Government of Nepal

Ministry of Physical Infrastructure and Transport

Department Of Roads

Development Cooperation Implementation Division

Strategic Road Connectivity & Trade Improvement Project (SRCTIP)

Detailed Design of Upgradation of Kamala- Dhalkebar- Pathlaiya Road Section (130km) of Mahendra ighway and Bridges

Final Design Report

Volume IV

Design Report & Drawing of Bridges

Bridge Name- Dumdume

Volume-2

Detailed Drawing

April,2023

Joint Venture Of:

EPTISA Servicios De Ingenieria
Madrid, Spain

STUP Consultants Private Limited
India

In Association With

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

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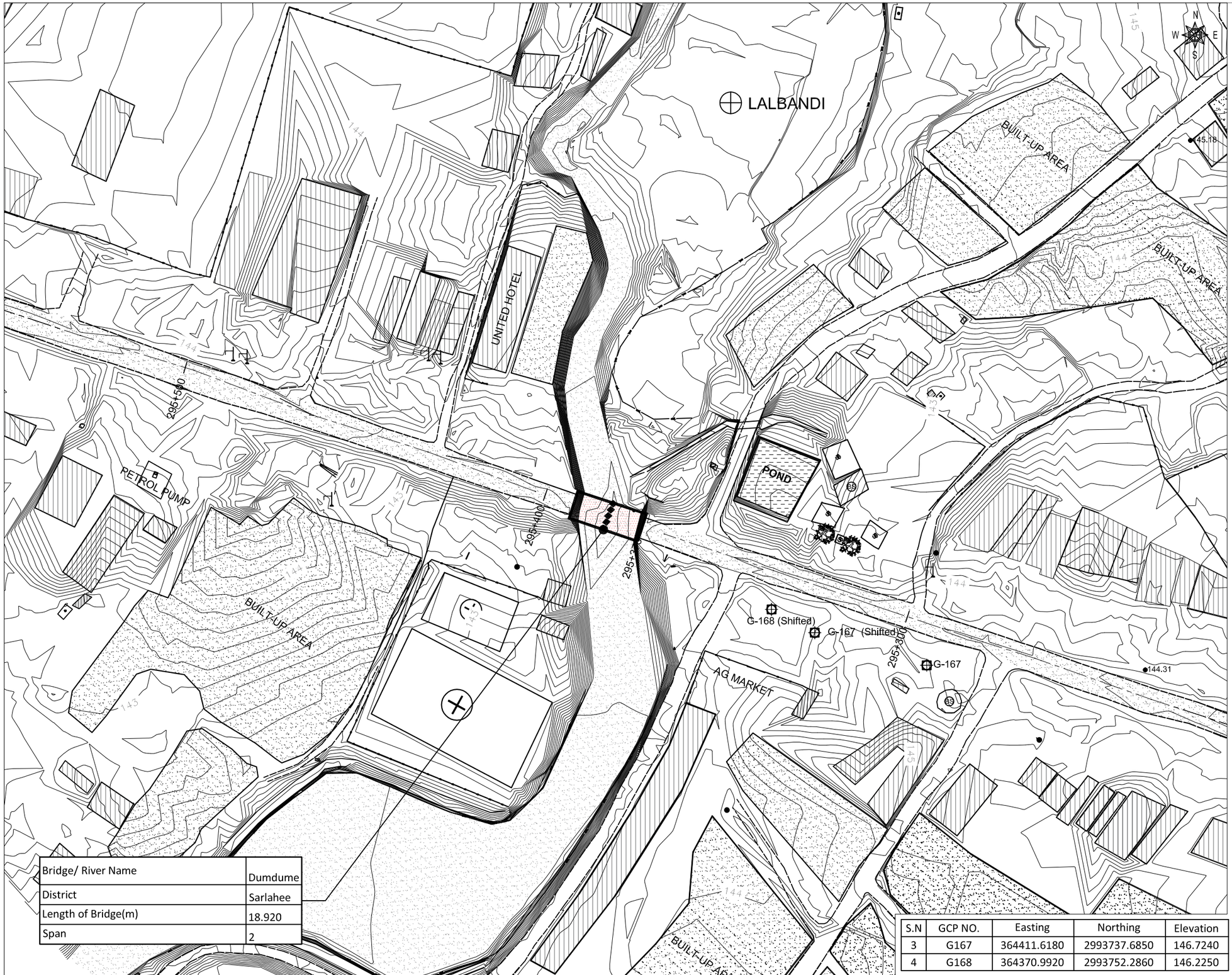


DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL
MAIN FOOT TRAIL		ANIMAL FARM	
PLACE NAME		BAMBOO	
POLICE STATION		BIO GAS	
PETROL PUMP		BUS WAITING STATION	
Pond/ Water Body		BRIDGE	
POULTRY FARM		CONTOUR	
PROPERTY BOUNDARY		CANAL	
ROAD INFORMATION BOARD		CULVERT	
RIVER		CONTROL POINT (G)	
SPOT HEIGHT		CRUSHER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

Bridge/ River Name	Dumdume
District	Sarlahee
Length of Bridge(m)	18.920
Span	2

S.N	GCP NO.	Easting	Northing	Elevation
3	G167	364411.6180	2993737.6850	146.7240
4	G168	364370.9920	2993752.2860	146.2250

EMPLOYER

Government of Nepal
Ministry of Physical Infrastructure and Transport
Department of Roads
Development Cooperation Implementation Division

PROJECT NAME

Strategic Road Connectivity & Trade Improvement Project (SRCTIP)

Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges

DESIGN CONSULTANTS

Joint Venture of

EPTISA Servicios De Ingeniera Madrid, Spain

STUP Consultants Private Limited Kolkatta, India

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

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

Drawing Name
DETAILED SURVEY TOPOGRAPHIC MAP(EXISTING CONDITION) OF BRIDGE OVER RIVER DUMDUME

Reference Drawings
-

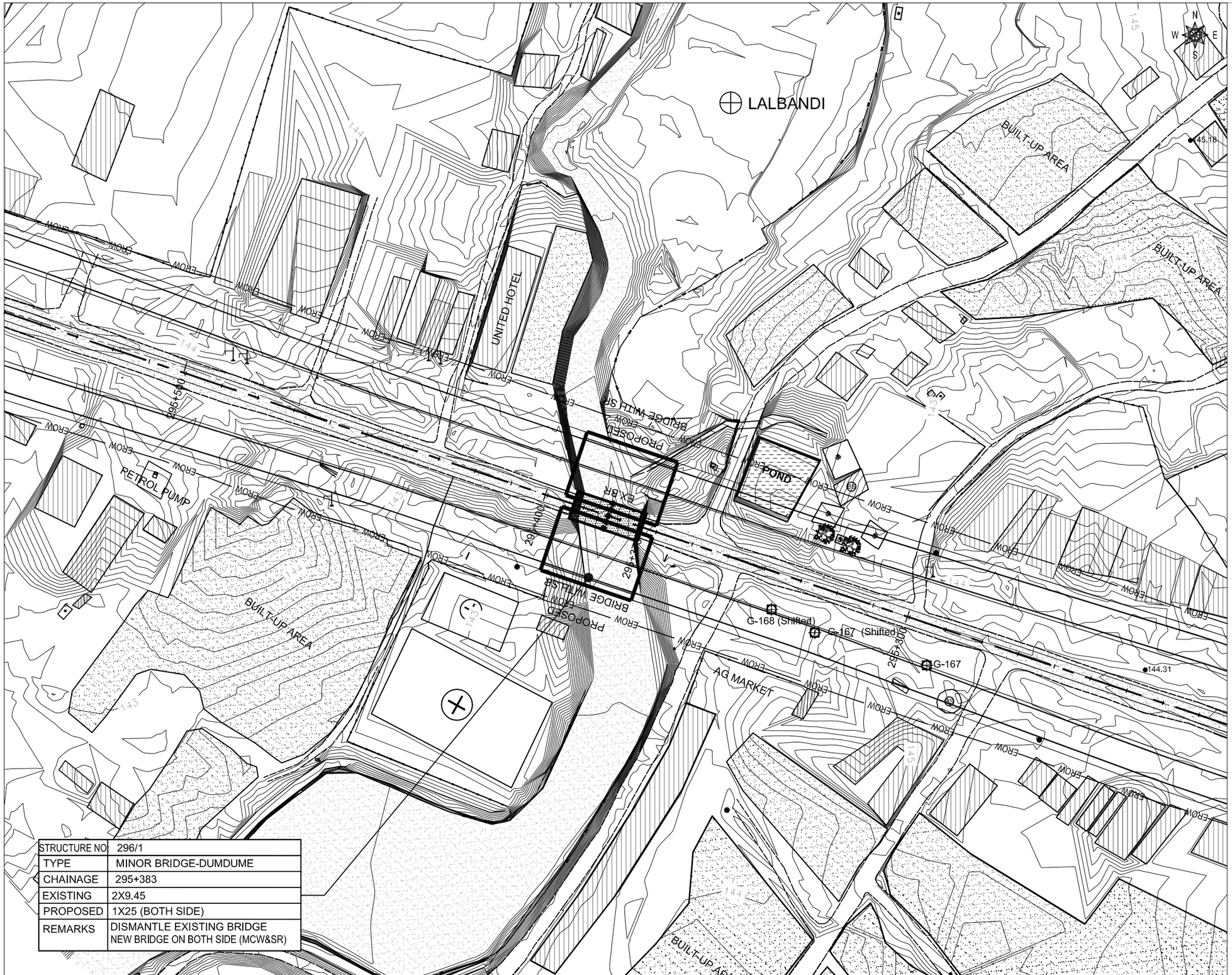
Scale: 1:1000

Chainage: 295+383

Date: 25.04.2023

Drawing No.- KDP/DPR/STR/BR/DUMDUME/DD- 02

Sheet No. 1 / 1



STRUCTURE NO	296/1
TYPE	MINOR BRIDGE-DUMDUME
CHAINAGE	295+383
EXISTING	2X9.45
PROPOSED	1X25 (BOTH SIDE)
REMARKS	DISMANTLE EXISTING BRIDGE NEW BRIDGE ON BOTH SIDE (MCW&SR)

DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL
MAIN FOOT TRAIL		ANIMAL FARM	
PLACE NAME		BAMBOO	
POLICE STATION		BIO GAS	
PETROL PUMP		BUS WAITING STATION	BS
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	100
TRANSFORMER		KILOMETER POST	KP
SHOULDER		MONASTERY	

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS
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

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

Drawing Name
DETAILED SURVEY TOPOGRAPHIC MAP(WITH PROPOSED BRIDGE) OF BRIDGE OVER RIVER DUMDUME

Reference Drawings
-

Scale: 1:1000

Chainage: 295+383

Date: 25.04.2023

Drawing No.- KDP/DPR/STR/BR/DUMDUME/DD- 03

Sheet No. 1 / 1

A. GENERAL

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

B. DESIGN CRITERIA

1. THE DESIGN HAS BEEN PREPARED BASED ON THE FOLLOWING CODES:
   a) NEPAL ROAD STANDARD 2070
   b) IRC-5 2015
   c) IRC-6 2017
   d) IRC-78 2014
   e) IRC-112 2020
   f) IRC SP-13 2022
2. TOTAL WIDTH OF THE BRIDGE DECK: 17.55 M (8 M WIDE CARRIAGEWAY + 6.5 M WIDE SERVICE LANE + 1.5M 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, =30° & 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-70.05
2. HFL - 142.080 M
3. FREE BOARD (MINIMUM) - 1 M
4. MAXIMUM SCOUR LEVEL:
   ABUTMENT - 138.490m

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

D. STRUCTURAL AND OTHER DATA: -

1. SPAN ARRANGEMENT: 1 X 25 = 25 m
2. SUPERSTRUCTURE:
   PRECAST RCC LONGITUDINAL GIRDERS & CAST-IN-SITU RCC CROSS GIRDERS AND DECK SLAB.
3. SUBSTRUCTURE
   A) ABUTMENTS - RCC WALL TYPE
4. FOUNDATIONS
   A) ABUTMENT - 1200 DIA BORED CAST-IN-SITU PILE
   DESIGN WORKING LOAD ON PILE - 223 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
    1.5m 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. ABUTMENT M35
    e. RETURN WALL.....M35
    f. LEVELING COURSE: I) BELOW APPROACH SLAB.....M15
       II) BELOW PILE CAP.....M15
    g. APPROACH SLAB M30
    h. CAST-IN-SITU CRASH BARRIER M40
    i. KERB M35
    j. DECK SLAB FOR RCC GIRDERS.....M35
    k. PRECAST RCC GIRDERS M35
    l. CAST-IN-SITU CROSS GIRDER FOR RCC GIRDERS.....M35

12. REINFORCEMENT STEEL: -
    a. H.Y.S.D. BARS - GRADE 500 CONFORMING TO IS 1786
    b. REINFORCEMENT WHERE EVER NECESSARY SHALL BE LOCALLY BENT OR ADJUSTED TO ENSURE PROPER CONCRETING.
13. CONCRETE COVER
    a. DECK SLAB, GIRDER, PEDESTAL, CAP : 40 MM
    b. SUBSTRUCTURE AND FOUNDATION : 75 MM
14. LAPS (Ls) ARE TO BE STAGGERED AND MINIMUM LAP LENGTH ARE TO BE AS FOLLOWS:
    a) FOR M 30 GRADE CONCRETE : 57.2Ø
    b) FOR M 35 GRADE CONCRETE : 51.48Ø
    c) FOR M 40 GRADE CONCRETE : 48.62Ø

    (WHERE Ø IS THE DIAMETER OF THE BAR)

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

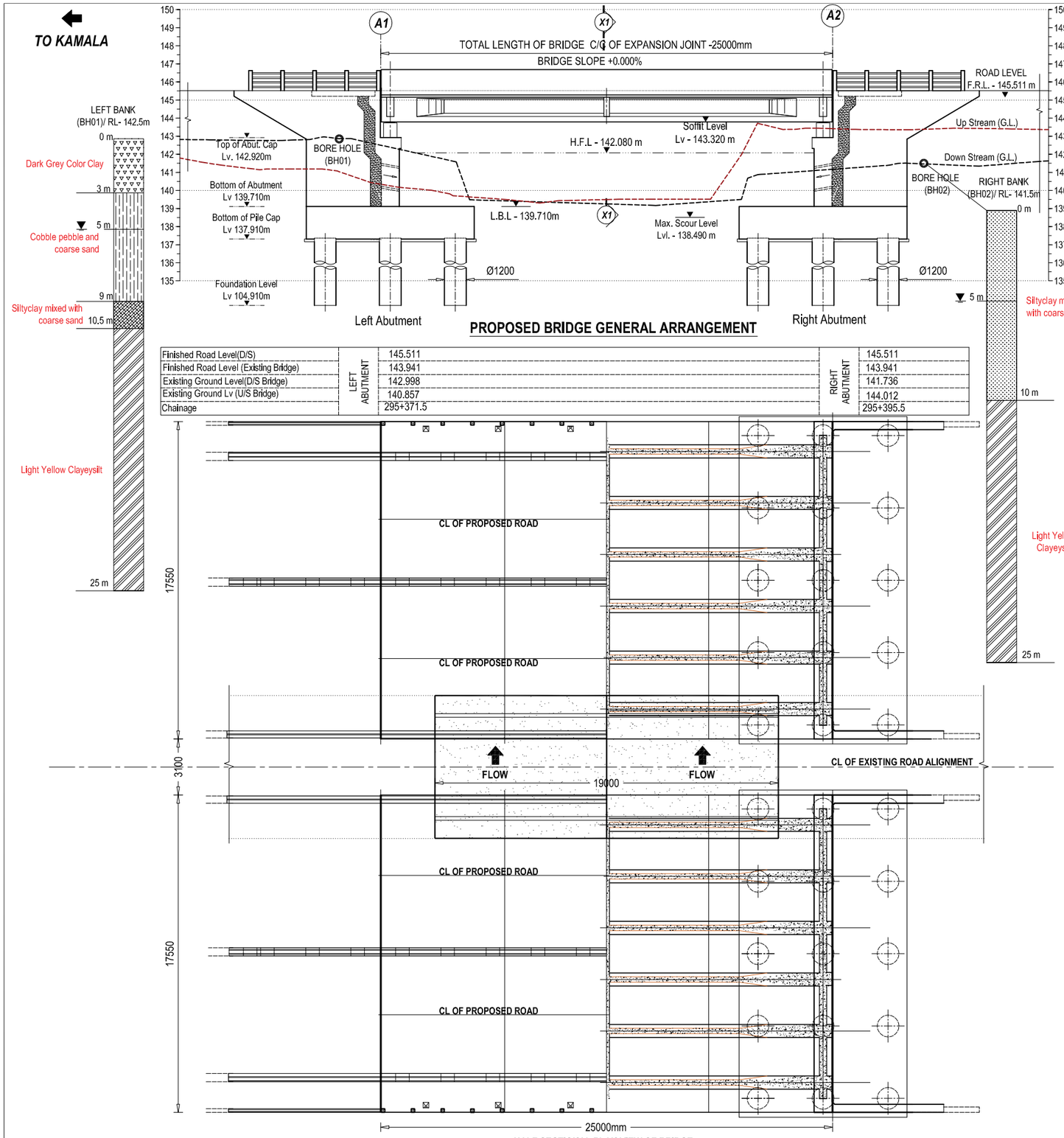
GRADE OF CONCRETE	M30	M35	M40	M45
LAPPED BAR <25%	57.2ϕ	51.48ϕ	48.62ϕ	45.76ϕ
25%≤LAPPED BAR <33%	65.78ϕ	62.65ϕ	55.91ϕ	52.62ϕ
33%≤LAPPED BAR <50%	80.08ϕ	72.07ϕ	68.07ϕ	64.06ϕ
50%≤LAPPED BAR	85.8ϕ	77.22ϕ	72.93ϕ	68.64ϕ

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

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS					
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 Krtl Consultant and Rays Consultant Private Limited	Designed By	Mr. R.A. Nec.No. 6431 CIVIL 'A'	Signature	Drawing Name: GENERAL NOTES OF BRIDGE OVER RIVER DUMDUME Reference Drawings: -	Scale: AS SHOWN Chainage: 295+383	Date: 05.05.2023 Drawing No.- KDP/DPR/STR/BR/DUMDUME/DD-4 Sheet No. 1 / 1
			Checked By	Mr. S.M.	Signature			
			Approved By	Mr. H.B.	Signature			

TO KAMALA

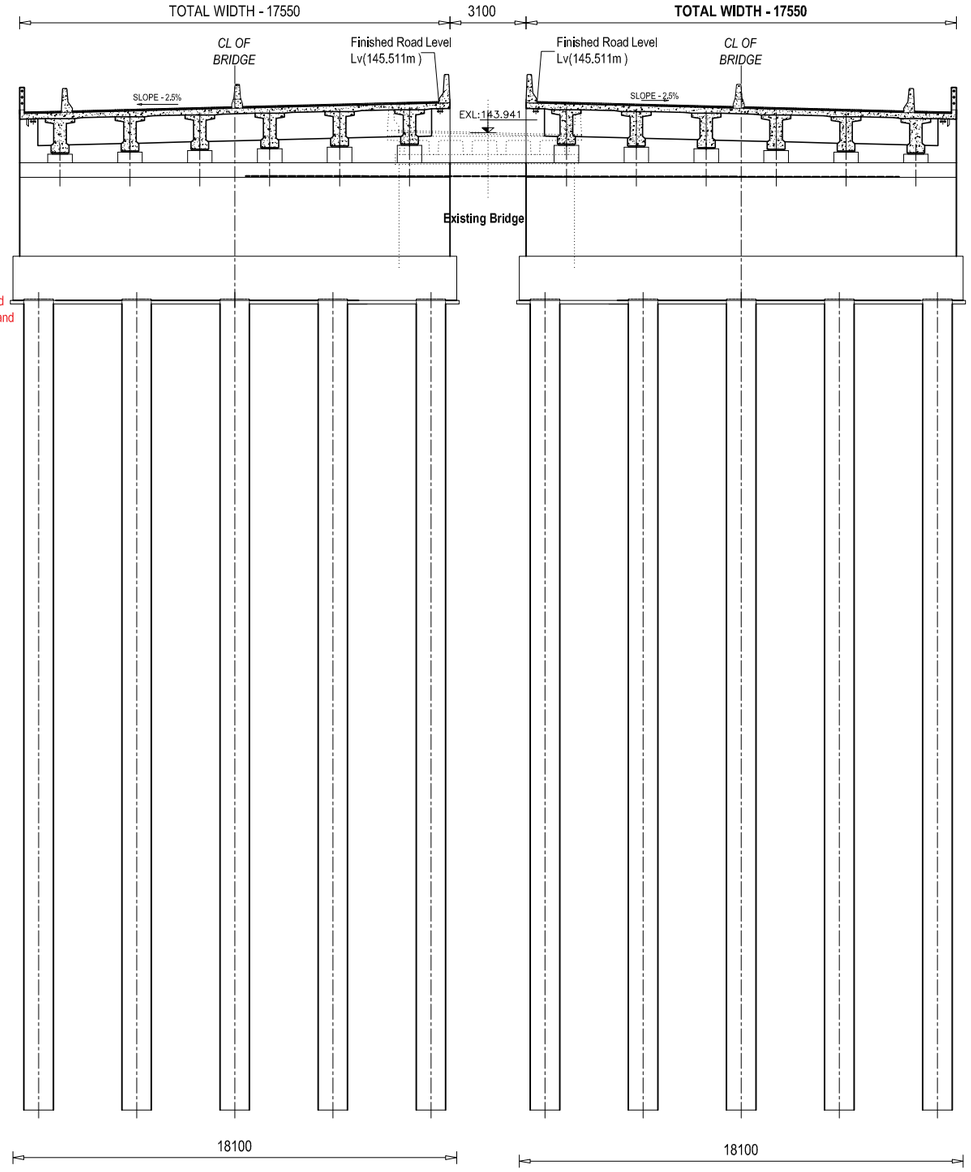
TO PATHALAIYA



PROPOSED BRIDGE GENERAL ARRANGEMENT

Finished Road Level(D/S)	LEFT ABUTMENT	145.511	RIGHT ABUTMENT	145.511
Finished Road Level (Existing Bridge)		143.941		143.941
Existing Ground Level(D/S Bridge)		142.998		141.736
Existing Ground Lv (U/S Bridge)		140.857		144.012
Chainage		295+371.5		295+395.5

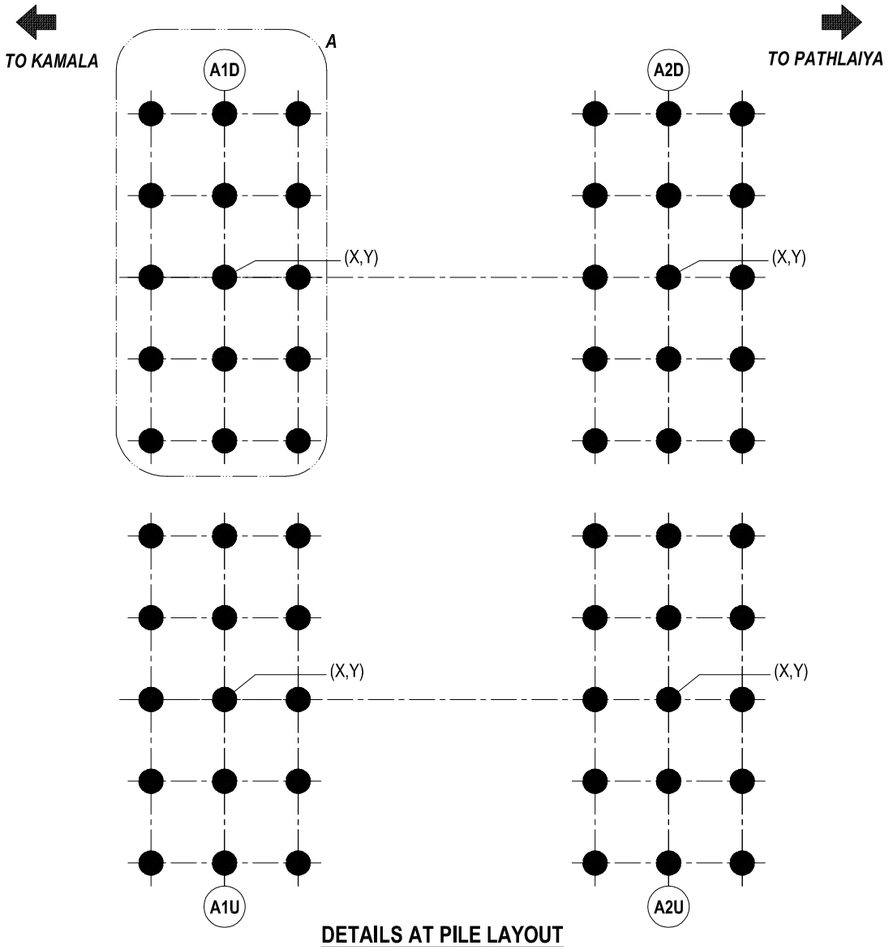
HALF SECTIONAL PLAN VIEW OF BRIDGE



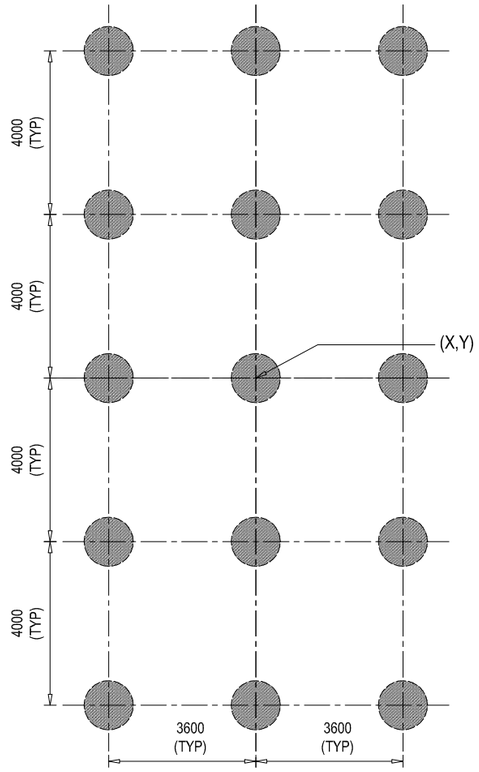
SECTIONAL VIEW AT X1

(SCALE 1 :250 @ A3)

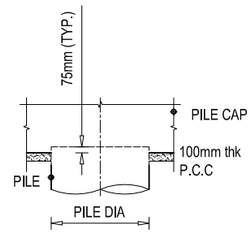
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS					
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya 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 Krill Consultant and Rays Consultant Private Limited	Designed By	Mr. R.A. Nec.No. 6431 CIVIL 'A'	Signature	Drawing Name GENERAL ARRANGEMENT OF BRIDGE OVER RIVER DUMDUME Reference Drawings	Scale: AS SHOWN Chainage: 295+383	Date: 25.04.2023 Drawing No.- KDP/DPR/STR/BR/DUMDUME/DD-05 Sheet No. 1 / 1
			Checked By	Mr. S.M.	Signature			
			Approved By	Mr. H.B.	Signature			



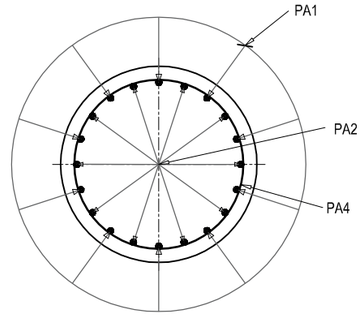
DETAILS AT PILE LAYOUT
SCALE - 1:300



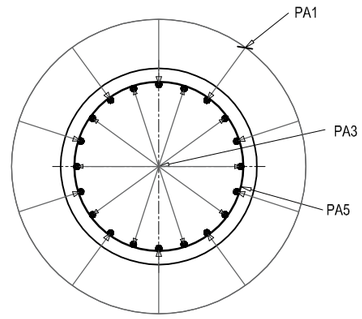
DETAILS AT A
SCALE - 1:150



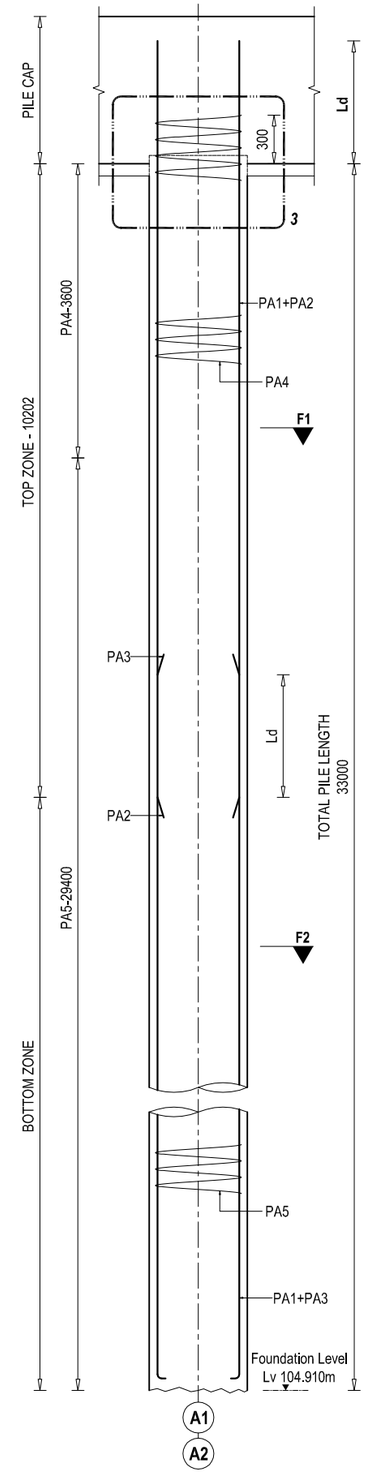
DETAIL AT 3
SCALE - 1:75



SECTIONAL VIEW AT F1 - F1
SCALE - 1:75



SECTIONAL VIEW AT F2 - F2
SCALE - 1:75



ELEVATION VIEW

BAR DETAIL AT PILE
SCALE - 1:75

BAR BENDING SCHEDULE OF ABUTMENT PILE

S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA (MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	PA1	300, 34650	25		34.950	10	3.858	1348.38
2	PA2	13427	25		13.427	10	3.858	518.017
3	PA3	300, 22723	12		23.023	10	0.889	204.65
4	PA4	Dia. 1034, 100	16	110	3.448	47	1.580	256.11
5	PA5	Dia. 1034, 100	12	110	3.448	254	0.889	778.55
							TOTAL (KG) :	3105.71
							No. of Pile	15.00
							TOTAL WEIGHT (KG) :	46585.64

PILE CAPACITY (INDIVIDUAL)		
SN.	DIA (mm)	CAPACITY (Ton)
1	1200	223

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

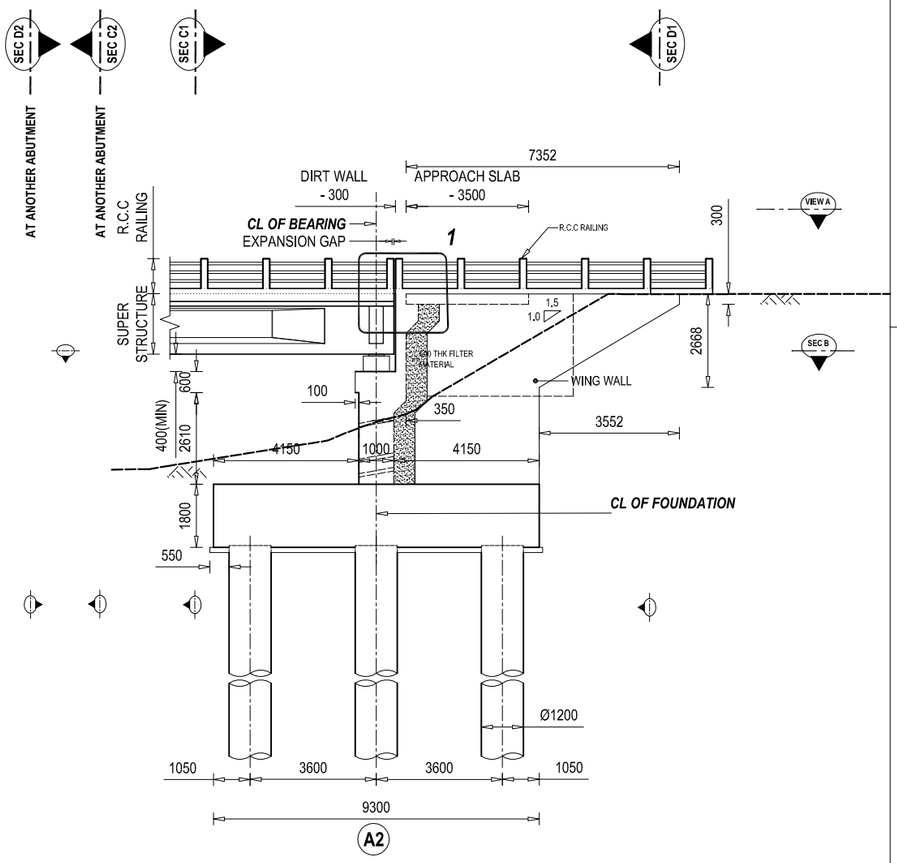
SN.	ABUTMENT	EASTING (X)	NORTHING (Y)
1	ABUTMENT (A1U)	364108.206	2993872.693
2	ABUTMENT (A2U)	364084.514	2993880.673

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

SN.	ABUTMENT	EASTING (X)	NORTHING (Y)
1	ABUTMENT (A1D)	364101.615	2993853.124
2	ABUTMENT (A2D)	364077.922	2993861.103

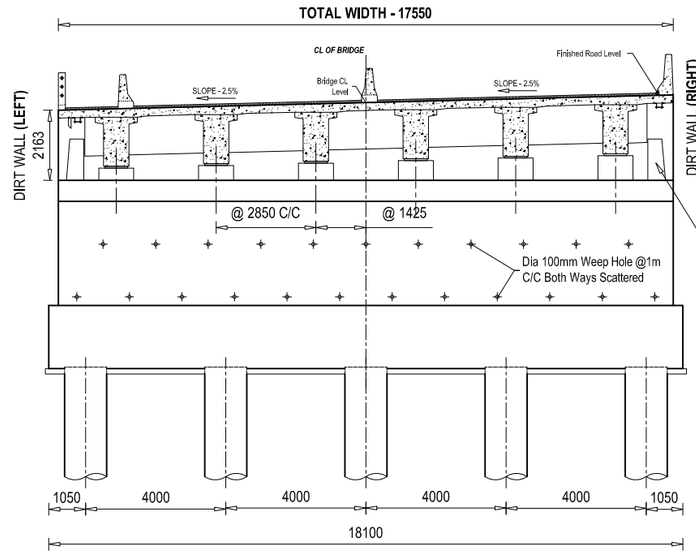
NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/DUMDUME/DD-4

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS					
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	Designed By	Mr. R.A. Nec.No. 6431 CIVIL 'A'	Signature	Drawing Name **LAYOUT AND DETAIL OF PILE FOUNDATION OF BRIDGE OVER RIVER DUMDUME** Reference Drawings **KDP/DPR/STR/BR/DUMDUME/DD-9**	Scale: AS SHOWN Chainage: 295+383	Date: 05.05.2023 Drawing No.- KDP/DPR/STR/BR/DUMDUME/DD-6 Sheet No. 1 / 1
			Checked By	Mr. S.M.	Signature			
			Approved By	Mr. H.B.	Signature			



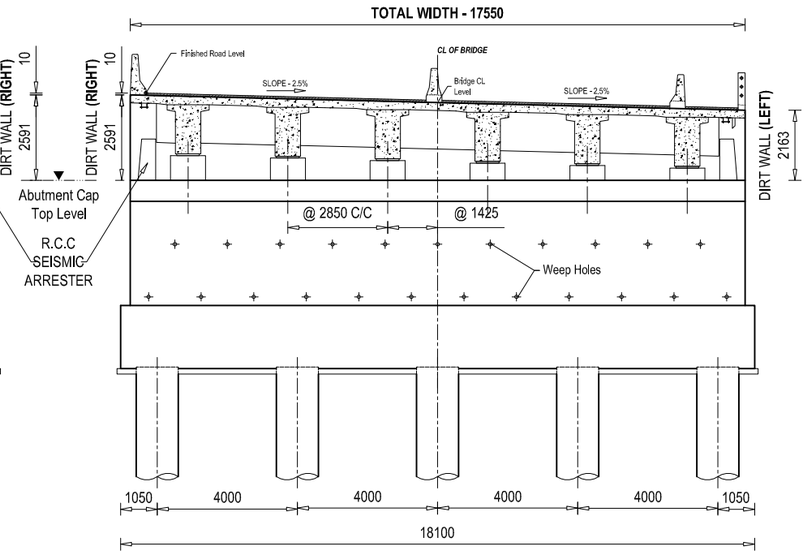
OUTLINE DETAILS OF ABUTMENT

SCALE - 1: 175



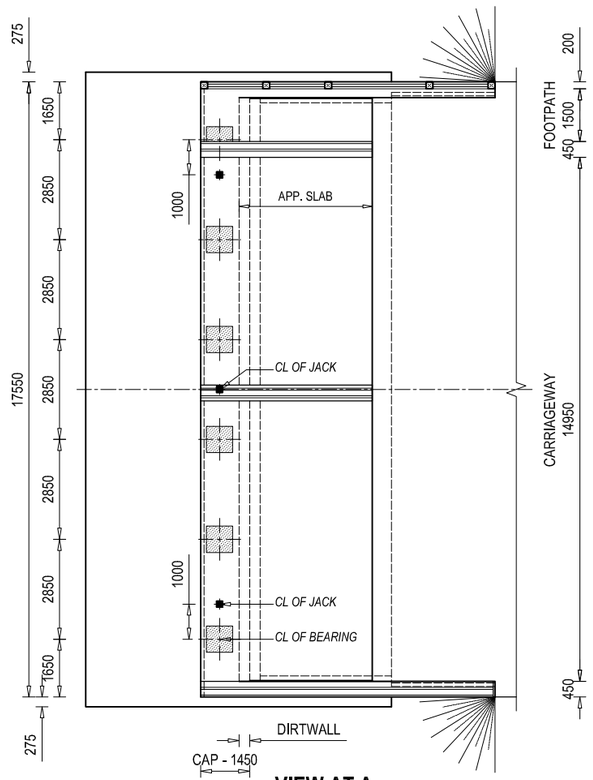
SECTIONAL VIEW AT C1 - C1

SCALE - 1: 175



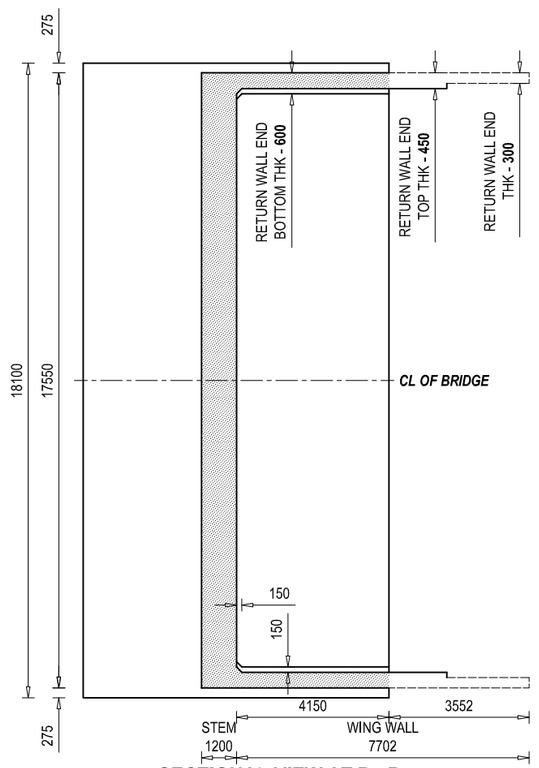
SECTIONAL VIEW AT C2 - C2

SCALE - 1: 175



VIEW AT A

SCALE - 1: 175

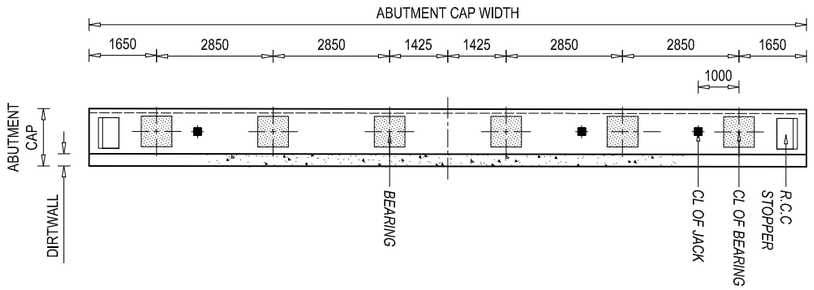


SECTIONAL VIEW AT B - B

SCALE - 1: 175

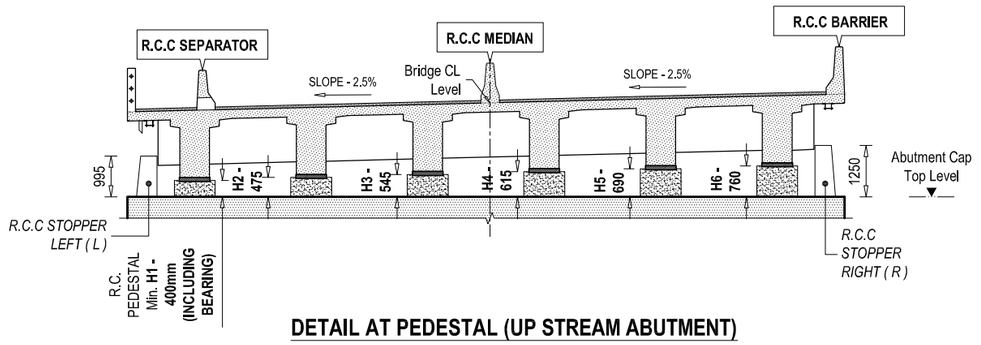
NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/DUMDUME/DD-4

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS				
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	Designed By	Mr. R.A. Nec.No. 6431 CIVIL 'A'	Signature	Drawing Name: ABUTMENT DETAILS OF BRIDGE OVER RIVER DUMDUME Reference Drawings: KDP/DPR/STR/BR/DUMDUME/DD-9
			Checked By	Mr. S.M.	Signature	Scale: AS SHOWN Chainage: 295+383
			Approved By	Mr. H.B.	Signature	Date: 05.05.2023 Drawing No.- KDP/DPR/STR/BR/DUMDUME/DD-7 Sheet No. 1 / 2



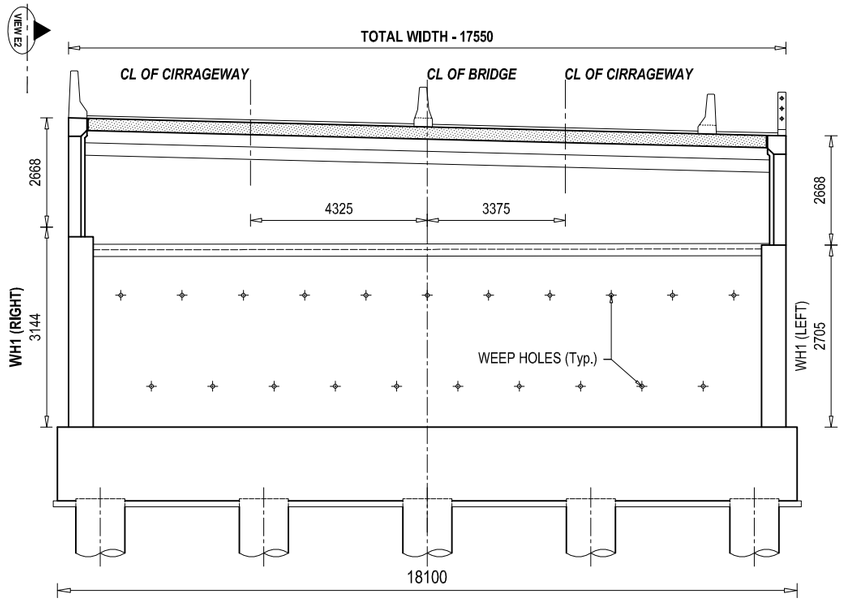
PLAN VIEW AT ABUTMENT CAP (UP STREAM ABUTMENT)

SCALE - 1: 150



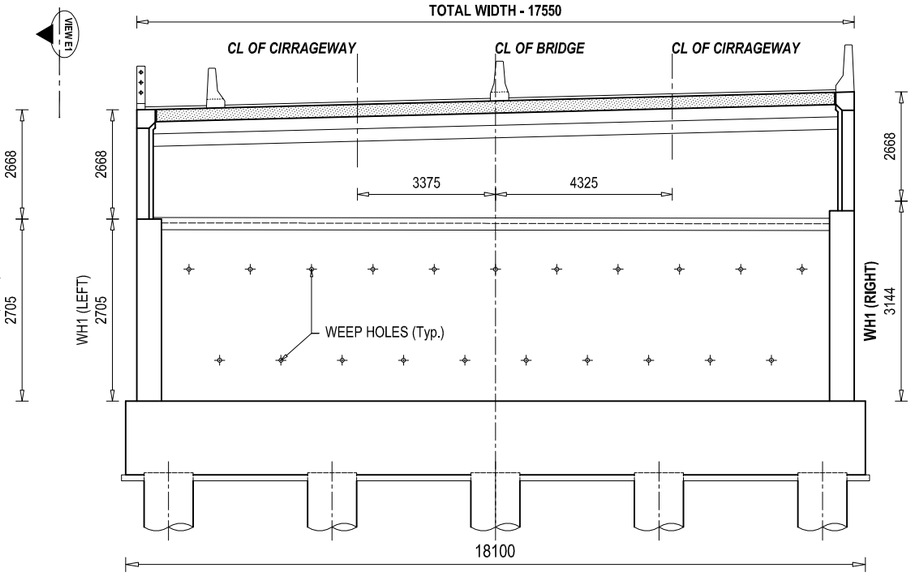
DETAIL AT PEDESTAL (UP STREAM ABUTMENT)

SCALE - 1 : 150



SECTIONAL VIEW AT D1 - D1

SCALE - 1: 150

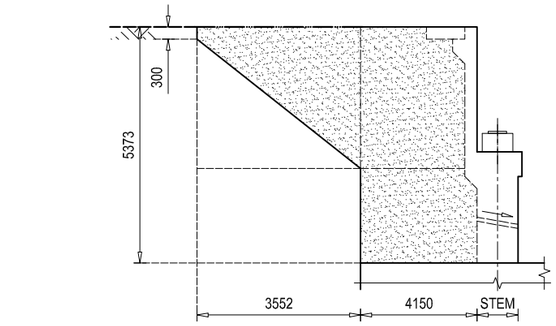


SECTIONAL VIEW AT D2 - D2

SCALE - 1: 150

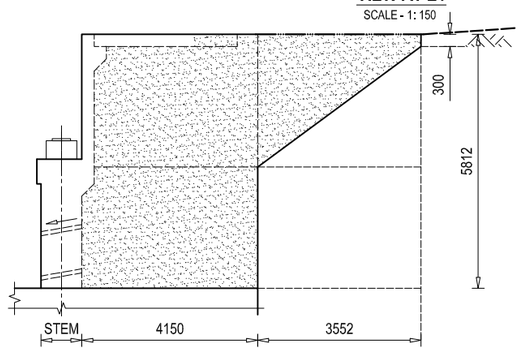
DETAIL AT DIRT WALL

SCALE - 1 : 150



VIEW AT E1

SCALE - 1: 150

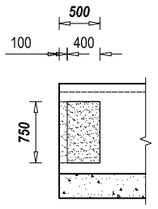


VIEW AT E2

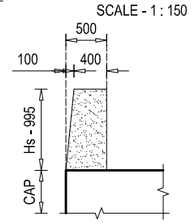
SCALE - 1: 150

DETAIL AT RETURN WALL

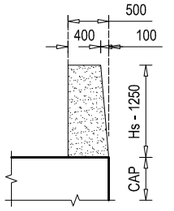
SCALE - 1 : 150



R.C.C SEISMIC ARRESTER PLAN VIEW



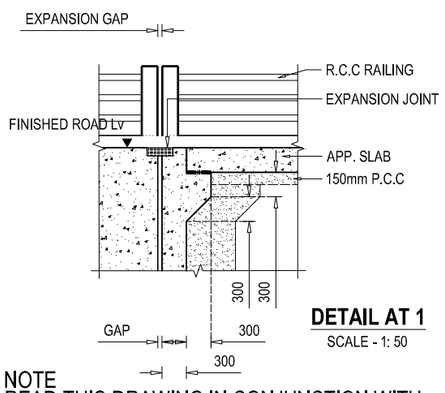
R.C.C SEISMIC ARRESTER - LEFT ELEVATION VIEW



R.C.C SEISMIC ARRESTER - RIGHT ELEVATION VIEW

DETAIL AT PEDESTAL

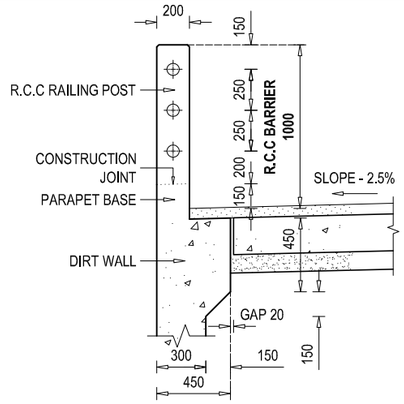
SCALE - 1 : 75



DETAIL AT 1

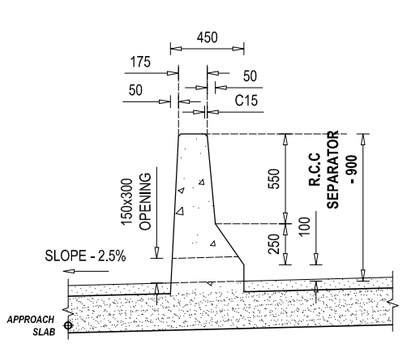
SCALE - 1: 50

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



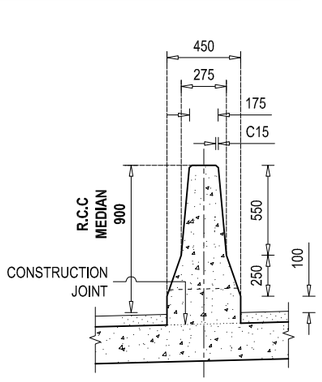
DETAIL SECTIONAL VIEW AT R.C.C RAILING

SCALE - 1: 25



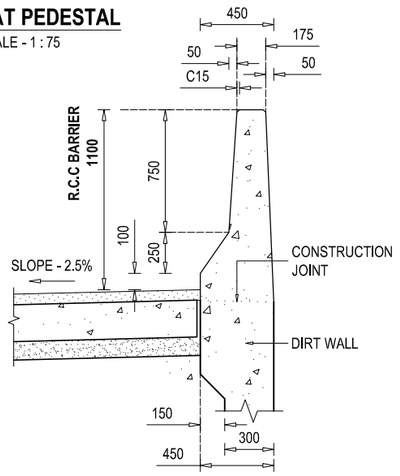
DETAIL SECTIONAL VIEW AT R.C.C SEPARATOR

SCALE - 1: 25



DETAIL AT R.C.C MEDIAN

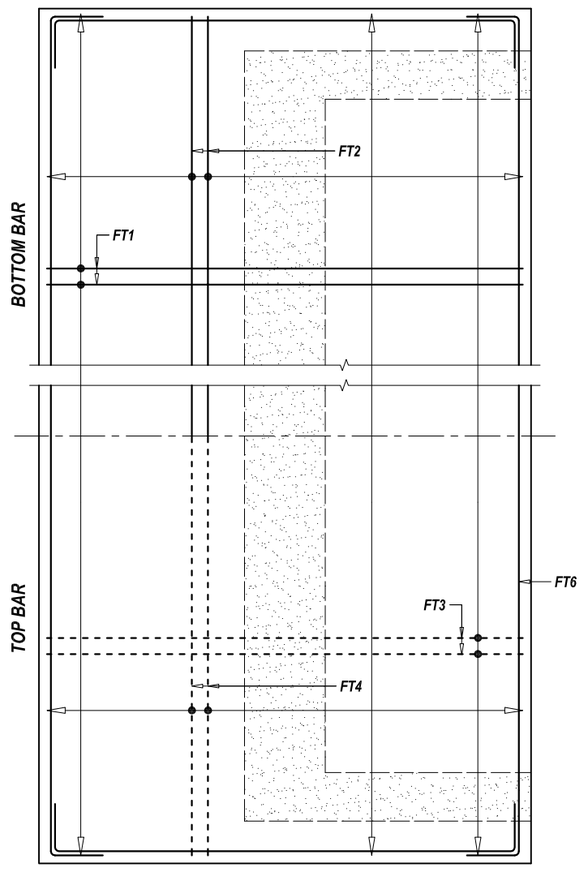
SCALE - 1 : 50



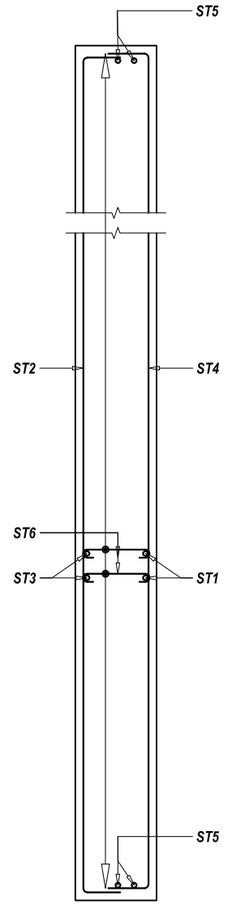
DETAIL SECTIONAL VIEW AT R.C.C BARRIER

SCALE - 1: 25

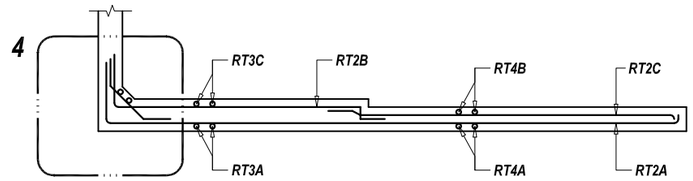
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS					
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya 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 Krill Consultant and Rays Consultant Private Limited	Designed By	Mr. R.A. Nec.No. 6431 CIVIL 'A'	Signature	Drawing Name: ABUTMENT DETAILS OF BRIDGE OVER RIVER DUMDUME Reference Drawings: KDP/DPR/STR/BR/DUMDUME/DD-9	Scale: AS SHOWN Chainage: 295+383
			Checked By	Mr. S.M.	Signature		Date: 05.05.2023 Drawing No.- KDP/DPR/STR/BR/DUMDUME/DD-7
			Approved By	Mr. H.B.	Signature		Sheet No. 2 / 2



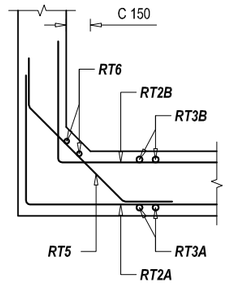
PLAN VIEW



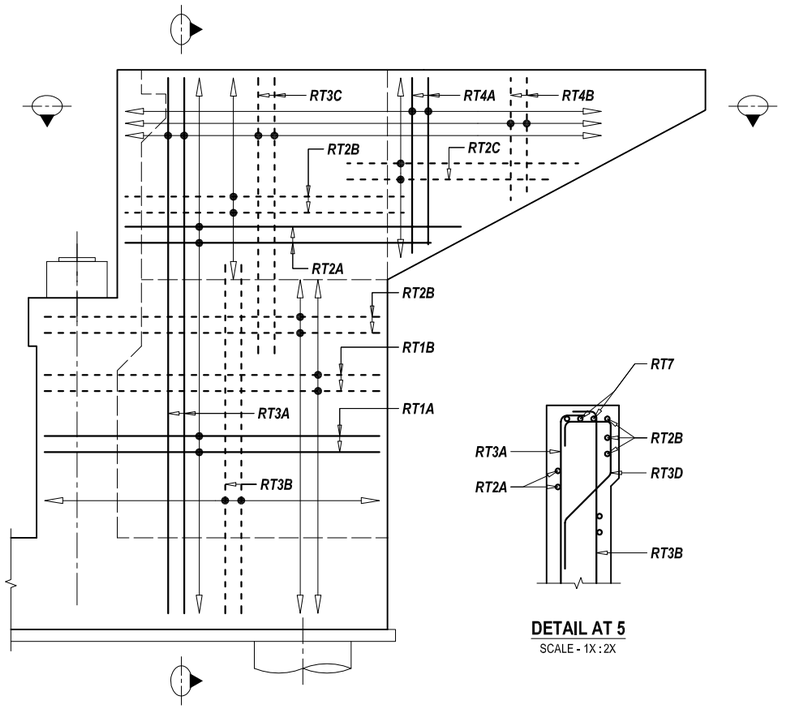
SECTIONAL PLAN VIEW



SECTIONAL PLAN VIEW

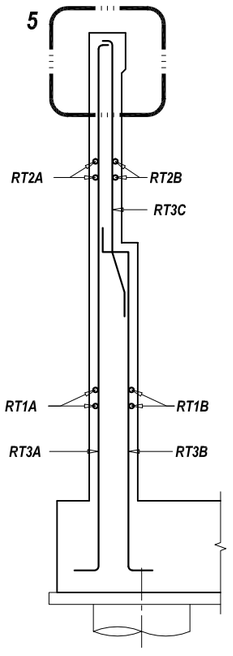


DETAILS AT 4



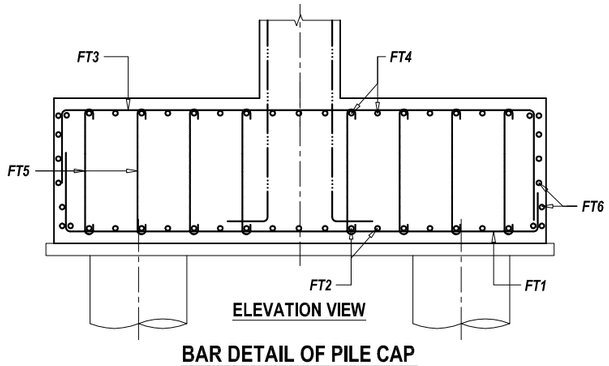
ELEVATION VIEW

DETAIL AT 5
SCALE - 1X : 2X



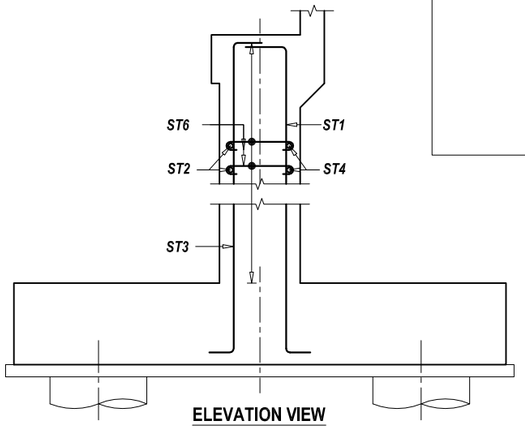
SECTIONAL SIDE VIEW

BAR DETAIL AT RETURN WALL
SCALE - 1 : 75



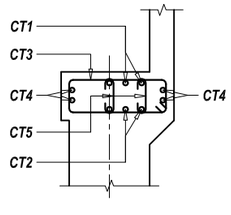
ELEVATION VIEW

BAR DETAIL OF PILE CAP
SCALE - 1 : 75

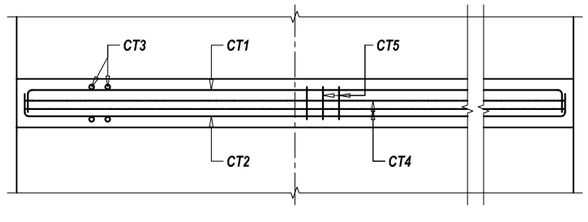


ELEVATION VIEW

BAR DETAIL AT ABUTMENT STEM
SCALE - 1 : 75



ELEVATION VIEW



FRONT VIEW

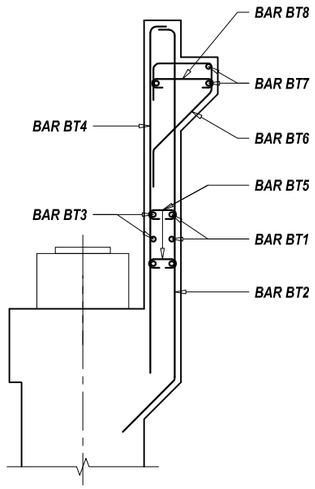
BAR DETAIL AT ABUTMENT CAP
SCALE - 1 : 75

TOP BAR OR
NEAR FACE REINFORCEMENT

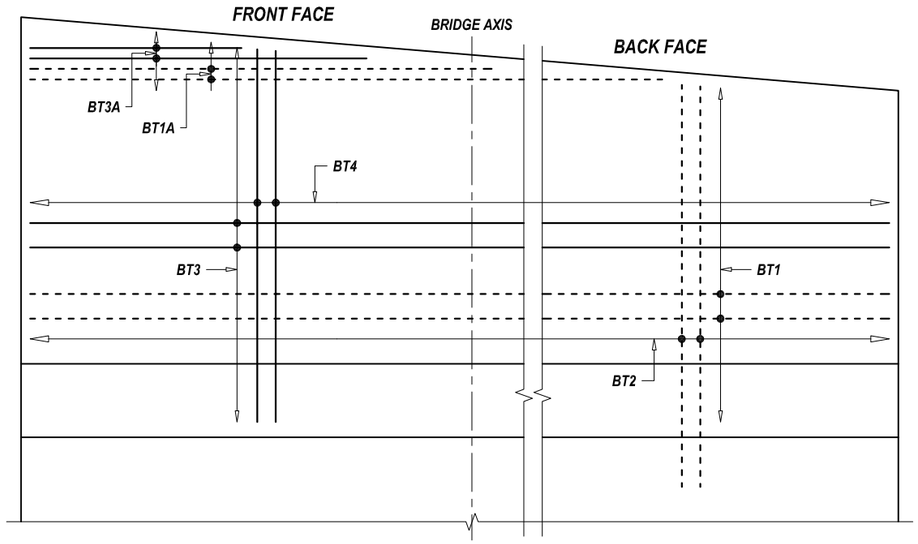
BOTTOM BAR OR
FAR FACE REINFORCEMENT

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

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS					
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	Designed By	Mr. R.A. Nec.No. 6431 CIVIL 'A'	Signature	Drawing Name: ABUTMENT REINGORCEMENT DETAILS OF BRIDGE OVER RIVER DUMDUME Reference Drawings: KDP/DPR/STR/BR/DUMDUME/DD-9	Scale: AS SHOWN Chainage: 295+383	Date: 05.05.2023 Drawing No.- KDP/DPR/STR/BR/DUMDUME/DD-8 Sheet No. 1 / 2
			Checked By	Mr. S.M.	Signature			
			Approved By	Mr. H.B.	Signature			



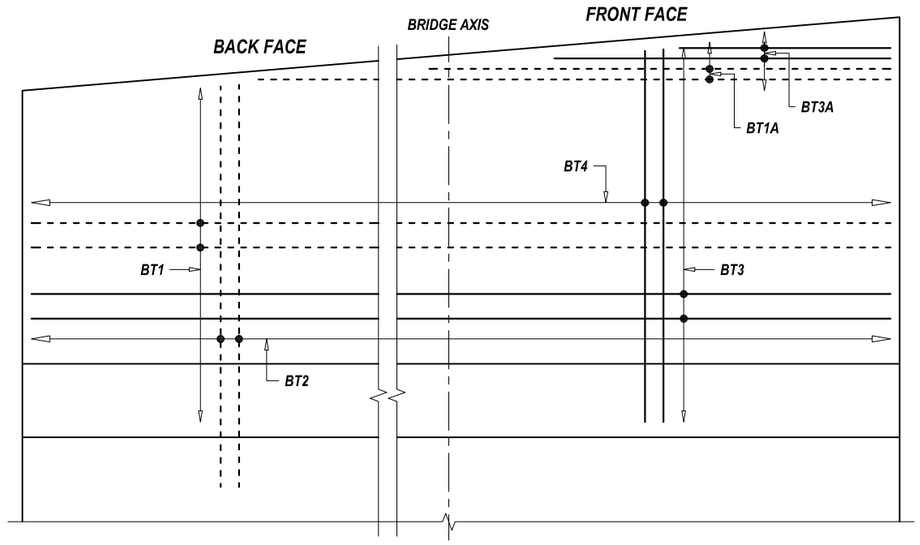
SECTIONAL SIDE VIEW



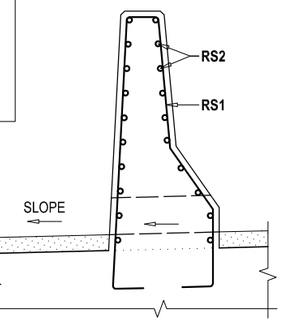
ELEVATION VIEW / VIEW AT D1

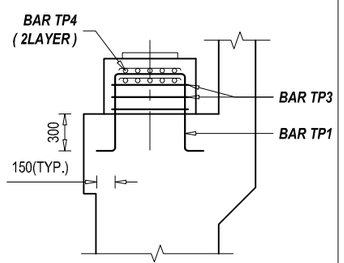
BAR DETAIL AT DIRT WALL

SCALE - 1 : 50

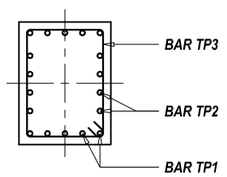


ELEVATION VIEW / VIEW AT D2





SECTIONAL SIDE VIEW

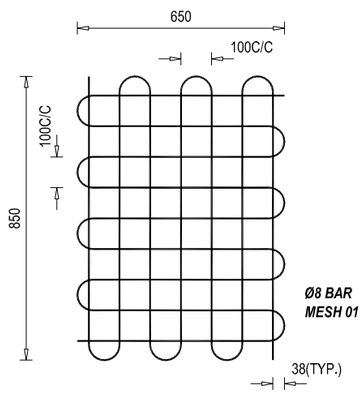


SECTIONAL PLAN VIEW

BAR DETAIL AT PEDESTAL

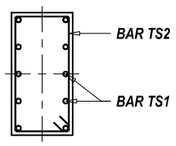
SCALE - 1 : 50

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

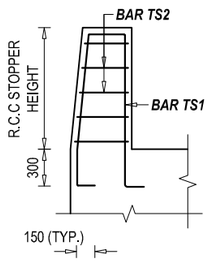


REINFORCEMENT DETAILS OF BEARING MESH

SCALE - 1 : 50

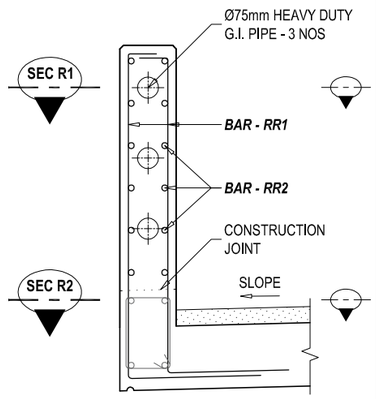


SECTIONAL PLAN VIEW



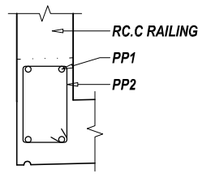
R.C.C STOPPER LEFT ELEVATION VIEW

SCALE - 1 : 50



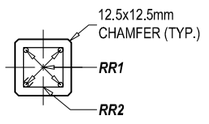
SECTIONAL VIEW OF POST (SEC R1)

SCALE - 1 : 25 @ A3 PAPER



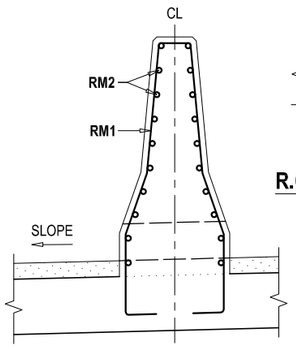
DETAILS OF PARAPET BASE (SEC R1 - R1)

SCALE - 1 : 20 @ A3 PAPER



SECTIONAL REINFORCEMENT DETAILS OF R.C.C POST (SEC R2 - R2)

SCALE - 1 : 20 @ A3 PAPER

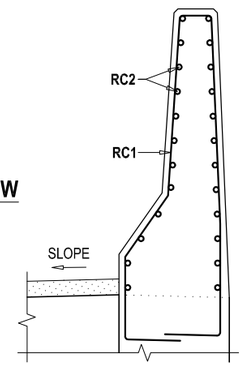


REINFORCEMENT DETAILS OF R.C.C MEDIAN - SECTIONAL VIEW

SCALE - 1 : 25

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

SCALE - 1 : 25



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

SCALE - 1 : 25

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS					
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	Designed By	Mr. R.A. Nec.No. 6431 CIVIL 'A'	Signature	Drawing Name: ABUTMENT REINGORCEMENT DETAILS OF BRIDGE OVER RIVER DUMDUME Reference Drawings: KDP/DPR/STR/BR/DUMDUME/DD-9	Scale: AS SHOWN Chainage: 295+383	Date: 05.05.2023 Drawing No.- KDP/DPR/STR/BR/DUMDUME/DD-8 Sheet No. 2 / 2
			Checked By	Mr. S.M.	Signature			
			Approved By	Mr. H.B.	Signature			

BAR BENDING SCHEDULE OF DIRT WALL

S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	BT1	150 — 17400 — 150	16	200	17.700	17	1.580	475.50
2	BT1A	Avg. 8700 — 150	16	200	8.850	4	1.580	55.94
3	BT2	150 / 450 — 2874.5Avg.	16	125	3.475	142	1.580	779.66
4	BT3	150 — 17400 — 150	16	200	17.700	13	1.580	363.61
5	BT3A	Avg. 8700 — 150	16	200	8.850	4	1.580	55.94
6	BT4	150 / 2878 — Avg.	12	125	3.028	142	0.889	382.20
7	BT5	100 — 150 — 100	12	500	0.350	144	0.889	44.80
8	BT6	200 — 450 — 220 / 200 — 756	12	200	1.826	89	0.889	144.46
9	BT7	11700	16		17.400	5	1.580	137.48
10	BT8	100 — 450 — 100	12	200	0.650	176	0.889	101.69
							TOTAL (KG) :	2541.28

BAR BENDING SCHEDULE OF ABUTMENT CAP

S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	CT1	300 — 17400 — 300	16	150	18.000	11	1.580	312.89
2	CT2	300 — 17400 — 300	16	150	18.000	11	1.580	312.89
3	CT3	450 — 1300 — 100	16	150	3.700	118	1.580	689.94
4	CT4	300 — 17400 — 300	12	150	18.000	8	0.889	128.00
5	CT5	450 — 100 / 100	12	Long. 150 / Trans.300	0.650	566	0.889	327.02
							TOTAL (KG) :	1770.74

BAR BENDING SCHEDULE OF ABUTMENT STEM

S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	ST1	300 — 4860 — 750	20		5.910	180	2.469	2626.67
2	ST2	500 — 17400 — 500	20	190	18.400	14	2.469	636.05
3	ST3	300 — 4860 — 750	16		5.910	180	1.580	1681.07
4	ST4	500 — 17400 — 500	20	190	18.400	14	2.469	636.05
5	ST5	300 / 750 — 4860	20		5.910	14	2.469	204.30
6	ST6	100 — 850 — 100	12	Ver. 500 / Hor.500	1.050	216	0.889	201.60
							TOTAL (KG) :	5985.73

BAR BENDING SCHEDULE OF PILE CAP

S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	FT1	900 — 9150 — 900	25		10.950	140	3.858	5914.35
2	FT2	900 — 17950 — 900	20		19.750	80	2.469	3901.23
3	FT3	900 — 9150 — 900	16		10.950	140	1.580	2422.52
4	FT4	900 — 17950 — 900	16		19.750	80	1.580	2496.79
5	FT5	100 — 1650 — 100	10	Long. 240 / Trans.480	1.850	1426	0.617	1628.46
6	FT6	9100 — 17910 — 150	16	200	54.320	8	1.580	686.71
							TOTAL (KG) :	17050.06

BAR BENDING SCHEDULE OF PEDESTAL

S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TP1	150 — 950 — Avg. 650	16	150	2.850	6	1.580	27.02
1	TP2	150 — 700 — Avg. 650	16	150	2.350	8	1.580	29.71
2	TP3	950 — 700 — 100	16	150	3.500	3	1.580	16.59
1	TP4	850 — 650 — @ 100	8		13.400	2	0.395	10.59
							TOTAL (KG) :	83.91
							TOTAL NOS OF PEDESTAL :	6.00
							TOTAL WEIGHT (KG) :	503.47

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				
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	Designed By	Mr. R.A. Nec.No. 6431 CIVIL 'A'	Signature	Drawing Name: ABUTMENT BAR BENDING SCHEDULE OF BRIDGE OVER RIVER DUMDUME Reference Drawings
			Checked By	Mr. S.M.	Signature	Scale: AS SHOWN Chainage: 295+383
			Approved By	Mr. H.B.	Signature	Date: 05.05.2023 Drawing No.- KDP/DPR/STR/BR/DUMDUME/DD-9 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	450 — 5000 — 150	12	150	5.600	39	0.889	194.13
2	RT1B	450 — 5000 — 150	12	150	5.600	39	0.889	194.13
3	RT2A	450 — 7202 — 150	12	150	7.802	19	0.889	131.77
4	RT2B	150 — 5000 — 150 — 600	12	150	5.900	19	0.889	99.64
5	RT2C	600 — 3127 — 150 — 150	12	150	4.027	19	0.889	68.01
6	RT3A	7462 — 150 — 450	12	150	8.062	29	0.889	207.82
7	RT3B	800 — 4794 — 150 — 450	16	150	6.194	29	1.580	283.85
8	RT3C	150 — 2593 — 150 — 800	16	150	3.693	29	1.580	169.24
9	RT3D	200 — 300 — 300 — 200 — 210	16	150	1.210	51	1.580	97.52
10	RT4A	1334 — 150 — 150	12	150	1.634	44	0.889	63.91
11	RT4B	1334 — 150 — 150	16	150	1.634	44	1.580	113.61
12	RT5	300 — 870 — 300	12	150	1.470	58	0.889	75.79
13	RT6	5812	12		5.812	2	0.889	10.33
14	RT7	225 — 4927	20		5.152	4	2.469	50.88
							TOTAL (KG) :	1760.64

BAR BENDING SCHEDULE OF RETURN WALL - RIGHT

S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RT1A	450 — 5000 — 150	12	150	5.600	36	0.889	179.20
2	RT1B	450 — 5000 — 150	12	150	5.600	36	0.889	179.20
3	RT2A	450 — 7202 — 150	12	150	7.802	19	0.889	131.77
4	RT2B	150 — 5000 — 150 — 600	12	150	5.900	19	0.889	99.64
5	RT2C	600 — 150 — 3127 — 150	12	150	4.027	19	0.889	68.01
6	RT3A	7023 — 150 — 450	12	150	7.623	29	0.889	196.50
7	RT3B	800 — 4355 — 150 — 450	16	150	5.755	29	1.580	263.74
8	RT3C	150 — 2593 — 150 — 800	16	150	3.693	29	1.580	169.24
9	RT3D	200 — 300 — 300 — 200 — 210	16	150	1.210	51	1.580	97.52
10	RT4A	1334 — 150 — 150	12	150	1.634	44	0.889	63.91
11	RT4B	1334 — 150 — 150	16	150	1.634	44	1.580	113.61
12	RT5	300 — 870 — 300	12	150	1.470	58	0.889	75.79
13	RT6	5373	12		5.373	2	0.889	9.55
14	RT7	225 — 4927	20		5.152	4	2.469	50.88
							TOTAL (KG) :	1698.56

BAR BENDING SCHEDULE OF R.C.C BARRIER

S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RC1	130, 735, 850, 305, 445, 200, 305, 200	16	150	3.170	50	1.580	250.47
2	RC2	150 — 7252 — 150	10	150	7.552	20	0.617	93.23
							TOTAL (KG) :	343.70

BAR BENDING SCHEDULE OF R.C.C SEPARATOR

S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RS1	130, 535, 1110, 305, 150, 315	16	150	2.695	25	1.580	106.47
2	RS2	150 — 3500 — 150	10	150	3.800	17	0.617	39.88
							TOTAL (KG) :	146.35

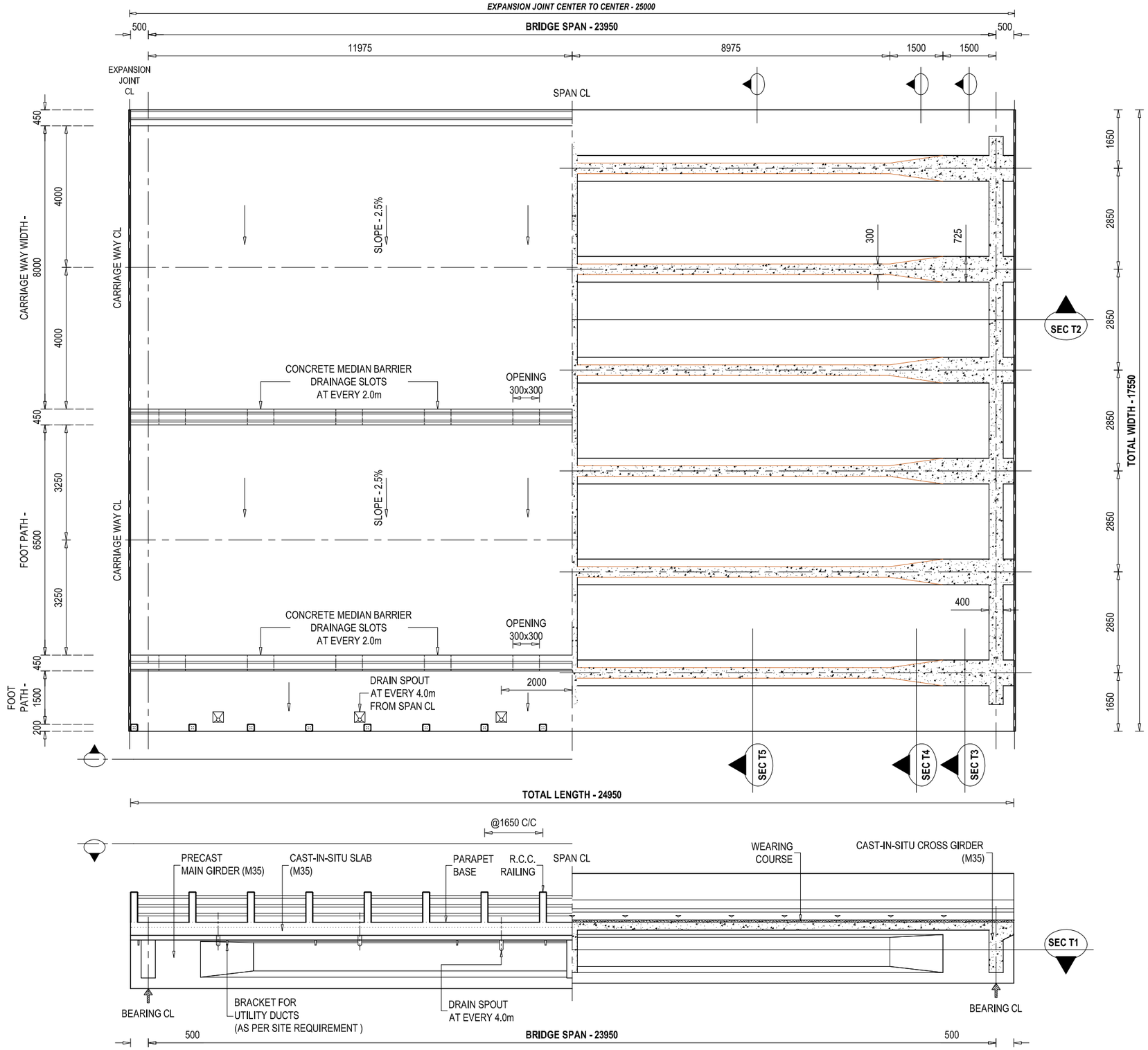
BAR BENDING SCHEDULE OF R.C.C MEDIAN

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	RM1	130, 535, 535, 305, 315, 150, 315	16	150	2.740	25	1.580	108.25
2	RM2	150 — 3500 — 150	10	150	3.800	18	0.617	42.22
							TOTAL (KG) :	150.47

BAR BENDING SCHEDULE OF APPROACH SLAB

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

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS				
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	Designed By	Mr. R.A. Nec.No. 6431 CIVIL 'A'	Signature	Drawing Name: ABUTMENT BAR BENDING SCHEDULE OF BRIDGE OVER RIVER DUMDUME Reference Drawings
			Checked By	Mr. S.M.	Signature	Scale: AS SHOWN Chainage: 295+383
			Approved By	Mr. H.B.	Signature	Date: 05.05.2023 Drawing No.- KDP/DPR/STR/BR/DUMDUME/DD-9 Sheet No. 2 / 2



HALF PLAN /SECTIONAL PLAN VIEW OF SUPERSTRUCTURE AT SEC T1

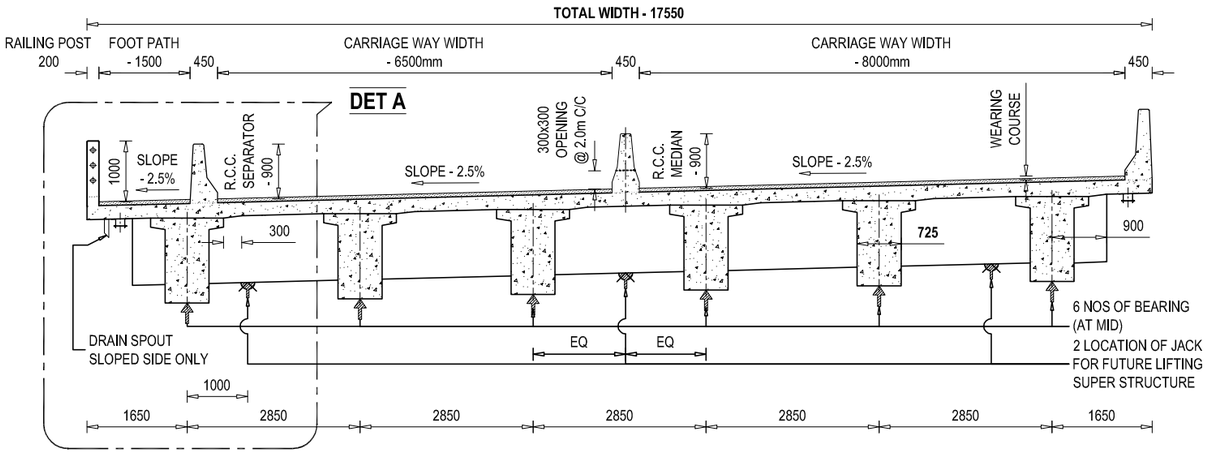
SCALE - 1 : 120

HALF ELEVATION SECTIONAL VIEW OF SUPERSTRUCTURE AT SEC T2

SCALE - 1 : 120

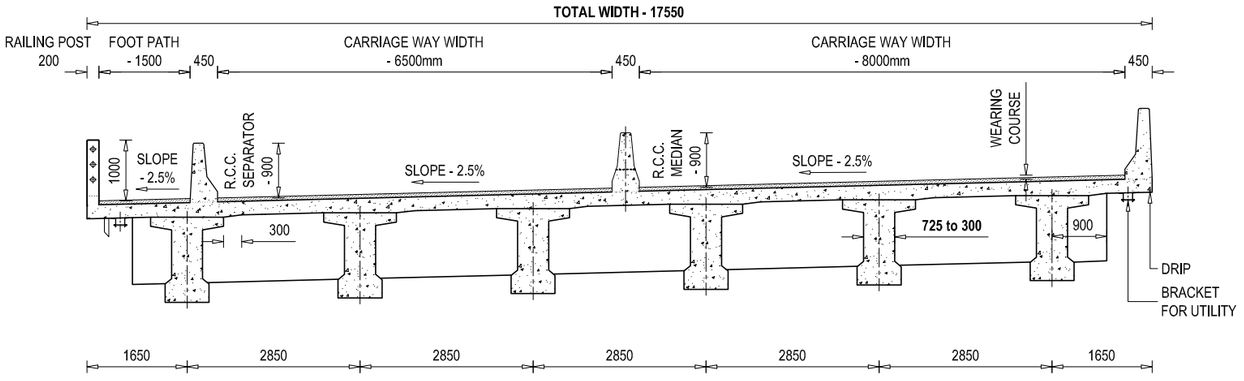
NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/DUMDUME/DD-4

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS					
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	Designed By	Mr. R.A. Nec.No. 6431 CIVIL 'A'	Signature	Drawing Name: SUPER STRUCTURE DETAILS OF BRIDGE OVER RIVER DUMDUME Reference Drawings: KDP/DPR/STR/BR/DUMDUME/DD-14	Scale: AS SHOWN Chainage: 295+383	Date: 25.04.2023 Drawing No.- KDP/DPR/STR/BR/DUMDUME/DD-10 Sheet No. 1 / 2
			Checked By	Mr. S.M.	Signature			
			Approved By	Mr. H.B.	Signature			



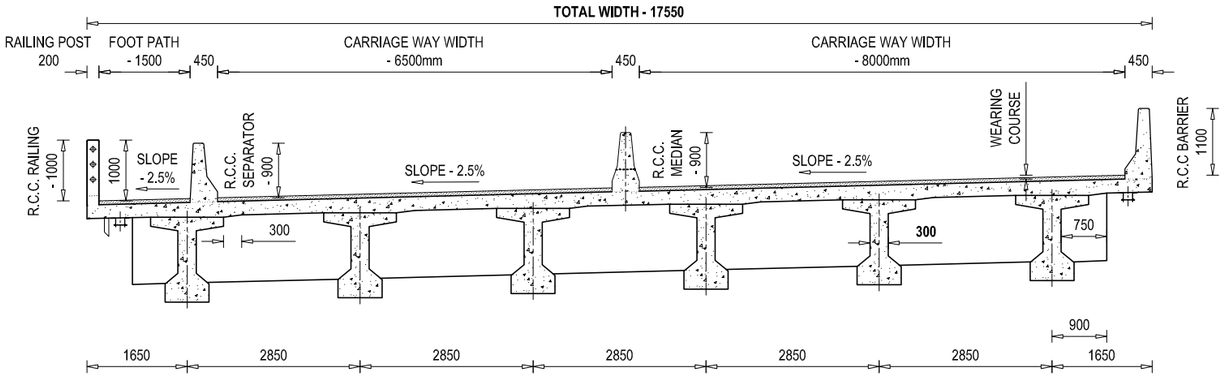
SECTIONAL VIEW AT T3

SCALE - 1 : 100



SECTIONAL VIEW AT T4

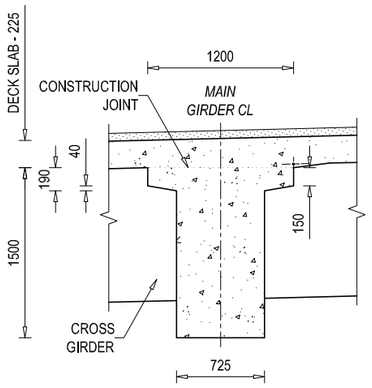
SCALE - 1 : 100



SECTIONAL VIEW AT T5

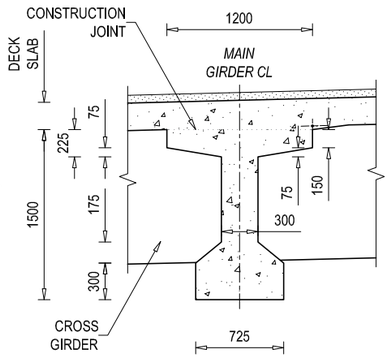
SCALE - 1 : 100

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



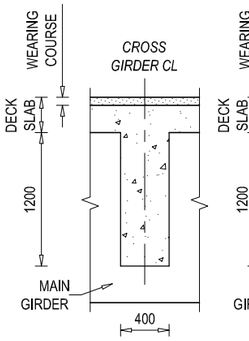
LONGITUDINAL GIRDER - SECTIONAL DETAIL AT END

SCALE - 1 : 50



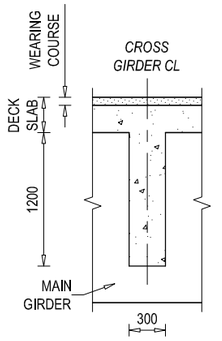
LONGITUDINAL GIRDER - SECTIONALDETAIL AT MID

SCALE - 1 : 50



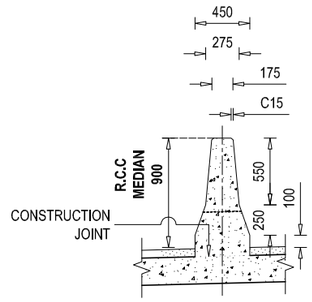
END CROSS GIRDER - SECTIONAL DETAIL

SCALE - 1 : 50



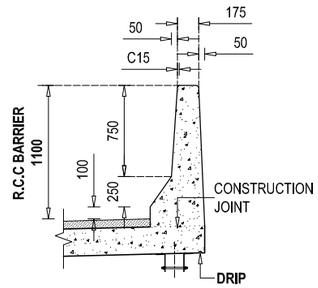
MID CROSS GIRDER - SECTIONAL DETAIL

SCALE - 1 : 50



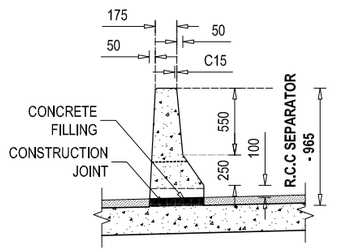
DETAIL AT R.C.C MEDIAN

SCALE - 1 : 50



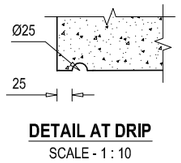
DETAIL AT R.C.C BARRIER

SCALE - 1 : 50



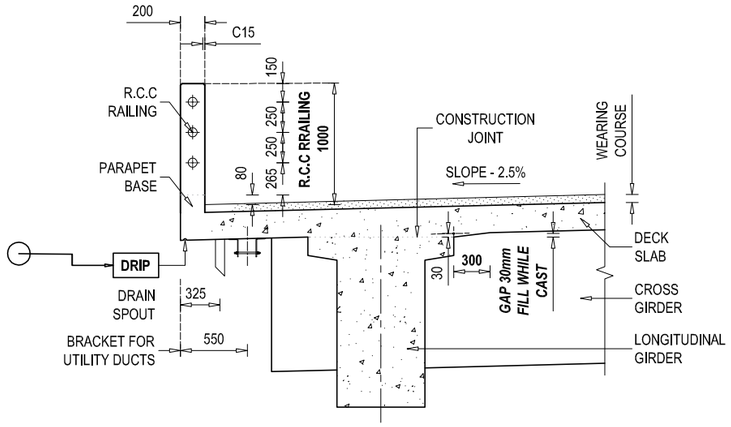
DETAIL AT R.C.C SEPARATOR

SCALE - 1 : 50



DETAIL AT DRIP

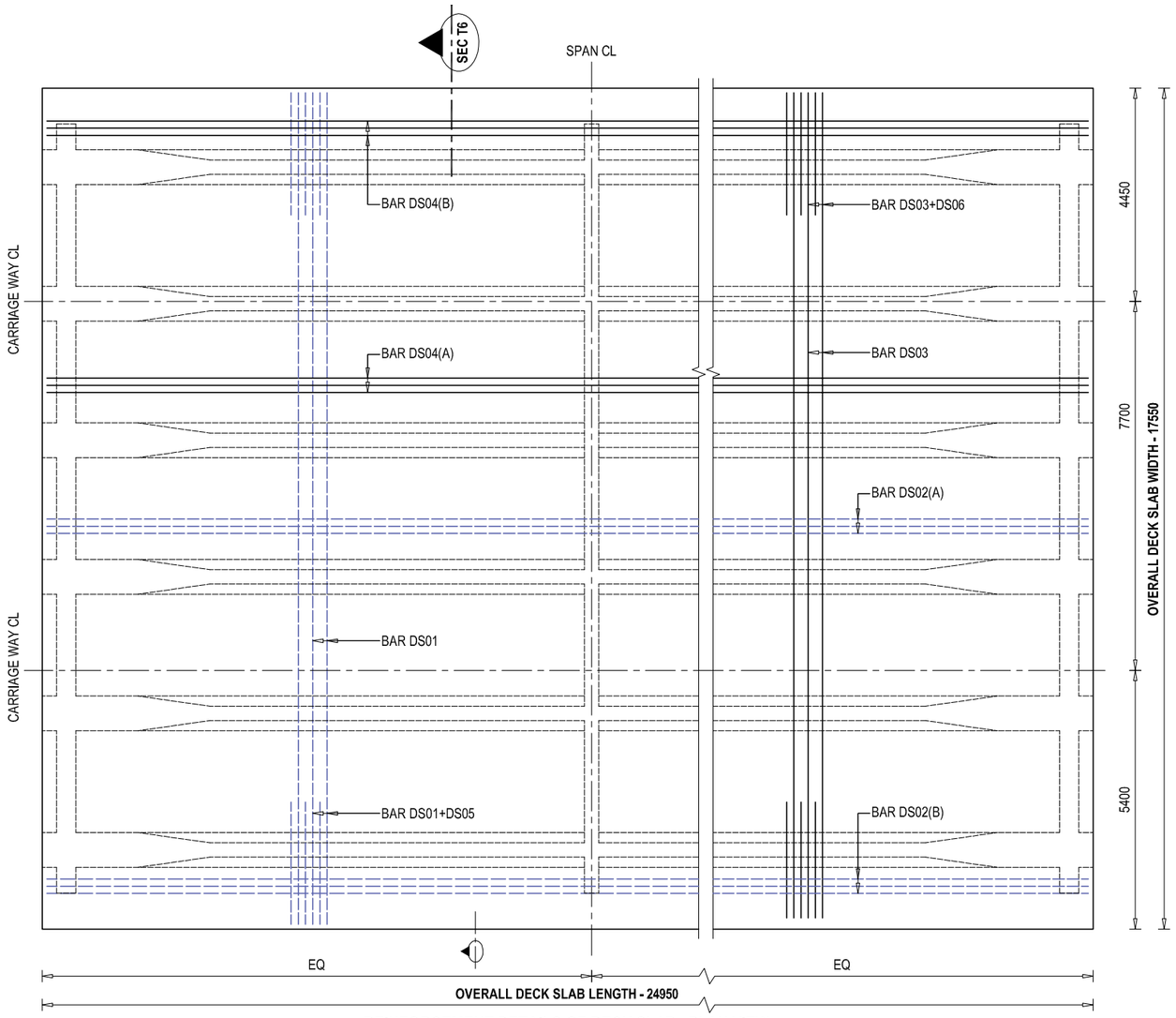
SCALE - 1 : 10



DETAIL AT R.C.C RAILING

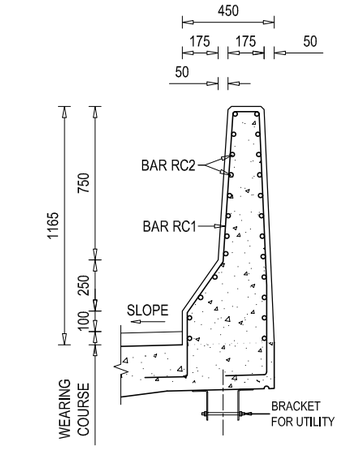
SCALE - 1 : 50

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS					
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	Designed By	Mr. R.A. Nec.No. 6431 CIVIL 'A'	Signature	Drawing Name: SUPER STRUCTURE DETAILS OF BRIDGE OVER RIVER DUMDUME Reference Drawings: KDP/DPR/STR/BR/DUMDUME/DD-14	Scale: AS SHOWN Chainage: 295+383
			Checked By	Mr. S.M.			Date: 25.04.2023 Drawing No.- KDP/DPR/STR/BR/DUMDUME/DD-10
			Approved By	Mr. H.B.	Signature		Sheet No. 2 / 2



REINFORCEMENT DETAILS OF DECK SLAB - PLAN VIEW

SCALE - 1 : 100



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

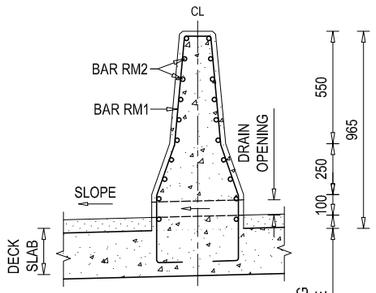
SCALE - 1 : 25

LEGEND FOR REINFORCEMENT BAR

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

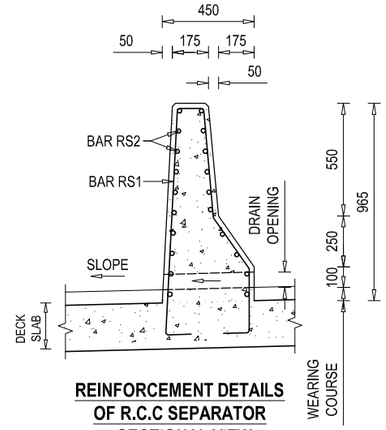
TOP BAR OR NEAR FACE REINFORCEMENT

BOTTOM BAR OR FAR FACE REINFORCEMENT



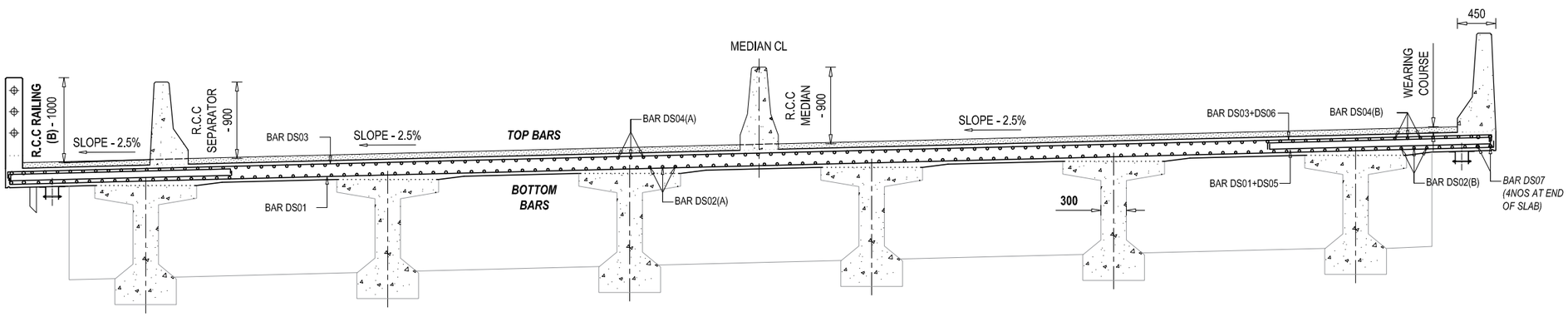
REINFORCEMENT DETAILS OF R.C.C MEDIAN - SECTIONAL VIEW

SCALE - 1 : 25



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

SCALE - 1 : 25



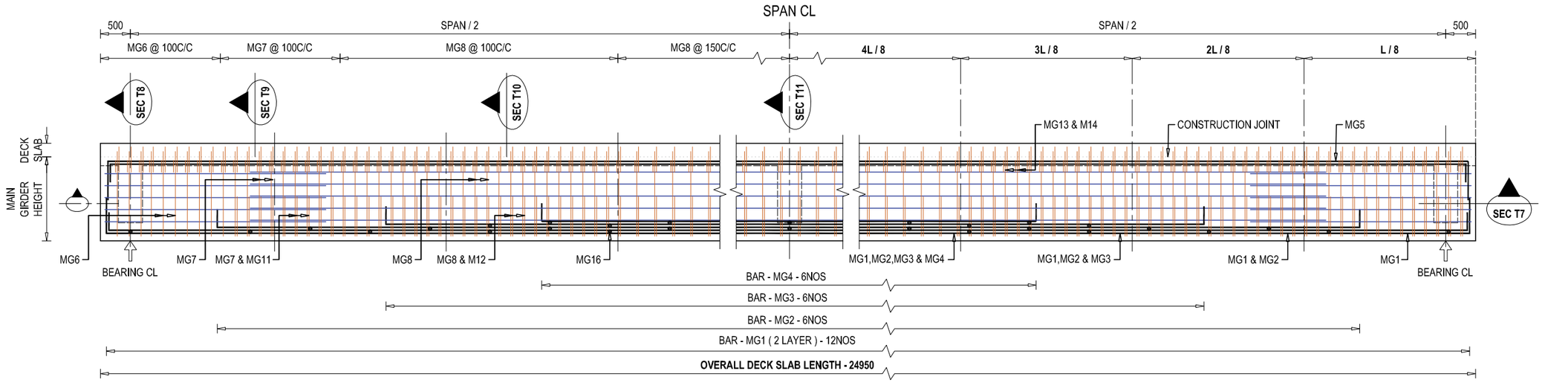
REINFORCEMENT DETAILS OF DECK SLAB - SECTIONAL VIEW AT T6

SCALE - 1 : 50

NOTE :

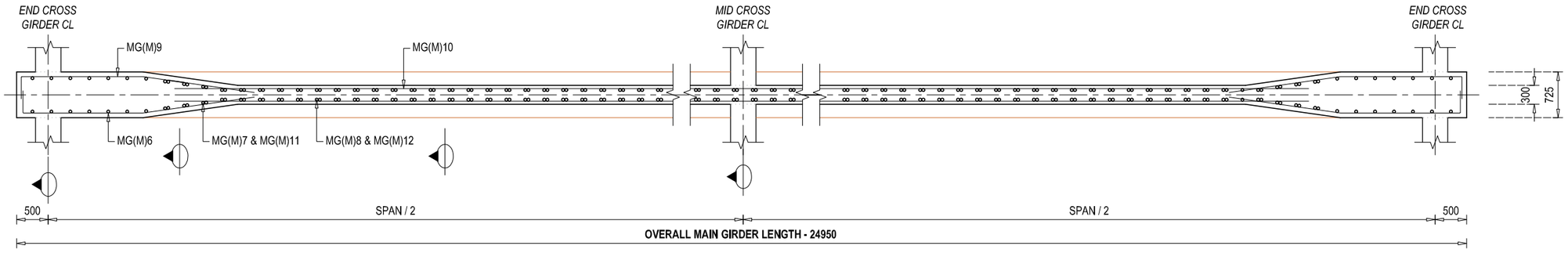
READ THIS DRAWING IN CONJUNCTION WITH DRG NO. KDP/DPR/STR/BR/DUMDUME/DD-4

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS						
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						
		Designed By	Mr. R.A. Nec.No. 6431 CIVIL 'A'	Signature	Drawing Name DECK SLAB DETAILS OF BRIDGE OVER RIVER DUMDUME	Scale: AS SHOWN	Date: 25.04.2023	
		Checked By	Mr. S.M.	Signature			Drawing No.- KDP/DPR/STR/BR/DUMDUME/DD-11	
		Approved By	Mr. H.B.	Signature	Reference Drawings KDP/DPR/STR/BR/DUMDUME/DD-14	Chainage: 295+383	Sheet No. 1 / 1	



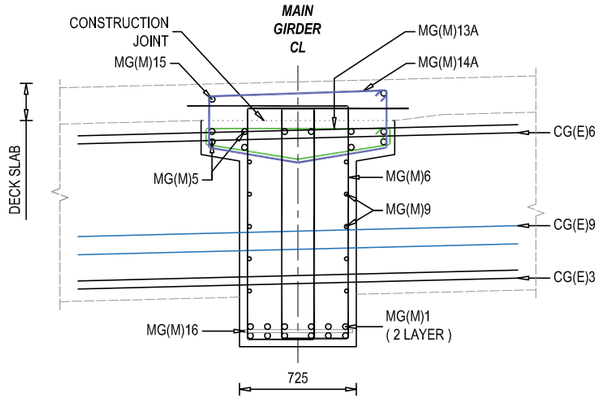
REINFORCEMENT DETAILS OF MAIN GIRDER - SECTIONAL ELEVATION VIEW

SCALE - 1 : 75



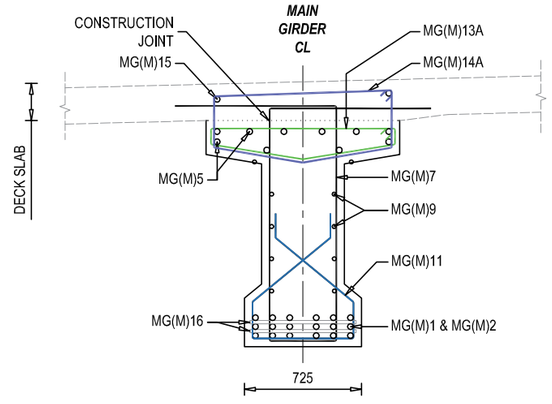
REINFORCEMENT DETAILS OF MAIN GIRDER (MID) - SECTIONAL PLAN VIEW AT T7(M)

SCALE - 1 : 75



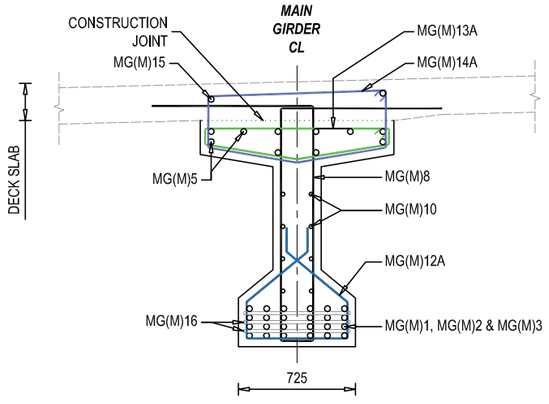
REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T8

SCALE - 1 : 50 @ A3 PAPER



REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T9

SCALE - 1 : 50 @ A3 PAPER

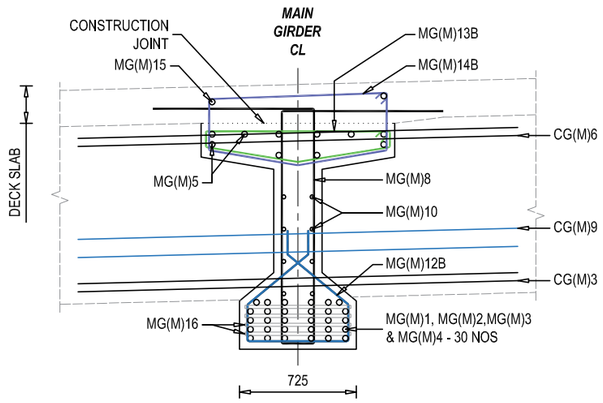


REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T10

SCALE - 1 : 50 @ A3 PAPER

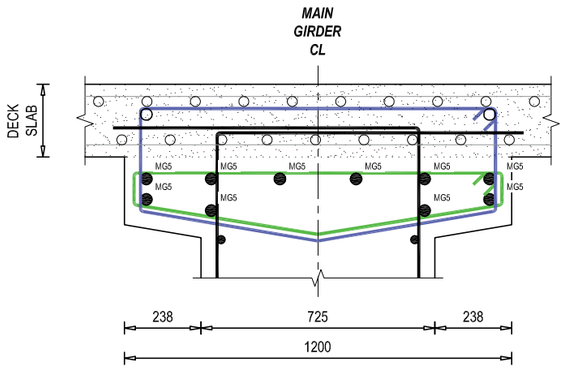
NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/DUMDUME/DD-4

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS					
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	Designed By	Mr. R.A. Nec.No. 6431 CIVIL 'A'	Signature	Drawing Name MAIN GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER DUMDUME Reference Drawings KDP/DPR/STR/BR/DUMDUME/DD-14	Scale: AS SHOWN Chainage: 295+383
			Checked By	Mr. S.M.	Signature		Date: 25.04.2023 Drawing No.- KDP/DPR/STR/BR/DUMDUME/DD-12 Sheet No. 1 / 2
			Approved By	Mr. H.B.	Signature		



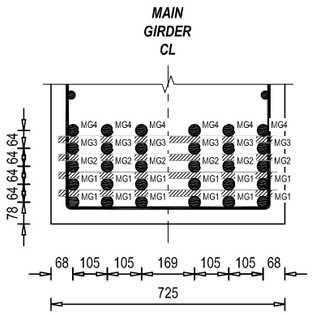
REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T11

SCALE - 1 : 50 @ A3 PAPER



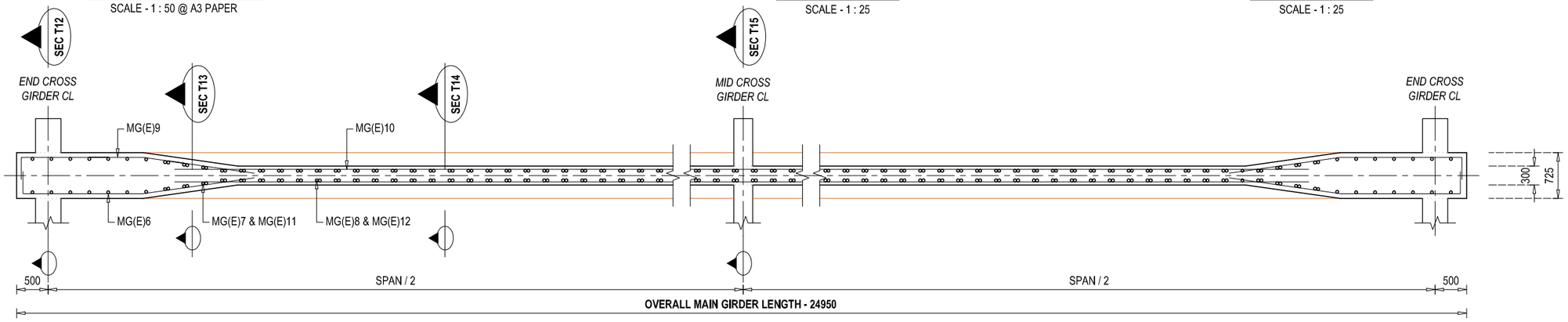
TOP BAR WEB REINFORCEMENT DETAILS OF MAIN GIRDER

SCALE - 1 : 25



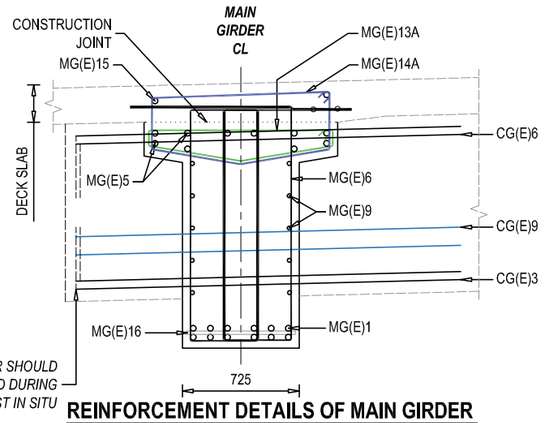
BOTTOM BAR WEB REINFORCEMENT DETAILS OF MAIN GIRDER

SCALE - 1 : 25



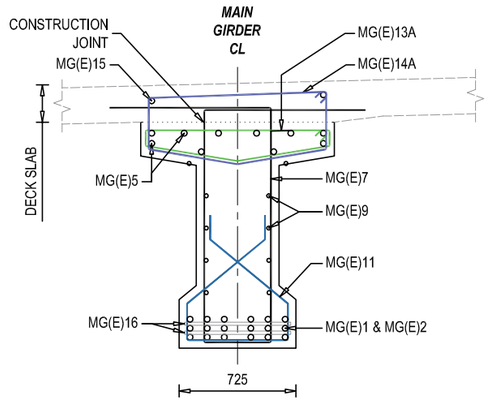
REINFORCEMENT DETAILS OF MAIN GIRDER (END) - SECTIONAL PLAN VIEW AT T7(E)

SCALE - 1 : 75



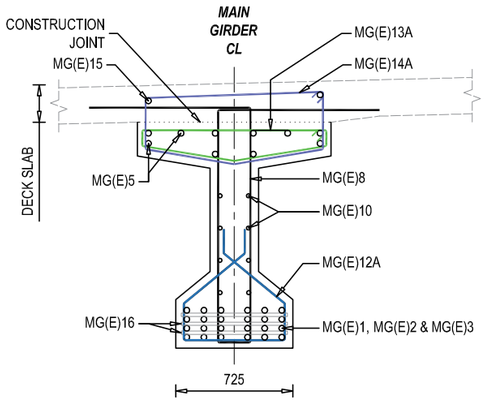
REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T12

SCALE - 1 : 50 @ A3 PAPER



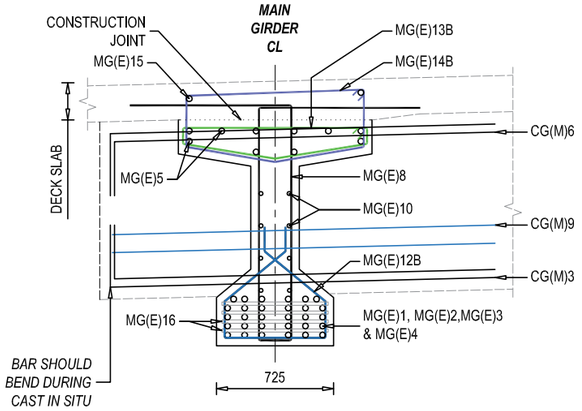
REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T13

SCALE - 1 : 50 @ A3 PAPER



REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T14

SCALE - 1 : 50 @ A3 PAPER

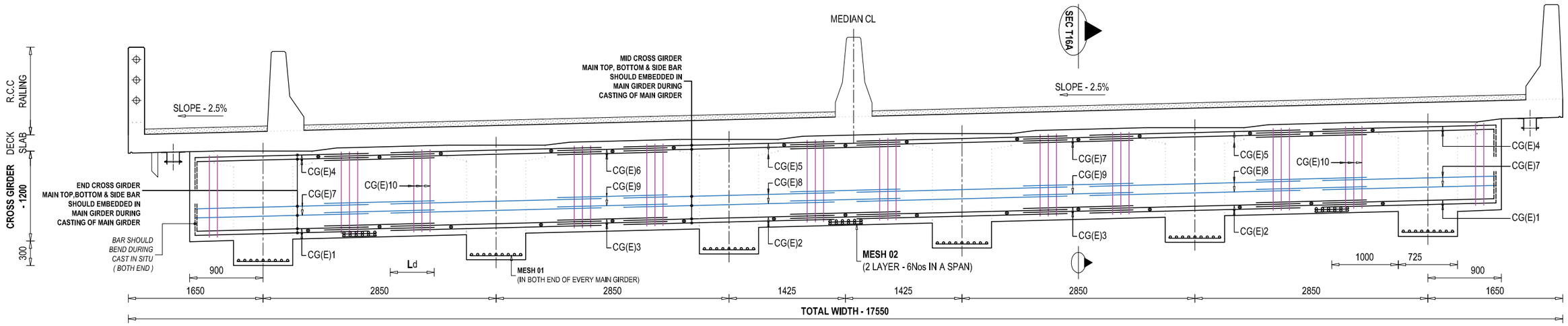


REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T15

SCALE - 1 : 50 @ A3 PAPER

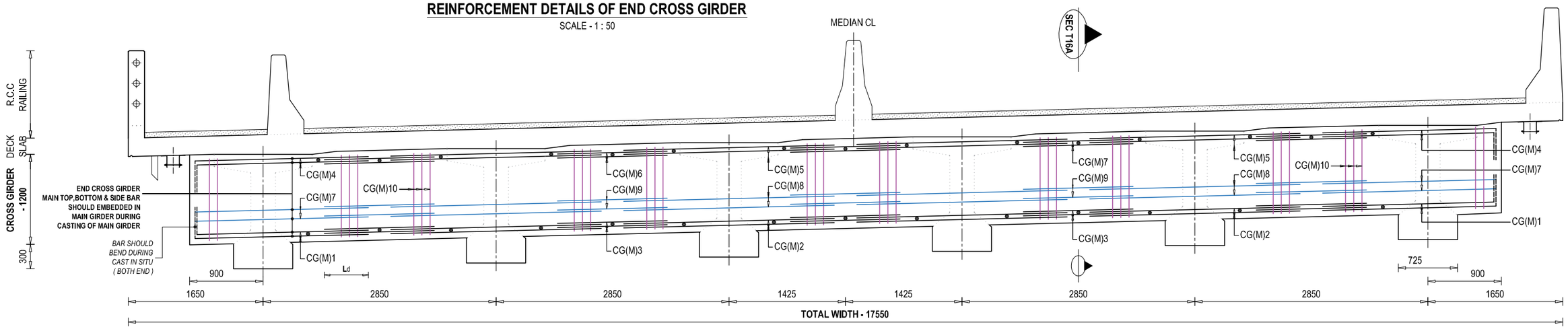
NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/DUMDUME/DD-4

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS				Drawing Name	Scale:	Date:
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-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	Designed By	Mr. R.A. Nec.No. 6431 CIVIL 'A'	Signature	MAIN GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER DUMDUME	AS SHOWN	25.04.2023
			Checked By	Mr. S.M.	Signature	Reference Drawings KDP/DPR/STR/BR/DUMDUME/DD-14	Chainage: 295+383	Drawing No.- KDP/DPR/STR/BR/DUMDUME/DD-12
			Approved By	Mr. H.B.	Signature			Sheet No. 2 / 2



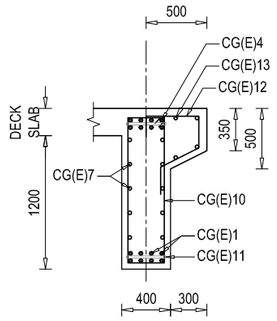
REINFORCEMENT DETAILS OF END CROSS GIRDER

SCALE - 1 : 50



REINFORCEMENT DETAILS OF MID CROSS GIRDER

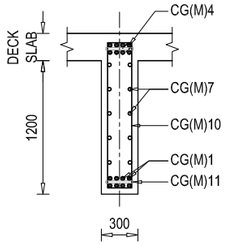
SCALE - 1 : 50



SECTIONAL REINFORCEMENT DETAILS OF END CROSS GIRDER - SEC T16A

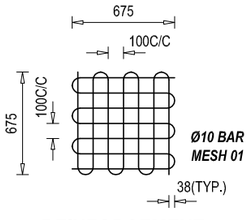
SCALE - 1 : 50

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



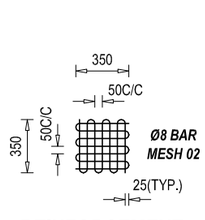
SECTIONAL REINFORCEMENT DETAILS OF MID CROSS GIRDER - SEC T16B

SCALE - 1 : 50



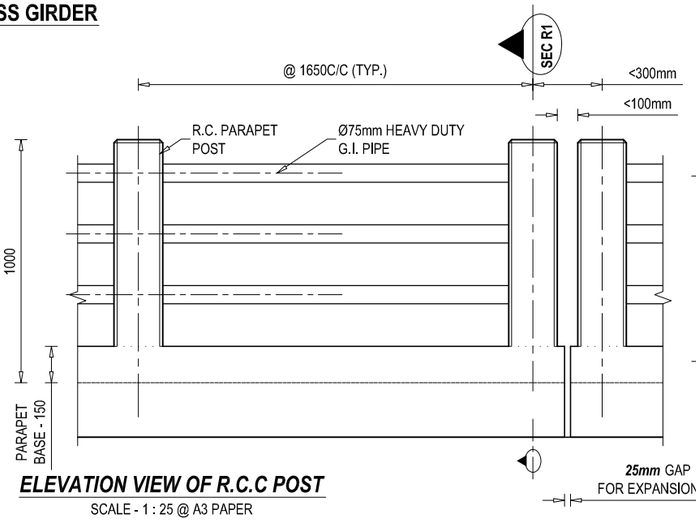
REINFORCEMENT DETAILS OF BEARING MESH

SCALE - 1 : 50



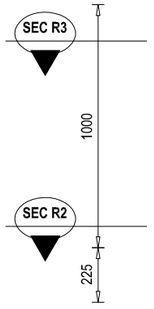
REINFORCEMENT DETAILS OF LIFTING MESH

SCALE - 1 : 50



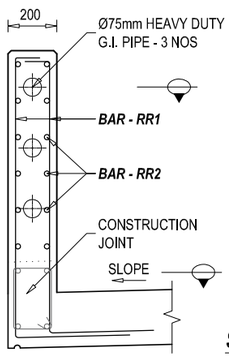
ELEVATION VIEW OF R.C.C POST

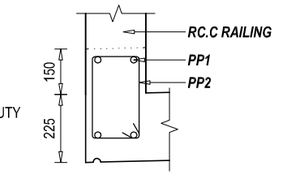
SCALE - 1 : 25 @ A3 PAPER



SECTIONAL VIEW OF POST (SEC R1)

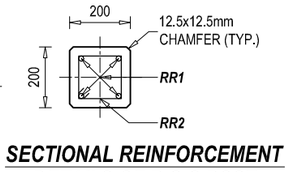
SCALE - 1 : 25 @ A3 PAPER





DETAILS OF PARAPET BASE (SEC R3 - R3)

SCALE - 1 : 20 @ A3 PAPER



SECTIONAL REINFORCEMENT DETAILS OF R.C.C POST (SEC R2 - R2)

SCALE - 1 : 20 @ A3 PAPER

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS					
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	Designed By	Mr. R.A. Nec.No. 6431 CIVIL 'A'	Signature	Drawing Name CROSS GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER DUMDUME Reference Drawings KDP/DPR/STR/BR/DUMDUME/DD-14	Scale: AS SHOWN Chainage: 295+383
			Checked By	Mr. S.M.	Signature		Date: 25.04.2023 Drawing No.-KDP/DPR/STR/BR/DUMDUME/DD-13
			Approved By	Mr. H.B.	Signature		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 — 17470 — 150	16	150	17.770	167	1.580	4689.52
2	DS02(A)	150 — 24870 — 150	10	150	25.170	100	0.617	1553.70
3	DS02(B)	150 — 24870 — 150	10	125	25.170	19	0.617	295.20
4	DS03	150 — 17470 — 150	16	150	17.770	118	1.580	3313.56
5	DS04(A)	150 — 24870 — 150	10	150	25.170	150	0.617	2330.56
6	DS04(B)	150 — 24870 — 150	10	125	25.170	19	0.617	295.20
7	DS05	150 — 2650 — 150	16	150	2.950	334	1.580	1557.02
8	DS06	150 — 2650 — 150	16	150	2.950	334	1.580	1557.02
9	DS07	24870	16		24.870	8	1.580	314.41
							TOTAL (KG) :	15906.19

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 — 24870 — 300	32		25.470	12	6.321	1931.95
2	MG(M)2	300 — 21273 — 300	32		21.873	6	6.321	829.55
3	MG(M)3	300 — 15035 — 300	32		15.635	6	6.321	592.97
4	MG(M)4	300 — 8798 — 300	32		9.398	6	6.321	356.43
5	MG(M)5	300 — 24870 — 300	12		25.470	10	0.889	226.40
6	MG(M)6	480, 645, 1530; 4 LEGGED	12	100	9.660	42	0.889	360.64
7	MG(M)7	480, AVG. 435, 1530	12	100	5.325	32	0.889	151.47
8	MG(M)8A	480, 220, 1530	12	100	4.680	118	0.889	490.88
9	MG(M)8B	480, 220, 1530	12	150	4.680	42	0.889	174.72
10	MG(M)9	370, 1920, 2000	12	200	4.290	32	0.889	122.03
11	MG(M)10	21950	12	200	21.950	16	0.889	312.18
12	MG(M)11	550, 300, AVG. 645, 220	12	100	2.785	32	0.889	79.22
13	MG(M)12A	700, 300, 645, 220	12	150	3.085	118	0.889	323.58
14	MG(M)12B	700, 300, 645, 220	12	150	3.085	42	0.889	115.17
15	MG(M)13A	1120, 70, 840, 50 x 2	12	100	3.040	189	0.889	510.72
16	MG(M)13B	1120, 70, 840, 50 x 2	12	150	3.040	43	0.889	116.20
17	MG(M)14A	1120, 50 x 2, 270, 840	12	100	3.440	189	0.889	577.92
18	MG14B	1120, 50 x 2, 270, 840	12	150	3.440	43	0.889	131.48
19	MG(M)15	24870	12		24.870	2	0.889	44.21
20	MG(M)16	645	32	1500	0.645	51	6.321	207.93
							TOTAL (KG) :	7655.65

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 — 24870 — 300	32		25.470	12	6.321	1931.95
2	MG(E)2	300 — 21273 — 300	32		21.873	6	6.321	829.55
3	MG(E)3	300 — 15035 — 300	32		15.635	6	6.321	592.97
4	MG(E)4	300 — 8798 — 300	32		9.398	6	6.321	356.43
5	MG(E)5	300 — 24870 — 300	12		25.470	10	0.889	226.40
6	MG(E)6	480, 645, 1530; 4 LEGGED	12	100	9.660	42	0.889	360.64
7	MG(E)7	480, AVG. 435, 1530	12	100	5.325	32	0.889	151.47
8	MG(E)8A	480, 220, 1530	12	100	4.680	118	0.889	490.88
9	MG(E)8B	480, 220, 1530	12	150	4.680	42	0.889	174.72
10	MG(E)9	370, 1920, 2000	12	200	4.290	32	0.889	122.03
11	MG(E)10	21950	12	200	21.950	16	0.889	312.18
12	MG(E)11	550, 300, AVG. 645, 220	12	100	2.785	32	0.889	79.22
13	MG(E)12A	700, 300, 645, 220	12	150	3.085	118	0.889	323.58
14	MG(E)12B	700, 300, 645, 220	12	150	3.085	42	0.889	115.17
15	MG(E)13A	1120, 70, 840, 50 x 2	12	100	3.040	189	0.889	510.72
16	MG(E)13B	1120, 70, 840, 50 x 2	12	150	3.040	43	0.889	116.20
17	MG(E)14A	1120, 50 x 2, 270, 840	12	100	3.440	189	0.889	577.92
18	MG14B	1120, 50 x 2, 270, 840	12	150	3.440	43	0.889	131.48
19	MG(E)15	24870	12		24.870	2	0.889	44.21
20	MG(E)16	645	32	1500	0.645	51	6.321	207.93
							TOTAL (KG) :	7655.65

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS				
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	Designed By	Mr. R.A. Nec.No. 6431 CIVIL 'A'	Signature	Drawing Name: SUPER STRUCTURE BAR BENDING SCHEDULE OF BRIDGE OVER RIVER DUMDUME Reference Drawings
			Checked By	Mr. S.M.	Signature	Scale: AS SHOWN Chainage: 295+383
			Approved By	Mr. H.B.	Signature	Date: 25.04.2023 Drawing No.-KDP/DPR/STR/BR/DUMDUME/DD-14 Sheet No. 1 /2

BAR BENDING SCHEDULE OF END CROSS GIRDER (1SPAN)

S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	CG(E)1	300 ⌊ 2325	20		2.625	16	2.469	103.70
2	CG(E)2	2625	20		2.625	32	2.469	207.41
3	CG(E)3	1825	20		1.825	40	2.469	180.25
4	CG(E)4	2325 / 300 ⌊	20		2.625	16	2.469	103.70
5	CG(E)5	2625	20		2.625	32	2.469	207.41
6	CG(E)6	1825	20		1.825	40	2.469	180.25
7	CG(E)7	2325	12	150	2.325	8	0.889	16.53
8	CG(E)8	2625	12	150	2.625	8	0.889	18.67
9	CG(E)9	1825	12	150	1.825	8	0.889	12.98
10	CG(E)10	50 x 2 ⊓ 320 1320	12	200	1.740	37	0.889	57.23
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	117	1.580	323.56
13	CG(E)13	17470	12		17.470	8	0.889	124.23
							TOTAL (KG) :	1550.13
							TOTAL NOS OF CROSS GIRDER :	2.00
							TOTAL WEIGHT (KG) :	3100.26

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 ⌊ 2325	20		2.625	8	2.469	51.85
2	CG(M)2	2625	20		2.945	32	2.469	232.69
3	CG(M)3	1825	20		2.145	40	2.469	211.85
4	CG(M)4	2325 / 300 ⌊	20		2.625	8	2.469	51.85
5	CG(M)5	2625	20		2.625	32	2.469	207.41
6	CG(M)6	1825	20		1.825	40	2.469	180.25
7	CG(M)7	2325	12	150	2.325	8	0.889	16.53
8	CG(M)8	2625	12	150	2.625	8	0.889	18.67
9	CG(M)9	1825	12	150	1.825	8	0.889	12.98
10	CG(M)10	50 x 2 ⊓ 320 1320	12	200	1.740	37	0.889	57.23
11	CG(M)11	320	20	1000	0.320	18	2.469	14.22
							TOTAL(KG):	1055.53

BAR BENDING SCHEDULE OF R.C.C RAILING (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	RR1	100, 1145, 600	16		1.845	4	1.580	11.66
2	RR2	50 x 2 ⊓ 320 1320	10	150	0.560	7	0.617	2.42
							TOTAL (KG):	14.08
							TOTAL NOS OF RAILINGS :	15.00
							TOTAL WEIGHT (KG) :	211.23

BAR BENDING SCHEDULE OF PARAPET BASE (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	PP1	24870	16		24.870	4	1.580	157.20
2	PP2	50 x 2 ⊓ 160 275	12	150	0.970	166	0.889	143.13
							TOTAL (KG) :	300.33
							TOTAL NOS OF CROSS GIRDER :	2.00
							TOTAL WEIGHT (KG) :	600.66

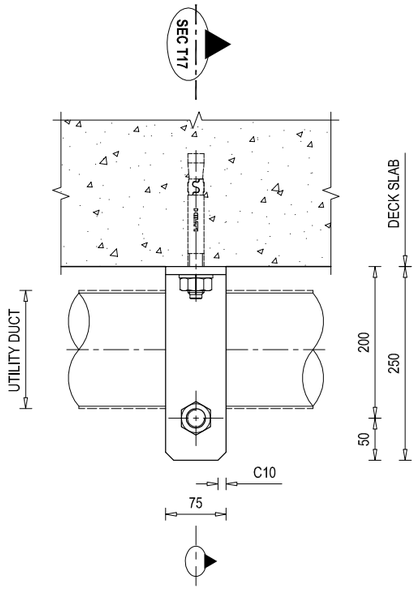
BAR BENDING SCHEDULE OF R.C.C BARRIER (1SPAN)

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	735, 130, 305, 850, 200, 305, 200, 445	16	150	3.170	167	1.580	836.57
2	RC-A2	150 24870 150	10	150	25.170	20	0.617	310.74
							TOTAL (KG) :	1147.31

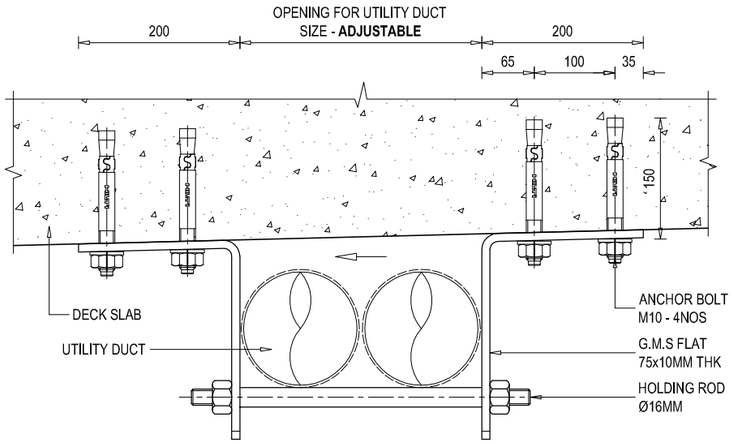
BAR BENDING SCHEDULE OF R.C.C MEDIAN (1SPAN)

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	RC1	130, 535, 305, 315, 150	16	150	2.740	167	1.580	723.09
2	RC2	150 24870 150	10	150	25.170	18	0.617	279.67
							TOTAL (KG) :	1002.76

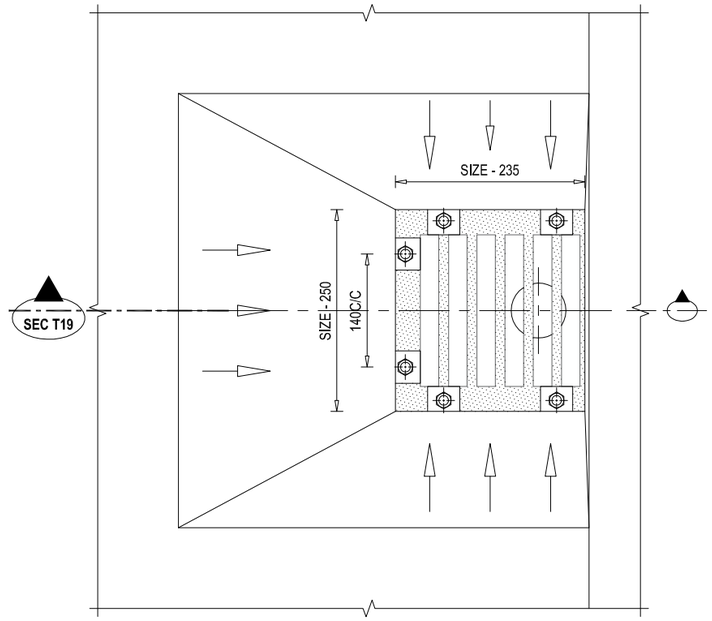
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS				
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya 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	Designed By	Mr. R.A. Nec.No. 6431 CIVIL 'A'	Signature	Drawing Name: SUPER STRUCTURE BAR BENDING SCHEDULE OF BRIDGE OVER RIVER DUMDUME Reference Drawings
			Checked By	Mr. S.M.	Signature	Scale: AS SHOWN Chainage: 295+383
			Approved By	Mr. H.B.	Signature	Date: 25.04.2023 Drawing No.-KDP/DPR/STR/BR/DUMDUME/DD-14 Sheet No. 2 /2



FRONT VIEW



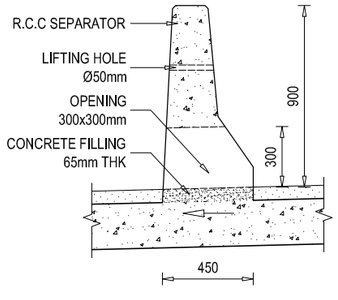
SECTIONAL ELEVATION VIEW AT SEC T17



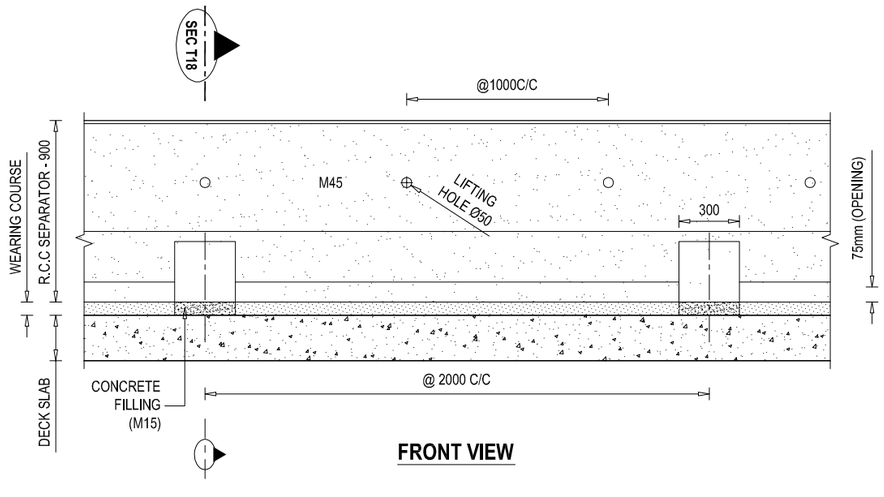
PLAN VIEW

DETAILS OF GALVANIZED MILD STEEL (G.M.S)
UTILITY DUCT CLAMP

SCALE - 1 : 10



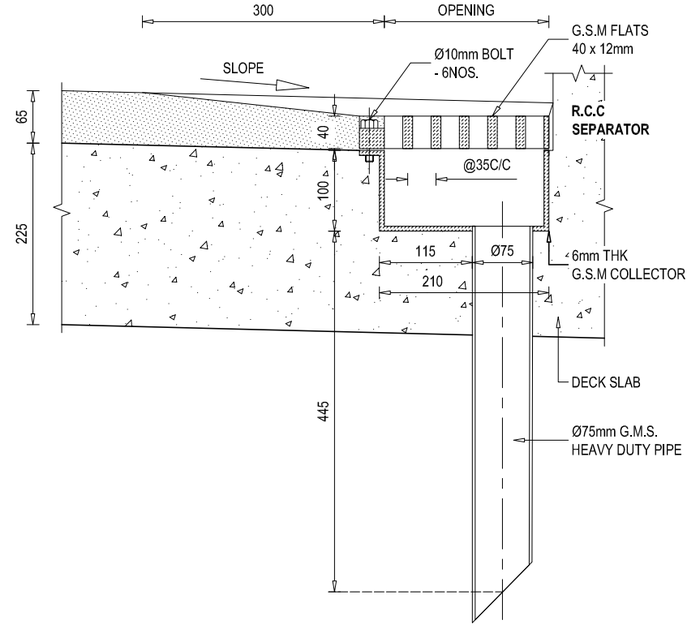
SECTIONAL ELEVATION VIEW AT SEC T18



FRONT VIEW

DETAIL ELEVATION VIEW AT R.C.C SEPARATOR & IT'S DRAIN OPENING

SCALE - 1 : 40



SECTIONAL ELEVATION VIEW AT SEC T19

DETAILS OF GALVANIZED MILD STEEL (G.M.S)
DRAINAGE SPOUT

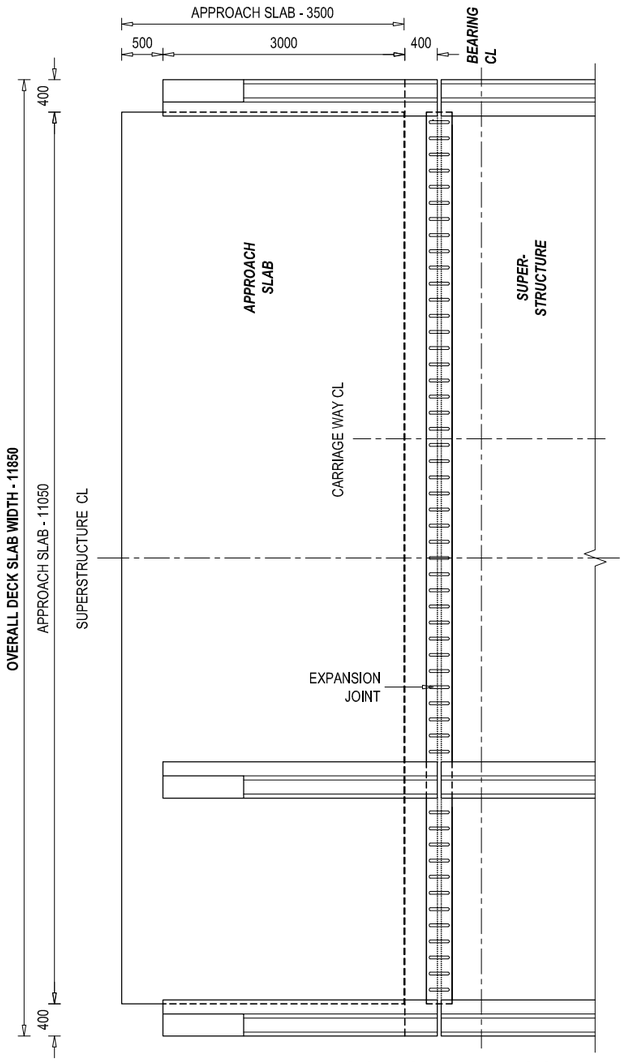
SCALE - 1 : 10

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS					
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	Designed By	Mr. R.A. Nec.No. 6431 CIVIL 'A'		Drawing Name MISCELLANEOUS DETAILS OF BRIDGE OVER RIVER DUMDUME	Scale: AS SHOWN
			Checked By	Mr. S.M.	Signature	Reference Drawings -	Chainage: 295+383
			Approved By	Mr. H.B.	Signature		

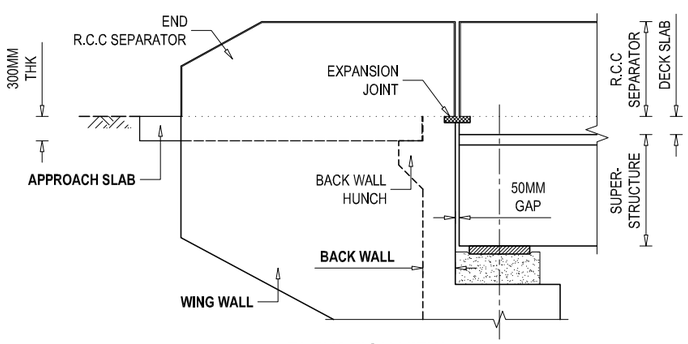
Date: 25.04.2023

Drawing No.- KDP/DPR/STR/BR/DUMDUME/DD-15

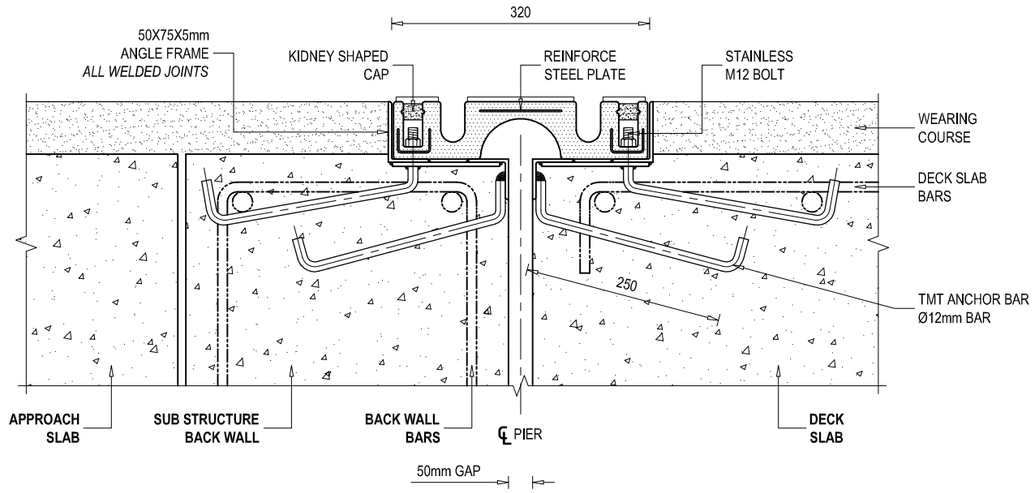
Sheet No.1 /2



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

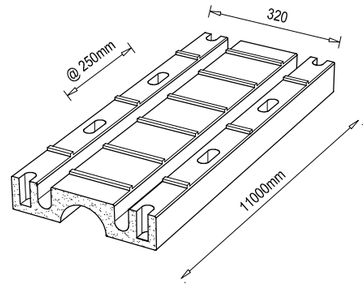


ELEVATION VIEW



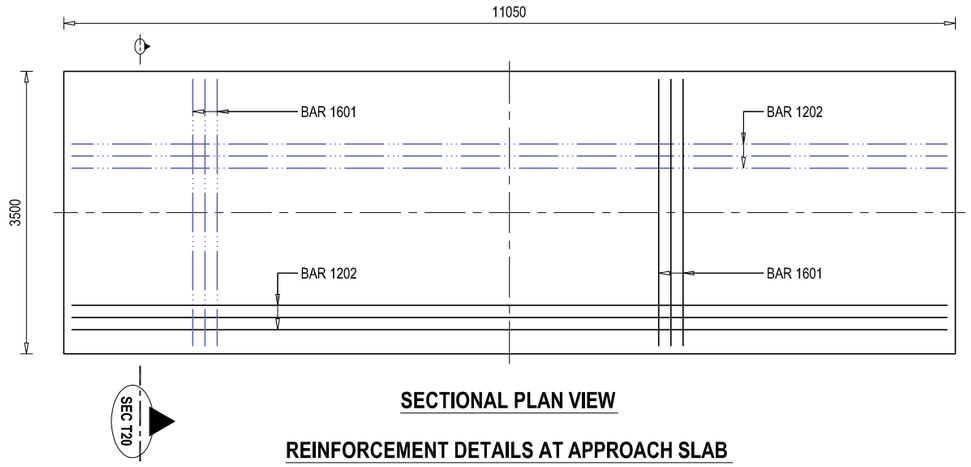
SEAL TYPE EXPANSION JOINTS ARRANGEMENT IN A CARRIAGEWAY

SCALE - 1 : 10 @ A3 PAPER



EXPANSION JOINT ISOMETRIC VIEW - SEAL TYPE

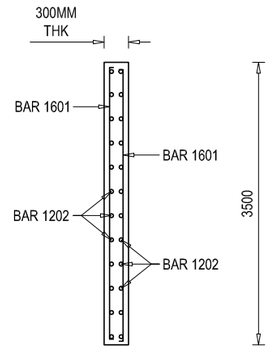
SCALE - NON



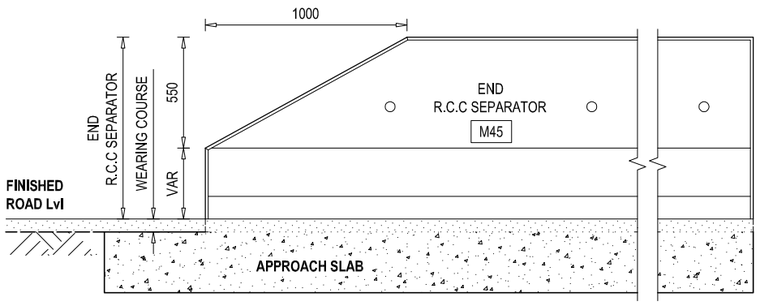
SECTIONAL PLAN VIEW

REINFORCEMENT DETAILS AT APPROACH SLAB

SCALE - 1 : 100 @ A3 PAPER

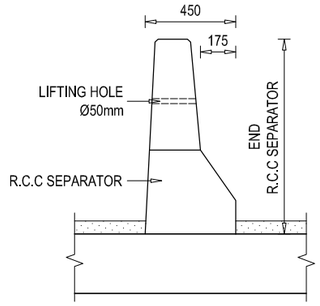


SECTIONAL ELEVATION VIEW AT SEC T20



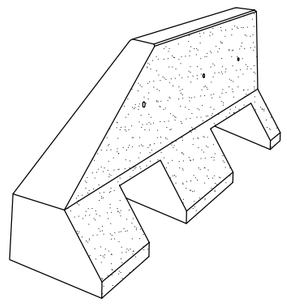
ELEVATION VIEW OF END R.C.C SEPARATOR

SCALE - 1 : 40 @ A3 PAPER



SIDE VIEW

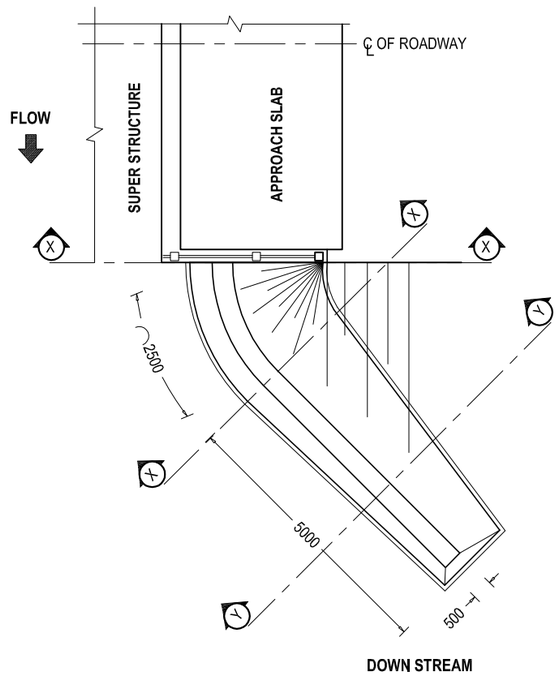
SCALE - 1 : 40 @ A3 PAPER



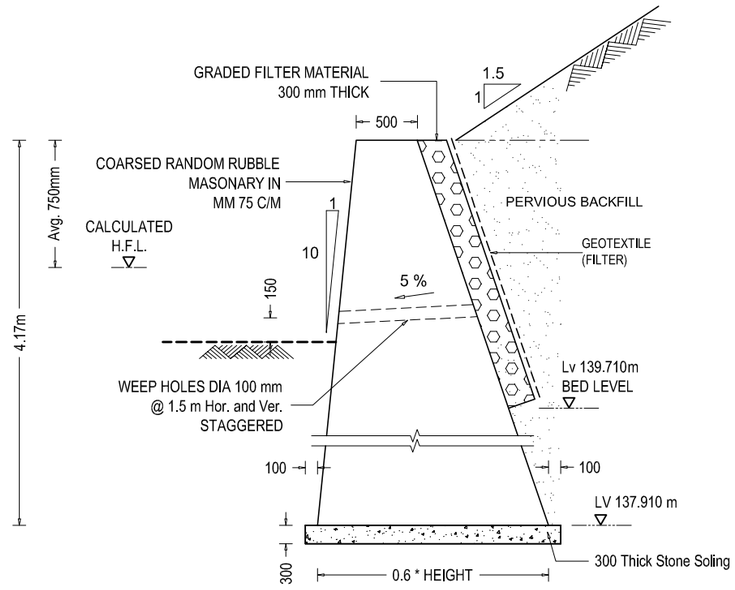
END R.C.C SEPARATOR ISOMETRIC VIEW

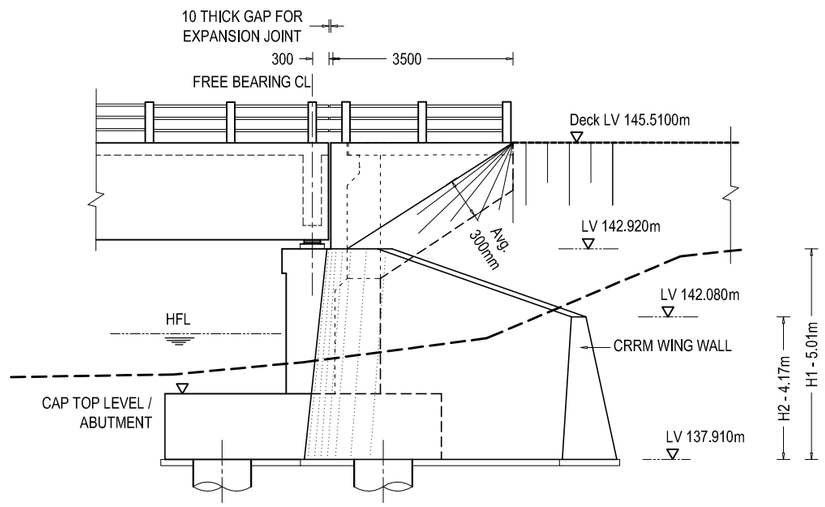
SCALE - NON

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS				
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	Designed By	Mr. R.A. Nec.No. 6431 CIVIL 'A'		Drawing Name: MISCELLANEOUS DETAILS OF BRIDGE OVER RIVER DUMDUME Reference Drawings: KDP/DPR/STR/BR/DUMDUME/DD-9
			Checked By	Mr. S.M.		Scale: AS SHOWN Chainage: 295+383
			Approved By	Mr. H.B.		Date: 25.04.2023 Drawing No.- KDP/DPR/STR/BR/DUMDUME/DD-15 Sheet No.2/2

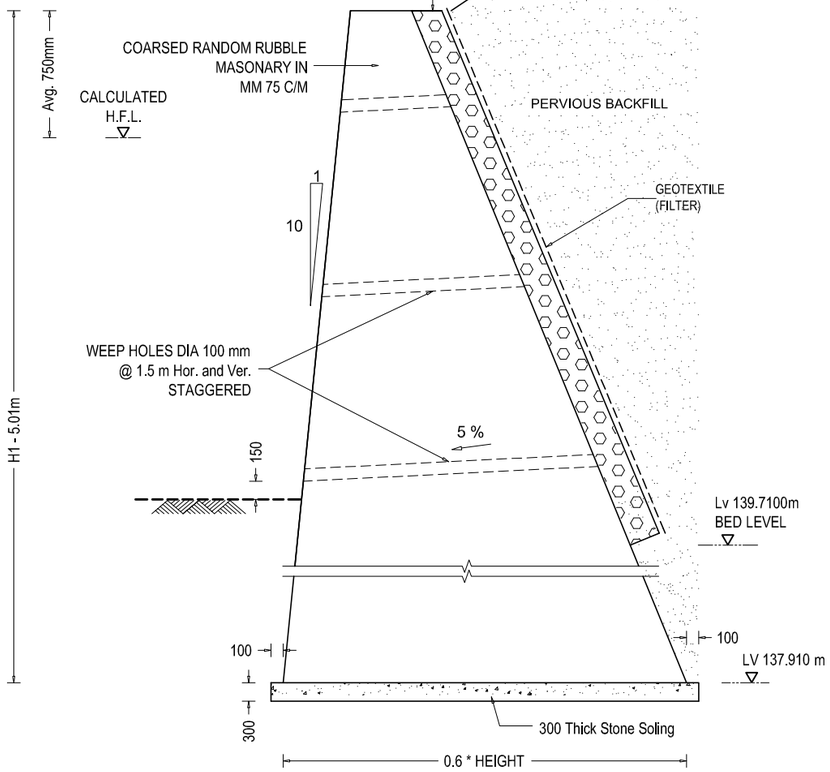


NOTE : AT DOWN STREAM ONLY





WING WALL ELEVATION

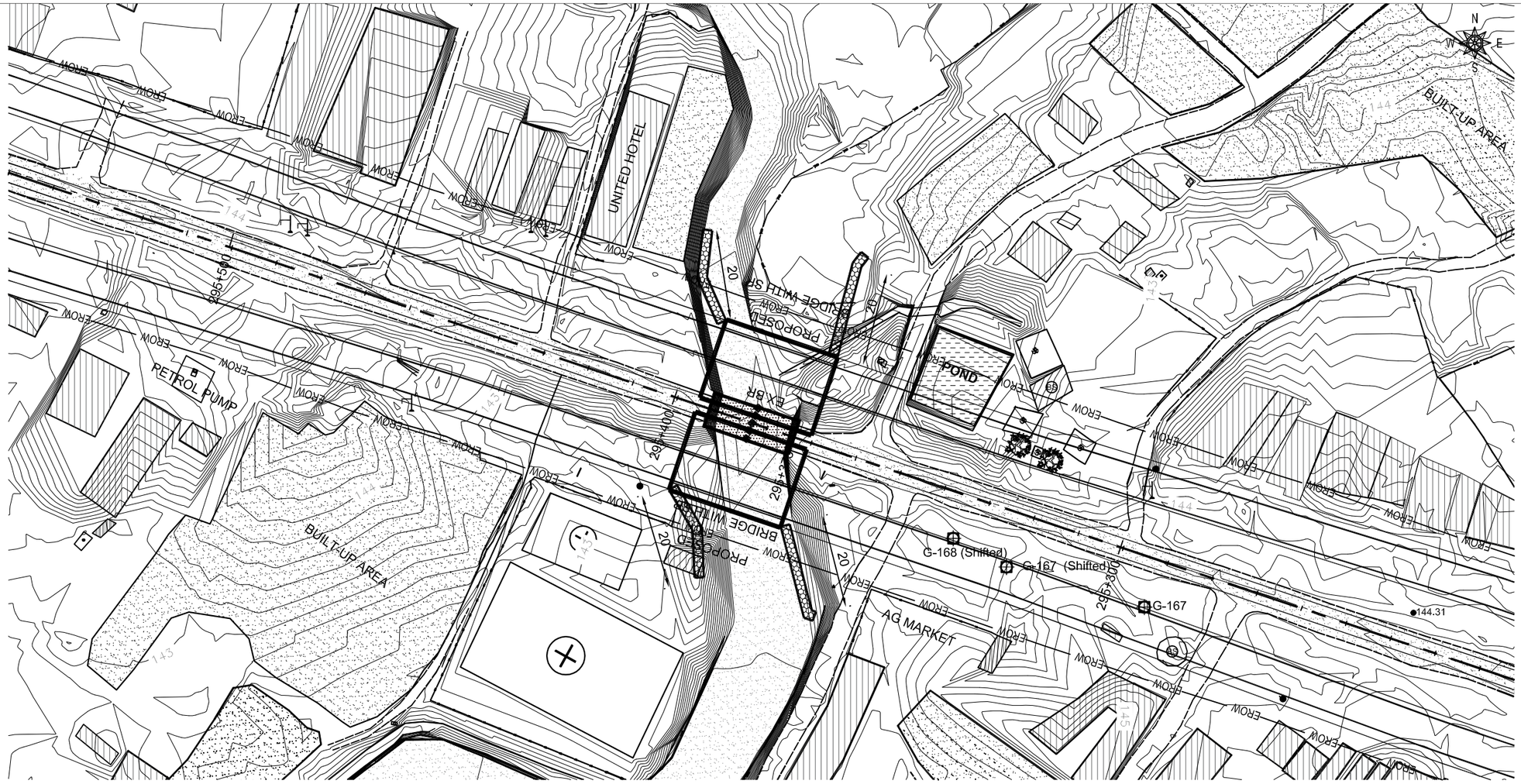


STONE MASONRY WING WALL SECTION X - X

0 1.5m 3m 4.5m 6m

0 0.5m 1m 1.5m 2m

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS						
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-Pathlaya Road Section (130 KM) of Mahendra Highway and Bridges	Joint Venture of eptisa EPTISA Servicios De Ingeniera Madrid, Spain STUP Consultants Private Limited Kolkatta, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Designed By	Mr. R.A. Nec.No. 6431 CIVIL 'A'	Signature	Drawing Name WING WALL DETAILS OF BRIDGE OVER RIVER DUMDUME	Scale: AS SHOWN	Date: 25.04.2023
			Checked By	Mr. S.M.	Signature	Reference Drawings	Chainage: 295+383	Drawing No.- KDP/DPR/STR/BR/DUMDUME/DD-16
			Approved By	Mr. H.B.	Signature			Sheet No. 1 / 1



TOPOGRAPHIC MAP

SECTION OF EMBANKMENT

SCALE - 1x : 5x

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS					
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	Designed By	Mr. R.A. Nec.No. 6431 CIVIL 'A'	Signature	Drawing Name RIVER TRAINING WORKS OF BRIDGE OVER RIVER DUMDUME	Scale: 1:1000
			Checked By	Mr. S.M.	Signature	Reference Drawings -	Chainage: 295+383
			Approved By	Mr. H.B.	Signature		Sheet No. 1/1

Date: 25.04.2023

Drawing No.- KDP/DPR/STR/BR/DUMDUME/DD- 17

Bearing Design Data for 25m Span and 17.55m width

Load Condition	Items	Under	On each Neoprene Bearing	Unit
Under No Live Load	V	NO EQ.	59.88	Ton
		EQ.	68.86	Ton
	H_L	NO EQ.	-	Ton
		EQ.	13.47	Ton
	H_T	NO EQ.	-	Ton
		EQ.	13.47	Ton
	θ	NO EQ.	0.00250	radian
		EQ.	0.00288	radian
	Δ		14.57	mm
Under Maximum Live Load	V	NO EQ.	102.95	Ton
		EQ.	113.22	Ton
	H_L	NO EQ.	-	Ton
		EQ.	0.00	Ton
	H_T	NO EQ.	-	Ton
		EQ.	0.00	Ton
	θ	NO EQ.	0.00388275	radian
		EQ.	0.00447	radian
	Δ		24.23	mm

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS						
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-Pathlaya 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	Designed By	Mr. R.A. Nec.No. 6431 CIVIL 'A'	Signature	Drawing Name BEARING DESIGN DATA OF BRIDGE OVER RIVER DUMDUME	Scale: 1:1000	Date: 25.04.2023
			Checked By	Mr. S.M.	Signature	Reference Drawings -	Chainage: 295+383	Drawing No.- KDP/DPR/STR/BR/DUMDUME/DD-18
			Approved By	Mr. H.B.	Signature			Sheet No. 1/1