



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- Dumajor
Volume-2
Detailed Drawing

April, 2023

Joint Venture Of:

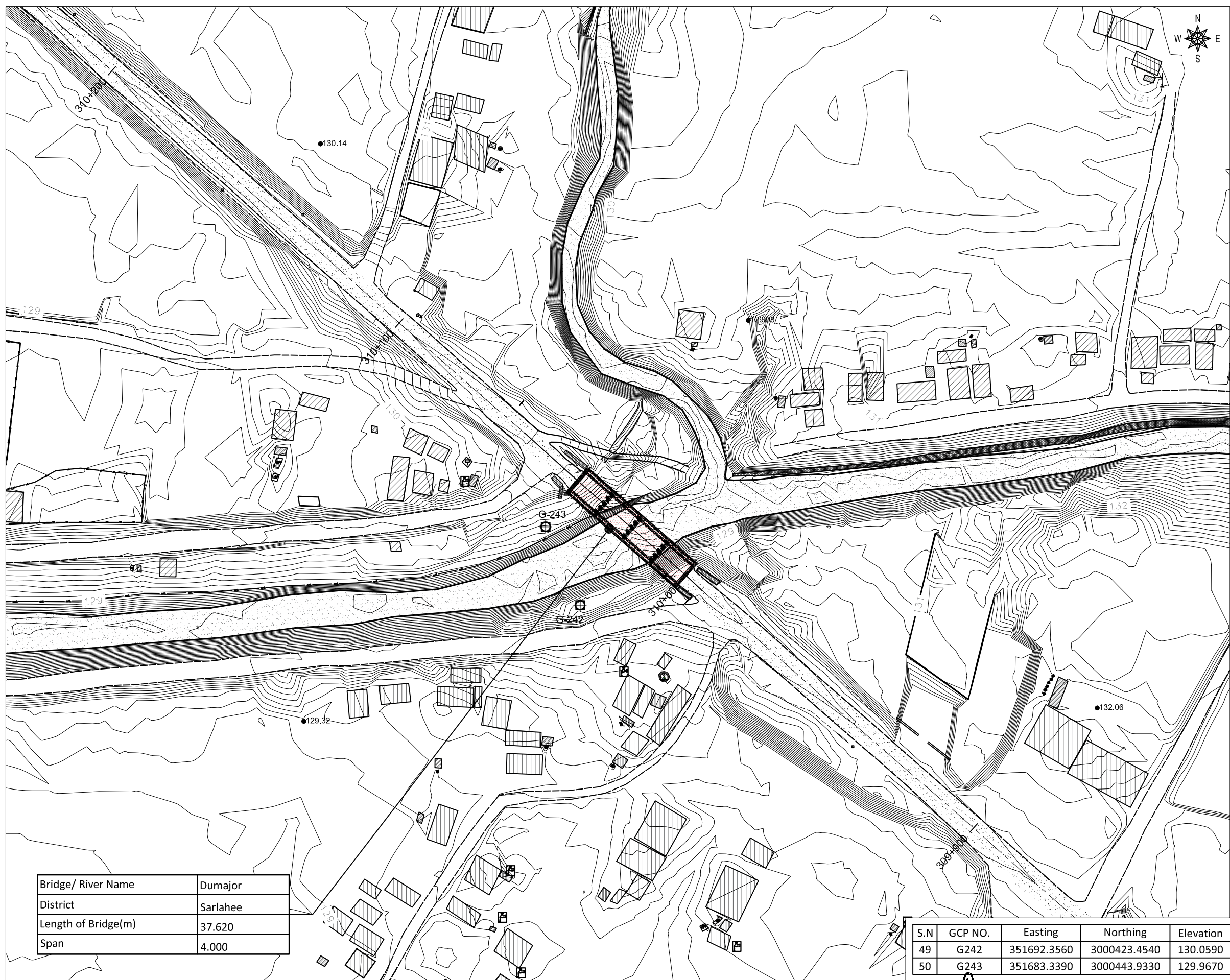
eptisa EPTISA Servicios De Ingenieria
Madrid, Spain

STUP Consultants Private Limited
Kolkata, India

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

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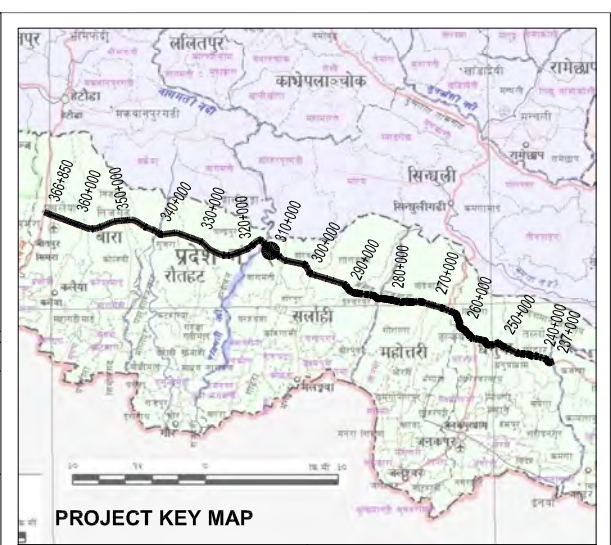
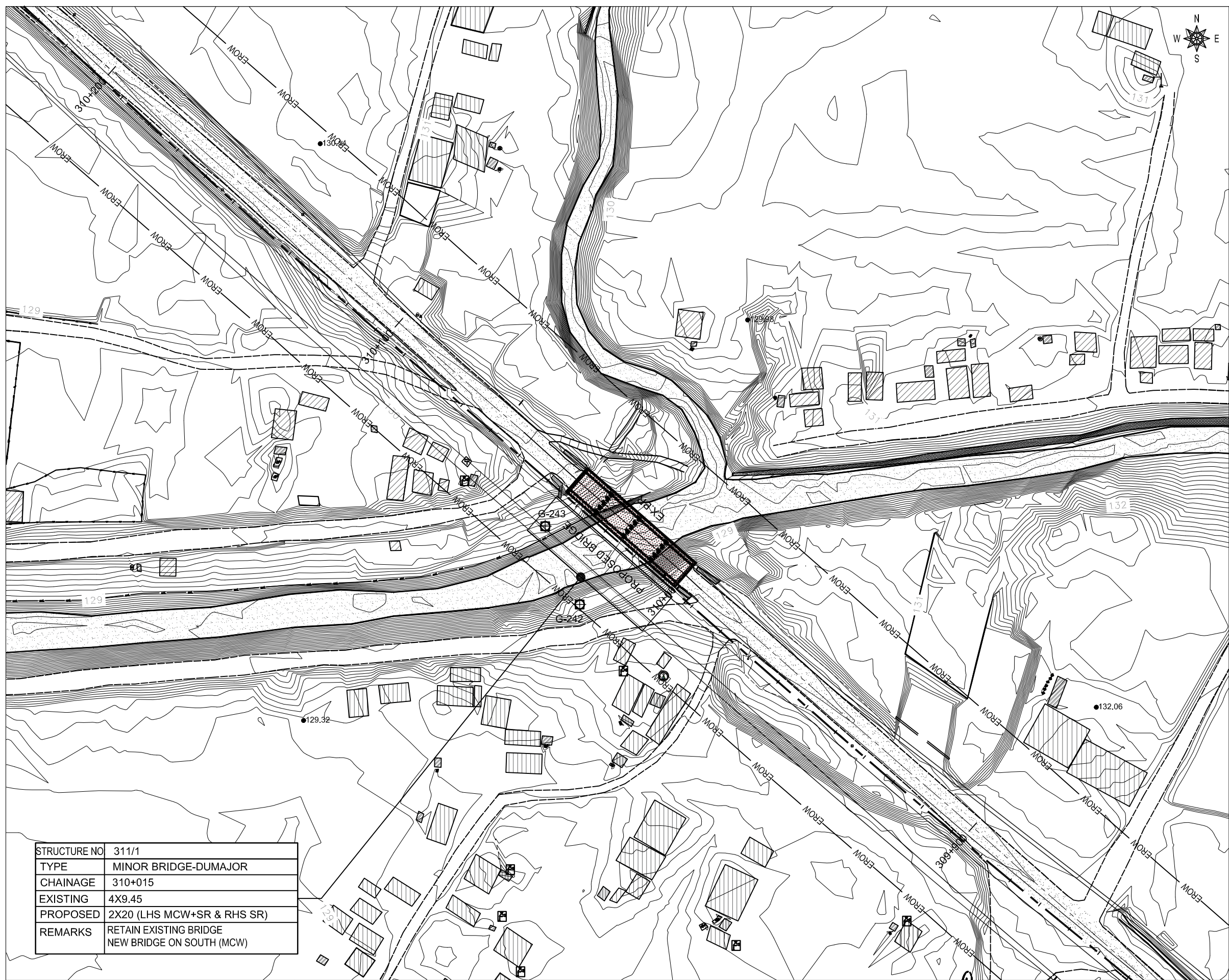
S.No.	DRAWING NAME	DRAWING No.	SHEET No.
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DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL
MAIN FOOT TRAIL		ANIMAL FARM	
PLACE NAME		BAMBOO	
POLICE STATION		BIO GAS	
PETROL PUMP		BUS WAITING STATION	
Pond/ Water Body		BRIDGE	
POULTRY FARM		CONTOUR	
PROPERTY BOUNDARY		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
49	G242	351692.3560	3000423.4540	130.0590
50	G243	351683.3390	3000443.9330	129.9670

 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		Designed By Mr. R.D. Nec.No. 6489 CIVIL/20 Signature	Drawing Name DETAILED SURVEY TOPOGRAPHIC MAP (EXISTING CONDITION) OF BRIDGE OVER RIVER DUMAJOR Reference Drawings	Scale: 1:1000 Chainage: 310+015	Date: 24.04.2023
		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/DUMAJOR/DD- 2
				Approved By Mr. H.B. Signature			Sheet No. 1/1



DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL
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				Approved By Mr. H.B. Signature			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) - 116.16 CUMECs
2. HFL - 130.990 M
3. FREE BOARD (MINIMUM) - 1 M
4. MAXIMUM SCOUR LEVEL:
ABUTMENT - 121.500M
PIER - 117.720M

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

D. STRUCTURAL AND OTHER DATA: -

1. SPAN ARRANGEMENT: 2 X 20 = 40 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 - 1500 DIA BORED CAST-IN-SITU PILE
DESIGN WORKING LOAD ON PILE - 313.27 TON
B) PIER- 1200 DIA BORED CAST-IN-SITU PILE
DESIGN WORKING LOAD ON PILE - 204.00 TON
RCC BORED PILES SHOULD BE CONSTRUCTED AS PER IS: 2911(PART 1/SEC 2)-2010.
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. PILE..... M35 (CEMENT CONTENT AS PER SPECIFICATION)
b. PILE CAP.....M35
c. BEARING PEDESTALS.....M40
d. ABUTMENTM35
e. PIER.....M35
f. PIER CAP.....M35
g. RETURN WALL.....M35
h. 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 : 57.2Ø
b) FOR M 35 GRADE CONCRETE : 51.48Ø
c) FOR M 40 GRADE CONCRETE : 48.62Ø

(WHERE Ø 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%	57.2Ø	51.48Ø	48.62Ø	45.76Ø
25%≤LAPPED BAR <33%	65.78Ø	62.65Ø	55.91Ø	52.62Ø
33%≤LAPPED BAR <50%	80.08Ø	72.07Ø	68.07Ø	64.06Ø
50%≤LAPPED BAR	85.8Ø	77.22Ø	72.93Ø	68.64Ø

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.

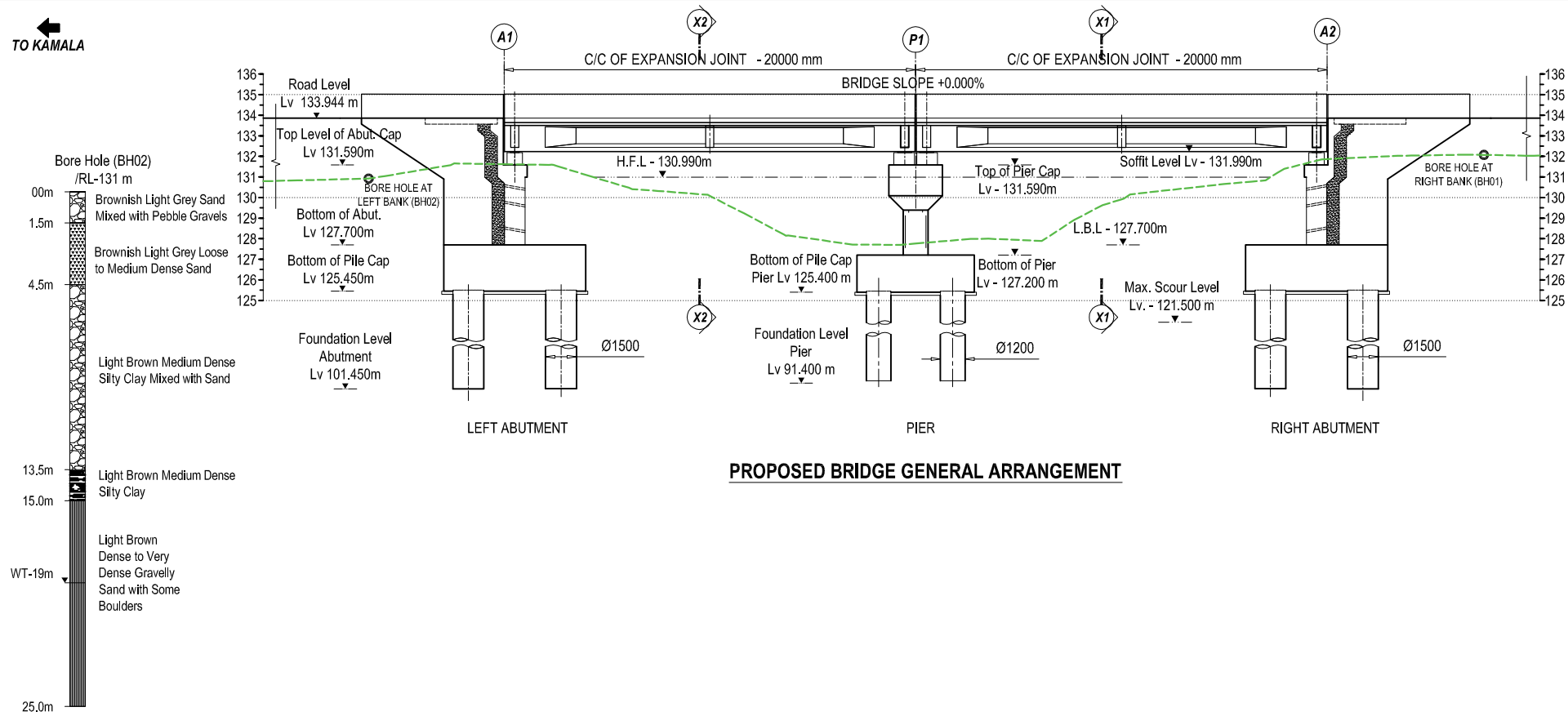
18. INSTEAD OF LAPPING SPLICING OF REINFORCEMENT CAN BE DONE WITH WELDED JOINT AS PER CL. 15.2.5.2 OF IRC 112-2020. WELD LENGTH SHALL NOT BE LESS THAN 18Ø.

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

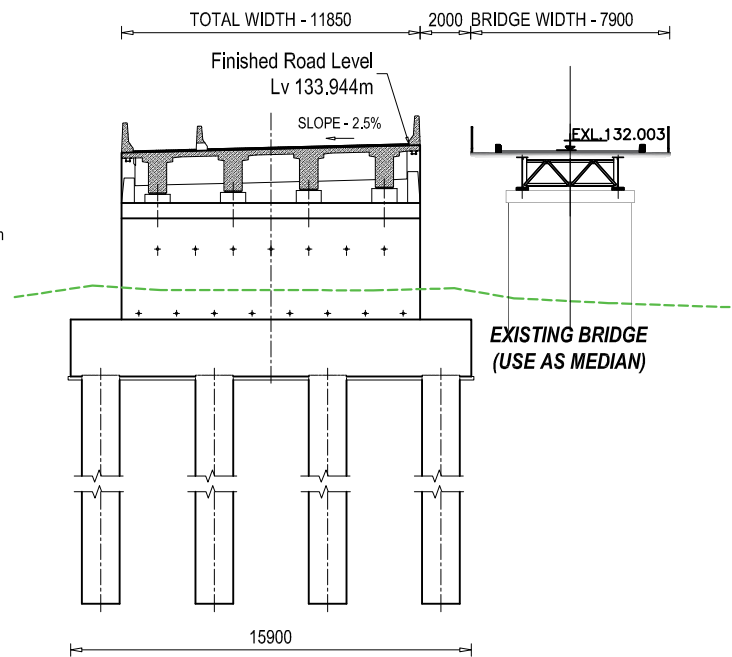
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Mr. R.D.	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlalya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of  EPTISA Servicios De Ingenieria Madrid, Spain  STUP Consultants Private Limited Kolkatta, India	Mr. S.M.	Mr. S.M.	GENERAL NOTES OF BRIDGE OVER RIVER DUMAJOR	AS SHOWN	05.05.2023
		In Association With Udaya Consultancy, Geocom International, Sundar Krti Consultant and Rays Consultant Private Limited	Mr. H.B.	Mr. H.B.	Reference Drawings	Chainage:	Drawing No.- KDP/DPR/STR/BR/DUMAJOR/DD-4
						310+015	Sheet No. 1 / 1

TO KAMALA

TO PATHALAIYA

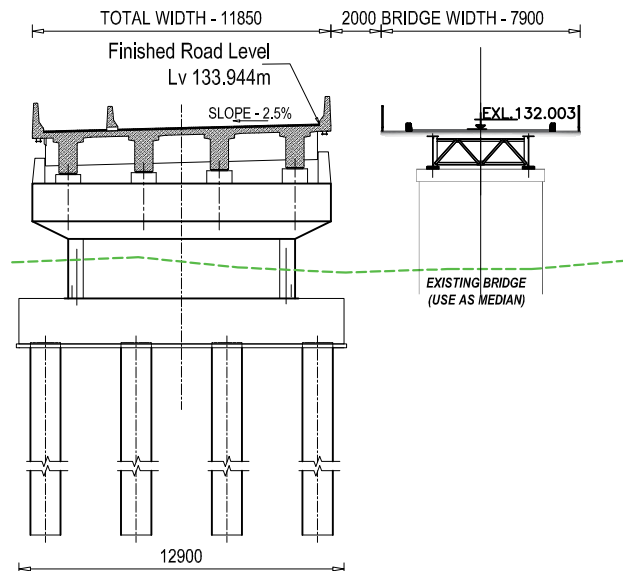


PROPOSED BRIDGE GENERAL ARRANGEMENT

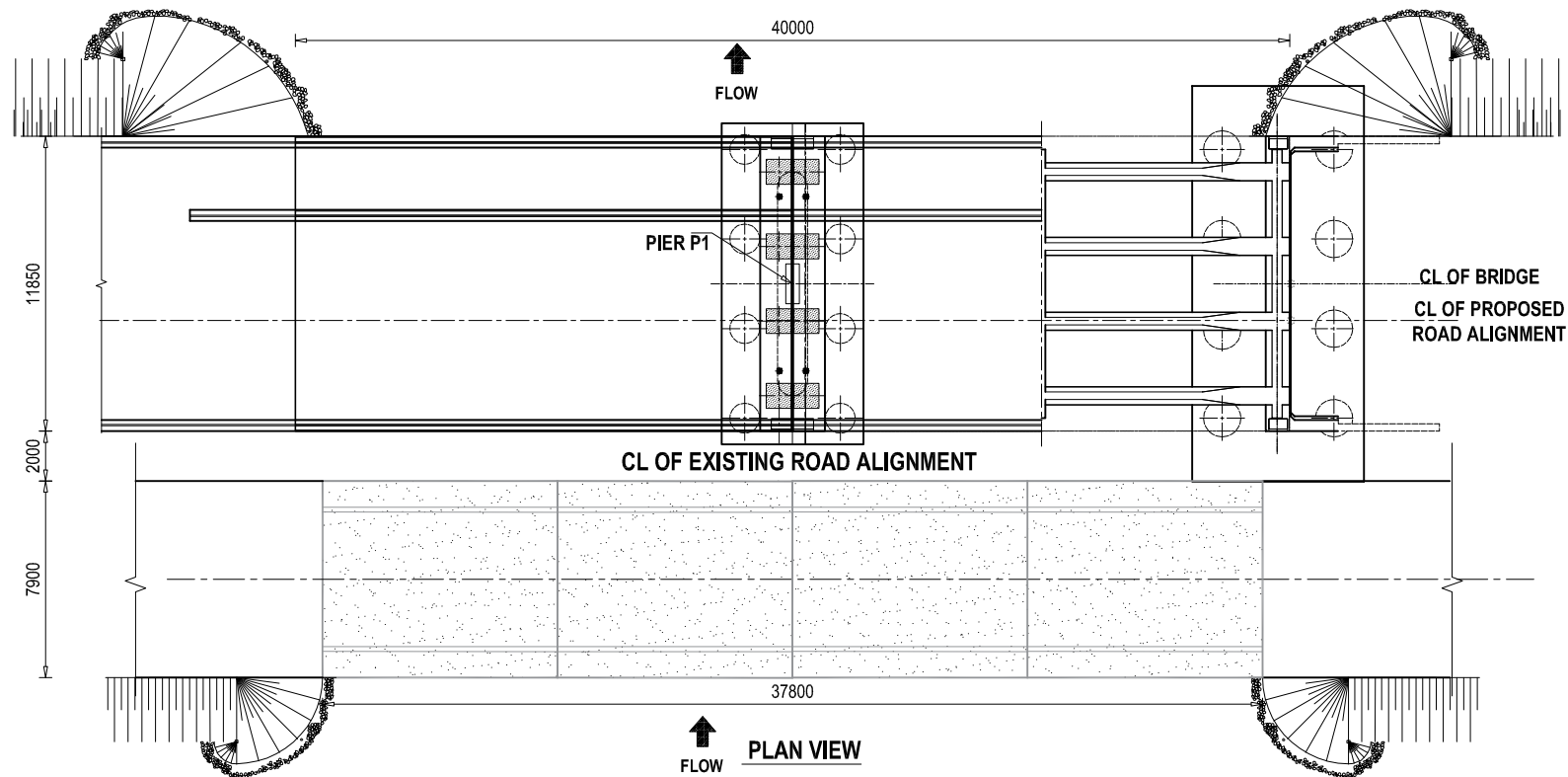


SECTIONAL VIEW OF ABUTMENT AT X1 - X1

Finished Road Level(D/S)	LEFT ABUTMENT	133.944	PIER 1	133.944	RIGHT ABUTMENT	133.944
Finished Road Level (Existing Bridge)		132.003		132.003		132.003
Existing Ground Level(D/S)		131.464		127.609		131.546
Existing Ground Lv (U/S)		132.253		127.908		132.035
Chainage		309+995		310+015		310+035



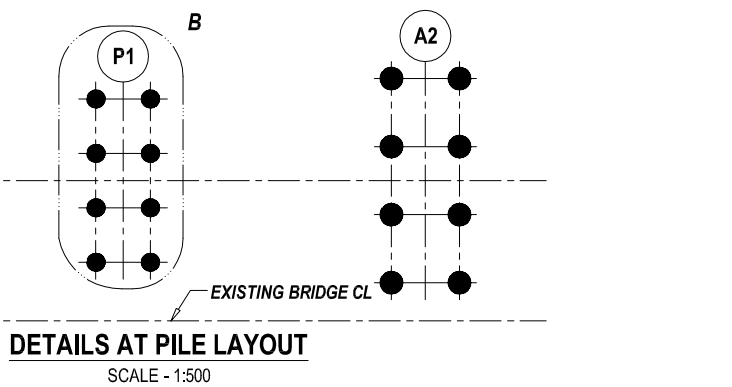
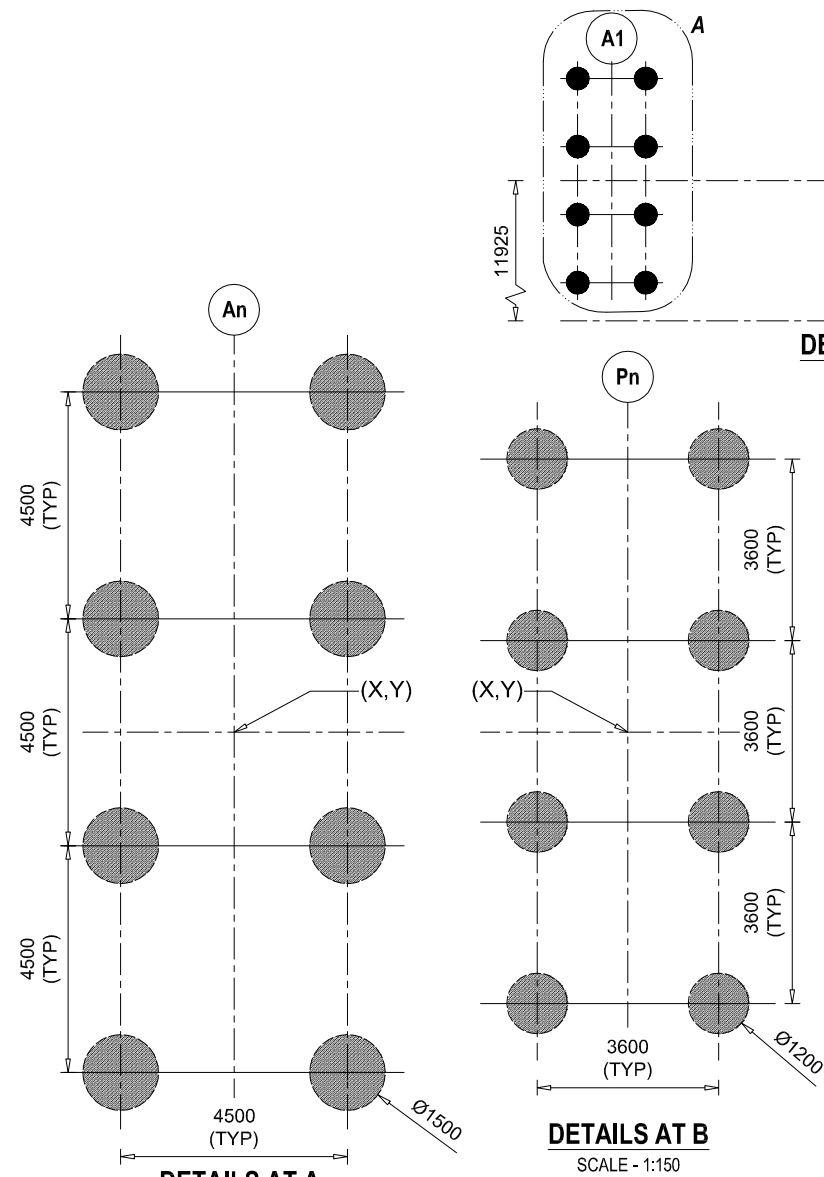
SECTIONAL VIEW OF PIER AT X2-X2



PLAN VIEW

(SCALE 1:300 @ A3)

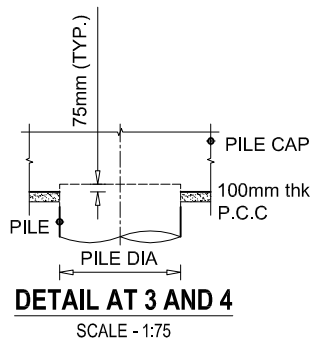
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		Joint Venture of						
		 EPTISA Servicios De Ingeniera Madrid, Spain		 STUP Consultants Private Limited Kolkatta, India		Checked By Mr. S.M.  Signature		
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								Sheet No. 1 / 1



CO ORDINATES OF PILE LOCATION OF PROPOSED BRIDGE

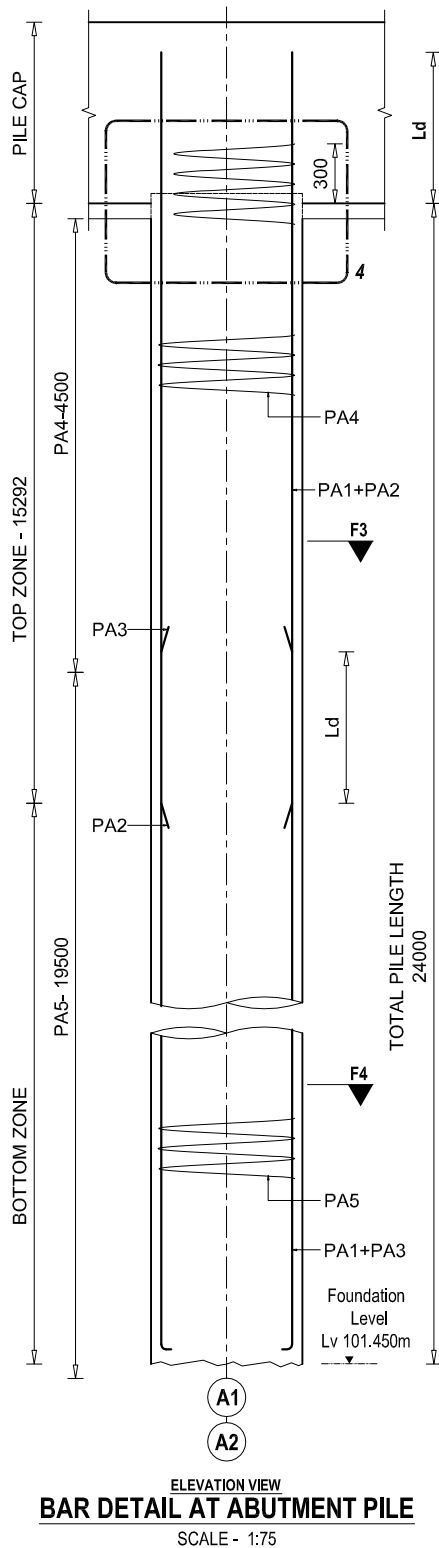
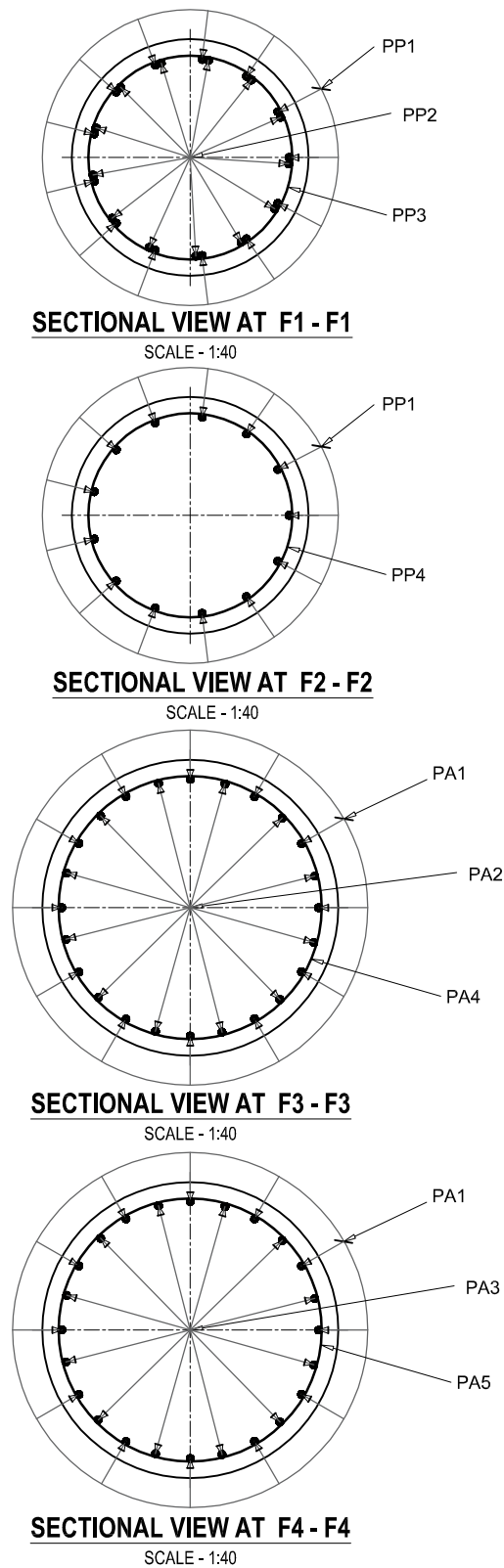
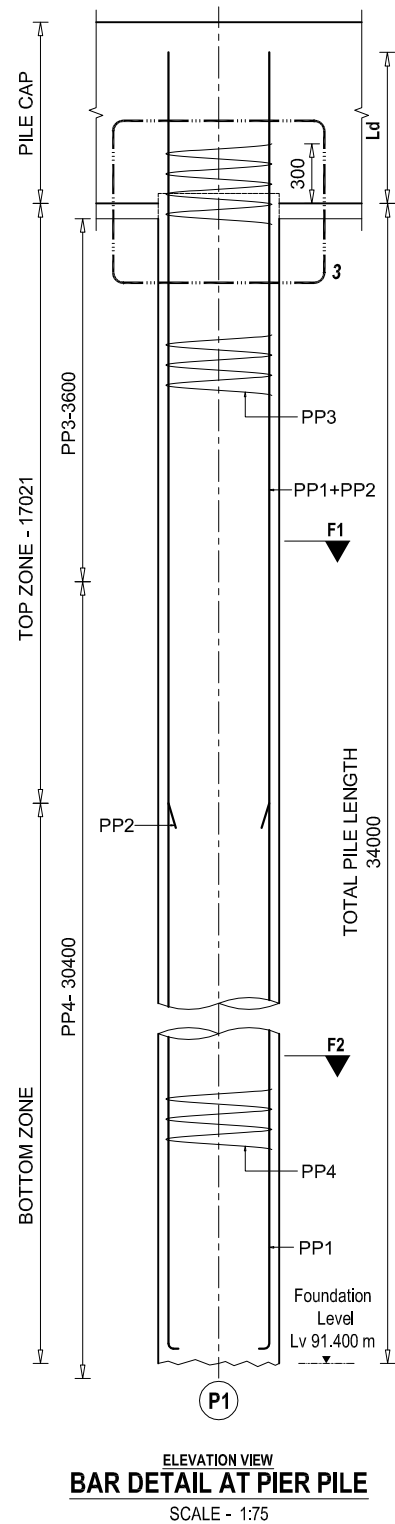
SN.	ABUTMENT/PIER	EASTING (X)	NORTHING (Y)
1	ABUTMENT (A1)	351712.668	3000420.964
2	PIER (P1)	351697.619	3000434.136
3	ABUTMENT (A2)	351682.567	3000447.306

PILE CAPACITY		
	SN.	CAPACITY (Ton)
1	ABUTMENT	313.27
2	PIER	204.00



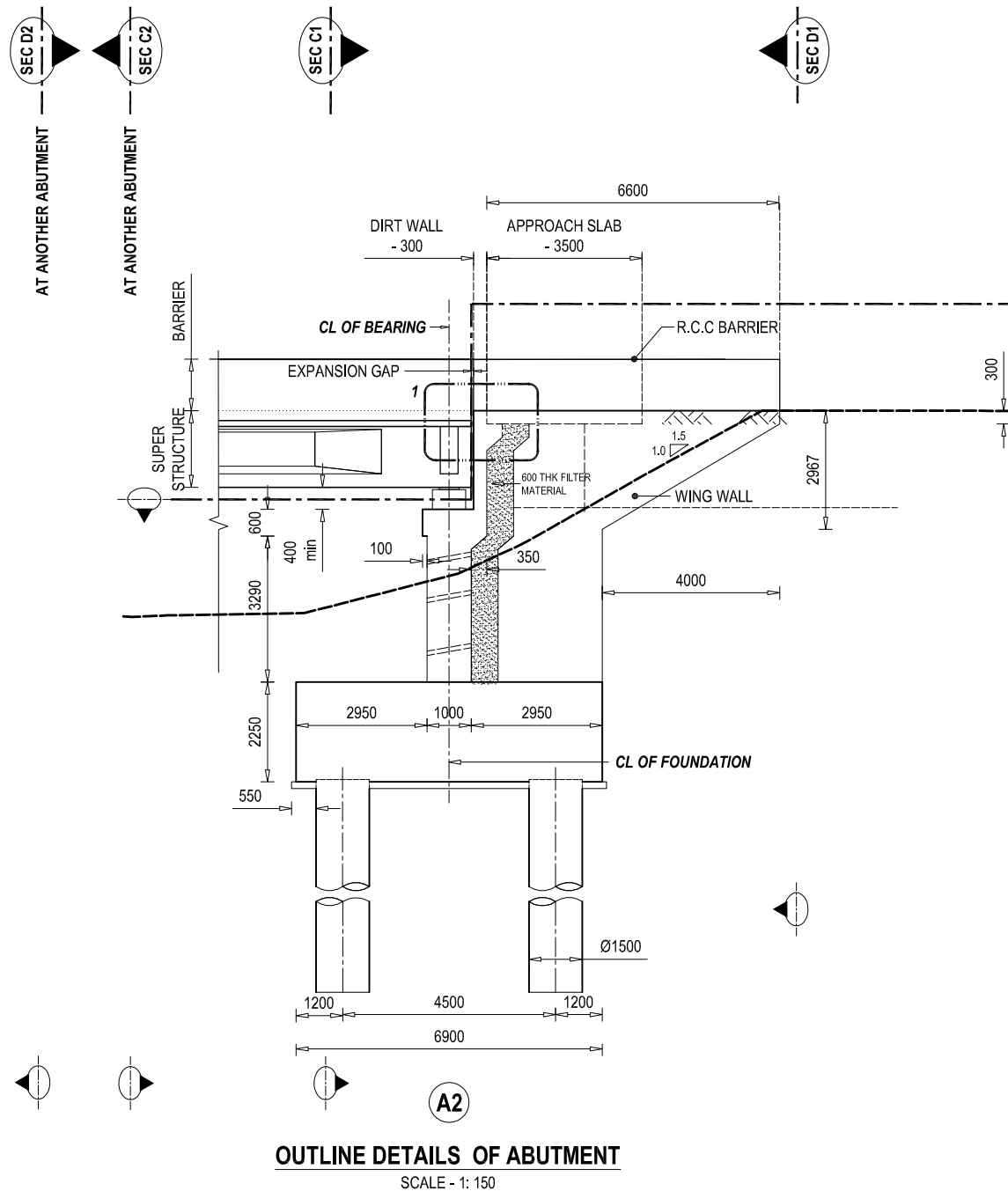
BAR BENDING SCHEDULE OF ABUTMENT PILE							
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	TOTAL WEIGHT (Kg)
1	PA1	26100	32		26.475	12	2008.18
2	PA2	17467	32		17.467	12	1324.904
3	PA3	10133	12		10.433	12	111.29
4	PA4	Dia. 1334	16	110	4.391	55	381.62
5	PA5	Dia. 1334	12	110	4.391	164	640.08
TOTAL (KG) :							4466.06
No. of Pile							8.00
TOTAL WEIGHT (KG) :							35728.48

BAR BENDING SCHEDULE OF PIER PILE							
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	TOTAL WEIGHT (Kg)
1	PP1	35650	32		35.950	13	2954.11
2	PP2	19946	32		19.946	13	1639.019
3	PP3	Dia. 1034	16	100	3.448	48	261.56
4	PP4	Dia. 1034	12	100	3.448	292	895.03
TOTAL (KG) :							5749.72
No. of Pile							8.00
TOTAL WEIGHT (KG) :							45997.78



NOTE
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NOTE
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Department of Roads
Development Cooperation Implementation
Division

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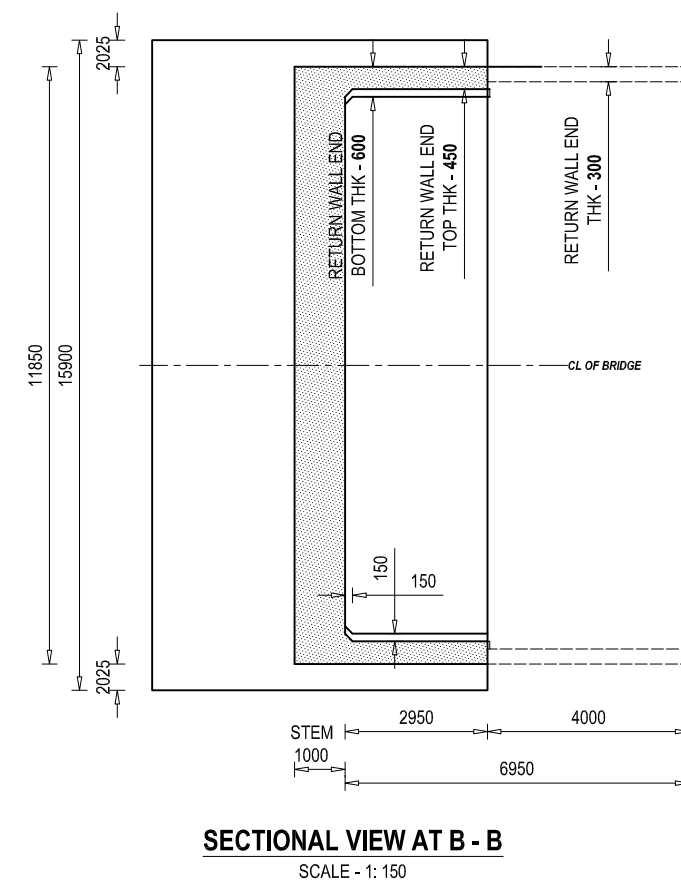
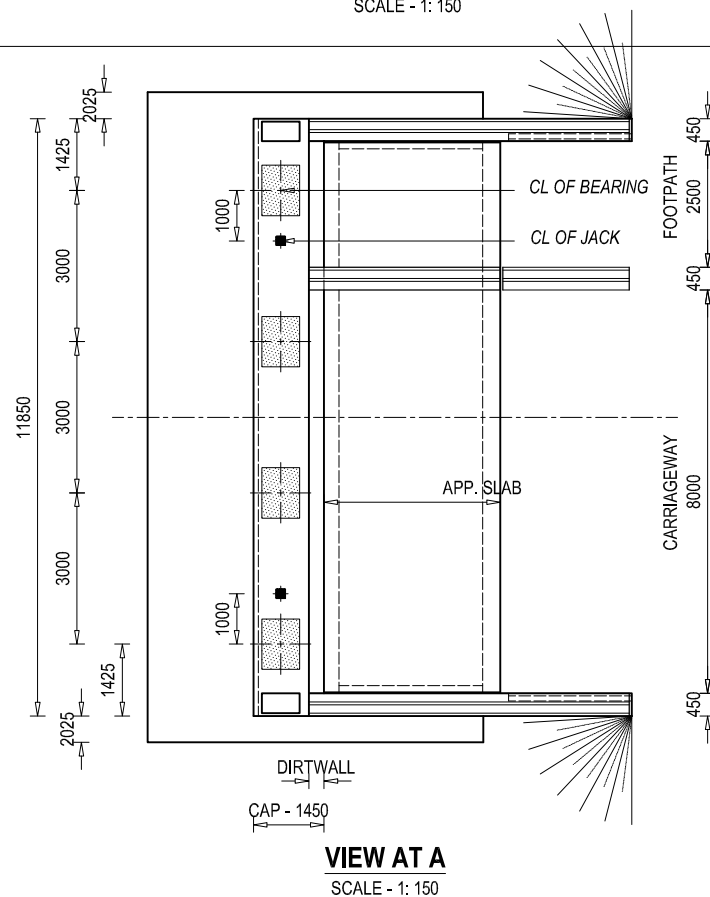
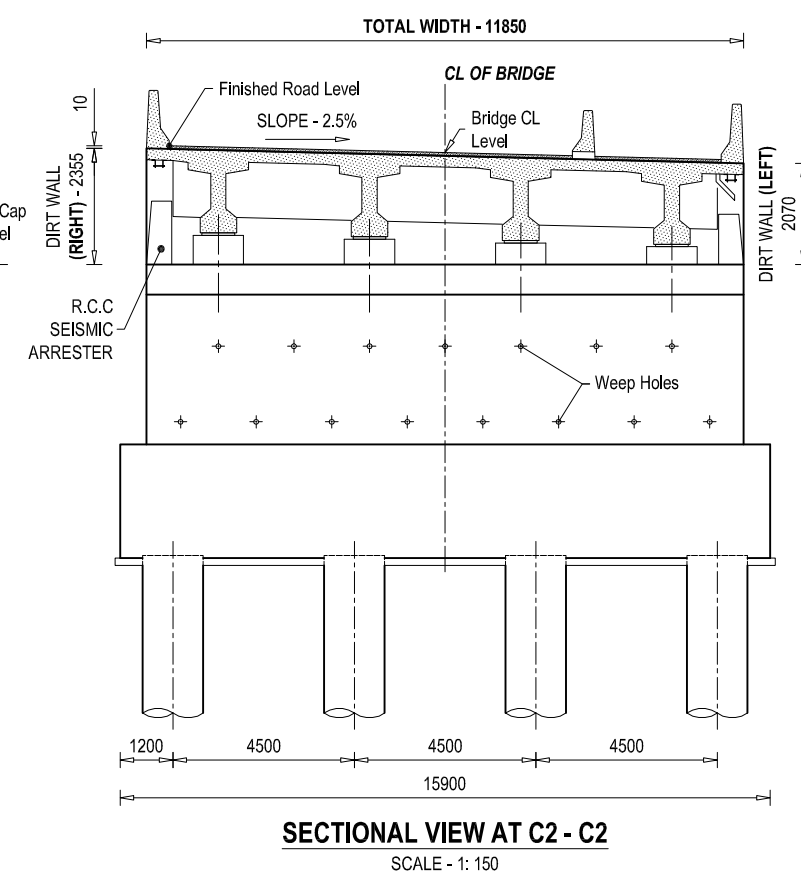
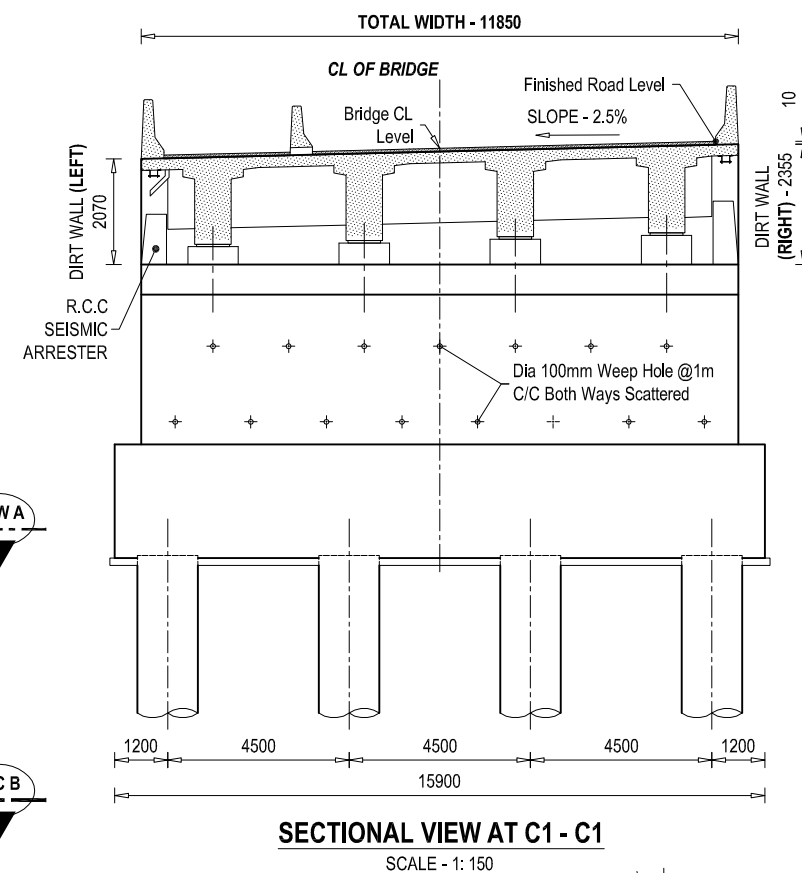
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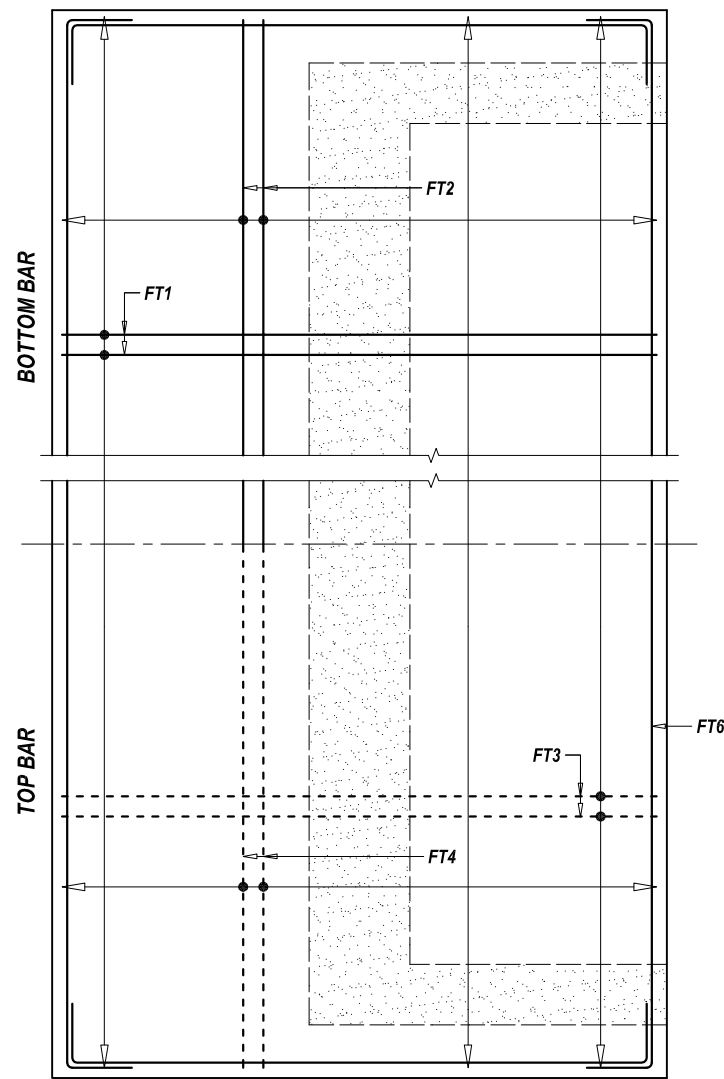
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Drawing Name
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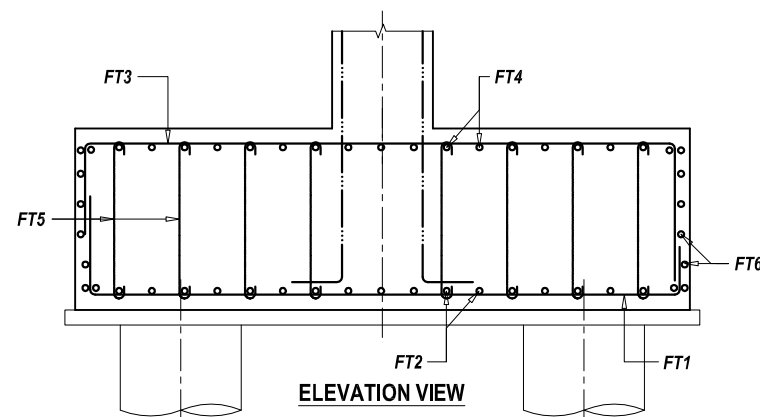
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03.08.2023
Drawing No.- KDP/DPR/STR/BR/DUMAJOR/DD- 7
Sheet No. 1 / 2

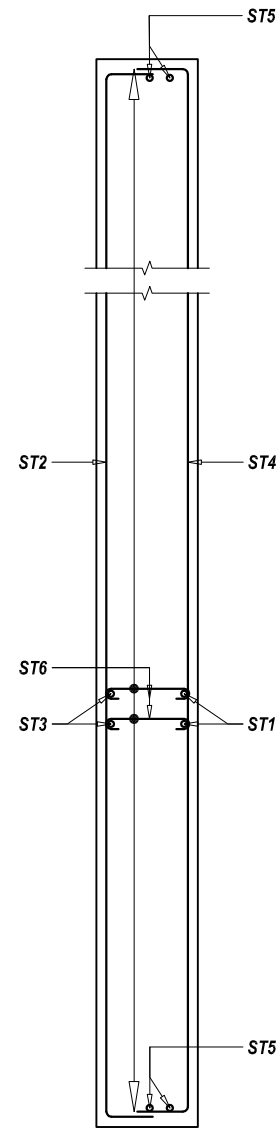




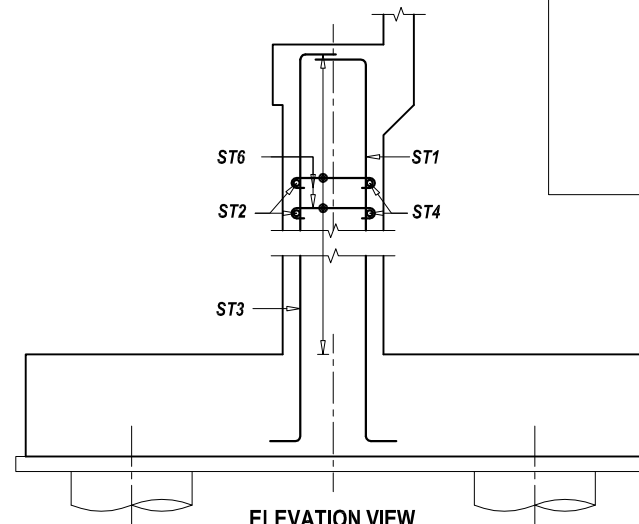
PLAN VIEW



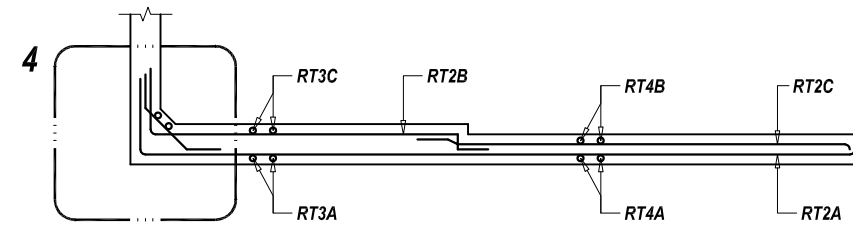
BAR DETAIL OF PILE CAP
SCALE - 1 : 75



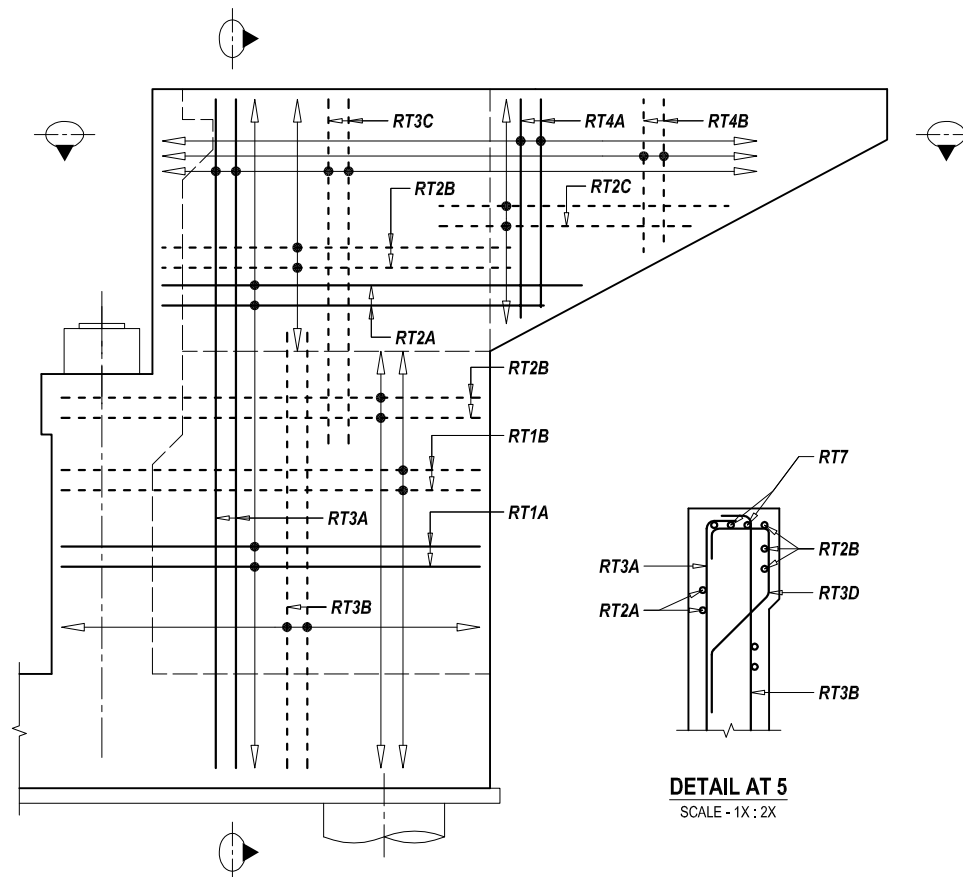
SECTIONAL PLAN VIEW



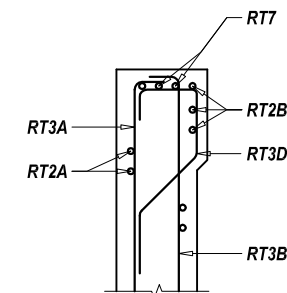
BAR DETAIL AT ABUTMENT STEM
SCALE - 1 : 75



SECTIONAL PLAN VIEW

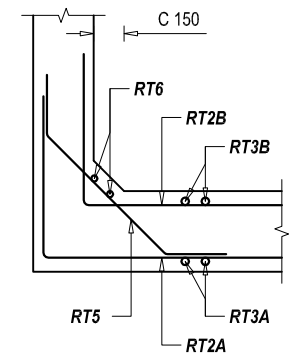


ELEVATION VIEW

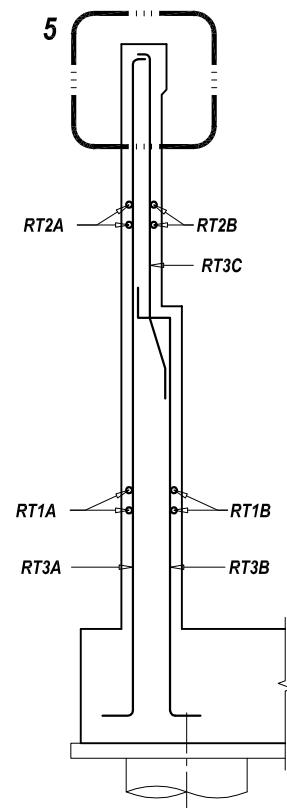


DETAIL AT 5
SCALE - 1X : 2X

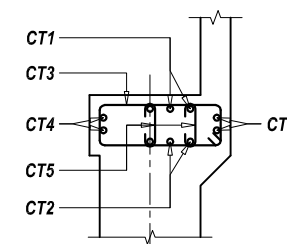
BAR DETAIL AT RETURN WALL
SCALE - 1 : 75



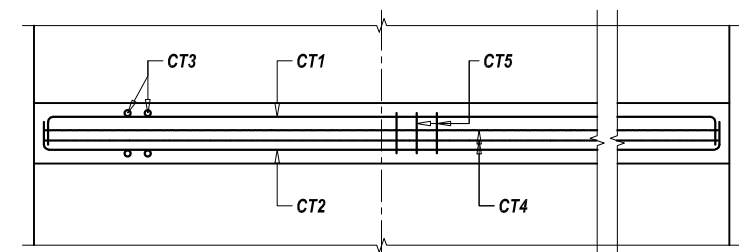
DETAILS AT 4



SECTIONAL SIDE VIEW



ELEVATION VIEW



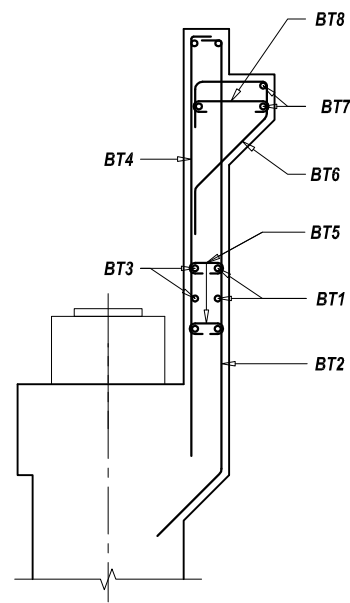
FRONT VIEW

BAR DETAIL AT ABUTMENT CAP
SCALE - 1 : 75

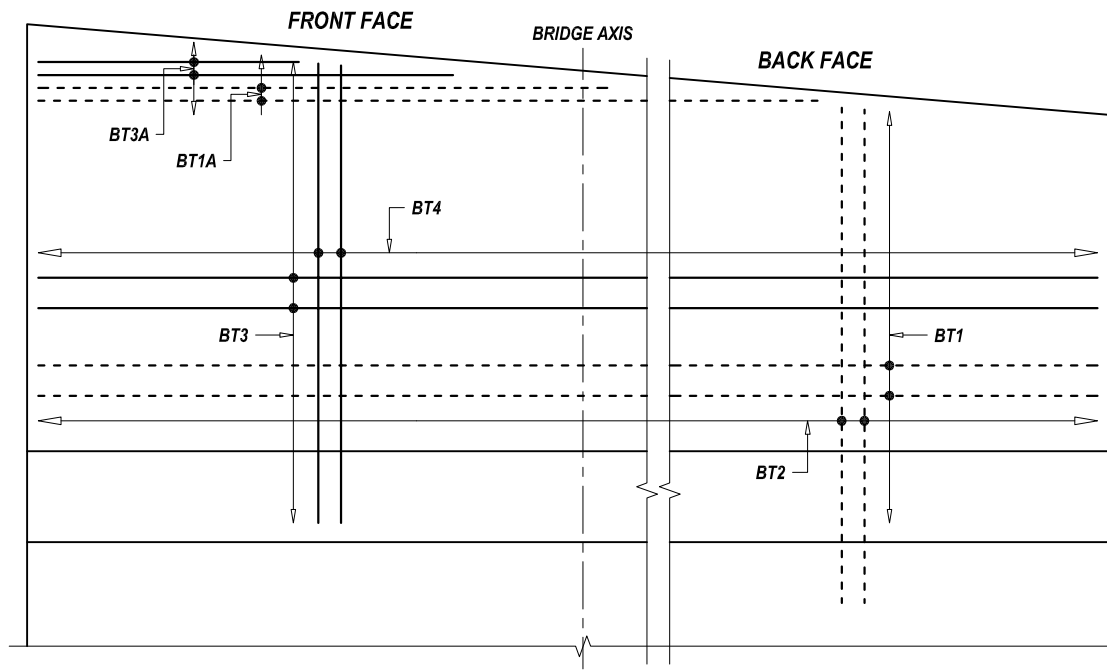
--- TOP BAR OR NEAR FACE REINFORCEMENT
--- BOTTOM BAR OR FAR FACE REINFORCEMENT

NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/DUMAJOR/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-Pathalaya 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 Kirti Consultant and Rays Consultant Private Limited	Checked By	Mr. S.M.	ABUTMENT REINFORCEMENT DETAILS OF BRIDGE OVER RIVER DUMAJOR	AS SHOWN	03.08.2023
			Approved By	Mr. H.B.	Reference Drawings KDP/DPR/STR/BR/DUMAJOR/DD-9	Chainage: 310+015	Drawing No:- KDP/DPR/STR/BR/DUMAJOR/DD-8 Sheet No. 1 / 2



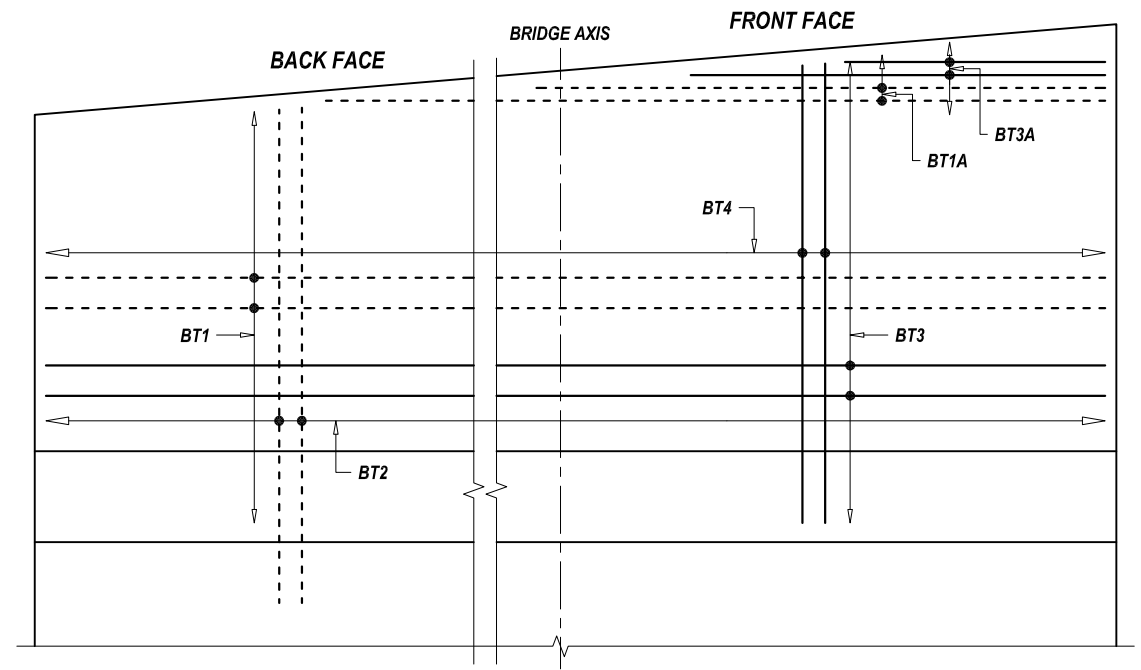
SECTIONAL SIDE VIEW



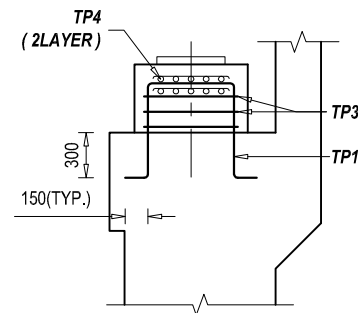
ELEVATION VIEW / VIEW AT D1

BAR DETAIL AT DIRT WALL

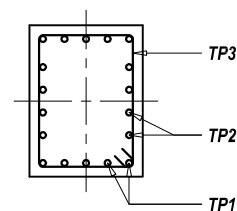
SCALE - 1 : 50



ELEVATION VIEW / VIEW AT D2



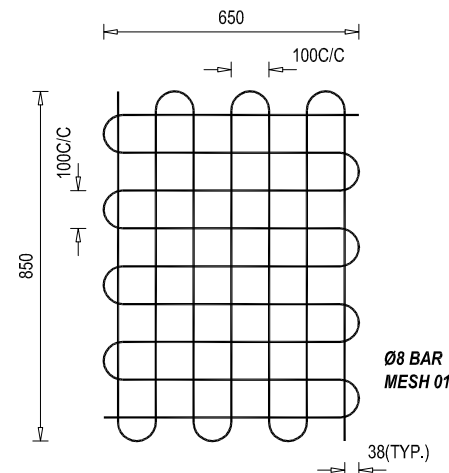
SECTIONAL SIDE VIEW



SECTIONAL PLAN VIEW
BAR DETAIL AT PEDESTAL

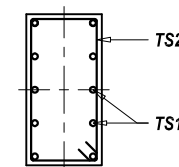
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NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/DUMAJOR/DD-4

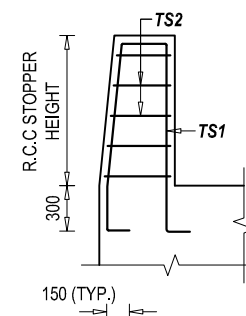


REINFORCEMENT DETAILS OF
BEARING MESH

SCALE - 1 : 50

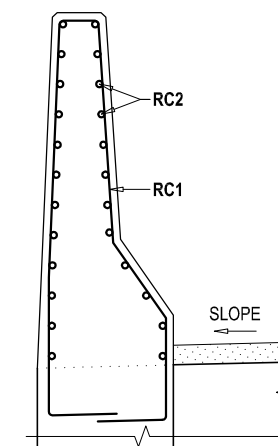


SECTIONAL PLAN VIEW



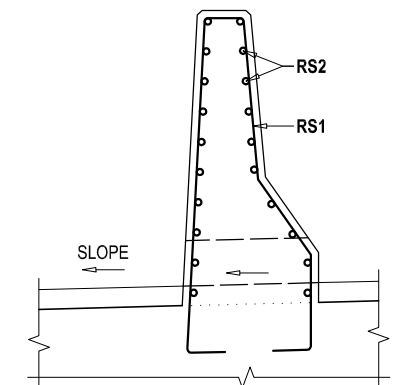
R.C.C STOPPER LEFT
ELEVATION VIEW

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  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 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 CML/AC Checked By Mr. S.M. Approved By Mr. H.B.	Drawing Name ABUTMENT REINFORCEMENT DETAILS OF BRIDGE OVER RIVER DUMAJOR Reference Drawings KDP/DPR/STR/BR/DUMAJOR/DD-9	Scale: AS SHOWN Chainage: 310+015	Date: 03.08.2023 Drawing No.- KDP/DPR/STR/BR/DUMAJOR/DD- 8 Sheet No. 2 / 2
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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	16	200	12.000	16	1.580	303.41
2	BT 1A	Avg. 5850 150	16	200	6.000	3	1.580	28.44
3	BT 2	150 2703 Avg. 450	16	125	3.303	96	1.580	501.08
4	BT 3	150 11700 150	16	200	12.000	12	1.580	227.56
5	BT 3A	Avg. 5850 150	16	200	6.000	3	1.580	28.44
6	BT 4	150 2778 Avg.	12	125	2.928	96	0.889	249.86
7	BT 5	100 150 100	12	500	0.350	96	0.889	29.87
8	BT 6	200 450 220 200 756	12	200	1.826	61	0.889	99.01
9	BT 7	11700	16		11.700	5	1.580	92.44
10	BT 8	100 450 100	12	200	0.650	120	0.889	69.33
TOTAL (KG) :								1629.44

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	16	150	12.300	11	1.580	213.81
2	CT 2	300 11700 300	16	150	12.300	11	1.580	213.81
3	CT 3	450 1300 100	16	150	3.700	80	1.580	467.75
4	CT 4	300 11700 300	12	150	12.300	8	0.889	87.47
5	CT 5	450 100 100	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	ST 1	300 5990 750	32		7.040	120	6.321	5339.97
2	ST 2	500 11700 500	16	150	12.700	22	1.580	441.52
3	ST 3	300 5990 750	20		7.040	120	2.469	2085.93
4	ST 4	500 11700 500	16	150	12.700	22	1.580	441.52
5	ST 5	300 5990 750	16		7.040	14	1.580	155.75
6	ST 6	100 850 100	12	Ver. 500 Hor.500	1.050	168	0.889	156.80
TOTAL (KG) :								8621.49

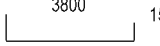
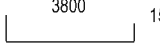
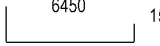
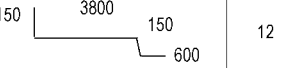
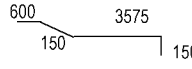
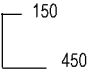
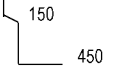
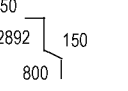
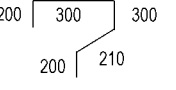
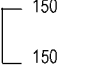
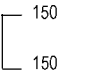
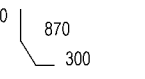
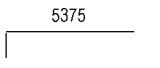
BAR BENDING SCHEDULE OF PILE CAP								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	FT 1	1125 6750 1125	25		9.000	130	3.858	4513.89
2	FT 2	1125 15750 1125	20		18.000	70	2.469	3111.11
3	FT 3	1125 6750 1125	16		9.000	130	1.580	1848.89
4	FT 4	1125 15750 1125	16		18.000	70	1.580	1991.11
5	FT 5	100 2100 100	10	Long. 200 Trans.250	2.300	2127	0.617	3019.81
6	FT 6	6700 15710 150	16	200	45.120	11	1.580	784.31
TOTAL (KG) :								15269.12

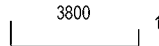
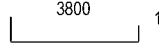
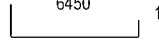
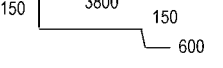
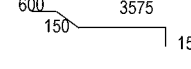
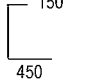
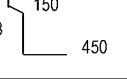
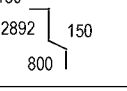
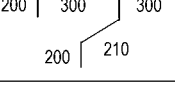
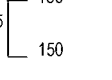
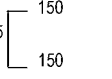
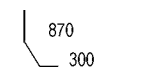
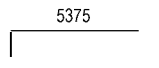
BAR BENDING SCHEDULE OF PEDESTAL								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TP 1	150 950 650 Avg.	16	150	2.850	6	1.580	27.02
1	TP 2	150 700 650 Avg.	16	150	2.350	8	1.580	29.71
2	TP 3	950 700 100	16	150	3.500	3	1.580	16.59
1	TP 4	650 850 @ 100	8		13.400	2	0.395	10.59
TOTAL (KG) :								83.91
TOTAL NOS OF PEDESTAL :								4.00
TOTAL WEIGHT (KG) :								335.64

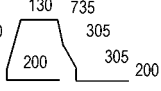
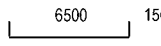
BAR BENDING SCHEDULE OF RCC SEISMIC ARRESTER - LEFT								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TS1-L	1010 400 1270 300 150 150	16	150	3.280	6	1.580	31.10
2	TS2-L	400 700 100	12	150	2.400	7	0.889	14.93
TOTAL (KG)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

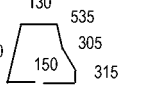
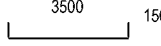
BAR BENDING SCHEDULE OF RCC SEISMIC ARRESTER - RIGHT								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TS1-R	1260 400 1525 300 150 150	16	150	3.785	6	1.580	35.89
2	TS2-R	400 700 100	12	150	3.400	9	0.889	27.20
TOTAL (KG)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

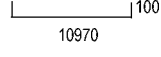
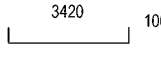
EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		Drawing Name		Scale:		Date:	
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division		Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathalaya Road Section (130 KM) of Mahendra Highway and Bridges		Joint Venture of		Designed By	Mr. R.D.	AS SHOWN	310+015	03.08.2023	
				 EPTISA Servicios De Ingeniera Madrid, Spain  STUP Consultants Private Limited Kolkata, India		Checked By	Mr. S.M.			Drawing No.- KDP/DPR/STR/BR/DUMAJOR/DD- 9	
				In Association With Udaya Consultancy, Geocom International, Sundar Kritt 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	4.400	42	0.889	164.27
2	RT1B	450  150	12	150	4.400	42	0.889	164.27
3	RT2A	450  150	12	150	7.050	21	0.889	131.60
4	RT2B	150  600	12	150	4.700	21	0.889	87.73
5	RT2C	 150	12	150	4.475	21	0.889	83.53
6	RT3A	8356  450	12	150	8.956	21	0.889	167.18
7	RT3B	800  450	16	150	6.789	21	1.580	225.29
8	RT3C	150  800	16	150	3.992	21	1.580	132.48
9	RT3D	200  210	16	150	1.210	45	1.580	86.04
10	RT4A	1483.5  150	12	150	1.784	50	0.889	79.27
11	RT4B	1483.5  150	16	150	1.784	50	1.580	140.92
12	RT5	300  300	12	150	1.470	63	0.889	82.32
13	RT6	6256	12		6.256	2	0.889	11.12
14	RT7	225  5375	20		5.6	4	2.469	55.31
TOTAL (KG) :								1611.33

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	450  150	12	150	4.400	40	0.889	156.44
2	RT1B	450  150	12	150	4.400	40	0.889	156.44
3	RT2A	450  150	12	150	7.050	21	0.889	131.60
4	RT2B	150  600	12	150	4.700	21	0.889	87.73
5	RT2C	 150	12	150	4.475	21	0.889	83.53
6	RT3A	8060  450	12	150	8.660	21	0.889	161.65
7	RT3B	800  450	16	150	6.493	21	1.580	215.47
8	RT3C	150  800	16	150	3.992	21	1.580	132.48
9	RT3D	200  210	16	150	1.210	45	1.580	86.04
10	RT4A	1483.5  150	12	150	1.784	50	0.889	79.27
11	RT4B	1483.5  150	16	150	1.784	50	1.580	140.92
12	RT5	300  300	12	150	1.470	63	0.889	82.32
13	RT6	5960	12		5.960	2	0.889	10.60
14	RT7	225  5375	20		5.6	4	2.469	55.31
TOTAL (KG) :								1579.81

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	 200	16	150	3.170	45	1.580	225.42
2	RC2	150  150	10	150	6.800	20	0.617	83.95
TOTAL (KG) :								309.37

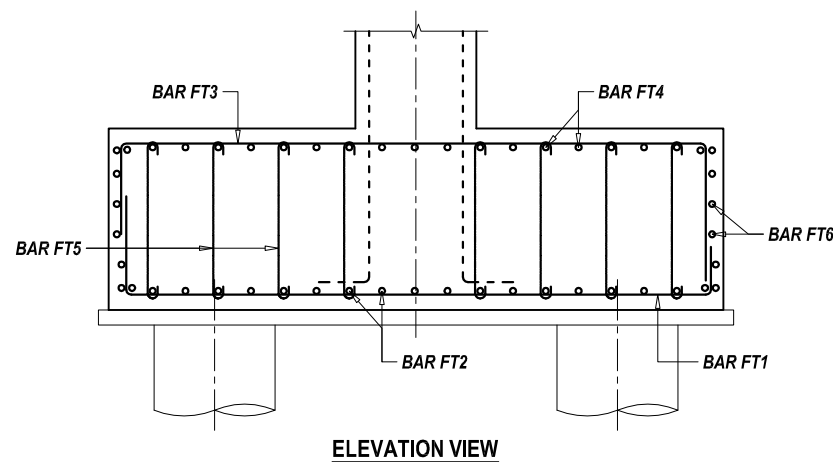
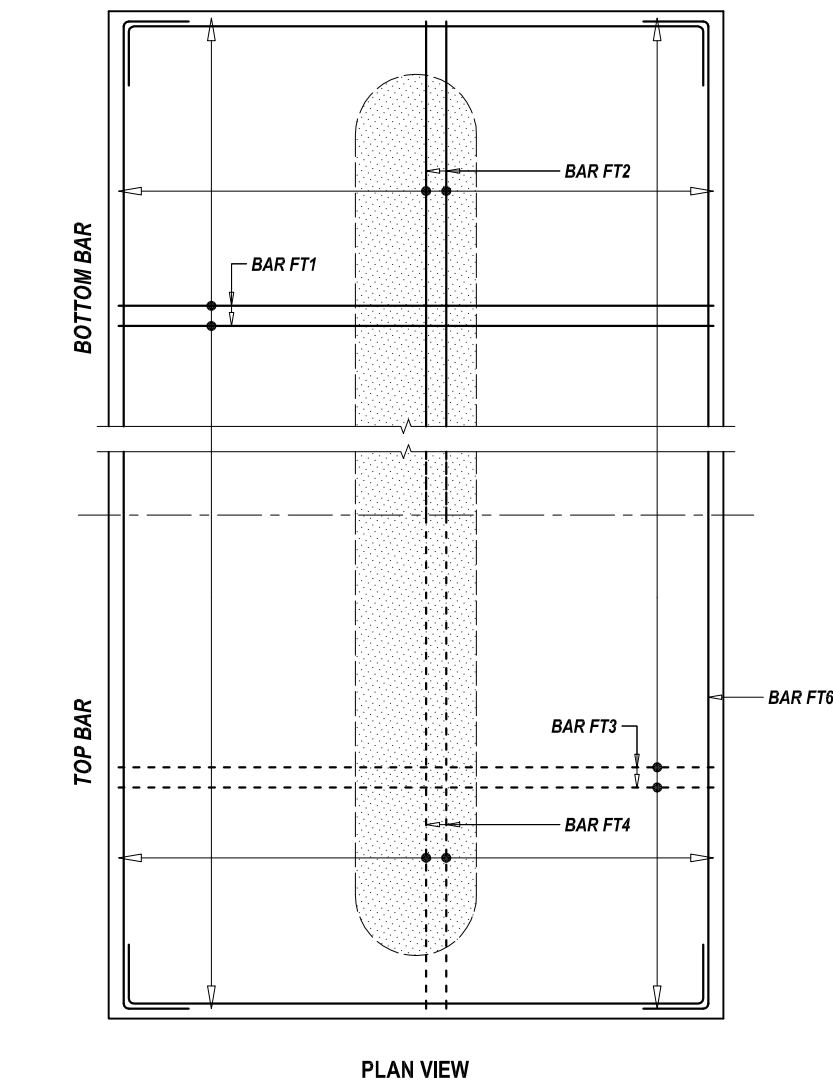
BAR BENDING SCHEDULE OF R.C.C SEPARATOR								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RS1	 150	16	150	2.695	25	1.580	106.47
2	RS2	150  150	10	150	3.800	17	0.617	39.88
TOTAL (KG) :								146.35

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		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	310+015	03.08.2023	
				 EPTISA Servicios De Ingeniera Madrid, Spain  STUP Consultants Private Limited Kolkatta, India		Checked By	Mr. S.M.			Drawing No.- KDP/DPR/STR/BR/DUMAJOR/DD-9	
				In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited		Approved By	Mr. H.B.			Sheet No. 2 / 2	

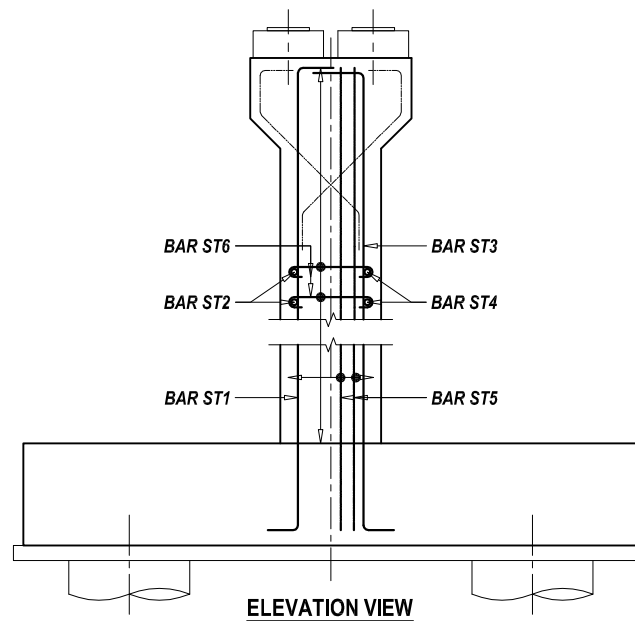
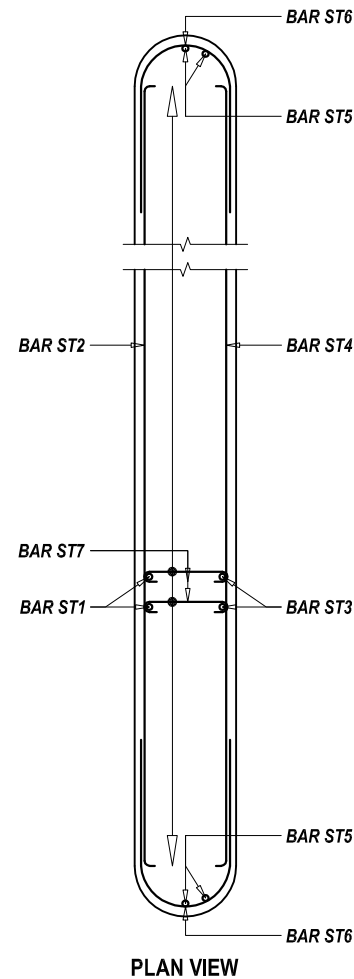


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Drawing No.- KDP/DPR/STR/BR/DUMAJOR/DD- 10	
Page 1 of 1	



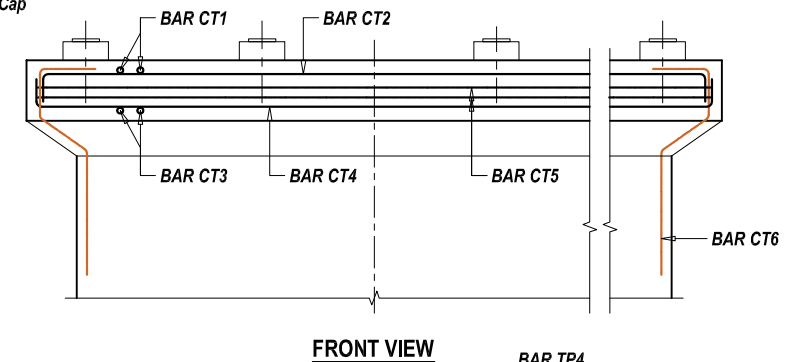
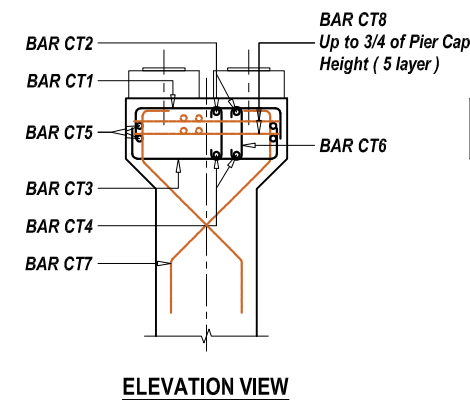
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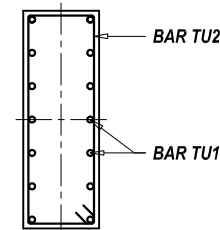
BAR DETAIL AT PIER STEM

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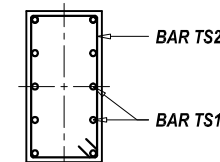


BAR DETAIL AT PIER CAP

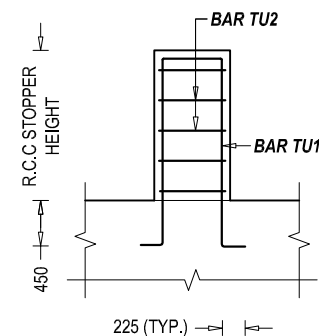
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SECTIONAL PLAN VIEW



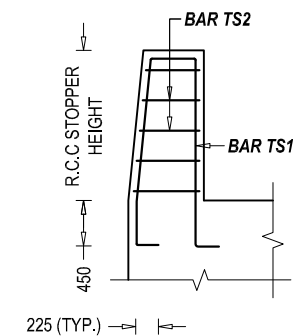
SECTIONAL PLAN VIEW



SECTIONAL ELEVATION VIEW

R.C.C STOPPER AT MID

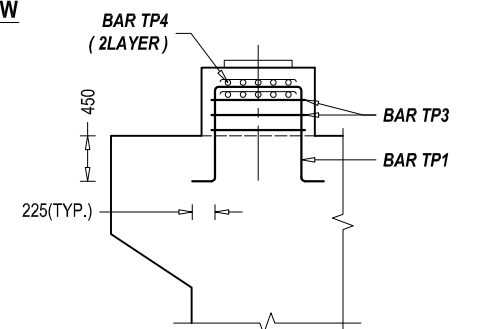
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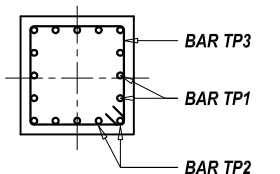
SECTIONAL ELEVATION VIEW

R.C.C STOPPER AT EDGE

SCALE - 1 : 50



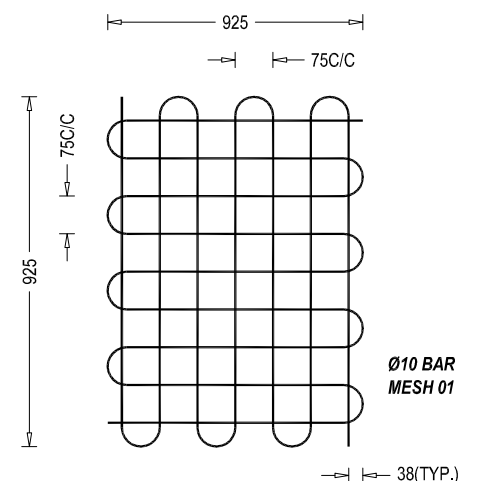
SECTIONAL SIDE VIEW



SECTIONAL PLAN VIEW

BAR DETAIL AT PEDESTAL

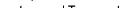
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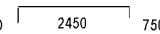
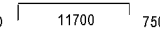
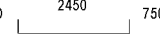
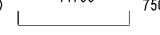
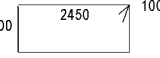
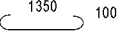
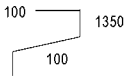
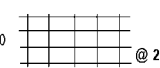


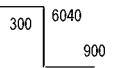
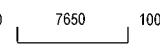
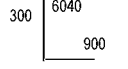
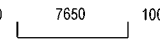
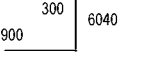
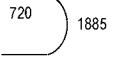
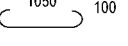
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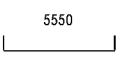
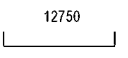
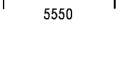
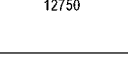
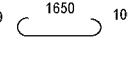
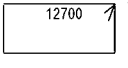
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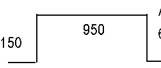
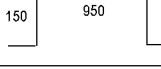
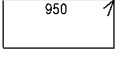
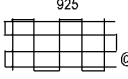
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READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/DUMAJOR/DD-4

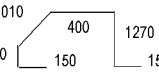
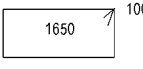
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Mr. R.D.	Drawing Name	Scale:	Date:	
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP)	Joint Venture of		Nec.No. 6489 CH/1/14				Signature
		 EPTISA Servicios De Ingenieria 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	Checked By	Mr. S.M.	Reference Drawings	Chainage:	Drawing No.- KDP/DPR/STR/BR/DUMAJOR/DD-11	
		Udaya Consultancy, Geocom International, Sundar K/rti Consultant and Rays Consultant Private Limited	Approved By	Mr. H.B.	KDP/DPR/STR/BR/DUMAJOR/DD-12	310+015	Sheet No.1/1	

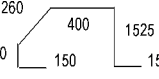
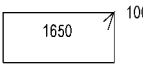
BAR BENDING SCHEDULE OF PIER CAP								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	CT1	750  750	20		3.950	50	2.469	487.65
2	CT2	750  750	20		13.200	18	2.469	586.67
3	CT3	750  750	20		3.950	50	2.469	487.65
4	CT4	750  750	20		13.200	18	2.469	586.67
5	CT5	11700  100	16	150	28.500	11	1.580	495.41
6	CT6	100  100	16	X: 280 Y: 480	1.550	225	1.580	551.11
7	CT7	100  1350	16	150	1.550	137	1.580	335.57
8	CT8	2450  @ 200	16		296.650	5 Layer	1.580	2343.90
TOTAL (KG) :								5874.63

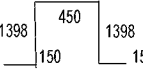
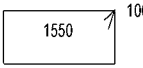
BAR BENDING SCHEDULE OF PIER STEM								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	ST1	300  900	20		7.240	50	2.469	893.83
2	ST2	100  100	16	200	7.850	15	1.580	186.07
3	ST3	300  900	20		7.240	50	2.469	893.83
4	ST4	100  100	16	200	7.850	15	1.580	186.07
5	ST5	900  6040	20		7.240	12	2.469	214.52
5	ST6	720  1885	16	200	3.325	30	1.580	157.63
6	ST7	100  100	12	Ver. 150 Hor. 400	1.250	460	0.889	511.11
TOTAL (KG) :								3043.06

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	900  900	25		7.350	98	3.858	2778.94
2	FT2	900  900	25		14.550	50	3.858	2806.71
3	FT3	900  900	25		7.350	98	3.858	2778.94
4	FT4	900  900	25		14.550	50	3.858	2806.71
5	FT5	100  100	12	Long 225 Trans 250	1.85	1258	0.889	2068.71
6	FT6	5500  150	16	200	36.700	8	1.580	463.96
TOTAL (KG) :								13703.97

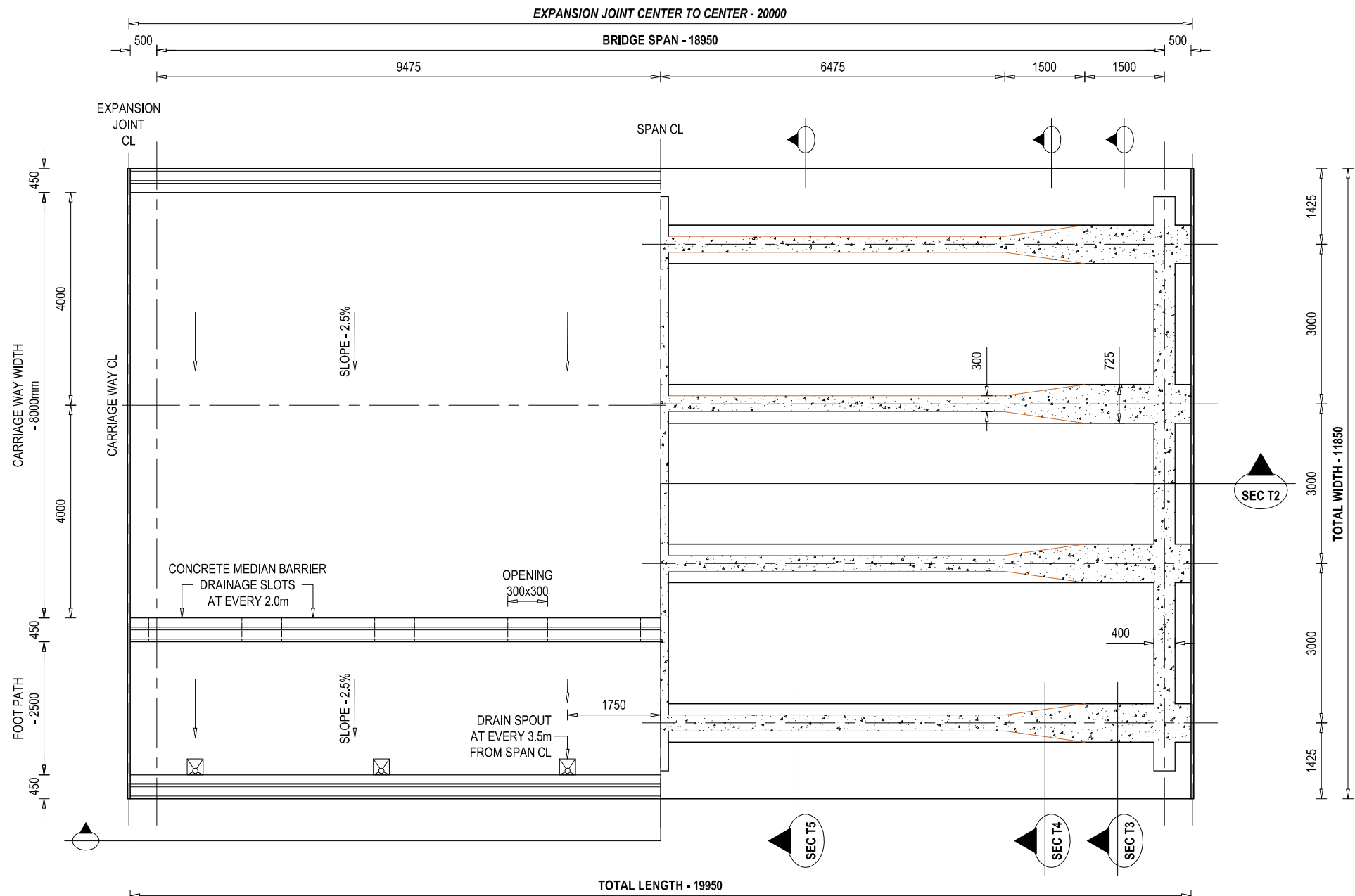
BAR BENDING SCHEDULE OF PEDESTAL								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TP1	150  Avg. 650	16	150	2.850	8	1.580	36.03
2	TP2	150  Avg. 650	16	150	2.850	8	1.580	36.03
3	TP3	950  100	16	150	4.000	3	1.580	18.96
4	TP4	925  @ 75	10		24.675	2	0.617	30.46
TOTAL (KG) :								121.49

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  150	16	150	3.280	13	1.580	67.38
2	TS2-L	400  100	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	1260  150	16	150	3.785	13	1.580	77.76
2	TS2-R	400  100	12	150	4.300	9	0.889	34.40
TOTAL (KG) :								112.16

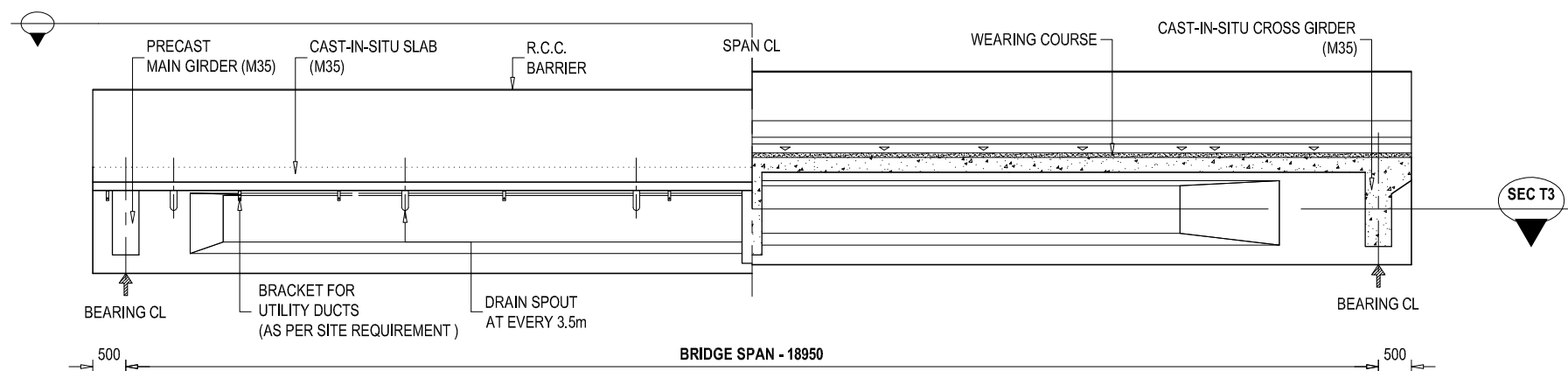
BAR BENDING SCHEDULE OF RCC SEISMIC ARRESTER - MID								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TU1	1398  150	16	150	3.546	13	1.580	72.85
2	TU2	450  100	12	150	4.200	8	0.889	29.87
TOTAL (KG) :								102.71

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.		Nec.No. 6489 CH/1/VK	PIER BAR BENDING SCHEDULE OF BRIDGE OVER RIVER DUMAJOR		AS SHOWN		03.08.2023	
		EPTISA Servicios De Ingeniera Madrid, Spain		Checked By	Mr. S.M.			Reference Drawings		Chainage:		Drawing No.- KDP/DPR/STR/BR/DUMAJOR/DD- 12	
		In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited		Approved By	Mr. H.B.			-		310+015		Sheet No.1/1	



HALF SECTIONAL PLAN VIEW OF SUPERSTRUCTURE AT SEC T1

SCALE - 1 : 100 @ A3 PAPER

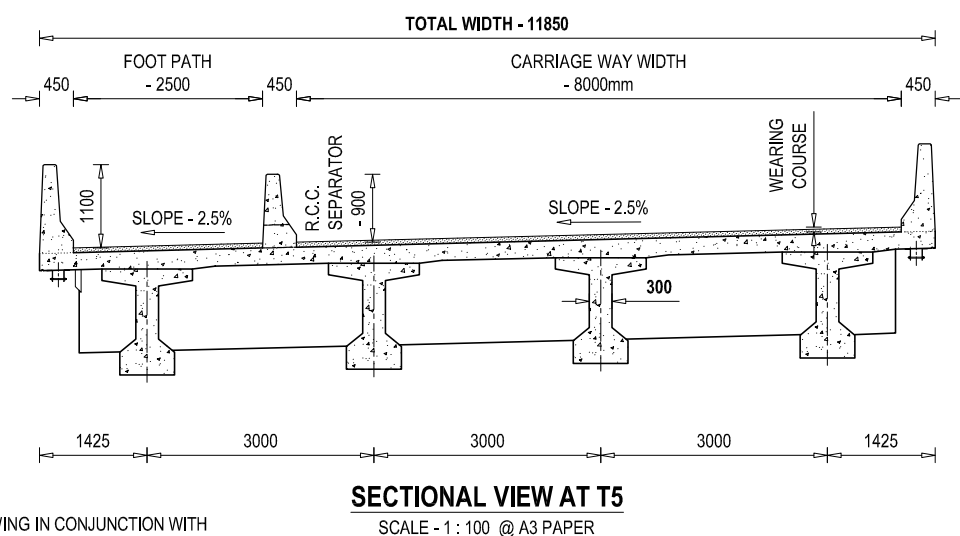
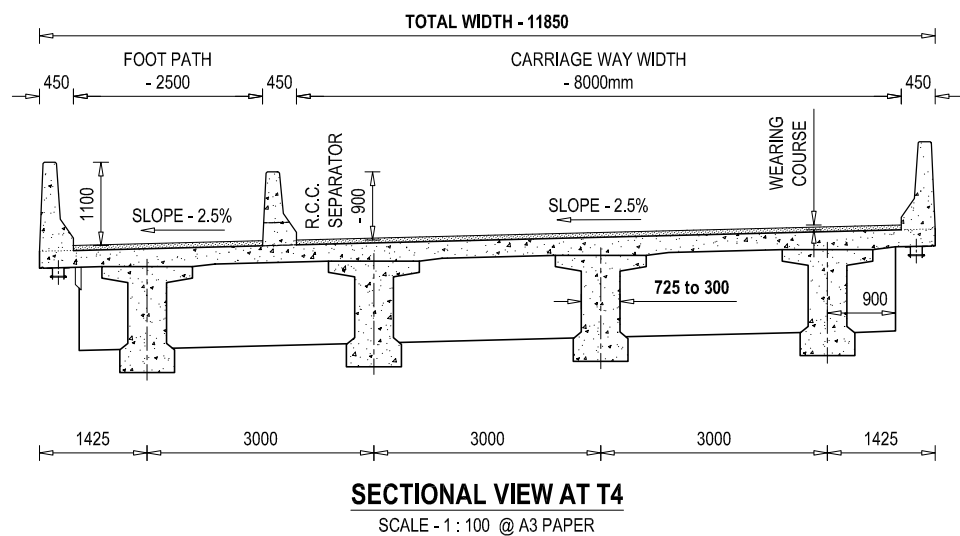
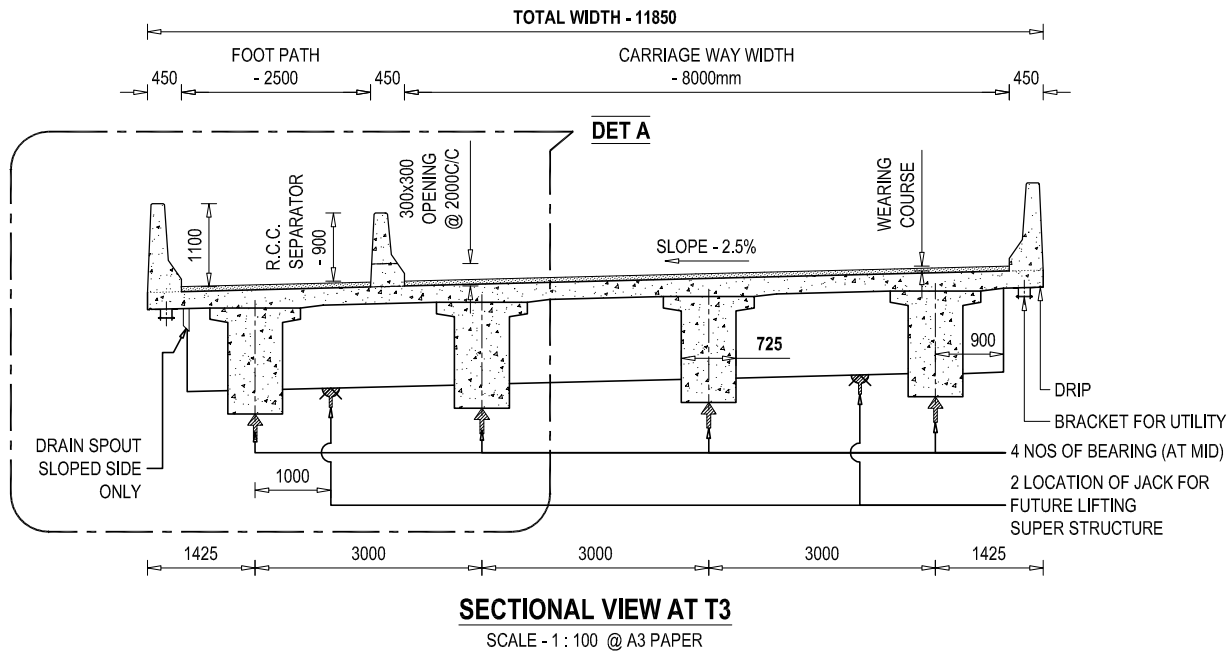


HALF ELEVATION SECTIONAL VIEW OF SUPERSTRUCTURE AT SEC T2

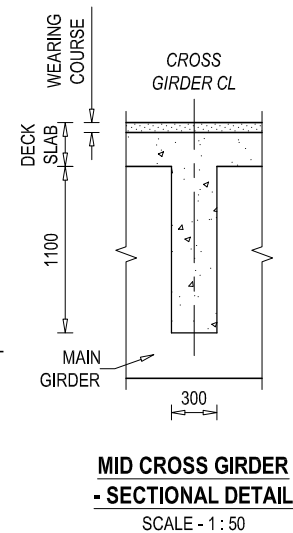
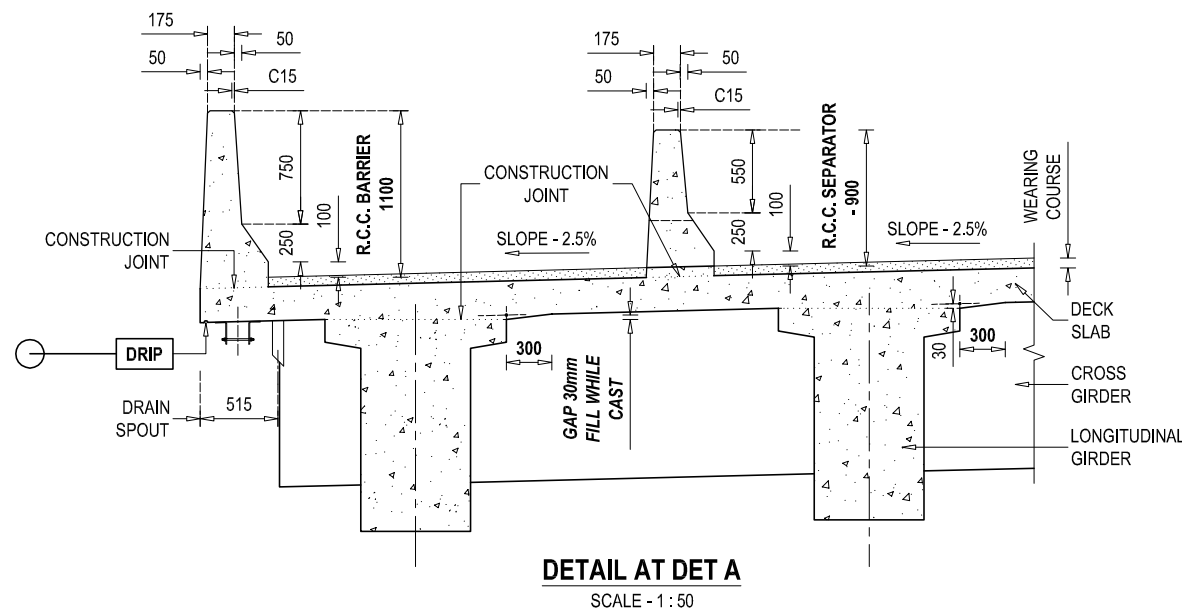
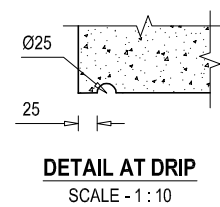
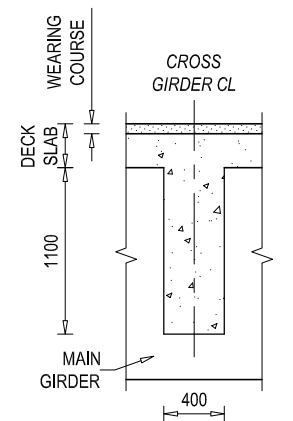
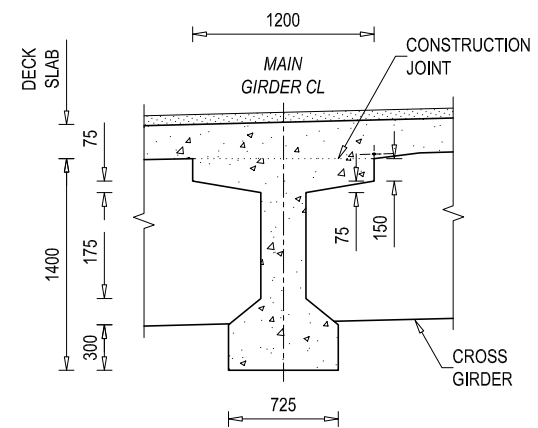
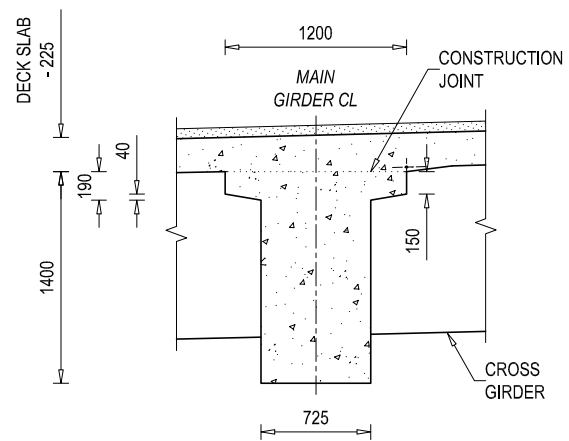
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NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/DUMAJOR/DD-4

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 (MIL)/W Signature	SUPER STRUCTURE DETAILS OF BRIDGE OVER RIVER DUMAJOR Reference Drawings KDP/DPR/STR/BR/DUMAJOR/DD-17	AS SHOWN Chainage: 310+015	05.05.2023
			Checked By Mr. S.M. Signature			Drawing No.- KDP/DPR/STR/BR/DUMAJOR/DD-13
			Approved By Mr. H.B. Signature			Sheet No. 1 / 2



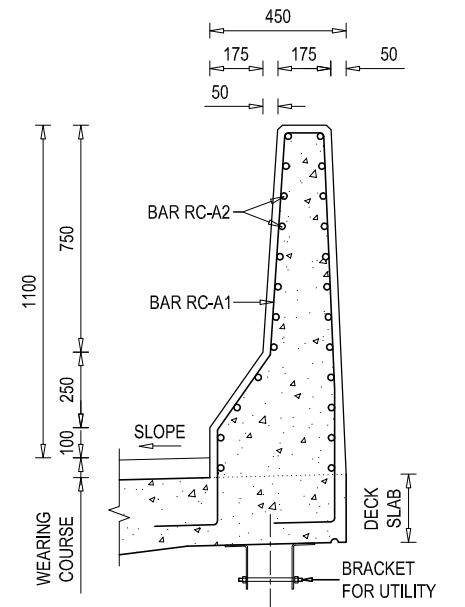
NOTE
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DRG NO. KDP/DPR/STR/BR/DUMAJOR/DD-4



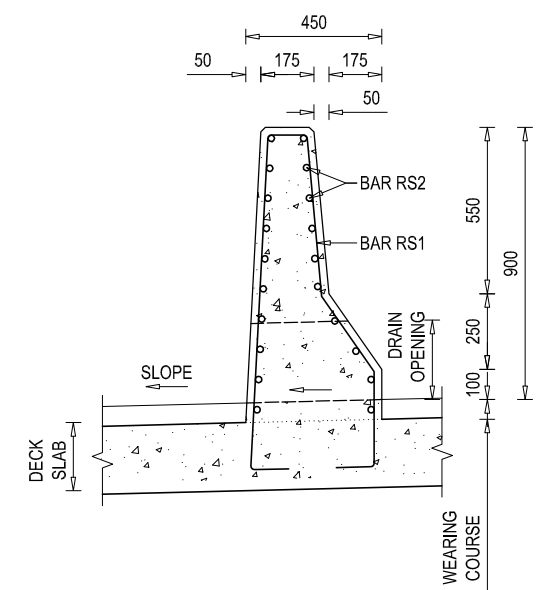
EMPLOYER Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	PROJECT NAME Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	DESIGN CONSULTANTS Joint Venture of eptisa EPTISA Servicios De Ingeniera Madrid, Spain STUP 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 CML/V Checked By Mr. S.M. Approved By Mr. H.B.	Drawing Name SUPER STRUCTURE DETAILS OF BRIDGE OVER RIVER DUMAJOR Reference Drawings KDP/DPR/STR/BR/DUMAJOR/DD-17	Scale: AS SHOWN Chainage: 310+015	Date: 05.05.2023 Drawing No.- KDP/DPR/STR/BR/DUMAJOR/DD-13 Sheet No. 2 / 2
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LEGEND FOR REINFORCEMENT BAR

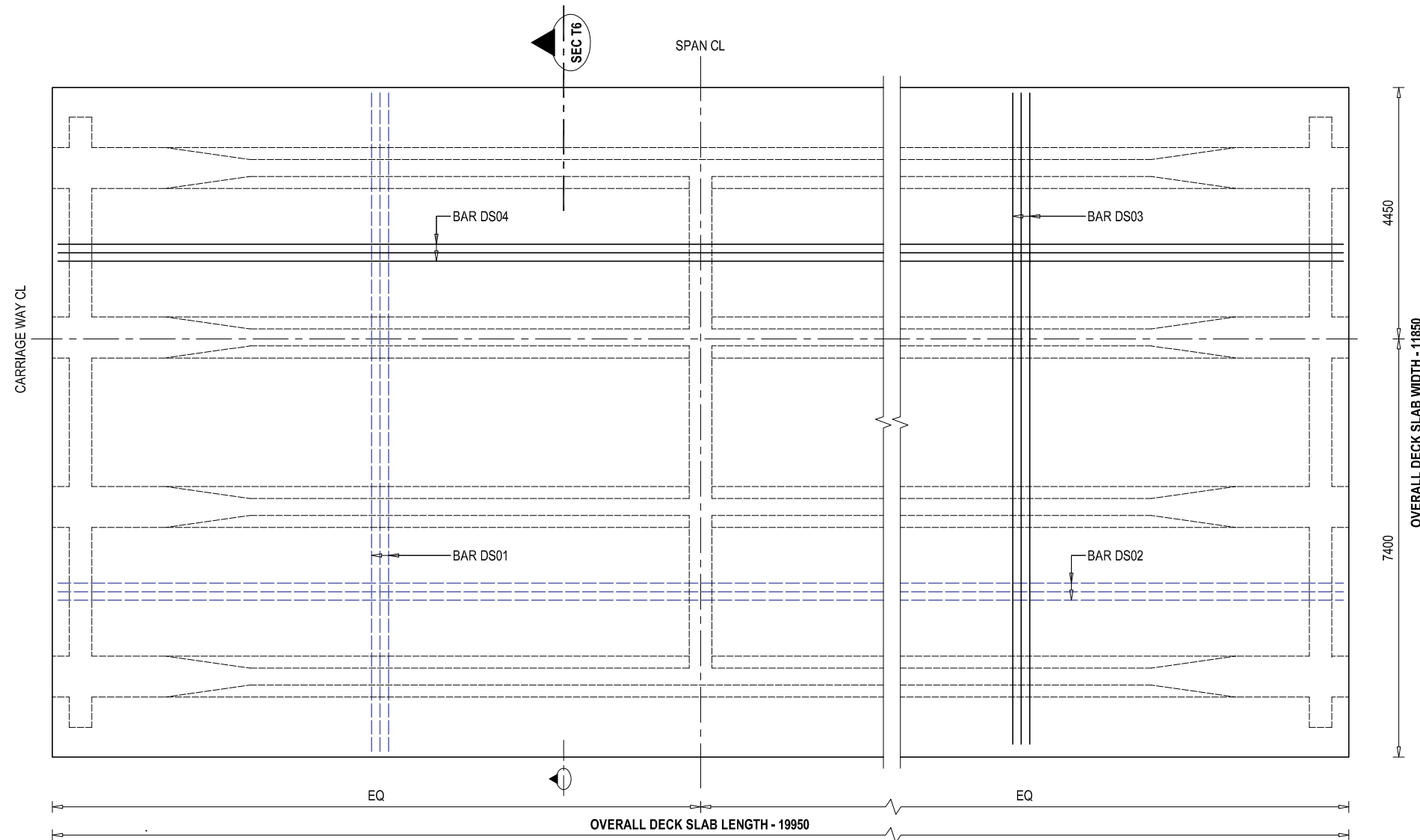
CODE	FULL FORM		
DS	- DECK SLAB	CG	- CROSS GIRDER
RB	- R.C.C BARRIER	AS	- APPROACH SLAB
RS	- R.C.C SEPARATOR	ST	- STOPPER
MG	- MAIN GIRDER	**	- ***
TOP BAR OR NEAR FACE REINFORCEMENT BOTTOM BAR OR FAR FACE REINFORCEMENT			



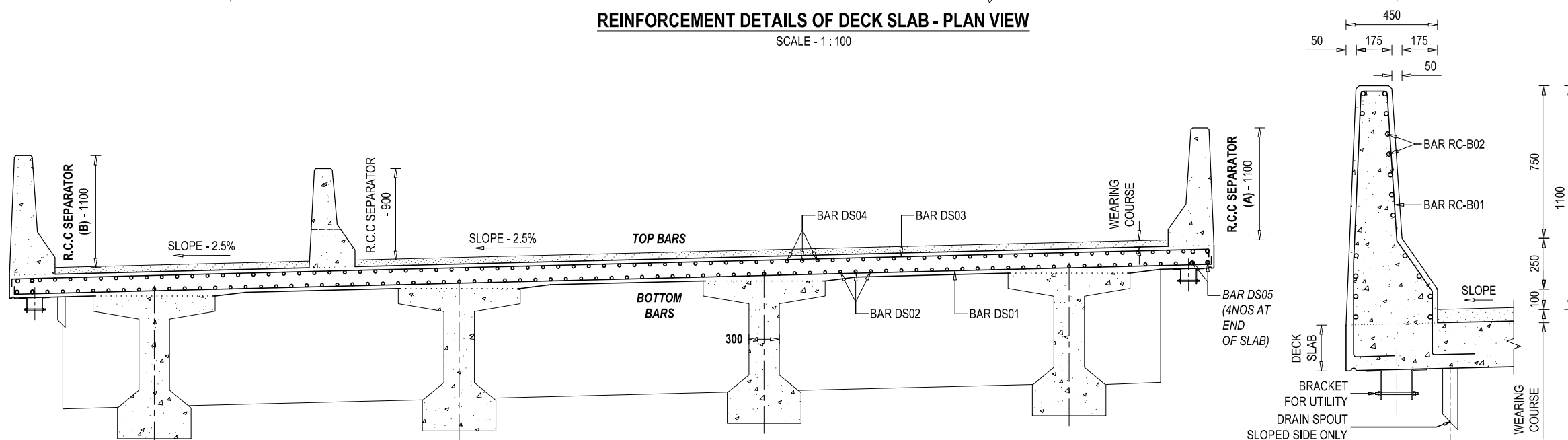
**REINFORCEMENT DETAILS OF
R.C.C BARRIER (A)- SECTIONAL VIEW**
SCALE - 1 : 25



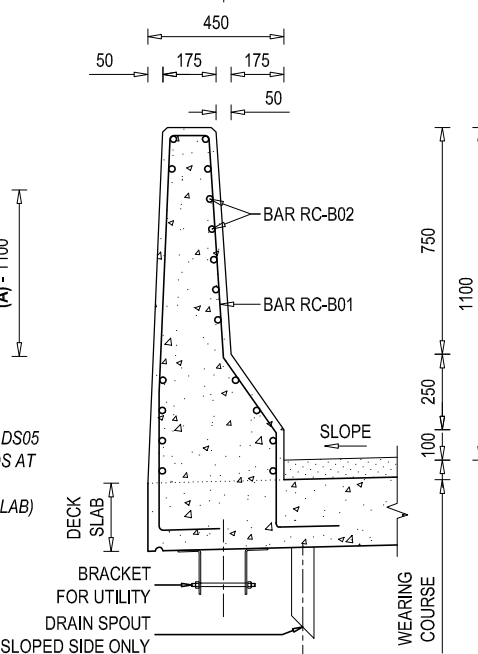
**REINFORCEMENT DETAILS OF
R.C.C SEPARATOR - SECTIONAL VIEW**
SCALE - 1 : 25



REINFORCEMENT DETAILS OF DECK SLAB - PLAN VIEW
SCALE - 1 : 100



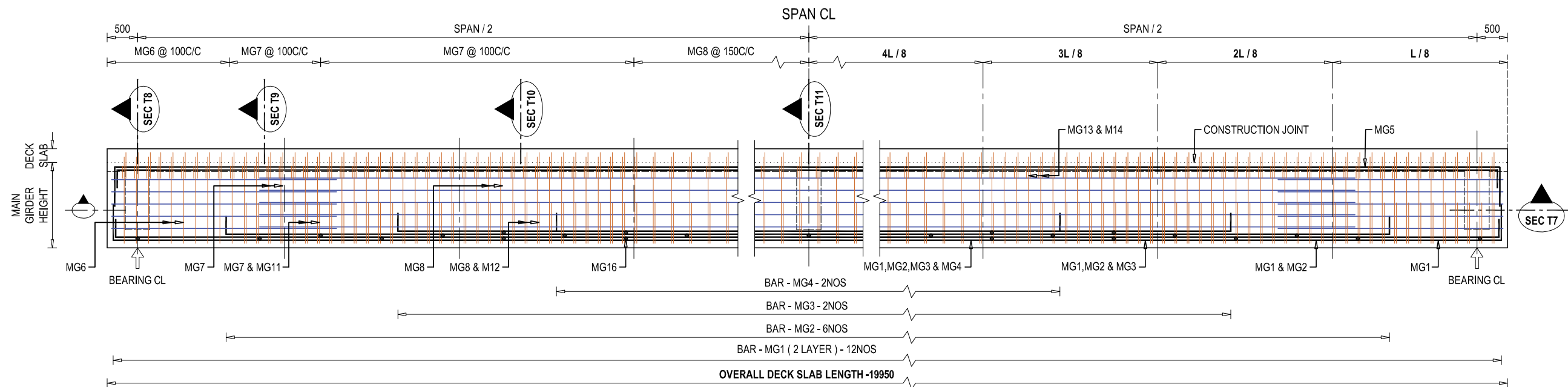
REINFORCEMENT DETAILS OF DECK SLAB - SECTIONAL VIEW AT T6
SCALE - 1 : 50



**REINFORCEMENT DETAILS OF
R.C.C BARRIER (B)- SECTIONAL VIEW**
SCALE - 1 : 25

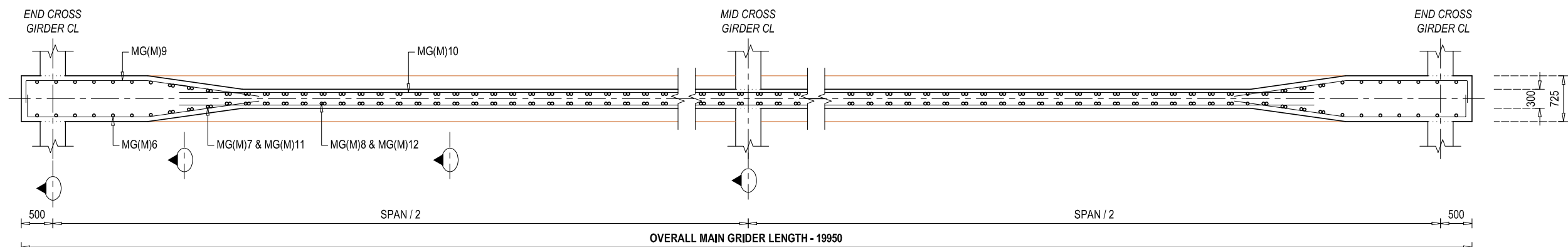
NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/DUMAJOR/DD-4

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Checked By	Approved 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	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 CML/V	Mr. S.M. Signature	Mr. H.B. Signature	DECK SLAB DETAILS OF BRIDGE OVER RIVER DUMAJOR Reference Drawings KDP/DPR/STR/BR/DUMAJOR/DD-17	AS SHOWN Chainage: 310+015	05.05.2023 Drawing No.- KDP/DPR/STR/BR/DUMAJOR/DD-14 Sheet No. 1 / 1



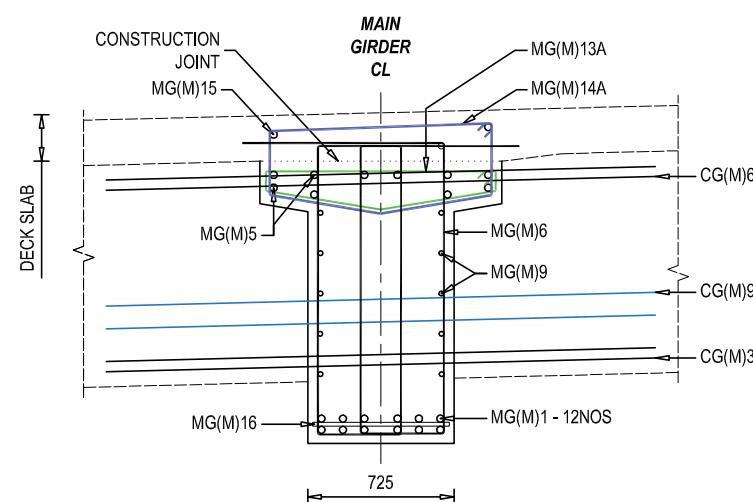
REINFORCEMENT DETAILS OF MAIN GIRDER - SECTIONAL ELEVATION VIEW

SCALE - 1 : 75



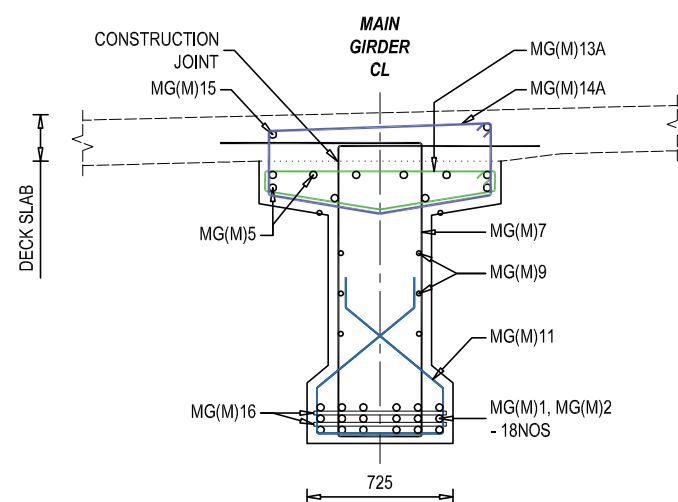
REINFORCEMENT DETAILS OF MAIN GIRDER (MID) - SECTIONAL PLAN VIEW AT T7(M)

SCALE - 1 : 75



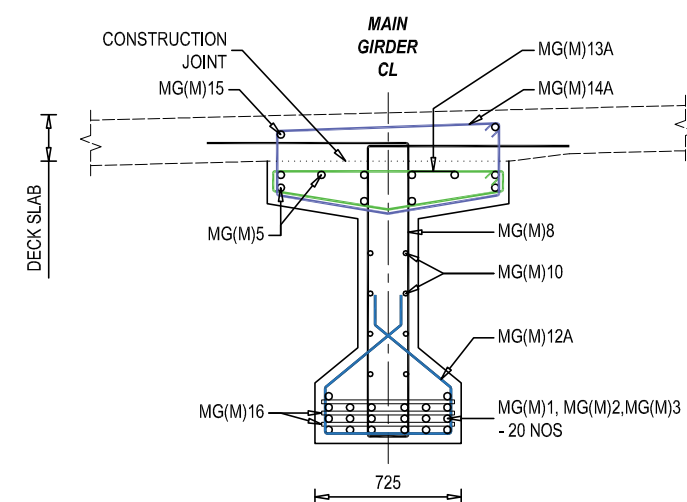
REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T8

SCALE - 1 : 50



REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T9

SCALE - 1 : 50

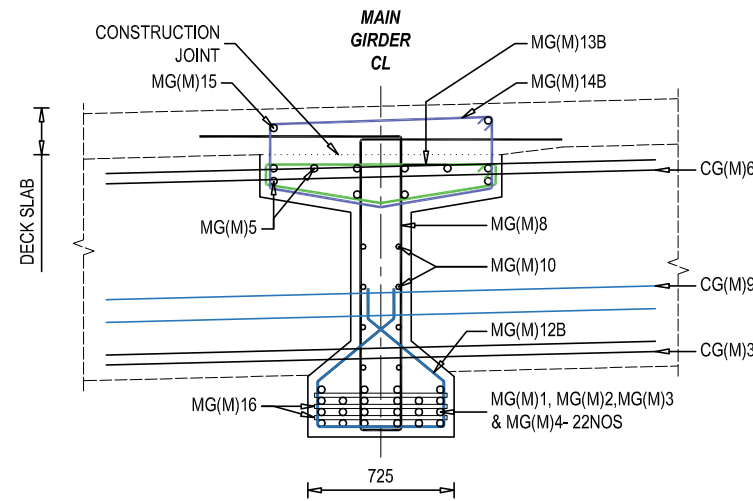


REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T10

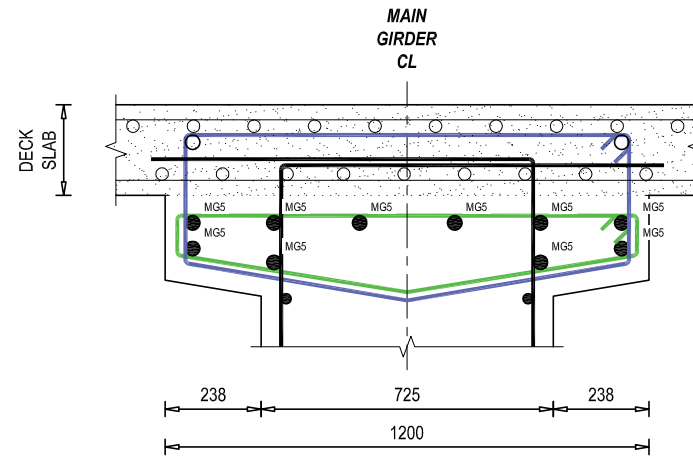
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NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/DUMAJOR/DD-4

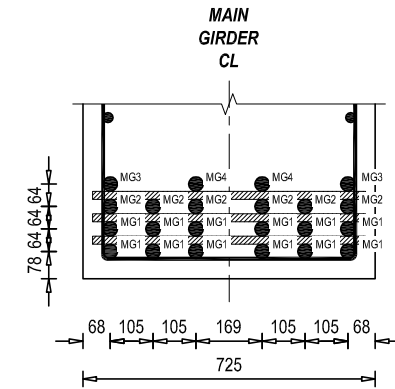
EMPLOYER  Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	PROJECT NAME Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	DESIGN CONSULTANTS Joint Venture of  EPTISA Servicios De 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.	Signature Signature Signature	Drawing Name MAIN GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER DUMAJOR Reference Drawings KDP/DPR/STR/BR/DUMAJOR/DD-17	Scale: AS SHOWN Chainage: 310+015	Date: 05.05.2023 Drawing No.: KDP/DPR/STR/BR/DUMAJOR/DD-15 Sheet No. 1 / 2
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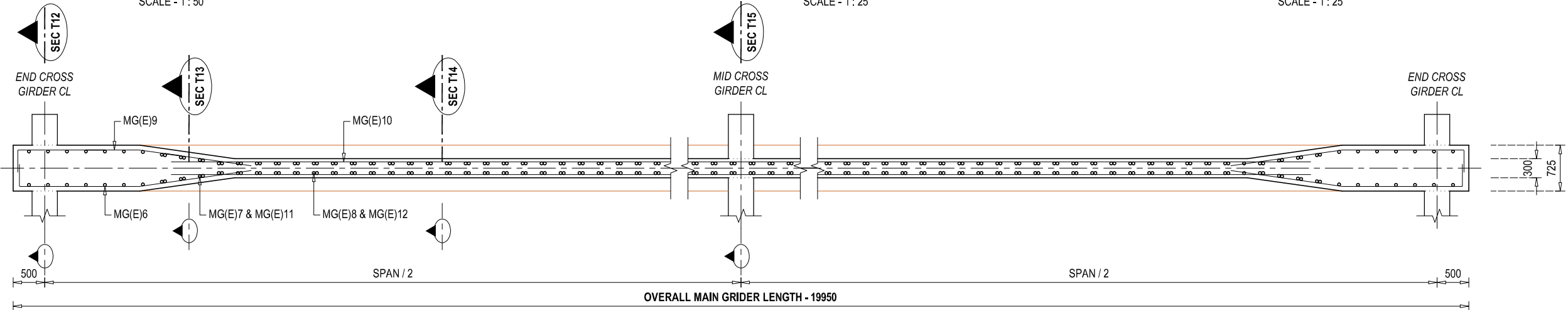
**REINFORCEMENT DETAILS OF MAIN GIRDER
SECTIONAL VIEW AT T11**
SCALE - 1 : 50



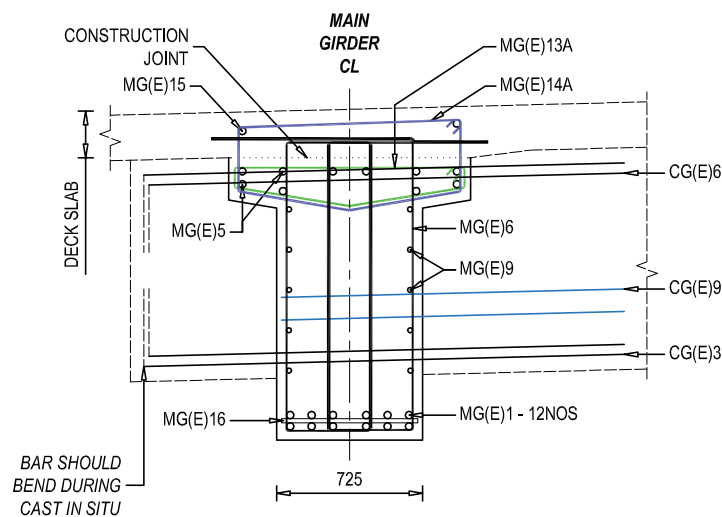
**TOP BAR WEB REINFORCEMENT DETAILS
OF MAIN GIRDER**
SCALE - 1 : 25



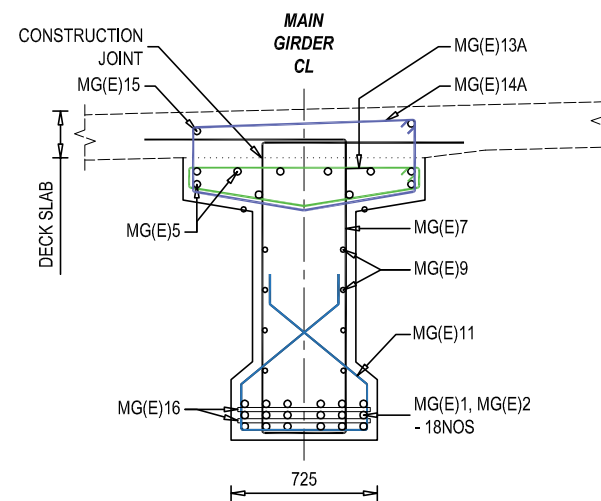
**BOTTOM BAR WEB REINFORCEMENT DETAILS
OF MAIN GIRDER**
SCALE - 1 : 25



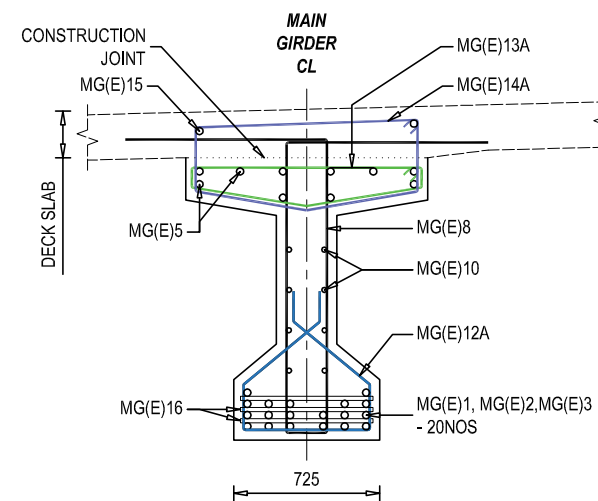
REINFORCEMENT DETAILS OF MAIN GIRDER (END) - SECTIONAL PLAN VIEW AT T7(E)
SCALE - 1 : 75



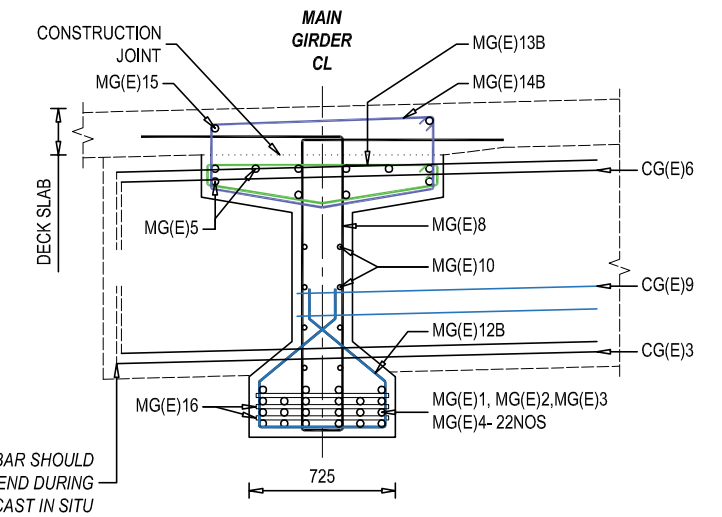
**REINFORCEMENT DETAILS OF MAIN GIRDER
SECTIONAL VIEW AT T12**
SCALE - 1 : 50



**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/DUMAJOR/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

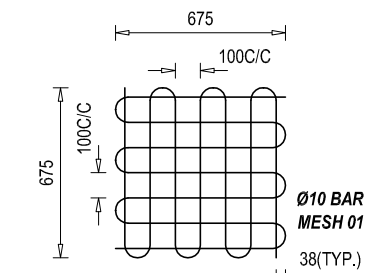
DESIGN CONSULTANTS
Joint Venture of
EPTISA Servicios De Ingeniera
Madrid, Spain
STUP Consultants Private Limited
Kolkata, India
In Association With
Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays
Consultant Private Limited

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

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

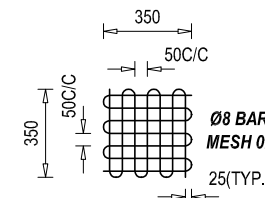
Scale:
AS SHOWN
Chainage:
310+015

Date:
05.05.2023
Drawing No.-
KDP/DPR/STR/BR/DUMAJOR/DD-15
Sheet No. 2 / 2



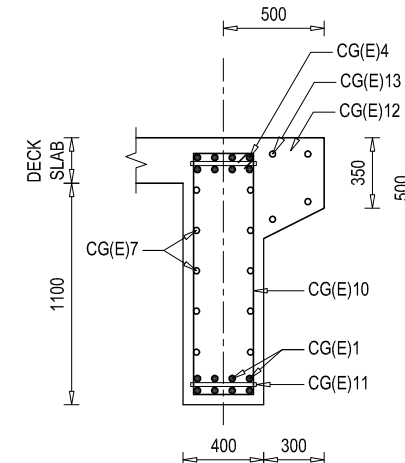
REINFORCEMENT DETAILS OF BEARING MESH

SCALE - 1 : 50

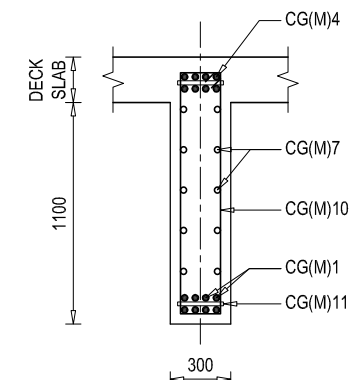


REINFORCEMENT DETAILS OF LIFTING MESH

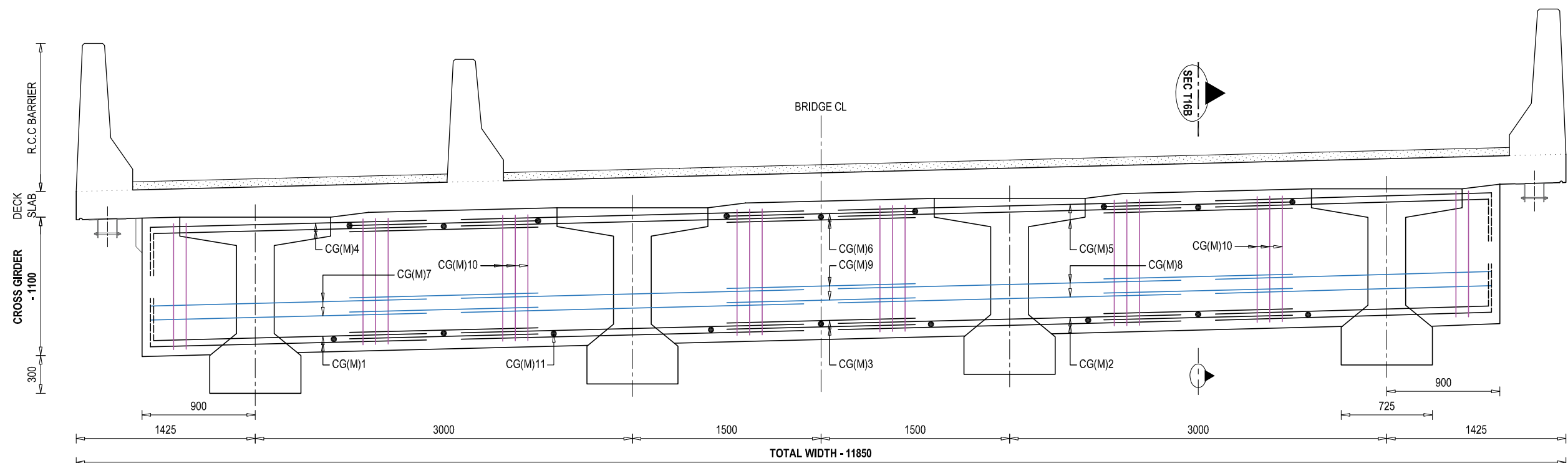
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**SECTIONAL REINFORCEMENT
DETAILS OF END CROSS
GIRDER - SEC T16A**
SCALE - 1 : 50

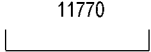
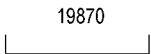
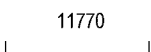
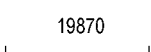
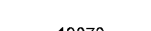


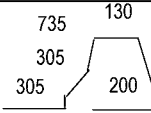
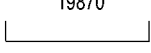
**SECTIONAL REINFORCEMENT
DETAILS OF MID CROSS
GIRDER - SEC T16B**
SCALE - 1 : 50

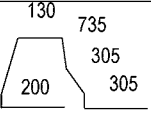
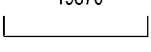


REINFORCEMENT DETAILS OF MID CROSS GIRDER
SCALE - 1 : 50

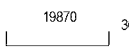
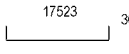
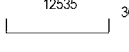
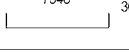
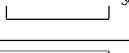
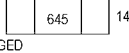
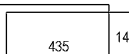
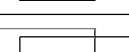
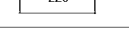
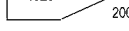
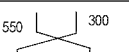
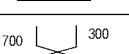
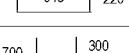
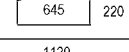
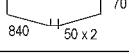
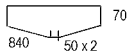
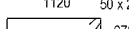
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Mr. R.D.	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Patilaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of	Mr. R.D.		CROSS GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER DUMAJOR	AS SHOWN	05.05.2023
		 EPTISA Servicios De Ingenieria Madrid, Spain	 STUP Consultants Private Limited Kolkata, India	Mr. S.M.			
		In Association With	Mr. H.B.		Reference Drawings	Chainage:	310+015
Udaya Consultancy, Geocom International, Sundar Krishi Consultant and Rays Consultant Private Limited			KDP/DPR/STR/BR/DUMAJOR/DD-17				

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	 130	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	 735	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 19870 300	32		20.470	12	6.321	1552.69
2	MG(E)2	300 17523 300	32		18.123	6	6.321	687.33
3	MG(E)3	300 12535 300	32		13.135	2	6.321	166.05
4	MG(E)4	300 7548 300	32		8.148	2	6.321	103.01
5	MG(E)5	300 19870 300	12		20.470	10	0.889	181.96
6	MG(E)6	480 645 1430 4 LEGGED	12	100	9.260	42	0.889	345.71
7	MG(E)7	480 435 1430 AVG	12	100	5.125	32	0.889	145.78
8	MG(E)8A	480 220 1430	12	100	4.480	81	0.889	322.56
9	MG(E)8B	480 220 1430	12	150	4.480	35	0.889	139.38
10	MG(E)9	370 1920 2000	12	200	4.290	28	0.889	106.77
11	MG(E)10	16950	12	200	16.950	14	0.889	210.93
12	MG(E)11	550 645 300 220 AVG.	12	100	2.785	32	0.889	79.22
13	MG(E)12A	700 645 300 220	12	150	3.085	81	0.889	222.12
14	MG(E)12B	700 645 300 220	12	150	3.085	35	0.889	95.98
15	MG(E)13A	1120 840 70 50 x 2	12	100	3.040	151	0.889	408.04
16	MG(E)13B	1120 840 70 50 x 2	12	150	3.040	35	0.889	94.58
17	MG(E)14A	1120 840 50 x 2 270	12	100	3.440	151	0.889	461.72
18	MG14B	1120 840 50 x 2 270	12	150	3.440	35	0.889	107.02
19	MG(E)15	19870	12		19.870	2	0.889	35.32
19	MG(E)16	645	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	 480 4 LEGGED	12	100	9.260	42	0.889	345.71
7	MG(M)7	 480 AVG.	12	100	5.125	32	0.889	145.78
8	MG(M)8A	 480	12	100	4.480	81	0.889	322.56
9	MG(M)8B	 480	12	150	4.480	35	0.889	139.38
10	MG(M)9	370  2000	12	200	4.290	28	0.889	106.77
11	MG(M)10	 16950	12	200	16.950	14	0.889	210.93
12	MG(M)11	 550 AVG.	12	100	2.785	32	0.889	79.22
13	MG(M)12A	 700	12	150	3.085	81	0.889	222.12
14	MG(M)12B	 700	12	150	3.085	35	0.889	95.98
15	MG(M)13A	 1120	12	100	3.040	151	0.889	408.04
16	MG(M)13B	 1120	12	150	3.040	35	0.889	94.58
17	MG(M)14A	 1120	12	100	3.440	151	0.889	461.72
18	MG14B	 1120	12	150	3.440	35	0.889	107.02
19	MG(M)15	 19870	12		19.870	2	0.889	35.32
19	MG(M)16	 645	32	1500	0.645	42	6.321	171.24
TOTAL (KG) :								5637.40

 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		Designed By	Mr. R.D.	 Signature	Drawing Name SUPER STRUCTURE BAR BENDING SCHEDULE OF BRIDGE OVER RIVER DUMAJOR	Scale: AS SHOWN	Date: 05.05.2023
		Joint Venture of			Nec.No. 6499 C/4/1/K				
		 EPTISA Servicios De Ingenieria Madrid, Spain	 STUP Consultants Private Limited Kolkata, India	Checked By	Mr. S.M.	 Signature			
		In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited			Approved By		Mr. H.B.	 Signature	
				Reference Drawings	-	Chainage: 310+015	Drawing No.- KDP/DP/STR/BR/DUMAJOR/DD-17		Sheet No. 1 / 2

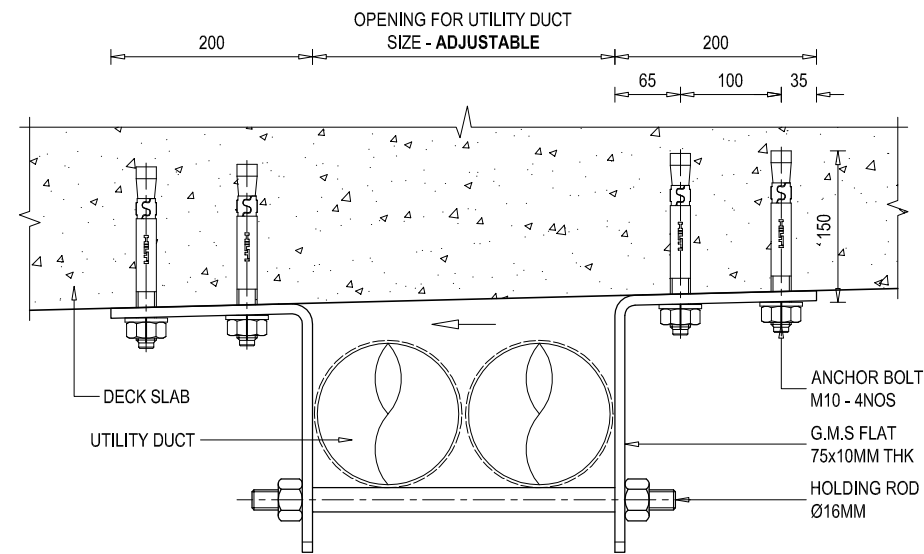
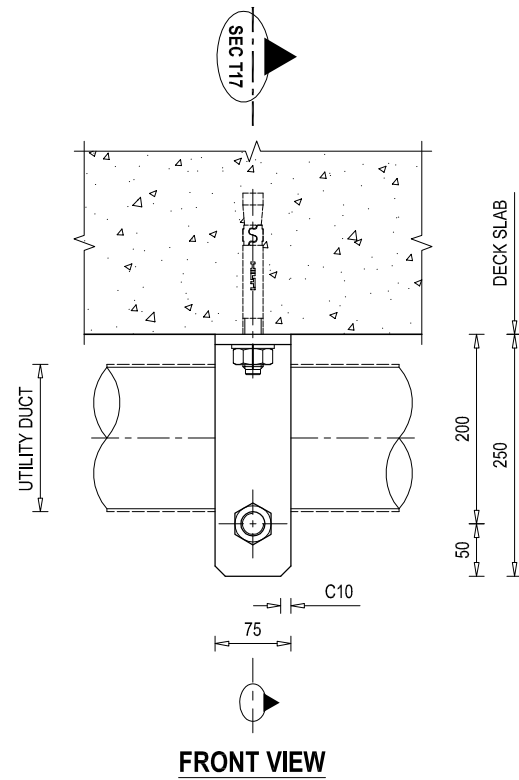
BAR BENDING SCHEDULE OF MESH (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	MESH 01	675 675 @ 100	10		9.450	8	0.617	46.67
2	MESH 02	350 350 @ 50	8		4.900	4	0.395	7.74
TOTAL (KG) :								616.32

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 1110 535 150 305 315	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

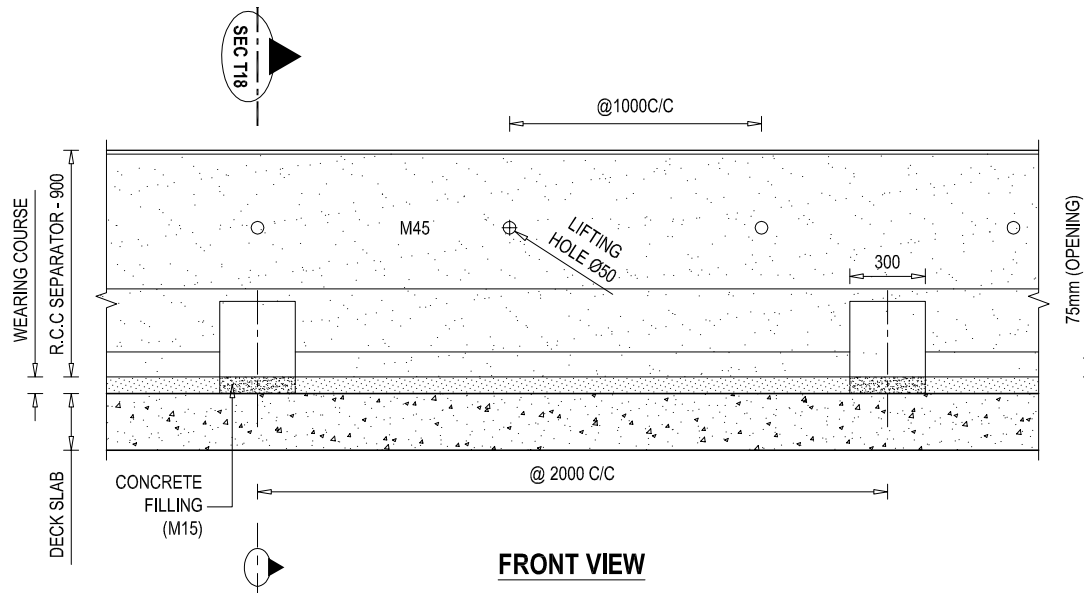
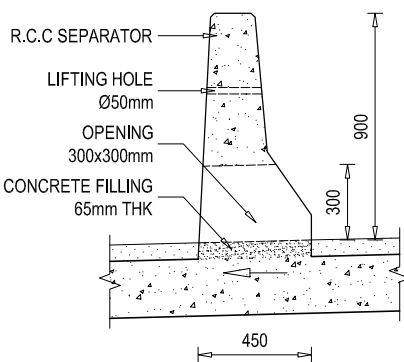
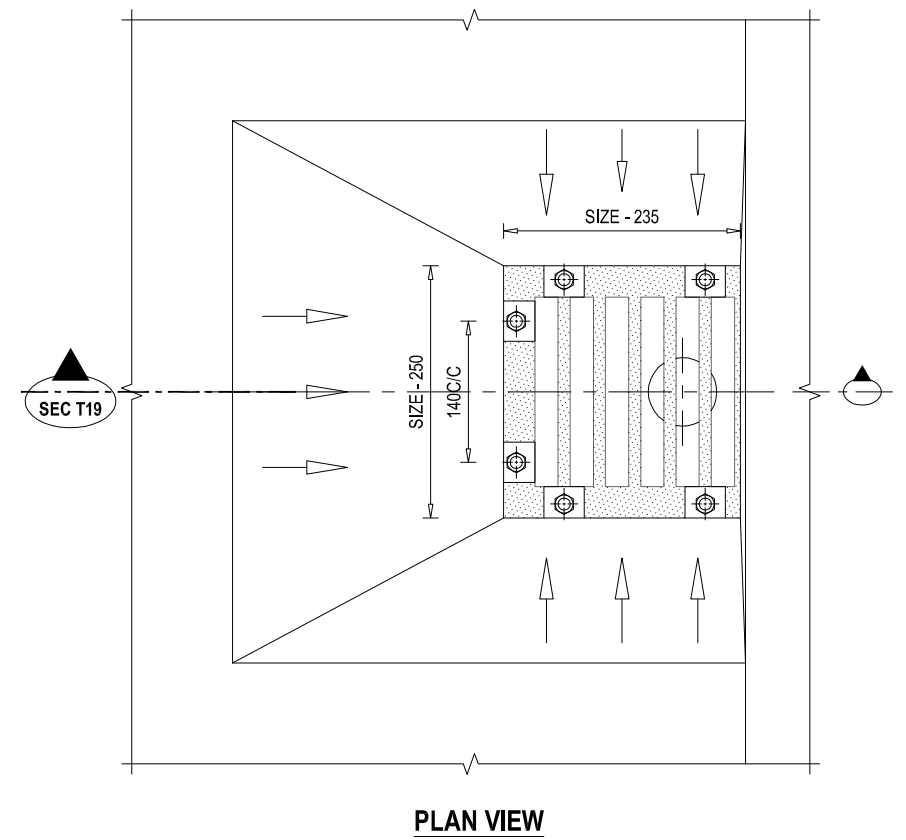
BAR BENDING SCHEDULE OF END CROSS GIRDER (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	CG(E)1	300 1825	20		2.125	8	2.469	41.98
2	CG(E)2	2625	20		2.625	8	2.469	51.85
3	CG(E)3	1675	20		1.675	8	2.469	33.09
4	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

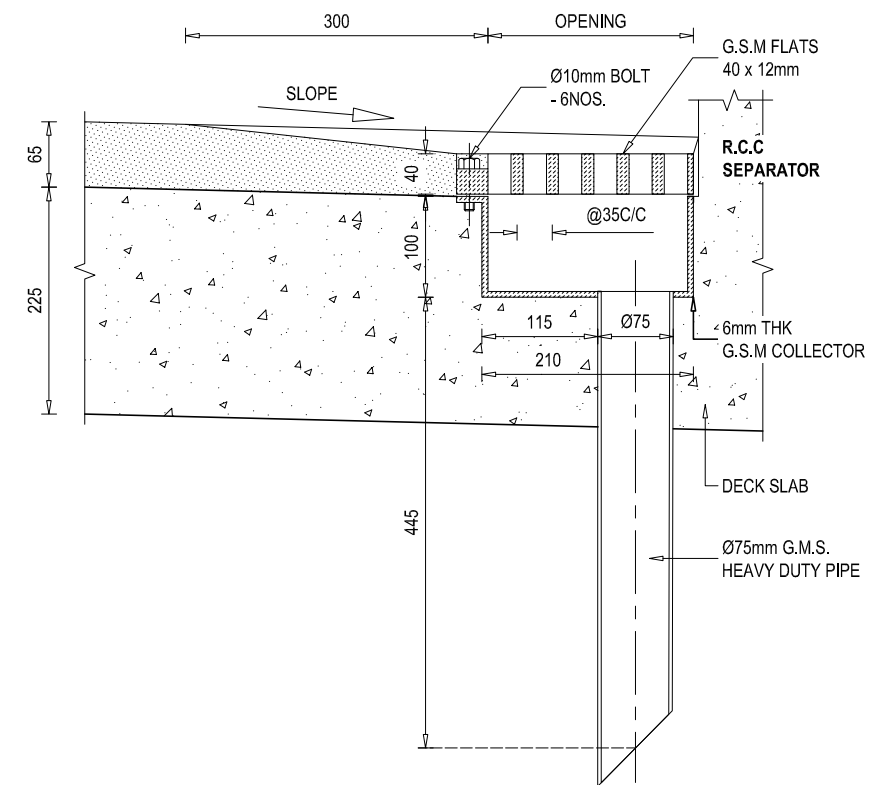
EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		Drawing Name		Scale:		Date:	
	Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation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



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

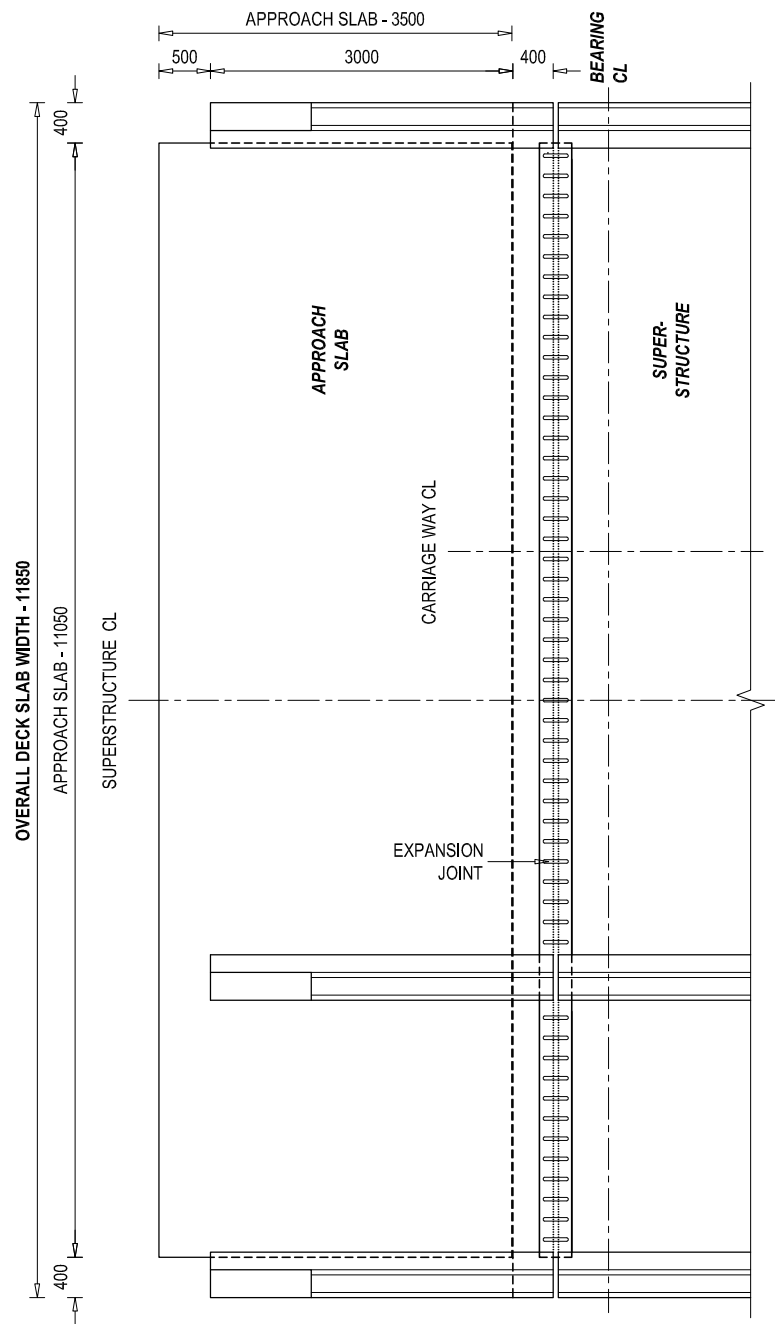


**DETAIL ELEVATION VIEW AT R.C.C SEPARATOR
& IT'S DRAIN OPENING**
SCALE - 1 : 40

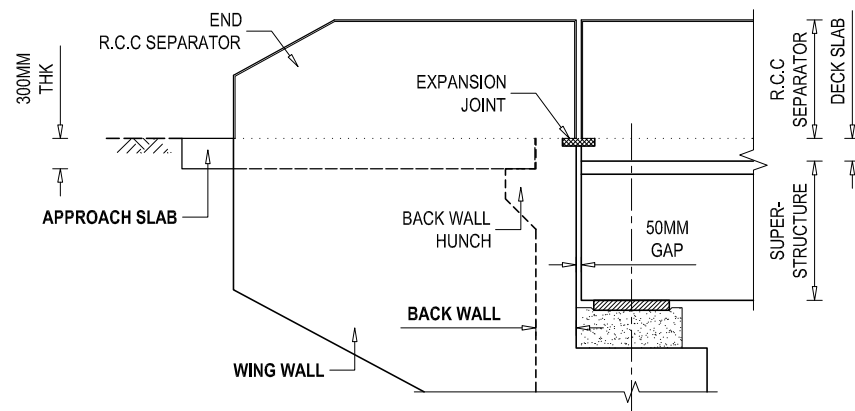


**DETAILS OF GALVANIZED MILD STEEL (G.M.S)
DRAINAGE SPOUT**
SCALE - 1 : 10

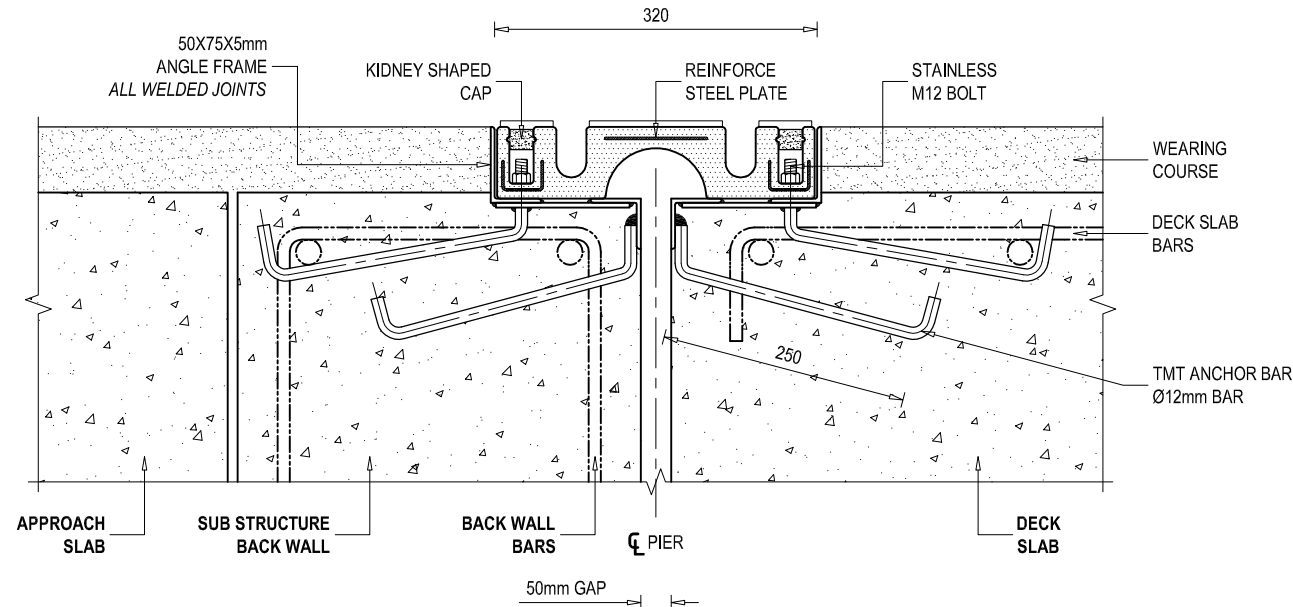
EMPLOYER Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	PROJECT NAME Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathaiya Road Section (130 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 CPB/1/V Checked By Mr. S.M. Approved By Mr. H.B.	Drawing Name MISCELLANEOUS DETAILS OF BRIDGE OVER RIVER DUMAJOR Reference Drawings	Scale: AS SHOWN Chainage: 310+015	Date: 24.04.2023 Drawing No:- KDP/DPR/STR/BR/DUMAJOR/DD-18 Sheet No.1 /2
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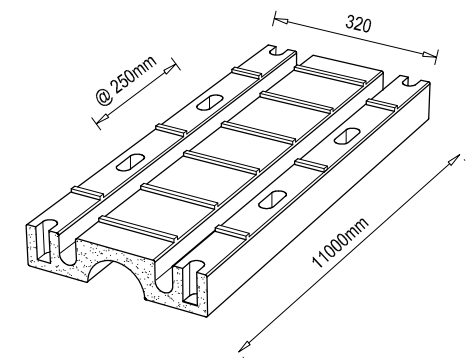
**PLAN VIEW AT EXPANSION JOINT, END R.C.C
SEPARATOR & APPROACH SLAB**



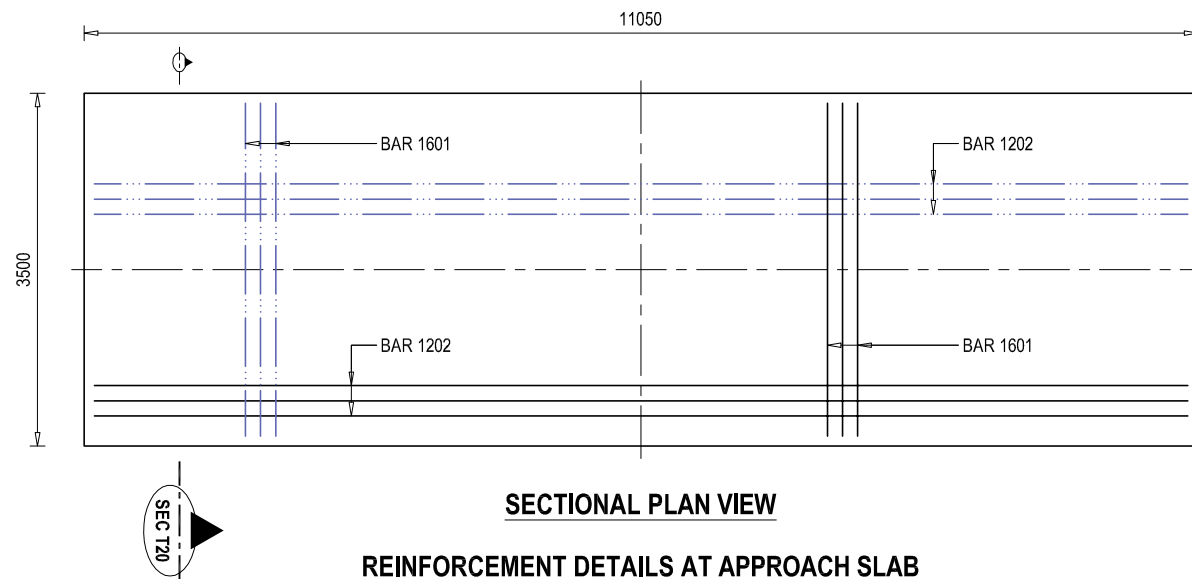
ELEVATION VIEW



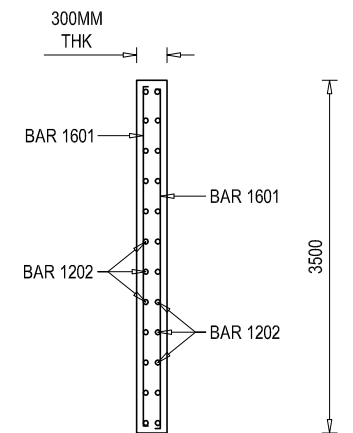
SEAL TYPE EXPANSION JOINTS ARRANGEMENT IN A CARRIAGEWAY
SCALE - 1 : 10 @ A3 PAPER



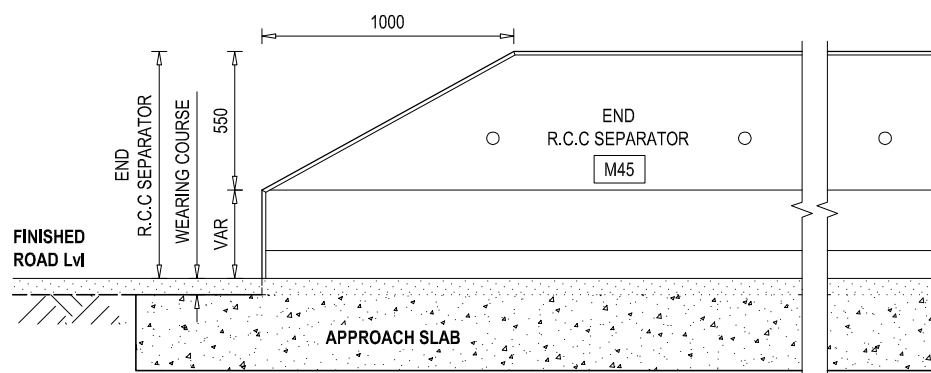
**EXPANSION JOINT ISOMETRIC VIEW
- SEAL TYPE**
SCALE - NON



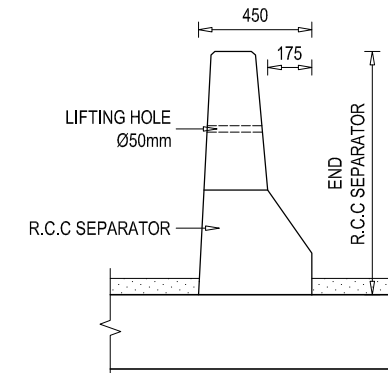
SECTIONAL PLAN VIEW
REINFORCEMENT DETAILS AT APPROACH SLAB
SCALE - 1 : 100 @ A3 PAPER



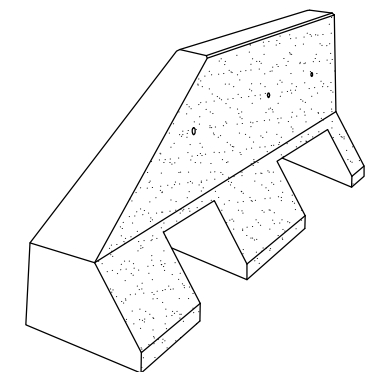
SECTIONAL ELEVATION VIEW AT SEC T20



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

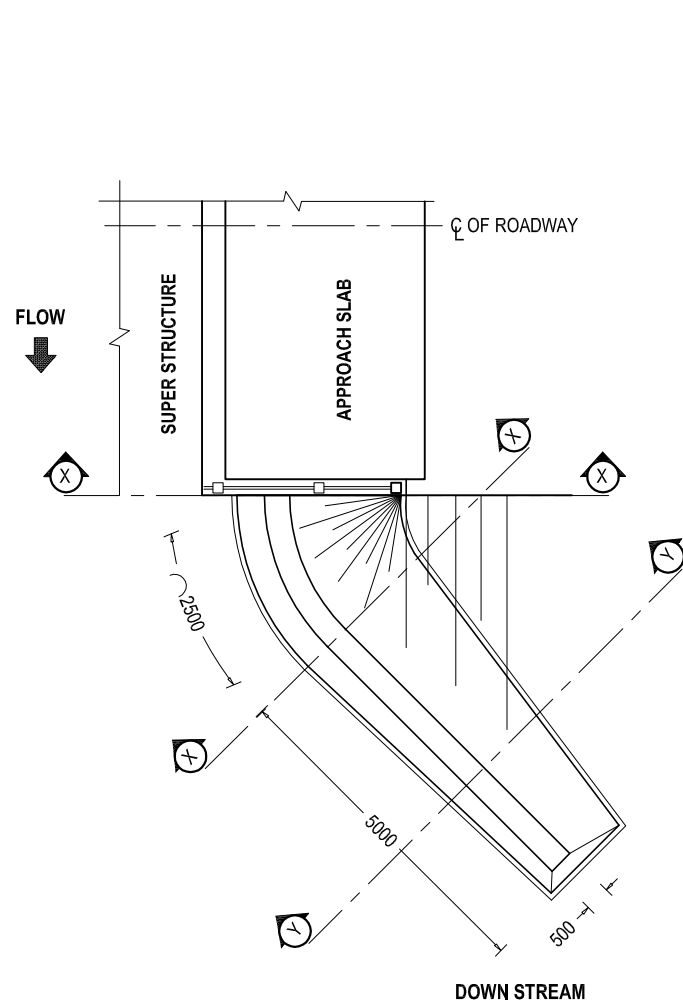


SIDE VIEW
SCALE - 1 : 40 @ A3 PAPER

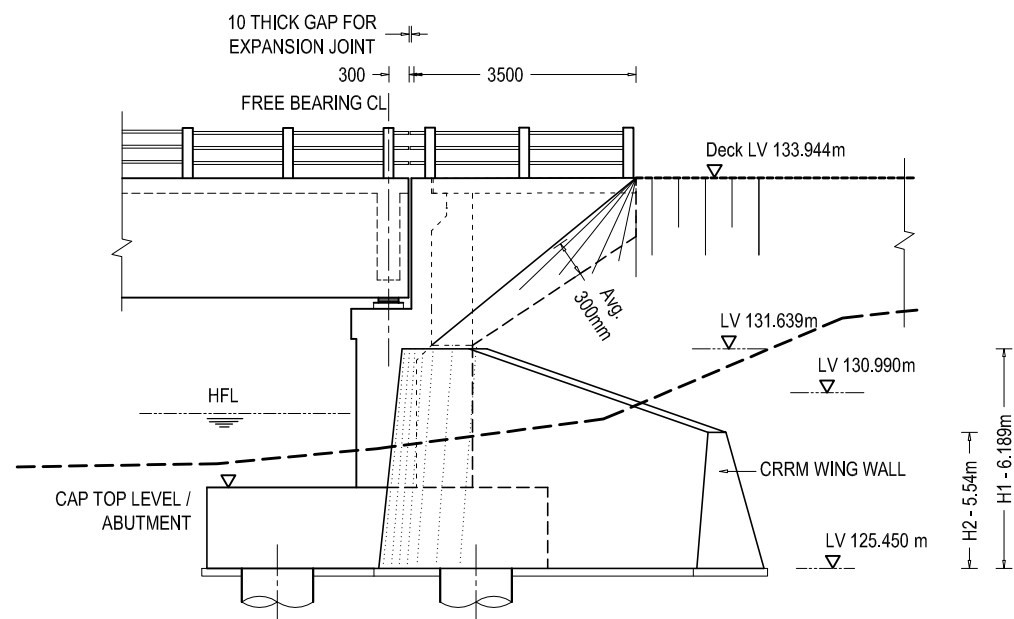
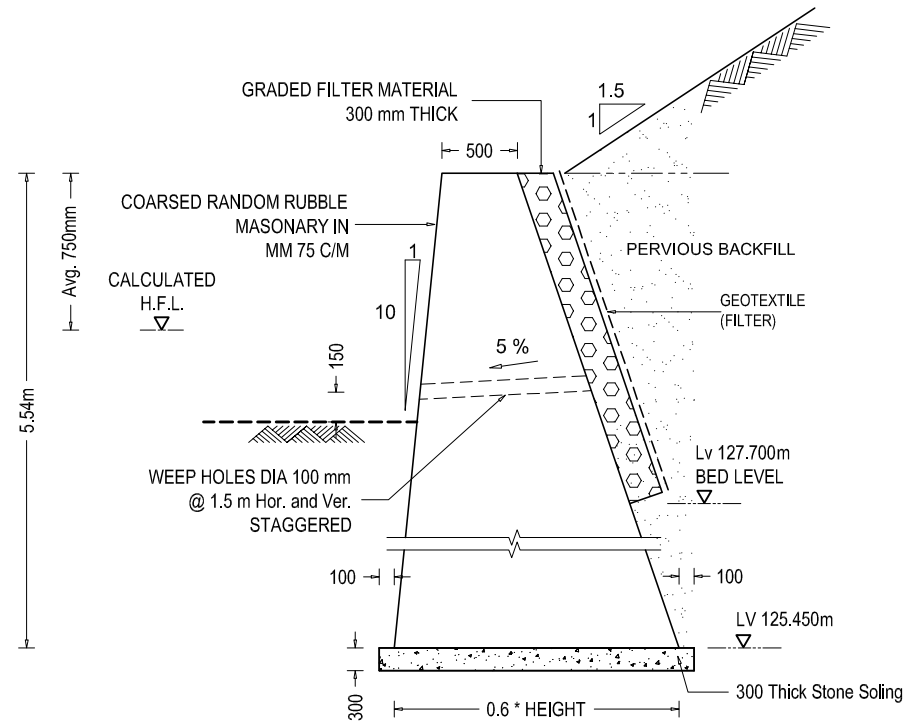


END R.C.C SEPARATOR ISOMETRIC VIEW
SCALE - NON

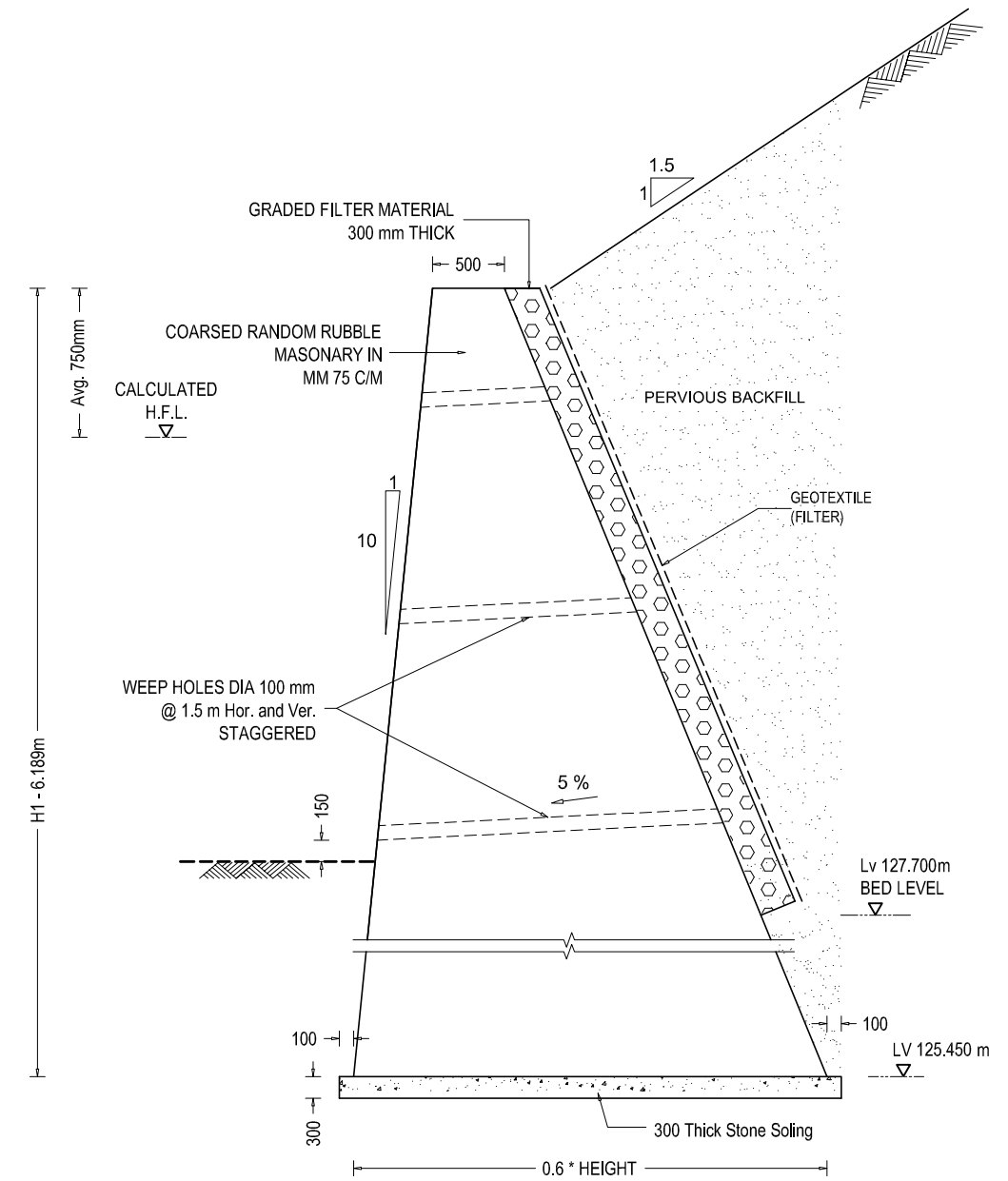
EMPLOYER Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	PROJECT NAME Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 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 CPM/V Checked By Mr. S.M. Approved By Mr. H.B.	Drawing Name MISCELLANEOUS DETAILS OF BRIDGE OVER RIVER DUMAJOR Reference Drawings KDP/DPR/STR/BR/DUMAJOR/DD-9	Scale: AS SHOWN Chainage: 310+015	Date: 24.04.2023 Drawing No:- KDP/DPR/STR/BR/DUMAJOR/DD-18 Sheet No.2/2
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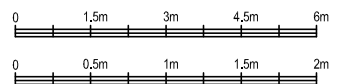
NOTE : AT DOWN STREAM ONLY



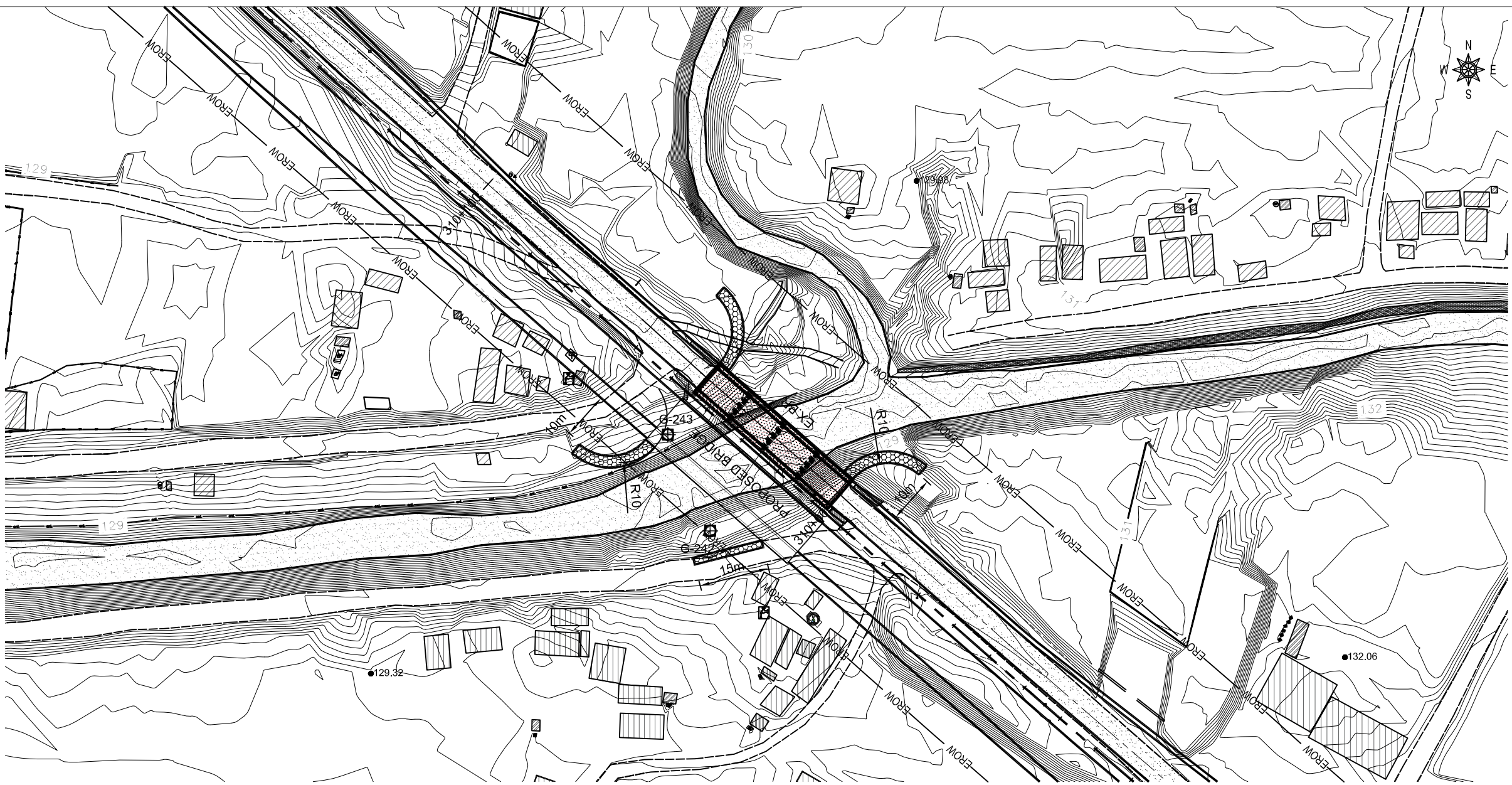
WING WALL ELEVATION



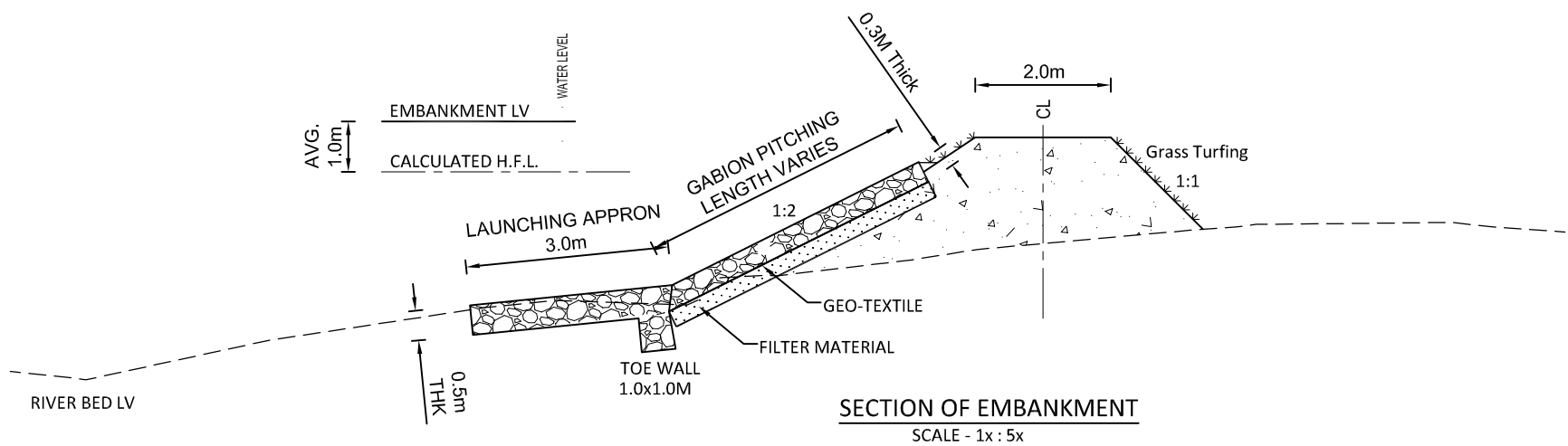
STONE MASONRY WING WALL SECTION X - X



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 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 CIVIL/1A/ Checked By Mr. S.M. Approved By Mr. H.B.	Drawing Name RETURN WALL DETAILS Reference Drawings	Scale: AS SHOWN Chainage: 310+015	Date: 24.04.2023 Drawing No.- KDP/DPR/STR/BR/DUMAJOR/DD-19 Sheet No. 1 / 1
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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 Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Krti Consultant and Rays Consultant Private Limited	Mr. R.D. Nec.No. 6489 CIVIL/20	RIVER TRAINING WORKS OF BRIDGE OVER RIVER DUMAJOR	1:1000	24.04.2023
			Checked By Mr. S.M.	Reference Drawings	Chainage: 310+015	Drawing No.- KDP/DPR/STR/BR/DUMAJOR/DD- 20
			Approved By Mr. H.B.			Sheet No. 1/1

