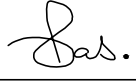
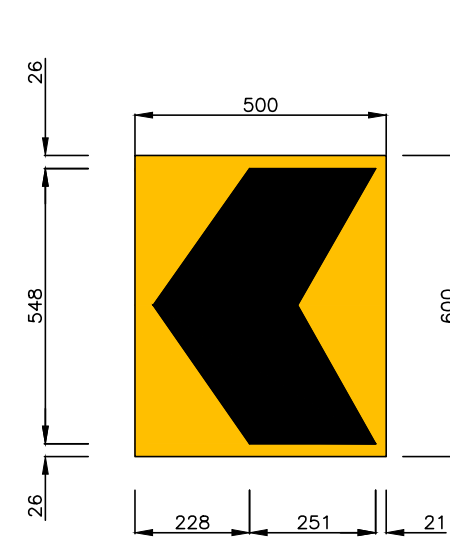


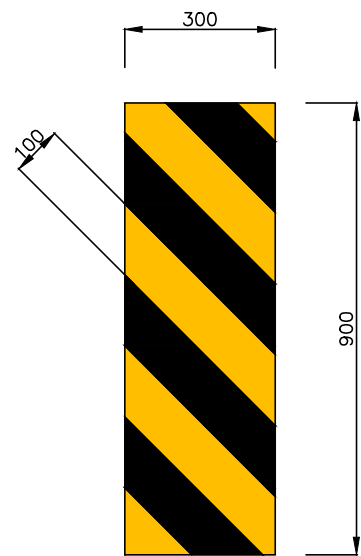


Note:
1.The dimension of the road sign given as in as per 80kmph design speed, dimension should be change of design speed according to IRC-67-2012 table no. 15.1

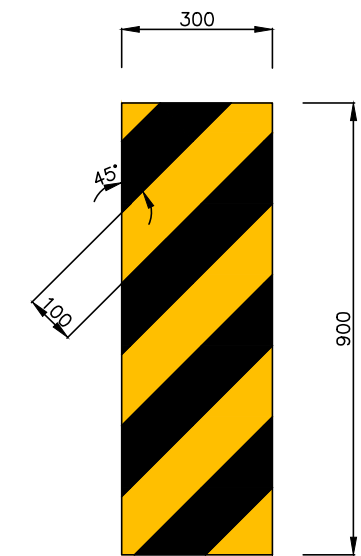
CLIENT :  NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT AND HIGHWAYS) GOVERNMENT OF INDIA		PROJECT : CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1:PACKAGE II)		DESIGN CONSULTANT:  VOYANTS SOLUTIONS PVT LTD. 403, 4th Floor, Park Centra, Sector-30, NH-8 Gurugram-122001, Haryana, India CIN- U74140HR2004PTC046918 Ph: 0124-4598200, Fax: 0124-4019051, E-mail: info@voyants.in, www.voyants.in	Detailed Project Report		DESIGNED BY PD/PS 	DRAWN BY SS 	CHECKED BY DGR 	APPROVED BY SKC 	TITLE : Road Sign & Road Delineators	
							SCALE : 1:30		SHEET SIZE	A2	DRG. No. : VSPL/1718-081/DPR/PKG-2/MIS- 01 (Sheet 02 of 03)	
					REV. DATE DESCRIPTION						REVISION:R1	
											NOVEMBER 2020	



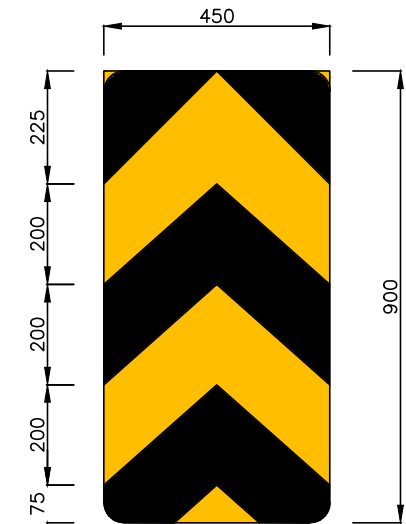
SINGLE CHEVRON
Fig. 15.72
TA-1
SCALE 1:15000



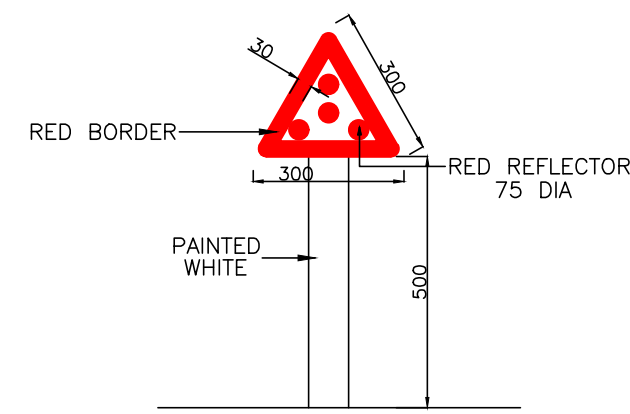
OBJECT HAZARD (LEFT)
Fig. 15.76
TA-2
SCALE 1:15000



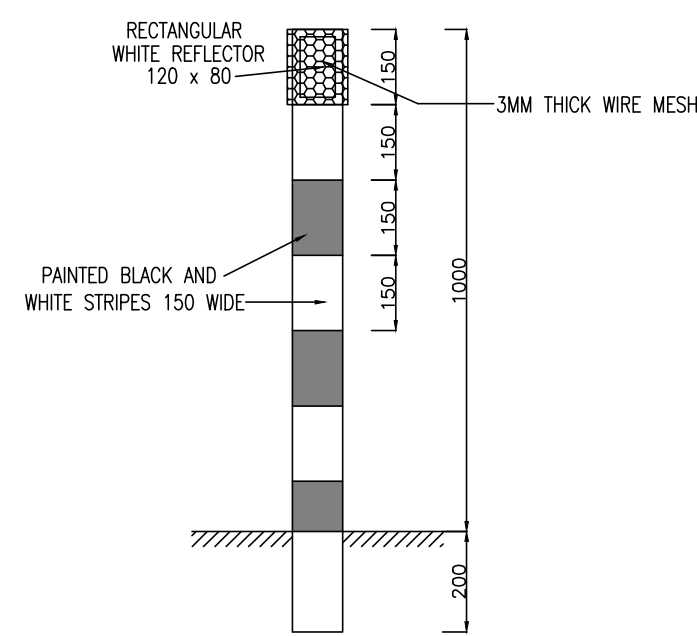
OBJECT HAZARD (RIGHT)
Fig. 15.77
TA-3
SCALE 1:15000



TWO WAY HAZARD MARKER
Fig. 15.78
TA-4
SCALE 1:15000



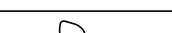
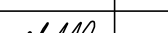
CLUSTER OF RED REFLECTORS
TA-5
SCALE 1:15000

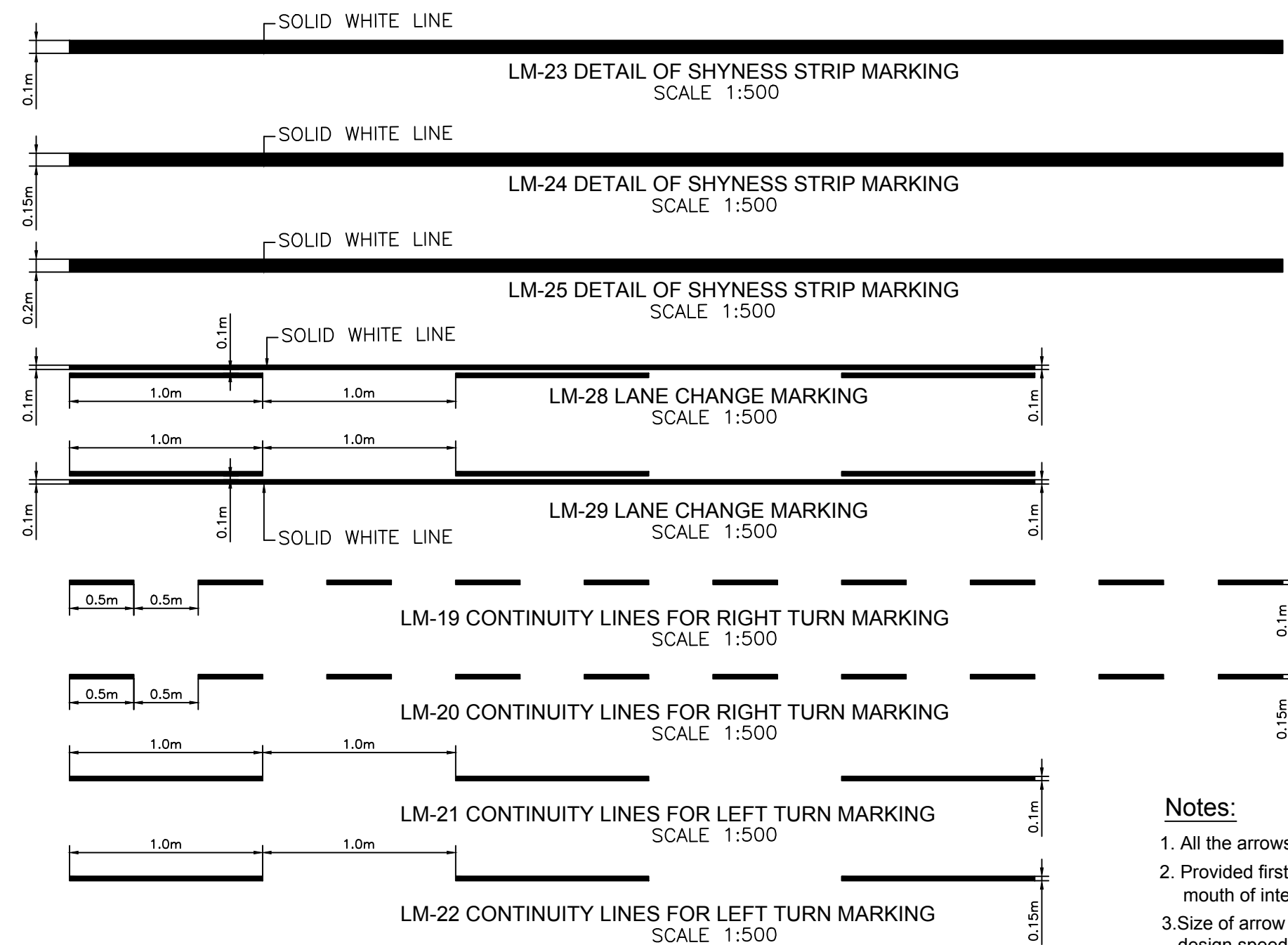
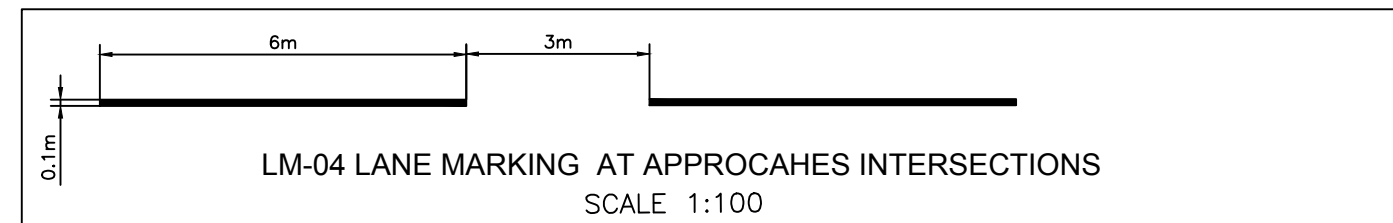
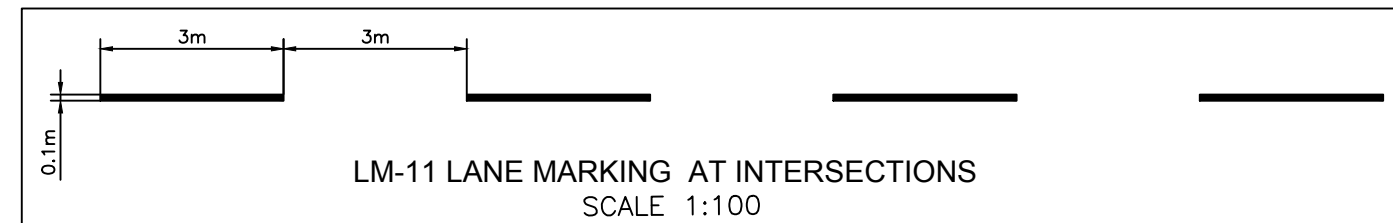
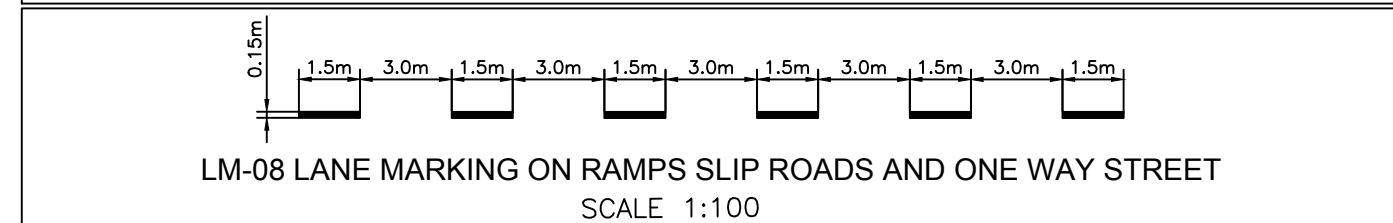
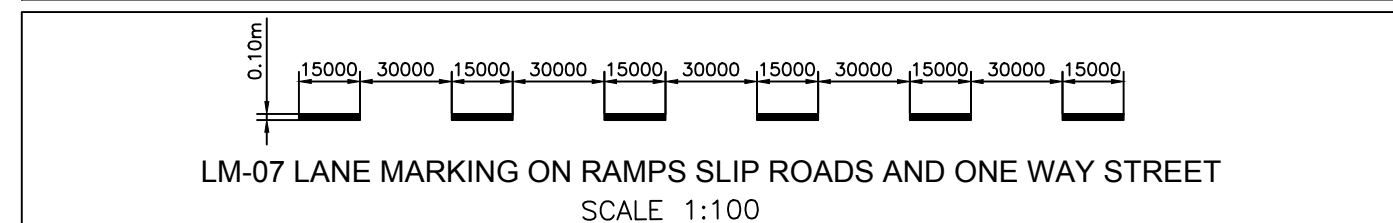
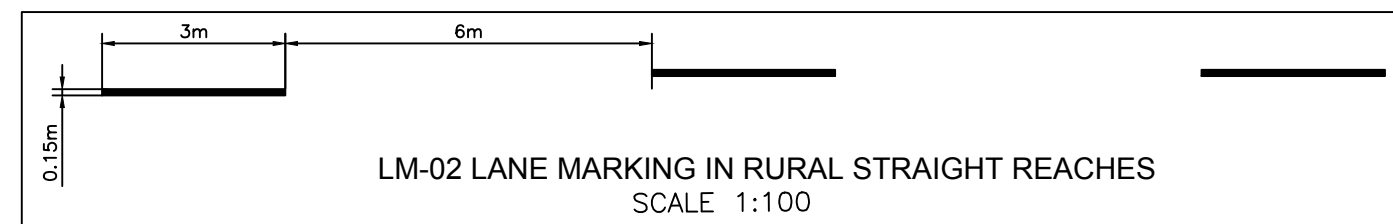
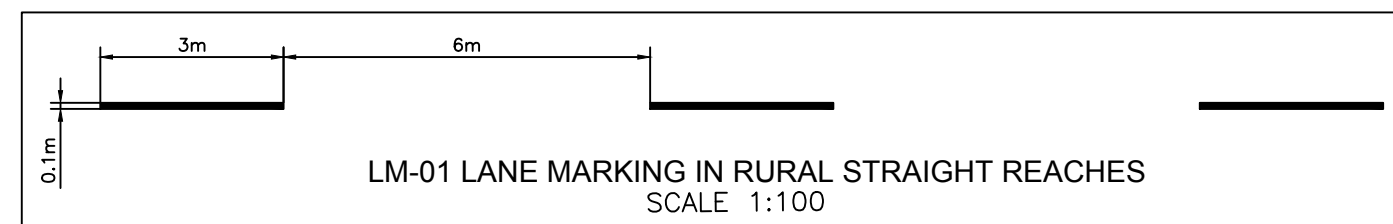
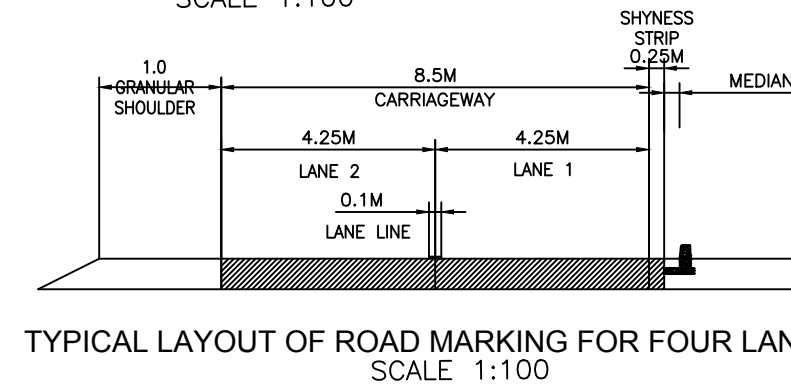
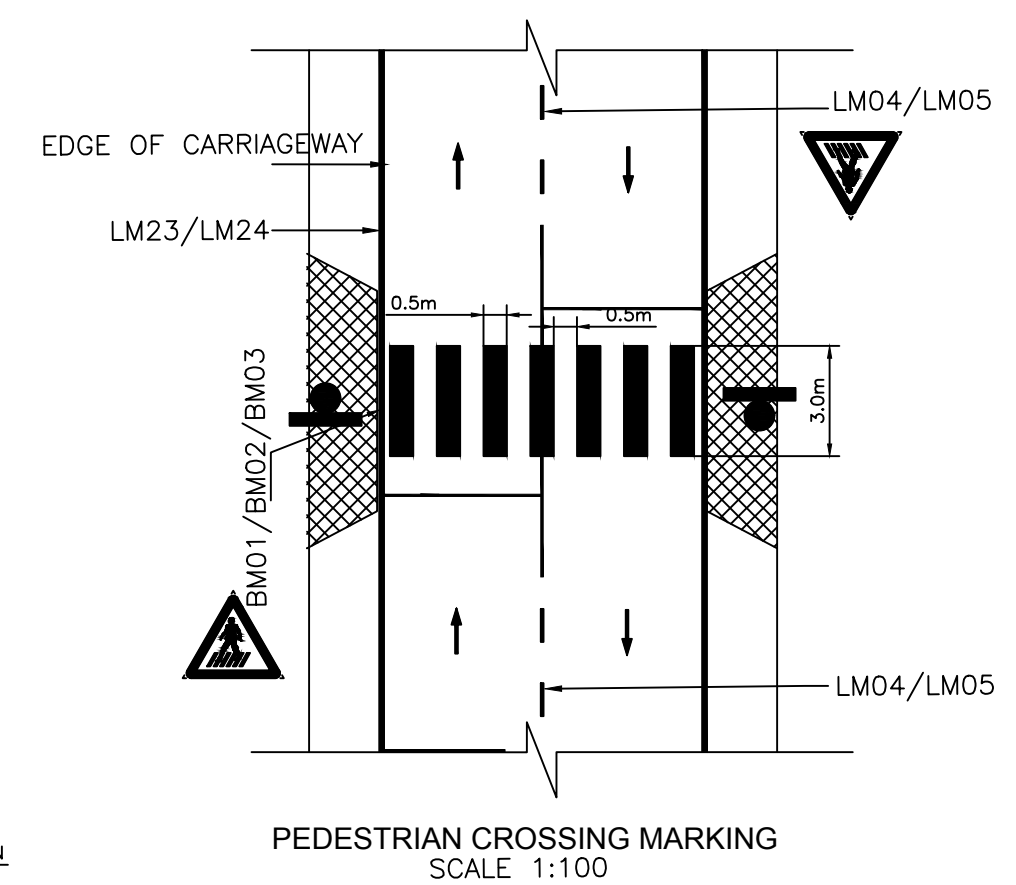
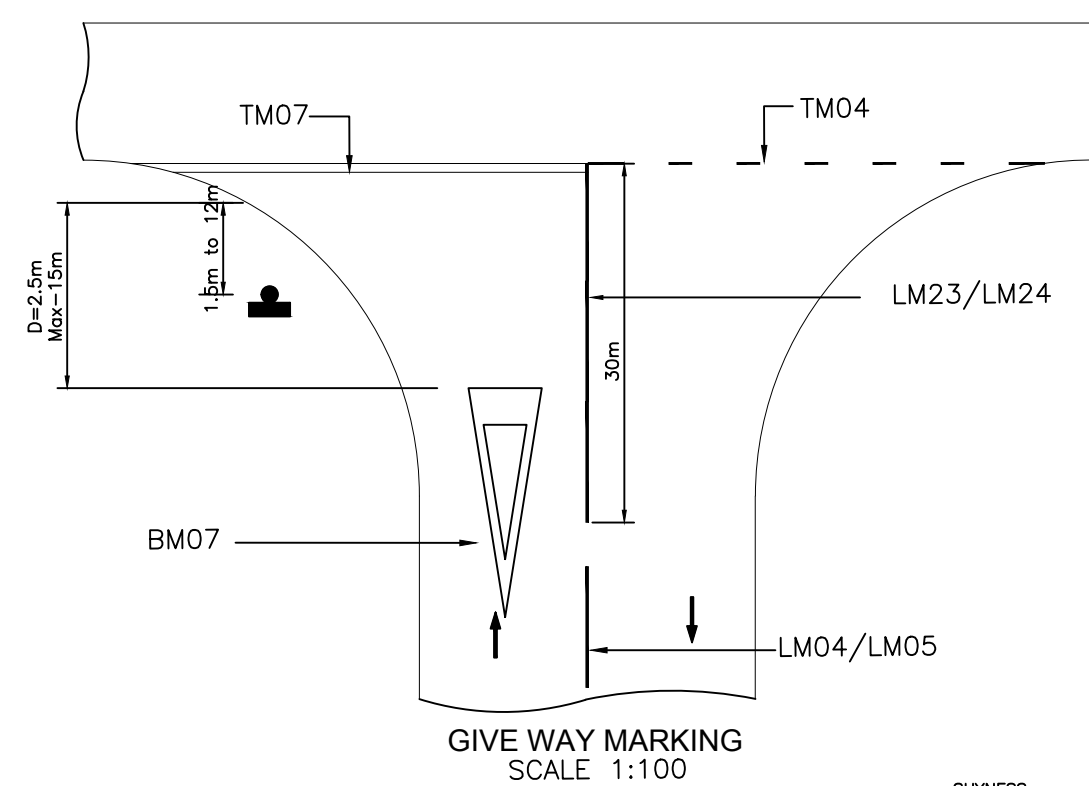
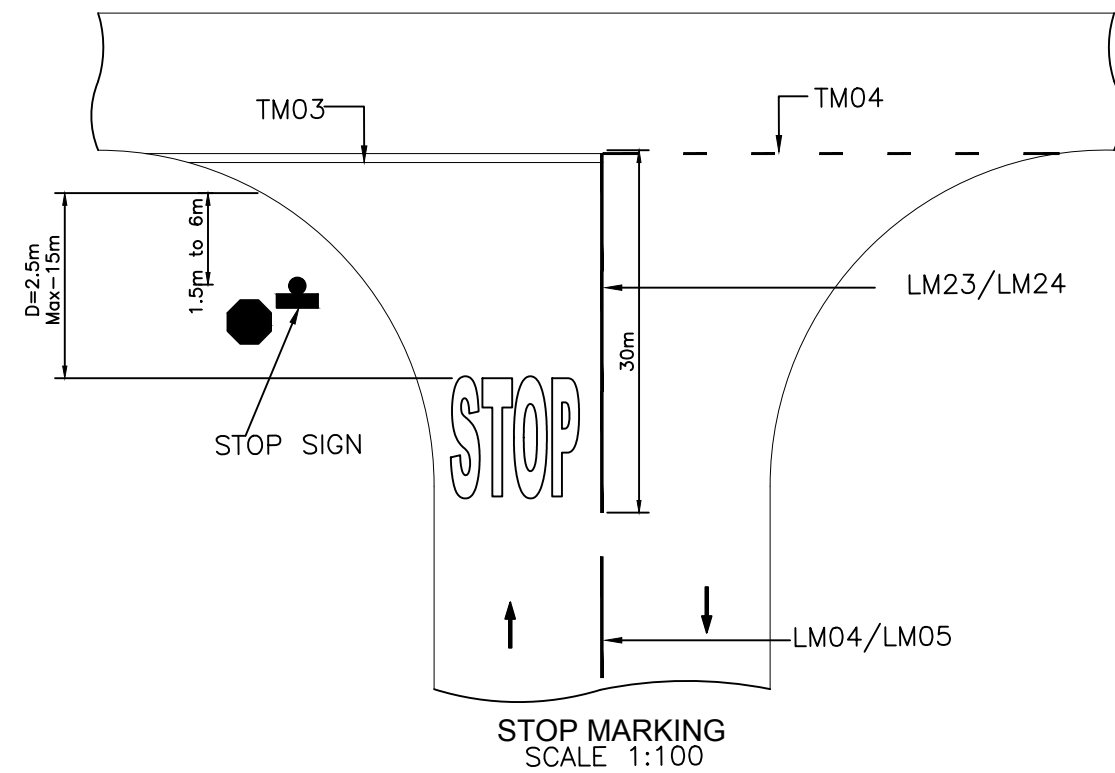


ROAD DELINEATORS WITH RECTANGULAR REFLECTOR
TA-6
SCALE 1:15000

Notes:

1. Road signs shall be erected as per IRC:67-2012.
2. Sizes of arrows, letters and numerals for road signs shall be as per IRC:67-2012
3. Route marker signs, letters and numerals shall be erected as per IRC:2-1968.
4. Spacing of TA2 on kerb face shall be 250mm C/C and that on metal beam crash barrier shall be 3000mm C/C. The number of reflector at island/median tips shall be as instructed by the Engineer, but in no case shall be less than five number at a tip.
5. CS1 can also be used for compulsory right turn and straight ahead by rotating.
6. All items indicated in this drawing may not be relevant for the subject project, these shall be used depending upon the requirement.
7. Besides the above, standards and specifications mentioned in IRC:67-2012 shall be followed strictly whenever applicable.

CLIENT :  NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT AND HIGHWAYS) GOVERNMENT OF INDIA	PROJECT : CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1:PACKAGE II)	DESIGN CONSULTANT:  VOYANTS SOLUTIONS PVT LTD. 403, 4th Floor, Park Centra, Sector-30, NH-8 Gurugram-122001, Haryana, India CIN- U74140HR2004PTC046918 Ph: 0124-4598200, Fax: 0124-4019051, E-mail: info@voyants.in, www.voyants.in	Detailed Project Report		DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	TITLE :			
						PD/PS	SS	DGR	SKC	Road Sign & Road Delineators		
										DRG. No. :		
						SCALE :		AS SHOWN	SHEET SIZE	A2	VSPL/1718-081/DPR/PKG-2/MIS- 01 (Sheet 03 of 03)	
			REV.	DATE	DESCRIPTION						REVISION:R1	NOVEMBER 2020



Notes:

1. All the arrows and marking are in white colour.
2. Provided first arrow at distance of 15m from mouth of intersection & second at 30m from first arrow.
3. Size of arrow shall be 3.5m (As per of IRC:35-2015) for design speed is less than 50km/hr.

CLIENT :



**NATIONAL HIGHWAYS AND INFRASTRUCTURE
DEVELOPMENT CORPORATION LTD.
(MINISTRY OF ROAD TRANSPORT AND HIGHWAYS)
GOVERNMENT OF INDIA**

PROJECT :

**CONSULTANCY SERVICES FOR PREPARATION OF
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ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT
MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA
(LOT-1:PACKAGE II)**

DESIGN CONSULTANT:



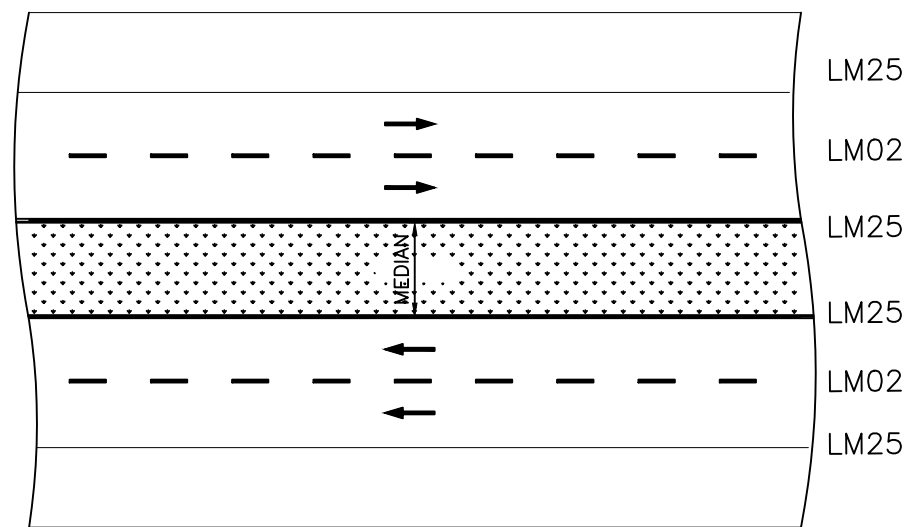
VOYANTS SOLUTIONS PVT LTD.
403, 4th Floor, Park Centra,
Sector-30, NH-8
Gurugram-122001, Haryana, India
CIN- U74140HR2004PTC046918
Ph: 0124-4598200, Fax: 0124-4019051,
E-mail: info@voyants.in, www.voyants.in

Detailed Project Report

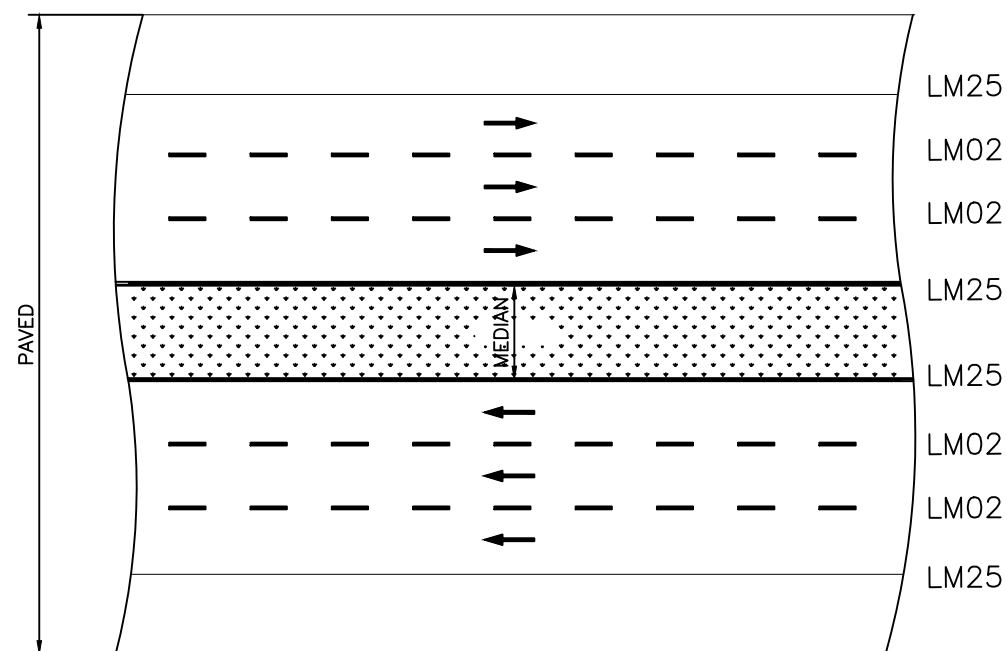
REV. DATE	DESCRIPTION	

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	TITLE : Road / Kerb Marking
PD/PS	SS	DGR	SKC	
				
SCALE :	N.T.S	SHEET SIZE	A2	DRG. No. : VSPL/1718-081/DPR/PKG-2/MIS-02 (Sheet 01 of 04)
REVISION:R1				NOVEMBER 2020

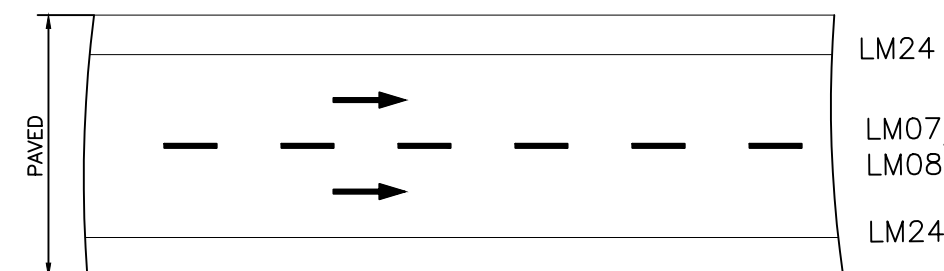
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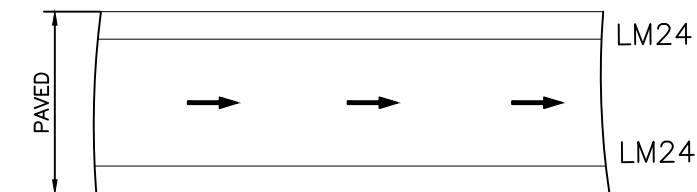
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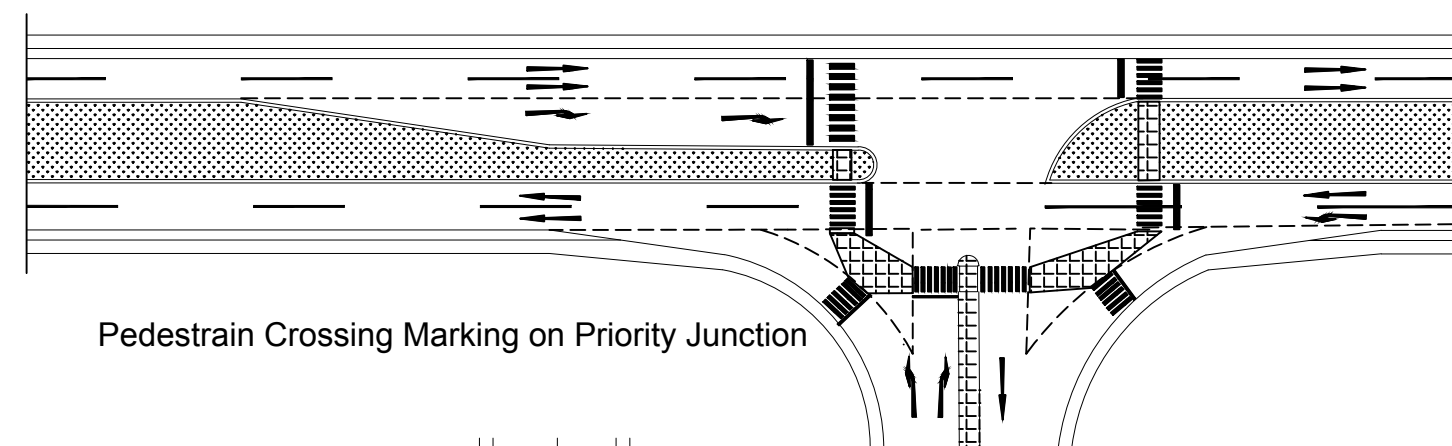
MAIN CARRIAGEWAY



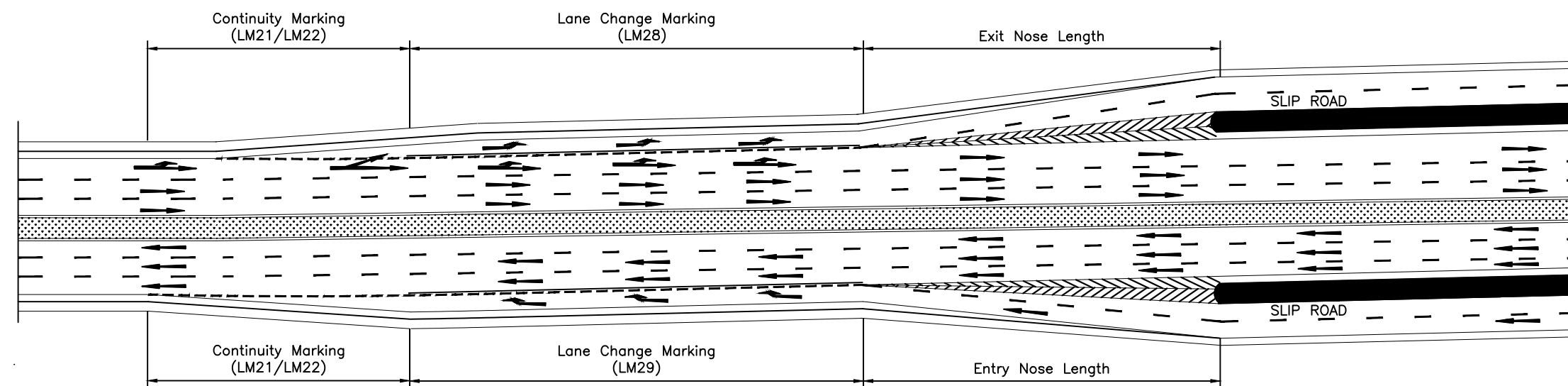
SERVICE / SLIP ROAD



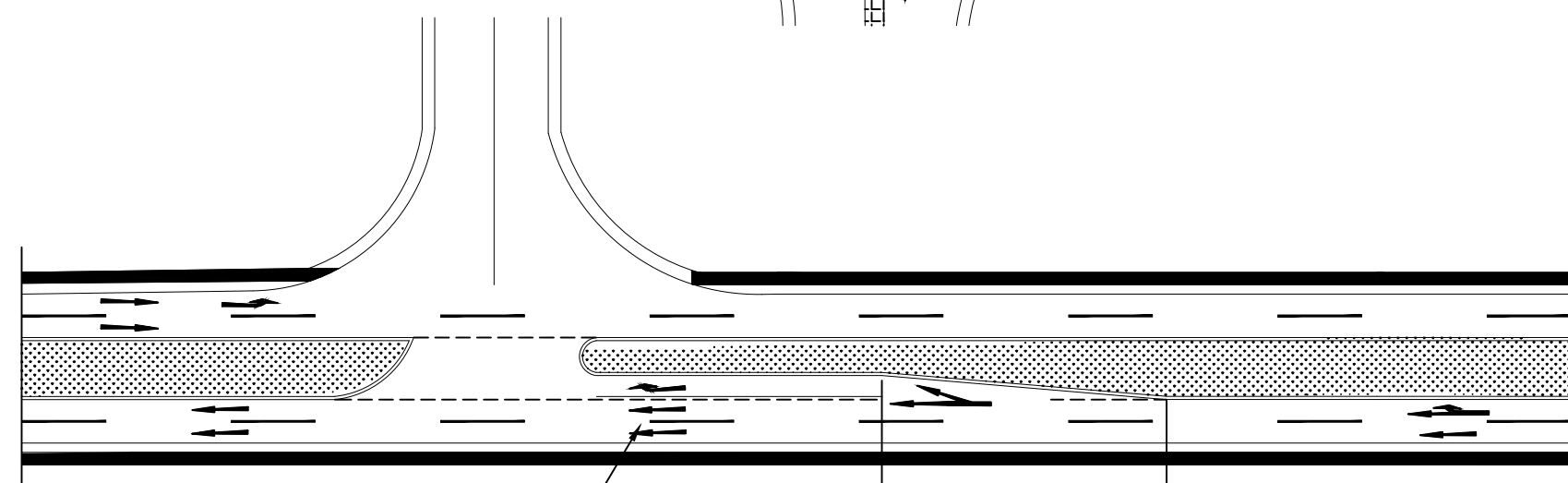
SERVICE / SLIP ROAD
TCS-19A



Pedestrian Crossing Marking on Priority Junction

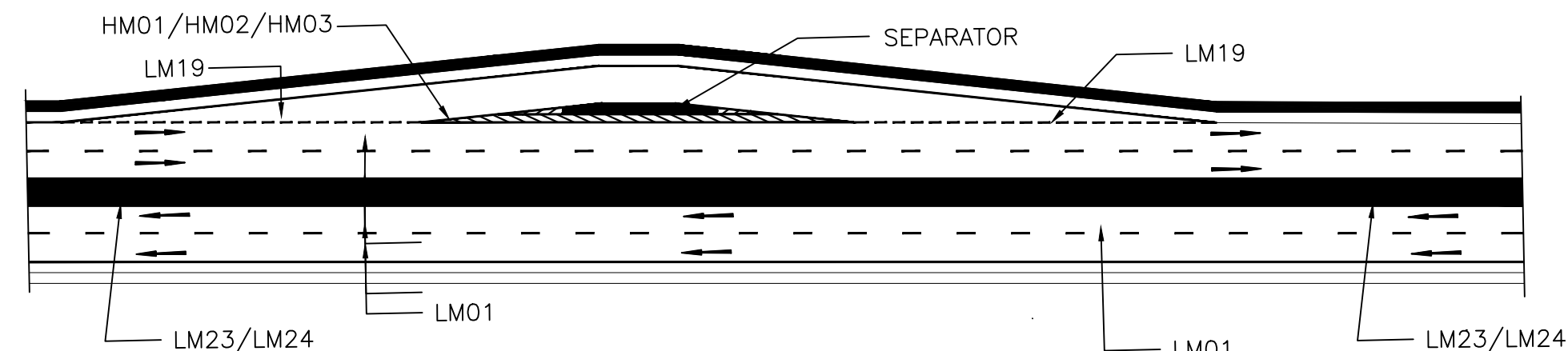


Mergen and Deceleration with Acceleration
at main carriageway and service road

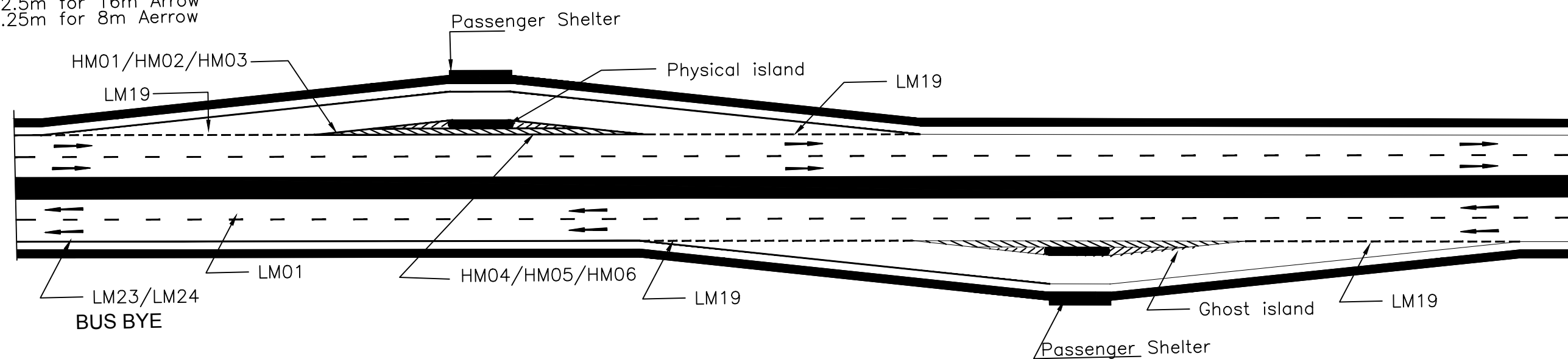


Shelter lane at median opening

25m for 32m Arrow
12.5m for 16m Arrow
6.25m for 8m Arrow



Truck Lay-by



BUS BYE

Notes:

1. All the arrows are in white colour.
2. Provided first arrow at distance of 15m from mouth of intersection & second at 30m from first arrow.
3. Size of arrow shall be 3.5m (As per fig.21 of IRC:35-2015) for design speed is less than 50km/hr.

CLIENT :



PROJECT :

**CONSULTANCY SERVICES FOR PREPARATION OF
DETAILED PROJECT REPORT FOR DEVELOPMENT OF
ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER
ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT
MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA
(LOT-1:PACKAGE II)**

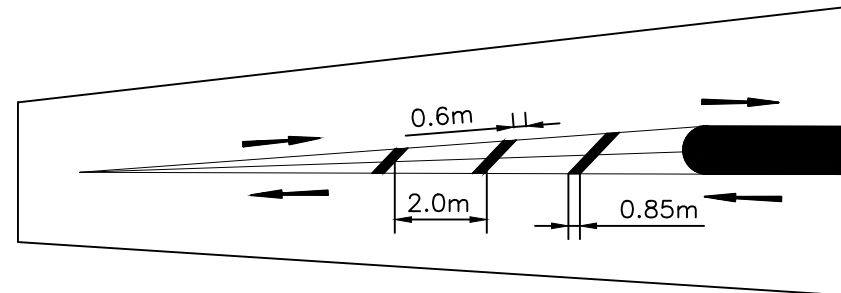
DESIGN CONSULTANT:

VOYANTS SOLUTIONS PVT LTD.
403, 4th Floor, Park Centra,
Sector-30, NH-8
Gurgaon-122001, Haryana, India
CIN: U74140HR2004PTC046918
Ph: 0124-4598200, Fax: 0124-4019051,
E-mail: info@voyants.in, www.voyants.in

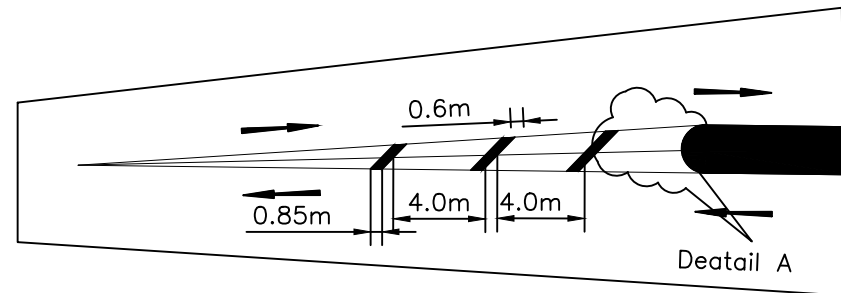
Detailed Project Report

REV.	DATE	DESCRIPTION

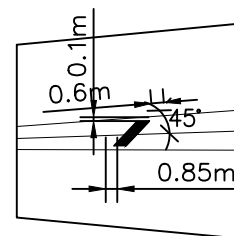
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PD/PS	SS	DGR	SKC	Road / Kerb Marking
				DRG. No. : VSPL/1718-081/DPR/PKG-2/MIS-02 (Sheet 02 of 04)
SCALE :	N.T.S	SHEET SIZE	A2	REVISION:R1 NOVEMBER 2020



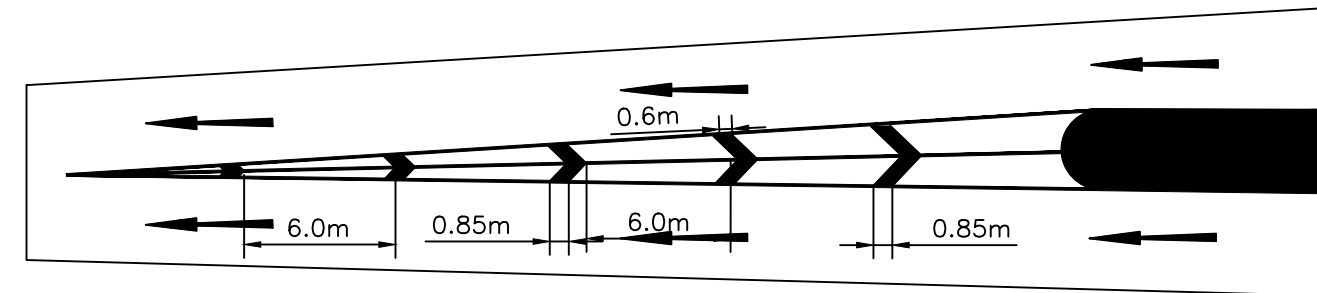
Total Length Of marking <10m



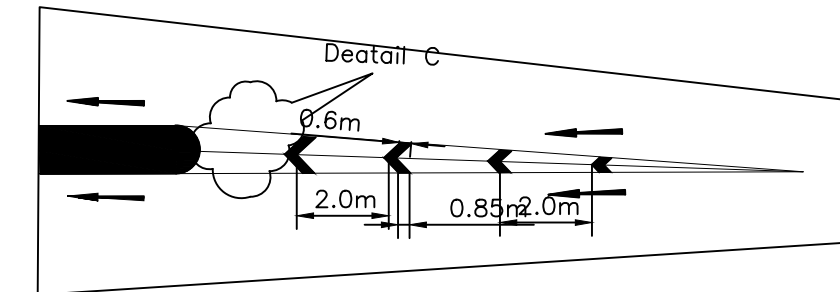
Total Length Of marking 10m to 22m



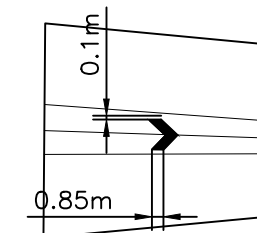
Detail A



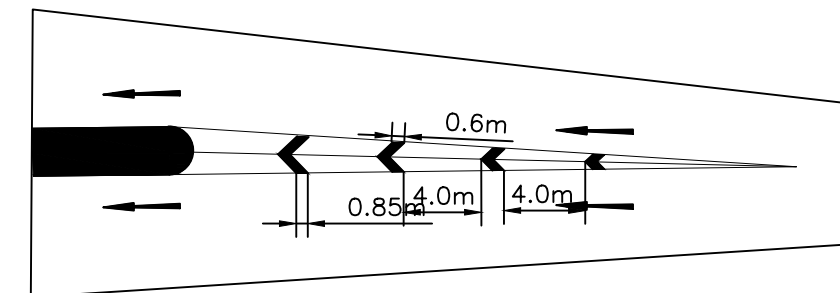
Total Length Of marking >22m
Chevron Marking (Merging)



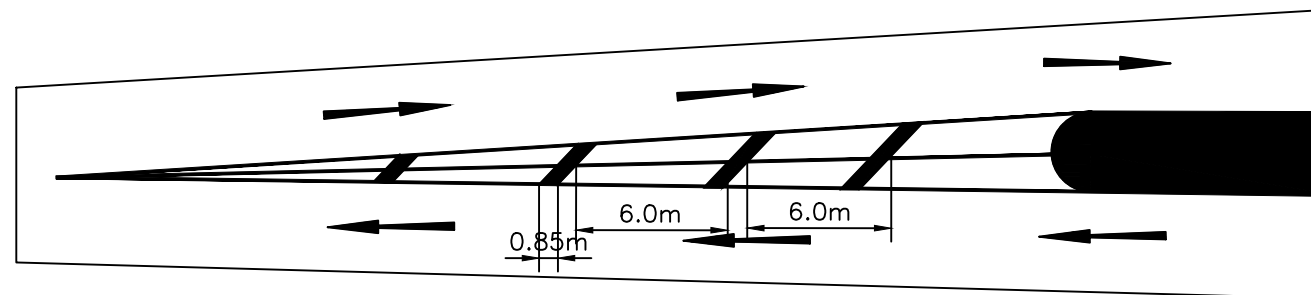
Total Length Of marking <10m



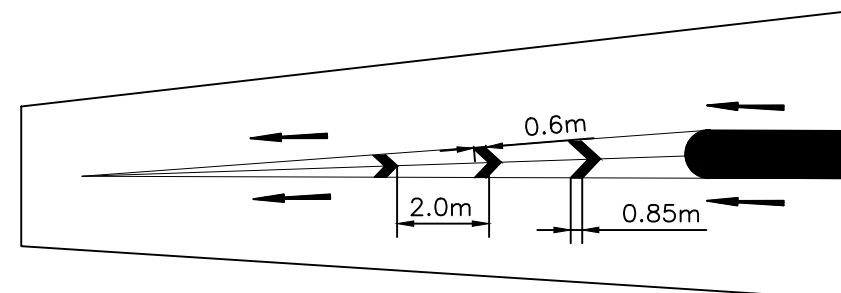
Detail C



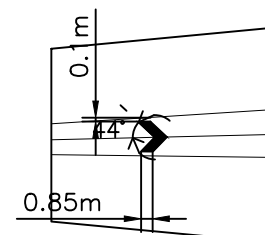
Total Length Of marking 10m to 22m



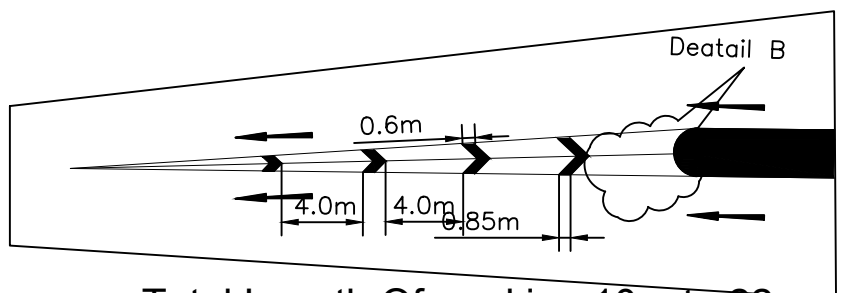
Total Length Of marking >22m
Diagonal Marking



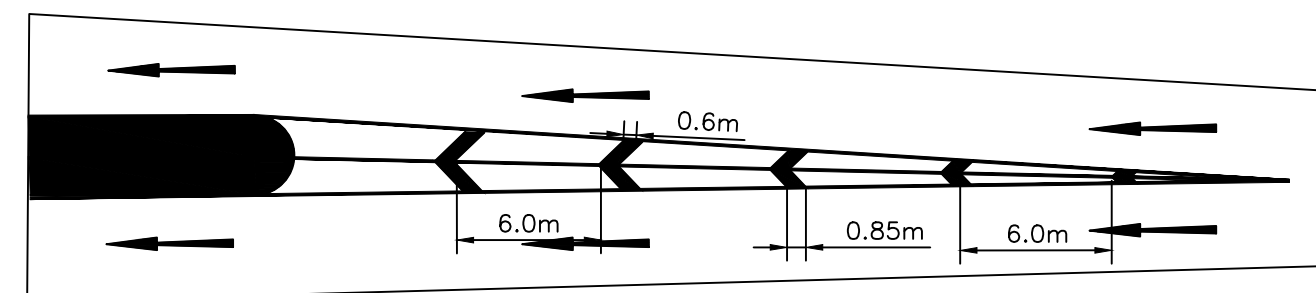
Total Length Of marking <10m



Detail B



Total Length Of marking 10m to 22m



Total Length Of marking >22m
Chevron Marling (Diverging)

Notes:

1. All the arrows are in white colour.
2. Provided first arrow at distance of 15m from mouth of intersection & second at 30m from first arrow.
3. Size of arrow shall be 3.5m (As per fig.21 of IRC:35-2015) for design speed is less than 50km/hr.

CLIENT :



PROJECT :

CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1:PACKAGE II)

DESIGN CONSULTANT:

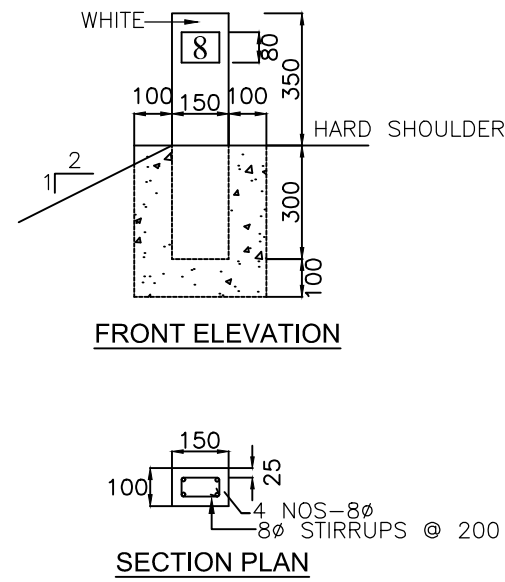
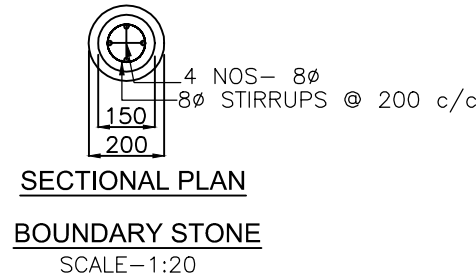
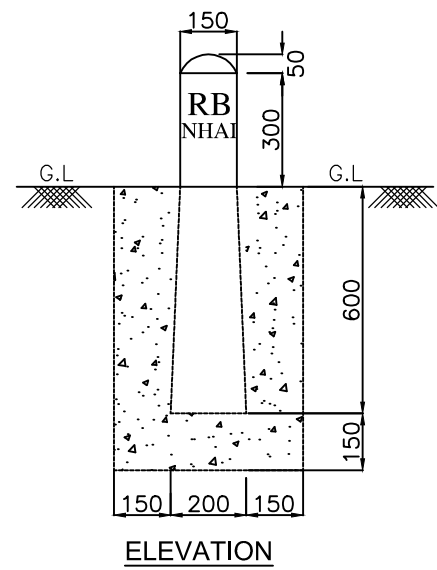
VOYANTS SOLUTIONS PVT LTD.
403, 4th Floor, Park Centra,
Sector-30, NH-8
Gurgaon-122001, Haryana, India
CIN: U74140HR2004PTC046918
Ph: 0124-4598200, Fax: 0124-4019051,
E-mail: info@voyants.in, www.voyants.in

Detailed Project Report

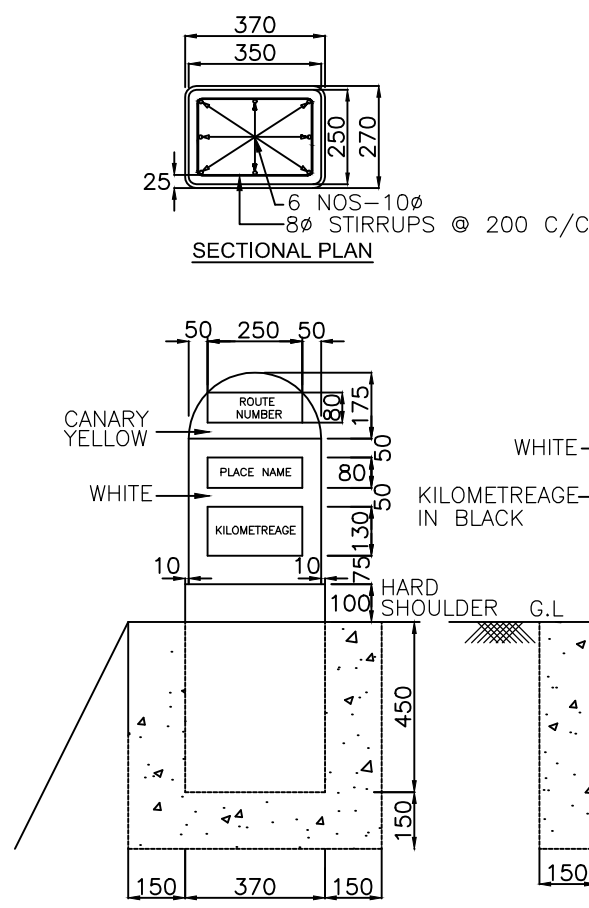
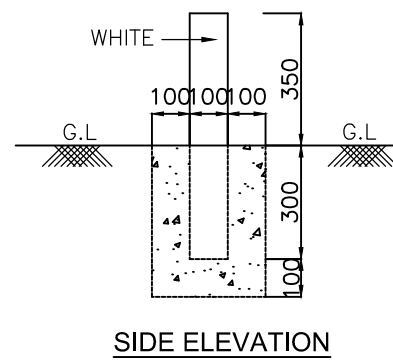
REV.	DATE	DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	TITLE :
PD/PS	SS	DGR	SKC	Road / Kerb Marking
				DRG. No. : VSPL/1718-081/DPR/PKG-2/MIS-02 (Sheet 03 of 04)
SCALE :	N.T.S	SHEET SIZE	A2	REVISION:R1
				NOVEMBER 2020

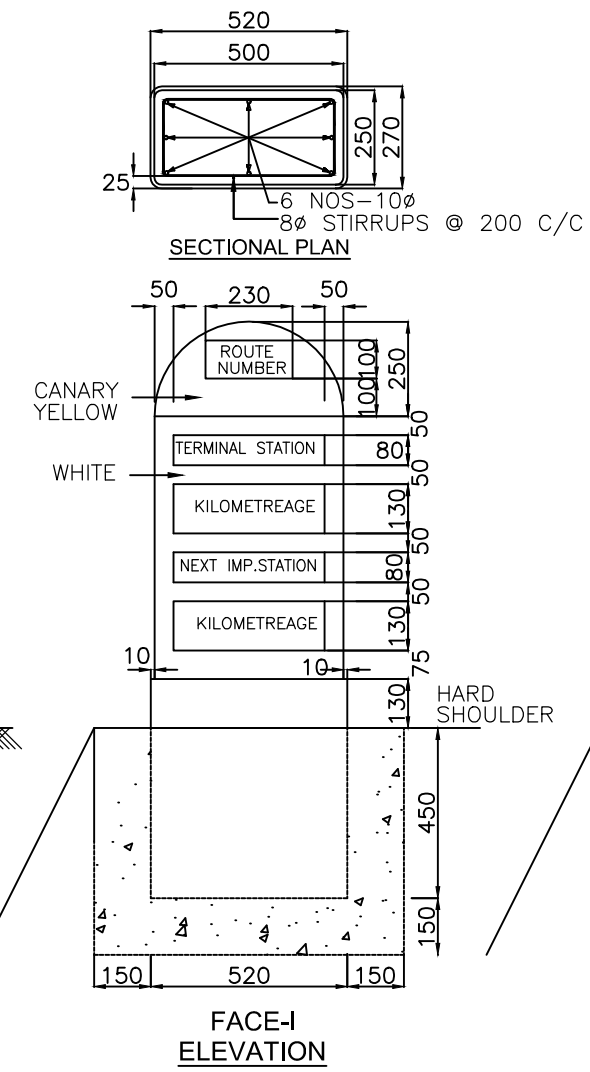
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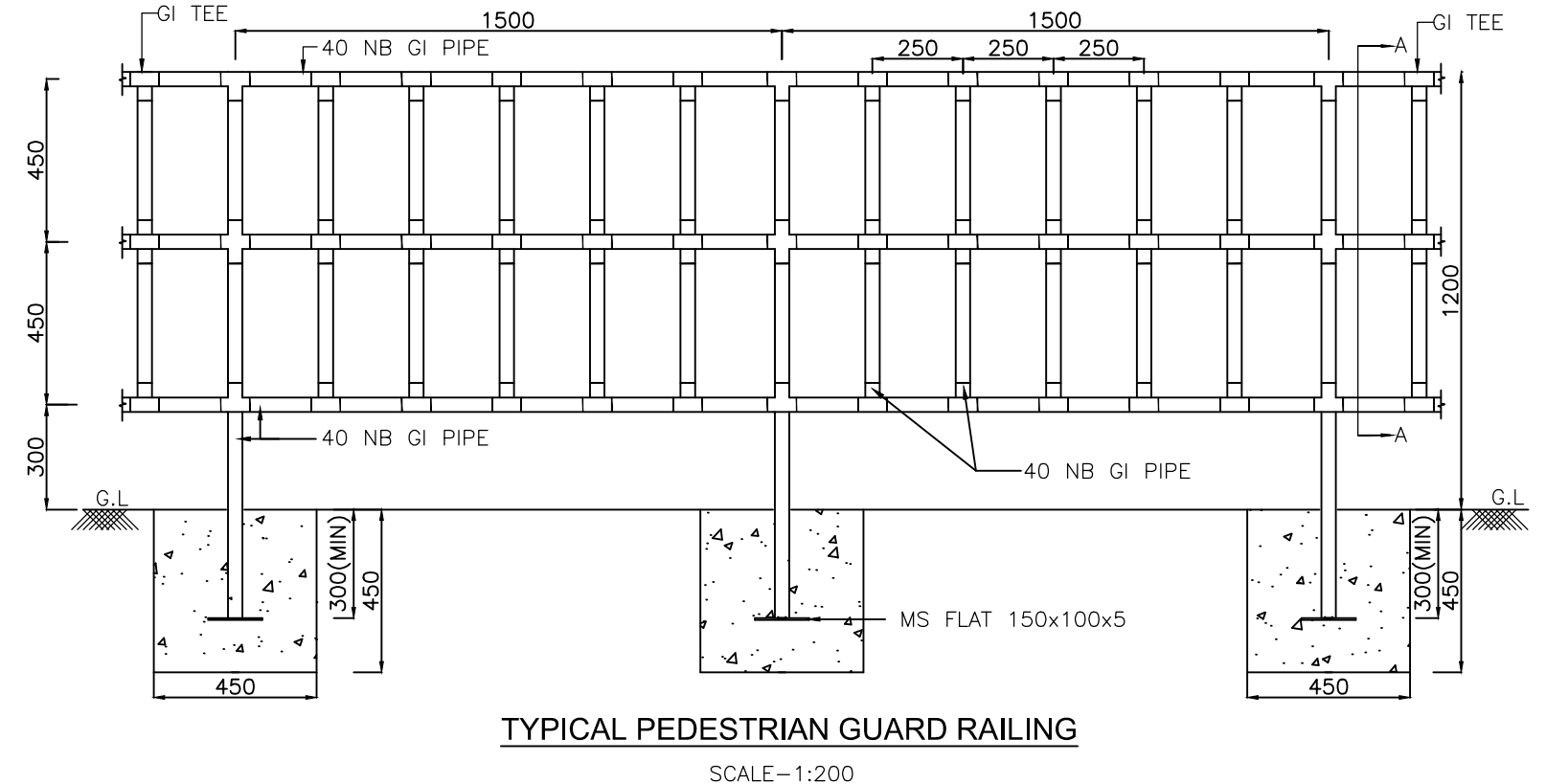
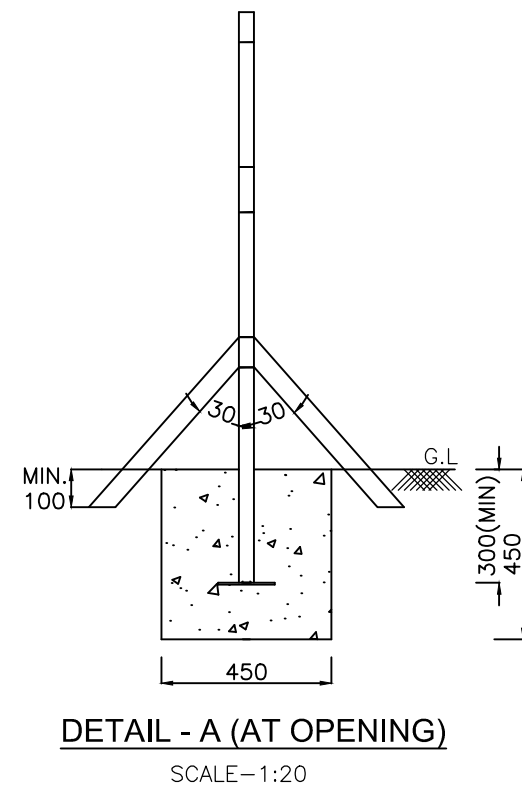
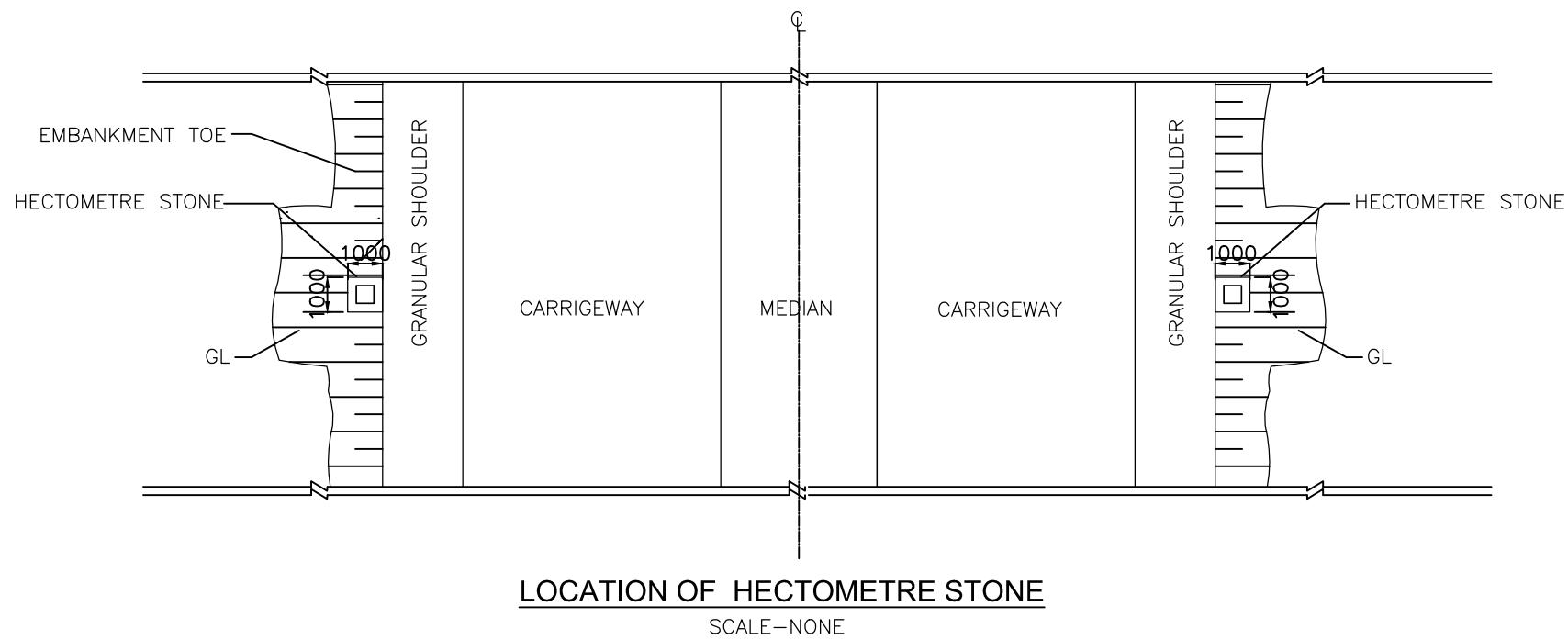
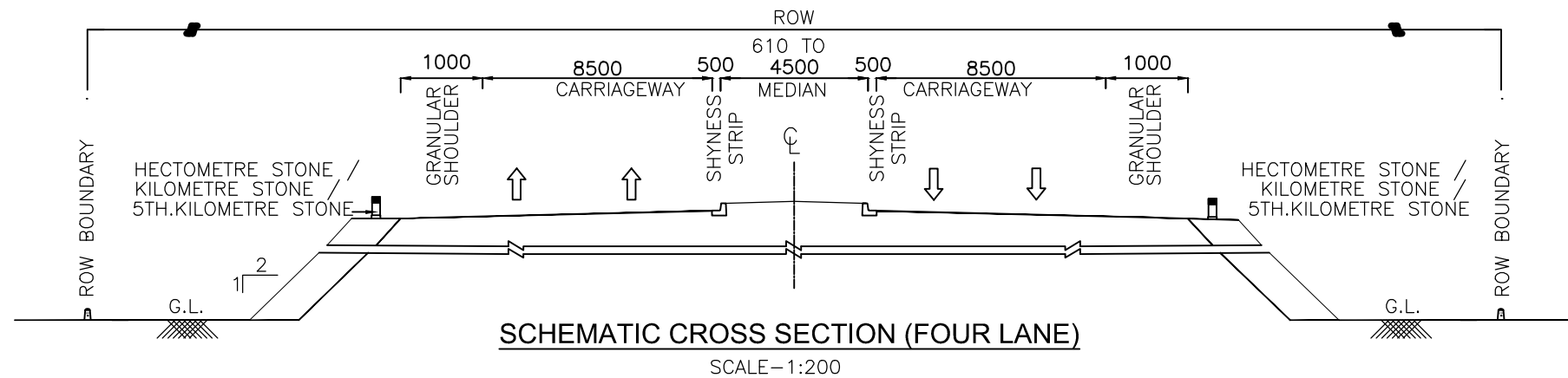
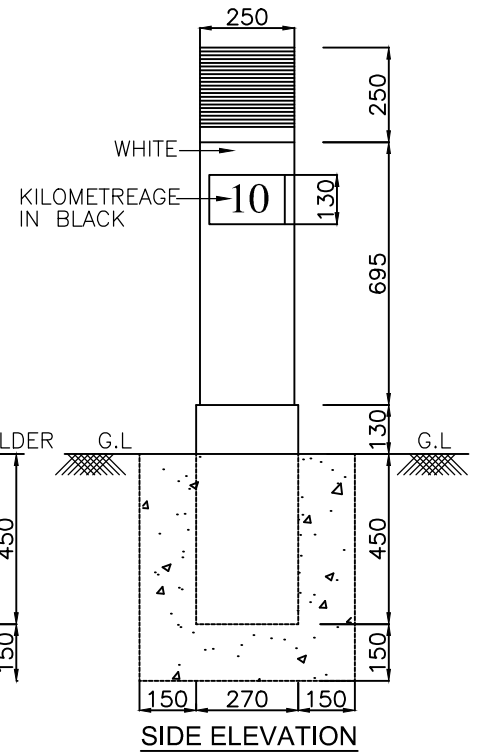
HECTOMETRE STONE
SCALE-1:20



KILOMETRE STONE
SCALE-1:20



FIFTH KILOMETRE STONE
SCALE-1:20



Notes:

1. Details of kilometre stone and 5th kilometre stone are generally based on IRC:8-1980
2. Details of 200m stones are generally based on IRC:26-1967.
3. The distance stones shall be provided on left side of the road as shown independently for each direction of traffic flow.
4. The letters and numerals on distance stones shall be as per IRC:8-1980.
5. Details of boundary stones are generally based on IRC:25-1967.
6. Besides the above, standards and specifications mentioned in IRC : SP : 84-2014 shall be followed strictly whenever applicable.
7. All dimensions are in millimetres unless otherwise mentioned.

CLIENT :



**NATIONAL HIGHWAYS AND INFRASTRUCTURE
DEVELOPMENT CORPORATION LTD.**
(MINISTRY OF ROAD TRANSPORT AND HIGHWAYS)
GOVERNMENT OF INDIA

PROJECT :

**CONSULTANCY SERVICES FOR PREPARATION OF
DETAILED PROJECT REPORT FOR DEVELOPMENT OF
ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER
ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT
MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA
(LOT-1:PACKAGE II)**

DESIGN CONSULTANT:



VOYANTS SOLUTIONS PVT LTD.
403, 4th Floor, Park Centra,
Sector-30, NH-8
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CIN: U74140HR2004PTC046918
Ph: 0124-4598200, Fax: 0124-4019051,
E-mail: info@voyants.in, www.voyants.in

Detailed Project Report

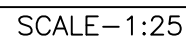
REV.	DATE	DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
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SCALE :	N.T.S	SHEET SIZE	A2

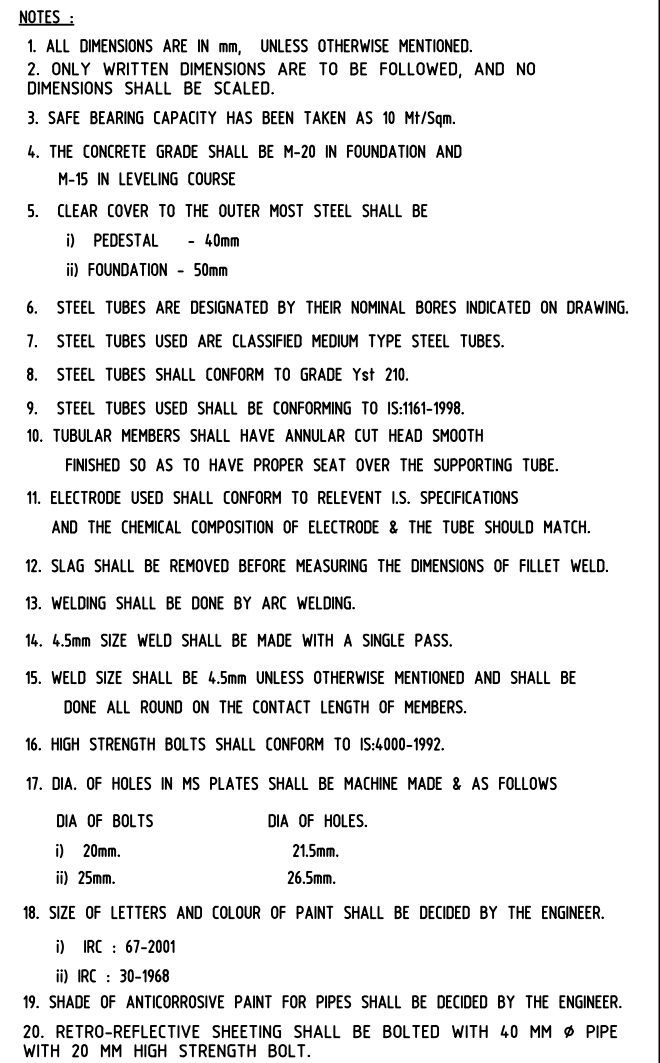
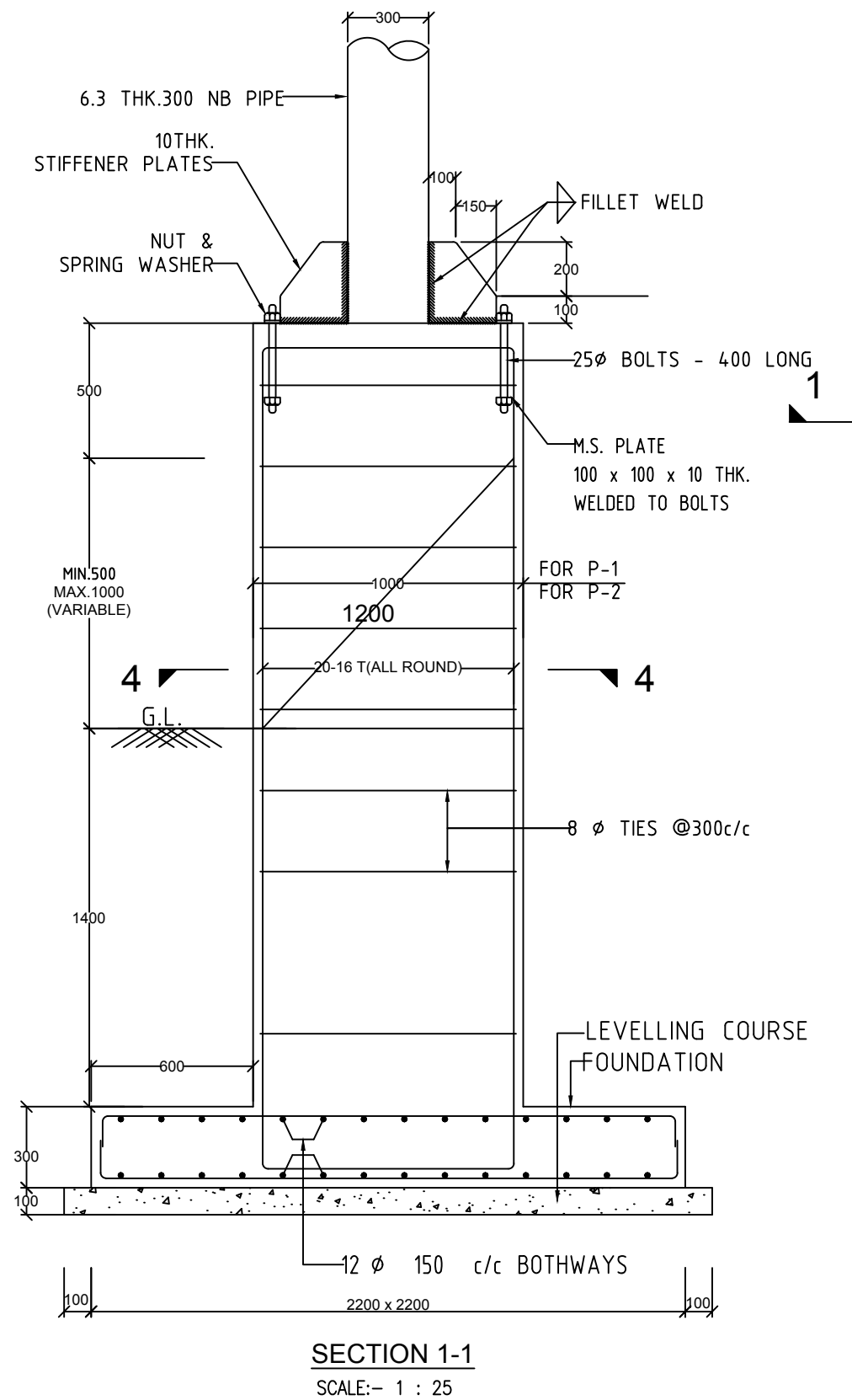
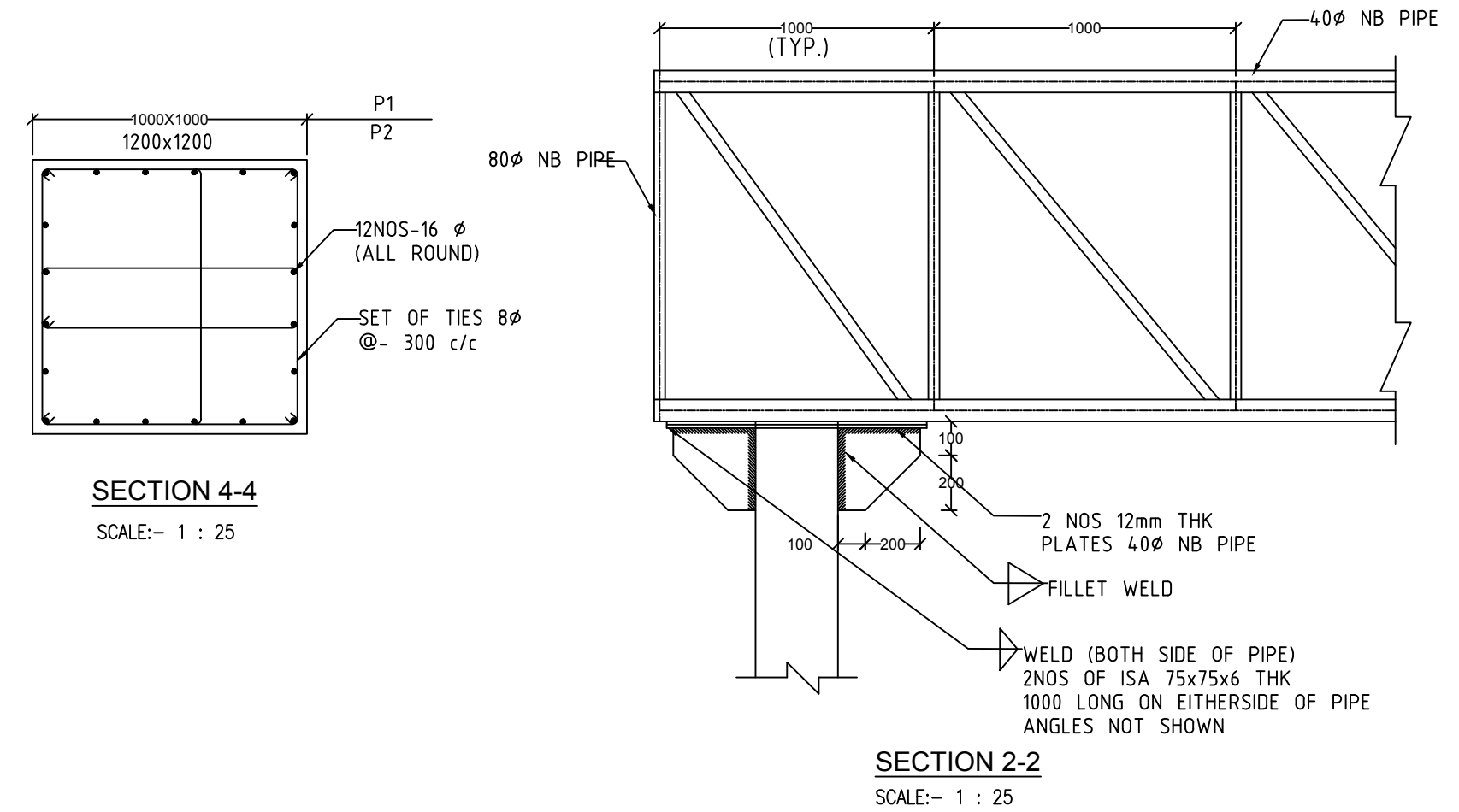
TITLE :

**Typical Deatils of Distance
Stone, Boundary Stone &
Guard Post**

DRG. No. : VSPL/1718-081/DPR/PKG-2/MIS-03	REVISION:R1	NOVEMBER 2020
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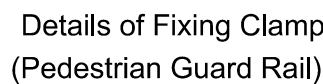
REVISION:R1	NOVEMBER 2020
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TITLE :	
Typical Details of Overhead Sign	
DRG. No. : VSPL/1718-081/DPR/PKG-2/MIS-04 (Sheet 02 of 02)	
REVISION:R1	NOVEMBER 2020



*h – Depends on thickness (BC + DBM)



*h - Depends on thickness (BC + DBM)



1. All dimensions are in millimetres unless otherwise mentioned.
2. All fillet welds shall be 3 mm thick.
3. Details of pedestrian guard rails are for typical modules in straight. Length of modules shall need some adjustments to fit in the individual runs of the fencing between discontinuities at locations of cross roads, driveways etc. A fencing plan finalising the details shall be prepared by the concessioner/contractor after final setting out and as approved by the Engineer.
4. After erection, kerbs shall be painted with one coat of primer and two coats of colour paint. All colour paints shall be ready mix oil bound and shall be approved by the Engineer.
5. Kerb shall be provided at every location except some selected stretches where kerb with channel shall be provided.
6. Besides the above, standards and specifications mentioned in IRC : SP : 84-2014 shall be followed strictly whenever applicable.

**NATIONAL HIGHWAYS AND INFRASTRUCTURE
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GOVERNMENT OF INDIA**

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DETAILED PROJECT REPORT FOR DEVELOPMENT OF
ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER
ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT
MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA
(LOT-1:PACKAGE II)**

VOYANTS SOLUTIONS PVT LTD.
403, 4th Floor, Park Centra,
Sector-30, NH-8
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REV. DATE	DESCRIPTION	

PD/PS

Bas.

SCALE :

SS

N.T.S

DGR

SHEET SIZE

SKC

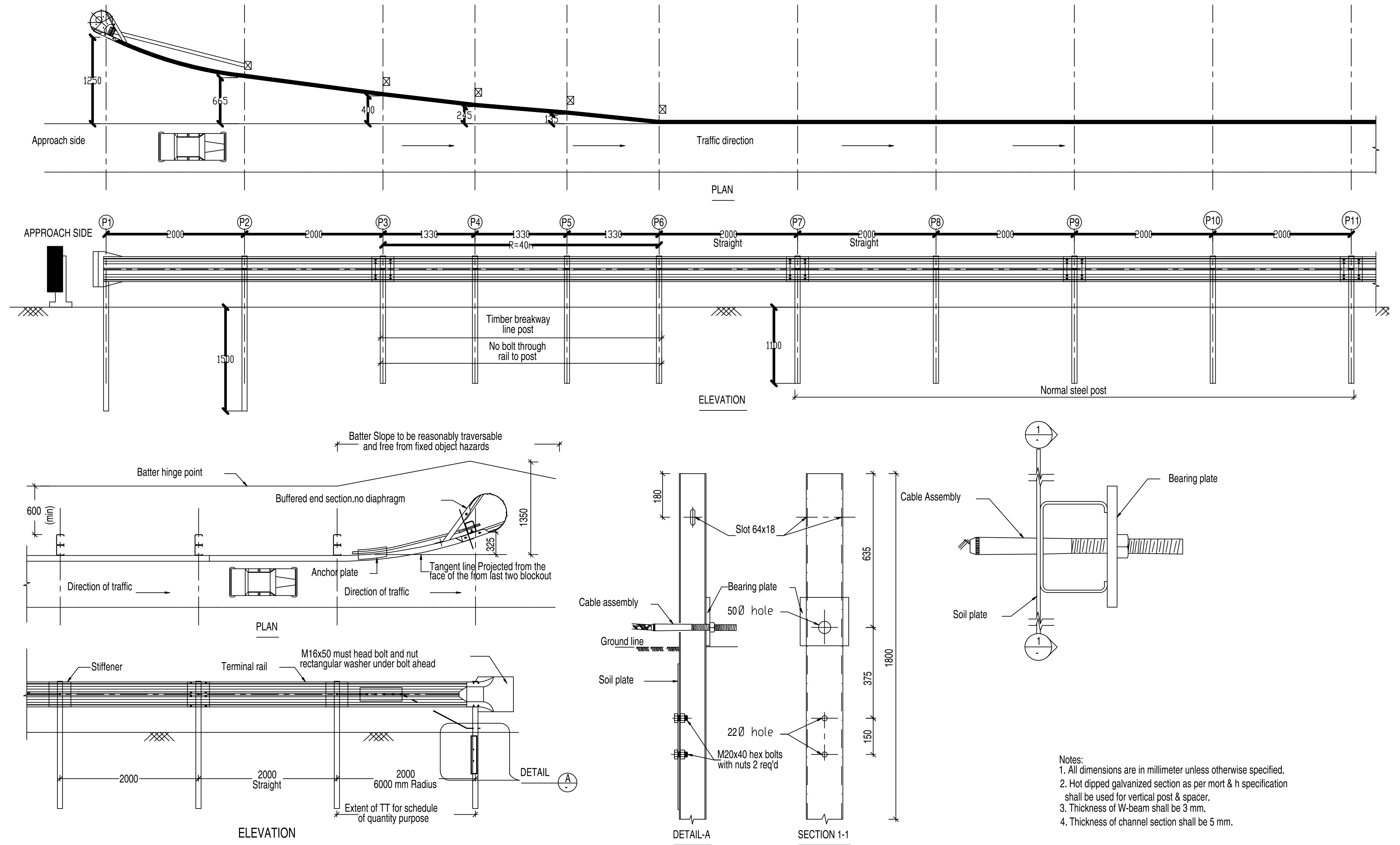
A2

TITLE :
Typical Deatils of Kerb, Kerb
with Channel Footpath &
Pedestrial Guard Rail

DRG. No. :
VSPL/1718-081/DPR/PKG-2/MIS-05

REVISION:R1	NOVEMBER 2020
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PATH: F:_Project\A_Work\1718-081_Bharatmala_2\2020_Duboka-Numaligarh\7_October_2020\Section-7_8_Miscellaneous\MIS_06_Metal_Beam_Barrier.dwg



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DESIGN CONSULTANT:

VOYANTS SOLUTIONS PVT LTD.
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REV. DATE DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
PD/PS	SS	DGR	SKC
<i>Bas.</i>	<i>San</i>	<i>Subh</i>	<i>SKC</i>
SCALE :	N.T.S	SHEET SIZE	A2

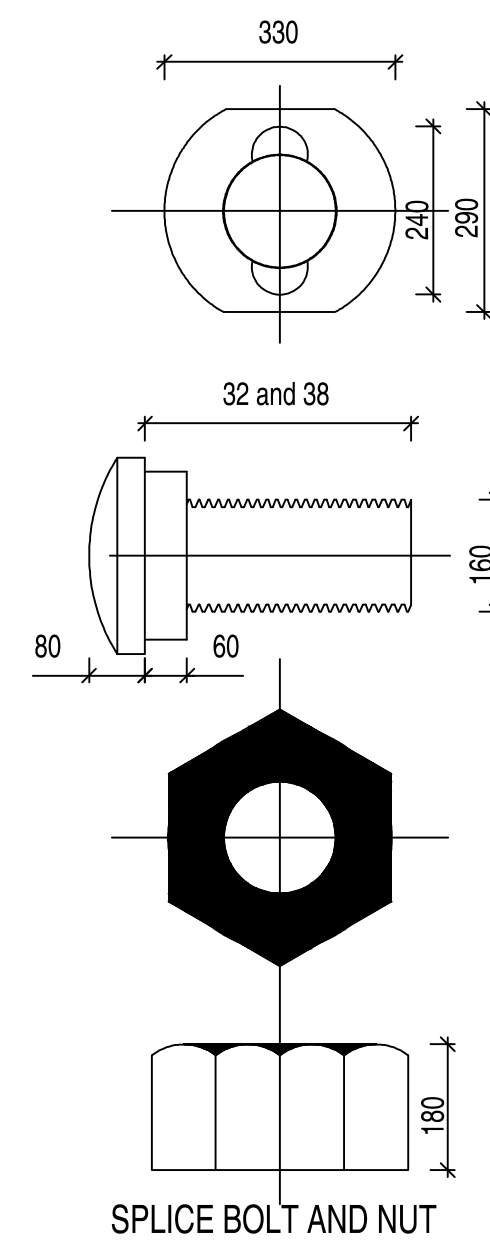
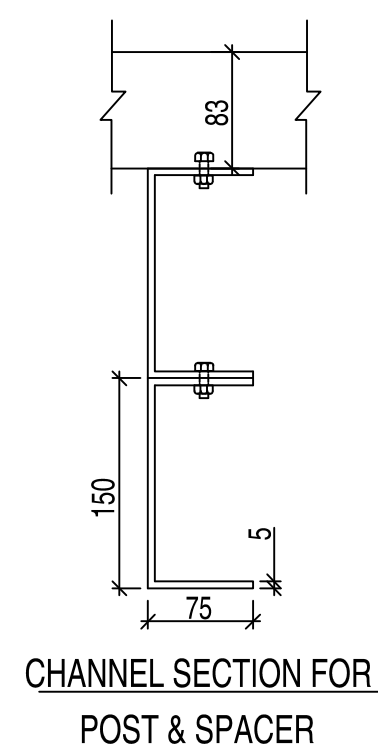
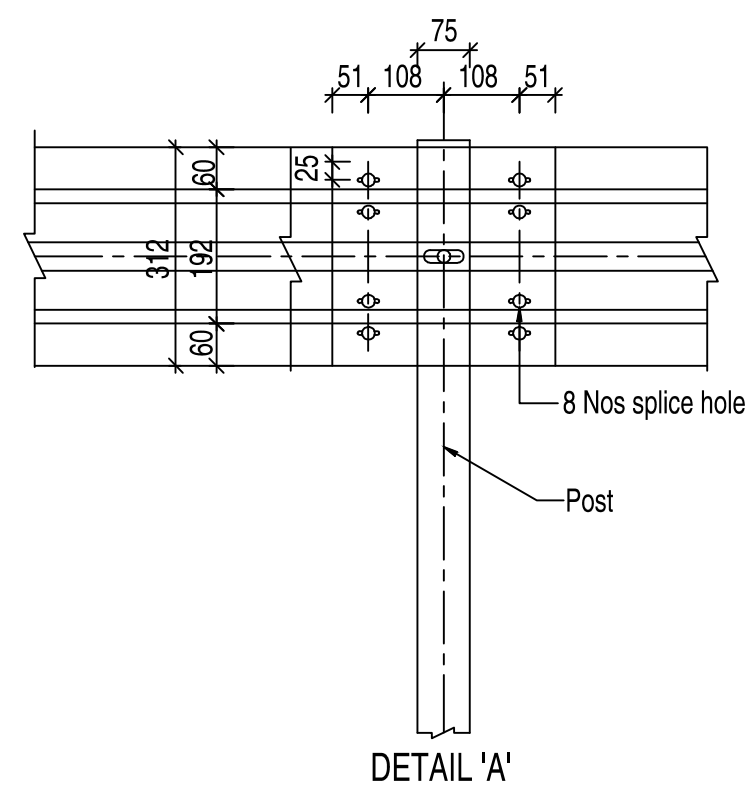
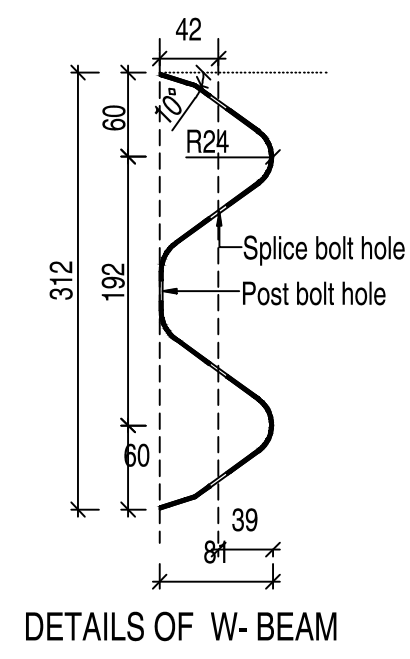
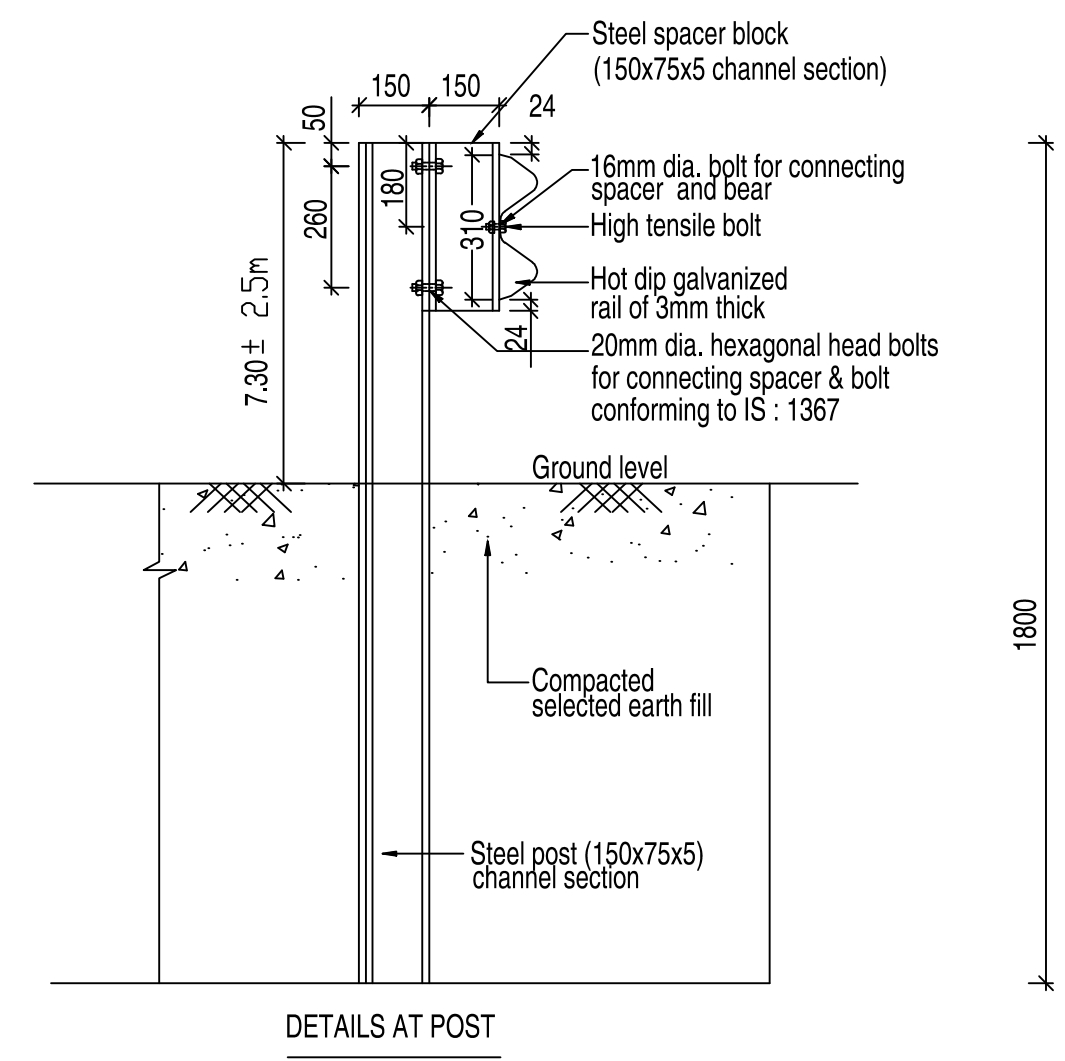
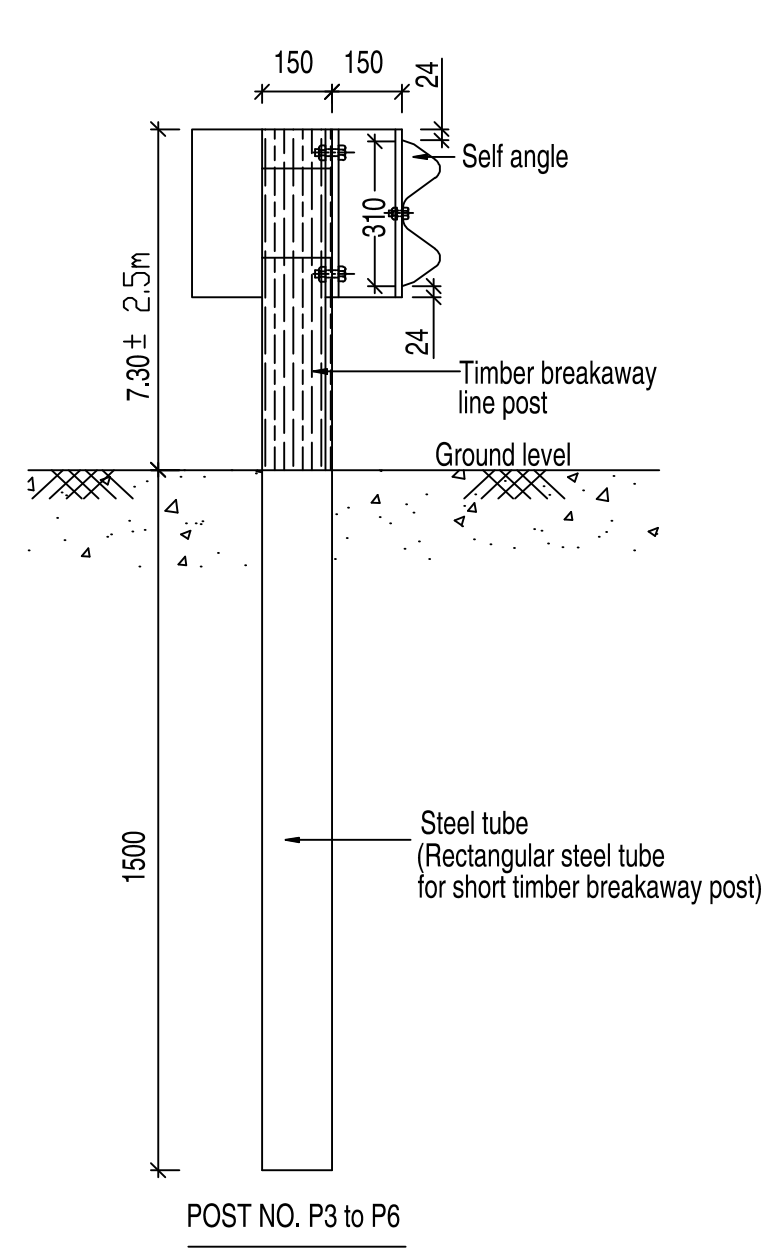
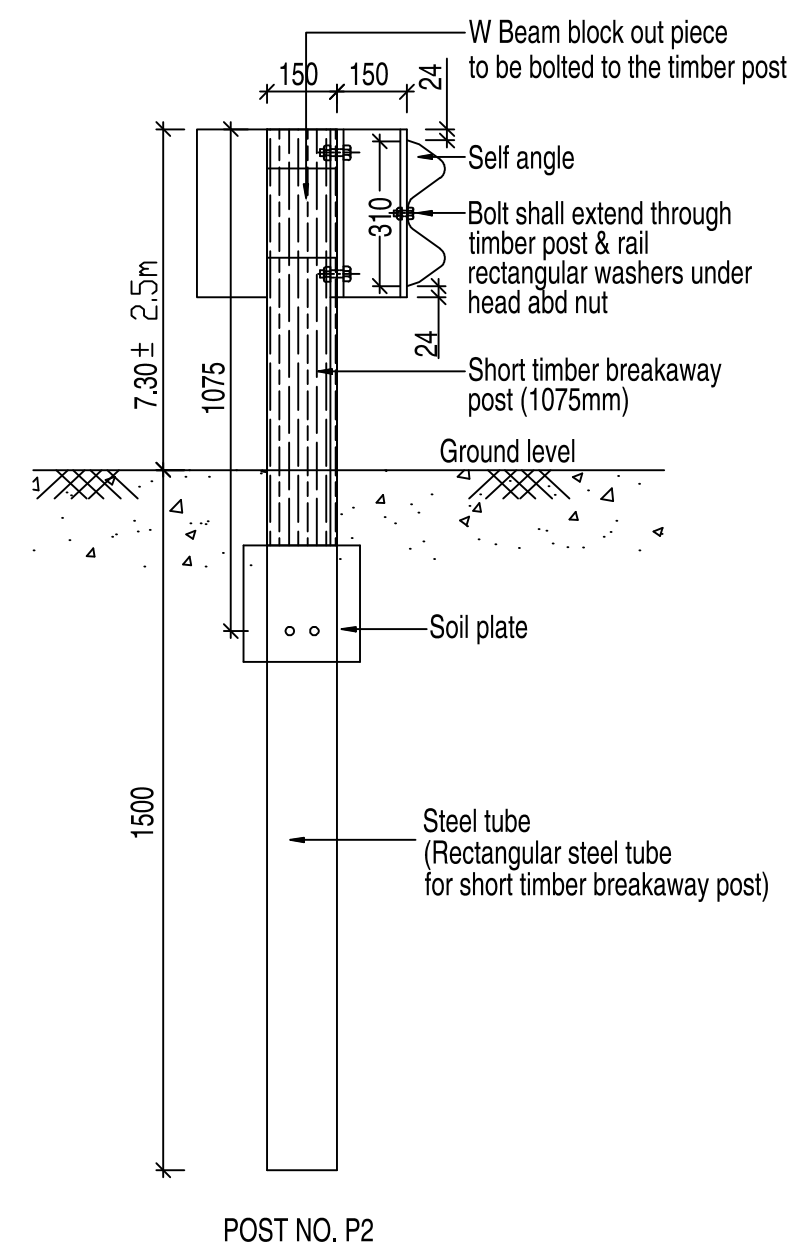
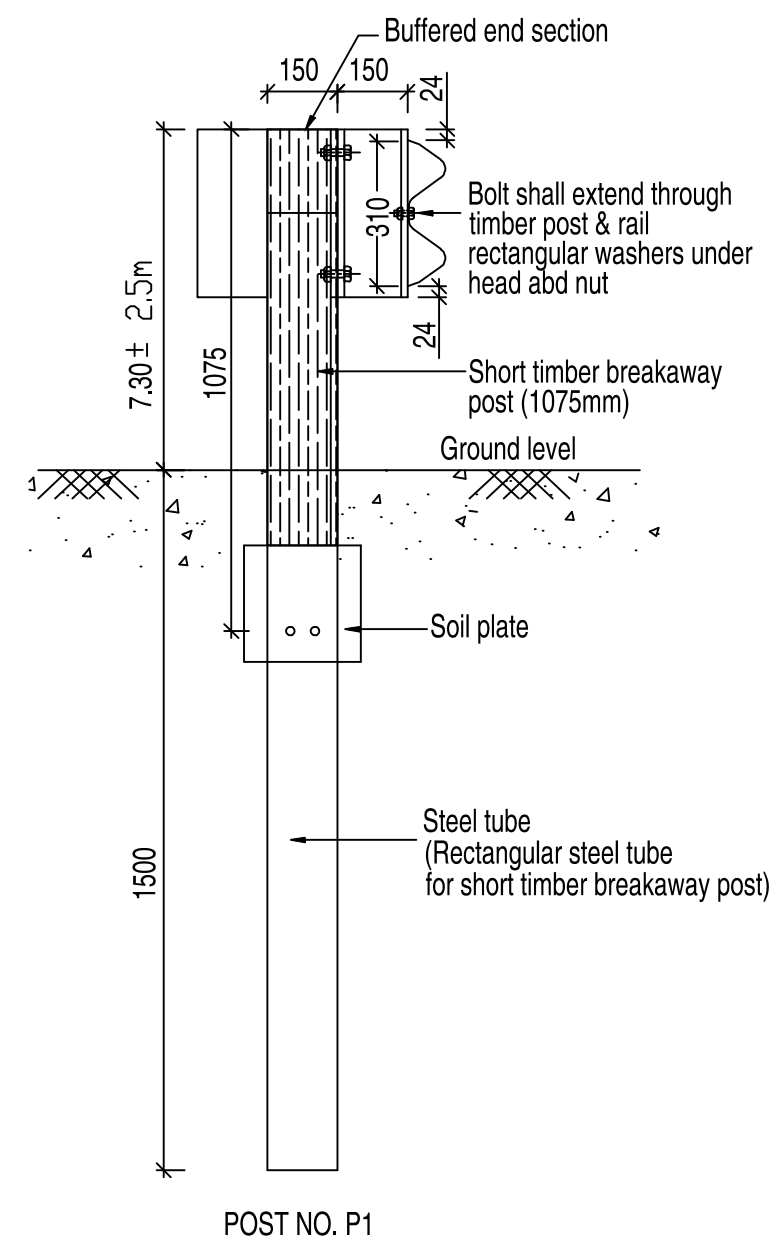
TITLE :

**Typical Details of Metal Beam
Crash Barrier**

DRG. No. :
VSPL/1718-081/DPR/PKG-2/MIS-06 (Sheet 01 of 03)

REVISION:R1

NOVEMBER 2020



- Notes:
1. All dimensions are in millimeter unless otherwise specified.
 2. Hot dipped galvanized section as per mort & h specification shall be used for vertical post & spacer.
 3. Thickness of W-beam shall be 3 mm.
 4. Thickness of channel section shall be 5 mm.

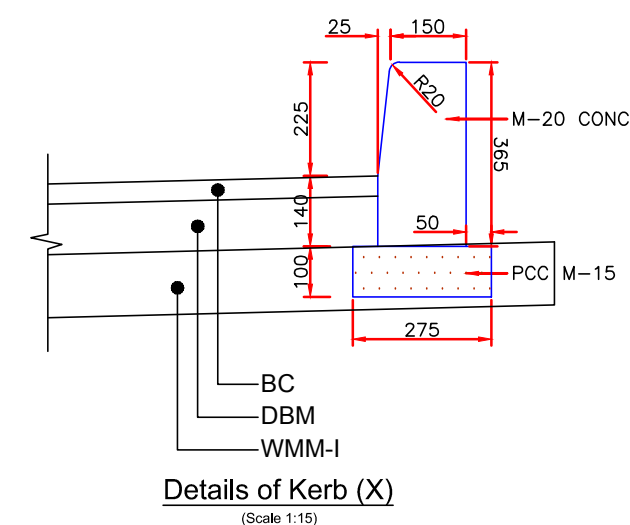
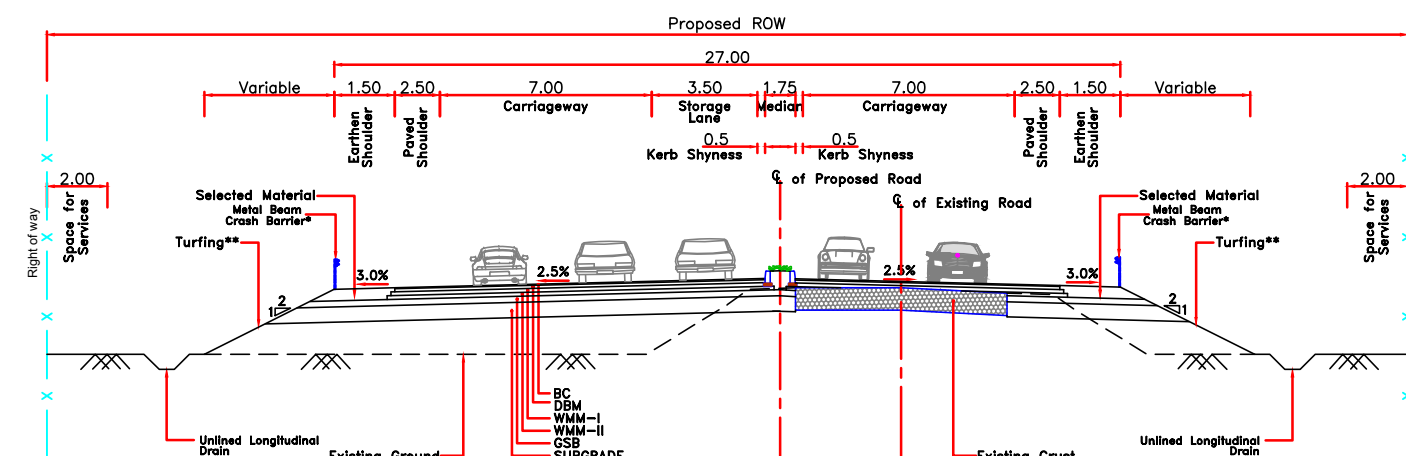
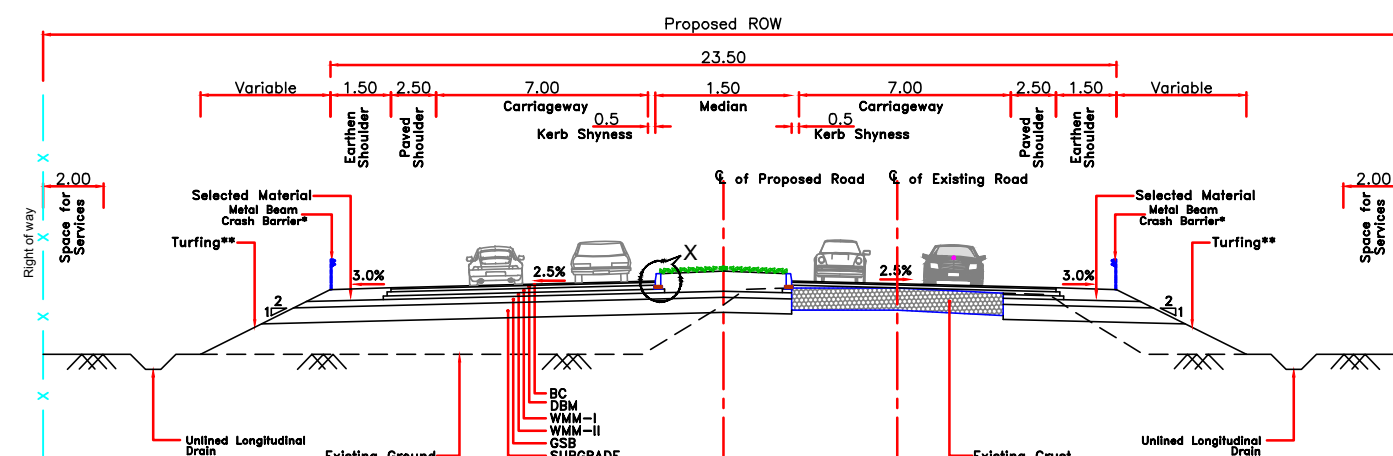
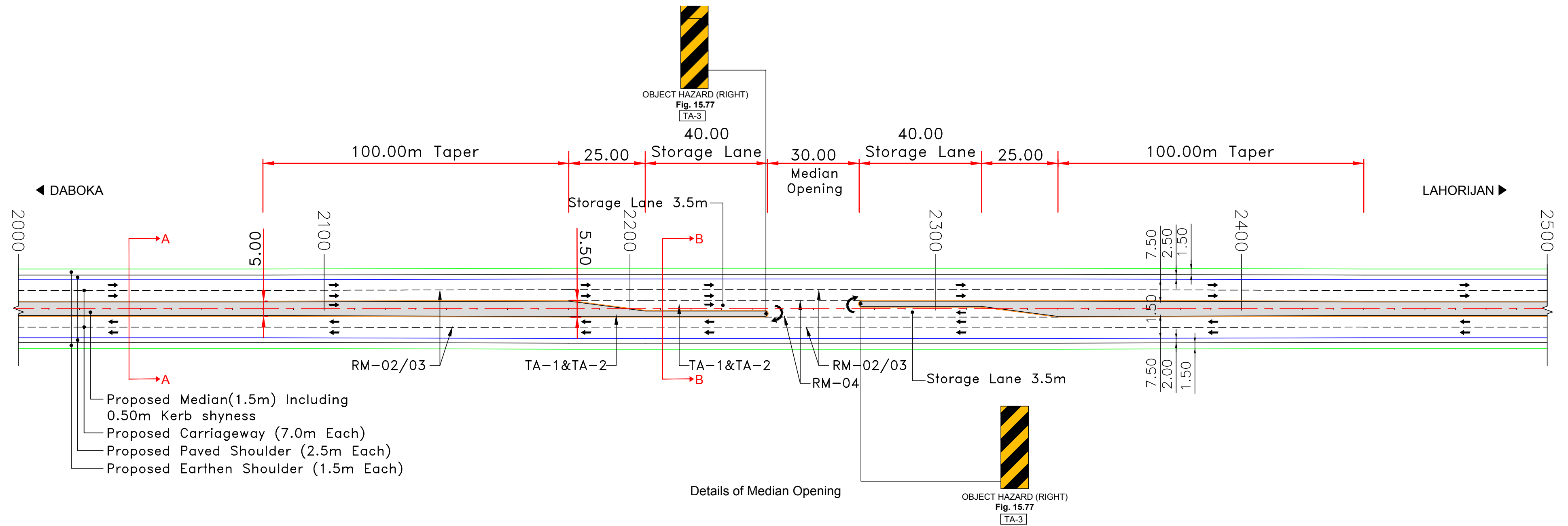
CLIENT :



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DETAILED PROJECT REPORT FOR DEVELOPMENT OF
ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER
ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT
MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA
(LOT-1:PACKAGE II)**



Note:
 1. All dimensions are in meter unless otherwise specified.
 2. * Applicable where embankment height is >3.0m
 3. ** Applicable where <3.0m embankment height Turfing with sods of perennial turf forming grass.

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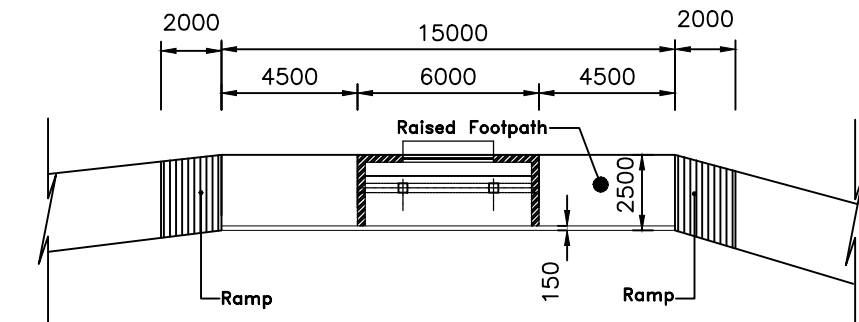
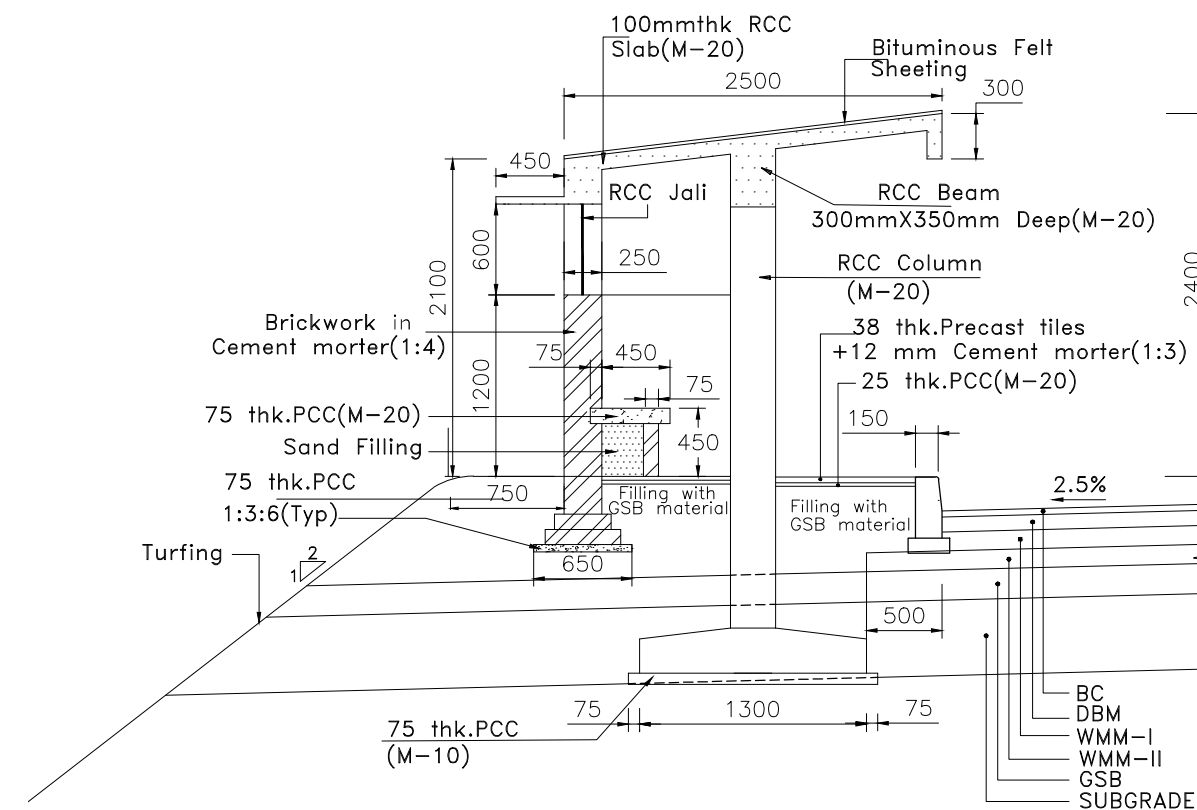
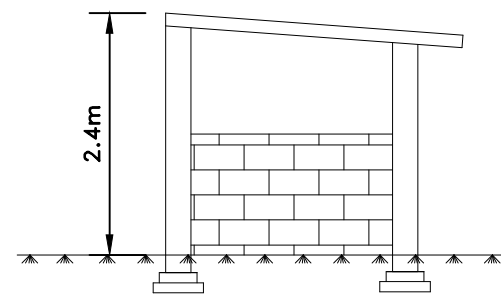
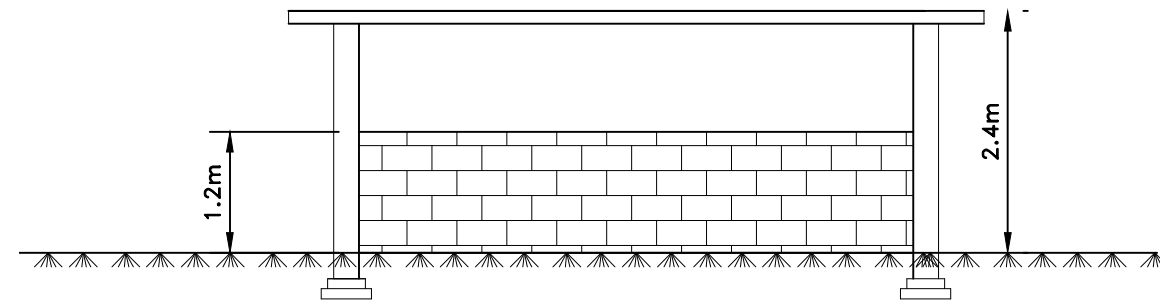
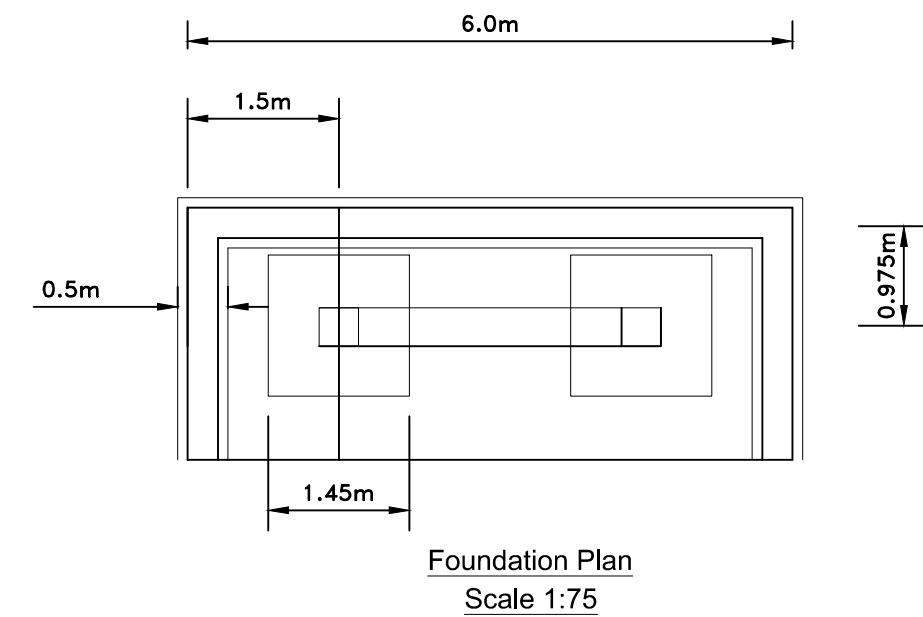
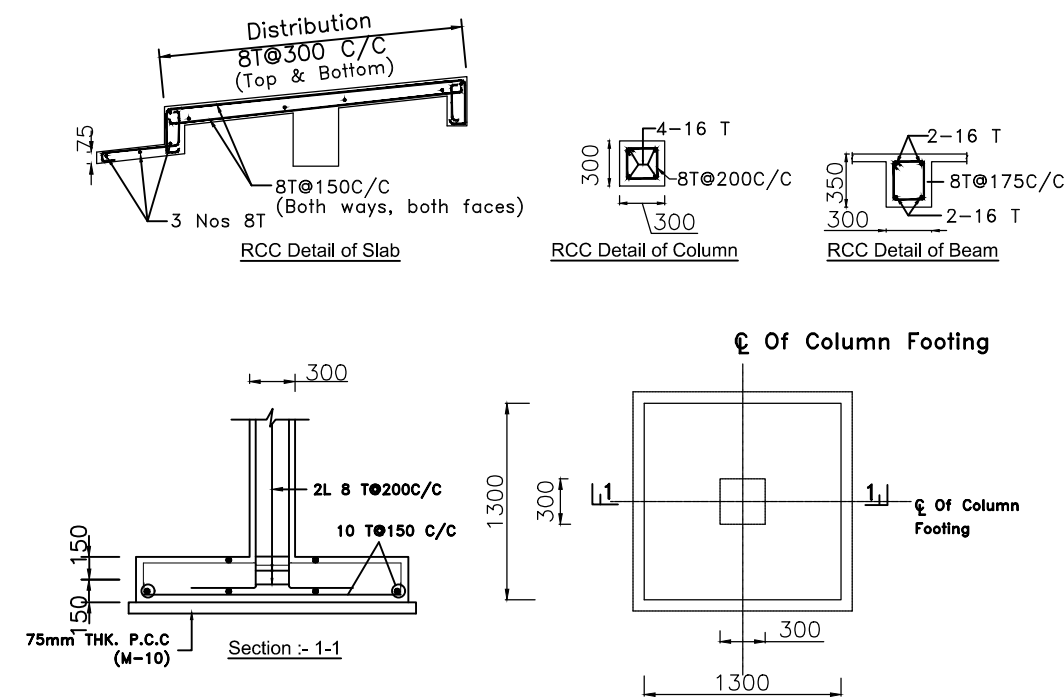
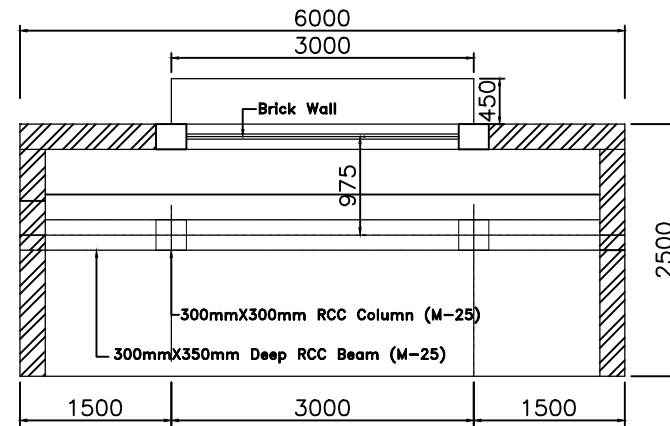
DESIGN CONSULTANT:

VOYANTS SOLUTIONS PVT LTD.
 403, 4th Floor, Park Centra,
 Sector-30, NH-8
 Gurugram-122001, Haryana, India
 CIN- U74140HR2004PTC046918
 Ph: 0124-4598200, Fax: 0124-4019051,
 E-mail: info@voyants.in, www.voyants.in

Detailed Project Report

REV.	DATE	DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	TITLE :
PD/PS	SS	DGR	SKC	Typical Detail of Median Opening
<i>Sas.</i>	<i>Sas.</i>	<i>Sas.</i>	<i>Sas.</i>	DRG. No. : VSPL/1718-081/DPR/PKG-2/MIS-07
SCALE :	N.T.S	SHEET SIZE	A2	REVISION:R1
				NOVEMBER 2020



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ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT
MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA
(LOT-1:PACKAGE II)**

DESIGN CONSULTANT:



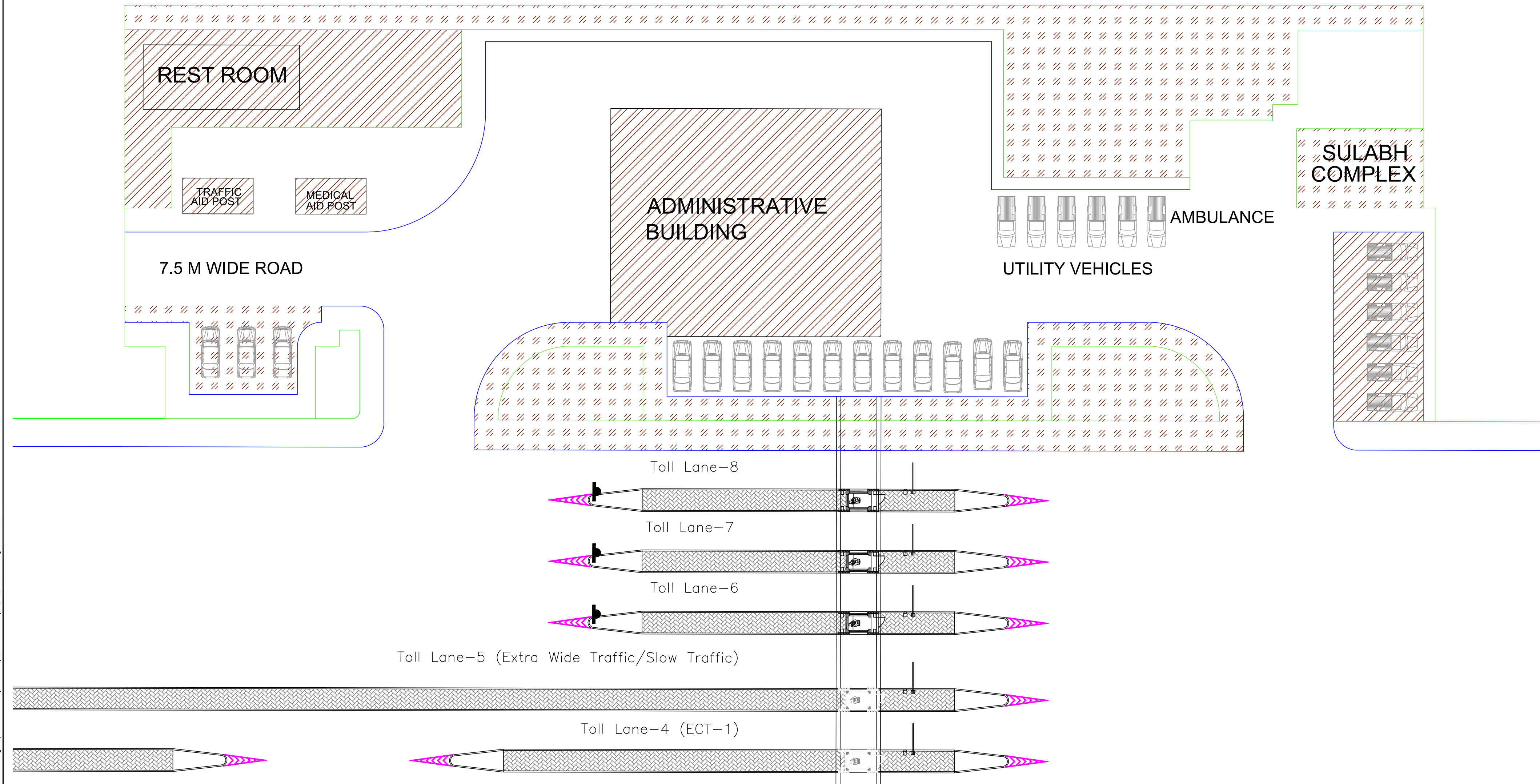
VOYANTS SOLUTIONS PVT LTD.
403, 4th Floor, Park Centra,
Sector-30, NH-8
Gurugram-122001, Haryana, India
CIN- U74140HR2004PTC046918
Ph: 0124-4598200, Fax: 0124-4019051,
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Detailed Project Report

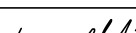
REV.	DATE	DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	TITLE : Typical Detail Passenger Shelter
PD/PS	SS	DGR	SKC	
				
SCALE :	N.T.S	SHEET SIZE	A2	DRG. No. : VSPL/1718-081/DPR/PKG-2/MIS-10
				REVISION:R1
				NOVEMBER 2020

PATH: F:_Project_VA_Work\1718-081_Bharatmala_2\2020_Daboka-Numalgam\7.October 2020\Section-7\8_Miscellaneous\MS_11_toll Plaza.dwg



Note:
1. All dimensions are in meter unless otherwise specified.

CLIENT :  NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT AND HIGHWAYS) GOVERNMENT OF INDIA	PROJECT : CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1:PACKAGE II)	DESIGN CONSULTANT:  VOYANTS SOLUTIONS PVT LTD. 403, 4th Floor, Park Centra, Sector-30, NH-8 Gurugram-122001, Haryana, India CIN- U74140HR2004PTC046918 Ph: 0124-4598200, Fax: 0124-4019051, E-mail: info@voyants.in, www.voyants.in	Detailed Project Report			DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	TITLE :		
						PD/PS	SS	DGR	SKC	Typical Detail of Toll Plaza		
										DRG. No. : VSPL/1718-081/DPR/PKG-2/MIS- 11 (Sheet 02 of 02)		
						SCALE :		N.T.S	SHEET SIZE	A2	REVISION:R1	
			REV.	DATE	DESCRIPTION						NOVEMBER 2020	



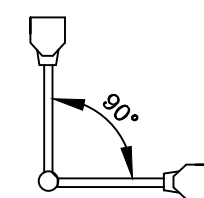
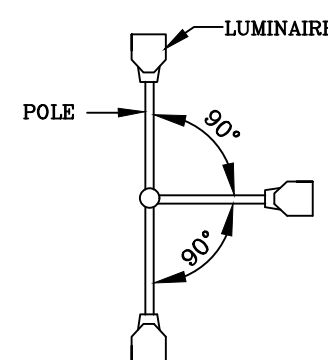
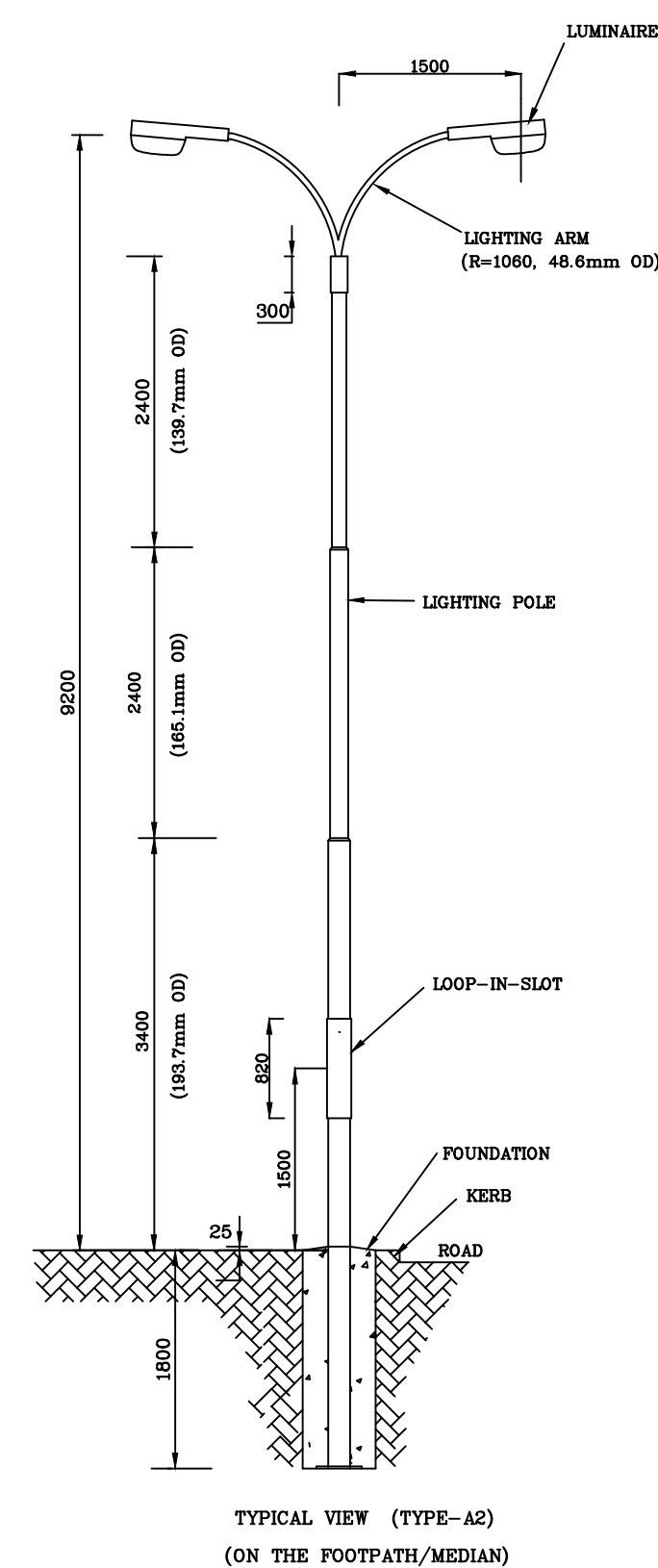
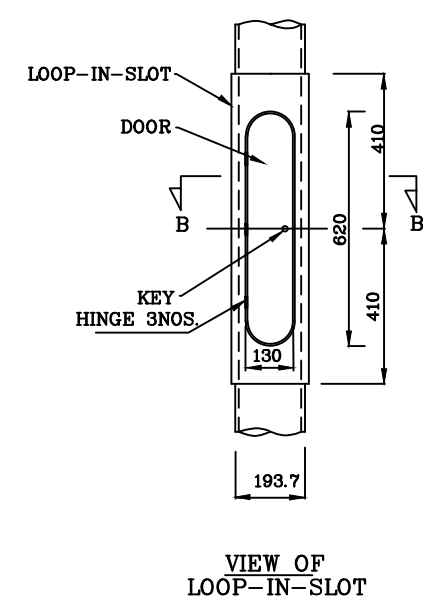
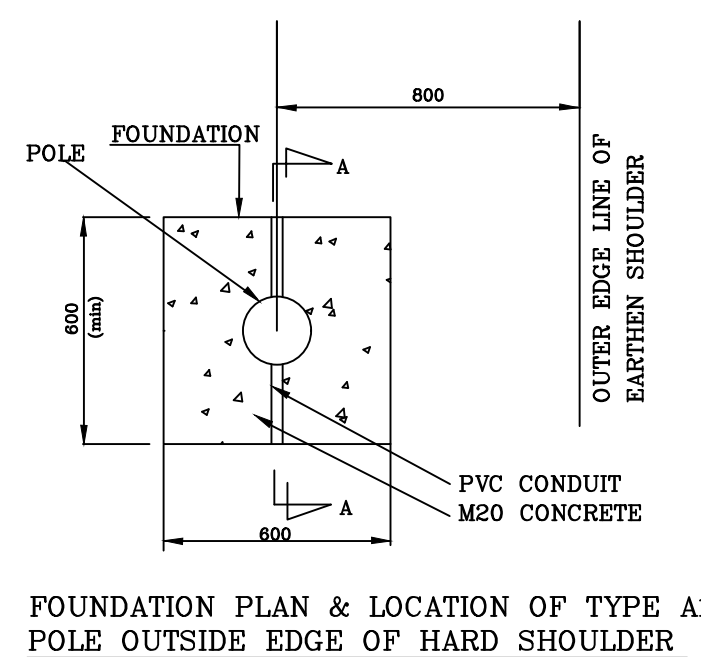
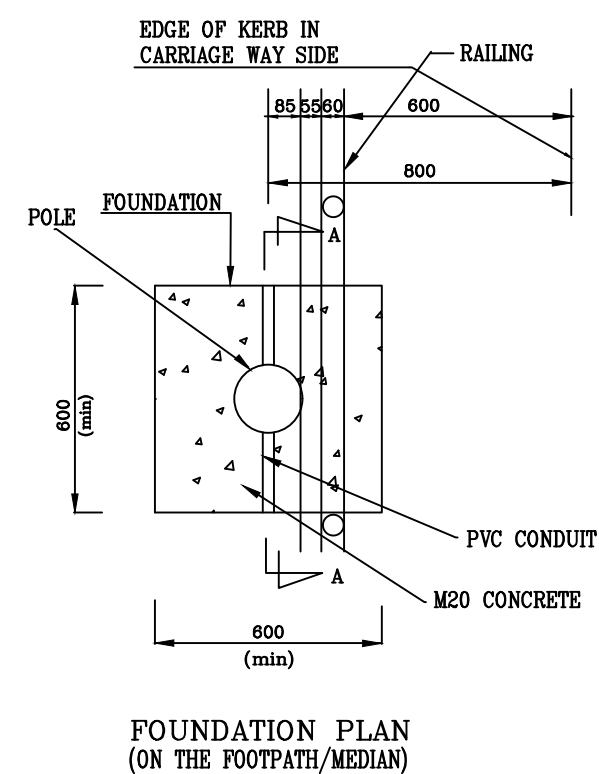
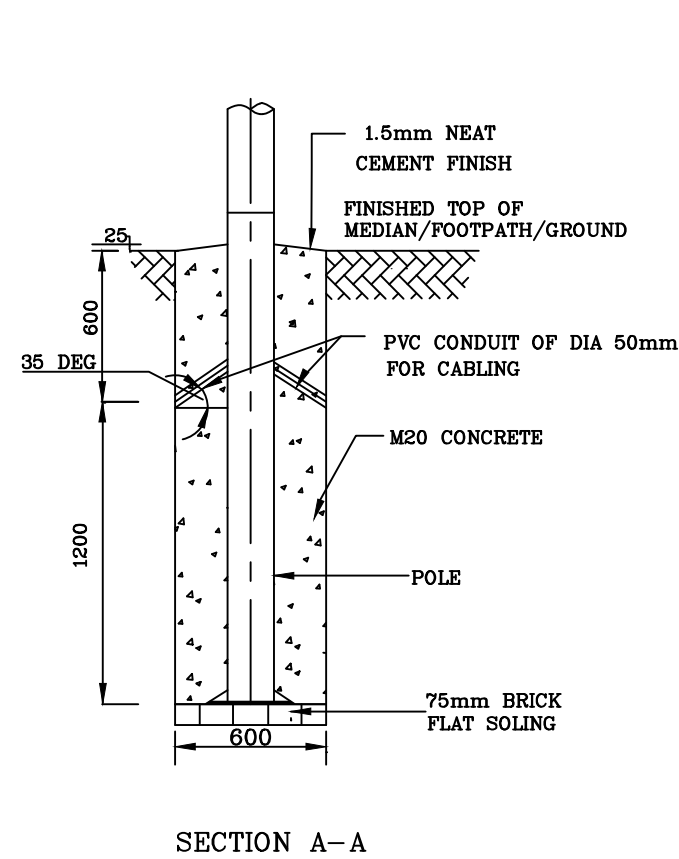
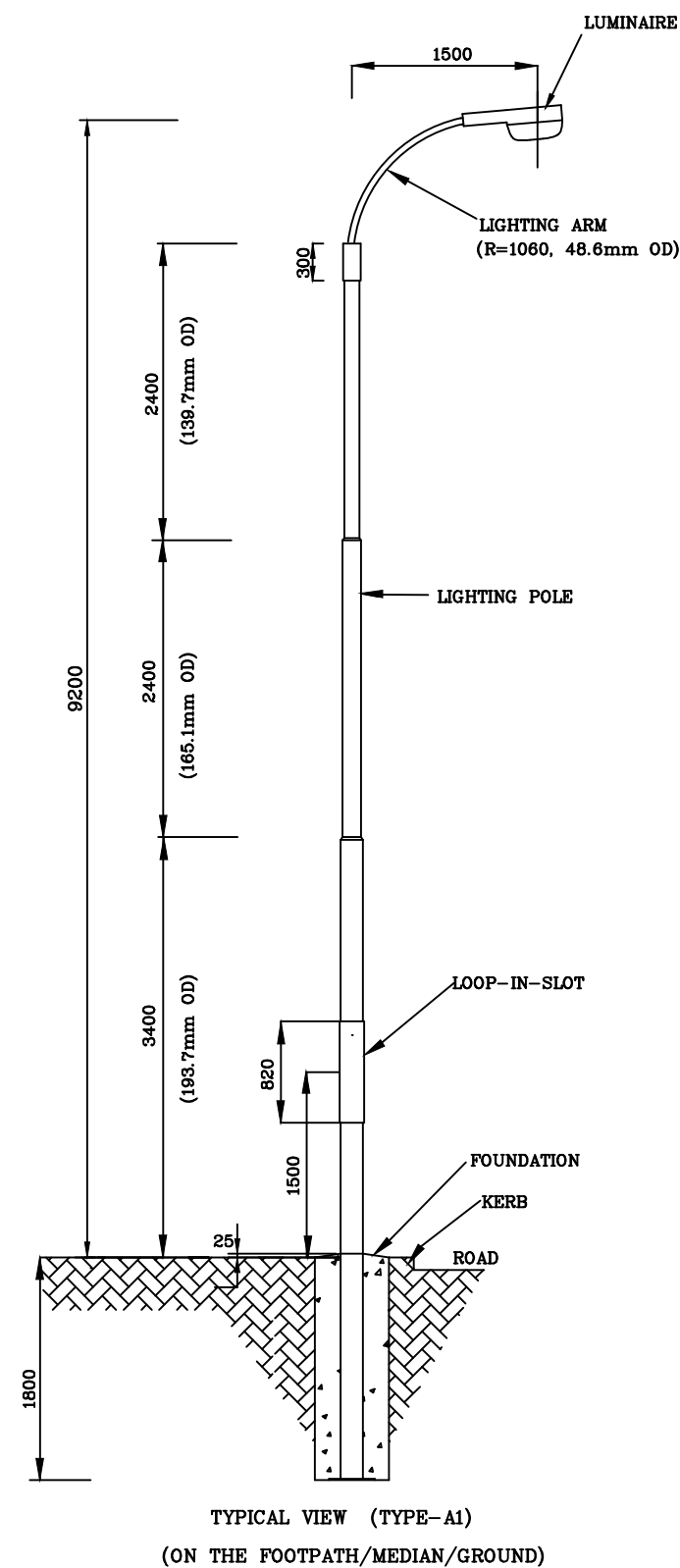
1. All dimensions are in metres unless otherwise mentioned.
2. Standards and specifications mentioned in IRC:SP:84-2014 shall be followed strictly whenever applicable.
3. This drawing is applicable for the stretches with raised median.

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ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT
MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA
(LOT-1:PACKAGE II)**

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Ph: 0124-4598200, Fax: 0124-4019051,
E-mail: info@voyants.in, www.voyants.in

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	TITLE : Typical Details of Extra Widening
PD/PS	SS	DGR	SKC	
				
SCALE :	N.T.S	SHEET SIZE	A2	DRG. No. : VSPL/1718-081/DPR/PKG-2/MIS-12
				REVISION:R1
				NOVEMBER 2020



Notes:

1. All dimensions are in millimetres unless otherwise mentioned.
2. Pole type- 410SP46 as per IS:2713 (P.T.- 1 to 3) :1980
3. Dimensions are indicative, may vary during execution of work
4. Besides the above, standards and specifications mentioned in IRC : SP : 84-2014 shall be followed strictly whenever applicable.

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DESIGN CONSULTANT:



VOYANTS SOLUTIONS PVT LTD.
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Detailed Project Report

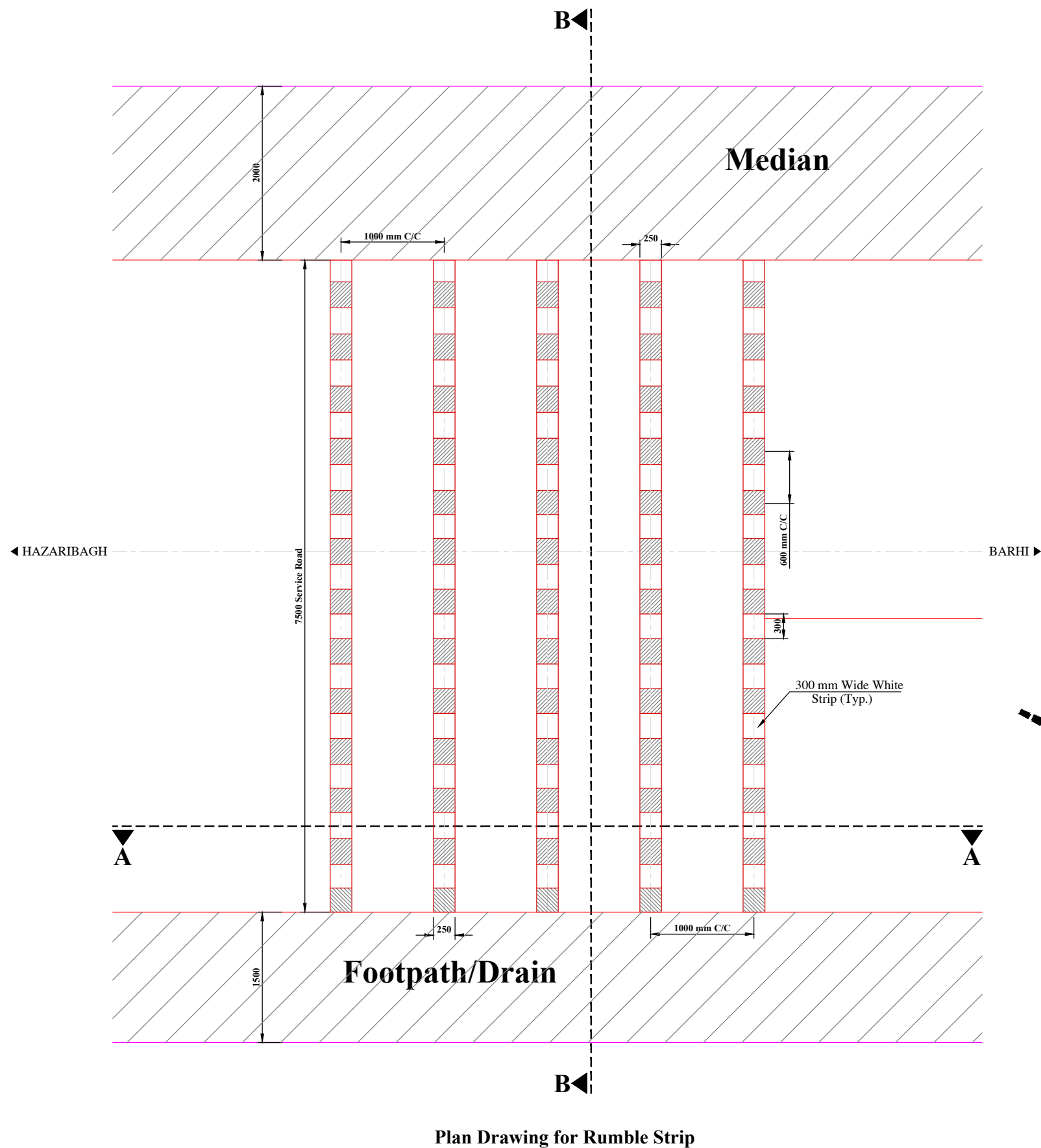
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DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
PD/PS	SS	DGR	SKC
SCALE :	N.T.S	SHEET SIZE	A2

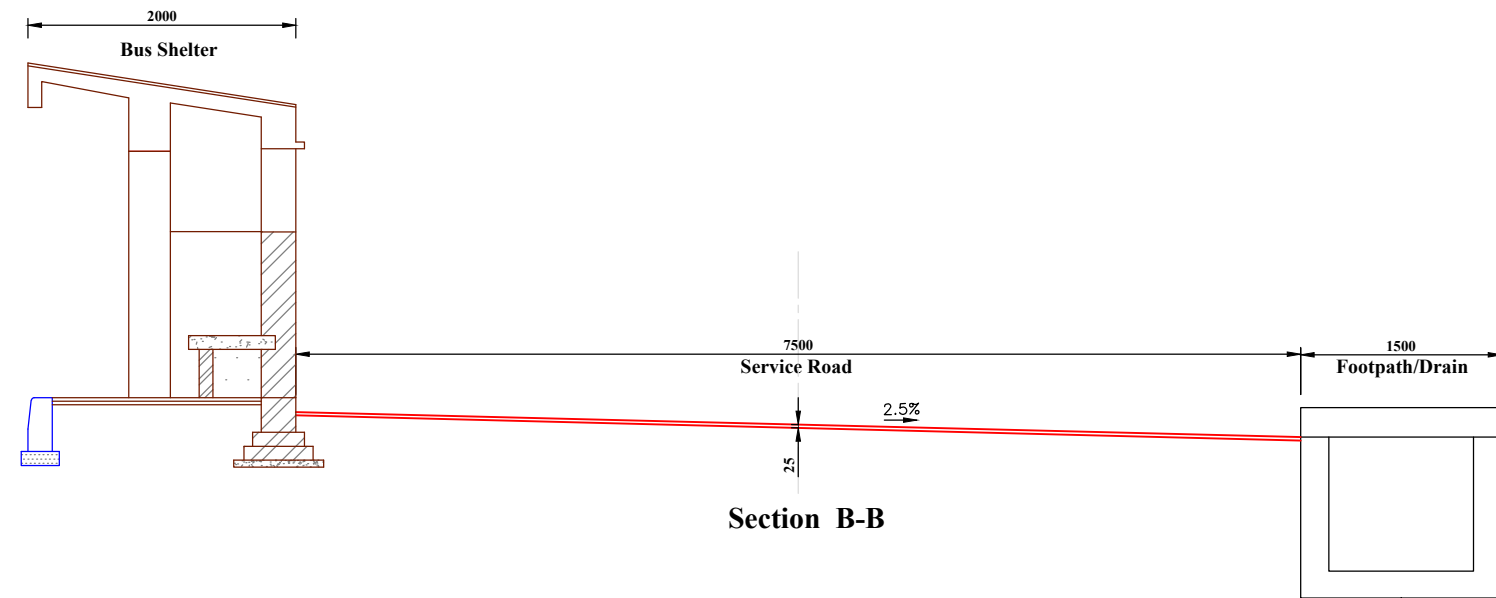
TITLE :
**Typical Details of Single Arm
and Double Arm Street
Lighting Arrangement**

DRG. No. :
VSPL/1718-081/DPR/PKG-2/MIS-14
REVISION:R1
NOVEMBER 2020

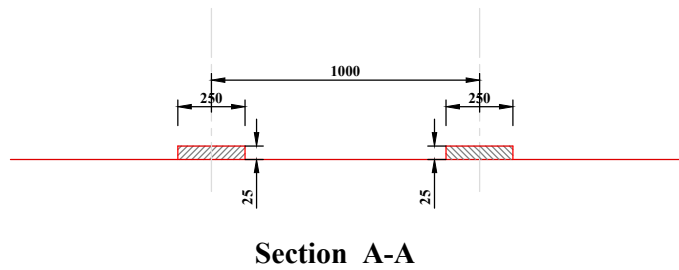
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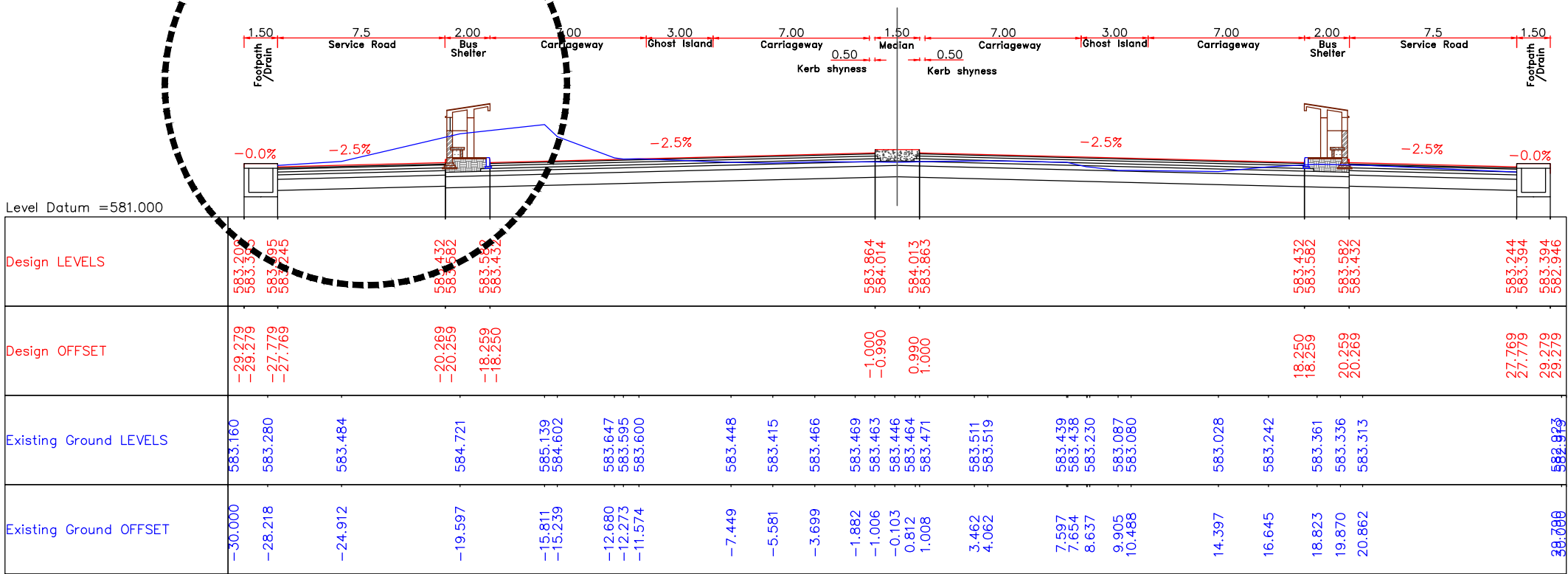
Plan Drawing for Rumble Strip



Section B-B



Section A-A



SCALE- 1:150

CLIENT :



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(LOT-1:PACKAGE II)**

DESIGN CONSULTANT:



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DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
PD/PS	SS	DGR	SKC
SCALE :	N.T.S	SHEET SIZE	A2

TITLE :

Details of Rumble Strip

DRG. No. :
VSPL/1718-081/DPR/PKG-2/MIS-15

REVISION:R1

NOVEMBER 2020

The diagram illustrates a cross-section of a road shoulder and drainage system. Key components and dimensions include:

- GRAVELLY SHOULDER 2000**: The top layer of the shoulder, with a width of 750.
- METAL BEAM CRASH BARRIER**: A vertical barrier with a height of 700.
- PAVED SHOULDER 2.5%**: The paved surface with a 2.5% slope.
- EARTHEN SHOULDER 3.5%**: The earthen surface with a 3.5% slope.
- OPEN LINE DRAIN**: A drainage structure with a width of 150 and a height of 100.
- MIN 1100**: The minimum depth of the drainage structure.
- 225**: The width of the drainage structure.
- 150**: The width of the drainage structure.

DETAIL-A
SCALE 1:30

Diagram illustrating the cross-section detail of a drainage structure (Detail-A) at a scale of 1:30. The structure features a central channel with a sloped bottom (pitching) and a filter layer. The filter layer is 300 units thick and is supported by a pitching layer 150 units thick. The filter layer is composed of 12mm diameter material with 8 nos. The pitching layer is composed of 10mm diameter material with 250mm/c. The structure is supported by a foundation M15. Dimensions shown include 1000 units for the top width, 200 units for the side walls, 300 units for the top width of the filter, 150 units for the pitching, 100 units for the foundation, and 250 units for the filter layer. A 150 unit slope is indicated for the pitching.

Filter 300
Pitching 150
1000
200
300
200
1000
150
100
12mm dia 8 nos
10mm dia 250mm/c
FOUNDATION M15

PLAN OF ENERGY DISSIPATION BASIN

SCALE 1:30

The diagram shows a plan view of a rectangular basin with a central square dissipater. The basin has a total width of 1000 units and a total length of 1000 units. The dissipater is a square with a side length of 1000 units, centered within the basin. The flow direction is indicated by arrows pointing from the left towards the dissipater. The dimensions are as follows:

- Basin width: 1000 units
- Basin length: 1000 units
- Dissipater side length: 1000 units
- Distance from basin left wall to dissipater left wall: 200 units
- Distance from basin right wall to dissipater right wall: 200 units
- Distance from basin top wall to dissipater top wall: 200 units
- Distance from basin bottom wall to dissipater bottom wall: 200 units
- Distance from basin left wall to dissipater left wall (centered): 200 units
- Distance from basin right wall to dissipater right wall (centered): 200 units
- Distance from basin top wall to dissipater top wall (centered): 200 units
- Distance from basin bottom wall to dissipater bottom wall (centered): 200 units

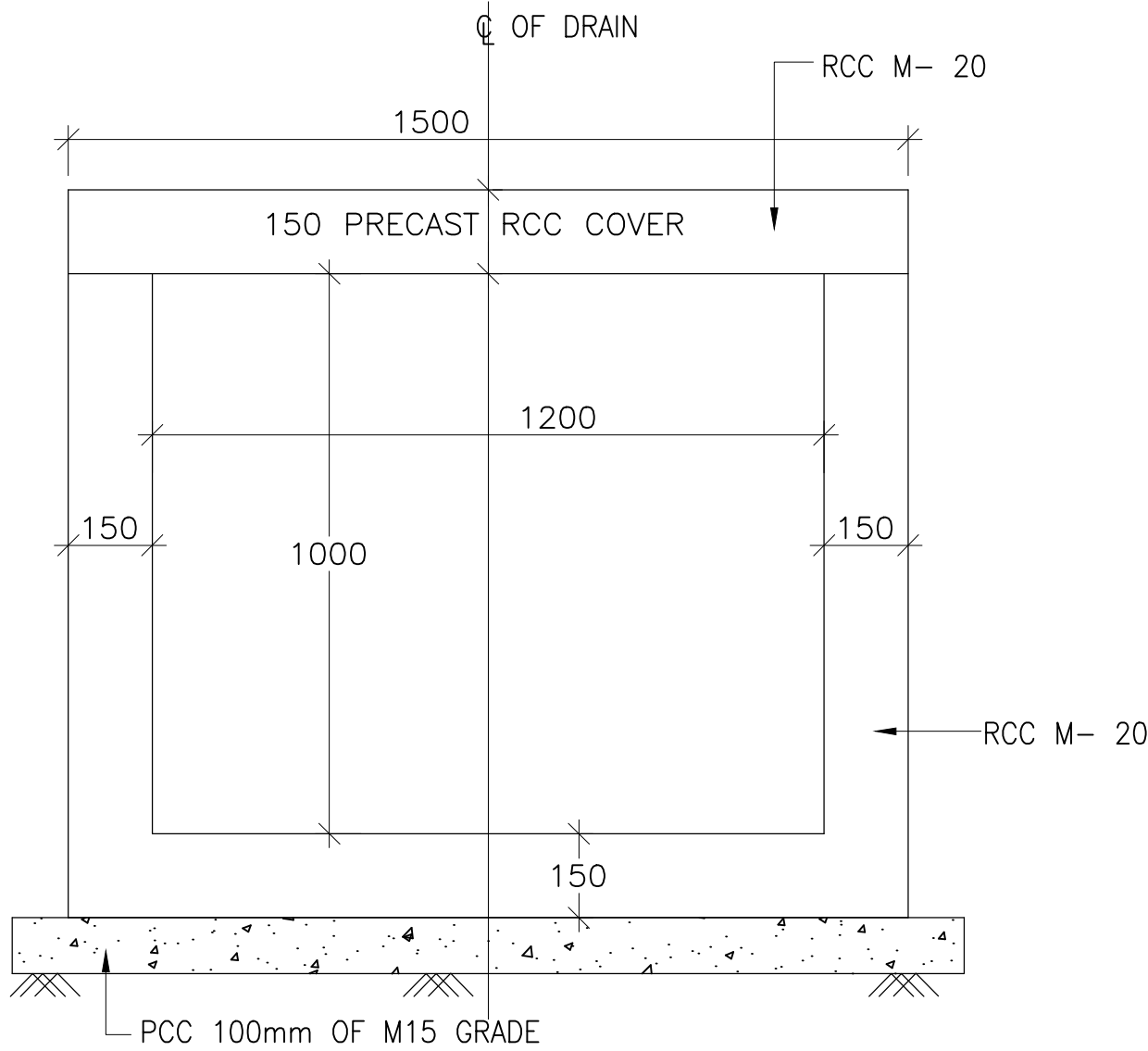
Diagram of a stepped concrete foundation. The foundation has a total width of 1500 mm and a total height of 500 mm. It consists of three steps with widths of 200 mm, 300 mm, and 200 mm. The foundation is shown resting on a base labeled 'FOUNDATION'.

Diagram illustrating the cross-section of a retaining wall structure. The wall has a total height of 1000 units and a base width of 1500 units. The wall is composed of a main body (1000 units high) and two side sections (each 200 units high). The base is divided into three segments: 1000 units (main body), 200 units (left side section), and 300 units (right side section). The wall is labeled "FOUNDATION" and "GL" (Ground Level). The wall is filled with a material represented by red dots, and the base is a solid grey layer.

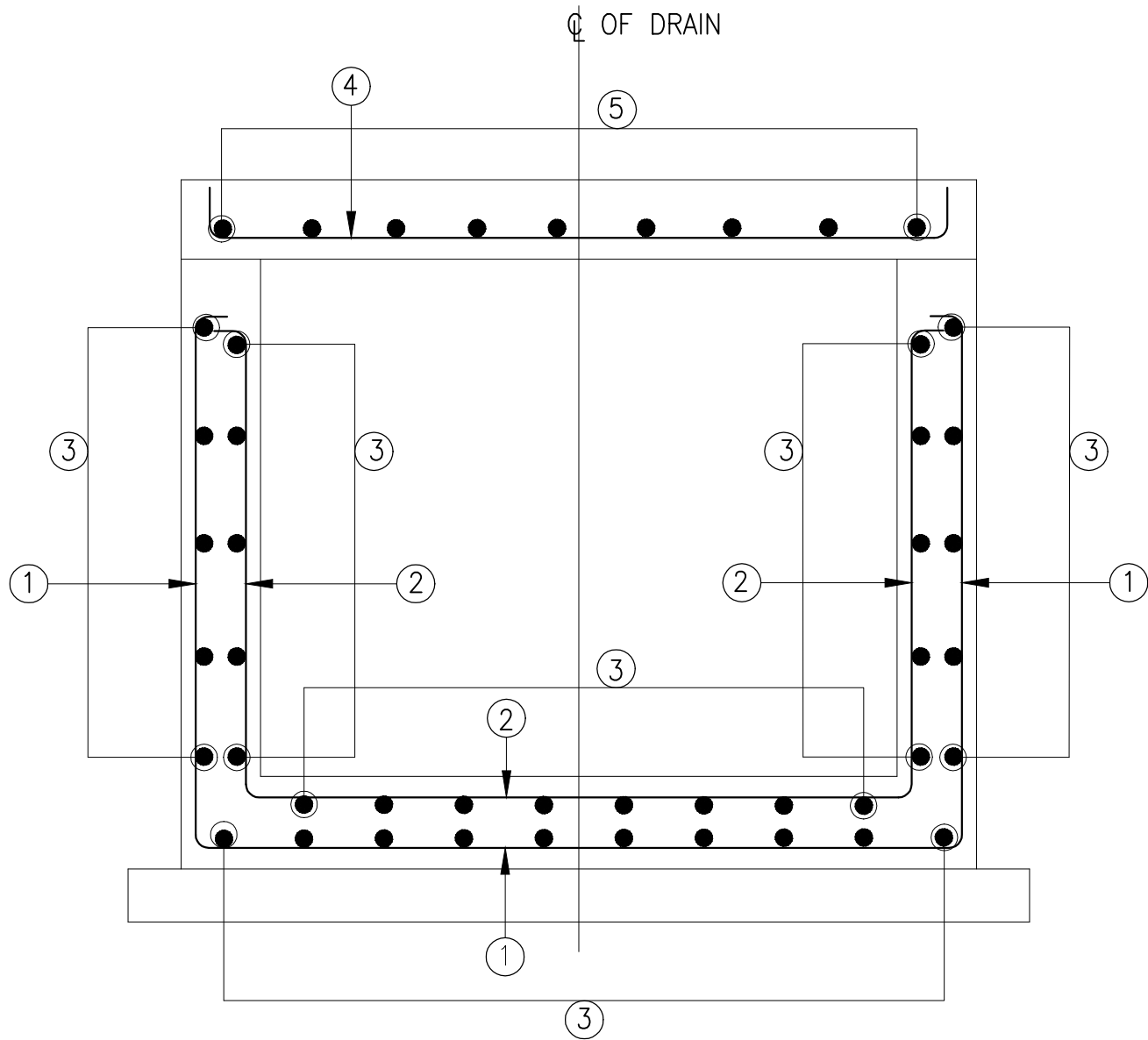
- 6). LAYING AND JOINTING OF HALF ROUND PIPE SHALL BE DONE WITH CEMENT MORTAR 1:3 WHEN BED CONCRETE IS STILL GREEN.
- 7). ENERGY DISSIPATION BASIN SHALL BE CONSTRUCTED IN PCC M20 GRADE AND FOUNDATION IN PCC M15 GRADE.
- 8). METAL BEAM CRASH BARRIER EITHER TO BE INSERTED IN GROUND DIRECTLY OR EMBEDDED IN PCC M15 GRADE OF SIZE 300x300mm.

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	TITLE : Drainage Arrangement in High Embankment (Typical Layout of Chute Drain)
PD/PS	SS	DGR	SKC	
				
SCALE :	N.T.S	SHEET SIZE	A2	DRG. No. : VSPL/1718-081/DPR/PKG-2/MIS-16
				REVISION:R1 NOVEMBER 2020

DETAILS OF DRAIN AT BUILT UP SECTION



DETAILS OF DRAIN CROSS SECTION
AT 2 LANE BUILT UP SECTION
(SCALE 1:25)



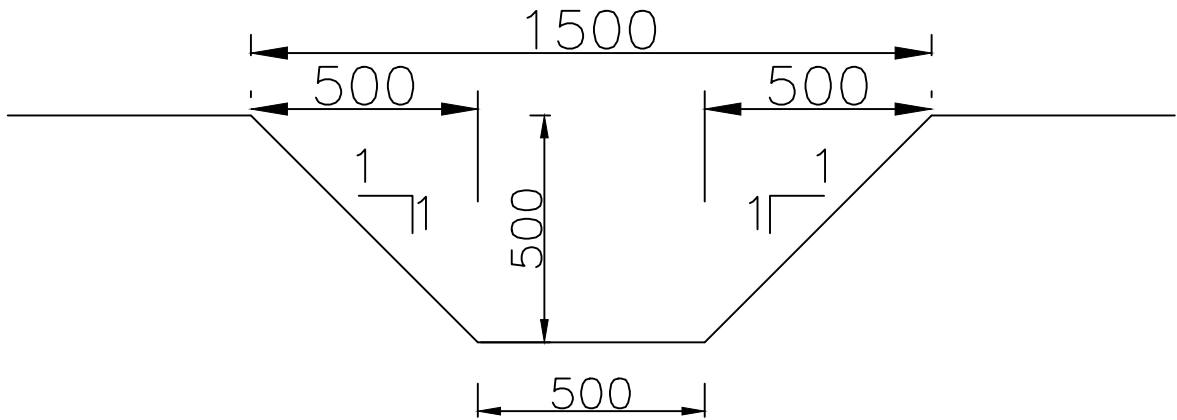
REINFORCEMENT DETAIL OF DRAIN
(SCALE 1:25)

REINF. SCHEDULE

BAR MARK	SHAPE OF BARS (NOT TO SCALE)	BAR DIA. in mm.	SPACING in mm.
①		10	200
②		8	200
③		8	250
④		10	200
⑤		8	250

Notes:

1. All dimensions are in millimetres unless otherwise mentioned.
2. Standards and specifications mentioned in IRC : SP: 73-2017 shall be followed strictly whenever applicable.



Trapezoidal Unlined Drain

CLIENT :



NATIONAL HIGHWAYS AND INFRASTRUCTURE
DEVELOPMENT CORPORATION LTD.
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GOVERNMENT OF INDIA

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CONSULTANCY SERVICES FOR PREPARATION OF
DETAILED PROJECT REPORT FOR DEVELOPMENT OF
ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER
ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT
MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA
(LOT-1:PACKAGE II)

DESIGN CONSULTANT:

VOYANTS SOLUTIONS PVT LTD.
403, 4th Floor, Park Centra,
Sector-30, NH-8
Gurgaon-122001, Haryana, India
CIN- U74140HR2004PTC046918
Ph: 0124-4598200, Fax: 0124-4019051,
E-mail: info@voyants.in, www.voyants.in

Detailed Project Report

REV.	DATE	DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
PD/PS	SS	DGR	SKC
SCALE : N.T.S.		SHEET SIZE	A2

TITLE :

Typical Details of Drain

DRG. No. :
VSPL/1718-081/DPR/PKG-2/MIS-17

REVISION:R1

NOVEMBER 2020



NOTES:—

- 1) ALL DIMENSIONS IN MILLIMETERS AND LEVELS IN METERS WRITTEN OTHERWISE.
- 2) NO DIMENSION SHALL BE SCALED FROM THIS DRAWING, ONLY WRITTEN DIMENSION SHALL BE FOLLOWED.
- 3) C.R STONE MASONRY IN C.M 1:5 ABOVE BED LEVEL AND 1:4 BELOW BED LEVEL.
- 4) SEISMIC DESIGN FOR ZONE-5 ADOPTED AS PER IS:1893 PART 2 AND PERMISSIBLE STRESSES INCREASED BY 50% UNDER SEISMIC CONDITION.
- 5) THERE SECTIONS ARE FOR GUIDENCE AND FOR ESTIMATION. EXACT STABILITY CALCULATIONS TO BE DONE WITH SITE PARAMETRE.
- 6) BACK FILLING SHALL BE DONE AS PER APPENDIX-6 OF IRC:78
- 7) WEEP HOLES SHALL BE PROVIDED AT 1.0m c/c HORIZONTALLY AND VERTICALLY IN A STAGGERED MANNER.
- 8) LEVELLING COURSE BELOW SHOULD BE PROVIDED WITH SUITABLE OFFSET (0.15m Min.) TO RESTRICT BASE PRESSURE ON SOIL WITHIN PERMISSIBLE LIMITS.
- 9) WIDTH OF BASE SHALL BE INCREASED/DECREASED AS PER SBC REQUIREMENT.
- 10) THE PROPERTIES OF THE RETAINED EARTH/BACK FILL HAVE BEEN ASSUMED AS FOLLOWS:
 DRY DENSITY --- 18 Kn/m^3
 ANGLE OF INTERNAL FRICTION --- 30°
 ANGLE OF WALL FRICTION --- 20°
 COHESION (c) = 0
- 11) LIVE LOAD SURCHARGE 1.2m FOR RETAINING WALLS EQUIVALENT HEIGHT DUT TO ON VALLY SIDE.
- 12) FACTOR OF SAFETY FOR OVERTURNING IS 2.0 FOR NON SEISMIC CONDITION AND 1.5 FOR SEISMIC CONDITION.
- 13) PERMISSIBLE TENSILE STRESS UNDER NON SEISMIC CONDIONION IS ASSUMED TO BE 70 Kn/m^2 FOR STONE MASONRY IN CM (1:5).
- 14) WEEP HOLES SHALL BE PROVIDED IN MASONRY WALLS AT A SPACING OF 900MM IN EITHER DIRECTION.
- 15) SIZE OF PVC SHALL BE 100MM TO 150MM PVC.
- 16) IMPERVIOUS SILTY SOIL LAYER OR BACK FILL OF ABOUT 300MM ON THE TOP TO PREVENT SEEPAGE OF RAIN WATER IN THE BACKFILL OR IN FOUNDATION.
- 17) NATURAL GULLIES SHALL BE DIVERTED AWAY FROM THE SILT. SO THAT FLOW OF RAIN WATER DOES NOT CAUSE EROSSION OF BREAST WALL ON TOPMOST TERRACE.
- 18) GRASS TURFING SHALL BE LAID ON THE GROUND SLOPE TO PREVENT EROSION.
- 19) SIDE WATER DRAINS SHALL BE AVOIDED NEAR THE TOP OF THE BREAST WALLS AS THEY ALLOW SEEPAGE OF WATER IN UNMAINTAINED CONDITIOS INTO THE OUT & DESTABILISE
- 20) SIDE WATER DRAINS TO BE PROVIDED AT THE TOE OF THE RETAINING WALLS
- 21) FOUNDATION TO BE 500MM BELOW THE SIDE DRAIN WITHIN SOIL OR HIGHLY JOINTED ROCK SIDE DRAIN
- 22) INCASE SIDE DRAINS AT TOE OF THE RETAINING WALL ARE NOT PROVIDED THEN DRY STONE PITCHING OF SIZE 150MM. MAY BE LAID ON SLOPE FOR A DISTANCE OF 1MTS BELOW THE TOE OF THE RETAINING WALLS.
- 23) FOR ERODABLE SOILS AND WEAK FOUNDATIONS (CLAY, WEAK SAND ETC.) GABION WALLS SHALL BE PREFERRED AS THEY WITH STAND HIGH DIFFERENTIAL SETTLEMENTS.

**NATIONAL HIGHWAYS AND INFRASTRUCTURE
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(LOT-1:PACKAGE II)**

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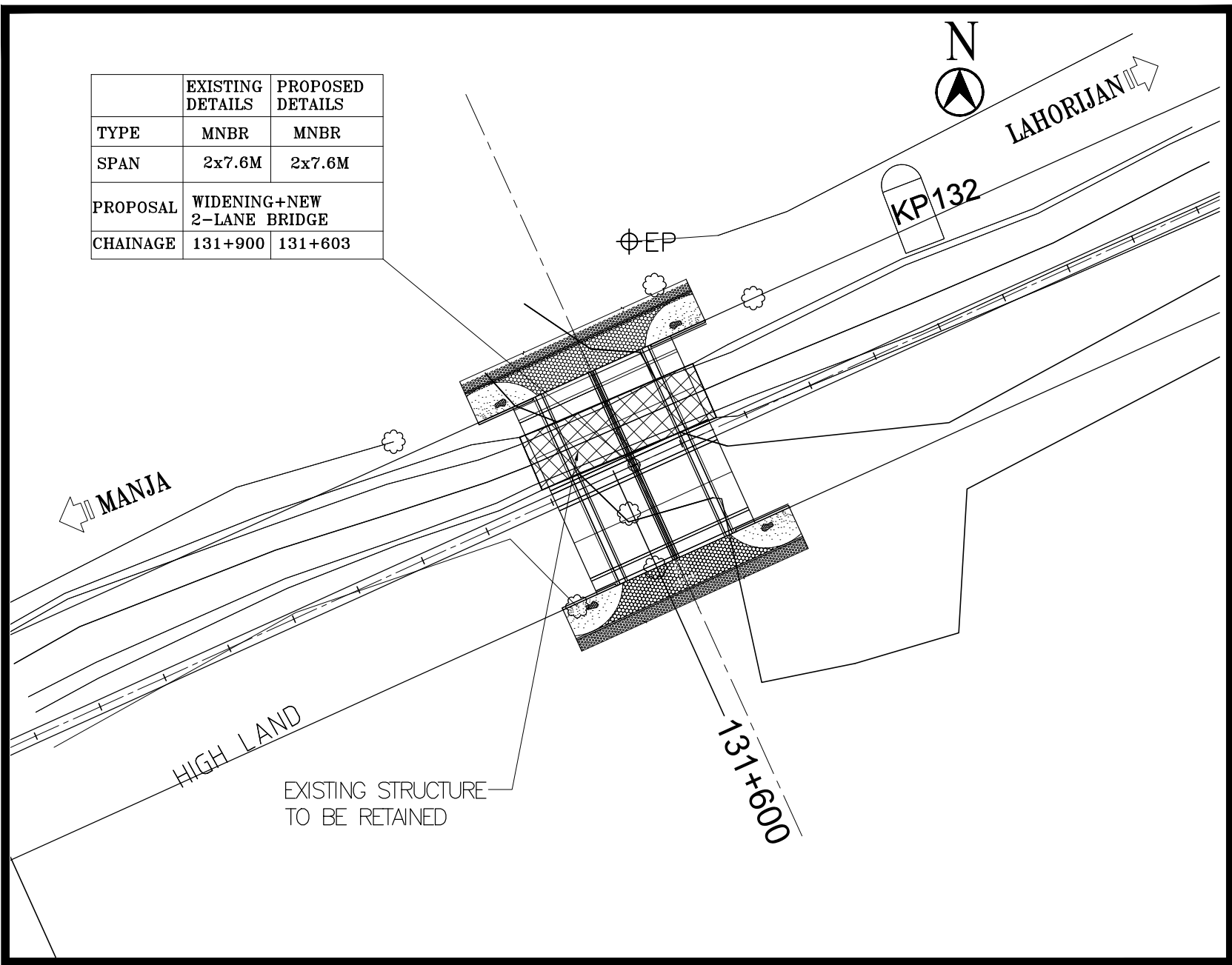
REV.	DATE	DESCRIPTION

REVISION:R1	NOVEMBER 2020
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Bridge Works



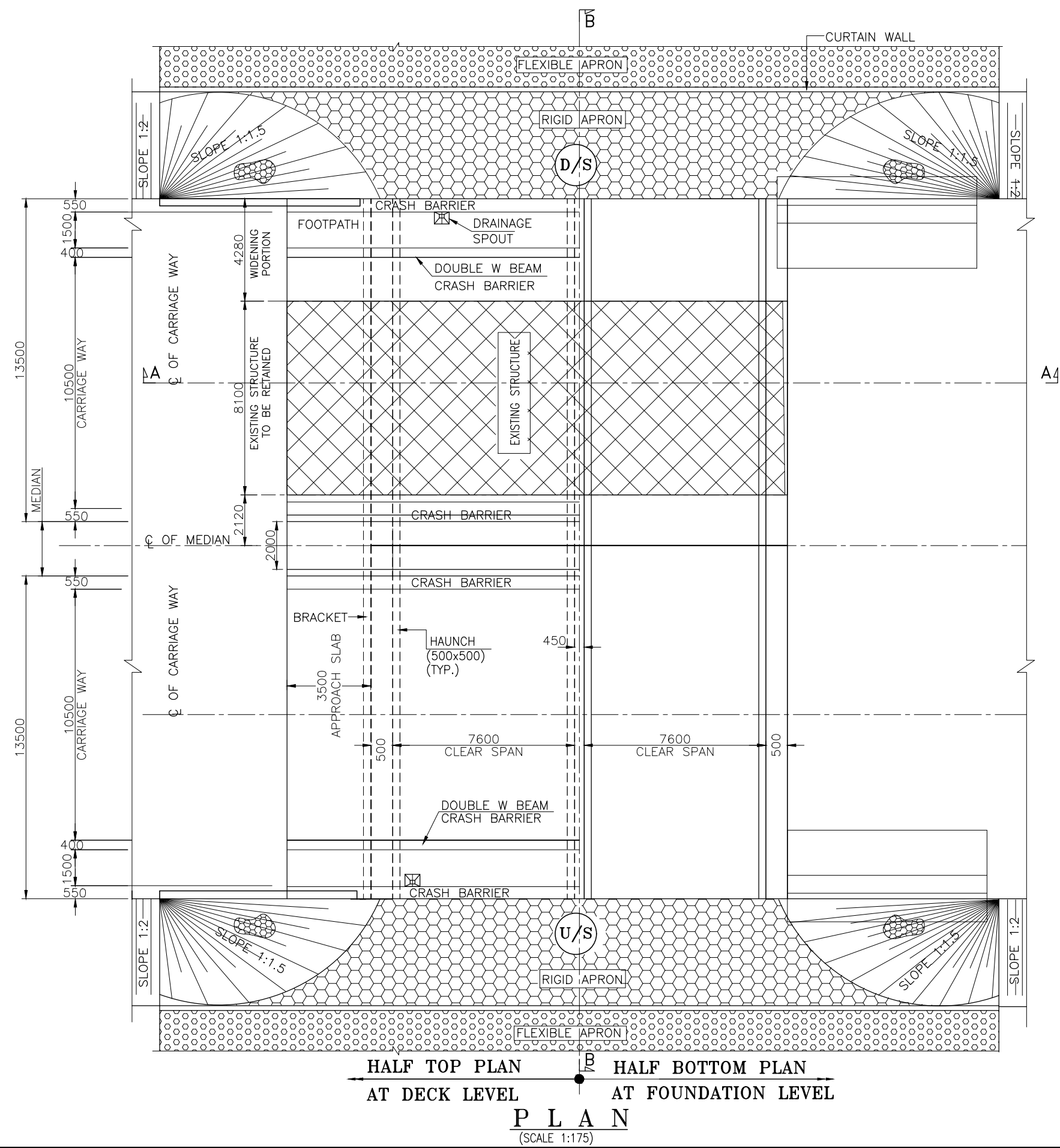


KEY PLAN

(SCALE-1:1000)

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3. FOR KEY PLAN, PROPOSED CHAINAGE & LOCATION REFER RELEVANT HIGHWAY DRAWING.
4. GRADE OF CONCRETE USED:
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 - b) CRASH BARRIER.....M40
 - c) APPROACH SLAB.....M30
 - d) PCC LEVELLING COURSE.....M15
5. ALL REINFORCEMENT STEEL SHALL BE HIGH STRENGTH DEFORMED BARS OF GRADE Fe500 CONFORMING TO IS: 1786-1985
6. THE STRUCTURE IS DESIGNED TO CATER LIVE LOAD COMBINATION OF 3-LANES OF CLASS A OR 1-LANE OF 70R WHILE + 1 LANE A OR IRC SV WHICHEVER PRODUCE SEVER EFFECT.
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9. WEEP HOLES ON THE ABUTMENT & RETAINING WALLS SHALL BE SPACED 1000 c/c HORIZANTALLY & VERTICALLY IN STAGGERED MANNER FROM 500MM ABOVE LWL TO HFL.
10. SOFT AND LOOSE PATCHES IN THE BEARING AREA ARE TO BE REPLACED BY COMPACTED GRANULAR FILLS WITH LAYERS NOT EXCEEDING 300MM.
11. COMPRESSIBLE FILLER BOARD SHALL BE PROVIDED IN ALL EXPANSION GAPS AND SEALED WITH POLY-SULPHIDE SEALANT.



CLIENT :



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Detailed Project Report

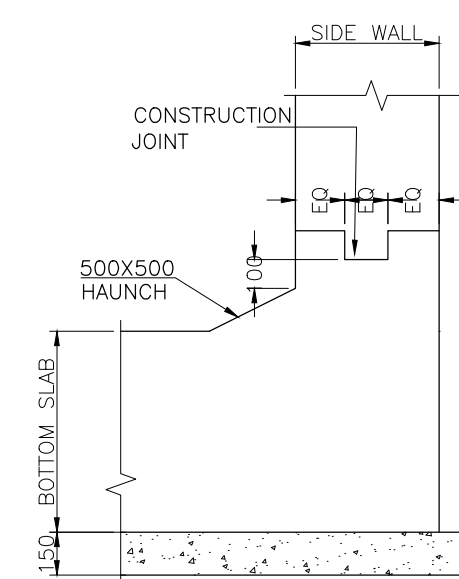
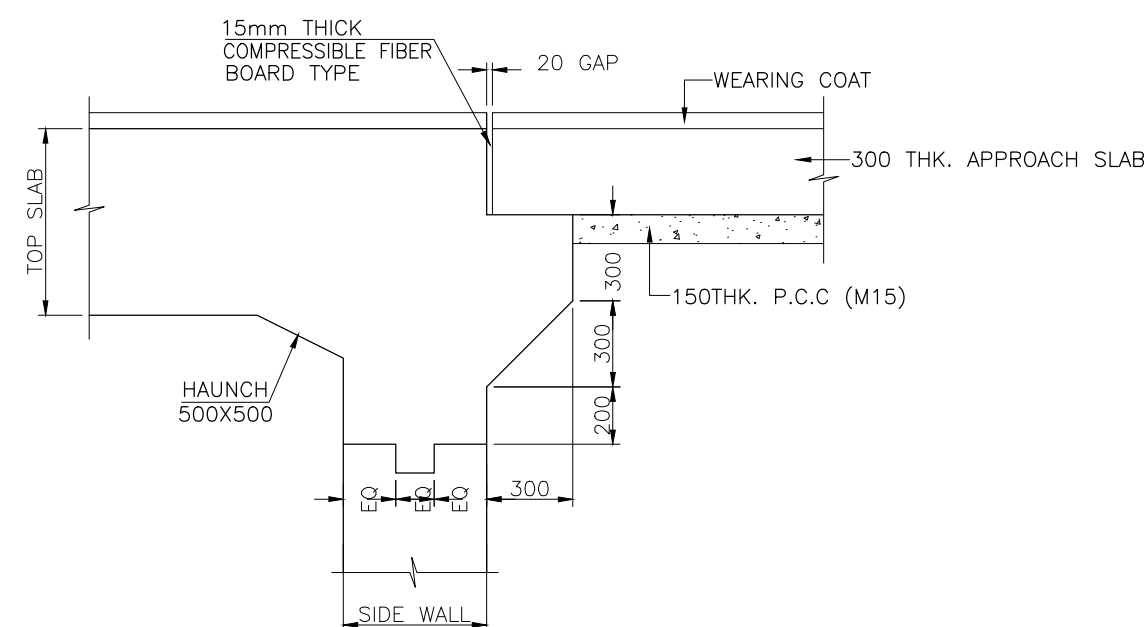
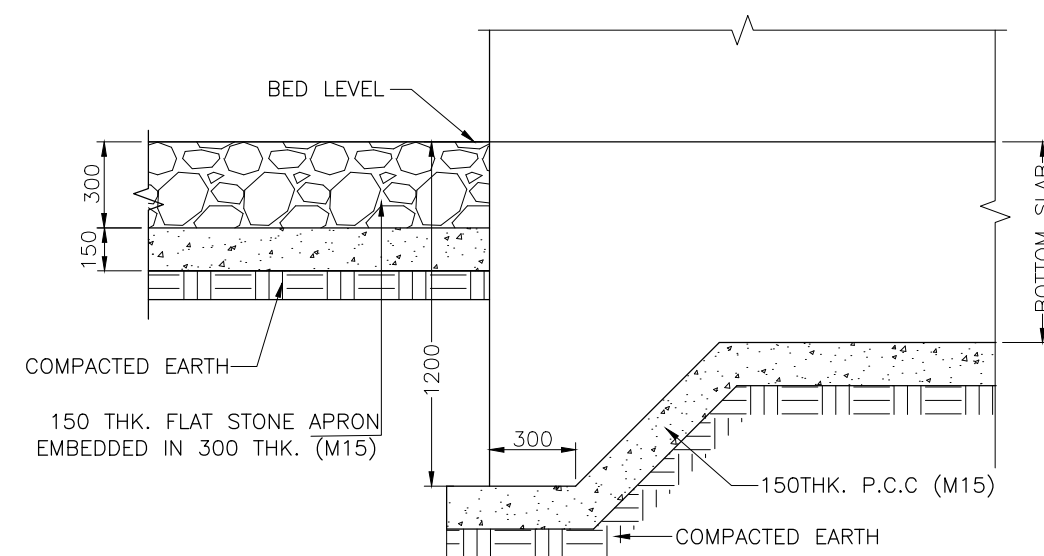
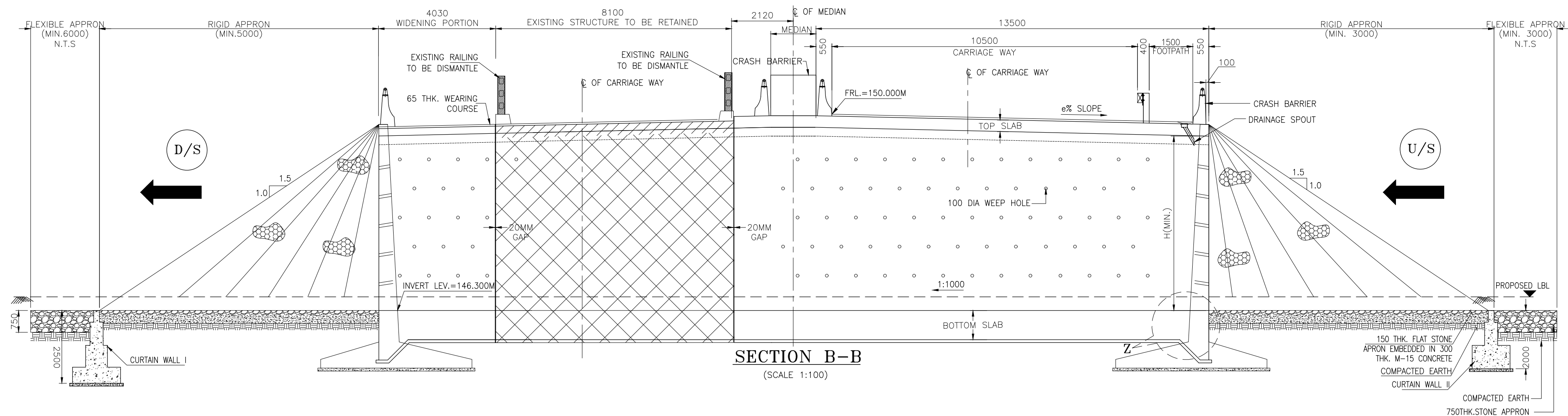
REV.	DATE	DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
DSR	SJC	SG	SKC
			
SCALE :	AS SHOWN	SHEET SIZE	A2

TITLE :
GENERAL ARRANGEMENT DRAWING
OF BOX TYPE MINOR BRIDGE
AT KM. CH.-131+603.00

DRG. No. : (SHEET 01 OF 02)
VSPL/1718-081/DPR/PKG-2/SEC-7/MNB-01

REVISION:R1	November 2020
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NOTES :-

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MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA
(LOT-1:PACKAGE II)**

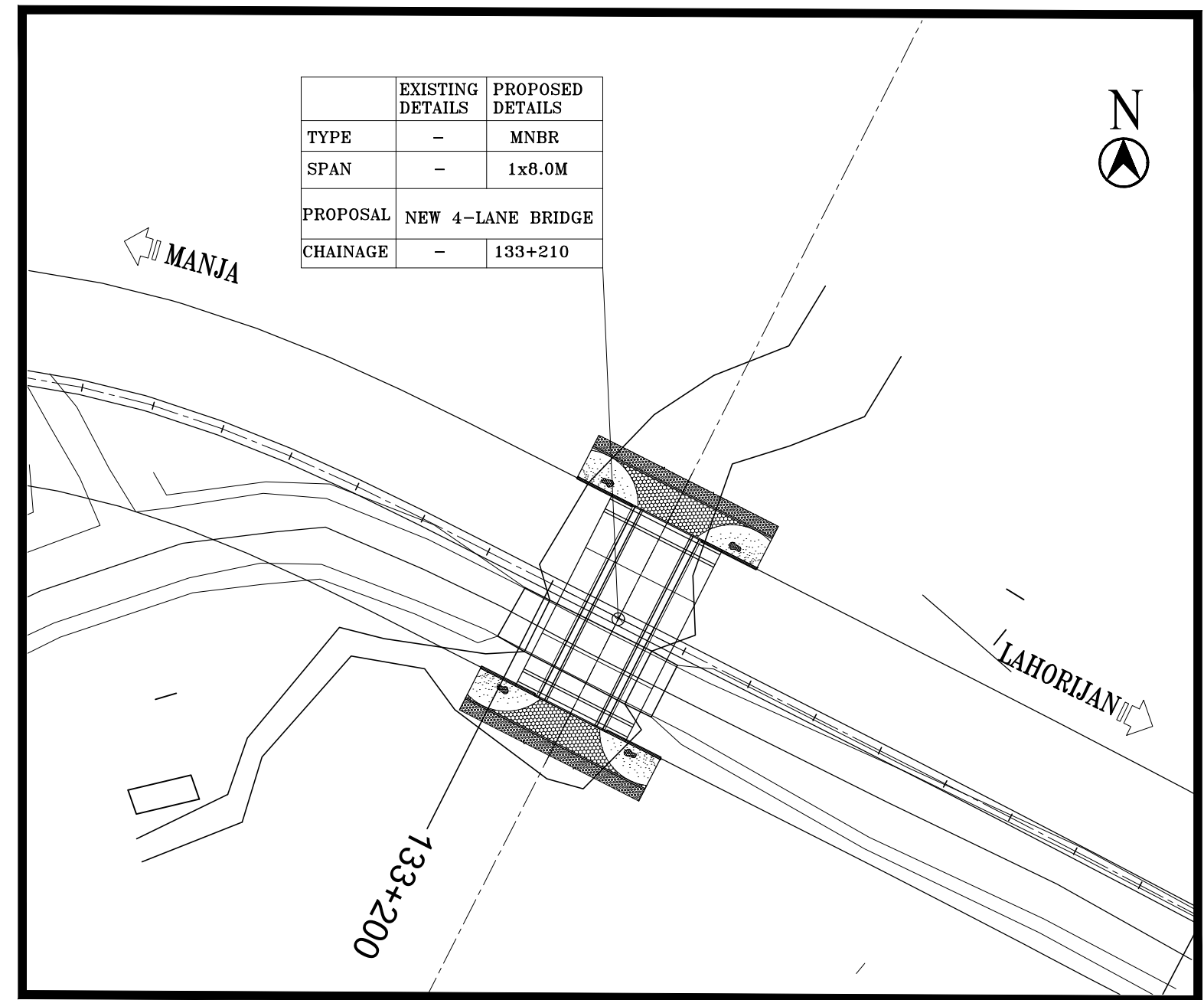
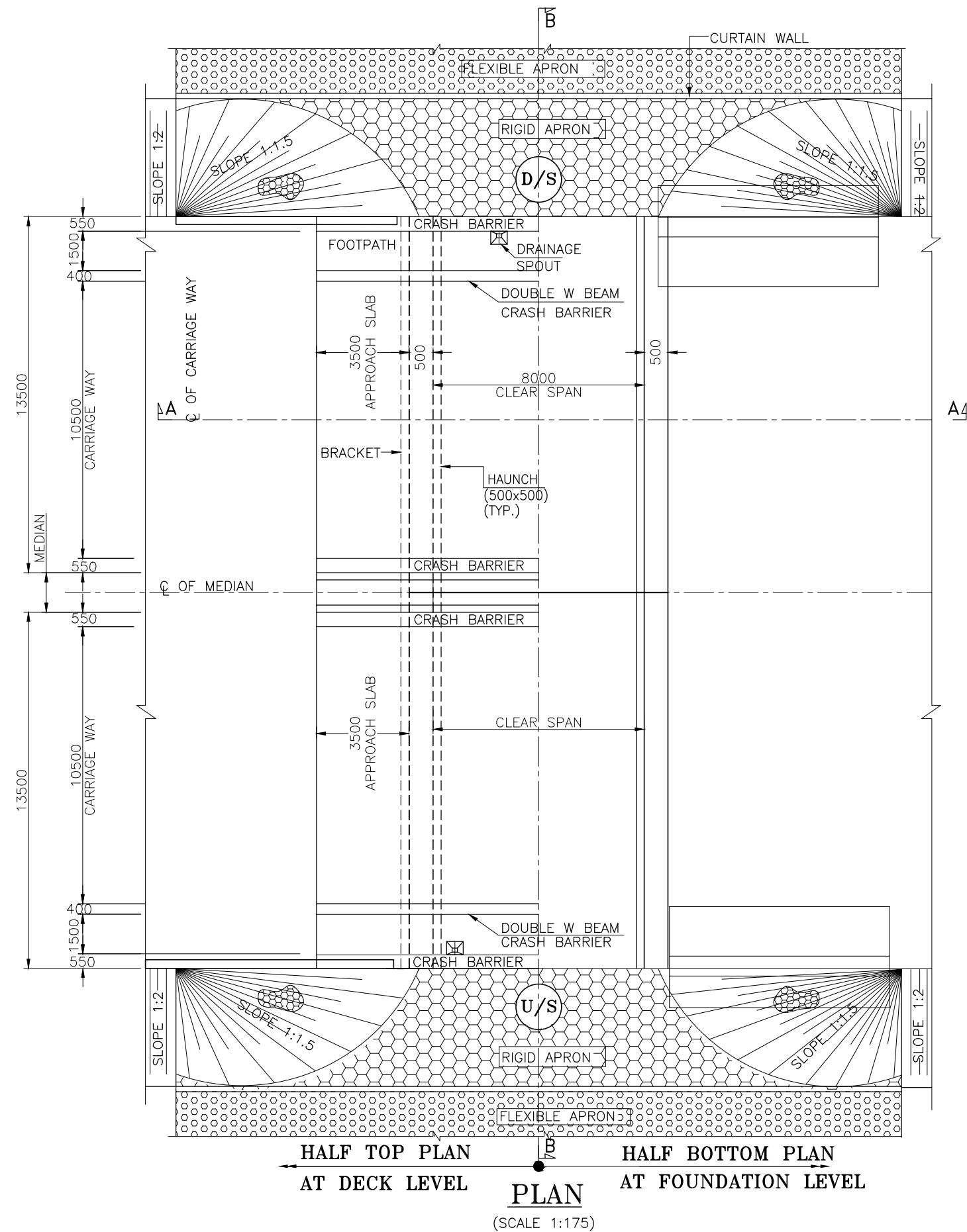
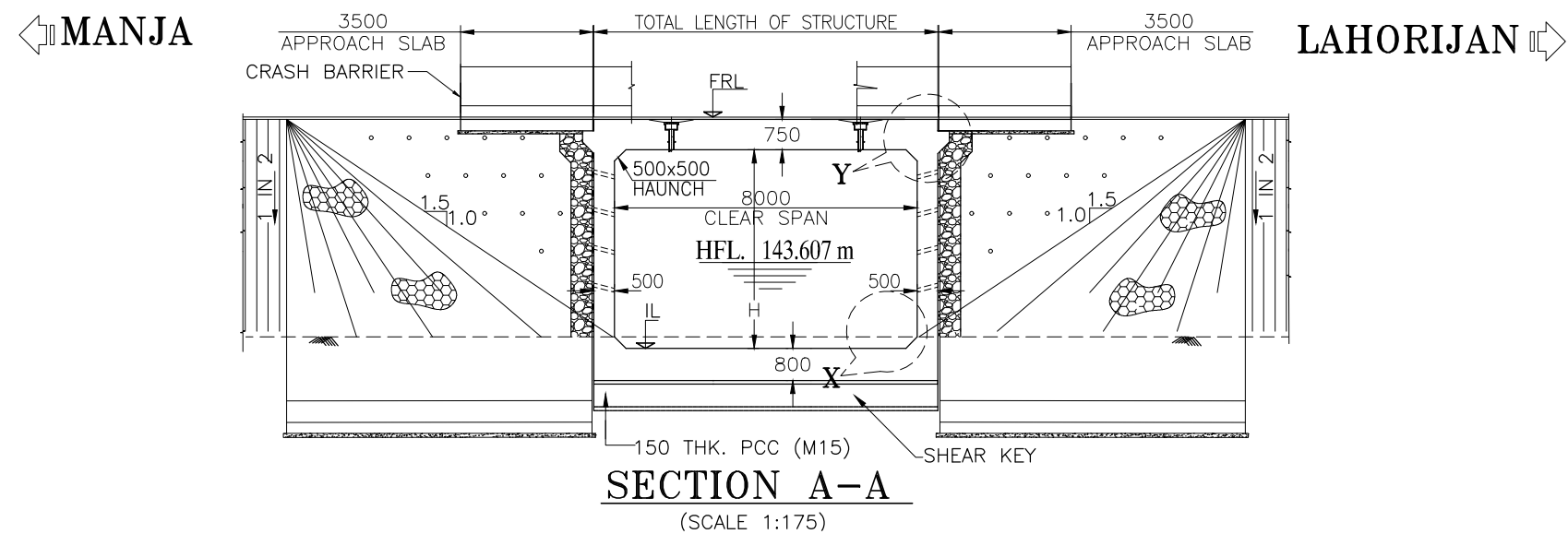
DESIGN CONSULTANT:

VOYANTS SOLUTIONS PVT LTD.
403, 4th Floor, Park Centra,
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CIN- U74140HR2004PTC046918
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E-mail: info@voyants.in, www.voyants.in

Detailed Project Report

REV.	DATE	DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	TITLE :
DSR	SJC	SG	SKC	GENERAL ARRANGEMENT DRAWING OF BOX TYPE MINOR BRIDGE AT KM. CH.-131+603.00
<i>DSR</i>	<i>SJC</i>	<i>SG</i>	<i>SKC</i>	DRG. No. : (SHEET 02 OF 02) VSP/L/1718-081/DPR/PKG-2/SEC-7/MNB-01
SCALE :	AS SHOWN	SHEET SIZE	A2	REVISION:R1
				November 2020



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a) RCC BOX, RETURN WALLM35
b) CRASH BARRIER.....M40
c) APPROACH SLAB.....M30
d) PCC LEVELLING COURSE.....M15
5. ALL REINFORCEMENT STEEL SHALL BE HIGH STRENGTH DEFORMED BARS OF GRADE F_{e500} CONFORMING TO IS: 1786-1985
6. THE STRUCTURE IS DESIGNED TO CATER LIVE LOAD COMBINATION OF 3-LANES OF CLASS A OR 1-LANE OF 70R WHILE + 1 LANE A OR IRC SV WHICHEVER PRODUCE SEVER EFFECT.
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11. COMPRESSIBLE FILLER BOARD SHALL BE PROVIDED IN ALL EXPANSION GAPS AND SEALED WITH POLY-SULPHIDE SEALANT.

CLIENT :

NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
(MINISTRY OF ROAD TRANSPORT AND HIGHWAYS)
GOVERNMENT OF INDIA

PROJECT :

CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1:PACKAGE II)

DESIGN CONSULTANT:

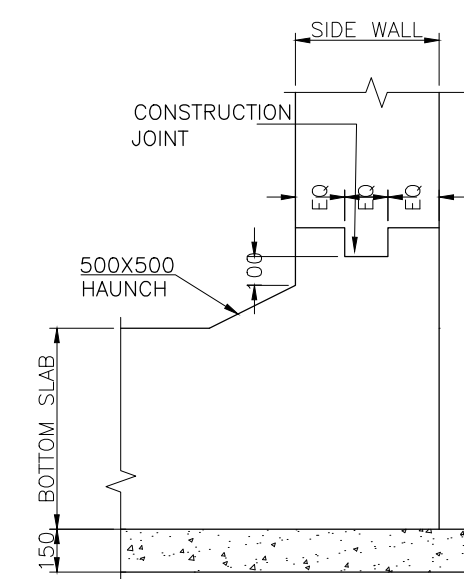
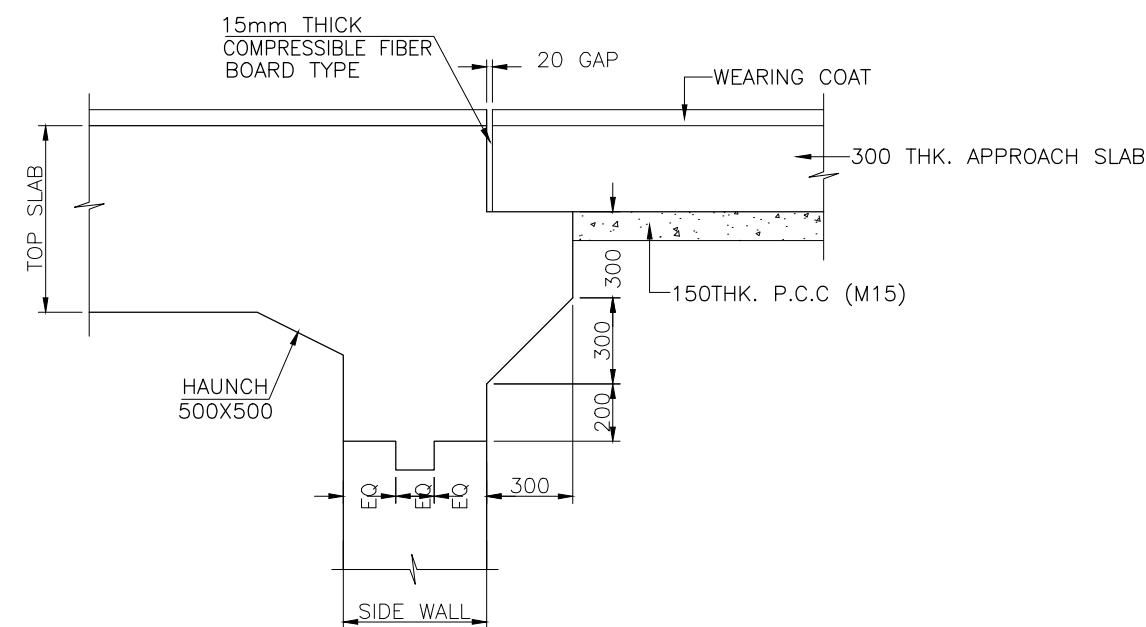
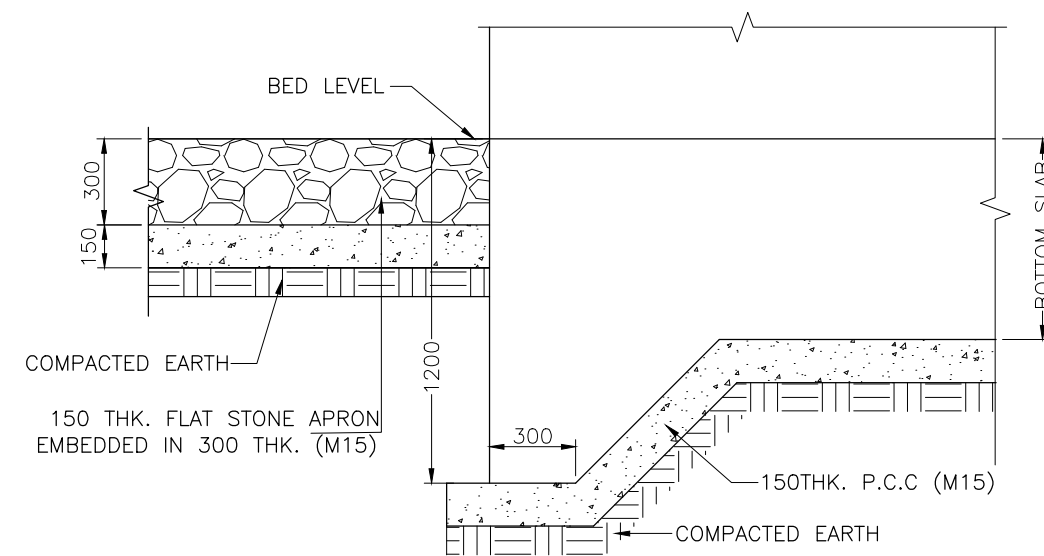
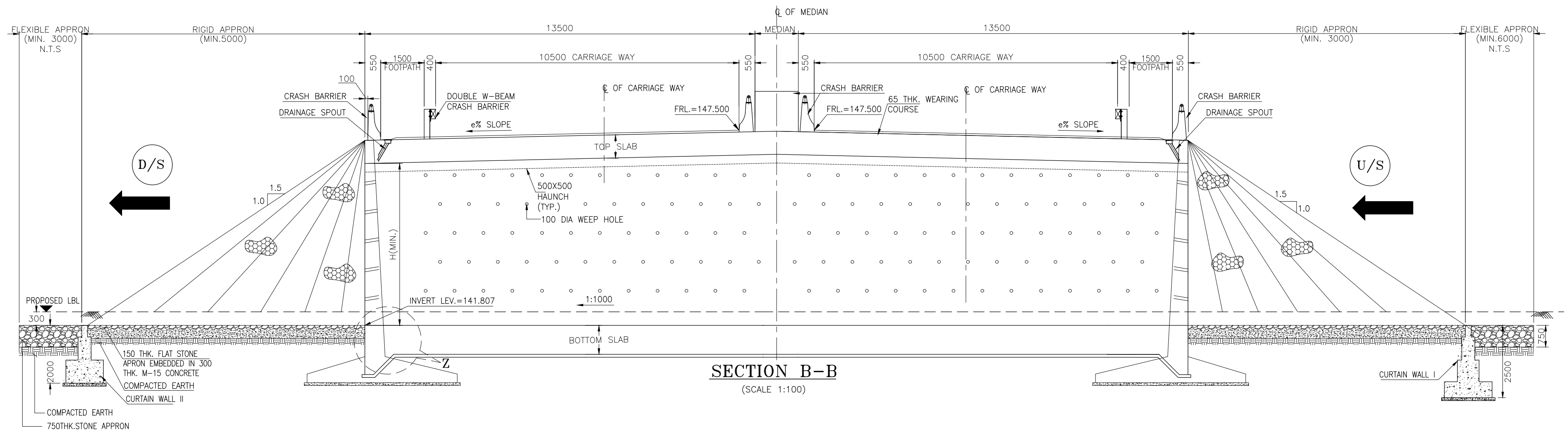
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Detailed Project Report

REV.	DATE	DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
DSR	G.Das	SG	SKC
<i>DSR</i>	<i>G.Das</i>	<i>SG</i>	<i>SKC</i>
SCALE :	AS SHOWN	SHEET SIZE	A2

TITLE : GENERAL ARRANGEMENT DRAWING OF BOX TYPE MINOR BRIDGE AT KM. CH.-133+210.00	
DRG. No. : VSPL/1718-081/DPR/PKG-2/SEC-7/MNB-02	(SHEET 01 OF 02)
REVISION:R1	November 2020



NOTES :-

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DESIGN CONSULTANT:

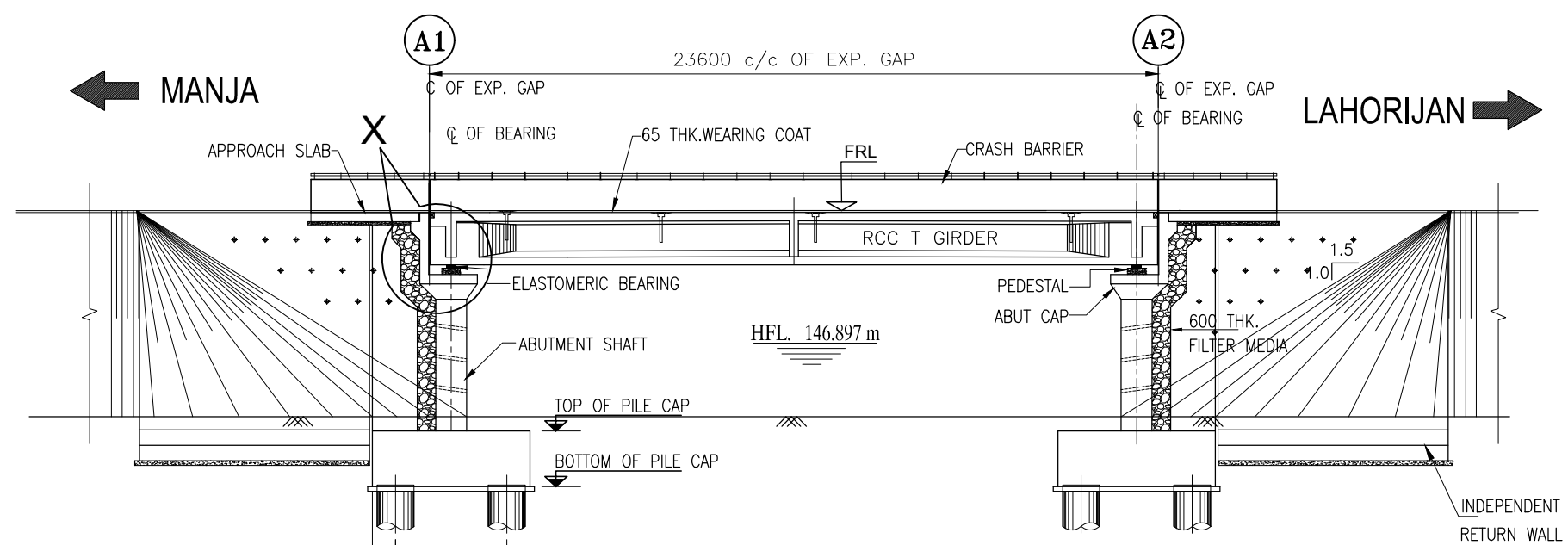
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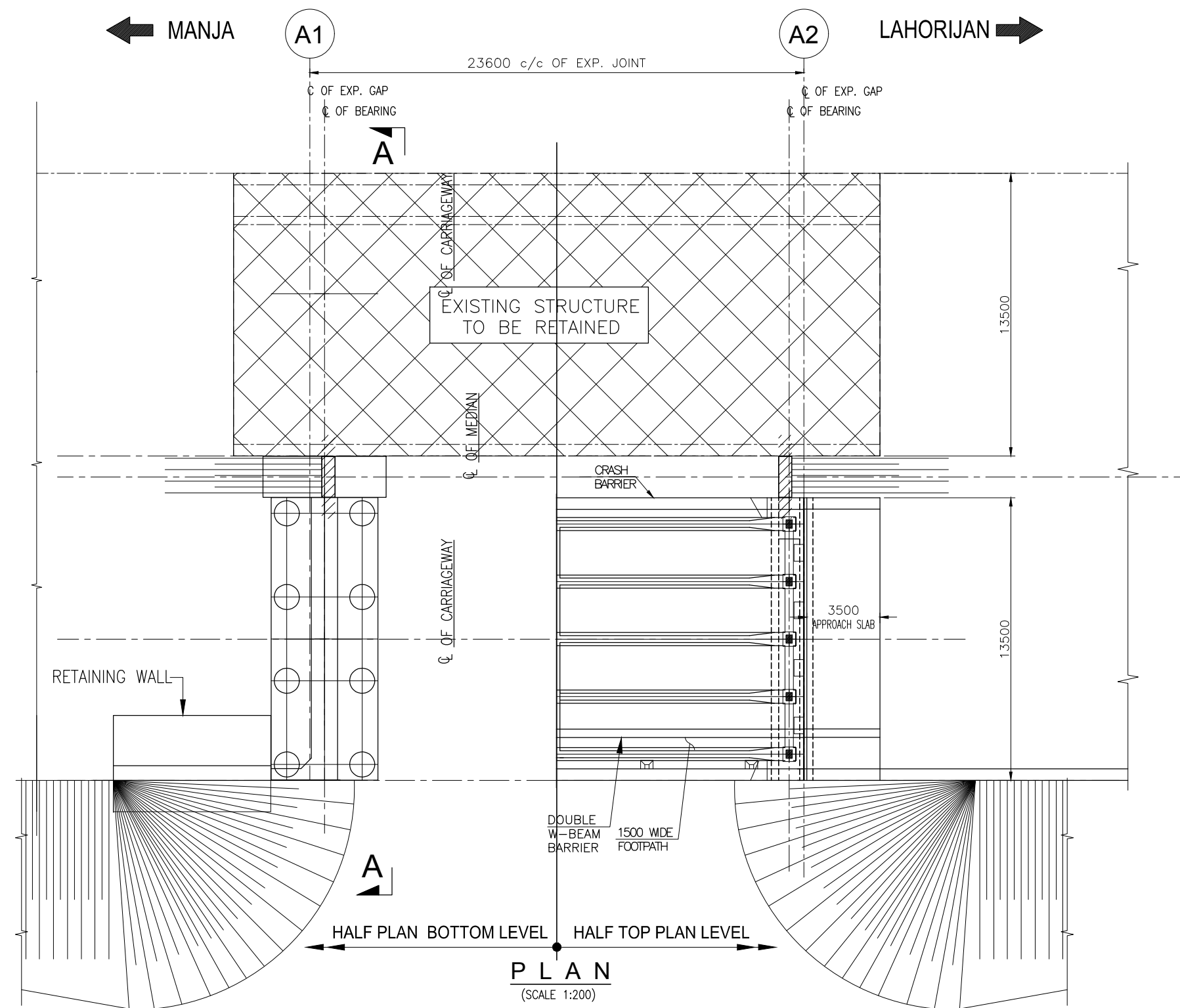
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DSR	G.Das	SG	SKC
<i>DSR</i>	<i>G.Das</i>	<i>SG</i>	<i>SKC</i>
SCALE :	AS SHOWN	SHEET SIZE	A2

TITLE :	
GENERAL ARRANGEMENT DRAWING OF BOX TYPE MINOR BRIDGE AT KM. CH.-133+210.00	
DRG. No. :	(SHEET 02 OF 02)
VSP/L/1718-081/DPR/PKG-2/SEC-7/MNB-02	
REVISION:R1	November 2020

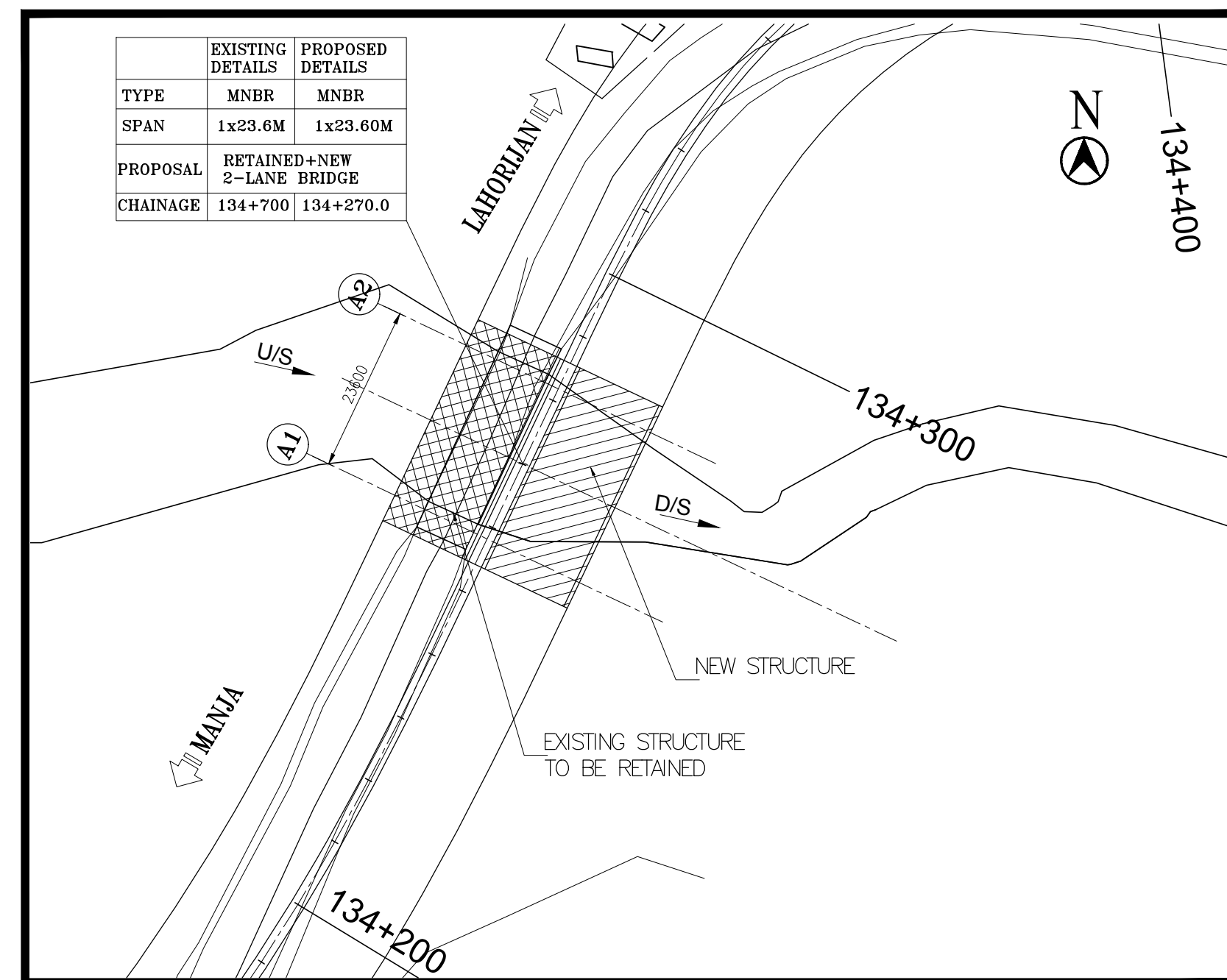


Datum = 142.000		
PROPOSED FRL (m)	151.000	151.000
EXISTING GR. LEVEL	149.932	149.887
CHAINAGE(Km)	134+258.200	134+281.8

SECTIONAL ELEVATION
(SCALE 1:200)



P L A N
(SCALE 1:200)



KEY PLAN
(SCALE-1:750)

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 - RCC DECK SLAB.....M35
 - RCC T-GIRDER.....M35
 - ABUTMENT / ABUTMENT CAP.....M35
 - CRASH BARRIER.....M40
 - APPROACH SLABM30
 - PCC LEVELING COURSEM15
- ALL REINFORCEMENT STEEL SHALL BE HIGH STRENGTH DEFORMED BARS OF GRADE Fe500 CONFORMING TO IS: 1786-1985
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CLIENT :



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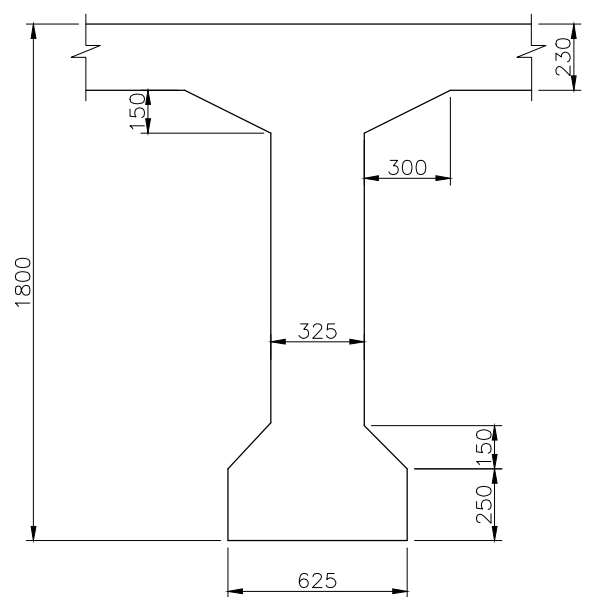
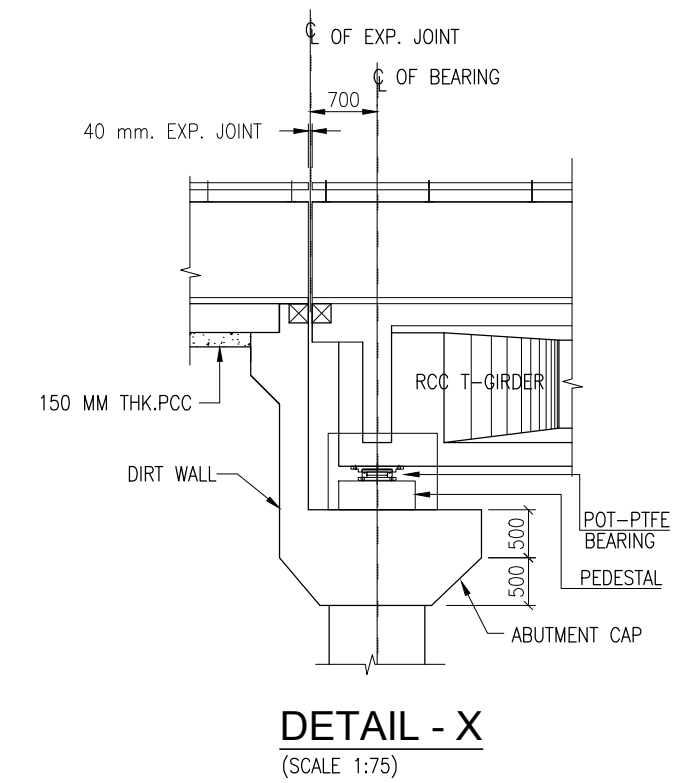
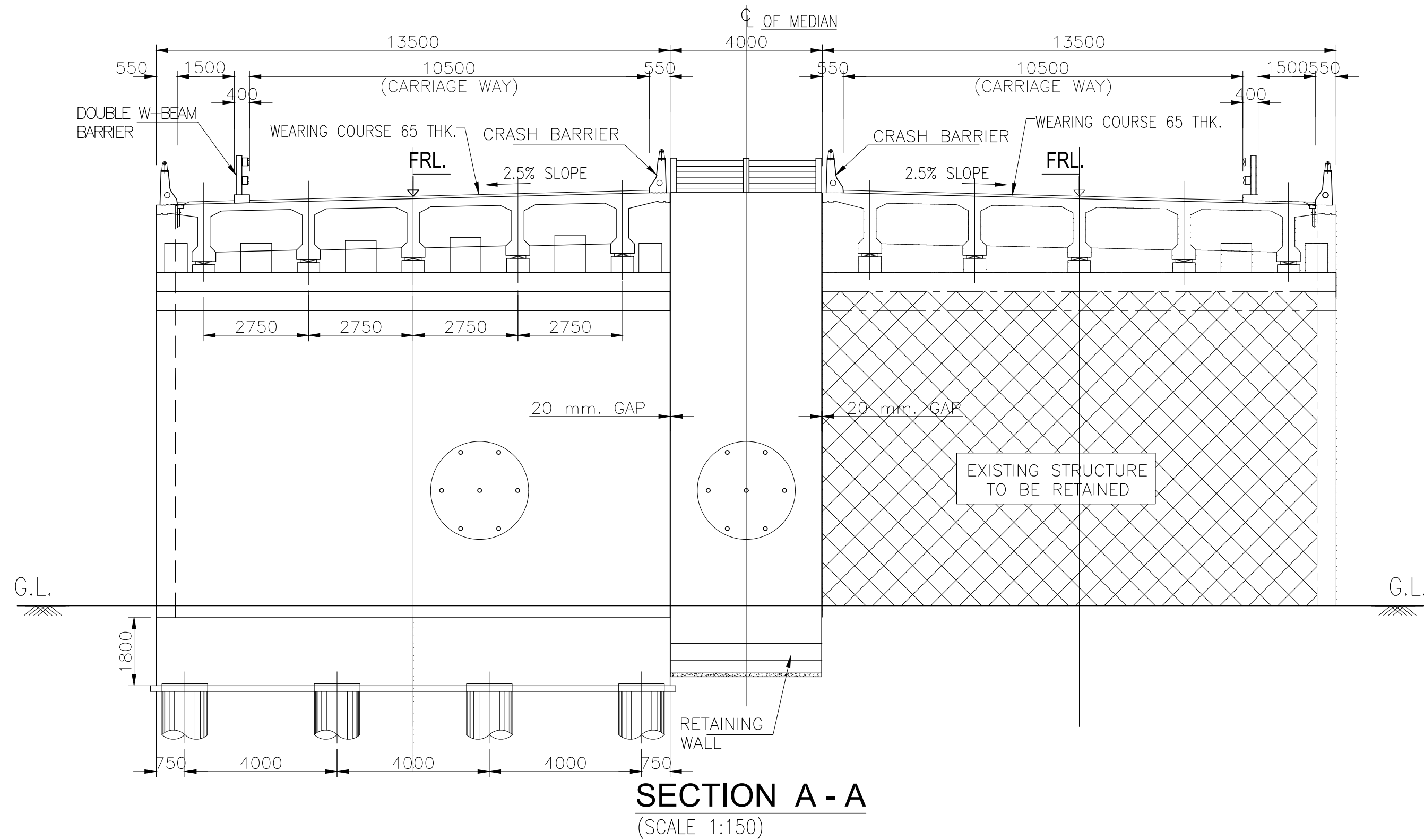
DESIGN CONSULTANT:

VOYANTS SOLUTIONS PVT LTD.
403, 4th Floor, Park Centra,
Sector-30, NH-8
Gurugram-122001, Haryana, India
CIN- U74140HR2004PTC046918
Ph: 0124-4598200, Fax: 0124-4019051,
E-mail: info@voyants.in, www.voyants.in

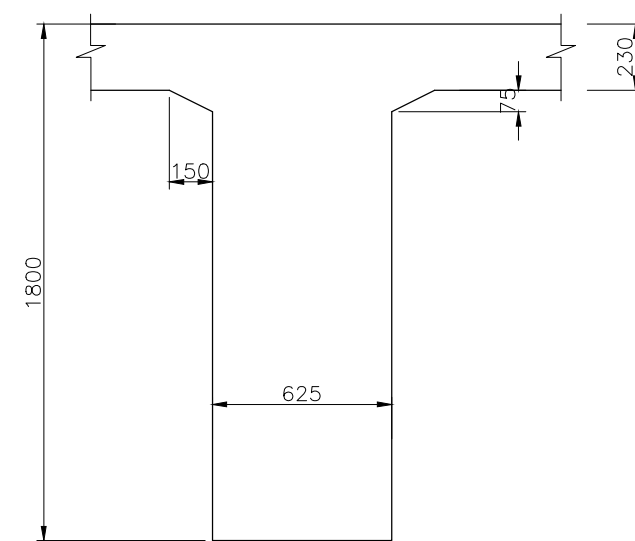
Detailed Project Report

REV.	DATE	DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	TITLE :
DSR	G.Das	SG	SKC	GENERAL ARRANGEMENT DRAWING OF MINOR BRIDGE AT KM. CH.-134+270.000
SCALE :	AS SHOWN	SHEET SIZE	A2	DRG. No. : (SHEET 01 OF 02) VSP/L/1718-081/DPR/PKG-2/SEC-7/MNB-03
				REVISION: R1 November 2020



RCC GIRDER AT MID SECTION
(SCALE 1:25)

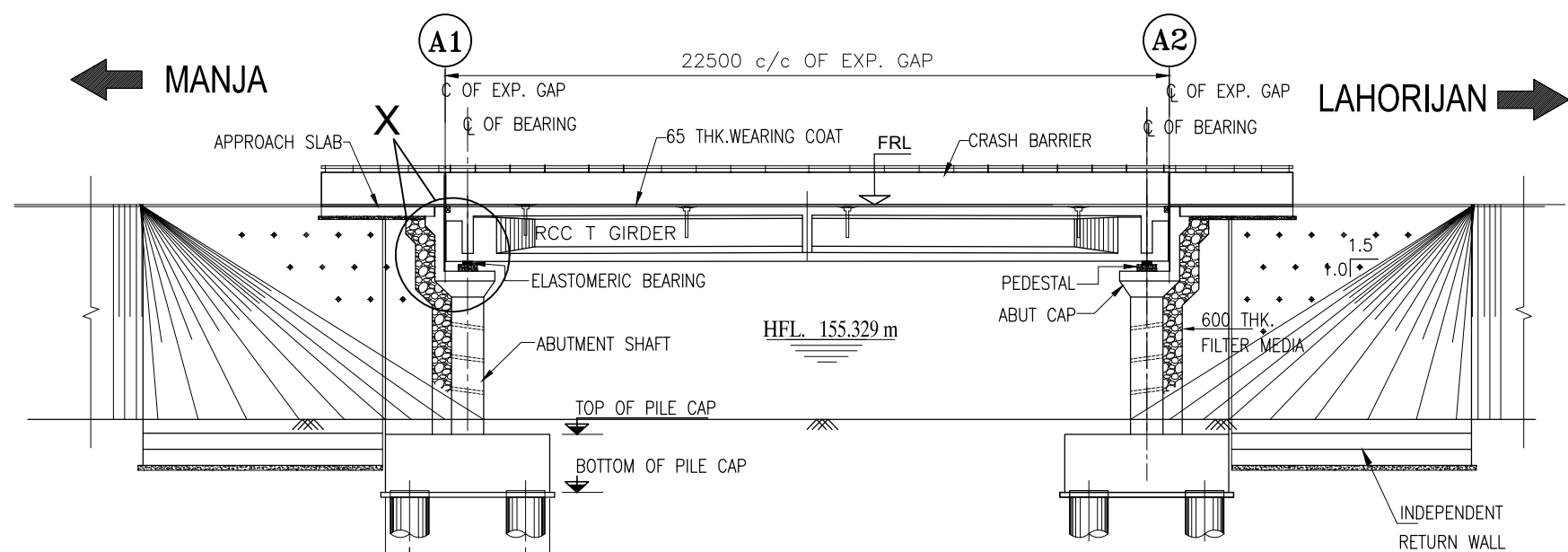


RCC GIRDER AT SUPPORT SECTION
(SCALE 1:50)

NOTES :-

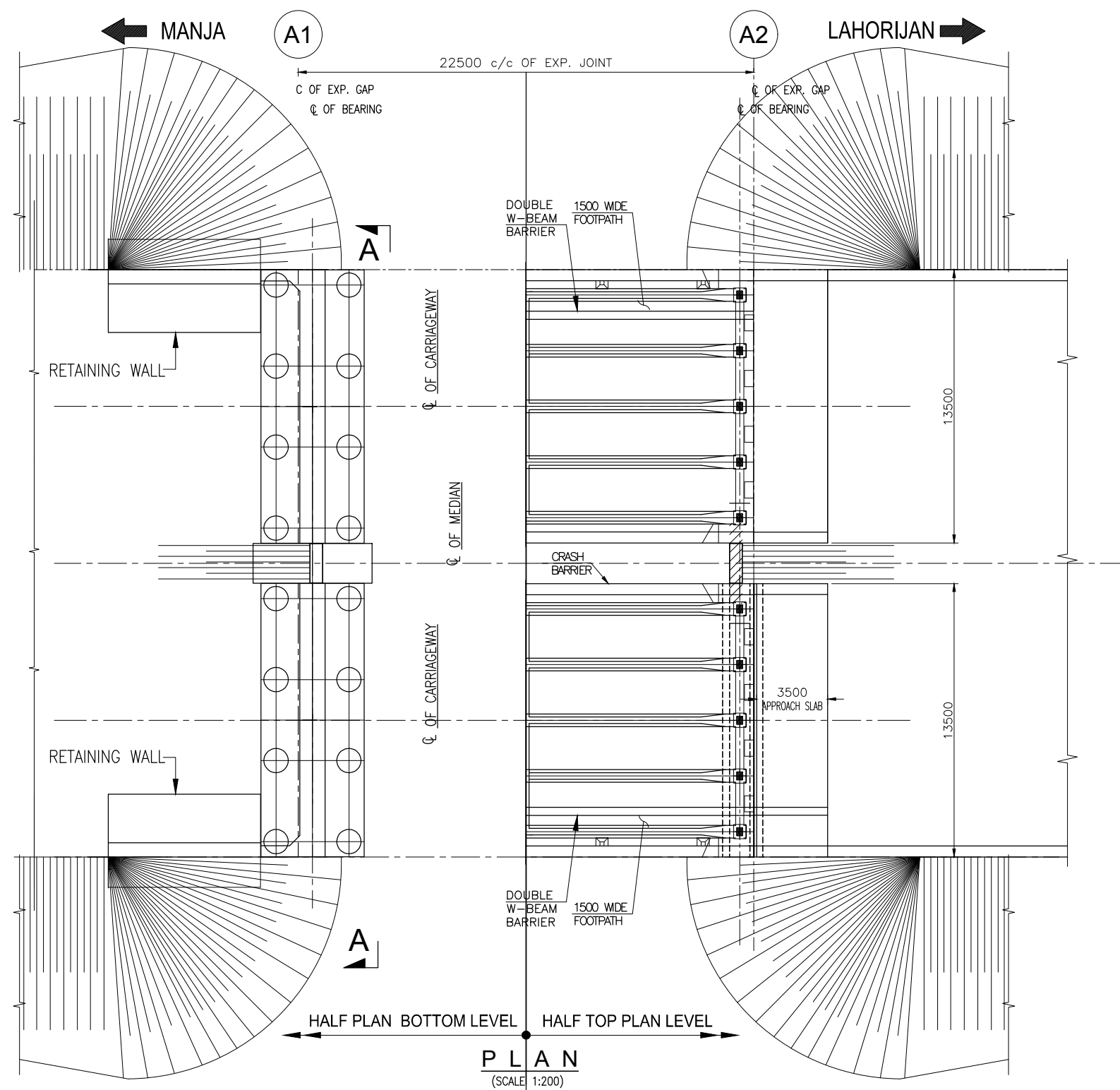
1. ALL DIMENSIONS ARE IN MM AND LEVELS ARE IN M UNLESS MENTIONED OTHERWISE.
2. DIMENSIONS ARE NOT TO BE SCALED, ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. FOR KEY PLAN, PROPOSED CHAINAGE & LOCATION REFER RELEVANT HIGHWAY DRAWING.

CLIENT :  NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT AND HIGHWAYS) GOVERNMENT OF INDIA	PROJECT : CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1:PACKAGE II)	DESIGN CONSULTANT:  VOYANTS SOLUTIONS PVT LTD. 403, 4th Floor, Park Centra, Sector-30, NH-8 Gurgaon-122001, Haryana, India CIN- U74140HR2004PTC046918 Ph: 0124-4598200, Fax: 0124-4019051, E-mail: info@voyants.in, www.voyants.in	Detailed Project Report				TITLE : GENERAL ARRANGEMENT DRAWING OF MINOR BRIDGE AT KM. CH.-134+270.000			
			DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRG. No. : (SHEET 02 OF 02) VSPL/1718-081/DPR/PKG-2/SEC-7/MNB-03			
			DSR	G.Das	SG	SKC				
										
			REV. DATE		DESCRIPTION		SCALE :	AS SHOWN	SHEET SIZE	A2

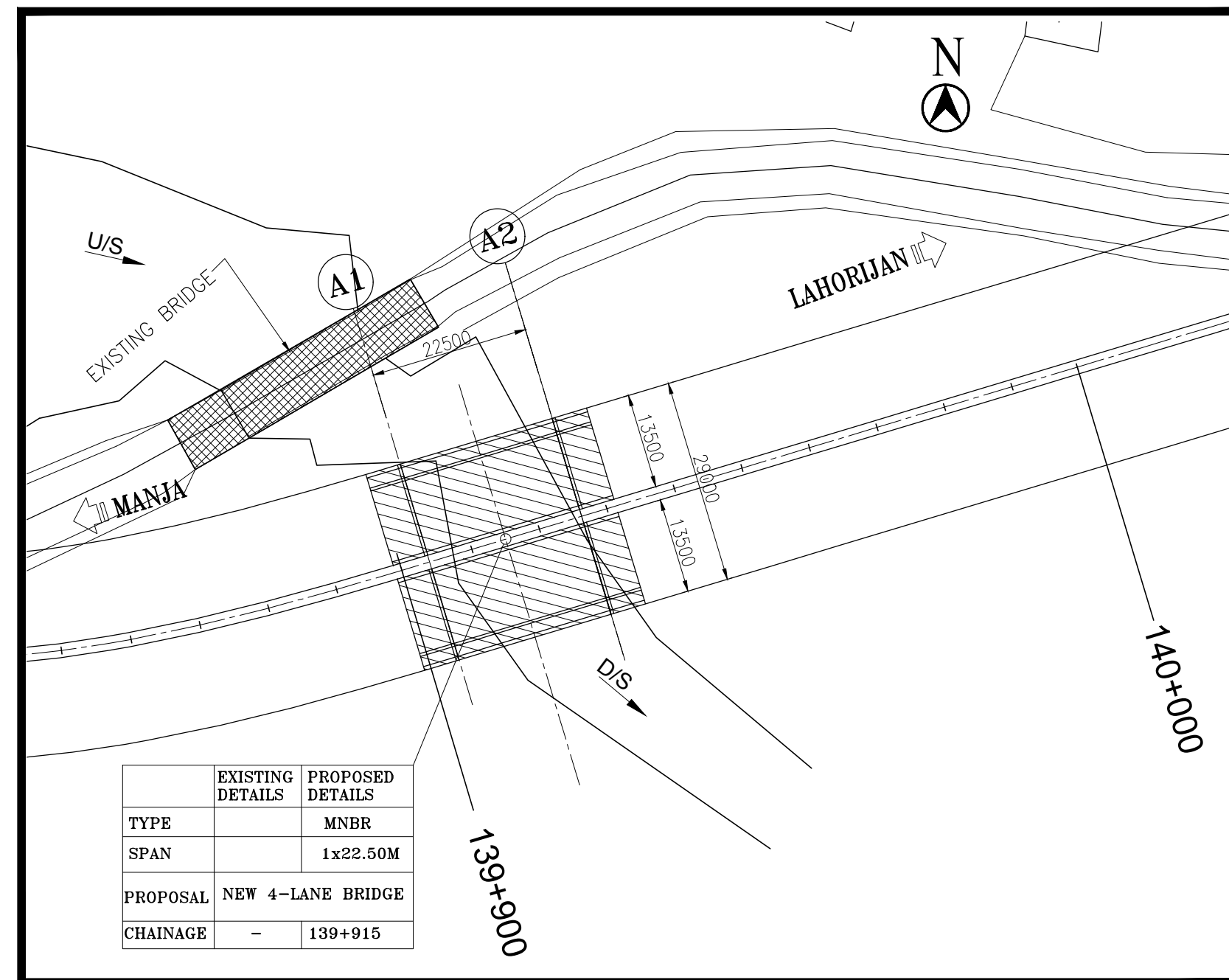


Datum = 142.000			
PROPOSED FRL (m)	159.203		159.464
EXISTING GR. LEVEL	153.544		152.253
CHAINAGE(Km)	139+903.750	139+915.000	139+926.250

SECTIONAL ELEVATION
(SCALE 1:200)



P L A N
(SCALE 1:200)



	EXISTING DETAILS	PROPOSED DETAILS
TYPE		MNBR
SPAN		1x22.50M
PROPOSAL		NEW 4-LANE BRIDGE
CHAINAGE	-	139+915

KEY PLAN
(SCALE-1:750)

NOTES :-

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- FOR KEY PLAN, PROPOSED CHAINAGE & LOCATION REFER RELEVANT HIGHWAY DRAWING.
 - RCC DECK SLAB.....M35
 - RCC T-GIRDER.....M35
 - ABUTMENT / ABUTMENT CAP.....M35
 - CRASH BARRIER.....M40
 - APPROACH SLABM30
 - PCC LEVELING COURSEM15
- ALL REINFORCEMENT STEEL SHALL BE HIGH STRENGTH DEFORMED BARS OF GRADE Fe500 CONFORMING TO IS: 1786-1985
- THE STRUCTURE IS DESIGNED TO CATER LIVE LOAD COMBINATION OF 3-LANES OF CLASS A OR 1-LANE OF 70R WHILE + 1 LANE A OR IRC SV WHICHEVER PRODUCE SEVER EFFECT.
- VARIOUS LEVELS (FRL,EGL) & SUPER ELEVATIONS SHOWN IN DRAWINGS SHALL BE VERIFIED WITH THE HIGHWAY PLAN & PROFILE PRIOR TO ACTUAL EXECUTION IN SITE.
- LAYING, COMPACTION & EXTENT OF BACKFILL BEHIND ABUTMENT & RETAINING WALLS SHALL CONSIST OF SELECTED EARTH CONFORMING TO THE APPENDIX-6 OF IRC:78-2014 HAVING PROPERTIES C=0, $\phi \geq 30^\circ$ & DENSITY=20kN/m³
- WEEP HOLES ON THE ABUTMENT & RETAINING WALLS SHALL BE SPACED 1000 c/c HORIZANTALY & VERTICALLY IN STAGGERED MANNER FROM 500MM ABOVE LWL TO HFL.
- SOFT AND LOOSE PATCHES IN THE BEARING AREA ARE TO BE REPLACED BY COMPACTED GRANULAR FILLS WITH LAYERS NOT EXCEEDING 300MM.
- COMPRESSIBLE FILLER BOARD SHALL BE PROVIDED IN ALL EXPANSION GAPS AND SEALED WITH POLY-SULPHIDE SEALANT.

CLIENT :



PROJECT :

CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1:PACKAGE II)

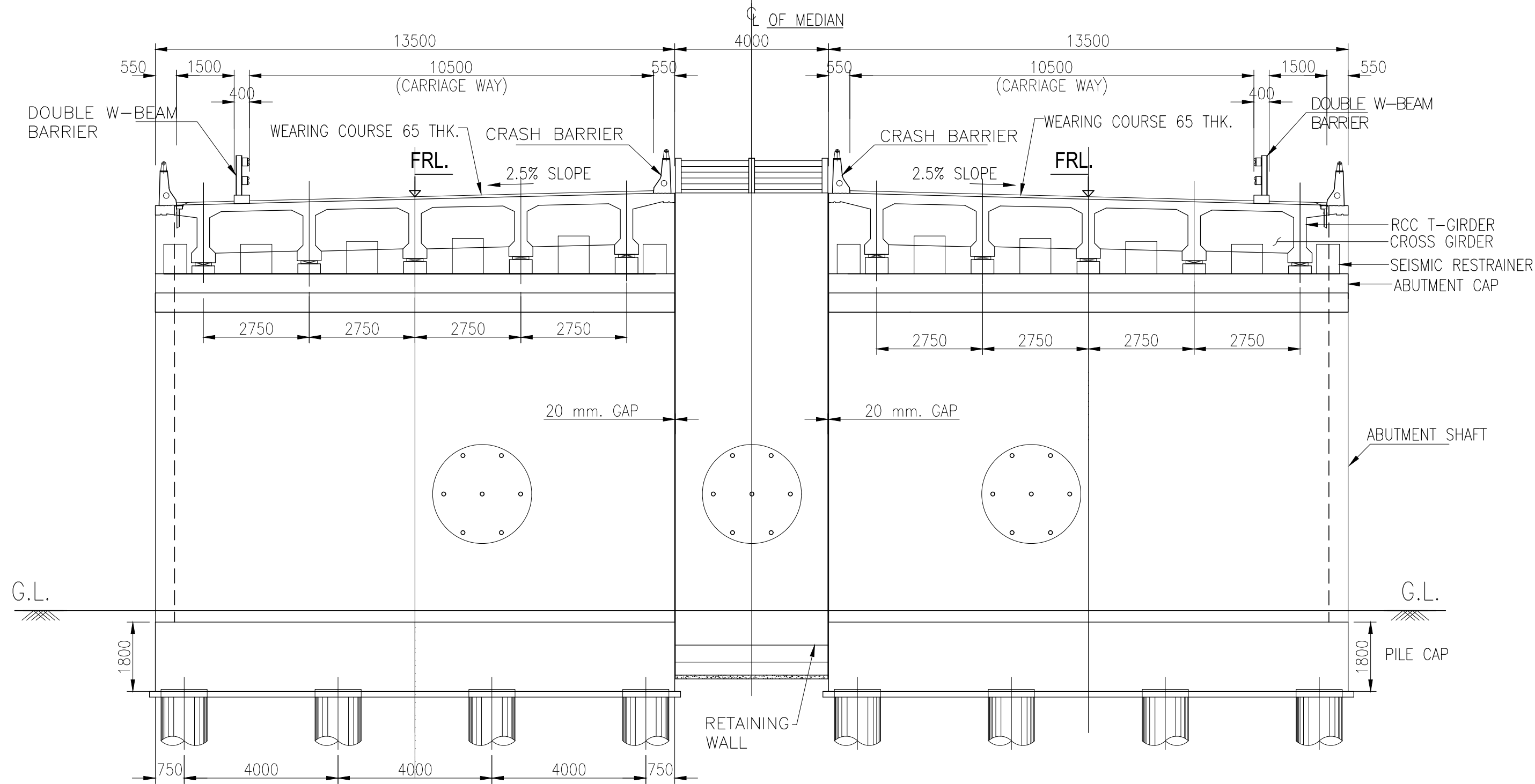
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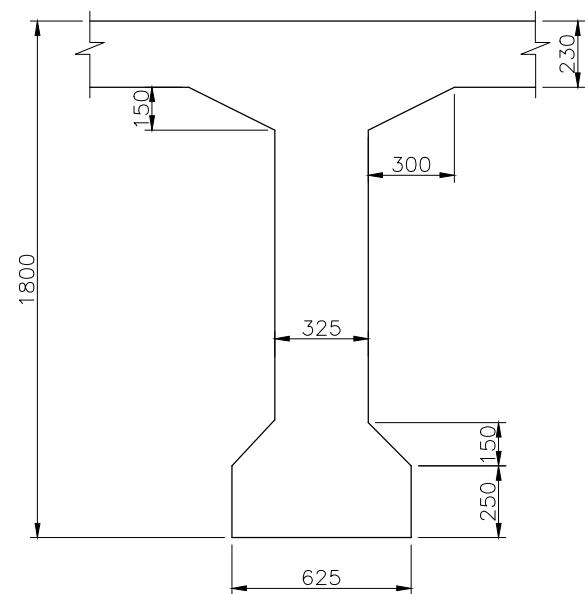
Detailed Project Report

REV.	DATE	DESCRIPTION

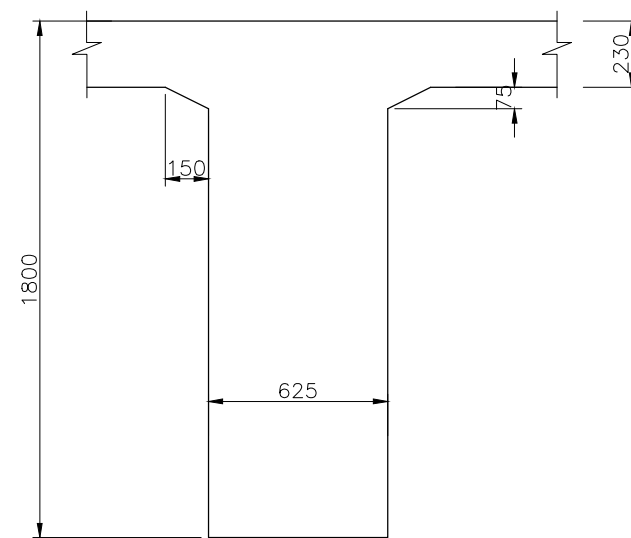
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	TITLE :
DSR	G.Das	SG	SKC	GENERAL ARRANGEMENT DRAWING OF MINOR BRIDGE AT KM. CH.-139+915.000
<i>DSR</i>	<i>G.Das</i>	<i>SG</i>	<i>SKC</i>	DRG. No. : (SHEET 01 OF 02)
SCALE :	AS SHOWN	SHEET SIZE	A2	VSP/L/1718-081/DPR/PKG-2/SEC-7/MNB-04
				REVISION: R1
				November 2020



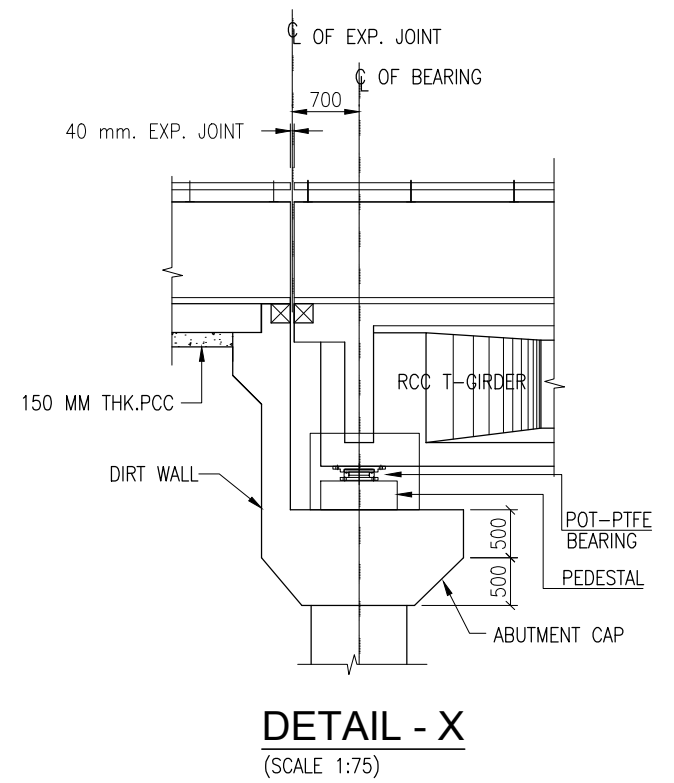
SECTION A - A
(SCALE 1:150)



RCC GIRDER AT MID SECTION
(SCALE 1:25)



RCC GIRDER AT SUPPORT SECTION
(SCALE 1:50)



DETAIL - X
(SCALE 1:75)

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GOVERNMENT OF INDIA

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MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA
(LOT-1:PACKAGE II)**

DESIGN CONSULTANT:

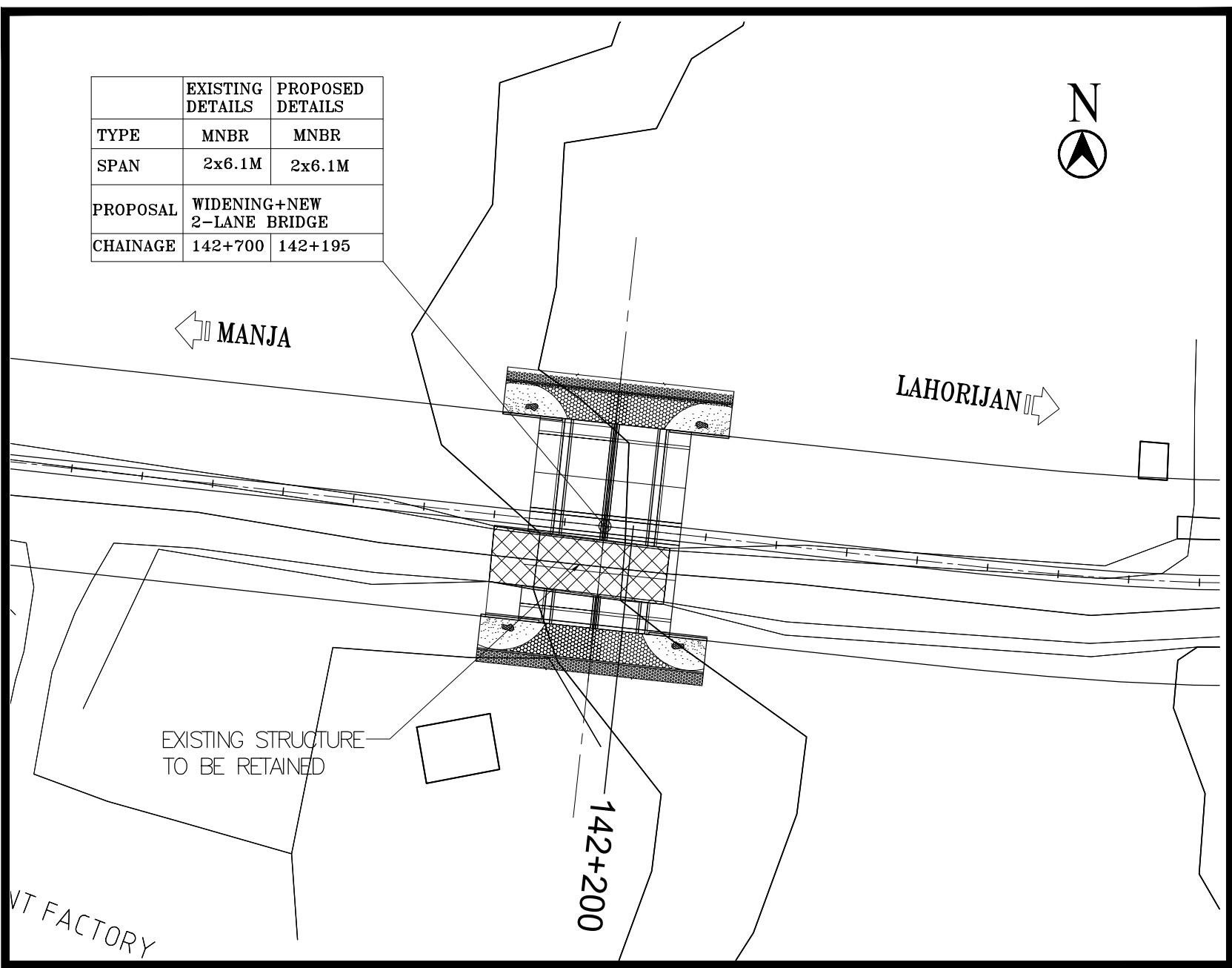
VOYANTS SOLUTIONS PVT LTD.
403, 4th Floor, Park Centra,
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Detailed Project Report

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SCALE :	AS SHOWN	SHEET SIZE	A2

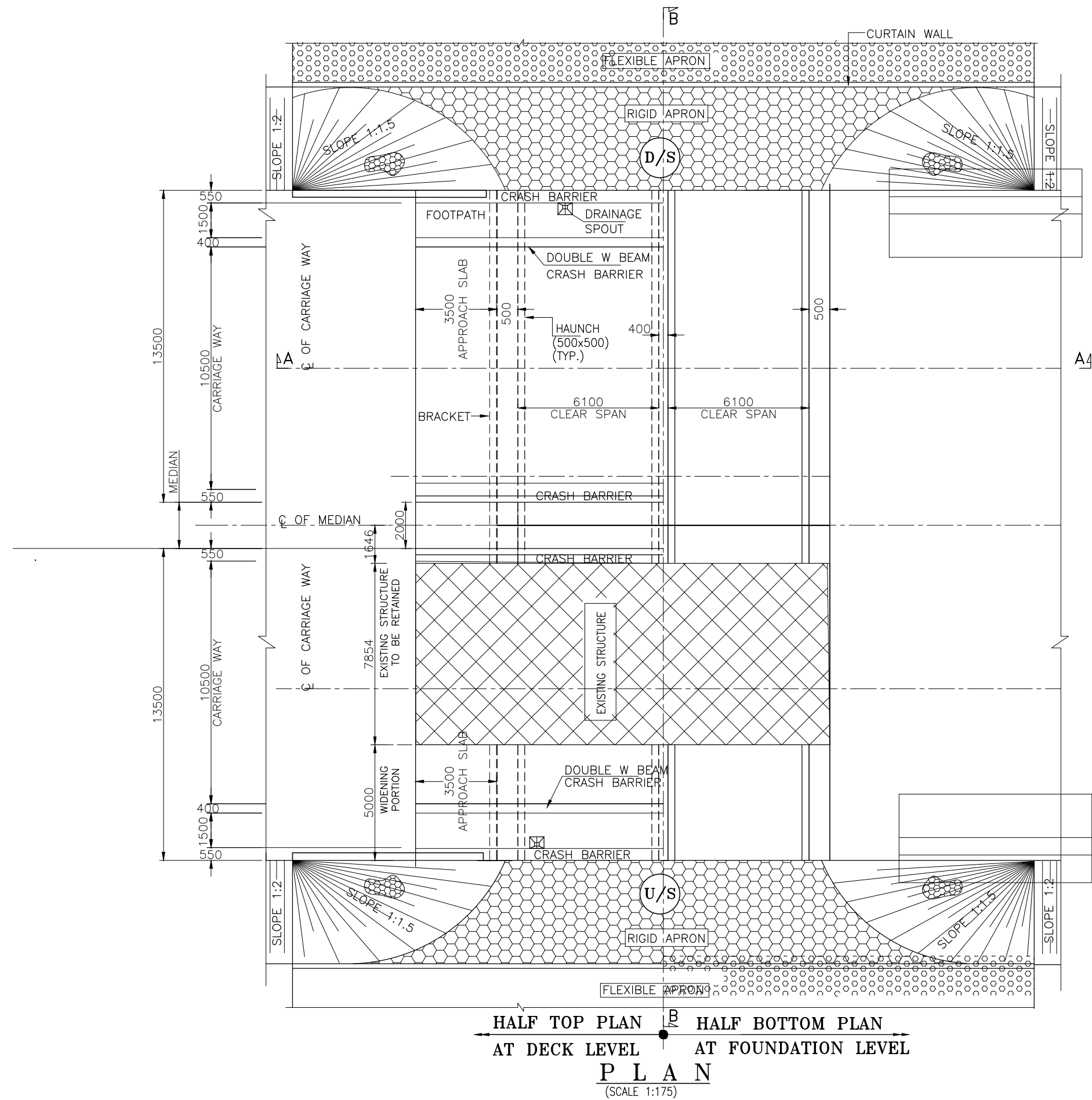
TITLE : GENERAL ARRANGEMENT DRAWING OF MINOR BRIDGE AT KM. CH.-139+915.000	
DRG. No. : VSPL/1718-081/DPR/PKG-2/SEC-7/MNB-04	(SHEET 02 OF 02)
REVISION: R1	November 2020



KEY PLAN

(SCALE-1:1000)

- ## NOTES :-
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 3. FOR KEY PLAN, PROPOSED CHAINAGE & LOCATION REFER RELEVANT HIGHWAY DRAWING.
 4. GRADE OF CONCRETE USED:
 - a) RCC BOX, RETURN WALLM35
 - b) CRASH BARRIER.....M40
 - c) APPROACH SLAB.....M30
 - d) PCC LEVELLING COURSE.....M15
 5. ALL REINFORCEMENT STEEL SHALL BE HIGH STRENGTH DEFORMED BARS OF GRADE Fe500 CONFORMING TO IS: 1786-1985
 6. THE STRUCTURE IS DESIGNED TO CATER LIVE LOAD COMBINATION OF 3-LANES OF CLASS A OR 1-LANE OF 70R WHILE + 1 LANE A OR IRC SV WHICHEVER PRODUCE SEVER EFFECT.
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 10. SOFT AND LOOSE PATCHES IN THE BEARING AREA ARE TO BE REPLACED BY COMPACTED GRANULAR FILLS WITH LAYERS NOT EXCEEDING 300MM.
 11. COMPRESSIBLE FILLER BOLD SHALL BE PROVIDED IN ALL EXPANSION GAPS AND SEALED WITH POLY-SULPHIDE SEALANT.



CLIENT :



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PROJECT :

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ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT
MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA
(LOT-1:PACKAGE II)**

DESIGN CONSULTANT:



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Detailed Project Report

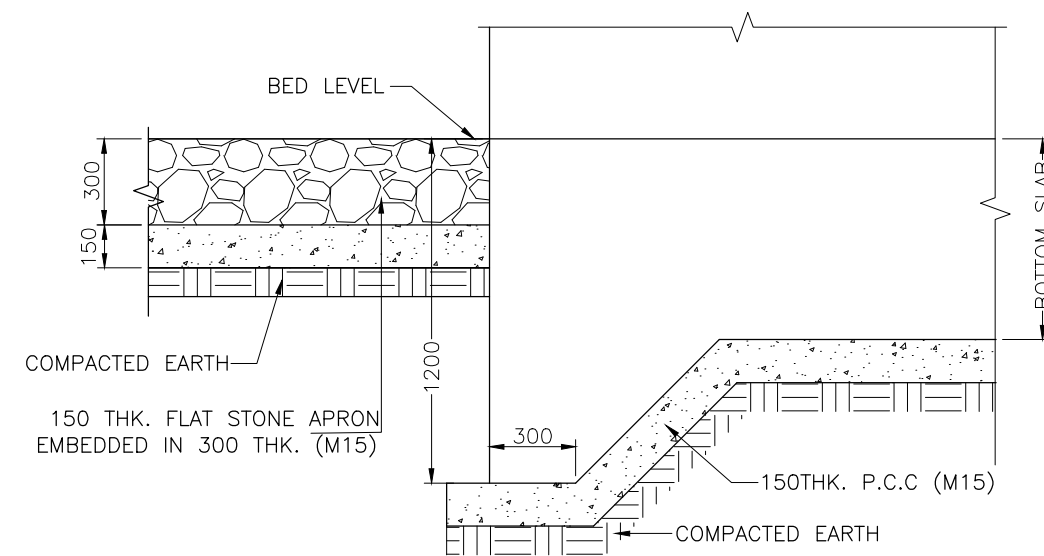
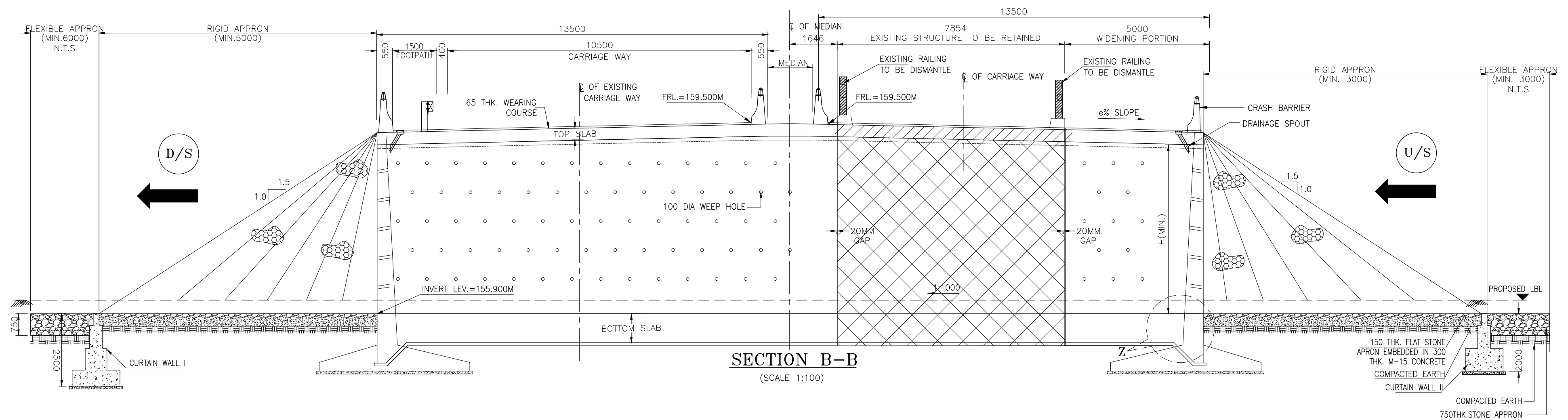
REV.	DATE	DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
DSR	SJC	SG	SKC
			
SCALE :	AS SHOWN	SHEET SIZE	A2

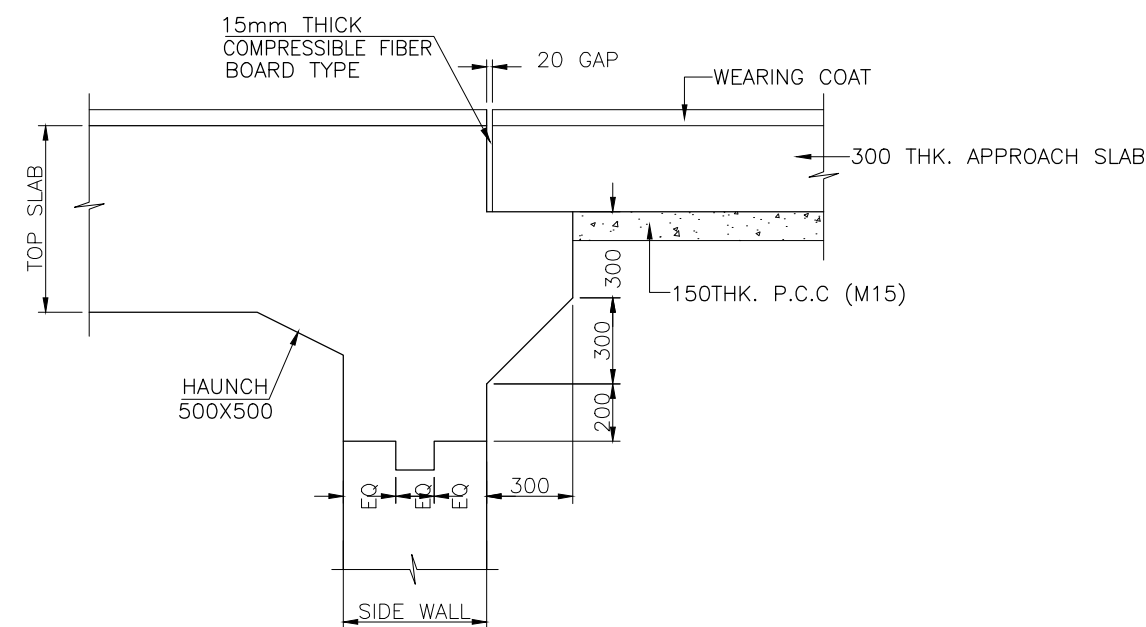
TITLE :
GENERAL ARRANGEMENT DRAWING
OF BOX TYPE MINOR BRIDGE
AT KM. CH.-142+195.000

DRG. No. : (SHEET 01 OF 02)
VSPL/1718-081/DPR/PKG-2/SEC-7/MNB-05

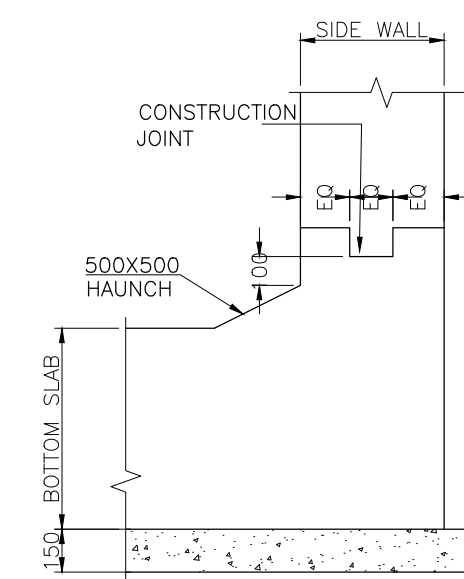
REVISION:R1	November 2020
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DETAIL 'Z'
(SCALE 1:25)



DETAIL Y
(SCALE 1:25)



DETAIL X
(SCALE 1:25)

NOTES :-

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GOVERNMENT OF INDIA

PROJECT :
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ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT
MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA
(LOT-1:PACKAGE II)**

DESIGN CONSULTANT:

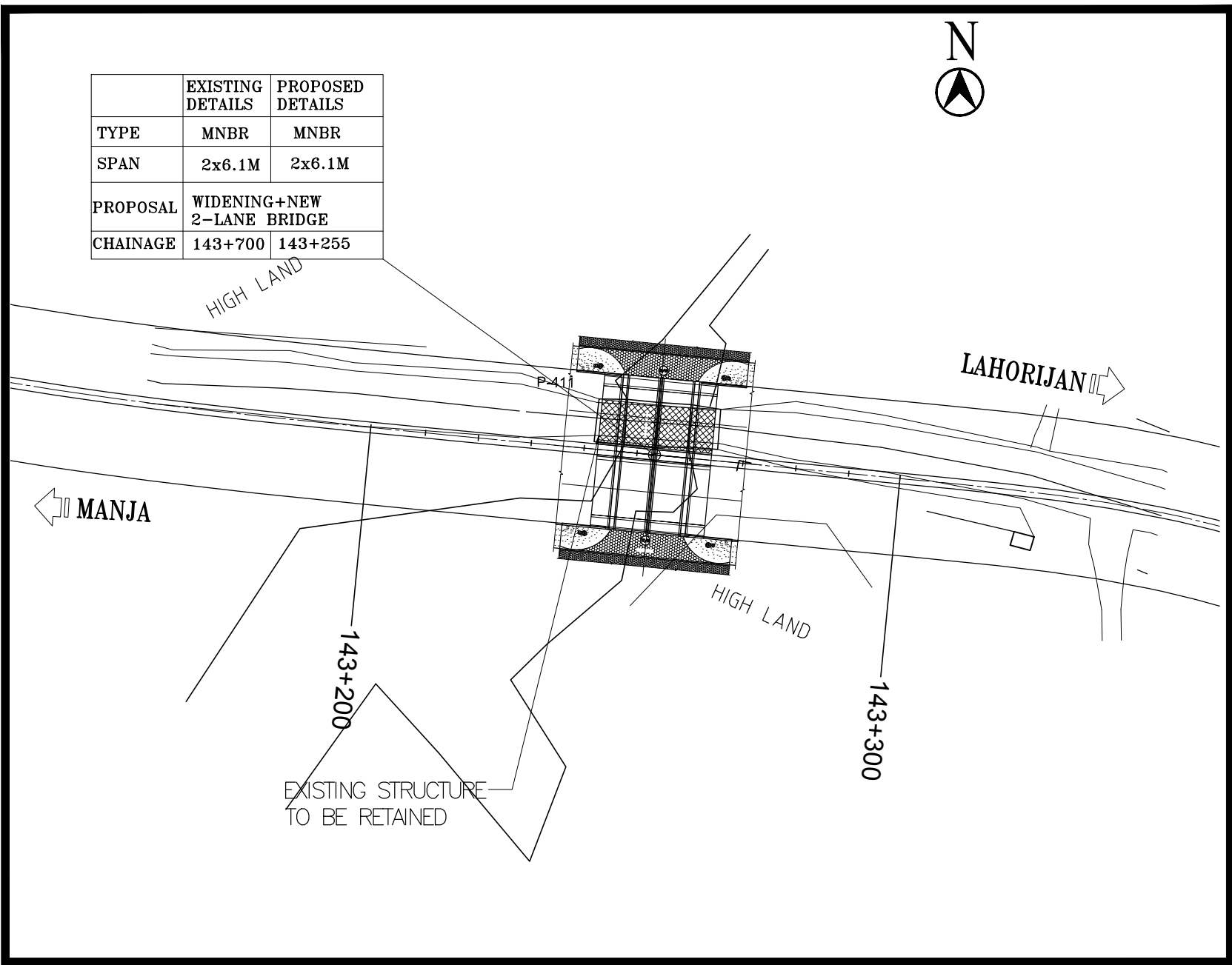
VOYANTS SOLUTIONS PVT LTD.
403, 4th Floor, Park Centra,
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Detailed Project Report

REV.	DATE	DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
DSR	SJC	SG	SKC
			
SCALE :	AS SHOWN	SHEET SIZE	A2

TITLE : GENERAL ARRANGEMENT DRAWING OF BOX TYPE MINOR BRIDGE AT KM. CH.-142+195.000	
DRG. No. : VSP/L/1718-081/DPR/PKG-2/SEC-7/MNB-05	(SHEET 02 OF 02)
REVISION:R1	November 2020



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DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
DSR	SJC	SG	SKC
			
SCALE :	AS SHOWN	SHEET SIZE	A2

TITLE : GENERAL ARRANGEMENT DRAWING OF BOX TYPE MINOR BRIDGE AT KM. CH.-143+255.000	
DRG. No. : VSPL/1718-081/DPR/PKG-2/SEC-7/MNB-06	(SHEET 01 OF 02)
REVISION:R1	November 2020

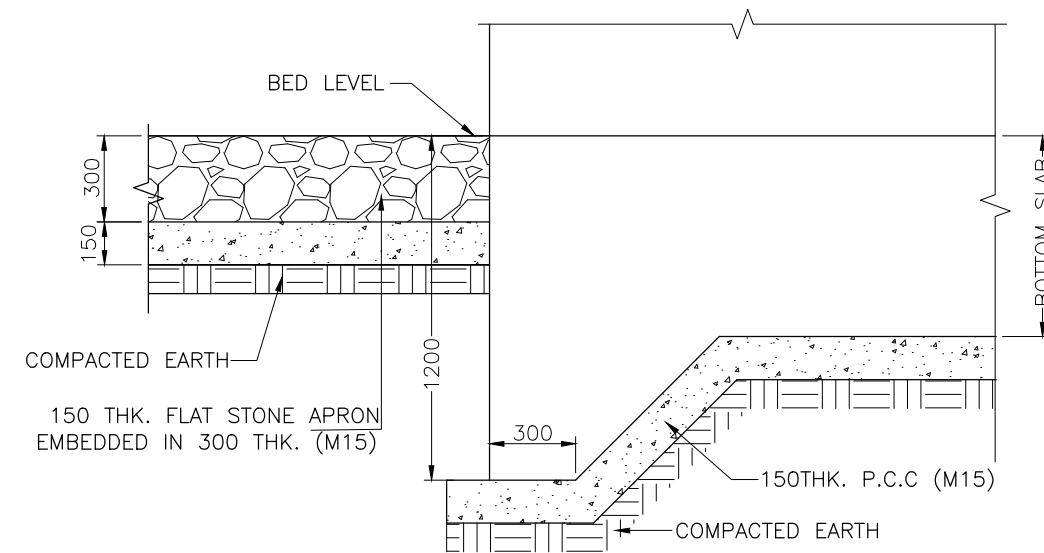
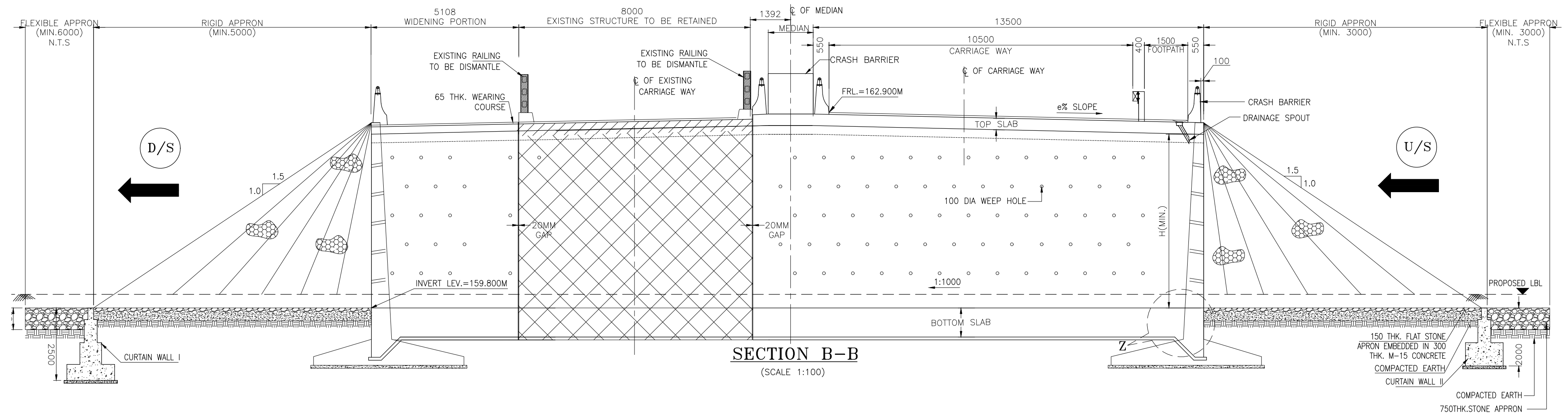
CLIENT :


NATIONAL HIGHWAYS AND INFRASTRUCTURE
DEVELOPMENT CORPORATION LTD.
(MINISTRY OF ROAD TRANSPORT AND HIGHWAYS)
GOVERNMENT OF INDIA

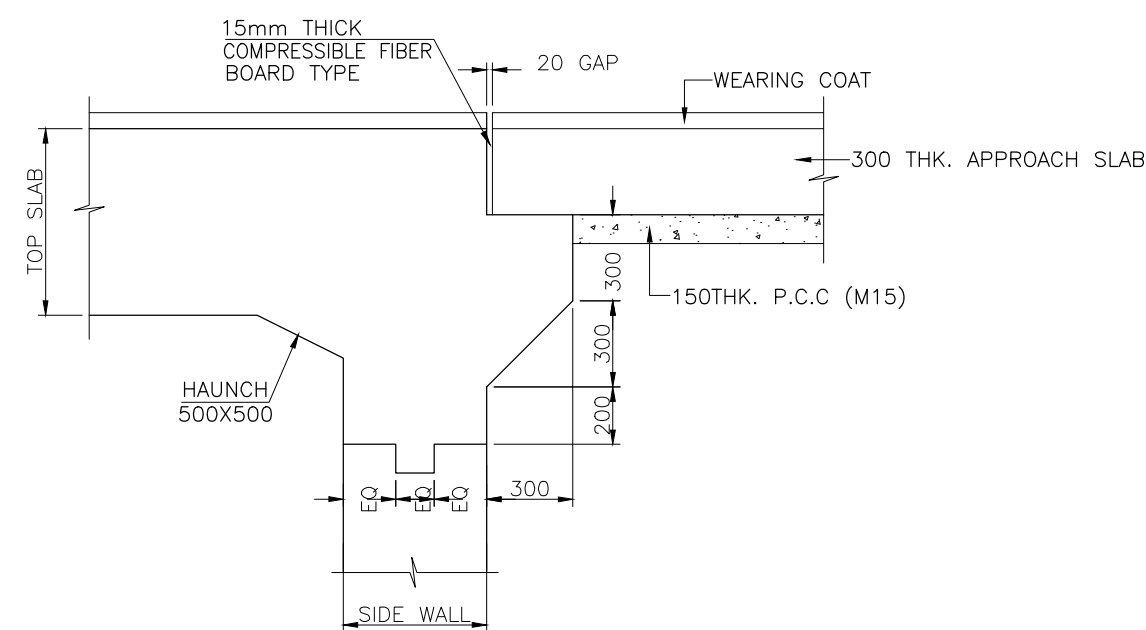
PROJECT :
**CONSULTANCY SERVICES FOR PREPARATION OF
DETAILED PROJECT REPORT FOR DEVELOPMENT OF
ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER
ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT
MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA
(LOT-1:PACKAGE II)**

DESIGN CONSULTANT:

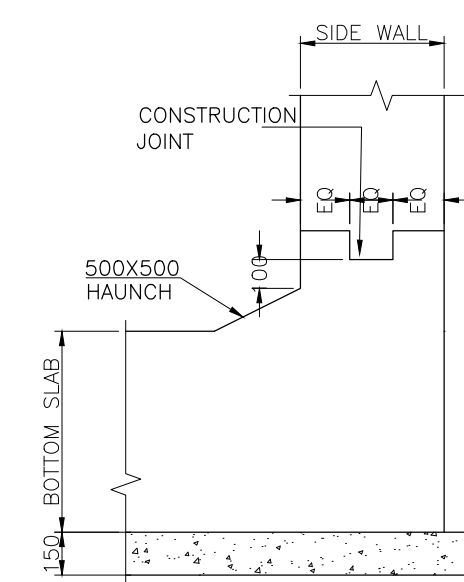
 **VOYANTS SOLUTIONS PVT LTD.**
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DETAIL 'Z'
(SCALE 1:25)



DETAIL Y
(SCALE 1:25)



DETAIL X
(SCALE 1:25)

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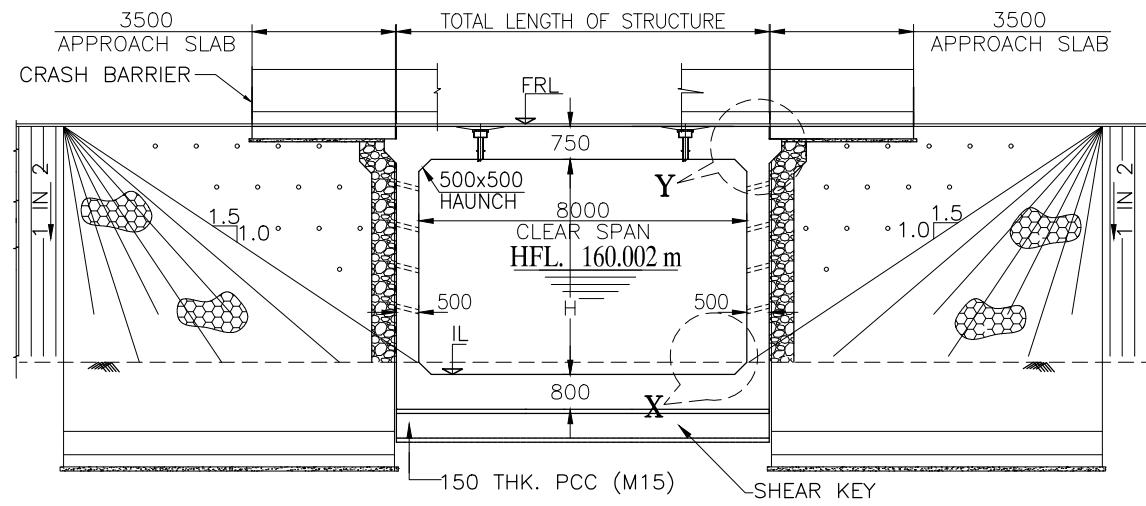
Detailed Project Report

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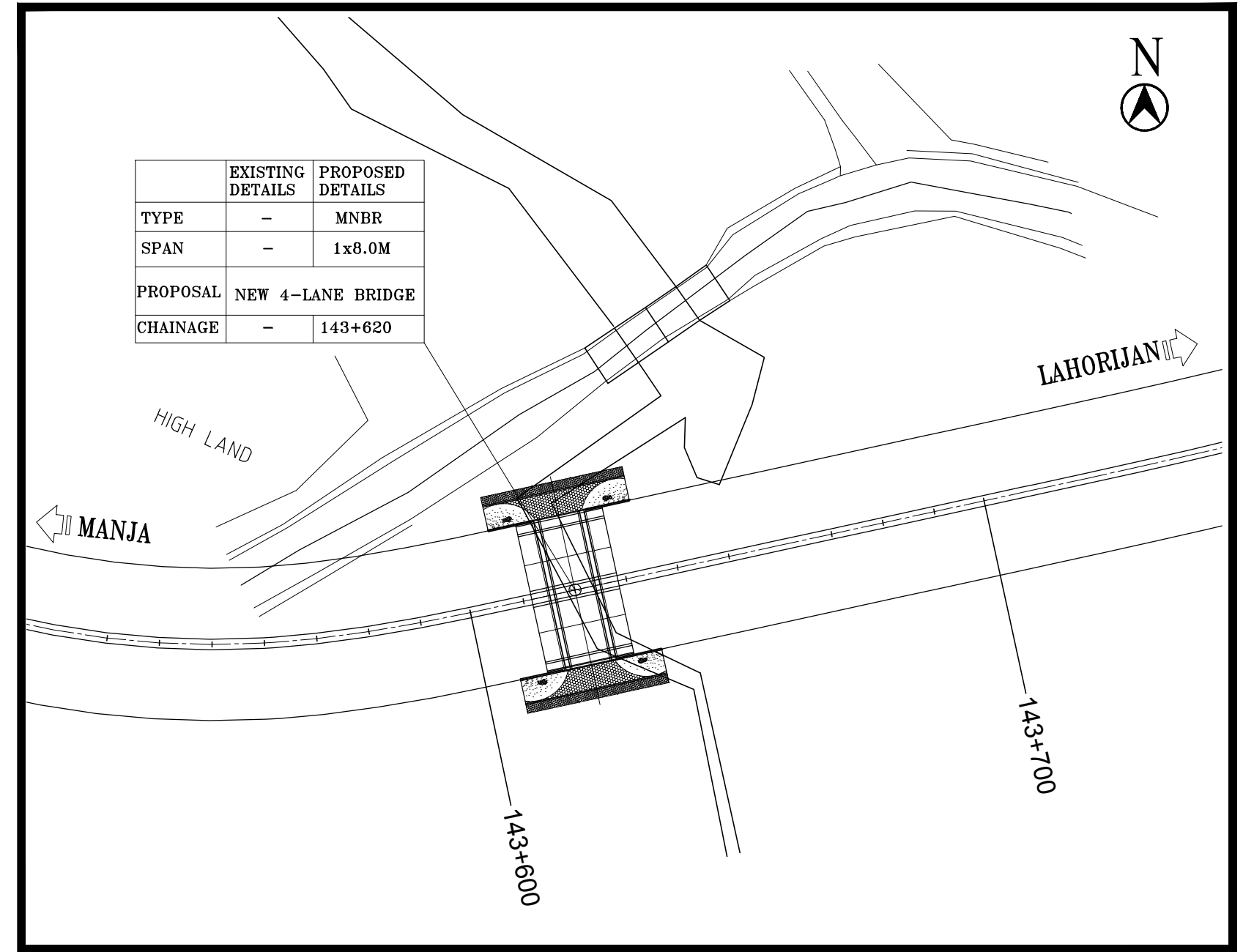
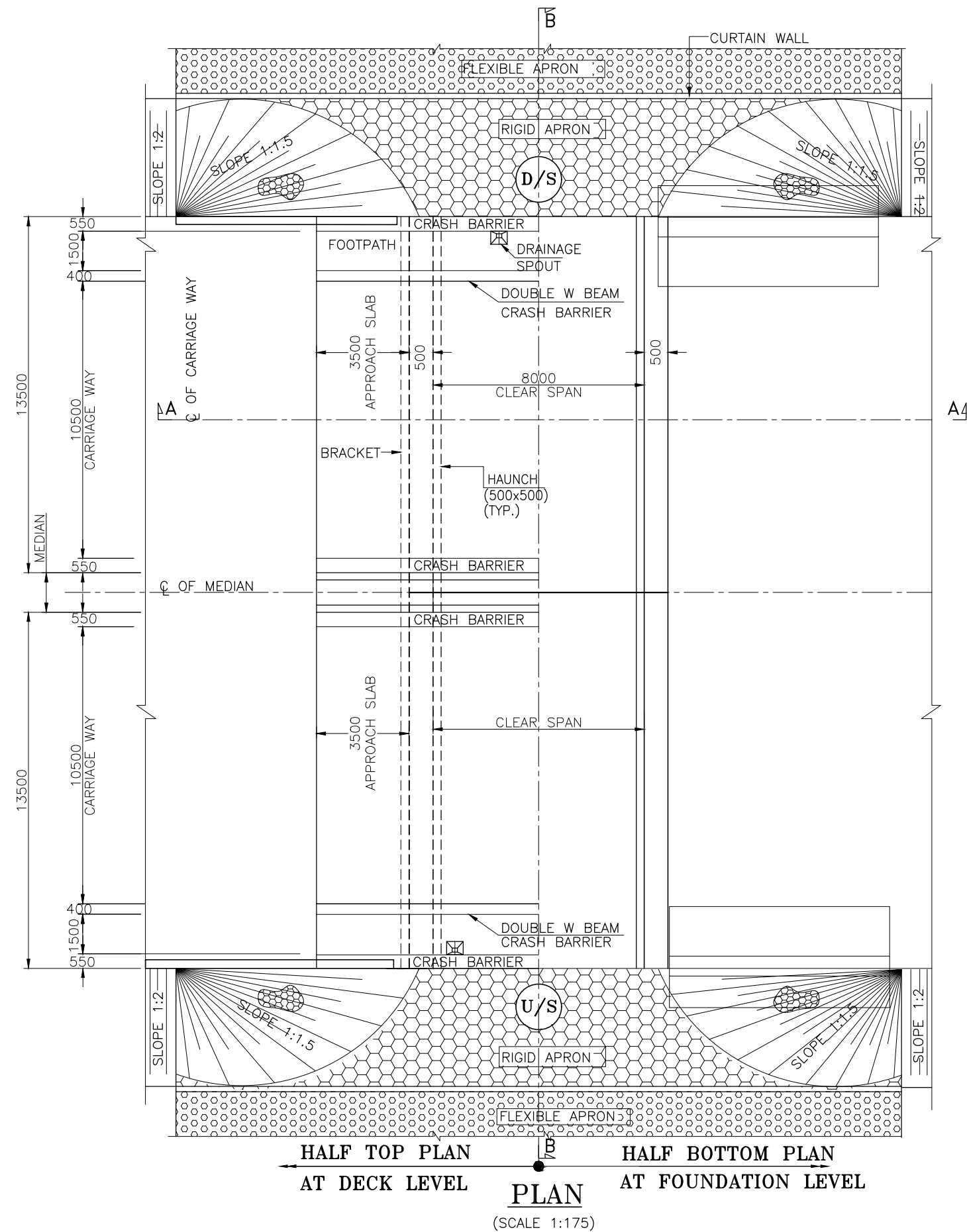
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
DSR	SJC	SG	SKC
<i>DSR</i>	<i>SJC</i>	<i>SG</i>	<i>SKC</i>
SCALE :	AS SHOWN	SHEET SIZE	A2

TITLE :	
GENERAL ARRANGEMENT DRAWING OF BOX TYPE MINOR BRIDGE AT KM. CH.-143+255.000	
DRG. No. :	(SHEET 02 OF 02)
VSP/L/1718-081/DPR/PKG-2/SEC-7/MNB-06	
REVISION:R1	November 2020

MANJA



LAHORIJAN



KEY PLAN
(SCALE-1:750)

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ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT
MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA
(LOT-1:PACKAGE II)**

DESIGN CONSULTANT:



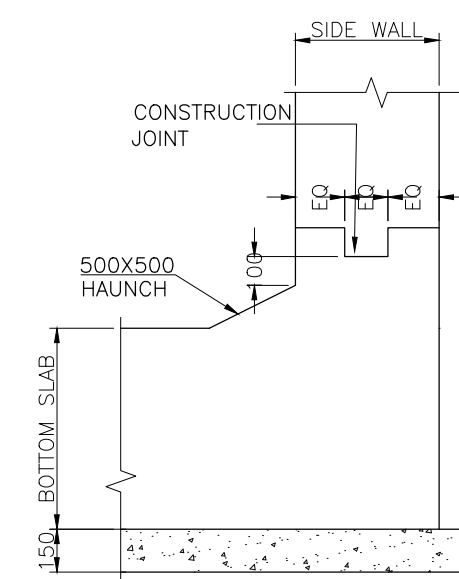
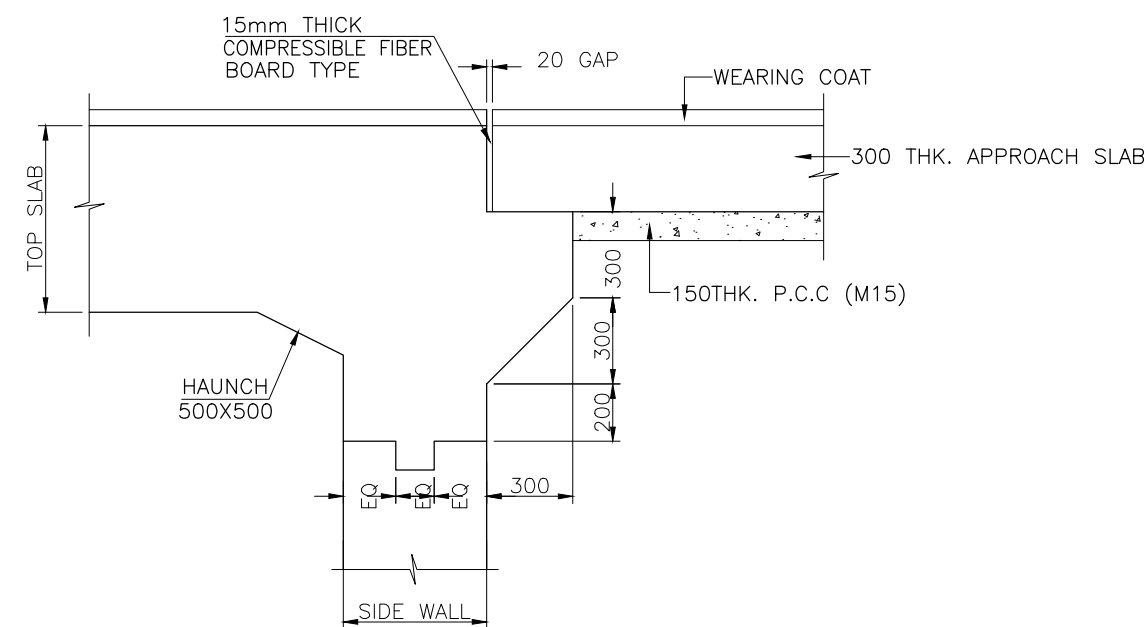
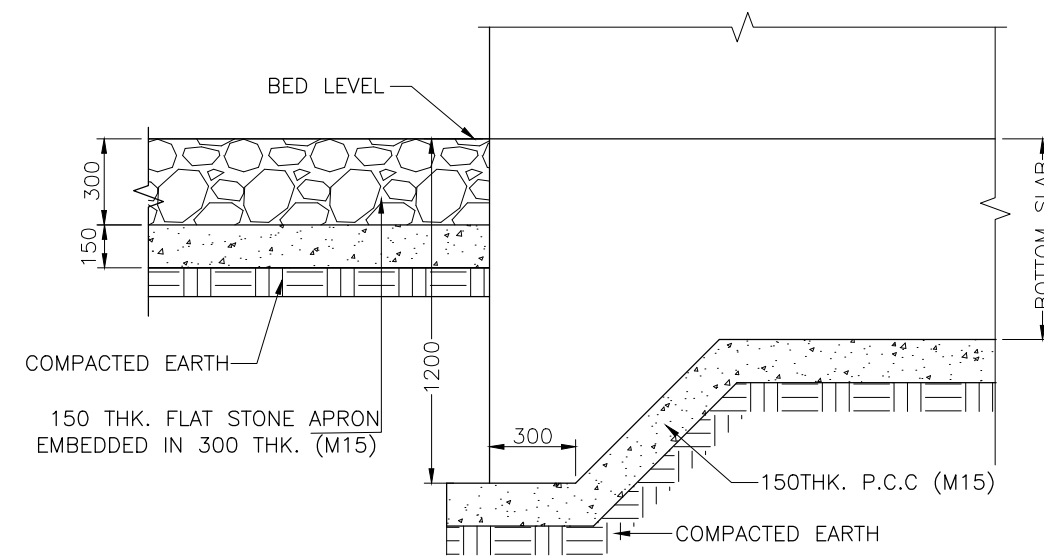
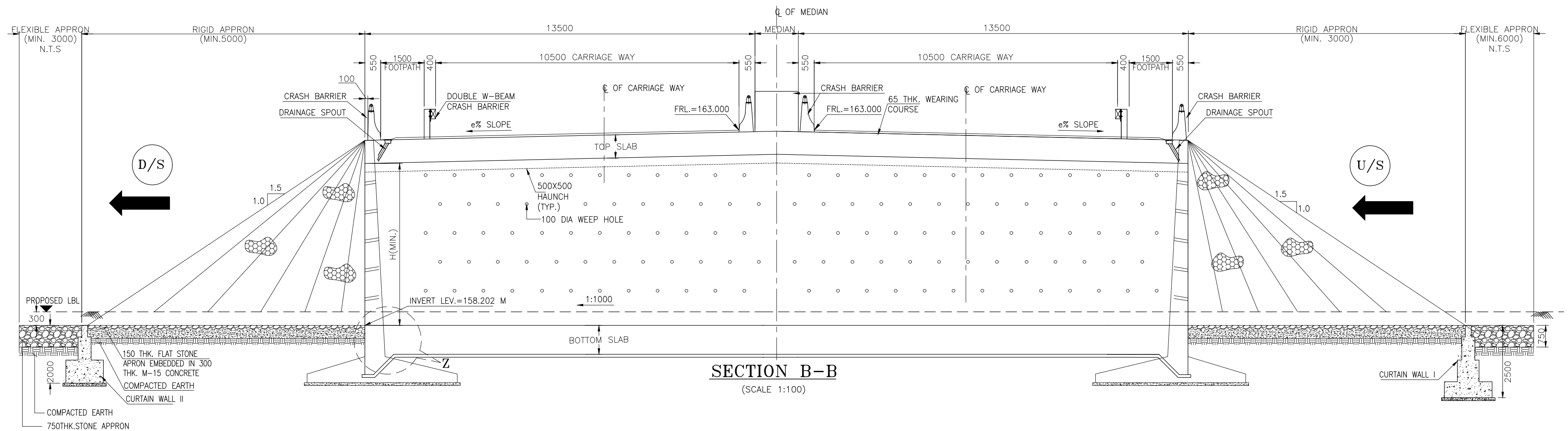
VOYANTS SOLUTIONS PVT LTD.
403, 4th Floor, Park Centra,
Sector-30, NH-8
Gurgaon-122001, Haryana, India
CIN- U74140HR2004PTC046918
Ph: 0124-4598200, Fax: 0124-4019051,
E-mail: info@voyants.in, www.voyants.in

Detailed Project Report

REV.	DATE	DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
DSR	G.Das	SG	SKC
SCALE :	AS SHOWN	SHEET SIZE	A2

TITLE : GENERAL ARRANGEMENT DRAWING OF BOX TYPE MINOR BRIDGE AT KM. CH.-143+620.00	
DRG. No. : VSPL/1718-081/DPR/PKG-2/SEC-7/MNB-07	(SHEET 01 OF 02)
REVISION:R1	November 2020



NOTES :-

1. ALL DIMENSIONS ARE IN MM AND LEVELS ARE IN M UNLESS MENTIONED OTHERWISE.
2. DIMENSIONS ARE NOT TO BE SCALED, ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. FOR KEY PLAN, PROPOSED CHAINAGE & LOCATION REFER RELEVANT HIGHWAY DRAWING.

CLIENT :

NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
(MINISTRY OF ROAD TRANSPORT AND HIGHWAYS)
GOVERNMENT OF INDIA

PROJECT :

CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1:PACKAGE II)

DESIGN CONSULTANT:

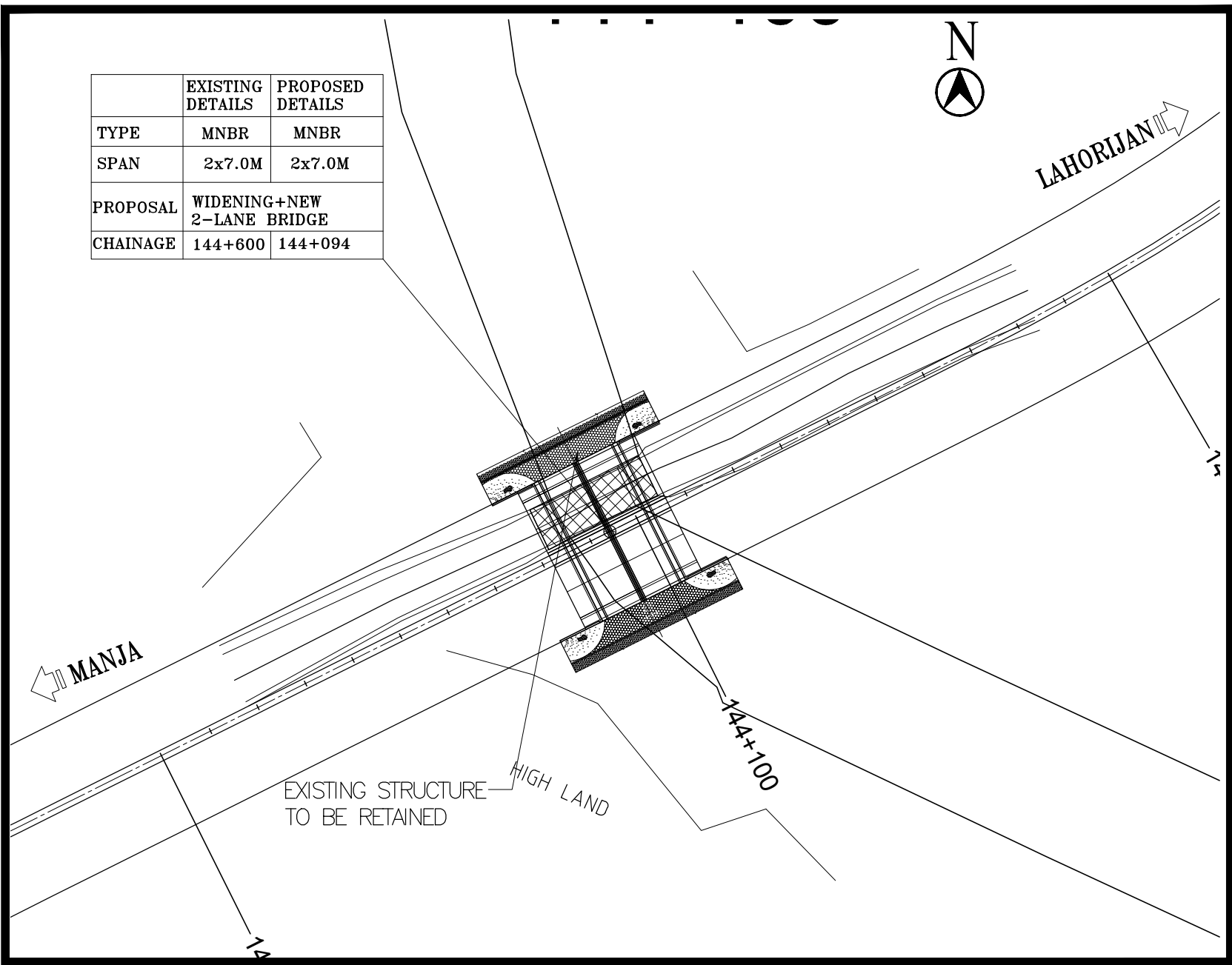
VOYANTS SOLUTIONS PVT LTD.
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Detailed Project Report

REV.	DATE	DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
DSR	G.Das	SG	SKC

TITLE :
GENERAL ARRANGEMENT DRAWING OF BOX TYPE MINOR BRIDGE AT KM. CH.-143+620.00
DRG. No. : (SHEET 02 OF 02) VSPL/1718-081/DPR/PKG-2/SEC-7/MNB-07
REVISION:R1 November 2020



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3. FOR KEY PLAN, PROPOSED CHAINAGE & LOCATION REFER RELEVANT HIGHWAY DRAWING.
4. GRADE OF CONCRETE USED:
 - a) RCC BOX, RETURN WALLM35
 - b) CRASH BARRIER.....M40
 - c) APPROACH SLAB.....M30
 - d) PCC LEVELLING COURSE.....M15
5. ALL REINFORCEMENT STEEL SHALL BE HIGH STRENGTH DEFORMED BARS OF GRADE Fe500 CONFORMING TO IS: 1786-1985
6. THE STRUCTURE IS DESIGNED TO CATER LIVE LOAD COMBINATION OF 3-LANES OF CLASS A OR 1-LANE OF 70R WHILE + 1 LANE A OR IRC SV WHICHEVER PRODUCE SEVER EFFECT.
7. VARIOUS LEVELS (FRL,EGL) & SUPER ELEVATIONS SHOWN IN DRAWINGS SHALL BE VERIFIED WITH THE HIGHWAY PLAN & PROFILE PRIOR TO ACTUAL EXECUTION IN SITE.
8. LAYING, COMPACTION & EXTENT OF BACKFILL BEHIND ABUTMENT & RETAINING WALLS SHALL CONSIST OF SELECTED EARTH CONFORMING TO THE APPENDIX-6 OF IRC:78-2014 HAVING PROPERTIES $C=0$, $\phi \geq 30^\circ$ & $DENSITY=20KN/m^3$
9. WEEP HOLES ON THE ABUTMENT & RETAINING WALLS SHALL BE SPACED 1000 C/C HORIZANTALY & VERTICALLY IN STAGGERED MANNER FROM 500MM ABOVE LWL TO HFL.
10. SOFT AND LOOSE PATCHES IN THE BEARING AREA ARE TO BE REPLACED BY COMPACTED GRANULAR FILLS WITH LAYERS NOT EXCEEDING 300MM.
11. COMPRESSIBLE FILLER BOARD SHALL BE PROVIDED IN ALL EXPANSION GAPS AND SEALED WITH POLY-SULPHIDE SEALANT.



DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
DSR	SJC	SG	SKC
			
SCALE :	AS SHOWN	SHEET SIZE	A2

TITLE : GENERAL ARRANGEMENT DRAWING OF BOX TYPE MINOR BRIDGE AT KM. CH.-144+094.00	
DRG. No. : VSPL/1718-081/DPR/PKG-2/SEC-7/MNB-08	(SHEET 01 OF 02)
REVISION:R1	November 2020

CLIENT :

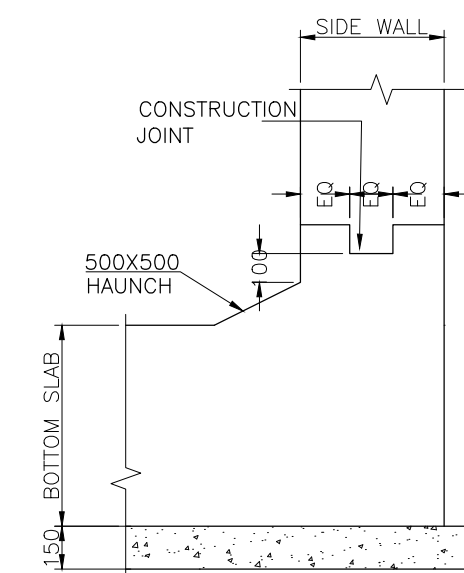
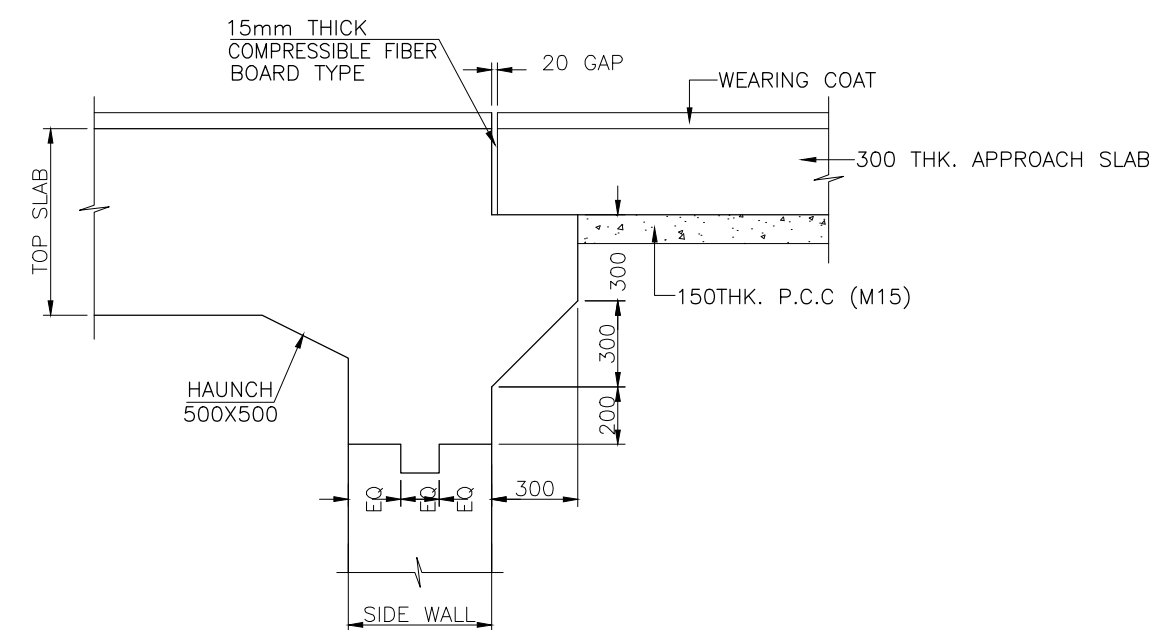
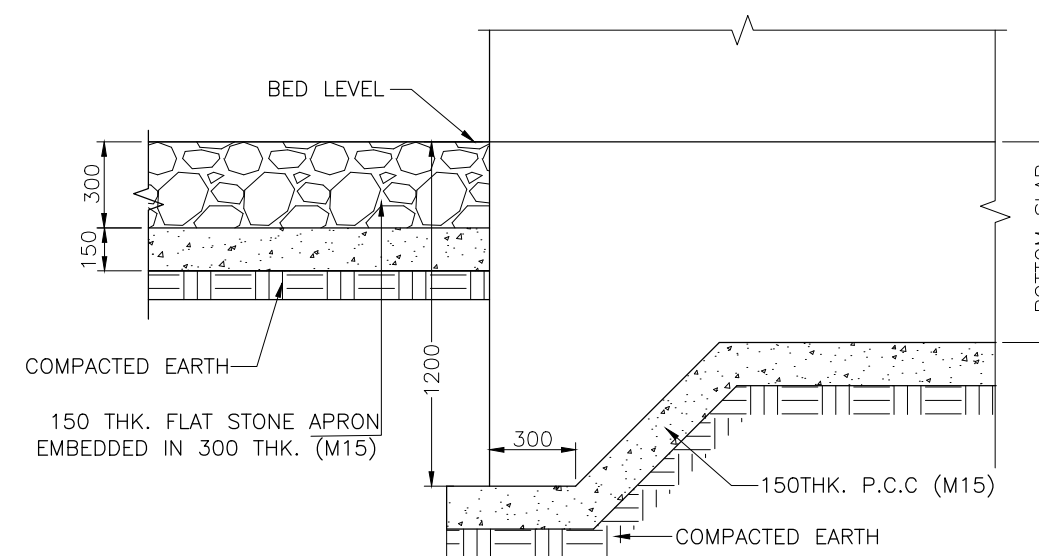
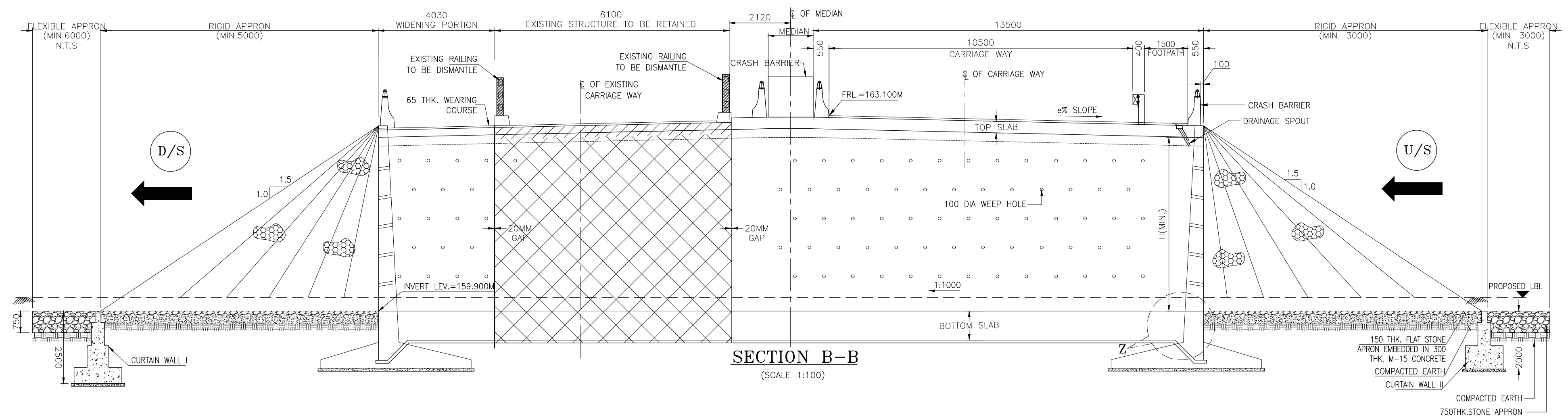

NATIONAL HIGHWAYS AND INFRASTRUCTURE
DEVELOPMENT CORPORATION LTD.
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GOVERNMENT OF INDIA

PROJECT :
**CONSULTANCY SERVICES FOR PREPARATION OF
DETAILED PROJECT REPORT FOR DEVELOPMENT OF
ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER
ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT
MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA
(LOT-1:PACKAGE II)**

DESIGN CONSULTANT:

 **VOYANTS**
PARTNERING FIDELITY

VOYANTS SOLUTIONS PVT LTD.
403, 4th Floor, Park Centra,
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(LOT-1:PACKAGE II)**

DESIGN CONSULTANT:

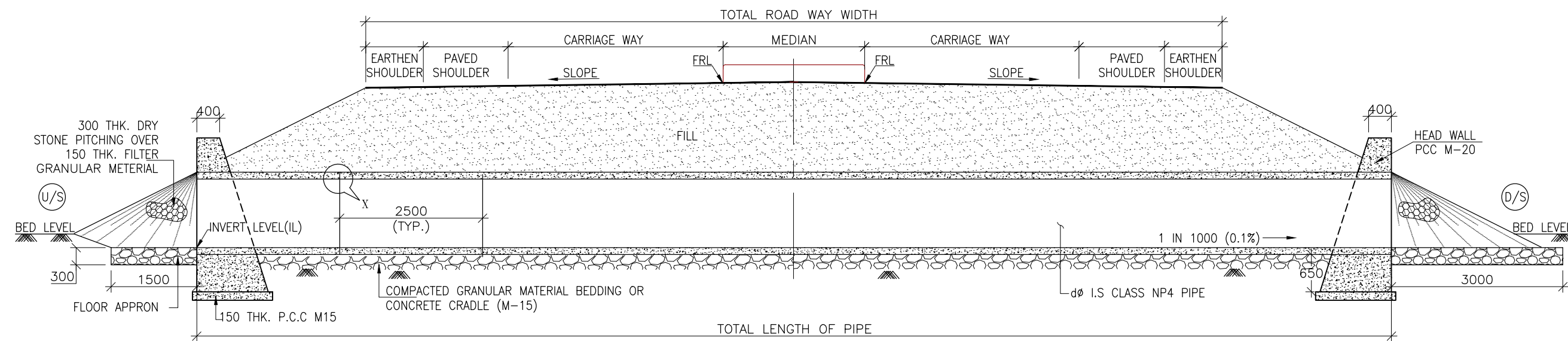


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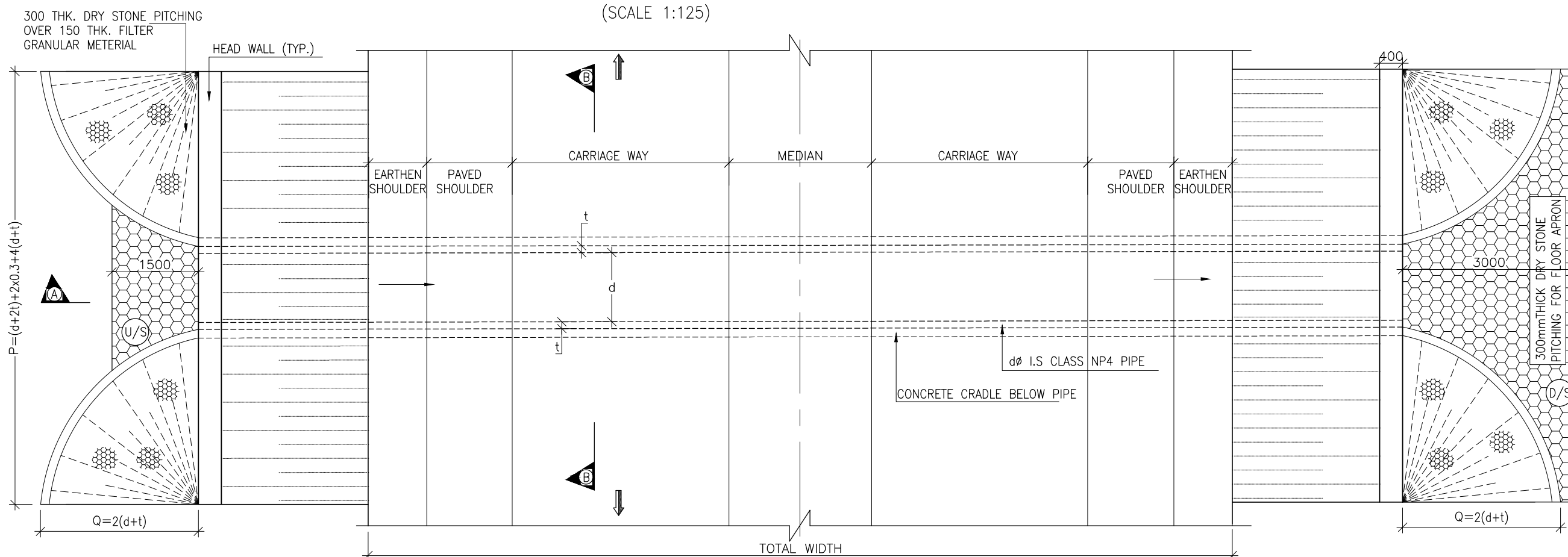
Detailed Project Report

REV.	DATE	DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	TITLE : GENERAL ARRANGEMENT DRAWING OF BOX TYPE MINOR BRIDGE AT KM. CH.-144+094.00
DSR	SJC	SG	SKC	
				
SCALE : AS SHOWN		SHEET SIZE	A2	DRG. No. : (SHEET 02 OF 02) VSP/L/1718-081/DPR/PKG-2/SEC-7/MNB-08
				REVISION:R1 November 2020

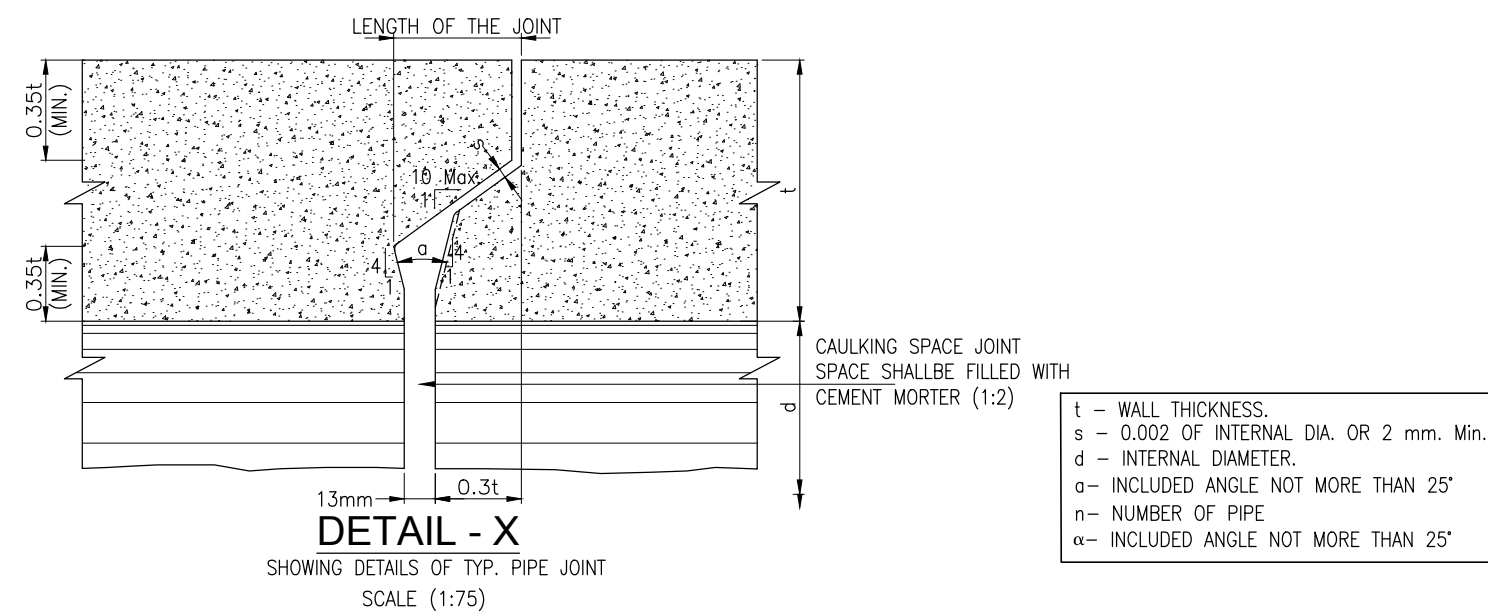


SECTION AT A-A
(SCALE 1:125)



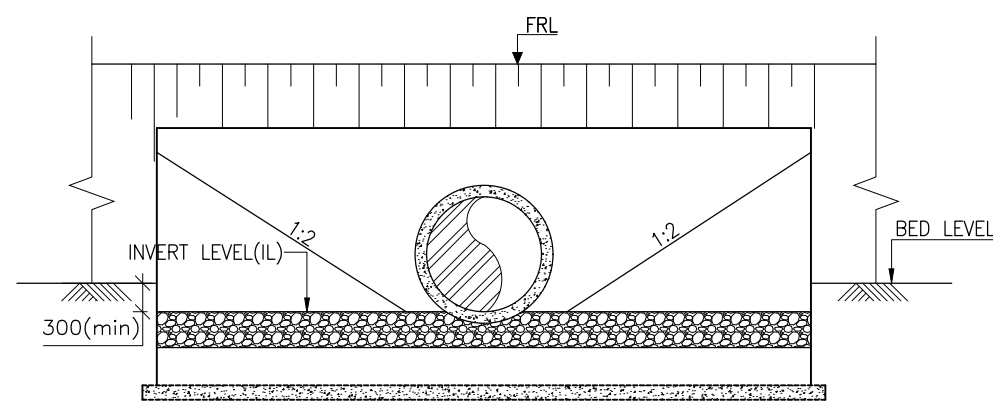
WHERE d=INTERNAL DIAMETER OF PIPE
t=THICKNESS OF PIPE

P L A N
(SCALE 1:125)



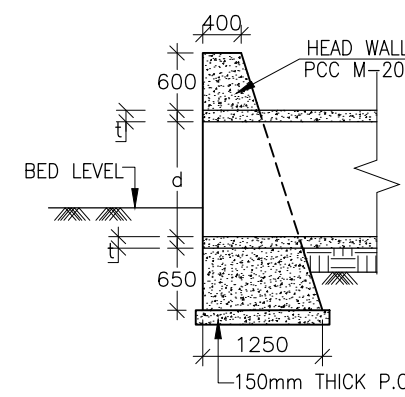
DETAIL - X

SHOWING DETAILS OF TYP. PIPE JOINT
SCALE (1:75)



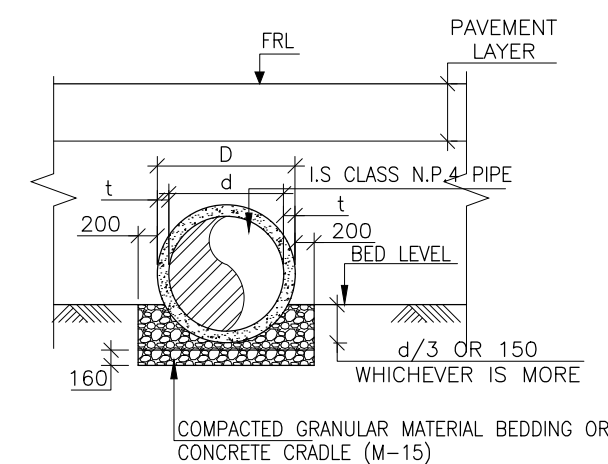
SECTION AT C-C

SCALE (1:75)



**SECTION OF HEADWALL
(OVER PIPE)**

SCALE (1:75)



SECTION AT B-B

SCALE (1:75)

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4. HUME PIPE (NP4 TYPE), SHALL CONFORM TO IS : 458-2003.
5. COMPACTED GRANULAR BED SHALL CONFORM TO MORT&H SPECIFICATION CLAUSE NO.2904.
6. LONGITUDINAL SLOPE OF WIDENED PIPE SHALL BE 1 : 1000 (MIN.)
7. LENGTH, LOCATION, ORIENTATION & INVERT LEVEL OF PIPE CULVERT SHALL BE ADJUSTED TO SUIT SITE CONDITION AND AS APPROVED BY THE ENGINEER.
8. TRENCHES SHALL BE BACKFILLED IMMEDIATELY AFTER THE PIPES HAVE BEEN LAID AND THE JOINTING MATERIAL HAS HARDENED.
9. PIPE SHALL BE JOINTED BY FLUSH JOINT METHOD AS PER THE DETAILS GIVEN IN SECTION 2906 OF MORT&H SPECIFICATIONS OF ROAD & BRIDGE WORKS.
10. FLOOR APRON SHALL BE PROVIDED AT NON-IRRIGATION CROSS DRAINAGE WORKS ONLY.

CLIENT :



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DEVELOPMENT CORPORATION LTD.**
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PROJECT :

**CONSULTANCY SERVICES FOR PREPARATION OF
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ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER
ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT
MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA
(LOT-1:PACKAGE II)**

DESIGN CONSULTANT:



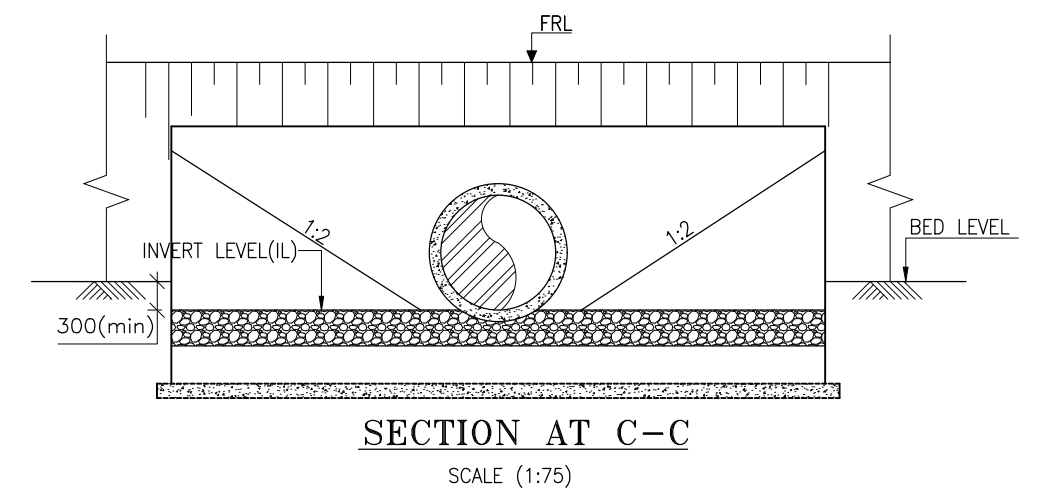
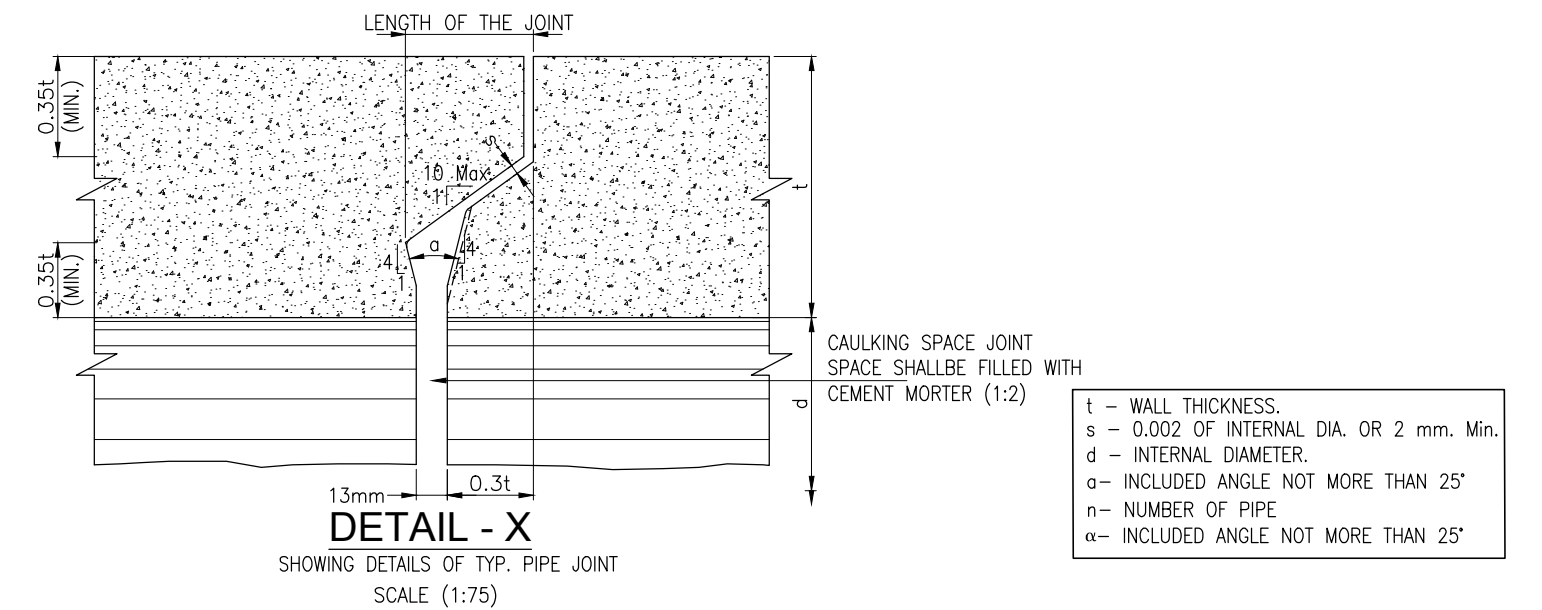
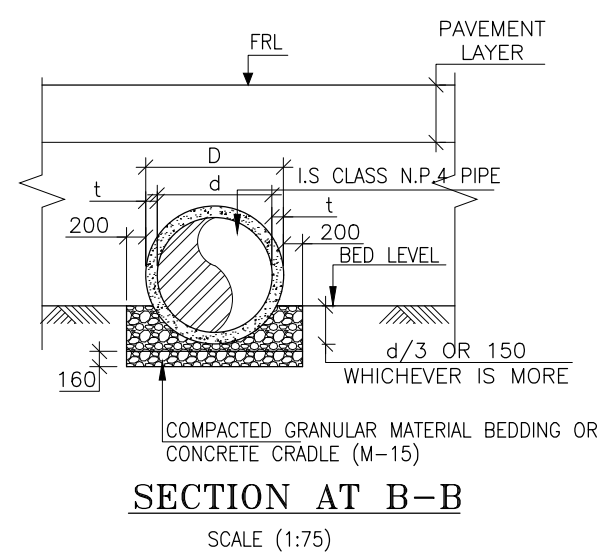
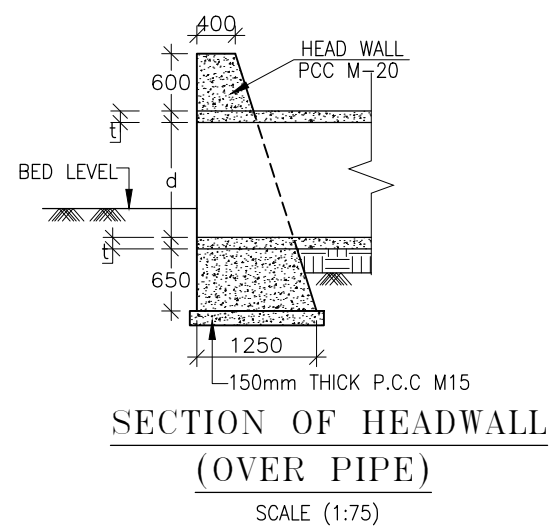
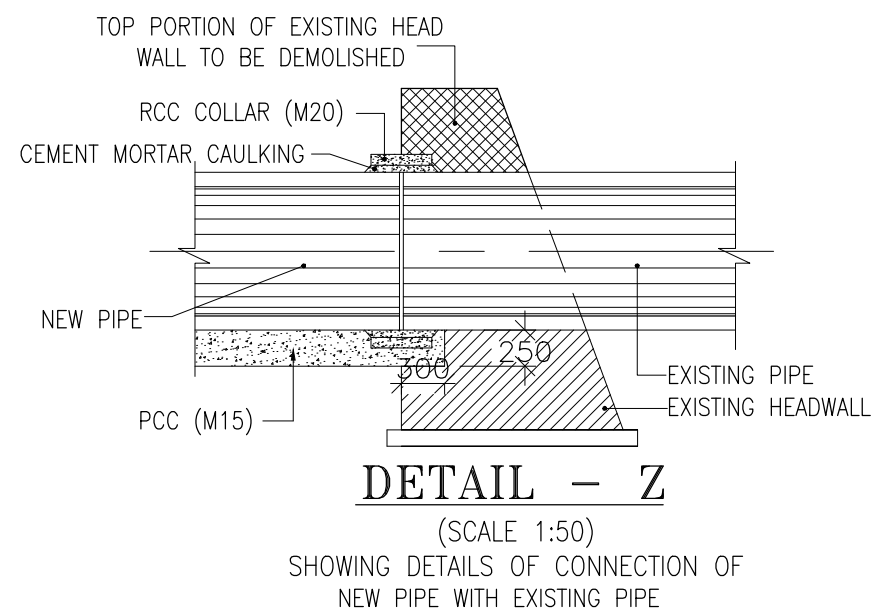
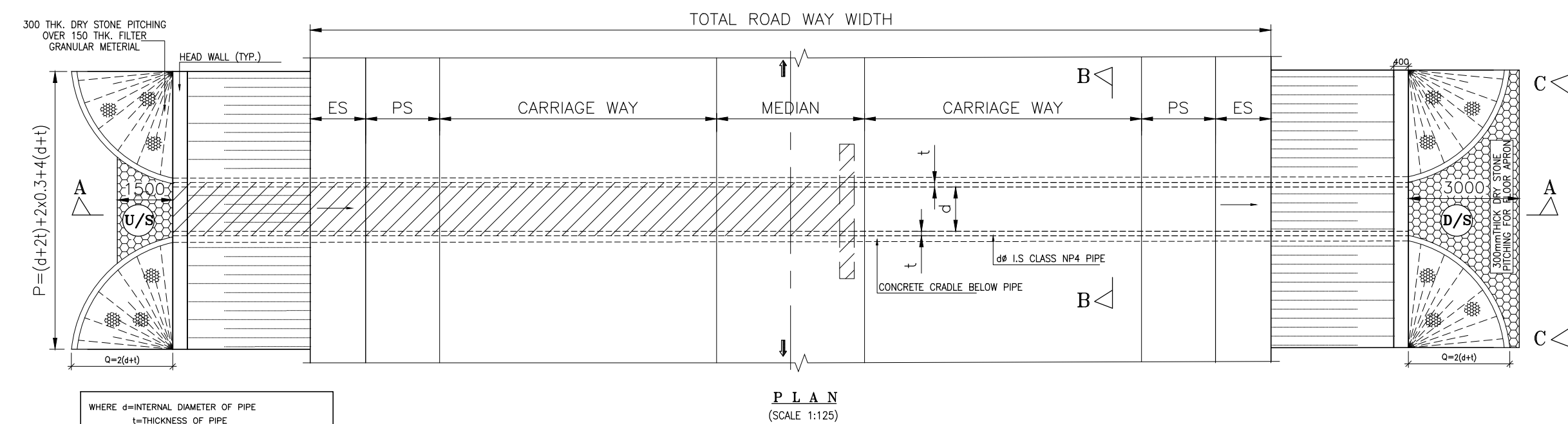
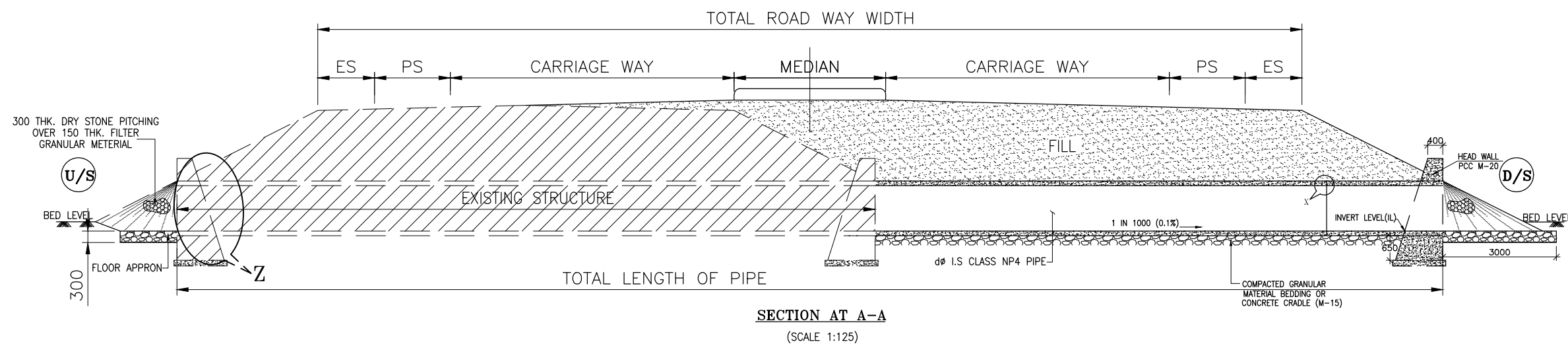
VOYANTS SOLUTIONS PVT LTD.
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CIN- U74140HR2004PTC046918
Ph: 0124-4598200, Fax: 0124-4019051,
E-mail: info@voyants.in, www.voyants.in

Detailed Project Report

November 2020

REV. DATE DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	TITLE :
DSR	SJC	SG	SKC	TYPICAL GENERAL ARRANGEMENT DRAWING OF SINGLE CELL PIPE CULVERT (NEW CONSTRUCTION / RECONSTRUCTION)
<i>DSR</i>	<i>SJC</i>	<i>SG</i>	<i>SKC</i>	DRG. No. : VSPL/1718-081/DPR/PKG-2/SEC-7/PC-01
SCALE :	AS SHOWN	SHEET SIZE	A2	REVISION:R1



NOTES:-

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- HUME PIPE (NP4 TYPE), SHALL CONFORM TO IS : 458-2003.
- COMPACTED GRANULAR BED SHALL CONFORM TO MORT&H SPECIFICATION CLAUSE NO.2904.
- LONGITUDINAL SLOPE OF WIDENED PIPE SHALL BE 1 : 1000 (MIN.)
- LENGTH, LOCATION, ORIENTATION & INVERT LEVEL OF PIPE CULVERT SHALL BE ADJUSTED TO SUIT SITE CONDITION AND AS APPROVED BY THE ENGINEER.
- TRENCHES SHALL BE BACKFILLED IMMEDIATELY AFTER THE PIPES HAVE BEEN LAID AND THE JOINTING MATERIAL HAS HARDENED.
- PIPE SHALL BE JOINTED BY FLUSH JOINT METHOD AS PER THE DETAILS GIVEN IN SECTION 2906 OF MORT&H SPECIFICATIONS OF ROAD & BRIDGE WORKS.
- FLOOR APRON SHALL BE PROVIDED AT NON-IRRIGATION CROSS DRAINAGE WORKS ONLY.

CLIENT :

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GOVERNMENT OF INDIA

PROJECT :

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ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT
MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA
(LOT-1:PACKAGE II)**

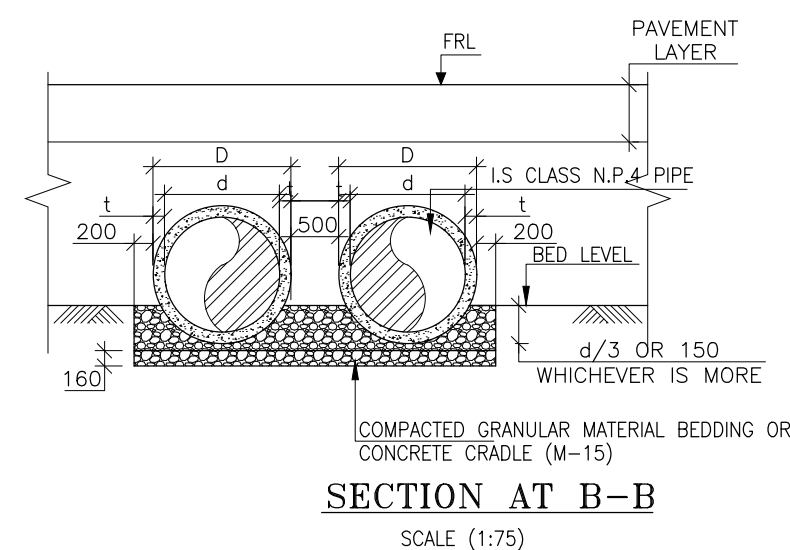
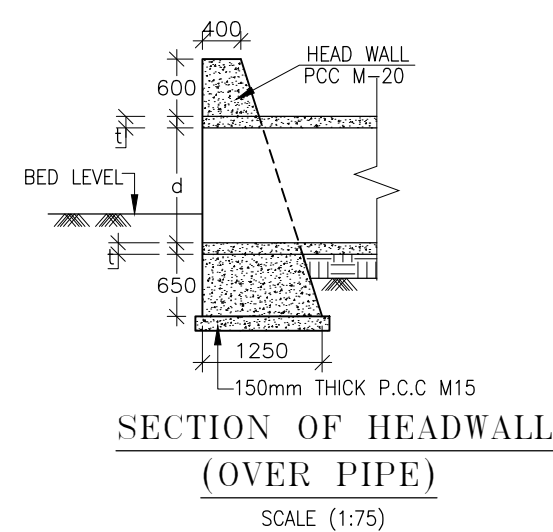
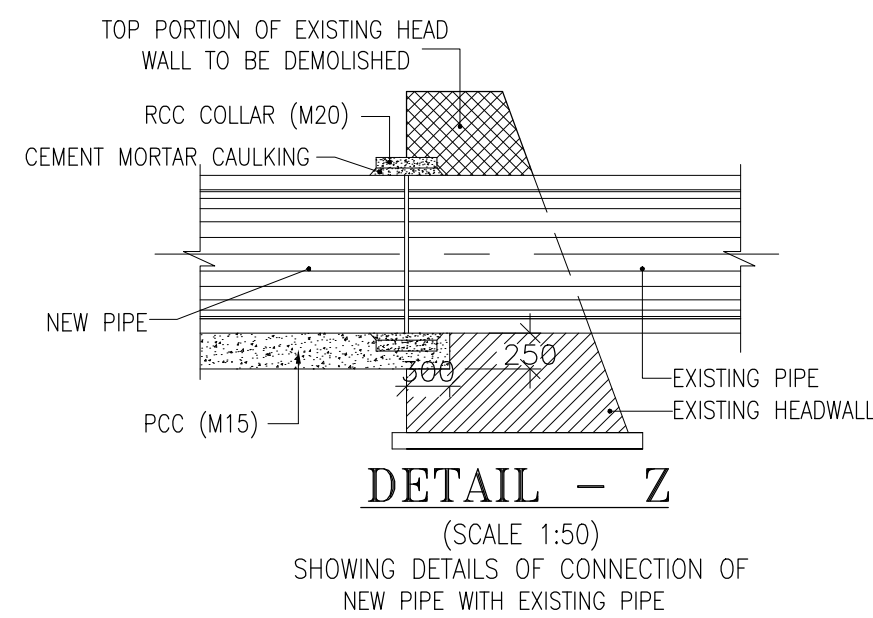
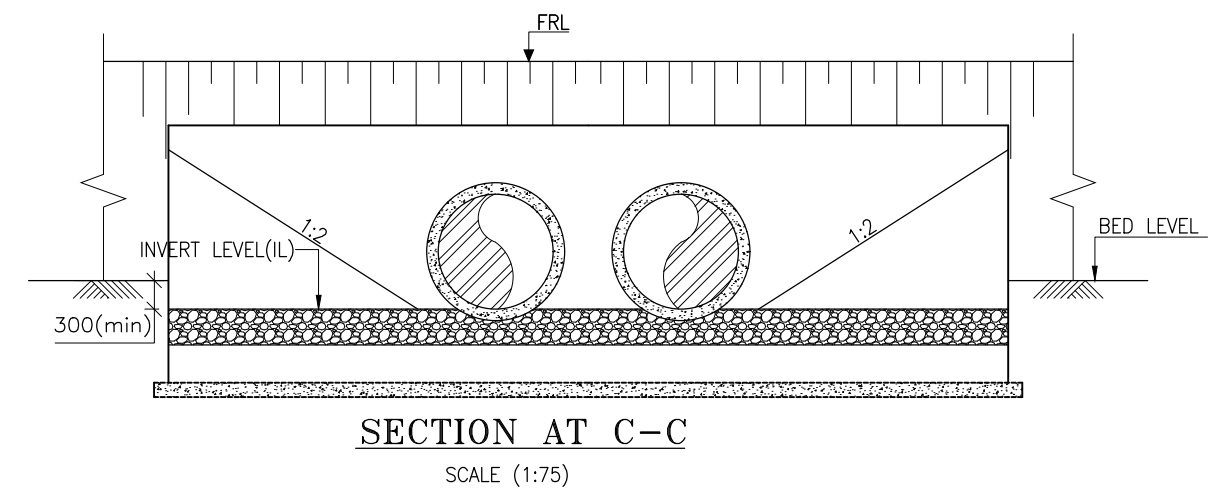
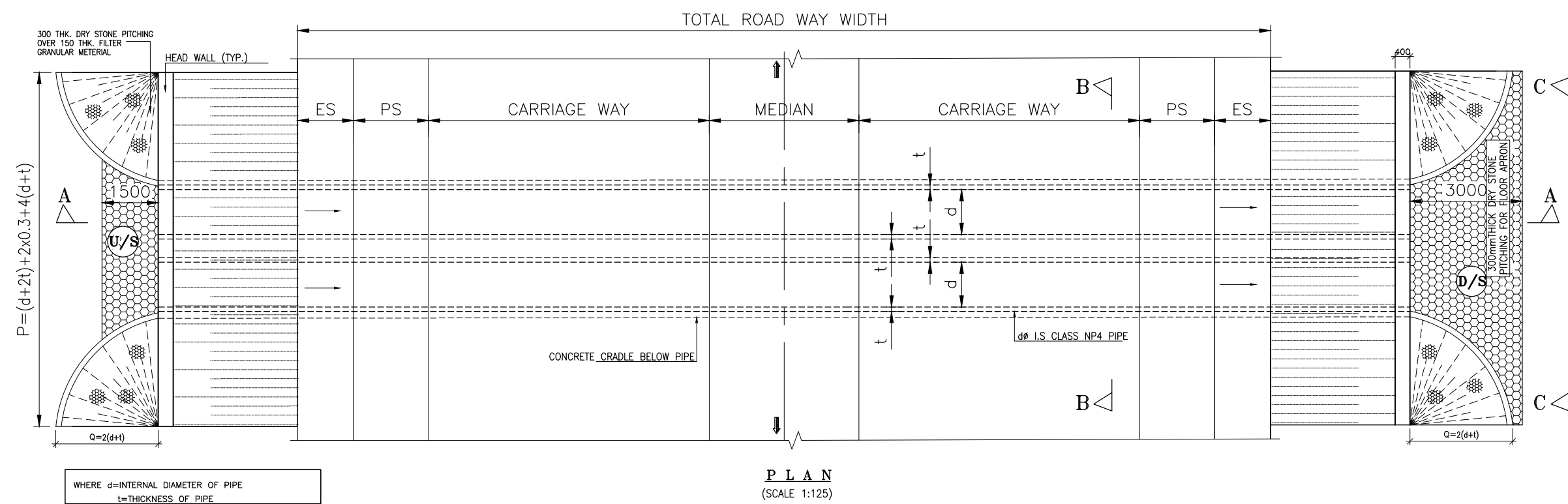
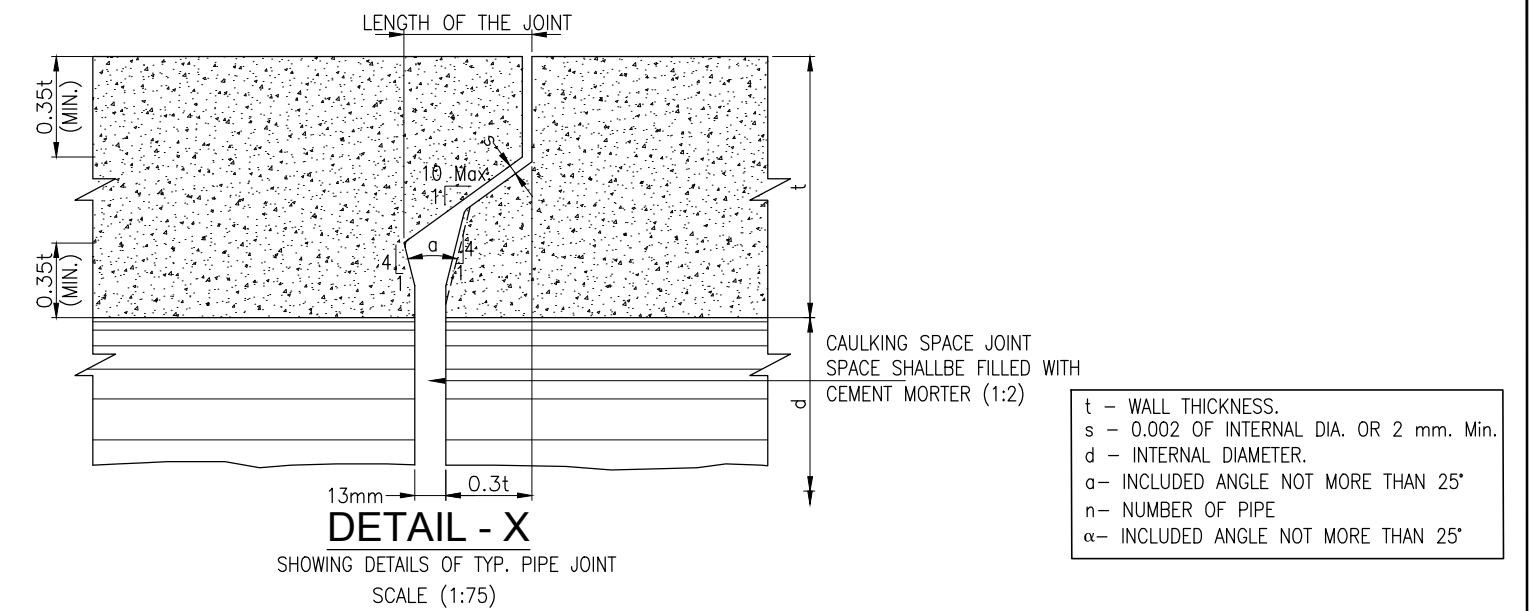
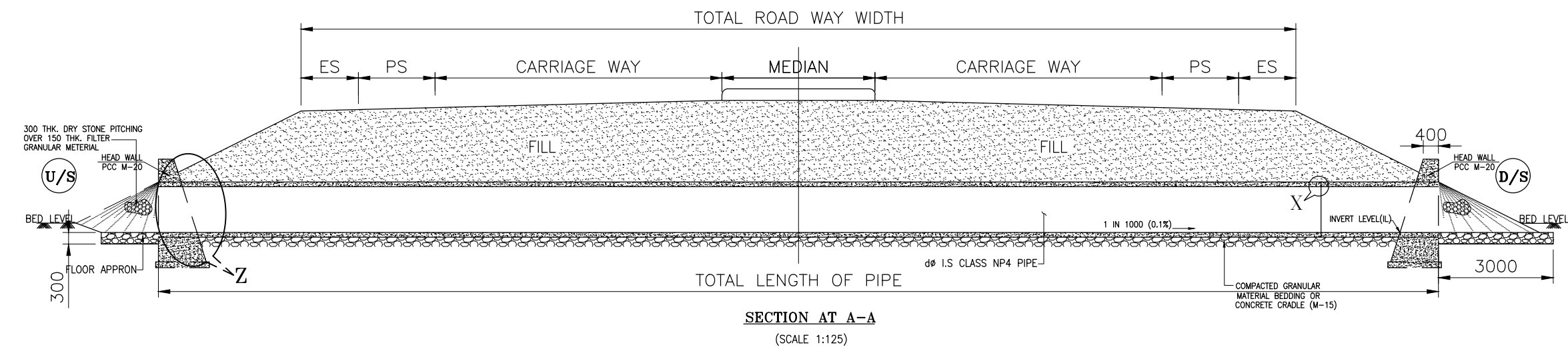
DESIGN CONSULTANT:

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Detailed Project Report

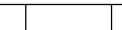
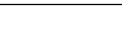
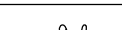
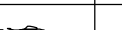
REV.	DATE	DESCRIPTION

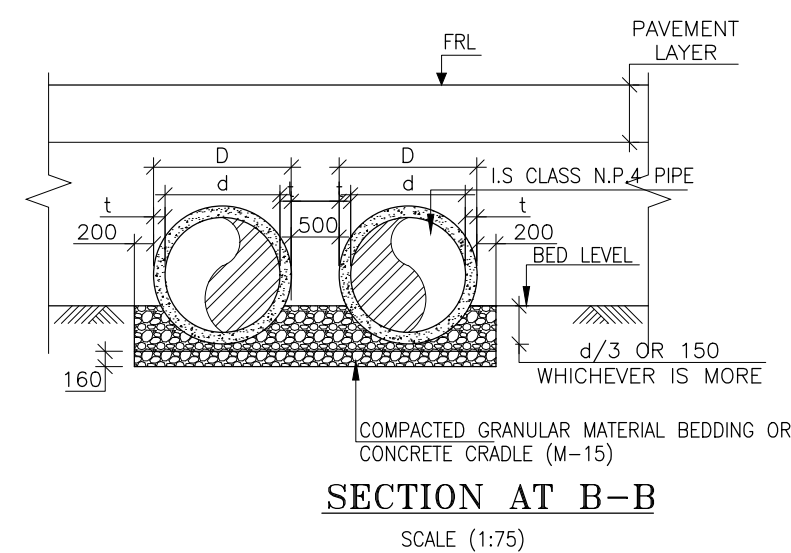
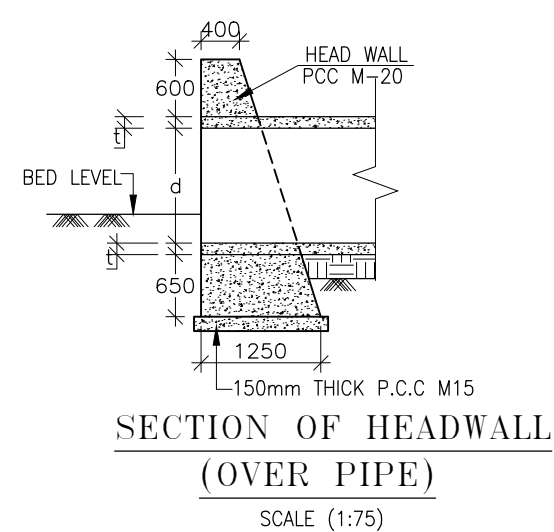
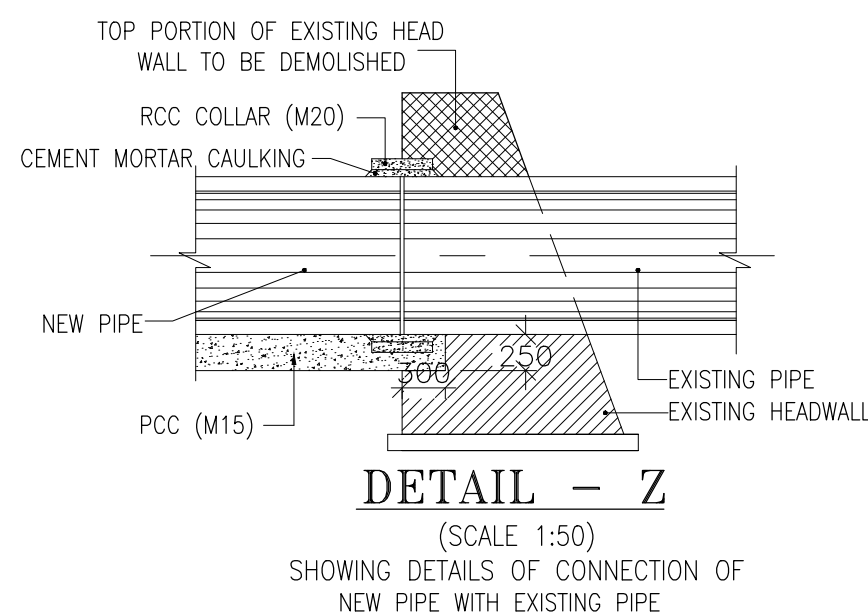
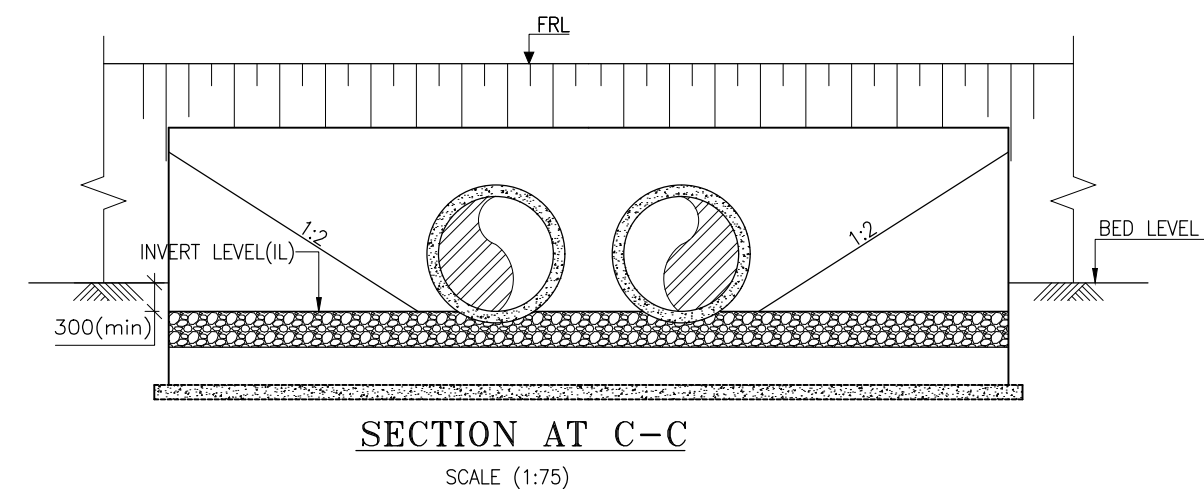
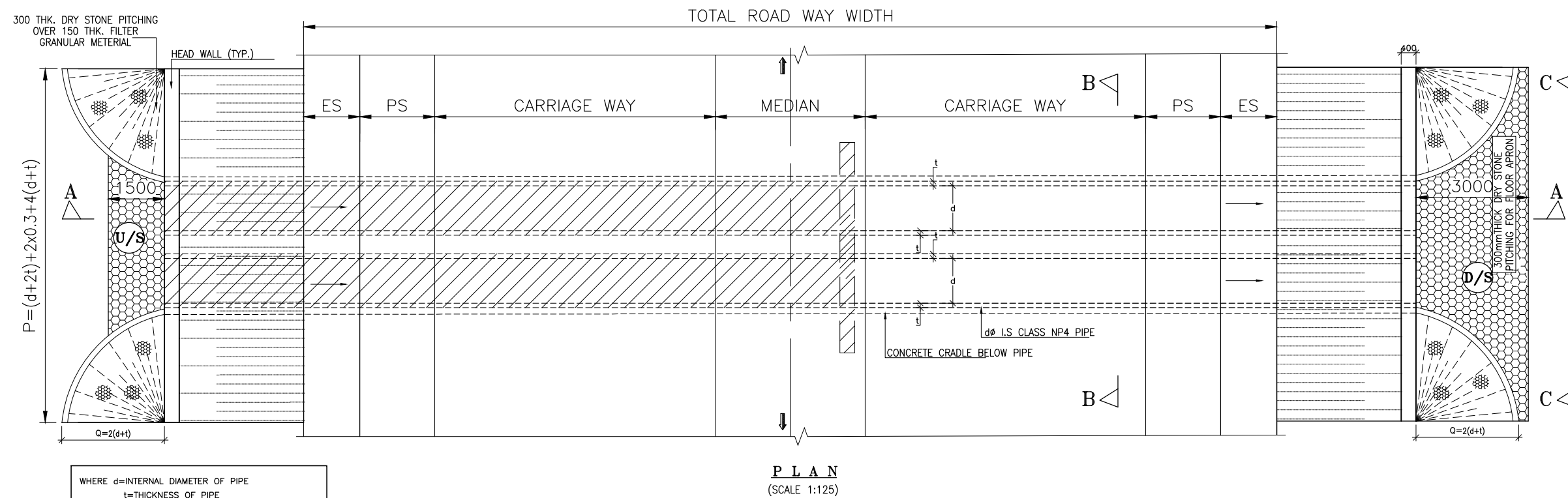
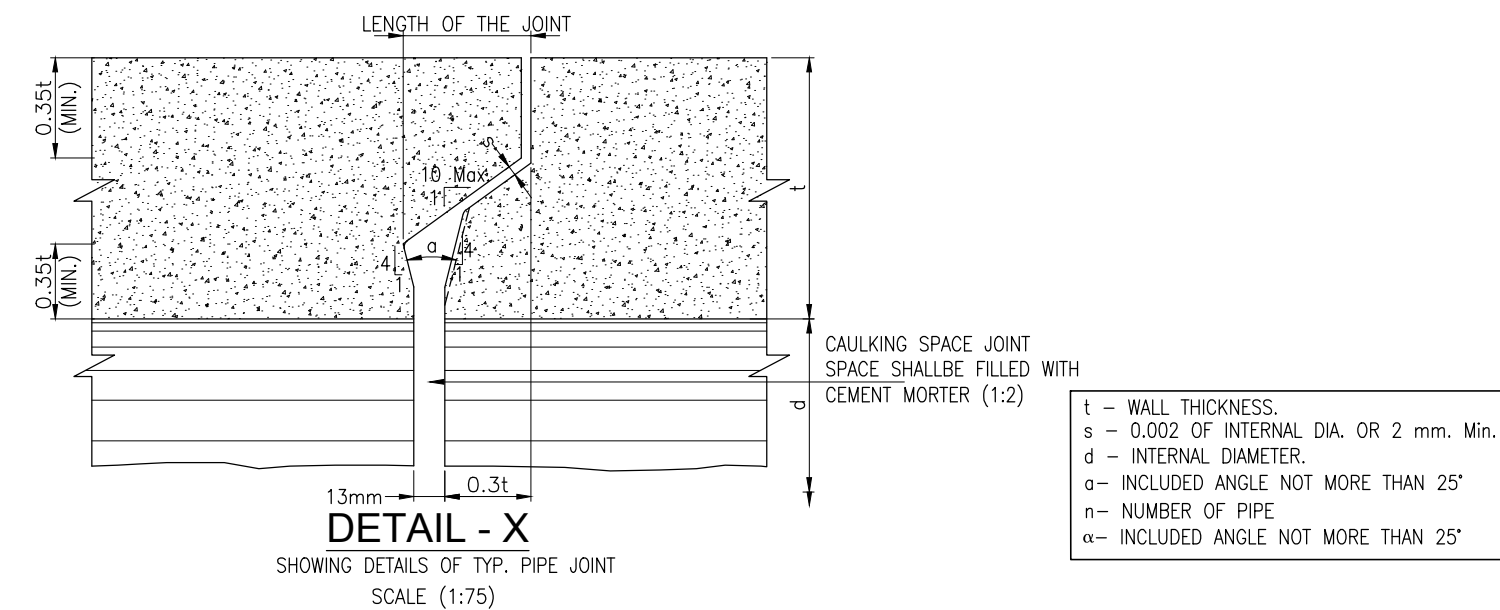
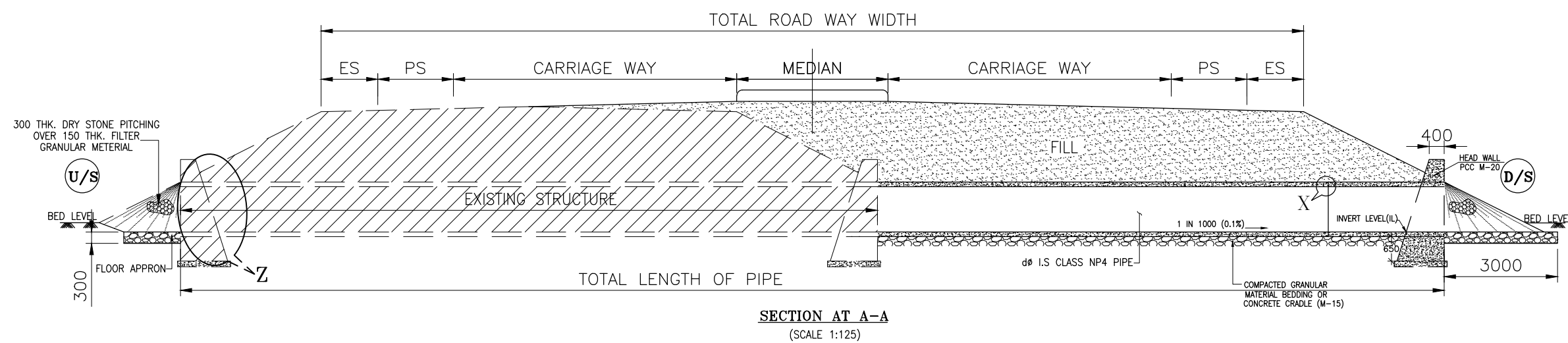
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	TITLE :
DSR	SJC	SG	SKC	GENERAL ARRANGEMENT DRAWING OF SINGLE CELL PIPE CULVERT (RETAIN & WIDENING)
<i>DSR</i>	<i>SJC</i>	<i>SG</i>	<i>SKC</i>	DRG. No. : (SHEET 01 OF 01) VSPL/1718-081/DPR/PKG-2/SEC-7/PC-02
SCALE :	AS SHOWN	SHEET SIZE	A2	REVISION:R1
				November 2020



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- PIPE SHALL BE JOINTED BY FLUSH JOINT METHOD AS PER THE DETAILS GIVEN IN SECTION 2906 OF MORT&H SPECIFICATIONS OF ROAD & BRIDGE WORKS.
- FLOOR APRON SHALL BE PROVIDED AT NON-IRRIGATION CROSS DRAINAGE WORKS ONLY.

CLIENT :  NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT AND HIGHWAYS) GOVERNMENT OF INDIA	PROJECT : CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1:PACKAGE II)	DESIGN CONSULTANT:  VOYANTS SOLUTIONS PVT LTD. 403, 4th Floor, Park Centra, Sector-30, NH-8 Gurgaon-122001, Haryana, India CIN- U74140HR2004PTC046918 Ph: 0124-4598200, Fax: 0124-4019051, E-mail: info@voyants.in, www.voyants.in	Detailed Project Report				DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	TITLE : GENERAL ARRANGEMENT DRAWING OF DOUBLE CELL PIPE CULVERT (NEW CONSTRUCTION/RE CONSTRUCTION) DRG. No. : (SHEET 01 OF 01) VSP/L/1718-081/DPR/PKG-2/SEC-7/PC-03 REVISION:R1November 2020
							DSR	SJC	SG	SKC	
											
			REV.	DATE	DESCRIPTION		SCALE :	AS SHOWN	SHEET SIZE	A2	



NOTES:-

1. ALL DIMENSIONS ARE IN mm, EXCEPT WHERE OTHERWISE MENTIONED.
2. NO DIMENSION SHALL BE SCALED, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT HIGHWAY DRAWINGS. FRL & CAMBER / SUPER ELEVATION AT PARTICULAR LOCATION SHALL BE VERIFIED WITH THE HIGHWAY DWG. DISCREPANCY, IF ANY, IS TO BE IMMEDIATELY BROUGHT TO THE NOTICE OF ENGINEER FOR NECESSARY MODIFICATION IN THE DRAWING.
4. HUME PIPE (NP4 TYPE), SHALL CONFORM TO IS : 458-2003.
5. COMPACTED GRANULAR BED SHALL CONFORM TO MORT&H SPECIFICATION CLAUSE NO.2904.
6. LONGITUDINAL SLOPE OF WIDENED PIPE SHALL BE 1 : 1000 (MIN.)
7. LENGTH, LOCATION, ORIENTATION & INVERT LEVEL OF PIPE CULVERT SHALL BE ADJUSTED TO SUIT SITE CONDITION AND AS APPROVED BY THE ENGINEER.
8. TRENCHES SHALL BE BACKFILLED IMMEDIATELY AFTER THE PIPES HAVE BEEN LAID AND THE JOINTING MATERIAL HAS HARDENED.
9. PIPE SHALL BE JOINTED BY FLUSH JOINT METHOD AS PER THE DETAILS GIVEN IN SECTION 2906 OF MORT&H SPECIFICATIONS OF ROAD & BRIDGE WORKS.
10. FLOOR APRON SHALL BE PROVIDED AT NON-IRRIGATION CROSS DRAINAGE WORKS ONLY.

CLIENT :

NATIONAL HIGHWAYS AND INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
(MINISTRY OF ROAD TRANSPORT AND HIGHWAYS)
GOVERNMENT OF INDIA

PROJECT :

CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT FOR DEVELOPMENT OF ECONOMIC CORRIDORS, INTER CORRIDORS AND FEEDER ROUTES TO IMPROVE THE EFFICIENCY OF FREIGHT MOVEMENTS IN INDIA UNDER BHARATMALA PARIYOJANA (LOT-1:PACKAGE II)

DESIGN CONSULTANT:

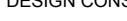
VOYANTS SOLUTIONS PVT LTD.
403, 4th Floor, Park Centra,
Sector-30, NH-8
Gurgaon-122001, Haryana, India
CIN- U74140HR2004PTC046918
Ph: 0124-4598200, Fax: 0124-4019051,
E-mail: info@voyants.in, www.voyants.in

Detailed Project Report

REV.	DATE	DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	TITLE :
DSR	SJC	SG	SKC	GENERAL ARRANGEMENT DRAWING OF DOUBLE CELL PIPE CULVERT (RETAIN & WIDENING)
<i>DSR</i>	<i>SJC</i>	<i>SG</i>	<i>SKC</i>	DRG. No. : (SHEET 01 OF 01) VSPL/1718-081/DPR/PKG-2/SEC-7/PC-04
SCALE :	AS SHOWN	SHEET SIZE	A2	REVISION:R1 November 2020

Improvement Proposal of Culverts Pkg-2															
Existing Details						Proposal Details									
Existing Chainage (km)	Type of Culvert	Span Arrangement / Dia. (m)	Total Width of Structure (m)	Total Roadway Width (m)	Remarks	Improvement Proposal	Sl. No.	Design Chainage (km)	Span Arrangement (m)	Type of Culvert	FRL (m)	Invert Level (m)	Proposed width as per TCS	Phase Details	
132+510	HP Culvert	1x1.0	27.60	12.50	Ext. Retain	New 2Lane	1	132+160	1x1.0	Pipe Culvert	160.268	158.268	2	Phase-7	
133+900	HP Culvert	1x1.0	24.60	13.60	Ext. Retain	New 2Lane	2	133+510	1x1.0	Pipe Culvert	147.598	145.598	2		
134+000	HP Culvert	1x1.0	24.40	12.80	Ext. Retain	New 2Lane	3	133+600	1x1.0	Pipe Culvert	147.670	145.670	2		
134+950	HP Culvert	1x1.0	24.80	11.20	Ext. Retain	New 2Lane	4	134+530	1x1.0	Pipe Culvert	156.040	154.040	8A		
135+500	HP Culvert	1x1.0	17.40	12.50	Ext. Retain	New 2Lane	5	135+080	1x1.0	Pipe Culvert	150.822	148.822	2		
135+730	HP Culvert	1x1.0	17.20	14.10	Ext. Retain	New 2Lane	6	135+310	1x1.0	Pipe Culvert	151.558	149.558	2		
136+080	HP Culvert	1x0.6	14.90	12.70	Reconstruction	New 4Lane	7	135+660	1x1.2	Pipe Culvert	158.548	156.348	Toll plaza		
136+230	HP Culvert	1x1.2	16.50	10.10	Ext. Retain	New 2Lane	8	135+810	1x1.2	Pipe Culvert	154.871	152.671	Toll plaza		
136+460	HP Culvert	1x1.0	16.80	12.30	Ext. Retain	New 2Lane	9	136+040	1x1.0	Pipe Culvert	150.909	148.909	Toll plaza		
136+510	HP Culvert	1x1.2	17.10	10.10	Ext. Retain	New 2Lane	10	136+090	1x1.2	Pipe Culvert	150.434	148.234	Toll plaza		
136+820	HP Culvert	1x0.9	15.90	10.60	Ext. Retain	New 2Lane	11	136+400	1x0.9	Pipe Culvert	151.933	150.033	8		
137+050	HP Culvert	1x0.6	17.20	10.00	Reconstruction	New 4Lane	12	136+630	1x1.2	Pipe Culvert	153.892	151.692	2		
137+150	HP Culvert	2x1.0	16.00	11.20	Ext. Retain	New 2Lane	13	136+730	2x1.0	Pipe Culvert	153.784	151.784	2		
137+290	HP Culvert	1x1.0	15.70	10.60	Ext. Retain	New 2Lane	14	136+870	1x1.0	Pipe Culvert	155.816	153.816	2		
						New 4Lane	15	136+920	1x1.2	Pipe Culvert	157.466	155.266	1A		
						New 4Lane	16	137+250	1x1.2	Pipe Culvert	166.349	164.149	1A		
138+030	HP Culvert	1x1.2	16.80	11.70	Ext. Retain	New 2Lane	17	137+610	1x1.2	Pipe Culvert	156.139	153.939	2		
138+225	HP Culvert	1x1.2	17.10	11.50	Ext. Retain	New 2Lane	18	137+805	1x1.2	Pipe Culvert	155.818	153.618	2		
138+495	HP Culvert	2x1.0	14.40	12.30	Ext. Retain	New 2Lane	19	138+075	2x1.0	Pipe Culvert	156.598	154.598	2		
138+540	HP Culvert	1x1.2	16.60	13.50	Ext. Retain	New 2Lane	20	138+120	1x1.2	Pipe Culvert	156.728	154.528	2		
138+720	HP Culvert	1x1.0	14.00	10.40	Ext. Retain	New 2Lane	21	138+300	1x1.0	Pipe Culvert	157.491	155.491	2		
139+260	HP Culvert	1x1.2	14.70	11.60	Ext. Retain	New 2Lane	22	138+840	1x1.2	Pipe Culvert	157.672	155.472	2		
139+330	HP Culvert	1x1.0	14.90	12.60	Ext. Retain	New 2Lane	23	138+910	1x1.0	Pipe Culvert	157.609	155.609	2		
139+500	HP Culvert	1x1.2	19.50	12.50	Ext. Retain	New 2Lane	24	139+080	1x1.2	Pipe Culvert	156.383	154.183	1A		
139+550	HP Culvert	1x0.6	21.20	10.50	Reconstruction	New 4Lane	25	139+130	1x1.2	Pipe Culvert	156.165	153.965	1A		
139+840	HP Culvert	1x1.2	17.10	10.20	Ext. Retain	New 2Lane	26	139+420	1x1.2	Pipe Culvert	159.046	156.846	2		
						New 4Lane	27	141+080	2x1.2	Pipe Culvert	158.998	156.798	1A		
141+640	HP Culvert	2x1.2	15.50	10.60	Ext. Retain	New 2Lane	28	141+220	2x1.2	Pipe Culvert	157.330	155.130	2		
141+700	HP Culvert	2x1.2	15.50	10.40	Ext. Retain	New 2Lane	29	141+280	2x1.2	Pipe Culvert	158.773	156.573	2		
142+120	HP Culvert	1x0.6	21.00	11.50	Reconstruction	New 4Lane	30	141+700	1x1.2	Pipe Culvert	159.288	157.088	2		
142+150	HP Culvert	1x0.6	20.70	11.00	Reconstruction	New 4Lane	31	141+730	1x1.2	Pipe Culvert	159.031	156.831	2		
142+470	HP Culvert	1x1.2	14.70	12.60	Ext. Retain	New 2Lane	32	142+050	1x1.2	Pipe Culvert	159.133	156.933	2		
143+440	HP Culvert	1x0.6	15.70	11.20	Reconstruction	New 4Lane	33	143+020	1x1.2	Pipe Culvert	168.749	166.549	2		
					Realignment	New 4Lane	34	143+700	3x1.2	Pipe Culvert	163.000	160.800	1A		
145+080	HP Culvert	1x1.0	25.00	12.60	Ext. Retain	New 2Lane	35	144+660	1x1.0	Pipe Culvert	164.147	162.147	1A		
145+800	HP Culvert	1x1.0	31.20	13.60	Ext. Retain	New 2Lane	36	145+380	1x1.0	Pipe Culvert	180.048	178.048	1A		

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							DSR	SJC	SG	SKC	SCHEDULE OF PIPE CULVERTS	
											DRG. No. : VSPL/1718-081/DPR/PKG-2/SEC-7/SCH-01	
							SCALE :	AS SHOWN	SHEET SIZE	A2	REVISION:R1	November 2020
						REV.	DATE	DESCRIPTION				