



Government of Nepal
Ministry of Federal Affairs and General Administration
Department of Local Infrastructure (DoLI)
Local Roads Bridge Programme (LRBP)

RCC T GIRDER BRIDGE

Intermediate-Lanes Traffic, Simply Supported Span, 3 Web, Cast-in-Situ

*Standard Drawings for Typical (16-25)m Span
Superstructure of Normal Height*



Local Roads Bridge Support Unit (LRBSU)

Prepared by

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GENERAL NOTES:
GENERAL

- 1.1. ALL DIMENSIONS ARE IN MM. (EXCEPT OTHERWISE INDICATED).
- 1.2. DRAWINGS ARE VALID FOR A SPAN LENGTH BETWEEN (16-25)M.
- 1.3. APPLICABLE DESIGN LIVE LOAD IS ACCORDING TO IRC 6:2017.
- 1.4. THE BRIDGE IS DESIGNED ON CONDITION THAT IRC CLASS A AND IRC 70R (TRACK AND WHEEL LOAD) LIVE LOAD PASS THE BRIDGE.
- 1.5. APPLICABLE DESIGN STANDARDS AND WORKS:
 - 1.5.1. INDIAN ROAD CONGRESS (IRC)
 - 1.5.2. LATEST STANDARD SPECIFICATION FOR ROAD AND BRIDGE WORKS, DEPARTMENT OF ROAD, DOR 2073 WITH AMENDMENT 2075

1. CONCRETE

1.1. THE GRADES OF CONCRETE ADOPTED IN THE STRUCTURES ARE AS FOLLOWS UNLESS OTHERWISE INDICATED IN THE DRAWINGS ACCORDING TO SECTION 2000:

| CONCRETE GRADE | CHARACTERISTIC STRENGTH: FCK (MPA) | TYPICAL USE |
|----------------|------------------------------------|--|
| M 25/20 | 25 | DECK SLAB, APPROACH SLAB, FOOTPATH AND KERB, DELINEATOR AND RAILING POST |

1.2. CONCRETE COVER AND CHAMFER:

MINIMUM CLEAR CONCRETE COVERS BETWEEN THE SURFACE OF CONCRETE AND RE-BAR AND ALL THE CONCRETE CORNERS SHALL BE CHAMFERED WITH TRIANGLE STRIP MINIMUM SIZE EXCEPT OTHERWISE INDICATED ON DRAWINGS SHALL BE AS FOLLOWS:

| Structures | Clear Cover (mm) | Chamfer (mm) |
|----------------|------------------|--------------|
| RCC Slab | 40 | 50 X 50 |
| Superstructure | 40 | 50 X 50 |
| Parapet | 25 | 30 X 30 |

2. REINFORCEMENT:

DEFORMED BARS SHALL COMPLY WITH FOLLOWING INDIAN STANDARD:
HEIGH YIELD DEFORMED BAR SHALL COMPLY WITH IS 1786-1979 OR EQUIVALENT WITH MINIMUM YIELD STRENGTH 500 MPA.
CUTTING, BENDING, SPLICING AND DEVELOPMENT LENGTH SHALL CONFORM TO IRC:112. FOR FAVOURABLE CONDITION
LAP LENGTH SHALL BE 48 TIMES BAR DIAMETER FOR M25
FOR UNFAVOURABLE CONDITION, INCREASE LAP LENGTH BY 43%.

3. CONTRACTOR OR CONSULTANT SHALL SUBMIT DRAWING WITH BAR BENDING SCHEDULE BASED ON THIS DRAWING.

**REFERENCES TO CONSTRUCTION WORK REQUIREMENT INTER ALIA:
STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS 2073 WITH AMENDMENT 2075:**

SPECIFICATIONS FOR WORKING PROCESS, QUALITY OF WORK, QUALITY OF MATERIAL SHALL BE IN ACCORDANCE WITH "STANDARD SPECIFICATION FOR ROAD AND BRIDGE WORKS" SPECIALLY IN FOLLOWING SECTIONS;

SECTION 500-QUALITY CONROL

SECTION 600-MATERIALS AND TESTING OF MATERIALS

SECTION 900: EARTHWORKS

SECTION 1600-PILING FOR STRUCTURES

SECTION 1800: FALSEWORK, FORMWORK AND SURFACE FINISH FOR CONCRETE STRUCTURES

SECTION 1900 - BEARINGS AND EXPANSION JOINTS

SECTION 2000 -CONCRETE FOR STRUCTURES

SECTION 2400 - RIVER TRAINING AND PROTECTON WORKS

SECTION 3100: MISCELLANEOUS WORKS

LIST OF DRAWINGS

| DWG.NO. | DESCRIPTION | DATE | REVISION NO. | REVISION DATE |
|---------|--|------|--------------|---------------|
| SD-1 | GENERAL NOTES/ LIST OF DRAWINGS | | | |
| SD-1a | BEARING DESIGN DATA AND SUBSTRUCTURE DESIGN DATA | | | |
| SD-2 | GENERAL ARRANGEMENT | | | |
| SD-3 | MAIN GIRDER AND CROSS GIRDER DETAIL - 16 M | | | |
| SD-4 | MAIN GIRDER AND CROSS GIRDER DETAIL - 18 M | | | |
| SD-5 | MAIN GIRDER AND CROSS GIRDER DETAIL - 20 M | | | |
| SD-6 | MAIN GIRDER AND CROSS GIRDER DETAIL - 22 M | | | |
| SD-7 | MAIN GIRDER AND CROSS GIRDER DETAIL - 25 M | | | |
| SD-8 | DECK SLAB AND APPROACH SLAB DETAIL | | | |
| SD-9 | BAR BENDING SCHEDULE OF DECK SLAB | | | |
| SD-10 | WING WALL | | | |
| SD-11 | MISCELLANEOUS | | | |

| BEARING DESIGN DATA | | | | | | | |
|---------------------|-------------|---|--------|-----------------------|---------------|-------------|----------|
| 16.0 m | | Bearing Data for Ultimate Limit State (ULS) | | | | | |
| | | Vertical Loads (KN) | | Horizontal Force (KN) | | Translation | Rotation |
| | | Max KN | Min KN | Longitudinal KN | Transverse KN | | |
| Fix Bearing | Non Seismic | 1010.00 | 405.00 | 105.00 | 0.00 | 0.00 | 0.003 |
| | Seismic | 1010.00 | 405.00 | 170.00 | 115.00 | 0.00 | 0.003 |
| Free Bearing | Non Seismic | 1010.00 | 405.00 | 0.00 | 0.00 | 8.96 | 0.003 |
| | Seismic | 1010.00 | 405.00 | 0.00 | 0.00 | 8.96 | 0.003 |
| 16.0 m | | Bearing Data for Serviceability Limit State (SLS) | | | | | |
| | | Vertical Loads (KN) | | Horizontal Force (KN) | | Translation | Rotation |
| | | Max KN | Min KN | Longitudinal KN | Transverse KN | | |
| Fix Bearing | Non Seismic | 710.00 | 300.00 | 70.00 | 0.00 | 0.00 | 0.003 |
| | Seismic | 710.00 | 300.00 | 125.00 | 85.00 | 0.00 | 0.003 |
| Free Bearing | Non Seismic | 710.00 | 300.00 | 0.00 | 0.00 | 8.96 | 0.003 |
| | Seismic | 710.00 | 300.00 | 0.00 | 0.00 | 8.96 | 0.003 |

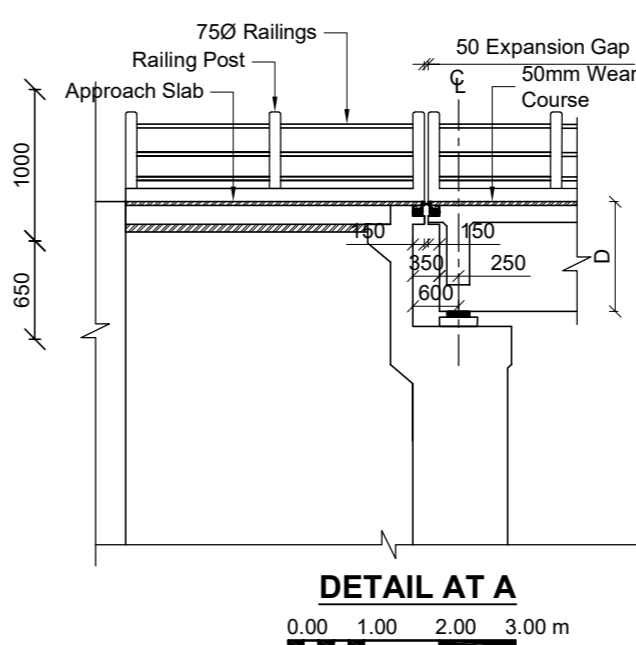
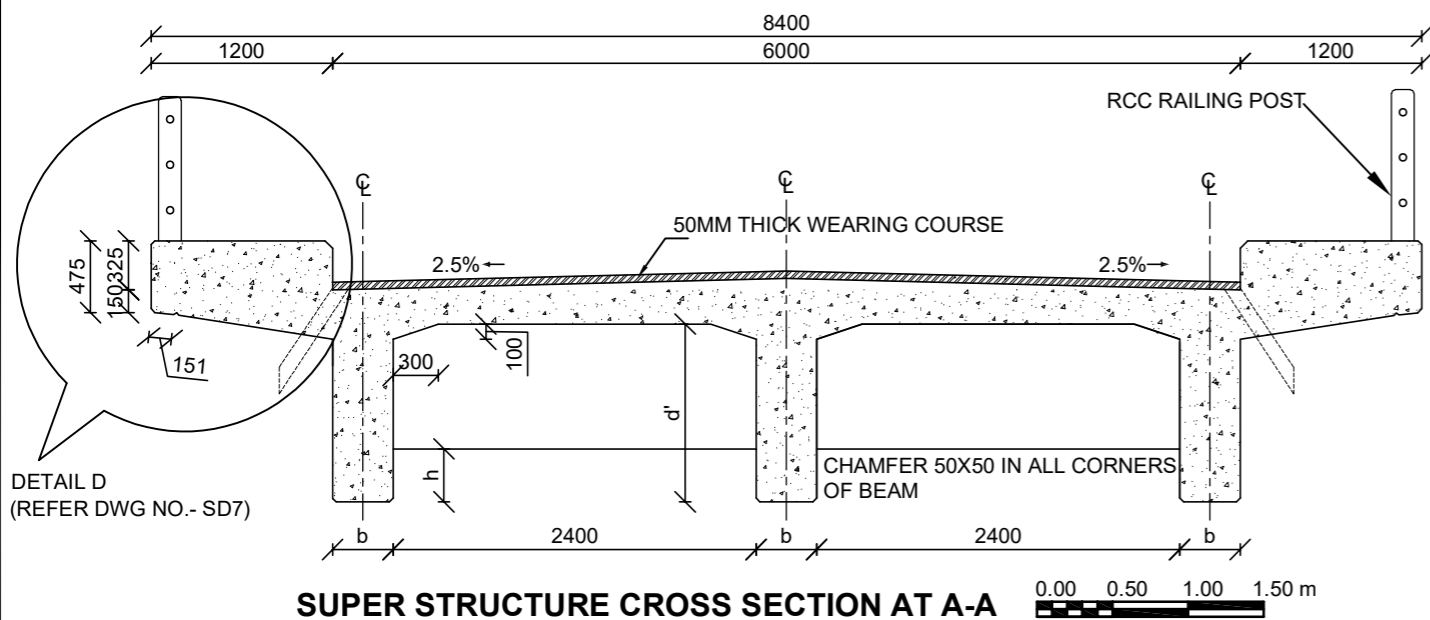
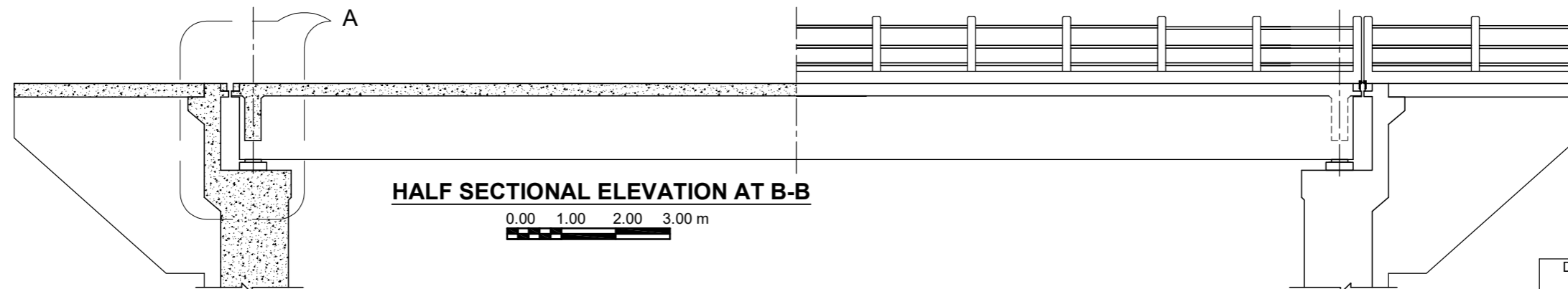
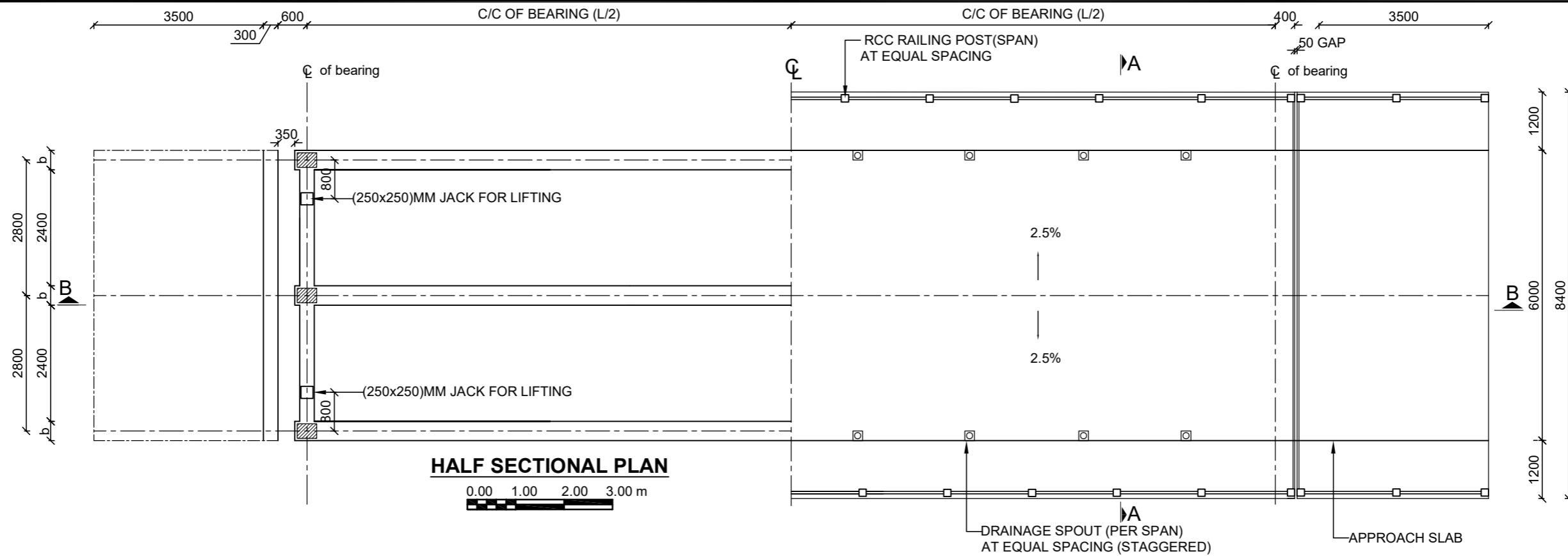
| BEARING DESIGN DATA | | | | | | | |
|---------------------|-------------|---|--------|-----------------------|---------------|-------------|----------|
| 18.0 m | | Bearing Data for Ultimate Limit State (ULS) | | | | | |
| | | Vertical Loads (KN) | | Horizontal Force (KN) | | Translation | Rotation |
| | | Max KN | Min KN | Longitudinal KN | Transverse KN | | |
| Fix Bearing | Non Seismic | 1090.00 | 450.00 | 110.00 | 0.00 | 0.00 | 0.003 |
| | Seismic | 1090.00 | 450.00 | 100.00 | 130.00 | 0.00 | 0.003 |
| Free Bearing | Non Seismic | 1090.00 | 450.00 | 0.00 | 0.00 | 10.08 | 0.003 |
| | Seismic | 1090.00 | 450.00 | 0.00 | 0.00 | 10.08 | 0.003 |
| 18.0 m | | Bearing Data for Serviceability Limit State (SLS) | | | | | |
| | | Vertical Loads (KN) | | Horizontal Force (KN) | | Translation | Rotation |
| | | Max KN | Min KN | Longitudinal KN | Transverse KN | | |
| Fix Bearing | Non Seismic | 765.00 | 335.00 | 70.00 | 0.00 | 0.00 | 0.003 |
| | Seismic | 765.00 | 335.00 | 0.00 | 0.00 | 0.00 | 0.003 |
| Free Bearing | Non Seismic | 765.00 | 335.00 | 0.00 | 0.00 | 10.08 | 0.003 |
| | Seismic | 765.00 | 335.00 | 0.00 | 0.00 | 10.08 | 0.003 |

| BEARING DESIGN DATA | | | | | | | |
|---------------------|-------------|---|--------|-----------------------|---------------|-------------|----------|
| 20.0 m | | Bearing Data for Ultimate Limit State (ULS) | | | | | |
| | | Vertical Loads (KN) | | Horizontal Force (KN) | | Translation | Rotation |
| | | Max KN | Min KN | Longitudinal KN | Transverse KN | | |
| Fix Bearing | Non Seismic | 1190.00 | 525.00 | 110.00 | 0.00 | 0.00 | 0.003 |
| | Seismic | 1190.00 | 525.00 | 110.00 | 145.00 | 0.00 | 0.003 |
| Free Bearing | Non Seismic | 1190.00 | 525.00 | 0.00 | 0.00 | 11.20 | 0.003 |
| | Seismic | 1190.00 | 525.00 | 0.00 | 0.00 | 11.20 | 0.003 |
| 20.0 m | | Bearing Data for Serviceability Limit State (SLS) | | | | | |
| | | Vertical Loads (KN) | | Horizontal Force (KN) | | Translation | Rotation |
| | | Max KN | Min KN | Longitudinal KN | Transverse KN | | |
| Fix Bearing | Non Seismic | 835.00 | 390.00 | 80.00 | 0.00 | 0.00 | 0.003 |
| | Seismic | 835.00 | 390.00 | 0.00 | 0.00 | 0.00 | 0.003 |
| Free Bearing | Non Seismic | 835.00 | 390.00 | 0.00 | 0.00 | 11.20 | 0.003 |
| | Seismic | 835.00 | 390.00 | 0.00 | 0.00 | 11.20 | 0.003 |

| BEARING DESIGN DATA | | | | | | | |
|---------------------|-------------|---|--------|-----------------------|---------------|-------------|----------|
| 22.0 m | | Bearing Data for Ultimate Limit State (ULS) | | | | | |
| | | Vertical Loads (KN) | | Horizontal Force (KN) | | Translation | Rotation |
| | | Max KN | Min KN | Longitudinal KN | Transverse KN | | |
| Fix Bearing | Non Seismic | 1290.00 | 610.00 | 115.00 | 0.00 | 0.00 | 0.003 |
| | Seismic | 1290.00 | 610.00 | 130.00 | 160.00 | 0.00 | 0.003 |
| Free Bearing | Non Seismic | 1290.00 | 610.00 | 0.00 | 0.00 | 12.32 | 0.003 |
| | Seismic | 1290.00 | 610.00 | 0.00 | 0.00 | 12.32 | 0.003 |
| 22.0 m | | Bearing Data for Serviceability Limit State (SLS) | | | | | |
| | | Vertical Loads (KN) | | Horizontal Force (KN) | | Translation | Rotation |
| | | Max KN | Min KN | Longitudinal KN | Transverse KN | | |
| Fix Bearing | Non Seismic | 910.00 | 450.00 | 80.00 | 0.00 | 0.00 | 0.003 |
| | Seismic | 910.00 | 450.00 | 0.00 | 0.00 | 0.00 | 0.003 |
| Free Bearing | Non Seismic | 910.00 | 450.00 | 0.00 | 0.00 | 12.32 | 0.003 |
| | Seismic | 910.00 | 450.00 | 0.00 | 0.00 | 12.32 | 0.003 |

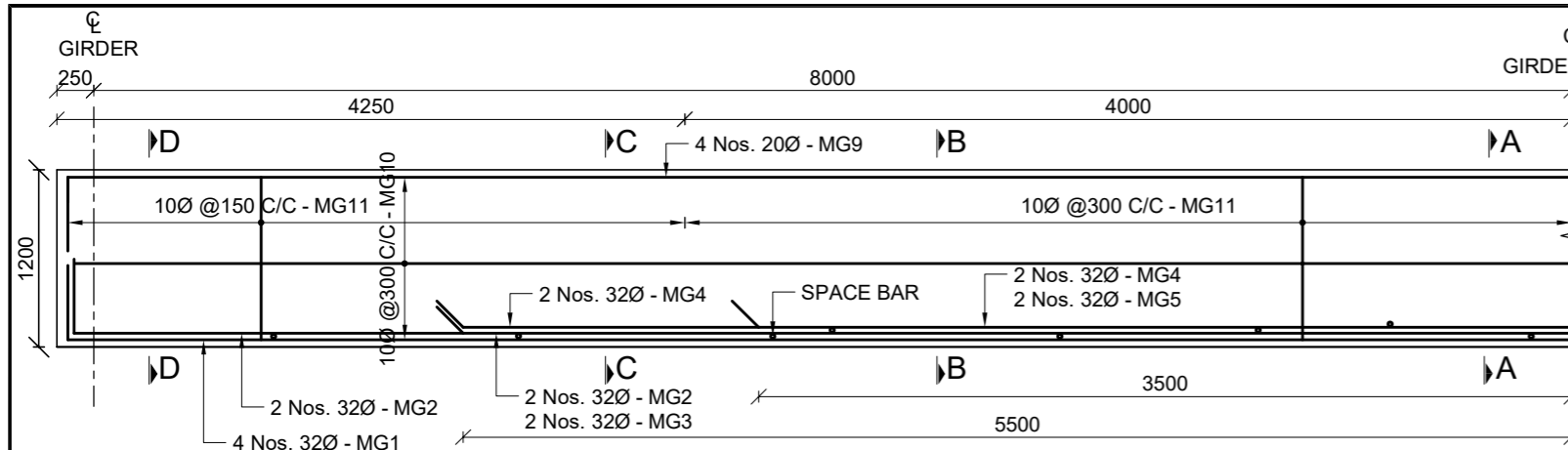
| BEARING DESIGN DATA | | | | | | | |
|---------------------|-------------|---|--------|-----------------------|---------------|-------------|----------|
| 25.0 m | | Bearing Data for Ultimate Limit State (ULS) | | | | | |
| | | Vertical Loads (KN) | | Horizontal Force (KN) | | Translation | Rotation |
| | | Max KN | Min KN | Longitudinal KN | Transverse KN | | |
| Fix Bearing | Non Seismic | 1410.00 | 710.00 | 120.00 | 0.00 | 0.00 | 0.003 |
| | Seismic | 1410.00 | 710.00 | 150.00 | 180.00 | 0.00 | 0.003 |
| Free Bearing | Non Seismic | 1410.00 | 710.00 | 0.00 | 0.00 | 14.00 | 0.003 |
| | Seismic | 1410.00 | 710.00 | 0.00 | 0.00 | 14.00 | 0.003 |
| 25.0 m | | Bearing Data for Serviceability Limit State (SLS) | | | | | |
| | | Vertical Loads (KN) | | Horizontal Force (KN) | | Translation | Rotation |
| | | Max KN | Min KN | Longitudinal KN | Transverse KN | | |
| Fix Bearing | Non Seismic | 1000.00 | 520.00 | 80.00 | 0.00 | 0.00 | 0.003 |
| | Seismic | 1000.00 | 520.00 | 0.00 | 0.00 | 0.00 | 0.003 |
| Free Bearing | Non Seismic | 1000.00 | 520.00 | 0.00 | 0.00 | 14.00 | 0.003 |
| | Seismic | 1000.00 | 520.00 | 0.00 | 0.00 | 14.00 | 0.003 |

| SUB-STRUCTURE DESIGN DATA (UN FACTORED)/ VERTICAL LOAD | | | | |
|--|---------------------|--------------|--------------|-----------------|
| SPAN (m) | DEAD LOAD | | LIVE LOAD | |
| | SUPERSTRUCTURE LOAD | SURFACE LOAD | VEHICLE LOAD | PEDESTRIAN LOAD |
| 16 | 836.80 | 90.00 | 818.8 | 73.96 |
| 18 | 933.30 | 101.25 | 849.5 | 81.60 |
| 20 | 1100.60 | 112.50 | 872.5 | 88.89 |
| 22 | 1279.90 | 123.75 | 890.4 | 95.82 |
| 25 | 1485.55 | 140.63 | 910.5 | 105.56 |

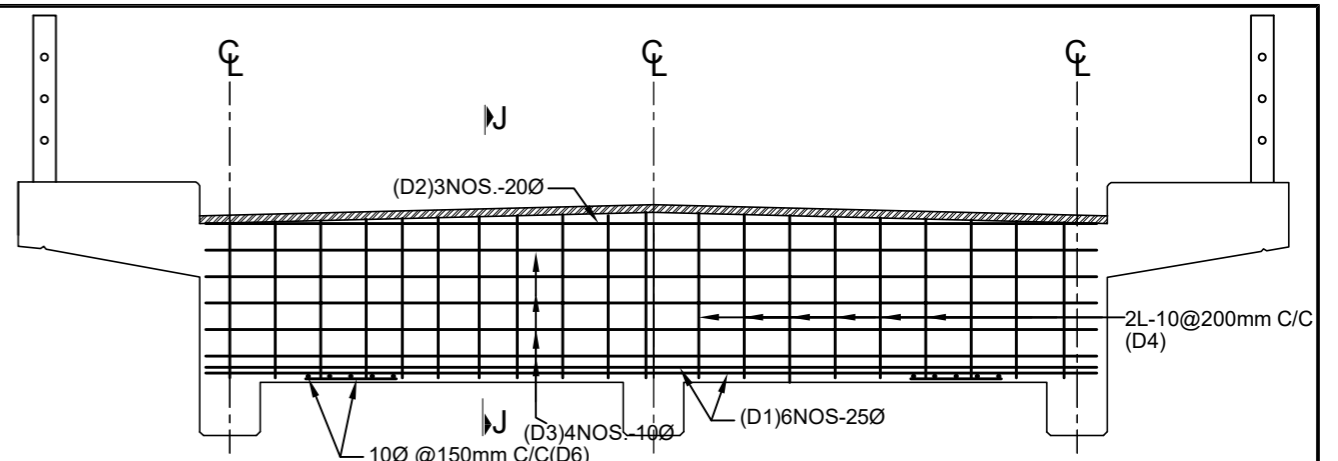
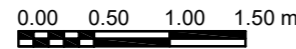


| DETAILS OF NO. OF RAILING POST AND DRAINAGE SPOUT | | | |
|---|-------------|------------------|-----------------|
| S.N | DESCRIPTION | RAILING POST | DRAINAGE SPOUT |
| 1 | 16M SPAN | 2 x 14 = 28 Nos. | 2 x 4 = 8 Nos. |
| 2 | 18M SPAN | 2 x 15 = 30 Nos. | 2 x 4 = 8 Nos. |
| 3 | 20M SPAN | 2 x 16 = 32 Nos. | 2 x 4 = 8 Nos. |
| 4 | 22M SPAN | 2 x 17 = 34 Nos. | 2 x 5 = 10 Nos. |
| 5 | 25M SPAN | 2 x 18 = 36 Nos. | 2 x 6 = 12 Nos. |

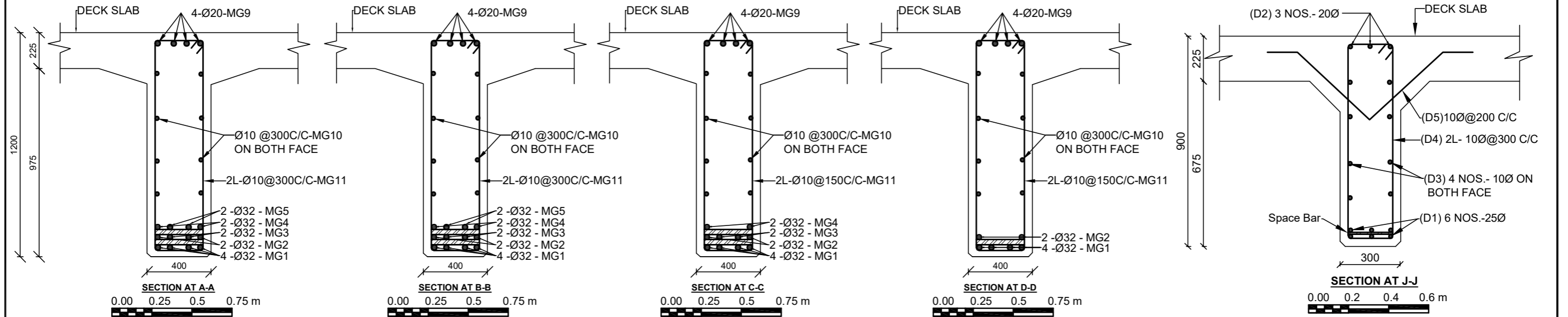
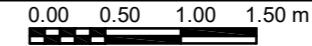
| DIMENSION DETAILING RECOMMENDED AT DRAWINGS: | | | | | | |
|--|------------|----------|----------|----------|----------|----------|
| S.N | PARAMETERS | 16M SPAN | 18M SPAN | 20M SPAN | 22M SPAN | 25M SPAN |
| 1 | L | 16000 | 18000 | 20000 | 22000 | 25000 |
| 2 | b | 400 | 400 | 400 | 400 | 400 |
| 3 | d | 225 | 225 | 225 | 225 | 225 |
| 4 | d' | 975 | 975 | 1175 | 1375 | 1475 |
| 5 | D | 1200 | 1200 | 1400 | 1600 | 1700 |
| 6 | h | 300 | 300 | 350 | 400 | 425 |



MAIN GIRDER REINFORCEMENT DETAILS



L-SECTION OF CROSS BEAM AT END

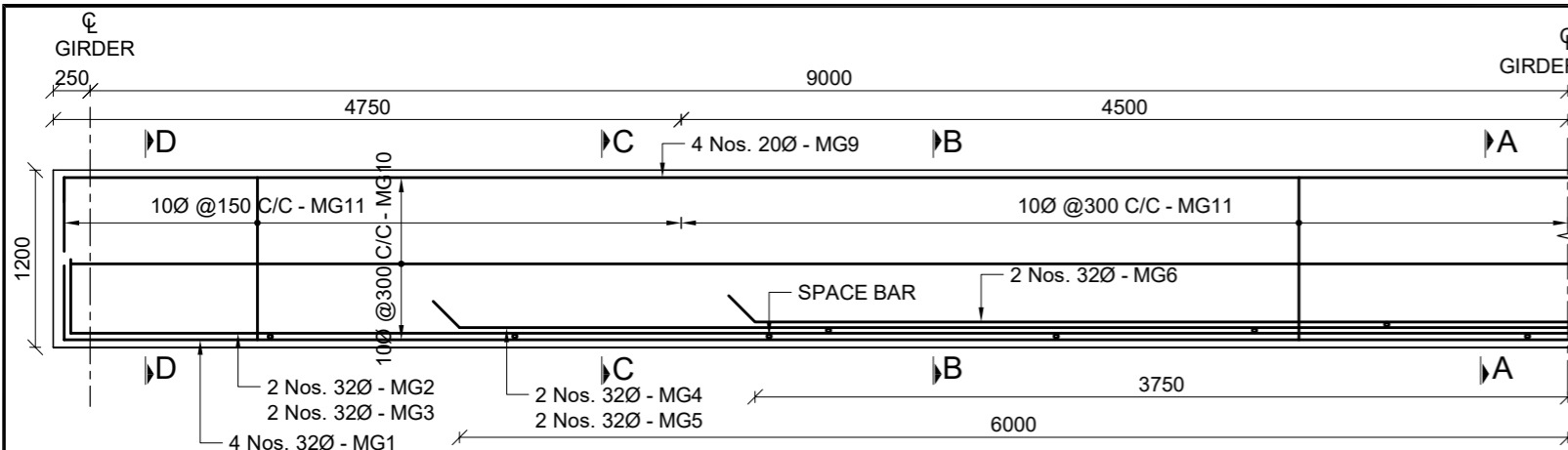


BAR SCHEDULE FOR MAIN GIRDER OF 16.0 M

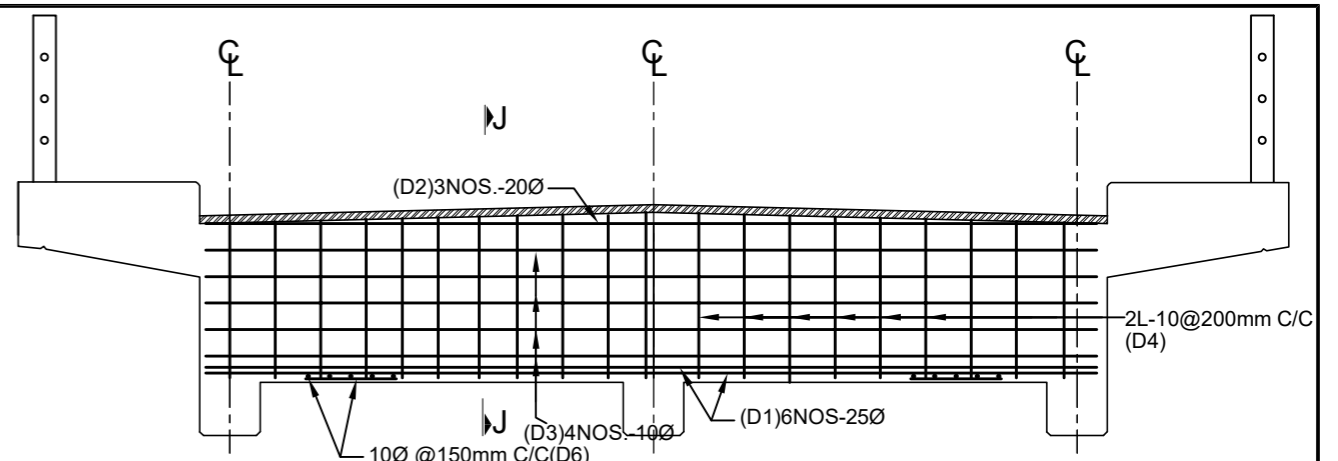
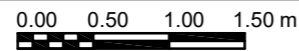
| S.No. | BAR MARK | DESCRIPTION OF BARS | BAR DIA. (MM) | SPACING (MM) | BAR LENGTH (M) | NO. OF BARS | TOTAL LENGTH (M) | UNIT WEIGHT (kg/m) | TOTAL WEIGHT (kg) |
|------------------------------------|----------|---------------------|---------------|--------------|----------------|-------------|------------------|--------------------|-------------------|
| 1 | MG1 | 500 16420 500 | 32 | | 17.42 | 4 | 69.68 | 6.321 | 440.48 |
| 2 | MG2 | 500 16420 500 | 32 | | 17.42 | 2 | 34.84 | 6.321 | 220.24 |
| 3 | MG3 | 500 11000 500 | 32 | | 12.00 | 2 | 24.00 | 6.321 | 151.71 |
| 4 | MG4 | 500 11000 500 | 32 | | 12.00 | 2 | 24.00 | 6.321 | 151.71 |
| 5 | MG5 | 500 7000 500 | 32 | | 8.00 | 2 | 16.00 | 6.321 | 101.14 |
| 6 | MG9 | 500 16420 500 | 20 | | 17.42 | 4 | 69.68 | 2.469 | 172.06 |
| 7 | MG10 | 150 16420 150 | 10 | 300 | 16.72 | 4 | 66.88 | 0.617 | 41.29 |
| 8 | MG11 | 100 1120 320 | 10 | 150/ 300 | 3.08 | 75 | 231.00 | 0.617 | 142.60 |
| TOTAL WEIGHT = | | | | | | | | | 1421.23 |
| TOTAL WEIGHT (FOR 3 MAIN GIRDER) = | | | | | | | | | 4263.70 |

BAR SCHEDULE FOR CROSS GIRDER OF 16.0 M

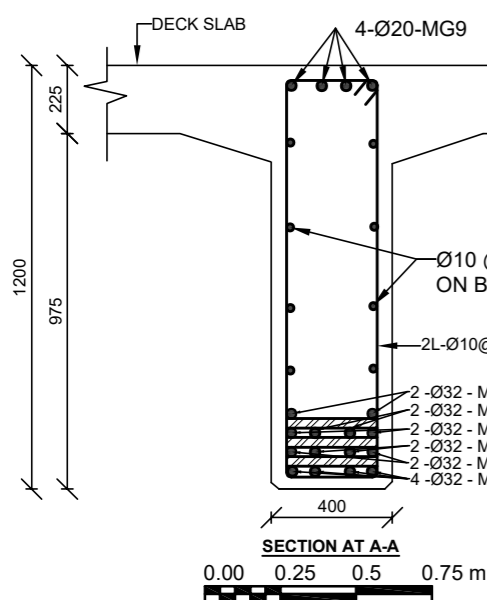
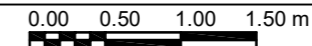
| S.No. | BAR MARK | DESCRIPTION OF BARS | BAR DIA. (MM) | SPACING (MM) | BAR LENGTH (M) | NO. OF BARS | TOTAL LENGTH (M) | UNIT WEIGHT (kg/m) | TOTAL WEIGHT (kg) |
|-------------------------------------|----------|-----------------------|---------------|--------------|----------------|-------------|------------------|--------------------|-------------------|
| 1 | D1 | 200 5920 200 | 25 | | 6.32 | 6 | 37.92 | 3.858 | 146.31 |
| 2 | D2 | 200 5920 200 | 20 | | 6.32 | 3 | 18.96 | 2.469 | 46.82 |
| 3 | D3 | 100 5920 100 | 10 | | 6.12 | 4 | 24.48 | 0.617 | 15.11 |
| 4 | D4 | 100 820 200 | 10 | 300 | 2.24 | 21 | 47.04 | 0.617 | 29.04 |
| 5 | D5 | 100 500 500 100 | 10 | 200 | 1.20 | 31 | 37.20 | 0.617 | 22.96 |
| 6 | D6 | 220 600 | 10 | | 4.10 | 2 | 8.20 | 0.617 | 5.06 |
| TOTAL WEIGHT = | | | | | | | | | 265.30 |
| TOTAL WEIGHT (FOR 2 CROSS GIRDER) = | | | | | | | | | 530.60 |



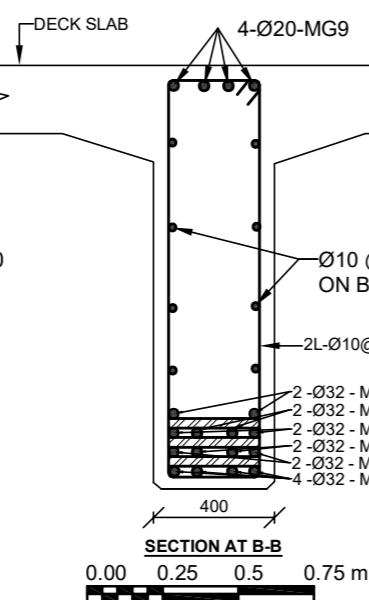
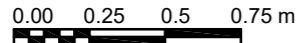
MAIN GIRDER REINFORCEMENT DETAILS



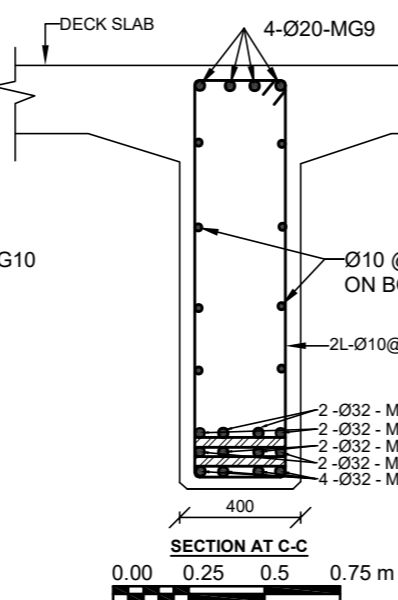
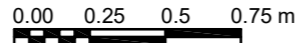
L-SECTION OF CROSS BEAM AT END



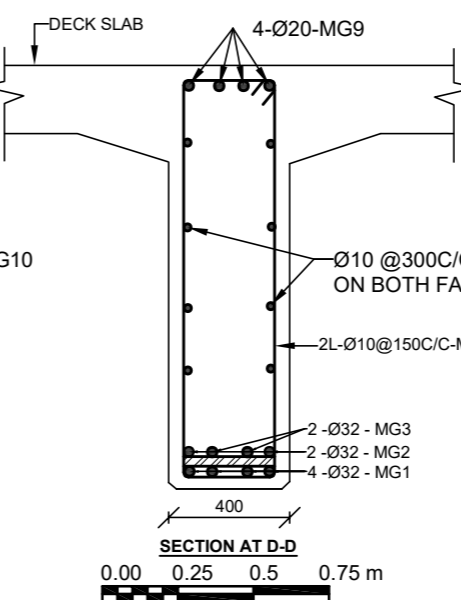
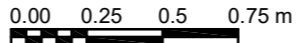
SECTION AT A-A



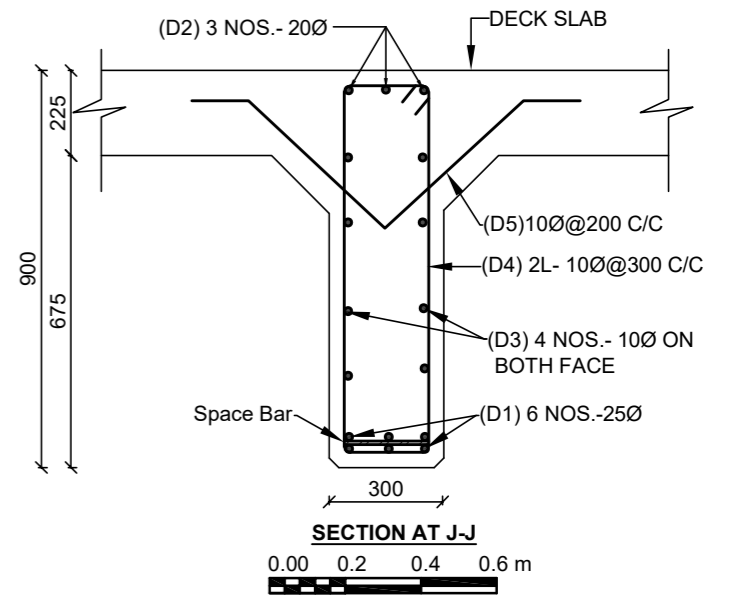
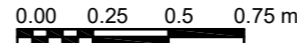
SECTION AT B-B



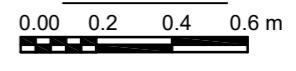
SECTION AT C-C



SECTION AT D-D



SECTION AT J-J

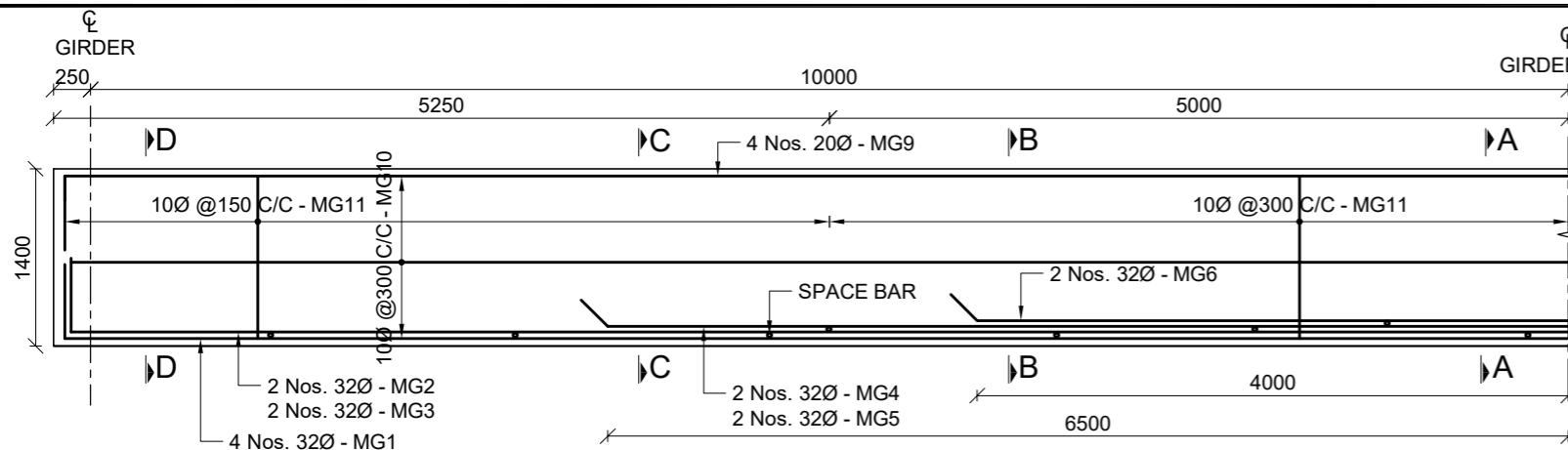


BAR SCHEDULE FOR MAIN GIRDER OF 18.0 M

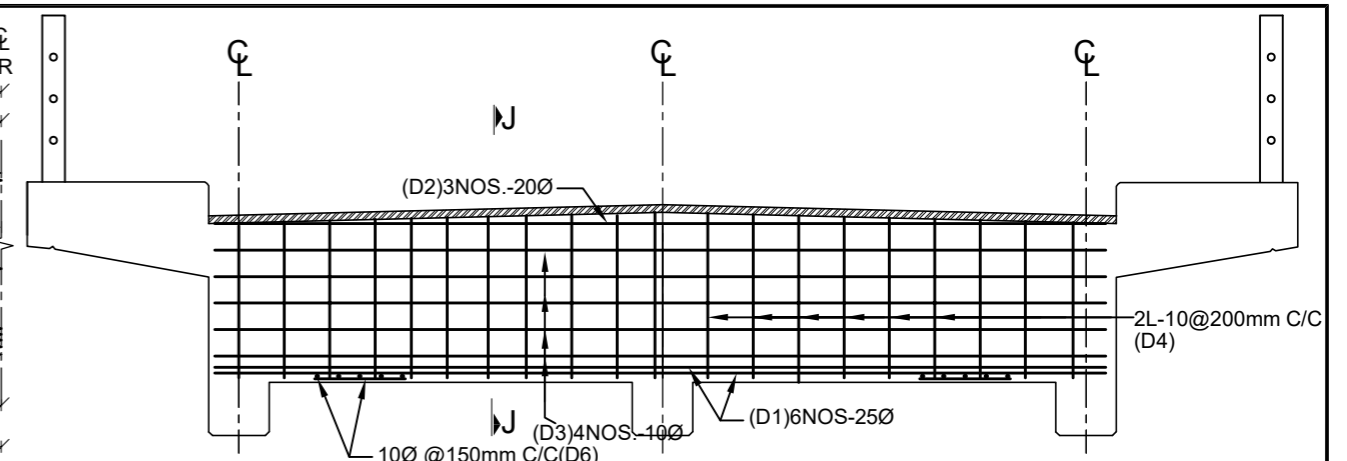
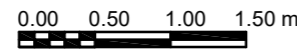
| S.No. | BAR MARK | DESCRIPTION OF BARS | BAR DIA. (MM) | SPACING (MM) | BAR LENGTH (M) | NO. OF BARS | TOTAL LENGTH (M) | UNIT WEIGHT (kg/m) | TOTAL WEIGHT (kg) |
|------------------------------------|----------|---------------------|---------------|--------------|----------------|-------------|------------------|--------------------|-------------------|
| 1 | MG1 | 500 18420 500 | 32 | | 19.42 | 4 | 77.68 | 6.321 | 491.05 |
| 2 | MG2 | 500 18420 500 | 32 | | 19.42 | 2 | 38.84 | 6.321 | 245.52 |
| 3 | MG3 | 500 18420 500 | 32 | | 19.42 | 2 | 38.84 | 6.321 | 245.52 |
| 4 | MG4 | 500 12000 500 | 32 | | 13.00 | 2 | 26.00 | 6.321 | 164.36 |
| 5 | MG5 | 500 12000 500 | 32 | | 13.00 | 2 | 26.00 | 6.321 | 164.36 |
| 6 | MG6 | 500 7500 500 | 32 | | 8.50 | 2 | 17.00 | 6.321 | 107.46 |
| 7 | MG9 | 500 18420 500 | 20 | | 19.42 | 4 | 77.68 | 2.469 | 191.82 |
| 8 | MG10 | 150 18420 150 | 10 | 300 | 18.72 | 4 | 74.88 | 0.617 | 46.23 |
| 9 | MG11 | 100 1120 320 | 10 | 150/ 300 | 3.08 | 82 | 252.56 | 0.617 | 155.91 |
| TOTAL WEIGHT = | | | | | | | | | 1812.22 |
| TOTAL WEIGHT (FOR 3 MAIN GIRDER) = | | | | | | | | | 5436.66 |

BAR SCHEDULE FOR CROSS GIRDER OF 18.0 M

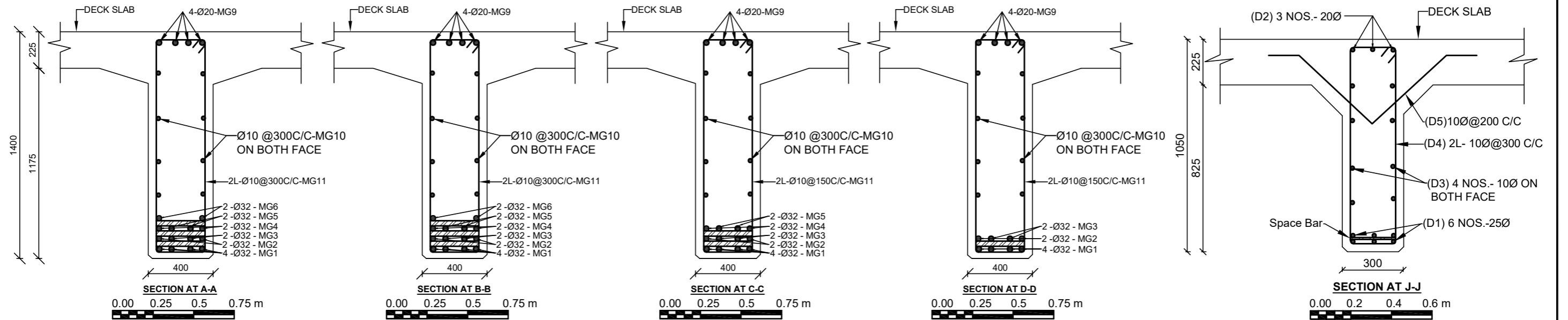
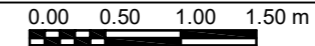
| S.No. | BAR MARK | DESCRIPTION OF BARS | BAR DIA. (MM) | SPACING (MM) | BAR LENGTH (M) | NO. OF BARS | TOTAL LENGTH (M) | UNIT WEIGHT (kg/m) | TOTAL WEIGHT (kg) |
|-------------------------------------|----------|-----------------------|---------------|--------------|----------------|-------------|------------------|--------------------|-------------------|
| 1 | D1 | 200 5920 200 | 25 | | 6.32 | 6 | 37.92 | 3.858 | 146.31 |
| 2 | D2 | 200 5920 200 | 20 | | 6.32 | 3 | 18.96 | 2.469 | 46.82 |
| 3 | D3 | 100 5920 100 | 10 | | 6.12 | 4 | 24.48 | 0.617 | 15.11 |
| 4 | D4 | 100 820 200 | 10 | 300 | 2.24 | 21 | 47.04 | 0.617 | 29.04 |
| 5 | D5 | 100 500 500 100 | 10 | 200 | 1.20 | 31 | 37.20 | 0.617 | 22.96 |
| 6 | D6 | 220 600 | 10 | | 4.10 | 2 | 8.20 | 0.617 | 5.06 |
| TOTAL WEIGHT = | | | | | | | | | 265.30 |
| TOTAL WEIGHT (FOR 2 CROSS GIRDER) = | | | | | | | | | 530.60 |



MAIN GIRDER REINFORCEMENT DETAILS

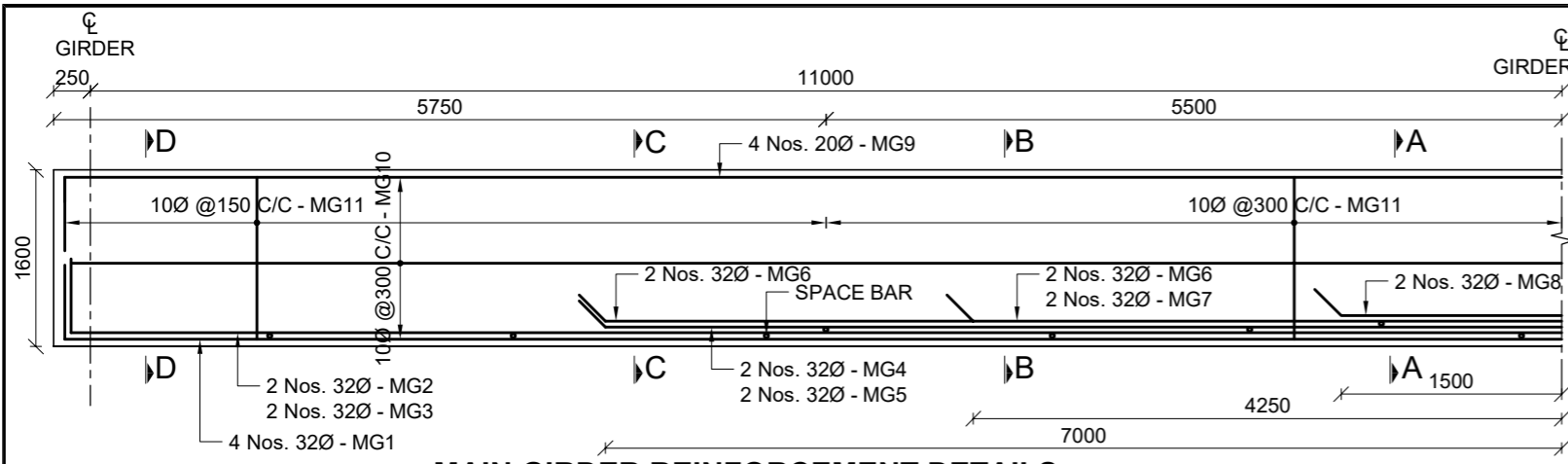


L-SECTION OF CROSS BEAM AT END

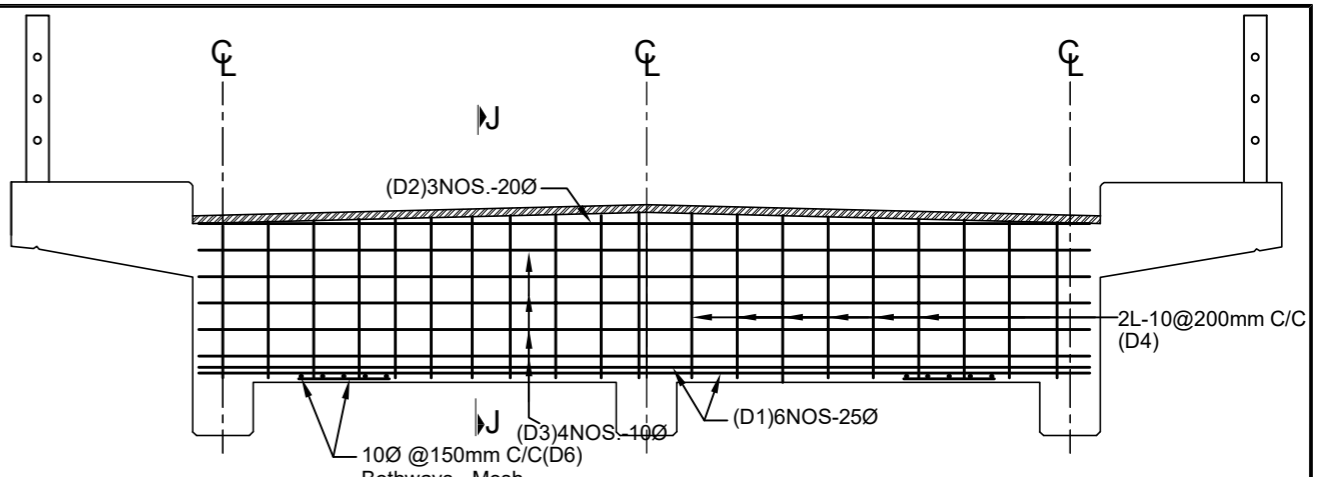
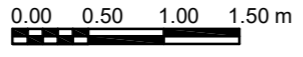


| BAR SCHEDULE FOR MAIN GIRDER OF 20.0 M | | | | | | | | | |
|--|----------|---------------------|---------------|--------------|----------------|-------------|------------------|--------------------|-------------------|
| S.No. | BAR MARK | DESCRIPTION OF BARS | BAR DIA. (MM) | SPACING (MM) | BAR LENGTH (M) | NO. OF BARS | TOTAL LENGTH (M) | UNIT WEIGHT (kg/m) | TOTAL WEIGHT (kg) |
| 1 | MG1 | 500 20420 500 | 32 | | 21.42 | 4 | 85.68 | 6.321 | 541.62 |
| 2 | MG2 | 500 20420 500 | 32 | | 21.42 | 2 | 42.84 | 6.321 | 270.81 |
| 3 | MG3 | 500 20420 500 | 32 | | 21.42 | 2 | 42.84 | 6.321 | 270.81 |
| 4 | MG4 | 500 13000 500 | 32 | | 14.00 | 2 | 28.00 | 6.321 | 177.00 |
| 5 | MG5 | 500 13000 500 | 32 | | 14.00 | 2 | 28.00 | 6.321 | 177.00 |
| 6 | MG6 | 500 8000 500 | 32 | | 9.00 | 2 | 18.00 | 6.321 | 113.79 |
| 7 | MG9 | 500 20420 500 | 20 | | 21.42 | 4 | 85.68 | 2.469 | 211.57 |
| 8 | MG10 | 150 20420 150 | 10 | 300 | 20.72 | 6 | 124.32 | 0.617 | 76.75 |
| 9 | MG11 | 100 1320 320 | 10 | 150/300 | 3.48 | 90 | 313.20 | 0.617 | 193.35 |
| TOTAL WEIGHT = | | | | | | | | | 2032.68 |
| TOTAL WEIGHT (FOR 3 MAIN GIRDER) = | | | | | | | | | 6098.04 |

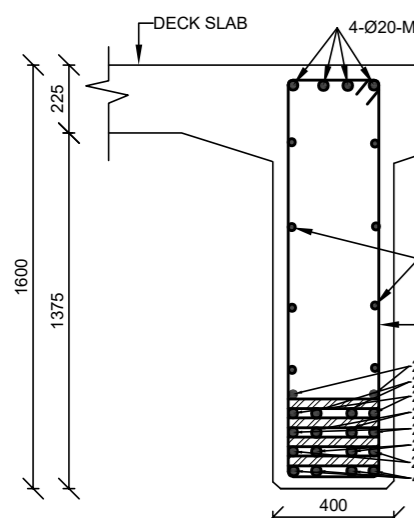
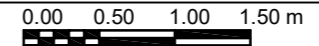
| BAR SCHEDULE FOR CROSS GIRDER OF 20.0 M | | | | | | | | | |
|---|----------|-----------------------|---------------|--------------|----------------|-------------|------------------|--------------------|-------------------|
| S.No. | BAR MARK | DESCRIPTION OF BARS | BAR DIA. (MM) | SPACING (MM) | BAR LENGTH (M) | NO. OF BARS | TOTAL LENGTH (M) | UNIT WEIGHT (kg/m) | TOTAL WEIGHT (kg) |
| 1 | D1 | 200 5920 200 | 25 | | 6.32 | 6 | 37.92 | 3.858 | 146.31 |
| 2 | D2 | 200 5920 200 | 20 | | 6.32 | 3 | 18.96 | 2.469 | 46.82 |
| 3 | D3 | 100 5920 100 | 10 | | 6.12 | 4 | 24.48 | 0.617 | 15.11 |
| 4 | D4 | 100 970 200 | 10 | 300 | 2.54 | 21 | 53.34 | 0.617 | 32.93 |
| 5 | D5 | 100 500 500 100 | 10 | 200 | 1.20 | 31 | 37.20 | 0.617 | 22.96 |
| 6 | D6 | 220 600 | 10 | | 4.10 | 2 | 8.20 | 0.617 | 5.06 |
| TOTAL WEIGHT = | | | | | | | | | 269.19 |
| TOTAL WEIGHT (FOR 2 CROSS GIRDER) = | | | | | | | | | 538.38 |



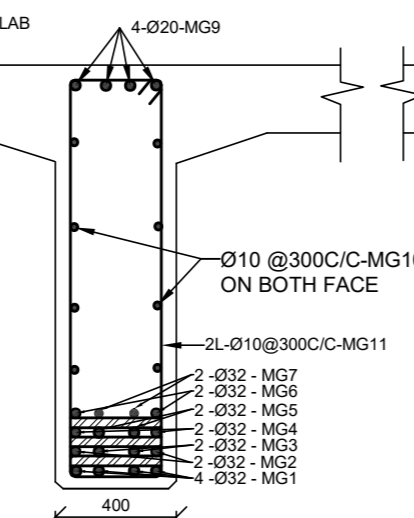
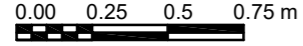
MAIN GIRDER REINFORCEMENT DETAILS



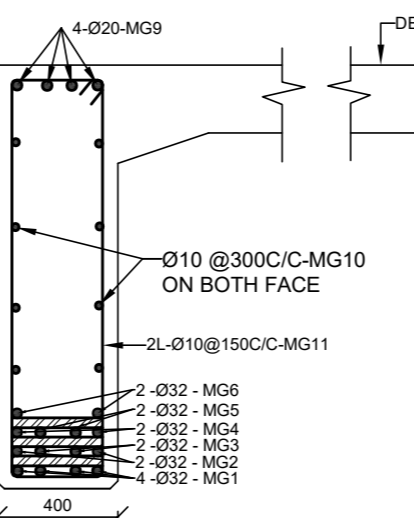
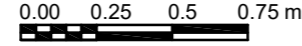
L-SECTION OF CROSS BEAM AT END



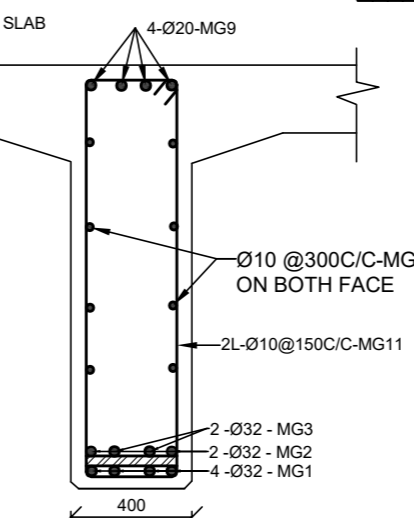
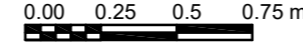
SECTION AT A-A



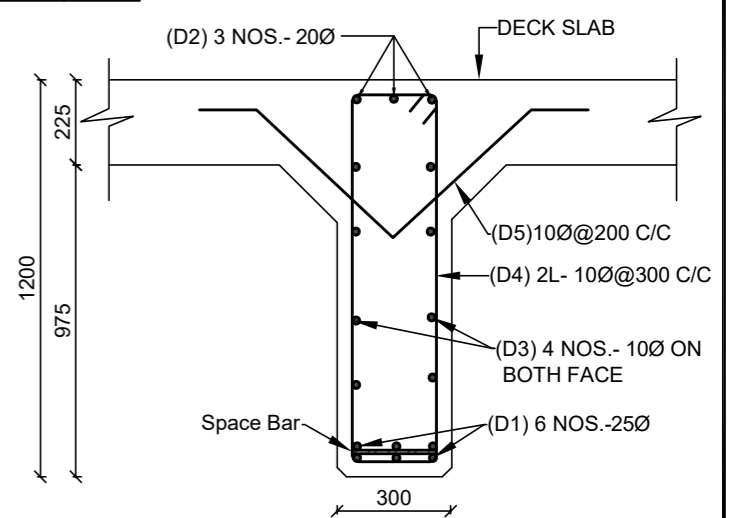
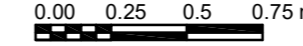
SECTION AT B-B



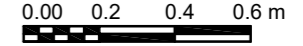
SECTION AT C-C



SECTION AT D-D

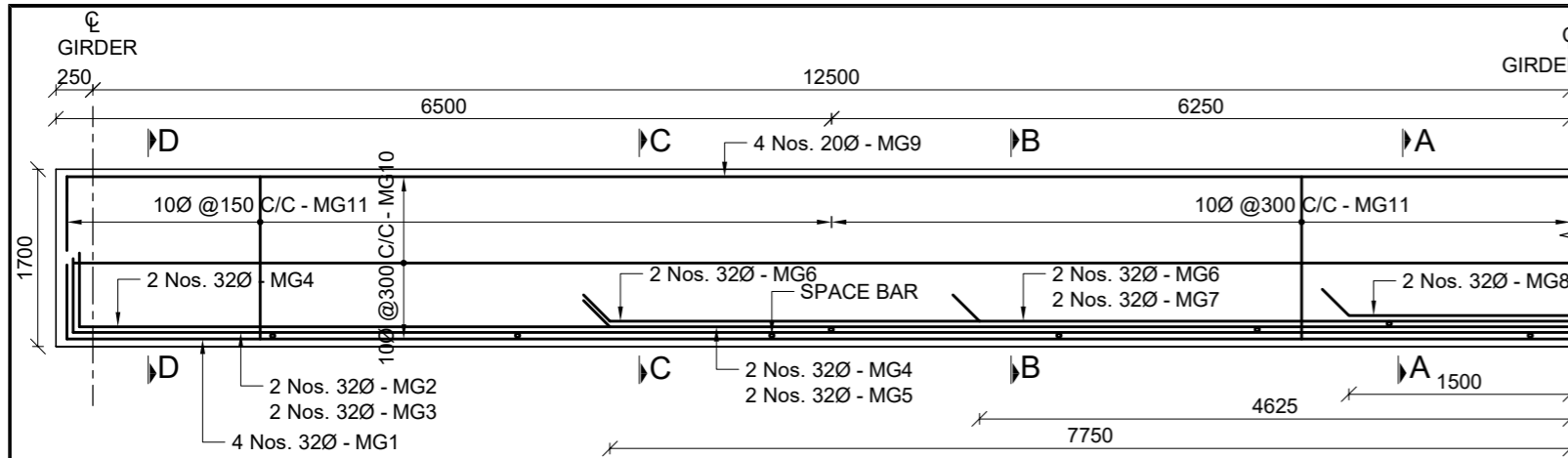


SECTION AT J-J

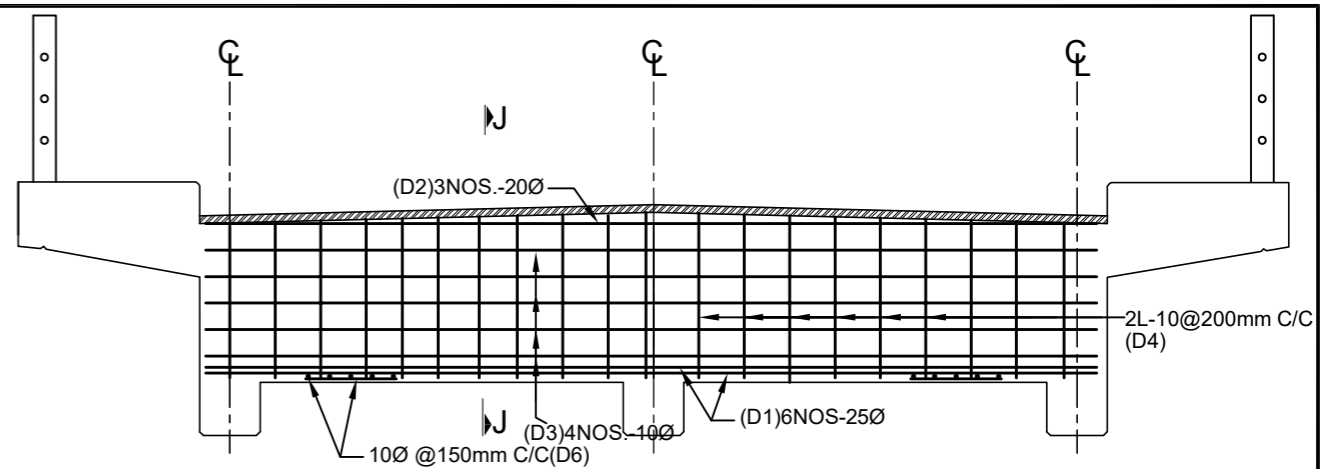
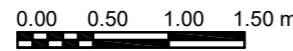


| BAR SCHEDULE FOR MAIN GIRDER OF 22.0 M | | | | | | | | | |
|--|----------|---------------------|---------------|--------------|----------------|-------------|------------------|--------------------|-------------------|
| S.No. | BAR MARK | DESCRIPTION OF BARS | BAR DIA. (MM) | SPACING (MM) | BAR LENGTH (M) | NO. OF BARS | TOTAL LENGTH (M) | UNIT WEIGHT (kg/m) | TOTAL WEIGHT (kg) |
| 1 | MG1 | 500 22420 500 | 32 | | 23.42 | 4 | 93.68 | 6.321 | 592.19 |
| 2 | MG2 | 500 22420 500 | 32 | | 23.42 | 2 | 46.84 | 6.321 | 296.09 |
| 3 | MG3 | 500 22420 500 | 32 | | 23.42 | 2 | 46.84 | 6.321 | 296.09 |
| 4 | MG4 | 500 14000 500 | 32 | | 15.00 | 2 | 30.00 | 6.321 | 189.64 |
| 5 | MG5 | 500 14000 500 | 32 | | 15.00 | 2 | 30.00 | 6.321 | 189.64 |
| 6 | MG6 | 500 14000 500 | 32 | | 15.00 | 2 | 30.00 | 6.321 | 189.64 |
| 7 | MG7 | 500 8500 500 | 32 | | 9.50 | 2 | 19.00 | 6.321 | 120.11 |
| 8 | MG8 | 500 3000 500 | 32 | | 4.00 | 2 | 8.00 | 6.321 | 50.57 |
| 9 | MG9 | 500 22420 500 | 20 | | 23.42 | 4 | 93.68 | 2.469 | 231.32 |
| 10 | MG10 | 150 22420 150 | 10 | 300 | 22.72 | 6 | 136.32 | 0.617 | 84.15 |
| 11 | MG11 | 100 1520 320 | 10 | 150/300 | 3.88 | 100 | 388.00 | 0.617 | 239.52 |
| TOTAL WEIGHT = | | | | | | | | | 2478.98 |
| TOTAL WEIGHT (FOR 3 MAIN GIRDER) = | | | | | | | | | 7436.94 |

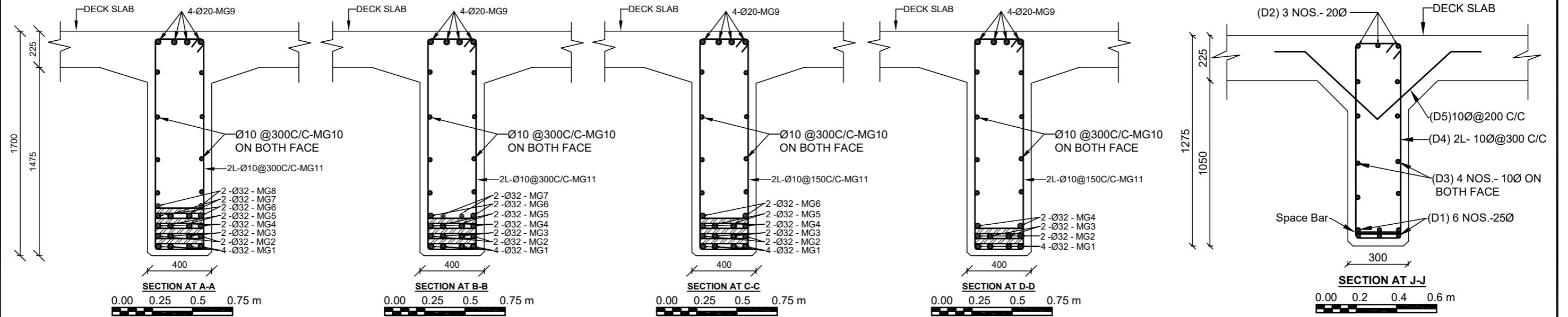
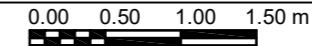
| BAR SCHEDULE FOR CROSS GIRDER OF 22.0 M | | | | | | | | | |
|---|----------|---------------------|---------------|--------------|----------------|-------------|------------------|--------------------|-------------------|
| S.No. | BAR MARK | DESCRIPTION OF BARS | BAR DIA. (MM) | SPACING (MM) | BAR LENGTH (M) | NO. OF BARS | TOTAL LENGTH (M) | UNIT WEIGHT (kg/m) | TOTAL WEIGHT (kg) |
| 1 | D1 | 200 5920 200 | 25 | | 6.32 | 6 | 37.92 | 3.858 | 146.31 |
| 2 | D2 | 200 5920 200 | 20 | | 6.32 | 3 | 18.96 | 2.469 | 46.82 |
| 3 | D3 | 100 5920 100 | 10 | | 6.12 | 6 | 36.72 | 0.617 | 22.67 |
| 4 | D4 | 100 1120 200 | 10 | 300 | 2.84 | 21 | 59.64 | 0.617 | 36.82 |
| 5 | D5 | 100 500 500 100 | 10 | 200 | 1.20 | 31 | 37.20 | 0.617 | 22.96 |
| 6 | D6 | 220 600 | 10 | | 4.10 | 2 | 8.20 | 0.617 | 5.06 |
| TOTAL WEIGHT = | | | | | | | | | 280.64 |
| TOTAL WEIGHT (FOR 2 CROSS GIRDER) = | | | | | | | | | 561.27 |



MAIN GIRDER REINFORCEMENT DETAILS

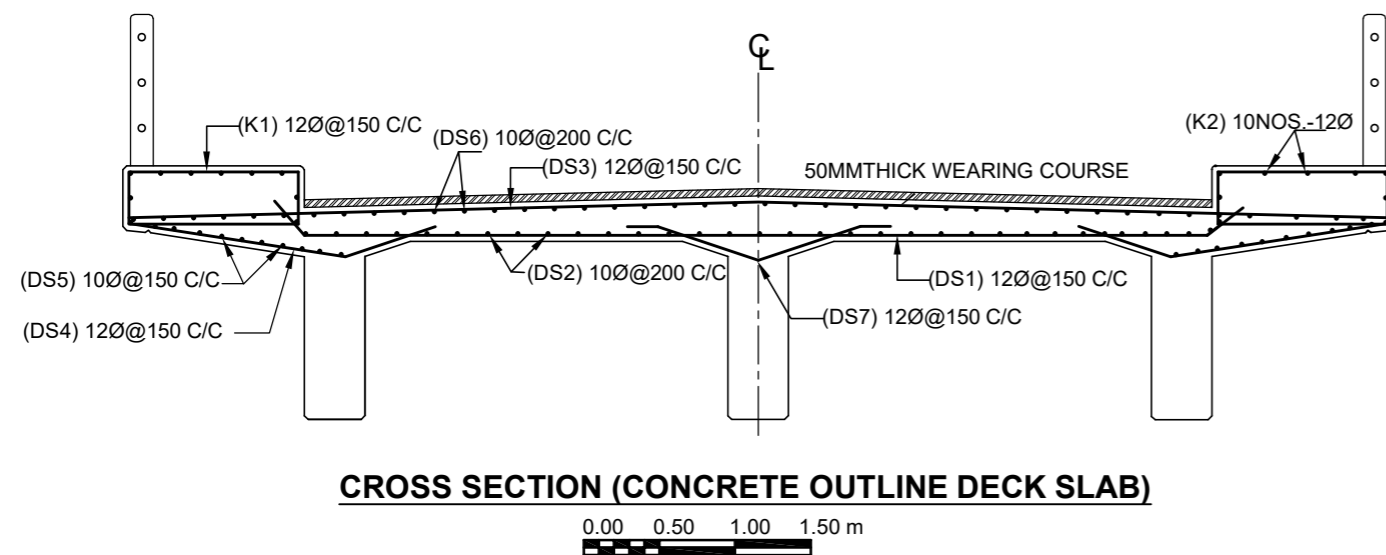
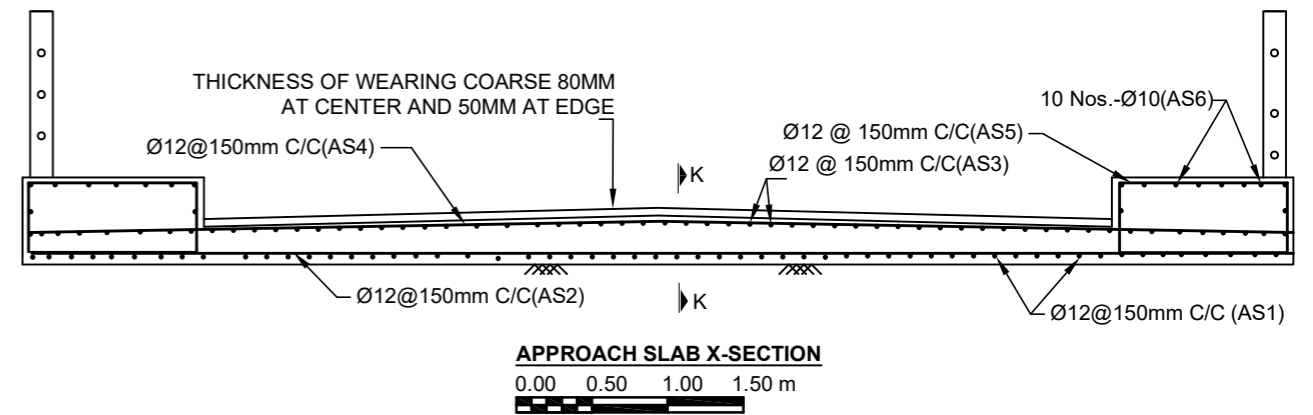
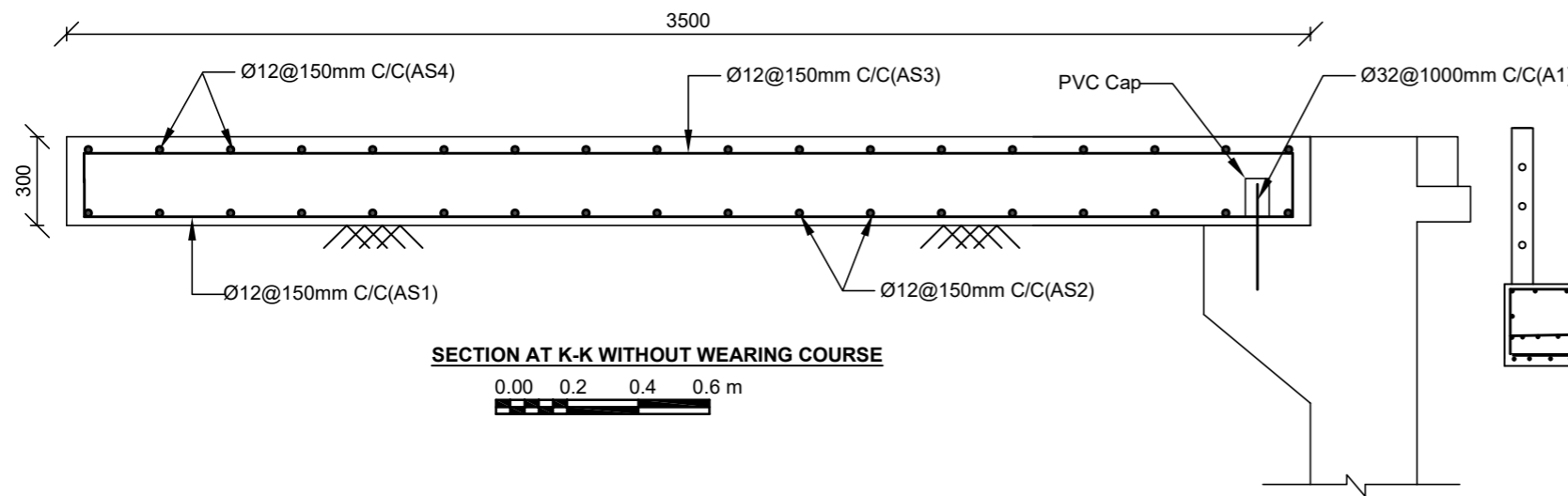


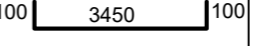
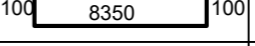
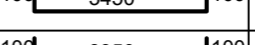
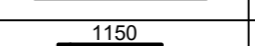
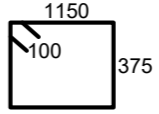
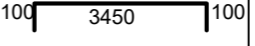
L-SECTION OF CROSS BEAM AT END

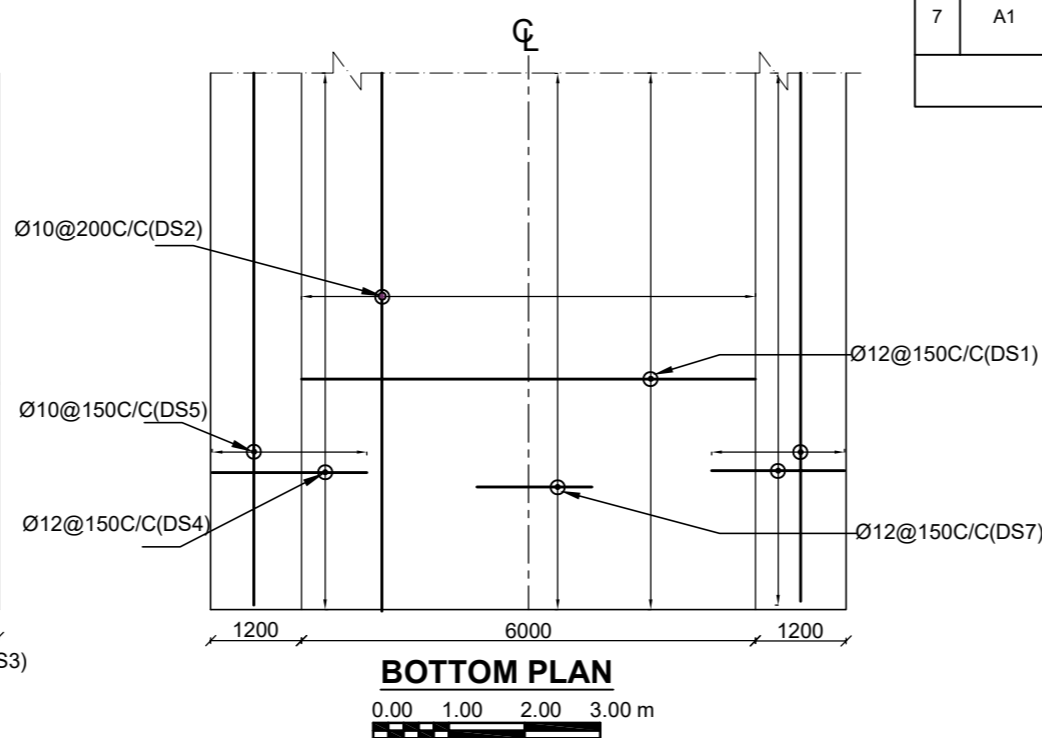
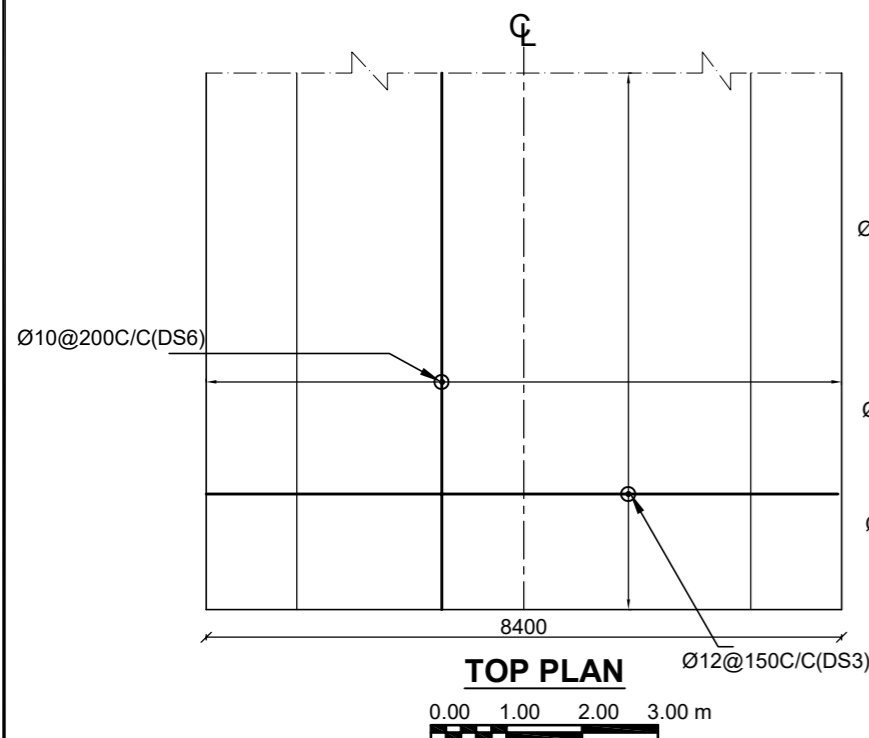


| BAR SCHEDULE FOR MAIN GIRDER OF 25.0 M | | | | | | | | | |
|--|----------|---------------------|---------------|--------------|----------------|-------------|------------------|--------------------|-------------------|
| S.No. | BAR MARK | DESCRIPTION OF BARS | BAR DIA. (MM) | SPACING (MM) | BAR LENGTH (M) | NO. OF BARS | TOTAL LENGTH (M) | UNIT WEIGHT (kg/m) | TOTAL WEIGHT (kg) |
| 1 | MG1 | 500 25420 500 | 32 | | 26.42 | 4 | 105.68 | 6.321 | 668.05 |
| 2 | MG2 | 500 25420 500 | 32 | | 26.42 | 2 | 52.84 | 6.321 | 334.02 |
| 3 | MG3 | 500 25420 500 | 32 | | 26.42 | 2 | 52.84 | 6.321 | 334.02 |
| 4 | MG4 | 500 25420 500 | 32 | | 26.42 | 2 | 52.84 | 6.321 | 334.02 |
| 5 | MG5 | 500 15500 500 | 32 | | 16.50 | 2 | 33.00 | 6.321 | 208.61 |
| 6 | MG6 | 500 15500 500 | 32 | | 16.50 | 2 | 33.00 | 6.321 | 208.61 |
| 7 | MG7 | 500 9250 500 | 32 | | 10.25 | 2 | 20.50 | 6.321 | 129.59 |
| 8 | MG8 | 500 3000 500 | 32 | | 4.00 | 2 | 8.00 | 6.321 | 50.57 |
| 9 | MG9 | 500 25420 500 | 20 | | 26.42 | 4 | 105.68 | 2.469 | 260.96 |
| 10 | MG10 | 150 25420 150 | 10 | 300 | 25.72 | 8 | 205.76 | 0.617 | 127.02 |
| 11 | MG11 | 100 1620 320 | 10 | 150/300 | 4.08 | 112 | 456.96 | 0.617 | 282.09 |
| TOTAL WEIGHT = | | | | | | | | | 2937.56 |
| TOTAL WEIGHT (FOR 3 MAIN GIRDER) = | | | | | | | | | 8812.67 |

| BAR SCHEDULE FOR CROSS GIRDER OF 25.0 M | | | | | | | | | |
|---|----------|-----------------------|---------------|--------------|----------------|-------------|------------------|--------------------|-------------------|
| S.No. | BAR MARK | DESCRIPTION OF BARS | BAR DIA. (MM) | SPACING (MM) | BAR LENGTH (M) | NO. OF BARS | TOTAL LENGTH (M) | UNIT WEIGHT (kg/m) | TOTAL WEIGHT (kg) |
| 1 | D1 | 200 5920 200 | 25 | | 6.32 | 6 | 37.92 | 3.858 | 146.31 |
| 2 | D2 | 200 5920 200 | 20 | | 6.32 | 3 | 18.96 | 2.469 | 46.82 |
| 3 | D3 | 100 5920 100 | 10 | | 6.12 | 6 | 36.72 | 0.617 | 22.67 |
| 4 | D4 | 100 1195 200 | 10 | 300 | 2.99 | 21 | 62.79 | 0.617 | 38.76 |
| 5 | D5 | 100 500 500 100 | 10 | 200 | 1.20 | 31 | 37.20 | 0.617 | 22.96 |
| 6 | D6 | 220 600 | 10 | | 4.10 | 2 | 8.20 | 0.617 | 5.06 |
| TOTAL WEIGHT = | | | | | | | | | 282.58 |
| TOTAL WEIGHT (FOR 2 CROSS GIRDER) = | | | | | | | | | 565.16 |



| BAR BENDING SCHEDULE FOR APPROACH SLAB | | | | | | | | | | |
|--|----------|---|---------------|--------------|----------------|-------------|------------------|--------------------|-------------------|--|
| S. No. | BAR MARK | DESCRIPTION OF BARS | BAR DIA. (MM) | SPACING (MM) | BAR LENGTH (M) | NO. OF BARS | TOTAL LENGTH (M) | UNIT WEIGHT (KG/M) | TOTAL WEIGHT (KG) | |
| 1 | AS1 | 100  100 | 12 | 150 | 3.65 | 57 | 208.05 | 0.889 | 184.95 | |
| 2 | AS2 | 100  100 | 12 | 150 | 8.55 | 24 | 205.20 | 0.889 | 182.41 | |
| 3 | AS3 | 100  100 | 12 | 150 | 3.65 | 57 | 208.05 | 0.889 | 184.95 | |
| 4 | AS4 | 100  100 | 12 | 150 | 8.55 | 24 | 205.20 | 0.889 | 182.41 | |
| 5 | AS5 |  | 12 | 150 | 3.25 | 48 | 156.00 | 0.889 | 138.68 | |
| 6 | AS6 | 100  100 | 10 | | 3.65 | 20 | 73.00 | 0.617 | 45.06 | |
| 7 | A1 | 500 | 32 | 1000 | 0.50 | 9 | 4.50 | 6.321 | 28.45 | |
| TOTAL KG = | | | | | | | | | 918.46 | |



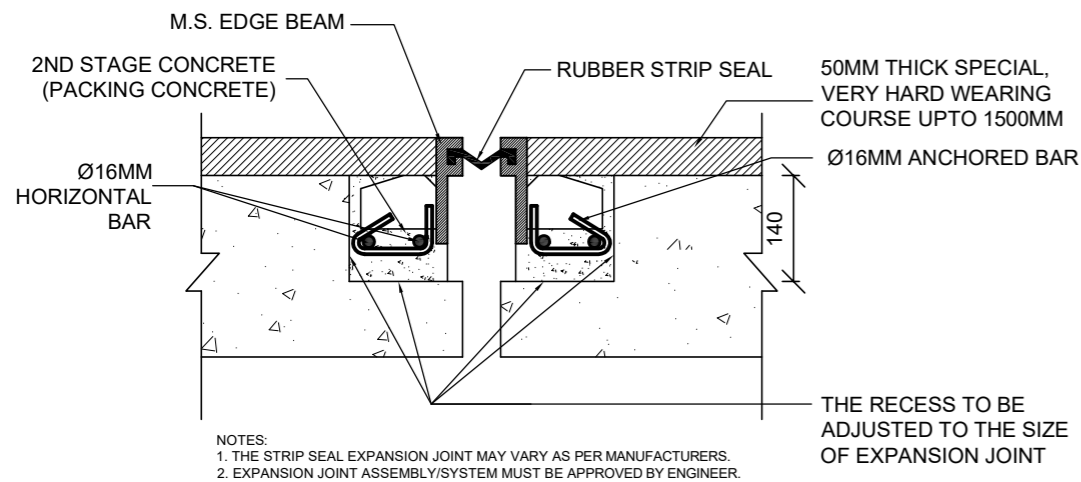
| BAR SCHEDULE FOR DECK SLAB OF 16.0 M | | | | | | | | | |
|--------------------------------------|----------|---------------------|---------------|--------------|----------------|-------------|------------------|--------------------|-------------------|
| S.No. | BAR MARK | DESCRIPTION OF BARS | BAR DIA. (MM) | SPACING (MM) | BAR LENGTH (M) | NO. OF BARS | TOTAL LENGTH (M) | UNIT WEIGHT (kg/m) | TOTAL WEIGHT (kg) |
| 1 | DS1 | | 12 | 150 | 6.20 | 113 | 700.60 | 0.889 | 622.80 |
| 2 | DS2 | | 10 | 200 | 16.92 | 31 | 524.52 | 0.617 | 323.80 |
| 3 | DS3 | | 12 | 150 | 8.55 | 113 | 966.15 | 0.889 | 858.86 |
| 4 | DS4 | | 12 | 150 | 2.20 | 226 | 497.20 | 0.889 | 441.98 |
| 5 | DS5 | | 10 | 150 | 16.92 | 22 | 372.24 | 0.617 | 229.79 |
| 6 | DS6 | | 10 | 200 | 16.92 | 43 | 727.56 | 0.617 | 449.14 |
| 7 | DS7 | | 12 | 150 | 1.60 | 113 | 180.80 | 0.889 | 160.72 |
| 8 | K1 | | 12 | 150 | 3.20 | 226 | 723.20 | 0.889 | 642.89 |
| 9 | K2 | | 12 | | 16.92 | 20 | 338.40 | 0.889 | 300.82 |
| TOTAL WEIGHT= | | | | | | | | | 4030.80 |

| BAR SCHEDULE FOR DECK SLAB OF 18.0 M | | | | | | | | | |
|--------------------------------------|----------|---------------------|---------------|--------------|----------------|-------------|------------------|--------------------|-------------------|
| S.No. | BAR MARK | DESCRIPTION OF BARS | BAR DIA. (MM) | SPACING (MM) | BAR LENGTH (M) | NO. OF BARS | TOTAL LENGTH (M) | UNIT WEIGHT (kg/m) | TOTAL WEIGHT (kg) |
| 1 | DS1 | | 12 | 150 | 6.20 | 126 | 781.20 | 0.889 | 694.45 |
| 2 | DS2 | | 10 | 200 | 18.92 | 31 | 586.52 | 0.617 | 362.07 |
| 3 | DS3 | | 12 | 150 | 8.55 | 126 | 1077.30 | 0.889 | 957.66 |
| 4 | DS4 | | 12 | 150 | 2.20 | 252 | 554.40 | 0.889 | 492.83 |
| 5 | DS5 | | 10 | 150 | 18.92 | 22 | 416.24 | 0.617 | 256.96 |
| 6 | DS6 | | 10 | 200 | 18.92 | 43 | 813.56 | 0.617 | 502.23 |
| 7 | DS7 | | 12 | 150 | 1.60 | 126 | 201.60 | 0.889 | 179.21 |
| 8 | K1 | | 12 | 150 | 3.20 | 252 | 806.40 | 0.889 | 716.85 |
| 9 | K2 | | 12 | | 18.92 | 20 | 378.40 | 0.889 | 336.38 |
| TOTAL WEIGHT= | | | | | | | | | 4498.64 |

| BAR SCHEDULE FOR DECK SLAB OF 20.0 M | | | | | | | | | |
|--------------------------------------|----------|---------------------|---------------|--------------|----------------|-------------|------------------|--------------------|-------------------|
| S.No. | BAR MARK | DESCRIPTION OF BARS | BAR DIA. (MM) | SPACING (MM) | BAR LENGTH (M) | NO. OF BARS | TOTAL LENGTH (M) | UNIT WEIGHT (kg/m) | TOTAL WEIGHT (kg) |
| 1 | DS1 | | 12 | 150 | 6.20 | 140 | 868.00 | 0.889 | 771.61 |
| 2 | DS2 | | 10 | 200 | 20.92 | 31 | 648.52 | 0.617 | 400.35 |
| 3 | DS3 | | 12 | 150 | 8.55 | 140 | 1197.00 | 0.889 | 1064.07 |
| 4 | DS4 | | 12 | 150 | 2.20 | 280 | 616.00 | 0.889 | 547.59 |
| 5 | DS5 | | 10 | 150 | 20.92 | 22 | 460.24 | 0.617 | 284.12 |
| 6 | DS6 | | 10 | 200 | 20.92 | 43 | 899.56 | 0.617 | 555.32 |
| 7 | DS7 | | 12 | 150 | 1.60 | 140 | 224.00 | 0.889 | 199.12 |
| 8 | K1 | | 12 | 150 | 3.20 | 280 | 896.00 | 0.889 | 796.50 |
| 9 | K2 | | 12 | | 20.92 | 20 | 418.40 | 0.889 | 371.94 |
| TOTAL WEIGHT= | | | | | | | | | 4990.61 |

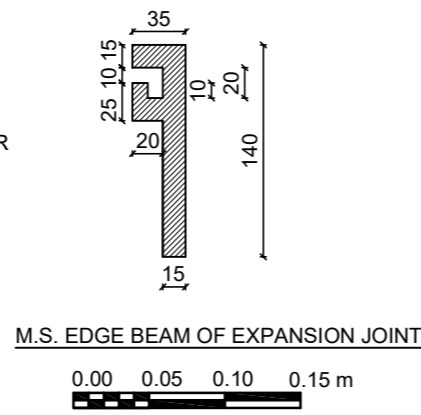
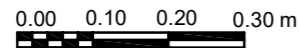
| BAR SCHEDULE FOR DECK SLAB OF 22.0 M | | | | | | | | | |
|--------------------------------------|----------|---------------------|---------------|--------------|----------------|-------------|------------------|--------------------|-------------------|
| S.No. | BAR MARK | DESCRIPTION OF BARS | BAR DIA. (MM) | SPACING (MM) | BAR LENGTH (M) | NO. OF BARS | TOTAL LENGTH (M) | UNIT WEIGHT (kg/m) | TOTAL WEIGHT (kg) |
| 1 | DS1 | | 12 | 150 | 6.20 | 153 | 948.60 | 0.889 | 843.26 |
| 2 | DS2 | | 10 | 200 | 22.92 | 31 | 710.52 | 0.617 | 438.62 |
| 3 | DS3 | | 12 | 150 | 8.55 | 153 | 1308.15 | 0.889 | 1162.88 |
| 4 | DS4 | | 12 | 150 | 2.20 | 306 | 673.20 | 0.889 | 598.44 |
| 5 | DS5 | | 10 | 150 | 22.92 | 22 | 504.24 | 0.617 | 311.28 |
| 6 | DS6 | | 10 | 200 | 22.92 | 43 | 985.56 | 0.617 | 608.41 |
| 7 | DS7 | | 12 | 150 | 1.60 | 153 | 244.80 | 0.889 | 217.61 |
| 8 | K1 | | 12 | 150 | 3.20 | 306 | 979.20 | 0.889 | 870.46 |
| 9 | K2 | | 12 | | 22.92 | 20 | 458.40 | 0.889 | 407.49 |
| TOTAL WEIGHT= | | | | | | | | | 5458.45 |

| BAR SCHEDULE FOR DECK SLAB OF 25.0 M | | | | | | | | | |
|--------------------------------------|----------|---------------------|---------------|--------------|----------------|-------------|------------------|--------------------|-------------------|
| S.No. | BAR MARK | DESCRIPTION OF BARS | BAR DIA. (MM) | SPACING (MM) | BAR LENGTH (M) | NO. OF BARS | TOTAL LENGTH (M) | UNIT WEIGHT (kg/m) | TOTAL WEIGHT (kg) |
| 1 | DS1 | | 12 | 150 | 6.20 | 173 | 1072.60 | 0.889 | 953.48 |
| 2 | DS2 | | 10 | 200 | 25.92 | 31 | 803.52 | 0.617 | 496.03 |
| 3 | DS3 | | 12 | 150 | 8.55 | 173 | 1479.15 | 0.889 | 1314.89 |
| 4 | DS4 | | 12 | 150 | 2.20 | 346 | 761.20 | 0.889 | 676.67 |
| 5 | DS5 | | 10 | 150 | 25.92 | 22 | 570.24 | 0.617 | 352.02 |
| 6 | DS6 | | 10 | 200 | 25.92 | 43 | 1114.56 | 0.617 | 688.05 |
| 7 | DS7 | | 12 | 150 | 1.60 | 173 | 276.80 | 0.889 | 246.06 |
| 8 | K1 | | 12 | 150 | 3.20 | 346 | 1107.20 | 0.889 | 984.24 |
| 9 | K2 | | 12 | | 25.92 | 20 | 518.40 | 0.889 | 460.83 |
| TOTAL WEIGHT= | | | | | | | | | 6172.27 |

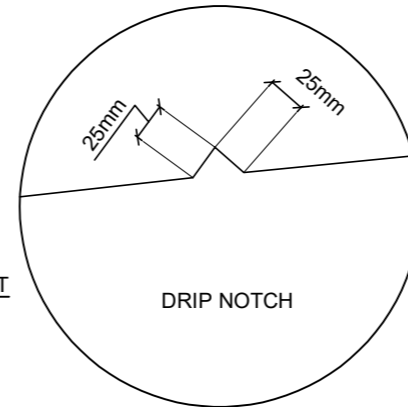


NOTES:
 1. THE STRIP SEAL EXPANSION JOINT MAY VARY AS PER MANUFACTURERS.
 2. EXPANSION JOINT ASSEMBLY/SYSTEM MUST BE APPROVED BY ENGINEER.

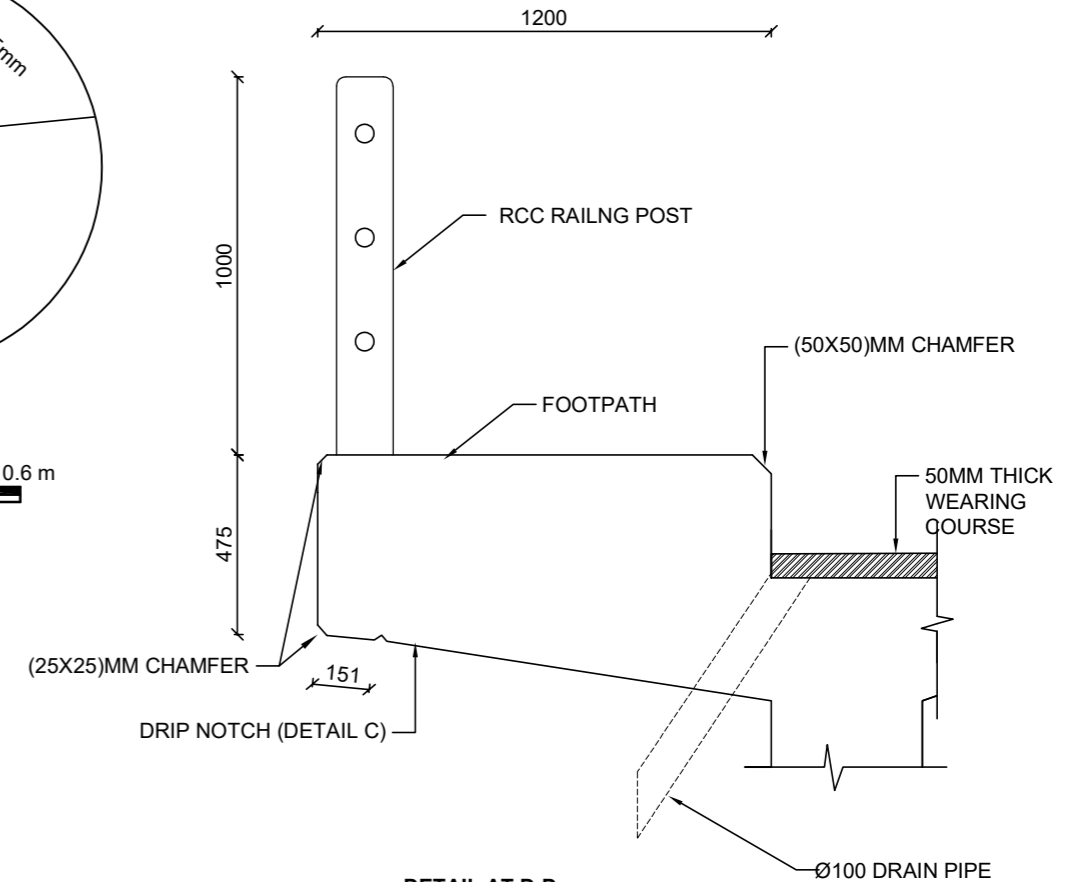
TYPICAL STRIP SEAL EXPANSION JOINT ASSEMBLY/SYSTEM



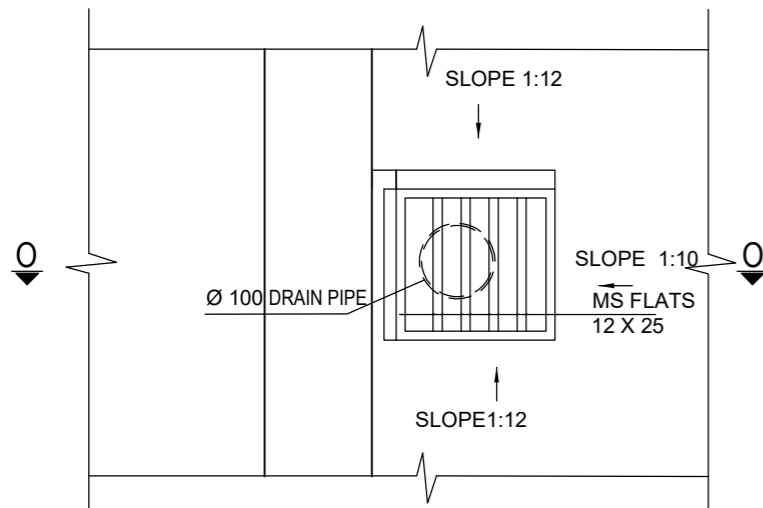
M.S. EDGE BEAM OF EXPANSION JOINT



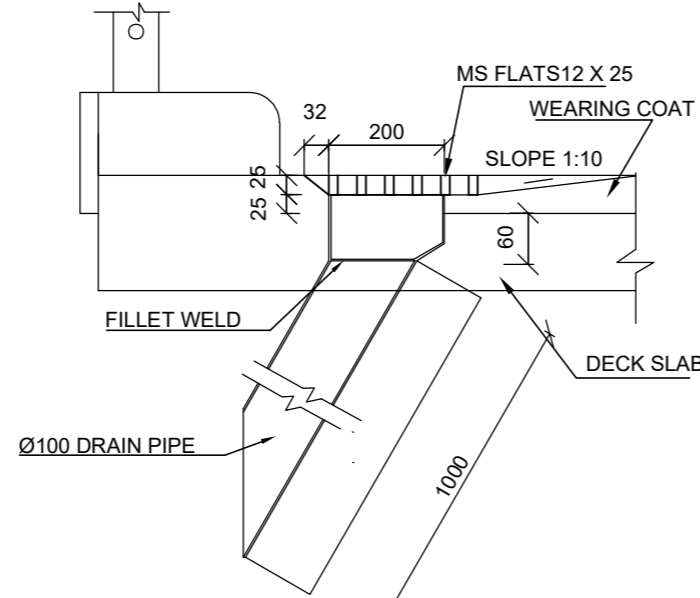
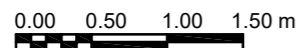
DETAIL AT C-C



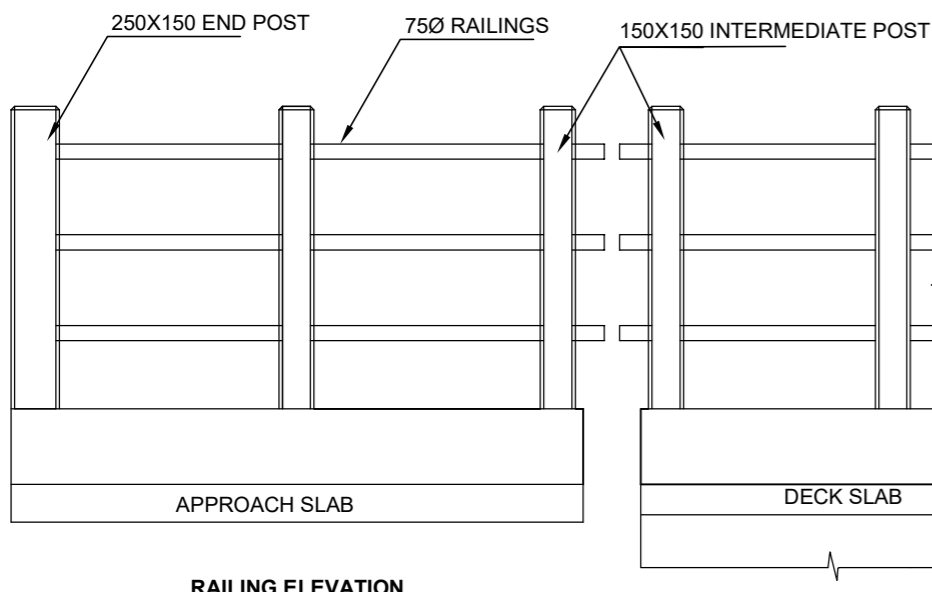
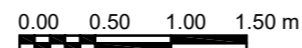
DETAIL AT D-D
(REFER DWG NO.- SD2)



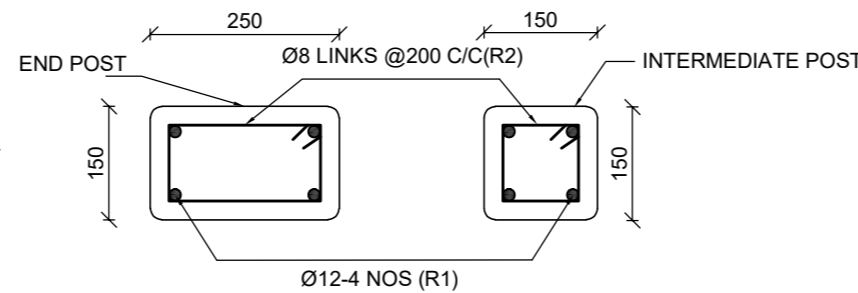
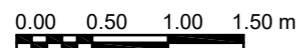
DRAINAGE SPOUT, PLAN



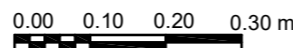
DRAINAGE SPOUT, SECTION O-O



RAILING ELEVATION



RAILING POST SECTION



| BAR SCHEDULE FOR RAILING END POST | | | | | | | | | |
|-----------------------------------|----------|---------------------|---------------|--------------|----------------|-------------|------------------|--------------------|-------------------|
| S.No | BAR MARK | DESCRIPTION OF BARS | BAR DIA. (MM) | SPACING (MM) | BAR LENGTH (M) | NO. OF BARS | TOTAL LENGTH (M) | UNIT WEIGHT (KG/M) | TOTAL WEIGHT (KG) |
| 1 | R1 | 1350 300 | 12 | | 1.70 | 4 | 6.80 | 0.889 | 6.04 |
| 2 | R2 | 100 200 | 8 | 200 | 0.80 | 6 | 4.80 | 0.395 | 1.90 |
| TOTAL WEIGHT= | | | | | | | | | 7.94 |

| BAR SCHEDULE FOR INTERMEDIATE RAILING POST | | | | | | | | | |
|--|----------|---------------------|---------------|--------------|----------------|-------------|------------------|--------------------|-------------------|
| S.No | BAR MARK | DESCRIPTION OF BARS | BAR DIA. (MM) | SPACING (MM) | BAR LENGTH (M) | NO. OF BARS | TOTAL LENGTH (M) | UNIT WEIGHT (KG/M) | TOTAL WEIGHT (KG) |
| 1 | R1 | 1350 300 | 12 | | 1.70 | 4 | 6.80 | 0.889 | 6.04 |
| 2 | R2 | 100 100 | 8 | 200 | 0.60 | 6 | 3.60 | 0.395 | 1.42 |
| TOTAL WEIGHT= | | | | | | | | | 7.47 |