



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 ighway and Bridges**

Final Design Report
Volume IV
Design Report & Drawing of Bridges

Bridge Name- Amuwa
Volume-2
Detailed Drawing

April,2023

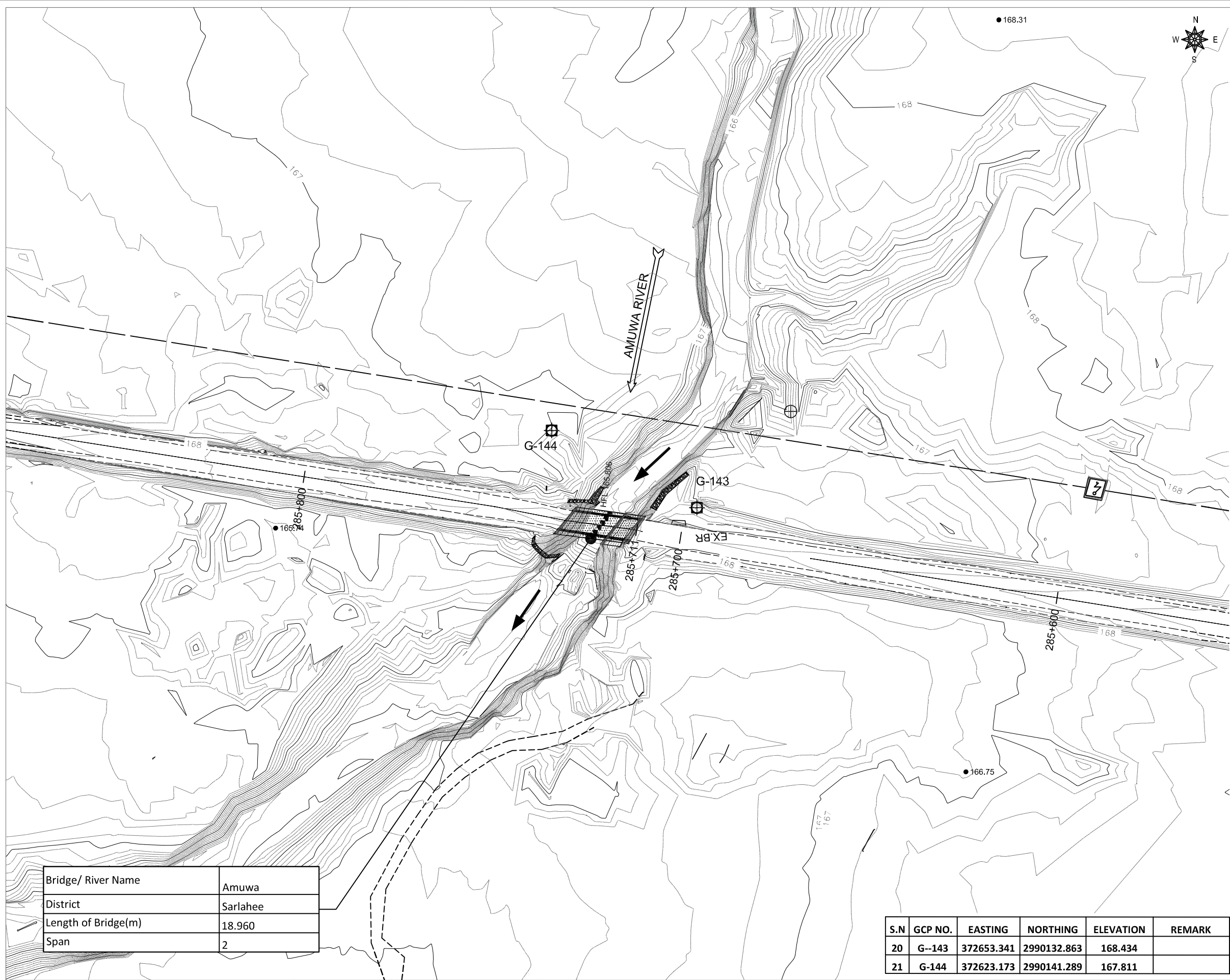
Joint Venture Of:

eptisa EPTISA Servicios De Ingenieria
Madrid, Spain

STUP STUP Consultants Private Limited
India

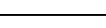
In Association With
Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited

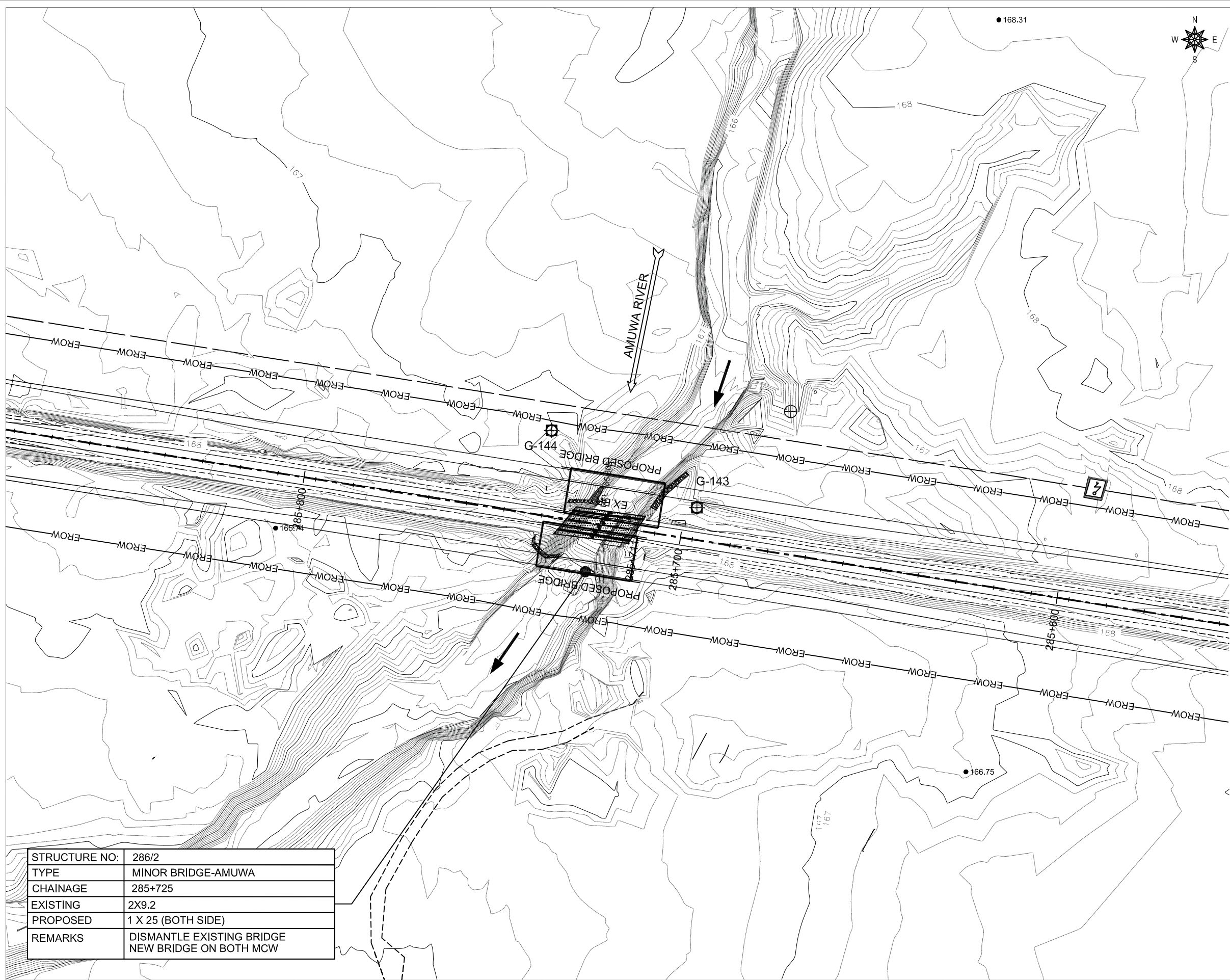
TABLE OF CONTENTS:			
S.No.	DRAWING NAME	DRAWING No.	SHEET No.
1	LOCATION MAP OF BRIDGE OVER RIVER AMUWA	KDP/DPR/STR/BR/AMUWA/DD -1	1
2	DETAILED SURVEY TOPOGRAPHIC MAP (EXISTING CONDITION) OF BRIDGE OVER RIVER AMUWA	KDP/DPR/STR/BR/AMUWA/DD -2	1
3	DETAILED SURVEY TOPOGRAPHIC MAP (WITH PROPOSED BRIDGE) OF BRIDGE OVER RIVER AMUWA	KDP/DPR/STR/BR/AMUWA/DD -3	1
4	GENERAL NOTES OF BRIDGE OVER RIVER AMUWA	KDP/DPR/STR/BR/AMUWA/DD -4	1
5	GENERAL ARRANGEMENT OF BRIDGE OVER RIVER AMUWA	KDP/DPR/STR/BR/AMUWA/DD -5	1
6	LAYOUT AND DETAIL OF PILE FOUNDATION OF BRIDGE OVER RIVER AMUWA	KDP/DPR/STR/BR/AMUWA/DD -6	1
7	ABUTMENT DETAILS OF BRIDGE OVER RIVER AMUWA	KDP/DPR/STR/BR/AMUWA/DD -7	2
8	ABUTMENT REINFORCEMENT DETAILS OF BRIDGE OVER RIVER AMUWA	KDP/DPR/STR/BR/AMUWA/DD -8	2
9	ABUTMENT BAR BENDING SCHEDULE OF BRIDGE OVER RIVER AMUWA	KDP/DPR/STR/BR/AMUWA/DD -9	2
10	SUPER STRUCTURE DETAILS OF BRIDGE OVER RIVER AMUWA	KDP/DPR/STR/BR/AMUWA/DD -10	2
11	DECK SLAB DETAILS OF BRIDGE OVER RIVER AMUWA	KDP/DPR/STR/BR/AMUWA/DD -11	1
12	MAIN GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER AMUWA	KDP/DPR/STR/BR/AMUWA/DD -12	2
13	CROSS GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER AMUWA	KDP/DPR/STR/BR/AMUWA/DD -13	1
14	SUPERSTRUCTURE BAR BENDING SCHEDULE OF BRIDGE OVER RIVER AMUWA	KDP/DPR/STR/BR/AMUWA/DD -14	2
15	MISCELLANEOUS DETAILS OF BRIDGE OVER RIVER AMUWA	KDP/DPR/STR/BR/AMUWA/DD -15	2
16	WING WALL DETAILS OF BRIDGE OVER RIVER AMUWA	KDP/DPR/STR/BR/AMUWA/DD -16	1
17	RIVER TRAINING WORKS OF BRIDGE OVER RIVER AMUWA	KDP/DPR/STR/BR/AMUWA/DD -17	1
18	BEARING DESIGN DATA OF BRIDGE OVER RIVER AMUWA	KDP/DPR/STR/BR/AMUWA/DD -18	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)	
		CRUSHER	
SHED		DELINETOR	
SAFTY TANK		ELECTRIC POLE	
SCHOOL		FACTORY	
STREET LIGHT		FEEDAR ROAD	
TAP		FISH FARM	
TEMPORARY HOUSE		FLOW DIRECTION	
TREE		GABION WALL	
TRANSMISSION LINE TOWER		HOSPITAL	
WELL		HAND PUMP	
TEMPLE		HOUSE	
CGI SHEET HOUSE		HOADING BOARD	
TOILET		CARRIAGE WAY	
WOODEN HOUSE		HUT	
WATER TANK		INDEX CONTOUR	
TRANSFORMER		KILOMETER POST	
SHOULDER		MONASTERY	

S.N	GCP NO.	EASTING	NORTHING	ELEVATION	REMARK
20	G--143	372653.341	2990132.863	168.434	
21	G-144	372623.173	2990141.289	167.811	

EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		Designed By	Mr. R.A.		Drawing Name DETAILED SURVEY TOPOGRAPHICAL MAP(EXISTING CONDITION) OF BRIDGE OVER RIVER AMUWA	Scale: 1:1000	Date: 21.04.2023
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division		Strategic Road Connectivity & Trade Improvement Project (SRCTIP)		Joint Venture of			Nec.No.6431 CIVIL 'A'	Signature			
				epysaEPTISA Servicios De Ingeniera Madrid, Spain		STUP Consultants Private Limited Kolkatta, India	Checked By	Mr. S.M.		Reference Drawings	Chainage: 285+725
		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 Krti Consultant and Rays Consultant Private Limited		Approved By	Mr. H.B.		Sheet No. 1 / 1		



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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:	286/2
TYPE	MINOR BRIDGE-AMUWA
CHAINAGE	285+725
EXISTING	2X9.2
PROPOSED	1 X 25 (BOTH SIDE)
REMARKS	DISMANTLE EXISTING BRIDGE NEW BRIDGE ON BOTH MCW

EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		Designed By Mr. R.A.  Nec.No. 6431 CIVIL 'A'	Drawing Name DETAILED SURVEY TOPOGRAPHICAL MAP(WITH PROPOSED BRIDGE) OF BRIDGE OVER RIVER AMUWA	Scale: 1:1000	Date: 21.04.2023
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		In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited			Approved By Mr. H.B. 				
						Reference Drawings	Chainage: 285+725	Drawing No.- KDP/DPR/STR/BR/AMUWA/DD- 03	Sheet No.1 / 1

A. GENERAL

1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METERS UNLESS NOTED OTHERWISE.
2. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED. DIMENSIONS ARE NOT TO BE SCALED.
3. THE LAYOUT OF THE BRIDGE/CULVERT SHALL BE SET AS PER RELEVANT HIGHWAY PLAN AND PROFILE DRAWING.
4. THE FORMATION LEVEL GIVEN IN THIS DRAWING SHALL BE VERIFIED FROM THE RELEVANT HIGHWAY DRAWING. IN CASE OF ANY DISCREPANCY THE HIGHWAY DRAWING SHALL BE CONSIDERED CORRECT.

B. DESIGN CRITERIA

1. THE DESIGN HAS BEEN PREPARED BASED ON THE FOLLOWING CODES:
a) NEPAL ROAD STANDARD 2070
b) IRC-5 2015
c) IRC-6 2017
d) IRC-78 2014
e) IRC-112 2020
f) IRC SP-13 2022
2. TOTAL WIDTH OF THE BRIDGE DECK: 11.85 M (8 M WIDE CARRIAGEWAY + 2.5 M WIDE FOOTPATH) HOWEVER THIS BRIDGE IS DESIGNED FOR THE FOLLOWING CARRIAGEWAY LIVE LOADS AS PER IRC:6-2017
a) ONE LANE OF IRC CLASS 70R (WHEELED) FOR TWO LANES + ONE LANE OF IRC CLASS A
b) THREE LANES OF IRC CLASS A
3. SEISMIC ZONE CONSIDERED IN THE DESIGN IS ZONE-V.
4. LAYING, COMPACTION, & EXTENT OF BACKFILL BEHIND ABUTMENT & RETURN/RETAINING WALLS SHALL CONSIST OF SELECTED EARTH CONFORMING TO THE APPENDIX-6 OF IRC:78-2014 HAVING PROPERTIES $C=0$, $\phi=30^\circ$ & DENSITY=20KN/m³.
5. 100mm DIA WEEP HOLES AT 1000mm C/C BOTH HORIZONTALLY AND VERTICALLY SHALL BE PROVIDED IN STAGGERED MANNER IN VERTICAL WALLS OF THE ABUTMENT AND RETURN WALL ABOVE GL. IN ONE OR TWO LAYERS AT A SLOPE OF 1 VERTICAL TO 20 HORIZONTAL TOWARDS THE DRAINING FACE.

C. HYDRAULIC DATA: -

1. DESIGN DISCHARGE, (Q100) - 85.6 CUMECs
2. HFL - 167 M
3. FREE BOARD (MINIMUM) - 1 M
4. MAXIMUM SCOUR LEVEL:
ABUTMENT - 161.980m

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

D. STRUCTURAL AND OTHER DATA: -

1. SPAN ARRANGEMENT: 1 X 25 = 25 m
2. SUPERSTRUCTURE:
PRECAST RCC LONGITUDINAL GIRDERS & CAST-IN-SITU RCC CROSS GIRDERS AND DECK SLAB.
3. SUBSTRUCTURE
A) ABUTMENTS - RCC WALL TYPE
4. FOUNDATIONS
A) ABUTMENT - 1200 DIA BORED CAST-IN-SITU PILE
DESIGN WORKING LOAD ON PILE - 295 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. RETURN WALL.....M35
f. LEVELING COURSE: I) BELOW APPROACH SLAB.....M15
II) BELOW PILE CAP.....M15
g. APPROACH SLABM30
h. CAST-IN-SITU CRASH BARRIERM40
i. KERBM35
j. DECK SLAB FOR RCC GIRDERS.....M35
k. PRECAST RCC GIRDERSM35
l. CAST-IN-SITU CROSS GIRDER FOR RCC GIRDERS.....M35

12. REINFORCEMENT STEEL: -

- a. H.Y.S.D. BARS - GRADE 500 CONFORMING TO IS 1786
b. REINFORCEMENT WHERE EVER NECESSARY SHALL BE LOCALLY BENT OR ADJUSTED TO ENSURE PROPER CONCRETING.

13. CONCRETE COVER

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

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

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

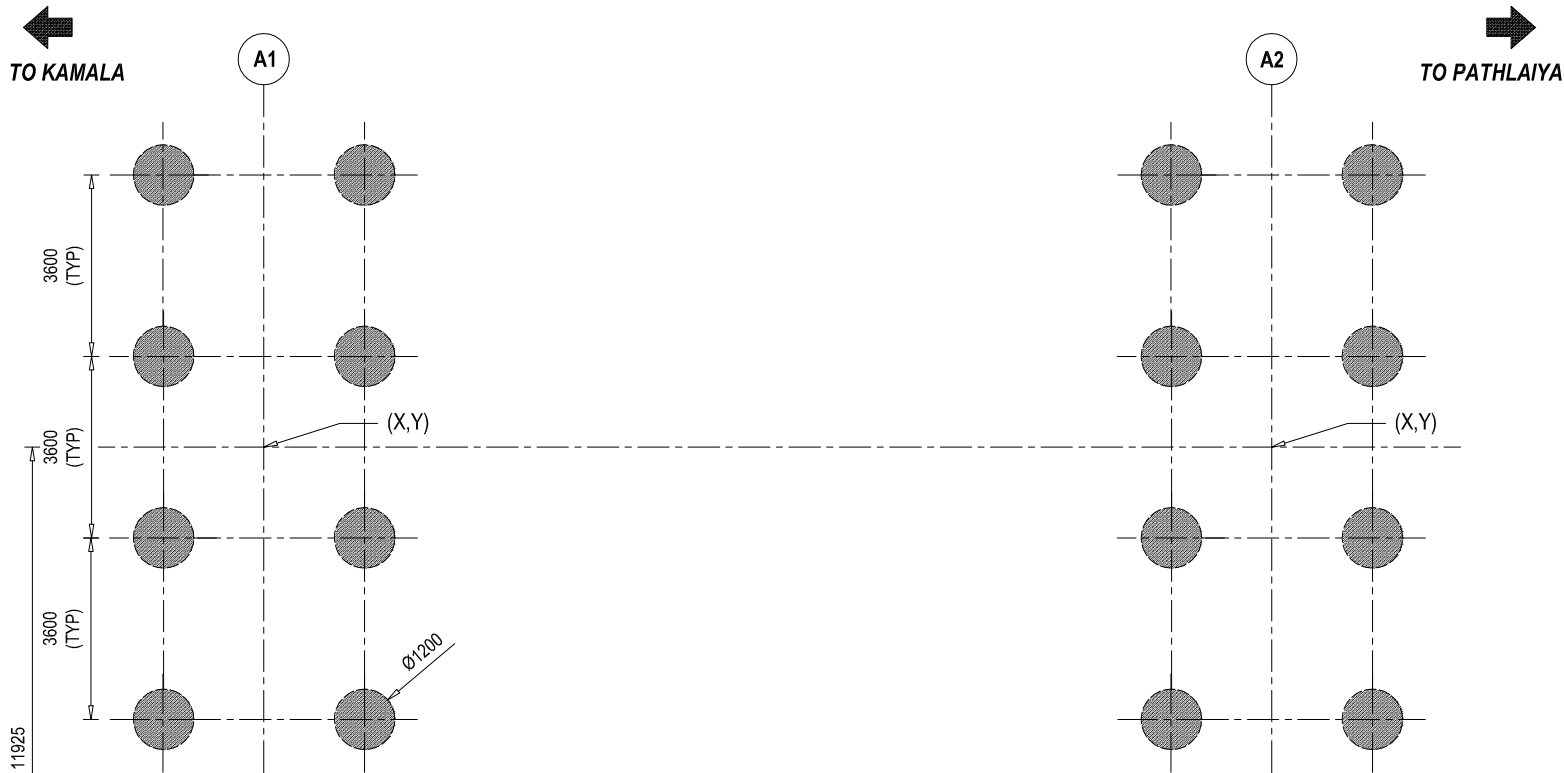
(WHERE Ø IS THE DIAMETER OF THE BAR)

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:

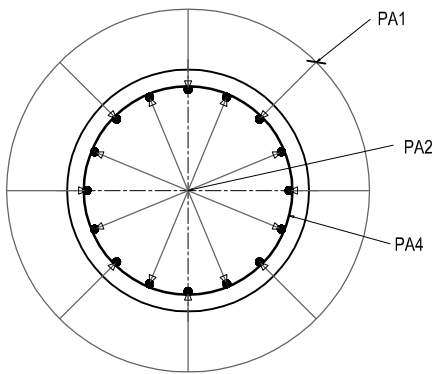
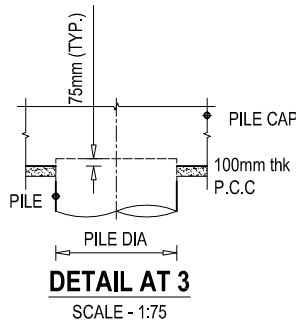
GRADE OF CONCRETE	M30	M35	M40	M45
LAPPED BAR <25%	57.2Ø	51.48Ø	48.62Ø	45.76Ø
25%≤LAPPED BAR <33%	65.78Ø	62.65Ø	55.91Ø	52.62Ø
33%≤LAPPED BAR <50%	80.08Ø	72.07Ø	68.07Ø	64.06Ø
50%≤LAPPED BAR	85.8Ø	77.22Ø	72.93Ø	68.64Ø

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 18D.
19. SHARP EDGES OF CONCRETE TO BE CHAMFERED MINIMUM 50 X 50

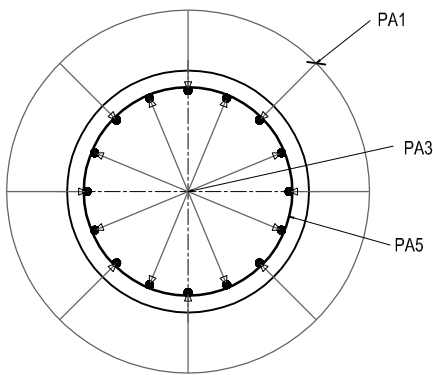
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 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of		Designed By	Mr. R.A.		GENERAL NOTES OF BRIDGE OVER RIVER AMUWA	AS SHOWN	05.05.2023	
		 EPTISA Servicios De Ingeniera Madrid, Spain	 STUP Consultants Prvate Lmted Kolkatta, India	Checked By	Mr. S.M.					
		In Association With Udaya Consultancy, Geocom International, Sundar Krtit Consultant and Rays Consultant Private Limited		Approved By	Mr. H.B.		Reference Drawings	Chainage:	285+725	Sheet No. 1 / 1



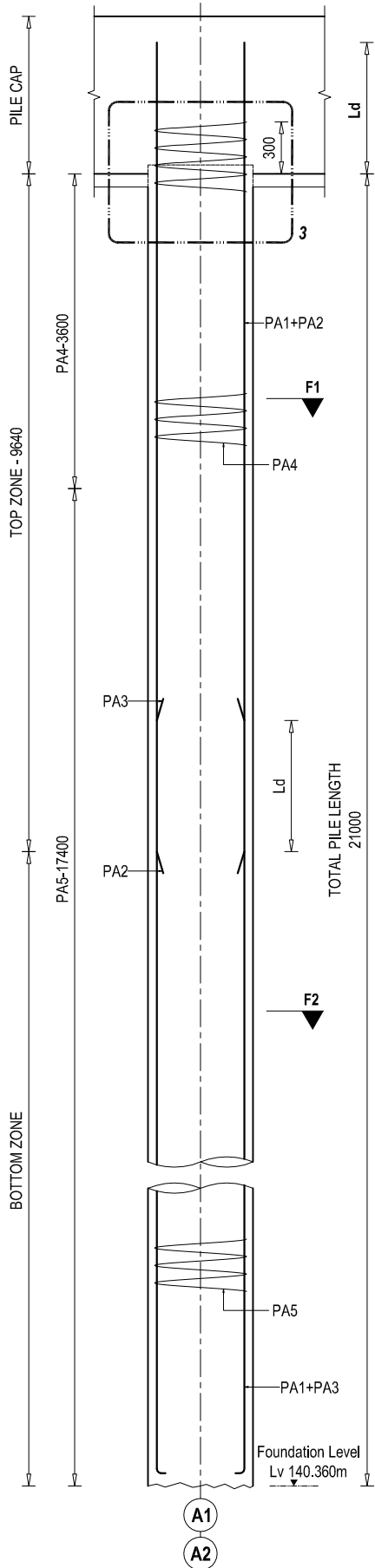
DETAILS AT PILE LAYOUT
SCALE - 1:150



SECTIONAL VIEW AT F1 - F1
SCALE - 1:75



SECTIONAL VIEW AT F2 - F2
SCALE - 1:75



BAR BENDING SCHEDULE OF ABUTMENT PILE								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	PA1	22650	32		22.950	8	6.321	1160.53
2	PA2	12865	32		12.865	8	6.321	650.556
3	PA3	11285	12		11.585	8	0.889	82.38
4	PA4	Dia. 1034	16	110	3.448	47	1.580	256.11
5	PA5	Dia. 1034	12	110	3.448	145	0.889	444.45
TOTAL (KG) :								2594.03
No. of Pile								8.00
TOTAL WEIGHT (KG) :								20752.26

PILE CAPACITY (INDIVIDUAL)		
SN.	DIA (mm)	CAPACITY (T on)
1	1200	295

CO ORDINATES OF PILE LOCATION OF PROPOSED BRIDGE AT U/S

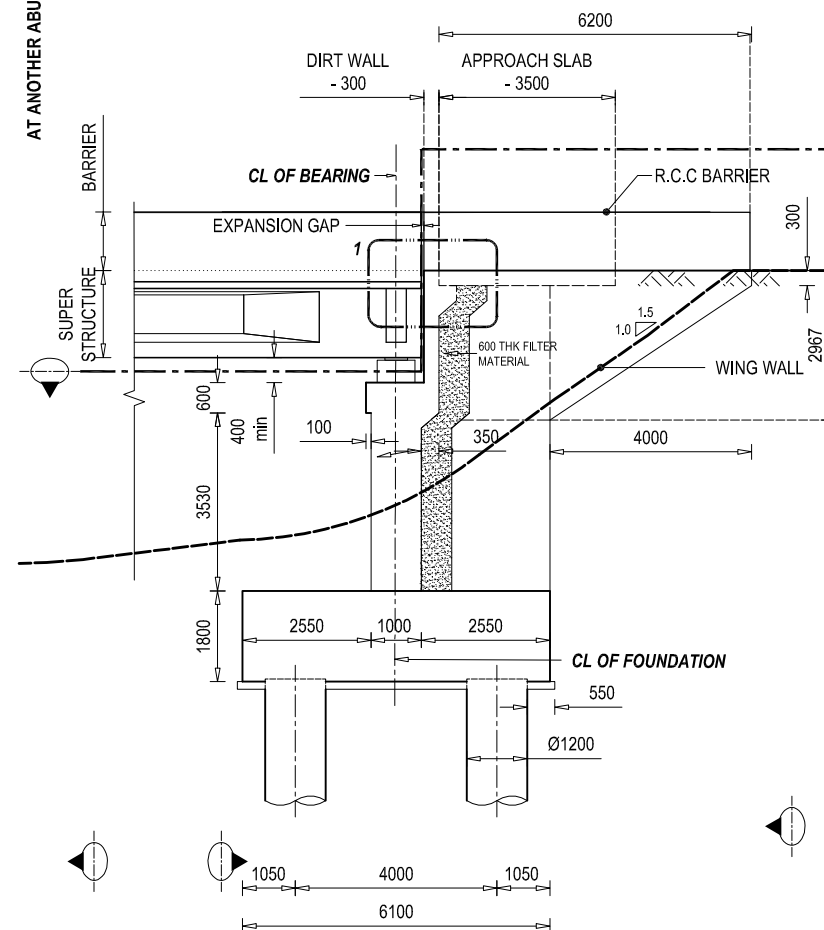
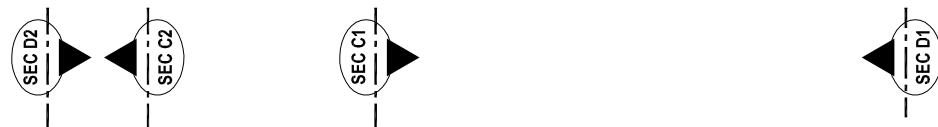
SN.	ABUTMENT	EASTING (X)	NORTHING (Y)
1	ABUTMENT (A1U)	372641.653	2990133.795
2	ABUTMENT (A2U)	372616.962	2990137.74

CO ORDINATES OF PILE LOCATION OF PROPOSED BRIDGE AT D/S

SN.	ABUTMENT	EASTING (X)	NORTHING (Y)
1	ABUTMENT (A1D)	350589.589	3001553.648
2	ABUTMENT (A2D)	350600.909	3001537.16

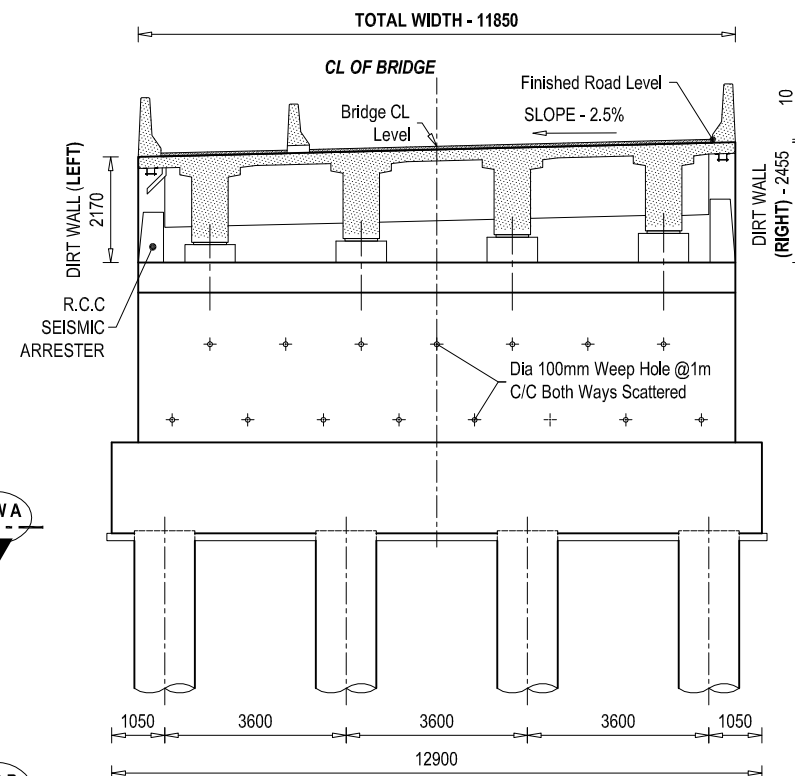
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READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/AMUWA/DD-4

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Mr. R.A.	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of  EPTISA Servicios De Ingeniera Madrid, Spain  STUP Consultants Private Limited Kolkatta, India In Association With Udaya Consultancy, Geocom International, Sundar Kritt Consultant and Rays Consultant Private Limited	Checked By	Mr. S.M.	LAYOUT AND DETAIL OF PILE FOUNDATION OF BRIDGE OVER RIVER AMUWA Reference Drawings KDP/DPR/STR/BR/AMUWA/DD-9	AS SHOWN	05.05.2023
			Approved By	Mr. H.B.			Drawing No.- KDP/DPR/STR/BR/AMUWA/DD-6
						Chainage: 285+725	Sheet No. 1 / 1

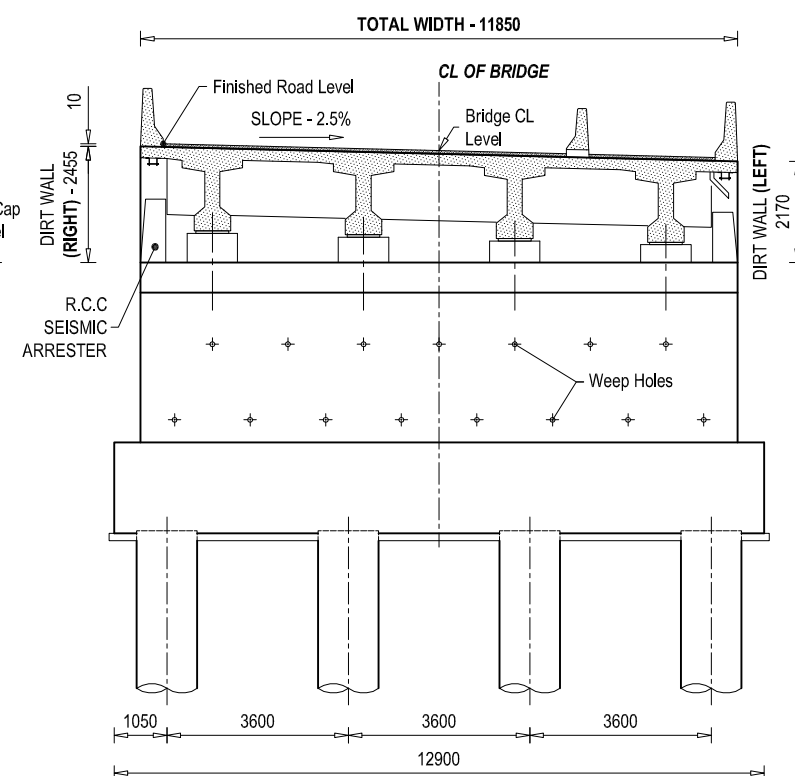


A2
OUTLINE DETAILS OF ABUTMENT
SCALE - 1: 150

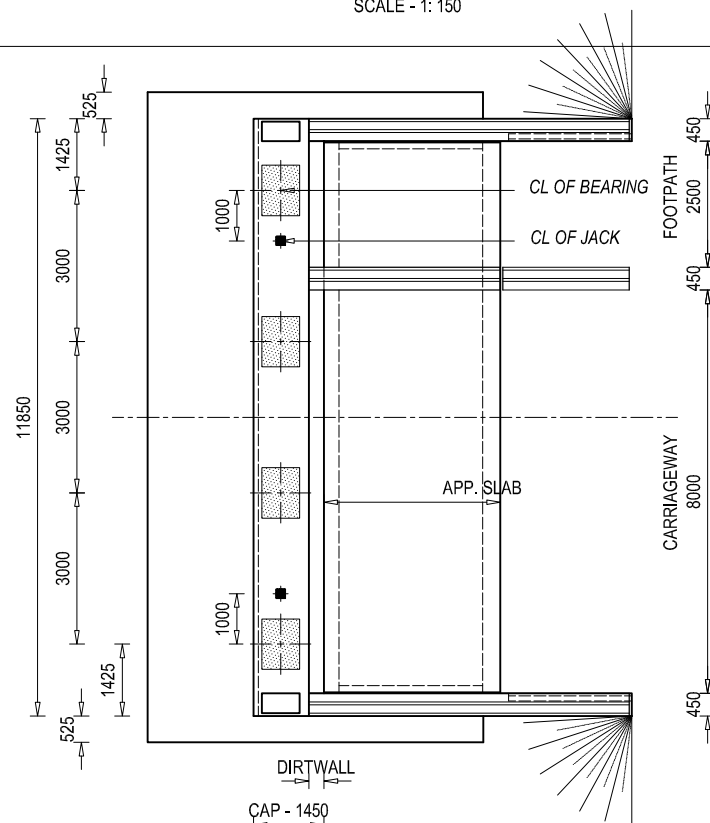
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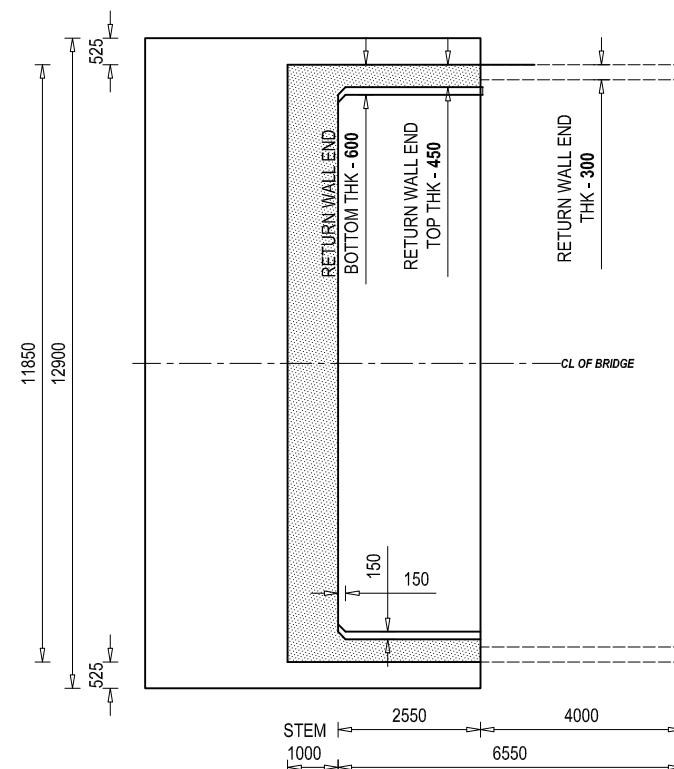
SECTIONAL VIEW AT C1 - C1
SCALE - 1: 150



SECTIONAL VIEW AT C2 - C2
SCALE - 1: 150

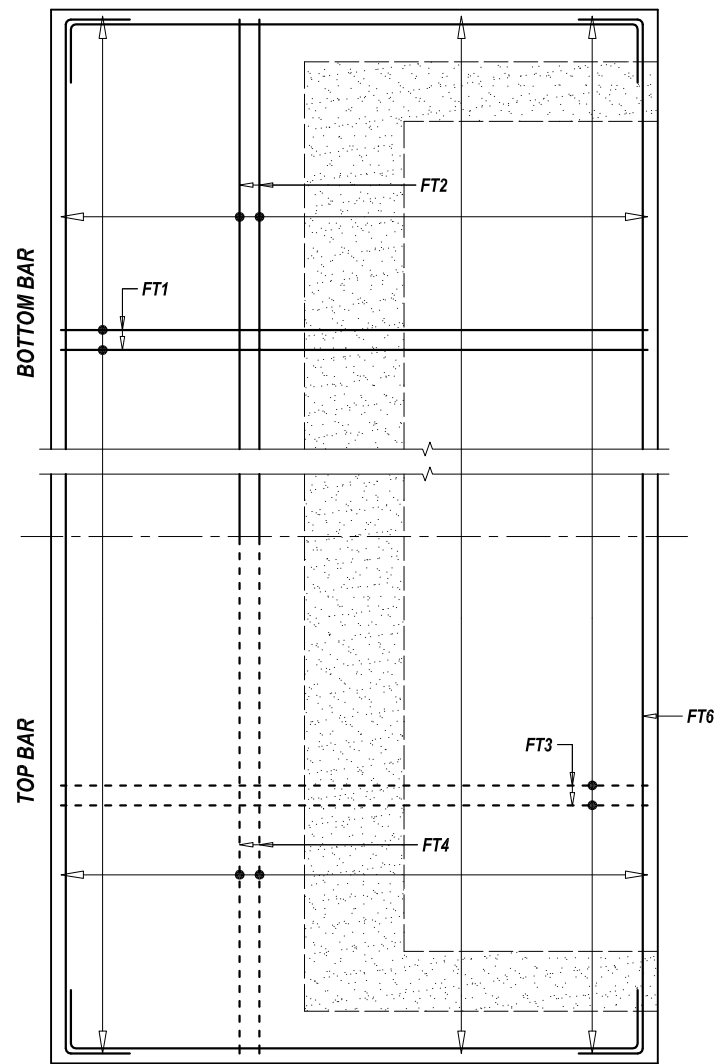


VIEW AT A
SCALE - 1: 150

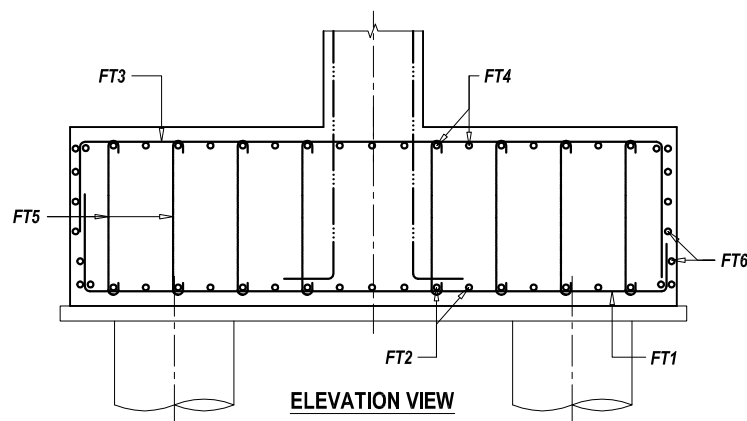


SECTIONAL VIEW AT B - B
SCALE - 1: 150

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			Checked By Mr. S.M.	Reference Drawings KDP/DPR/STR/BR/AMUWA/DD-9	Chainage: 285+725	Drawing No.- KDP/DPR/STR/BR/AMUWA/DD-7
			Approved By Mr. H.B.			Sheet No. 1 / 2



PLAN VIEW

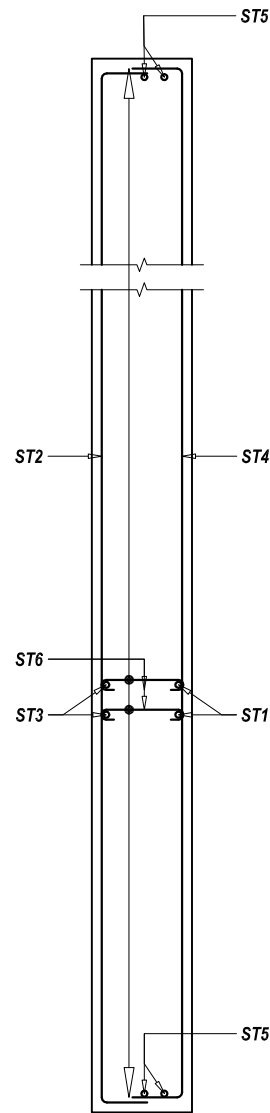


ELEVATION VIEW

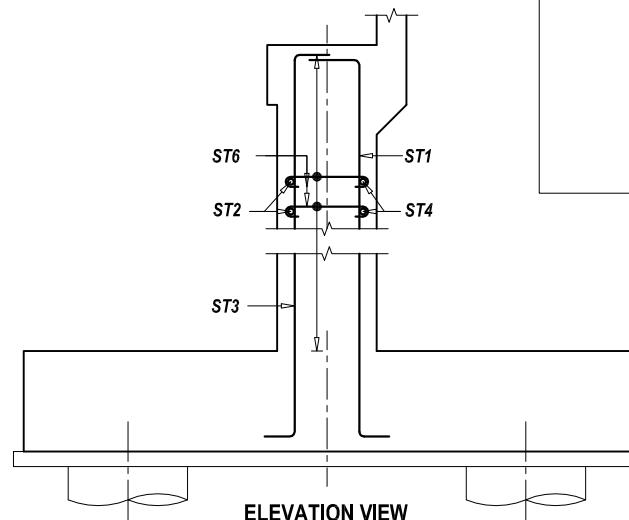
BAR DETAIL OF PILE CAP

SCALE - 1 : 75

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



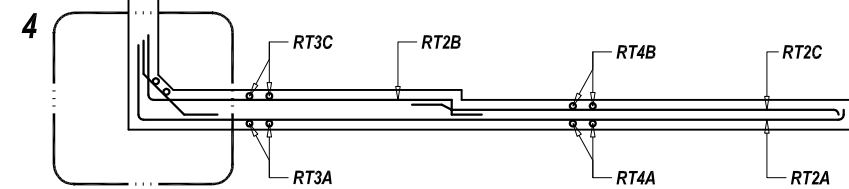
SECTIONAL PLAN VIEW



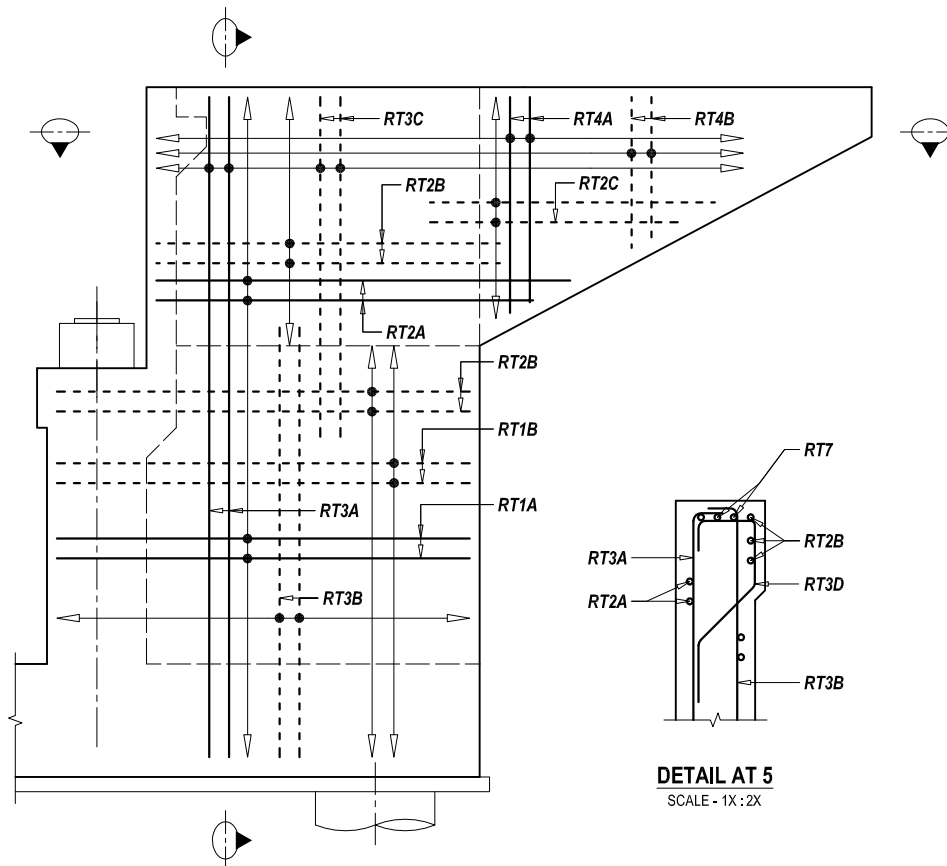
ELEVATION VIEW

BAR DETAIL AT ABUTMENT STEM

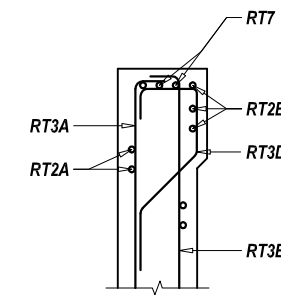
SCALE - 1 : 75



SECTIONAL PLAN VIEW



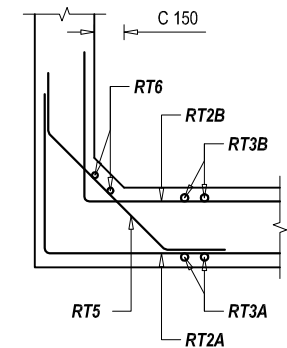
ELEVATION VIEW



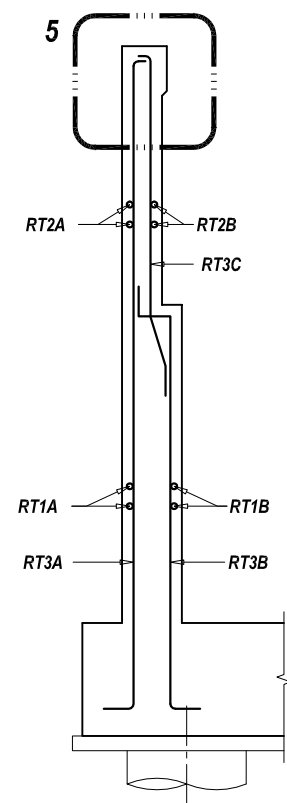
DETAIL AT 5
SCALE - 1X : 2X

BAR DETAIL AT RETURN WALL

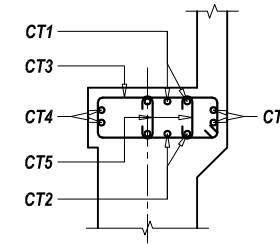
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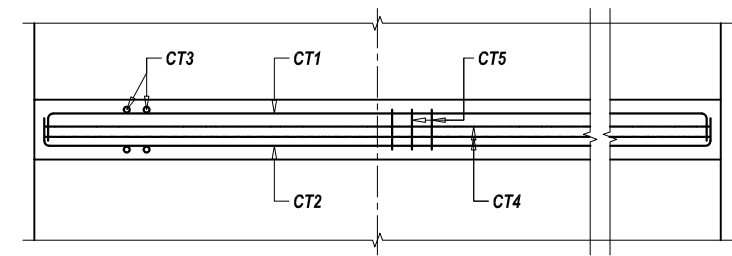
DETAILS AT 4



SECTIONAL SIDE VIEW



ELEVATION VIEW



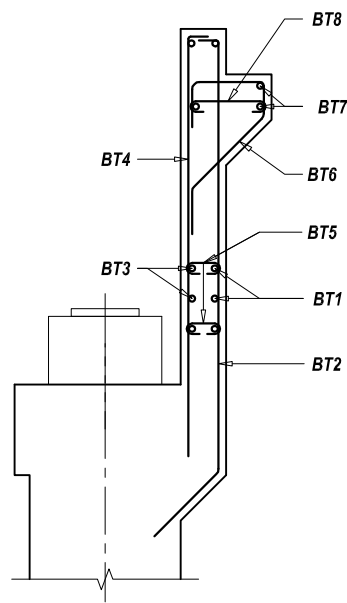
FRONT VIEW

BAR DETAIL AT ABUTMENT CAP

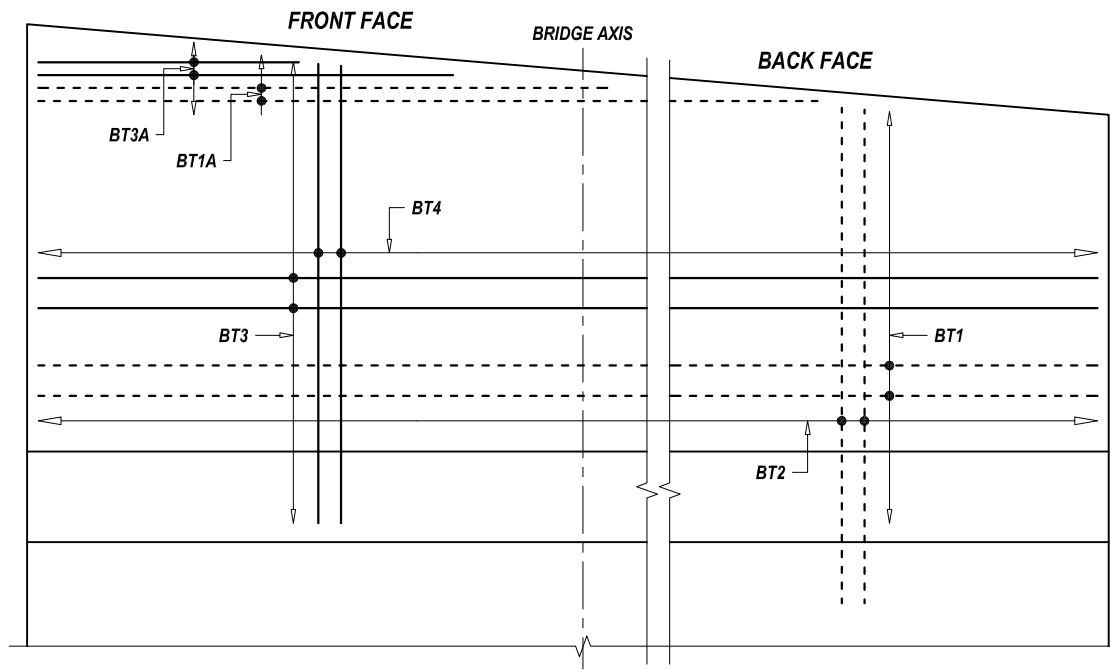
SCALE - 1 : 75

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

EMPLOYER Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	PROJECT NAME Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Patilaia Road Section (130 KM) of Mahendra Highway and Bridges	DESIGN CONSULTANTS Joint Venture of episa EPTISA Servicios De Ingeniera Madrid, Spain on STUP Consultants Private Limited Kolkatta, India In Association With Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited	Designed By Mr. R.A. Nec.No. 6431 CIVIL 'A' Checked By Mr. S.M. Approved By Mr. H.B.	Drawing Name ABUTMENT REINFORCEMENT DETAILS OF BRIDGE OVER RIVER AMUWA Reference Drawings KDP/DPR/STR/BR/AMUWA/DD-9	Scale: AS SHOWN Chainage: 285+725	Date: 06.08.2023 Drawing No.- KDP/DPR/STR/BR/AMUWA/DD-8 Sheet No. 1 / 2
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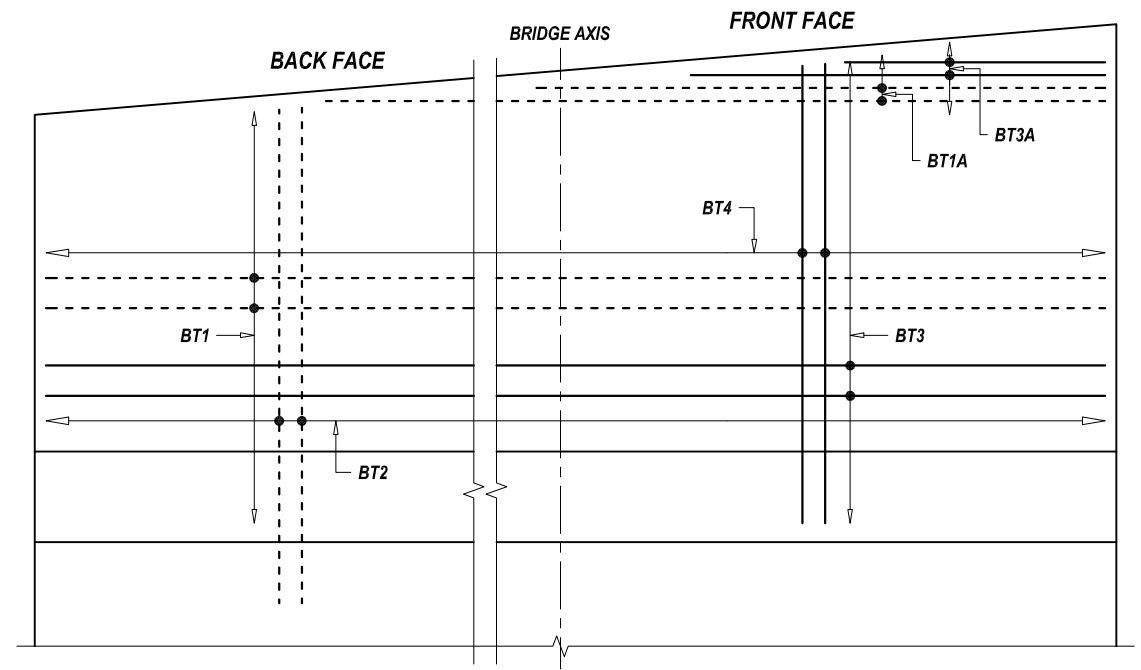
SECTIONAL SIDE VIEW



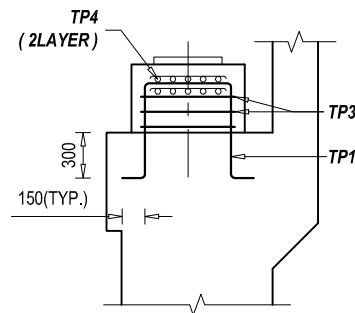
ELEVATION VIEW / VIEW AT D1

BAR DETAIL AT DIRT WALL

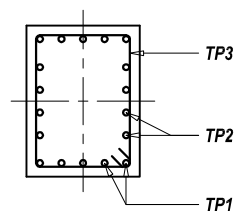
SCALE - 1 : 50



ELEVATION VIEW / VIEW AT D2



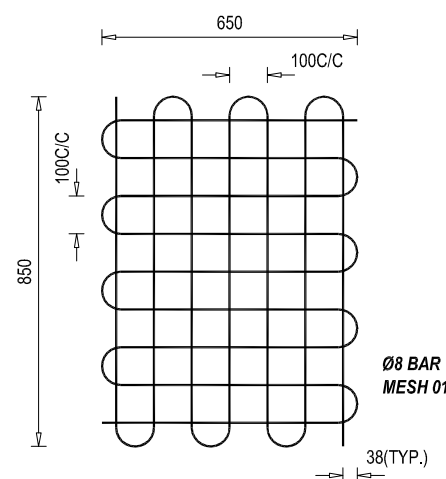
SECTIONAL SIDE VIEW



SECTIONAL PLAN VIEW
BAR DETAIL AT PEDESTAL

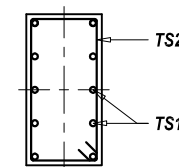
SCALE - 1 : 50

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

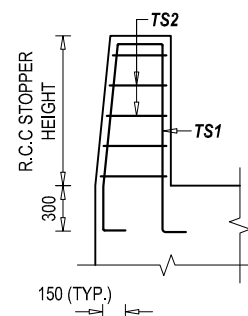


REINFORCEMENT DETAILS OF
BEARING MESH

SCALE - 1 : 50

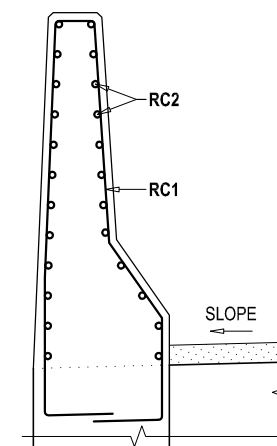


SECTIONAL PLAN VIEW



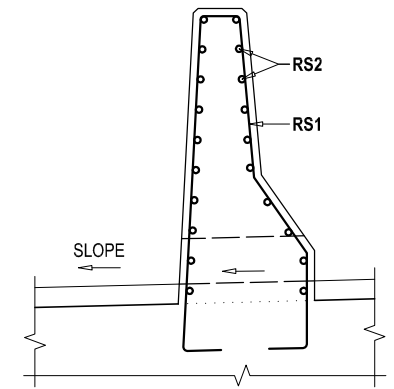
R.C.C STOPPER LEFT
ELEVATION VIEW

SCALE - 1 : 50



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

SCALE - 1 : 25



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

SCALE - 1 : 25

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

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Mr. R.A.	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of  EPTISA Servicios De Ingeniera Madrid, Spain  STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kritt Consultant and Rays Consultant Private Limited	Checked By	Mr. S.M.	ABUTMENT REINGORCEMENT DETAILS OF BRIDGE OVER RIVER AMUWA Reference Drawings KDP/DPR/STR/BR/AMUWA/DD-9	AS SHOWN Chainage: 285+725	06.08.2023
			Approved By	Mr. H.B.			Drawing No.- KDP/DPR/STR/BR/AMUWA/DD-8
							Sheet No. 2 / 2

BAR BENDING SCHEDULE OF DIRT WALL								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	BT 1	150 11700 150	16	200	12.000	17	1.580	322.37
2	BT1A	Avg. 5850 150	16	200	6.000	3	1.580	28.44
3	BT 2	150 2803 Avg. 450	16	125	3.403	96	1.580	516.25
4	BT 3	150 11700 150	16	200	12.000	13	1.580	246.52
5	BT3A	Avg. 5850 150	16	200	6.000	3	1.580	28.44
6	BT 4	150 2878 Avg.	12	125	3.028	96	0.889	258.39
7	BT 5	100 150 100	12	500	0.350	96	0.889	29.87
8	BT 6	200 450 220 200 756	12	200	1.826	61	0.889	99.01
9	BT 7	11700	16		11.700	5	1.580	92.44
10	BT 8	100 450 100	12	200	0.650	120	0.889	69.33
TOTAL (KG) :								1691.07

BAR BENDING SCHEDULE OF ABUTMENT CAP								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	CT1	300 11700 300	16	150	12.300	11	1.580	213.81
2	CT2	300 11700 300	16	150	12.300	11	1.580	213.81
3	CT3	450 1300 100	16	150	3.700	80	1.580	467.75
4	CT4	300 11700 300	12	150	12.300	8	0.889	87.47
5	CT5	450 100 100	12	Long. 150 Trans.300	0.650	382	0.889	220.71
TOTAL (KG) :								1203.55

BAR BENDING SCHEDULE OF ABUTMENT STEM								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	ST 1	300 5780 750	25		6.830	125	3.858	3293.79
2	ST 2	500 11700 500	16	150	12.700	24	1.580	481.66
3	ST 3	300 5780 750	20		6.830	125	2.469	2108.02
4	ST 4	500 11700 500	16	150	12.700	24	1.580	481.66
5	ST 5	300 5780 750	16		6.830	16	1.580	172.69
6	ST 6	100 850 100	12	Ver. 500 Hor.500	1.050	192	0.889	179.20
TOTAL (KG) :								6717.02

BAR BENDING SCHEDULE OF PILE CAP								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	FT 1	900 5950 900	25		7.750	100	3.858	2989.97
2	FT 2	900 12750 900	20		14.550	50	2.469	1796.30
3	FT 3	900 5950 900	16		7.750	100	1.580	1224.69
4	FT 4	900 12750 900	16		14.550	50	1.580	1149.63
5	FT 5	100 1650 100	10	Long. 250 Trans.500	1.850	607	0.617	693.18
6	FT 6	5900 12710 150	16	200	37.520	8	1.580	474.33
TOTAL (KG) :								8328.09

BAR BENDING SCHEDULE OF PEDESTAL								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TP1	150 950 650 Avg.	16	150	2.850	6	1.580	27.02
1	TP2	150 700 650 Avg.	16	150	2.350	8	1.580	29.71
2	TP3	950 700 100	16	150	3.500	3	1.580	16.59
1	TP4	850 650 @ 100	8		13.400	2	0.395	10.59
TOTAL (KG) :								83.91
TOTAL NOS OF PEDESTAL :								4.00
TOTAL WEIGHT (KG) :								335.64

BAR BENDING SCHEDULE OF RCC SEISMIC ARRESTER - LEFT								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TS1-L	1010 400 1270 300 150	16	150	3.280	6	1.580	31.10
2	TS2-L	450 700 100	12	150	2.500	7	0.889	15.56
TOTAL (KG) :								46.65

BAR BENDING SCHEDULE OF RCC SEISMIC ARRESTER - RIGHT								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TS1-R	1260 400 1525 300 150	16	150	3.785	6	1.580	35.89
2	TS2-R	450 700 100	12	150	3.400	9	0.889	27.20
TOTAL (KG) :								63.09

EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		Designed By	Mr. R.A. Nac.No. 4431 CIVIL 'X' Signature		Drawing Name	Scale:	AS SHOWN	Date:	06.08.2023			
 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	 EPTISA Servicios De Ingeniera Madrid, Spain	 STUP Consultants Private Limited Kolkatta, India	Checked By	Mr. S.M. Signature										Reference Drawings	Chainage:
						In Association With		Approved By	Mr. H.B. Signature							
						Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited										

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 3400 150	12	200	4.000	33	0.889	117.33
2	RT1B	450 3400 150	12	200	4.000	33	0.889	117.33
3	RT2A	450 6050 150	12	200	6.650	16	0.889	94.58
4	RT2B	150 3400 150 600	12	200	4.300	16	0.889	61.16
5	RT2C	600 3575 150 150	12	200	4.475	16	0.889	63.64
6	RT3A	8246 150 450	12	200	8.846	14	0.889	110.08
7	RT3B	800 150 5279 450	16	200	6.679	14	1.580	147.76
8	RT3C	150 2892 150 800	16	200	3.992	14	1.580	88.32
9	RT3D	200 300 300 200 210	16	200	1.210	32	1.580	61.19
10	RT4A	1483.5 150 150	12	200	1.784	38	0.889	60.24
11	RT4B	1483.5 150 150	12	200	1.784	38	0.889	60.24
12	RT5	300 870 300	12	200	1.470	49	0.889	64.03
13	RT6	6596	12		6.596	2	0.889	11.73
14	RT7	225 5375	20		5.6	4	2.469	55.31
TOTAL (KG) :								1112.94

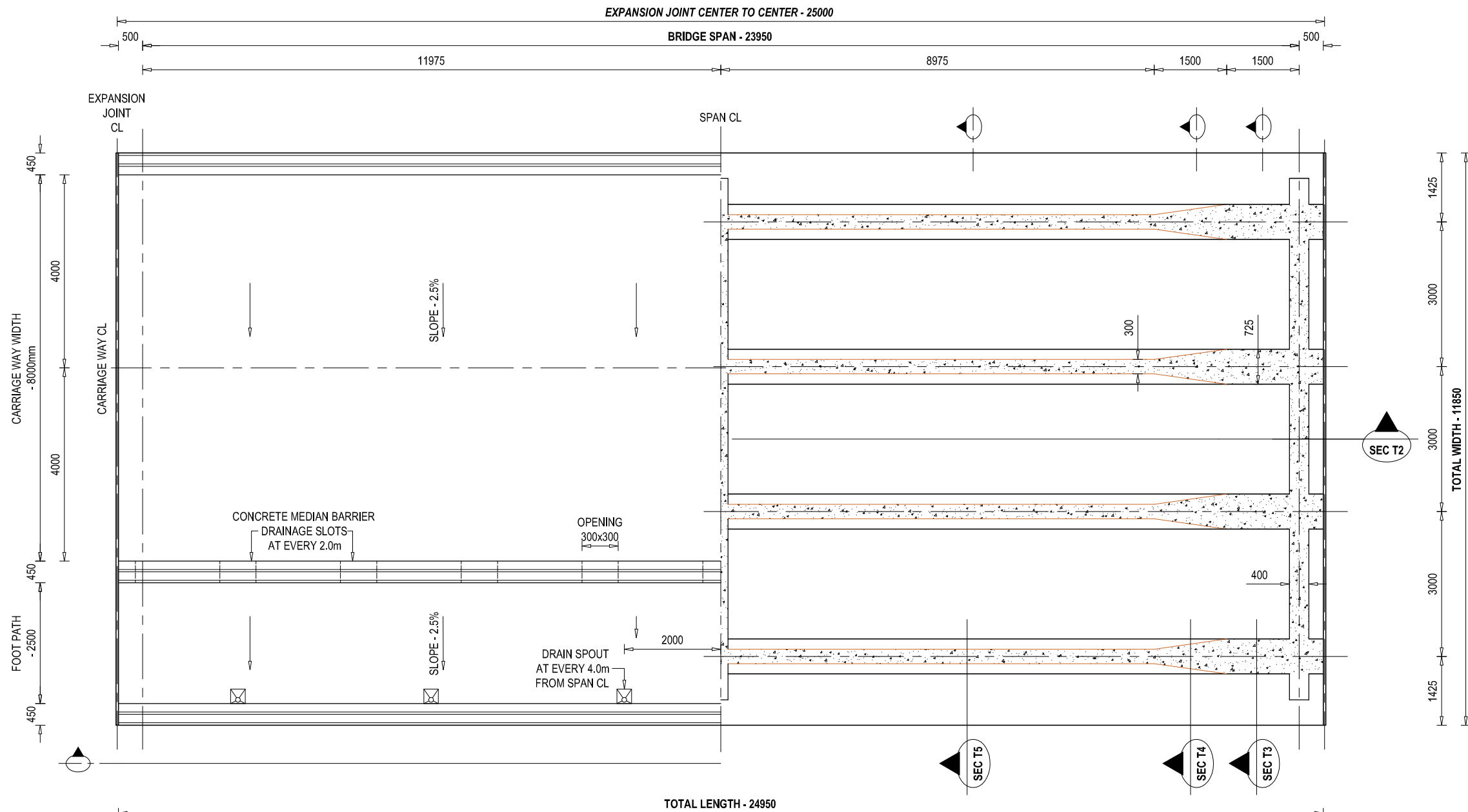
BAR BENDING SCHEDULE OF RETURN WALL - RIGHT								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RT1A	450 3400 150	12	200	4.000	32	0.889	113.78
2	RT1B	450 3400 150	12	200	4.000	32	0.889	113.78
3	RT2A	450 6050 150	12	200	6.650	16	0.889	94.58
4	RT2B	150 3400 150 600	12	200	4.300	16	0.889	61.16
5	RT2C	600 3575 150 150	12	200	4.475	16	0.889	63.64
6	RT3A	7950 150 450	12	200	8.550	14	0.889	106.40
7	RT3B	800 150 4983 450	16	200	6.383	14	1.580	141.21
8	RT3C	150 2892 150 800	16	200	3.992	14	1.580	88.32
9	RT3D	200 300 300 200 210	16	200	1.210	32	1.580	61.19
10	RT4A	1483.5 150 150	12	200	1.784	38	0.889	60.24
11	RT4B	1483.5 150 150	12	200	1.784	38	0.889	60.24
12	RT5	300 870 300	12	200	1.470	49	0.889	64.03
13	RT6	6300	12		6.300	2	0.889	11.20
14	RT7	225 5375	20		5.6	4	2.469	55.31
TOTAL (KG) :								1095.07

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	42	1.580	210.39
2	RC2	150 6100 150	10	150	6.400	20	0.617	79.01
TOTAL (KG) :								289.41

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

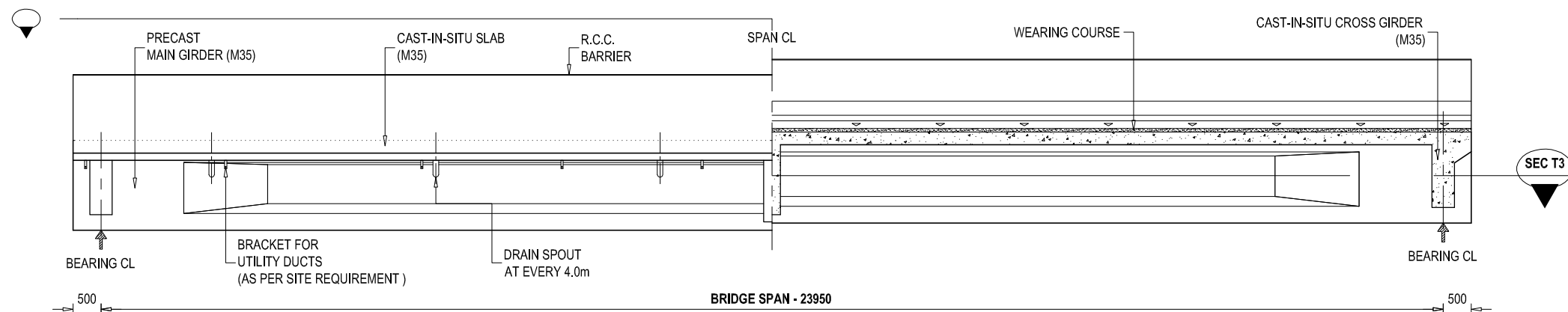
BAR BENDING SCHEDULE OF APPROACH SLAB								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	1601	100 100 10970	16	150	11.170	48	1.580	847.27
2	1202	100 3420 100	12	150	3.620	150	0.889	482.67
TOTAL (KG) :								1329.93

EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		Drawing Name		Scale:		Date:	
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of		Designed By	Mr. R.A.	 Signature	ABUTMENT BAR BENDING SCHEDULE OF BRIDGE OVER RIVER AMUWA	AS SHOWN		06.08.2023	
		 EPTISA Servicios De Ingeniera Madrid, Spain  STUP Consultants Private Limited Kolkatta, India		Checked By	Mr. S.M.					Drawing No.-KDP/DPR/STR/BR/AMUWA/DD-9	
		In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited		Approved By	Mr. H.B.		Reference Drawings -	Chainage: 285+725		Sheet No. 2 / 2	



HALF SECTIONAL PLAN VIEW OF SUPERSTRUCTURE AT SEC T1

SCALE - 1 : 100 @ A3 PAPER

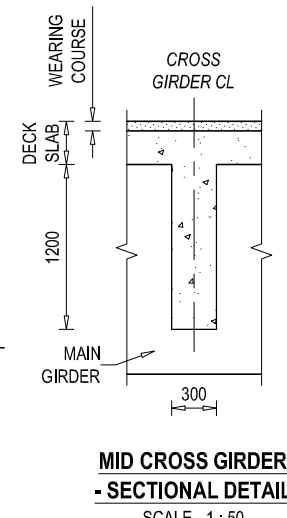
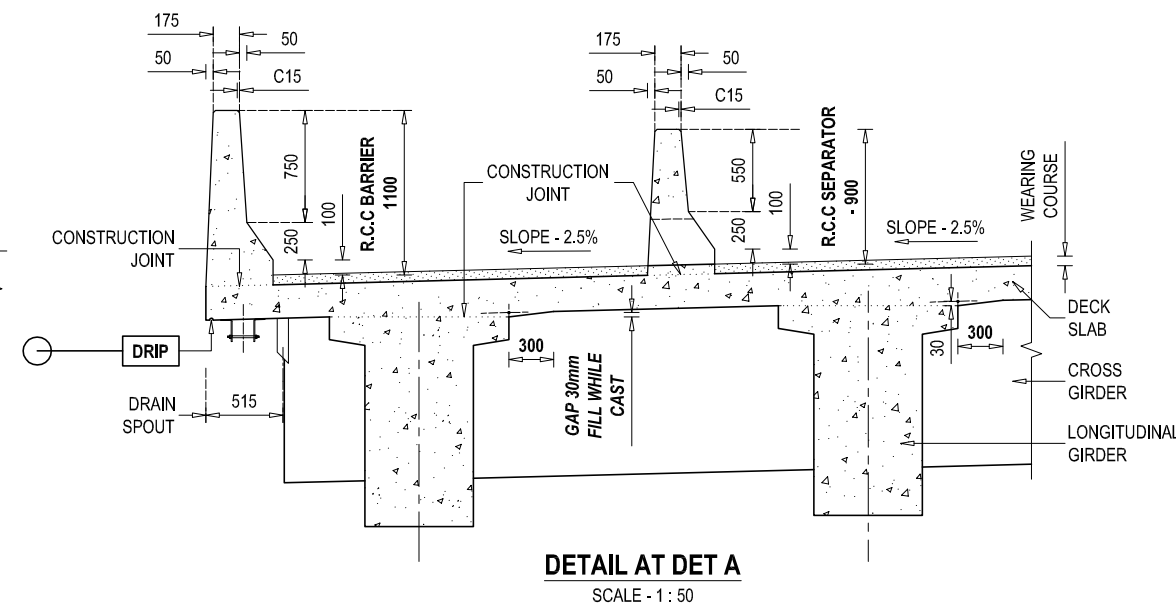
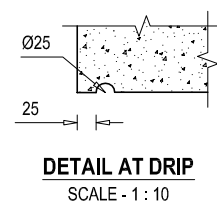
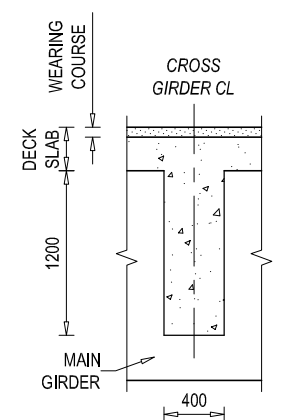
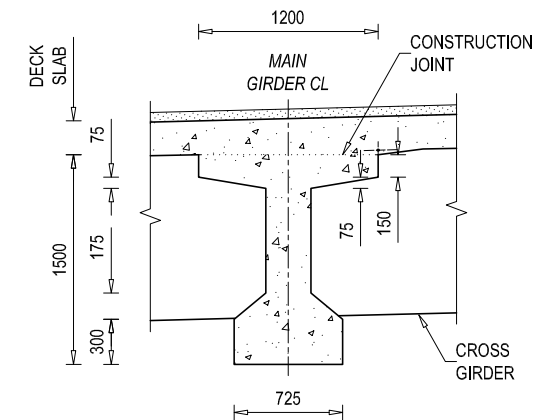
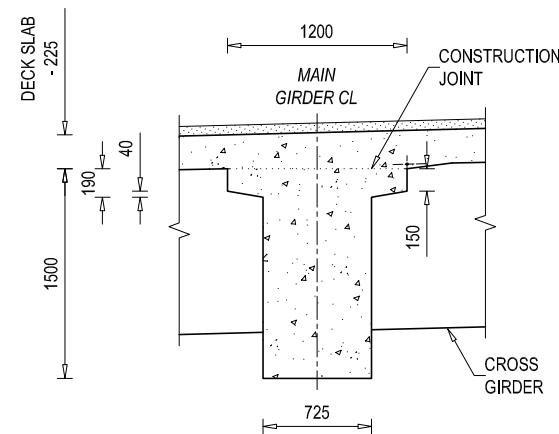
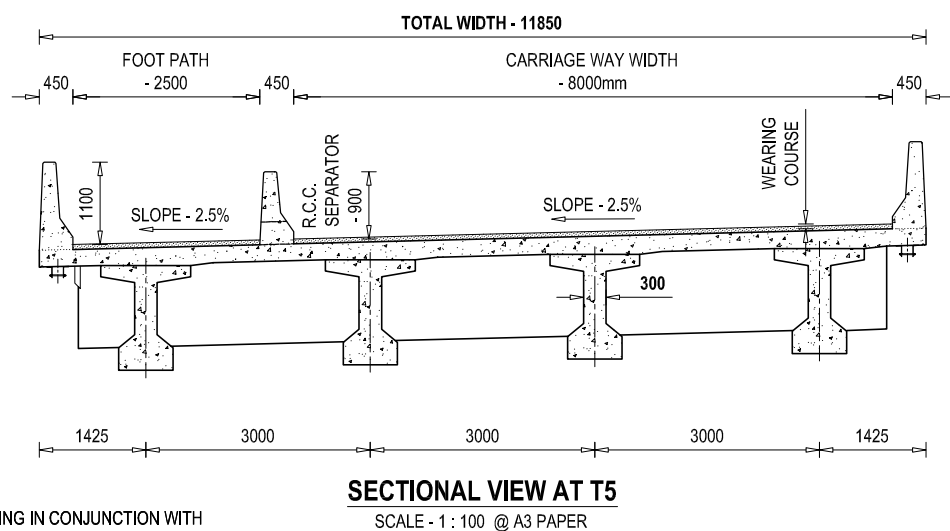
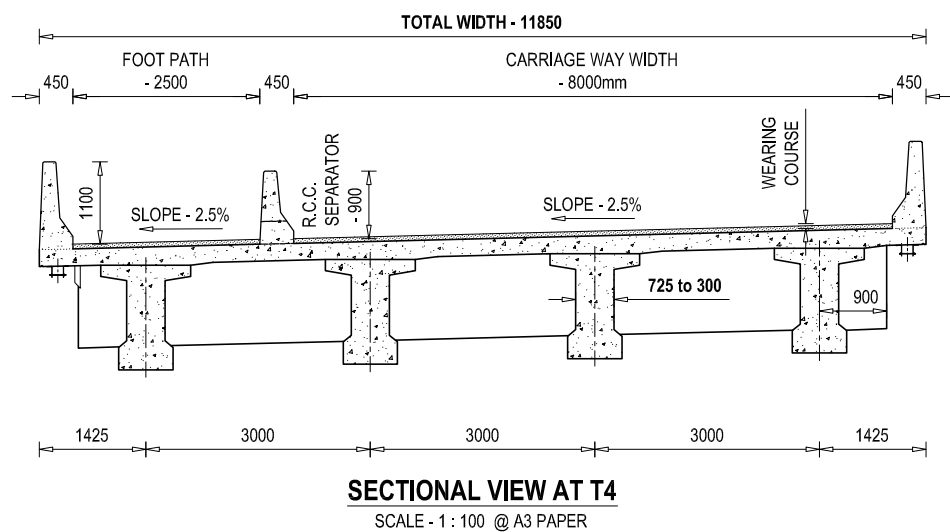
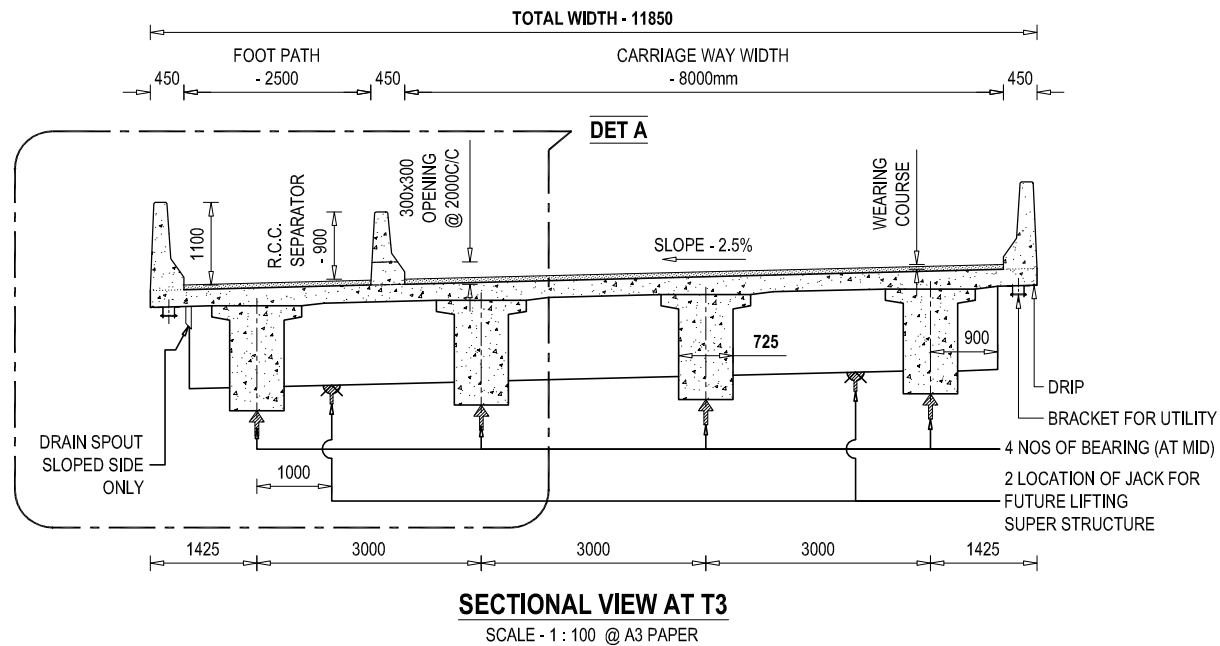


HALF ELEVATION SECTIONAL VIEW OF SUPERSTRUCTURE AT SEC T2

SCALE - 1 : 100 @ A3 PAPER

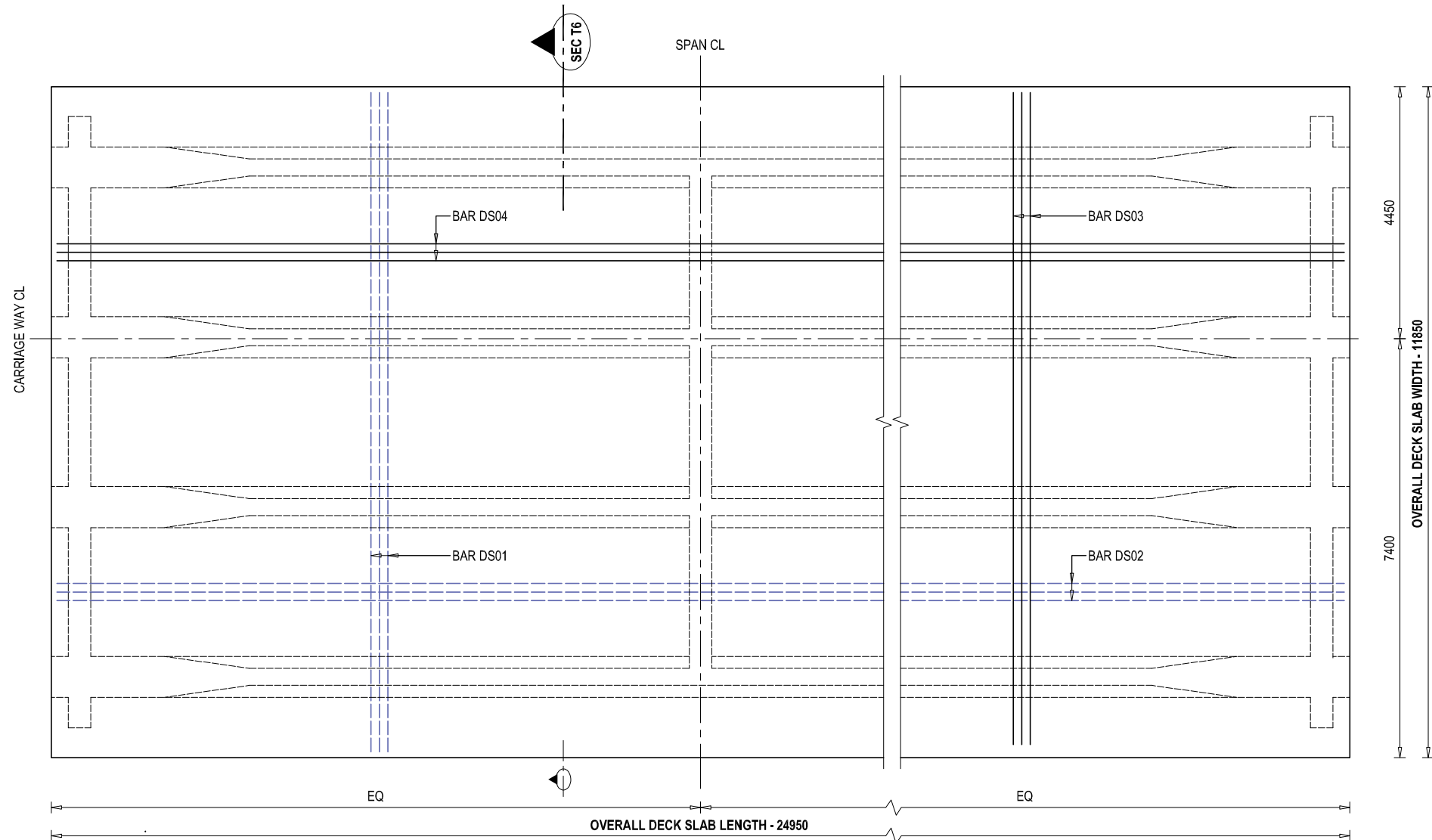
NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/AMUWA/DD-4

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Mr. R.A.	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Patthaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of  EPTISA Servicios De Ingeniera Madrid, Spain  STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited	Checked By	Mr. S.M.	Reference Drawings	Chainage:	Drawing No.- KDP/DPR/STR/BR/AMUWA/DD-10
			Approved By	Mr. H.B.	KDP/DPR/STR/BR/AMUWA/DD-14	285+725	Sheet No. 1 / 2
			Signature	 Signature	SUPER STRUCTURE DETAILS OF BRIDGE OVER RIVER AMUWA	AS SHOWN	28.05.2023



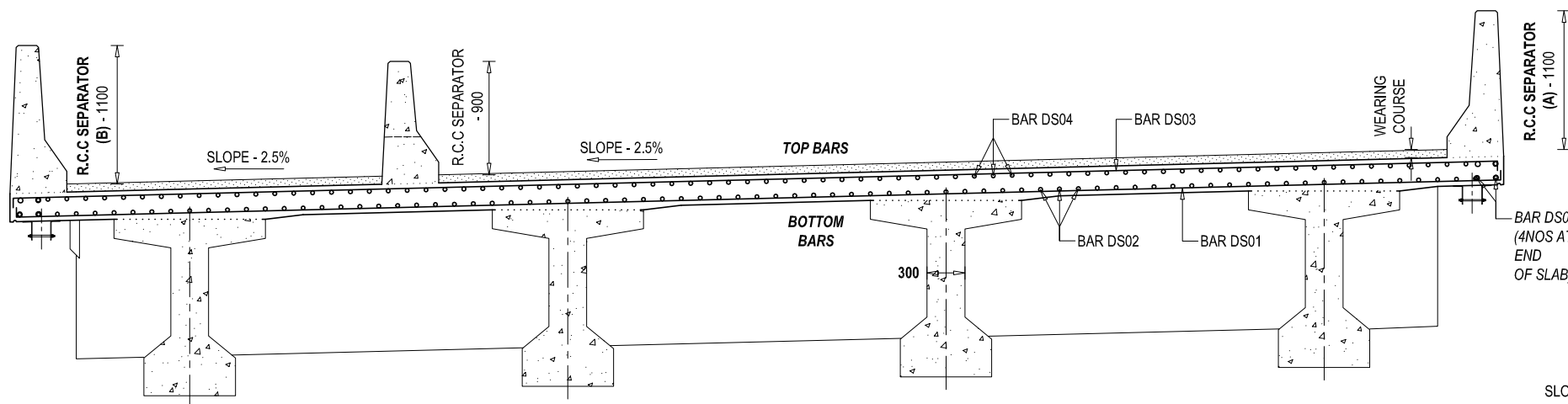
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READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/AMUWA/DD-4

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Mr. R.A.	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of  EPTISA Servicios De Ingeniera Madrid, Spain  STUP Consultants Private Limited Kolkatta, India In Association With Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited	Checked By	Mr. S.M.	SUPER STRUCTURE DETAILS OF BRIDGE OVER RIVER AMUWA Reference Drawings KDP/DPR/STR/BR/AMUWA/DD-14	AS SHOWN Chainage: 285+725	28.05.2023
			Approved By	Mr. H.B.			Drawing No.- KDP/DPR/STR/BR/AMUWA/DD-10
							Sheet No. 2 / 2



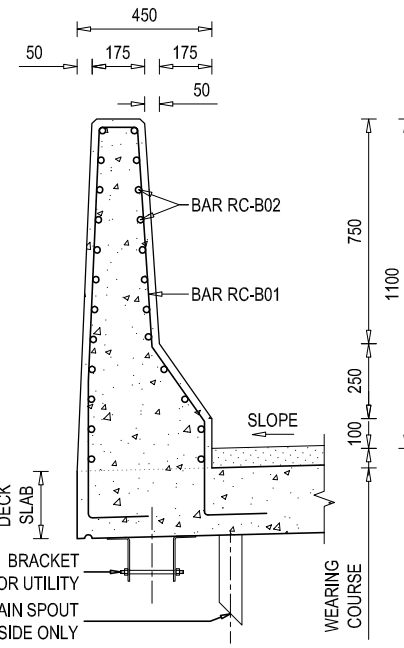
REINFORCEMENT DETAILS OF DECK SLAB - PLAN VIEW

SCALE - 1 : 100



REINFORCEMENT DETAILS OF DECK SLAB - SECTIONAL VIEW AT T6

SCALE - 1 : 50

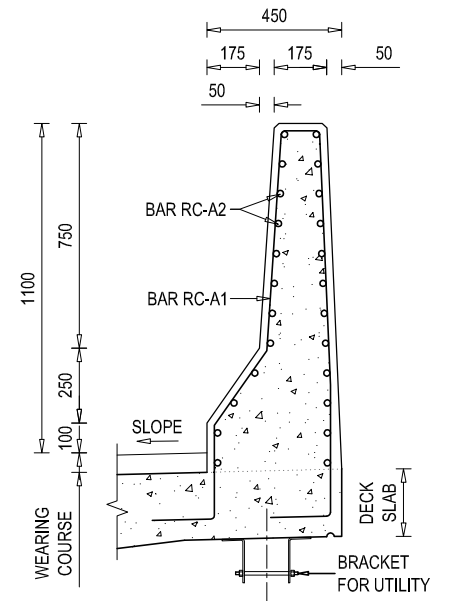


REINFORCEMENT DETAILS OF R.C.C BARRIER (B) - SECTIONAL VIEW

SCALE - 1 : 25

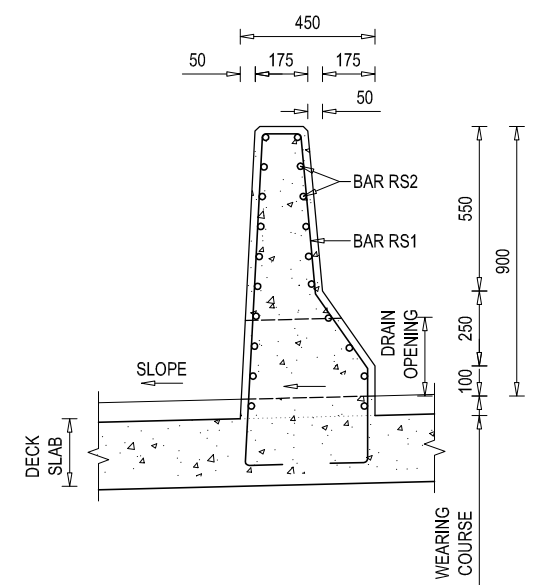
LEGEND FOR REINFORCEMENT BAR

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



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

SCALE - 1 : 25

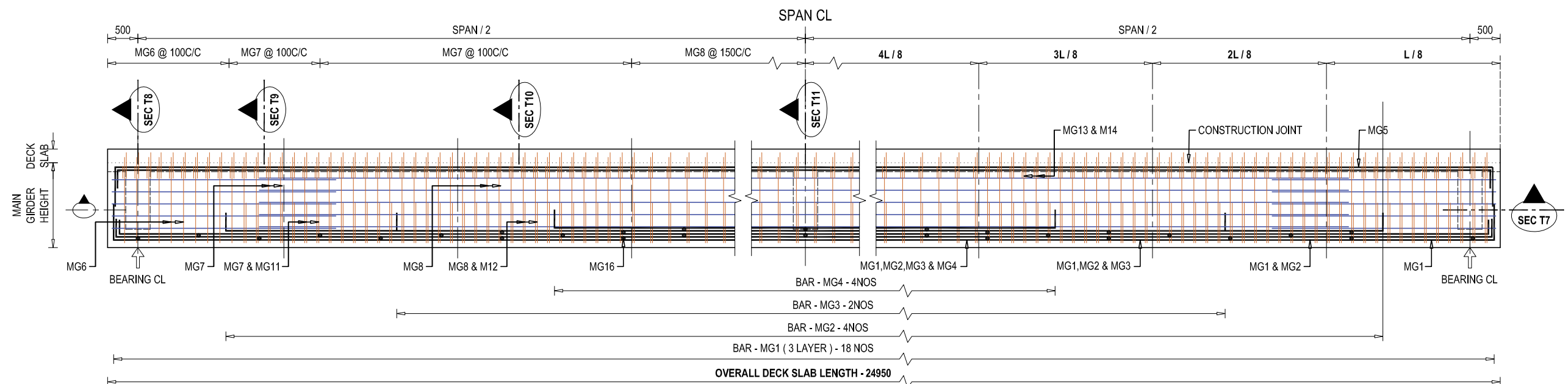


REINFORCEMENT DETAILS OF R.C.C SEPARATOR - SECTIONAL VIEW

SCALE - 1 : 25

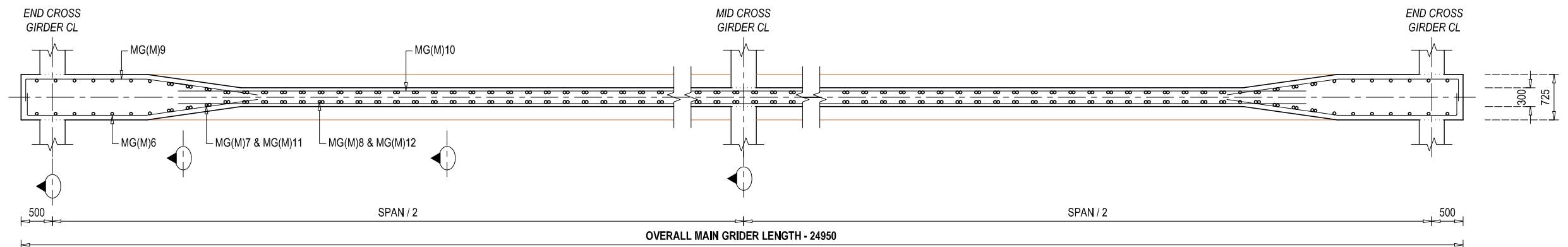
NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/AMUWA/DD-4

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Mr. R.A.	Signature	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of  EPTISA Servicios De Ingeniera Madrid, Spain  STUP Consultants Private Limited Kolkatta, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Checked By	Mr. S.M.	Signature	DECK SLAB DETAILS OF BRIDGE OVER RIVER AMUWA	AS SHOWN	28.05.2023
			Approved By	Mr. H.B.	Signature	Reference Drawings KDP/DPR/STR/BR/AMUWA/DD-14	Chainage: 285+725	Drawing No.- KDP/DPR/STR/BR/AMUWA/DD-11
								Sheet No. 1 / 1



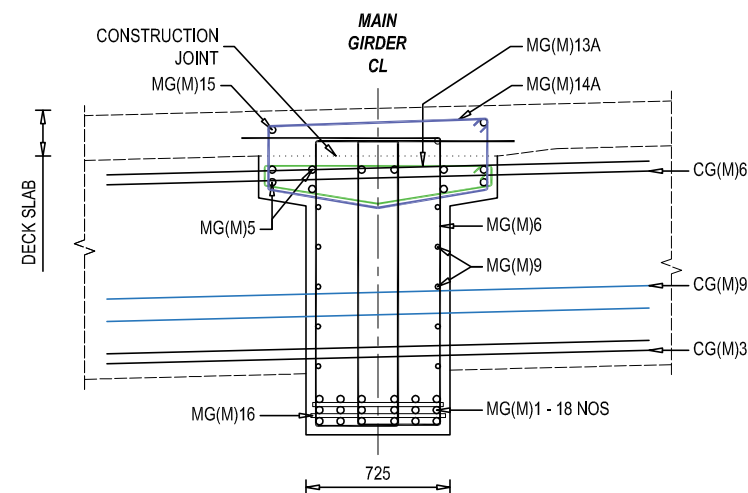
REINFORCEMENT DETAILS OF MAIN GIRDER - SECTIONAL ELEVATION VIEW

SCALE - 1 : 75



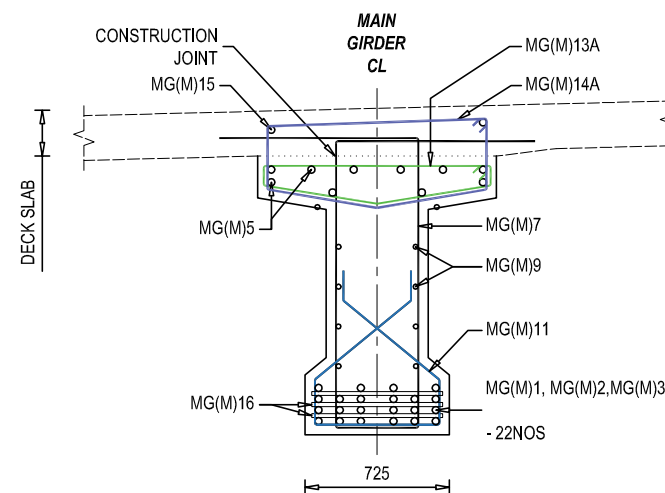
REINFORCEMENT DETAILS OF MAIN GIRDER (MID) - SECTIONAL PLAN VIEW AT T7(M)

SCALE - 1 : 75



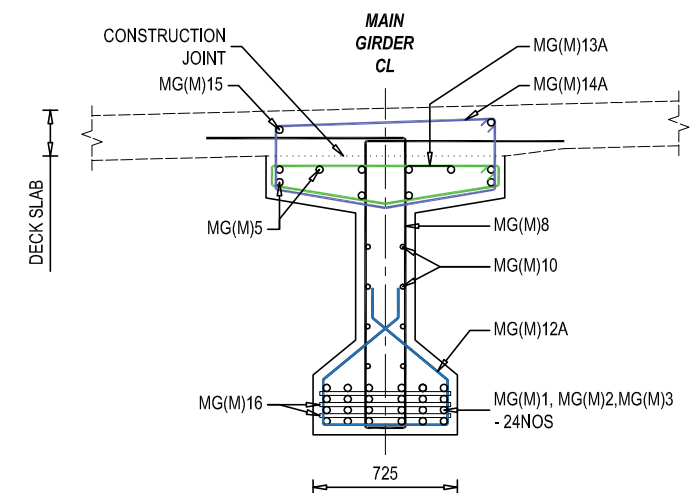
REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T8

SCALE - 1 : 50



REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T9

SCALE - 1 : 50

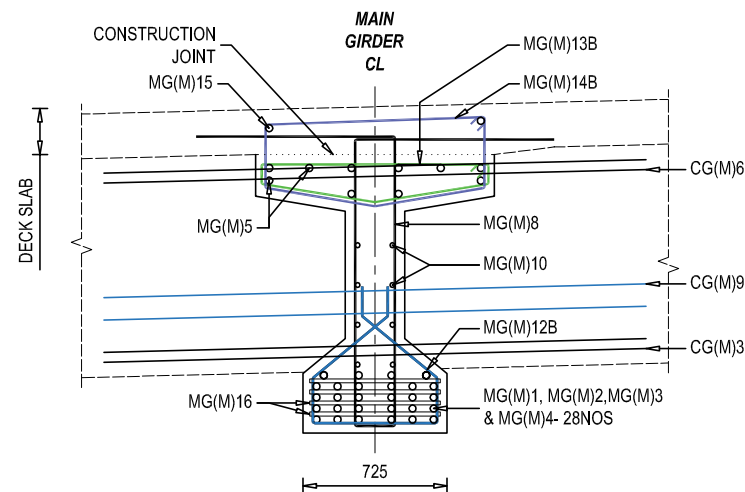


REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T10

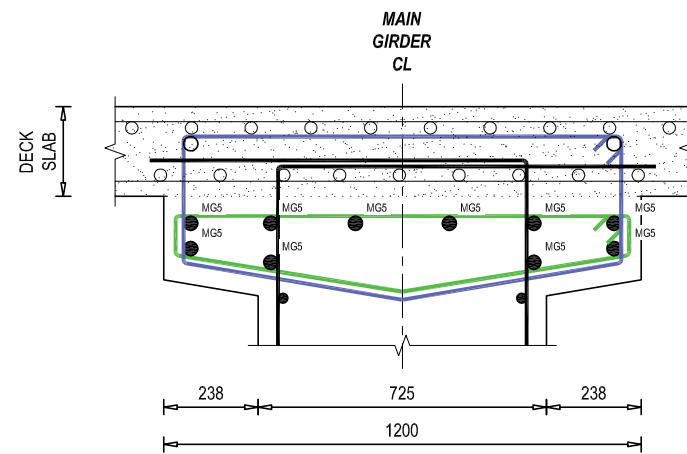
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NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/AMUWA/DD-4

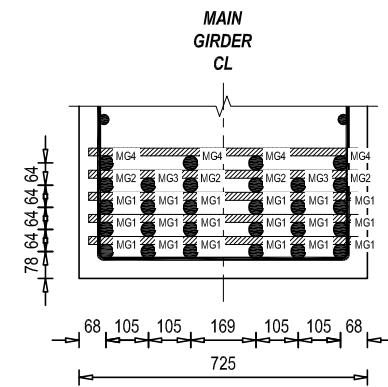
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamal-Dhalkebar-Pathalaja Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of  EPTISA Servicios De Ingenieria Madrid, Spain  STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited	Mr. R.A.	MAIN GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER AMUWA Reference Drawings KDP/DPR/STR/BR/AMUWA/DD-14	AS SHOWN	28.05.2023
			Checked By			
			Approved By			
					Chainage:	Drawing No.- KDP/DPR/STR/BR/AMUWA/DD-12
					285+725	Sheet No. 1 / 2



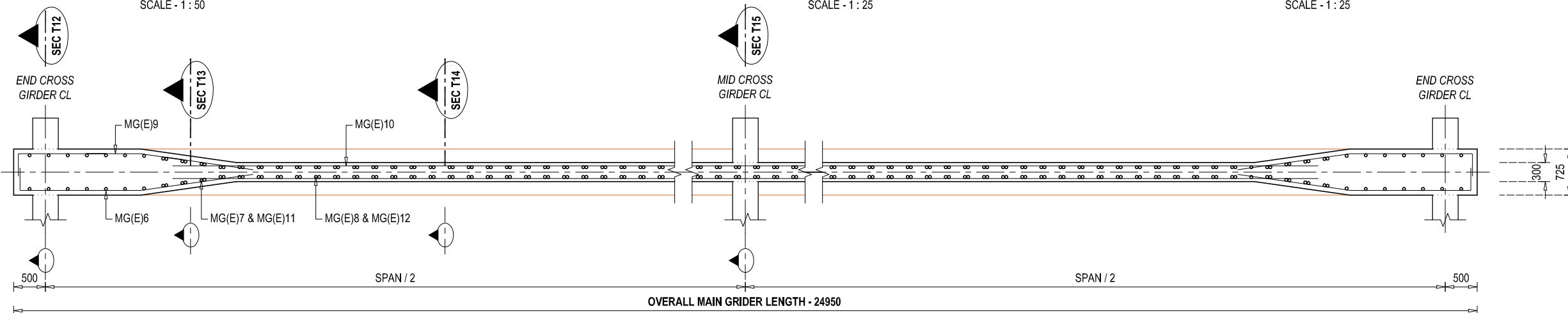
REINFORCEMENT DETAILS OF MAIN GIRDER
SECTIONAL VIEW AT T11
SCALE - 1 : 50



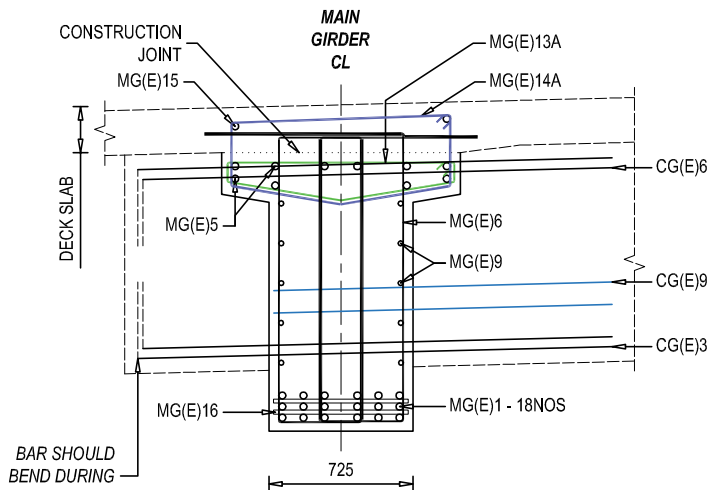
TOP BAR WEB REINFORCEMENT DETAILS
OF MAIN GIRDER
SCALE - 1 : 25



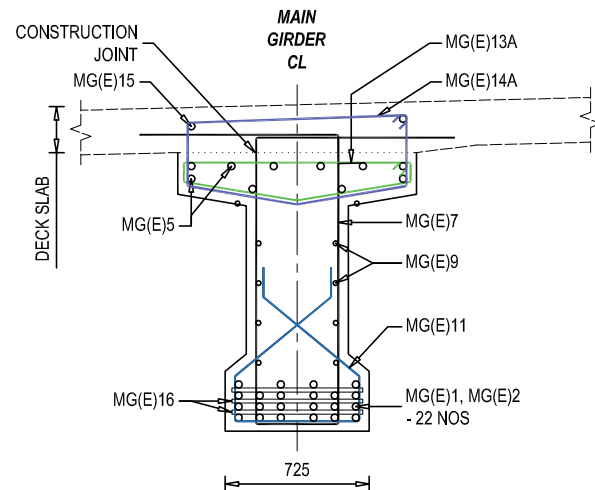
BOTTOM BAR WEB REINFORCEMENT DETAILS
OF MAIN GIRDER
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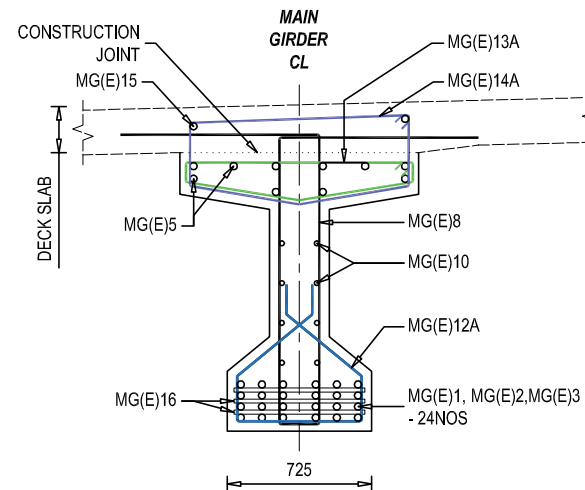
REINFORCEMENT DETAILS OF MAIN GIRDER (END) - SECTIONAL PLAN VIEW AT T7(E)
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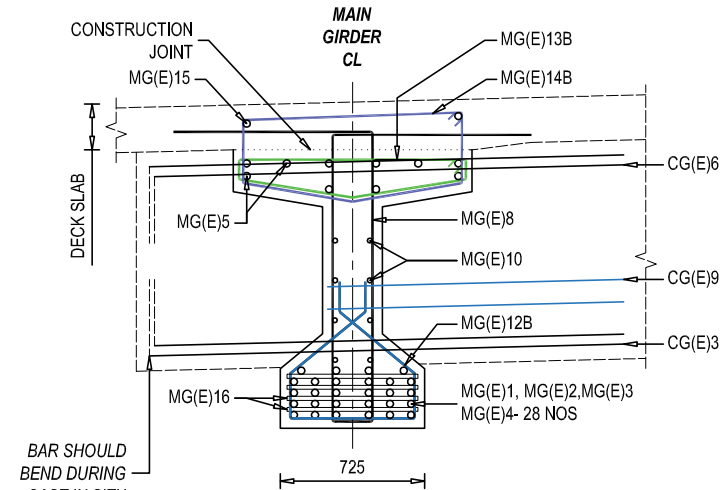
REINFORCEMENT DETAILS OF MAIN GIRDER
SECTIONAL VIEW AT T12
SCALE - 1 : 50



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

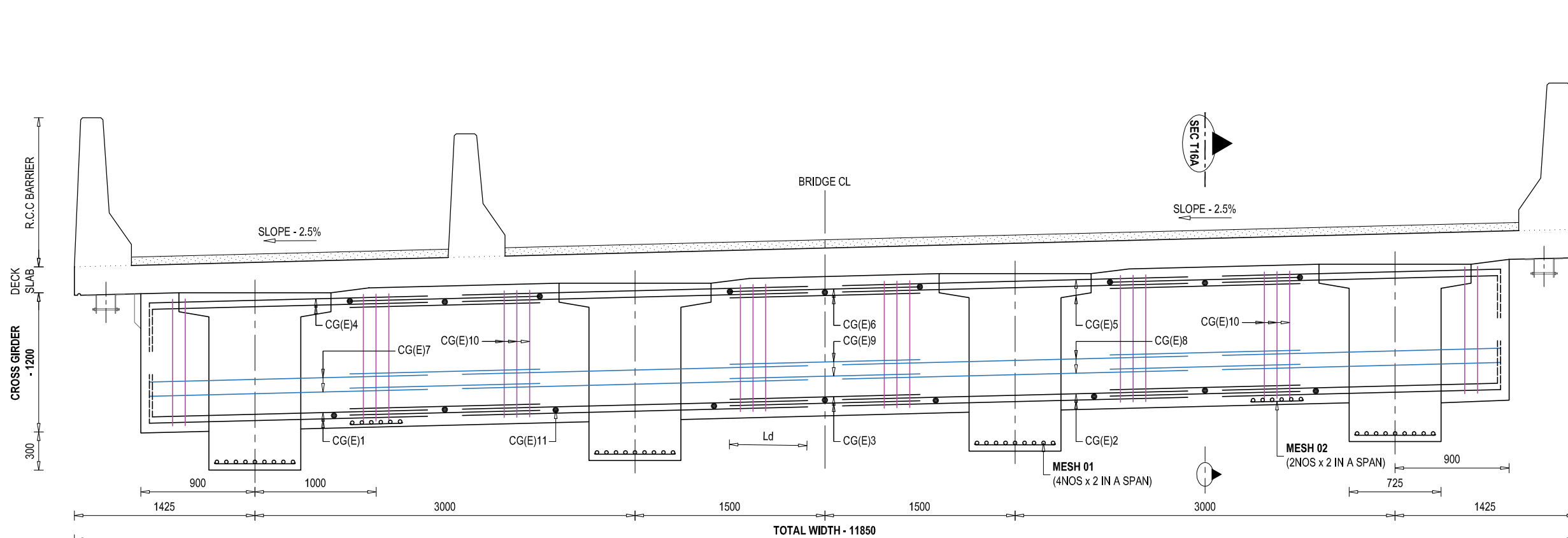


REINFORCEMENT DETAILS OF MAIN GIRDER
SECTIONAL VIEW AT T14
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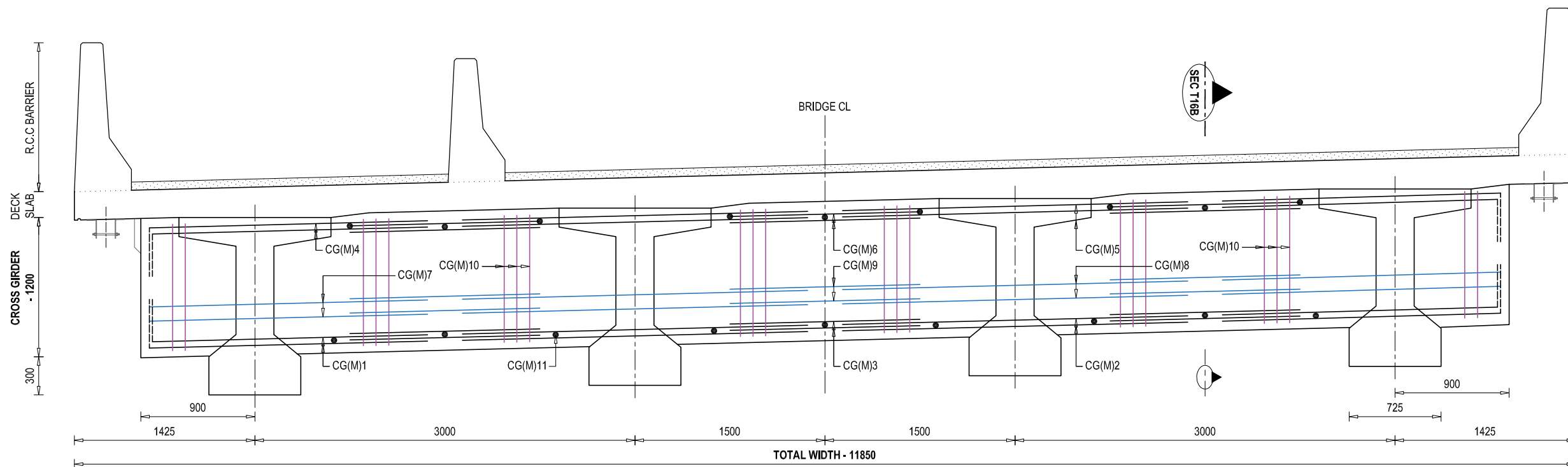


REINFORCEMENT DETAILS OF MAIN GIRDER
SECTIONAL VIEW AT T15
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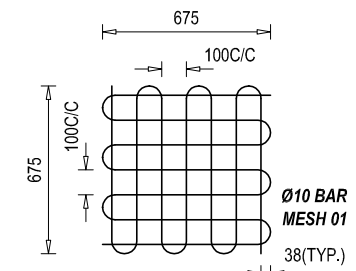
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Drawing Name	Scale:	Date:
Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamal-Dhalkebar-Pathalaya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of EPTISA Servicios De Ingeniera Madrid, Spain STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited	Mr. R.A. Nec.No. 6431 CIVIL 'A' Mr. S.M. Mr. H.B.	MAIN GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER AMUWA Reference Drawings KDP/DPR/STR/BR/AMUWA/DD-14	AS SHOWN Chainage: 285+725	28.05.2023
			Checked By			Drawing No.- KDP/DPR/STR/BR/AMUWA/DD-12
			Approved By			Sheet No. 2 / 2



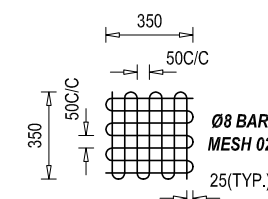
REINFORCEMENT DETAILS OF END CROSS GIRDER
SCALE - 1 : 50



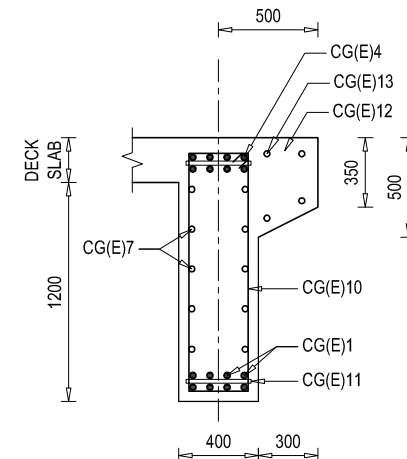
REINFORCEMENT DETAILS OF MID CROSS GIRDER
SCALE - 1 : 50



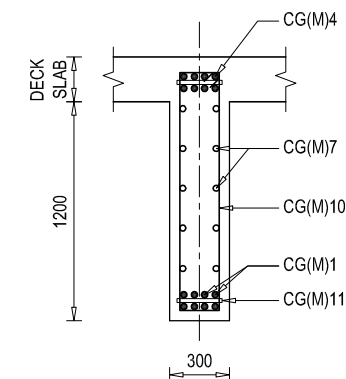
REINFORCEMENT DETAILS OF BEARING MESH
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REINFORCEMENT DETAILS OF LIFTING MESH
SCALE - 1 : 50



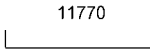
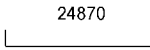
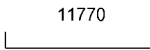
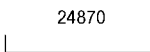
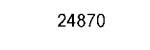
SECTIONAL REINFORCEMENT DETAILS OF END CROSS GIRDER - SEC T16A
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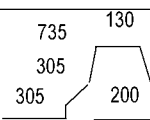
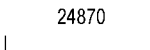


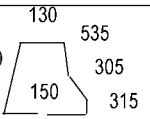
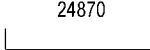
SECTIONAL REINFORCEMENT DETAILS OF MID CROSS GIRDER - SEC T16B
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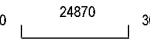
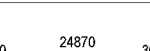
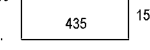
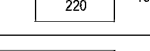
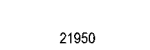
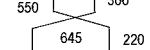
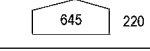
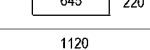
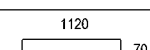
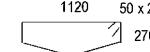
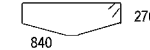
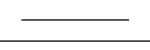
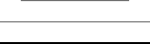
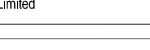
NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/AMUWA/DD-4

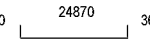
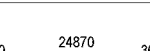
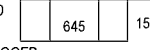
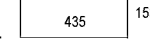
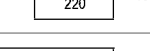
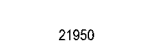
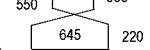
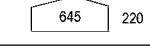
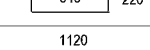
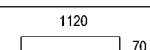
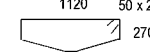
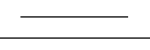
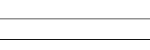
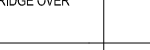
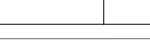
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Mr. R.A.	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamal-Dhalkebar-Pathalaya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of  EPTISA Servicios De Ingenieria Madrid, Spain  STUP Consultants Private Limited Kolkatta, India In Association With Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited	Checked By	Mr. S.M.	CROSS GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER AMUWA	AS SHOWN	28.05.2023
			Approved By	Mr. H.B.	Reference Drawings KDP/DPR/STR/BR/AMUWA/DD-14	Chainage: 285+725	Drawing No.- KDP/DPR/STR/BR/AMUWA/DD-13
							Sheet No. 1 / 1

BAR BENDING SCHEDULE OF DECK SLAB (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	DS01	150  150	16	150	12.070	167	1.580	3185.29
2	DS02	150  150	10	150	25.170	76	0.617	1180.81
3	DS03	150  150	16	150	12.070	167	1.580	3185.29
5	DS04	150  150	10	150	25.170	76	0.617	1180.81
6	DS05	 24870	16		24.870	8	1.580	314.41
TOTAL (KG) :								9046.61

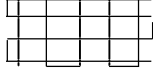
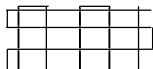
BAR BENDING SCHEDULE OF R.C.C BARRIER (A) (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RC-A1	 200	16	150	3.170	167	1.580	836.57
2	RC-A2	150  150	10	150	25.170	20	0.617	310.74
TOTAL (KG) :								1147.31

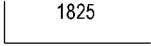
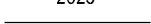
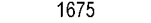
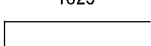
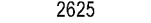
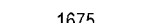
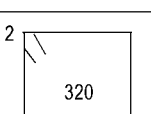
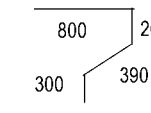
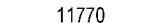
BAR BENDING SCHEDULE OF R.C.C SEPARATOR (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RS1	 150	16	150	2.695	167	1.580	711.21
2	RS2	150  150	10	150	25.170	17	0.617	264.13
TOTAL (KG) :								975.34

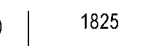
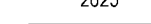
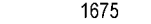
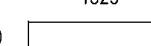
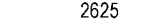
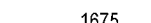
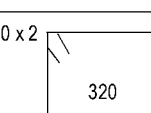
BAR BENDING SCHEDULE OF MID MAIN GIRDER (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	MG (M)1	300  300	32		25.470	18	6.321	2897.92
2	MG(M)2	300  300	32		21.873	4	6.321	553.04
3	MG(M)3	300  300	32		15.835	2	6.321	197.66
4	MG(M)4	300  300	32		9.398	4	6.321	237.62
5	MG(M)5	300  300	12		25.470	10	0.889	226.40
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	91	0.889	378.56
9	MG(M)8B	480  1530	12	150	4.680	43	0.889	178.88
10	MG(M)9	370  2000	12	200	4.290	24	0.889	91.52
11	MG(M)10	 21950	12	200	21.950	12	0.889	234.13
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	91	0.889	249.54
14	MG(M)12B	700  220	12	150	3.085	43	0.889	117.92
15	MG(M)13A	 70	12	100	3.040	189	0.889	510.72
16	MG(M)13B	 70	12	150	3.040	43	0.889	116.20
17	MG(M)14A	 270	12	100	3.440	189	0.889	577.92
18	MG14B	 270	12	150	3.440	43	0.889	131.48
19	MG(M)15	 24870	12		24.870	2	0.889	44.21
19	MG(M)16	645	32	1500	0.645	68	6.321	277.24
TOTAL (KG) :								7612.28

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		25.470	18	6.321	2897.92
2	MG(E)2	300  300	32		21.873	4	6.321	553.04
3	MG(E)3	300  300	32		15.835	2	6.321	197.66
4	MG(E)4	300  300	32		9.398	4	6.321	237.62
5	MG(E)5	300  300	12		25.470	10	0.889	226.40
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	91	0.889	378.56
9	MG(E)8B	480  1530	12	150	4.680	43	0.889	178.88
10	MG(E)9	370  2000	12	200	4.290	32	0.889	122.03
11	MG(E)10	 21950	12	200	21.950	16	0.889	312.18
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	91	0.889	249.54
14	MG(E)12B	700  220	12	150	3.085	43	0.889	117.92
15	MG(E)13A	 70	12	100	3.040	189	0.889	510.72
16	MG(E)13B	 70	12	150	3.040	43	0.889	116.20
17	MG(E)14A	 270	12	100	3.440	189	0.889	577.92
18	MG14B	 270	12	150	3.440	43	0.889	131.48
19	MG(E)15	 24870	12		24.870	2	0.889	44.21
19	MG(E)16	645	32	1500	0.645	68	6.321	277.24
TOTAL (KG) :								7720.83

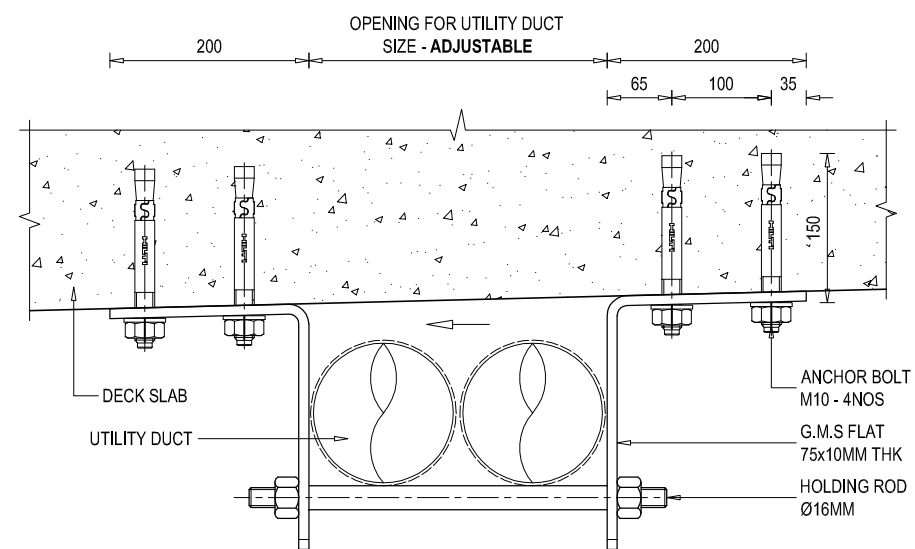
EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		Designed By	Mr. R.A. Nec.No. 6431 CIVIL 'N' Signature		Drawing Name	Scale: AS SHOWN	Date: 28.05.2023
	Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamal-Dhalkebar-Pathilajya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of		Checked By						
			 EPTISA Servicios De Ingenieria Madrid, Spain	 STUP Consultants Private Limited Kolkata, India		Approved By	Mr. H.B. Signature				
									In Association With Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited		

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	10		4.900	4	0.617	12.10
TOTAL (KG) :								58.77

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 	12	200	1.740	39	0.889	60.32
11	CG(E)11		20	1000	0.320	18	2.469	14.22
12	CG(E)12		16	150	1.750	79	1.580	218.47
13	CG(E)13		12		11.770	6	0.889	62.77
TOTAL (KG) :								653.17
TOTAL NOS OF CROSS GIRDER :								2.00
TOTAL WEIGHT (KG) :								1306.33

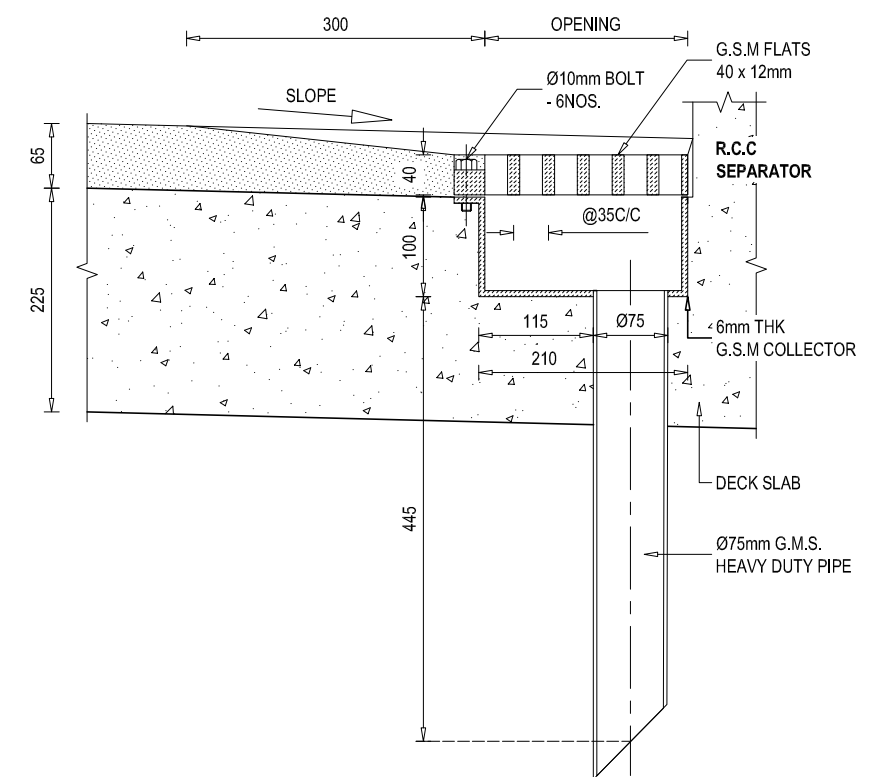
BAR BENDING SCHEDULE OF MID CROSS GIRDER (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	CG(M)1	300 	20		1.920	8	2.469	37.93
2	CG(M)2		20		2.945	8	2.469	58.17
3	CG(M)3		20		1.995	8	2.469	39.41
4	CG(M)4	300 	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 	12	200	1.740	39	0.889	60.32
11	CG(M)11		20	1000	0.320	18	2.469	14.22
TOTAL (KG) :								375.01

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Mr. R.A.	Drawing Name	Scale:	Date:
	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamal-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of EPTISA Servicios De Ingeniera Madrid, Spain STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kiti Consultant and Rays Consultant Private Limited	Checked By	Mr. S.M.	SUPER STRUCTURE BAR BENDING SCHEDULE OF BRIDGE OVER RIVER AMUWA	AS SHOWN	28.05.2023
			Approved By	Mr. H.B.	Reference Drawings	Chainage:	Drawing No.- KDP/DPR/STR/BR/AMUWA/DD-14
						285+725	Sheet No. 2 / 2



SECTIONAL ELEVATION VIEW AT SEC T17

PLAN VIEW

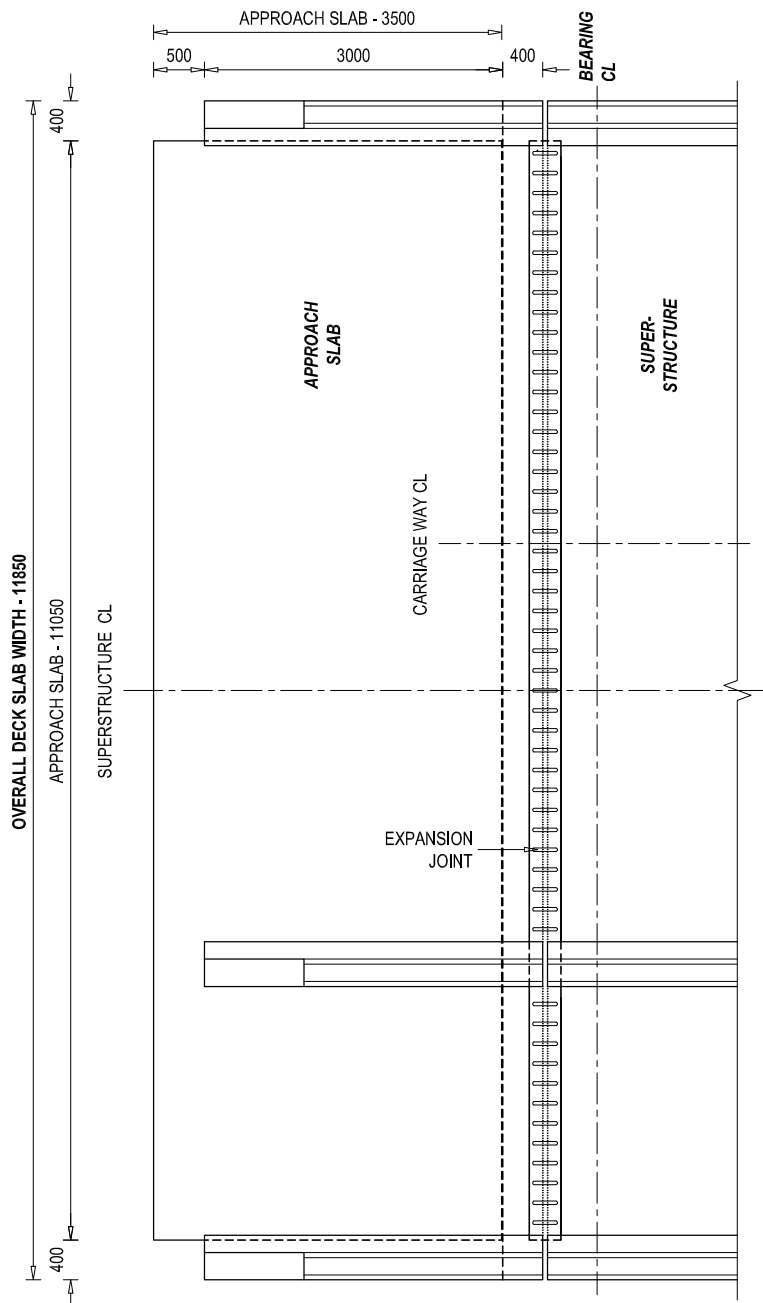


SECTIONAL ELEVATION VIEW AT SEC T19

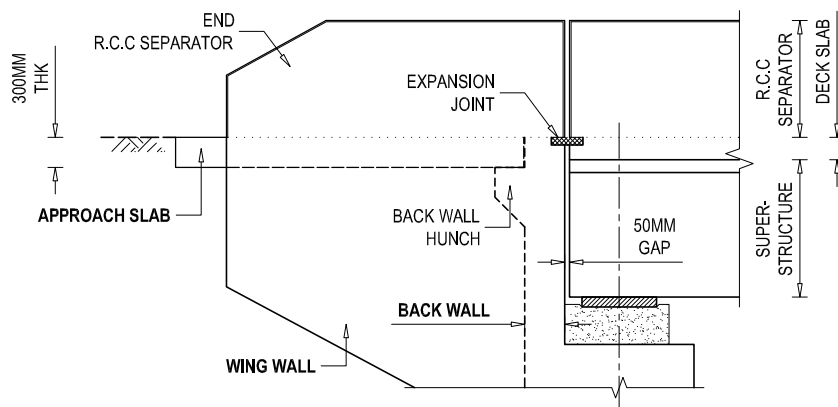
SECTIONAL ELEVATION VIEW AT SEC T18

FRONT VIEW

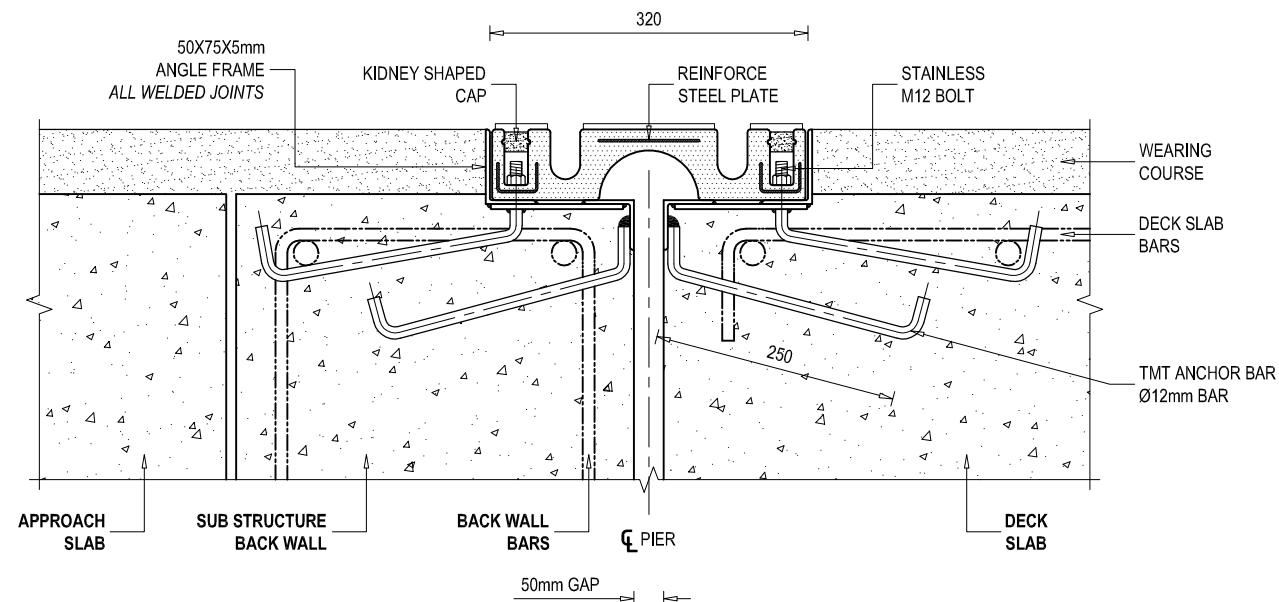
EMPLOYER		PROJECT NAME	DESIGN CONSULTANTS		Designed By	Mr. R.A.	Drawing Name MISCELLANEOUS DETAILS OF BRIDGE OVER RIVER AMUWA	Scale: AS SHOWN	Date: 21.04.2023
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division		Strategic 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			 Signature			
			 EPTISA Servicios De Ingenieria Madrid, Spain	 STUP Consultants Private Limited Kolkata, India		 Signature		Reference Drawings	Drawing No - KDP/DPR/STR/BR/AMUWA/DD-15
			In Association With Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited		Checked By	Mr. S.M.			
						Mr. H.B.	 Signature	Chainage: 285+725	Sheet No.1 /2



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

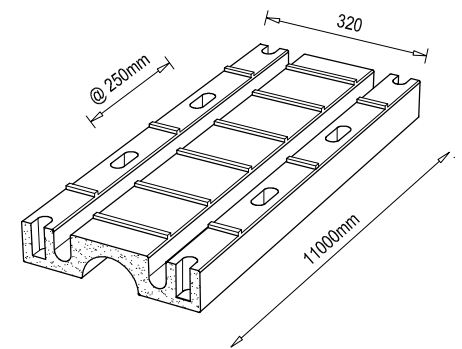


ELEVATION VIEW



SEAL TYPE EXPANSION JOINTS ARRANGEMENT IN A CARRIAGEWAY

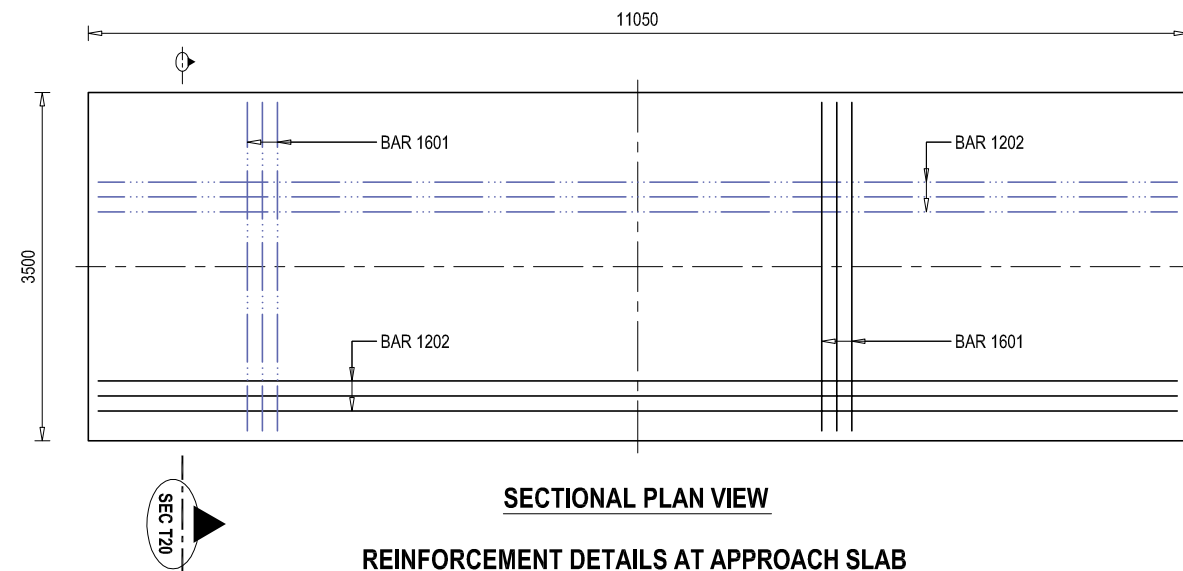
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EXPANSION JOINT ISOMETRIC VIEW

- SEAL TYPE

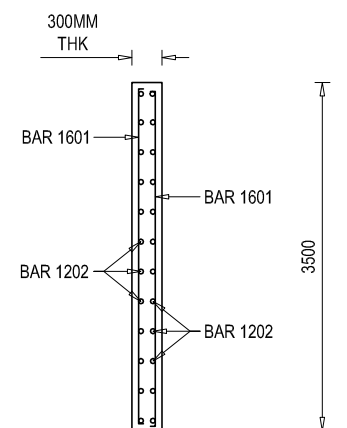
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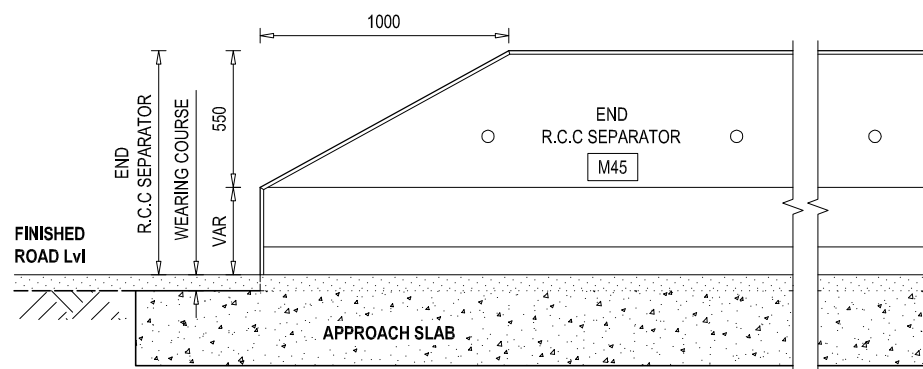
SECTIONAL PLAN VIEW

REINFORCEMENT DETAILS AT APPROACH SLAB

SCALE - 1 : 100 @ A3 PAPER

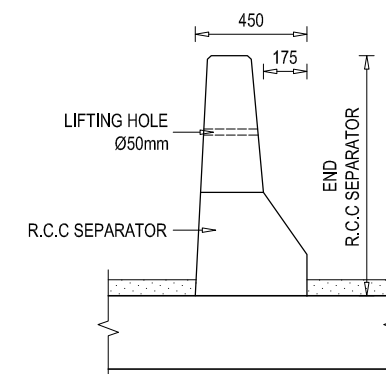


SECTIONAL ELEVATION VIEW AT SEC T20



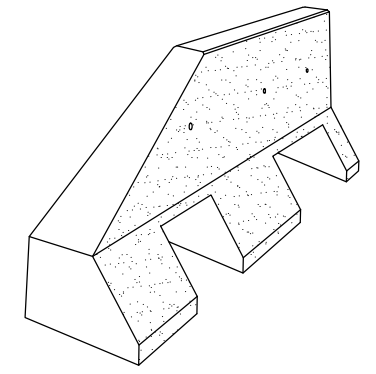
ELEVATION VIEW OF END R.C.C SEPARATOR

SCALE - 1 : 40 @ A3 PAPER



SIDE VIEW

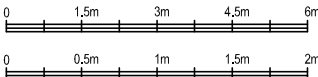
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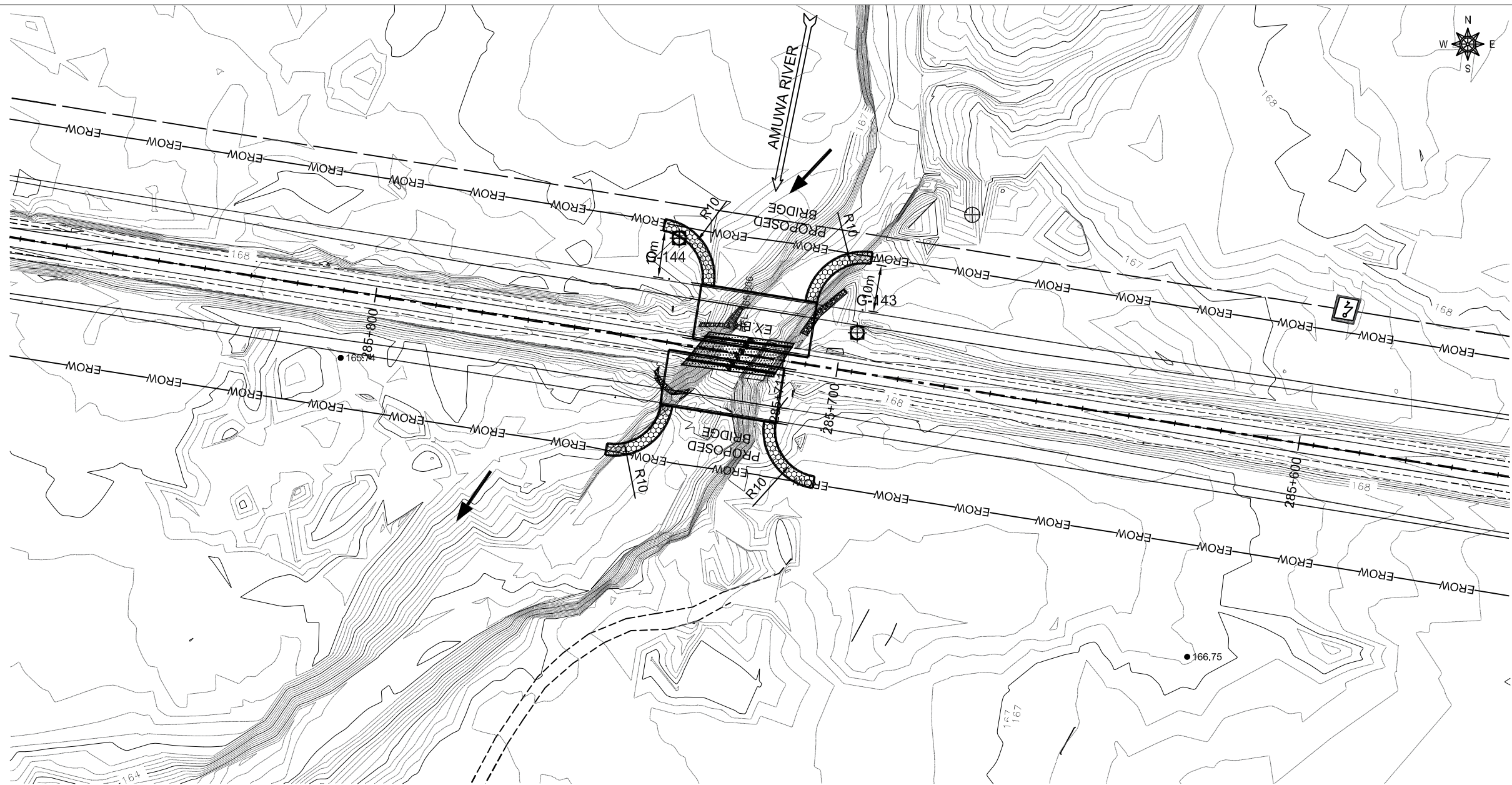
END R.C.C SEPARATOR ISOMETRIC VIEW

SCALE - NON

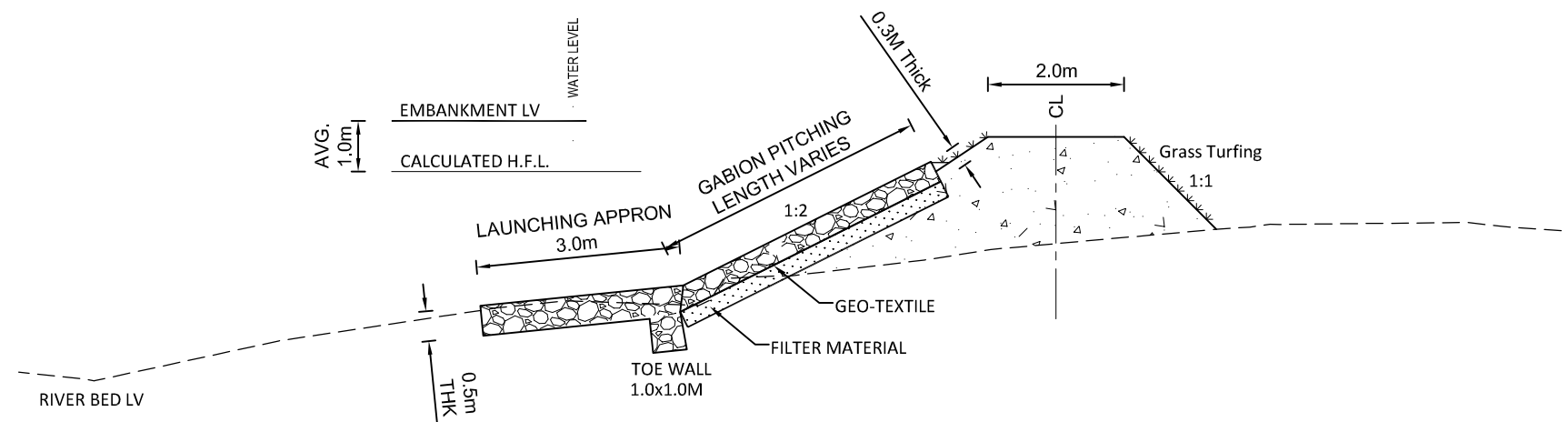
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamab-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of  EPTISA Servicios De Ingenieria Madrid, Spain  STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited	Mr. R.A.	MISCELLANEOUS DETAILS OF BRIDGE OVER RIVER AMUWA	AS SHOWN	21.04.2023
			Checked By	Reference Drawings	Chainage:	Drawing No.-
			Approved By	KDP/DPR/STR/BR/AMUWA/DD-9	285+725	KDP/DPR/STR/BR/AMUWA/DD-15
						Sheet No. 2/2



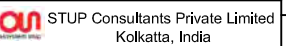
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhakkebar-Pathihalya Road Section (130 KM) of Mahendra Highway and Bridges	DESIGN CONSULTANTS		Designed By Mr. R.A. Nac.No. - 6431 CIVIL 'W' Signature Checked By Mr. S.M. Signature Approved By Mr. H.B. Signature	Drawing Name WING WALL DETAILS OF BRIDGE OVER RIVER AMUWA Reference Drawings	Scale: AS SHOWN Chainage: 285+725	Date: 22.04.2023 Drawing No.- KDP/DPR/STR/BR/AMUWA/DD-16 Sheet No. 1 / 1
		Joint Venture of					
		 EPTISA Servicios De Ingeniera Madrid, Spain	 STUP Consultants Private Limited Kolkatta, India				
		In Association With Udaya Consultancy, Geocom International, Sundar Krti Consultant and Rays Consultant Private Limited					



TOPOGRAPHIC MAP

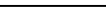


SECTION OF EMBANKMENT
SCALE - 1x : 5x

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Mr. R.A.	Signature	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of  EPTISA Servicios De Ingenieria Madrid, Spain  STUP Consultants Private Limited Kolkatta, India In Association With Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited	Checked By	Mr. S.M.	Signature	RIVER TRAINING WORKS OF BRIDGE OVER RIVER AMUWA	1:1000	21.04.2023
			Approved By	Mr. H.B.	Signature	Reference Drawings	Chainage: 285+725	Drawing No.- KDP/DPR/STR/BR/AMUWA/DD- 17
								Sheet No. 1 / 1

Bearing Design Data for 25m Span and 11.85m width

Load Condition	Items	Under	On each Neoprene Bearing	Unit
Under No Live Load	V	NO EQ.	60.54	Ton
		EQ.	69.62	Ton
	H _L	NO EQ.	-	Ton
		EQ.	13.62	Ton
	H _T	NO EQ.	-	Ton
		EQ.	13.62	Ton
	θ	NO EQ.	0.00250	radian
		EQ.	0.00288	radian
	Δ		14.57	mm
Under Maximum Live Load	V	NO EQ.	103.45	Ton
		EQ.	113.82	Ton
	H _L	NO EQ.	-	Ton
		EQ.	0.00	Ton
	H _T	NO EQ.	-	Ton
		EQ.	0.00	Ton
	θ	NO EQ.	0.00388275	radian
		EQ.	0.00447	radian
	Δ		24.23	mm

 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	PROJECT NAME	DESIGN CONSULTANTS		Designed By	Mr. R.A.	 Signature	Drawing Name BEARING DESIGN DATA OF BRIDGE OVER RIVER AMUWA	Scale: 1:1000	Date: 21.04.2023
	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlalya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of			Checked By				
		 EPTISA Servicios De Ingeniera Madrid, Spain	 STUP Consultants Private Limited Kolkatta, India						
		In Association With Udaya Consultancy, Geocom International, Sundar Krti Consultant and Rays Consultant Private Limited		Approved By	Mr. H.B.	 Signature	Reference Drawings	Chainage: 285+725	Drawing No.- KDP/DPR/STR/BR/AMUWA/DD- 18
				Sheet No.1 / 1					