

#### REINFORCEMENT DETAIL:

BAR MKD.	DIA (mm)	SPACING/Nos.	SHAPE
p5	25	2x70 nos	└┐
p6	25	2x8 nos	└┐
p7	12	150	—
L1	10	200	— EVERY ALT. BAR AND STAGGERED

#### LEGEND:

—	TOP/EARTH FACE
---	BOTTOM/OUTER FACE
B/F	BOTH FACE
V.L	VARYING LENGTH

#### NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE MENTIONED.
2. THE REINFORCING STEEL SHALL BE DEFORMED TMT BARS (GRADE DESIGNATION Fe:500) CONFORMING TO IS:1786.
3. L-L REPRESENTS LONGITUDINAL AXIS OF THE BRIDGE AND T-T REPRESENTS TRANSVERSE AXIS OF THE BRIDGE.
4. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT DRAWINGS.
5. CLEAR COVER TO ANY REINFORCEMENT SHALL BE 50mm.



Project Title:-

**CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.**

TELIAMURA - SABROOM SECTION-2

CLIENT:-



**NATIONAL HIGHWAYS & INFRASTRUCTURE  
DEVELOPMENT CORPORATION LTD**

Drawing Title:-

**REINFORCEMENT DETAILS OF  
PIER SHAFT (PIER P1)**

Drawing No. :- **TASPL/NHIDCL/FDPR/GAD/09**

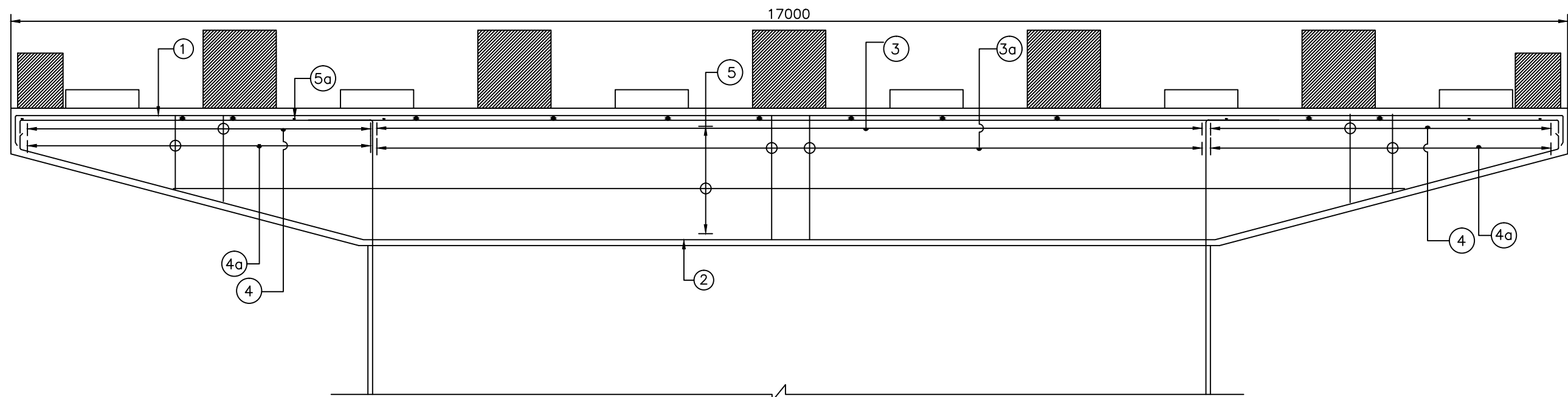
Scale :- **AS SHOWN**

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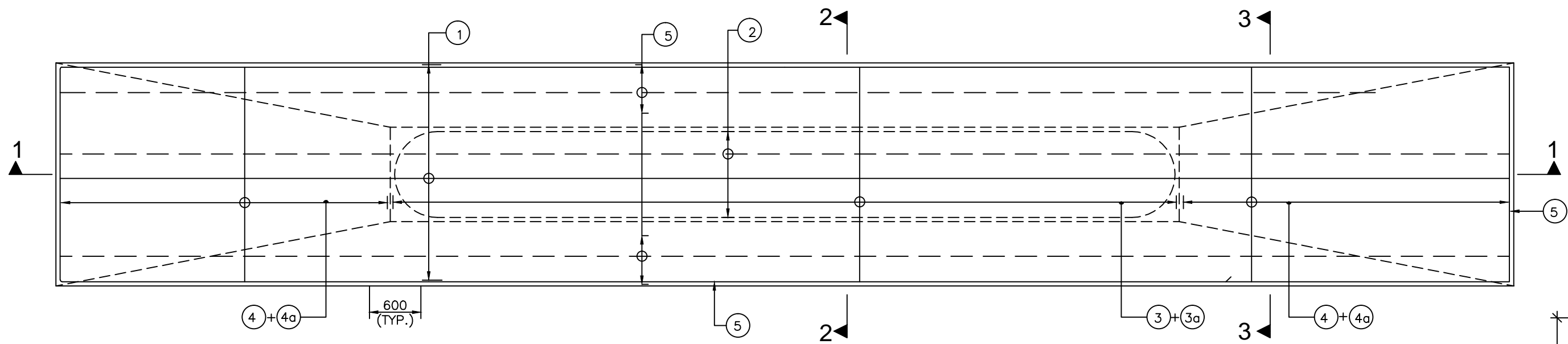
CONSULTANT:-



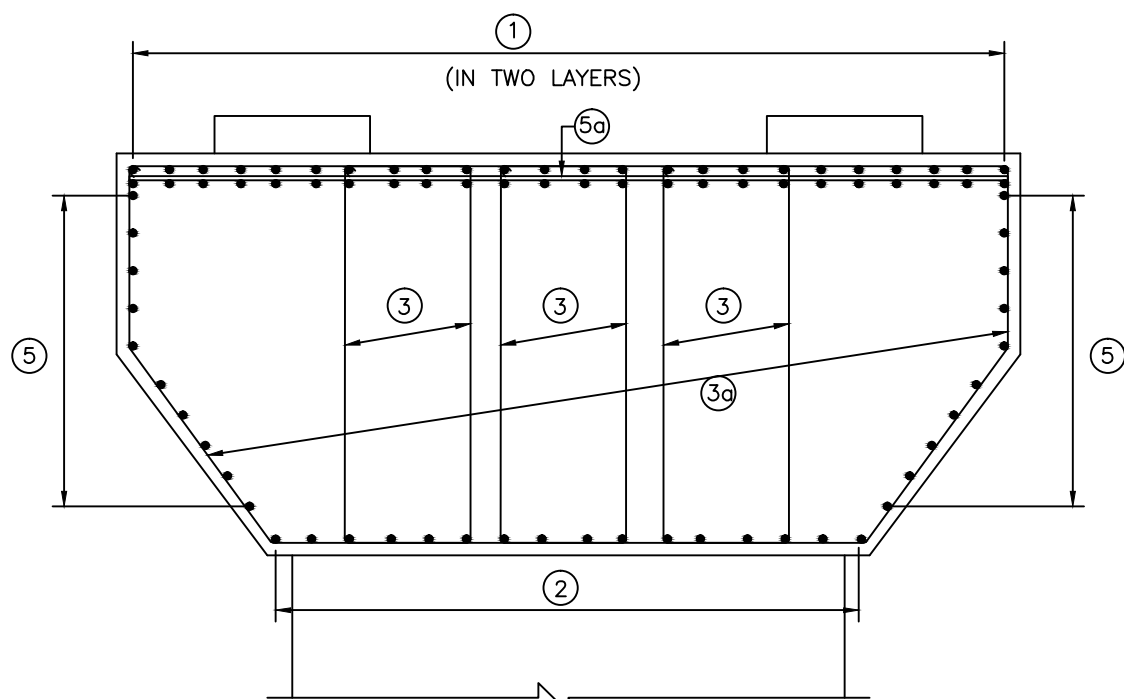
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68,Ajanta Apartments, 36, I.P. Extension  
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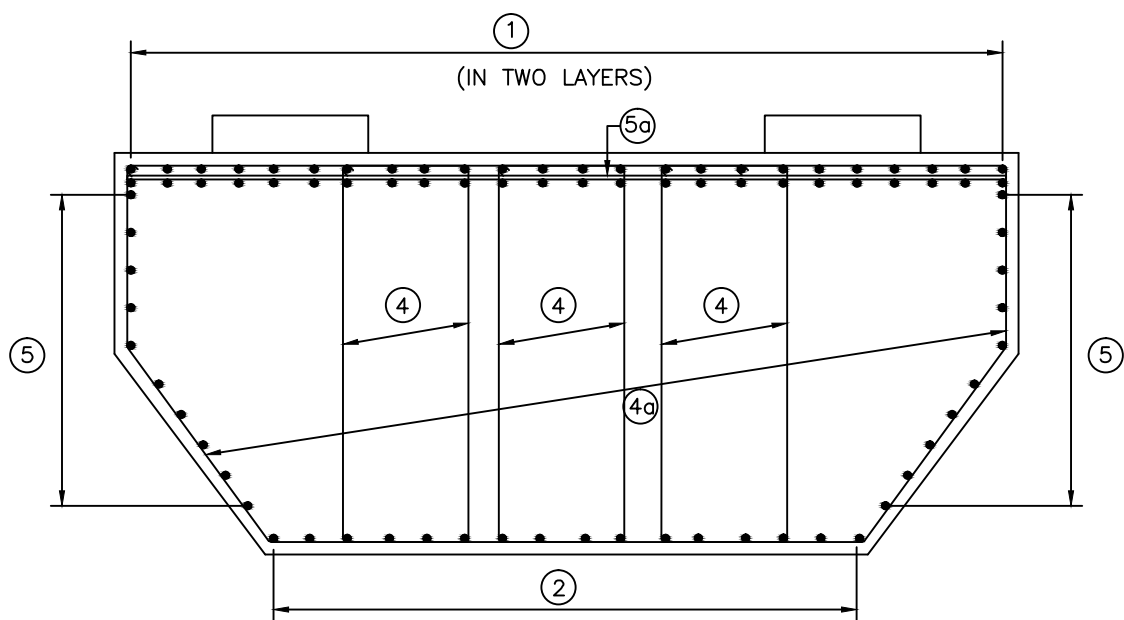
SECTION 1-1  
(SCALE 1:50)



REINFORCEMENT IN PLAN AT PIER CAP TOP  
(SCALE 1:50)



SECTION 2-2  
(MESH REINFORCEMENT NOT SHOWN FOR CLARITY)  
(SCALE 1:30)



SECTION 3-3  
(MESH REINFORCEMENT NOT SHOWN FOR CLARITY)  
(SCALE 1:30)

REINFORCEMENT DETAIL:

BAR MKD.	DIA (mm)	SPACING/Nos.	SHAPE
1	32	140 (IN TWO LAYERS)	
2	25	140	
3	6L-16	160	STIRR.
3a	2L-16	160	STIRR.
4	6L-12	160	STIRR.
4a	2L-16	160	STIRR.
5	16	100	
5a	32	1000	SPACER BAR

TRANSVERSE SEISMIC STOPPER:-

BAR MKD.	DIA (mm)	SPACING/Nos.	SHAPE
TS1	25	10 nos	
TS2	12	8 nos	
TS3	12	3x2 nos	
TS4	16	@100 C/C	4 LEGGED STIRRUPS

LONGITUDINAL SEISMIC STOPPER:-

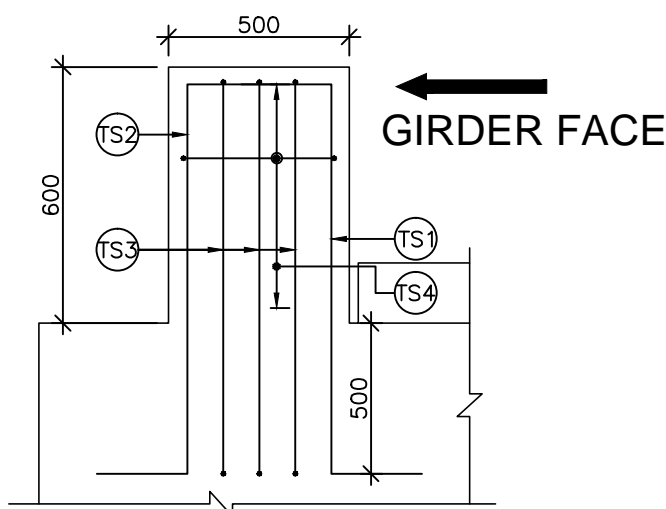
LS1	20	2x6 NOS.	300 300
LS2	16	3x2 NOS.	300 300
LS3	12	@150 C/C	4 LEGGED

LEGEND:

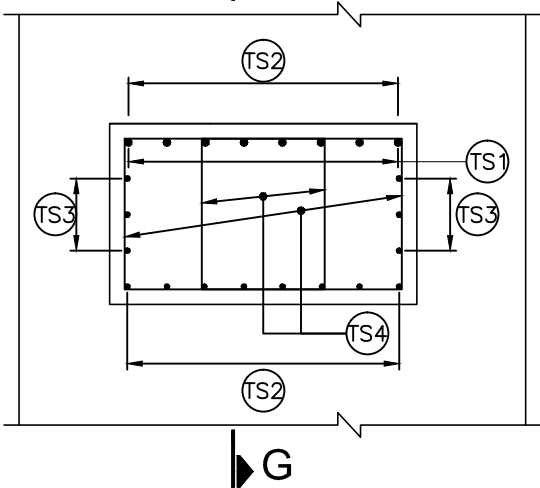
—	TOP/EARTH FACE
- - - -	BOTTOM/OUTER FACE
B/F	BOTH FACE
V.L	VARYING LENGTH

NOTES:-

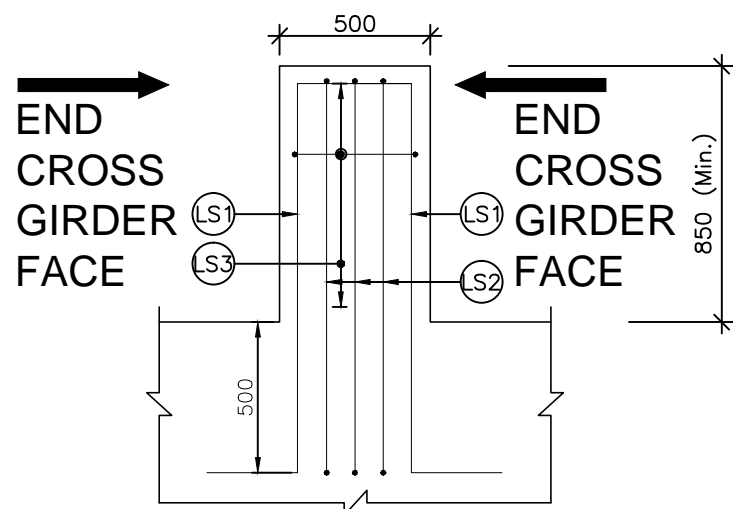
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE MENTIONED.
- THE REINFORCING STEEL SHALL BE DEFORMED TMT BARS (GRADE DESIGNATION Fe:500) CONFORMING TO IS:1786.
- L-L REPRESENTS LONGITUDINAL AXIS OF THE BRIDGE AND T-T REPRESENTS TRANSVERSE AXIS OF THE BRIDGE.
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT DRAWINGS.
- CLEAR COVER TO ANY REINFORCEMENT SHALL BE 50mm.



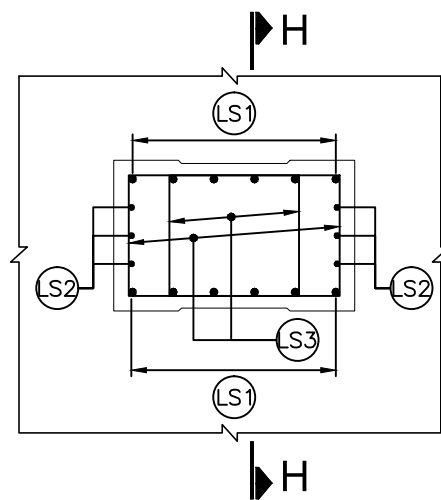
SECTION AT G-G  
(SCALE 1:25)



PLAN SHOWING REINF. DETAILS OF  
SEISMIC TRANSVERSE STOPPER  
(SCALE 1:25)



SECTION AT H-H  
(SCALE 1:25)



PLAN SHOWING REINF. DETAILS OF  
LONGITUDINAL STOPPER ON PIER CAP  
(SCALE 1:25)

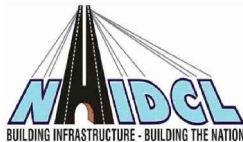


Project Title:-

CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.

TELIAMURA - SABROOM SECTION-2

CLIENT:-



NATIONAL HIGHWAYS & INFRASTRUCTURE  
DEVELOPMENT CORPORATION LTD

Drawing Title:-

REINFORCEMENT DETAILS OF PIER CAP  
(PIER P1)

Drawing No. :- TASPL/NHIDCL/FDPR/GAD/09

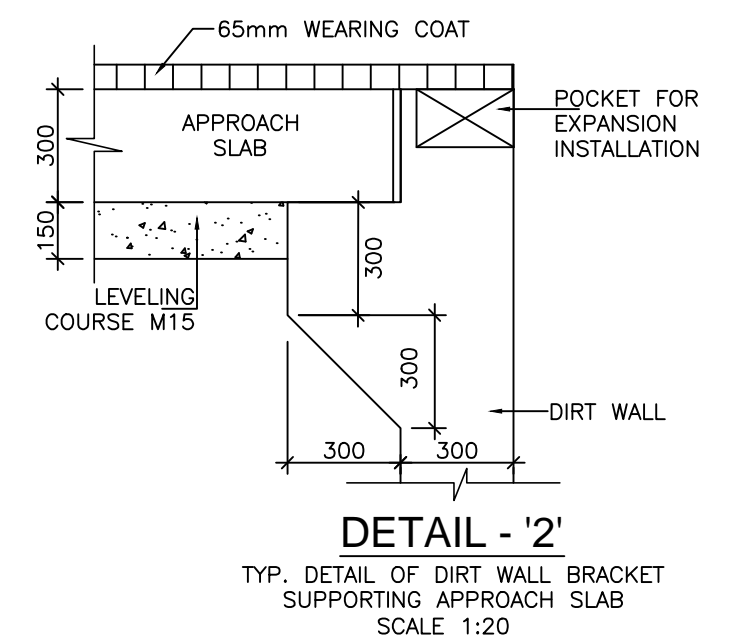
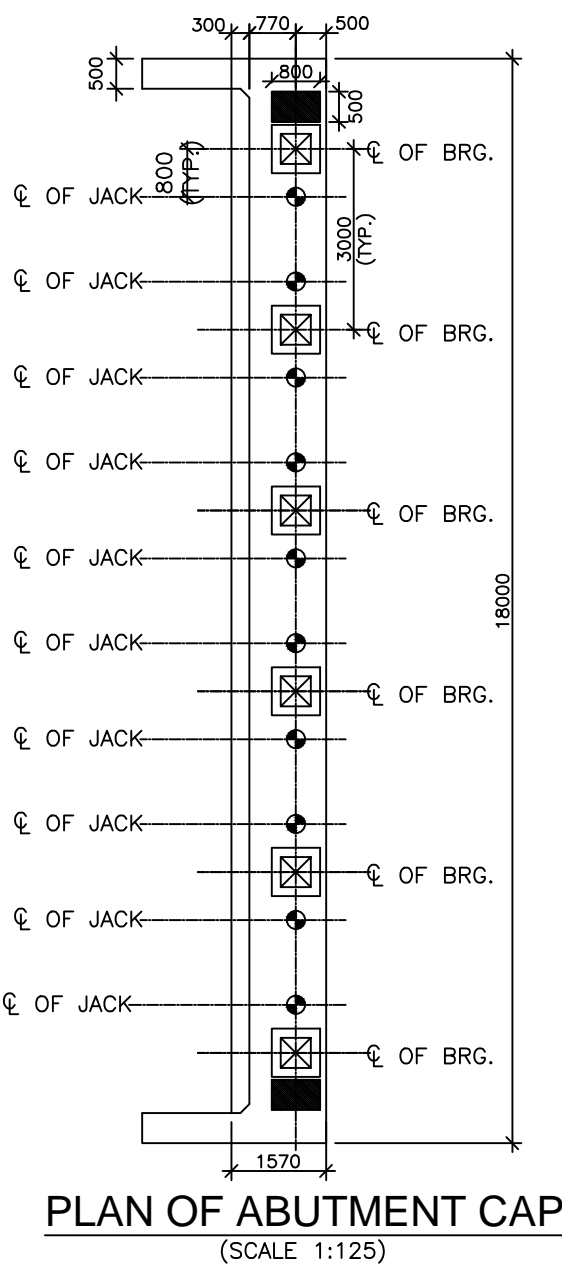
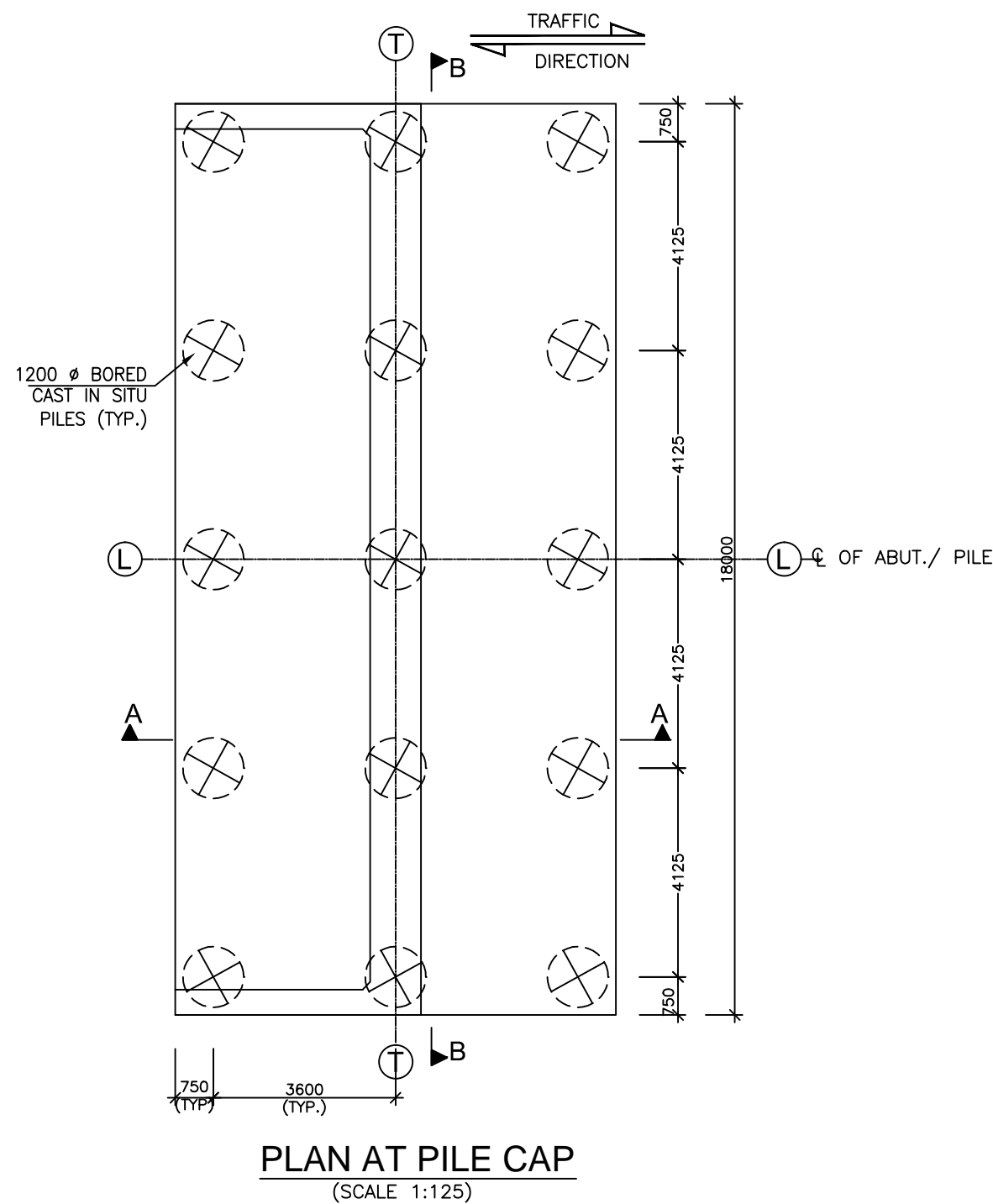
Scale :- AS SHOWN



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CONSULTANT:-



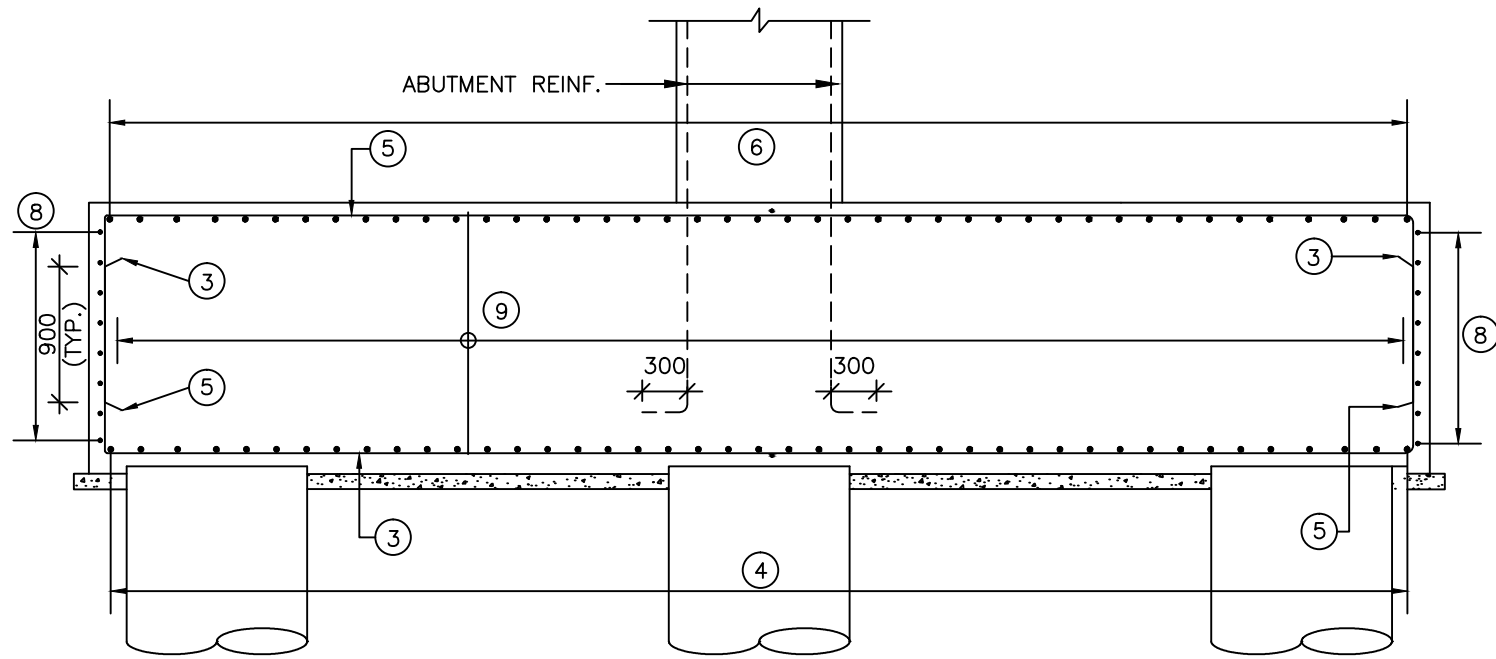
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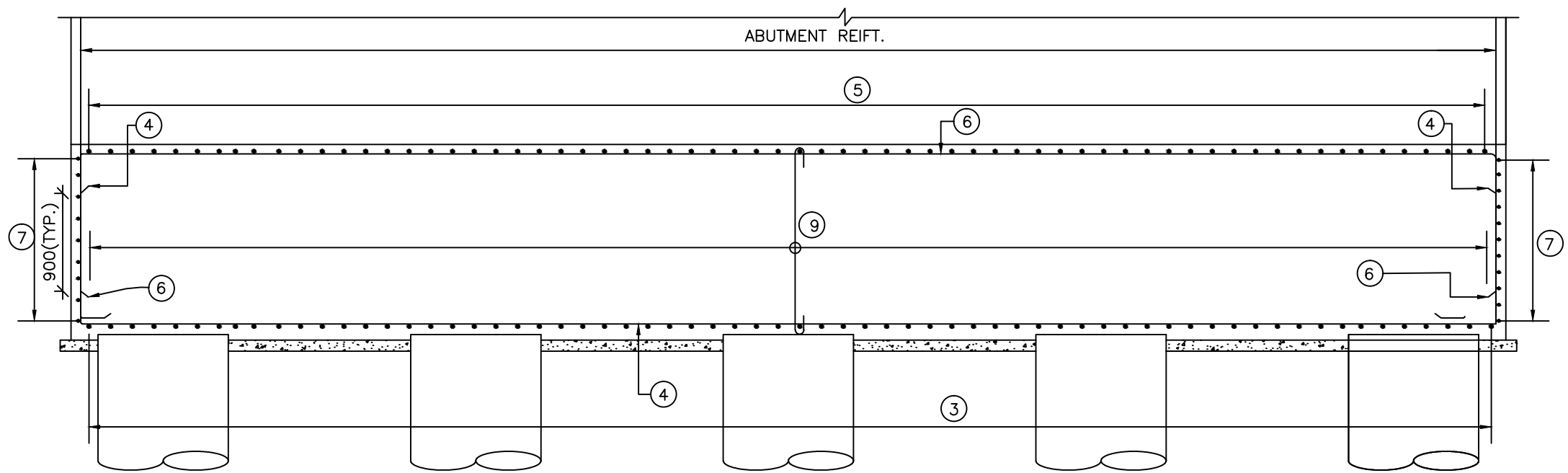
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|--|---|---|--|-------|-------|----------|--------------|
|  | Project Title:-   | CLIENT:-  | Drawing Title:-  |       |       |          | CONSULTANT:- |
|  | <p><b>CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.</b></p> <p><u>TELIAMURA - SABROOM SECTION-2</u></p> |  <p>NATIONAL HIGHWAYS &amp; INFRASTRUCTURE DEVELOPMENT CORPORATION LTD</p> | <p>DIMENSIONAL DETAILS OF ABUTMENT CAP &amp; ABUTMENT FOUNDATION</p> |       |       |          |              |
|  |   |   | Drawing No. :- TASPL/NHIDCL/FDPR/GAD/09                              |       |       |          |              |
|  |   |   | Scale :- AS SHOWN  |       |       |          |              |
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|  |   |   | D.S  | D.P.S | B.Ram | 01 OF 03 |              |
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**SECTION A-A**  
(SCALE 1:50)



**SECTION B-B**  
(SCALE 1:50)

**SCHEDULE OF PEDESTAL REINFORCEMENT**

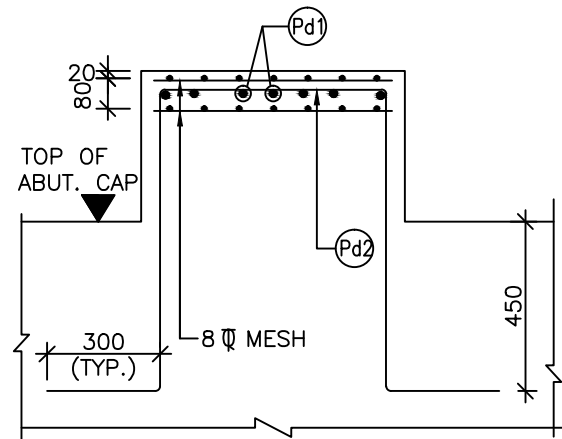
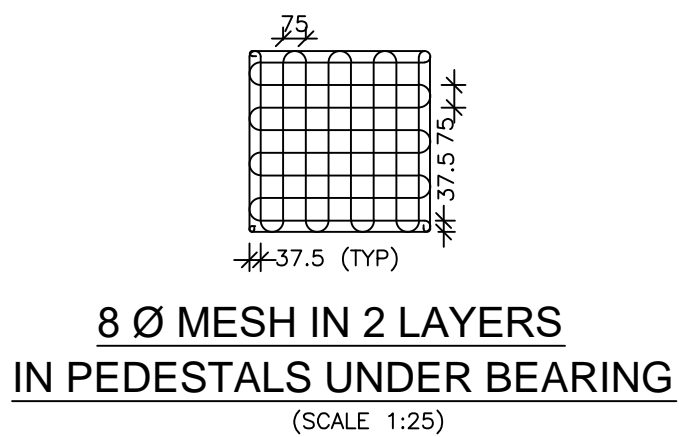
BAR MKD.	DIA (mm)	SPACING/Nos.	SHAPE
Pd1	12	75	┐
Pd2	12	75	┐

**LEGEND:**

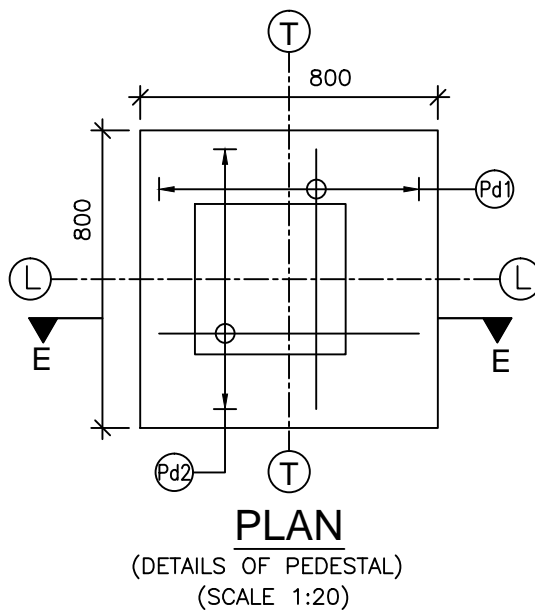
—— TOP/EARTH FACE  
 - - - - BOTTOM/OUTER FACE  
 B/F BOTH FACE  
 V.L VARYING LENGTH

**SCHEDULE OF PILE & PILE CAP REINFORCEMENT**

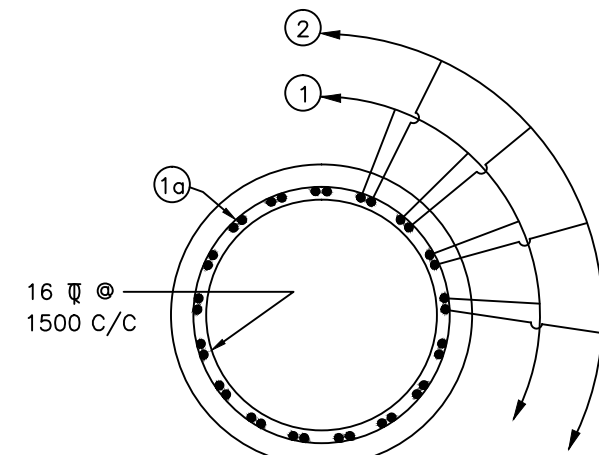
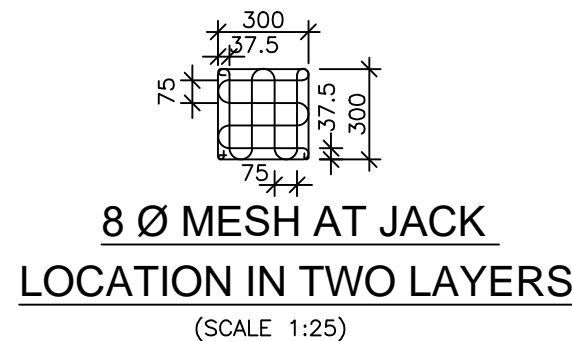
BAR MKD.	DIA (mm)	SPACING/Nos.	SHAPE
1	32	17 Nos.	
1a	16	100	○
2	32	17 Nos.	
2a	10	150	⋈
3	20	100	┐
4	20	100	┐
5	16	100	┐
6	16	100	┐
7	16	150	┐
8	16	150	┐
9	1L-12	100 both ways	┐



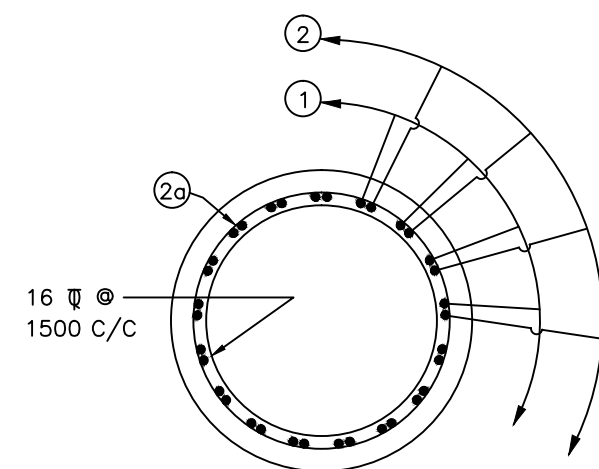
**SECTION E-E**  
(SCALE 1:20)



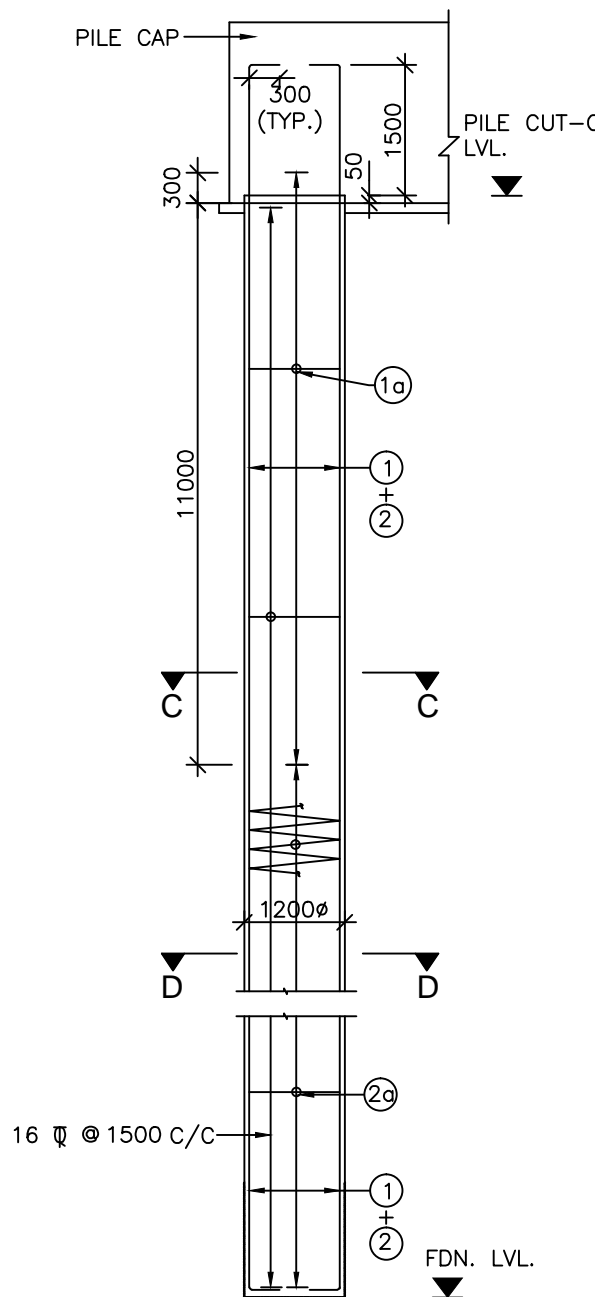
**PLAN**  
(DETAILS OF PEDESTAL)  
(SCALE 1:20)



**SECTION C-C**  
(SCALE 1:30)



**SECTION D-D**  
(SCALE 1:30)



**R.C.DETAILS OF PILE**  
(SCALE 1:75)

**NOTES**

- ALL DIMENSIONS ARE IN MILLIMETERS, AND LEVELS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
- DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- L-L REPRESENTS LONGITUDINAL AXIS OF THE BRIDGE  
T-T REPRESENTS TRANSVERSE AXIS OF THE BRIDGE
- HIGH YIELD STRENGTH DEFORMED BARS OF GRADE DESIGNATION Fe-500D CONFORMING TO IS: 1786 SHALL ONLY BE USED.
- REINFORCEMENT OF PIER SHAFT IS TO BE ANCHORED IN THE PILE CAP BEFORE IT'S CONCRETING.
- LAPPING OF REINFORCEMENT SHALL BE AVOIDED AS FAR AS POSSIBLE. IN CASE LAPPING OF BARS BECOMES UNAVOIDABLE, MINIMUM LAP LENGTH OF REINFORCEMENT BARS SHALL BE CALCULATED AS FOLLOWS WITH MAXIMUM ALLOWABLE LAPPING (p) OF 50% ONLY (IRC: 112-2011) (CLAUSE:15.2.5.1)

$$\text{LAP LENGTH } l_s = \alpha \cdot l_{bnet}$$

$$\alpha = 1.0 \text{ FOR } p\% \leq 25\%$$

$$\alpha = 1.15 \text{ FOR } 25\% < p\% \leq 25\%$$

$$\alpha = 1.14 \text{ FOR } 33\% \leq p\% \leq 50\%$$

(IRC:112-2011, CLAUSE:15.2.3.3)

$$\text{ANCHORAGE LENGTH (} l_{bnet} \text{)}$$

$$l_{bnet} = \alpha \cdot l_b \quad (\alpha = 1.0)$$

$$l_b = k \phi$$

$$k = 40 \text{ FOR M30 (Fe500D)}$$

$$k = 36 \text{ FOR M35 (Fe500D)}$$

$$k = 34 \text{ FOR M40 (Fe500D)}$$

FOR UNFAVORABLE BOND CONDITION THE  $l_b$  SHOULD BE MULTIPLIED BY FACTOR OF 1.43. FOR  $\phi > 32\text{mm}$   $l_b$  SHOULD BE INCREASED BY MULTIPLYING FACTOR  $\left( \frac{100}{132 - \phi} \right)$

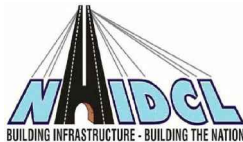


Project Title:-

**CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.**

TELIAMURA - SABROOM SECTION-2

CLIENT:-



**NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD**

Drawing Title:-

REINFORCEMENT DETAILS OF ABUTMENT CAP & ABUTMENT FOUNDATION

Drawing No. :- TASPL/NHIDCL/FDPR/GAD/09

Scale :- AS SHOWN

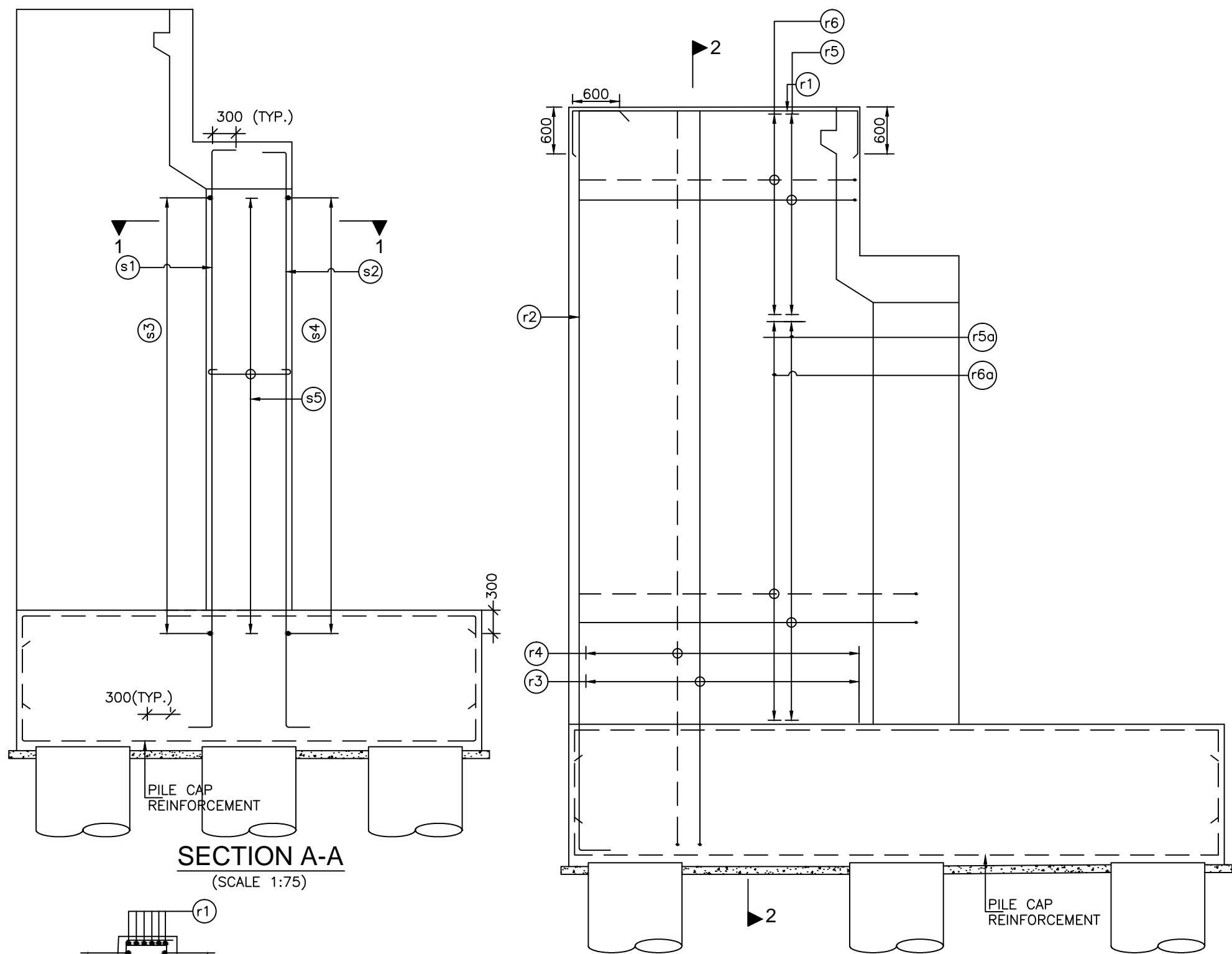
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D.S	D.P.S	B.Ram	02 OF 03

CONSULTANT:-



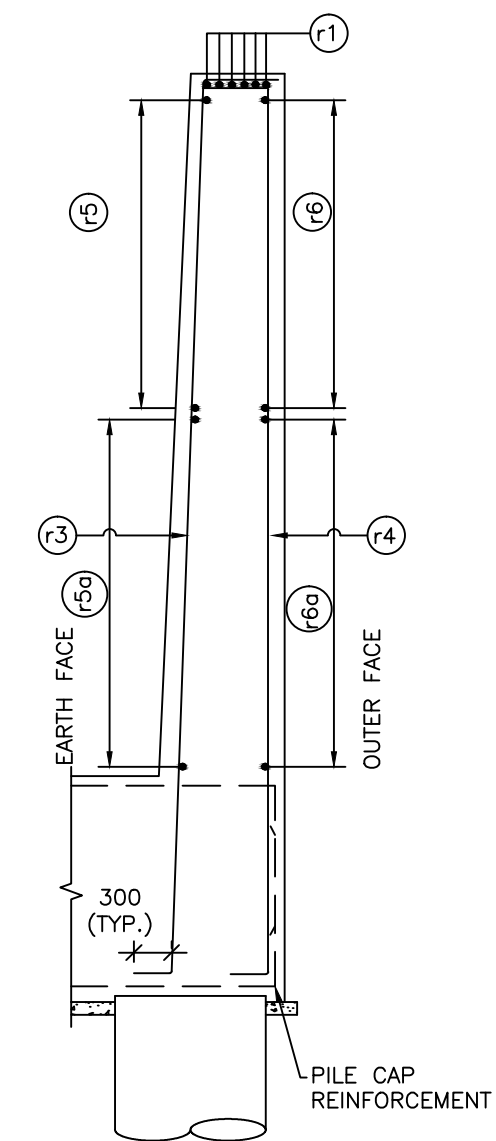
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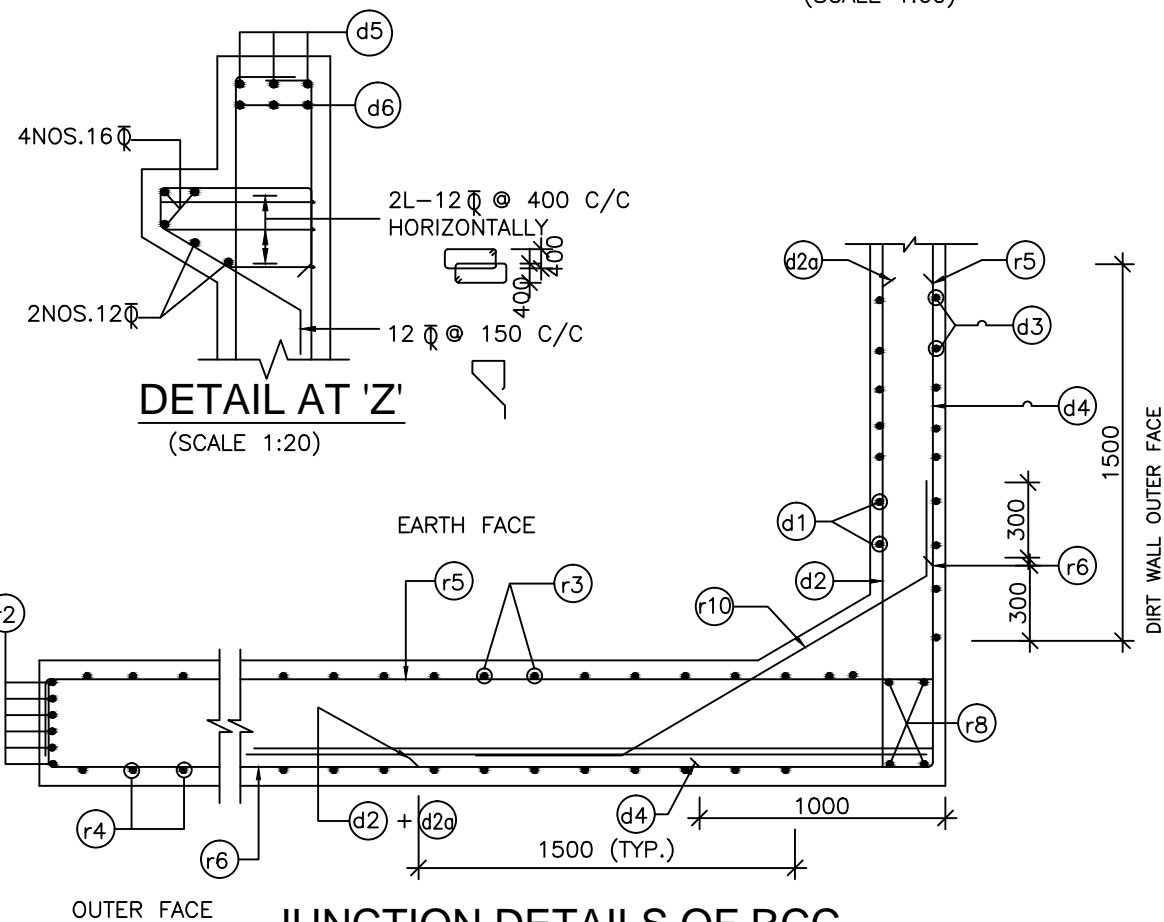


SECTION A-A  
(SCALE 1:75)

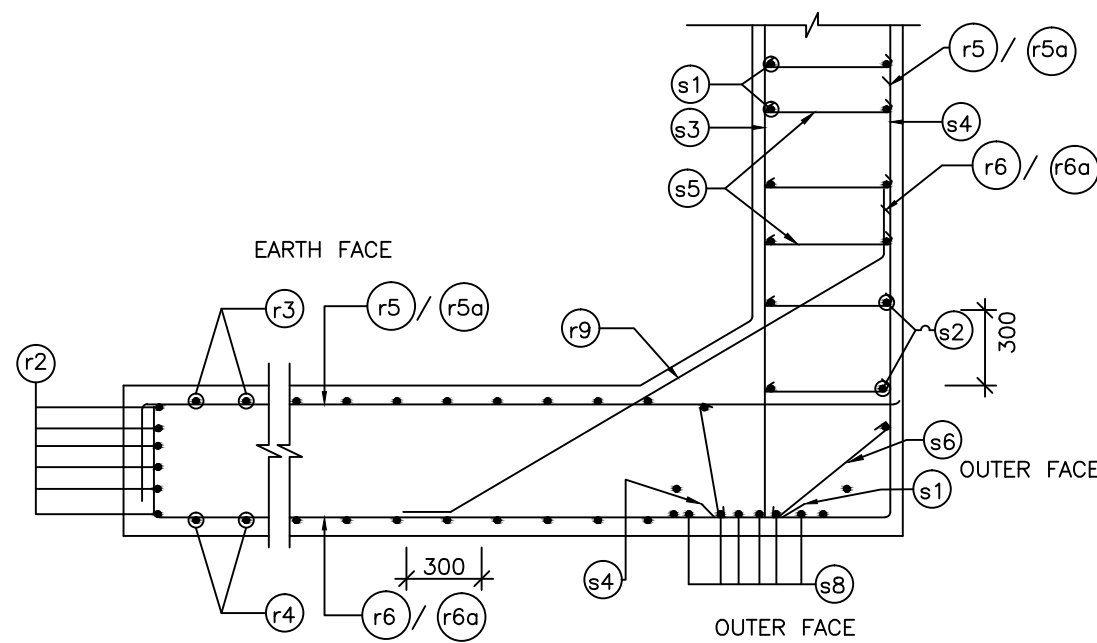
R/F DETAILS OF RETURN WALL  
(SCALE 1:60)



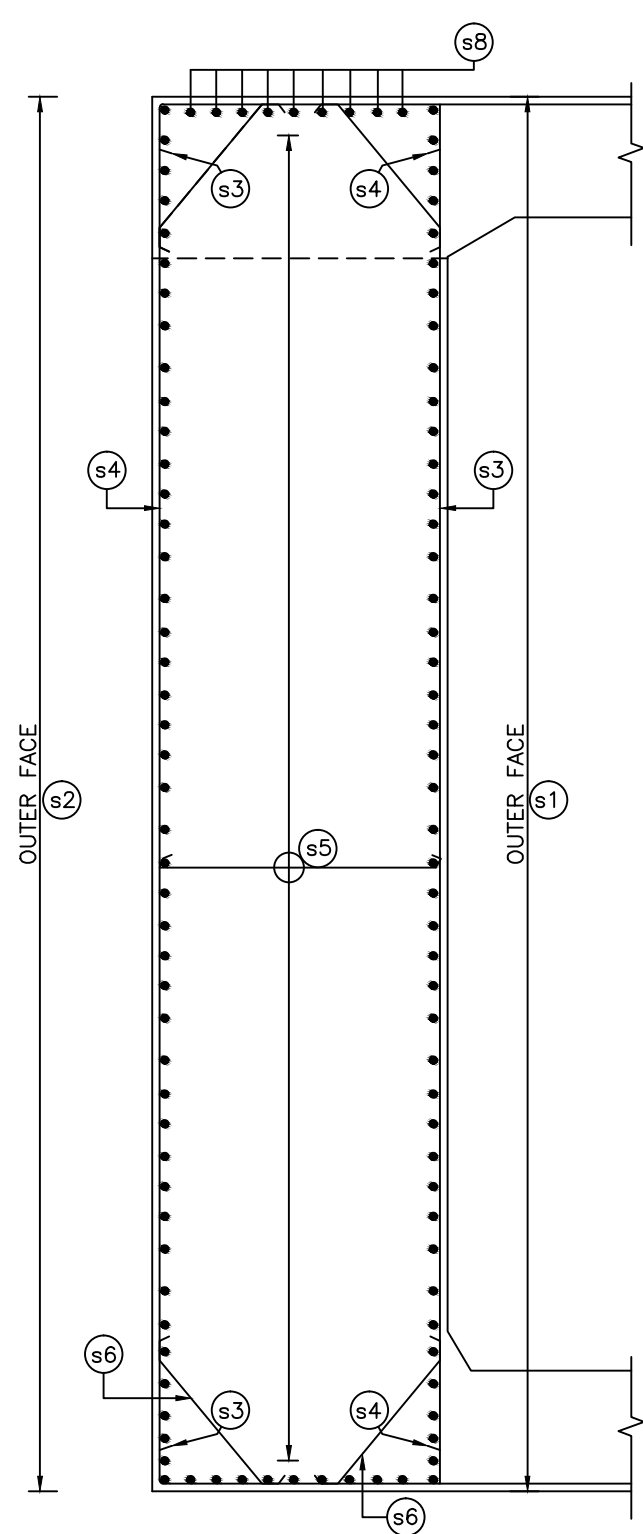
SECTION 2-2  
(SCALE 1:60)



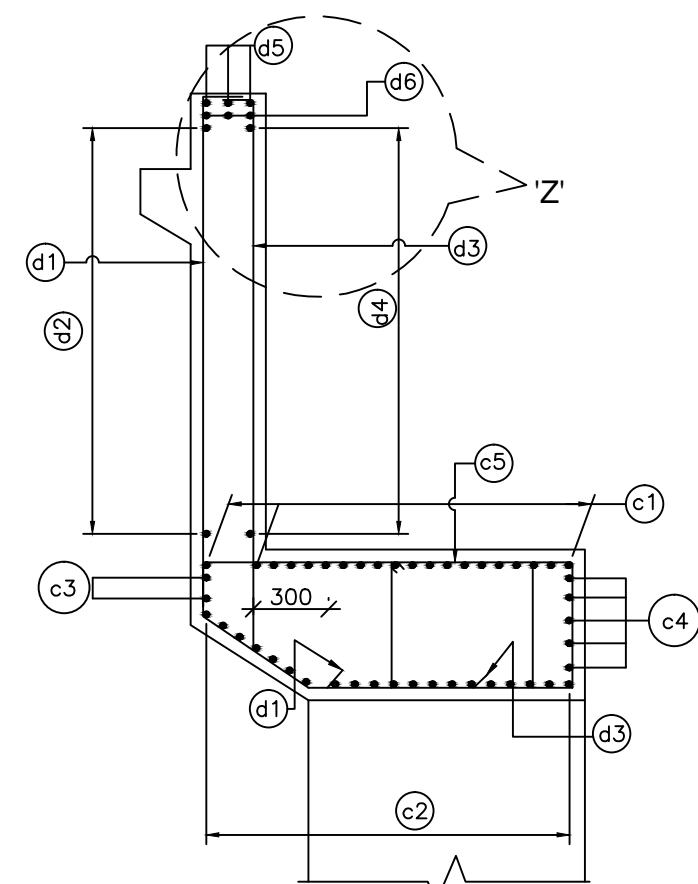
JUNCTION DETAILS OF RCC  
SOLID RETURN WALL AND DIRT WALL  
(SCALE 1:30)



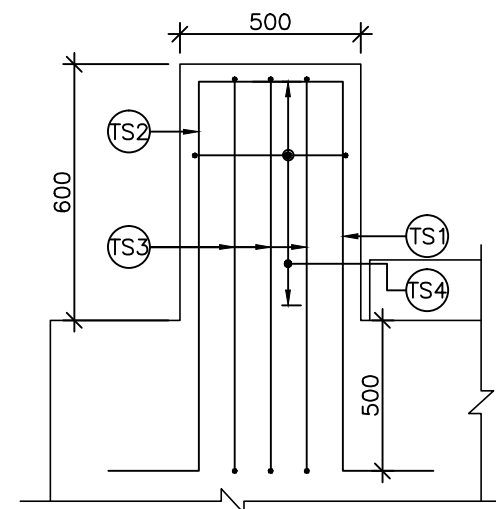
JUNCTION DETAILS OF RCC  
ABUTMENT AND SOLID RETURN WALL  
(SCALE 1:30)



SECTION 1-1  
(SCALE 1:50)



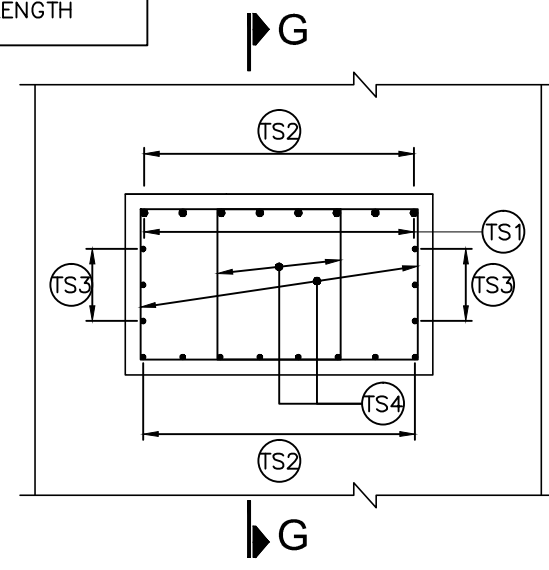
R/F DETAILS OF  
DIRT WALL & ABUTMENT CAP  
(SCALE 1:30)



SECTION AT G-G  
(SCALE 1:25)

**LEGEND:**

—	TOP/EARTH FACE
- - -	BOTTOM/OUTER FACE
B/F	BOTH FACE
V.L	VARYING LENGTH



PLAN SHOWING REINF. DETAILS OF  
SEISMIC TRANSVERSE STOPPER  
(SCALE 1:25)

#### ABUT. SHAFT REINFT.

BAR MKD.	DIA (mm)	SPACING/Nos.	SHAPE
s1	25	140 Nos.	
s2	16	140 Nos.	
s3	16	200	
s4	16	200	
s5	12	240	
s6	12	150	
s7		NOT USED	
s8	16	5 Nos	

#### DIRT WALL. REINFT.

d1	12	150	
d2	10	200	
d3	10	150	
d4	10	200	
d5	12	3 Nos.	
d6	12	3 Nos.	

#### ABUT.CAP REINFT.

c1	20	10 Nos.	
c2	20	10 Nos.	
c3	16	2 Nos.	
c4	16	5 Nos.	
c5	4L-12	120	

#### RETURN WALL. REINFT.

r1	20	4 Nos.	
r2	20	4 Nos.	
r3	20	150	
r4	16	150	
r5	16	200	
r5a	16	200	
r6	12	200	
r6a	10	200	
r8	12	4 Nos.	
r9	16	150	
r10	16	150	

#### TRANSVERSE SEISMIC STOPPER:-

TS1	25	10 Nos.	
TS2	12	8 Nos.	
TS3	12	3x2 Nos.	
TS4	16	100	4 LEGGED



Project Title:-

**CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.**

TELIAMURA - SABROOM SECTION-2

CLIENT:-



NATIONAL HIGHWAYS & INFRASTRUCTURE  
DEVELOPMENT CORPORATION LTD

Drawing Title:-

REINFORCEMENT DETAILS OF ABUTMENT  
CAP & ABUTMENT FOUNDATION

Drawing No. :- TASPL/NHIDCL/FDPR/GAD/09

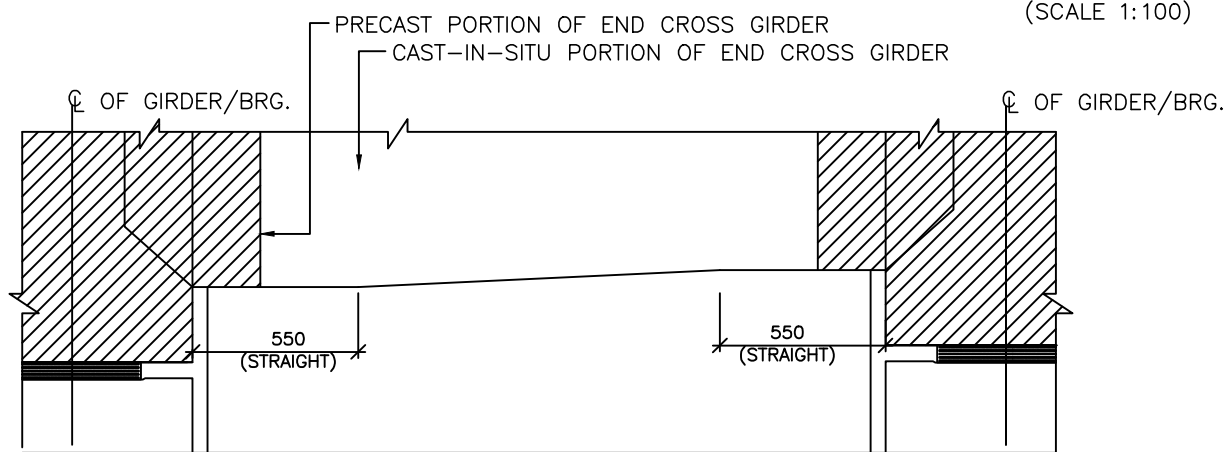
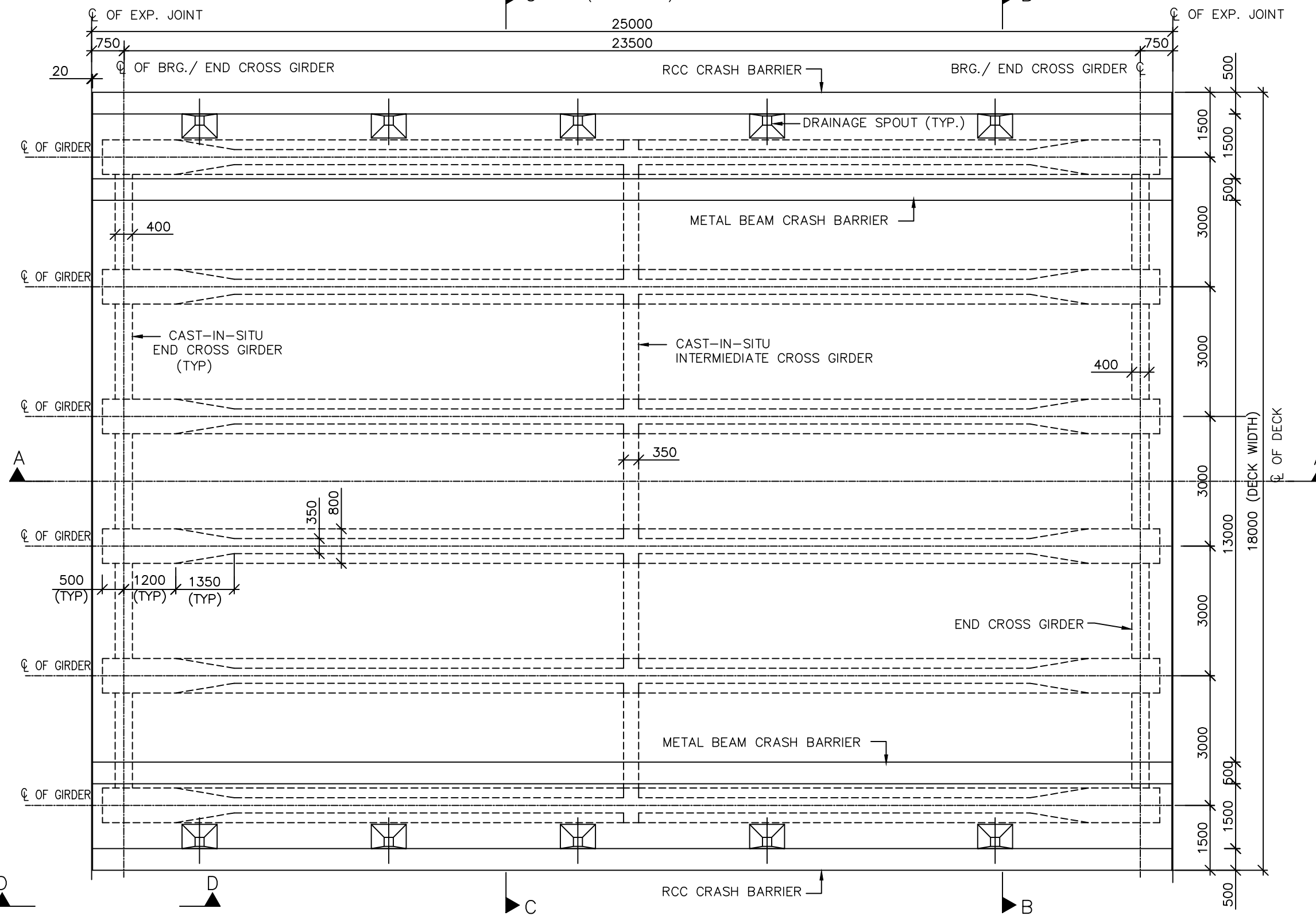
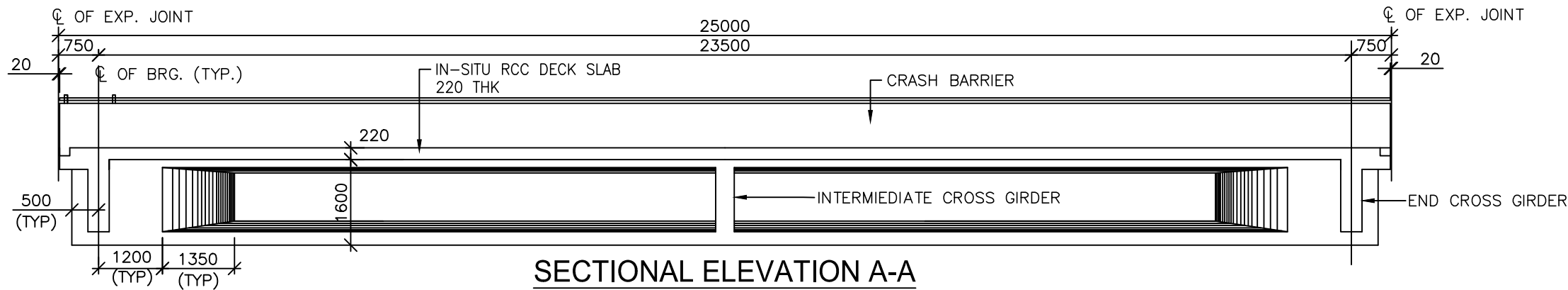
Scale :- AS SHOWN

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D.S	D.P.S	B.Ram	03 OF 03

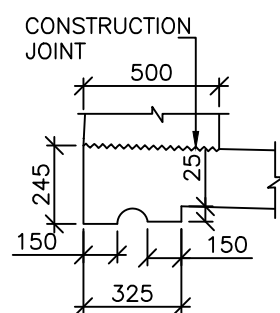
CONSULTANT:-



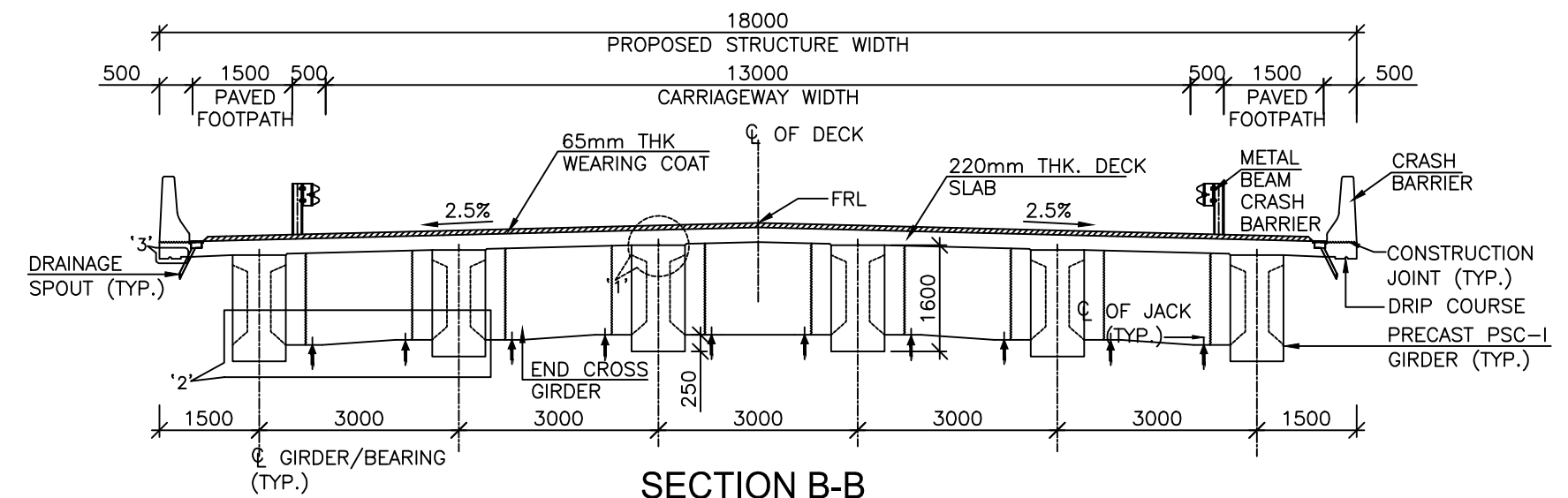
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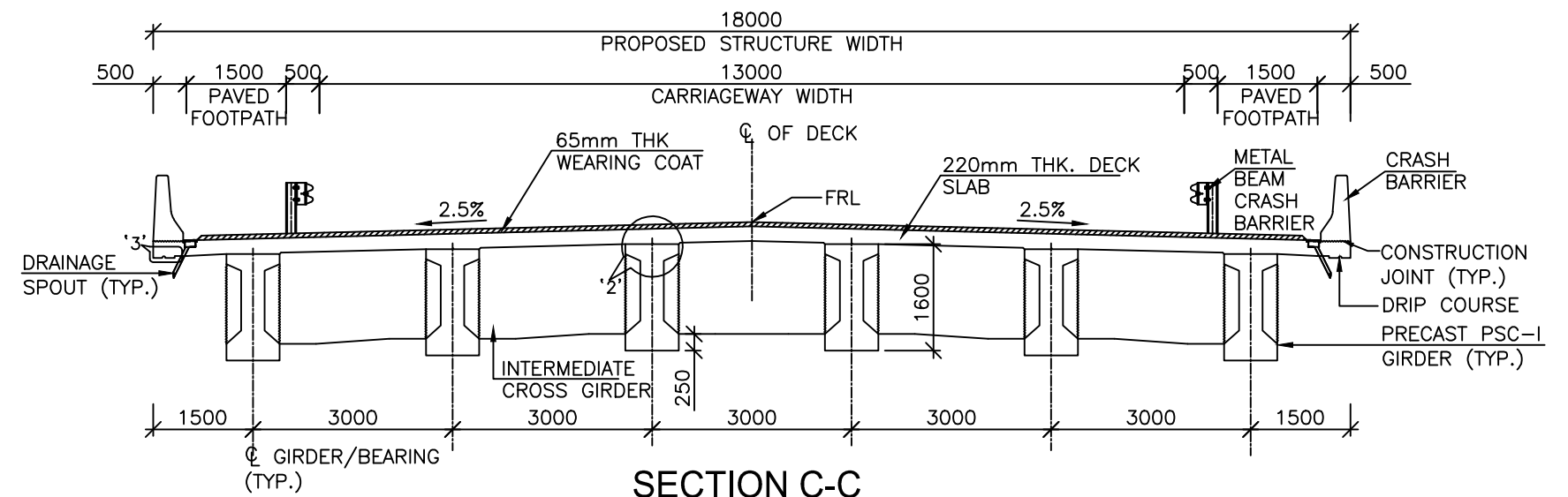
**DETAIL '2'**  
(SCALE 1:25)



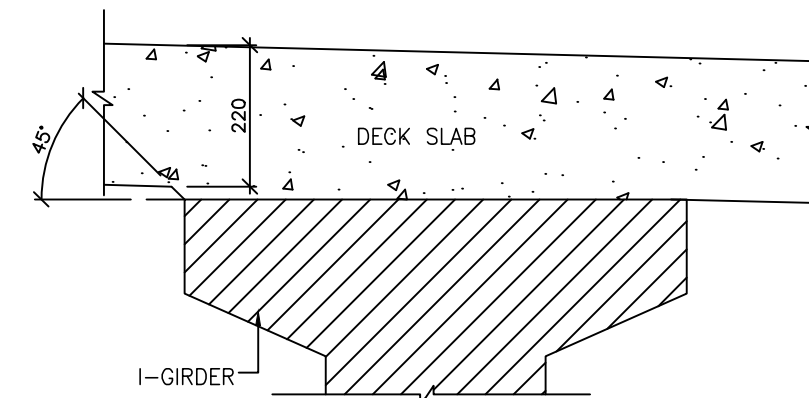
**DETAIL '3'**  
(SCALE 1:25)



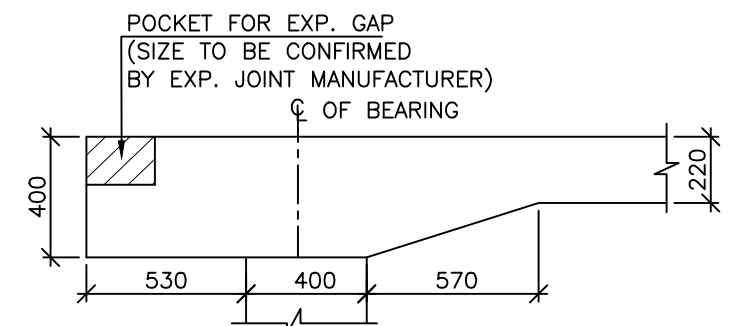
**SECTION B-B**  
(SCALE 1:100)



**SECTION C-C**  
(SCALE 1:100)



**DETAIL '1'**  
(SCALE 1:10)



**SECTION D-D**  
(SCALE 1:25)

### NOTES:-

1. ALL DIMENSIONS ARE IN MM UNLESS SHOWN OTHERWISE.
2. TOP SURFACE OF GIRDER SHALL BE ROUGHED FOR EFFECTIVE BONDING.
3. ANY DISCREPANCIES MUST BE BROUGHT TO THE NOTICE OF THE CONSULTANT BEFORE EXECUTION OF WORK AT SITE.
4. BEAM SHALL BE KEPT UPRIGHT AT ALL TIMES AND TO BE CLEARLY MARKED INDICATING SPAN, LOCATION, AND RESPECTIVE ENDS BEFORE REMOVAL FROM CASTING BED.
5. CONCRETE FOR SUPERSTRUCTURE SHALL BE DESIGN MIX AND HAVE A MINIMUM 28 DAYS CHARACTERISTIC STRENGTH OF M40.
6. THE JACK FOR LIFTING THE SUPER STRUCTURE DURING BEARING REPLACEMENT SHALL HAVE A MINIMUM CAPACITY OF 200T.

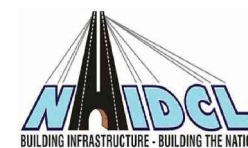


Project Title:-

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TELIAMURA - SABROOM SECTION-2

CLIENT:-



**NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD**

Drawing Title:-

**DIMENSION DETAIL OF PRECAST PSC I-GIRDER SUPERSTRUCTURE FOR 25.0m SPAN**

Drawing No. :- TASPL/NHIDCL/FDPR/GAD/09

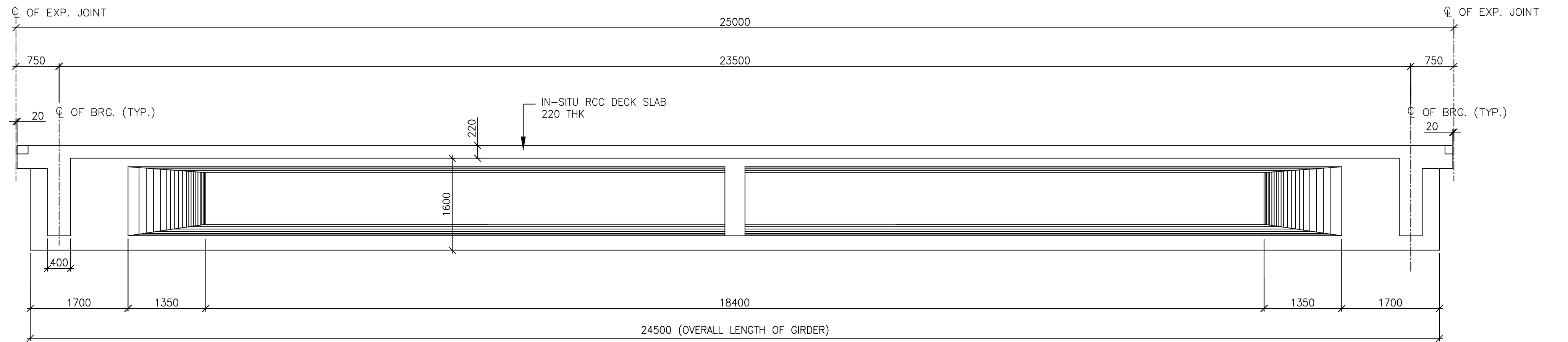
Scale :- AS SHOWN

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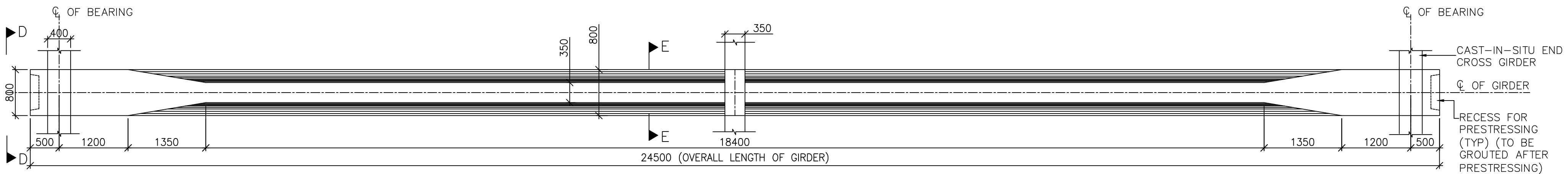
CONSULTANT:-



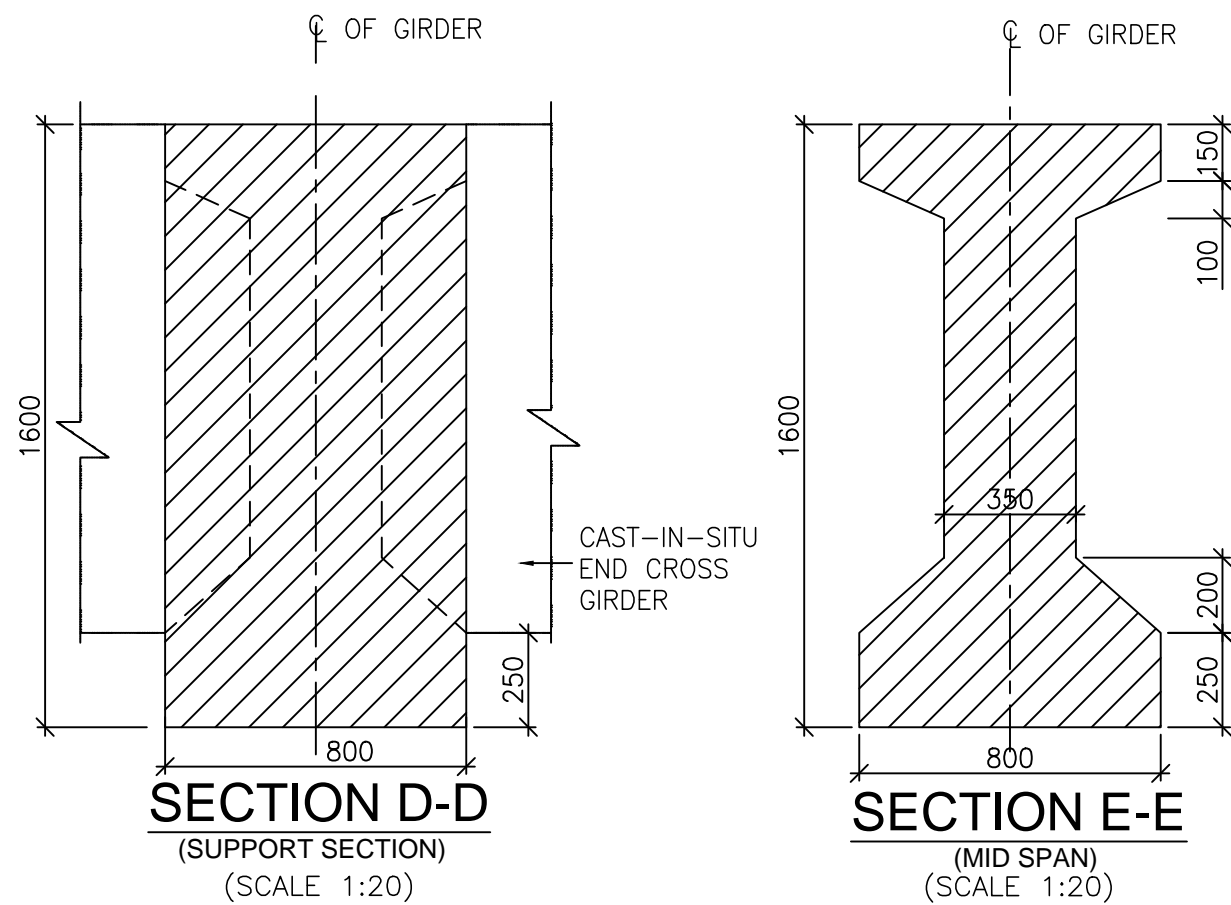
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in association with Vaishnavi Infratech Services Pvt. Ltd  
68,Ajanta Apartments, 36, I.P. Extension  
Patparganj Delhi-110092.



**ELEVATION OF PRECAST GIRDER**  
(SCALE 1:50)



**PLAN OF PRECAST GIRDER**  
(SCALE 1:50)



**NOTES:-**

1. ALL DIMENSIONS ARE IN MM UNLESS SHOWN OTHERWISE.
2. TOP SURFACE OF GIRDER SHALL BE ROUGHED FOR EFFECTIVE BONDING.
3. ANY DISCREPANCIES MUST BE BROUGHT TO THE NOTICE OF THE CONSULTANT BEFORE EXECUTION OF WORK AT SITE.
4. BEAM SHALL BE KEPT UPRIGHT AT ALL TIMES AND TO BE CLEARLY MARKED INDICATING SPAN, LOCATION, AND RESPECTIVE ENDS BEFORE REMOVAL FROM CASTING BED.
5. CONCRETE FOR SUPERSTRUCTURE SHALL BE DESIGN MIX AND HAVE A MINIMUM 28 DAYS CHARACTERISTIC STRENGTH OF M40.



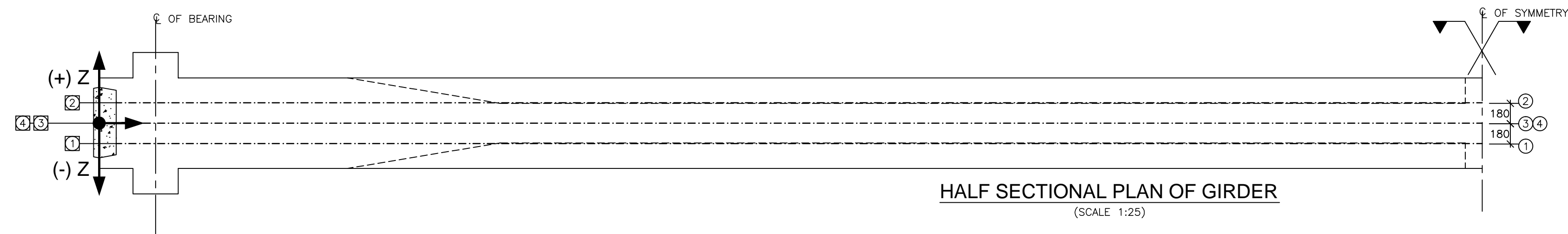
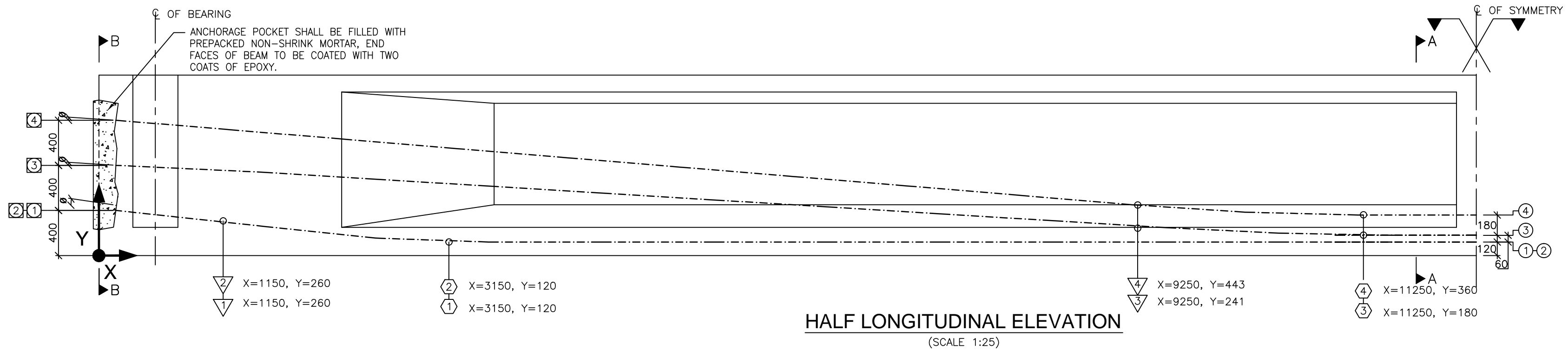
Project Title:-  
**CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.**  
TELIAMURA - SABROOM SECTION-2

CLIENT:-  
  
**NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD**

Drawing Title:-  
**DIMENSION DETAIL OF PRECAST PSC I-GIRDER SUPERSTRUCTURE FOR 25.0m SPAN**  
Drawing No. :- **TASPL/NHIDCL/FDPR/GAD/09**  
Scale :- **AS SHOWN**  
Drm Dgn. Appd Sheet :  
D.S D.P.S B.Ram 02 OF 02

CONSULTANT:-  
  
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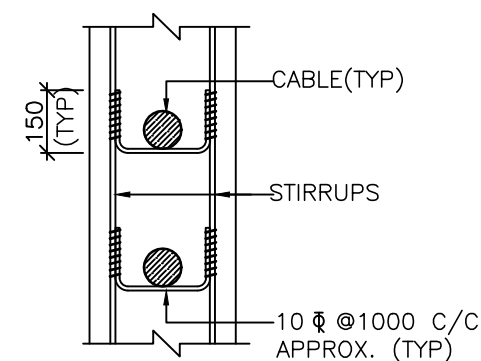


**TABLE2: DETAILS OF JACKING FORCE & TENDON ELONGATION**

CABLE NO.	EXTENSION AT EACH END (mm)	EMERGENCE ANGLE (θ) (Degree)	GIRDER		
			JACKING FORCE (t)	NOS. OF STRANDS	DUMMY STRANDS
1	88.3	7.970	215.1	11	1
2	88.3	7.970	215.1	11	1
3	89.9	3.513	195.5	10	2
4	89.9	4.754	234.6	12	—

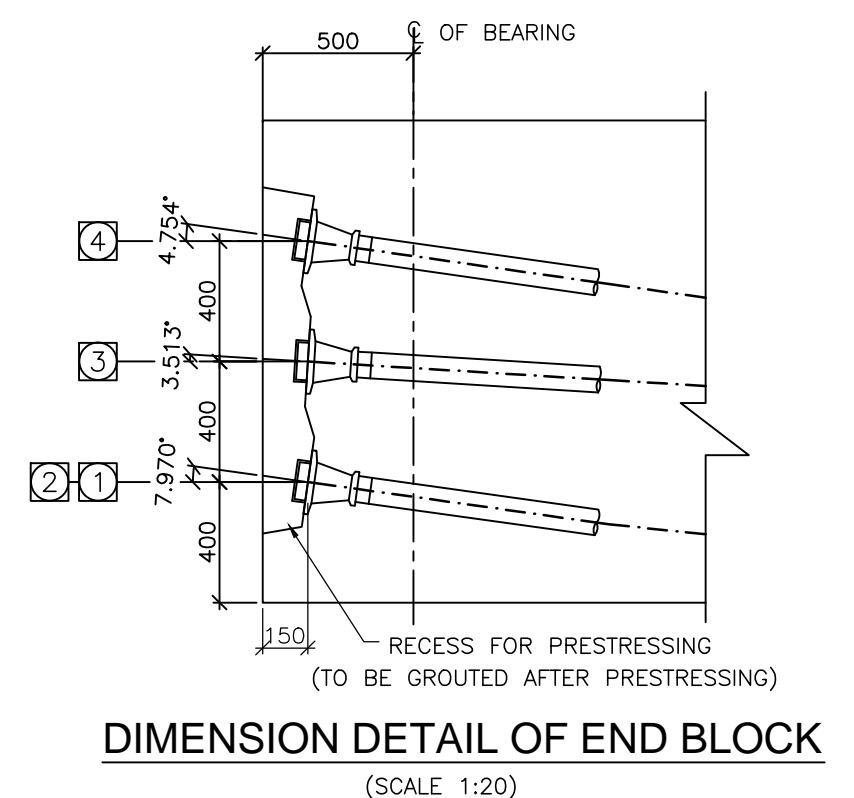
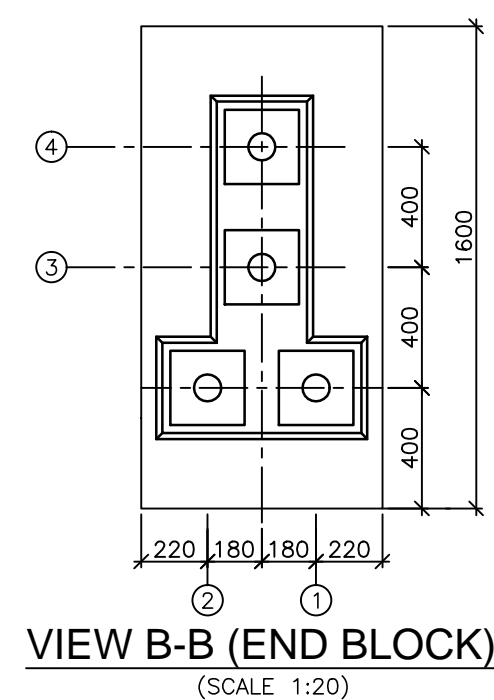
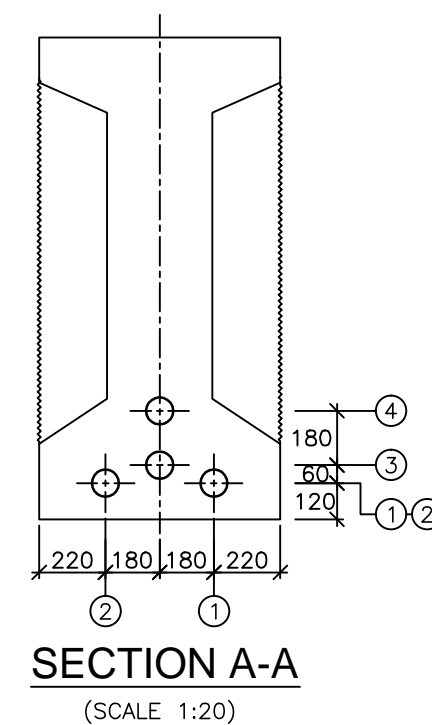
**LEGEND :-**

- INDICATED START OF CURVE IN ELEVATION
- INDICATED END OF CURVE IN ELEVATION
- INDICATED END OF CABLE
- INDICATED CABLE NUMBER



**TABLE - 1: DETAILS OF CABLE CO-ORDINATE**

CABLE  NO.	ORDINATES AT DISTANCE 'X' FROM END OF GIRDER																											
	150		1150		2150		3150		4150		5150		6150		7150		8150		9250		10250		11250		12150		MID OF GIRDER	
	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
1	400	-180	260	-180	155	-180	120	-180	120	-180	120	-180	120	-180	120	-180	120	-180	120	-180	120	-180	120	-180	120	-180	120	-180
2	400	180	260	180	155	180	120	180	120	180	120	180	120	180	120	180	120	180	120	180	120	180	120	180	120	180	120	180
3	800	0	739	0	677	0	616	0	554	0	493	0	432	0	370	0	309	0	245	0	195	0	180	0	180	0	180	0
4	1200	0	1117	0	1034	0	950	0	867	0	784	0	701	0	618	0	535	0	443	0	381	0	360	0	360	0	360	0



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**TELIAMURA - SABROOM SECTION-2**

**CLIENT:-**  
  
**NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD**

**Drawing Title:-**  
 CABLE LAYOUT OF PRECAST PSC I-GIRDER SUPERSTRUCTURE FOR 25.0m SPAN  
**Drawing No. :-** TASPL/NHIDCL/FDPR/GAD/09  
**Scale :-** AS SHOWN  

Drn	Dgn.	Appd	Sheet :
D.S	D.P.S	B.Ram	01 OF 02

**CONSULTANT:-**  
  
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 68,Ajanta Apartments, 36, I.P. Extension  
 Patparganj Delhi-110092.

PRESTRESSING NOTES:–

1. ALL DIMENSIONS ARE IN MILLIMETERS, LEVELS ARE IN METERS UNLESS OTHERWISE MENTIONED.
2. DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. ANY DISCREPANCIES MUST BE BROUGHT TO THE NOTICE OF THE CONSULTANT BEFORE EXECUTION OF WORK AT SITE.

PRESTRESSING SYSTEM

- a) ALL PRESTRESSING STRANDS SHALL HAVE 7 PLY UNCOATED STRESS RELIEVED LOW RELAXATION HIGH TENSILE STRANDS OF 15.2mm DIA. CONFORMING TO CLASS 2 OF IS 14268–1995.
- b) THE PARAMETERS ADOPTED FOR DESIGN ARE AS FOLLOWS:–

i) ANCHORAGE TYPE -----12 K 15

ii) SLIP AT EACH END ----- 6mm

iii) CO–EFFICIENT OF FRICTION(μ) ----- 0.17/ RADIAN

iv) WOBBLE CO–EFFICIENT (K)----- 0.0020/m

v) NOMINAL AREA OF EACH STRAND ----- 140 sq.mm

vi) NOMINAL ULTIMATE BREAKING LOAD OF EACH STRAND ----- 260.7KN

vii) MODULUS OF ELASTICITY OF HIGH TENSILE STEEL ----- 1.95X10<sup>5</sup> MPa

viii) SHEATHING THICKNESS----- 0.5 mm
- c) HDPE SHEATHING DUCT OF 86mm DIA (ID) SHALL BE USED FOR ALL CABLES.
- d) ALL THE DESIGN PARAMETERS ADOPTED SHALL BE VERIFIED AT SITE.

PRESTRESSING OPERATIONS

- a) ALL CABLES SHALL BE LAID IN SMOOTH PROFILE PASSING THROUGH THE GIVEN ORDINATES. FIRM SUPPORT SHALL BE INSTALLED AT EVERY METRE AS SHOWN.
- b) CABLE LENGTHS MENTIONED IN THE DRAWING ARE INCLUSIVE OF 1000 MILLIMETRE EXTRA AT EACH END. THE TOTAL LENGTH OF CABLE SHALL BE VERIFIED AT SITE.
- c) ABSCISSA (DISTANCE "X") OF CABLE GIVEN IN THE DRAWING ARE EVALUATED WITH REFERENCE TO END OF GIRDER. ORDINATES DISTANCE 'Y' ARE WITH REFERENCE TO SOFFIT OF THE GIRDER.
- d) ALL STRANDS OF CABLES SHALL BE STRESSED FROM BOTH ENDS SIMULTANEOUSLY. ONLY MULTIPULL JACKS SHALL BE USED FOR STRESSING.
- e) GROUTING OF CABLES SHALL BE DONE IN SAME SEQUENCE AS STRESSING AND SHALL CONFIRM TO TECHNICAL SPECIFICATIONS. ANCHORAGE POCKET SHALL BE FILLED WITH EPOXY MORTAR AFTER STRESSING & GROUTING.
- f) TIME LAG BETWEEN STRESSING OF EACH CABLE SHALL BE AVOIDED.
- g) EXTENSIONS SHALL BE RECHECKED AT 24 HOURS AFTER ANCHORING TO OBSERVE SLOW SLIPPAGE. INCASE OF EXCESSIVE SLIPPAGE THE MATTER SHALL BE REPORTED TO THE ENGINEER–IN–CHARGE.
- h) EXTENSIONS ARE GIVEN FOR HALF CABLE LENGTHS INCLUSIVE OF 600 MILLIMETRE GRIP LENGTH AT EACH END. LOSS UPTO 6mm DUE TO SLIP OF ANCHORAGES ARE NOT TO BE COMPENSATED DURING SITE OPERATIONS. JACK PRESSURE AND EXTENSIONS OF CABLES AT EACH END GIVEN IN THE DRAWING SHALL BE VERIFIED AT SITE.
- i) INITIAL SLACKNESS IN CABLES SHALL BE REMOVED BY APPLYING SMALL TENSION. THE INITIAL TENSION REQUIRED TO REMOVE SLACKNESS SHALL BE TAKEN AS THE STARTING POINT FOR MEASURING ELONGATION AND CORRECTION SHALL BE APPLIED AS PER CL. 12.2.1.3 OF IS:1343–1980.
- j) IN CASE THE CALCULATED ELONGATION AND THE JACK PRESSURE ARE NOT ACHIEVED SIMULTANEOUSLY DURING PRESTRESSING OPERATION STRESSING SHALL BE CONTINUED / DISCONTINUED AS PER NOTE NO. 9 GIVEN BELOW.
- k) EXCESS STRANDS AS SHOWN IN TABLE–2 SHALL BE STRESSED IF ANY SHORTFALL IN PRESTRESSING.
6. THE EXTENSIONS GIVEN IN TABLE SHALL BE MODIFIED AT SITE IN CASE ACTUAL VALUE OF AREA OF STRANDS 'A' AND MODULUS OF ELASTICITY 'E' VARIES FROM THOSE ASSUMED IN DESIGN, REVISED EXTENSION SHALL BE CALCULATED AS UNDER  
REVISED EXTENSION = (140 X 195 X 10<sup>~5</sup>) / (NEW AREA X NEW MODULUS) x ORIGINAL EXTENSION.

7. EXTENSION OF CABLE SHALL BE VERIFIED FOR A FEW CABLES AT SITE. IN CASE OF VALUE OF μ AND K ARE FOUND TO BE DIFFERENT THAN THOSE CONSIDERED FOR DESIGN, EXTENSION SHALL BE SUITABLY MODIFIED AFTER APPROVAL OF DESIGN OFFICE.
8. THE GRIP LENGTH FROM ANCHORAGE FACE UPTO GRIPPING POINT IN JACK ASSUMED IN EXTENSION CALCULATIONS IS 600 mm AND THE ADDITIONAL LENGTH TAKEN FOR CUTTING IS 400 mm. IN CASE GRIP LENGTH VARIES THEN THOSE CONSIDERED, THE EXTENSIONS SHALL BE MODIFIED AS UNDER :

Ex = Ex + JACK FORCE x (GRIP LENGTH – 600)

(New) (Old) AREA x Es

SPECIAL NOTE FOR PRESTRESSING




- IF THE CALCULATED ELONGATION IS REACHED BEFORE THE CALCULATED GAUGE PRESSURE IS OBTAINED, CONTINUE TENSIONING TILL ATTAINING THE CALCULATED GAUGE PRESSURE PROVIDED THE ELONGATION DOES NOT EXCEED 1.05 TIMES THE CALCULATED ELONGATION. IF THE CALCULATED ELONGATION HAS NOT BEEN REACHED CONTINUE TENSIONING IN INTERVALS OF 5 kg/sqcm UNTIL THE CALCULATED ELONGATION IS REACHED PROVIDED THE GAUGE PRESSURE DOES NOT EXCEED 1.05 TIMES THE CALCULATED GAUGE PRESSURE. IF THE ELONGATION AT 1.05 TIMES THE CALCULATED GAUGE PRESSURE IS LESS THAN 0.95 TIMES THE CALCULATED ELONGATION THE FOLLOWING MEASURES MUST BE TAKEN :
- i) RECALIBRATE THE PRESSURE GAUGE
- ii) CHECK THE CORRECT FUNCTIONING OF THE JACK PUMP AND LEADS
- iii) DE–TENSION THE CABLE SLIDE IT IN ITS DUCT TO CHECK THAT IT IS NOT BLOCKED BY MORTAR WHICH HAS ENTERED THROUGH IN THE SHEATH. RE–TENSION THE CABLE IF FREE. IF THE REQUIRED ELONGATION IS NOT OBTAINED FURTHER FINISHING OPERATION SUCH AS CUTTING OR SEALING SHOULD NOT BE UNDERTAKEN WITHOUT THE APPROVAL THE ENGINEER.
10. THE GAUGE PRESSURE FOR PRESTRESSING SHALL BE WORKED OUT PRIOR TO ANY STRESSING OPERATION DULY TAKING IN TO ACCOUNT THE RAM AREA OF THE JACK AND THE JACK EFFICIENCY. THE STRESSING EQUIPMENTS SHALL BE WELL MAINTAINED AND THE CALIBRATION CHARTS SHALL BE AVAILABLE AT SITE.
11. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS.

CONSTRUCTION SEQUENCE OF OUTER GIRDER

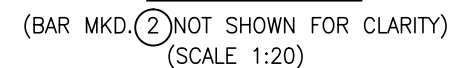
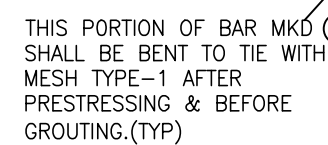
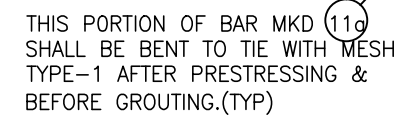
1. AT '0'TH DAY GIRDER SHALL BE CASTED ON CASTING BED.
2. CABLE No. ③ & ④ SHALL BE PRESTRESSED AT 5TH DAY OR WHEN CUBE STRENGTH IS 35MPa WHICHEVER IS LATER. AFTER THIS STAGE OF STRESSING THE GIRDER CAN BE LIFTED FROM THE CASTING BED.
3. 4 STRANDS OF CABLE No. ① SHALL BE PRESTRESSED AT 21ST DAY OR WHEN CUBE STRENGTH IS 40MPa.
4. AFTER STRESSING 4 STRANDS OF CABLE NO① , 8 STRANDS OF CABLE No. ② SHALL BE PRESTRESSED.
5. AFTER STRESSING CABLE No. ② REMAINING STRANDS OF CABLE No. ① SHALL BE PRESTRESSED.
6. GIRDERS SHALL BE PLACED ON TEMPORARY SUPPORTS ON PIER CAP.
7. PERMANENT BEARINGS SHALL BE INSTALLED ON PEDESTALS.
8. CAST WEDGE OVER THE BEARING AS PER RELEVANT WEDGE DETAILS.
9. REMOVE TEMPORARY SUPPORT SO THAT GIRDER CAN BE PLACED OVER STEEL WEDGE AND PERMANENT BEARINGS.
10. DECK SLAB SHALL BE CAST AFTER 28 DAYS OF CASTING OF GIRDER.
11. PARAPET, RAIL PLINTH SHALL BE ERECTED/CAST 28 DAYS AFTER CASTING THE DECK SLAB OR AFTER THE DECK SLAB ATTAINS A STRENGTH OF 40MPa, WHICHEVER IS LATER.

NOTES

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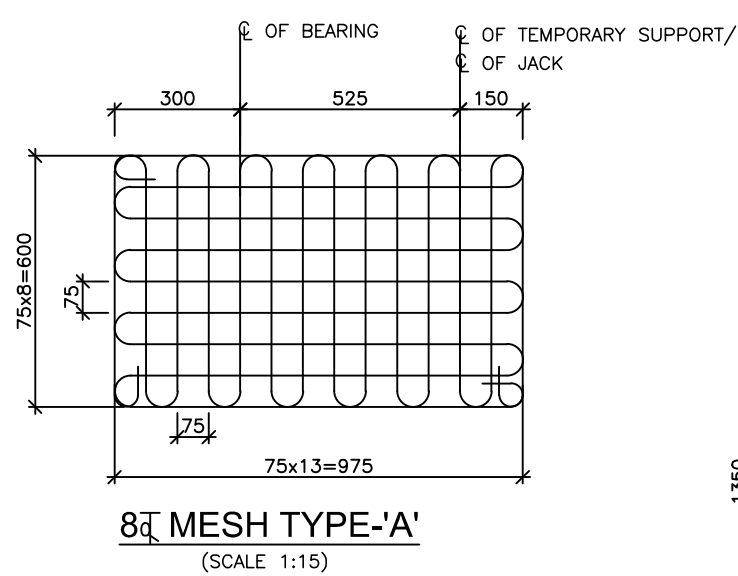
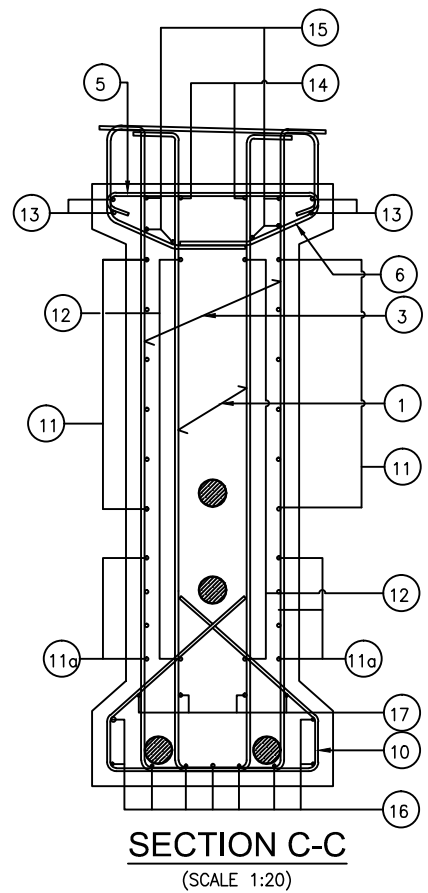
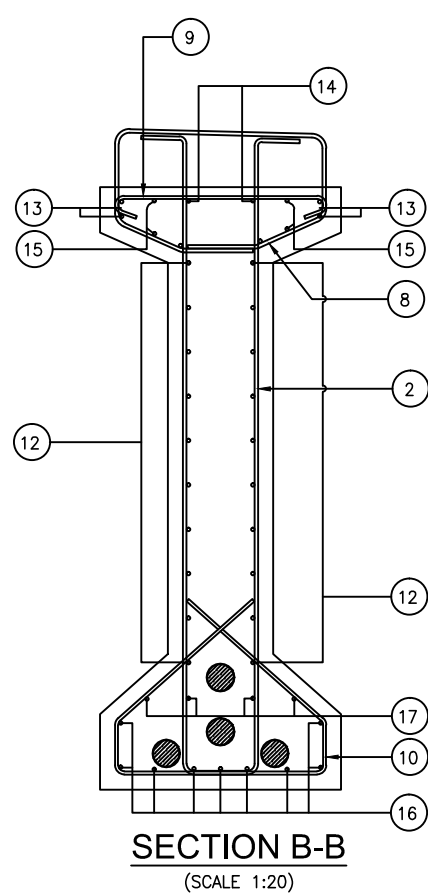
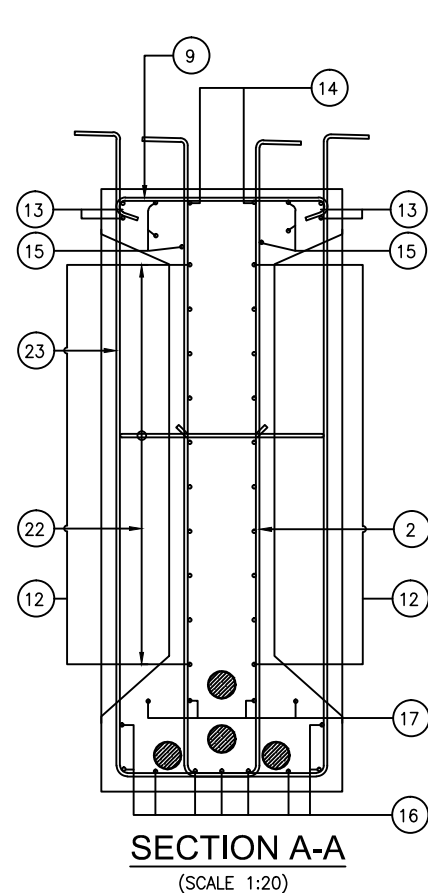
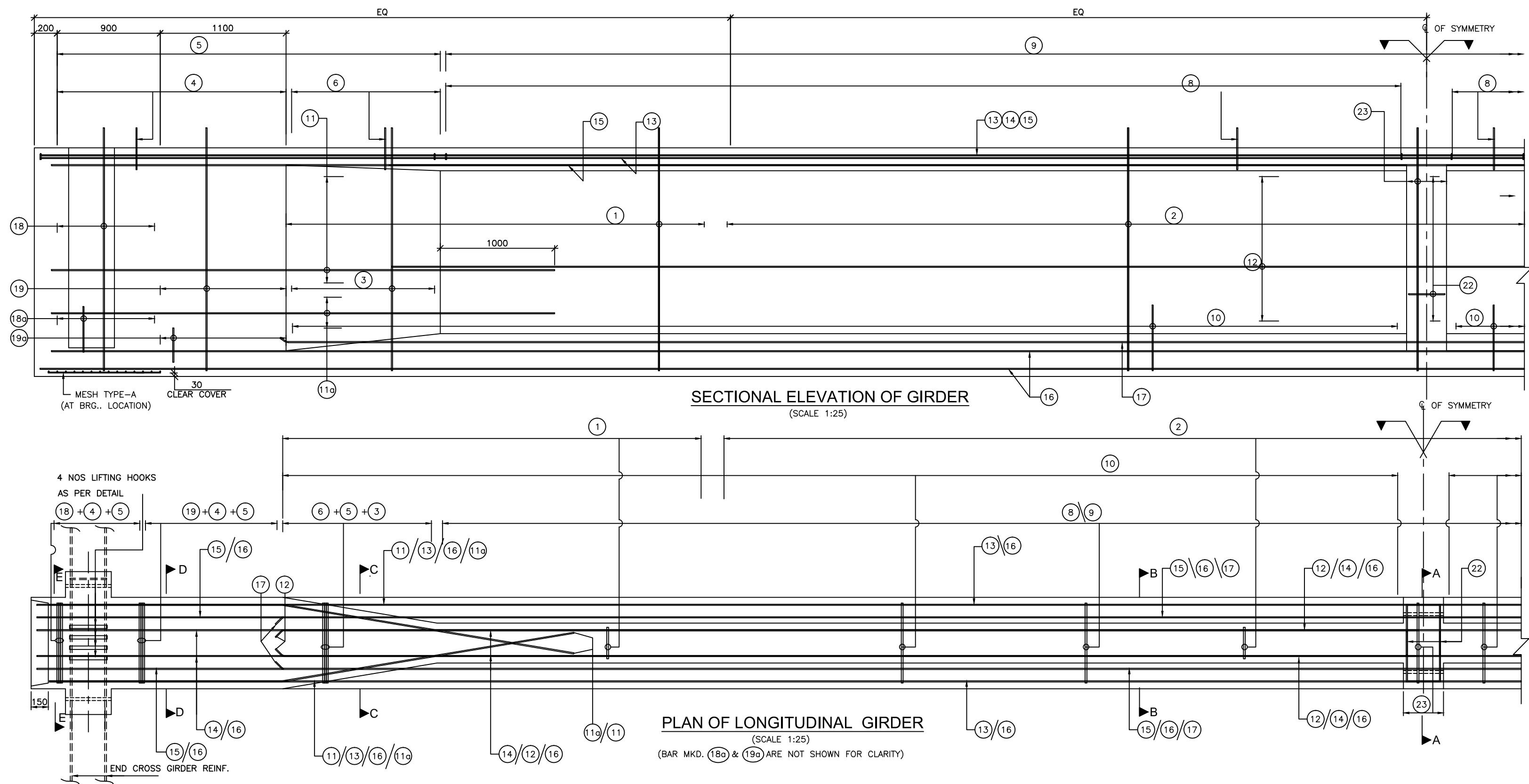


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4. ANCHORAGE RECESSES SHALL BE SEALED WITH PREPACKAGED NON-SHRINK MORTAR. END FACES OF GIRDERS TO BE COATED WITH TWO COATES OF EPOXY.

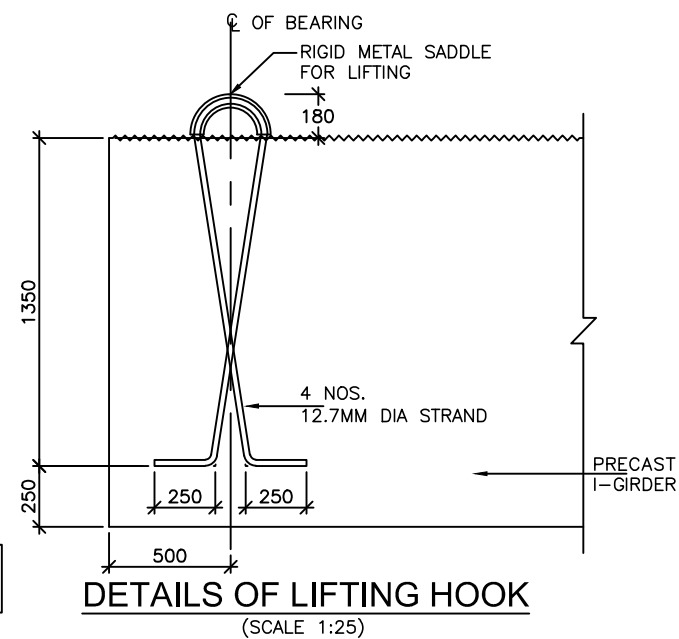
DIAMETER AND DIMENSIONS OF SPIRAL REINFORCEMENT  
SHALL BE CONFIRMED BY PRESTRESSING SYSTEM SUPPLIER







REINFORCEMENT FOR CROSS GIRDER SHALL BE LEFT IN PRECAST GIRDER BEFORE CASTING



## SCHEDULE OF REINFORCEMENT

BAR MARKED	DIA OF BAR & SPACING/NOS.	BAR SHAPE	REMARKS
1	2L-12 $\varnothing$ 200c/c		
2	2L-12 $\varnothing$ 200c/c		
3	2L-16 $\varnothing$ 200c/c		
4	2L-12 $\varnothing$ 200c/c		
5	10 $\varnothing$ 200 c/c		
6	2L-12 $\varnothing$ 200 c/c		
7	NOT USED		
8	2L-12 $\varnothing$ 200 c/c		
9	10 $\varnothing$ 200 c/c		
10	10 $\varnothing$ 200 c/c		
11	10 $\varnothing$ 6 NOS (ON EACH FACE)		EACH END OF GIRDER
11a	10 $\varnothing$ 4 NOS (ON EACH FACE)		EACH END OF GIRDER
12	10 $\varnothing$ 10 NOS (ON EACH FACE)		
13	10 $\varnothing$ 4 NOS		
14	10 $\varnothing$ 2 NOS		
15	10 $\varnothing$ 4 NOS		
16	10 $\varnothing$ 9 NOS		
17	10 $\varnothing$ 4 NOS		
18	2L-16 $\varnothing$ 100 c/c		EACH END OF GIRDER
18a	2L-16 $\varnothing$ 100 c/c		EACH END OF GIRDER
19	2L-16 $\varnothing$ 100 c/c		EACH END OF GIRDER
19a	2L-16 $\varnothing$ 100 c/c		EACH END OF GIRDER
20	16 $\varnothing$ 7 NOS		EACH END OF GIRDER
20a	16 $\varnothing$ 2 NOS		EACH END OF GIRDER
20b	16 $\varnothing$ 2 NOS		EACH END OF GIRDER
21	12 $\varnothing$ 4 NOS		EACH END OF GIRDER
22	12 $\varnothing$ 12X2 NOS		
23	2L-12 $\varnothing$ NOS		
24	10 $\varnothing$ 2 NOS		EACH END OF GIRDER/
24a	10 $\varnothing$ 2 NOS		BENT AFTER PRESTRESS

## NOTES :

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- THE REINFORCING STEEL SHALL BE DEFORMED TMT BARS (GRADE DESIGNATION Fe:500D) CONFORMING TO IS:1786.
- CLEAR COVER TO ANY REINFORCEMENT IS 50mm.
- LAP LENGTH SHALL NOT BE LESS THAN 41D (WHERE D IS THE DIA OF THE SMALLER BAR TO BE LAPPED AT A SECTION.)
- LAPS SHOULD BE STAGGERED & NOT MORE THAN 50% BARS SHOULD BE LAPPED AT A SECTION.
- ANCHORAGE LENGTH SHALL NOT BE LESS THAN 41 X DIA OF BAR.
- REINFORCEMENT SHALL BE SUITABLY ADJUSTED WHILE FOULING WITH PRESTRESS CABLE.

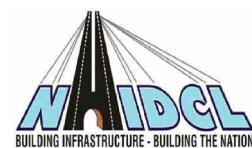


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TELIAMURA - SABROOM SECTION-2

CLIENT:-



**NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD**

Drawing Title:-

**REINFORCEMENT DETAIL OF PRECAST PSC I-GIRDER SUPERSTRUCTURE FOR 25.0m SPAN**

Drawing No. :- TASPL/NHIDCL/FDPR/GAD/09

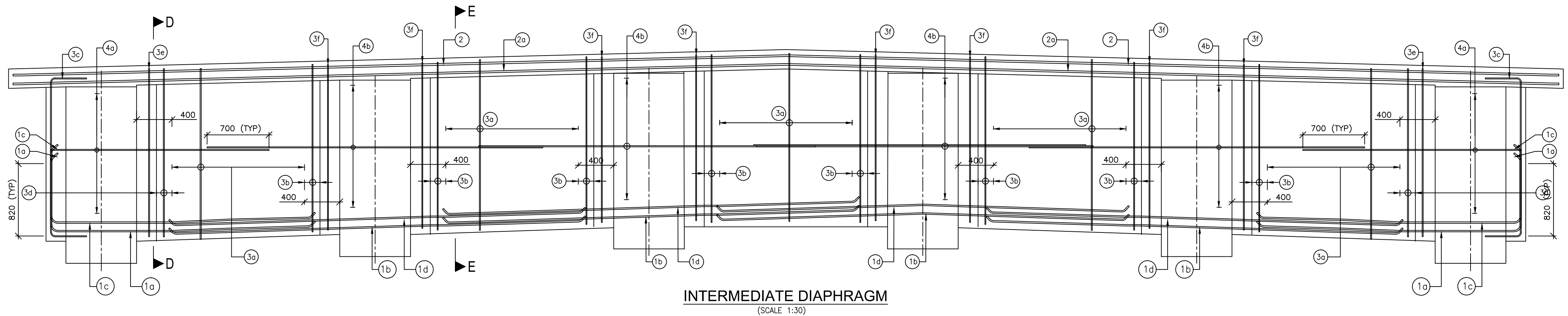
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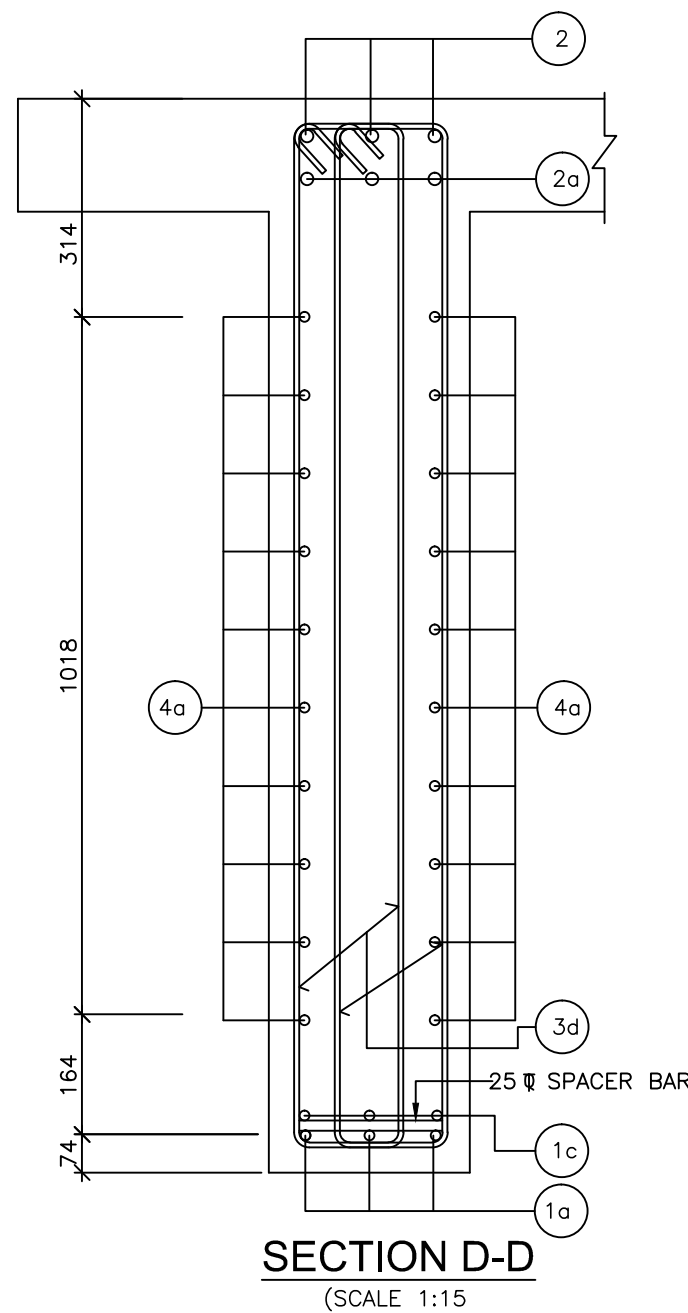
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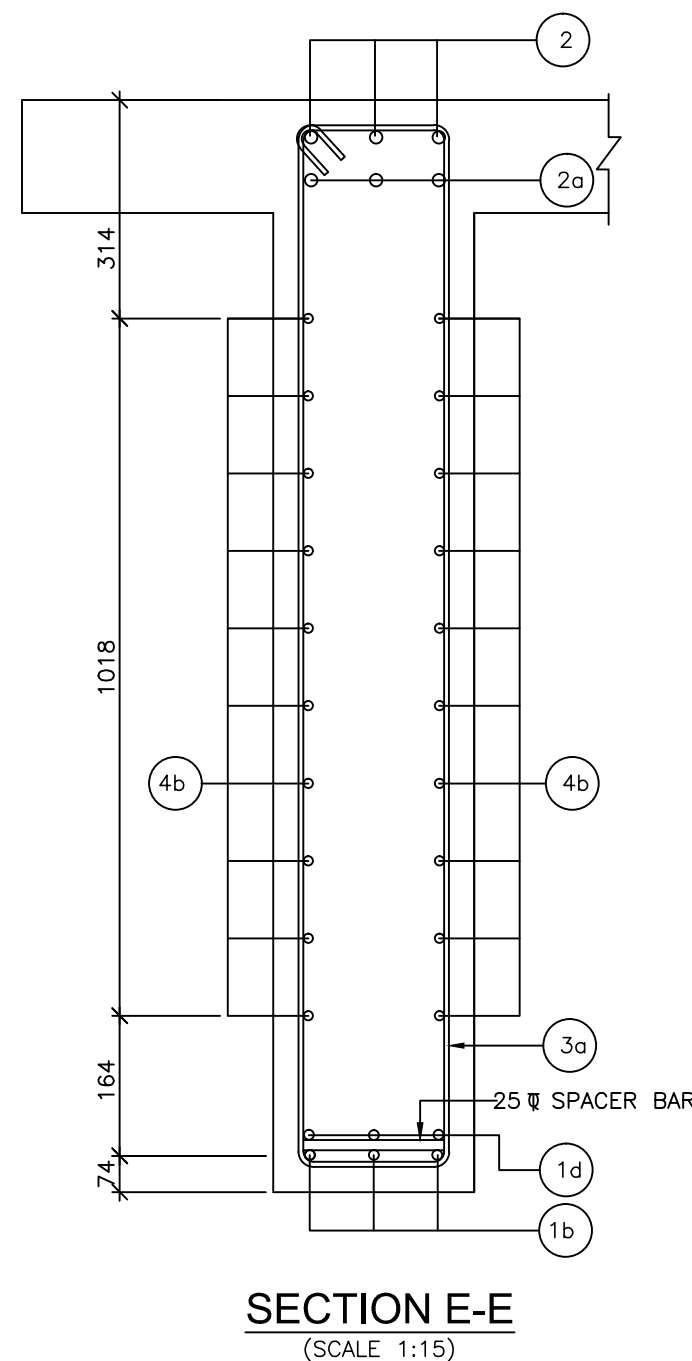
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INTERMEDIATE DIAPHRAGM  
(SCALE 1:30)



SECTION D-D  
(SCALE 1:15)



SECTION E-E  
(SCALE 1:15)

SCHEDULE OF REINFORCEMENT

BAR MARKED	DIA OF BAR & SPACING/NOS.	BAR SHAPE
1a	25 $\Psi$ 3NOS.	
1b	25 $\Psi$ 3NOS.	
1c	25 $\Psi$ 3NOS.	
1d	25 $\Psi$ 3NOS.	
2	25 $\Psi$ 3NOS.	
2a	25 $\Psi$ 3NOS.	
3a	2L-12 $\Psi$ @ 150c/c	
3b	2Nos.-2L-12 $\Psi$ (EACH LOCATION)	
3c	2Nos.-12 $\Psi$ (EACH LOCATION)	
3d	2Nos.-2L-12 $\Psi$ (EACH LOCATION)	
3e	2Nos.-2L-12 $\Psi$ (EACH LOCATION)	
3f	2Nos.-2L-12 $\Psi$ (EACH LOCATION)	
4a	12 $\Psi$ 10NOS.(EACH FACE)	
4b	12 $\Psi$ 10NOS.(EACH FACE)	

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2. FIGURED DIMENSIONS SHOULD BE FOLLOWED, DO NOT SCALE THE DIMENSIONS.
3. ANY DISCREPANCIES MUST BE BROUGHT TO THE NOTICE OF THE CONSULTANT BEFORE EXECUTION OF WORK AT SITE.
4. THE REINFORCING STEEL SHALL BE DEFORMED TMT BARS (GRADE DESIGNATION Fe:500D) CONFORMING TO IS:1786.

BAR MARKED (1a) (1b) (1c) (1d) (3c) (3e) (3f) (4a) (4b) SHALL BE PLACED IN PRECAST GIRDER.

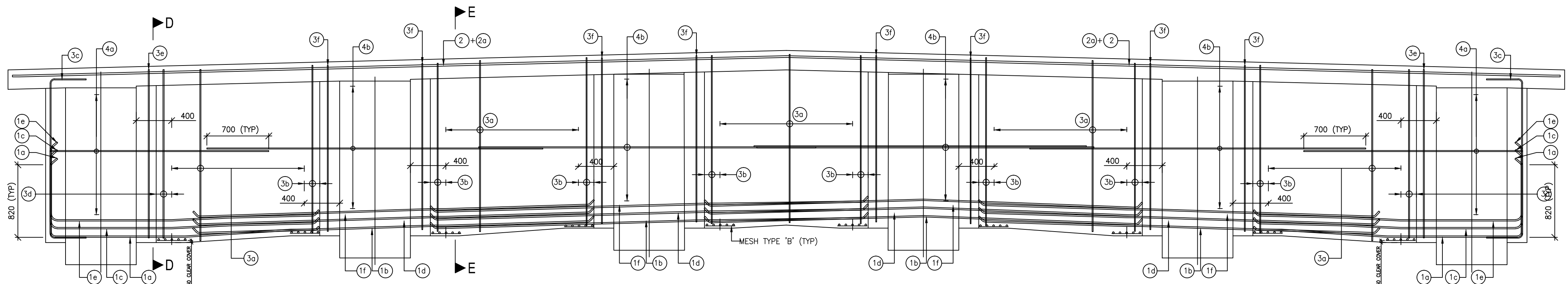


Project Title:-  
**CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.**  
**TELIAMURA - SABROOM SECTION-2**

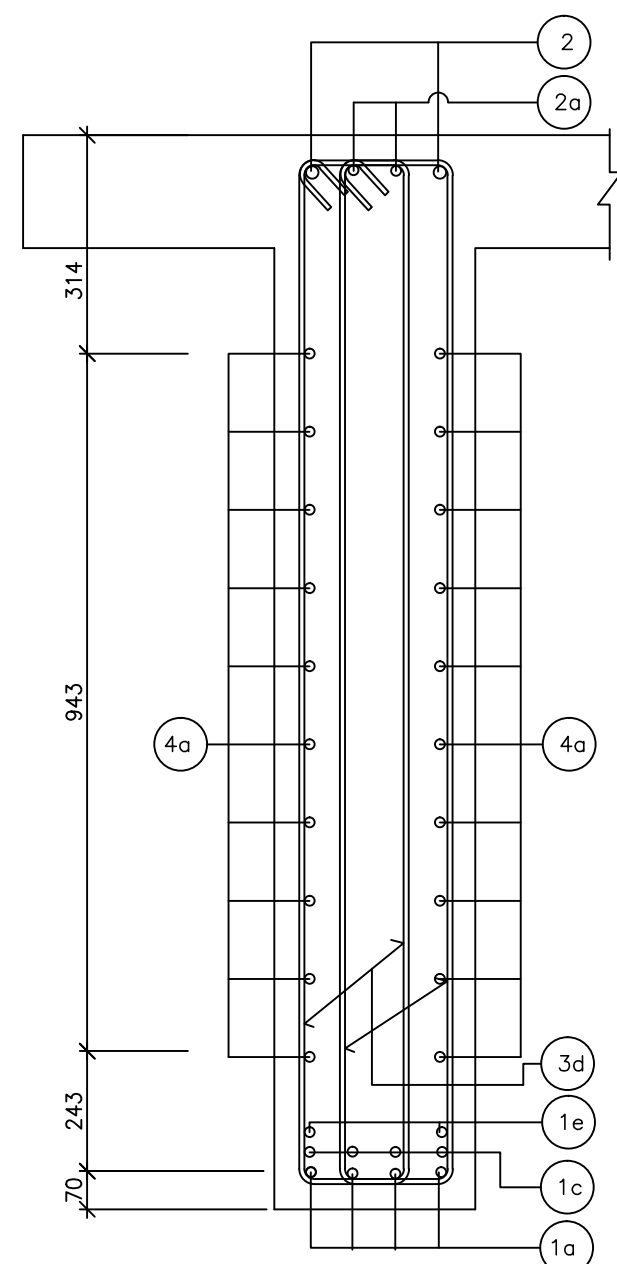
CLIENT:-  
  
**NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD**

Drawing Title:-  
**REINFORCEMENT DETAIL OF CAST-IN-SITU END CROSS GIRDER FOR PRECAST PSC I-GIRDER SUPERSTRUCTURE FOR 25.0m SPAN**  
Drawing No. :- **TASPL/NHIDCL/FDPR/GAD/09**  
Scale :- **AS SHOWN**  
Drn Dgn. Appd Sheet :  
D.S D.P.S B.Ram 01 OF 02

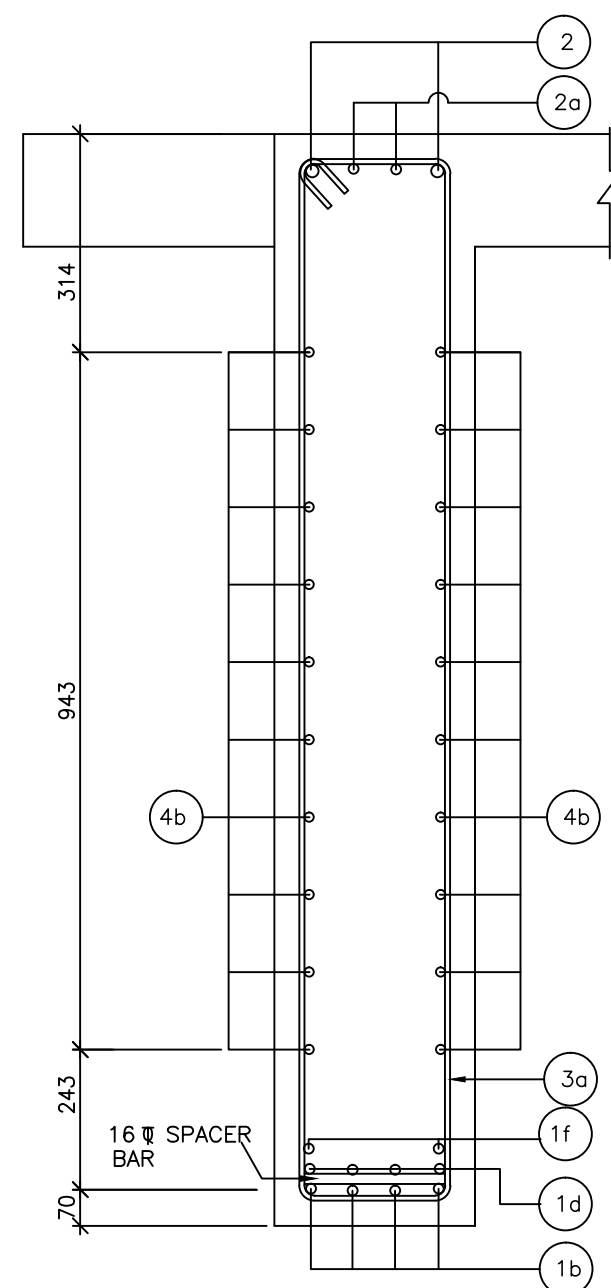
CONSULTANT:-  
  
**Technocrats Advisory Services Private Limited**  
in association with Vaishnavi Infratech Services Pvt. Ltd  
68,Ajanta Apartments, 36, I.P. Extension  
Patparganj Delhi-110092.



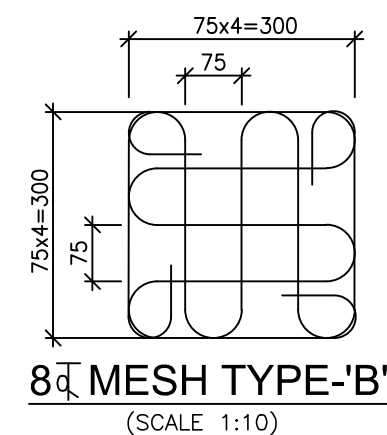
**END DIAPHRAGM**  
(SCALE 1:30)



**SECTION D-D**  
(SCALE 1:15)



**SECTION E-E**  
(SCALE 1:15)



### SCHEDULE OF REINFORCEMENT

BAR MARKED	DIA OF BAR & SPACING/NOS.	BAR SHAPE
1a	16 # 4NOS.	└─
1b	16 # 4NOS.	─┐
1c	16 # 4NOS.	└─
1d	16 # 4NOS.	─┐
1e	16 # 2NOS.	─┐
1f	16 # 2NOS.	─┐
2	20 # 2NOS.	─┐
2a	20 # 2NOS.	─┐
3a	2L-12 # @ 150c/c	└─
3b	2Nos.-4L-16 # (EACH LOCATION)	└─
3c	2Nos.-16 # (EACH LOCATION)	└─
3d	2Nos.-4L-16 # (EACH LOCATION)	└─
3e	2Nos.-4L-16 # (EACH LOCATION)	└─
3f	2Nos.-4L-16 # (EACH LOCATION)	└─
4a	12 # 10NOS.(EACH FACE)	└─
4b	12 # 10NOS.(EACH FACE)	─┐

### NOTES :

- ALL DIMENSIONS ARE IN MM UNLESS SHOWN OTHERWISE.
- FIGURED DIMENSIONS SHOULD BE FOLLOWED, DO NOT SCALE THE DIMENSIONS.
- ANY DISCREPANCIES MUST BE BROUGHT TO THE NOTICE OF THE CONSULTANT BEFORE EXECUTION OF WORK AT SITE.
- THE REINFORCING STEEL SHALL BE DEFORMED TMT BARS (GRADE DESIGNATION Fe:500D) CONFORMING TO IS:1786.
- CLEAR COVER TO ANY REINFORCEMENT IS 50mm.
- NO LAPS ARE PERMITTED IN CROSS GIRDER UNLESS SPECIFIED IN DRAWING.

BAR MARKED (1a, 1b, 1c, 1d, 1e, 1f, 3a, 3b, 3c, 3d, 3e, 3f, 4a, 4b) SHALL BE PLACED IN PRECAST GIRDER.

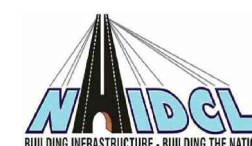


Project Title:-

**CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.**

TELIAMURA - SABROOM SECTION-2

CLIENT:-



**NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD**

Drawing Title:-

REINFORCEMENT DETAIL OF CAST-IN-SITU INTER. CROSS GIRDER FOR PRECAST PSC I-GIRDER SUPERSTRUCTURE FOR 25.0m SPAN

Drawing No. :- TASPL/NHIDCL/FDPR/GAD/09

Scale :- AS SHOWN

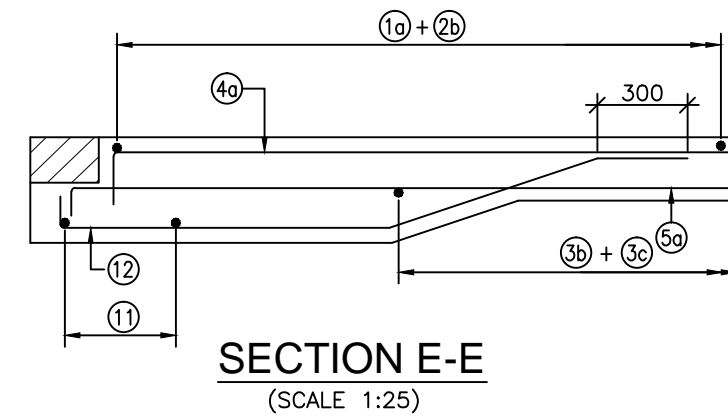
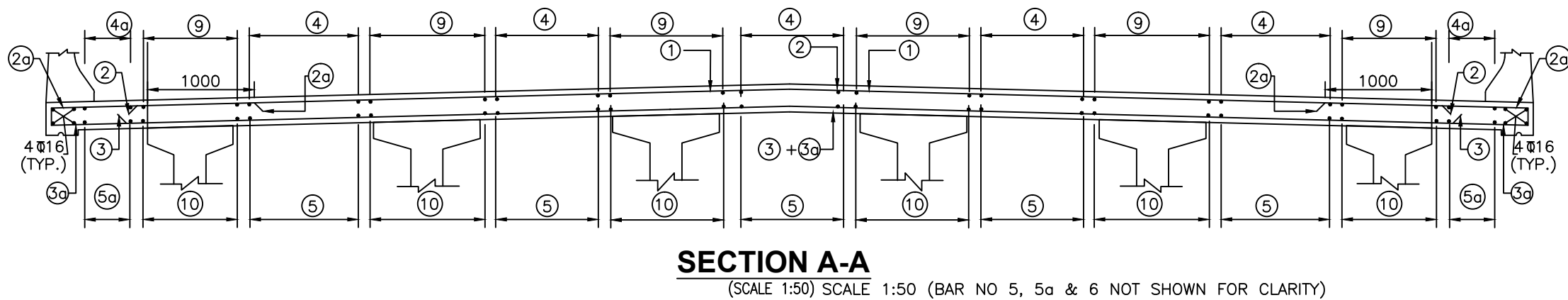
Drn	Dgn.	Appd	Sheet :
D.S	D.P.S	B.Ram	02 OF 02

CONSULTANT:-



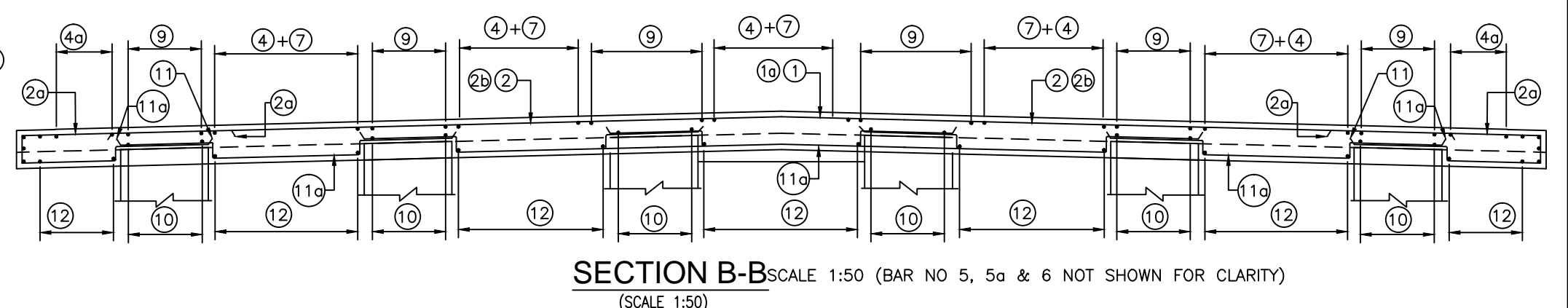
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in association with Vaishnavi Infratech Services Pvt. Ltd  
68,Ajanta Apartments, 36, I.P. Extension  
Patparganj Delhi-110092.





NOTES:

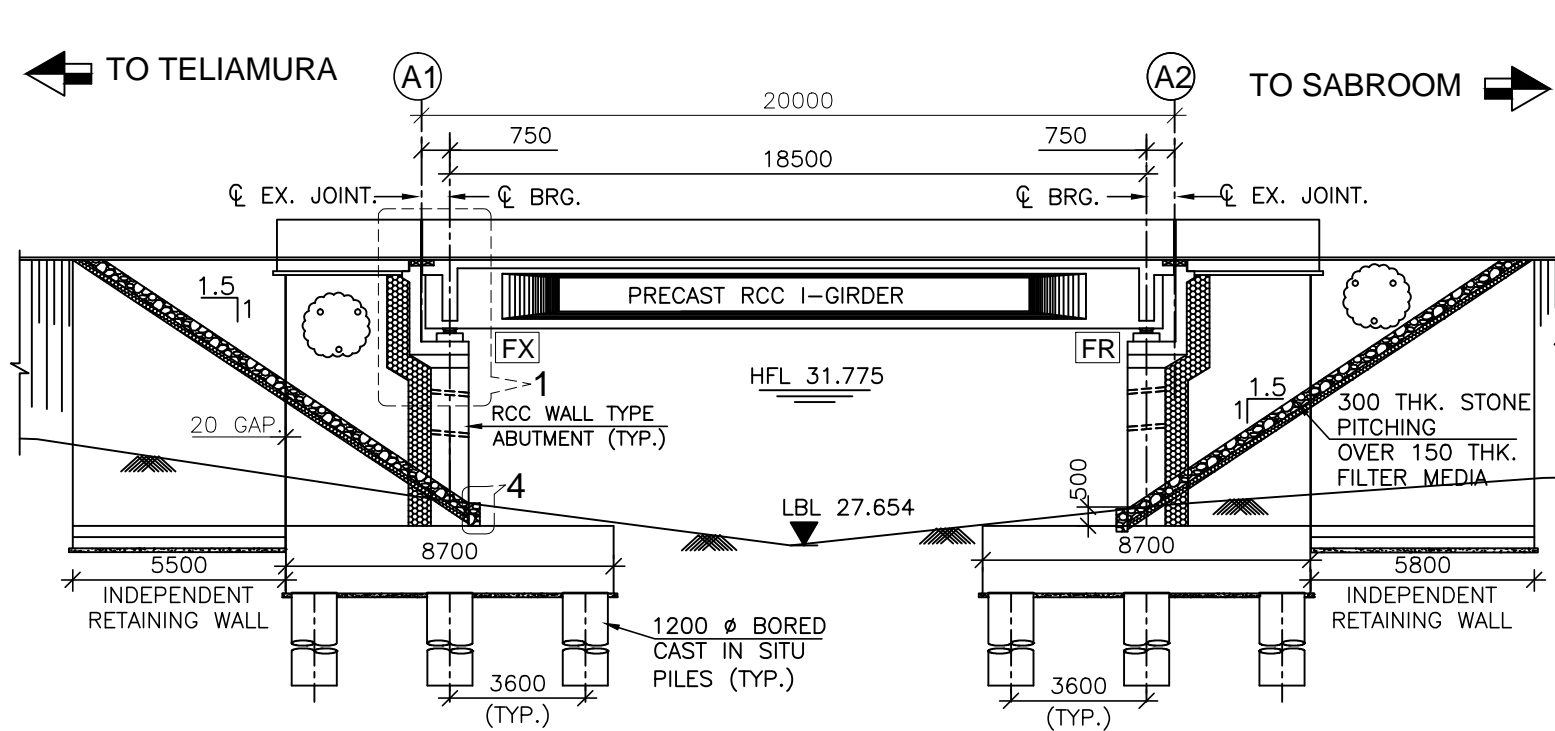
1. ALL DIMENSIONS ARE IN MM UNLESS SHOWN OTHERWISE.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRG.
3. STEEL REINFORCEMENT SHALL BE HYSD TMT BARS OF GRADE DESIGNATION Fe 500D CONFORMING TO IS 1786-2008.
4. CLEAR COVER TO ANY REINFORCEMENT IS 40MM.
5. LAP LENGTH SHALL CONFIRM TO CLAUSE 15.2 IRC-112 2011.
6. LAP SHOULD BE STAGGERED AND NOT MORE THAN 50% BARS SHOULD BE LAPPED AT ANY SECTION & LAP SHOULD BE LOCATED AT POINT ALONG THE SPAN WHERE STRESSES ARE LOW.
7. ANCHORAGE LENGTH OF REINF. BARS SHALL BE 36xDIA OF BAR & SHALL CONFIRM TO CLAUSE 15.2.3 OF IRC-112 2011.
8. 32 DIA SPACER BARS SHALL BE PROVIDED @ 1M C/C BETWEEN TWO TIERS OF LONGITUDINAL BARS OF GIRDERS.
9. CONDITION OF EXPOSURE IS MODERATE.



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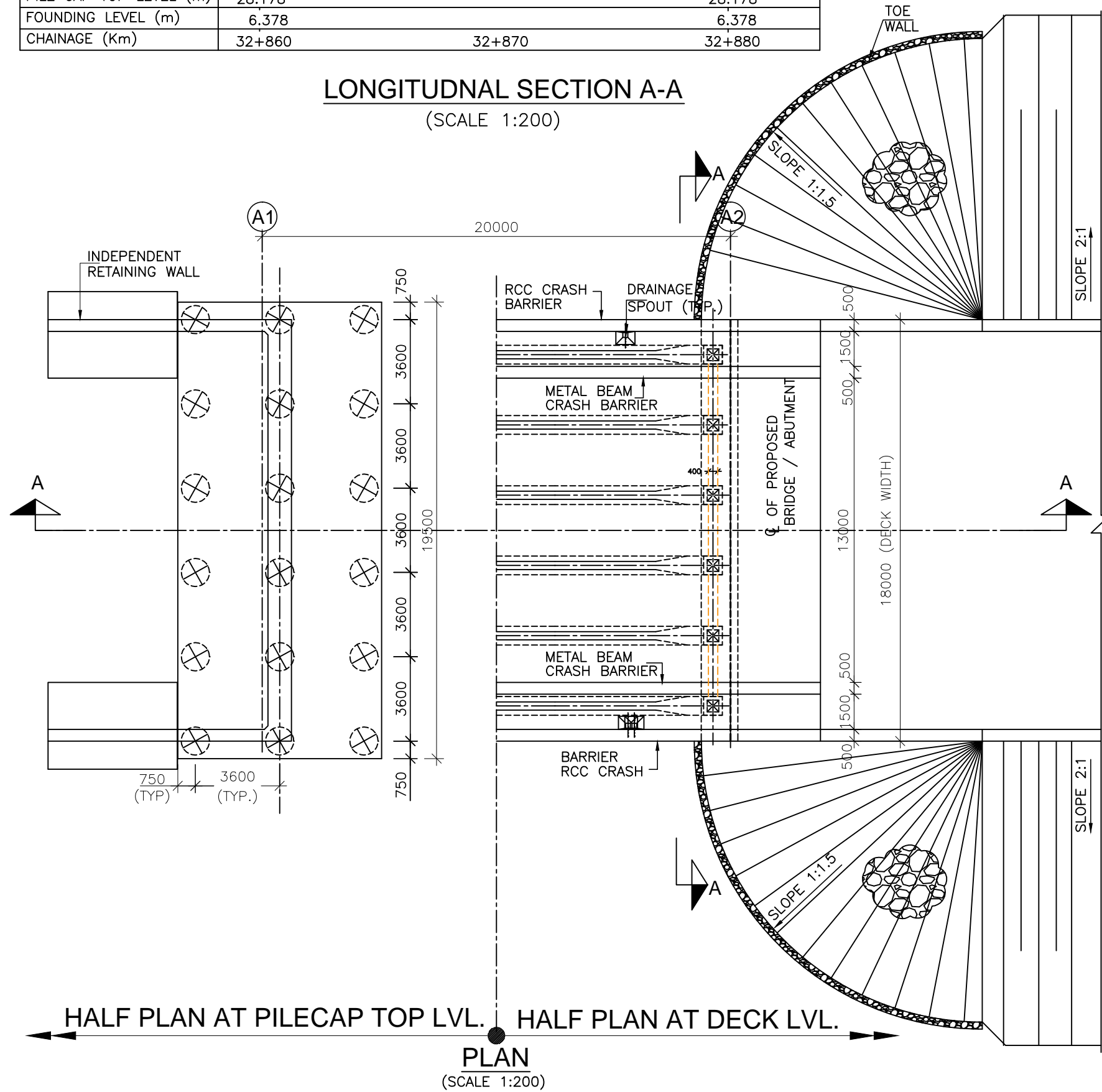
MINOR BRIDGE AT CH. 32+870 (1X20m SPAN) ►





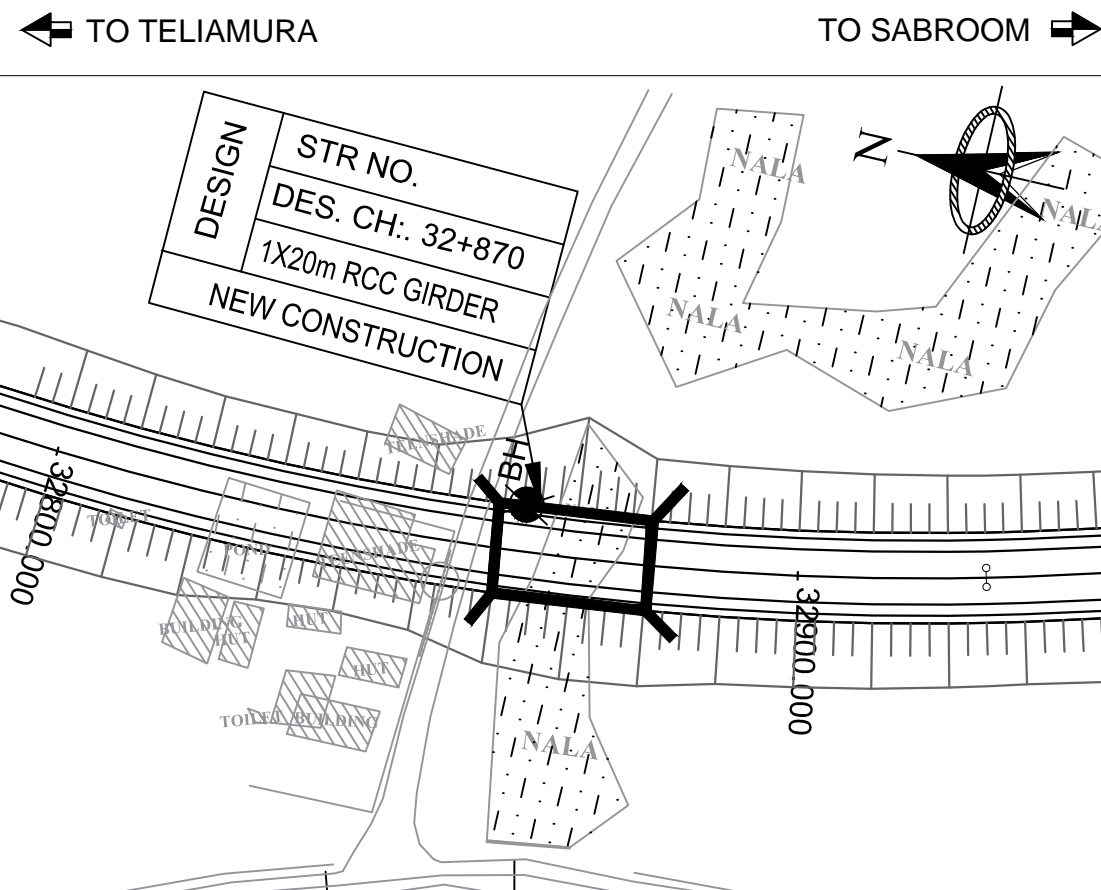
PROPOSED FRL (m)	34.694	34.694
ABT CAP LEVEL (m)	32.459	32.459
GROUND LEVEL (m)	28.840	28.678
PILE CAP TOP LEVEL (m)	28.178	28.178
FOUNDING LEVEL (m)	6.378	6.378
CHAINAGE (Km)	32+860	32+880

**LONGITUDNAL SECTION A-A**  
(SCALE 1:200)

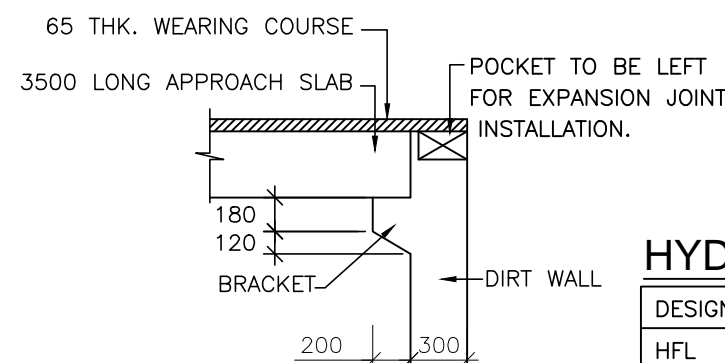


**HALF PLAN AT PILECAP TOP LVL. HALF PLAN AT DECK LVL.**

**PLAN**  
(SCALE 1:200)



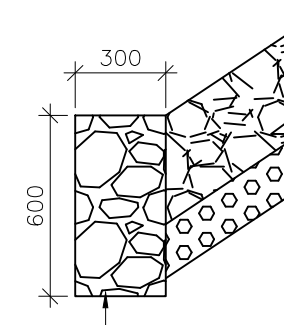
**KEYPLAN**  
SCALE - 1:1



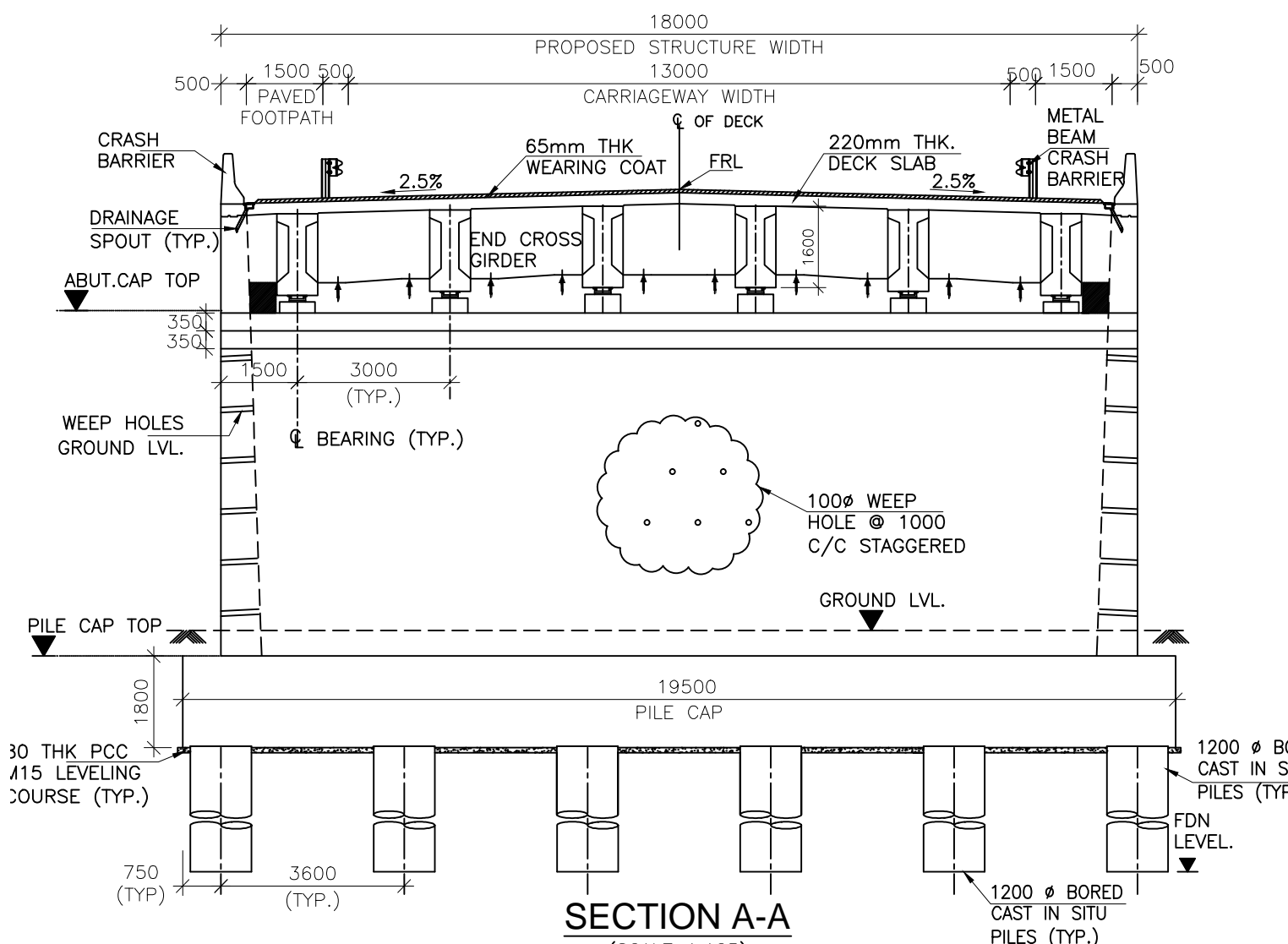
**DETAIL-3'**  
(SCALE 1:40)

**HYDROLOGICAL DETAILS:-**

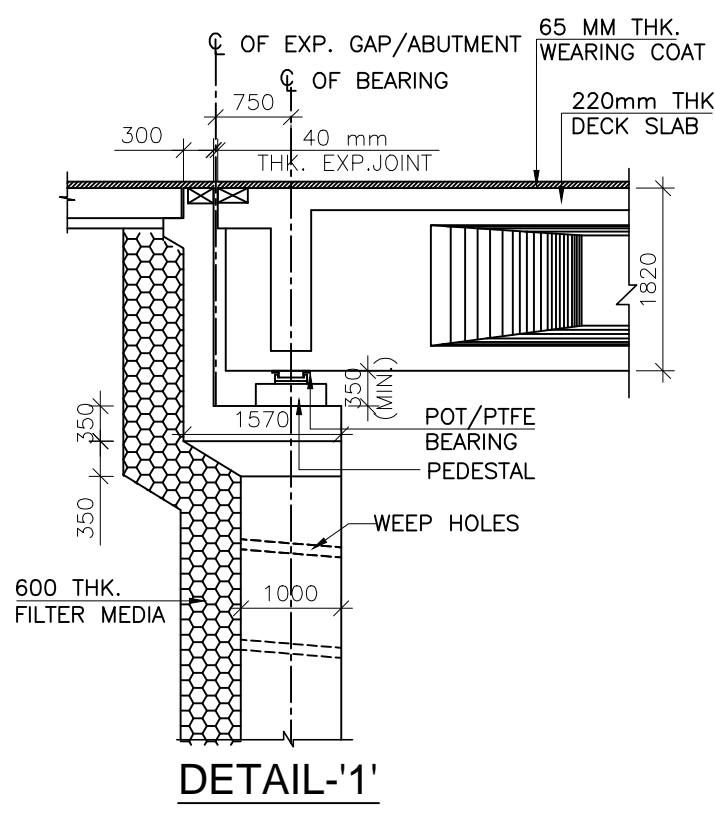
DESIGN DISCHARGE	104.97 CUMecs
HFL	31.775m
DESIGN VELOCITY	2.666 M/s
MSL AT ABUTMENT	22.368



**DETAIL-4**  
(SCALE 1:25)



**SECTION A-A**  
(SCALE 1:125)



**DETAIL-1'**  
(SCALE 1:75)

**NOTES:-**

- ALL DIMENSIONS ARE IN MILLIMETERS, LEVELS ARE IN METERS UNLESS OTHERWISE MENTIONED.
- NO DIMENSION SHALL BE MEASURED FROM THE DRAWINGS. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- CHAINAGE & LEVEL SHALL BE VERIFIED WITH THE RELEVANT PLAN & PROFILE DRAWINGS. VARIATION (IF ANY) SHALL BE REPORTED TO ENGINEER FOR MODIFICATION.
- CHAINAGE OF THE STRUCTURE IS AT THE CENTER LINE OF THE PROPOSED STRUCTURE.
- THE REINFORCEMENT SHALL BE HYSD BARS OF GRADE DESIGNATION Fe 500D CONFORMING TO IS 1786-2008.
- CONCRETE SHALL BE DESIGN MIX WITH WITH A MINIMUM 28 DAYS CHARACTERISTIC CUBE STRENGTH FOR DIFFERENT ELEMENTS AS FOLLOWS:
  - RCC-I GIRDER, RCC DECK SLAB & END CROSS GIRDER M35
  - ABUT. & ABUT CAP M35
  - PILE & PILE CAP M35
  - PIER & PIER CAP M35
  - RETAINING WALL M40
  - CRASH BARRIER M30
  - APPROACH SLAB M15
  - LEVELING COURSE M40
  - PEDESTALS
- CLEAR COVER TO OUTER STEEL SHALL BE AS FOLLOWS:-
  - SUPERSTRUCTURE 40MM
  - ABUTMENT EARTH FACE 75MM
  - ABUTMENT OUTER FACE/PIER 50MM
  - FOUNDATION 75MM
  - CRASH BARRIER 40MM
- BACK FILLING BEHIND WALLS/ABUTMENT SHALL CONSISTS OF SELECTED EARTH CONFORMING TO APPENDIX 6 OF IRC:78-2014 HAVING PROPERTIES C=0,  $\phi \geq 30^\circ$ ,  $\gamma = 2.0t/cu.m$ .
- 65MM THICK WEARING COURSE COMPRISING OF BITUMINOUS CONCRETE 40MM THICK OVERLAID WITH 25MM THICK BITUMEN MASTIC ASPHALTIC SHALL BE PROVIDED AS PER SECTION 500 OF MORTH SPECIFICATION.
- ALL SOLID WALLS RETAINING THE EARTH SHALL HAVE WEEP HOLES STARTING 150MM ABOVE THE GROUND LEVEL AND SPACED 1000MM HORIZONTALLY AND VERTICALLY IN STAGGERED MANNER.
- 600MM THICK FILTER MEDIA SHALL BE PROVIDED BEHIND SOLID ABUTMENT WALLS AND RETURN/RETAINING WALL.
- CONDITION OF EXPOSURE IS MODERATE.
- BRIDGE IS DESIGN FOR SEISMIC ZONE V OF SEISMIC MAP OF INDIA.
- THE STRUCTURE SHALL BE DESIGNED FOR LIVE LOAD COMBINATION CONFORMING TO IRC:6-2017.
- SINGLE STRIP SEAL TYPE EXPANSION JOINT SHALL BE PROVIDED AS PER MODIFIED INTERIM SPECIFICATION FOR EXPANSION JOINTS ISSUED VIDE "MORTH" CIRCULAR NO. RW/NH-34059/1/98-S&R DATED 30-11-2000 & 25-01-2001.
- FOR DETAILS OF DRAINAGE SPOUT, CRASH BARRIER, JOINTS, APPROACH SLAB & RETAINING WALL REFER SEPARATE DRAWING.

LOAD CARRYING CAPACITY OF 1.2m DIA PILE AS PER GEOTECH REPORT.

DESCPTION	NORMAL CASE		SEISMIC CASE	
	VERTICAL (T)	HORIZONTAL (T)	VERTICAL (T)	HORIZONTAL (T)
ABUTMENT (A1)	601	36.6	751.25	45.75
ABUTMENT (A2)	601	36.6	751.25	45.75

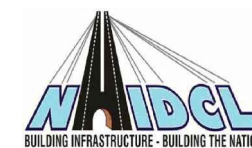


Project Title:-

**CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.**

TELIAMURA - SABROOM SECTION-2

CLIENT:-



**NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD**

Drawing Title:-

GENERAL ARRANGEMENT DRAWING OF MINOR BRIDGE AT CH. 32+870

Drawing No. :- TASPL/NHIDCL/FDPR/GAD/09

Scale :- AS SHOWN

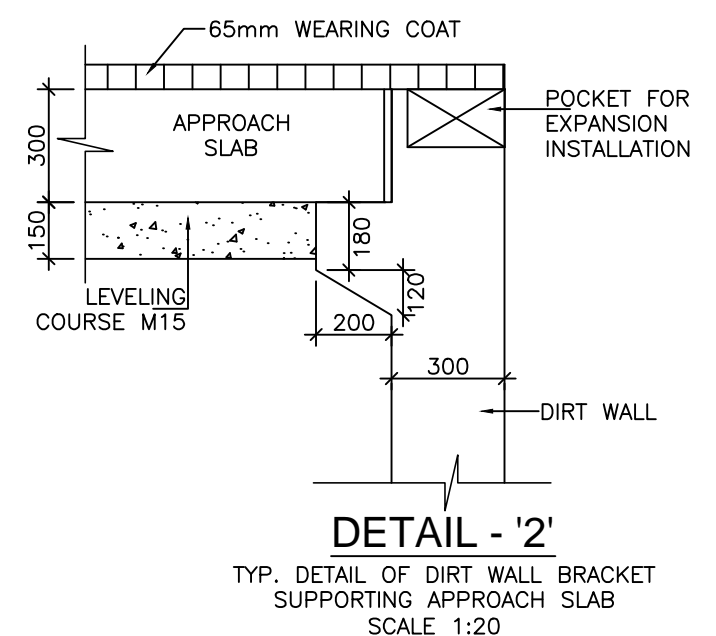
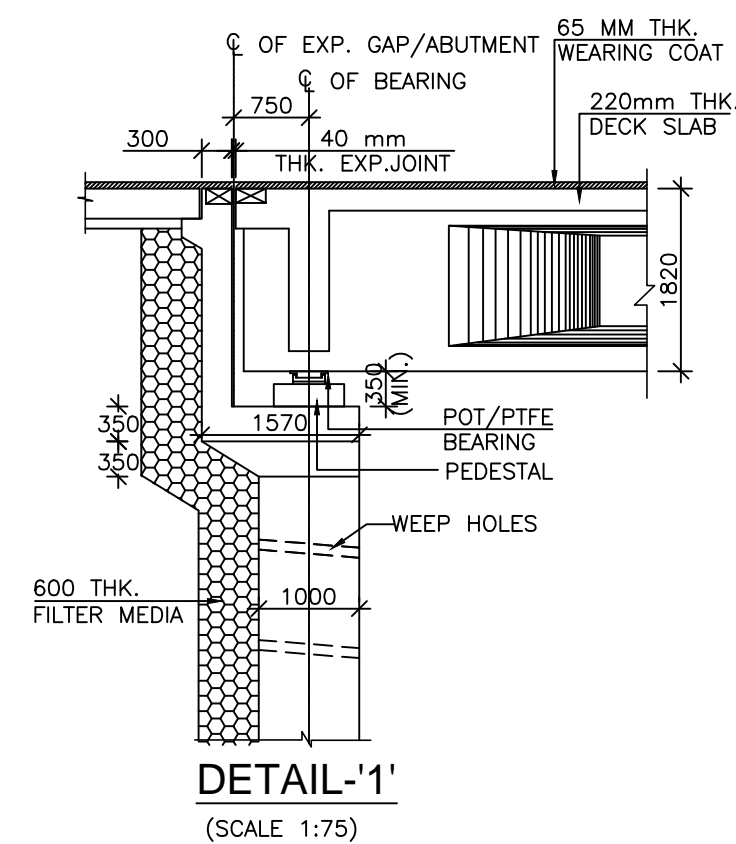
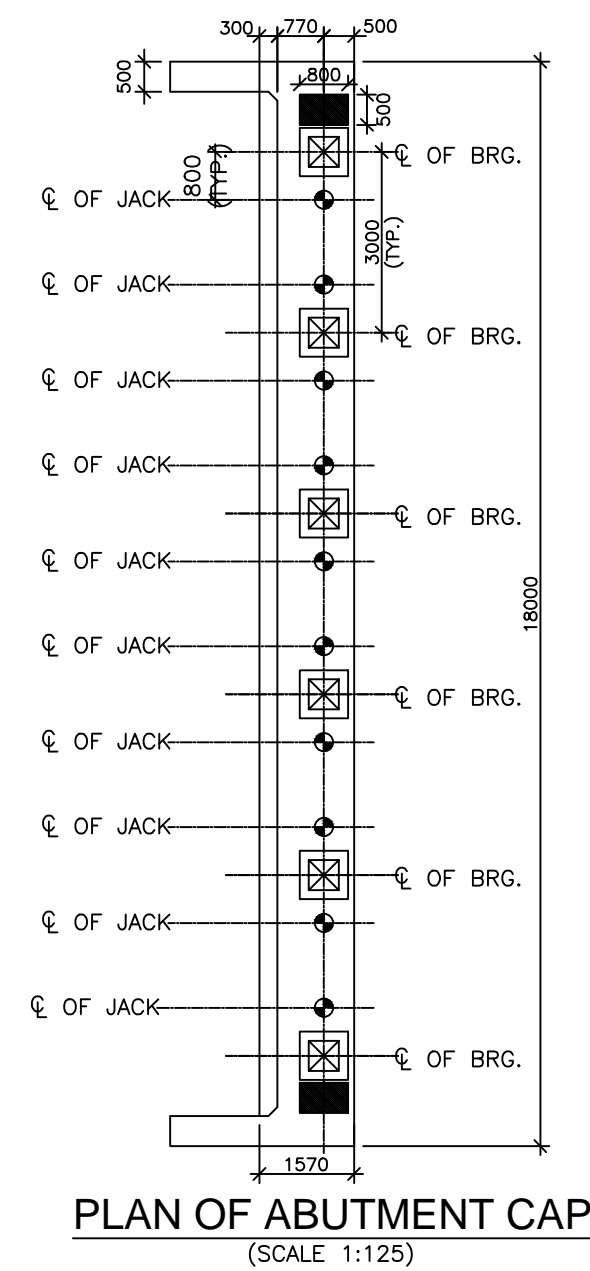
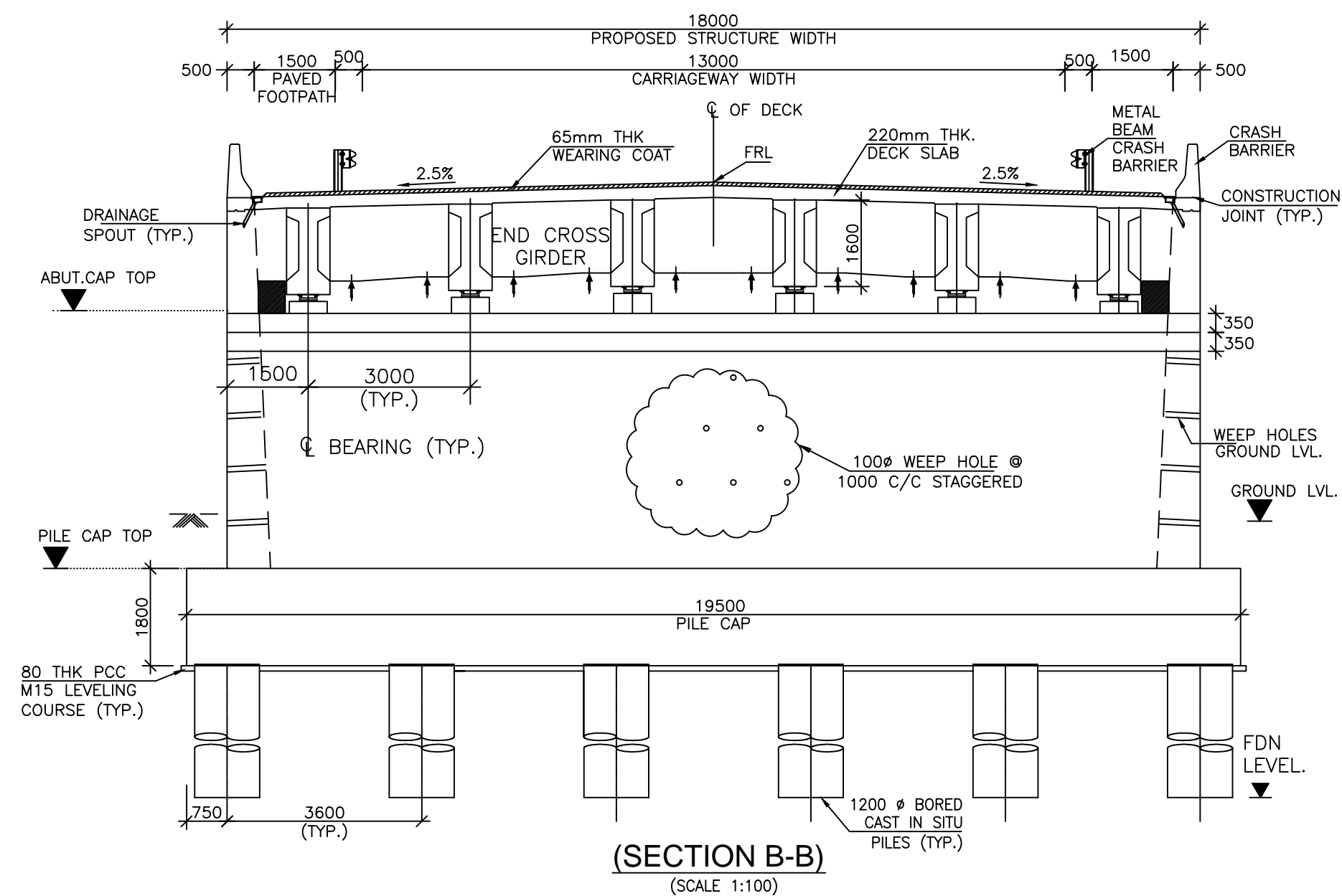
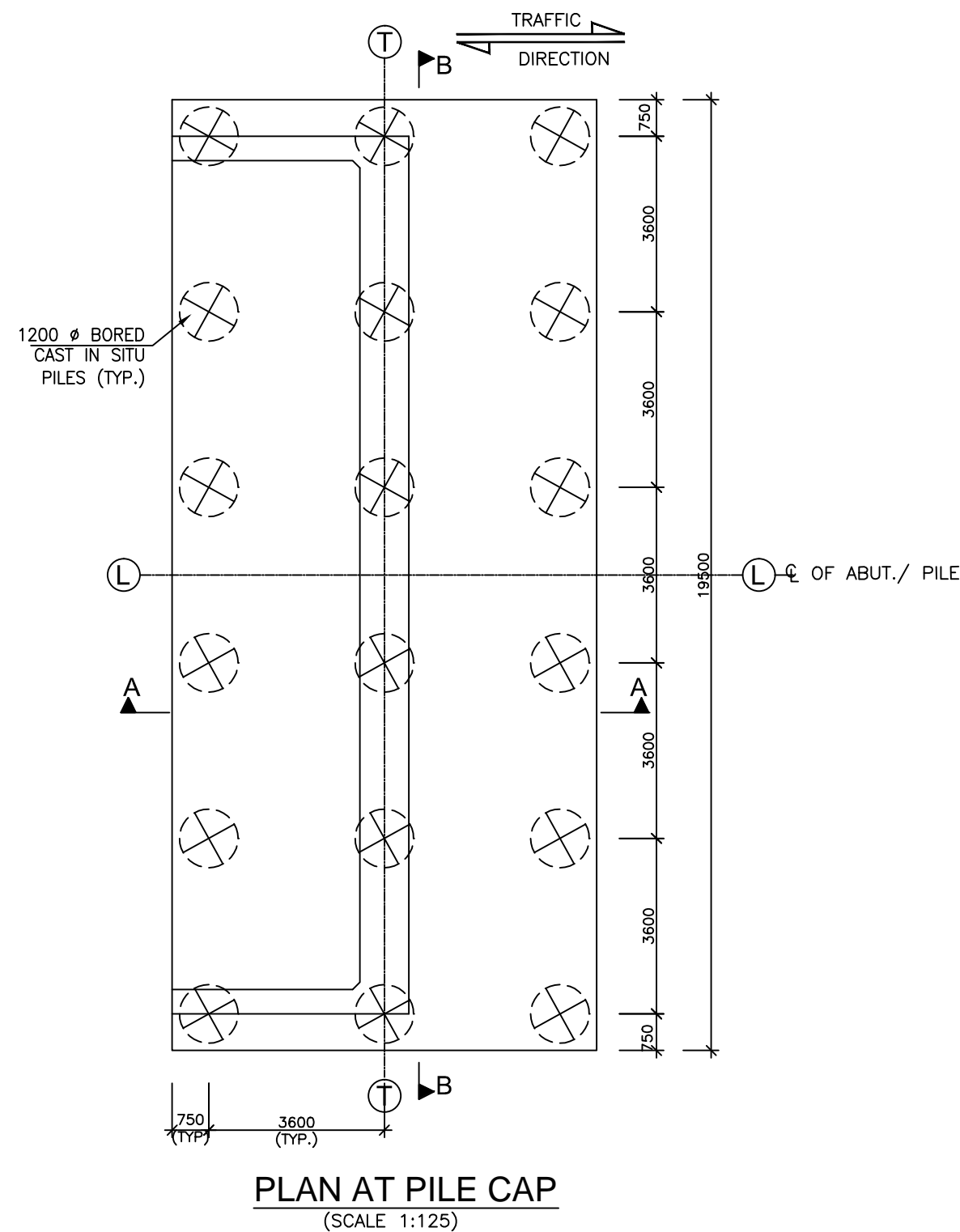
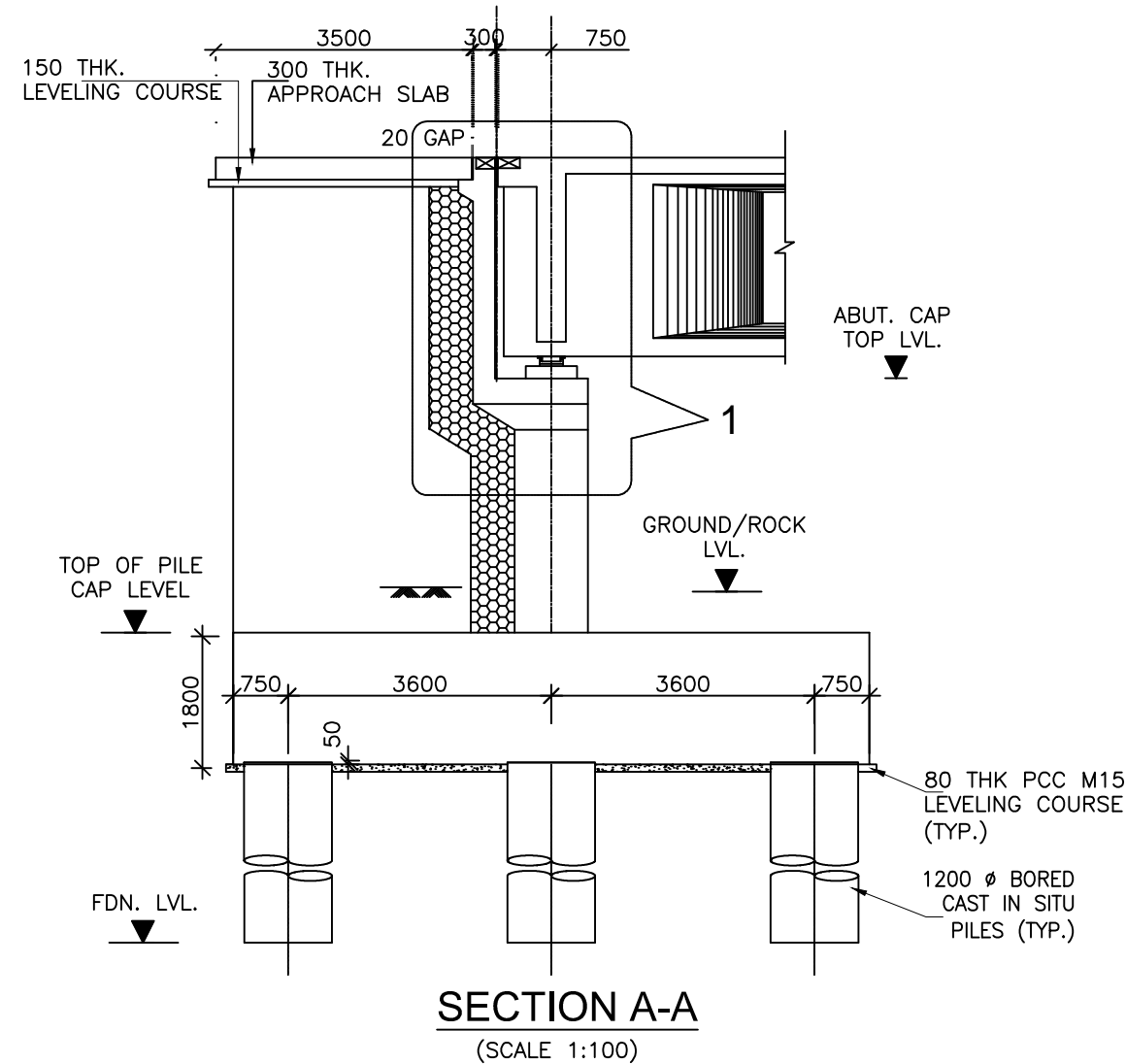
Drn	Dgn.	Appd	Sheet :
D.S	D.P.S	B.Ram	01 OF 01

CONSULTANT:-



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## NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS, AND LEVELS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
2. DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. L-L REPRESENTS LONGITUDINAL AXIS OF THE BRIDGE  
T-T REPRESENTS TRANSVERSE AXIS OF THE BRIDGE
4. TOP LEVEL OF ABUTMENT CAP HAS BEEN WORKED OUT BY ASSUMING MINIMUM THICKNESS OF BEARING + PEDESTAL AS 0.35m THIS SHALL BE RECONFIRMED FROM THE BEARING MANUFACTURER BEFORE
5. THE LOCATION OF JACK OR LIFTING OF THE SUPERSTRUCTURE TO REPLACE BEARINGS ETC. IS SHOWN I. THIS SHALL BE DISTINCTLY ETCHED FOR EASY IDENTIFICATION ON THE END CROSS GIRDERS AND ABUTMENT CAPS.
7. CAPACITY OF JACKS SHOULD NOT BE LESS THAN 100 TONS.
8. FOLLOWING DESIGN MIX CONCRETE GRADES SHALL BE USED:-
 

i) ABUT. AND ABUT. CAP	---M35
ii) PILE AND PILE CAP	---M35
iii) RCC CRASH BARRIER	---M40
iv) PEDESTAL	---M40
v) LEVELLING COURSE	---M15



Project Title:-

**CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.**

TELIAMURA - SABROOM SECTION-2

CLIENT:-



**NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD**

Drawing Title:-

**DIMENSIONAL DETAILS OF ABUTMENT CAP & ABUTMENT FOUNDATION**

Drawing No. :- TASPL/NHIDCL/FDPR/GAD/09

Scale :- AS SHOWN

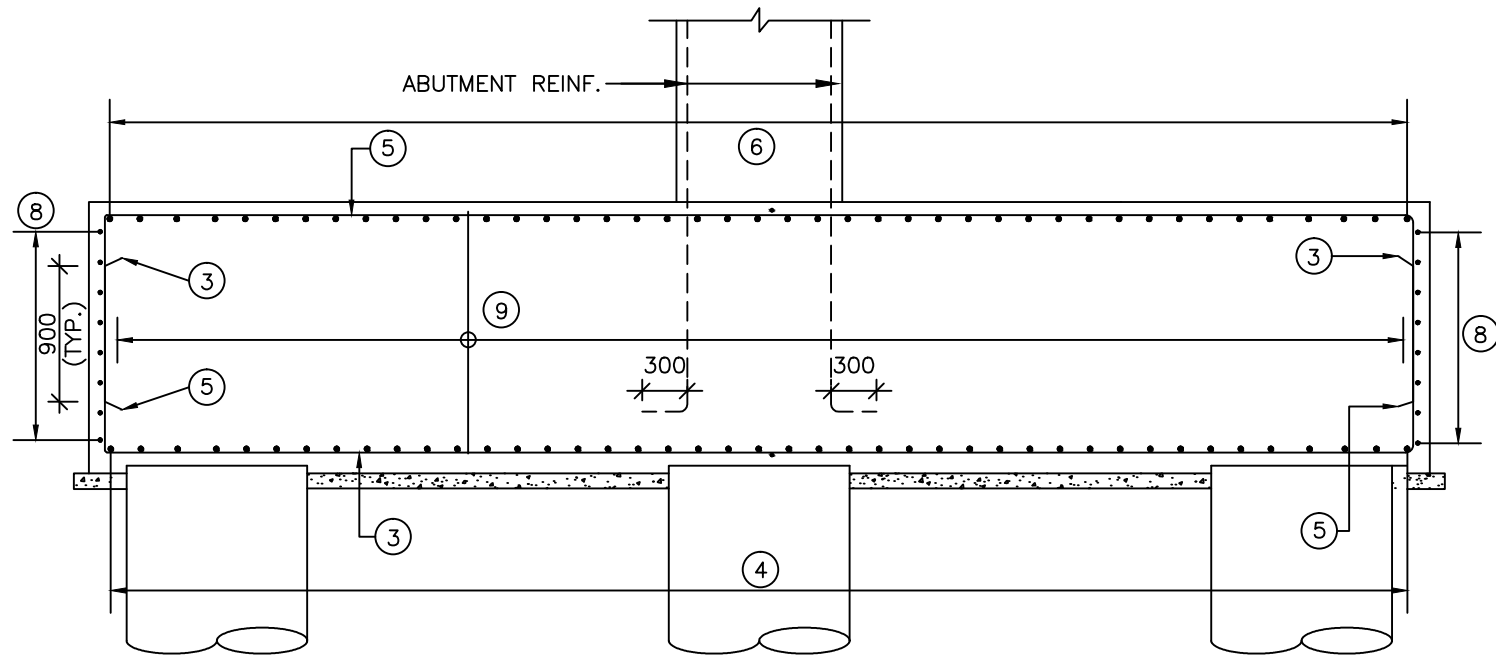
Drn	Dgn.	Appd	Sheet :
D.S	D.P.S	B.Ram	01 OF 03

CONSULTANT:-

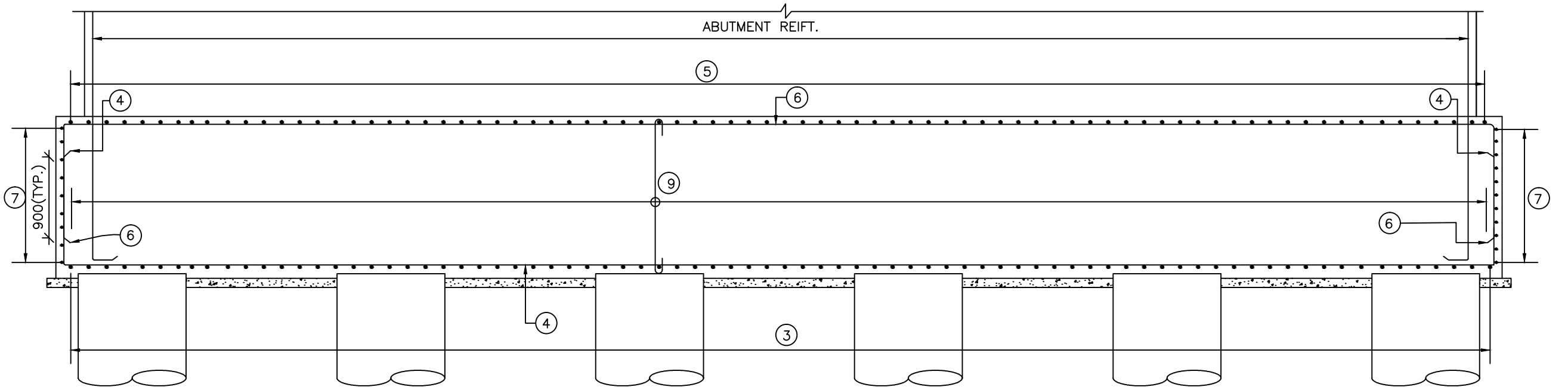


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68,Ajanta Apartments, 36, I.P. Extension  
Patparganj Delhi-110092.

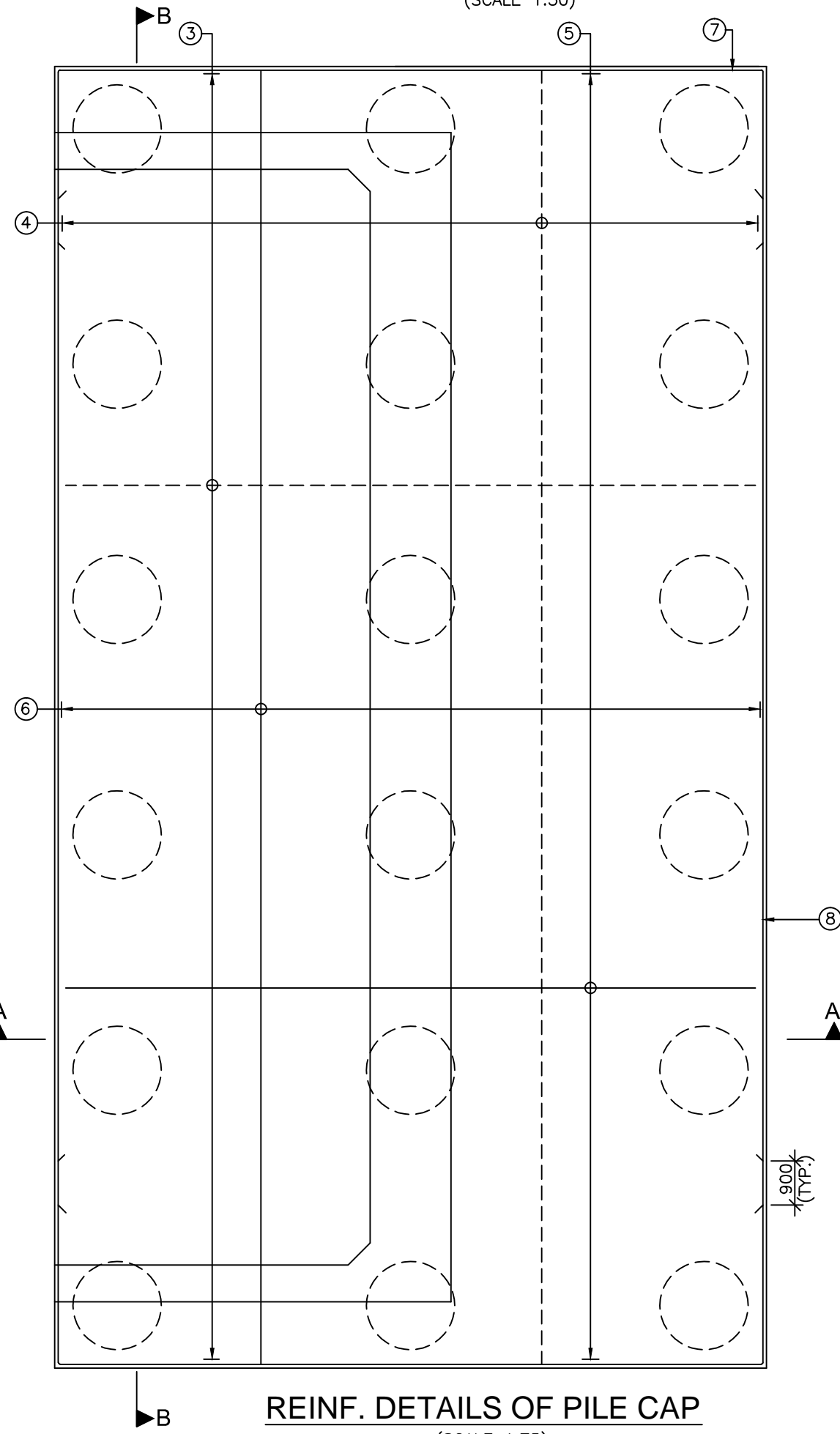




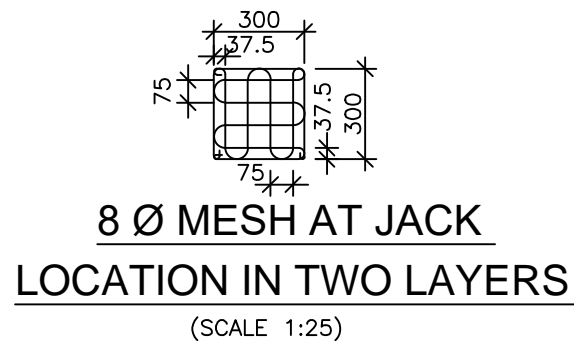
**SECTION A-A**  
(SCALE 1:50)



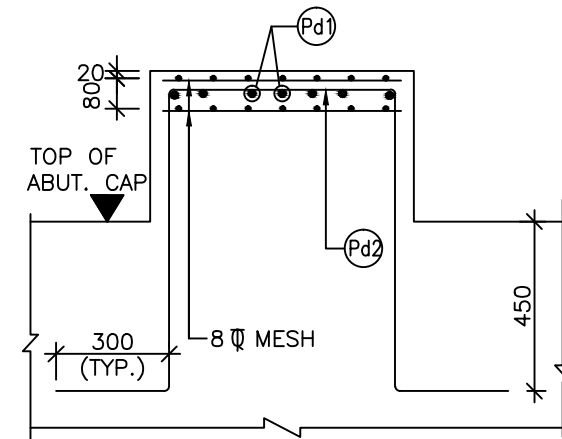
**SECTION B-B**  
(SCALE 1:50)



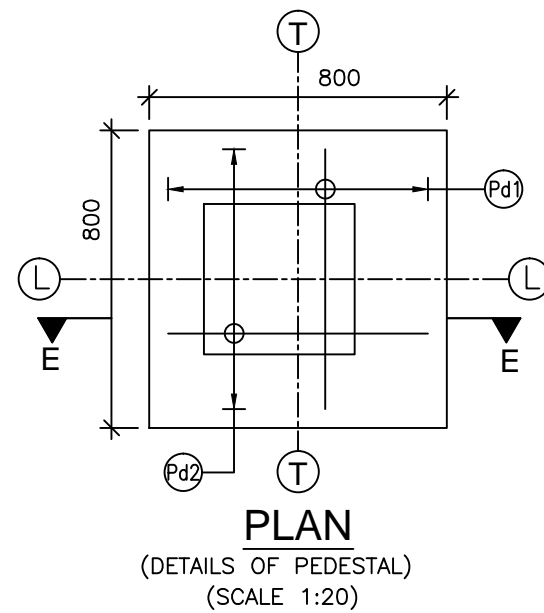
**REINF. DETAILS OF PILE CAP**  
(SCALE 1:75)



**8 Ø MESH AT JACK  
LOCATION IN TWO LAYERS**  
(SCALE 1:25)



**SECTION E-E**  
(SCALE 1:20)

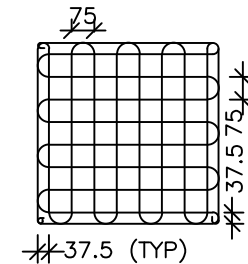


**PLAN**  
(DETAILS OF PEDESTAL)  
(SCALE 1:20)

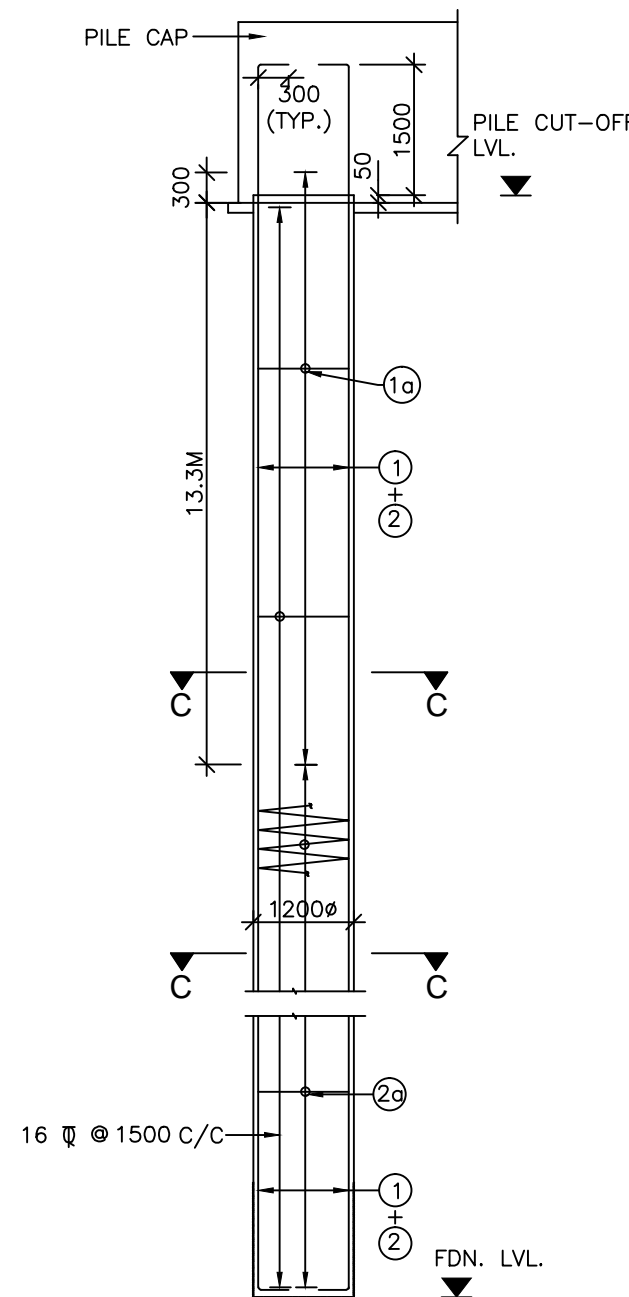
**SCHEDULE OF PEDESTAL REINFORCEMENT**

BAR MKD.	DIA (mm)	SPACING/Nos.	SHAPE
Pd1	12	75	┐┌
Pd2	12	75	┐┌

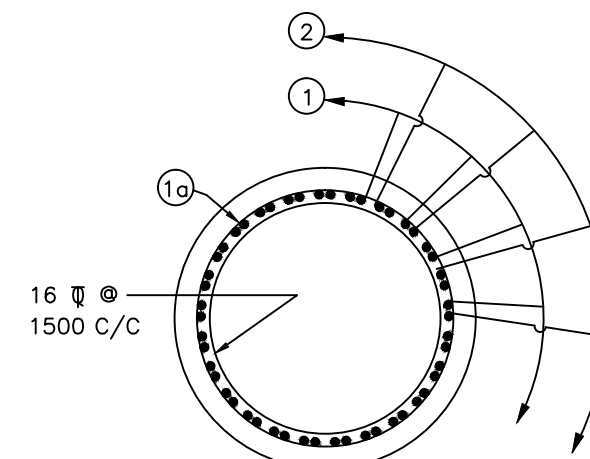
**LEGEND:**  
 ——— TOP/EARTH FACE  
 - - - - - BOTTOM/OUTER FACE  
 B/F BOTH FACE  
 V.L VARYING LENGTH



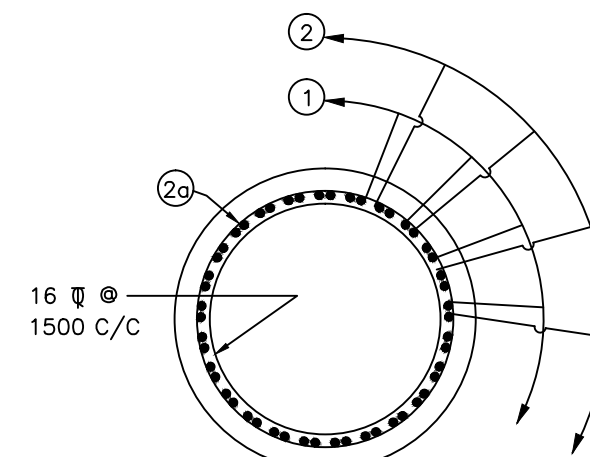
**8 Ø MESH IN 2 LAYERS  
IN PEDESTALS UNDER BEARING**  
(SCALE 1:25)



**R.C.DETAILS OF PILE**  
(SCALE 1:75)



**SECTION C-C**  
(SCALE 1:30)



**SECTION D-D**  
(SCALE 1:30)

**SCHEDULE OF PILE & PILE CAP REINFORCEMENT**

BAR MKD.	DIA (mm)	SPACING/Nos.	SHAPE
1	32	17 Nos.	
1a	16	100	○
2	32	17 Nos.	
2a	10	150	⋈
3	20	100	┐┌
4	20	100	┐┌
5	16	100	┐┌
6	16	100	┐┌
7	16	150	┐┌
8	16	150	┐┌
9	1L-12	100 both ways	┐┌

**NOTES**

- ALL DIMENSIONS ARE IN MILLIMETERS, AND LEVELS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
- DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- L-L REPRESENTS LONGITUDINAL AXIS OF THE BRIDGE  
T-T REPRESENTS TRANSVERSE AXIS OF THE BRIDGE
- HIGH YIELD STRENGTH DEFORMED BARS OF GRADE DESIGNATION Fe-500D CONFORMING TO IS: 1786 SHALL ONLY BE USED.
- REINFORCEMENT OF PIER SHAFT IS TO BE ANCHORED IN THE PILE CAP BEFORE IT'S CONCRETING.
- LAPPING OF REINFORCEMENT SHALL BE AVOIDED AS FAR AS POSSIBLE. IN CASE LAPPING OF BARS BECOMES UNAVOIDABLE, MINIMUM LAP LENGTH OF REINFORCEMENT BARS SHALL BE CALCULATED AS FOLLOWS WITH MAXIMUM ALLOWABLE LAPPING (p) OF 50% ONLY (IRC: 112-2011) (CLAUSE:15.2.5.1)

LAP LENGTH  $l_s = \alpha \cdot l_{bnet}$   
 $\alpha = 1.0$  FOR  $p \leq 25\%$   
 $\alpha = 1.15$  FOR  $25\% < p \leq 33\%$   
 $\alpha = 1.14$  FOR  $33\% < p \leq 50\%$   
 (IRC:112-2011, CLAUSE:15.2.3.3)

ANCHORAGE LENGTH ( $l_{bnet}$ )  
 $l_{bnet} = \alpha \cdot l_b$  ( $\alpha = 1.0$ )  
 $l_b = k \phi$   
 $k = 40$  FOR M30 (Fe500D)  
 $k = 36$  FOR M35 (Fe500D)  
 $k = 34$  FOR M40 (Fe500D)

FOR UNFAVORABLE BOND CONDITION THE  $l_b$  SHOULD BE MULTIPLIED BY FACTOR OF 1.43. FOR  $\phi > 32mm$   $l_b$  SHOULD BE INCREASED BY MULTIPLYING FACTOR  $\left( \frac{100}{132 - \phi} \right)$



Project Title:-

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TELIAMURA - SABROOM SECTION-2

CLIENT:-



**NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD**

Drawing Title:-

**REINFORCEMENT DETAILS OF ABUTMENT CAP & ABUTMENT FOUNDATION**

Drawing No. :- TASPL/NHIDCL/FDPR/GAD/09

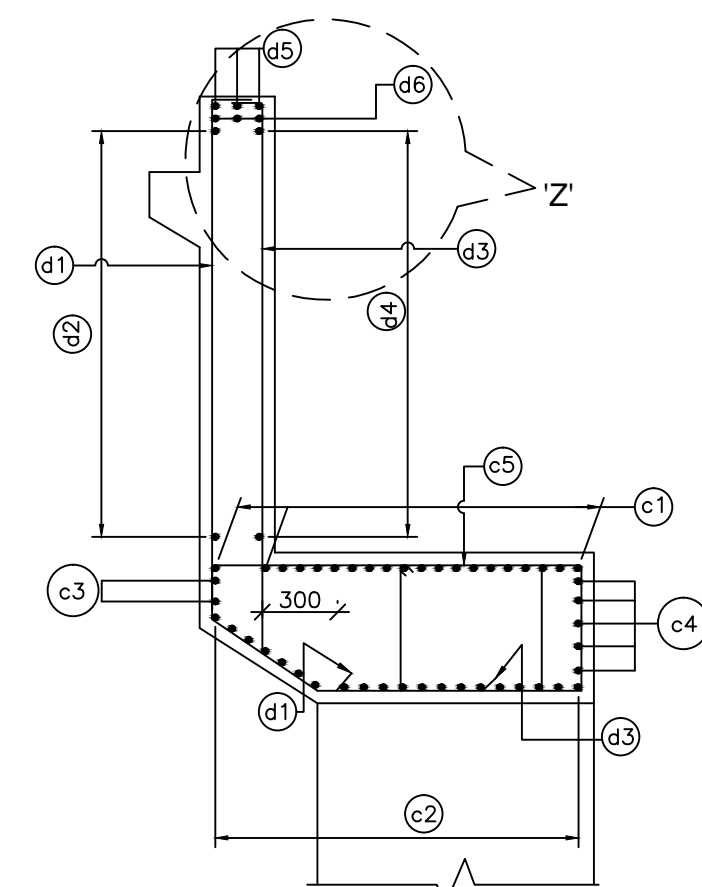
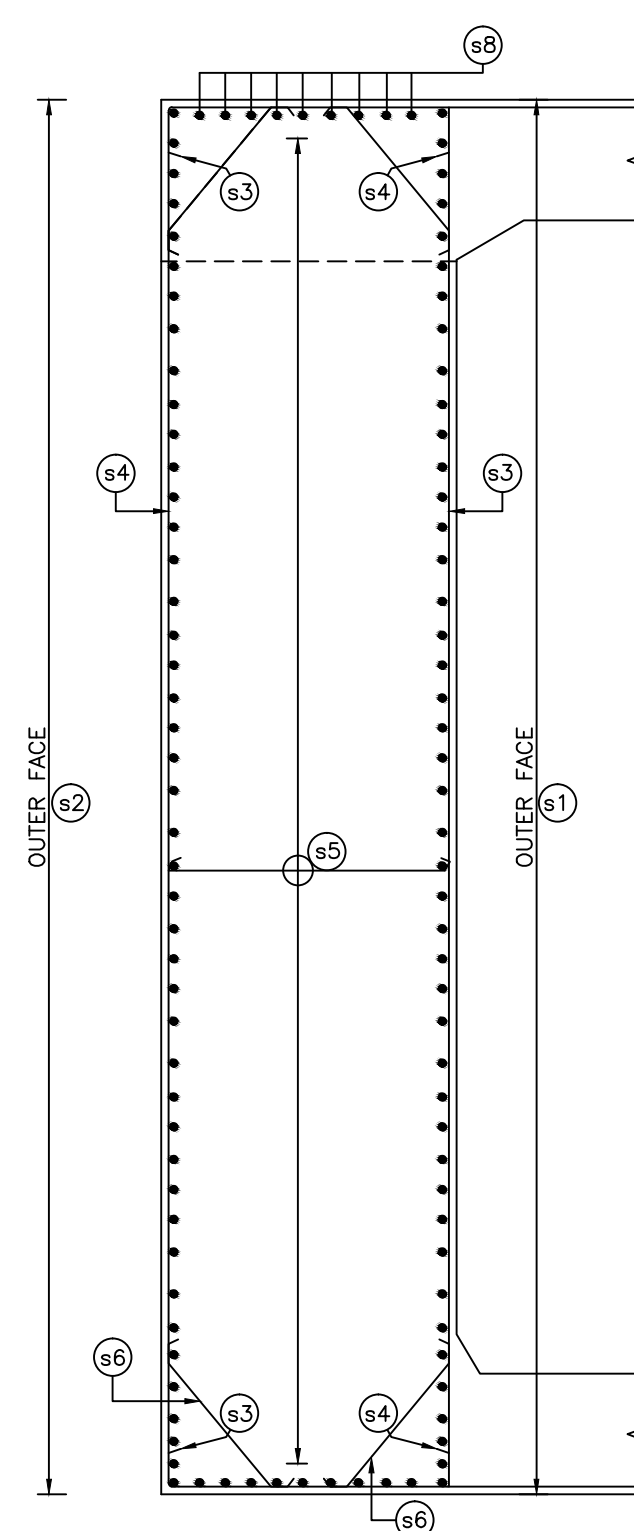
Scale :- AS SHOWN

Drn	Dgn.	Appd	Sheet :
D.S	D.P.S	B.Ram	02 OF 03

CONSULTANT:-




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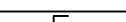









**LEGEND:**

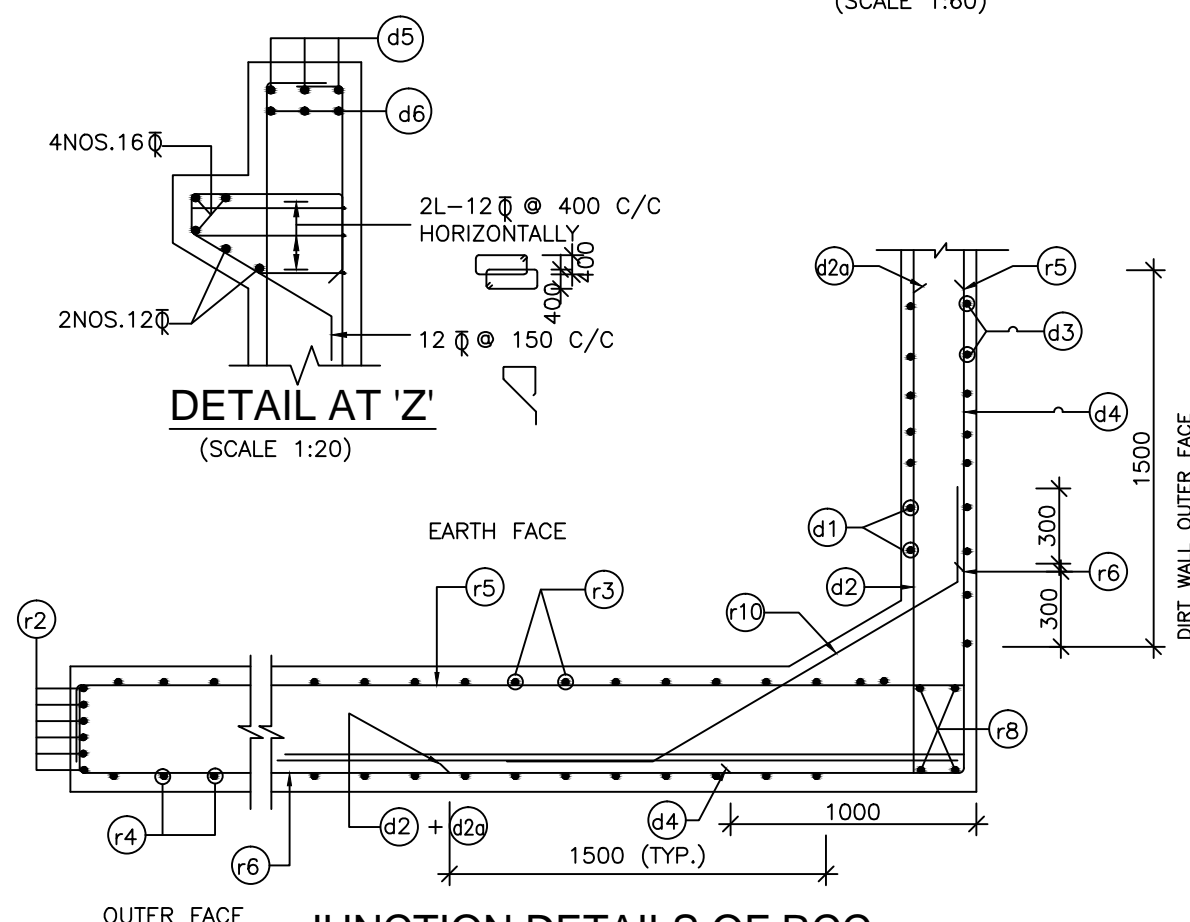
—————	TOP/EARTH FACE
-----	BOTTOM/OUTER FACE
B/F	BOTH FACE
V.L	VARYING LENGTH

DIRT WALL. REINFT.			
d1	12	150	[
d2	10	200	_____]
d3	10	150	]
d4	10	200	_____]
d5	12	3 Nos.	_____
d6	12	3 Nos.	_____

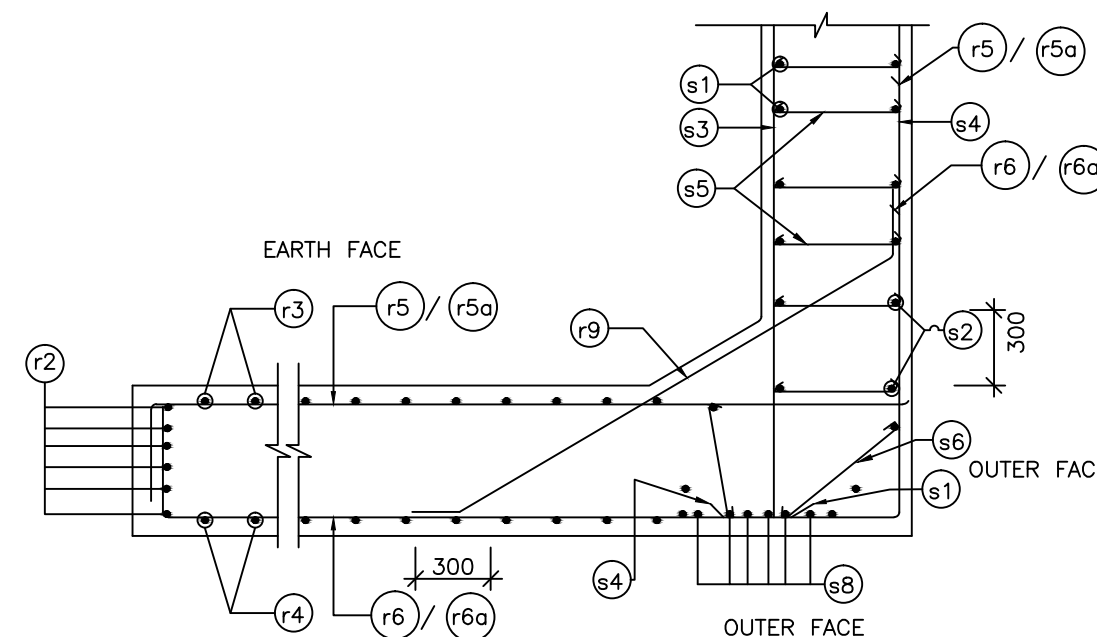
ABUT.CAP REINFT.			
c1	20	10 Nos.	
c2	20	10 Nos.	
c3	16	2 Nos.	
c4	16	5 Nos.	
c5	4L-12	120	

RETURN WALL. REINFT.			
r1	16	4 Nos.	
r2	16	4 Nos.	
r3	16	150	
r4	16	150	
r5	16	200	
r5a	16	200	
r6	12	200	
r6a	10	200	
r8	12	4 Nos.	
r9	16	150	
r10	16	150	

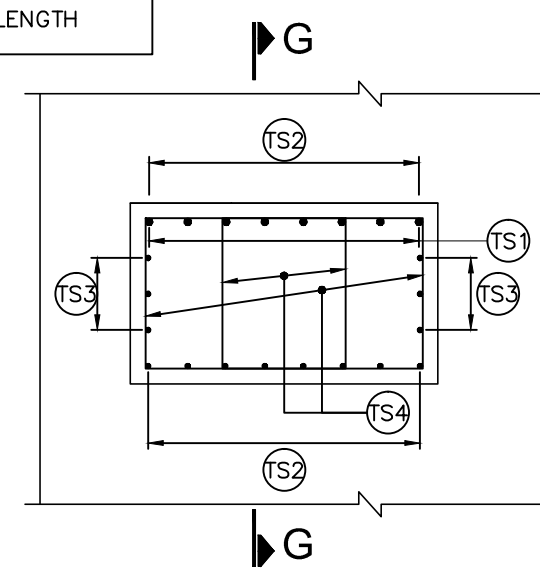
TRANSVERSE SEISMIC STOPPER:			
TS1	25	10 Nos.	
TS2	12	8 Nos.	
TS3	12	3x2 Nos.	
TS4	16	100	 4 LEGGED



JUNCTION DETAILS OF RCC  
SOLID RETURN WALL AND DIRT WALL  
(SCALE 1:30)

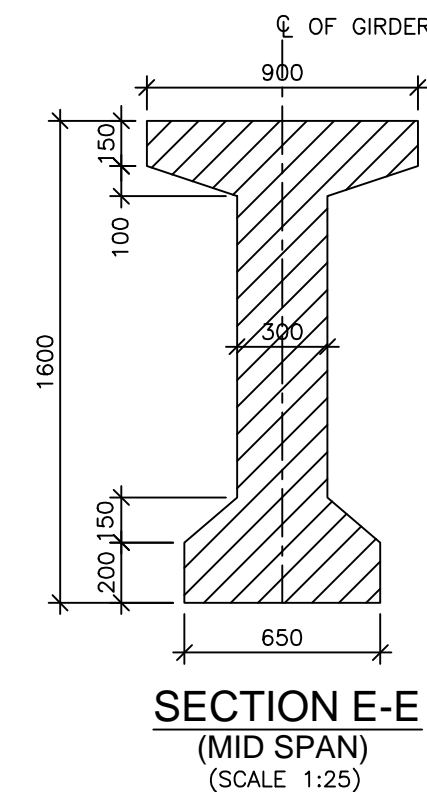
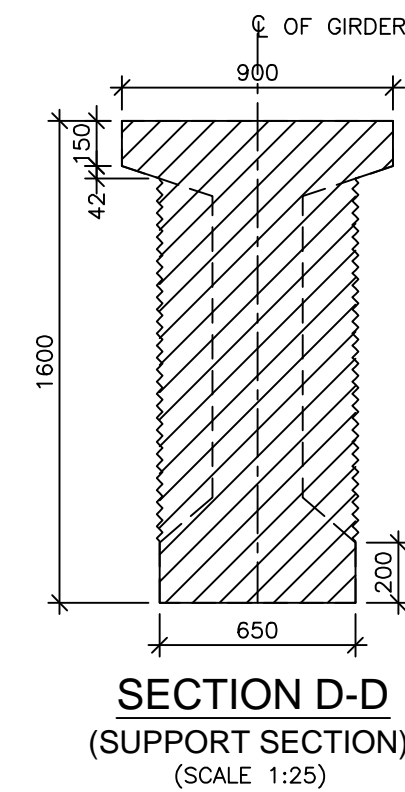
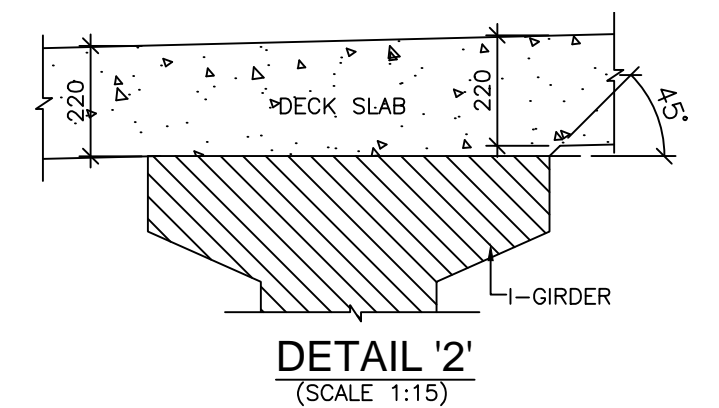
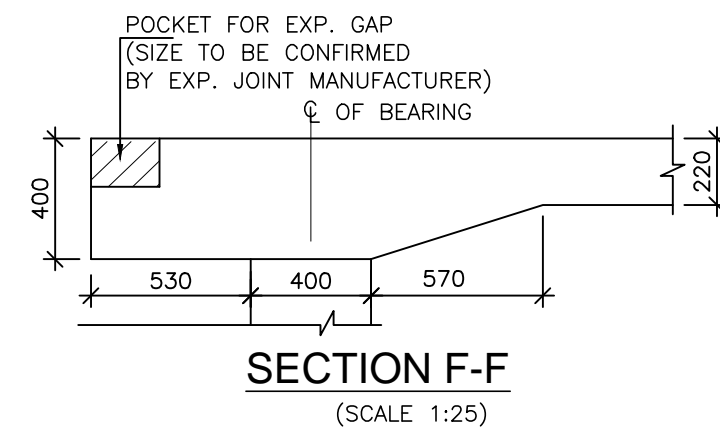
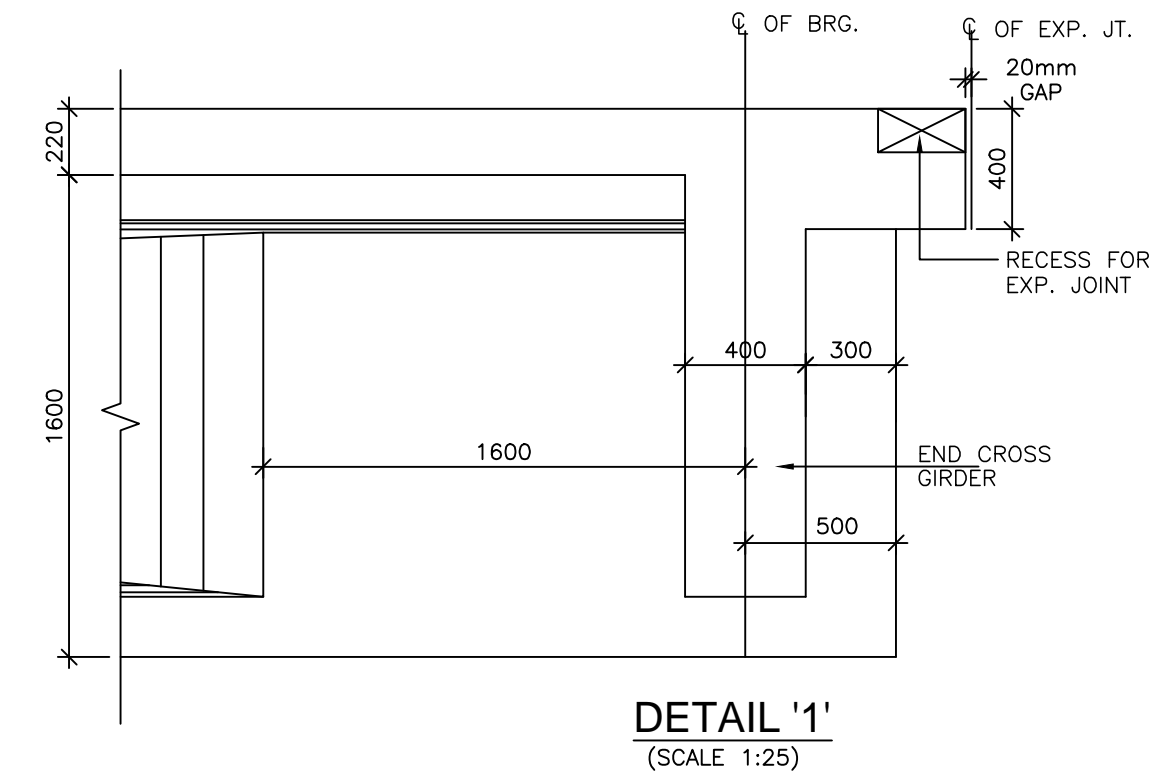
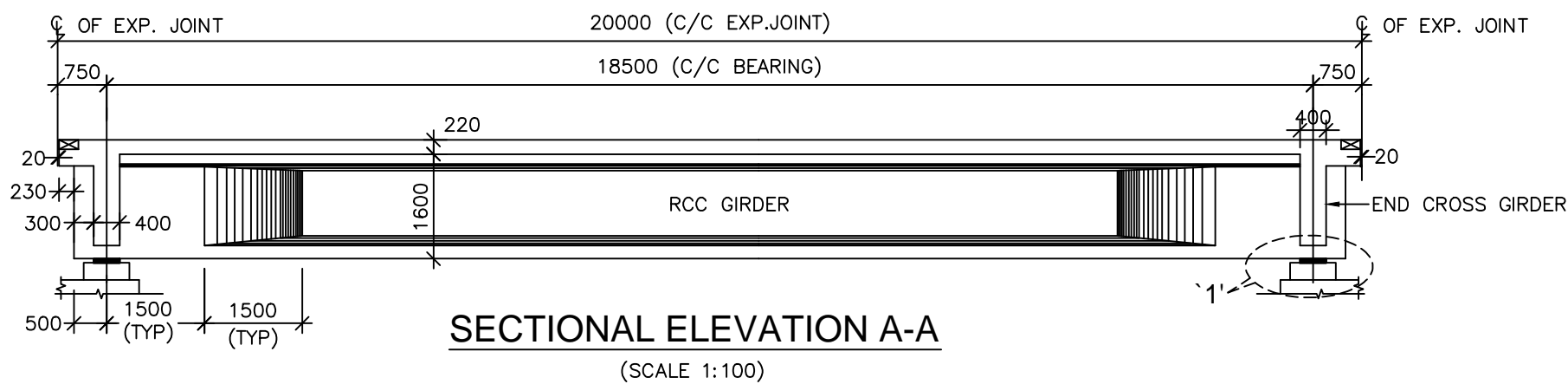
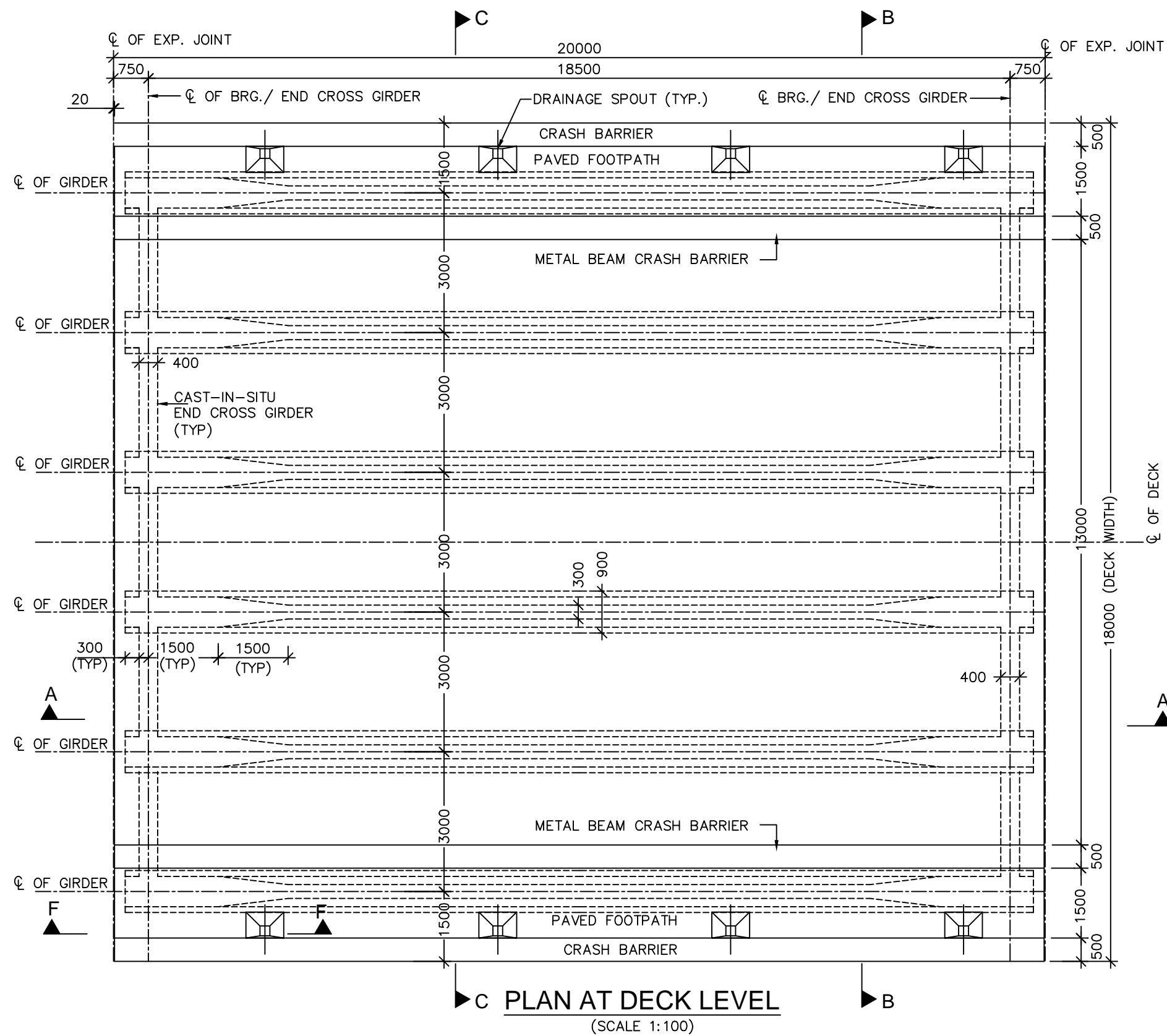


JUNCTION DETAILS OF RCC  
ABUTMENT AND SOLID RETURN WALL  
(SCALE 1:30)



PLAN SHOWING REINF. DETAILS OF  
SEISMIC TRANSVERSE STOPPER  
(SCALE 1:25)





Project Title:-

**CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.**

TELIAMURA - SABROOM SECTION-2

CLIENT:-



**NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD**

Drawing Title:-

**DIMENSION DETAIL OF RCC PRECAST I-GIRDER SUPERSTRUCTURE FOR 1x20.0 M SPAN**

Drawing No. :- TASPL/NHIDCL/FDPR/GAD/09

Scale :- AS SHOWN

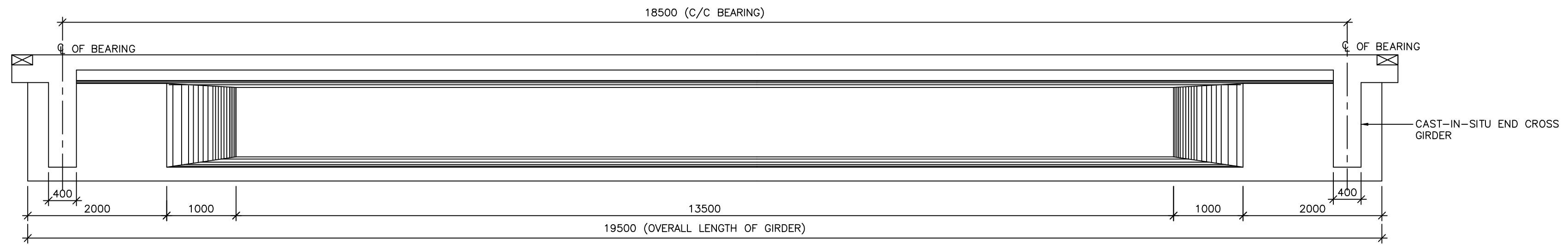
Drn	Dgn.	Appd	Sheet :
D.S	D.P.S	B.Ram	01 OF 02

CONSULTANT:-



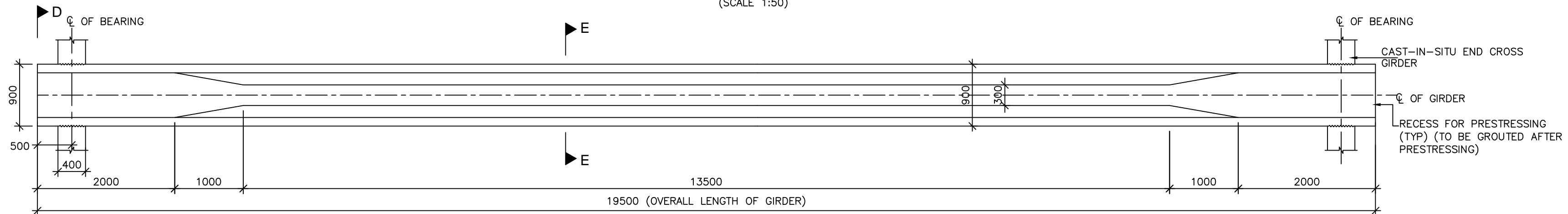
**Technocrats Advisory Services Private Limited**  
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68, Ajanta Apartments, 36, I.P. Extension  
Patparganj Delhi-110092.





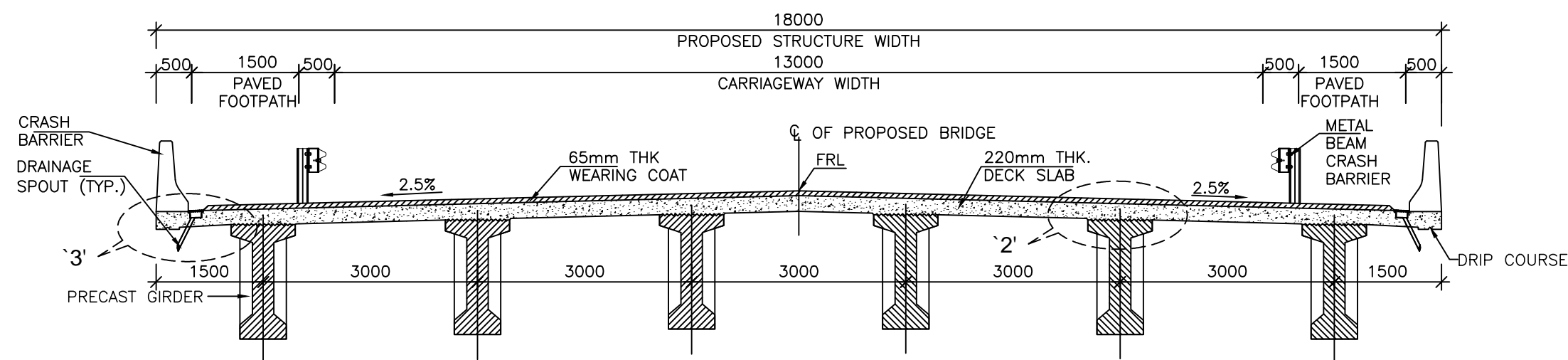
**ELEVATION OF PRECAST GIRDER**

(SCALE 1:50)



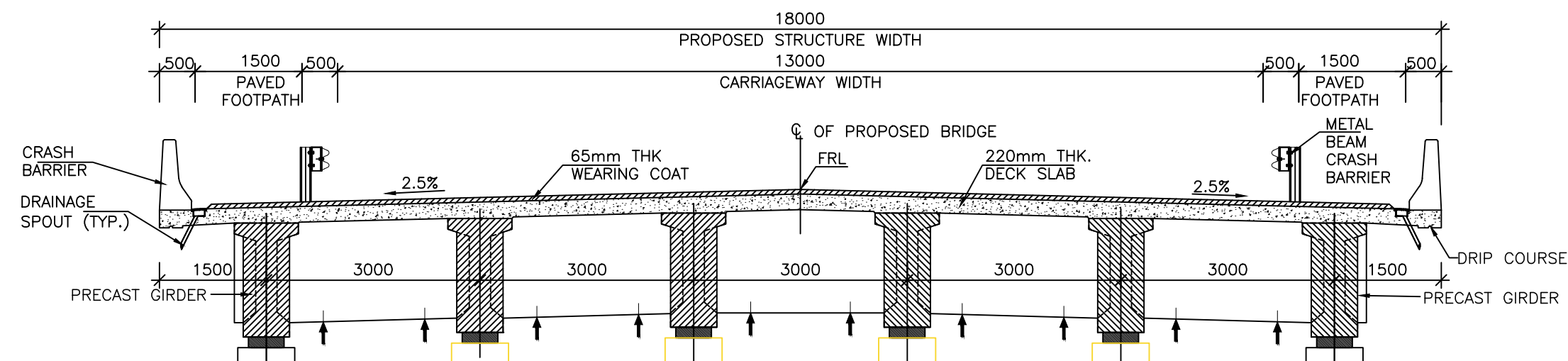
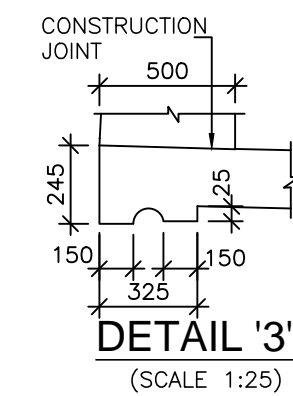
**PLAN OF PRECAST GIRDER**

(SCALE 1:50)



**SECTION C-C**

(SCALE 1:100)



**SECTIONAL ELEVATION B-B**

(SCALE 1:75)

**NOTES:-**

1. ALL DIMENSIONS ARE IN MM UNLESS SHOWN OTHERWISE.
2. TOP SURFACE OF GIRDER SHALL BE ROUGHED FOR EFFECTIVE BONDING.
3. ANY DISCREPANCIES MUST BE BROUGHT TO THE NOTICE OF THE CONSULTANT BEFORE EXECUTION OF WORK AT SITE.
4. BEAM SHALL BE KEPT UPRIGHT AT ALL TIMES AND TO BE CLEARLY MARKED INDICATING SPAN, LOCATION, AND RESPECTIVE ENDS BEFORE REMOVAL FROM CASTING BED.
5. CONCRETE FOR SUPERSTRUCTURE SHALL BE DESIGN MIX AND HAVE A MINIMUM 28 DAYS CHARACTERISTIC STRENGTH OF M40.
6. TOP SURFACE OF GIRDER SHALL BE ROUGHED FOR EFFECTIVE BONDING.



Project Title:-

**CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.**

TELIAMURA - SABROOM SECTION-2

CLIENT:-



**NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD**

Drawing Title:-

**DIMENSION DETAIL OF RCC PRECAST I-GIRDER SUPERSTRUCTURE FOR 1x20.0 M SPAN**

Drawing No. :- **TASPL/NHIDCL/FDPR/GAD/09**

Scale :- **AS SHOWN**

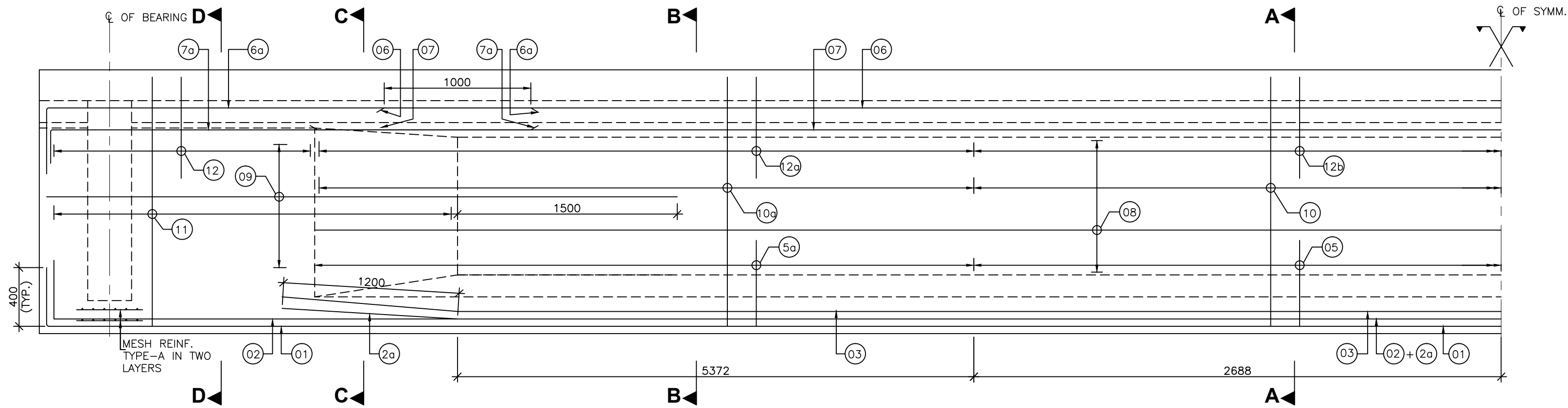
Drn	Dgn.	Appd	Sheet :
D.S	D.P.S	B.Ram	02 OF 02

CONSULTANT:-



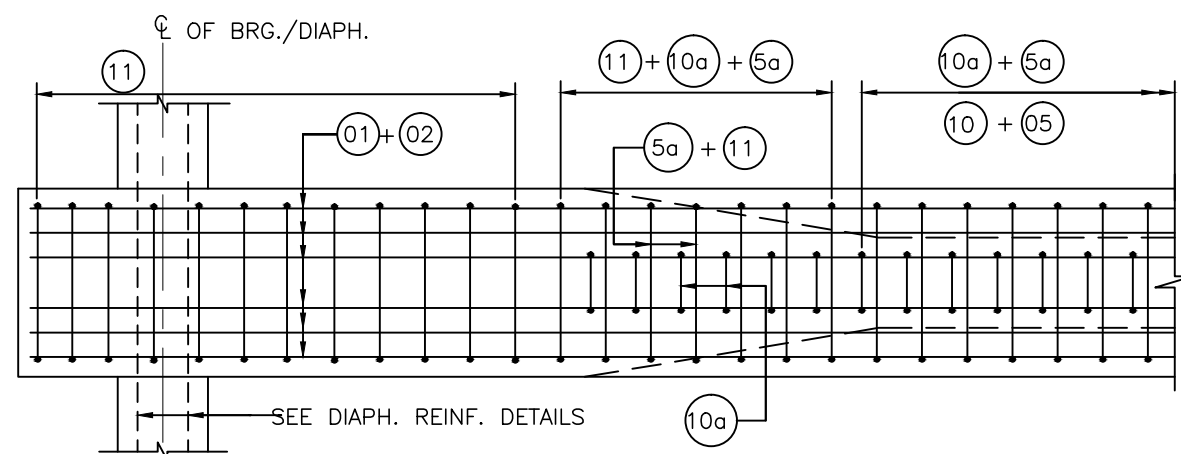
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Patparganj Delhi-110092.



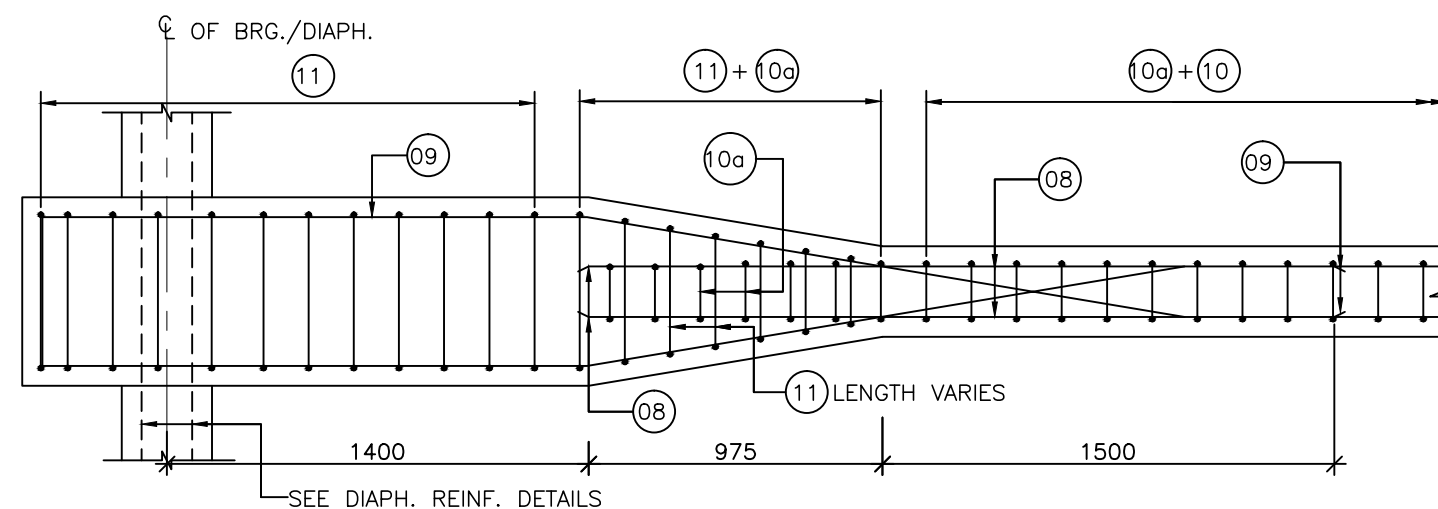
**REINFORCEMENT DETAILS OF LONGITUDINAL GIRDER**

(SCALE 1:30)



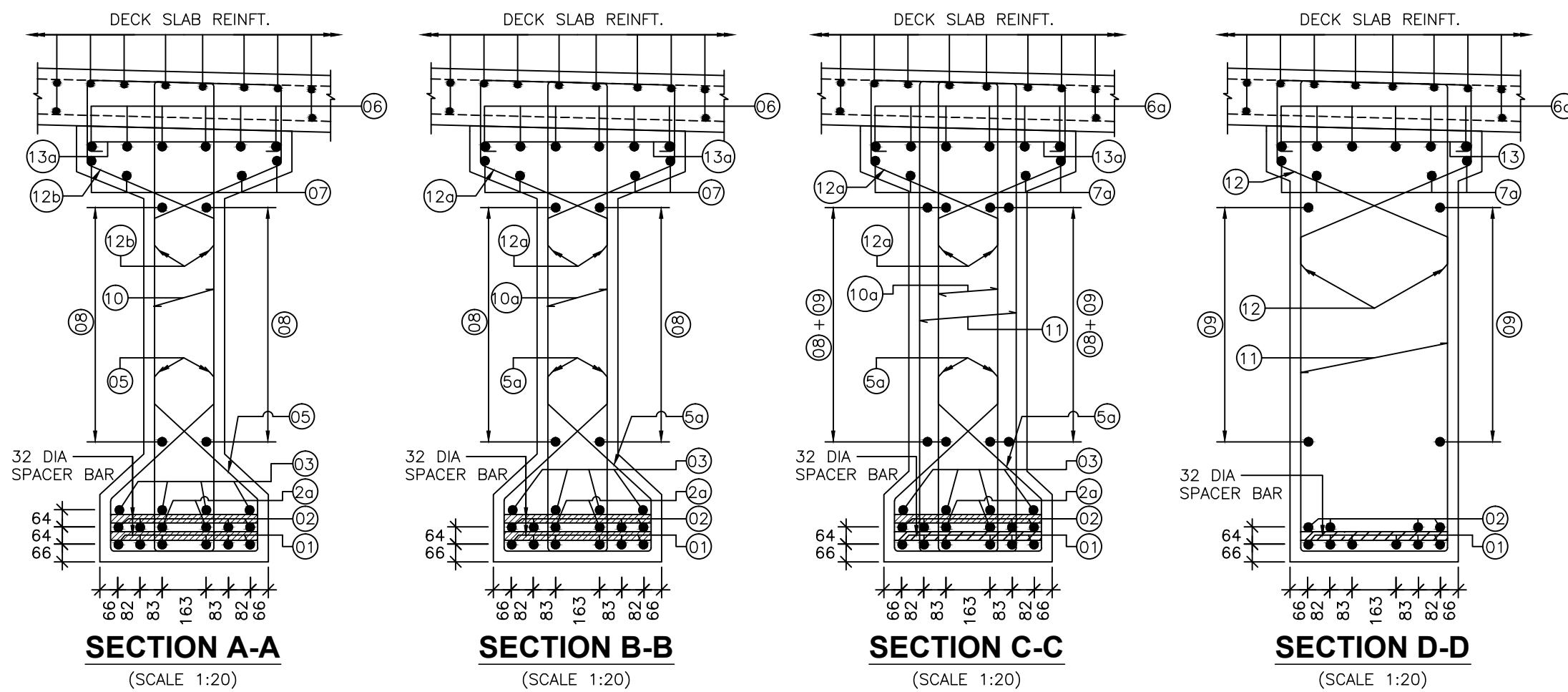
**PLAN SHOWING BULB REINF. DETAILED AT END**

(SCALE 1:30)



**PLAN SHOWING WEB REINF. DETAILED (TOP) AT END**

(SCALE 1:30)



**SECTION A-A**

(SCALE 1:20)

**SECTION B-B**

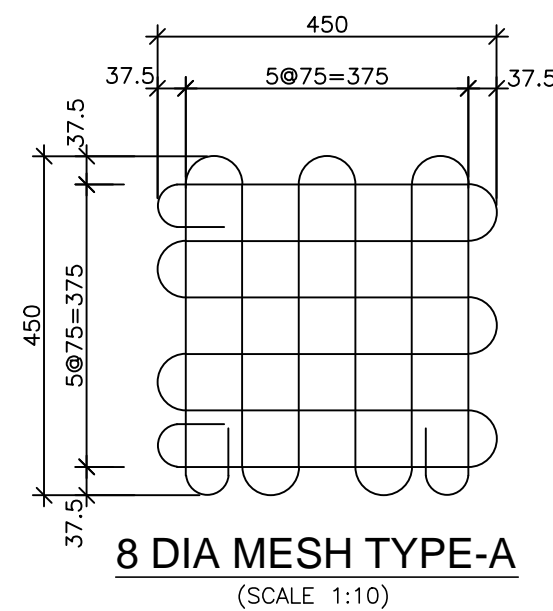
(SCALE 1:20)

**SECTION C-C**

(SCALE 1:20)

**SECTION D-D**

(SCALE 1:20)



**8 DIA MESH TYPE-A**

(SCALE 1:10)

**NOTES:**

1. ALL DIMENSIONS ARE IN MM UNLESS SHOWN OTHERWISE.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRG.
3. FIGURED DIMENSIONS SHOULD BE FOLLOWED. DO NOT SCALE THE DIMENSIONS.
4. STEEL REINFORCEMENT SHALL BE HYSD TMT BARS OF GRADE DESIGNATION Fe 500D CONFORMING TO IS 1786-2008.
5. CLEAR COVER TO ANY REINFORCEMENT IS 40MM.
6. LAP LENGTH SHALL CONFIRM TO CLAUSE 15.2 IRC-112 2011.
7. LAPS SHOULD BE STAGGERED & NOT MORE THAN 50% BARS SHOULD BE LAPPED AT A SECTION & LAP SHOULD NOT BE LOCATED IN AREA OF HIGHEST STRESSES.
8. ANCHORAGE LENGTH OF REINF. BARS SHALL BE 36x DIA OF BAR & SHALL CONFIRM TO CLAUSE 15.2.3 OF IRC-112 2011.
9. 32 DIA SPACER BARS SHALL BE PROVIDED @ 1M C/C BETWEEN TWO TIERS OF LONGITUDINAL BARS OF GIRDERS.
10. CONDITION OF EXPOSURE IS MODERATE.
11. CONC. GRADE M35.

SCHEDULE OF REINFORCEMENT			
BAR MKD.	DIA OF BAR	SPACING/ NO. OF BAR	BAR SHAPE
01	32	6 NOS.	
02	32	4 NOS.	
2a	32	2 NOS.	
03	32	4 NOS.	
04	NOT USED		
05	10	200c/c	
5a	10	200c/c	
06	10	6 NOS.	
6a	10	6 NOS.	
07	10	2+2NOS.	
7a	10	2+2NOS.	
08	10	200c/c	
09	10	200c/c	
10	2L-10	200c/c	
10a	2L-12	200c/c	
11	2L-12	80c/c	
12	10	150c/c	
12b	10	200c/c	
12a	10	200c/c	
13	10	150c/c	
13a	10	200c/c	



Project Title:-

**CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.**

**TELIAMURA - SABROOM SECTION-2**

CLIENT:-



**NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD**

Drawing Title:-

**REINFORCEMENT DETAILS OF RCC PRECAST INNER & OUTER GIRDER FOR 1X20.0M SPAN**

Drawing No. :- **TASPL/NHIDCL/FDPR/GAD/09**

Scale :- **AS SHOWN**

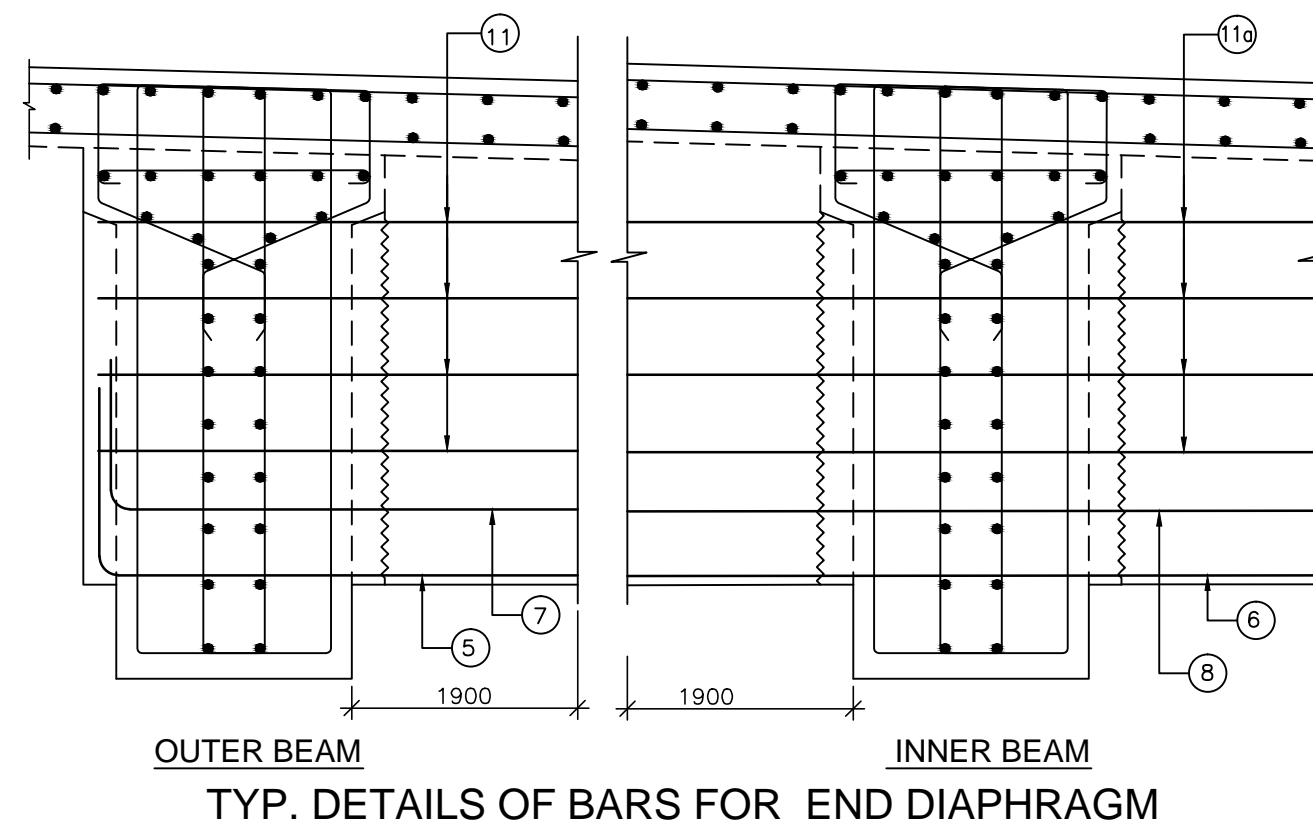
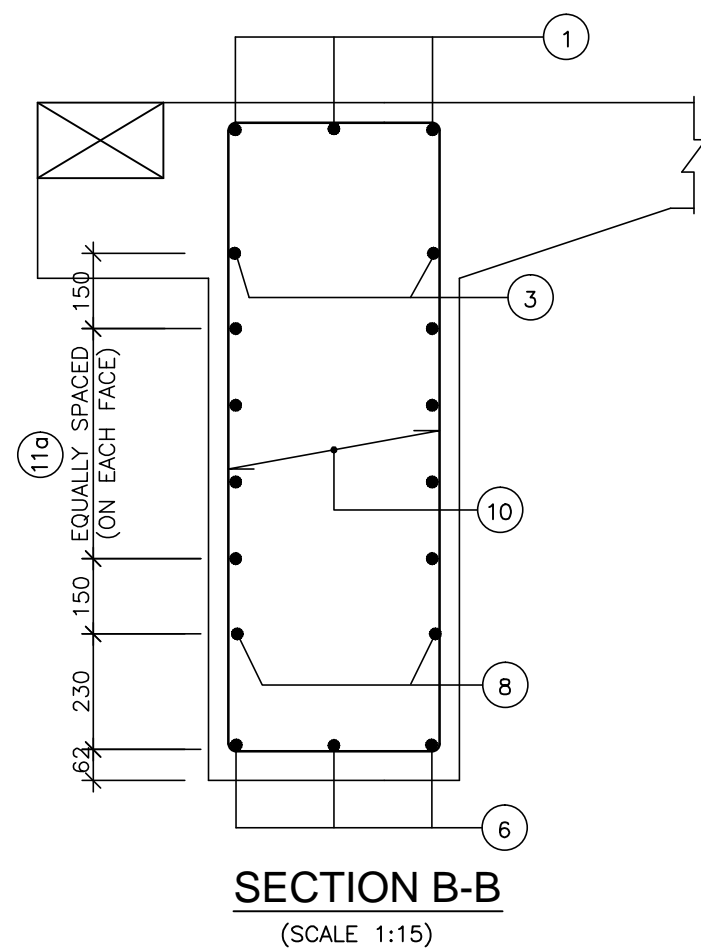
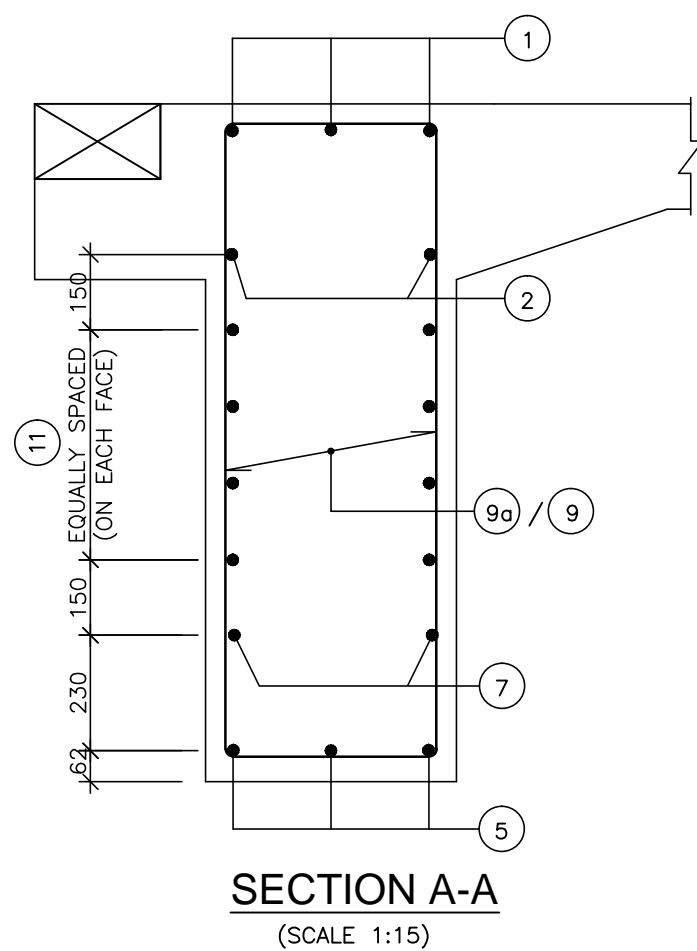
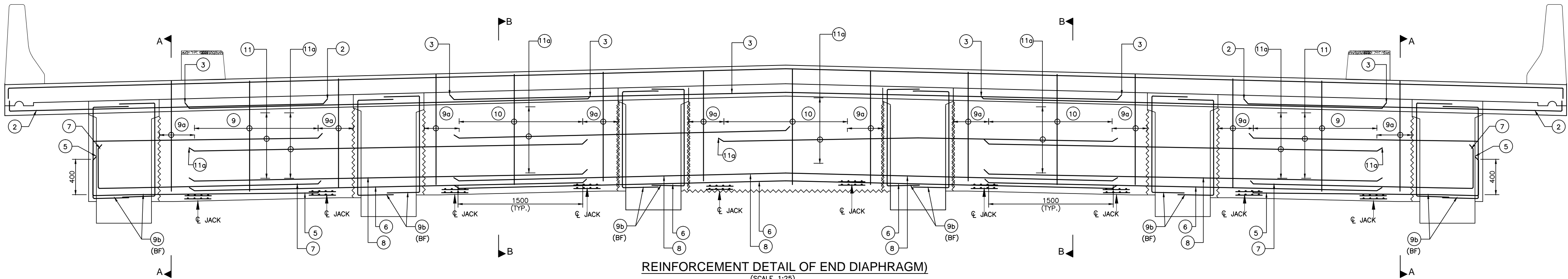
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D.S	D.P.S	B.Ram	01 OF 01

CONSULTANT:-

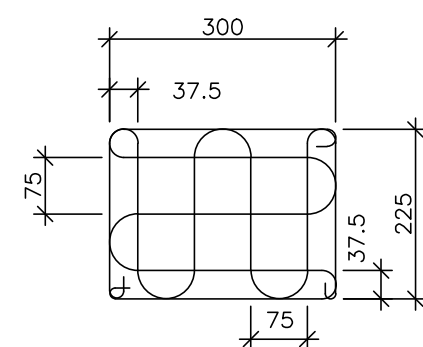


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SCHEDULE OF REINFORCEMENT			
BAR MKD.	DIA OF BAR	SPACING/ NO. OF BAR	BAR SHAPE
①	25	3 NOS.	150
②	25	2 NOS.	150
③	25	2 NOS.	
④	NOT USED		
⑤	25	3 NOS.	400
⑥	20	3 NOS.	
⑦	20	2 NOS.	
⑧	20	2 NOS.	
⑨	2L-16 (STIRRUPS)	200	
⑨a	2L-16	4 NOS.	
⑨b	2L-16 (BOTH FACE)	4 NOS. (BOTH FACE)	400
⑩	2L-16 (STIRRUPS)	200	
⑪	16	4 NOS. (ON EACH FACE)	
⑪a	16	4 NOS. (ON EACH FACE)	



#### NOTES:

- ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METERS.
- NO DIMENSIONS SHALL BE SCALED OFF FROM THE DRAWING AND WRITTEN DIMENSIONS SHALL BE FOLLOWED
- STEEL REINFORCEMENT SHALL BE HYSD TMT BARS OF GRADE DESIGNATION Fe 500D CONFORMING TO IS 1786-2008.
- THE LOCATION OF JACKS FOR LIFTING UP THE SUPERSTRUCTURE TO REPLACE BEARING ETC. IS SHOWN THUS ↓. THESE SHOULD BE DISTINCTLY ETCHED ON THE CROSS GIRDERS AND ABUTMENT CAPS.
- THE JACK FOR LIFTING THE SUPER STRUCTURE DURING BEARING REPLACEMENT SHALL HAVE A MINIMUM CAPACITY OF 100t.
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS.
- BAR MARK 5 & 6 TO BE LOCALLY ADJUSTED SO AS THAT THEY DO NOT FOUL WITH ANCHORAGES.
- CONC. GRADE M35.



Project Title:-

**CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.**

TELIAMURA - SABROOM SECTION-2

CLIENT:-



**NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD**

Drawing Title:-

REINFORCEMENT DETAILS OF  
END DIAPHRAGM FOR 1X20.0M SPAN

Drawing No. :- TASPL/NHIDCL/FDPR/GAD/09

Scale :- AS SHOWN

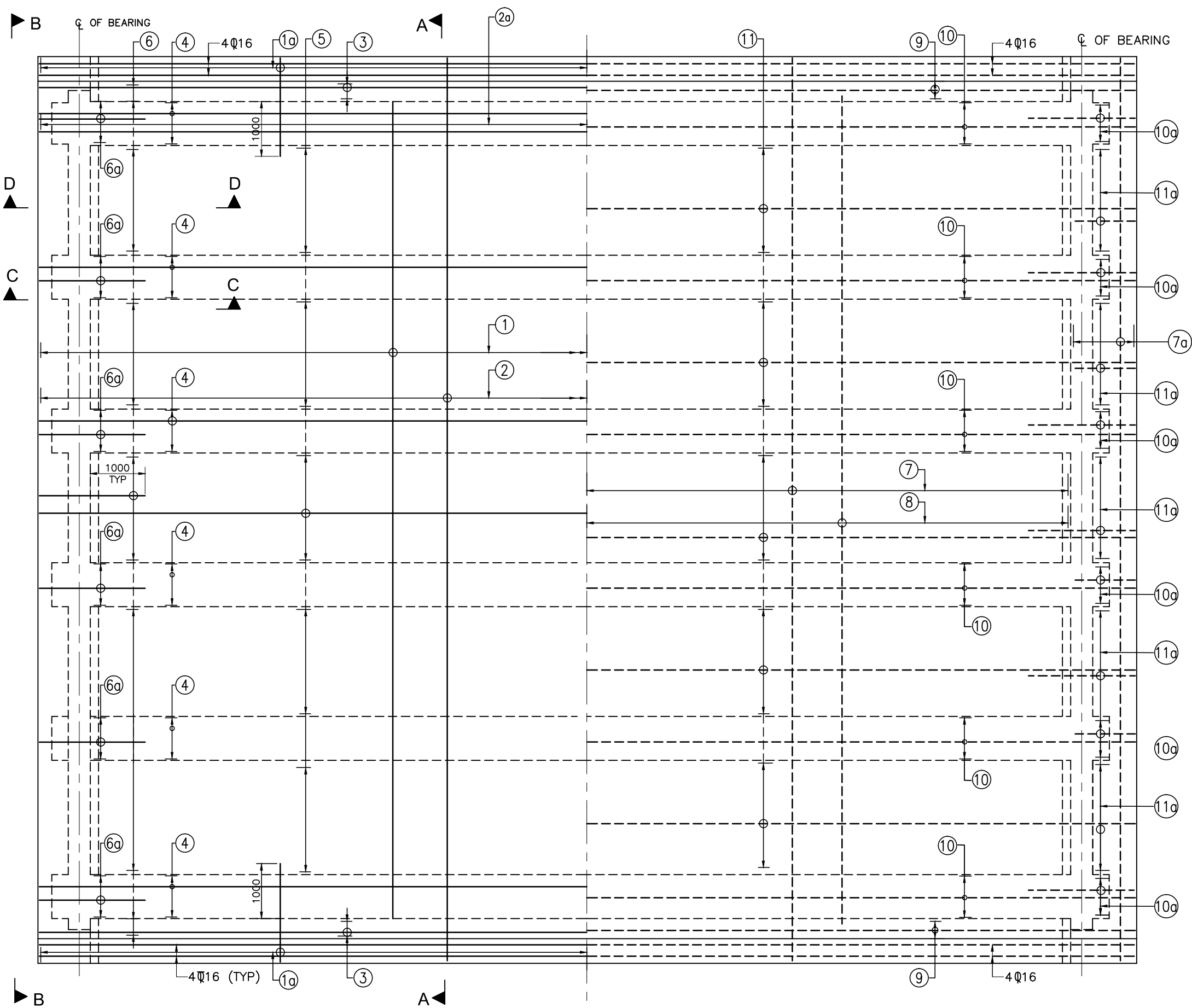
Drn	Dgn.	Appd	Sheet :
D.S	D.P.S	B.Ram	01 OF 01

CONSULTANT:-



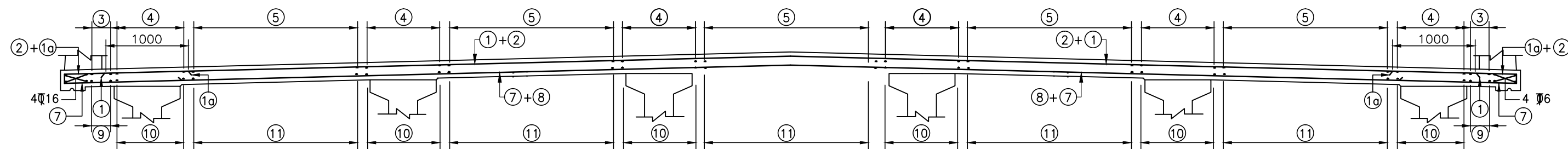
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Patparganj Delhi-110092.



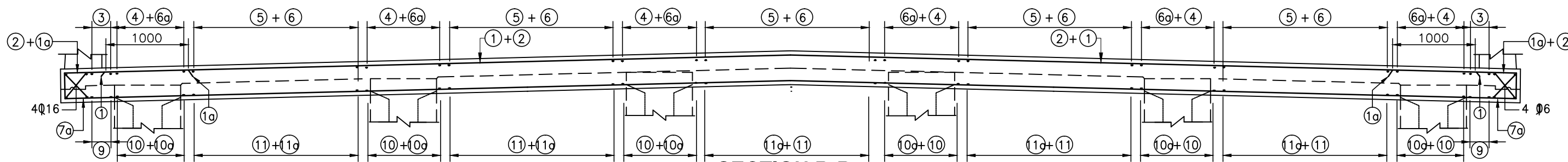


HALF TOP REINFORCEMENT      HALF BOTTOM REINFORCEMENT

PLAN  
(SCALE 1:75)



SECTION A-A  
(SCALE 1:50)



SECTION B-B  
(SCALE 1:50)

#### NOTES :

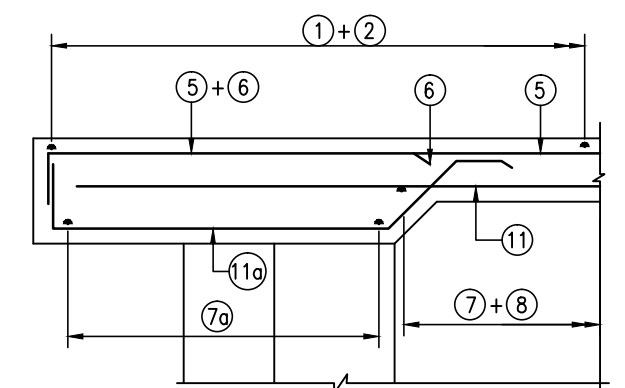
1. ALL DIMENSIONS ARE IN MM UNLESS SHOWN OTHERWISE.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRG.
3. FIGURED DIMENSIONS SHOULD BE FOLLOWED, DO NOT SCALE THE DIMENSIONS.
4. ALL UNTENSIONED REINF. SHALL BE THERMO MECHANICALLY TREATED (TMT) BARS OF GRADE Fe 500 CONFIRMING TO IS:1786-1985 WITH A YIELD STRENGTH OF 500 N/Sq mm.
5. CLEAR COVER TO ANY REINFORCEMENT IS 40mm.
6. LAP LENGTH = 63D (WHERE D IS THE DIA OF THE BAR TO BE LAPPED AT A SECTION.
7. LAPS SHOULD BE STAGGERED & NOT MORE THAN 50 % BARS SHOULD BE LAPPED AT A SECTION.

#### LEGEND

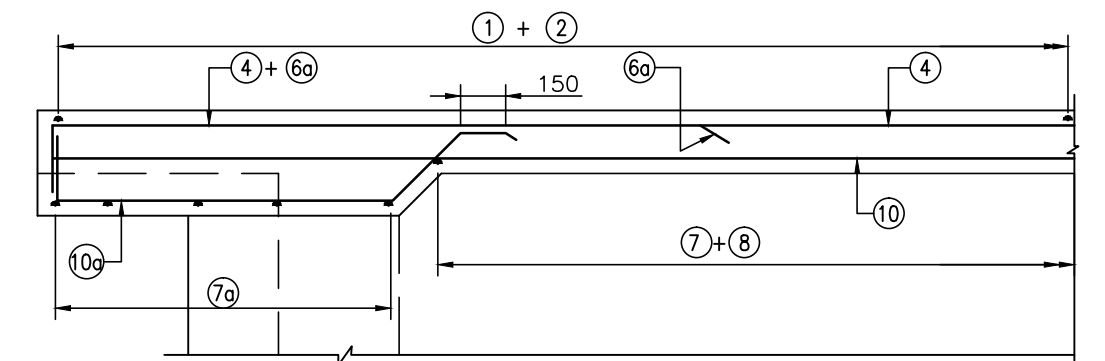
TOP BAR      \_\_\_\_\_  
BOTTOM BAR      - - - - -

#### SCHEDULE OF REINFORCEMENT

BAR MARKED	DIA OF BAR & SPACING/NOS.	BAR SHAPE
1	12 $\Phi$ @ 240 C/C	
2	10 $\Phi$ @ 240 C/C	
3	3-10 $\Phi$	
4	4-10 $\Phi$	
5	10-10 $\Phi$	
6	10-10 $\Phi$	
6a	4-10 $\Phi$	
7	12 $\Phi$ @ 240 C/C	
7a	5-12 $\Phi$	
8	16 $\Phi$ @ 240 C/C	
9	3-10 $\Phi$	
10	4-10 $\Phi$	
10a	4-10 $\Phi$	
11	10-10 $\Phi$	
11a	10-10 $\Phi$	



SECTION D-D  
(SCALE 1:25)



SECTION C-C  
SCALE 1:25

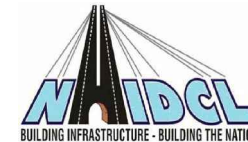


Project Title:-

**CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.**

TELIAMURA - SABROOM SECTION-2

CLIENT:-



NATIONAL HIGHWAYS & INFRASTRUCTURE  
DEVELOPMENT CORPORATION LTD

Drawing Title:-

REINFORCEMENT DETAIL OF CAST-IN-SITU  
DECK SLAB FOR PRECAST RCC I-GIRDER  
SUPERSTRUCTURE FOR 1X20.0M SPAN

Drawing No. :- TASPL/NHIDCL/FDPR/GAD/09

Scale :- AS SHOWN

Drn	Dgn.	Appd	Sheet :
D.S	D.P.S	B.Ram	01 OF 01

CONSULTANT:-

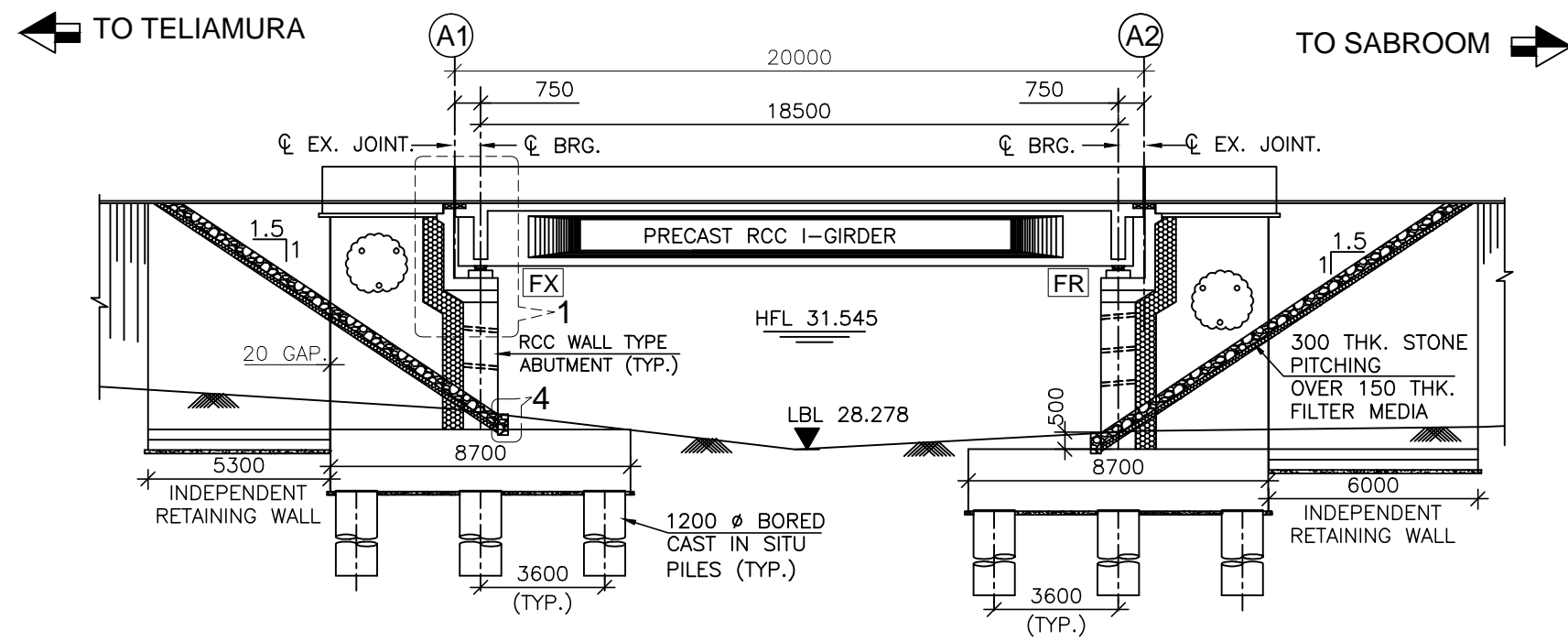


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Patparganj Delhi-110092.

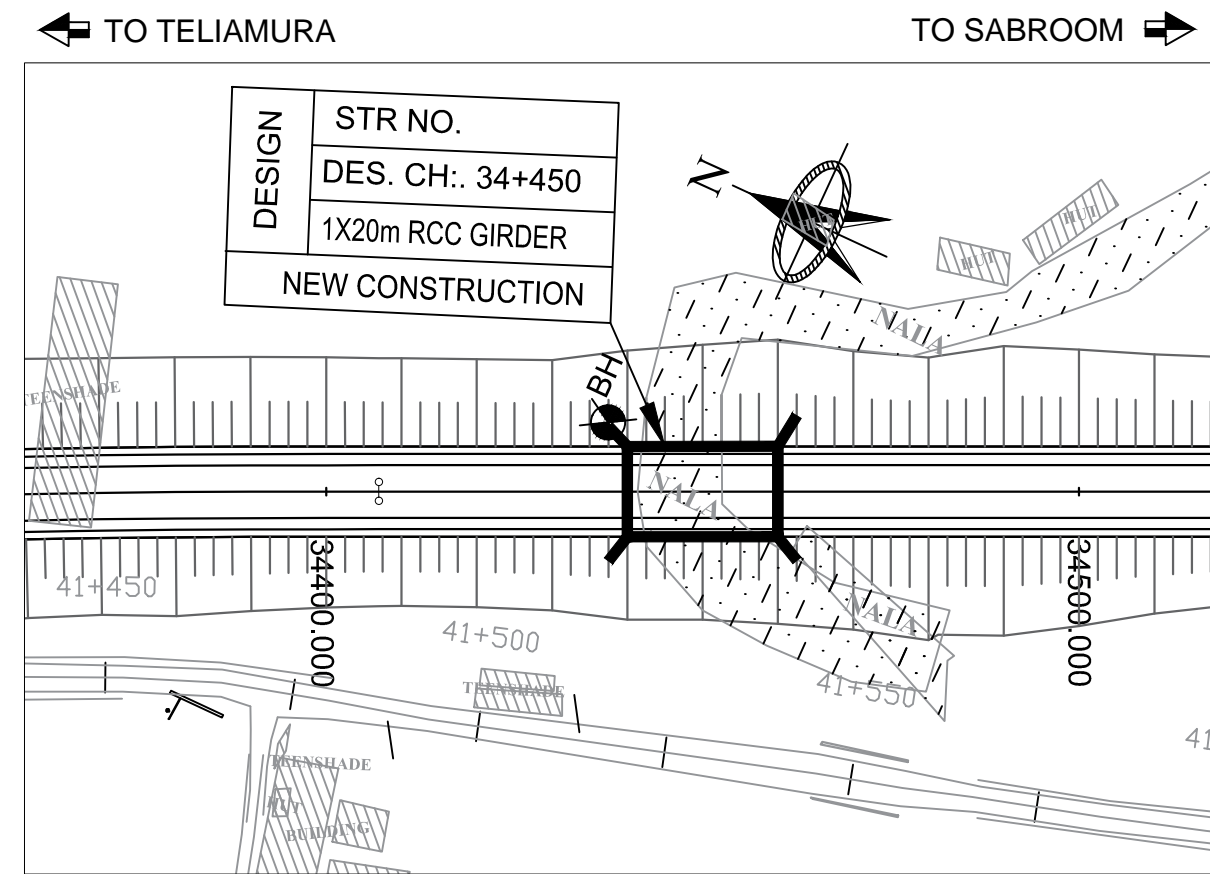
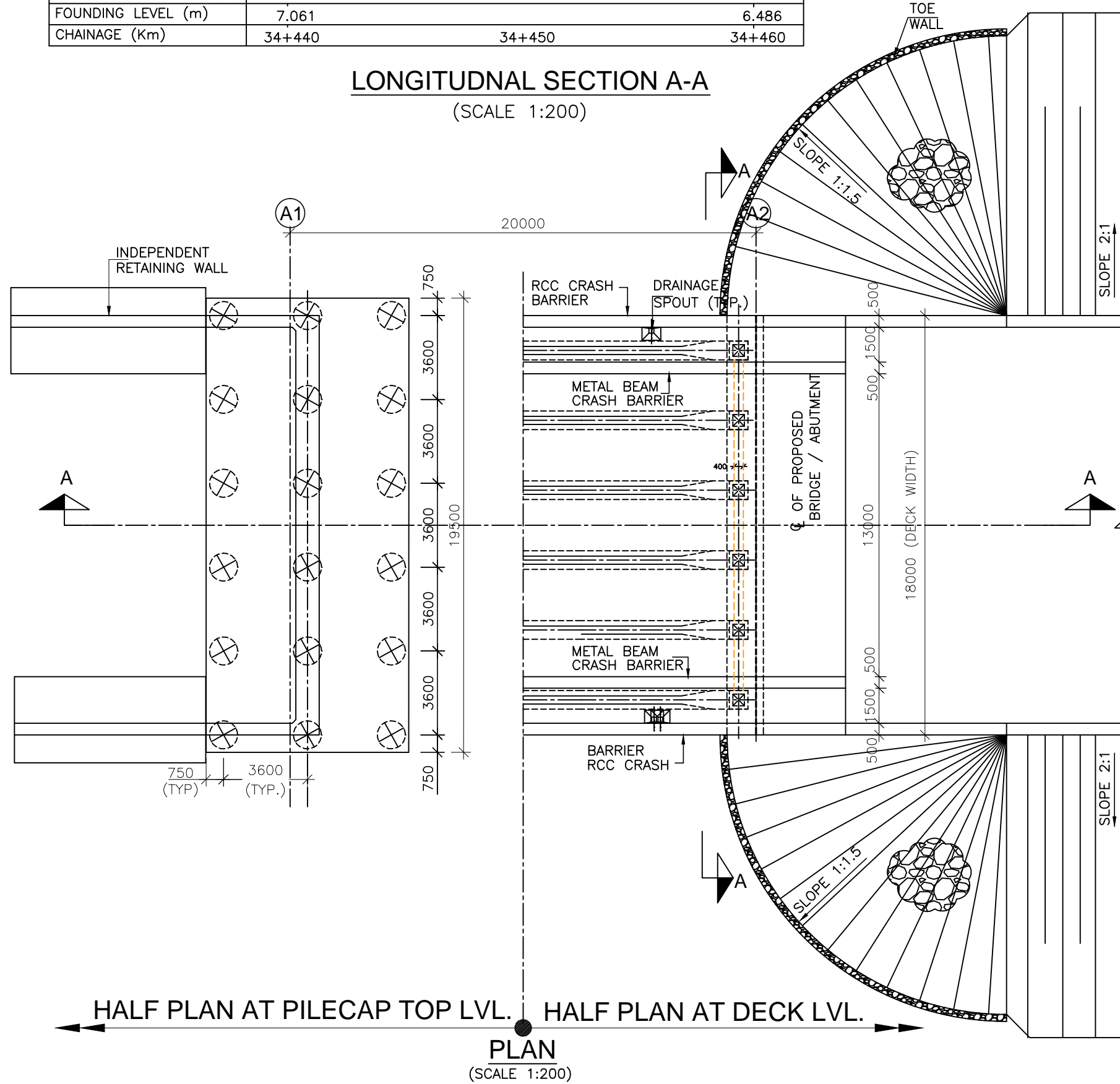
MINOR BRIDGE AT CH. 34+450 (1X20m SPAN) ►



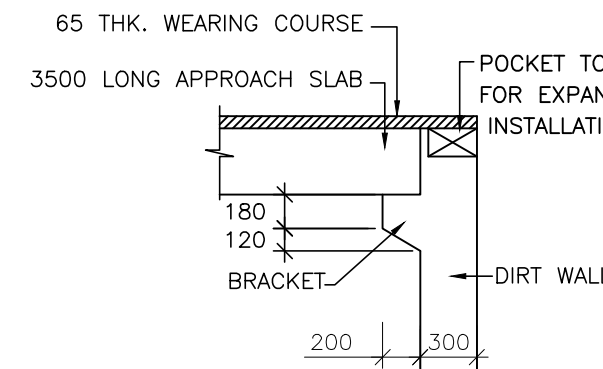


PROPOSED FRL (m)	35.485	35.485
ABT CAP LEVEL (m)	33.250	33.250
GROUND LEVEL (m)	29.361	28.786
PILE CAP TOP LEVEL (m)	28.861	28.286
FOUNDING LEVEL (m)	7.061	6.486
CHAINAGE (Km)	34+440	34+460

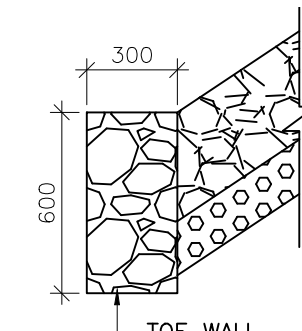
**LONGITUDINAL SECTION A-A**  
(SCALE 1:200)



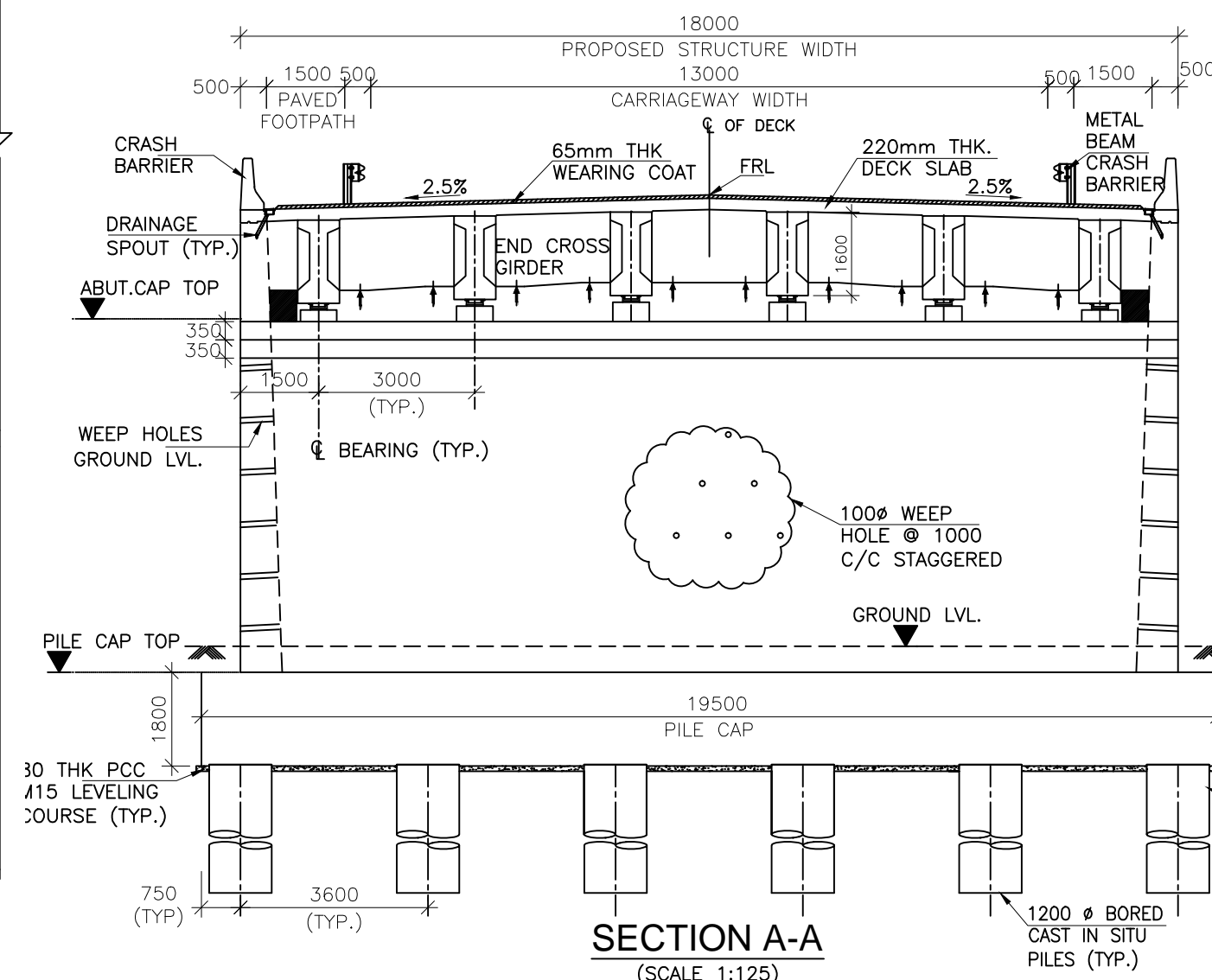
**KEYPLAN**  
SCALE-1:1



**DETAIL-3'**  
(SCALE 1:40)



**DETAIL-4**  
(SCALE 1:25)



**SECTION A-A**  
(SCALE 1:125)

## NOTES:-

- ALL DIMENSIONS ARE IN MILLIMETERS, LEVELS ARE IN METERS UNLESS OTHERWISE MENTIONED.
- NO DIMENSION SHALL BE MEASURED FROM THE DRAWINGS. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- CHAINAGE & LEVEL SHALL BE VERIFIED WITH THE RELEVANT PLAN & PROFILE DRAWINGS. VARIATION (IF ANY) SHALL BE REPORTED TO ENGINEER FOR MODIFICATION.
- CHAINAGE OF THE STRUCTURE IS AT THE CENTER LINE OF THE PROPOSED STRUCTURE.
- THE REINFORCEMENT SHALL BE HYSD BARS OF GRADE DESIGNATION Fe 500D CONFORMING TO IS 1786-2008.
- CONCRETE SHALL BE DESIGN MIX WITH A MINIMUM 28 DAYS CHARACTERISTIC CUBE STRENGTH FOR DIFFERENT ELEMENTS AS FOLLOWS:
 

a. RCC-I GIRDER, RCC DECK SLAB & END CROSS GIRDER	M45
b. ABUT. & ABUT CAP	M35
c. PILE & PILE CAP	M35
d. PIER & PIER CAP	M35
e. RETAINING WALL	M40
f. CRASH BARRIER	M30
g. APPROACH SLAB	M15
h. LEVELING COURSE	M40
i. PEDESTALS	
- CLEAR COVER TO OUTER STEEL SHALL BE AS FOLLOWS:-
 

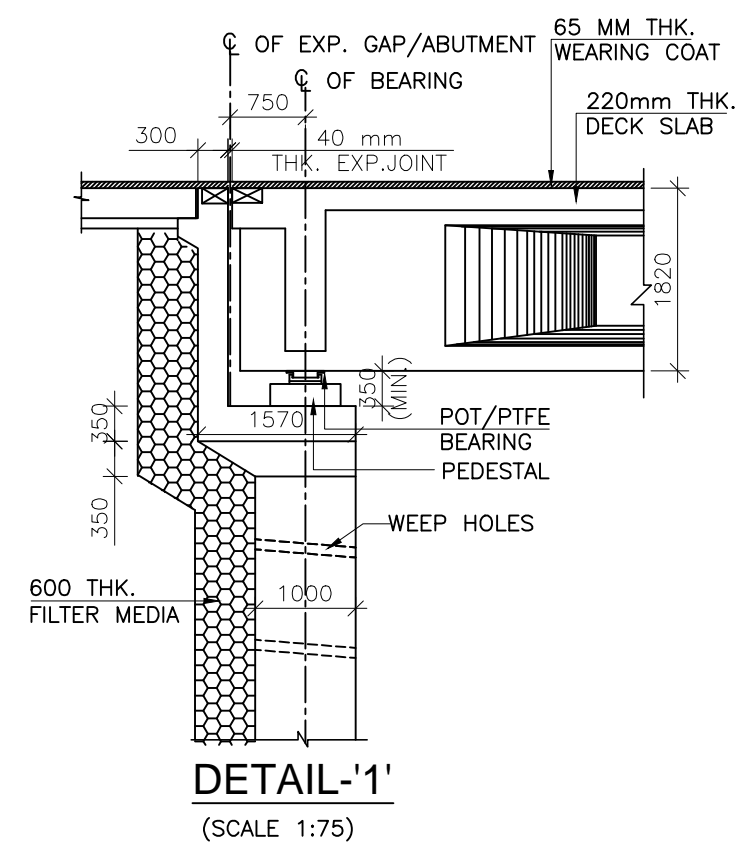
a. SUPERSTRUCTURE	40MM
b. ABUTMENT EARTH FACE	75MM
c. ABUTMENT OUTER FACE/PIER	50MM
d. FOUNDATION	75MM
e. CRASH BARRIER	40MM
- BACK FILLING BEHIND WALLS/ABUTMENT SHALL CONSISTS OF SELECTED EARTH CONFORMING TO APPENDIX 6 OF IRC:78-2014 HAVING PROPERTIES  $C=0$ ,  $\phi \geq 30^\circ$ ,  $\gamma=2.0t/cu.m.$
- 65MM THICK WEARING COURSE COMPRISING OF BITUMINOUS CONCRETE 40MM THICK OVERLAID WITH 25MM THICK BITUMEN MASTIC ASPHALTIC SHALL BE PROVIDED AS PER SECTION 500 OF MORTH SPECIFICATION.
- ALL SOLID WALLS RETAINING THE EARTH SHALL HAVE WEEP HOLES STARTING 150MM ABOVE THE GROUND LEVEL AND SPACED 1000MM HORIZONTALLY AND VERTICALLY IN STAGGERED MANNER.
- 600MM THICK FILTER MEDIA SHALL BE PROVIDED BEHIND SOLID ABUTMENT WALLS AND RETURN/RETAINING WALL.
- CONDITION OF EXPOSURE IS MODERATE.
- BRIDGE IS DESIGN FOR SEISMIC ZONE V OF SEISMIC MAP OF INDIA.
- THE STRUCTURE SHALL BE DESIGNED FOR LIVE LOAD COMBINATION CONFORMING TO IRC:6-2017.
- SINGLE STRIP SEAL TYPE EXPANSION JOINT SHALL BE PROVIDED AS PER MODIFIED INTERIM SPECIFICATION FOR EXPANSION JOINTS ISSUED VIDE "MORTH" CIRCULAR NO. RW/NH-34059/1/98-S&R DATED 30-11-2000 & 25-01-2001.
- FOR DETAILS OF DRAINAGE SPOUT, CRASH BARRIER, JOINTS, APPROACH SLAB & RETAINING WALL REFER SEPARATE DRAWING.

LOAD CARRYING CAPACITY OF 1.2m DIA PILE AS PER GEOTECH REPORT.

DESCPTION	NORMAL CASE		SEISMIC CASE	
	VERTICAL (T)	HORIZONTAL (T)	VERTICAL (T)	HORIZONTAL (T)
ABUTMENT (A1)	595	64	743.75	80
ABUTMENT (A2)	595	64	743.75	80

## HYDROLOGICAL DETAILS:-

DESIGN DISCHARGE	59.158 CUMECs
HFL	31.700m
DESIGN VELOCITY	2.58 M/s
MSL AT ABUTMENT	24.93m



**DETAIL-1'**  
(SCALE 1:75)



Project Title:-

**CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.**

TELIAMURA - SABROOM SECTION-2

CLIENT:-



**NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD**

Drawing Title:-

GENERAL ARRANGEMENT DRAWING OF MINOR BRIDGE AT CH. 34+450

Drawing No. :- TASPL/NHIDCL/FDPR/GAD/09

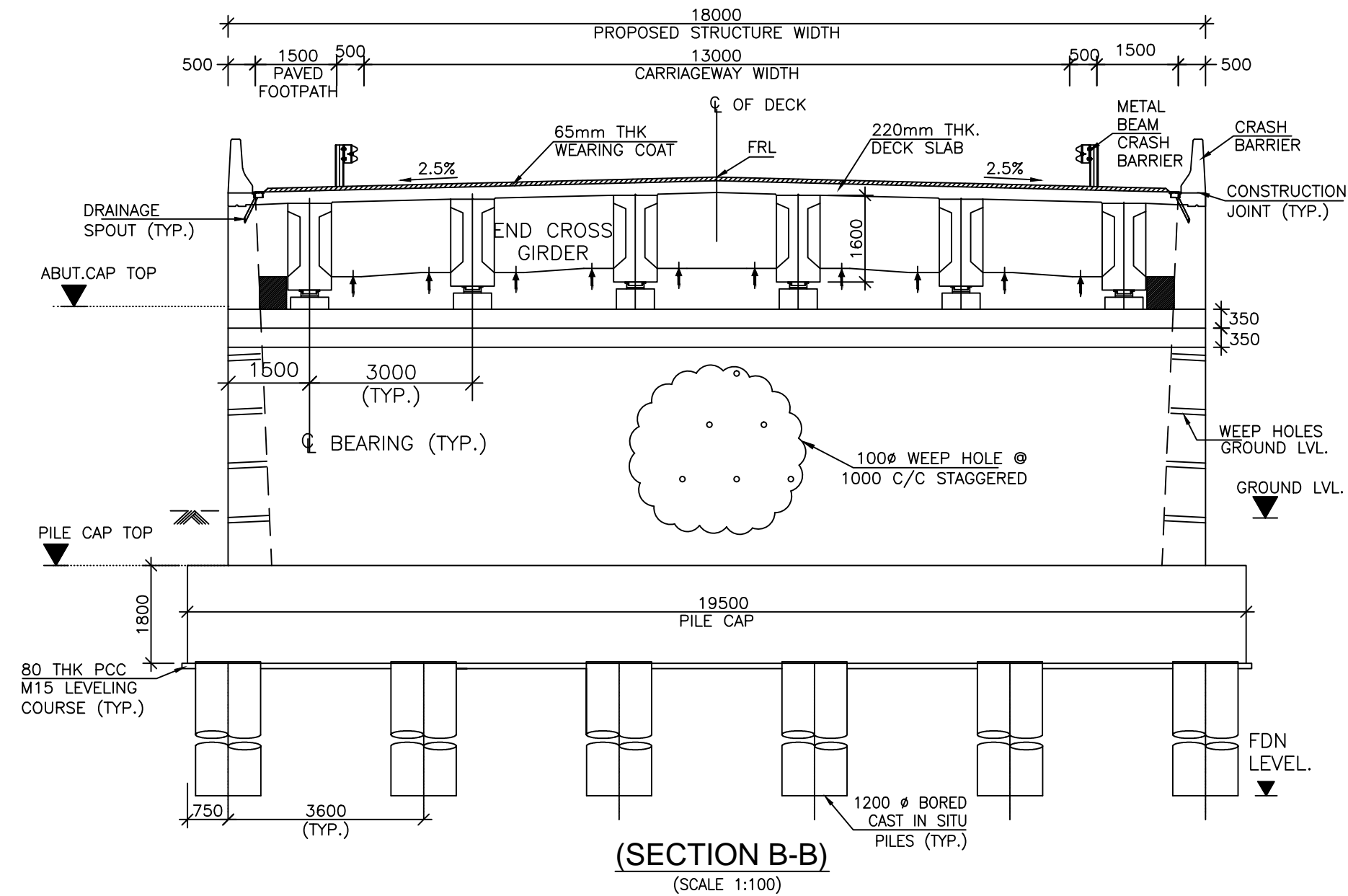
Scale :- AS SHOWN

Drn	Dgn.	Appd	Sheet :
D.S	D.P.S	B.Ram	01 OF 01

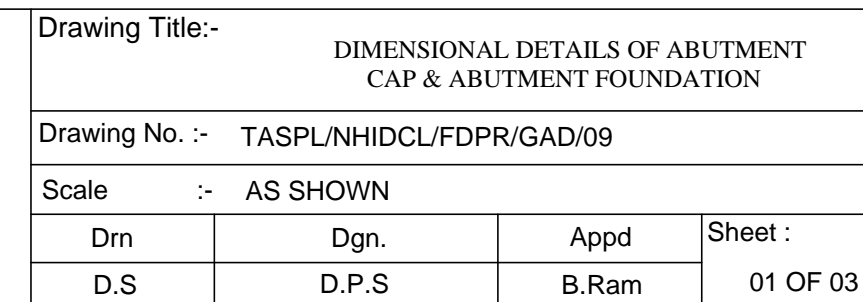
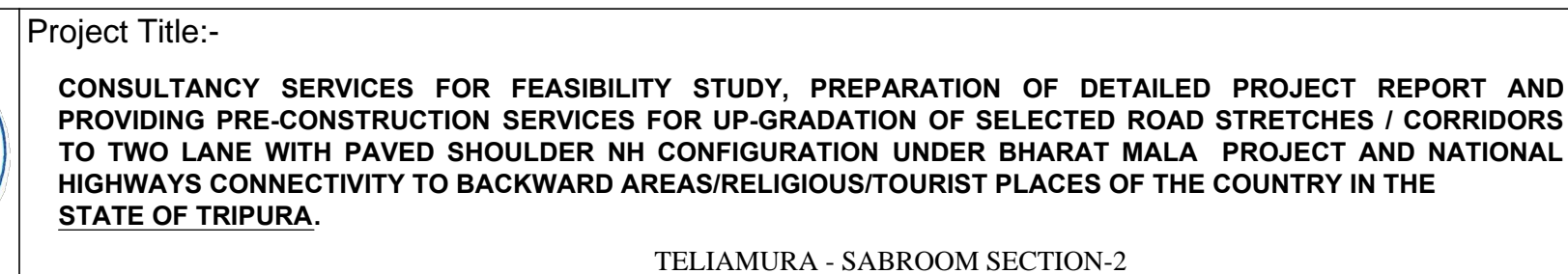
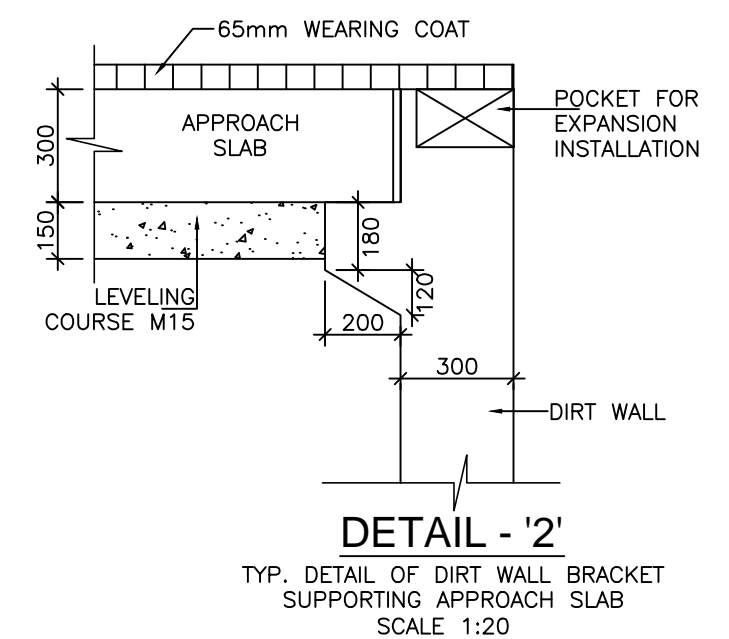
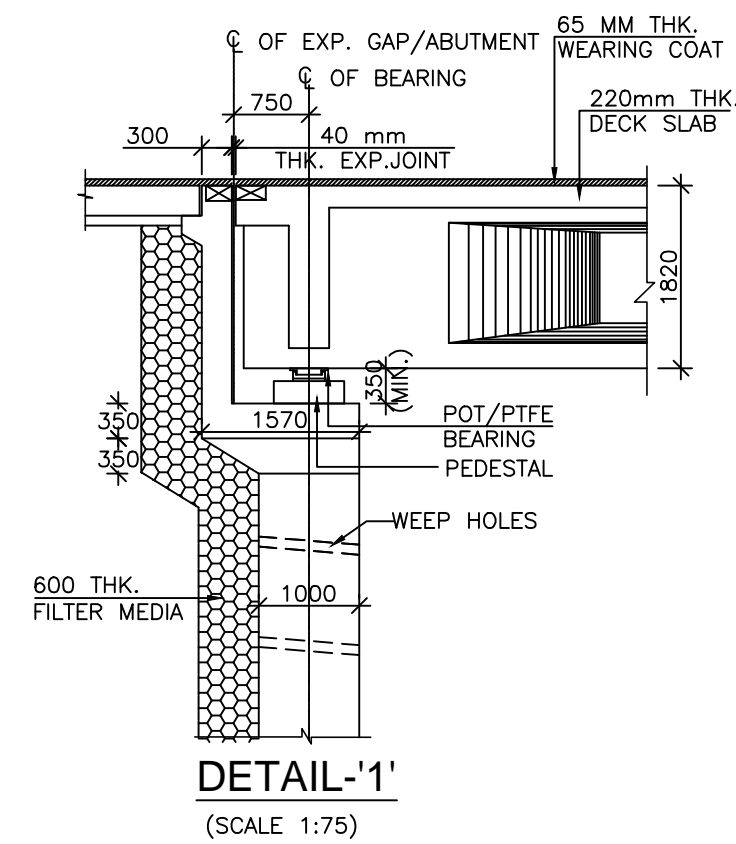
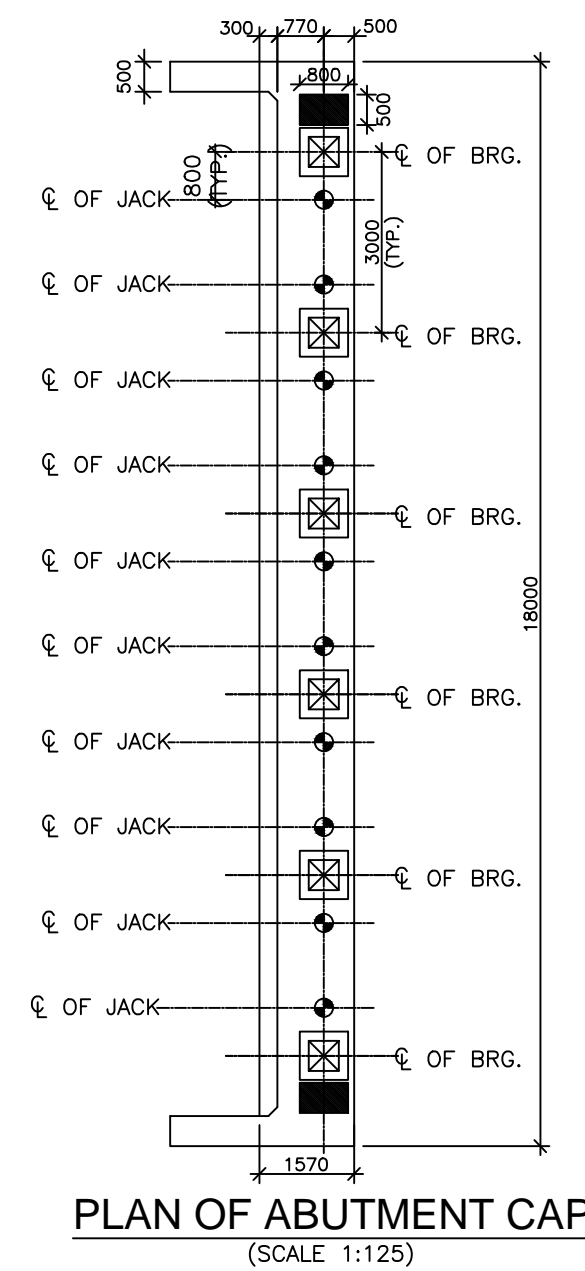
CONSULTANT:-




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- [illegible]

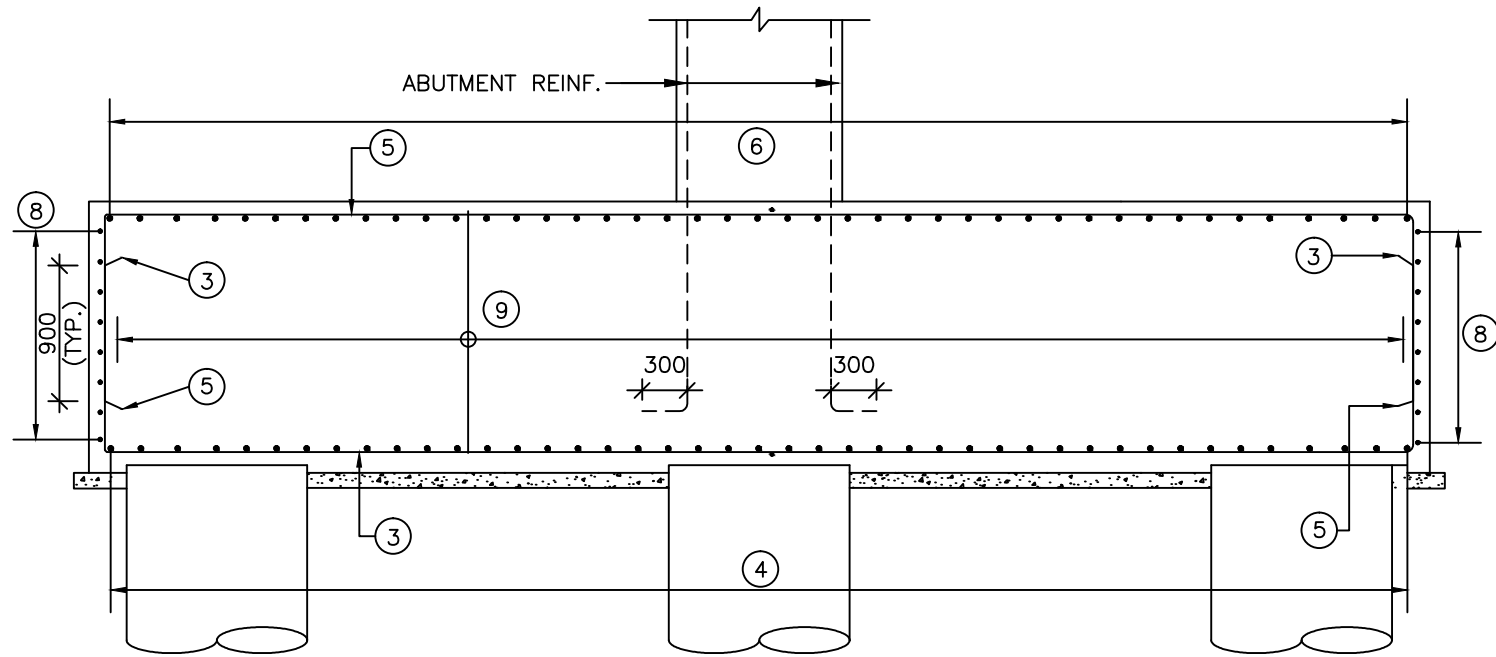


CONSULTANT:-

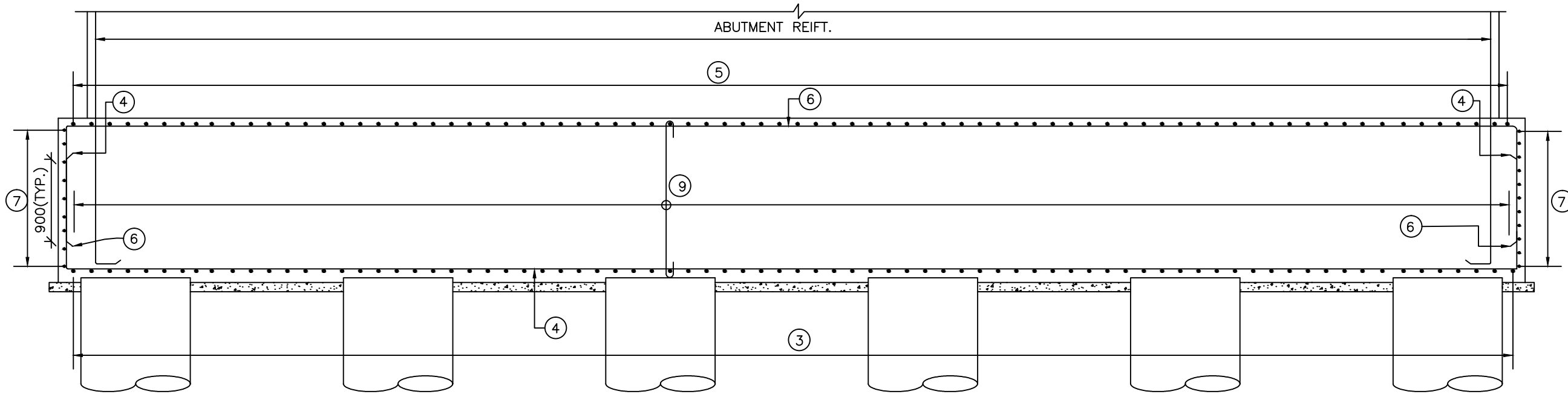
 **TASPL**

**Technocrats Advisory Services Private Limited**  
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68,Ajanta Apartments, 36, I.P. Extension  
Patparganj Delhi-110092.

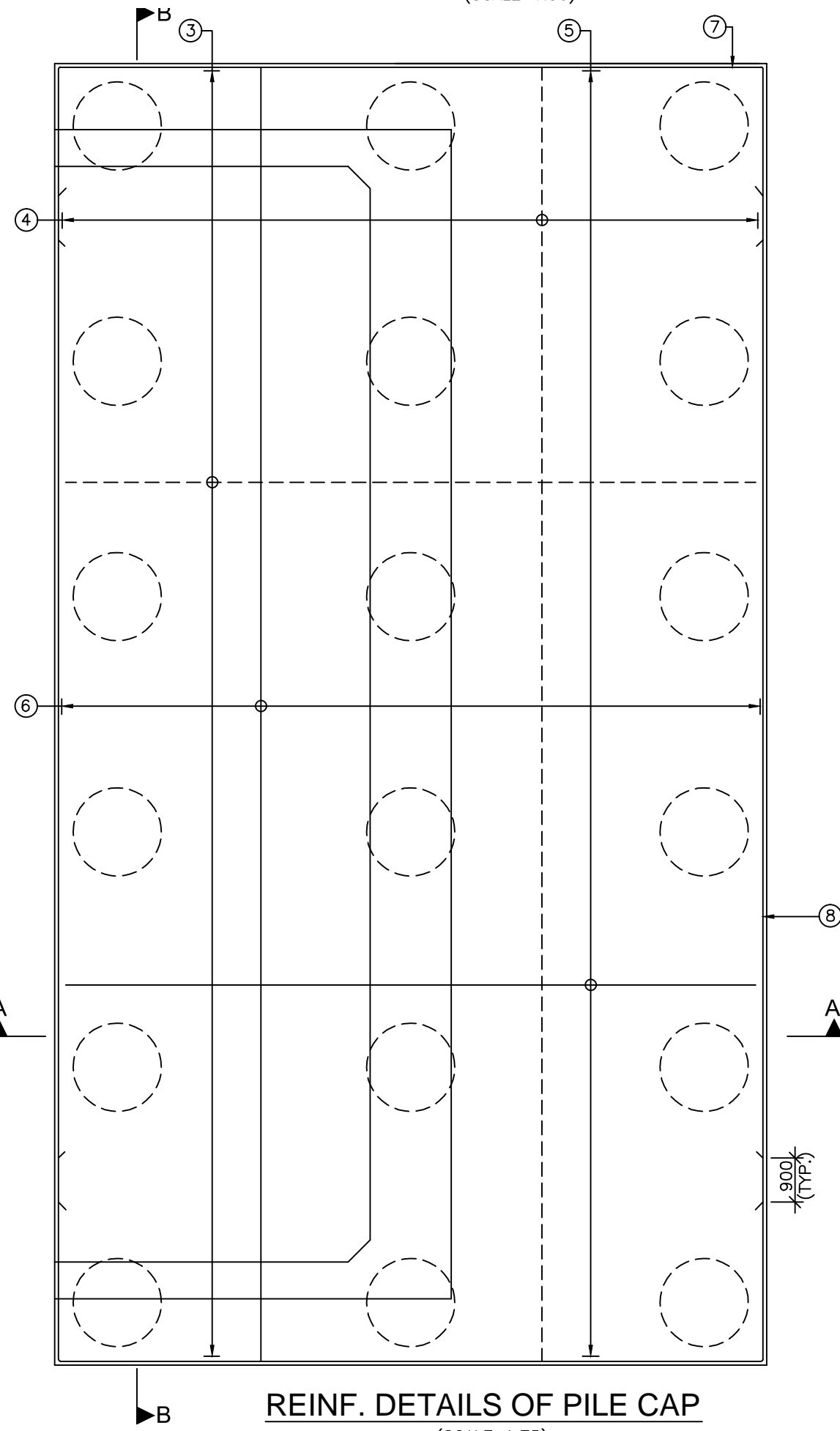




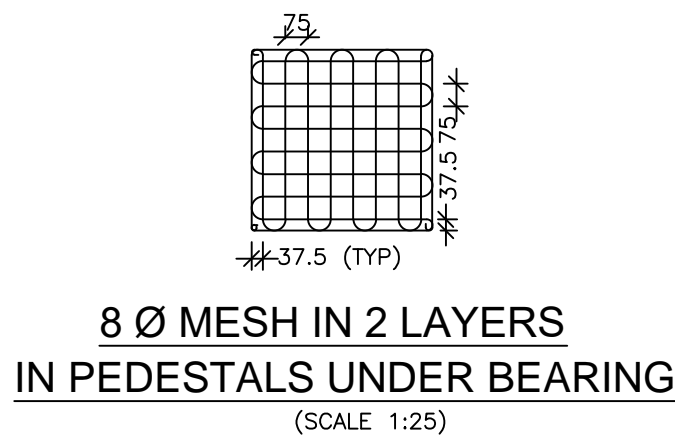
**SECTION A-A**  
(SCALE 1:50)



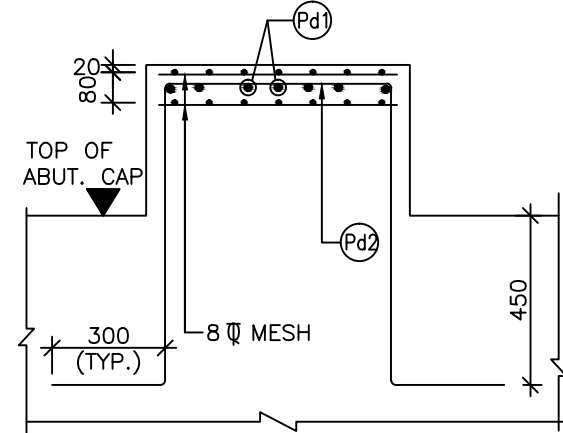
**SECTION B-B**  
(SCALE 1:50)



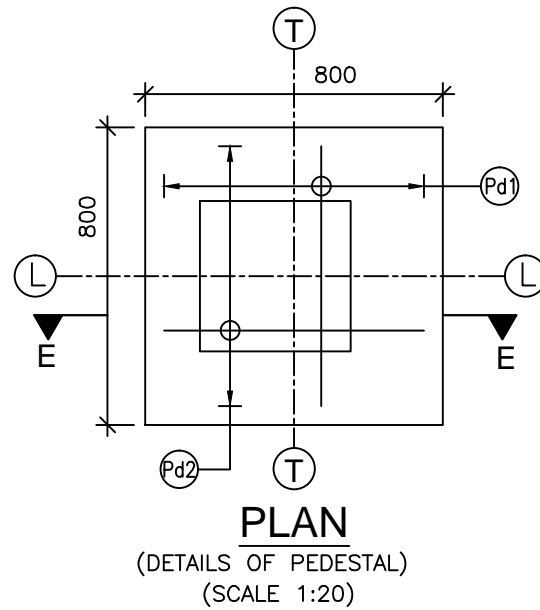
**REINF. DETAILS OF PILE CAP**  
(SCALE 1:75)



**8 Ø MESH IN 2 LAYERS  
IN PEDESTALS UNDER BEARING**  
(SCALE 1:25)



**SECTION E-E**  
(SCALE 1:20)



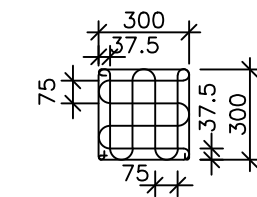
**PLAN  
(DETAILS OF PEDESTAL)**  
(SCALE 1:20)

**SCHEDULE OF PEDESTAL REINFORCEMENT**

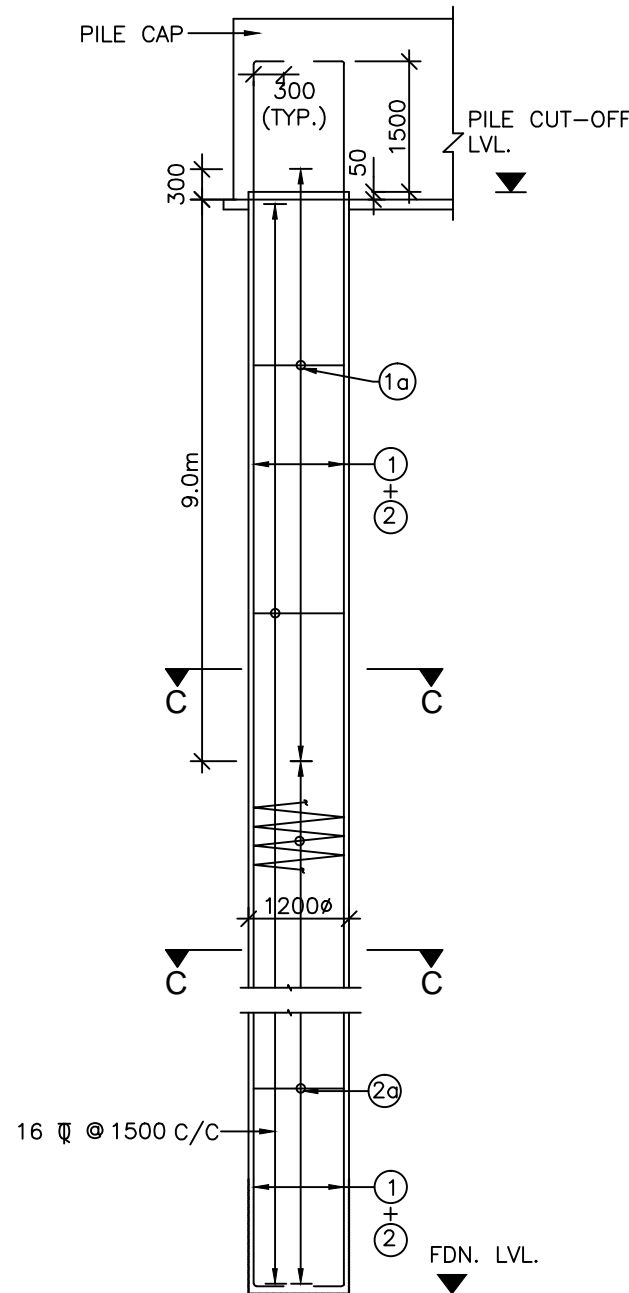
BAR MKD.	DIA (mm)	SPACING/Nos.	SHAPE
Pd1	12	75	
Pd2	12	75	

**LEGEND:**

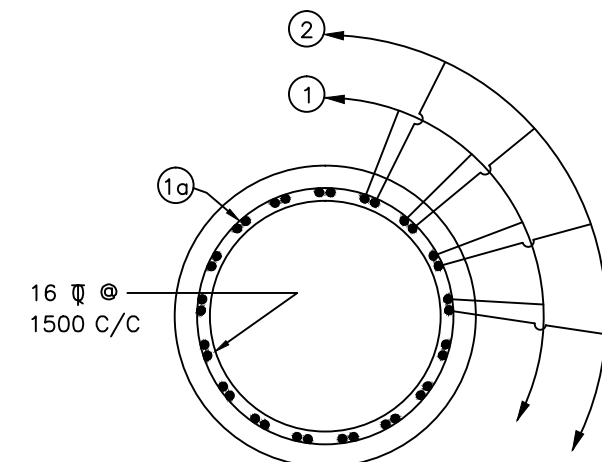
——	TOP/EARTH FACE
----	BOTTOM/OUTER FACE
B/F	BOTH FACE
V.L	VARYING LENGTH



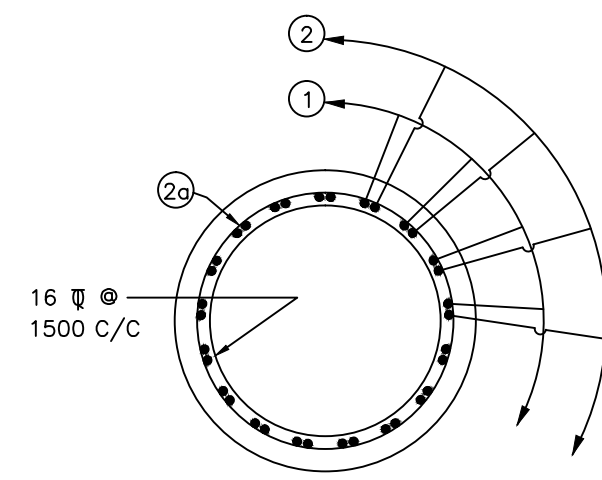
**8 Ø MESH AT JACK  
LOCATION IN TWO LAYERS**  
(SCALE 1:25)



**R.C.DETAILS OF PILE**  
(SCALE 1:75)



**SECTION C-C**  
(SCALE 1:30)



**SECTION D-D**  
(SCALE 1:30)

**SCHEDULE OF PILE & PILE CAP REINFORCEMENT**

BAR MKD.	DIA (mm)	SPACING/Nos.	SHAPE
1	32	15 Nos.	
1a	16	100	
2	32	15 Nos.	
2a	10	150	
3	20	100	
4	20	100	
5	16	100	
6	16	100	
7	16	150	
8	16	150	
9	NA		

**NOTES**

- ALL DIMENSIONS ARE IN MILLIMETERS, AND LEVELS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
- DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- L-L REPRESENTS LONGITUDINAL AXIS OF THE BRIDGE  
T-T REPRESENTS TRANSVERSE AXIS OF THE BRIDGE
- HIGH YIELD STRENGTH DEFORMED BARS OF GRADE DESIGNATION Fe-500D CONFORMING TO IS: 1786 SHALL ONLY BE USED.
- REINFORCEMENT OF PIER SHAFT IS TO BE ANCHORED IN THE PILE CAP BEFORE IT'S CONCRETING.
- LAPPING OF REINFORCEMENT SHALL BE AVOIDED AS FAR AS POSSIBLE. IN CASE LAPPING OF BARS BECOMES UNAVOIDABLE, MINIMUM LAP LENGTH OF REINFORCEMENT BARS SHALL BE CALCULATED AS FOLLOWS WITH MAXIMUM ALLOWABLE LAPPING (p) OF 50% ONLY (IRC: 112-2011) (CLAUSE:15.2.5.1)

LAP LENGTH  $l_s = \alpha \cdot l_{bnet}$   
 $\alpha = 1.0$  FOR  $p \leq 25\%$   
 $\alpha = 1.15$  FOR  $25\% < p \leq 33\%$   
 $\alpha = 1.14$  FOR  $33\% < p \leq 50\%$   
 (IRC:112-2011, CLAUSE:15.2.3.3)

ANCHORAGE LENGTH ( $l_{bnet}$ )  
 $l_{bnet} = \alpha \cdot l_b$  ( $\alpha = 1.0$ )  
 $l_b = k \phi$   
 $k = 40$  FOR M30 (Fe500D)  
 $k = 36$  FOR M35 (Fe500D)  
 $k = 34$  FOR M40 (Fe500D)

FOR UNFAVORABLE BOND CONDITION THE  $l_b$  SHOULD BE MULTIPLIED BY FACTOR OF 1.43. FOR  $\phi > 32mm$   $l_b$  SHOULD BE INCREASED BY MULTIPLYING FACTOR  $\left( \frac{100}{132 - \phi} \right)$



Project Title:-

**CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.**

TELIAMURA - SABROOM SECTION-2

CLIENT:-



**NATIONAL HIGHWAYS & INFRASTRUCTURE  
DEVELOPMENT CORPORATION LTD**

Drawing Title:-

REINFORCEMENT DETAILS OF ABUTMENT  
CAP & ABUTMENT FOUNDATION

Drawing No. :- TASPL/NHIDCL/FDPR/GAD/09

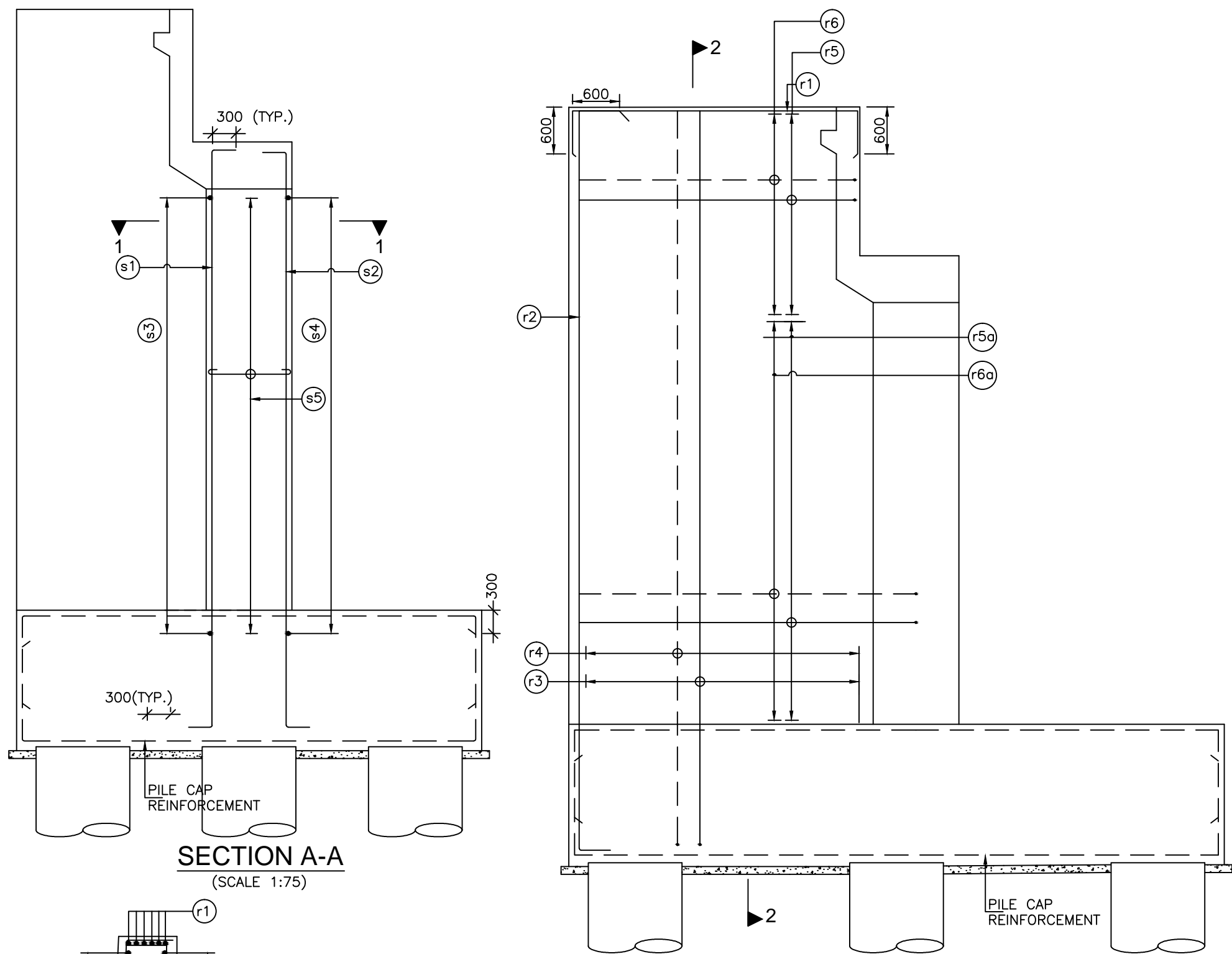
Scale :- AS SHOWN

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CONSULTANT:-

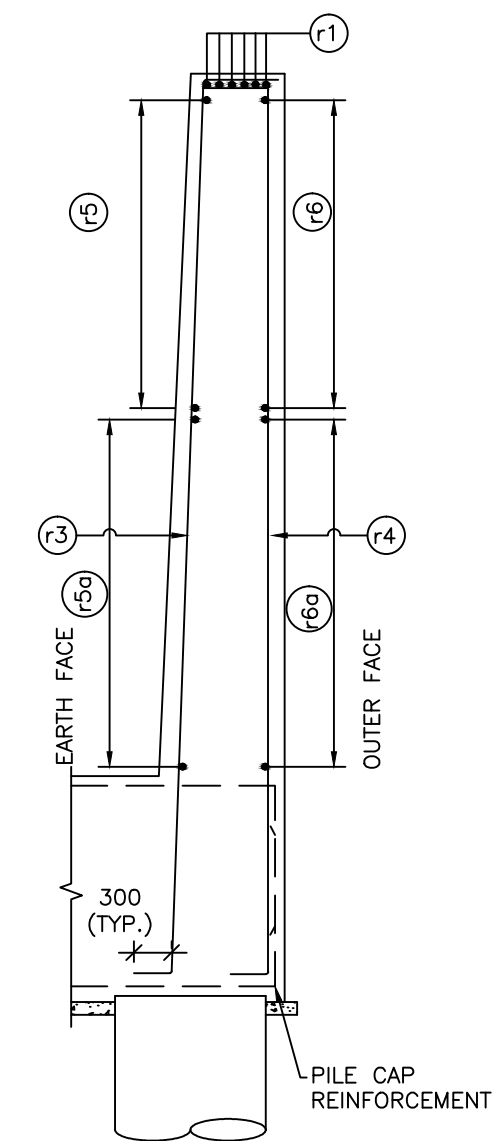


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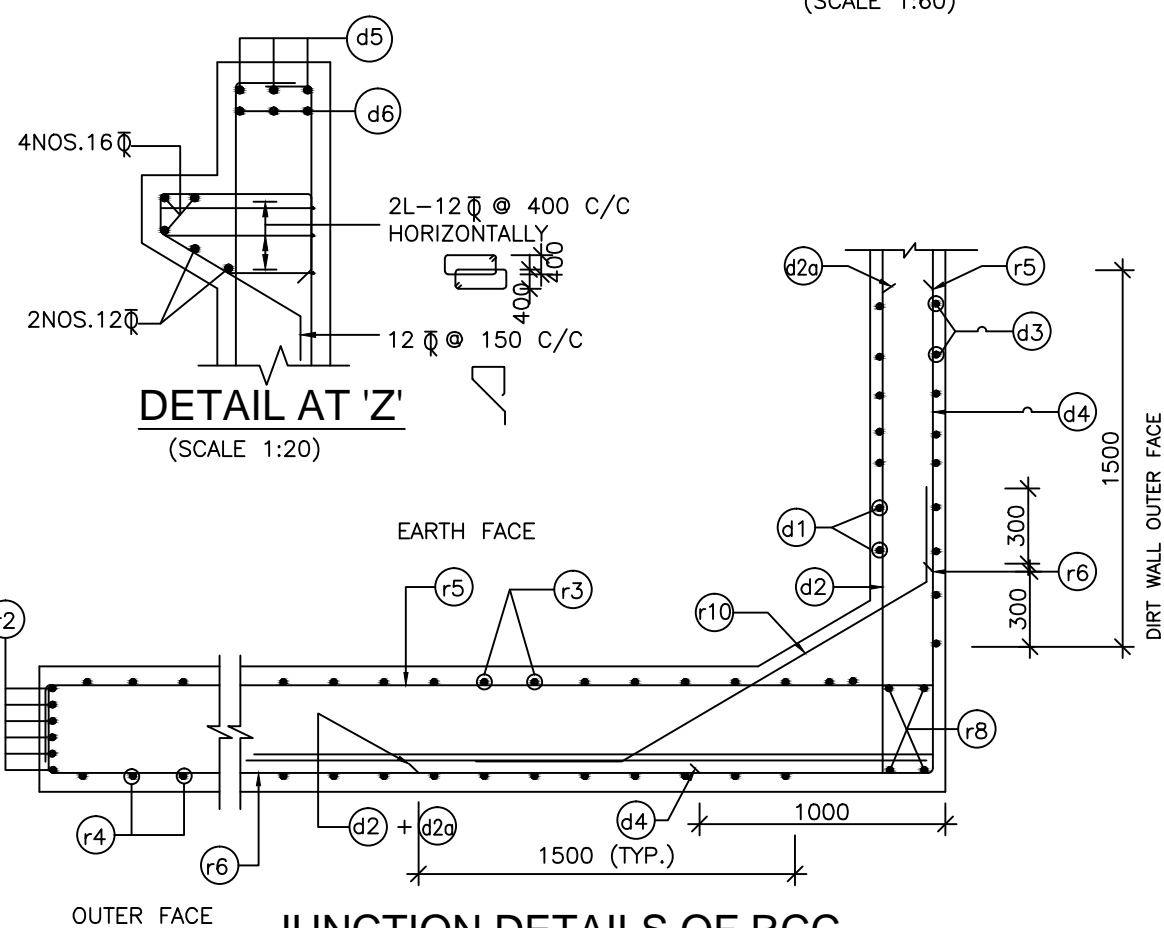


SECTION A-A  
(SCALE 1:75)

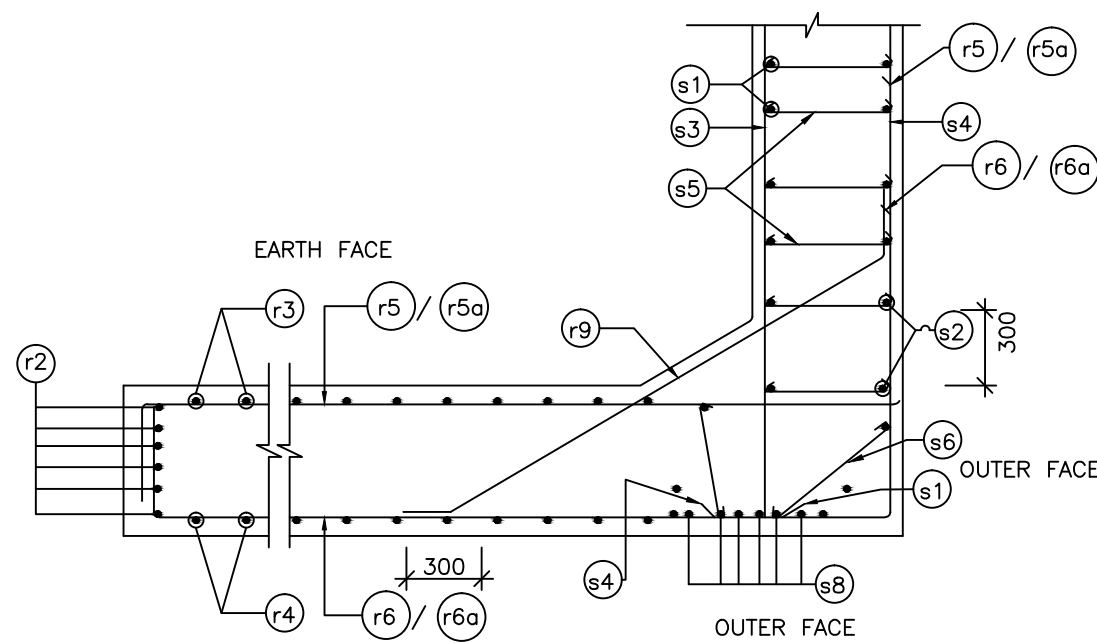
R/F DETAILS OF RETURN WALL  
(SCALE 1:60)



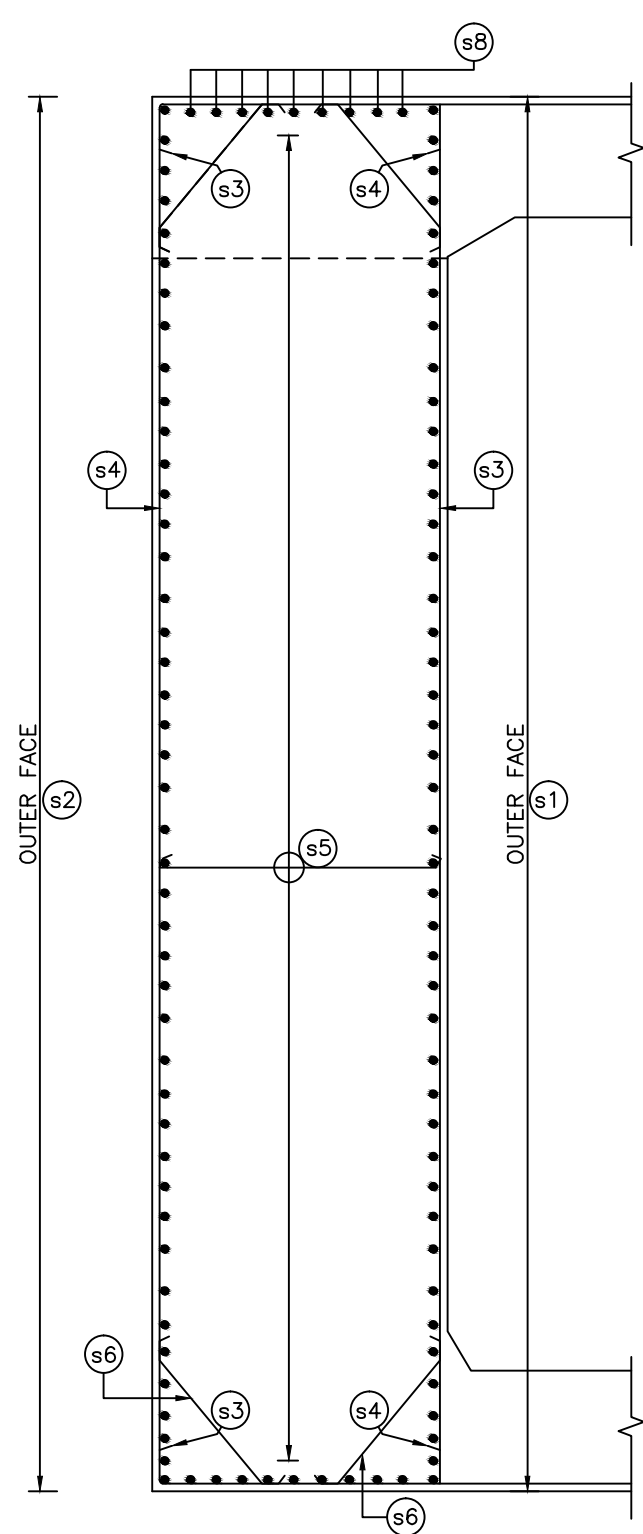
SECTION 2-2  
(SCALE 1:60)



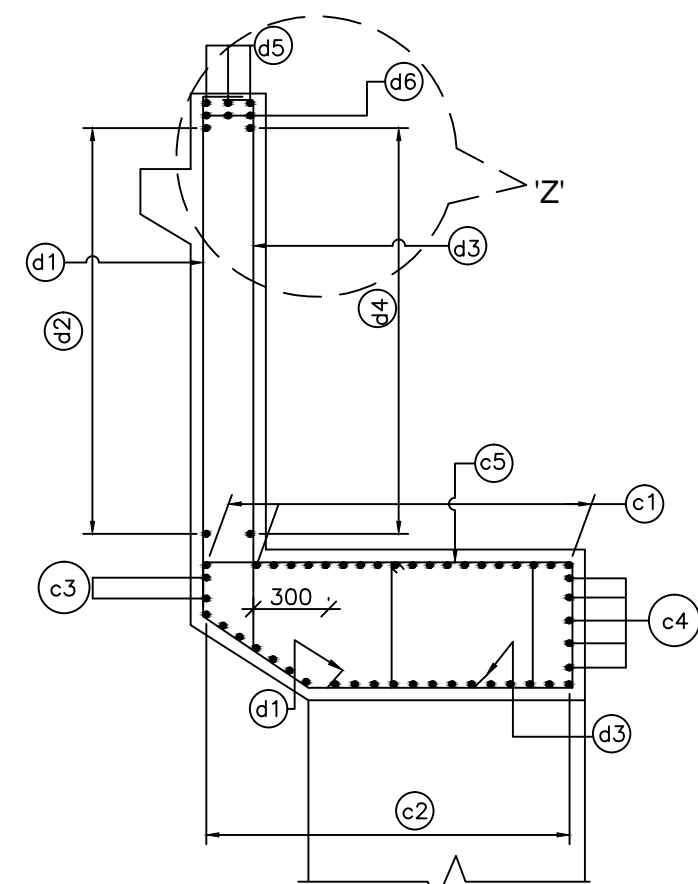
JUNCTION DETAILS OF RCC  
SOLID RETURN WALL AND DIRT WALL  
(SCALE 1:30)



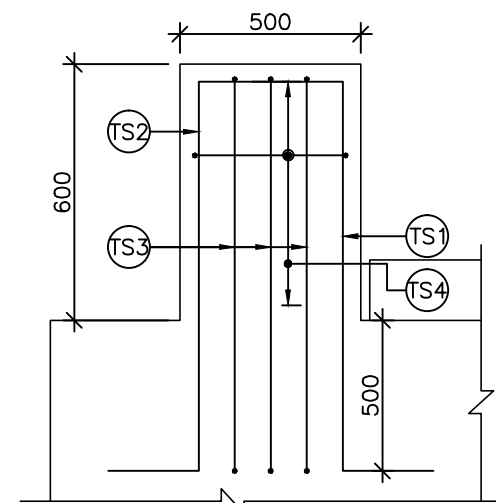
JUNCTION DETAILS OF RCC  
ABUTMENT AND SOLID RETURN WALL  
(SCALE 1:30)



SECTION 1-1  
(SCALE 1:50)



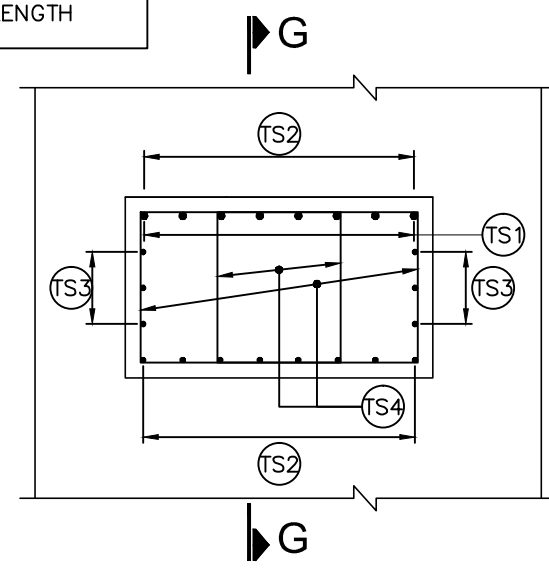
R/F DETAILS OF  
DIRT WALL & ABUTMENT CAP  
(SCALE 1:30)



SECTION AT G-G  
(SCALE 1:25)

**LEGEND:**

—	TOP/EARTH FACE
- - -	BOTTOM/OUTER FACE
B/F	BOTH FACE
V.L	VARYING LENGTH



PLAN SHOWING REINF. DETAILS OF  
SEISMIC TRANSVERSE STOPPER  
(SCALE 1:25)

#### ABUT. SHAFT REINFT.

BAR MKD.	DIA (mm)	SPACING/Nos.	SHAPE
s1	20	130 Nos.	
s2	16	130 Nos.	
s3	16	200	
s4	12	200	
s5	10	240	
s6	12	150	
s7		NOT USED	
s8	16	5 Nos	

#### DIRT WALL. REINFT.

d1	12	150	
d2	10	200	
d3	10	150	
d4	10	200	
d5	12	3 Nos.	
d6	12	3 Nos.	

#### ABUT.CAP REINFT.

c1	20	10 Nos.	
c2	20	10 Nos.	
c3	16	2 Nos.	
c4	16	5 Nos.	
c5	4L-12	120	

#### RETURN WALL. REINFT.

r1	16	4 Nos.	
r2	16	4 Nos.	
r3	16	125	
r4	16	125	
r5	16	125	
r5a	16	125	
r6	12	125	
r6a	10	125	
r8	12	4 Nos.	
r9	16	125	
r10	16	125	

#### TRANSVERSE SEISMIC STOPPER:-

TS1	25	10 Nos.	
TS2	12	8 Nos.	
TS3	12	3x2 Nos.	
TS4	16	100	4 LEGGED



Project Title:-

**CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.**

TELIAMURA - SABROOM SECTION-2

CLIENT:-



NATIONAL HIGHWAYS & INFRASTRUCTURE  
DEVELOPMENT CORPORATION LTD

Drawing Title:-

REINFORCEMENT DETAILS OF ABUTMENT  
CAP & ABUTMENT FOUNDATION

Drawing No. :- TASPL/NHIDCL/FDPR/GAD/09

Scale :- AS SHOWN

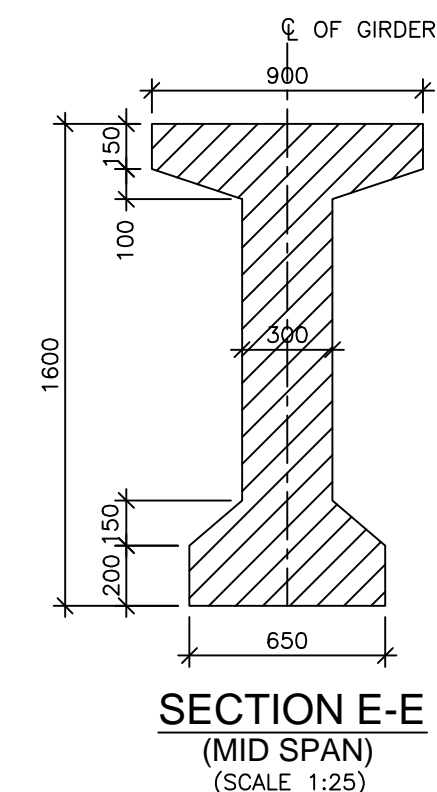
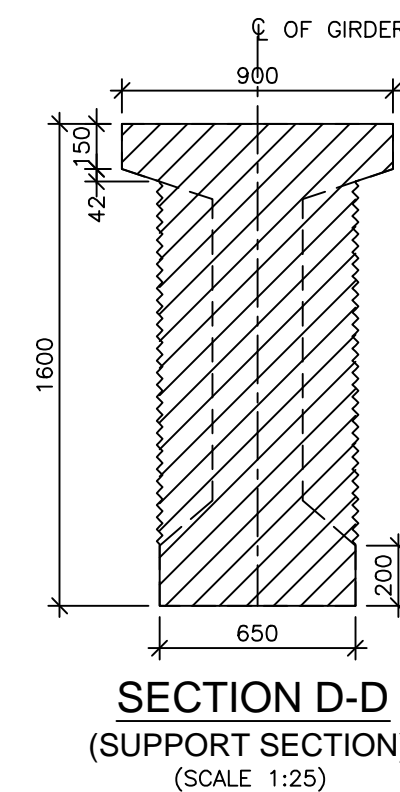
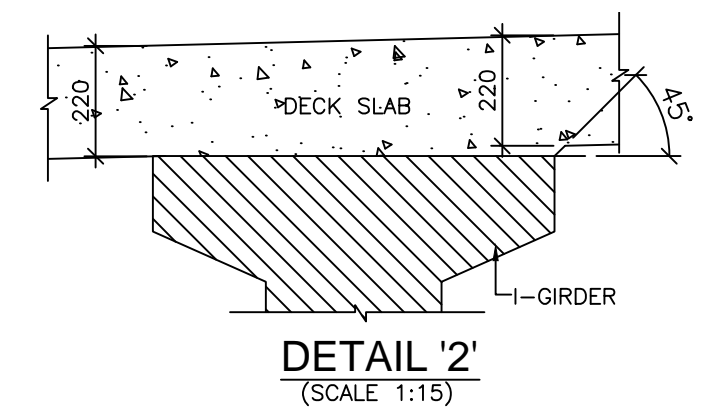
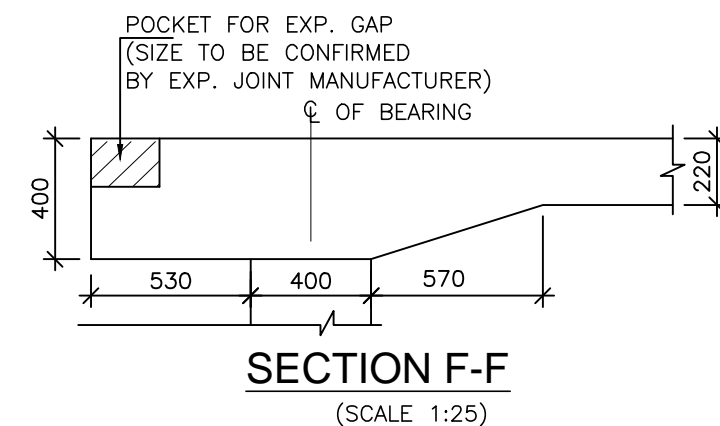
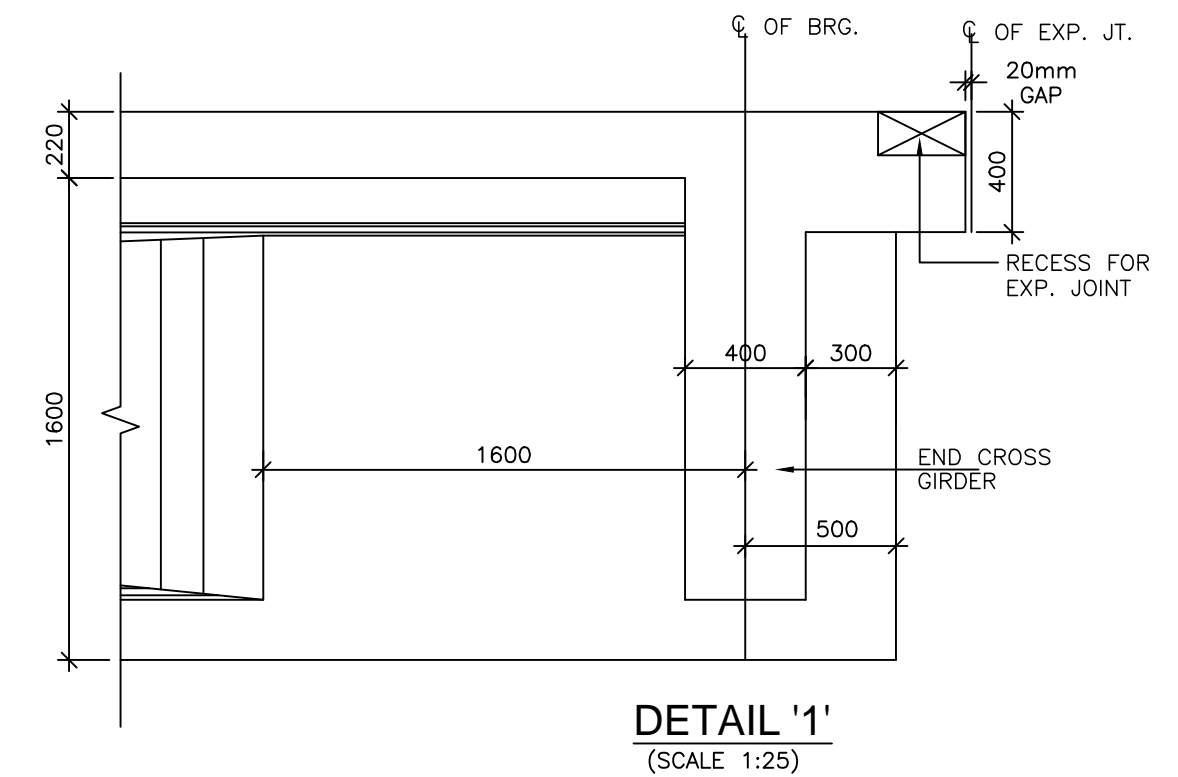
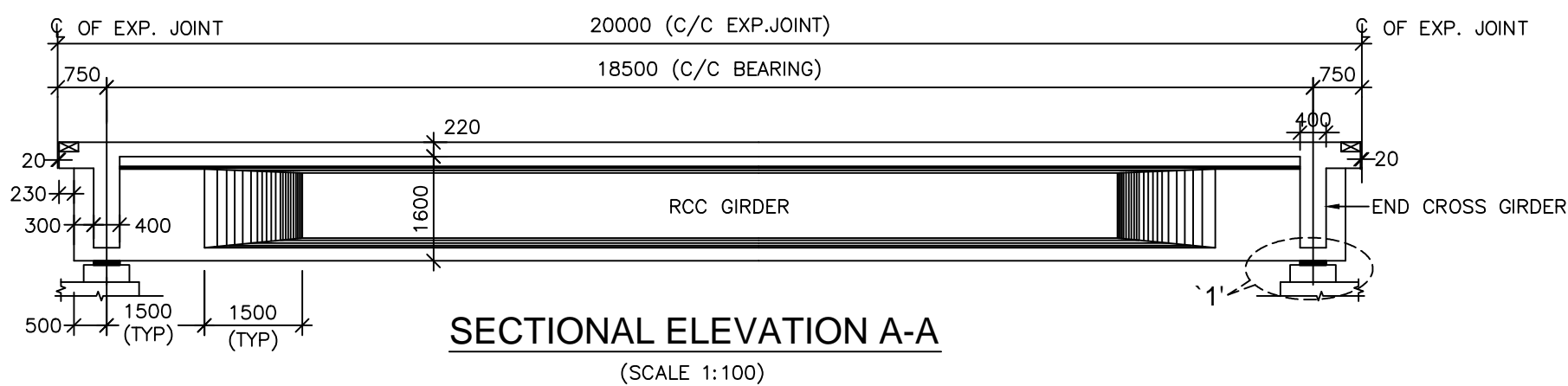
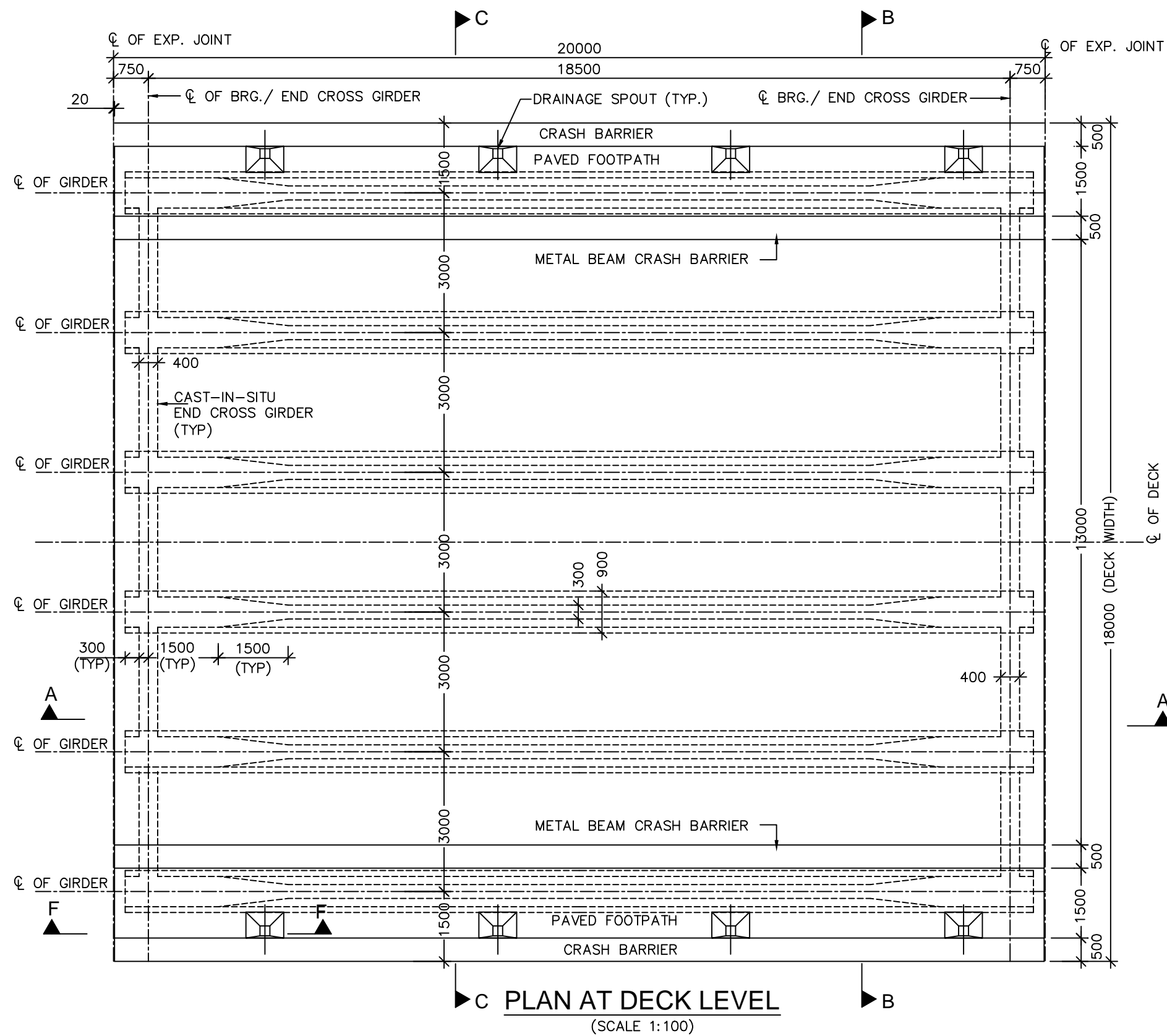
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CONSULTANT:-



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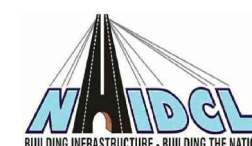


Project Title:-

**CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.**

TELIAMURA - SABROOM SECTION-2

CLIENT:-



**NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD**

Drawing Title:-

**DIMENSION DETAIL OF RCC PRECAST I-GIRDER SUPERSTRUCTURE FOR 1x20.0 M SPAN**

Drawing No. :- TASPL/NHIDCL/FDPR/GAD/09

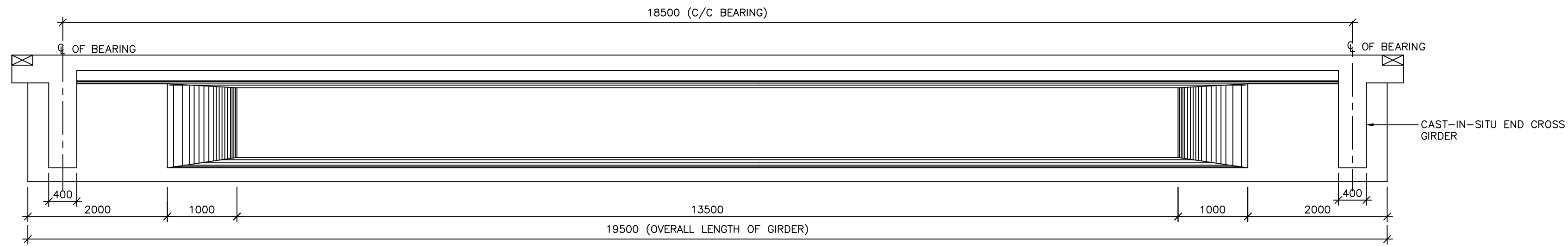
Scale :- AS SHOWN

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CONSULTANT:-

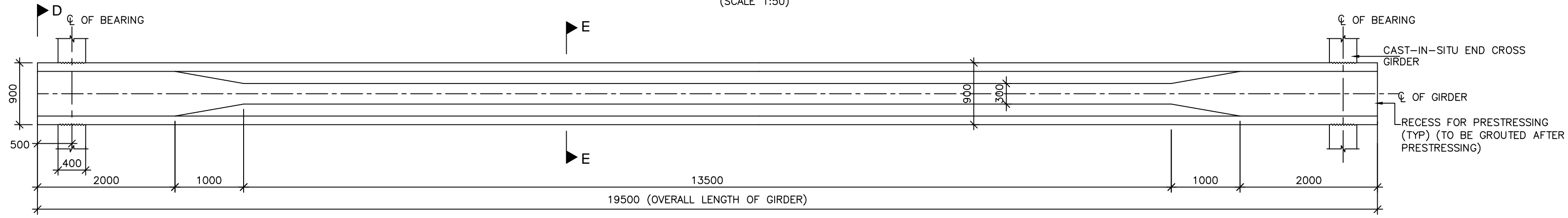


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Patparganj Delhi-110092.



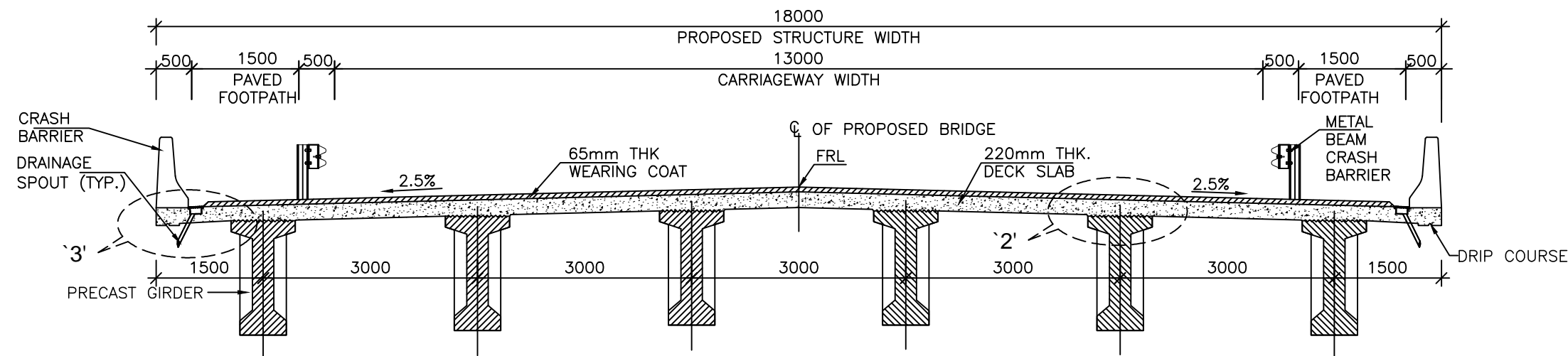
**ELEVATION OF PRECAST GIRDER**

(SCALE 1:50)



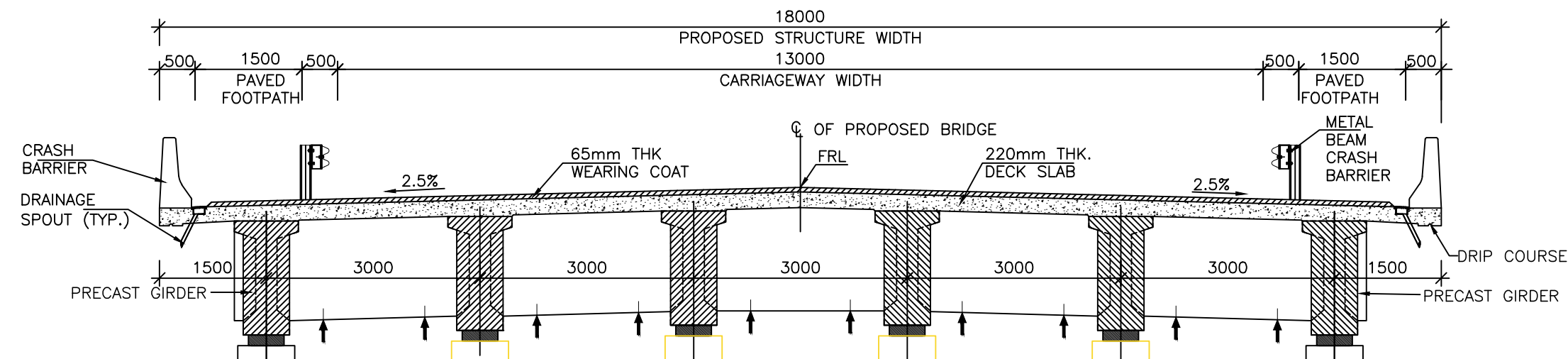
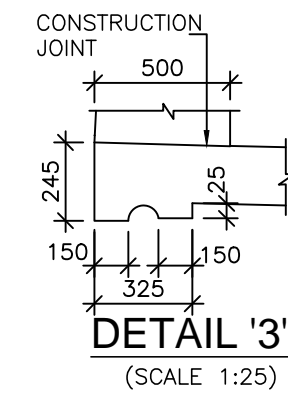
**PLAN OF PRECAST GIRDER**

(SCALE 1:50)



**SECTION C-C**

(SCALE 1:100)



**SECTIONAL ELEVATION B-B**

(SCALE 1:75)

**NOTES:-**

1. ALL DIMENSIONS ARE IN MM UNLESS SHOWN OTHERWISE.
2. TOP SURFACE OF GIRDER SHALL BE ROUGHED FOR EFFECTIVE BONDING.
3. ANY DISCREPANCIES MUST BE BROUGHT TO THE NOTICE OF THE CONSULTANT BEFORE EXECUTION OF WORK AT SITE.
4. BEAM SHALL BE KEPT UPRIGHT AT ALL TIMES AND TO BE CLEARLY MARKED INDICATING SPAN, LOCATION, AND RESPECTIVE ENDS BEFORE REMOVAL FROM CASTING BED.
5. CONCRETE FOR SUPERSTRUCTURE SHALL BE DESIGN MIX AND HAVE A MINIMUM 28 DAYS CHARACTERISTIC STRENGTH OF M40.
6. TOP SURFACE OF GIRDER SHALL BE ROUGHED FOR EFFECTIVE BONDING.



Project Title:-

**CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.**

TELIAMURA - SABROOM SECTION-2

CLIENT:-



**NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD**

Drawing Title:-

**DIMENSION DETAIL OF RCC PRECAST I-GIRDER SUPERSTRUCTURE FOR 1x20.0 M SPAN**

Drawing No. :- **TASPL/NHIDCL/FDPR/GAD/09**

Scale :- **AS SHOWN**

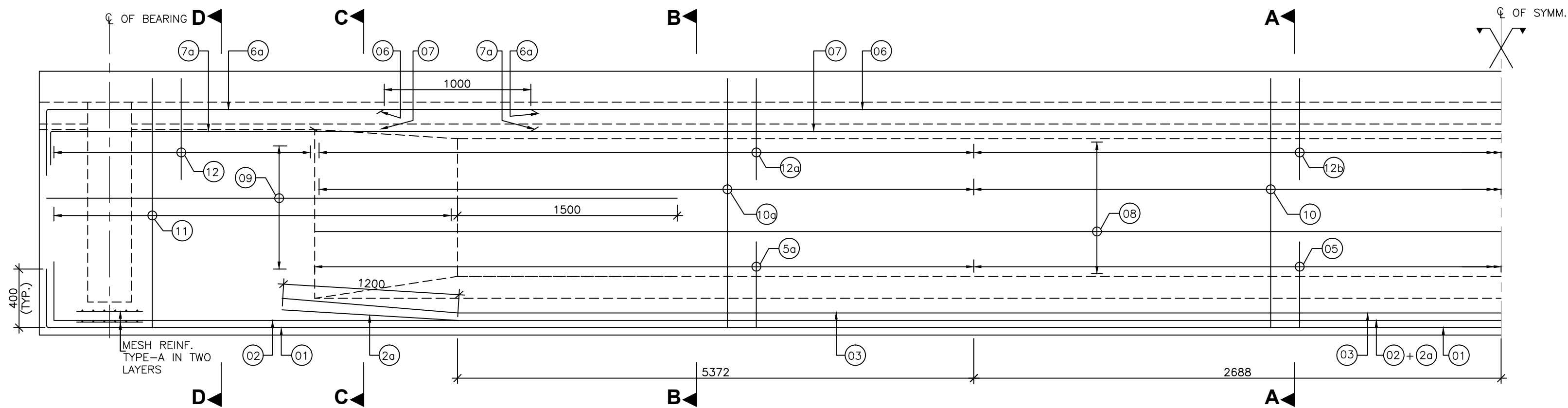
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CONSULTANT:-



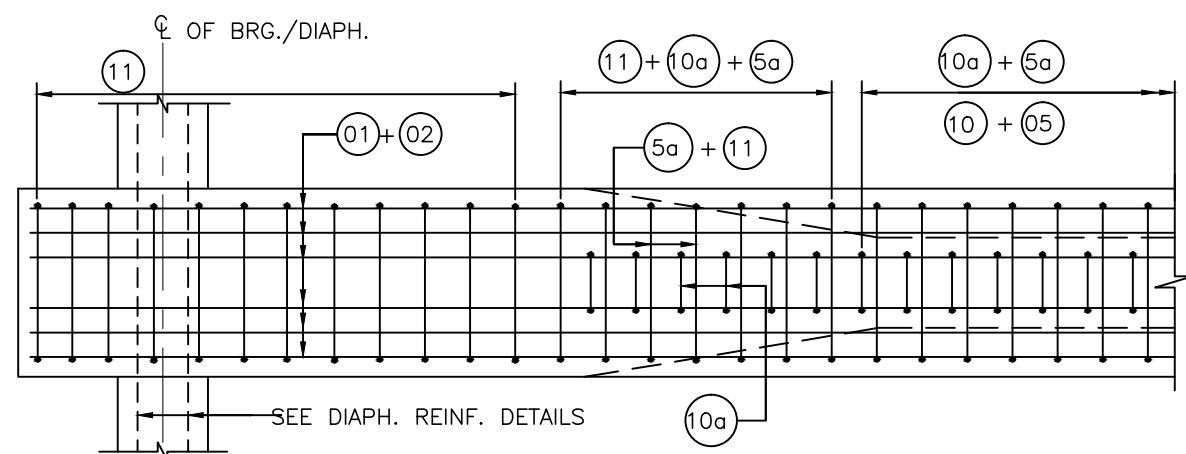
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68,Ajanta Apartments, 36, I.P. Extension  
Patparganj Delhi-110092.





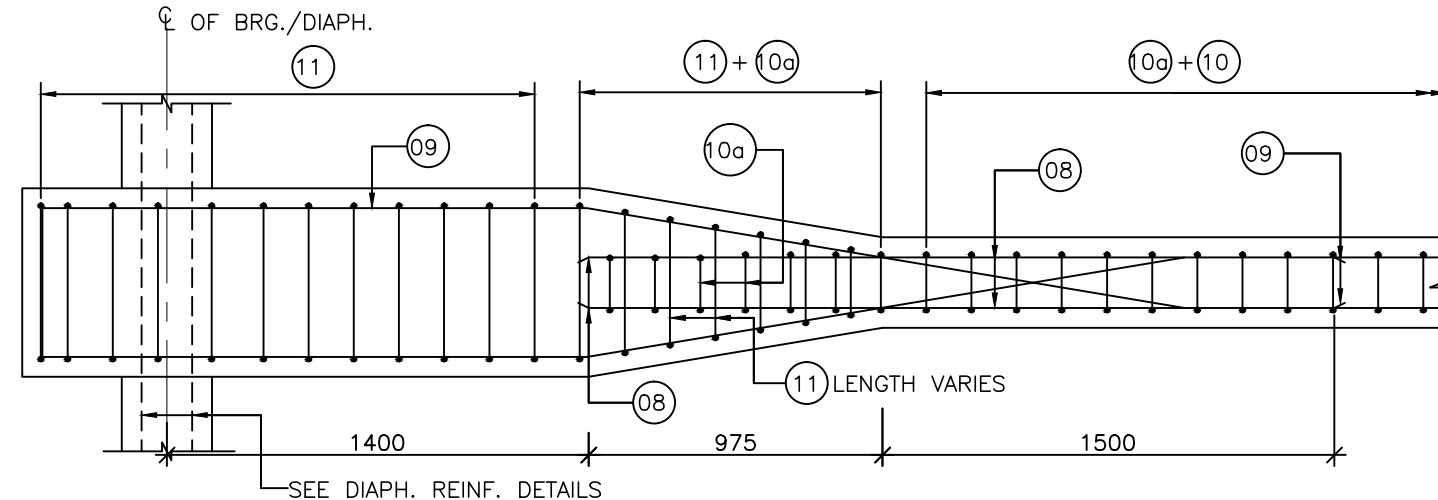
**REINFORCEMENT DETAILS OF LONGITUDINAL GIRDER**

(SCALE 1:30)



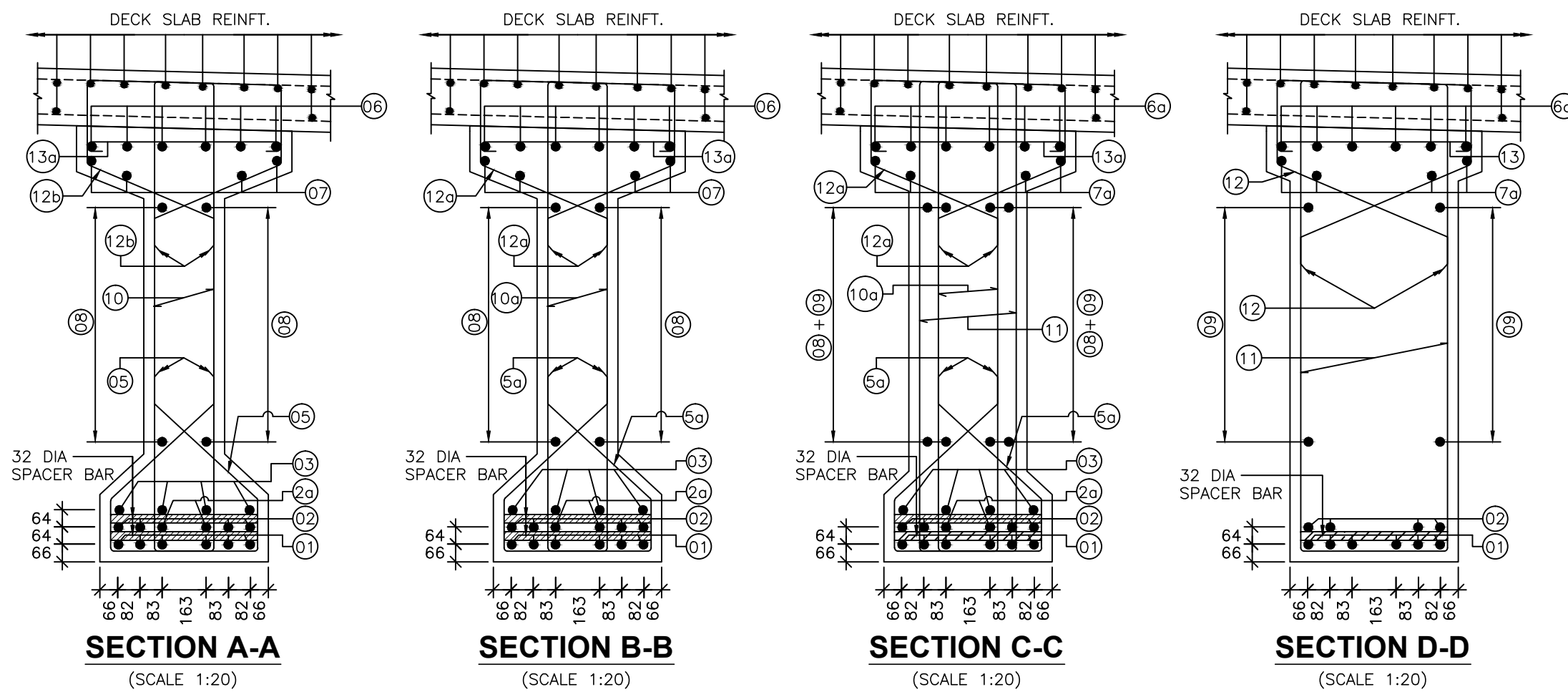
**PLAN SHOWING BULB REINF. DETAILED AT END**

(SCALE 1:30)



**PLAN SHOWING WEB REINF. DETAILED (TOP) AT END**

(SCALE 1:30)



**SECTION A-A**

(SCALE 1:20)

**SECTION B-B**

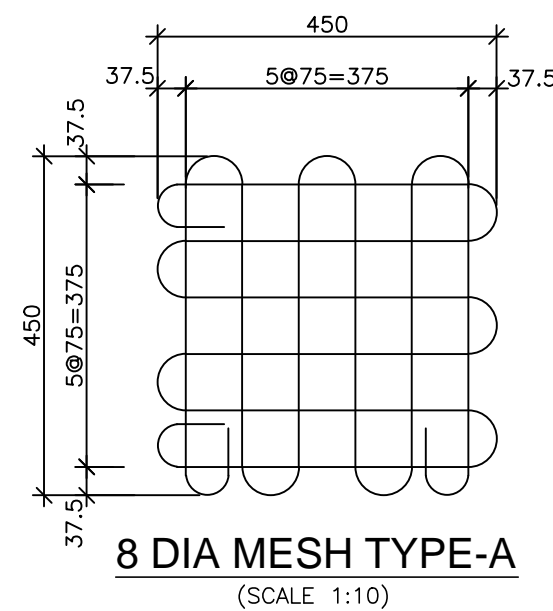
(SCALE 1:20)

**SECTION C-C**

(SCALE 1:20)

**SECTION D-D**

(SCALE 1:20)



**8 DIA MESH TYPE-A**

(SCALE 1:10)

SCHEDULE OF REINFORCEMENT			
BAR MKD.	DIA OF BAR	SPACING/ NO. OF BAR	BAR SHAPE
01	32	6 NOS.	
02	32	4 NOS.	
2a	32	2 NOS.	
03	32	4 NOS.	
04	NOT USED		
05	10	200c/c	
5a	10	200c/c	
06	10	6 NOS.	
6a	10	6 NOS.	
07	10	2+2NOS.	
7a	10	2+2NOS.	
08	10	200c/c	
09	10	200c/c	
10	2L-10	200c/c	
10a	2L-12	200c/c	
11	2L-12	80c/c	
12	10	150c/c	
12b	10	200c/c	
12a	10	200c/c	
13	10	150c/c	
13a	10	200c/c	

**NOTES:**

- ALL DIMENSIONS ARE IN MM UNLESS SHOWN OTHERWISE.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRG.
- FIGURED DIMENSIONS SHOULD BE FOLLOWED. DO NOT SCALE THE DIMENSIONS.
- STEEL REINFORCEMENT SHALL BE HYSD TMT BARS OF GRADE DESIGNATION Fe 500D CONFORMING TO IS 1786-2008.
- CLEAR COVER TO ANY REINFORCEMENT IS 40MM.
- LAP LENGTH SHALL CONFIRM TO CLAUSE 15.2 IRC-112 2011.
- LAPS SHOULD BE STAGGERED & NOT MORE THAN 50% BARS SHOULD BE LAPPED AT A SECTION & LAP SHOULD NOT BE LOCATED IN AREA OF HIGHEST STRESSES.
- ANCHORAGE LENGTH OF REINF. BARS SHALL BE 36xDIA OF BAR & SHALL CONFIRM TO CLAUSE 15.2.3 OF IRC-112 2011.
- 32 DIA SPACER BARS SHALL BE PROVIDED @ 1M C/C BETWEEN TWO TIERS OF LONGITUDINAL BARS OF GIRDERS.
- CONDITION OF EXPOSURE IS MODERATE.
- CONC. GRADE M35.



Project Title:-

**CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.**

**TELIAMURA - SABROOM SECTION-2**

CLIENT:-



**NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD**

Drawing Title:-

**REINFORCEMENT DETAILS OF RCC PRECAST INNER & OUTER GIRDER FOR 1X20.0M SPAN**

Drawing No. :- **TASPL/NHIDCL/FDPR/GAD/09**

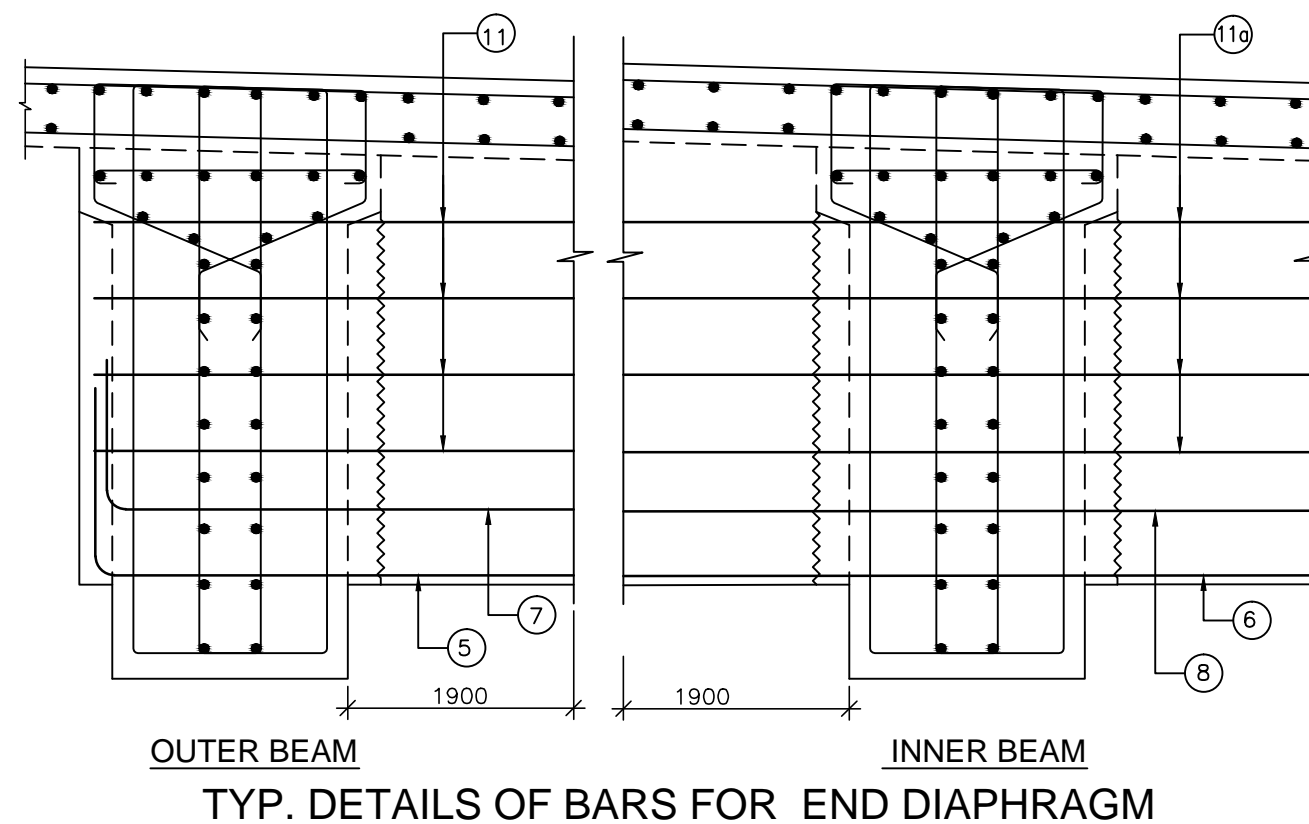
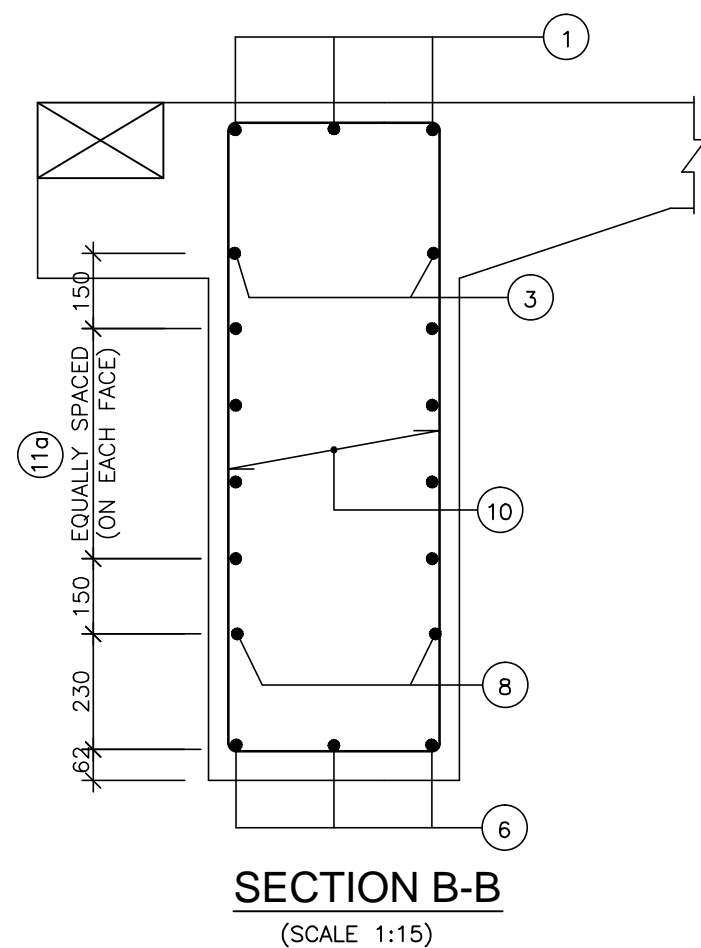
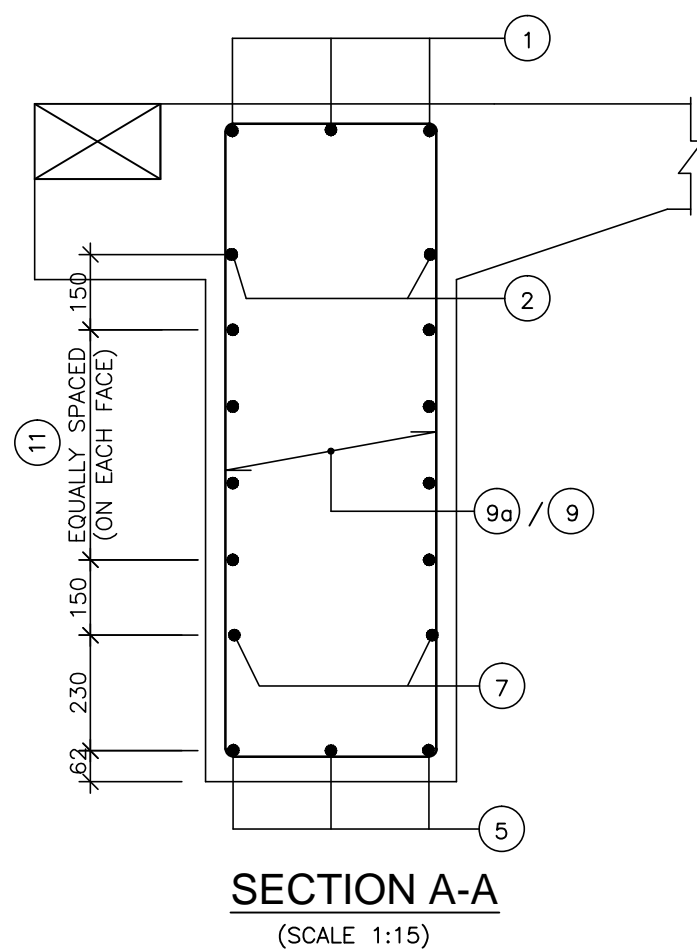
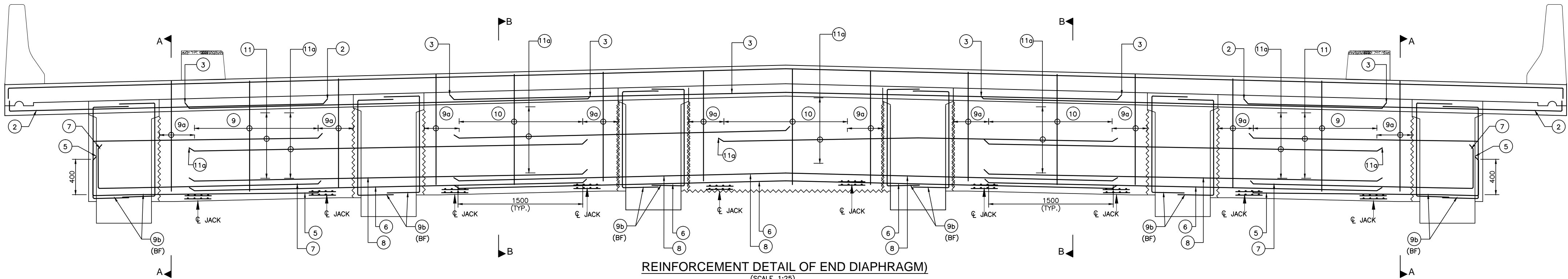
Scale :- **AS SHOWN**

Drn	Dgn.	Appd	Sheet :
D.S	D.P.S	B.Ram	01 OF 01

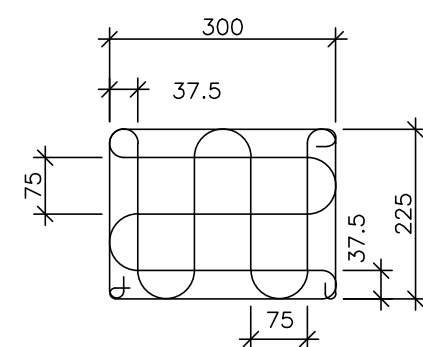
CONSULTANT:-



**Technocrats Advisory Services Private Limited**  
in association with Vaishnavi Infratech Services Pvt. Ltd  
68,Ajanta Apartments, 36, I.P. Extension  
Patparganj Delhi-110092.



SCHEDULE OF REINFORCEMENT			
BAR MKD.	DIA OF BAR	SPACING/ NO. OF BAR	BAR SHAPE
①	25	3 NOS.	
②	25	2 NOS.	
③	25	2 NOS.	
④	NOT USED		
⑤	25	3 NOS.	
⑥	20	3 NOS.	
⑦	20	2 NOS.	
⑧	20	2 NOS.	
⑨	2L-16 (STIRRUPS)	200	
⑨a	2L-16	4 NOS.	
⑨b	2L-16 (BOTH FACE)	4 NOS. (BOTH FACE)	
⑩	2L-16 (STIRRUPS)	200	
⑪	16	4 NOS. (ON EACH FACE)	
⑪a	16	4 NOS. (ON EACH FACE)	



### NOTES:

- ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METERS.
- NO DIMENSIONS SHALL BE SCALED OFF FROM THE DRAWING AND WRITTEN DIMENSIONS SHALL BE FOLLOWED
- STEEL REINFORCEMENT SHALL BE HYSD TMT BARS OF GRADE DESIGNATION Fe 500D CONFORMING TO IS 1786-2008.
- THE LOCATION OF JACKS FOR LIFTING UP THE SUPERSTRUCTURE TO REPLACE BEARING ETC. IS SHOWN THUS ↓. THESE SHOULD BE DISTINCTLY ETCHED ON THE CROSS GIRDERS AND ABUTMENT CAPS.
- THE JACK FOR LIFTING THE SUPER STRUCTURE DURING BEARING REPLACEMENT SHALL HAVE A MINIMUM CAPACITY OF 100t.
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS.
- BAR MARK 5 & 6 TO BE LOCALLY ADJUSTED SO AS THAT THEY DO NOT FOUL WITH ANCHORAGES.
- CONC. GRADE M35.



Project Title:-

**CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.**

TELIAMURA - SABROOM SECTION-2

CLIENT:-



**NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD**

Drawing Title:-

REINFORCEMENT DETAILS OF  
END DIAPHRAGM FOR 1X20.0M SPAN

Drawing No. :- TASPL/NHIDCL/FDPR/GAD/09

Scale :- AS SHOWN

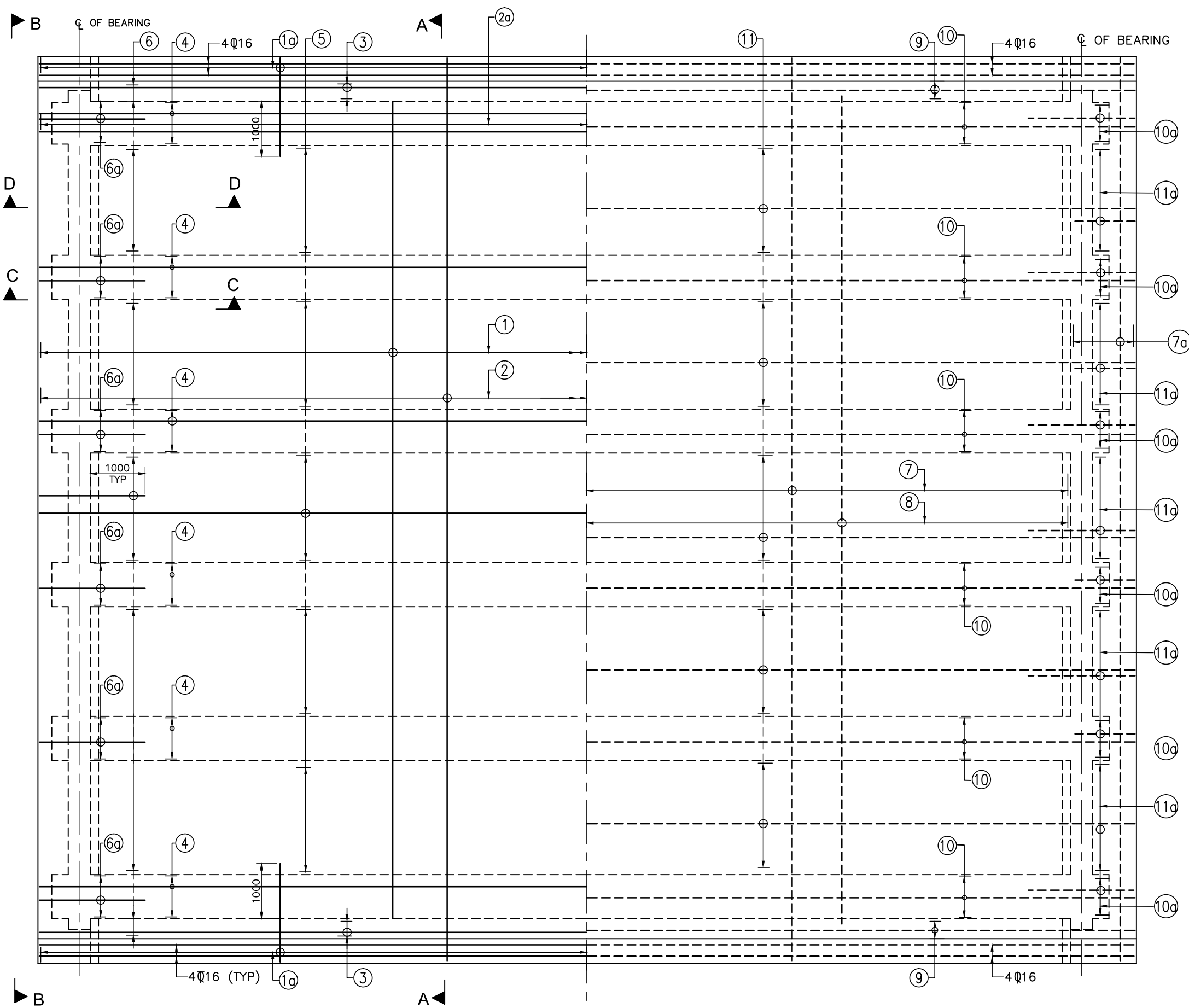
Drn	Dgn.	Appd	Sheet :
D.S	D.P.S	B.Ram	01 OF 01

CONSULTANT:-



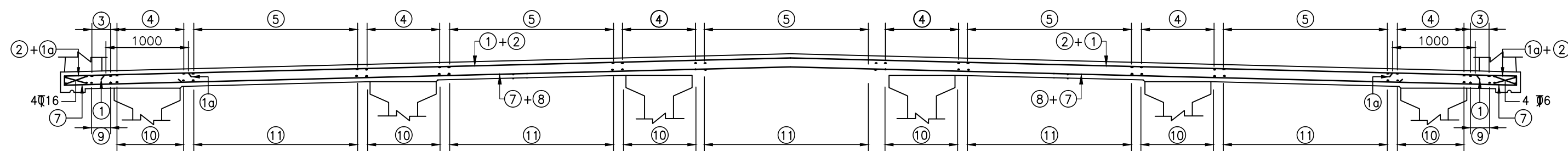
**Technocrats Advisory Services Private Limited**  
in association with Vaishnavi Infratech Services Pvt. Ltd  
68,Ajanta Apartments, 36, I.P. Extension  
Patparganj Delhi-110092.



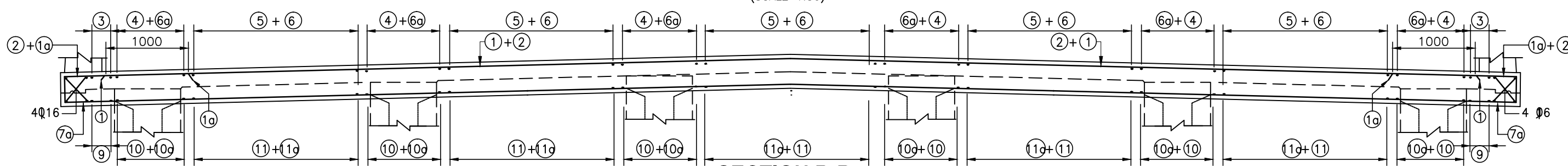


HALF TOP REINFORCEMENT    HALF BOTTOM REINFORCEMENT

PLAN  
(SCALE 1:75)



SECTION A-A  
(SCALE 1:50)



SECTION B-B  
(SCALE 1:50)

#### NOTES :

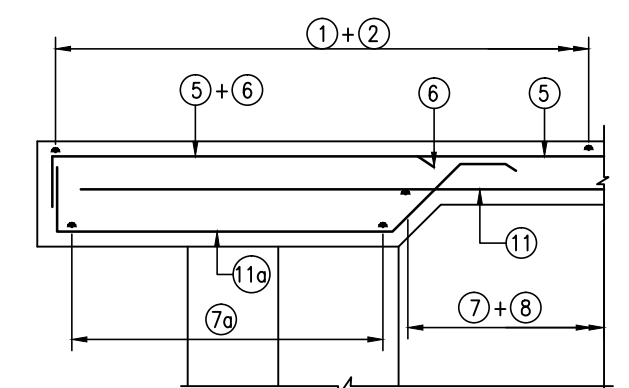
1. ALL DIMENSIONS ARE IN MM UNLESS SHOWN OTHERWISE.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRG.
3. FIGURED DIMENSIONS SHOULD BE FOLLOWED, DO NOT SCALE THE DIMENSIONS.
4. ALL UNTENSIONED REINF. SHALL BE THERMO MECHANICALLY TREATED (TMT) BARS OF GRADE Fe 500 CONFIRMING TO IS:1786-1985 WITH A YIELD STRENGTH OF 500 N/Sq mm.
5. CLEAR COVER TO ANY REINFORCEMENT IS 40mm.
6. LAP LENGTH = 63D (WHERE D IS THE DIA OF THE BAR TO BE LAPPED AT A SECTION.
7. LAPS SHOULD BE STAGGERED & NOT MORE THAN 50 % BARS SHOULD BE LAPPED AT A SECTION.

#### LEGEND

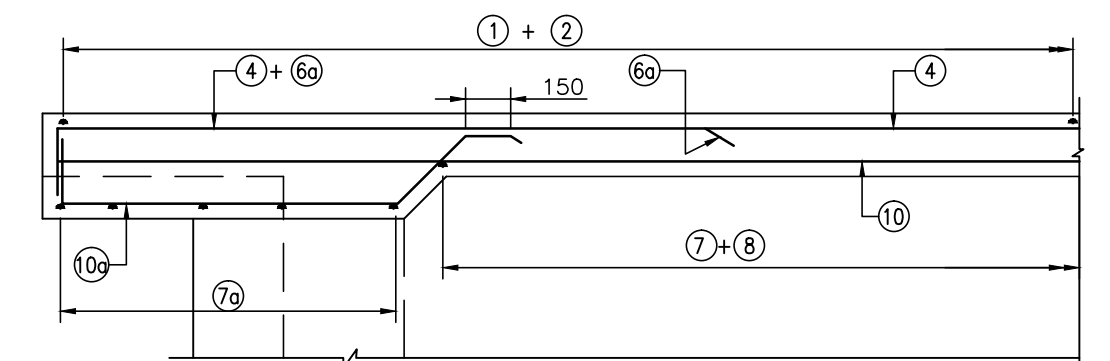
TOP BAR        \_\_\_\_\_  
BOTTOM BAR    - - - - -

#### SCHEDULE OF REINFORCEMENT

BAR MARKED	DIA OF BAR & SPACING/NOS.	BAR SHAPE
1	12 $\Psi$ @ 240 C/C	
2	10 $\Psi$ @ 240 C/C	
3	3-10 $\Psi$	
4	4-10 $\Psi$	
5	10-10 $\Psi$	
6	10-10 $\Psi$	
6a	4-10 $\Psi$	
7	12 $\Psi$ @ 240 C/C	
7a	5-12 $\Psi$	
8	16 $\Psi$ @ 240 C/C	
9	3-10 $\Psi$	
10	4-10 $\Psi$	
10a	4-10 $\Psi$	
11	10-10 $\Psi$	
11a	10-10 $\Psi$	



SECTION D-D  
(SCALE 1:25)



SECTION C-C  
SCALE 1:25



Project Title:-

**CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.**

TELIAMURA - SABROOM SECTION-2

CLIENT:-



NATIONAL HIGHWAYS & INFRASTRUCTURE  
DEVELOPMENT CORPORATION LTD

Drawing Title:-

REINFORCEMENT DETAIL OF CAST-IN-SITU  
DECK SLAB FOR PRECAST RCC I-GIRDER  
SUPERSTRUCTURE FOR 1X20.0M SPAN

Drawing No. :- TASPL/NHIDCL/FDPR/GAD/09

Scale :- AS SHOWN

Drn	Dgn.	Appd	Sheet :
D.S	D.P.S	B.Ram	01 OF 01

CONSULTANT:-



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in association with Vaishnavi Infratech Services Pvt. Ltd  
68,Ajanta Apartments, 36, I.P. Extension  
Patparganj Delhi-110092.

---



MISCELLANEOUS DRAWING



CAUTIONARY/WARNING SIGNS

RIGHT HAND CURVE  
CS-01

LEFT HAND CURVE  
CS-02

STEEP ASCENT  
CS-03

STEEP DESCENT  
CS-04

ROAD WIDENS AHEAD  
CS-05

PEDESTRIANS CROSSING  
CS-08

SCHOOL  
CS-09

CROSS ROAD SIGNS  
CS-10

SIDE ROAD RIGHT  
CS-11

SIDE ROAD LEFT  
CS-12

T' INTERSECTION  
CS-13

SIDE ROAD AHEAD  
CS-14

Y' INTERSECTION  
CS-15

Y' INTERSECTION  
CS-16

Y' INTERSECTION  
CS-17

STAGGERED INTERSECTIONS  
CS-18

STAGGERED INTERSECTIONS  
CS-19

SPEED BREAKER  
CS-20

DIVERSION TO THE OTHER CARRIAGEWAY  
OF DUAL CARRIAGEWAY ROAD  
CS-25

SERIES OF BENDS  
CS-26

ROAD MERGING AHEAD  
CS-27

CYCLE CROSSING  
CS-28

HAIR PIN BEND  
CS-29



Project Title:-  
**CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.**  
TELIAMURA - SABROOM SECTION

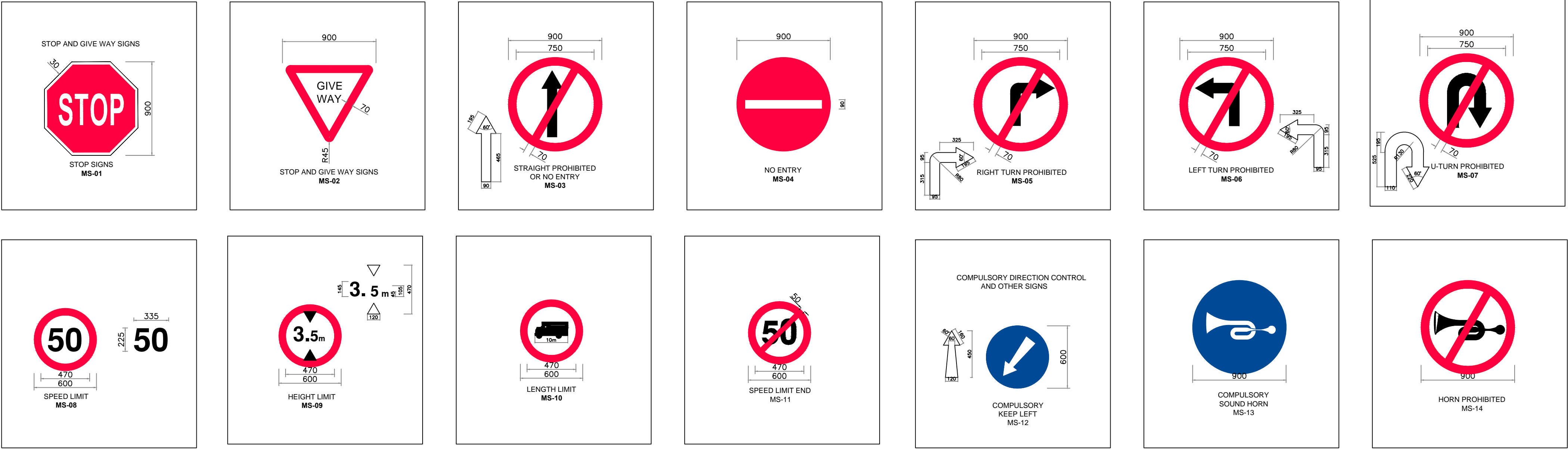
CLIENT:-  
  
**NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD**

Drawing Title:- ROAD SIGNS-I			
Drawing No. :- TASPL/NHIDCL/FDPR/MISC/12			
Scale :- NTS			
Drn	Dgn.	Appd	Sheet :
D.S	B.Mishra	B.Ram	01 OF 03

CONSULTANT:-  
  
**Technocrats Advisory Services Private Limited**  
in association with Vaishnavi Infratech Services Pvt. Ltd  
68,Ajanta Apartment, 36, I.P. Extension  
Patparganj Delhi-110092.

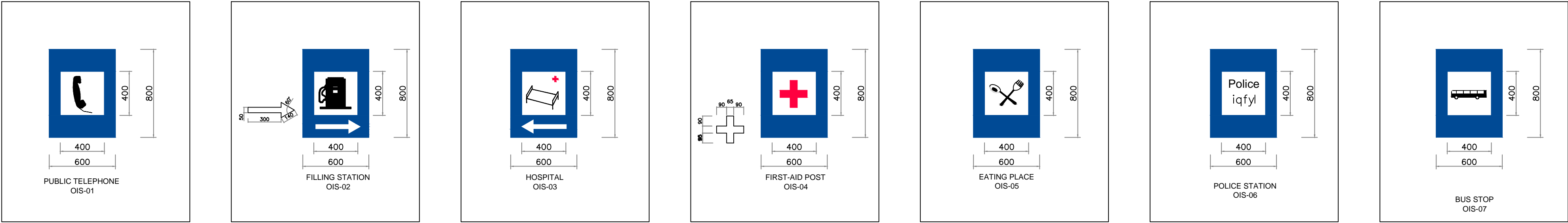


MANDATORY/REGULATORY SIGNS

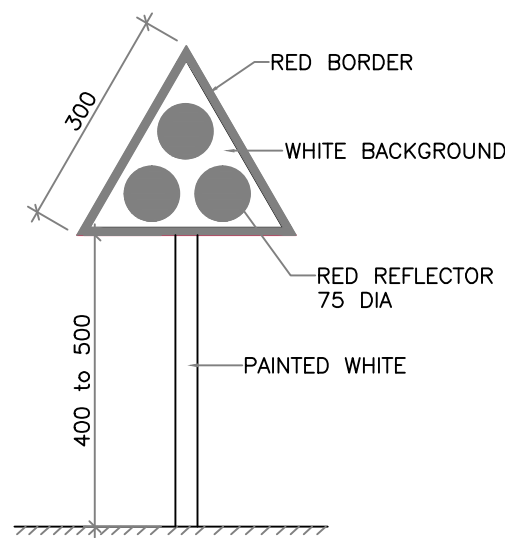


INFORMATORY SIGN BOARD:-

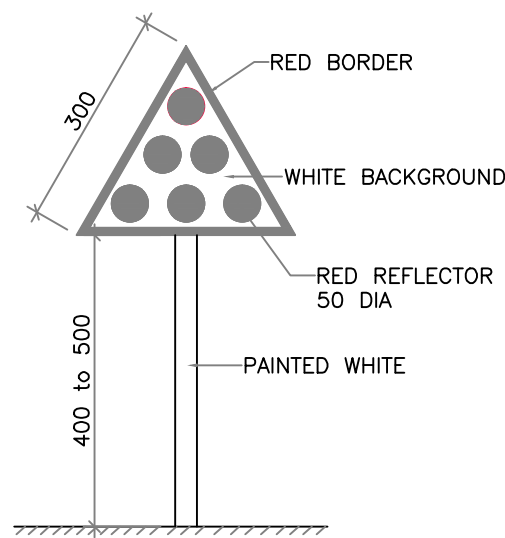
(A) FACILITY INFORMATION SIGNS



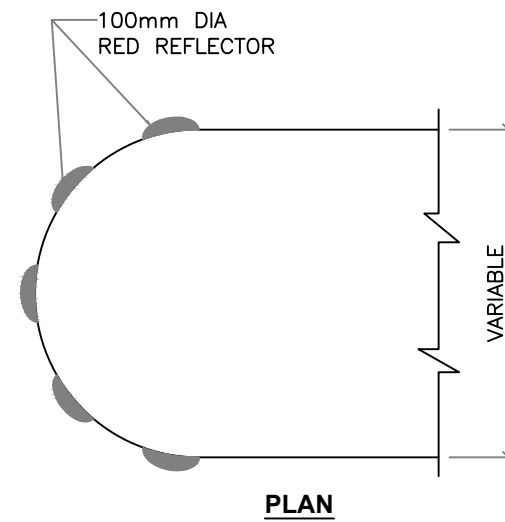
(B) DIRECTION AND PLACE IDENTIFICATION SIGNS



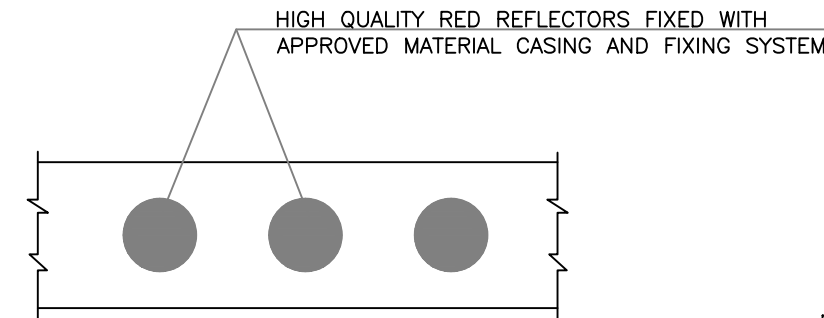
CLUSTER OF RED REFLECTORS  
TA-1



MEDIAN TIP REFLECTORS  
TA-4

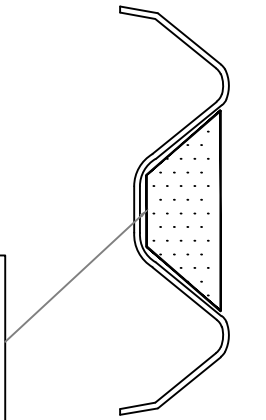


PLAN

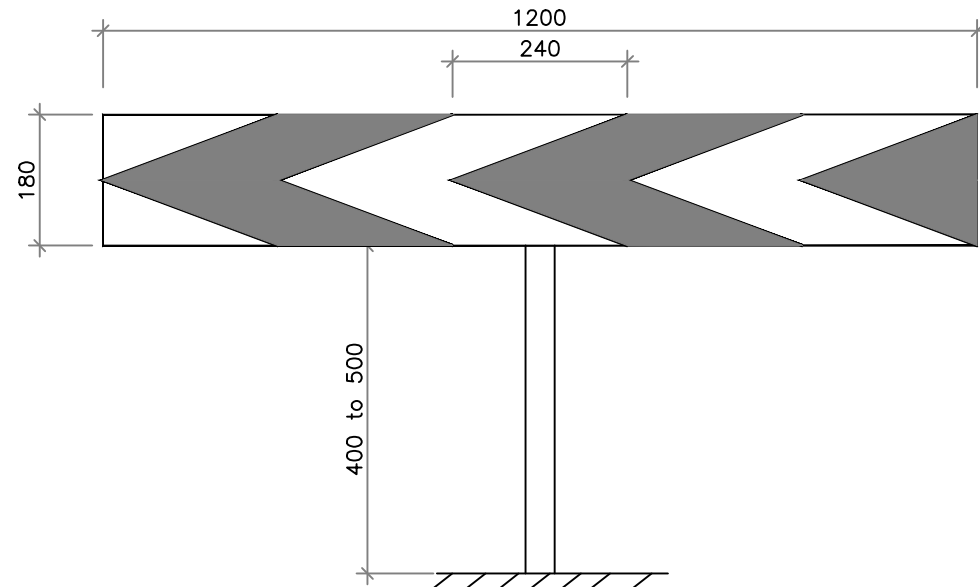


ELEVATION

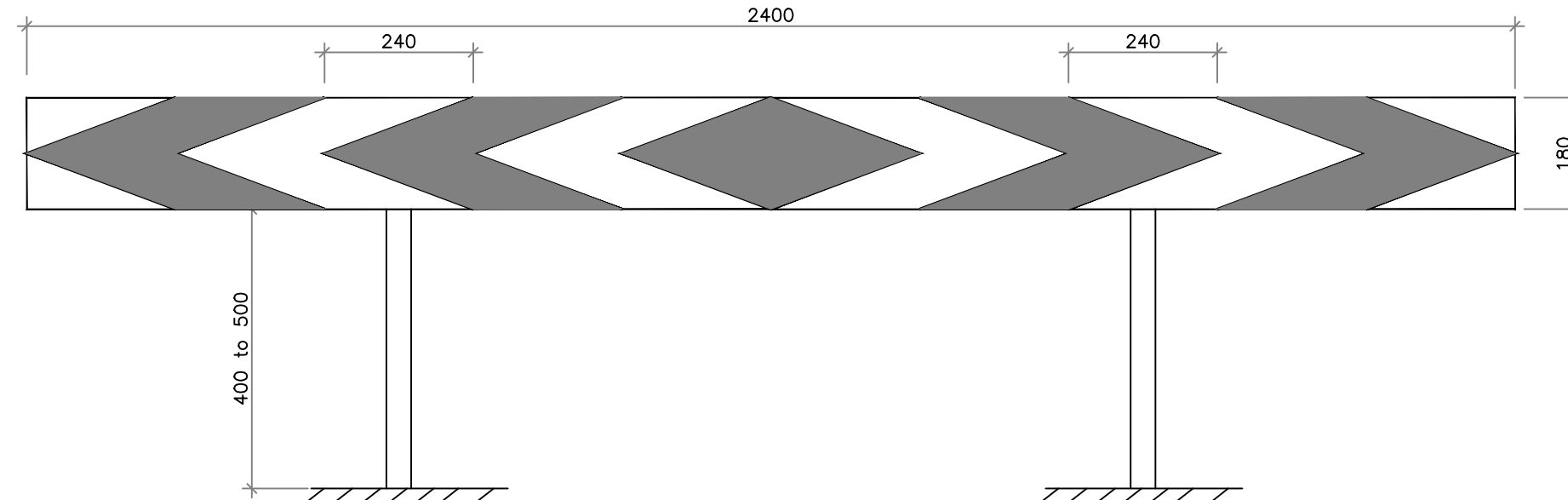
HIGH QUALITY RED REFLECTORS OF APPROVED SIZE AND SHAPE ( TO FIXED IN THE SHAPE OF W-BEAM), FIXED WITH APPROVED MATERIAL, CASING ANF FIXUP SYSTEM



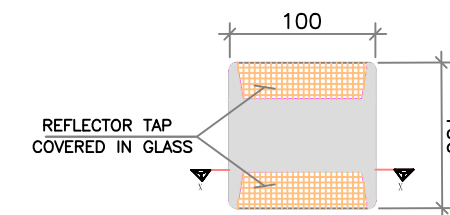
ON W-BEAM OF  
METAL BEAM  
CRASH BARRIER  
TA-5



ONE-WAY HAZARD MARKER  
TA-2

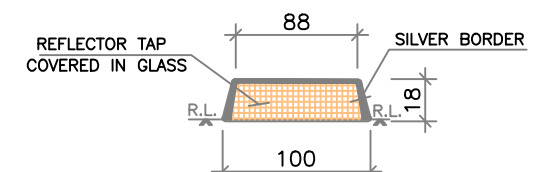


TWO-WAY HAZARD MARKER  
TA-3



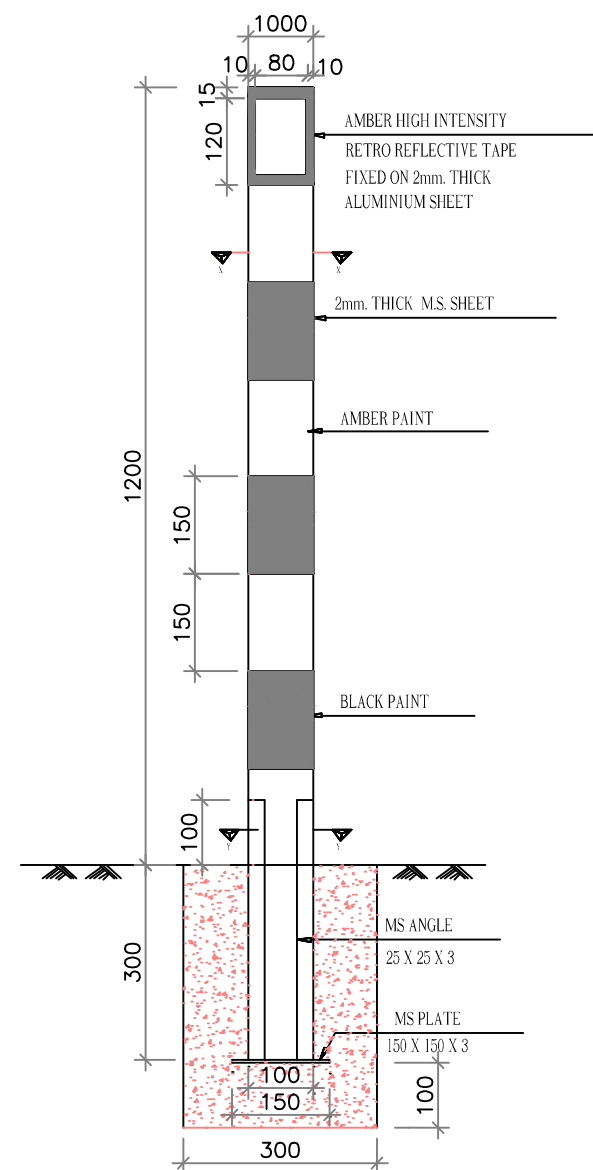
PLAN

Road Studs  
(Cateyes)

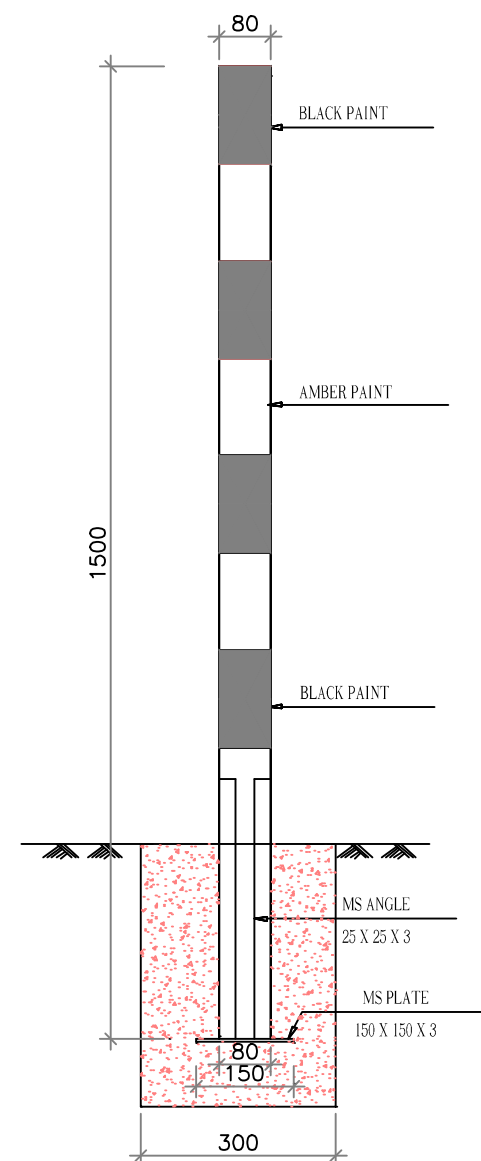


Section X - X

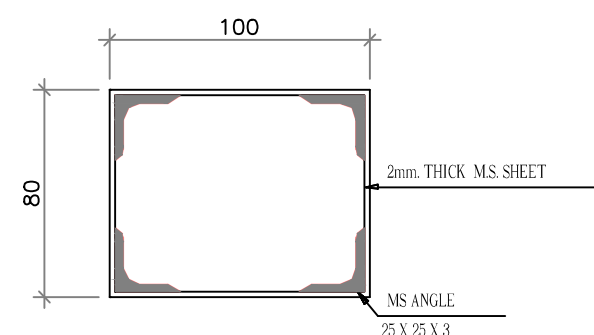
Road Studs  
(Cateyes)



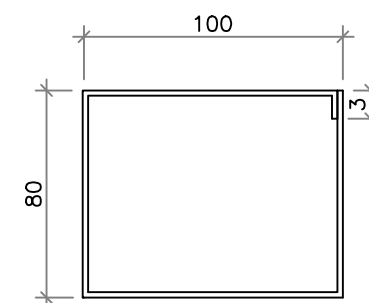
FRONT VIEW



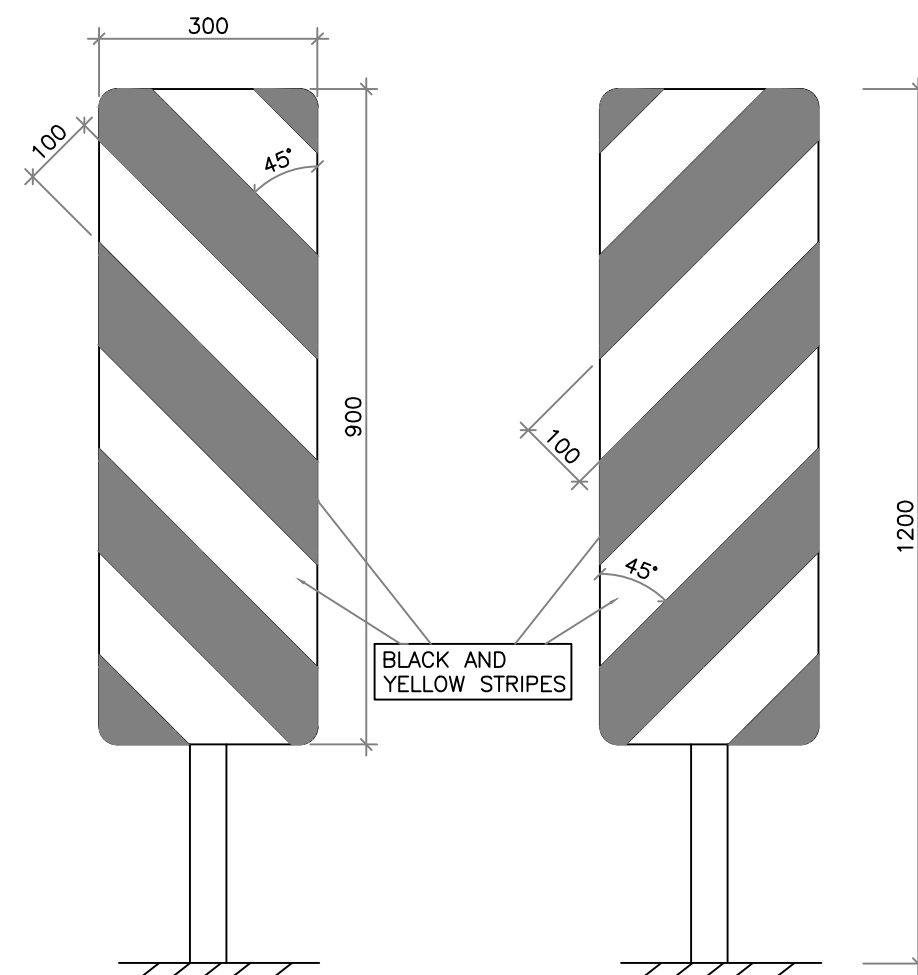
SIDE VIEW



SECTION Y-Y



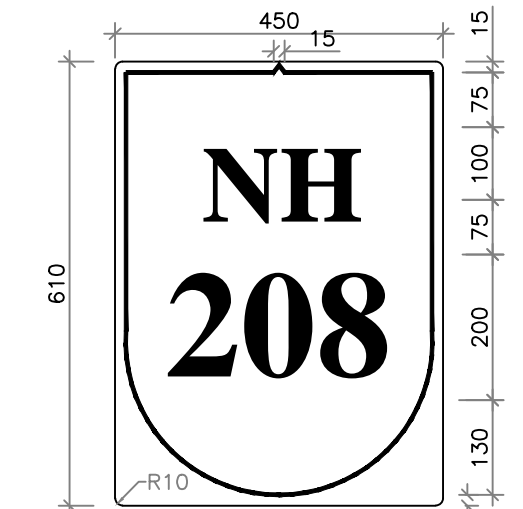
SECTION X-X



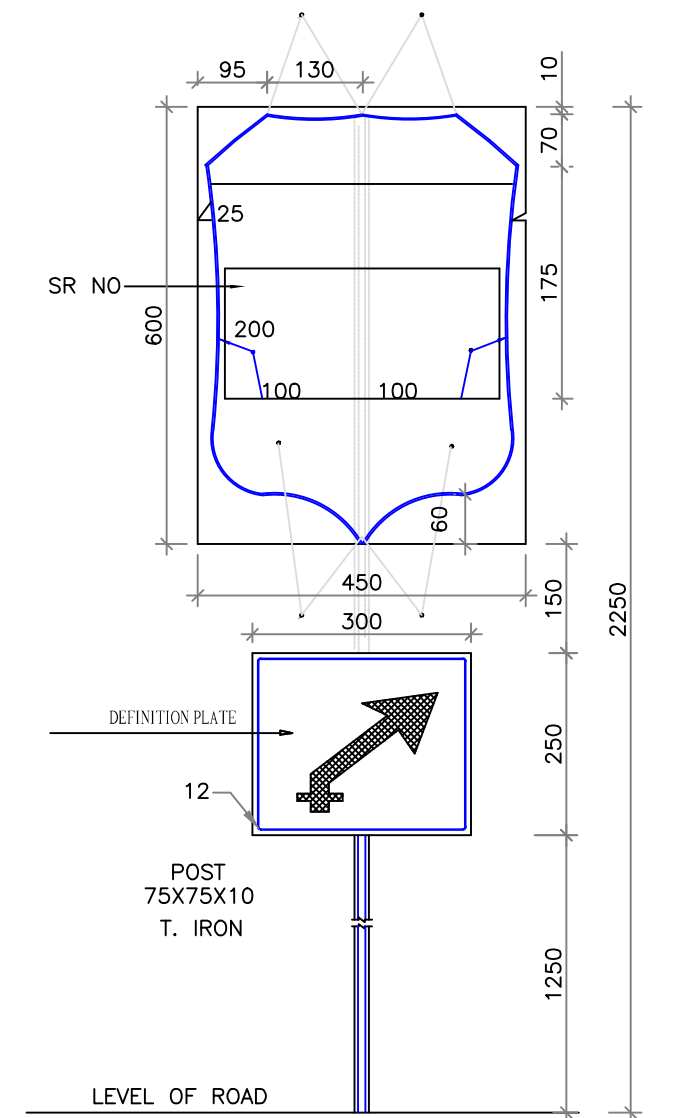
LEFT

RIGHT

OBJECT HAZARD MARKERS



NH ROUTE MARKER SIGN  
IS-07



ASSEMBLY OF ROUTE MARKER SIGN  
ARRANGEMENT FOR ERECTION OF  
STATE ROUTE MARKER SIGN



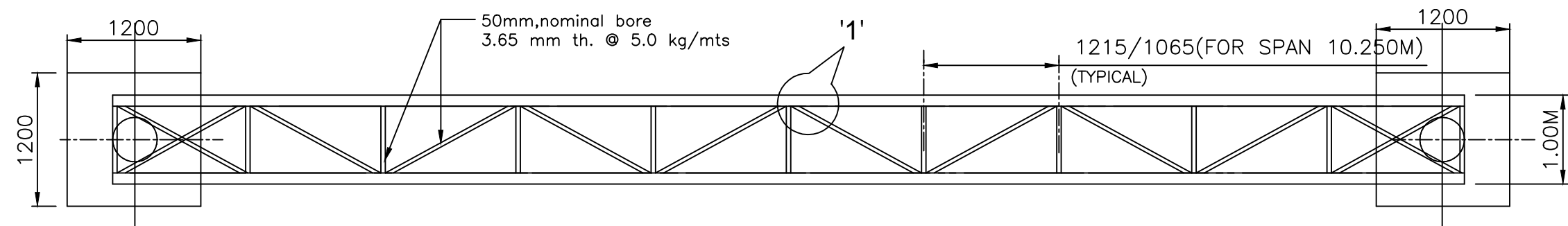
Project Title:-  
**CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.**  
**TELIAMURA - SABROOM SECTION**

CLIENT:-  
**NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD**

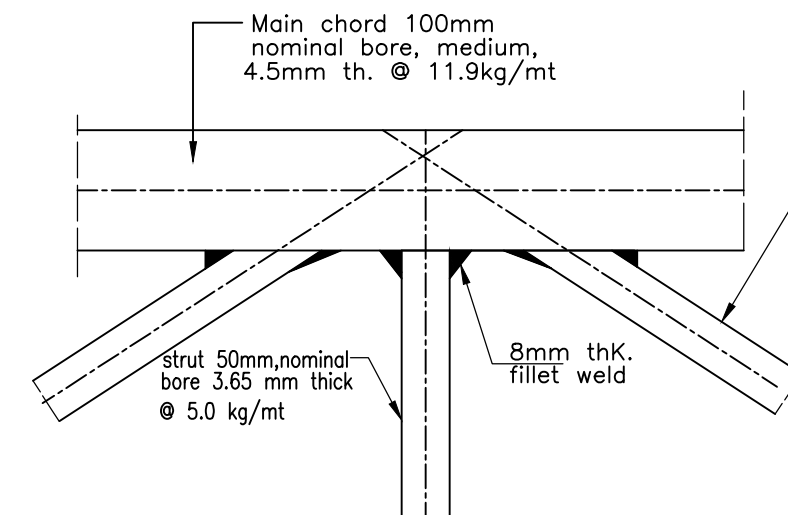
Drawing Title:-  
**ROAD SIGNS-III**  
Drawing No. :- **TASPL/NHIDCL/FDPR/MISC/12**  
Scale :- **NTS**  
Drn :- **D.S**  
Dgn. :- **B.Mishra**  
Appd :- **B.Ram**  
Sheet :- **03 OF 03**

CONSULTANT:-  
**TASPL**  
**Technocrats Advisory Services Private Limited**  
in association with Vaishnavi Infratech Services Pvt. Ltd  
68,Ajanta Apartment, 36, I.P. Extension  
Patparganj Delhi-110092.

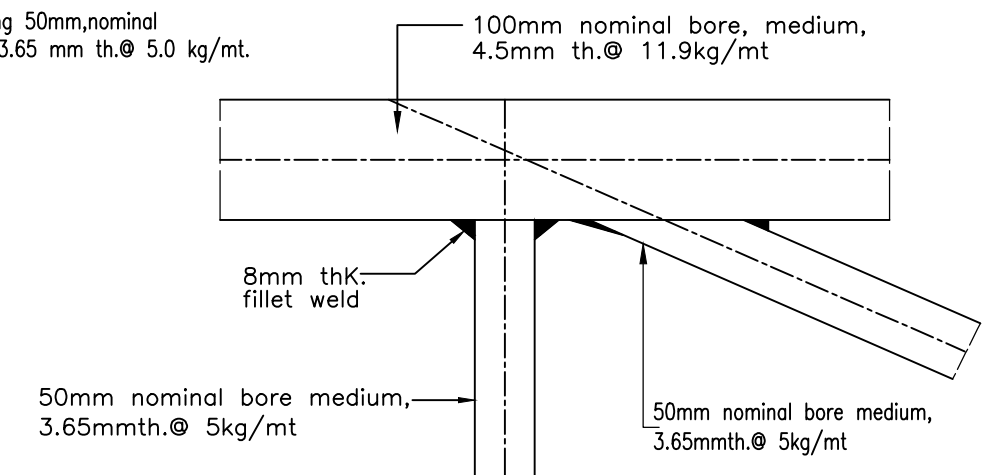




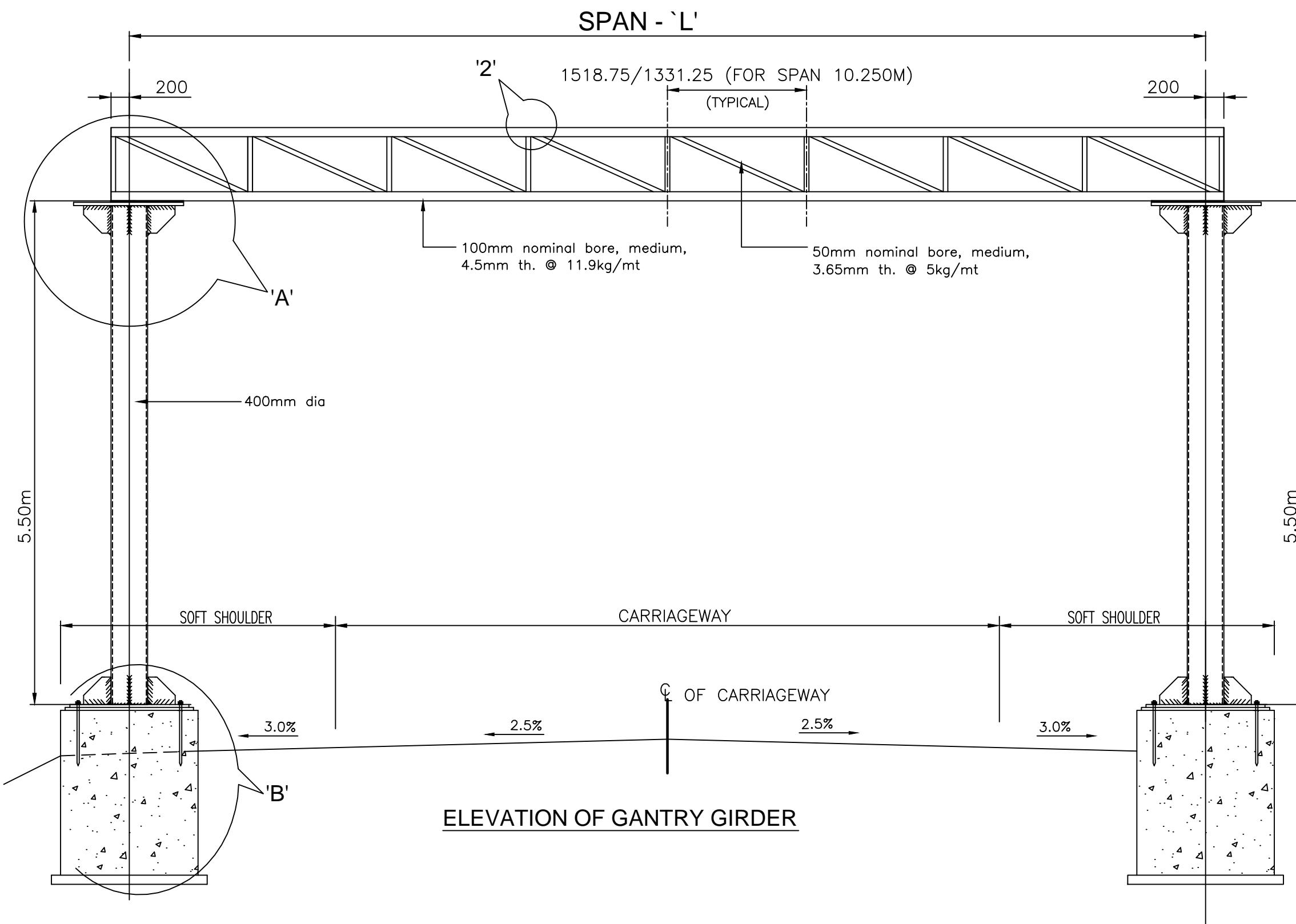
TOP/BOTTOM PLAN



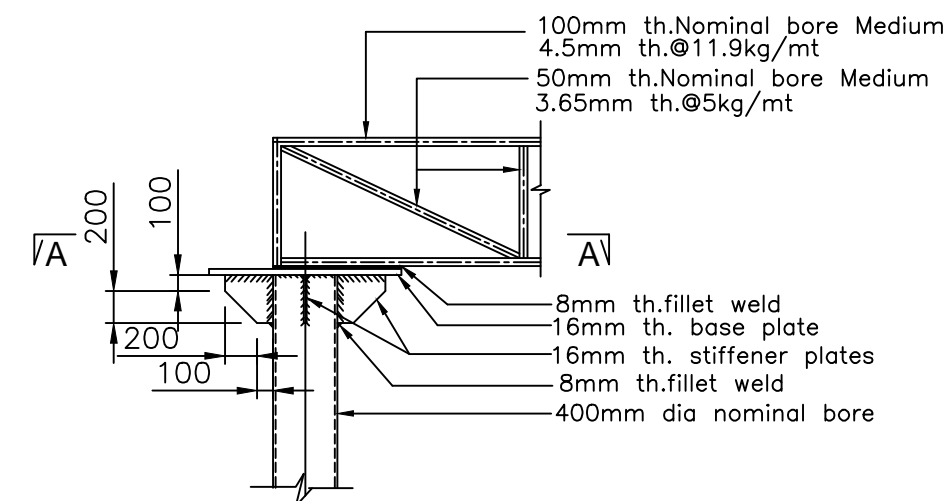
DETAIL-1



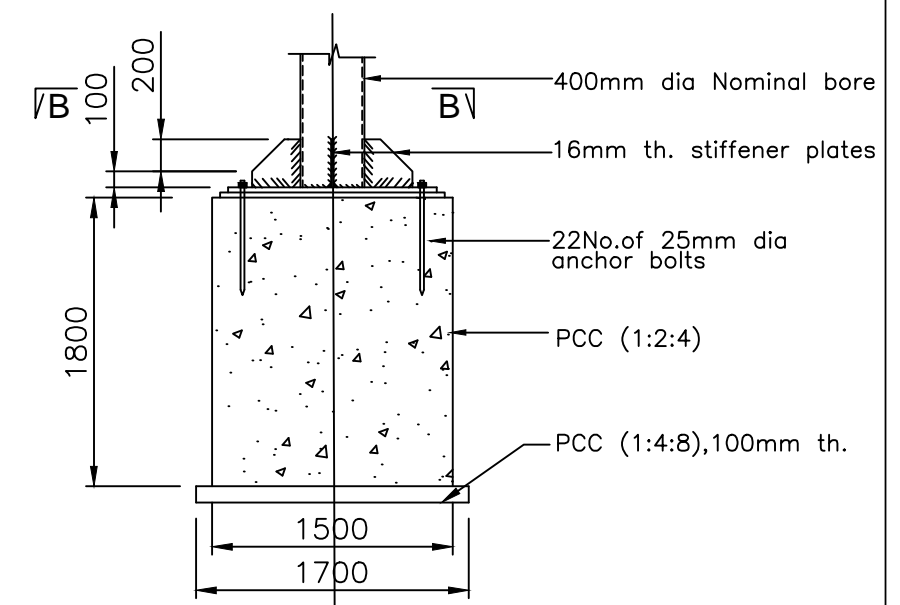
DETAIL-2



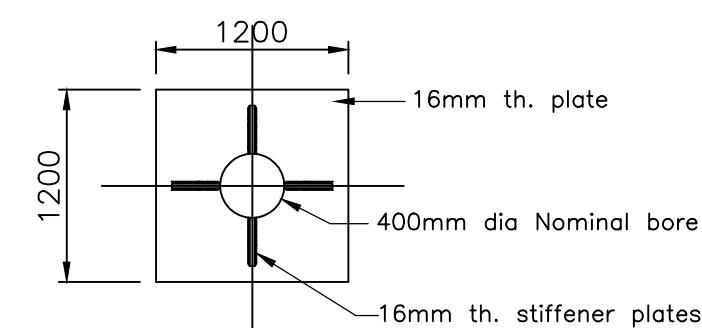
ELEVATION OF GANTRY GIRDER



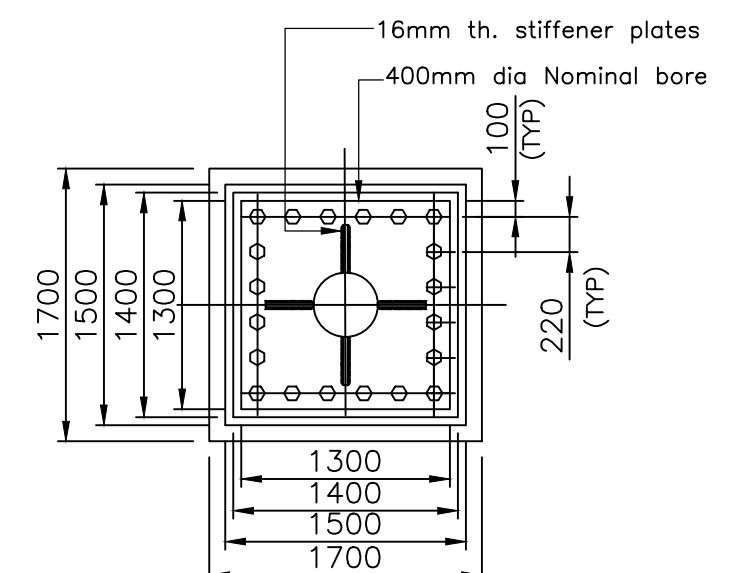
DETAIL - A



DETAIL - B



SECTION A-A  
PLAN



SECTION B-B  
COLUMN BASE DETAILS

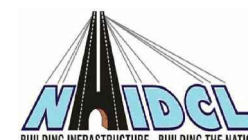


Project Title:-

CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.

TELIAMURA - SABROOM SECTION

CLIENT:-



NATIONAL HIGHWAYS & INFRASTRUCTURE  
DEVELOPMENT CORPORATION LTD

Drawing Title:-

TYPICAL DETAILS OF OVERHEAD GANTRY

Drawing No. :- TASPL/NHIDCL/FDPR/MISC/12

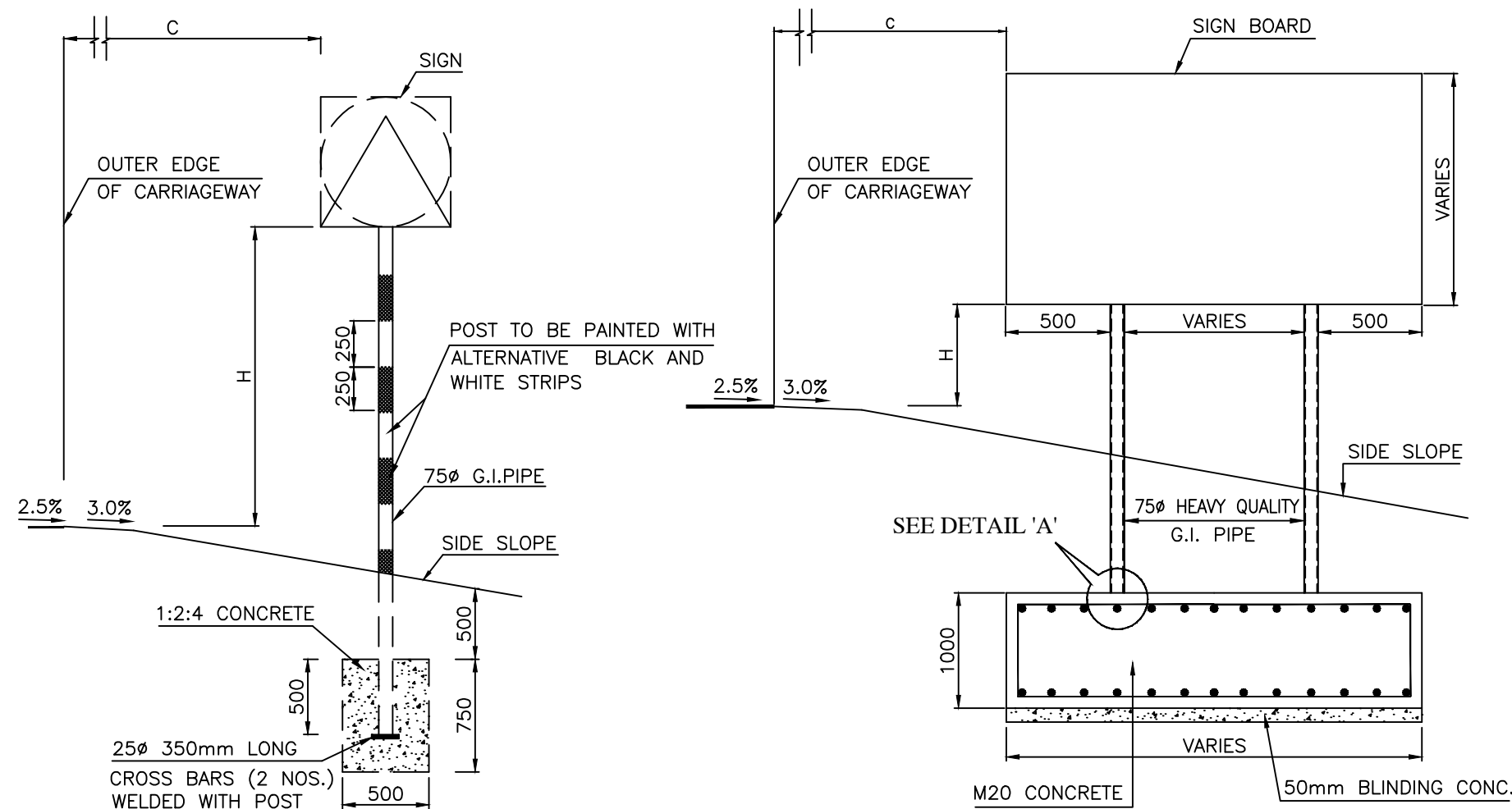
Scale :- NTS

Drn	Dgn.	Appd	Sheet :
D.S	B.Mishra	B.Ram	01 OF 01

CONSULTANT:-

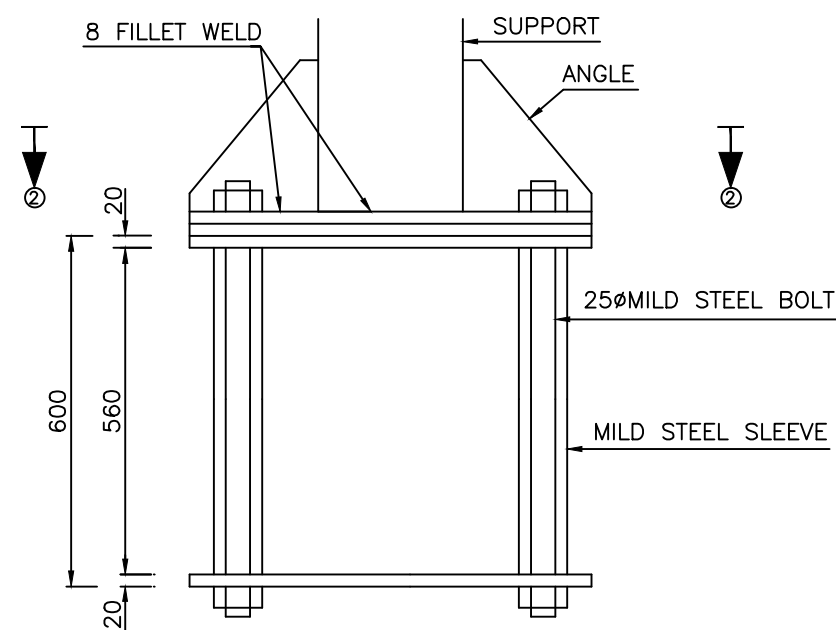


Technocrats Advisory Services Private Limited  
in association with Vaishnavi Infratech Services Pvt. Ltd  
68, Ajanta Apartment, 36, I.P. Extension  
Patparganj Delhi-110092.

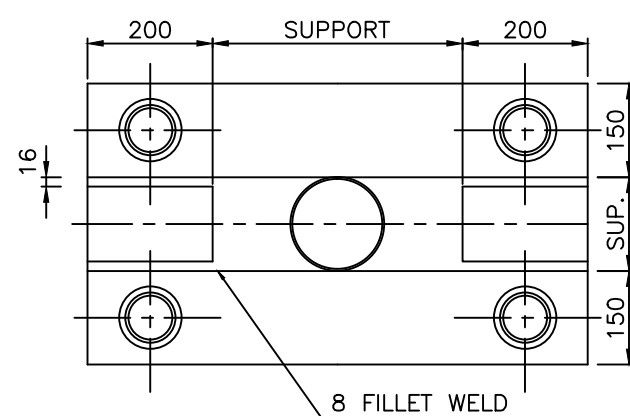


DETAILS FOR SIGN WITH SINGLE SUPPORT

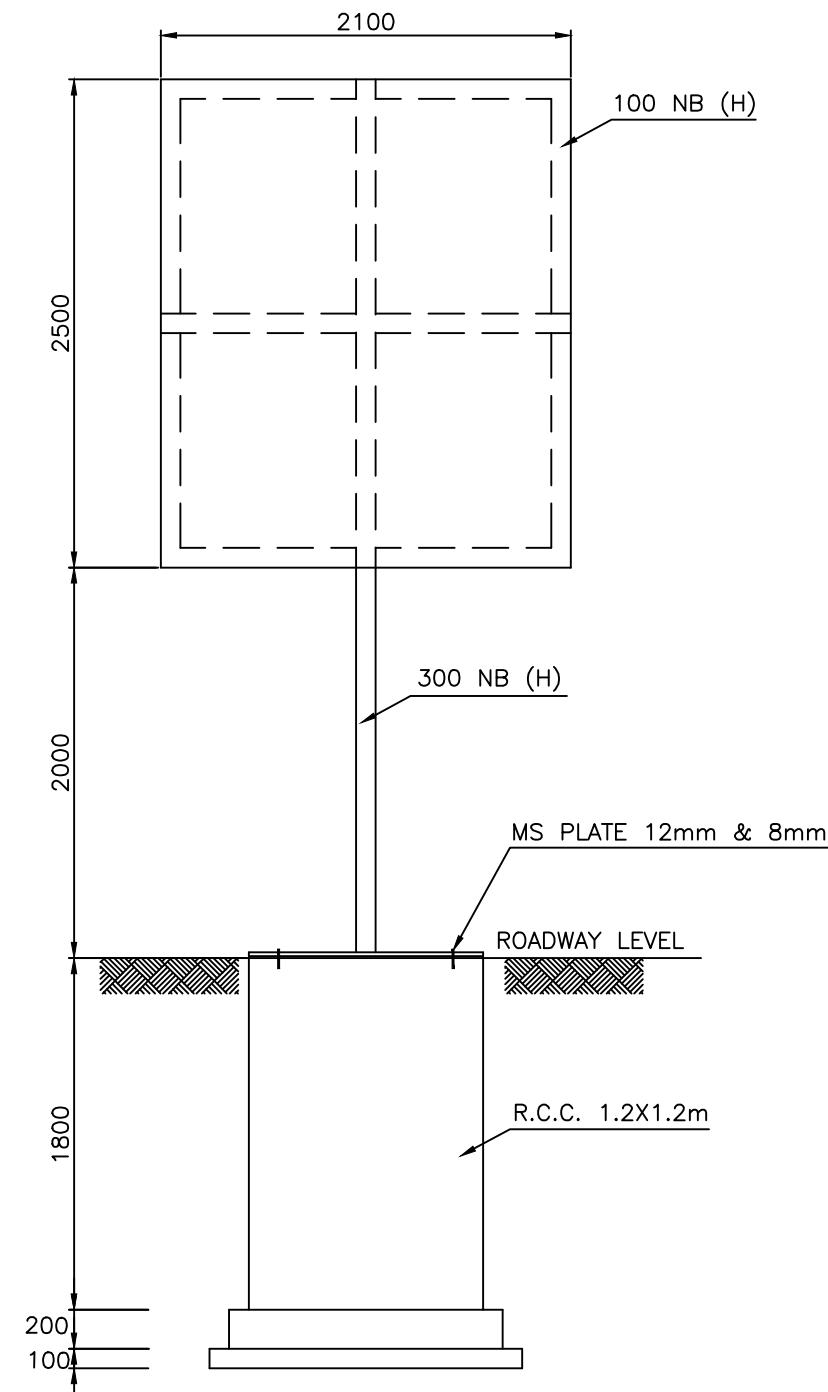
DETAILS FOR SIGN WITH DOUBLE SUPPORT



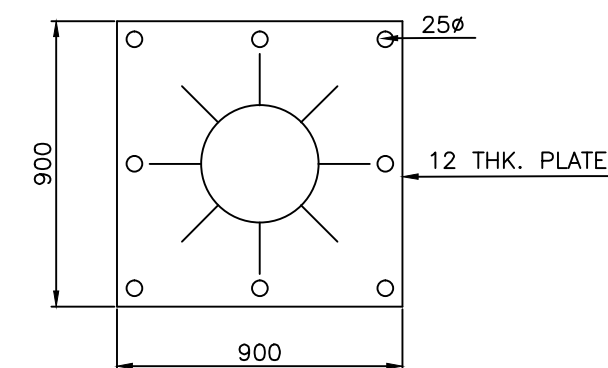
DETAIL-A



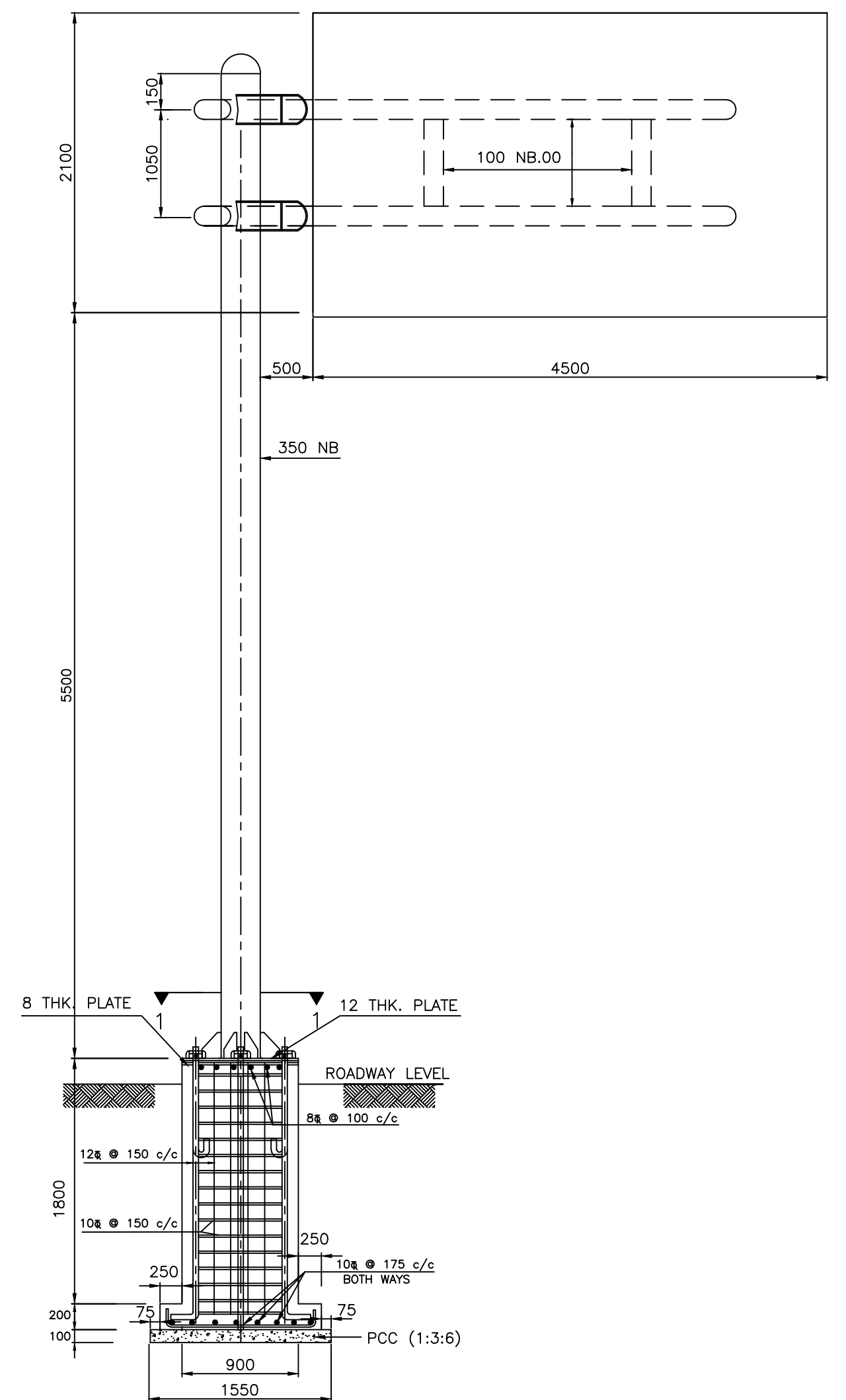
SECTION 2-2



DETAILS OF SIGN POST



SECTION 1-1



DETAILS FOR CANTILEVER TYPE OVERHEAD SIGN




Project Title:-  
**CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.**  
TELIAMURA - SABROOM SECTION

CLIENT:-  
  
**NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD**

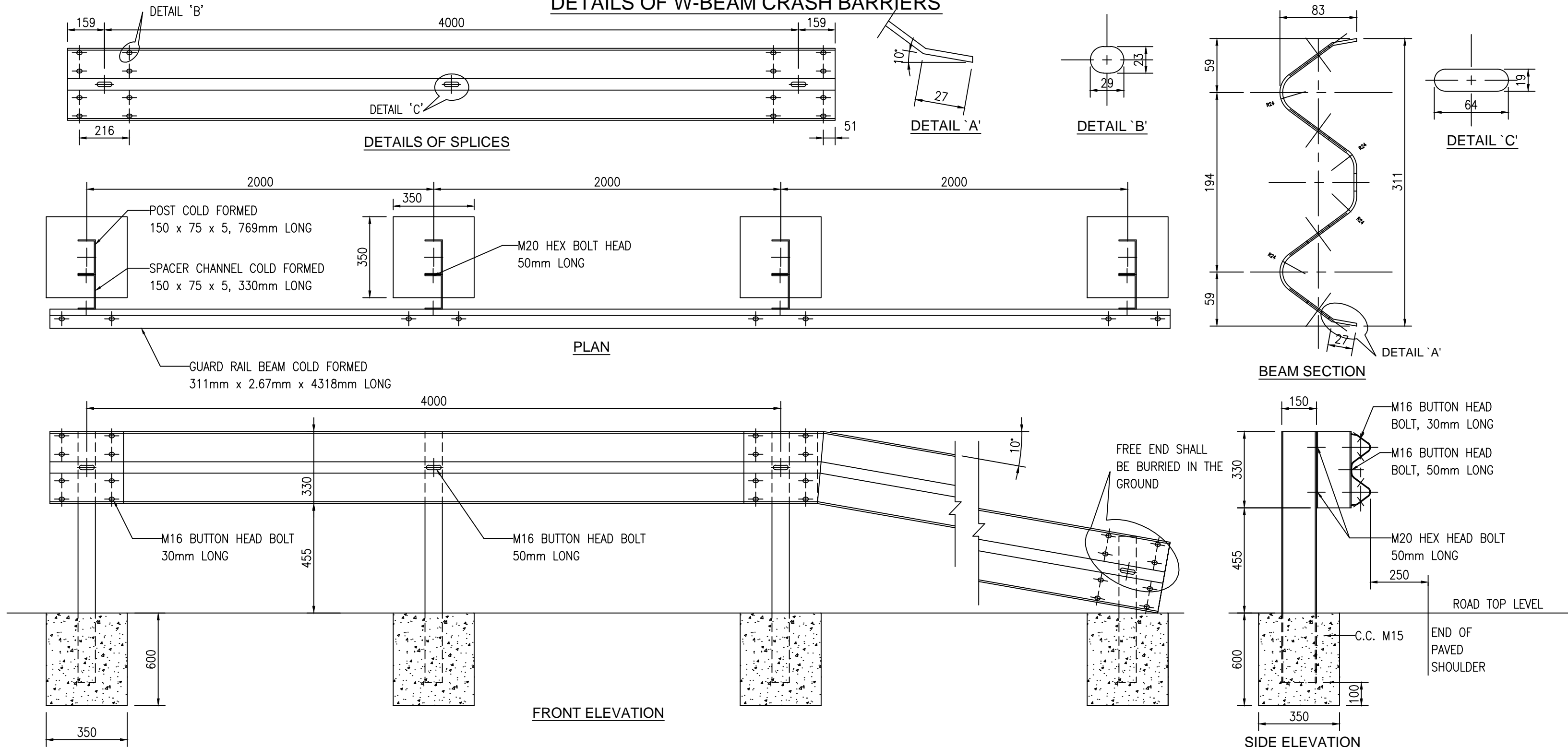
Drawing Title:-  
 TYPICAL CANTILEVER TYPE OVERHEAD SIGN  
 Drawing No. :- TASPL/NHIDCL/FDPR/MISC/12  
 Scale :- NTS  

Drn	Dgn.	Appd	Sheet :
D.S	B.Mishra	B.Ram	01 OF 01

CONSULTANT:-  
  
**Technocrats Advisory Services Private Limited**  
 in association with Vaishnavi Infratech Services Pvt. Ltd  
 68,Ajanta Apartment, 36, I.P. Extension  
 Patparganj Delhi-110092.

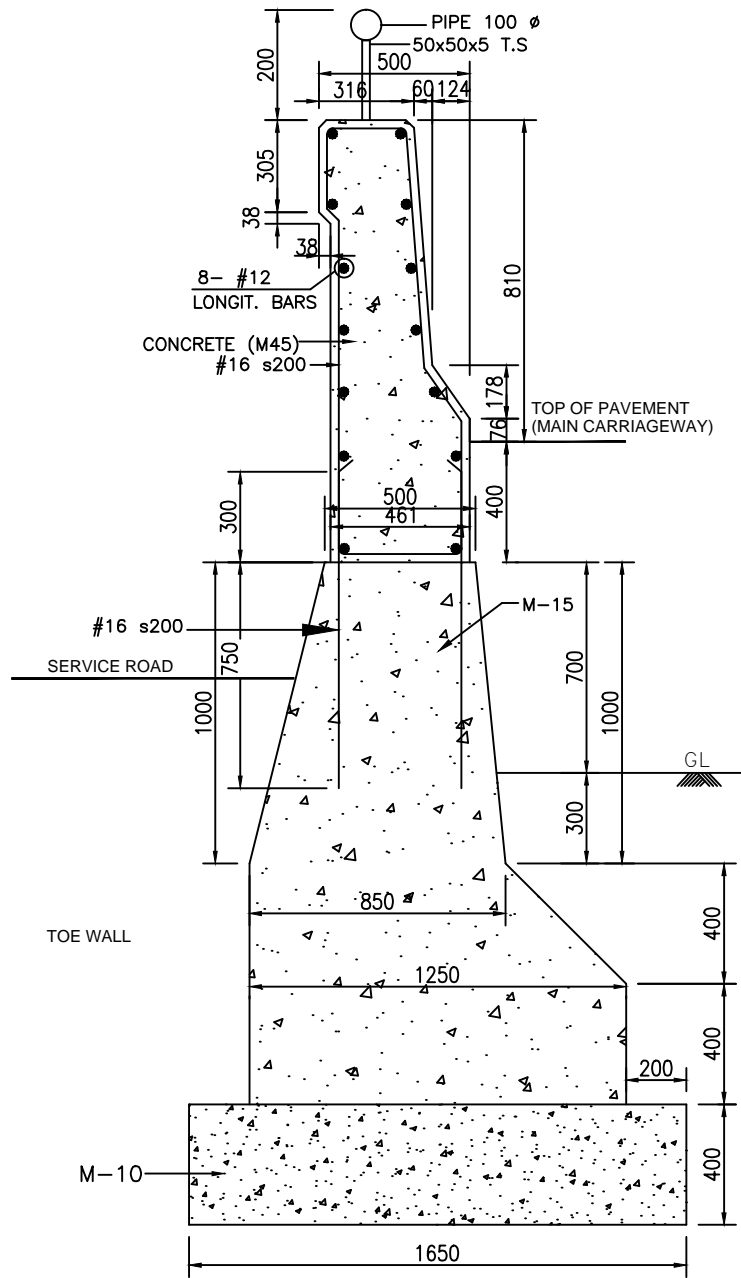


DETAILS OF W-BEAM CRASH BARRIERS

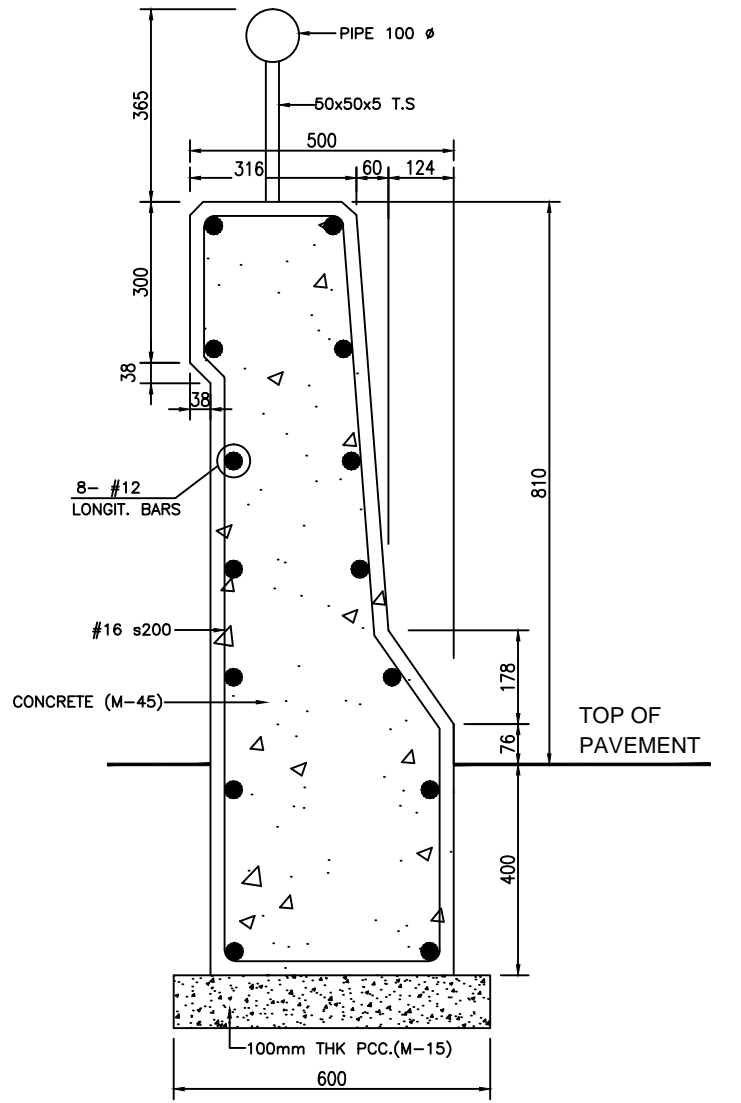


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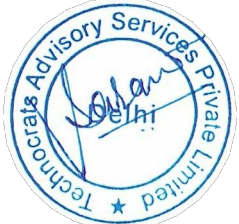
- HEIGHT OF POSTS SHOULD BE 785mm LONG ABOVE THE FINISHED ROAD LEVEL.
- SPACING OF POSTS SHOULD BE 2.0m C/C.
- 1 No. SPACER CHANNEL SHOULD BE PLACED AT EACH POST.
- W-PROFILE FORMED CORRUGATED BEAMS (EFFECTIVE LENGTH OF 4318mm), 311mm x 83mm.
- POST CONSISTS OF FORMED CHANNEL OF SIZE 150 x 75 x 5, 785mm LONG ABOVE GROUND LVL.
- SPACER CONSISTS OF FORMED CHANNEL OF SIZE 150 x 75 x 5, 330mm LONG.
- BUTTON HEAD BOLTS M16 x 30mm LONG, 8 Nos FOR THE SPlicing OF THE W PROFILE AT EACH LOCATION.
- BUTTON HEAD BOLTS M16 x 50mm LONG, 1 Nos AT THE CONNECTION OF THE W BEAM TO SPACER.
- HEX HEAD BOLTS M20 x 50mm LONG , 2 Nos AT THE CONNECTION OF THE SPACER TO POST.
- THE BEAM ELEMENTS SHALL BE FORMED SHEETS HAVING NOMINAL WIDTH OF 483mm.
- THE BASE MATERIAL OF THE CORRUGATED BEAM SHALL COMPLY TO FOLLOWING MECHANICAL PROPERTIES:-  
I. TENSILE STRENGTH, MIN=483 MPA. II. ELONGATION, in 2 inches, MIN = 12%  
III. YIELD, MIN=345 MPA.
- ALL MEMBERS OF THE SYSTEM SHOULD BE HOT DIPPED GALVANIZED AND TO HAVE A MINIMUM COATING OF 550g/Sq m, EACH FACE IN CONFORMANCE TO M.O.R.T & H. SPECIFICATIONS (CLAUSE 810).
- BEAMS TO BE ERECTED ON A RADIUS OF 46m (150') OR LESS SHALL BE SHAPE CURVED TO APPROPRIATE CURVATURE.
- CRASH BARRIERS ARE POSTED ON ALL SECTION OF EMBANKMENT WHOSE HEIGHT IS >= TO 3m, HORIZONTAL CURVES OF RADIUS < 360m AND ALSO AT ALL BRIDGE APPROACHES FOR LENGTH OF 50m ON BOTH SIDES FOR MAJOR & 25m FOR MINOR BRIDGE.
- BEAM SURFACE FACING THE TRAFFIC IS PAINTED WITH ALTERNATE BANDS (500mm WIDE) OF BLACK & YELLOW COLOUR REFLECTORIFIED PAINT CONFORMING CL.803.5 OF M.O.R.T & H SPEC.



NEWJERSEY TYPE CRASH BARRIER BETWEEN MAIN CARRIAGEWAY AND SERVICE ROAD  
(SCALE 1:20)



DETAILS OF JERSEY TYPE CRASH BARRIER  
(SCALE 1:10)

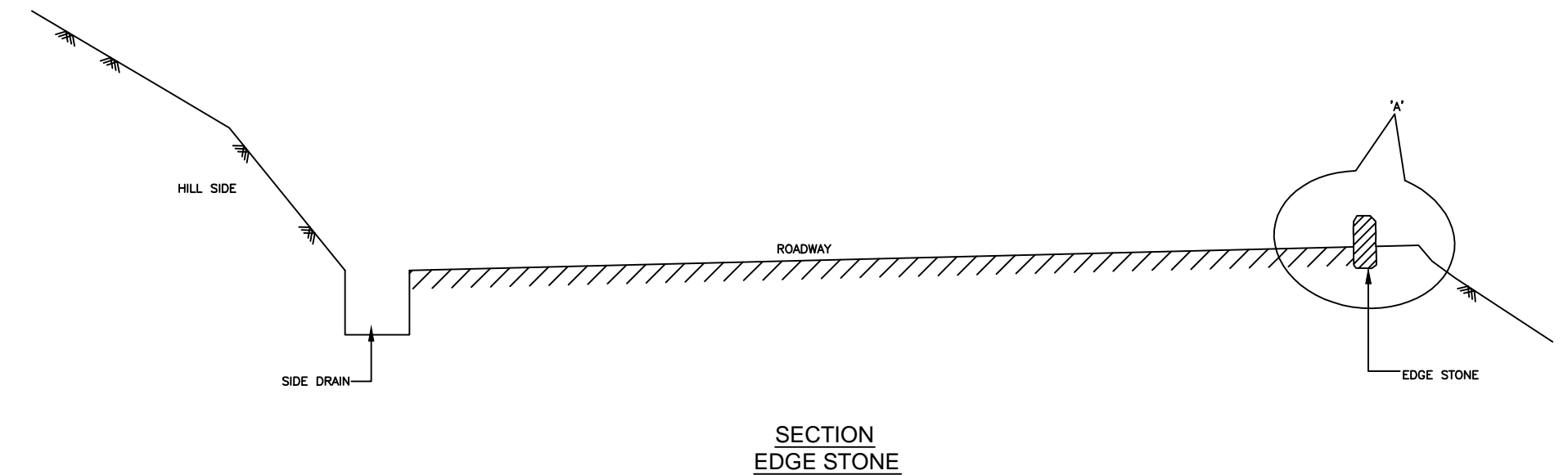
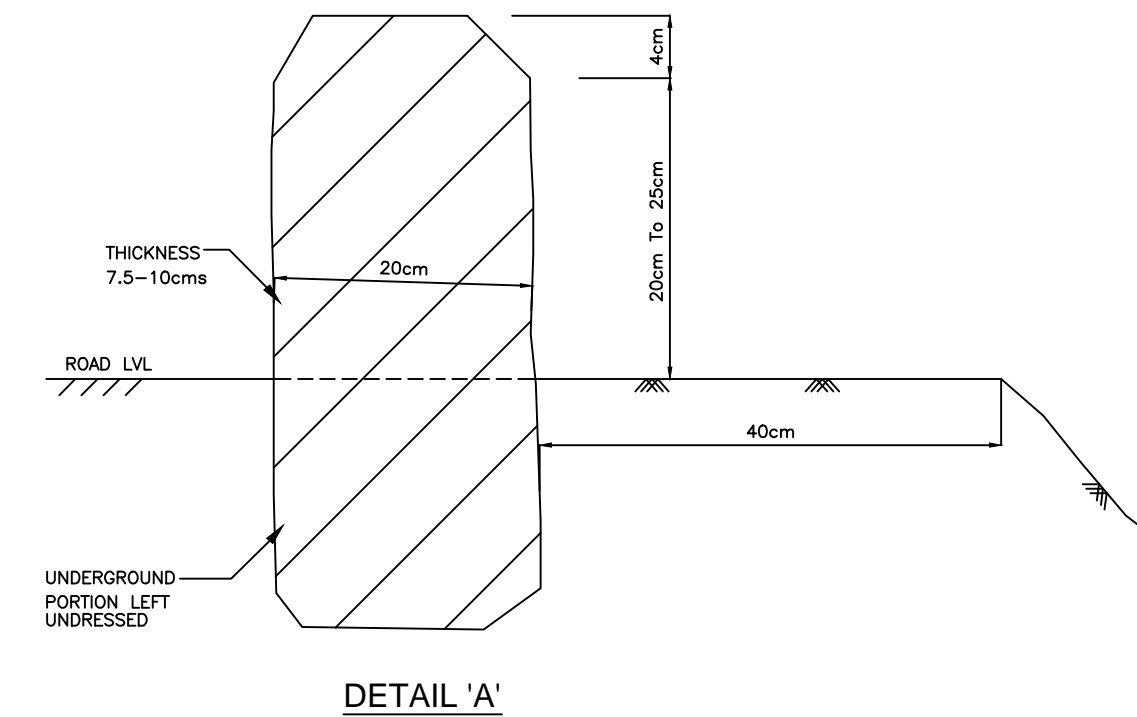


Project Title:-  
**CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.**  
**TELIAMURA - SABROOM SECTION**

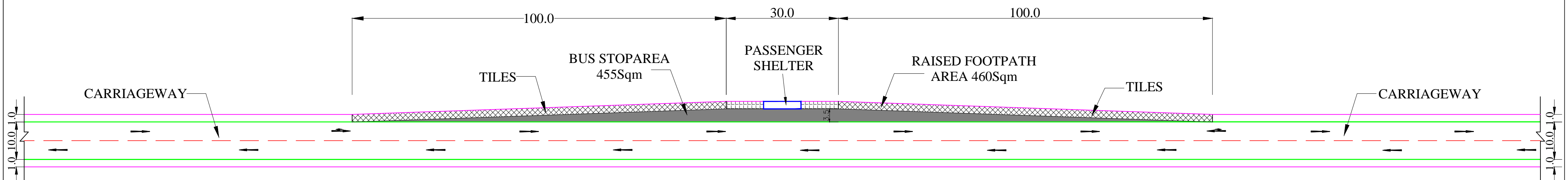
CLIENT:-  
  
**NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD**

Drawing Title:-  
**DETAILS OF W-BEAM CRASH BARRIER**  
Drawing No. :- **TASPL/NHIDCL/FDPR/MISC/12**  
Scale :- **NTS**  
Drn :- **D.S**  
Dgn. :- **B.Mishra**  
Appd :- **B.Ram**  
Sheet :- **01 OF 01**

CONSULTANT:-  
  
**Technocrats Advisory Services Private Limited**  
in association with Vaishnavi Infratech Services Pvt. Ltd  
68,Ajanta Apartment, 36, I.P. Extension  
Patparganj Delhi-110092.










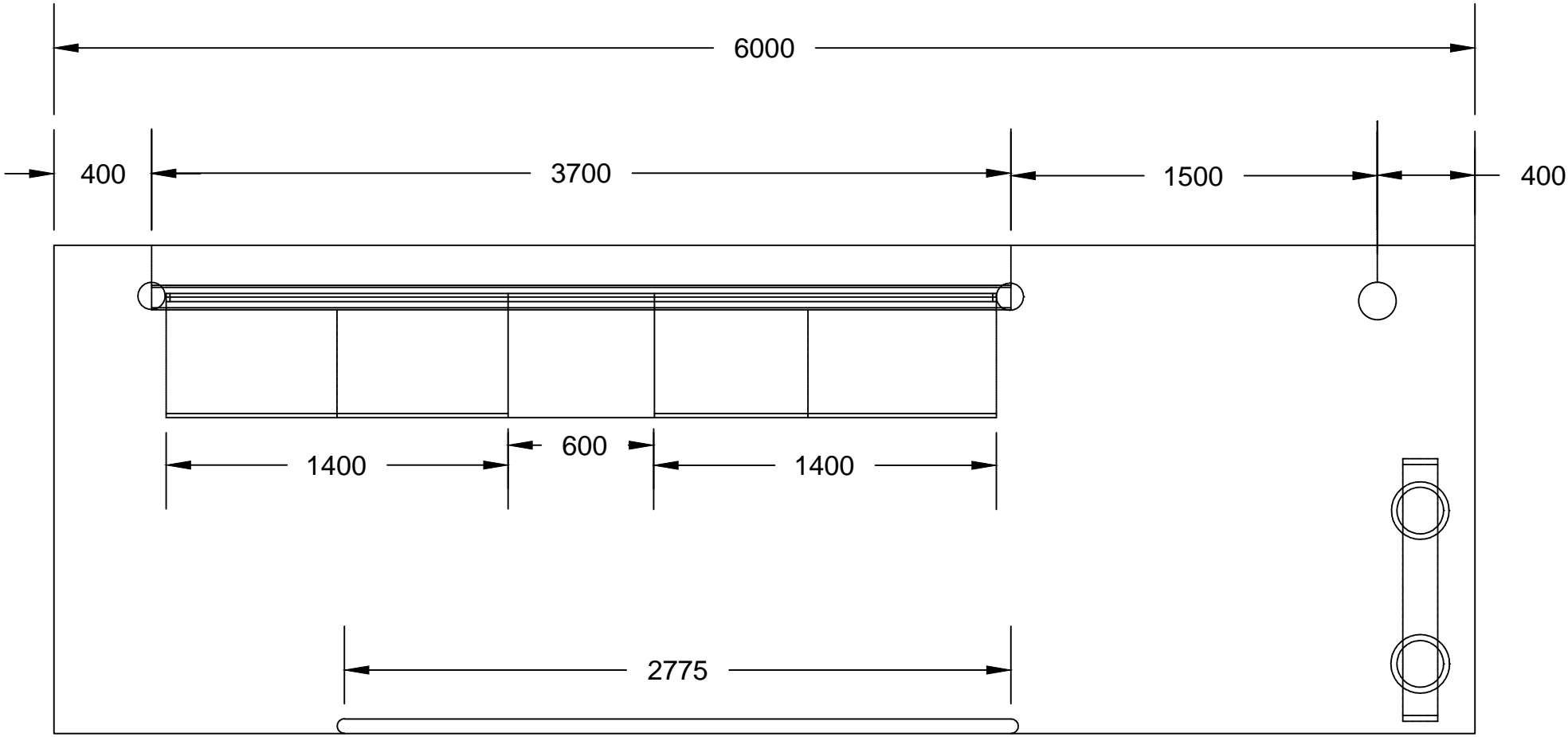
## LAYOUT FOR BUS BAYS

DETAILS OF BUS BAYS			
SL.NO	TYPE	UNIT	AREA
1.	BUS STOP	Sqm	455
2.	FOOTPATH	Sqm	460
3.	SHELTER	Sqm	60

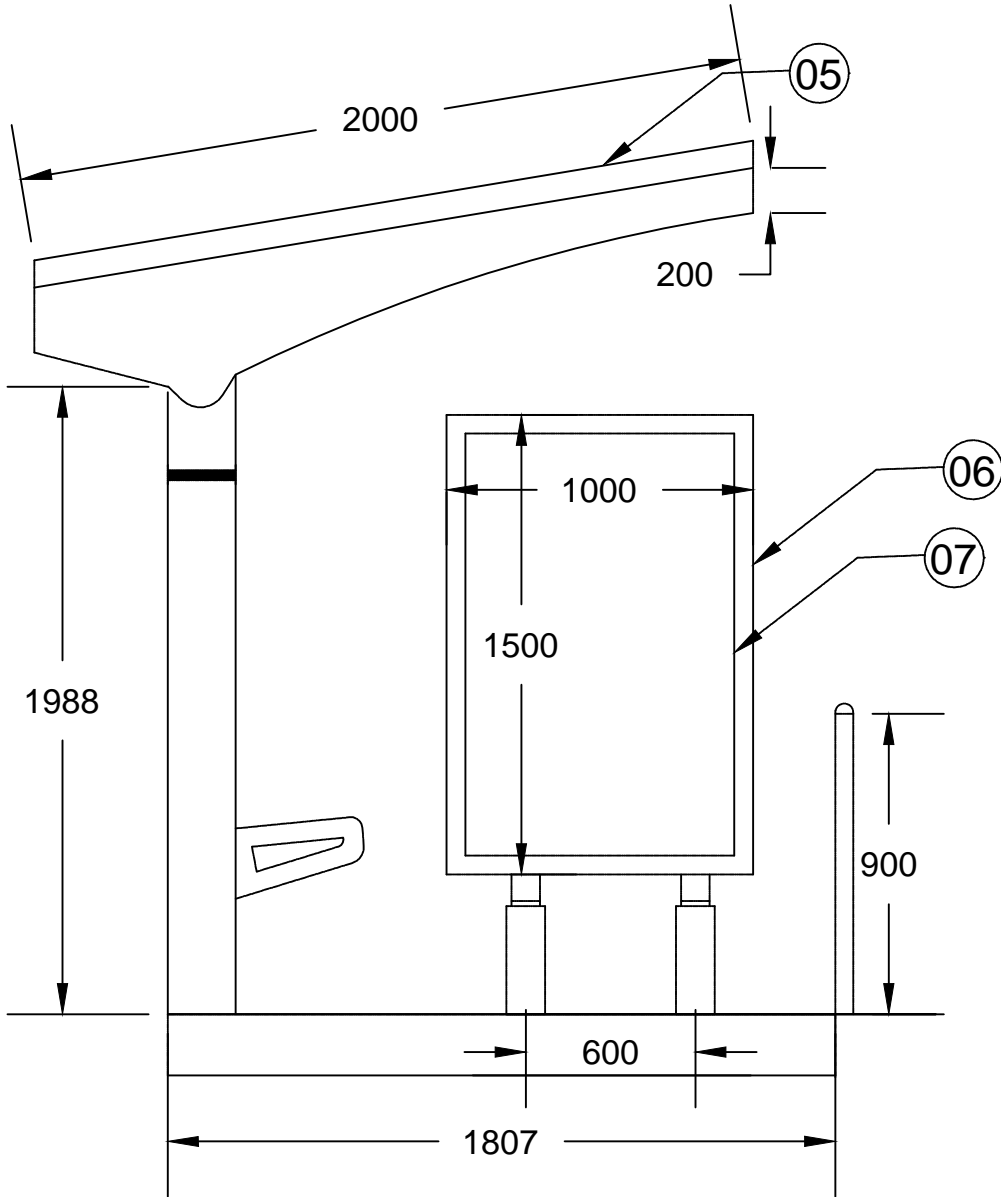
SOURCE:- IRC::SP:73-2019

	<b>Project Title:-</b>  CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE <u>STATE OF TRIPURA.</u>  <u>TELIAMURA - SABROOM SECTION</u>	<b>CLIENT:-</b>    NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD	<b>Drawing Title:-</b>  LAYOUT FOR BUS BAYS				<b>CONSULTANT:-</b>    Technocrats Advisory Services Private Limited in association with Vaishnavi Infratech Services Pvt. Ltd 68,Ajanta Apartment, 36, I.P. Extension Patparganj Delhi-110092.			
			<b>Drawing No. :-</b> TASPL/NHIDCL/FDPR/MISC/12							
			<b>Scale :-</b> NTS							
	<table><tr><td>Drn</td><td>Dgn.</td><td>Appd</td><td rowspan="2">Sheet :  01 OF 01</td></tr><tr><td>D.S</td><td>B.Mishra</td><td>B.Ram</td></tr></table>		Drn	Dgn.	Appd	Sheet :  01 OF 01		D.S	B.Mishra	B.Ram
Drn	Dgn.	Appd	Sheet :  01 OF 01							
D.S	B.Mishra	B.Ram								

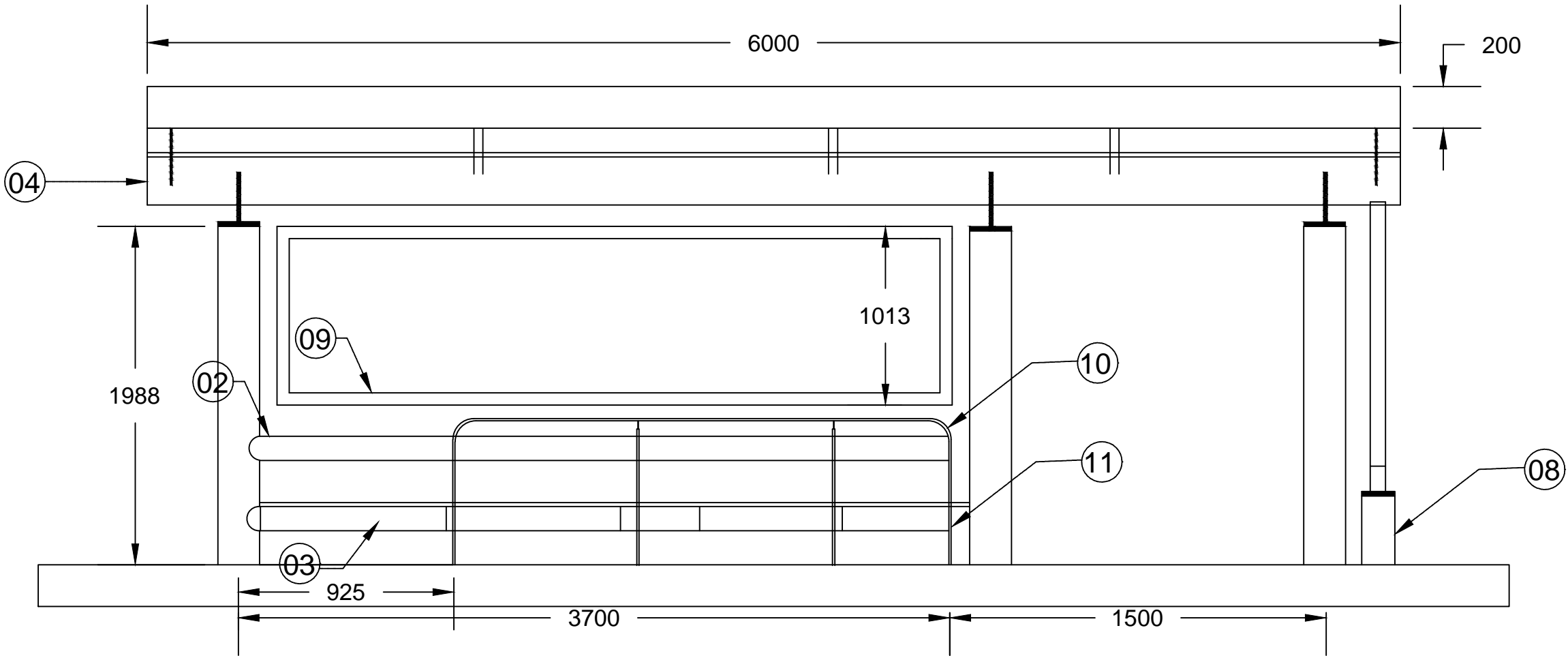
SR	DESCRIPTION	SIZE	MATERIAL
01	MAIN VERTICAL COLUMNS	OD.200mm X15 SWG	S.S 304
02	BACK SUPPORT PIPE	OD'75MM X17 SWG	S.S 304
03	BENCH SUPPORT PIPE	OD.150 X15 SWG	S.S 304
04	ROOF SUPPORT PIPE	OD.200mm X15 SWG	S.S 304
05	ROOF SUPPORT PLATES	2.5MM THK.	S.S 304
06	ADV BORD OUTER FRAME	100X40 X18 SWG	S.S 304
07	ADV BORD INNER FRAME	25X25X 18 SWG	M.S/G.I
08	ADV BORD COLUMNS (SIDE)	OD.150MM X15 SWG	S.S 304
09	ADV BORD FRAME (MAIN)	25X25X 18SWG	M.S/G.I
10	RAILING	OD.75MM X17 SWG	S.S 304
11	RAILING COLUMNS	OD.50MM X18 SWG	S.S 304



TOP PLAN




SIDE VIEW



FRONT ELEVATION

NOTE:- ALL DIMENSIONS ARE IN MM.




Project Title:-

CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.

TELIAMURA - SABROOM SECTION

CLIENT:-



NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD

Drawing Title:-

TYPICAL LAYOUT FOR BUS SHELTER

Drawing No. :-


TASPL/NHIDCL/FDPR/MISC/12

Scale :-

NTS

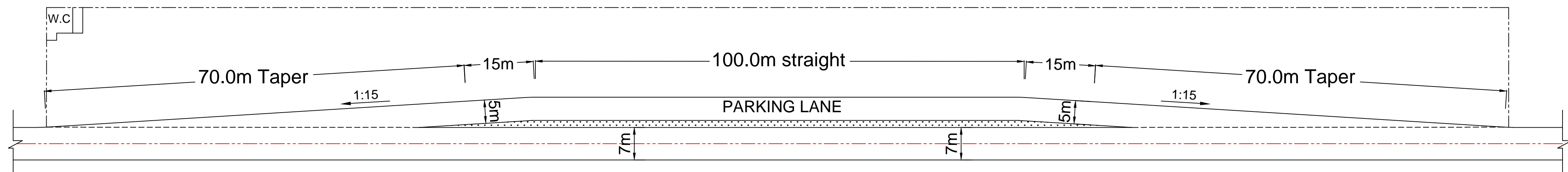
Drn	Dgn.	Appd	Sheet :
D.S	B.Mishra	B.Ram	01 OF 01

CONSULTANT:-



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68,Ajanta Apartment, 36, I.P. Extension  
Patparganj Delhi-110092.



TYPICAL LAYOUT OF TRUCK LAY BYE IRC-SP73




Project Title:-  
**CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.**  
TELIAMURA - SABROOM SECTION

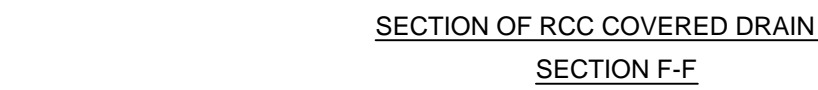
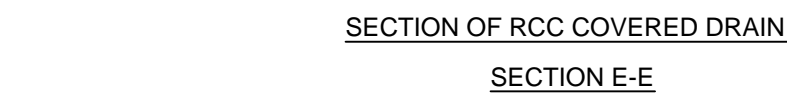
CLIENT:-  
  
**NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD**

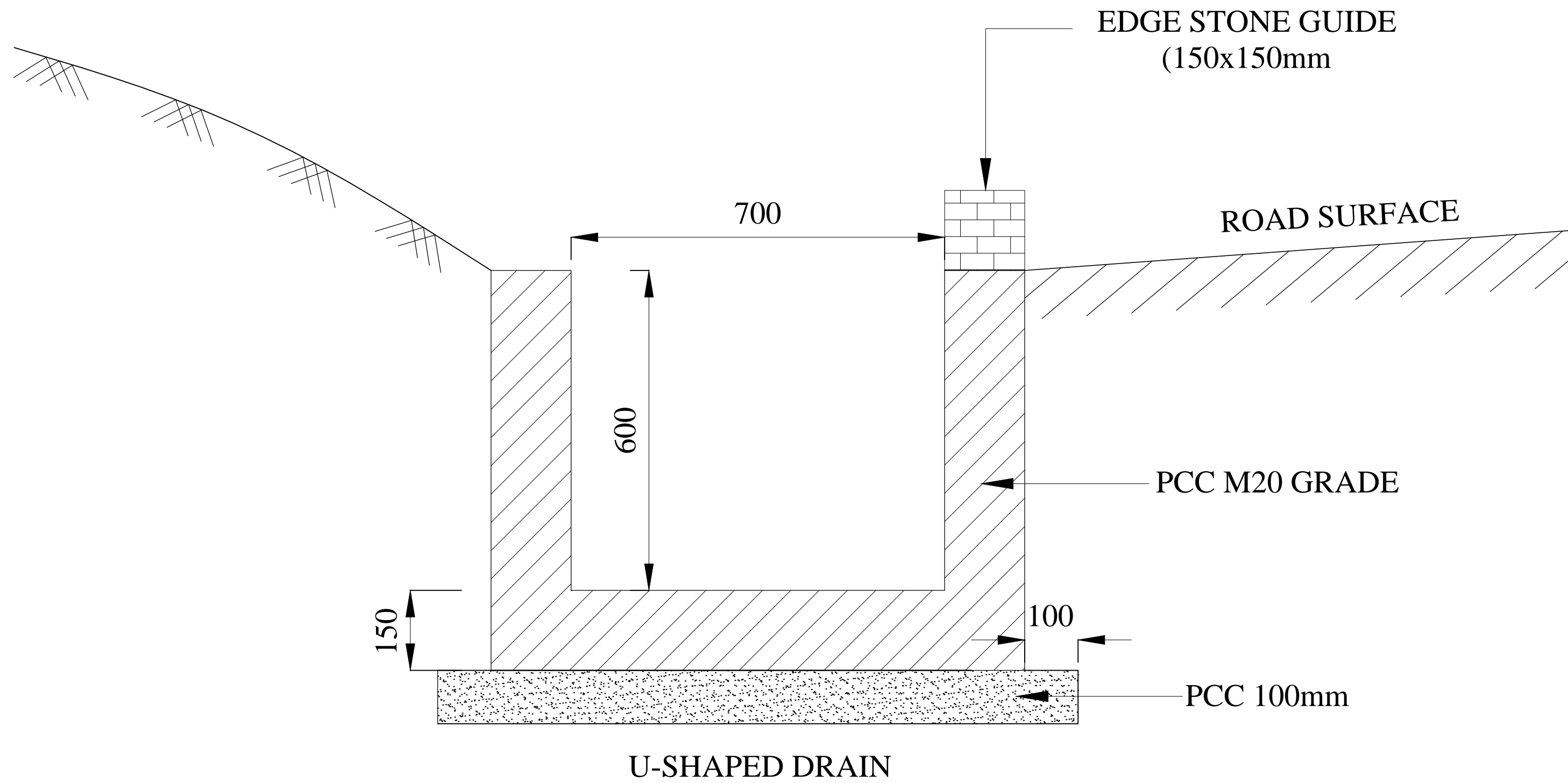
Drawing Title:-  
**TYPICAL LAYOUT OF TRUCK LAY BYE**  
Drawing No. :- **TASPL/NHIDCL/FDPR/MISC/12**  
Scale :- **NTS**  

Drn	Dgn.	Appd	Sheet :
D.S	B.Mishra	B.Ram	01 OF 01

CONSULTANT:-  
  
**Technocrats Advisory Services Private Limited**  
in association with Vaishnavi Infratech Services Pvt. Ltd  
68,Ajanta Apartment, 36, I.P. Extension  
Patparganj Delhi-110092.







Project Title:-

CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.

TELIAMURA - SABROOM SECTION

CLIENT:-



NATIONAL HIGHWAYS & INFRASTRUCTURE  
DEVELOPMENT CORPORATION LTD

Drawing Title:-

U-SHAPED DRAIN

Drawing No. :- TASPL/NHIDCL/FDPR/MISC/12

Scale :- NTS

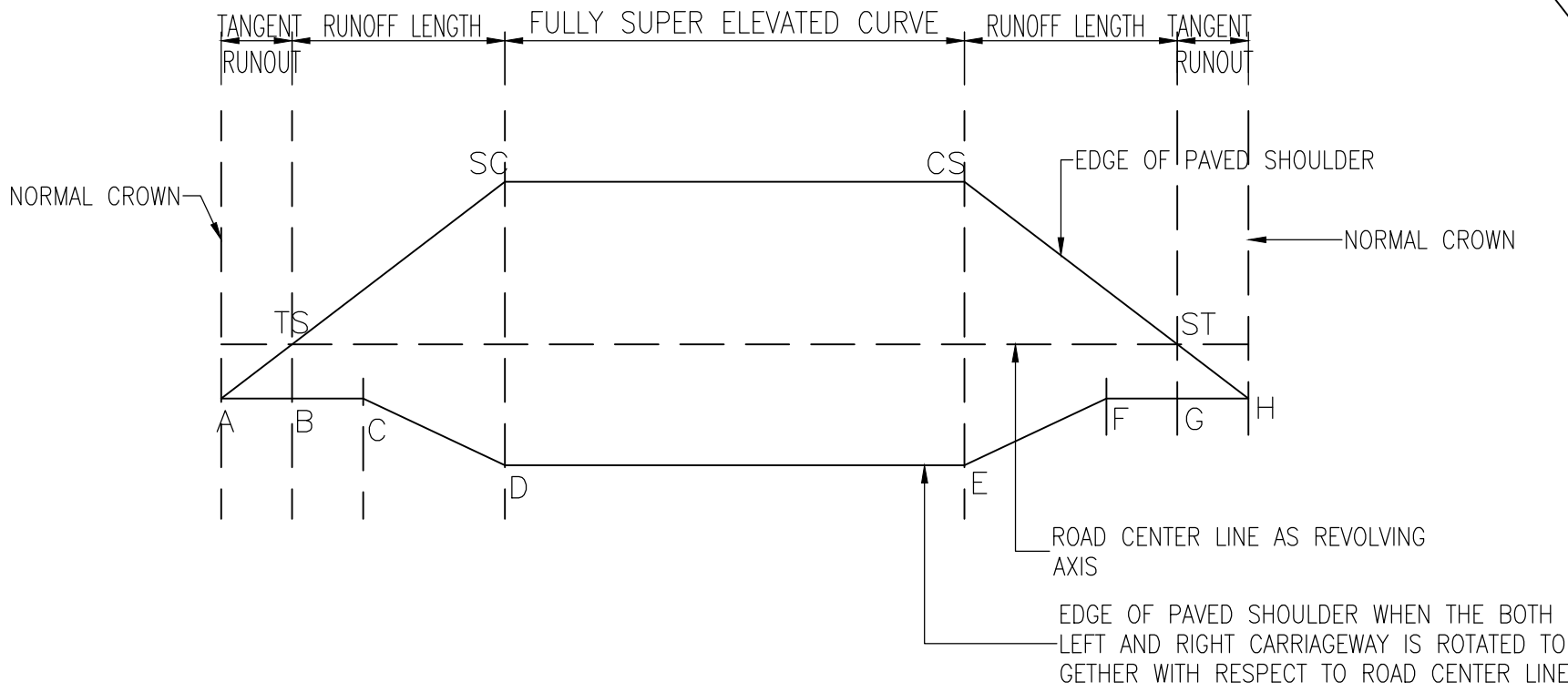
Drn	Dgn.	Appd	Sheet :
D.S	B.Mishra	B.Ram	01 OF 01

CONSULTANT:-

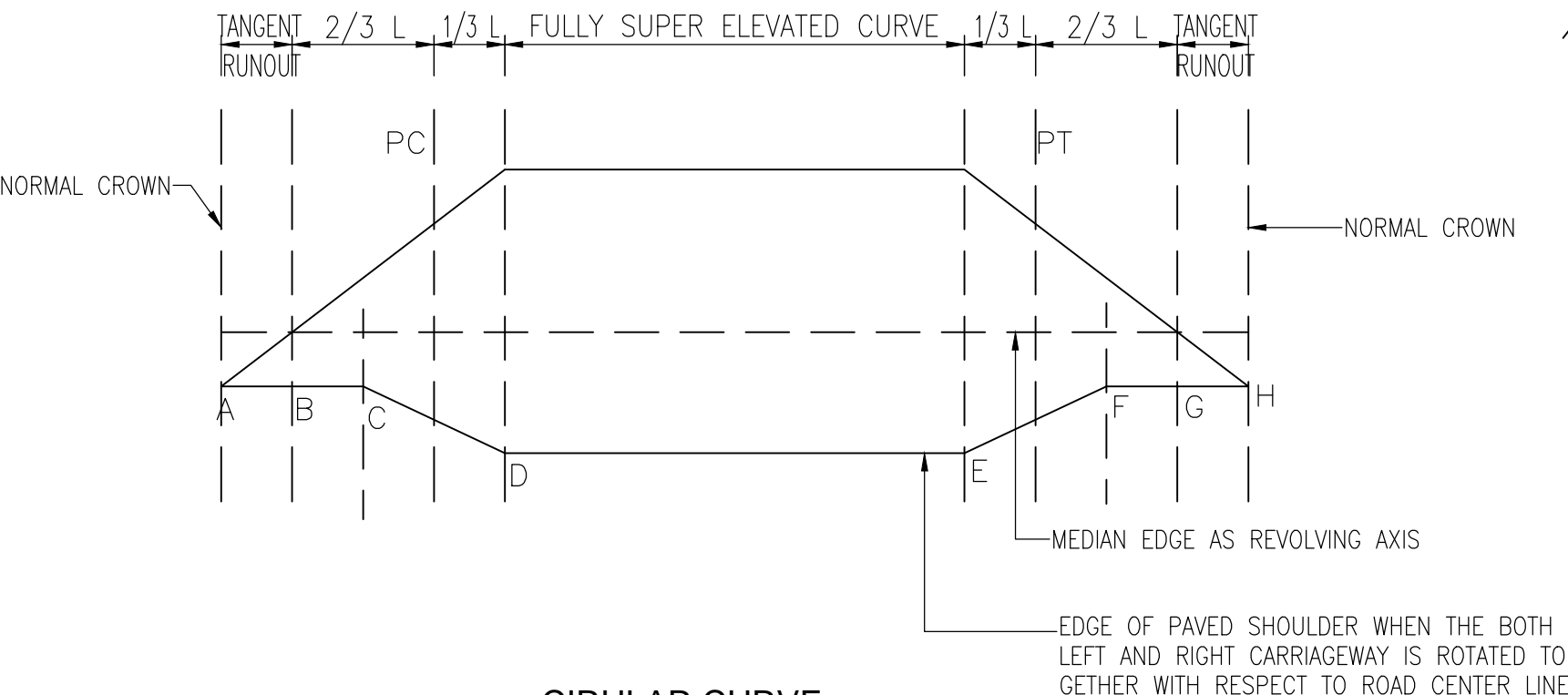


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68,Ajanta Apartment, 36, I.P. Extension  
Patparganj Delhi-110092.

DETAILS OF SUPERELVATION

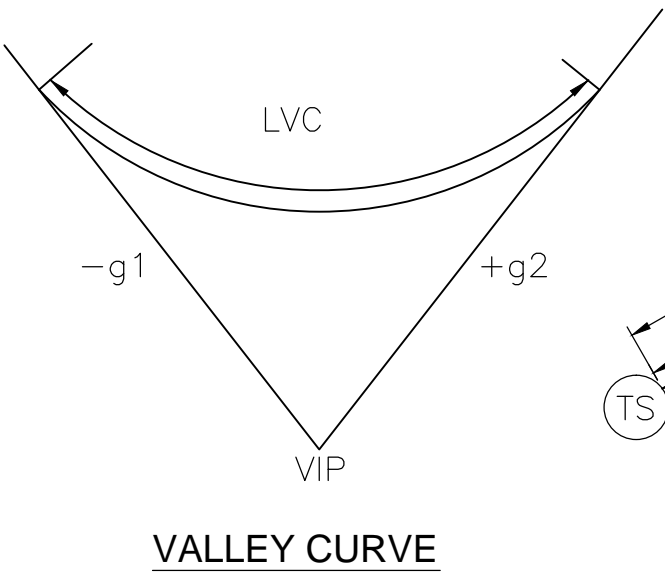


CIRCULAR CURVE WITH TRANSITION

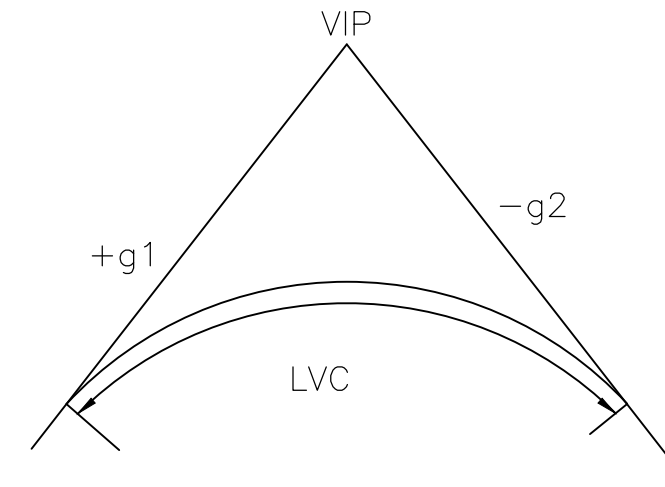


CIRCULAR CURVE

DETAILS OF VERTICAL CURVE

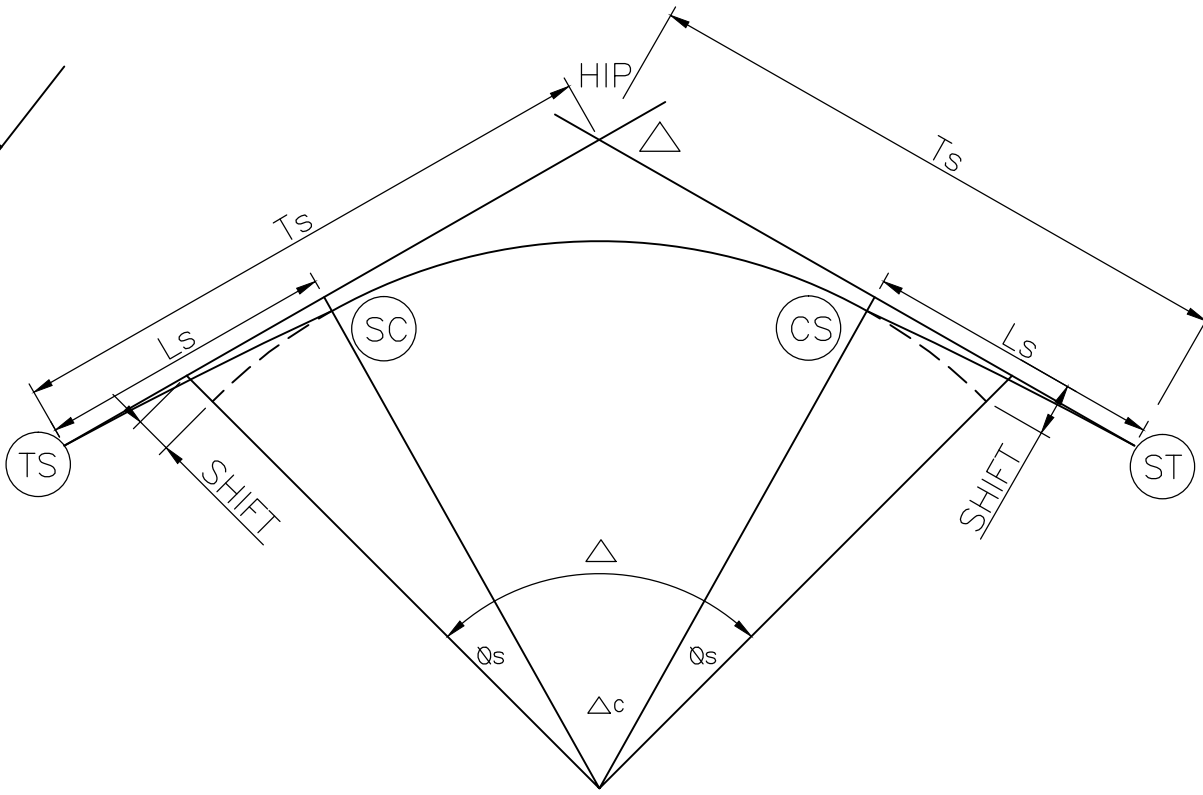


VALLEY CURVE

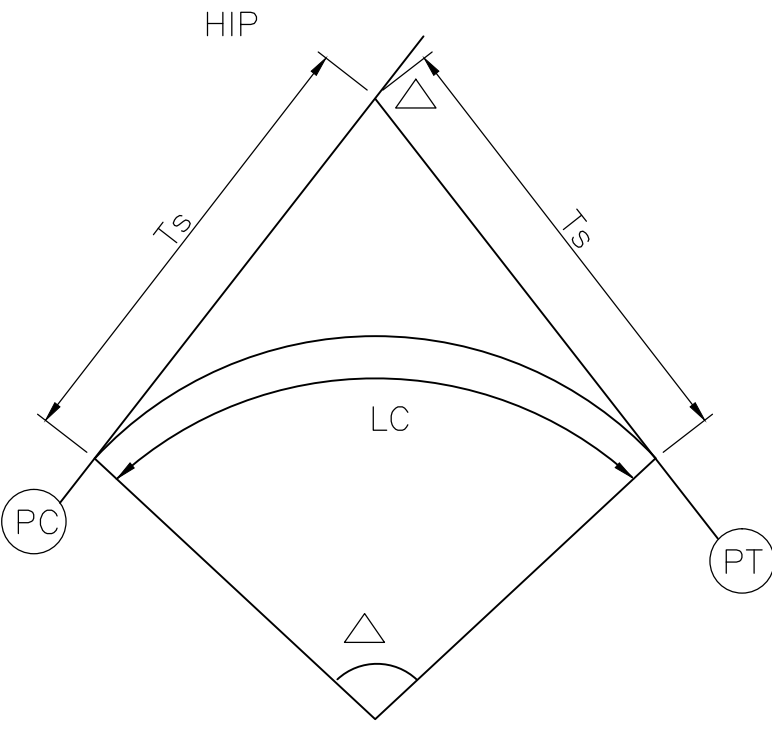


SUMMIT CURVE

DETAILS OF HORIZONTAL CURVE



CIRCULAR CURVE WITH TRANSITION



CIRCULAR CURVE


- TS TANGENT TO SPIRAL
- SC SPIRAL TO CURVE
- CS CURVE TO SPIRAL
- ST SPIRAL TO TANGENT
- PC POINT OF CURVATURE
- PT POINT OF TANGENT
- HIP HORIZONTAL INTERSECTION POINT
- LS LENGTH OF TRANSITION
- Ts TANGENT DISTANCE
- Δ TOTAL DEVIATION ANGLE
- Δs DEVIATION ANGLE OF TRANSITION CURVE
- LVC LENGTH OF VERTICAL CURVE
- g1 VERTICAL GRADIENT
- VIP VERTICAL INTERSECTION POINT



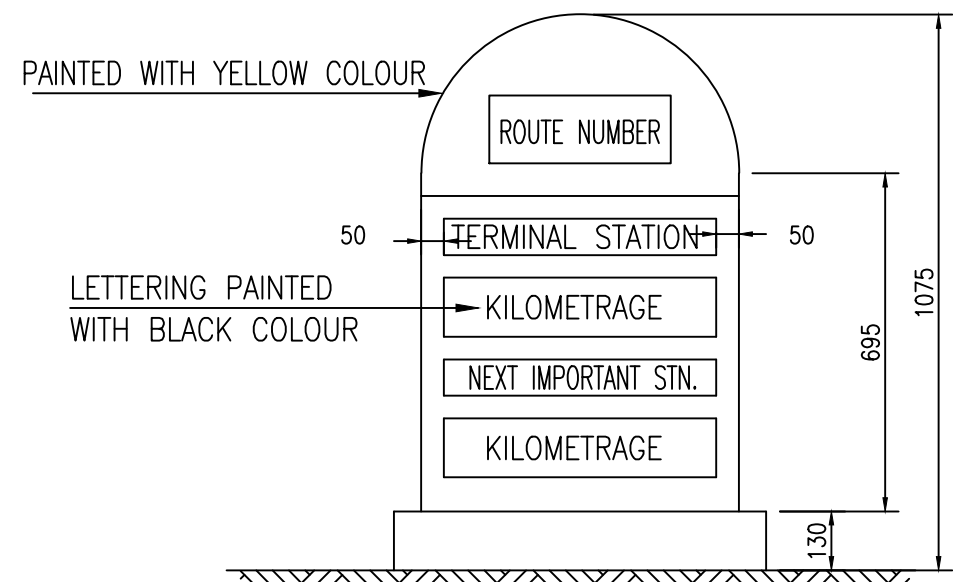
Project Title:-  
**CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.**  
**TELIAMURA - SABROOM SECTION**

CLIENT:-  
  
**NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD**

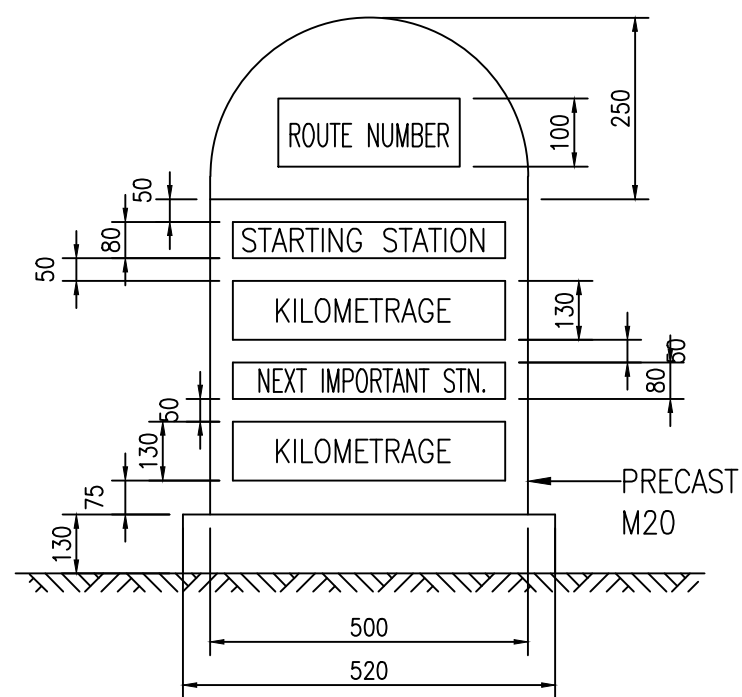
Drawing Title:-  
**DETAILS OF CURVE & SUPER ELEVATION**  
Drawing No. :- **TASPL/NHIDCL/FDPR/MISC/12**  
Scale :- **NTS**  
Drn Dgn. Appd Sheet :  
D.S B.Mishra B.Ram 01 OF 01

CONSULTANT:-  
  
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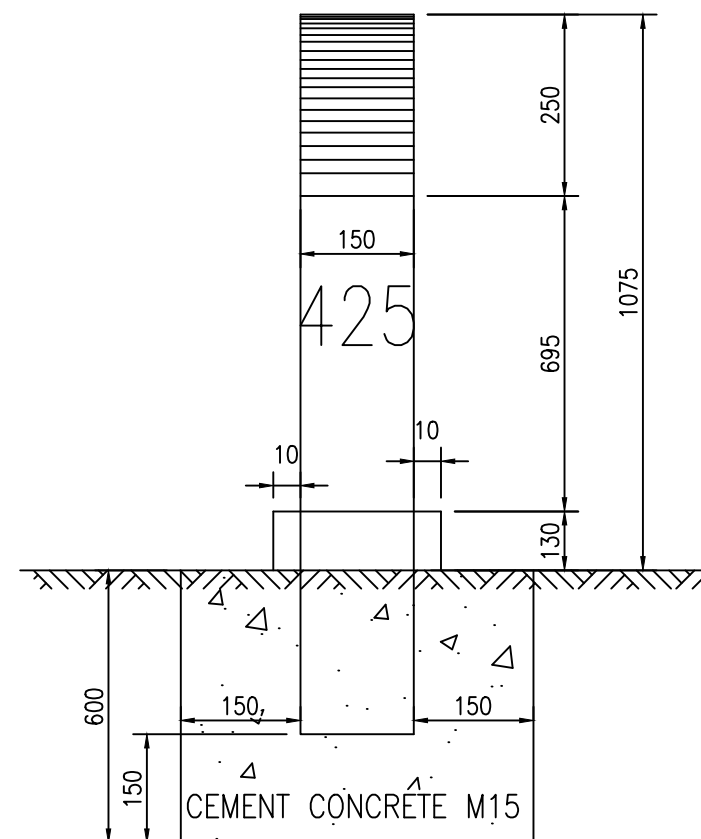




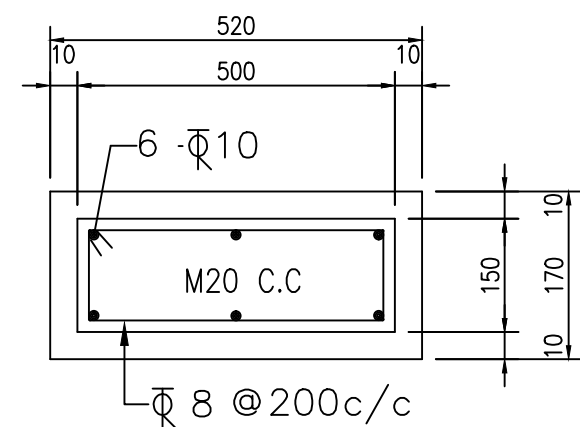
FACE 1



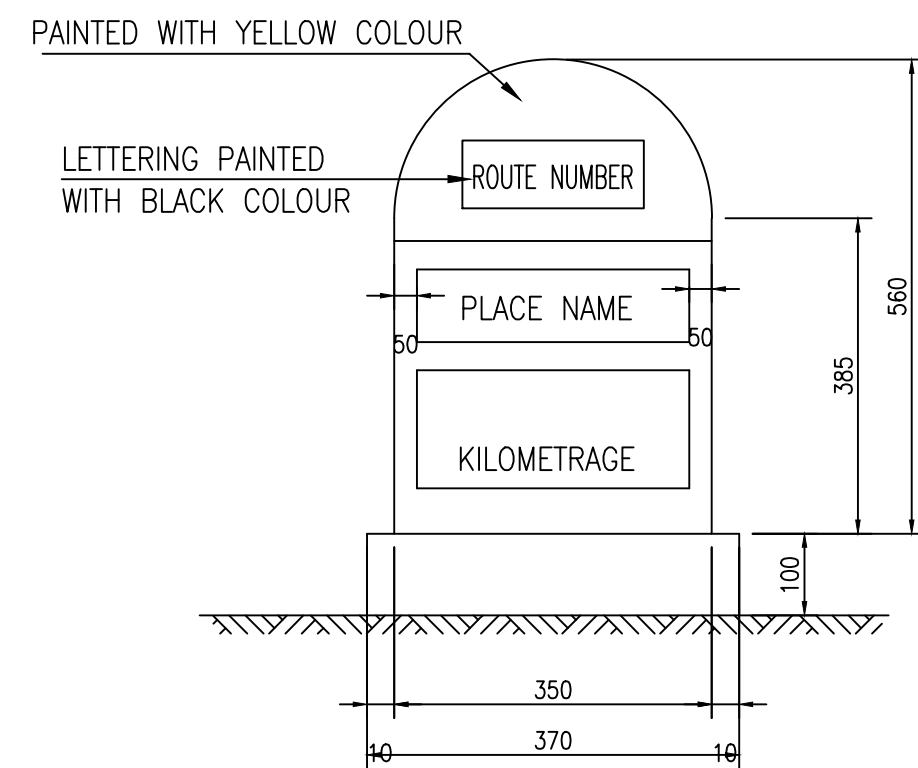
FACE 2



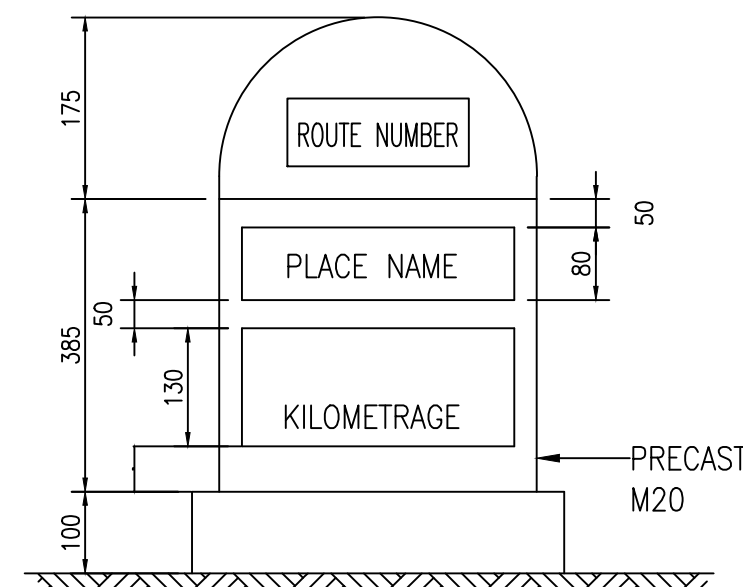
SIDE ELEVATION



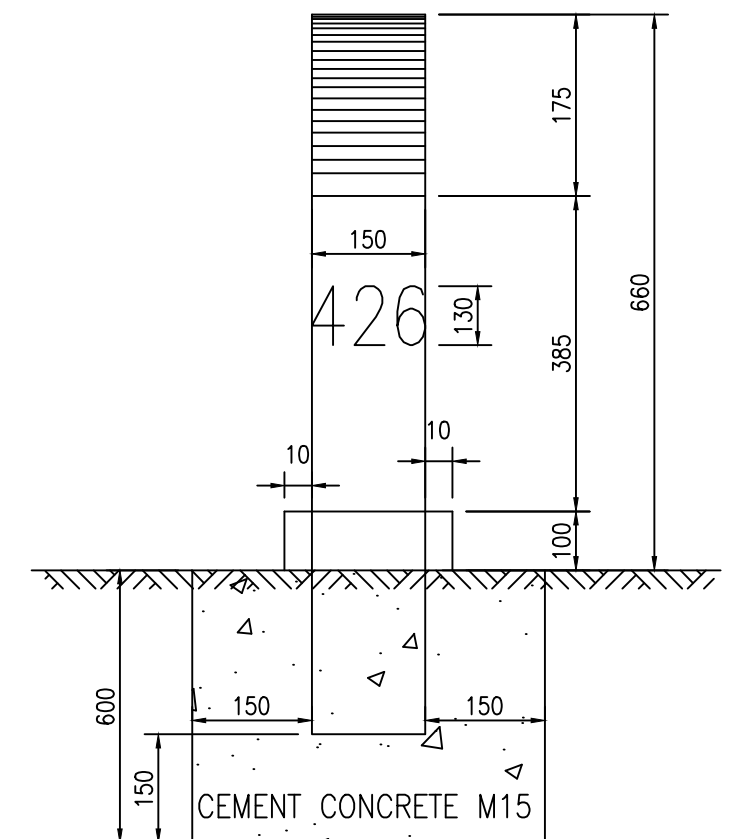
SECTIONAL PLAN



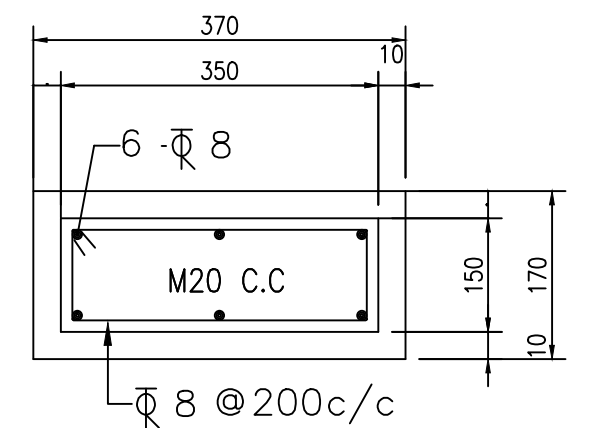
FACE 1



FACE 2



SIDE ELEVATION



SECTIONAL PLAN

## TYPICAL DESIGN FOR THE 5TH KILOMETRE STONE

INDEX FOR KILOMETRE STONES		
Km No.	SCRIPT FOR PLACE NAMES	PLACE TO BE SHOWN
0	ROMAN	TERMINAL/STARTING STATION AND NEXT IMPORTANT TOWN
1	HINDI (DEVANAGARI SCRIPT)	NEXT IMPORTANT TOWN
2	LOCAL LANGUAGE	NEXT IMPORTANT TOWN
3	HINDI (DEVANAGARI SCRIPT)	TERMINAL / STARTING STATION
4	LOCAL LANGUAGE	TERMINAL / STARTING STATION
5	ROMAN	TERMINAL/STARTING STATION AND NEXT IMPORTANT TOWN
6	HINDI (DEVANAGARI SCRIPT)	NEXT IMPORTANT TOWN

## TYPICAL DESIGN FOR ORDINARY KILOMETRE STONE

### NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. REFLECTORISED PAINT SHALL BE IN ACCORDANCE WITH CL.803.5 OF M.O.R.T & H SPEC.
3. FOR TYPE & STYLE SIZE OF LETTERING RELEVANT IRC CODE OF PRATICE SHALL BE REFERED.
4. LETTERING IS DONE WITH APPROVED QUALITY BLACK ENAMEL PAINT USING STENCIL



Project Title:-

**CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.**

TELIAMURA - SABROOM SECTION

CLIENT:-



**NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD**

Drawing Title:-

TYPICAL DRAWING OF KM STONE

Drawing No. :-

TASPL/NHIDCL/FDPR/MISC/12

Scale :-

NTS

Drn

Dgn.

Appd

Sheet :

D.S

B.Mishra

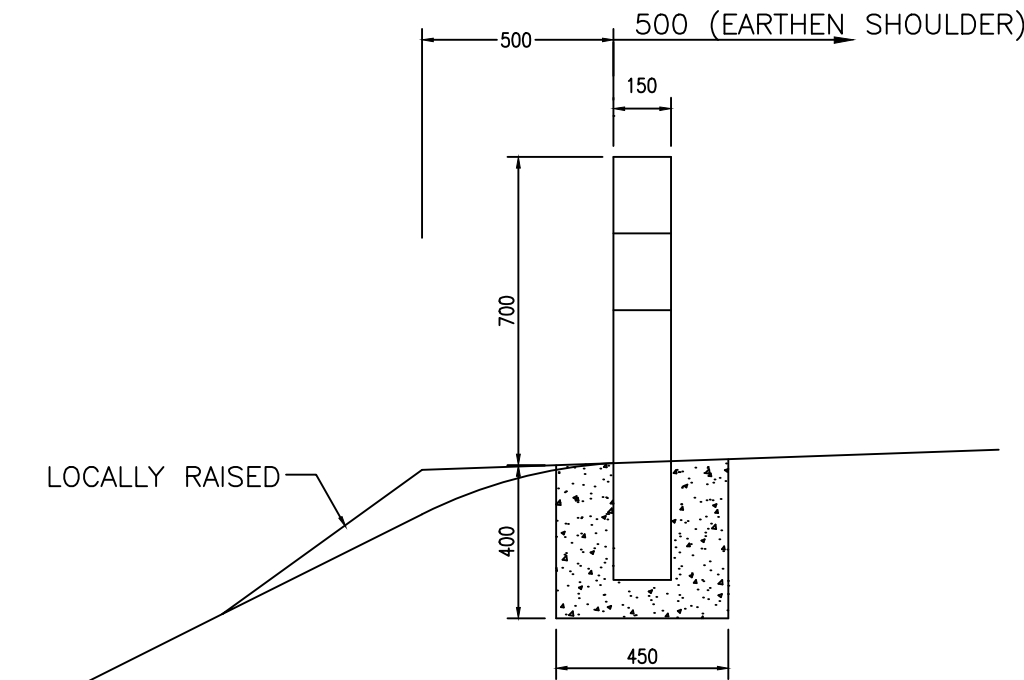
B.Ram

01 OF 02

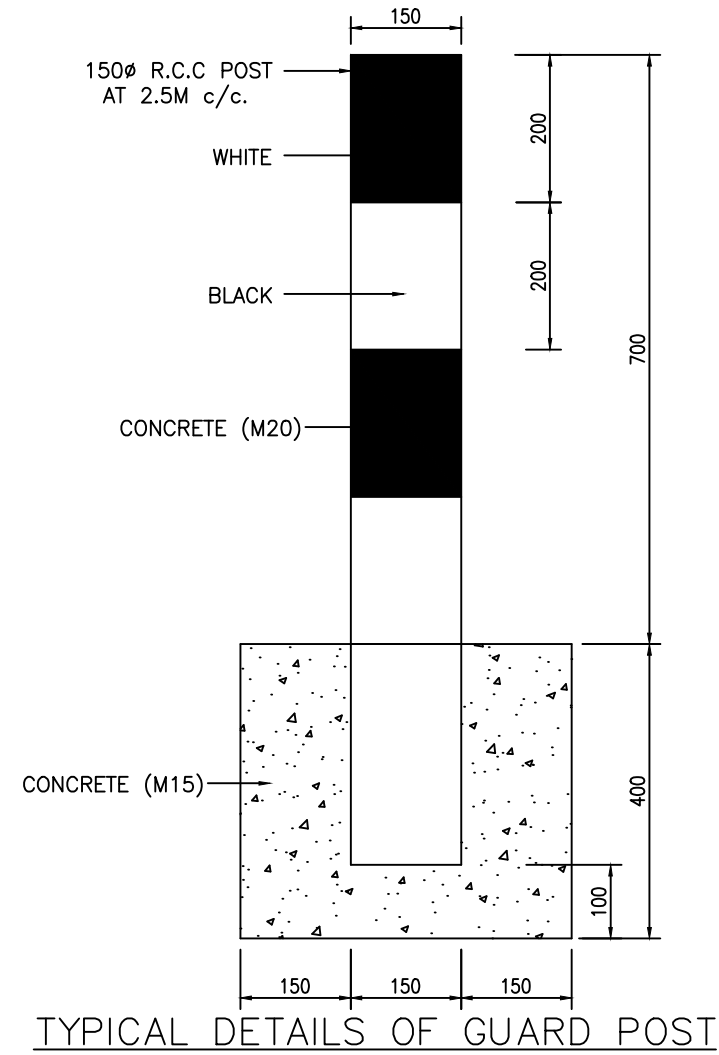
CONSULTANT:-



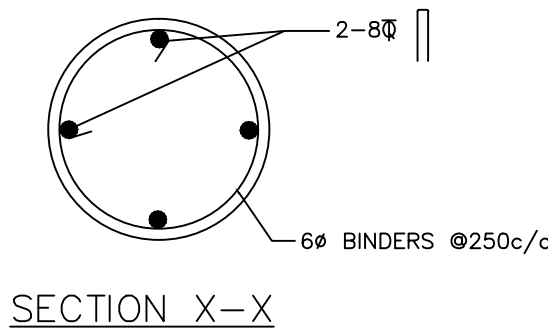
**Technocrats Advisory Services Private Limited**  
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68,Ajanta Apartment, 36, I.P. Extension  
Patparganj Delhi-110092.



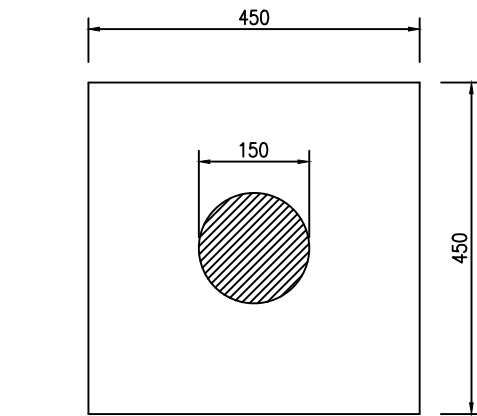
FIXING DETAILS OF GUARD POST



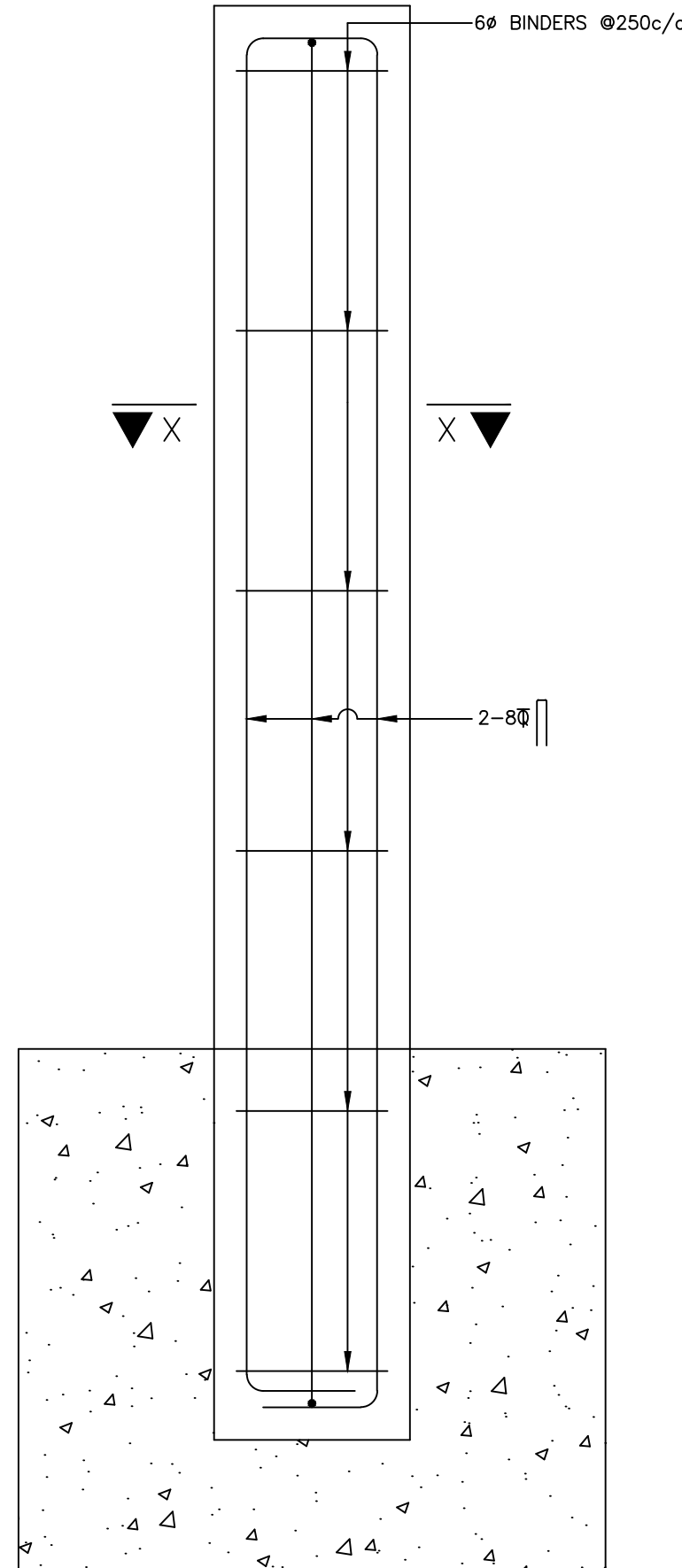
TYPICAL DETAILS OF GUARD POST



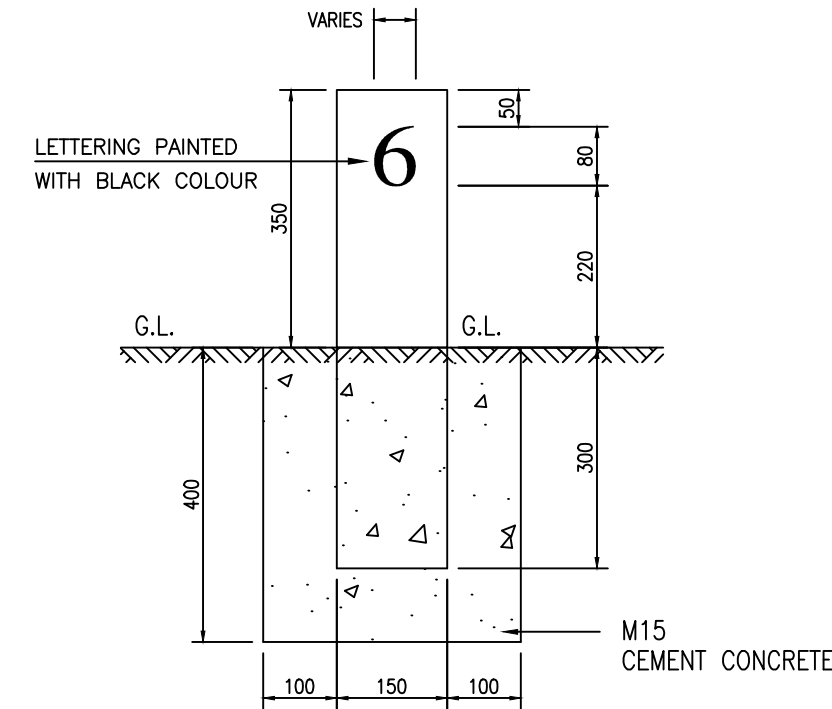
SECTION X-X



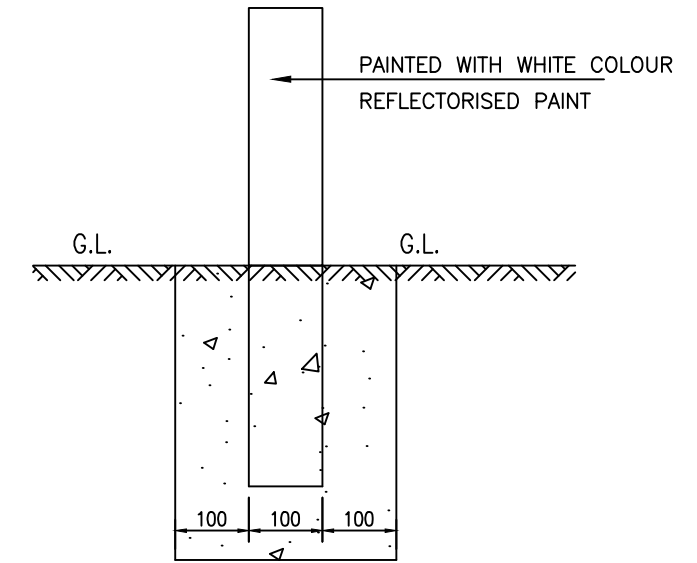
PLAN OF GUARD POST



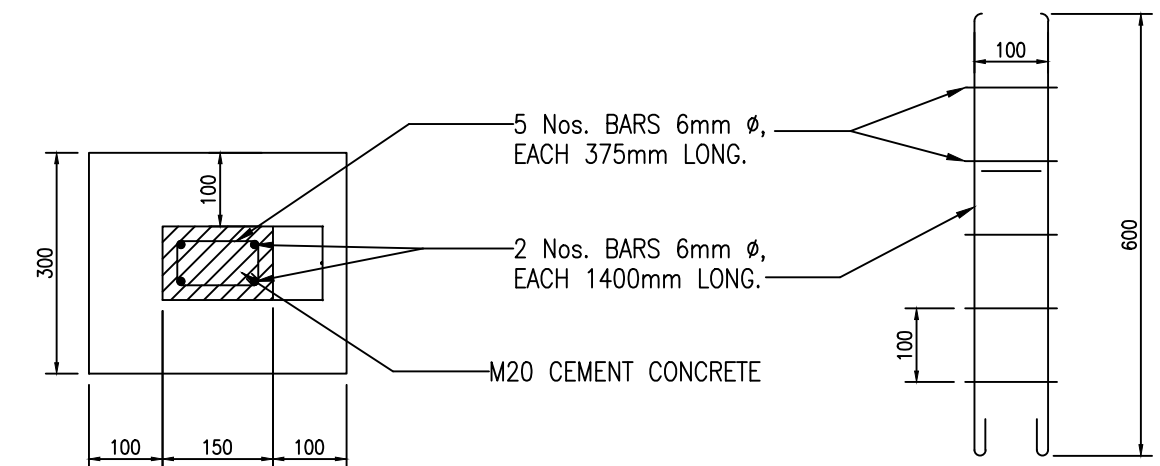
REINFORCEMENT DETAIL OF GUARD POST



FRONT ELEVATION



SIDE VIEW



PLAN

SCHEDULE OF REINFORCEMENT

## TYPICAL DESIGN FOR 200m STONES

### NOTES:

1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE MENTIONED.
2. FOR EXACT DETAILS OF W-BEAM, REFER MANUFACTURER DRAWING.
3. W-BEAM BARRIER IS INSTALLED WHERE EMBANKMENT HEIGHT IS MORE THAN 6 METRES & AT IMMEDIATE BRIDGE APPROACHES.
4. R.C.C. GUARD POSTS IS TO BE INSTALLED AS PER THE INSTRUCTIONS OF ENGINEER.

### NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. REFLECTORISED PAINT SHALL BE IN ACCORDANCE WITH CL.803.5 OF M.O.R.T & H SPEC.
3. FOR TYPE & STYLE SIZE OF LETTERING RELEVANT IRC CODE OF PRATICE SHALL BE REFERED.
4. LETTERING IS DONE WITH APPROVED QUALITY BLACK ENAMEL PAINT USING STENCIL



Project Title:-

CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.

TELIAMURA - SABROOM SECTION

CLIENT:-



NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD

Drawing Title:-

TYPICAL DRAWING OF KM STONE

Drawing No. :- TASPL/NHIDCL/FDPR/MISC/12

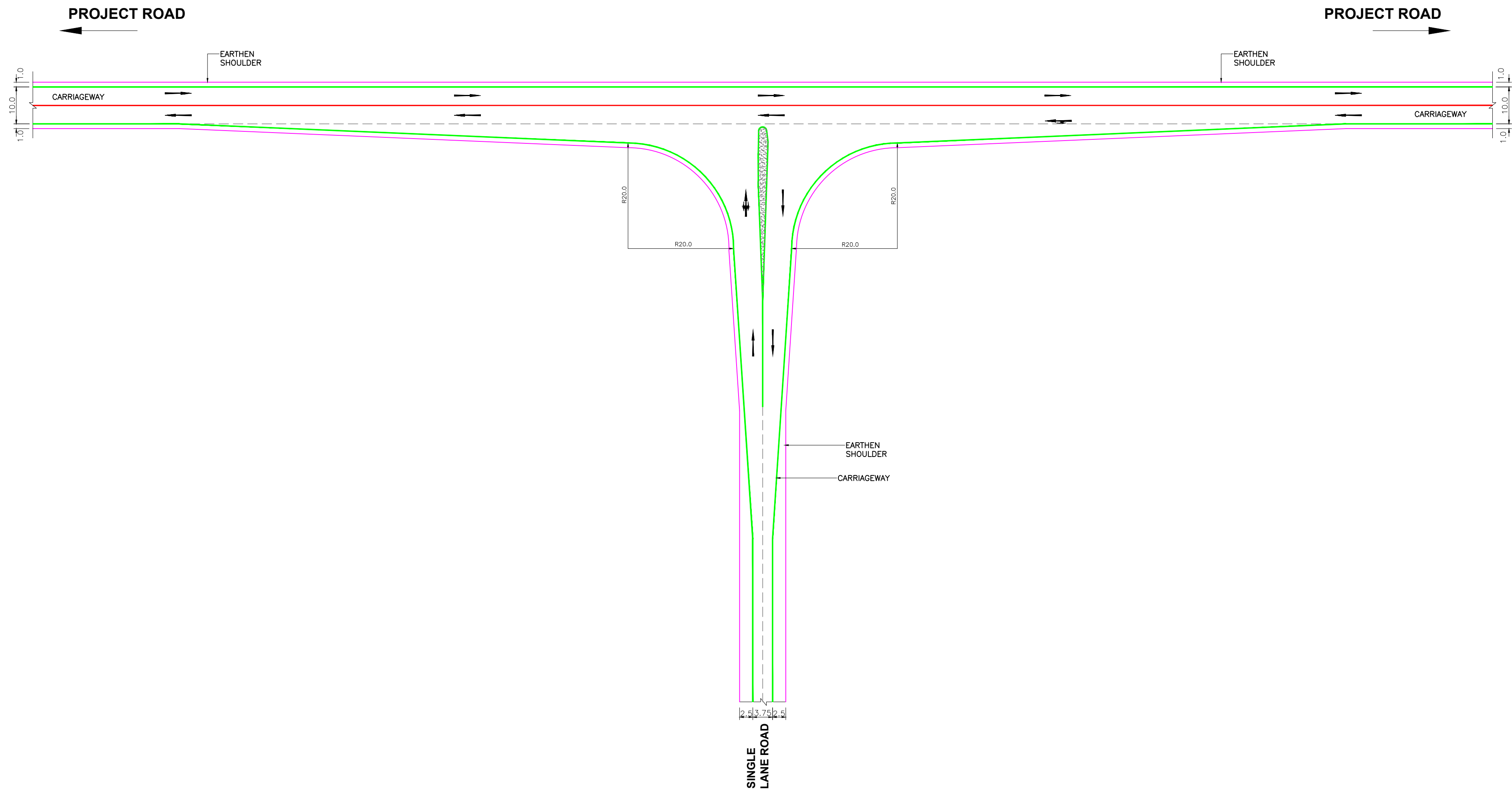
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Drn	Dgn.	Appd	Sheet :
D.S	B.Mishra	B.Ram	02 OF 02

CONSULTANT:-



Technocrats Advisory Services Private Limited  
in association with Vaishnavi Infratech Services Pvt. Ltd  
68,Ajanta Apartment, 36, I.P. Extension  
Patparganj Delhi-110092.



TYPICAL 'THREE ARM' JUNCTION




Project Title:-  
**CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.**  
TELIAMURA - SABROOM SECTION

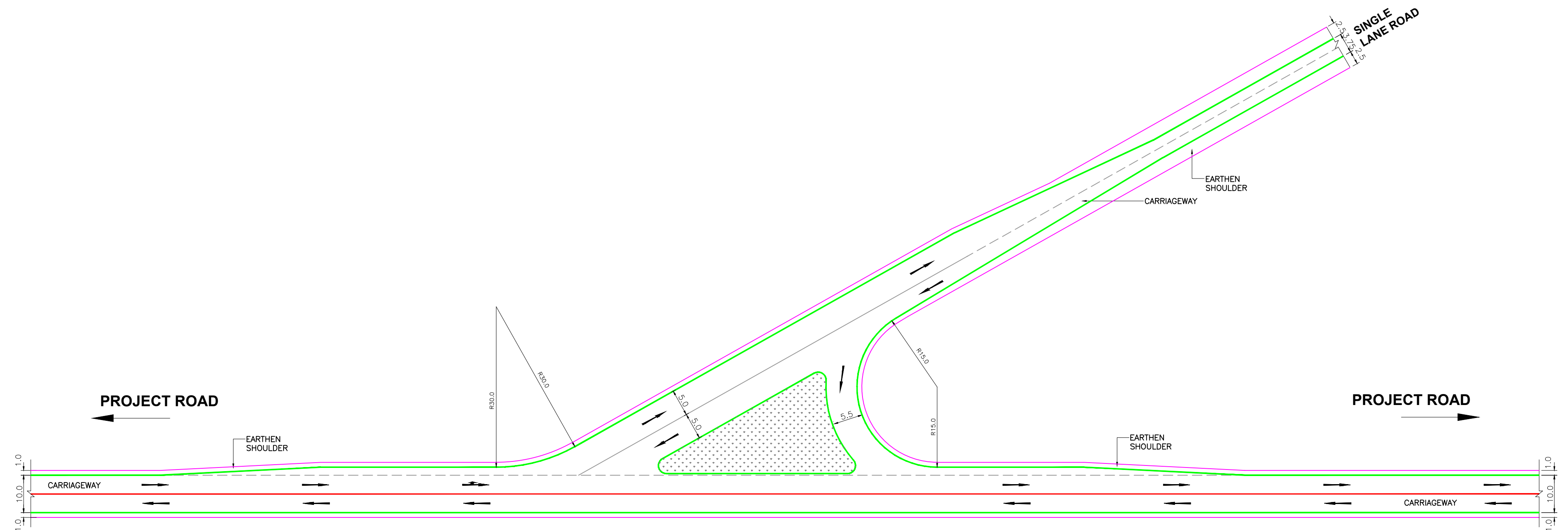
CLIENT:-  
  
**NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD**

Drawing Title:-  
**TYPICAL 'T' JUNCTION**  
Drawing No. :- **TASPL/NHIDCL/FDPR/MISC/12**  
Scale :- **NTS**  

Drn	Dgn.	Appd	Sheet :
D.S	B.Mishra	B.Ram	01 OF 03

CONSULTANT:-  
  
**Technocrats Advisory Services Private Limited**  
in association with Vaishnavi Infratech Services Pvt. Ltd  
68,Ajanta Apartment, 36, I.P. Extension  
Patparganj Delhi-110092.





TYPICAL 'Y' JUNCTION



Project Title:-

CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.

TELIAMURA - SABROOM SECTION

CLIENT:-



NATIONAL HIGHWAYS & INFRASTRUCTURE  
DEVELOPMENT CORPORATION LTD

Drawing Title:-

TYPICAL 'Y' JUNCTION

Drawing No. :- TASPL/NHIDCL/FDPR/MISC/12

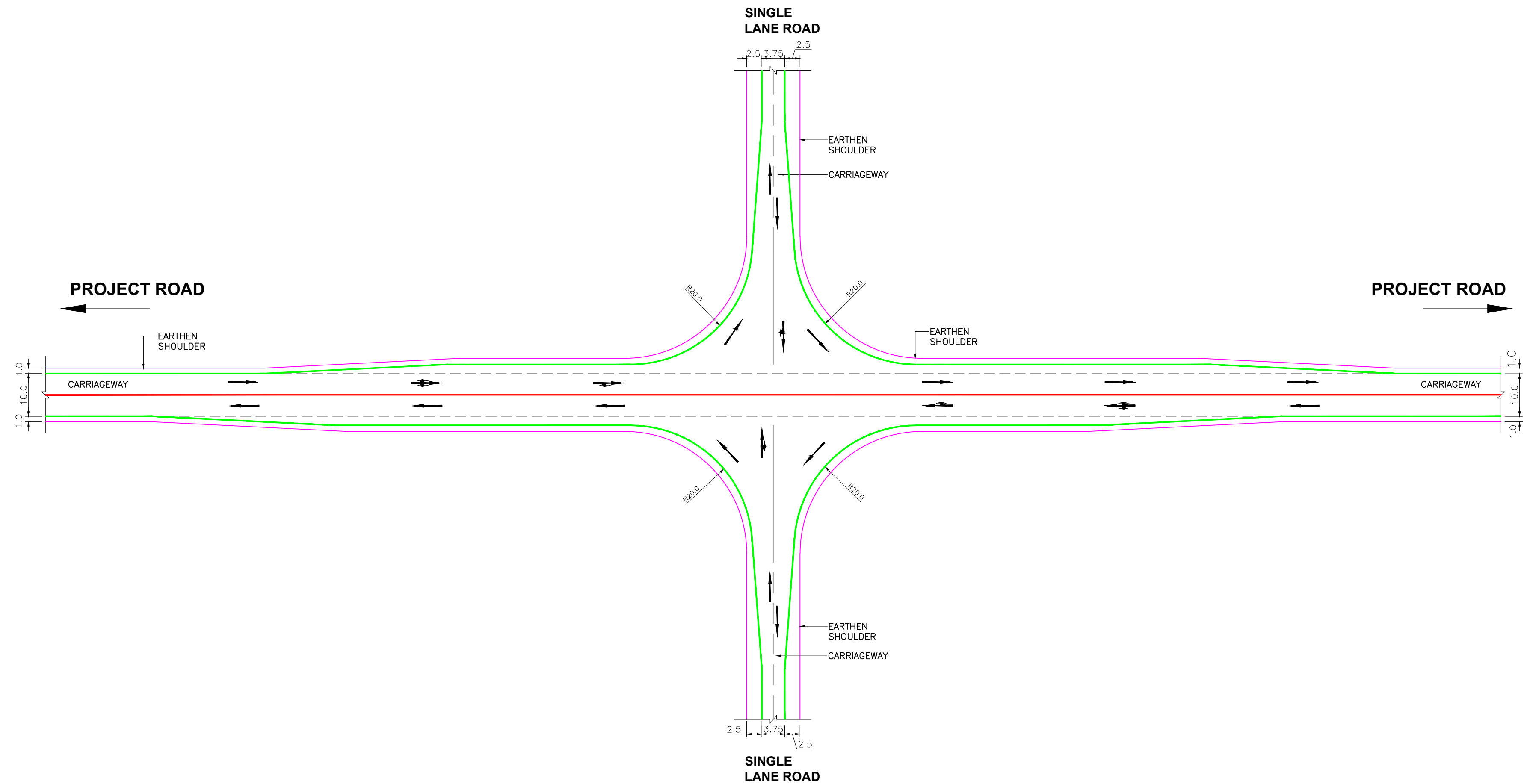
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D.S	B.Mishra	B.Ram	02 OF 03

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68,Ajanta Apartment, 36, I.P. Extension  
Patparganj Delhi-110092.



TYPICAL 'FOUR ARM' JUNCTION



Project Title:-

CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.

TELIAMURA - SABROOM SECTION

CLIENT:-



NATIONAL HIGHWAYS & INFRASTRUCTURE  
DEVELOPMENT CORPORATION LTD

Drawing Title:-

TYPICAL 'FOUR ARM' JUNCTION

Drawing No. :- TASPL/NHIDCL/FDPR/MISC/12

Scale :- NTS

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D.S	B.Mishra	B.Ram	03 OF 03

CONSULTANT:-



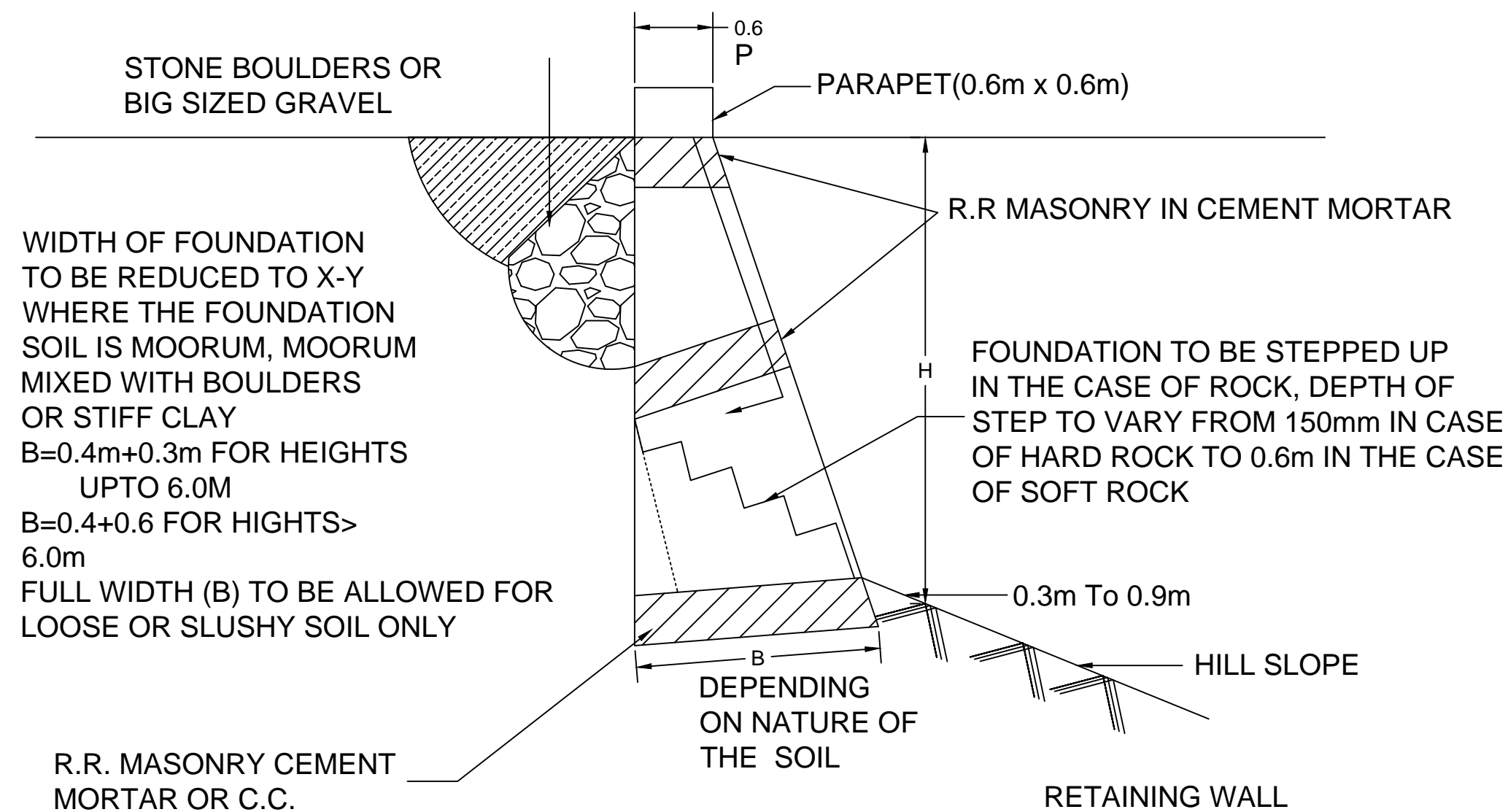
Technocrats Advisory Services Private Limited  
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68,Ajanta Apartment, 36, I.P. Extension  
Patparganj Delhi-110092.

PROTECTIVE ITEMS

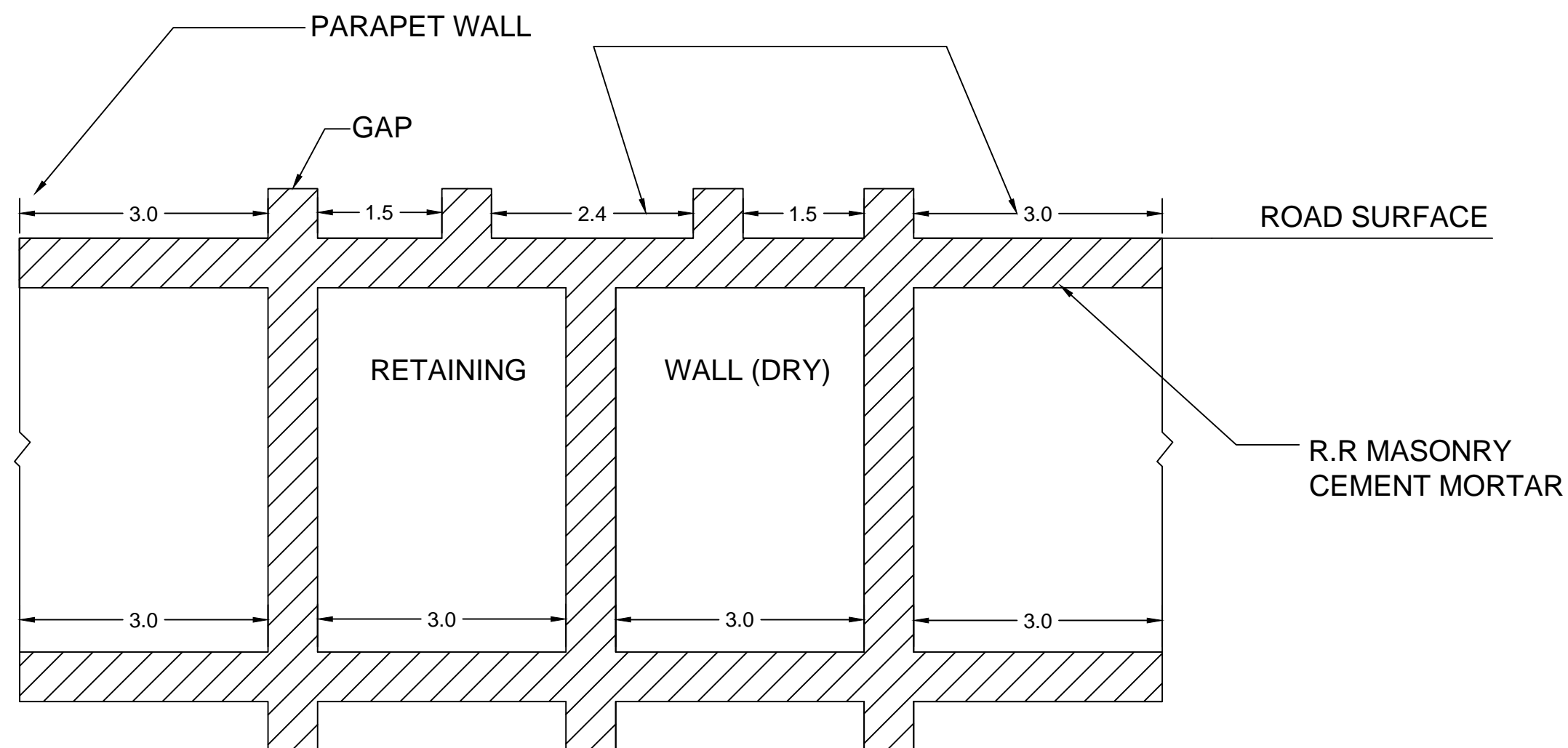




RETAINING WALL ►



CROSS SECTION



L-SECTION ON P-Q



Project Title:-

CONSULTANCY SERVICES FOR FEASIBILITY STUDY, PREPARATION OF DETAILED PROJECT REPORT AND PROVIDING PRE-CONSTRUCTION SERVICES FOR UP-GRADATION OF SELECTED ROAD STRETCHES / CORRIDORS TO TWO LANE WITH PAVED SHOULDER NH CONFIGURATION UNDER BHARAT MALA PROJECT AND NATIONAL HIGHWAYS CONNECTIVITY TO BACKWARD AREAS/RELIGIOUS/TOURIST PLACES OF THE COUNTRY IN THE STATE OF TRIPURA.

TELIAMURA - SABROOM SECTION

CLIENT:-



NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD

Drawing Title:-

RETAINING WALL

Drawing No. :- TASPL/NHIDCL/FDPR/RW/13

Scale :- NTS

Drn  
D.S

Dgn.  
B.Mishra

Appd  
B.Ram

Sheet :  
01 OF 01

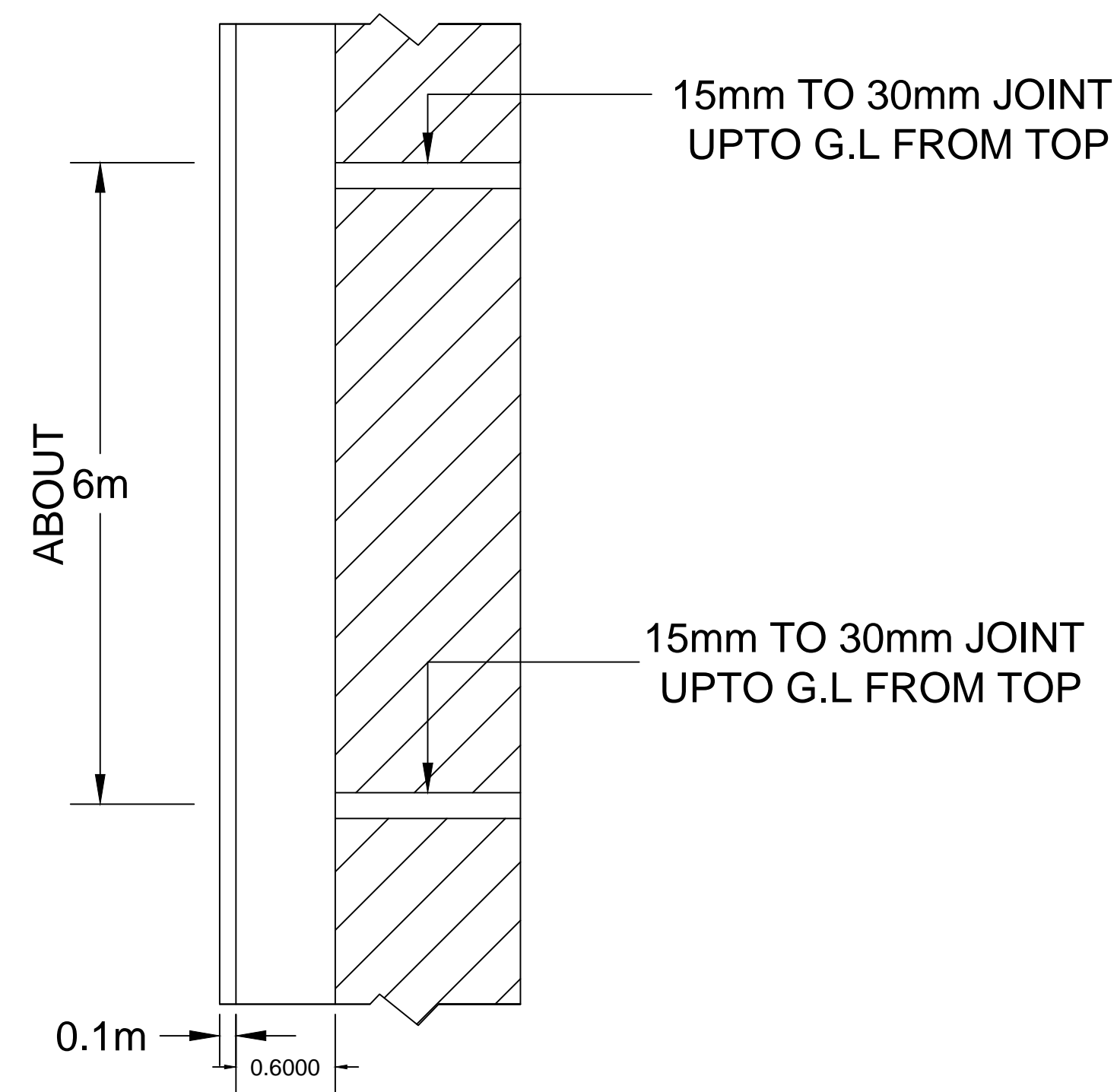
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 68,Ajanta Apartment, 36, I.P. Extension  
 Patparganj Delhi-110092.

BREAST WALL ►





PLAN  
(AT GROUND LEVEL)

