



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- Belgachhi (Dhungre Khola)**  
**Volume-2**  
**Detailed Drawing**

**April, 2023**

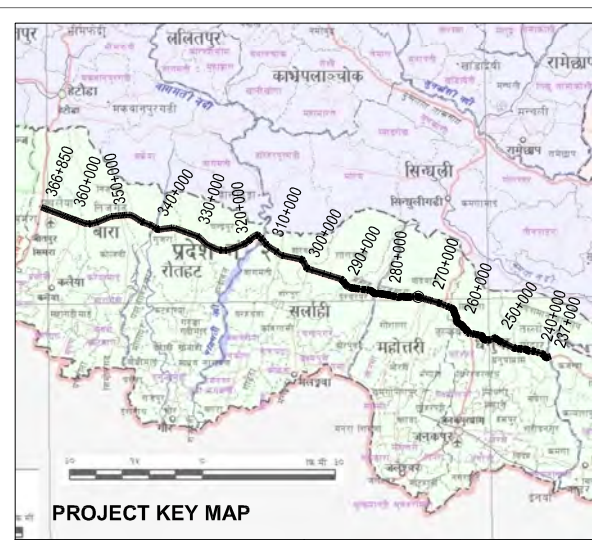
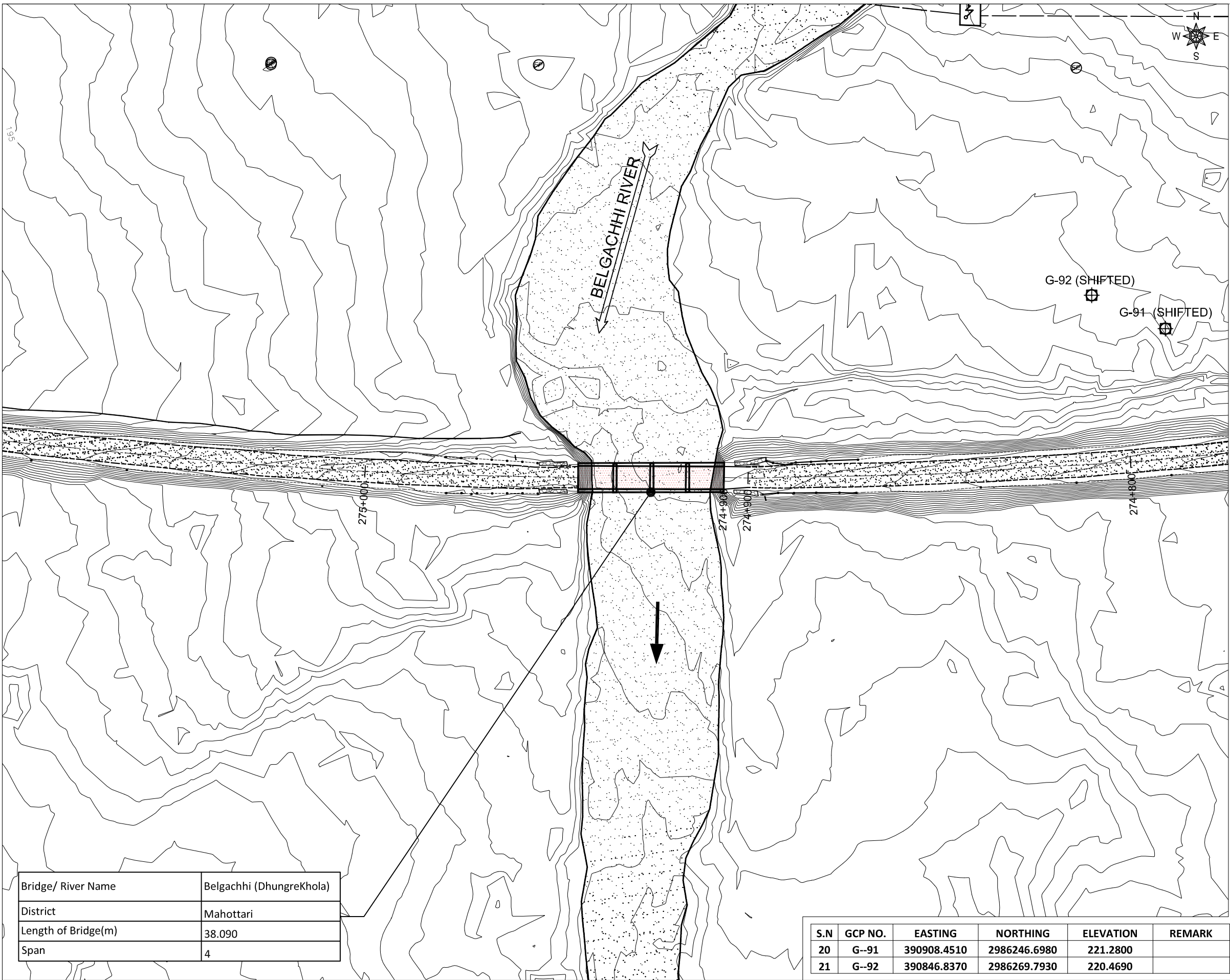
**Joint Venture Of:**

**eptisa** EPTISA Servicios De Ingenieria  
Madrid, Spain

**STUP** STUP Consultants Private Limited  
India

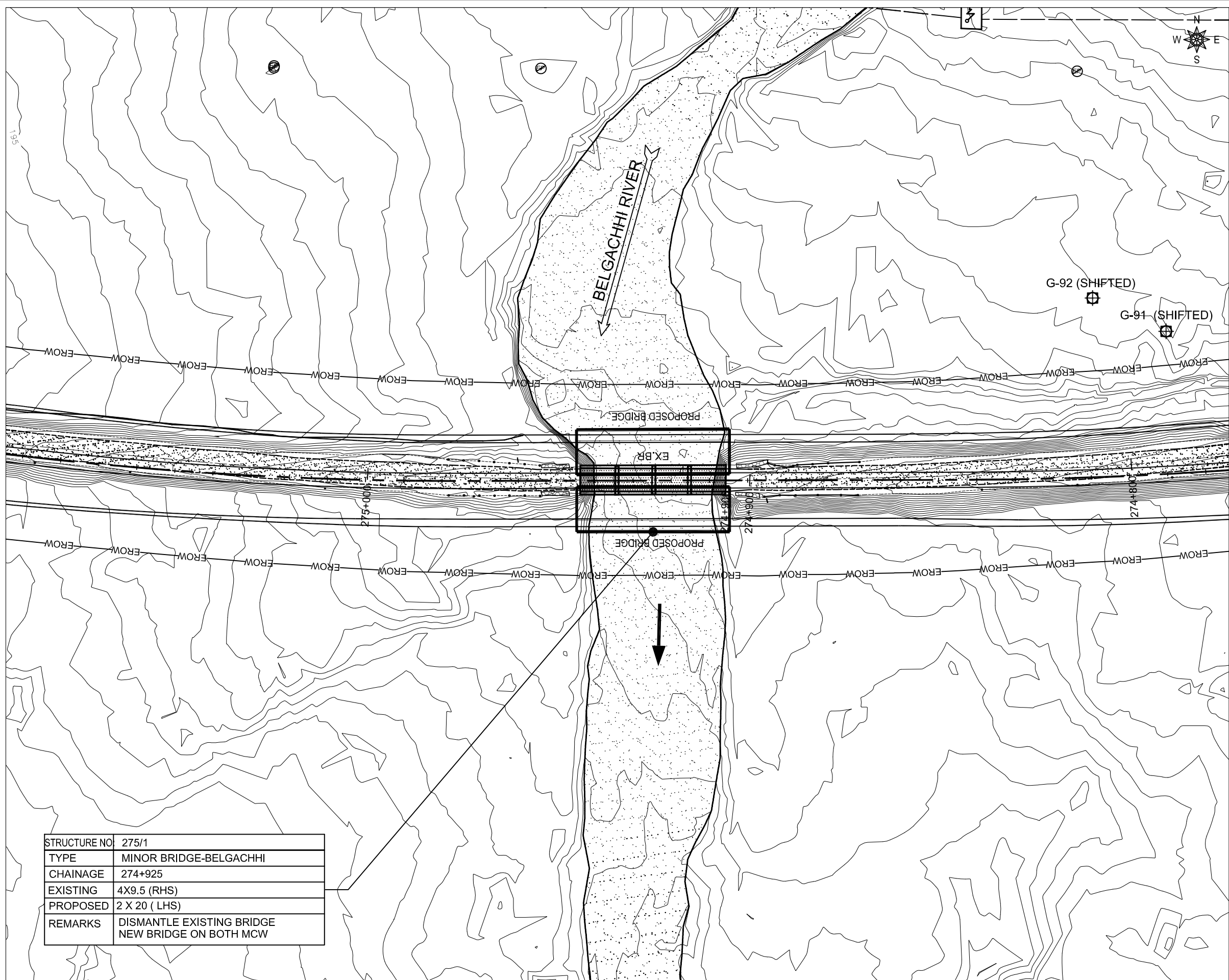
In Association With  
**Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited**

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

|                                                                                                                                                        |  |                                                                                                                                                                                            |  |                                                                                                      |  |                    |          |           |  |                                                |  |
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| EMPLOYER                                                                                                                                               |  | PROJECT NAME                                                                                                                                                                               |  | DESIGN CONSULTANTS                                                                                   |  | Drawing Name       |          | Scale:    |  | Date:                                          |  |
| <br>Government of Nepal<br>Ministry of Physical Infrastructure and Transport<br>Department of Roads<br>Development Cooperation Implementation Division |  | Strategic Road Connectivity & Trade Improvement Project (SRCTIP)<br><br>Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges |  | Joint Venture of                                                                                     |  | Designed By        | Mr. R.A. | 1:1000    |  | 24.04.2023                                     |  |
|                                                                                                                                                        |  |                                                                                                                                                                                            |  | epysa EPTISA Servicios De Ingenieria Madrid, Spain                                                   |  | Checked By         | Mr. S.M. |           |  |                                                |  |
|                                                                                                                                                        |  |                                                                                                                                                                                            |  | In Association With                                                                                  |  | Approved By        | Mr. H.B. |           |  |                                                |  |
|                                                                                                                                                        |  |                                                                                                                                                                                            |  | STUP Consultants Private Limited Kolkatta, India                                                     |  | Reference Drawings |          | Chainage: |  | Drawing No.-                                   |  |
|                                                                                                                                                        |  |                                                                                                                                                                                            |  | Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited |  |                    |          | 274+925   |  | KDP/DPR/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD- 2 |  |
|                                                                                                                                                        |  |                                                                                                                                                                                            |  |                                                                                                      |  |                    |          |           |  | Sheet No. 1/1                                  |  |



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

|                                                                                                                                                        |  |                                                                                                                                                                                            |  |                                                                                                      |  |                    |          |           |  |                                                |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------|--|--------------------|----------|-----------|--|------------------------------------------------|--|
| EMPLOYER                                                                                                                                               |  | PROJECT NAME                                                                                                                                                                               |  | DESIGN CONSULTANTS                                                                                   |  | Drawing Name       |          | Scale:    |  | Date:                                          |  |
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|                                                                                                                                                        |  |                                                                                                                                                                                            |  | eptsasEPTISA Servicios De Ingeniera Madrid, Spain                                                    |  | Checked By         | Mr. S.M. |           |  |                                                |  |
|                                                                                                                                                        |  |                                                                                                                                                                                            |  | In Association With                                                                                  |  | Approved By        | Mr. H.B. |           |  |                                                |  |
|                                                                                                                                                        |  |                                                                                                                                                                                            |  | STUP Consultants Private Limited Kolkatta, India                                                     |  | Reference Drawings |          | Chainage: |  | Drawing No.-                                   |  |
|                                                                                                                                                        |  |                                                                                                                                                                                            |  | Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited |  |                    |          | 274+925   |  | KDP/DPR/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD- 3 |  |
|                                                                                                                                                        |  |                                                                                                                                                                                            |  |                                                                                                      |  |                    |          |           |  | Sheet No. 1/1                                  |  |

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.

1. THE DESIGN HAS BEEN PREPARED BASED ON THE FOLLOWING CODES:
  - a) NEPAL ROAD STANDARD 2070
  - b) IRC-5 2015
  - c) IRC-6 2017
  - d) IRC-78 2014
  - e) IRC-112 2020
  - f) IRC SP-13 2022
2. TOTAL WIDTH OF THE BRIDGE DECK: 11.85 M (8 M WIDE CARRIAGEWAY + 2.5 M WIDE FOOTPATH) HOWEVER THIS BRIDGE IS DESIGNED FOR THE FOLLOWING CARRIAGEWAY LIVE LOADS AS PER IRC:6-2017
  - a) ONE LANE OF IRC CLASS 70R (WHEELED) FOR TWO LANES + ONE LANE OF IRC CLASS A
  - b) THREE LANES OF IRC CLASS A
3. SEISMIC ZONE CONSIDERED IN THE DESIGN IS ZONE-V.
4. LAYING, COMPACTION, & EXTENT OF BACKFILL BEHIND ABUTMENT & RETURN/RETAINING WALLS SHALL CONSIST OF SELECTED EARTH CONFORMING TO THE APPENDIX-6 OF IRC:78-2014 HAVING PROPERTIES  $C=0$ ,  $\phi=30^\circ$  & DENSITY=20KN/m<sup>3</sup>.
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.

|    |                          |          |               |
|----|--------------------------|----------|---------------|
| 1. | DESIGN DISCHARGE, (Q100) | -        | 134.22 CUMecs |
| 2. | HFL - 197.320 M          |          |               |
| 3. | FREE BOARD (MINIMUM) -   | 1 M      |               |
| 4. | MAXIMUM SCOUR LEVEL:     |          |               |
|    | ABUTMENT -               | 192.920M |               |
|    | PIER -                   | 190.440M |               |

1. SPAN ARRANGEMENT: 2 X 20 = 40 M
2. SUPERSTRUCTURE:  
PRECAST RCC LONGITUDINAL GIRDERS & CAST-IN-SITU RCC CROSS GIRDERS AND DECK SLAB.

|                             |   |                                  |
|-----------------------------|---|----------------------------------|
| A) ABUTMENT                 | - | 1200 DIA BORED CAST-IN-SITU PILE |
| DESIGN WORKING LOAD ON PILE | - | 243.49 TON                       |
| B) PIER-                    |   | 1200 DIA BORED CAST-IN-SITU PILE |
| DESIGN WORKING LOAD ON PILE | - | 213.80 TON                       |

RCC CRASH BARRIER AT EDGES OF CARRIAGEWAY AND FOOTPATH

|                                                        |                                           |
|--------------------------------------------------------|-------------------------------------------|
| 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                                       |
| I. CAST-IN-SITU CROSS GIRDER FOR RCC GIRDERS.....      | M35                                       |

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

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:

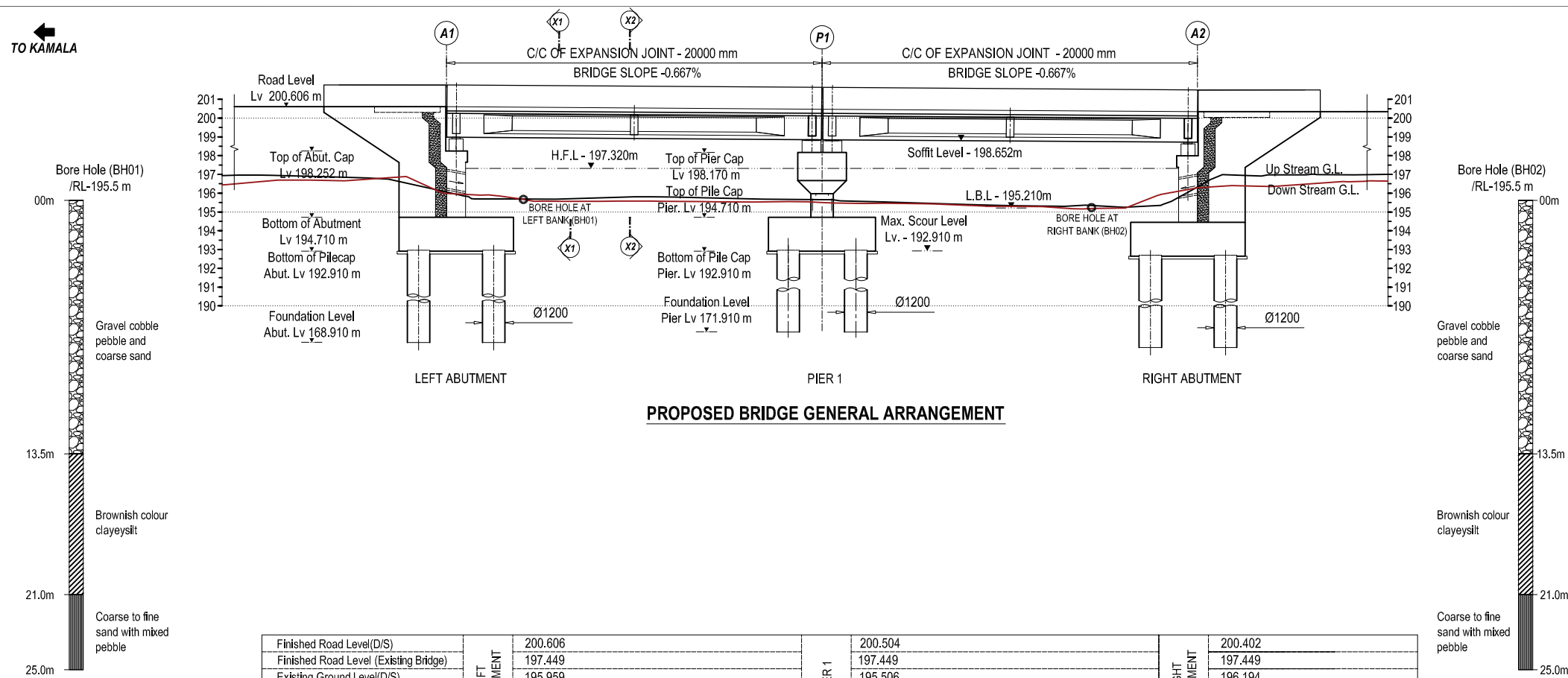
| GRADE OF CONCRETE   | M30    | M35    | M40    | M45    |
|---------------------|--------|--------|--------|--------|
| LAPPED BAR <25%     | 57.2φ  | 51.48φ | 48.62φ | 45.76φ |
| 25%≤LAPPED BAR <33% | 65.78φ | 62.65φ | 55.91φ | 52.62φ |
| 33%≤LAPPED BAR <50% | 80.08φ | 72.07φ | 68.07φ | 64.06φ |
|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

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

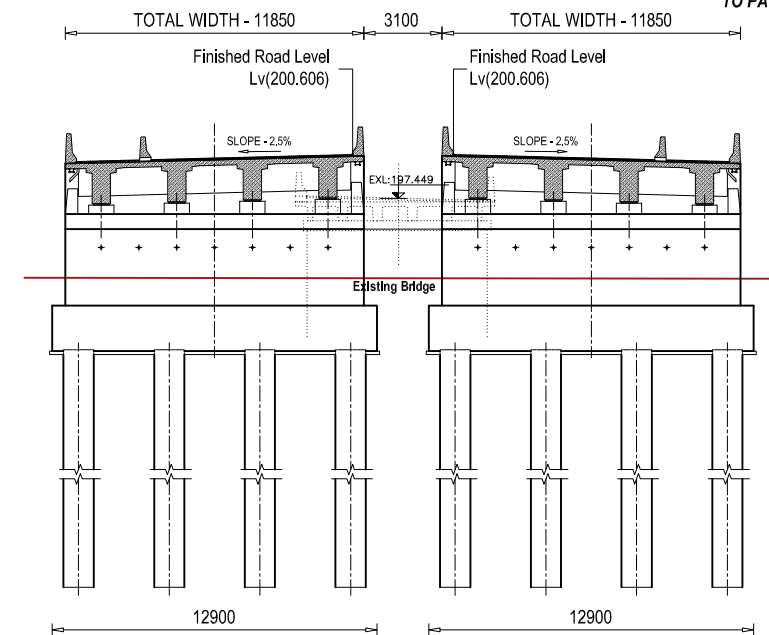
| EMPLOYER                                                                                                                                                                                                                                  | PROJECT NAME                                                                                                                                                                              | DESIGN CONSULTANTS                                                                                                               |                                                                                                                                        |                      | Designed By | Mr. R.A.                                                                              |  | Drawing Name | Scale:  | Date:                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------|---------|-------------------------------------------------------------|
| <br>Government of Nepal<br>Ministry of Physical Infrastructure and Transport<br>Department of Roads<br>Development Cooperation Implementation Division | Strategic Road Connectivity & Trade Improvement Project (SRCTIP)<br><br>Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaja Road Section (130 KM) of Mahendra Highway and Bridges | Joint Venture of                                                                                                                 |                                                                                                                                        | Nec.No.6431 CIVIL/AT |             | Signature                                                                             |                                                                                       |              |         |                                                             |
|                                                                                                                                                                                                                                           |                                                                                                                                                                                           |  EPTISA Servicios De Ingeniera Madrid, Spain |  STUP Consultants Prlvate Limited Kolkatta, India | Checked By           | Mr. S.M.    |  |                                                                                       |              |         |                                                             |
|                                                                                                                                                                                                                                           |                                                                                                                                                                                           | In Association With                                                                                                              |                                                                                                                                        | Approved By          | Mr. H.B.    |  | Reference Drawings                                                                    | Chainage:    |         |                                                             |
|                                                                                                                                                                                                                                           |                                                                                                                                                                                           | Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited                             |                                                                                                                                        |                      |             |                                                                                       | GENERAL NOTES OF BRIDGE OVER RIVER BELGACHHI (DHUNGRE KHOLA)                          | AS SHOWN     |         | 05.05.2023                                                  |
|                                                                                                                                                                                                                                           |                                                                                                                                                                                           |                                                                                                                                  |                                                                                                                                        |                      |             |                                                                                       | —                                                                                     |              | 274+925 | Drawing No.- KDP/DPR/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD- 4 |
|                                                                                                                                                                                                                                           |                                                                                                                                                                                           |                                                                                                                                  |                                                                                                                                        |                      |             |                                                                                       |                                                                                       |              |         | Sheet No. 1 / 1                                             |

TO KAMALA

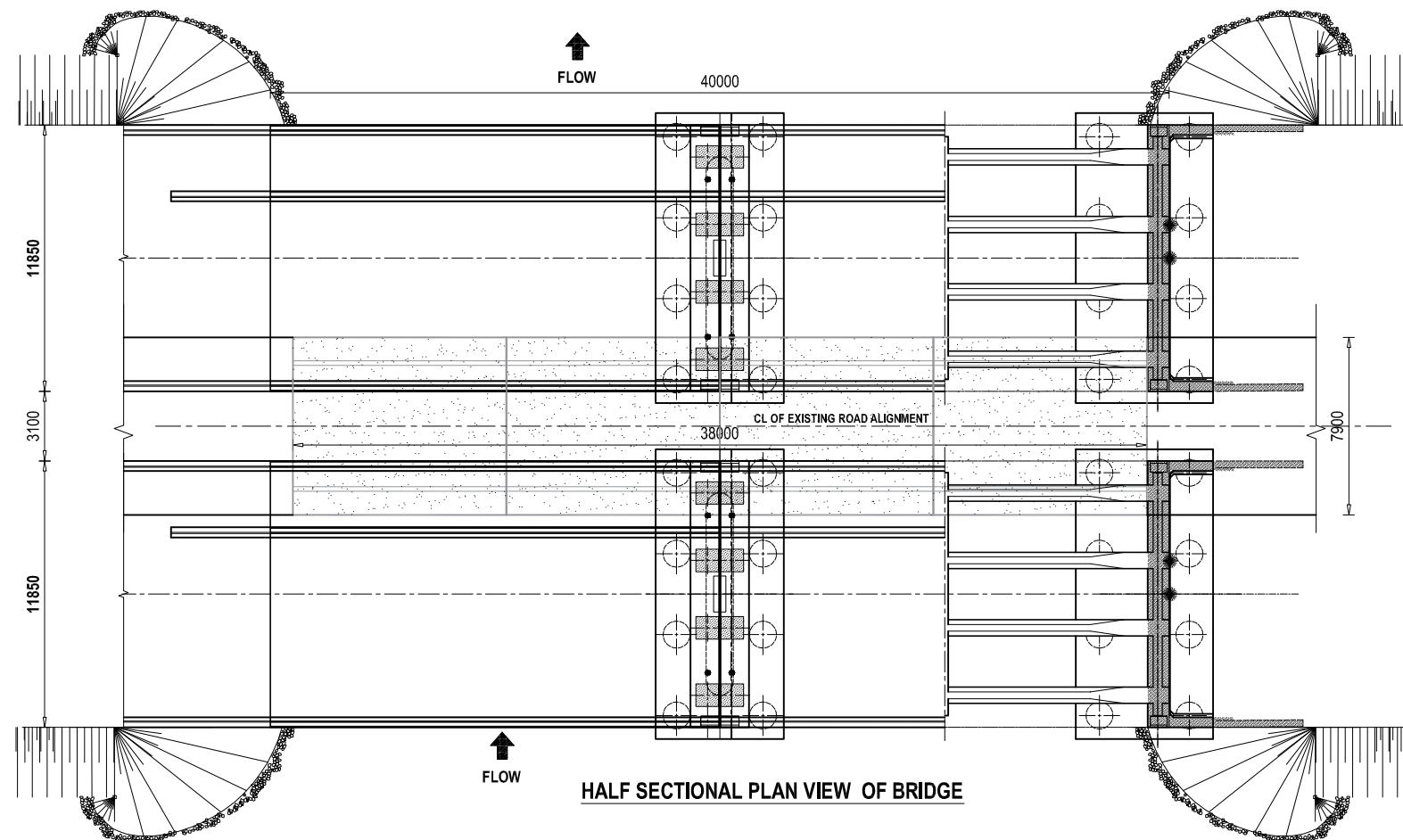
TO PATHALAIYA



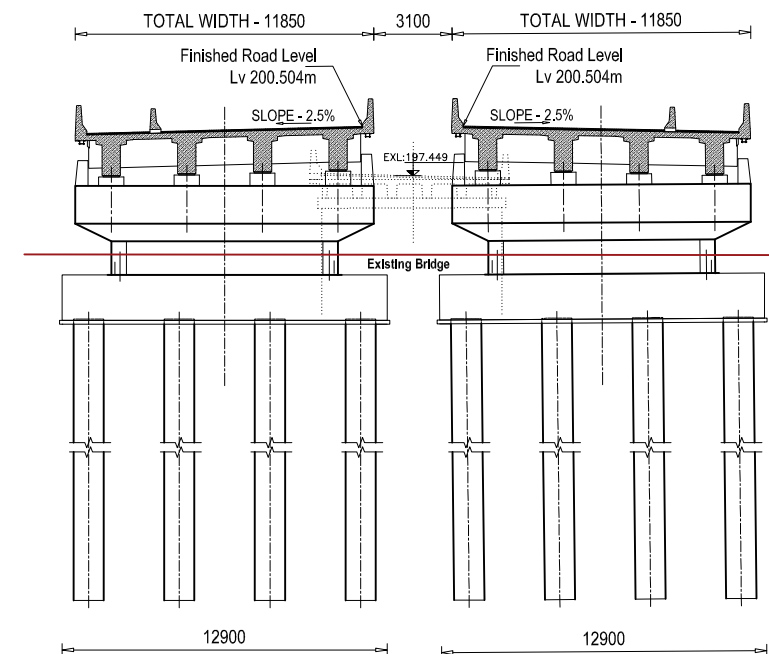
PROPOSED BRIDGE GENERAL ARRANGEMENT



SECTIONAL VIEW OF ABUTMENT AT X1-X1



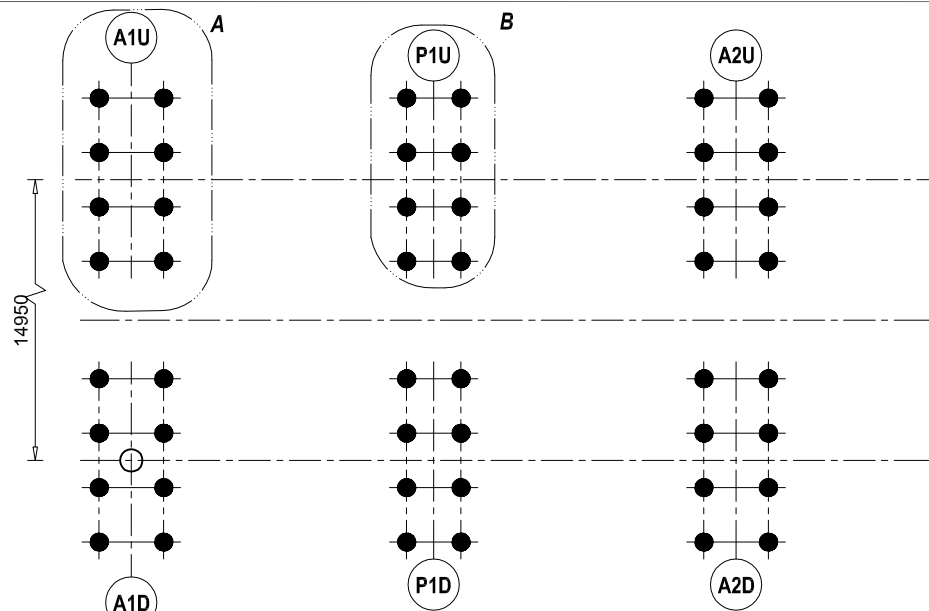
HALF SECTIONAL PLAN VIEW OF BRIDGE



SECTIONAL VIEW OF PIER AT X2-X2

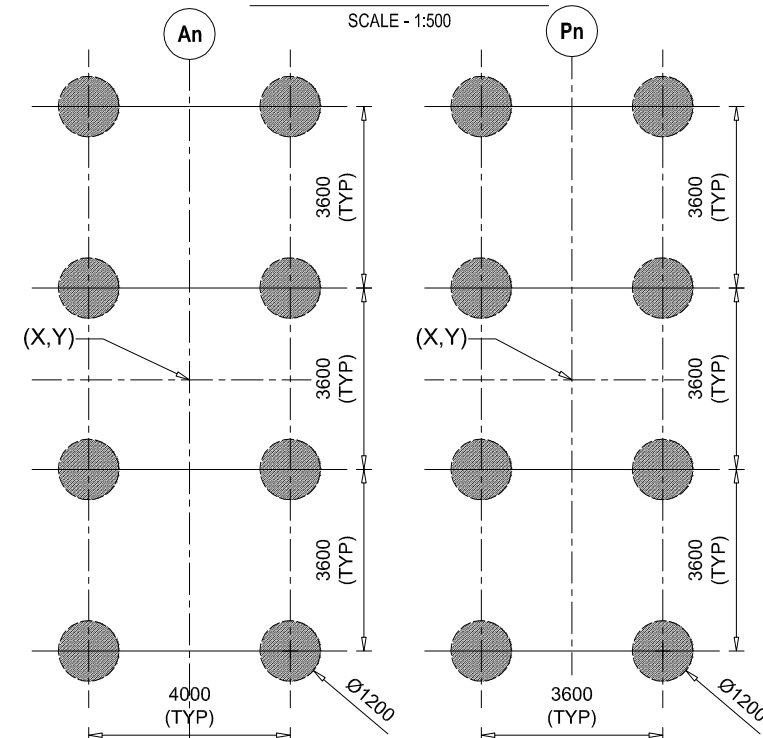
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| <b>EMPLOYER</b><br><br>Government of Nepal<br>Ministry of Physical Infrastructure and Transport<br>Department of Roads<br>Development Cooperation Implementation Division | <b>PROJECT NAME</b><br>Strategic Road Connectivity & Trade Improvement Project (SRCTIP)<br>Detailed Design of Upgradation of Kamala-Dhalkebar-Pathalaya Road Section (130 KM) of Mahendra Highway and Bridges | <b>DESIGN CONSULTANTS</b><br>Joint Venture of<br> EPTISA Servicios De Ingenieria Madrid, Spain<br> STUP Consultants Private Limited Kolkata, India<br>In Association With<br>Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited | <b>Designed By</b> Mr. R.A.<br><b>Checked By</b> Mr. S.M.<br><b>Approved By</b> Mr. H.B. | <b>Drawing Name</b><br>GENERAL ARRANGEMENT OF BRIDGE OVER RIVER BELGACHHI (DHUNGRE KHOLA)<br><b>Reference Drawings</b> | <b>Scale:</b><br>AS SHOWN<br><b>Chainage:</b><br>274+925 | <b>Date:</b><br>01.06.2023<br><b>Drawing No.:</b><br>KDP/DPR/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD- 5<br><b>Sheet No.</b><br>1/1 |
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DETAILS AT PILE LAYOUT

SCALE - 1:500

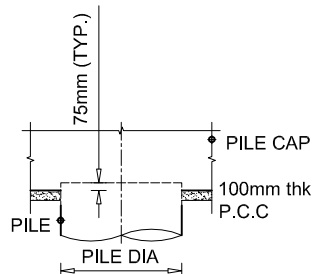


DETAILS AT A

SCALE - 1:150

DETAILS AT B

SCALE - 1:150



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          | 25           |              | 25.950         | 9           | 3.858              | 901.04            |
| 2                                     | PA2      | 10630              | 25           |              | 10.63          | 9           | 3.858025           | 369.0972          |
| 3                                     | PA3      | 300 16220          | 12           |              | 16.520         | 9           | 0.889              | 132.16            |
| 4                                     | PA4      | Dia. 1034 100      | 16           | 110          | 3.448          | 92          | 1.580              | 501.32            |
| 5                                     | PA5      | Dia. 1034 100      | 12           | 110          | 3.448          | 127         | 0.889              | 389.28            |
| TOTAL (KG) :                          |          |                    |              |              |                |             |                    | 2292.90           |
| No. of Pile                           |          |                    |              |              |                |             |                    | 8.00              |
| TOTAL WEIGHT (KG) :                   |          |                    |              |              |                |             |                    | 18343.20          |

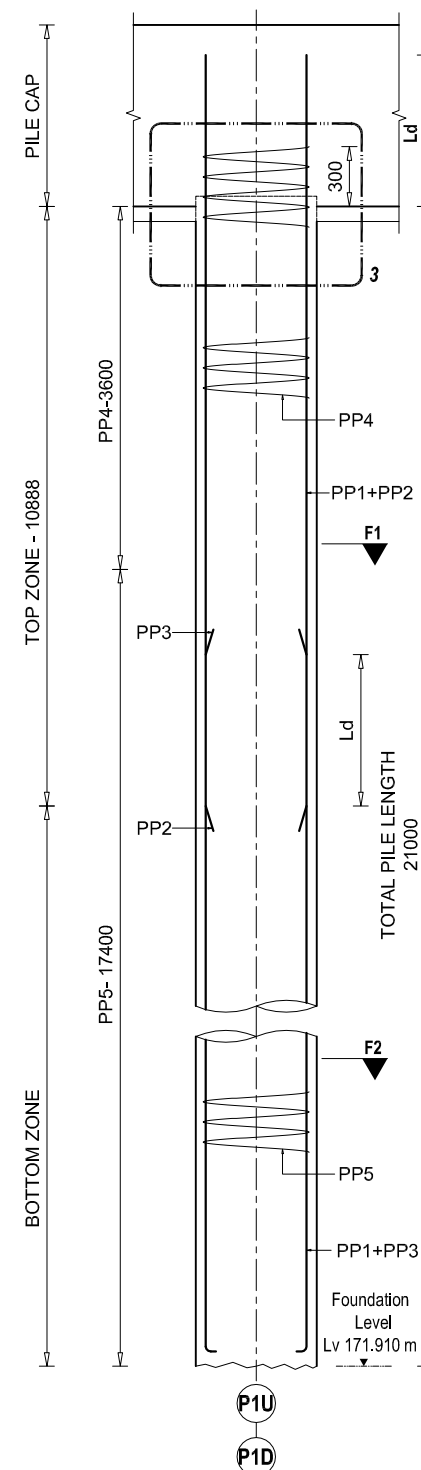
| BAR BENDING SCHEDULE OF PIER PILE |          |                    |              |              |                |             |                    |                   |
|-----------------------------------|----------|--------------------|--------------|--------------|----------------|-------------|--------------------|-------------------|
| 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 22650          | 32           |              | 22.950         | 10          | 6.321              | 1450.67           |
| 2                                 | PP2      | 13813              | 32           |              | 13.813         | 10          | 6.320968           | 873.118           |
| 3                                 | PP3      | 300 11237          | 12           |              | 11.537         | 10          | 0.889              | 102.55            |
| 4                                 | PP4      | Dia. 1034 100      | 16           | 100          | 3.448          | 48          | 1.580              | 261.56            |
| 5                                 | PP5      | Dia. 1034 100      | 12           | 100          | 3.448          | 162         | 0.889              | 496.56            |
| TOTAL (KG) :                      |          |                    |              |              |                |             |                    | 3184.45           |
| No. of Pile                       |          |                    |              |              |                |             |                    | 8.00              |
| TOTAL WEIGHT (KG) :               |          |                    |              |              |                |             |                    | 25475.63          |

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

| SN. | ABUTMENT/PIER   | EASTING (X) | NORTHING (Y) |
|-----|-----------------|-------------|--------------|
| 1   | ABUTMENT (A1U)  | 382963.473  | 2988062.51   |
| 2   | PIER (P1U)      | 382943.476  | 2988062.466  |
| 3   | ABUTMENT (A2DU) | 382923.46   | 2988062.317  |

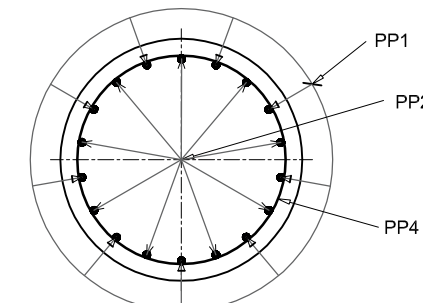
CO ORDINATES OF PILE LOCATION OF PROPOSED BRIDGE AT D/S

| SN. | ABUTMENT/PIER  | EASTING (X) | NORTHING (Y) |
|-----|----------------|-------------|--------------|
| 1   | ABUTMENT (A1D) | 382963.509  | 2988047.383  |
| 2   | PIER (P1D)     | 382943.509  | 2988047.339  |
| 3   | ABUTMENT (A2D) | 382923.496  | 2988047.383  |



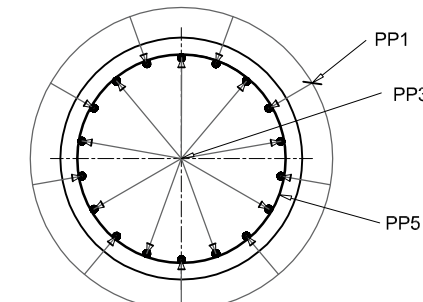
BAR DETAIL AT PIER PILE

SCALE - 1:75



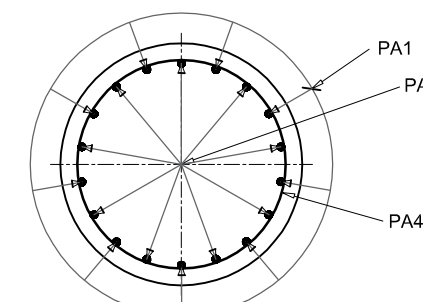
SECTIONAL VIEW AT F1 - F1

SCALE - 1:40



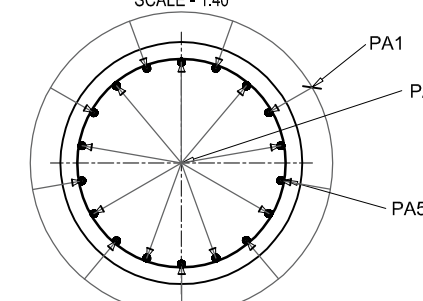
SECTIONAL VIEW AT F2 - F2

SCALE - 1:40



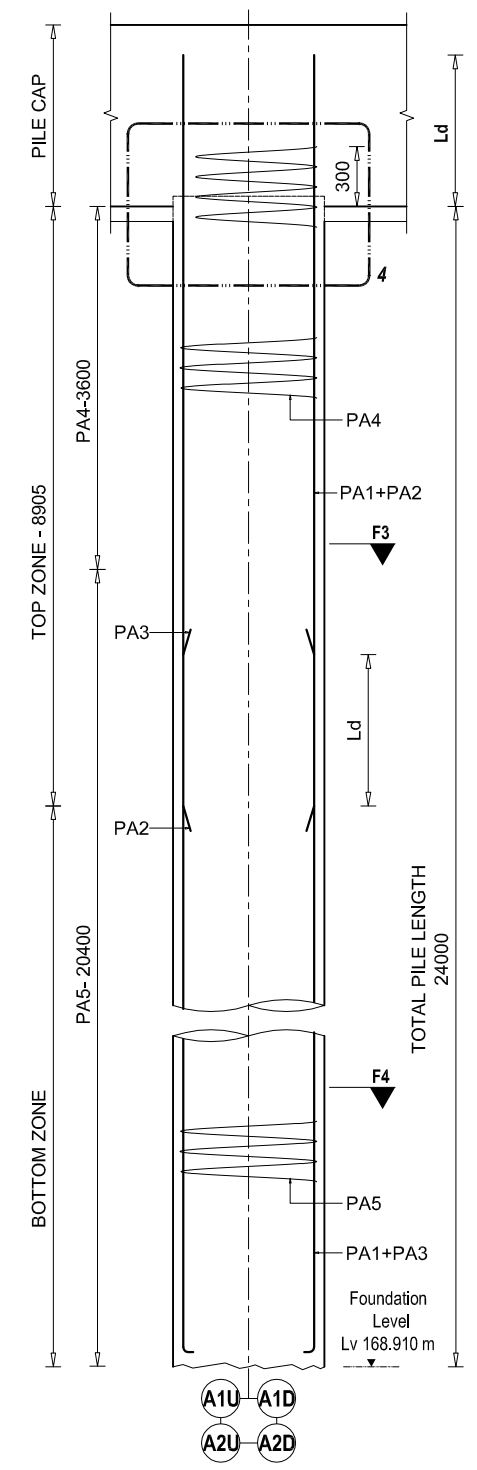
SECTIONAL VIEW AT F3 - F3

SCALE - 1:40



SECTIONAL VIEW AT F4 - F4

SCALE - 1:40



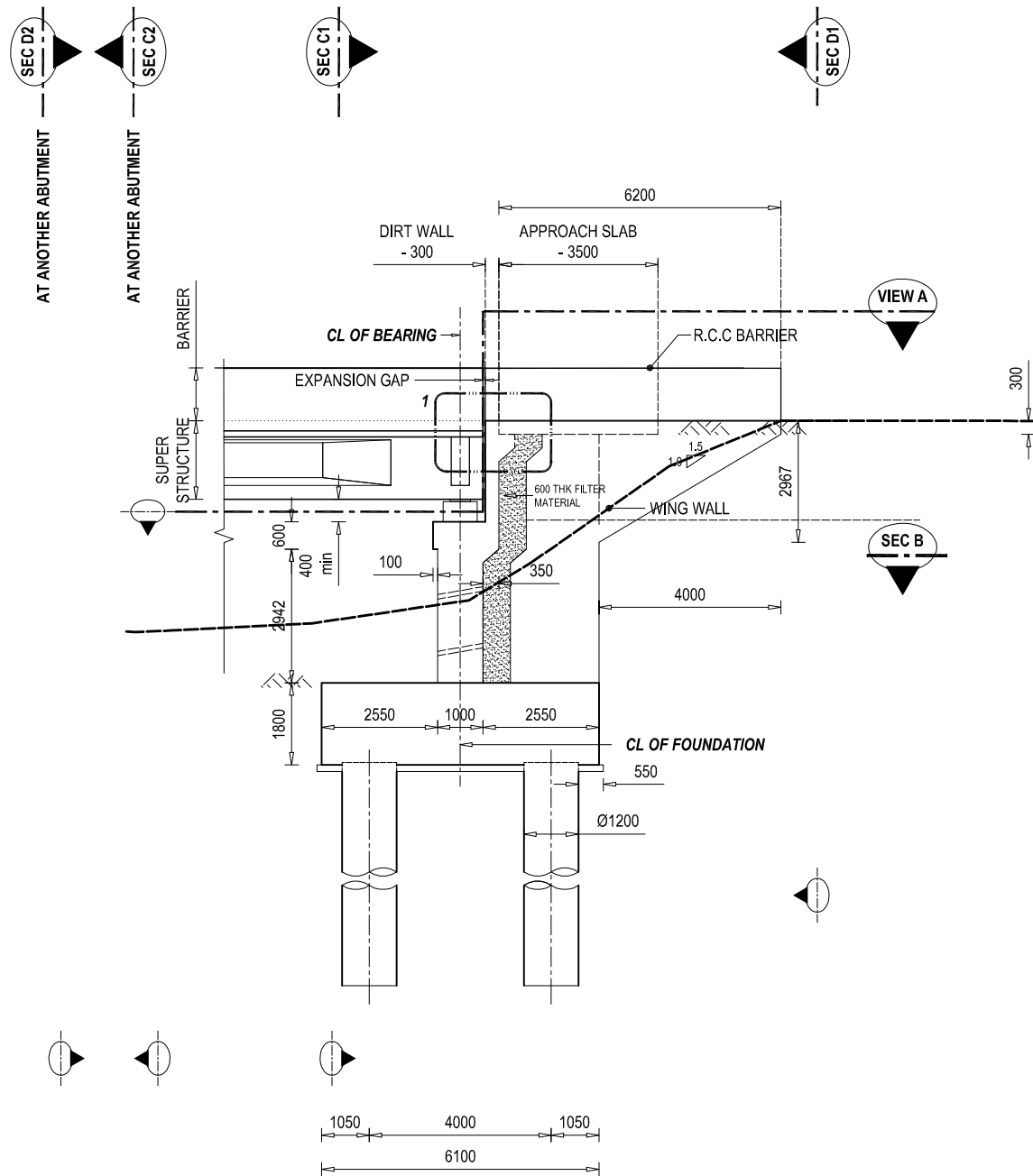
BAR DETAIL AT ABUTMENT PILE

SCALE - 1:75

| PILE CAPACITY |             |                |
|---------------|-------------|----------------|
| SN.           | DESCRIPTION | CAPACITY (Ton) |
| 1             | ABUTMENT    | 243.49         |
| 2             | PIER        | 213.80         |

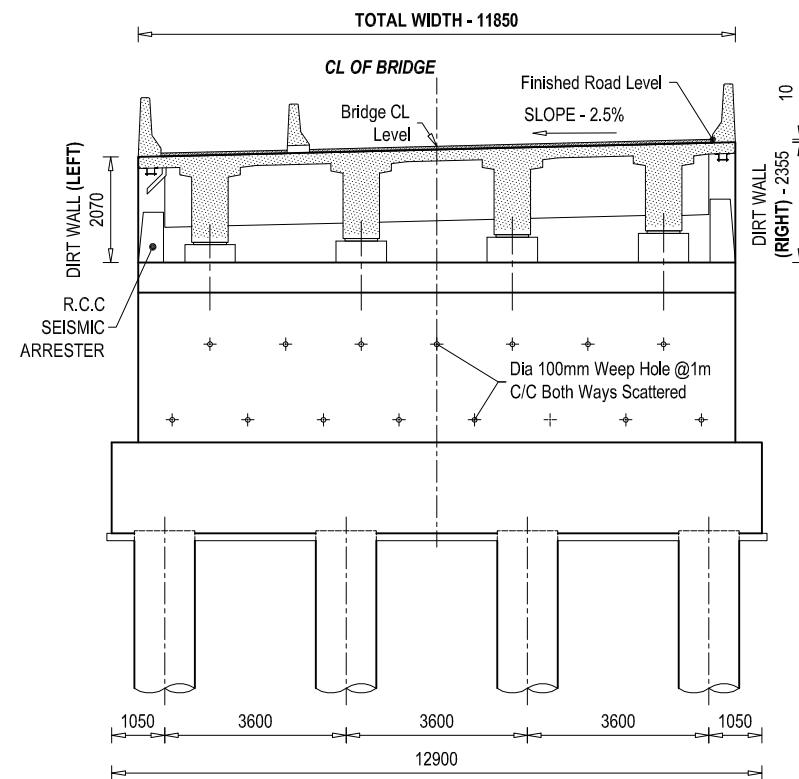
NOTE  
READ THIS DRAWING IN CONJUNCTION WITH  
DRG NO. KDP/DPR/STR/BR/BELGACHHI(DHUNGRE KHOLA)/DD-4

| EMPLOYER                                                                                                                                           | PROJECT NAME                                                                                                                                                                           | DESIGN CONSULTANTS                                                                                                                                                                                                                                | Designed By                                    | Drawing Name                                                                            | Scale:               | Date:                                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|-----------------------------------------------------------------------------------------|----------------------|----------------------------------------------------------------|
| Government of Nepal<br>Ministry of Physical Infrastructure and Transport<br>Department of Roads<br>Development Cooperation Implementation Division | Strategic Road Connectivity & Trade Improvement Project (SRCTIP)<br>Detailed Design of Upgradation of Kamata-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges | Joint Venture of<br>EPTISA Servicios De Ingenieria Madrid, Spain<br>STUP Consultants Private Limited Kolkata, India<br>In Association With<br>Udaya Consultancy, Geocom International, Sundar Krti Consultant and Rays Consultant Private Limited | Mr. R.A.<br>Nec.No. 6431 CIVIL/KA<br>Signature | LAYOUT AND DETAIL OF PILE FOUNDATION FOR<br>BRIDGE OVER RIVER BELGACHHI (DHUNGRE KHOLA) | AS SHOWN             | 05.05.2023                                                     |
|                                                                                                                                                    |                                                                                                                                                                                        |                                                                                                                                                                                                                                                   | Checked By<br>Mr. S.M.<br>Signature            | Reference Drawings<br>KDP/DPR/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD-9                     | Chainage:<br>274+925 | Drawing No.-<br>KDP/DPR/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD-06 |
|                                                                                                                                                    |                                                                                                                                                                                        |                                                                                                                                                                                                                                                   | Approved By<br>Mr. H.B.<br>Signature           |                                                                                         |                      | Sheet No. 1/1                                                  |

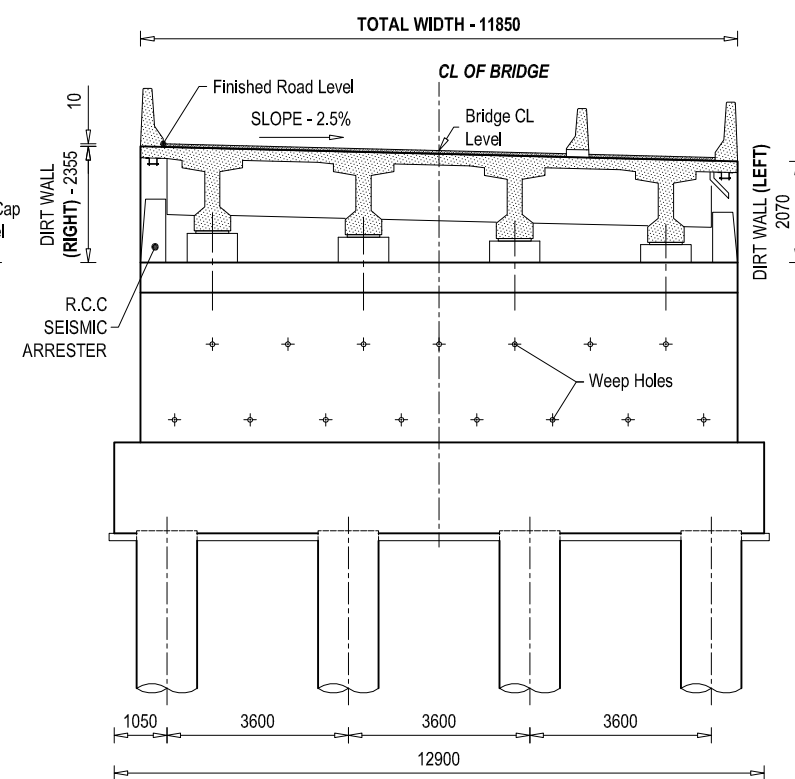


**A2**  
**OUTLINE DETAILS OF ABUTMENT**  
SCALE - 1: 150

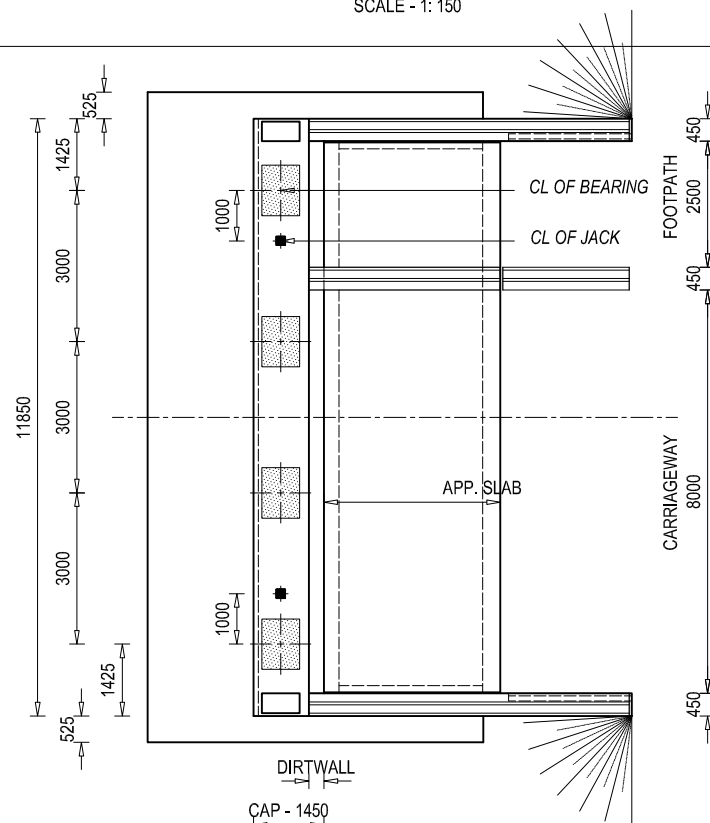
NOTE  
READ THIS DRAWING IN CONJUNCTION WITH  
DRG NO. KDP/DPR/STR/BR/BELGACHHI(DHUNGRE KHOLA)/DD-4



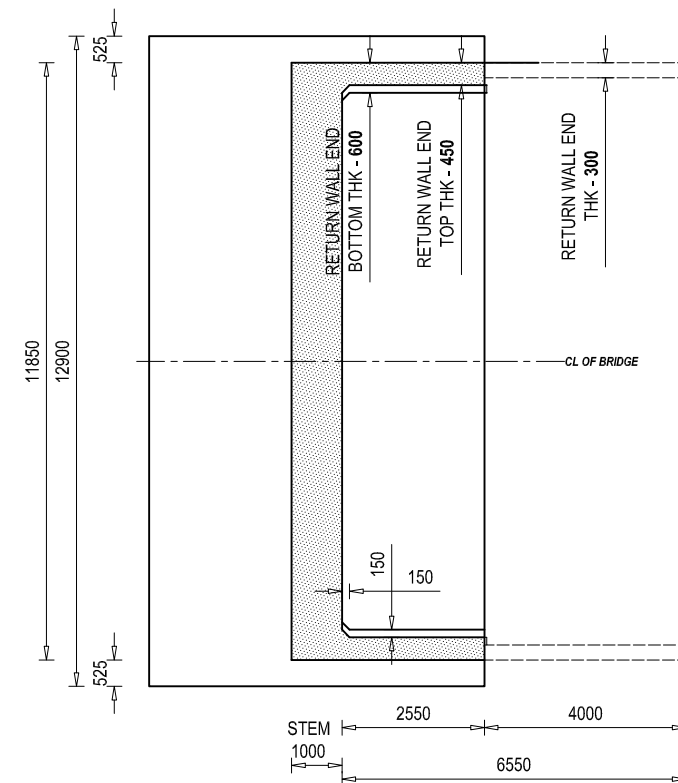
**SECTIONAL VIEW AT C1 - C1**  
SCALE - 1: 150



**SECTIONAL VIEW AT C2 - C2**  
SCALE - 1: 150



**VIEW AT A**  
SCALE - 1: 150



**SECTIONAL VIEW AT B - B**  
SCALE - 1: 150

| EMPLOYER                                                                                                                                                                                                                                             | PROJECT NAME                                                                                                                                                                               | DESIGN CONSULTANTS                                                                                                                                                                                                                                                                                                                                                                                                                 | Designed By                                       | Mr. R.A.                                               | Drawing Name                                                                                                                               | Scale:                               | Date:                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|--------------------------------------------------------------------------------------------------------|
|  Government of Nepal<br>Ministry of Physical Infrastructure and Transport<br><b>Department of Roads</b><br><b>Development Cooperation Implementation Division</b> | Strategic Road Connectivity & Trade Improvement Project (SRCTIP)<br><br>Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges | Joint Venture of<br> EPTISA Servicios De Ingenieria Madrid, Spain<br> STUP Consultants Private Limited Kolkata, India<br><br>In Association With<br>Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited | Checked By<br>Mr. S.M.<br>Approved By<br>Mr. H.B. | Mr. R.A.<br>Nec.No. 6431 CML/W<br>Mr. S.M.<br>Mr. H.B. | ABUTMENT DETAILS OF BRIDGE OVER RIVER BELGACHHI (DHUNGRE KHOLA)<br><br>Reference Drawings<br>KDP/DPR/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD-9 | AS SHOWN<br><br>Chainage:<br>274+925 | 04.08.2023<br><br>Drawing No.-<br>KDP/DPR/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD-7<br><br>Sheet No. 1 / 2 |

**VIEW AT E2**  
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

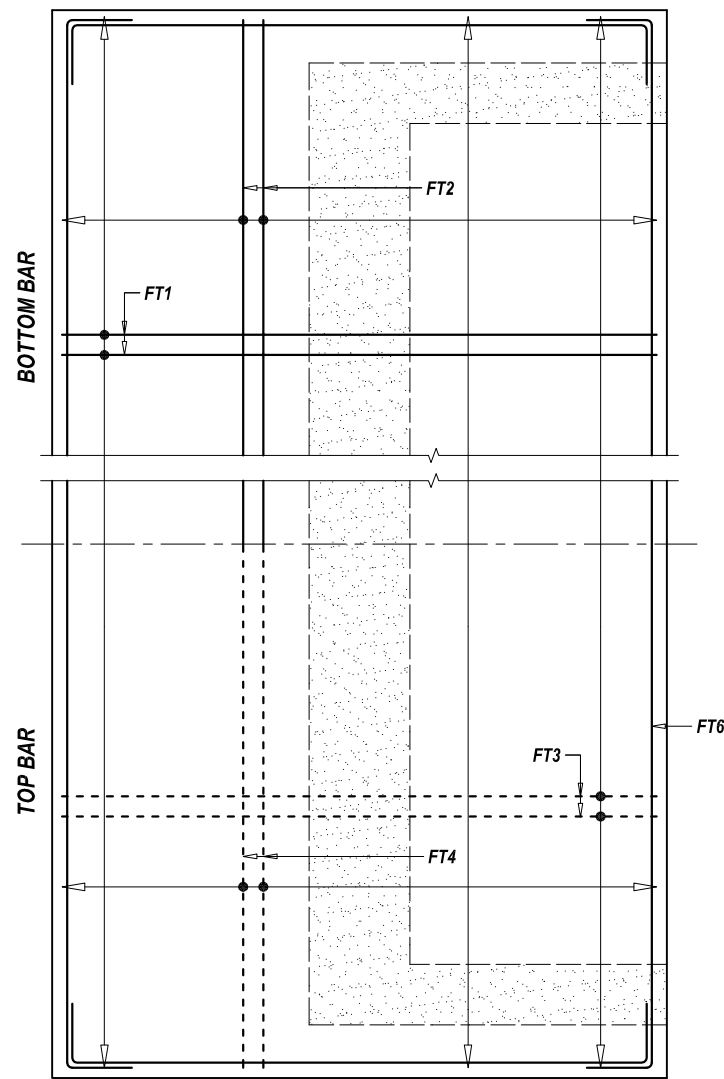
NOTE  
READ THIS DRAWING IN CONJUNCTION WITH  
DRG NO. KDP/DPR/STR/BR/BELGACHHI(DHUNGRE KHOLA)/DD-4

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

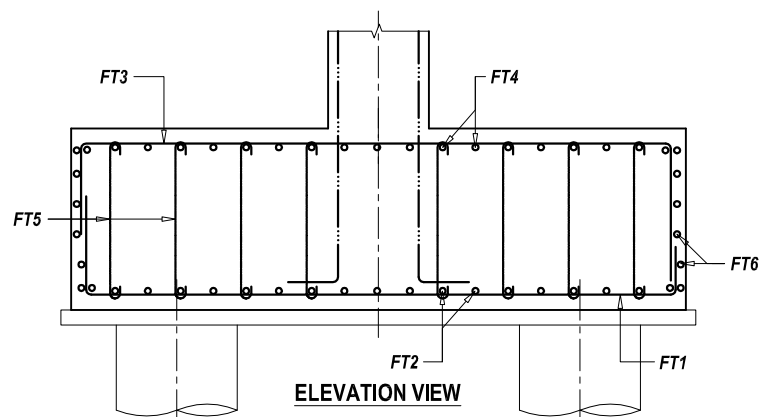
**DETAIL SECTIONAL VIEW**  
**AT R.C.C SEPARATOR**  
SCALE - 1:25

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

| EMPLOYER                                                                                                                                                                                                                                                       | PROJECT NAME                                                                                                                                                                                          | DESIGN CONSULTANTS                                                                                                                                                                                                                                                                                                           | Designed By                                                            | Drawing Name                                                    | Scale:   | Date:                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|-----------------------------------------------------------------|----------|---------------------------------------------------------------|
|  <p>Government of Nepal<br/>Ministry of Physical Infrastructure and Transport<br/><b>Department of Roads</b><br/><b>Development Cooperation Implementation Division</b></p> | <p>Strategic Road Connectivity &amp; Trade Improvement Project (SRCTIP)</p> <p>Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges</p> | <p>Joint Venture of</p> <div>  EPTISA Servicios De Ingeniera Madrid, Spain            STUP Consultants Private Limited Kolkata, India         </div> | <p>Mr. R.A.</p> <p>Nec.No. 6431 CH/17/17</p> <p><i>[Signature]</i></p> | ABUTMENT DETAILS OF BRIDGE OVER RIVER BELGACHHI (DHUNGRE KHOLA) | AS SHOWN | 04.08.2023                                                    |
|                                                                                                                                                                                                                                                                |                                                                                                                                                                                                       | <p>Checked By</p> <p>Mr. S.M.</p> <p><i>[Signature]</i></p>                                                                                                                                                                                                                                                                  | Reference Drawings                                                     | Chainage:                                                       | 274+925  | Drawing No.-<br>KDP/DP/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD- 7 |
|                                                                                                                                                                                                                                                                |                                                                                                                                                                                                       | <p>Approved By</p> <p>Mr. H.B.</p> <p><i>[Signature]</i></p>                                                                                                                                                                                                                                                                 |                                                                        |                                                                 |          |                                                               |
| <p>In Association With</p> <p>Udaya Consultancy, Geocom International, Sundar Kiti Consultant and Rays Consultant Private Limited</p>                                                                                                                          |                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                              |                                                                        |                                                                 |          | Sheet No. 2 / 2                                               |

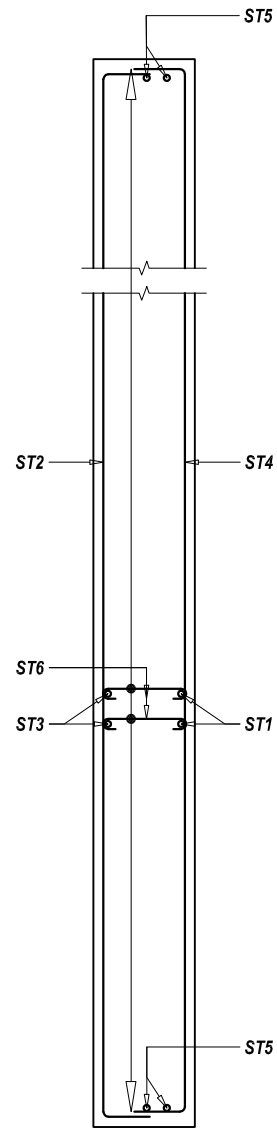


PLAN VIEW

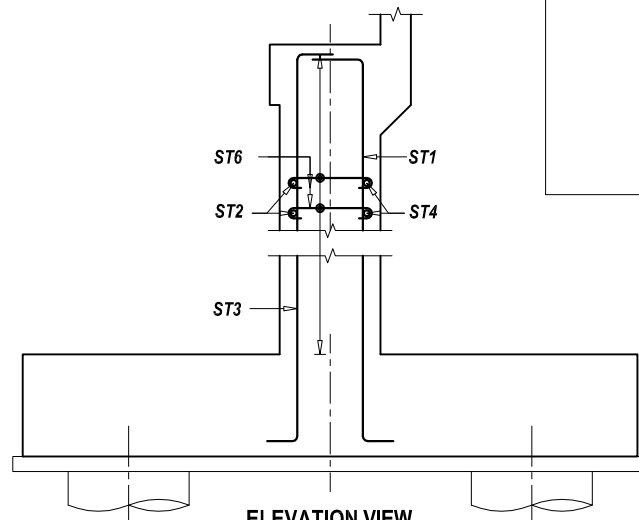


BAR DETAIL OF PILE CAP

SCALE - 1 : 75

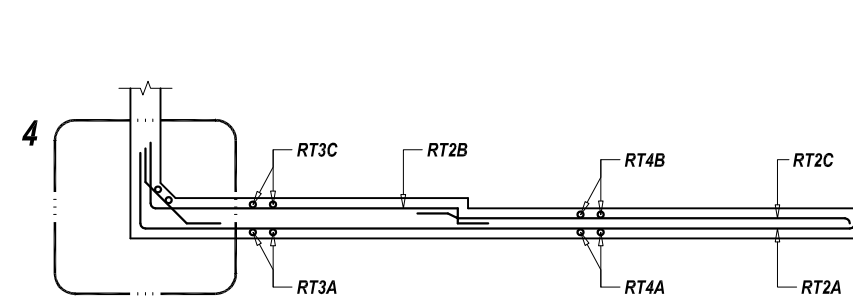


SECTIONAL PLAN VIEW

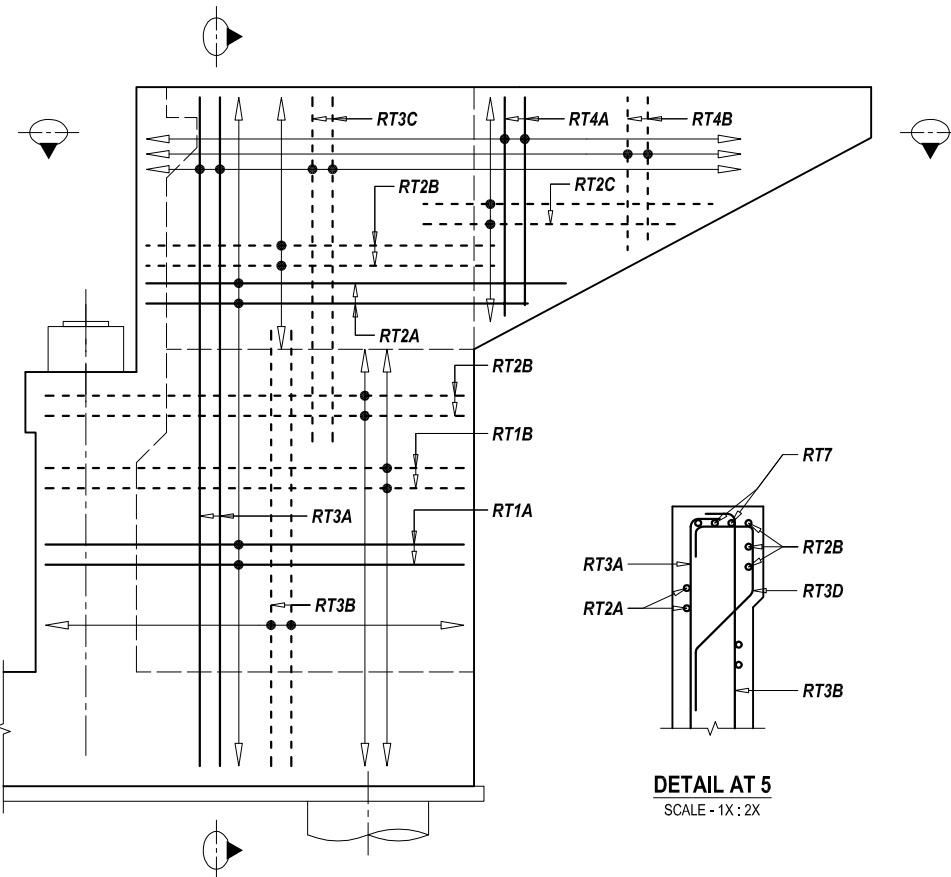


BAR DETAIL AT ABUTMENT STEM

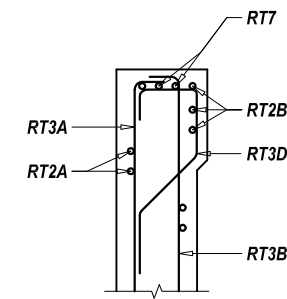
SCALE - 1 : 75



SECTIONAL PLAN VIEW



ELEVATION VIEW

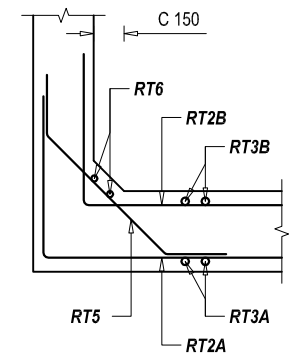


DETAIL AT 5

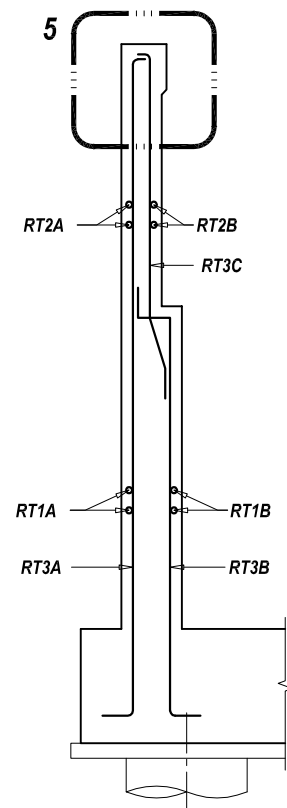
SCALE - 1X : 2X

BAR DETAIL AT RETURN WALL

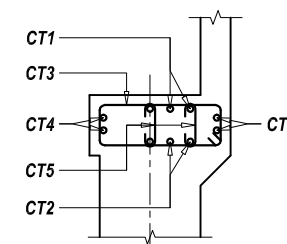
SCALE - 1 : 75



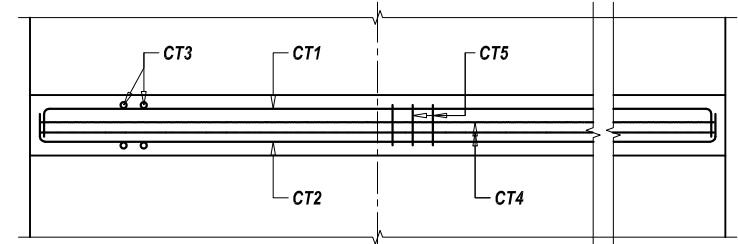
DETAILS AT 4



SECTIONAL SIDE VIEW



ELEVATION VIEW



FRONT VIEW

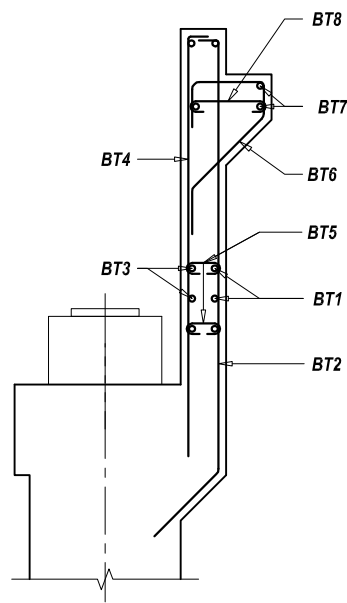
BAR DETAIL AT ABUTMENT CAP

SCALE - 1 : 75

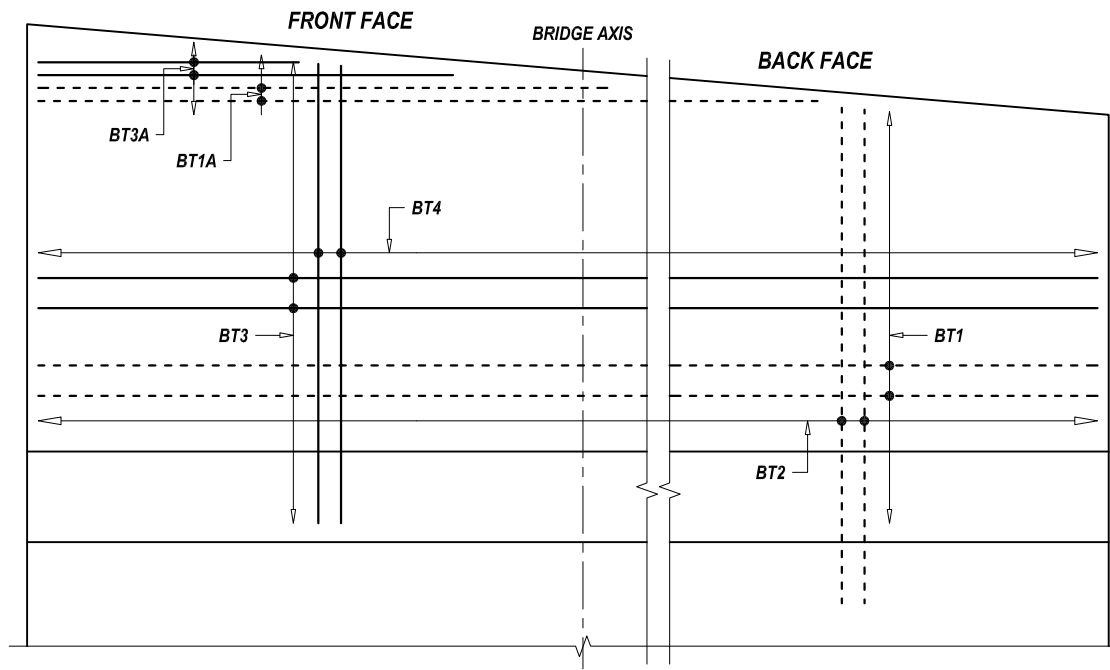
--- TOP BAR OR NEAR FACE REINFORCEMENT  
--- BOTTOM BAR OR FAR FACE REINFORCEMENT

NOTE  
READ THIS DRAWING IN CONJUNCTION WITH  
DRG NO. KDP/DPR/STR/BR/BELGACHHI(DHUNGRE KHOLA)/DD-4

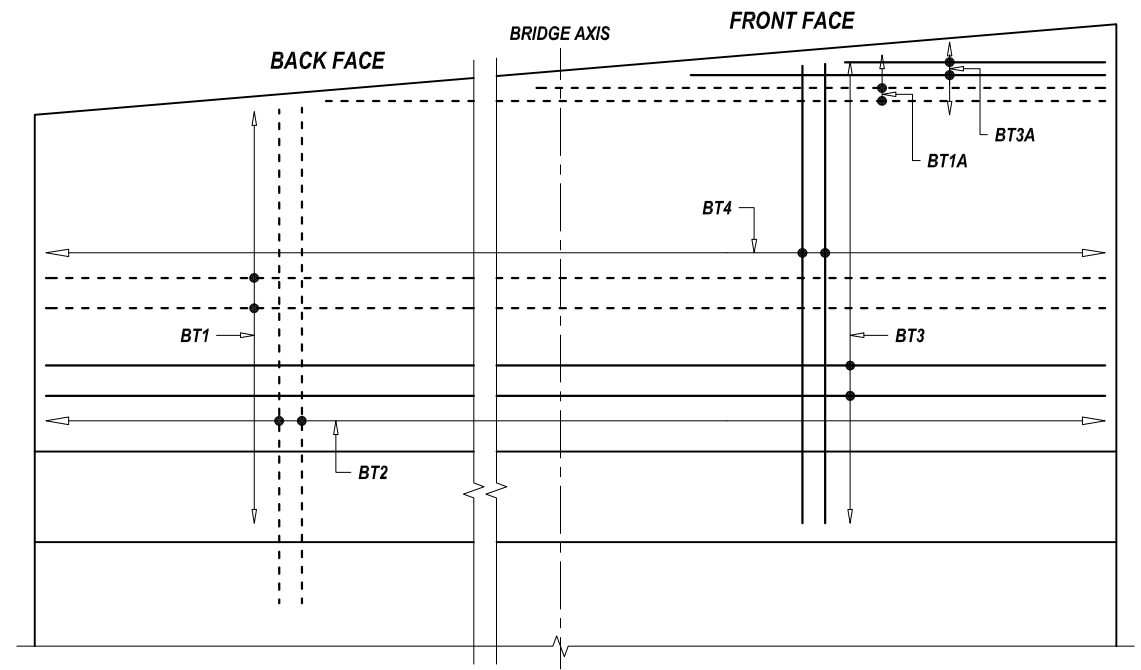
|                                                                                                                                                    |                                                                                                                                                                                        |                                                                                                                                                                                                                                                         |             |          |           |                                                                               |                      |                                                                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------|-----------|-------------------------------------------------------------------------------|----------------------|----------------------------------------------------------------------------------|
| EMPLOYER                                                                                                                                           | PROJECT NAME                                                                                                                                                                           | DESIGN CONSULTANTS                                                                                                                                                                                                                                      | Designed By | Mr. R.A. | Signature | Drawing Name                                                                  | Scale:               | Date:                                                                            |
| Government of Nepal<br>Ministry of Physical Infrastructure and Transport<br>Department of Roads<br>Development Cooperation Implementation Division | Strategic Road Connectivity & Trade Improvement Project (SRCTIP)<br>Detailed Design of Upgradation of Kamala-Dhalkebar-Pathalaya Road Section (130 KM) of Mahendra Highway and Bridges | Joint Venture of<br>ep4sa EPTISA Servicios De Ingeniera Madrid, Spain<br>STUP Consultants Private Limited Kolkata, India<br>In Association With<br>Udaya Consultancy, Geocom International, Sundar Kirti Consultant and Rays Consultant Private Limited | Checked By  | Mr. S.M. | Signature | ABUTMENT REINFORCEMENT DETAILS OF BRIDGE OVER RIVER BELGACHHI (DHUNGRE KHOLA) | AS SHOWN             | 04.08.2023                                                                       |
|                                                                                                                                                    |                                                                                                                                                                                        |                                                                                                                                                                                                                                                         | Approved By | Mr. H.B. | Signature | Reference Drawings<br>KDP/DPR/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD-9           | Chainage:<br>274+925 | Drawing No.-<br>KDP/DPR/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD-8<br>Sheet No. 1 / 2 |



SECTIONAL SIDE VIEW



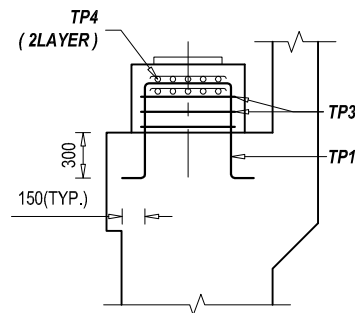
ELEVATION VIEW / VIEW AT D1



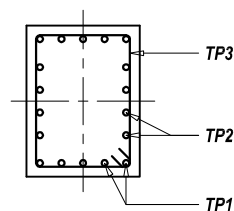
ELEVATION VIEW / VIEW AT D2

BAR DETAIL AT DIRT WALL

SCALE - 1 : 50



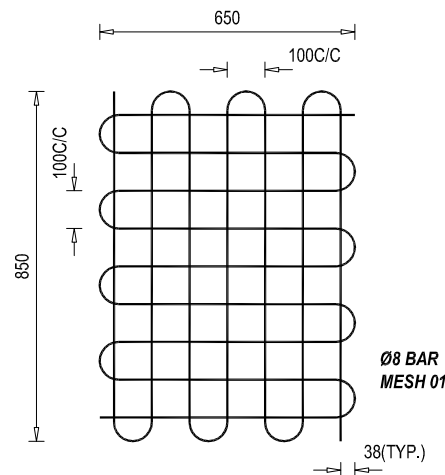
SECTIONAL SIDE VIEW



SECTIONAL PLAN VIEW  
BAR DETAIL AT PEDESTAL

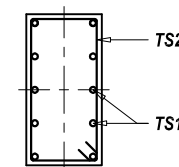
SCALE - 1 : 50

NOTE  
READ THIS DRAWING IN CONJUNCTION WITH  
DRG NO. KDP/DPR/STR/BR/BELGACHHI(DHUNGRE KHOLA)/DD-4

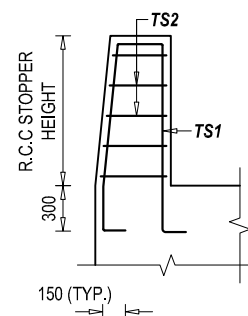


REINFORCEMENT DETAILS OF  
BEARING MESH

SCALE - 1 : 50

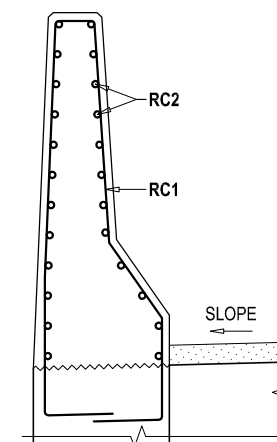


SECTIONAL PLAN VIEW



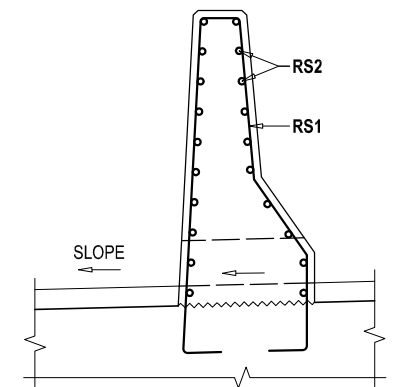
R.C.C STOPPER LEFT  
ELEVATION VIEW

SCALE - 1 : 50



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

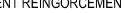
SCALE - 1 : 25



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                                                                                                                 |                                                                                                                                        |                                                                                       |                     |                                                                                       |                                                                                                   |                          |                                                                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--------------------------|----------------------------------------------------------------|
| <br>Government of Nepal<br>Ministry of Physical Infrastructure and Transport<br>Department of Roads<br>Development Cooperation Implementation Division | Strategic Road Connectivity & Trade Improvement Project (SRCTIP)<br><br>Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges | Joint Venture of                                                                                                                   |                                                                                                                                        | Designed By                                                                           | Mr. R.A.            |  | Drawing Name<br><br>ABUTMENT REINFORCEMENT DETAILS OF BRIDGE OVER RIVER BELGACHHI (DHUNGRE KHOLA) | Scale:<br><br>AS SHOWN   | Date:<br><br>04.08.2023                                        |
|                                                                                                                                                                                                                                           |                                                                                                                                                                                            |  EPTISA Servicios De Ingenieria Madrid, Spain |  STUP Consultants Private Limited Kolkatta, India |                                                                                       | Nec.No. 6431 CPB/14 |  |                                                                                                   |                          |                                                                |
|                                                                                                                                                                                                                                           |                                                                                                                                                                                            |                                                                                                                                    | In Association With<br>Udaya Consultancy, Geocom International, Sundar K/iti Consultant and Rays Consultant Private Limited            | Checked By                                                                            | Mr. S.M.            |  | Reference Drawings<br><br>KDP/DPR/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD-9                           | Chainage:<br><br>274+925 | Drawing No.-<br>KDP/DPR/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD- 8 |
|                                                                                                                                                                                                                                           |                                                                                                                                                                                            | Approved By                                                                                                                        | Mr. H.B.                                                                                                                               |  | Sheet No. 2 / 2     |                                                                                       |                                                                                                   |                          |                                                                |

| BAR BENDING SCHEDULE OF DIRT WALL |          |                     |              |              |                |             |                    |                   |
|-----------------------------------|----------|---------------------|--------------|--------------|----------------|-------------|--------------------|-------------------|
| S.No.                             | BAR MARK | DESCRIPTION OF BAR  | BAR DIA.(MM) | SPACING (MM) | BAR LENGTH (M) | No. OF BARS | UNIT WEIGHT (Kg/m) | TOTAL WEIGHT (Kg) |
| 1                                 | BT1      | 150 11700 150       | 16           | 200          | 12.000         | 16          | 1.580              | 303.41            |
| 2                                 | BT1A     | Avg. 5850 150       | 16           | 200          | 6.000          | 3           | 1.580              | 28.44             |
| 3                                 | BT2      | 150 2703 Avg. 450   | 16           | 125          | 3.303          | 96          | 1.580              | 501.08            |
| 4                                 | BT3      | 150 11700 150       | 16           | 200          | 12.000         | 12          | 1.580              | 227.56            |
| 5                                 | BT3A     | Avg. 5850 150       | 16           | 200          | 6.000          | 3           | 1.580              | 28.44             |
| 6                                 | BT4      | 150 2778 Avg.       | 12           | 125          | 2.928          | 96          | 0.889              | 249.86            |
| 7                                 | BT5      | 100 150 100         | 12           | 500          | 0.350          | 96          | 0.889              | 29.87             |
| 8                                 | BT6      | 200 450 220 200 756 | 12           | 200          | 1.826          | 61          | 0.889              | 99.01             |
| 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) :                      |          |                     |              |              |                |             |                    | 1629.44           |

| BAR BENDING SCHEDULE OF ABUTMENT CAP |          |                    |              |                       |                |             |                    |                   |
|--------------------------------------|----------|--------------------|--------------|-----------------------|----------------|-------------|--------------------|-------------------|
| S.No.                                | BAR MARK | DESCRIPTION OF BAR | BAR DIA.(MM) | SPACING (MM)          | BAR LENGTH (M) | No. OF BARS | UNIT WEIGHT (Kg/m) | TOTAL WEIGHT (Kg) |
| 1                                    | 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<br>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 5192 750       | 20           |                      | 6.242          | 95          | 2.469              | 1464.17           |
| 2                                     | ST2      | 500 11700 500      | 16           | 190                  | 12.700         | 16          | 1.580              | 321.11            |
| 3                                     | ST3      | 300 5192 750       | 20           |                      | 6.242          | 95          | 2.469              | 1464.17           |
| 4                                     | ST4      | 500 11700 500      | 16           | 190                  | 12.700         | 16          | 1.580              | 321.11            |
| 5                                     | ST5      | 300 5192 750       | 16           |                      | 6.242          | 12          | 1.580              | 118.37            |
| 6                                     | ST6      | 100 850 100        | 12           | Ver. 500<br>Hor. 500 | 1.050          | 144         | 0.889              | 134.40            |
| TOTAL (KG) :                          |          |                    |              |                      |                |             |                    | 3823.32           |

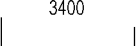
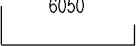
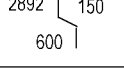
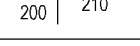
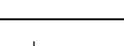
| BAR BENDING SCHEDULE OF PILE CAP |          |                    |              |                       |                |             |                    |                   |
|----------------------------------|----------|--------------------|--------------|-----------------------|----------------|-------------|--------------------|-------------------|
| 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 5950 900       | 25           |                       | 7.750          | 100         | 3.858              | 2989.97           |
| 2                                | FT2      | 900 12750 900      | 20           |                       | 14.550         | 50          | 2.469              | 1796.30           |
| 3                                | FT3      | 900 5950 900       | 16           |                       | 7.750          | 100         | 1.580              | 1224.69           |
| 4                                | FT4      | 900 12750 900      | 16           |                       | 14.550         | 50          | 1.580              | 1149.63           |
| 5                                | FT5      | 100 1650 100       | 10           | Long 250<br>Trans 500 | 1.850          | 607         | 0.617              | 693.18            |
| 6                                | FT6      | 5900 12710 150     | 16           | 200                   | 37.520         | 8           | 1.580              | 474.33            |
| TOTAL (KG) :                     |          |                    |              |                       |                |             |                    | 8328.09           |

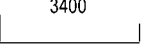
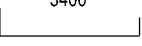
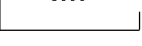
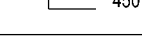
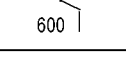
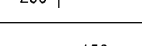
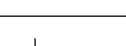
| BAR BENDING SCHEDULE OF PEDESTAL |          |                    |              |              |                |             |                    |                   |
|----------------------------------|----------|--------------------|--------------|--------------|----------------|-------------|--------------------|-------------------|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

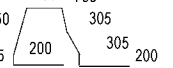
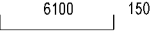
| BAR BENDING SCHEDULE OF RCC SEISMIC ARRESTER - LEFT |          |                           |              |              |                |             |                    |                   |
|-----------------------------------------------------|----------|---------------------------|--------------|--------------|----------------|-------------|------------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

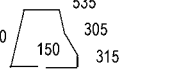
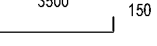
| BAR BENDING SCHEDULE OF RCC SEISMIC ARRESTER - RIGHT |          |                           |              |              |                |             |                    |                   |
|------------------------------------------------------|----------|---------------------------|--------------|--------------|----------------|-------------|----------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

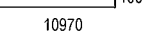
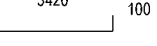
| EMPLOYER                                                                                                                                                                                                                                  |                                                                                                                                                                                            | PROJECT NAME                                                                                                                      |                                                                                                                                        | DESIGN CONSULTANTS |          | Designed By                                                                           |                    | Drawing Name                                                                          |  | Scale:            |  | Date:                                                      |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|---------------------------------------------------------------------------------------|--------------------|---------------------------------------------------------------------------------------|--|-------------------|--|------------------------------------------------------------|--|
| <br>Government of Nepal<br>Ministry of Physical Infrastructure and Transport<br>Department of Roads<br>Development Cooperation Implementation Division | Strategic Road Connectivity & Trade Improvement Project (SRCTIP)<br><br>Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges | Joint Venture of                                                                                                                  |                                                                                                                                        | Designed By        | Mr. R.A. |  | Nec.No. 6431 CRM/W | ABUTMENT BAR BENDING SCHEDULE OF BRIDGE OVER RIVER BELGACHHI (DHUNGRE KHOLA)          |  | AS SHOWN          |  | 04.08.2023                                                 |  |
|                                                                                                                                                                                                                                           |                                                                                                                                                                                            |  EPTISA Servicios De Ingeniera Madrid, Spain |  STUP Consultants Private Limited Kolkatta, India | Checked By         | Mr. S.M. |                                                                                       |                    | Reference Drawings                                                                    |  | Chainage: 274+925 |  | Drawing No.- KDP/DPR/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD-9 |  |
|                                                                                                                                                                                                                                           |                                                                                                                                                                                            | In Association With<br>Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited       |                                                                                                                                        | Approved By        | Mr. H.B. |                                                                                       |                    |  |  |                   |  | 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  150       | 12           | 150          | 4.000          | 40          | 0.889              | 142.22            |
| 2                                          | RT1B     | 450  150       | 12           | 150          | 4.000          | 40          | 0.889              | 142.22            |
| 3                                          | RT2A     | 450  150       | 12           | 150          | 6.650          | 21          | 0.889              | 124.13            |
| 4                                          | RT2B     | 150  150 600   | 12           | 150          | 4.300          | 21          | 0.889              | 80.27             |
| 5                                          | RT2C     |  150           | 12           | 150          | 4.475          | 21          | 0.889              | 83.53             |
| 6                                          | RT3A     | 7558  450      | 12           | 150          | 8.158          | 18          | 0.889              | 130.53            |
| 7                                          | RT3B     |  150 450      | 12           | 150          | 5.791          | 18          | 0.889              | 92.66             |
| 8                                          | RT3C     |  150 600     | 12           | 150          | 3.792          | 18          | 0.889              | 60.67             |
| 9                                          | RT3D     | 200  300 210 | 12           | 150          | 1.210          | 43          | 0.889              | 46.25             |
| 10                                         | RT4A     | 1483.5  150  | 12           | 150          | 1.784          | 50          | 0.889              | 79.27             |
| 11                                         | RT4B     | 1483.5  150  | 12           | 150          | 1.784          | 50          | 0.889              | 79.27             |
| 12                                         | RT5      | 300  870 300 | 12           | 150          | 1.470          | 61          | 0.889              | 79.71             |
| 13                                         | RT6      |  5908        | 12           |              | 5.908          | 2           | 0.889              | 10.50             |
| 14                                         | RT7      | 225  5375    | 20           |              | 5.6            | 4           | 2.469              | 55.31             |
| TOTAL (KG) :                               |          |                                                                                                 |              |              |                |             |                    | 1206.53           |

| 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  150       | 12           | 150          | 4.000          | 38          | 0.889              | 135.11            |
| 2                                           | RT1B     | 450  150       | 12           | 150          | 4.000          | 38          | 0.889              | 135.11            |
| 3                                           | RT2A     | 450  150       | 12           | 150          | 6.650          | 21          | 0.889              | 124.13            |
| 4                                           | RT2B     | 150  150 600   | 12           | 150          | 4.300          | 21          | 0.889              | 80.27             |
| 5                                           | RT2C     |  150           | 12           | 150          | 4.475          | 21          | 0.889              | 83.53             |
| 6                                           | RT3A     | 7262  450      | 12           | 150          | 7.862          | 18          | 0.889              | 125.79            |
| 7                                           | RT3B     |  150 450      | 12           | 150          | 5.495          | 18          | 0.889              | 87.92             |
| 8                                           | RT3C     |  150 600     | 12           | 150          | 3.792          | 18          | 0.889              | 60.67             |
| 9                                           | RT3D     | 200  300 210 | 12           | 150          | 1.210          | 43          | 0.889              | 46.25             |
| 10                                          | RT4A     | 1483.5  150  | 12           | 150          | 1.784          | 50          | 0.889              | 79.27             |
| 11                                          | RT4B     | 1483.5  150  | 12           | 150          | 1.784          | 50          | 0.889              | 79.27             |
| 12                                          | RT5      | 300  870 300 | 12           | 150          | 1.470          | 61          | 0.889              | 79.71             |
| 13                                          | RT6      |  5612        | 12           |              | 5.612          | 2           | 0.889              | 9.98              |
| 14                                          | RT7      | 225  5375    | 20           |              | 5.6            | 4           | 2.469              | 55.31             |
| TOTAL (KG) :                                |          |                                                                                                   |              |              |                |             |                    | 1182.31           |

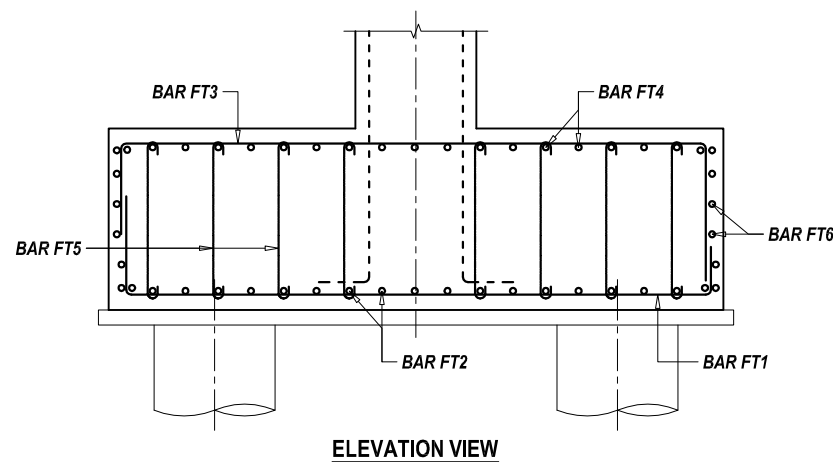
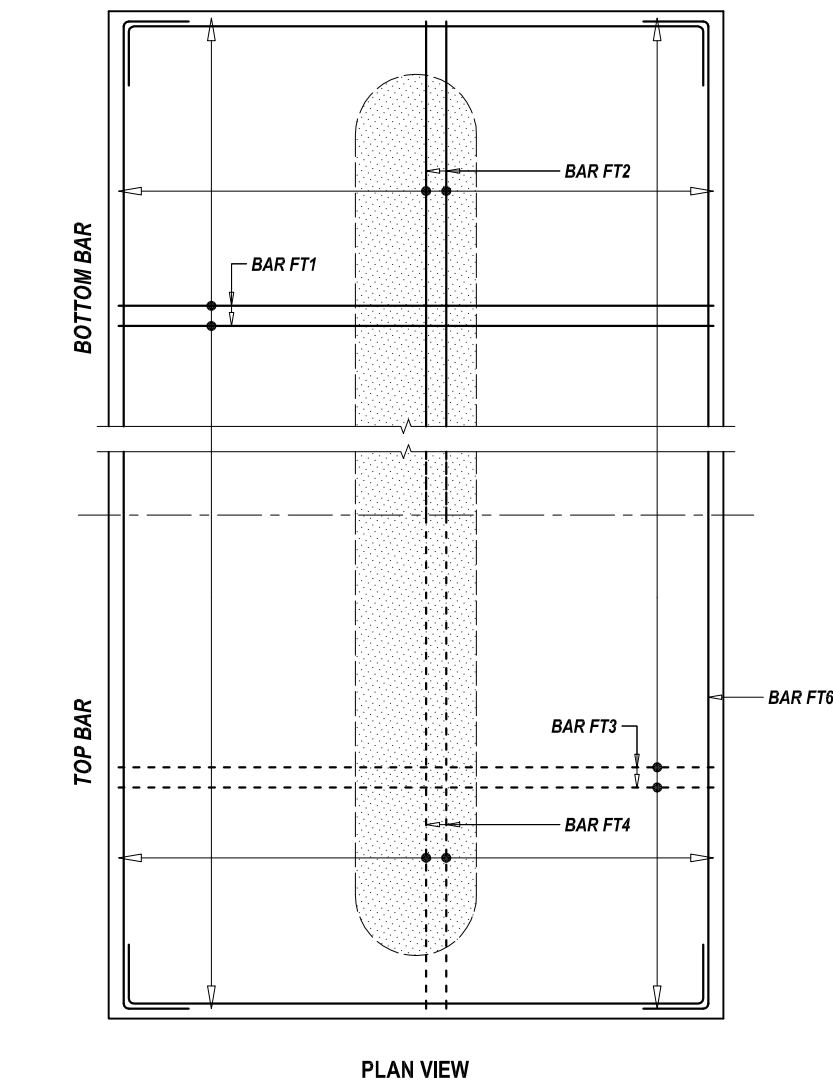
| BAR BENDING SCHEDULE OF R.C.C BARRIER |          |                                                                                                         |              |              |                |             |                    |                   |
|---------------------------------------|----------|---------------------------------------------------------------------------------------------------------|--------------|--------------|----------------|-------------|--------------------|-------------------|
| 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      |  130 735 850 305 200 | 16           | 150          | 3.170          | 42          | 1.580              | 210.39            |
| 2                                     | RC2      | 150  150             | 10           | 150          | 6.400          | 20          | 0.617              | 79.01             |
| TOTAL (KG) :                          |          |                                                                                                         |              |              |                |             |                    | 289.41            |

| BAR BENDING SCHEDULE OF R.C.C SEPARATOR |          |                                                                                                          |              |              |                |             |                    |                   |
|-----------------------------------------|----------|----------------------------------------------------------------------------------------------------------|--------------|--------------|----------------|-------------|--------------------|-------------------|
| S.No.                                   | BAR MARK | DESCRIPTION OF BAR                                                                                       | BAR DIA.(MM) | SPACING (MM) | BAR LENGTH (M) | No. OF BARS | UNIT WEIGHT (Kg/m) | TOTAL WEIGHT (Kg) |
| 1                                       | RS1      |  130 535 1110 305 150 | 16           | 150          | 2.695          | 25          | 1.580              | 106.47            |
| 2                                       | RS2      | 150  150              | 10           | 150          | 3.800          | 17          | 0.617              | 39.88             |
| TOTAL (KG) :                            |          |                                                                                                          |              |              |                |             |                    | 146.35            |

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

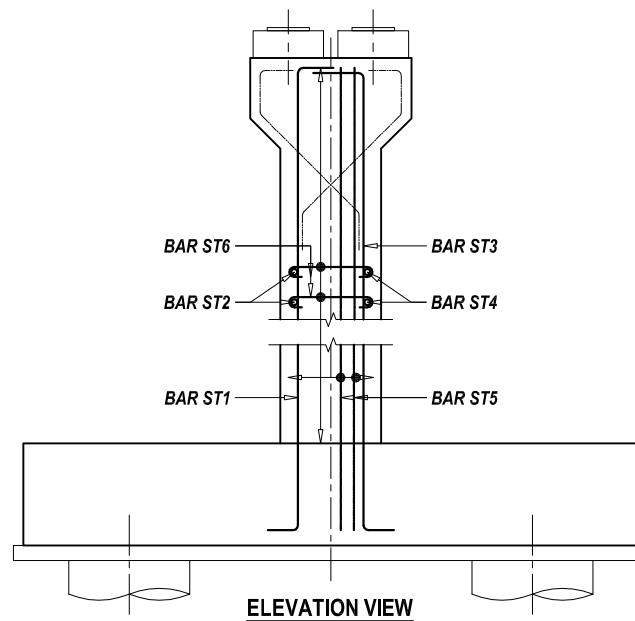
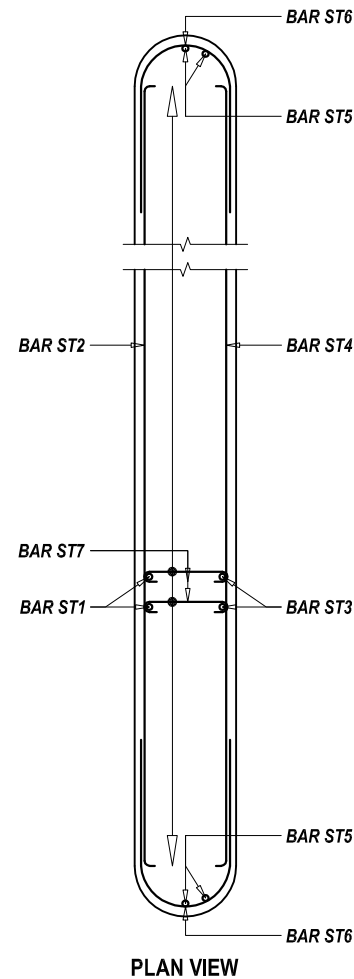
| EMPLOYER                                                                            |                                                                                                                                                    | PROJECT NAME                                                     |                                                                                                                     | DESIGN CONSULTANTS                                                                                                                 |                                                                                                                                        | Designed By | Mr. R.A.             |  | Drawing Name       | Scale:    | AS SHOWN | Date:                                                    | 04.08.2023 |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------|---------------------------------------------------------------------------------------|--------------------|-----------|----------|----------------------------------------------------------|------------|
|  | Government of Nepal<br>Ministry of Physical Infrastructure and Transport<br>Department of Roads<br>Development Cooperation Implementation Division | Strategic Road Connectivity & Trade Improvement Project (SRCTIP) | Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlajaya Road Section (130 KM) of Mahendra Highway and Bridges | Joint Venture of                                                                                                                   |                                                                                                                                        |             | Nac.No. 6431 QP/1/21 |                                                                                       |                    |           |          |                                                          |            |
|                                                                                     |                                                                                                                                                    |                                                                  |                                                                                                                     |  EPTISA Servicios De Ingenieria Madrid, Spain |  STUP Consultants Private Limited Kolkatta, India | Checked By  | Mr. S.M.             |  | Reference Drawings | Chainage: | 274+925  | Drawing No- KDP/DPR/STR/BR/BELGACHI (DHUNGRE KHOLA)/DD-9 |            |
|                                                                                     |                                                                                                                                                    |                                                                  |                                                                                                                     | In Association With                                                                                                                |                                                                                                                                        | Approved By | Mr. H.B.             |                                                                                       |                    |           |          |                                                          | Signature  |
|                                                                                     |                                                                                                                                                    |                                                                  |                                                                                                                     | Udaya Consultancy, Geocom International, Sundar Kritt Consultant and Rays Consultant Private Limited                               |                                                                                                                                        |             |                      |                                                                                       |                    |           |          |                                                          |            |





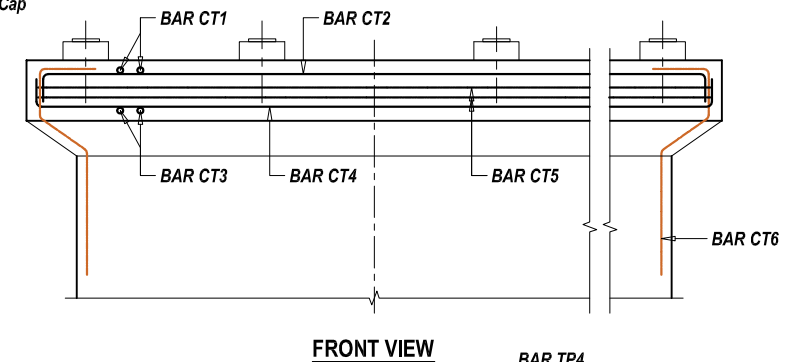
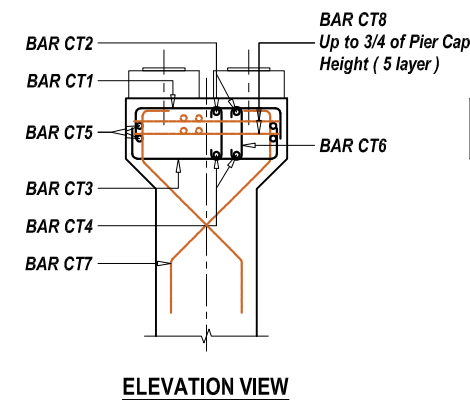
**BAR DETAIL OF FOUNDATION**

SCALE - 1 : 75



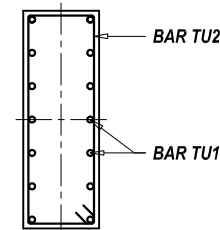
**BAR DETAIL AT PIER STEM**

SCALE - 1 : 75

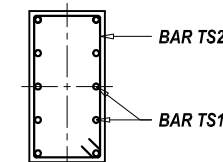


**BAR DETAIL AT PIER CAP**

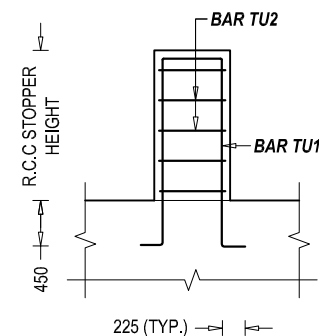
SCALE - 1 : 75



**SECTIONAL PLAN VIEW**



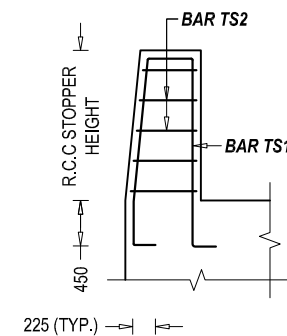
**SECTIONAL PLAN VIEW**



**SECTIONAL ELEVATION VIEW**

**R.C.C STOPPER AT MID**

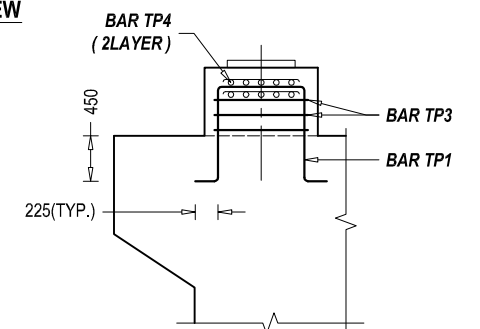
SCALE - 1 : 50



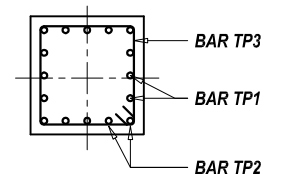
**SECTIONAL ELEVATION VIEW**

**R.C.C STOPPER AT EDGE**

SCALE - 1 : 50



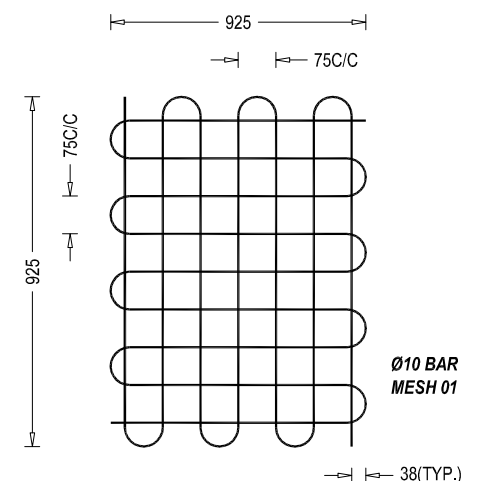
**SECTIONAL SIDE VIEW**



**SECTIONAL PLAN VIEW**

**BAR DETAIL AT PEDESTAL**

SCALE - 1 : 50



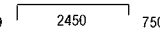
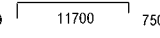
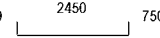
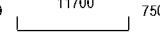
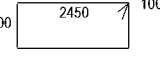
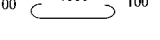
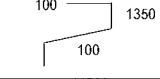
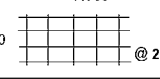
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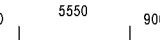
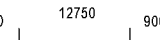
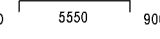
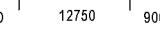
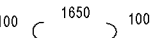
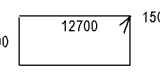
SCALE - 1 : 50

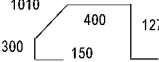
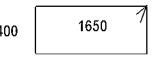
--- TOP BAR OR NEAR FACE REINFORCEMENT  
--- BOTTOM BAR OR FAR FACE REINFORCEMENT

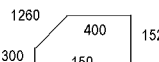
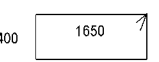
NOTE  
READ THIS DRAWING IN CONJUNCTION WITH  
DRG NO. KDP/DPR/STR/BR/BELGACHHI(DHUNGRE KHOLA)/DD-4

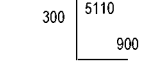
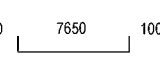
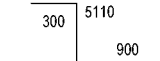
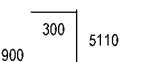
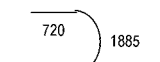
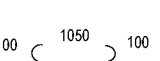
|                                                                                                                                                                                            |                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                   |                                                                                                                                                                     |                                             |                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| <p><b>EMPLOYER</b></p> <p>Government of Nepal<br/>Ministry of Physical Infrastructure and Transport<br/><b>Department of Roads</b><br/>Development Cooperation Implementation Division</p> | <p><b>PROJECT NAME</b></p> <p>Strategic Road Connectivity &amp; Trade Improvement Project (SRCTIP)<br/><br/>Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges</p> | <p><b>DESIGN CONSULTANTS</b></p> <p>Joint Venture of<br/>  EPTISA Servicios De Ingeniera Madrid, Spain<br/>  STUP Consultants Private Limited Kolkata, India<br/>           In Association With<br/>           Udaya Consultancy, Geocom International, Sundar Kritt Consultant and Rays Consultant Private Limited</p> | <p>Designed By<br/>Mr. R.A.<br/>Nec.No. 6431 CIVIL/W<br/>Signature</p> <p>Checked By<br/>Mr. S.M.<br/>Signature</p> <p>Approved By<br/>Mr. H.B.<br/>Signature</p> | <p>Drawing Name<br/>PIER BAR DETAIL OF BRIDGE OVER RIVER BELGACHHI (DHUNGRE KHOLA)</p> <p>Reference Drawings<br/>KDP/DPR/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD-12</p> | <p>Scale:<br/>AS SHOWN</p> <p>Chainage:</p> | <p>Date:<br/>04.08.2023</p> <p>Drawing No.-<br/>KDP/DPR/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD-11</p> <p>Sheet No.1/1</p> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------|

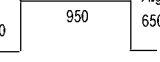
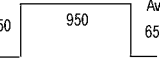
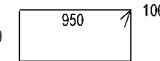
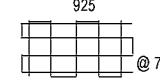
| BAR BENDING SCHEDULE OF PIER CAP |          |                                                                                              |              |                  |                |             |                    |                   |
|----------------------------------|----------|----------------------------------------------------------------------------------------------|--------------|------------------|----------------|-------------|--------------------|-------------------|
| 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  750    | 20           |                  | 3.950          | 50          | 2.469              | 487.65            |
| 2                                | CT2      | 750  750    | 20           |                  | 13.200         | 18          | 2.469              | 586.67            |
| 3                                | CT3      | 750  750    | 20           |                  | 3.950          | 50          | 2.469              | 487.65            |
| 4                                | CT4      | 750  750    | 20           |                  | 13.200         | 18          | 2.469              | 586.67            |
| 5                                | CT5      | 11700  100  | 16           |                  | 28.500         | 11          | 1.580              | 495.41            |
| 6                                | CT6      | 100  100    | 16           | X: 280<br>Y: 480 | 1.550          | 225         | 1.580              | 551.11            |
| 7                                | CT7      |  100        | 16           | 150              | 1.550          | 137         | 1.580              | 335.57            |
| 8                                | CT8      | 2450  @ 200 | 16           |                  | 296.650        | 5 Layer     | 1.580              | 2343.90           |
| TOTAL (KG) :                     |          |                                                                                              |              |                  |                |             |                    | 5874.63           |

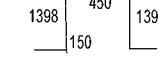
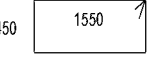
| BAR BENDING SCHEDULE OF PILE CAP |          |                                                                                              |              |                         |                |             |                    |                   |
|----------------------------------|----------|----------------------------------------------------------------------------------------------|--------------|-------------------------|----------------|-------------|--------------------|-------------------|
| 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  900  | 25           |                         | 7.350          | 98          | 3.858              | 2778.94           |
| 2                                | FT2      | 900  900  | 25           |                         | 14.550         | 50          | 3.858              | 2806.71           |
| 3                                | FT3      | 900  900  | 25           |                         | 7.350          | 98          | 3.858              | 2778.94           |
| 4                                | FT4      | 900  900  | 25           |                         | 14.550         | 50          | 3.858              | 2806.71           |
| 5                                | FT5      | 100  100  | 12           | Long. 225<br>Trans. 250 | 1.85           | 1258        | 0.889              | 2068.71           |
| 6                                | FT6      | 5500  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    |  1270    | 16           | 150          | 3.280          | 13          | 1.580              | 67.38             |
| 2                                                   | TS2-L    | 400  100 | 12           | 150          | 4.300          | 7           | 0.889              | 26.76             |
| TOTAL (KG) :                                        |          |                                                                                             |              |              |                |             |                    | 94.14             |

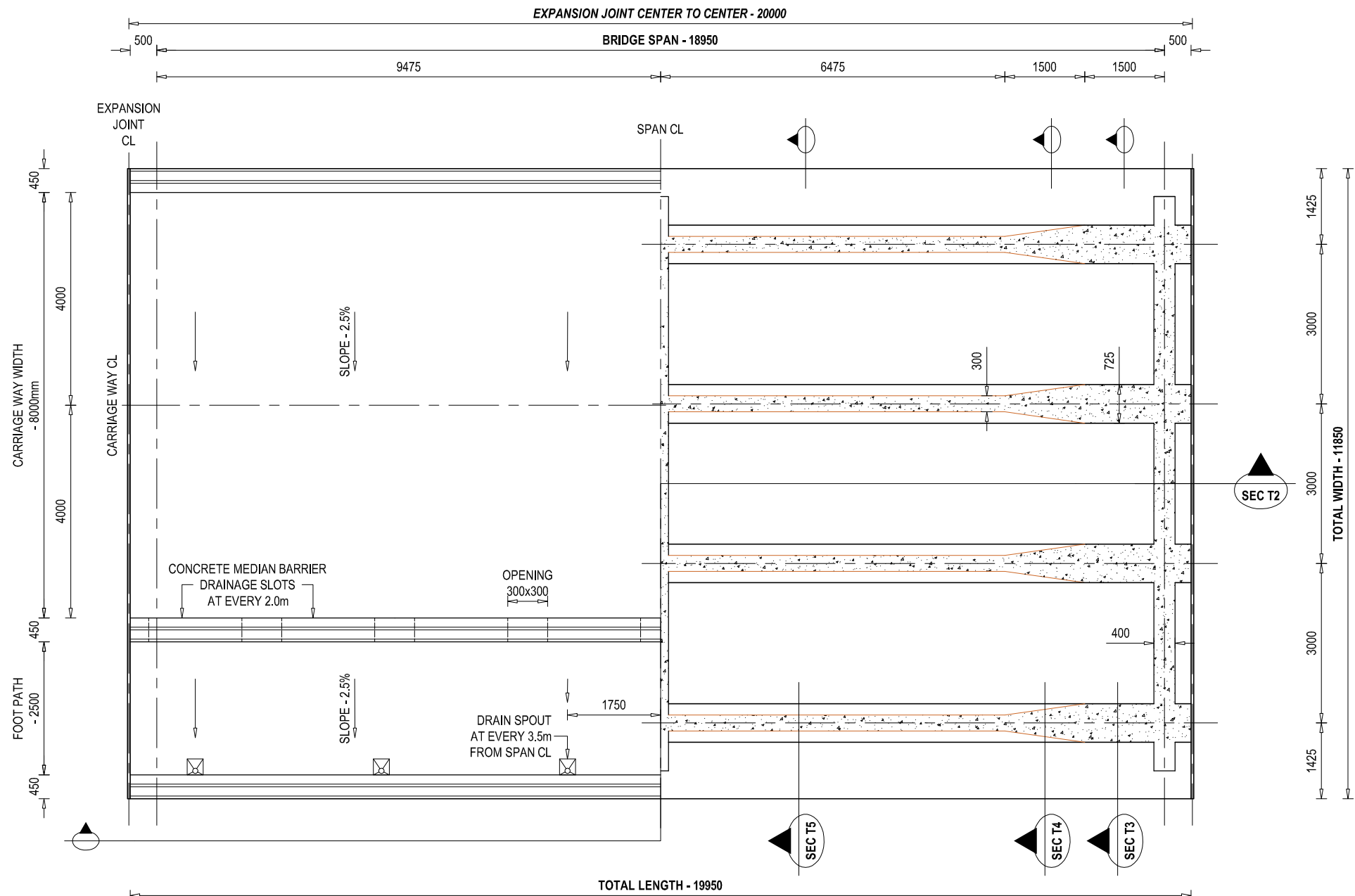
| BAR BENDING SCHEDULE OF RCC SEISMIC ARRESTER - RIGHT |          |                                                                                             |              |              |                |             |                    |                   |
|------------------------------------------------------|----------|---------------------------------------------------------------------------------------------|--------------|--------------|----------------|-------------|--------------------|-------------------|
| 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    |  1525    | 16           | 150          | 3.785          | 13          | 1.580              | 77.76             |
| 2                                                    | TS2-R    | 400  100 | 12           | 150          | 4.300          | 9           | 0.889              | 34.40             |
| TOTAL (KG) :                                         |          |                                                                                             |              |              |                |             |                    | 112.16            |

| 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  900 | 20           |                     | 6.310          | 50          | 2.469              | 779.01            |
| 2                                 | ST2      | 100  100 | 16           | 200                 | 7.850          | 10          | 1.580              | 124.05            |
| 3                                 | ST3      | 300  900 | 20           |                     | 6.310          | 50          | 2.469              | 779.01            |
| 4                                 | ST4      | 100  100 | 16           | 200                 | 7.850          | 10          | 1.580              | 124.05            |
| 5                                 | ST5      | 300  900 | 20           |                     | 6.310          | 12          | 2.469              | 186.96            |
| 5                                 | ST6      |  1885    | 16           | 200                 | 3.325          | 20          | 1.580              | 105.09            |
| 6                                 | ST7      | 100  100 | 12           | Ver. 155<br>Hor.400 | 1.250          | 299         | 0.889              | 332.22            |
| TOTAL (KG) :                      |          |                                                                                             |              |                     |                |             |                    | 2430.40           |

| 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  650  | 16           | 150          | 2.850          | 8           | 1.580              | 36.03             |
| 2                                | TP2      | 150  650  | 16           | 150          | 2.850          | 8           | 1.580              | 36.03             |
| 3                                | TP3      | 950  100  | 16           | 150          | 4.000          | 3           | 1.580              | 18.96             |
| 4                                | TP4      | 925  @ 75 | 10           |              | 26.000         | 2           | 0.617              | 32.10             |
| TOTAL (KG) :                     |          |                                                                                                |              |              |                |             |                    | 123.12            |

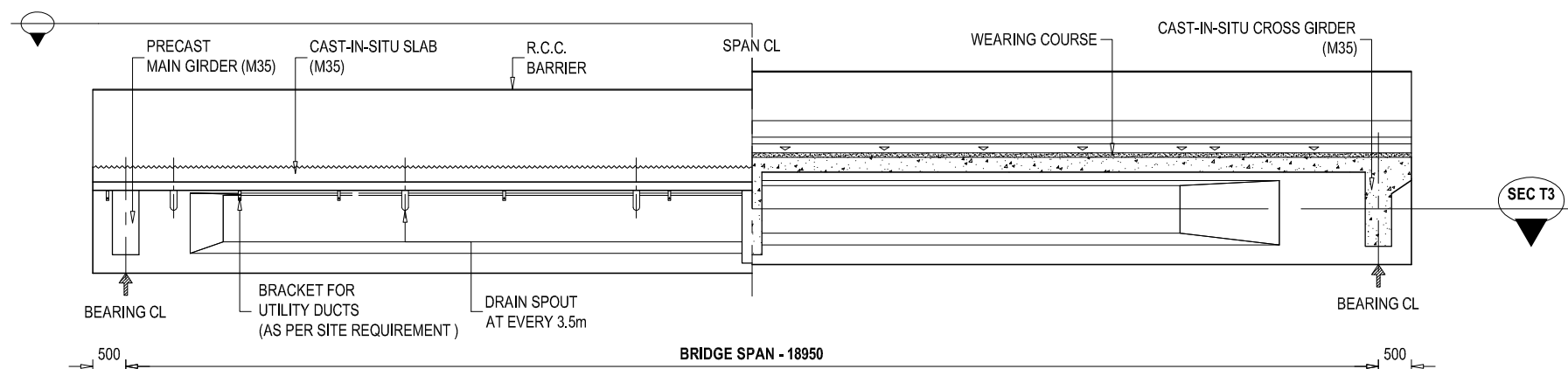
| BAR BENDING SCHEDULE OF RCC SEISMIC ARRESTER - MID |          |                                                                                               |              |              |                |             |                    |                   |
|----------------------------------------------------|----------|-----------------------------------------------------------------------------------------------|--------------|--------------|----------------|-------------|--------------------|-------------------|
| 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    | 16           | 150          | 3.546          | 13          | 1.580              | 72.85             |
| 2                                                  | TU2      | 450  100 | 12           | 150          | 4.200          | 8           | 0.889              | 29.87             |
| TOTAL (KG) :                                       |          |                                                                                               |              |              |                |             |                    | 102.71            |

| EMPLOYER                                                                                                                                                                                                                                  |                                                                                                                                                                                            | PROJECT NAME                                                                                                                |  | DESIGN CONSULTANTS |          | Drawing Name                                                                                       |                                                                              | Scale:   |            | Date:                                                              |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|--|--------------------|----------|----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|----------|------------|--------------------------------------------------------------------|--|
| <br>Government of Nepal<br>Ministry of Physical Infrastructure and Transport<br>Department of Roads<br>Development Cooperation Implementation Division | Strategic Road Connectivity & Trade Improvement Project (SRCTIP)<br><br>Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges | Joint Venture of                                                                                                            |  | Designed By        | Mr. R.A. | <br>Signature | PIER BAR BENDING SCHEDULE OF BRIDGE OVER RIVER<br>BELGACHIHI (DHUNGRE KHOLA) | AS SHOWN | 04.08.2023 | Drawing No.-<br>KDP/DPR/STR/BR/BELGACHIHI<br>(DHUNGRE KHOLA)/DD-12 |  |
|                                                                                                                                                                                                                                           |                                                                                                                                                                                            | EPTISA Servicios De Ingeniera Madrid, Spain                                                                                 |  | Checked By         | Mr. S.M. |                                                                                                    |                                                                              |          |            | Chainage: 274+925                                                  |  |
|                                                                                                                                                                                                                                           |                                                                                                                                                                                            | In Association With<br>Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited |  | Approved By        | Mr. H.B. |                                                                                                    |                                                                              |          |            | Sheet No. 1/1                                                      |  |



**HALF SECTIONAL PLAN VIEW OF SUPERSTRUCTURE AT SEC T1**

SCALE - 1 : 100 @ A3 PAPER

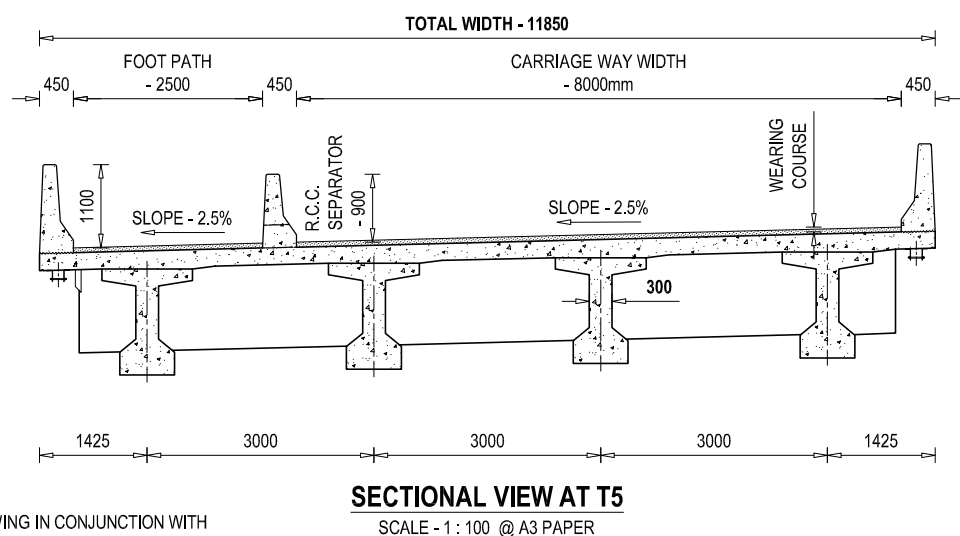
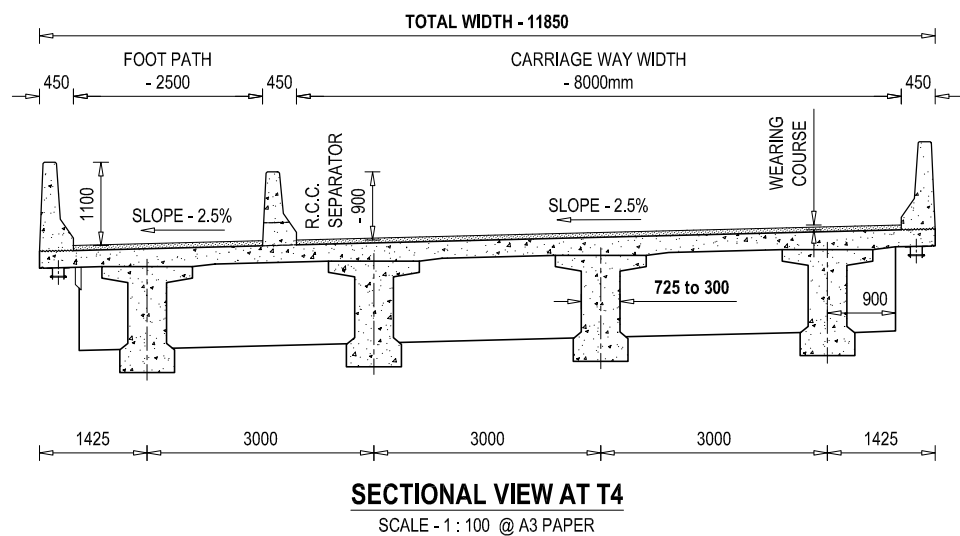
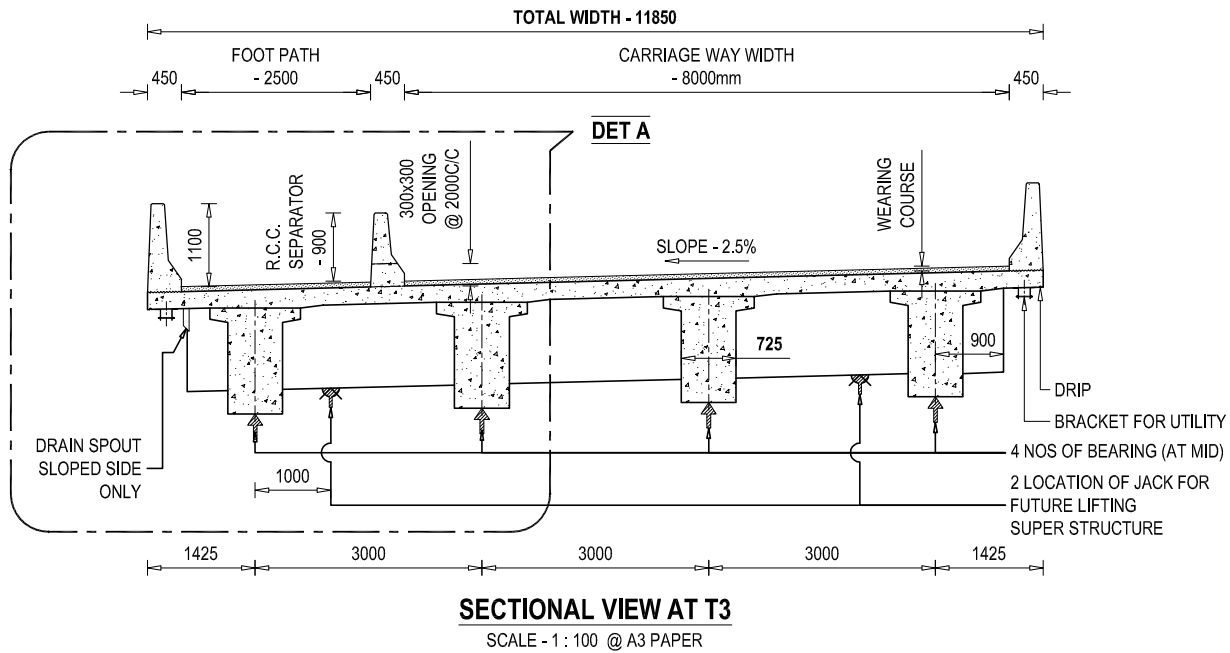


**HALF ELEVATION SECTIONAL VIEW OF SUPERSTRUCTURE AT SEC T2**

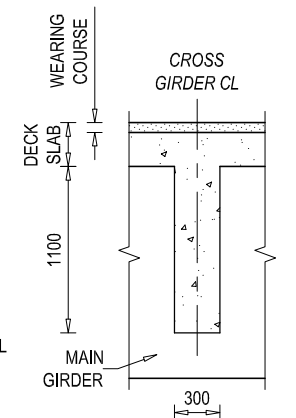
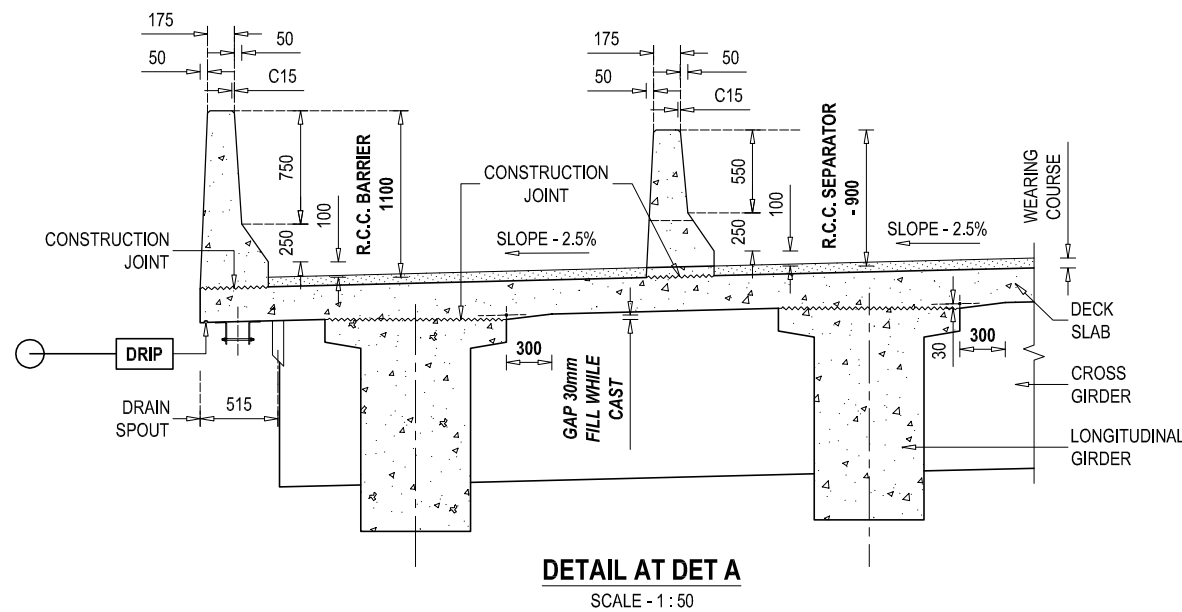
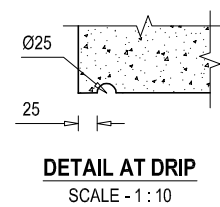
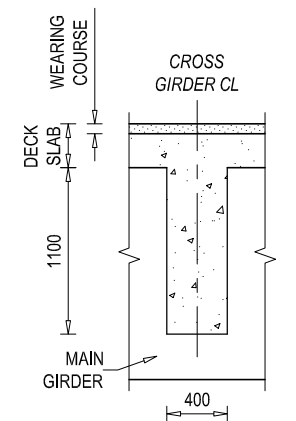
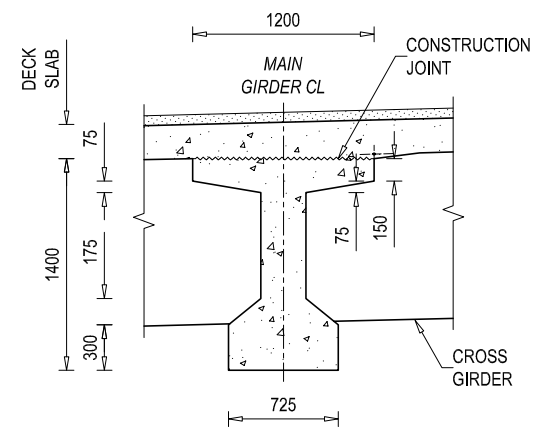
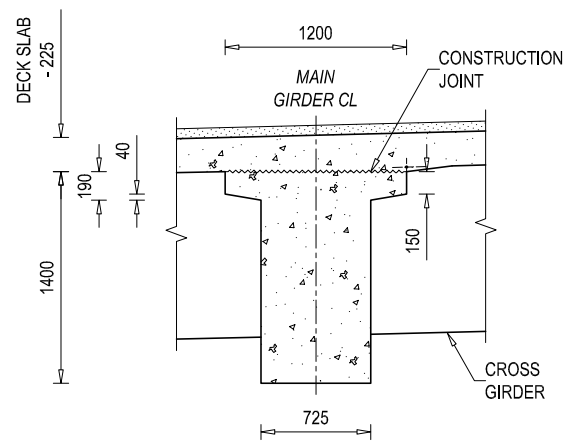
SCALE - 1 : 100 @ A3 PAPER

NOTE  
READ THIS DRAWING IN CONJUNCTION WITH  
DRG NO. KDP/DPR/STR/BR/BELGACHHI(DHUNGRE KHOLA)/DD-4

| EMPLOYER                                                                                                                                                                                                                                                   | PROJECT NAME                                                                                                                                                                                          | DESIGN CONSULTANTS                                                                                                                                                                                                                                                                                                                                                                                                                                    | Designed By | Mr. R.A.  | Drawing Name                                                                                                                                                  | Scale:                                          | Date:                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
|  <p>Government of Nepal<br/>Ministry of Physical Infrastructure and Transport<br/><b>Department of Roads</b><br/>Development Cooperation Implementation<br/>Division</p> | <p>Strategic Road Connectivity &amp; Trade Improvement Project (SRCTIP)</p> <p>Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges</p> | <p>Joint Venture of</p> <p> EPTISA Servicios De Ingenieria Madrid, Spain</p> <p> STUP Consultants Private Limited Kolkata, India</p> <p>In Association With</p> <p>Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited</p> | Signature   | Signature | <p>SUPER STRUCTURE DETAILS OF BRIDGE OVER RIVER BELGACHHI (DHUNGRE KHOLA)</p> <p>Reference Drawings</p> <p>KDP/DPR/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD-17</p> | <p>AS SHOWN</p> <p>Chainage:</p> <p>274+925</p> | <p>02.06.2023</p> <p>Drawing No.- KDP/DPR/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD-13</p> <p>Sheet No. 1 / 2</p> |
|                                                                                                                                                                                                                                                            |                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Checked By  | Mr. S.M.  |                                                                                                                                                               |                                                 |                                                                                                             |
|                                                                                                                                                                                                                                                            |                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Approved By | Mr. H.B.  |                                                                                                                                                               |                                                 |                                                                                                             |



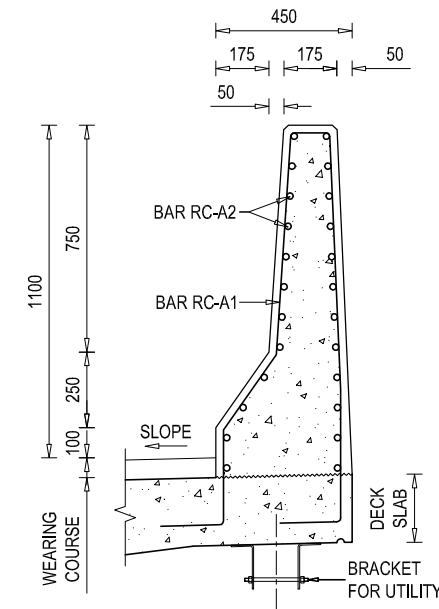
NOTE  
READ THIS DRAWING IN CONJUNCTION WITH  
DRG NO. KDP/DPR/STR/BR/BELGACHHI(DHUNGRE KHOLA)/DD-4



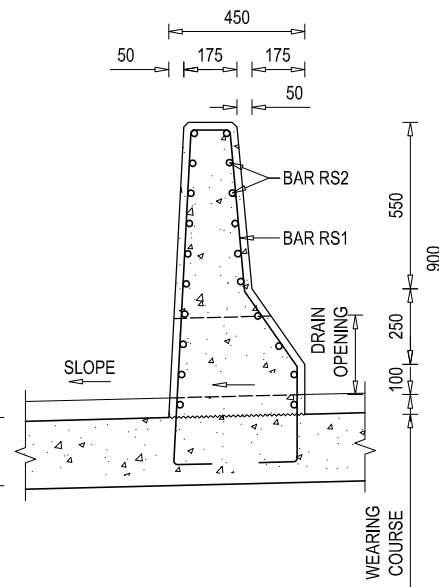
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|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| <p>EMPLOYER</p> <p>Government of Nepal<br/>Ministry of Physical Infrastructure and Transport<br/><b>Department of Roads</b><br/>Development Cooperation Implementation Division</p> | <p>PROJECT NAME</p> <p>Strategic Road Connectivity &amp; Trade Improvement Project (SRCTIP)<br/>Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges</p> | <p>DESIGN CONSULTANTS</p> <p>Joint Venture of</p> <p><b>eptisa</b> EPTISA Servicios De Ingenieria Madrid, Spain <b>STUP</b> STUP Consultants Private Limited Kolkata, India</p> <p>In Association With<br/>Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited</p> | <p>Designed By</p> <p>Mr. R.A.<br/>Nec.No. 6431 Q.M.L. 'A'</p> <p>Checked By</p> <p>Mr. S.M.</p> <p>Approved By</p> <p>Mr. H.B.</p> | <p>Drawing Name</p> <p>SUPER STRUCTURE DETAILS OF BRIDGE OVER RIVER BELGACHHI (DHUNGRE KHOLA)</p> <p>Reference Drawings</p> <p>KDP/DPR/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD-17</p> | <p>Scale:</p> <p>AS SHOWN</p> <p>Chainage:</p> <p>274+925</p> | <p>Date:</p> <p>02.06.2023</p> <p>Drawing No.-<br/>KDP/DPR/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD- 13</p> <p>Sheet No. 2 / 2</p> |
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LEGEND FOR REINFORCEMENT BAR

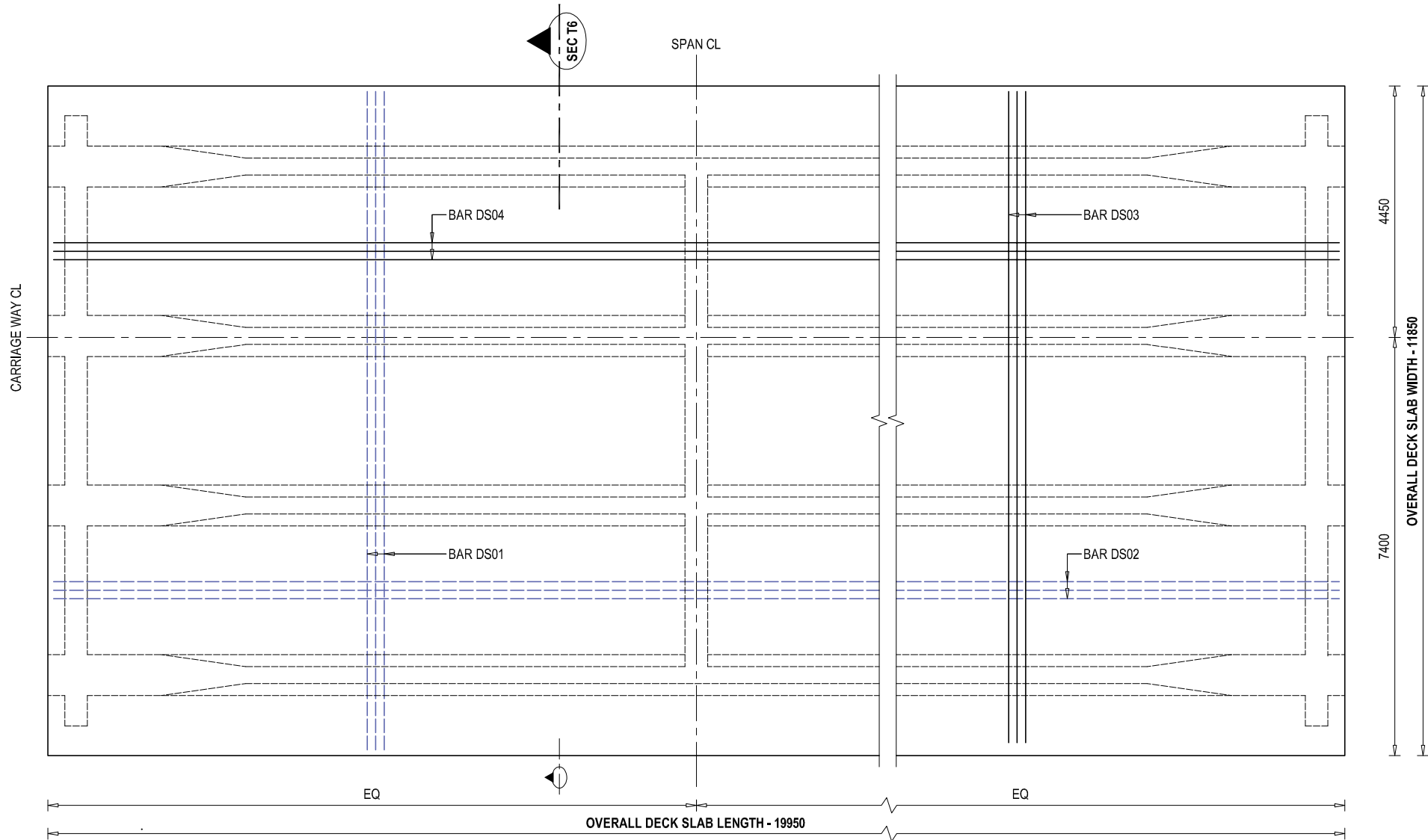
| CODE                                     | FULL FORM         |                    |
|------------------------------------------|-------------------|--------------------|
| DS                                       | - DECK SLAB       | CG - CROSS GIRDER  |
| RB                                      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



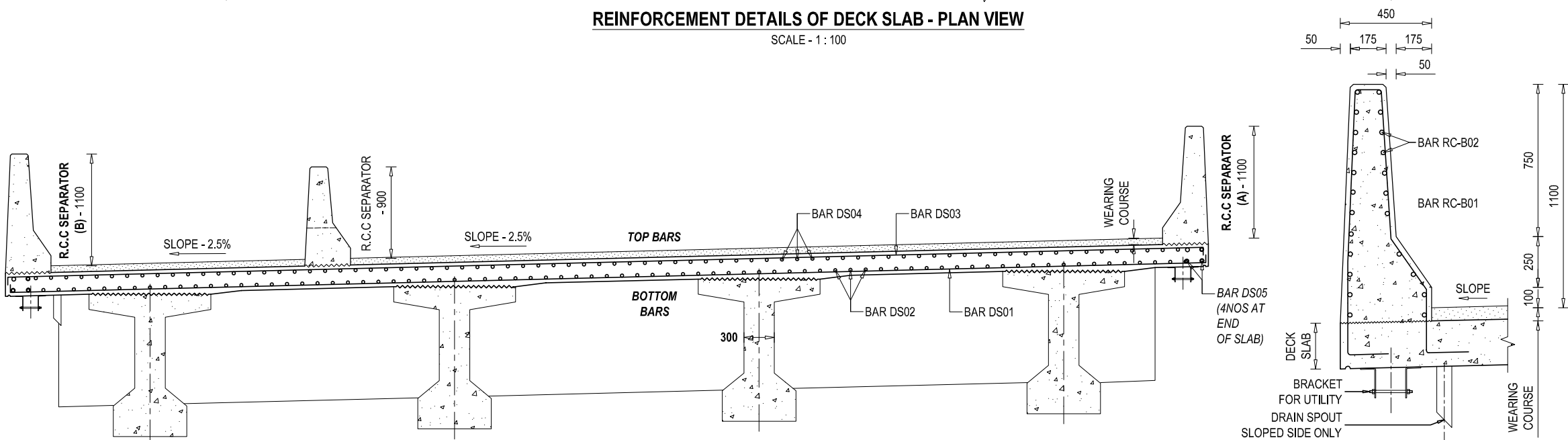
REINFORCEMENT DETAILS OF R.C.C BARRIER (A)- SECTIONAL VIEW  
SCALE - 1 : 25



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



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

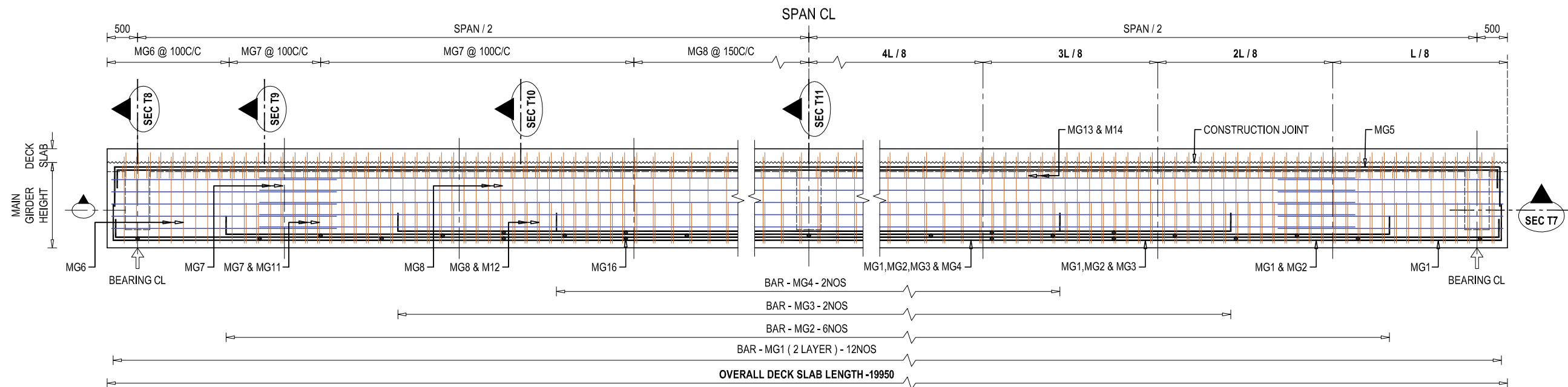


REINFORCEMENT DETAILS OF DECK SLAB - SECTIONAL VIEW AT T6  
SCALE - 1 : 50

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

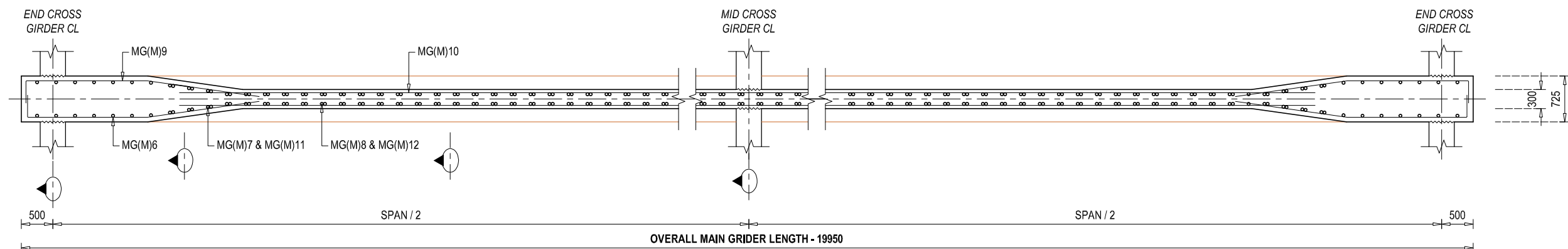
NOTE  
READ THIS DRAWING IN CONJUNCTION WITH  
DRG NO. KDP/DPR/STR/BR/BELGACHHI(DHUNGRE KHOLA)/DD-4

| EMPLOYER                                                                                                                                                                                                                                     | PROJECT NAME                                                                                                                                                                           | DESIGN CONSULTANTS                                                                                                                                                                                                                                                                                                                                                                                                            | Designed By | Mr. R.A. | Drawing Name                                                         | Scale:               | Date:                                                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------|----------------------------------------------------------------------|----------------------|-----------------------------------------------------------------|
| <br>Government of Nepal<br>Ministry of Physical Infrastructure and Transport<br>Department of Roads<br>Development Cooperation Implementation<br>Division | Strategic Road Connectivity & Trade Improvement Project (SRCTIP)<br>Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges | Joint Venture of<br> EPTISA Servicios De Ingeniera Madrid, Spain<br> STUP Consultants Private Limited Kolkata, India<br>In Association With<br>Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited | Checked By  | Mr. S.M. | DECK SLAB DETAILS OF BRIDGE OVER RIVER BELGACHHI (DHUNGRE KHOLA)     | AS SHOWN             | 02.06.2023                                                      |
|                                                                                                                                                                                                                                              |                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                               | Approved By | Mr. H.B. | Reference Drawings<br>KDP/DPR/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD-17 | Chainage:<br>274+925 | Drawing No.-<br>KDP/DPR/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD- 14 |
|                                                                                                                                                                                                                                              |                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                               |             |          |                                                                      |                      | Sheet No. 1 / 1                                                 |



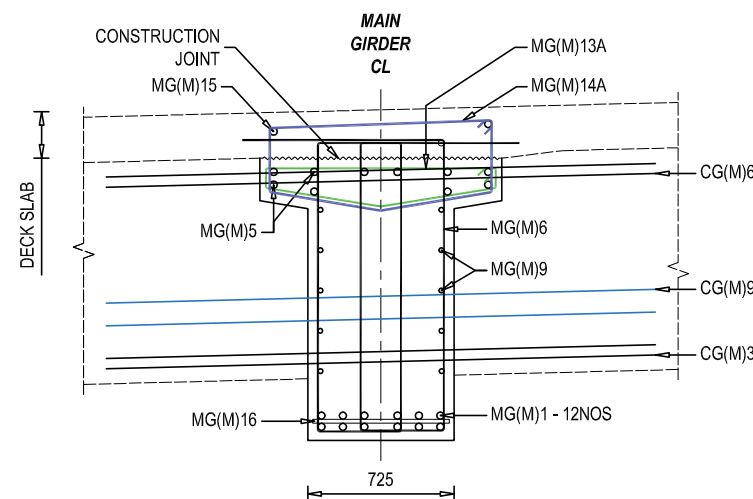
**REINFORCEMENT DETAILS OF MAIN GIRDER - SECTIONAL ELEVATION VIEW**

SCALE - 1 : 75



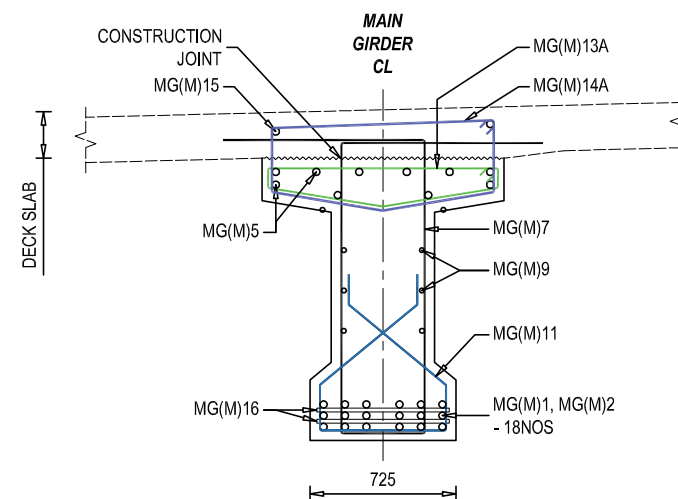
**REINFORCEMENT DETAILS OF MAIN GIRDER (MID) - SECTIONAL PLAN VIEW AT T7(M)**

SCALE - 1 : 75



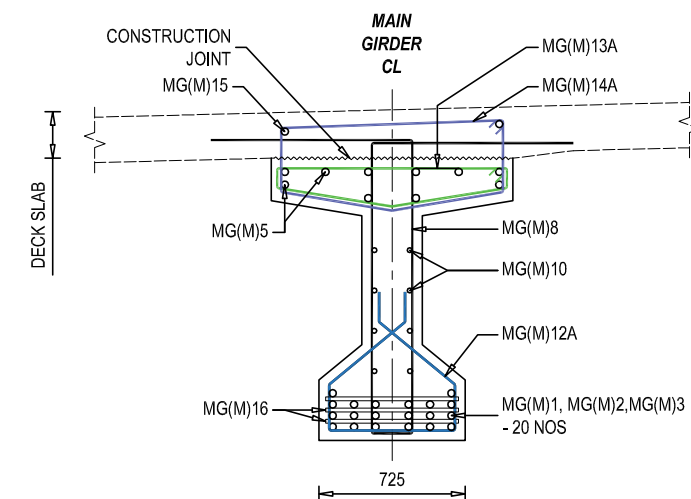
**REINFORCEMENT DETAILS OF MAIN GIRDER  
SECTIONAL VIEW AT T8**

SCALE - 1 : 50



**REINFORCEMENT DETAILS OF MAIN GIRDER  
SECTIONAL VIEW AT T9**

SCALE - 1 : 50

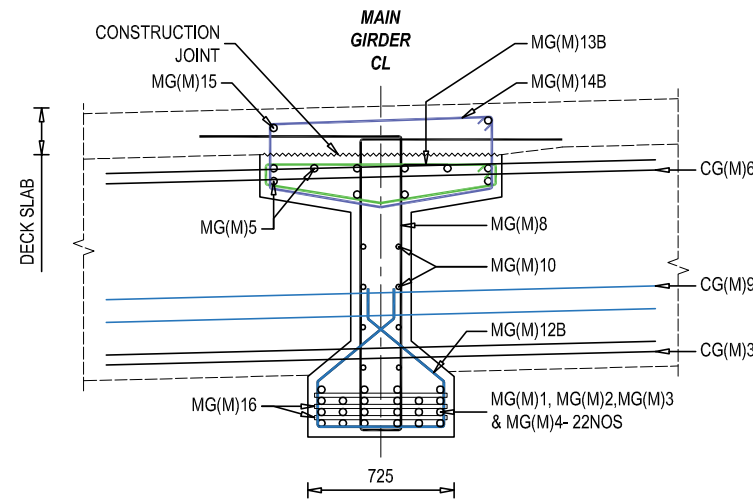


**REINFORCEMENT DETAILS OF MAIN GIRDER  
SECTIONAL VIEW AT T10**

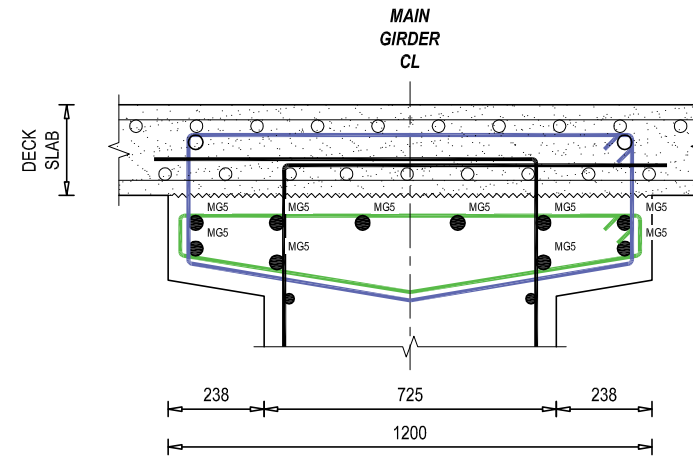
SCALE - 1 : 50

NOTE  
READ THIS DRAWING IN CONJUNCTION WITH  
DRG NO. KDP/DPR/STR/BR/BELGACHHI(DHUNGRE KHOLA)/DD-4

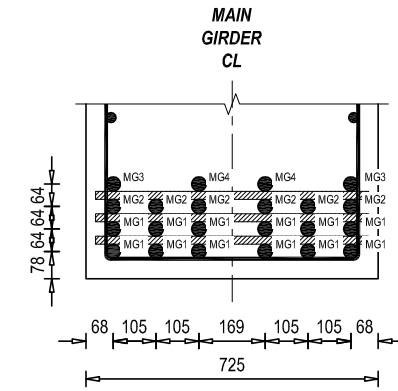
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|-------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|-------------|----------|----------------------------------------------------------------------------------|-----------|---------------------------------------------------------------|
| EMPLOYER                                                                                                                                              | PROJECT NAME                                                                                                                                                                           | DESIGN CONSULTANTS                                                                                                          | Designed By | Mr. R.A. | Drawing Name                                                                     | Scale:    | Date:                                                         |
| Government of Nepal<br>Ministry of Physical Infrastructure and Transport<br>Department of Roads<br>Development Cooperation Implementation<br>Division | Strategic Road Connectivity & Trade Improvement Project (SRCTIP)<br>Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges | Joint Venture of<br>EPTISA Servicios De Ingeniera Madrid, Spain<br>STUP Consultants Private Limited Kolkata, India          | Mr. S.M.    | Mr. S.M. | MAIN GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER BELGACHHI (DHUNGRE KHOLA) | AS SHOWN  | 02.06.2023                                                    |
|                                                                                                                                                       |                                                                                                                                                                                        | In Association With<br>Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited | Checked By  | Mr. H.B. | Reference Drawings                                                               | Chainage: | Drawing No-<br>KDP/DPR/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD-15 |
|                                                                                                                                                       |                                                                                                                                                                                        |                                                                                                                             | Approved By | Mr. H.B. | KDP/DPR/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD-17                                   | 274+925   | Sheet No. 1 / 2                                               |



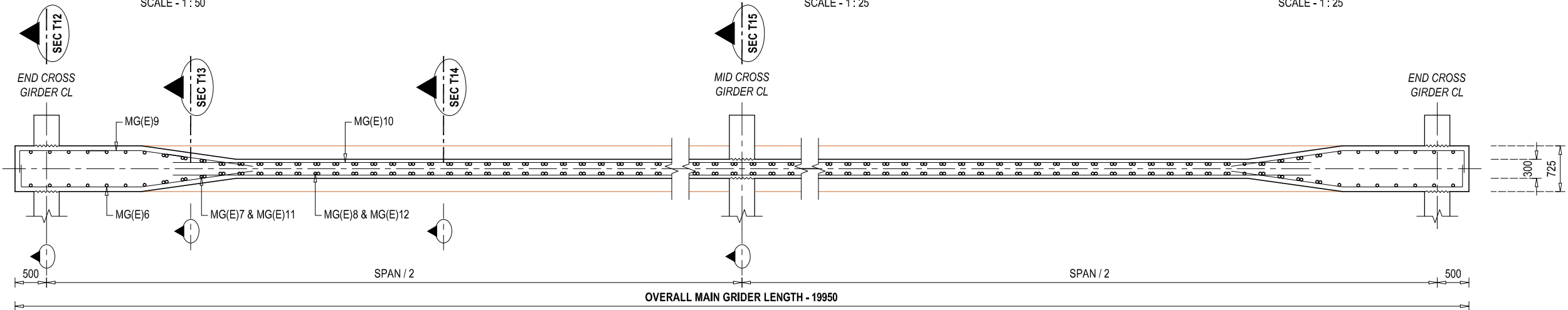
**REINFORCEMENT DETAILS OF MAIN GIRDER  
SECTIONAL VIEW AT T11**  
SCALE - 1 : 50



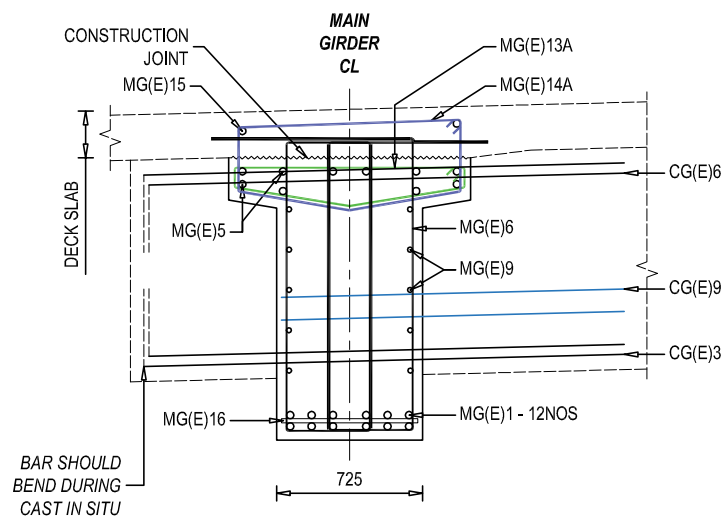
**TOP BAR WEB REINFORCEMENT DETAILS  
OF MAIN GIRDER**  
SCALE - 1 : 25



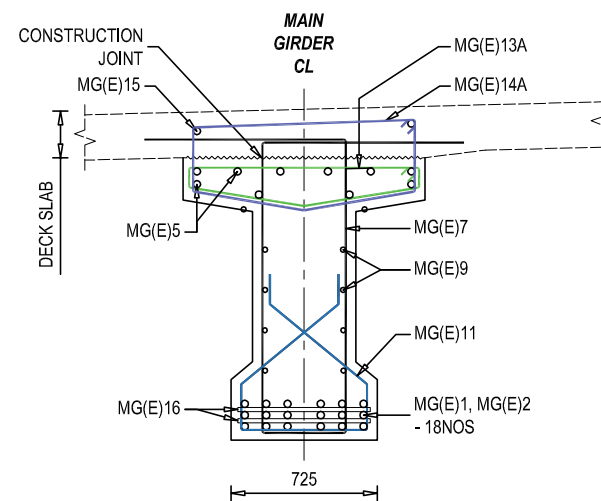
**BOTTOM BAR WEB REINFORCEMENT DETAILS  
OF MAIN GIRDER**  
SCALE - 1 : 25



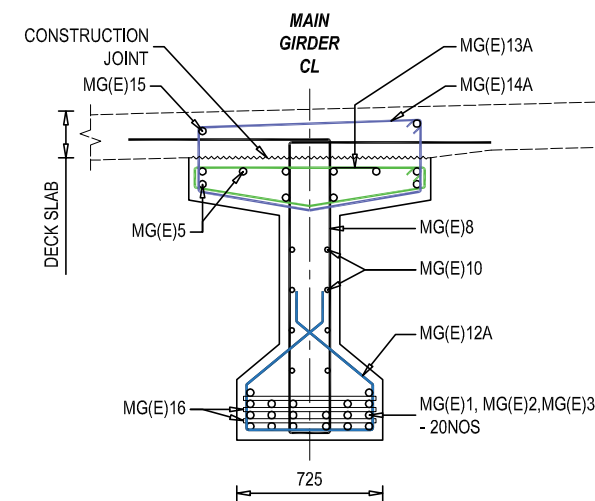
**REINFORCEMENT DETAILS OF MAIN GIRDER (END) - SECTIONAL PLAN VIEW AT T7(E)**  
SCALE - 1 : 75



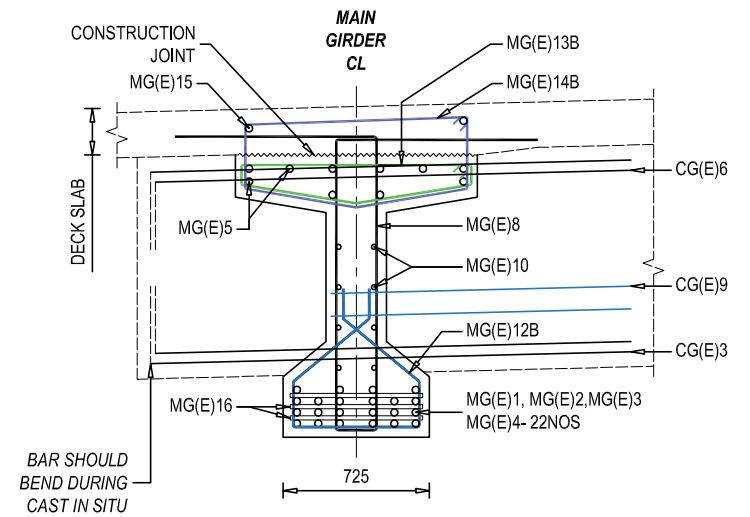
**REINFORCEMENT DETAILS OF MAIN GIRDER  
SECTIONAL VIEW AT T12**  
SCALE - 1 : 50



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



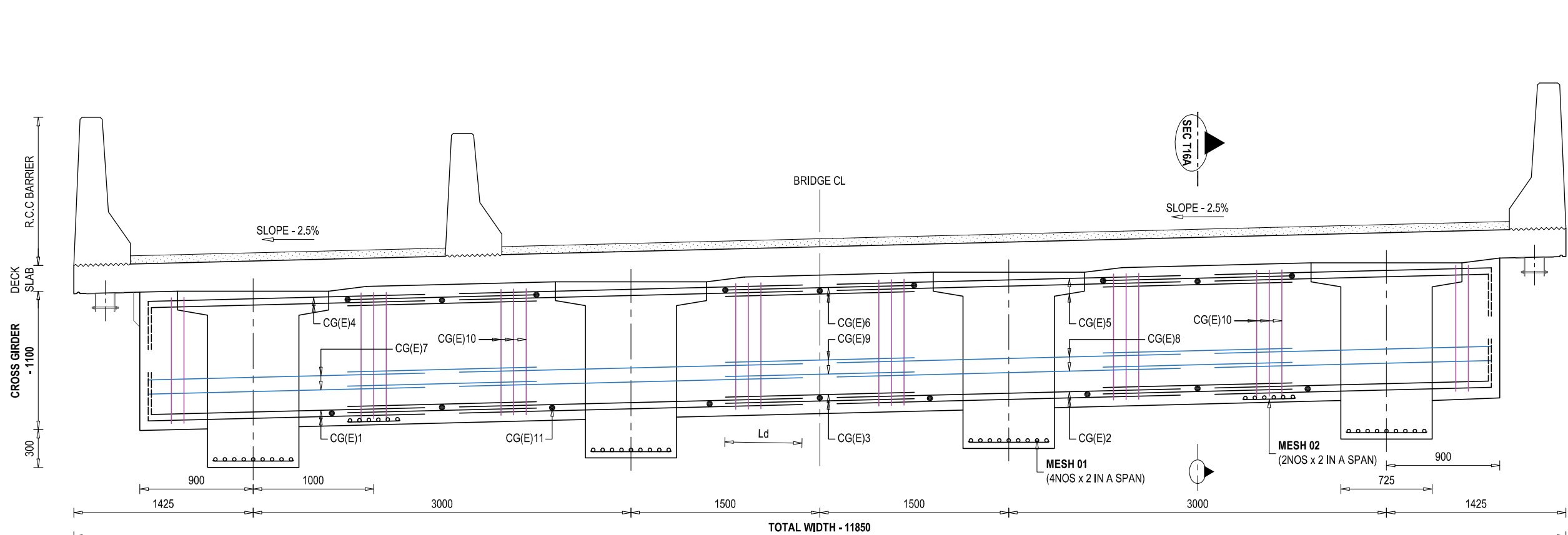
**REINFORCEMENT DETAILS OF MAIN GIRDER  
SECTIONAL VIEW AT T14**  
SCALE - 1 : 50



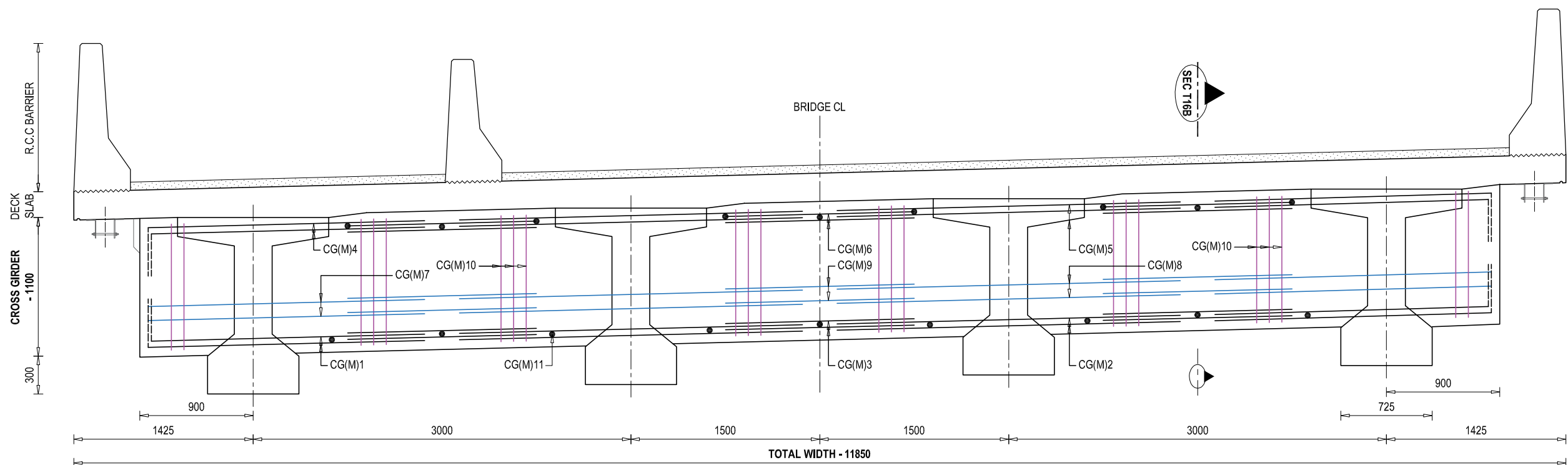
**REINFORCEMENT DETAILS OF MAIN GIRDER  
SECTIONAL VIEW AT T15**  
SCALE - 1 : 50

NOTE  
READ THIS DRAWING IN CONJUNCTION WITH SCALE - 1 : 50  
DRG NO. KDP/DPR/STR/BR/BELGACHHI(DHUNGRE KHOLA)/DD-4

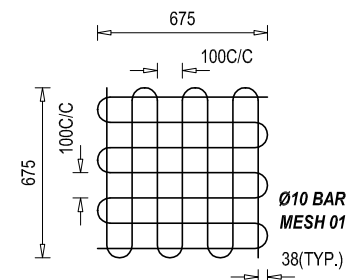
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|-------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|--------------------------------------------------------------------------------------------------|
| EMPLOYER                                                                                                                                              | PROJECT NAME                                                                                                                                                                           | DESIGN CONSULTANTS                                                                                                                                                                                                                                | Designed By                                                                                        | Drawing Name                                                                                                                                             | Scale:                           | Date:                                                                                            |
| Government of Nepal<br>Ministry of Physical Infrastructure and Transport<br>Department of Roads<br>Development Cooperation Implementation<br>Division | Strategic Road Connectivity & Trade Improvement Project (SRCTIP)<br>Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges | Joint Venture of<br>EPTISA Servicios De Ingeniera Madrid, Spain<br>STUP Consultants Private Limited Kolkata, India<br>In Association With<br>Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited | Mr. R.A.<br>Nec.No. 6431 Q.M.L. 'A'<br>Signature<br>Mr. S.M.<br>Signature<br>Mr. H.B.<br>Signature | MAIN GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER BELGACHHI (DHUNGRE KHOLA)<br>Reference Drawings<br>KDP/DPR/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD-17 | AS SHOWN<br>Chainage:<br>274+925 | 02.06.2023<br>Drawing No.-<br>KDP/DPR/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD- 15<br>Sheet No. 2 / 2 |



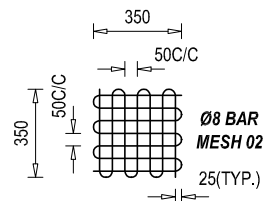
**REINFORCEMENT DETAILS OF END CROSS GIRDER**  
SCALE - 1 : 50



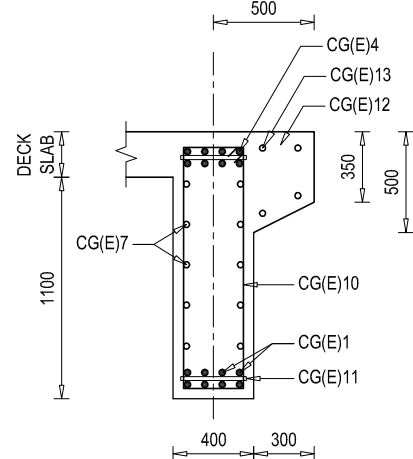
**REINFORCEMENT DETAILS OF MID CROSS GIRDER**  
SCALE - 1 : 50



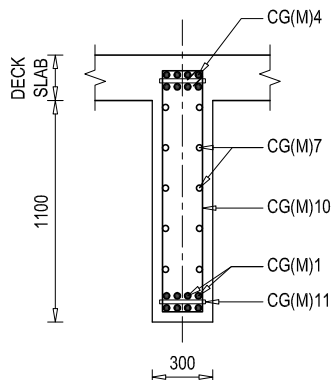
**REINFORCEMENT DETAILS OF BEARING MESH**  
SCALE - 1 : 50



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



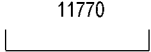
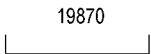
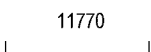
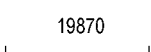
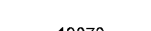
**SECTIONAL REINFORCEMENT DETAILS OF END CROSS GIRDER - SEC T16A**  
SCALE - 1 : 50

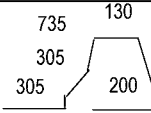
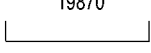


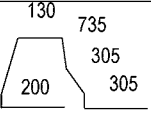
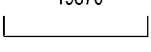
**SECTIONAL REINFORCEMENT DETAILS OF MID CROSS GIRDER - SEC T16B**  
SCALE - 1 : 50

NOTE  
READ THIS DRAWING IN CONJUNCTION WITH  
DRG NO. KDP/DPR/STR/BR/BELGACHHI(DHUNGRE KHOLA)/DD-4

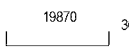
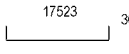
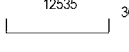
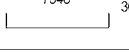
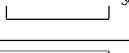
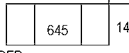
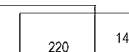
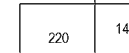
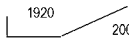
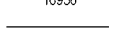
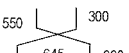
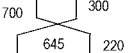
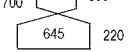
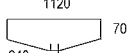
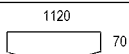
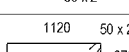
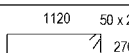
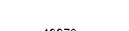
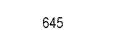
|                                                                                                                                                                              |                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                          |                                                                                                                                     |                                                                                                                                                                                              |                                                               |                                                                                                                               |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| <p>EMPLOYER</p> <p>Government of Nepal<br/>Ministry of Physical Infrastructure and Transport<br/>Department of Roads<br/>Development Cooperation Implementation Division</p> | <p>PROJECT NAME</p> <p>Strategic Road Connectivity &amp; Trade Improvement Project (SRCTIP)<br/>Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges</p> | <p>DESIGN CONSULTANTS</p> <p>Joint Venture of<br/>EPTISA Servicios De Ingenieria Madrid, Spain<br/>STUP Consultants Private Limited Kolkatta, India<br/>In Association With<br/>Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited</p> | <p>Designed By</p> <p>Mr. R.A.<br/>Nec.No. 6431 Q.M.L. 'A'</p> <p>Checked By</p> <p>Mr. S.M.</p> <p>Approved By</p> <p>Mr. H.B.</p> | <p>Drawing Name</p> <p>CROSS GIRDER REINFORCEMENT DETAILS OF BRIDGE OVER RIVER BELGACHHI (DHUNGRE KHOLA)</p> <p>Reference Drawings</p> <p>KDP/DPR/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD-17</p> | <p>Scale:</p> <p>AS SHOWN</p> <p>Chainage:</p> <p>274+925</p> | <p>Date:</p> <p>02.06.2023</p> <p>Drawing No.-<br/>KDP/DPR/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD- 16</p> <p>Sheet No. 1 / 1</p> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|

| BAR BENDING SCHEDULE OF DECK SLAB (1SPAN) |          |                                                                                           |              |              |                |             |                    |                   |
|-------------------------------------------|----------|-------------------------------------------------------------------------------------------|--------------|--------------|----------------|-------------|--------------------|-------------------|
| S.No.                                     | BAR MARK | DESCRIPTION OF BAR                                                                        | BAR DIA.(MM) | SPACING (MM) | BAR LENGTH (M) | No. OF BARS | UNIT WEIGHT (Kg/m) | TOTAL WEIGHT (Kg) |
| 1                                         | DS01     | 150  150 | 16           | 150          | 12.070         | 134         | 1.580              | 2555.86           |
| 2                                         | DS02     | 150  150 | 10           | 150          | 20.170         | 76          | 0.617              | 946.25            |
| 3                                         | DS03     | 150  150 | 16           | 150          | 12.070         | 134         | 1.580              | 2555.86           |
| 5                                         | DS04     | 150  150 | 10           | 150          | 20.170         | 76          | 0.617              | 946.25            |
| 6                                         | DS05     |  19870   | 16           |              | 19.870         | 8           | 1.580              | 251.20            |
| TOTAL (KG) :                              |          |                                                                                           |              |              |                |             |                    | 7255.41           |

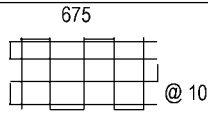
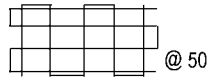
| BAR BENDING SCHEDULE OF R.C.C BARRIER (A) (1SPAN) |          |                                                                                             |              |              |                |             |                    |                   |
|---------------------------------------------------|----------|---------------------------------------------------------------------------------------------|--------------|--------------|----------------|-------------|--------------------|-------------------|
| S.No.                                             | BAR MARK | DESCRIPTION OF BAR                                                                          | BAR DIA.(MM) | SPACING (MM) | BAR LENGTH (M) | No. OF BARS | UNIT WEIGHT (Kg/m) | TOTAL WEIGHT (Kg) |
| 1                                                 | RC-A1    |  130     | 16           | 150          | 3.170          | 134         | 1.580              | 671.26            |
| 2                                                 | RC-A2    | 150  150 | 10           | 150          | 20.170         | 20          | 0.617              | 249.01            |
| TOTAL (KG) :                                      |          |                                                                                             |              |              |                |             |                    | 920.27            |

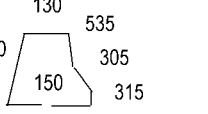
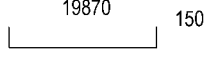
| BAR BENDING SCHEDULE OF R.C.C BARRIER (B) (1SPAN) |          |                                                                                             |              |              |                |             |                    |                   |
|---------------------------------------------------|----------|---------------------------------------------------------------------------------------------|--------------|--------------|----------------|-------------|--------------------|-------------------|
| S.No.                                             | BAR MARK | DESCRIPTION OF BAR                                                                          | BAR DIA.(MM) | SPACING (MM) | BAR LENGTH (M) | No. OF BARS | UNIT WEIGHT (Kg/m) | TOTAL WEIGHT (Kg) |
| 1                                                 | RC-B1    |  130     | 16           | 150          | 3.170          | 134         | 1.580              | 671.26            |
| 2                                                 | RC-B2    | 150  150 | 10           | 150          | 20.170         | 20          | 0.617              | 249.01            |
| TOTAL (KG) :                                      |          |                                                                                             |              |              |                |             |                    | 920.27            |

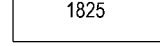
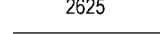
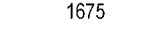
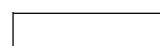
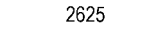
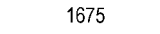
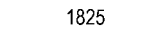
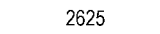
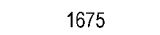
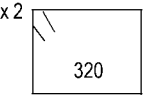
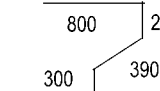
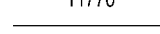
| BAR BENDING SCHEDULE OF END MAIN GIRDER (1SPAN) |          |                                                                                                           |              |              |                |             |                    |                   |
|-------------------------------------------------|----------|-----------------------------------------------------------------------------------------------------------|--------------|--------------|----------------|-------------|--------------------|-------------------|
| S.No.                                           | BAR MARK | DESCRIPTION OF BAR                                                                                        | BAR DIA.(MM) | SPACING (MM) | BAR LENGTH (M) | No. OF BARS | UNIT WEIGHT (Kg/m) | TOTAL WEIGHT (Kg) |
| 1                                               | MG(E)1   | <div><div>300</div><div>19870</div><div>300</div></div>                                                   | 32           |              | 20.470         | 12          | 6.321              | 1552.69           |
| 2                                               | MG(E)2   | <div><div>300</div><div>17523</div><div>300</div></div>                                                   | 32           |              | 18.123         | 6           | 6.321              | 687.33            |
| 3                                               | MG(E)3   | <div><div>300</div><div>12535</div><div>300</div></div>                                                   | 32           |              | 13.135         | 2           | 6.321              | 166.05            |
| 4                                               | MG(E)4   | <div><div>300</div><div>7548</div><div>300</div></div>                                                    | 32           |              | 8.148          | 2           | 6.321              | 103.01            |
| 5                                               | MG(E)5   | <div><div>300</div><div>19870</div><div>300</div></div>                                                   | 12           |              | 20.470         | 10          | 0.889              | 181.96            |
| 6                                               | MG(E)6   | <div><div>480</div><div><div><div>645</div></div></div><div>1430</div></div> <div>4 LEGGED</div>          | 12           | 100          | 9.260          | 42          | 0.889              | 345.71            |
| 7                                               | MG(E)7   | <div><div>480</div><div><div><div>435</div></div></div><div>1430</div></div> <div>AVG</div>               | 12           | 100          | 5.125          | 32          | 0.889              | 145.78            |
| 8                                               | MG(E)8A  | <div><div>480</div><div><div><div>220</div></div></div><div>1430</div></div>                              | 12           | 100          | 4.480          | 81          | 0.889              | 322.56            |
| 9                                               | MG(E)8B  | <div><div>480</div><div><div><div>220</div></div></div><div>1430</div></div>                              | 12           | 150          | 4.480          | 35          | 0.889              | 139.38            |
| 10                                              | MG(E)9   | <div><div>370</div><div>1920</div><div>2000</div></div>                                                   | 12           | 200          | 4.290          | 28          | 0.889              | 106.77            |
| 11                                              | MG(E)10  | <div><div>16950</div></div>                                                                               | 12           | 200          | 16.950         | 14          | 0.889              | 210.93            |
| 12                                              | MG(E)11  | <div><div>550</div><div><div><div>645</div></div></div><div>300</div><div>220</div></div> <div>AVG.</div> | 12           | 100          | 2.785          | 32          | 0.889              | 79.22             |
| 13                                              | MG(E)12A | <div><div>700</div><div><div><div>645</div></div></div><div>300</div><div>220</div></div>                 | 12           | 150          | 3.085          | 81          | 0.889              | 222.12            |
| 14                                              | MG(E)12B | <div><div>700</div><div><div><div>645</div></div></div><div>300</div><div>220</div></div>                 | 12           | 150          | 3.085          | 35          | 0.889              | 95.98             |
| 15                                              | MG(E)13A | <div><div>1120</div><div><div><div>840</div></div></div><div>70</div><div>50 x 2</div></div>              | 12           | 100          | 3.040          | 151         | 0.889              | 408.04            |
| 16                                              | MG(E)13B | <div><div>1120</div><div><div><div>840</div></div></div><div>70</div><div>50 x 2</div></div>              | 12           | 150          | 3.040          | 35          | 0.889              | 94.58             |
| 17                                              | MG(E)14A | <div><div>1120</div><div><div><div>840</div></div></div><div>50 x 2</div><div>270</div></div>             | 12           | 100          | 3.440          | 151         | 0.889              | 461.72            |
| 18                                              | MG14B    | <div><div>1120</div><div><div><div>840</div></div></div><div>50 x 2</div><div>270</div></div>             | 12           | 150          | 3.440          | 35          | 0.889              | 107.02            |
| 19                                              | MG(E)15  | <div><div>19870</div></div>                                                                               | 12           |              | 19.870         | 2           | 0.889              | 35.32             |
| 19                                              | MG(E)16  | <div><div>645</div></div>                                                                                 | 32           | 1500         | 0.645          | 42          | 6.321              | 171.24            |
| TOTAL (KG) :                                    |          |                                                                                                           |              |              |                |             |                    | 5637.40           |

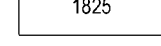
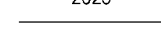
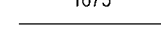
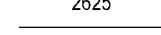
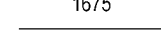
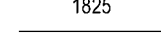
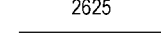
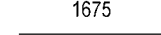
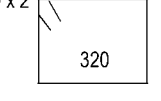
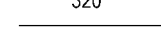
| BAR BENDING SCHEDULE OF MID MAIN GIRDER (1SPAN) |          |                                                                                                     |              |              |                |             |                    |                   |
|-------------------------------------------------|----------|-----------------------------------------------------------------------------------------------------|--------------|--------------|----------------|-------------|--------------------|-------------------|
| S.No.                                           | BAR MARK | DESCRIPTION OF BAR                                                                                  | BAR DIA.(MM) | SPACING (MM) | BAR LENGTH (M) | No. OF BARS | UNIT WEIGHT (Kg/m) | TOTAL WEIGHT (Kg) |
| 1                                               | MG(M)1   | 300  300         | 32           |              | 20.470         | 12          | 6.321              | 1552.69           |
| 2                                               | MG(M)2   | 300  300         | 32           |              | 18.123         | 6           | 6.321              | 687.33            |
| 3                                               | MG(M)3   | 300  300         | 32           |              | 13.135         | 2           | 6.321              | 166.05            |
| 4                                               | MG(M)4   | 300  300         | 32           |              | 8.148          | 2           | 6.321              | 103.01            |
| 5                                               | MG(M)5   | 300  300         | 12           |              | 20.470         | 10          | 0.889              | 181.96            |
| 6                                               | MG(M)6   |  480<br>4 LEGGED | 12           | 100          | 9.260          | 42          | 0.889              | 345.71            |
| 7                                               | MG(M)7   |  480<br>AVG.     | 12           | 100          | 5.125          | 32          | 0.889              | 145.78            |
| 8                                               | MG(M)8A  |  480             | 12           | 100          | 4.480          | 81          | 0.889              | 322.56            |
| 9                                               | MG(M)8B  |  480             | 12           | 150          | 4.480          | 35          | 0.889              | 139.38            |
| 10                                              | MG(M)9   | 370  2000        | 12           | 200          | 4.290          | 28          | 0.889              | 106.77            |
| 11                                              | MG(M)10  |  16950         | 12           | 200          | 16.950         | 14          | 0.889              | 210.93            |
| 12                                              | MG(M)11  |  550<br>AVG.   | 12           | 100          | 2.785          | 32          | 0.889              | 79.22             |
| 13                                              | MG(M)12A |  700           | 12           | 150          | 3.085          | 81          | 0.889              | 222.12            |
| 14                                              | MG(M)12B |  700           | 12           | 150          | 3.085          | 35          | 0.889              | 95.98             |
| 15                                              | MG(M)13A |  1120          | 12           | 100          | 3.040          | 151         | 0.889              | 408.04            |
| 16                                              | MG(M)13B |  1120          | 12           | 150          | 3.040          | 35          | 0.889              | 94.58             |
| 17                                              | MG(M)14A |  1120          | 12           | 100          | 3.440          | 151         | 0.889              | 461.72            |
| 18                                              | MG14B    |  1120          | 12           | 150          | 3.440          | 35          | 0.889              | 107.02            |
| 19                                              | MG(M)15  |  19870         | 12           |              | 19.870         | 2           | 0.889              | 35.32             |
| 19                                              | MG(M)16  |  645           | 32           | 1500         | 0.645          | 42          | 6.321              | 171.24            |
| TOTAL (KG) :                                    |          |                                                                                                     |              |              |                |             |                    | 5637.40           |

|                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                |                                                                                                                                   |                                                                                                                                       |                    |          |                                                                                                    |                                                                                                         |                                                                 |                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|-------------------------|
|  <div>Government of Nepal<br/>Ministry of Physical Infrastructure and Transport<br/><b>Department of Roads</b><br/><b>Development Cooperation Implementation Division</b></div> | PROJECT NAME<br><br>Strategic Road Connectivity & Trade Improvement Project (SRCTIP)<br><br>Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges | DESIGN CONSULTANTS                                                                                                                |                                                                                                                                       | Designed By        | Mr. R.A. | <br>Signature | Drawing Name<br><br>SUPER STRUCTURE BAR BENDING SCHEDULE OF BRIDGE OVER RIVER BELGACHHI (DHUNGRE KHOLA) | Scale:<br><br>AS SHOWN                                          | Date:<br><br>02.06.2023 |
|                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                | Joint Venture of                                                                                                                  |                                                                                                                                       |                    |          |                                                                                                    |                                                                                                         |                                                                 |                         |
|                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                |  EPTISA Servicios De Ingeniera Madrid, Spain |  STUP Consultants Private Limited Kolkata, India | Checked By         | Mr. S.M. | <br>Signature |                                                                                                         |                                                                 |                         |
|                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                | In Association With                                                                                                               |                                                                                                                                       |                    |          |                                                                                                    |                                                                                                         |                                                                 |                         |
|                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                | Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited                              |                                                                                                                                       | Approved By        | Mr. H.B. | <br>Signature |                                                                                                         |                                                                 |                         |
|                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                |                                                                                                                                   |                                                                                                                                       |                    |          |                                                                                                    |                                                                                                         |                                                                 |                         |
|                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                |                                                                                                                                   |                                                                                                                                       | Reference Drawings |          | Chainage:                                                                                          | 274+925                                                                                                 | Drawing No.-<br>KDP/DPR/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD- 17 |                         |
|                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                |                                                                                                                                   |                                                                                                                                       |                    |          |                                                                                                    |                                                                                                         | Sheet No. 1 / 2                                                 |                         |

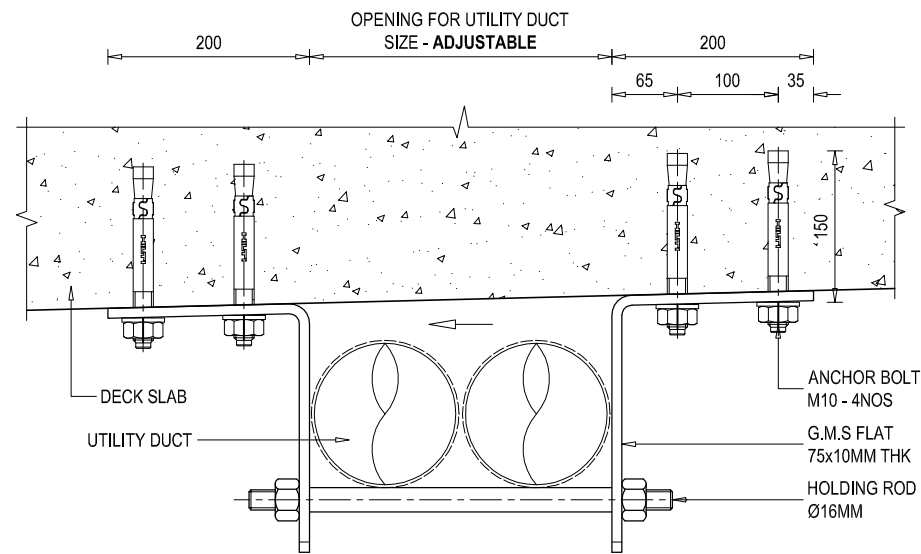
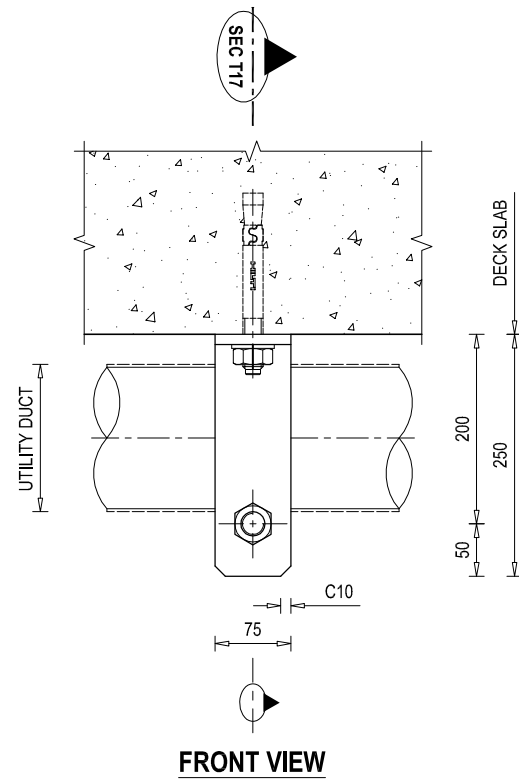
| BAR BENDING SCHEDULE OF MESH (1SPAN) |          |                                                                                                                                             |              |              |                |             |                    |                   |
|--------------------------------------|----------|---------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------|----------------|-------------|--------------------|-------------------|
| S.No.                                | BAR MARK | DESCRIPTION OF BAR                                                                                                                          | BAR DIA.(MM) | SPACING (MM) | BAR LENGTH (M) | No. OF BARS | UNIT WEIGHT (Kg/m) | TOTAL WEIGHT (Kg) |
| 1                                    | MESH 01  | <div>675</div> <div>675</div> <div></div> <div>@ 100</div> | 10           |              | 9.450          | 8           | 0.617              | 46.67             |
| 2                                    | MESH 02  | <div>350</div> <div>350</div> <div></div> <div>@ 50</div>  | 8            |              | 4.900          | 4           | 0.395              | 7.74              |
| TOTAL (KG) :                         |          |                                                                                                                                             |              |              |                |             |                    | 616.32            |

| 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      | <div>130</div> <div>1110</div> <div></div> <div>315</div>  | 16           | 150          | 2.695          | 134         | 1.580              | 570.67            |
| 2                                               | RS2      | <div>150</div> <div>19870</div> <div></div> <div>150</div> | 10           | 150          | 20.170         | 17          | 0.617              | 211.66            |
| TOTAL (KG) :                                    |          |                                                                                                                                               |              |              |                |             |                    | 782.34            |

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

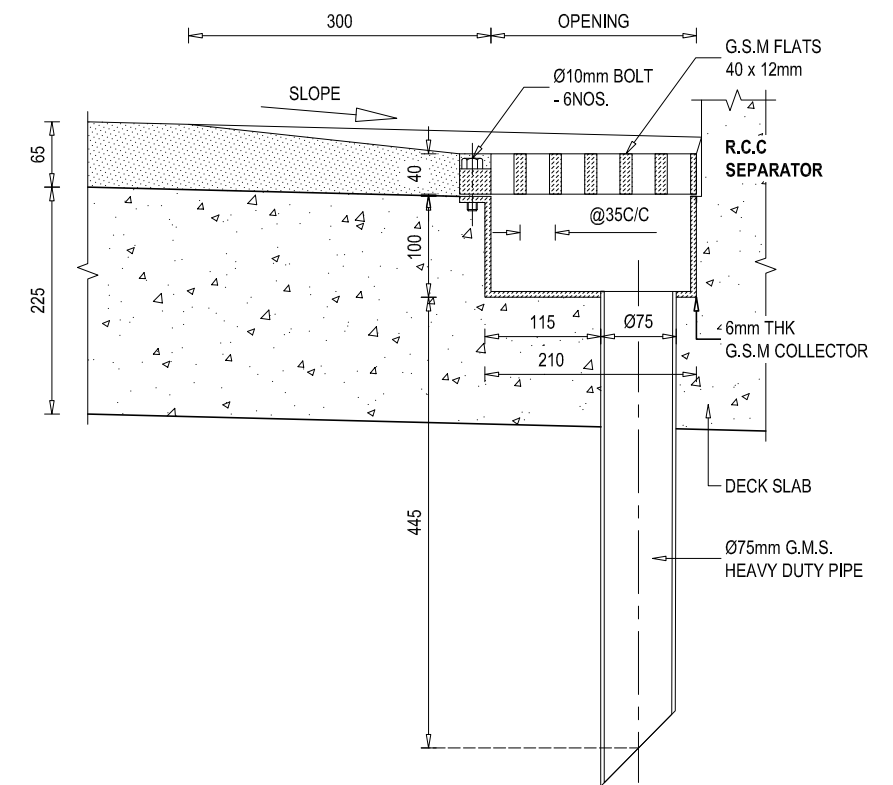
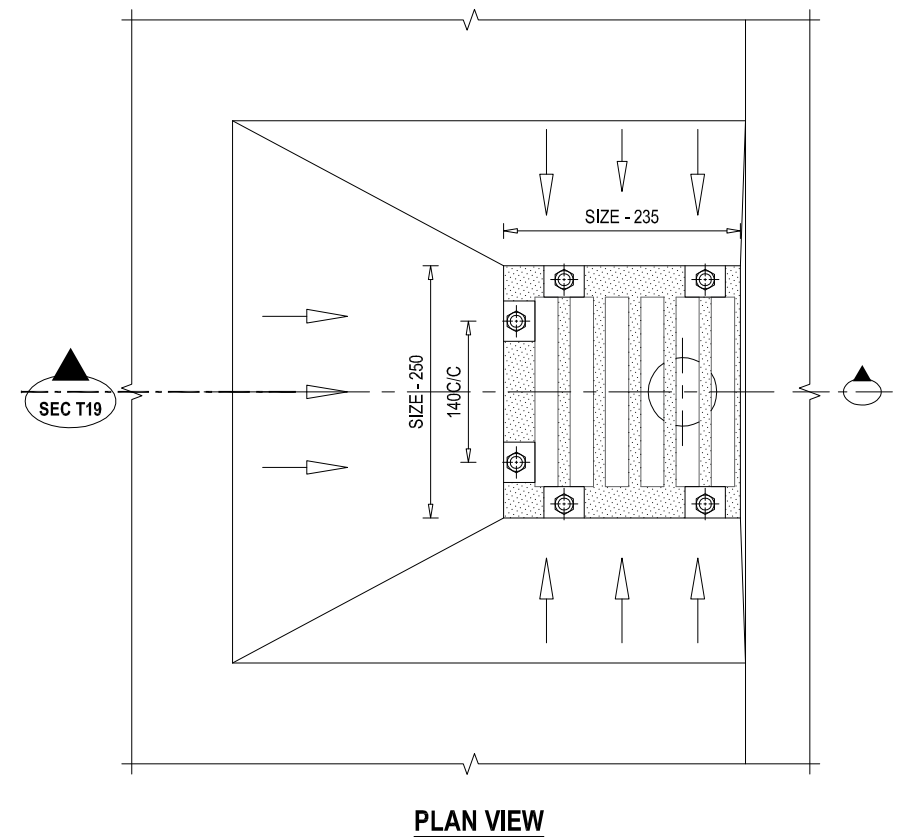
| BAR BENDING SCHEDULE OF MID CROSS GIRDER (1SPAN) |          |                                                                                                                                    |              |              |                |             |                    |                   |
|--------------------------------------------------|----------|--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

| EMPLOYER                                                                                                                                                                                                                                  | PROJECT NAME                                                                                                                                                                          | DESIGN CONSULTANTS                                                                                                          | Designed By | Mr. R.A. | Drawing Name                                                                        | Scale:    | Date:                                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|-------------|----------|-------------------------------------------------------------------------------------|-----------|--------------------------------------------------------------|
| <br>Government of Nepal<br>Ministry of Physical Infrastructure and Transport<br>Department of Roads<br>Development Cooperation Implementation Division | Strategic Road Connectivity & Trade Improvement Project (SRCTIP)<br>Detailed Design of Upgradation of Kamala-Dhalkebar-Pathaiya Road Section (130 KM) of Mahendra Highway and Bridges | Joint Venture of<br>EPTISA Servicios De Ingeniera Madrid, Spain<br>STUP Consultants Private Limited Kolkata, India          | Checked By  | Mr. S.M. | SUPER STRUCTURE BAR BENDING SCHEDULE OF BRIDGE OVER RIVER BELGACHHI (DHUNGRE KHOLA) | AS SHOWN  | 02.06.2023                                                   |
|                                                                                                                                                                                                                                           |                                                                                                                                                                                       | In Association With<br>Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited | Approved By | Mr. H.B. | Reference Drawings                                                                  | Chainage: | Drawing No.- KDP/DPR/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD- 17 |
|                                                                                                                                                                                                                                           |                                                                                                                                                                                       |                                                                                                                             |             |          | -                                                                                   | 274+925   | Sheet No. 2 / 2                                              |



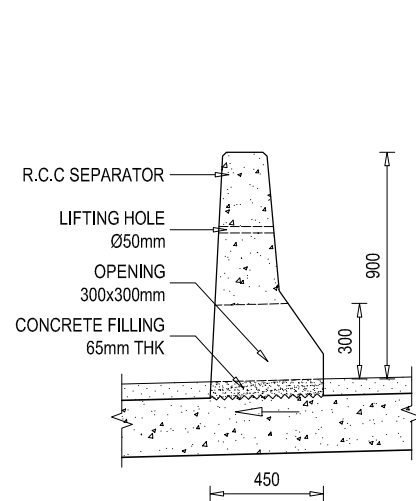
SECTIONAL ELEVATION VIEW AT SEC T17

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

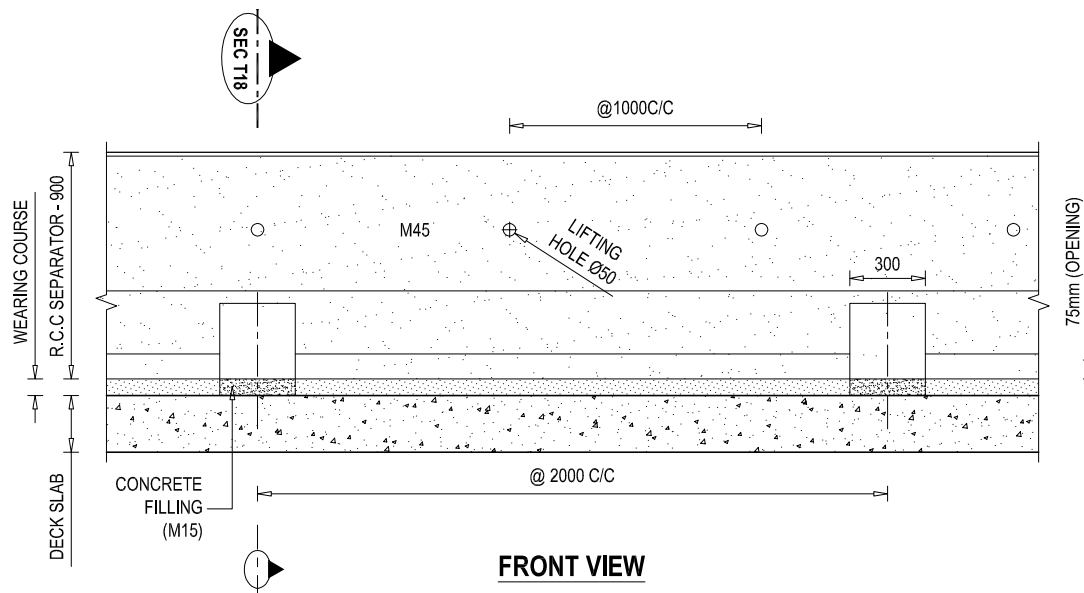


SECTIONAL ELEVATION VIEW AT SEC T19

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

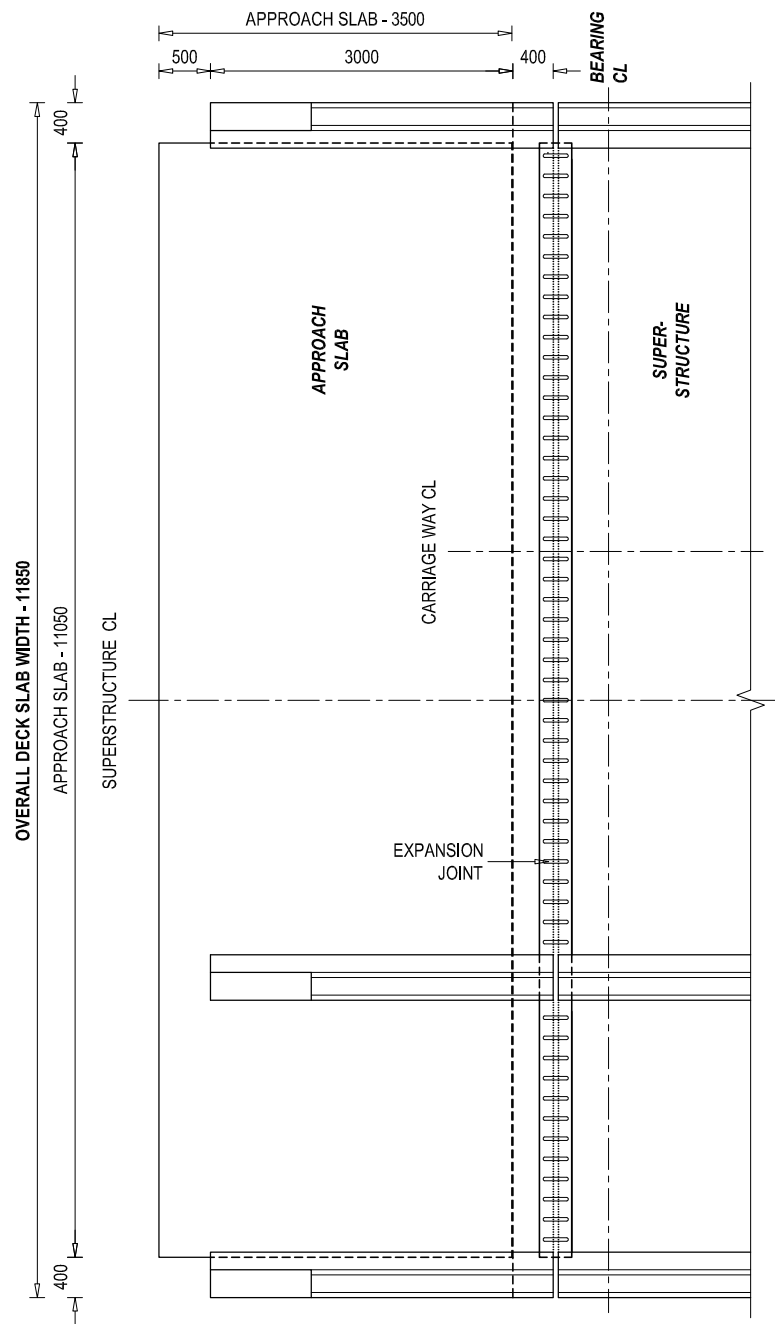


SECTIONAL ELEVATION VIEW AT SEC T18

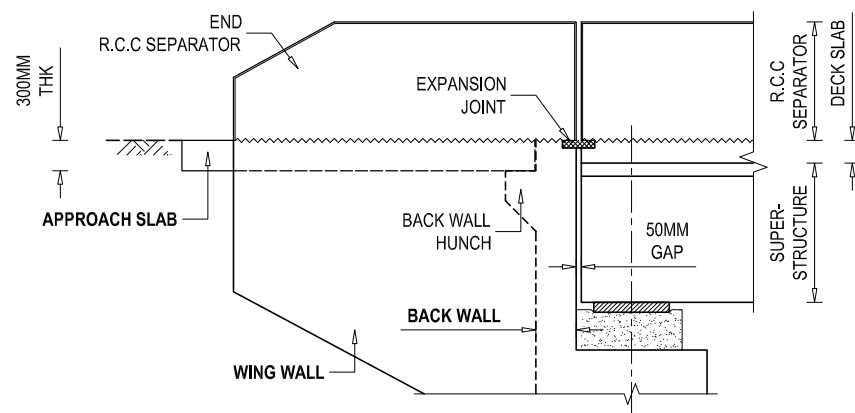


DETAIL ELEVATION VIEW AT R.C.C SEPARATOR  
& IT'S DRAIN OPENING  
SCALE - 1 : 40

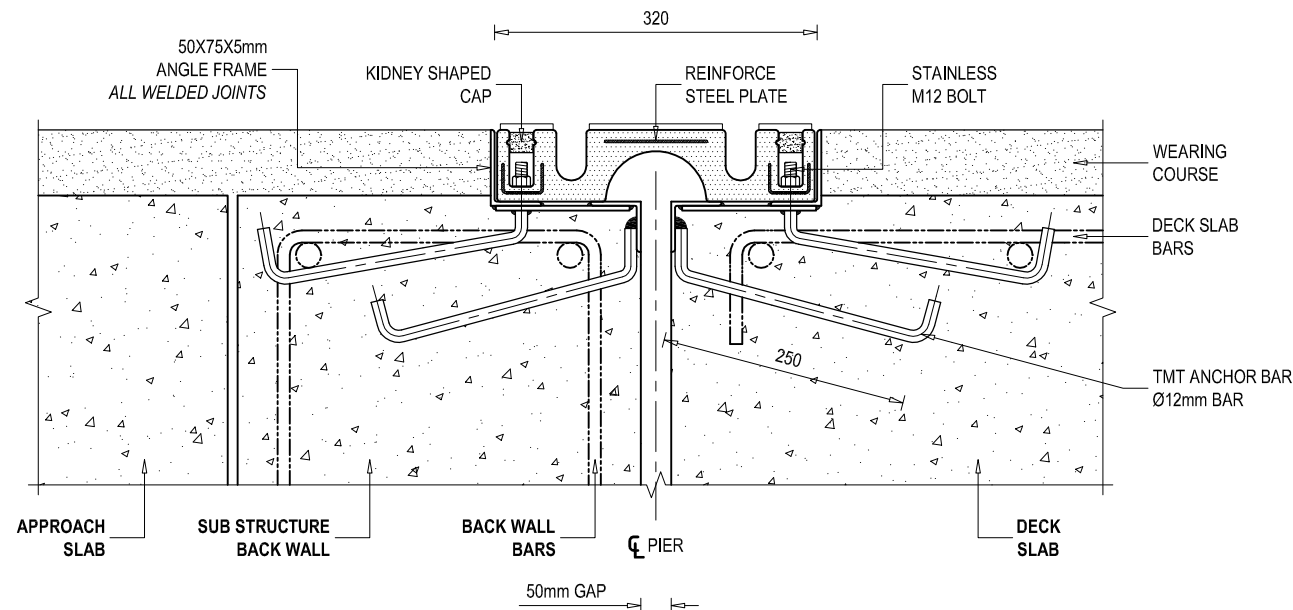
|                                                                                                                                                    |                                                                                                                                                                                       |                                                                                                                             |             |          |           |                                                                      |           |                                                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|-------------|----------|-----------|----------------------------------------------------------------------|-----------|-------------------------------------------------------------|
| EMPLOYER                                                                                                                                           | PROJECT NAME                                                                                                                                                                          | DESIGN CONSULTANTS                                                                                                          | Designed By | Mr. R.A. | Signature | Drawing Name                                                         | Scale:    | Date:                                                       |
| Government of Nepal<br>Ministry of Physical Infrastructure and Transport<br>Department of Roads<br>Development Cooperation Implementation Division | Strategic Road Connectivity & Trade Improvement Project (SRCTIP)<br>Detailed Design of Upgradation of Kamala-Dhalkebar-Pathaiya Road Section (130 KM) of Mahendra Highway and Bridges | Joint Venture of<br>EPTISA Servicios De Ingeniera Madrid, Spain<br>STUP Consultants Private Limited Kolkata, India          | Checked By  | Mr. S.M. | Signature | MISCELLANEOUS DETAILS OF BRIDGE OVER RIVER BELGACHHI (DHUNGRE KHOLA) | AS SHOWN  | 24.04.2023                                                  |
|                                                                                                                                                    |                                                                                                                                                                                       | In Association With<br>Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited | Approved By | Mr. H.B. | Signature | Reference Drawings                                                   | Chainage: | Drawing No- KDP/DPR/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD- 18 |
|                                                                                                                                                    |                                                                                                                                                                                       |                                                                                                                             |             |          |           |                                                                      | 274+925   | Sheet No.1 /2                                               |



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

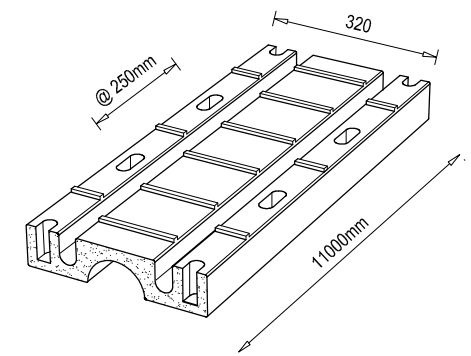


ELEVATION VIEW



SEAL TYPE EXPANSION JOINTS ARRANGEMENT IN A CARRIAGEWAY

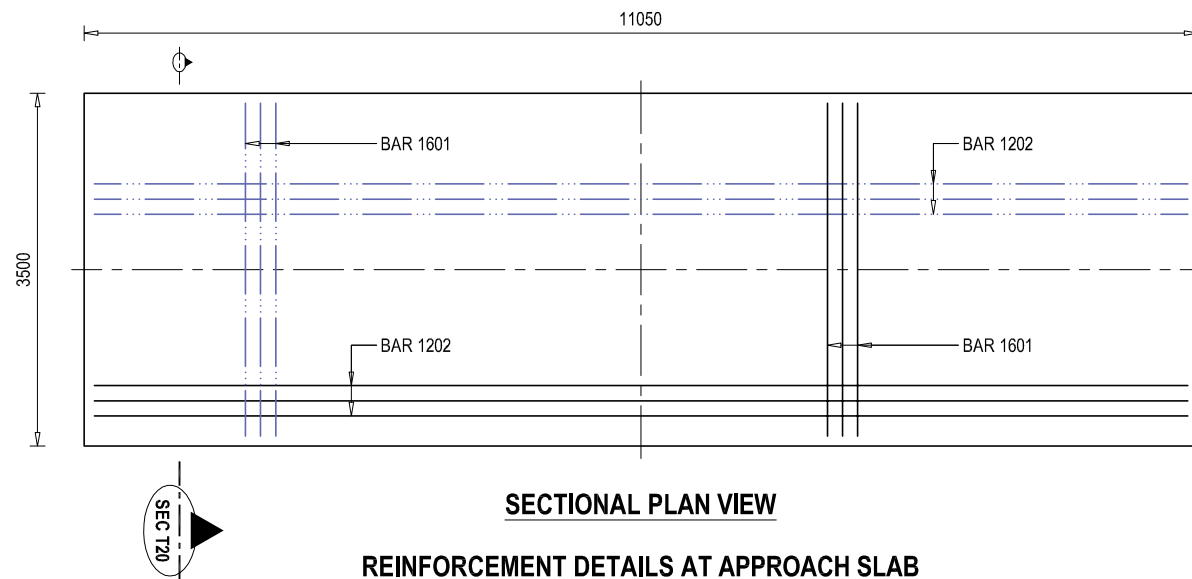
SCALE - 1 : 10 @ A3 PAPER



EXPANSION JOINT ISOMETRIC VIEW

- SEAL TYPE

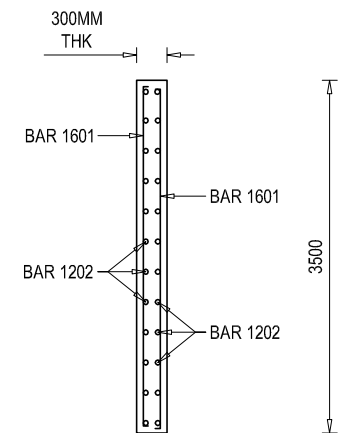
SCALE - NON



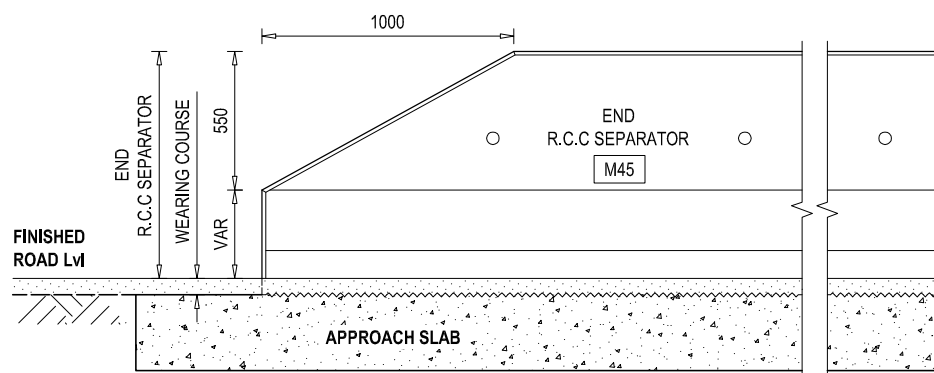
SECTIONAL PLAN VIEW

REINFORCEMENT DETAILS AT APPROACH SLAB

SCALE - 1 : 100 @ A3 PAPER

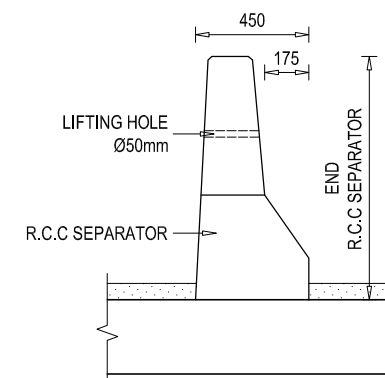


SECTIONAL ELEVATION VIEW AT SEC T20



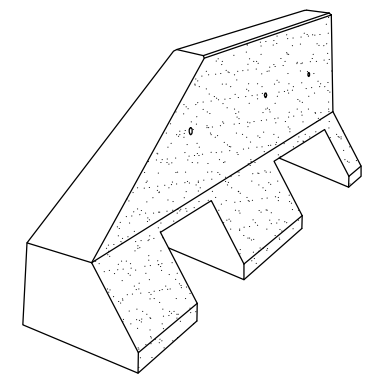
ELEVATION VIEW OF END R.C.C SEPARATOR

SCALE - 1 : 40 @ A3 PAPER



SIDE VIEW

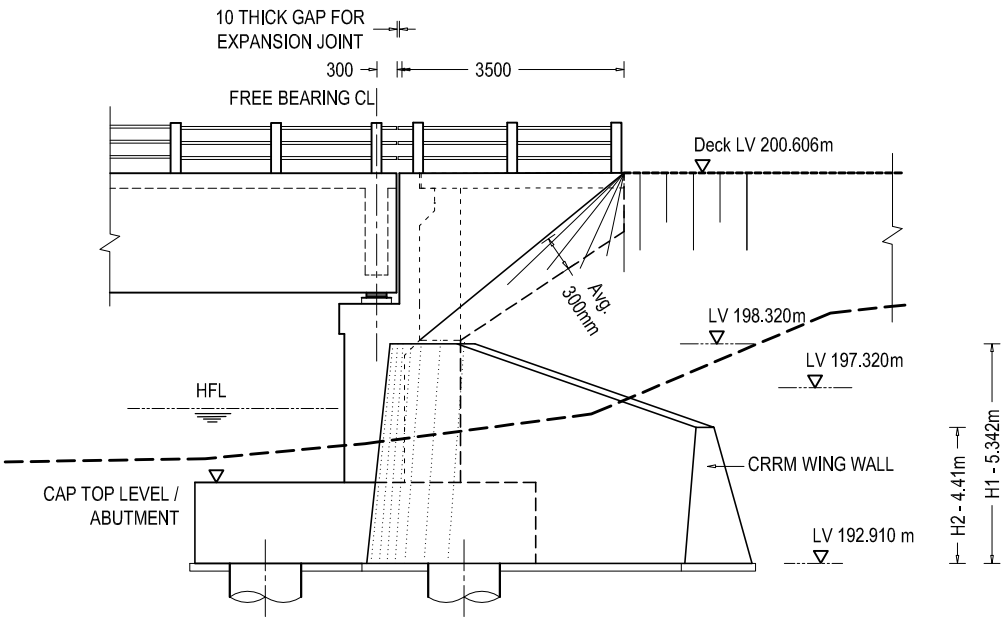
SCALE - 1 : 40 @ A3 PAPER



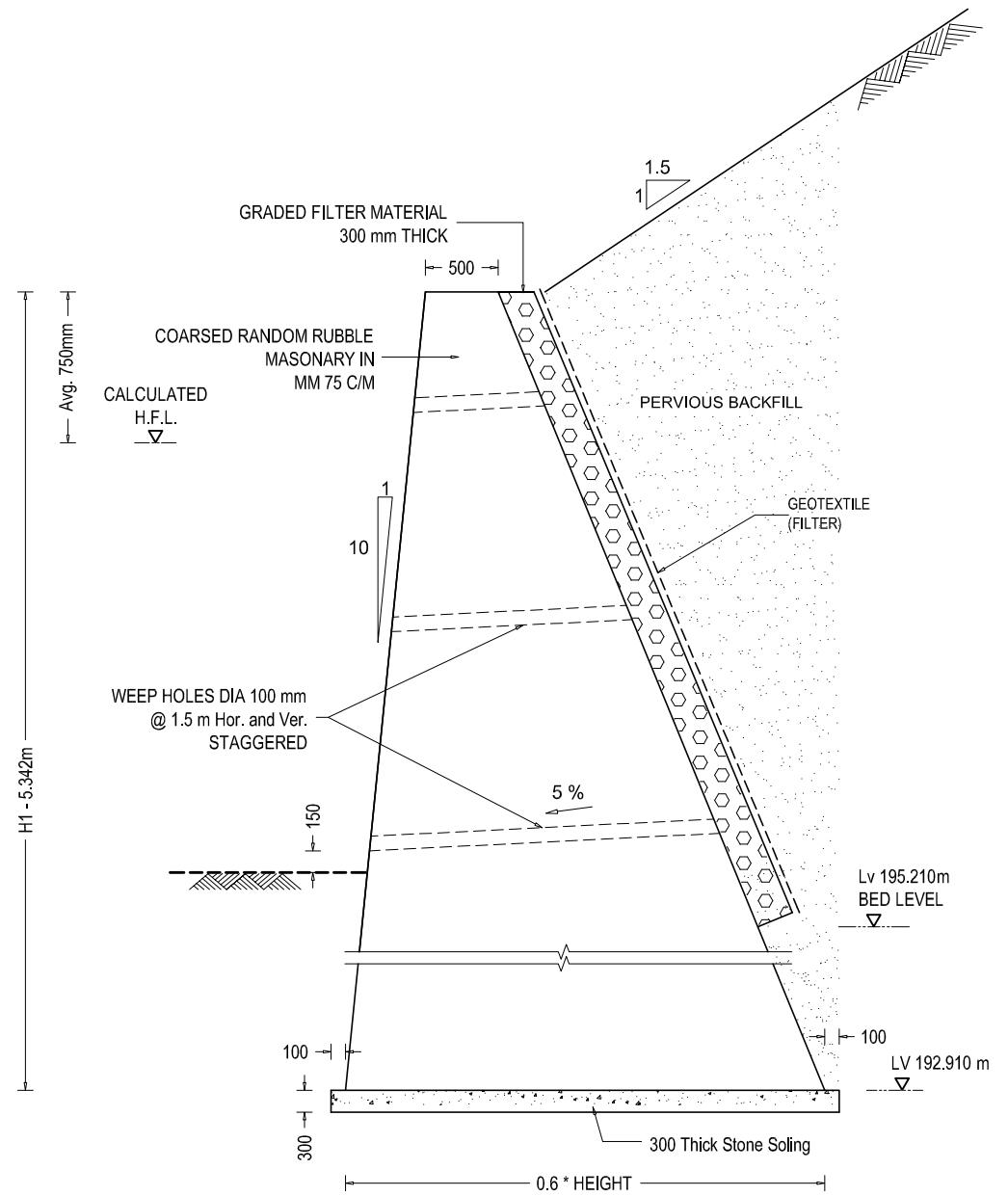
END R.C.C SEPARATOR ISOMETRIC VIEW

SCALE - NON

|                                                                                                                                                                                                                                              |                                                                                                                                                                                        |                                                                                                                                                                                                                                                   |                                                |                       |                                                                      |           |                                                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|-----------------------|----------------------------------------------------------------------|-----------|-------------------------------------------------------------|
| EMPLOYER                                                                                                                                                                                                                                     | PROJECT NAME                                                                                                                                                                           | DESIGN CONSULTANTS                                                                                                                                                                                                                                | Designed By                                    | Mr. R.A.              | Drawing Name                                                         | Scale:    | Date:                                                       |
| <br>Government of Nepal<br>Ministry of Physical Infrastructure and Transport<br>Department of Roads<br>Development Cooperation Implementation<br>Division | Strategic Road Connectivity & Trade Improvement Project (SRCTIP)<br>Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlaiya Road Section (130 KM) of Mahendra Highway and Bridges | Joint Venture of<br>EPTISA Servicios De Ingeniera Madrid, Spain<br>STUP Consultants Private Limited Kolkata, India<br>In Association With<br>Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited | Mr. R.A.<br>Nec.No. 6431 CIVIL/12<br>Signature | Mr. S.M.<br>Signature | MISCELLANEOUS DETAILS OF BRIDGE OVER RIVER BELGACHHI (DHUNGRE KHOLA) | AS SHOWN  | 24.04.2023                                                  |
|                                                                                                                                                                                                                                              |                                                                                                                                                                                        |                                                                                                                                                                                                                                                   | Checked By                                     | Mr. H.B.<br>Signature | Reference Drawings                                                   | Chainage: | Drawing No- KDP/DPR/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD- 18 |
|                                                                                                                                                                                                                                              |                                                                                                                                                                                        |                                                                                                                                                                                                                                                   | Approved By                                    | Mr. H.B.<br>Signature | KDP/DPR/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD-9                        | 274+925   | Sheet No.2/2                                                |



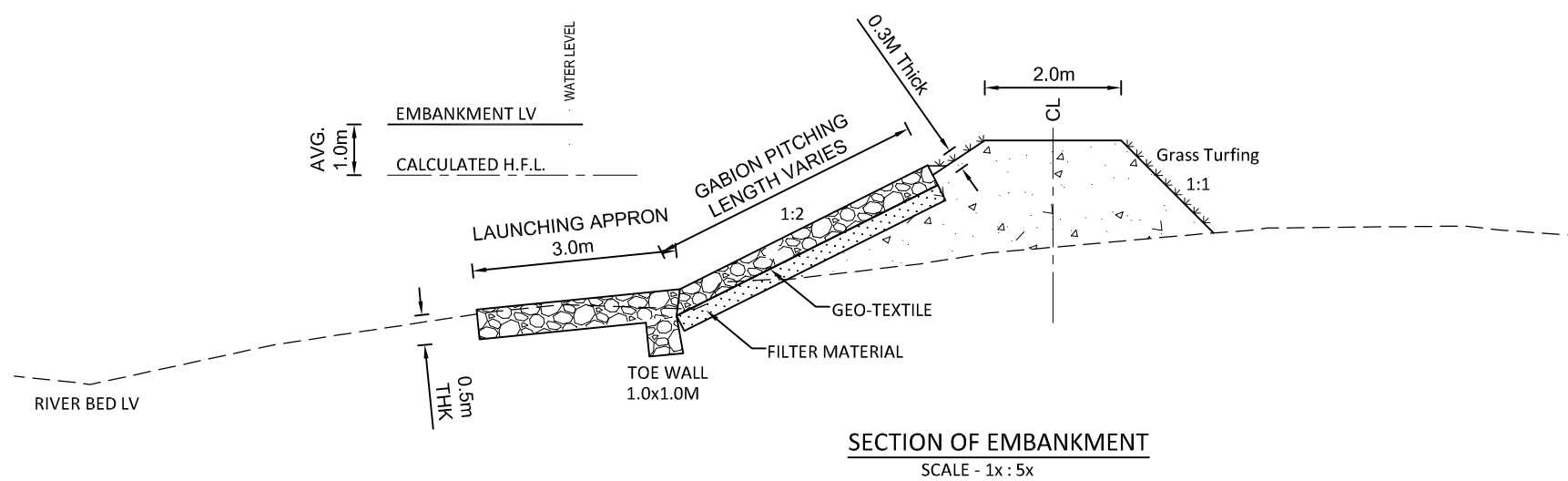
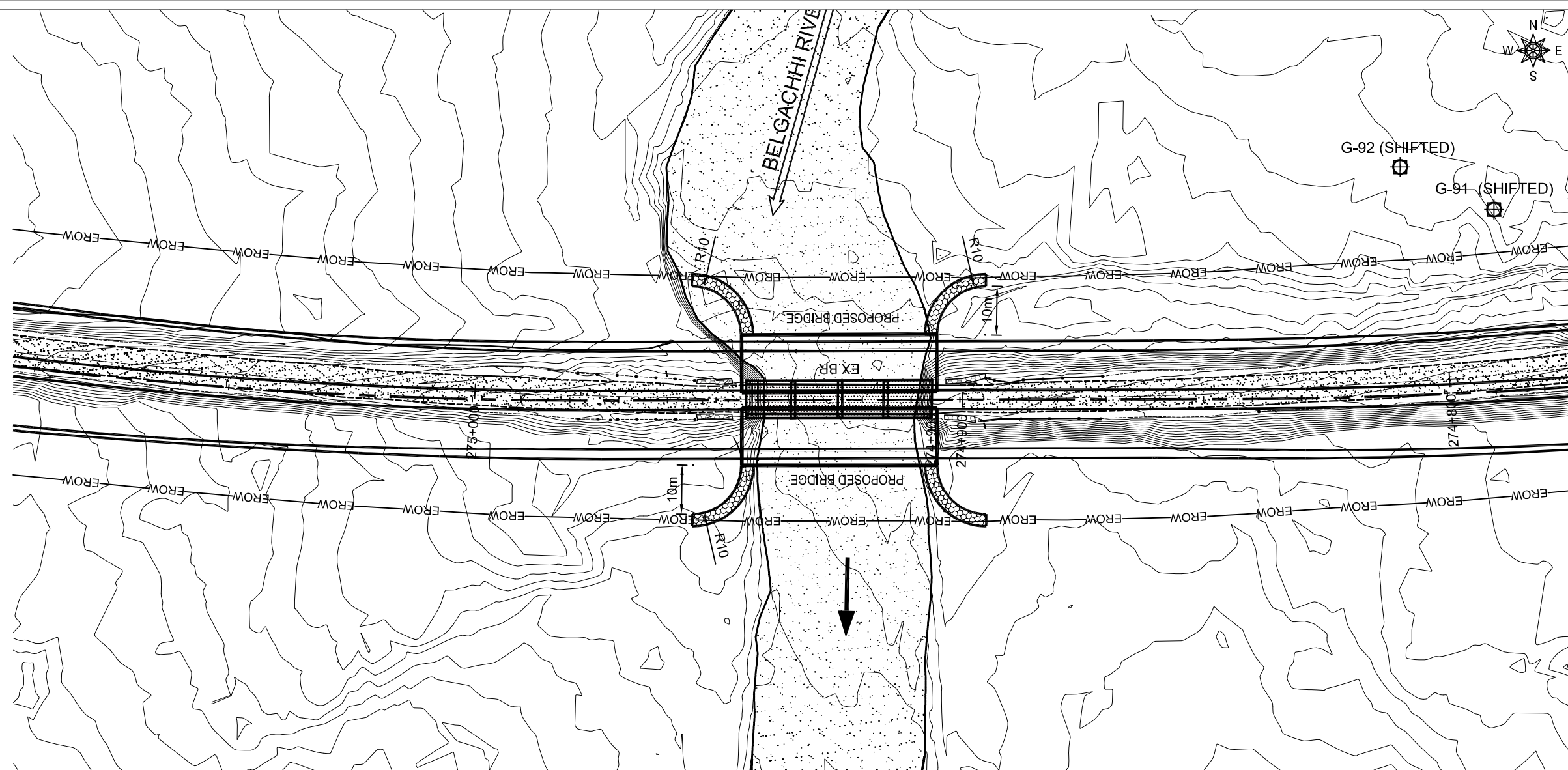
## WING WALL ELEVATION



# STONE MASONRY WING WALL SECTION X - X



|                                                                                                                                                                                                                                                                    |                                                                                                                                                                                           |                                                                                                                                 |                                                                                                                                     |                                                                                                                                                                   |                                                                                  |                          |                                                                                         |                                                                                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
|  <div>Government of Nepal<br/>Ministry of Physical Infrastructure and Transport<br/><b>Department of Roads</b><br/><b>Development Cooperation Implementation Division</b></div> | Strategic Road Connectivity & Trade Improvement Project (SRCTIP)<br><br>Detailed Design of Upgradation of Kamala-Dhakkebar-Pathalya Road Section (130 KM) of Mahendra Highway and Bridges | DESIGN CONSULTANTS                                                                                                              |                                                                                                                                     | Designed By<br><br>Mr. R.A.<br><br>Nac.No. 6431 CH/L/A*<br><br>Signature<br> | Drawing Name<br>WING WALL DETAILS OF BRIDGE OVER RIVER BELGACHHI (DHUNGRE KHOLA) | Scale:<br><br>AS SHOWN   | Date:<br><br>24.04.2023                                                                 |                                                                                                                                      |
|                                                                                                                                                                                                                                                                    |                                                                                                                                                                                           | Joint Venture of                                                                                                                |                                                                                                                                     |                                                                                                                                                                   |                                                                                  |                          |                                                                                         | Checked By<br><br>Mr. S.M.<br><br>Signature<br> |
|                                                                                                                                                                                                                                                                    |                                                                                                                                                                                           |  EPTISA Servicios De Ingeniera Madrid, Spain |  STUP Consultants Private Limited Kolkata, India |                                                                                                                                                                   |                                                                                  |                          |                                                                                         |                                                                                                                                      |
|                                                                                                                                                                                                                                                                    |                                                                                                                                                                                           | In Association With<br>Udaya Consultancy, Geocom International, Sundar Krti Consultant and Rays Consultant Private Limited      |                                                                                                                                     |                                                                                                                                                                   |                                                                                  |                          |                                                                                         |                                                                                                                                      |
|                                                                                                                                                                                                                                                                    |                                                                                                                                                                                           |                                                                                                                                 |                                                                                                                                     |                                                                                                                                                                   | Reference Drawings<br>-                                                          | Chainage:<br><br>274+925 | Drawing No.-<br>KDP/IDPR/STR/BR/BELGACHHI (DHUNGRE KHOLA)/DD- 19<br><br>Sheet No. 1 / 1 |                                                                                                                                      |



| EMPLOYER                                                                                                                                                                                                                                                | PROJECT NAME                                                                                                                                                                               | DESIGN CONSULTANTS                                                                                                                 |                                                                                                                                        |            | Designed By | Mr. R.A.            | Drawing Name       | Scale:    | Date:       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|------------|-------------|---------------------|--------------------|-----------|-------------|
| <br>Government of Nepal<br>Ministry of Physical Infrastructure and Transport<br><b>Department of Roads</b><br><b>Development Cooperation Implementation Division</b> | Strategic Road Connectivity & Trade Improvement Project (SRCTIP)<br><br>Detailed Design of Upgradation of Kamala-Dhalkebar-Pathlalya Road Section (130 KM) of Mahendra Highway and Bridges | Joint Venture of                                                                                                                   |                                                                                                                                        |            |             | Nec.No.6431 CIVILTA |                    |           |             |
|                                                                                                                                                                                                                                                         |                                                                                                                                                                                            |  EPTISA Servicios De Ingenieria Madrid, Spain |  STUP Consultants Private Limited Kolkatta, India | Checked By | Mr. S.M.    | Signature           |                    |           |             |
|                                                                                                                                                                                                                                                         |                                                                                                                                                                                            | In Association With<br>Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited        |                                                                                                                                        |            | Approved By | Mr. H.B.            | Signature          |           |             |
|                                                                                                                                                                                                                                                         |                                                                                                                                                                                            |                                                                                                                                    |                                                                                                                                        |            |             |                     | Reference Drawings | Chainage: |             |
|                                                                                                                                                                                                                                                         |                                                                                                                                                                                            |                                                                                                                                    |                                                                                                                                        |            |             |                     |                    | 274+925   |             |
|                                                                                                                                                                                                                                                         |                                                                                                                                                                                            |                                                                                                                                    |                                                                                                                                        |            |             |                     |                    |           | Sheet No1/1 |

Bearing Design Data for 20m Span and 11.85m width

| Load Condition          | Items          | Under  | On each Neoprene Bearing | Unit   |
|-------------------------|----------------|--------|--------------------------|--------|
| Under No Live Load      | V              | NO EQ. | 46.28                    | Ton    |
|                         |                | EQ.    | 53.22                    | Ton    |
|                         | H <sub>L</sub> | NO EQ. | -                        | Ton    |
|                         |                | EQ.    | 10.41                    | Ton    |
|                         | H <sub>T</sub> | NO EQ. | -                        | Ton    |
|                         |                | EQ.    | 10.41                    | Ton    |
|                         | θ              | NO EQ. | 0.00266                  | radian |
|                         |                | EQ.    | 0.00306                  | radian |
|                         | Δ              |        | 12.4                     | mm     |
| Under Maximum Live Load | V              | NO EQ. | 84.85                    | Ton    |
|                         |                | EQ.    | 92.95                    | Ton    |
|                         | H <sub>L</sub> | NO EQ. | -                        | Ton    |
|                         |                | EQ.    | 0.00                     | Ton    |
|                         | H <sub>T</sub> | NO EQ. | -                        | Ton    |
|                         |                | EQ.    | 0.00                     | Ton    |
|                         | θ              | NO EQ. | 0.0040425                | radian |
|                         |                | EQ.    | 0.00465                  | radian |
|                         | Δ              |        | 20.80                    | mm     |

|                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                          |             |                                   |                                                                                                    |                    |                                                                     |           |          |             |                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------------------|----------------------------------------------------------------------------------------------------|--------------------|---------------------------------------------------------------------|-----------|----------|-------------|--------------------------------------------------|
| <div>EMPLOYER</div> <div><div>Government of Nepal<br/>Ministry of Physical Infrastructure and Transport<br/>Department of Roads<br/>Development Cooperation Implementation Division</div></div> | <div>PROJECT NAME</div> <div>Strategic Road Connectivity &amp; Trade Improvement Project (SRCTIP)<br/>Detailed Design of Upgradation of Kamala-Dhalkebar-Pathalya Road Section (130 KM) of Mahendra Highway and Bridges</div> | <div>DESIGN CONSULTANTS</div> <div>Joint Venture of</div> <div><div>EPTISA Servicios De Ingeniera<br/>Madrid, Spain</div><div>STUP Consultants Private Limited<br/>Kolkatta, India</div></div> | Designed By | Mr. R.A.<br>Nec.No. 6431 CIVIL-14 | <br>Signature | Drawing Name       | BEARING DESIGN DATA OF BRIDGE OVER RIVER BELGACHI-I (DHUNGRE KHOLA) | Scale:    | AS SHOWN | Date:       | 24.04.2023                                       |
|                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                          | Checked By  | Mr. S.M.                          | <br>Signature | Reference Drawings | -                                                                   | Chainage: | 274+925  | Drawing No- | KDP/DPR/STR/BR/BELGACHI-I (DHUNGRE KHOLA)/DD- 21 |
|                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                          | Approved By | Mr. H.B.                          | <br>Signature |                    |                                                                     |           |          | Sheet No.   | 1 / 1                                            |
|                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                               | In Association With<br>Udaya Consultancy, Geocom International, Sundar Kriti Consultant and Rays Consultant Private Limited                                                                                                                                                                                                                                              |             |                                   |                                                                                                    |                    |                                                                     |           |          |             |                                                  |