



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- Bagmati East
Volume-2
Detailed Drawing

April,2023

Joint Venture Of:

eptisa EPTISA Servicios De Ingenieria
Madrid, Spain

STUP STUP Consultants Private Limited
India

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

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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: 17.55 M (8 M WIDE CARRIAGEWAY + 6.5 M WIDE SERVICE LANE + 1.5M 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. HFL - 128.120 M
2. FREE BOARD (MINIMUM) - 1 M
3. MAXIMUM SCOUR LEVEL:
ABUTMENT - 125.120m

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 25 = 25 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 - 1200 DIA BORED CAST-IN-SITU PILE
DESIGN WORKING LOAD ON PILE - 211 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
1.5m 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. RETURN WALL.....M35
f. 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		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.A. 	GENERAL NOTES OF BRIDGE OVER RIVER BAGMATI EAST		AS SHOWN	05.05.2023
		 EPTISA Servicios De Ingenieria Madrid, Spain	 STUP Consultants Pvt Ltd Kolkata, India	Checked By	Mr. S.M. 				
		In Association With Udaya Consultancy, Geocom International, Sundar Krti Consultant and Rays Consultant Private Limited		Approved By	Mr. H.B. 	Reference Drawings		Chainage:	312+470
						-			Sheet No. 1 / 1

←
TO KAMALA

→
TO PATHALAIYA

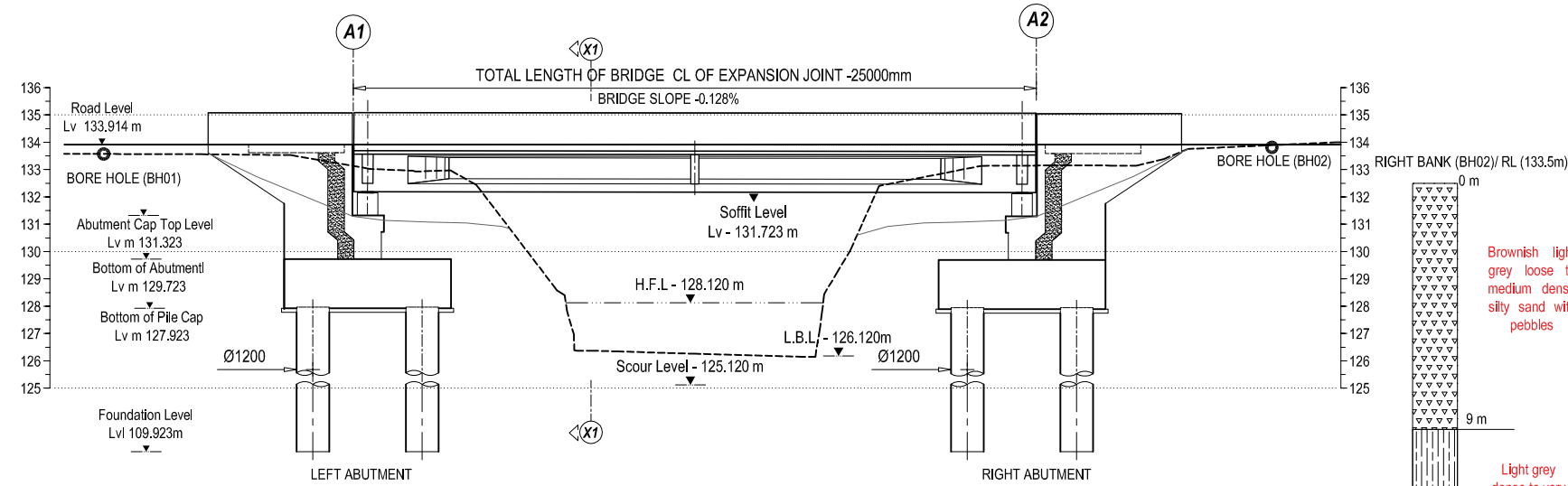
LEFT BANK (BH01)/ RL (133.5m)

Brownish light
grey loose to
medium dense
silty sand with
pebbles

Light grey
dense to very
dense sandy
gravels with
cobbles

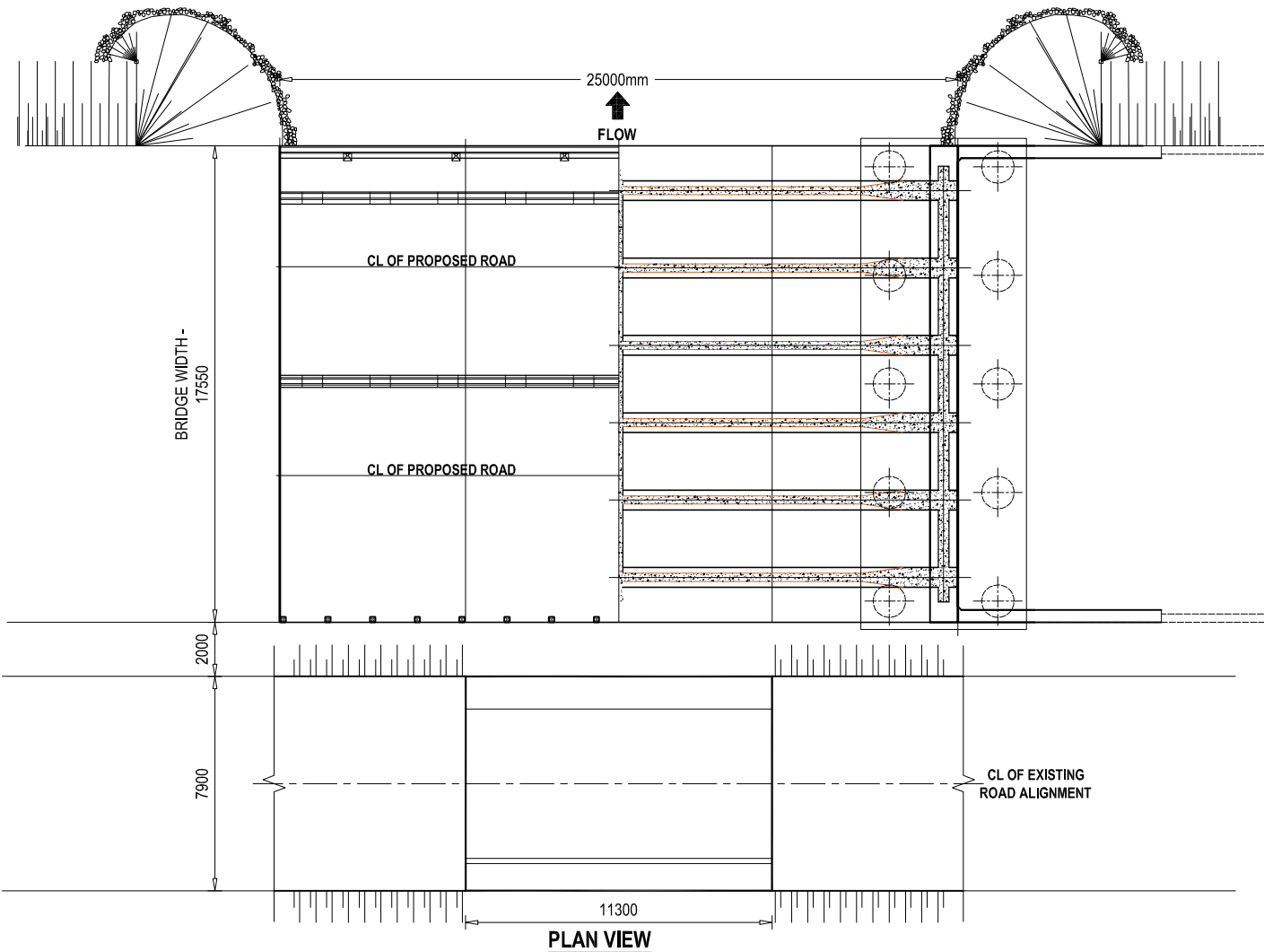
Light grey
dense to very
dense sandy
gravels with
cobbles and
some boulders

Light grey
dense to very
dense sandy
gravels with
cobbles

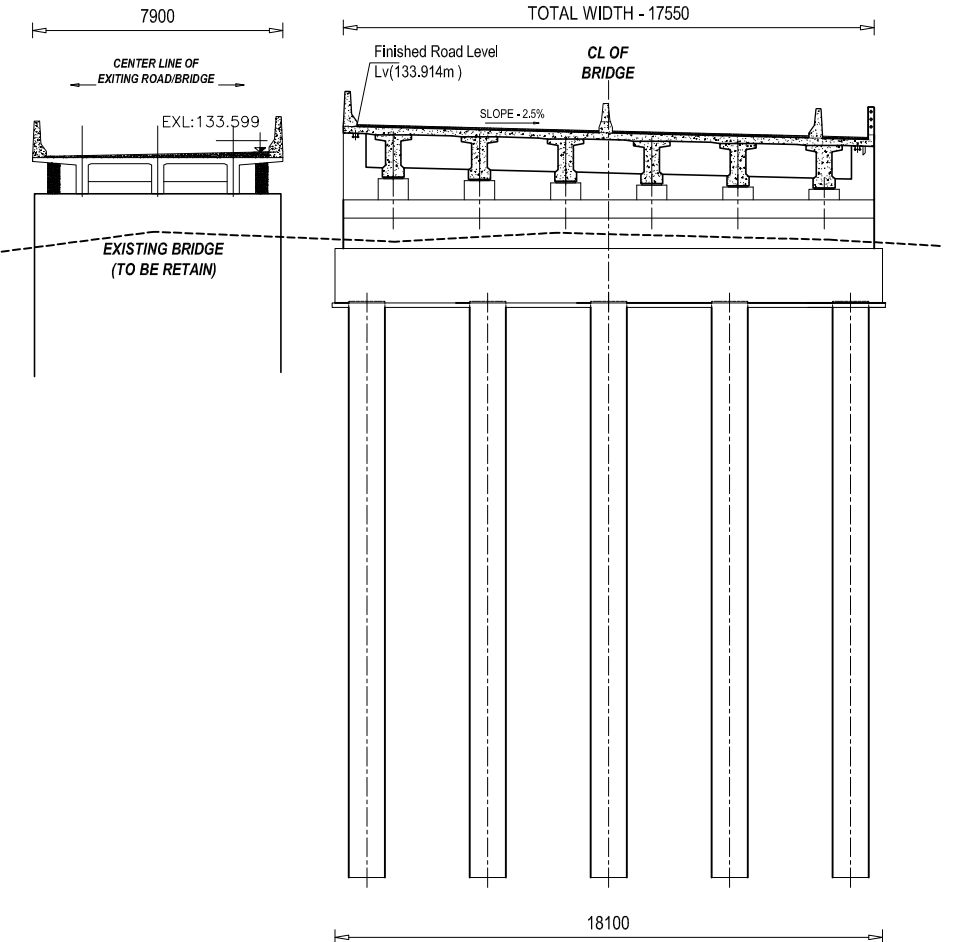


PROPOSED BRIDGE GENERAL ARRANGEMENT

Finished Road Level(D/S)	LEFT ABUTMENT	133.914	RIGHT ABUTMENT	133.882
Finished Road Level (Existing Bridge)		133.599		133.599
Existing Ground Level(D/S)		133.056		133.487
Existing Ground Lv		134.215		134.256
Chainage		312+257.5		312+482.5

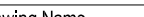


PLAN VIEW



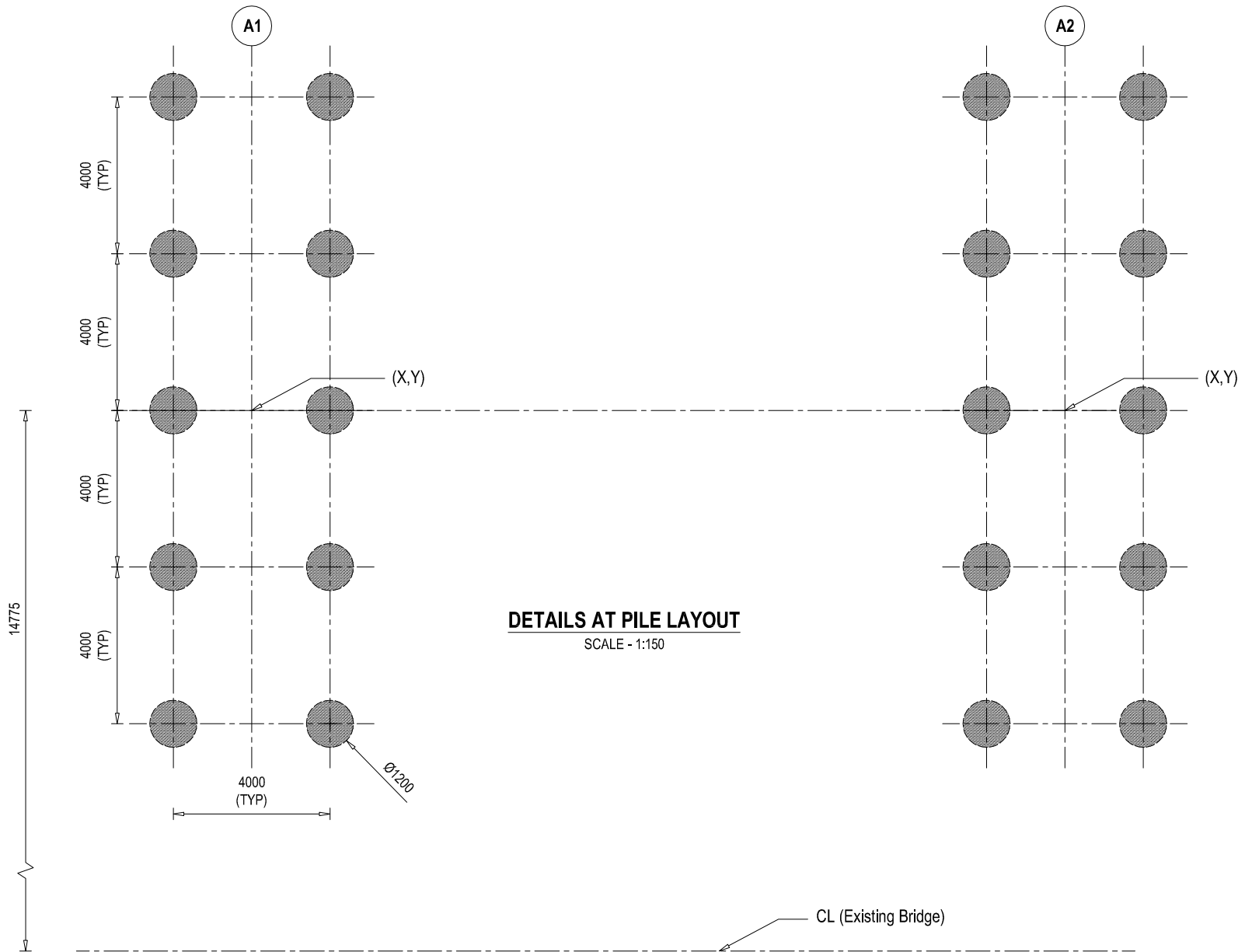
SECTIONAL VIEW AT X1-X1

(SCALE 1 :250 @ A3)

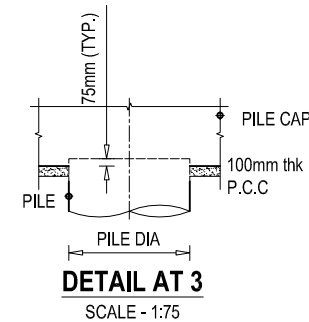
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 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathalaya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of  EPTISA Servicios De Ingeniera Madrid, Spain  STUP Consultants Private Limited Kolkata, India					Checked By Mr. S.M. 	Reference Drawings	Chainage: 312+470	Drawing No- KDP/DPR/STR/BR/BAGMATI EAST/DD-05
		In Association With Udaya Consultancy, Geocom International, Sundar Krilli Consultant and Rays Consultant Private Limited					Approved By Mr. H.B. 			Sheet No. 1/1

←
TO KAMALA

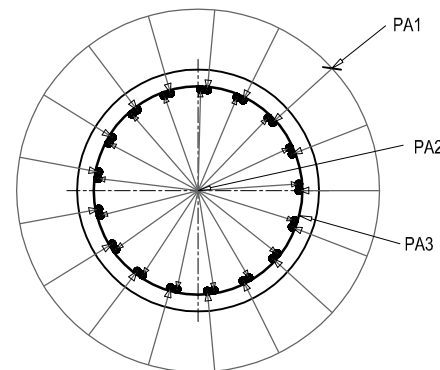
→
TO PATHLAIYA



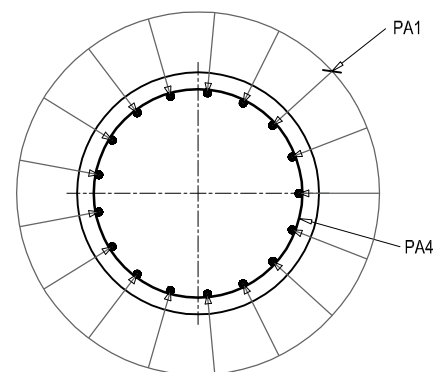
DETAILS AT PILE LAYOUT
SCALE - 1:150



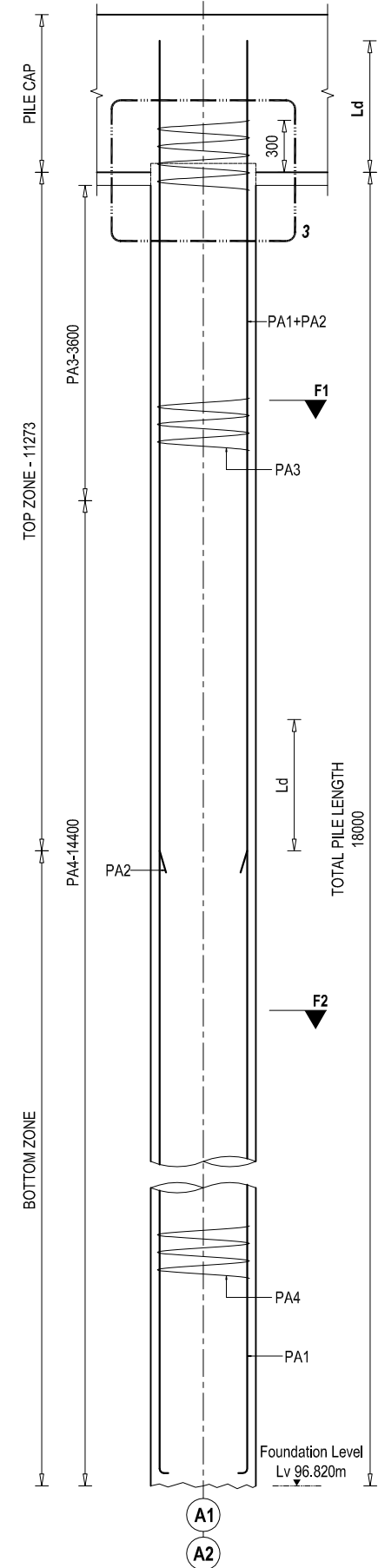
DETAIL AT 3
SCALE - 1:75



SECTIONAL VIEW AT F1 - F1
SCALE - 1:75



SECTIONAL VIEW AT F2 - F2
SCALE - 1:75



ELEVATION VIEW
BAR DETAIL AT PILE
SCALE - 1:75

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	19650	25		19.950	12	923.61
2	PA2	14198	25		14.198	12	657.315
4	PA3	Dia. 1034 100	16	110	3.448	44	239.76
5	PA4	Dia. 1034 100	12	110	3.448	120	367.82
TOTAL (Kg)							2198.51
No. of Pile							10.00
TOTAL WEIGHT (Kg)							21985.10

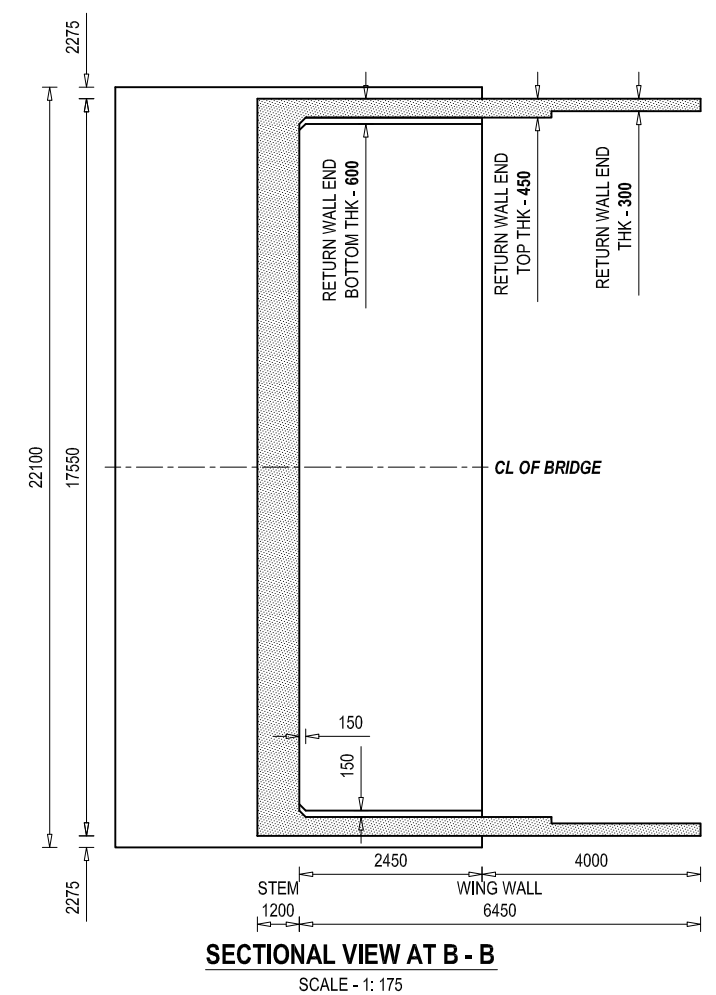
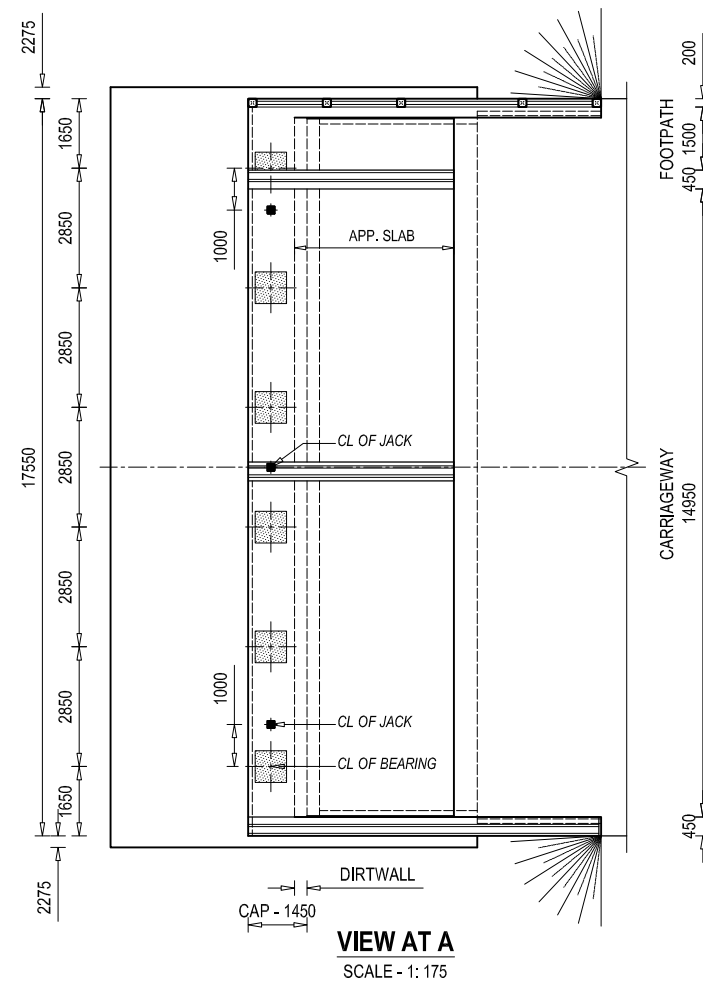
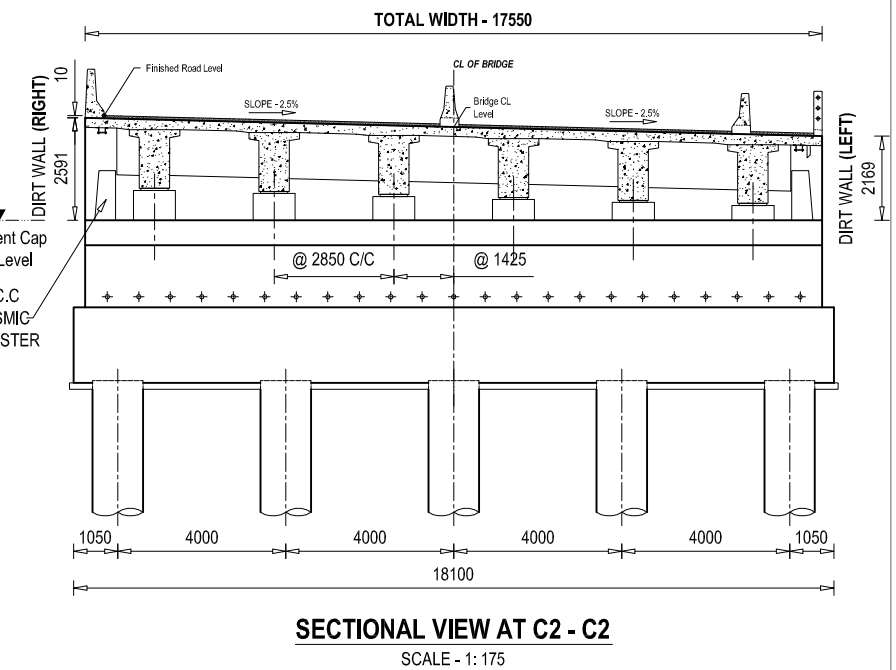
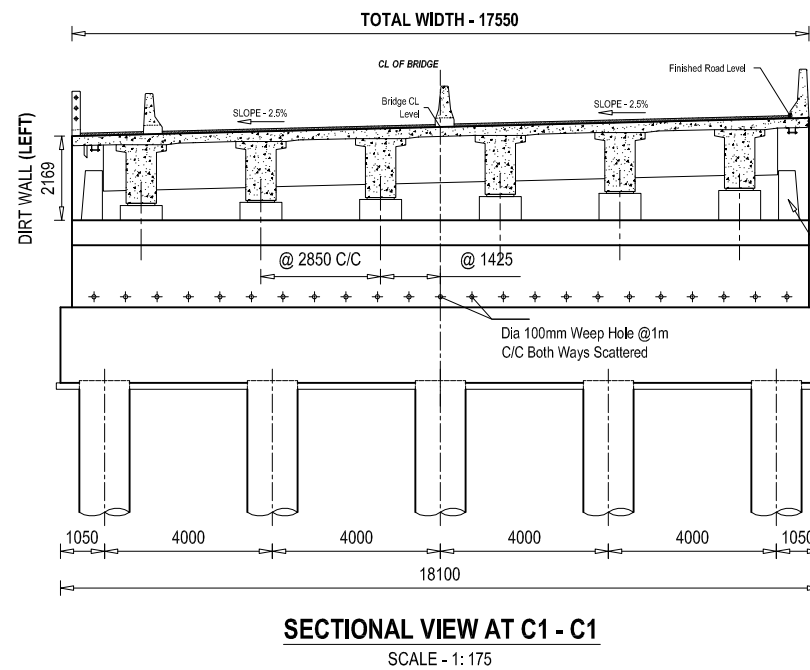
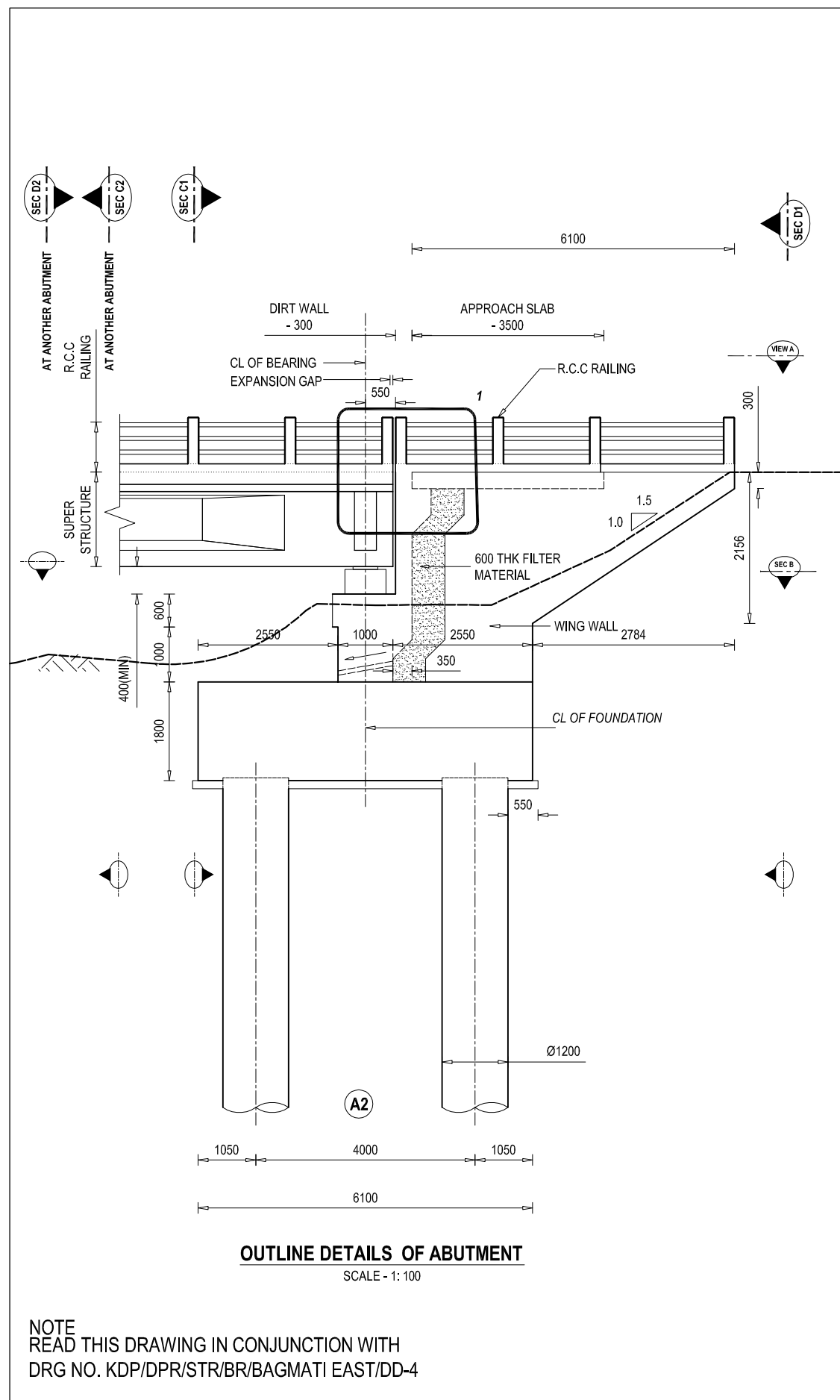
PILE CAPACITY (INDIVIDUAL)		
SN.	DIA (mm)	CAPACITY (Ton)
1	1200	211

CO ORDINATES OF PILE LOCATION OF PROPOSED BRIDGE

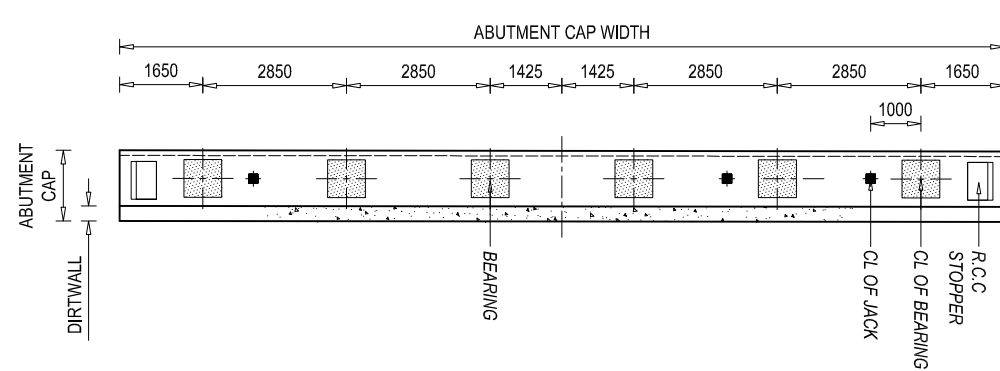
SN.	ABUTMENT	EASTING (X)	NORTHING (Y)
1	ABUTMENT (A1)	350076.687	3002242.06
2	ABUTMENT (A2)	350059.859	3002260.548

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

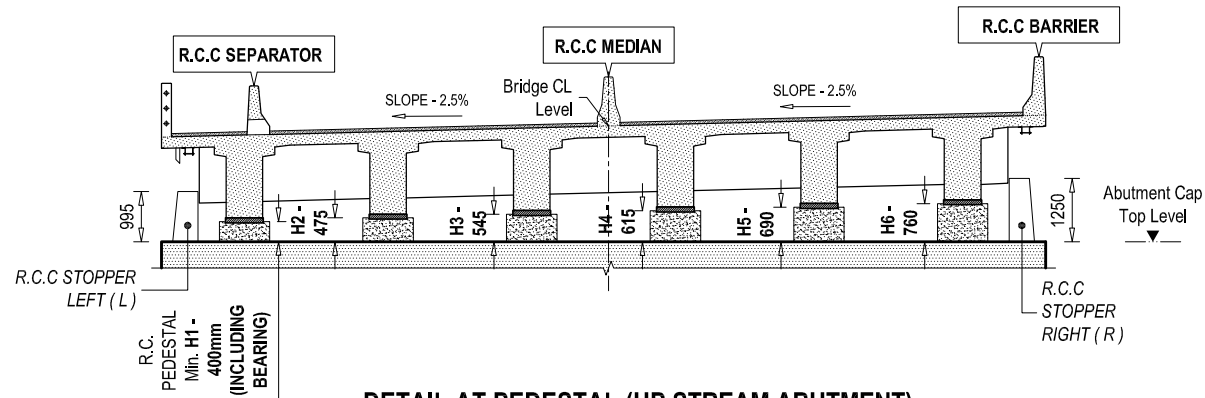
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 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of		Designed By	Mr. R.A.		LAYOUT AND DETAIL OF PILE FOUNDATION OF BRIDGE OVER RIVER BAGMATI EAST	AS SHOWN	05.05.2023		
		 EPTISA Servicios De Ingeniera Madrid, Spain	 STUP Consultants Private Limited Kolkata, India	Checked By	Mr. S.M.						
		In Association With Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited		Approved By	Mr. H.B.		Reference Drawings KDP/DPR/STR/BR/BAGMATI EAST/DD-9	Chainage: 312+470	Sheet No.1 / 1		



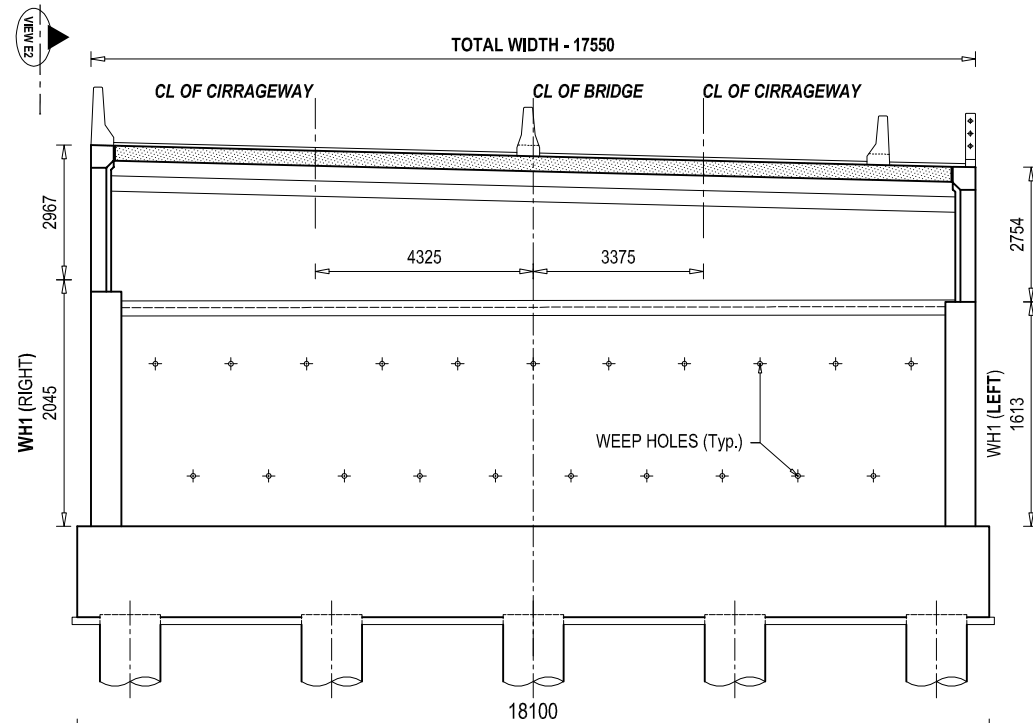
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			Checked By Mr. S.M.	Reference Drawings KDP/DPR/STR/BR/BAGMATI EAST/DD-9	Chainage:	Drawing No.- KDP/DPR/STR/BR/BAGMATI EAST/DD-7
			Approved By Mr. H.B.		312+470	Sheet No. 1 / 2



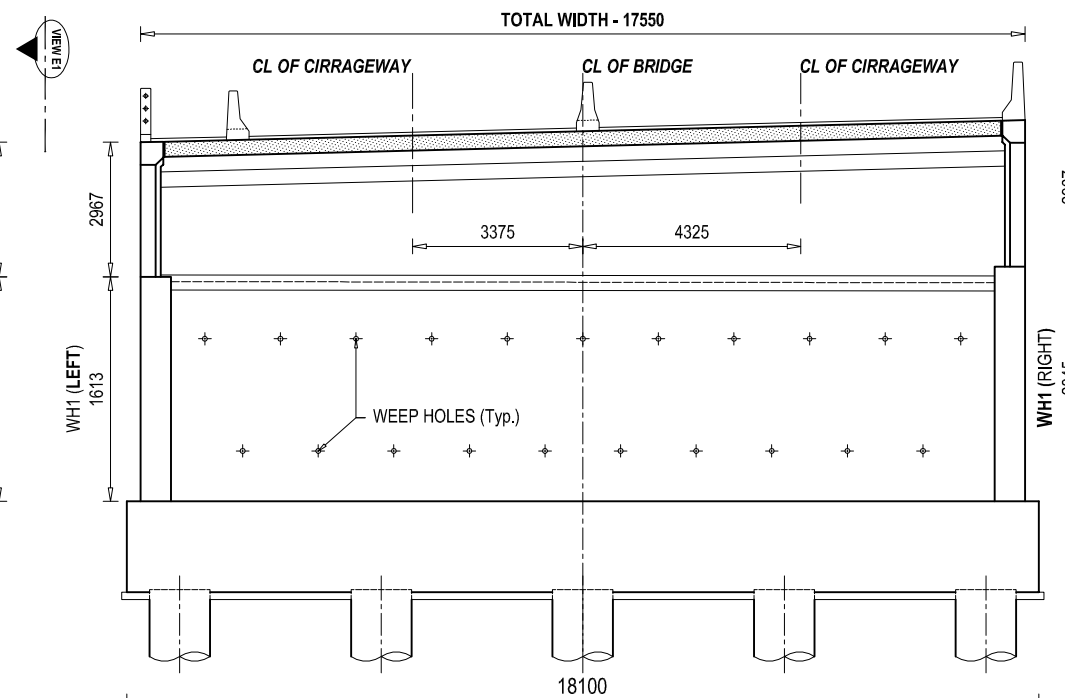
PLAN VIEW AT ABUTMENT CAP (UP STREAM ABUTMENT)
SCALE - 1: 150



DETAIL AT PEDESTAL (UP STREAM ABUTMENT)
SCALE - 1: 150

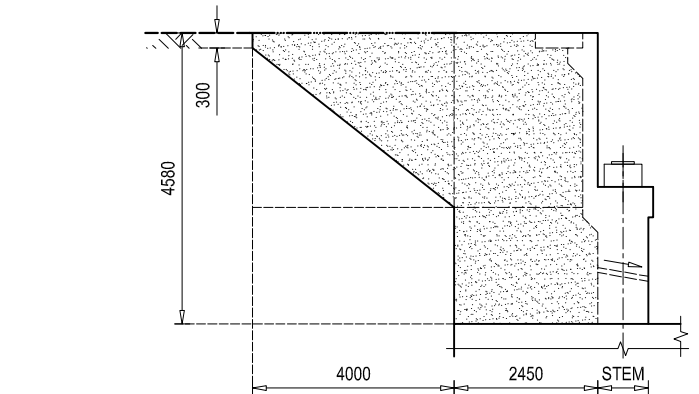


SECTIONAL VIEW AT D1 - D1
SCALE - 1: 150

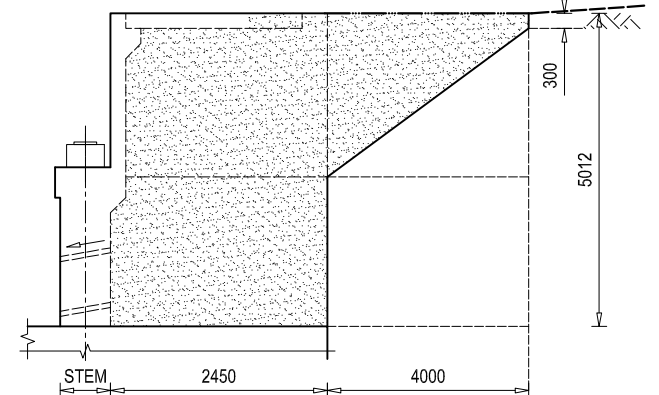


SECTIONAL VIEW AT D2 - D2
SCALE - 1: 150

DETAIL AT DIRT WALL
SCALE - 1: 150

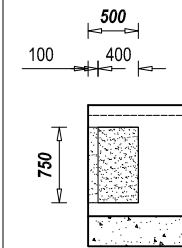


VIEW AT E1
SCALE - 1: 150

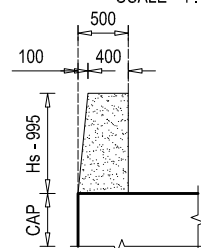


VIEW AT E2
SCALE - 1: 150

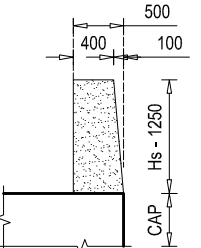
DETAIL AT RETURN WALL
SCALE - 1: 150



R.C.C SEISMIC ARRESTER PLAN VIEW

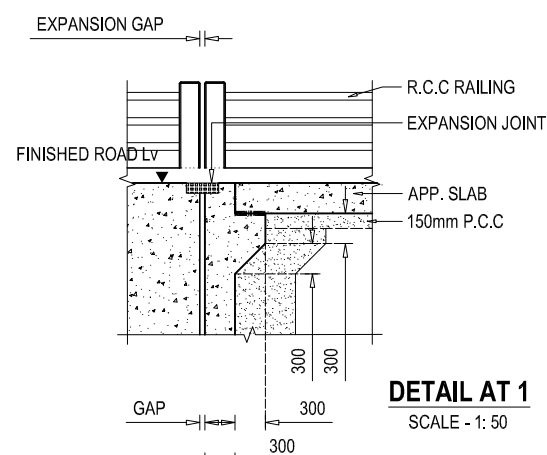


R.C.C SEISMIC ARRESTER - LEFT ELEVATION VIEW



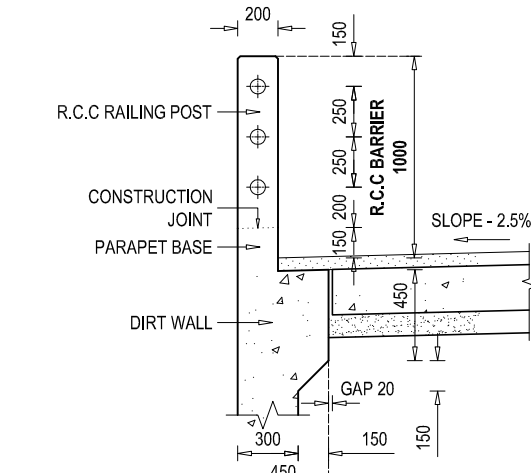
R.C.C SEISMIC ARRESTER - RIGHT ELEVATION VIEW

DETAIL AT PEDESTAL
SCALE - 1: 75

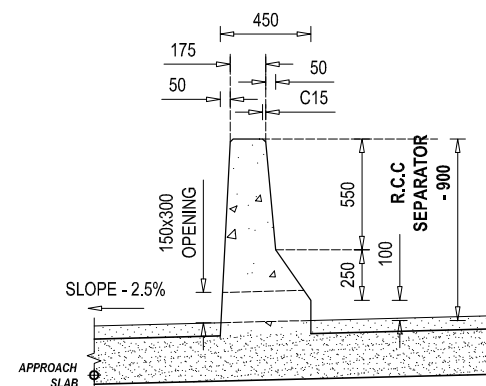


DETAIL AT 1
SCALE - 1: 50

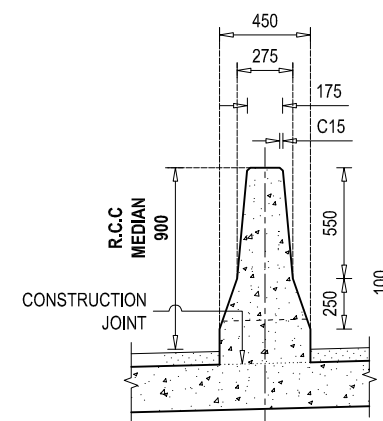
NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/BAGMATI EAST/DD-4



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

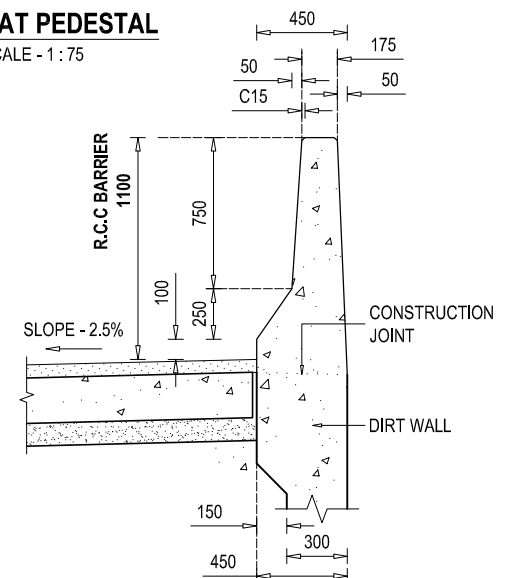


DETAIL SECTIONAL VIEW AT R.C.C SEPARATOR
SCALE - 1: 25

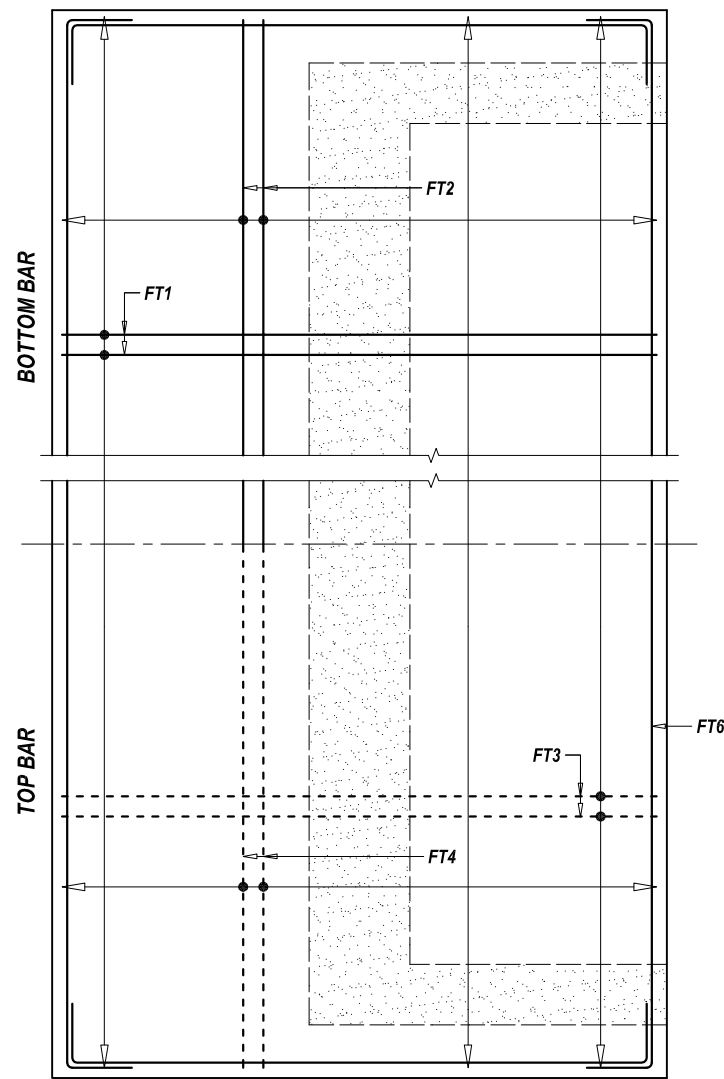


DETAIL AT R.C.C MEDIAN
SCALE - 1: 50

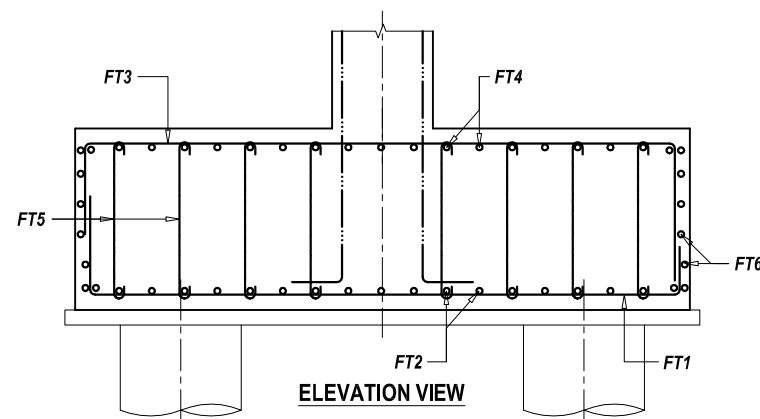
DETAIL SECTIONAL VIEW AT R.C.C BARRIER
SCALE - 1: 25



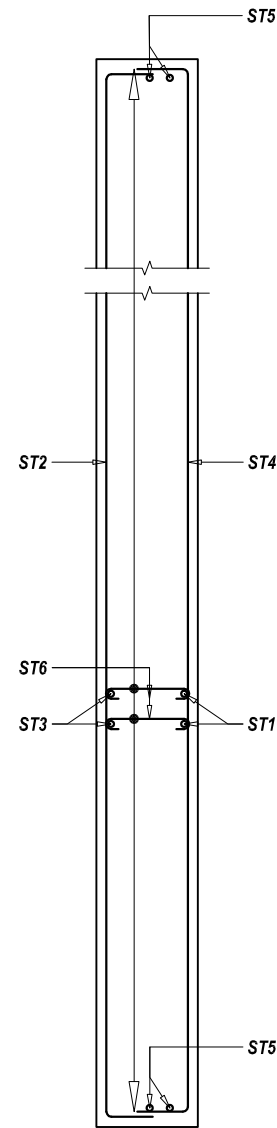
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of 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 Kruti Consultant and Rays Consultant Private Limited	Mr. R.A. Nec.No. 6431 CML/V Signature Mr. S.M. Signature Mr. H.B. Signature	ABUTMENT DETAILS OF BRIDGE OVER RIVER BAGMATI EAST Reference Drawings KDP/DPR/STR/BR/BAGMATI EAST/DD-9	AS SHOWN Chainage: 312+470	05.05.2023 Drawing No.- KDP/DPR/STR/BR/BAGMATI EAST/DD-7 Sheet No.2 / 2



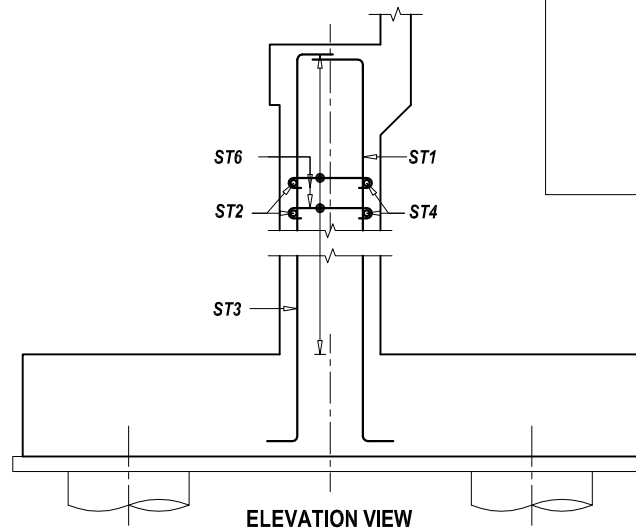
PLAN VIEW



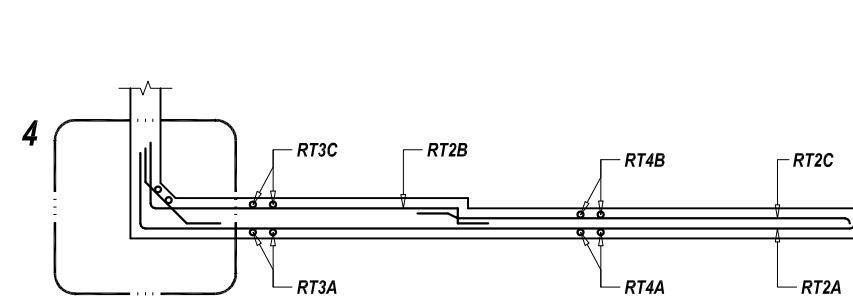
BAR DETAIL OF PILE CAP
SCALE - 1 : 75



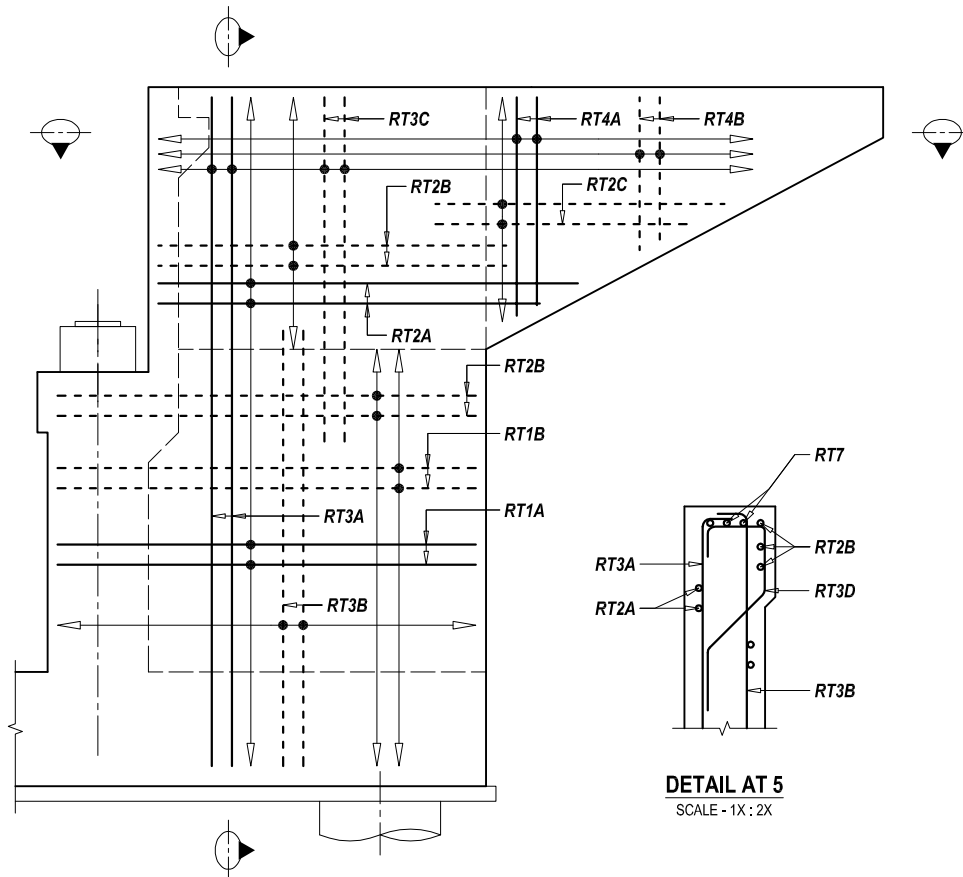
SECTIONAL PLAN VIEW



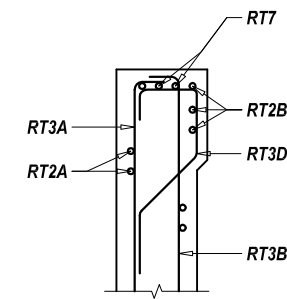
BAR DETAIL AT ABUTMENT STEM
SCALE - 1 : 75



SECTIONAL PLAN VIEW

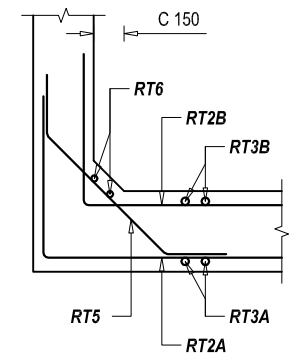


ELEVATION VIEW

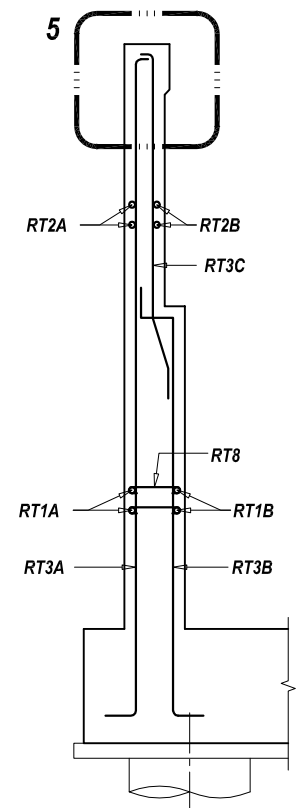


DETAIL AT 5
SCALE - 1X : 2X

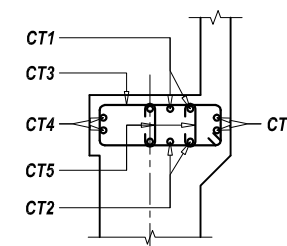
BAR DETAIL AT RETURN WALL
SCALE - 1 : 75



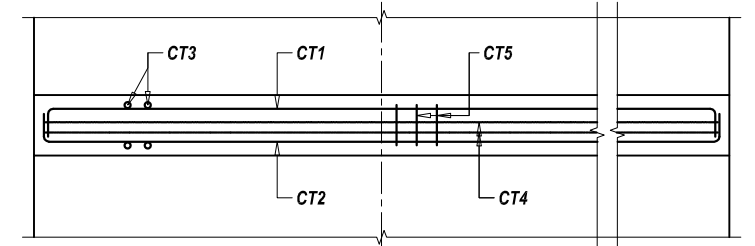
DETAILS AT 4



SECTIONAL SIDE VIEW



ELEVATION VIEW



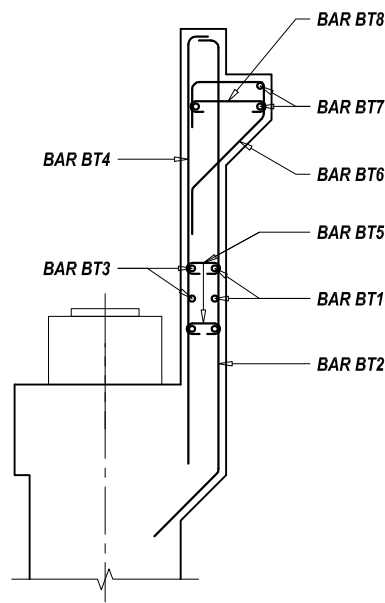
FRONT VIEW

BAR DETAIL AT ABUTMENT CAP
SCALE - 1 : 75

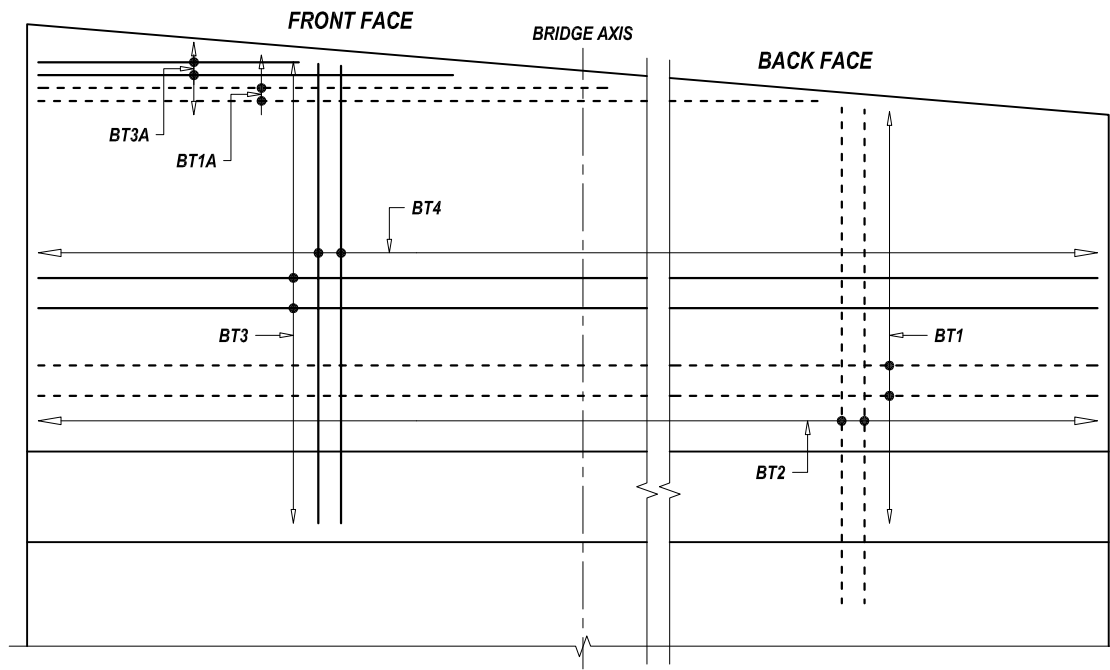
--- TOP BAR OR NEAR FACE REINFORCEMENT
--- BOTTOM BAR OR FAR FACE REINFORCEMENT

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

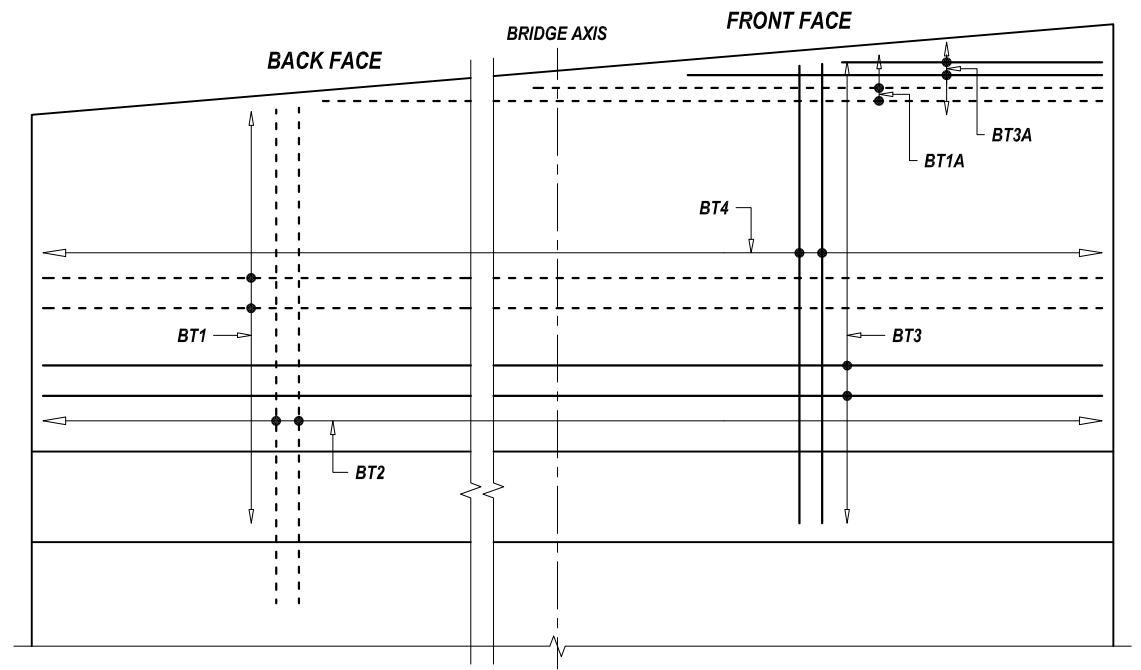
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of 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 Kirti Consultant and Rays Consultant Private Limited	Mr. R.A. Nec.No. 6431 C/AL/16 Mr. S.M. Mr. H.B.	ABUTMENT REINFORCEMENT DETAILS OF BRIDGE OVER RIVER BAGMATI EAST Reference Drawings KDP/DPR/STR/BR/BAGMATI EAST/DD-9	AS SHOWN Chainage: 312+470	05.05.2023 Drawing No.- KDP/DPR/STR/BR/BAGMATI EAST/DD-8 Sheet No. 1 / 2



SECTIONAL SIDE VIEW



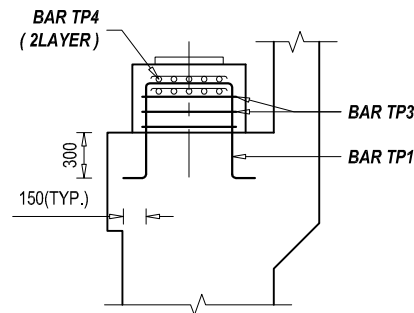
ELEVATION VIEW / VIEW AT D1



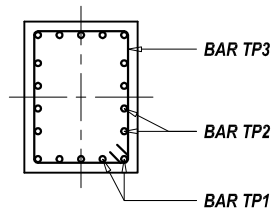
ELEVATION VIEW / VIEW AT D2

BAR DETAIL AT DIRT WALL

SCALE - 1 : 50



SECTIONAL SIDE VIEW

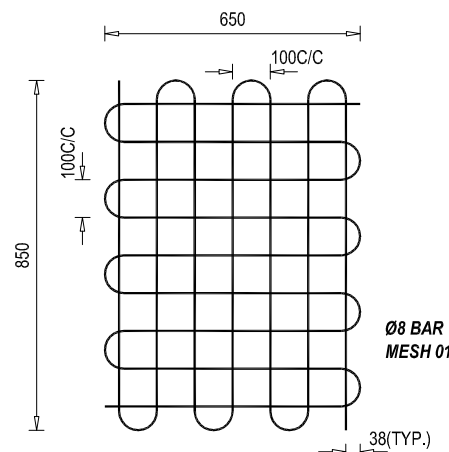


SECTIONAL PLAN VIEW

BAR DETAIL AT PEDESTAL

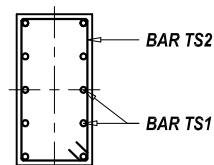
SCALE - 1 : 50

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

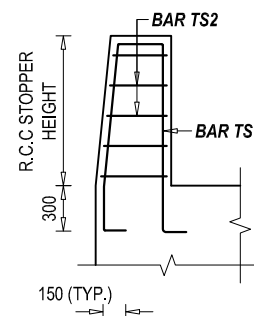


REINFORCEMENT DETAILS OF
BEARING MESH

SCALE - 1 : 50

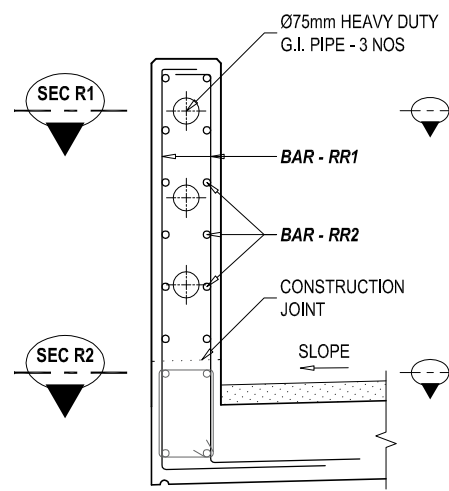


SECTIONAL PLAN VIEW



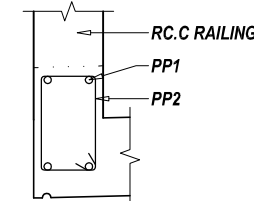
R.C.C STOPPER LEFT
ELEVATION VIEW

SCALE - 1 : 50



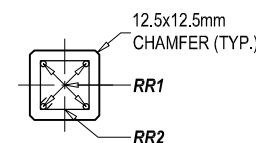
SECTIONAL VIEW OF POST (SEC R1)

SCALE - 1 : 25 @ A3 PAPER



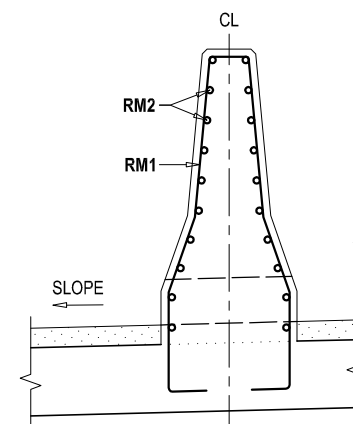
DETAILS OF PARAPET BASE
(SEC R1 - R1)

SCALE - 1 : 20 @ A3 PAPER



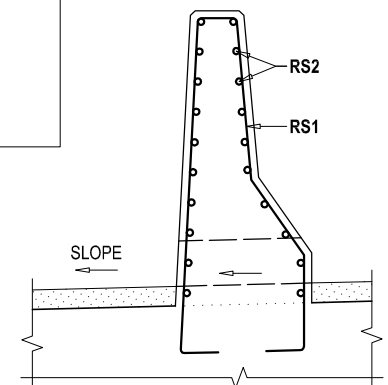
SECTIONAL REINFORCEMENT
DETAILS OF R.C.C POST (SEC R2 - R2)

SCALE - 1 : 20 @ A3 PAPER



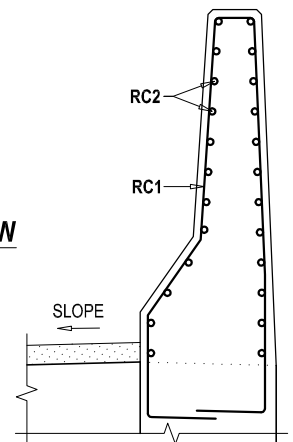
REINFORCEMENT DETAILS
OF R.C.C MEDIAN - SECTIONAL VIEW

SCALE - 1 : 25



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

SCALE - 1 : 25



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

SCALE - 1 : 25

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.A. Nec.No. 6431 CML/A	 Signature	ABUTMENT REINFORCEMENT DETAILS OF BRIDGE OVER RIVER BAGMATI EAST	AS SHOWN	05.05.2023
		 EPTISA Servicios De Ingenieria Madrid, Spain	 STUP Consultants Private Limited Kolkatta, India	Checked By	Mr. S.M.  Signature				
				In Association With Udaya Consultancy, Geocom International, Sundar Kritt Consultant and Rays Consultant Private Limited			Approved By	Mr. H.B.  Signature	Chainage: 312+470

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 17400 150	16	200	17.700	17	1.580	475.50
2	BT 1A	Avg. 8700 150	16	200	8.850	4	1.580	55.94
3	BT 2	150 2874.5Avg. 450	16	125	3.475	142	1.580	779.66
4	BT 3	150 17400 150	16	200	17.700	13	1.580	363.61
5	BT 3A	Avg. 8700 150	16	200	8.850	4	1.580	55.94
6	BT 4	150 2878 Avg.	12	125	3.028	142	0.889	382.20
7	BT 5	100 150 100	12	500	0.350	144	0.889	44.80
8	BT 6	200 450 220 200 756	12	200	1.826	89	0.889	144.46
9	BT 7	17400	16		17.400	5	1.580	137.48
10	BT 8	100 450 100	12	200	0.650	176	0.889	101.69
TOTAL (KG) : 2541.28								

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 17400 300	16	150	18.000	11	1.580	312.89
2	CT 2	300 17400 300	16	150	18.000	11	1.580	312.89
3	CT 3	450 1300 100	16	150	3.700	118	1.580	689.94
4	CT 4	300 17400 300	12	150	18.000	8	0.889	128.00
5	CT 5	450 100 100	12	Long. 150 Trans.300	0.650	566	0.889	327.02
TOTAL (KG) : 1770.74								

BAR BENDING SCHEDULE OF ABUTMENT STEM								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	ST1	300 3250 750	20		4.300	120	2.469	1274.07
2	ST2	500 17400 500	20	200	18.400	5	2.469	227.16
3	ST3	300 3250 750	25		4.300	120	3.858	1990.74
4	ST4	500 17400 500	20	200	18.400	5	2.469	227.16
5	ST5	750 300 3250	20		4.300	10	2.469	106.17
6	ST6	100 850 100	12	Ver. 300 Hor.300	1.050	236	0.889	220.27
TOTAL (KG) : 4045.58								

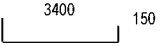
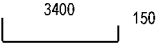
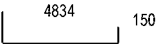
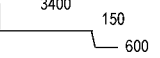
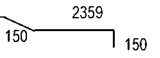
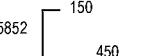
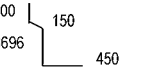
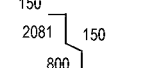
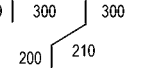
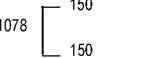
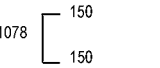
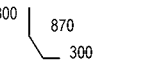
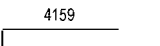
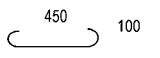
BAR BENDING SCHEDULE OF PILE CAP								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	FT 1	900 5950 900	25		7.750	140	3.858	4185.96
2	FT 2	900 17950 900	20		19.750	50	2.469	2438.27
3	FT 3	900 5950 900	16		7.750	140	1.580	1714.57
4	FT 4	900 17950 900	16		19.750	50	1.580	1560.49
5	FT 5	100 1650 100	10	Long. 250 Trans.300	1.850	1425	0.617	1627.31
6	FT 6	5900 17910 150	16	200	47.920	8	1.580	605.80
TOTAL (KG) : 12132.41								

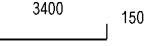
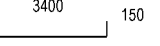
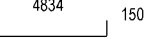
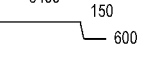
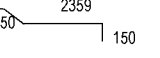
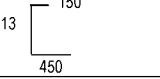
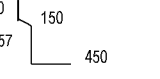
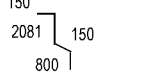
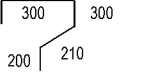
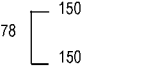
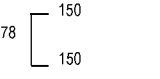
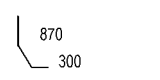
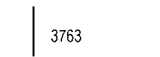
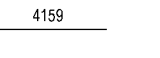
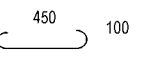
BAR BENDING SCHEDULE OF PEDESTAL								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TP1	150 950 650 Avg.	16	150	2.850	6	1.580	27.02
1	TP2	150 700 650 Avg.	16	150	2.350	8	1.580	29.71
2	TP3	950 700 100	16	150	3.500	3	1.580	16.59
1	TP4	850 650 @ 100	8		13.400	2	0.395	10.59
TOTAL (KG) :								83.91
TOTAL NOS OF PEDESTAL :								6.00
TOTAL WEIGHT (KG) :								503.47

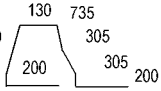
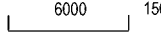
BAR BENDING SCHEDULE OF RCC SEISMIC ARRESTER - LEFT								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TS1-L	1010 400 1270 300 150 150	16	150	3.280	6	1.580	31.10
2	TS2-L	400 700 100	12	150	2.400	7	0.889	14.93
TOTAL (KG)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

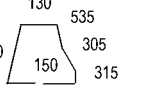
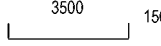
BAR BENDING SCHEDULE OF RCC SEISMIC ARRESTER - RIGHT								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TS1-R	1260 400 1525 300 150 150	16	150	3.785	6	1.580	35.89
2	TS2-R	400 700 100	12	150	3.400	9	0.889	27.20
TOTAL (KG)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

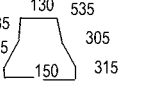
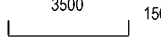
EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		Designed By	Mr. R.A. Nec.No. 6431 CHM/ 'K' Signature	Drawing Name	Scale:	AS SHOWN	Date:	05.05.2023
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamata-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of		EPTISA EPTISA Servicios De Ingeniera Madrid, Spain	STUP Consultants Private Limited Kolkatta, India							
		In Association With Udaya Consultancy, Geocom International, Sundar Krill Consultant and Rays Consultant Private Limited				Approved By	Mr. H.B. Signature					

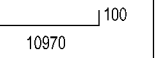
BAR BENDING SCHEDULE OF RETURN WALL - LEFT								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RT1A		12	150	4.000	29	0.889	103.11
2	RT1B		12	150	4.000	29	0.889	103.11
3	RT2A		12	150	5.434	16	0.889	77.28
4	RT2B		12	150	4.300	16	0.889	61.16
5	RT2C		12	150	3.259	16	0.889	46.35
6	RT3A		12	150	6.452	18	0.889	103.23
7	RT3B		16	150	5.096	18	1.580	144.95
8	RT3C		16	150	3.181	18	1.580	90.48
9	RT3D		16	150	1.210	35	1.580	66.92
10	RT4A		12	150	1.378	34	0.889	41.65
11	RT4B		16	150	1.378	34	1.580	74.04
12	RT5		12	150	1.470	44	0.889	57.49
13	RT6		12		4.202	2	0.889	7.47
14	RT7		20		4.384	4	2.469	43.30
15	RT8		12	200	0.650	24	0.889	13.87
TOTAL (KG) :								1034.41

BAR BENDING SCHEDULE OF RETURN WALL - RIGHT								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RT1A		12	150	4.000	26	0.889	92.44
2	RT1B		12	150	4.000	26	0.889	92.44
3	RT2A		12	150	5.434	16	0.889	77.28
4	RT2B		12	150	4.300	16	0.889	61.16
5	RT2C		12	150	3.259	16	0.889	46.35
6	RT3A		12	150	6.013	18	0.889	96.21
7	RT3B		16	150	4.657	18	1.580	132.47
8	RT3C		16	150	3.181	18	1.580	90.48
9	RT3D		16	150	1.210	35	1.580	66.92
10	RT4A		12	150	1.378	34	0.889	41.65
11	RT4B		16	150	1.378	34	1.580	74.04
12	RT5		12	150	1.470	44	0.889	57.49
13	RT6		12		3.763	2	0.889	6.69
14	RT7		20		4.384	4	2.469	43.30
15	RT8		12	200	0.650	20	0.889	11.56
TOTAL (KG) :								990.48

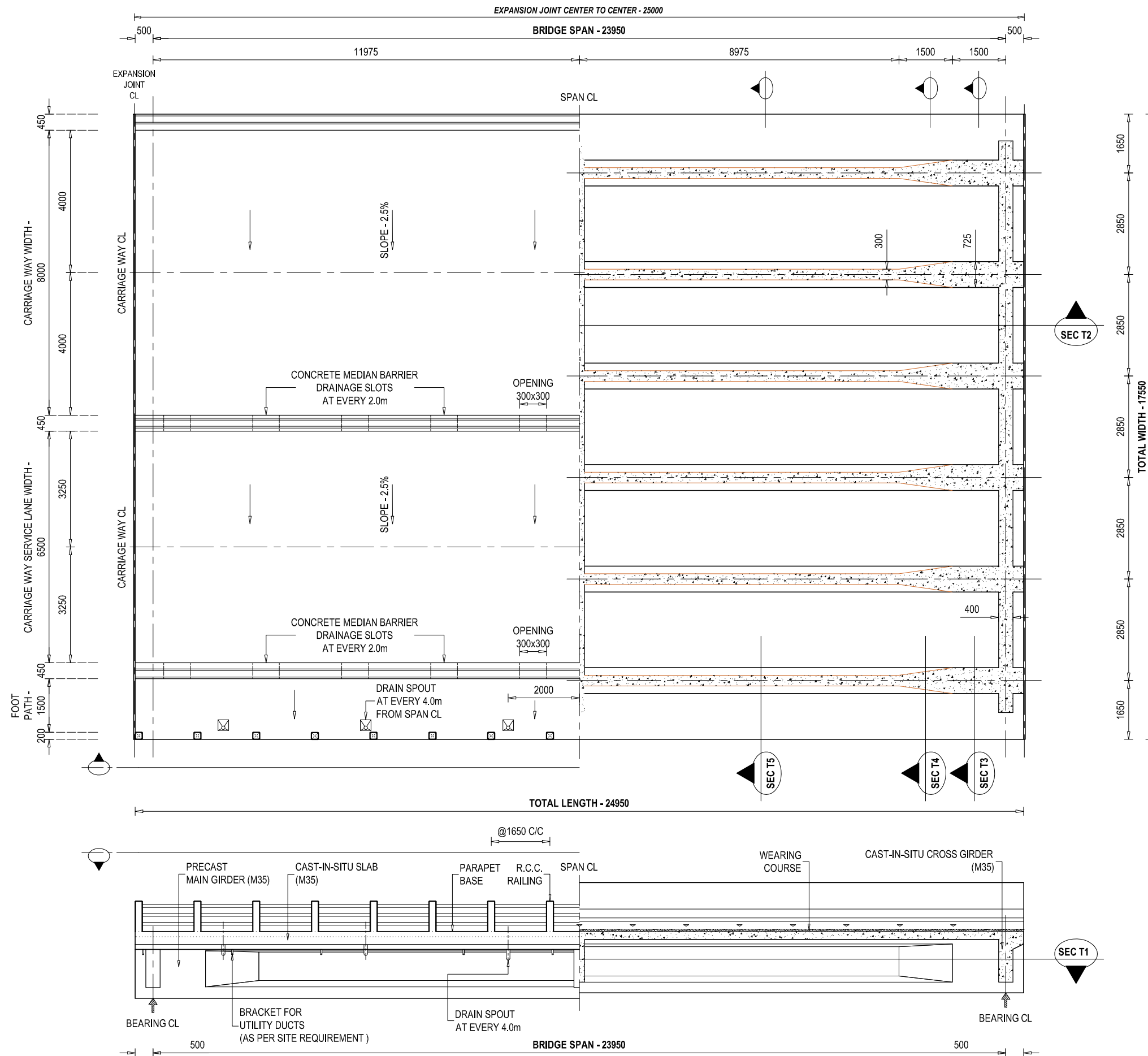
BAR BENDING SCHEDULE OF R.C.C BARRIER								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RC1		16	150	3.170	41	1.580	205.38
2	RC2		10	150	6.300	20	0.617	77.78
TOTAL (KG) :								283.16

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 R.C.C MEDIAN								
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	RM1		16	150	2.740	25	1.580	108.25
2	RM2		10	150	3.800	18	0.617	42.22
TOTAL (KG) :								150.47

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

EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		Designed By	Mr. R.A. Nec.No. 6431 CHM/ 'K' Signature		Drawing Name	Scale:	AS SHOWN	Date:	05.05.2023						
 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 Kamata-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of		Checked By	Mr. S.M. Signature <th rowspan="2">Reference Drawings</th> <th rowspan="2">Chainage:</th> <th rowspan="2">312+470</th> <th rowspan="2">Drawing No.-</th> <th rowspan="2">KDP/DPR/STR/BR/BAGMATI EAST/DD-9</th> <th rowspan="2">Sheet No. 2 / 2</th>									Reference Drawings	Chainage:	312+470	Drawing No.-	KDP/DPR/STR/BR/BAGMATI EAST/DD-9	Sheet No. 2 / 2
		 EPTISA Servicios De Ingeniera Madrid, Spain	 STUP Consultants Private Limited Kolkata, India																

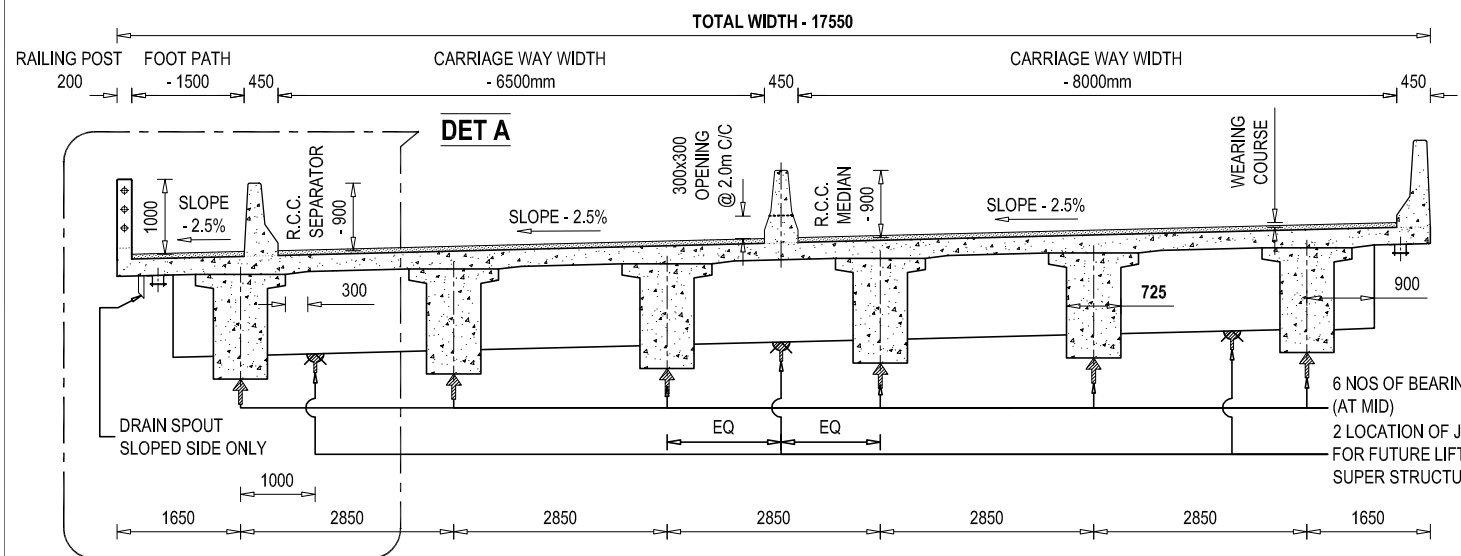


**HALF PLAN /SECTIONAL
PLAN VIEW OF
SUPERSTRUCTURE
AT SEC T1**
SCALE - 1 : 120

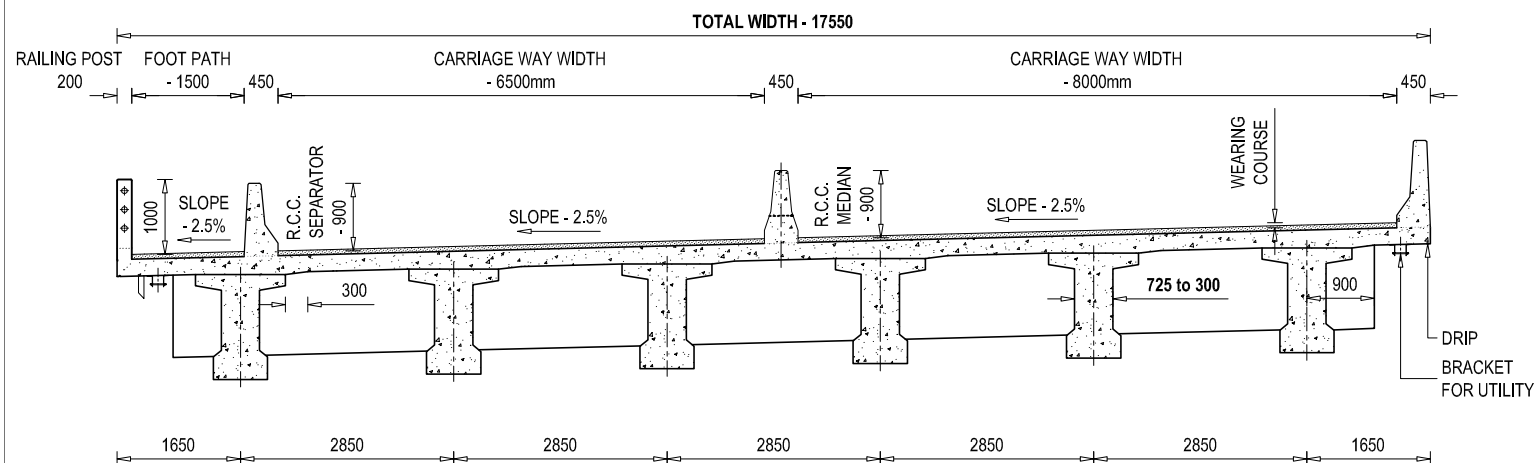
**HALF ELEVATION
SECTIONAL VIEW OF
SUPERSTRUCTURE
AT SEC T2**
SCALE - 1 : 120

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

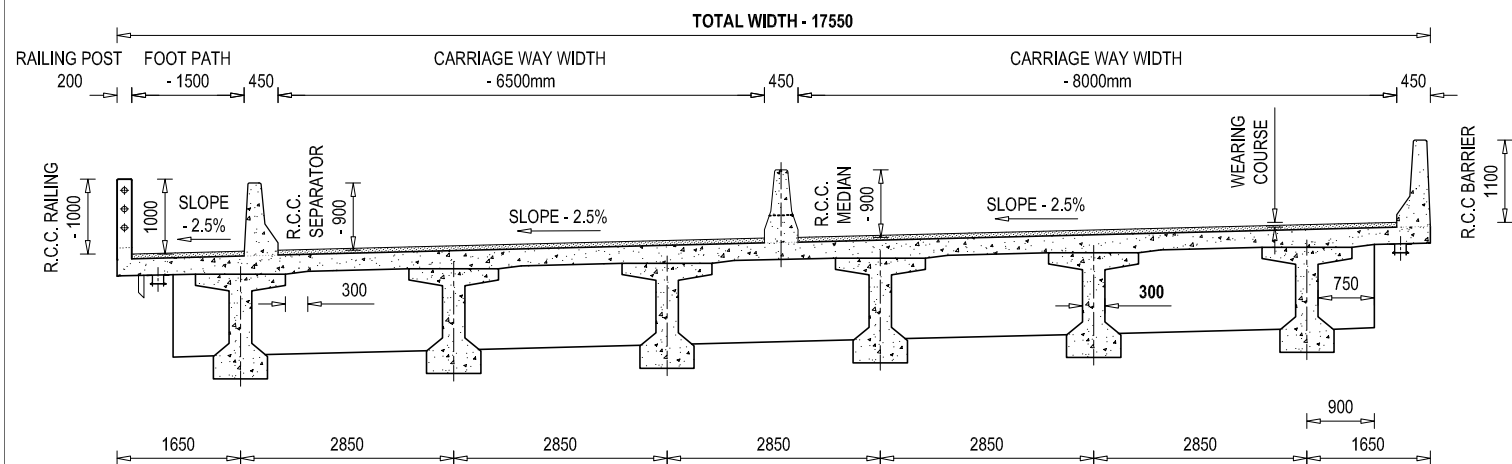
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of 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.A. Nec.No. 6431 CIVIL 'A' 	SUPER STRUCTURE DETAILS OF BRIDGE OVER RIVER BAGMATI EAST	AS SHOWN	25.04.2023
			Checked By Mr. S.M. 	Reference Drawings KDP/DPR/STR/BR/BAGMATI EAST/DD-14	Chainage: 312+470	Drawing No.- KDP/DPR/STR/BR/BAGMATI EAST/DD-10
			Approved By Mr. H.B. 			Sheet No. 1 / 2



SECTIONAL VIEW AT T3
SCALE - 1 : 100

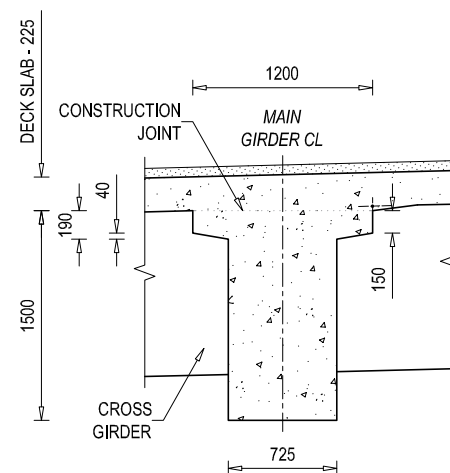


SECTIONAL VIEW AT T4
SCALE - 1 : 100

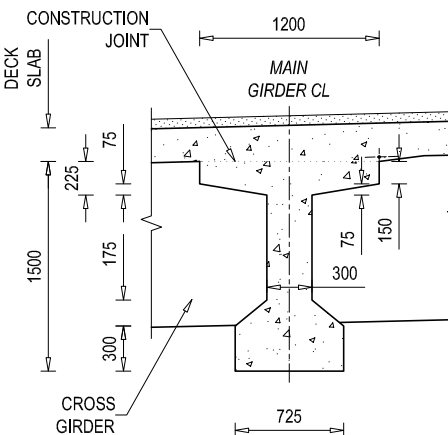


SECTIONAL VIEW AT T5
SCALE - 1 : 100

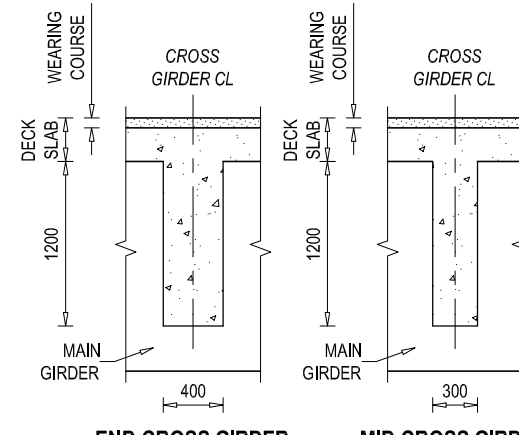
NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/BAGMATI EAST/DD-4



LONGITUDINAL GIRDER - SECTIONAL DETAIL AT END
SCALE - 1 : 50

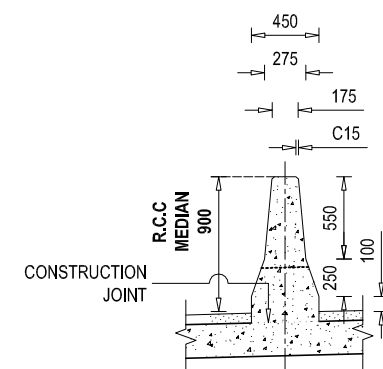


LONGITUDINAL GIRDER - SECTIONAL DETAIL AT MID
SCALE - 1 : 50

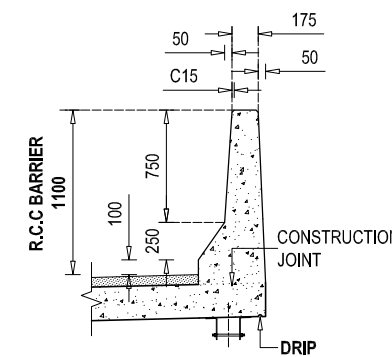


END CROSS GIRDER - SECTIONAL DETAIL
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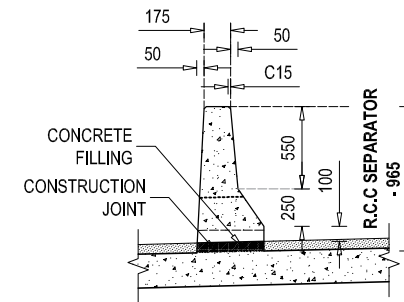
MID CROSS GIRDER - SECTIONAL DETAIL
SCALE - 1 : 50



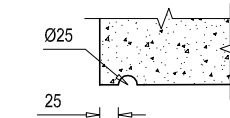
DETAIL AT R.C.C MEDIAN
SCALE - 1 : 50



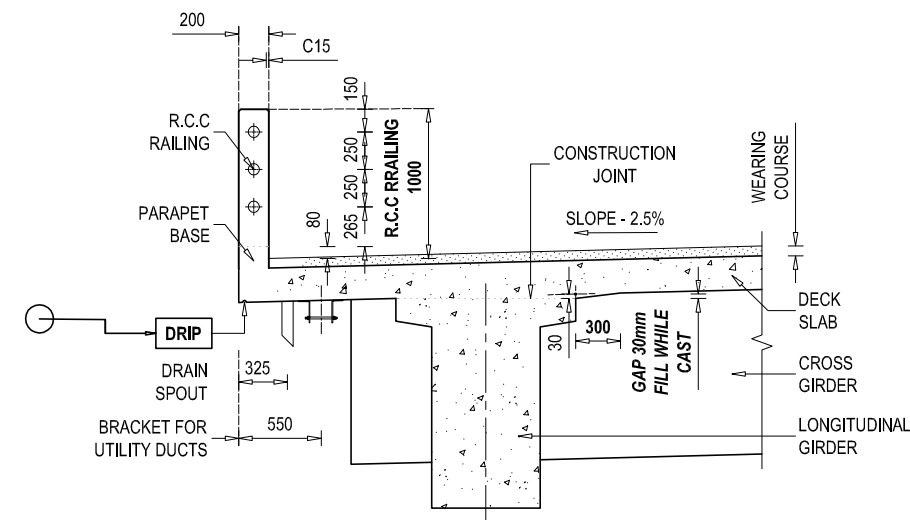
DETAIL AT R.C.C BARRIER
SCALE - 1 : 50



DETAIL AT R.C.C SEPARATOR
SCALE - 1 : 50

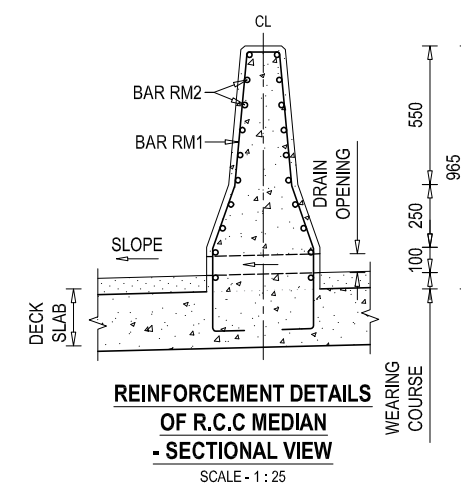
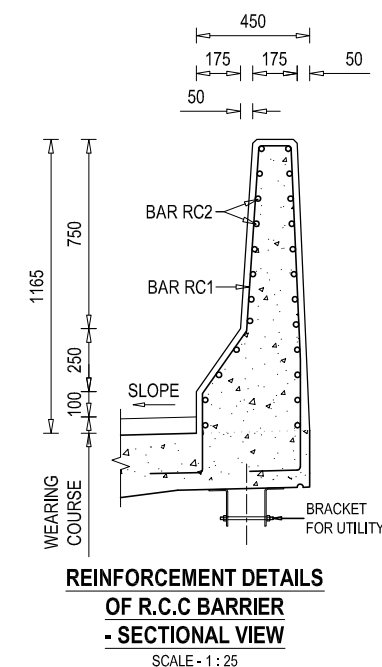
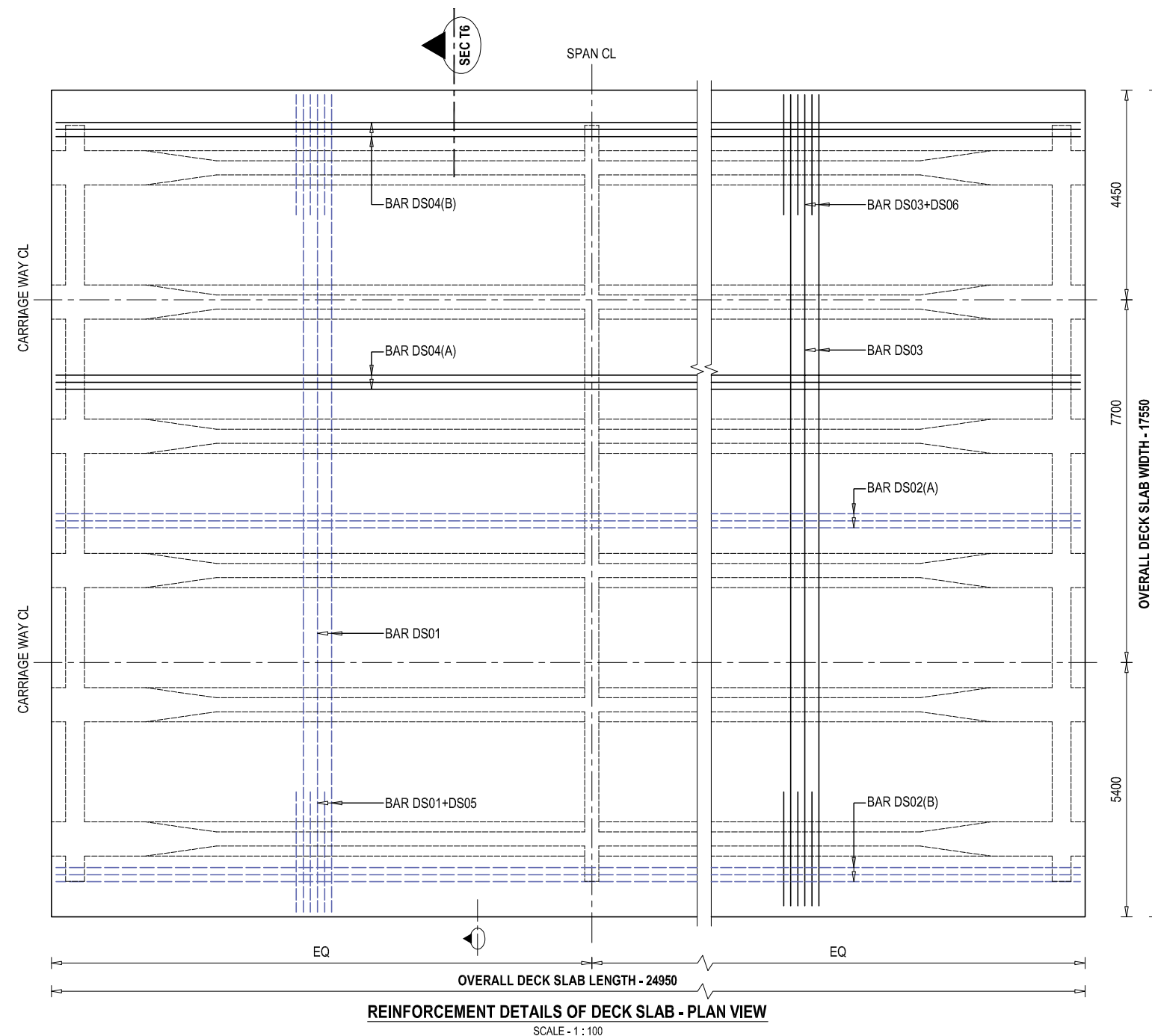


DETAIL AT DRIP
SCALE - 1 : 10



DETAIL AT R.C.C RAILING
SCALE - 1 : 50

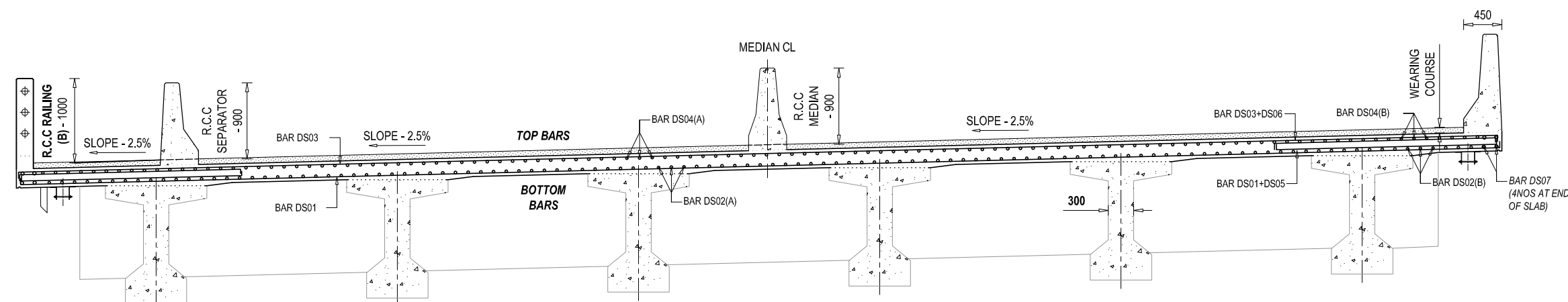
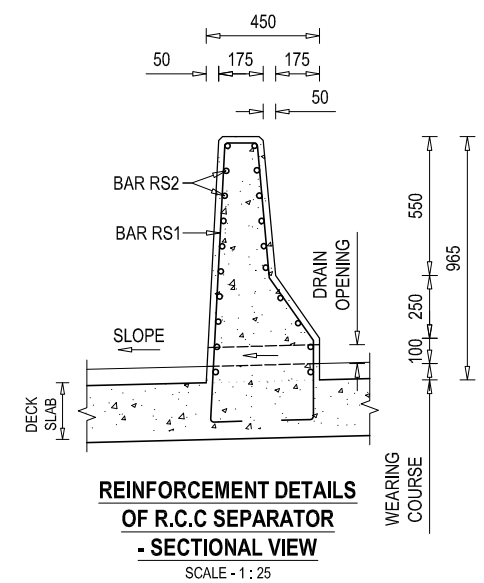
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Mr. R.A.	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed 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 Kirti Consultant and Rays Consultant Private Limited	Checked By	Mr. S.M.	SUPER STRUCTURE DETAILS OF BRIDGE OVER RIVER BAGMATI EAST Reference Drawings KDP/DPR/STR/BR/BAGMATI EAST/DD-14	AS SHOWN Chainage: 312+470	25.04.2023 Drawing No.- KDP/DPR/STR/BR/BAGMATI EAST/DD-10 Sheet No. 2 / 2
			Approved By	Mr. H.B.			



LEGEND FOR REINFORCEMENT BAR

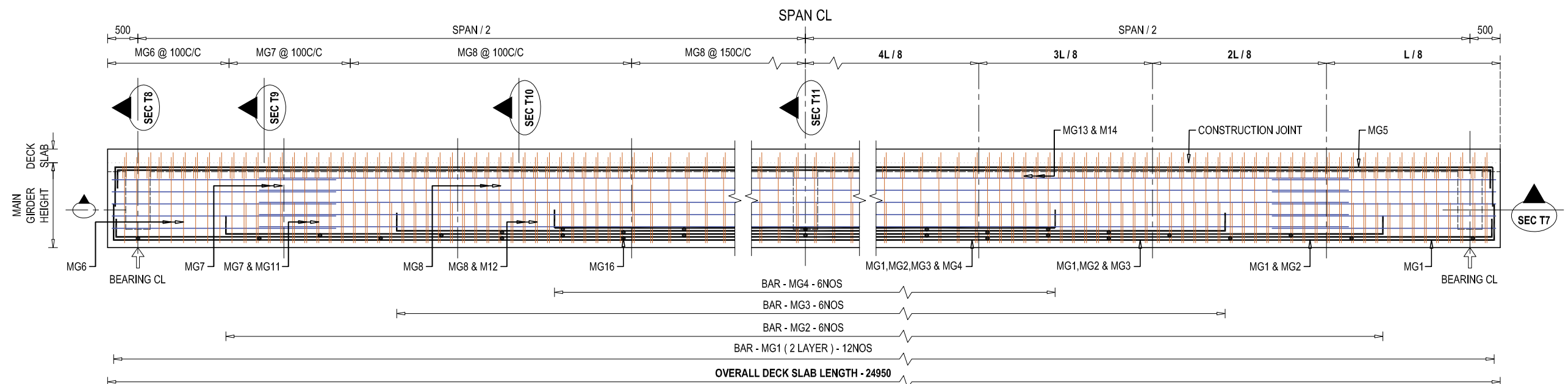
CODE	FULL FORM	
DS	- DECK SLAB	CG - CROSS GIRDER
RB	- R.C.C BARRIER	AS - APPROACH SLAB
RS	- R.C.C SEPARATOR	ST - STOPPER
MG	- MAIN GIRDER	** - ***

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



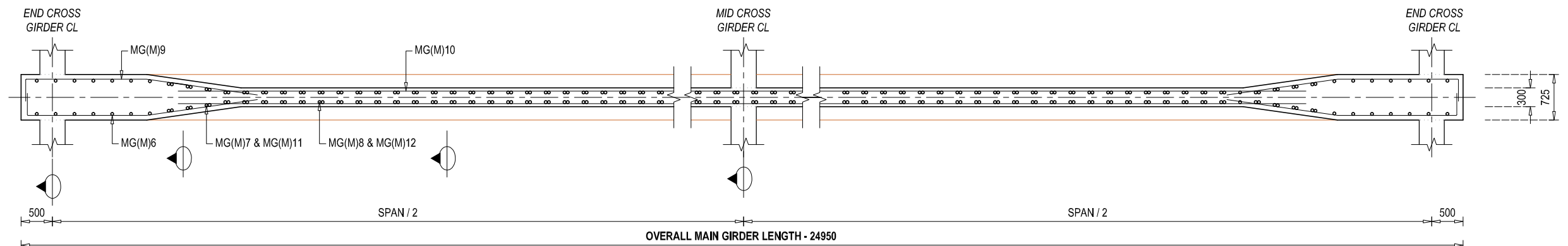
NOTE :
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/BAGMATI EAST/DD-4

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.A. Nec.No. 6431 CIVIL 'A' Signature Mr. S.M. Signature Mr. H.B. Signature	DECK SLAB DETAILS OF BRIDGE OVER RIVER BAGMATI EAST Reference Drawings KDP/DPR/STR/BR/BAGMATI EAST/DD-14	AS SHOWN Chainage: 312+470	25.04.2023 Drawing No.- KDP/DPR/STR/BR/BAGMATI EAST/DD-11 Sheet No. 1 / 1



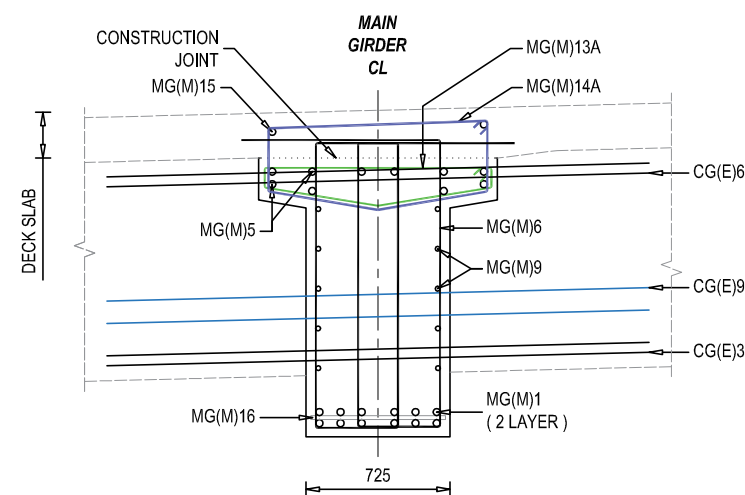
REINFORCEMENT DETAILS OF MAIN GIRDER - SECTIONAL ELEVATION VIEW

SCALE - 1 : 75



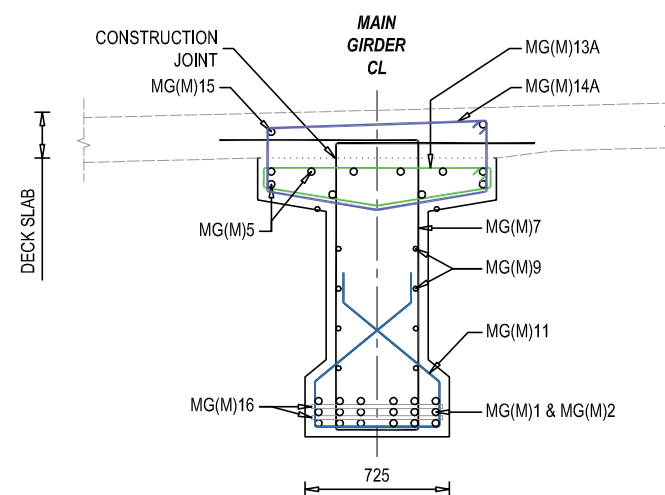
REINFORCEMENT DETAILS OF MAIN GIRDER (MID) - SECTIONAL PLAN VIEW AT T7(M)

SCALE - 1 : 75



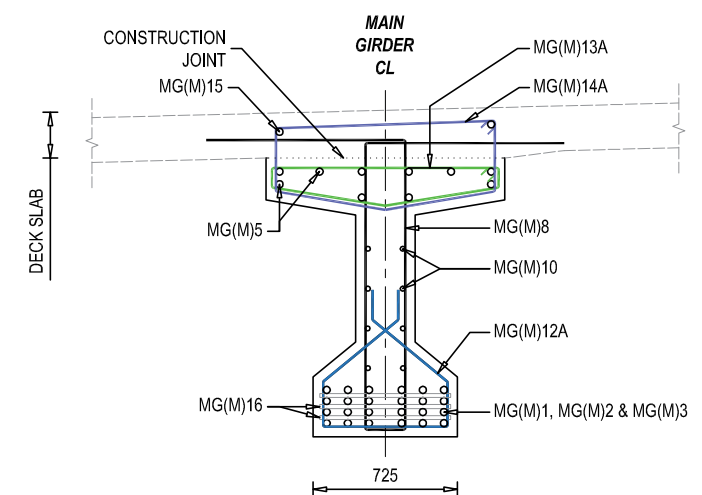
REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T8

SCALE - 1 : 50 @ A3 PAPER



REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T9

SCALE - 1 : 50 @ A3 PAPER

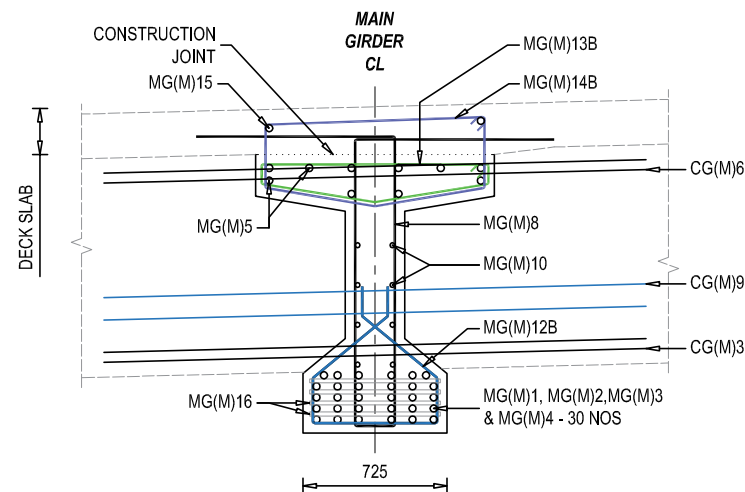


REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T10

SCALE - 1 : 50 @ A3 PAPER

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

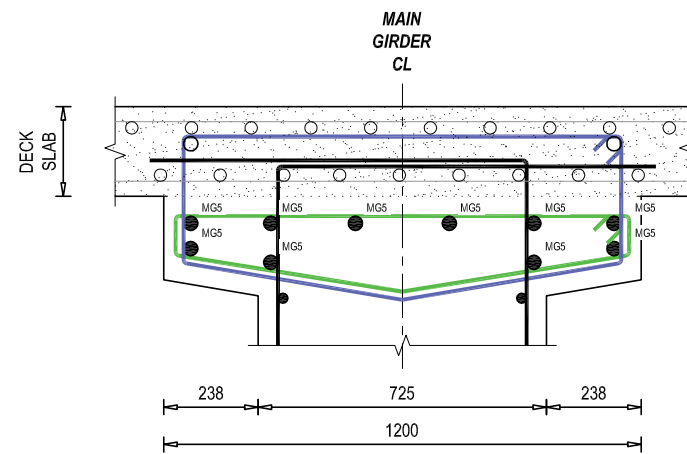
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamal-Dhalkebar-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 Kirti Consultant and Rays Consultant Private Limited	Mr. R.A.	MAIN GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER BAGMATI EAST	AS SHOWN	25.04.2023
			Checked By	Reference Drawings	Chainage:	Drawing No.- KDP/DPR/STR/BR/BAGMATI EAST/DD-12
			Approved By	KDP/DPR/STR/BR/BAGMATI EAST/DD-14	312+470	Sheet No. 1 / 2



REINFORCEMENT DETAILS OF MAIN GIRDER

SECTIONAL VIEW AT T11

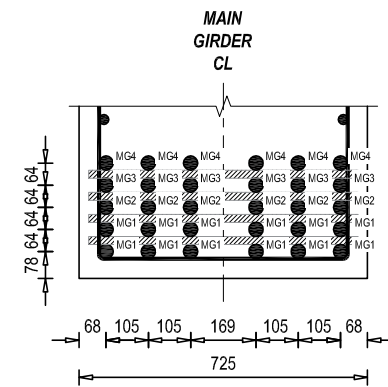
SCALE - 1 : 50 @ A3 PAPER



TOP BAR WEB REINFORCEMENT DETAILS

OF MAIN GIRDER

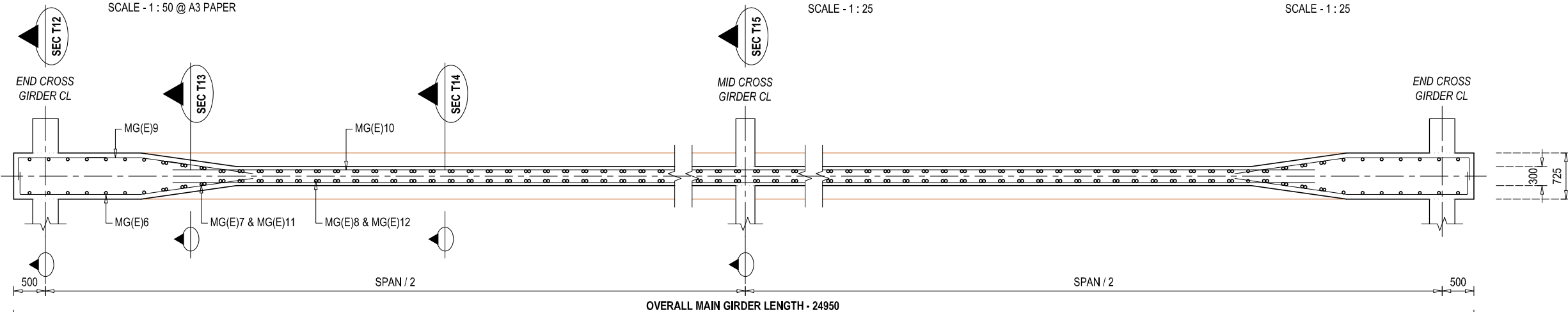
SCALE - 1 : 25



BOTTOM BAR WEB REINFORCEMENT DETAILS

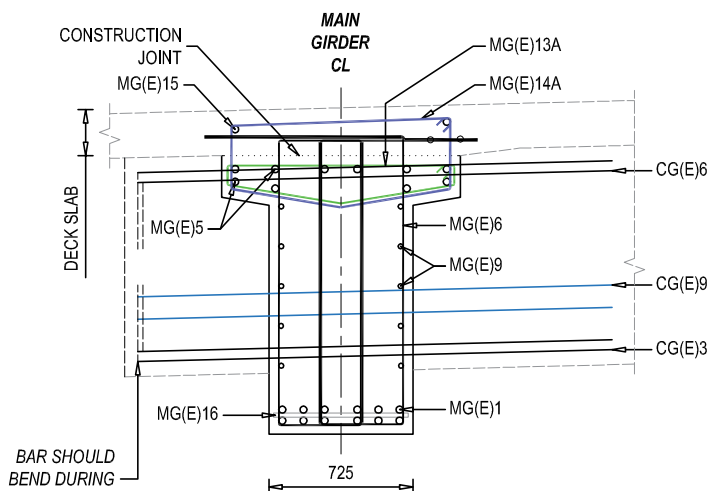
OF MAIN GIRDER

SCALE - 1 : 25



REINFORCEMENT DETAILS OF MAIN GIRDER (END) - SECTIONAL PLAN VIEW AT T7(E)

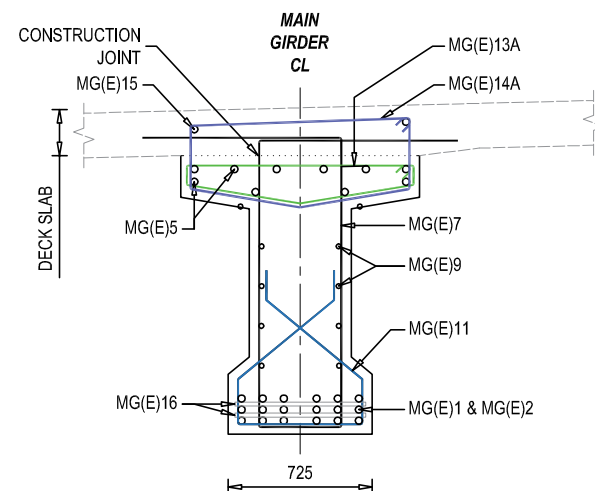
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REINFORCEMENT DETAILS OF MAIN GIRDER

SECTIONAL VIEW AT T12

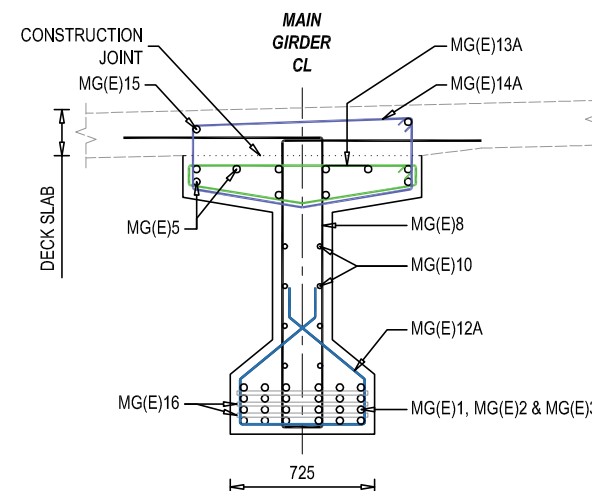
SCALE - 1 : 50 @ A3 PAPER



REINFORCEMENT DETAILS OF MAIN GIRDER

SECTIONAL VIEW AT T13

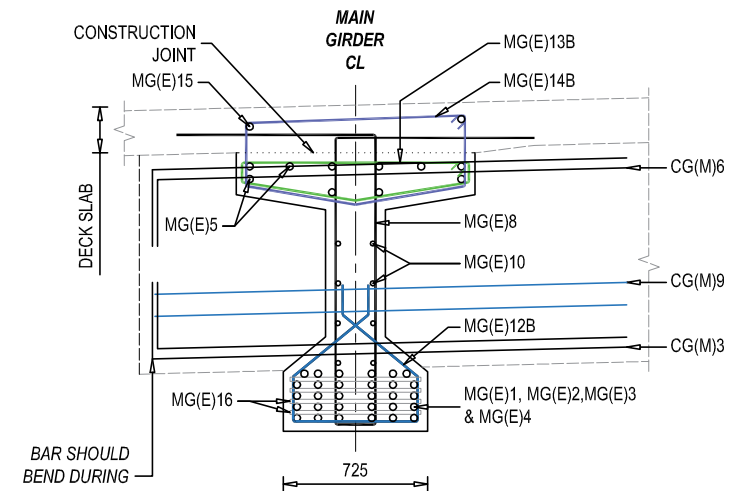
SCALE - 1 : 50 @ A3 PAPER



REINFORCEMENT DETAILS OF MAIN GIRDER

SECTIONAL VIEW AT T14

SCALE - 1 : 50 @ A3 PAPER



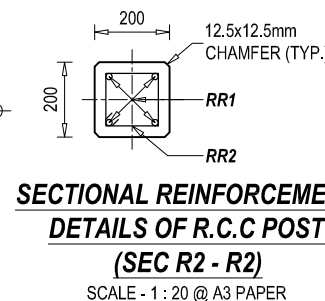
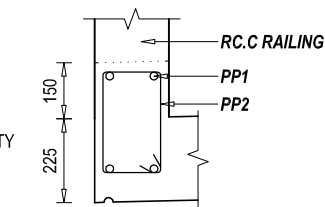
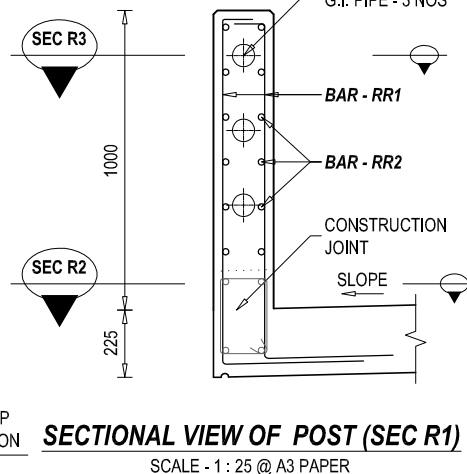
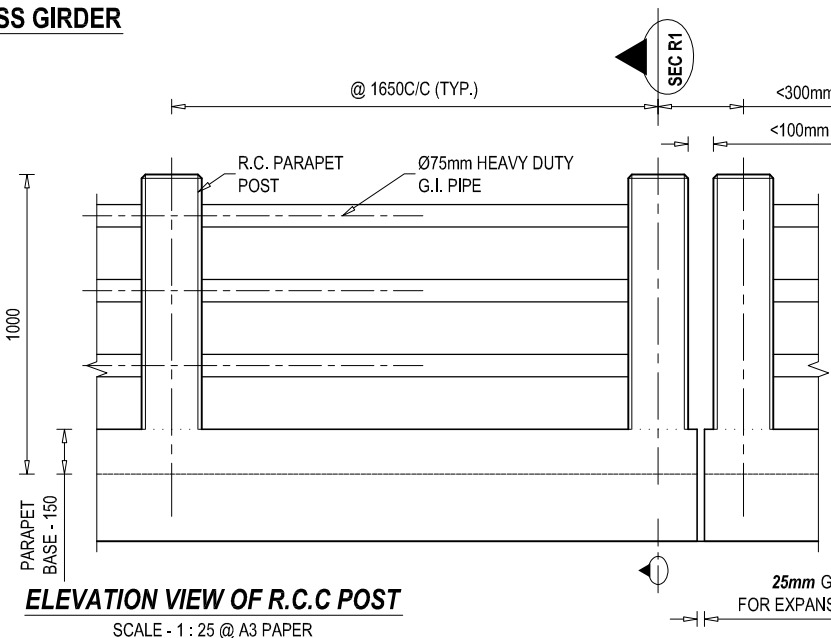
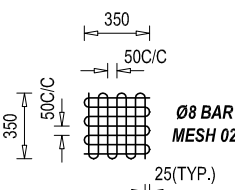
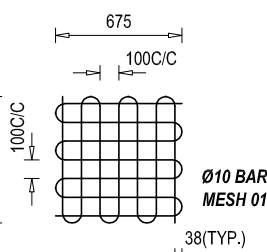
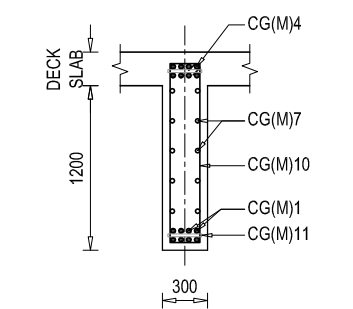
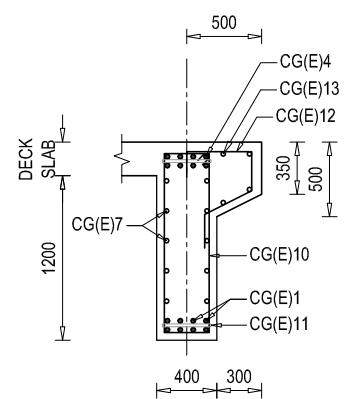
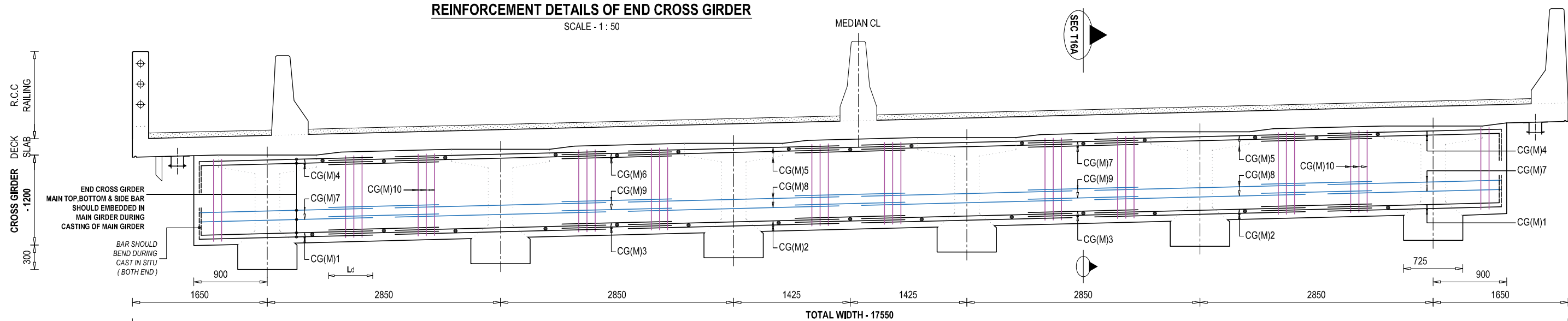
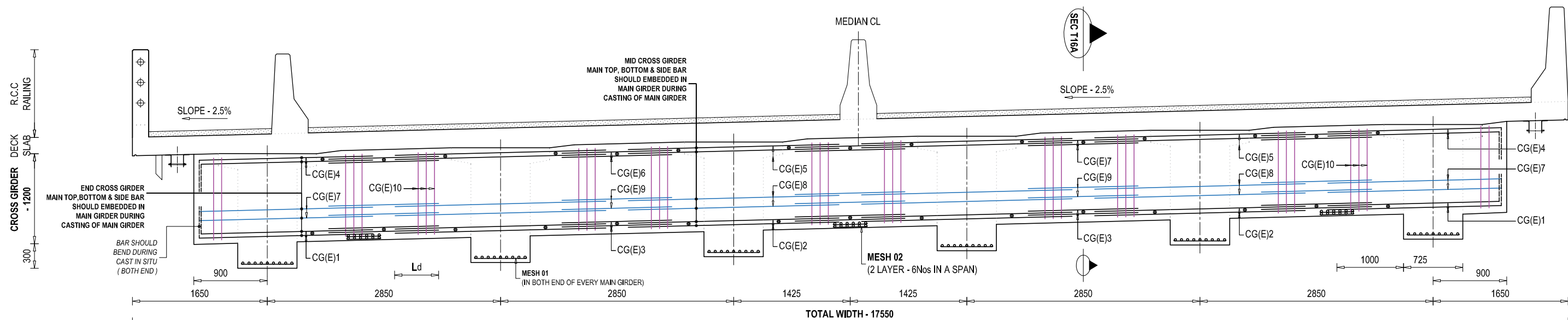
REINFORCEMENT DETAILS OF MAIN GIRDER

SECTIONAL VIEW AT T15

SCALE - 1 : 50 @ A3 PAPER

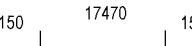
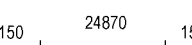
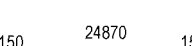
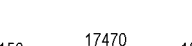
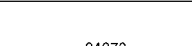
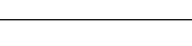
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DRG NO. KDP/DPR/STR/BR/BAGMATI EAST/DD-4

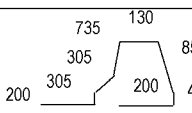
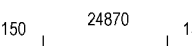
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Checked By	Approved By	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of 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 In Association With Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited	Mr. R.A.	Mr. S.M.	Mr. H.B.	MAIN GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER BAGMATI EAST Reference Drawings KDP/DPR/STR/BR/BAGMATI EAST/DD-14	AS SHOWN	25.04.2023
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							312+470	Sheet No. 2 / 2

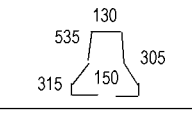
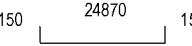


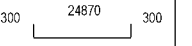
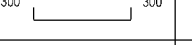
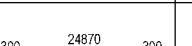
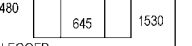
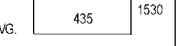
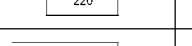
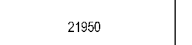
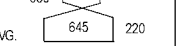
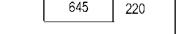
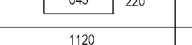
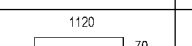
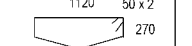
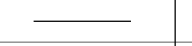
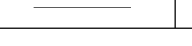
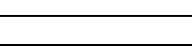
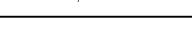
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DRG NO. KDP/DPR/STR/BR/BAGMATI EAST/DD-4

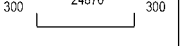
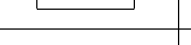
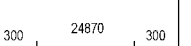
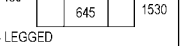
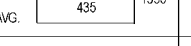
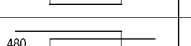
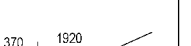
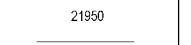
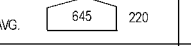
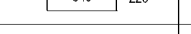
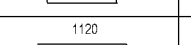
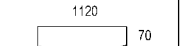
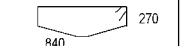
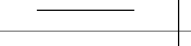
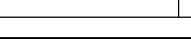
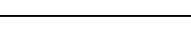
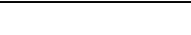
EMPLOYER Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	PROJECT NAME Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	DESIGN CONSULTANTS Joint Venture of EPTISA Servicios De Ingeniera Madrid, Spain STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited	Designed By Mr. R.A. Nec.No. 6431 CIVIL 'K' Checked By Mr. S.M. Approved By Mr. H.B.	Drawing Name CROSS GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER BAGMATI EAST Reference Drawings KDP/DPR/STR/BR/BAGMATI EAST/DD-14	Scale: AS SHOWN Chainage: 312+470	Date: 25.04.2023 Drawing No.: KDP/DPR/STR/BR/BAGMATI EAST/DD-13 Sheet No.: 1 / 1
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BAR BENDING SCHEDULE OF DECK SLAB (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	DS01		16	150	17.770	167	1.580	4689.52
2	DS02(A)		10	150	25.170	100	0.617	1553.70
3	DS02(B)		10	125	25.170	19	0.617	295.20
4	DS03		16	150	17.770	118	1.580	3313.56
5	DS04(A)		10	150	25.170	150	0.617	2330.56
6	DS04(B)		10	125	25.170	19	0.617	295.20
7	DS05		16	150	2.950	334	1.580	1557.02
8	DS06		16	150	2.950	334	1.580	1557.02
9	DS07		16		24.870	8	1.580	314.41
TOTAL (KG) :							15906.19	

BAR BENDING SCHEDULE OF R.C.C BARRIER (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	167	1.580	836.57
2	RC-A2		10	150	25.170	20	0.617	310.74
TOTAL (KG) :							1147.31	

BAR BENDING SCHEDULE OF R.C.C MEDIAN (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	RC1		16	150	2.740	167	1.580	723.09
2	RC2		10	150	25.170	18	0.617	279.67
TOTAL (KG) :							1002.76	

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		32		25.470	12	6.321	1931.95
2	MG(M)2		32		21.873	6	6.321	829.55
3	MG(M)3		32		15.635	6	6.321	592.97
4	MG(M)4		32		9.398	6	6.321	356.43
5	MG(M)5		12		25.470	10	0.889	226.40
6	MG(M)6		12	100	9.660	42	0.889	360.64
7	MG(M)7		12	100	5.325	32	0.889	151.47
8	MG(M)8A		12	100	4.680	118	0.889	490.88
9	MG(M)8B		12	150	4.680	42	0.889	174.72
10	MG(M)9		12	200	4.290	32	0.889	122.03
11	MG(M)10		12	200	21.950	16	0.889	312.18
12	MG(M)11		12	100	2.785	32	0.889	79.22
13	MG(M)12A		12	150	3.085	118	0.889	323.58
14	MG(M)12B		12	150	3.085	42	0.889	115.17
15	MG(M)13A		12	100	3.040	189	0.889	510.72
16	MG(M)13B		12	150	3.040	43	0.889	116.20
17	MG(M)14A		12	100	3.440	189	0.889	577.92
18	MG14B		12	150	3.440	43	0.889	131.48
19	MG(M)15		12		24.870	2	0.889	44.21
20	MG(M)16		32	1500	0.645	51	6.321	207.93
TOTAL (KG) :							7655.65	

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		32		25.470	12	6.321	1931.95
2	MG(E)2		32		21.873	6	6.321	829.55
3	MG(E)3		32		15.635	6	6.321	592.97
4	MG(E)4		32		9.398	6	6.321	356.43
5	MG(E)5		12		25.470	10	0.889	226.40
6	MG(E)6		12	100	9.660	42	0.889	360.64
7	MG(E)7		12	100	5.325	32	0.889	151.47
8	MG(E)8A		12	100	4.680	118	0.889	490.88
9	MG(E)8B		12	150	4.680	42	0.889	174.72
10	MG(E)9		12	200	4.290	32	0.889	122.03
11	MG(E)10		12	200	21.950	16	0.889	312.18
12	MG(E)11		12	100	2.785	32	0.889	79.22
13	MG(E)12A		12	150	3.085	118	0.889	323.58
14	MG(E)12B		12	150	3.085	42	0.889	115.17
15	MG(E)13A		12	100	3.040	189	0.889	510.72
16	MG(E)13B		12	150	3.040	43	0.889	116.20
17	MG(E)14A		12	100	3.440	189	0.889	577.92
18	MG14B		12	150	3.440	43	0.889	131.48
19	MG(E)15		12		24.870	2	0.889	44.21
20	MG(E)16		32	1500	0.645	51	6.321	207.93
TOTAL (KG) :							7655.65	

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		Mr. R.A.	SUPER STRUCTURE BAR BENDING SCHEDULE OF BRIDGE OVER RIVER BAGMATI EAST	AS SHOWN	25.04.2023		
						Mr. S.M.							
		In Association With Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited		Checked By		Mr. H.B.							
				Approved By		Reference Drawings		Chainage:		Sheet No. 1 /2			

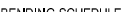
BAR BENDING SCHEDULE OF END CROSS GIRDER (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	CG(E)1	300 2325	20		2.625	16	2.469	103.70
2	CG(E)2	2625	20		2.625	32	2.469	207.41
3	CG(E)3	1825	20		1.825	40	2.469	180.25
4	CG(E)4	300 2325	20		2.625	16	2.469	103.70
5	CG(E)5	2625	20		2.625	32	2.469	207.41
6	CG(E)6	1825	20		1.825	40	2.469	180.25
7	CG(E)7	2325	12	150	2.325	8	0.889	16.53
8	CG(E)8	2625	12	150	2.625	8	0.889	18.67
9	CG(E)9	1825	12	150	1.825	8	0.889	12.98
10	CG(E)10	50 x 2 320 1320	12	200	1.740	37	0.889	57.23
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	117	1.580	323.56
13	CG(E)13	17470	12		17.470	8	0.889	124.23
TOTAL (KG) :								1550.13
TOTAL NOS OF CROSS GIRDER :								2.00
TOTAL WEIGHT (KG) :								3100.26

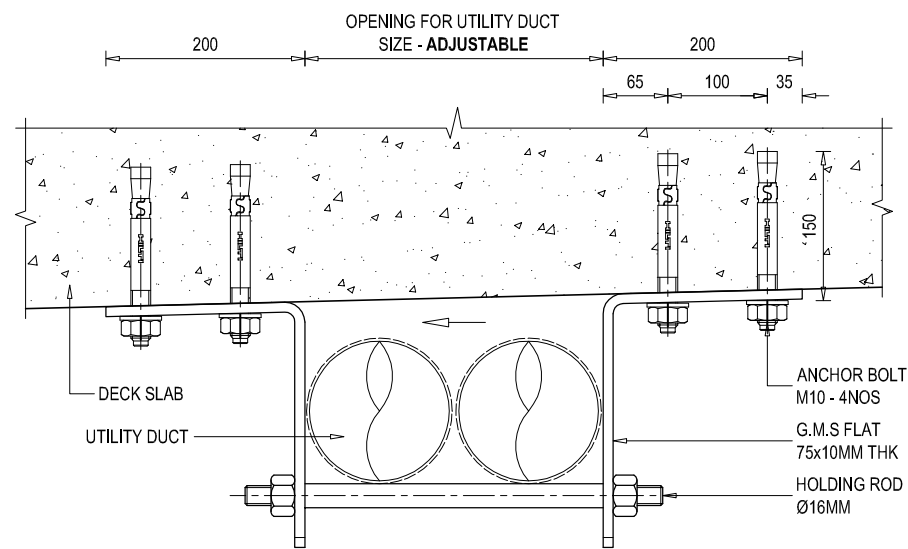
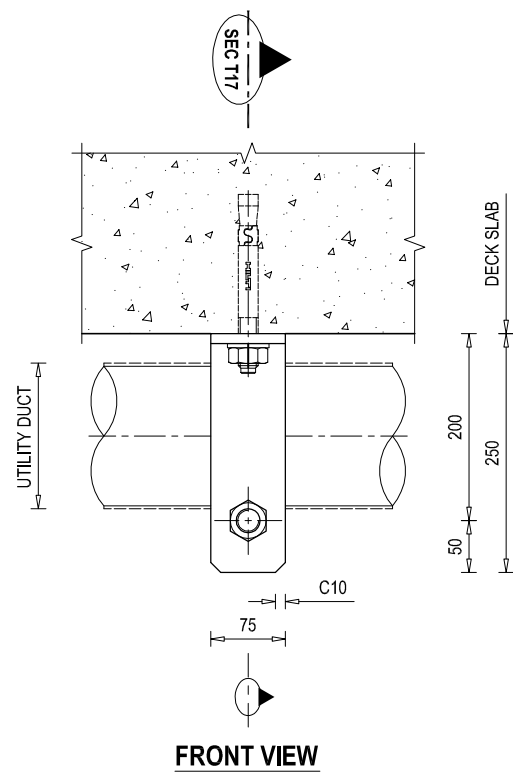
BAR BENDING SCHEDULE OF MID CROSS GIRDER (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	CG(M)1	300 2325	20		2.625	8	2.469	51.85
2	CG(M)2	2625	20		2.945	32	2.469	232.69
3	CG(M)3	1825	20		2.145	40	2.469	211.85
4	CG(M)4	300 2325	20		2.625	8	2.469	51.85
5	CG(M)5	2625	20		2.625	32	2.469	207.41
6	CG(M)6	1825	20		1.825	40	2.469	180.25
7	CG(M)7	2325	12	150	2.325	8	0.889	16.53
8	CG(M)8	2625	12	150	2.625	8	0.889	18.67
9	CG(M)9	1825	12	150	1.825	8	0.889	12.98
10	CG(M)10	50 x 2 320 1320	12	200	1.740	37	0.889	57.23
11	CG(M)11	320	20	1000	0.320	18	2.469	14.22
TOTAL(KG):								1055.53

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	10		4.900	4	0.617	12.10
TOTAL (Kg) :								58.77

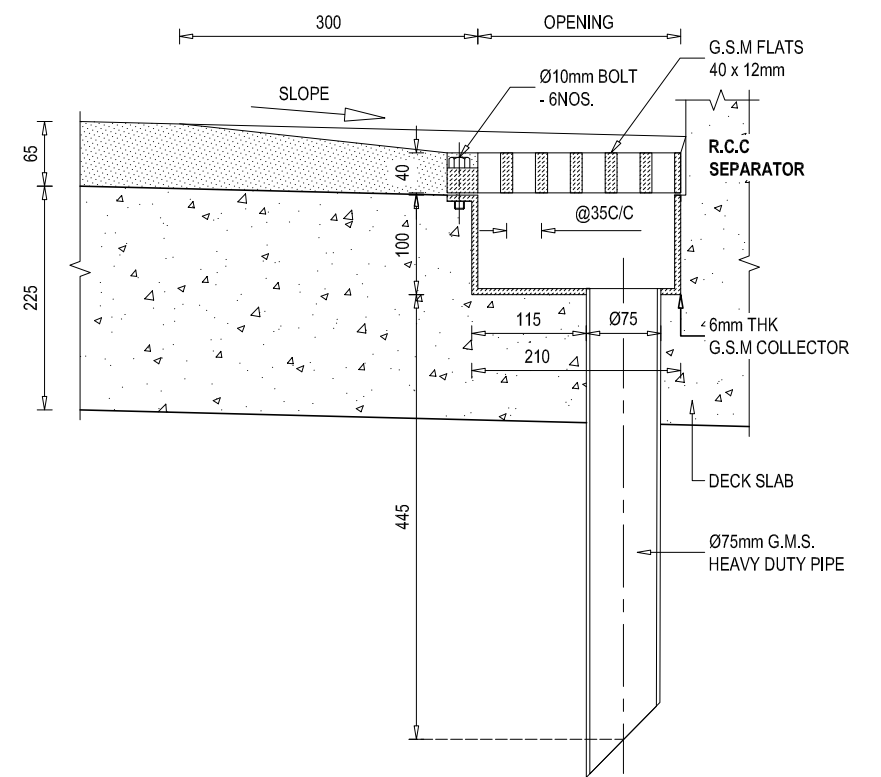
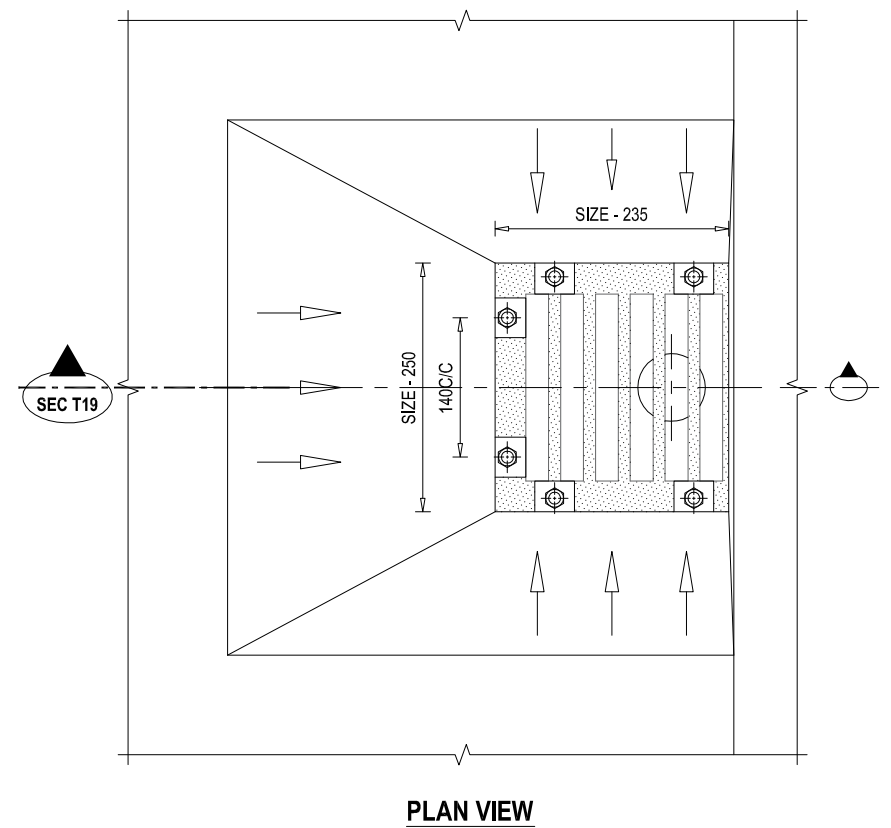
BAR BENDING SCHEDULE OF R.C.C RAILING (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RR1	100 1145 600	16		1.845	4	1.580	11.66
2	RR2	50 x 2 320 1320	10	150	0.560	7	0.617	2.42
TOTAL (KG):								14.08
TOTAL NOS OF RAILINGS :								15.00
TOTAL WEIGHT (KG) :								211.23

BAR BENDING SCHEDULE OF PARAPET BASE (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	PP1	24870	16		24.870	4	1.580	157.20
2	PP2	50 x 2 160 275	12	150	0.970	166	0.889	143.13
TOTAL (KG) :								300.33
TOTAL NOS OF CROSS GIRDER :								2.00
TOTAL WEIGHT (KG) :								600.66

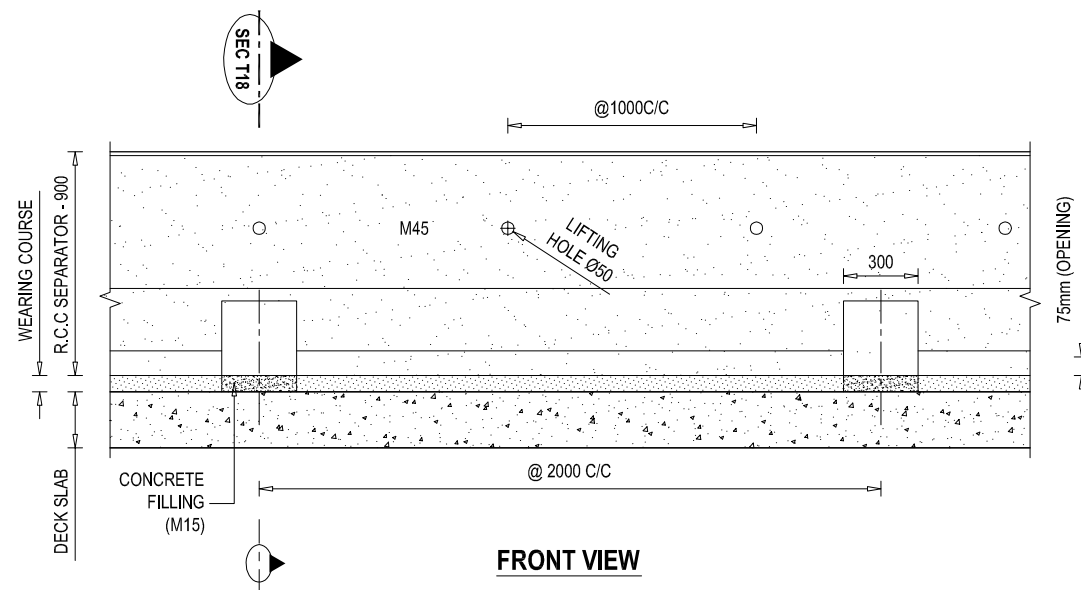
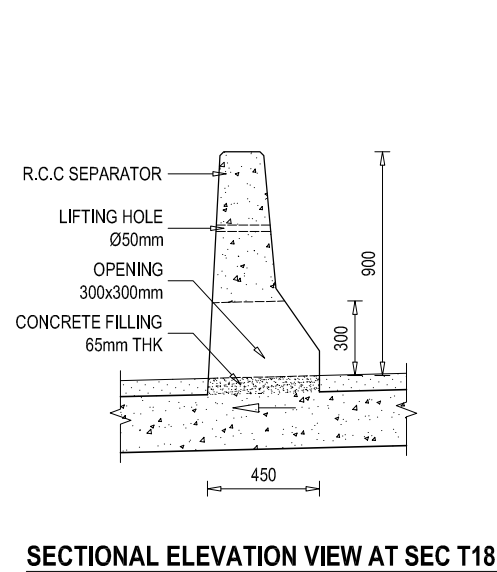
EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		Designed By	Mr. R.A.		Drawing Name	Scale:	AS SHOWN	Date:	25.04.2023	
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-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		Mr. S.M.							
		In Association With					Udaya Consultancy, Geocom International, Sundar Kiti Consultant and Rays Consultant Private Limited	Mr. H.B.						
						Approved By			Reference Drawings	Chainage:	312+470		Sheet No. 2 /2	



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

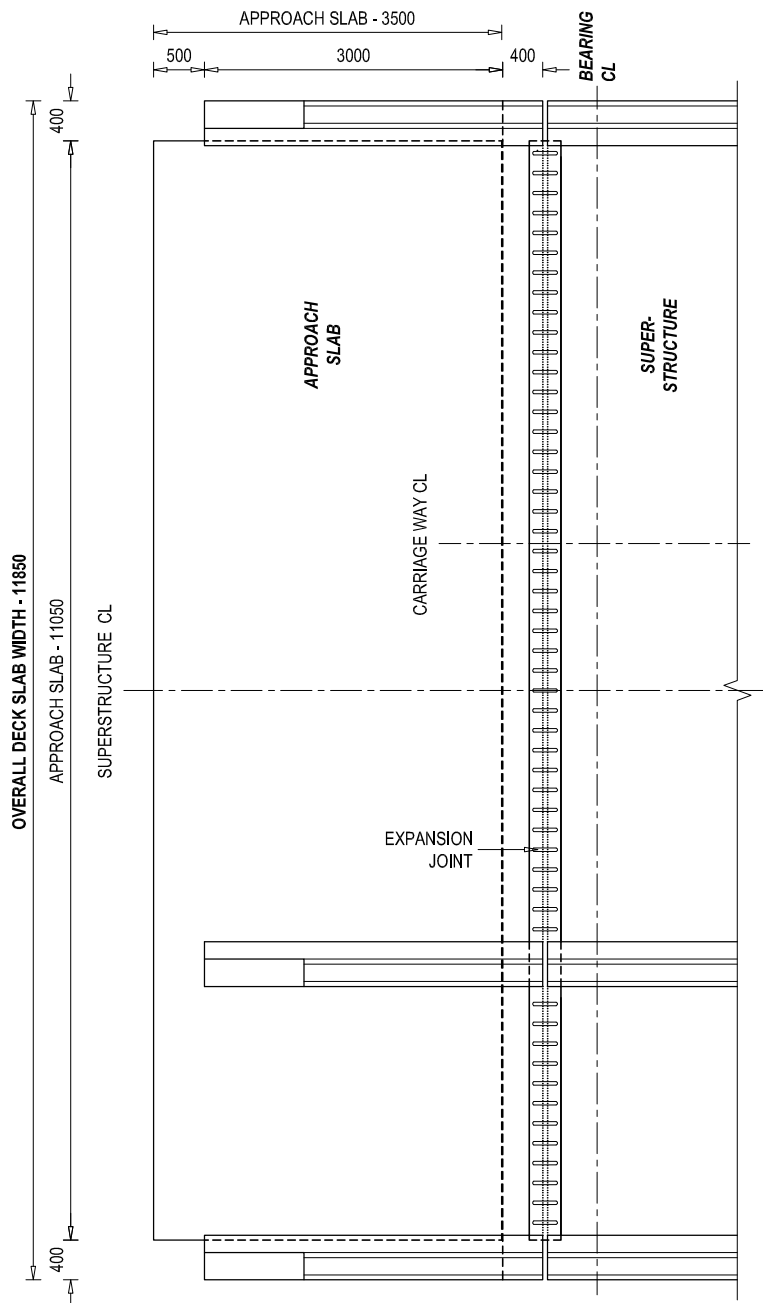


**DETAILS OF GALVANIZED MILD STEEL (G.M.S)
DRAINAGE SPOUT**
SCALE - 1 : 10

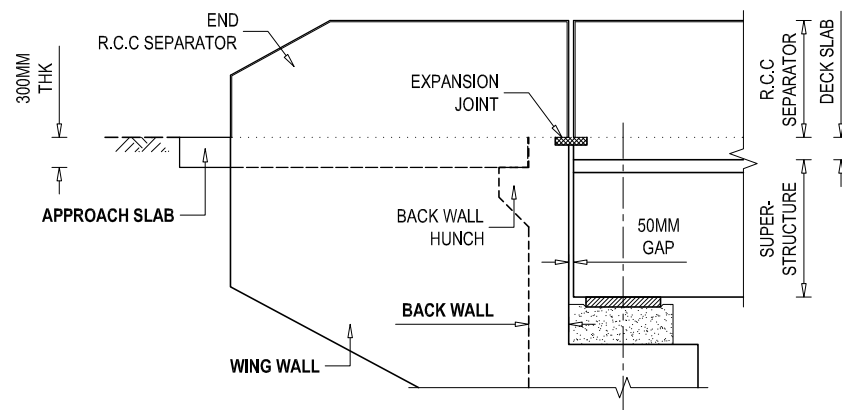


**DETAIL ELEVATION VIEW AT R.C.C SEPARATOR
& IT'S DRAIN OPENING**
SCALE - 1 : 40

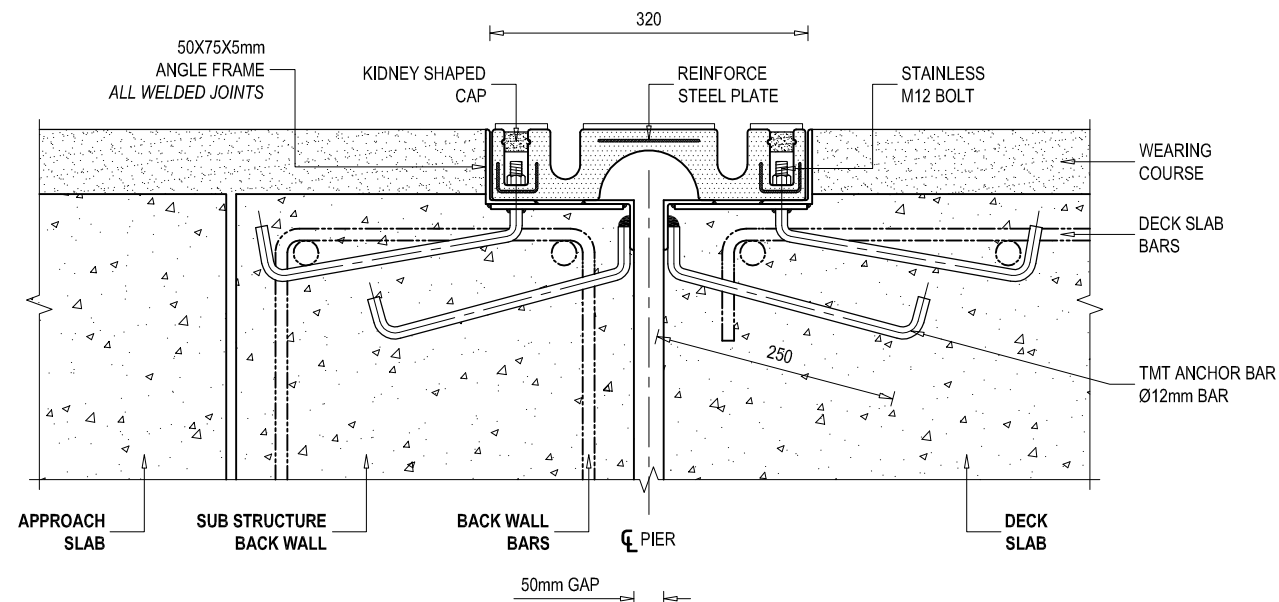
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of 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 Kolkatta, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Mr. R.A. Nec.No. 6451 QUIL 'K' Signature	MISCELLANEOUS DETAILS OF BRIDGE OVER RIVER BAGMATI EAST	AS SHOWN	20.04.2023
			Checked By Mr. S.M. Signature	Reference Drawings	Chainage:	Drawing No.- KDP/DPR/STR/BR/BAGMATI EAST/DD-15
			Approved By Mr. H.B. Signature		312+470	Sheet No.1/2



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

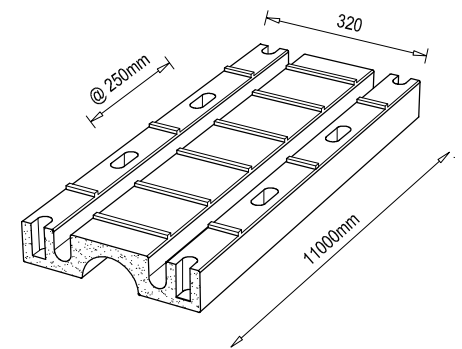


ELEVATION VIEW



SEAL TYPE EXPANSION JOINTS ARRANGEMENT IN A CARRIAGEWAY

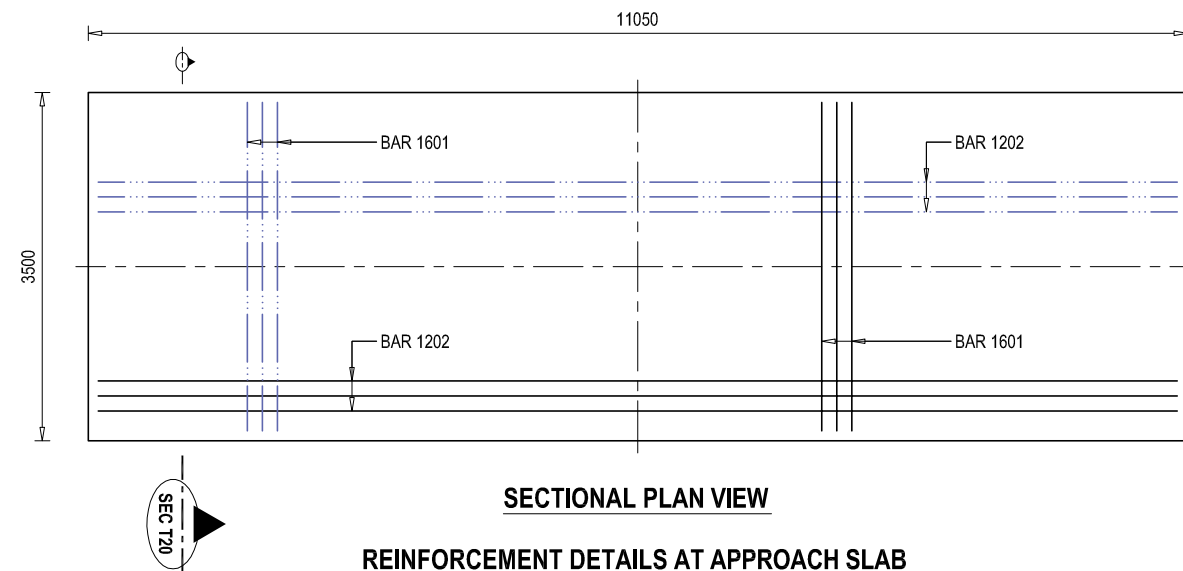
SCALE - 1 : 10 @ A3 PAPER



EXPANSION JOINT ISOMETRIC VIEW

- SEAL TYPE

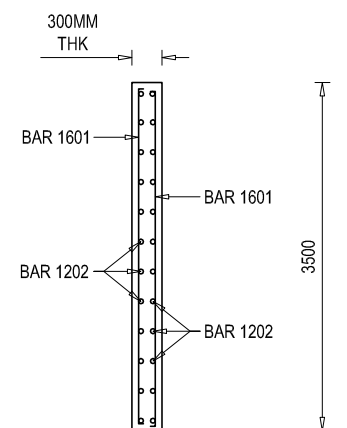
SCALE - NON



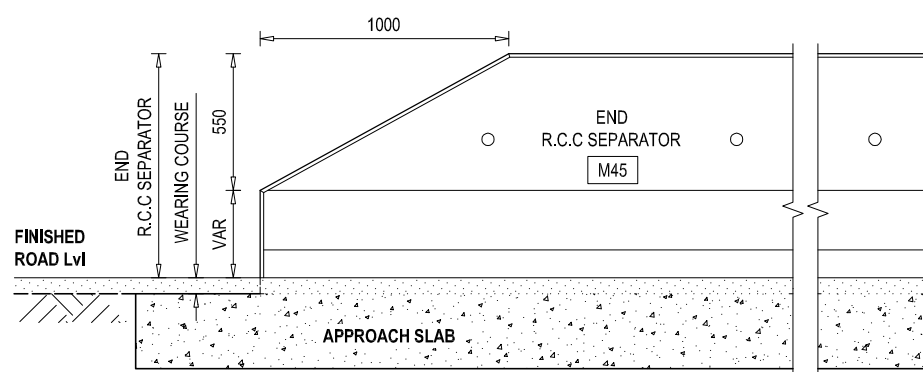
SECTIONAL PLAN VIEW

REINFORCEMENT DETAILS AT APPROACH SLAB

SCALE - 1 : 100 @ A3 PAPER

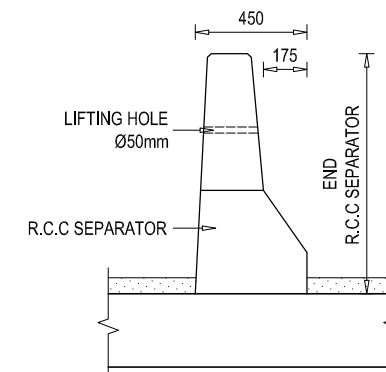


SECTIONAL ELEVATION VIEW AT SEC T20



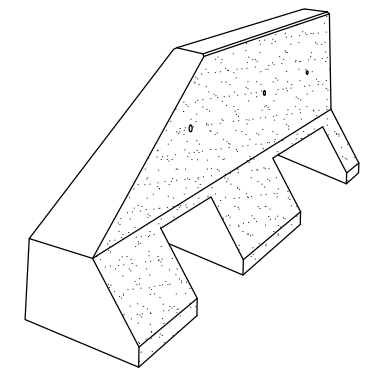
ELEVATION VIEW OF END R.C.C SEPARATOR

SCALE - 1 : 40 @ A3 PAPER



SIDE VIEW

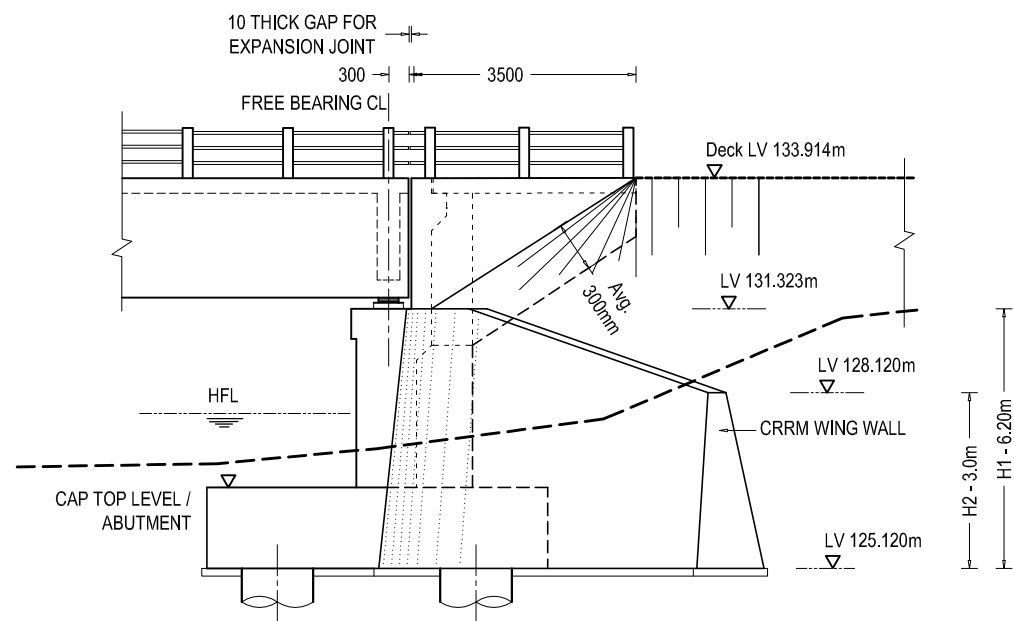
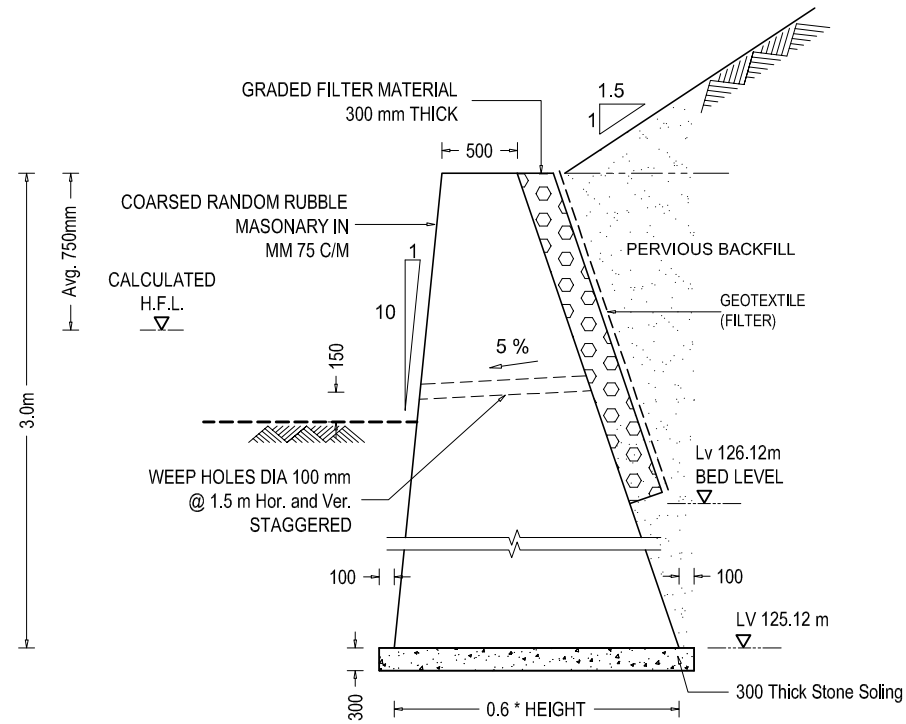
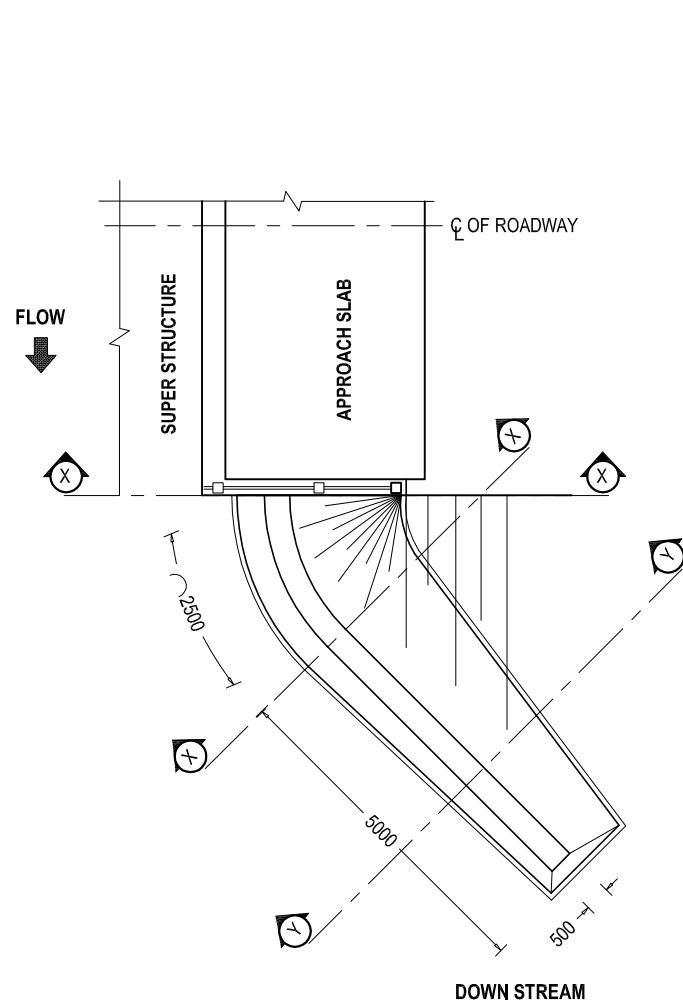
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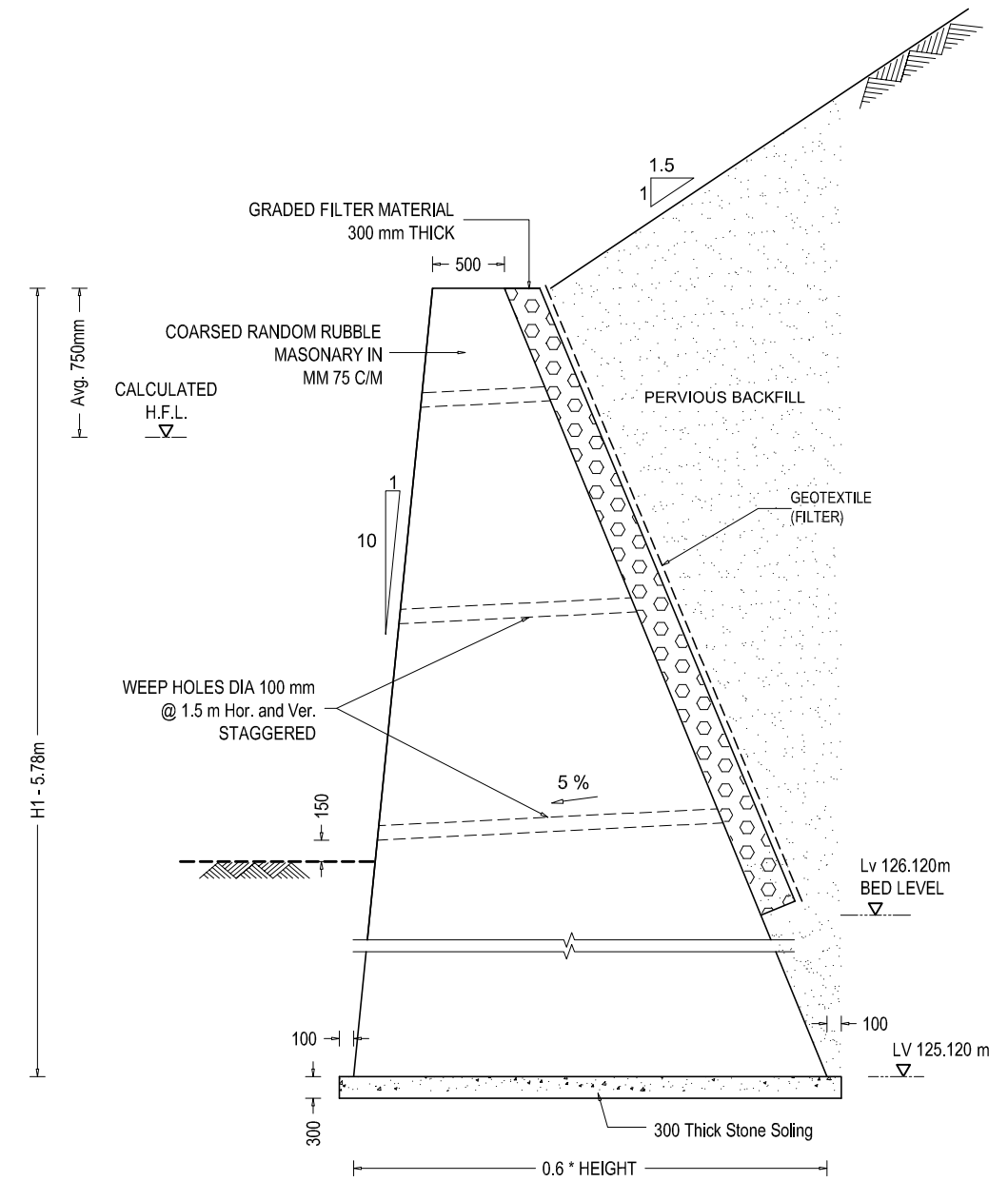
END R.C.C SEPARATOR ISOMETRIC VIEW

SCALE - NON

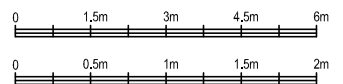
EMPLOYER Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	PROJECT NAME Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamal-Dhalkebar-Pathalaya Road Section (130 KM) of Mahendra Highway and Bridges	DESIGN CONSULTANTS Joint Venture of EPTISA Servicios De Ingeniera Madrid, Spain STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited	Designed By Mr. R.A. Checked By Mr. S.M. Approved By Mr. H.B.	Drawing Name MISCELLANEOUS DETAILS OF BRIDGE OVER RIVER BAGMATI EAST Reference Drawings KDP/DPR/STR/BR/BAGMATI EAST/DD-9	Scale: AS SHOWN Chainage: 312+470	Date: 20.04.2023 Drawing No.- KDP/DPR/STR/BR/BAGMATI EAST/DD-15 Sheet No.2 /2
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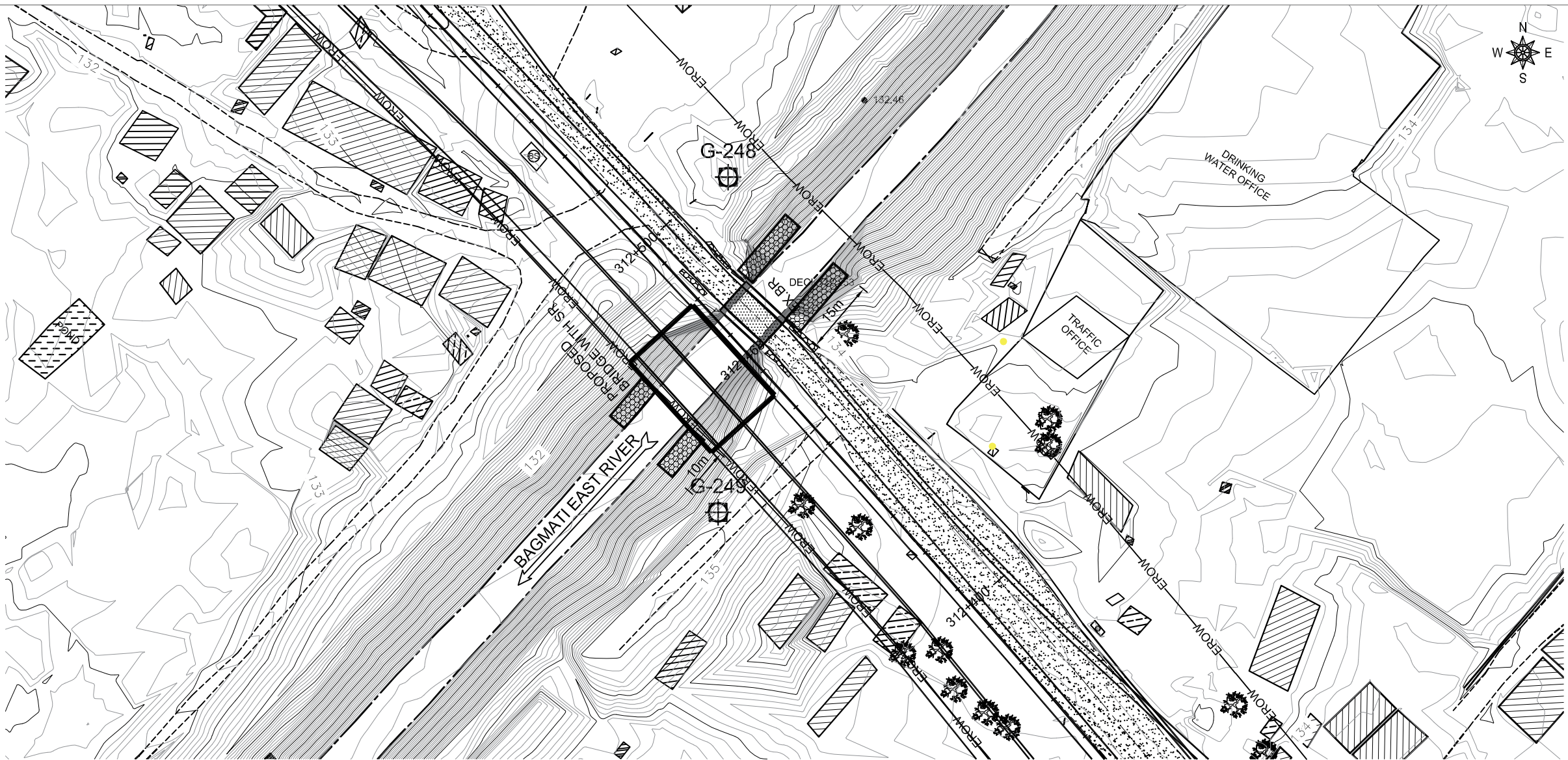
WING WALL ELEVATION



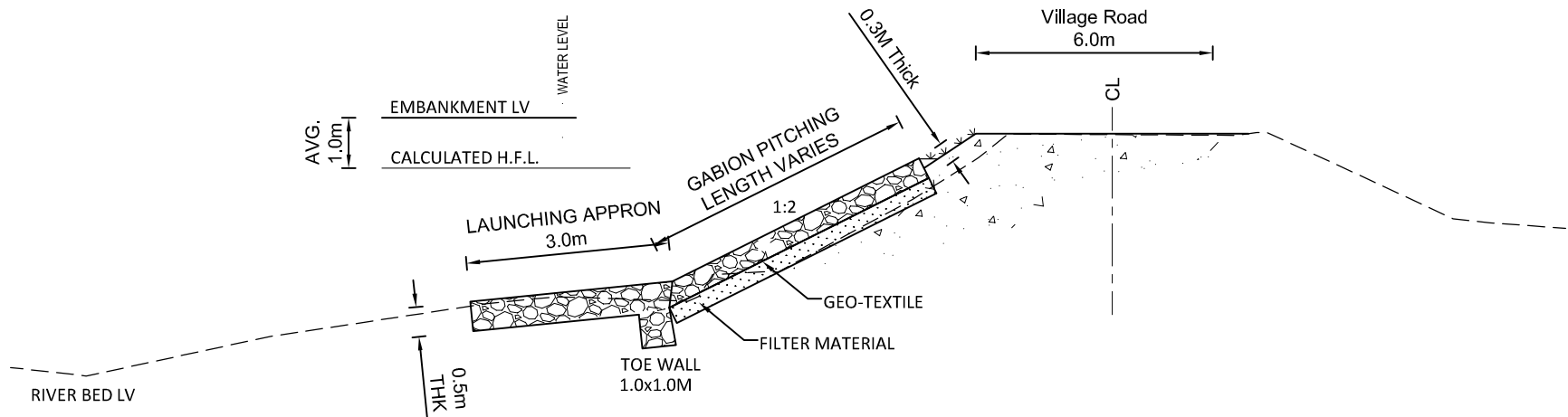
STONE MASONRY WING WALL SECTION X - X



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.A. Nec.No. 6431 CIVIL 'W' Signature Checked By Mr. S.M. Signature Approved By Mr. H.B. Signature	Drawing Name WING WALL DETAILS OF BRIDGE OVER RIVER BAGMATI EAST Reference Drawings	Scale: AS SHOWN Chainage: 312+470	Date: 20.04.2023 Drawing No.- KDP/DPR/STR/BR/BAGMATI EAST/DD-16 Sheet No. 1 / 1
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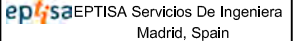
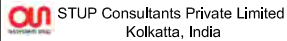


TOPOGRAPHIC MAP



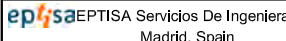
SECTION OF EMBANKMENT

SCALE - 1x : 5x

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Mr. R.A.	Signature	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 Kirti Consultant and Rays Consultant Private Limited	Checked By	Mr. S.M.	Signature	RIVER TRAINING WORKS OF BRIDGE OVER RIVER BAGMATI EAST	1:1000	20.04.2023
			Approved By	Mr. H.B.	Signature	Reference Drawings	Chainage:	Drawing No.- KDP/DPR/STR/BR/BAGMATI EAST/DD- 17
							312+470	Sheet No. 1/1

Bearing Design Data for 25m Span and 17.55m width

Load Condition	Items	Under	On each Neoprene Bearing	Unit
Under No Live Load	V	NO EQ.	59.88	Ton
		EQ.	68.86	Ton
	H _L	NO EQ.	-	Ton
		EQ.	13.47	Ton
	H _T	NO EQ.	-	Ton
		EQ.	13.47	Ton
	θ	NO EQ.	0.00250	radian
		EQ.	0.00288	radian
	Δ		14.57	mm
Under Maximum Live Load	V	NO EQ.	102.95	Ton
		EQ.	113.22	Ton
	H _L	NO EQ.	-	Ton
		EQ.	0.00	Ton
	H _T	NO EQ.	-	Ton
		EQ.	0.00	Ton
	θ	NO EQ.	0.00388275	radian
		EQ.	0.00447	radian
	Δ		24.23	mm

EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		Designed By Mr. R.A.  Signature Nec.No.6431 CIVIL "A"	Drawing Name BEARING DESIGN DATA OF BRIDGE OVER RIVER BAGMATI EAST	Scale: 1:1000	Date: 20.04.2023
 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-Pathalaya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of		Checked By Mr. S.M.  Signature					
		 EPTISA Servicios De Ingeniera Madrid, Spain	 STUP Consultants Private Limited Kolkatta, India						
		In Association With Udaya Consultancy, Geocom International, Sundar Krti Consultant and Rays Consultant Private Limited			Approved By Mr. H.B.  Signature		Reference Drawings -	Chainage: 312+470	Drawing No.- KDP/DPR/STR/BR/BAGMATI EAST/DD- 18
									Sheet No. 1/1