



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- Charnath
Volume-2
Detailed Drawing

April, 2023

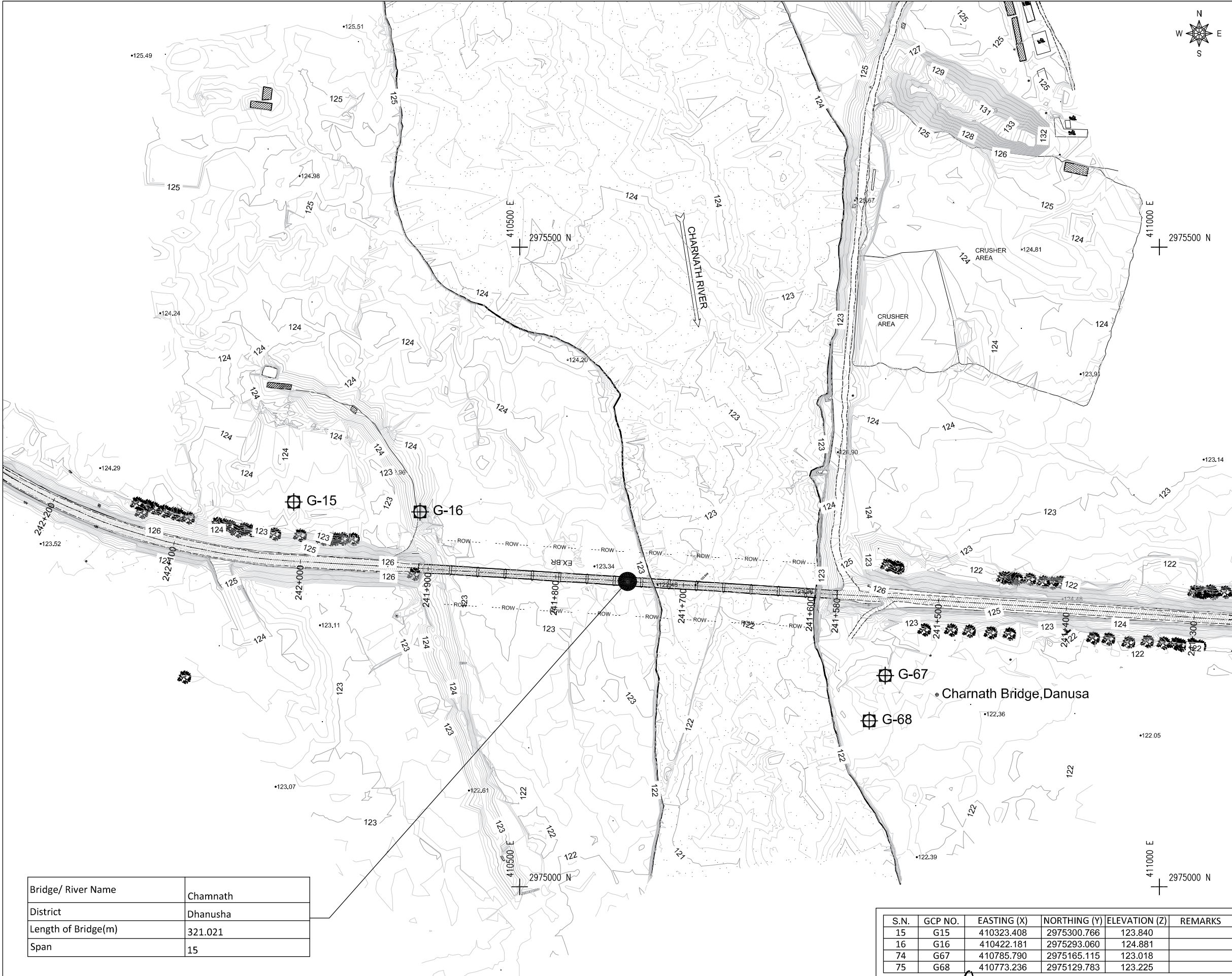
Joint Venture Of:

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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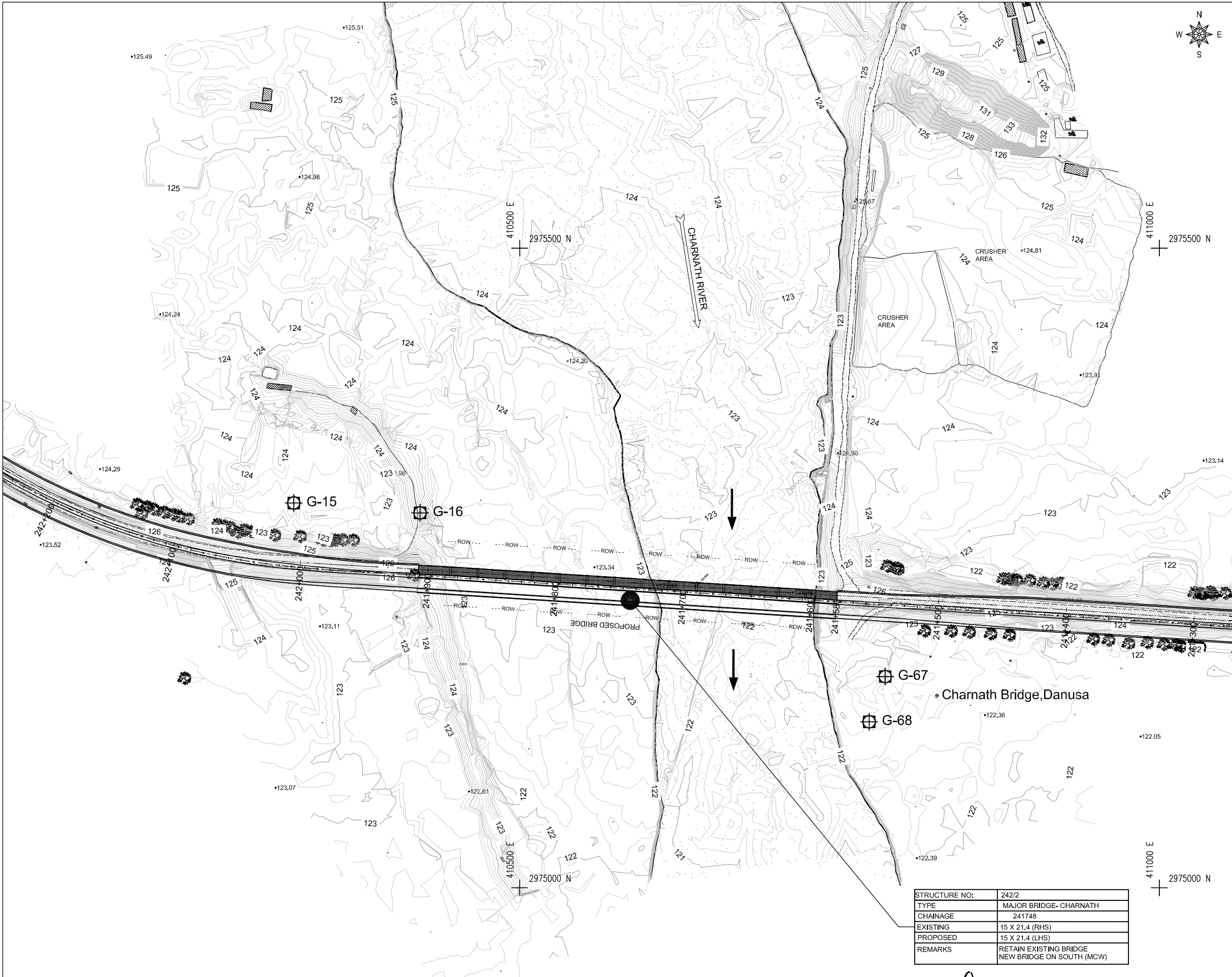
Bridge/ River Name	Chamnath
District	Dhanusha
Length of Bridge(m)	321.021
Span	15

S.N.	GCP NO.	EASTING (X)	NORTHING (Y)	ELEVATION (Z)	REMARKS
15	G15	410323.408	2975300.766	123.840	
16	G16	410422.181	2975293.060	124.881	
74	G67	410785.790	2975165.115	123.018	
75	G68	410773.236	2975129.783	123.225	



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		DELINOTOR	
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	

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		In Association With Udaya Consultancy, Geocom International, Sundar Krti Consultant and Rays Consultant Private Limited		Checked By Mr. S.M.			Drawing No.- KDP/DP/STR/BR/CHARNATH/DD-2	
				Approved By Mr. H.B.			Sheet No.1/1	



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		DELINOTOR	
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SCHOOL		FACTORY	
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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	

STRUCTURE NO:	242/2
TYPE	MAJOR BRIDGE- CHARNATH
CHAINAGE	241748
EXISTING	15 X 21.4 (RHS)
PROPOSED	15 X 21.4 (LHS)
REMARKS	RETAIN EXISTING BRIDGE NEW BRIDGE ON SOUTH (MCW)

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				Checked By Mr. S.M. 			Drawing No.- KDP/DPR/STR/BR/CHARNATH/DD-3
				Approved By Mr. H.B. 			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) - 335.50 CUMECs
2. HFL - 123.640 M
3. FREE BOARD (MINIMUM) - 1.2 M
4. MAXIMUM SCOUR LEVEL:
ABUTMENT - 116.710M
PIER - 112.630M

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

D. STRUCTURAL AND OTHER DATA: -

1. SPAN ARRANGEMENT: 15 X 21.4 = 321 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 - 269 TON
B) PIER- 1200 DIA BORED CAST-IN-SITU PILE
DESIGN WORKING LOAD ON PILE - 190 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

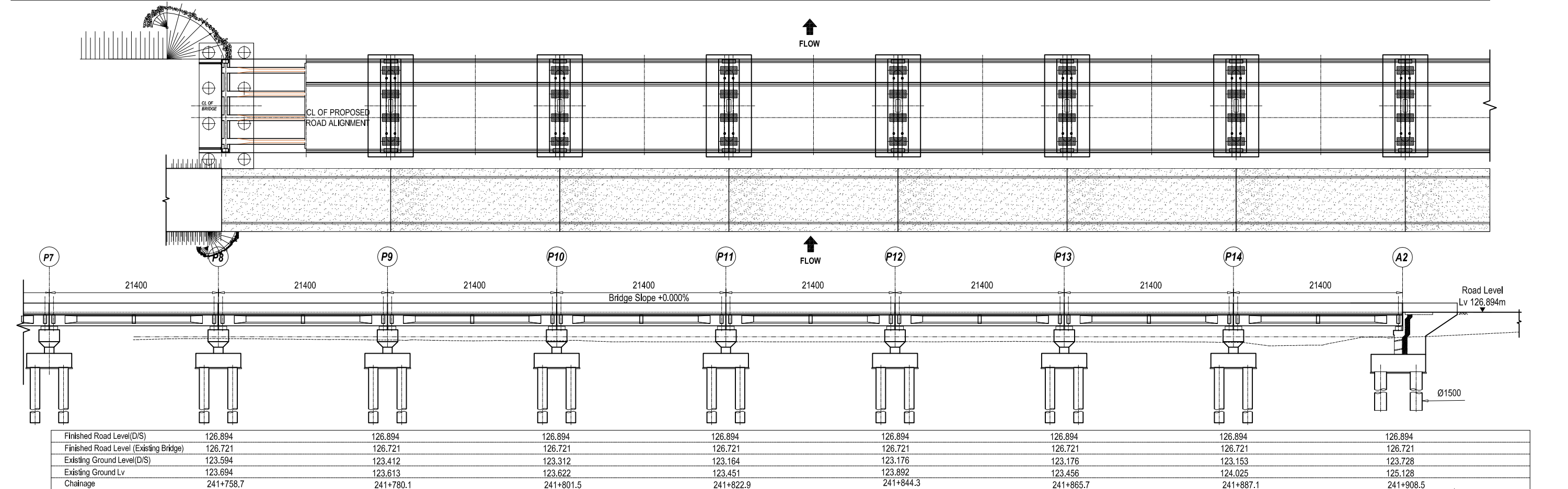
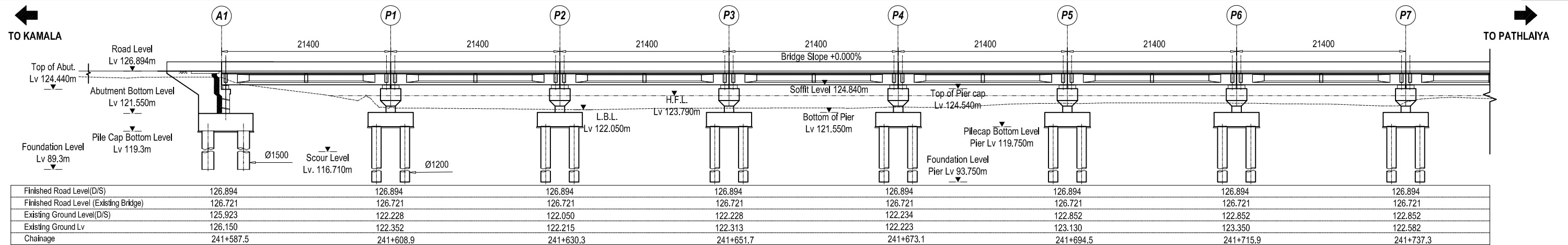
(WHERE Ø IS THE DIAMETER OF THE BAR)

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:

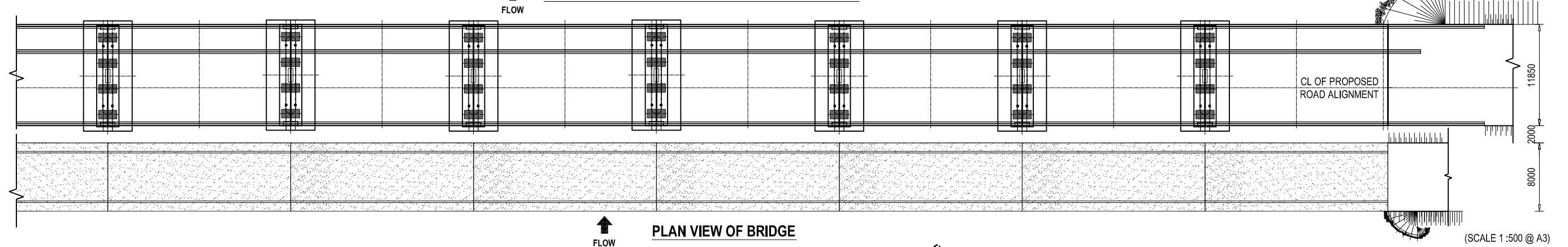
GRADE OF CONCRETE	M30	M35	M40	M45
LAPPED BAR <25%	57.2Ø	51.48Ø	48.62Ø	45.76Ø
25%≤LAPPED BAR <33%	65.78Ø	62.65Ø	55.91Ø	52.62Ø
33%≤LAPPED BAR <50%	80.08Ø	72.07Ø	68.07Ø	64.06Ø
50%≤LAPPED BAR	85.8Ø	77.22Ø	72.93Ø	68.64Ø

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

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		In Association With Udaya Consultancy, Geocom International, Sundar Krti Consultant and Rays Consultant Private Limited	Checked By	Mr. H.B.	Reference Drawings	Chainage:	Drawing No.- KDP/DPR/STR/BR/CHARNATH/DD-4
			Approved By			241+748	Sheet No. 1 / 1



GENERAL ARRANGEMENT OF PROPOSED BRIDGE



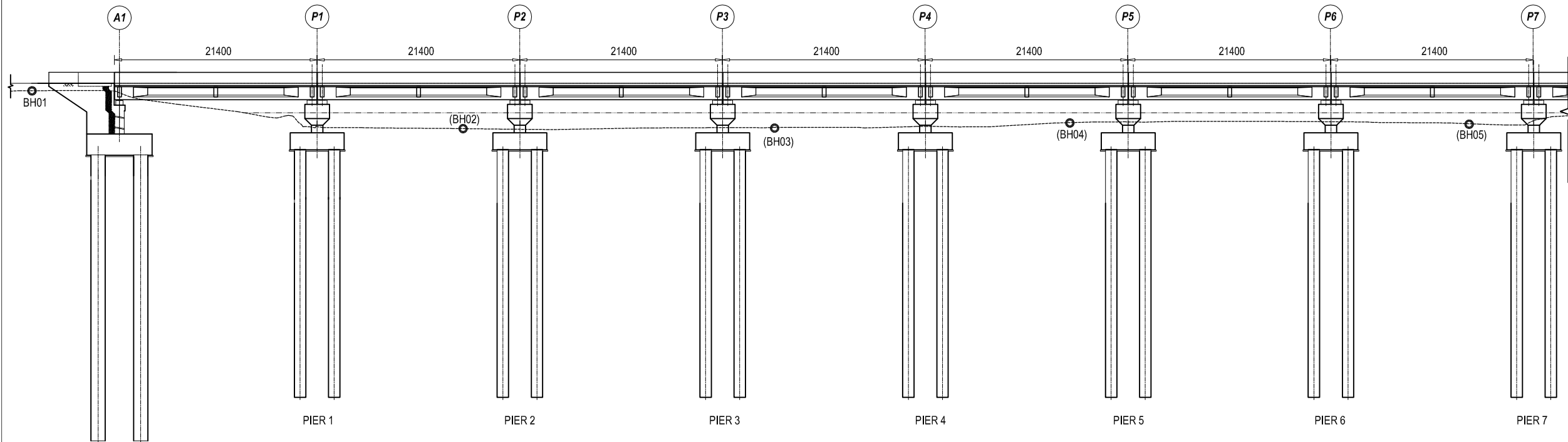
PLAN VIEW OF BRIDGE

(SCALE 1 : 500 @ A3)

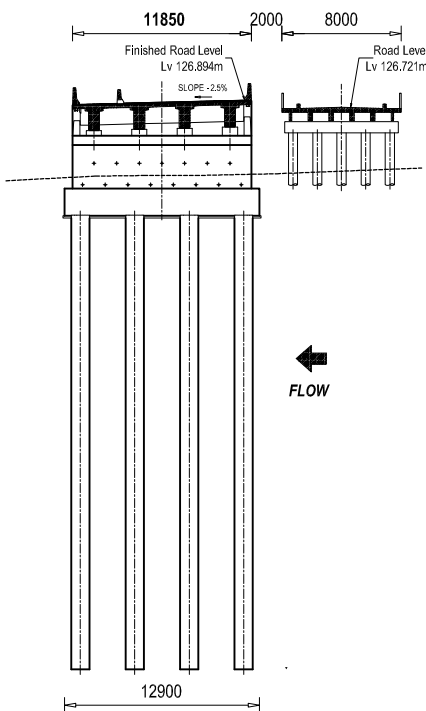
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		 EPTISA Servicios De Ingenieria Madrid, Spain	 STUP Consultants Private Limited Kolkata, India		Checked By				Mr. S.M.	Signature
					In Association With				Approved By	Mr. H.B.
		Udaya Consultancy, Geocom International, Sundar K/Iti Consultant and Rays Consultant Private Limited				GENERAL ARRANGEMENT OF BRIDGE OVER RIVER CHARNATH	AS SHOWN	19.04.2023		
						Reference Drawings	Chainage:	Drawing No.-KDP/DPR/STR/BR/CHARNATH/DD- 5		
						-	241+748	Sheet No. 1/3		

TO KAMALA

TO PATHLAIYA

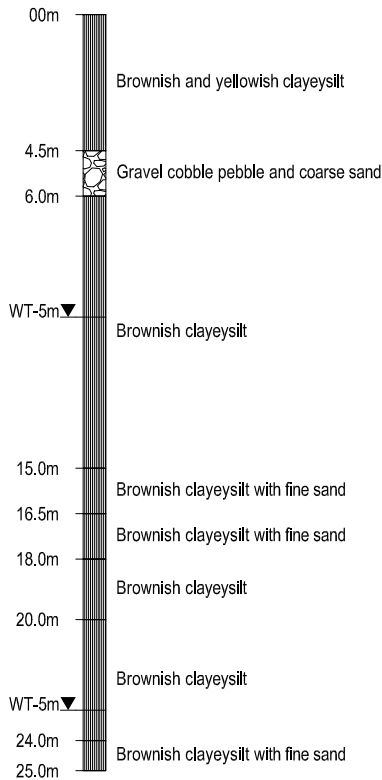


LEFT ABUTMENT

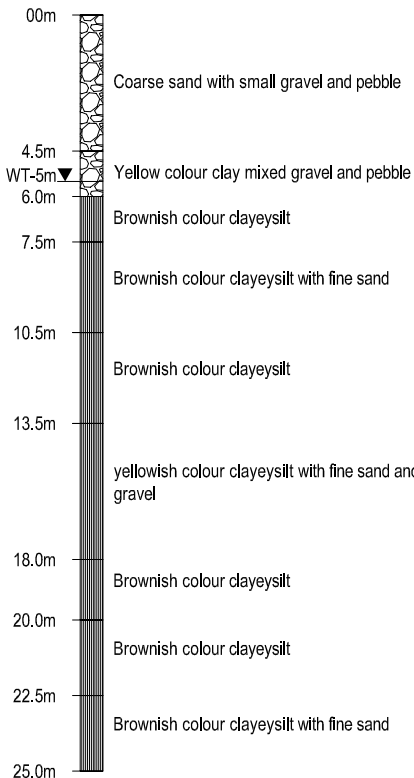


SECTIONAL VIEW OF ABUTMENT AT X1- X1

LEFT BANK
(BH01)/ RL (126m)

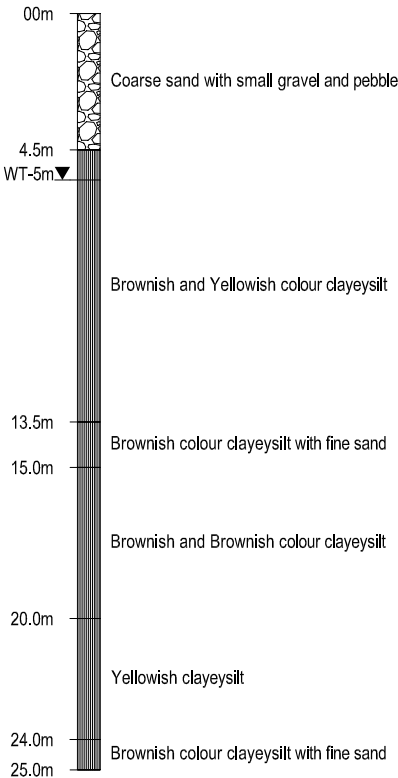


(BH02)/ RL (122m)

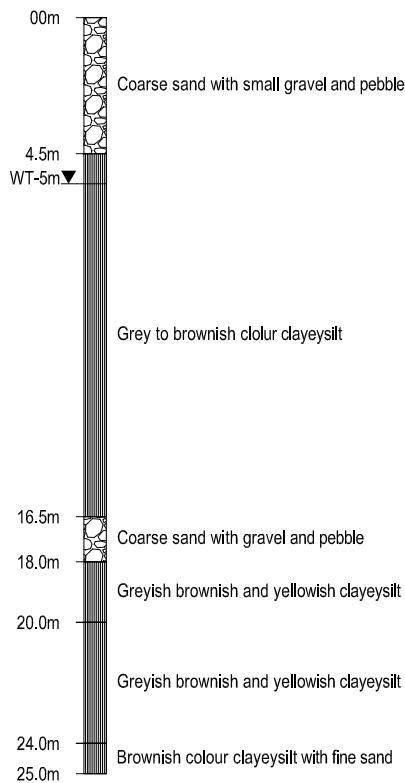


ELEVATION VIEW OF PROPOSED BRIDGE

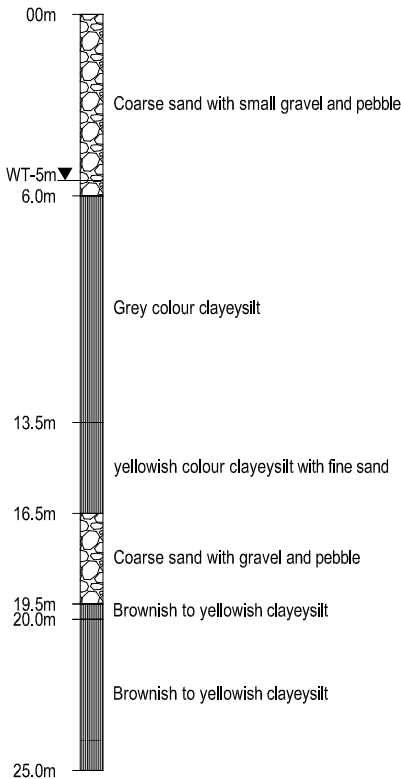
(BH03)/ RL (122m)



(BH04)/ RL (122.5m)

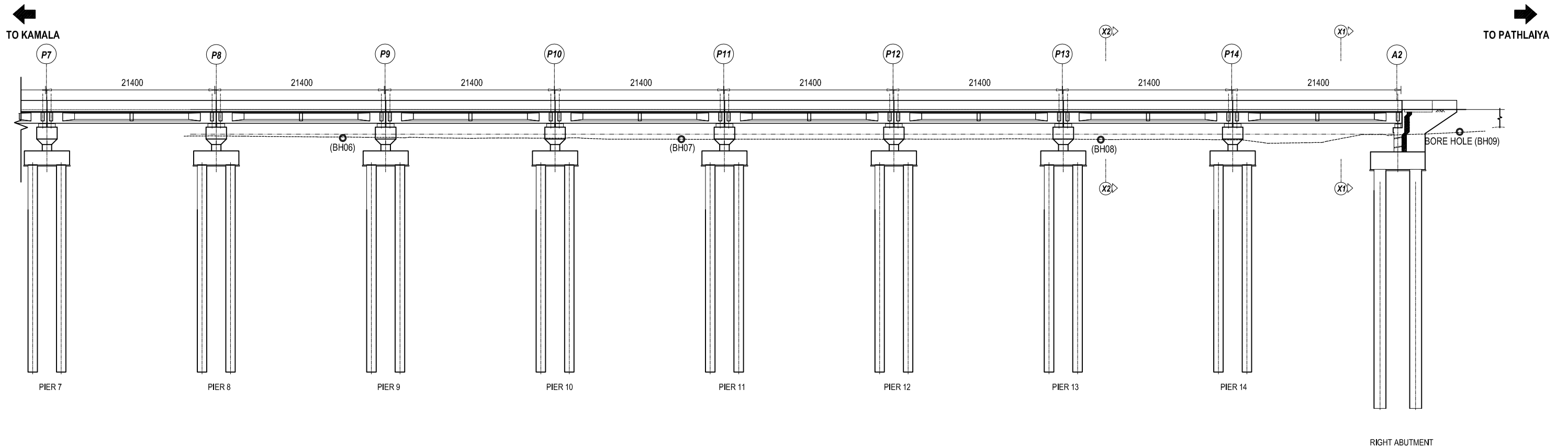


(BH05)/ RL (122.5m)

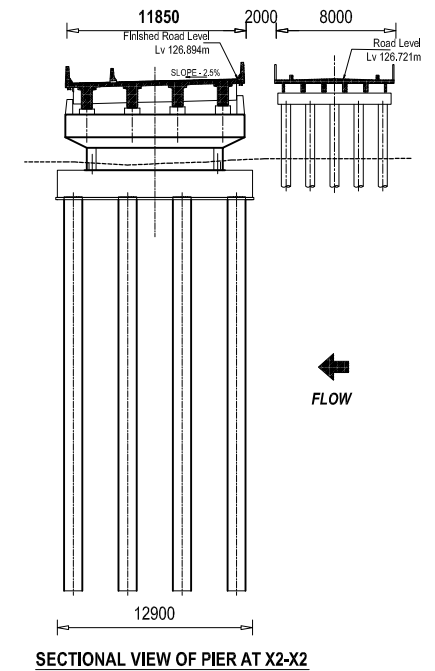
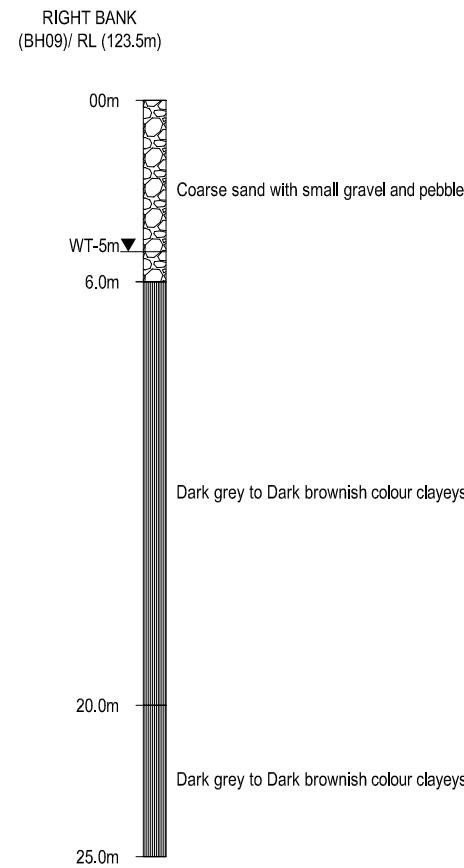
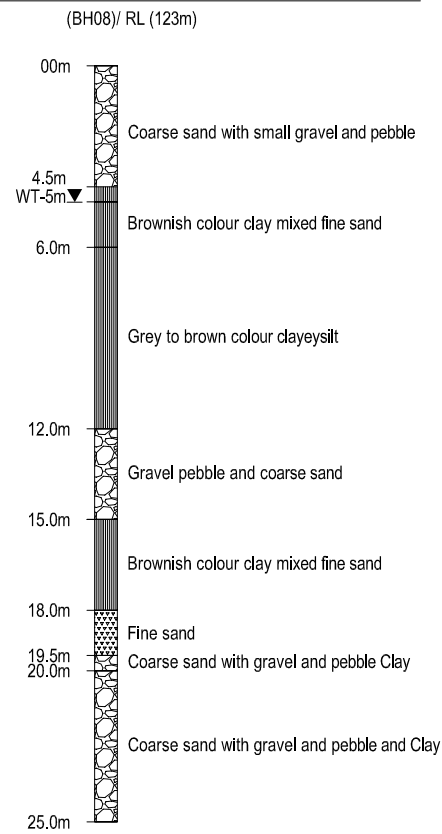
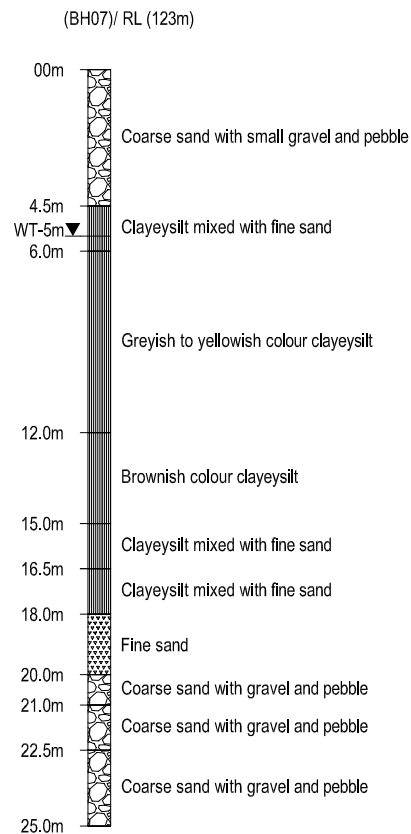
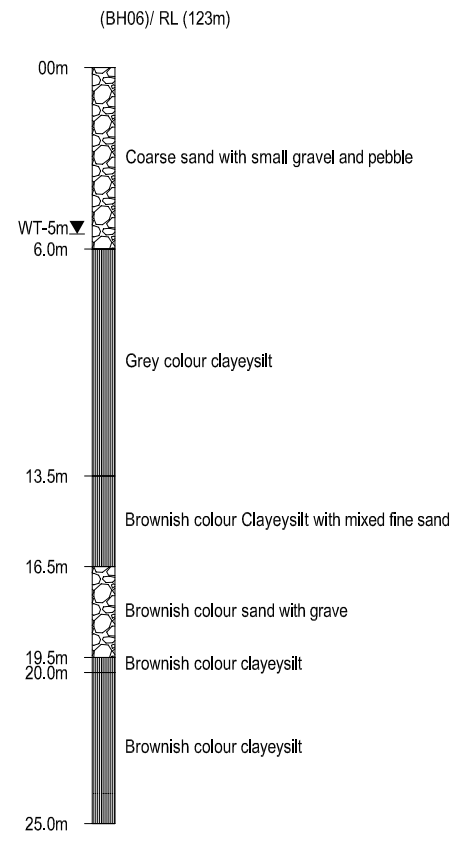


(SCALE 1 :500 @ A3)

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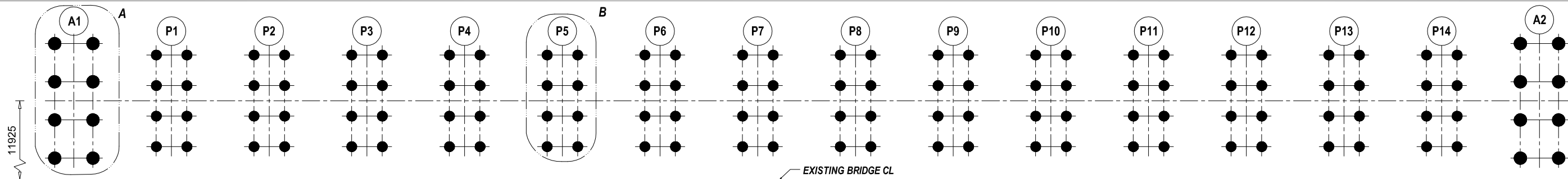
ELEVATION VIEW OF PROPOSED BRIDGE



SECTIONAL VIEW OF PIER AT X2-X2

(SCALE 1 :500 @ A3)

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						241+748	Sheet No. 3/3



DETAILS AT PILE LAYOUT

SCALE - 1:500

CO ORDINATES OF PILE LOCATION OF PROPOSED BRIDGE

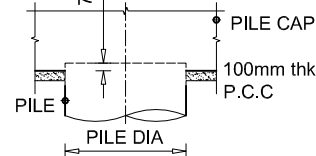
SN.	ABUTMENT/PIER	EASTING (X)	NORTHING (Y)
1	ABUTMENT (A1)	410746.361	2975216.484
2	PIER (P1)	410725.003	2975217.828
3	PIER (P2)	410703.645	2975219.171
4	PIER (P3)	410682.287	2975220.514
5	PIER (P4)	410660.93	2975221.858
6	PIER (P5)	410639.572	2975223.201
7	PIER (P6)	410618.214	2975224.544
8	PIER (P7)	410596.856	2975225.887
9	PIER (P8)	410575.498	2975227.231
10	PIER (P9)	410554.141	2975228.574
11	PIER (P10)	410532.783	2975229.917
12	PIER (P11)	410511.425	2975231.261
13	PIER (P12)	410490.067	2975232.604
14	PIER (P13)	410468.709	2975233.947
15	PIER (P14)	410447.352	2975235.29
16	ABUTMENT (A2)	410425.994	2975236.634

PILE CAPACITY ABUT (INDIVIDUAL)

SN.	DIA (mm)	CAPACITY (Ton)
1	1500	269

PILE CAPACITY PIER (INDIVIDUAL)

SN.	DIA (mm)	CAPACITY (Ton)
1	1200	190



DETAIL AT 3 AND 4

SCALE - 1:75

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

DETAILS AT A

SCALE - 1:150

DETAILS AT B

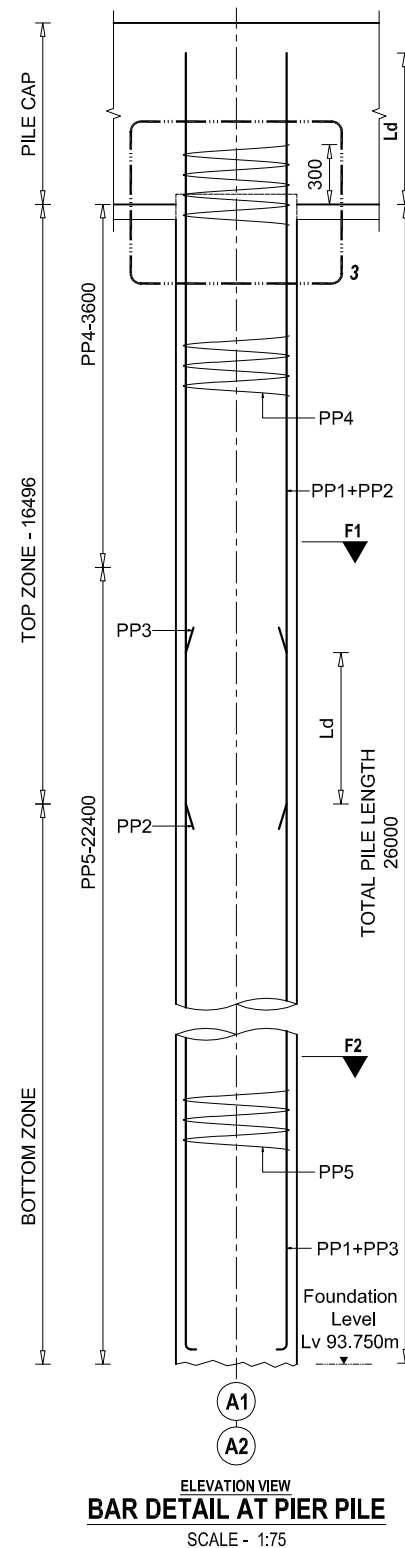
SCALE - 1:150

BAR BENDING SCHEDULE OF ABUTMENT PILE

S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA (MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	PA1	32100	25		32.475	14	3.858	1754.05
2	PA2	17053	25		17.053	14	3.858025	921.0725
3	PA3	16547	12		16.847	14	0.889	209.65
4	PA4	Dia. 1334	16	90	4.391	67	1.580	464.88
5	PA5	Dia. 1334	12	90	4.391	267	0.889	1042.07
TOTAL (KG) :								4391.73
No. of Pile :								8.00
TOTAL WEIGHT (KG) :								35133.82

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	27650	32		27.950	11	6.321	1943.39
2	PP2	19721	32		19.721	11	6.320988	1371.218
3	PP3	10929	12		11.229	11	0.889	109.79
4	PP4	Dia. 1034	16	100	3.448	51	1.580	277.91
5	PP5	Dia. 1034	12	100	3.448	209	0.889	640.62
TOTAL (KG) :								4342.93
No. of Pile :								8.00
TOTAL WEIGHT (KG) :								34743.43



BAR DETAIL AT PIER PILE

SCALE - 1:75

SECTIONAL VIEW AT F1 - F1

SCALE - 1:40

SECTIONAL VIEW AT F2 - F2

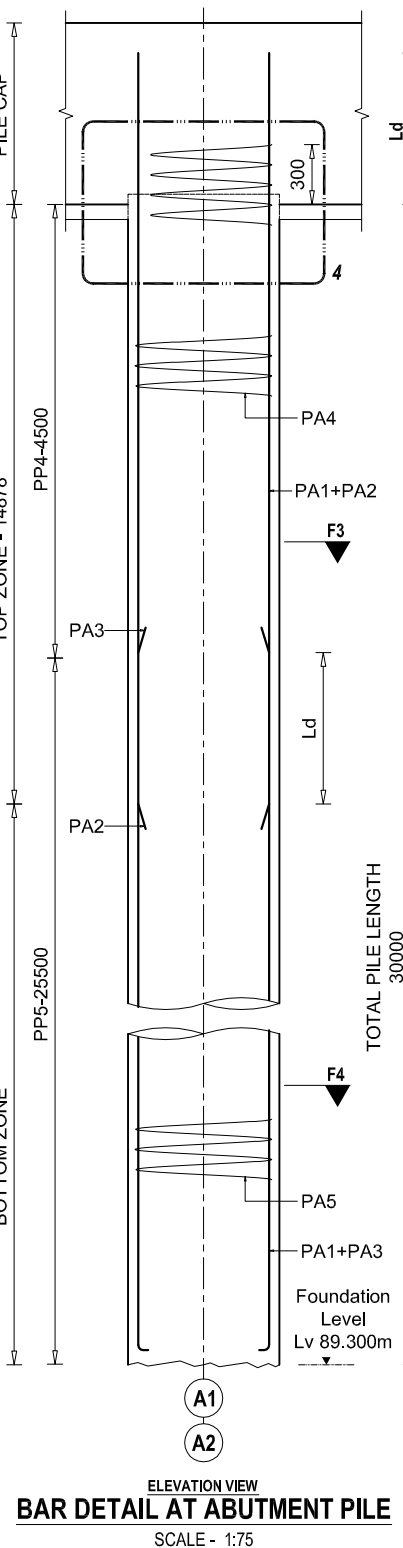
SCALE - 1:40

SECTIONAL VIEW AT F3 - F3

SCALE - 1:40

SECTIONAL VIEW AT F4 - F4

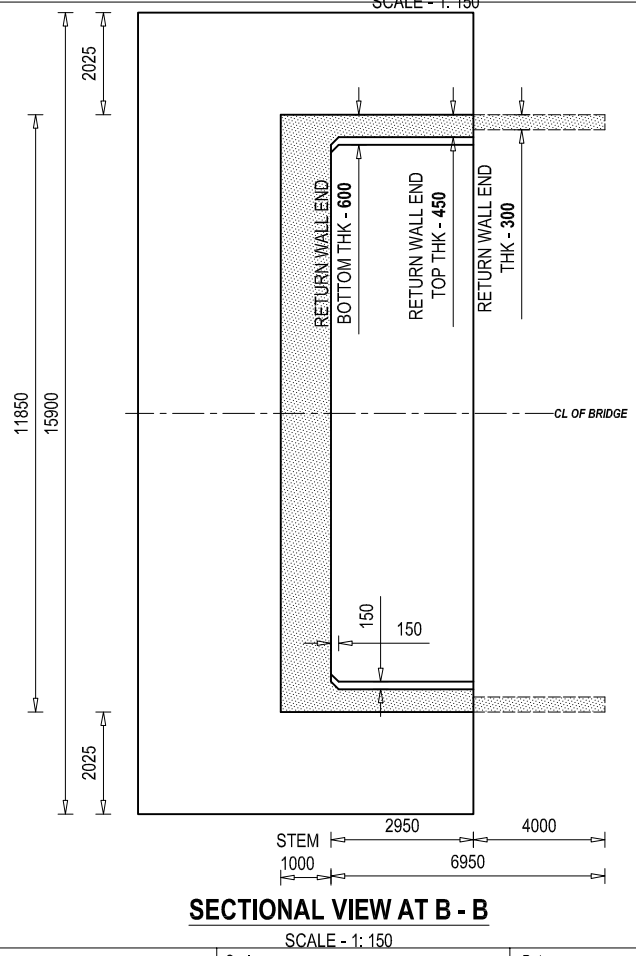
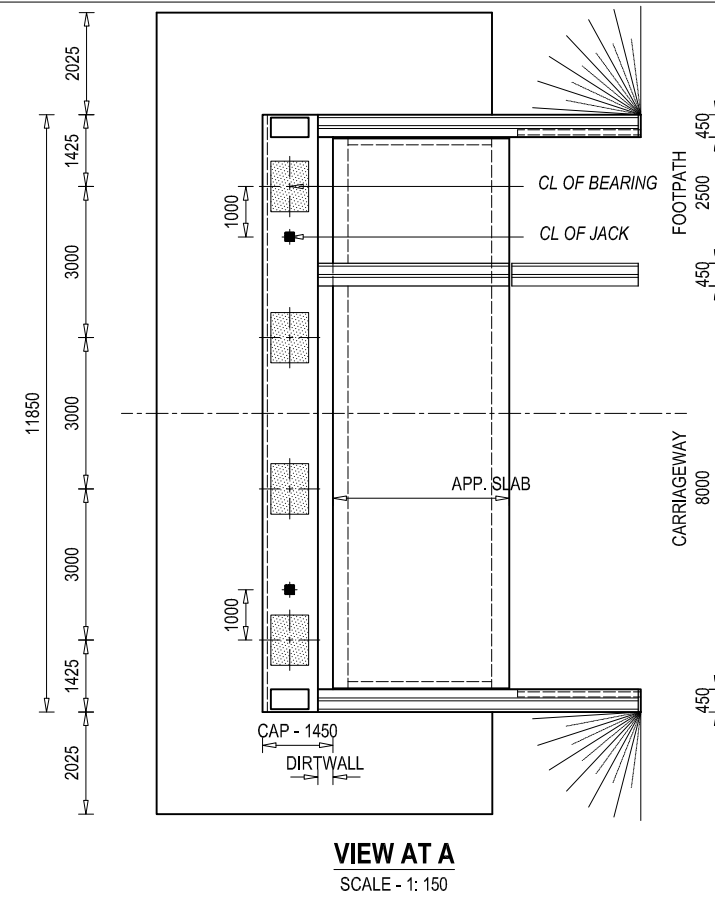
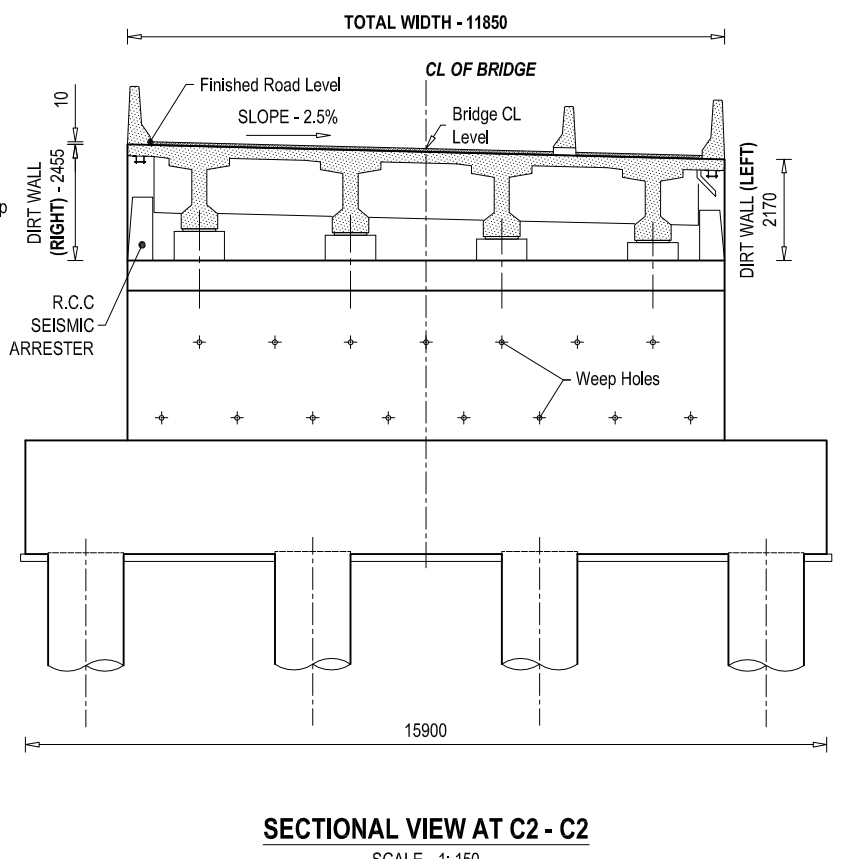
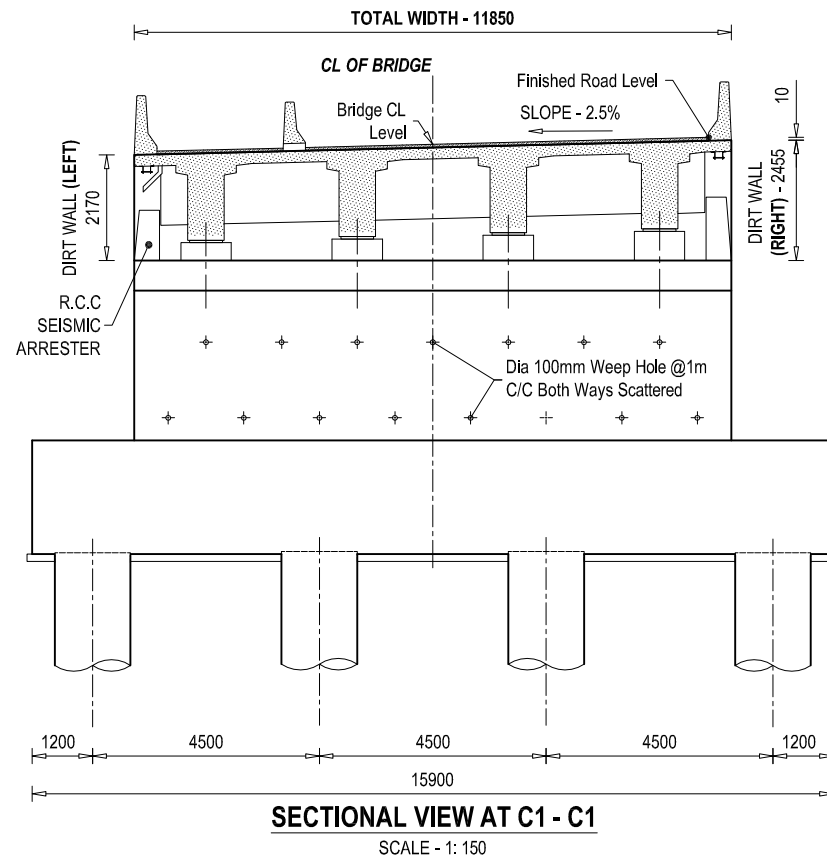
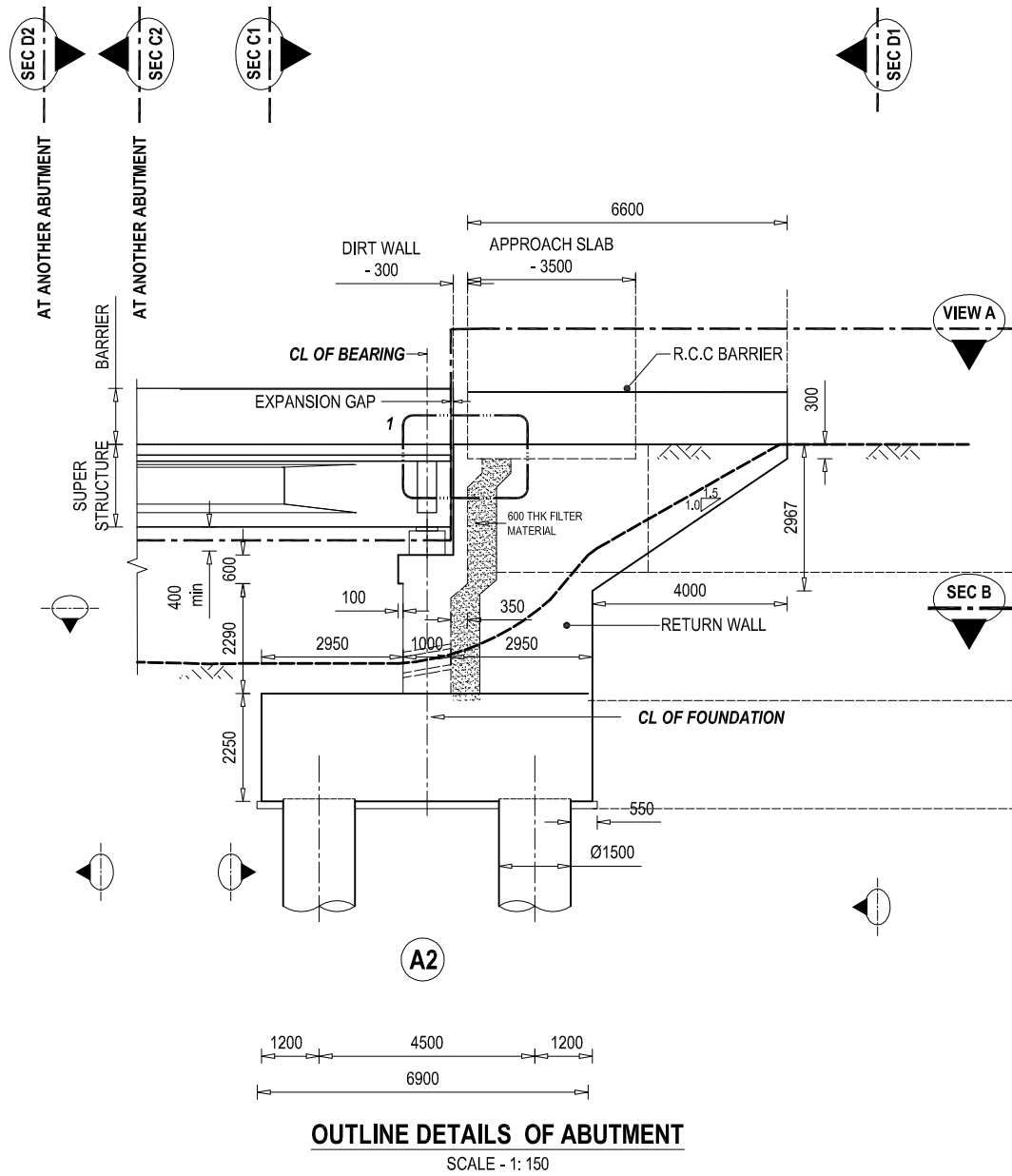
SCALE - 1:40



BAR DETAIL AT ABUTMENT PILE

SCALE - 1:75

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Drawing Name	Scale:	Date:
Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamata-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of EPTISA Servicios De Ingenieria Madrid, Spain STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Krti Consultant and Rays Consultant Private Limited	Mr. R.D. Nec.No. 6489 CIVIL/TA Mr. S.M. Mr. H.B.	LAYOUT AND DETAIL OF PILE FOUNDATION OF BRIDGE OVER RIVER CHARNATH Reference Drawings KDP/DPR/STR/BR/CHARNATH/DD-9	AS SHOWN Chainage: 241+748	18.04.2023 Drawing No.- KDP/DPR/STR/BR/CHARNATH/DD-6 Sheet No. 1/1



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

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Mr. R.D.		Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of	Checked By	Mr. S.M.		ABUTMENT DETAILS OF BRIDGE OVER RIVER CHARNATH	AS SHOWN	18.04.2023
		 EPTISA Servicios De Ingenieria Madrid, Spain  STUP Consultants Private Limited Kolkata, India						Drawing No.- KDP/DPR/STR/BR/CHARNATH/DD- 7
		In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Approved By	Mr. H.B.		Reference Drawings	Chainage:	241+748
						KDP/DPR/STR/BR/CHARNATH/DD-9		

PLAN VIEW

BAR DETAIL OF PILE CAP
SCALE - 1 : 75

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

SECTIONAL PLAN VIEW

BAR DETAIL AT ABUTMENT STEM
SCALE - 1 : 75

SECTIONAL PLAN VIEW

ELEVATION VIEW

DETAIL AT 5
SCALE - 1X : 2X

DETAILS AT 4

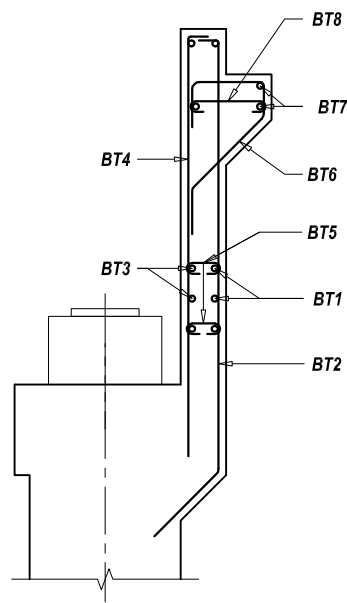
SECTIONAL SIDE VIEW

ELEVATION VIEW

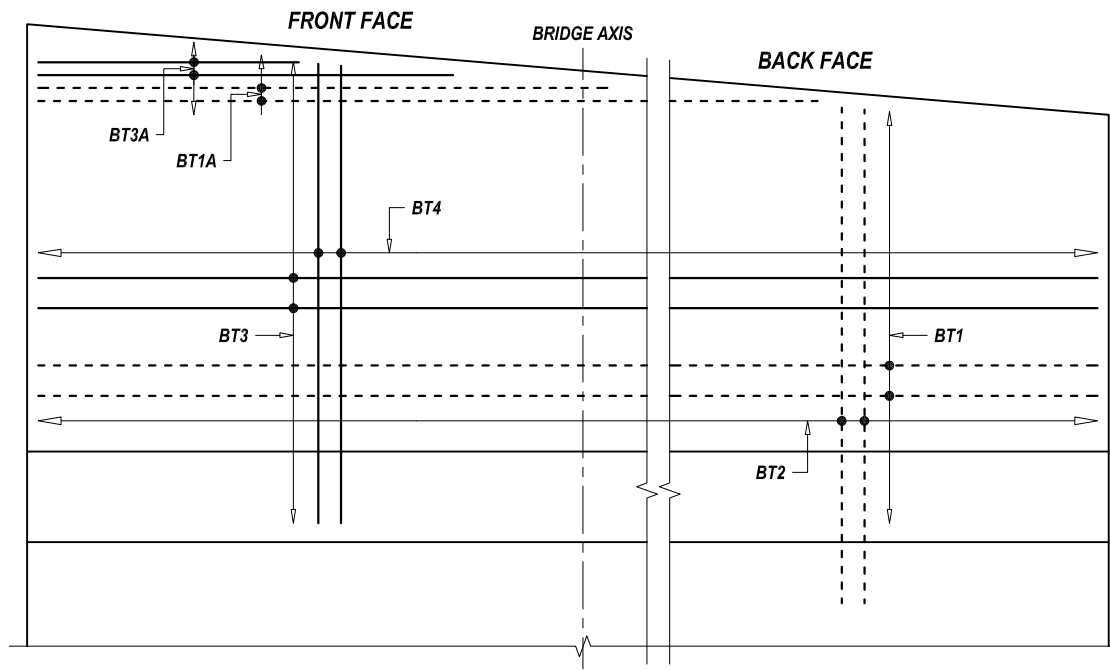
BAR DETAIL AT ABUTMENT CAP
SCALE - 1 : 75

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

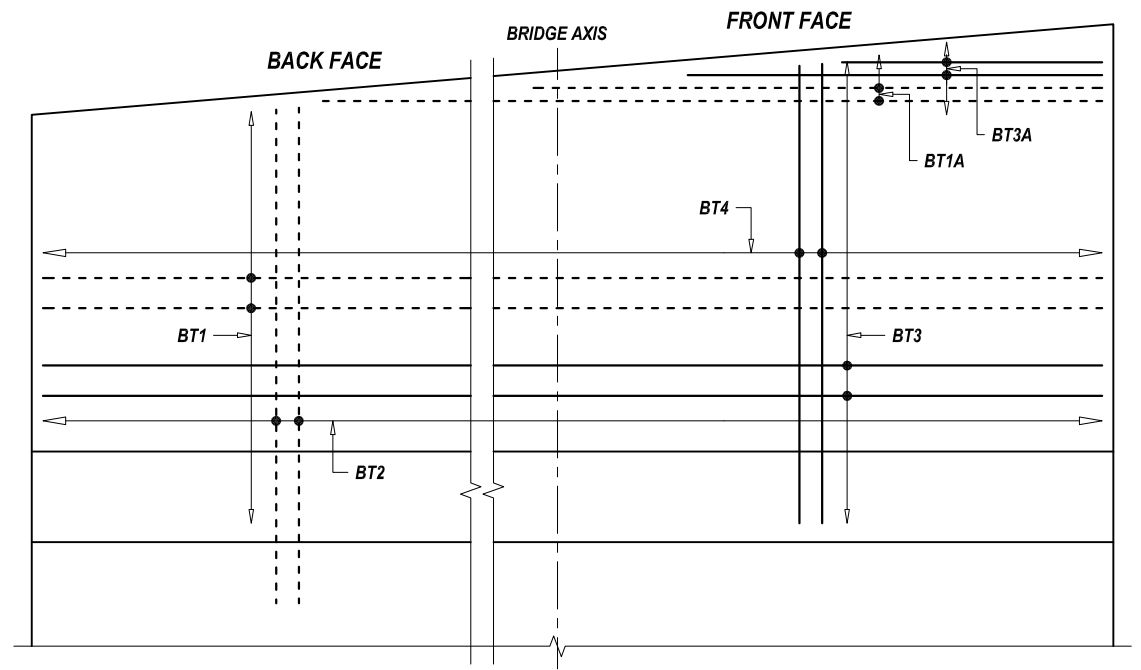
EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		Designed By Mr. R.D. Nec.No. 6489 CHB/14 Signature	Drawing Name ABUTMENT REINGORCEMENT DETAILS OF BRIDGE OVER RIVER CHARNATH	Scale: AS SHOWN	Date: 18.04.2023	
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathalaya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of		Checked By Mr. S.M. Signature	Reference Drawings KDP/DPR/STR/BR/CHARNATH/DD-9					Chainage: 241+748
		 EPTISA Servicios De Ingenieria Madrid, Spain	 STUP Consultants Private Limited Kolkatta, India							



SECTIONAL SIDE VIEW



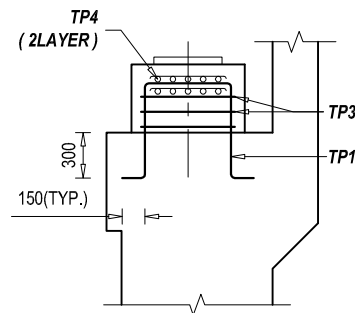
ELEVATION VIEW / VIEW AT D1



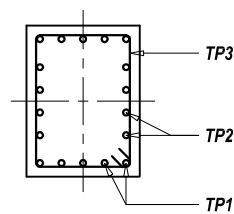
ELEVATION VIEW / VIEW AT D2

BAR DETAIL AT DIRT WALL

SCALE - 1 : 50



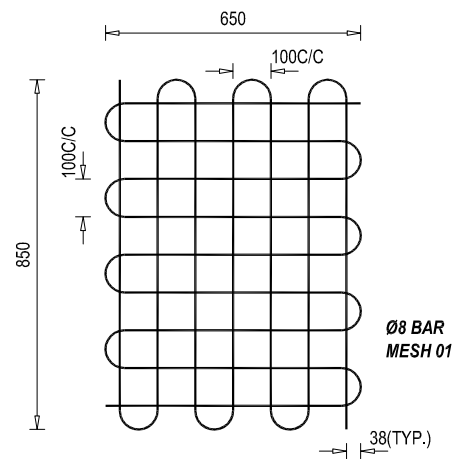
SECTIONAL SIDE VIEW



SECTIONAL PLAN VIEW
BAR DETAIL AT PEDESTAL

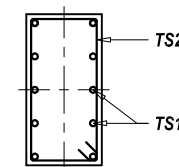
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NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/CHARNATH/DD-4

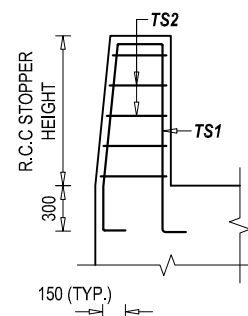


REINFORCEMENT DETAILS OF
BEARING MESH

SCALE - 1 : 50

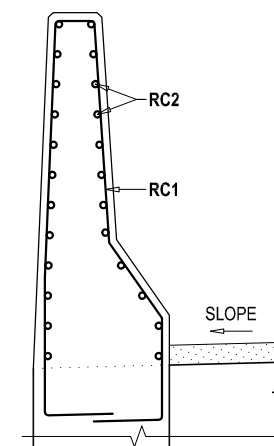


SECTIONAL PLAN VIEW



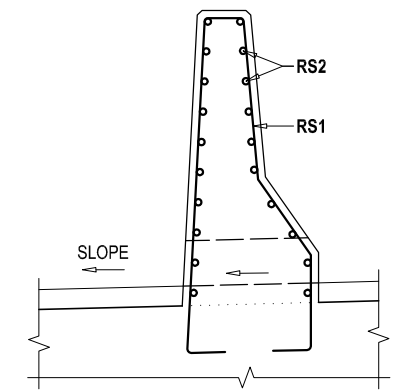
R.C.C STOPPER LEFT
ELEVATION VIEW

SCALE - 1 : 50



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

SCALE - 1 : 25

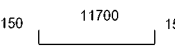
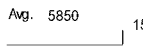
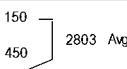
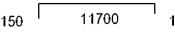
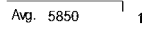
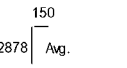
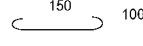
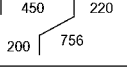
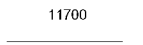
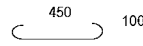


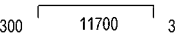
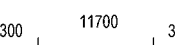
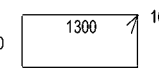
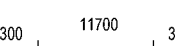
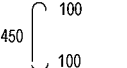
REINFORCEMENT DETAILS OF
R.C.C SEPARATOR - SECTIONAL VIEW

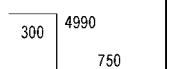
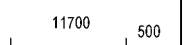
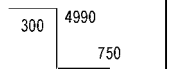
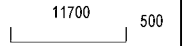
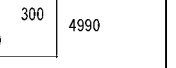
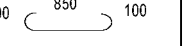
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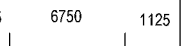
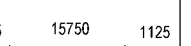
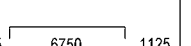
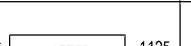
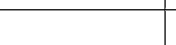
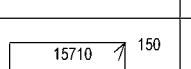
--- TOP BAR OR
NEAR FACE REINFORCEMENT
--- BOTTOM BAR OR
FAR FACE REINFORCEMENT

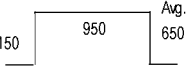
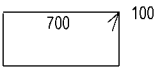
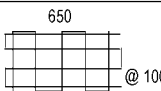
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Mr. R.D.	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathalaya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of  EPTISA Servicios De Ingeniera Madrid, Spain  STUP Consultants Private Limited Kolkatta, India In Association With Udaya Consultancy, Geocom International, Sundar Kritt Consultant and Rays Consultant Private Limited	Checked By	Mr. S.M.	ABUTMENT REINFORCEMENT DETAILS OF BRIDGE OVER RIVER CHARNATH Reference Drawings KDP/DPR/STR/BR/CHARNATH/DD-9	AS SHOWN Chainage: 241+748	18.04.2023 Drawing No.- KDP/DPR/STR/BR/CHARNATH/DD-8 Sheet No. 2 / 2
			Approved By	Mr. H.B.			

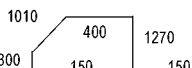
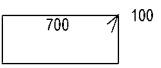
BAR BENDING SCHEDULE OF DIRT WALL								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	BT 1		16	200	12.000	17	1.580	322.37
2	BT 1A		16	200	6.000	3	1.580	28.44
3	BT 2		16	125	3.403	96	1.580	516.25
4	BT 3		16	200	12.000	13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

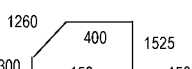
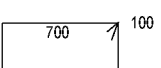
BAR BENDING SCHEDULE OF ABUTMENT CAP								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	CT 1		16	150	12.300	11	1.580	213.81
2	CT 2		16	150	12.300	11	1.580	213.81
3	CT 3		16	150	3.700	80	1.580	467.75
4	CT 4		12	150	12.300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

BAR BENDING SCHEDULE OF ABUTMENT STEM								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	ST 1		20		6.040	112	2.469	1670.32
2	ST 2		16	190	12.700	13	1.580	260.90
3	ST 3		16		6.040	112	1.580	1069.01
4	ST 4		16	190	12.700	13	1.580	260.90
5	ST 5		16		6.040	14	1.580	133.63
6	ST 6		12	Ver. 500 Hor. 500	1.050	120	0.889	112.00
TOTAL (KG) :								3506.75

BAR BENDING SCHEDULE OF PILE CAP								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	FT 1		25		9.000	120	3.858	4166.67
2	FT 2		20		18.000	70	2.469	3111.11
3	FT 3		16		9.000	120	1.580	1706.67
4	FT 4		16		18.000	70	1.580	1991.11
5	FT 5		10	Long. 200 Trans.270	2.300	1969	0.617	2795.49
6	FT 6		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	TP 1		16	150	2.850	6	1.580	27.02
1	TP 2		16	150	2.350	8	1.580	29.71
2	TP 3		16	150	3.500	3	1.580	16.59
1	TP 4		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		16	150	3.280	6	1.580	31.10
2	TS2-L		12	150	2.400	7	0.889	14.93
TOTAL (KG) :								46.03

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

EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		Drawing Name		Scale:		Date:	
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of		Designed By	Mr. R.D.	ABUTMENT BAR BENDING SCHEDULE OF BRIDGE OVER RIVER CHARNATH	AS SHOWN	241+748	18.04.2023	Drawing No.- KDP/DPR/STR/BR/CHARNATH/DD- 9	
		EPTISA Servicios De Ingeniera Madrid, Spain		Checked By	Mr. S.M.					Sheet No. 1 / 2	
		STUP Consultants Private Limited Kolkatta, India		Approved By	Mr. H.B.						

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 3800 150	12	200	4.400	27	0.889	105.60
2	RT1B	450 3800 150	12	200	4.400	27	0.889	105.60
3	RT2A	450 6450 150	12	200	7.050	16	0.889	100.27
4	RT2B	150 3800 150 600	12	200	4.700	16	0.889	66.84
5	RT2C	600 3575 150 150	12	200	4.475	16	0.889	63.64
6	RT3A	7456 150 450	12	200	8.056	16	0.889	114.57
7	RT3B	800 150 4489 450	16	200	5.889	16	1.580	148.90
8	RT3C	150 2892 150 800	16	200	3.992	16	1.580	100.93
9	RT3D	200 300 300 200 210	16	200	1.210	34	1.580	65.01
10	RT4A	1483.5 150 150	12	200	1.784	38	0.889	60.24
11	RT4B	1483.5 150 150	16	200	1.784	38	1.580	107.10
12	RT5	300 870 300	12	200	1.470	43	0.889	56.19
13	RT6	5356	12		5.356	2	0.889	9.52
14	RT7	225 5375	20		5.6	4	2.469	55.31
TOTAL (KG) :								1159.73

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 3800 150	12	200	4.400	26	0.889	101.69
2	RT1B	450 3800 150	12	200	4.400	26	0.889	101.69
3	RT2A	450 6450 150	12	200	7.050	16	0.889	100.27
4	RT2B	150 3800 150 600	12	200	4.700	16	0.889	66.84
5	RT2C	600 3575 150 150	12	200	4.475	16	0.889	63.64
6	RT3A	7160 150 450	12	200	7.760	16	0.889	110.36
7	RT3B	800 150 4193 450	16	200	5.593	16	1.580	141.41
8	RT3C	150 2892 150 800	16	200	3.992	16	1.580	100.93
9	RT3D	200 300 300 200 210	16	200	1.210	34	1.580	65.01
10	RT4A	1483.5 150 150	12	200	1.784	38	0.889	60.24
11	RT4B	1483.5 150 150	16	200	1.784	38	1.580	107.10
12	RT5	300 870 300	12	200	1.470	43	0.889	56.19
13	RT6	5060	12		5.060	2	0.889	9.00
14	RT7	225 5375	20		5.6	4	2.469	55.31
TOTAL (KG) :								1139.69

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	130 735 850 305 445 200 305 200	16	150	3.170	45	1.580	225.42
2	RC2	150 6500 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	130 535 1110 305 150 315	16	150	2.695	25	1.580	106.47
2	RS2	150 3500 150	10	150	3.800	17	0.617	39.88
TOTAL (KG) :								146.35

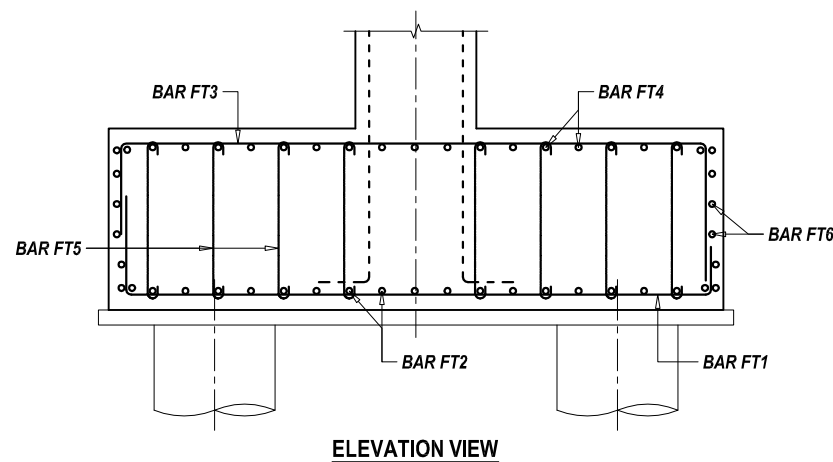
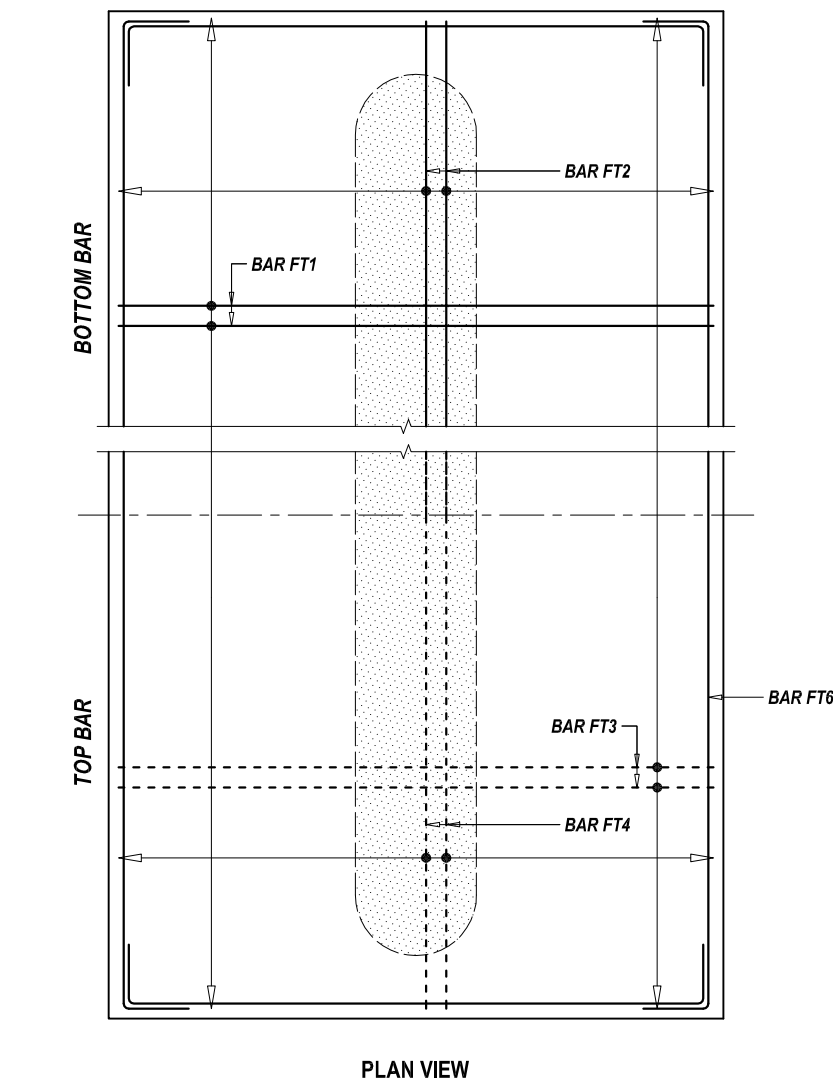
BAR BENDING SCHEDULE OF APPROACH SLAB								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	1601	100 100 10970	16	150	11.170	48	1.580	847.27
2	1202	100 3420 100	12	150	3.620	150	0.889	482.67
TOTAL (KG) :								1329.93

EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		Designed By	Mr. R.D.	Drawing Name	Scale:	AS SHOWN	Date:	18.04.2023				
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathalaya Road Section (130 KM) of Mahendra Highway and Bridges	 EPTISA Servicios De Ingeniera Madrid, Spain	 STUP Consultants Private Limited Kolkatta, India	Joint Venture of	Nec.No. 6489 CH/1/17		Checked By				Mr. S.M.		Reference Drawings	Chainage:	241+748	Drawing No.- KDP/DPR/STR/BR/CHARNATH/DD-9
				In Association With	Udaya Consultancy, Geocom International, Sundar Krilli Consultant and Rays Consultant Private Limited						Approved By					



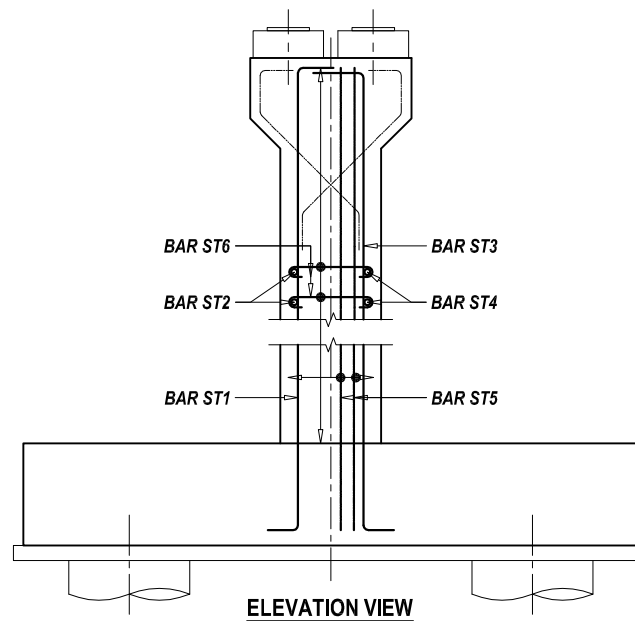
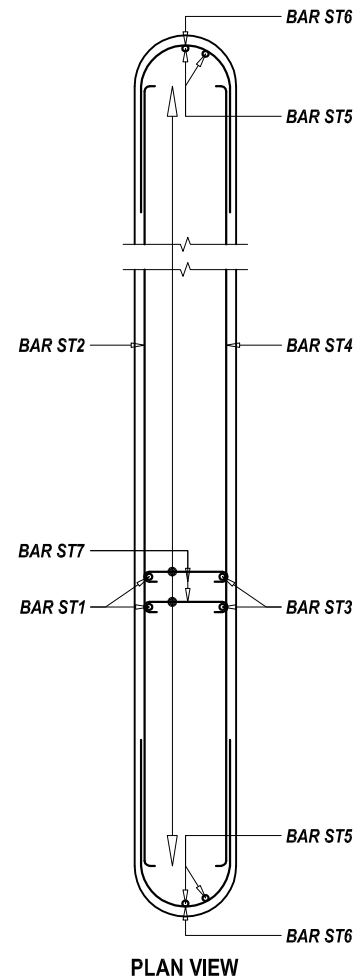
NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/CHARNATH/DD-4

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  EPTISA Servicios De Ingenieria Madrid, Spain  STUP Consultants Private Limited Kolkatta, India	Designed By	Mr. R.D. Nec.No. 6489 Q10/12		PIER DETAILS OF BRIDGE OVER RIVER CHARNATH	AS SHOWN	20.04.2023
			Checked By	Mr. S.M.		Reference Drawings KDP/DPR/STR/BR/CHARNATH/DD-12	Chainage: 241+748	Drawing No.-KDP/DPR/STR/BR/CHARNATH/DD- 10
			In Association With Udaya Consultancy, Geocom International, Sundar K/illi Consultant and Rays Consultant Private Limited	Approved By	Mr. H.B.			



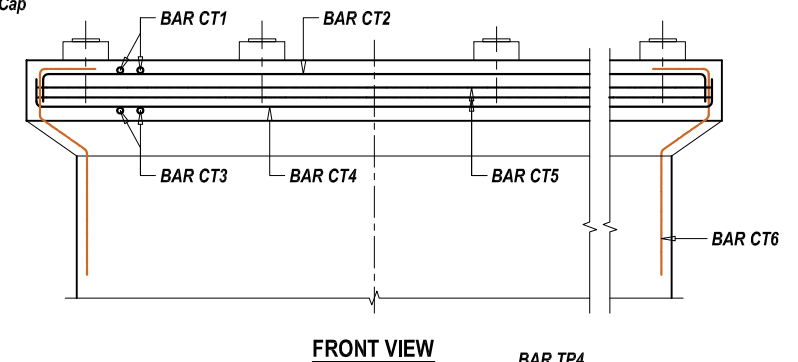
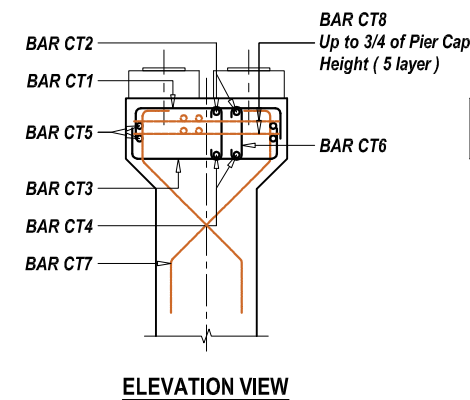
BAR DETAIL OF FOUNDATION

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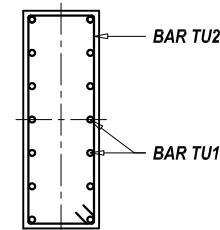
BAR DETAIL AT PIER STEM

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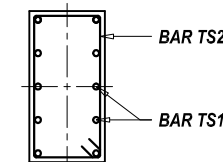


BAR DETAIL AT PIER CAP

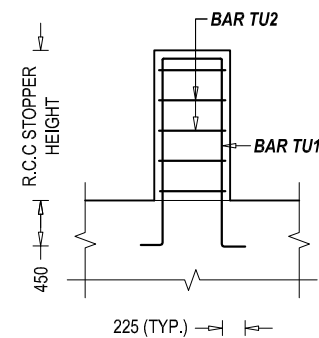
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SECTIONAL PLAN VIEW



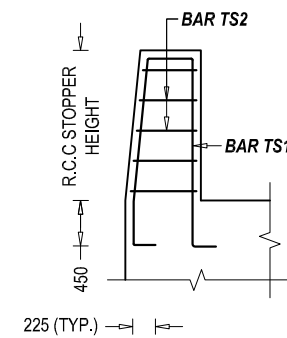
SECTIONAL PLAN VIEW



SECTIONAL ELEVATION VIEW

R.C.C STOPPER AT MID

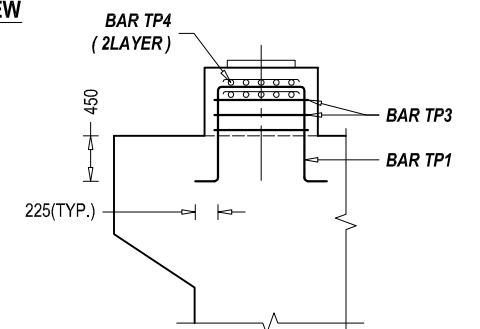
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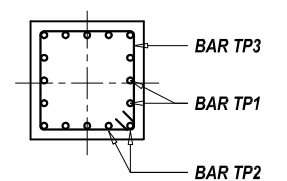
SECTIONAL ELEVATION VIEW

R.C.C STOPPER AT EDGE

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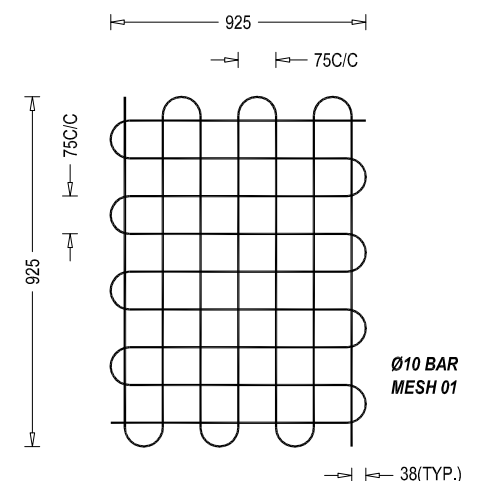
SECTIONAL SIDE VIEW



SECTIONAL PLAN VIEW

BAR DETAIL AT PEDESTAL

SCALE - 1 : 50



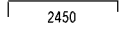
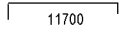
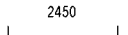
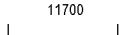
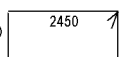
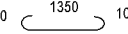
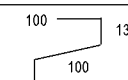
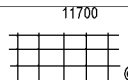
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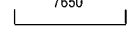
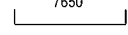
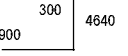
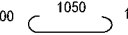
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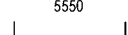
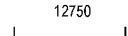
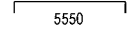
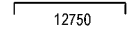
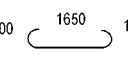
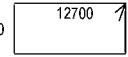
--- TOP BAR OR NEAR FACE REINFORCEMENT
--- BOTTOM BAR OR FAR FACE REINFORCEMENT

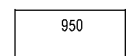
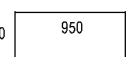
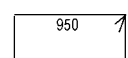
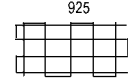
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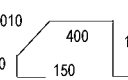
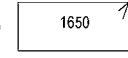
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Mr. R.D.	Drawing Name	Scale:	Date:
Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP)	Joint Venture of EPTISA Servicios De Ingeniera Madrid, Spain STUP Consultants Private Limited Kolkata, India	Checked By	Mr. S.M.	PIER BAR DETAIL OF BRIDGE OVER RIVER CHARNATH	AS SHOWN	20.04.2023
	Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	In Association With Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited	Approved By	Mr. H.B.	Reference Drawings KDP/DPR/STR/BR/CHARNATH/DD-12	Chainage: 241+748	Drawing No.-KDP/DPR/STR/BR/CHARNATH/DD-11 Sheet No.1/1

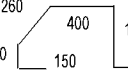
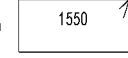
BAR BENDING SCHEDULE OF PIER CAP								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	CT1	750  750	20		3.950	52	2.469	507.16
2	CT2	750  750	20		13.200	18	2.469	586.67
3	CT3	750  750	20		3.950	52	2.469	507.16
4	CT4	750  750	20		13.200	18	2.469	586.67
5	CT5	11700  100	16		28.500	11	1.580	495.41
6	CT6	100  100	16	X: 280 Y: 460	1.550	234	1.580	573.16
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) :								5935.68

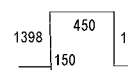
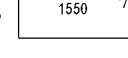
BAR BENDING SCHEDULE OF PIER STEM								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	ST1	300  900	20		5.840	50	2.469	720.99
2	ST2	100  100	16	200	7.850	8	1.580	99.24
3	ST3	300  900	20		5.840	50	2.469	720.99
4	ST4	100  100	16	200	7.850	8	1.580	99.24
5	ST5	900  4640	20		5.840	12	2.469	173.04
5	ST6	720  1885	16	200	3.325	16	1.580	84.07
6	ST7	100  100	12	Ver. 153 Hor.400	1.250	230	0.889	255.56
TOTAL (KG) :								2153.12

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 275	1.85	1144	0.889	1881.24
6	FT6	5500  150	16	200	36.700	8	1.580	463.96
TOTAL (KG) :								13516.50

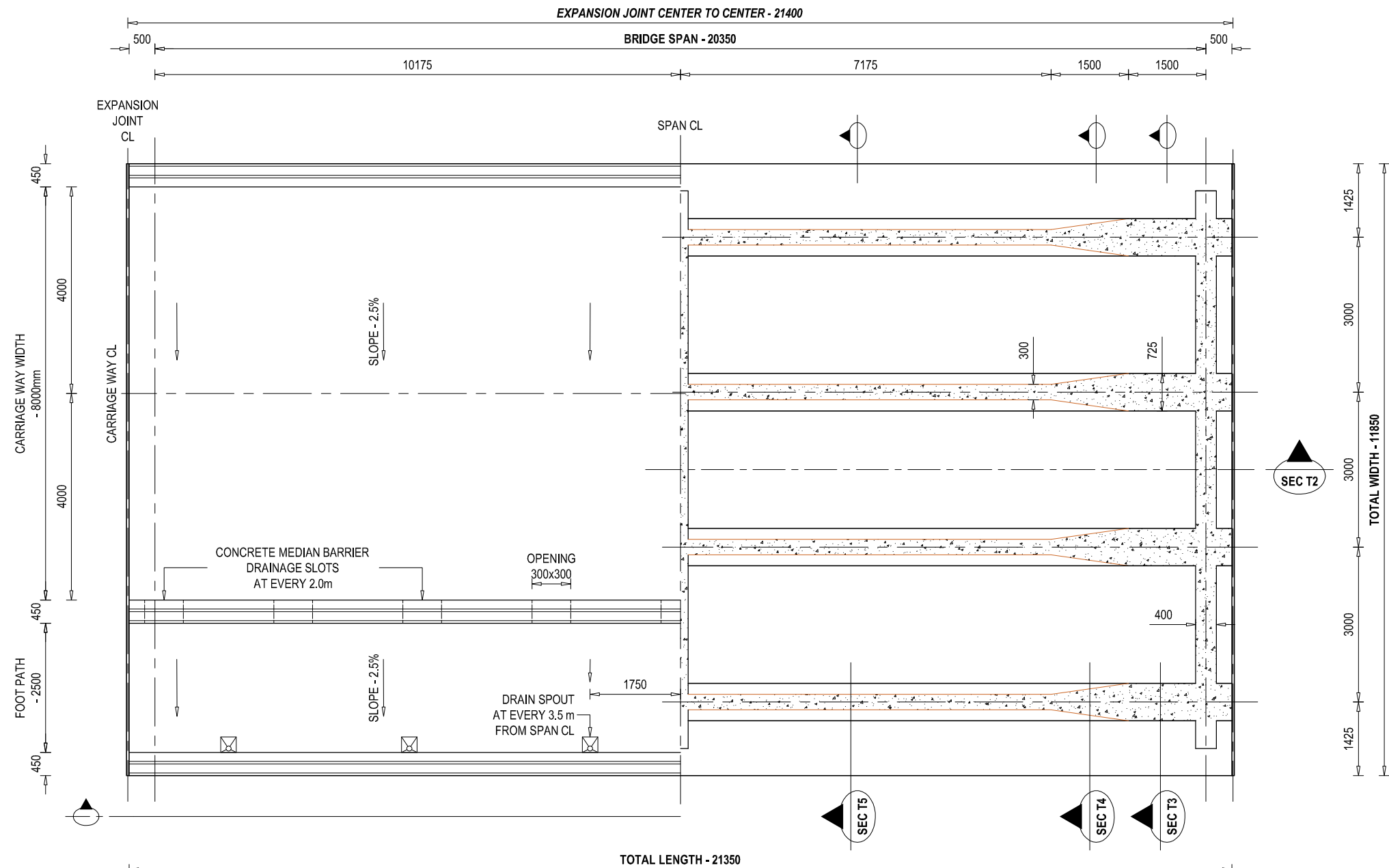
BAR BENDING SCHEDULE OF PEDESTAL								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TP1	150  650	16	150	2.850	8	1.580	36.03
2	TP2	150  650	16	150	2.850	8	1.580	36.03
3	TP3	950  100	16	150	4.000	3	1.580	18.96
4	TP4	925  @ 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	4.100	9	0.889	32.80
TOTAL (KG) :								110.56

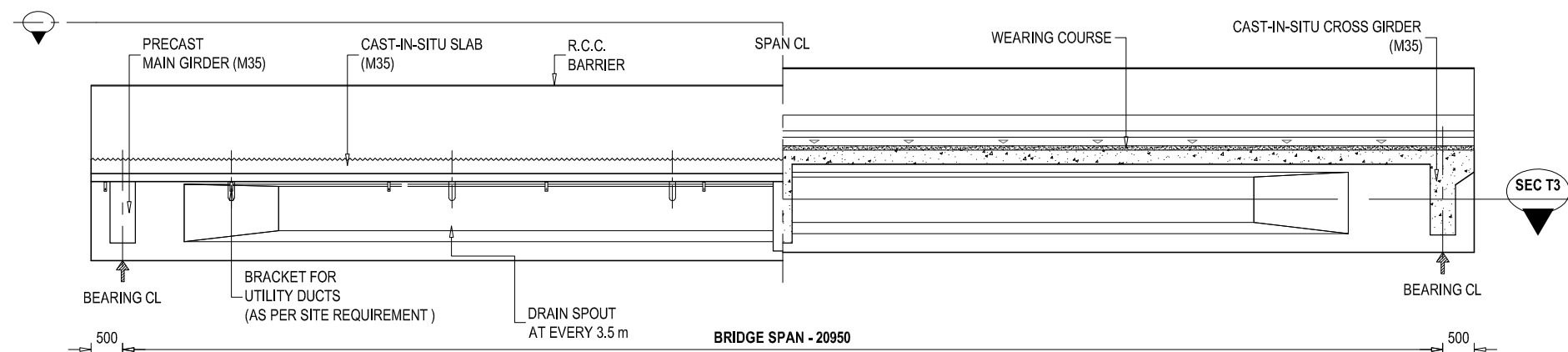
BAR BENDING SCHEDULE OF RCC SEISMIC ARRESTER - MID								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TU1	1398  150	16	150	3.546	13	1.580	72.85
2	TU2	450  100	12	150	4.200	8	0.889	29.87
TOTAL (KG) :								102.71

EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		Designed By	Mr. R.D.		Drawing Name	Scale:	AS SHOWN	Date:	20.04.2023
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of		Checked By	Mr. S.M.								
		 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	Approved By	Mr. H.B.					



HALF SECTIONAL PLAN VIEW OF SUPERSTRUCTURE AT SEC T1

SCALE - 1 : 100 @ A3 PAPER

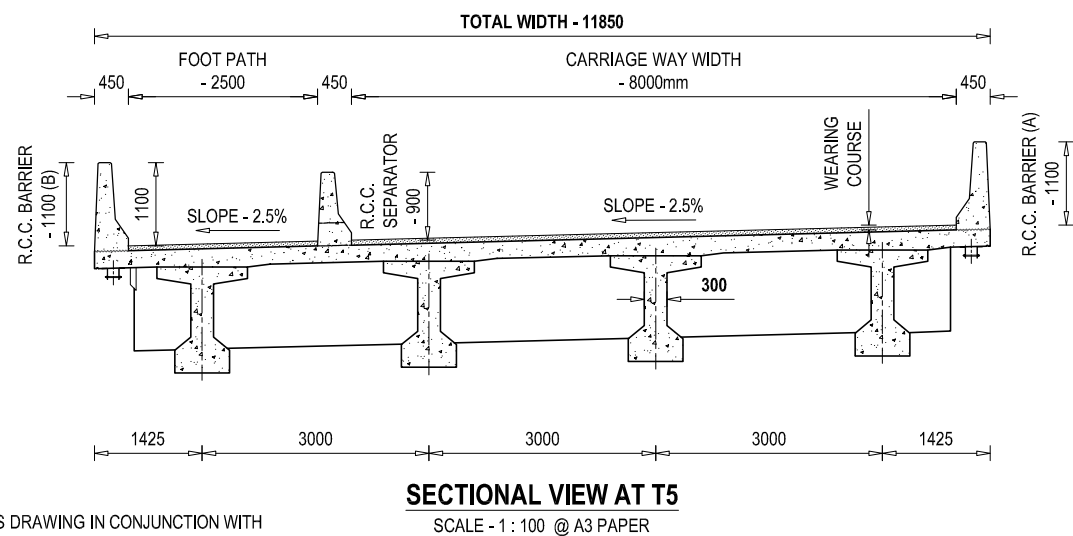
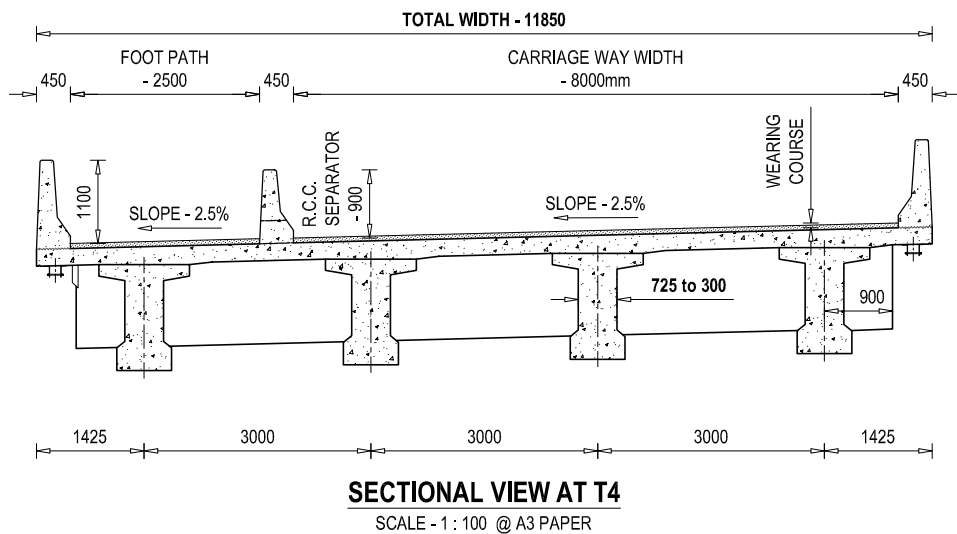
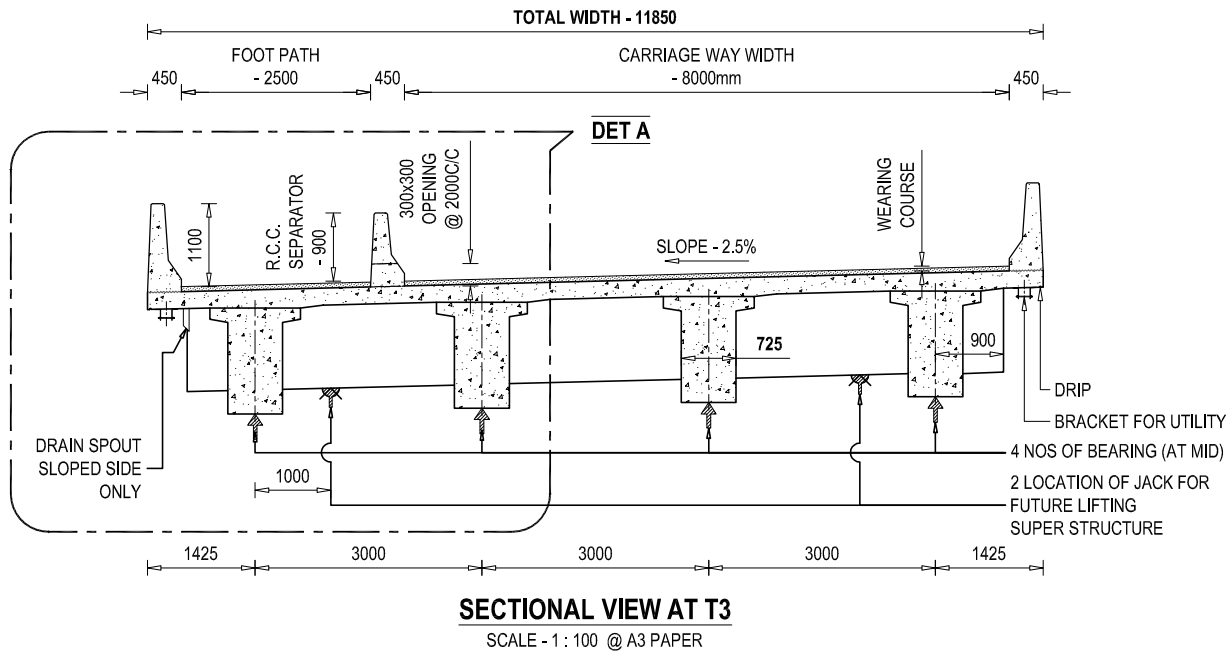


HALF ELEVATION SECTIONAL VIEW OF SUPERSTRUCTURE AT SEC T2

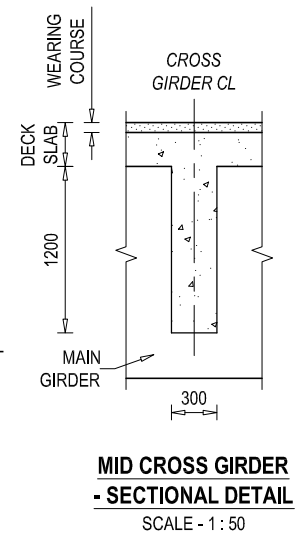
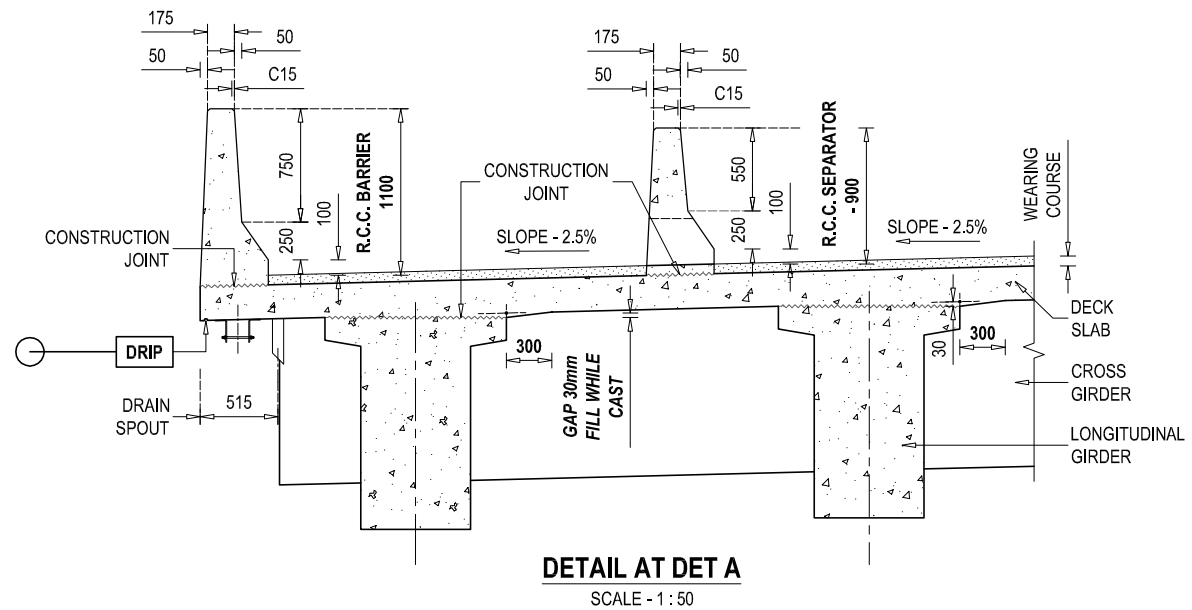
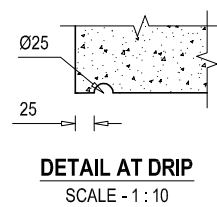
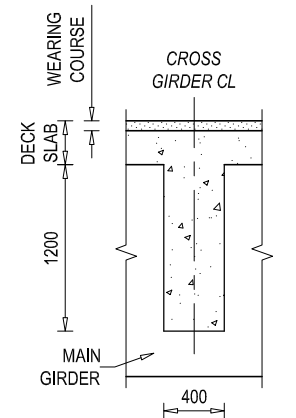
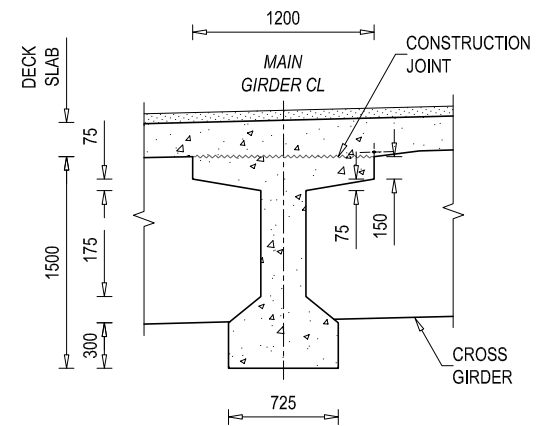
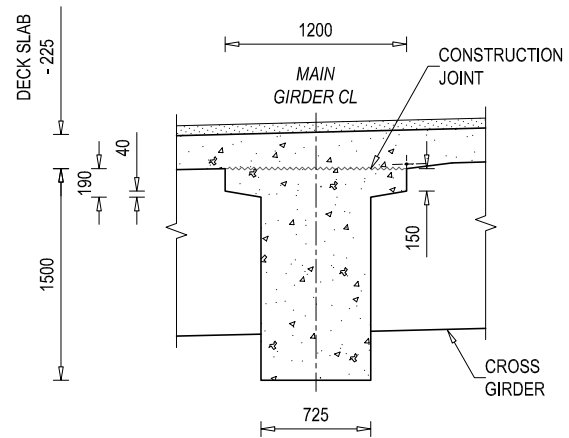
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NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/CHARNATH/DD-4

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of  EPTISA Servicios De Ingenieria Madrid, Spain  STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Mr. R.D. Nec.No. 6489 CIVIL/10	SUPER STRUCTURE DETAILS OF BRIDGE OVER RIVER CHARNATH	AS SHOWN	20.04.2023
			Checked By Mr. S.M.	Reference Drawings KDP/DPR/STR/BR/CHARNATH/DD-17	Chainage: 241+748	Drawing No.- KDP/DPR/STR/BR/CHARNATH/DD- 13
			Approved By Mr. H.B.			Sheet No.1/2



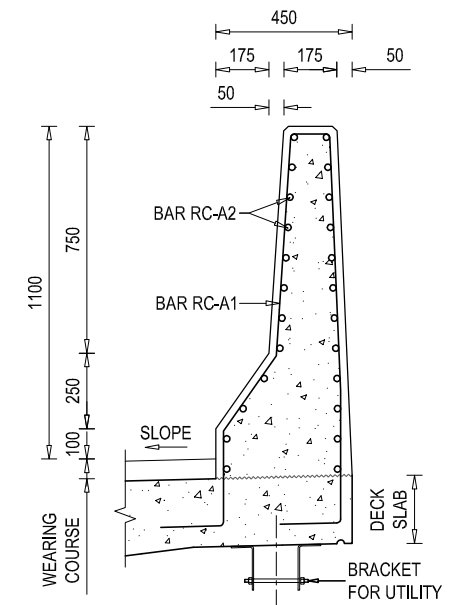
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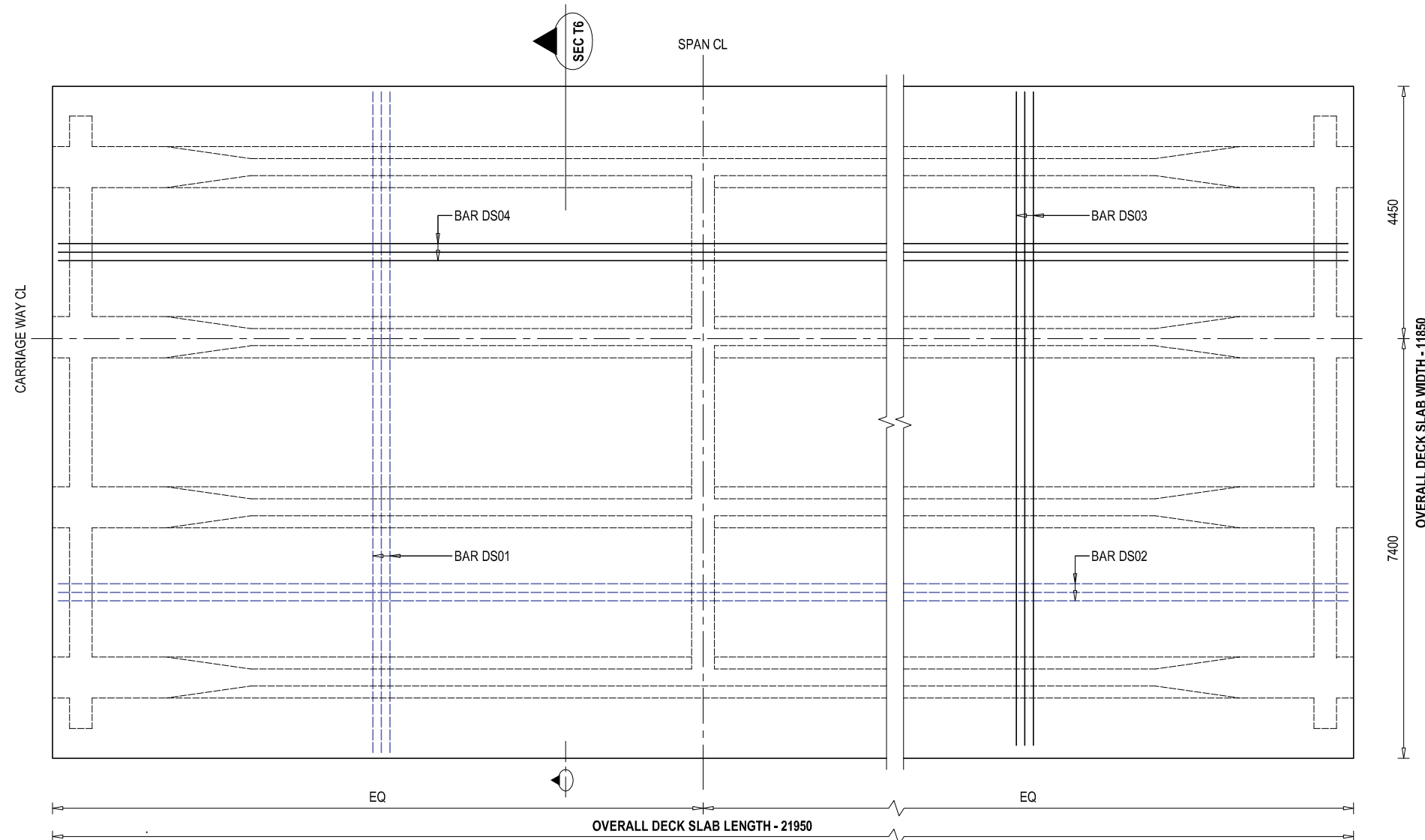
EMPLOYER Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	PROJECT NAME Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	DESIGN CONSULTANTS Joint Venture of eptisa EPTISA Servicios De Ingenieria Madrid, Spain STUP STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Designed By Mr. R.D. Nec.No. 6489 (CIVIL/17) Checked By Mr. S.M. Approved By Mr. H.B.	Drawing Name SUPER STRUCTURE DETAILS OF BRIDGE OVER RIVER CHARNATH Reference Drawings KDP/DPR/STR/BR/CHARNATH/DD-17	Scale: AS SHOWN Chainage: 241+748	Date: 20.04.2023 Drawing No.- KDP/DPR/STR/BR/CHARNATH/DD- 13 Sheet No.2/2
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LEGEND FOR REINFORCEMENT BAR

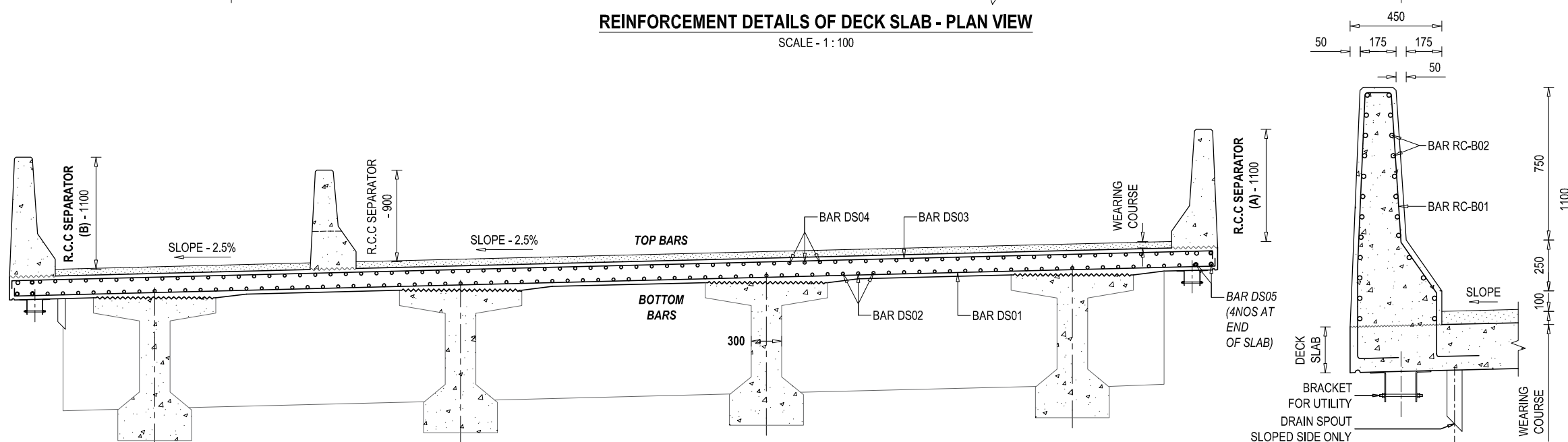
CODE	FULL FORM	
DS	- DECK SLAB	CG - CROSS GIRDER
RB	- R.C.C BARRIER	AS - APPROACH SLAB
RS	- R.C.C SEPARATOR	ST - STOPPER
MG	- MAIN GIRDER	** - ***
TOP BAR OR NEAR FACE REINFORCEMENT BOTTOM BAR OR FAR FACE REINFORCEMENT		



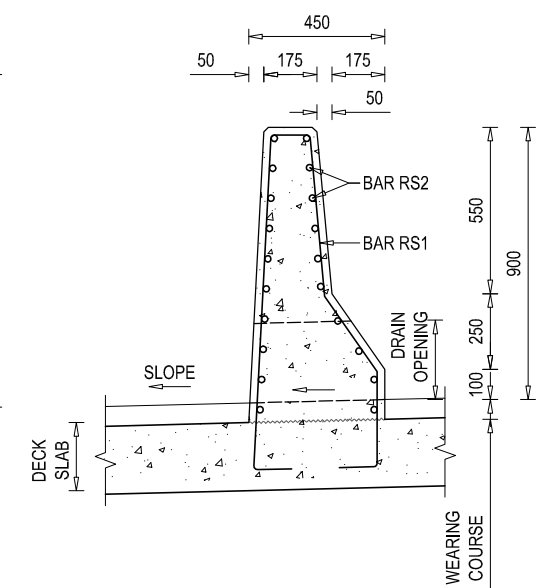
REINFORCEMENT DETAILS OF
R.C.C BARRIER (A)- SECTIONAL VIEW
SCALE - 1 : 25



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



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

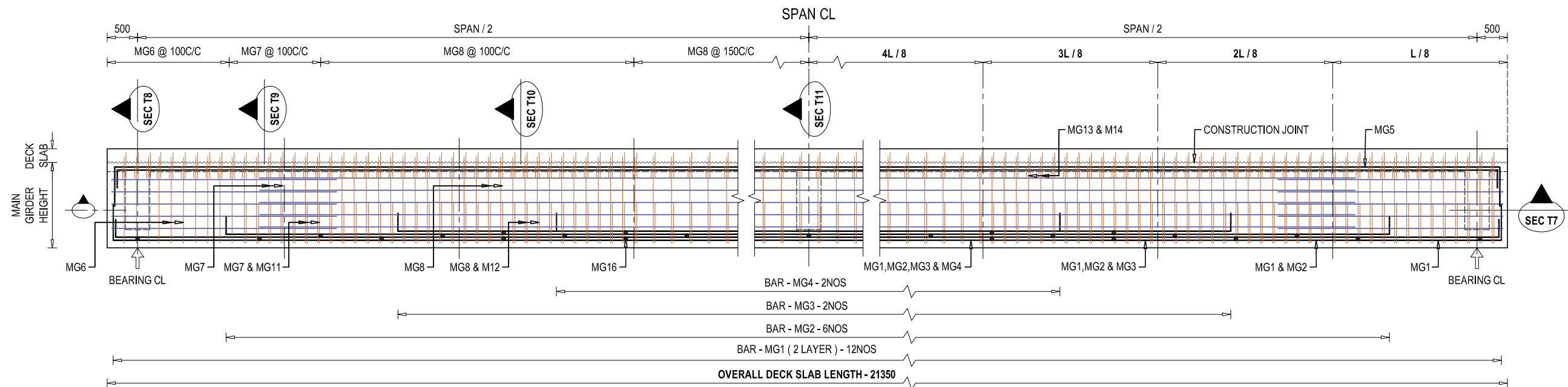


REINFORCEMENT DETAILS OF
R.C.C SEPARATOR - SECTIONAL VIEW
SCALE - 1 : 25

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

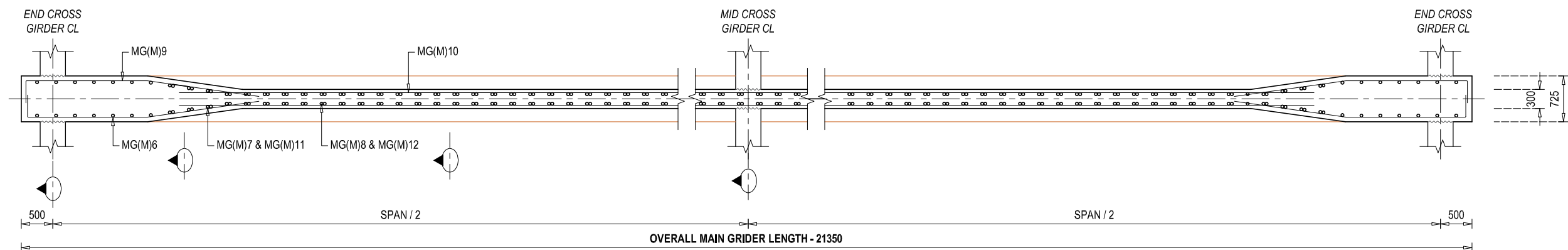
REINFORCEMENT DETAILS OF DECK SLAB - SECTIONAL VIEW AT T6
SCALE - 1 : 50

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Mr. R.D.	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of  EPTISA Servicios De Ingenieria Madrid, Spain  STUP Consultants Private Limited Kolkatta, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Checked By	Mr. S.M.	DECK SLAB DETAILS OF BRIDGE OVER RIVER CHARNATH	AS SHOWN	20.04.2023
			Approved By	Mr. H.B.	Reference Drawings	Chainage:	Drawing No.- KDP/DPR/STR/BR/CHARNATH/DD- 14
					KDP/DPR/STR/BR/CHARNATH/DD-17	241+748	Sheet No.1/1



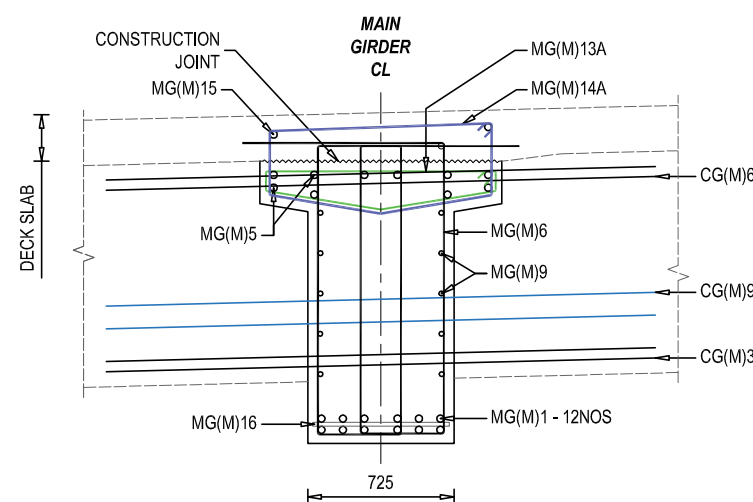
REINFORCEMENT DETAILS OF MAIN GIRDER - SECTIONAL ELEVATION VIEW

SCALE - 1 : 75



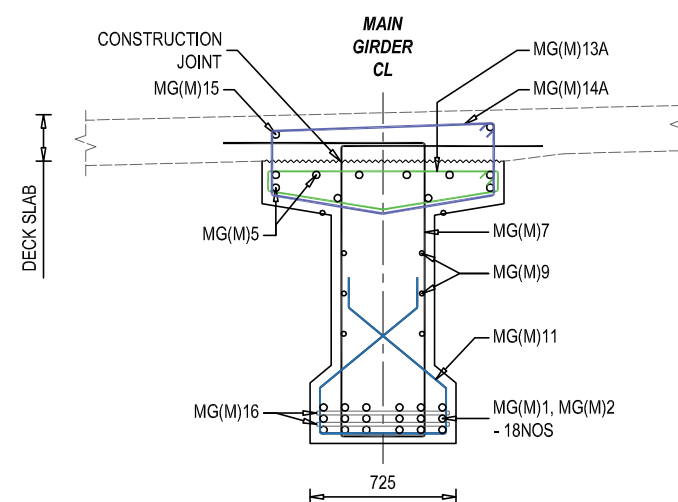
REINFORCEMENT DETAILS OF MAIN GIRDER (MID) - SECTIONAL PLAN VIEW AT T7(M)

SCALE - 1 : 75



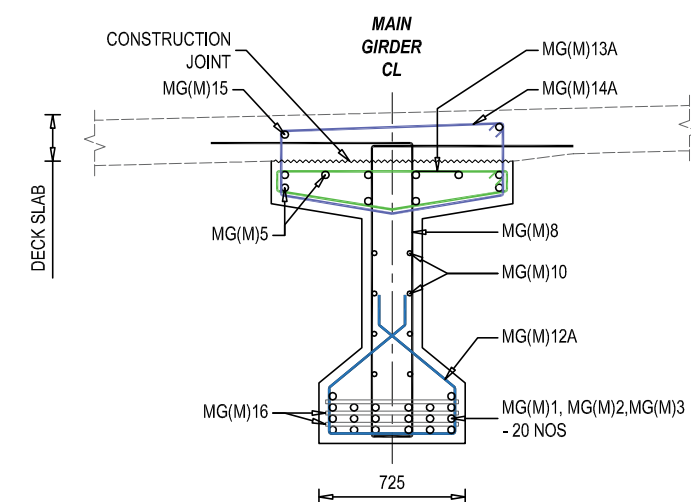
REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T8

SCALE - 1 : 50



REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T9

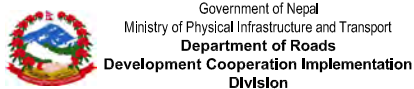
SCALE - 1 : 50



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/CHARNATH/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

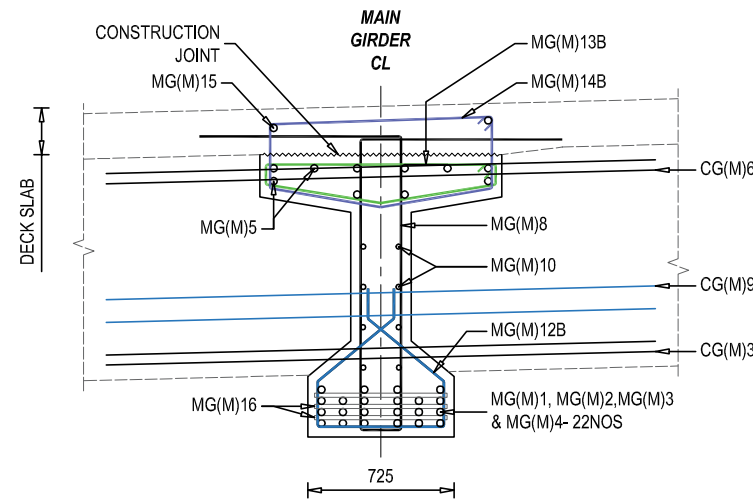
DESIGN CONSULTANTS
Joint Venture of
EPTISA Servicios De Ingeniera Madrid, Spain
STUP Consultants Private Limited Kolkata, India
In Association With
Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited

Designed By Mr. R.D.
Checked By Mr. S.M.
Approved By Mr. H.B.

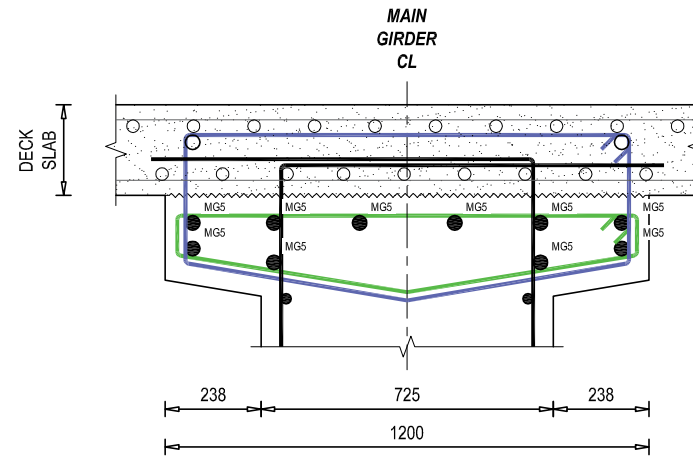
Drawing Name
MAIN GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER CHARNATH
Reference Drawings
KDP/DPR/STR/BR/CHARNATH/DD-17

Scale:
AS SHOWN
Chainage:
241+748

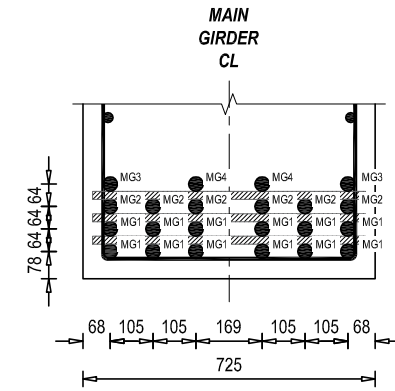
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20.04.2023
Drawing No.- KDP/DPR/STR/BR/CHARNATH/DD- 15
Sheet No.1/2



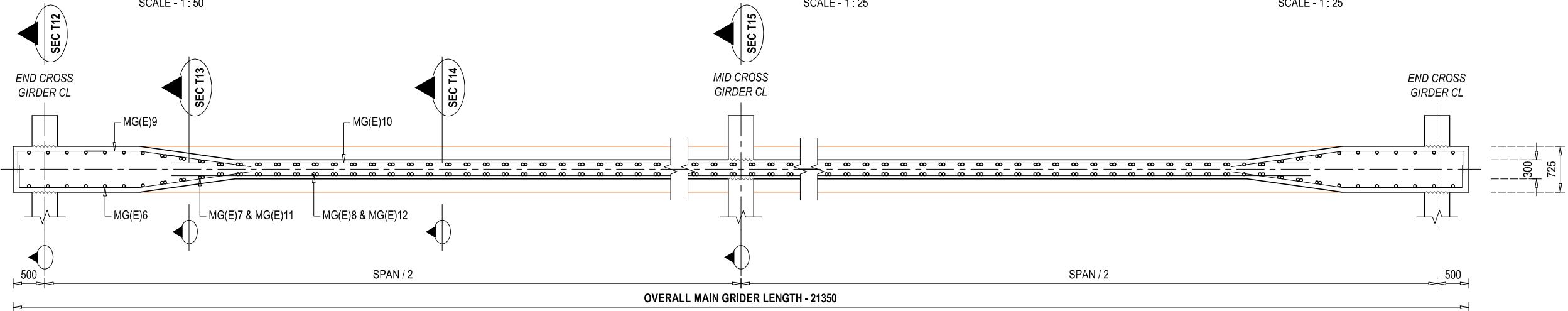
**REINFORCEMENT DETAILS OF MAIN GIRDER
SECTIONAL VIEW AT T11**
SCALE - 1 : 50



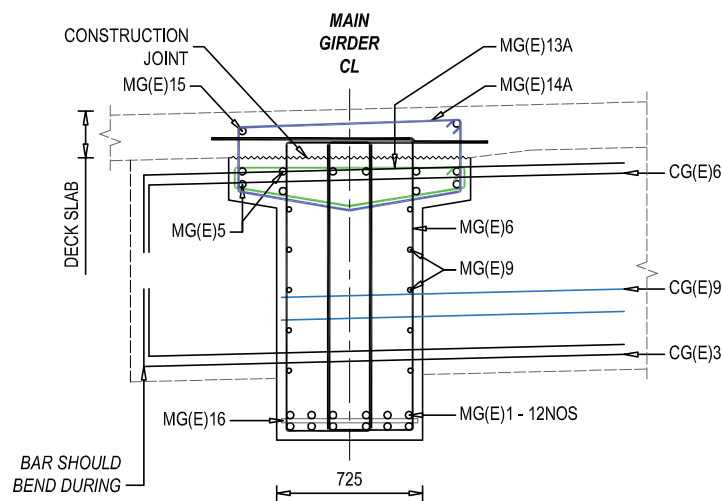
**TOP BAR WEB REINFORCEMENT DETAILS
OF MAIN GIRDER**
SCALE - 1 : 25



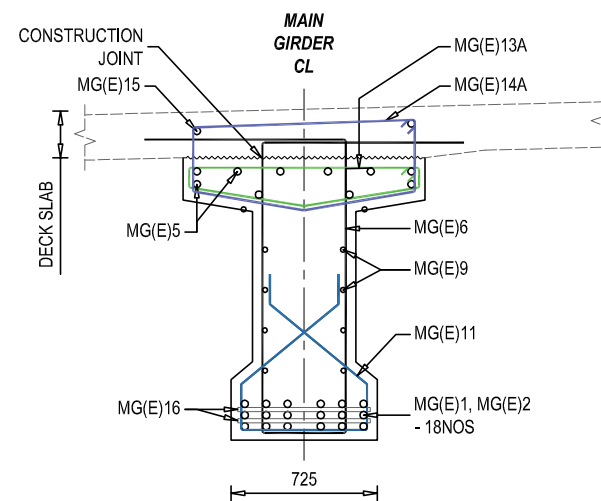
**BOTTOM BAR WEB REINFORCEMENT DETAILS
OF MAIN GIRDER**
SCALE - 1 : 25



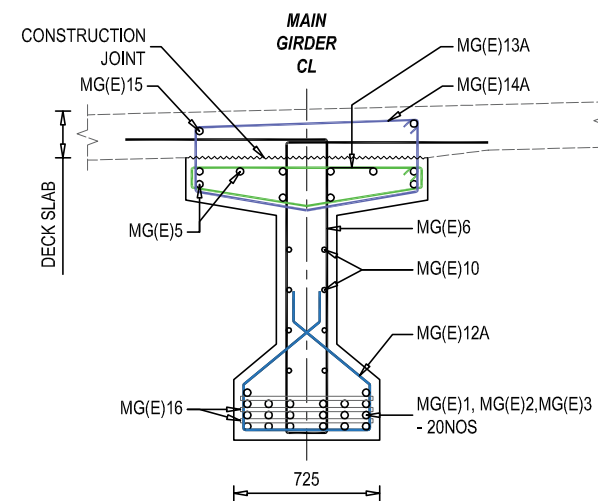
REINFORCEMENT DETAILS OF MAIN GIRDER (END) - SECTIONAL PLAN VIEW AT T7(E)
SCALE - 1 : 75



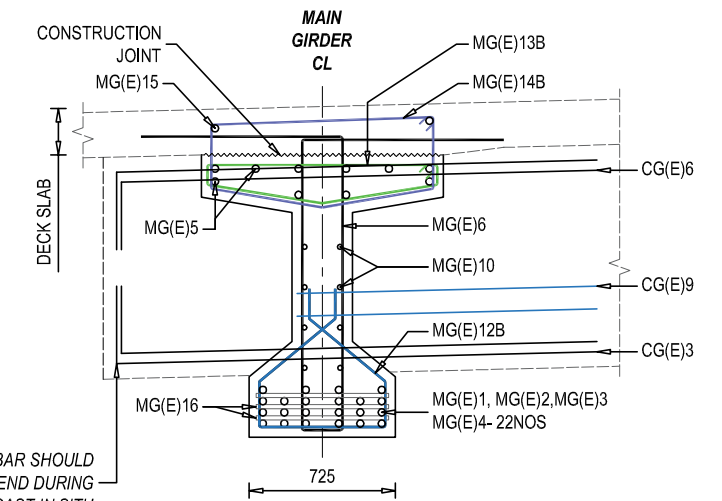
**REINFORCEMENT DETAILS OF MAIN GIRDER
SECTIONAL VIEW AT T12**
SCALE - 1 : 50



**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/CHARNATH/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

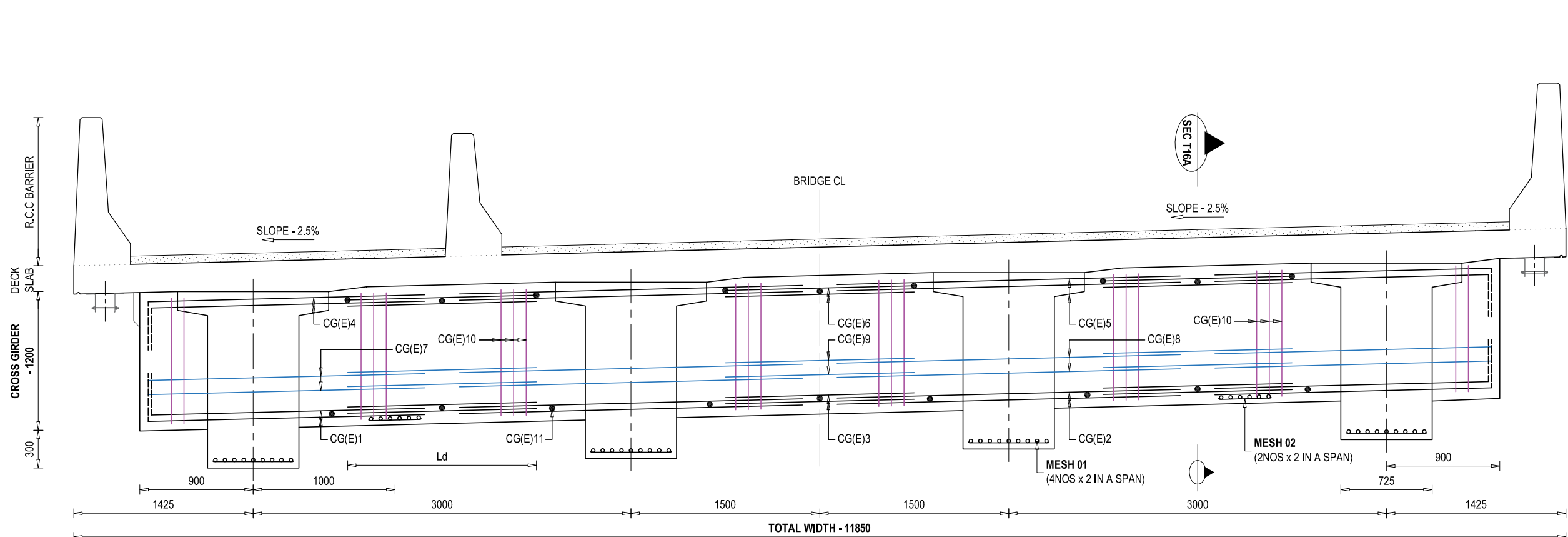
DESIGN CONSULTANTS
Joint Venture of
EPTISA Servicios De Ingeniera Madrid, Spain
STUP Consultants Private Limited Kolkata, India
In Association With
Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited

Designed By Mr. R.D.
Checked By Mr. S.M.
Approved By Mr. H.B.

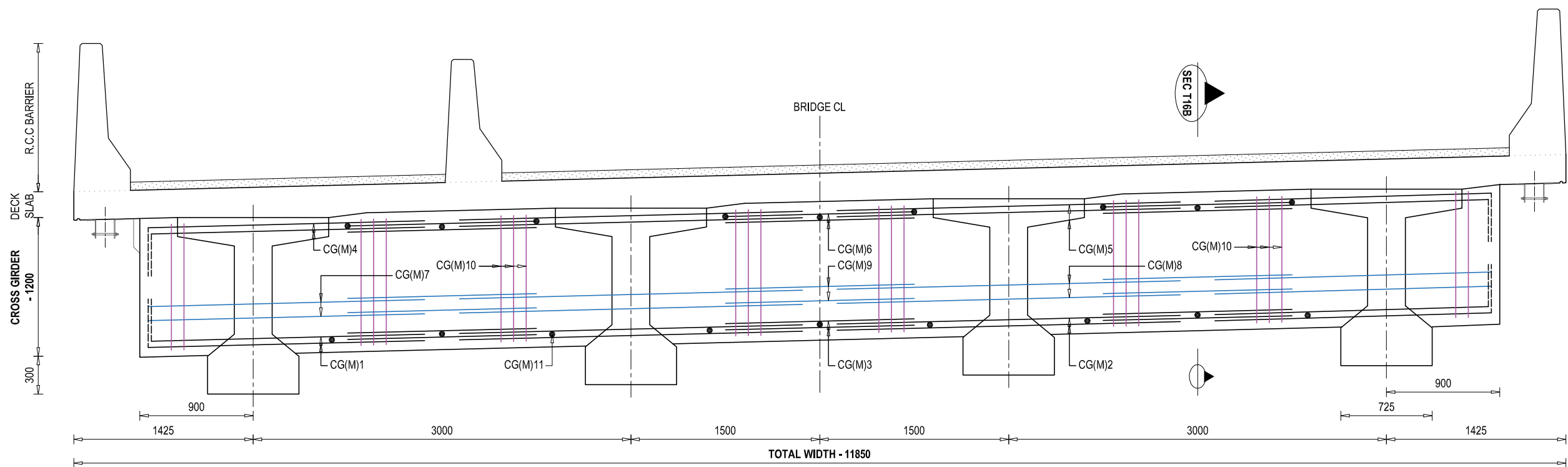
Drawing Name
MAIN GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER CHARNATH
Reference Drawings
KDP/DPR/STR/BR/CHARNATH/DD-17

Scale:
AS SHOWN
Chainage:
241+748

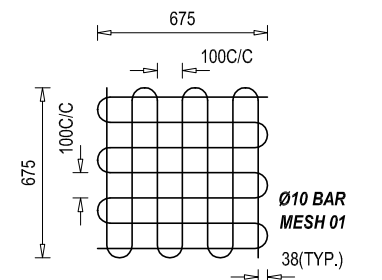
Date:
20.04.2023
Drawing No.- KDP/DPR/STR/BR/CHARNATH/DD- 15
Sheet No. 2/2



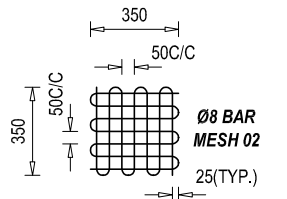
REINFORCEMENT DETAILS OF END CROSS GIRDER
SCALE - 1 : 50



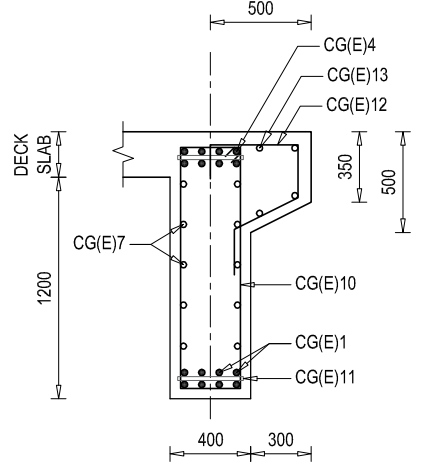
REINFORCEMENT DETAILS OF MID CROSS GIRDER
SCALE - 1 : 50



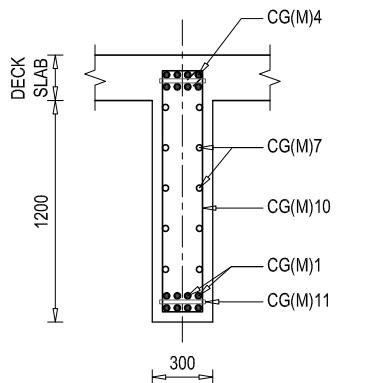
REINFORCEMENT DETAILS OF BEARING MESH
SCALE - 1 : 50



REINFORCEMENT DETAILS OF LIFTING MESH
SCALE - 1 : 50



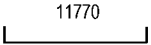
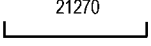
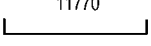
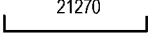
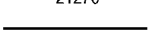
SECTIONAL REINFORCEMENT DETAILS OF END CROSS GIRDER - SEC T16A
SCALE - 1 : 50

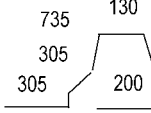
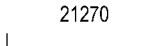


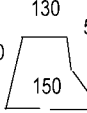
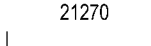
SECTIONAL REINFORCEMENT DETAILS OF MID CROSS GIRDER - SEC T16B
SCALE - 1 : 50

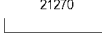
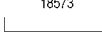
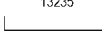
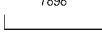
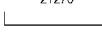
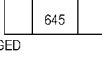
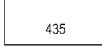
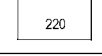
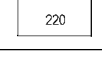
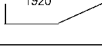
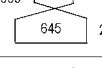
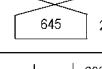
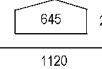
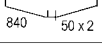
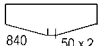
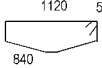
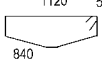
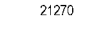
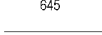
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DRG NO. KDP/DPR/STR/BR/CHARNATH/DD-4

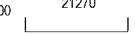
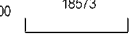
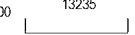
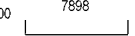
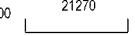
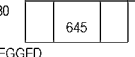
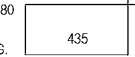
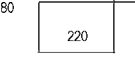
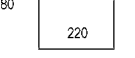
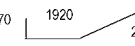
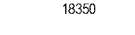
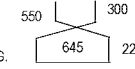
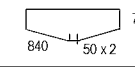
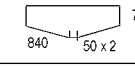
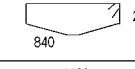
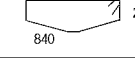
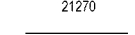
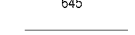
EMPLOYER Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	PROJECT NAME Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	DESIGN CONSULTANTS Joint Venture of EPTISA Servicios De Ingeniera Madrid, Spain STUP Consultants Private Limited Kolkatta, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Designed By Mr. R.D. Nec.No. 6489 CH/6/7/ Checked By Mr. S.M. Approved By Mr. H.B.	Drawing Name CROSS GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER CHARNATH Reference Drawings KDP/DPR/STR/BR/CHARNATH/DD-17	Scale: AS SHOWN Chainage: 241+748	Date: 20.04.2023 Drawing No:- KDP/DPR/STR/BR/CHARNATH/DD- 16 Sheet No.1/1
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BAR BENDING SCHEDULE OF DECK SLAB (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	DS01	150  150	16	150	12.070	143	1.580	2727.52
2	DS02	150  150	10	150	21.570	76	0.617	1011.93
3	DS03	150  150	16	150	12.070	143	1.580	2727.52
5	DS04	150  150	10	150	21.570	76	0.617	1011.93
6	DS05	 21270	16		21.270	8	1.580	268.89
TOTAL (KG) :								7747.79

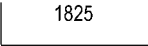
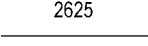
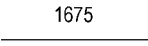
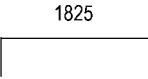
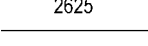
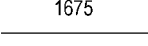
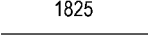
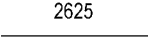
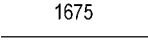
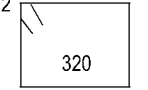
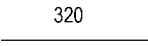
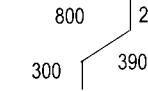
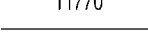
BAR BENDING SCHEDULE OF R.C.C BARRIER (A) (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RC-A1	 200	16	150	3.170	143	1.580	716.34
2	RC-A2	150  150	10	150	21.570	20	0.617	266.30
TOTAL (KG) :								982.64

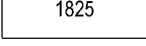
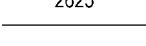
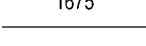
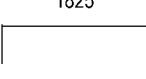
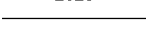
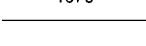
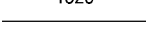
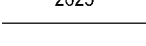
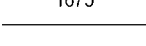
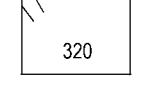
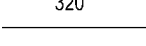
BAR BENDING SCHEDULE OF R.C.C SEPARATOR (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RS1	 1110	16	150	2.695	143	1.580	609.00
2	RS2	150  150	10	150	21.570	17	0.617	226.35
TOTAL (KG) :								835.36

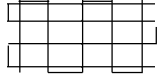
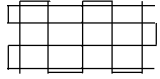
BAR BENDING SCHEDULE OF END MAIN GIRDER (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	MG(E)1	300  300	32		21.870	12	6.321	1658.88
2	MG(E)2	300  300	32		19.173	6	6.321	727.15
3	MG(E)3	300  300	32		13.835	2	6.321	174.90
4	MG(E)4	300  300	32		8.498	2	6.321	107.43
5	MG(E)5	300  300	12		21.870	10	0.889	194.40
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	92	0.889	382.72
9	MG(E)8B	480  1530	12	150	4.680	37	0.889	153.92
10	MG(E)9	370  2000	12	200	4.290	32	0.889	122.03
11	MG(E)10	 18350	12	200	18.350	32	0.889	521.96
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	92	0.889	252.28
14	MG(E)12B	700  220	12	150	3.085	37	0.889	101.46
15	MG(E)13A	 70	12	100	3.040	162	0.889	437.76
16	MG(E)13B	 70	12	150	3.040	37	0.889	99.98
17	MG(E)14A	 270	12	100	3.440	162	0.889	495.36
18	MG14B	 270	12	150	3.440	37	0.889	113.14
19	MG(E)15	 21270	12		21.270	2	0.889	37.81
19	MG(E)16	 645	32	1500	0.645	45	6.321	183.47
TOTAL :							6355.98	

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		21.870	12	6.321	1658.88
2	MG(M)2	300  300	32		19.173	6	6.321	727.15
3	MG(M)3	300  300	32		13.835	2	6.321	174.90
4	MG(M)4	300  300	32		8.498	2	6.321	107.43
5	MG(M)5	300  300	12		21.870	10	0.889	194.40
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	92	0.889	382.72
9	MG(M)8B	480  1530	12	150	4.680	37	0.889	153.92
10	MG(M)9	370  2000	12	200	4.290	32	0.889	122.03
11	MG(M)10	 18350	12	200	18.350	32	0.889	521.96
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	92	0.889	252.28
14	MG(M)12B	700  220	12	150	3.085	37	0.889	101.46
15	MG(M)13A	 70	12	100	3.040	162	0.889	437.76
16	MG(M)13B	 70	12	150	3.040	37	0.889	99.98
17	MG(M)14A	 270	12	100	3.440	162	0.889	495.36
18	MG14B	 270	12	150	3.440	37	0.889	113.14
19	MG(M)15	 21270	12		21.270	2	0.889	37.81
19	MG(M)16	 645	32	1500	0.645	45	6.321	183.47
TOTAL :							6355.98	

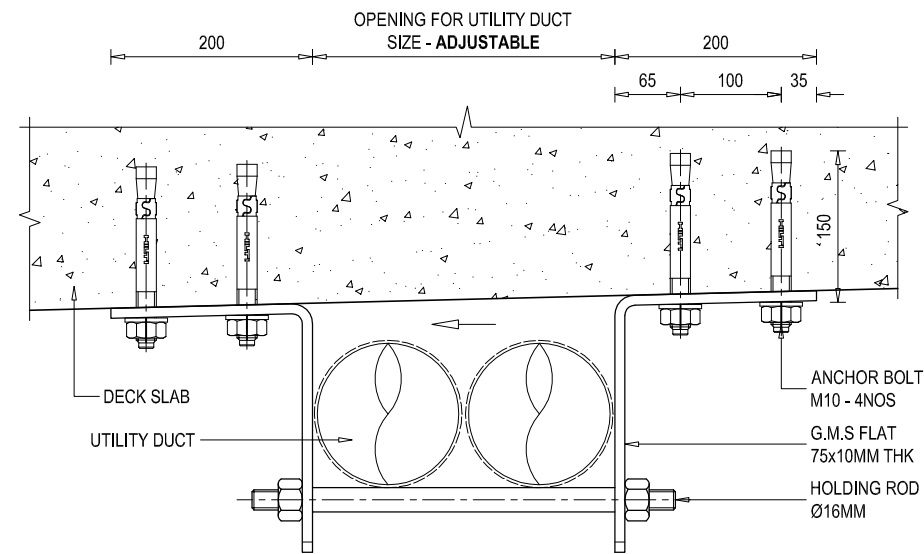
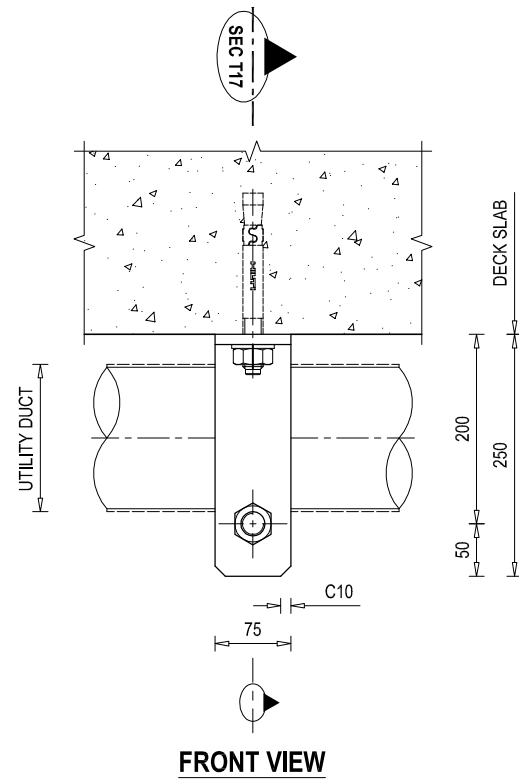
EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		Drawing Name		Scale:		Date:	
	Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges		Joint Venture of		Designed By	Mr. R.D.	AS SHOWN		20.04.2023	
				EPTISA Servicios De Ingeniera Madrid, Spain		Checked By	Mr. S.M.			Drawing No.- KDP/DPR/STR/BR/CHARNATH/DD- 17	
				In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited		Approved By	Mr. H.B.			Sheet No. 1/2	

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

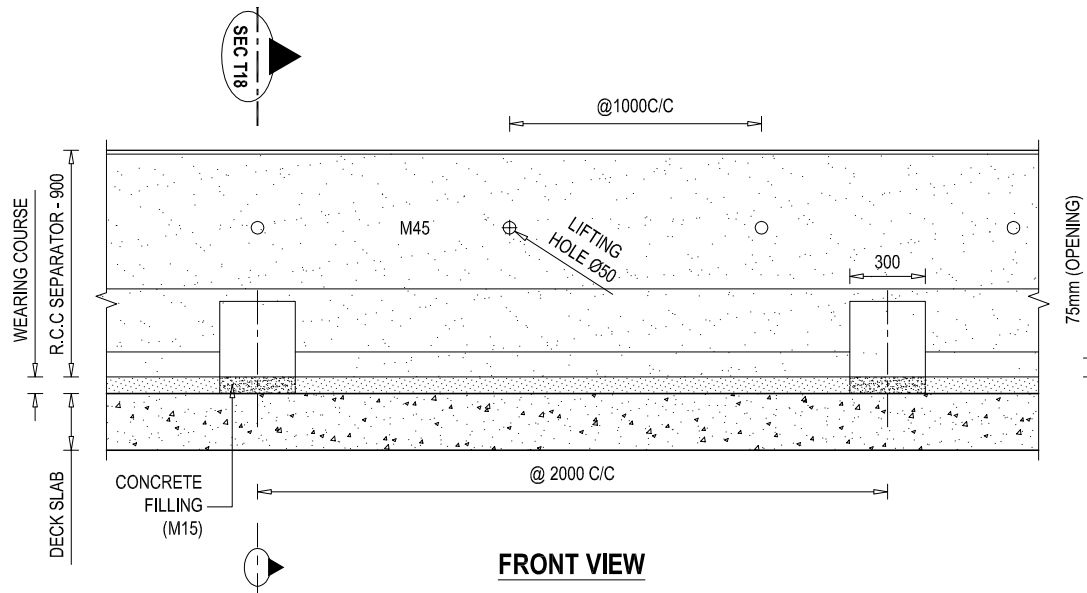
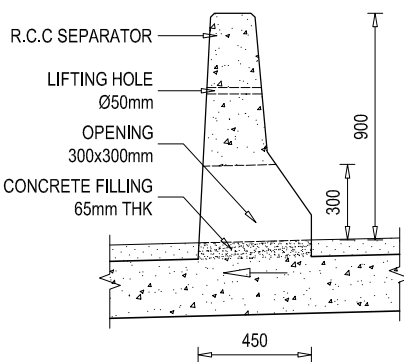
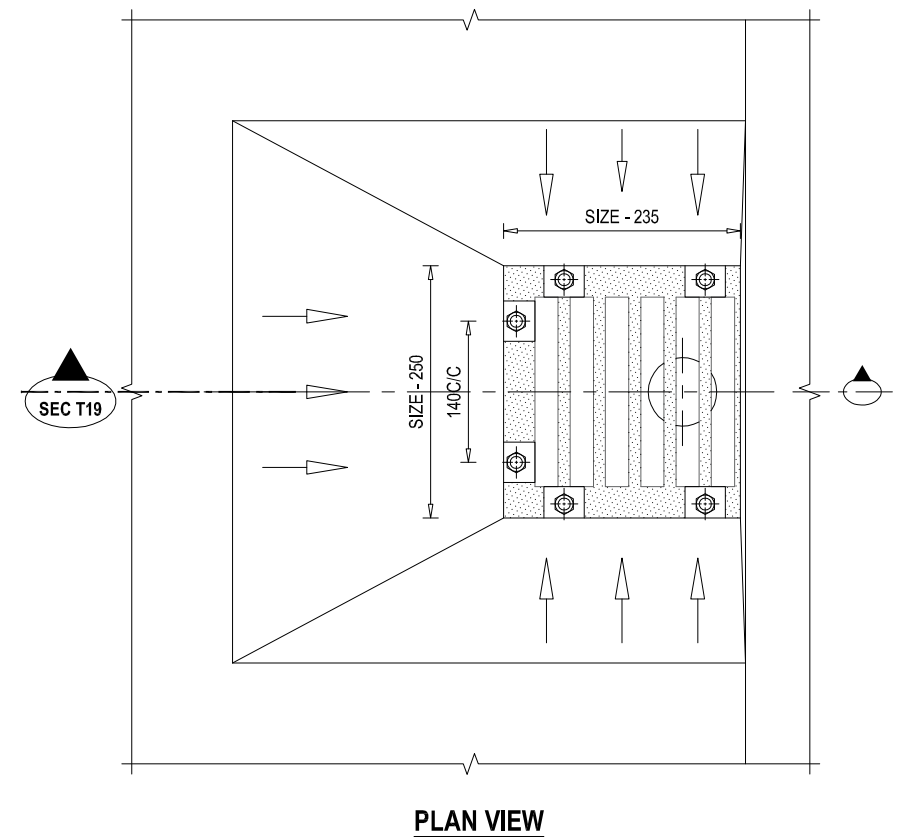
BAR BENDING SCHEDULE OF MID CROSS GIRDER (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	CG(M)1	300 	20		1.920	8	2.469	37.93
2	CG(M)2		20		2.945	8	2.469	58.17
3	CG(M)3		20		1.995	8	2.469	39.41
4	CG(M)4	300 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

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

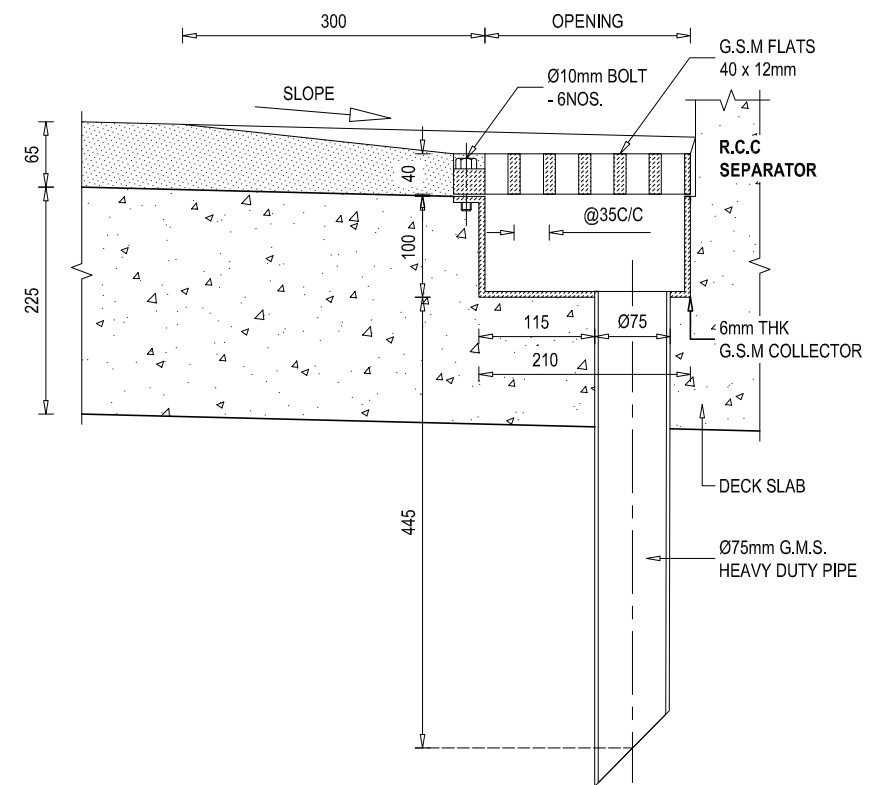
EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		Drawing Name		Scale:		Date:	
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of		Designed By	Mr. R.D. Nec.No. 6489 CIVIL/10	 Signature	SUPER STRUCTURE BAR BENDING DETAILS OF BRIDGE OVER RIVER CHARNATH	AS SHOWN	20.04.2023		
		 EPTISA Servicios De Ingenieria Madrid, Spain  STUP Consultants Private Limited Kolkatta, India		Checked By	Mr. S.M.  Signature				Reference Drawings	Chainage: 241+748	Drawing No.- KDP/DPR/STR/BR/CHARNATH/DD- 17 Sheet No. 2/2
		In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited		Approved By	Mr. H.B.  Signature						



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

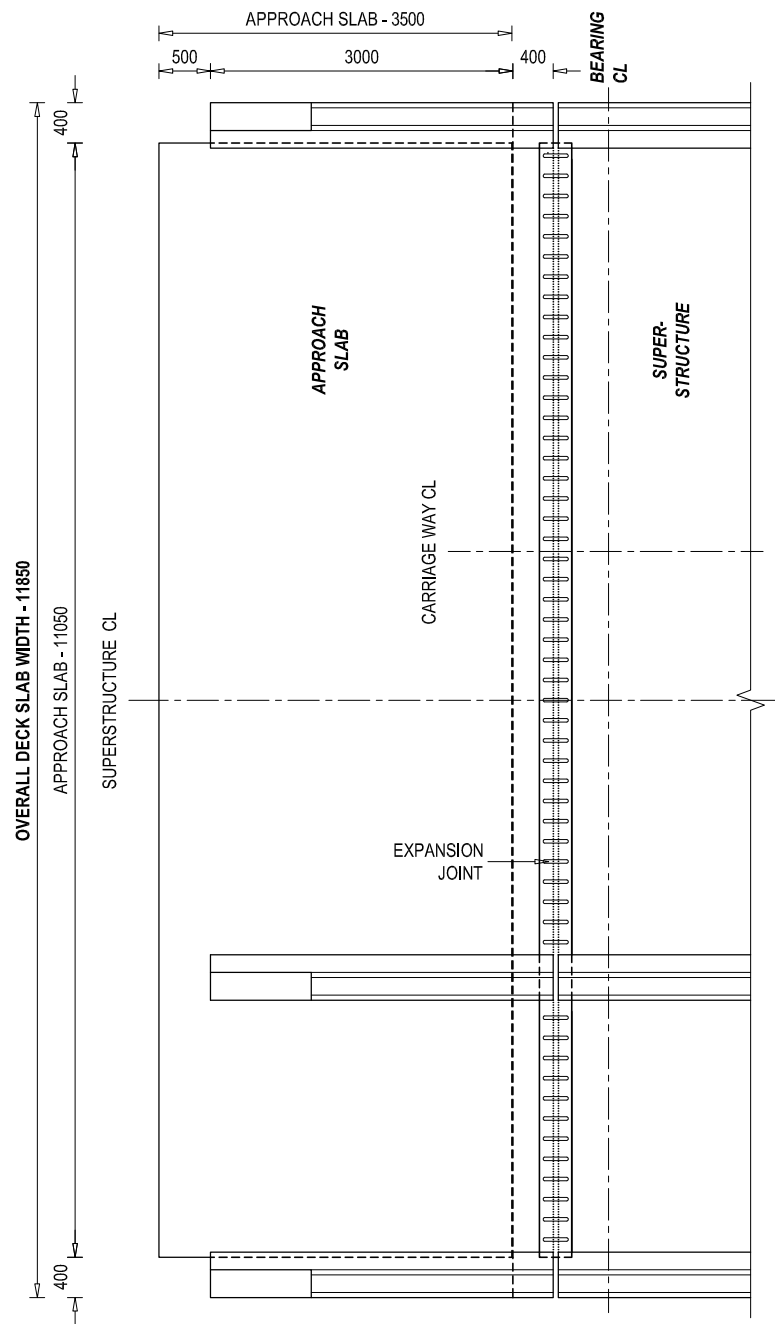


DETAIL ELEVATION VIEW AT R.C.C SEPARATOR
& IT'S DRAIN OPENING
 SCALE - 1 : 40

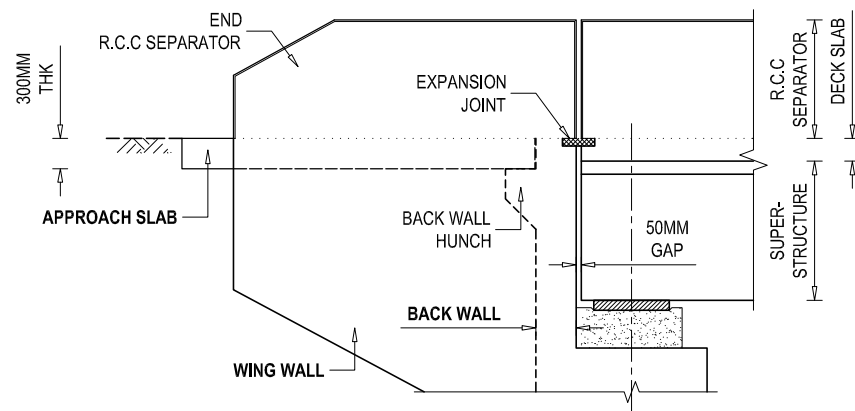


DETAILS OF GALVANIZED MILD STEEL (G.M.S)
DRAINAGE SPOUT
 SCALE - 1 : 10

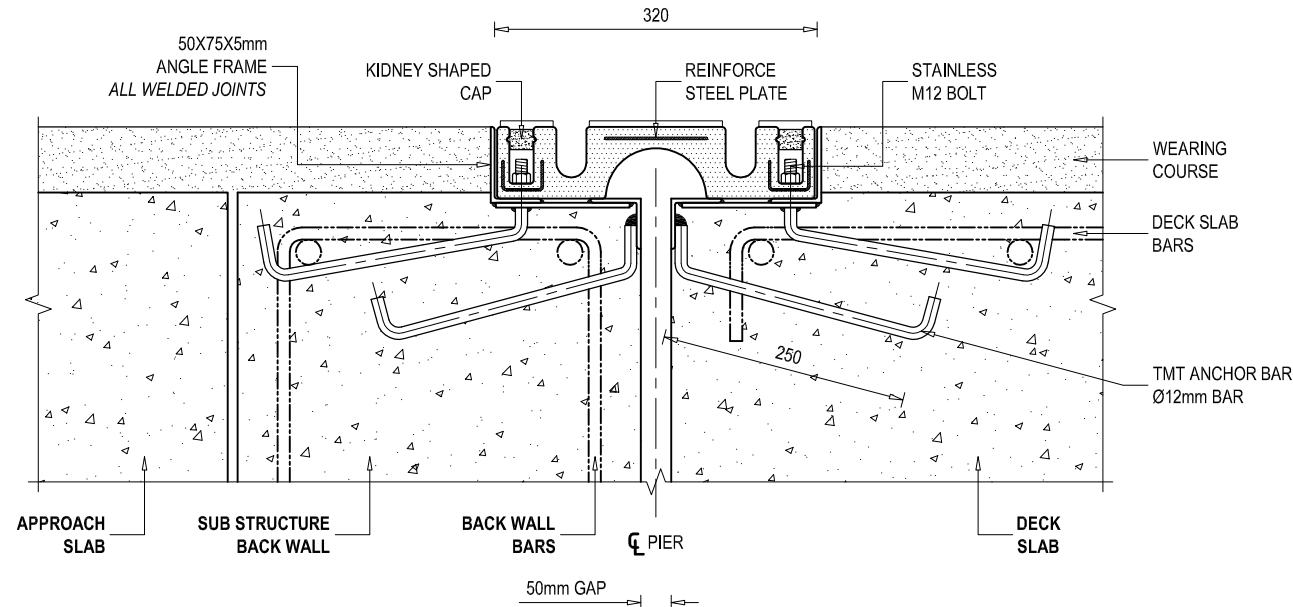
EMPLOYER Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	PROJECT NAME Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathaiya Road Section (130 KM) of Mahendra Highway and Bridges	DESIGN CONSULTANTS Joint Venture of ep4sa EPTISA Servicios De Ingenieria Madrid, Spain on STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Designed By Mr. R.D. Nec.No. 6489 CPRI/V Checked By Mr. S.M. Approved By Mr. H.B.	Drawing Name MISCELLANEOUS DETAILS OF BRIDGE OVER RIVER CHARNATH Reference Drawings	Scale: AS SHOWN Chainage: 241+748	Date: 18.04.2023 Drawing No:- KDP/DPR/STR/BR/CHARNATH/DD-18 Sheet No.1 /2
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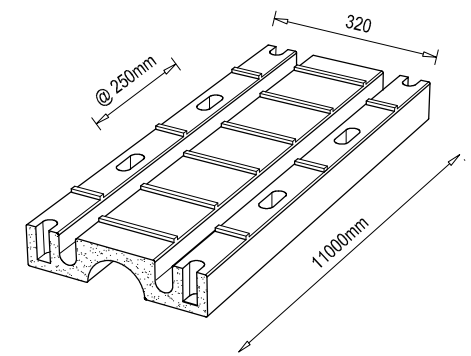
PLAN VIEW AT EXPANSION JOINT, END R.C.C SEPARATOR & APPROACH SLAB



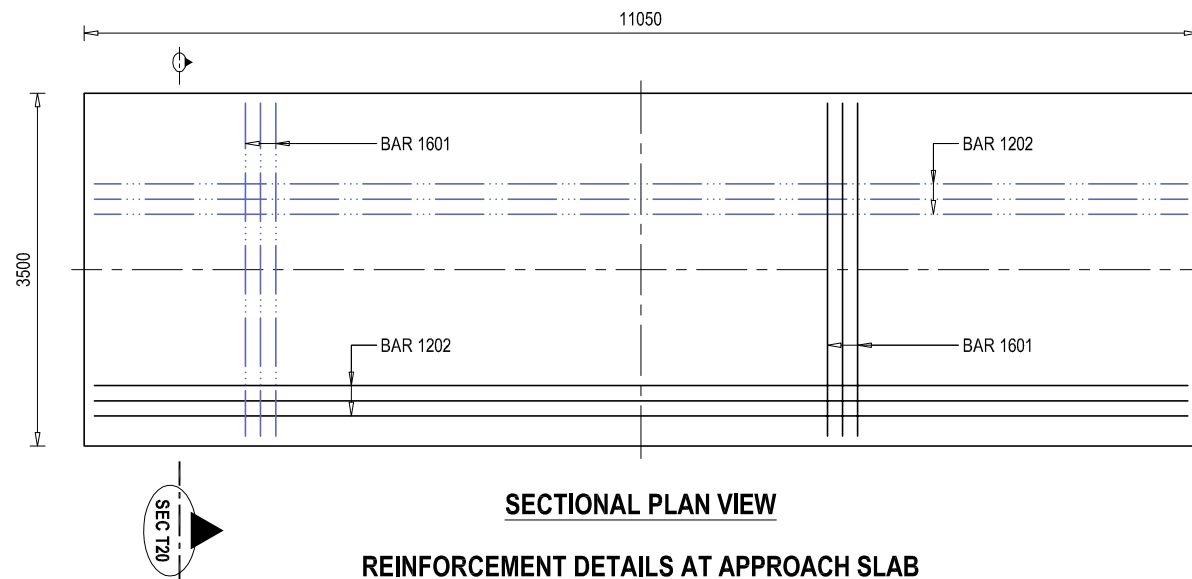
ELEVATION VIEW



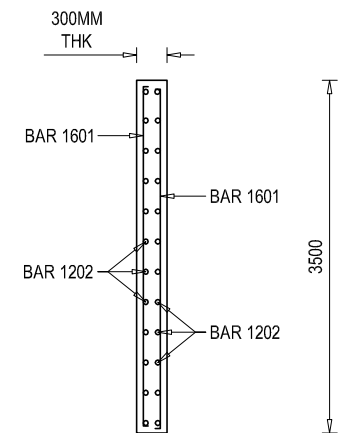
SEAL TYPE EXPANSION JOINTS ARRANGEMENT IN A CARRIAGEWAY
SCALE - 1 : 10 @ A3 PAPER



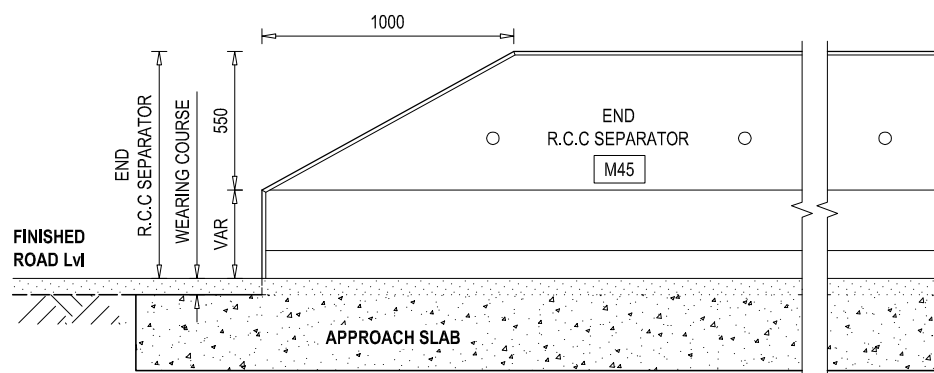
EXPANSION JOINT ISOMETRIC VIEW - SEAL TYPE
SCALE - NON



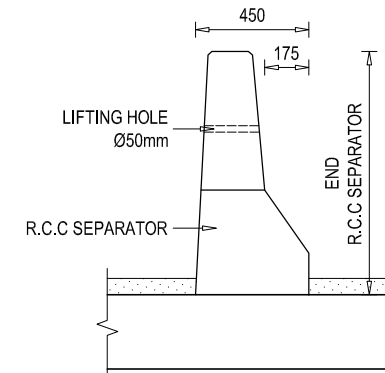
REINFORCEMENT DETAILS AT APPROACH SLAB
SCALE - 1 : 100 @ A3 PAPER



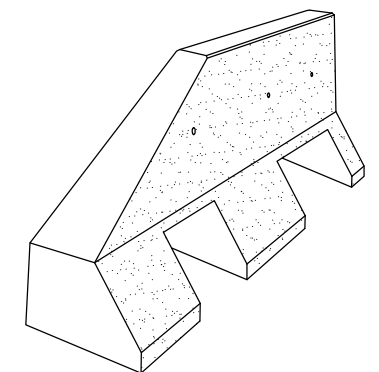
SECTIONAL ELEVATION VIEW AT SEC T20



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

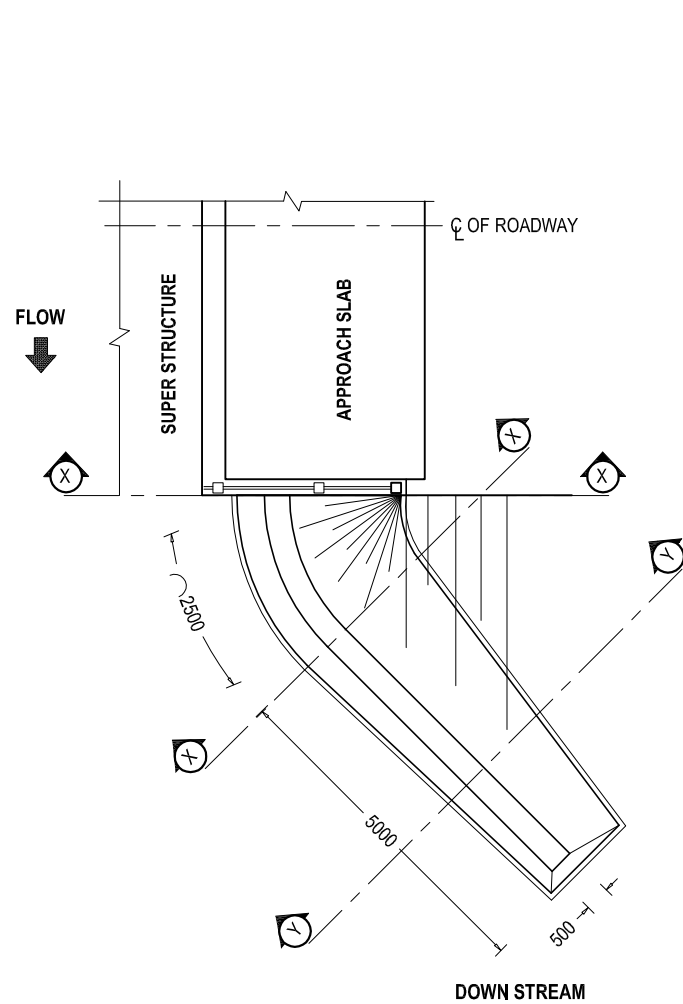


SIDE VIEW
SCALE - 1 : 40 @ A3 PAPER

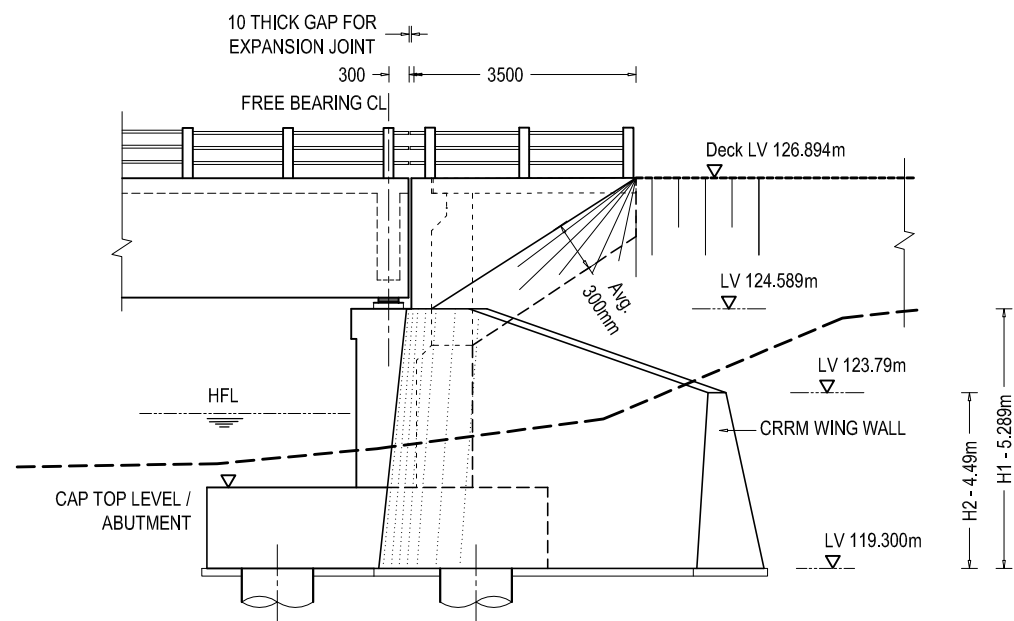
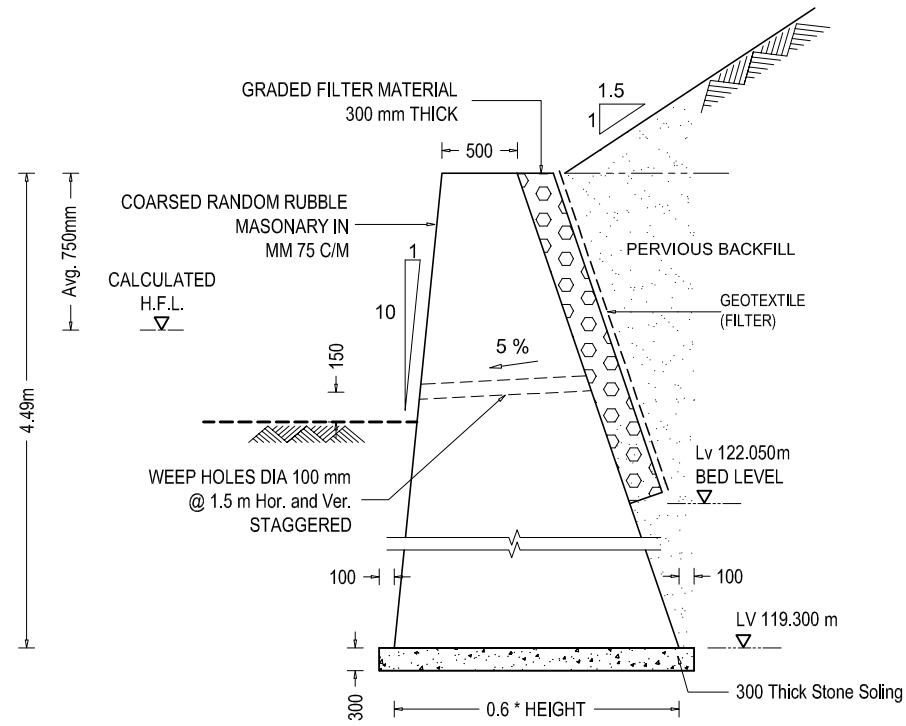


END R.C.C SEPARATOR ISOMETRIC VIEW
SCALE - NON

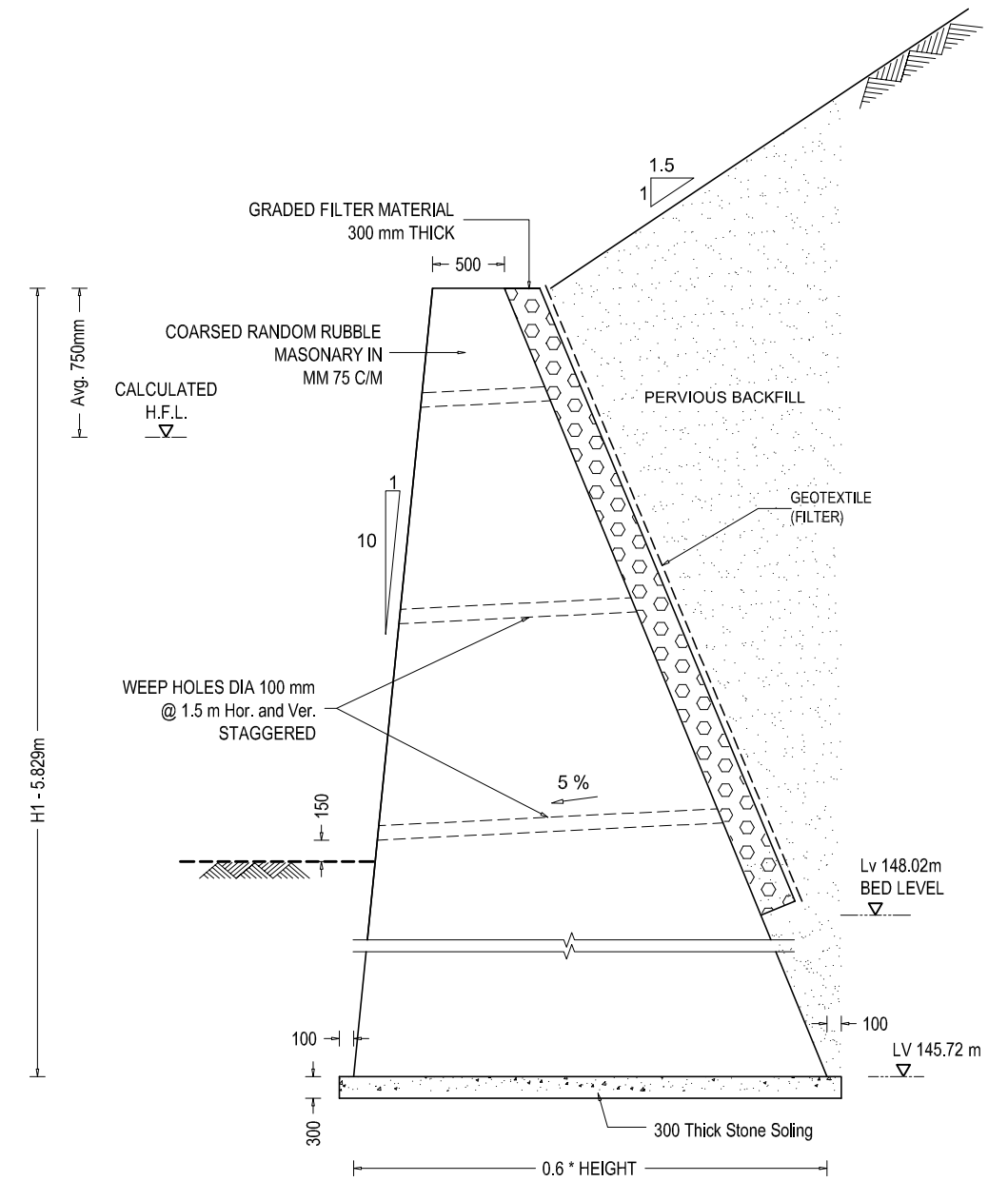
EMPLOYER Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	PROJECT NAME Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	DESIGN CONSULTANTS Joint Venture of EPTISA Servicios De Ingenieria Madrid, Spain STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Designed By Mr. R.D. Nec.No. 6489 C/ML/V Checked By Mr. S.M. Approved By Mr. H.B.	Drawing Name MISCELLANEOUS DETAILS OF BRIDGE OVER RIVER CHARNATH Reference Drawings KDP/DPR/STR/BR/CHARNATH/DD-9	Scale: AS SHOWN Chainage: 241+748	Date: 18.04.2023 Drawing No:- KDP/DPR/STR/BR/CHARNATH/DD-18 Sheet No.2/2
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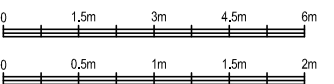
NOTE : AT DOWN STREAM ONLY



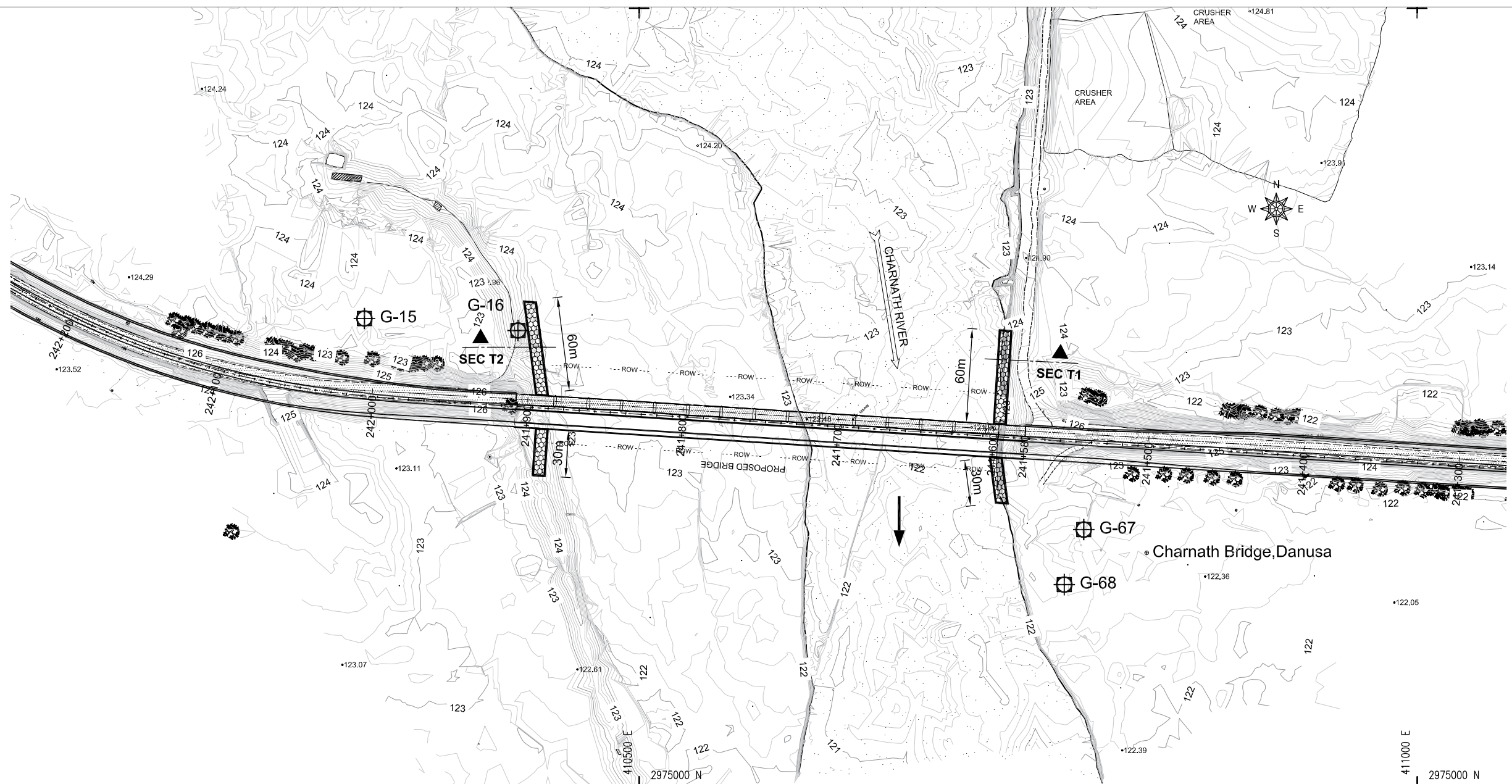
WING WALL ELEVATION



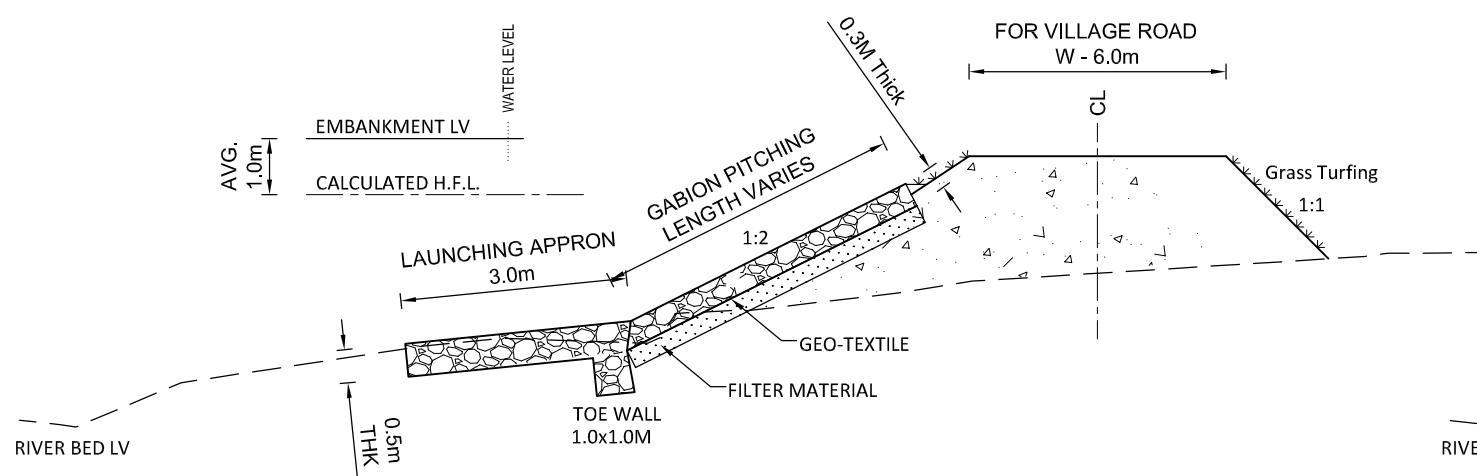
STONE MASONRY WING WALL SECTION X - X



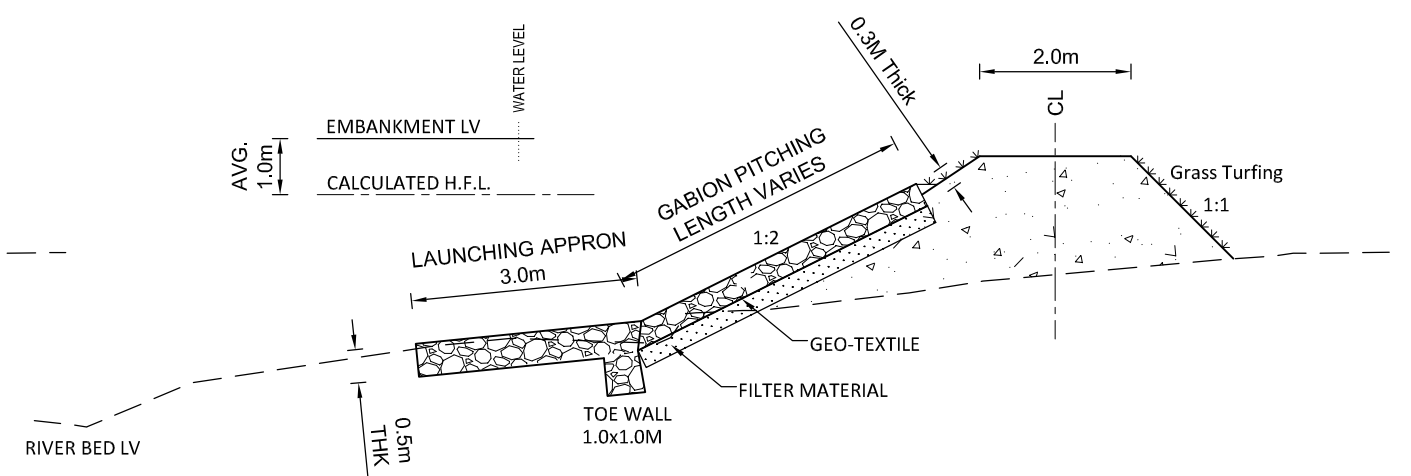
EMPLOYER Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	PROJECT NAME Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathalya Road Section (130 KM) of Mahendra Highway and Bridges	DESIGN CONSULTANTS Joint Venture of ep4sa EPTISA Servicios De Ingenieria Madrid, Spain STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Designed By Mr. R.D. Nec.No. 6489 CIVIL/1A Checked By Mr. S.M. Approved By Mr. H.B.	Drawing Name WING WALL DETAILS OF BRIDGE OVER RIVER CHARNATH Reference Drawings -	Scale: AS SHOWN Chainage: 241+748	Date: 18.04.2023 Drawing No.- KDP/DPR/STR/BR/CHARNATH/DD-19 Sheet No. 1 / 1
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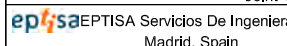
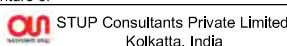
TOPOGRAPHIC MAP



SECTION OF EMBANKMENT (SEC T1)

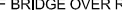


SECTION OF EMBANKMENT (SEC T2)

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlalya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of  EPTISA Servicios De Ingenieria Madrid, Spain  STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Krti Consultant and Rays Consultant Private Limited	Mr. R.D. Nec.No. 6489 CIVIL/2	RIVER TRAINING WORKS OF BRIDGE OVER RIVER CHARNATH Reference Drawings	AS SHOWN Chainage: 241+478	18.04.2023
			Mr. S.M. Signature			Drawing No.- KDP/DPR/STR/BR/CHARNATH/DD-20
			Mr. H.B. Signature			Sheet No.1/1

Bearing Design Data for 21.4m Span and 11.85m width

Load Condition	Items	Under	On each Neoprene Bearing	Unit
Under No Live Load	V	NO EQ.	51.94	Ton
		EQ.	59.74	Ton
	H _L	NO EQ.	-	Ton
		EQ.	11.69	Ton
	H _T	NO EQ.	-	Ton
		EQ.	11.69	Ton
	θ	NO EQ.	0.00228	radian
		EQ.	0.00262	radian
Δ		13.268	mm	
Under Maximum Live Load	V	NO EQ.	93.00	Ton
		EQ.	102.02	Ton
	H _L	NO EQ.	-	Ton
		EQ.	0.00	Ton
	H _T	NO EQ.	-	Ton
		EQ.	0.00	Ton
	θ	NO EQ.	0.0036591	radian
		EQ.	0.00421	radian
Δ		22.17	mm	

EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		Designed By	Mr. R.D.		Drawing Name	Scale:	AS SHOWN	Date:	29.01.2024
 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		ep4saEPTISA Servicios De Ingeniera Madrid, Spain	STUP Consultants Private Limited Kolkatta, India		Nec.No. 6489 CIVIL/2						
		Checked By	Mr. S.M.				Reference Drawings	Chainage:	241+478	Drawing No.-	KDP/DPR/STR/BR/CHARNATH/DD-21		
			Approved By	Mr. H.B.								Sheet No.1/1	
		Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlalya Road Section (130 KM) of Mahendra Highway and Bridges		In Association With Udaya Consultancy, Geocom International, Sundar Krti Consultant and Rays Consultant Private Limited									