



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- Chapani
Volume-2
Detailed Drawing

April,2023

Joint Venture Of:

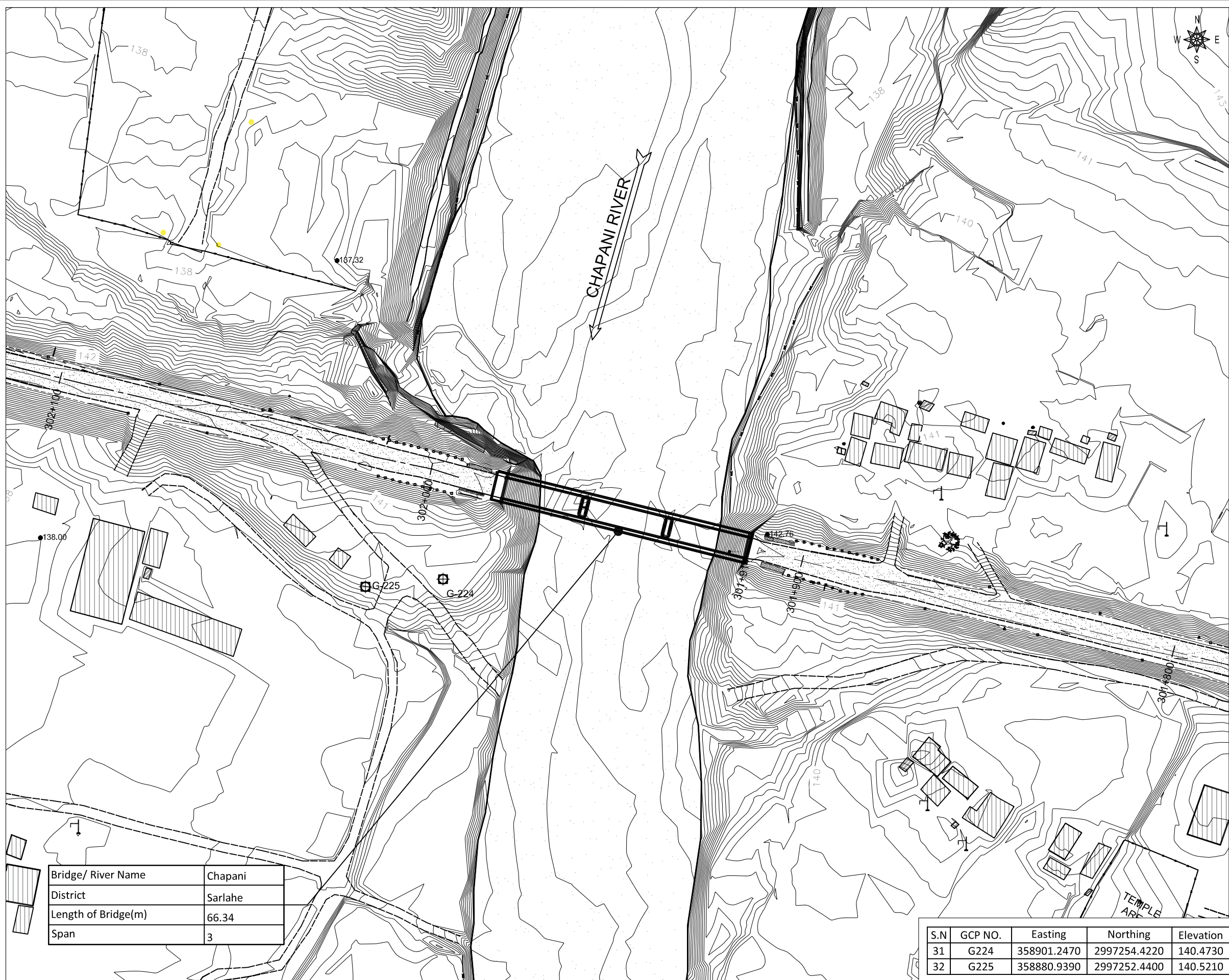
eptisa EPTISA Servicios De Ingenieria
Madrid, Spain

STUP Consultants Private Limited
Kolkata, India

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

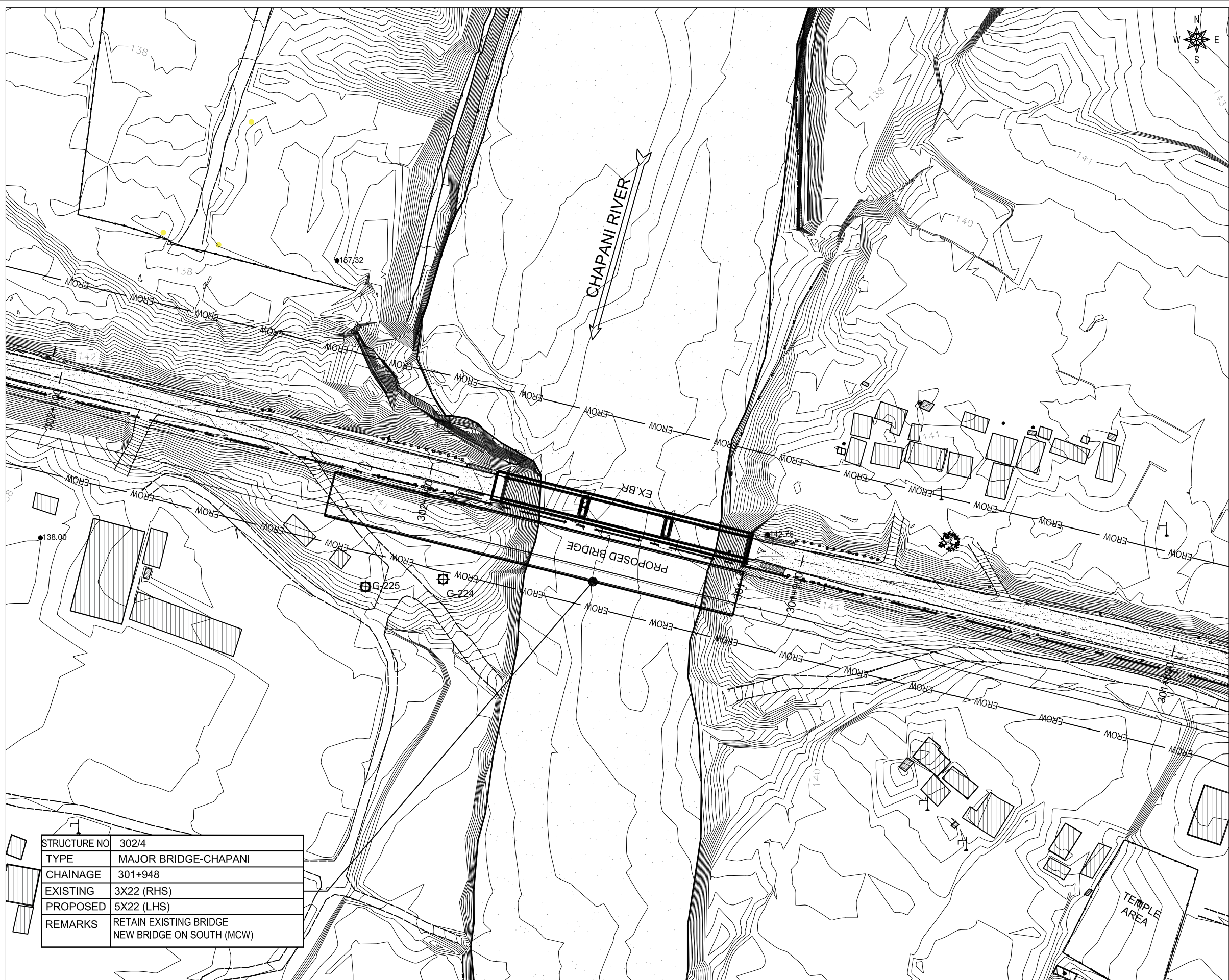
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DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL
MAIN FOOT TRAIL		ANIMAL FARM	
PLACE NAME		BAMBOO	
POLICE STATION		BIO GAS	
PETROL PUMP		BUS WAITING STATION	
Pond/ Water Body		BRIDGE	
POULTRY FARM		CONTOUR	
PROPERTY BOUNDARY		CANAL	
ROAD INFORMATION BOARD		CULVERT	
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	

 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.A. Nec.No. 6431 CML/W Signature	Drawing Name DETAILED SURVEY TOPOGRAPHIC MAP (EXISTING CONDITION) OF BRIDGE OVER RIVER CHAPANI Reference Drawings	Scale: 1:1000 Chainage: 301+948	Date: 24.04.2023 Drawing No.- KDP/DPR/STR/BR/CHAPANI/DD- 02 Sheet No. 1/1
		In Association With Udaya Consultancy, Geocom International, Sundar Krii Consultant and Rays Consultant Private Limited		Checked By Mr. S.M. Signature			
				Approved By Mr. H.B. Signature			



DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL
MAIN FOOT TRAIL		ANIMAL FARM	
PLACE NAME		BAMBOO	
POLICE STATION		BIO GAS	
PETROL PUMP		BUS WAITING STATION	
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SHOULDER		MONASTERY	

 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS				Designed By	Mr. R.A. Nac.No. 6431 GMA/14 Signature 	Drawing Name	DETAILED SURVEY TOPOGRAPHIC MAP (WITH PROPOSED BRIDGE) OF BRIDGE OVER RIVER CHAPANI	Scale:	1:1000	Date:	24.04.2023		
			Joint Venture of												Checked By	Mr. S.M. Signature 
			 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													
Detailed Design of Upgradation of Kamala-Dhalekebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges																
										Reference Drawings	Chainage:	301+948	Drawing No. - KDP/DPR/STR/BR/CHAPANI/IDD- 03			
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) - 389.35 CUMecs
2. HFL - 139.680M
3. FREE BOARD (MINIMUM) - 1.2 M
4. MAXIMUM SCOUR LEVEL:
- ABUTMENT - 131.420M
- PIER - 127.310M

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

D. STRUCTURAL AND OTHER DATA: -

1. SPAN ARRANGEMENT: 5 X 22 = 110 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 - 358.00 TON
- B) PIER- 1200 DIA BORED CAST-IN-SITU PILE
- DESIGN WORKING LOAD ON PILE - 221.53 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

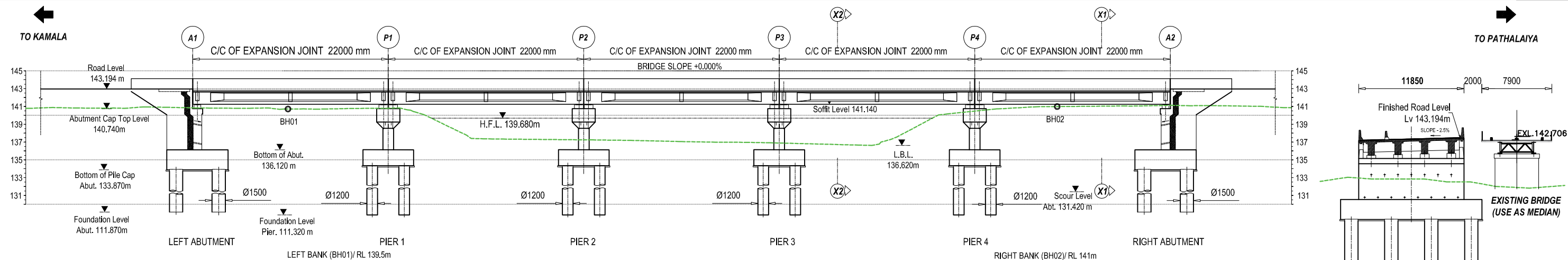
(WHERE Ø IS THE DIAMETER OF THE BAR)

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:

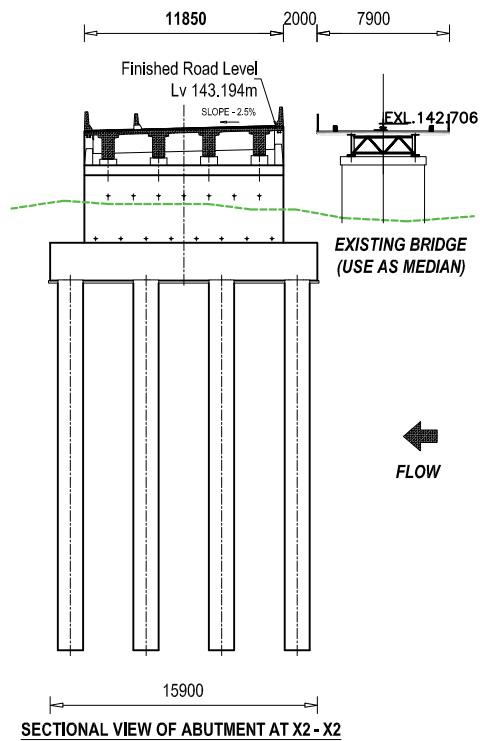
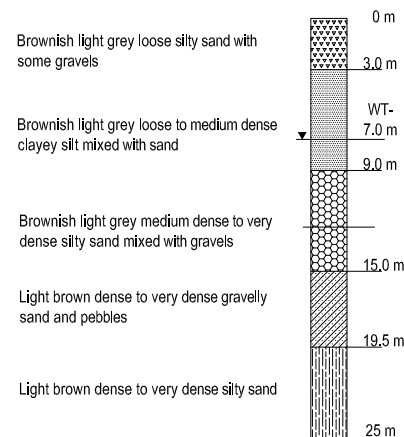
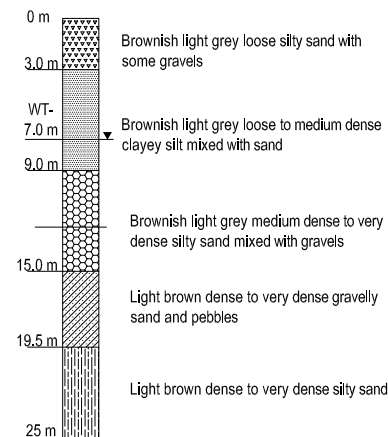
GRADE OF CONCRETE	M30	M35	M40	M45
LAPPED BAR <25%	57.2Ø	51.48Ø	48.62Ø	45.76Ø
25%≤LAPPED BAR <33%	65.78Ø	62.65Ø	55.91Ø	52.62Ø
33%≤LAPPED BAR <50%	80.08Ø	72.07Ø	68.07Ø	64.06Ø
50%≤LAPPED BAR	85.8Ø	77.22Ø	72.93Ø	68.64Ø

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.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-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 In Association With Udaya Consultancy, Geocom International, Sundar Krti Consultant and Rays Consultant Private Limited	Mr. S.M.		Signature	GENERAL NOTES OF BRIDGE OVER RIVER CHAPANI	AS SHOWN	05.05.2023
			Checked By	Mr. H.B.		Reference Drawings	Chainage:	Drawing No.- KDP/DPR/STR/BR/CHAPANI/DD-4
			Approved By				301+948	Sheet No. 1 / 1

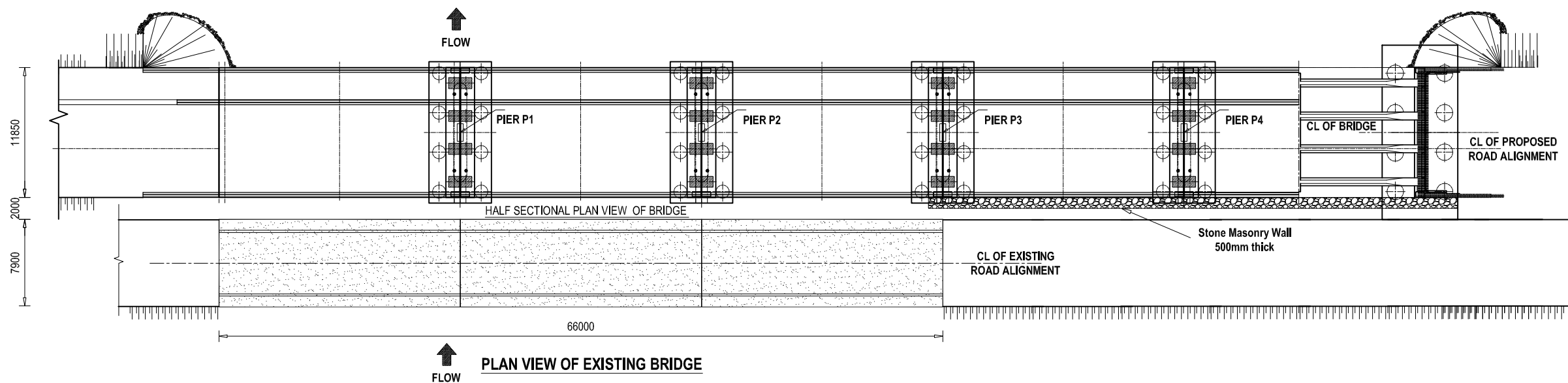


GENERAL ARRANGEMENT OF PROPOSED BRIDGE

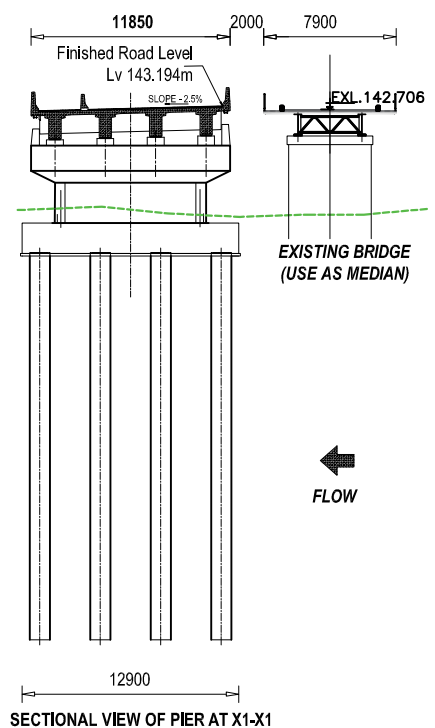


SECTIONAL VIEW OF ABUTMENT AT X2-X2

Finished Road Level(D/S)	LEFT ABUTMENT	143.194	PIER 1	143.194	PIER 2	143.194	PIER 3	143.194	PIER 4	143.194	RIGHT ABUTMENT	143.194
Finished Road Level (Existing Bridge)		142.706		142.706		142.706		142.706		142.706		142.706
Existing Ground Level(D/S)		140.648		140.557		137.067		136.701		140.289		140.930
Existing Ground Lv		141.235		141.752		137.956		136.982		141.365		141.228
Chainage		301+893		301+915		301+937		301+959		301+981		302+003



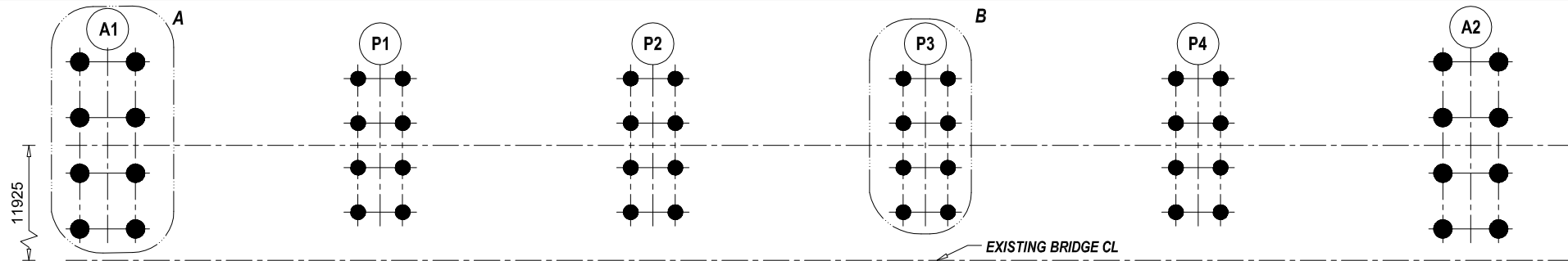
PLAN VIEW OF EXISTING BRIDGE



SECTIONAL VIEW OF PIER AT X1-X1

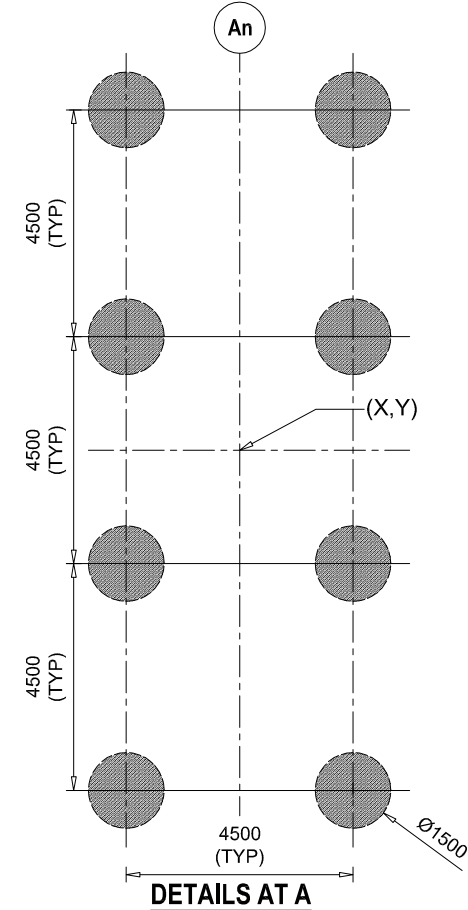
(SCALE 1:450 @ A3)

	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 CML/TA 	Drawing Name GENERAL ARRANGEMENT OF BRIDGE OVER RIVER CHAPANI Reference Drawings	Scale: AS SHOWN Chainage: 301+948	Date: 31.05.2023 Drawing No.- KDP/DPR/STR/BR/CHAPANI/DD-5 Sheet No. 1/1
					Checked By Mr. S.M. 			
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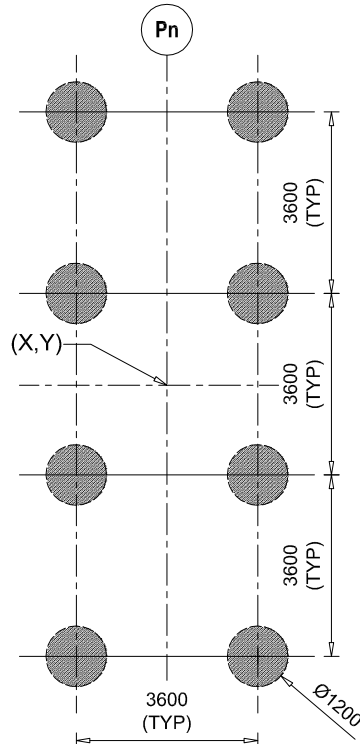
DETAILS AT PILE LAYOUT

SCALE - 1:500



DETAILS AT A

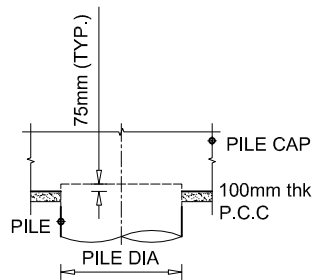
SCALE - 1:150



DETAILS AT B

SCALE - 1:150

PILE CAPACITY		
	SN.	CAPACITY (Ton)
1	ABUTMENT	358.00
2	PIER	221.53



DETAIL AT 3 AND 4

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	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	PA1	24100	32		24.475	14	6.321	2165.89
2	PA2	15915	32		15.915	14	6.320988	1408.379
3	PA3	9685	12		9.985	14	0.889	124.26
4	PA4	Dia. 1334 100	16	90	4.391	57	1.580	395.49
5	PA5	Dia. 1334 100	12	90	4.391	188	0.889	733.74
TOTAL (KG) :								4827.76
No. of Pile :								8.00
TOTAL WEIGHT (KG) :								38622.10

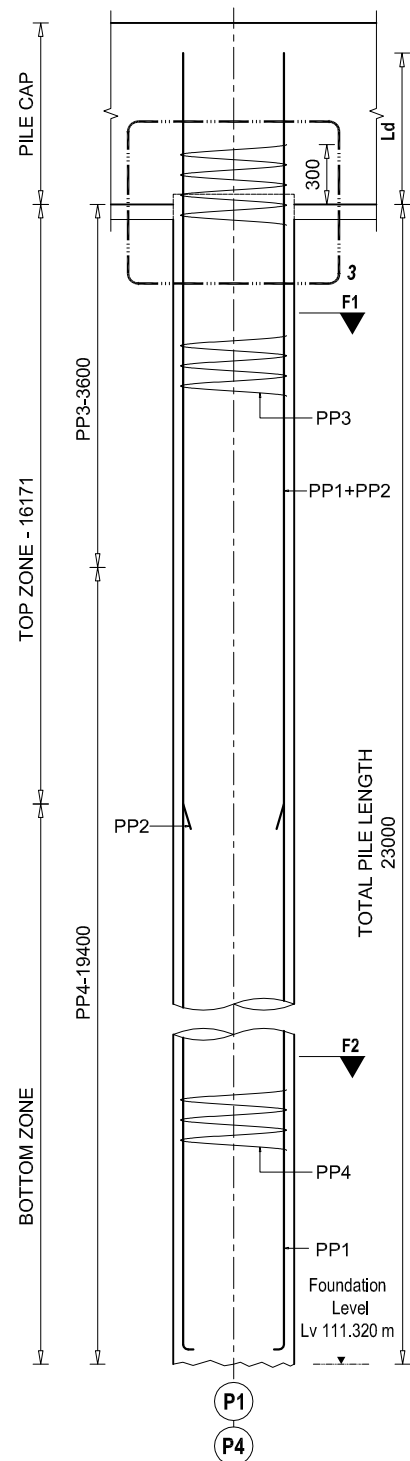
BAR BENDING SCHEDULE OF PIER PILE								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	PP1	24650	32		24.950	15	6.321	2365.63
2	PP2	19096	32		19.096	15	6.320988	1810.584
3	PP3	Dia. 1034 100	16	100	3.448	48	1.580	261.56
4	PP4	Dia. 1034 100	12	100	3.448	182	0.889	557.86
TOTAL (KG) :								4995.63
No. of Pile :								8.00
TOTAL WEIGHT (KG) :								39965.07

NOTE

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

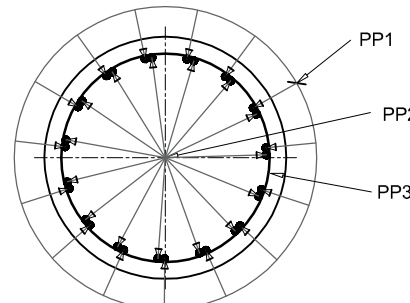
CO ORDINATES OF PILE LOCATION OF PROPOSED BRIDGE

SN.	ABUTMENT/PIER	EASTING (X)	NORTHING (Y)
1	ABUTMENT (A1)	358978.466	2997250.531
2	PIER (P1)	358957.101	2997255.779
3	PIER (P2)	358935.736	2997261.028
4	PIER (P3)	358914.372	2997266.276
5	PIER (P4)	358893.007	2997271.524
6	ABUTMENT (A2)	358871.642	2997276.772



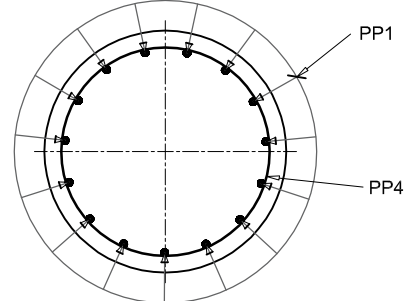
ELEVATION VIEW
BAR DETAIL AT PIER PILE

SCALE - 1:75



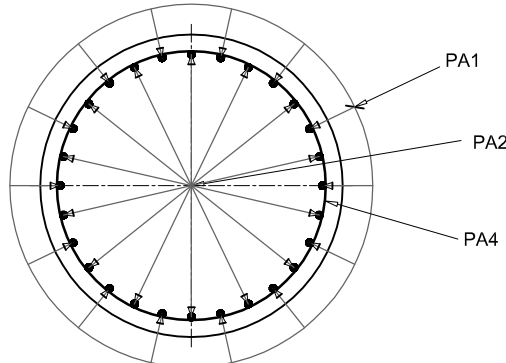
SECTIONAL VIEW AT F1 - F1

SCALE - 1:40



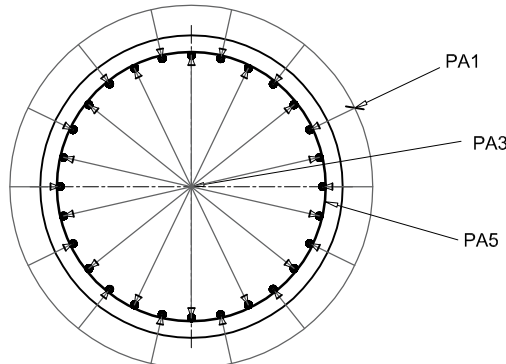
SECTIONAL VIEW AT F2 - F2

SCALE - 1:40



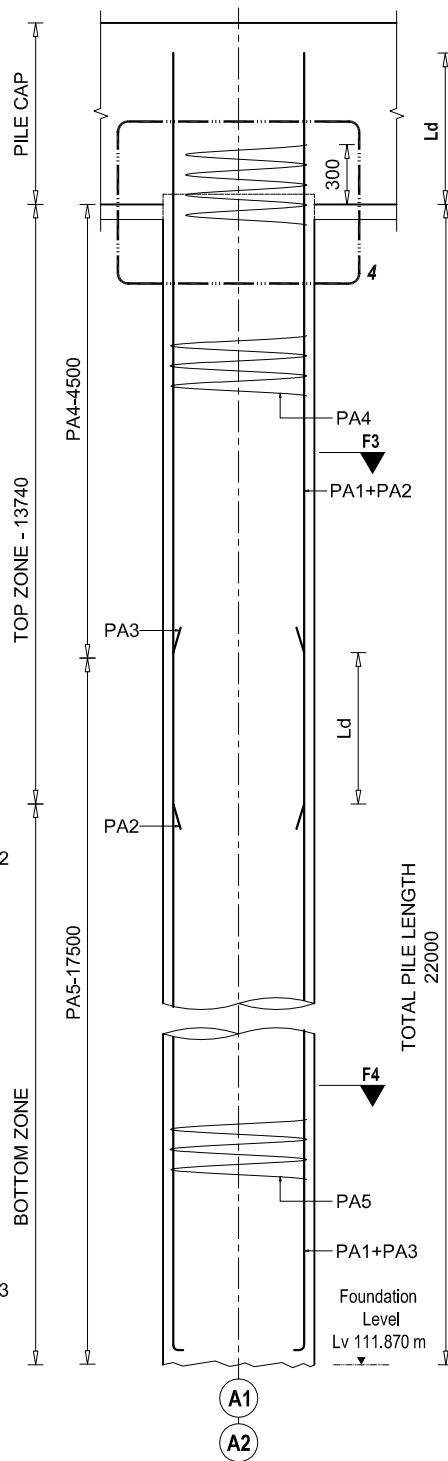
SECTIONAL VIEW AT F3 - F3

SCALE - 1:40



SECTIONAL VIEW AT F4 - F4

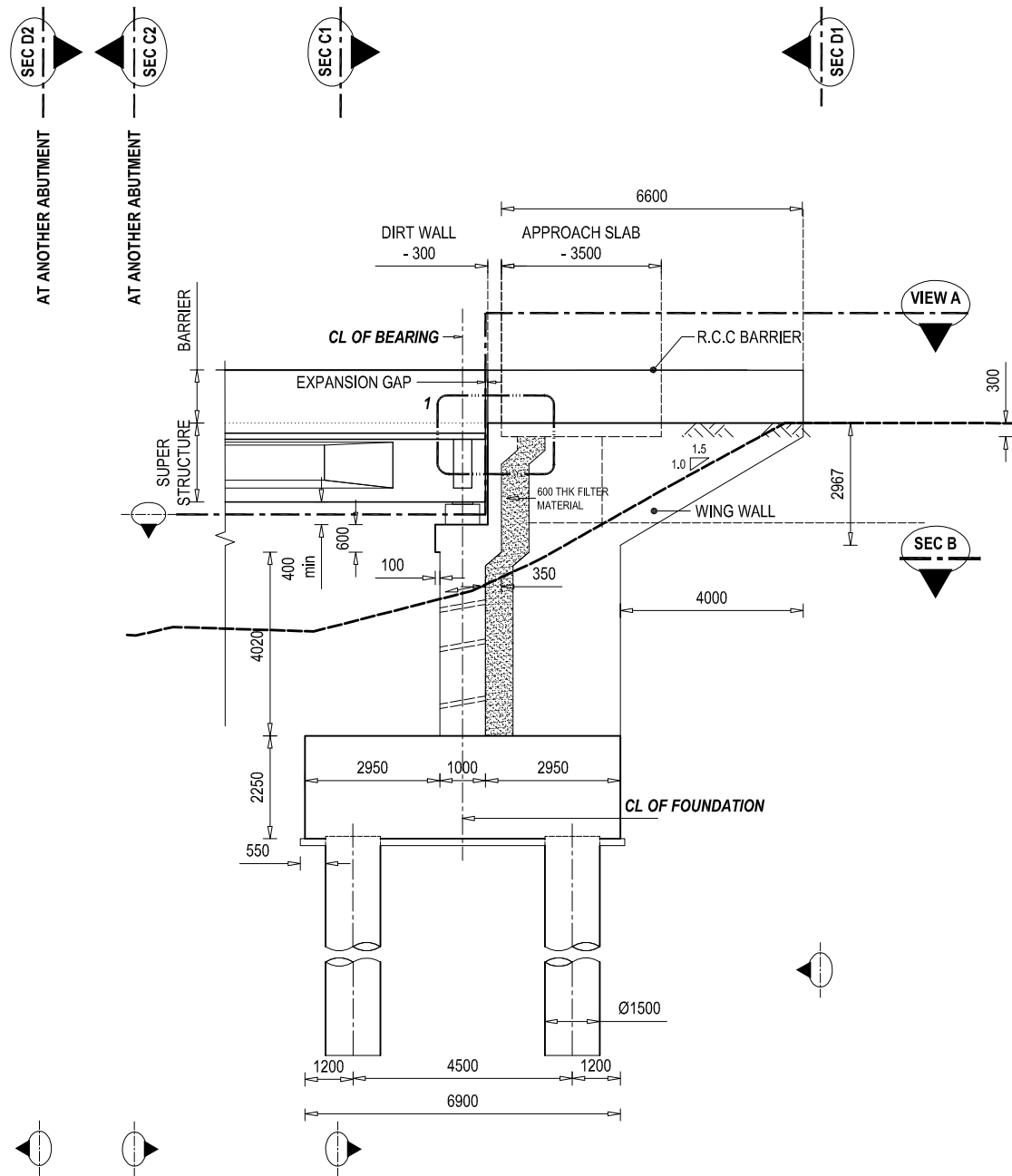
SCALE - 1:40



ELEVATION VIEW
BAR DETAIL AT ABUTMENT PILE

SCALE - 1:75

EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		Drawing Name		Scale:		Date:	
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										Sheet No. 1/1	



A2
OUTLINE DETAILS OF ABUTMENT
SCALE - 1: 150

NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/CHAPANI/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-Pathalaya
Road Section (130 KM) of Mahendra Highway and Bridges

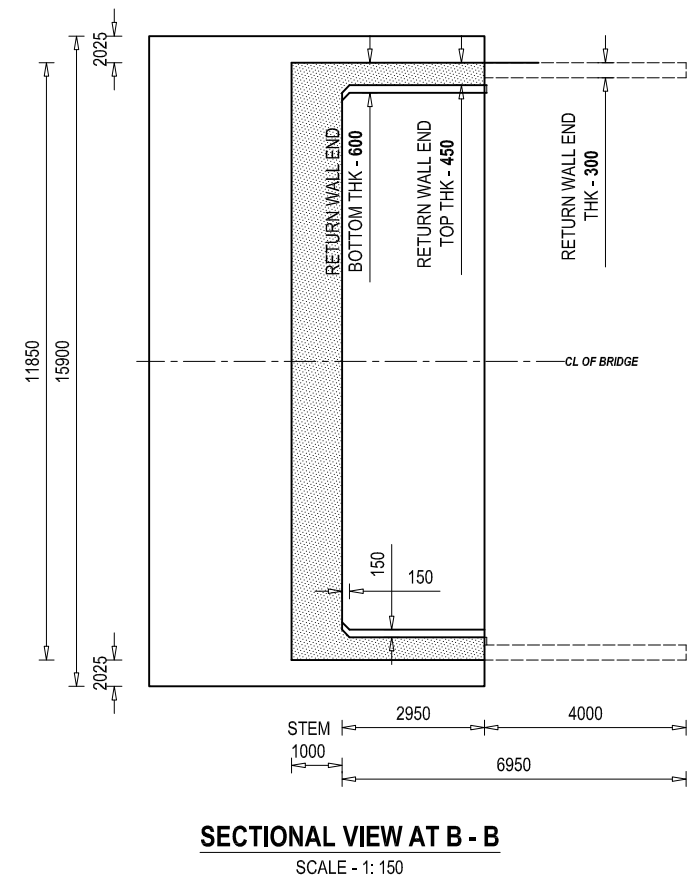
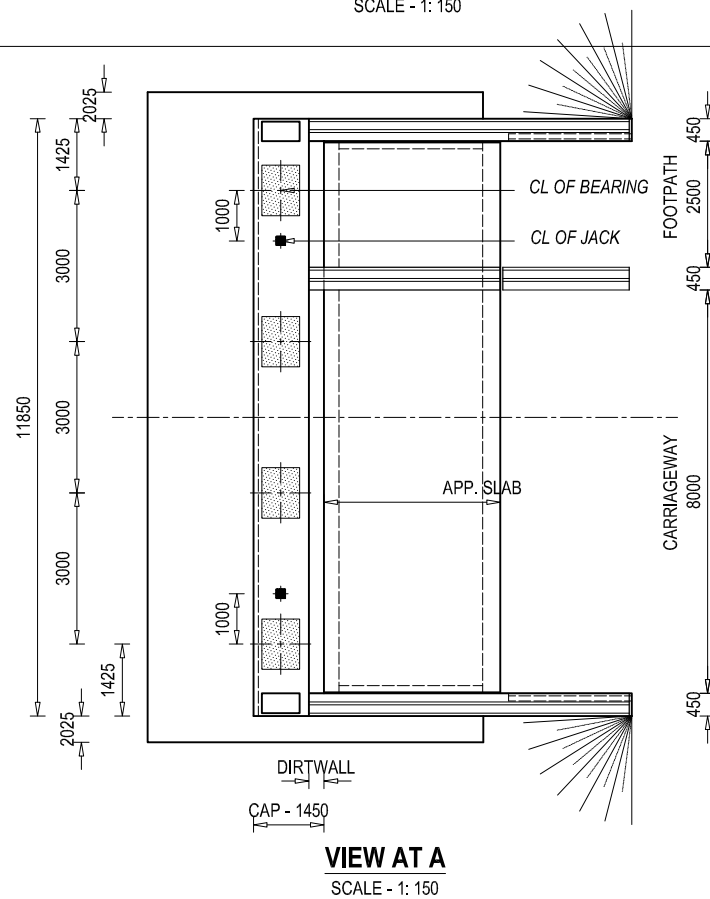
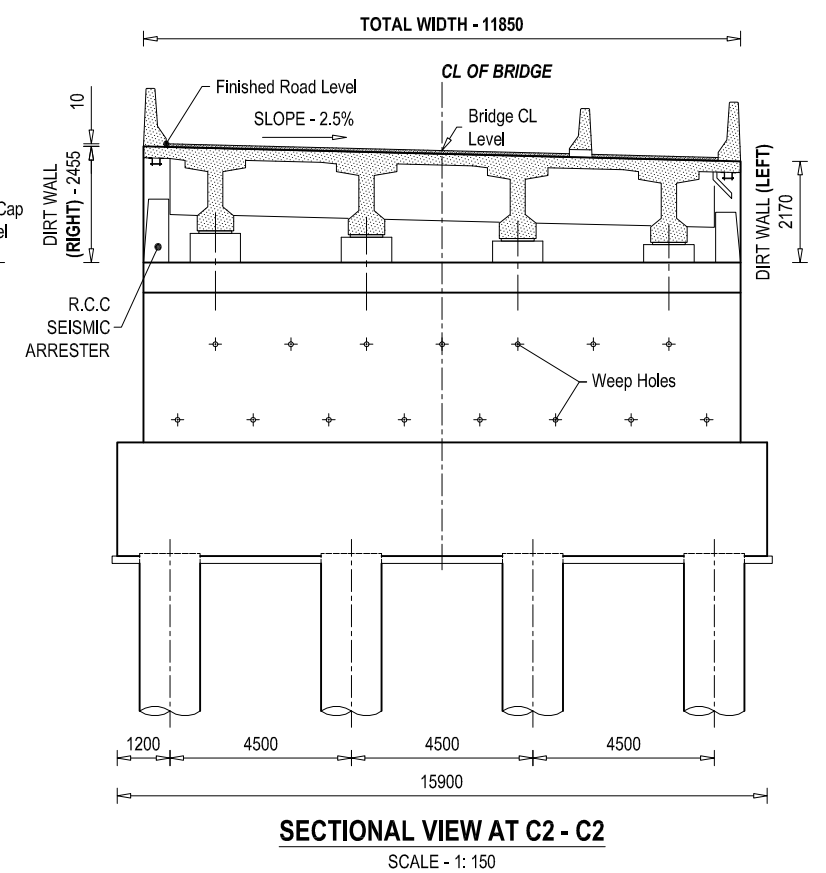
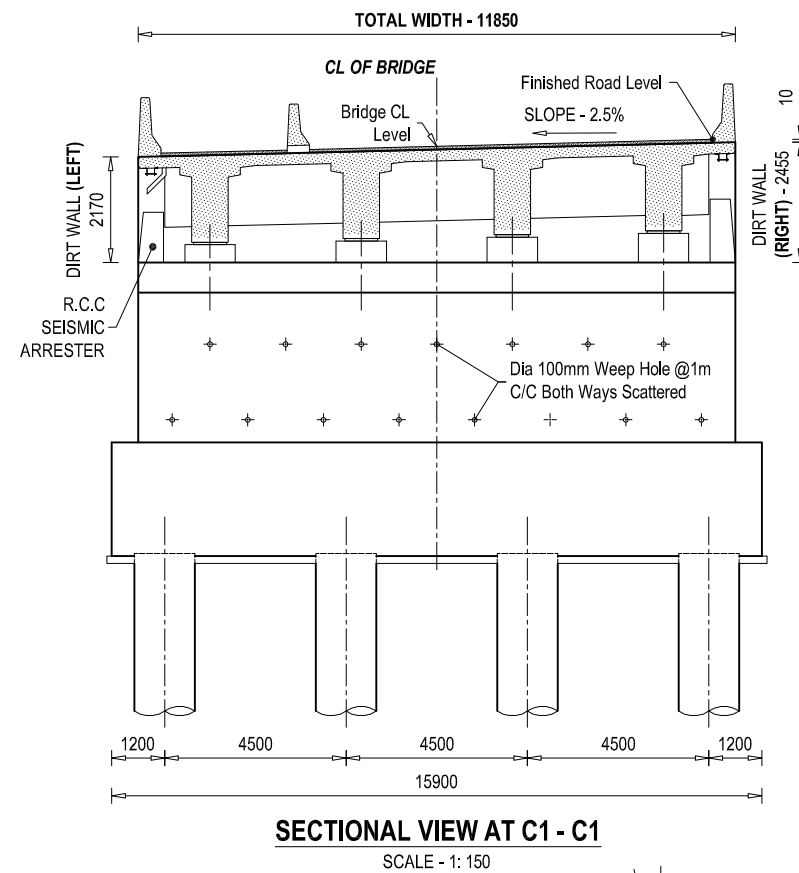
DESIGN CONSULTANTS
Joint Venture of
ep4sa EPTISA Servicios De Ingeniera
Madrid, Spain
ow STUP Consultants Private Limited
Kolkatta, India
In Association With
Udaya Consultancy, Geocom International, Sundar Kritt Consultant and Rays
Consultant Private Limited

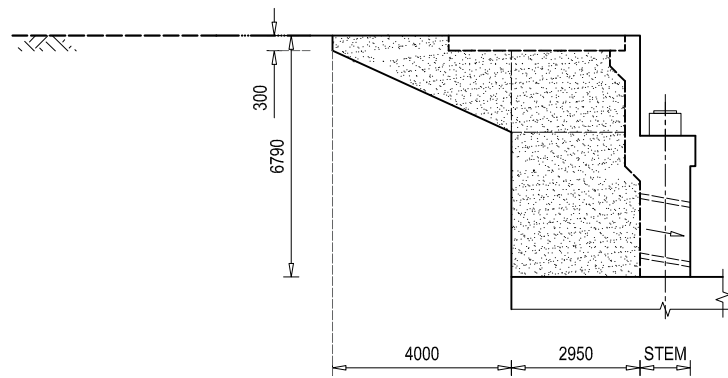
Designed By
Mr. R.A.
Nec.No. 6431 CIVIL/W
Checked By
Mr. S.M.
Approved By
Mr. H.B.

Drawing Name
ABUTMENT DETAILS OF BRIDGE OVER RIVER CHAPANI
Reference Drawings
KDP/DPR/STR/BR/CHAPANI/DD-9

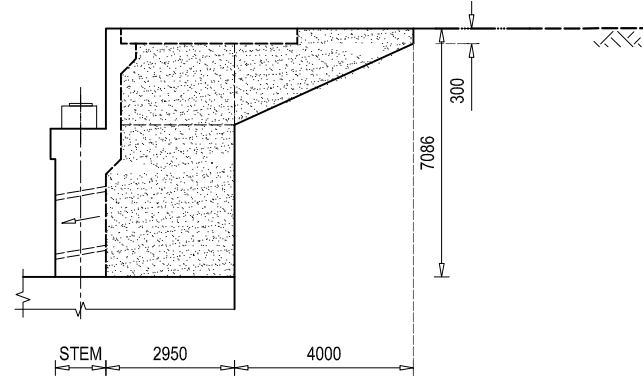
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Date:
25.04.2023
Drawing No.- KDP/DPR/STR/BR/CHAPANI/DD- 7
Sheet No. 1 / 2



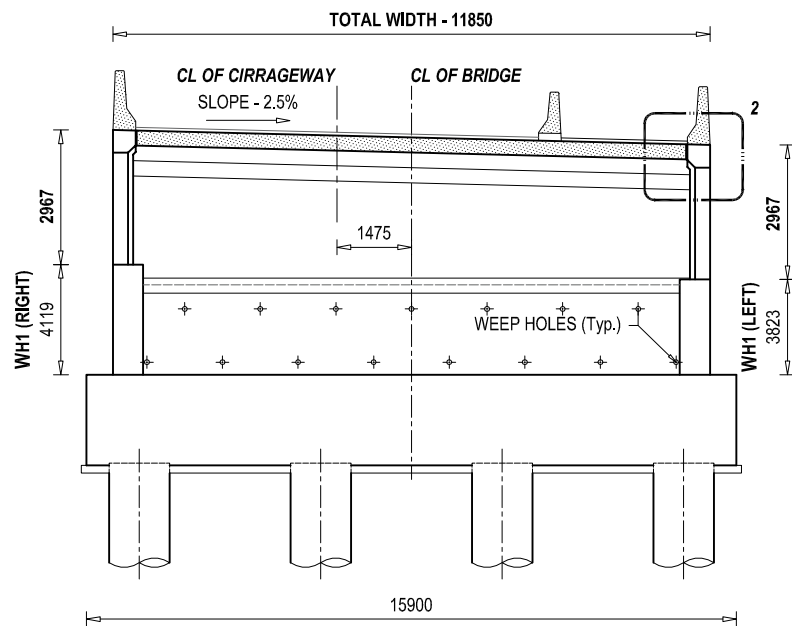


VIEW AT E1
SCALE - 1: 150

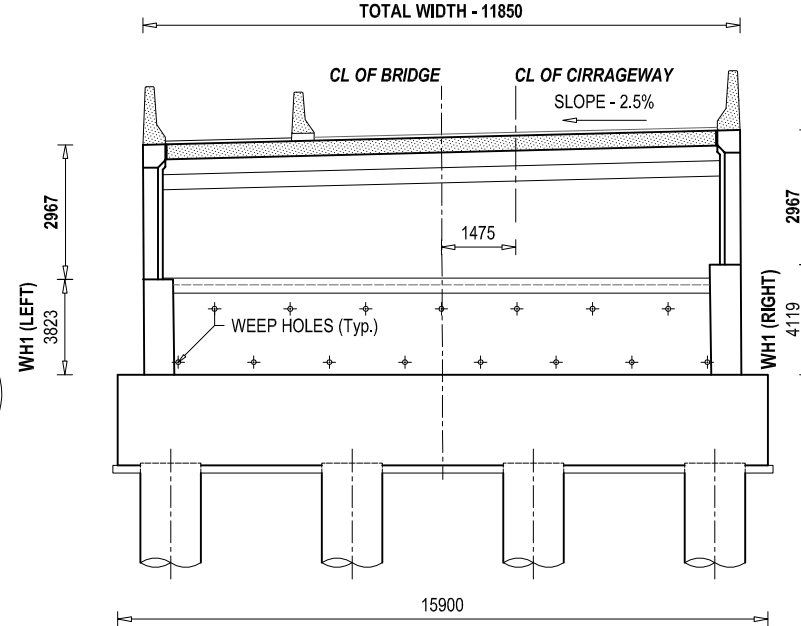


VIEW AT E2
SCALE - 1: 150

DETAIL AT RETURN WALL

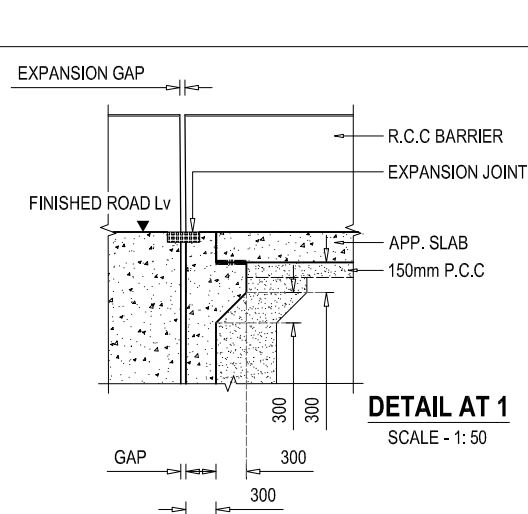


SECTIONAL VIEW AT D1 - D1
SCALE - 1: 150



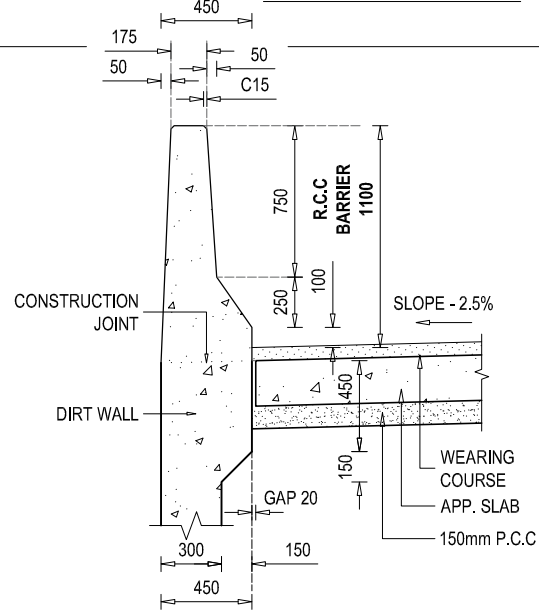
SECTIONAL VIEW AT D2 - D2
SCALE - 1: 150

DETAIL AT DIRT WALL

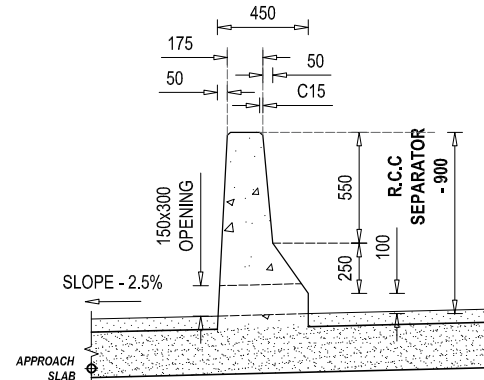


DETAIL AT 1
SCALE - 1: 50

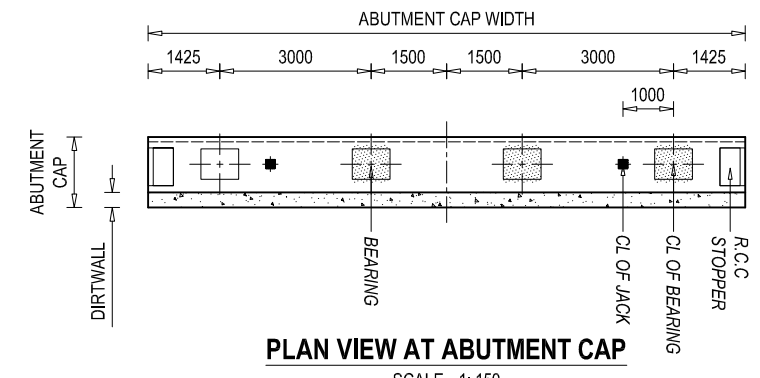
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DRG NO. KDP/DPR/STR/BR/CHAPANI/DD-4



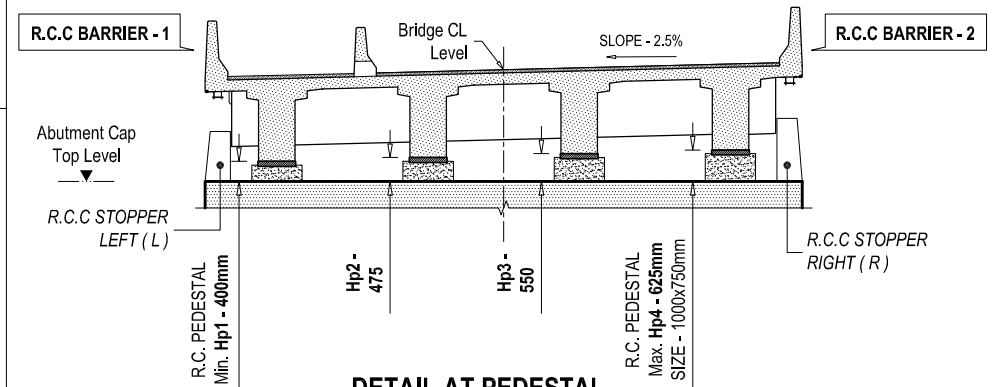
**DETAIL SECTIONAL VIEW
AT R.C.C BARRIER - 1
DETAIL AT 2**
SCALE - 1: 25



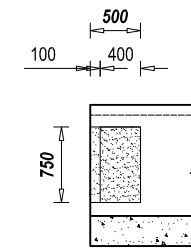
**DETAIL SECTIONAL VIEW
AT R.C.C SEPARATOR**
SCALE - 1: 25



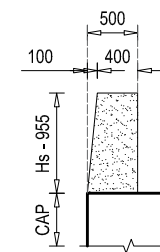
PLAN VIEW AT ABUTMENT CAP
SCALE - 1: 150



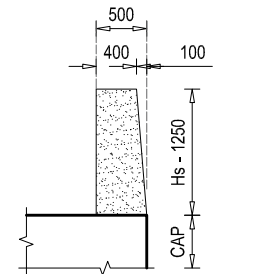
DETAIL AT PEDESTAL
SCALE - 1: 150



**R.C.C SEISMIC ARRESTER
PLAN VIEW**



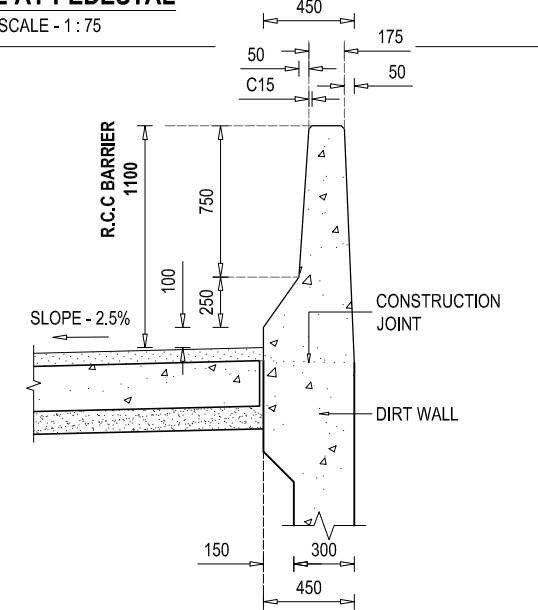
**R.C.C SEISMIC ARRESTER - LEFT
ELEVATION VIEW**



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

DETAIL AT PEDESTAL
SCALE - 1: 75

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



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
Kolkatta, India

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Udaya Consultancy, Geocom International, Sundar Kritt Consultant and Rays
Consultant Private Limited

Designed By

Mr. R.A.

Nec.No. 6431 CIVIL/VI

Checked By

Mr. S.M.

Approved By

Mr. H.B.

Drawing Name

ABUTMENT DETAILS OF BRIDGE OVER RIVER CHAPANI

Reference Drawings

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

Scale:

AS SHOWN

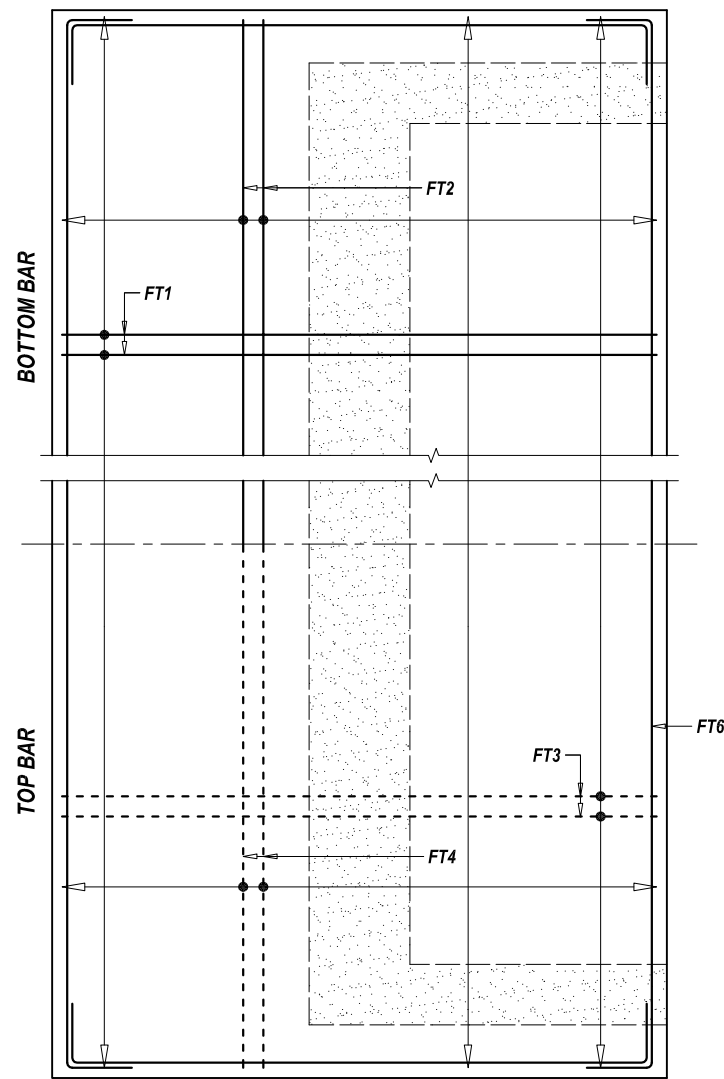
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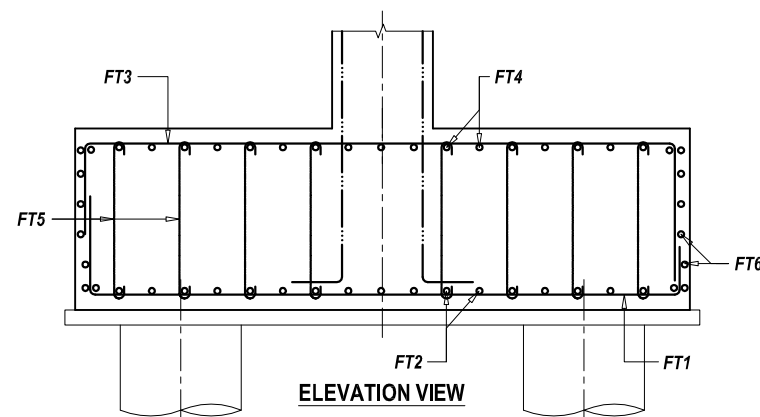
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Drawing No.- KDP/DPR/STR/BR/CHAPANI/DD- 7

Sheet No. 2 / 2

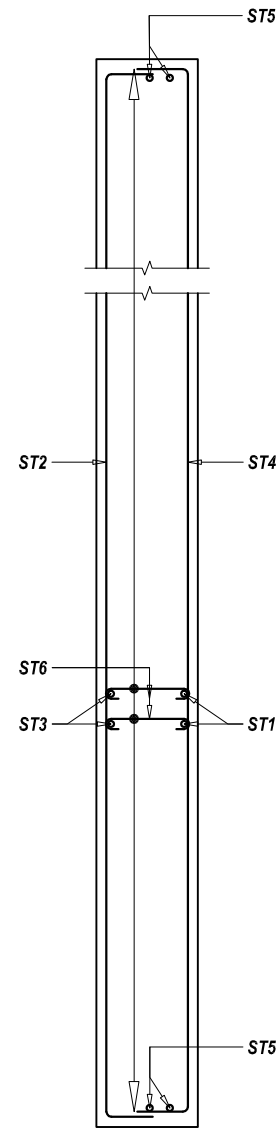


PLAN VIEW

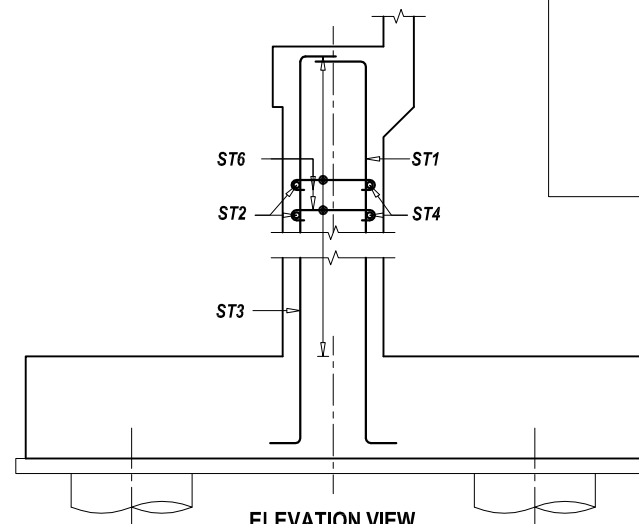


BAR DETAIL OF PILE CAP
SCALE - 1 : 75

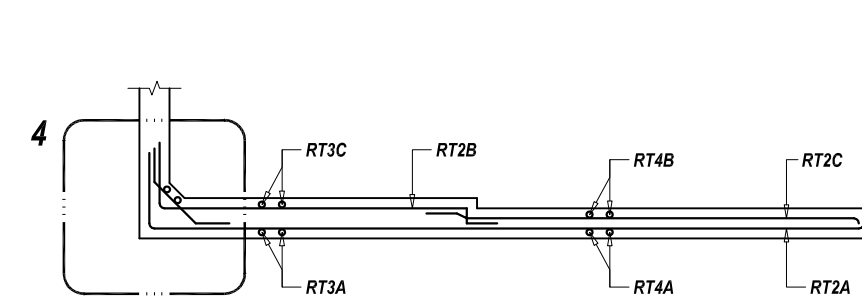
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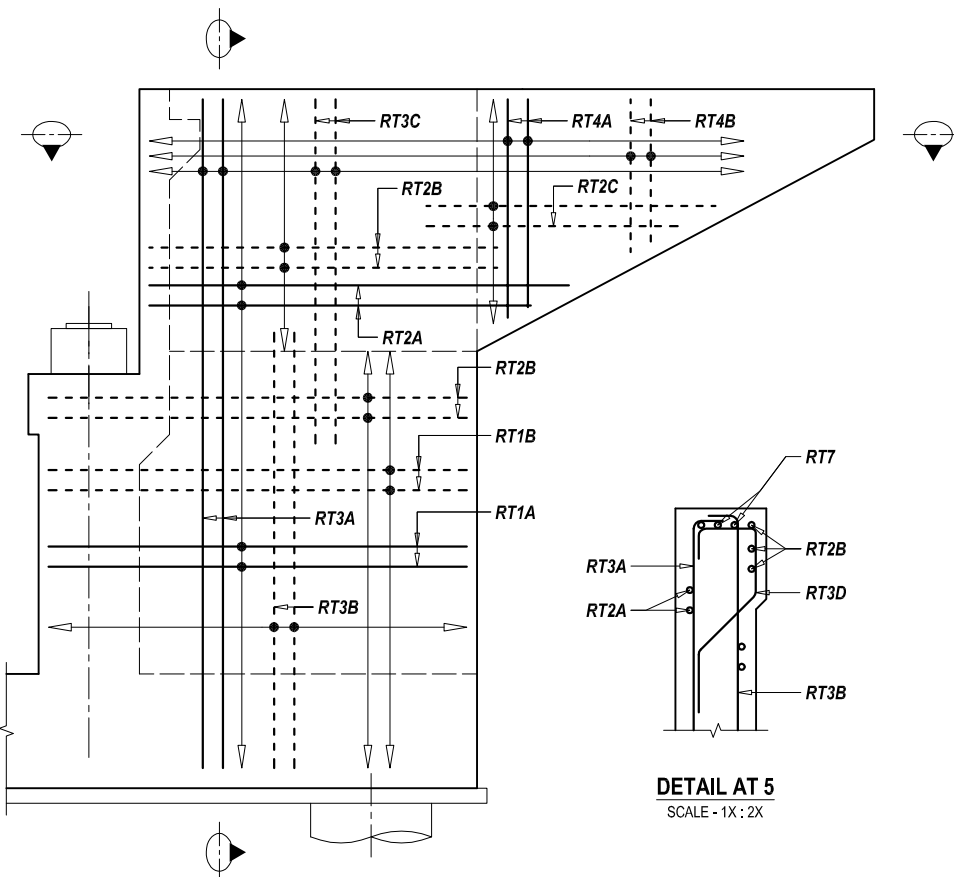
SECTIONAL PLAN VIEW



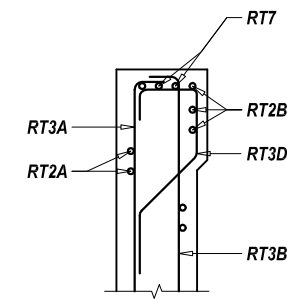
BAR DETAIL AT ABUTMENT STEM
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SECTIONAL PLAN VIEW

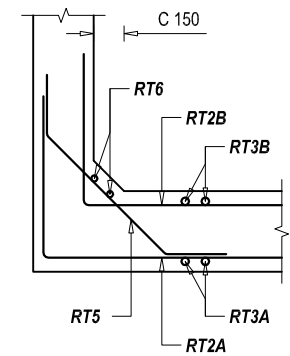


ELEVATION VIEW

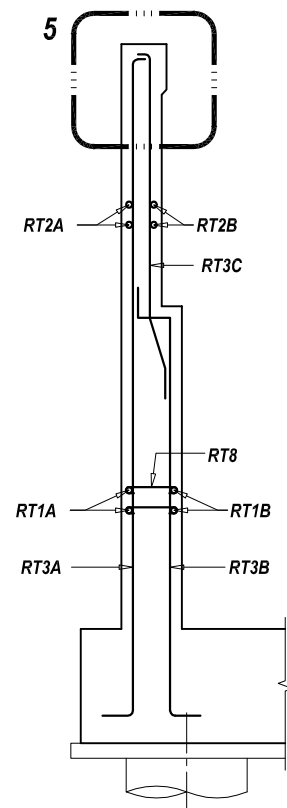


DETAIL AT 5
SCALE - 1X : 2X

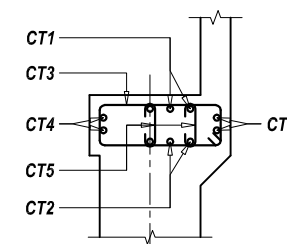
BAR DETAIL AT RETURN WALL
SCALE - 1 : 75



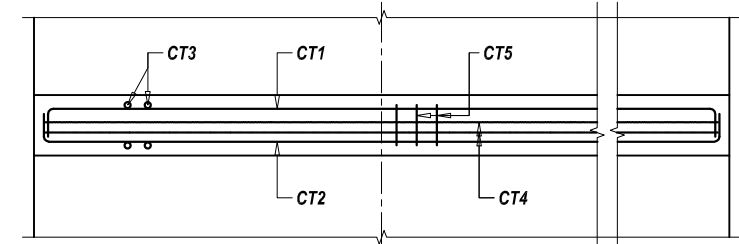
DETAILS AT 4



SECTIONAL SIDE VIEW



ELEVATION VIEW

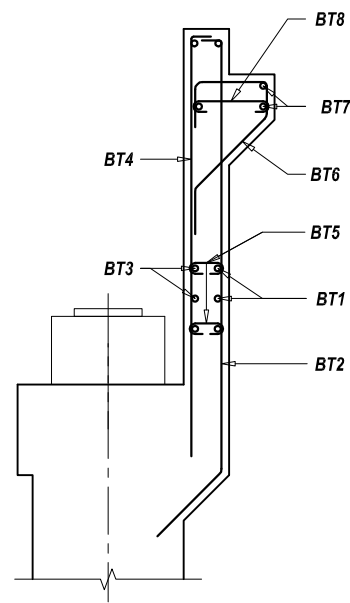


FRONT VIEW

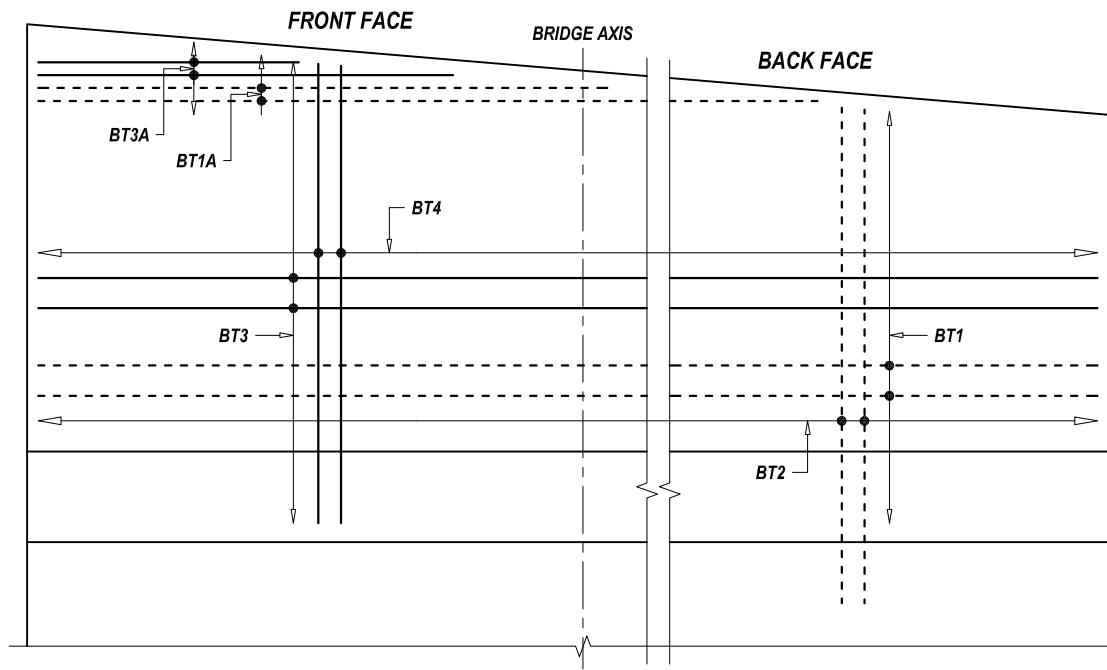
BAR DETAIL AT ABUTMENT CAP
SCALE - 1 : 75

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

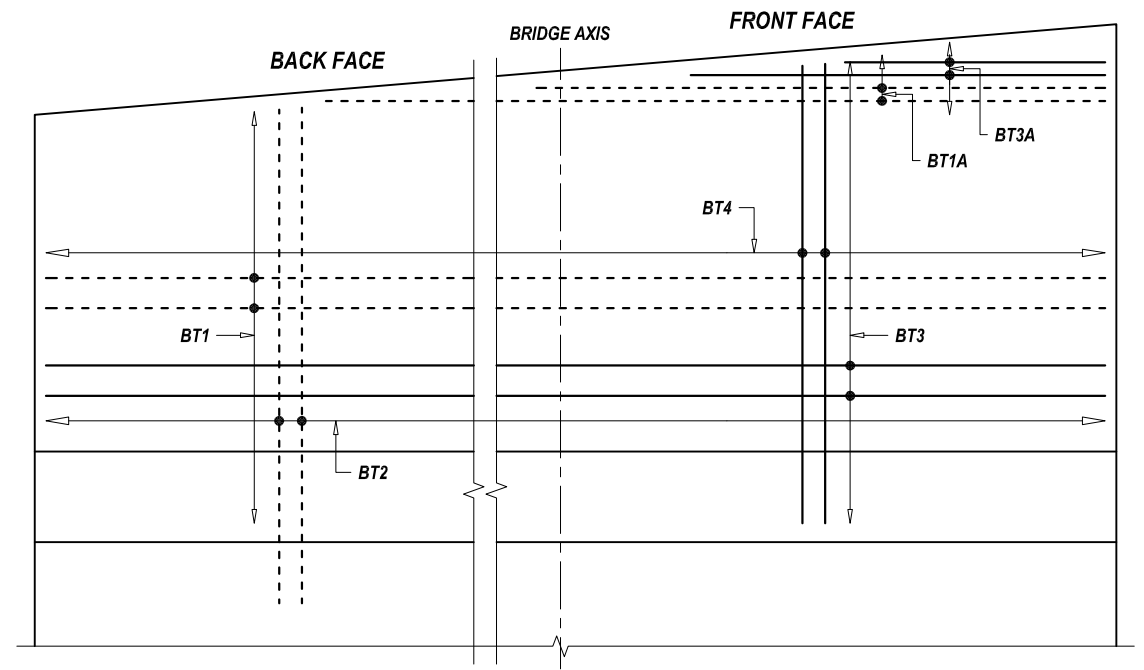
EMPLOYER Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	PROJECT NAME Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathalaya Road Section (130 KM) of Mahendra Highway and Bridges	DESIGN CONSULTANTS Joint Venture of ep4sa EPTISA Servicios De Ingeniera Madrid, Spain ow 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/VI Signature Checked By Mr. S.M. Signature Approved By Mr. H.B. Signature	Drawing Name ABUTMENT REINFORCEMENT DETAILS OF BRIDGE OVER RIVER CHAPANI Reference Drawings KDP/DPR/STR/BR/CHAPANI/DD-9	Scale: AS SHOWN Chainage: 301+948	Date: 25.04.2023 Drawing No.- KDP/DPR/STR/BR/CHAPANI/DD- 8 Sheet No. 1 / 2
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SECTIONAL SIDE VIEW



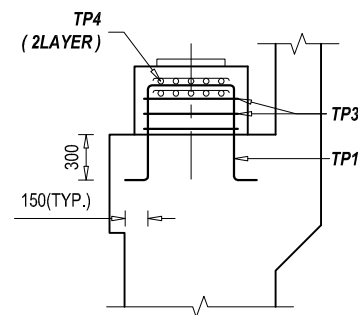
ELEVATION VIEW / VIEW AT D1



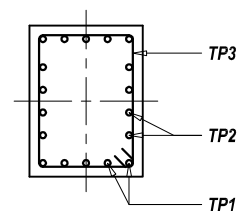
ELEVATION VIEW / VIEW AT D2

BAR DETAIL AT DIRT WALL

SCALE - 1 : 50



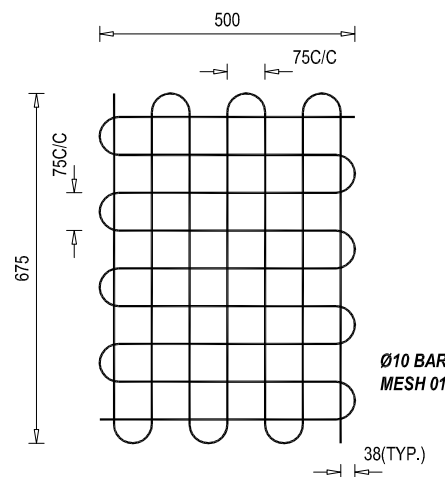
SECTIONAL SIDE VIEW



SECTIONAL PLAN VIEW
BAR DETAIL AT PEDESTAL

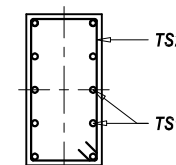
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NOTE
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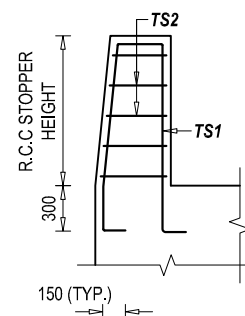


REINFORCEMENT DETAILS OF
BEARING MESH

SCALE - 1 : 50

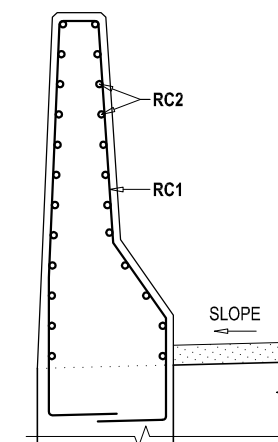


SECTIONAL PLAN VIEW



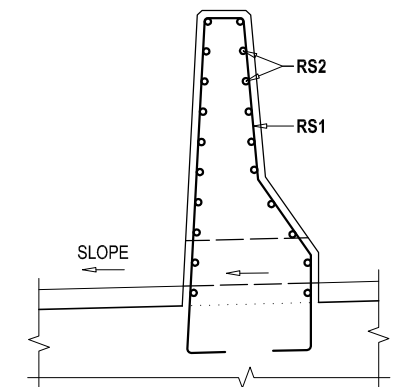
R.C.C STOPPER LEFT
ELEVATION VIEW

SCALE - 1 : 50



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

SCALE - 1 : 25

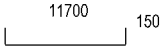
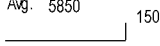
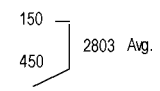
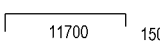
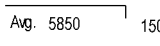
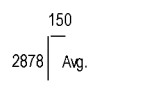
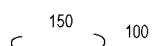
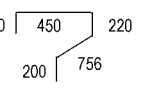
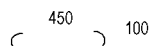


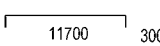
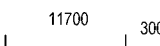
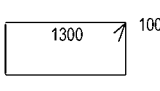
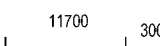
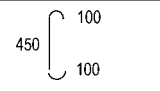
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R.C.C SEPARATOR - SECTIONAL VIEW

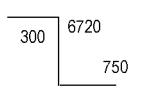
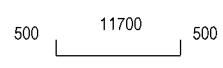
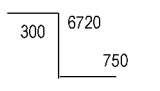
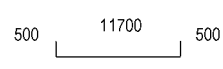
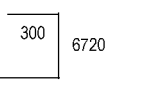
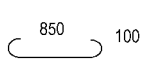
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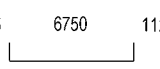
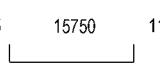
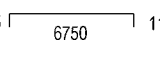
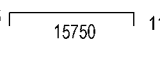
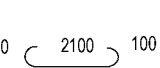
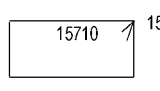
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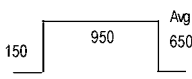
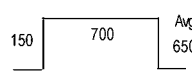
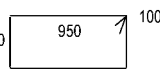
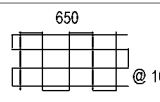
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			Approved By	Mr. H.B.	Reference Drawings KDP/DPR/STR/BR/CHAPANI/DD-9	Chainage: 301+948	Drawing No.- KDP/DPR/STR/BR/CHAPANI/DD- 8
							Sheet No. 2 / 2

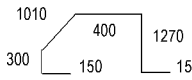
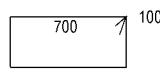
BAR BENDING SCHEDULE OF DIRT WALL								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	BT1	150  150	16	200	12.000	17	1.580	322.37
2	BT1A	Avg. 5850  150	16	200	6.000	3	1.580	28.44
3	BT2	150  2803 Avg.	16	125	3.403	96	1.580	516.25
4	BT3	150  150	16	200	12.000	13	1.580	246.52
5	BT3A	Avg. 5850  150	16	200	6.000	3	1.580	28.44
6	BT4	150  2878 Avg.	12	125	3.028	96	0.889	258.39
7	BT5	100  100	12	500	0.350	96	0.889	29.87
8	BT6	200  220 756	12	200	1.826	61	0.889	99.01
9	BT7	11700	16		11.700	5	1.580	92.44
10	BT8	100  100	12	200	0.650	120	0.889	69.33
TOTAL (KG) : 1691.07								

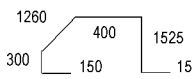
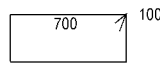
BAR BENDING SCHEDULE OF ABUTMENT CAP								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	CT1	300  300	16	150	12.300	11	1.580	213.81
2	CT2	300  300	16	150	12.300	11	1.580	213.81
3	CT3	450  100	16	150	3.700	80	1.580	467.75
4	CT4	300  300	12	150	12.300	8	0.889	87.47
5	CT5	450  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	ST1	300  750	25		7.770	110	3.858	3297.45
2	ST2	500  500	16	160	12.700	26	1.580	521.80
3	ST3	300  750	25		7.770	110	3.858	3297.45
4	ST4	500  500	16	160	12.700	26	1.580	521.80
5	ST5	300  750	16		7.770	14	1.580	171.90
6	ST6	100  100	12	Ver. 450 Hor.450	1.050	243	0.889	226.80
TOTAL (KG) : 8037.20								

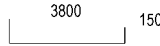
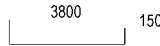
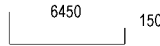
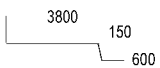
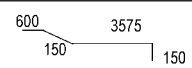
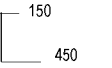
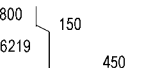
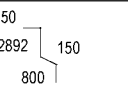
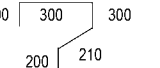
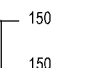
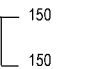
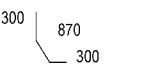
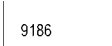
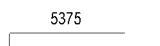
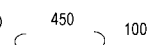
BAR BENDING SCHEDULE OF PILE CAP								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	FT1	1125  1125	25		9.000	120	3.858	4166.67
2	FT2	1125  1125	20		18.000	70	2.469	3111.11
3	FT3	1125  1125	16		9.000	120	1.580	1706.67
4	FT4	1125  1125	16		18.000	70	1.580	1991.11
5	FT5	100  100	10	Long. 200 Trans.270	2.300	1969	0.617	2795.49
6	FT6	6700  150	16	200	45.120	11	1.580	784.31
TOTAL (KG) : 14555.36								

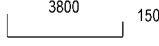
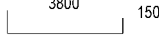
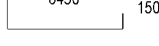
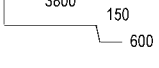
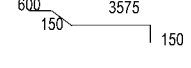
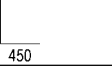
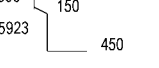
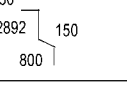
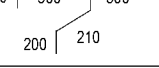
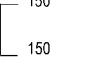
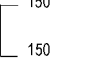
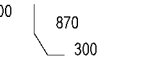
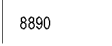
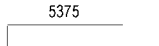
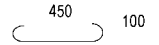
BAR BENDING SCHEDULE OF PEDESTAL								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TP1	150  650	16	150	2.850	6	1.580	27.02
1	TP2	150  650	16	150	2.350	8	1.580	29.71
2	TP3	700  100	16	150	3.500	3	1.580	16.59
1	TP4	850  @ 100	8		13.400	2	0.395	10.59
TOTAL (KG) :								83.91
TOTAL NOS OF PEDESTAL :								4.00
TOTAL WEIGHT (KG) :								335.64

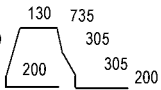
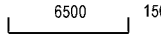
BAR BENDING SCHEDULE OF RCC SEISMIC ARRESTER - LEFT								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TS1-L	1010  150	16	150	3.280	6	1.580	31.10
2	TS2-L	400  100	12	150	2.400	7	0.889	14.93
TOTAL (KG) : 46.03								

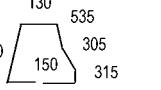
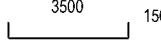
BAR BENDING SCHEDULE OF RCC SEISMIC ARRESTER - RIGHT								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TS1-R	1260  150	16	150	3.785	6	1.580	35.89
2	TS2-R	400  100	12	150	3.400	9	0.889	27.20
TOTAL (KG) : 63.09								

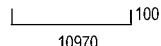
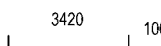
EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		Designed By	Mr. R.A.		Drawing Name	Scale:	AS SHOWN	Date:			
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP)	Joint Venture of		episa	EPTISA Servicios De Ingenieria		STUP Consultants Private Limited	Nec.No. 6431 Q/16/14				Signature	ABUTMENT BAR BENDING SCHEDULE OF BRIDGE OVER RIVER CHAPANI	Chainage: 301+948	Drawing No.- KDP/DPR/STR/BR/CHAPANI/DD- 9
		Madrid, Spain	 Kolkata, India		Mr. S.M.										
Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlajaya Road Section (130 KM) of Mahendra Highway and Bridges		In Association With		Udaya Consultancy, Geocom International, Sundar Kritt Consultant and Rays Consultant Private Limited		Checked By	Mr. H.B.		Reference Drawings	Chainage: 301+948	Sheet No. 1 / 2				
						Approved By									

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	48	0.889	187.73
2	RT1B	450  150	12	150	4.400	48	0.889	187.73
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	9186  450	12	150	9.786	21	0.889	182.67
7	RT3B	 450	16	150	7.619	21	1.580	252.84
8	RT3C	 150	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	69	0.889	90.16
13	RT6	 9186	12		9.186	2	0.889	16.33
14	RT7	225  5375	20		5.6	4	2.469	55.31
15	RT8	100  100	12	200	0.650	305	0.889	176.22
TOTAL (KG) :								1890.57

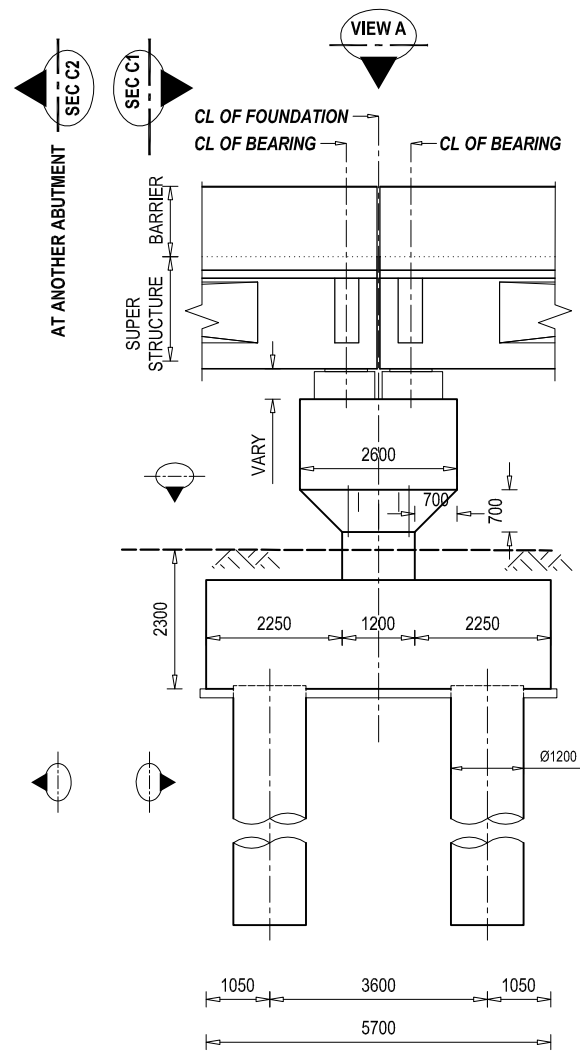
BAR BENDING SCHEDULE OF RETURN WALL - RIGHT								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RT1A	450  150	12	150	4.400	46	0.889	179.91
2	RT1B	450  150	12	150	4.400	46	0.889	179.91
3	RT2A	450  150	12	150	7.050	21	0.889	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	8890  450	12	150	9.490	21	0.889	177.15
7	RT3B	 450	16	150	7.323	21	1.580	243.02
8	RT3C	 150	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	69	0.889	90.16
13	RT6	 8890	12		8.890	2	0.889	15.80
14	RT7	225  5375	20		5.6	4	2.469	55.31
15	RT8	100  100	12	200	0.650	283	0.889	163.51
TOTAL (KG) :								1846.34

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

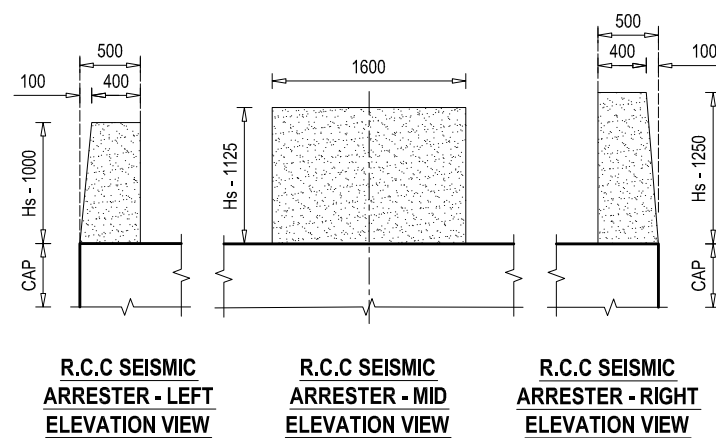
BAR BENDING SCHEDULE OF R.C.C SEPARATOR								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RS1		16	150	2.695	25	1.580	106.47
2	RS2	150  150	10	150	3.800	17	0.617	39.88
TOTAL (KG) :								146.35

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

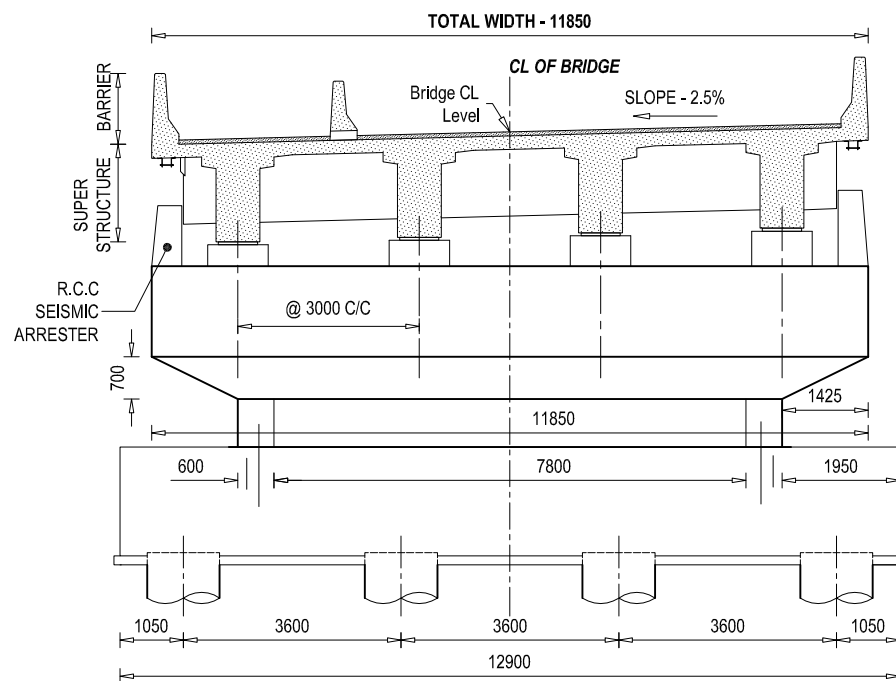
EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS			Drawing Name		Scale:		Date:	
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathalaya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of		Designed By	Mr. R.A.		ABUTMENT BAR BENDING SCHEDULE OF BRIDGE OVER RIVER CHAPANI		AS SHOWN		25.04.2023	
		 EPTISA Servicios De Ingeniera Madrid, Spain	 STUP Consultants Private Limited Kolkatta, India	Checked By	Mr. S.M.						Drawing No.- KDP/DPR/STR/BR/CHAPANI/DD- 9	
		In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited			Approved By	Mr. H.B.		Reference Drawings		Chainage: 301+948	Sheet No. 2 / 2	



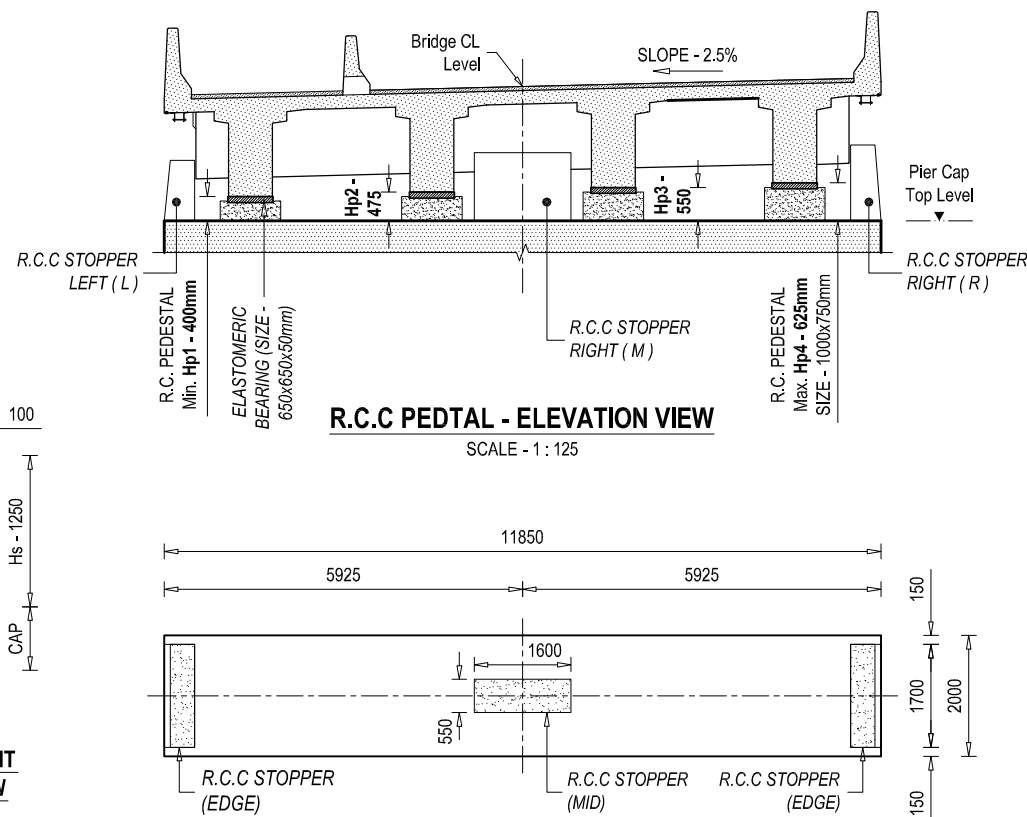
ELEVATION VIEW OF PIER
SCALE - 1: 125



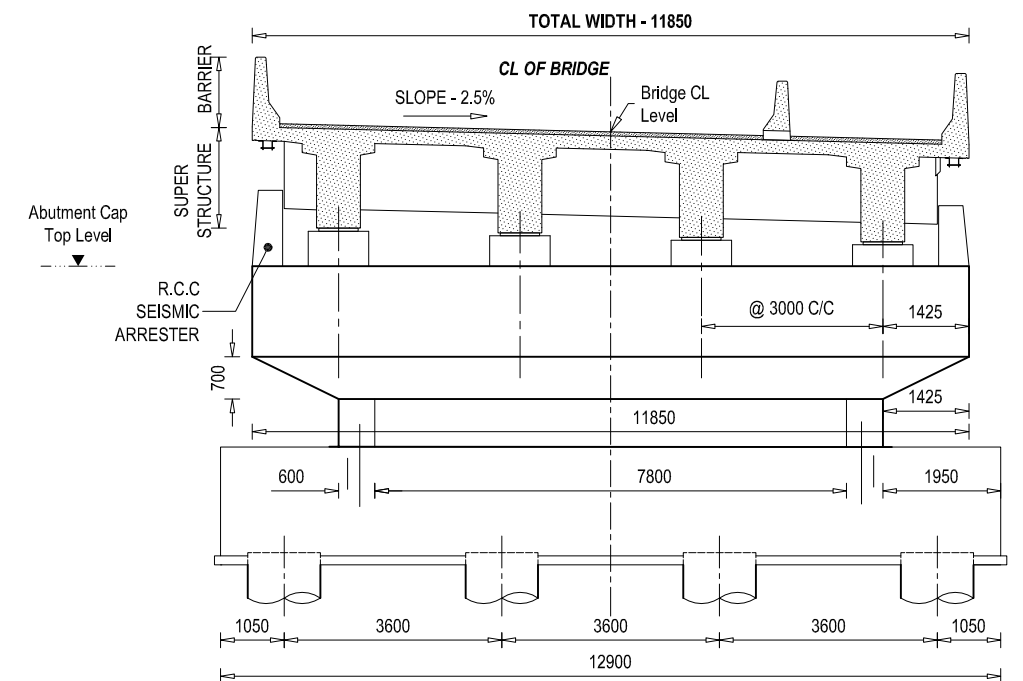
DETAIL AT PEDESTAL
SCALE - 1: 75



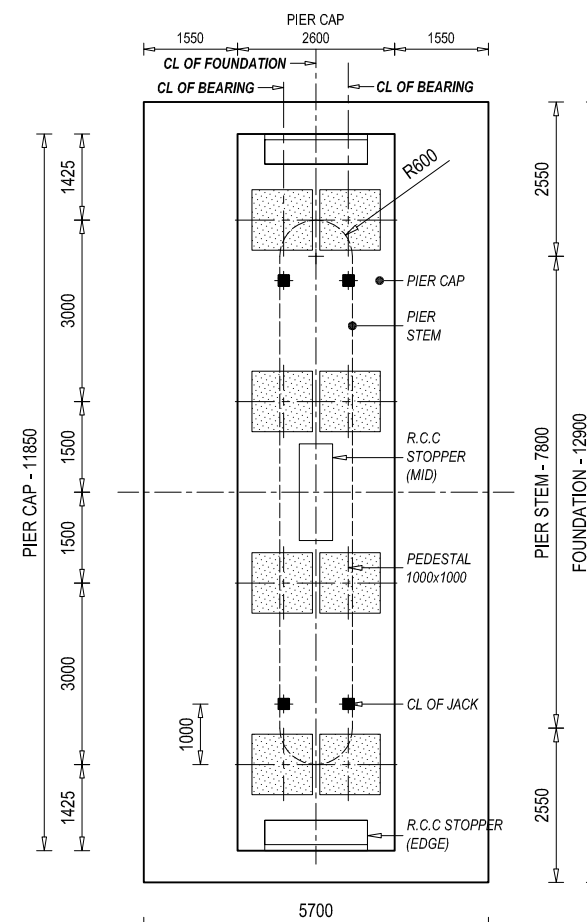
SECTIONAL VIEW AT C1 - C1
SCALE - 1: 125



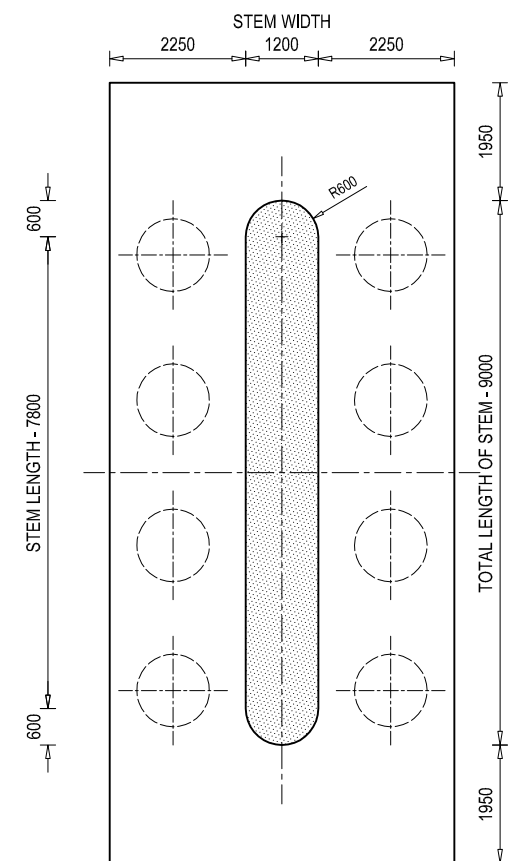
DETAIL AT R.C.C SEISMIC ARRESTER
SCALE - 1: 150



SECTIONAL VIEW AT C2 - C2
SCALE - 1: 125



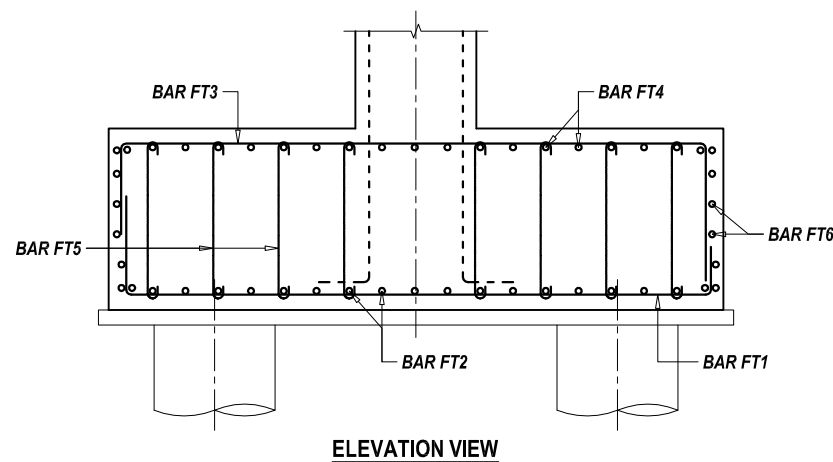
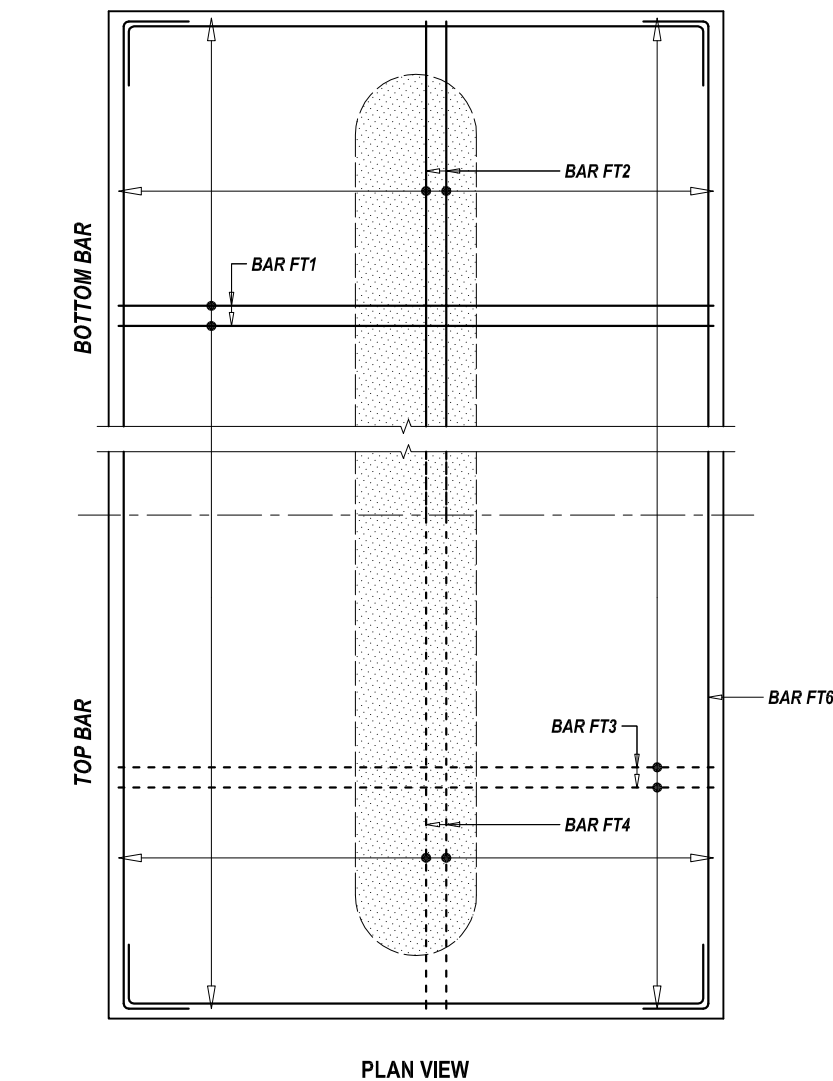
PLAN VIEW OF PIER (VIEW AT A)
SCALE - 1: 125



SECTIONAL VIEW AT B - B
SCALE - 1: 125

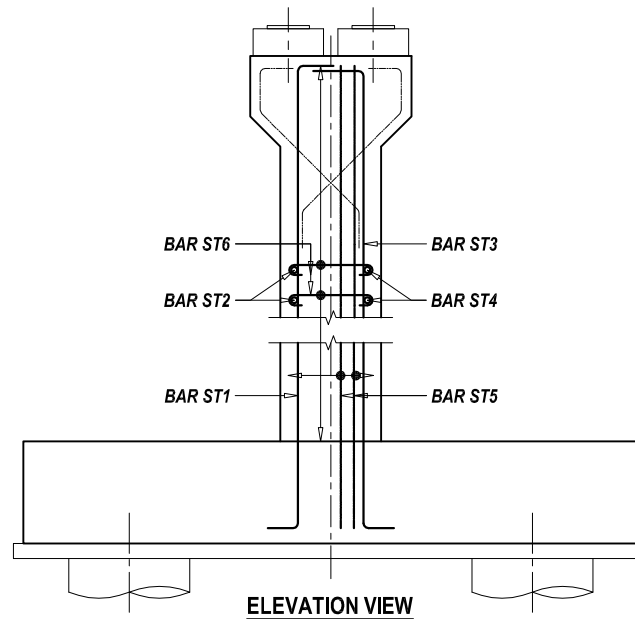
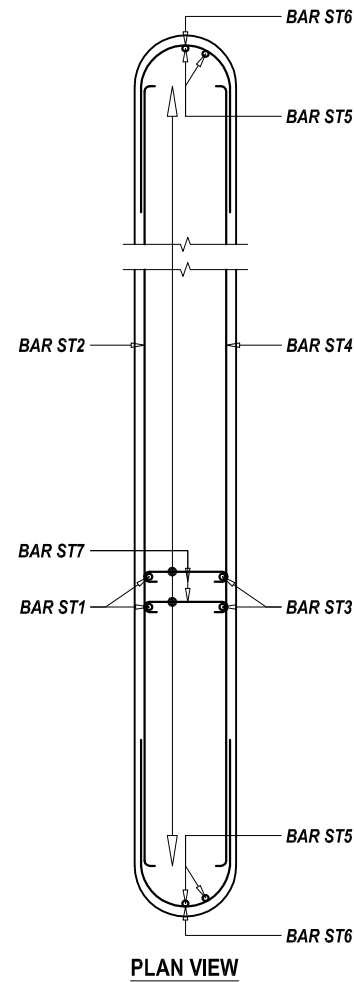
NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/CHAPANI/DD-4

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkhebar-Pathlajya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of  EPTISA Servicios De Ingenieria Madrid, Spain  STUP Consultants Private Limited Kolkatta, India In Association With Udaya Consultancy, Geocom International, Sundar Kritt Consultant and Rays Consultant Private Limited	Mr. R.A. Nec.No. 6431 CIVIL/V Signature Checked By Mr. S.M. Signature Approved By Mr. H.B. Signature	PIER DETAILS OF BRIDGE OVER RIVER CHAPANI Reference Drawings KDP/DPR/STR/BR/CHAPANI/DD-12	AS SHOWN Chainage: 301+948	03.08.2023 Drawing No.- KDP/DPR/STR/BR/CHAPANI/DD- 10 Sheet No. 1/1



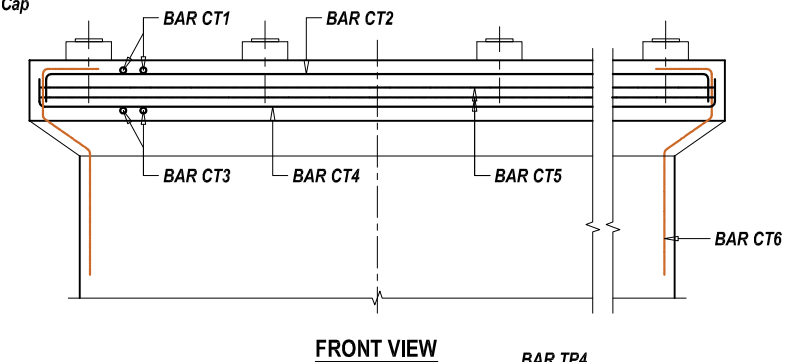
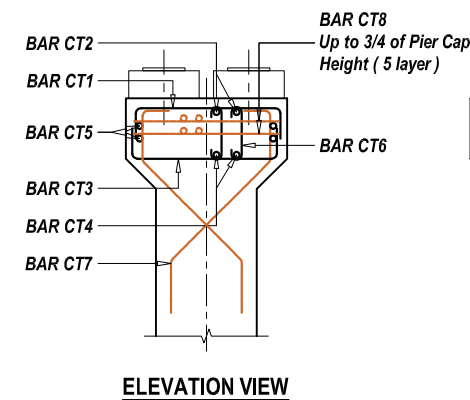
BAR DETAIL OF FOUNDATION

SCALE - 1 : 75



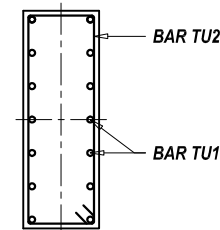
BAR DETAIL AT PIER STEM

SCALE - 1 : 75

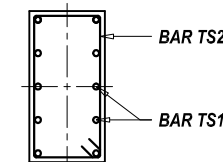


BAR DETAIL AT PIER CAP

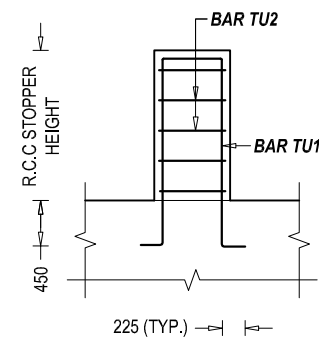
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SECTIONAL PLAN VIEW



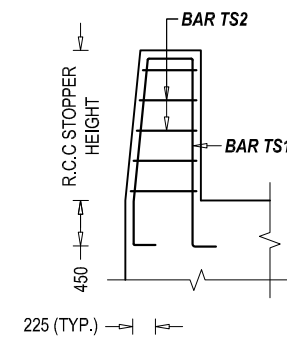
SECTIONAL PLAN VIEW



SECTIONAL ELEVATION VIEW

R.C.C STOPPER AT MID

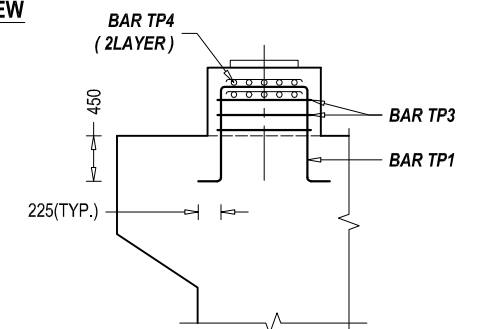
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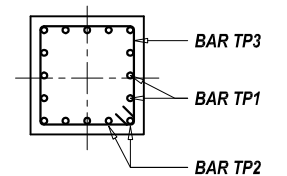
SECTIONAL ELEVATION VIEW

R.C.C STOPPER AT EDGE

SCALE - 1 : 50



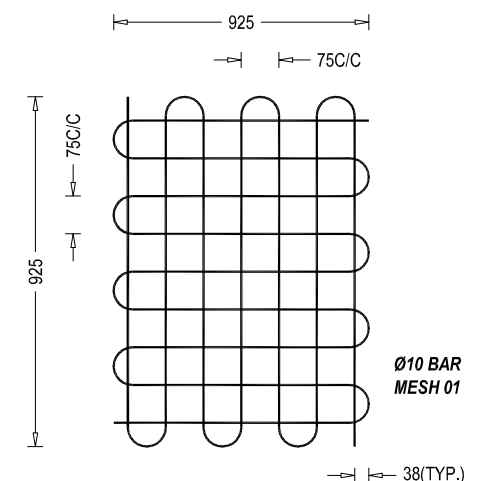
SECTIONAL SIDE VIEW



SECTIONAL PLAN VIEW

BAR DETAIL AT PEDESTAL

SCALE - 1 : 50

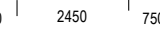
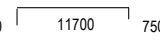
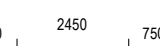
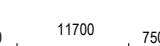
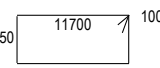
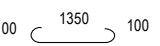
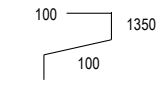
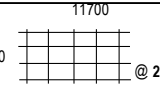


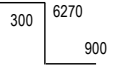
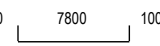
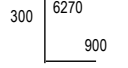
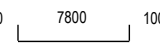
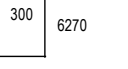
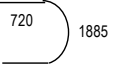
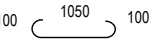
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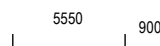
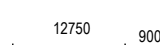
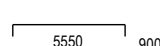
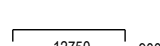
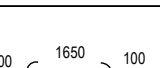
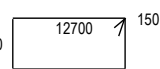
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--- BOTTOM BAR OR FAR FACE REINFORCEMENT

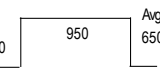
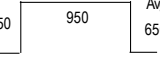
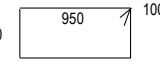
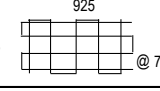
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READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/CHAPANI/DD-4

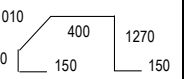
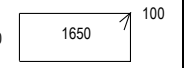
EMPLOYER Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	PROJECT NAME Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathalaya Road Section (130 KM) of Mahendra Highway and Bridges	DESIGN CONSULTANTS Joint Venture of ep4sa EPTISA Servicios De Ingeniera Madrid, Spain cn 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/V Signature Checked By Mr. S.M. Signature Approved By Mr. H.B. Signature	Drawing Name PIER BAR DETAIL OF BRIDGE OVER RIVER CHAPANI Reference Drawings KDP/DPR/STR/BR/CHAPANI/DD-12	Scale: AS SHOWN Chainage: 301+948	Date: 03.08.2023 Drawing No.- KDP/DPR/STR/BR/CHAPANI/DD41 Sheet No.1/1
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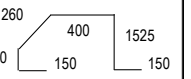
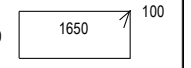
BAR BENDING SCHEDULE OF PIER CAP								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	CT1	750  750	20		3.950	50	2.469	487.65
2	CT2	750  750	20		13.200	18	2.469	586.67
3	CT3	750  750	20		3.950	50	2.469	487.65
4	CT4	750  750	20		13.200	18	2.469	586.67
5	CT5	2450  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

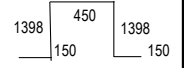
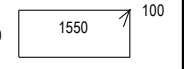
BAR BENDING SCHEDULE OF PIER STEM								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	ST1	300  900	20		7.470	50	2.469	922.22
2	ST2	100  100	16	200	8.000	16	1.580	202.27
3	ST3	300  900	20		7.470	50	2.469	922.22
4	ST4	100  100	16	200	8.000	16	1.580	202.27
5	ST5	300  6270	20		7.470	12	2.469	221.33
5	ST6	720  1885	16	200	3.325	32	1.580	168.14
6	ST7	100  100	16	Ver. 150 Hor. 400	1.250	483	1.580	954.07
TOTAL (KG) :								3592.53

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

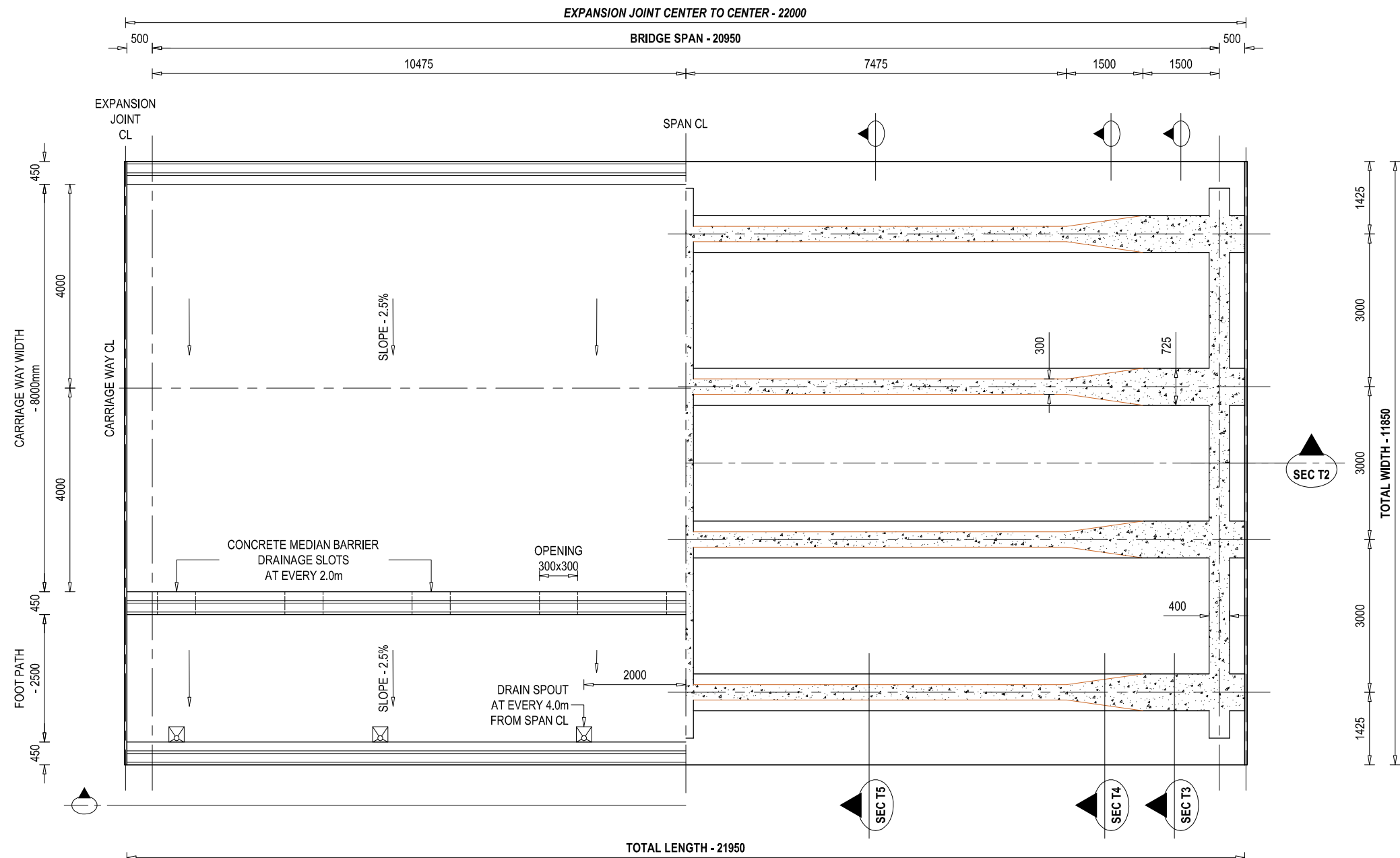
BAR BENDING SCHEDULE OF PEDESTAL								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TP1	150  Avg. 650	16	150	2.850	8	1.580	36.03
2	TP2	150  Avg. 650	16	150	2.850	8	1.580	36.03
3	TP3	950  100	16	150	4.000	3	1.580	18.96
4	TP4	925  @ 75	10		26.000	2	0.617	32.10
TOTAL (KG) :								123.12

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

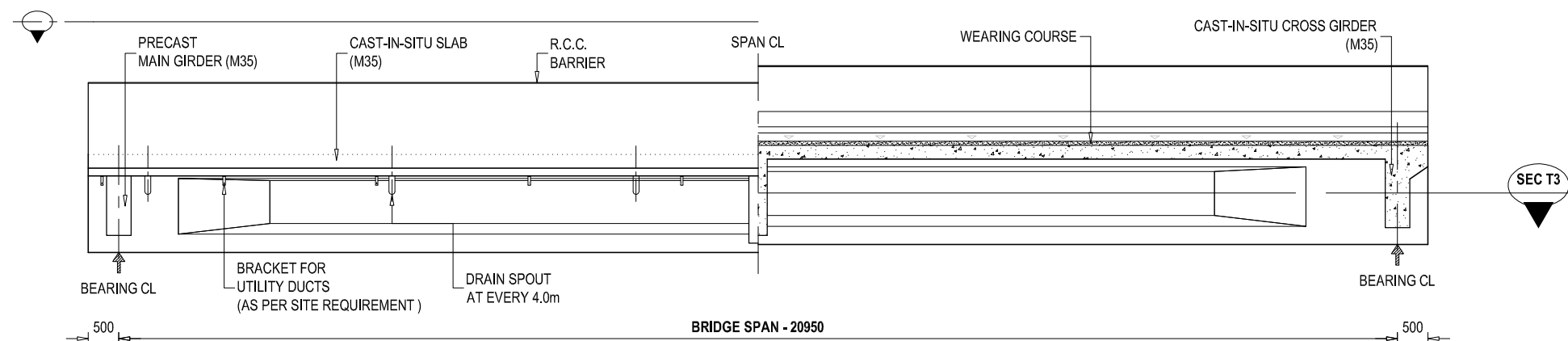
BAR BENDING SCHEDULE OF RCC SEISMIC ARRESTER - MID								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TU1	1398  150	16	150	3.546	13	1.580	72.85
2	TU2	450  100	12	150	4.200	8	0.889	29.87
TOTAL (KG) :								102.71

EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		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.A. Nec.No. 6431 CIVIL/W	 Signature	PIER BAR BENDING SCHEDULE OF BRIDGE OVER RIVER CHAPANI	AS SHOWN	03.08.2023			
		EPTISA Servicios De Ingeniera Madrid, Spain		Checked By	Mr. S.M.				 Signature	Reference Drawings	Chainage:	Drawing No.- KDP/DPR/STR/BR/CHAPANI/DD- 12
		STUP Consultants Private Limited Kolkatta, India		Approved By	Mr. H.B.							
In Association With Udaya Consultancy, Geocom International, Sundar Krilli Consultant and Rays Consultant Private Limited												



HALF SECTIONAL PLAN VIEW OF SUPERSTRUCTURE AT SEC T1

SCALE - 1 : 100 @ A3 PAPER

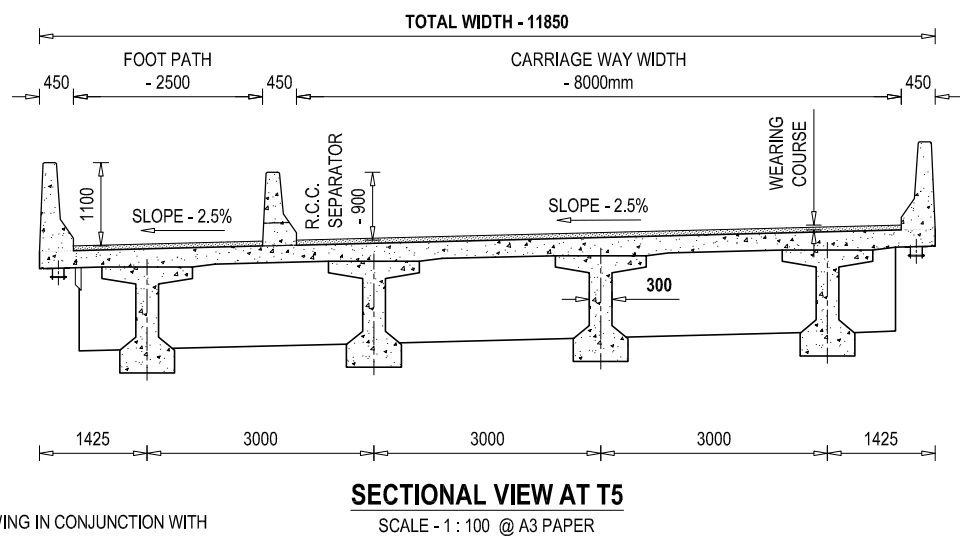
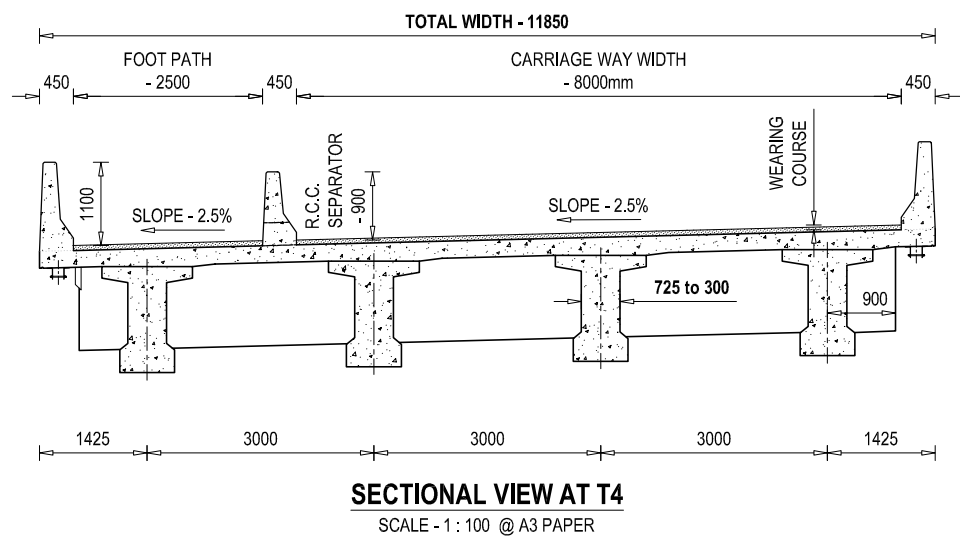
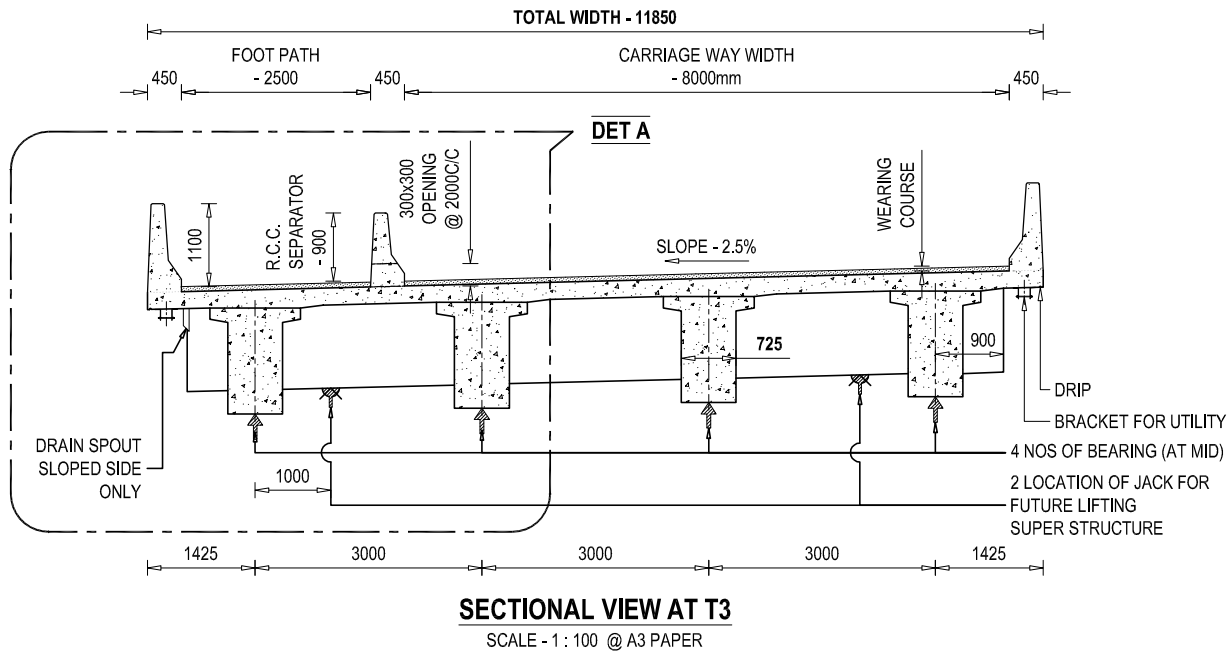


HALF ELEVATION SECTIONAL VIEW OF SUPERSTRUCTURE AT SEC T2

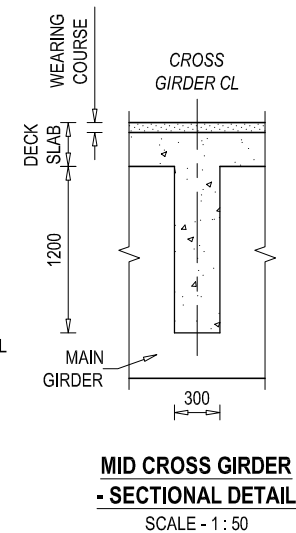
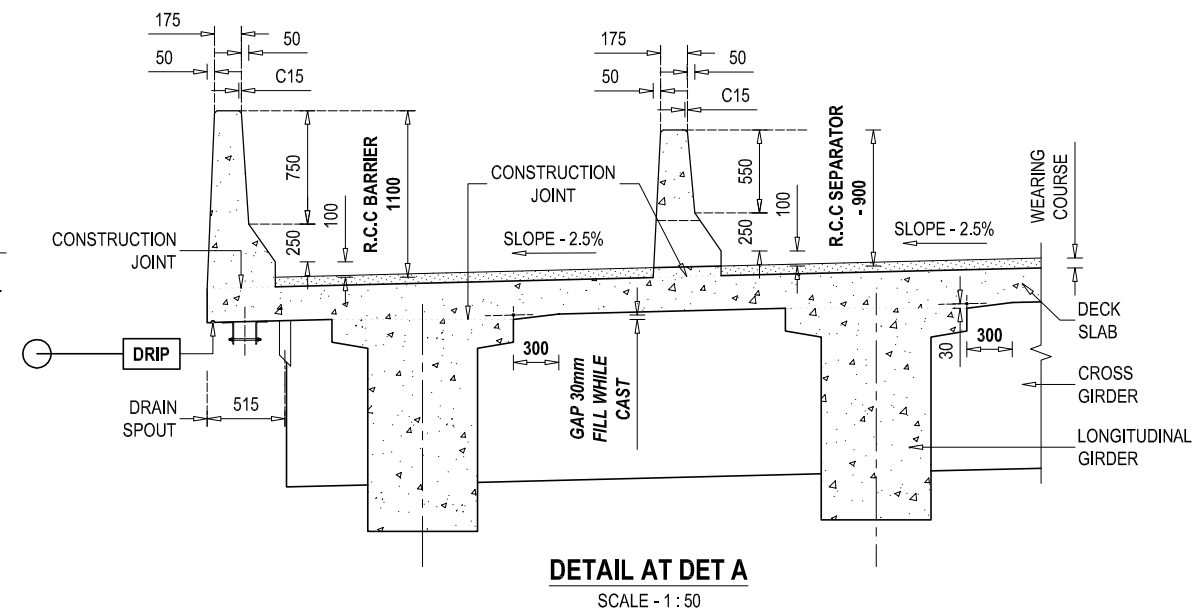
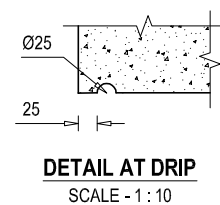
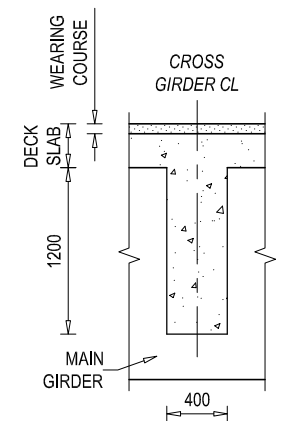
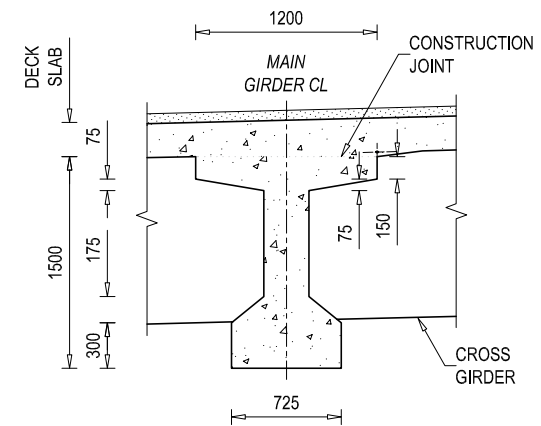
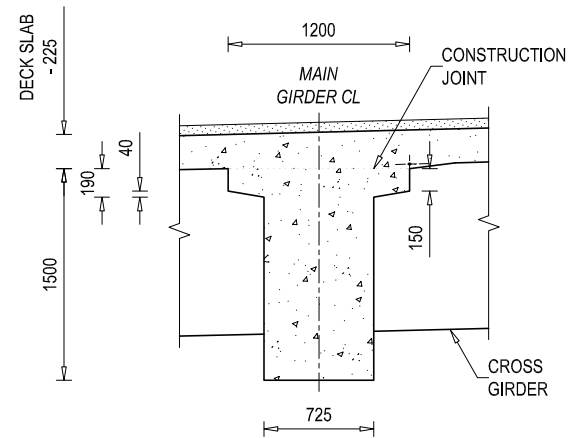
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NOTE
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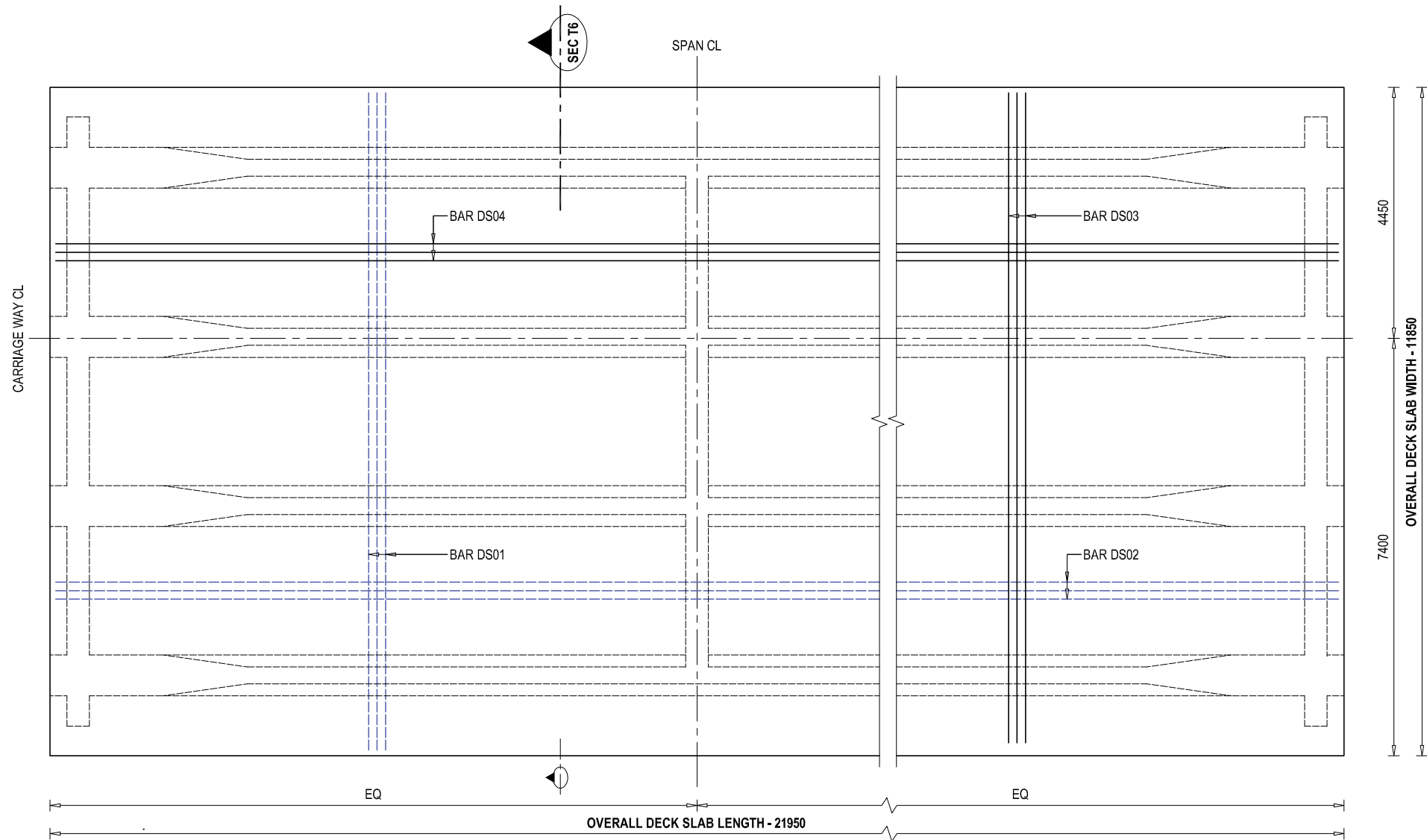
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Mr. R.A.	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed 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 Kriti Consultant and Rays Consultant Private Limited	Checked By	Mr. S.M.	Reference Drawings	Chainage:	Drawing No.-
			Approved By	Mr. H.B.	KDP/DPR/STR/BR/CHAPANI/DD-17	301+948	KDP/DPR/STR/BR/CHAPANI/DD- 13
							Sheet No. 1/2



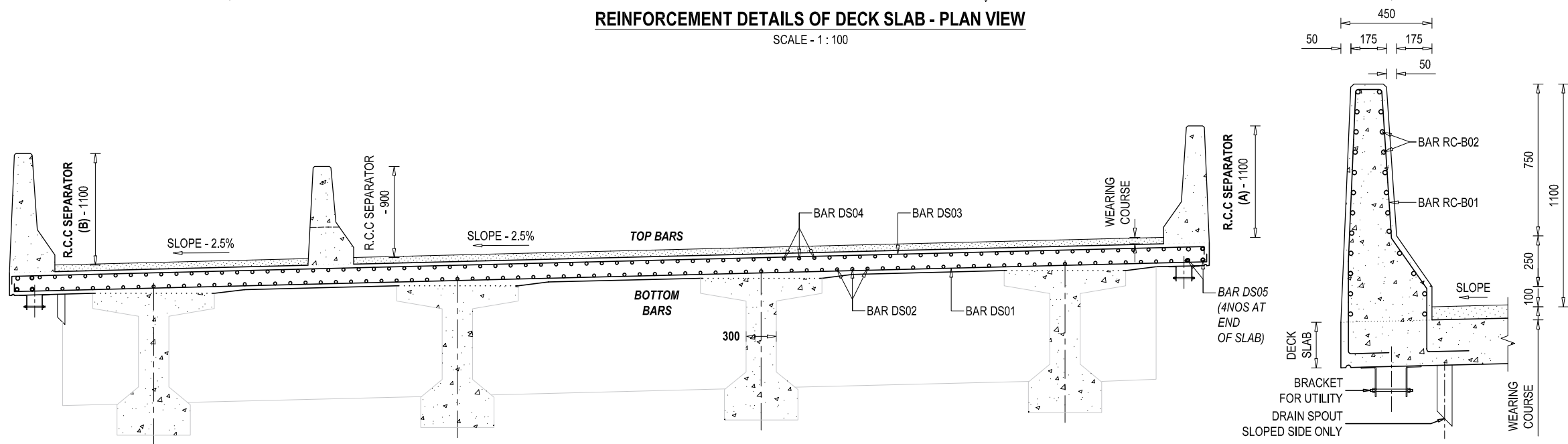
NOTE
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DRG NO. KDP/DPR/STR/BR/CHAPANI/DD-4



EMPLOYER Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	PROJECT NAME Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	DESIGN CONSULTANTS Joint Venture of EPTISA Servicios De Ingeniera Madrid, Spain STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Designed By Mr. R.A. Nec.No. 6431 CIVIL/14 Signature Checked By Mr. S.M. Signature Approved By Mr. H.B. Signature	Drawing Name SUPER STRUCTURE DETAILS OF BRIDGE OVER RIVER CHAPANI Reference Drawings KDP/DPR/STR/BR/CHAPANI/DD-17	Scale: AS SHOWN Chainage: 301+948	Date: 24.04.2023 Drawing No.- KDP/DPR/STR/BR/CHAPANI/DD- 13 Sheet No.2/2
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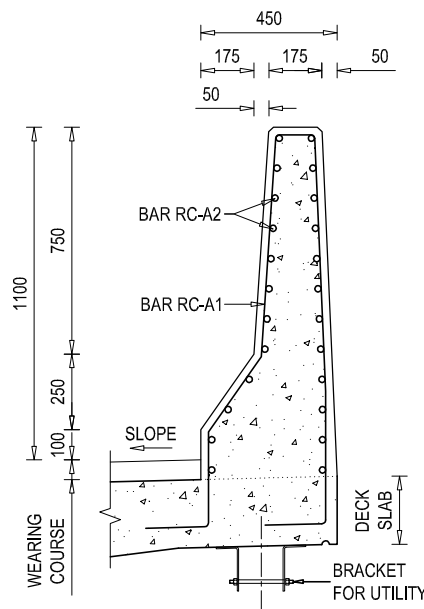
REINFORCEMENT DETAILS OF DECK SLAB - PLAN VIEW
SCALE - 1 : 100



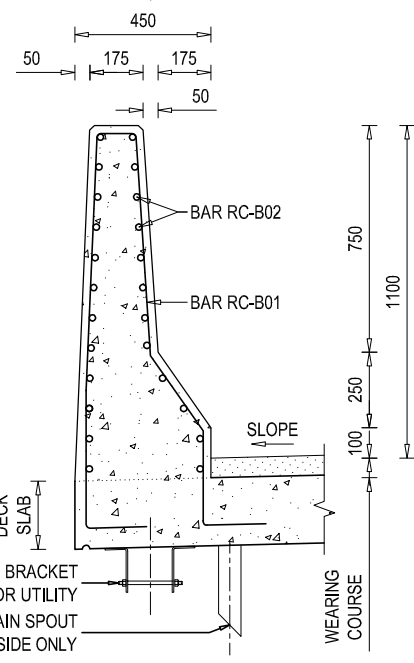
REINFORCEMENT DETAILS OF DECK SLAB - SECTIONAL VIEW AT T6
SCALE - 1 : 50

LEGEND FOR REINFORCEMENT BAR

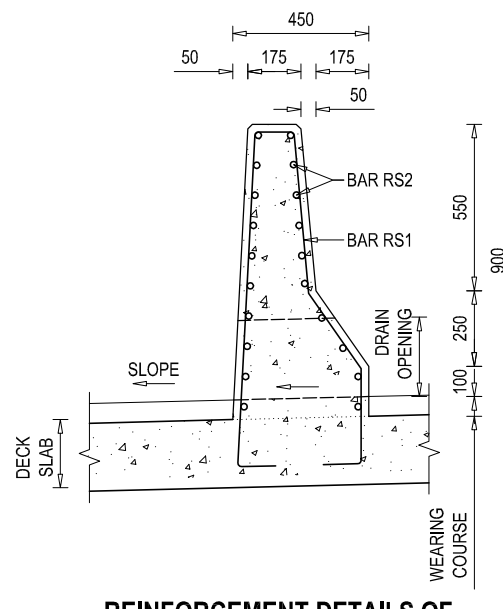
CODE	FULL FORM	
DS	- DECK SLAB	CG - CROSS GIRDER
RB	- R.C.C BARRIER	AS - APPROACH SLAB
RS	- R.C.C SEPARATOR	ST - STOPPER
MG	- MAIN GIRDER	** - ***
	TOP BAR OR NEAR FACE REINFORCEMENT	
	BOTTOM BAR OR FAR FACE REINFORCEMENT	



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



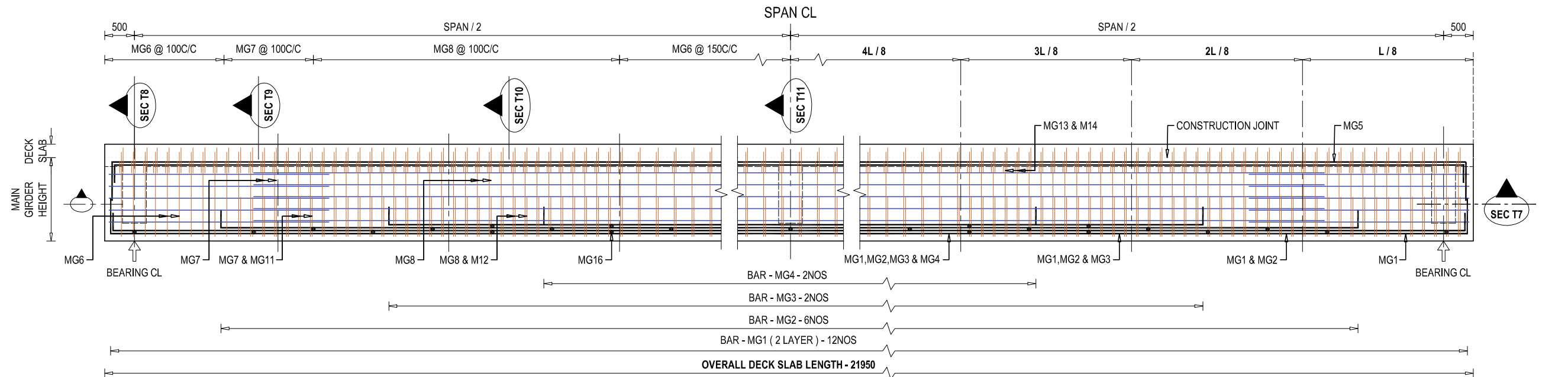
REINFORCEMENT DETAILS OF R.C.C BARRIER (B)- SECTIONAL VIEW
SCALE - 1 : 25



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

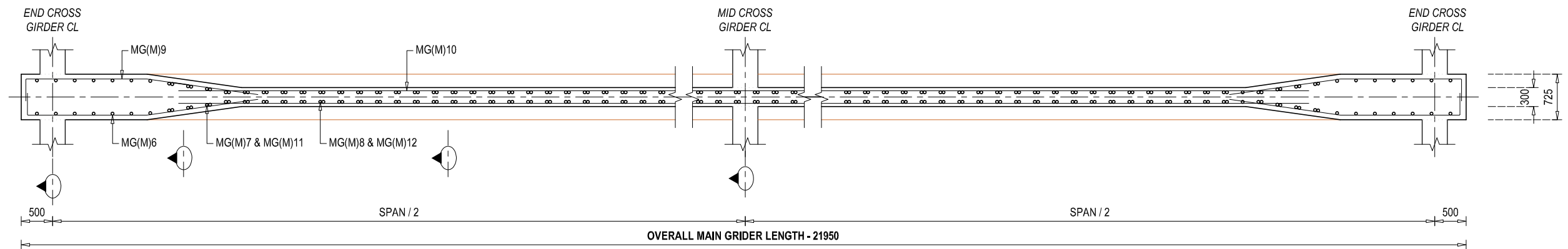
NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/CHAPANI/DD-4

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-Pathahiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of			Mr. R.A.			DECK SLAB DETAILS OF BRIDGE OVER RIVER CHAPANI	AS SHOWN
		 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:	Drawing No.-
							KDP/DPR/STR/BR/CHAPANI/DD-17	301+948	KDP/DPR/STR/BR/CHAPANI/DD- 14
									Sheet No. 1/1



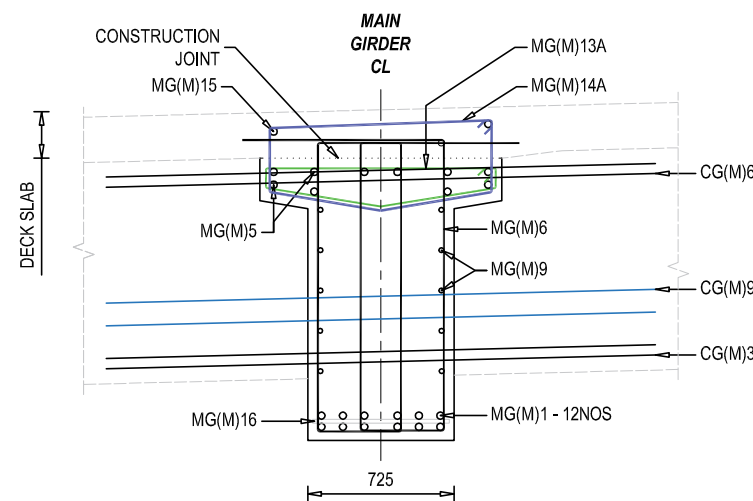
REINFORCEMENT DETAILS OF MAIN GIRDER - SECTIONAL ELEVATION VIEW

SCALE - 1 : 75



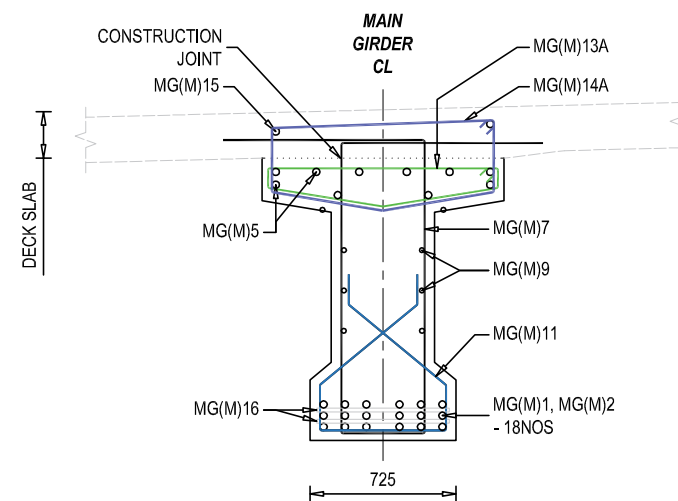
REINFORCEMENT DETAILS OF MAIN GIRDER (MID) - SECTIONAL PLAN VIEW AT T7(M)

SCALE - 1 : 75



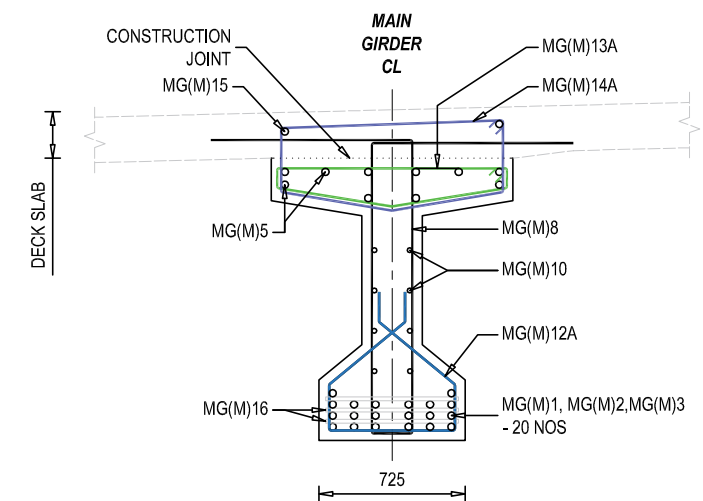
REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T8

SCALE - 1 : 50



REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T9

SCALE - 1 : 50



REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T10

SCALE - 1 : 50

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



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

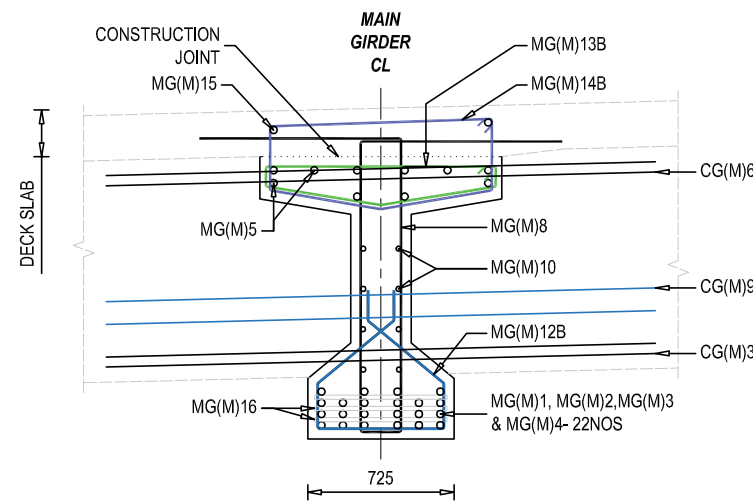
DESIGN CONSULTANTS
Joint Venture of
EPTISA Servicios De Ingeniera Madrid, Spain
STUP Consultants Private Limited Kolkata, India
In Association With
Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited

Designed By Mr. R.A.
Nec.No. 6431 CIVIL/14
Checked By Mr. S.M.
Approved By Mr. H.B.

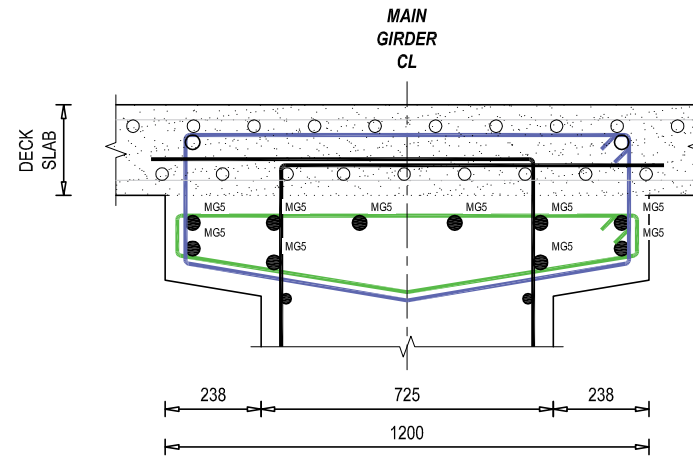
Drawing Name
MAIN GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER CHAPANI
Reference Drawings
KDP/DPR/STR/BR/CHAPANI/DD-17

Scale:
AS SHOWN
Chainage:
301+948

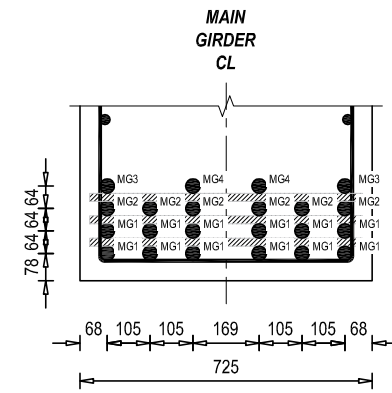
Date:
24.04.2023
Drawing No.- KDP/DPR/STR/BR/CHAPANI/DD- 15
Sheet No.1/2



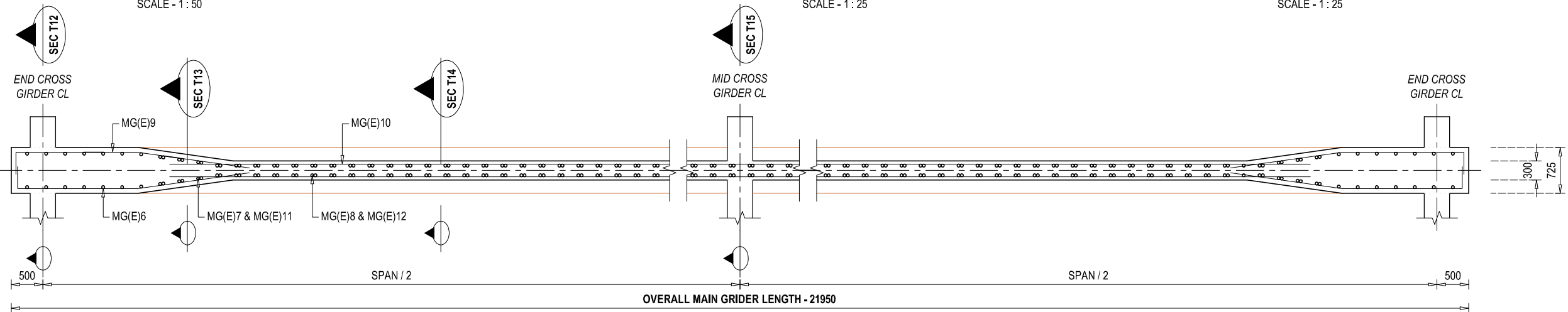
**REINFORCEMENT DETAILS OF MAIN GIRDER
SECTIONAL VIEW AT T11**
SCALE - 1 : 50



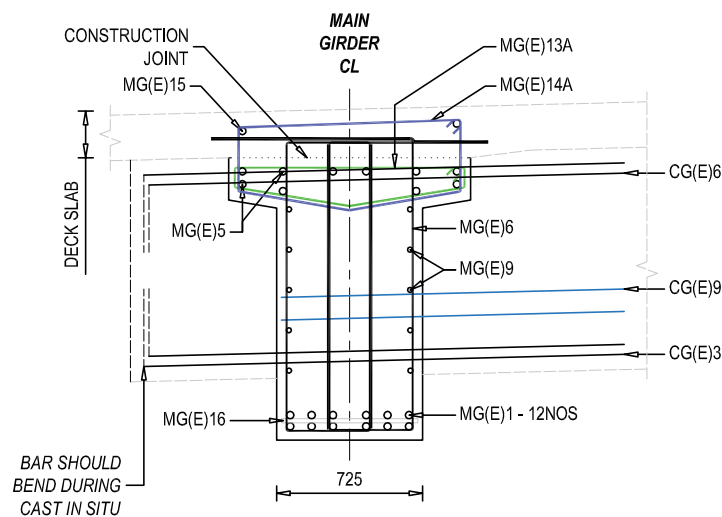
**TOP BAR WEB REINFORCEMENT DETAILS
OF MAIN GIRDER**
SCALE - 1 : 25



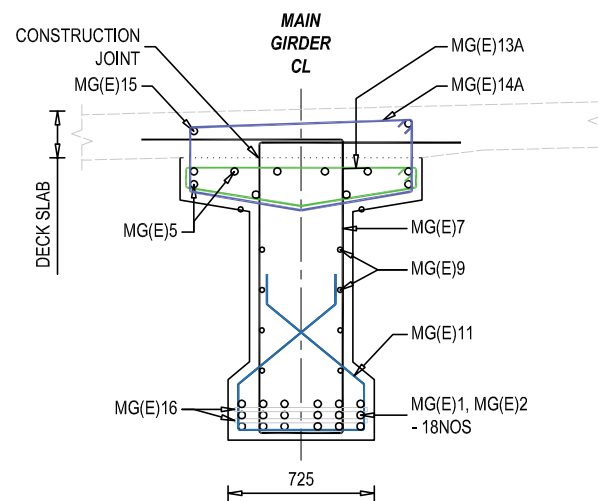
**BOTTOM BAR WEB REINFORCEMENT DETAILS
OF MAIN GIRDER**
SCALE - 1 : 25



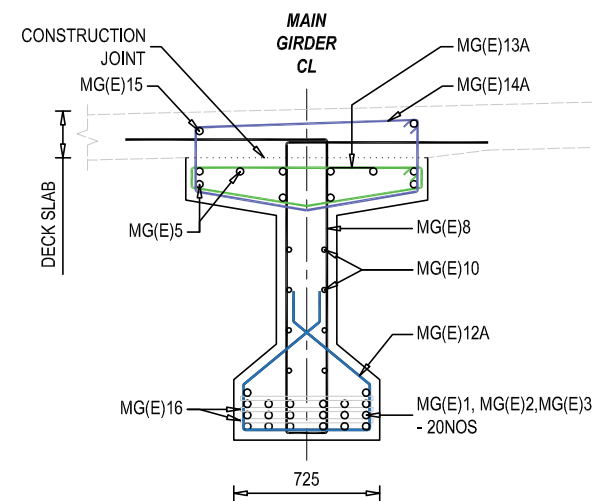
REINFORCEMENT DETAILS OF MAIN GIRDER (END) - SECTIONAL PLAN VIEW AT T7(E)
SCALE - 1 : 75



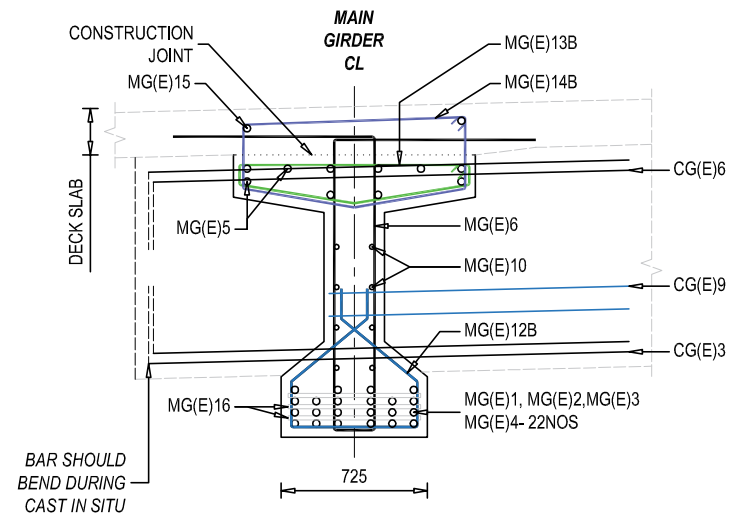
**REINFORCEMENT DETAILS OF MAIN GIRDER
SECTIONAL VIEW AT T12**
SCALE - 1 : 50



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



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



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

NOTE
READ THIS DRAWING IN CONJUNCTION WITH SCALE - 1 : 50
DRG NO. KDP/DPR/STR/BR/CHAPANI/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

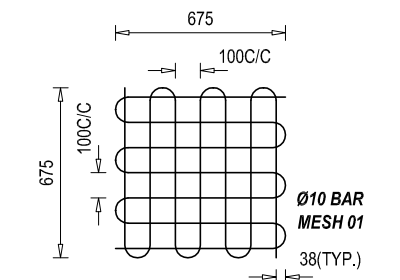
DESIGN CONSULTANTS
Joint Venture of
EPTISA Servicios De Ingeniera Madrid, Spain
STUP Consultants Private Limited Kolkata, India
In Association With
Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited

Designed By
Mr. R.A.
Nec.No. 6431 CH/8/14
Checked By
Mr. S.M.
Approved By
Mr. H.B.

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

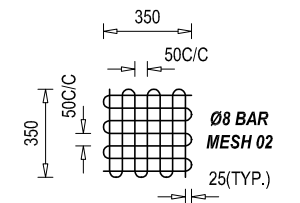
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301+948

Date:
24.04.2023
Drawing No.-
KDP/DPR/STR/BR/CHAPANI/DD- 15
Sheet No. 2/2



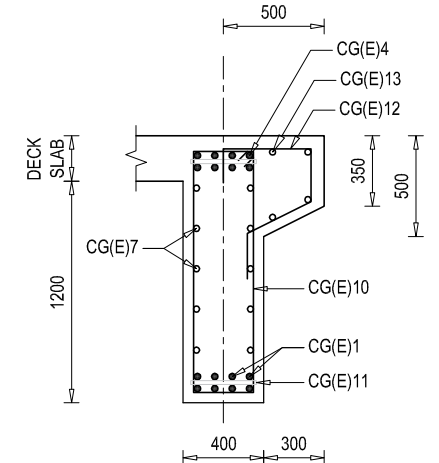
REINFORCEMENT DETAILS OF BEARING MESH

SCALE - 1 : 50

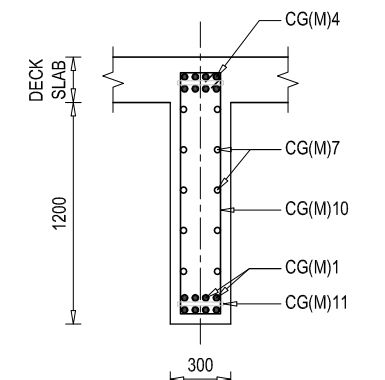


REINFORCEMENT DETAILS OF LIFTING MESH

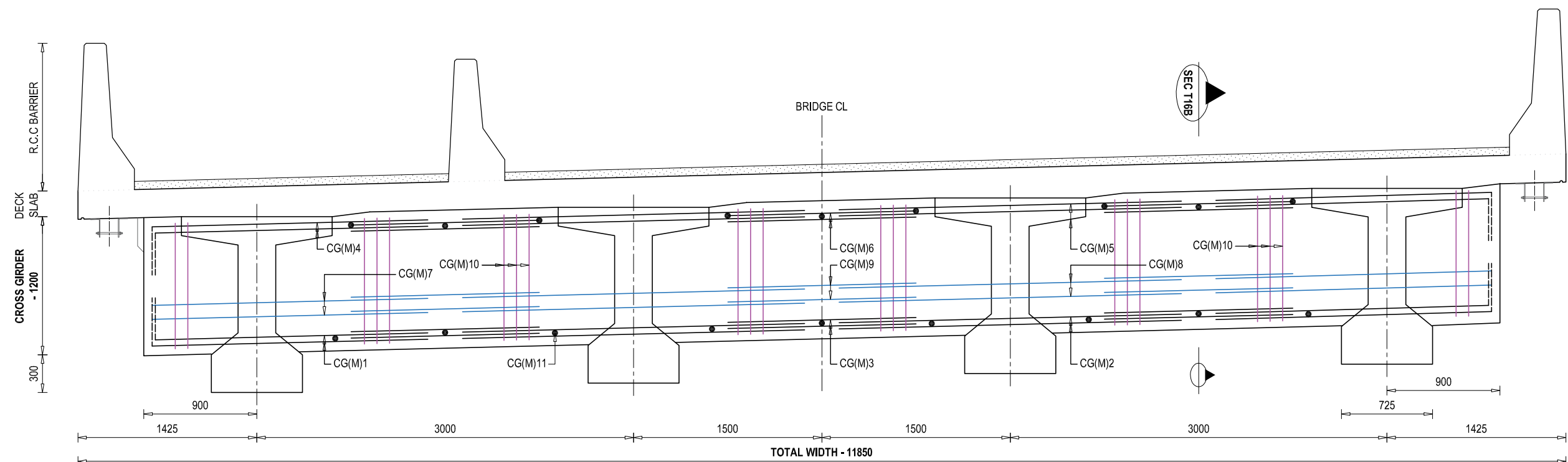
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SECTIONAL REINFORCEMENT
DETAILS OF END CROSS
GIRDER - SEC T16A
SCALE - 1 : 50



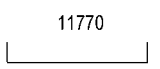
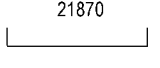
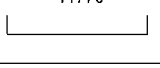
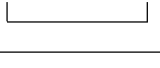
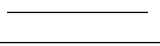
SECTIONAL REINFORCEMENT
DETAILS OF MID CROSS
GIRDER - SEC T16B
SCALE - 1 : 50

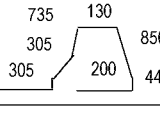
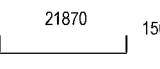


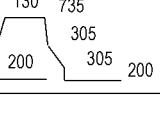
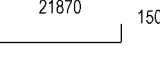
REINFORCEMENT DETAILS OF MID CROSS GIRDER
SCALE - 1 : 50

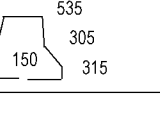
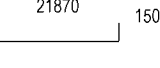
NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/CHAPANI/DD-4

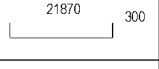
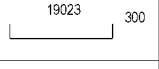
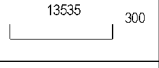
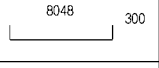
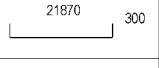
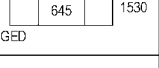
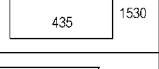
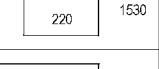
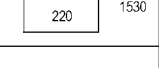
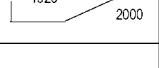
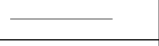
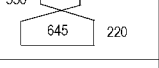
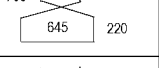
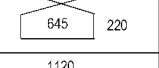
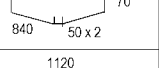
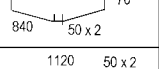
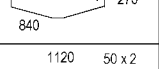
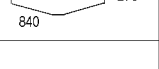
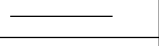
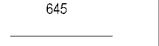
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS			Designed By	Mr. R.A.		Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathalaya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of				Mr. R.A.		 <td>CROSS GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER CHAPANI</td> <td>AS SHOWN</td> <td>24.04.2023</td>	CROSS GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER CHAPANI	AS SHOWN
		 EPTISA Servicios De Ingenieria Madrid, Spain	 STUP Consultants Private Limited Kolkatta, India		Checked By	Mr. S.M.	Reference Drawings		Chainage:	Drawing No.- KDP/DPR/STR/BR/CHAPANI/DD- 16
		In Association With Udaya Consultancy, Geocom International, Sundar K/Iti Consultant and Rays Consultant Private Limited			Approved By	Mr. H.B.		KDP/DPR/STR/BR/CHAPANI/DD-17	301+948	Sheet No.1/1

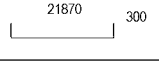
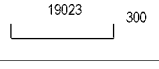
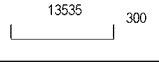
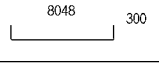
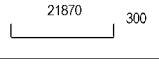
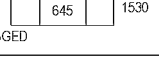
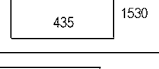
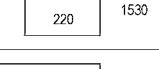
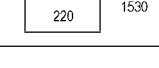
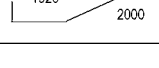
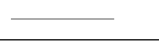
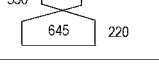
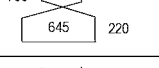
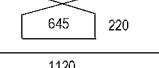
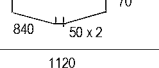
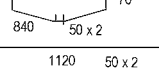
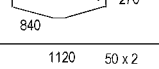
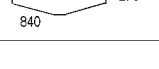
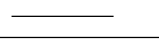
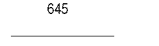
BAR BENDING SCHEDULE OF DECK SLAB (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	DS01	150  150	16	150	12.070	80	1.580	1525.89
2	DS02	150  150	10	150	22.170	143	0.617	1956.98
3	DS03	150  150	16	150	12.070	147	1.580	2803.82
5	DS04	150  150	10	150	22.170	143	0.617	1956.98
6	DS05	 21870	16		21.870	8	1.580	276.48
TOTAL (KG) :								8520.15

BAR BENDING SCHEDULE OF R.C.C BARRIER (A) (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RC-A1	 200	16	150	3.170	147	1.580	736.38
2	RC-A2	150  150	10	150	22.170	20	0.617	273.70
TOTAL (KG) :								1010.08

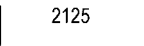
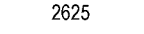
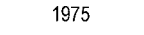
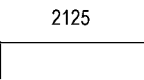
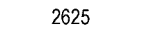
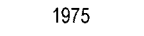
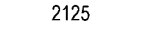
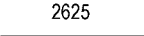
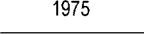
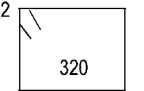
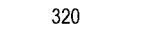
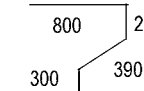
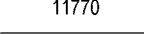
BAR BENDING SCHEDULE OF R.C.C BARRIER (B) (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RC-B1	 200	16	150	3.170	147	1.580	736.38
2	RC-B2	150  150	10	150	22.170	20	0.617	273.70
TOTAL (KG) :								1010.08

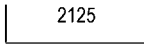
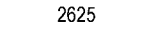
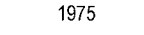
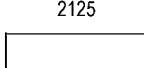
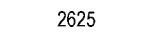
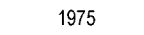
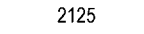
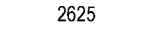
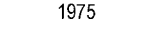
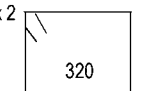
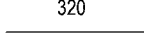
BAR BENDING SCHEDULE OF R.C.C SEPARATOR (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RS1	 150	16	150	2.695	147	1.580	626.04
2	RS2	150  150	10	150	22.170	17	0.617	232.65
TOTAL (KG) :								858.69

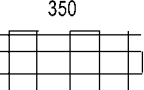
BAR BENDING SCHEDULE OF END MAIN GIRDER (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	MG(E)1	300  300	32		22.470	12	6.321	1704.39
2	MG(E)2	300  300	32		19.623	6	6.321	744.22
3	MG(E)3	300  300	32		14.135	2	6.321	178.69
4	MG(E)4	300  300	32		8.648	2	6.321	109.33
5	MG(E)5	300  300	12		22.470	10	0.889	199.73
6	MG(E)6	480  1530 4 LEGGED	12	100	9.660	42	0.889	360.64
7	MG(E)7	480  1530 AVG.	12	100	5.325	32	0.889	151.47
8	MG(E)8A	480  1530	12	100	4.680	96	0.889	399.36
9	MG(E)8B	480  1530	12	150	4.680	38	0.889	158.08
10	MG(E)9	370  2000	12	200	4.290	32	0.889	122.03
11	MG(E)10	 18950	12	200	18.950	16	0.889	269.51
12	MG(E)11	550  220 AVG.	12	100	2.785	32	0.889	79.22
13	MG(E)12A	700  220	12	150	3.085	96	0.889	263.25
14	MG(E)12B	700  220	12	150	3.085	38	0.889	104.20
15	MG(E)13A	 70 840 50 x 2	12	100	3.040	166	0.889	448.57
16	MG(E)13B	 70 840 50 x 2	12	150	3.040	38	0.889	102.68
17	MG(E)14A	 270	12	100	3.440	166	0.889	507.59
18	MG14B	 270	12	150	3.440	38	0.889	116.20
19	MG(E)15	 21870	16		21.870	2	1.580	69.12
19	MG(E)16	 645	32	1500	0.645	45	6.321	183.47
TOTAL (KG) :								6271.75

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		22.470	12	6.321	1704.39
2	MG(M)2	300  300	32		19.623	6	6.321	744.22
3	MG(M)3	300  300	32		14.135	2	6.321	178.69
4	MG(M)4	300  300	32		8.648	2	6.321	109.33
5	MG(M)5	300  300	12		22.470	10	0.889	199.73
6	MG(M)6	480  1530 4 LEGGED	12	100	9.660	42	0.889	360.64
7	MG(M)7	480  1530 AVG.	12	100	5.325	32	0.889	151.47
8	MG(M)8A	480  1530	12	100	4.680	96	0.889	399.36
9	MG(M)8B	480  1530	12	150	4.680	38	0.889	158.08
10	MG(M)9	370  2000	12	200	4.290	32	0.889	122.03
11	MG(M)10	 18950	12	200	18.950	16	0.889	269.51
12	MG(M)11	550  220 AVG.	12	100	2.785	32	0.889	79.22
13	MG(M)12A	700  220	12	150	3.085	96	0.889	263.25
14	MG(M)12B	700  220	12	150	3.085	38	0.889	104.20
15	MG(M)13A	 70 840 50 x 2	12	100	3.040	166	0.889	448.57
16	MG(M)13B	 70 840 50 x 2	12	150	3.040	38	0.889	102.68
17	MG(M)14A	 270	12	100	3.440	166	0.889	507.59
18	MG14B	 270	12	150	3.440	38	0.889	116.20
19	MG(M)15	 21870	16		21.870	2	1.580	69.12
19	MG(M)16	 645	32	1500	0.645	45	6.321	183.47
TOTAL (KG) :								6271.75

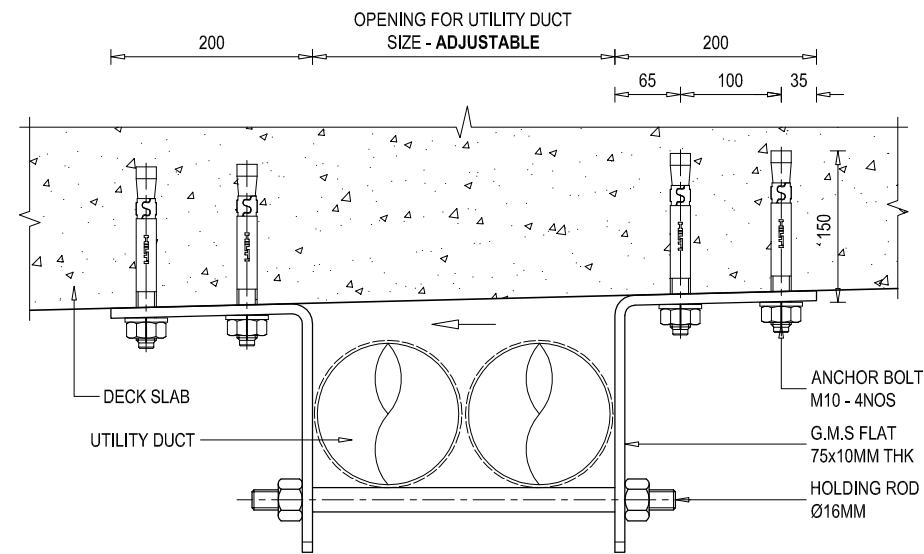
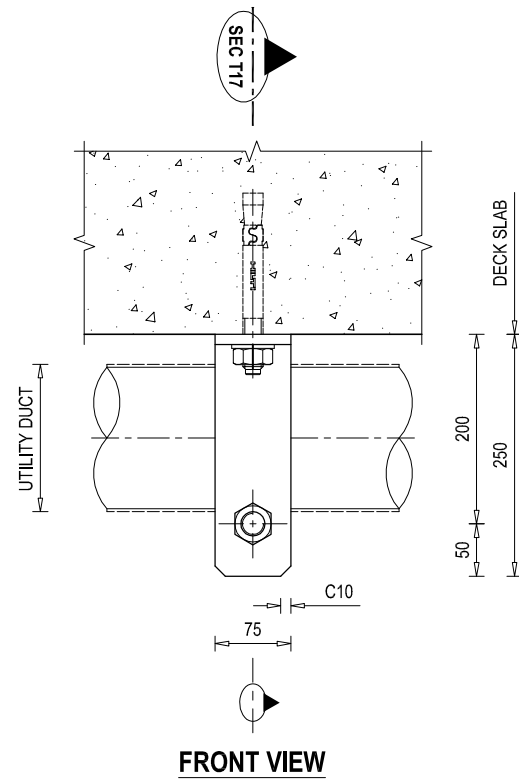
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 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division		Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges		Joint Venture of		Mr. R.A.		SUPER STRUCTURE BAR BENDING DETAILS OF BRIDGE OVER RIVER CHAPANI		AS SHOWN		24.04.2023	
				EPTISA Servicios De Ingeniera Madrid, Spain		Mr. S.M.						Drawing No.- KDP/DPR/STR/BR/CHAPANI/DD- 17	
				In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited		Mr. H.B.		Reference Drawings		Chainage: 301+948		Sheet No. 1/2	

BAR BENDING SCHEDULE OF END CROSS GIRDER (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	CG(E)1	300 	20		2.425	8	2.469	47.90
2	CG(E)2		20		2.625	8	2.469	51.85
3	CG(E)3		20		1.975	8	2.469	39.01
4	CG(E)4	300 	20		2.425	8	2.469	47.90
5	CG(E)5		20		2.625	8	2.469	51.85
6	CG(E)6		20		1.975	8	2.469	39.01
7	CG(E)7		12	150	2.125	8	0.889	15.11
8	CG(E)8		12	150	2.625	8	0.889	18.67
9	CG(E)9		12	150	1.975	8	0.889	14.04
10	CG(E)10	50 x 2 	12	200	1.740	39	0.889	60.32
11	CG(E)11		20	1000	0.320	18	2.469	14.22
12	CG(E)12		16	150	1.750	79	1.580	218.47
13	CG(E)13		12		11.770	6	0.889	62.77
TOTAL (KG) :								681.14

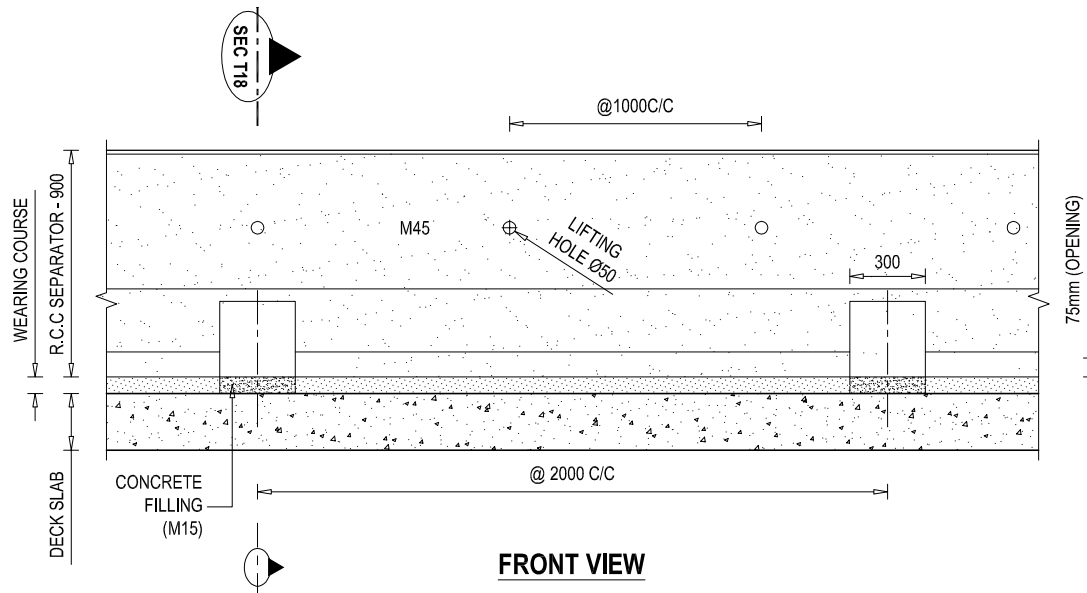
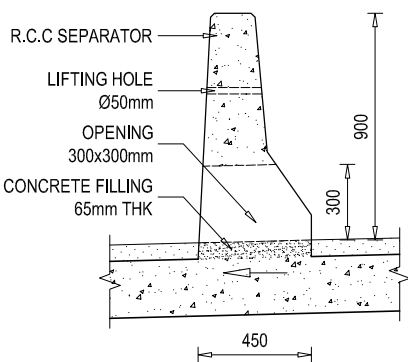
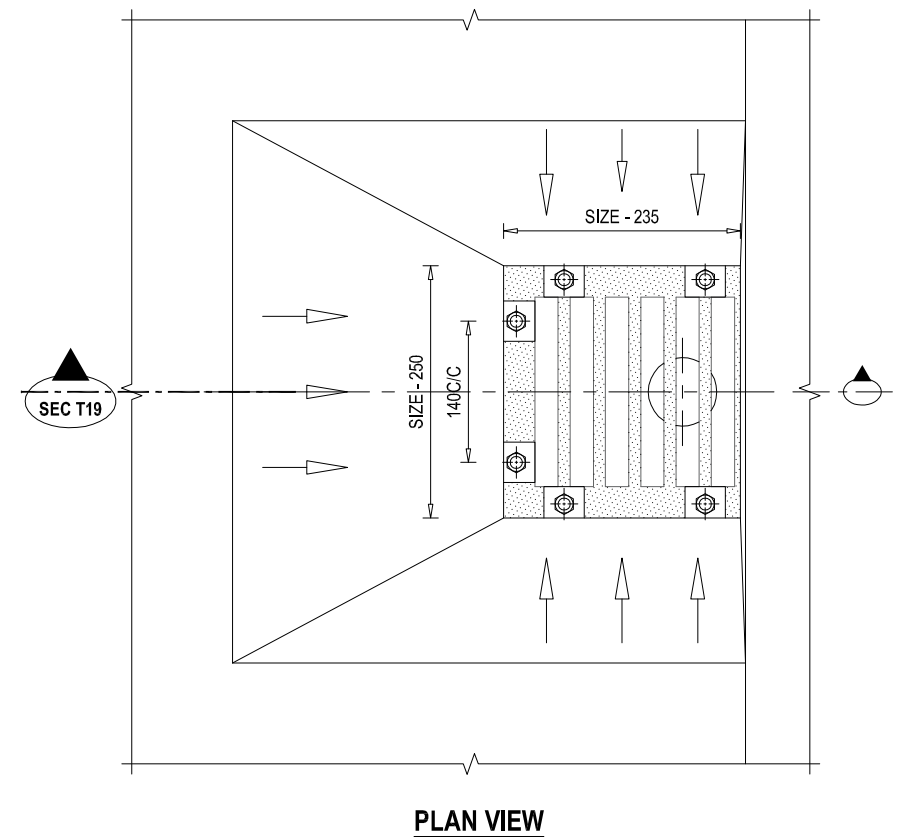
BAR BENDING SCHEDULE OF MID CROSS GIRDER (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	CG(M)1	300 	20		1.920	8	2.469	37.93
2	CG(M)2		20		2.945	8	2.469	58.17
3	CG(M)3		20		2.295	8	2.469	45.33
4	CG(M)4	300 	20		1.920	8	2.469	37.93
5	CG(M)5		20		2.625	8	2.469	51.85
6	CG(M)6		20		1.975	8	2.469	39.01
7	CG(M)7		12	150	1.620	8	0.889	11.52
8	CG(M)8		12	150	2.625	8	0.889	18.67
9	CG(M)9		12	150	1.975	8	0.889	14.04
10	CG(M)10	50 x 2 	12	200	1.740	39	0.889	60.32
11	CG(M)11		20	1000	0.320	18	2.469	14.22
TOTAL (KG) :								389.00

BAR BENDING SCHEDULE OF MESH (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	MESH 01	 @ 100	10		9.450	8	0.617	46.67
2	MESH 02	 @ 50	10		4.900	4	0.617	12.10
TOTAL (KG) :								58.77

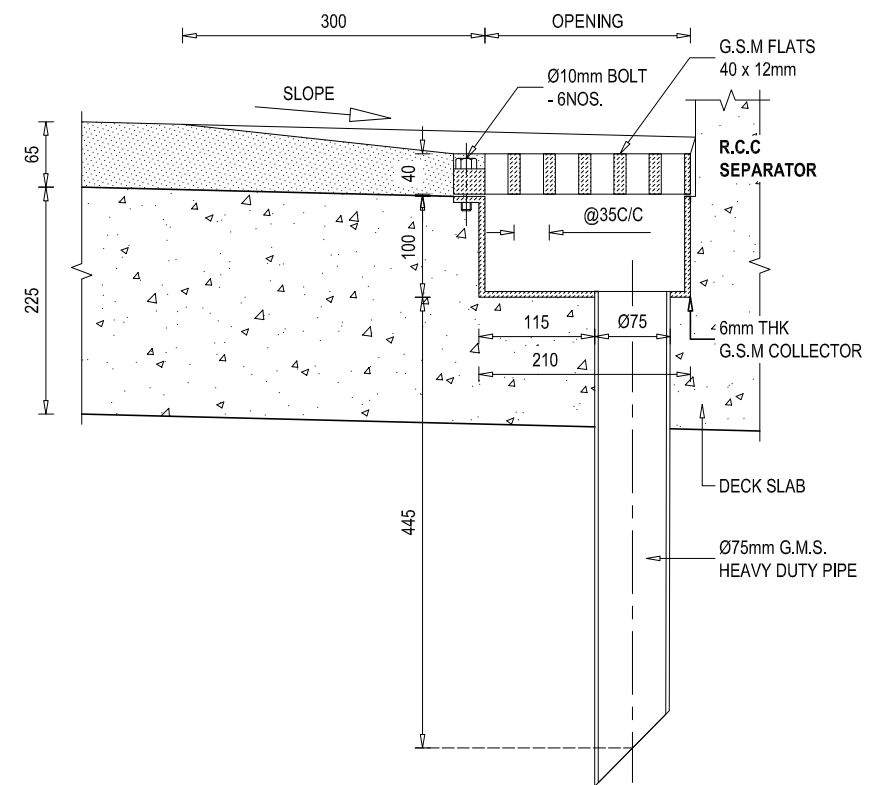
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 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of		Designed By	Mr. R.A.	SUPER STRUCTURE BAR BENDING DETAILS OF BRIDGE OVER RIVER CHAPANI	AS SHOWN	24.04.2023			
		 EPTISA Servicios De Ingenieria Madrid, Spain	 STUP Consultants Private Limited Kolkata, India	Checked By	Mr. S.M.			Drawing No.- KDP/DPR/STR/BR/CHAPANI/DD- 17			
		In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited		Approved By	Mr. H.B.			Chainage: 301+948		Sheet No. 2/2	



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

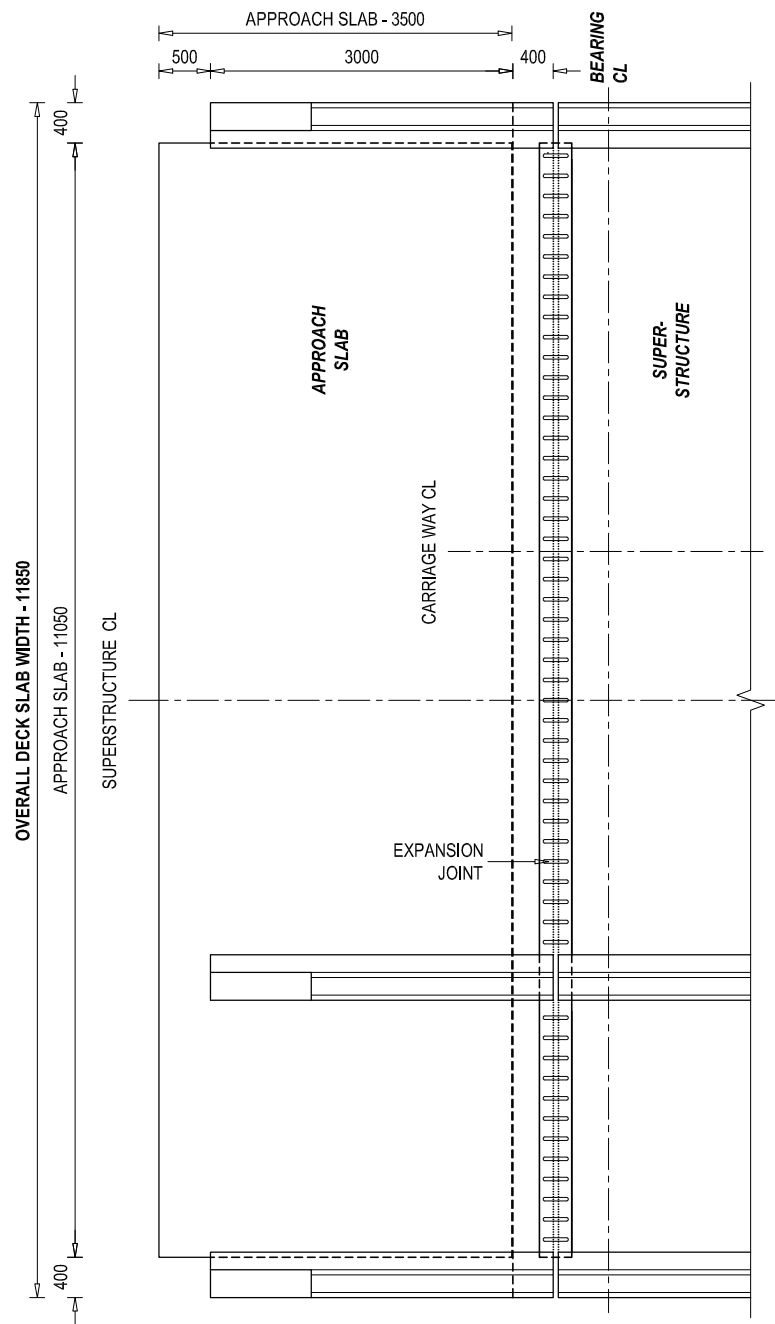


DETAIL ELEVATION VIEW AT R.C.C SEPARATOR
& IT'S DRAIN OPENING
 SCALE - 1 : 40

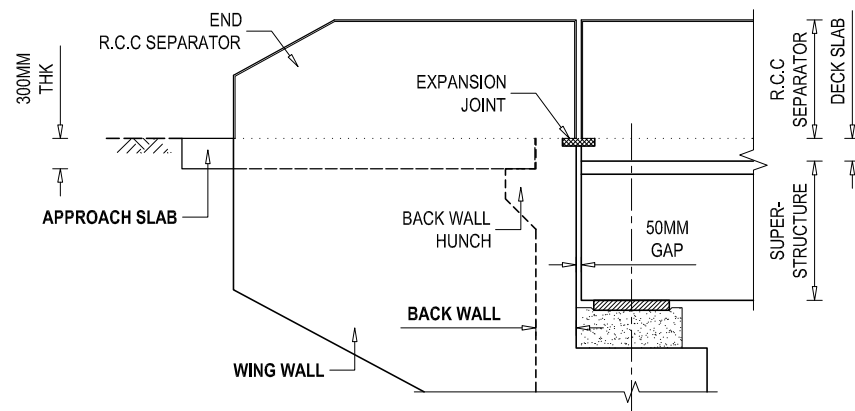


DETAILS OF GALVANIZED MILD STEEL (G.M.S)
DRAINAGE SPOUT
 SCALE - 1 : 10

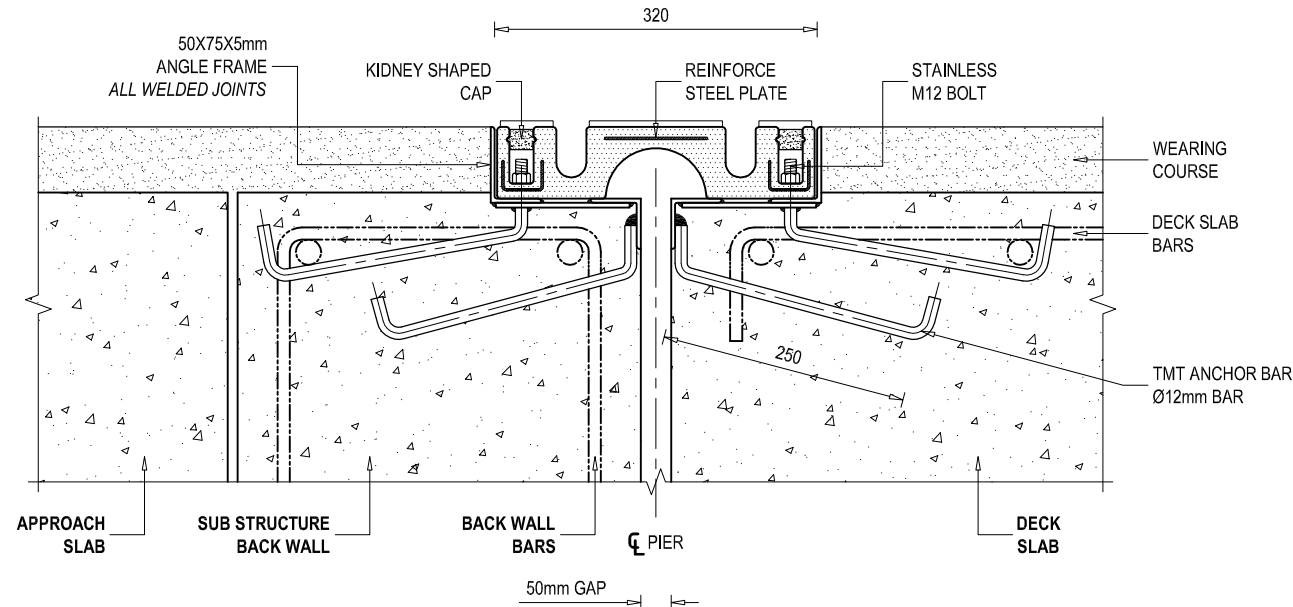
EMPLOYER  Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	PROJECT NAME Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathaiya Road Section (130 KM) of Mahendra Highway and Bridges	DESIGN CONSULTANTS Joint Venture of  EPTISA Servicios De 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 CMU/V Signature Checked By Mr. S.M. Signature Approved By Mr. H.B. Signature	Drawing Name MISCELLANEOUS DETAILS OF BRIDGE OVER RIVER CHAPANI Reference Drawings	Scale: AS SHOWN Chainage: 301+948	Date: 24.04.2023 Drawing No.: KDP/DPR/STR/BR/CHAPANI/DD-18 Sheet No.1 /2
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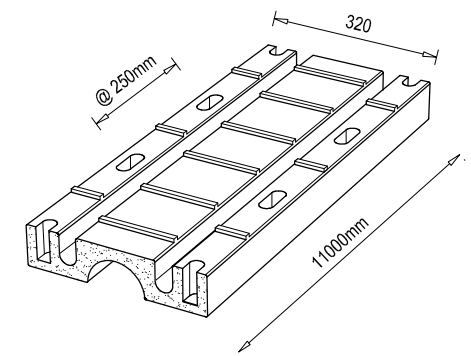
PLAN VIEW AT EXPANSION JOINT, END R.C.C SEPARATOR & APPROACH SLAB



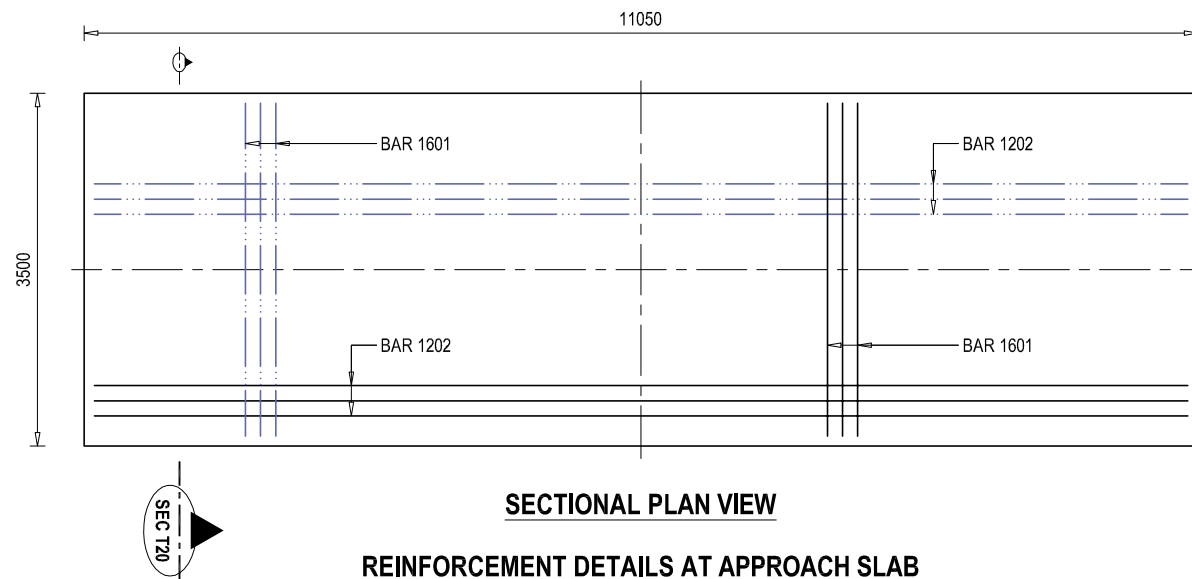
ELEVATION VIEW



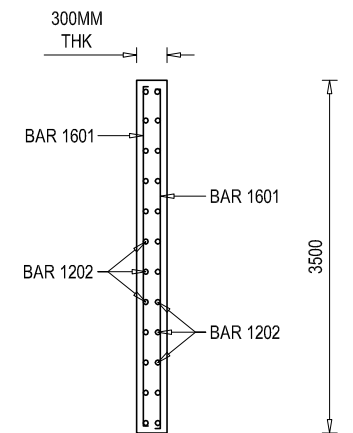
SEAL TYPE EXPANSION JOINTS ARRANGEMENT IN A CARRIAGEWAY
SCALE - 1 : 10 @ A3 PAPER



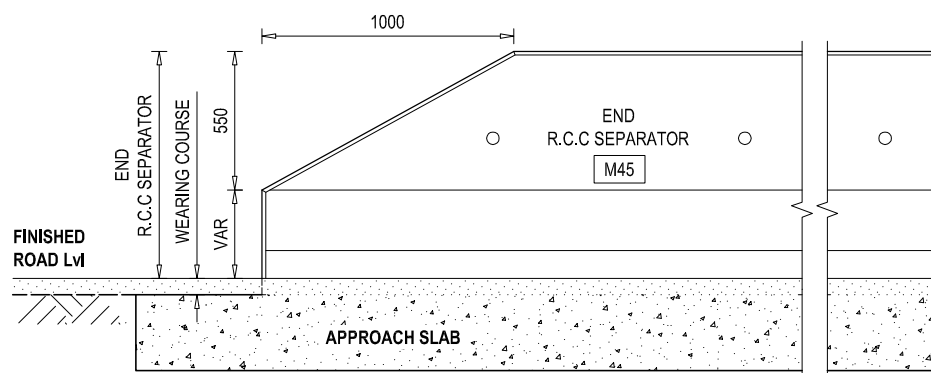
EXPANSION JOINT ISOMETRIC VIEW - SEAL TYPE
SCALE - NON



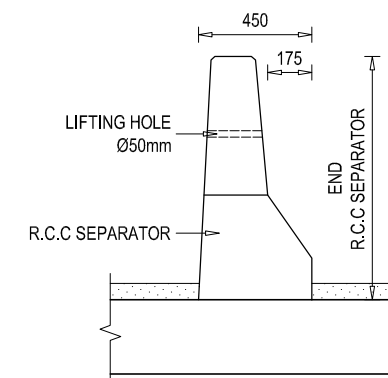
REINFORCEMENT DETAILS AT APPROACH SLAB
SCALE - 1 : 100 @ A3 PAPER



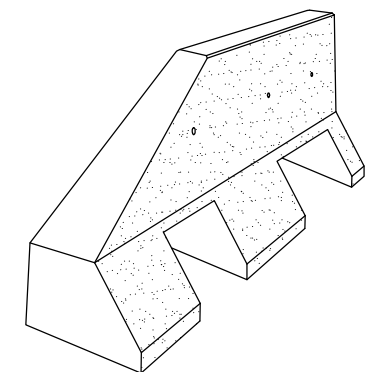
SECTIONAL ELEVATION VIEW AT SEC T20



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

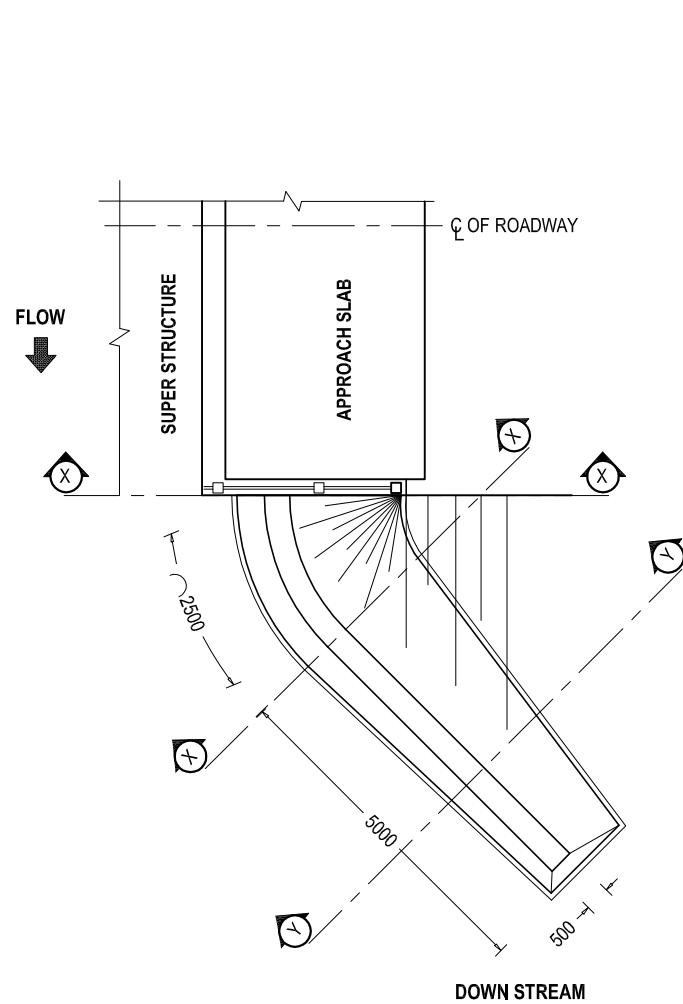


SIDE VIEW
SCALE - 1 : 40 @ A3 PAPER

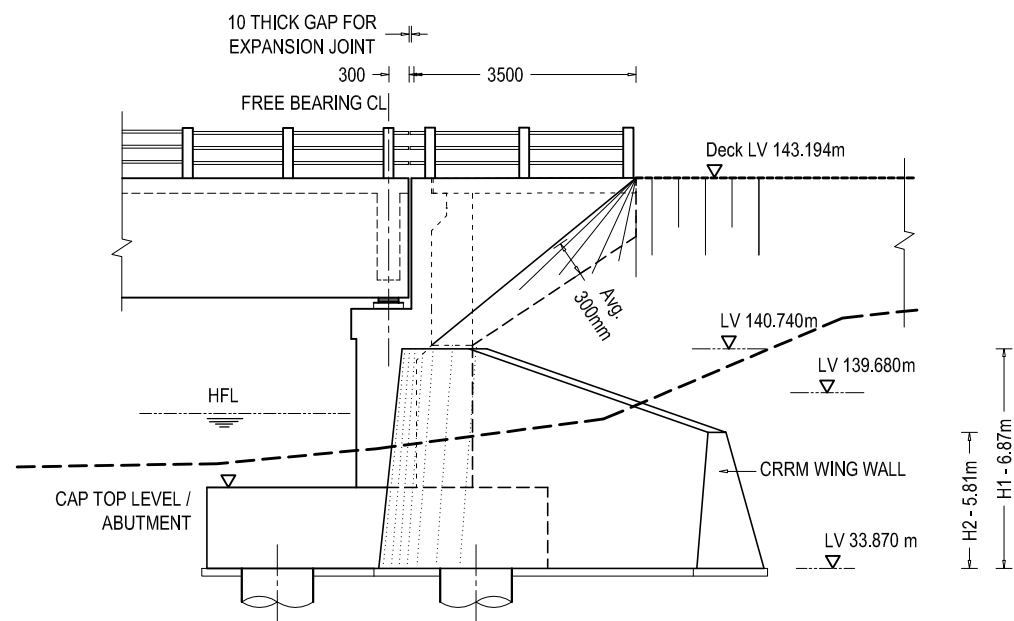
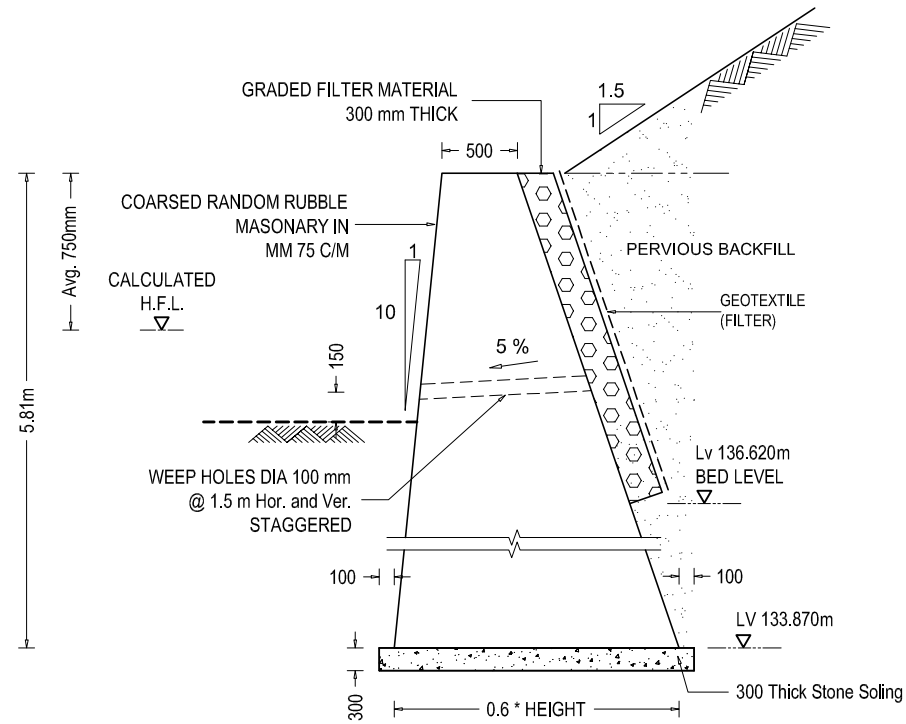


END R.C.C SEPARATOR ISOMETRIC VIEW
SCALE - NON

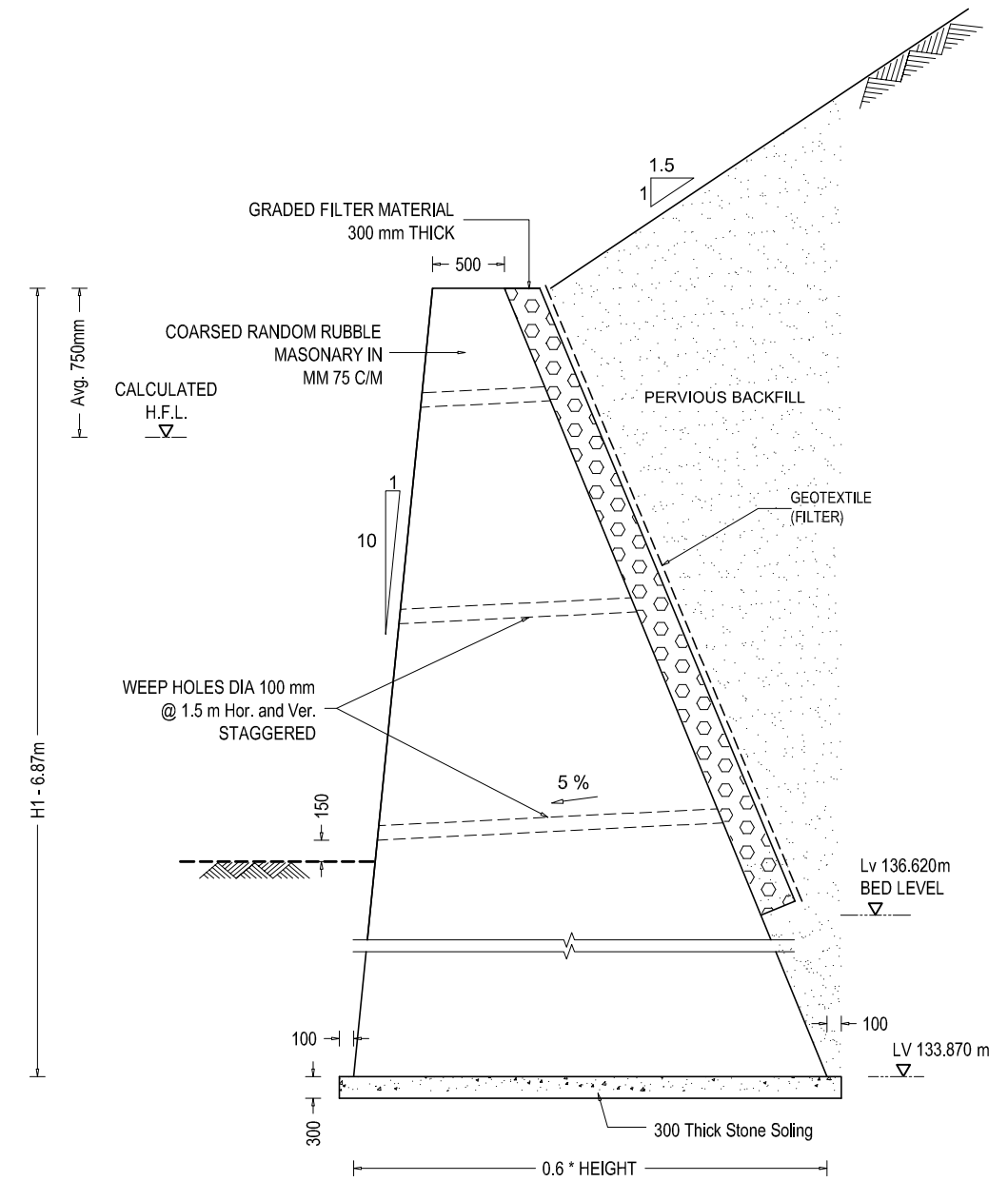
EMPLOYER Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	PROJECT NAME Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	DESIGN CONSULTANTS Joint Venture of EPTISA Servicios De 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.A. Nec.No. 6431 CMU/V Signature Checked By Mr. S.M. Signature Approved By Mr. H.B. Signature	Drawing Name MISCELLANEOUS DETAILS OF BRIDGE OVER RIVER CHAPANI Reference Drawings KDP/DPR/STR/BR/CHAPANI/DD-9	Scale: AS SHOWN Chainage: 301+948	Date: 24.04.2023 Drawing No:- KDP/DPR/STR/BR/CHAPANI/DD-18 Sheet No.2/2
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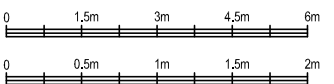
NOTE : AT DOWN STREAM ONLY



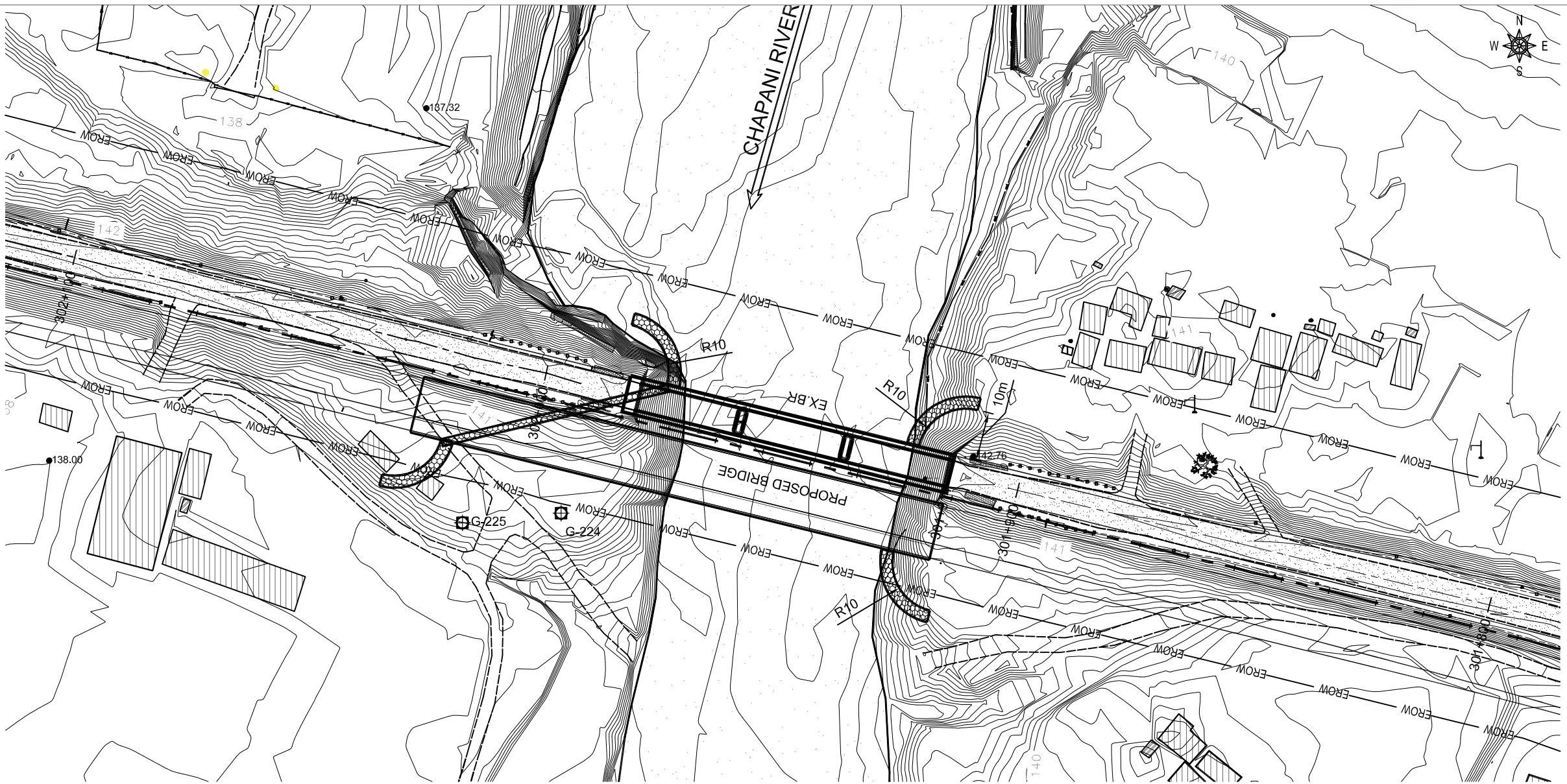
WING WALL ELEVATION



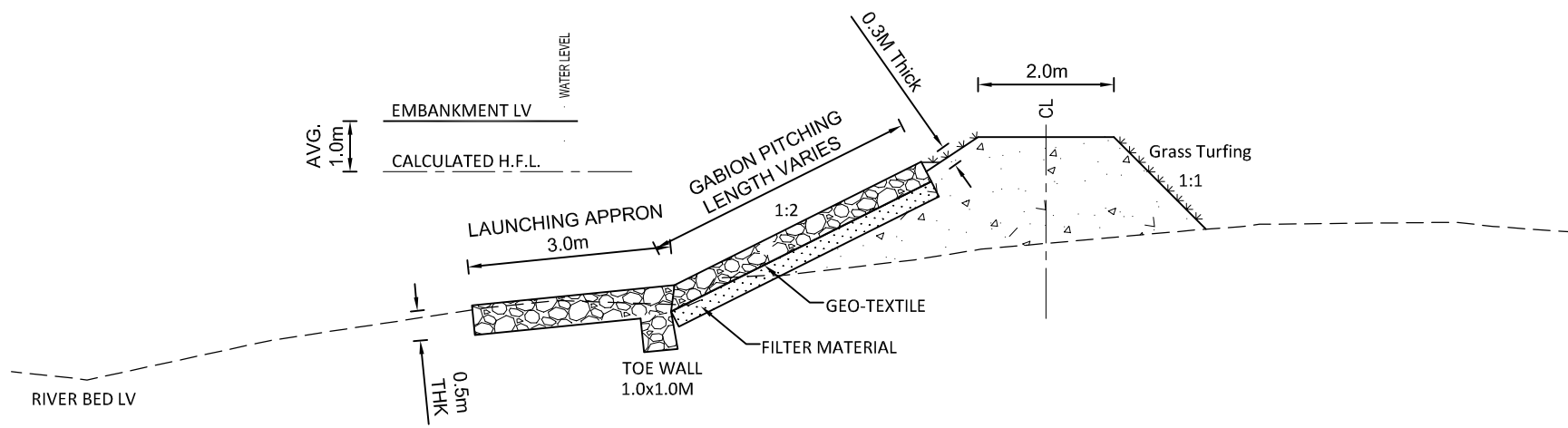
STONE MASONRY WING WALL SECTION X - X



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.A. Nec.No. 6431 CIVIL/SA Signature Checked By Mr. S.M. Signature Approved By Mr. H.B. Signature	Drawing Name WING WALL DETAILS OF BRIDGE OVER RIVER CHAPANI Reference Drawings -	Scale: AS SHOWN Chainage: 301+948	Date: 24.04.2023 Drawing No.- KDP/DPR/STR/BR/CHAPANI/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	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-Patthariya 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	Checked By	Mr. S.M.	RIVER TRAINING WORKS OF BRIDGE OVER RIVER CHAPANI Reference Drawings	1:1000 Chainage: 301+948	24.04.2023 Drawing No. - KDP/DPR/STR/BR/CHAPANI/DD- 20 Sheet No. 1/1
			Approved By	Mr. H.B.			

Bearing Design Data for 22m Span and 11.85m width

Load Condition	Items	Under	On each Neoprene Bearing	Unit
Under No Live Load	V	NO EQ.	53.02	Ton
		EQ.	60.98	Ton
	H _L	NO EQ.	-	Ton
		EQ.	11.93	Ton
	H _T	NO EQ.	-	Ton
		EQ.	11.93	Ton
	θ	NO EQ.	0.00234	radian
		EQ.	0.00269	radian
Δ		13.64	mm	
Under Maximum Live Load	V	NO EQ.	94.08	Ton
		EQ.	103.26	Ton
	H _L	NO EQ.	-	Ton
		EQ.	0.00	Ton
	H _T	NO EQ.	-	Ton
		EQ.	0.00	Ton
	θ	NO EQ.	0.003723	radian
		EQ.	0.00428	radian
Δ		22.76	mm	

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 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.A. Nec.No. 6431 CIVIL/A*	 Signature	Drawing Name	BEARING DESIGN DATA OF BRIDGE OVER RIVER CHAPANI	Scale:	1:1000	Date:	24.04.2023
			Checked By	Mr. S.M.	 Signature	Reference Drawings		Chainage:	301+948	Drawing No.-	KDP/DPR/STR/BR/CHAPANI/DD- 21
			Approved By	Mr. H.B.	 Signature					Sheet No.	1/1