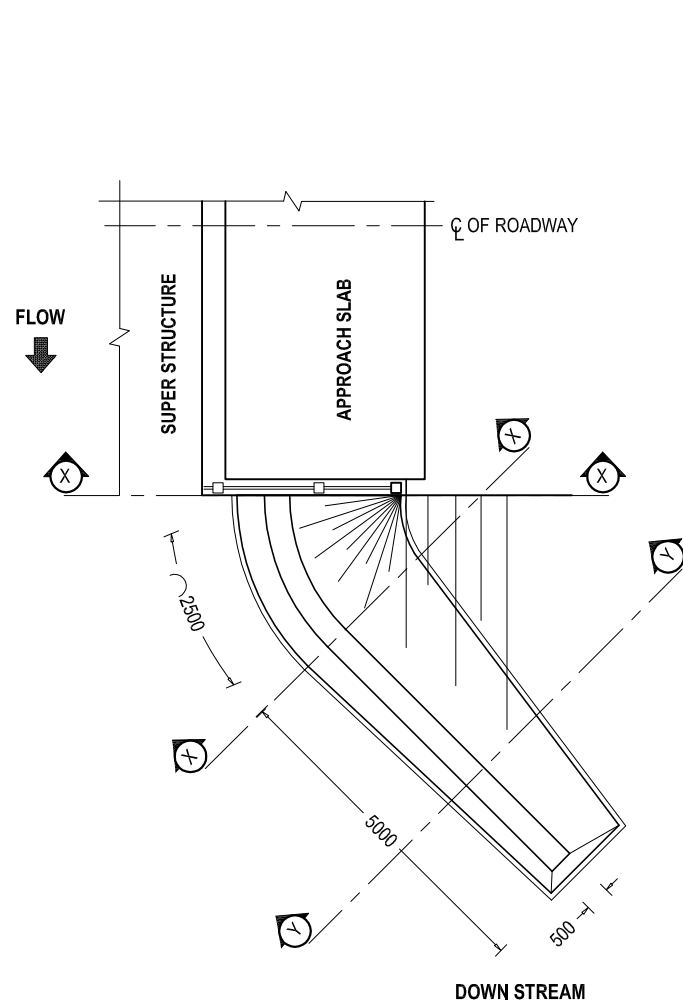
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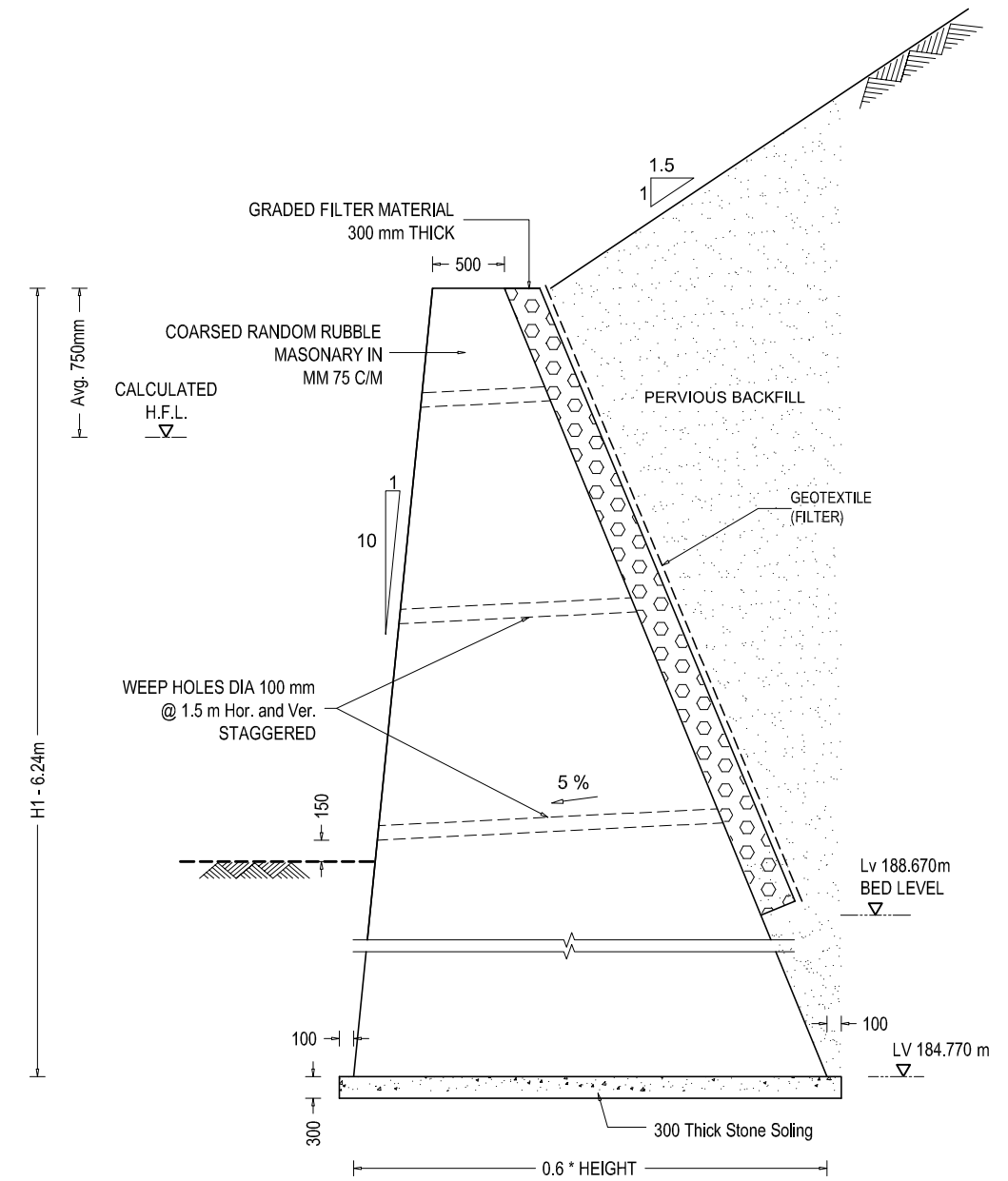
END R.C.C SEPARATOR ISOMETRIC VIEW

SCALE - NON

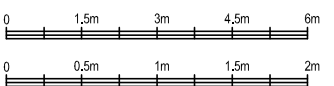
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Drawing Name	Scale:	Date:
Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamal-Dhalkebar-Pathalaya 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. Nec.No. 9489 CH/131 Mr. S.M.	MISCELLANEOUS DETAILS OF BRIDGE OVER RIVER TUTESHWOR-2	AS SHOWN	26.04.2023
		In Association With Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited	Checked By Mr. H.B.	Reference Drawings KDP/DPR/STR/BR/TUTESHWOR-2/DD-8	Chainage: 275+856	Drawing No.- KDP/DPR/STR/BR/TUTESHWOR-2/DD-14
			Approved By			Sheet No.2/2



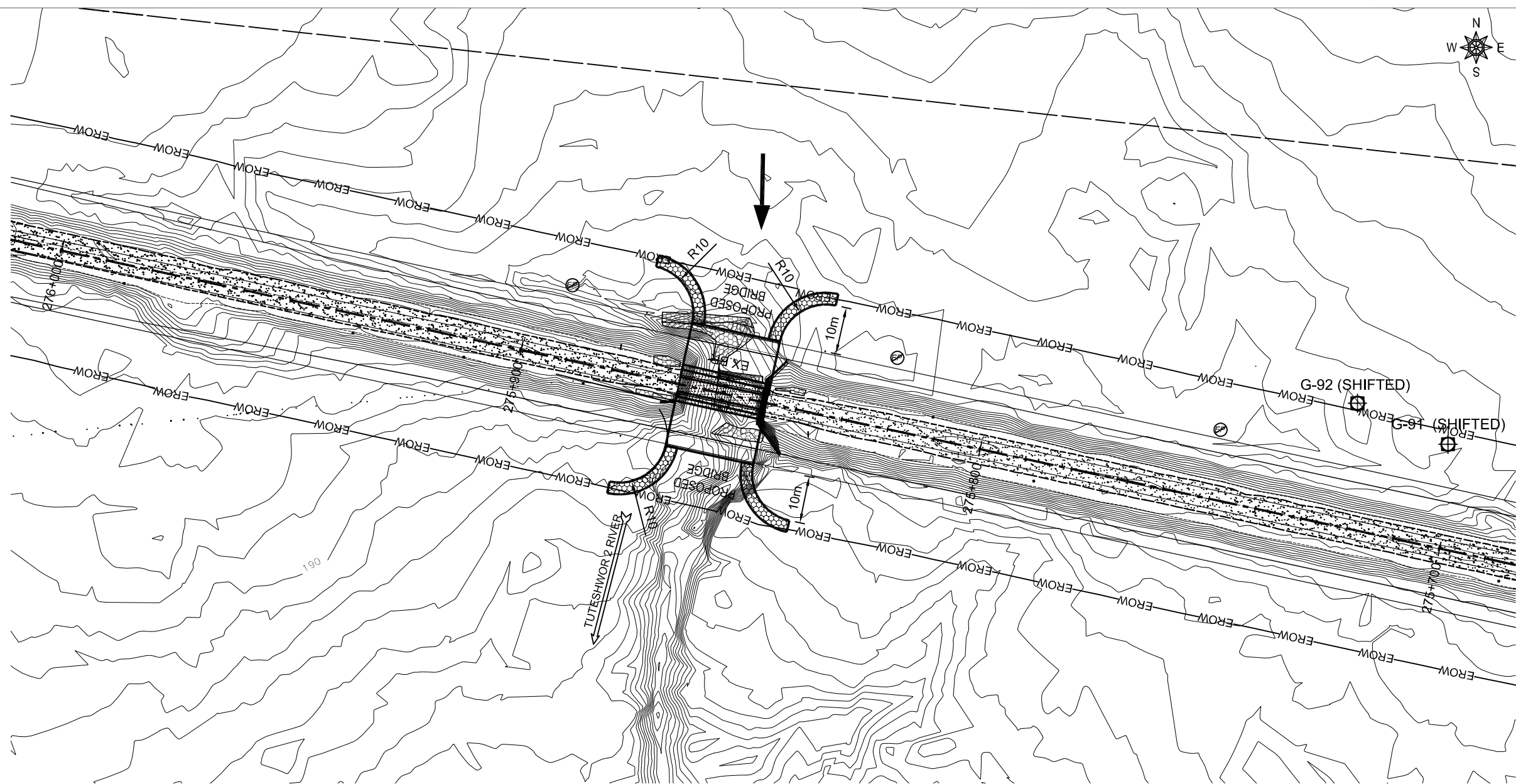
WING WALL ELEVATION



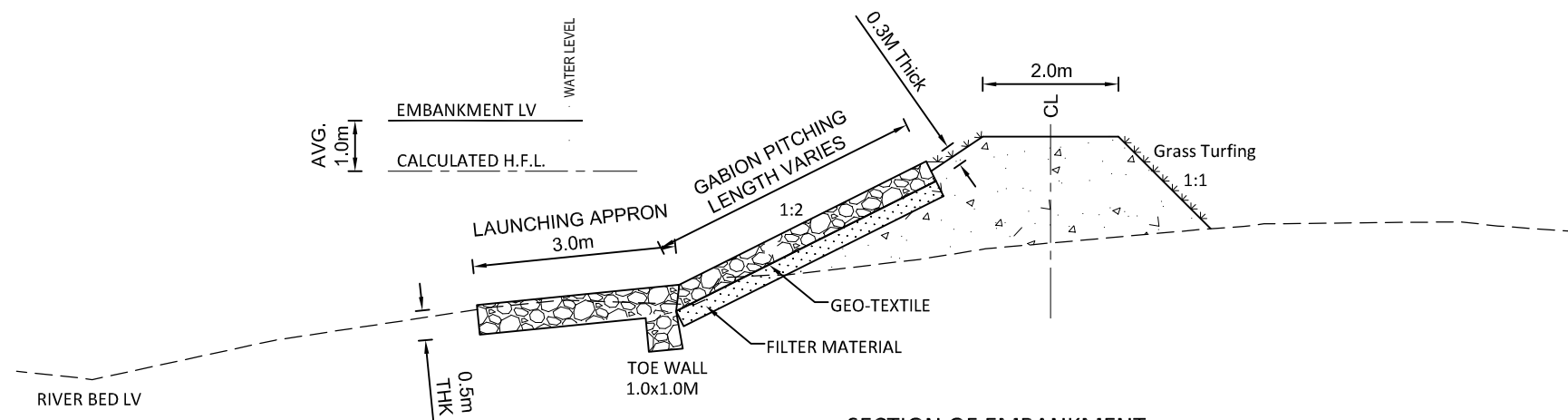
STONE MASONRY WING WALL SECTION X - X



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-Pathalya Road Section (130 KM) of Mahendra Highway and Bridges	DESIGN CONSULTANTS Joint Venture of ep4sa 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 CIVIL/1A/ Checked By Mr. S.M. Approved By Mr. H.B.	Drawing Name WING WALL DETAILS OF BRIDGE OVER RIVER TUTESHWOR-2 Reference Drawings -	Scale: AS SHOWN Chainage: 275+856	Date: 26.04.2023 Drawing No.- KDP/DPR/STR/BR/TUTESHWOR-2/DD-15 Sheet No. 1 / 1
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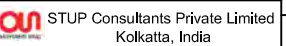


TOPOGRAPHIC MAP



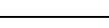
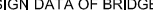
SECTION OF EMBANKMENT

SCALE - 1x : 5x

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  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	Checked By	Mr. S.M.	RIVER TRAINING WORKS OF BRIDGE OVER RIVER TUTESHWOR-2	1:1000	26.04.2023
			Approved By	Mr. H.B.	Reference Drawings	Chainage:	Drawing No.- KDP/DPR/STR/BR/TUTESHWOR-2/DD- 16
						275+856	Sheet No. 1/1

Bearing Design Data for 20m Span and 11.85m width

Load Condition	Items	Under	On each Neoprene Bearing	Unit
Under No Live Load	V	NO EQ.	46.28	Ton
		EQ.	53.22	Ton
	H _L	NO EQ.	-	Ton
		EQ.	10.41	Ton
	H _T	NO EQ.	-	Ton
		EQ.	10.41	Ton
	θ	NO EQ.	0.00266	radian
		EQ.	0.00306	radian
	Δ		12.4	mm
Under Maximum Live Load	V	NO EQ.	84.85	Ton
		EQ.	92.95	Ton
	H _L	NO EQ.	-	Ton
		EQ.	0.00	Ton
	H _T	NO EQ.	-	Ton
		EQ.	0.00	Ton
	θ	NO EQ.	0.0040425	radian
		EQ.	0.00465	radian
	Δ		20.80	mm

EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		Designed By Mr. R.D.  Signature	Drawing Name BEARING DESIGN DATA OF BRIDGE OVER RIVER TUTESHWOR-2	Scale: 1:1000	Date: 26.04.2023
 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-Pathlalya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of		Checked By Mr. S.M.  Signature	Reference Drawings				
		 EPTISA Servicios De Ingenieria Madrid, Spain	 STUP Consultants Private Limited Kolkatta, India			Approved By Mr. H.B.  Signature	Sheet No. 1/1		
		In Association With Udaya Consultancy, Geocom International, Sundar Krti Consultant and Rays Consultant Private Limited							