

BAR BENDING SCHEDULE OF PIER CAP								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	CT1	375 2550 375	32		3.300	60	6.321	1251.56
2	CT2	375 11700 375	32		12.450	60	6.321	4721.78
3	CT3	375 2550 375	32		3.300	15	6.321	312.89
4	CT4	375 11700 375	32		12.450	30	6.321	2350.89
5	CT5	11700 2550 100	16	200	28.700	5	1.580	226.77
6	CT6	100 1350 100	16	X: 100 Y: 400	0.800	190	1.580	986.07
7	CT7	100 600 100	16	150	0.800	141	1.580	178.25
8	CT8	2550 11700 400	16		302.550	5	1.580	2390.52
9	CT9	750 1275 150	16	150	2.925	2	1.580	9.24
10	CT10	100 11700 100	16	150	11.900	10	1.580	188.05
TOTAL (KG) :								12626.01

BAR BENDING SCHEDULE OF PEDESTAL							
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	TOTAL WEIGHT (Kg)
1	TP1	150 700 820	16	150	2.520	8	23.89
2	TP2	150 700 820	16	150	2.520	8	23.89
3	TP3	700 700 120	16	150	3.900	4	18.56
4	TP4	575 575 100	10		10.675	2	13.78
TOTAL (KG) :							79.93

BAR BENDING SCHEDULE OF PIER STEM								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	ST1	300 5350 1125	32		6.775	65	6.321	2783.60
2	ST2	100 7350 100	20	160	7.550	19	2.469	354.20
3	ST3	300 5350 1125	32		6.775	65	6.321	2783.60
4	ST4	100 7350 100	20	160	7.550	19	2.469	354.20
5	ST5	1125 300 5350	32		6.775	20	6.321	856.49
5	ST6	900 2357	20	160	4.157	38	2.469	390.04
6	ST7	100 1350 100	20	Ver. 180 Hor. 320	1.550	551	2.469	2108.77
TOTAL (KG) :								9530.90

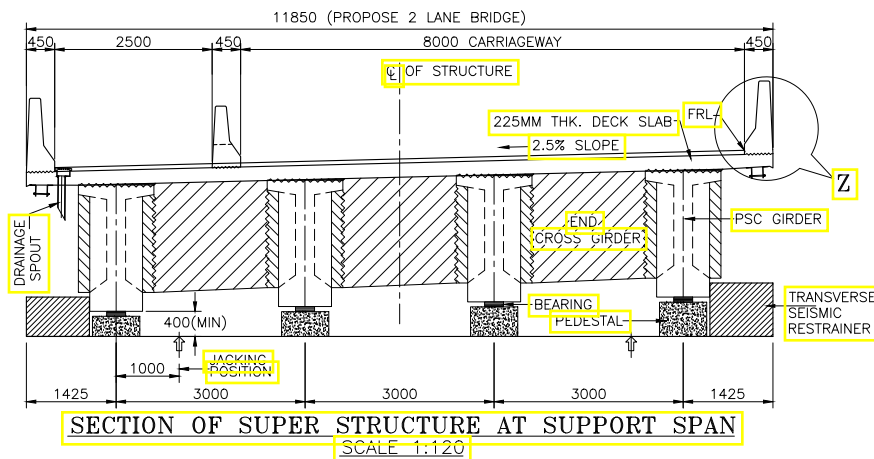
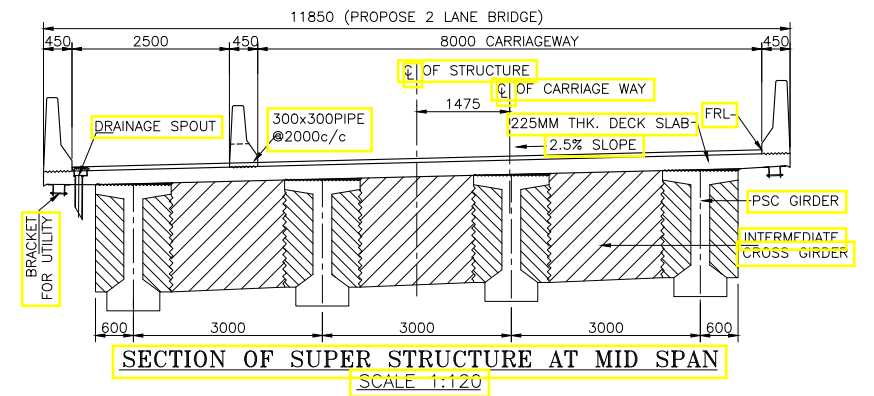
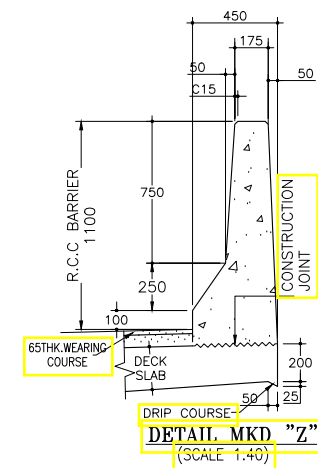
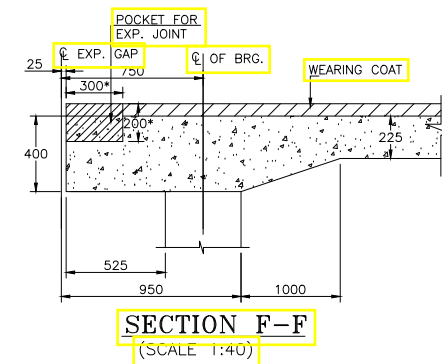
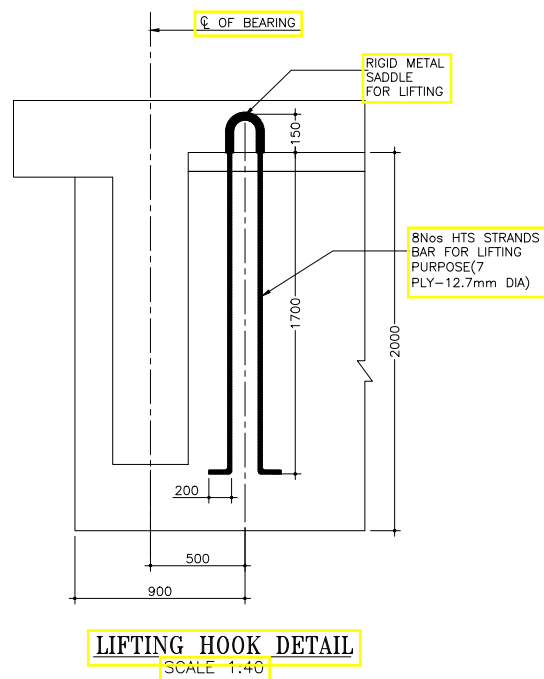
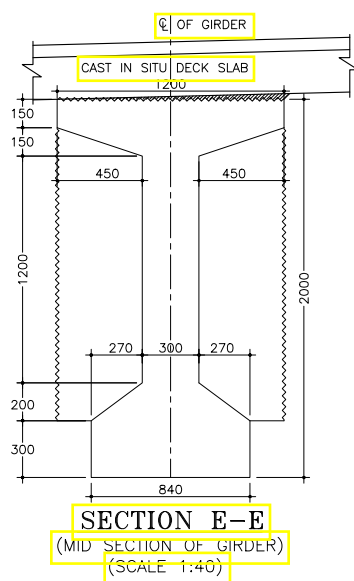
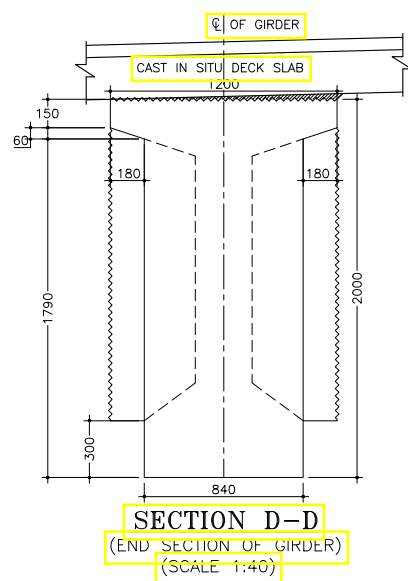
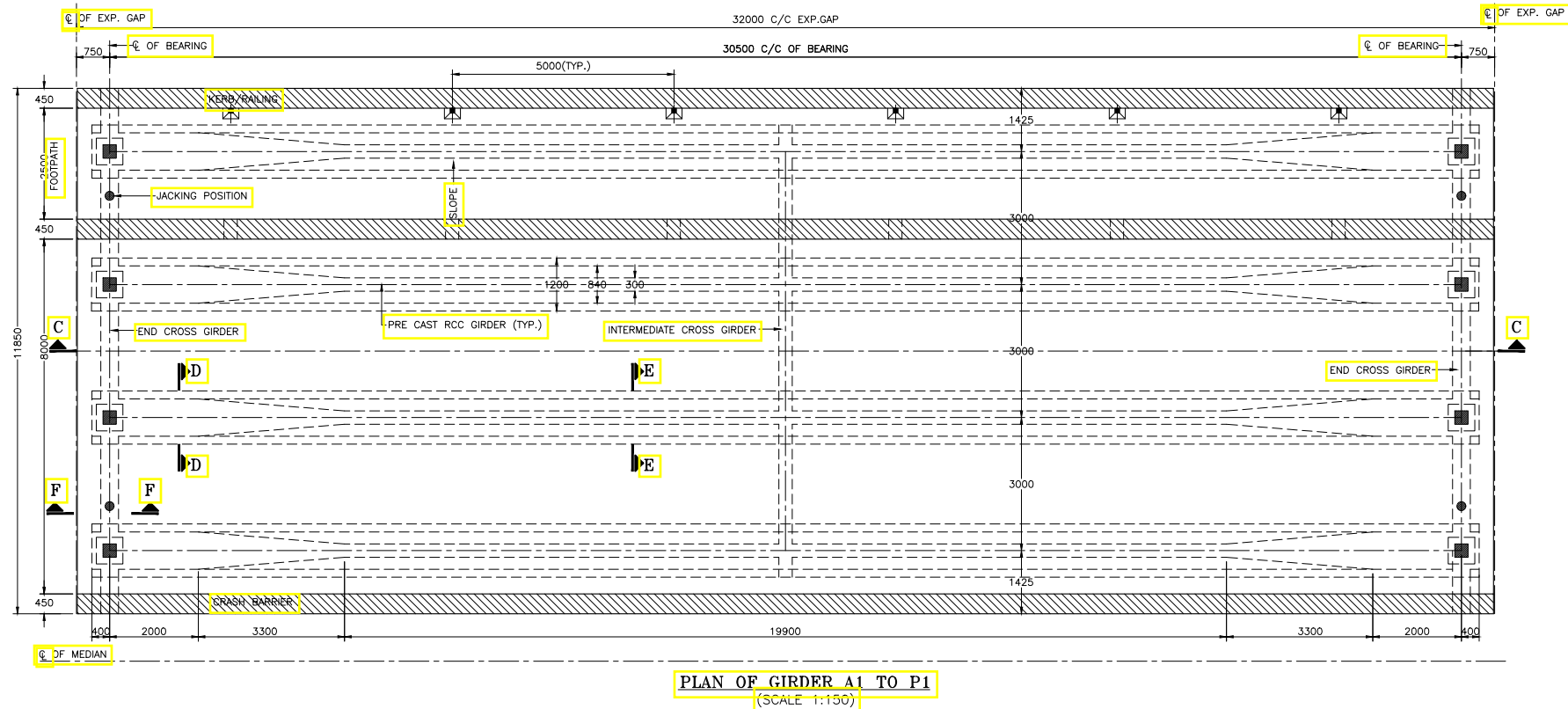
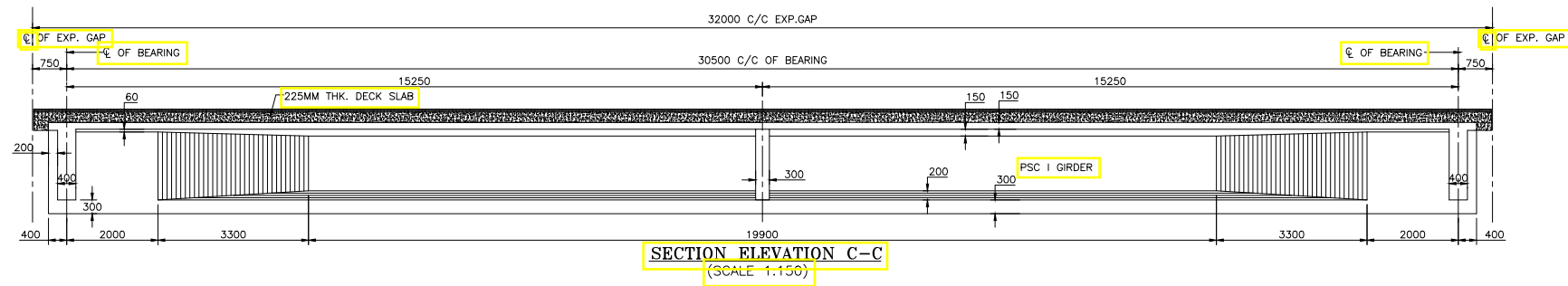
BAR BENDING SCHEDULE OF PILE CAP							
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	TOTAL WEIGHT (Kg)
1	FT1	900 8650 900	32	150	10.450	83	5482.51
2	FT2	900 12250 900	32	150	14.050	59	5239.78
3	FT3	900 8650 900	20	200	10.450	63	1625.56
4	FT4	900 12250 900	20	200	14.050	45	1561.11
5	FT5	100 1650 100	16	Long. 200 Trans. 200	1.85	2650	7747.16
6	FT6	8586 12186 150	16	200	41.844	8	528.99
TOTAL (KG) :							22185.11

BAR BENDING SCHEDULE OF RCC STOPPER - TRANSVERSE (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	900 975 850 850	16	150	4.550	12	1.580	86.28
2	TS2-L	900 1600 100	16	150	5.200	5	1.580	41.09
3	TS3-L	975 1600 100	16	200	5.350	5	1.580	42.27
TOTAL (KG) :								169.64

BAR BENDING SCHEDULE OF RCC STOPPER- TRANSVERSE (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	1200 900 850 850	16	150	5.000	12	1.580	94.81
2	TS2-R	900 1600 100	16	150	5.200	6	1.580	49.30
3	TS3-R	1200 1600 100	16	200	5.800	5	1.580	45.83
TOTAL (KG) :								189.95

BAR BENDING SCHEDULE OF RCC STOPPER - LONGITUDINAL (2 Nos.)								
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	1350 500 850 850	16	150	4.900	7	1.580	54.20
2	TS2	500 900 100	16	150	3.000	7	1.580	33.19
3	TS3	1350 900 100	12	150	4.700	4	0.889	16.71
TOTAL (KG) 2 Nos:								208.20

EMPLOYER  Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division		PROJECT NAME Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges		DESIGN CONSULTANTS Joint Venture of  EPTISA Servicios De Ingeniera Madrid, Spain  STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited		Designed By Mr. S.N.R.B. Nec.No. 265 Civil "A"  Checked By Mr. S.M. Nec.No.  Approved By Mr. H.B. Nec.No. 	Drawing Name PIER BAR BENDING SCHEDULE OF BRIDGE OVER RIVER BALUWA Reference Drawings -	Scale: AS SHOWN Chainage: 245+228	Date: JUNE, 2023 Drawing No.- 12 Sheet No. 1/1
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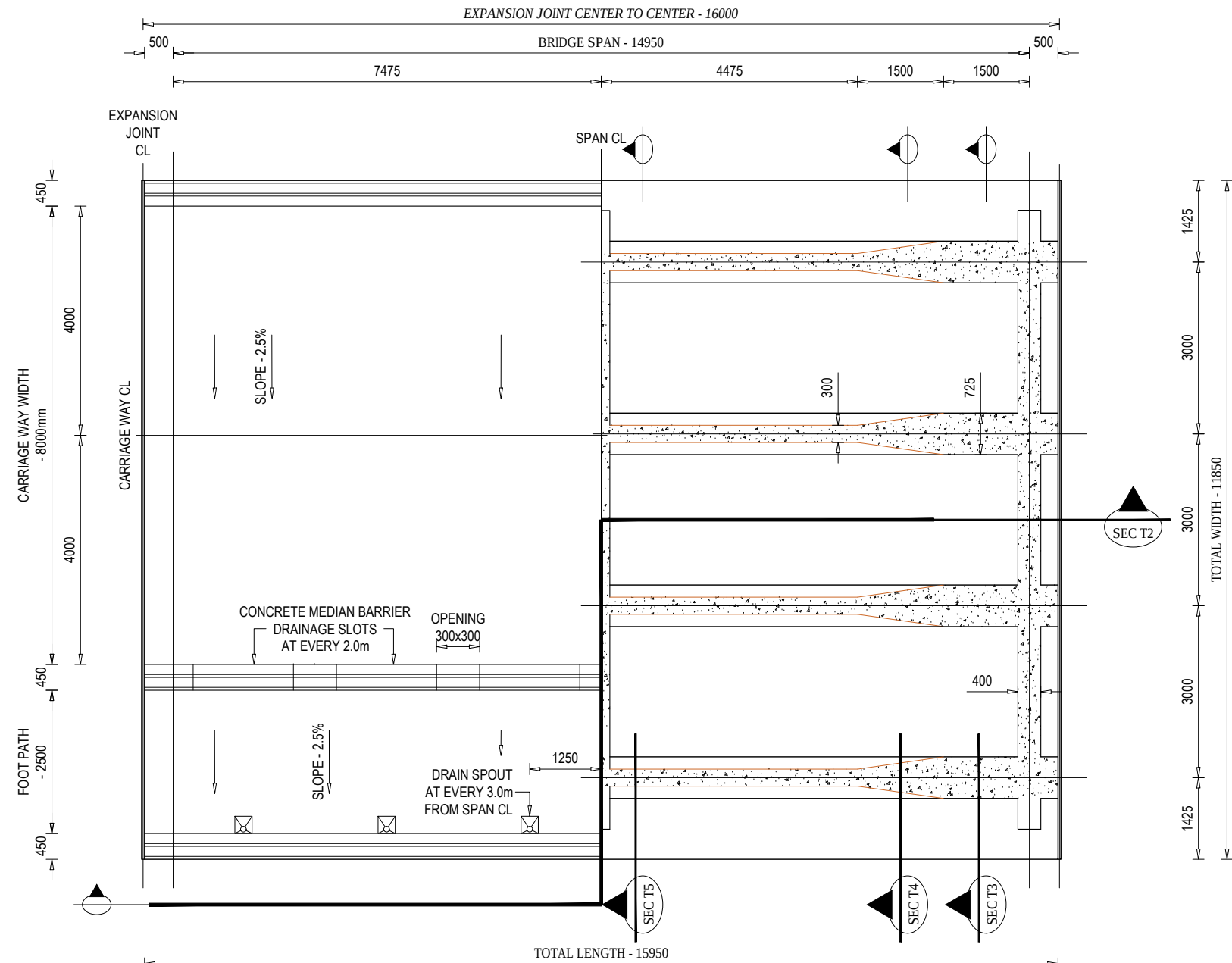


NOTES:

1. DIMENSIONS ARE IN MILLIMETERS. CHANGES & LEVELS ARE IN METER UNLESS NOTED OTHERWISE.
2. CHAINAGE & LEVEL SHALL BE VERIFIED WITH THE RELEVANT PLAN & PROFILE DRAWING VARIATION (IF ANY) SHALL BE REPORTED TO ENGINEER FOR MODIFICATION.
3. CHAINAGE OF THE STRUCTURE IS AT THE CENTER LINE OF THE PROPOSED STRUCTURE.
4. EACH PRECAST GIRDER WILL BE LIFTED BY USING LIFTING STRAND AT EITHER END DURING LIFTING GIRDER SHALL BE KEPT PLUMB AND UPRIGHT.

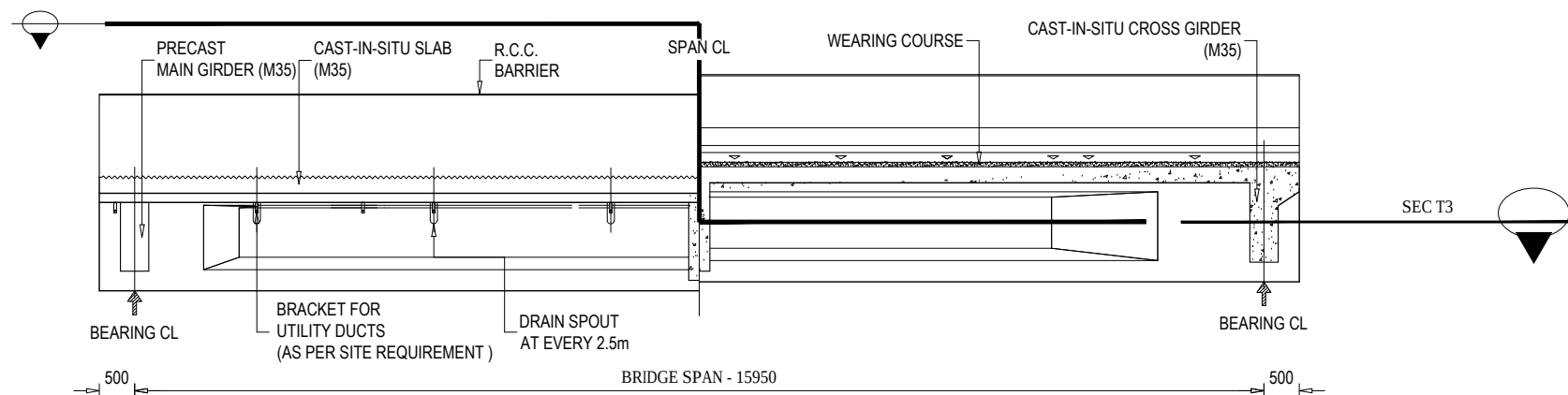
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 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division		Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges		Joint Venture of		SUPER STRUCTURE DETAILS OF BRIDGE OVER RIVER BALUWA		AS NOTED		JUNE, 2023	
				 EPTISA Servicios De Ingenieria Madrid, Spain  STUP Consultants Private Limited Kolkatta, India		Designed By Mr.S.N.R.B.  Checked By Mr.S.M.  Approved By Mr.H.B. 		Reference Drawings:		Drawing No.: KDP/DPR/STR/BR/BALUWA /DD -13	
				In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited				Chainage: 245+228		Sheet No.: 1/3	

32m Superstructure



HALF SECTIONAL PLAN VIEW OF SUPERSTRUCTURE AT SEC T1

SCALE - 1 : 100 @ A3 PAPER

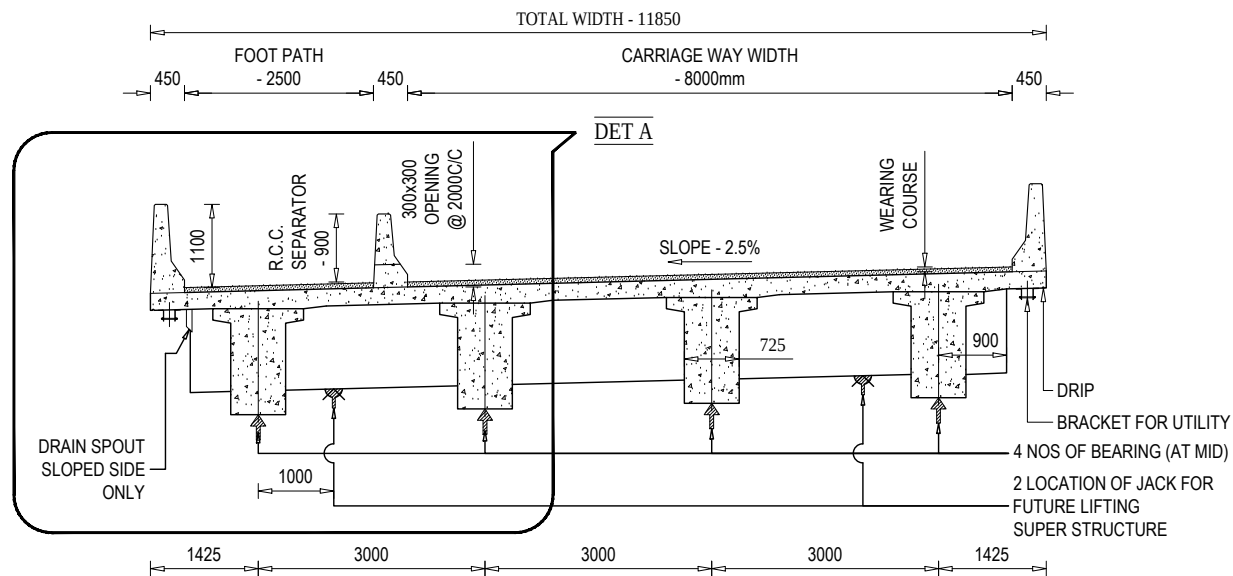


HALF ELEVATION SECTIONAL VIEW OF SUPERSTRUCTURE AT SEC T2

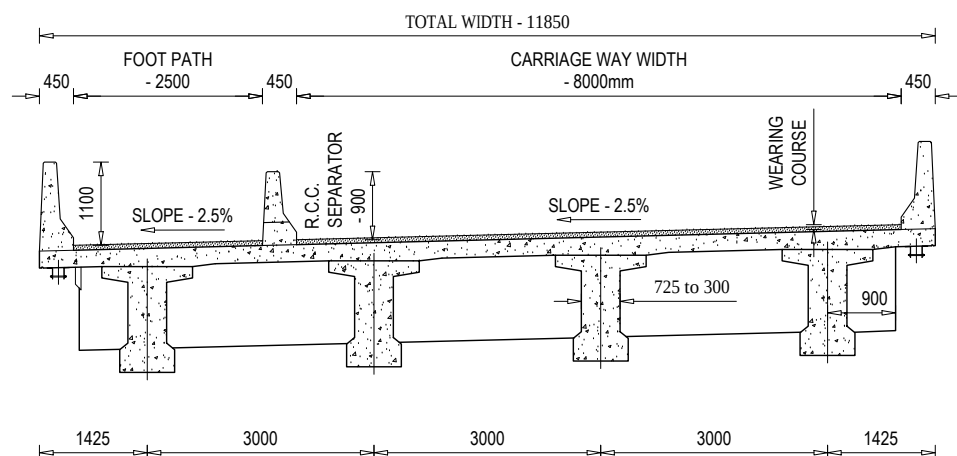
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16m Superstructure

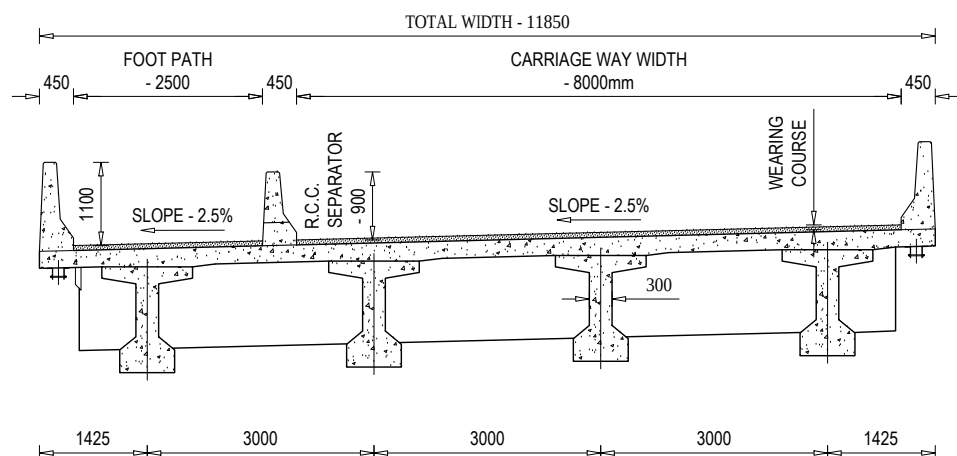
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 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of  EPTISA Servicios De Ingeniera Madrid, Spain  STUP Consultants Private Limited Kolkatta, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Mr. S.N.R.B.	SUPER STRUCTURE DETAILS OF BRIDGE OVER RIVER BALUWA Reference Drawings	AS SHOWN	JUNE 2023
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			Approved By			KDP/DPR/STR/BR/BALUWA /DD-13
					Chainage:	Sheet No. 2 / 3



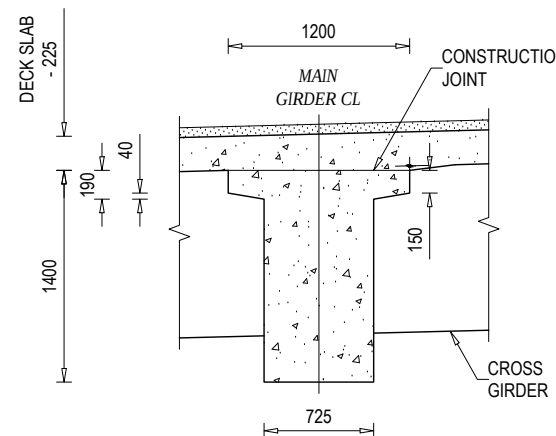
SECTIONAL VIEW AT T3
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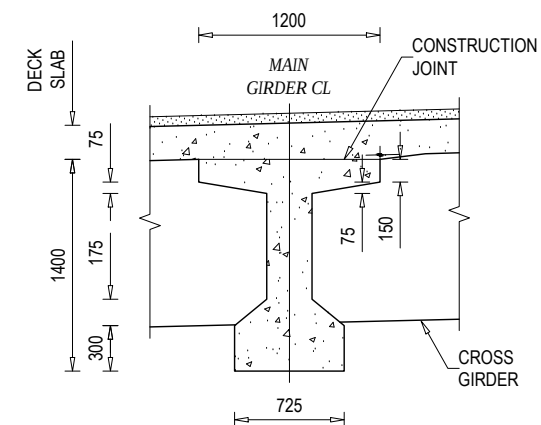
SECTIONAL VIEW AT T4
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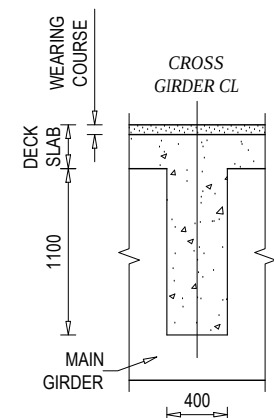
SECTIONAL VIEW AT T5
SCALE - 1 : 100 @ A3 PAPER



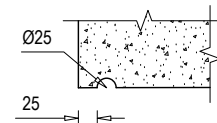
LONGITUDINAL GIRDER - SECTIONAL DETAIL AT END
SCALE - 1 : 50 @ A3 PAPER



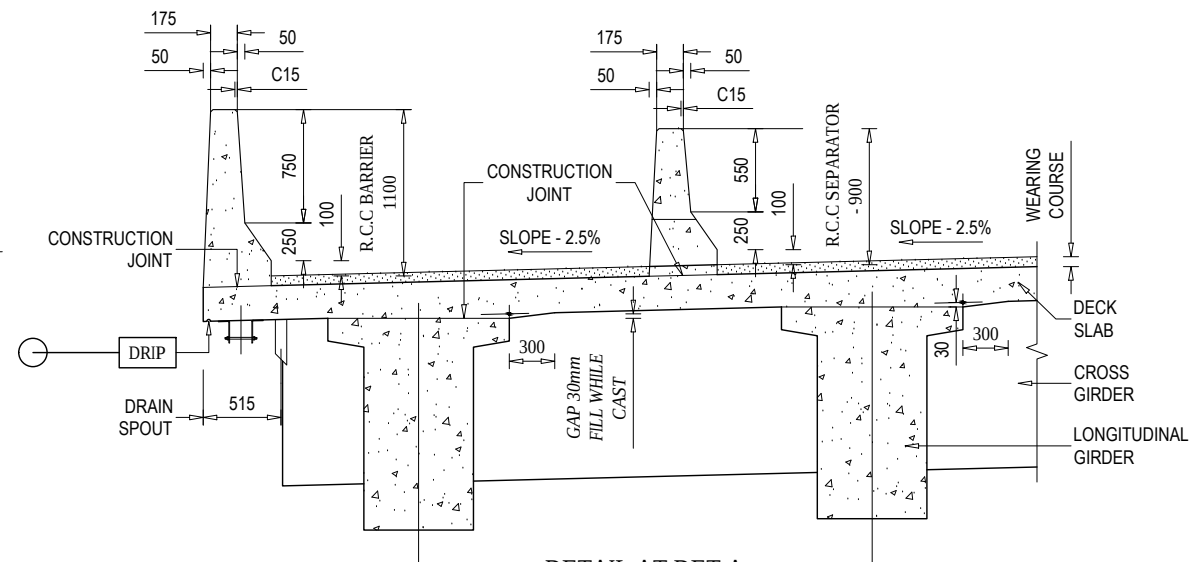
LONGITUDINAL GIRDER - SECTIONAL DETAIL AT MID
SCALE - 1 : 50 @ A3 PAPER



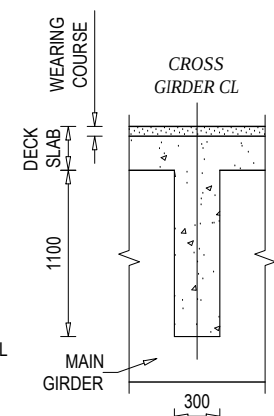
END CROSS GIRDER
- SECTIONAL DETAIL
SCALE - 1 : 50



DETAIL AT DRIP
SCALE - 1 : 10



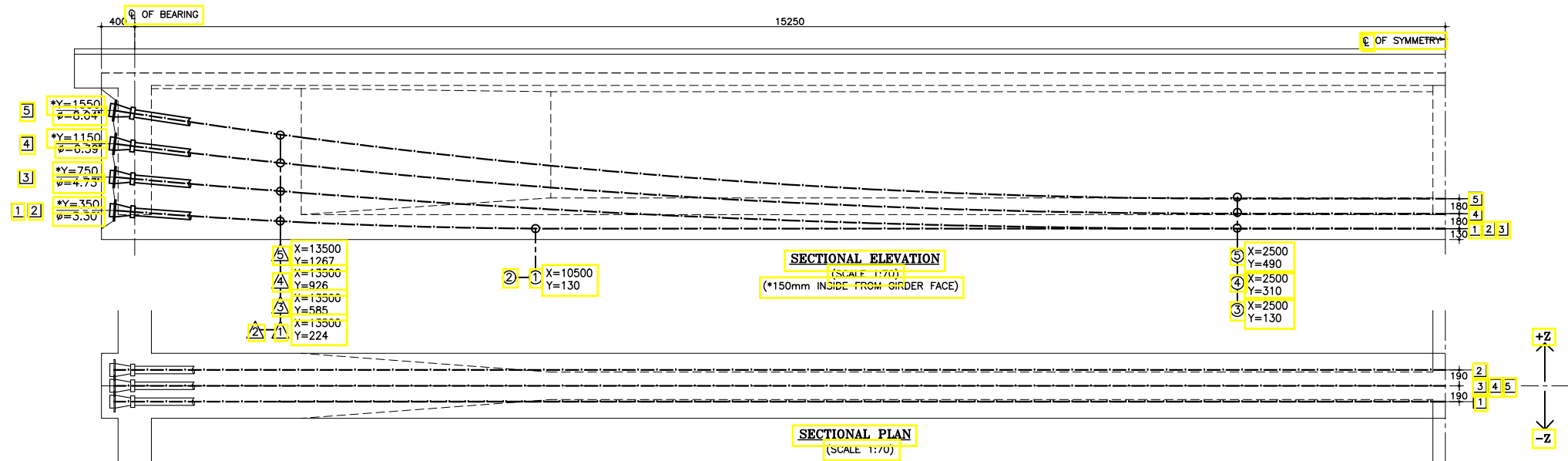
DETAIL AT DET A
SCALE - 1 : 50



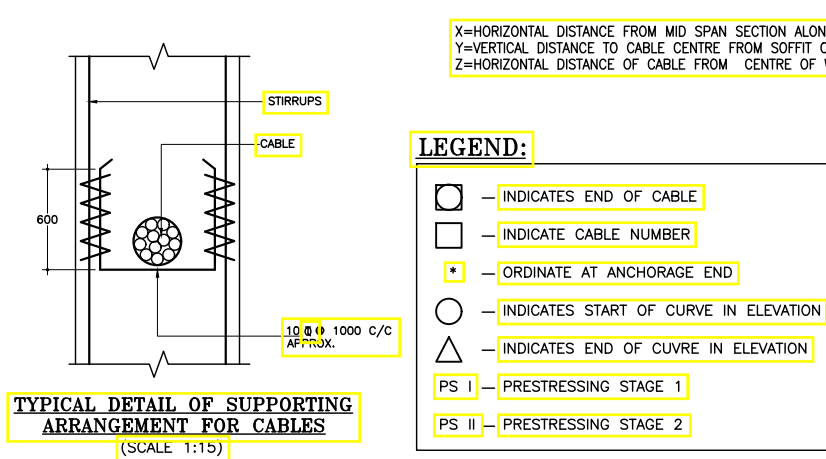
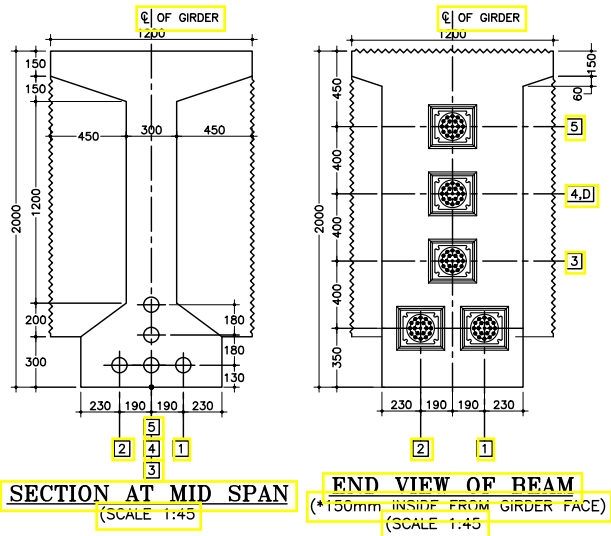
MID CROSS GIRDER
- SECTIONAL DETAIL
SCALE - 1 : 50

16m Superstructure

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Drawing Name	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of  EPTISA Servicios De Ingenieria Madrid, Spain  STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Mr. S.N.R.B. Nec.No. 265 CIVIL "A"	MAIN GIRDER STRUCTURE DETAILS OF BRIDGE OVER RIVER BALUWA Reference Drawings	AS SHOWN Chainage: 245+228	JUNE 2023
			Mr. S.M. Nec.No.			Drawing No. - KDP/DPR/STR/BR/BALUWA/DD-13
			Mr. H.B. Nec.No.			Sheet No. 3 / 3



cable no	at X =	15500		14300		13000		11700		10400		9100		7800		6500		5200		3900		2600		1300		0	
		y	z	y	z	y	z	y	z	y	z	y	z	y	z	y	z	y	z	y	z	y	z	y	z	y	z
C5		1550	0	1380	0	1198	0	1034	0	891	0	770	0	670	0	593	0	537	0	503	0	490	0	490	0	490	0
C4(Dummy)		1150	0	1016	0	871	0	741	0	628	0	532	0	453	0	391	0	347	0	320	0	310	0	310	0	310	0
C3		750	0	651	0	544	0	448	0	365	0	294	0	236	0	190	0	157	0	137	0	130	0	130	0	130	0
C2		350	190	275	190	195	190	145	190	130	190	130	190	130	190	130	190	130	190	130	190	130	190	130	190	130	190
C1		350	-190	275	-190	195	-190	145	-190	130	-190	130	-190	130	-190	130	-190	130	-190	130	-190	130	-190	130	-190	130	-190



LEGEND:	
□	INDICATES END OF CABLE
□	INDICATE CABLE NUMBER
*	ORDINATE AT ANCHORAGE END
○	INDICATES START OF CURVE IN ELEVATION
△	INDICATES END OF CURVE IN ELEVATION
PS I	PRESTRESSING STAGE 1
PS II	PRESTRESSING STAGE 2

NOTES FOR PRESTRESSING:

- ALL DIMENSIONS ARE IN MM. UNLESS OTHERWISE SPECIFIED.
- DIMENSIONS NOT BE SCALED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- SEQUENCE OF CONSTRUCTION AND PRESTRESSING SHALL BE AS FOLLOWS:
 - STAGE 1 CABLES SHALL BE STRESSED WHEN THE BEAM CONCRETE ATTAINS A MINIMUM STRENGTH OF 35MPa OR AFTER 7 DAYS OF CASTING WHICHEVER IS LATER.
 - ALL REMAINING CABLES SHALL BE STRESSED TO 100% OF JACKING FORCE WHEN THE BEAM CONCRETE IS 21-DAYS OLD WITH MINIMUM CONCRETE STRENGTH OF 42MPa.
 - IN CASE OF EMERGENCY OR SHORTFALL THE REMAINING STRANDS OF CABLE NO. 4 MAY BE STRESSED.

TABLE-1:

CABLE NO.	STAGE OF PRESTR-ESSING	ANCHORAGE TYPE	CABLE LENGTH CONSIDERING GRIP ADDITIONAL CUTTING LENGTH IN M.	CALCULATED ELONGATION CONSIDERING GRIP LENGTH (MM)	JACKING FORCE (KN)	NUMBER OF STRANDS TO BE STRESSED
5	PS II	19 T 15	33.013	112.95	3694	19
3		19 T 15	32.939	113.26	3694	19
2	PS I	19 T 15	32.912	113.05	2333	12
1		19 T 15	32.912	113.05	2333	12

CABLE 4 is dummy cable

3. PRESTRESSING SYSTEM

- ALL PRESTRESSING STRANDS SHALL HAVE 7 PLY UNCOATED STRESS RELIEVED HIGH TENSILE STRANDS OF 15.2mm DIA CONFORMING TO CLASS 2 OF IS-14268-1995.
- HDPE SHEATHING SHALL BE USED.
- THE PARAMETERS ADOPTED FOR DESIGN ARE AS FOLLOWS:
 - ANCHORAGE TYPE.....19 T 15
 - SLIP AT EACH END.....10mm
 - SHEATH DIA100mm.
 - SHEATH THICKNESS.....±3mm
 - CO-EFFICIENT OF FRICTION.....0.17
 - WOBBLE CO-EFFICIENT.....0.002/m
 - NOMINAL AREA OF EACH STRAND.....140 mm²
 - NOMINAL ULTIMATE BREAKING LOAD OF EACH STRAND.....260.7KN
 - MODULUS OF ELASTICITY OF HIGH TENSILE STEEL.....1.95X10⁵ MPa
- ALL THE DESIGN PARAMETERS ADOPTED SHALL BE VERIFIED AT SITE.
- ALL PRESTRESSING ACCESSORIES BEING PATENTED ITEMS SHALL BE OBTAINED FROM AUTHORISED MANUFACTURERS ONLY.

4. PRESTRESSING OPERATIONS

- STRESSING OPERATION SHALL BE DONE AS PER PROCEDURE GIVEN IN MORTH'S SPECIFICATIONS.
- CABLE LENGTHS MENTIONED IN THE DRAWING ARE INCLUSIVE OF 950 MM. EXTRA AT EACH END. THE TOTAL LENGTH OF CABLE SHALL BE VERIFIED AT SITE.
- STAGES OF PRESTRESSING SHALL BE AS IN TABLE-1&3.
- STRESSING OF CABLES SHALL BE CARRIED OUT SIMULTANEOUSLY FROM BOTH ENDS & ALL STRANDS IN A CABLE SHALL BE TENSIONED SIMULTANEOUSLY. ONLY MULTI PULL JACKS SHALL BE USED FOR STRESSING.
- GROUTING OF CABLES SHALL BE DONE IN SAME SEQUENCE AS STRESSING AND SHALL CONFORM TO IRC:112-2011.
- ANCHORAGE POCKET SHALL BE FILLED WITH PREPACKED NON-SHRINK MORTAR, END FACES OF GIRDERS TO BE COATED WITH TWO COATS OF EPOXY.
- EXTENSIONS SHALL BE RECHECKED AT 24 HOURS AFTER ANCHORING TO OBSERVE SLOW SLIPPAGE. THE MATTER SHALL BE REPORTED FOR EXCESSIVE SLIPPAGE IF ANY.
- INITIAL SLACKNESS IN CABLES SHALL BE REMOVED BY APPLYING SMALL TENSION. THE INITIAL TENSION REQUIRED TO REMOVE SLACKNESS SHALL BE TAKEN AS THE STARTING POINT FOR MEASURING ELONGATION & CORRECTION SHALL BE APPLIED AS PER CL 12.2.1.3 OF IS:1343-198
- IN CASE THE CALCULATED ELONGATION AND THE JACK PRESSURE ARE NOT ACHIEVED SIMULTANEOUSLY DURING PRESTRESSING OPERATION STRESSING SHALL BE CONTINUED/ DISCONTINUED AS PER NOTE NO. 8 GIVEN BELOW.
- THE EXTENSIONS GIVEN IN TABLE NO.-1 SHALL BE MODIFIED AT SITE IN CASE ACTUAL VALUE OF AREA OF STRANDS 'A' & MODULUS OF ELASTICITY 'E' VARIES FROM THOSE ASSUMED IN DESIGN, REVISED EXTENSION SHALL BE CALCULATED AS UNDER
REVISED EXTENSION = $(195 \times 10^{-5}) \times \text{ORIGINAL EXTENSION} \times \frac{\text{OLD AREA OF STRANDS}}{\text{NEW MODULUS}}$

- EXTENSION OF CABLE SHALL BE VERIFIED FOR A FEW CABLES AT SITE. IN CASE OF VALUE OF μ AND k ARE FOUND TO BE DIFFERENT THAN THOSE CONSIDERED FOR DESIGN, EXTENSION SHALL BE SUITABLY MODIFIED AFTER APPROVAL OF DESIGN OFFICE

- THE GRIP LENGTH FROM ANCHORAGE FACE UP TO GRIPPING POINT IN JACK ASSUMED IN EXTENSION IS 750MM & THE ADDITIONAL LENGTH TAKEN FOR CUTTING IS 200MM. IF GRIP LENGTH VARIES THAN THOSE CONSIDERED, THE EXTENSIONS SHALL BE MODIFIED AS UNDER:
 $\text{NEW EXTENSIONS} = \text{EX} + \text{EX} \times (\text{GRIP} - 750) / (\text{LENGTH})$
WHERE, EX IS EXTENSION AS SPECIFIED IN RESPECTIVE DRAWING.

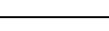
5. SPECIAL NOTE FOR PRESTRESSING

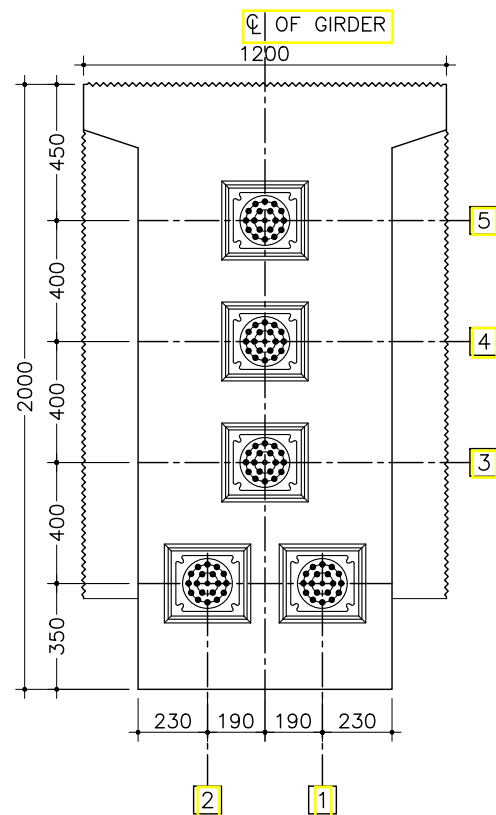
- IF THE CALCULATED ELONGATION IS REACHED BEFORE THE CALCULATED GAUGE PRESSURE IS OBTAINED, CONTINUE TENSIONING TILL ATTAINING THE CALCULATED GAUGE PRESSURE PROVIDED THE ELONGATION DOES NOT EXCEED 1.05 TIMES THE CALCULATED ELONGATION.
- IF THE CALCULATED ELONGATION HAS NOT BEEN REACHED CONTINUE TENSIONING IN INTERVALS OF 5 kg/sqcm UNTILL THE CALCULATED ELONGATION IS REACHED PROVIDED THE GAUGE PRESSURE DOES NOT EXCEED 1.05 TIMES THE CALCULATED GAUGE PRESSURE.
- IF THE ELONGATION AT 1.05 TIMES THE CALCULATED GAUGE PRESSURE IS LESS THAN 95 TIMES THE CALCULATED ELONGATION THE FOLLOWING MEASURES MUST BE TAKEN:
 - RECALIBRATE THE PRESSURE GAUGE
 - CHECK THE CORRECT FUNCTIONING OF THE JACK PUMP & LEADS
 - DETENSION THE CABLE SLIDE IT IN ITS DUCT TO CHECK THAT IT IS NOT BLOCKED BY MORTAR WHICH HAS ENTERED THROUGH HOLES IN THE SHEATH. RETENSION THE CABLE IF FREE.
- IF THE REQUIRED ELONGATION IS NOT OBTAINED FURTHER FINISHING OPERATION SUCH AS CUTTING OR SEALING SHOULD NOT BE UNDER TAKEN WITHOUT THE APPROVAL OF THE DESIGN OFFICE
- THE GAUGE PRESSURE FOR PRESTRESSING SHALL BE WORKED OUT PRIOR TO ANY STRESSING OPERATION DULY TAKING IN TO ACCOUNT THE RAM AREA OF THE JACK & THE JACK EFFICIENCY. THE STRESSING EQUIPMENTS SHALL BE WELL MAINTAINED AND THE CALIBRATION CHARTS SHALL BE AVAILABLE AT SITE.AFTER APPROVAL OF CLIENT.
- IF CABLE NUMBER 4 (DUMMY CABLE) IS NOT IN USE, IT IS GROUTED BEFORE SLAB CASTING.
- THIS DRAWING IS APPLICABLE FOR BOTH INNER AND OUTER GIRDER.

NOTES:

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- CHAINAGE & LEVEL SHALL BE VERIFIED WITH THE RELEVANT PLAN & PROFILE DRAWING VARIATION (IF ANY) SHALL BE REPORTED TO ENGINEER FOR MODIFICATION.
- CHAINAGE OF THE STRUCTURE IS AT THE CENTER LINE OF THE PROPOSED STRUCTURE.
- WHERE ABSOLUTELY NECESSARY THE UNTENSIONED REINFORCEMENT BARS/MESH MAY BE SUITABLY REPOSITIONED TO SUIT.

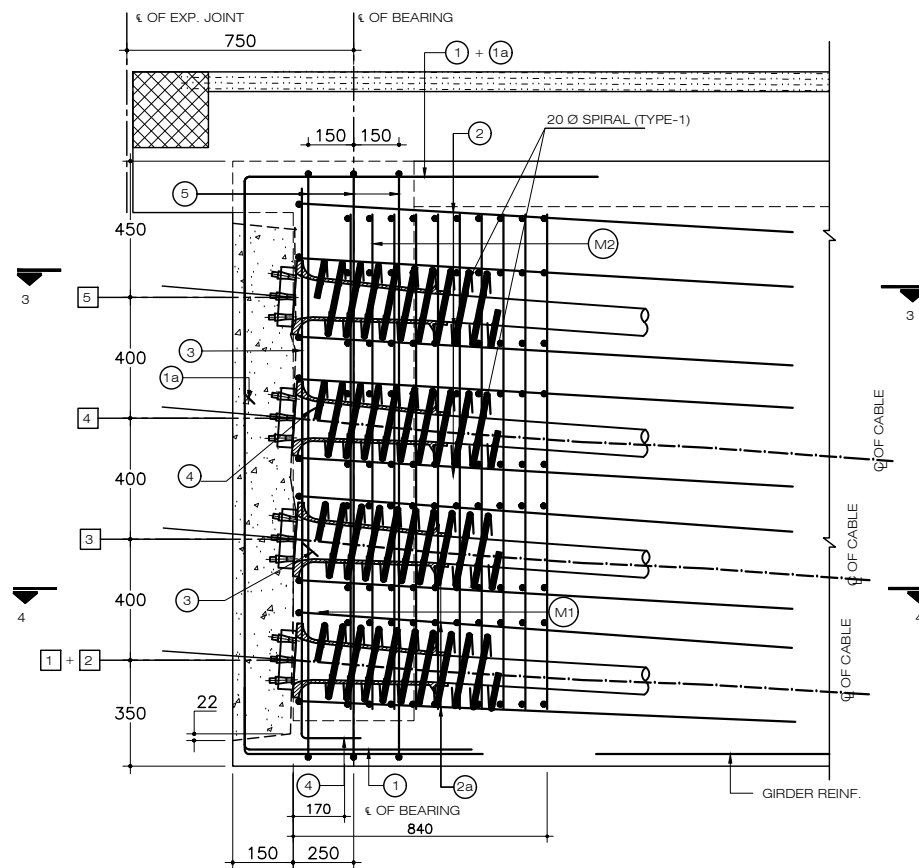
32m Superstructure

EMPLOYER	PROJECT	DESIGN CONSULTANT			Designed By	Mr.S.N.R.B SEC NO. 265 CIVIL A		Drawing Name:	Scale:	Date: JUNE, 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			Checked By	Mr.S.M		MAIN GIRDER DETAILS OF BRIDGE OVER RIVER BALUWA	AS NOTED	Drawing No.: KDP/DP/STR/BR/BALUWA/DD -14
	 EPTISA Servicios De Ingenieria Madrid, Spain	 STUP Consultants Private Limited Kolkatta, India								
	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 Kriti Consultant and Rays Consultant Private Limited			Approved By	Mr.H.B		Reference Drawings:	Chainage: 245+228	Sheet No.: Sheet No. 1/1

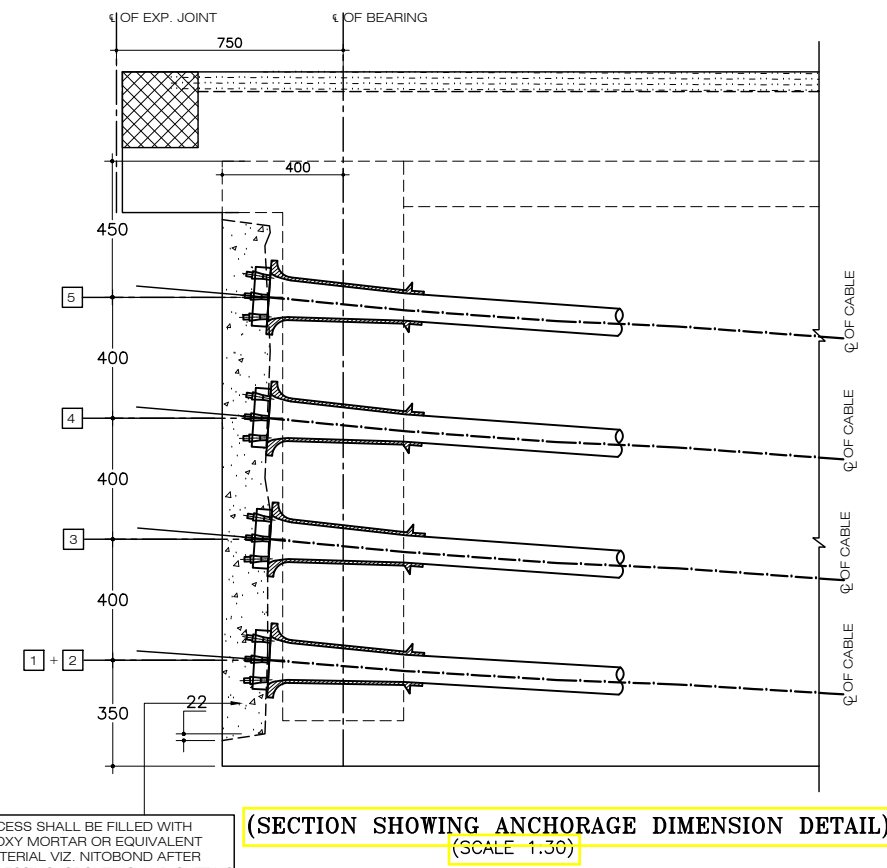


END VIEW OF BEAM

DETAILS OF 16 MESH
TYPE M1 & M2 IN 10 LAYERS
AT EQUAL SPACING
(SCALE 1:20)



(SECTION SHOWING ANCHORAGE REINF. DETAIL)
(SCALE 1:30)



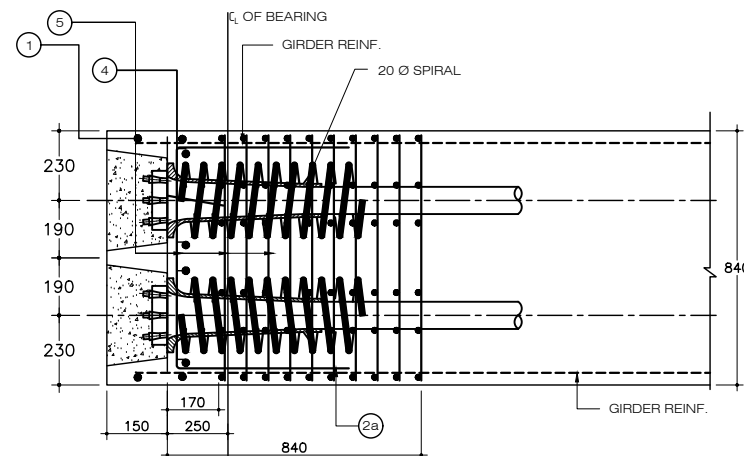
(SECTION SHOWING ANCHORAGE DIMENSION DETAIL)
(SCALE 1:30)

ANCHORAGE BLOCK
DIMENSION SHOULD BE AS PER
MANUFACTURING AGENCY

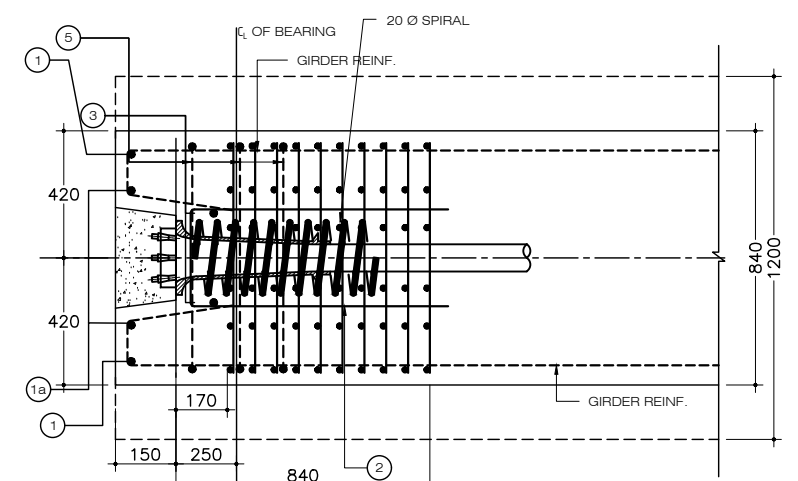
REINFORCEMENT SCHEDULE		
BAR MKD.	BAR DIA & SPACING/NOS.	BAR SHAPE
1	16 Ø 2 Nos.	700
1a	16 Ø 2 Nos.	700
2	20 Ø 4 Nos.	800
2a	20 Ø 3 Nos.	800
3	12 Ø 2 Nos.	800
4	12 Ø 4 Nos.	800
5	2L-20 Ø 6 NOS. STIRRUPS	

NOTES:

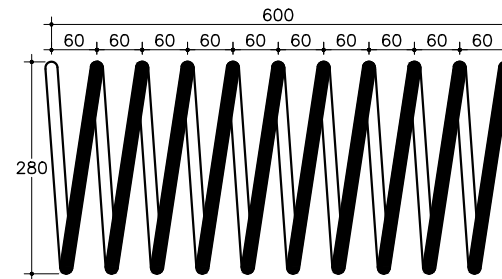
1. ALL DIMENSIONS ARE IN MM. UNLESS OTHERWISE SPECIFIED.
2. DIMENSIONS ARE NOT TO BE SCALED, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. WHEREVER REINFORCEMENT IS FOUND TO BE FOULING WITH THE PRESTRESSED CABLE, ANCHORAGE - LOCAL ADJUSTMENT IN REINFORCEMENT DETAIL CAN BE DONE WITH APPROVAL OF THE ENGINEER. NO CHANGE SHALL BE PERMITTED ON PRESTRESS CABLE ALIGNMENT UNDER ANY CIRCUMSTANCE.
4. THIS DRAWING IS APPLICABLE FOR BOTH INNER & OUTER GIRDER.
5. FIRST LAYER OF MESH TYPE-A AS SHOWN ABOVE SHALL BE PLACED AS CLOSE AS POSSIBLE TO THE FACE OF ANCHORAGE.
6. LAPPING SHALL BE STAGGERED. BARS SHALL BE LAPPED IN SUCH A WAY THAT NOT MORE THAN 50% OF THE BARS ARE LAPPED AT ANY SECTION, LAP LENGTH SHALL BE PROVIDED AS "X*D" MENTIONED IN THE TABLE BELOW, WHERE "D" IS THE SMALLER BAR UNLESS OTHERWISE SPECIFIED.



SECTION AT 4-4
(SCALE 1:30)



SECTION AT 3-3
(SCALE 1:30)



*TYPICAL DETAIL OF 20Ø SPIRAL REINFORCEMENT
(To be conformed with supplier specification)
(SCALE 1:10)

FAVORABLE BOND CONDITION					
GRADE OF CONCRETE	PERCENTAGE OF LAPPED BARS	<25%	33%	50%	>50%
M50	X	29	33	41	44
M45	X	33	38	47	50

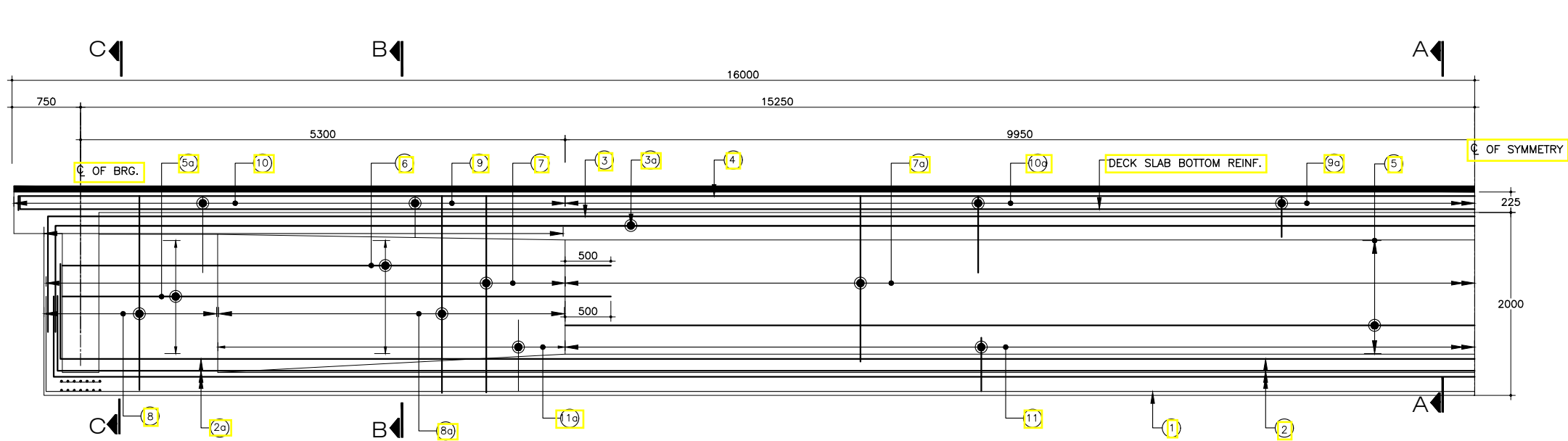
UNFAVORABLE BOND CONDITION					
GRADE OF CONCRETE	PERCENTAGE OF LAPPED BARS	<25%	33%	50%	>50%
M50	X	42	48	59	63
M45	X	45.7	52.6	64	68.6

FAVORABLE ZONE:
a. RAFT/SLAB BOTTOM MAIN BAR.
UNFAVORABLE ZONE:
a. RAFT/SLAB BOTTOM MAIN BAR.
b. WALL/COLUMN MAIN BAR.

32m Superstructure

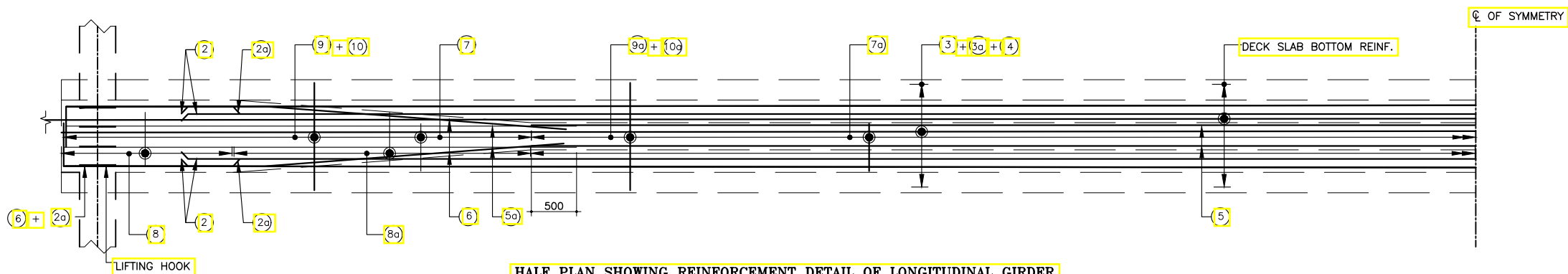
MANUFACTURER'S SPECIFICATION.

EMPLOYER	PROJECT	DESIGN CONSULTANT	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 Kolkatta, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Mr.S.N.R.B. Signature Checked By Mr.S.M. Signature Approved By Mr.H.B. Signature	MAIN GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER BALUWA Reference Drawings: KDP/DPR/STR/BR/BALUWA /DD -18	AS NOTED Chainage: 245+228	JUNE, 2023 Drawing No.: KDP/DPR/STR/BR/BALUWA /DD -15 Sheet No.: Sheet No. 1/4



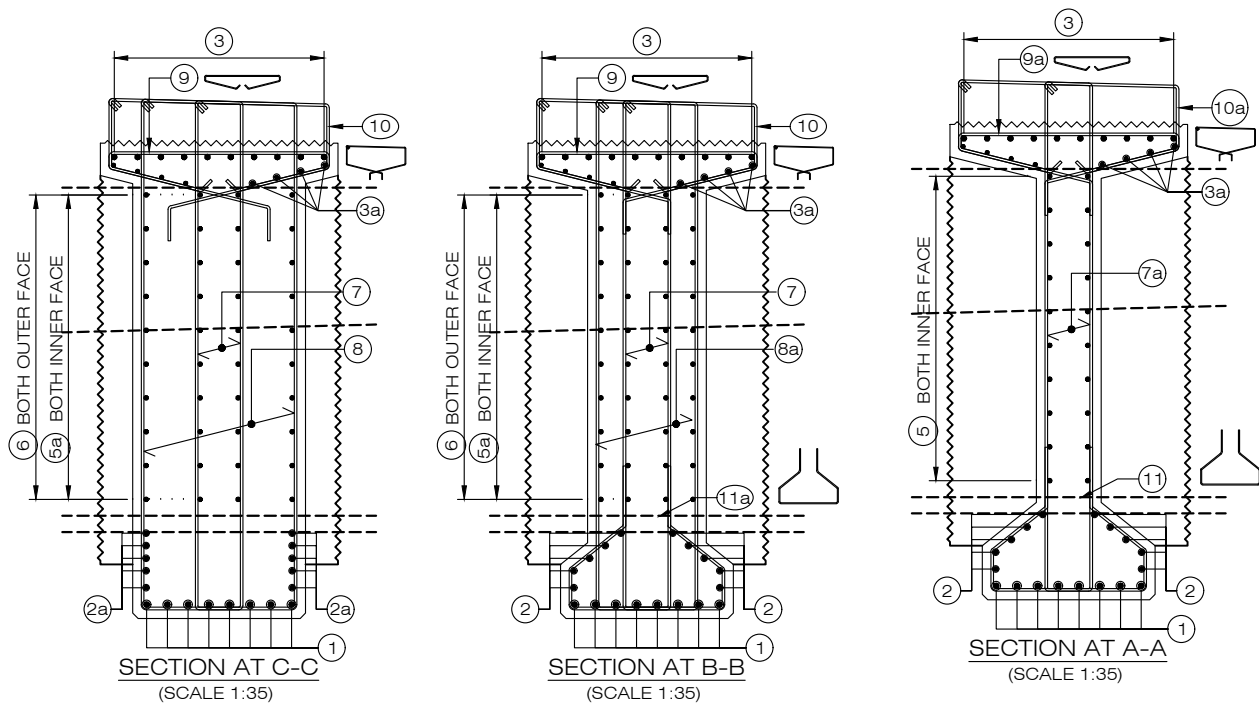
ELEVATION SHOWN REINFORCEMENT DETAIL OF LONGITUDINAL GIRDER

(SCALE 1:60)



HALF PLAN SHOWING REINFORCEMENT DETAIL OF LONGITUDINAL GIRDER

(SCALE 1:60)



NOTES:

- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.
- DIMENSIONS ARE NOT TO BE SCALED, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- GRADE OF CONCRETE SHALL BE AS BELOW:
a) CAST-IN-SITU DECK SLAB.....M45
b) PRECAST PSC GIRDER.....M50
c) CROSS GIRDER.....M45
- CLEAR COVER TO OUTERMOST STEEL SHALL BE AS BELOW:
a. CAST-IN-SITU SUPERSTRUCTURE).....45mm
b. PRECAST PSC GIRDER.....40mm
- REINFORCING STEEL SHALL BE HYSD (TMT) BARS (GRADE DESIGNATION Fe 500DD) CONFORMING TO TABLE 18.1 OF IRC: 112-2020.
- SHOWN JACK LOCATION IN PLAN AND SHOWN JACK LOCATION IN ELEVATION OTHERWISE MENTIONED.
- CURING OF THE GIRDERS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE MORTH SPECIFICATIONS.
- GIRDERS SHALL BE SECURELY SUPPORTED AT ALL TIMES BY BRACING TO PREVENT BEAMS TOPPLING OVER.
- EACH GIRDER SHALL BE INDEPENDENTLY BRACED AGAINST OVERTURNING PRIOR TO RELEASE BY THE CRANE OR LIFTING DEVICE.
- LIFTING LOOPS SHALL BE PLACED WITH THE PLANE OF THE LOOP PERPENDICULAR TO THE LONGITUDINAL AXIS OF THE GIRDER.
- SHIFTING THE PSC GIRDERS TO SITE SHALL BE AS PER 1811 OF MORTH & H REV-V, SECTION
- RECESS FOR EXPANSION JOINT SHALL BE LEFT AS PER MANUFACTURER'S SPECIFICATION.
- LAPPING SHALL BE STAGGERED, BARS SHALL BE LAPPED IN SUCH A WAY THAT NOT MORE THAN 50% OF THE BARS ARE LAPPED AT ANY SECTION, LAP LENGTH SHALL BE PROVIDED AS 'X+D' MENTIONED IN THE TABLE BELOW, WHERE 'D' IS THE SMALLER BAR UNLESS OTHERWISE SPECIFIED.

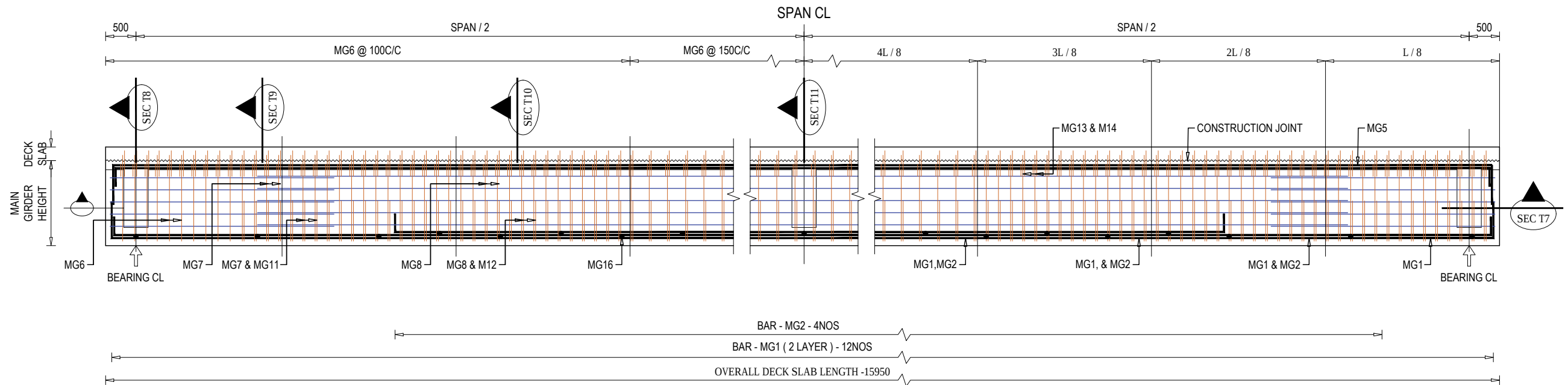
FAVORABLE BOND CONDITION				
GRADE OF CONCRETE	PERCENTAGE OF LAPPED BARS	<25%	33%	50%
M50	X	29	33	41

UNFAVORABLE BOND CONDITION				
GRADE OF CONCRETE	PERCENTAGE OF LAPPED BARS	<25%	33%	50%
M50	X	42	48	59

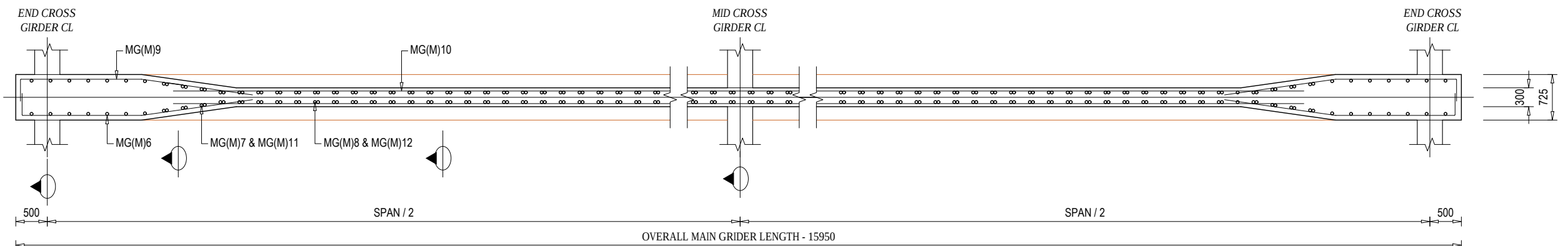
- FAVORABLE ZONE:
- RAFT/SLAB BOTTOM MAIN BAR.
- UNFAVORABLE ZONE:
- RAFT/SLAB BOTTOM MAIN BAR.
 - WALL/COLUMN MAIN BAR.

32m Superstructure

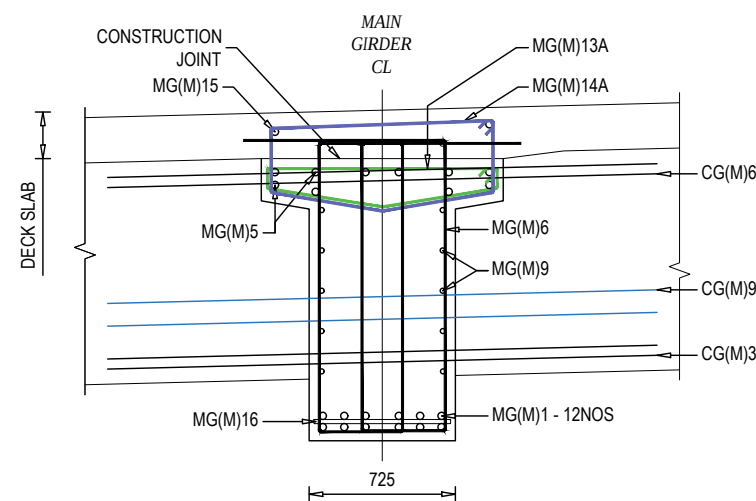
EMPLOYER	PROJECT	DESIGN CONSULTANT	Designed By	Checked By	Approved By	Drawing Name:	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of  EPTISA Servicios De Ingenieria Madrid, Spain  STUP Consultants Private Limited Kolkatta, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Mr.S.N.R.B. NIC NO. 265 CIVIL A Signature	Mr.S.M Signature	Mr.H.B Signature	MAIN GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER BALUWA Reference Drawings: KDP/DPR/STR/BR/BALUWA /DD -18	AS NOTED Chainage: 245+228	JUNE, 2023 Drawing No.: KDP/DPR/STR/BR/BALUWA /DD -15 Sheet No.: Sheet No. 2/4



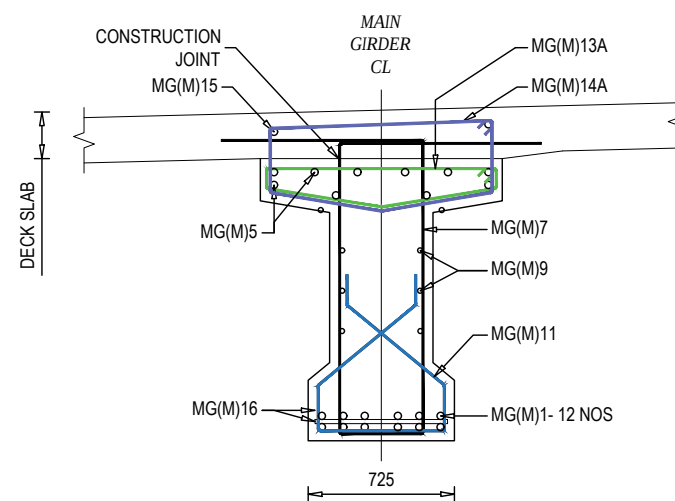
REINFORCEMENT DETAILS OF MAIN GIRDER - SECTIONAL ELEVATION VIEW
SCALE - 1 : 75



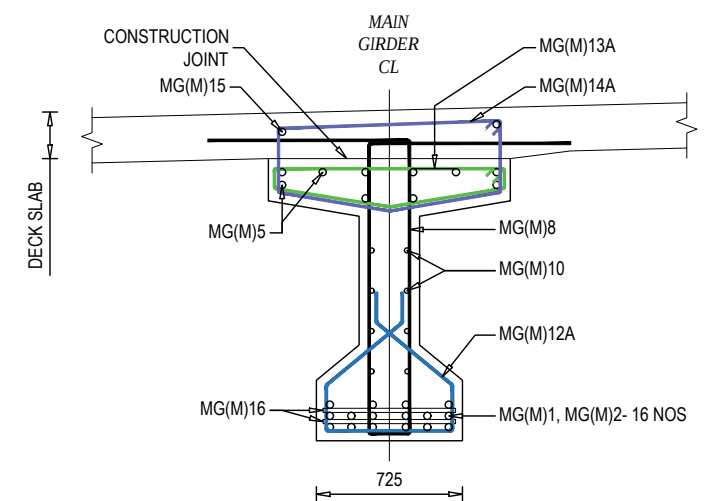
REINFORCEMENT DETAILS OF MAIN GIRDER (MID) - SECTIONAL PLAN VIEW AT T7(M)
SCALE - 1 : 75



REINFORCEMENT DETAILS OF MAIN GIRDER
SECTIONAL VIEW AT T8
SCALE - 1 : 50



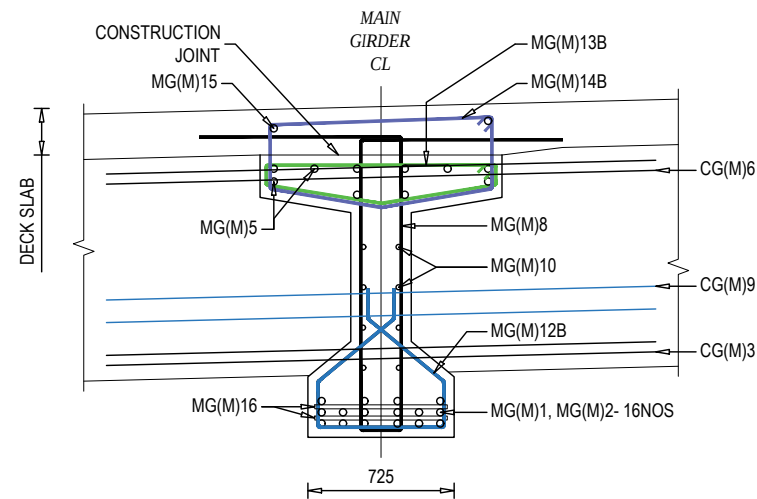
REINFORCEMENT DETAILS OF MAIN GIRDER
SECTIONAL VIEW AT T9
SCALE - 1 : 50



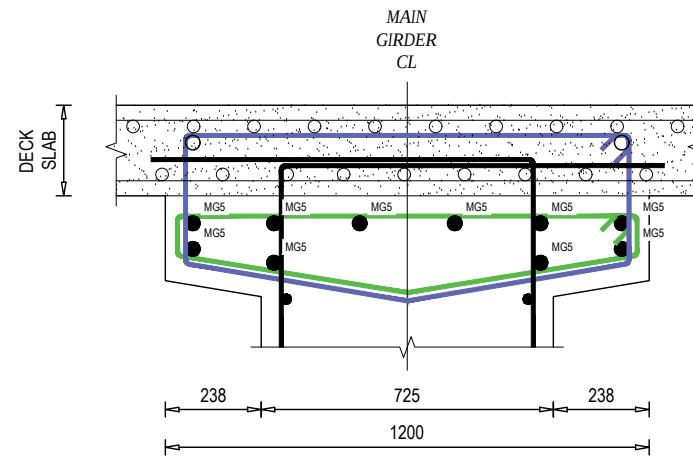
REINFORCEMENT DETAILS OF MAIN GIRDER
SECTIONAL VIEW AT T10
SCALE - 1 : 50

16m Superstructure

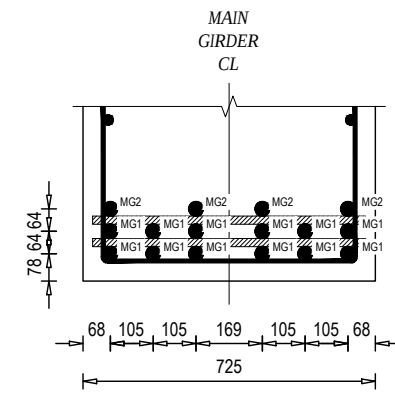
EMPLOYER  Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	PROJECT NAME Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	DESIGN CONSULTANTS Joint Venture of  EPTISA Servicios De Ingenieria Madrid, Spain  STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Designed By Mr. S.N.R.B. Nec.No. 265 CIVIL "A" Checked By Mr. S.M. Nec.No. Approved By Mr. H.B. Nec.No.		Drawing Name MAIN GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER BALUWA Reference Drawings KDP/DPR/STR/BR/BALUWA /DD-18	Scale: AS SHOWN Chainage: 245+228	Date: JUNE 2023 Drawing No.- KDP/DPR/STR/BR/BALUWA /DD-15 Sheet No. 3 / 4
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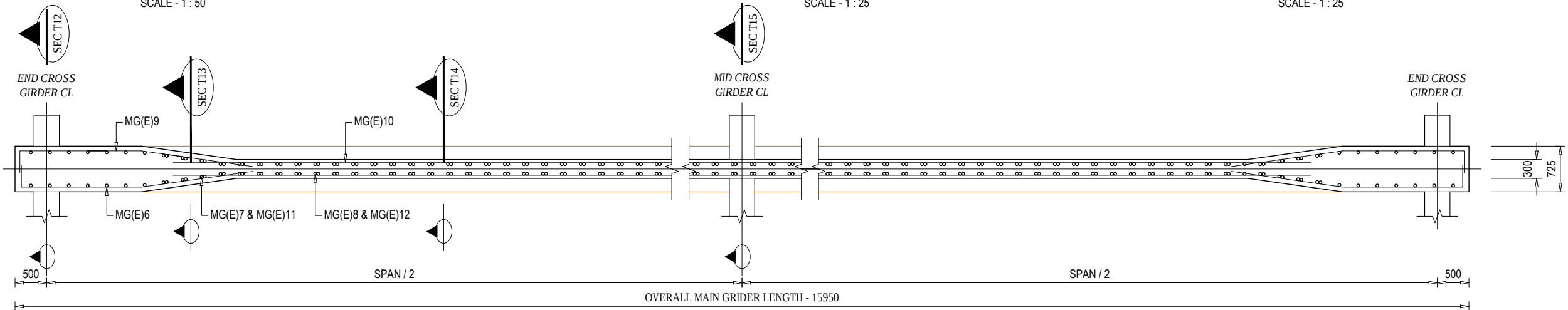
REINFORCEMENT DETAILS OF MAIN GIRDER
SECTIONAL VIEW AT T11
SCALE - 1 : 50



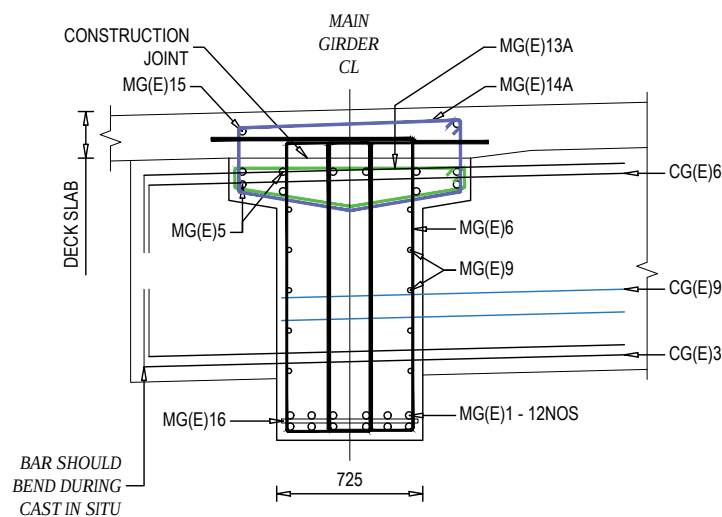
TOP BAR WEB REINFORCEMENT DETAILS
OF MAIN GIRDER
SCALE - 1 : 25



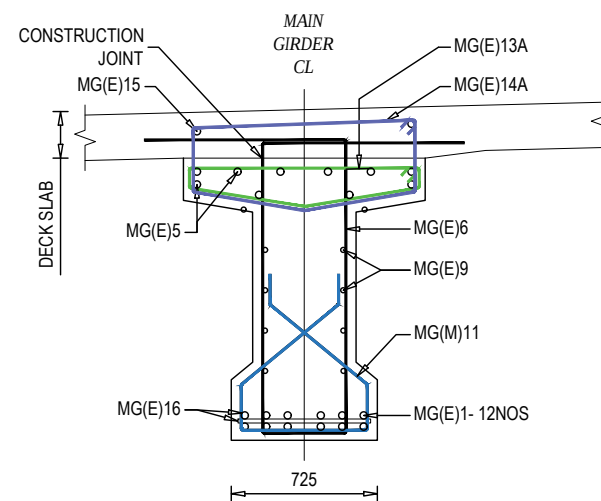
BOTTOM BAR WEB REINFORCEMENT DETAILS
OF MAIN GIRDER
SCALE - 1 : 25



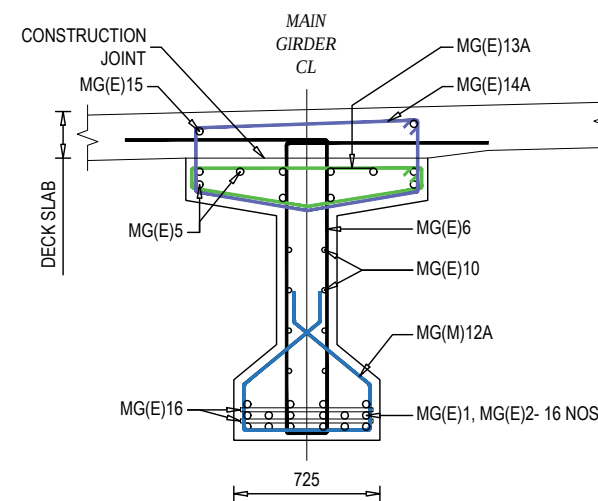
REINFORCEMENT DETAILS OF MAIN GIRDER (END) - SECTIONAL PLAN VIEW AT T7(E)
SCALE - 1 : 75



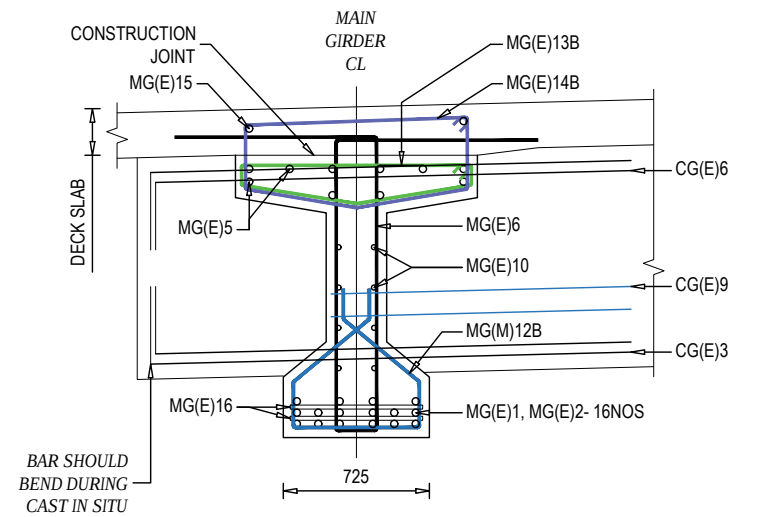
REINFORCEMENT DETAILS OF MAIN GIRDER
SECTIONAL VIEW AT T12
SCALE - 1 : 50



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



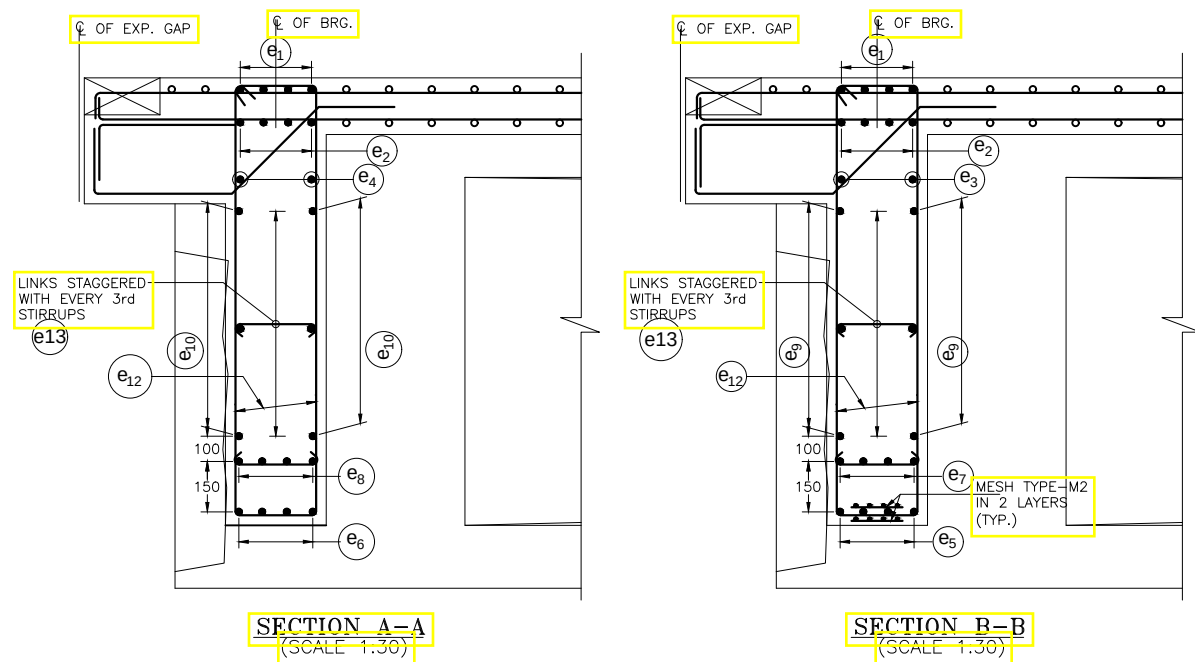
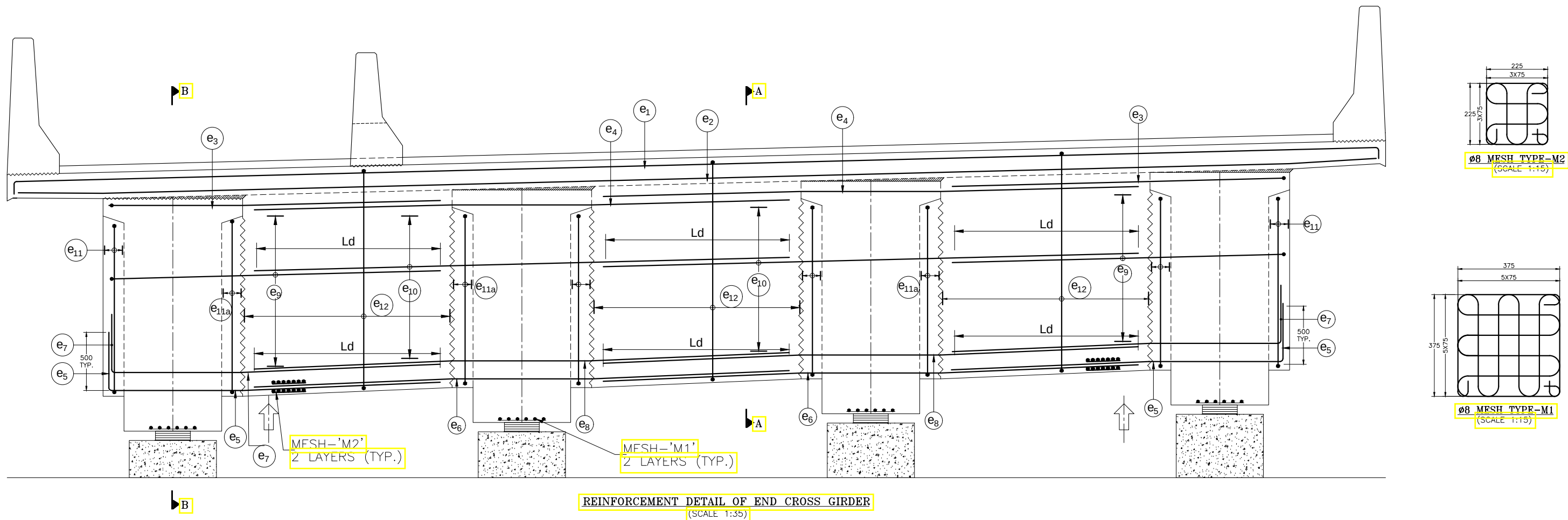
REINFORCEMENT DETAILS OF MAIN GIRDER
SECTIONAL VIEW AT T14
SCALE - 1 : 50



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

16m Superstructure

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Mr. S.N.R.B. Nec.No. 265 CIVIL "A"	Drawing Name	Scale:	Date:
Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of EPTISA Servicios De Ingenieria Madrid, Spain STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Checked By	Mr. S.M. Nec.No. Mr. H.B. Nec.No.	MAIN GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER BALUWA Reference Drawings KDP/DP/STR/BR/BALUWA /DD-18	AS SHOWN Chainage: 245+228	JUNE 2023 Drawing No.- KDP/DP/STR/BR/BALUWA /DD-15 Sheet No. 4 / 4



NOTES:-

- ALL DIMENSIONS ARE IN mm AND LEVELS ARE IN METER, DIMENSIONS ARE NOT TO BE SCALED, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- CONCRETE GRADE FOR CROSS-GIRDER & DECK SLAB M45.
- SUITABLE HOLES SHALL BE LEFT IN PRECAST GIRDER FOR SUPPORTING THE DECK SLAB SHUTTERING.
- SUITABLE PROVISION FOR HANDLING & LIFTING HOOKS ETC TO BE PROVIDED.
- BEAMS SHALL BE KEPT UPRIGHT AT ALL TIMES AND TO BE CLEARLY MARKED INDICATING SPAN LOCATION & RESPECTIVE ENDS BEFORE REMOVAL FROM CASTING BED.
- TOP SURFACE OF PRECAST BEAM & VERTICAL EDGES OF END TO BE LEFT ROUGHENED FOR EFFECTIVE BONDING.
- ALL SURFACES, COMING IN CONTACT WITH DECK SLAB/DIAPHRAGM SHALL BE ADEQUATELY PREPARED BY GREEN CUTTING, USING SURFACE RETARDERS OR BY MECHANICAL MEANS(SUCH AS 100% HACKING) TO ENSURE THAT COARSE AGGREGATES ARE JUST EXPOSED.
- ALL REINFORCING BARS SHALL BE THERMO MECHANICALLY TREATED (TMT) BARS (GRADE DESIGNATE Fe500D) CONFORMING TO IS-1786 STANDARDS.
- LAPPING SHALL BE STAGGERED, BARS SHALL BE LAPPED IN SUCH A WAY THAT NOT MORE THAN 50% OF THE BARS ARE LAPPED AT ANY SECTION, LAP LENGTH SHALL BE PROVIDED AS "X*U" MENTIONED IN THE TABLE BELOW, WHERE "U" IS THE SMALLER BAR UNLESS OTHERWISE SPECIFIED.

FAVORABLE BOND CONDITION

GRADE OF CONCRETE	PERCENTAGE OF LAPPED BARS	<25%	33%	50%	>50%
M45	X	33	38	47	50

UNFAVORABLE BOND CONDITION

GRADE OF CONCRETE	PERCENTAGE OF LAPPED BARS	<25%	33%	50%	>50%
M45	X	45.7	52.6	64	68.6

FAVORABLE ZONE:

a. RAFT/SLAB BOTTOM MAIN BAR.

UNFAVORABLE ZONE:

a. RAFT/SLAB BOTTOM MAIN BAR.

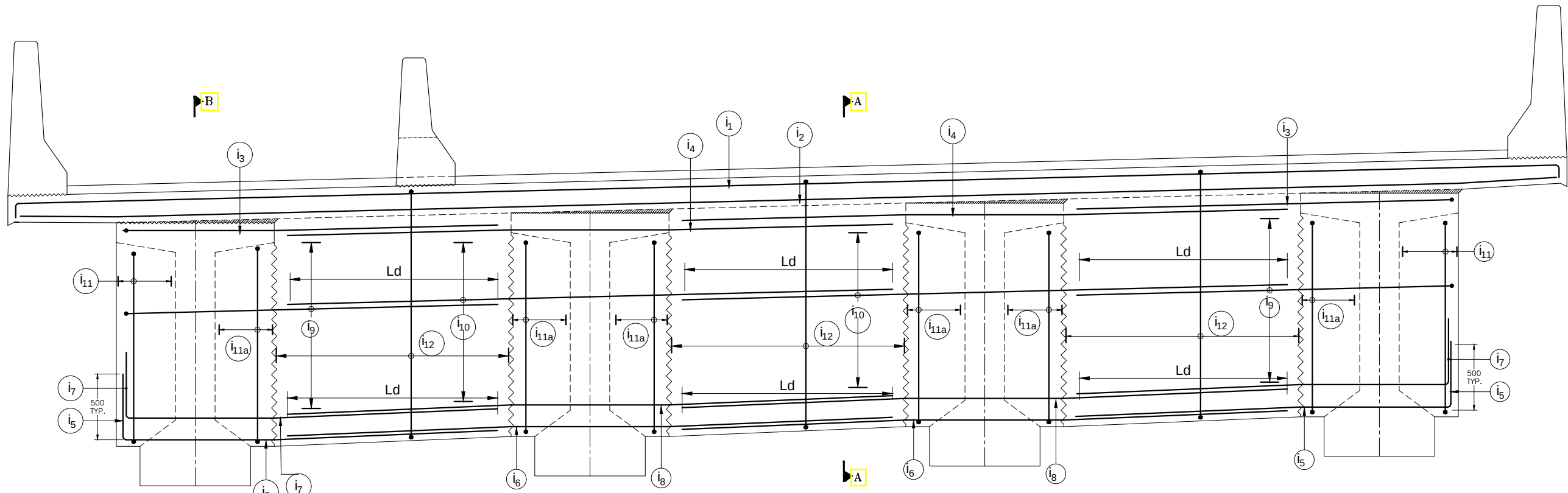
b. WALL/COLUMN MAIN BAR.

SCHEDULE OF REINFORCEMENT (END CROSS GIRDERS TYP. EACH)

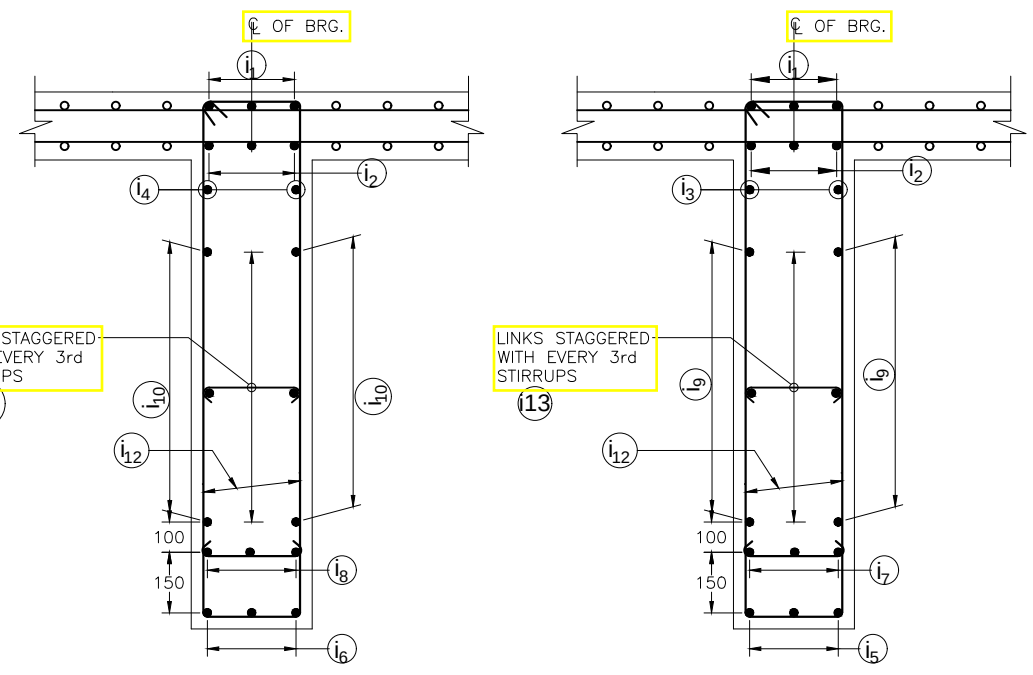
BAR MKD.	DESCRIPTION	SHAPE
e1	20 4 nos	150
e2	20 4 nos	150
e3	20 4x2 Nos	150
e4	20 4x2 Nos	
e5	20 4 nos	
e6	20 4 nos	
e7	20 4 nos	300
e8	20 4 nos	
e9	16 6x2 Nos	150
e10	16 6x2 Nos	
e11	2L-20 4 @ 150c/c	
e12	2L-20 4 @ 150c/c	
e13	120 linked Every 3rd Layer	
MESH-M1	8 75 x 75	
MESH-M2	8 75 x 75	

32m Superstructure

EMPLOYER	PROJECT	DESIGN CONSULTANT	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 Kolkatta, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Mr.S.N.R.B. Signature	CROSS GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER BALUWA	AS NOTED	JUNE, 2023
			Checked By Mr.S.M Signature	Reference Drawings: KDP/DPR/STR/BR/BALUWA /DD -18	Chainage: 245+228	Drawing No.: KDP/DPR/STR/BR/BALUWA /DD -16
			Approved By Mr.H.B Signature			Sheet No.: Sheet No. 1/3



REINFORCEMENT DETAIL OF INTERMEDIATE CROSS GIRDER
(SCALE 1:35)



SECTION A-A
(SCALE 1:25)

SECTION B-B
(SCALE 1:25)

SCHEDULE OF REINFORCEMENT
(INTERMEDIATE CROSS GIRDERS TYP. EACH)

BAR MKD.	DESCRIPTION	SHAPE
i1	16 Ø 3 nos	150
i2	16 Ø 3 nos	150
i3	12 Ø 3x2 Nos	150
i4	12 Ø 3x2 Nos	
i5	20 Ø 3 Nos	
i6	20 Ø 3 Nos	
i7	20 Ø 3 Nos	300
i8	20 Ø 3 Nos	
i9	12 Ø 6x2 Nos	150
i10	12 Ø 6x2 Nos	
i11	2L-20 Ø @ 150c/c	
i11a	2L-20 Ø @ 150c/c	
i12	2L-20 Ø @ 150c/c	
i13	12 Ø linked Every 3rd Layer	

- NOTES:-
- ALL DIMENSIONS ARE IN mm AND LEVELS ARE IN METER, DIMENSIONS ARE NOT TO BE SCALED, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
 - CONCRETE GRADE FOR CROSS-GIRDER & DECK SLAB M45.
 - SUITABLE HOLES SHALL BE LEFT IN PRECAST GIRDER FOR SUPPORTING THE DECK SLAB SHUTTERING.
 - SUITABLE PROVISION FOR HANDLING & LIFTING HOOKS ETC TO BE PROVIDED.
 - BEAMS SHALL BE KEPT UPRIGHT AT ALL TIMES AND TO BE CLEARLY MARKED INDICATING SPAN LOCATION & RESPECTIVE ENDS BEFORE REMOVAL FROM CASTING BED.
 - TOP SURFACE OF PRECAST BEAM & VERTICAL EDGES OF END TO BE LEFT ROUGHENED FOR EFFECTIVE BONDING.
 - ALL SURFACES, COMING IN CONTACT WITH DECK SLAB/DIAPHRAGM SHALL BE ADEQUATELY PREPARED BY GREEN CUTTING, USING SURFACE RETARDERS OR BY MECHANICAL MEANS(SUCH AS 100% HACKING) TO ENSURE THAT COARSE AGGREGATES ARE JUST EXPOSED.
 - ALL REINFORCING BARS SHALL BE THERMO MECHANICALLY TREATED (TMT) BARS (GRADE DESIGNATE Fe500D) CONFORMING TO IS-1786 STANDARDS.
 - LAPPING SHALL BE STAGGERED, BARS SHALL BE LAPPED IN SUCH A WAY THAT NOT MORE THAN 50% OF THE BARS ARE LAPPED AT ANY SECTION, LAP LENGTH SHALL BE PROVIDED AS "X*D" MENTIONED IN THE TABLE BELOW, WHERE "D" IS THE SMALLER BAR UNLESS OTHERWISE SPECIFIED:

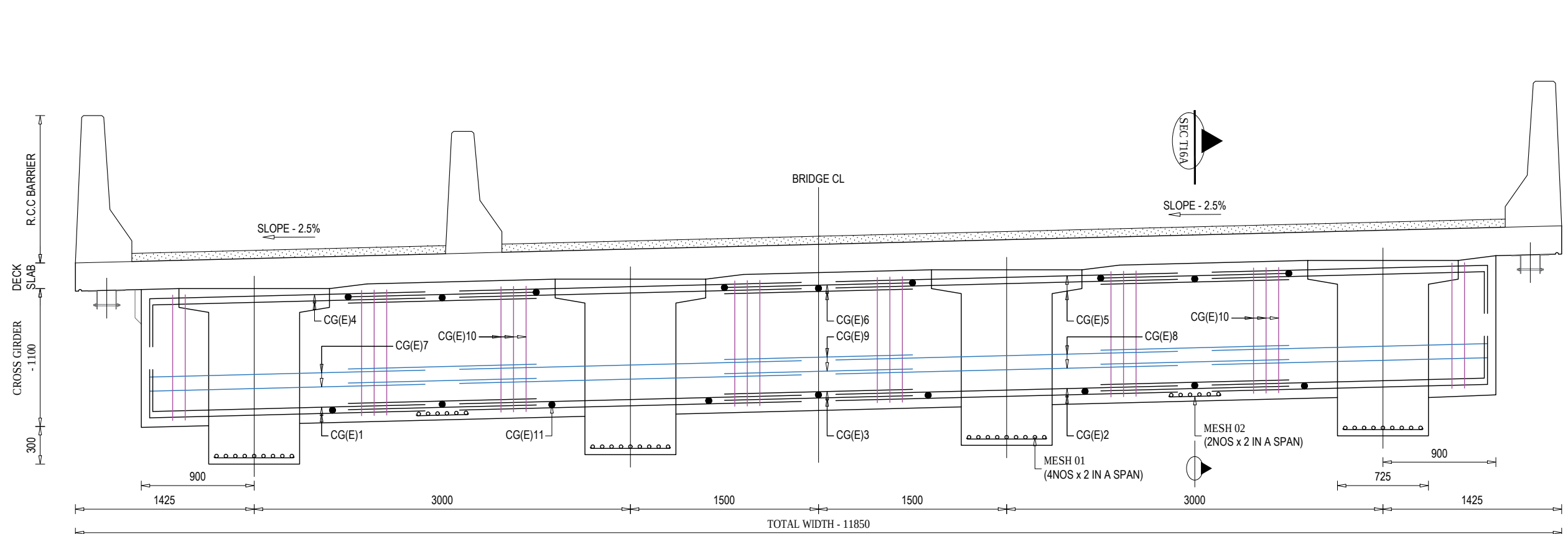
FAVORABLE BOND CONDITION					
GRADE OF CONCRETE	PERCENTAGE OF LAPPED BARS	<25%	33%	50%	>50%
M45	X	33	38	47	50

UNFAVORABLE BOND CONDITION					
GRADE OF CONCRETE	PERCENTAGE OF LAPPED BARS	<25%	33%	50%	>50%
M45	X	45.7	52.6	64	68.6

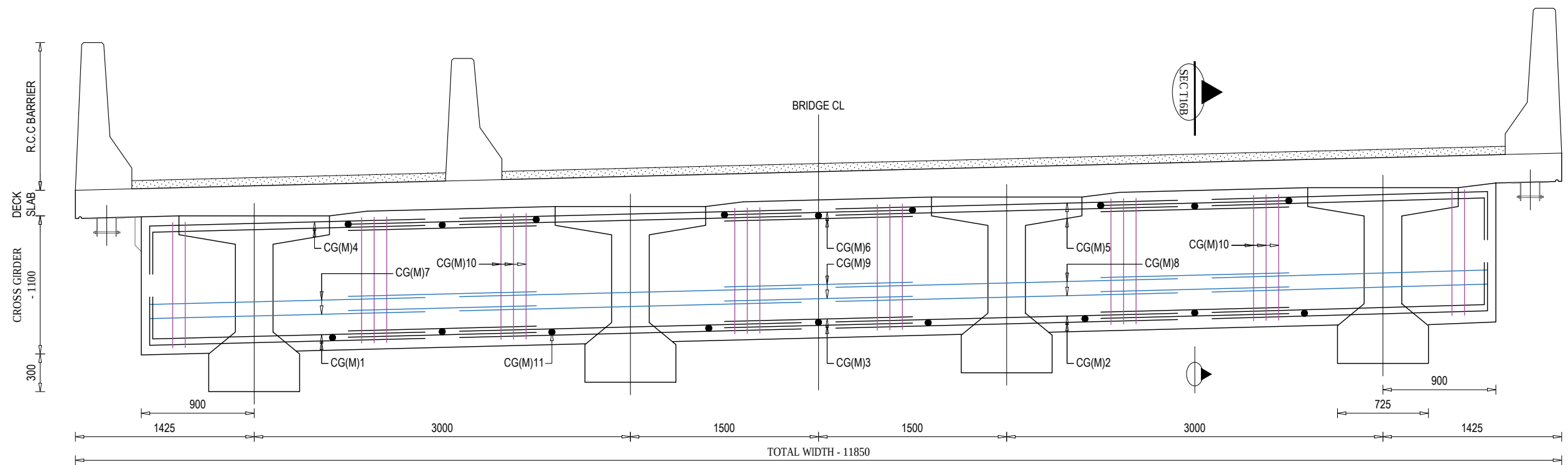
- FAVORABLE ZONE:
a. RAFT/SLAB BOTTOM MAIN BAR.
- UNFAVORABLE ZONE:
a. RAFT/SLAB BOTTOM MAIN BAR.
b. WALL/COLUMN MAIN BAR.

32m Superstructure

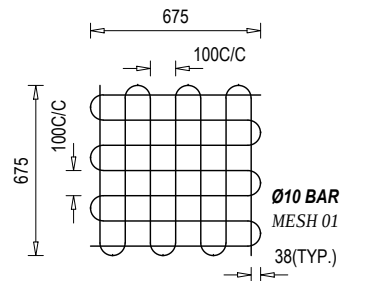
EMPLOYER	PROJECT	DESIGN CONSULTANT	Designed By	Mr.S.N.R.B Signature	Drawing Name:	Scale:	Date:
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed 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	CROSS GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER BALUWA	AS NOTED	JUNE, 2023
			Approved By	Mr.H.B Signature	Reference Drawings: KDP/DPR/STR/BR/BALUWA /DD -18	Chainage: 245+228	Drawing No.: KDP/DPR/STR/BR/BALUWA /DD -16
							Sheet No.: Sheet No. 2/3



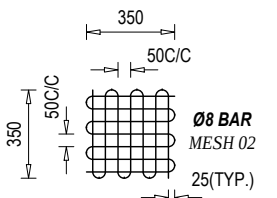
REINFORCEMENT DETAILS OF END CROSS GIRDER
SCALE - 1 : 50



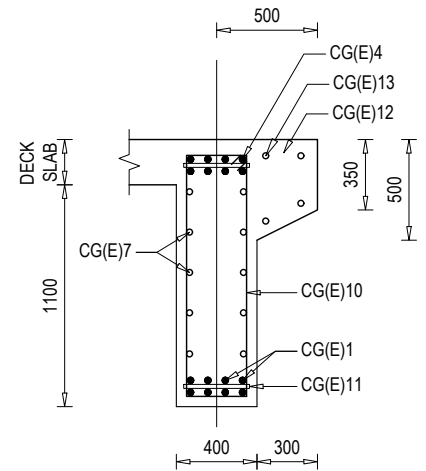
REINFORCEMENT DETAILS OF MID CROSS GIRDER
SCALE - 1 : 50



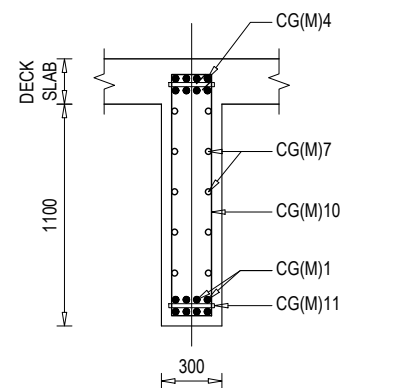
REINFORCEMENT DETAILS OF BEARING MESH
SCALE - 1 : 50



REINFORCEMENT DETAILS OF LIFTING MESH
SCALE - 1 : 50

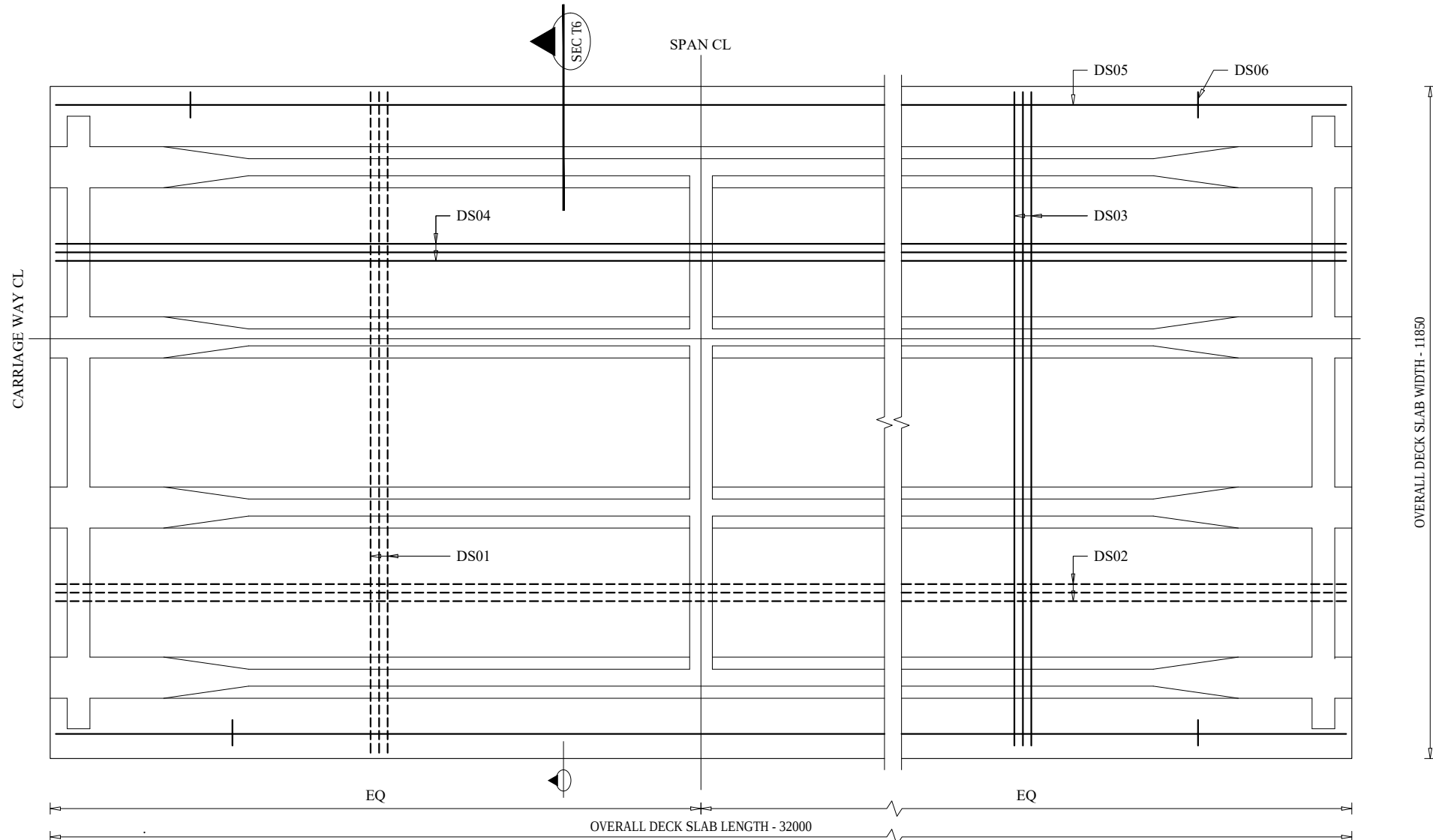


SECTIONAL REINFORCEMENT DETAILS OF END CROSS GIRDER - SEC T16A
SCALE - 1 : 50

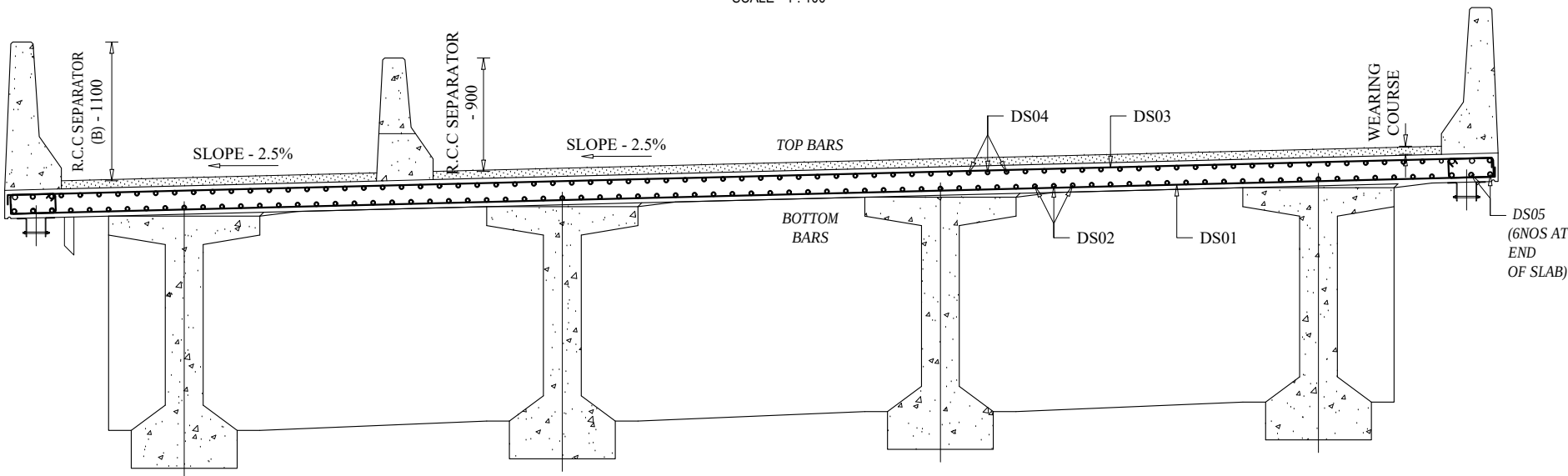


SECTIONAL REINFORCEMENT DETAILS OF MID CROSS GIRDER - SEC T16B
SCALE - 1 : 50
16m Superstructure

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 Ingeniera Madrid, Spain  STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Mr. S.N.R.B. Nec.No. 265 CIVIL "A" Mr. S.M. Nec.No. Mr. H.B. Nec.No.	CROSS GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER BALUWA Reference Drawings KDP/DPR/STR/BR/BALUWA /DD-18	AS SHOWN Chainage: 245+228	JUNE 2023 Drawing No.- KDP/DPR/STR/BR/BALUWA /DD-16 Sheet No. 3 / 3
			Approved By Signature			



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



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

BAR MARK	SHAPE	BAR DIA & SPACING/Nos.
DS01	[150 150]	16Ø @ 150 C/C
DS02	[150 150]	12Ø @ 150 C/C
DS03	[150 150]	16Ø @ 150 C/C
DS04	[150 150]	12Ø @ 150 C/C
DS05	[150 150]	(3+3) 6Nos Ø16
DS06	[]	2L-Ø10 @300 C/C

LEGEND FOR REINFORCEMENT BAR

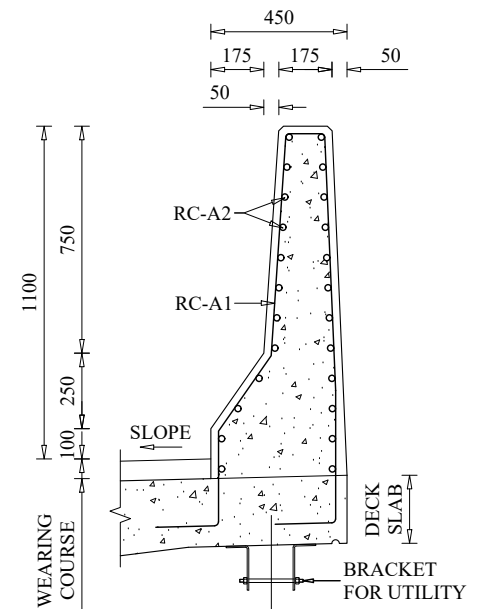
AB (M / E) 02 @ 250C/C

SPACING OF BARS (mm)
BAR SHAPE MARK
MID OR EDGE
SUPERSTRUCTURE
SHORT FORM

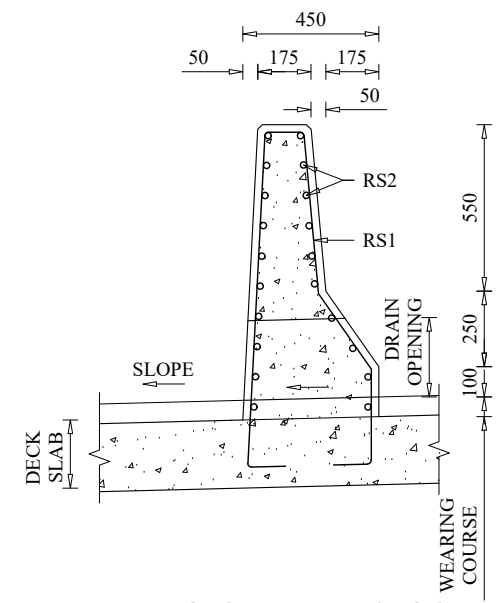
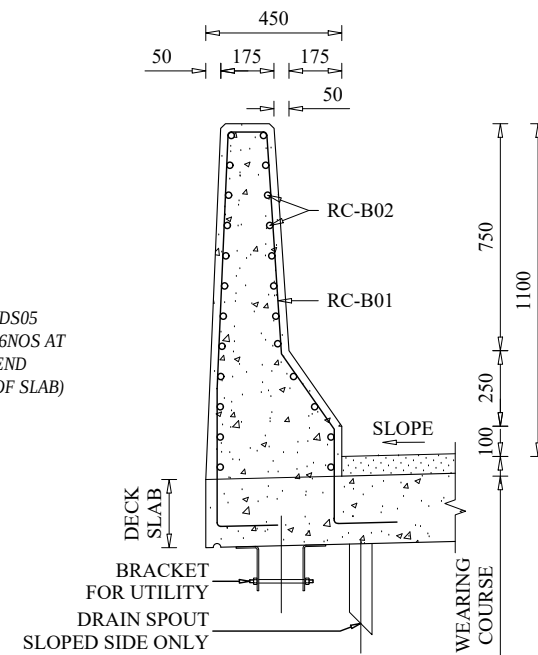
CODE FULL FORM

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



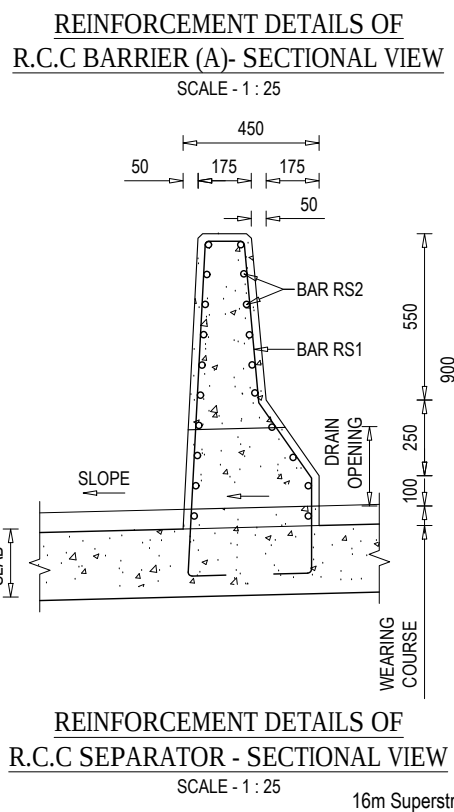
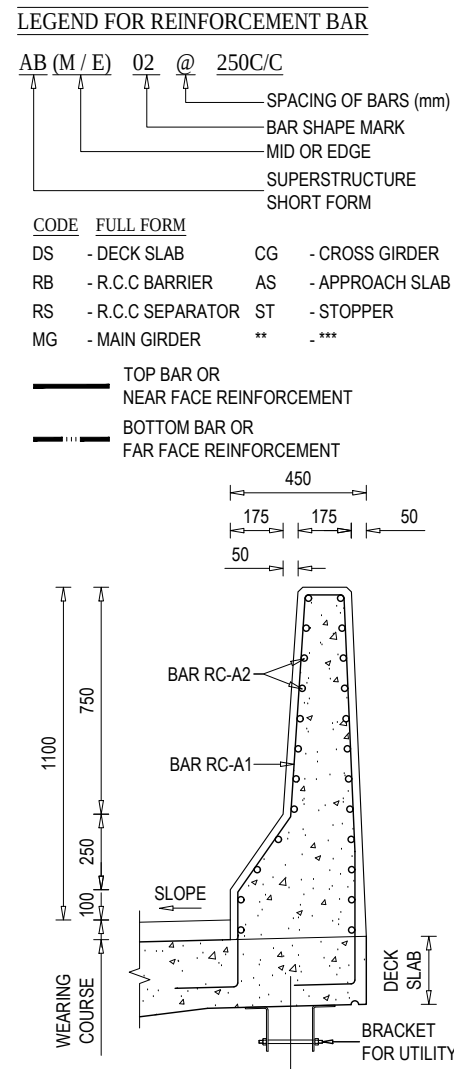
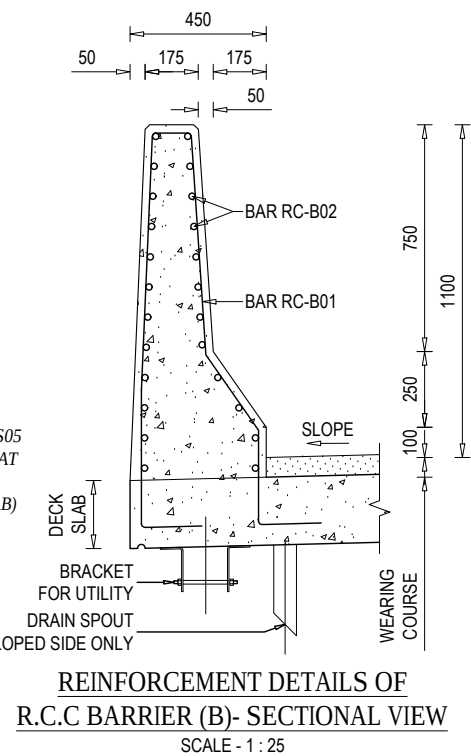
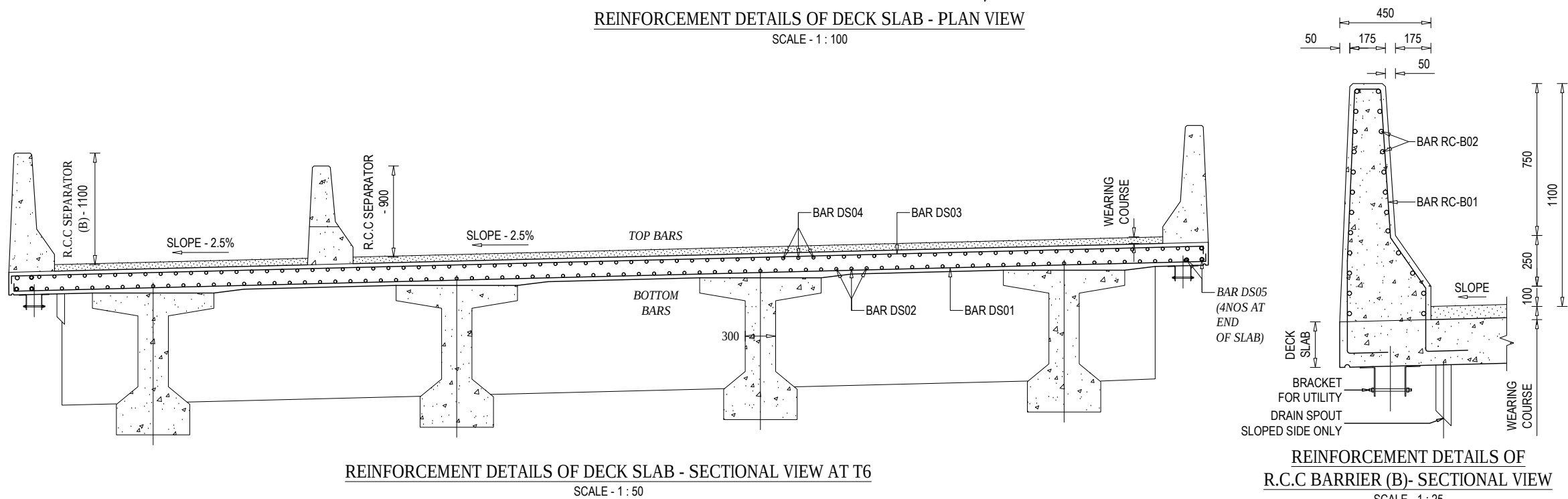
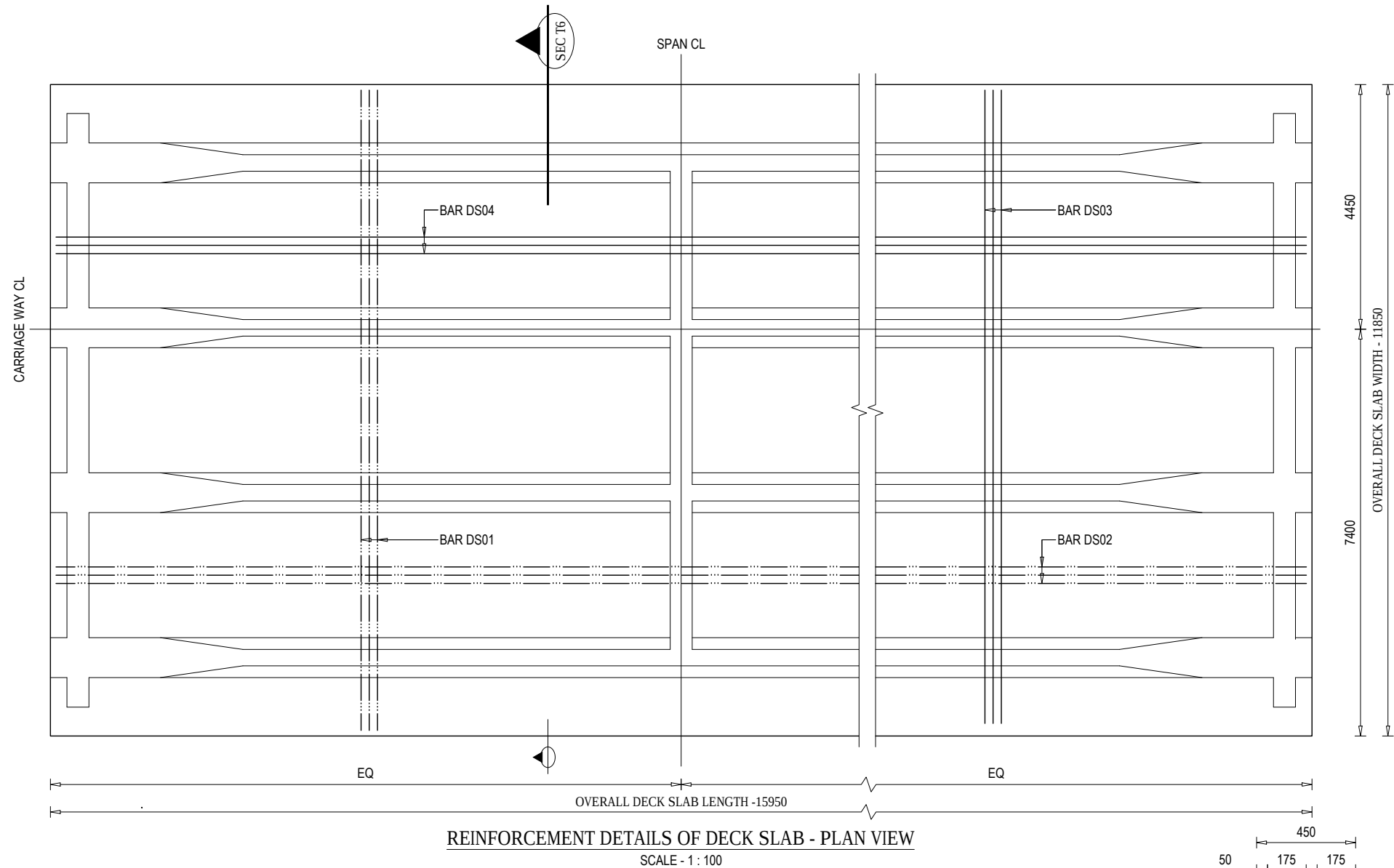
REINFORCEMENT DETAILS OF R.C.C BARRIER (A)- SECTIONAL VIEW
SCALE - 1 : 25



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

32m Superstructure

EMPLOYER	PROJECT	DESIGN CONSULTANT	Designed By	Mr.S.N.R.B	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 BALUWA	AS NOTED	Drawing No.:
			Approved By	Mr.H.B	Signature	Reference Drawings:	Chainage:	Sheet No.:
						KDP/IDPR/STR/BR/BALUWA/DD -18	245+228	Sheet No. 1/2



LEGEND FOR REINFORCEMENT BAR

AB (M / E) 02 @ 250C/C

SPACING OF BARS (mm)
BAR SHAPE MARK
MID OR EDGE
SUPERSTRUCTURE
SHORT FORM

CODE FULL FORM

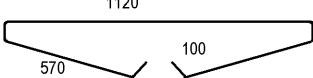
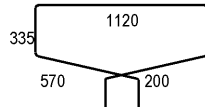
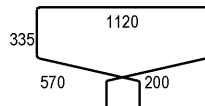
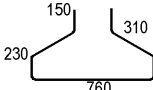
DS - DECK SLAB CG - CROSS GIRDER
RB - R.C.C BARRIER AS - APPROACH SLAB
RS - R.C.C SEPARATOR ST - STOPPER
MG - MAIN GIRDER ** - ***

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

EMPLOYER Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	PROJECT NAME Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	DESIGN CONSULTANTS Joint Venture of EPTISA Servicios De Ingenieria Madrid, Spain STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Designed By Mr. S.N.R.B. Nec.No. 265 CIVIL "A" Checked By Mr. S.M. Nec.No. Approved By Mr. H.B. Nec.No.	Drawing Name DECK SLAB DETAILS OF BRIDGE OVER RIVER BALUWA Reference Drawings KDPDPR/STR/BR/BALUWA /DD-18	Scale: AS SHOWN Chainage: 245+228	Date: JUNE 2023 Drawing No.: KDPDPR/STR/BR/BALUWA /DD-17 Sheet No. 2 / 2
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Bar bending schedule for Deck Slab													
S.N	Bar Label	Bar Shape				Bar Dia (mm)	Bar spacing (mm)	No. of bars	Length (m)	Total Length(m)	Unit Weight (kg/m)	Weight (kg)	
1	DS01	150				150	16	150	215	12.07	2595.05	1.578	4095.86
2	DS02	150				150	12	150	79	32.17	2541.43	0.89	2256.32
3	DS03	150				150	16	150	215	12.07	2595.05	1.578	4095.86
4	DS04	150				150	12	150	79	32.17	2541.43	0.888	2256.32
5	DS05	150				150	16		12	32.17	386.04	1.578	609.30
6	DS06	145 75				10	300	214	1.26	269.64	0.617	166.24	
Total Weight of Deck Slab (kg)													13479.90

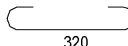
Bar bending schedule for Longitudinal Girder												
S.N	Bar Label	Bar Shape			Bar Dia (mm)	Bar spacing	No. of bars	Length	Total Length(m)	Unit Weight (kg/m)	Weight (kg)	
1	1	100				16		10	31.42	314.2	1.578	495.91
2	2	100				16		12	27.20	326.4	1.578	515.17
3	2a	100				16		24	3.10	74.4	1.578	117.43
4	3	100				16		14	31.40	439.6	1.578	693.84
5	3a					16		12	31.20	374.4	1.578	590.93
6	5					12		24	19.90	477.6	0.888	424.02
7	5a					12		48	6.15	295.2	0.888	262.08
8	6	100				12		48	6.25	300	0.888	266.34
9	7a					12	200	100	4.93	493	0.888	437.69
10	7					12	150	78	4.93	384.54	0.888	341.40
11	8a	2145				12	150	46	Average 5.47	251.62	0.888	223.39
12	8					12	150	34	6.01	204.34	0.888	181.42

Bar bending schedule for Longitudinal Girder										
S.N	Bar Label	Bar Shape	Bar Dia (mm)	Bar spacing	No. of bars	Length	Total Length(m)	Unit Weight (kg/m)	Weight (kg)	
13	9&9a		12	150	209	2.68	560.16	0.89	497.31	
14	10		12	150	78	3.33	259.75	0.89	230.61	
15	10a		12	200	101	3.33	336.35	0.89	298.61	
16	11&11a		12	150	177	2.14	378.78	0.89	336.29	
Total Weight for One Longitudinal Beam (kg)									5912.5	
Total Weight for Four webs (kg) = 5912.4 X 4=									23649.8	

Bar bending schedule for Cross Girder at support												
S.N	Bar Label	Bar Shape			Bar Dia (mm)	Bar spacing	No. of bars	Length	Total Length(m)	Unit Weight (kg/m)	Weight (kg)	
1	e1	150				20		4	10.42	41.68	2.466	102.79
2	e2	150				20		4	10.42	41.68	2.466	102.79
3	e3	150				20		16	3.01	48.16	2.466	118.77
4	e4					20		16	4.6	73.6	2.466	181.51
5	e5	500				20		8	3.36	26.88	2.466	66.29
6	e6					20		8	4.6	36.8	2.466	90.75
7	e7	500				20		8	3.36	26.88	2.466	66.29
8	e8					20		8	4.6	36.8	2.466	90.75
9	e9	150				16		24	3.01	72.24	1.578	114.02
10	e10					16		24	4.6	110.4	1.578	174.25
11	e11					20	150	4	3.52	14.08	2.466	34.72
12	e11a					20	150	12	3.52	42.24	2.466	104.17
13	e12					20	150	39	4.53	176.67	2.466	435.69

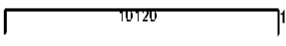
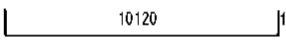
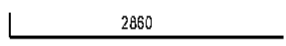
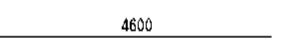
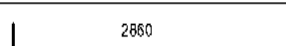
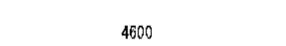
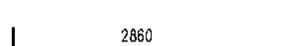
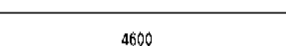
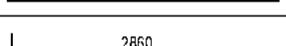
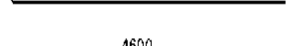
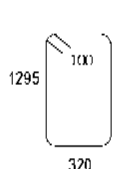
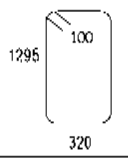
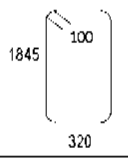
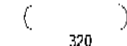
32m Superstructure

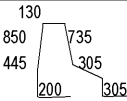
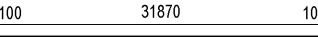
EMPLOYER		PROJECT		DESIGN CONSULTANT			Designed By Mr.S.N.R.B SEC NO. 265 CIVIL-A  Signature	Drawing Name: SUPERSTRUCTURE BAR BENDING SCHEDULE OF BRIDGE OVER RIVER BALUWA	Scale: AS NOTED	Date: JUNE, 2023
 Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of			Checked By Mr.S.M  Signature	Drawing No.:				
		 EPTISA Servicios De Ingeniera Madrid, Spain	 STUP Consultants Private Limited Kolkatta, India	KDP/DPR/STR/BR/BALUWA/DD -18						
		In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited				Approved By Mr.H.B  Signature				Reference Drawings:

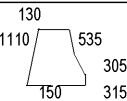
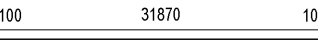
Bar bending schedule for Cross Girder at support									
S.N	Bar Label	Bar Shape	Bar Dia (mm)	Bar spacing	No. of bars	Length	Total Length(m)	Unit Weight (kg/m)	Weight (kg)
14	e13	100  100	12	300	15	0.52	7.8	0.888	6.92
15	Mesh-M1		8		4	2.17	8.7	0.4	13.7
16	Mesh-M2		8		4	5.24	21.0	0.4	33.1
Total Weight for 1 Cross Girder (kg)									1736.54
Total Weight for 2 Cross Girder (kg)									3473.07

Bar bending schedule for Webs								
S.N	Bar Label		Bar Dia (mm)	No. of bars	Length(m)	Total Length(m)	Unit Weight (kg/m)	Weight (kg)
1	M1	MESH TYPE M1	16	20	13.710	274.2	1.58	432.78
2	M2	MESH TYPE M2	16	20	7.037	140.74	1.58	222.14
3	SPIRAL	SPIRAL REINFORCEMENT(14 TURNSEACH)	20	8	5.6	44.8	2.47	110.48
4	1	1920 700	16	4	3.32	13.28	1.58	20.96
5	1a	960 700	16	4	1.66	6.64	1.58	10.48
6	2	345 800	20	8	1.945	15.56	2.47	38.37
7	2a	730 800	20	6	2.33	13.98	2.47	34.48
8	3	960	12	4	0.96	3.84	0.89	3.41
9	4	960 700	12	8	1.66	13.28	0.89	11.79
10	5	1920 730	20	12	5.5	66	2.47	162.77
Sub-Total								1,047.65
Total Weight for Four webs (kg) = 1047.6 X 4=								4190.62

Bar bending schedule for Approach Slab									
S.N	Bar Label	Bar Shape	Bar Dia (mm)	Bar spacing	No. of bars	Length	Total length	Unit Weight (kg/m)	Weight (kg)
1	1601		16	150	148	3.62	535.76	1.578	845.61
2	1201		12	150	48	11.17	536.16	0.888	476.01
Total Weight for one approach Slab (Kg)									1,321.62
Total Weight for one Sapn of bridge (Kg)									2,643.24

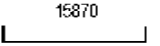
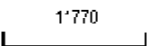
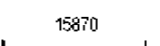
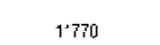
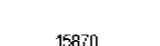
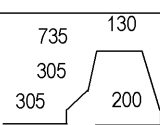
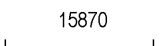
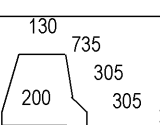
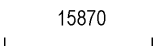
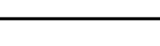
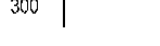
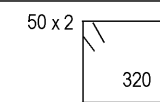
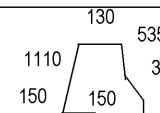
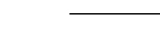
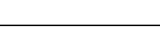
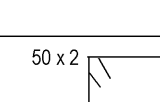
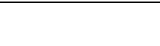
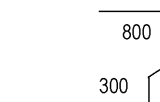
Bar bending schedule for Cross Girder at Mid									
S.N	Bar Label	Bar Shape	Bar Dia (mm)	Bar spacing	No. of bars	Length	Total Length(m)	Unit Weight (kg/m)	Weight (kg)
1	i1	150  150	16		3	10.42	31.26	1.578	49.34
2	i2	150  150	16		3	10.42	31.26	1.578	49.34
3	i3	150  2860	12		12	3.01	36.12	0.888	32.07
4	i4	 4600	12		12	4.6	55.2	0.888	49.01
5	i5	500  2860	20		6	3.36	20.16	2.466	49.72
6	i6	 4600	20		6	4.6	27.6	2.466	68.07
7	i7	500  2860	20		6	3.36	20.16	2.466	49.72
8	i8	 4600	20		6	4.6	27.6	2.466	68.07
9	i9	150  2860	12		24	3.01	72.24	0.888	64.14
10	i10	 4600	12		24	4.6	110.4	0.888	98.01
11	i11	1295  100 320	20	150	4	3.43	13.72	2.466	33.84
12	i11a	1295  100 320	20	150	12	3.43	41.16	2.466	101.51
13	i12	1845  100 320	20	150	39	4.53	176.67	2.466	435.69
14	i13	100  320 100	12	300	15.00	0.52	7.8	0.888	6.92
Total Weight for 1 Cross Girder (kg)									1155.43

BAR BENDING SCHEDULE OF R.C.C BARRIER									
S.N	Bar Label	Bar Shape	Bar Dia (mm)	Bar spacing	No. of bars	Length	Total length	Unit Weight (kg/m)	Weight (kg)
1	RC-A1	130  735 305 305	16	150	213	3.17	675.21	1.58	1065.71
2	RC-A2	100  100	10	150	20	32.07	641.4	0.62	395.45
Total Weight (Kg)									395.45

BAR BENDING SCHEDULE OF R.C.C SEPARATOR									
S.N	Bar Label	Bar Shape	Bar Dia (mm)	Bar spacing	No. of bars	Length	Total length	Unit Weight (kg/m)	Weight (kg)
1	RS1	130  535 305 315	16	150	213	2.695	574.035	1.58	906.02
2	RS2	100  100	10	150	17	32.07	545.19	0.62	336.13
Total Weight (Kg)									336.13

32m Superstructure

EMPLOYER		PROJECT		DESIGN CONSULTANT		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		Mr.S.N.R.B		SUPERSTRUCTURE BAR BENDING SCHEDULE OF BRIDGE OVER RIVER BALUWA		AS NOTED		JUNE, 2023	
				 EPTISA Servicios De Ingeniera Madrid, Spain  STUP Consultants Private Limited Kolkatta, India		Mr.S.M						Drawing No.: KDP/DPR/STR/BR/BALUWA/DD -18	
				In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited		Mr.H.B		Reference Drawings:		Chainage: 245+228		Sheet No.: Sheet No. 2/4	

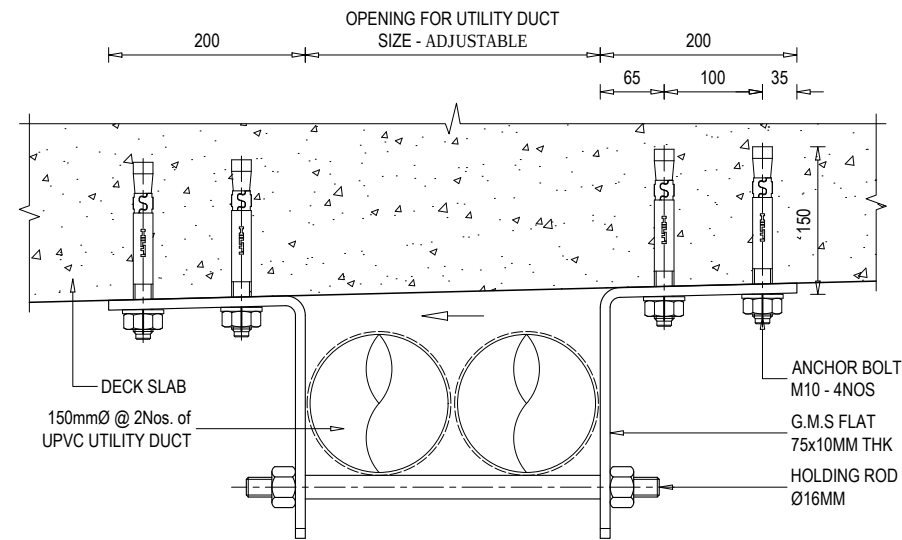
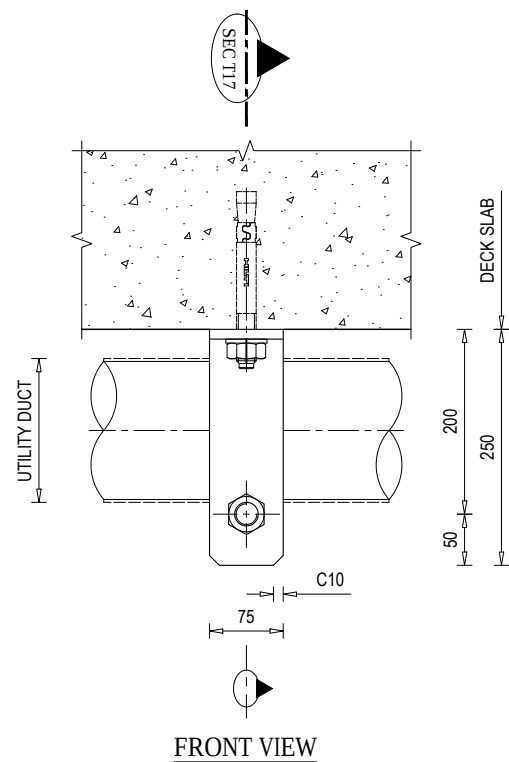
BAR BENDING SCHEDULE OF DECK SLAB (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	DS01	150  150	16	150	16.170	80	1.580	2044.21
2	DS02	150  150	10	150	12.070	103	0.617	767.41
3	DS03	150  150	16	150	16.170	107	1.580	2734.13
5	DS04	150  150	10	150	12.070	103	0.617	767.41
6	DS06	 15870	16	4 Nos.	15.870	8	1.580	200.53
TOTAL (KG) :								6513.79
BAR BENDING SCHEDULE OF R.C.C BARRIER (A) (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RC-A1	 130	16	150	3.170	107	1.580	536.00
2	RC-A2	150  150	10	150	16.170	20	0.617	199.63
TOTAL (KG) :								735.63
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	 130	16	150	3.170	107	1.580	536.00
2	RC-B2	150  150	10	150	16.170	20	0.617	199.63
TOTAL (KG) :								735.63
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	8 Nos.	1.920	8	2.469	37.93
2	CG(M)2	 2625	20	8 Nos.	2.945	8	2.469	58.17
3	CG(M)3	 1675	20	8 Nos.	1.995	8	2.469	39.41
4	CG(M)4	300  1825	20	8 Nos.	1.920	8	2.469	37.93
5	CG(M)5	 2625	20	8 Nos.	2.625	8	2.469	51.85
6	CG(M)6	 1675	20	8 Nos.	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  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
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	16	150	2.695	107	1.580	455.69
2	RS2	150  150	10	150	16.170	17	0.617	169.69
TOTAL (KG) :								625.37
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	8 Nos.	2.125	8	2.469	41.98
2	CG(E)2	 2625	20	8 Nos.	2.625	8	2.469	51.85
3	CG(E)3	 1675	20	8 Nos.	1.675	8	2.469	33.09
4	CG(E)4	300  1825	20	8 Nos.	2.125	8	2.469	41.98
5	CG(E)5	 2625	20	8 Nos.	2.625	8	2.469	51.85
6	CG(E)6	 1675	20	8 Nos.	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  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	 260	16	150	1.750	79	1.580	218.47
13	CG(E)13	 11770	12	6 Nos.	11.770	6	0.889	62.77
TOTAL (KG) :								649.70
TOTAL NOS OF CROSS GIRDER :								2.00
TOTAL WEIGHT (KG) :								1299.40
16m Superstructure								
EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS			Drawing Name	
 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			SUPER STRUCTURE BAR BENDING SCHEDULE OF BRIDGE OVER RIVER BALUWA	
				EPTISA Servicios De Ingeniera Madrid, Spain			Reference Drawings	
				STUP Consultants Private Limited Kolkata, India			Chainage:	
				In Association With Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited			245+228	
				Designed By	Mr. S.N.R.B.		Date:	
				Checked By	Mr. S.M.		Drawing No:-	
				Approved By	Mr. H.B.		KDP/DPR/STR/BR/BALUWA /DD-18	
							Sheet No. 3 / 4	

BAR BENDING SCHEDULE OF 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	MG1	300 15870 300	32	12 Nos.	16.470	12	6.321	1249.28
2	MG2	300 14523 300	32	4 Nos.	15.123	4	6.321	382.37
3	MG5	300 15870 300	12	10 Nos.	16.470	10	0.889	146.40
4	MG6	480 41FCGFD 645 1430	12	100	9.260	21	0.889	172.85
5	MG7	480 AVC. 435 1430	12	100	5.125	16	0.889	72.89
6	MG8A	480 220 1430	12	100	4.480	131	0.889	521.67
7	MG8B	480 220 1430	12	150	4.480	28	0.889	111.50
8	MG9	370 1920 2000	12	200	4.290	28	0.889	106.77
9	MG10	12950	12	200	12.950	14	0.889	161.16
10	MG11	550 300 645 220 AVG.	12	100	2.785	16	0.889	39.61
11	MG12A	700 300 645 220	12	150	3.085	131	0.889	359.23
12	MG12B	700 300 645 220	12	150	3.085	28	0.889	76.70

13	MG13A	1120 70 840 50 x 2	12	100	3.040	121	0.889	326.97
14	MG13B	1120 70 840 50 x 2	12	150	3.040	28	0.889	75.66
15	MG14A	1120 50 x 2 270 840	12	100	3.440	121	0.889	369.99
16	MG14B	1120 50 x 2 270 840	12	150	3.440	28	0.889	85.62
17	MG15	15870	16	2 Nos.	15.870	2	1.580	50.16
18	MG16	645	32	1000	0.645	48	6.321	195.70
TOTAL (KG) :								5399.28
TOTAL NOS OF MAIN GIRDER :								4.00
TOTAL WEIGHT (KG) :								21597.11

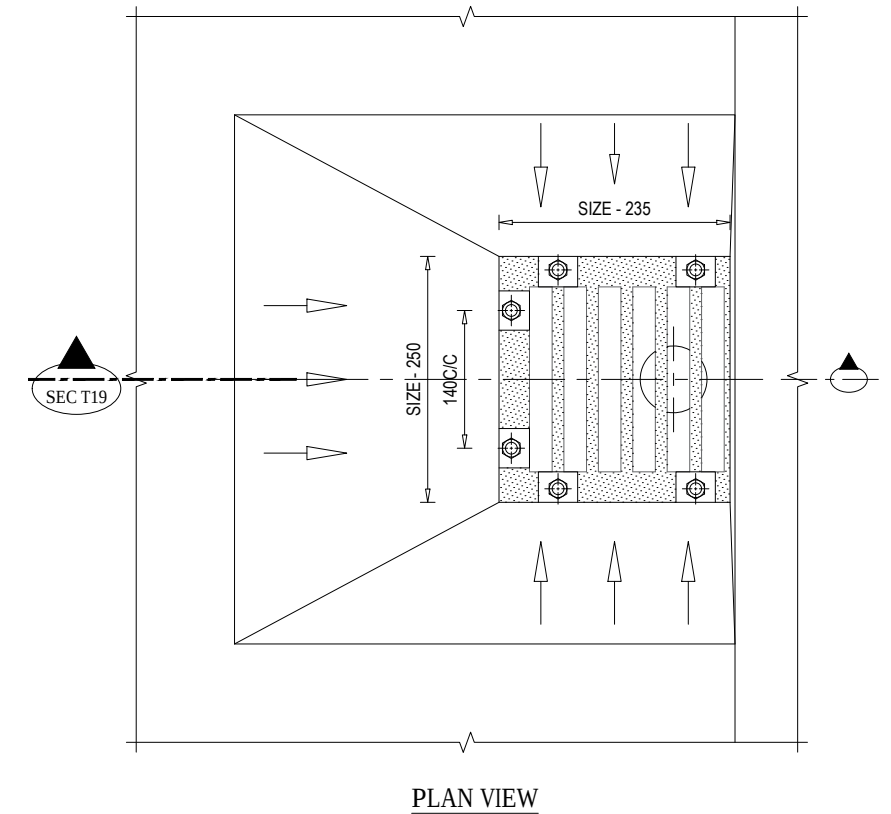
BAR BENDING SCHEDULE OF MESH (1SPAN)								
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	MESH 01	675 675 @ 100	10	8 Nos.	9.450	8	0.617	46.67
2	MESH 02	350 350 @ 50	8	4 Nos.	4.900	4	0.395	7.74
TOTAL (KG) :								54.41

EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		Drawing Name		Scale:		Date:		16m Superstructure	
 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. S.N.R.B. Nec.No. 265 CIVIL "A"	 Signature	SUPER STRUCTURE BAR BENDING SCHEDULE OF BRIDGE OVER RIVER BALUWA	AS SHOWN	JUNE 2023	Drawing No- KDP/DPR/STR/BR/BALUWA /DD-18 Sheet No. 4 / 4			
		 EPTISA Servicios De Ingenieria Madrid, Spain	 STUP Consultants Private Limited Kolkatta, India	Checked By	Mr. S.M. Nec.No.								 Signature
		In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited		Approved By	Mr. H.B. Nec.No.	 Signature	Reference Drawings	Chainage:	245+228				

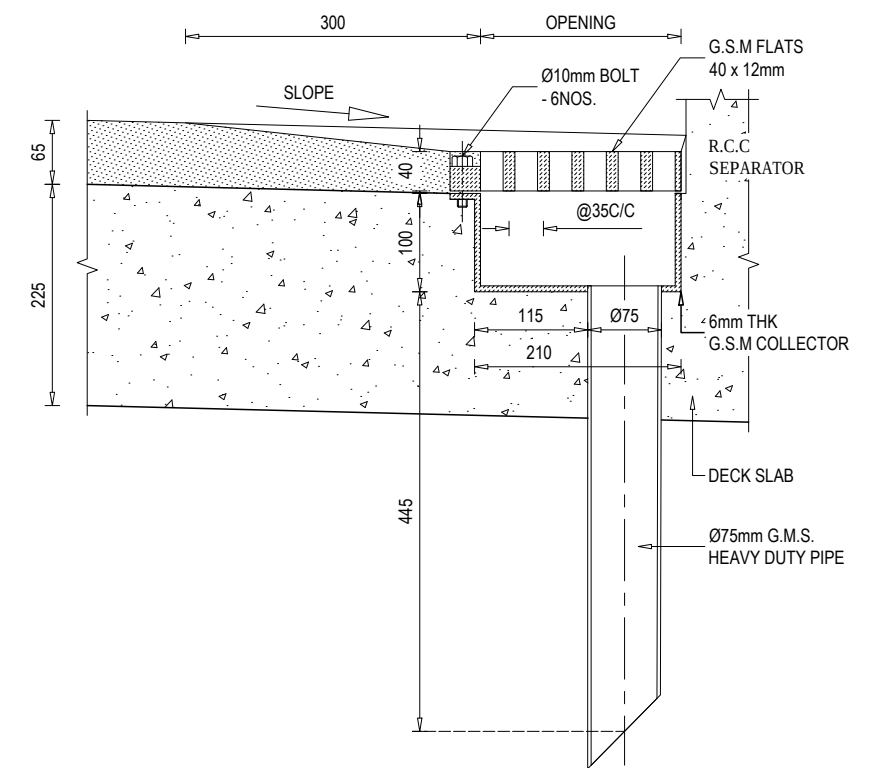


SECTIONAL ELEVATION VIEW AT SEC T17

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

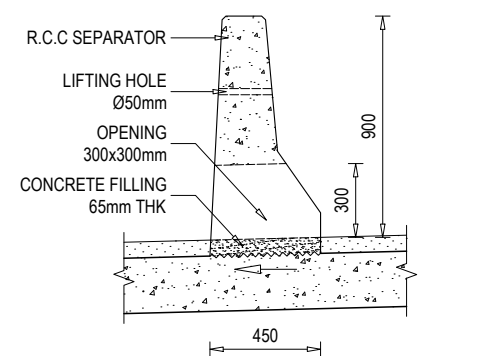


PLAN VIEW

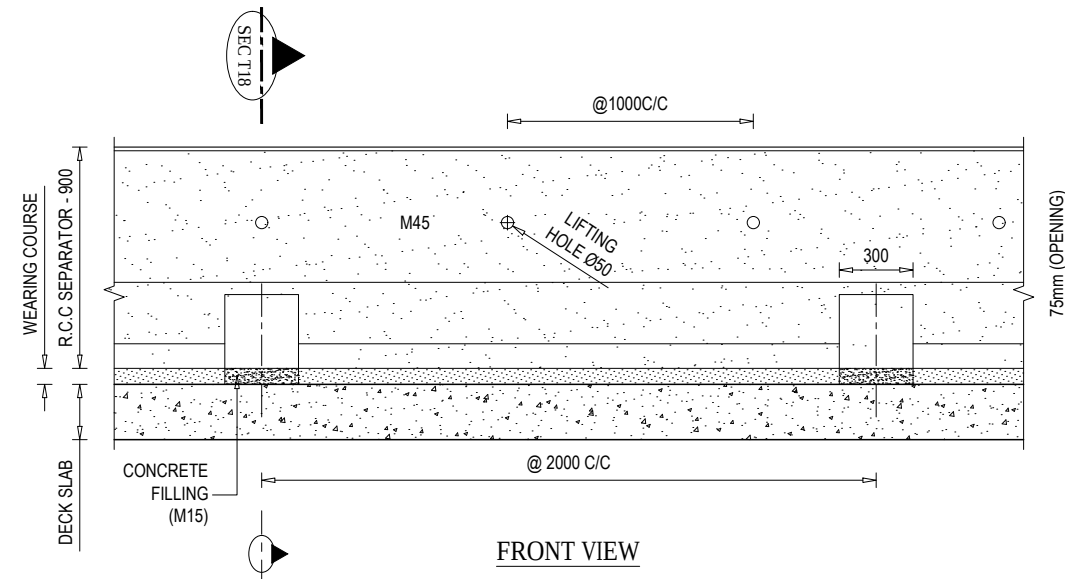


SECTIONAL ELEVATION VIEW AT SEC T19

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

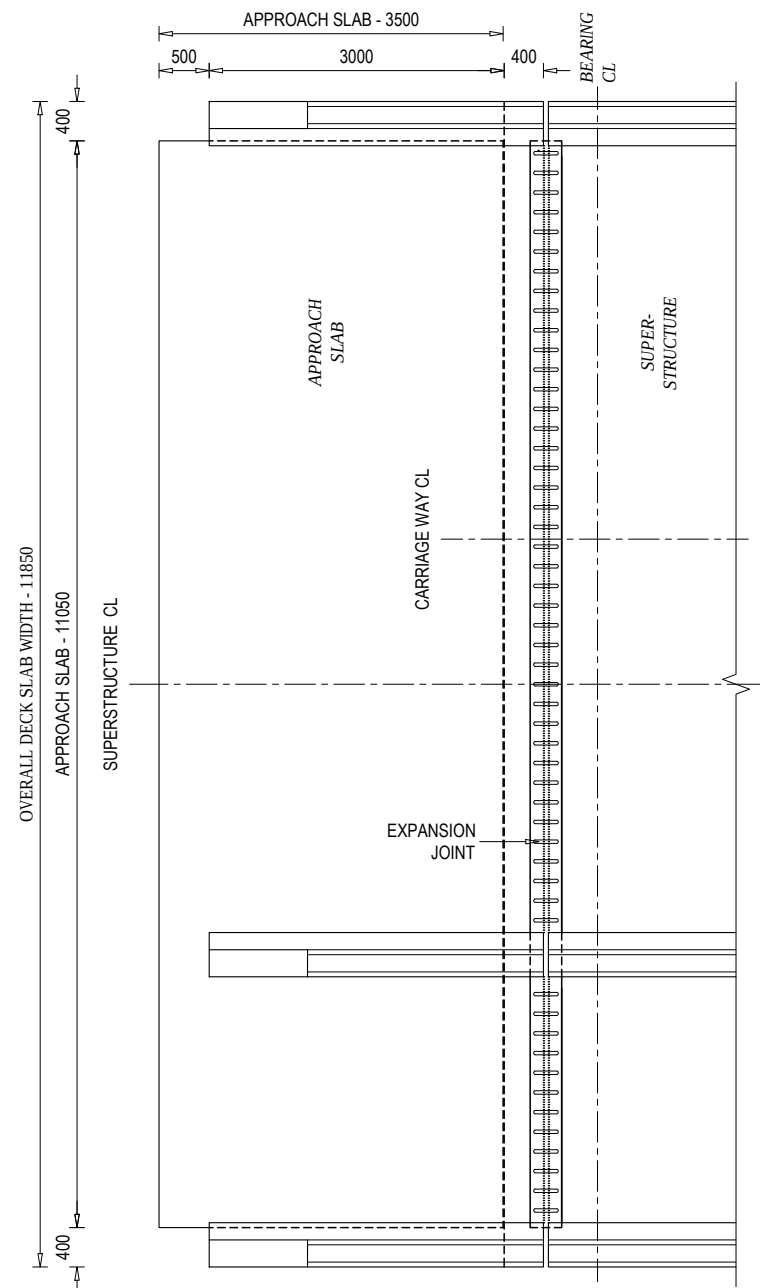


SECTIONAL ELEVATION VIEW AT SEC T18

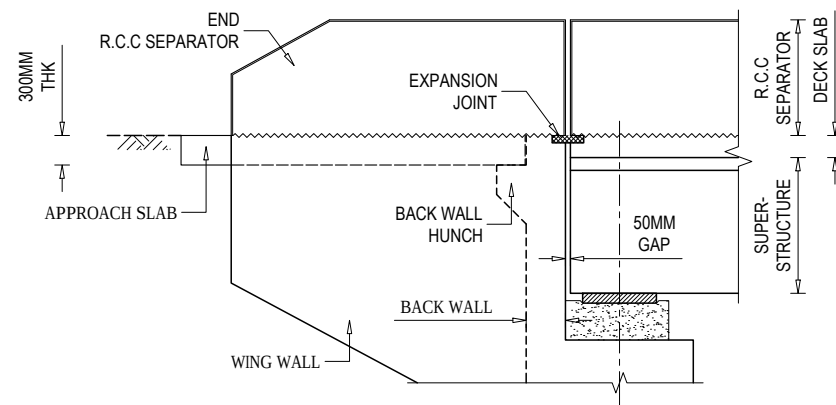


DETAIL ELEVATION VIEW AT R.C.C SEPARATOR
& IT'S DRAIN OPENING
SCALE - 1 : 40

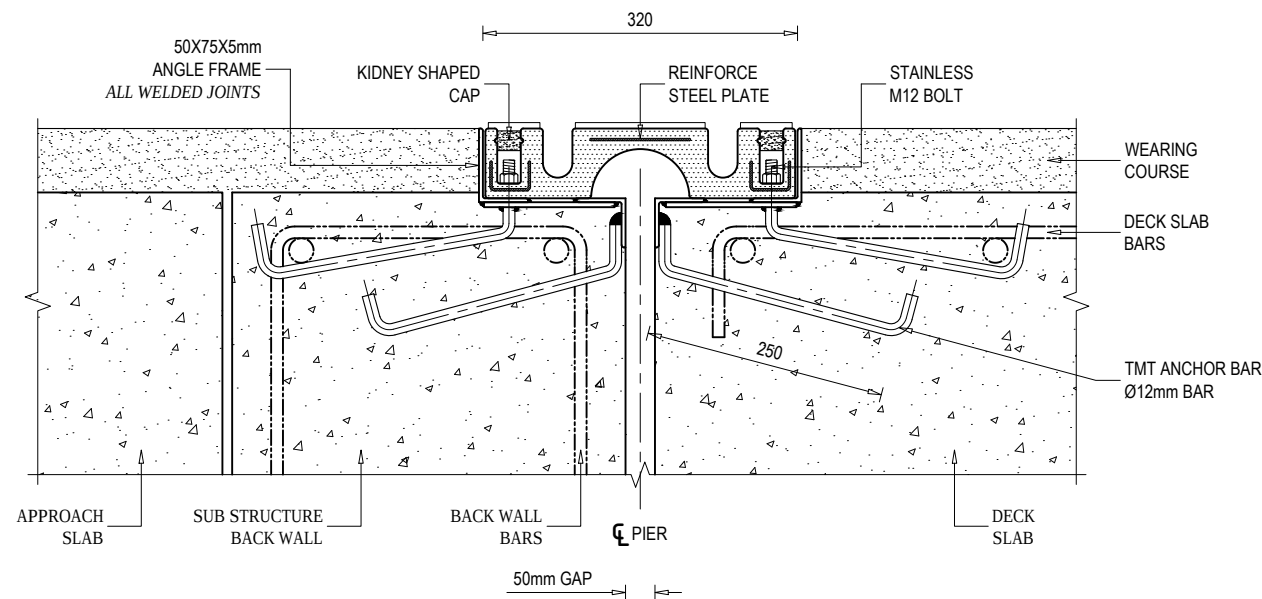
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Mr. S.N.R.B.	Drawing Name	Scale:	Date:
Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed 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	Mr. S.N.R.B. NEC No.265 Civil "A"	Signature	MISCELLANEOUS DETAILS OF BRIDGE OVER RIVER BALUWA	AS SHOWN	JUNE, 2023
			Checked By	Mr. S.M.	Reference Drawings	Chainage:	Drawing No.-
			Approved By	Mr. H.B.		245+228	KDP/DPR/STR/BR/BALUWA/DD-19
				Signature			Sheet No. 1 / 2



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

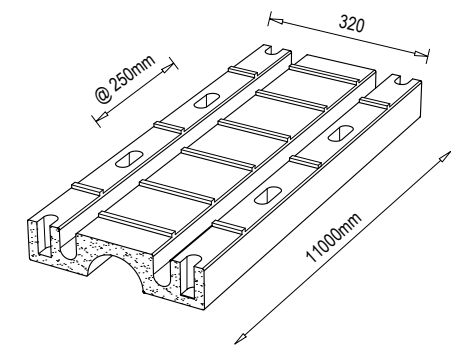


ELEVATION VIEW



SLAB SEAL TYPE EXPANSION JOINTS ARRANGEMENT IN A CARRIAGEWAY

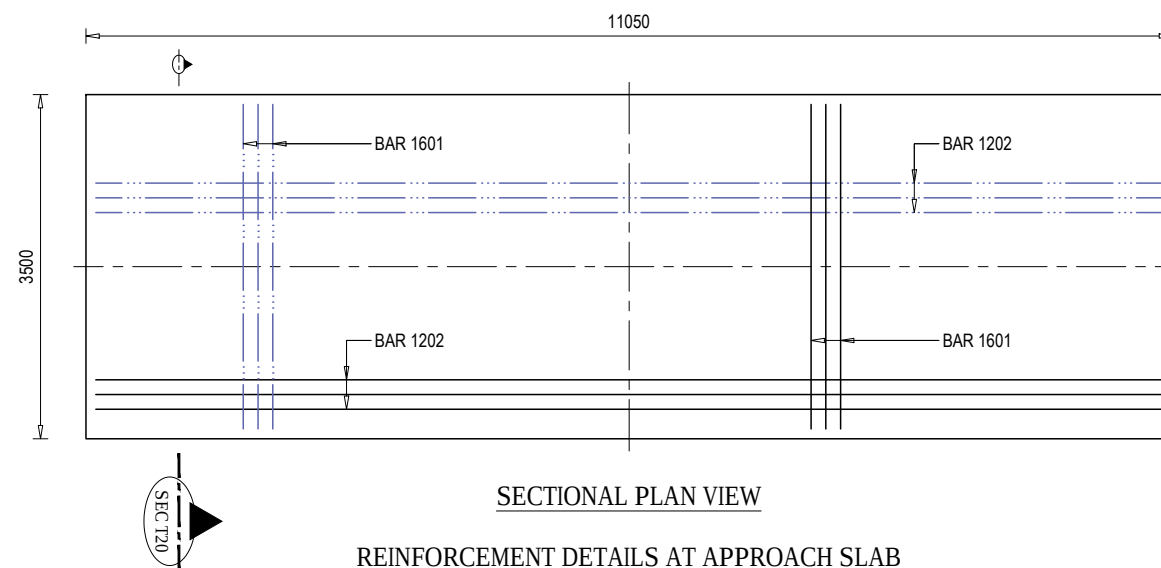
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EXPANSION JOINT ISOMETRIC VIEW

- SEAL TYPE

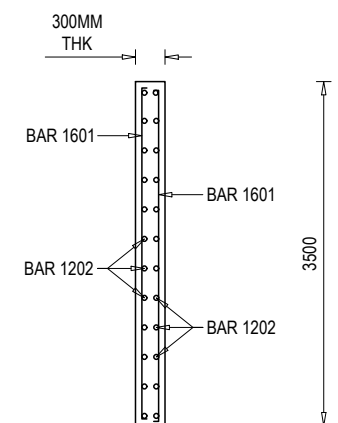
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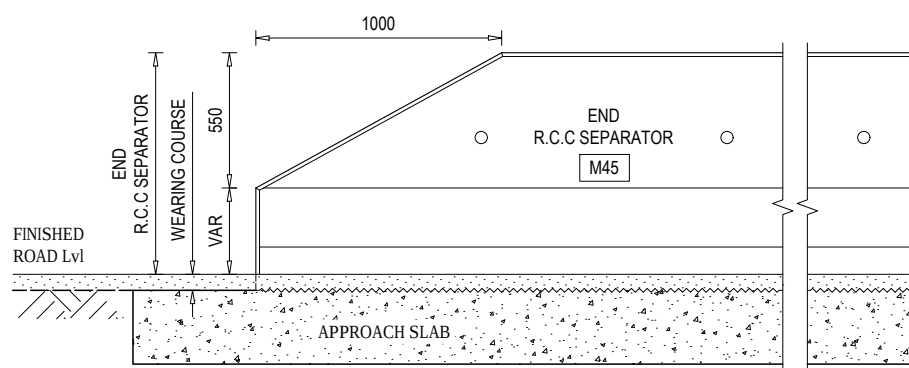
SECTIONAL PLAN VIEW

REINFORCEMENT DETAILS AT APPROACH SLAB

SCALE - 1 : 100 @ A3 PAPER

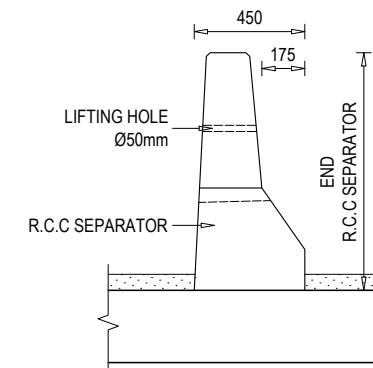


SECTIONAL ELEVATION VIEW AT SEC T20



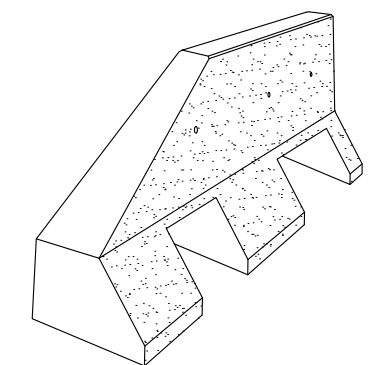
ELEVATION VIEW OF END R.C.C SEPARATOR

SCALE - 1 : 40 @ A3 PAPER



SIDE VIEW

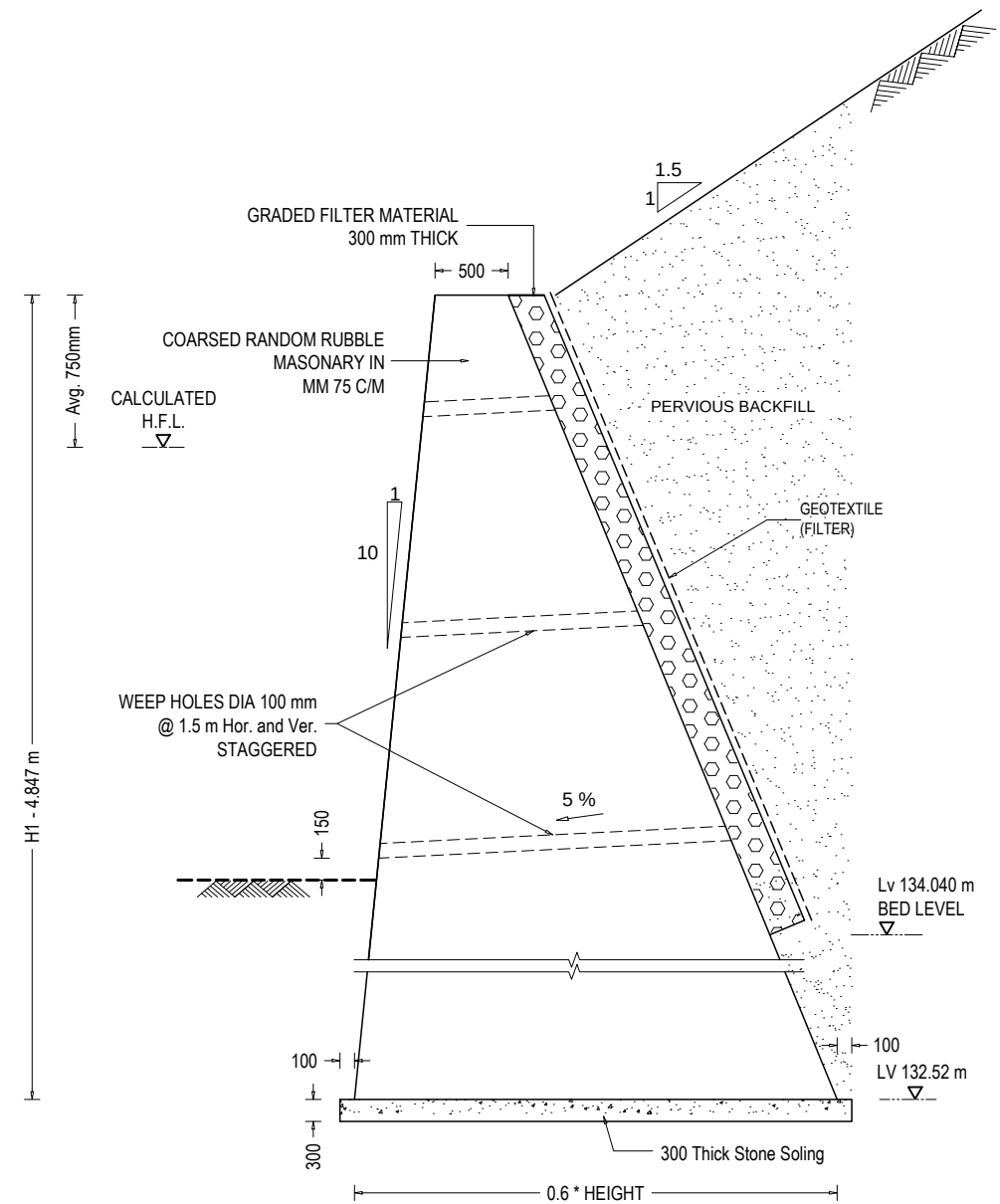
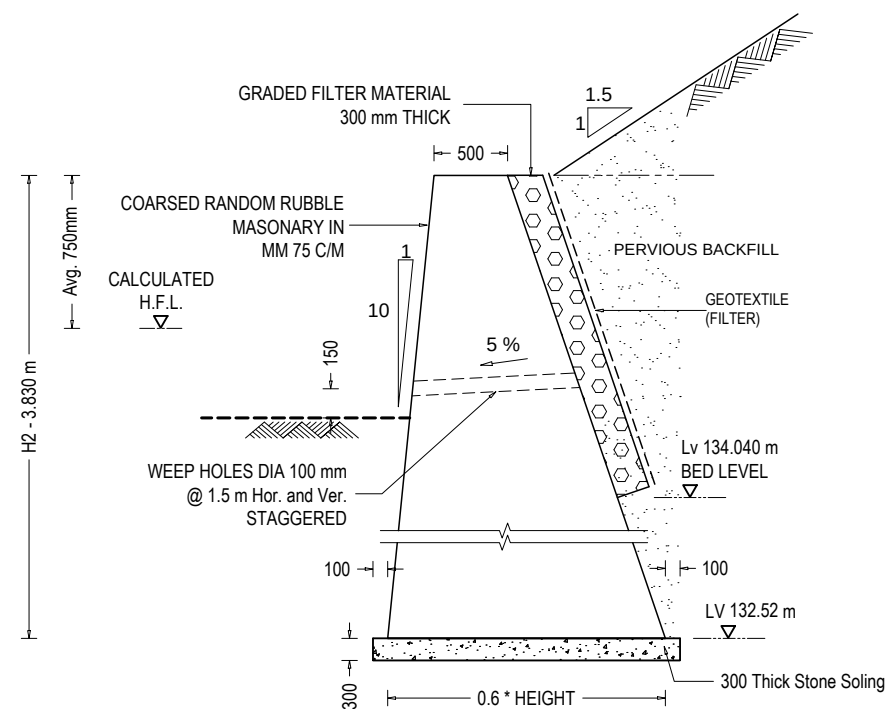
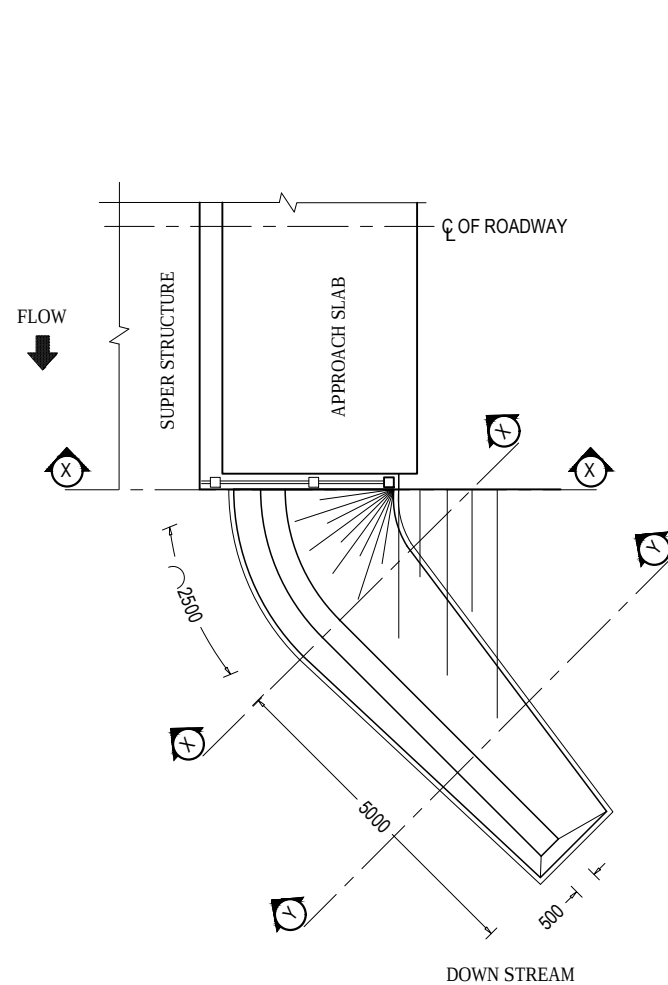
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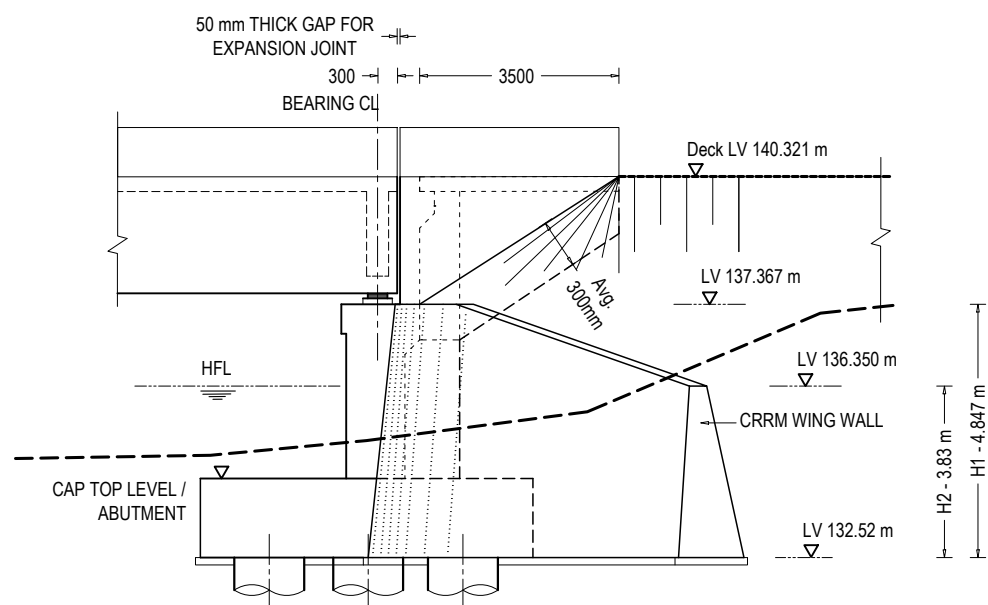
END R.C.C SEPARATOR ISOMETRIC VIEW

SCALE - NONE

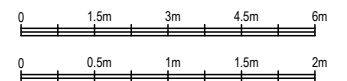
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS	Designed By	Drawing Name	Scale:	Date:
Government of Nepal Ministry of Physical Infrastructure and Transport Department of Roads Development Cooperation Implementation Division	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of EPTISA Servicios De Ingeniera Madrid, Spain STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Mr. S.N.R.B. NEC No.265 Civil "A" Mr. S.M. Mr. H.B.	MISCELLANEOUS DETAILS OF BRIDGE OVER RIVER BALUWA Reference Drawings KDP/DPR/STR/BR/BALUWA/DD-18	AS SHOWN Chainage: 245+228	JUNE, 2023 Drawing No.- KDP/DPR/STR/BR/BALUWA/DD-19 Sheet No. 2 / 2



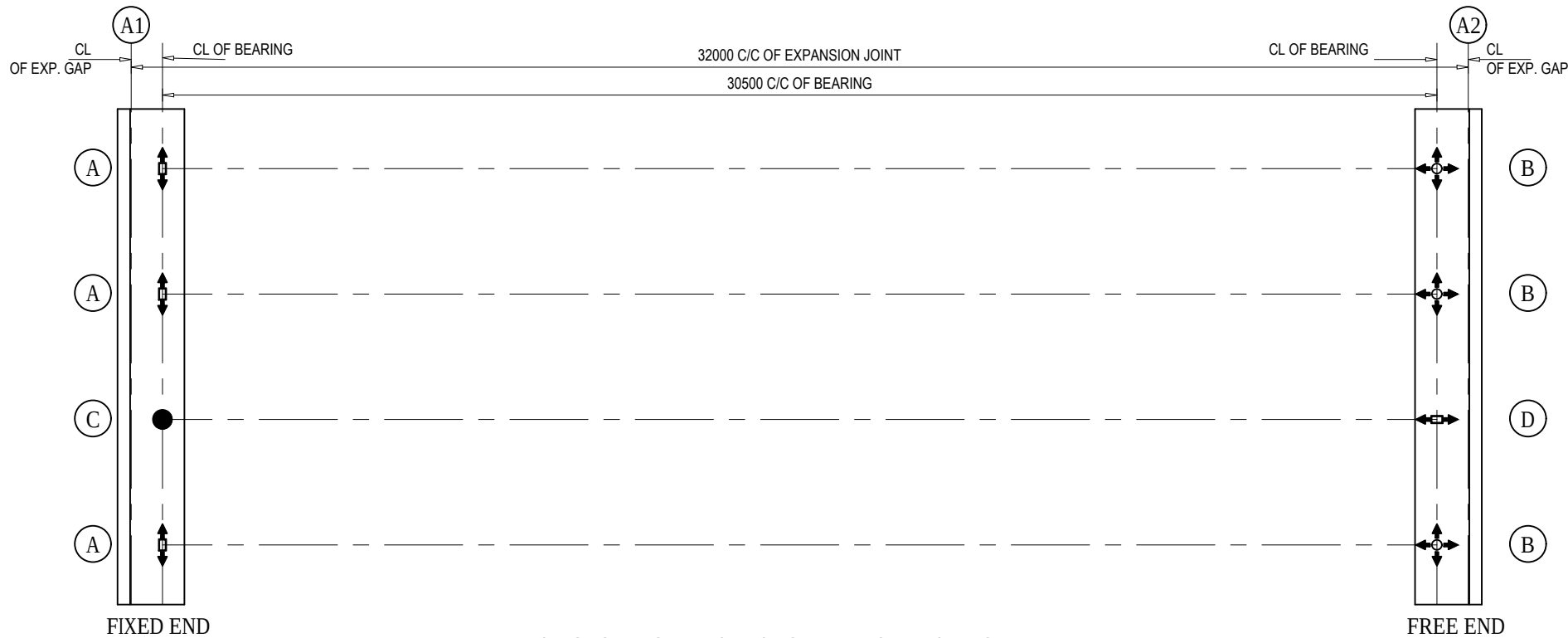
STONE MASONRY WING WALL SECTION X - X



WING WALL ELEVATION



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 ep4sa EPTISA Servicios De Ingenieria Madrid, Spain cw STUP Consultants Private Limited Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Mr. S.N.R.B.	WING WALL DETAILS OF BRIDGE OVER RIVER BALUWA Reference Drawings	AS SHOWN Chainage: 245+228	JUNE, 2023
			Checked By			Drawing No. -
			Approved By			KDP/DPR/STR/BR/BALUWA/DD-20
						Sheet No. 1 / 1



KEY PLAN SHOWING THE ARRANGEMENT OF BEARING
SCALE - 1: 150

TABLE SHOWING DATA FOR DESIGN OF BEARINGS

		Structure Reference						
1	Bearing Identification mark				A	B	C	D
	Type of Bearing				Guided Bearing in transverse Direction	Free Bearing	Fixed Bearing	Guided Bearing in Longitudinal Direction
2	Seating Material and characteristic strength	Upper Surface			M35	M35	M35	M35
		Lower Surface			M35	M35	M35	M35
3	Design Load (KN)	Serviceability Limit state (SLS Rare)	Vertical	max (LL)	139.45 T	102.77 T	139.45 T	102.77 T
				min (NO LL)	93.22 T	93.22 T	93.22 T	93.22 T
			Transverse					
			Longitudinal	max (LL)	23.42 T	6.08 T	23.42 T	6.08 T
				min (NO LL)	4.66 T	4.66 T	4.66 T	4.66 T
		Serviceability Limit state (SLS Frequent)	Vertical	max (LL)	127.90 T	100.38 T	127.90 T	100.38 T
				min (NO LL)	93.22 T	93.22 T	93.22 T	93.22 T
			Transverse					
			Longitudinal	max (LL)	16.86 T	5.73 T	16.86 T	5.73 T
				min (NO LL)	4.66 T	4.66 T	4.66 T	4.66 T
		Ultimate Limit state (ULS Basic)	Vertical	max (LL)	196.03 T	140.99 T	196.03 T	140.99 T
				min (NO LL)	126.68 T	126.68 T	126.68 T	126.68 T
			Transverse					
			Longitudinal	max (LL)	35.52 T	8.46 T	35.52 T	8.46 T
				min (NO LL)	6.33 T	6.33 T	6.33 T	6.33 T
		Ultimate Limit state (ULS Seismic)	Vertical	max (LL)	230.89 T	190.69 T	230.89 T	190.69 T
				min (NO LL)	176.33 T	176.33 T	176.33 T	176.33 T
			Transverse		57.75 T	57.75 T	57.75 T	57.75 T
Longitudinal	max (LL)		150.91 T	8.30 T	150.91 T	8.30 T		
	min (NO LL)		145.15 T	6.33 T	145.15 T	6.33 T		
4	Displacement (mm)	SLS		Transverse	3.20 mm	3.20 mm		
				Longitudinal		39.85 mm		39.85 mm
		ULS		Transverse	4.80 mm	4.80 mm		
				Longitudinal		59.78 mm		59.78 mm
5	Rotation (Radians)	SLS	Rare	max (LL)	0.00269 radian			
				min (NO LL)	0.00184 radian			
		ULS	Basic	max (LL)	0.00377 radian			
				min (NO LL)	0.00250 radian			

- NOTE:
- MATERIAL SPECIFICATIONS, DESIGN OF BEARINGS ACCEPTANCE CRITERIA AND INSTALLATION SHALL BE IN ACCORDANCE WITH IRC:83 (PART 3)-2018.
 - BEARINGS SHALL BE OBTAINED FROM MANUFACTURERS.
 - INSTALLATION OF BEARINGS SHALL BE UNDER THE SUPERVISION OF REPRESENTATIVE OF THE MANUFACTURER.
 - FOR DESIGN LOADS AND ROTATIONS REFER TABLE IN THE DRAWING.
 - FOR BEARINGS, DETAILED SHOP DRAWINGS SHALL BE PREPARED BY THE SUPPLIER AND BE DULY APPROVED BEFORE MANUFACTURE AND INSTALLATION.
 - THE GROUT/BEDDING MORTAR SHALL BE HIGH STRENGTH FREE FLOWING NON SHRINK GROUT (80 MPa STRENGTH).
 - ALL BEARING SHALL BE PLACED IN TRULY HORIZONTAL PLANE ONLY.
 - FOR DESIGN OF POT BEARINGS, THE DESIGN HORIZONTAL FORCE SHALL, IN NO CASE BE LESS THAN 10% AND GREATER THAN 25% OF THE DESIGN VERTICAL LOAD.
 - THE CONTRACTOR AND SUPPLIER OF BEARINGS SHALL BE FURNISH A MINIMUM TROUBLE FREE WARRANTY OF 10 YEARS AFTER OPENING OF THE BRIDGE.

LEGEND

	A Guided Bearing in transverse Direction
	B Free Bearing
	C Fixed Bearing
	D Guided Bearing in Longitudinal Direction

EMPLOYER		PROJECT NAME		DESIGN CONSULTANTS		Designed By	Mr. S.N.R.B. Nec.No. 265 Civil "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		Checked By	Mr. S.M. Nec.No. 					
		 EPTISA Servicios De Ingenieria Madrid, Spain	 STUP Consultants Private Limited Kolkatta, India			Approved By	Mr. H.B. Nec.No. 	KDP/DPR/STR/BR/BALUWA/DD -19	Sheet No. 1 / 1	
		In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited								