



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- Jagadav Branch
Volume-2
Detailed Drawing

April,2023

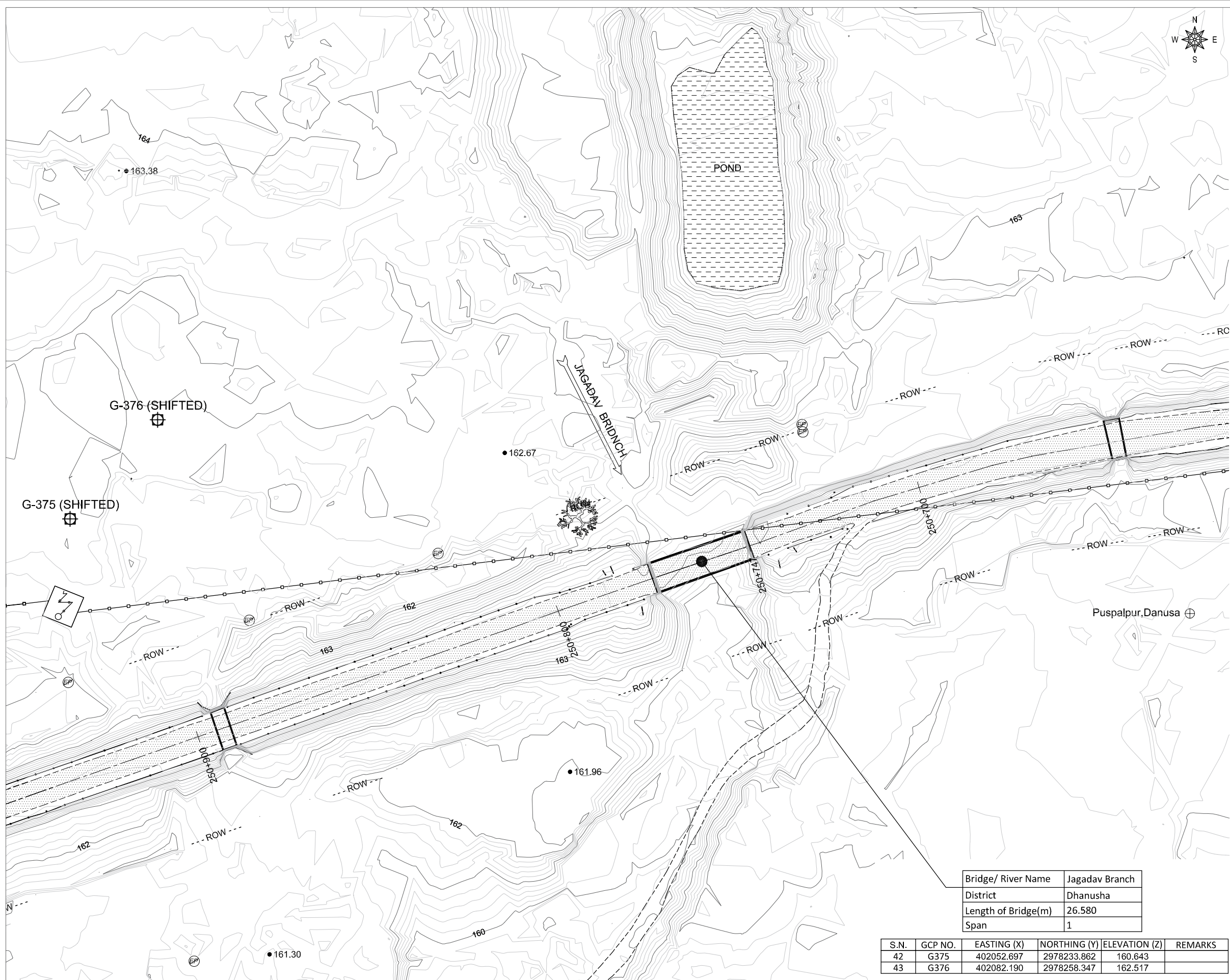
Joint Venture Of:

eptisa EPTISA Servicios De Ingenieria
Madrid, Spain

STUP STUP Consultants Private Limited
India

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

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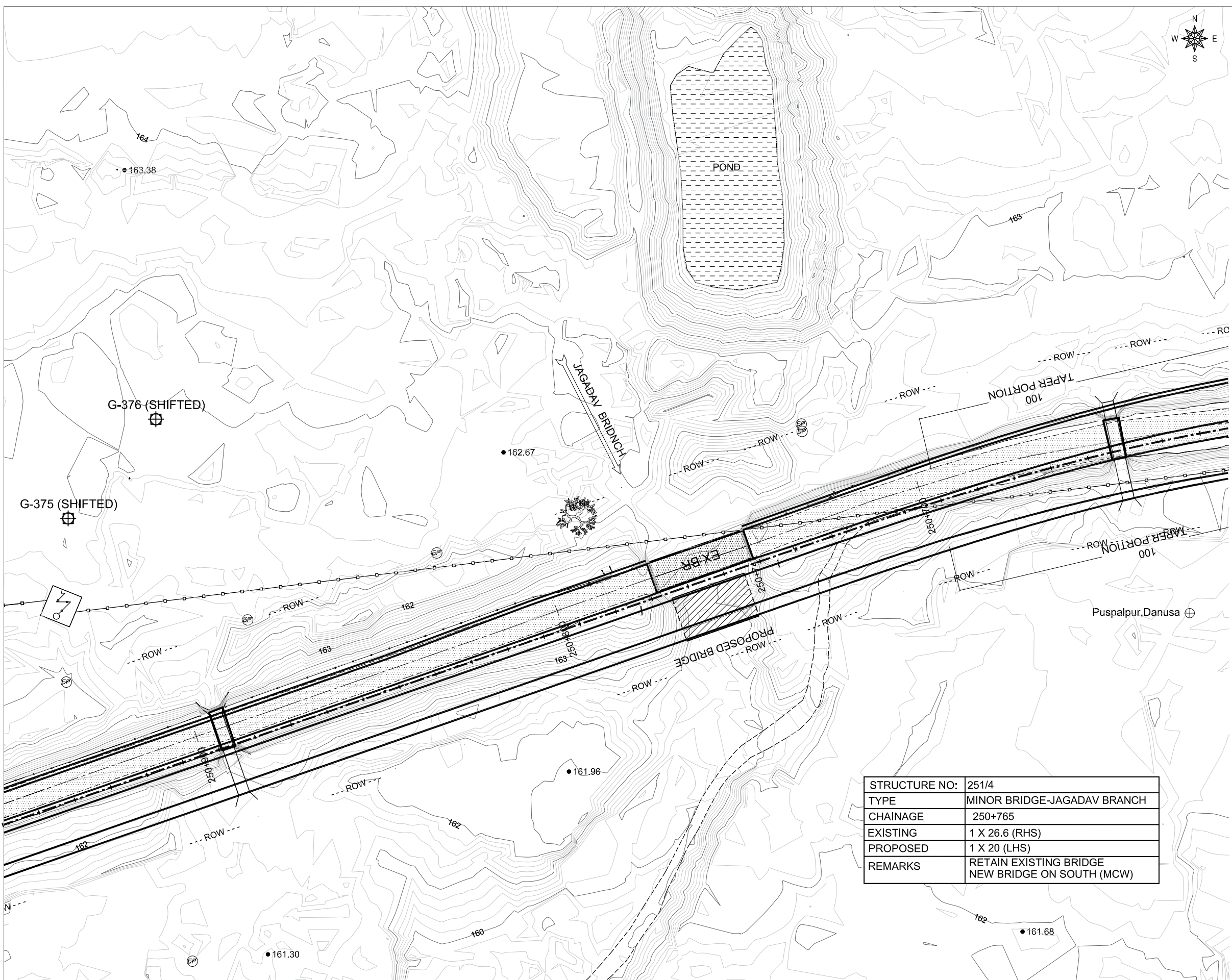
PROJECT KEY MAP

DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL
MAIN FOOT TRAIL		ANIMAL FARM	
PLACE NAME		BAMBOO	
POLICE STATION		BIO GAS	
PETROL PUMP		BUS WAITING STATION	
Pond/ Water Body		BRIDGE	
POULTRY FARM		CONTOUR	
PROPERTY BOUNDARY		CANAL	
ROAD INFORMATION BOARD		CULVERT	
RIVER		CONTROL POINT (G)	
SPOT HEIGHT		CRUSHER	
SHED		DELINETOR	
SAFTY TANK		ELECTRIC POLE	
SCHOOL		FACTORY	
STREET LIGHT		FEEDAR ROAD	
TAP		FISH FARM	
TEMPORARY HOUSE		FLOW DIRECTION	
TREE		GABION WALL	
TRANSMISSION LINE TOWER		HOSPITAL	
WELL		HAND PUMP	
TEMPLE		HOUSE	
CGI SHEET HOUSE		HOADING BOARD	
TOILET		CARRIAGE WAY	
WOODEN HOUSE		HUT	
WATER TANK		INDEX CONTOUR	
TRANSFORMER		KILOMETER POST	
SHOULDER		MONASTERY	

Bridge/ River Name	Jagadav Branch
District	Dhanusha
Length of Bridge(m)	26.580
Span	1

S.N.	GCP NO.	EASTING (X)	NORTHING (Y)	ELEVATION (Z)	REMARKS
42	G375	402052.697	2978233.862	160.643	
43	G376	402082.190	2978258.347	162.517	

	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 Kolkatta, India	Designed By	Mr. R.A. Nec.No. 6431 CIVIL 'A' 	Drawing Name DETAILED SURVEY TOPOGRAPHIC MAP(EXISTING CONDITION) OF BRIDGE OVER RIVER JAGADAV BRANCH Reference Drawings	Scale: AS SHOWN Chainage: 250+765	Date: 12.03.2023 Drawing No.- KDP/DPR/STR/BR/JAGADAV BRANCH/DD- 2 Sheet No.1 / 1
				Checked By	Mr. S.M. 			
				Approved By	Mr. H.B. 			



DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL
MAIN FOOT TRAIL		ANIMAL FARM	
PLACE NAME		BAMBOO	
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TOILET		CARRIAGE WAY	
WOODEN HOUSE		HUT	
WATER TANK		INDEX CONTOUR	
TRANSFORMER		KILOMETER POST	
SHOULDER		MONASTERY	

STRUCTURE NO:	251/4
TYPE	MINOR BRIDGE-JAGADAV BRANCH
CHAINAGE	250+765
EXISTING	1 X 26.6 (RHS)
PROPOSED	1 X 20 (LHS)
REMARKS	RETAIN EXISTING BRIDGE NEW BRIDGE ON SOUTH (MCW)

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			In Association With Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited		Checked By Mr. S.M. Signature			
					Approved By Mr. H.B. Signature			

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) - 11.01 CUMECs
2. HFL - 162.44 M
3. FREE BOARD (MINIMUM) - 1 M
4. MAXIMUM SCOUR LEVEL:
ABUTMENT - 161.150m

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 20 = 20 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 - 179 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:

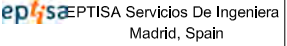
- a) FOR M 30 GRADE CONCRETE : 57.2 ϕ
b) FOR M 35 GRADE CONCRETE : 51.48 ϕ
c) FOR M 40 GRADE CONCRETE : 48.62 ϕ

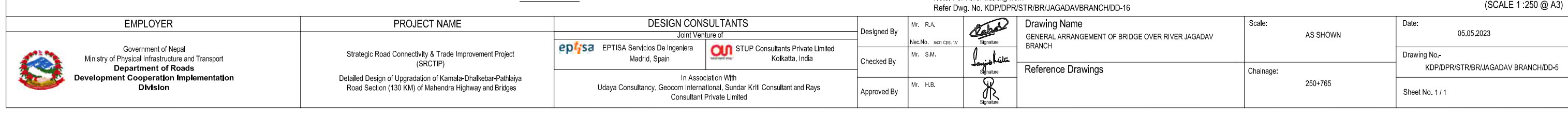
(WHERE ϕ IS THE DIAMETER OF THE BAR)

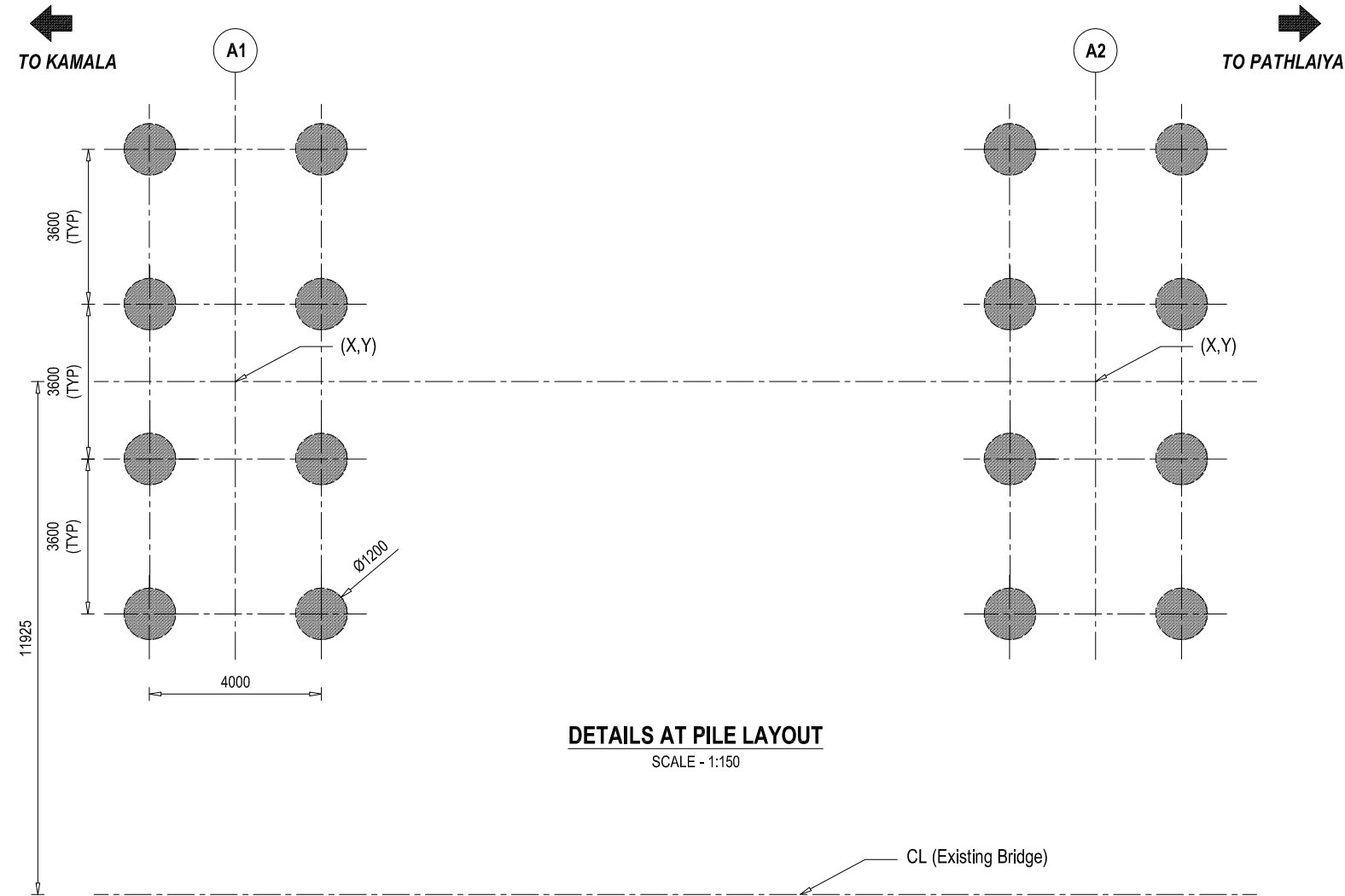
15. LAP LENGTH SHALL BE INCREASED BY A FACTOR BASED ON THE PERCENTAGE OF LAPPED BAR RELATIVE TO THE TOTAL CROSS SECTIONAL AREA. LAP LENGTH FOR DIFFERENT GRADE OF CONCRETE AS WELL AS DIFFERENT PERCENTAGE OF LAP LENGTH ARE AS FOLLOWS:

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

16. THE LAP LENGTH SHALL BE STAGGERED BY MINIMUM DISTANCE OF 1.3 TIMES THE LAP LENGTH.
17. HELICAL REINFORCEMENT SHALL BE LAPPED BY 1.5 TURNS.
18. INSTEAD OF LAPPING SPLICING OF REINFORCEMENT CAN BE DONE WITH WELDED JOINT AS PER CL. 15.2.5.2 OF IRC 112-2020. WELD LENGTH SHALL NOT BE LESS THAN 18D.
19. SHARP EDGES OF CONCRETE TO BE CHAMFERED MINIMUM 50 X 50

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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  EPTISA Servicios De Ingenieria Madrid, Spain  STUP Consultants Private Limited Kolkatta, India	Checked By	Mr. S.M.		GENERAL NOTES OF BRIDGE OVER RIVER JAGADAV BRANCH	AS SHOWN	05.05.2023
		In Association With Udaya Consultancy, Geocom International, Sundar Krti Consultant and Rays Consultant Private Limited	Approved By	Mr. H.B.		Reference Drawings —	Chainage: 250+765	Drawing No.- KDP/DPR/STR/BR/JAGADAV BRANCH/DD-4
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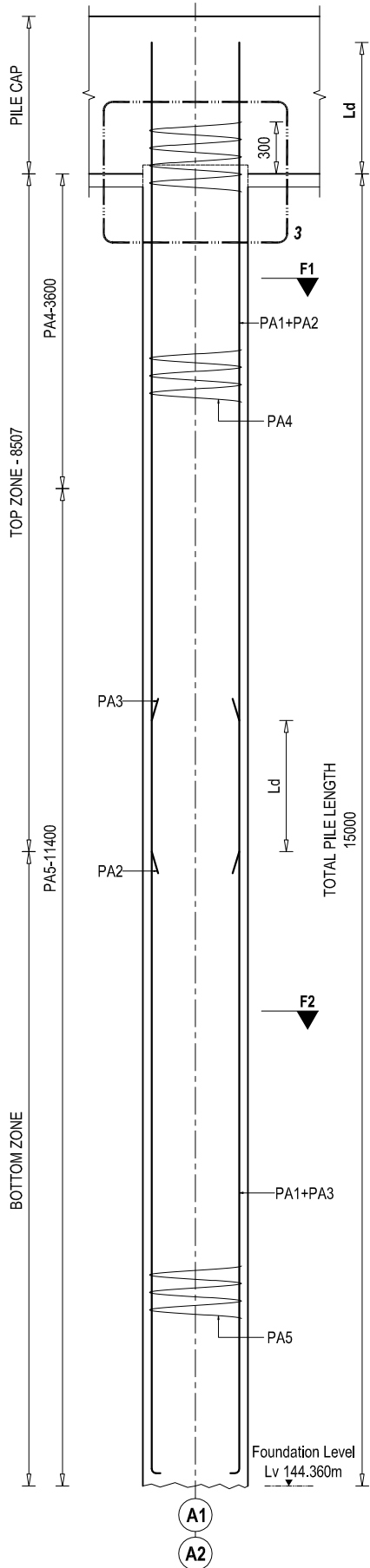
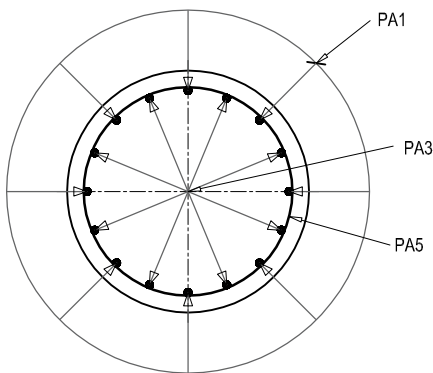
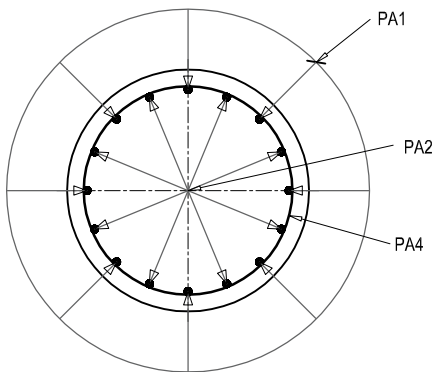
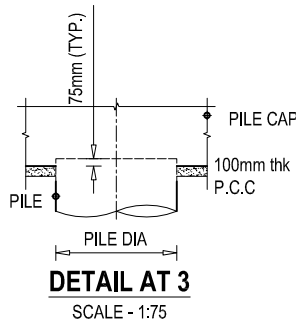
BAR BENDING SCHEDULE OF ABUTMENT PILE								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	PA1		25		16.950	8	3.858	523.15
2	PA2		25		10.232	8	3.858	315.802
3	PA3		12		8.218	8	0.889	58.44
4	PA4		16	110	3.448	47	1.580	256.11
5	PA5		12	110	3.448	90	0.889	275.86
TOTAL (KG) :								1429.37
No. of Pile								8.00
TOTAL WEIGHT (KG) :								11434.93

PILE CAPACITY (INDIVIDUAL)		
SN.	DIA (mm)	CAPACITY (Ton)
1	1200	179

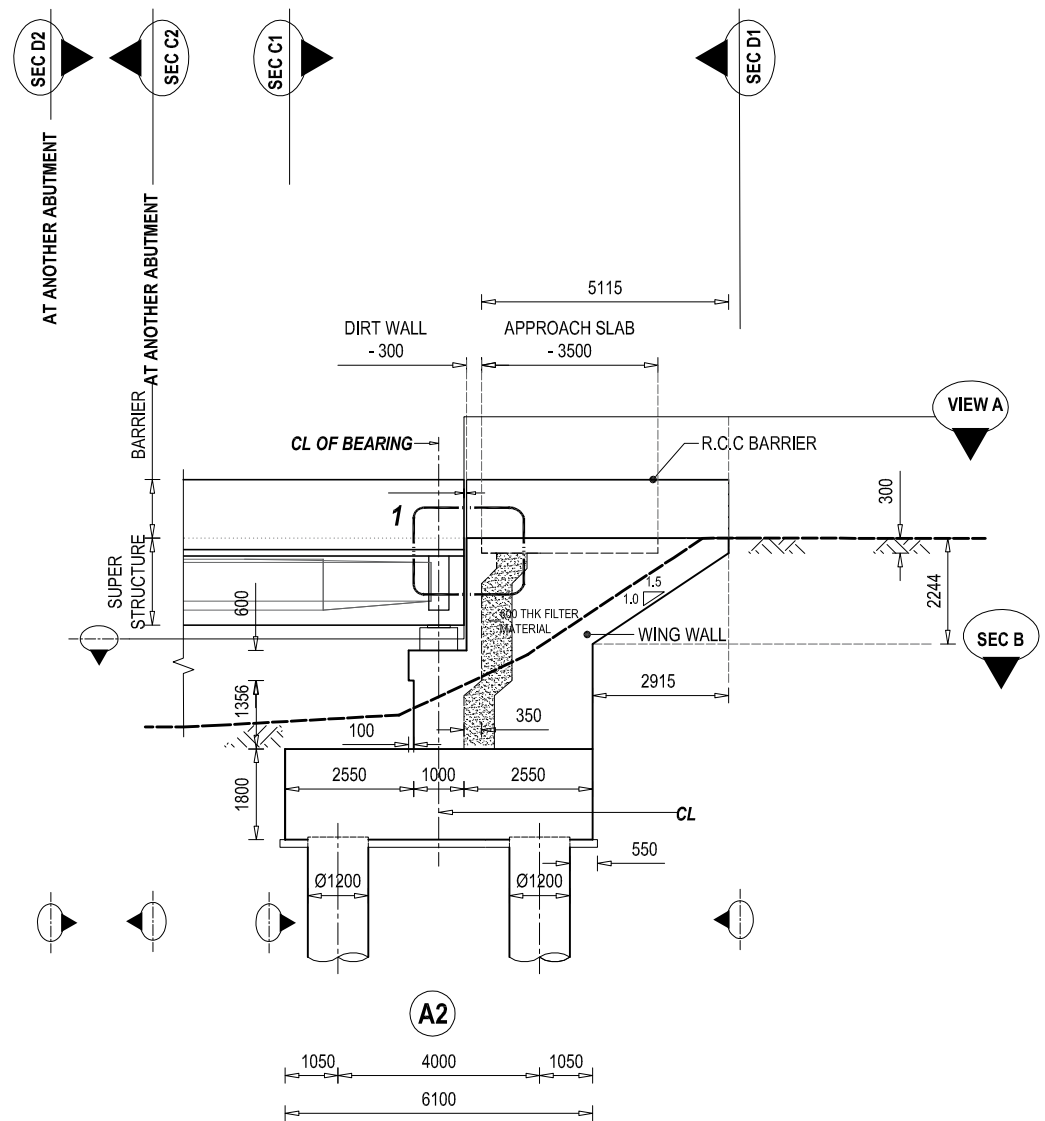
CO ORDINATES OF PILE LOCATION OF PROPOSED BRIDGE

SN.	ABUTMENT/PIER	EASTING (X)	NORTHING (Y)
1	ABUTMENT (A1)	402331.241	2978289.242
2	ABUTMENT (A2)	402308.842	2978281.453

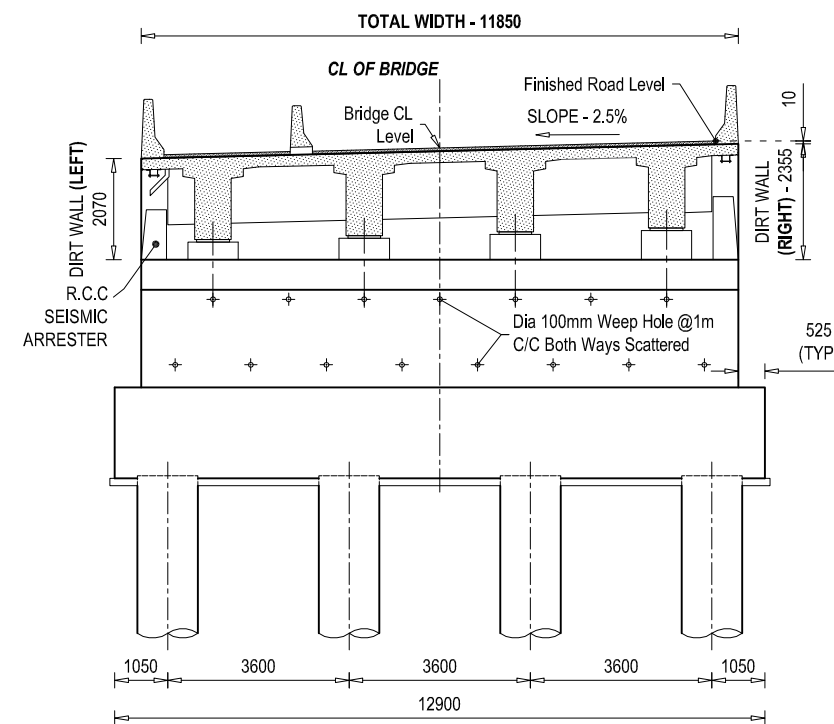
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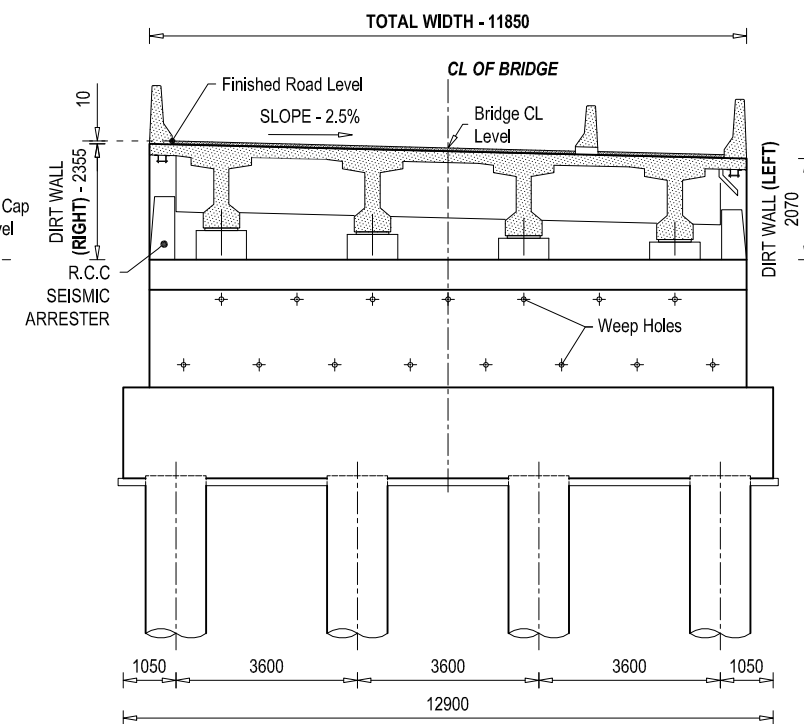
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									KDP/DPR/STR/BR/JAGADAV BRANCH/DD-9	250+765	KDP/DPR/STR/BR/JAGADAV BRANCH/DD-6
											Sheet No. 1 / 1



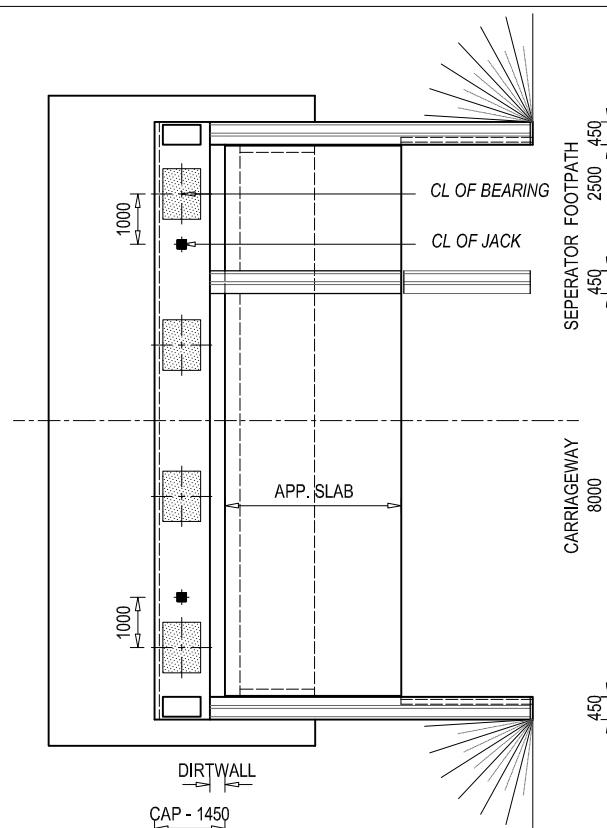
OUTLINE DETAILS OF ABUTMENT
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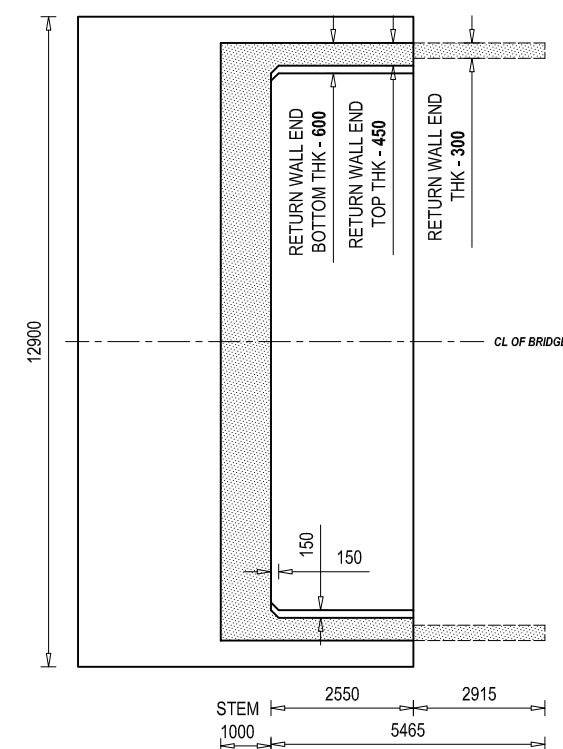
SECTIONAL VIEW AT C1 - C1
SCALE - 1: 150



SECTIONAL VIEW AT C2 - C2
SCALE - 1: 150



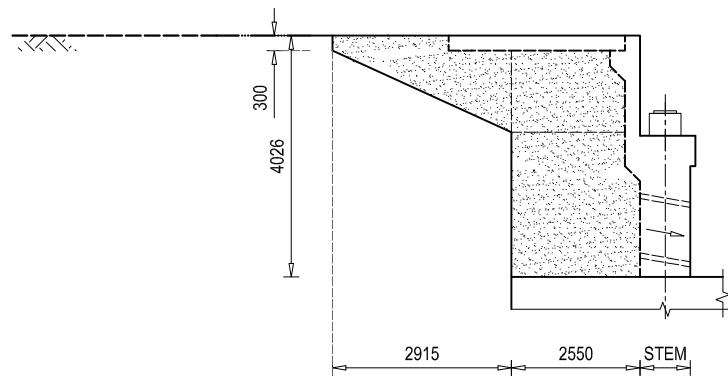
VIEW AT A
SCALE - 1: 150



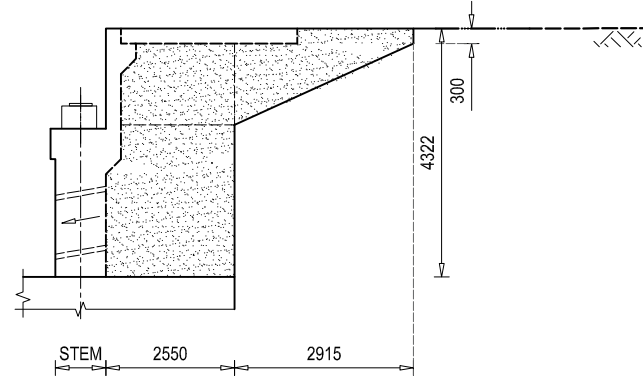
SECTIONAL VIEW AT B - B
SCALE - 1: 150

NOTE
READ THIS DRAWING IN CONJUNCTION WITH
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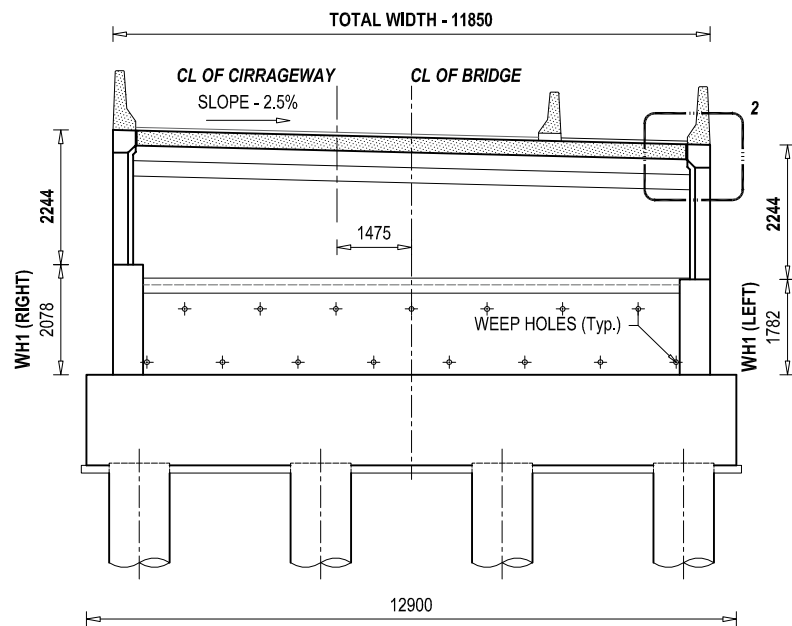


VIEW AT E1
SCALE - 1: 150

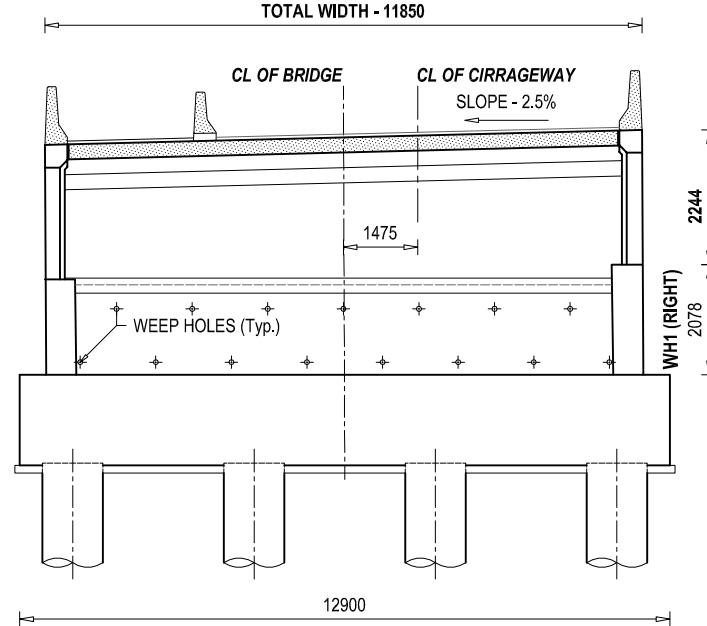


VIEW AT E2
SCALE - 1: 150

DETAIL AT RETURN WALL

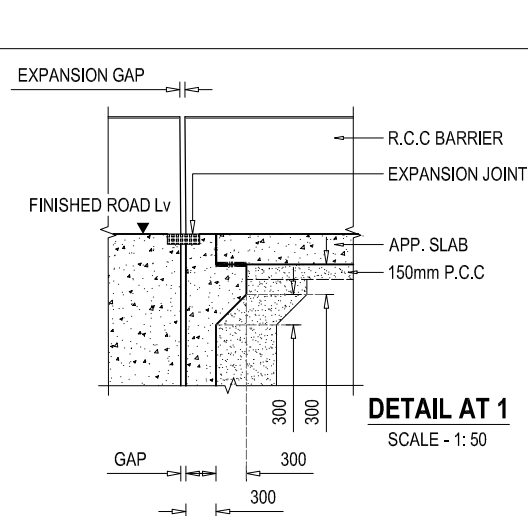


SECTIONAL VIEW AT D1 - D1
SCALE - 1: 150

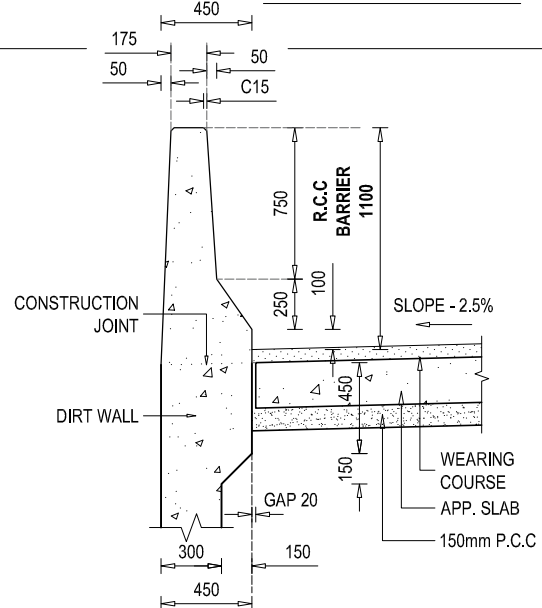


SECTIONAL VIEW AT D2 - D2
SCALE - 1: 150

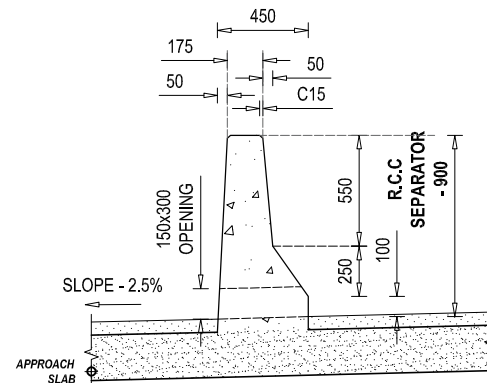
DETAIL AT DIRT WALL



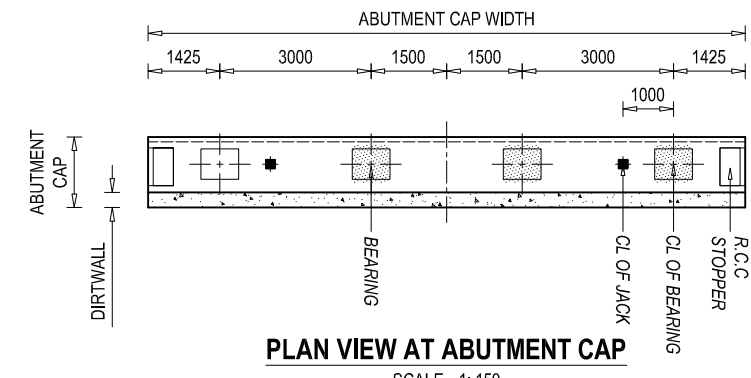
DETAIL AT 1
SCALE - 1: 50



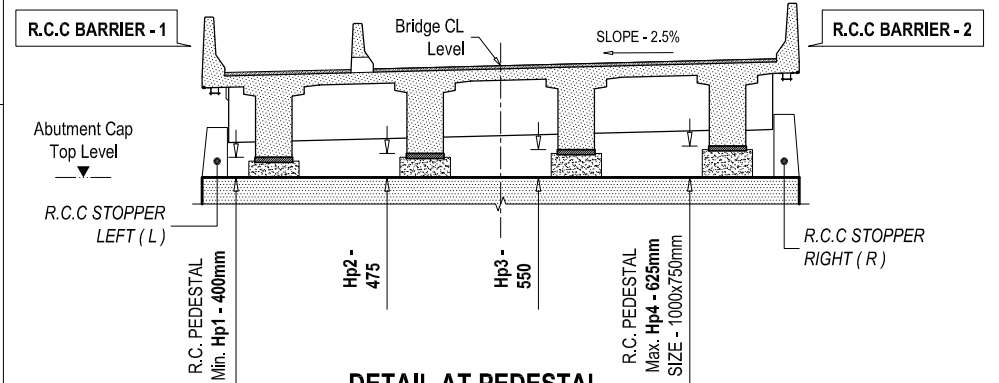
**DETAIL SECTIONAL VIEW
AT R.C.C BARRIER - 1**
SCALE - 1: 25



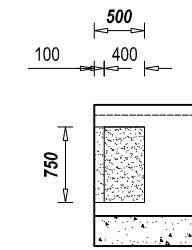
**DETAIL SECTIONAL VIEW
AT R.C.C SEPARATOR**
SCALE - 1: 25



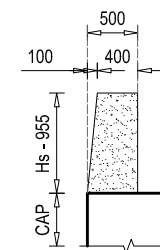
PLAN VIEW AT ABUTMENT CAP
SCALE - 1: 150



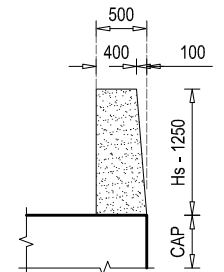
DETAIL AT PEDESTAL
SCALE - 1: 150



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

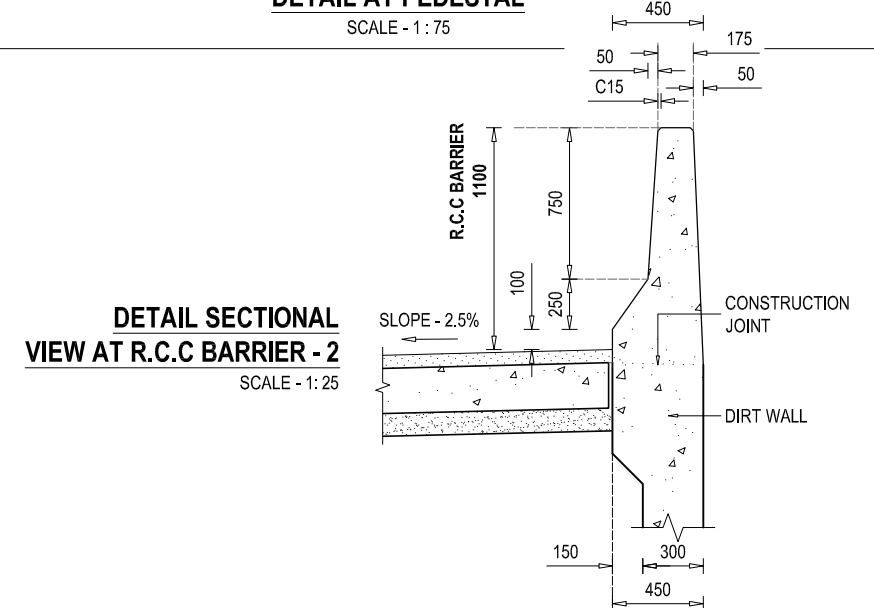


**R.C.C SEISMIC ARRESTER - LEFT
ELEVATION VIEW**



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

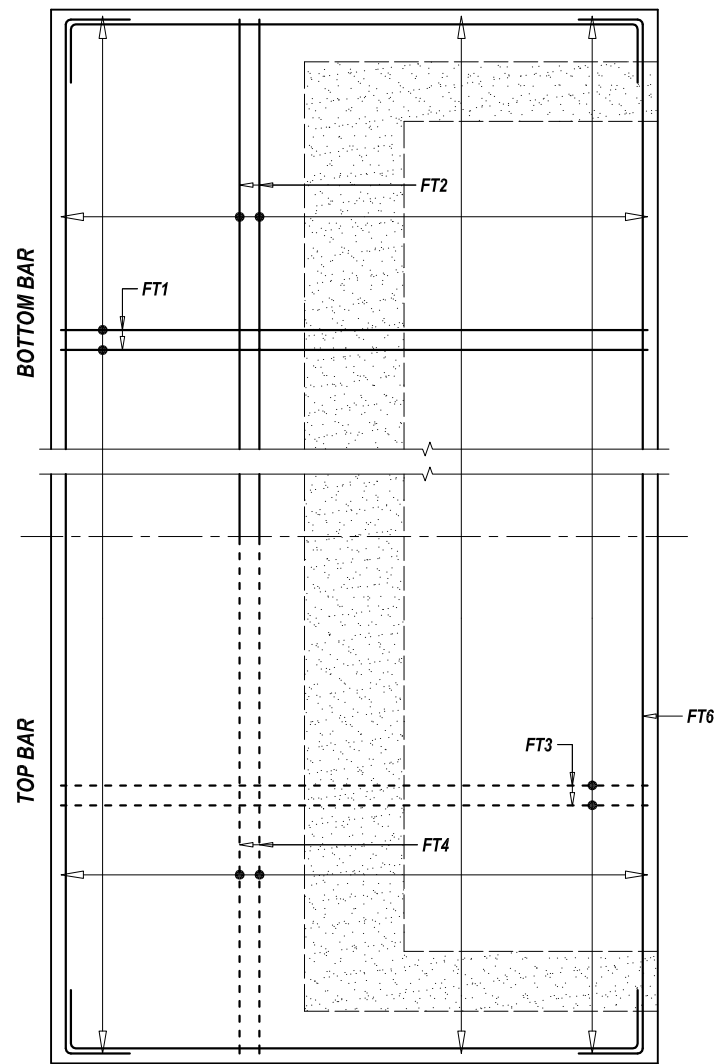
DETAIL AT PEDESTAL
SCALE - 1: 75



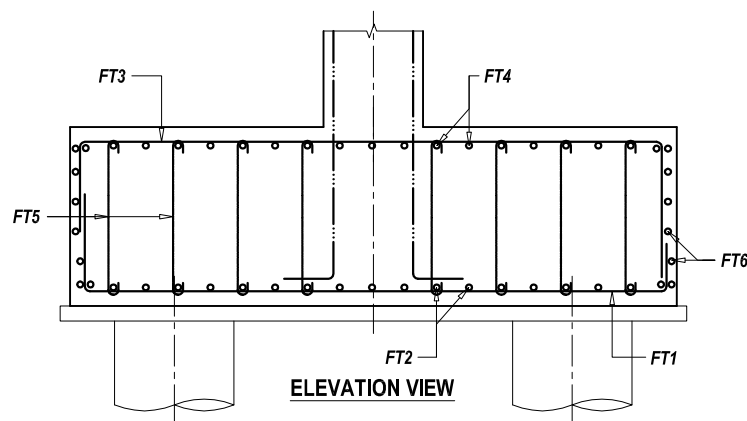
**DETAIL SECTIONAL
VIEW AT R.C.C BARRIER - 2**
SCALE - 1: 25

NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/JAGADAV BRANCH/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 Kritt Consultant and Rays Consultant Private Limited	Mr. R.A. Mr. S.M. Mr. H.B.	ABUTMENT DETAILS OF BRIDGE OVER RIVER JAGADAV BRANCH Reference Drawings KDP/DPR/STR/BR/JAGADAV BRANCH/DD-9	AS SHOWN Chainage: 250+765	05.05.2023 Drawing No.- KDP/DPR/STR/BR/JAGADAV BRANCH/DD-7 Sheet No. 2 / 2



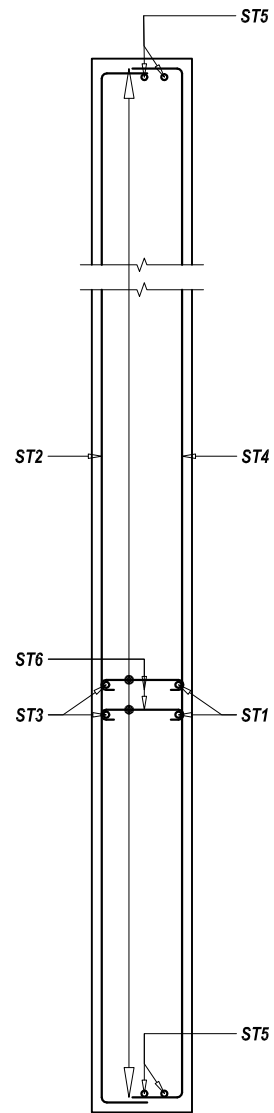
PLAN VIEW



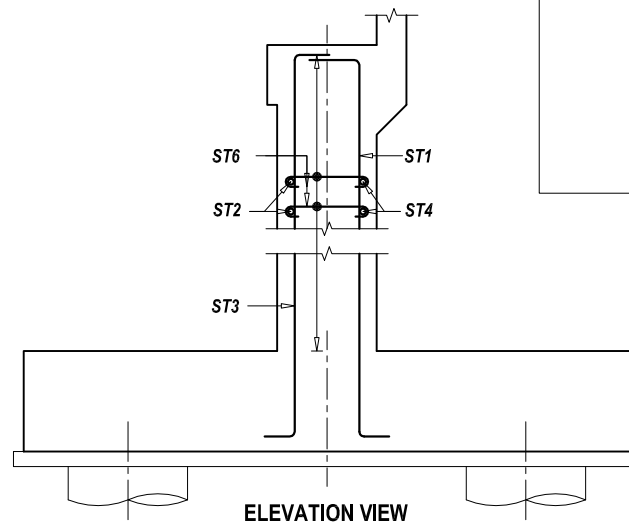
BAR DETAIL OF PILE CAP

SCALE - 1 : 75

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

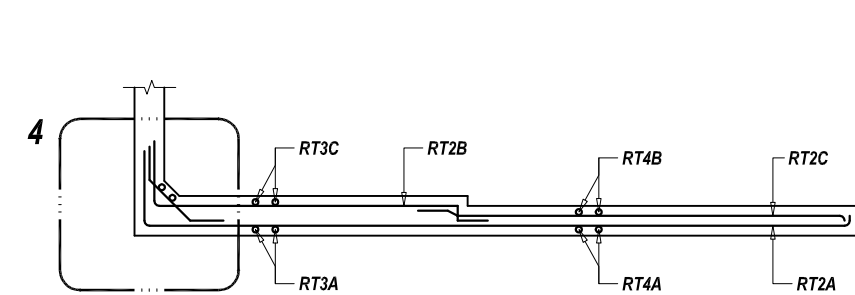


SECTIONAL PLAN VIEW

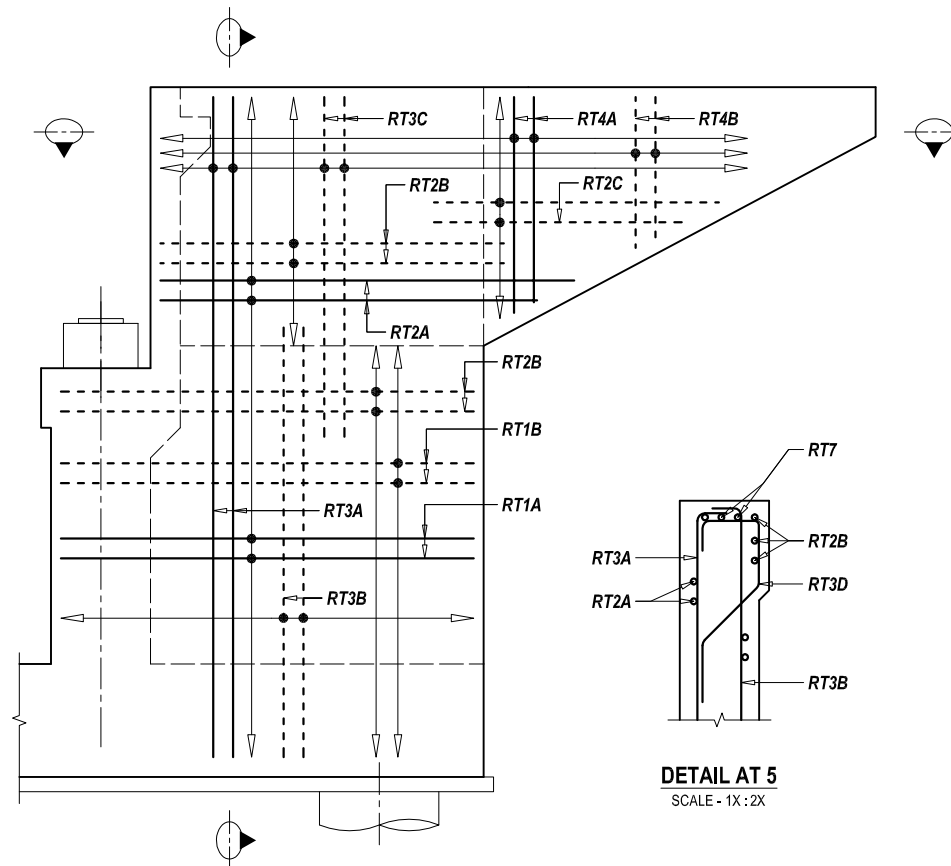


BAR DETAIL AT ABUTMENT STEM

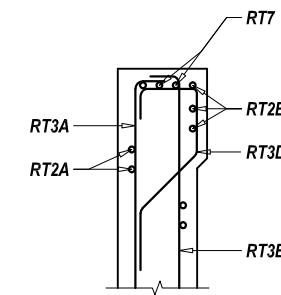
SCALE - 1 : 75



SECTIONAL PLAN VIEW



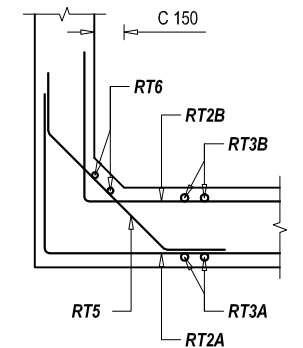
ELEVATION VIEW



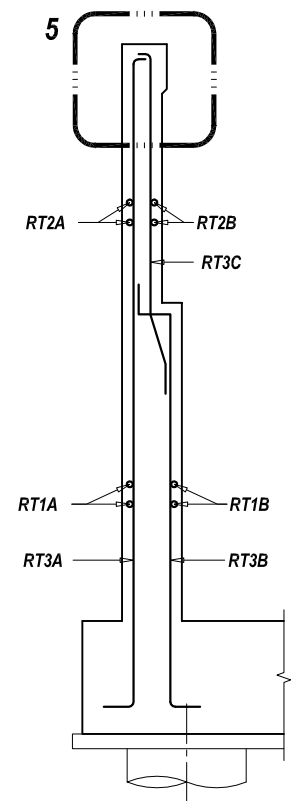
DETAIL AT 5
SCALE - 1X : 2X

BAR DETAIL AT RETURN WALL

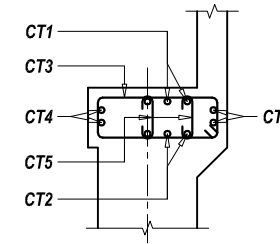
SCALE - 1 : 75



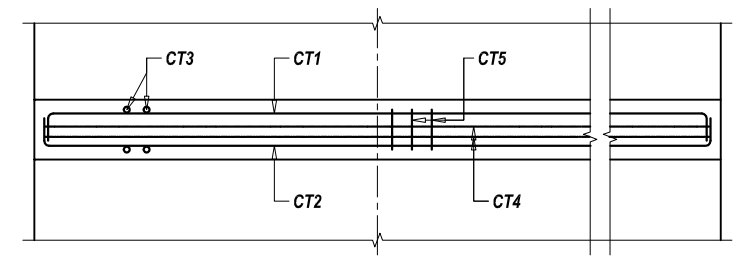
DETAILS AT 4



SECTIONAL SIDE VIEW



ELEVATION VIEW



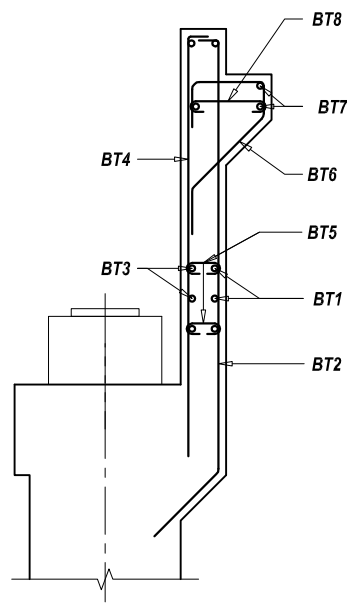
FRONT VIEW

BAR DETAIL AT ABUTMENT CAP

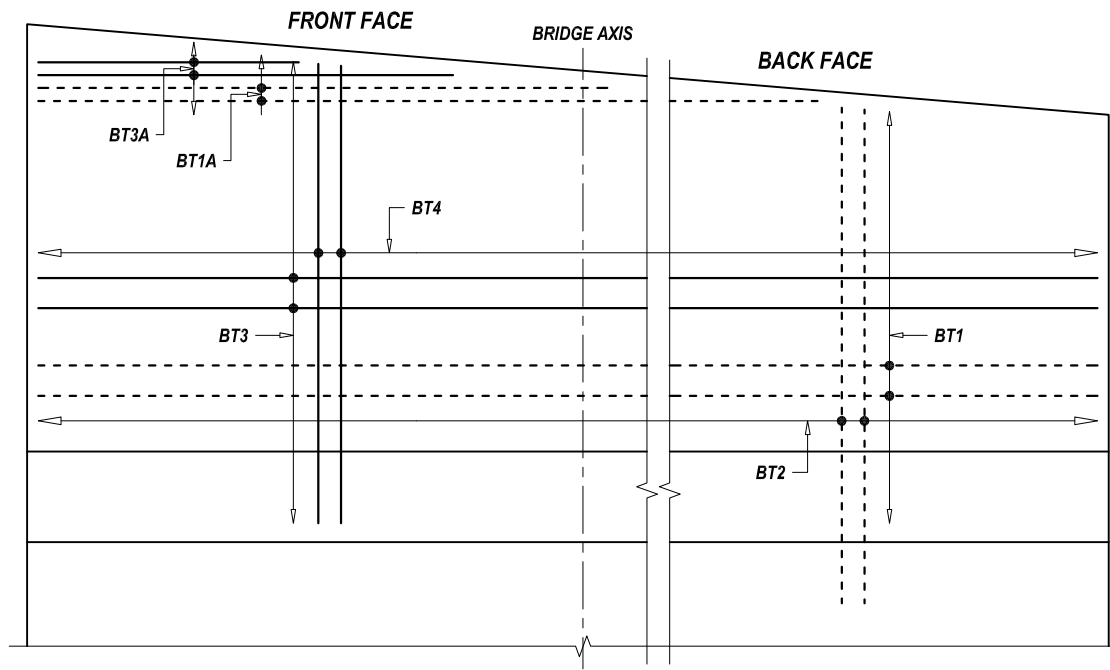
SCALE - 1 : 75

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

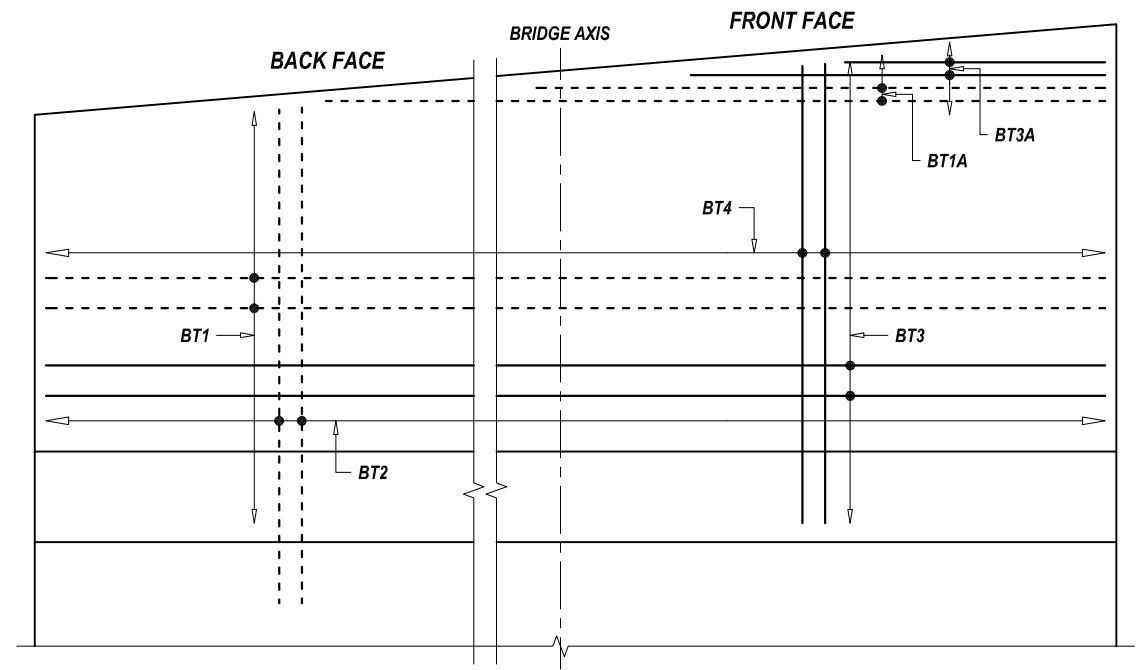
EMPLOYER Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	PROJECT NAME Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Patilaia Road Section (130 KM) of Mahendra Highway and Bridges	DESIGN CONSULTANTS Joint Venture of EPTISA Servicios De Ingeniera Madrid, Spain STUP Consultants Private Limited Kolkatta, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Designed By Mr. R.A. Nec.No. 6431 CR/IL/1K Checked By Mr. S.M. Approved By Mr. H.B.	Drawing Name ABUTMENT REINFORCEMENT DETAILS OF BRIDGE OVER RIVER JAGADAV BRANCH Reference Drawings KDP/DPR/STR/BR/JAGADAV BRANCH/DD-9	Scale: AS SHOWN Chainage: 250+765	Date: 05.05.2023 Drawing No.- KDP/DPR/STR/BR/JAGADAV BRANCH/DD-8 Sheet No. 1 / 2
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SECTIONAL SIDE VIEW



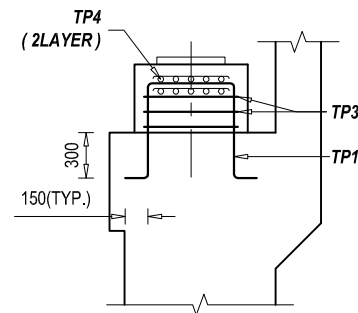
ELEVATION VIEW / VIEW AT D1



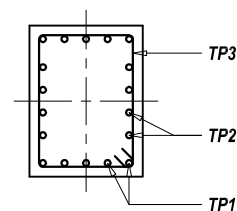
ELEVATION VIEW / VIEW AT D2

BAR DETAIL AT DIRT WALL

SCALE - 1 : 50

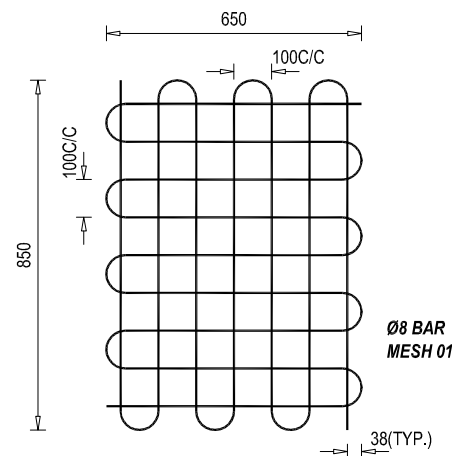


SECTIONAL SIDE VIEW



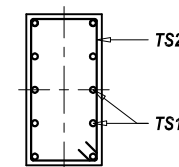
SECTIONAL PLAN VIEW
BAR DETAIL AT PEDESTAL

SCALE - 1 : 50

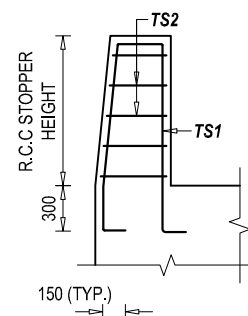


REINFORCEMENT DETAILS OF
BEARING MESH

SCALE - 1 : 50

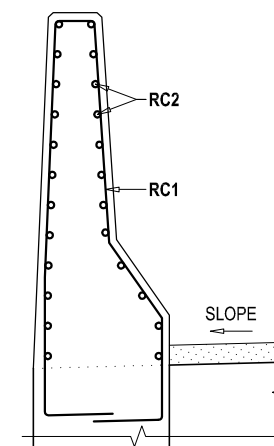


SECTIONAL PLAN VIEW



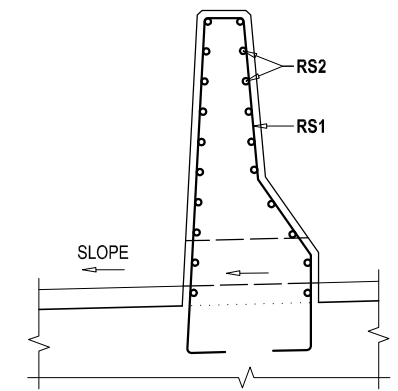
R.C.C STOPPER LEFT
ELEVATION VIEW

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

NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/JAGADAV BRANCH/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-Pathlajaya 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	Mr. S.M. Checked By Mr. H.B. Approved By	Signature Signature Signature	ABUTMENT REINFORCEMENT DETAILS OF BRIDGE OVER RIVER JAGADAV BRANCH Reference Drawings KDP/DPR/STR/BR/JAGADAV BRANCH/DD-9	AS SHOWN Chainage: 250+765	05.05.2023 Drawing No.- KDP/DPR/STR/BR/JAGADAV BRANCH/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	16	1.580	303.41
2	BT 1A	Avg. 5850 150	16	200	6.000	3	1.580	28.44
3	BT 2	150 2703 Avg. 450	16	125	3.303	96	1.580	501.08
4	BT 3	150 11700 150	16	200	12.000	12	1.580	227.56
5	BT 3A	Avg. 5850 150	16	200	6.000	3	1.580	28.44
6	BT 4	150 2778 Avg.	12	125	2.928	96	0.889	249.86
7	BT 5	100 150 100	12	500	0.350	96	0.889	29.87
8	BT 6	200 450 220 200 756	12	200	1.826	61	0.889	99.01
9	BT 7	11700	16		11.700	5	1.580	92.44
10	BT 8	100 450 100	12	200	0.650	120	0.889	69.33
TOTAL (KG) :								1629.44

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

BAR BENDING SCHEDULE OF ABUTMENT STEM								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	ST 1	300 3606 750	20		4.656	120	2.469	1379.56
2	ST 2	500 11700 500	16	190	12.700	8	1.580	160.55
3	ST 3	300 3606 750	16		4.656	120	1.580	882.92
4	ST 4	500 11700 500	16	190	12.700	8	1.580	160.55
5	ST 5	300 3606 750	16		4.656	14	1.580	103.01
6	ST 6	100 850 100	12	Ver. 425 Hor.425	1.050	112	0.889	104.53
TOTAL (KG) :								2791.12

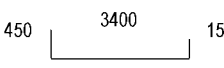
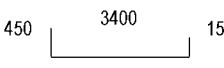
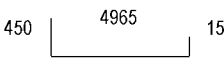
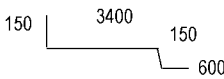
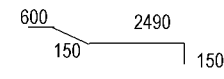
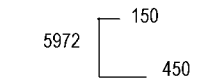
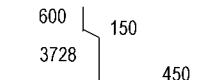
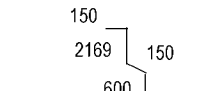
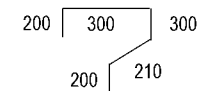
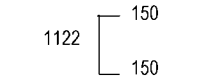
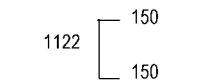
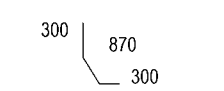
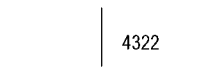
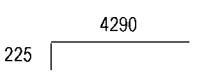
BAR BENDING SCHEDULE OF PILE CAP								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	FT 1	900 5950 900	25		7.750	100	3.858	2989.97
2	FT 2	900 12750 900	20		14.550	50	2.469	1796.30
3	FT 3	900 5950 900	16		7.750	100	1.580	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

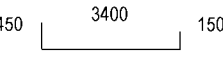
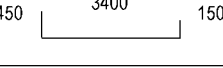
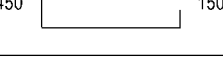
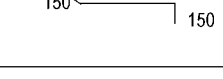
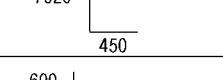
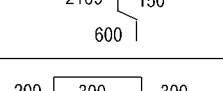
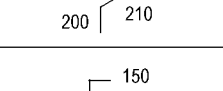
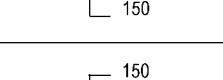
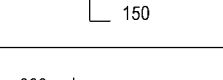
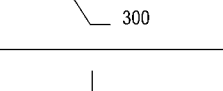
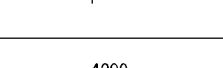
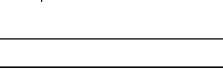
BAR BENDING SCHEDULE OF PEDESTAL								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TP 1	150 950 650 Avg.	16	150	2.850	6	1.580	27.02
1	TP 2	150 700 650 Avg.	16	150	2.350	8	1.580	29.71
2	TP 3	950 700 100	16	150	3.500	3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

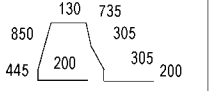
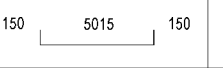
BAR BENDING SCHEDULE OF RCC SEISMIC ARRESTER - LEFT								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TS1-L	1010 400 1270 300 150 150	16	150	3.280	6	1.580	31.10
2	TS2-L	400 700 100	12	150	2.400	7	0.889	14.93
TOTAL (KG)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

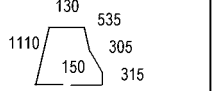
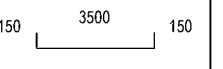
BAR BENDING SCHEDULE OF RCC SEISMIC ARRESTER - RIGHT								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TS1-R	1260 400 1525 300 150 150	16	150	3.785	6	1.580	35.89
2	TS2-R	400 700 100	12	150	3.400	9	0.889	27.20
TOTAL (KG)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

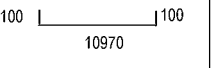
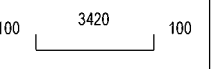
EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		Designed By		Drawing Name		Scale:		Date:	
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamata-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of		EPTISA Servicios De Ingeniera Madrid, Spain		STUP Consultants Private Limited Kolkatta, India		ABUTMENT BAR BENDING SCHEDULE OF BRIDGE OVER RIVER JAGADAV BRANCH		AS SHOWN		05.05.2023	
		In Association With		Udaya Consultancy, Geocom International, Sundar Krilli Consultant and Rays Consultant Private Limited		Reference Drawings		Chainage:		250+765		Sheet No. 1 / 2	

BAR BENDING SCHEDULE OF RETURN WALL - LEFT								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RT1A		12	150	4.000	29	0.889	103.11
2	RT1B		12	150	4.000	29	0.889	103.11
3	RT2A		12	150	5.565	16	0.889	79.15
4	RT2B		12	150	4.300	16	0.889	61.16
5	RT2C		12	150	3.390	16	0.889	48.21
6	RT3A		12	150	6.572	18	0.889	105.15
7	RT3B		12	150	4.928	18	0.889	78.85
8	RT3C		12	150	3.069	18	0.889	49.10
9	RT3D		12	150	1.210	36	0.889	38.72
10	RT4A		12	150	1.422	36	0.889	45.50
11	RT4B		12	150	1.422	36	0.889	45.50
12	RT5		12	150	1.470	45	0.889	58.80
13	RT6		12		4.322	2	0.889	7.68
14	RT7		20		4.515	4	2.469	44.59
TOTAL (KG) :								868.65

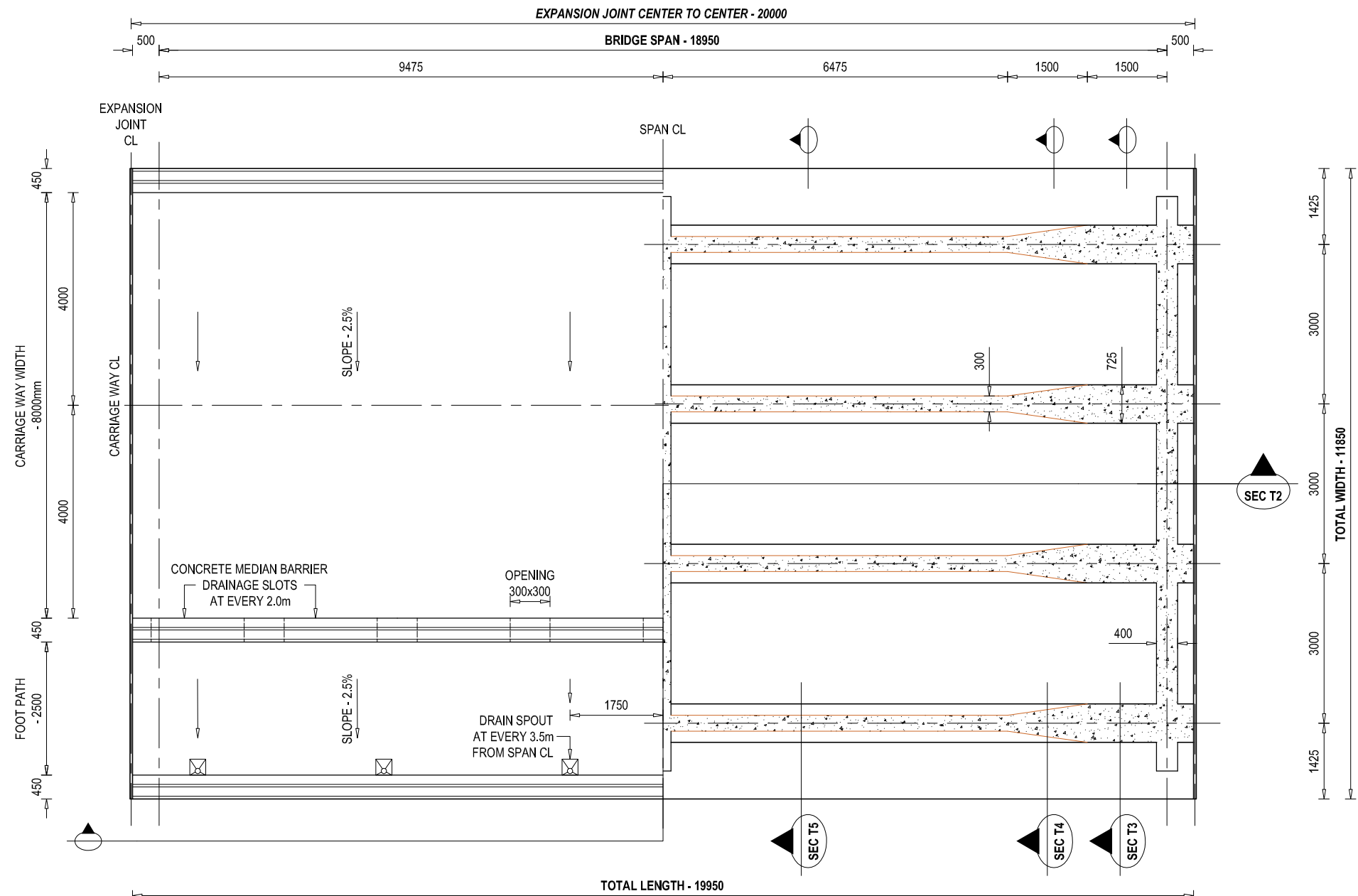
BAR BENDING SCHEDULE OF RETURN WALL - RIGHT								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RT1A		12	150	4.000	27	0.889	96.00
2	RT1B		12	150	4.000	27	0.889	96.00
3	RT2A		12	150	5.565	16	0.889	79.15
4	RT2B		12	150	4.300	16	0.889	61.16
5	RT2C		12	150	3.390	16	0.889	48.21
6	RT3A		12	150	8.520	18	0.889	136.32
7	RT3B		12	150	6.876	18	0.889	110.02
8	RT3C		12	150	3.069	18	0.889	49.10
9	RT3D		12	150	1.210	36	0.889	38.72
10	RT4A		12	150	1.422	36	0.889	45.50
11	RT4B		12	150	1.422	36	0.889	45.50
12	RT5		12	150	1.422	45	0.889	56.88
13	RT6		12		6.270	2	0.889	11.15
14	RT7		20		4.515	4	2.469	44.59
TOTAL (KG) :								918.30

BAR BENDING SCHEDULE OF R.C.C BARRIER								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RC1		16	150	3.170	35	1.580	175.33
2	RC2		10	150	5.315	18	0.617	59.06
TOTAL (KG) :								234.38

BAR BENDING SCHEDULE OF R.C.C SEPARATOR								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RS1		16	150	2.695	25	1.580	106.47
2	RS2		10	150	3.800	18	0.617	42.22
TOTAL (KG) :								148.69

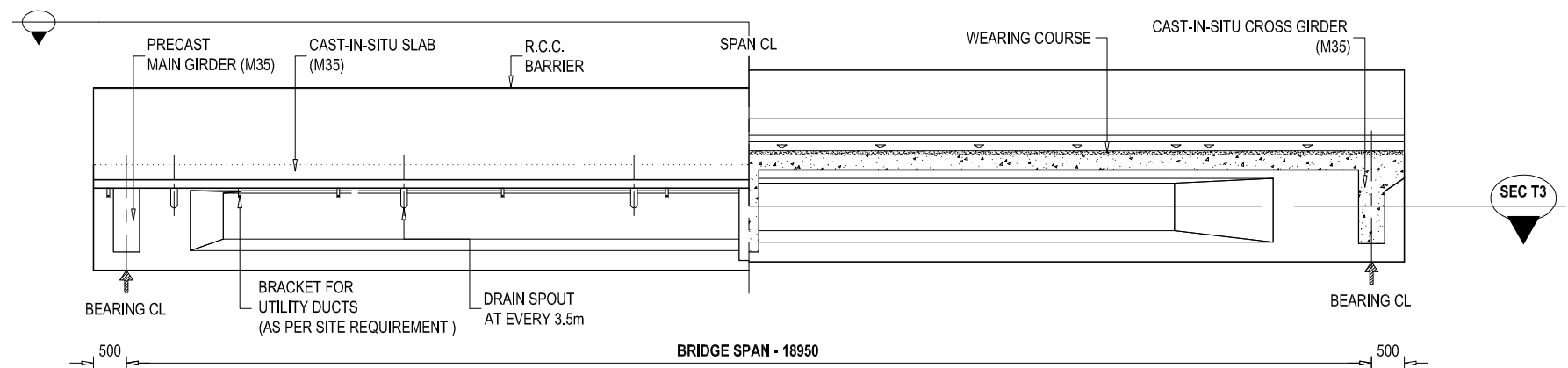
BAR BENDING SCHEDULE OF APPROACH SLAB								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	1601		16	150	11.170	48	1.580	847.27
2	1202		12	150	3.620	150	0.889	482.67
TOTAL (KG) :								1329.93

EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		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-Dhakkebar-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 JAGADAV BRANCH	AS SHOWN	05.05.2023		
		EPTISA Servicios De Ingeniera Madrid, Spain		Checked By	Mr. S.M.				 Signature	Drawing No.- KDP/DPR/STR/BR/JAGADAV BRANCH/DD-9	
		STUP Consultants Private Limited Kolkata, India		Approved By	Mr. H.B.					Sheet No. 2 / 2	
In Association With Udaya Consultancy, Geocom International, Sundar Krilli Consultant and Rays Consultant Private Limited						Reference Drawings			Chainage:	250+765	



HALF SECTIONAL PLAN VIEW OF SUPERSTRUCTURE AT SEC T1

SCALE - 1 : 100 @ A3 PAPER

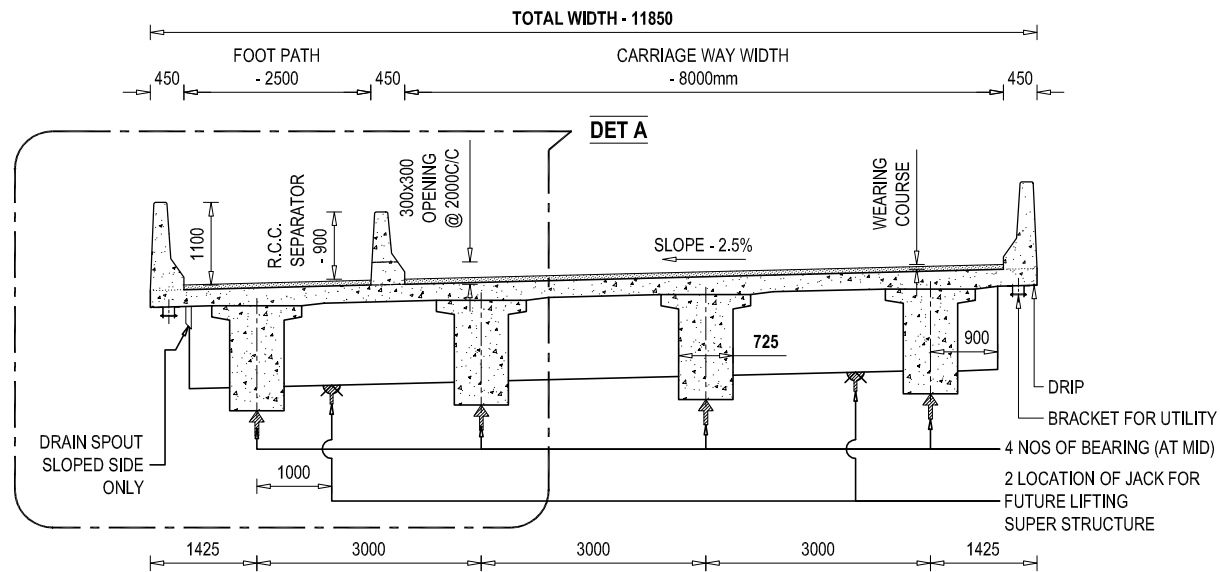


HALF ELEVATION SECTIONAL VIEW OF SUPERSTRUCTURE AT SEC T2

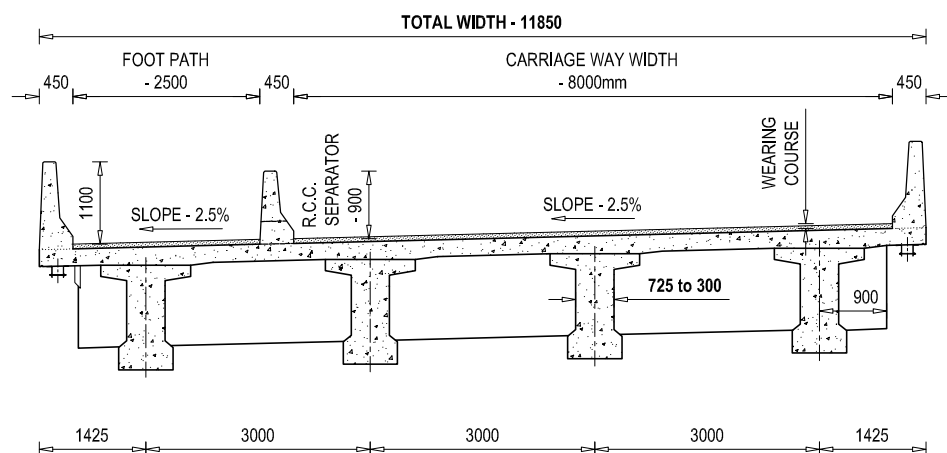
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NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/JAGADAV BRANCH/DD-4

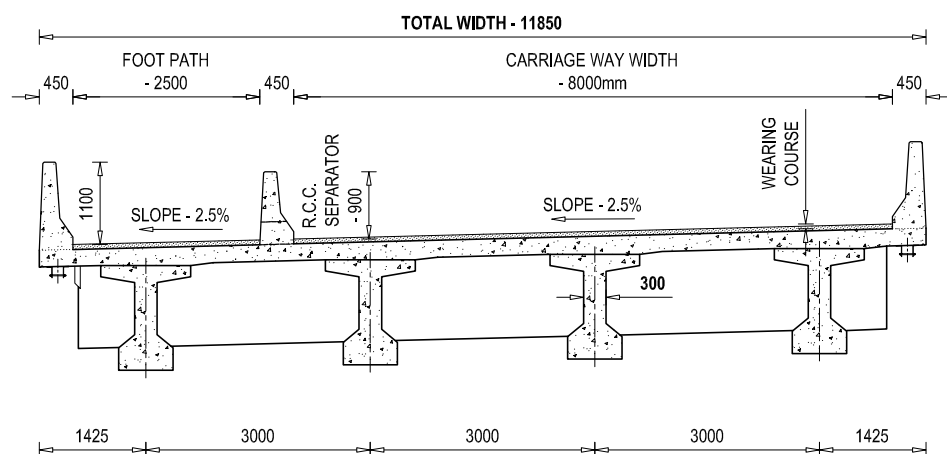
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Mr. R.A.	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed 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 Kolkatta, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Checked By	Mr. S.M.	SUPER STRUCTURE DETAILS OF BRIDGE OVER RIVER JAGADAV BRANCH	AS SHOWN	05.05.2023
			Approved By	Mr. H.B.	Reference Drawings KDP/DPR/STR/BR/JAGADAV BRANCH/DD-14	Chainage: 250+765	Drawing No.: KDP/DPR/STR/BR/JAGADAV BRANCH/DD-10
							Sheet No. 1 / 2



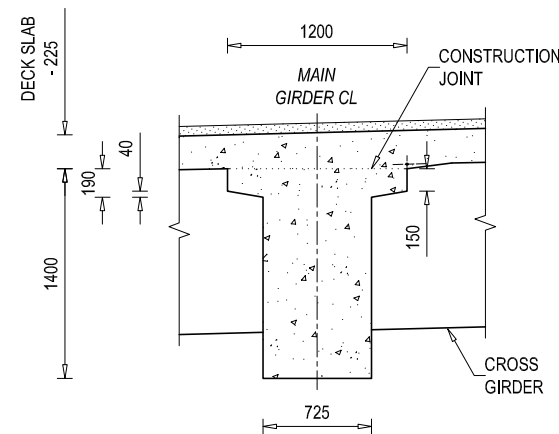
SECTIONAL VIEW AT T3
SCALE - 1 : 100 @ A3 PAPER



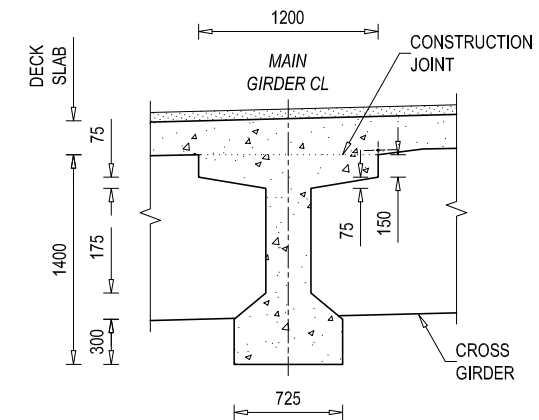
SECTIONAL VIEW AT T4
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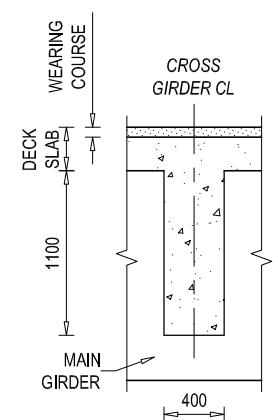
SECTIONAL VIEW AT T5
SCALE - 1 : 100 @ A3 PAPER



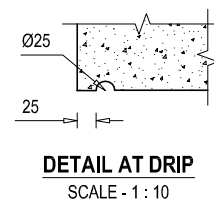
LONGITUDINAL GIRDER - SECTIONAL DETAIL AT END
SCALE - 1 : 50 @ A3 PAPER



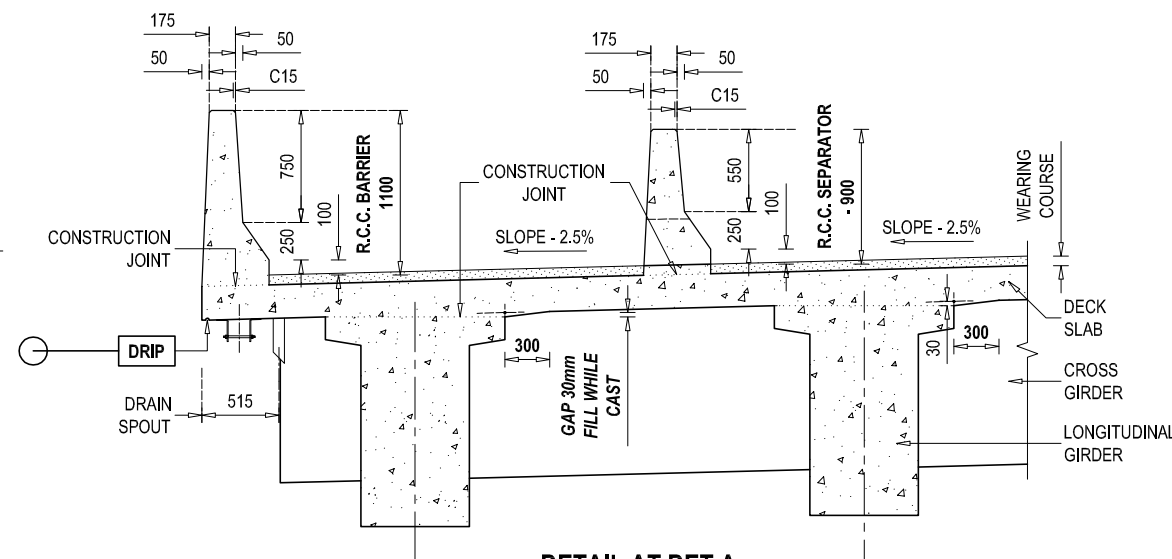
LONGITUDINAL GIRDER - SECTIONAL DETAIL AT MID
SCALE - 1 : 50 @ A3 PAPER



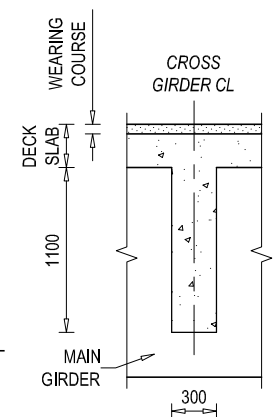
END CROSS GIRDER - SECTIONAL DETAIL
SCALE - 1 : 50



DETAIL AT DRIP
SCALE - 1 : 10



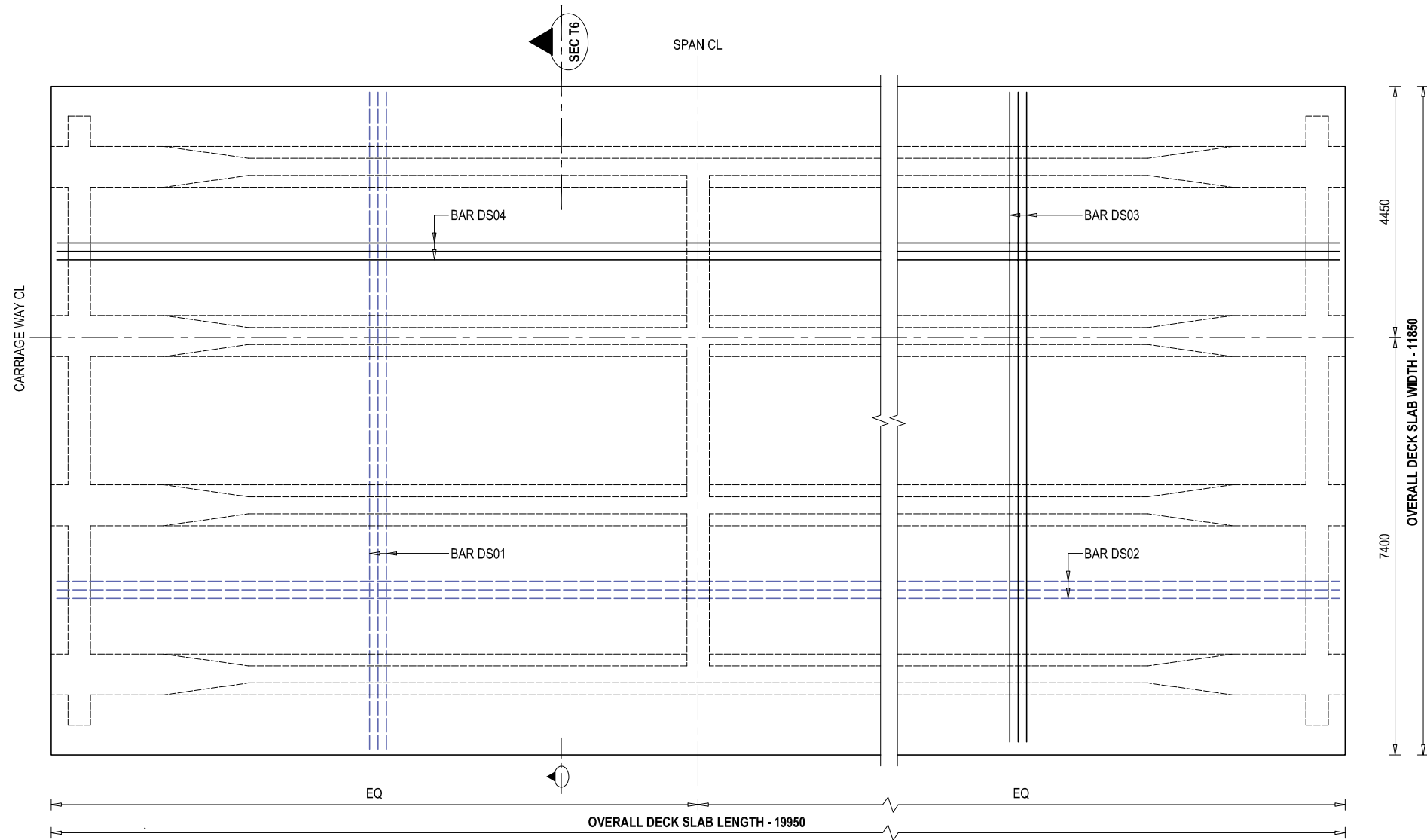
DETAIL AT DET A
SCALE - 1 : 50



MID CROSS GIRDER - SECTIONAL DETAIL
SCALE - 1 : 50

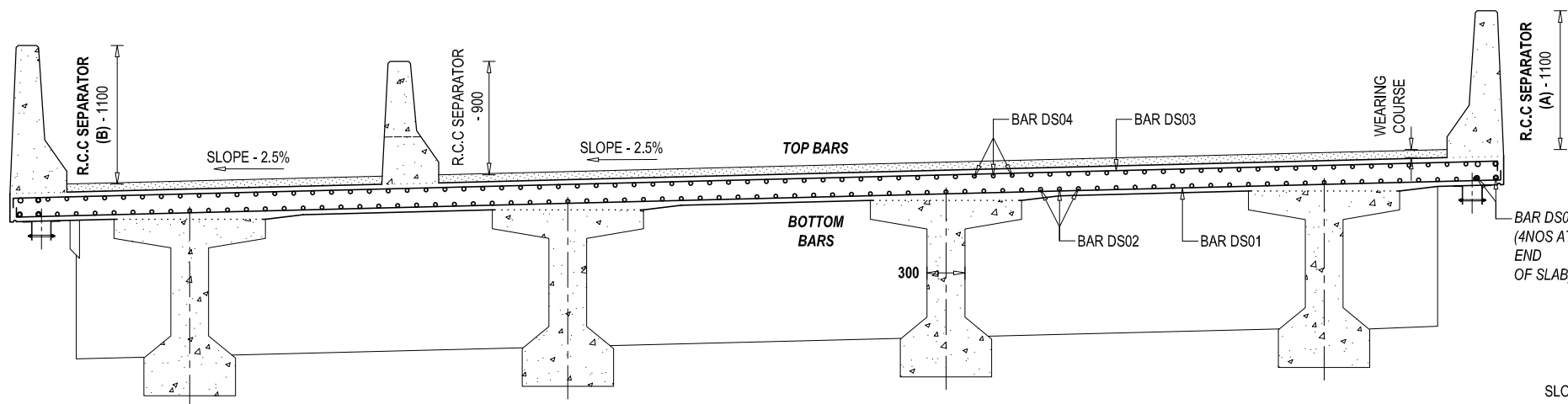
NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/JAGADAV BRANCH/DD-4

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 Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited	Checked By	Mr. S.M.	SUPER STRUCTURE DETAILS OF BRIDGE OVER RIVER JAGADAV BRANCH Reference Drawings KDP/DPR/STR/BR/JAGADAV BRANCH/DD-14	Chainage: 250+765	05.05.2023
			Approved By	Mr. H.B.			Drawing No.:- KDP/DPR/STR/BR/JAGADAV BRANCH/DD-10
							Sheet No. 2 / 2



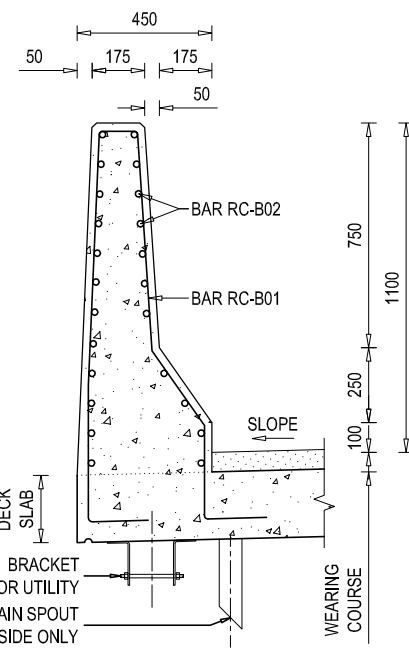
REINFORCEMENT DETAILS OF DECK SLAB - PLAN VIEW

SCALE - 1 : 100



REINFORCEMENT DETAILS OF DECK SLAB - SECTIONAL VIEW AT T6

SCALE - 1 : 50



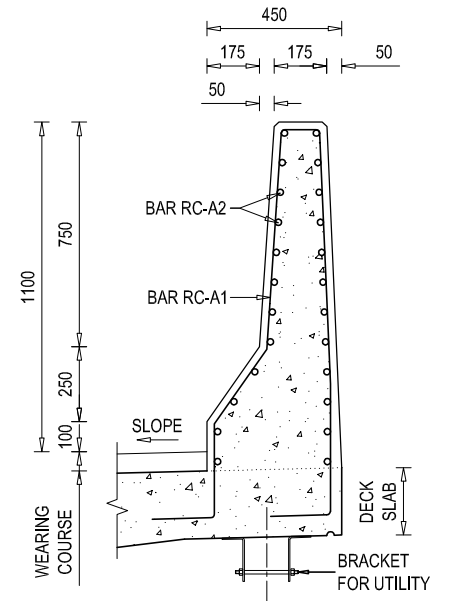
REINFORCEMENT DETAILS OF R.C.C BARRIER (B) - SECTIONAL VIEW

SCALE - 1 : 25

LEGEND FOR REINFORCEMENT BAR

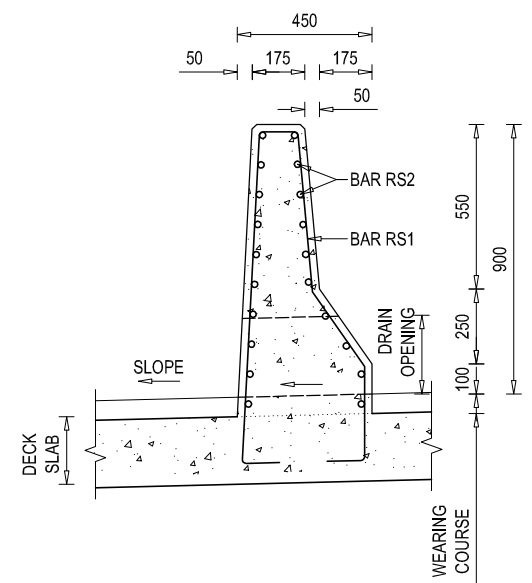
CODE	FULL FORM	CG	- CROSS GIRDER
DS	- DECK SLAB	AS	- APPROACH SLAB
RB	- R.C.C BARRIER	ST	- STOPPER
RS	- R.C.C SEPARATOR	**	- ***
MG	- MAIN GIRDER		

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

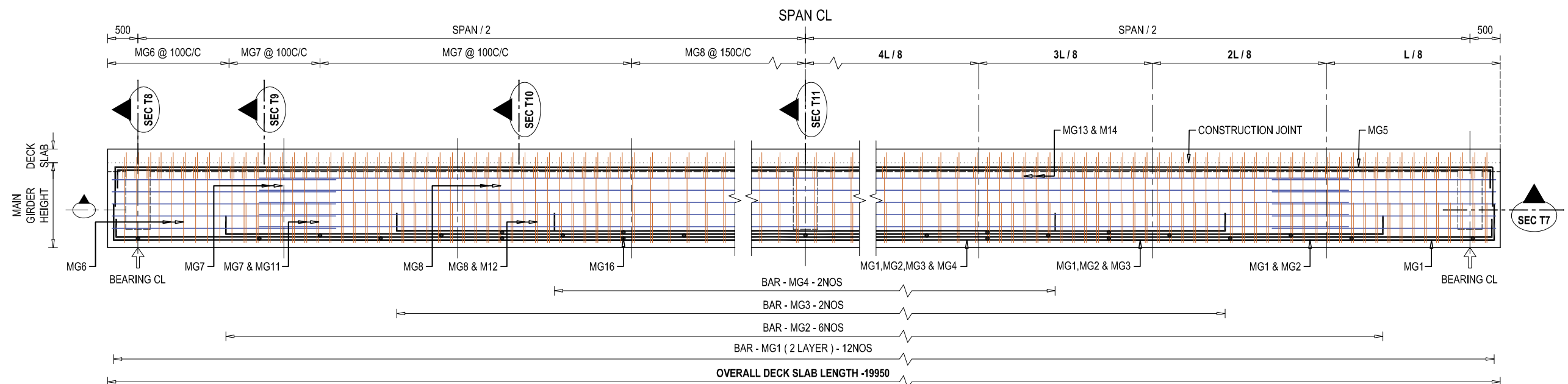


REINFORCEMENT DETAILS OF R.C.C SEPARATOR - SECTIONAL VIEW

SCALE - 1 : 25

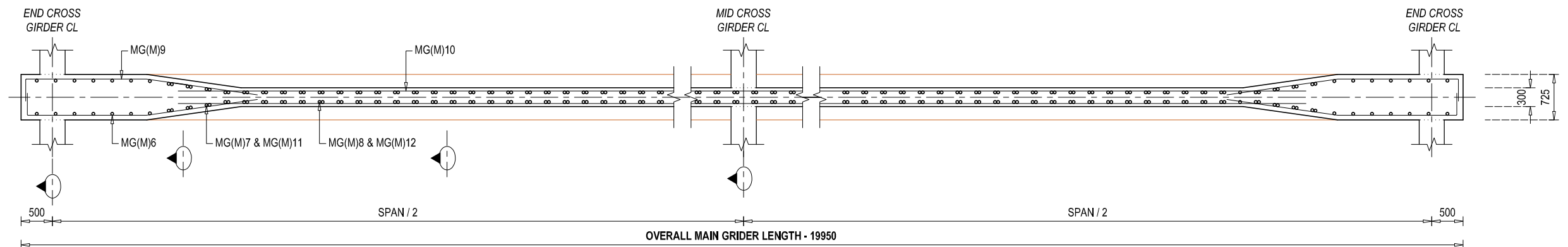
NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/JAGADAV BRANCH/DD-4

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 Kolkata, 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 JAGADAV BRANCH	AS SHOWN	05.05.2023
			Approved By	Mr. H.B.	Signature	Reference Drawings	Chainage:	Drawing No. KDP/DPR/STR/BR/JAGADAV BRANCH/DD-11
						KDP/DPR/STR/BR/JAGADAV BRANCH/DD-14	250+765	Sheet No. 1 / 1



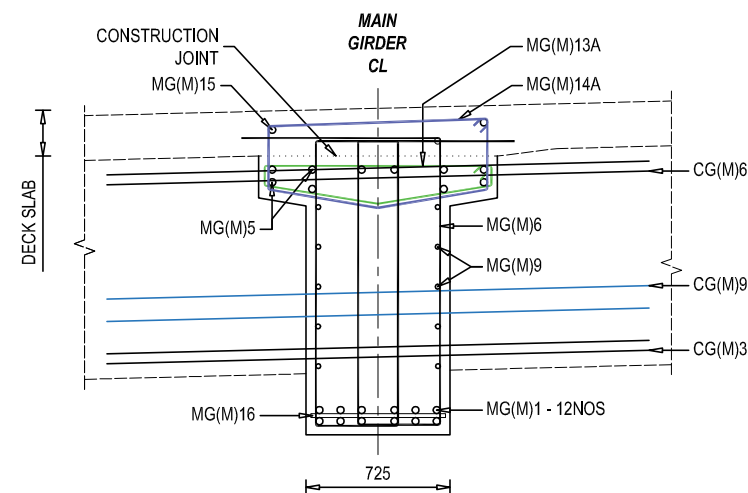
REINFORCEMENT DETAILS OF MAIN GIRDER - SECTIONAL ELEVATION VIEW

SCALE - 1 : 75



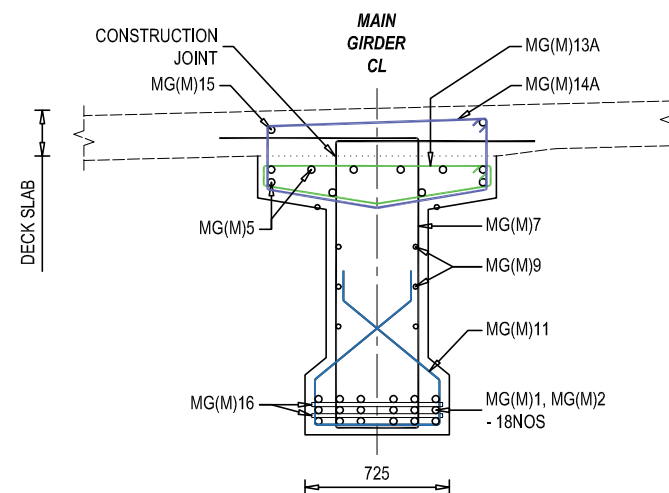
REINFORCEMENT DETAILS OF MAIN GIRDER (MID) - SECTIONAL PLAN VIEW AT T7(M)

SCALE - 1 : 75



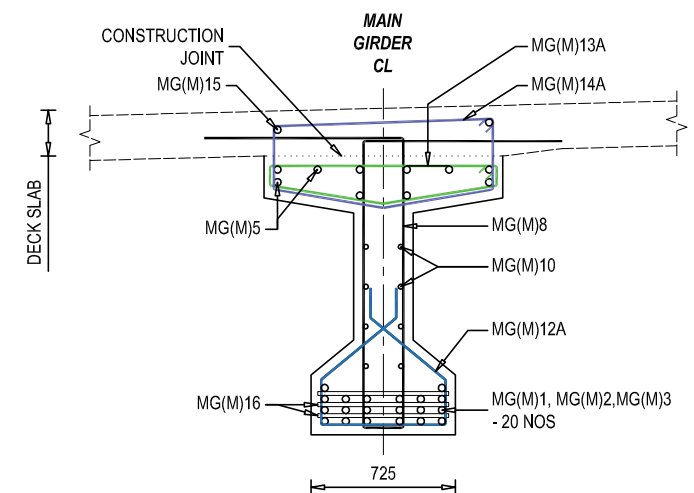
REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T8

SCALE - 1 : 50



REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T9

SCALE - 1 : 50

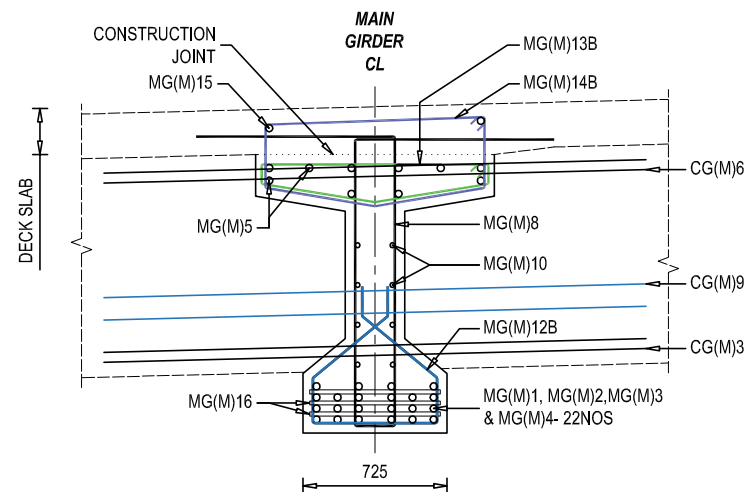


REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T10

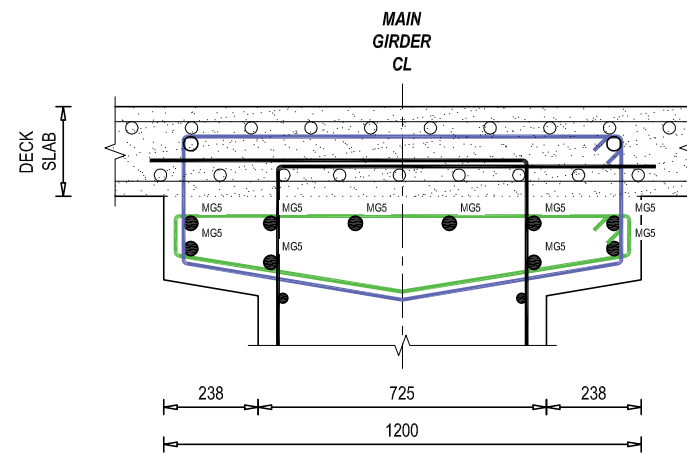
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NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/JAGADAV BRANCH/DD-4

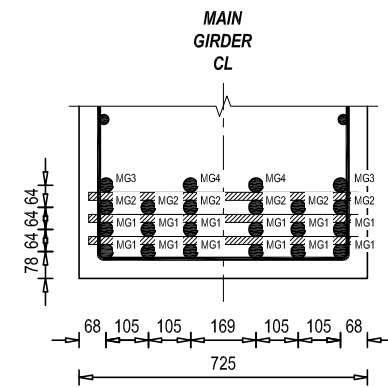
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Drawing Name	Scale:	Date:
Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamal-Dhalkebar-Pathilaya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of EPTISA Servicios De Ingenieria Madrid, Spain STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited	Mr. R.A. Nec.No. 6431 CHAL 'K' Mr. S.M. Mr. H.B.	MAIN GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER JAGADAV BRANCH Reference Drawings KDP/DPR/STR/BR/JAGADAV BRANCH/DD-14	AS SHOWN Chainage: 250+765	05.05.2023
						Drawing No. KDP/DPR/STR/BR/JAGADAV BRANCH/DD-12
						Sheet No. 1 / 2



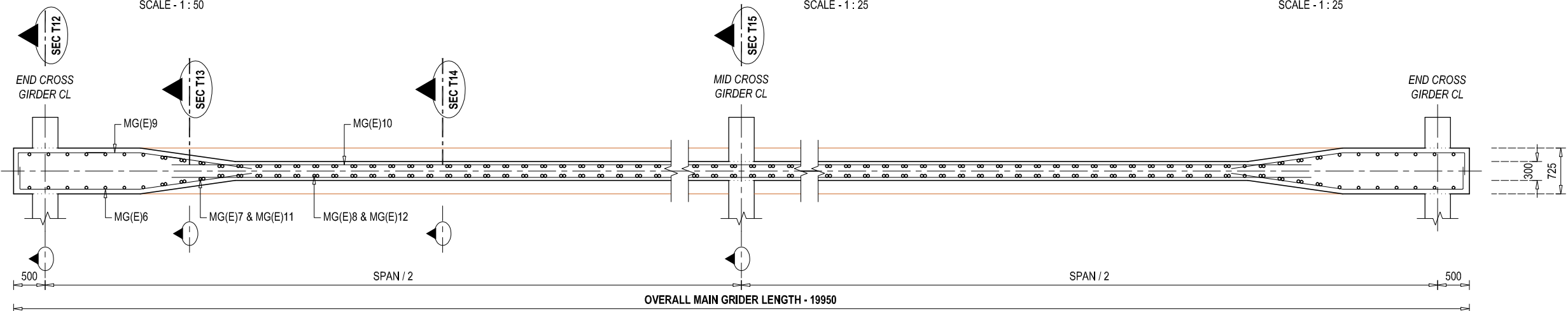
REINFORCEMENT DETAILS OF MAIN GIRDER
SECTIONAL VIEW AT T11
SCALE - 1 : 50



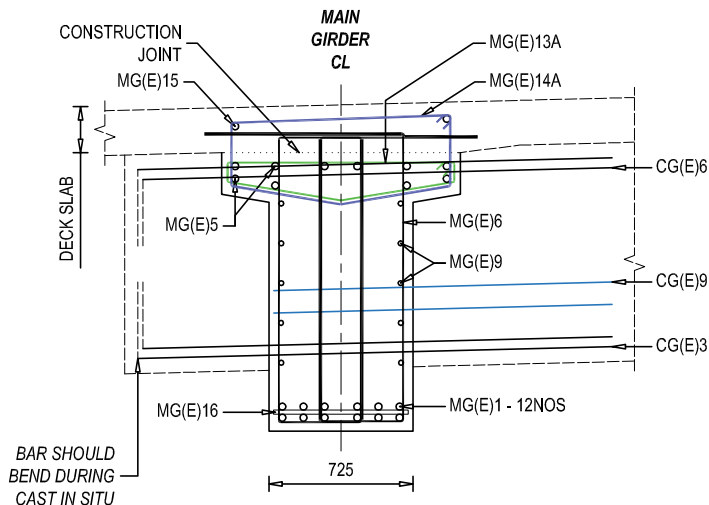
TOP BAR WEB REINFORCEMENT DETAILS
OF MAIN GIRDER
SCALE - 1 : 25



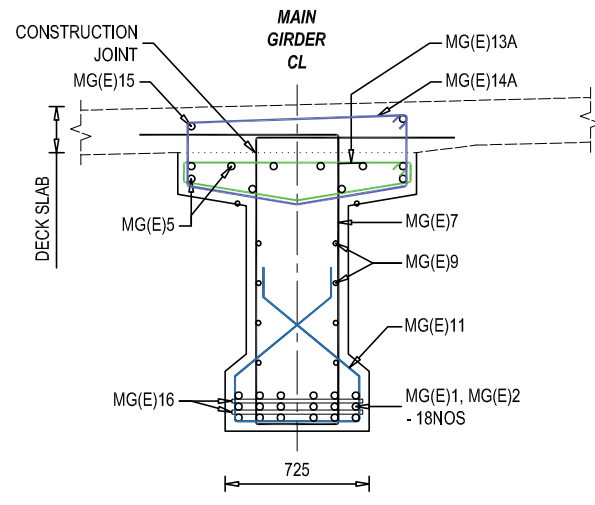
BOTTOM BAR WEB REINFORCEMENT DETAILS
OF MAIN GIRDER
SCALE - 1 : 25



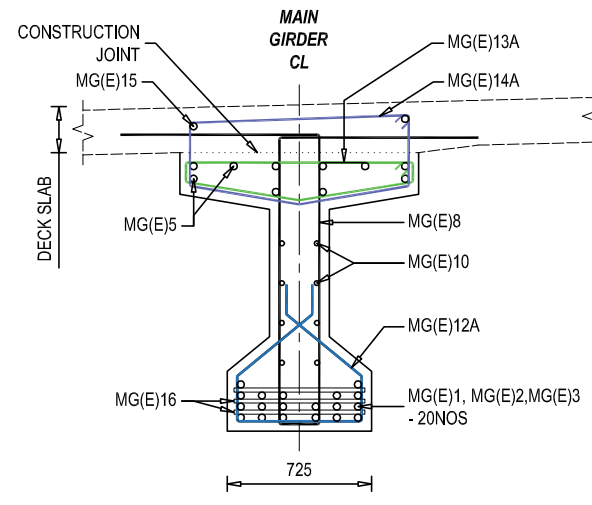
REINFORCEMENT DETAILS OF MAIN GIRDER (END) - SECTIONAL PLAN VIEW AT T7(E)
SCALE - 1 : 75



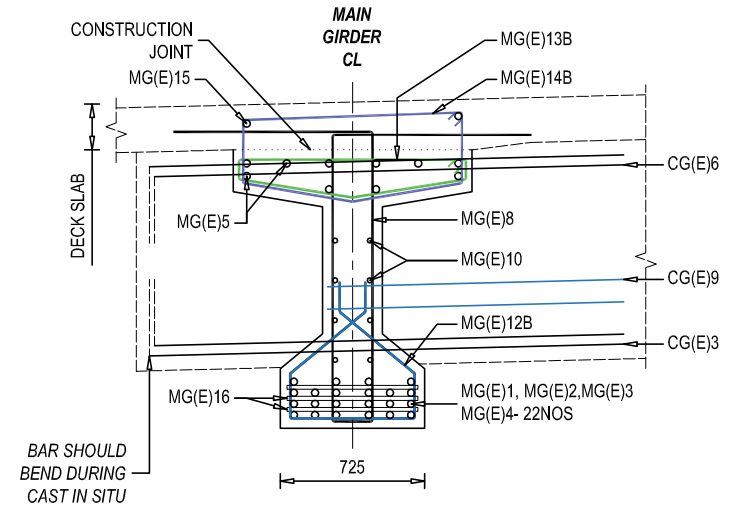
REINFORCEMENT DETAILS OF MAIN GIRDER
SECTIONAL VIEW AT T12
SCALE - 1 : 50



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



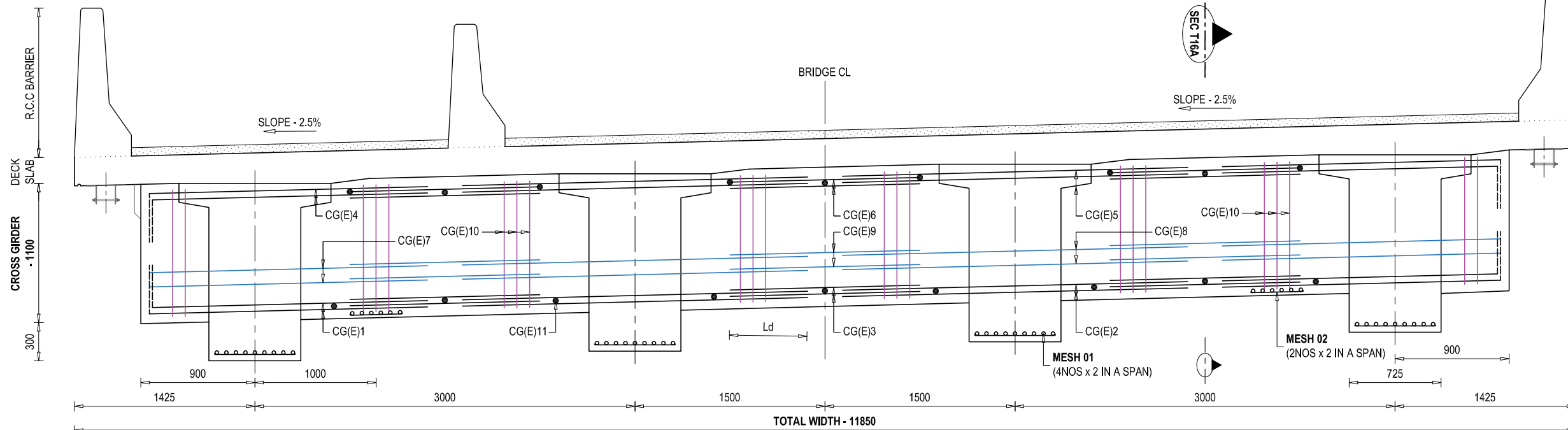
REINFORCEMENT DETAILS OF MAIN GIRDER
SECTIONAL VIEW AT T14
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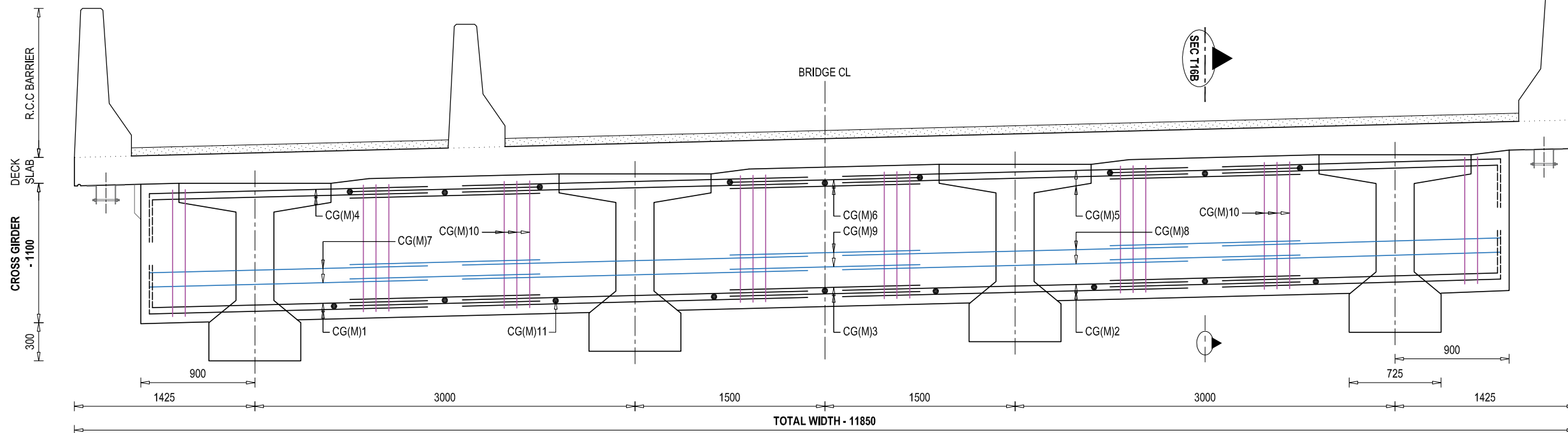
REINFORCEMENT DETAILS OF MAIN GIRDER
SECTIONAL VIEW AT T15
SCALE - 1 : 50

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

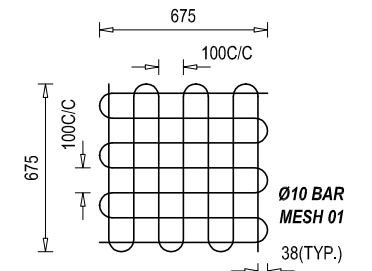
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamal-Dhalkebar-Pathalaya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of  EPTISA Servicios De Ingenieria Madrid, Spain  STUP Consultants Private Limited Kolkatta, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Mr. R.A. Nec.No. 6431 CHL/K	MAIN GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER JAGADAV BRANCH	AS SHOWN	05.05.2023
			Checked By Mr. S.M.	Reference Drawings KDP/DPR/STR/BR/JAGADAV BRANCH/DD-14	Chainage:	Drawing No.- KDP/DPR/STR/BR/JAGADAV BRANCH/DD-12
			Approved By Mr. H.B.		250+765	Sheet No. 2 / 2



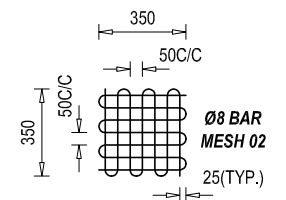
REINFORCEMENT DETAILS OF END CROSS GIRDER
SCALE - 1 : 50



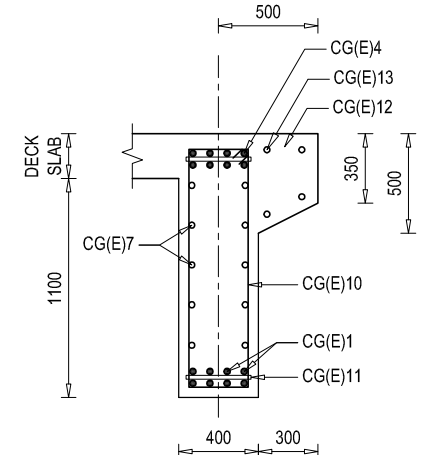
REINFORCEMENT DETAILS OF MID CROSS GIRDER
SCALE - 1 : 50



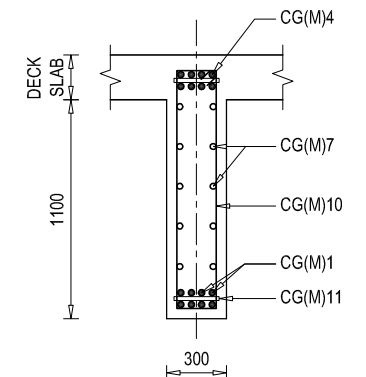
REINFORCEMENT DETAILS OF BEARING MESH
SCALE - 1 : 50



REINFORCEMENT DETAILS OF LIFTING MESH
SCALE - 1 : 50



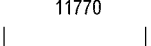
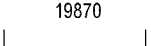
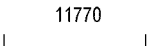
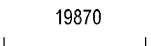
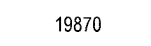
SECTIONAL REINFORCEMENT DETAILS OF END CROSS GIRDER - SEC T16A
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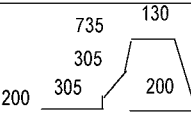
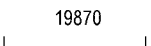


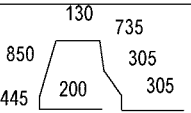
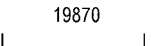
SECTIONAL REINFORCEMENT DETAILS OF MID CROSS GIRDER - SEC T16B
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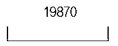
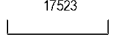
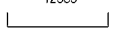
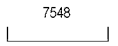
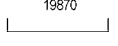
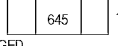
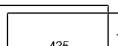
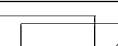
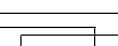
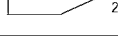
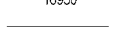
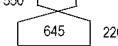
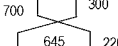
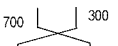
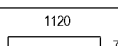
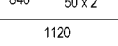
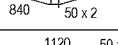
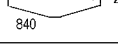
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READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/JAGADAV BRANCH/DD-4

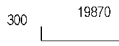
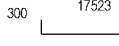
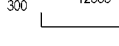
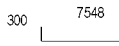
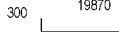
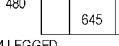
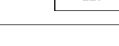
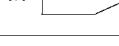
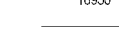
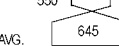
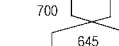
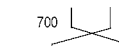
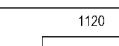
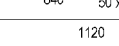
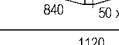
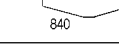
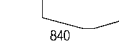
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamal-Dhalkebar-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	Mr. R.A.	CROSS GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER JAGADAV BRANCH Reference Drawings KDP/DPR/STR/BR/JAGADAV BRANCH/DD-14	AS SHOWN Chainage: 250+765	05.05.2023
			Checked By			Drawing No. - KDP/DPR/STR/BR/JAGADAV BRANCH/DD-13
			Approved By			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	134	1.580	2555.86
2	DS02	150  150	10	150	20.170	76	0.617	946.25
3	DS03	150  150	16	150	12.070	134	1.580	2555.86
5	DS04	150  150	10	150	20.170	76	0.617	946.25
6	DS05	 19870	16		19.870	8	1.580	251.20
TOTAL (KG) :								7255.41

BAR BENDING SCHEDULE OF R.C.C BARRIER (A) (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RC-A1	 200	16	150	3.170	134	1.580	671.26
2	RC-A2	150  150	10	150	20.170	20	0.617	249.01
TOTAL (KG) :								920.27

BAR BENDING SCHEDULE OF R.C.C BARRIER (B) (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RC-B1	 200	16	150	3.170	134	1.580	671.26
2	RC-B2	150  150	10	150	20.170	20	0.617	249.01
TOTAL (KG) :								920.27

BAR BENDING SCHEDULE OF END MAIN GIRDER (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	MG(E)1	300  300	32		20.470	12	6.321	1552.69
2	MG(E)2	300  300	32		18.123	6	6.321	687.33
3	MG(E)3	300  300	32		13.135	2	6.321	166.05
4	MG(E)4	300  300	32		8.148	2	6.321	103.01
5	MG(E)5	300  300	12		20.470	10	0.889	181.96
6	MG(E)6	 4 LEGGED	12	100	9.260	42	0.889	345.71
7	MG(E)7	 AVG.	12	100	5.125	32	0.889	145.78
8	MG(E)8A	 1430	12	100	4.480	81	0.889	322.56
9	MG(E)8B	 1430	12	150	4.480	35	0.889	139.38
10	MG(E)9	370  2000	12	200	4.290	28	0.889	106.77
11	MG(E)10	 16950	12	200	16.950	14	0.889	210.93
12	MG(E)11	 AVG.	12	100	2.785	32	0.889	79.22
13	MG(E)12A	 220	12	150	3.085	81	0.889	222.12
14	MG(E)12B	 220	12	150	3.085	35	0.889	95.98
15	MG(E)13A	 70	12	100	3.040	151	0.889	408.04
16	MG(E)13B	 70	12	150	3.040	35	0.889	94.58
17	MG(E)14A	 270	12	100	3.440	151	0.889	461.72
18	MG14B	 270	12	150	3.440	35	0.889	107.02
19	MG(E)15	 19870	12		19.870	2	0.889	35.32
19	MG(E)16	 645	32	1500	0.645	42	6.321	171.24
TOTAL (KG) :								5637.40

BAR BENDING SCHEDULE OF MID MAIN GIRDER (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	MG(M)1	300  300	32		20.470	12	6.321	1552.69
2	MG(M)2	300  300	32		18.123	6	6.321	687.33
3	MG(M)3	300  300	32		13.135	2	6.321	166.05
4	MG(M)4	300  300	32		8.148	2	6.321	103.01
5	MG(M)5	300  300	12		20.470	10	0.889	181.96
6	MG(M)6	 4 LEGGED	12	100	9.260	42	0.889	345.71
7	MG(M)7	 AVG.	12	100	5.125	32	0.889	145.78
8	MG(M)8A	 1430	12	100	4.480	81	0.889	322.56
9	MG(M)8B	 1430	12	150	4.480	35	0.889	139.38
10	MG(M)9	370  2000	12	200	4.290	28	0.889	106.77
11	MG(M)10	 16950	12	200	16.950	14	0.889	210.93
12	MG(M)11	 AVG.	12	100	2.785	32	0.889	79.22
13	MG(M)12A	 220	12	150	3.085	81	0.889	222.12
14	MG(M)12B	 220	12	150	3.085	35	0.889	95.98
15	MG(M)13A	 70	12	100	3.040	151	0.889	408.04
16	MG(M)13B	 70	12	150	3.040	35	0.889	94.58
17	MG(M)14A	 270	12	100	3.440	151	0.889	461.72
18	MG14B	 270	12	150	3.440	35	0.889	107.02
19	MG(M)15	 19870	12		19.870	2	0.889	35.32
19	MG(M)16	 645	32	1500	0.645	42	6.321	171.24
TOTAL (KG) :								5637.40

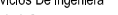
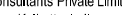
EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS			Drawing Name		Scale:		Date:	
	Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamal-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges		Joint Venture of		Designed By	Mr. R.A.		AS SHOWN		05.05.2023	
				EPTISA Servicios De Ingeniera Madrid, Spain		Checked By	Nec.No. 6431 CHL/K Mr. S.M.				Drawing No.- KDP/DPR/STR/BR/JAGADAV BRANCH/IDD-14	
				In Association With Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited		Approved By	Mr. H.B.				Sheet No. 1 / 2	

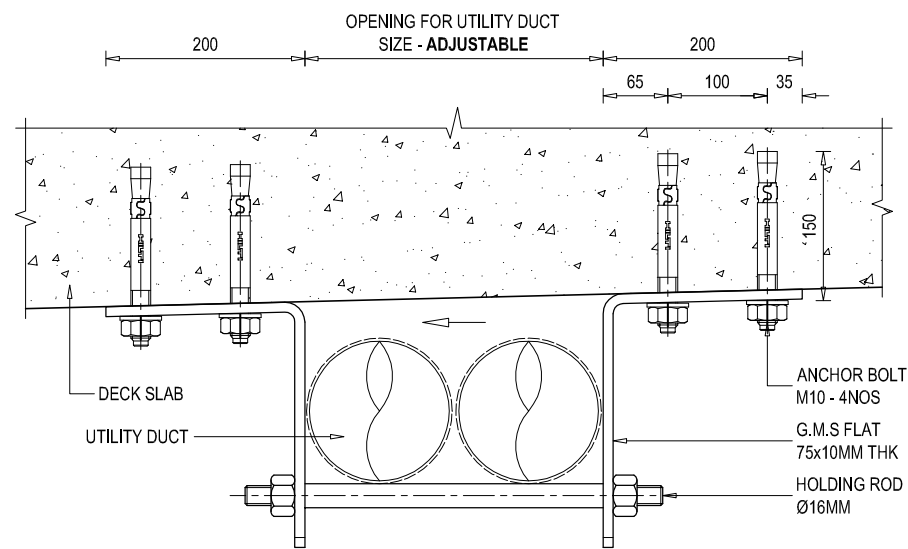
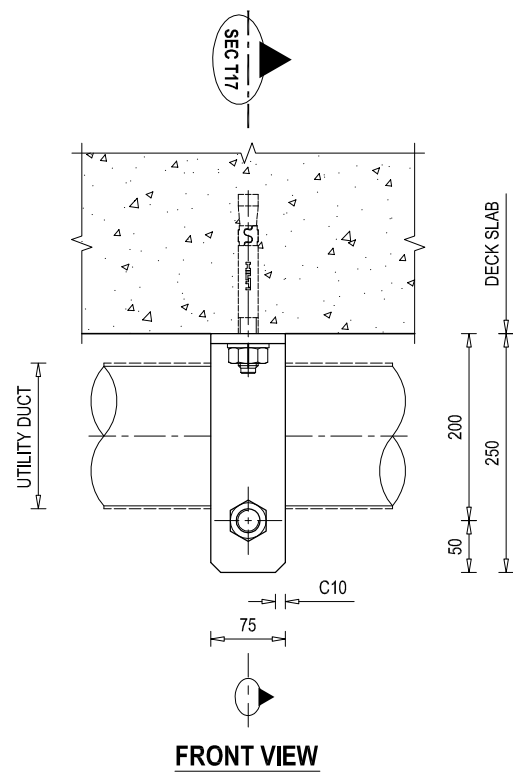
BAR BENDING SCHEDULE OF MESH (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	MESH 01	675 675 @ 100	10		9.450	8	0.617	46.67
2	MESH 02	350 350 @ 50	8		4.900	4	0.395	7.74
TOTAL (KG) :								54.41

BAR BENDING SCHEDULE OF R.C.C SEPARATOR (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RS1	130 535 1110 150 305 315	16	150	2.695	134	1.580	570.67
2	RS2	150 19870 150	10	150	20.170	17	0.617	211.66
TOTAL (KG) :								782.34

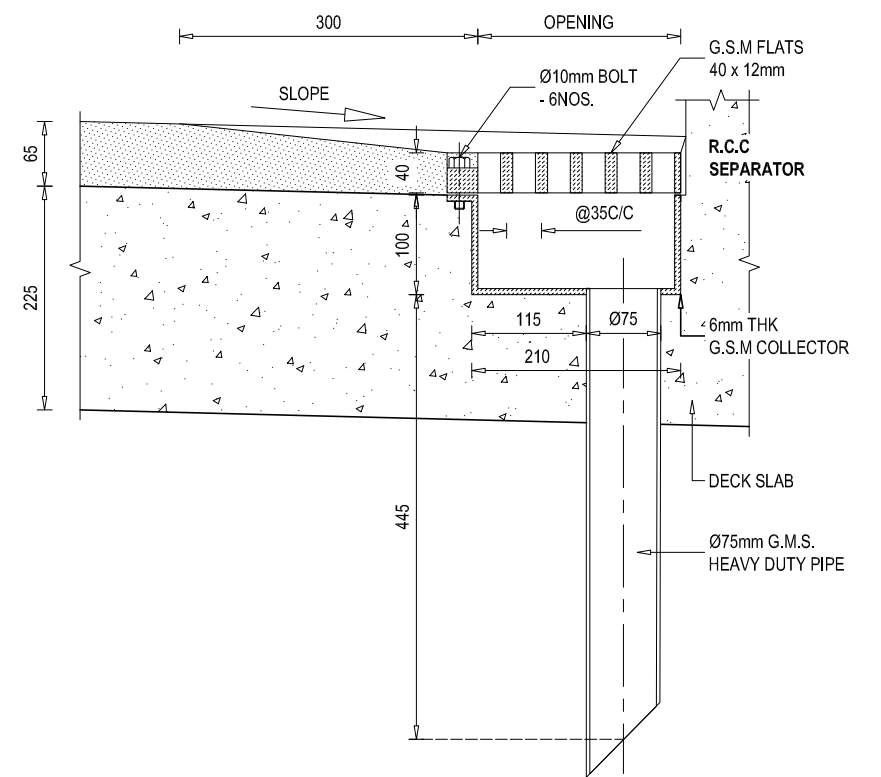
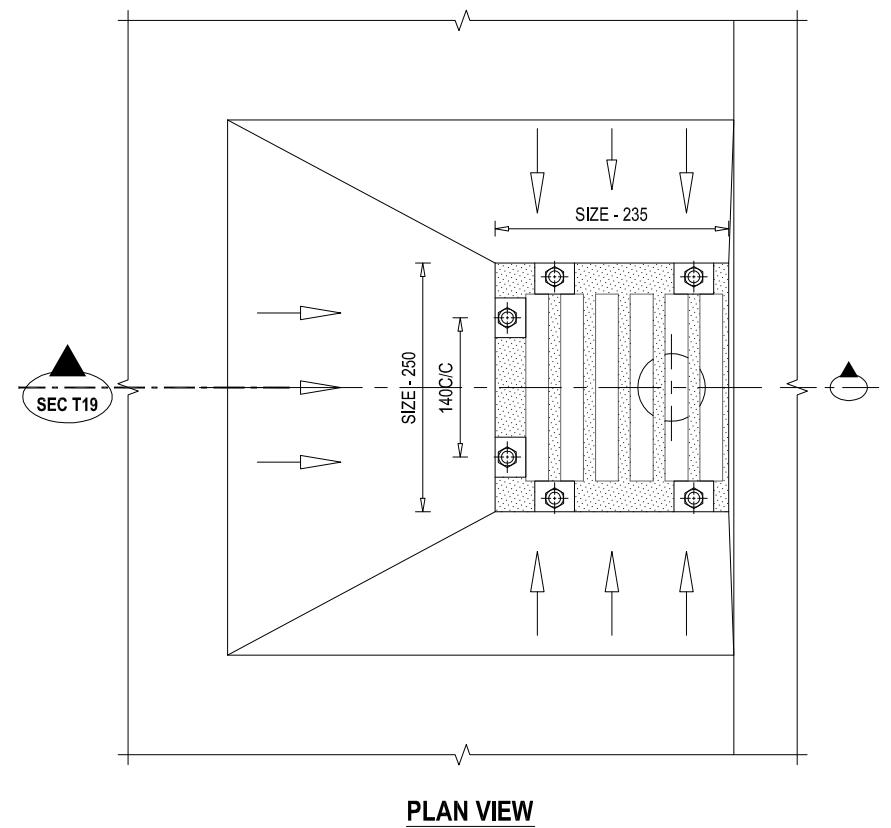
BAR BENDING SCHEDULE OF END CROSS GIRDER (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	CG(E)1	300 1825	20		2.125	8	2.469	41.98
2	CG(E)2	2625	20		2.625	8	2.469	51.85
3	CG(E)3	1675	20		1.675	8	2.469	33.09
4	CG(E)4	300 1825	20		2.125	8	2.469	41.98
5	CG(E)5	2625	20		2.625	8	2.469	51.85
6	CG(E)6	1675	20		1.675	8	2.469	33.09
7	CG(E)7	1825	12	150	1.825	8	0.889	12.98
8	CG(E)8	2625	12	150	2.625	8	0.889	18.67
9	CG(E)9	1675	12	150	1.675	8	0.889	11.91
10	CG(E)10	50 x 2 320 1220	12	200	1.640	39	0.889	56.85
11	CG(E)11	320	20	1000	0.320	18	2.469	14.22
12	CG(E)12	800 260 300 390	16	150	1.750	79	1.580	218.47
13	CG(E)13	11770	12		11.770	6	0.889	62.77
TOTAL (KG) :								649.70
TOTAL NOS OF CROSS GIRDER :								2.00
TOTAL WEIGHT (KG) :								1299.40

BAR BENDING SCHEDULE OF MID CROSS GIRDER (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	CG(M)1	300 1825	20		1.920	8	2.469	37.93
2	CG(M)2	2625	20		2.945	8	2.469	58.17
3	CG(M)3	1675	20		1.995	8	2.469	39.41
4	CG(M)4	300 1825	20		1.920	8	2.469	37.93
5	CG(M)5	2625	20		2.625	8	2.469	51.85
6	CG(M)6	1675	20		1.675	8	2.469	33.09
7	CG(M)7	1825	12	150	1.620	8	0.889	11.52
8	CG(M)8	2625	12	150	2.625	8	0.889	18.67
9	CG(M)9	1675	12	150	1.675	8	0.889	11.91
10	CG(M)10	50 x 2 320 1220	12	200	1.640	39	0.889	56.85
11	CG(M)11	320	20	1000	0.320	18	2.469	14.22
TOTAL (KG) :								371.54

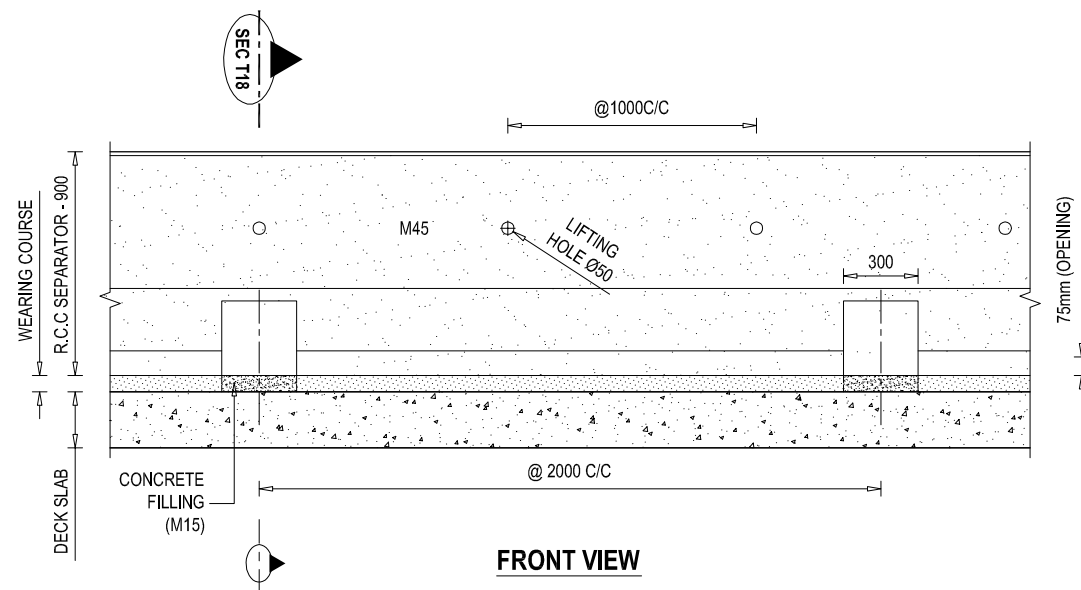
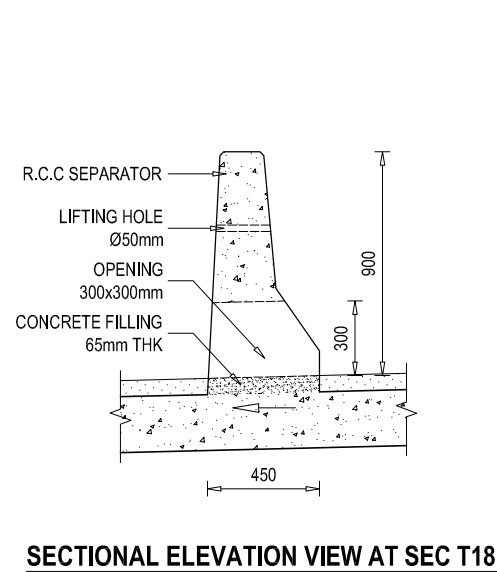
EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		Drawing Name		Scale:		Date:	
	Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamal-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of		Designed By	Mr. R.A.	 Signature	SUPER STRUCTURE BAR BENDING SCHEDULE OF BRIDGE OVER RIVER JAGADAV BRANCH	AS SHOWN	05.05.2023	
			 EPTISA Servicios De Ingeniera Madrid, Spain	 STUP Consultants Private Limited Kolkata, India	Checked By	Mr. S.M.					 Signature
					In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited						
					Reference Drawings		Chainage:		250+765	Sheet No. 2 / 2	



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

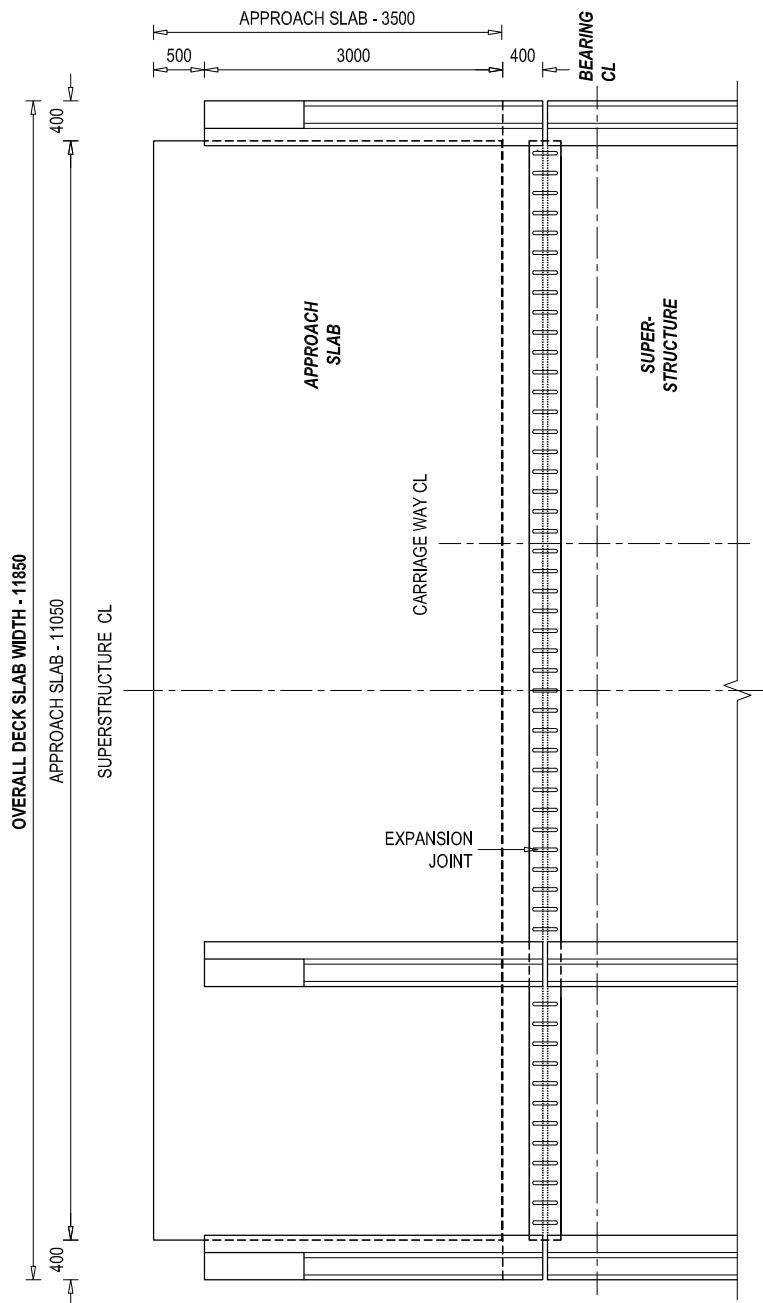


DETAILS OF GALVANIZED MILD STEEL (G.M.S)
DRAINAGE SPOUT
SCALE - 1 : 10

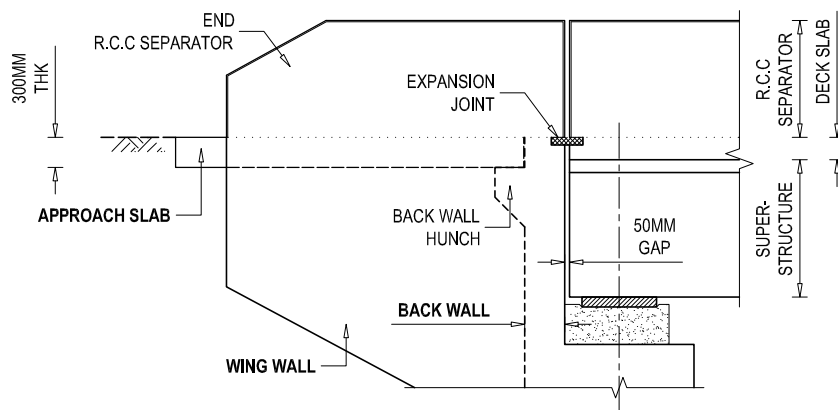


DETAIL ELEVATION VIEW AT R.C.C SEPARATOR
& IT'S DRAIN OPENING
SCALE - 1 : 40

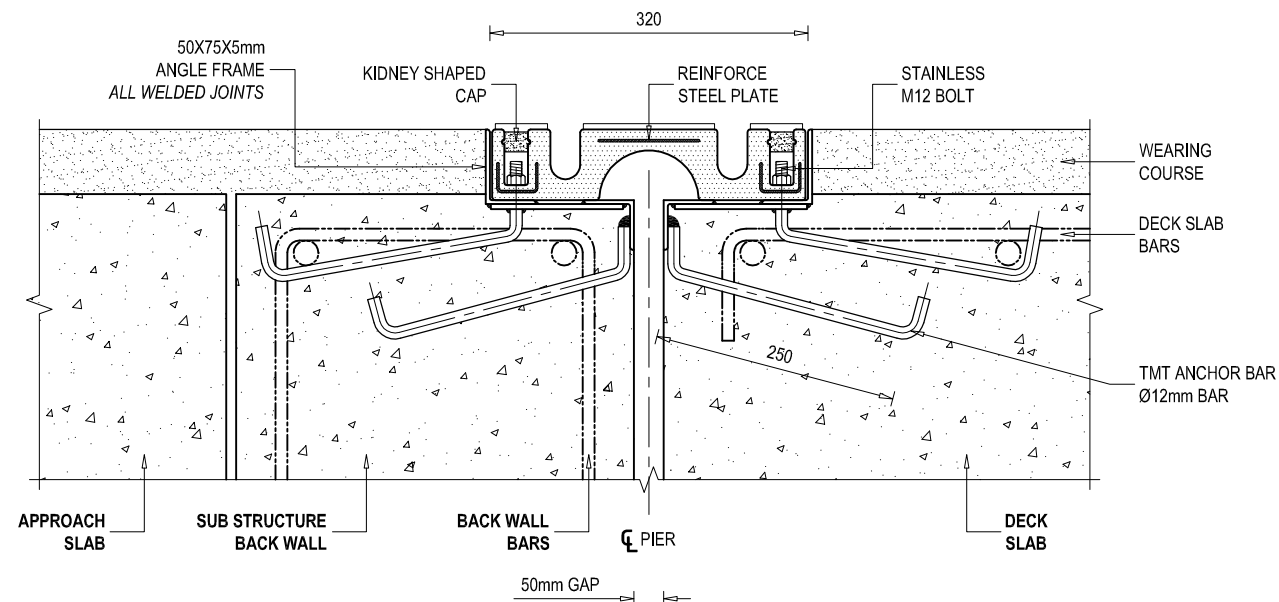
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Mr. B.G.	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamal-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of EPTISA Servicios De Ingenieria Madrid, Spain STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited	Checked By	Mr. R.A.	MISCELLANEOUS DETAILS OF BRIDGE OVER RIVER JAGADAV BRANCH	AS SHOWN	05.05.2023
			Approved By	Mr. S.M.	Reference Drawings	Chainage:	Drawing No.- KDP/DPR/STR/BR/JAGADAV BRANCH/DD-15
				Mr. S.M.		250+765	Sheet No. 1 / 2



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

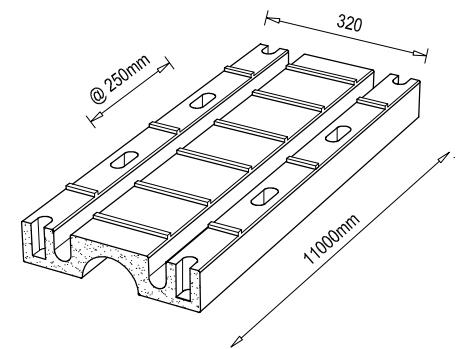


ELEVATION VIEW



SLAB SEAL TYPE EXPANSION JOINTS ARRANGEMENT IN A CARRIAGEWAY

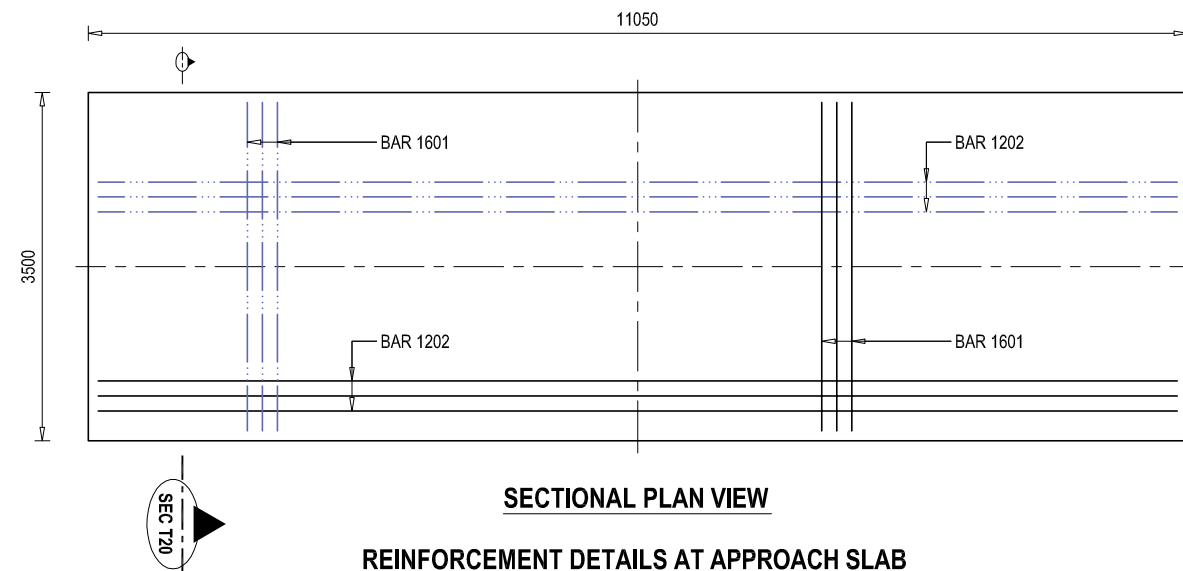
SCALE - 1 : 10 @ A3 PAPER



EXPANSION JOINT ISOMETRIC VIEW

- SEAL TYPE

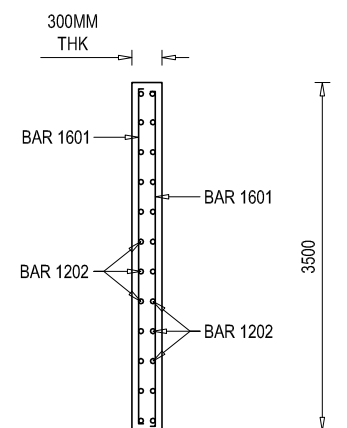
SCALE - NON



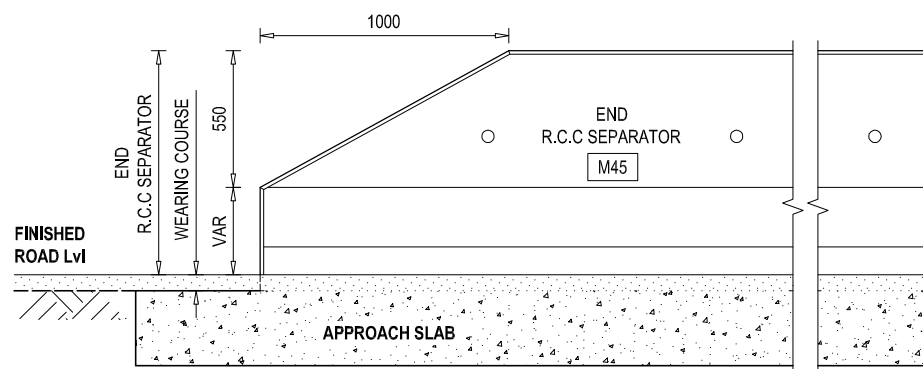
SECTIONAL PLAN VIEW

REINFORCEMENT DETAILS AT APPROACH SLAB

SCALE - 1 : 100 @ A3 PAPER

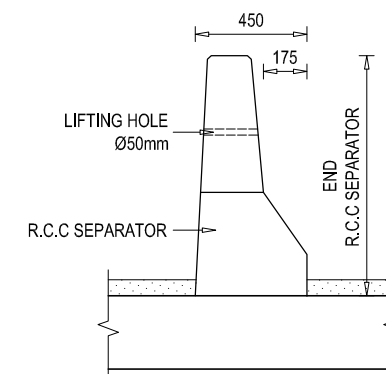


SECTIONAL ELEVATION VIEW AT SEC T20



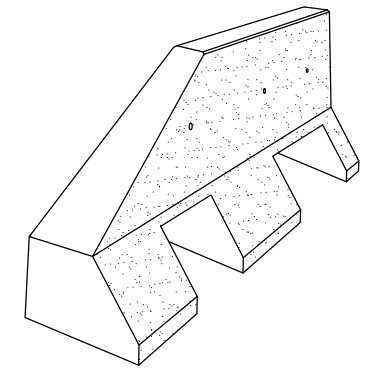
ELEVATION VIEW OF END R.C.C SEPARATOR

SCALE - 1 : 40 @ A3 PAPER



SIDE VIEW

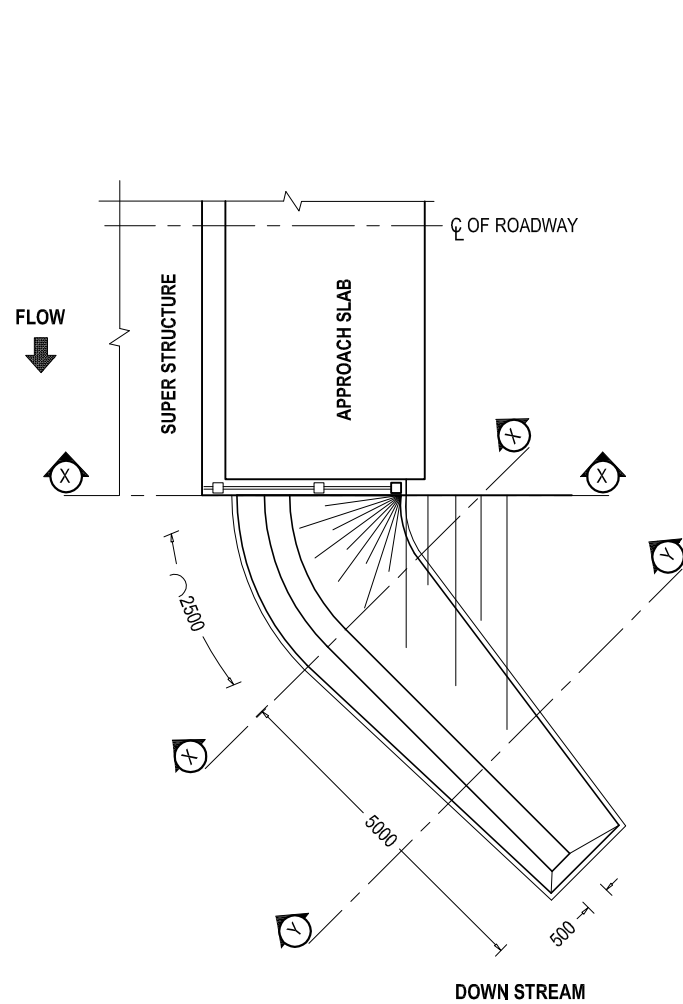
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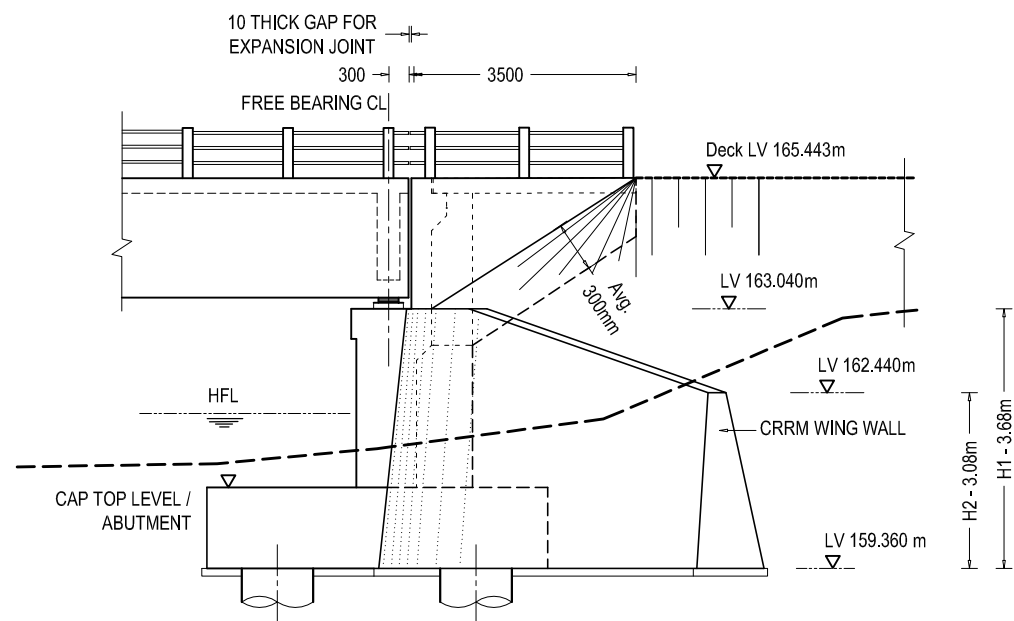
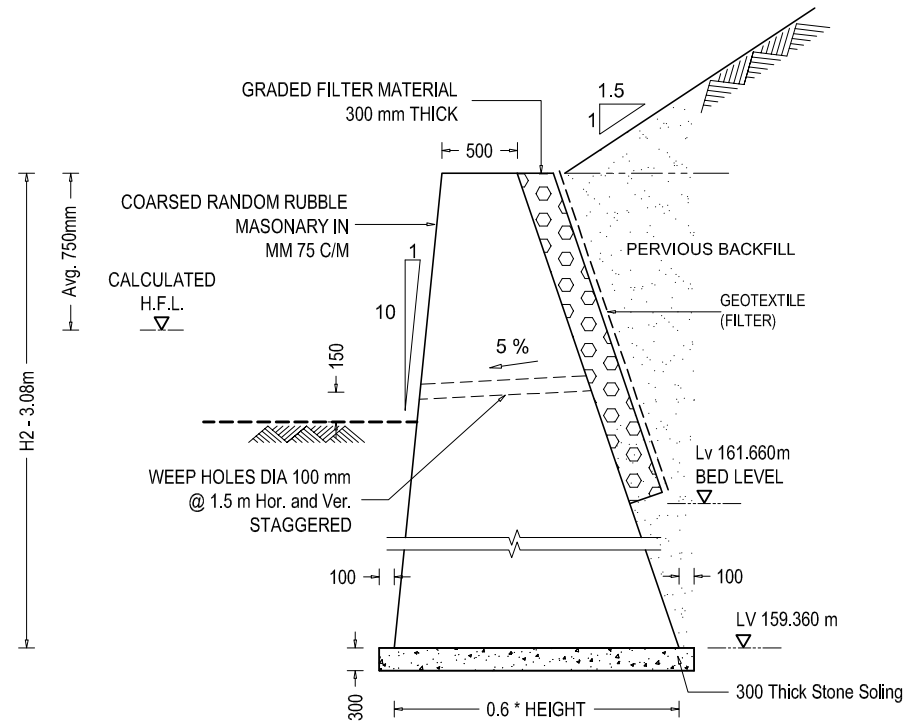
END R.C.C SEPARATOR ISOMETRIC VIEW

SCALE - NON

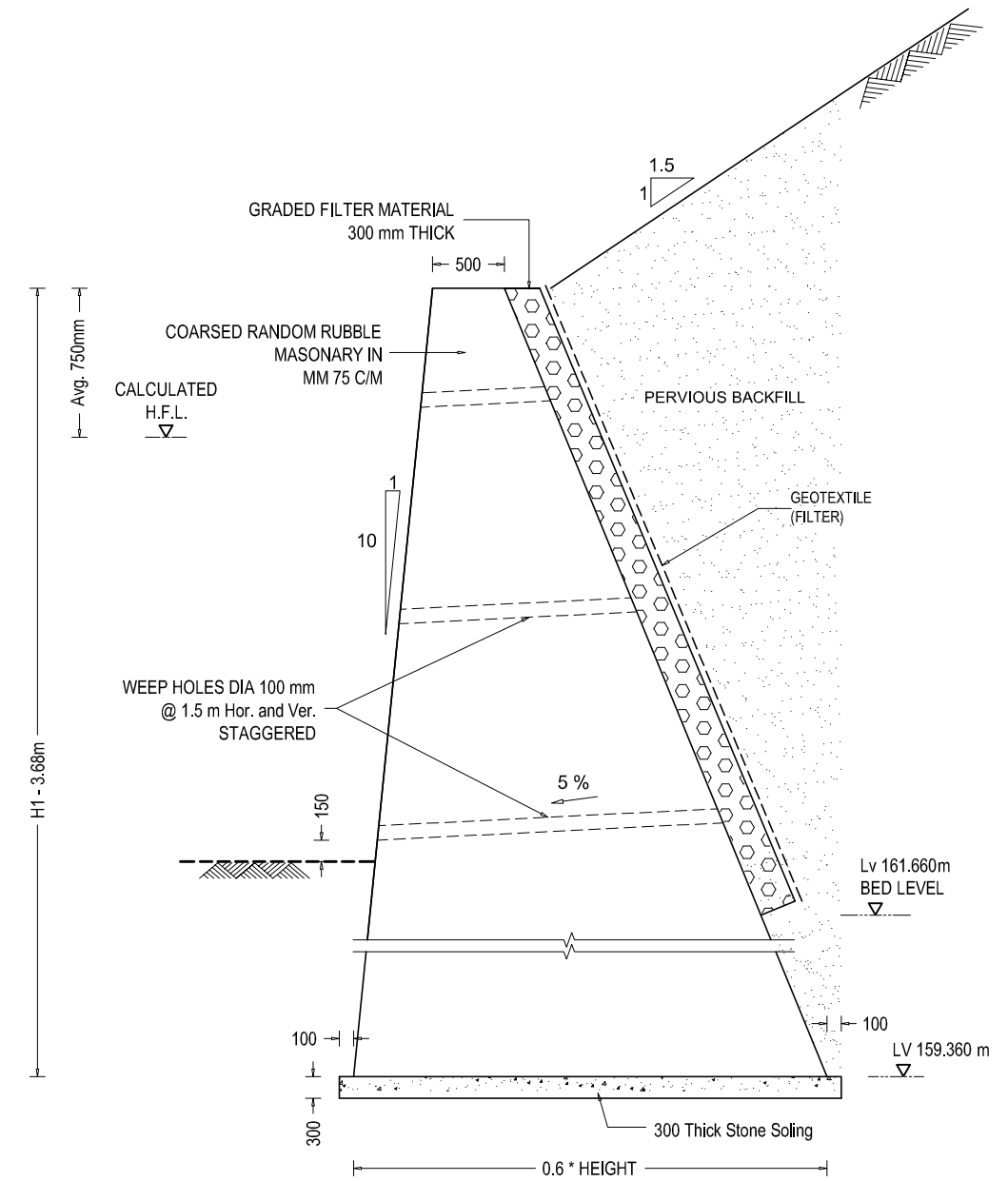
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of 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. B.G.	MISCELLANEOUS DETAILS OF BRIDGE OVER RIVER	AS SHOWN	05.05.2023
			Mr. R.A.	JAGADAV BRANCH		Drawing No.-
			Mr. S.M.	Reference Drawings	Chainage:	KDP/DPR/STR/BR/JAGADAV BRANCH/DD-15
			Mr. S.M.	KDP/DPR/STR/BR/JAGADAV BRANCH/DD-9	250+765	Sheet No. 2 / 2



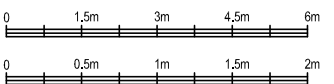
NOTE : AT DOWN STREAM ONLY



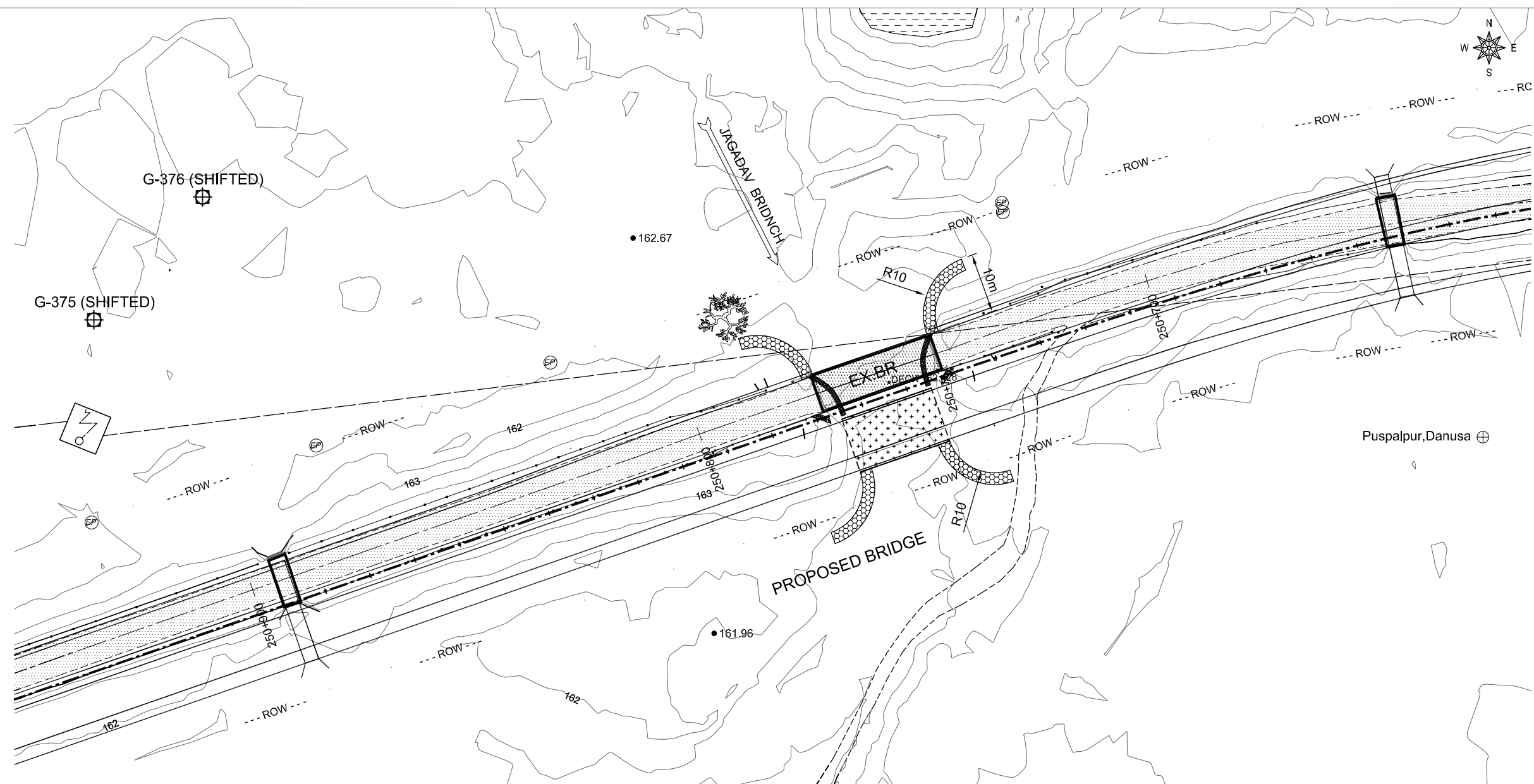
WING WALL ELEVATION



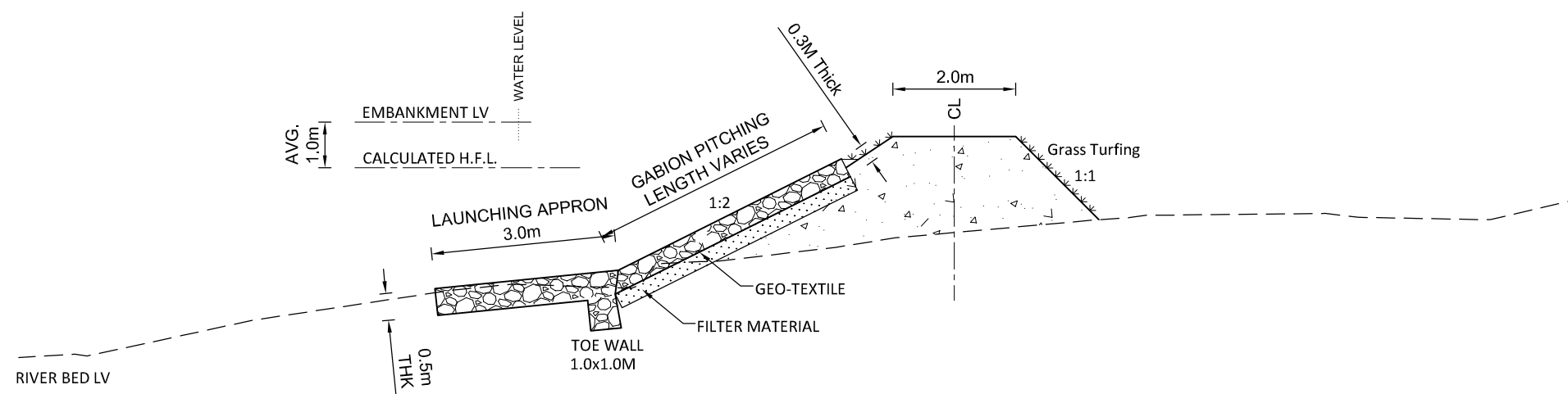
STONE MASONRY WING WALL SECTION X - X



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-Pathahya Road Section (130 KM) of Mahendra Highway and Bridges	DESIGN CONSULTANTS Joint Venture of ep4sa EPTISA Servicios De Ingenieria Madrid, Spain STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Designed By Mr. R.A. Nec.No. 6431 CIVIL 'X' Checked By Mr. S.M. Approved By Mr. H.B.	Signature Signature Signature	Drawing Name WING WALL DETAILS OF BRIDGE OVER RIVER JAGADAV BRANCH Reference Drawings	Scale: AS SHOWN Chainage: 250+765	Date: 05.05.2023 Drawing No.- KDP/DPR/STR/BR/JAGADAV BRANCH/DD-16 Sheet No. 1 / 1
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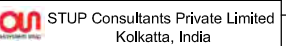


TOPOGRAPHIC MAP



SECTION OF EMBANKMENT

SCALE - 1x : 5x

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Mr. R.A.	Signature	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of  EPTISA Servicios De Ingenieria Madrid, Spain  STUP Consultants Private Limited 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 JAGADAV BRANCH	AS SHOWN	05.05.2023
			Approved By	Mr. H.B.	Signature	Reference Drawings	Chainage: 250+765	Drawing No.- KDP/DPR/STR/BR/JAGADAV BRANCH/DD-17
								Sheet No.1/1

Bearing Design Data for 20m Span and 11.85m width

Load Condition	Items	Under	On each Neoprene Bearing	Unit
Under No Live Load	V	NO EQ.	46.28	Ton
		EQ.	53.22	Ton
	H _L	NO EQ.	-	Ton
		EQ.	10.41	Ton
	H _T	NO EQ.	-	Ton
		EQ.	10.41	Ton
	θ	NO EQ.	0.00266	radian
		EQ.	0.00306	radian
	Δ		12.4	mm
Under Maximum Live Load	V	NO EQ.	84.85	Ton
		EQ.	92.95	Ton
	H _L	NO EQ.	-	Ton
		EQ.	0.00	Ton
	H _T	NO EQ.	-	Ton
		EQ.	0.00	Ton
	θ	NO EQ.	0.0040425	radian
		EQ.	0.00465	radian
	Δ		20.80	mm

EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		Designed By	Mr. R.A.		Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathalaya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of		Checked By	Nec.No. 6431 CIVIL 'A'		Signature				
		 EPTISA Servicios De Ingenieria	 STUP Consultants Private Limited		Madrid, Spain	Kolkatta, India					
		In Association With		Approved By	Mr. H.B.		Reference Drawings	Chainage:	Drawing No.-		
Udaya Consultancy, Geocom International, Sundar Krti Consultant and Rays Consultant Private Limited		Mr. S.M.	Signature		250+765					KDP/DPR/STR/BR/JAGADAV BRANCH/DD-18	
											Sheet No.1/1