Government of Nepal

Ministry of Physical Infrastructure and Transport

Department Of Roads

Development Cooperation Implementation Division

Strategic Road Connectivity & Trade Improvement Project (SRCTIP)

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

Final Design Report

Volume IV

Design Report & Drawing of Bridges

Bridge Name- Kalinjor-2

Volume-2

Detailed Drawing

June, 2023

Joint Venture Of:

EPTISA Servicios De Ingenieria
Madrid, Spain

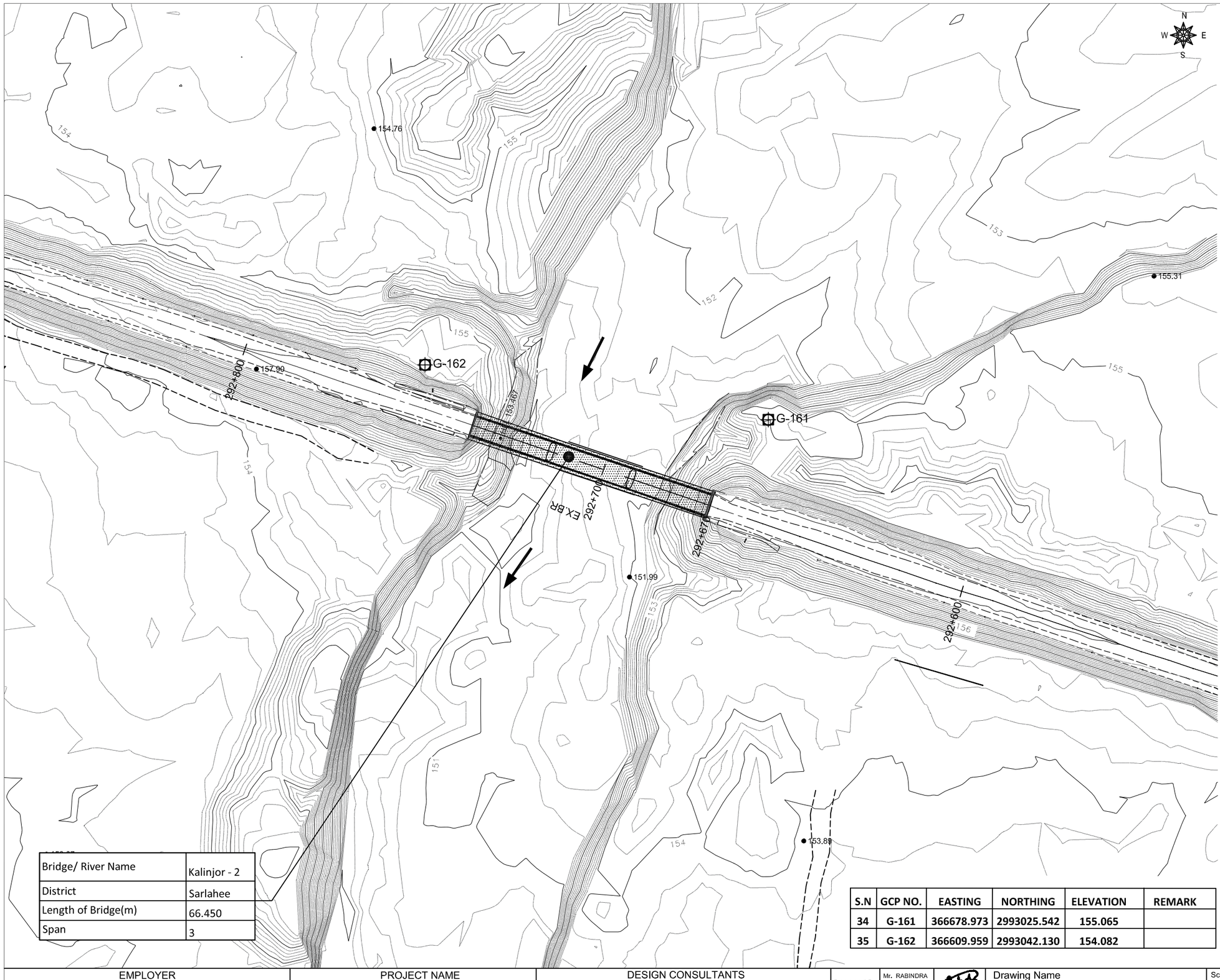
STUP Consultants Private Limited
India

In Association With

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

TABLE OF CONTENTS:

S.No.	DRAWING NAME	DRAWING No.	SHEET No.
1	LOCATION MAP OF BRIDGE OVER RIVER KALINJOR-2	KDP/DPR/STR/BR/KALINJOR-2/DD -1	1
2	DETAILED SURVEY TOPOGRAPHIC MAP (EXISTING CONDITION) OF BRIDGE OVER RIVER KALINJOR-2	KDP/DPR/STR/BR/KALINJOR-2/DD -2	1
3	DETAILED SURVEY TOPOGRAPHIC MAP (WITH PROPOSED BRIDGE) OF BRIDGE OVER RIVER KALINJOR-2	KDP/DPR/STR/BR/KALINJOR-2/DD -3	1
4	GENERAL NOTES OF BRIDGE OVER RIVER KALINJOR-2	KDP/DPR/STR/BR/KALINJOR-2/DD -4	1
5	GENERAL ARRANGEMENT OF BRIDGE OVER RIVER KALINJOR-2	KDP/DPR/STR/BR/KALINJOR-2/DD -5	1
6	LAYOUT AND DETAIL OF PILE FOUNDATION OF BRIDGE OVER RIVER KALINJOR-2	KDP/DPR/STR/BR/KALINJOR-2/DD -6	1
7	ABUTMENT DETAILS OF BRIDGE OVER RIVER KALINJOR-2	KDP/DPR/STR/BR/KALINJOR-2/DD -7	2
8	ABUTMENT REINFORCEMENT DETAILS OF BRIDGE OVER RIVER KALINJOR-2	KDP/DPR/STR/BR/KALINJOR-2/DD -8	2
9	ABUTMENT BAR BENDING SCHEDULE OF BRIDGE OVER RIVER KALINJOR-2	KDP/DPR/STR/BR/KALINJOR-2/DD -9	2
10	PIER DETAILS OF BRIDGE OVER RIVER KALINJOR-2	KDP/DPR/STR/BR/KALINJOR-2/DD -10	1
11	PIER BAR DETAILS OF BRIDGE OVER RIVER KALINJOR-2	KDP/DPR/STR/BR/KALINJOR-2/DD -11	1
12	PIER BAR BENDING SCHEDULE OF BRIDGE OVER RIVER KALINJOR-2	KDP/DPR/STR/BR/KALINJOR-2/DD -12	1
13	SUPER STRUCTURE DETAILS OF BRIDGE OVER RIVER KALINJOR-2	KDP/DPR/STR/BR/KALINJOR-2/DD -13	2
14	DECK SLAB DETAILS OF BRIDGE OVER RIVER KALINJOR-2	KDP/DPR/STR/BR/KALINJOR-2/DD -14	1
15	MAIN GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER KALINJOR-2	KDP/DPR/STR/BR/KALINJOR-2/DD -15	2
16	CROSS GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER KALINJOR-2	KDP/DPR/STR/BR/KALINJOR-2/DD -16	1
17	SUPERSTRUCTURE BAR BENDING SCHEDULE OF BRIDGE OVER RIVER KALINJOR-2	KDP/DPR/STR/BR/KALINJOR-2/DD -17	2
18	MISCELLANEOUS DETAILS OF BRIDGE OVER RIVER KALINJOR-2	KDP/DPR/STR/BR/KALINJOR-2/DD -18	2
19	WING WALL DETAILS OF BRIDGE OVER RIVER KALINJOR-2	KDP/DPR/STR/BR/KALINJOR-2/DD -19	1
20	RIVER TRAINING WORKS OF BRIDGE OVER RIVER KALINJOR-2	KDP/DPR/STR/BR/KALINJOR-2/DD -20	1
21	BEARING DESIGN DATA OF BRIDGE OVER RIVER KALINJOR-2	KDP/DPR/STR/BR/KALINJOR-2/DD -21	1



PROJECT KEY MAP

DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL
MAIN FOOT TRAIL		ANIMAL FARM	
PLACE NAME		BAMBOO	
POLICE STATION		BIO GAS	
PETROL PUMP		BUS WAITING STATION	
Pond/ Water Body		BRIDGE	
POULTRY FARM		CONTOUR	
PROPERTY BOUNDARY		CANAL	
ROAD INFORMATION BOARD		CULVERT	
RIVER		CONTROL POINT (G)	
		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	

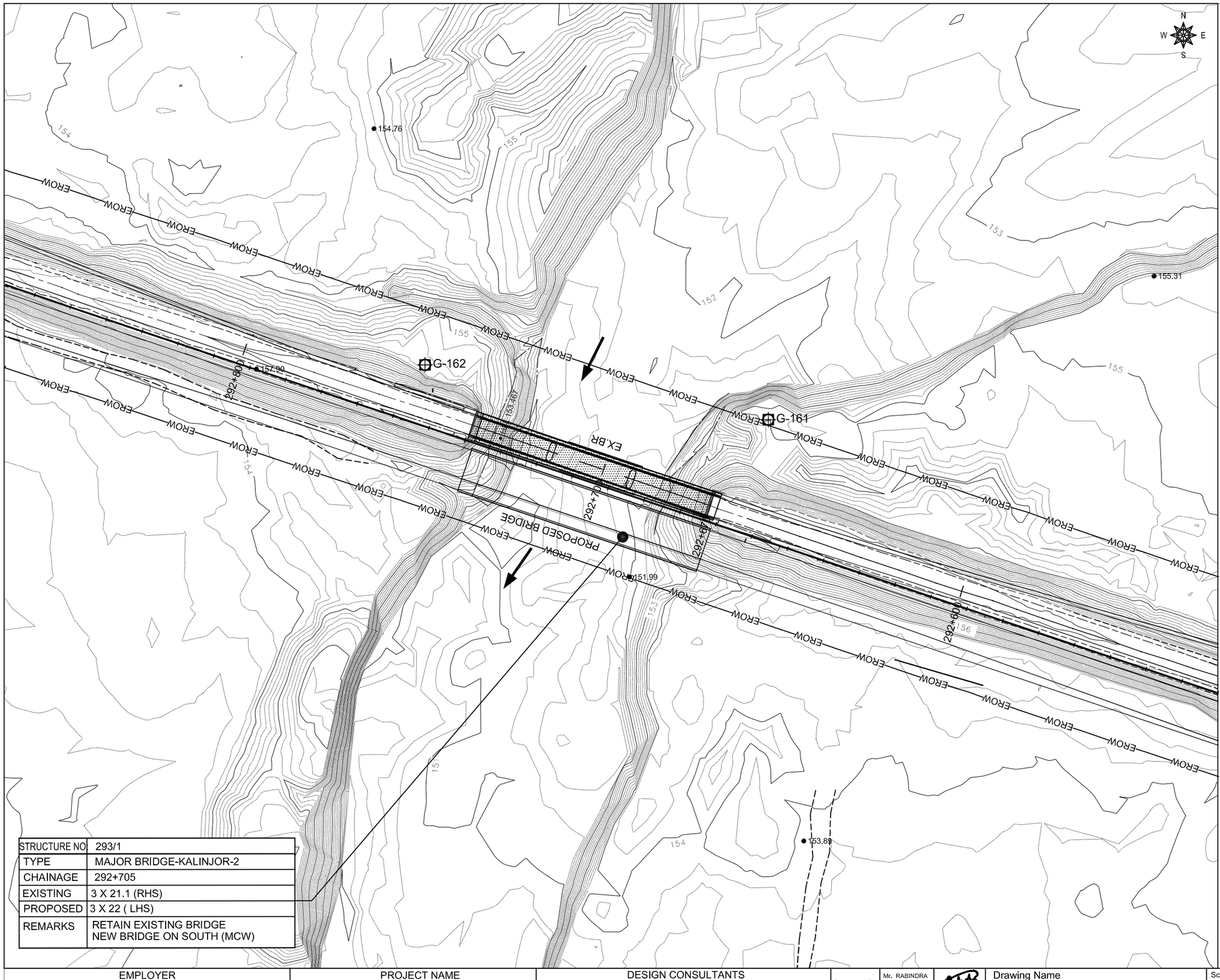
Bridge/ River Name	Kalinjor - 2
District	Sarlahee
Length of Bridge(m)	66.450
Span	3

S.N	GCP NO.	EASTING	NORTHING	ELEVATION	REMARK
34	G-161	366678.973	2993025.542	155.065	
35	G-162	366609.959	2993042.130	154.082	

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. RABINDRA ADHIKARI Nec.No. 6431 CIVIL'A'	Signature	Drawing Name: DETAILED SURVEY TOPOGRAPHICAL MAP (EXISTING CONDITION) OF BRIDGE OVER RIVER KALINJOR-2
Checked By	Mr. SANJIB MITRA	Signature	Reference Drawings
Approved By	Mr. HARI KRISHNA BHAVSAR	Signature	

Scale:	1:1000
Chainage:	292+705
Date:	18.06.2023
Drawing No.-	KDP/DPR/STR/BR/KALINJOR-2/DD- 2
Sheet No.	1 / 1



PROJECT KEY MAP

DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL
MAIN FOOT TRAIL		ANIMAL FARM	
PLACE NAME		BAMBOO	
POLICE STATION		BIO GAS	
PETROL PUMP		BUS WAITING STATION	
Pond/ Water Body		BRIDGE	
POULTRY FARM		CONTOUR	
PROPERTY BOUNDARY		CANAL	
ROAD INFORMATION BOARD		CULVERT	
RIVER		CONTROL POINT (G)	
		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	

STRUCTURE NO:	293/1
TYPE	MAJOR BRIDGE-KALINJOR-2
CHAINAGE	292+705
EXISTING	3 X 21.1 (RHS)
PROPOSED	3 X 22 (LHS)
REMARKS	RETAIN EXISTING BRIDGE NEW BRIDGE ON SOUTH (MCW)

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS
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Designed By	Mr. RABINDRA ADHIKARI	Nec.No. 6431 CIVIL'A'	Signature
Checked By	Mr. SANJIB MITRA		Signature
Approved By	Mr. HARI KRISHNA BHAVSAR		Signature

Drawing Name
DETAILED SURVEY TOPOGRAPHICAL MAP (WITH PROPOSED BRIDGE) OF BRIDGE OVER RIVER KALINJOR-2

Reference Drawings

Scale: 1:1000

Chainage: 292+705

Date: 18.06.2023

Drawing No.- KDP/DPR/STR/BR/KALINJOR-2/DD- 3

Sheet No. 1 / 1

A. GENERAL

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

B. DESIGN CRITERIA

1. THE DESIGN HAS BEEN PREPARED BASED ON THE FOLLOWING CODES:
   a) NEPAL ROAD STANDARD 2070
   b) IRC-5 2015
   c) IRC-6 2017
   d) IRC-78 2014
   e) IRC-112 2020
   f) IRC SP-13 2022
2. TOTAL WIDTH OF THE BRIDGE DECK: 11.85 M (8 M WIDE CARRIAGEWAY + 2.5 M WIDE FOOTPATH) HOWEVER THIS BRIDGE IS DESIGNED FOR THE FOLLOWING CARRIAGEWAY LIVE LOADS AS PER IRC:6-2017
   a) ONE LANE OF IRC CLASS 70R (WHEELED) FOR TWO LANES + ONE LANE OF IRC CLASS A
   b) THREE LANES OF IRC CLASS A
3. SEISMIC ZONE CONSIDERED IN THE DESIGN IS ZONE-V.
4. LAYING, COMPACTION, & EXTENT OF BACKFILL BEHIND ABUTMENT & RETURN/RETAINING WALLS SHALL CONSIST OF SELECTED EARTH CONFORMING TO THE APPENDIX-6 OF IRC:78-2014 HAVING PROPERTIES C=0, =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, (Q100) - 345.37 CUMECS
2. HFL - 154.230 M
3. FREE BOARD (MINIMUM) - 1.2 M
4. MAXIMUM SCOUR LEVEL:
   ABUTMENT - 146.930M
   PIER - 143.010M

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

D. STRUCTURAL AND OTHER DATA: -

1. SPAN ARRANGEMENT: 3 X 22 = 66 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 - 239.74 TON
   B) PIER- 1200 DIA BORED CAST-IN-SITU PILE
   DESIGN WORKING LOAD ON PILE - 247.87 TON

   RCC BORED PILES SHOULD BE CONSTRUCTED AS PER IS: 2911(PART 1/SEC 2)-2010.
5. BEARINGS
   ELASTOMERIC BEARINGS
6. WEARING COAT:
   65 MM THICK ASPHALTIC CONCRETE WEARING COAT AS PER STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS (2073) , DEPARTMENT OF ROADS
   .
7. EXPANSION JOINT -
   SLAB SEAL TYPE EXPANSION JOINT OF PROVEN QUALITY SHALL BE PROVIDED IN ACCORDANCE WITH IRC:SP-69-2005 (GUIDELINES AND SPECIFICATIONS OF EXPANSION JOINT)
8. DRAINAGE SPOUTS - AS PER STANDARD SPECIFICATION FOR ROAD & BRIDGE WORKS 2073
9. RAILINGS/CRASH BARRIER:
   RCC CRASH BARRIER AT EDGES OF CARRIAGEWAY AND FOOTPATH
10. FOOTPATH
    2.5m WIDE FOOTPATH AT OUTER EDGE OF DECK
11. CONCRETE: -
    a. PILE..... M35 (CEMENT CONTENT AS PER SPECIFICATION)
    b. PILE CAP.....M35
    c. BEARING PEDESTALS.....M40
    d. ABUTMENT M35
    e. PIER.....M35
    f. PIER CAP.....M35
    g. RETURN WALL.....M35
    h. LEVELING COURSE: I) BELOW APPROACH SLAB.....M15
    II) BELOW PILE CAP.....M15
    g. APPROACH 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

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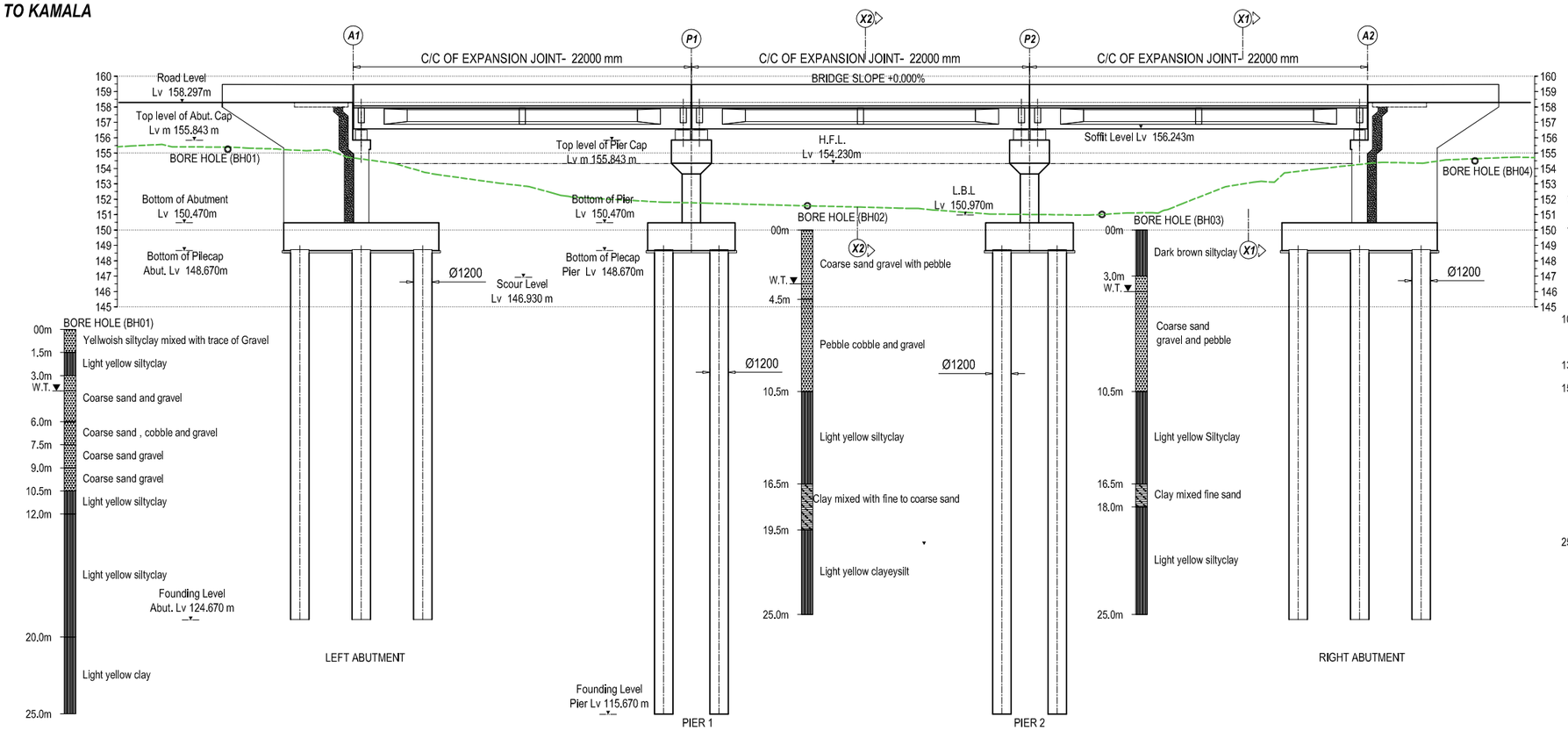
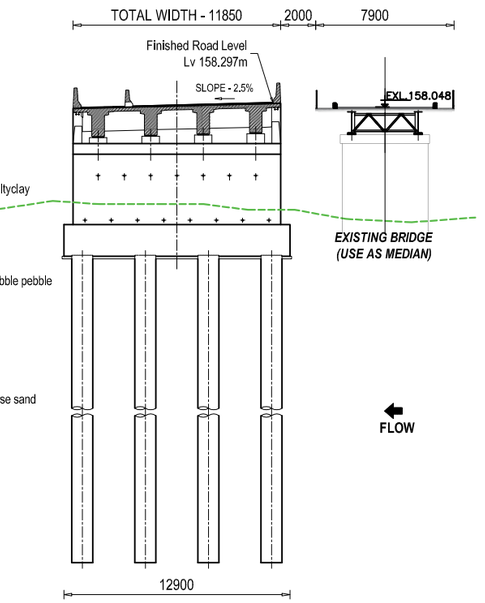
			Checked By	Mr. SANJIB MITRA	Signature			
			Approved By	Mr. HARI KRISHNA BHAVSAR.	Signature			

TO KAMALA

TO PATHALAIYA

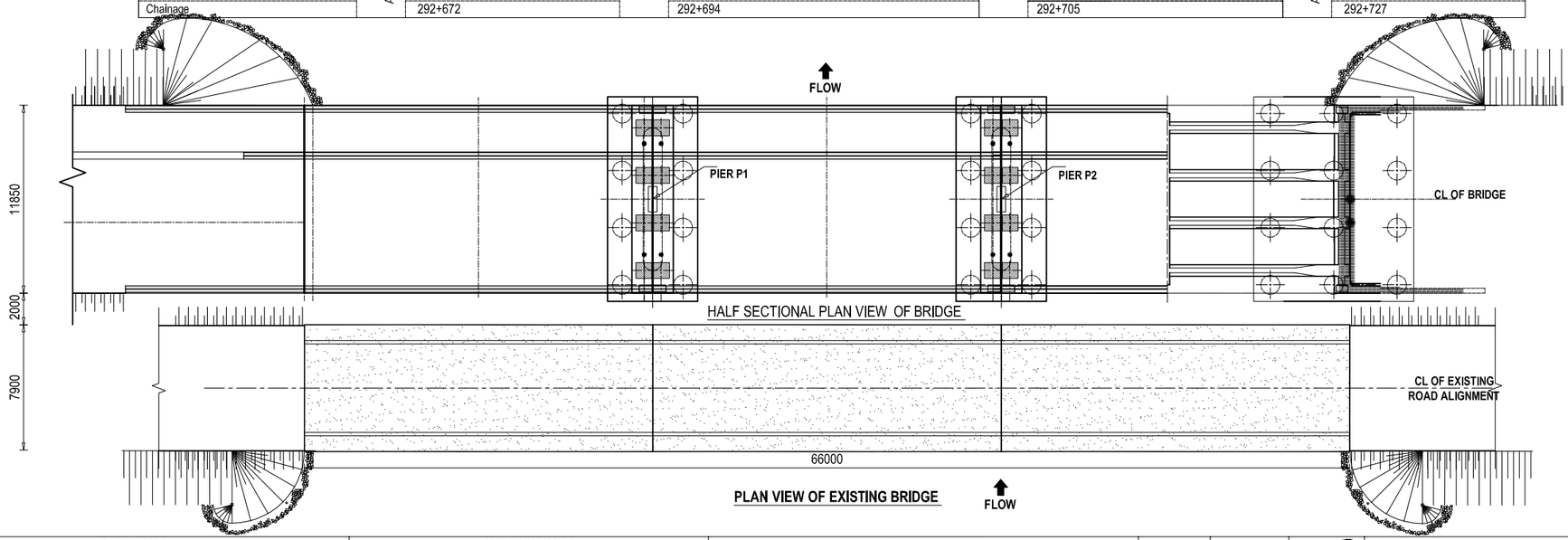


PROPOSED BRIDGE GENERAL ARRANGEMENT



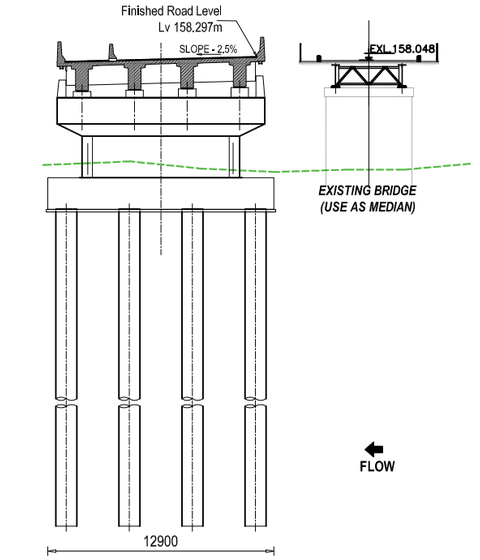
SECTIONAL VIEW OF ABUTMENT AT X1 - X1

Finished Road Level(D/S)	LEFT ABUTMENT	158.297	PIER 1	158.297	PIER 2	158.297	RIGHT ABUTMENT	158.297
Finished Road Level (Existing Bridge)		158.048		158.048		158.048		158.048
Existing Ground Level(D/S)		154.666		151.816		151.058		154.319
Existing Ground Lv		154.982		152.536		151.968		155.438
Chainage		292+672		292+694		292+705		292+727



HALF SECTIONAL PLAN VIEW OF BRIDGE

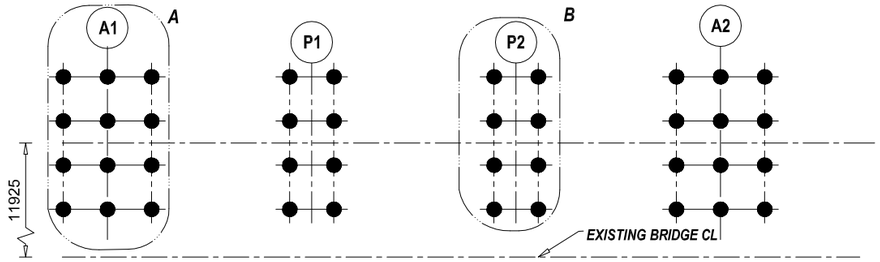
PLAN VIEW OF EXISTING BRIDGE



SECTIONAL VIEW OF PIER AT X2-X2

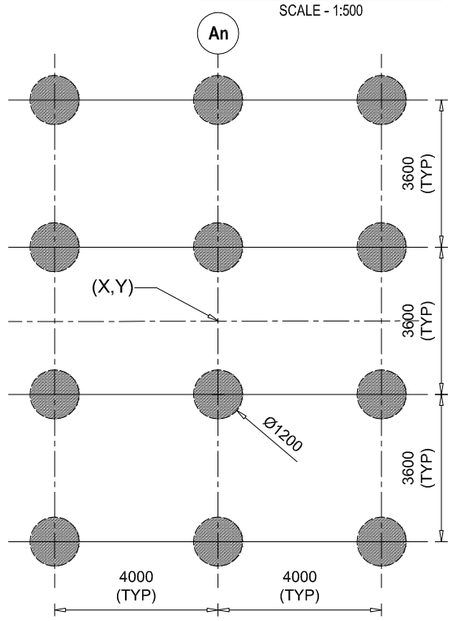
(SCALE 1 :350 @ A3)

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. RABINDRA ADHIKARI Nec.No. 6431 CIVIL'A'	Signature	Drawing Name: GENERAL ARRANGEMENT OF BRIDGE OVER RIVER KALINJOR-2 Reference Drawings: -	Scale: AS SHOWN Chainage: 292+705	Date: 18.06.2023 Drawing No.: KDP/DPR/STR/BR/KALINJOR-2/DD-5 Sheet No.: 1 / 1
			Checked By	Mr. SANJIB MITRA	Signature			
			Approved By	Mr. HARI KRISHNA BHAVSAR	Signature			



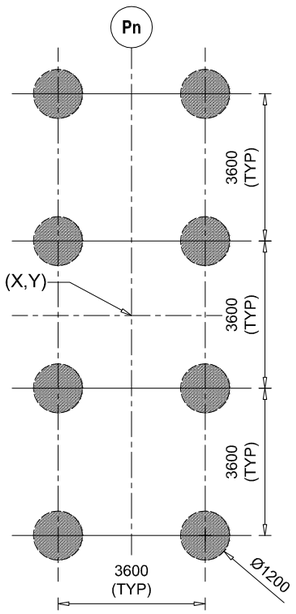
DETAILS AT PILE LAYOUT

SCALE - 1:500



DETAILS AT A

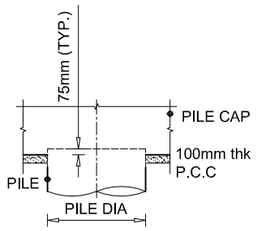
SCALE - 1:150



DETAILS AT B

SCALE - 1:150

PILE CAPACITY		
SN.	DESCRIPTION	CAPACITY (Ton)
1	ABUTMENT	239.74
2	PIER	247.87



DETAIL AT 3 AND 4

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 25650	32		25.950	10	6.321	1640.30
2	PA2	13283	32		13.283	10	6.320988	839.6168
3	PA3	300 13567	12		13.867	10	0.889	123.26
4	PA4	Dia. 1034 100	16	110	3.448	44	1.580	239.76
5	PA5	Dia. 1034 100	12	110	3.448	175	0.889	536.40
							TOTAL (KG) :	3379.34
							No. of Pile	12.00
							TOTAL WEIGHT (KG) :	40552.12

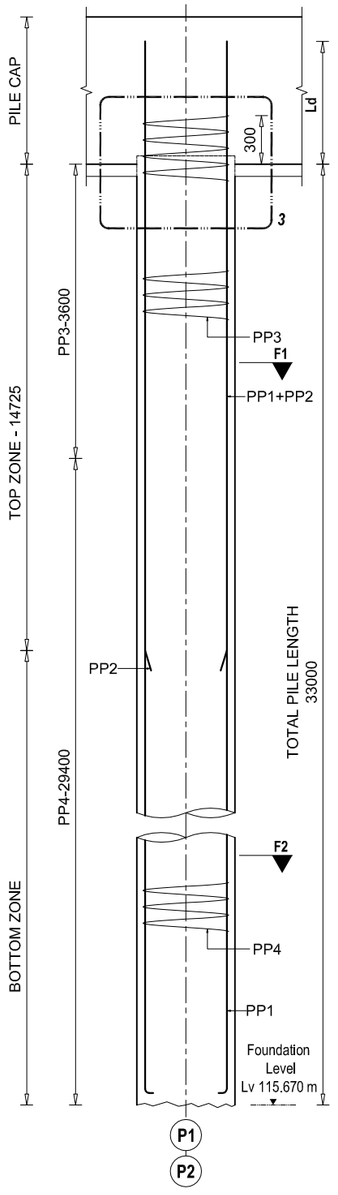
BAR BENDING SCHEDULE OF PIER PILE

S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	PP1	300 34650	32		34.950	13	6.321	2871.94
2	PP2	17650	32		17.65	13	6.320988	1450.351
3	PP3	Dia. 1034 100	16	100	3.448	48	1.580	261.56
4	PP4	Dia. 1034 100	12	100	3.448	282	0.889	864.38
							TOTAL (KG) :	5448.23
							No. of Pile	8.00
							TOTAL WEIGHT (KG) :	43585.83

NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/KALINJOR-2/DD-4

CO ORDINATES OF PILE LOCATION OF PROPOSED BRIDGE

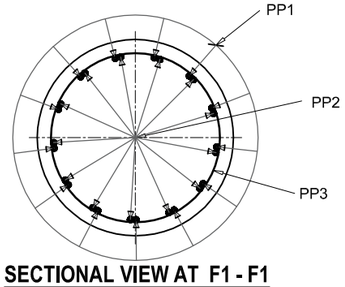
SN.	ABUTMENT/PIER	EASTING (X)	NORTHING (Y)
1	ABUTMENT (A1)	366659.712	2992991.712
2	PIER (P1)	366638.86	2992998.725
3	PIER (P2)	366618.007	2993005.738
4	ABUTMENT (A2)	366597.155	2993012.751



ELEVATION VIEW

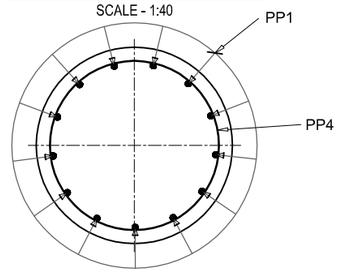
BAR DETAIL AT PIER PILE

SCALE - 1:75



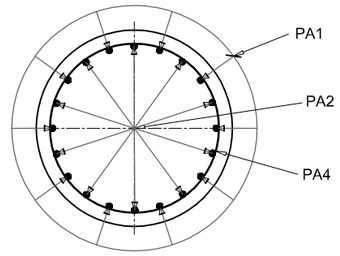
SECTIONAL VIEW AT F1 - F1

SCALE - 1:40



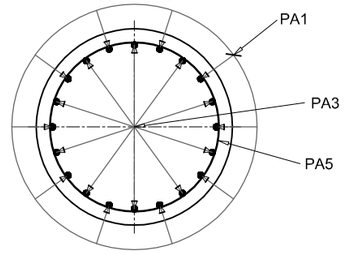
SECTIONAL VIEW AT F2 - F2

SCALE - 1:40



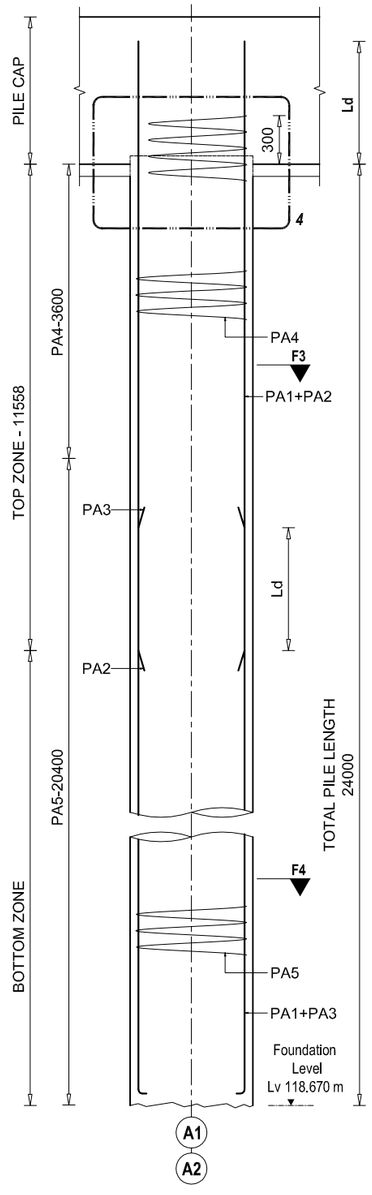
SECTIONAL VIEW AT F3 - F3

SCALE - 1:40



SECTIONAL VIEW AT F4 - F4

SCALE - 1:40

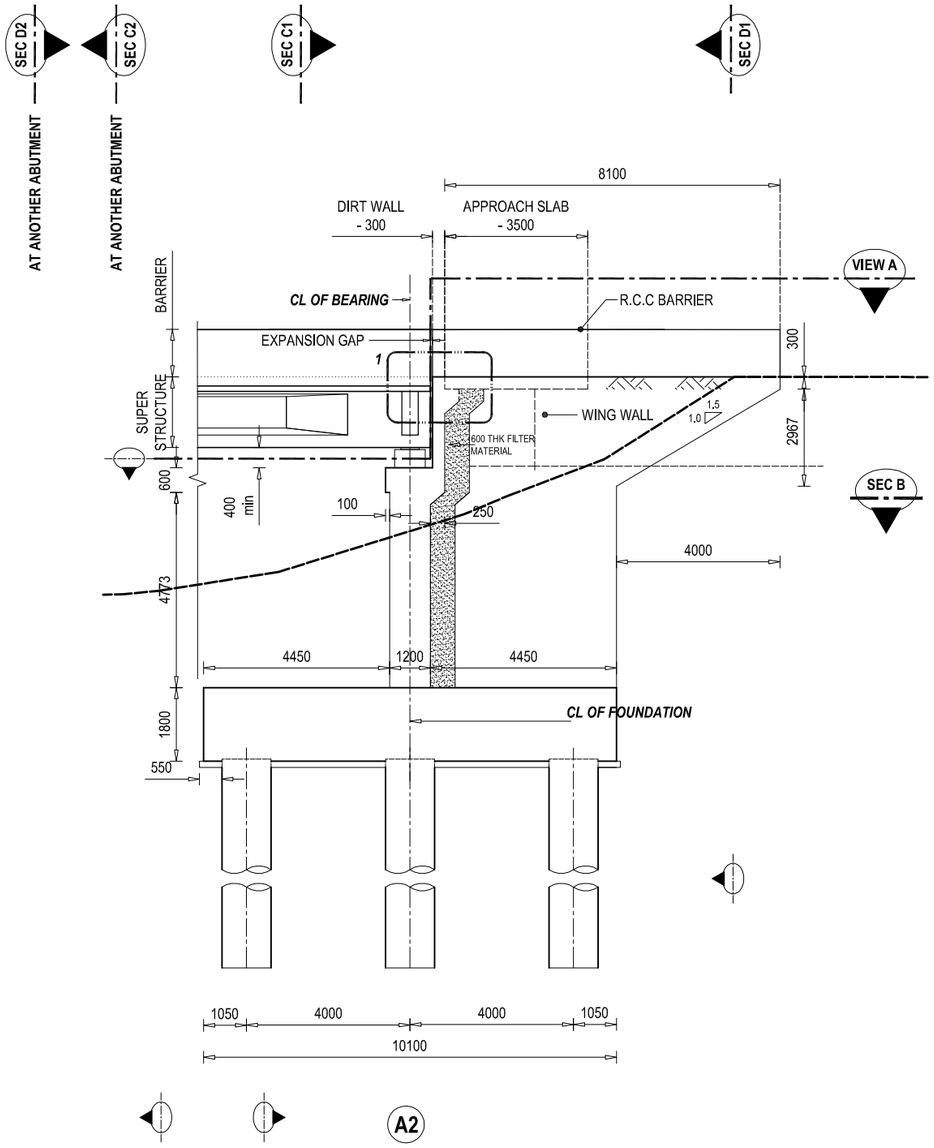


ELEVATION VIEW

BAR DETAIL AT ABUTMENT PILE

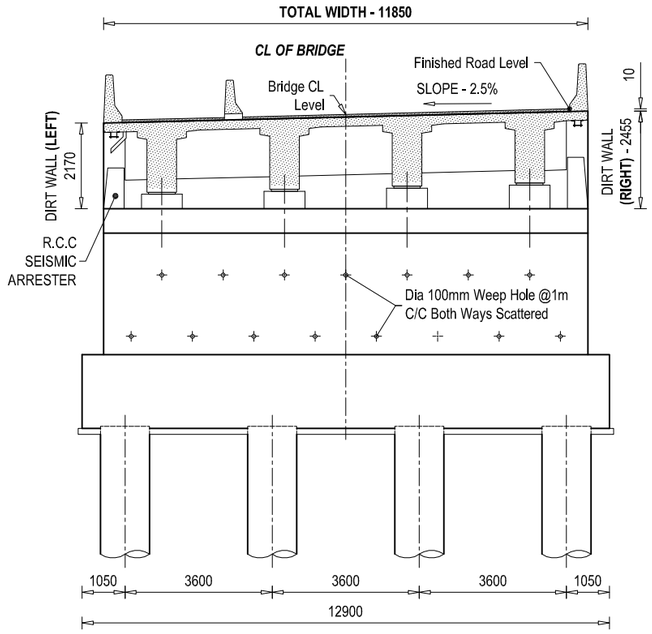
SCALE - 1:75

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 Krtil Consultant and Rays Consultant Private Limited			
		Designed By	Mr. RABINDRA ADHIKARI Nec.No.6431 CIVIL"A"	Signature	Drawing Name: LAYOUT AND DETAIL OF PILE FOUNDATION FOR BRIDGE OVER RIVER KALINJOR-2
		Checked By	Mr. SANJIB MITRA	Signature	Reference Drawings
		Approved By	Mr. HARI KRISHNA BHAVSAR.	Signature	Scale: AS SHOWN Chainage: 292+705
					Date: 05.05.2023 Drawing No.- KDP/DPR/STR/BR/KALINJOR-2/DD-6 Sheet No. 1/1



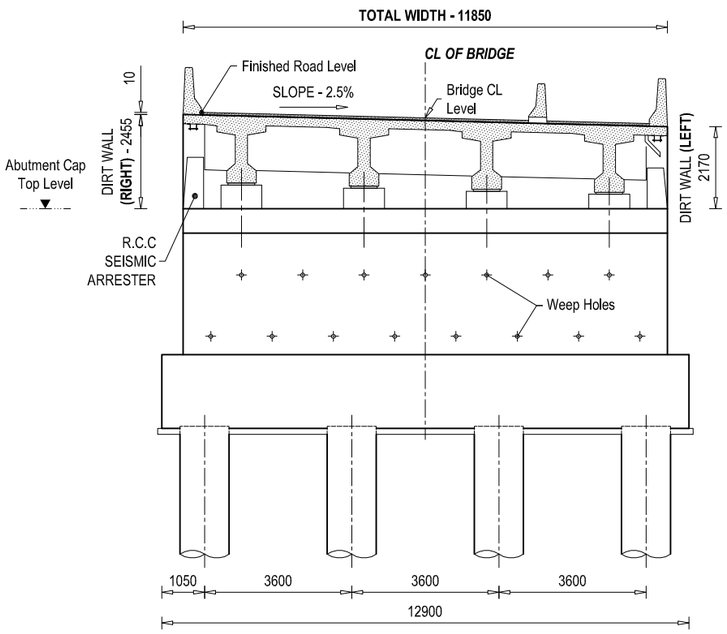
OUTLINE DETAILS OF ABUTMENT

SCALE - 1: 150



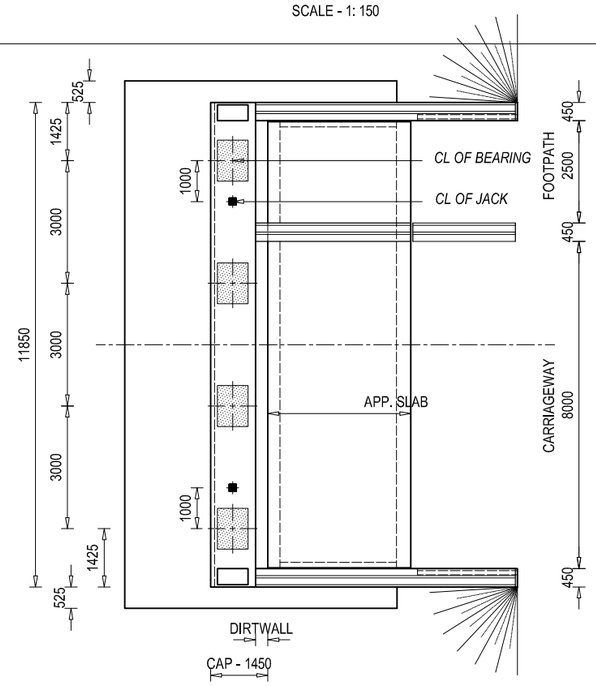
SECTIONAL VIEW AT C1 - C1

SCALE - 1: 150



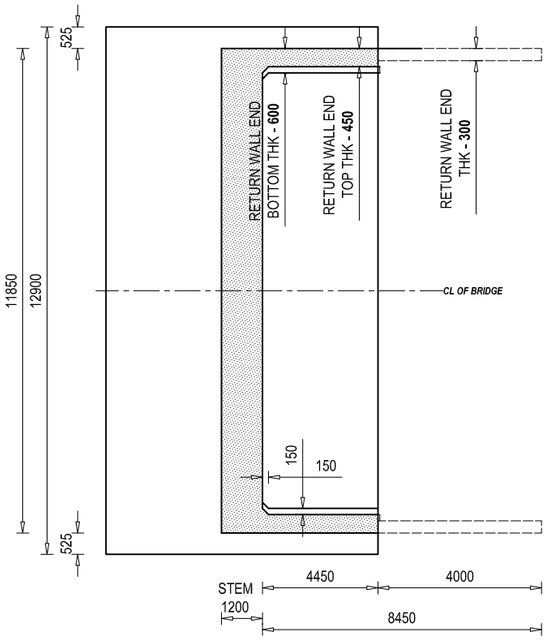
SECTIONAL VIEW AT C2 - C2

SCALE - 1: 150



VIEW AT A

SCALE - 1: 150

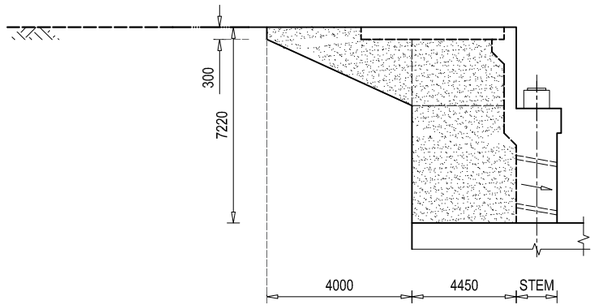


SECTIONAL VIEW AT B - B

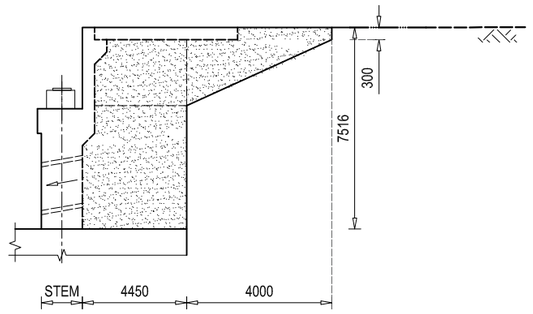
SCALE - 1: 150

NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/KALINJOR-2/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 Krill Consultant and Rays Consultant Private Limited	Designed By	Mr. RABINDRA ADHIKARI Nec.No. 6431 CIVIL"A"	Signature	Drawing Name ABUTMENT DETAILS OF BRIDGE OVER RIVER KALINJOR-2	Scale: AS SHOWN Date: 18.06.2023
			Checked By	Mr. SANJIB MITRA	Signature	Reference Drawings	Chainage: 292+705 Drawing No.- KDP/DPR/STR/BR/KALINJOR-2/DD- 7
			Approved By	Mr. HARI KRISHNA BHAVSAR.	Signature		Sheet No. 1 / 2

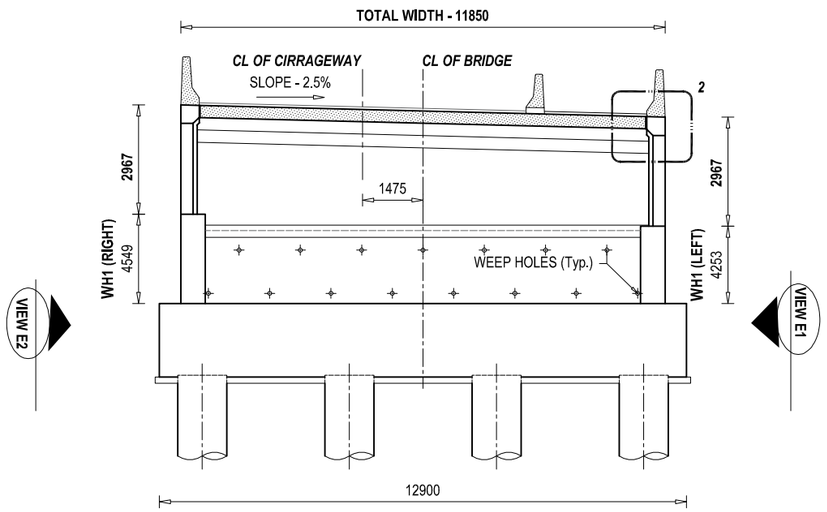


VIEW AT E1
SCALE - 1: 150

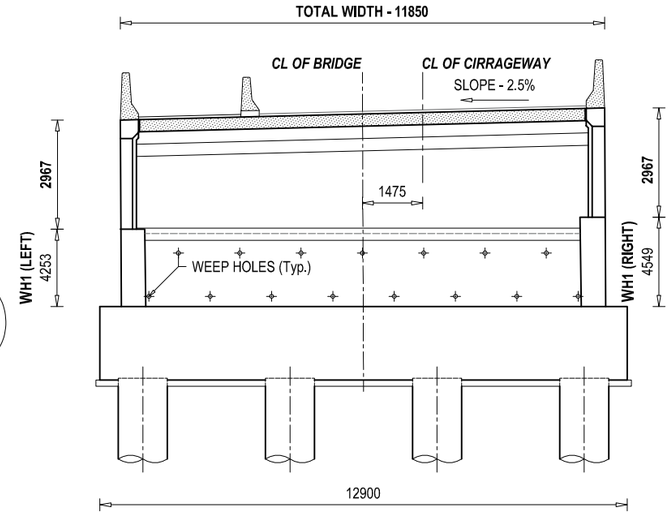


VIEW AT E2
SCALE - 1: 150

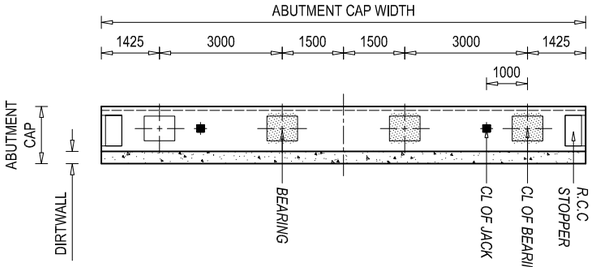
DETAIL AT RETURN WALL



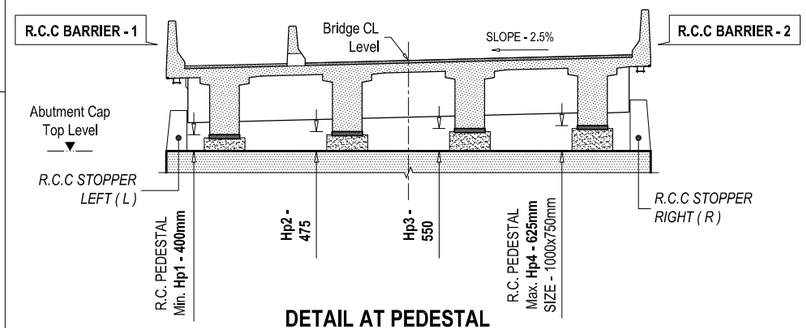
SECTIONAL VIEW AT D1 - D1
SCALE - 1: 150



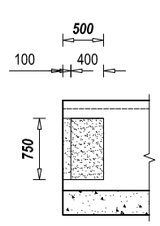
SECTIONAL VIEW AT D2 - D2
SCALE - 1: 150



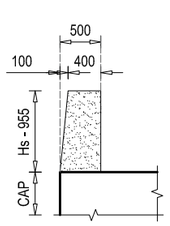
PLAN VIEW AT ABUTMENT CAP
SCALE - 1: 150



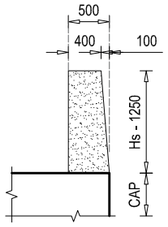
DETAIL AT PEDESTAL
SCALE - 1 : 150



R.C.C SEISMIC ARRESTER PLAN VIEW

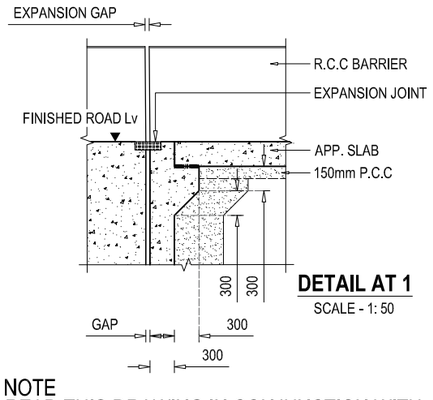


R.C.C SEISMIC ARRESTER - LEFT ELEVATION VIEW



R.C.C SEISMIC ARRESTER - RIGHT ELEVATION VIEW

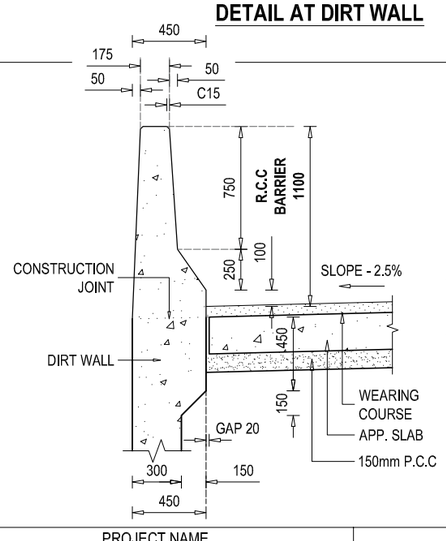
DETAIL AT PEDESTAL
SCALE - 1 : 75



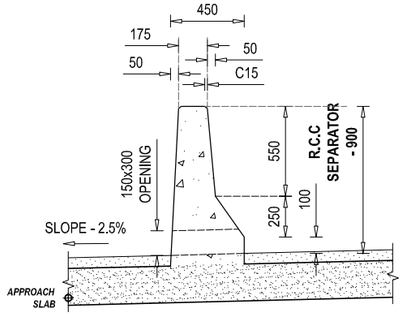
DETAIL AT 1
SCALE - 1: 50

NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/KALINJOR-2/DD-4

DETAIL AT DIRT WALL

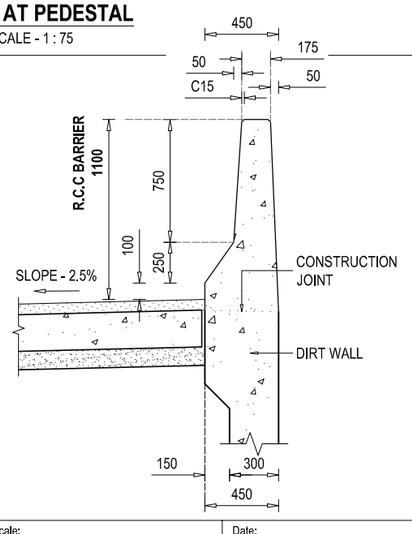


DETAIL SECTIONAL VIEW AT R.C.C BARRIER - 1
DETAIL AT 2
SCALE - 1: 25

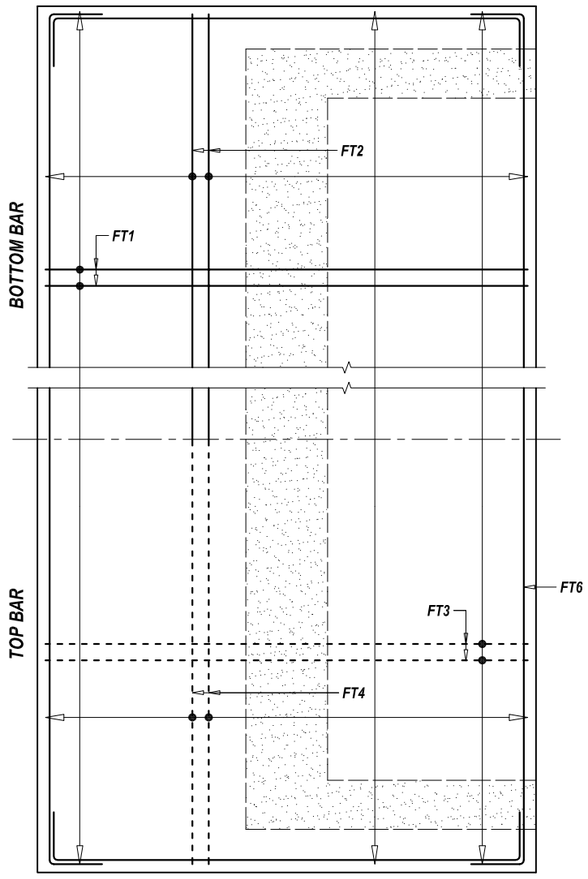


DETAIL SECTIONAL VIEW AT R.C.C SEPARATOR
SCALE - 1: 25

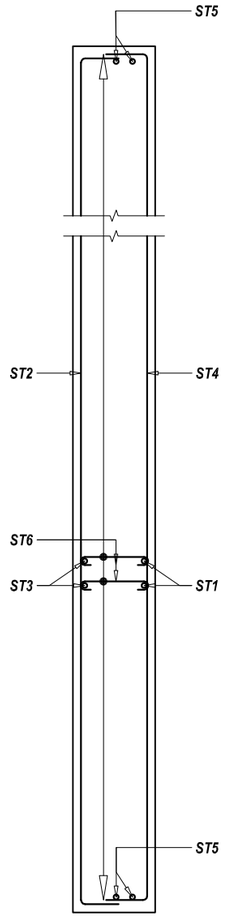
DETAIL SECTIONAL VIEW AT R.C.C BARRIER - 2
SCALE - 1: 25



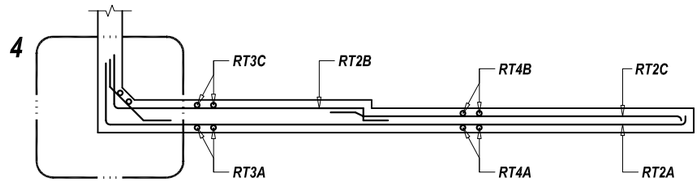
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS			
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya 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. RABINDRA ADHIKARI Nec.No. 6431 CIVIL'A'	Signature	Drawing Name: ABUTMENT DETAILS OF BRIDGE OVER RIVER KALINJOR-2
		Checked By	Mr. SANJIB MITRA	Signature	Reference Drawings
		Approved By	Mr. HARI KRISHNA BHAVSAR	Signature	Scale: AS SHOWN Chainage: 292+705
					Date: 18.06.2023 Drawing No.- KDP/DPR/STR/BR/KALINJOR-2/DD-7 Sheet No. 2 / 2



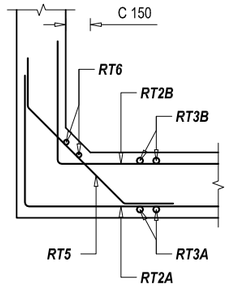
PLAN VIEW



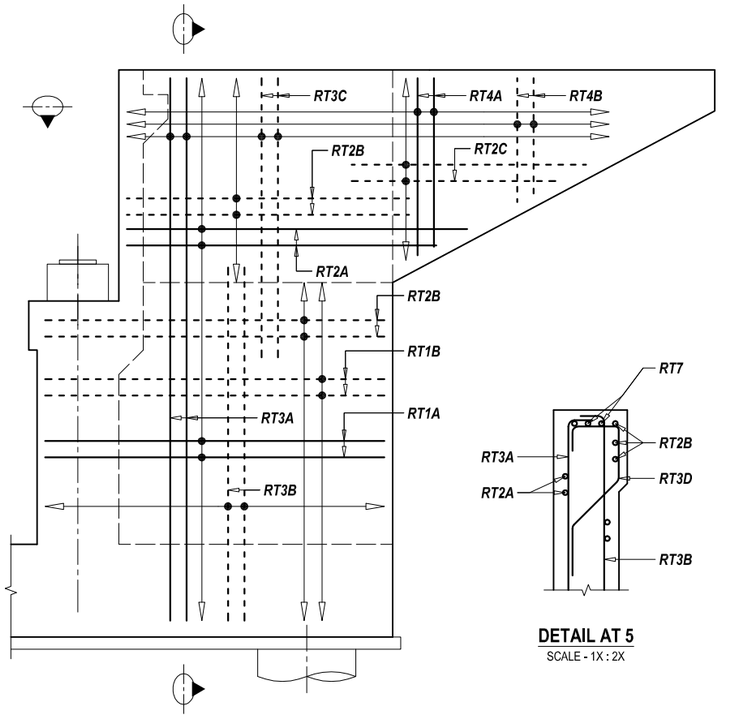
SECTIONAL PLAN VIEW



SECTIONAL PLAN VIEW

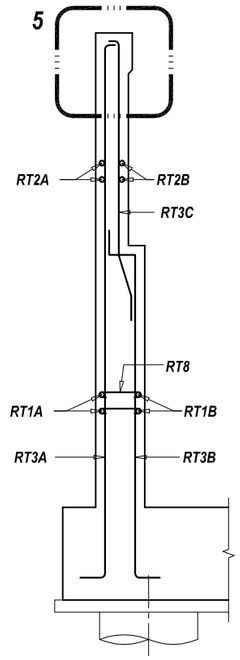


DETAILS AT 4



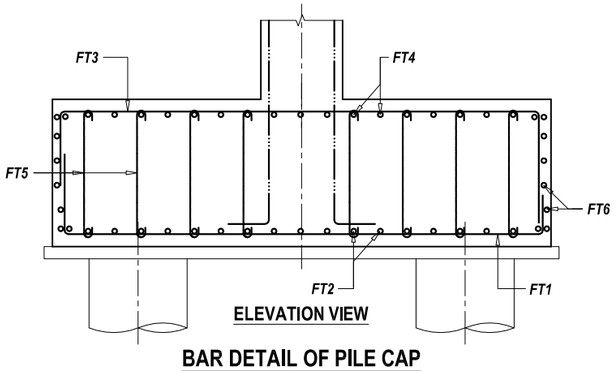
ELEVATION VIEW

DETAIL AT 5
SCALE - 1X : 2X



SECTIONAL SIDE VIEW

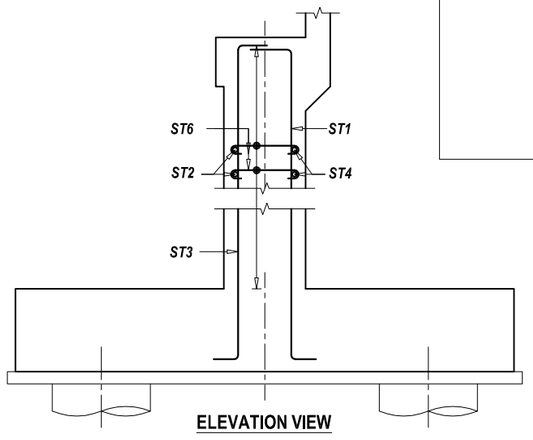
BAR DETAIL AT RETURN WALL
SCALE - 1 : 75



ELEVATION VIEW

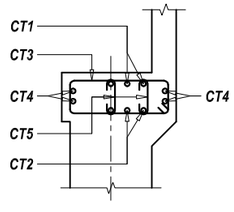
BAR DETAIL OF PILE CAP
SCALE - 1 : 75

NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/KALINJOR-2/DD-4

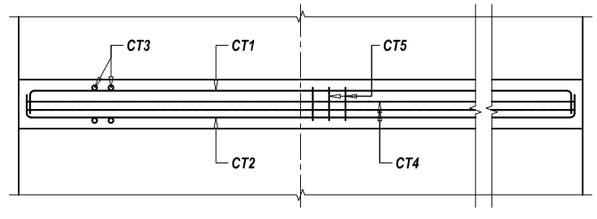


ELEVATION VIEW

BAR DETAIL AT ABUTMENT STEM
SCALE - 1 : 75



ELEVATION VIEW



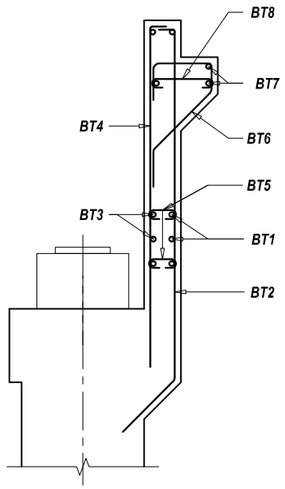
FRONT VIEW

BAR DETAIL AT ABUTMENT CAP
SCALE - 1 : 75

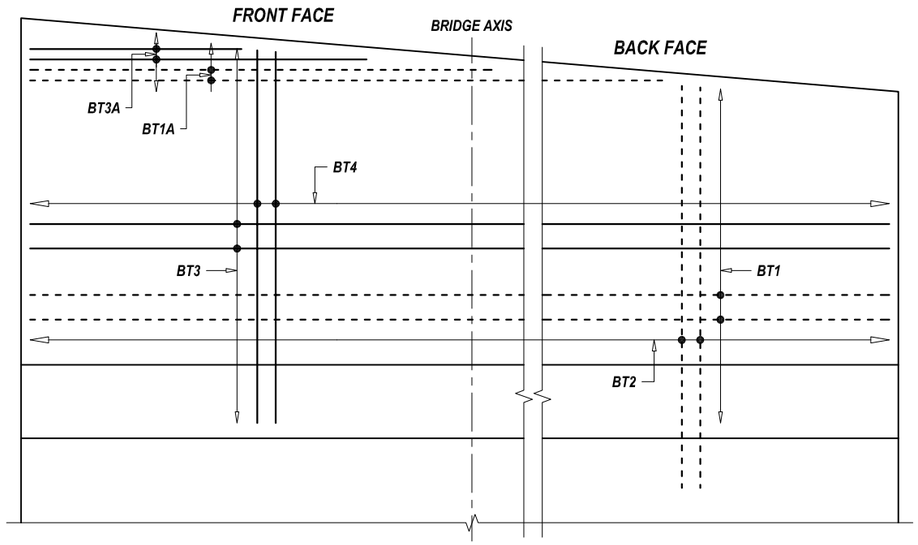
TOP BAR OR
NEAR FACE REINFORCEMENT

BOTTOM BAR OR
FAR FACE REINFORCEMENT

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. RABINDRA ADHIKARI Nec.No. 6431 CE/1'A'	Signature	Drawing Name ABUTMENT REINGORCEMENT DETAILS OF BRIDGE OVER RIVER KALINJOR-2	Scale: AS SHOWN	Date: 18.06.2023
		Checked By	Mr. SANJIB MITRA	Signature			Drawing No.- KDP/DPR/STR/BR/KALINJOR-2/DD-8
		Approved By	Mr. HARI KRISHNA BHAVSAR	Signature	Reference Drawings KDP/DPR/STR/BR/KALINJOR-2/DD-9	Chainage: 292+705	Sheet No. 1 / 2



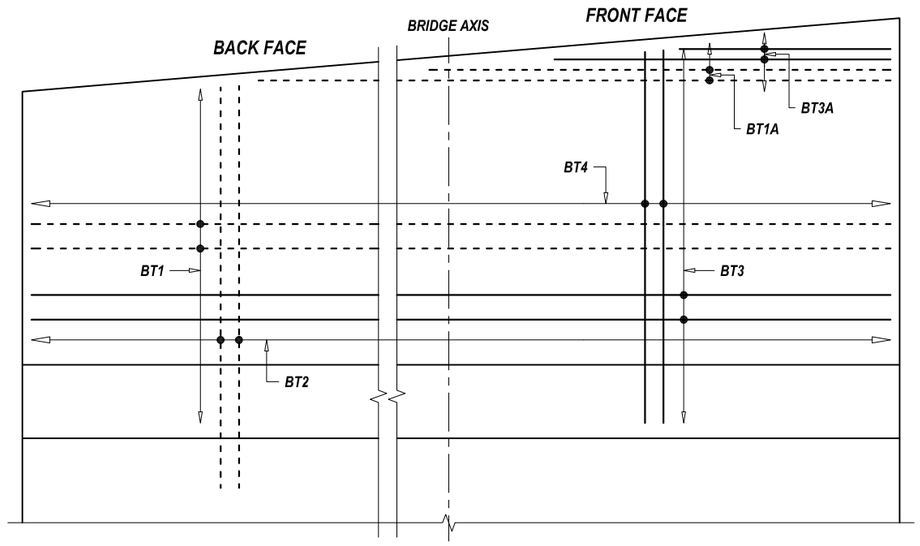
SECTIONAL SIDE VIEW



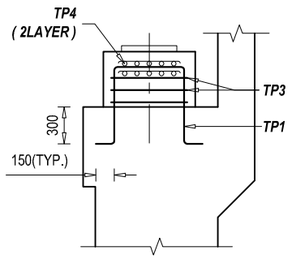
ELEVATION VIEW / VIEW AT D1

BAR DETAIL AT DIRT WALL

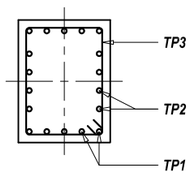
SCALE - 1 : 50



ELEVATION VIEW / VIEW AT D2



SECTIONAL SIDE VIEW

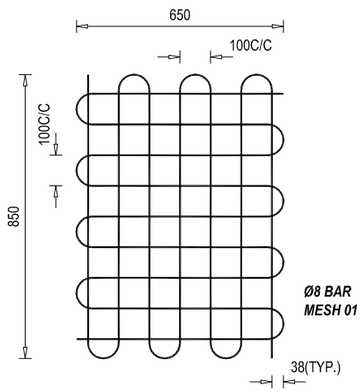


SECTIONAL PLAN VIEW

BAR DETAIL AT PEDESTAL

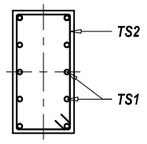
SCALE - 1 : 50

NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/KALINJOR-2/DD-4

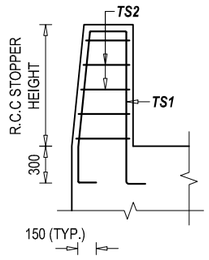


REINFORCEMENT DETAILS OF BEARING MESH

SCALE - 1 : 50

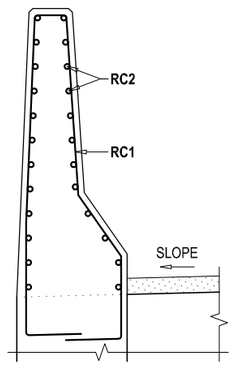


SECTIONAL PLAN VIEW



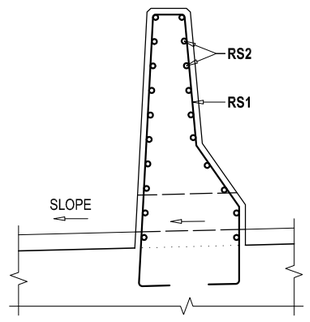
R.C.C STOPPER LEFT ELEVATION VIEW

SCALE - 1 : 50



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

SCALE - 1 : 25



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

SCALE - 1 : 25

TOP BAR OR
NEAR FACE REINFORCEMENT

BOTTOM BAR OR
FAR FACE REINFORCEMENT

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS					
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. RABINDRA ADHIKARI Nec.No. 6431 CIVIL 'A'	Signature	Drawing Name: ABUTMENT REINGORCEMENT DETAILS OF BRIDGE OVER RIVER KALINJOR-2 Reference Drawings: KDP/DPR/STR/BR/KALINJOR-2/DD-9	Scale: AS SHOWN Chainage: 292+705	Date: 18.06.2023 Drawing No.- KDP/DPR/STR/BR/KALINJOR-2/DD-8 Sheet No. 2 / 2
			Checked By	Mr. SANJIB MITRA	Signature			
			Approved By	Mr. HARI KRISHNA BHAVSAR	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 — 11700 — 150	16	200	12.000	17	1.580	322.37
2	BT1A	Avg. 5850 — 150	16	200	6.000	3	1.580	28.44
3	BT2	150 / 450 — 2803 Avg.	16	125	3.403	96	1.580	516.25
4	BT3	150 — 11700 — 150	16	200	12.000	13	1.580	246.52
5	BT3A	Avg. 5850 — 150	16	200	6.000	3	1.580	28.44
6	BT4	150 / 2878 — Avg.	12	125	3.028	96	0.889	258.39
7	BT5	100 — 150 — 100	12	500	0.350	96	0.889	29.87
8	BT6	200 — 450 — 220 / 200 — 756	16	200	1.826	61	1.580	176.02
9	BT7	11700	16		11.700	5	1.580	92.44
10	BT8	100 — 450 — 100	12	200	0.650	120	0.889	69.33
							TOTAL (KG) :	1768.08

BAR BENDING SCHEDULE OF ABUTMENT CAP

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

BAR BENDING SCHEDULE OF ABUTMENT STEM

S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	ST1	300 — 6700 / 900	25		7.900	110	3.858	3352.62
2	ST2	600 — 11700 — 600	16	170	12.900	27	1.580	550.40
3	ST3	300 — 6700 / 900	25		7.900	110	3.858	3352.62
4	ST4	600 — 11700 — 600	16	170	12.900	27	1.580	550.40
5	ST5	300 / 900 — 6700	16		7.900	14	1.580	174.78
6	ST6	100 — 1050 — 100	12	Ver. 475 / Hor.475	1.250	250	0.889	277.78
							TOTAL (KG) :	8258.60

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 — 9950 — 900	25		11.750	110	3.858	4986.50
2	FT2	900 — 12750 — 900	20		14.550	80	2.469	2874.07
3	FT3	900 — 9950 — 900	16		11.750	110	1.580	2042.47
4	FT4	900 — 12750 — 900	16		14.550	80	1.580	1839.41
5	FT5	100 — 1650 — 100	10	Long. 260 / Trans.520	1.850	939	0.617	1072.31
6	FT6	9900 — 12710 — 150	16	200	45.520	8	1.580	575.46
							TOTAL (KG) :	13390.23

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 :	4.00
							TOTAL WEIGHT (KG) :	335.64

BAR BENDING SCHEDULE OF RCC SEISMIC ARRESTER - LEFT

S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TS1-L	1010 / 300 — 400 — 1270 / 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 / 300 — 400 — 1525 / 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. RABINDRA ADHIKARI Nec.No. 6431 CIVIL'A'	Signature	Drawing Name: ABUTMENT BAR BENDING SCHEDULE OF BRIDGE OVER RIVER KALINJOR-2
			Checked By	Mr. SANJIB MITRA	Signature	Reference Drawings: -
			Approved By	Mr. HARI KRISHNA BHAVSAR.	Signature	Scale: AS SHOWN Chainage: 292+705 Date: 18.06.2023 Drawing No.- KDP/DPR/STR/BR/KALINJOR-2/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 5500 150	12	150	6.100	51	0.889	276.53
2	RT1B	450 5500 150	16	150	6.100	51	1.580	491.61
3	RT2A	450 7950 150	12	150	8.550	21	0.889	159.60
4	RT2B	150 5500 150 800	16	150	6.600	21	1.580	219.02
5	RT2C	800 3575 150 150	16	150	4.675	21	1.580	155.14
6	RT3A	9166 150 450	12	150	9.766	31	0.889	269.11
7	RT3B	1000 6199 150 450	20	150	7.799	31	2.469	596.96
8	RT3C	150 2892 150 1000	20	150	4.192	31	2.469	320.87
9	RT3D	200 300 300 200 210	20	150	1.210	55	2.469	164.32
10	RT4A	1483.5 150 150	12	150	1.784	50	0.889	79.27
11	RT4B	1483.5 150 150	20	150	1.784	50	2.469	220.19
12	RT5	300 870 300	12	150	1.470	71	0.889	92.77
13	RT6	7516	12		7.516	2	0.889	13.36
14	RT7	225 5375	20		5.6	4	2.469	55.31
15	RT8	100 450 100	12	200	0.650	508	0.889	293.51
							TOTAL (KG) :	3407.58

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 5500 150	12	150	6.100	49	0.889	265.69
2	RT1B	450 5500 150	16	150	6.100	49	1.580	472.34
3	RT2A	450 7950 150	12	150	8.550	21	0.889	159.60
4	RT2B	150 5500 150 800	16	150	6.600	21	1.580	219.02
5	RT2C	800 3575 150 150	16	150	4.675	21	1.580	155.14
6	RT3A	8870 150 450	12	150	9.470	31	0.889	260.95
7	RT3B	1000 5903 150 450	20	150	7.503	31	2.469	574.30
8	RT3C	150 2892 150 1000	20	150	4.192	31	2.469	320.87
9	RT3D	200 300 300 200 210	20	150	1.210	55	2.469	164.32
10	RT4A	1483.5 150 150	12	150	1.784	50	0.889	79.27
11	RT4B	1483.5 150 150	20	150	1.784	50	2.469	220.19
12	RT5	300 870 300	12	150	1.470	71	0.889	92.77
13	RT6	7220	12		7.220	2	0.889	12.84
14	RT7	225 5375	20		5.6	4	2.469	55.31
15	RT8	100 450 100	12	200	0.650	508	0.889	293.51
							TOTAL (KG) :	3346.11

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	55	1.580	275.52
2	RC2	150 8000 150	10	150	8.300	20	0.617	102.47
							TOTAL (KG) :	377.99

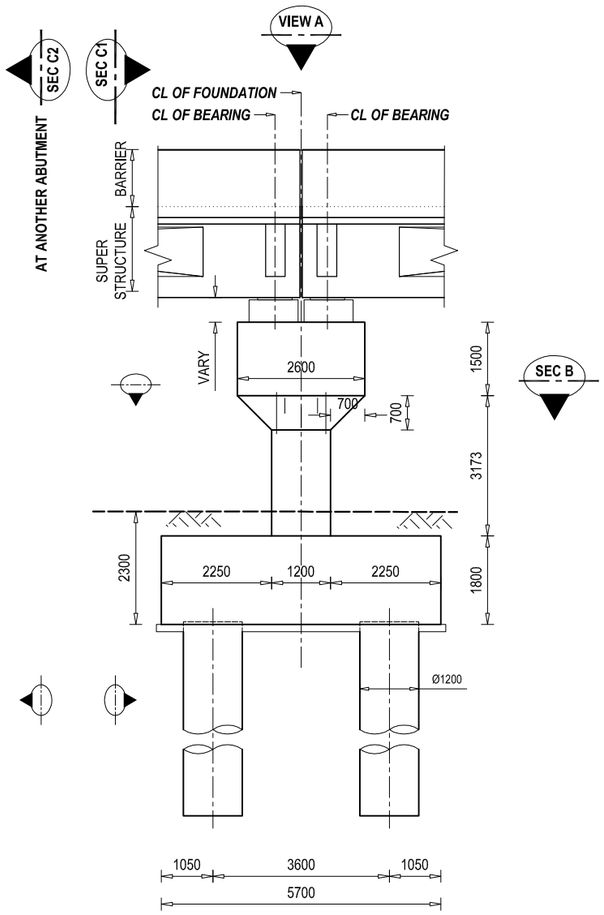
BAR BENDING SCHEDULE OF R.C.C SEPARATOR

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 150 305 315	16	150	2.695	25	1.580	106.47
2	RS2	150 3500 150	10	150	3.800	17	0.617	39.88
							TOTAL (KG) :	146.35

BAR BENDING SCHEDULE OF APPROACH SLAB

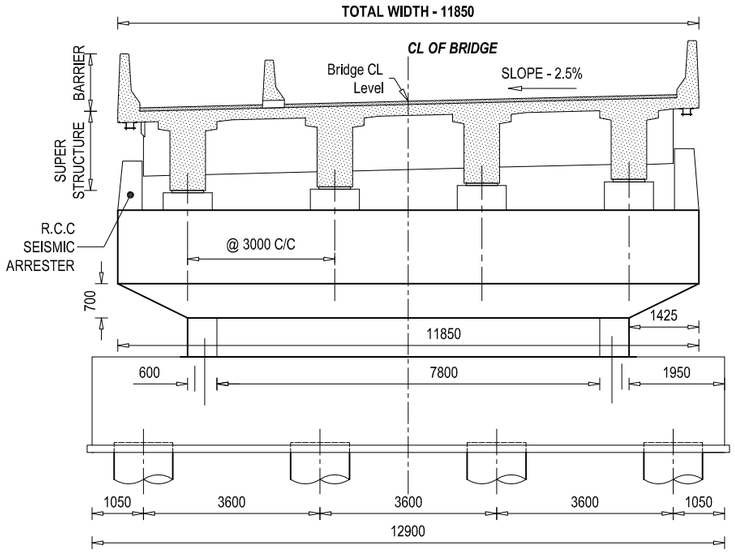
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	1601	100 10970 100	16	150	11.170	48	1.580	847.27
2	1202	100 3420 100	12	150	3.620	150	0.889	482.67
							TOTAL (KG) :	1329.93

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. RABINDRA ADHIKARI Nec.No. 6431 CIVIL'A'	Signature	Drawing Name: ABUTMENT BAR BENDING SCHEDULE OF BRIDGE OVER RIVER KALINJOR-2 Reference Drawings: -
			Checked By	Mr. SANJIB MITRA	Signature	Scale: AS SHOWN Chainage: 292+705
			Approved By	Mr. HARI KRISHNA BHAVSAR	Signature	Date: 18.06.2023 Drawing No.- KDP/DPR/STR/BR/KALINJOR-2/DD- 9 Sheet No. 2 / 2



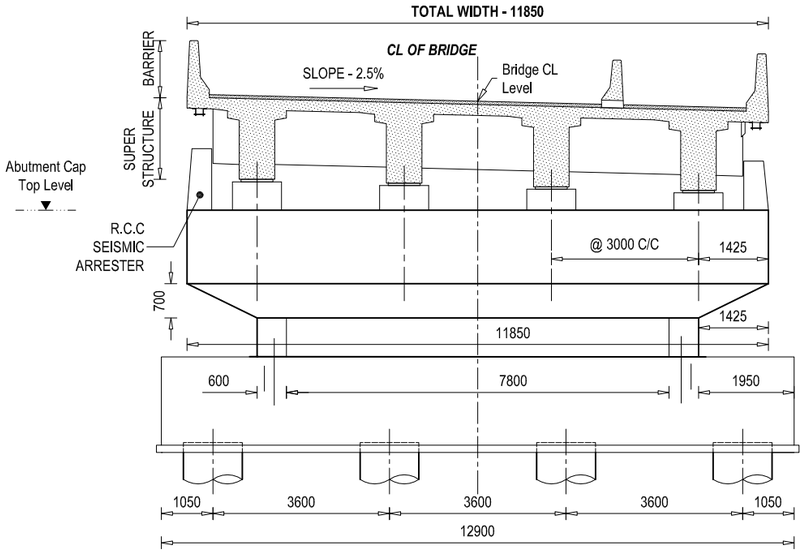
ELEVATION VIEW OF PIER

SCALE - 1: 125



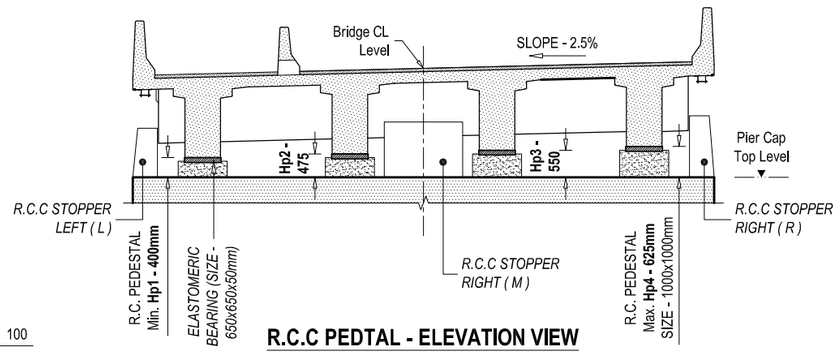
SECTIONAL VIEW AT C1 - C1

SCALE - 1: 125



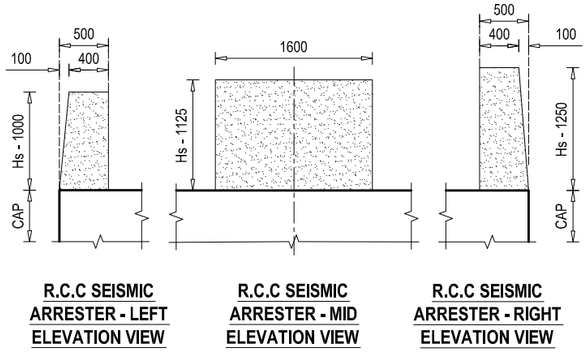
SECTIONAL VIEW AT C2 - C2

SCALE - 1: 125



R.C.C PEDTAL - ELEVATION VIEW

SCALE - 1 : 125



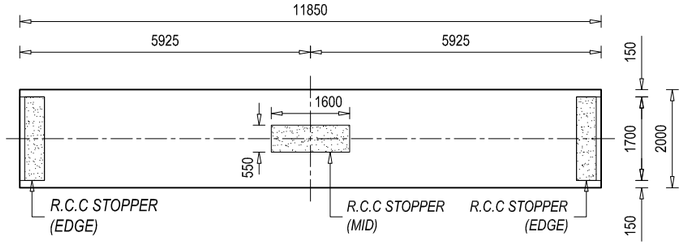
R.C.C SEISMIC ARRESTER - LEFT ELEVATION VIEW

R.C.C SEISMIC ARRESTER - MID ELEVATION VIEW

R.C.C SEISMIC ARRESTER - RIGHT ELEVATION VIEW

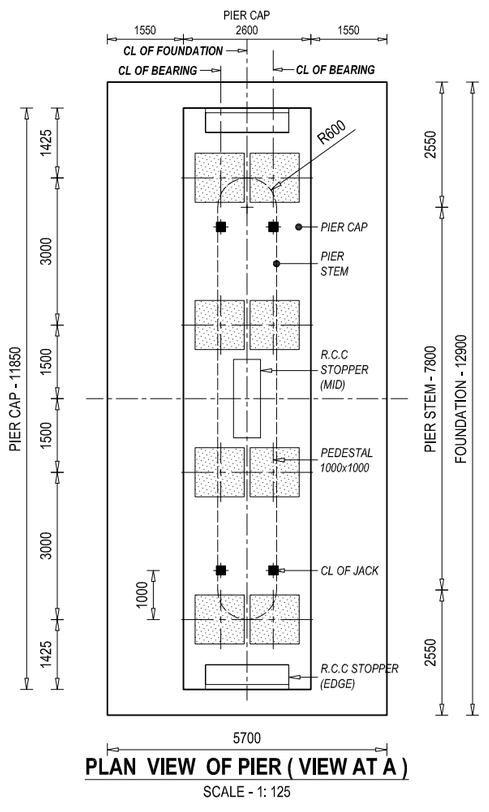
DETAIL AT PEDESTAL

SCALE - 1 : 75



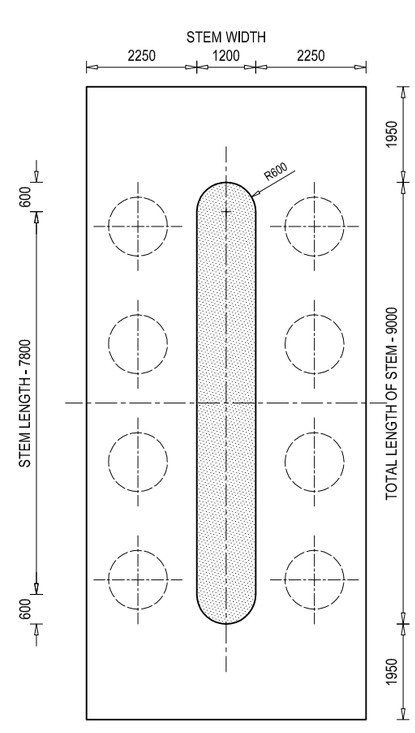
DETAIL AT R.C.C SEISMIC ARRESTER

SCALE - 1 : 150



PLAN VIEW OF PIER (VIEW AT A)

SCALE - 1: 125

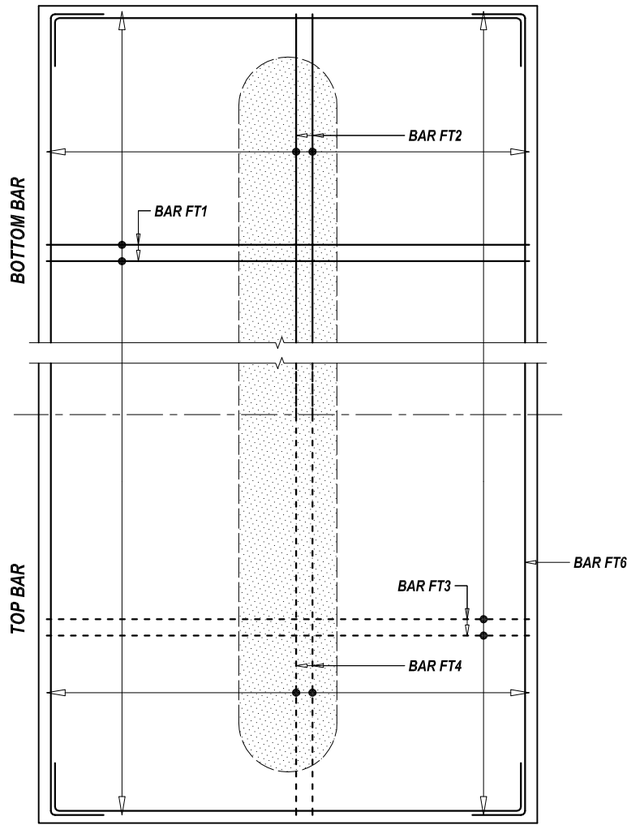


SECTIONAL VIEW AT B - B

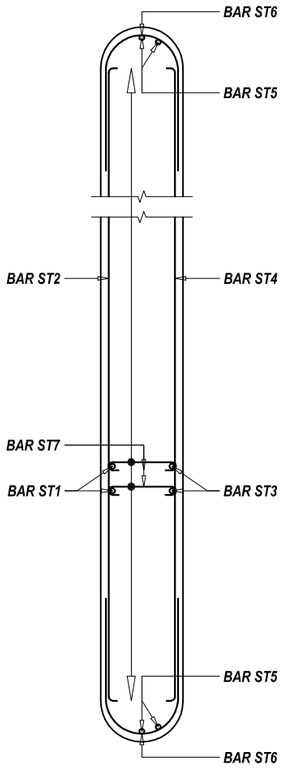
SCALE - 1 : 125

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

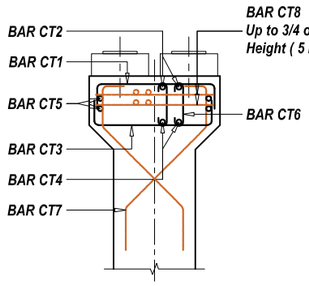
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS				
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya 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. RABINDRA ADHIKARI Nec.No. 6431 CE/CL"A"	Signature	Drawing Name: PIER DETAILS OF BRIDGE OVER RIVER KALINJOR-2 Reference Drawings: KDP/DPR/STR/BR/BHAPSI/DD-12
			Checked By	Mr. SANJIB MITRA	Signature	Scale: AS SHOWN Chainage: 292+705
			Approved By	Mr. HARI KRISHNA BHAVSAR	Signature	Date: 01.09.2023 Drawing No.-KDP/DPR/STR/BR/KALINJOR-2/DD-10 Sheet No.1/1



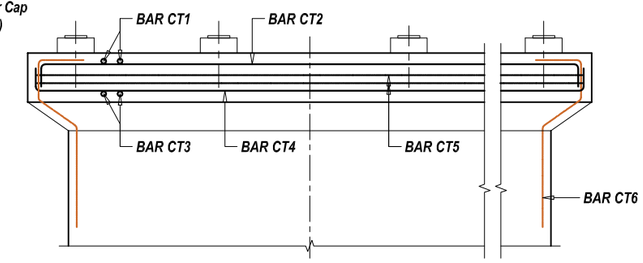
PLAN VIEW



PLAN VIEW



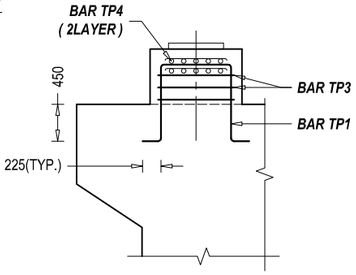
ELEVATION VIEW



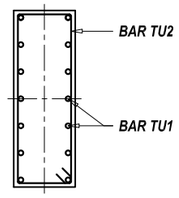
FRONT VIEW

BAR DETAIL AT PIER CAP

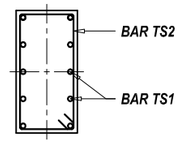
SCALE - 1 : 75



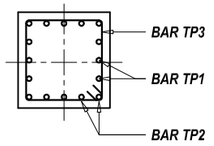
SECTIONAL SIDE VIEW



SECTIONAL PLAN VIEW



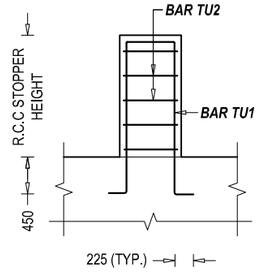
SECTIONAL PLAN VIEW



SECTIONAL PLAN VIEW

BAR DETAIL AT PEDESTAL

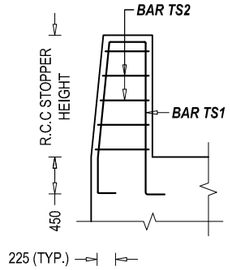
SCALE - 1 : 50



SECTIONAL ELEVATION VIEW

R.C.C STOPPER AT MID

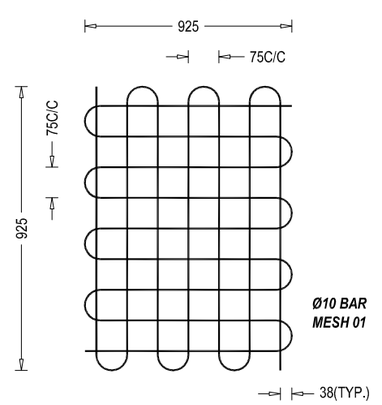
SCALE - 1 : 50



SECTIONAL ELEVATION VIEW

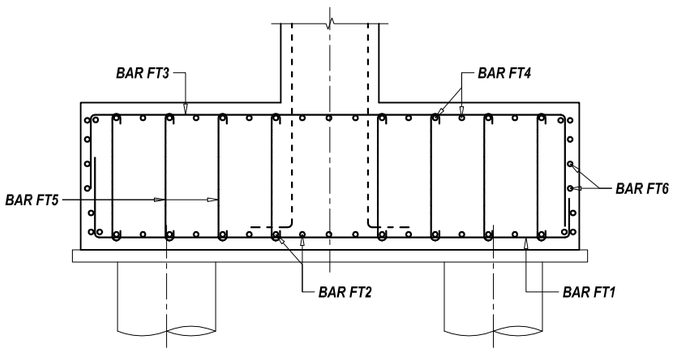
R.C.C STOPPER AT EDGE

SCALE - 1 : 50



REINFORCEMENT DETAILS OF BEARING MESH

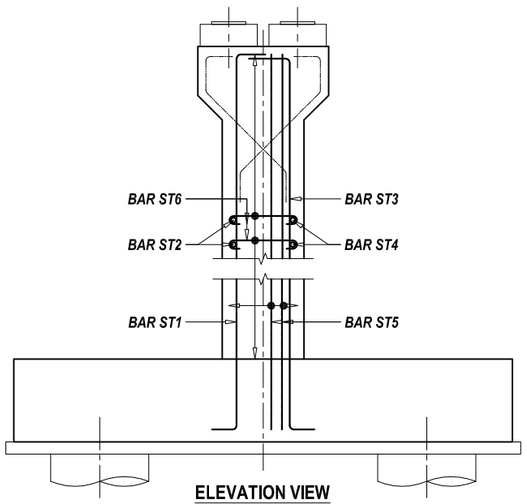
SCALE - 1 : 50



ELEVATION VIEW

BAR DETAIL OF FOUNDATION

SCALE - 1 : 75



ELEVATION VIEW

BAR DETAIL AT PIER STEM

SCALE - 1 : 75

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

TOP BAR OR
NEAR FACE REINFORCEMENT

BOTTOM BAR OR
FAR FACE REINFORCEMENT

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. RABINDRA ADHIKARI Nec.No. 6431 CIVIL"A"	Signature	Drawing Name PIER BAR DETAIL OF BRIDGE OVER RIVER BHAPSI	Scale: AS SHOWN Chainage: 292+705	Date: 01.09.2023 Drawing No.-KDP/DPR/STR/BR/KALINJOR-2/DD-11 Sheet No.1/1
			Checked By	Mr. SANJIB MITRA	Signature			
			Approved By	Mr. HARI KRISHNA BHAVSAR	Signature	Reference Drawings KDP/DPR/STR/BR/BHAPSI/DD-12		

BAR BENDING SCHEDULE OF PIER CAP

S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	CT1	750 2450 750	20		3.950	50	2.469	487.65
2	CT2	750 11700 750	20		13.200	18	2.469	586.67
3	CT3	750 2450 750	20		3.950	50	2.469	487.65
4	CT4	750 11700 750	20		13.200	18	2.469	586.67
5	CT5	11700 2450 100	16	150	28.500	11	1.580	495.41
6	CT6	100 1050 100	16	X: 280 Y: 480	1.550	225	1.580	551.11
7	CT7	100 1350 100	16	150	1.550	137	1.580	335.57
8	CT8	11700 2450 @ 200	16		296.650	5 Layer	1.580	2343.90
							TOTAL (KG) :	5874.63

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 5550 900	25		7.350	98	3.858	2778.94
2	FT2	900 12750 900	25		14.550	50	3.858	2806.71
3	FT3	900 5550 900	25		7.350	98	3.858	2778.94
4	FT4	900 12750 900	25		14.550	50	3.858	2806.71
5	FT5	100 1650 100	12	Long. 225 Trans. 250	1.85	1258	0.889	2068.71
6	FT6	5500 12700 150	16	200	36.700	8	1.580	463.96
							TOTAL (KG) :	13703.97

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	975 400 1270 300 150 150	16	150	3.245	13	1.580	66.66
2	TS2-L	400 1650 100	12	150	4.300	7	0.889	26.76
							TOTAL (KG) :	93.42

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	1229 400 1525 300 150 150	16	150	3.754	13	1.580	77.12
2	TS2-R	400 1650 100	12	150	4.300	9	0.889	34.40
							TOTAL (KG) :	111.52

BAR BENDING SCHEDULE OF RCC SEISMIC ARRESTER - MID

S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	TU1	1398 450 1398 150 150	16	150	3.546	13	1.580	72.85
2	TU2	450 1550 100	12	150	4.200	8	0.889	29.87
							TOTAL (KG) :	102.71

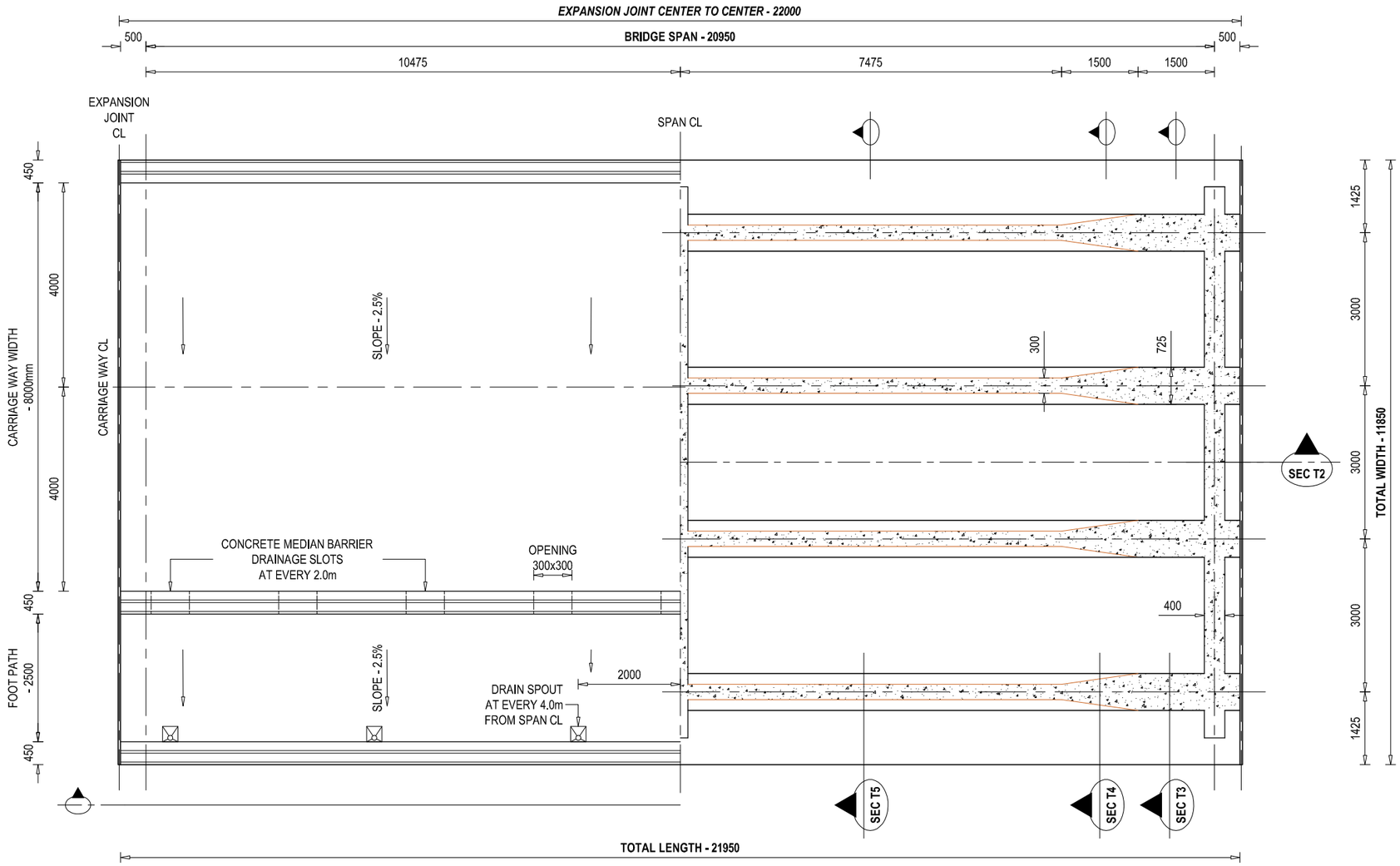
BAR BENDING SCHEDULE OF PIER STEM

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 7020 900	25		8.220	50	3.858	1585.65
2	ST2	100 8850 100	16	200	9.050	20	1.580	286.02
3	ST3	300 7020 900	25		8.220	50	3.858	1585.65
4	ST4	100 8850 100	16	200	9.050	20	1.580	286.02
5	ST5	720 720 3770	25		8.220	12	3.858	380.56
5	ST6	720 3770	16	200	5.210	20	1.580	164.66
6	ST7	100 1050 100	12	Ver. 150 Hor. 400	1.250	598	0.889	664.44
							TOTAL (KG) :	4953.01

BAR BENDING SCHEDULE OF PEDESTAL

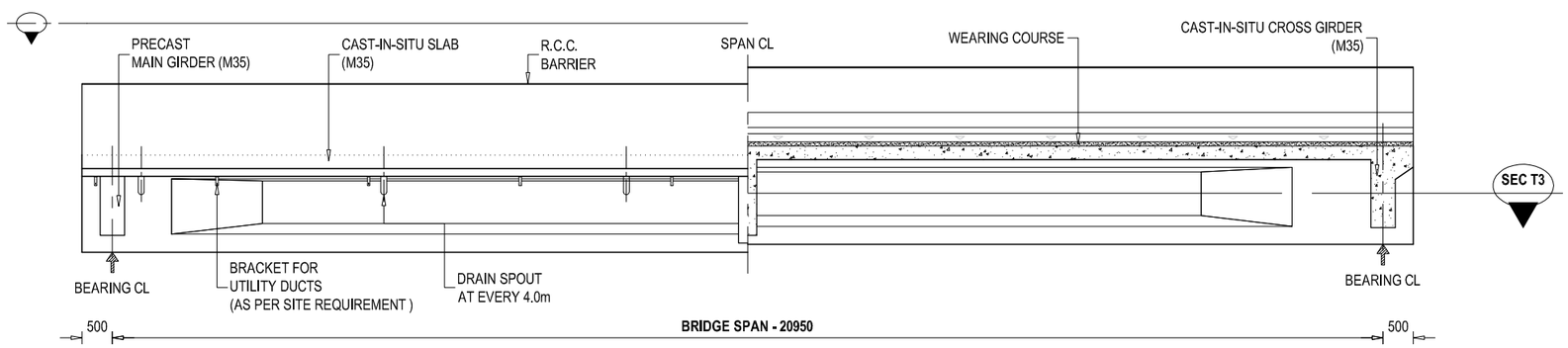
S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH	No. OF BARS	UNIT WEIGHT	TOTAL WEIGHT
1	TP1	150 950 Avg. 650	16	150	2.850	8	1.580	36.03
2	TP2	150 950 Avg. 650	16	150	2.850	8	1.580	36.03
3	TP3	950 950 100	16	150	4.000	3	1.580	18.96
4	TP4	925 925 @ 75	10		24.675	2	0.617	30.46
							TOTAL (KG) :	121.49
							TOTAL NOS OF PEDESTAL :	4.00
							TOTAL WEIGHT (KG) :	485.94

EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS			Drawing Name: PIER BAR BENDING SCHEDULE OF BRIDGE OVER RIVER KALINJOR-2
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-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. RABINDRA ADHIKARI, Nec.No. 6431 CIVIL 'A'	Reference Drawings
			Checked By	Mr. SANJIB MITRA	Scale: AS SHOWN Chainage: 292+705
			Approved By	Mr. HARI KRISHNA BHAVSAR	Date: 01.09.2023 Drawing No.-KDP/DPR/STR/BR/KALINJOR-2/DD- 12 Sheet No. 1/1



HALF SECTIONAL PLAN VIEW OF SUPERSTRUCTURE AT SEC T1

SCALE - 1 : 100 @ A3 PAPER

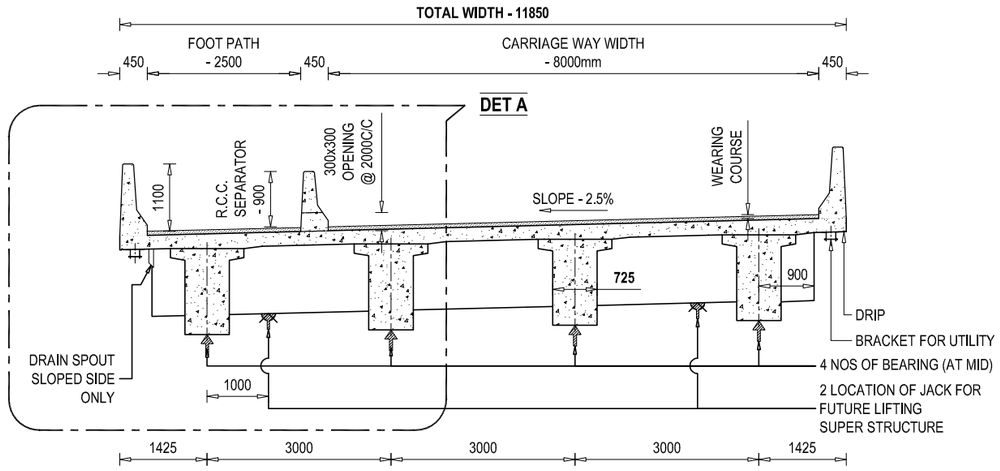


NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/KALINJOR-2/DD-4

HALF ELEVATION SECTIONAL VIEW OF SUPERSTRUCTURE AT SEC T2

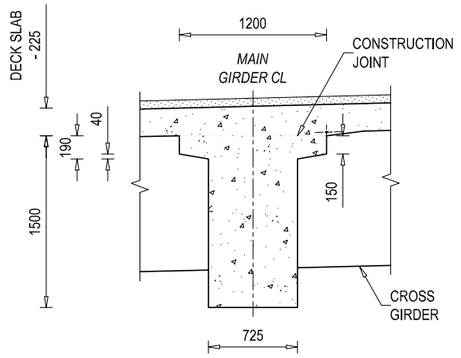
SCALE - 1 : 100 @ A3 PAPER

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. RABINDRA ADHIKARI Nec.No. 6431 CIVIL'A'	Signature	Drawing Name SUPER STRUCTURE DETAILS OF BRIDGE OVER RIVER KALINJOR-2	Scale: AS SHOWN Date: 18.06.2023
			Checked By	Mr. SANJIB MITRA	Signature	Reference Drawings -	Chainage: 292+705 Drawing No.- KDP/DPR/STR/BR/KALINJOR-2/DD- 13
			Approved By	Mr. HARI KRISHNA BHAVSAR	Signature		Sheet No. 1/2



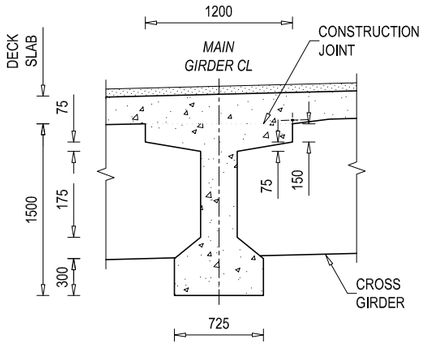
SECTIONAL VIEW AT T3

SCALE - 1 : 100 @ A3 PAPER



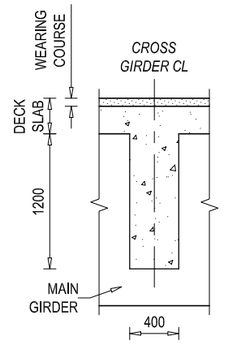
LONGITUDINAL GIRDER - SECTIONAL DETAIL AT END

SCALE - 1 : 50 @ A3 PAPER



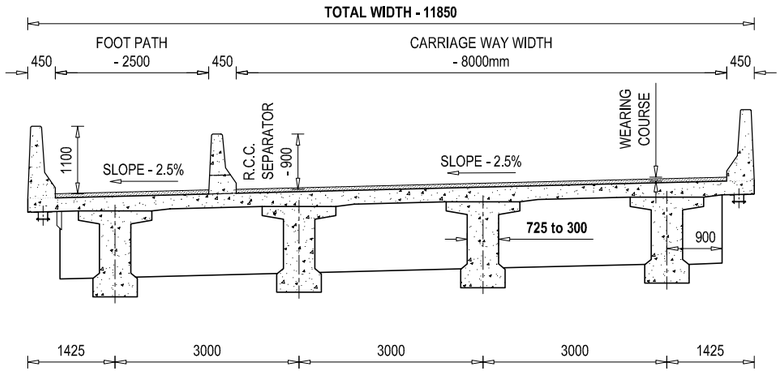
LONGITUDINAL GIRDER - SECTIONAL DETAIL AT MID

SCALE - 1 : 50 @ A3 PAPER



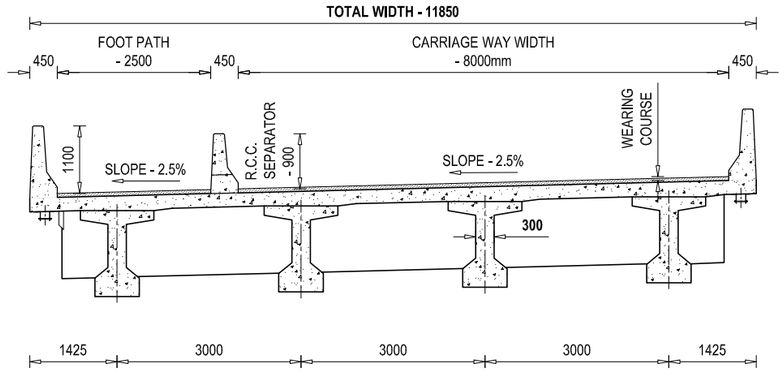
END CROSS GIRDER - SECTIONAL DETAIL

SCALE - 1 : 50



SECTIONAL VIEW AT T4

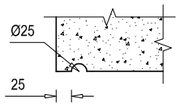
SCALE - 1 : 100 @ A3 PAPER



SECTIONAL VIEW AT T5

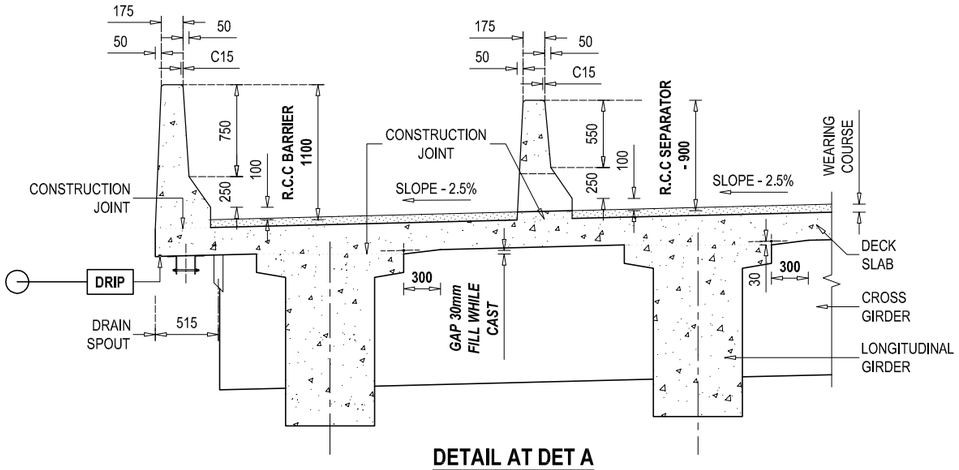
SCALE - 1 : 100 @ A3 PAPER

NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/KALINJOR-2/DD-4



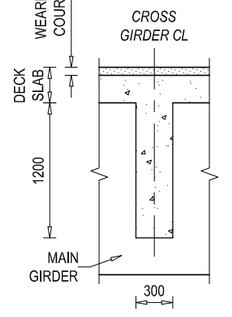
DETAIL AT DRIP

SCALE - 1 : 10



DETAIL AT DET A

SCALE - 1 : 50



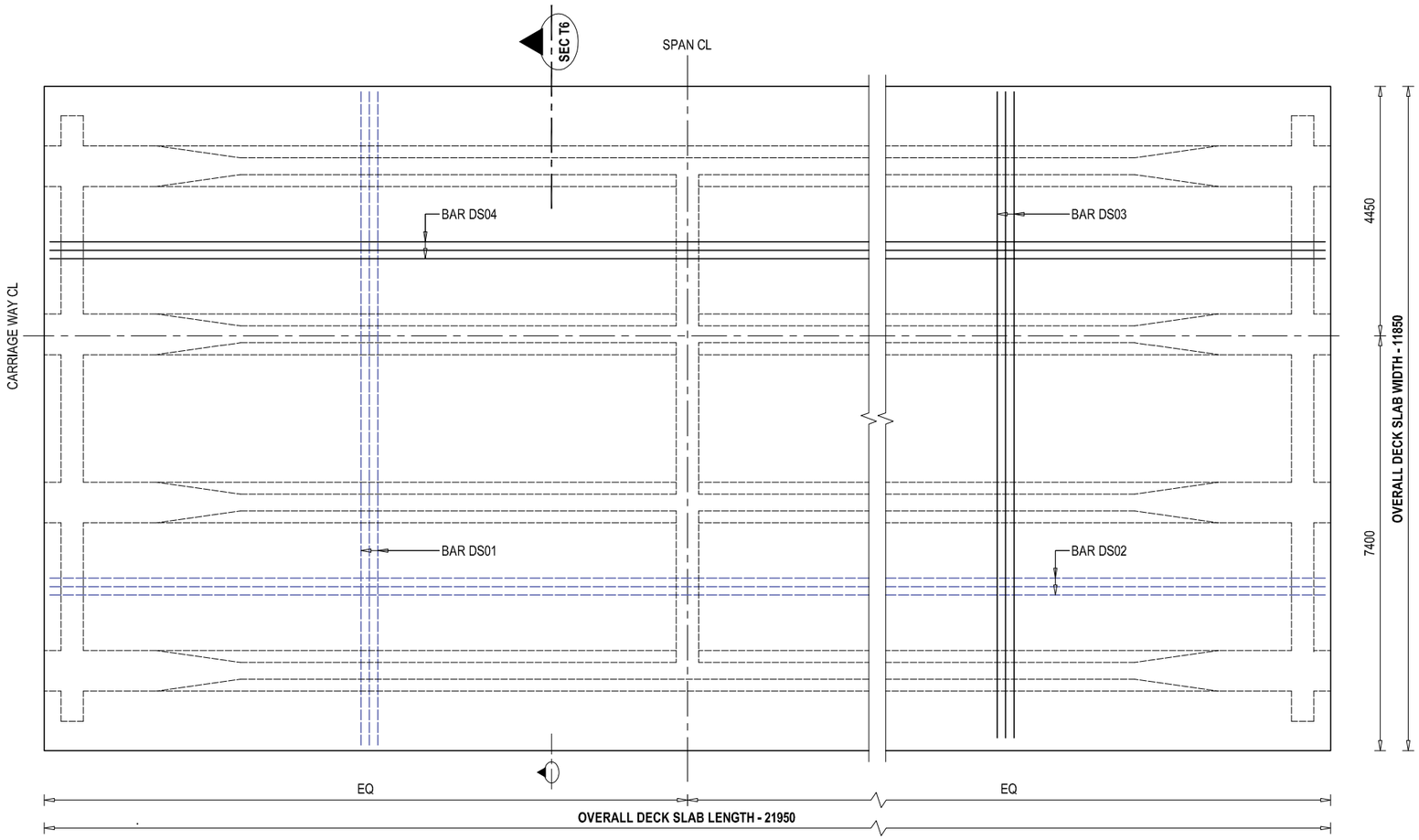
MID CROSS GIRDER - SECTIONAL DETAIL

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. RABINDRA ADHIKARI Nec.No. 6431 CIVIL'A'	Signature	Drawing Name SUPER STRUCTURE DETAILS OF BRIDGE OVER RIVER KALINJOR-2	Scale: AS SHOWN
			Checked By	Mr. SANJIB MITRA	Signature	Reference Drawings	Chainage: 292+705
			Approved By	Mr. HARI KRISHNA BHAVSAR	Signature		Sheet No.2/2

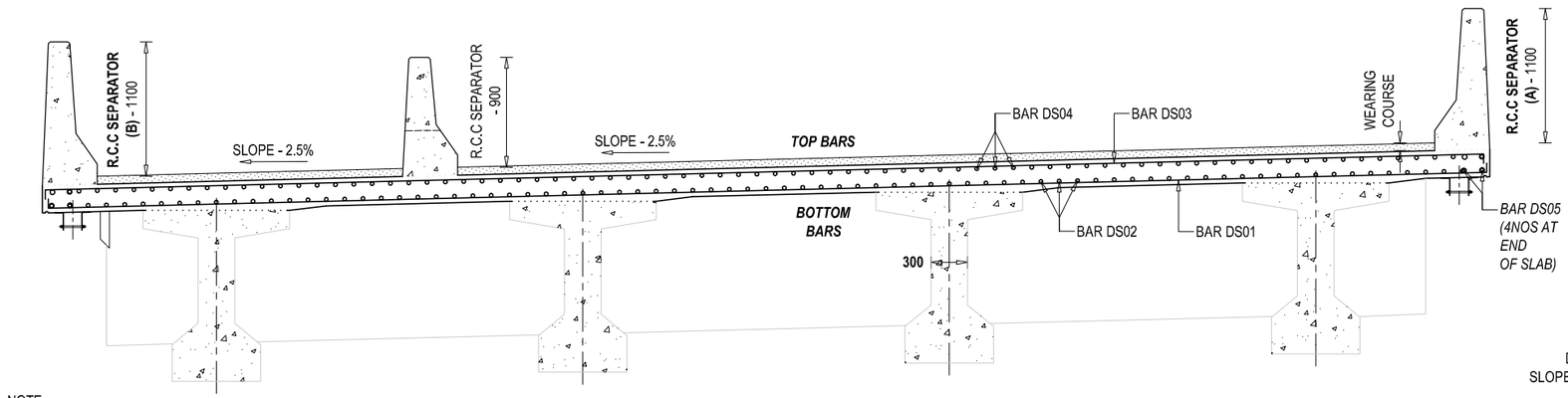
Date: 18.06.2023

Drawing No.- KDP/DPR/STR/BR/KALINJOR-2/DD- 13



REINFORCEMENT DETAILS OF DECK SLAB - PLAN VIEW

SCALE - 1 : 100



NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/KALINJOR-2/DD-4

REINFORCEMENT DETAILS OF DECK SLAB - SECTIONAL VIEW AT T6

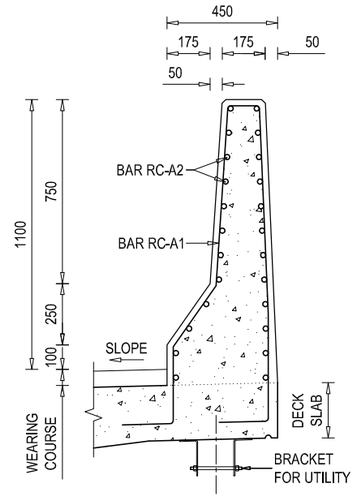
SCALE - 1 : 50

LEGEND FOR REINFORCEMENT BAR

CODE	FULL 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	**	- ***

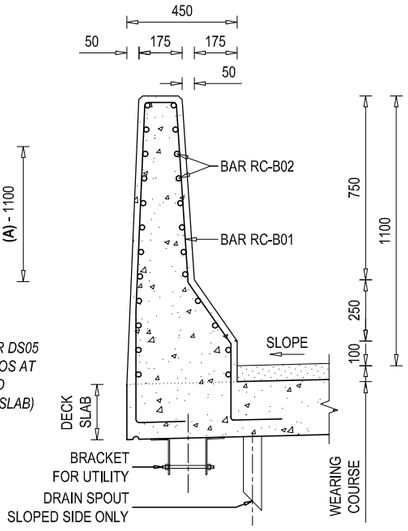
TOP BAR OR NEAR FACE REINFORCEMENT

BOTTOM BAR OR FAR FACE REINFORCEMENT



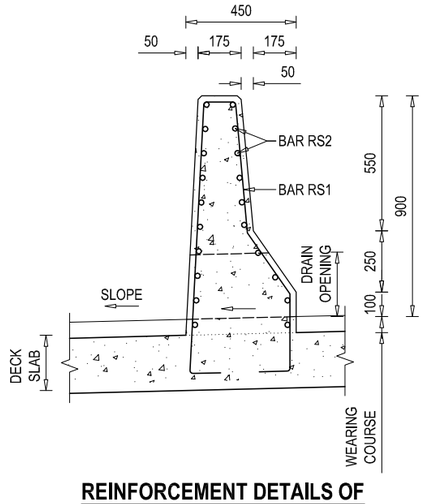
REINFORCEMENT DETAILS OF R.C.C BARRIER (A)- SECTIONAL VIEW

SCALE - 1 : 25



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

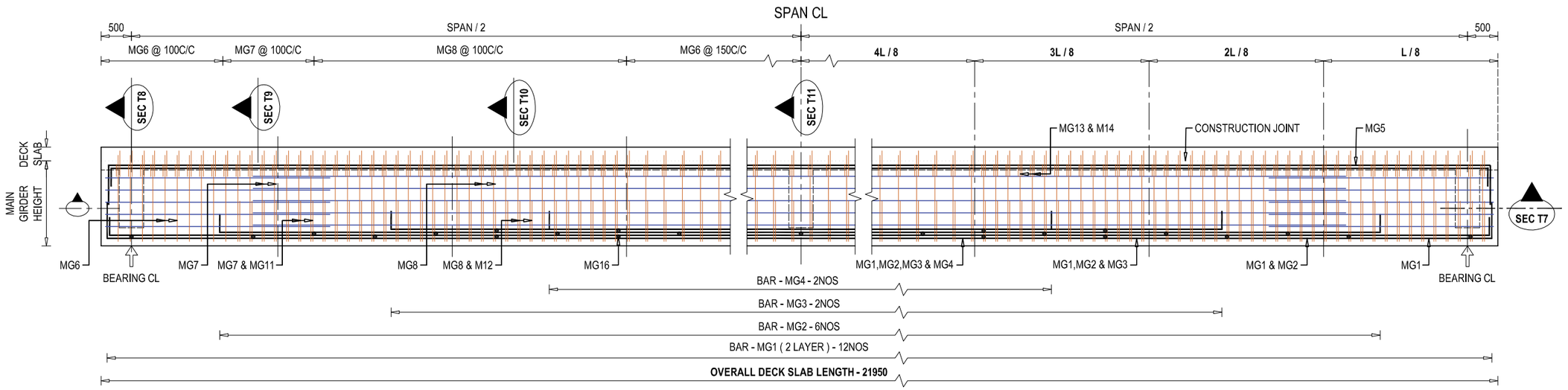
SCALE - 1 : 25



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

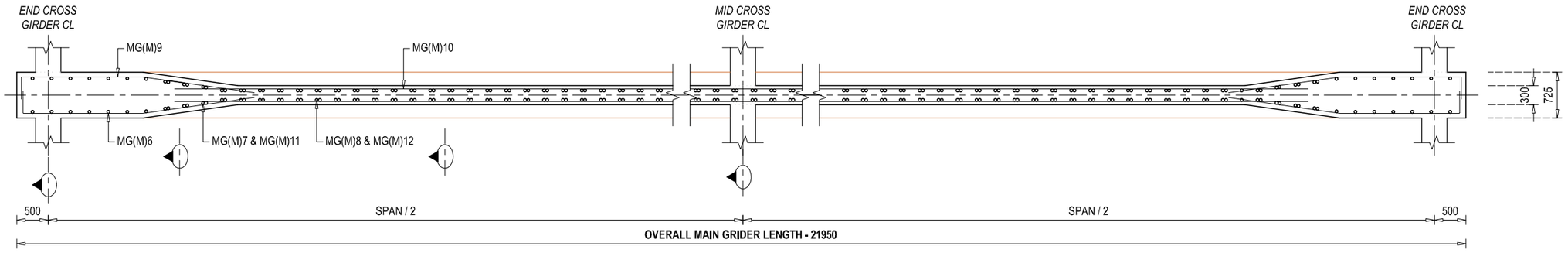
SCALE - 1 : 25

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. RABINDRA ADHIKARI Nec.No. 6431 CIVIL'A'	Signature	Drawing Name: DECK SLAB DETAILS OF BRIDGE OVER RIVER KALINJOR-2 Reference Drawings: KDP/DPR/STR/BR/KALINJOR-2/DD-17	Scale: AS SHOWN Chainage: 292+705	Date: 18.06.2023 Drawing No.- KDP/DPR/STR/BR/KALINJOR-2/DD- 14 Sheet No. 1/1
			Checked By	Mr. SANJIB MITRA	Signature			
			Approved By	Mr. HARI KRISHNA BHAVSAR	Signature			



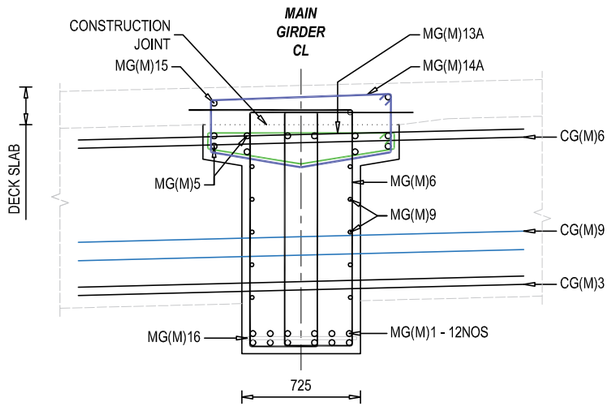
REINFORCEMENT DETAILS OF MAIN GIRDER - SECTIONAL ELEVATION VIEW

SCALE - 1 : 75



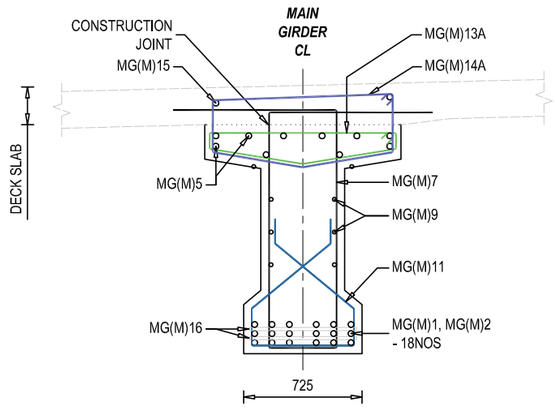
REINFORCEMENT DETAILS OF MAIN GIRDER (MID) - SECTIONAL PLAN VIEW AT T7(M)

SCALE - 1 : 75



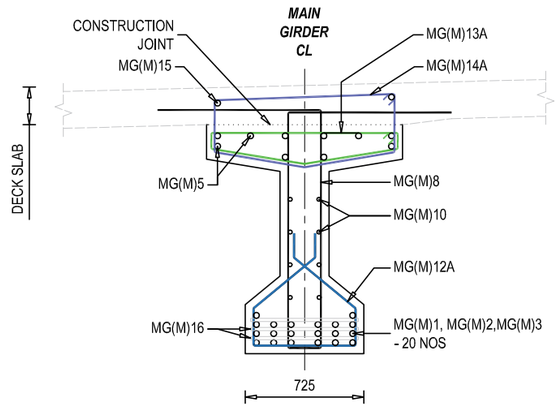
REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T8

SCALE - 1 : 50



REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T9

SCALE - 1 : 50

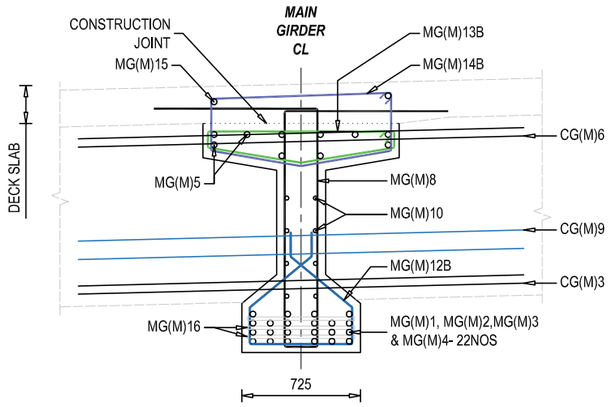


REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T10

SCALE - 1 : 50

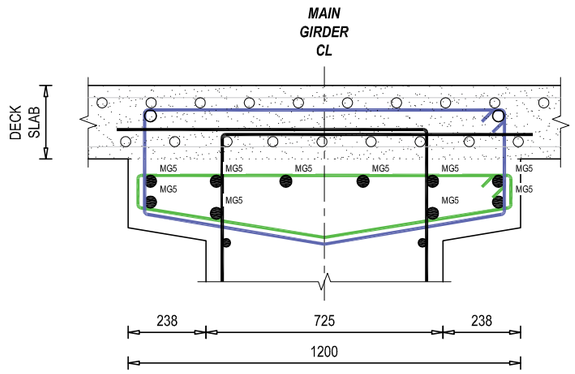
NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/KALINJOR-2/DD-4

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. RABINDRA ADHIKARI Nec.No. 6431 CIVIL'A'	Signature	Drawing Name MAIN GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER KALINJOR-2 Reference Drawings KDP/DPR/STR/BR/KALINJOR-2/DD-17	Scale: AS SHOWN Chainage: 292+705
			Checked By	Mr. SANJIB MITRA	Signature		Date: 18.06.2023 Drawing No.- KDP/DPR/STR/BR/KALINJOR-2/DD- 15 Sheet No. 1/2
			Approved By	Mr. HARI KRISHNA BHAVSAR	Signature		



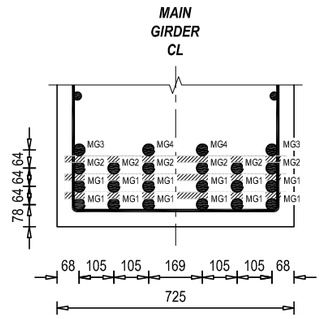
REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T11

SCALE - 1 : 50



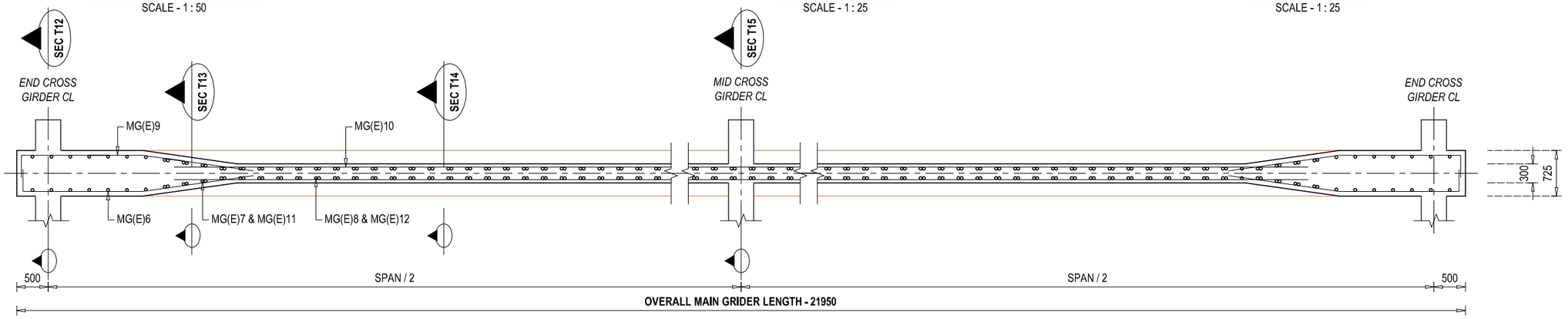
TOP BAR WEB REINFORCEMENT DETAILS OF MAIN GIRDER

SCALE - 1 : 25



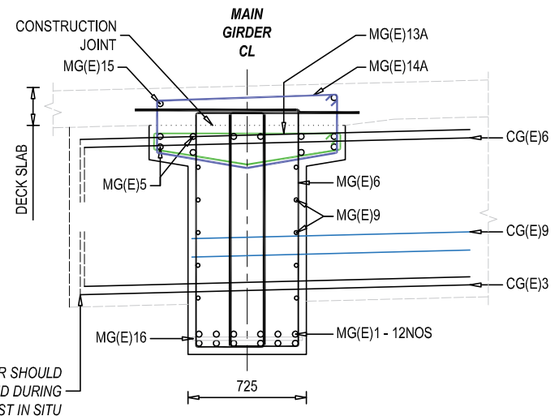
BOTTOM BAR WEB REINFORCEMENT DETAILS OF MAIN GIRDER

SCALE - 1 : 25



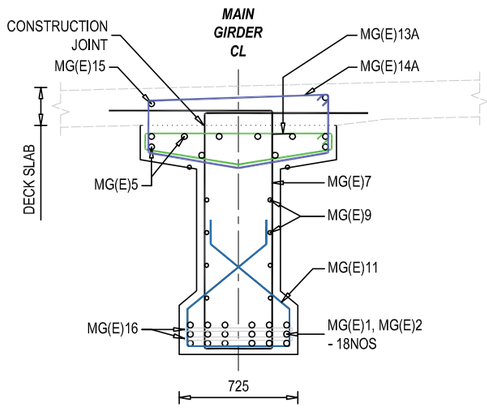
REINFORCEMENT DETAILS OF MAIN GIRDER (END) - SECTIONAL PLAN VIEW AT T7(E)

SCALE - 1 : 75



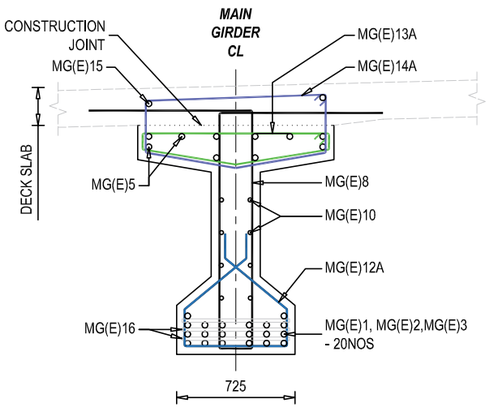
REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T12

SCALE - 1 : 50



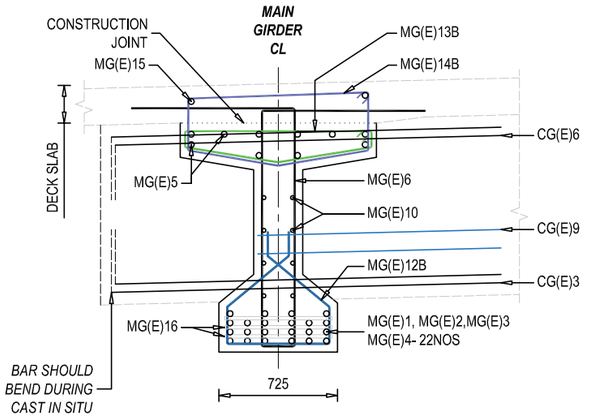
REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T13

SCALE - 1 : 50



REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T14

SCALE - 1 : 50



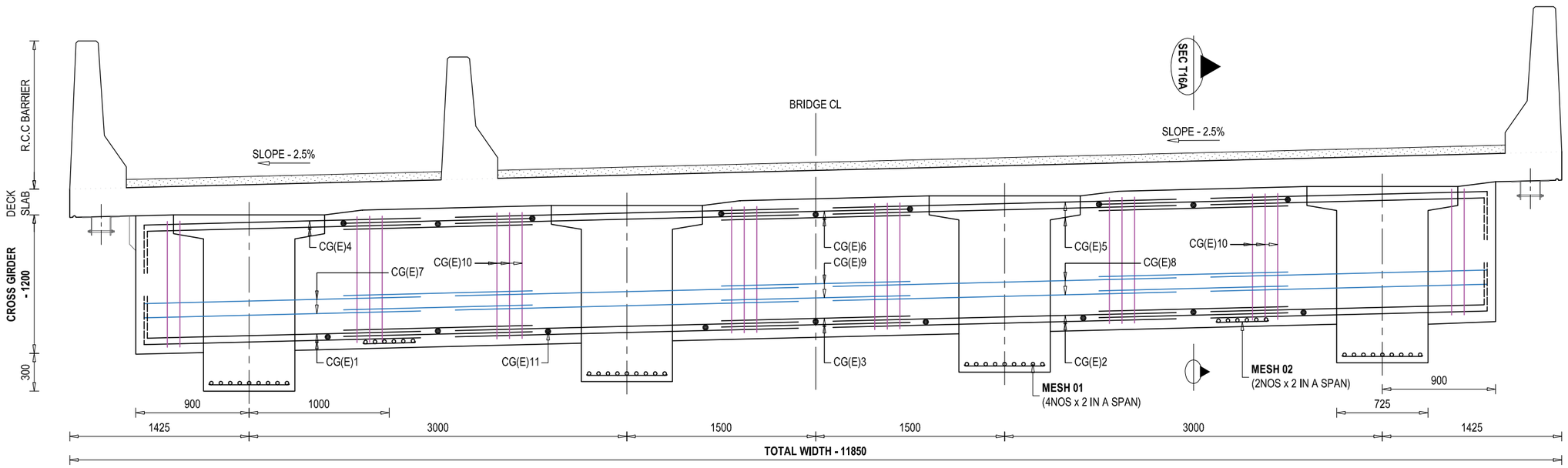
REINFORCEMENT DETAILS OF MAIN GIRDER SECTIONAL VIEW AT T15

SCALE - 1 : 50

NOTE
READ THIS DRAWING IN CONJUNCTION WITH DRG NO. KDP/DPR/STR/BR/KALINJOR-2/DD-4

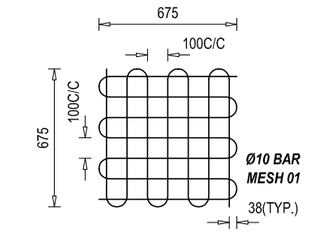
SCALE - 1 : 50

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. RABINDRA ADHIKARI Nec.No. 6431 CIVIL'A'	Signature	Drawing Name MAIN GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER KALINJOR-2	Scale: AS SHOWN Date: 18.06.2023
			Checked By	Mr. SANJIB MITRA	Signature	Reference Drawings KDP/DPR/STR/BR/KALINJOR-2/DD-17	Chainage: 292+705 Drawing No.- KDP/DPR/STR/BR/KALINJOR-2/DD- 15
			Approved By	Mr. HARI KRISHNA BHAVSAR	Signature		Sheet No. 2/2



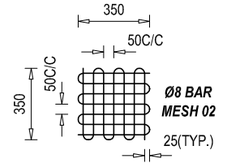
REINFORCEMENT DETAILS OF END CROSS GIRDER

SCALE - 1 : 50



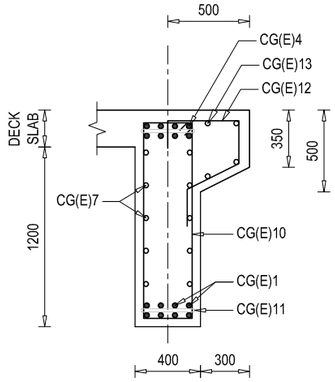
REINFORCEMENT DETAILS OF BEARING MESH

SCALE - 1 : 50



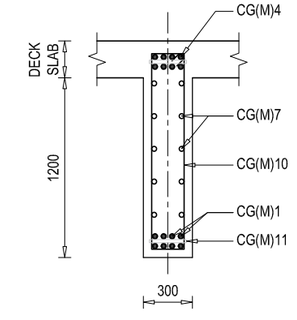
REINFORCEMENT DETAILS OF LIFTING MESH

SCALE - 1 : 50



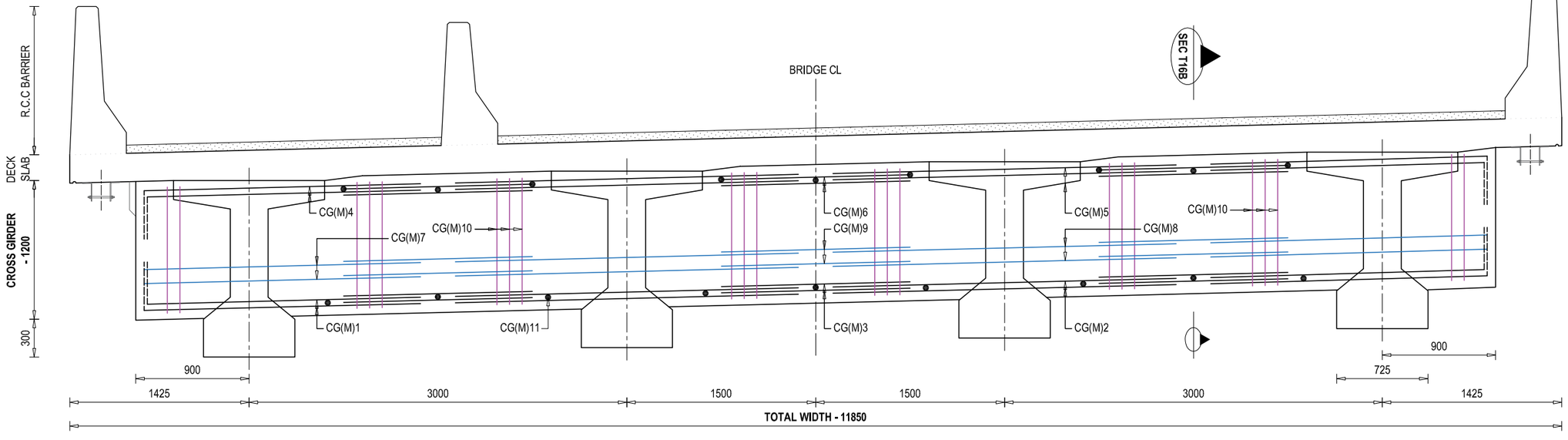
SECTIONAL REINFORCEMENT DETAILS OF END CROSS GIRDER - SEC T16A

SCALE - 1 : 50



SECTIONAL REINFORCEMENT DETAILS OF MID CROSS GIRDER - SEC T16B

SCALE - 1 : 50



REINFORCEMENT DETAILS OF MID CROSS GIRDER

SCALE - 1 : 50

NOTE
READ THIS DRAWING IN CONJUNCTION WITH
DRG NO. KDP/DPR/STR/BR/KALINJOR-2/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. RABINDRA ADHIKARI Nec.No. 6431 CIVIL'A'	Signature	Drawing Name CROSS GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER KALINJOR-2	Scale: AS SHOWN Date: 18.06.2023
			Checked By	Mr. SANJIB MITRA	Signature	Reference Drawings KDP/DPR/STR/BR/KALINJOR-2/DD-17	Chainage: 292+705 Drawing No.- KDP/DPR/STR/BR/KALINJOR-2/DD- 16
			Approved By	Mr. HARI KRISHNA BHAVSAR	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 — 11770 — 150	16	150	12.070	80	1.580	1525.89
2	DS02	150 — 21870 — 150	10	150	22.170	143	0.617	1956.98
3	DS03	150 — 11770 — 150	16	150	12.070	147	1.580	2803.82
5	DS04	150 — 21870 — 150	10	150	22.170	143	0.617	1956.98
6	DS05	21870	16		21.870	8	1.580	276.48
							TOTAL (KG) :	8520.15

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	735, 130, 305, 850, 200, 305, 200, 445	16	150	3.170	147	1.580	736.38
2	RC-A2	150 — 21870 — 150	10	150	22.170	20	0.617	273.70
							TOTAL (KG) :	1010.08

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, 735, 850, 305, 445, 200, 305, 200	16	150	3.170	147	1.580	736.38
2	RC-B2	150 — 21870 — 150	10	150	22.170	20	0.617	273.70
							TOTAL (KG) :	1010.08

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

S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	RS1	130, 535, 1110, 305, 150, 150, 315	16	150	2.695	147	1.580	626.04
2	RS2	150 — 21870 — 150	10	150	22.170	17	0.617	232.65
							TOTAL (KG) :	858.69

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 — 21870 — 300	32		22.470	12	6.321	1704.39
2	MG(E)2	300 — 19023 — 300	32		19.623	6	6.321	744.22
3	MG(E)3	300 — 13535 — 300	32		14.135	2	6.321	178.69
4	MG(E)4	300 — 8048 — 300	32		8.648	2	6.321	109.33
5	MG(E)5	300 — 21870 — 300	12		22.470	10	0.889	199.73
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	96	0.889	399.36
9	MG(E)8B	480, 220, 1530	12	150	4.680	38	0.889	158.08
10	MG(E)9	370, 1920, 2000	12	200	4.290	32	0.889	122.03
11	MG(E)10	18950	12	200	18.950	16	0.889	269.51
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	96	0.889	263.25
14	MG(E)12B	700, 300, 645, 220	12	150	3.085	38	0.889	104.20
15	MG(E)13A	1120, 70, 840, 50 x 2	12	100	3.040	166	0.889	448.57
16	MG(E)13B	1120, 70, 840, 50 x 2	12	150	3.040	38	0.889	102.68
17	MG(E)14A	1120, 50 x 2, 270, 840	12	100	3.440	166	0.889	507.59
18	MG14B	1120, 50 x 2, 270, 840	12	150	3.440	38	0.889	116.20
19	MG(E)15	21870	16		21.870	2	1.580	69.12
19	MG(E)16	645	32	1500	0.645	45	6.321	183.47
							TOTAL (KG) :	6271.75

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 — 21870 — 300	32		22.470	12	6.321	1704.39
2	MG(M)2	300 — 19023 — 300	32		19.623	6	6.321	744.22
3	MG(M)3	300 — 13535 — 300	32		14.135	2	6.321	178.69
4	MG(M)4	300 — 8048 — 300	32		8.648	2	6.321	109.33
5	MG(M)5	300 — 21870 — 300	12		22.470	10	0.889	199.73
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	96	0.889	399.36
9	MG(M)8B	480, 220, 1530	12	150	4.680	38	0.889	158.08
10	MG(M)9	370, 1920, 2000	12	200	4.290	32	0.889	122.03
11	MG(M)10	18950	12	200	18.950	16	0.889	269.51
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	96	0.889	263.25
14	MG(M)12B	700, 300, 645, 220	12	150	3.085	38	0.889	104.20
15	MG(M)13A	1120, 70, 840, 50 x 2	12	100	3.040	166	0.889	448.57
16	MG(M)13B	1120, 70, 840, 50 x 2	12	150	3.040	38	0.889	102.68
17	MG(M)14A	1120, 50 x 2, 270, 840	12	100	3.440	166	0.889	507.59
18	MG14B	1120, 50 x 2, 270, 840	12	150	3.440	38	0.889	116.20
19	MG(M)15	21870	16		21.870	2	1.580	69.12
19	MG(M)16	645	32	1500	0.645	45	6.321	183.47
							TOTAL (KG) :	6271.75

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 Kolkata, India In Association With Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited	Designed By	Mr. RABINDRA ADHIKARI Nec.No. 6431 CIVIL'A'	Signature	Drawing Name: SUPER STRUCTURE BAR BENDING DETAILS OF BRIDGE OVER RIVER KALINJOR-2 Reference Drawings: -
			Checked By	Mr. SANJIB MITRA	Signature	Scale: AS SHOWN Chainage: 292+705
			Approved By	Mr. HARI KRISHNA BHAVSAR	Signature	Date: 18.06.2023 Drawing No.- KDP/DPR/STR/BR/KALINJOR-2/DD- 17 Sheet No. 1/2

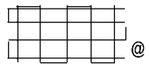
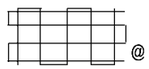
BAR BENDING SCHEDULE OF END CROSS GIRDER (1SPAN)

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 | 2125	20		2.425	8	2.469	47.90
2	CG(E)2	2625	20		2.625	8	2.469	51.85
3	CG(E)3	1975	20		1.975	8	2.469	39.01
4	CG(E)4	2125 / 300 |	20		2.425	8	2.469	47.90
5	CG(E)5	2625	20		2.625	8	2.469	51.85
6	CG(E)6	1975	20		1.975	8	2.469	39.01
7	CG(E)7	2125	12	150	2.125	8	0.889	15.11
8	CG(E)8	2625	12	150	2.625	8	0.889	18.67
9	CG(E)9	1975	12	150	1.975	8	0.889	14.04
10	CG(E)10	50 x 2, 320, 1320	12	200	1.740	39	0.889	60.32
11	CG(E)11	320	20	1000	0.320	18	2.469	14.22
12	CG(E)12	800, 260, 300, 390	16	150	1.750	79	1.580	218.47
13	CG(E)13	11770	12		11.770	6	0.889	62.77
							TOTAL (KG) :	681.14

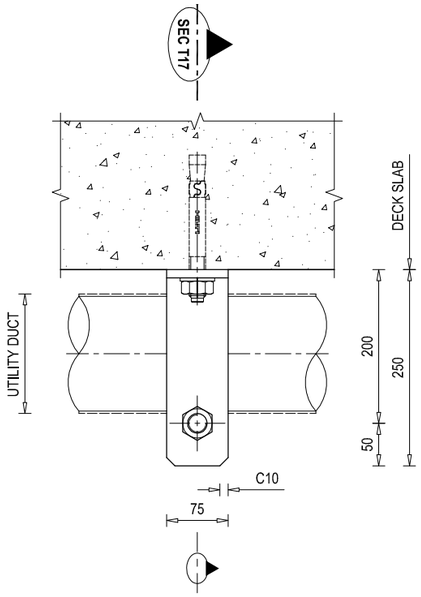
BAR BENDING SCHEDULE OF MID CROSS GIRDER (1SPAN)

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 | 2125	20		1.920	8	2.469	37.93
2	CG(M)2	2625	20		2.945	8	2.469	58.17
3	CG(M)3	1975	20		2.295	8	2.469	45.33
4	CG(M)4	2125 / 300 |	20		1.920	8	2.469	37.93
5	CG(M)5	2625	20		2.625	8	2.469	51.85
6	CG(M)6	1975	20		1.975	8	2.469	39.01
7	CG(M)7	2125	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	1975	12	150	1.975	8	0.889	14.04
10	CG(M)10	50 x 2, 320, 1320	12	200	1.740	39	0.889	60.32
11	CG(M)11	320	20	1000	0.320	18	2.469	14.22
							TOTAL (KG) :	389.00

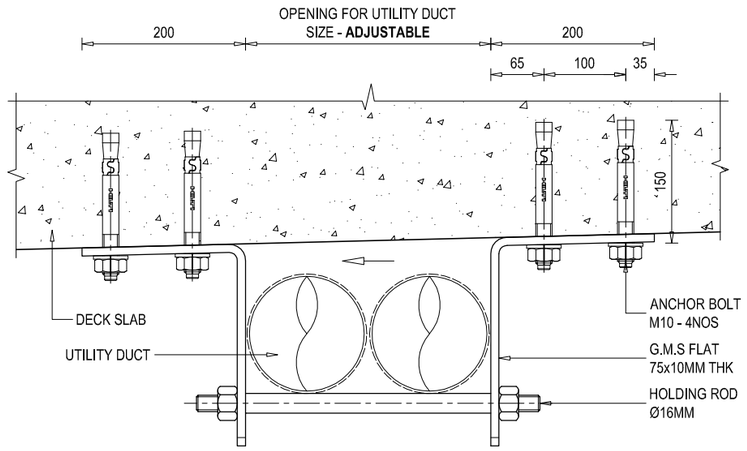
BAR BENDING SCHEDULE OF MESH (1SPAN)

S.No.	BAR MARK	DESCRIPTION OF BAR	BAR DIA.(MM)	SPACING (MM)	BAR LENGTH (M)	No. OF BARS	UNIT WEIGHT (Kg/m)	TOTAL WEIGHT (Kg)
1	MESH 01	675 / 675  @ 100	10		9.450	8	0.617	46.67
2	MESH 02	350 / 350  @ 50	10		4.900	4	0.617	12.10
							TOTAL (KG) :	58.77

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. RABINDRA ADHIKARI Nec.No. 6431 CIVIL"A"	Signature	Drawing Name: SUPER STRUCTURE BAR BENDING DETAILS OF BRIDGE OVER RIVER KALINJOR-2
			Checked By	Mr. SANJIB MITRA	Signature	Reference Drawings: -
			Approved By	Mr. HARI KRISHNA BHAVSAR	Signature	Scale: AS SHOWN Chainage: 292+705 Date: 18.06.2023 Drawing No.- KDP/DPR/STR/BR/KALINJOR-2/DD- 17 Sheet No. 2/2



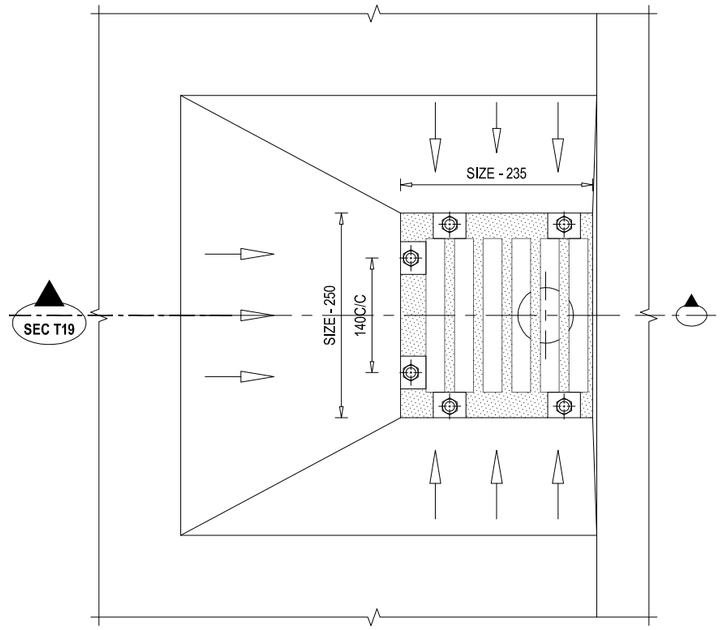
FRONT VIEW



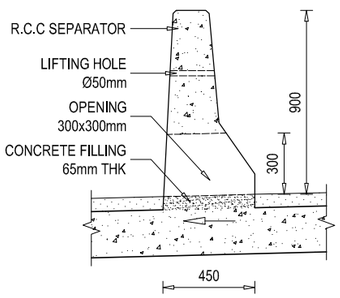
SECTIONAL ELEVATION VIEW AT SEC T17

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

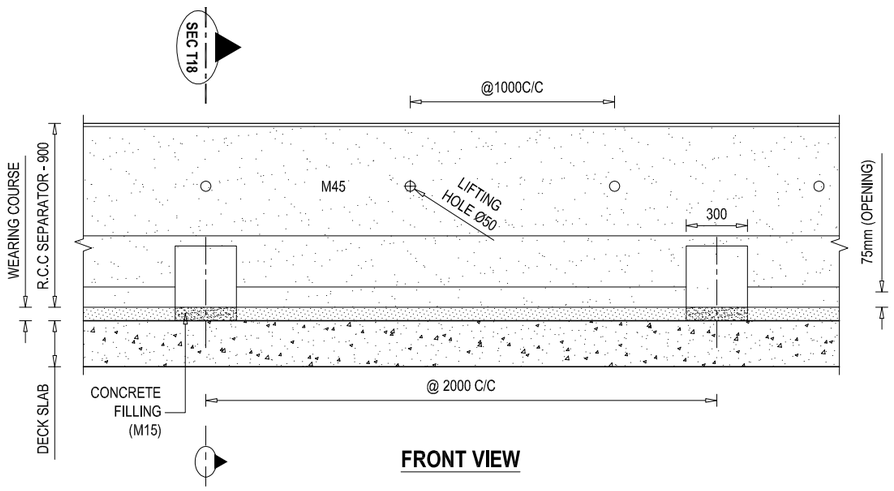
SCALE - 1 : 10



PLAN VIEW



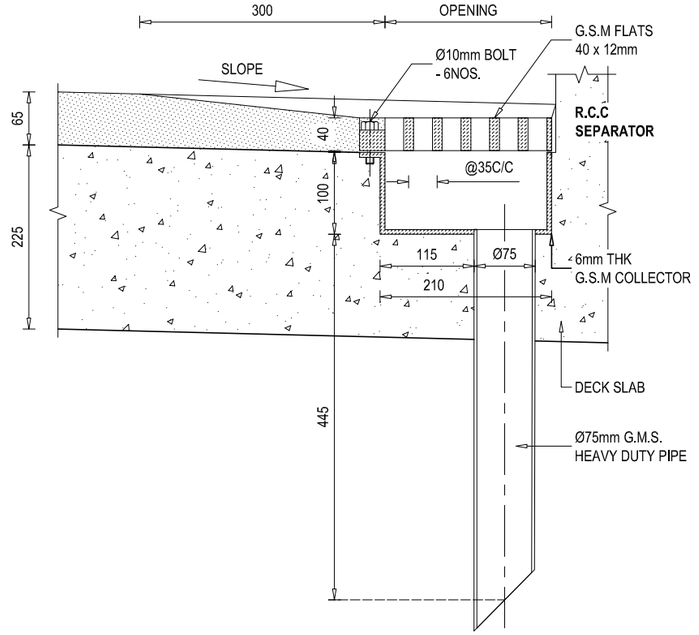
SECTIONAL ELEVATION VIEW AT SEC T18



FRONT VIEW

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

SCALE - 1 : 40

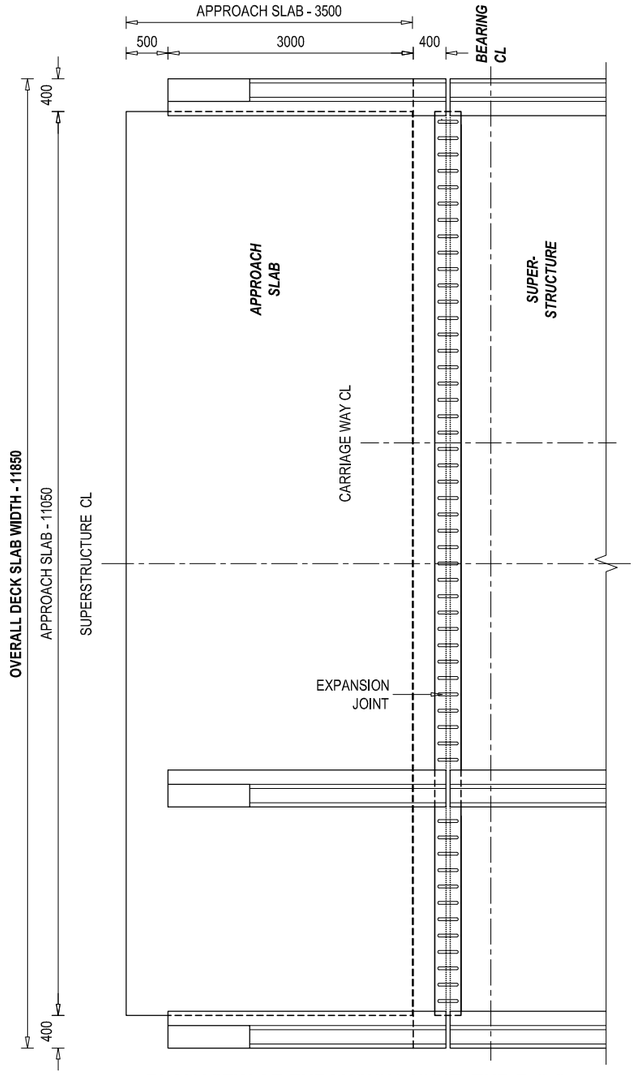


SECTIONAL ELEVATION VIEW AT SEC T19

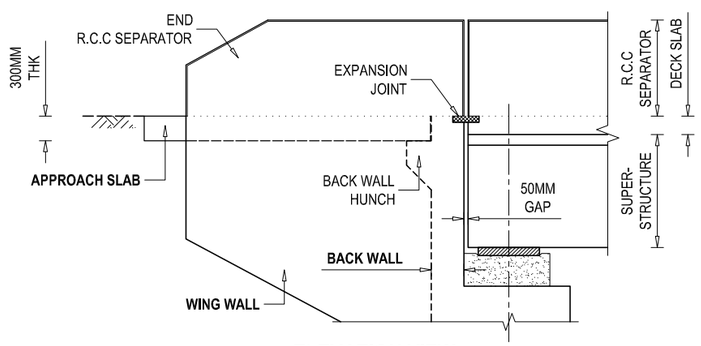
DETAILS OF GALVANIZED MILD STEEL (G.M.S) DRAINAGE SPOUT

SCALE - 1 : 10

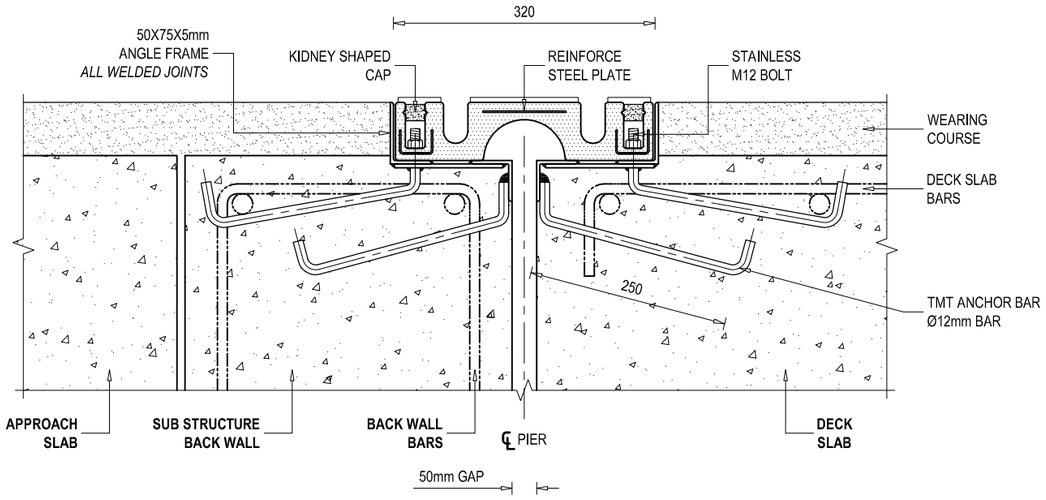
EMPLOYER	PROJECT NAME	DESIGN CONSULTANTS					
Government of Nepal Ministry of Physical Infrastructure and Transport **Department of Roads** **Development Cooperation Implementation Division**	Strategic Road Connectivity & Trade Improvement Project (SRCTIP) Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya 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. RABINDRA ADHIKARI Nec.No. 6431 CIVIL'A'	Signature	Drawing Name MISCELLANEOUS DETAILS OF BRIDGE OVER RIVER KALINJOR-2	Scale: AS SHOWN	Date: 18.06.2023
			Checked By	Mr. SANJIB MITRA	Signature	Reference Drawings -	Chainage: 292+705	Drawing No.- KDP/DPR/STR/BR/KALINJOR-2/DD-18
			Approved By	Mr. HARI KRISHNA BHAVSAR	Signature			Sheet No.1 /2



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

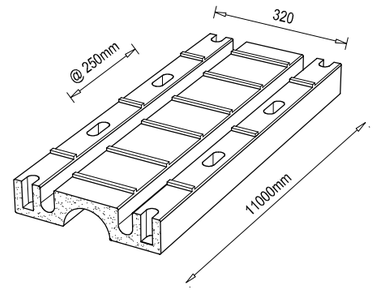


ELEVATION VIEW



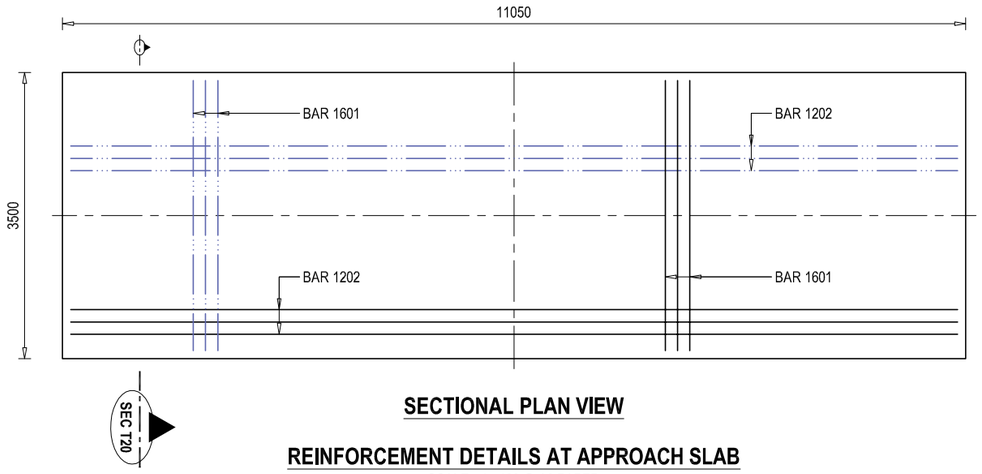
SEAL TYPE EXPANSION JOINTS ARRANGEMENT IN A CARRIAGEWAY

SCALE - 1 : 10 @ A3 PAPER



EXPANSION JOINT ISOMETRIC VIEW - SEAL TYPE

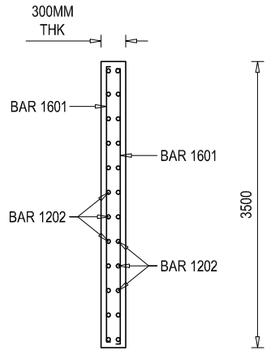
SCALE - NON



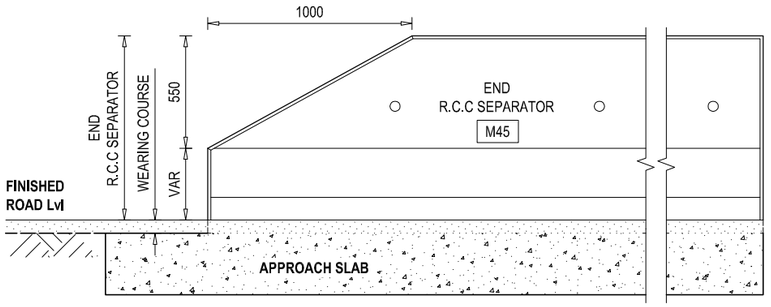
SECTIONAL PLAN VIEW

REINFORCEMENT DETAILS AT APPROACH SLAB

SCALE - 1 : 100 @ A3 PAPER

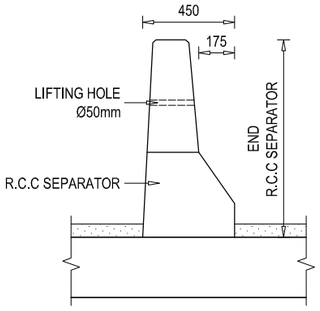


SECTIONAL ELEVATION VIEW AT SEC T20



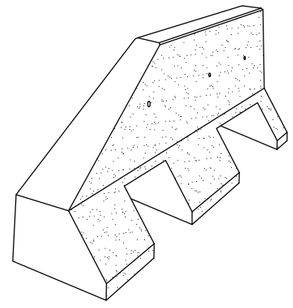
ELEVATION VIEW OF END R.C.C SEPARATOR

SCALE - 1 : 40 @ A3 PAPER



SIDE VIEW

SCALE - 1 : 40 @ A3 PAPER



END R.C.C SEPARATOR ISOMETRIC VIEW

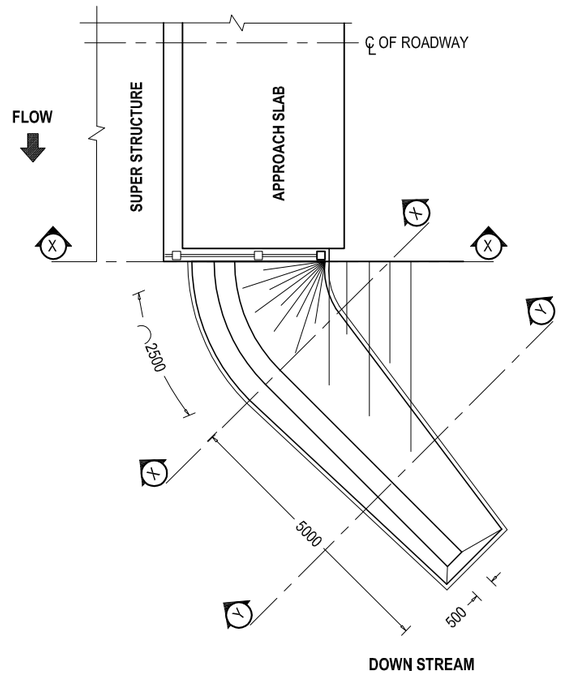
SCALE - NON

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. RABINDRA ADHIKARI Nec.No. 6431 CIVIL'A'	Signature	Drawing Name MISCELLANEOUS DETAILS OF BRIDGE OVER RIVER KALINJOR-2	Scale: AS SHOWN
			Checked By	Mr. SANJIB MITRA	Signature	Reference Drawings KDP/DPR/STR/BR/KALINJOR-2/DD-9	Chainage: 292+705
			Approved By	Mr. HARI KRISHNA BHAVSAR	Signature		

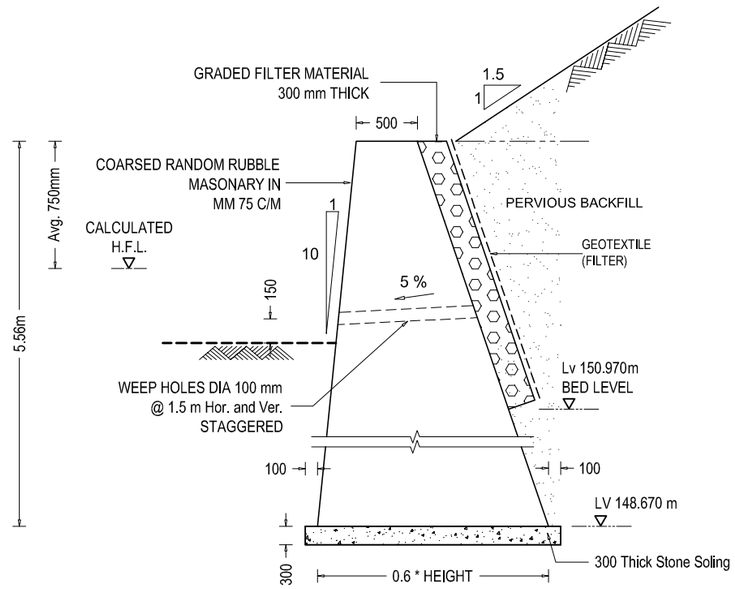
Date: 18.06.2023

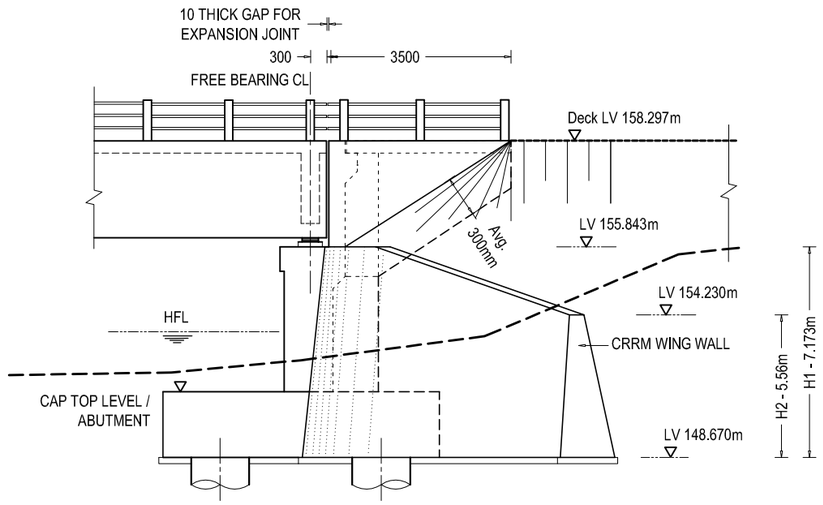
Drawing No.- KDP/DPR/STR/BR/KALINJOR-2/DD-18

Sheet No.2 /2

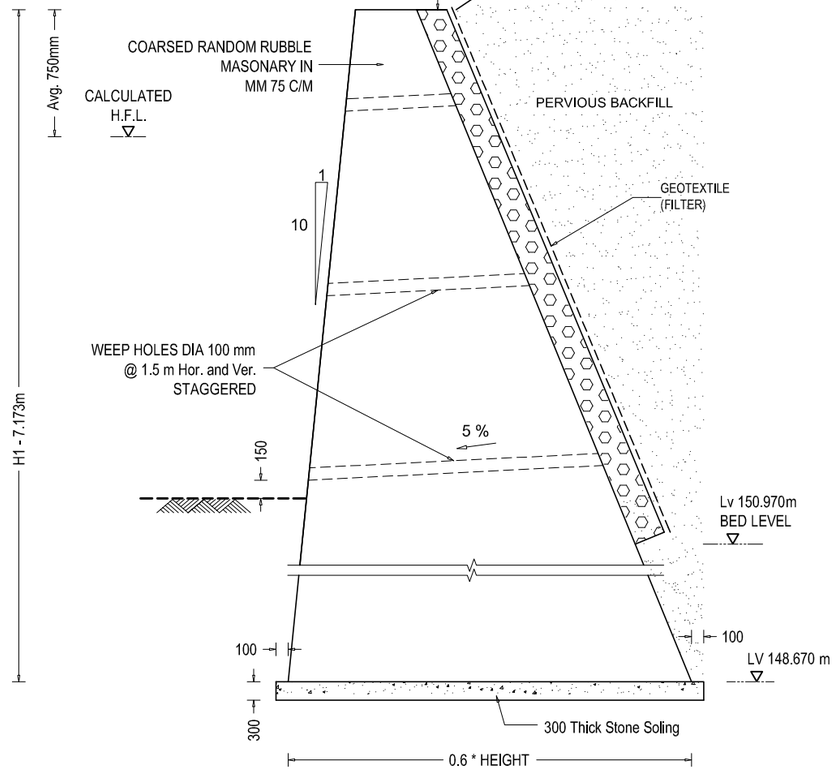


NOTE : AT DOWN STREAM ONLY





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					
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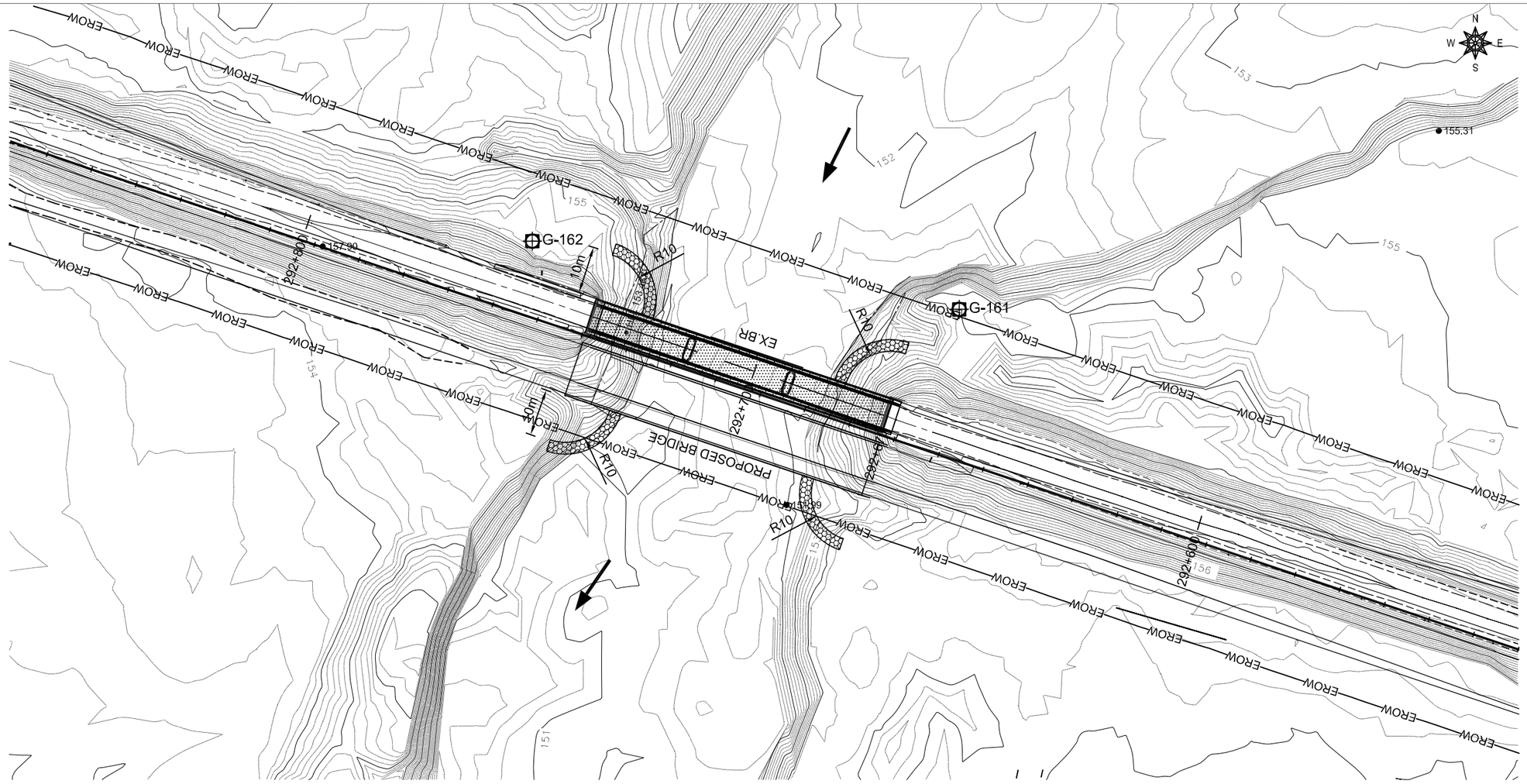
			Checked By	Mr. SANJIB MITRA	Signature		
			Approved By	Mr. HARI KRISHNA BHAVSAR	Signature		

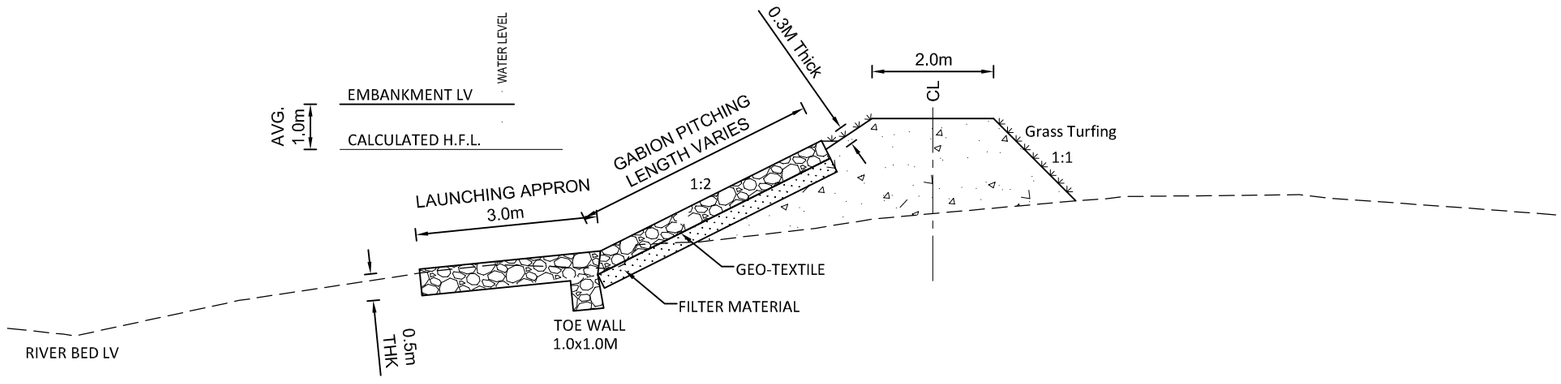
Date: 18.06.2023

Drawing No.- KDP/DPR/STR/BR/KALINJOR-2/DD-19

Sheet No. 1 / 1



TOPOGRAPHIC MAP



SECTION OF EMBANKMENT

SCALE - 1x : 5x

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 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. RABINDRA ADHIKARI Nec.No. 6431 CIVIL"A"	Signature	RIVER TRAINING WORKS OF BRIDGE OVER RIVER KALINJOR-2	1:1000	18.06.2023
			Checked By	Mr. SANJIB MITRA	Signature	Reference Drawings	Chainage: 292+705	Drawing No.- KDP/DPR/STR/BR/KALINJOR-2/DD- 20
			Approved By	Mr. HARI KRISHNA BHAVSAR	Signature			Sheet No. 1 / 1

Bearing Design Data for 22m Span and 11.85m width

Load Condition	Items	Under	On each Neoprene Bearing	Unit
Under No Live Load	V	NO EQ.	53.02	Ton
		EQ.	60.98	Ton
	H_L	NO EQ.	-	Ton
		EQ.	11.93	Ton
	H_T	NO EQ.	-	Ton
		EQ.	11.93	Ton
	θ	NO EQ.	0.00234	radian
		EQ.	0.00269	radian
	Δ		13.64	mm
Under Maximum Live Load	V	NO EQ.	94.08	Ton
		EQ.	103.26	Ton
	H_L	NO EQ.	-	Ton
		EQ.	0.00	Ton
	H_T	NO EQ.	-	Ton
		EQ.	0.00	Ton
	θ	NO EQ.	0.003723	radian
		EQ.	0.00428	radian
	Δ		22.76	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. RABINDRA ADHIKARI Nec.No. 6431 CIVIL'A'	Signature	Drawing Name BEARING DESIGN DATA OF BRIDGE OVER RIVER KALINJOR-2 Reference Drawings	Scale: 1:1000 Chainage: 292+705
			Checked By	Mr. SANJIB MITRA	Signature		Date: 18.06.2023 Drawing No.- KDP/DPR/STR/BR/KALINJOR-2/DD-20 Sheet No.1 / 1
			Approved By	Mr. HARI KRISHNA BHAVSAR	Signature		