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LIST OF DRAWINGS (PACKAGE - III)

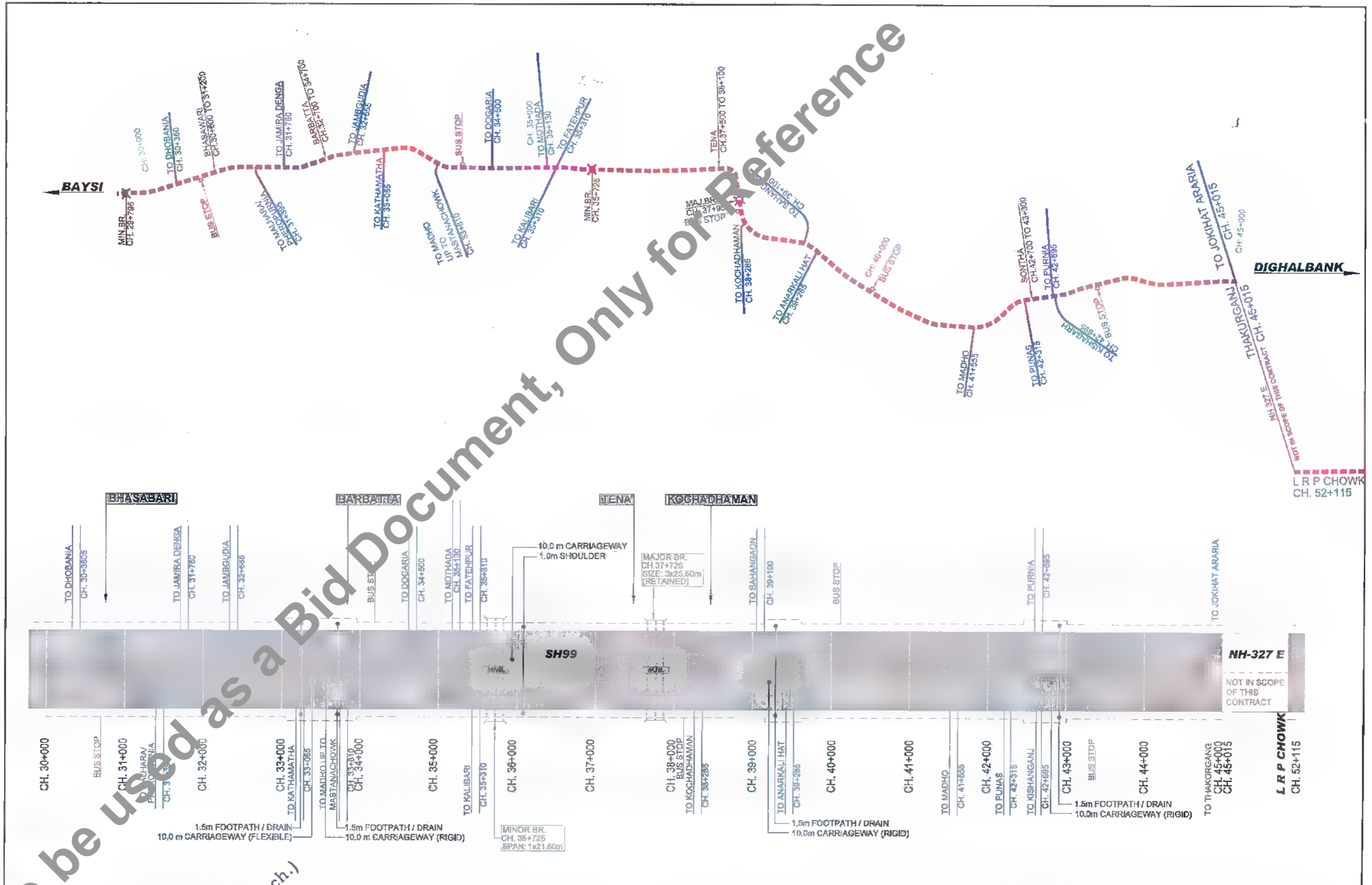
TITLE	DRAWING NO.	TITLE	DRAWING NO.
01. LEGEND	SAI-213007/DPR/M/TYP-LE	23. TYPICAL DETAILS OF LANE MARKINGS	SAI-213007/DPR/M/TYP-06
02. SCHEMATIC DIAGRAM (LINER PLAN)	SAI-213007/DPR/C/H/LP - 01 TO 05	24. TYPICAL DETAILS OF LANE MARKINGS	SAI-213007/DPR/M/TYP-07
03. TYPICAL CROSS SECTION	SAI-213007/DPR/M/TYP/CS - 01	25. TYPICAL DETAILS OF CRASH BARRIER	SAI-213007/DPR/M/TYP-08
04. HORIZONTAL ALIGNMENT DETAILS FOR Km. 52+115 TO Km. 72+450	SAI-213007/DPR/C/H/HD - 01 TO 02	26. DISTANCE STONES	SAI-213007/DPR/M/TYP-09
05. VERTICAL ALIGNMENT DETAILS FOR Km. 52+115 TO Km. 72+450	SAI-213007/DPR/C/H/V/D - 01	27. TYPICAL DETAILS OF INDICATORS	SAI-213007/DPR/M/TYP-10
06. ALIGNMENT PLAN & PROFILE FOR Km. 52+115 TO Km. 72+450	SAI-213007/DPR/C/H/PP - 53 TO 73	28. DETAILS OF UTILITY DUCTS	SAI-213007/DPR/M/TYP-11
07. ROAD FURNITURE TABLES	SAI-213007/DPR/C/H/RFT - 01 TO 02	29. TYPICAL PLANTATION LAYOUT WITH PAVED SHOULDER	SAI-213007/DPR/M/TYP-12
08. ROAD FURNITURE PLAN FOR Km. 52+115 TO Km. 72+450	SAI-213007/DPR/C/H/RF - 01 TO 11	30. DRAIN DETAILS FOR RURAL SECTIONS	SAI-213007/DPR/M/TYP-14
09. MAJOR JUNCTION AT CH. 52+115	SAI-213007/DPR/C/H/MJ - 01	31. DRAIN DETAILS FOR HIGH EMBANKMENT	SAI-213007/DPR/M/TYP-15
10. TYPICAL LAYOUT OF FOUR LEGGED CHANNELISED JUNCTION WITH PAVED SHOULDER	SAI-213007/DPR/M/TYP/JUNC - 01	32. DETAILS FOR COVERED BOX DRAIN SECTIONS	SAI-213007/DPR/M/TYP-16 (SHEET 1 OF 2 & 2 OF 2)
11. TYPICAL LAYOUT OF THREE LEGGED CHANNELISED JUNCTION WITH PAVED SHOULDER	SAI-213007/DPR/M/TYP/JUNC - 02	33. TYPICAL DETAILS FOR RIGID PAVEMENT	SAI-213007/DPR/M/TYP-17
12. TYPICAL LAYOUT OF LEFT-IN LEFT-OUT FOUR LEGGED JUNCTION WITH PAVED SHOULDER	SAI-213007/DPR/M/TYP/JUNC - 03	34. OFFICE CUM RESIDENTIAL COMPLEX FOR PIU	SAI-213007/DPR/M/TYP-18
13. TYPICAL LAYOUT OF LEFT-IN LEFT-OUT THREE LEGGED JUNCTION WITH PAVED SHOULDER	SAI-213007/DPR/M/TYP/JUNC - 04	35. TYPICAL DETAILS OF RUMBLE STRIPS	SAI-213007/DPR/M/TYP-19
14. TYPICAL LAYOUT OF THREE LEGGED CHANNELISED Y JUNCTION WITH PAVED SHOULDER	SAI-213007/DPR/M/TYP/JUNC - 05	36. TRAFFIC SAFETY DURING CONSTRUCTION	SAI-213007/DPR/M/TYP/TM-01
15. GENERAL ARRANGEMENT DRAWING FOR BUS SHELTER	SAI-213007/DPR/M/TYP-01	37. TRAFFIC MANAGEMENT REQUIREMENTS AND CONSTRUCTION METHODOLOGY	SAI-213007/DPR/M/TYP/TM-02
16. STRUCTURAL DETAILS FOR BUS SHELTER	SAI-213007/DPR/M/TYP-01A	38. TRAFFIC MANAGEMENT REQUIREMENTS AND CONSTRUCTION METHODOLOGY	SAI-213007/DPR/M/TYP/TM-03
17. TYPICAL DETAILS OF OVER HEAD SIGNS	SAI-213007/DPR/M/TYP-02	39. TYPICAL CROSS SECTIONS FOR TRAFFIC MANAGEMENT CASE - 1	SAI-213007/DPR/M/TYP/TM-04
18. FOOTING DETAILS FOR OVER HEAD/GANTRY SIGNS	SAI-213007/DPR/M/TYP-03	40. TYPICAL CROSS SECTIONS FOR TRAFFIC MANAGEMENT CASE - 2	SAI-213007/DPR/M/TYP/TM-05
19. TYPICAL DETAILS OF REGULATORY MANDATORY TRAFFIC SIGNS	SAI-213007/DPR/M/TYP-04	41. TYPICAL CROSS SECTIONS FOR TRAFFIC MANAGEMENT CASE - 3	SAI-213007/DPR/M/TYP/TM-06
20. SCHEDULE OF TRAFFIC SIGNS	SAI-213007/DPR/M/TYP-04A	42. TYPICAL PLAN FOR TRAFFIC MANAGEMENT SEQUENCE DURING CONSTRUCTION	SAI-213007/DPR/M/TYP/TM-07
21. TYPICAL DETAILS TRAFFIC SIGNS	SAI-213007/DPR/M/TYP-04B	43. SCHEMATIC PLAN FOR TRAFFIC MANAGEMENT BETWEEN SUB-SECTION AT DIFFERENT STAGES	SAI-213007/DPR/M/TYP/TM-08
22. PEDESTRIAN GUARD DETAILS	SAI-213007/DPR/M/TYP-05	44. TYPICAL ARRANGEMENT OF TRAFFIC CONTROL DEVICES FOR 500M SUB-SECTION	SAI-213007/DPR/M/TYP/TM-09

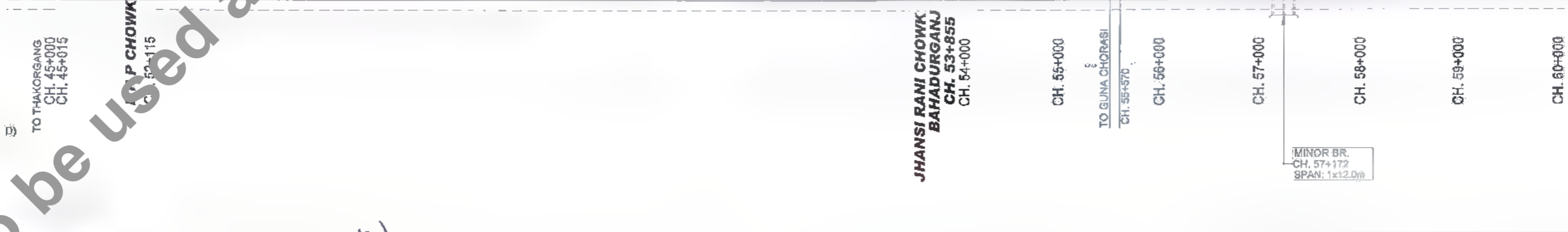
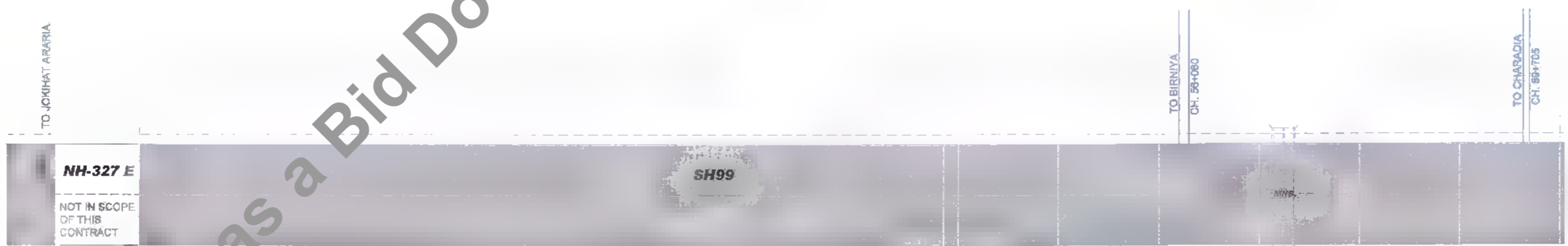
A
D. G. M. (Tech.)
BSRDCL
PIU-Katihar

VOL: (PART-I)
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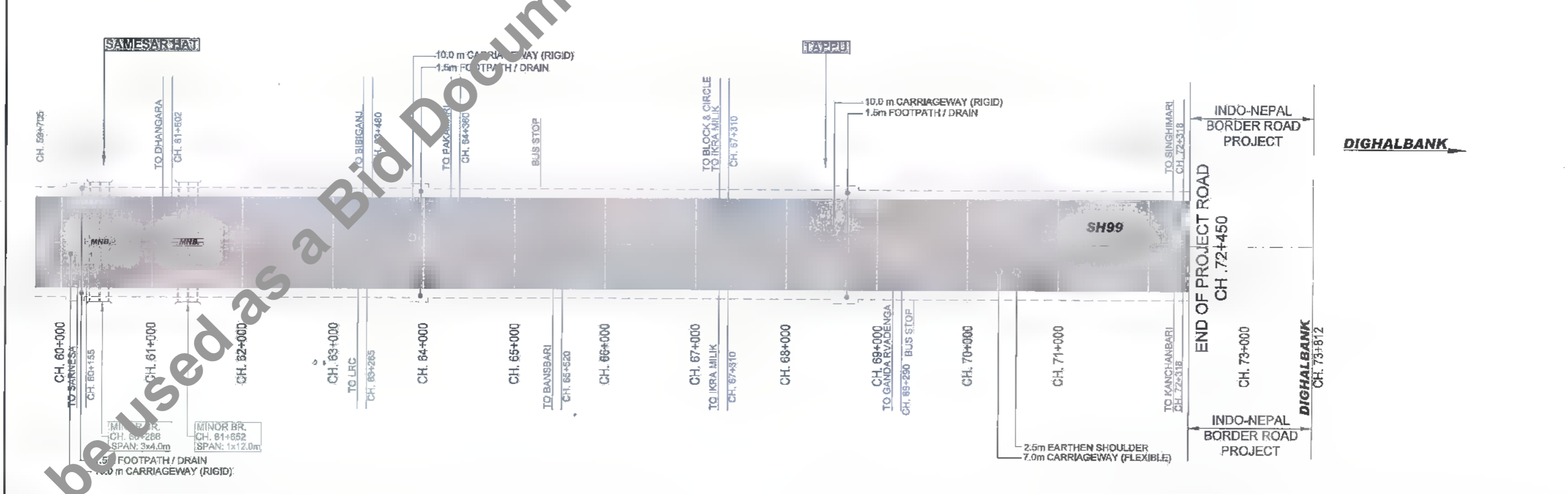
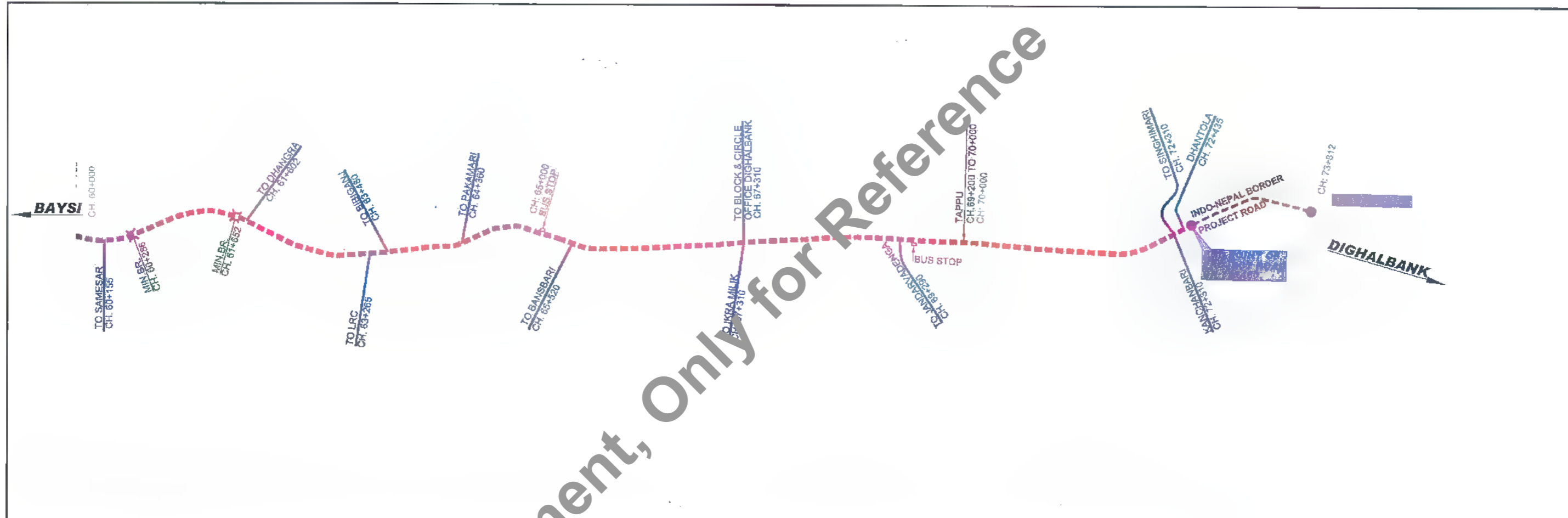


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<p>Bihar State Road Development Corporation Limited (BSRDC) (A Government of Bihar Undertaking)</p>	<p>PROJECT: Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)</p>	<p>CONSULTANTS: SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company Block-A "SAI Home" Sofyam Corporate Square, BA Rajpath DUB, Badaikav, Abhaasbaat-28 0659, Gurgaon, India Phone : +91-79-56162609/100, Fax : +91-79-66162800 Email : mail@saiindia.com</p>	PH 31/07/19 PD 28/12/18 PF 31/03/17 PE 10/04/14 PD 24/02/14 PD 19/11/13	GOOD FOR CONSTRUCTION (REVISED DPR) GOOD FOR CONSTRUCTION (DPR) GOOD FOR CONSTRUCTION (DPR) GOOD FOR CONSTRUCTION (DPR) ISSUED WITH FINAL DPR ISSUED WITH ORDER	DRAWN BY : Y.L.S. CHECKED BY : H.M. APPROVED BY : C.S. ISSUED BY : S.R.H.	TITLE: BAYSIL TO DIGHALBANK ROAD SCHEMATIC DIAGRAM (LINEAR PLAN)
			DRG. NO. : SAI-213007/DPR/CH/PL-04	REVISION : PH		

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DATE: 11/11/18 12:18 pm
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<p>Bihar State Road Development Corporation Limited (BSRDC) (A Government of Bihar Undertaking)</p>	<p>PROJECT: Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)</p>	<p>CONSULTANTS: SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company Block-A "SAI House" Sanyal Corporate Square, 8th Rajpath Club Bhubaneswar, Ahmedabad-380059, Gujarat, India Phone: +91-79-6542440/150, Fax: +91-79-6611298 Email: mail@saiindia.com</p>	<table border="1"> <tr> <th>REV.</th> <th>DATE</th> <th>DESCRIPTION</th> <th>SIGN</th> <th>ISSUED BY</th> <th>BY</th> </tr> <tr> <td>PH</td> <td>31/07/19</td> <td>GOOD FOR CONSTRUCTION (REVISED DPR)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>PG</td> <td>28/12/18</td> <td>GOOD FOR CONSTRUCTION (DPR)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>PF</td> <td>31/03/19</td> <td>GOOD FOR CONSTRUCTION (DPR)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>PD</td> <td>10/04/14</td> <td>ISSUED WITH FINAL DOPR</td> <td></td> <td></td> <td></td> </tr> <tr> <td>PC</td> <td>24/09/14</td> <td>ISSUED WITH FINAL DOPR</td> <td></td> <td></td> <td></td> </tr> <tr> <td>PC</td> <td>13/11/13</td> <td>ISSUED WITH DOPR</td> <td></td> <td></td> <td></td> </tr> </table>	REV.	DATE	DESCRIPTION	SIGN	ISSUED BY	BY	PH	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)				PG	28/12/18	GOOD FOR CONSTRUCTION (DPR)				PF	31/03/19	GOOD FOR CONSTRUCTION (DPR)				PD	10/04/14	ISSUED WITH FINAL DOPR				PC	24/09/14	ISSUED WITH FINAL DOPR				PC	13/11/13	ISSUED WITH DOPR				<p>TITLE: BAYSII TO DIGHALBANK ROAD SCHEMATIC DIAGRAM (LINEAR PLAN)</p> <p>DRG. NO.: SAI-213007DPR/C/HLP-05</p> <p>REVISION: PH</p>
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<p>DATE: 11/11/18 12:18 pm PATH: C:\Users\agowar\appdata\local\temp\AcPub\ish_2704\SCHEMATIC (LINEAR PLAN).dwg</p>	<p>SCALE: NONE</p>			<p>DRAWN BY: E.M.S. CHECKED BY: N.M. APPROVED BY: E.S. ISSUED BY: E.M.S.</p>																																										

Horizontal Curve Details

Sr. No.	HIP No.	HIP Chainage	Easting	Northing	Radius	Transition Length	Transition Start	Circular Start	Circular End	Transition End	Speed	Delta	Lc	Shift(S)	Theta_s	Es	k	Ts(m)	e	
		m			m	m	m	m	m	m	kmph	Degree	m	m	Degree	m	m	m	%	
1	53/1R	52149.29	582941.9320	2903213.5760	400	0		52132.285	52166.295		40	4.87	34.1	4.87	0.00	0.0	0.4	0.00	17.02	-
2	53/2L	52192.09	582926.6660	2903263.6790	550	0		52177.037	52207.149		40	3.14	3.1	3.14	0.00	0.0	0.2	0.00	15.06	-
3	53/3L	52323.74	582873.0490	2903373.8650	260	25	52291.340	52316.340	52331.138	52356.138	40	8.7	14.8	3.28	0.10	2.8	0.9	12.50	32.44	2.74
4	53/4L	52364.64	582850.8730	2903408.2620	780	0		52358.809	52370.462		40	0.96	11.7	0.86	0.00	0.0	0.0	0.00	5.83	-
5	53/5R	52412.53	582824.3320	2903448.1510	2000	0		52403.776	52421.286		40	0.75	17.5	0.50	0.00	0.0	0.0	0.00	8.76	-
6	53/6L	52519.32	582765.9370	2903537.5600	1000	0		52511.465	52527.175		40	0.80	15.7	0.90	0.00	0.0	0.0	0.00	7.86	-
7	53/7R	52569.42	582737.8680	2903579.0670	4700	0		52551.198	52587.632		40	0.44	36.4	0.44	0.00	0.0	0.0	0.00	18.22	-
8	53/8R	52896.81	582556.6820	2903851.7450	3000	0		52880.947	52912.677		40	0.61	31.7	0.61	0.00	0.0	0.0	0.00	15.67	-
9	53/9L	52942.12	582532.0040	2903889.7470	1300	0		52936.259	52947.989		40	0.52	11.7	0.52	0.00	0.0	0.0	0.00	5.87	-
10	54/1R	53061.28	582466.2110	2903989.0660	3000	0		53040.729	53081.620		40	0.78	41.1	0.78	0.00	0.0	0.1	0.00	20.55	-
11	54/2R	53170.83	582406.8850	2904081.3830	300	0		53135.345	53206.309		40	13.65	71.0	13.55	0.00	0.0	2.1	0.00	35.65	-
12	54/3L	53331.54	582354.0320	2904233.3370	970	0		53326.162	53336.925		40	0.64	10.8	0.64	0.00	0.0	0.0	0.00	5.38	-
13	54/4R	53425.59	582322.1520	2904321.8150	1000	0		53405.858	53445.310		40	2.26	39.5	2.28	0.00	0.0	0.2	0.00	19.73	-
14	54/5R	53573.33	582277.0200	2904464.4910	335	0		53487.857	53613.791		40	29.24	170.9	29.24	0.00	0.0	11.2	0.00	87.37	-
15	54/6R	53728.22	582308.7680	2904618.0410	1350	0		53713.003	53743.374		40	1.29	30.4	1.29	0.00	0.0	0.1	0.00	15.22	-
16	54/7R	53815.53	582328.3790	2904703.1640	350	0		53781.301	53839.761		40	7.93	46.5	7.93	0.00	0.0	0.8	0.00	24.27	-
17	54/8L	53897.32	582357.5820	2904779.6130	420	0		53878.888	53915.747		40	5.03	36.9	5.03	0.00	0.0	0.4	0.00	18.44	-
18	54/9R	53974.93	582378.8190	2904854.2740	1400	0		53959.111	54000.713		40	1.29	31.6	1.29	0.00	0.0	0.1	0.00	15.79	-
19	55/1R	54067.67	582412.4330	2904963.0630	110	45	54033.314	54033.314	54077.030	54142.030	40	33.19	18.7	9.75	0.77	11.7	5.6	22.47	55.48	6.46
20	55/2R	54158.12	582467.5440	2905008.7230	520	0		54126.643	54173.547		40	3.40	30.9	3.40	0.00	0.0	0.2	0.00	15.44	-
21	55/3R	54290.75	582574.5310	2905087.1450	500	0		54267.739	54311.763		40	4.82	42.0	4.82	0.00	0.0	0.4	0.00	21.02	-
22	55/4L	54328.76	582606.9780	2905106.9710	400	0		54313.534	54343.978		40	4.36	30.4	4.36	0.00	0.0	0.3	0.00	15.23	-
23	55/5L	54395.93	582681.7460	2905146.4510	230	25	54346.714	54371.725	54420.138	54445.138	40	18.29	48.4	12.06	0.11	3.1	3.1	12.50	49.54	3.09
24	55/6L	54470.63	582705.7700	2905207.2100	700	0		54452.213	54489.041		40	3.01	36.8	3.01	0.00	0.0	0.2	0.00	18.42	-
25	55/7L	54512.92	582728.7560	2905242.7260	500	0		54497.652	54528.194		40	3.50	30.5	3.50	0.00	0.0	0.2	0.00	15.28	-
26	55/8L	54566.37	582750.1150	2905280.6140	290	0		54535.130	54577.617		40	8.39	42.5	8.39	0.00	0.0	0.8	0.00	21.28	-
27	55/9L	54629.76	582776.5260	2905349.3570	150	0	54587.627	54627.627	54681.897	54671.897	40	16.91	4.3	1.63	0.44	7.6	2.1	19.99	42.35	4.74
28	55/10L	54752.3	582785.3190	2905471.7930	1150	0		54736.737	54767.855		40	1.55	31.1	1.55	0.00	0.0	0.1	0.00	15.56	-
29	55/11L	54805.05	582787.6720	2905524.4920	1000	0		54788.097	54821.992		40	1.94	33.9	1.94	0.00	0.0	0.1	0.00	16.95	-
30	56/1R	55005.64	582789.8260	2905725.0750	2000	0		55000.626	55010.649		40	0.29	10.0	0.29	0.00	0.0	0.0	0.00	5.01	-
31	56/2R	55071.1	582790.8570	2905790.5380	2000	0		55044.713	55097.492		40	2.52	52.8	2.52	0.00	0.0	0.3	0.00	26.39	-
32	56/3R	55228.39	582800.2460	2905947.5460	2000	0		55207.859	55248.915		40	1.96	41.1	1.96	0.00	0.0	0.2	0.00	20.53	-
33	56/4L	55440.21	582820.1470	2906158.7730	305	50	55371.781	55421.781	55458.638	55508.638	50	16.32	36.9	6.92	0.34	4.7	3.5	24.99	68.77	3.64
34	56/5R	55620.62	582785.8270	2906336.4330	305	30	55566.929	55598.929	55642.313	55672.313	50	13.79	43.4	8.15	0.12	2.8	2.3	15.00	51.88	3.64
35	56/6L	55764.58	582793.0510	2906414.4400	200	45	55893.874	55798.874	55790.278	55835.278	50	27.62	51.4	14.73	0.42	6.4	6.4	22.49	71.75	5.56
36	56/7R	55978.11	582702.9800	2906570.4360	600	25	55888.471	55813.471	56042.741	56067.741	65	14.73	129.3	12.34	0.04	1.2	5.0	12.50	90.07	3.13
37	57/1L	56404.18	582628.6690	2907036.6700	3500	0		56402.156	56406.203		80	0.07	4.0	0.07	0.00	0.0	0.0	0.00	2.02	-
38	57/2R	56596.46	582594.1100	2907286.1870	500	30	56527.334	56557.334	56635.586	56665.586	65	12.40	78.3	8.97	0.08	1.7	3.0	15.00	69.35	3.76
39	57/3L	56842.35	582604.0990	2907532.1540	2000	0		56753.932	56930.765		80	5.07	176.8	5.07	0.00	0.0	2.0	0.00	88.47	-
40	58/1R	57067.66	582593.9470	2907757.4320	500	30	57003.077	57033.077	57102.245	57132.245	65	11.36	69.2	7.93	0.08	1.7	2.5	15.00	64.75	3.76
41	58/2L	57218.53	582516.5500	2907908.8680	500	30	57162.711	57192.711	57244.348	57274.348	65	9.35	51.6	5.92	0.08	1.7	1.8	15.00	55.92	3.76
42	58/3R	57555.01	582510.1010	2908245.5680	350	45	57444.796	57489.796	57620.615	57665.615	65	28.78	130.8	21.42	0.24	3.7	11.6	22.50	112.36	5.37
43	58/4L	57807.26	582456.6470	2908496.4140	900	0		57763.248	57911.280		65	9.42	148.0	9.42	0.00	0.0	3.1	0.00	74.18	-
44	59/1R	58017.77	582801.3930	2908662.0080	800	0		57965.455	58058.087		65	6.63	92.6	6.63	0.00	0.0	1.3	0.00	46.37	-
45	59/2L	58103.1	582908.6080	2908889.4390	1800	0		58244.630	58281.678		80	1.18	37.0	1.18	0.00	0.0	0.1	0.00	18.52	-
46	59/3R	58637.16	583086.3930	2909242.8230	2800	0		58637.180	58663.144		100	0.53	26.0	0.53	0.00	0.0	0.0	0.00	12.98	-
47	59/4L	58991.63	583208.4970	2909553.3210	2000	0		58983.735	58999.531		100	0.45	15.8	0.45	0.00	0.0	0.0	0.00	7.90	-
48	60/1L	59208.05	583297.0030	2909750.8130	1000	30	59173.077	59203.077	59213.018	59243.018	80	2.29	8.9	0.57	0.04	0.8	0.2	15.00	34.97	2.84
49	60/2L	59562.91	583429.6650	2910081.6380	800	30	59404.444	59434.444	59691.378	59721.378	80	20.55	256.9	18.40	0.05	1.1	13.1	15.00	160.03	3.56
50	60/3L	59853.54	583436.3060	2910374.1090	500	30	59775.312	59805.312	59901.773	59931.773	65	14.49	96.5	11.05	0.08	1.7	4.1	15.00	78.58	3.76
51	60/1L	60086.69	583367.5880	2910581.9780	1800	0		60041.728	60081.656		80	1.58	49.9	1.59	0.00	0.0	0.2	0.00	24.97	-
52	61/2R	60258.13	583339.2620	2910765.1460	5200	0		60246.711	60265.546		80	0.21	18.8	0.21	0.00	0.0	0.0	0.00	9.42	-
53	61/3R	60467.5	583286.0600	2910969.7970	1200	0		60396.232	60538.784		65	6.81	142.5	6.81	0.00	0.0	2.1	0.00	71.35	-
54	61/4R	60598.12	583268.3900	2911099.3510	800	0		60552.698	60643.539		65	5.51	90.8	5.51	0.00	0.0	1.3	0.00	45.47	-
55	61/5R	60858.4	583262.6240	2911361.3520	525	30	60731.627	60761.627	60955.171	60985.171	65	24.40	193.5	21.12	0.07	1.6	12.2	15.00	128.51	3.58
56	62/1R	61199.24	583397.2930	2911676.5370	400	40	61136.928	61176.928	61221.549	61281.549	65	12.12	44.6	6.39	0.17	2.9	2.4	20.00	62.49	4.89
57	62/2L	61454.83	583544.8140	2911885.2210	2200	0		61433.615	61475.635		80	1.09	42.0	1.09	0.00	0.0	0.1	0.00	21.01	-
58	62/3R	61605.5																		

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572

Horizontal Curve Details																				
Sr. No.	HIP No.	HIP Chainages	Eastings	Northings	Radius	Transition Length	Transition Start	Circular Start	Circular End	Transition End	Speed	Delta	Lc	Delta	Theta_s	Es	k	Ts(m)	e	
		m			m	m	m	m	m	m	kmph	Degree	m	Degree	m	m	m	m	%	
66	65/2R	84384.55	583923.5080	2914687.4100	200	60	64310.130	64370.130	64398.971	64458.971	65	25.45	8.26	0.75	8.6	5.8	29.98	75.31	7.00	
67	65/3L	84627.14	584034.5250	2914904.1470	2000	0		64551.365	64702.911		80	4.34	11.5	4.34	0.00	1.4	0.00	75.81	-	
68	65/4R	84810.48	584105.5440	2915073.2550	1250	0		64756.877	64864.091		80	4.91	10.22	4.91	0.00	1.2	0.00	53.64	-	
69	66/1L	85200.74	584287.3570	2915419.6310	500	45	65091.583	65136.583	65264.894	65309.894	80	19.0	128.3	14.70	0.17	2.6	7.8	22.50	110.08	5.69
70	66/2L	85578.57	584338.9880	2915794.8340	2000	0		65573.502	65583.641		100	2.99	10.1	0.29	0.00	0.0	0.00	5.07	-	
71	66/3L	85820.33	584370.7320	2916034.5100	2000	0		65777.385	65863.282		100	2.3	85.9	2.48	0.00	0.0	0.5	0.00	42.98	-
72	67/1R	86355.33	584418.1420	2916567.4130	3500	0		66325.894	66384.774		100	0.36	58.9	0.96	0.00	0.1	0.00	29.44	-	
73	67/2L	86630.49	584447.1330	2916841.0500	5000	0		66526.678	66734.295		100	2.36	207.6	2.38	0.00	0.0	1.1	0.00	103.82	-
74	68/1R	87077.54	584475.7390	2917287.2060	5200	0		66988.715	67168.354		100	2.00	181.6	2.00	0.00	0.0	0.8	0.00	90.83	-
75	68/2L	87605.11	584527.8640	2917612.2060	5200	0		67560.165	67650.047		100	0.99	89.9	0.99	0.00	0.0	0.2	0.00	44.94	-
76	68/3R	87781.03	584542.2170	2917987.5420	3000	0		67769.309	67792.745		100	0.45	23.4	0.45	0.00	0.0	0.0	0.00	11.72	-
77	69/1R	88102.48	584570.9600	2918307.8820	4000	0		67900.418	68304.547		100	5.79	404.1	5.79	0.00	0.0	5.1	0.00	202.24	-
78	69/2R	88582.3	584661.8550	2918779.1850	3500	0		68539.650	68624.941		100	1.40	85.3	1.40	0.00	0.0	0.3	0.00	42.65	-
79	70/1L	89052.8	584762.1900	2919238.8830	3500	0		68954.847	69157.758		100	3.21	195.9	3.21	0.00	0.0	1.4	0.00	97.98	-
80	70/2R	89380.71	584814.1010	2919562.7920	5000	0		69189.385	69520.039		100	4.38	382.7	4.38	0.00	0.0	3.7	0.00	181.42	-
81	71/1L	70308.84	585030.6600	2920465.5090	5000	0		70219.363	70355.513		100	2.05	179.2	2.05	0.00	0.0	0.8	0.00	89.58	-
82	71/2R	70647.67	585087.8320	2920797.5280	6500	0		70628.168	70667.180		100	0.34	99.0	0.34	0.00	0.0	0.0	0.00	19.51	-
83	72/1L	71214.27	585214.6110	2921357.4410	800	30	70984.080	71014.080	71414.518	71444.518	80	30.83	400.5	28.68	0.05	1.1	28.9	15.00	235.61	3.58
84	72/2R	71549.65	585103.3950	2921679.5180	5500	0		71487.551	71611.781		80	1.29	124.3	1.29	0.00	0.0	0.4	0.00	62.14	-
85	72/3L	71752.98	585041.3840	2921873.1720	5500	0		71717.458	71788.512		80	0.74	71.1	0.74	0.00	0.0	0.1	0.00	35.53	-
86	73/1R	72180.23	584905.8280	2922278.4020	3800	0		72430.001	72317.432		65	4.14	274.4	4.14	0.00	0.0	2.5	0.00	137.27	-

DATE: 20/07/23 - 2:45pm
 PATH: C:\Users\lisa\AppData\Local\Temp\5084\HORIZONTAL DETAILS - PACKAGE-2.dwg

CLIENT :



Bihar State Road Development Corporation Limited (BSRDCL)
 (A Government of Bihar Undertaking)

PROJECT :

Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS :



SAI Consulting Engineers Pvt. Ltd.
 An ISO 9001 Certified Company

Block-A "SAI House", Sanyal Corporate Square, BA, Rajpath
 Club, Bhubaneswar, Odisha-751005, India
 Phone : +91-79-8833508/700 Fax : +91-79-88332800
 Email : saia@saimtds.com

PO	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)	DRAWN BY : R.M.
PT	17/12/18	GOOD FOR CONSTRUCTION (DPR)	CHECKED BY : A.S.
RE	20/04/14	GOOD FOR CONSTRUCTION (DPR)	APPROVED BY : J.D.
PA	26/02/14	ISSUED WITH FINAL DPR	
PC	13/11/13	ISSUED WITH DPR	
PB	29/08/13	ISSUED WITH PFR	

TITLE : **LRP CHOKK (BAHADURGANJ) - DIGHALBANK (PACKAGE-II) HORIZONTAL ALIGNMENT DETAIL**

DRG. NO. : **SAI-213007/OPR/CHHAD - 02**


REVISION : PG



VERTICAL CURVE DETAILS							
Sl. No.	VIP Chainage	Level (m)	Gradient (%)	% Change in grade	Type of Curve	Curve Length (m)	K Value
1	52115.000	47.117	0	0	0	0	0
2	52204.135	46.421	-0.781	-0.877	Valley	50	56.99
3	52771.056	46.969	0.097	0.193	Summit	45	232.80
4	53048.197	46.701	-0.097	-0.266	Valley	30	112.84
5	53340.966	47.196	0.169	-0.055	Valley	20	365.31
6	53611.367	47.802	0.224	0.331	Summit	30	90.64
7	53849.376	47.547	-0.107	-0.572	Valley	40	69.91
8	54025.000	48.364	0.465	0.706	Summit	25	35.42
9	54262.770	47.792	-0.241	-0.537	Valley	25	46.56
10	54584.791	48.746	0.296	0.408	Summit	30	73.45
11	55033.498	48.243	-0.112	-0.371	Valley	30	80.87
12	55587.614	49.677	0.259	0.544	Summit	200	367.31
13	55866.364	48.880	-0.286	-0.405	Valley	100	17.18
14	56492.610	49.625	0.119	-1.631	Valley	80	49.05
15	56678.020	52.870	1.750	3.500	Summit	15	42.86
16	56857.290	49.733	-1.750	-1.857	Valley	0	43.09
17	57175.000	50.071	0.107	0.264	Summit	80	226.84
18	57385.888	49.738	-0.158	-0.367	Valley	60	163.37
19	57849.235	50.708	0.209	0.634	Summit	30	94.63
20	58003.373	50.053	-0.425	-0.844	Valley	60	71.11
21	58154.446	50.686	0.419	0.314	Summit	60	191.04
22	58386.036	50.929	0.105	-0.254	Valley	60	236.10
23	58604.179	51.712	0.359	0.608	Summit	60	98.68
24	58785.000	51.262	-0.249	-0.371	Valley	60	161.77
25	59246.756	51.825	0.122	0.345	Summit	60	173.92
26	59392.950	51.499	-0.223	-0.407	Valley	60	147.52
27	59512.742	51.719	0.184	0.76	Summit	60	159.41
28	59644.219	51.466	-0.193	0	Valley	60	80.78
29	59791.020	52.273	0.550	1.00	Summit	90	81.82
30	59928.448	51.517	-0.550	-1.068	Valley	60	56.16
31	60109.931	52.458	0.518	0.643	Summit	60	93.31
32	60328.549	52.186	-0.275	-0.289	Valley	60	207.88
33	60655.000	52.721	0.535	0.281	Summit	100	355.83
34	60812.355	52.537	-0.184	-0.587	Valley	60	102.26
35	60996.709	53.283	0.746	-0.830	Valley	60	72.26
36	61158.020	55.500	1.300	2.600	Summit	150	57.69
37	61372.008	52.718	-1.300	-1.568	Valley	100	63.80
38	61732.723	53.283	0.268	0.548	Summit	100	182.52
39	62019.081	52.881	-0.280	-0.397	Valley	100	251.72
40	62322.000	53.235	0.117	0.018	Summit	60	3319.44
41	63000.507	53.958	0.099	-0.022	Valley	60	2777.67
42	63400.000	54.407	0.120	0.599	Summit	60	100.21
43	63545.070	53.839	-0.478	-1.138	Valley	60	52.71

VERTICAL CURVE DETAILS							
Sl. No.	VIP Chainage	Level (m)	Gradient (%)	% Change in grade	Type of Curve	Curve Length (m)	K Value
44	63590.240	54.428	0.660	0.786	Summit	60	76.37
45	63590.001	54.281	-0.126	-0.416	Valley	60	144.15
46	63710.801	54.745	0.291	0.408	Summit	60	147.09
47	64024.302	54.612	-0.117	-0.381	Valley	60	157.37
48	64393.493	55.587	0.264	0.613	Summit	60	97.83
49	64525.503	55.126	-0.349	-0.692	Valley	80	115.54
50	64707.654	55.751	0.343	0.443	Summit	100	225.63
51	64935.133	55.524	-0.100	0.098	Summit	60	615.06
52	65067.577	55.262	-0.198	-0.998	Valley	100	106.62
53	65181.020	56.102	0.740	0.531	Summit	60	113.05
54	65304.739	56.361	0.210	0.370	Summit	60	161.98
55	65557.056	55.955	-0.161	-0.649	Valley	60	92.50
56	65750.722	56.900	0.488	0.591	Summit	60	101.51
57	65903.859	56.742	-0.103	-0.402	Valley	60	149.19
58	66194.086	57.603	0.299	0.443	Summit	60	135.31
59	66372.735	57.351	-0.145	-0.281	Valley	60	213.81
60	66660.198	57.743	0.136	0.244	Summit	60	245.69
61	66816.054	57.574	-0.108	-0.494	Valley	125	253.28
62	66995.000	58.264	0.385	0.465	Summit	100	215.27
63	67407.670	57.937	-0.100	-0.194	Valley	60	309.49
64	68070.584	58.698	0.115	0.227	Summit	100	440.43
65	68297.182	58.443	-0.112	-0.536	Valley	60	111.99
66	68441.057	59.053	0.423	0.306	Summit	60	195.79
67	68857.035	59.539	0.117	-0.094	Valley	60	639.24
68	69149.425	60.156	0.211	0.322	Summit	100	310.54
69	69302.932	59.985	-0.111	-0.317	Valley	60	189.40
70	69825.000	61.059	0.206	0.456	Summit	100	219.51
71	69981.012	60.669	-0.250	-0.473	Valley	60	126.72
72	70485.021	61.795	0.224	0.124	Summit	200	1618.93
73	70966.472	62.277	0.100	0.251	Summit	60	238.71
74	71185.776	61.945	-0.151	-0.315	Valley	60	190.40
75	71672.459	62.742	0.164	0.458	Summit	60	131.10
76	71836.817	62.259	-0.294	-0.520	Valley	100	192.24
77	72041.020	62.721	0.226	0.116	Summit	100	859.50
78	72218.408	62.916	0.110	0.311	Summit	60	192.69
79	72366.398	62.618	-0.201	-0.443	Valley	60	135.51
80	72450.000	62.820	0.241	0.241	Summit	0	0.00


DATE: 20/07/2017 2:15PM PATH: T:\CAL\AD 213007 BINARY REVISED DRRV\HPP\PACKAGE-III\VERTICAL DETAILS PACKAGE-2.dwg

CLIENT:  Bihar State Road Development Corporation Limited (BSRDCL) (A Government of Bihar Undertaking)

PROJECT: Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:  SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company

PG	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)	DRAWN BY : R.K.	TITLE : LRP CHOWK (BAHADURGANJ) - DIGHALBANK (PACKAGE-II)
PF	17/12/19	GOOD FOR CONSTRUCTION (DPR)	CHECKED BY : A.S.	VERTICAL ALIGNMENT DETAIL
PD	10/04/14	GOOD FOR CONSTRUCTION (DPR)	APPROVED BY : A.D.	
PC	29/02/14	ISSUED WITH FINAL DPR	ISSUED BY : B.H.	DRG. NO. : SAI-213007/DPR/CH/IVAD - 01
PS	01/03/14	ADDITION OF DRRV		REVISION : PG
PT	13/11/13	ISSUED WITH DRRV		

 SAI CONSULTING ENGINEERS PVT. LTD.

207
570

SCHEDULE OF TRAFFIC SIGN				
Sr. No.	Design Chainage	Traffic Sign	Type of Sign	Side
1	52+115	S-66	SH route marker	LEFT
2	52+115	S-46	Advance direction sign	LEFT
3	52+115	S-4	Compulsory keep left	Central Median
4	52+115	S-1	Stop sign	Central Median
5	52+137	S-17	Speed limit	LEFT
6	52+143	S-1	Stop sign	Central Median
7	52+178	S-58	Chevron sign	RIGHT
8	52+193	S-4	Compulsory keep left	Central Median
9	52+115	S-66	SH route marker	RIGHT
10	52+115	S-46	Advance direction sign	RIGHT
11	52+115	S-4	Compulsory keep left	Central Median
12	52+193	S-4	Compulsory keep left	Central Median
13	52+207	S-58	Chevron sign	RIGHT
14	52+288	S-46	Advance direction sign	LEFT
15	52+297	S-46	Advance direction sign	RIGHT
16	52+320	S-66	SH route marker	RIGHT
17	52+331	S-58	Chevron sign	RIGHT
18	52+340	S-1	Stop sign	RIGHT
19	52+361	S-58	Chevron sign	RIGHT
20	52+361	S-46	Advance direction sign	RIGHT
21	52+392	S-58	Chevron sign	RIGHT
22	52+418	S-1	Stop sign	LEFT
23	52+445	S-46	Advance direction sign	LEFT
24	52+482	S-46	Advance direction sign	RIGHT
25	52+511	S-58	Chevron sign	RIGHT
26	52+627	S-58	Chevron sign	RIGHT
27	52+665	S-21	Left hand curve	RIGHT
28	52+668	S-58	Chevron sign	RIGHT
29	52+685	S-22	Right hand curve	LEFT
30	53+048	S-58	Chevron sign	LEFT
31	53+135	S-58	Chevron sign	LEFT
32	53+180	S-58	Chevron sign	LEFT
33	53+194	S-46	Advance direction sign	LEFT
34	53+237	S-1	Stop sign	RIGHT
35	53+240	S-46	Advance direction sign	RIGHT
36	53+287	S-22	Right hand curve	LEFT
37	53+285	S-58	Chevron sign	LEFT
38	53+340	S-46	Advance direction sign	LEFT
39	53+340	S-1	Stop sign	LEFT
40	53+386	S-46	Advance direction sign	RIGHT
41	53+386	S-58	Chevron sign	LEFT
42	53+405	S-21	Left hand curve	RIGHT
43	53+445	S-58	Chevron sign	LEFT
44	53+488	S-58	Chevron sign	LEFT
45	53+488	S-58	Chevron sign	RIGHT
46	53+532	S-58	Chevron sign	LEFT
47	53+545	S-46	Advance direction sign	LEFT
48	53+577	S-58	Chevron sign	LEFT
49	53+592	S-20	Series of Bend	LEFT
50	53+622	S-58	Chevron sign	LEFT
51	53+676	S-1	Stop sign	RIGHT
52	53+679	S-46	Advance direction sign	RIGHT
53	53+695	S-1	Stop sign	LEFT
54	53+719	S-46	Advance direction sign	RIGHT
55	53+792	S-58	Chevron sign	LEFT
56	53+825	S-46	Advance direction sign	RIGHT
57	53+839	S-58	Chevron sign	LEFT
58	53+847	S-21	Left hand curve	RIGHT
59	53+885	S-1	Stop sign	RIGHT
60	53+888	S-1	Stop sign	RIGHT
61	53+892	S-46	Advance direction sign	RIGHT
62	53+894	S-58	Bus stop	LEFT
63	53+915	S-58	Chevron sign	RIGHT
64	54+011	S-46	Advance direction sign	RIGHT
65	54+014	S-58	Chevron sign	LEFT
66	54+031	S-58	Chevron sign	RIGHT
67	54+069	S-55	Bus stop	RIGHT
68	54+078	S-58	Chevron sign	LEFT
69	54+097	S-58	Chevron sign	LEFT
70	54+130	S-58	Chevron sign	LEFT

SCHEDULE OF TRAFFIC SIGN				
Sr. No.	Design Chainage	Traffic Sign	Type of Sign	Side
71	54+270	S-58	Chevron sign	LEFT
72	54+811	S-58	Chevron sign	LEFT
73	54+339	S-20	Series of Bend	RIGHT
74	54+348	S-58	Chevron sign	RIGHT
75	54+391	S-58	Chevron sign	RIGHT
76	54+420	S-58	Chevron sign	RIGHT
77	54+467	S-58	Chevron sign	RIGHT
78	54+489	S-58	Chevron sign	RIGHT
79	54+529	S-58	Chevron sign	RIGHT
80	54+548	S-58	Chevron sign	RIGHT
81	54+578	S-58	Chevron sign	RIGHT
82	54+632	S-58	Chevron sign	RIGHT
83	54+658	S-58	Chevron sign	RIGHT
84	54+822	S-58	Chevron sign	RIGHT
85	54+973	S-58	Chevron sign	RIGHT
86	54+985	S-17	Speed limit	RIGHT
87	55+422	S-58	Chevron sign	RIGHT
88	55+458	S-58	Chevron sign	RIGHT
89	55+508	S-58	Chevron sign	LEFT
90	55+559	S-1	Stop sign	Right
91	55+582	S-46	Advance direction sign	Right
92	55+599	S-58	Chevron sign	Left
93	55+642	S-58	Chevron sign	Left
94	55+711	S-46	Advance direction sign	Right
95	55+738	S-58	Chevron sign	Right
96	55+780	S-58	Chevron sign	Right
97	55+783	S-58	Chevron sign	Left
98	55+790	S-58	Chevron sign	Right
99	55+850	S-58	Chevron sign	Right
100	55+813	S-58	Chevron sign	Left
101	55+899	S-46	Advance direction sign	Left
102	55+994	S-58	Chevron sign	Left
103	58+043	S-58	Chevron sign	Left
104	58+139	S-46	Advance direction sign	Left
105	58+139	S-1	Stop sign	Left
106	58+243	S-58	Left hand curve	Right
107	58+266	S-46	Advance direction sign	Right
108	58+391	S-17	Speed limit	Right
109	58+418	S-58	Chevron sign	Left
110	58+501	S-58	Chevron sign	Left
111	58+528	S-58	Chevron sign	Left
112	58+666	S-67A	Hazard marker	Left
113	58+689	S-67A	Hazard marker	Right
114	58+893	S-58	Chevron sign	Left
115	57+033	S-58	Chevron sign	Left
116	57+102	S-58	Chevron sign	Left
117	57+146	S-17	Speed limit	Left
118	57+183	S-58	Chevron sign	Right
119	57+244	S-58	Chevron sign	Right
120	57+298	S-32	Right hand curve	Left
121	57+384	S-58	Chevron sign	Right
122	57+401	S-58	Chevron sign	Left
123	57+490	S-58	Chevron sign	Left
124	57+535	S-58	Chevron sign	Left
125	57+580	S-58	Chevron sign	Left
126	57+621	S-58	Chevron sign	Left
127	57+763	S-58	Chevron sign	Right
128	57+815	S-58	Chevron sign	Left
129	57+831	S-58	Chevron sign	Right
130	57+911	S-58	Chevron sign	Right
131	57+965	S-58	Chevron sign	Right
132	58+058	S-32	Right hand curve	Right
133	58+058	S-58	Chevron sign	Left
134	58+082	S-58	Chevron sign	Right
135	58+211	S-17	Speed limit	Right
136	59+203	S-58	Chevron sign	Right
137	59+213	S-58	Chevron sign	Right
138	59+364	S-58	Chevron sign	Right
139	59+454	S-58	Chevron sign	Right
140	59+533	S-58	Chevron sign	Right

SCHEDULE OF TRAFFIC SIGN				
Sr. No.	Design Chainage	Traffic Sign	Type of Sign	Side
141	59+562	S-46	Advance direction sign	Left
142	59+613	S-58	Chevron sign	Right
143	59+691	S-58	Chevron sign	Right
144	59+704	S-46	Advance direction sign	Left
145	59+811	S-1	Stop sign	Left
146	59+839	S-46	Advance direction sign	Right
147	59+842	S-58	Chevron sign	Right
148	59+902	S-58	Chevron sign	Right
149	60+015	S-46	Advance direction sign	Left
150	60+042	S-58	Chevron sign	Right
151	60+045	S-1	Stop sign	Right
152	60+111	S-46	Advance direction sign	Right
153	60+112	S-46	Advance direction sign	Right
154	60+403	S-58	Chevron sign	Left
155	60+553	S-58	Chevron sign	Left
156	60+644	S-58	Chevron sign	Left
157	60+762	S-58	Chevron sign	Left
158	60+838	S-17	Speed limit	Left
159	60+842	S-58	Chevron sign	Left
160	60+821	S-58	Chevron sign	Left
161	60+955	S-58	Chevron sign	Left
162	60+985	S-22	Right hand curve	Left
163	61+057	S-58	Chevron sign	Left
164	61+146	S-67A	Hazard marker	Left
165	61+171	S-67A	Hazard marker	Right
166	61+177	S-58	Chevron sign	Left
167	61+222	S-58	Chevron sign	Left
168	61+452	S-33	Left hand curve	Right
169	61+481	S-46	Advance direction sign	Left
170	61+596	S-17	Speed limit	Right
171	61+606	S-46	Advance direction sign	Left
172	61+606	S-1	Stop sign	Left
173	62+041	S-46	Advance direction sign	Right
174	61+806	S-58	Chevron sign	Right
175	61+838	S-58	Chevron sign	Right
176	61+918	S-58	Chevron sign	Right
177	62+068	S-58	Chevron sign	Right
178	62+243	S-58	Chevron sign	Right
179	62+314	S-58	Chevron sign	Left
180	62+383	S-58	Chevron sign	Left
181	62+523	S-58	Chevron sign	Left
182	63+119	S-46	Advance direction sign	Left
183	63+247	S-1	Stop sign	Right
184	63+254	S-46	Advance direction sign	Right
185	63+309	S-17	Speed limit	Left
186	63+384	S-46	Advance direction sign	Left
187	63+393	S-46	Advance direction sign	Right
188	63+458	S-21	Left hand curve	Left
189	63+528	S-46	Advance direction sign	Left
190	63+528	S-1	Stop sign	Left
191	63+642	S-58	Chevron sign	Right
192	63+655	S-58	Chevron sign	Right
193	63+665	S-46	Advance direction sign	Right
194	63+674	S-58	Chevron sign	Right
195	63+714	S-58	Chevron sign	Right
196	63+771	S-17	Speed limit	Left
197	63+894	S-32	Right hand curve	Right
198	63+921	S-32	Right hand curve	Left
199	64+044	S-17	Speed limit	Right
200	64+066	S-58	Chevron sign	Left
201	64+126	S-58	Chevron sign	Right
202	64+147	S-58	Chevron sign	Right
203	64+272	S-46	Advance direction sign	Left
204	64+310	S-58	Chevron sign	Left
205	64+370	S-58	Chevron sign	Left
206	64+416	S-46	Advance direction sign	Left
207	64+416	S-1	Stop sign	Left
208	64+544	S-46	Advance direction sign	Right
209	64+601	S-55	Bus stop	Left
210	64+731	S-55	Bus stop	Right

SCHEDULE OF TRAFFIC SIGN				
Sr. No.	Design Chainage	Traffic Sign	Type of Sign	Side
211	64+853	S-66	SH route marker	Right
212	65+000	S-17	Speed limit	Right
213	65+105	S-46	Advance direction sign	Left
214	65+137	S-58	Chevron sign	Right
215	65+174	S-58	Chevron sign	Right
216	65+206	S-58	Chevron sign	Right
217	65+239	S-1	Stop sign	Right
218	65+249	S-46	Advance direction sign	Right
219	65+266	S-58	Chevron sign	Right
220	65+388	S-46	Advance direction sign	Right
221	65+406	S-58	Chevron sign	Right
222	67+148	S-46	Advance direction sign	Left
223	67+294	S-46	Advance direction sign	Left
224	68+294	S-1	Stop sign	Left
225	67+356	S-1	Stop sign	Right
226	67+356	S-46	Advance direction sign	Right
227	67+501	S-46	Advance direction sign	Right
228	68+741	S-55	Bus stop	Left
229	68+871	S-55	Bus stop	Left
230	69+146	S-46	Advance direction sign	Left
231	69+280	S-1	Stop sign	Right
232	69+315	S-46	Advance direction sign	Right
233	69+429	S-46	Advance direction sign	Right
234	71+014	S-58	Chevron sign	Right
235	71+096	S-58	Chevron sign	Right
236	71+178	S-58	Chevron sign	Right
237	71+255	S-58	Chevron sign	Right
238	71+414	S-58	Chevron sign	Right
239	71+565	S-58	Chevron sign	Right
240	72+229	S-46	Advance direction sign	Left
241	72+318	S-17	Speed limit	Left
242	72+377	S-1	Stop sign	Left
243	72+406	S-46	Advance direction sign	Left
244	72+424	S-1	Stop sign	Right
245	72+428	S-46	Advance direction sign	Right

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CLIENT:  Bihar State Road Development Corporation Limited (BSRDC) (A Government of Bihar Undertaking)

PROJECT: Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:  SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company

DATE: 31/07/19
 PD: 28/12/18
 DC: 18/01/19
 PR: 28/02/19
 EA: 18/11/18

GOOD FOR CONSTRUCTION (REVISED DPR)
 GOOD FOR CONSTRUCTION (REVISED DPR)
 ISSUED WITH FINAL DPR
 ISSUED WITH DPR

DRY BY: XLS.
 CHECKED BY: HAL
 APPROVED BY: E.S.

SCALE: 1:500

TITLE: LRP CHOWK (BAHADURGANJ - DIGHALBANK (PACKAGE-III)) ROAD FURNITURE TABLES

DRG. NO.: SAI-213007(DPR)/RFT - 01

REVISION: PE



W-beam Metal Crash Barrier Locations-Package 3

Sr. no.	Left Side Crash Barrier			Right Side Crash Barrier		
	Design Chainage		Length m	Design Chainage		Length m
	From	To		From	To	
1	56+580	56+671	91	56+590	56+671	81
2	56+690	56+760	70	56+690	56+770	80
3	59+760	59+790	30	59+760	59+790	30
4	59+802	59+832	30	59+802	59+832	30
5	61+060	61+152	92	61+070	61+152	82
6	61+170	61+210	40	61+170	61+210	40

Pedestrian Guard Rail locations (Built-up area) - Package 3

Sr No.	Existing Chainage		Design Chainage		Length (mt.)	Cross section Type
	From	To	From	To		
1	24/000	25/740	52+115	53+855	1740	TCS-6
2	55/280	56/400	53+855	54+985	1130	TCS-6
3	60/970	61/165	59+560	59+760	200	TCS-6
4	64/760	64/960	63+360	63+560	200	TCS-6
5	69/410	69/710	68+005	68+305	300	TCS-6
6	73/455	73/655	72+065	72+265	200	TCS-6

Road studs locations (Curves) - Package 3

Sr. No.	Transition start	Transition end	Length (mt.)	Radius of curve (mt.)	Nos. of studs
1	52291.340	52358.138	64.798	280	4
2	53135.345	53208.309	70.964	300	5
3	53487.857	53658.792	170.935	350	35
4	53791.301	53839.761	48.460	350	11
5	54033.314	54142.030	108.716	110	23
6	54346.725	54445.136	98.411	230	21
7	54535.130	54577.617	42.487	280	9
8	54587.627	54871.007	283.380	150	18
9	55371.781	55508.636	136.855	305	28
10	55568.929	55670.313	103.384	305	22
11	55693.874	55850.078	141.404	200	29
12	57444.750	57685.615	220.819	350	45
13	60070.108	603709.247	102.128	175	21
14	64071.135	64201.954	130.519	250	27
15	64370.130	64458.871	148.841	200	31

Road Studs (Built-up Area) - Package 3

Sr. No.	Design Chainage		Length of section (mt.)	Nos. of studs
From	To			
1	52+115	53+855	1740	349
2	53+855	54+985	1130	227
3	59+560	59+760	200	41
4	63+360	63+560	200	41
5	68+005	68+305	300	61
6	72+065	72+265	200	41

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CLIENT: **Bihar State Road Development Corporation Limited (BSRDCL)**
 (A Government of Bihar Undertaking)

PROJECT: **Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)**

CONSULTANTS: **SAI Consulting Engineers, Pvt. Ltd.**
 An ISO 9001 Certified Company
 SYSTRA GROUP

Plot-A, "SAI House", Sofam Corporate Square, Bih Rajpath
 Dist. Bhojpur, Bihar-801005, Bihar, India
 Phone: +91-91-4481807/8/9 Fax: +91-91-3616200
 Email: mail@saindo.com

REV.	DATE	DESCRIPTION	SIGN	ISSUED BY	REVL
PE	31/07/13	GOOD FOR CONSTRUCTION (REVISED DPR)			
PD	28/12/13	GOOD FOR CONSTRUCTION (REVISED DPR)			
PC	19/04/14	GOOD FOR CONSTRUCTION (REVISED DPR)			
PP	26/02/14	ISSUED WITH FINAL DPR			
PA	16/11/13	ISSUED WITH DPR			

TITLE: **LRP C&OWK (BAHADURGANJ) - DIGHALBANK (PACKAGE-III) ROAD FURNITURE TABLES**

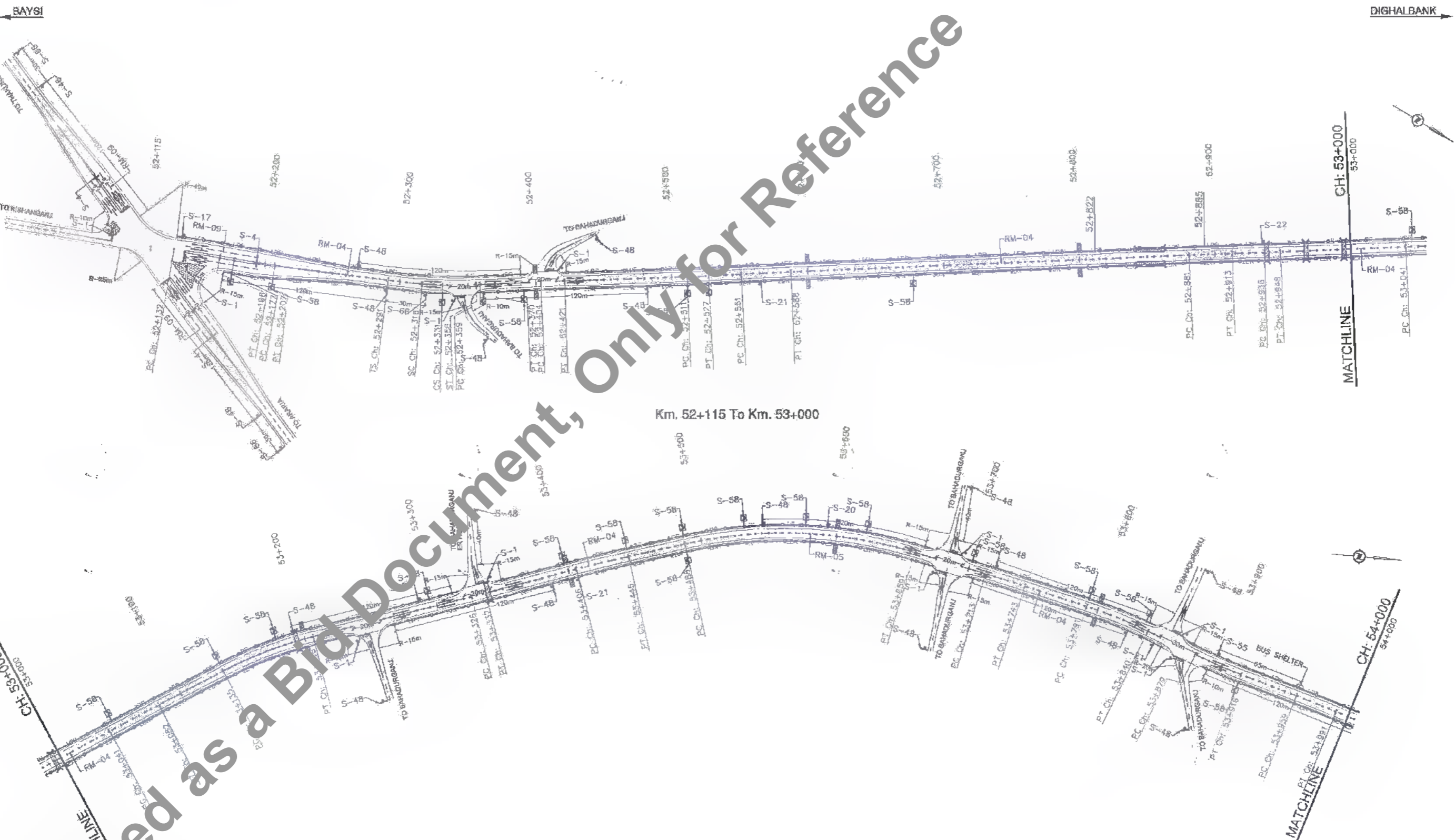
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REVISION: PE



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Km. 52+115 To Km. 53+000

Km. 53+000 To Km. 54+000

LEGEND

- CHEVRON SIGN
- CRASH BARRIER
- PEDESTRIAN GUARDRAIL
- STUDS

NOTES:

1. ALL DIMENSIONS IN METRES UNLESS OTHERWISE MENTIONED
2. REFER DRAWING NO. SAL-213007/DP/PC/M/TYP-01 FOR BUS SHELTER DETAILS
3. REFER DRAWING NO. SAL-213007/DP/PC/M/TYP-04, 04A, & 04B FOR ROAD SIGN
4. REFER DRAWING NO. SAL-213007/DP/PC/M/TYP-05 FOR PROVIDE PGR IN BUSBAY & BUS STOP
5. REFER DRAWING NO. SAL-213007/DP/PC/M/TYP-06 & 07 FOR ROAD MARKING
6. REFER DRAWING NO. SAL-213007/DP/PC/M/TYP-08 FOR CRASH BARRIER DETAILS
7. REFER DRAWING NO. SAL-213007/DP/PC/M/TYP-19 FOR RUMBLE STRIP DETAILS
8. REFER DRAWING NO. SAL-213007/DP/PC/M/TYP/JUNC-01 TO 05 & 01A TO 05A FOR TYPICAL JUNCTION DETAILS

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CLIENT:



Bihar State Road Development Corporation Limited (BSRDCL)
(A Government of Bihar Undertaking)

PROJECT:

Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:




SAL Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company

Plot-A "SAL House" Solihani Enclave Sector, Bih. Hajrat
Club Road, Patna-800013, Bihar-800013, India
Phone: +91-91-80122007100, Fax: +91-91-80122008
Email: info@salindia.com

REV.	DATE	DESCRIPTION	SIGN	ISSUED BY
01	31/03/19	GOOD FOR CONSTRUCTION (REVISED DPR)		
02	28/12/18	GOOD FOR CONSTRUCTION (DPR)		
03	31/05/17	GOOD FOR CONSTRUCTION (DPR)		
04	18/04/14	GOOD FOR CONSTRUCTION (DPR)		
05	25/02/14	ISSUED WITH FINAL DPR		
06	09/03/14	ADDITIONAL OF DPR		

SCALE: 1:2000



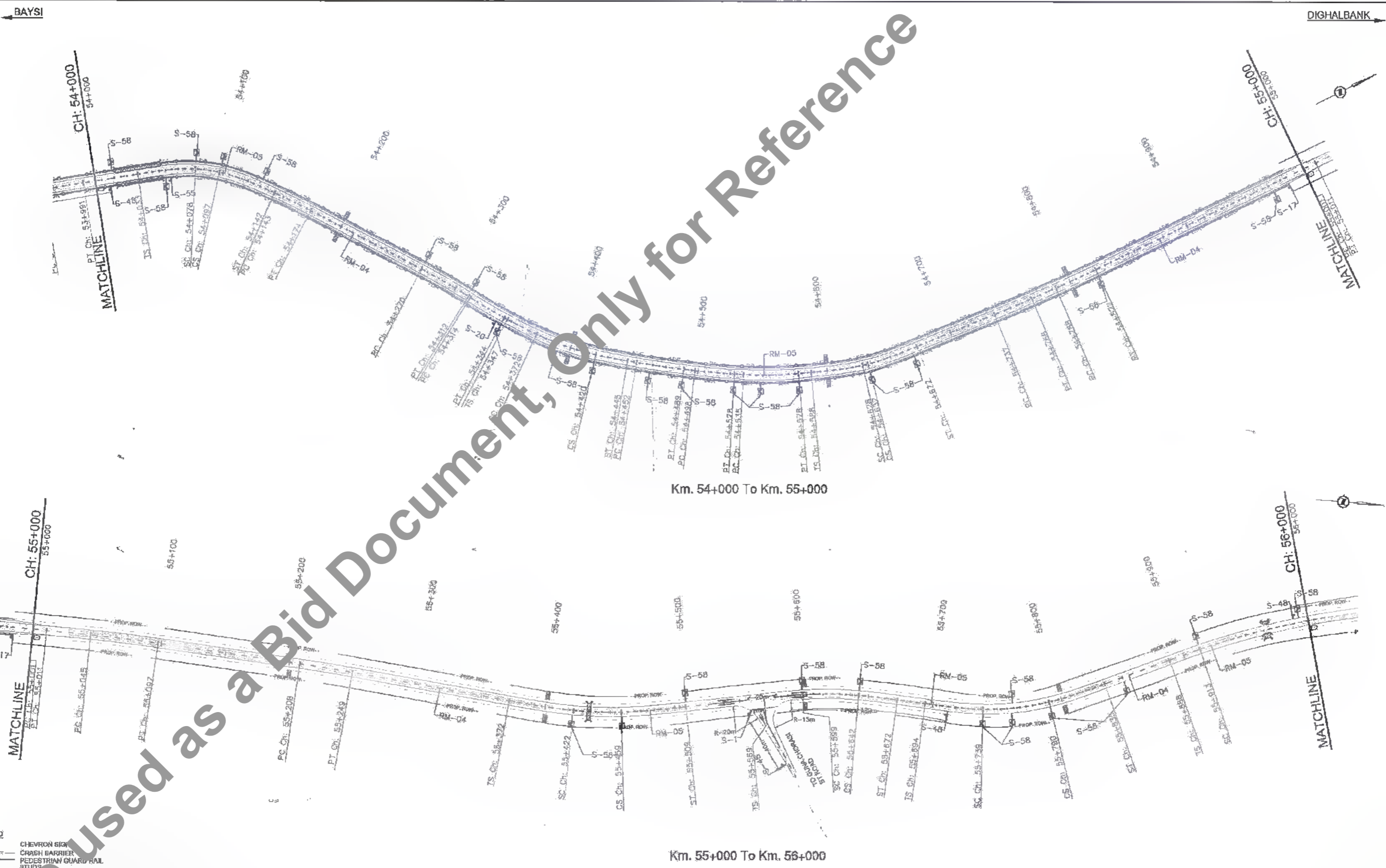
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ROAD FURNITURE PLAN
KM. 52+115 TO KM. 54+000

DRG. NO.:
SAL-213007/DP/PC/M/RF-01

REVISION: PG



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- CHEVRON SIGN
- CRASH BARRIER
- PEDESTRIAN GUARD RAIL
- STUDS

NOTES:

1. ALL DIMENSIONS IN METRES UNLESS OTHERWISE MENTIONED
2. REFER DRAWING NO. SAI-213007/DFR/C/M/TYP-01 FOR BUS SHELTER DETAILS
3. REFER DRAWING NO. SAI-213007/DFR/C/M/TYP-04, 04A, & 04B FOR ROAD SIGN
4. REFER DRAWING NO. SAI-213007/DFR/C/M/TYP-05 FOR PROVIDE PGR IN BUEBAY & BUS STOP
5. REFER DRAWING NO. SAI-213007/DFR/C/M/TYP-06 & 07 FOR ROAD MARKING
6. REFER DRAWING NO. SAI-213007/DFR/C/M/TYP-06 FOR CRASH BARRIER DETAILS
7. REFER DRAWING NO. SAI-213007/DFR/C/M/TYP-10 FOR RUMBLE STRIP DETAILS
8. REFER DRAWING NO. SAI-213007/DFR/C/M/TYP/JUNC-01 TO 05 & 01A TO 05A FOR TYPICAL JUNCTION DETAILS

CLIENT:




Bihar State Road Development Corporation Limited (BSRDC)
(A Government of Bihar Undertaking)

PROJECT:

Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:




SAL Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company

Block-A "SAL House" Salgra Corporate Square, W/4 Rajgods,
Club Road, Patna-800005, Bihar, India
Phone : +91-91-4432608/708 Fax : +91-91-4612903
E-mail : mail@salindia.com

REV.	DATE	DESCRIPTION	SIGN	ISSUED BY
PG	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)		DRAWN BY : V.L.S.
PF	28/12/18	GOOD FOR CONSTRUCTION (DPR)		CHECKED BY : H.M.
PE	31/03/17	GOOD FOR CONSTRUCTION (DPR)		APPROVED BY : C.S.
PD	10/04/14	GOOD FOR CONSTRUCTION (DPR)		
PC	26/02/14	ISSUED WITH FINAL DPR		
PB	04/07/14	ADDENDUM OF DPR		

SCALE: 1:2000



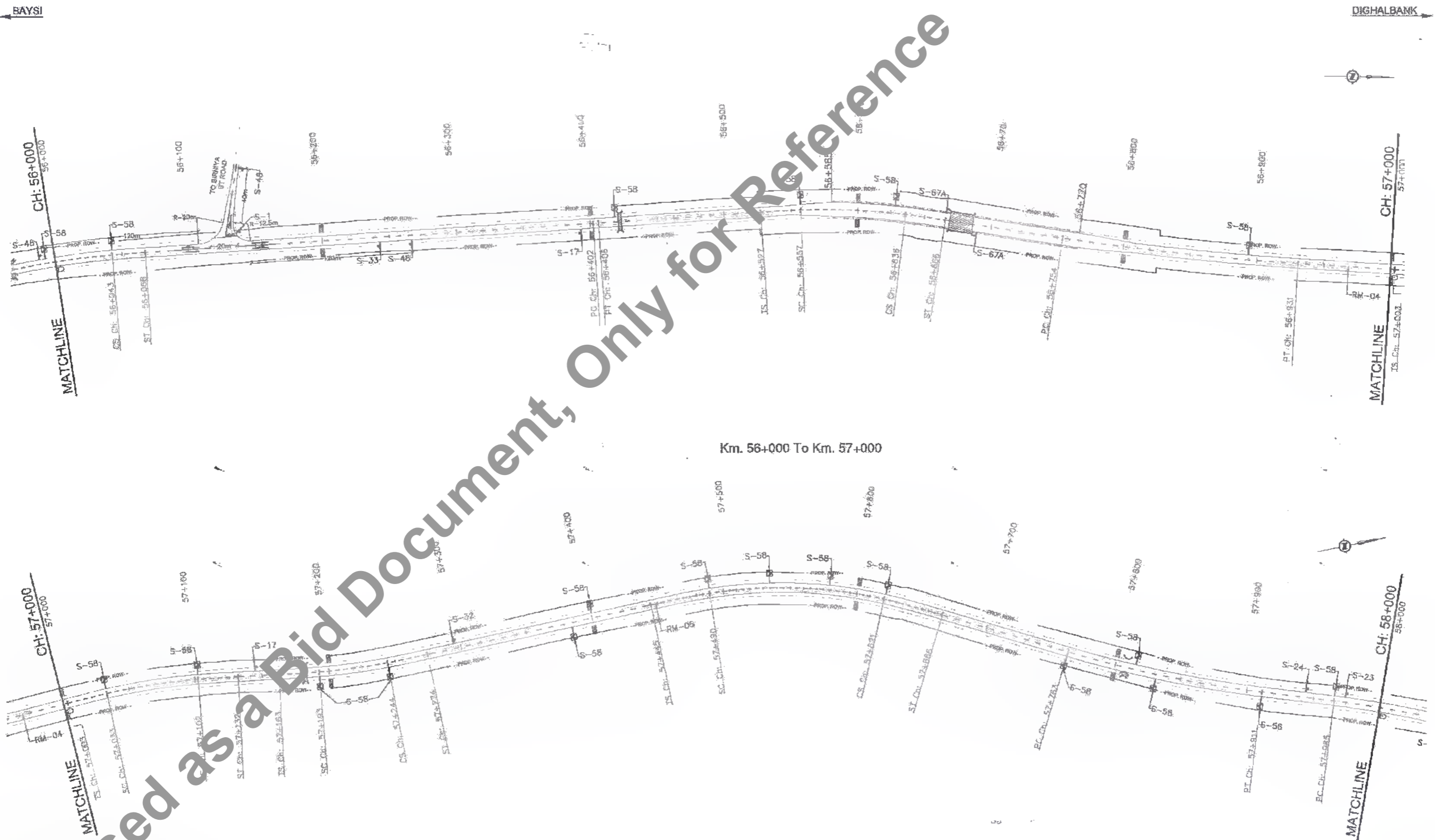
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SAI-213007/DFR/C/HRF - 02

REVISION: - R0

TITLE: LRP CHOWK (BAHADURGANJ) - DIGHALBANK (PACKAGE-III)
ROAD FURNITURE PLAN
KM. 54+000 TO KM. 56+000

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566



LEGEND

- CHEVRON SIGN
- CRASH BARRIER
- PEDESTRIAN GUARD STUDS

NOTES:

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE MENTIONED
2. REFER DRAWING NO. SA-213007/DP/RC/M/TYP-01 FOR BUS SHELTER DETAILS
3. REFER DRAWING NO. SA-213007/DP/RC/M/TYP-04, 04A, & 04B FOR ROAD SIGN
4. REFER DRAWING NO. SA-213007/DP/RC/M/TYP-05 FOR PROVIDE PGR IN BAYSAY & BUS STOP
5. REFER DRAWING NO. SA-213007/DP/RC/M/TYP-06 & 07 FOR ROAD MARKING
6. REFER DRAWING NO. SA-213007/DP/RC/M/TYP-08 FOR CRASH BARRIER DETAILS
7. REFER DRAWING NO. SA-213007/DP/RC/M/TYP-19 FOR RUMBLE STRIP DETAILS
8. REFER DRAWING NO. SA-213007/DP/RC/M/TYP/LINC-01 TO 05 & 01A TO 05A FOR TYPICAL JUNCTION DETAILS



Bihar State Road Development Corporation Limited (BSRDCL)
(A Government of Bihar Undertaking)

PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:
SAL Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company
B-10, "SAI House" Sakinaka Corporate Square, 8th, Ring Road, Durgam Cheruvu, Hyderabad - 500083, India
Phone: +91-78-66129987/9988 Fax: +91-78-6612999
Email: info@saiindia.com

REV.	DATE	DESCRIPTION	SIGN	ISSUED BY	DATE
PD	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)			
PF	28/12/18	GOOD FOR CONSTRUCTION (DPR)			
PE	31/03/17	GOOD FOR CONSTRUCTION (DPR)			
PD	10/04/14	GOOD FOR CONSTRUCTION (DPR)			
PC	26/02/14	ISSUED WITH FINAL DPR			
PD	04/01/14	ADDENDUM OF DPR			

SCALE: 1:2000

TITLE: LRP CHOWK (BAHADURGANJ) - DIGHALBANK (PACKAGE-III)
ROAD FURNITURE PLAN
KM. 56+000 TO KM. 58+000

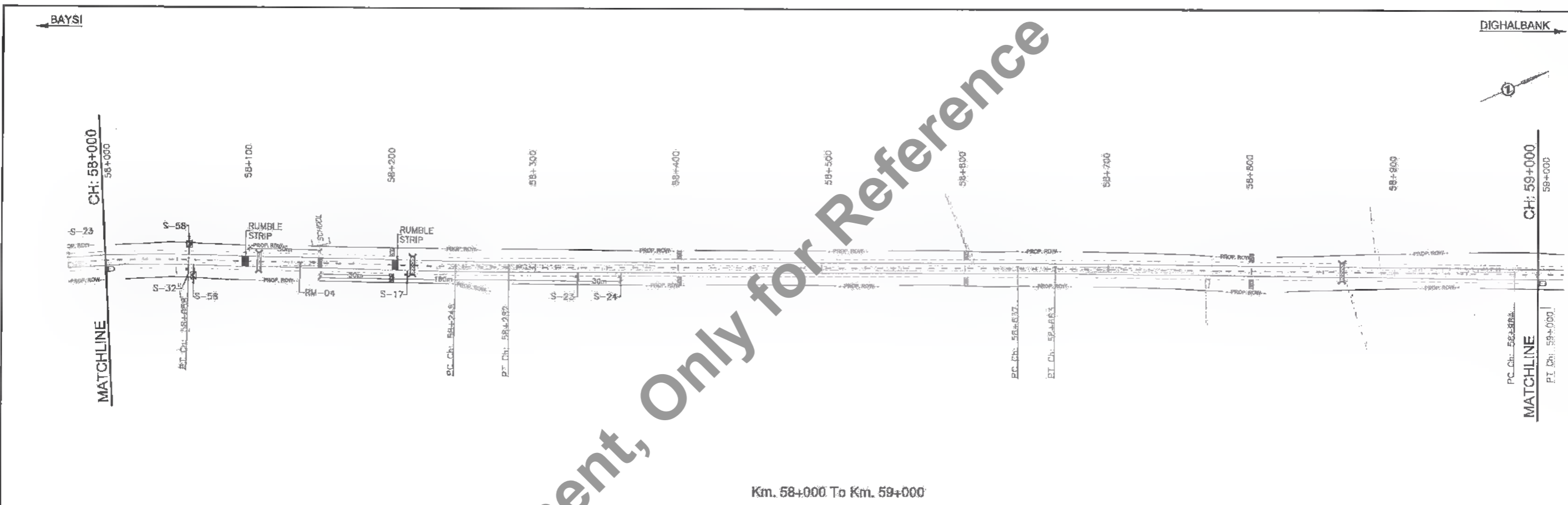
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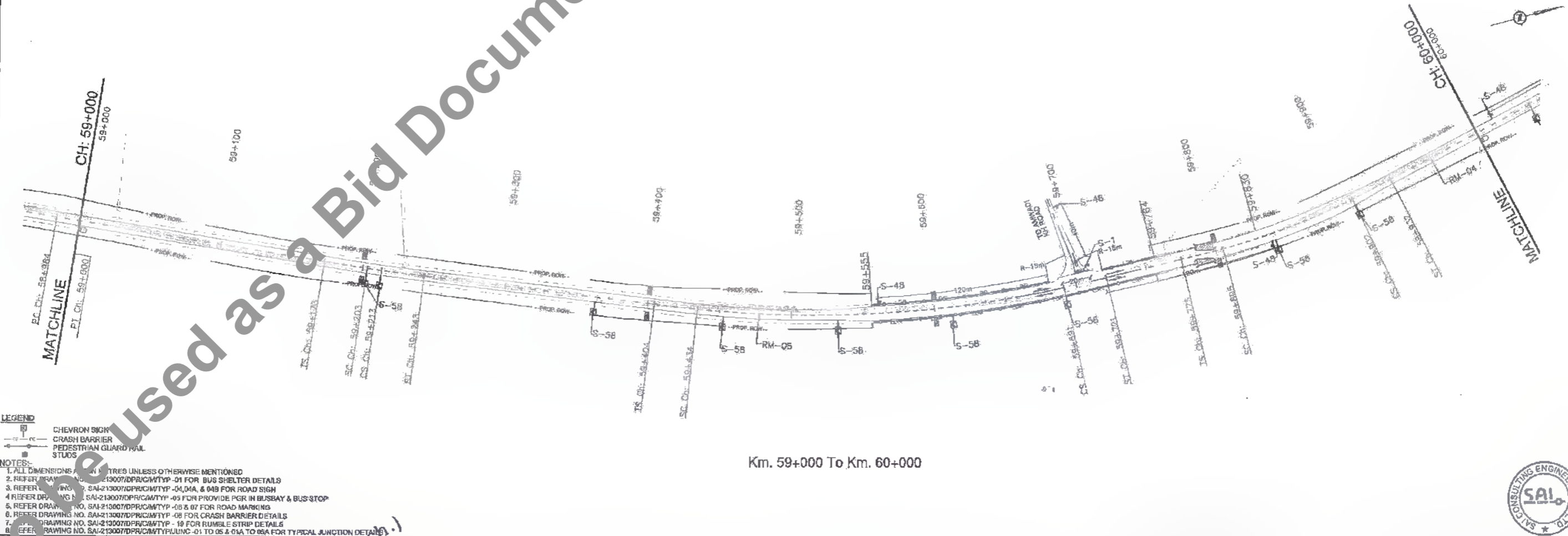


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 D. G. BSRDCL Tech
 P. BSRDCL
 P. BSRDCL



Km. 58+000 To Km. 59+000



Km. 59+000 To Km. 60+000

LEGEND

	CHEVRON SIGN
	CRASH BARRIER
	PEDESTRIAN GUARD RAIL
	STUDS

- NOTES:**
1. ALL DIMENSIONS IN METRES UNLESS OTHERWISE MENTIONED
 2. REFER DRAWING NO. SAI-213007/DPR/C/M/TYP-01 FOR BUS SHELTER DETAILS
 3. REFER DRAWING NO. SAI-213007/DPR/C/M/TYP-04, 04A, & 04B FOR ROAD SIGN
 4. REFER DRAWING NO. SAI-213007/DPR/C/M/TYP-05 FOR PROVIDE PGR IN BUSBAY & BUS STOP
 5. REFER DRAWING NO. SAI-213007/DPR/C/M/TYP-06 & 07 FOR ROAD MARKINGS
 6. REFER DRAWING NO. SAI-213007/DPR/C/M/TYP-08 FOR CRASH BARRIER DETAILS
 7. REFER DRAWING NO. SAI-213007/DPR/C/M/TYP-19 FOR RUMBLE STRIP DETAILS
 8. REFER DRAWING NO. SAI-213007/DPR/C/M/TYP/JUNC-01 TO 05 & 01A TO 05A FOR TYPICAL JUNCTION DETAILS



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CLIENT:
Bihar State Road Development Corporation Limited (BSRDC)
 (A Government of Bihar Undertaking)

PROJECT:
 Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
 Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:
Sai Consulting Engineers Pvt. Ltd.
 An ISO 9001 Certified Company
 Plot-A "SAI House", Sanyam Corner, Sector 5, Noida
 Distt. Gautam Buddha Nagar - 201307, Uttar Pradesh
 Phone : +91-11-5143667/8/9 Fax : +91-11-5143668
 Email : mail@saiindia.com

REV.	DATE	DESCRIPTION	SIGN	ISSUED BY
PC	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)		DRAWN BY : Y.L.S.
PF	28/12/18	GOOD FOR CONSTRUCTION (DPR)		CHECKED BY : H.M.
PE	31/03/17	GOOD FOR CONSTRUCTION (DPR)		APPROVED BY : G.S.
PD	18/04/14	GOOD FOR CONSTRUCTION (DPR)		ISSUED BY : B.S.
PC	29/02/14	ISSUED WITH FINAL DOWP		
PR	05/01/14	ADDENDUM OF DOWP		

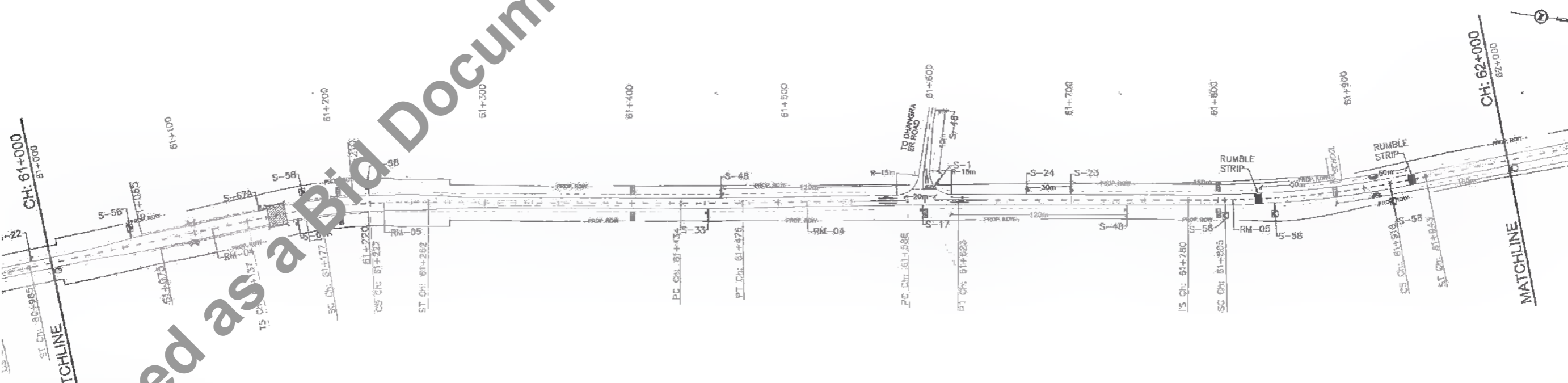
TITLE: LRP CHOWK (BAHADURGANJ) - DIGHALBANK (PACKAGE-III)
ROAD FURNITURE PLAN
 KM. 58+000 TO KM. 60+000
DRG. NO.:
 SAI-213007/DPR/CH/R/F - 04
REVISION: PG



2/3
564



Km. 60+000 To Km. 61+000



Km. 61+000 To Km. 62+000

LEGEND

- CHEVRON SIGN
- CRASH BARRIER
- PEDESTRIAN GUARDRAIL STUDS

NOTES:

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3. REFER DRAWING NO. SAI-213007/DPR/C/N/TYP-04, 04A, & 04B FOR ROAD SIGN
4. REFER DRAWING NO. SAI-213007/DPR/C/N/TYP-05 FOR PROVIDE FOR IN BUSWAY & BUS STOP
5. REFER DRAWING NO. SAI-213007/DPR/C/N/TYP-08 & 07 FOR ROAD MARKING
6. REFER DRAWING NO. SAI-213007/DPR/C/N/TYP-06 FOR CRASH BARRIER DETAILS
7. REFER DRAWING NO. SAI-213007/DPR/C/N/TYP-19 FOR RUMBLE STRIP DETAILS
8. REFER DRAWING NO. SAI-213007/DPR/C/N/TYP/JUNC-01 TO 05 & 01A TO 05A FOR TYPICAL JUNCTION DETAILS



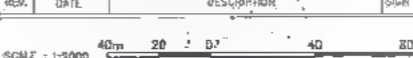
Bihar State Road Development Corporation Limited (BSRDC)
(A Government of Bihar Undertaking)

PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:
SAL Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company
Block-A 'SAI House' Sanyal Corporate Square, B-5, Sector-16, Gurgaon, Haryana
Phone: +91-124-4442600/799 Fax: +91-124-4442609
Email: sail@saiconsulting.com

PO	31/07/10	GOOD FOR CONSTRUCTION (REVISED DPR)	DRAWN BY : V.L.S.
PF	28/12/10	GOOD FOR CONSTRUCTION (DPR)	CHECKED BY : N.M.
PE	31/03/17	GOOD FOR CONSTRUCTION (DPR)	APPROVED BY : C.S.
PD	12/04/14	GOOD FOR CONSTRUCTION (DPR)	ISSUED BY : B.S.
PC	28/02/14	ISSUED WITH FINAL DOPR	
PI	04/01/14	ADDENDUM OF DOPR	

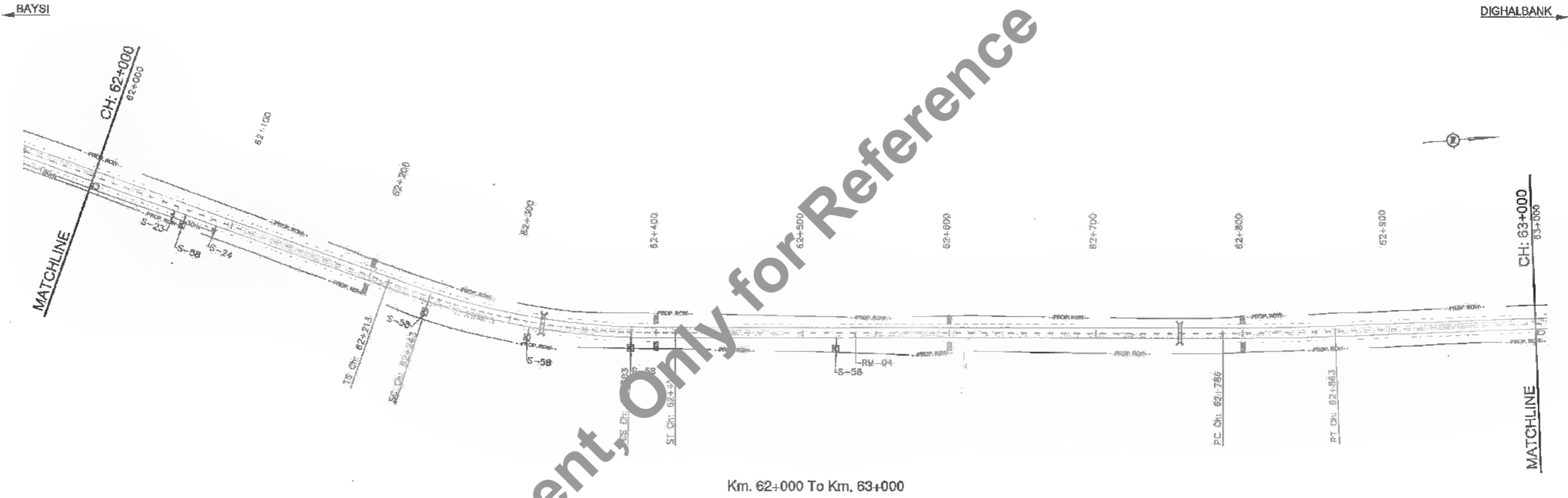
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ROAD FURNITURE PLAN
KM. 60+000 TO KM. 62+000



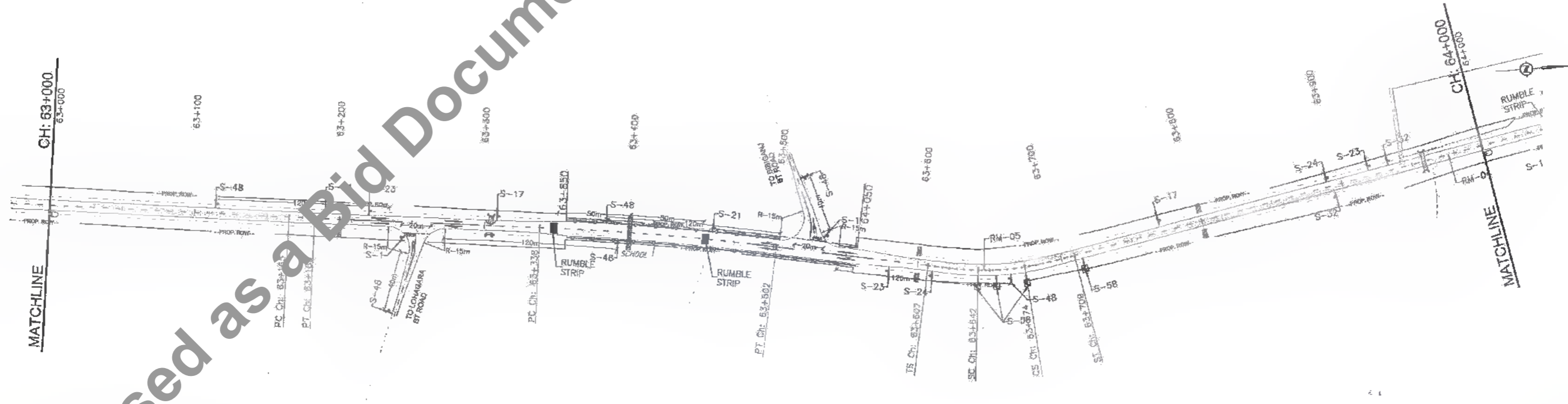
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REVISION: PG



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Km. 62+000 To Km. 63+000




Km. 63+000 To Km. 64+000

- LEGEND**
- CHEVRON SIGN
 - CRASH BARRIER
 - PEDESTRIAN GUARD RAIL
 - STUD

- NOTES:-**
1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE MENTIONED
 2. REFER DRAWING NO. SAI-213007/DPR/CH/TYPE-01 FOR BUS SHELTER DETAILS
 3. REFER DRAWING NO. SAI-213007/DPR/CH/TYPE-04, 04A, & 04B FOR ROAD SIGN
 4. REFER DRAWING NO. SAI-213007/DPR/CH/TYPE-05 FOR PROVIDE PGR IN BUSBAY & BUS STOP
 5. REFER DRAWING NO. SAI-213007/DPR/CH/TYPE-06 & 07 FOR ROAD MARKING
 6. REFER DRAWING NO. SAI-213007/DPR/CH/TYPE-08 FOR CRASH BARRIER DETAILS
 7. REFER DRAWING NO. SAI-213007/DPR/CH/TYPE-19 FOR RUMBLE STRIP DETAILS
 8. REFER DRAWING NO. SAI-213007/DPR/CH/TYPE-01 TO 06 & 01A TO 06A FOR TYPICAL JUNCTION DETAILS

CLIENT:



Bihar State Road Development Corporation Limited (BSRDC)
(A Government of Bihar Undertaking)

PROJECT:

Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:



SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company
Block-A "Sai Home" Satyamev Corporate Square, B/6 Rajpath
C/5, Sector-22, Connaught Place, New Delhi
Phone : +91-11-6648800/002 Fax : +91-11-6648800
Email : sai@saiconsulting.com

REV.	DATE	DESCRIPTION	SIGN	ISSUED BY
PC	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)		
PF	28/12/18	GOOD FOR CONSTRUCTION (DPR)		
PE	31/03/17	GOOD FOR CONSTRUCTION (DPR)		
PD	10/04/14	GOOD FOR CONSTRUCTION (DPR)		
PC	26/02/14	ISSUED WITH FINAL DOPB		
PD	04/01/14	ADDENDUM OF DPR		

DRWN BY : V.L.S.
CHECKED BY : N.M.
APPROVED BY : S.S.
ISSUED BY : S.S.

TITLE : LRP CHOWK (BAHADURGANJ) - DIGHALBANK (PACKAGE-III)
ROAD FURNITURE PLAN
KM. 62+000 TO KM. 64+000

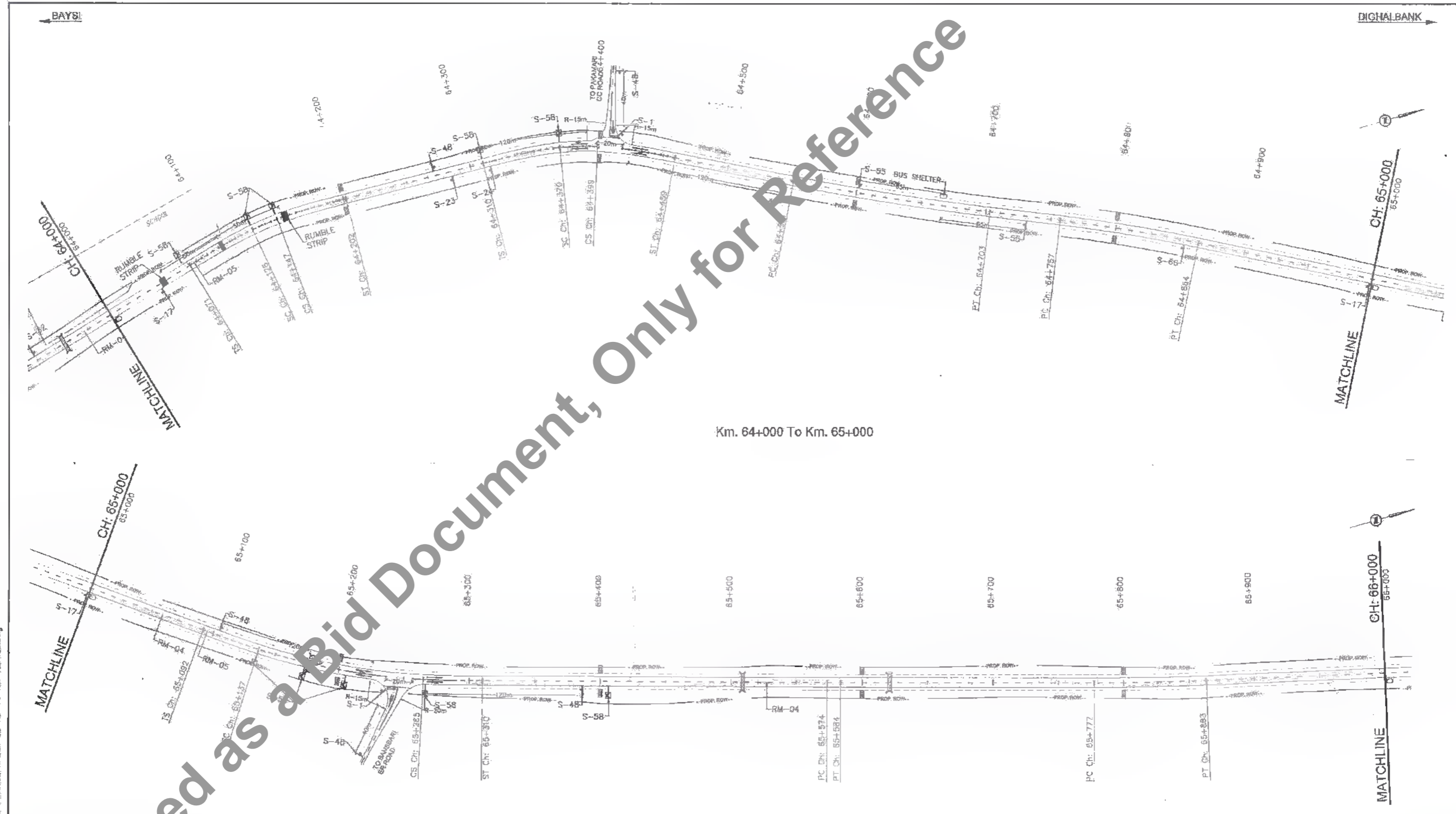
DRG. NO. :
SAI-213007/DPR/CH/RF-06

REVISION : PG



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215
562



Km. 64+000 To Km. 65+000

Km. 65+000 To Km. 66+000

LEGEND

- CHEVRON SIGN
- CRASH BARRIER
- PEDESTRIAN GUARD RAIL
- STUDS

NOTES:

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE MENTIONED
2. REFER DRAWING NO. SAI-213007/DPR/CM/TYP-01 FOR BUS SHELTER DETAILS
3. REFER DRAWING NO. SAI-213007/DPR/CM/TYP-04, 04A, & 04B FOR ROAD SIGN
4. REFER DRAWING NO. SAI-213007/DPR/CM/TYP-05 FOR PROVIDE PGR IN BUSWAY & BUS STOP
5. REFER DRAWING NO. SAI-213007/DPR/CM/TYP-06 & 07 FOR ROAD MARKING
6. REFER DRAWING NO. SAI-213007/DPR/CM/TYP-08 FOR CRASH BARRIER DETAILS
7. REFER DRAWING NO. SAI-213007/DPR/CM/TYP-19 FOR RUMBLE STRIP DETAILS
8. REFER DRAWING NO. SAI-213007/DPR/CM/TYP/JOINT-01 TO 05 & 01A TO 05A FOR TYPICAL JUNCTION DETAILS

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PROJECT:

Bihar State Road Development Corporation Limited (BSRDC)
(A Government of Bihar Undertaking)

CONSULTANTS:

SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company

PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

SAI
SYSTRA GROUP

Block-A, "Sai House", Surpan Corporate Square, B-16, Indira Park, Ganga Nagar, Patna-800005, Bihar, India
Phone: +91-91-4452280/700 Fax: +91-91-4452260
Email: sai@sainfos.com

REV.	DATE	DESCRIPTION	SIGN.	ISSUED BY :	DATE
RG	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)		Y.L.S.	
RF	28/12/18	GOOD FOR CONSTRUCTION (DPR)		H.M.	
PE	31/03/17	GOOD FOR CONSTRUCTION (DPR)		C.S.	
PD	10/04/14	GOOD FOR CONSTRUCTION (DPR)			
PC	26/02/14	ISSUED WITH FINAL DPR			
PB	04/01/14	APPENDIX OF DPR			

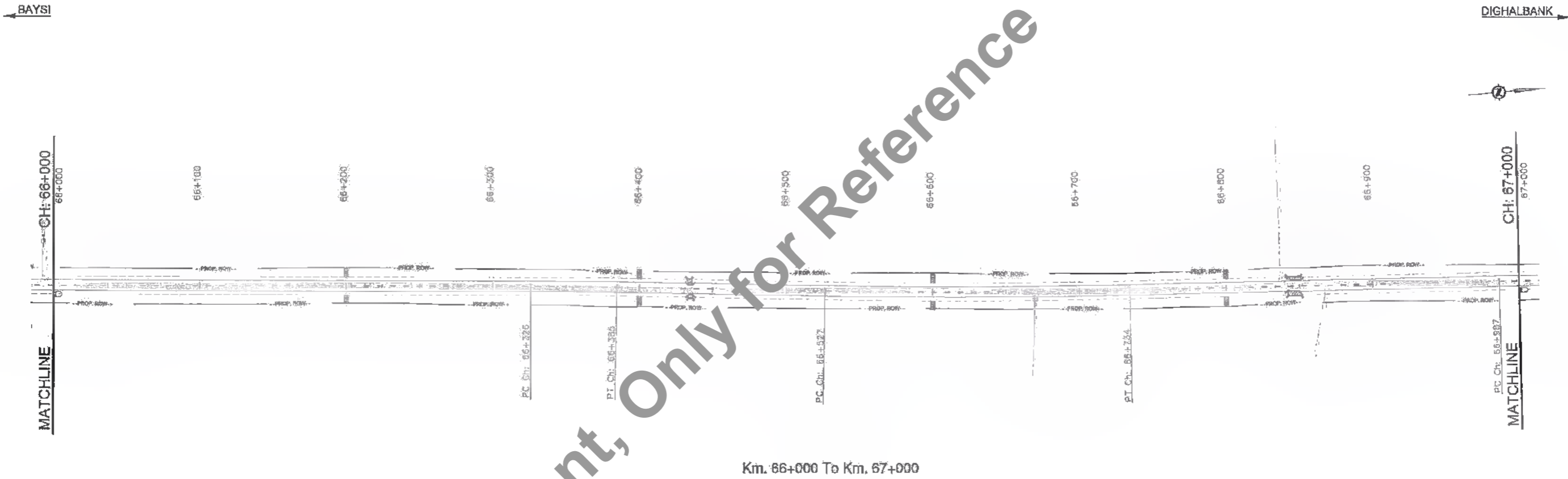
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SAI CONSULTING ENGINEERS PVT. LTD.

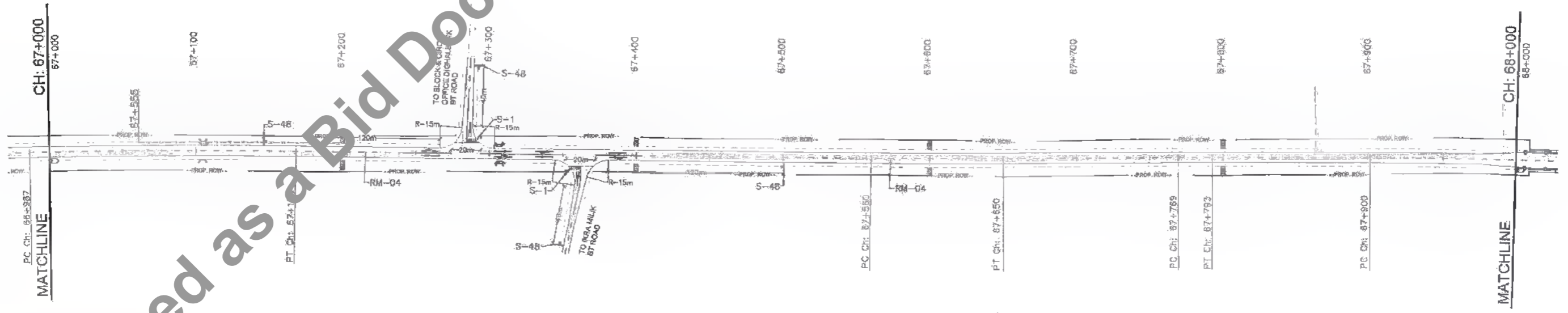
TITLE: LRP CHOWK (BAHADURGANJ) - DIGHALBANK (PACKAGE-III) ROAD FURNITURE PLAN
KM. 64+000 TO KM. 66+000

DRG. NO.:
SAI-213007/DPR/CM/RF - 07

REVISION: PG



Km. 66+000 To Km. 67+000



Km. 67+000 To Km. 68+000


LEGEND

- CHEVRON SIGN
- CRASH BARRIER
- PEDESTRIAN GUARD RAIL
- STUD

NOTES:-

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE MENTIONED
2. REFER DRAWING NO. SAI-213007/DPR/CM/TYP-01 FOR BUS SHELTER DETAILS
3. REFER DRAWING NO. SAI-213007/DPR/CM/TYP-04, 04A, & 04B FOR ROAD SIGN
4. REFER DRAWING NO. SAI-213007/DPR/CM/TYP-05 FOR PROVIDE PGR IN BUSWAY & BUS STOP
5. REFER DRAWING NO. SAI-213007/DPR/CM/TYP-06 & 07 FOR ROAD MARKING
6. REFER DRAWING NO. SAI-213007/DPR/CM/TYP-08 FOR CRASH BARRIER DETAILS
7. REFER DRAWING NO. SAI-213007/DPR/CM/TYP-19 FOR RUMBLE STRIP DETAILS
8. REFER DRAWING NO. SAI-213007/DPR/CM/TYP/JUNC-01 TO 05 & 01A TO 05A FOR TYPICAL JUNCTION DETAILS

CLIENT:



Bihar State Road Development Corporation Limited (BSRDCLM)
(A Government of Bihar Undertaking)

D. C. M. Tech. (BSRDCLM) PIU-Katihar

PROJECT:

Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:




SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company

Block-A, "SAI House" Sector Corporate Square, B-8, Rajpath, D-10, Block-10, Connaught Place, New Delhi-110029
Phone : +91-11-46142007/100, Fax : +91-11-46142000
Email : mail@saiindia.com

REV.	DATE	DESCRIPTION	ISSN	ISSUED BY	BY
PG	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)		V.L.S.	
PF	28/12/18	GOOD FOR CONSTRUCTION (DPR)		H.M.	
PE	31/03/17	GOOD FOR CONSTRUCTION (DPR)		G.S.	
PD	10/04/14	GOOD FOR CONSTRUCTION (DPR)			
PC	26/02/14	ISSUED WITH FINAL DPR			
PS	04/01/14	ADDENDUM OF DPR			

SCALE : 1:2000



TITLE: LRIP CHOWK (BAHADURGANJ) - DIGHALBANK (PACKAGE-III)
ROAD FURNITURE PLAN
KM. 66+000 TO KM. 68+000

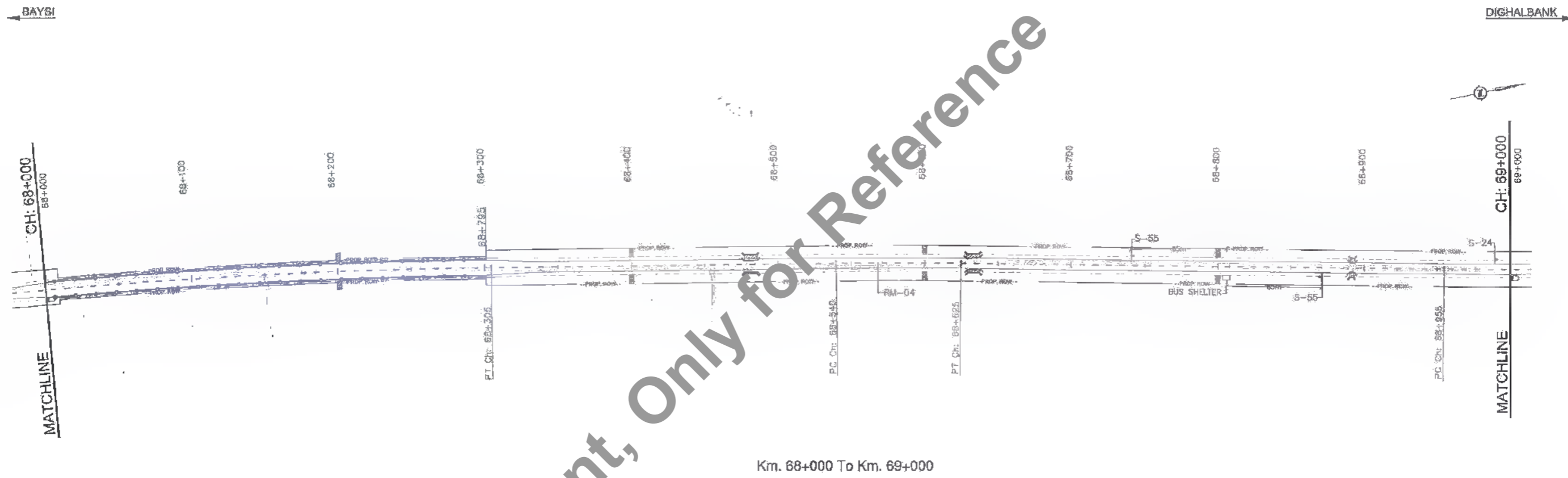
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REVISION : PG



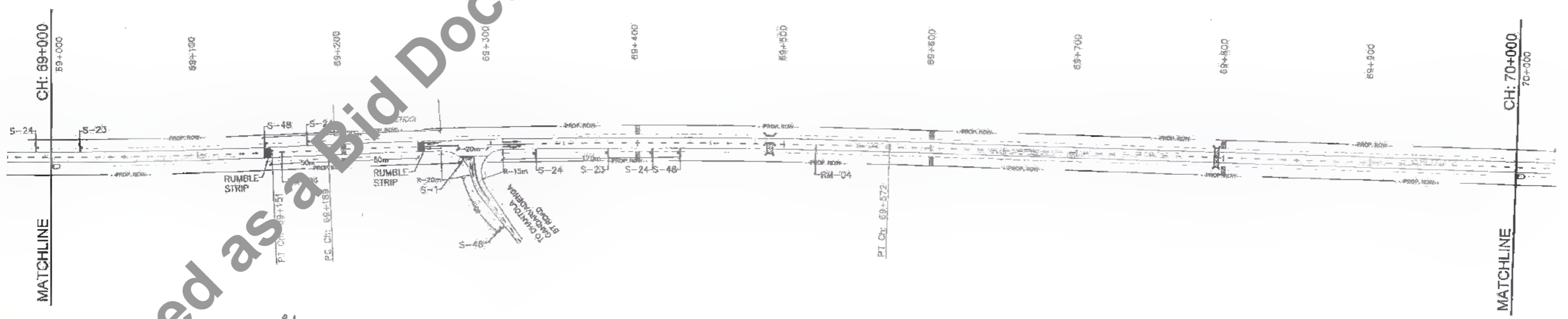
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2/17
SEO



Km. 68+000 To Km. 69+000



Km. 69+000 To Km. 70+000

LEGEND

- CHEVRON SIGN
- CRASH BARRIER
- PEDESTRIAN GUARD RAIL
- STUDS

NOTES:

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE MENTIONED
2. REFER DRAWING NO. SAI-213007/DP/PC/MTYP-01 FOR BUS SHELTER DETAILS
3. REFER DRAWING NO. SAI-213007/DP/PC/MTYP-04, 04A, & 04B FOR ROAD SIGN
4. REFER DRAWING NO. SAI-213007/DP/PC/MTYP-05 FOR PROVIDE PGR IN BUSBAY & BUS STOP
5. REFER DRAWING NO. SAI-213007/DP/PC/MTYP-06 & 07 FOR ROAD MARKING
6. REFER DRAWING NO. SAI-213007/DP/PC/MTYP-08 FOR CRASH BARRIER DETAILS
7. REFER DRAWING NO. SAI-213007/DP/PC/MTYP-19 FOR RUMBLE STRIP DETAILS
8. REFER DRAWING NO. SAI-213007/DP/PC/MTYP/JUNC-01 TO 05 & 01A TO 05A FOR TYPICAL JUNCTION DETAILS

DATE: 20/07/18 - 12:43pm
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Bihar State Road Development Corporation Limited (BSRDCL)
(A Government of Bihar Undertaking)

PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:
SAL SYSTRA GROUP
SAI Consulting Engineers, Pvt. Ltd.
An ISO 9001 Certified Company

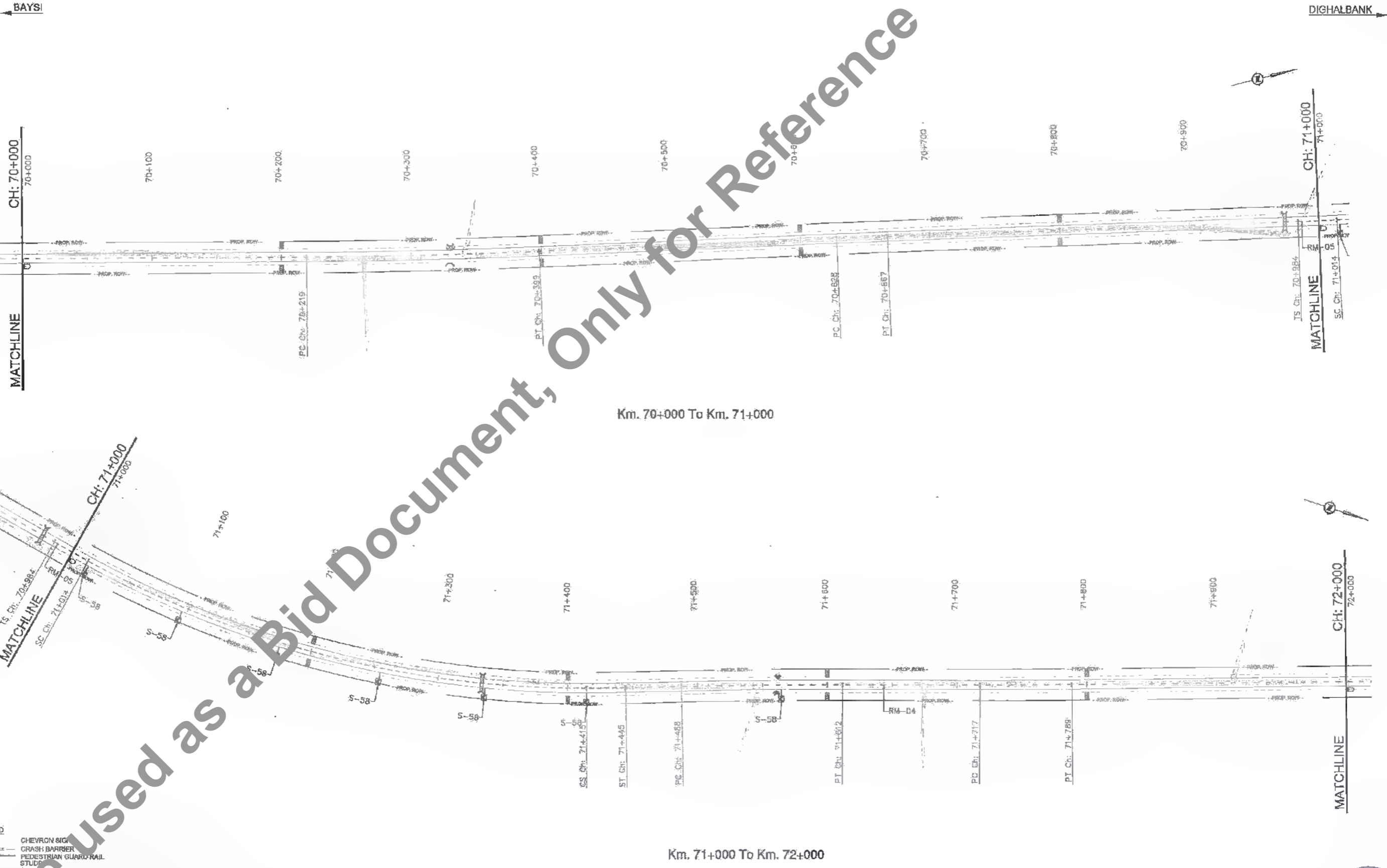
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PT	28/12/18	GOOD FOR CONSTRUCTION (DPR)		
PE	31/03/17	GOOD FOR CONSTRUCTION (DPR)		
PD	10/04/14	GOOD FOR CONSTRUCTION (DPR)		
PC	26/02/14	ISSUED WITH FINAL DPR		
PD	04/01/14	ADDENDUM OF DPR		

DRAWN BY : V.L.S.
CHECKED BY : H.M.
APPROVED BY : C.S.
ISSUED BY : S.S.

TITLE: LRP CHOWK (BAHADURGANJ) - DIGHALBANK (PACKAGE III)
ROAD FURNITURE PLAN
KM. 68+000 TO KM. 70+000

DRG. NO.:
SAI-213007/DP/PC/HRF - 05
REVISION: R6





DATE: 20/07/19 12:43 pm
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- LEGEND**
- CHEVRON SIGN
 - CRASH BARRIER
 - PEDESTRIAN GUARD RAIL
 - STUD
- NOTES:-**
1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE MENTIONED
 2. REFER DRAWING NO. SAI-213007/DPR/CM/TYP-01 FOR BUS SHELTER DETAILS
 3. REFER DRAWING NO. SAI-213007/DPR/CM/TYP-04, 04A, & 04B FOR ROAD SIGN
 4. REFER DRAWING NO. SAI-213007/DPR/CM/TYP-05 FOR PROVIDE PGR IN BUSBAY & BUS STOP
 5. REFER DRAWING NO. SAI-213007/DPR/CM/TYP-05 & 07 FOR ROAD MARKING
 6. REFER DRAWING NO. SAI-213007/DPR/CM/TYP-08 FOR CRASH BARRIER DETAILS
 7. REFER DRAWING NO. SAI-213007/DPR/CM/TYP-15 FOR RUMBLE STRIP DETAILS
 8. REFER DRAWING NO. SAI-213007/DPR/CM/TYP-01 TO 05 & 01A TO 01A FOR TYPICAL JUNCTION DETAILS

CLIENT:

Bihar State Road Development Corporation Limited (BSRDC)
 (A Government of Bihar Undertaking)

P.D. M. (Tech.)
 BSRDC
 P.D. Katihar

PROJECT:

Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
 Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:

SAL Consulting Engineers - Pvt. Ltd.
 An ISO 9001 Certified Company

Block-A "SAL House" Salyan Corporate Square, 8th Rajbati
 Old Patna, Bihar - 800009, India
 Phone : +91-91-4512460/780 Fax : 91-91-4512460
 Email : mail@salindia.com

REV.	DATE	DESCRIPTION	SIGN	ISSUED BY
PS	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)		DRAWN BY : V.S.
PF	26/12/18	GOOD FOR CONSTRUCTION (DPR)		CHECKED BY : H.M.
PE	31/03/17	GOOD FOR CONSTRUCTION (DPR)		APPROVED BY : C.S.
PD	10/04/14	GOOD FOR CONSTRUCTION (DPR)		ISSUED BY : E.S.
PC	26/02/14	ISSUED WITH FINAL DPR		
PB	04/01/14	ADDENDUM OF DPR		

TITLE: LRP CHOWK (BAHADURGANJ) - DIGHALBANK (PACKAGE-III)
 ROAD FURNITURE PLAN
 KM. 70+000 TO KM. 72+000

DRG. NO.:
 SAI-213007/DPR/CM/RF-10

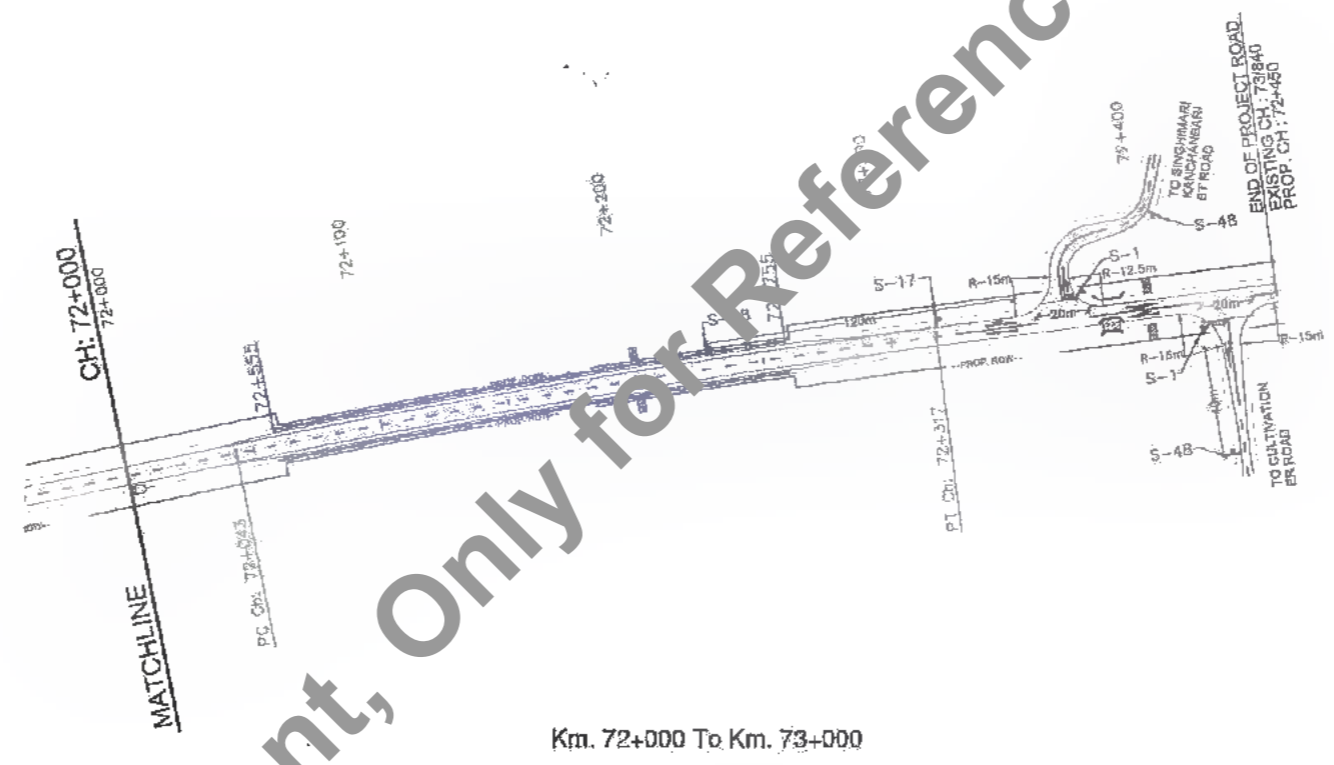
REVISION: P9



213
558

BAYSI

DIGHALBANK



Km. 72+000 To Km. 73+000

- LEGEND**
- CHEVRON SIGN
 - CRASH BARRIER
 - PEDESTRIAN GUARD RAIL
 - STUDY

- NOTES:-**
1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE MENTIONED
 2. REFER DRAWING NO. SAI-213007/DP/RC/M/TYP-01 FOR BUS SHELTER DETAILS
 3. REFER DRAWING NO. SAI-213007/DP/RC/M/TYP-04, 04A, & 04B FOR ROAD SIGN
 4. REFER DRAWING NO. SAI-213007/DP/RC/M/TYP-05 FOR PROVIDE FOR IN BUSBAY & BUS STOP
 5. REFER DRAWING NO. SAI-213007/DP/RC/M/TYP-06 & 07 FOR ROAD MARKING
 6. REFER DRAWING NO. SAI-213007/DP/RC/M/TYP-08 FOR CRASH BARRIER DETAILS
 7. REFER DRAWING NO. SAI-213007/DP/RC/M/TYP-19 FOR RUMBLE STRIP DETAILS
 8. REFER DRAWING NO. SAI-213007/DP/RC/M/TYP/JUNC-01 TO 05 & 01A TO 05A FOR TYPICAL JUNCTION DETAILS



Bihar State Road Development Corporation Limited (BSRDC)
(A Government of Bihar Undertaking)

PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:

SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company

Block-A "Sai House" Satriam Corporate Square, B-8, Pujasali
Gurgaon, Haryana-122009 (India)
Phone: +91-12-2646266/2667032 Fax: +91-12-4611200
Email: eoi@saima.com

PC	31/07/19	0000 FOR CONSTRUCTION (REVISED DPR)
PF	28/12/18	0000 FOR CONSTRUCTION (DPR)
PE	31/03/17	0000 FOR CONSTRUCTION (DPR)
PD	10/04/14	0000 FOR CONSTRUCTION (DPR)
PC	26/02/14	ISSUED WITH FINAL DPR
PD	04/07/14	APPENDUM OF DPR

DRAWN BY : V.J.S.
CHECKED BY : H.M.
APPROVED BY : C.S.ISSUED BY : B.S.

TITLE: LRP CHOWK (BAHADURGANJ)
-DIGHALBANK (PACKAGE-II)
ROAD FURNITURE PLAN
KM. 72+000 TO KM. 72+450



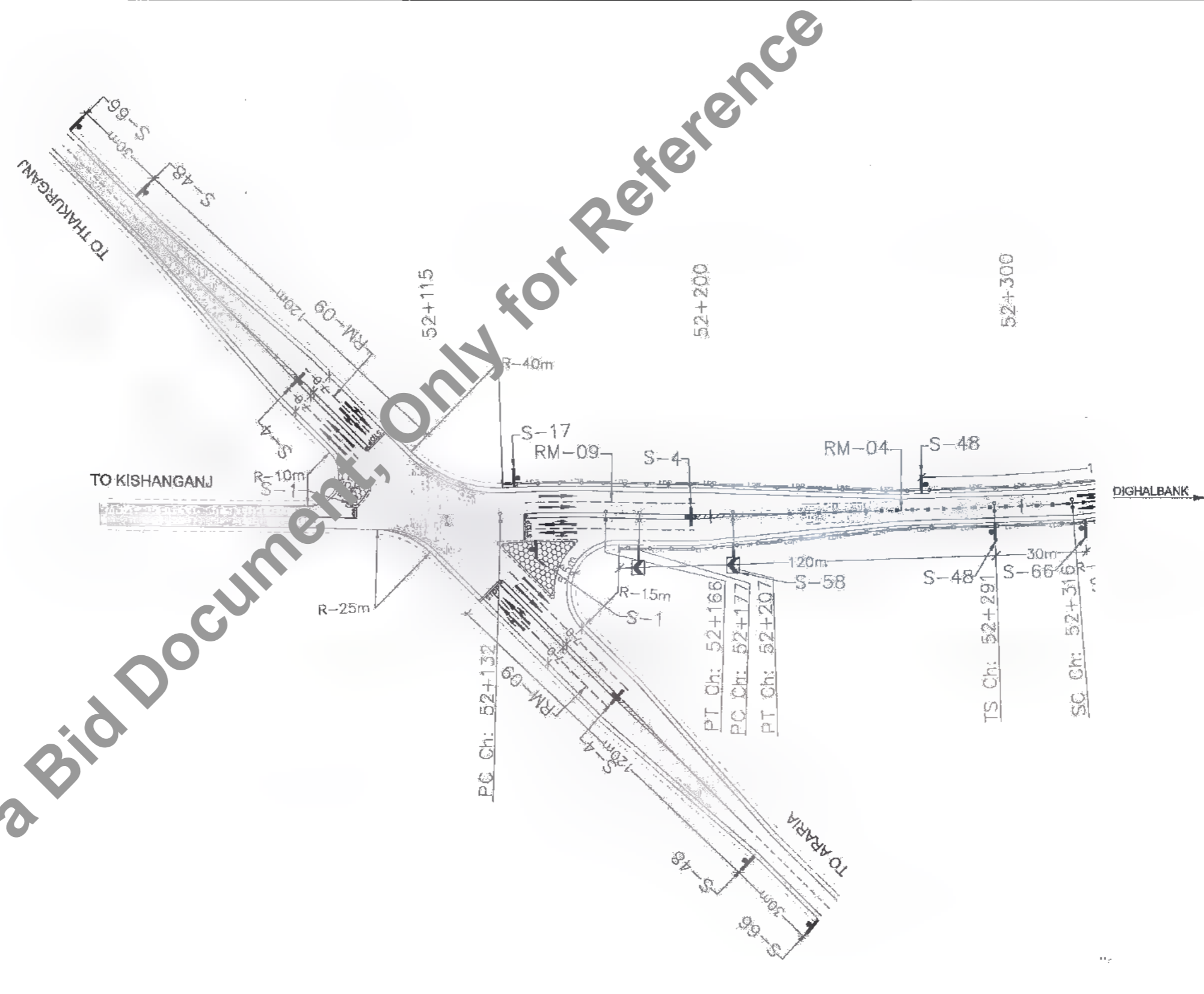
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SAI-213007/DP/RC/M/RF-11
REVISION: PG



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D.O.M. Tech
 PIU-A

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CH : 52+115

LEGEND

NOTES:
 1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE MENTIONED.
 2. REFER DRAWING NO. SAI-213007/DP/RC/M/TYP-08 & 07 FOR ROAD MARKING.
 3. REFER DRAWING NO. SAI-213007/DP/RC/M/TYP-04, 04A & 04B FOR ROAD SIGN.
 4. REFER DRAWING NO. SAI-213007/DP/RC/M/TYP-08 FOR CRASH BARRIER DETAILS.
 5. REFER DRAWING NO. SAI-213007/DP/RC/M/TYP-05 FOR PROVIDE PGR IN BUSBAY & BUS STOP.
 6. REFER DRAWING NO. SAI-213007/DP/RC/M/TYP/JUNC-01 TO 06 & 01A TO 05A FOR TYPICAL JUNCTION DETAILS.

CLIENT :

Bihar State Road Development Corporation Limited (BSRIDC)
 (A Government of Bihar Undertaking)

PROJECT :
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANT'S :

SAL Consulting Engineers Pvt. Ltd.
 An ISO 9001 Certified Company
 Block-A "3rd Floor" Sahyog Corporate Square, 8th Cross,
 11th Mile, Outer Ring Road, Ahmedabad-380015, Gujarat, India
 Phone : +91-79-26042600/7700 Fax : +91-79-26042600
 Email : sae@salindia.com

RF	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)		DRAWN BY : Y.L.S.
PC	28/12/18	GOOD FOR CONSTRUCTION (DPR)		CHECKED BY : H.M.
PD	31/03/17	GOOD FOR CONSTRUCTION (DPR)		APPROVED BY : C.S.
PE	18/04/14	GOOD FOR CONSTRUCTION (DPR)		
PF	26/02/14	ISSUED WITH FINAL DPR		
PA	13/11/13	ISSUED WITH DPR		

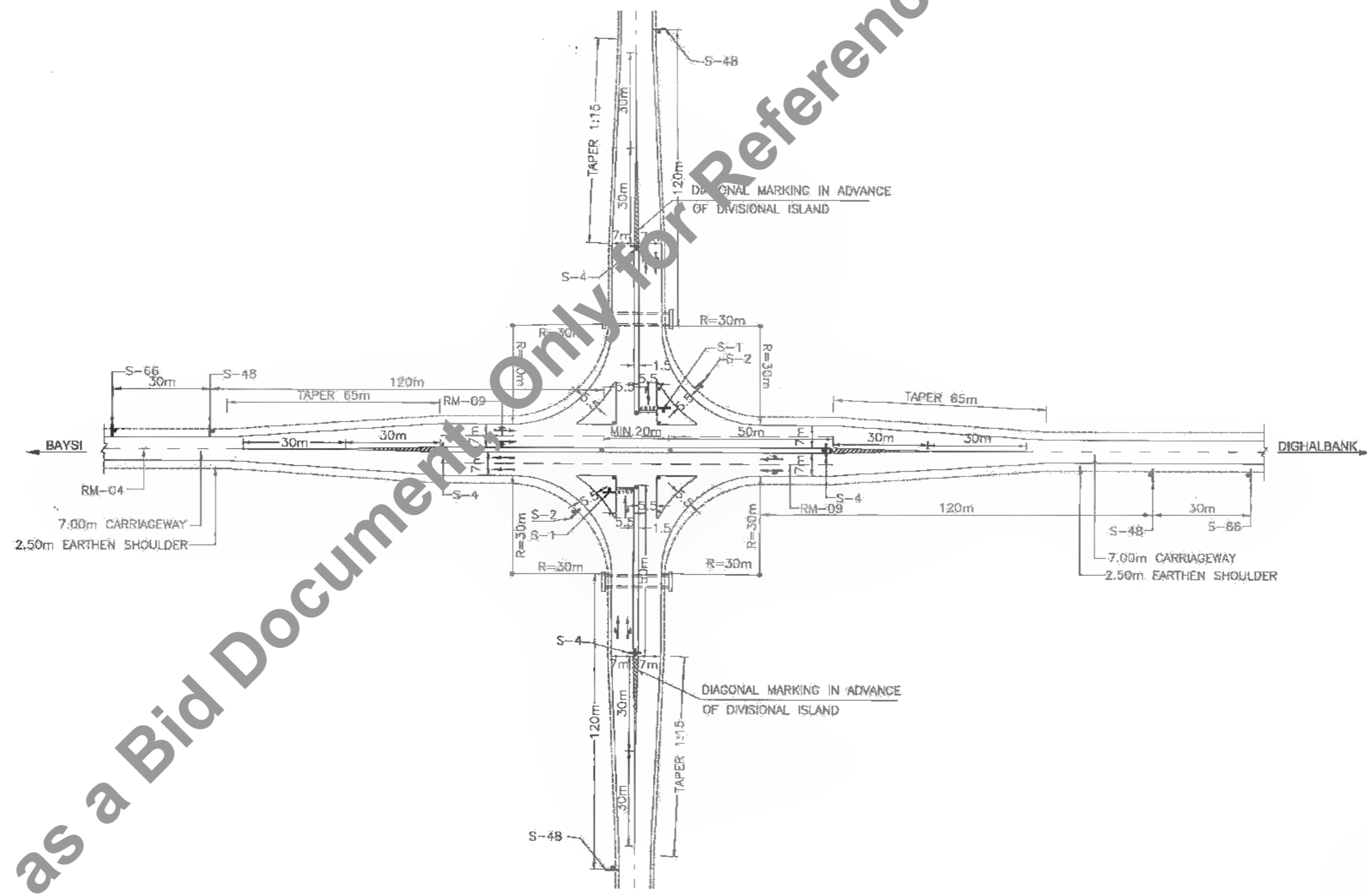
ISSUED BY : B.S.	TITLE : LRP CHOWK (BAHADURGANJ) - DIGHALBANK (PACKAGE-III)
	MAJOR JUNCTION AT Km. 52+115
SCALE : 1:1000	DRG. NO. : SAI-213007/DP/RC/M/J - 01
	REVISION : PF

DATE: 20/07/19 3:53pm
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29)
556



DATE: 10/07/19 - 10:28am
PATH: C:\Users\jaisankar\Documents\Public\13728\1\JUNCTION-PACKAGE-III.dwg

Not to be used as a Bid Document Only for Reference



NOTES :-

1. ALL DIMENSIONS ARE AS NOTED.
2. CROSS MAIN PIPE CULVERT OF NP4 1200 mm ϕ SHALL BE PROVIDED AS PER THE SITE CONDITION AT DITCH LOCATION AS DIRECTED BY THE ENGINEER.
3. L. MIN. RADIUS SHOULD NOT BE LESS THEN 15m.
4. FOR DETAILS SIGN BOARD DWG. REFER DWG.NO.SAI-213007/DPR/M/TYP-04,04A & 04B
5. FOR PAVEMENT MARKING DETAILS REFER DWG.NO.SAI-213007/DPR/M/TYP-07 & 08
6. 'RM' REPRESENT ROAD MARKING.
7. 'R' REPRESENT RADIUS.

Client:
Bihar State Road Development Corporation Limited (BSRDCL)
 (A Government of Bihar Undertaking)

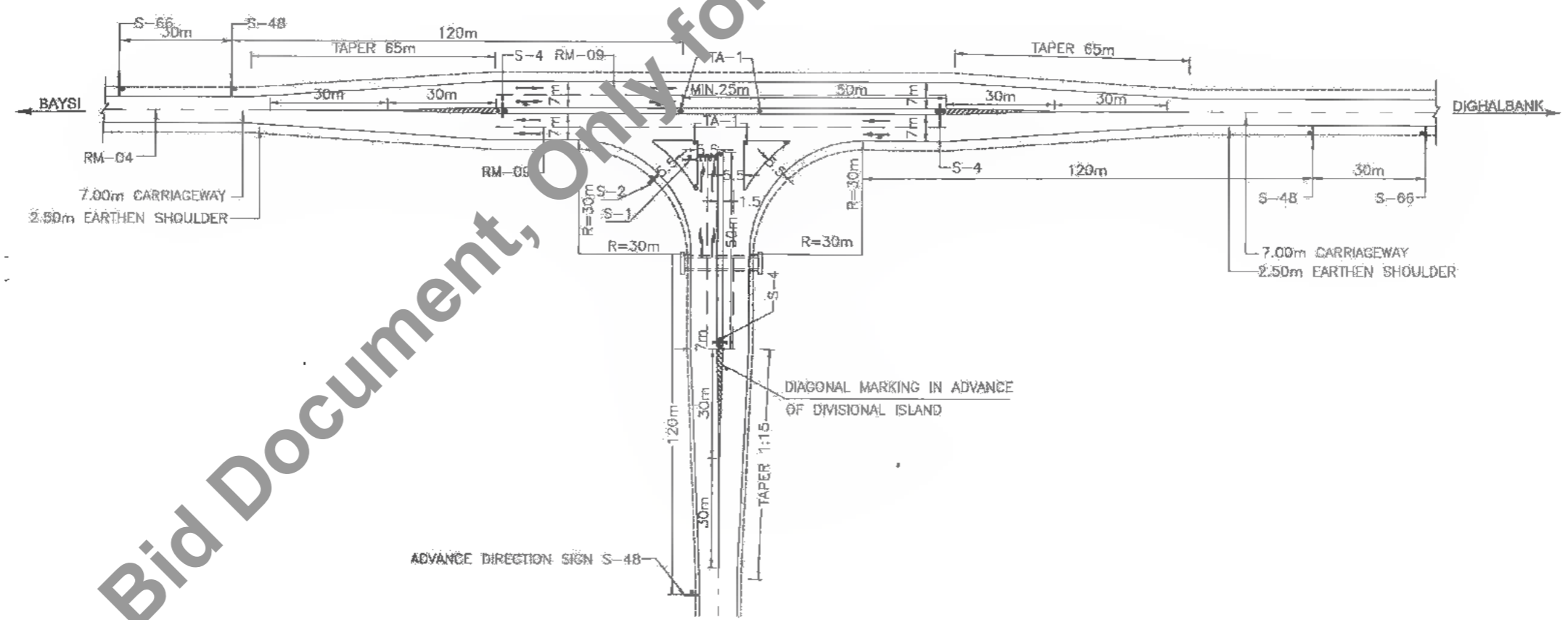
PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:
SAI Consulting Engineers Pvt. Ltd.
 An ISO 9001 Certified Company
 Head-A "SAI House", Sanyam Corporate Square, 6th Floor, 6th
 (Lab, Badliwala, Akashtola-380015, Gujarat, India)
 Phone : +91-79-4696249/740 Fax : +91-79-4442900
 Email : mail@saito.com

REV.	DATE	DESCRIPTION	BY	ISSUED BY
PG	21/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)		
PF	29/12/18	GOOD FOR CONSTRUCTION (DPR)		
PD	10/06/18	GOOD FOR CONSTRUCTION (DPR)		
PC	26/02/14	ISSUED WITH FINAL DPR		
PE	13/11/13	ISSUED WITH DPR		
PG	16/02/13	ISSUED WITH DPR		

DRAWN BY : R.N.L.	TITLE : LRP CHOKK (BAHADURGANJ) - DIGHALBANK (PACKAGE-III) TYPICAL LAYOUT OF FOUR LEGGED CHANNELISED JUNCTION WITH PAVED SHOULDER
CHECKED BY : C.S.	
APPROVED BY : J.D.	
ISSUED BY : B.S.	DRG. NO. : SAI-213007/DPR/M/TYP/JUNC - 01
REVISION : PG	

SCALE : NONE.



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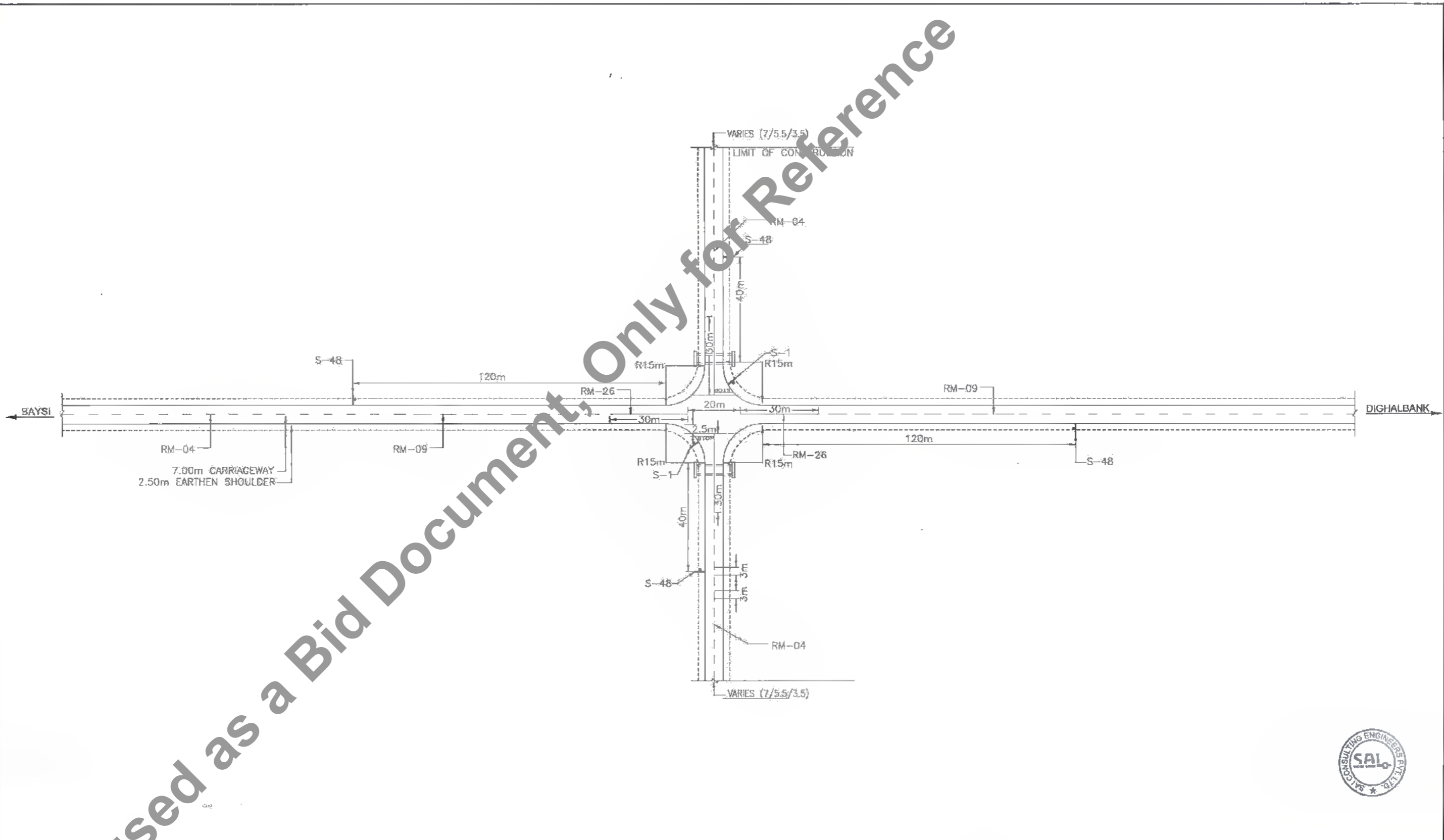
NOTES :-

1. ALL DIMENSIONS ARE AS NOTED.
2. CROSS OVER IN PIPE CULVERT OF NP4 1200 mm ϕ SHALL BE PROVIDED AS PER THE SITE CONDITION AT DITCH LOCATION AS DIRECTED BY THE ENGINEER.
3. LEFT TURN RADIUS SHOULD NOT BE LESS THEN 15m.
4. FOR DETAILS SIGN BOARD DWG. REFER DWG.NO.SAI-213007/DPR/M/TYP-04,04A & 04B FOR PAVEMENT MARKING DETAILS REFER DWG.NO.SAI-213007/DPR/M/TYP-07 & 08
5. 'RM' REPRESENT ROAD MARKING.
6. 'R' REPRESENT RADIUS.

DATE: 21/07/10 10:28am
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<p>CLIENT:</p> <p>Bihar State Road Development Corporation Limited (BSRDC) (A Government of Bihar Undertaking)</p>	<p>PROJECT:</p> <p>Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar <i>Baysi - Bahadurganj - Dighalbank (SH-99)</i></p>	<p>CONSULTANTS:</p> <p>SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company Bldg-A "SAI House" Sofyan Corporate Square, Bih Purpeth Sub. Postoffice Alambakshi-200259, Gurgaon, India Phone : +91-12-2638800/802 Fax : +91-12-2611200 Email : saik@saiindia.com</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">REV.</td> <td style="width: 10%;">DATE</td> <td style="width: 40%;">DESCRIPTION</td> <td style="width: 10%;">SIGN</td> <td style="width: 10%;">ISSUED BY</td> <td style="width: 10%;">: B.S.</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table> <p>SCALE : NONE</p>	REV.	DATE	DESCRIPTION	SIGN	ISSUED BY	: B.S.						
REV.	DATE	DESCRIPTION	SIGN	ISSUED BY	: B.S.										
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">DRAWN BY : R.N.</td> <td style="width: 40%;">TITLE : LRP CHOKK (BAHADURGANJ) -DIGHALBANK (PACKAGE-III)</td> </tr> <tr> <td>CHECKED BY : C.S.</td> <td>TYPICAL LAYOUT OF THREE LEGGED CHANNELISED JUNCTION WITH PAVED SHOULDER</td> </tr> <tr> <td>APPROVED BY : J.S.</td> <td>DRG. NO. : SAI-213007-DPR/MTYP/JUNC - 02</td> </tr> <tr> <td> </td> <td>REVISION : PG</td> </tr> </table>				DRAWN BY : R.N.	TITLE : LRP CHOKK (BAHADURGANJ) -DIGHALBANK (PACKAGE-III)	CHECKED BY : C.S.	TYPICAL LAYOUT OF THREE LEGGED CHANNELISED JUNCTION WITH PAVED SHOULDER	APPROVED BY : J.S.	DRG. NO. : SAI-213007-DPR/MTYP/JUNC - 02		REVISION : PG				
DRAWN BY : R.N.	TITLE : LRP CHOKK (BAHADURGANJ) -DIGHALBANK (PACKAGE-III)														
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APPROVED BY : J.S.	DRG. NO. : SAI-213007-DPR/MTYP/JUNC - 02														
	REVISION : PG														

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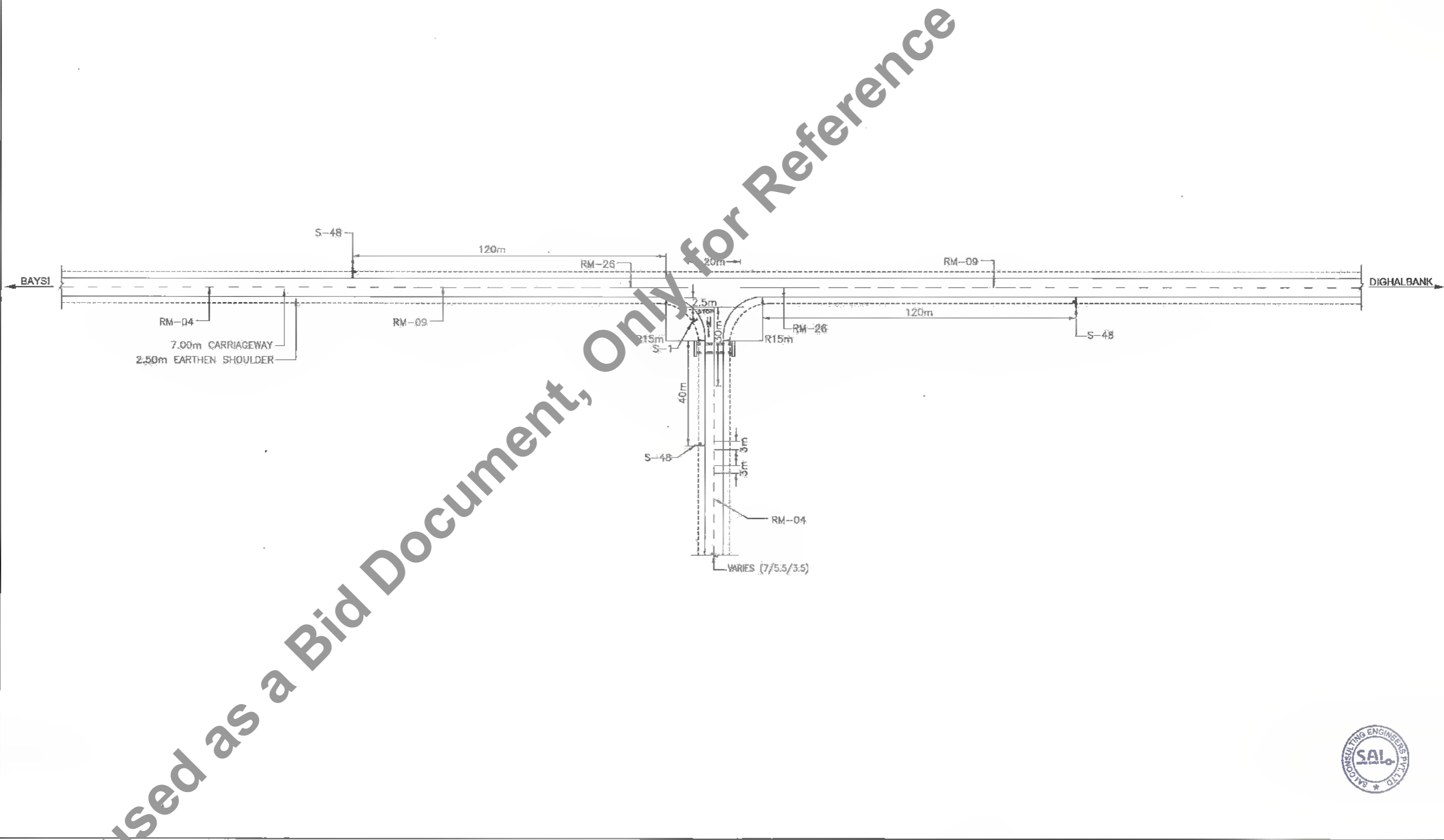


NOTES :-

1. ALL DIMENSIONS ARE AS NOTED.
2. CROSS DRAIN PIPE CULVERT OF NP# 1200 mm# SHALL BE PROVIDED AS PER THE SITE CONDITION AT DITCH LOCATION AS DIRECTED BY THE ENGINEER.
3. MINIMUM RADIUS SHOULD NOT BE LESS THEN 15m.
4. FOR DETAILS SIGN BOARD DWG. REFER DWG.NO.SAI-213007/DPR/M/TYP-04,04A & 04B
5. FOR PAVEMENT MARKING DETAILS REFER DWG.NO.SAI-213007/DPR/M/TYP-07 & 08
6. 'RM' REPRESENT ROAD MARKING.
7. 'R' REPRESENT RADIUS.

DATE: 24/07/19 - 10:26am
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<p>Bihar State Road Development Corporation Limited (BSRDC) (A Government of Bihar Undertaking)</p>	<p>PROJECT: Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar <i>Baysi - Bahadurganj - Dighalbank (SH-99)</i></p>	<p>CONSULTANTS :</p> <p>SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company Block-4 "SAI House" Sahyog Corporate Scheme, 276 Bagmati (Opp. Bhubaneswar, Ahmedabad-380019, Gujarat, India) Phone : +91-79-4638800/00190 Fax : +91-79-4634800 Email : mail@saiengineers.com</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>REV.</td> <td>DATE</td> <td>DESCRIPTION</td> <td>SIGN</td> <td>ISSUED BY</td> <td>DATE</td> </tr> <tr> <td>PO</td> <td>31/07/19</td> <td>GOOD FOR CONSTRUCTION (REVISED DPR)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>PF</td> <td>26/12/16</td> <td>GOOD FOR CONSTRUCTION (DPR)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>PE</td> <td>10/04/14</td> <td>GOOD FOR CONSTRUCTION (DPR)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>PD</td> <td>26/02/14</td> <td>ISSUED WITH FINAL DPR</td> <td></td> <td></td> <td></td> </tr> <tr> <td>PC</td> <td>13/11/13</td> <td>ISSUED WITH DPR</td> <td></td> <td></td> <td></td> </tr> <tr> <td>PE</td> <td>15/07/13</td> <td>ISSUED WITH FFB</td> <td></td> <td></td> <td></td> </tr> </table> <p>SCALE : NONE</p>	REV.	DATE	DESCRIPTION	SIGN	ISSUED BY	DATE	PO	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)				PF	26/12/16	GOOD FOR CONSTRUCTION (DPR)				PE	10/04/14	GOOD FOR CONSTRUCTION (DPR)				PD	26/02/14	ISSUED WITH FINAL DPR				PC	13/11/13	ISSUED WITH DPR				PE	15/07/13	ISSUED WITH FFB			
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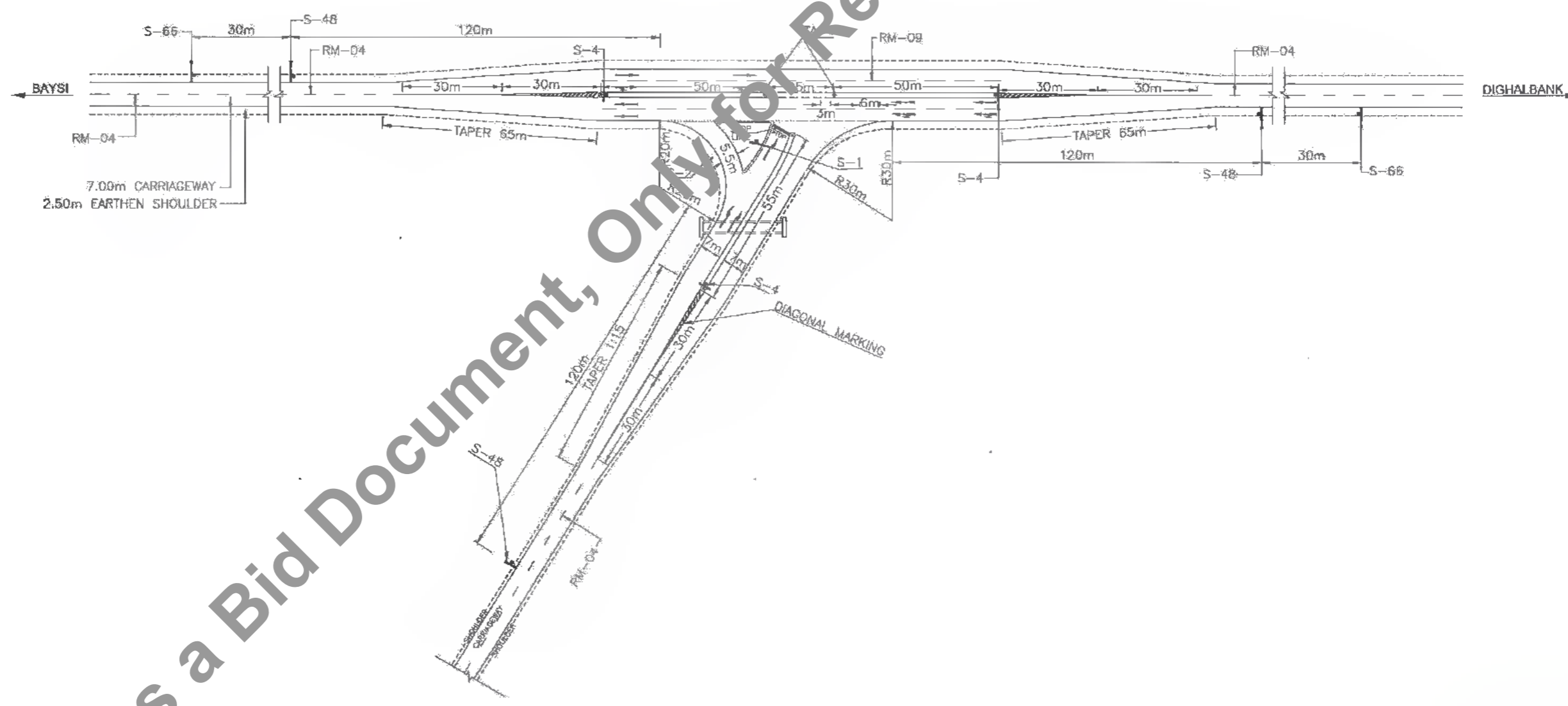
NOTES :-

1. ALL DIMENSIONS ARE AS NOTED.
2. CROSS DRAIN PIPE CULVERT OF NP4 1200 mm ϕ SHALL BE PROVIDED AS PER THE SITE CONDITION AT DITCH LOCATION AS DIRECTED BY THE ENGINEER.
3. LEFT TURN RADIUS SHOULD NOT BE LESS THEN 15m.
4. FOR DETAILS SIGN BOARD DWG. REFER DWG.NO.SAI-213007/DPR/M/TYP-04,04A & 04B
5. FOR PAVEMENT MARKING DETAILS REFER DWG.NO.SAI-213007/DPR/M/TYP-07 & 08
6. 'RM' REPRESENT ROAD MARKING.
7. 'R' REPRESENT RADIUS.

<p>CLIENT :</p> <p>Bihar State Road Development Corporation Limited (BSRDCL) (A Government of Bihar Undertaking)</p>	<p>PROJECT :</p> <p>Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar <i>Baysi - Bahadurganj - Dighalbank (SH-99)</i></p>	<p>CONSULTANTS :</p> <p>SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company Block-A "SAI House" Salson Corporate Square, 8th Floor Club Road, Jay Prakash Road, Patna - 800 001, India Phone : +91-91-5614-8600/7400, Fax : +91-91-5614-2100 Email : mail@saiconsulting.com</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>REV.</td> <td>DATE</td> <td>DESCRIPTION</td> <td>ISSN</td> <td>ISSUED BY</td> </tr> <tr> <td>PG</td> <td>31/07/19</td> <td>GOOD FOR CONSTRUCTION (REVISED DPR)</td> <td></td> <td>DRAWN BY : R.J.L.</td> </tr> <tr> <td>PF</td> <td>26/12/18</td> <td>GOOD FOR CONSTRUCTION (DPR)</td> <td></td> <td>CHECKED BY : C.S.</td> </tr> <tr> <td>PE</td> <td>10/04/14</td> <td>GOOD FOR CONSTRUCTION (DPR)</td> <td></td> <td>APPROVED BY : A.D.</td> </tr> <tr> <td>PD</td> <td>26/02/14</td> <td>ISSUED WITH FINAL DPR</td> <td></td> <td>ISSUED BY : B.S.</td> </tr> <tr> <td>PC</td> <td>13/11/13</td> <td>ISSUED WITH DPR</td> <td></td> <td></td> </tr> <tr> <td>PB</td> <td>15/07/13</td> <td>ISSUED WITH FFR</td> <td></td> <td></td> </tr> </table> <p>SCALE : HONC</p>	REV.	DATE	DESCRIPTION	ISSN	ISSUED BY	PG	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)		DRAWN BY : R.J.L.	PF	26/12/18	GOOD FOR CONSTRUCTION (DPR)		CHECKED BY : C.S.	PE	10/04/14	GOOD FOR CONSTRUCTION (DPR)		APPROVED BY : A.D.	PD	26/02/14	ISSUED WITH FINAL DPR		ISSUED BY : B.S.	PC	13/11/13	ISSUED WITH DPR			PB	15/07/13	ISSUED WITH FFR		
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DATE: 20/07/19 10:28am
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552



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NOTES :-

1. ALL DIMENSIONS ARE AS NOTED.
2. CROSS MAIN PIPE CULVERT OF NP4 1200 mm ϕ SHALL BE PROVIDED AS PER THE SITE CONDITION AT DITCH LOCATION AS DIRECTED BY THE ENGINEER.
3. LATERAL RADIUS SHOULD NOT BE LESS THEN 15m.
4. FOR DETAILS SIGN BOARD DWG. REFER DWG.NO.SAI-213007/DPR/M/TYP-04,04A & 04B
5. FOR PAVEMENT MARKING DETAILS REFER DWG.NO.SAI-213007/DPR/M/TYP-07 & 08
6. 'RM' REPRESENT ROAD MARKING.
7. 'R' REPRESENT RADIUS.

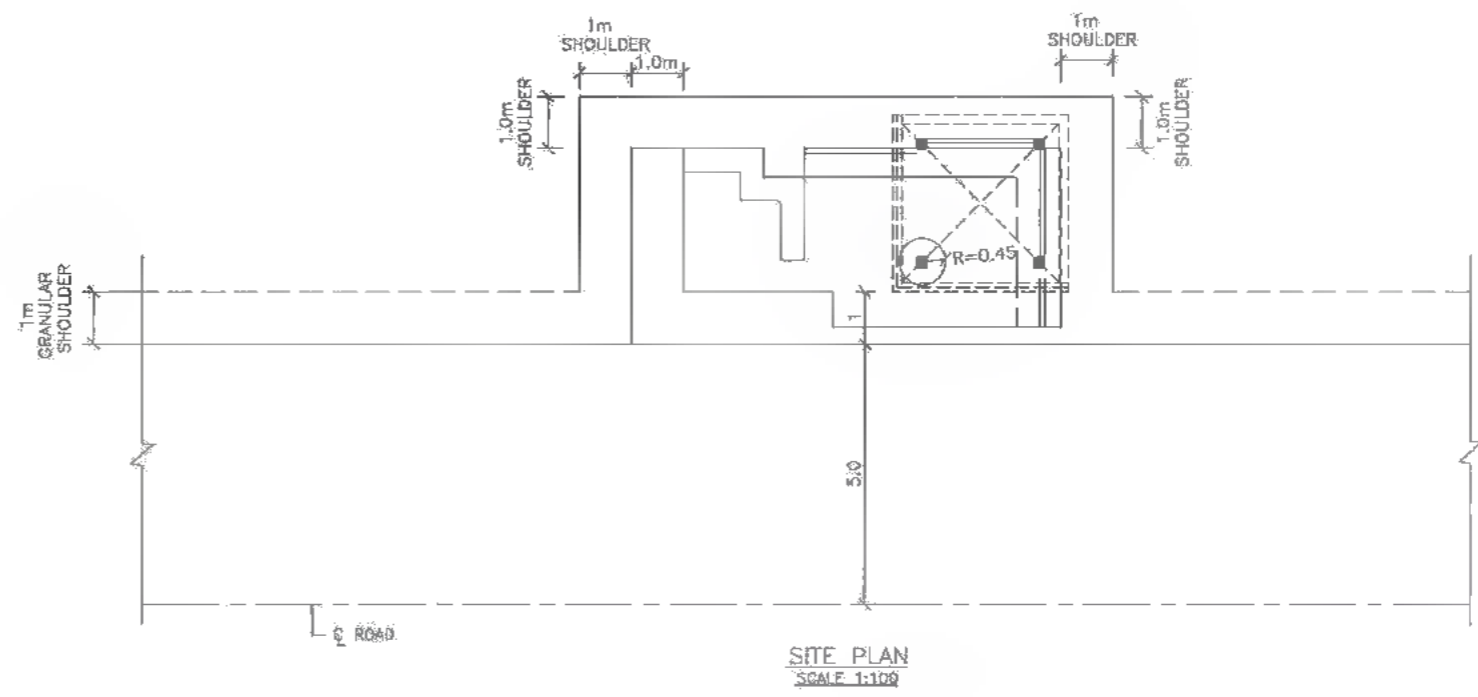
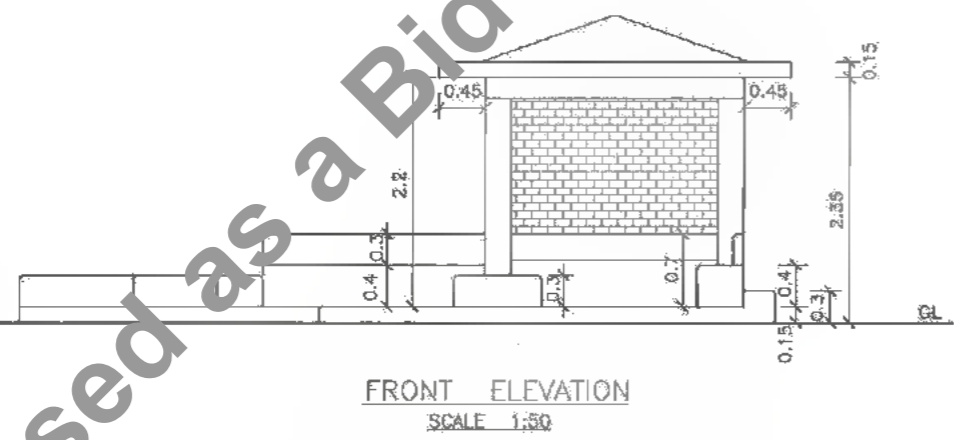
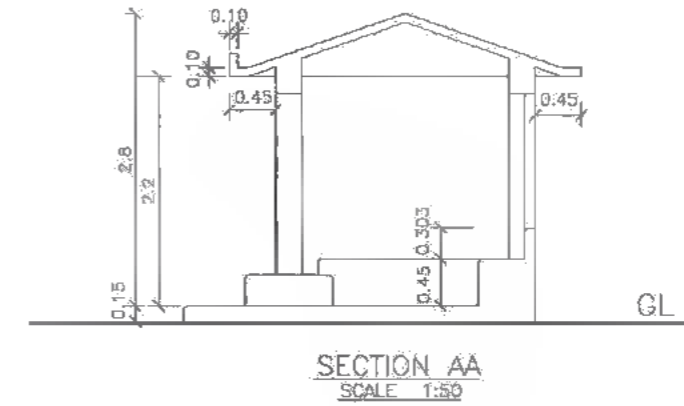
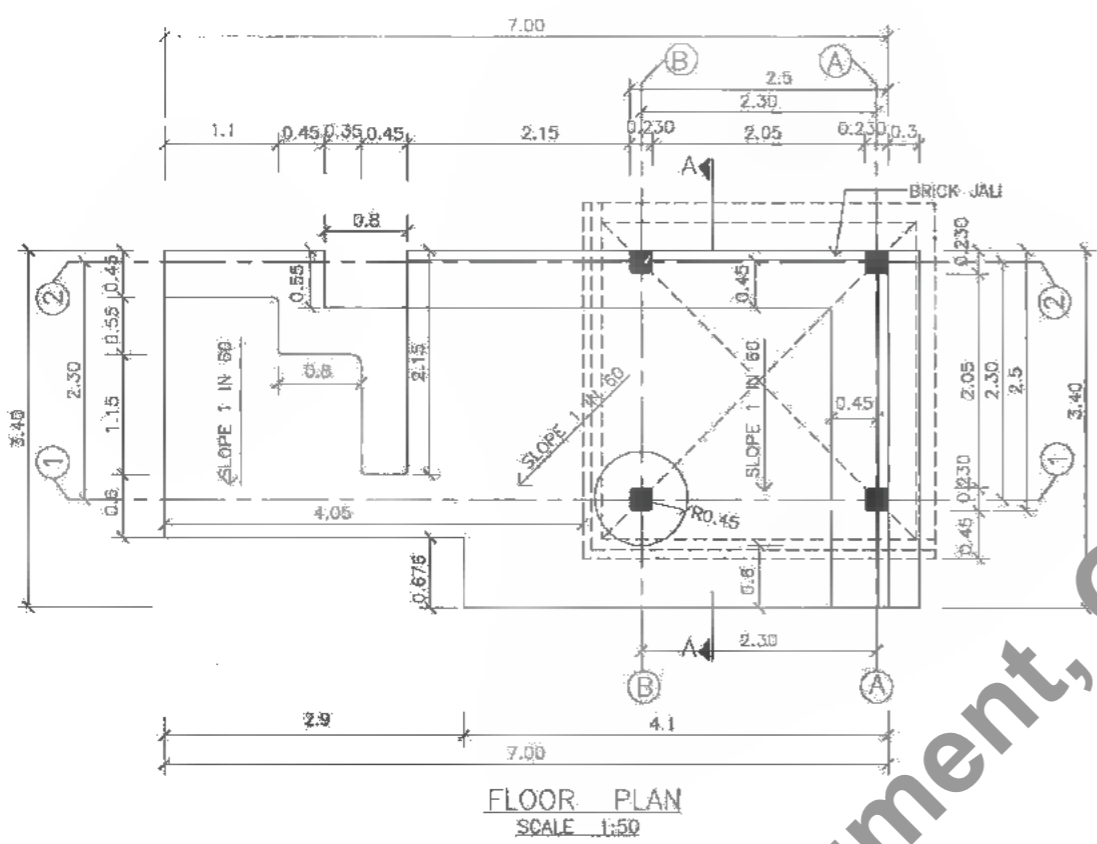
Bihar State Road Development Corporation Limited (BSRDC)
(A Government of Bihar Undertaking)

PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:
SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company
Block-A "SAI House", Subhas Chandra Bose Square, 8th Floor, Club, Dufferin Road, Lucknow-226001, India
Phone : +91-522-6632000/6632001/6632002
Email : mail@saiinfo.com

PD	31/07/10	GOOD FOR CONSTRUCTION (REVISED DPR)	DRAWN BY : P.N.	TITLE : LRP CHOKK (BAHADURGANJ) -DIGHALBANK (PACKAGE-III)
PF	28/12/10	GOOD FOR CONSTRUCTION (DPR)	CHECKED BY : C.S.	TYPICAL LAYOUT OF THREE LEGGED CHANNELISED Y JUNCTION WITH PAVED SHOULDER
PE	10/04/14	GOOD FOR CONSTRUCTION (DPR)	APPROVED BY : J.D.	
PD	26/02/14	ISSUED WITH FINAL DPR	ISSUED BY : B.S.	
PE	13/11/13	ISSUED WITH DPR		
PE	15/07/13	ISSUED WITH FFR		DRG. NO. : SAI-213007/DPR/M/TYP/JUNC - 05
SCALE : NONE				
REVISION : PG				

DATE: 27/07/2014 10:28am
PATH: C:\Users\vipppd1\Documents\Project\Temp\AcPublish\17281\JUNCTION-PACKAGE-III.dwg



NOTE:
BRICK WORK SHOULD BE EXPOSED WITH POINTED JOINTS AS PER MOST TECHNICAL SPECIFICATION CLAUSE 1003 AND 1300

- NOTES:-**
1. REFER DRAWING NO. SAI-213007/DPR/M/TYP-01A FOR STRUCTURAL DETAILS.
 2. HONEY-COMBED BRICK WALL TO BE CONSTRUCTED ON WEST OR SOUTH SIDE OF THE STRUCTURE EXCEPT WHERE BUS-STOP FACES WEST. THE SIZE AND PATTERN OF OPENINGS TO BE DECIDED BY THE ENGINEER AS PER AVAILABLE BRICK SIZE.
 3. ALL CONCRETE SURFACES SHOULD BE FINISHED AS PER MOST TECHNICAL SPECIFICATION CLAUSE 1714.



DATE: 30/07/2018 10:58 AM User: 3007 BHARATI/REVISED DPR/C&M/PACKAGE-III/01 BUS SHELTER.dwg

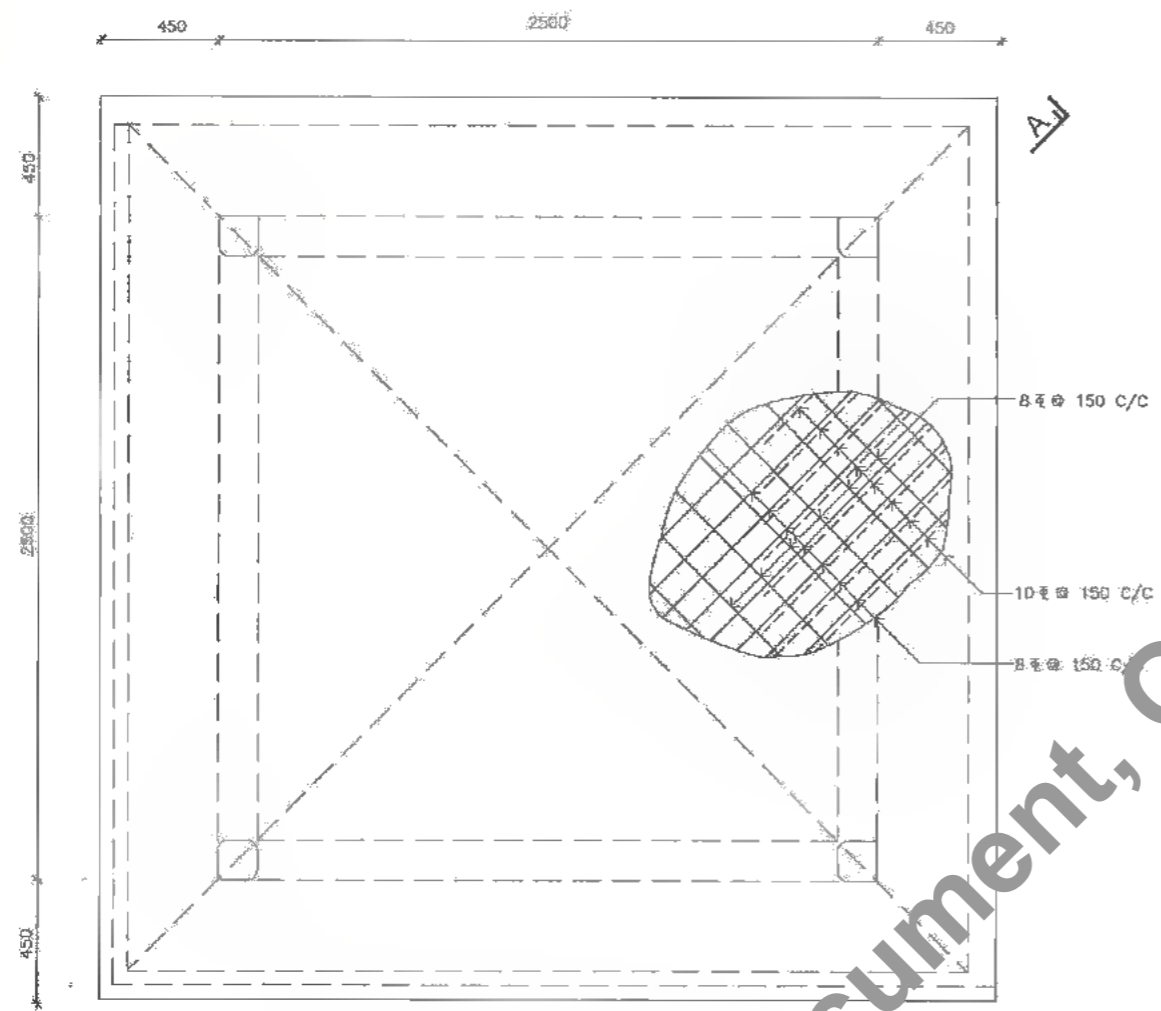
CLIENT:
Bihar State Road Development Corporation Limited (BSRDCL) (A Government of Bihar Undertaking)

PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:
SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company
Block-A "SAI House", Sakinagar Corporate Square, Bih. Rajendra (Lal Bahadur Shastri) Road-800015, Patna, Bihar
Phone : +91-9451828000 Fax : +91-9451828000 Email : mail@saiindia.com

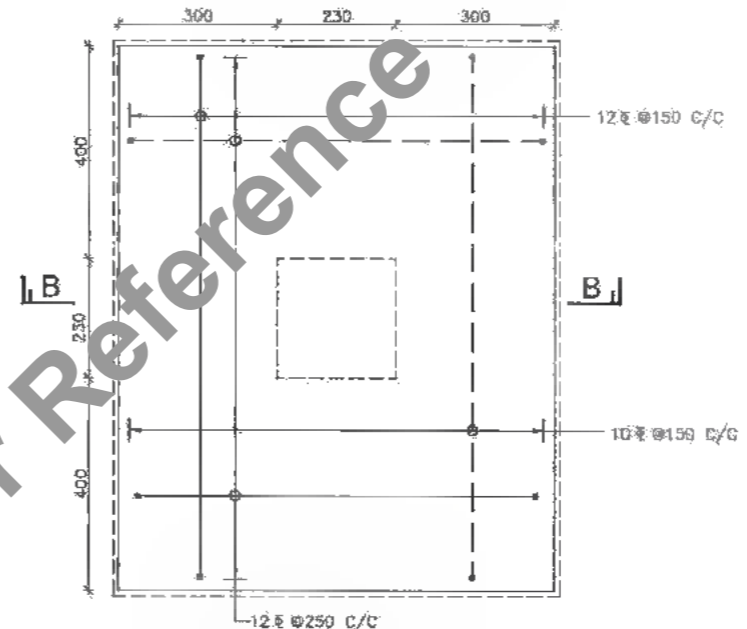
PH	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)		DRAWN BY : R.M.	TITLE : LRP CHOWK (BAHADURGANJ) -DIGHALBANK (PACKAGE-III) GENERAL ARRANGEMENT DRAWING FOR BUS SHELTER DRG. NO. : SAI-213007/DPR/M/TYP-01 REVISION : PH
PG	17/12/18	GOOD FOR CONSTRUCTION (DPR)		CHECKED BY : C.S.	
PE	31/03/17	GOOD FOR CONSTRUCTION (DPR)		APPROVED BY : J.O.	
PD	10/04/14	GOOD FOR CONSTRUCTION (DPR)		ISSUED BY : B.S.	
PE	25/02/14	ISSUED WITH FINAL DPR			
PG	13/11/13	ISSUED WITH DPR			
PD	29/08/13	ISSUED WITH ETR			
REV.	DATE	DESCRIPTION	SIGN	ISSUED BY	
SCALE : AS SHOWN					

DRAWN BY : R.M.	TITLE : LRP CHOWK (BAHADURGANJ) -DIGHALBANK (PACKAGE-III) GENERAL ARRANGEMENT DRAWING FOR BUS SHELTER DRG. NO. : SAI-213007/DPR/M/TYP-01 REVISION : PH
CHECKED BY : C.S.	
APPROVED BY : J.O.	
ISSUED BY : B.S.	

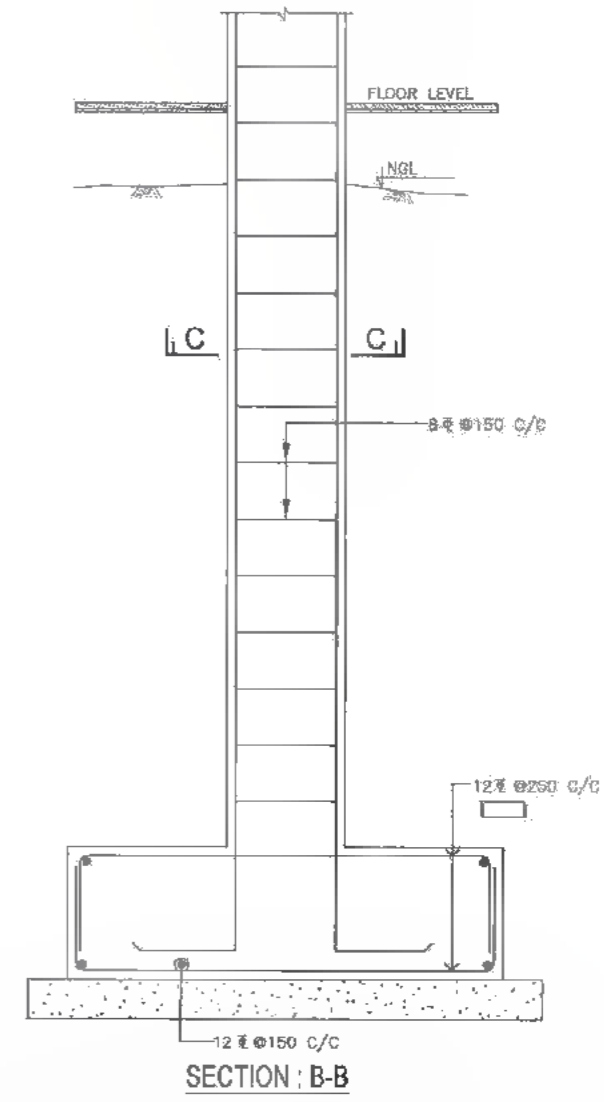
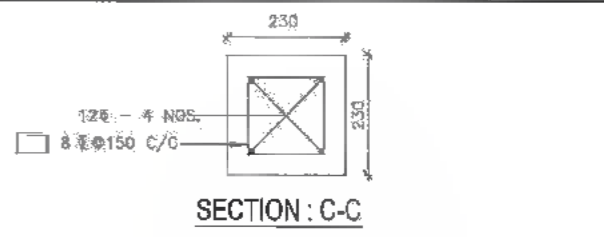


REINFORCEMENT DETAILS FOR SLAB
SCALE 1:10

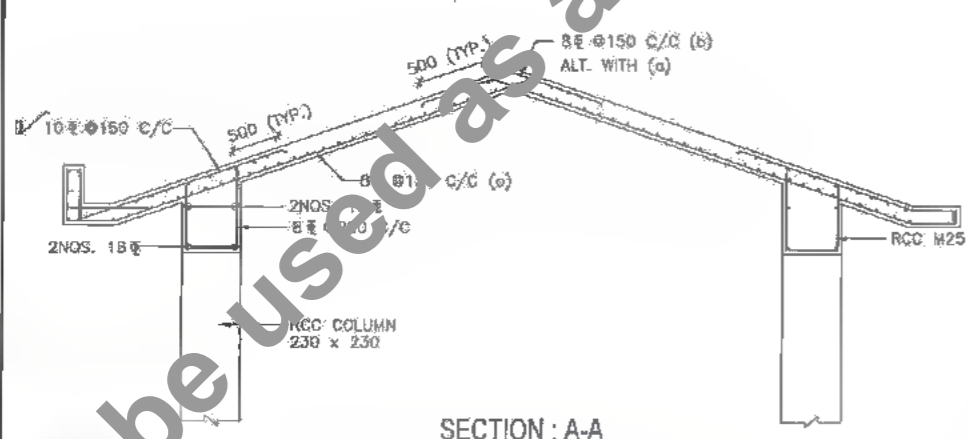
DIRECTION OF
PREDOMINANT WIND



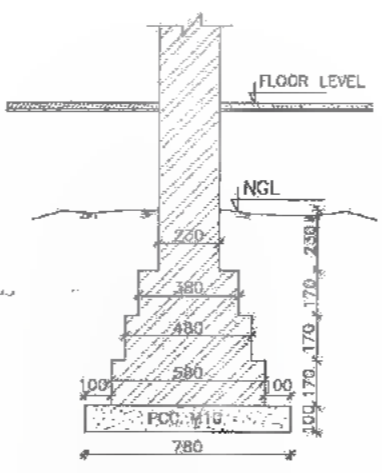
FOOTING FOR RCC COLUMN
REINF. DETAILS
SCALE 1:10



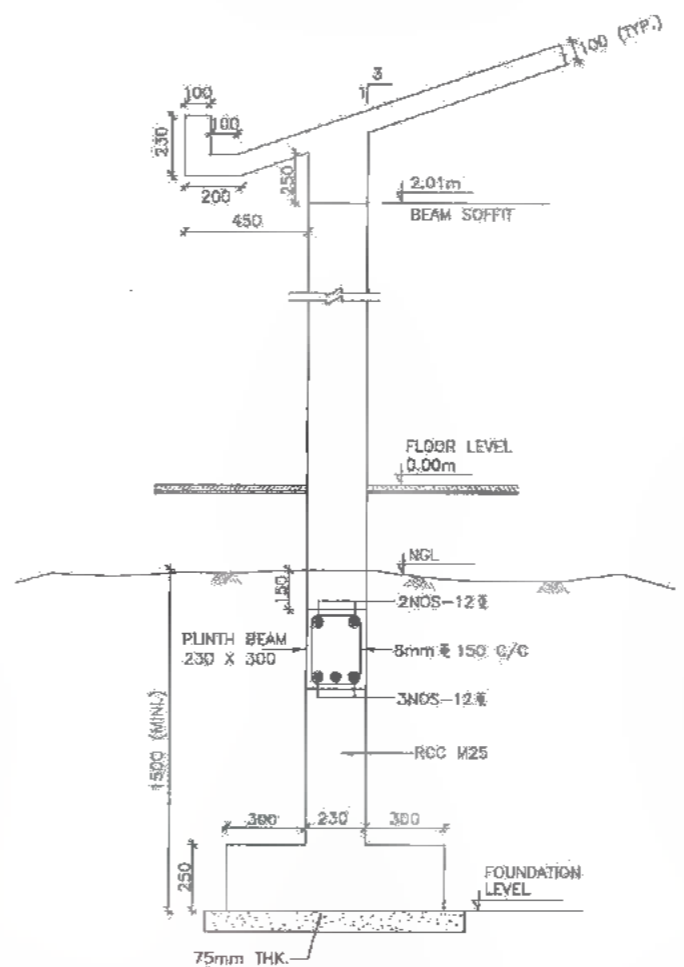
SECTION : B-B



SECTION : A-A
SCALE 1:10



FOUNDATION DETAILS
FOR 230 THK. BRICK MASONRY
SCALE 1:10



FOUNDATION DETAILS FOR RCC
COLUMN 230 x 230
SCALE 1:10

- NOTES :
- ALL DIMENSIONS ARE IN mm AND ALL LEVELS ARE IN m, UNLESS OTHERWISE MENTIONED.
 - DIMENSIONS SHOULD NOT BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
 - THIS DRAWING HAS TO BE READ IN CONJUNCTION WITH SAI-213007/DPR/M/TYP-01
 - GRADE OF CONCRETE IS M25 FOR ALL R.C.C WORKS.
 - THE MIX SHALL BE DESIGN MIX CONFORMING TO THE REQUIREMENTS OF IS 456-2000.
 - CLEAR COVER TO REINFORCEMENTS SHALL BE AS GIVEN BELOW.
 SLAB = 20mm
 COLUMN = 40mm
 BEAM = 25mm
 OTHER R.C.C MEMBERS = 25mm
 - ONLY HYSD BARS OF GRADE Fe415/Fe500 SHALL BE USED FOR REINFORCEMENT.
 - LAP LENGTH, HOOK, ETC., WHEREVER NECESSARY SHALL BE PROVIDED AS PER IS 456-2000 AND AS DIRECTED BY THE ENGINEER.
 - DESIGN HAS BEEN CARRIED OUT AS PER IS 456-2000. FOR DESIGN OF FOOTING SAFE BEARING CAPACITY OF SOIL HAS BEEN CONSIDERED 75 KN/m²
 - AT THE TIME OF CONSTRUCTION CONTRACTOR SHOULD PLACE THE LONGER SIDE OF THE FOOTING PARALLEL TO THE PREDOMINANT DIRECTION OF WIND.
- LEGEND :
- TOP REINFORCEMENT SHOWN THUS
 - BOTTOM REINFORCEMENT SHOWN THUS



Bihar State Road Development Corporation Limited (BSRDCL) (A Government of Bihar Undertaking)

PROJECT: Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS : SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company

PH	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)	DRAWN BY : R.N.
PE	17/11/18	GOOD FOR CONSTRUCTION (DPR)	CHECKED BY : C.S.
PE	31/03/17	GOOD FOR CONSTRUCTION (DPR)	APPROVED BY : J.D.
PE	10/04/14	GOOD FOR CONSTRUCTION (DPR)	ISSUED BY : C.B.S.
PD	25/02/14	ISSUED WITH FINAL DPR	
PD	13/11/13	ISSUED WITH DPR	
PB	22/08/13	ISSUED WITH FFR	

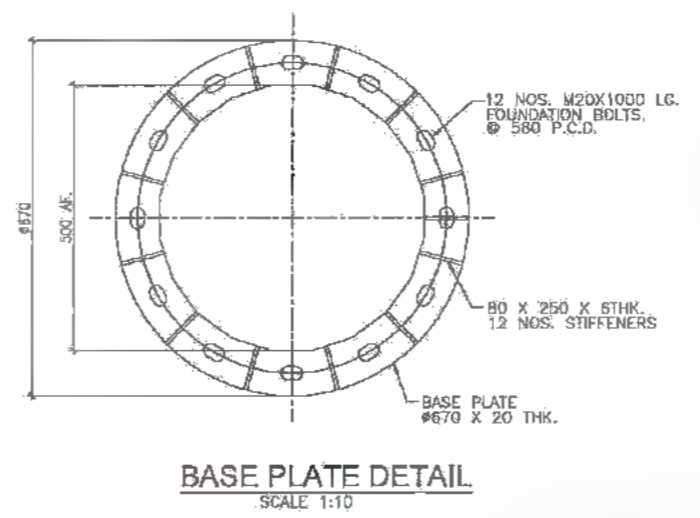
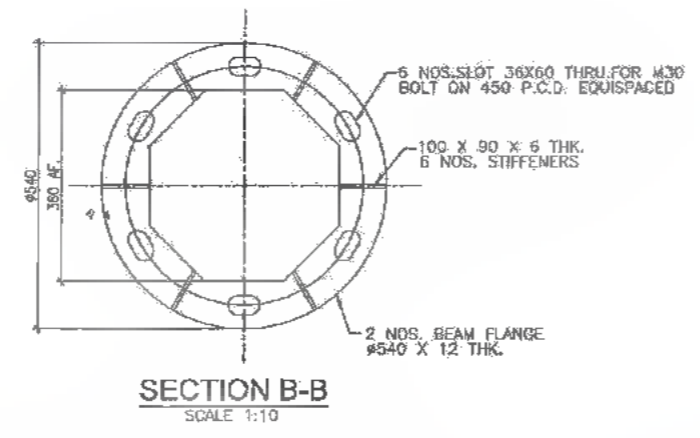
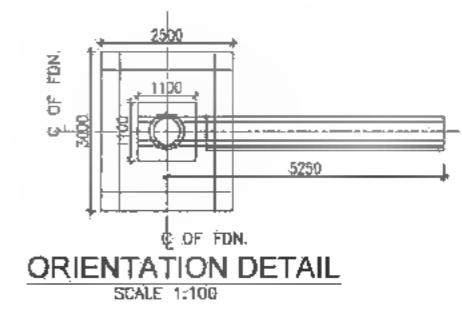
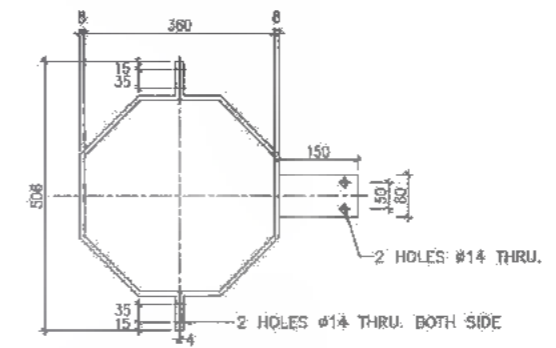
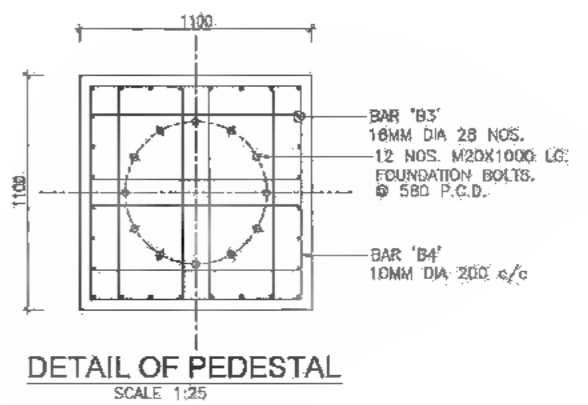
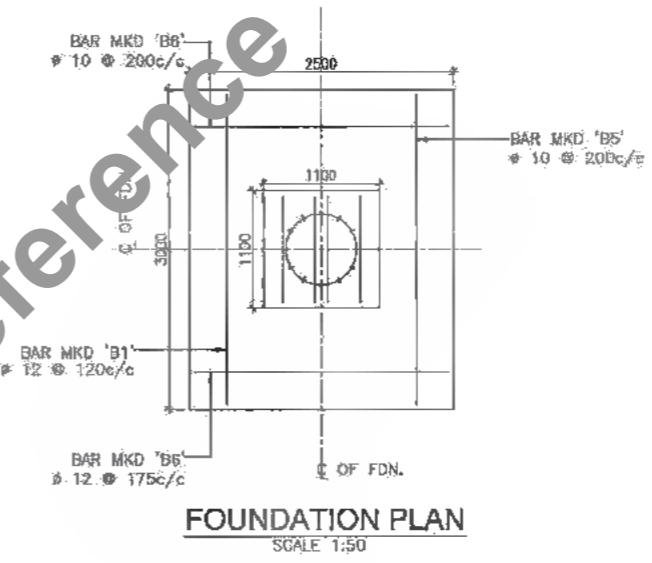
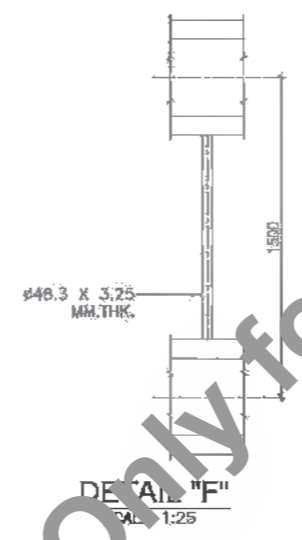
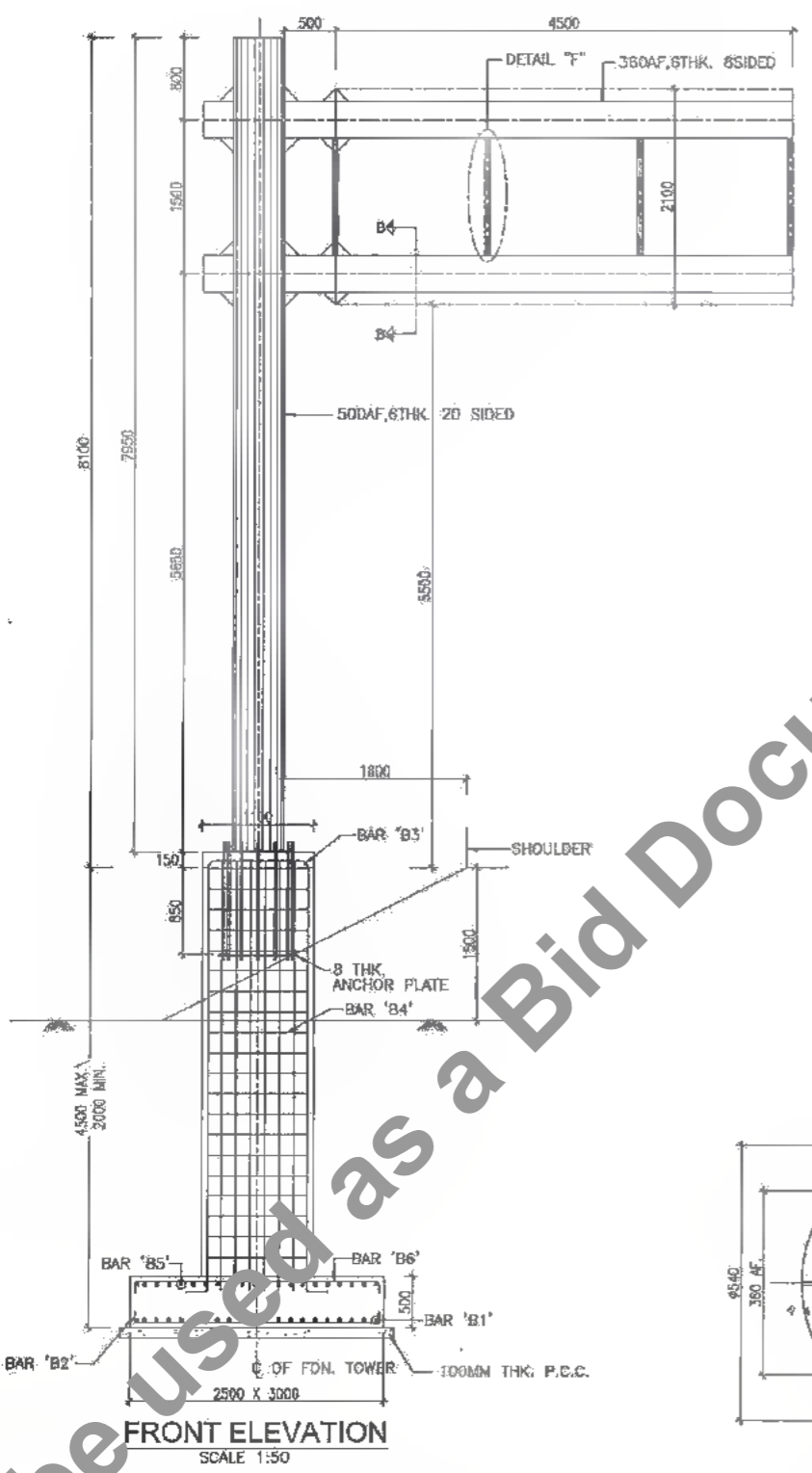
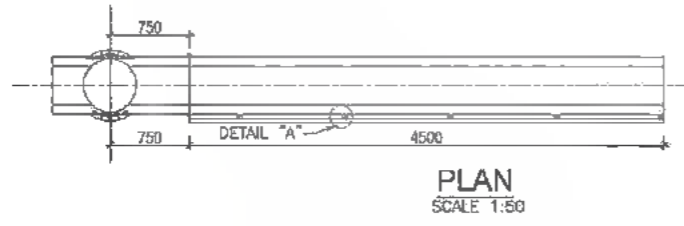
TITLE : LRP/CHOWK (BAHADURGANJ)-DIGHALBANK (PACKAGE-II) STRUCTURAL DETAIL FOR BUS SHELTER

REV.	DATE	DESCRIPTION	SDN	ISSUED BY	C.B.S.

DRG. NO.: SAI-213007/DPR/M/TYP-01A
REVISION : PH

U. G. M. Tech. BSRDCL PIU-Kaushal

DATE: 30/07/2019 TIME: 11:00 AM BY: R.N. FOR: BSRDCL PIU-Kaushal



- GENERAL NOTES:**
1. ALL DIMENSIONS ARE IN MILLIMETRES
 2. MATERIAL OF CONSTRUCTION: CONCRETE-M-20; REINFORCEMENT-Fe-415; P.C.C.-1-A-B
 3. POLYGONAL SECTION: S355JO AS PER ISEN 10025 OR EQUI OTHER-Fe410 OR EQUI AS PER 2062
 4. COVER TO ALL REINFORCEMENT-50MM
 5. MINIMUM LAP LENGTH OF BARS SHALL BE 99 X DIA.
 6. FOUNDATION SHOULD REST ON VIRGIN SOIL, IF SAID S.B.C IS NOT AVAILABLE AT SPECIFIED FOUNDATION LEVEL, IT SHOULD BE TAKEN DEEPER.
 7. MAST FLANGE SHOULD REMAIN UNGROUTED FOR DRAINAGE & VENTILATION.
 8. IF MAST FLANGE IS GROUTED MIN-4 NOS OF 25MM DIA DUCTS SHALL BE PLACED AROUND IT TO ALLOW DRAINAGE & VENTILATION.
 9. FOUNDATION IS DESIGNED CONSIDERING NET SAFE BEARING CAPACITY AS 12T/SQ.M.
 10. PLEASE VERIFY THE BOLT DETAILS BEFORE CASTING THE FOUNDATION.
 11. FINISH-HOT DIP GALVANIZED AS PER ISEN 1461.
 12. HARDWARE : ALL THE HARDWARE SHALL BE HOT DIP GALVANIZED.



DATE: 30/07/2014; TIME: 11:30 AM; PROJECT: BSRDC; DRAWING NO: SH-99-TYP-02; SCALE: AS SHOWN; CHECKED BY: C.S.; APPROVED BY: J.S.; ISSUED BY: B.S.;

CLIENT : **Bihar State Road Development Corporation Limited (BSRDCL)**
(A Government of Bihar Undertaking)

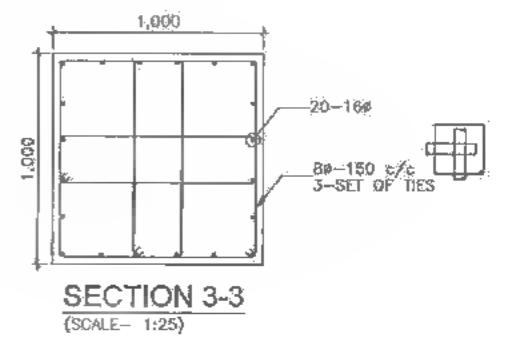
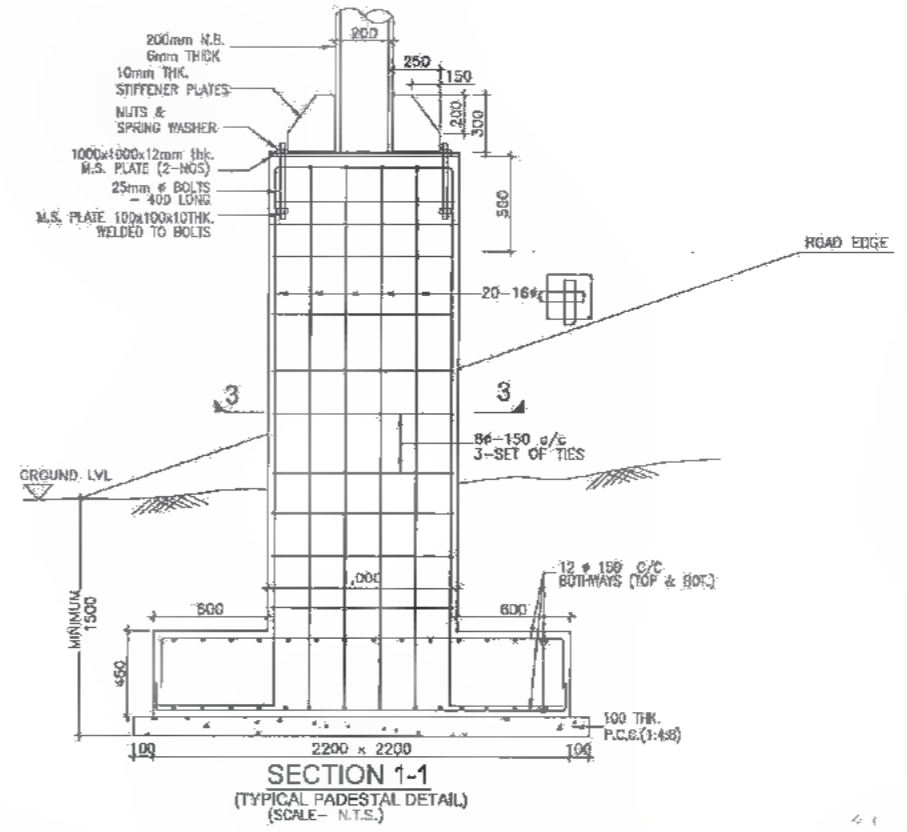
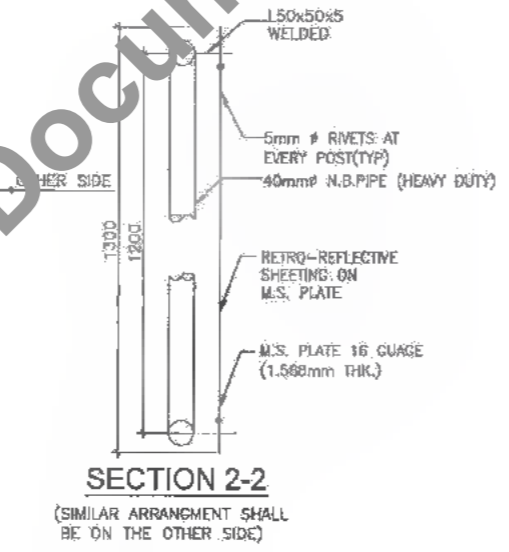
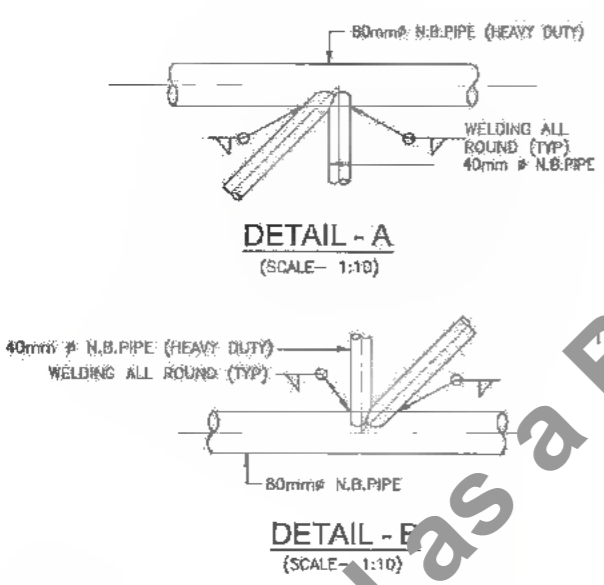
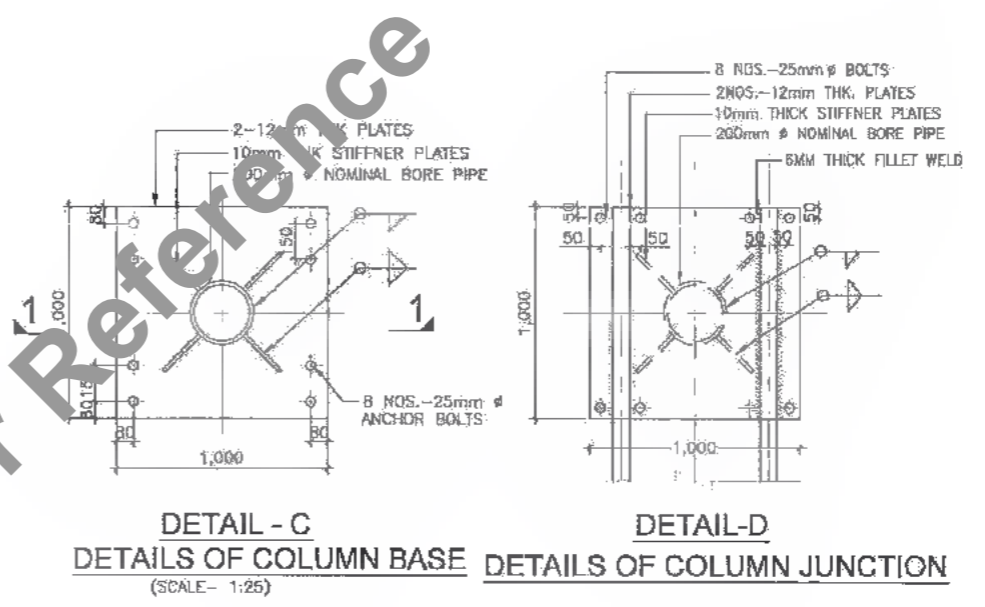
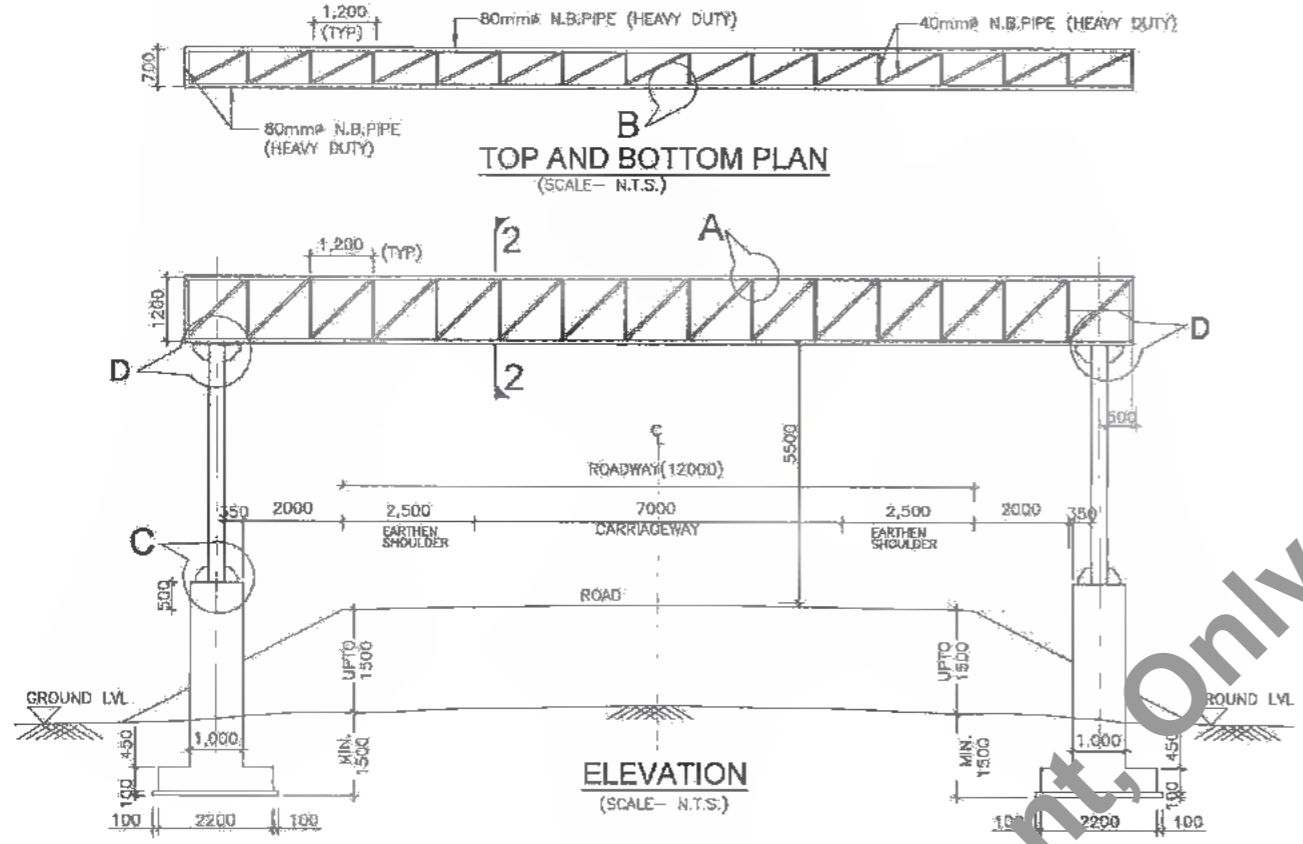
PROJECT: **Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)**

CONSULTANTS : **SAI Consulting Engineers Pvt. Ltd.**
An ISO 9001 Certified Company

PH	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)	DRAWN BY : P.M.	TITLE : LRP CHOWK (BAHADURGANJ) - DIGHALBANK (PACKAGE-III)
PC	17/12/18	GOOD FOR CONSTRUCTION (DPR)	CHECKED BY : C.S.	TYPICAL DETAILS OF OVER HEAD SIGNS
PF	31/03/17	GOOD FOR CONSTRUCTION (DPR)	APPROVED BY : J.S.	DRG. NO. : SAI-213007/DP/PM/TYP-02
PE	10/04/14	GOOD FOR CONSTRUCTION (DPR)	ISSUED BY : B.S.	REVISION : PH
PD	26/02/14	ISSUED WITH FINAL DPR		
PC	13/11/13	ISSUED WITH DPR		
PE	29/08/13	ISSUED WITH FFR		

REV.	DATE	DESCRIPTION	SRN	ISSUED BY :
SCALE : AS SHOWN				

223
548



Notes :

1. ALL THE DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE SPECIFIED.
2. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED AND NO DIMENSIONS SHALL BE SCALED.
3. SAFE BEARING CAPACITY HAS BEEN TAKEN AS 10 TONS/5sqm.
4. THE CONCRETE GRADE SHALL BE M-25.
5. CLEARANCE TO THE OUTER MOST STEEL SHALL BE
 - i) PEDAestal - 40mm
 - ii) FOUNDATION - 50mm
6. STEEL TUBES ARE DESIGNATED BY THEIR NOMINAL BORES INDICATED ON DRAWING.
7. STEEL TUBE USED ARE CLASSIFIED (HEAVY DUTY) TYPE STEEL TUBES.
8. STEEL TUBE SHALL CONFORM TO GRADE Yst 210.
9. STEEL TUBE USED SHALL BE CONFORMING TO IS:1161-1998.
10. TUBLER MEMBERS SHALL HAVE ANNULAR CUT HEAD SMOOTH FINISHED SO AS TO HAVE PROPER SEAT OVER THE SUPPORTING TUBE.
11. ELECTRODE USED SHALL CONFORM RELEVANT I.S. SPECIFICATIONS AND THE CHEMICAL COMPOSITION OF ELECTRODE AND THE TUBE SHOULD MATCH.
12. SLAG SHALL BE REMOVED BEFORE MEASURING THE DIMENSIONS OF FILLET WELD.
13. WELDING SHALL BE DONE BY ARC WELDING.
14. 4.5mm SIZE WELD SHALL BE MADE WITH A SINGLE PASS.
15. WELD SIZE SHALL BE 4.5mm UNLESS OTHERWISE MENTIONED & SHALL BE DONE ALL ROUND ON THE CONTACT LENGTH OF MEMBERS.
16. HIGH STRENGTH BOLTS SHALL CONFORM TO IS:1367-1364.
17. DIA. OF HOLES IN MS PLATE SHALL BE MACHINE MADE AND AS FOLLOWS SIA OF BOLTS DIA OF HOLES.
 - i) 20mm, 21.5mm.
 - ii) 25mm, 26.5mm.
18. SIZE OF LETTERS AND COLOUR OF PAINT SHALL CONFORM.
 - i) IRC : 67-2012
 - ii) IRC : 30-1968
19. SHADE OF ANTICORROSIVE PAINT FOR PIPES SHALL BE DECIDED BY ENGINEER INCHARGE.
20. RETRO - REFLECTIVE SHEETING SHALL BE AS PER MORT & H SPECIFICATIONS SECTIONS 800.
21. METALIC CRASH BARRIER SHALL BE PROVIDED ON EARTHEN SHOULDER 50m, EITHER SIDE OF CENTER LINE OF COLUMN OF PORTAL AS PER DRAWING & MORT&H SPECIFICATIONS.
22. ALL STRUCTURAL STEEL CONFORM TO IS:2062-1999.
23. THE OVERHEAD SIGNBOARD IS DESIGNED TO WITHSTAND A WIND LOAD OF 150KG/M2 FOR NORMAL FACE AND 30KG/M2 FOR TRANSVERSE FACE OF THE SIGN.

CLIENT :

Bihar State Road Development Corporation Limited (BSRDC)
 (A Government of Bihar Undertaking)

PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS :

SAI Consulting Engineers Pvt. Ltd.
 An ISO 9001 Certified Company
 Block-A "SAI House" Sanyal Corporate Square, 8th Rajpath
 Condo Building, Phase-II, Condo-89, Sector-14, Gurgaon
 Haryana - 122002
 Phone : +91-79-6532600/700/Fax : +91-79-6532800
 Email : mail@saiindia.com

REV.	DATE	DESCRIPTION	SIGN	ISSUED BY :
PA	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)		DRAWN BY : J.N.
PE	17/12/19	GOOD FOR CONSTRUCTION (DPR)		CHECKED BY : C.S.
PE	31/03/19	GOOD FOR CONSTRUCTION (DPR)		APPROVED BY : J.D.
PE	10/04/14	GOOD FOR CONSTRUCTION (DPR)		ISSUED BY : J.N.
PD	26/02/14	ISSUED WITH FINAL DPR		
PC	13/11/13	ISSUED WITH DPR		
PR	28/08/13	ISSUED WITH DPR		

SCALE : AS SHOWN

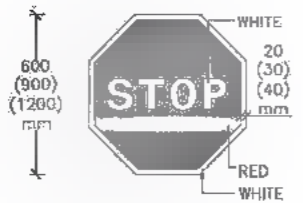
TITLE : LRP CHOWK (BAHADURGANJ) - DIGHALBANK (PACKAGE-III)
 FOOTING DETAILS FOR OVER HEAD / GANTRY SIGNS

DRG. NO. :
 SAI-21307/DPR/M-TYP-03

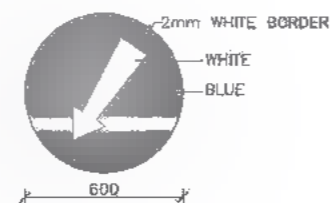
REVISION : PH



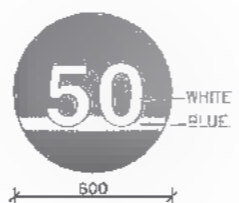
Not to be used as a Bid Document. Only for Reference.



S-1 STOP SIGN
SCALE-1:20



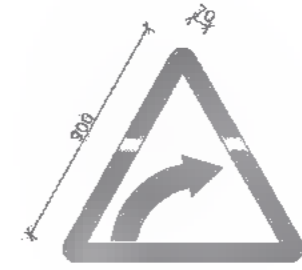
S-4 COMPULSORY KEEP LEFT
SCALE 1:20



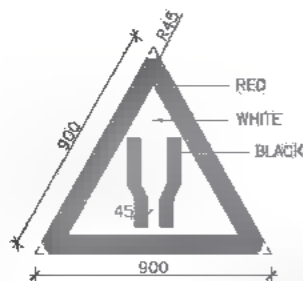
S-17 SPEED LIMIT
SCALE 1:20



S-21/33 LEFT HAND CURVE
SCALE-1:20



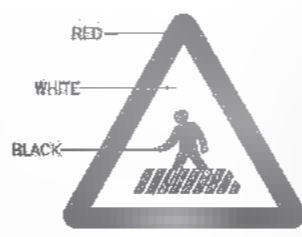
S-22/32 RIGHT HAND CURVE
SCALE-1:20



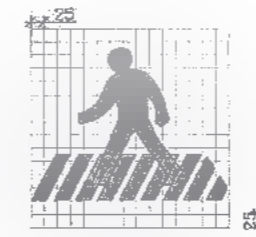
S-35 ROAD WIDENS AHEAD
SCALE 1:20



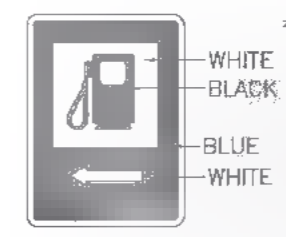
S-38 ARROW ROAD AHEAD
SCALE-1:20



S-23 PEDESTRIAN CROSSING
SCALE-1:20



S-62 FILLING STATION
(Fuel Pump)
SCALE 1:10



S-24 SCHOOL AHEAD
SCALE 1:20



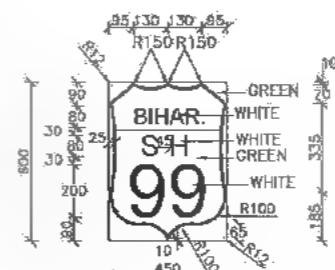
S-48 ADVANCE DIRECTION/DESTINATION SIGN
SCALE-1:20



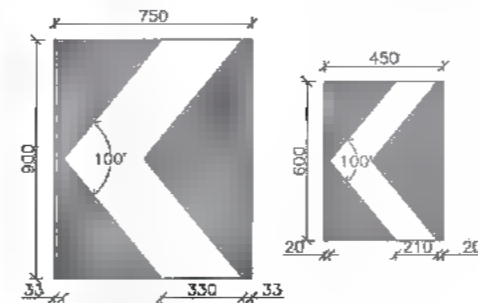
S-52 REASSURANCE SIGN
SCALE-1:20



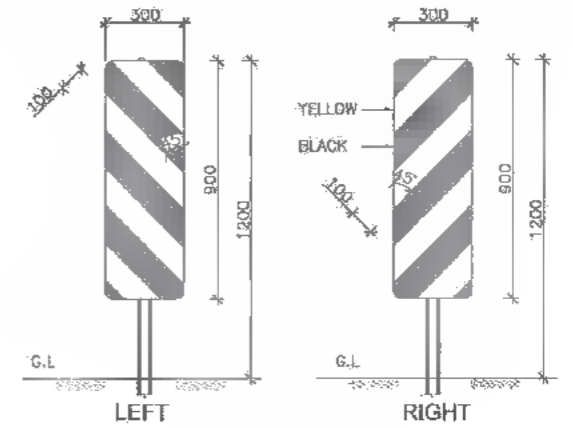
S-55 BUS STOP
SCALE 1:20



S-66 STATE HIGHWAY
ROUTE MARKER SIGN
SCALE 1:20



S-58 CHEVRON
SCALE 1:20



S-67A OBJECT HAZARD MARKERS
SCALE 1:20

- GENERAL NOTES:-**
- 1) ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED;
 - 2) MATERIAL AND COLOUR FOR ROAD SIGNS SHALL BE AS PER IRC : 67-2012
 - 3) SIZES OF ARROWS, LETTERS AND NUMERALS FOR ROAD SIGNS SHALL BE AS PER IRC : 67-2012 AND IRC : 35-1997

CLIENT : **Bihar State Road Development Corporation Limited (BSRDCL)**
(A Government of Bihar Undertaking)

PROJECT: **Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)**

CONSULTANTS : **SAI Consulting Engineers Pvt. Ltd.**
An ISO 9001 Certified Company

REV.	DATE	DESCRIPTION	SIGN	ISSUED BY
01	31/07/19	GOOD FOR CONSTRUCTION (REVISED DWR)		R.N.
02	17/12/18	GOOD FOR CONSTRUCTION (DPR)		R.N.
03	31/08/17	GOOD FOR CONSTRUCTION (DPR)		R.N.
04	16/04/14	GOOD FOR CONSTRUCTION (DPR)		R.N.
05	26/07/14	ISSUED WITH FINAL DOPR		R.N.
06	13/11/13	ISSUED WITH DOPR		R.N.
07	25/08/13	ISSUED WITH ETR		R.N.

TITLE : **LRP CHOWK (BAHADURGANJ) - DIGHALBANK (PACKAGE-III) TYPICAL DETAILS OF REGULATORY / MANDATORY TRAFFIC SIGNS**

DRG. NO. : **SAI-213007/DPR/M/TYP-04**

REVISION : PH



DATE: 30/07/2019
PATH: I:\G00\T20 21\07 BIHAR\BDRD\PROJECT\PACKAGE-III\04 TRAFFIC SIGNING

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546

SIZES AND DIMENSIONS OF 'STOP' SIGNS.

APPROACH SPEED ON MINOR ROAD	SIZE	HEIGHT (mm)	BORDER (mm)	FONT SIZE (mm)
Up to 50 kmph	Small	750	25	125
51 - 65 kmph	Normal	900	30	150
> 65 kmph	Large	1200	40	225

SIZES AND DIMENSIONS OF 'GIVE WAY' SIGNS

APPROACH SPEED ON MINOR ROAD	SIZE	SIDE (mm)	BORDER (mm)
Up to 50 kmph	Small	600	45
51 - 80 kmph	Normal	900	70
> 80 kmph	Large	1200	90

SIZES AND DIMENSIONS OF MANDATORY AND REGULATORY SIGNS

DESIGN SPEED	SIZE	REGULATORY (mm)	MANDATORY SIGNS			
		DIAMETER (mm)	DIAMETER (mm)	BORDER (mm)	OBLIQUE BAR (mm)	FONT SIZE (mm)
Up to 65 kmph	In conjunction with traffic light signal		300	35	35	75
	Small	600	600	50	50	100
66 - 80 kmph	Medium	750	750	60	60	125
81 - 100 kmph	Normal	900	900	75	75	150
> 100 kmph	Large	1200	1200	100	100	225

SIZES AND DIMENSIONS OF CAUTIONARY AND THEIR SITING DISTANCES

DESIGN SPEED	SIZE	SIDE (mm)	BORDER (mm)	CLEAR VISIBILITY DISTANCES (mm)	DISTANCE OF SIGN FROM HAZARD (m)
Up to 50 kmph	Small	600	45	45	45
51 - 65 kmph	Medium	750	60	60	45-10
66 - 80 kmph	Normal	900	70	60	10-180
> 80 kmph	Large	1200	90	60	180-245

COLOUR PATTERN FOR DIRECTION INFORMATION SIGNS

ROAD TYPE	BACKGROUND	ARROWS/BORDER/LETTERS
Expressway	Blue	White
National Highway (NH)	Green	White
State Highway (SH)	Green	White
Major District Road (MDR)	Blue	White
Village Road (ODR & VR)	White	Black
Urban/City Road	Blue	White

SPACING OF SIGNAL CHEVRON SIGNS

CURVE RADIUS (m)	DISTANCE BETWEEN CHEVRON (m)	
	ON CURVE	BEFORE CURVE
50	15	30
100	20	40
200	30	60
300	45	90
400	60	120
500	70	150
> 500	80	150

LETTER SIZE AND SITING OF INFORMATION SIGNS (SHOULDER & GANTRY MOUNTED)

1	ADVANCE DIRECTION SIGNS (SHOULDER MOUNTED)					FLAG TYPE DIRECTION SIGNS REASSURANCE SIGNS PLACE IDENTIFICATION SIGNS			GANTRY MOUNTED SIGNS		
	2	3	4	5	6	7	8	9	10	11	12
Design Speed	"x" height (mm) Lower case	"x" height (mm) upper case	Minimum clear visibility to the sign (m)	ONE sign: distance from junction (m)	TWO signs: distance between 1st and 2nd sign (m)	"x" height (mm) Lower case	"x" height (mm) upper case	Minimum clear visibility to the sign (m)	"x" height (mm) Lower case	"x" height (mm) upper case	Minimum clear visibility to the sign (m)
Up to 30 kmph km/h	75 (60)*	105 (84)	50 (35)	20	-	80 (50)	84 (70)	35 (30)			
31-50 km/h	100 (75)*	140 (105)	75 (45)	45	45	75 (60)	105 (84)	45 (35)	200 (175)	280 (245)	150
51-65 km/h	125 (100)	175 (140)	100 (80)	90	60	100 (75)	140 (105)	60 (45)			
66-80 km/h	150 (125)	210 (175)	135 (90)	90-150	70	125 (100)	175 (140)	75 (60)			
81-100 km/h	200 (150)	280 (210)	185 (125)	150-225	100	150 (125)	210 (175)	105 (75)	250 (200)	350 (280)	200
101-110 km/h	250 (200)	350 (280)	225 (150)	225-300, See also Note 1	100	200 (150)	280 (210)	135 (105)	275 (250)	385 (350)	240
111-120 km/h	300 (250)	420 (350)	260 (180)	See Note 1	See Note 1	300 (250)	420 (350)	180 (150)	300 (275)	420 (385)	260

*Note:- The values in brackets are the minimum values to be adopted when there are site/space constraints.

GENERAL NOTES:-

SCHEDULE OF TRAFFIC SIGNS SHALL BE AS PER IRC : 67-2012

CLIENT :



Bihar State Road Development Corporation Limited (BSRDC)
(A Government of Bihar Undertaking)

PROJECT :

Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS :

SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company
Block-A "SAI House" Salzman Corporate Square, Bih Rajnath
11A, Bodh Gaya, 81-101-38859, Bihar, India
Phone : +91-91-6624288/289, Fax : +91-91-6624288
E-mail : mail@sai100.com

REV.	DATE	DESCRIPTION	SIGN	ISSUED BY	REVISION
PH	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)		DRWN BY : R.N.	TITLE : LRP CHOWK (BAHADURGANJ) - DIGHALBANK (PACKAGE-III) SCHEDULE OF TRAFFIC SIGNS
PG	17/12/18	GOOD FOR CONSTRUCTION (DPR)		CHECKED BY : C.S.	
PC	31/03/17	GOOD FOR CONSTRUCTION (DPR)		APPROVED BY : J.D.	
PE	16/04/14	GOOD FOR CONSTRUCTION (DPR)			
PD	26/02/14	ISSUED WITH FINAL DPR			
PC	12/11/13	ISSUED WITH DPR			
PD	25/08/13	ISSUED WITH FTR			

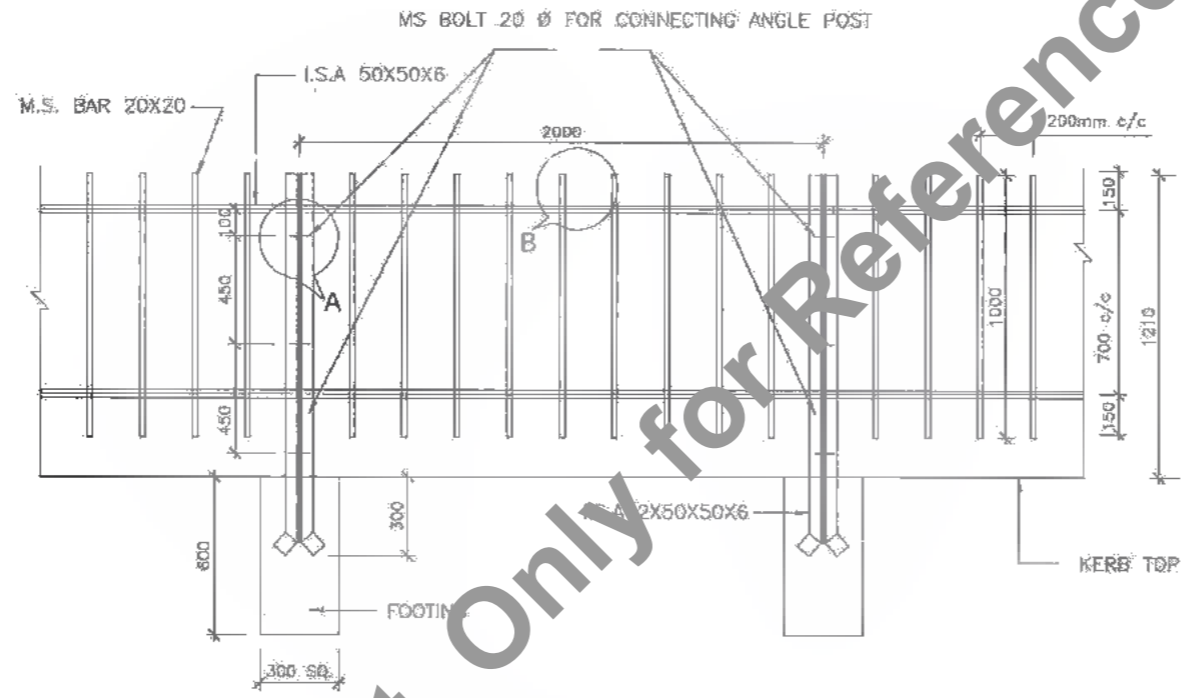
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DRG. NO. : SAI-213007/DPR/MLTYR--08A
REVISION : PH

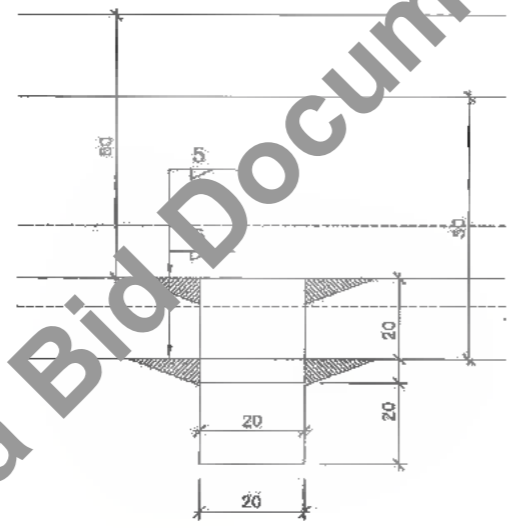


DATES: 30/07/19 (1st Issue), 17/12/18 (2nd Issue), 31/03/17 (3rd Issue), 16/04/14 (4th Issue), 26/02/14 (5th Issue), 12/11/13 (6th Issue), 25/08/13 (7th Issue)
 FROM: T. YADAV (1st Issue), S. K. SINGH (2nd Issue), D. K. SINGH (3rd Issue), R. K. SINGH (4th Issue), R. K. SINGH (5th Issue), R. K. SINGH (6th Issue), R. K. SINGH (7th Issue)

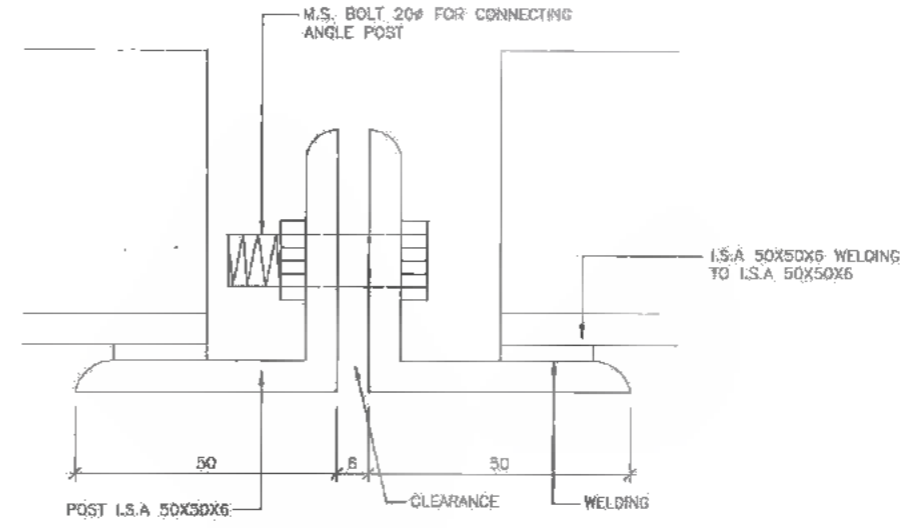
233
544



PEDESTRIAN GUARD RAIL
(SCALE 1:20)



DETAIL - B
(SCALE 1:1)



DETAIL - A
(SCALE 1:1)

NOTES:

1. ALL THE DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE SPECIFIED.
2. FOOTING SHALL BE IN PLAN CEMENT CONCRETE OF M20 GRADE.
3. M.S. BOLT SHALL CONFIRM TO IS:4000-1992
4. WELD SHALL BE MADE WITH SINGLE PASS.
5. WELD SHALL BE DONE BY ARC WELDING.
6. ELECTRODE USED SHALL CONFORM TO RELEVANT IS SPECIFICATIONS. & THE CHEMICAL COMPOSITION OF ELECTRODE & THE MS BAR SHOULD MATCH.
7. SLAG SHALL BE REMOVED BEFORE MEASURING THE DIMENSIONS OF FILLET WELD.
8. STRUCTURAL STEEL SHALL CONFORM TO IS: 1977-1996
9. SHADE OF ANTI CORROSIVE PAINT SHALL BE DECIDED BY ENGINEER-IN-CHARGE.
10. POST ENDS IN CONCRETE FOOTING SHALL BE BENDED TO SERVE THE PURPOSE OF HOLD FAST.



CLIENT:

Bihar State Road Development Corporation Limited (BSRDCL)
(A Government of Bihar Undertaking)

PROJECT:

Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:

SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company

Block-A "SAI Plaza", Solapur Corporate Square, Bih Bahujith
City, Bhubaneswar, Odisha-751009, India
Phone : +91-79-66112007/1007 Per : +91-79-66112000
Email : mail@saiconsulting.com

REV.	DATE	DESCRIPTION	SIGN	ISSUED BY
PH	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)		
PE	17/12/18	GOOD FOR CONSTRUCTION (DPR)		
PE	31/03/17	GOOD FOR CONSTRUCTION (DPR)		
PE	10/04/16	GOOD FOR CONSTRUCTION (DPR)		
PD	26/02/14	ISSUED WITH FINAL DPR		
PC	13/11/13	ISSUED WITH DPR		
PR	22/08/13	ISSUED WITH EPR		

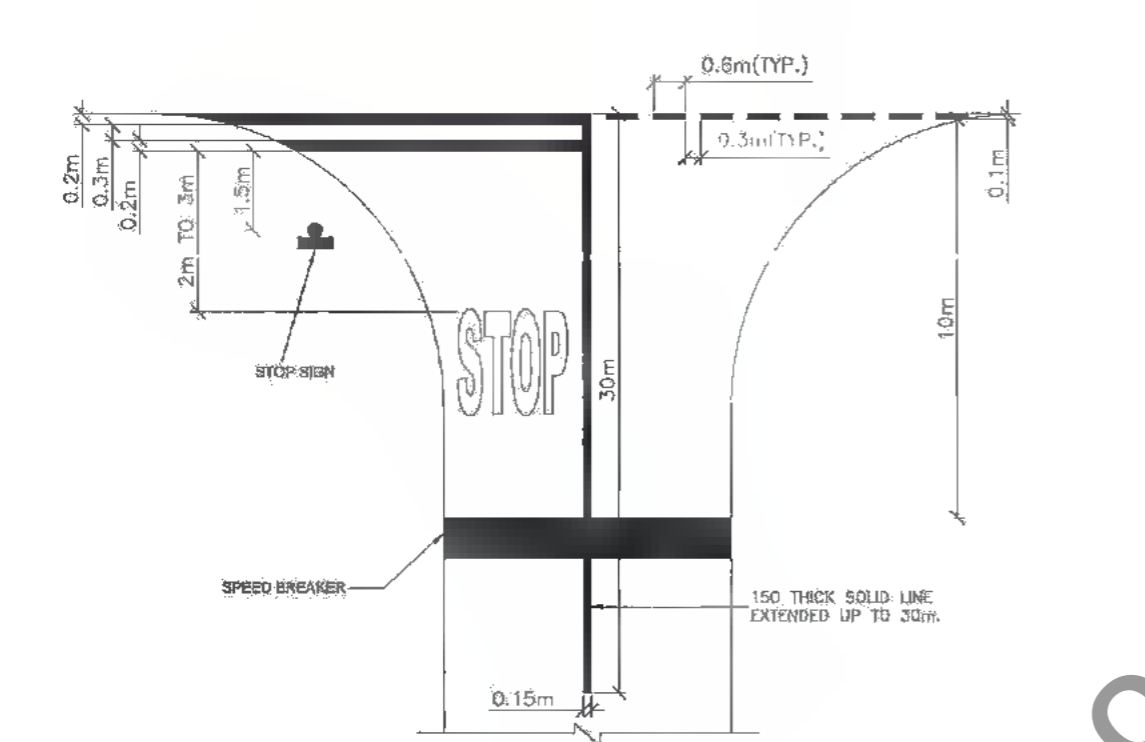
SCALE : AS SHOWN

TITLE : LRP CHOWK (BAHADURGANJ - DIGHALBANK (PACKAGE-III))
PEDESTRIAN GUARD DETAILS

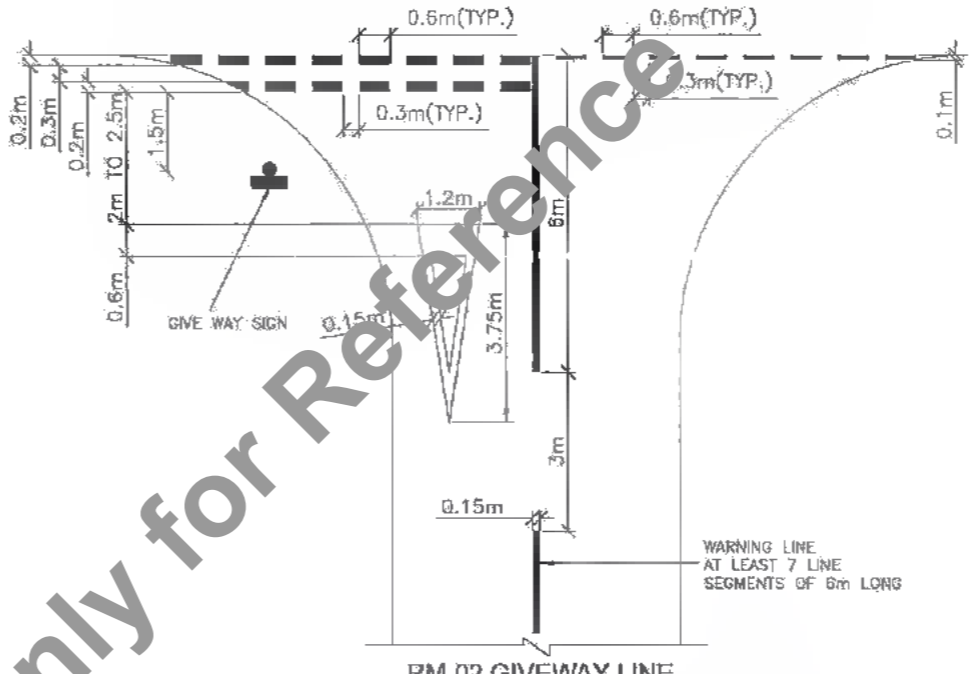
DRG. NO. :
SAI-213007/DPR/M/TYP - 05

REVISION : PH

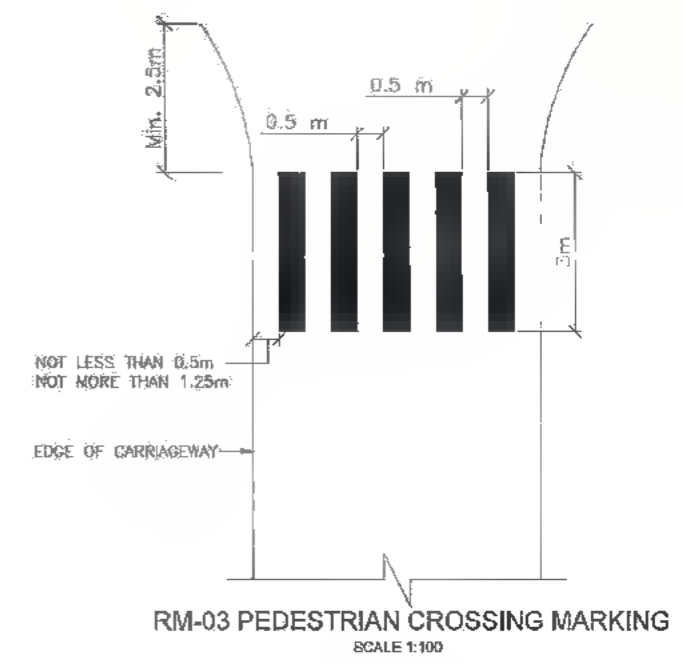
DATE: 22/07/2019
 DRAWN BY: P. G. N. (Tech.)
 CHECKED BY: P. G. N. (Tech.)
 APPROVED BY: P. G. N. (Tech.)
 PROJECT: BSRDCL
 DRAWING NO: SAI-213007/DPR/M/TYP-05



RM-01 STOP LINE
SCALE 1:100



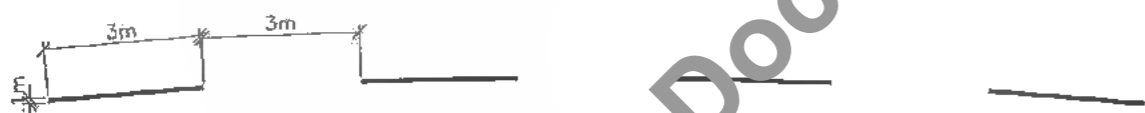
RM-02 GIVEWAY LINE
SCALE 1:100



RM-03 PEDESTRIAN CROSSING MARKING
SCALE 1:100



RM-04 LANE MARKING IN RURAL STRAIGHT REACHES
SCALE 1:100



RM-05 LANE MARKING ON CURVES IN RURAL AREA
SCALE 1:100

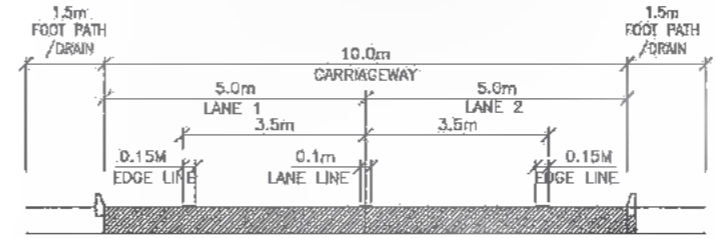


RM-06 LANE MARKING IN URBAN STRAIGHT REACHES
SCALE 1:100

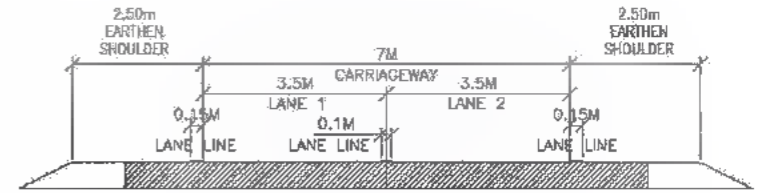


RM-07 LANE MARKING ON CURVES IN URBAN AREA
SCALE 1:100

TYPICAL LAYOUT OF ROAD MARKING FOR TWO LANE
SCALE 1:100



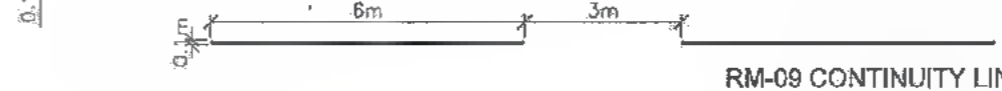
TYPICAL LAYOUT OF ROAD MARKING FOR TWO LANE
SCALE 1:100



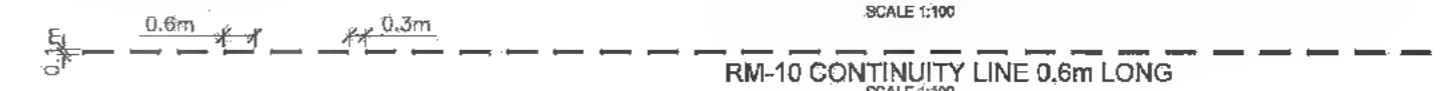
TYPICAL LAYOUT OF ROAD MARKING FOR TWO LANE
SCALE 1:100



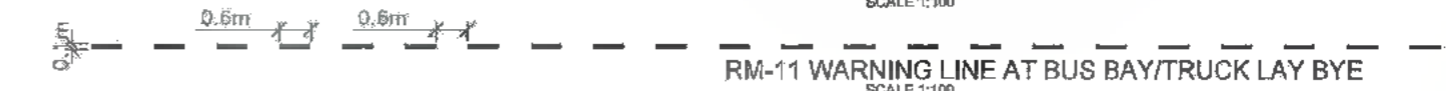
RM-08 DETAIL OF SHYNESS STRIP MARKING
SCALE 1:500



RM-09 CONTINUITY LINE 6m LONG
SCALE 1:100



RM-10 CONTINUITY LINE 0.6m LONG
SCALE 1:100



RM-11 WARNING LINE AT BUS BAY/TRUCK LAY BYE
SCALE 1:100

NOTES
1. ROAD MARKING SHALL BE OF HOT APPLIED THERMOPLASTIC MATERIALS WITH GLASS REFLECTORISING BEADS OF TYPE 2 AS PER CLAUSES OF SECTION 803 OF MORTH SPECIFICATIONS.



Bihar State Road Development Corporation Limited (BSRDC)
(A Government of Bihar Undertaking)

PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

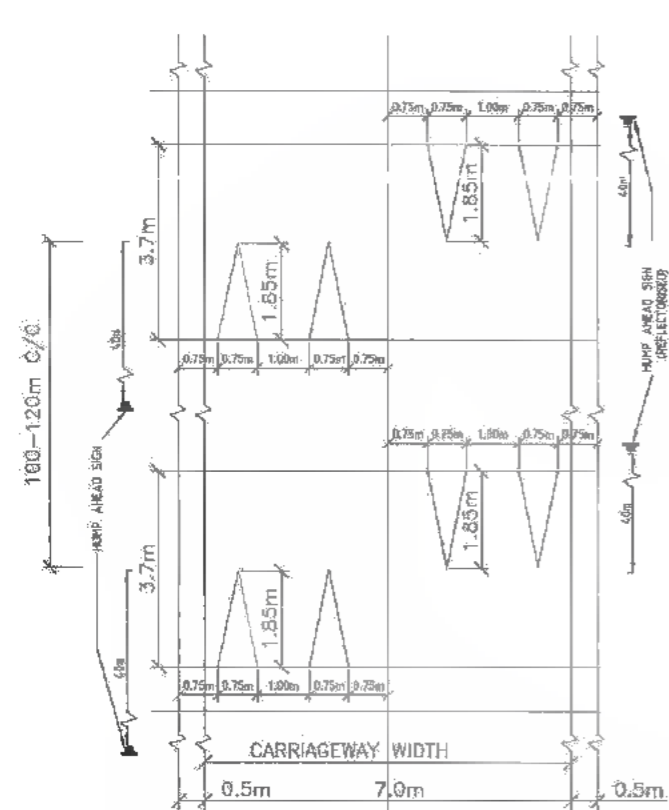
CONSULTANTS:
SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company
Block-A "SAI House" Saloon Corporate Square, 6th Floor
C-10, Sector-16, Gurgaon-122002, Haryana
Phone : +91-124-4012002/1622002 Fax : +91-124-4012000
Email : mail@saiengg.com

PH	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)	DRAWN BY : R.M.	TITLE: LRP CHOWK (BAHADURGANJ) - DIGHALBANK (PACKAGE-III)
PC	17/12/18	GOOD FOR CONSTRUCTION (DPR)	CHECKED BY : C.S.	TYPICAL DETAILS OF LANE MARKINGS
PF	21/03/17	GOOD FOR CONSTRUCTION (DPR)	APPROVED BY : J.D.	
PE	10/04/14	GOOD FOR CONSTRUCTION (DPR)	ISSUED BY : J.S.	
PD	25/02/14	ISSUED WITH FINAL DPR		
PP	13/11/13	ISSUED WITH DPR		
PB	28/08/13	ISSUED WITH FFR		

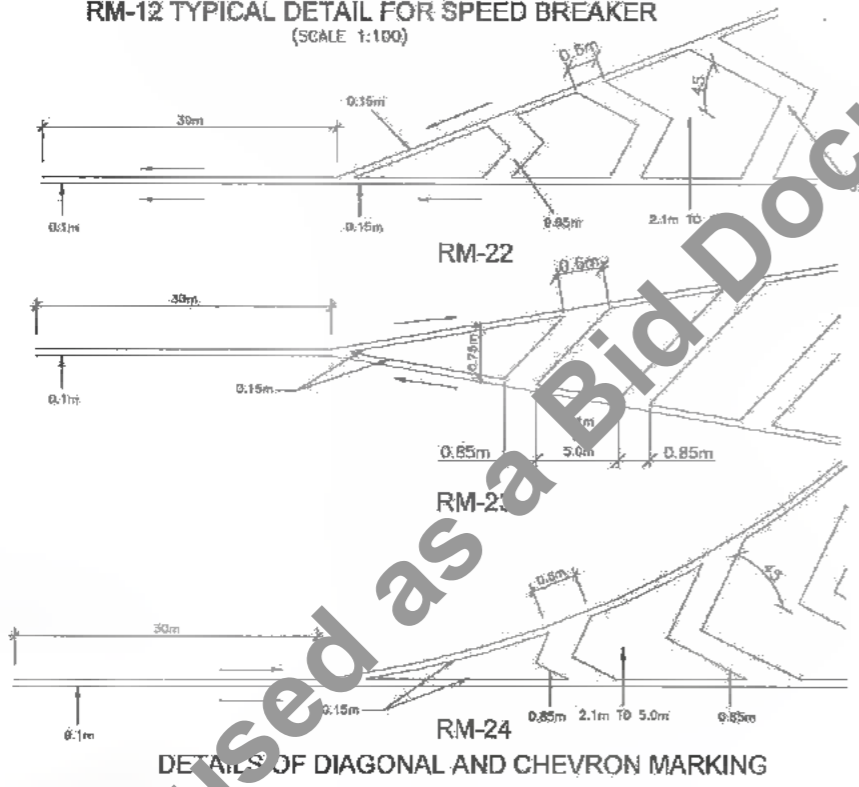
SAI CONSULTING ENGINEERS PVT. LTD.
DRG. NO. : SAI-213007/DPR/M/TYP - 05
REVISION : PH

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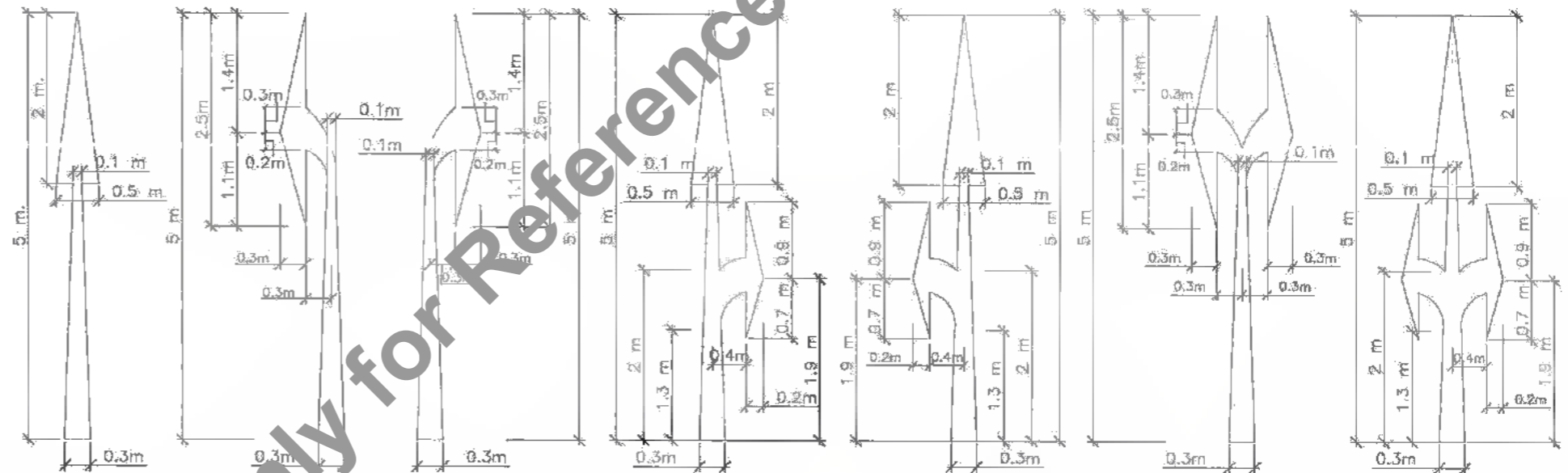
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542



RM-12 TYPICAL DETAIL FOR SPEED BREAKER (SCALE 1:100)

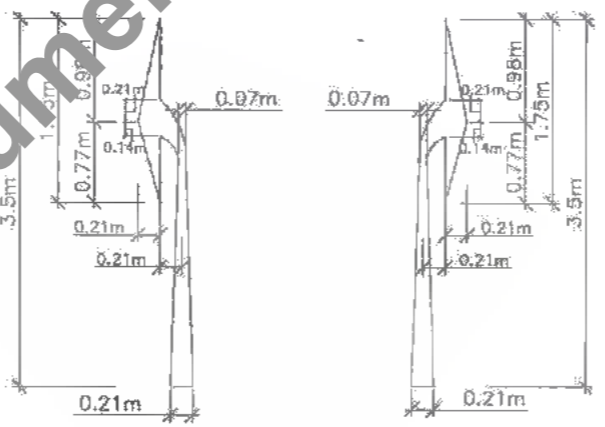


DETAILS OF DIAGONAL AND CHEVRON MARKING

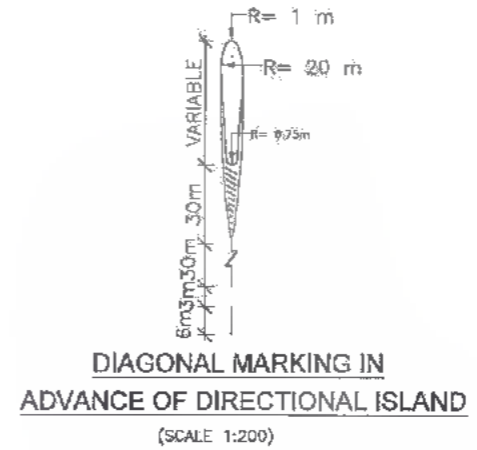


RM-13 STRAIGHT (SCALE 1:20)
RM-14 LEFT (SCALE 1:20)
RM-15 RIGHT (SCALE 1:20)
RM-16 STRAIGHT & RIGHT (SCALE 1:20)
RM-17 STRAIGHT & LEFT (SCALE 1:20)
STRAIGHT & BOTH LEFT & RIGHT RM-18 (SCALE 1:20)
RM-19 (SCALE 1:20)

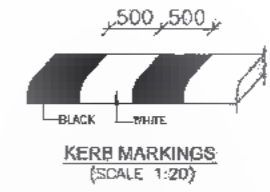
ARROW MARKING FOR ROUTE DIRECTION



RM-20 LEFT (SCALE 1:20)
RM-21 RIGHT (SCALE 1:20)



DIAGONAL MARKING IN ADVANCE OF DIRECTIONAL ISLAND (SCALE 1:200)



KERB MARKINGS (SCALE 1:20)

TOTAL LENGTH OF MARKING (M)	SPACING BETWEEN BARS OR CHEVRONS (MM)	
	LOW SPEED (75 KM/H)	HIGH SPEED (75 KM/H)
< 5.7	2100	---
5.7 to 22.5	3500	---
> 22.5	5000	---
< 10.5	---	4000
> 10.5	---	6000



RM-26 DETAIL OF EDGE LINE MARKING (SCALE 1:100)

NOTES:
1. ROAD MARKINGS SHALL BE OF HOT APPLIED THERMOPLASTIC MATERIALS WITH GLASS REFLECTORISING BEADS OF TYPE AS PER CLAUSES OF SECTION 803 OF MORTH SPECIFICATIONS.

CLIENT:
Bihar State Road Development Corporation Limited (BSRDCL)
(A Government of Bihar Undertaking)

PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:
SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company
SYSTRA GROUP

REV.	DATE	DESCRIPTION	SIGN	ISSUED BY :
PH	31/07/13	GOOD FOR CONSTRUCTION (REVISED DPR)		
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PF	31/03/17	GOOD FOR CONSTRUCTION (DPR)		
PC	30/04/14	GOOD FOR CONSTRUCTION (DPR)		
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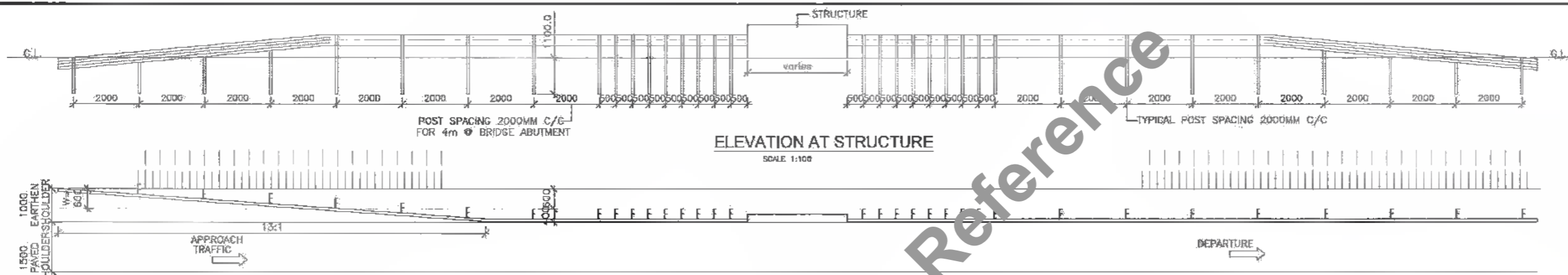
DRAWN BY : B.M.
CHECKED BY : C.S.
APPROVED BY : J.D.
ISSUED BY : B.B.

TITLE: LRP CHOWK (BAHADURGANJ) - DIGHALBANK (PACKAGE-III)
TYPICAL DETAILS OF LANE MARKINGS

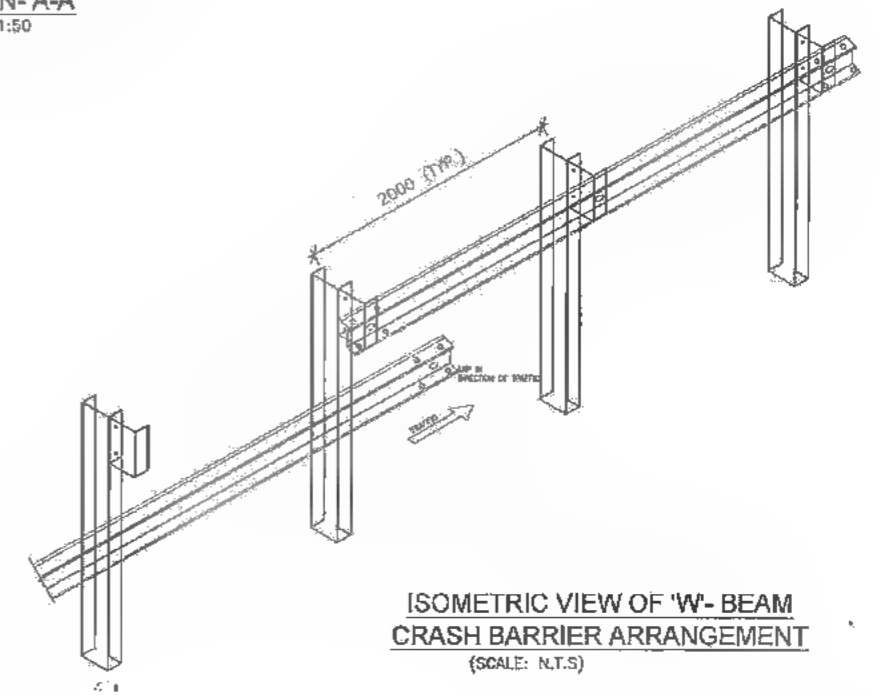
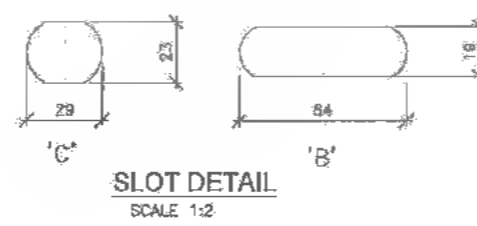
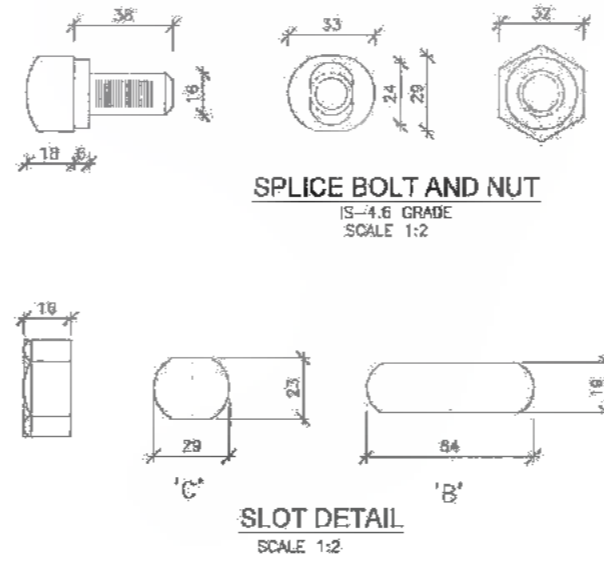
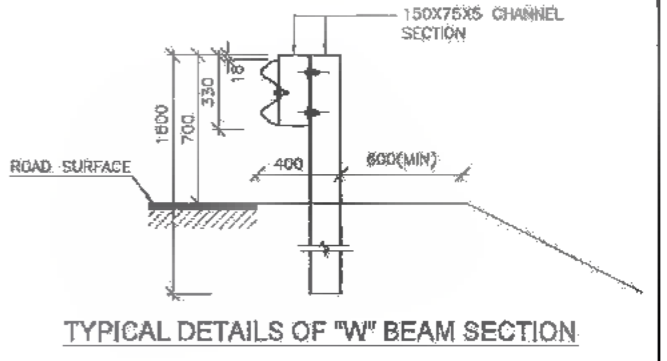
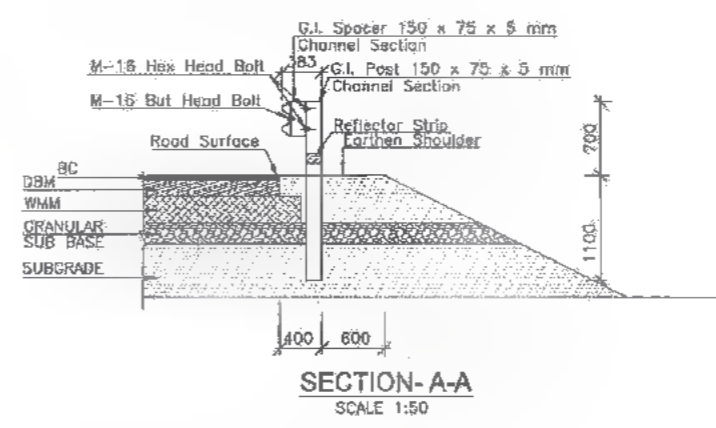
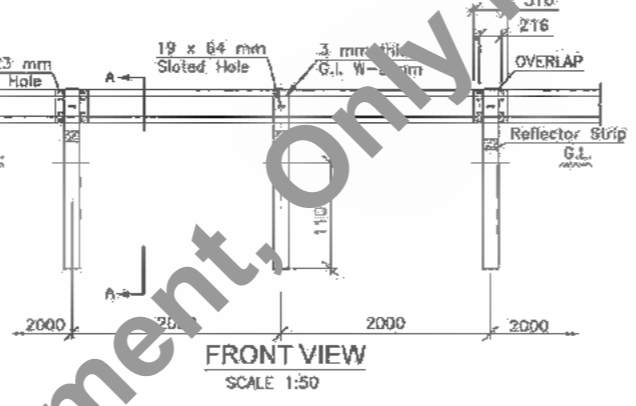
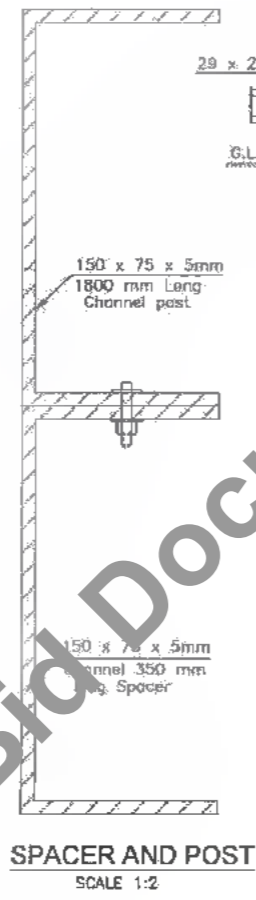
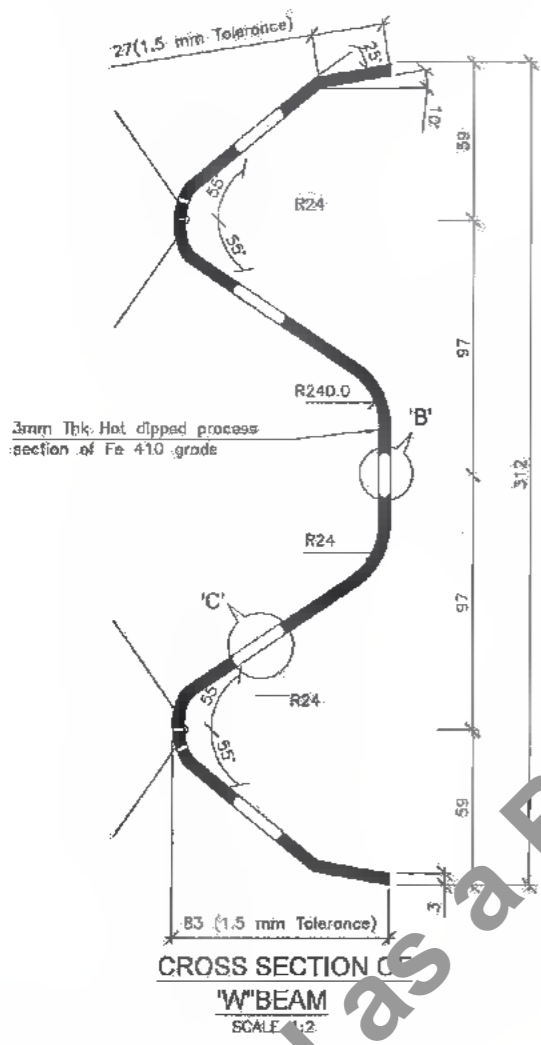
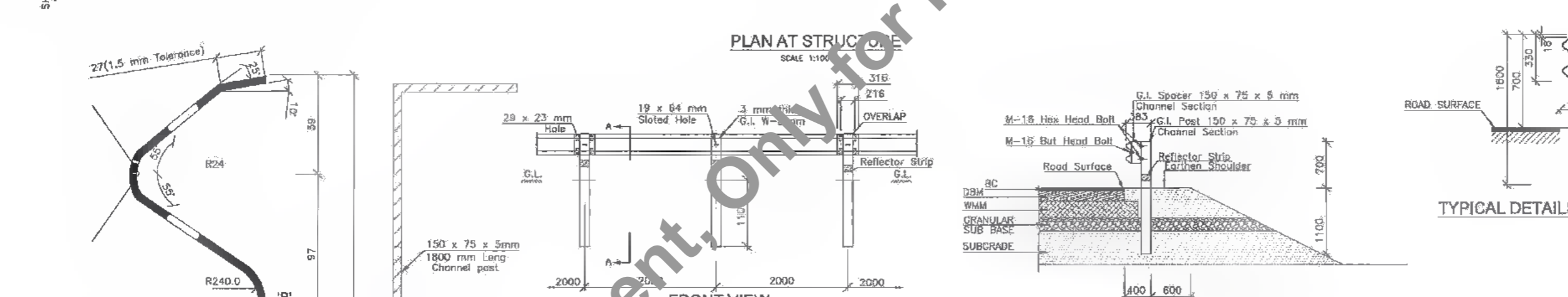
DRG. NO. : SAI-213007/DPRM/TYP - 07
REVISION : PH



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SUGGESTED FLARE RATES FOR END TREATMENTS	
DESIGN SPEED (km/h)	SEMI RIGID
100	13:1
80	11:1
65	9:1
50	7:1

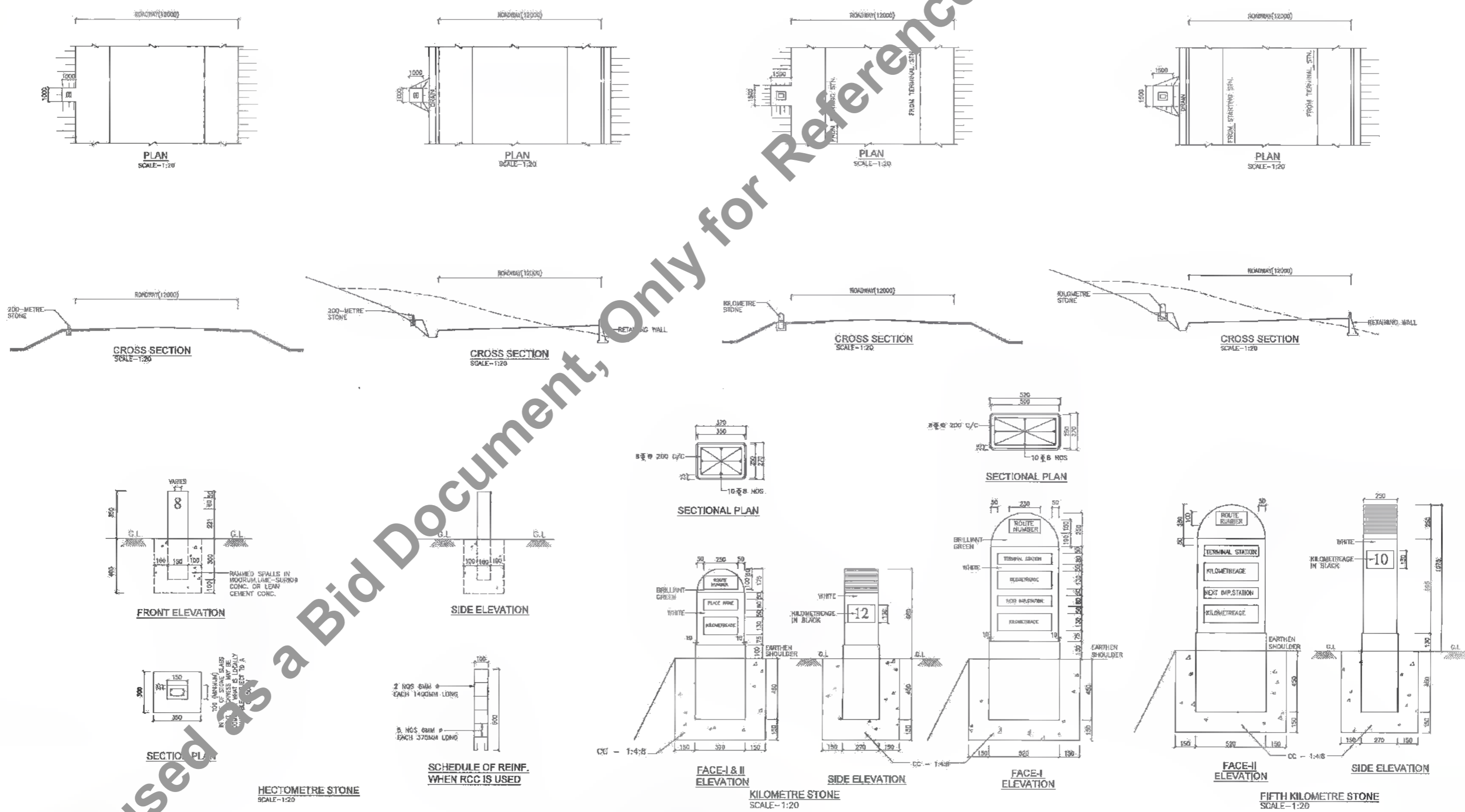


- Notes :**
1. ALL THE DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE SPECIFIED.
 2. CORROSION RESISTANT METAL BEAM SHALL BE 3MM THICK.
 3. W-BEAM SHALL BE COLD ROLL FORMED SECTION.
 4. ALL RAW MATERIAL SHALL CONFORM TO IS 5986 (Gr.Fe 410:ST-42) HOT DIP GALVANISED TO 550 gm/Sqm.
 5. SPACERS SHALL BE AS PER: IS :2062-1992
 6. EVERY CHANNEL POST SHALL BE 500MM C/C APART EXCEPT STRUCTURE LOCATIONS;
 7. THE ENDS OF FASTENERS ARE TO BE FLARED BY PNEUMATIC OPERATION TO ENSURE THAT THE BOLTS ARE NOT REMOVABLE

<p>CLIENT : Bihar State Road Development Corporation Limited (BSRDCL) (A Government of Bihar Undertaking)</p>	<p>PROJECT : Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)</p>	<p>CONSULTANTS :</p> <p>SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company Block-A "SM House", Salween Corporate Sector, Old Rajmahal, Patna - 800009, Bihar Phone : +91-20-5692180/190, Fax : +91-20-51142000 Email : mail@saiengineers.com</p>	<p>REV. DATE DESCRIPTION SIGN ISSUED BY :</p> <p>31/07/19 GOOD FOR CONSTRUCTION (REVISED DPR) DRAWN BY : R.N. 17/12/18 GOOD FOR CONSTRUCTION (DPR) CHECKED BY : C.S. 31/03/17 GOOD FOR CONSTRUCTION (DPR) APPROVED BY : S.S. 10/04/14 GOOD FOR CONSTRUCTION (DPR) 26/02/14 ISSUED WITH FINAL DPR 13/11/13 ISSUED WITH DPR 29/08/13 ISSUED WITH DPR</p>	<p>TITLE : LRP CHOWK (BAHADURGANJ) -DIGHALBANK (PACKAGE-III) TYPICAL DETAILS OF CRASH BARRIER</p> <p>DRG. NO. : SAI-213007/OPR/MTYR-08</p> <p>REVISION : PH</p>
			<p>SCALE : AS SHOWN</p>	

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 DATE: 30/07/2019
 PAGE: 1/100

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NOTES:

- 1). ALL DIMENSIONS ARE IN MM, UNLESS OTHERWISE MENTIONED.
- 2). KILOMETRE STONE / HECTOMETRE STONE / FIFTH KILOMETRE STONE SHALL BE CONSTRUCTED IN RCC M20 GRADE.
- 3). FOUNDATION OF KILOMETRE STONE / HECTOMETRE STONE / FIFTH KILOMETRE STONE SHALL BE IN RCC M20 GRADE.
- 4). THE BOUNDARY STONES SHALL BE PROVIDED ON LEFT SIDE OF THE ROAD AS SHOWN INDEPENDENT OF DIRECTION OF TRAFFIC FLOW.
- 5). ALL NUMERALS SHALL BE PAINTED BLACK.
- 6). SIZE OF LETTERS AND NUMERALS SHALL BE AS PER IRC: 8-1980.
- 7). STEEL REINFORCEMENT SHALL BE MILD-STEEL Fe. 415.
- 8). BOUNDARY STONES SHALL BE FIXED AT THE EDGE OF ROW STAGGERED ON EACH SIDE AT INTERVAL OF 100 METRE.
- 9). NO PAINTING SHALL BE CARRIED OUT ON BOUNDARY STONES.
- 10). HECTOMETRE STONE SHALL BE PAINTED WHITE.
- 11). KILOMETRE STONE AND FIFTH KILOMETRE STONE SHALL BE PAINTED AS SHOWN.

<p>CLIENT:</p>  <p>Bihar State Road Development Corporation Limited (BSRDGM) (A Government of Bihar Undertaking)</p> <p><i>D. G. M. (Tech.) B.S. D.C. PIU-Kaifhat</i></p>	<p>PROJECT:</p> <p>Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar <i>Baysi - Bahadurganj - Dighalbank (SH-99)</i></p>	<p>CONSULTANTS:</p>  <p>SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company</p> <p>Block-A "SAI House", Sanyam Corporate Scheme, 6th Highway Club, Badaikher, Alwar Road-380029, Gurgaon, India Phone : +91-73-8012800/790; Fax : +91-73-8012895 Email : sae@saiengineers.com</p>	<table border="1"> <tr> <td>REV.</td> <td>DATE</td> <td>DESCRIPTION</td> <td>SIGN</td> <td>ISSUED BY</td> </tr> <tr> <td>PH</td> <td>31/07/18</td> <td>GOOD FOR CONSTRUCTION (REVISED DFR)</td> <td></td> <td></td> </tr> <tr> <td>PG</td> <td>17/12/18</td> <td>GOOD FOR CONSTRUCTION (DPR)</td> <td></td> <td></td> </tr> <tr> <td>PE</td> <td>10/03/17</td> <td>GOOD FOR CONSTRUCTION (DPR)</td> <td></td> <td></td> </tr> <tr> <td>PD</td> <td>26/02/14</td> <td>ISSUED WITH FINAL DOPR</td> <td></td> <td></td> </tr> <tr> <td>PS</td> <td>13/11/13</td> <td>ISSUED WITH DOPR</td> <td></td> <td></td> </tr> <tr> <td>PR</td> <td>25/06/13</td> <td>ISSUED WITH DFR</td> <td></td> <td></td> </tr> </table> <p>SCALE : AS SHOWN</p>	REV.	DATE	DESCRIPTION	SIGN	ISSUED BY	PH	31/07/18	GOOD FOR CONSTRUCTION (REVISED DFR)			PG	17/12/18	GOOD FOR CONSTRUCTION (DPR)			PE	10/03/17	GOOD FOR CONSTRUCTION (DPR)			PD	26/02/14	ISSUED WITH FINAL DOPR			PS	13/11/13	ISSUED WITH DOPR			PR	25/06/13	ISSUED WITH DFR			<p>TITLE: LRP CHOWK (BAHADURGANJ) - DIGHALBANK (PACKAGE-III) DISTANCE STONES</p> <p>DRG. NO.: SAI-213007/DFR/INTYP - 08</p> <p>REVISION: PH</p>
REV.	DATE	DESCRIPTION	SIGN	ISSUED BY																																			
PH	31/07/18	GOOD FOR CONSTRUCTION (REVISED DFR)																																					
PG	17/12/18	GOOD FOR CONSTRUCTION (DPR)																																					
PE	10/03/17	GOOD FOR CONSTRUCTION (DPR)																																					
PD	26/02/14	ISSUED WITH FINAL DOPR																																					
PS	13/11/13	ISSUED WITH DOPR																																					
PR	25/06/13	ISSUED WITH DFR																																					



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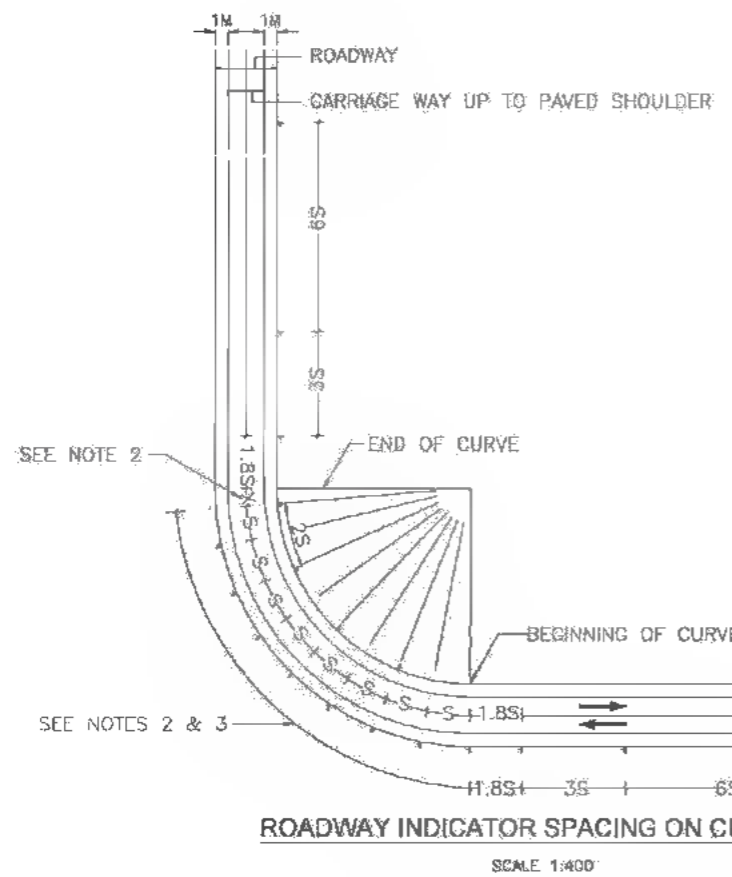
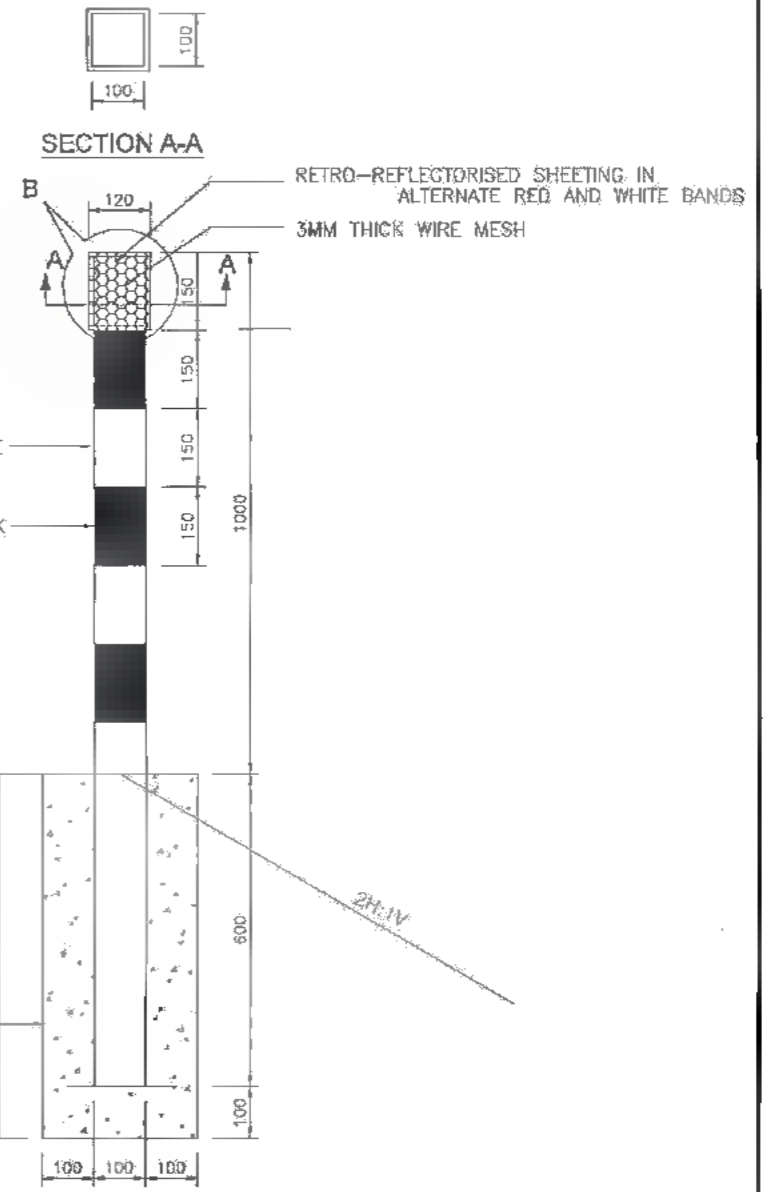
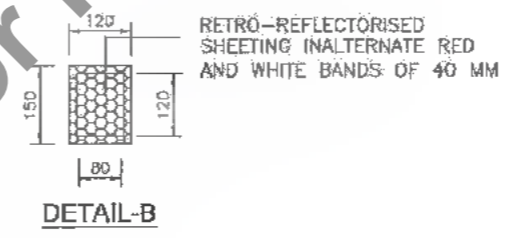


TABLE FOR RECOMMENDED SPACING FOR ROADWAY DELINEATORS ON HORIZONTAL CURVES

RADIUS OF CURVE (METERS)	SPACING ON CURVE, S (METERS)
300	25
400	30
500	35
600	38
700	42
800	45
900	48
1000	50



- Notes :**
- ALL THE DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE SPECIFIED.
 - ADJUST DISTANCE 'X' SUITABLY SO THAT THE LAST ROADWAY DELINEATOR IS AT THE END OF THE CURVE.
 - INSTALL DELINEATORS PERPENDICULAR TO THE ONCOMING TRAFFIC.
 - SEE TABLE FOR VALUE OF 'S' i.e. SPACING OF DELINEATORS ON THE CURVE.
 - THE SPACING OF FIRST, SECOND & THIRD DELINEATORS ON THE APPROACHES SHALL BE 1.85S, 3S & 6S, RESPECTIVELY BUT NOT EXCEEDING 30m.
 - INDICATORS SHALL BE DIE CAST IN ALUMINUM, RESISTANT TO CORROSIVE EFFECT OF SILT AND GRIT, FITTED WITH LENS REFLECTORS.
 - STEEL REINFORCEMENT SHALL BE OF HYSD Fe 415 GRADE.

CLIENT :

Bihar State Road Development Corporation Limited (BSRD)
 (A Government of Bihar Undertaking)

PROJECT :
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS :

SAI Consulting Engineers Pvt. Ltd.
 An ISO 9001 Certified Company
 Block-A "Sai House", Sakra Corporate Square, 8th Floor
 Dab, Dighalbank, Dhanbad-826009, Jharkhand
 Phone : +91-76-6662600/700 Fax : +91-76-6661200
 Email : mail@saiinfo.com

REV.	DATE	DESCRIPTION	SIGN	ISSUED BY :	CHKD BY :
PH	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)		DRAWN BY : R.M.	
PG	17/12/18	GOOD FOR CONSTRUCTION (DPR)		CHECKED BY : C.S.	
PF	31/03/17	GOOD FOR CONSTRUCTION (DPR)		APPROVED BY : J.D.	
PE	10/04/14	GOOD FOR CONSTRUCTION (DPR)		ISSUED BY : B.S.	
PD	25/02/14	ISSUED WITH FINAL DPR			
PC	13/11/13	ISSUED WITH DPR			
PP	29/08/13	ISSUED WITH FFR			

TITLE : LRP CHOWK (BAHADURGANJ) - DIGHALBANK (PACKAGE-III)
TYPICAL DETAILS OF INDICATORS

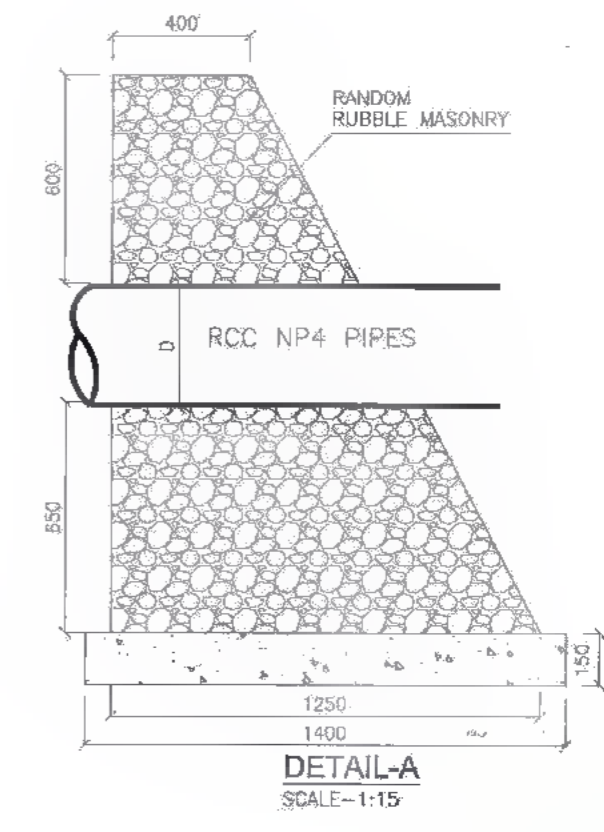
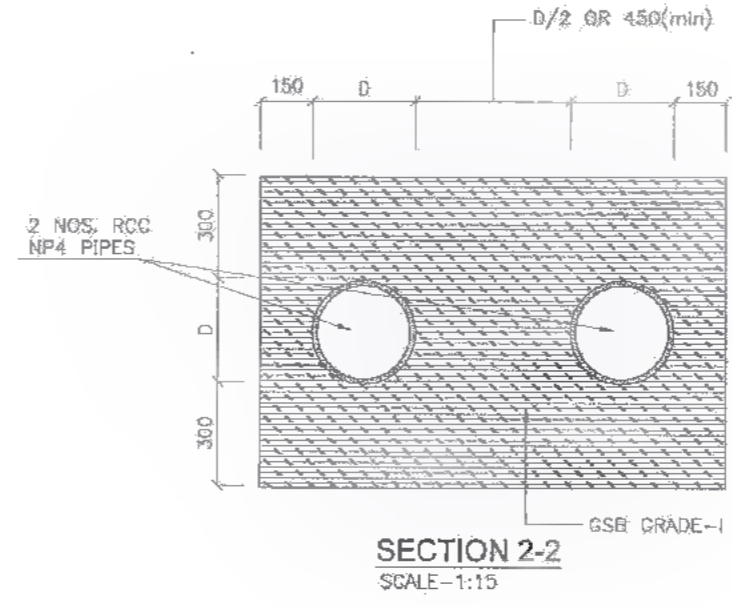
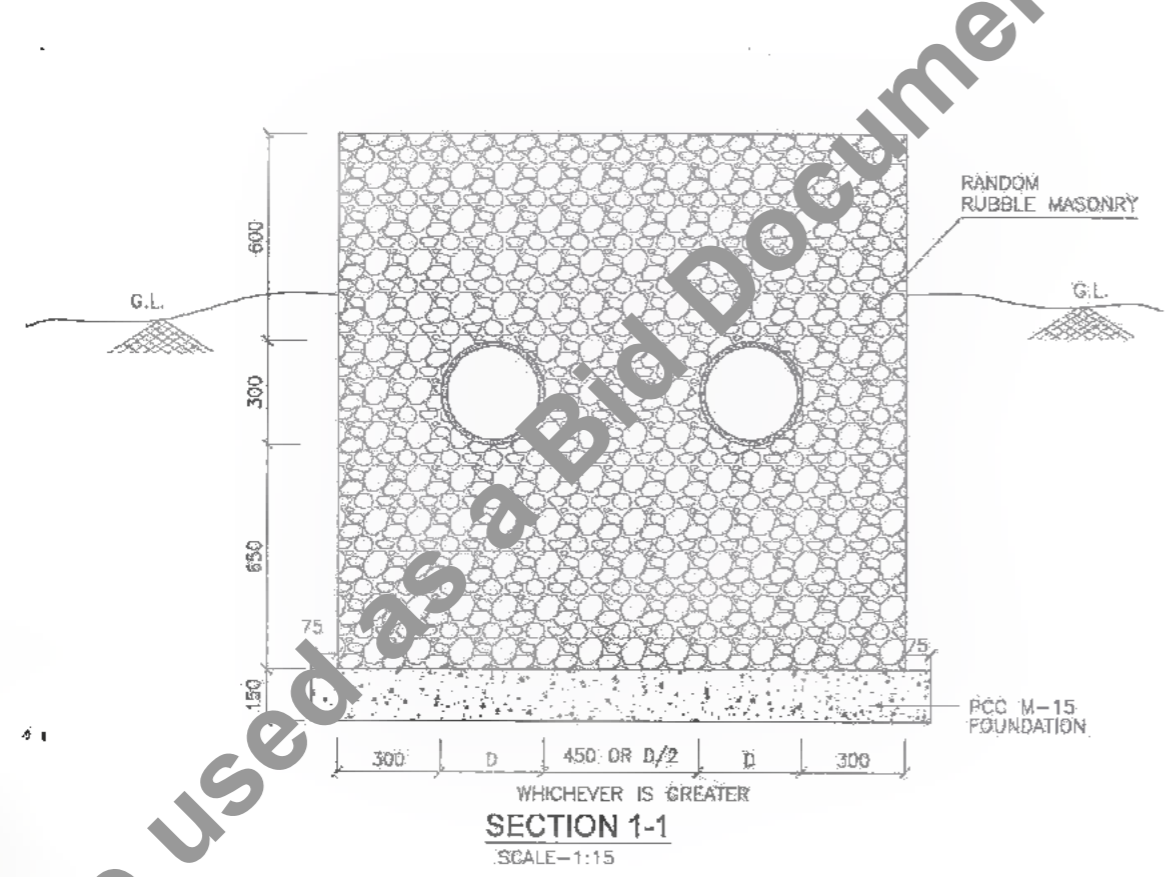
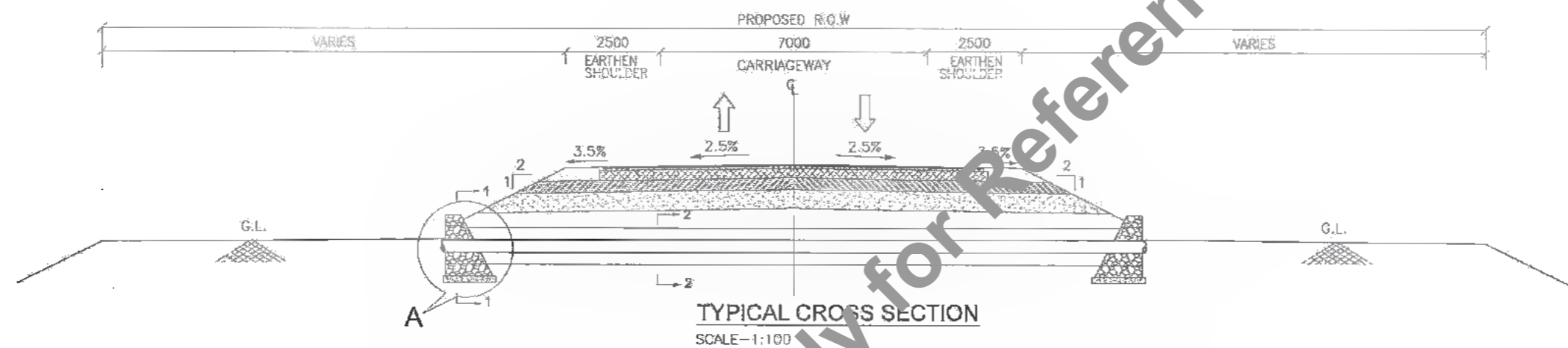
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REVISION : PH



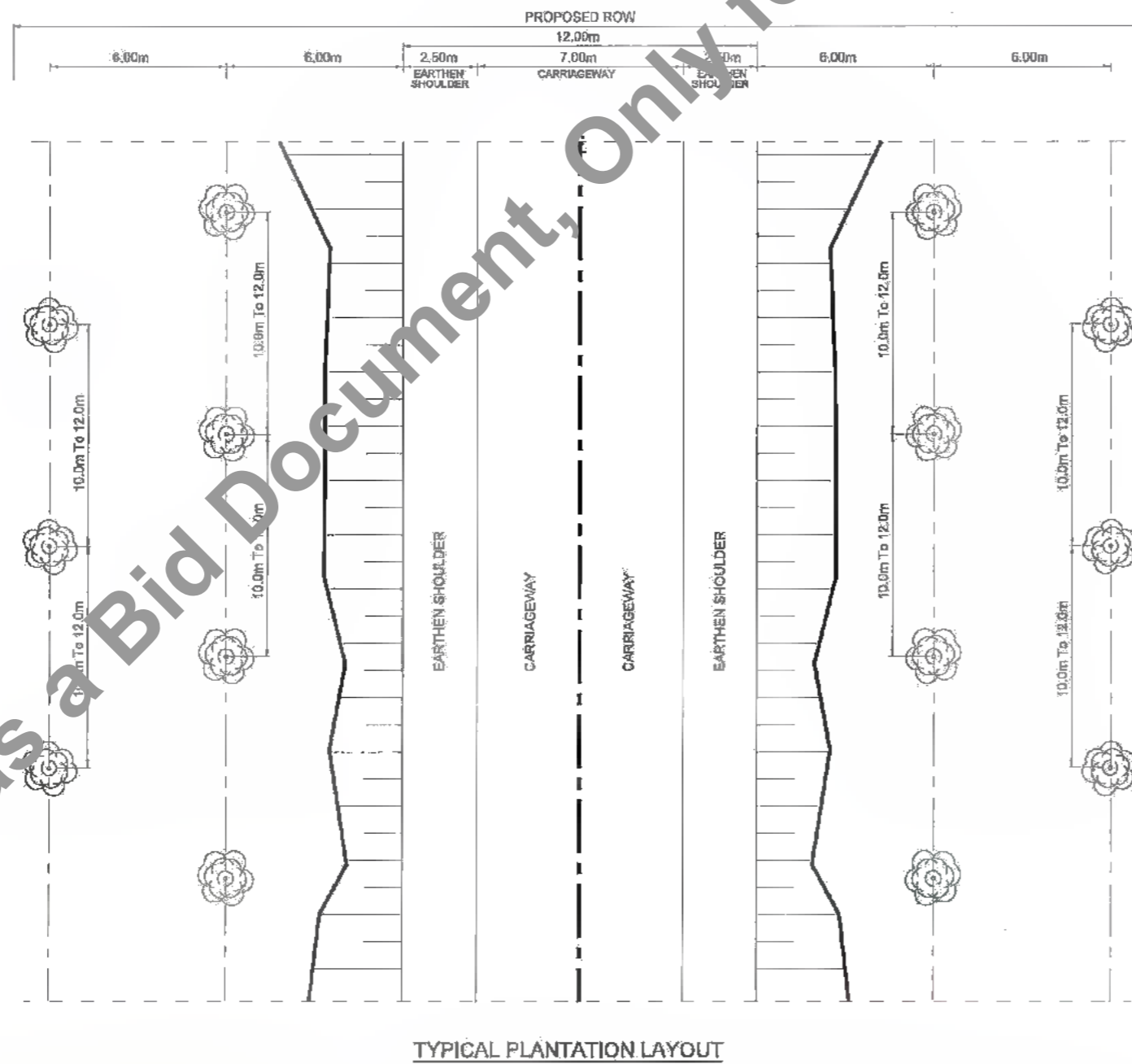
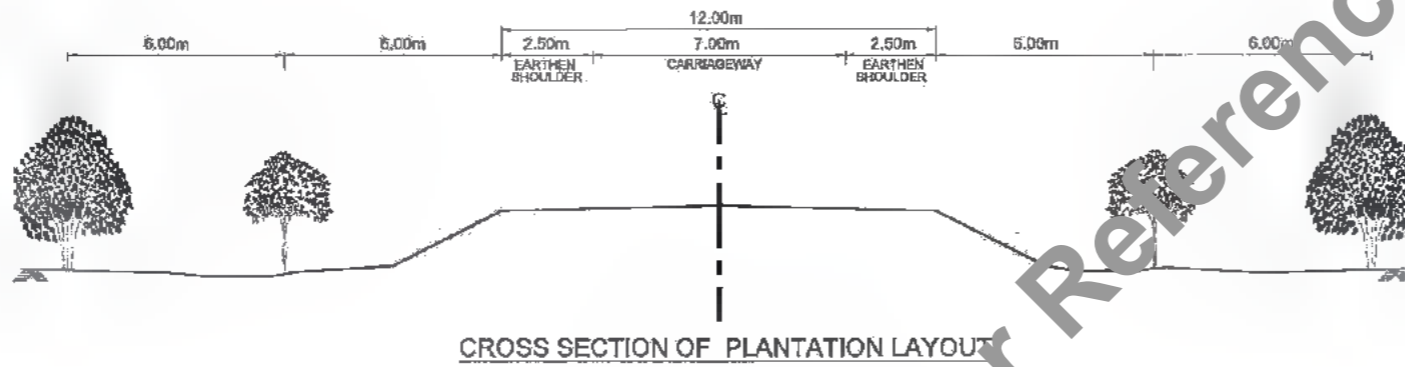
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558



DATE: 20/07/18 BY: R.N. CHECKED: C.S. APPROVED: J.B. ISSUED: B.S.
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CLIENT: Bihar State Road Development Corporation Limited (BSRDCL) (A Government of Bihar Undertaking)	PROJECT: Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)	CONSULTANTS: SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company Block-A "SAI House" Solvon Corporate Square, B'n Road Club Road, Patna, Bihar-800001 Phone: +91-91-8511980/288 Fax: +91-91-6495280 Email: sae@saiengineers.com	REVISIONS: NO. DATE DESCRIPTION SIGN 01 31/07/18 GOOD FOR CONSTRUCTION (REVISED DPR) 02 11/12/18 GOOD FOR CONSTRUCTION (DPR) 03 31/03/17 GOOD FOR CONSTRUCTION (DPR) 04 18/09/14 GOOD FOR CONSTRUCTION (DPR) 05 26/02/14 ISSUED WITH FINAL DPR 06 12/11/13 ISSUED WITH DPR 07 25/06/13 ISSUED WITH DPR	DRAWN BY : R.N. CHECKED BY : C.S. APPROVED BY : J.B. ISSUED BY : B.S.	TITLE: LRP CHOWK (BAHADURGANJ) -DIGHALBANK (PACKAGE-III) DETAILS OF UTILITY DUCTS DRG. NO.: SAI-213007/DPR/MTYP - 11 REVISION: PH
			SCALE: AS SHOWN		



SYMBOL	TYPE OF TREE
	KACHMAR (BAUHNIA VARIEGATE)
	AMALTUS (CASSIA FISTULA)
	PEEPAL (ALBIZZIA LEBECK) for water logged condition & alkaline soil
	ACONLA (EMBLIC MYROBALAN)
	SILVER OAK (GREVILLEA ROBUSTA)



DATE: 30/07/2017, 11:06am, View: 110x60mm, Path: R:\CADD\13007_B... Revised DPM\13007_B... LANDSCAPING_TVC_LANE.dwg

ORIENT :

 Bihar State Road Development Corporation Limited (BSRDC)
 (A Government of Bihar Undertaking)

PROJECT:
 Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
 Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS :

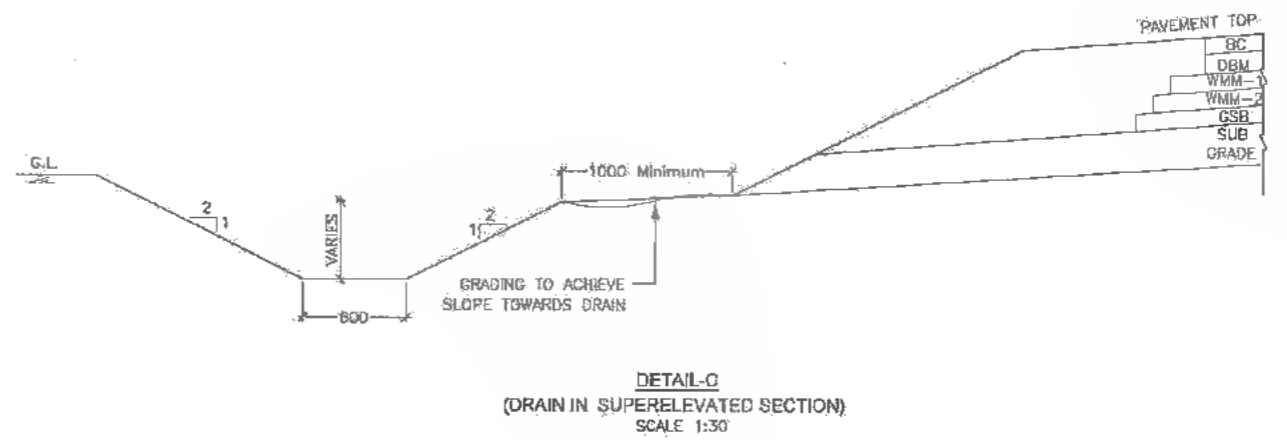
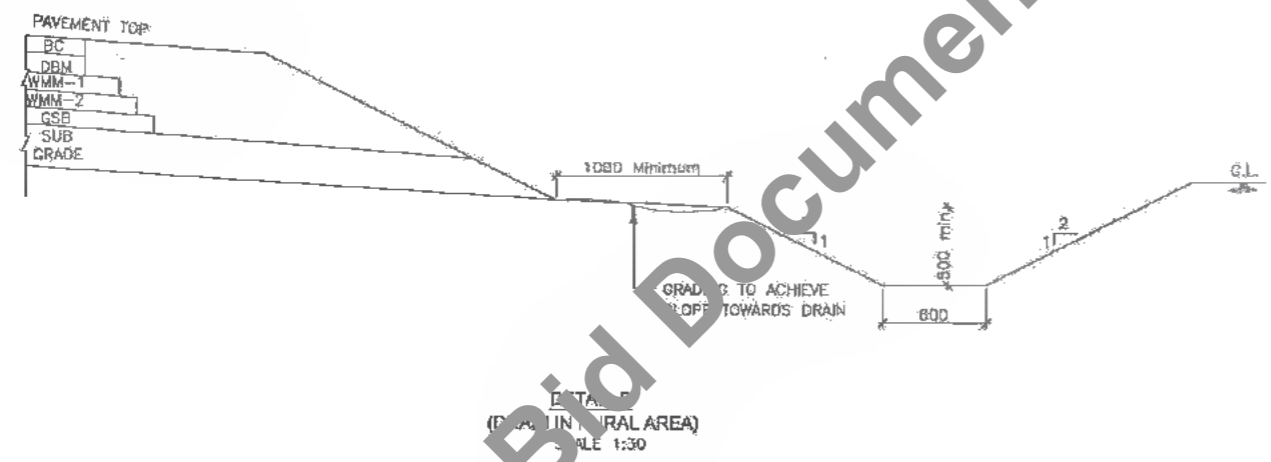
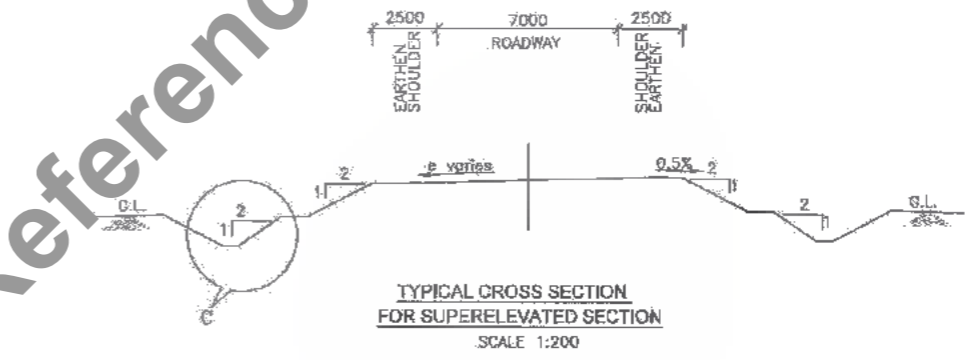
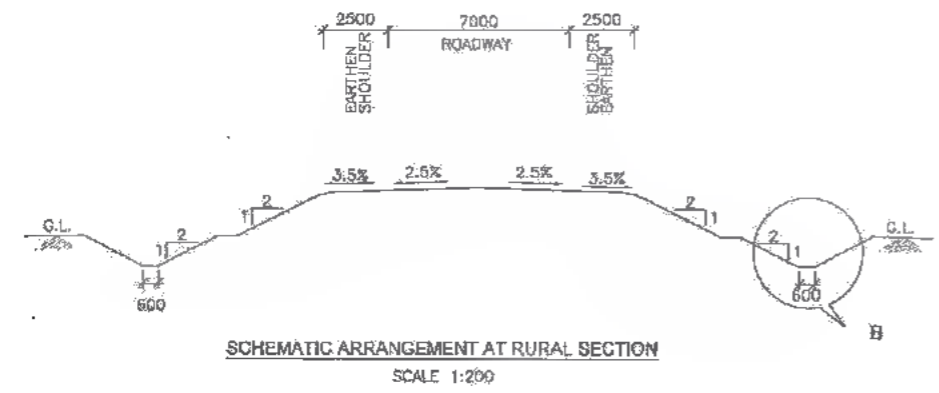
SAL Consulting Engineers Pvt. Ltd.
 An ISO 9001 Certified Company
 Work-A "SAI House", Satyam Corporate Square, Bih. Bypass
 (Lko) Proddar Alkandobed-200019, Hyderabad
 Phone: +91-79-6674100/799, Fax: +91-79-6674288
 Email: info@sai.co.in

PH	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)	DRWN BY : R.K.	TITLE : LRP CHÓWK (BAHADURGANJ) - DIGHALBANK (PACKAGE-II)
DP	17/12/18	GOOD FOR CONSTRUCTION (DPR)	CHECKED BY : C.S.	TYPICAL PLANTATION LAYOUT WITH PAVED SHOULDER
RF	17/03/17	GOOD FOR CONSTRUCTION (DPR)	APPROVED BY : J.D.	
RE	10/04/14	GOOD FOR CONSTRUCTION (DPR)	ISSUED BY : B.S.	
PO	26/02/14	ISSUED WITH FINAL DPR		
PC	13/11/13	ISSUED WITH DPR		
PE	29/08/13	ISSUED WITH TVE		
REV.	DATE	DESCRIPTION	SIGN	

SCALE : AS SHOWN

DRG. NO. :
 SAI-213007/DPR/M/TYP - 12
 REVISION : PH

241
536



CONSTRUCTION NOTES

- 1). FOUNDATION OF LINED DRAIN SHALL BE CAST IN PCC OF CONCRETE GRADE M20.
- 2). BASE AND SIDE WALLS OF LINED DRAIN AND CATCH PIT SHALL BE CAST IN M20 GRADE.
- 3). CATCH PIT TO BE PROVIDED AT DESIGNATED LOCATION OF OUTFALL.
- 4). SPECIFIC ADJUSTMENTS TO BE MADE IN HILLY TERRAINS. CONCRETE LINED DRAIN SHOULD BE PROVIDED IN PLACE OF EARTHEN DRAIN.



CLIENT:
Bihar State Road Development Corporation Limited (BSRDC)
 (A Government of Bihar Undertaking)

PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:
SAI Consulting Engineers Pvt. Ltd.
 An ISO 9001 Certified Company
 Block-A "SAI House", Sanyal Corporate Square, 8th Rajpath, Gurgaon, Haryana, India
 Phone : +91-12-6512500/700 Fax : +91-12-6512801
 Email : mail@saiindia.com

REV.	DATE	DESCRIPTION	ISSUED BY	SIGN
PR	31/07/10	GOOD FOR CONSTRUCTION (REVISED DPR)		
PC	17/12/10	GOOD FOR CONSTRUCTION (DPR)		
PE	31/03/17	GOOD FOR CONSTRUCTION (DPR)		
PD	10/04/14	GOOD FOR CONSTRUCTION (DPR)		
PG	26/02/14	ISSUED WITH FINAL DPR		
PH	12/11/13	ISSUED WITH DDPR		
	29/08/13	ISSUED WITH DPR		

SCALE : AS SHOWN

DRAWN BY : R.J.
CHECKED BY : C.S.
APPROVED BY : J.D.
ISSUED BY : B.S.

TITLE : LRP CHOWK (BAHADURGANJ) - DIGHALBANK (PACKAGE-III)
DRAIN DETAILS FOR RURAL SECTIONS

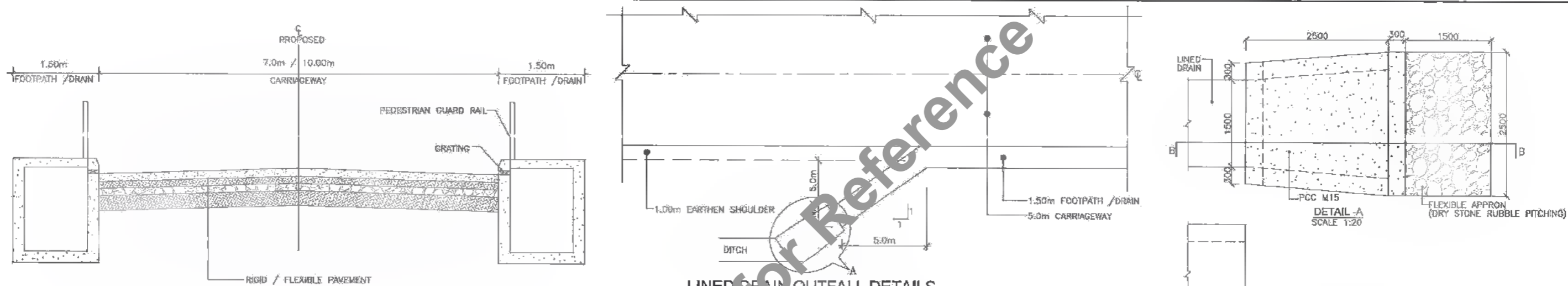
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 SAI-213007/DPR/WTYP-14

REVISION : PH

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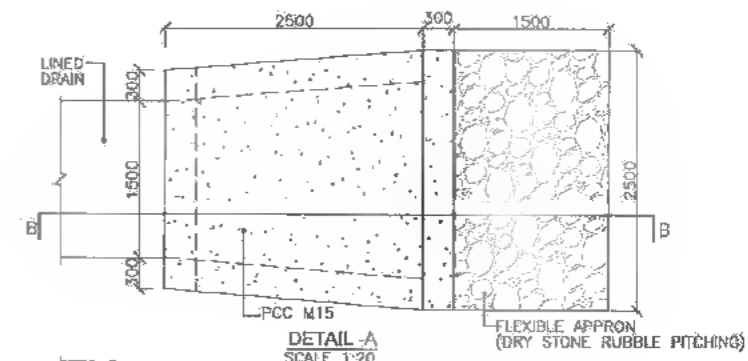
NOT TO BE USED AS A Bid Document, Only for Reference

2/3
534

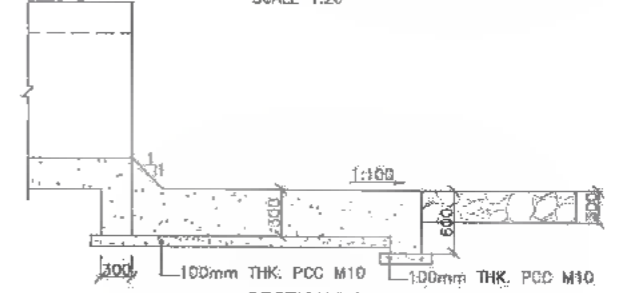


TWO-LANE WITH LINED DRAIN
(SCALE 1:20)

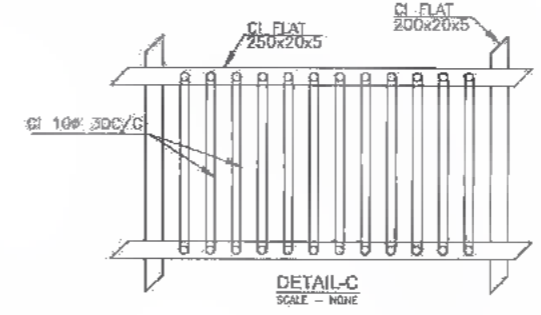
LINED DRAIN OUTFALL DETAILS
SCALE 1:50



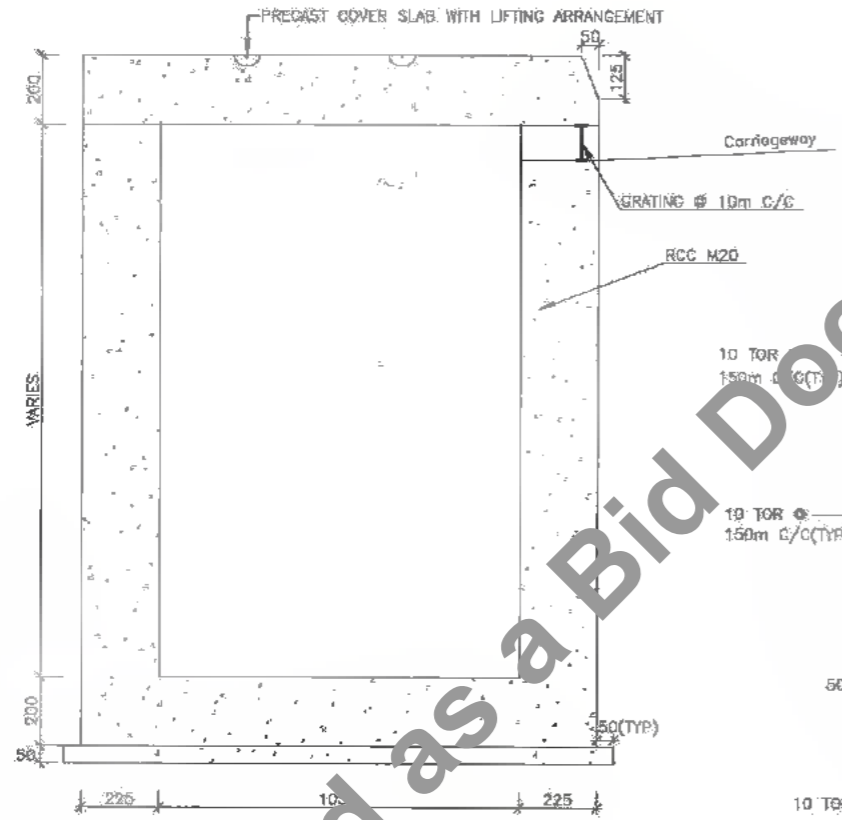
DETAIL-A
SCALE 1:20



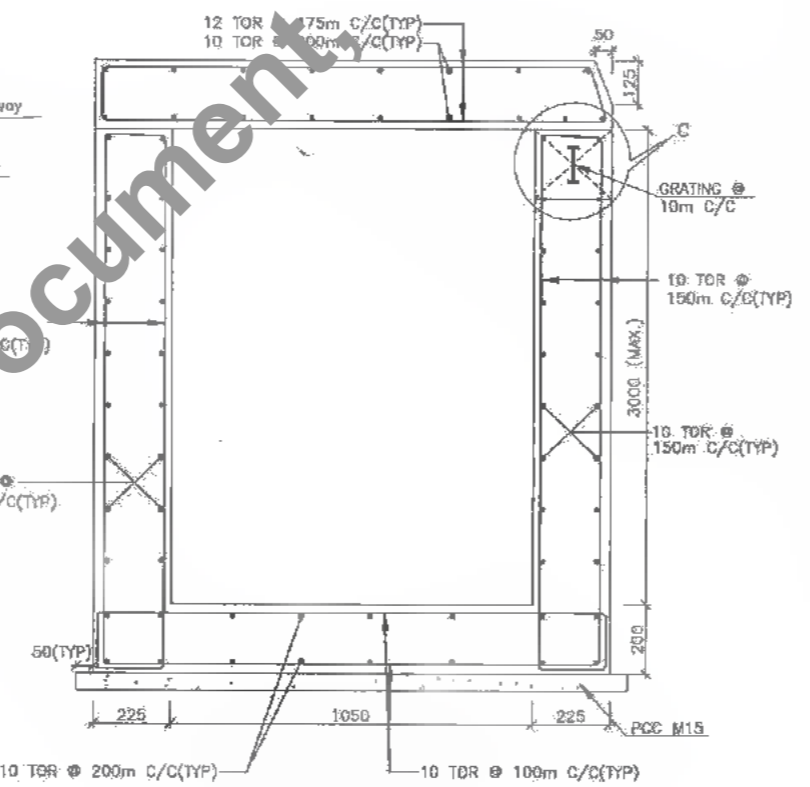
SECTION B-B
SCALE 1:20



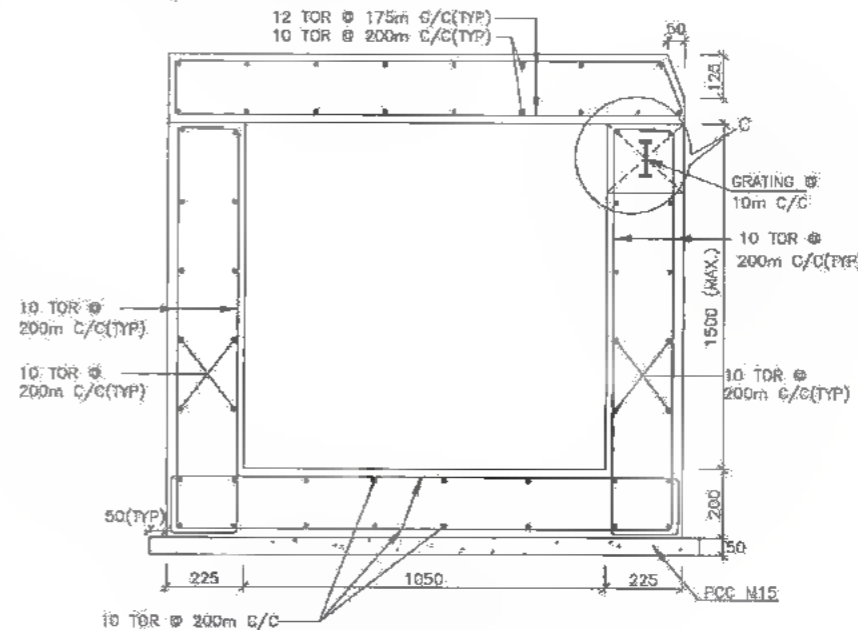
DETAIL-C
SCALE - NONE



DETAIL OF BOX DRAIN WITH GRATING
SCALE 1:15



DETAIL OF LINED DRAIN 1.50m x 3.00m BOX DRAIN
GRADE OF CONG. - M-20, REIF. Fe-500
CLEAR COVER - 40mm
NONE



DETAIL OF LINED DRAIN 1.50m x 1.50m BOX DRAIN
GRADE OF CONG. - M-20, REIF. Fe-500
CLEAR COVER - 40mm
NONE

- CONSTRUCTION NOTES**
- 1). ALL FOUNDATIONS OF COVERED DRAIN SHALL BE CONSTRUCTED IN PCC M15 GRADE.
 - 2). SLAB OVER COVERED DRAIN SHALL BE RCC M20 GRADE.
 - 3). REINFORCEMENT SHALL BE TMT Fe515 AS PER SECTION 1800, UNLESS OTHERWISE SPECIFIED.
 - 4). ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE SPECIFIED.

CLIENT :
Bihar State Road Development Corporation Limited (BSRDC)
(A Government of Bihar Undertaking)

PROJECT :
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurgan) - Dighalbank (SH-99)

CONSULTANTS :
SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company
Block-A "SAI House", Sarson Corporate Square, 8th Rajpath, Club Road, Anandnagar-201009, Gurgaon, India.
Phone : +91-11-64512600/7047, +91-11-64512800
Email : sai@saiengs.com

REV.	DATE	DESCRIPTION	SIGN	ISSUED BY :
PH	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)		
PO	12/10/18	GOOD FOR CONSTRUCTION (DPR)		
CP	31/03/17	GOOD FOR CONSTRUCTION (DPR)		
PC	10/04/14	GOOD FOR CONSTRUCTION (DPR)		
PD	25/02/14	ISSUED WITH FINAL DPR		
PC	13/11/13	ISSUED WITH DPR		
DB	29/08/13	ISSUED WITH DPR		

DRAWN BY : R.N.	TITLE : LRP CHOWK (BAHADURGAN)-DIGHALBANK (PACKAGE-III) DETAILS FOR COVERED BOX DRAIN SECTIONS
CHECKED BY : C.S.	DRG. NO. : (SHEET-1 OF 2)
APPROVED BY : J.G.	SAI-213007/DPR/M/TYP-1b
ISSUED BY : B.S.	REVISION : PH



DATE: 30/07/2019, 11:14:00 AM, View
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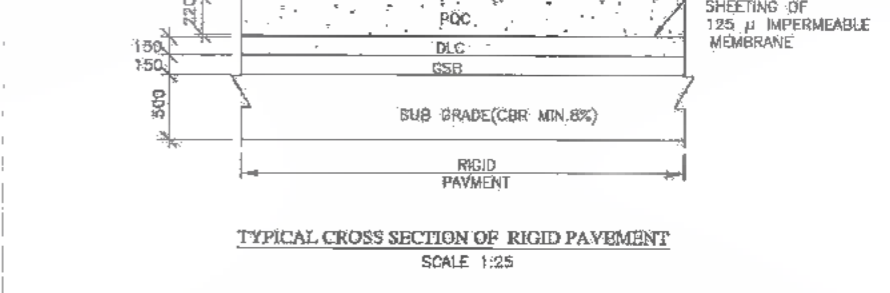
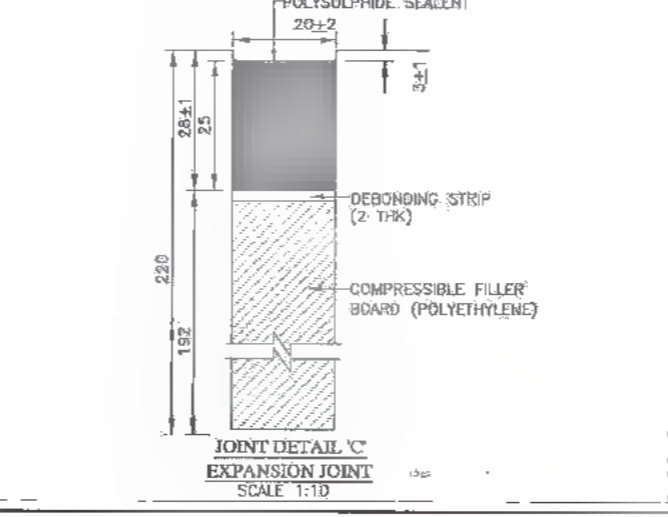
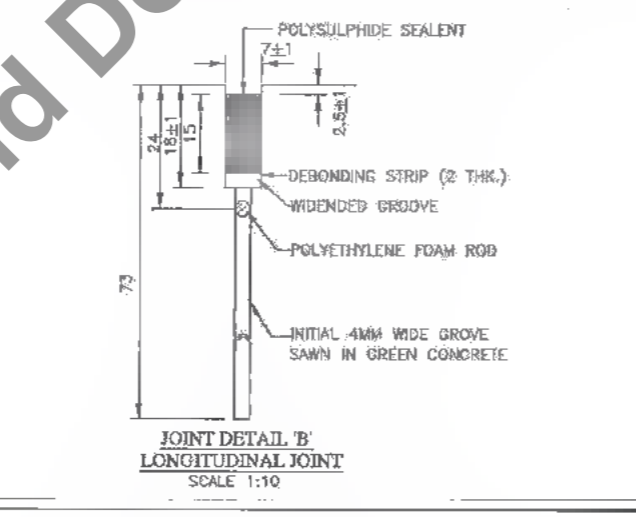
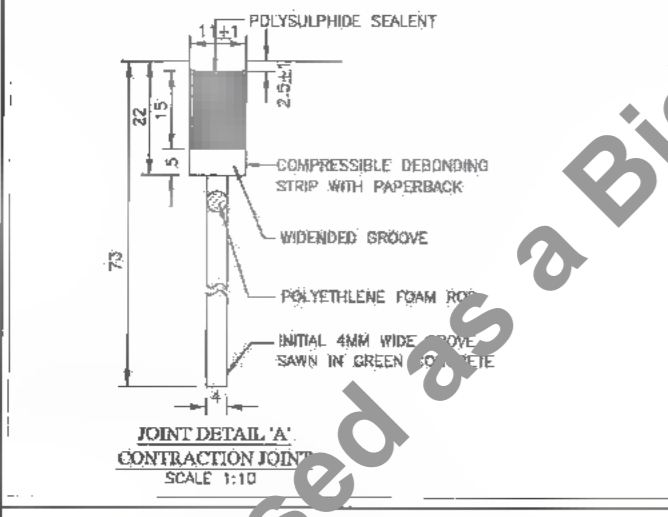
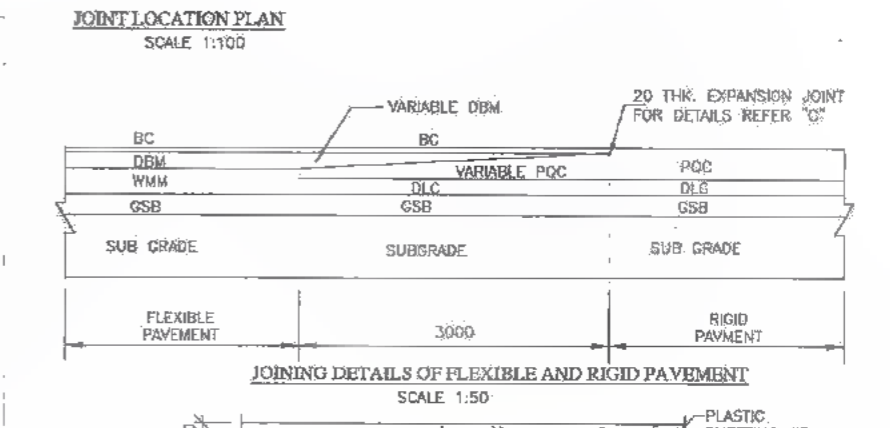
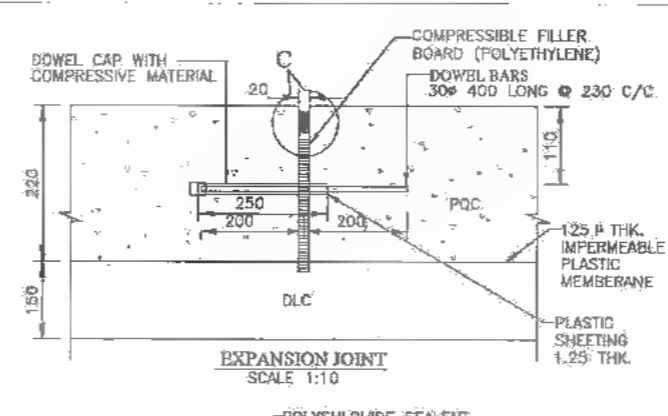
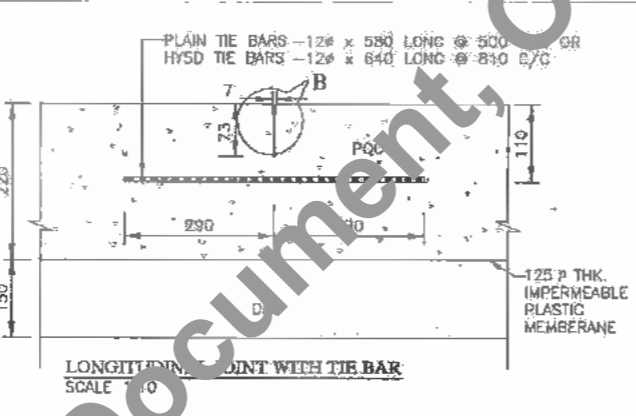
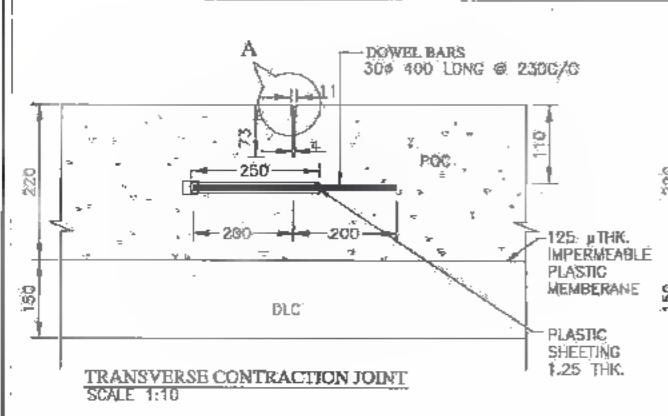
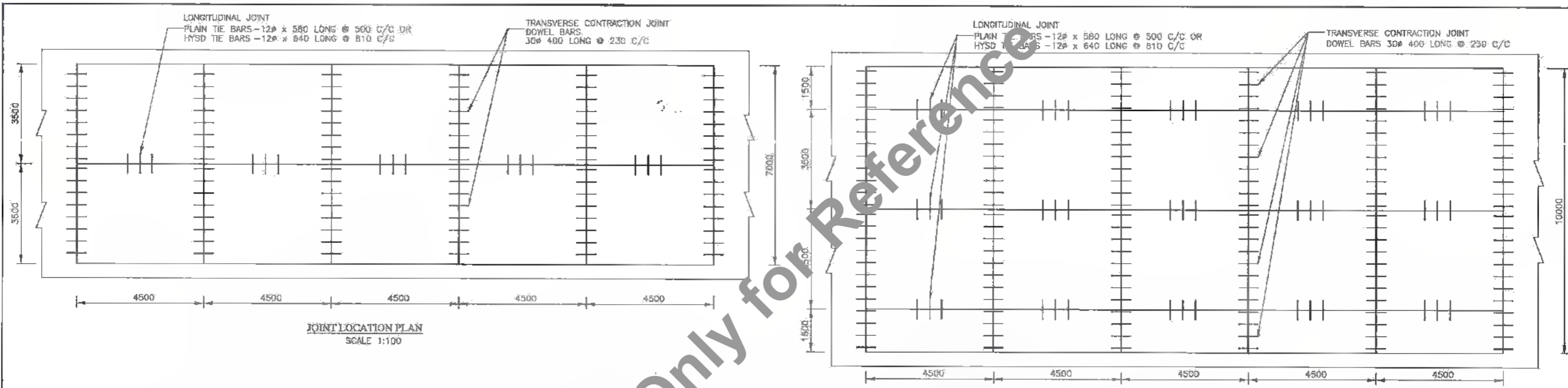
Not to be used as a Bid Document Only for Reference
 D. S. Bhatnagar (Tech)
 PIU-Kolnada

Design Chainage (M)	FRL at CL (M)	FRL at CW Edge (M)	DRAIN BED LEVEL at RHS (M)	DRAIN BED LEVEL at LHS (M)	Wall HEIGHT at RHS (M)	Wall HEIGHT at LHS (M)
1	2	3	4	5	10	11
52115	47.117	47.017	45.695	45.666	1.351	1.351
52125	47.039	46.939	45.694	45.664	1.285	1.285
52150	46.844	46.744	45.625	45.625	1.119	1.119
52175	46.648	46.548	45.595	45.595	0.953	0.953
52200	46.491	46.391	45.565	45.565	0.826	0.826
52225	46.443	46.343	45.535	45.535	0.808	0.808
52250	46.485	46.385	45.505	45.505	0.859	0.859
52275	46.489	46.389	45.475	45.475	0.913	0.913
52300	46.514	46.414	45.446	45.446	0.968	0.968
52325	46.538	46.438	45.417	45.417	1.021	1.021
52350	46.562	46.462	45.387	45.387	1.075	1.075
52375	46.586	46.486	45.357	45.357	1.129	1.129
52400	46.61	46.510	45.327	45.327	1.183	1.183
52425	46.634	46.534	45.298	45.298	1.236	1.236
52450	46.658	46.558	45.268	45.268	1.291	1.291
52475	46.683	46.583	45.238	45.238	1.345	1.345
52500	46.707	46.607	45.208	45.208	1.399	1.399
52525	46.731	46.631	45.179	45.179	1.452	1.452
52550	46.755	46.655	45.149	45.149	1.506	1.506
52575	46.779	46.679	45.119	45.119	1.560	1.560
52600	46.804	46.704	45.09	45.09	1.614	1.614
52625	46.828	46.728	45.06	45.06	1.668	1.668
52650	46.852	46.752	45.03	45.03	1.722	1.722
52675	46.876	46.776	45	45	1.776	1.776
52700	46.9	46.800	44.971	44.971	1.829	1.829
52725	46.924	46.824	44.941	44.941	1.883	1.883
52750	46.948	46.848	44.911	44.911	1.937	1.937
52775	46.972	46.872	44.881	44.881	1.991	1.991
52800	46.996	46.896	44.851	44.851	2.045	2.045
52825	47.02	46.92	44.821	44.821	2.099	2.099
52850	47.044	46.944	44.791	44.791	2.153	2.153
52875	47.068	46.968	44.761	44.761	2.207	2.207
52900	47.092	46.992	44.731	44.731	2.261	2.261
52925	47.116	47.016	44.701	44.701	2.315	2.315
52950	47.14	47.04	44.671	44.671	2.369	2.369
52975	47.164	47.064	44.641	44.641	2.423	2.423
53000	47.188	47.088	44.611	44.611	2.477	2.477

Design Chainage (M)	FRL at CL (M)	FRL at CW Edge (M)	DRAIN BED LEVEL at RHS (M)	DRAIN BED LEVEL at LHS (M)	Wall HEIGHT at RHS (M)	Wall HEIGHT at LHS (M)
1	2	3	4	5	10	11
53000	46.748	46.648	44.524	44.524	2.124	2.124
53025	46.723	46.623	44.645	44.645	1.978	1.978
53050	46.712	46.612	44.765	44.765	1.847	1.847
53075	46.746	46.646	44.885	44.885	1.761	1.761
53100	46.789	46.689	45.005	45.005	1.683	1.683
53125	46.831	46.731	45.125	45.125	1.605	1.605
53150	46.873	46.773	45.247	45.247	1.526	1.526
53175	46.916	46.816	45.367	45.367	1.449	1.449
53200	46.958	46.858	45.477	45.477	1.381	1.381
53225	47.000	46.900	45.558	45.558	1.347	1.347
53250	47.042	46.942	45.629	45.629	1.313	1.313
53275	47.085	46.985	45.705	45.705	1.280	1.280
53300	47.127	47.027	45.781	45.781	1.246	1.246
53325	47.169	47.069	45.857	45.857	1.212	1.212
53350	47.211	47.111	45.915	45.915	1.202	1.202
53375	47.273	47.173	45.950	45.950	1.223	1.223
53400	47.319	47.219	45.984	45.984	1.245	1.245
53425	47.385	47.285	46.019	46.019	1.266	1.266
53450	47.441	47.341	46.053	46.053	1.288	1.288
53475	47.497	47.397	46.088	46.088	1.309	1.309
53500	47.553	47.453	46.122	46.122	1.331	1.331
53525	47.609	47.509	46.157	46.157	1.352	1.352
53550	47.665	47.565	46.191	46.191	1.374	1.374
53575	47.721	47.621	46.225	46.225	1.395	1.395
53600	47.776	47.676	46.260	46.260	1.416	1.416
53625	47.832	47.732	46.295	46.295	1.392	1.392
53650	47.887	47.787	46.330	46.330	1.368	1.368
53675	47.943	47.843	46.365	46.365	1.344	1.344
53700	48.000	47.900	46.400	46.400	1.320	1.320
53725	48.056	47.956	46.435	46.435	1.296	1.296
53750	48.112	48.012	46.470	46.470	1.272	1.272
53775	48.168	48.068	46.505	46.505	1.248	1.248
53800	48.224	48.124	46.540	46.540	1.224	1.224
53825	48.280	48.180	46.575	46.575	1.200	1.200
53850	48.336	48.236	46.610	46.610	1.176	1.176
53875	48.392	48.292	46.645	46.645	1.152	1.152
53900	48.448	48.348	46.680	46.680	1.128	1.128
53925	48.504	48.404	46.715	46.715	1.104	1.104
53950	48.560	48.460	46.750	46.750	1.080	1.080
53975	48.616	48.516	46.785	46.785	1.056	1.056
54000	48.672	48.572	46.820	46.820	1.032	1.032
54025	48.728	48.628	46.855	46.855	1.008	1.008
54050	48.784	48.684	46.890	46.890	0.984	0.984
54075	48.840	48.740	46.925	46.925	0.960	0.960
54100	48.896	48.796	46.960	46.960	0.936	0.936
54125	48.952	48.852	47.000	47.000	0.912	0.912
54150	49.008	48.908	47.040	47.040	0.888	0.888
54175	49.064	48.964	47.080	47.080	0.864	0.864
54200	49.120	49.020	47.120	47.120	0.840	0.840
54225	49.176	49.076	47.160	47.160	0.816	0.816
54250	49.232	49.132	47.200	47.200	0.792	0.792
54275	49.288	49.188	47.240	47.240	0.768	0.768
54300	49.344	49.244	47.280	47.280	0.744	0.744
54325	49.400	49.300	47.320	47.320	0.720	0.720
54350	49.456	49.356	47.360	47.360	0.696	0.696
54375	49.512	49.412	47.400	47.400	0.672	0.672
54400	49.568	49.468	47.440	47.440	0.648	0.648
54425	49.624	49.524	47.480	47.480	0.624	0.624
54450	49.680	49.580	47.520	47.520	0.600	0.600
54475	49.736	49.636	47.560	47.560	0.576	0.576
54500	49.792	49.692	47.600	47.600	0.552	0.552
54525	49.848	49.748	47.640	47.640	0.528	0.528
54550	49.904	49.804	47.680	47.680	0.504	0.504
54575	49.960	49.860	47.720	47.720	0.480	0.480
54600	50.016	49.916	47.760	47.760	0.456	0.456
54625	50.072	49.972	47.800	47.800	0.432	0.432
54650	50.128	50.028	47.840	47.840	0.408	0.408
54675	50.184	50.084	47.880	47.880	0.384	0.384
54700	50.240	50.140	47.920	47.920	0.360	0.360
54725	50.296	50.196	47.960	47.960	0.336	0.336
54750	50.352	50.252	48.000	48.000	0.312	0.312
54775	50.408	50.308	48.040	48.040	0.288	0.288
54800	50.464	50.364	48.080	48.080	0.264	0.264
54825	50.520	50.420	48.120	48.120	0.240	0.240
54850	50.576	50.476	48.160	48.160	0.216	0.216
54875	50.632	50.532	48.200	48.200	0.192	0.192
54900	50.688	50.588	48.240	48.240	0.168	0.168
54925	50.744	50.644	48.280	48.280	0.144	0.144
54950	50.800	50.700	48.320	48.320	0.120	0.120
54975	50.856	50.756	48.360	48.360	0.096	0.096
54999	50.912	50.812	48.400	48.400	0.072	0.072

Design Chainage (M)	FRL at CL (M)	FRL at CW Edge (M)	DRAIN BED LEVEL at RHS (M)	DRAIN BED LEVEL at LHS (M)	Wall HEIGHT at RHS (M)	Wall HEIGHT at LHS (M)
1	2	3	4	5	10	11
54000	48.748	48.648	45.662	45.662	2.486	2.486
54025	48.790	48.690	45.666	45.666	2.576	2.576
54050	48.832	48.732	45.668	45.668	2.666	2.666
54075	48.874	48.774	45.670	45.670	2.756	2.756
54100	48.916	48.816	45.672	45.672	2.846	2.846
54125	48.958	48.858	45.674	45.674	2.936	2.936
54150	49.000	48.900	45.676	45.676	3.026	3.026
54175	49.042	48.942	45.678	45.678	3.116	3.116
54200	49.084	48.984	45.680	45.680	3.206	3.206
54225	49.126	49.026	45.682	45.682	3.296	3.296
54250	49.168	49.068	45.684	45.684	3.386	3.386
54275	49.210	49.110	45.686	45.686	3.476	3.476
54300	49.252	49.152	45.688	45.688	3.566	3.566
54325	49.294	49.194	45.690	45.690	3.656	3.656
54350	49.336	49.236	45.692	45.692	3.746	3.746
54375	49.378	49.278	45.694	45.694	3.836	3.836
54400	49.420	49.320	45.696	45.696	3.926	3.926
54425	49.462	49.362	45.698	45.698	4.016	4.016
54450	49.504	49.404	45.700	45.700	4.106	4.106
54475	49.546	49.446	45.702	45.702	4.196	4.196
54500	49.588	49.488	45.704	45.704	4.286	4.286
54525	49.630	49.530	45.706	45.706	4.376	4.376
54550	49.672	49.572	45.708	45.708	4.466	4.466
54575	49.714	49.614	45.710	45.710	4.556	4.556
54600	49.756	49.656	45.712	45.712	4.646	4.646
54625	49.798	49.698	45.714	45.714	4.736	4.736
54650	49.840	49.740	45.716	45.716	4.826	4.826
54675	49.882	49.782	45.718	45.718	4.916	4.916
54700	49.924	49.824	45.720	45.720	5.006	5.006
54725	49.966	49.866	45.722	45.722	5.096	5.096
54750	50.008	49.908	45.724	45.724	5.1	

245
532



DETAILS OF DOWEL & TIE BAR

DOWEL BAR (MILD STEEL) DETAILS			TIE BAR DETAILS			
Dia. (mm)	Length (mm)	Spacing (mm)	Dia. (mm)	Length (mm)	Spacing (mm)	
					Plain	HYSD
30	400	230	12	580	640	500 810

CONSTRUCTION NOTES:

- ALL DIMENSIONS ARE IN MM, UNLESS OTHERWISE MENTIONED.
- 30 MM MILD STEEL DOWEL BARS SHALL BE OF GRADE S240.
- 12 MM MILD STEEL TIE BARS SHALL BE OF GRADE Fe250/12mm. HYSD TIE BARS SHALL BE OF GRADE Fe300.
- PER LASTISIZER @ 0.5 PERCENT BY WEIGHT OF CEMENT IS PERMITTED.
- SUB GRADE SHOULD HAVE 'K' VALUE MIN. 50.33 Mpa/m.
- PCC SHALL BE OF MIN. FLEXURAL STRENGTH OF 4.50 Mpa.
- SEPARATION MEMBRANE SHALL BE IMPERMEABLE PLASTIC SHEETING 125 MICRONS THICK LAID FLAT WITHOUT CREASES. BEFORE PLACING THE SEPARATION MEMBRANE, THE SUB-BASE SHALL BE SWEEP CLEAN OF ALL THE EXTRANEIOUS MATERIALS USING AIR COMPRESSOR. WHEREVER OVERLAP OF PLASTIC SHEETS IS NECESSARY, IT SHOULD BE AT LEAST 300 MM.
- THE SEPARATION MEMBRANE MAY BE NAILED TO THE LOWER LAYER WITH CONCRETE NAILS.

Client: Bihar State Road Development Corporation Limited (BSRDL) (A Government of Bihar Undertaking)

Project: Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)

Consultants: SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company

REV.	DATE	DESCRIPTION	SIGN	ISSUED BY
PR	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)		
PP	17/10/18	GOOD FOR CONSTRUCTION (DPR)		
PE	31/08/19	GOOD FOR CONSTRUCTION (DPR)		
PL	10/06/14	GOOD FOR CONSTRUCTION (DPR)		
PD	26/02/14	ISSUED WITH FINAL DPR		
PC	13/11/13	ISSUED WITH DDPR		
PP	29/06/13	ISSUED WITH FER		

DRG NO.: SAI-213007/DPR/MTYP-17
REVISION: PH

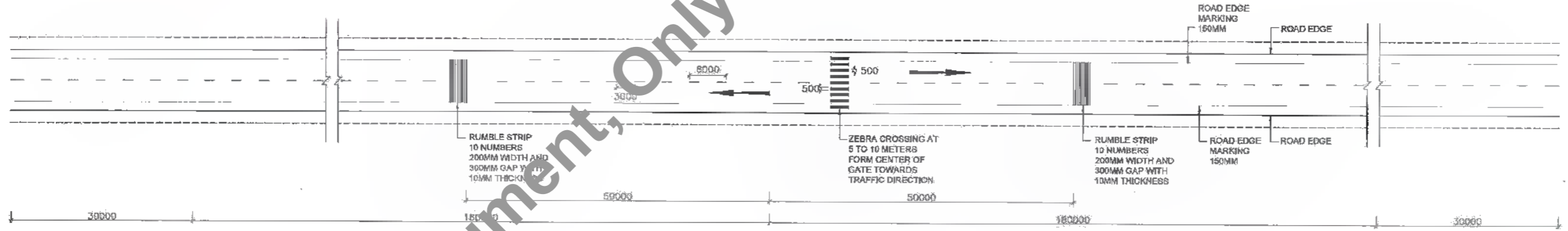
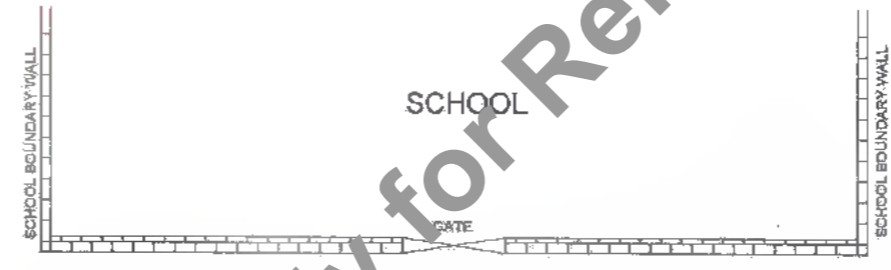
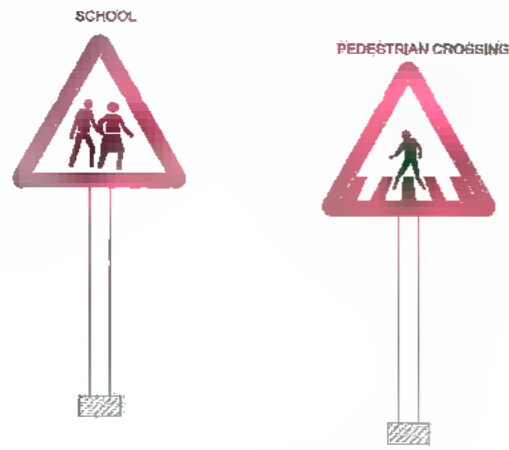


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BAYSI ←

→ DIGHALBANK



TYPICAL DRAWING OF RUMBLE STRIPS
SCALE 1:500



NOTE
1. ALL DIMENSIONS ARE IN MILLIMETRE UNLESS STATED OTHERWISE
2. MATERIAL AND COLOUR FOR ROAD SIGNS SHALL BE AS PER IRC : 67-2012

Client: Bihar State Road Development Corporation Limited (BSRDC) (A Government of Bihar Undertaking)

Signature: D. B. Prasad, PIU-Varanasi

PROJECT: Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS: SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company

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REV.	DATE	DESCRIPTION	ISSN	ISSUED BY : B.S.
PA	17/11/18	GOOD FOR CONSTRUCTION (GPR)		

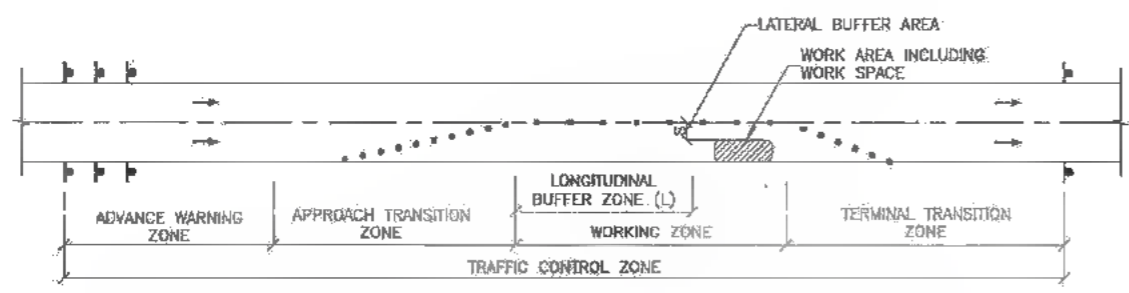
SCALE :

TITLE: LRP CHOWK (BAHADURGANJ) - DIGHALBANK (PACKAGE-III) TYPICAL DETAILS OF RUMBLE STRIPS

DRWN BY : R.M.
CHECKED BY : C.S.
APPROVED BY : J.D.

DRG. NO. : SAI-213007/DPR/MTYP-19
REVISION : PA





ELEMENTS OF TRAFFIC CONTROL ZONE

GENERAL NOTES

1. THE RECOMMENDED LENGTHS FOR EACH COMPONENT OF TRAFFIC CONTROL ZONES FOR A WELL LOCATED SITE ARE GIVEN IN THE FOLLOWING TABLE. IT MAY BE NECESSARY TO EXTEND THE ADVANCED WARNING ZONE WHERE APPROACH VISIBILITY IS POOR. HOWEVER, THE ZONE LENGTH SHOULD NOT BE LESS THAN THE VALUES SPECIFIED IN THE FOLLOWING TABLE.

AVERAGE APPROACH SPEED (km/h)	LENGTH OF ADVANCE WARNING ZONE (m)	LENGTH OF APPROACH TRANSITION ZONE (m)	LENGTH OF WORKING ZONE (m)
50 or less	100	50	VARIES
51-80	100-300	50-100	VARIES
81-100	300-500	100-200	VARIES
Over 100	1000	200-300	VARIES

- PRIOR TO ANY ROAD CONSTRUCTION, TRAFFIC CONTROL SIGNS AND DEVICES SHALL BE IN PLACE.
- ALL EXISTING ROAD SIGNS, PAVEMENT MARKINGS AND ANY OTHER TRAFFIC CONTROL DEVICES WHICH CONFLICT WITH THE PROPOSED TRAFFIC CONTROL PLAN SHALL BE COVERED, REMOVED OR RELOCATED.
- MAINTENANCE AND PROTECTION OF TRAFFIC SHALL BE DONE IN ACCORDANCE WITH IRC:SP:55:2001, "GUIDELINES ON SAFETY IN ROAD CONSTRUCTION ZONES." THE SIZE, COLOURS AND PLACEMENT OF SIGNS SHALL CONFORM TO IRC:67 AND IRC:SP:55:2001, UNLESS OTHERWISE NOTED IN THE PLANS.
- THE CONTRACTOR SHALL PREPARE A PLAN FOR THE SAFE ACCESS OF CONSTRUCTION VEHICLES THROUGHOUT THE WORK SITE WHERE SPACE CONSTRAINTS PREVENT THE USE OF LANE CLOSURES.
- ALL EXCAVATED AREAS WITHIN OR ADJACENT TO THE ROADWAY SHALL BE BACKFILLED AND PLACED ON A MINIMUM 1V:6H SLOPE PRIOR TO THE END OF EACH WORK DAY. OTHER EXCAVATED AREAS WITHIN THE CLEAR ZONE ARE TO BE EITHER BACKFILLED OR A TYPE III BARRICADE SET TEMPORARILY IN PLACE TO STOP VEHICULAR AND PEDESTRIAN TRAFFIC. IF THE EXCAVATIONS ARE DEEPER THAN 1.2 M, STRONG FENCING WILL BE REQUIRED.
- BITUMINOUS LAYERS PLACED DURING THE VARIOUS CONSTRUCTION STAGES SHALL BE TRANSITIONED ON A MINIMUM 1V:20H SLOPE TO MEET THE ADJACENT EXISTING GRADE AT THE LONGITUDINAL AND TRANSVERSE LIMITS OF THE STAGE CONSTRUCTION.
- CONSTRUCTION ZONE SPEED LIMIT TO BE DECIDED ON SITE BY INDEPENDENT/RESIDENT ENGINEER. A REDUCED SPEED AHEAD SIGN SHOULD BE LOCATED IN ADVANCE OF THE SPEED LIMIT SIGN WHICH WILL REDUCE THE NORMAL POSTED SPEED LIMIT SIGN THROUGH THE CONSTRUCTION ZONE.
- TRAFFIC CONTROL DEVICES FOR LANE CLOSURES INCLUDING SIGNS, BARRICADES ETC. SHALL BE PLACED AS SHOWN IN IRC:SP:55:2001. SIGNS SHALL NOT BE PLACED WITHOUT ACTUAL LANE CLOSURES AND SHALL BE IMMEDIATELY REMOVED UPON REMOVAL OF THE CLOSURE.
- GAPS IN WORK AREA MAY BE AVOIDED AS THESE MAY EXCESSIVELY GIVE AN IMPRESSION TO THE ROAD USERS THAT THEY HAVE PASSED THE WORK AREA. THE GUIDE SIGNS IN THIS REGARD SHOULD BE INSTALLED AT APPROPRIATE LOCATIONS.
- AS FAR AS POSSIBLE, ROAD WORKS IN URBAN AREA SHOULD BE CARRIED OUT AT NIGHT. WHENEVER NIGHT TIME ROAD REPAIRS ARE NOT POSSIBLE, THEN ONLY DAY TIME REPAIRS SHOULD BE CARRIED OUT. REPAIRS DURING PEAK HOURS SHOULD ALSO BE AVOIDED. ADEQUATE MEASURES FOR PEDESTRIAN SAFETY SHOULD BE TAKEN IN URBAN AREAS.
- DEFINITION/SUPPLEMENTARY PLATES SHALL BE PLACED (BELOW) 150 MM FROM THE BOTTOM OF WARNING SIGNS.
- THE ROAD WIDTH THROUGH THE CONSTRUCTION ZONE MUST BE AT LEAST AS TRAFFIC MANAGEMENT PLAN FOR TWO WAY TRAFFIC TO ENSURE THAT THE PROBLEMS FOR BUSES AND LORRIES ARE MINIMIZED. A GREATER WIDTH IS DESIRED IF THERE ARE A HIGH PROPORTION OF VULNERABLE ROAD USERS.
- ON THE ROADS WITH NO BUSES OR GOODS VEHICLES AND LOW FLOWS OF VULNERABLE USERS, WIDTH OF 5.5 M COULD BE ACCEPTABLE BUT TWO-WAY WORKING WOULD NOT BE POSSIBLE. IN THIS CASE THE CONES SHOULD BE USED TO REDUCE THE CARRIAGEWAY TO NOT MORE THAN 3.7 M AND TRAFFIC SHOULD BE CONTROLLED BY GUIDELINES GIVEN IN IRC:SP:55:2001.
- THE MINIMUM WIDTH OF ONE-WAY TRAFFIC IS 3.25M WITH AN ABSOLUTE MINIMUM OF 3 M.
- IN CASES WHERE A TRAFFIC CONTROL ZONE MAY AFFECT AN ADJACENT RAILWAY CROSSING AND THERE IS A CHANCE THAT TRAFFIC MAY BLOCK BACK ACROSS THE RAILWAY LINE, THE RAILWAY AUTHORITIES SHOULD BE INFORMED. ADEQUATE MEASURES SHOULD BE TAKEN TO MONITOR SUCH SITUATIONS AND TO ENSURE THAT THE TRAFFIC DOES NOT WAIT ON THE CROSSING ITSELF.
- THE LENGTH OF THE DOWNSTREAM OR CLOSING TAPER, PLACED IN THE TERMINAL TRANSITION ZONE, MAY BE 25-30 m.

SIZE AND SITING DISTANCE DETAIL OF SIGNS AND CONES

Type of Road	Minimum and Normal maximum sitting distance "D" of first sign at the start of transition zone (m)	Minimum clear visibility to first sign (m)	Minimum size of signs (mm)	Minimum height of cones (or equivalent delineator) (mm)	Details of lead-in cone tapers (note :2)	Width of Hazard (m)							
						1	2	3	4	5	6	7	
All purpose single carriageway road, urban, restricted to 50 km/h or less	25 to 50	60	600	500	Length of Transition Zone "T" (m)	13	26	39	52	65	78	91	
						Minimum number of cones	4	4	6	7	9	10	12
						Minimum number of lamps at night	3	3	5	6	8	9	11
All purpose single carriageway road, restricted to 80 km/h or less	50 to 110	80	750	500	Length of Transition Zone "T" (m)	20	40	60	80	100	120	140	
						Minimum number of cones	4	6	8	10	13	15	17
						Minimum number of lamps at night	3	5	7	9	12	14	16
All purpose divided carriageway road, restricted to 80 km/h or less	110 to 275	60	750	500	Length of Transition Zone "T" (m)	25	50	75	100	125	150	175	
						Minimum number of cones	4	7	10	13	15	18	21
						Minimum number of lamps at night	3	5	9	12	14	17	20
All purpose single carriageway road, with speed limit 80 km/h or less	275 to 450	75	50	500	Length of Transition Zone "T" (m)	25	50	75	100	125	150	175	
						Minimum number of cones	4	7	10	13	15	18	21
						Minimum number of lamps at night	3	6	9	12	14	17	20
All purpose divided carriageway road, with speed limit 80 km/h or more	725 to 1800	105	1200	750	Length of Transition Zone "T" (m)	32	64	96	128	160	192	224	
						Minimum number of cones	5	9	12	15	19	23	26
						Minimum number of lamps at night	4	8	11	15	18	22	25

NOTES

- ON ROADS WITH SPEED LIMITS OF 80 KM/H OR MORE, ALL ADVANCE SIGNS SHOULD HAVE PLATES GIVING THE DISTANCE TO THE WORKS IN M OR KM.
- LEAD-IN TAPERS USED WITH TRAFFIC CONTROL, AND ALL EXIT TAPERS, SHALL BE ABOUT 45° TO THE KERB LINE WITH CONES SPACED 1.2 M APART.
- THE MAXIMUM SPACING DISTANCE OF CONES IN LONGITUDINAL LENGTHS OF CONING SHALL BE 9 M, BUT NOT LESS THAN 2 CONES SHALL BE USED IN ANY LENGTH BETWEEN TAPERS.
- THE RANGE OF SITING DISTANCE (D) IS GIVEN TO ALLOW THE SIGN TO BE PLACED IN THE MOST CONVENIENT POSITION BEARING IN MIND AVAILABLE SPACE AND VISIBILITY FOR DRIVERS.
- IT MAY BE APPROPRIATE TO USE THE NEXT LARGER SIZE OF CONE IN LEAD-IN TAPERS I.E. 750 MM CONES IN TAPERS WHERE 450 MM CONES ARE INDICATED IN THE TABLE. IF 1.0 M HIGH CONES ARE AVAILABLE, THESE ARE RECOMMENDED FOR EXPRESSWAYS AND HIGH SPEED ROADS.

BUFFER ZONE SAFETY CLEARANCES

Speed Restriction (km/h)	Minimum Longitudinal Buffer Zone (L) (m)	Minimum Lateral Buffer Zone (S) (m)
50 or Less	5	0.5
60	15	0.5
80	30	1.2
100	60	1.2
120	120	1.2

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<p>Bihar State Road Development Corporation Limited (BSRDC) (A Government of Bihar Undertaking)</p>	<p>PROJECT: Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)</p>	<p>CONSULTANTS: SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company Mitra-A "SAI House", Sanyam Corporate Square, 8th Floor, Club Road, Alhabad, Ahmedabad-380015, Gujarat, India Phone : +91-79-5662460/190 Fax : +91-79-45142800 Email : mail@saiindia.com</p>	<p>PE 31/07/19 GOOD FOR CONSTRUCTION (REVISED DPR)</p> <p>PD 28/12/18 GOOD FOR CONSTRUCTION (DPR)</p> <p>PC 16/05/14 GOOD FOR CONSTRUCTION (DPR)</p> <p>PB 26/02/14 ISSUED WITH FINAL DPR</p> <p>PA 13/11/13 ISSUED WITH DPR</p>	<p>DRAWN BY : R.M.</p> <p>CHECKED BY : C.S.</p> <p>APPROVED BY : J.D.</p>	<p>TITLE : LRP CHOWK (BAHADURGANJ) - DIGHALBANK (PACKAGE-III) TRAFFIC SAFETY DURING CONSTRUCTION</p>
			<p>REV. DATE DESCRIPTION SIGN ISSUED BY : S.S.</p>	<p>DRG. NO. : SAI-213007/DPR/WTYP/TM - 01</p> <p>REVISION : PE</p>	



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Traffic Management Requirements and Construction Methodology

Contractor's Submission

The Contractor shall submit, for the Engineer's approval, Traffic Management Plans and associated method statements at least 7 working days prior to commencement of the works. The Traffic Management Plans and method statements shall include the following minimum information and details:

- 1) Proposed location and sequence of sub-sections for construction.
- 2) Proposed staging of "half-width" by "half-width" road construction and traffic safety and control.
- 3) Details of transitions to maintain safe traffic flow between various road construction stages.
- 4) Details of temporary diversions in accordance with Specification Clause 112.3.
- 5) Typical details of arrangements for construction under traffic including details of traffic arrangements after the cessation of work each day.

Special consideration shall be given in the Traffic Management Plans to the safety of pedestrians and workers, both by day and at night.

Temporary diversions will be constructed only with the approval of the Engineer.

In general the contractor must plan his works in consideration of the following basic principles:

1. Partial pavement construction over long lengths shall not be permitted. The contractor should concentrate his activities over sections such that he can complete continuous fronts of up to a maximum of say 10km before starting the adjacent front. (10km is taken as a reasonable guide.) The contractor may open more than one continuous 10km front provided that he has the separate resources to do so. The resources working on a 10km front may be shifted to another front until no longer required on that front. It is acknowledged that as one front nears completion plant will become available to work on a successive front. This implies some inevitable overlap between one front and its successor, which is acceptable.
2. The construction activities should be staggered over sub-sections to the extent that the use of plant and equipment is optimized to maximum efficiency and to avoid idling. For road widening operations, excavation adjacent to the existing road shall not be permitted on both sides simultaneously. Earthworks must be completed to the level of the existing road before excavation work on the opposite side will be permitted.
3. The construction operations taking place on a particular front must be managed efficiently such that delays between successive pavement layers are minimized.
4. Before the start of the monsoon season (June) the contractor shall ensure that the pavement over any front is complete, full width, at least to DBM level, but preferably with AC wearing course. The contractor should not start any sections of pavement that he cannot complete by the start of the monsoon season.
5. In the absence of permanent facilities, temporary drainage and erosion control measures, as required by the Specifications, are to be implemented prior to the onset of the monsoon.
6. Project road has its own unique conditions and therefore the above traffic management concept should be modified to suit, but respecting the basic principle of completion of discrete sections.
7. Works on CD structures requiring diversions should be sequenced in with the overall traffic management plan, but can be treated independently of the established 10km working fronts where separate resources are available.
8. When separate traffic diversions are required for CD works and other situations that demand them the minimum requirements of Spec Clause 112.3 should be equalled or bettered. Such diversions should have smooth connections to the road with well established and clear signage to give all required information to the road user. Such diversions should be maintained throughout their required duration.
9. In general traffic management and safety measures implemented should be inspected regularly (day and night) to rectify problem areas before giving cause for complaint.
10. The Employer is highly concerned about the quality of traffic management and safety and an integral part of the project and will not compromise on this aspect.

Separate traffic diversions as per Spec. Clause 112.3 shall in general be required for the following construction situations as determined by the Engineer:

- 1) For CD reconstruction
- 2) For CD widening if considered necessary by the Engineer
- 3) For new road works when the FRL is substantially above existing RL
- 4) For new road works when the FRL is substantially below the existing RL such that a separate diversion is required in the judgment of the engineer

The above criteria may be adjusted as decided by the Engineer if alternative methodology is possible and cost-effective as per actual site conditions. The above criteria may also be adjusted when the design centreline is significantly offset with respect to the existing.

In cases where separate traffic diversions are not essential or cost effective the construction methodology should be in accordance with the guidelines following:

The contractor working a 10km section, the pavement construction (except new alignments) should be limited to 500m sub-sections with a minimum of 1 to 1.5 km between successive sub-sections to ease traffic management and safety issues. The earthworks in the widening portions are not limited in this respect. Excavation on both sides of the existing road over the same sub-section simultaneously shall not be permitted for reasons of safety to the traffic, particularly at night. Sub-sections longer than 500m may be authorized by the Engineer if two-way traffic flow can be comfortably managed and the Contractor can demonstrate his ability to maintain dust control, proper road edge delineation, proper signage and traffic control. The number of sub-sections open for construction shall suit the contractor's needs to meet his approved clause 14 Programme.

Where single file traffic is permitted (only applicable to final wearing course operations), the sub-sections shall be reduced to a maximum length whereby safe traffic regulation can be physically managed. Single file traffic may not be permitted at certain locations or times of the day when traffic volumes are such that excessive congestion shall occur.

Three typical traffic management scenarios for which separate traffic diversions are not required are illustrated on the attached drawings and described as follows:

Case 1: Proposed FRL at Approximately the same level as the existing RL (Refer to drawing TM-03) Overlay Sections

Stage 1

1. Overfill normally on the existing road.
2. Install proper edge delineation and temporary road signs on existing carriageway edge.
3. Construct the earthworks on one side only with proper benching into the existing embankment as appropriate and as per Pavement Crust design upto Selected fill of Earthen Shoulder. Temporary additional widening by 2.50m would be required. This shall later form part of permanent works, hence should be constructed as per contract specification.
4. Construct temporary overfilling to match the level of the adjacent existing pavement.

Stage 2

1. Divert traffic on new partial construction and half width of existing road.
2. Install proper edge delineation and temporary road signs to suit next stage. Earth running surface to be kept watered periodically to control dust.
3. Breakout / excavate earthen shoulder of existing road on the other side. Reuse salvaged materials elsewhere or dispose as appropriate.
4. Prepare cut formation as per Spec Clause 301.6 or as otherwise directed by the Engineer.
5. Construct earthworks to the design levels including the use of salvaged materials from the existing road where possible.
6. Scarify the bituminous surface of existing carriageway if required for overlay. Construct BM/ DBM /BC including Profile correction and Earthen Shoulder with Granular top to the design levels.
7. BC and earthen shoulder completed to half width. Adjust temporary delineation and signs ready for next stage.

Stage 3

1. Divert traffic onto the new prepared carriageway and work on the other side.
2. Scarify temporary earthworks and break out remaining portion of the earthen shoulder of existing road, which is not part of permanent works. (salvage materials for reuse in earthworks of adjacent section)
3. Construct earthworks / granular earthen shoulder to the design levels including use of salvaged materials from the existing road where possible.
4. Scarify the bituminous surface of existing carriageway if required for overlay. Construct BM/ DBM /BC including Profile correction and Earthen Shoulder with Granular top to the design levels.
5. Construct BC wearing course complete half width.

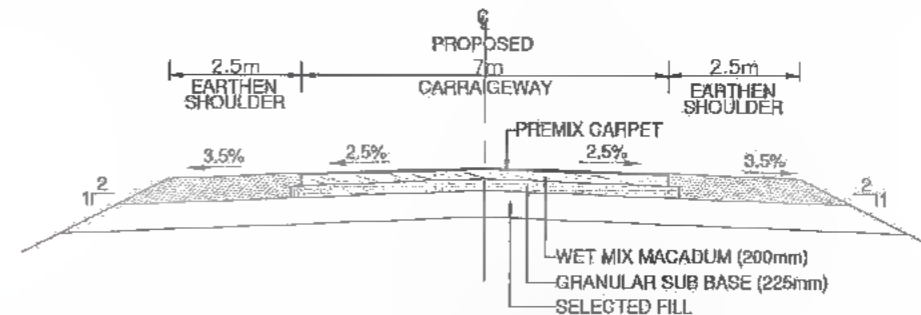
(The Engineer may allow the full road width to be open for traffic after completion of DBM (Stage 3) provided that wearing course operations follow without undue delay.)

Stage 4

1. Regulate traffic to single file flow properly controlled by signalmen while the BC wearing course is completed on the other side to complete the full width, if Stage 2 completed with DBM only.
2. Shoulders and side slopes made good and finished during this stage.
3. This stage with single file traffic flow should be limited to the shortest duration possible to minimize disruption to traffic flow.

Move to the next 500m and repeat the process. The bituminous paving works should be planned in conjunction with the staging of the road base works to give a continuity of operations in accordance with the contractor's materials production and paving rate. The bituminous paving works must take place as soon as practicable

During paving operations short stretches of alternating single file traffic may be permitted during off-peak times. Traffic control for single file traffic must meet the approval of the Engineer and be diligently controlled throughout its implementation.



TYPICAL CROSS SECTION FOR DIVERSION



DATE: 20/07/19 10:22am
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CLIENT:
 Bihar State Road Development Corporation Limited (BSRDC) (A Government of Bihar Undertaking)
 D.O.M. (Tech.)
 BSRDC
 PIU, Patna

PROJECT:
 Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
 Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:
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PE	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)	DRAWN BY : R.N.
PD	28/12/18	GOOD FOR CONSTRUCTION (DPR)	CHECKED BY : C.S.
PC	10/04/14	GOOD FOR CONSTRUCTION (DPR)	APPROVED BY : J.B.
PB	26/02/14	ISSUED WITH FINAL DPR	ISSUED BY : B.S.
PA	13/11/13	ISSUED WITH DPR	
REV.	DATE	DESCRIPTION	SIGN

TITLE : LRP CHOWK (BAHADURGANJ) -DIGHALBANK (PACKAGE-III) TRAFFIC MANAGEMENT REQUIREMENTS AND CONSTRUCTION METHODOLOGY
ORG. NO. : SAJ-213007/DPR/MT/PTM - 02
REVISION : PE

Case 2: Proposed FRL upto 0.5m above the existing RL (Refer to drawings TM-04)
Reconstruction Sections

Stage 1

1. Traffic running normally on the existing road.
2. Install proper edge delineation and temporary road signs on existing carriageway edge.
3. Construct the earthworks on one side only with proper benching into the existing embankment as appropriate with approved material. Temporary additional widening by 3.00m (min.) would be required.
4. Construct temporary overfilling to match the level of the adjacent existing pavement.

Stage 2

1. Install proper edge delineation and temporary road signs.
2. Divert traffic on new partial construction and half width of existing road. Earth running surface to be kept watered periodically to control dust.
3. Breakout half width of the existing road on the other side. Reuse salvaged materials elsewhere or dispose as appropriate.
4. Prepare cut formation as per Spec Clause 301.6 or as otherwise directed by the Engineer.
5. Construct earthworks to the design levels including the use of salvaged materials from the existing road where possible.
6. Construct GSB to the design levels.
7. Adjust temporary delineation and signs ready for next stage.

Stage 3

1. Divert traffic onto the new GSB and work on the other side.
2. Break out remaining portion of the existing road (save materials for reuse in earthworks of adjacent section.) and trim adjacent earthworks to the required level.
3. Prepare cut formation as per Spec Clause 301.6.
4. Construct earthworks to the design levels including use of salvaged materials from the existing road where possible.
5. Construct GSB and WMM layers to the design levels.
6. Construct DBM and earthen shoulder for complete half width. (or BC, if approved by The Engineer)
7. Adjust temporary delineation and signs ready for next stage.

Stage 4

1. Divert traffic onto the new DBM and work on the other side.
2. Prepare surface of GSB, repair any traffic damage.
3. Construct WMM and DBM. (DBM now complete to full width.)

Stage 5

1. Regulate traffic to single file flow properly controlled by signmen while the BC wearing course is completed on each side to complete the full width.
2. Shoulders and side slopes made good and finished during this stage.
3. This stage with single file traffic flow should be limited to the shortest duration possible to minimize disruption to traffic flow.

Case 3: Proposed FRL >0.5m above the existing RL (Refer to drawings TM-05) Reconstruction Sections

Stage 1

1. Traffic running normally on the existing road.
2. Install proper edge delineation and temporary road signs on existing carriageway edge.
3. Construct the earthworks on one side only with proper benching into the existing embankment as appropriate with approved material. Temporary additional widening by 3.50m (min.) would be required.
4. Construct temporary overfilling to match the level of the adjacent existing pavement.

Stage 2

1. Install proper edge delineation and temporary road signs.
2. Divert traffic on new partial construction and half width of existing road. Earth running surface to be kept watered periodically to control dust.
3. Breakout half width of the existing road on the other side. Reuse salvaged materials elsewhere or dispose as appropriate.
4. Prepare cut formation as per Spec Clause 301.6 or as otherwise directed by the Engineer.
5. Construct earthworks to the design levels including the use of salvaged materials from the existing road where possible.
6. Construct GSB to the design levels.
7. Protect half width construction edge with sandbags or other approved method.
8. Adjust temporary delineation and signs ready for next stage.

Stage 3

1. Divert traffic onto the new GSB and work on the other side.
2. Break out remaining portion of the existing road (save materials for reuse in earthworks of adjacent section.) and trim adjacent earthworks to the required level.
3. Prepare cut formation as per Spec Clause 301.6.
4. Construct earthworks to the design levels including use of salvaged materials from the existing road where possible.
5. Construct GSB and WMM layers to the design levels.
6. Construct DBM and earthen shoulder for complete half width. (or BC if approved by The Engineer)
7. Adjust temporary delineation and signs ready for next stage.

Stage 4

1. Divert traffic onto the new DBM and work on the other side.
2. Construct WMM and DBM and earthen shoulder. (DBM now complete to full width)

Stage 5

1. Regulate traffic to single file flow properly controlled by signal men while the BC wearing course is completed on each side to complete the full width.
2. Shoulders and side slopes made good and finished during this stage.
3. This stage with single file traffic flow should be limited to the shortest duration possible to minimize disruption to traffic flow.

For all the above construction scenarios there shall be a need for a considerable input into planning and implementing the different stages in a practical and safe manner. There shall correspondingly be a need for clear and explicit signage correctly positioned to give adequate warning and guidance to road users. The contractor shall pay particular attention to the control of dust during the trafficking of earthen or granular surfaces and proper delineation of the edges of the travelled way. Watering to control dust should be carried out at least three times per day. If the Contractor fails to control dust from the trafficking of earthen or granular surfaces the Engineer will instruct the Contractor to apply a temporary bituminous surface treatment at the Contractor's cost. The Contractor is responsible for maintaining and making good any surface under trafficking to the approval of the Engineer and at no additional cost to the Employer.

The contractor may propose alternative traffic management systems provided that the concept of sectional completion and contained working sub-section are respected.

Other Traffic Management Consideration during Construction

During any particular stage of traffic management, the Contractor shall make sure that adjoining properties and access roads are not out of unless there are viable alternatives available. Where required, the Contractor shall construct and maintain temporary access respecting all necessary safety requirements. Bus stops shall be preserved and adjusted to suit the traffic management staging with proper and safe accessibility for pedestrians. The Contractor must train his personnel who are assigned for the purpose of traffic control and safety. These personnel must understand the importance of their role and have a proper awareness of the concept of safe traffic management. Such personnel should themselves be road users to understand safe traffic control procedures

Safety Requirements

The importance of proper safety measures cannot be over-emphasized. It is the sole responsibility of the Contractor to implement and maintain all necessary safety measures during the course of the works. The Contractor shall adhere to the requirements of the MOST Specifications and the latest IRC codes, particularly IRC:SP:55-2001 concerning safety in road construction zones. The Engineer shall strictly monitor the Contractor's performance in the execution of his duties with respect to safety and The Engineer shall exercise his authority under the Contract to have any deficiencies remedied.


REFERENCE DRAWINGS

- 1.) TYPICAL CROSS SECTIONS FOR TRAFFIC MANAGEMENT CASE-1 DWG.NO. TM-04.
- 2.) TYPICAL CROSS SECTIONS FOR TRAFFIC MANAGEMENT CASE-2 DWG.NO. TM-05
- 3.) TYPICAL CROSS SECTIONS FOR TRAFFIC MANAGEMENT CASE-3 DWG.NO. TM-06
- 4.) TYPICAL PLAN FOR TRAFFIC MANAGEMENT SEQUENCE DURING CONSTRUCTION DWG.NO. TM-07
- 5.) SCHEMATIC PLAN FOR TRAFFIC MANAGEMENT BETWEEN SUB-SECTION AT DIFFERENT STAGES DWG.NO. TM-08
- 6.) TYPICAL ARRANGEMENT OF TRAFFIC CONTROL DEVICES FOR 500M SUB-SECTION DWG.NO. TM-09

DATE: 2014-03-03 08:22:26m
 PATH: T:\CAD\2013\07 BHARREVISED DPR\CM\TYP. TRAFFIC MANAGEMENT PLAN\PACKAGE-INVOC-TRAFFIC-MANAGEMENT-NOTES - 2.dwg

CLIENT :
 Bihar State Road Development Corporation Limited (BSRDCL) (A Government of Bihar Undertaking)

PROJECT :
 Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)

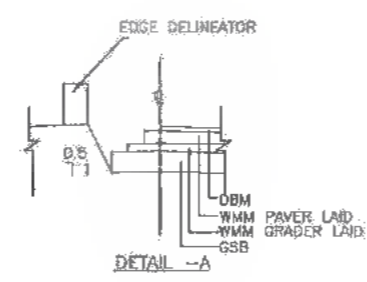
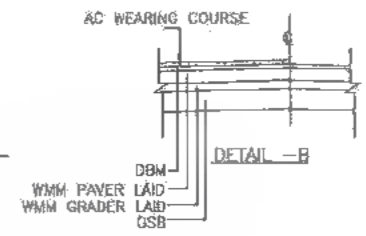
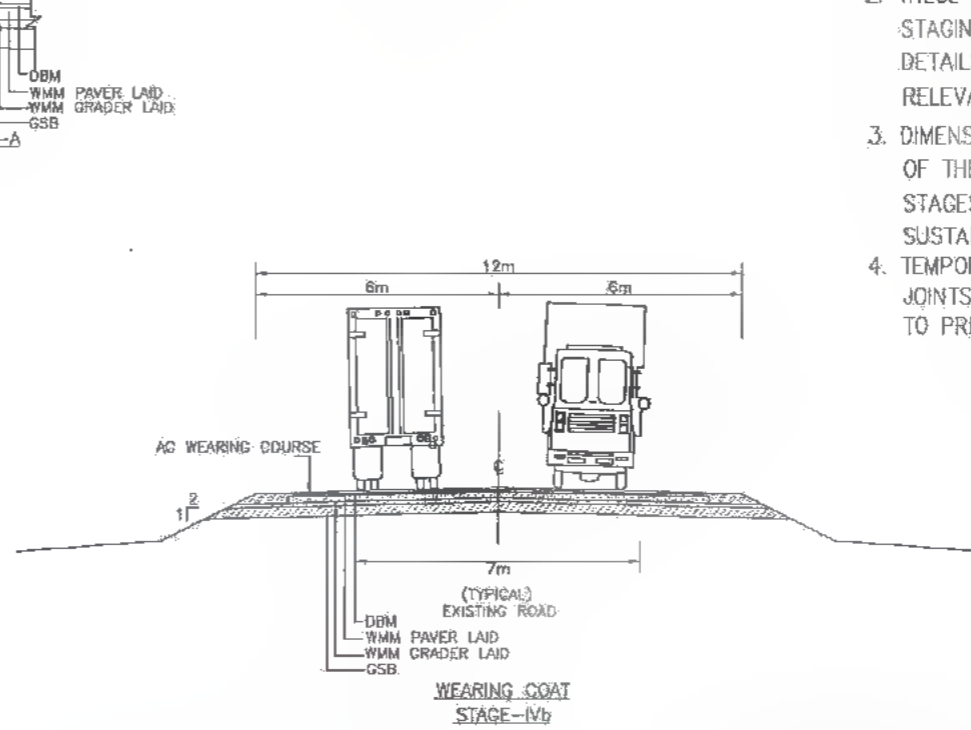
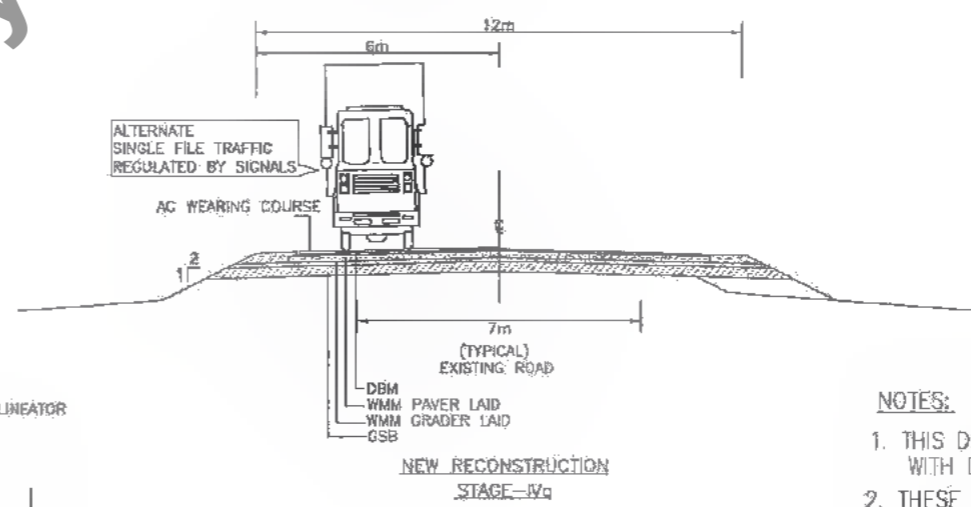
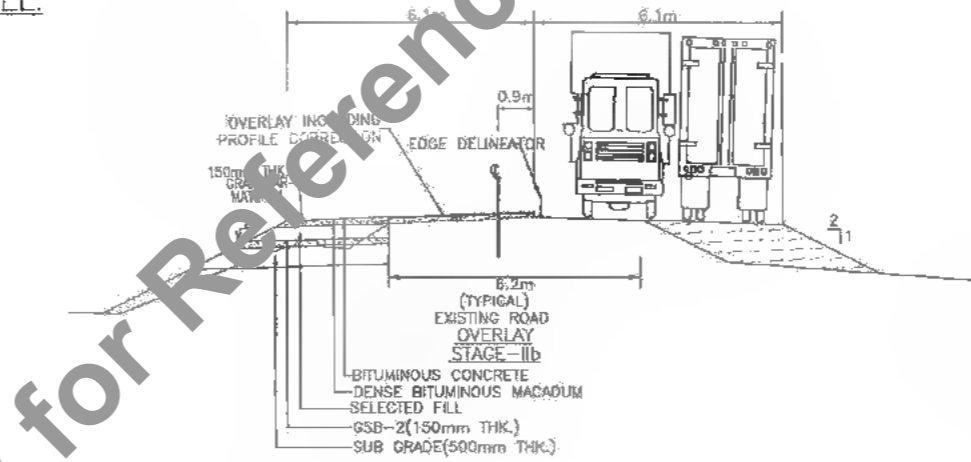
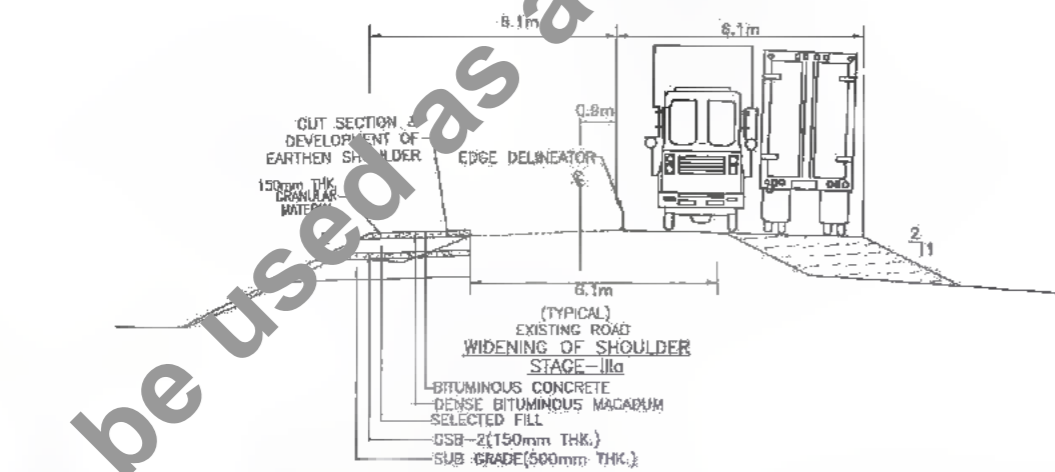
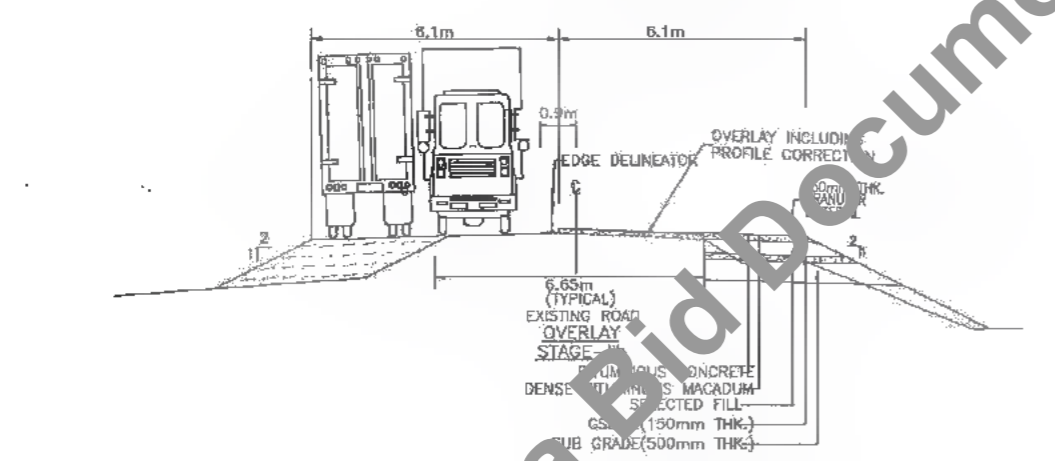
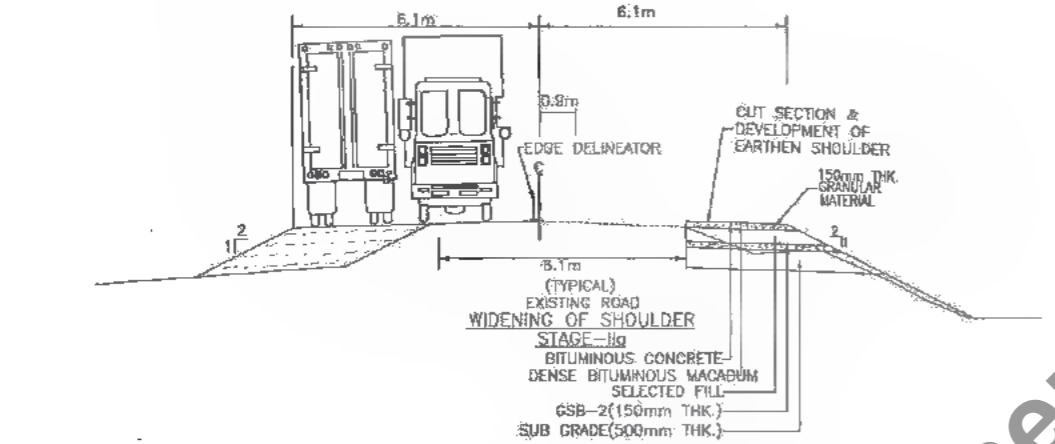
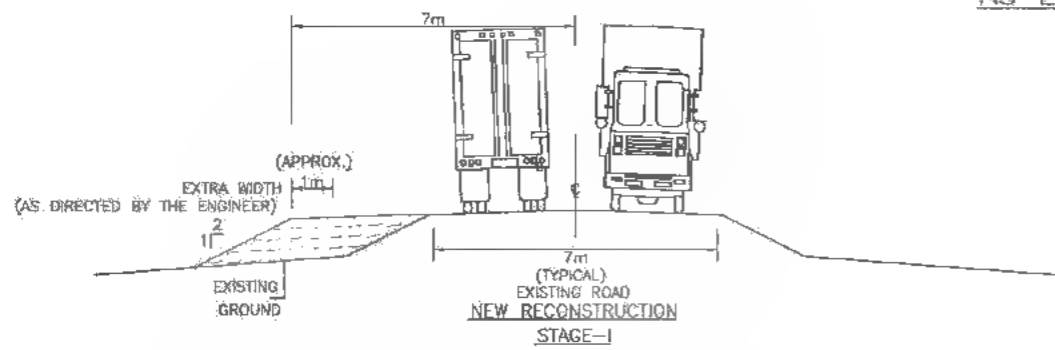
CONSULTANTS :
 SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company
 Plot-A "SAI House" Sanyal Corporate Square, 20th Regiment, Col. Indrinder Ahluwalia Road, Sector 13/50
 Phone : +91-79-6676007/100, Fax : +91-79-6676200
 Email : mail@saiindia.com

REV.	DATE	DESCRIPTION	SNR	ISSUED BY	CHECKED BY	APPROVED BY
PE	31/07/10	GOOD FOR CONSTRUCTION (REVISED DPR)			R.N.	
PE	26/12/10	GOOD FOR CONSTRUCTION (DPR)			C.S.	
PC	10/04/14	GOOD FOR CONSTRUCTION (DPR)				
PE	26/02/14	ISSUED WITH FINAL DPR				
PA	15/11/13	ISSUED WITH DPR				

TITLE :LRP CHOWK (BAHADURGANJ) -DIGHALBANK (PACKAGE-III) TRAFFIC MANAGEMENT REQUIREMENTS AND CONSTRUCTION METHODOLOGY
 DRG. NO. : SAI-213007/DPR/M/TYP/ TM - 03
 REVISION : PE



PROPOSED FRL. AT APPROXIMATELY THE SAME LEVEL
AS EXISTING ROAD LEVEL.



NOTES:


1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH DRAWING TM-01 TO TM-07
2. THESE DRAWINGS SHOW TYPICAL TRAFFIC MANAGEMENT STAGING DURING CONSTRUCTION. FOR COMPLETE TECHNICAL DETAILS OF THE PAVEMENT WORKS REFER TO THE RELEVANT DRAWINGS AND SPECIFICATIONS.
3. DIMENSIONS SHOWN ACROSS THE WIDTH ARE INDICATIVE OF THE PARTICULAR CONSTRUCTION STAGE. AT INTERMEDIATE STAGES THE WIDTHS SHALL BE THE MINIMUM REQUIRED TO SUSTAIN TWO-WAY TRAFFIC.
4. TEMPORARILY EXPOSED EARTHEN/GRANULAR CONSTRUCTION JOINTS ARE TO BE PRIMED AS DIRECTED BY THE ENGINEER TO PREVENT LOSS OF MATERIAL.

DATE: 20/07/13 10:21am
PATH: T:\2007 BHARU REVISED UPRC\TM\TYP\TRAFFIC MANAGEMENT PLAN\PACKAGE-III\04-TRAFFIC-MANAGEMENT CASE-1.dwg

CLIENT:

Bihar State Road Development Corporation Limited (BSPRCL)
 (A Government of Bihar Undertaking)

PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

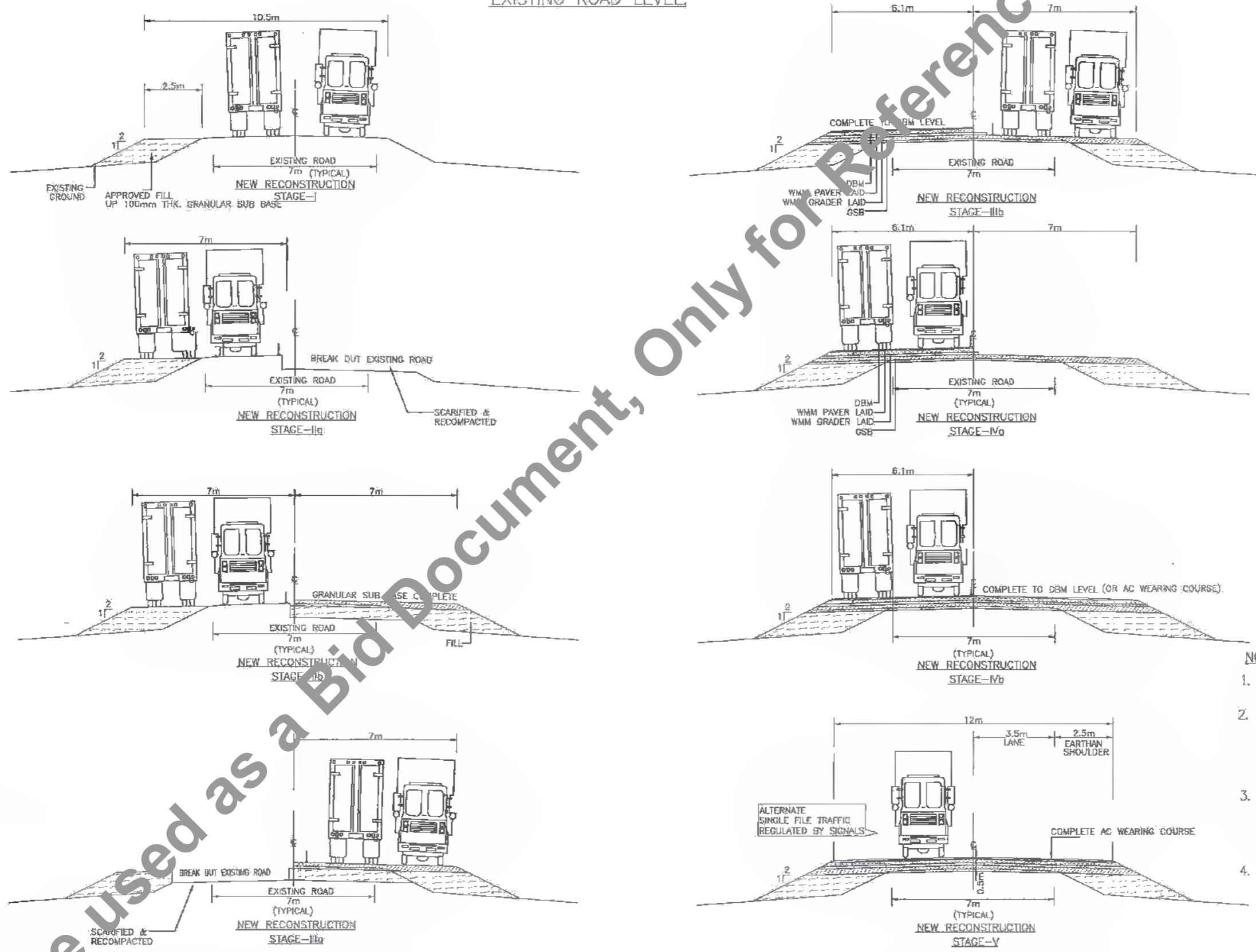
CONSULTANTS:

SAI Consulting Engineers Pvt. Ltd.
 An ISO 9001 Certified Company
 Block-A, 'SAI House', Tatyasaheb Koregaon, 5th, Rajpath
 Link Road, Sector-43, Gurgaon - 122002, Haryana
 Phone : +91-12-6642299/709, Fax : +91-12-6645200
 Email : saiconsulting@gmail.com

PE	31/07/10	GOOD FOR CONSTRUCTION (REVISED DPR)	DRAWN BY : R.M.
PD	28/12/10	GOOD FOR CONSTRUCTION (DPR)	CHECKED BY : C.S.
PC	10/04/14	GOOD FOR CONSTRUCTION (DPR)	APPROVED BY : J.D.
PA	26/02/14	ISSUED WITH FINAL DPR	ISSUED BY : B.S.
RA	13/11/13	ISSUED WITH DPR	
REV.	DATE	DESCRIPTION	SIGN
SCALE : N.T.S.			

TITLE: **LRP CHOWK (BAHADURGANJ) - DIGHALBANK (PACKAGE-III)**
 TYPICAL CROSS SECTIONS FOR TRAFFIC MANAGEMENT CASE - I
 DRG. NO.: **SAI-213007/DPR/MTYP/ TM - 04**
 REVISION: PE




PROPOSED FRL UP TO 0.5m ABOVE EXISTING ROAD LEVEL.



- NOTES:**
1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH DRAWING TM-01 TO TM-07
 2. THESE DRAWINGS SHOW TYPICAL TRAFFIC MANAGEMENT STAGING DURING CONSTRUCTION. FOR COMPLETE TECHNICAL DETAILS OF THE PAVEMENT WORKS REFER TO THE RELEVANT DRAWINGS AND SPECIFICATIONS.
 3. DIMENSIONS SHOWN ACROSS THE WIDTH ARE INDICATIVE OF THE PARTICULAR CONSTRUCTION STAGE. AT INTERMEDIATE STAGES THE WIDTHS SHALL BE THE MINIMUM REQUIRED TO SUSTAIN TWO-WAY TRAFFIC.
 4. TEMPORARILY EXPOSED EARTHEN/GRANULAR CONSTRUCTION JOINTS ARE TO BE PRIMED AS DIRECTED BY THE ENGINEER TO PREVENT LOSS OF MATERIAL.

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CLIENT:
 Bihar State Road Development Corporation Limited (BSRDC) (A Government of Bihar Undertaking)

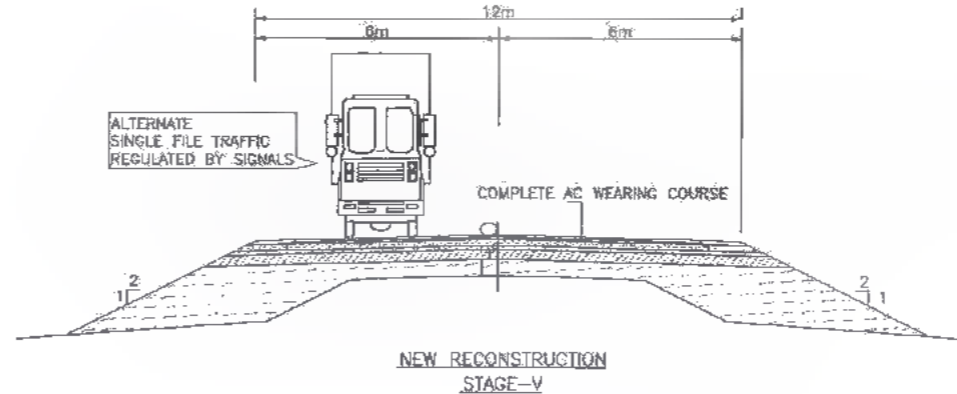
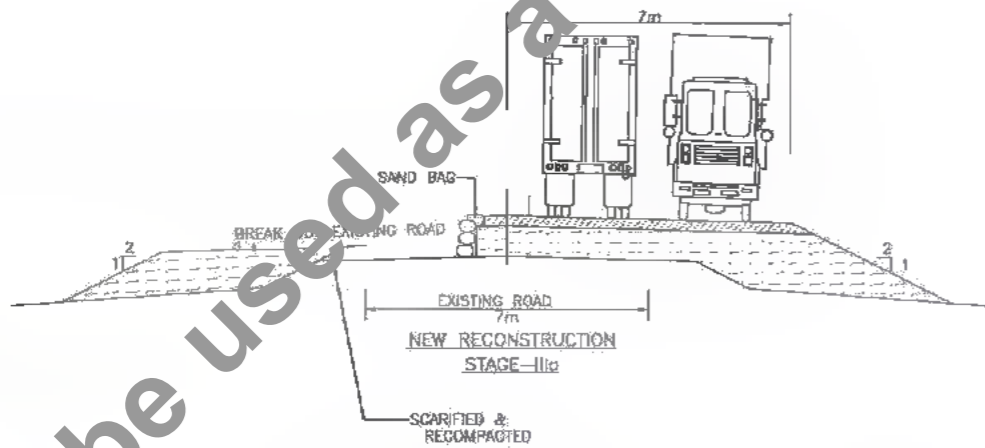
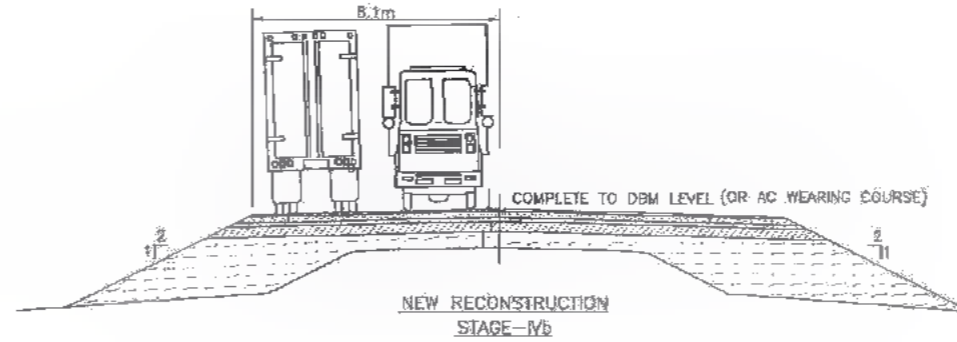
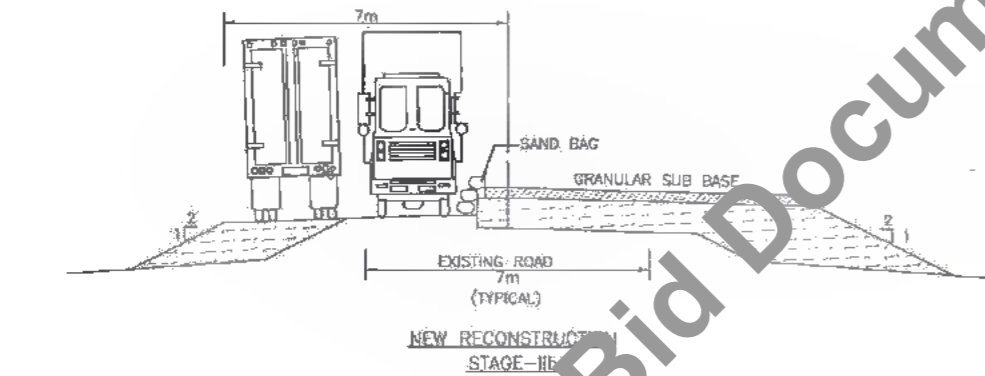
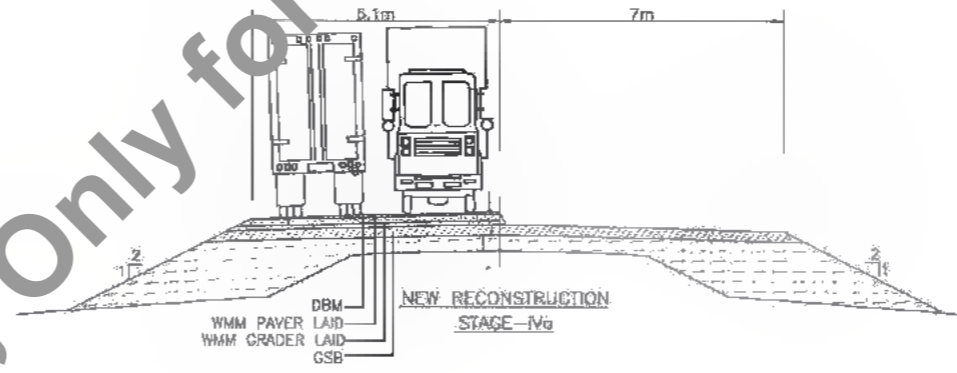
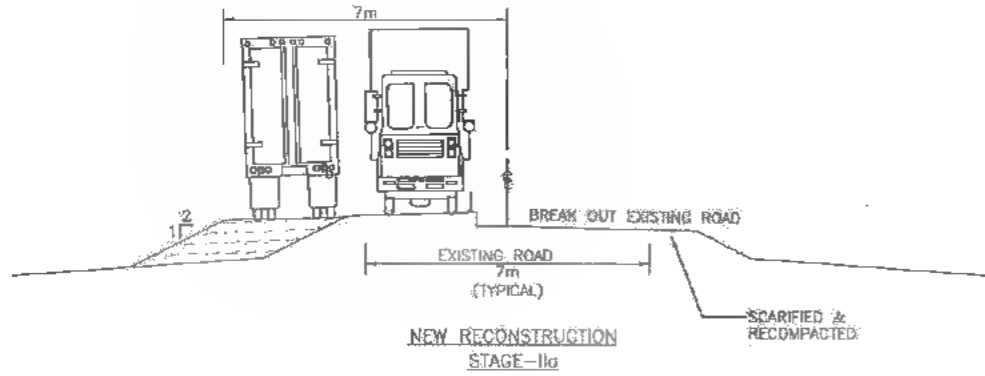
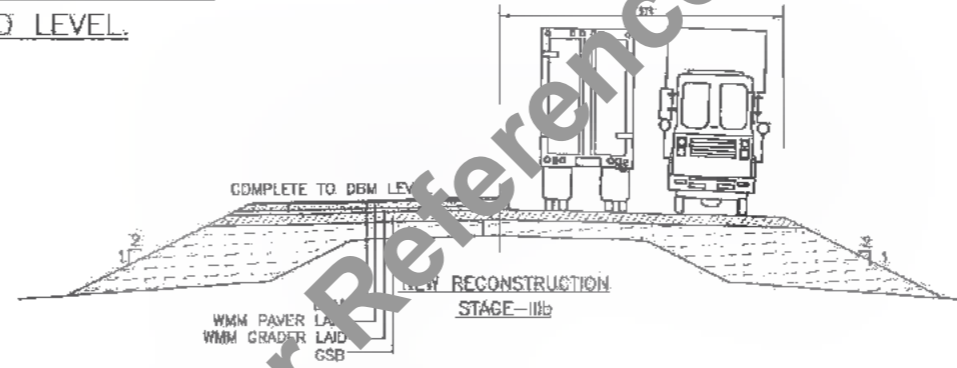
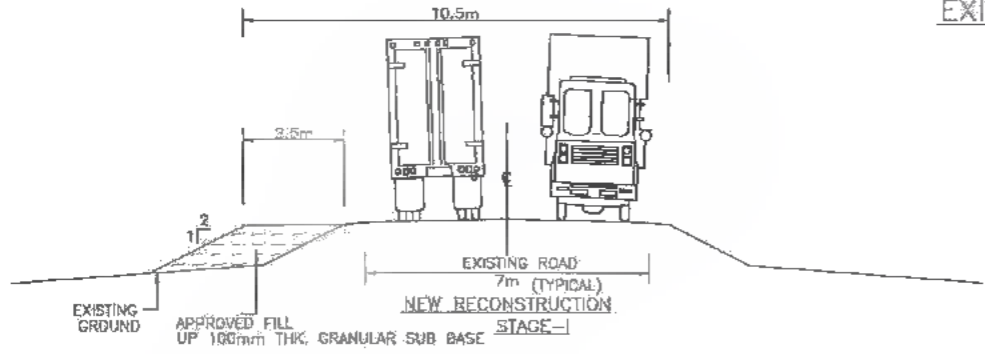
PROJECT:
 Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:
 SAI Consulting Engineers Pvt. Ltd. An ISO-9001 Certified Company
 Block-A "SAI House" Sahaibnagar Square, 8th Ring Road, Patna, Bihar, India. Phone: +91-91-6678007/7800, Fax: +91-91-6678200. Email: mail@saiengg.com

PE	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)	DRAWN BY : R.N.	TITLE : LRP CHOWK (BAHADURGANJ) -DIGHALBANK (PACKAGE-III)
PD	28/12/18	GOOD FOR CONSTRUCTION (DPR)	CHECKED BY : C.S.	TYPICAL CROSS SECTIONS FOR TRAFFIC MANAGEMENT CASE - 2
PC	10/04/14	GOOD FOR CONSTRUCTION (DPR)	APPROVED BY : J.B.	DRG. NO. : SAI-213007/DPR/TYP/TM - 05
PE	28/02/14	ISSUED WITH FINAL DPR	ISSUED BY : R.S.	REVISION : PE
PA	13/11/13	ISSUED WITH DPR		



PROPOSED FRL > 0.5m ABOVE
EXISTING ROAD LEVEL.



NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH DRAWING TM-01 TO TM-07
2. THESE DRAWINGS SHOW TYPICAL TRAFFIC MANAGEMENT STAGING DURING CONSTRUCTION. FOR COMPLETE TECHNICAL DETAILS OF THE PAVEMENT WORKS REFER TO THE RELEVANT DRAWINGS AND SPECIFICATIONS.
3. DIMENSIONS SHOWN ACROSS THE WIDTH ARE INDICATIVE OF THE PARTICULAR CONSTRUCTION STAGE. AT INTERMEDIATE STAGES THE WIDTHS SHALL BE THE MINIMUM REQUIRED TO SUSTAIN TWO-WAY TRAFFIC.
4. TEMPORARILY EXPOSED EARTHEN/GRANULAR CONSTRUCTION JOINTS ARE TO BE PRIMED AS DIRECTED BY THE ENGINEER TO PREVENT LOSS OF MATERIAL.

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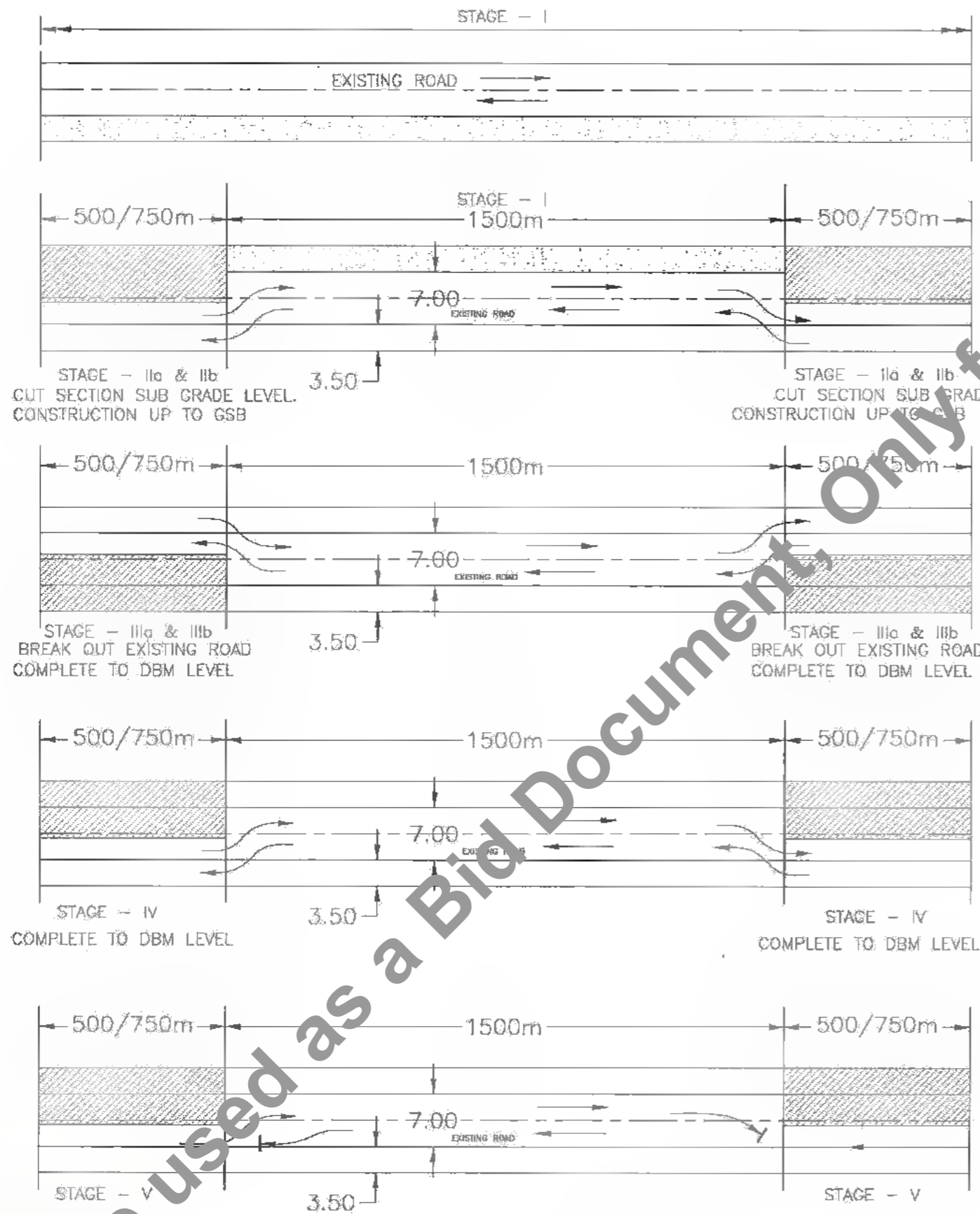
CLIENT:
 Bihar State Road Development Corporation Limited (BSRDC) (A Government of Bihar Undertaking)

PROJECT:
 Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:
 SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company
 Back-A "SAI House" Solara Corporate Square, 8th Floor, 1st Phase, Sector-10, Gurgaon, Haryana
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PE	31/07/18	GOOD FOR CONSTRUCTION (REVISED DPR)	DRAWN BY : R.R.	TITLE: LRP CHOWK (BAHADURGANJ) -DIGHALBANK (PACKAGE-III)
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PC	10/04/14	GOOD FOR CONSTRUCTION (DPR)	APPROVED BY : A.D.	DRG. NO. : SAI-213007/DRPRM/TYP/ TM -06
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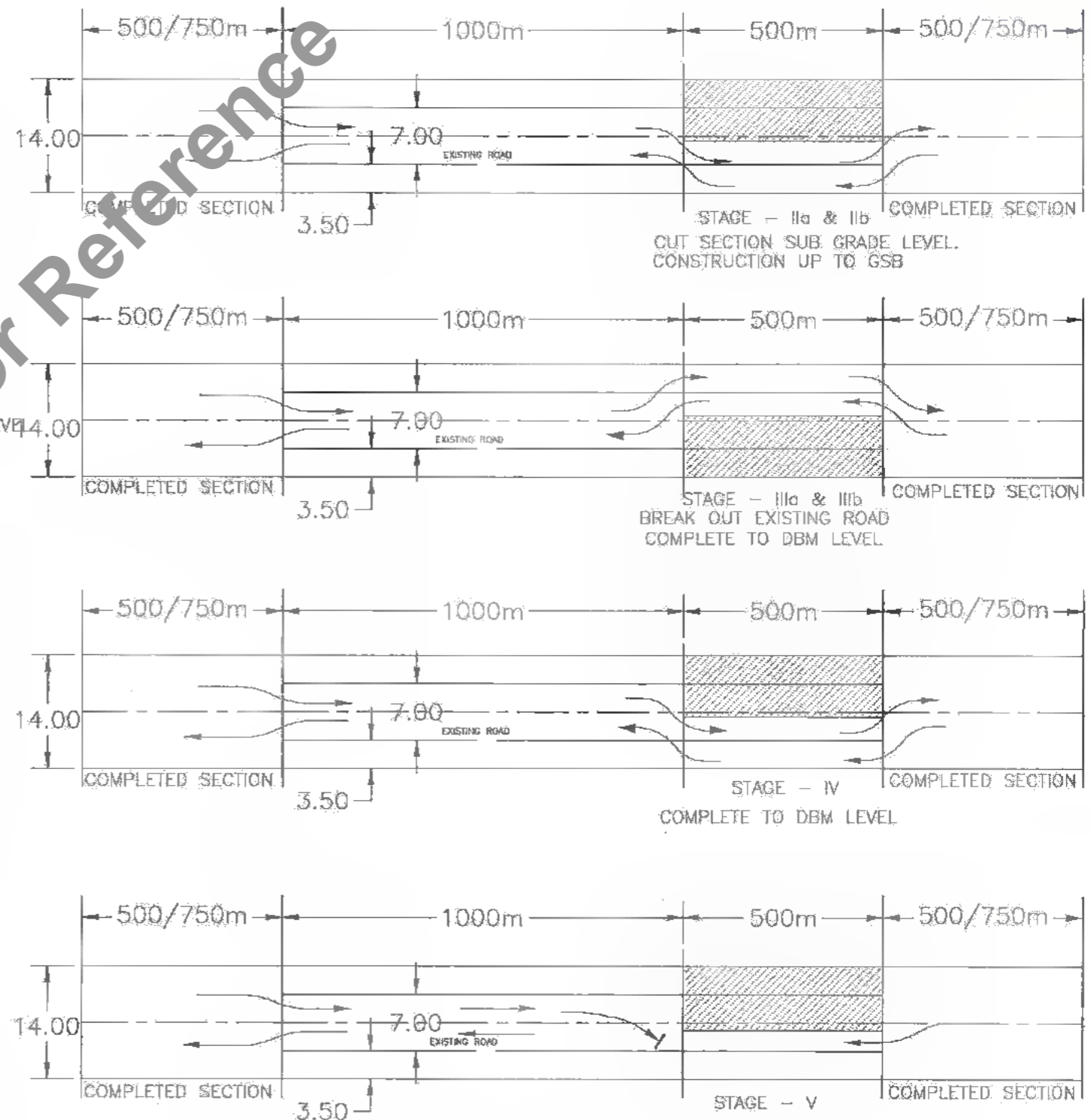


ALTERNATE SINGLE TRAFFIC FILE REGULATED BY SIGNALS TO COMPLETE AC COURSE

500/750m SUB-SECTIONS
SCALE 1:20

ALTERNATE SINGLE TRAFFIC FILE REGULATED BY SIGNALS

EARTHWORKS AND PAVEMENT CONSTRUCTION
 EARTHWORKS ONLY



ALTERNATE SINGLE TRAFFIC FILE REGULATED BY SIGNALS TO COMPLETE AC COURSE

COMPLETED SECTION
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 SCALE 1:20

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CLIENT:

Bihar State Road Development Corporation Limited (BSRDC)
(A Government of Bihar Undertaking)

PROJECT:

Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:

SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company

Block-A "SAI House", Salyan Corporate Square, 6th Bahadur, Club, Bahadur, Ahmednagar-430057, Maharashtra, India
Phone : +91-79-6652607/698, Fax : +91-79-6654200
Email : sai@saiindia.com

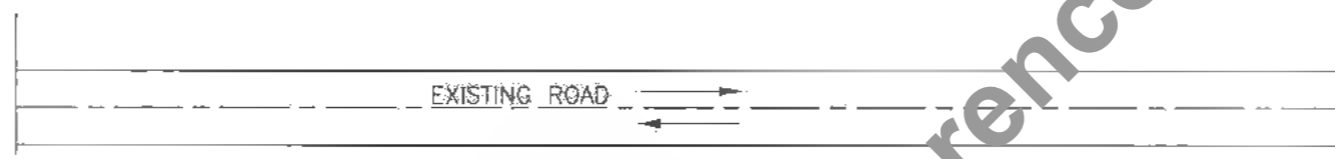
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PI	10/04/14	GOOD FOR CONSTRUCTION (DPR)	APPROVED BY : J.D.	DRG. NO. : SAI-213007/DPR/MTYP/TM-07
PA	26/02/14	ISSUED WITH FINAL DPR	ISSUED BY : B.S.	REVISION : PE
REV.	DATE	DESCRIPTION	SIGN	

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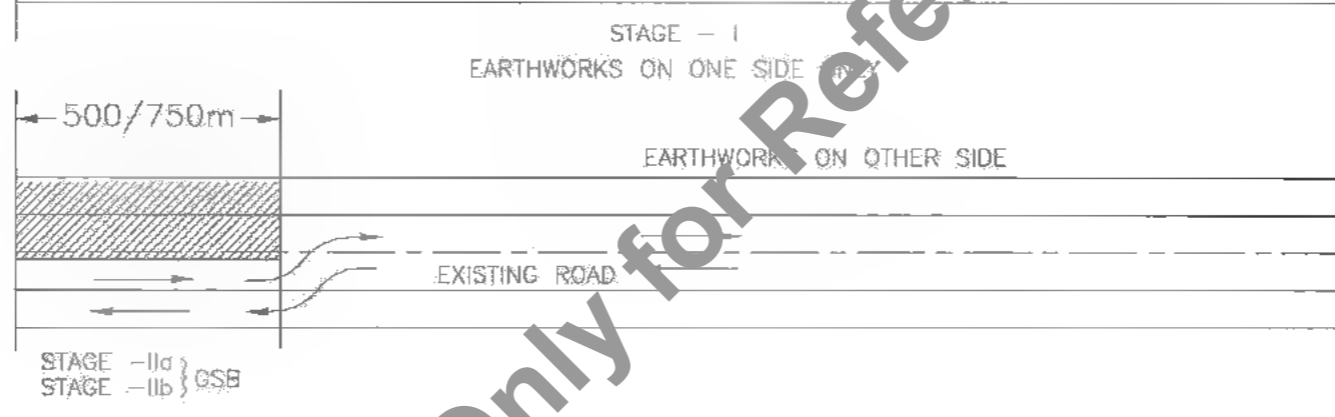
SAI CONSULTING ENGINEERS PVT. LTD.

DATE: 20/07/10 - 10:16am
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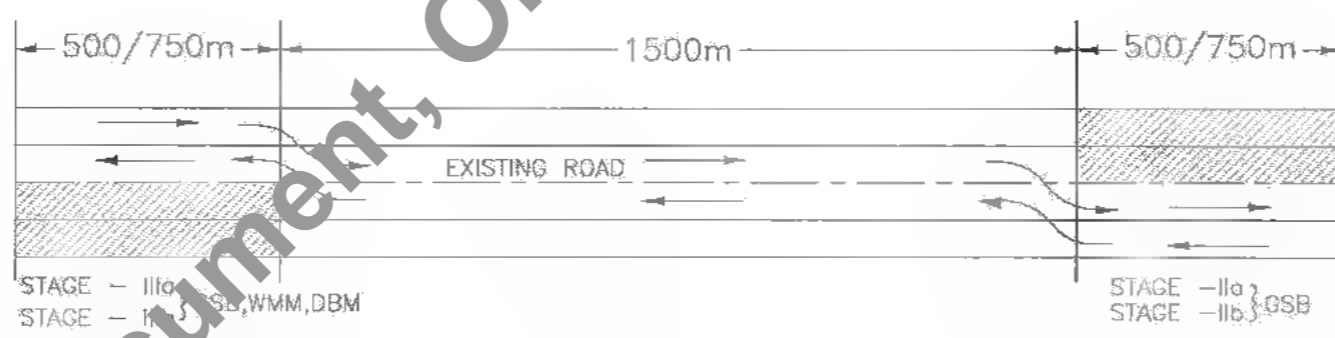
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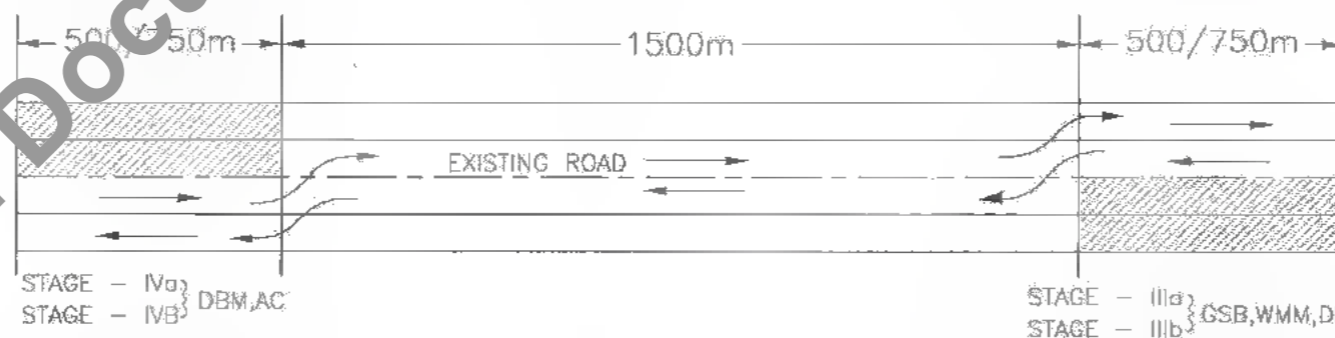
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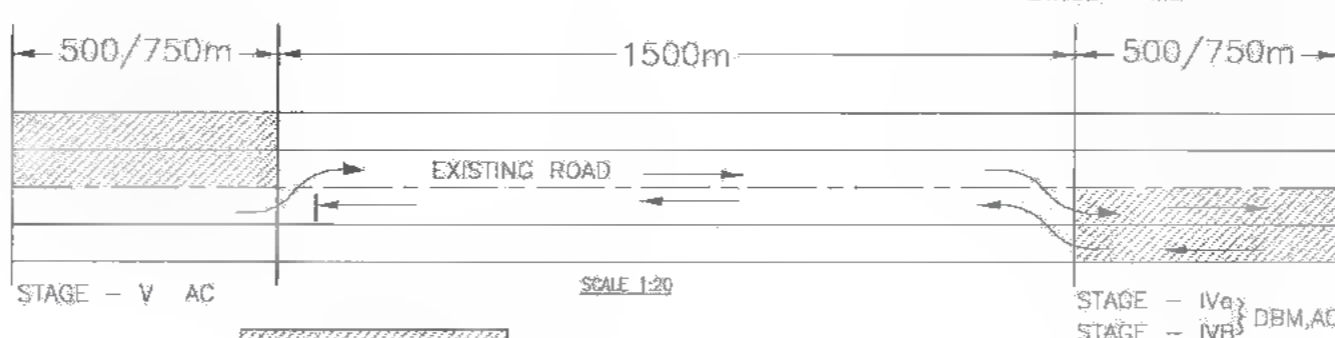
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④



⑤



EARTHWORKS AND PAVEMENT CONSTRUCTION
 EARTHWORKS ONLY

SCALE 1:20

CLIENT:

Bihar State Road Development Corporation Limited (BSRDC)
(A Government of Bihar Undertaking)

P. C. M. Tech. J
P. BSRDC
PIU-Katihar

PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:

SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company

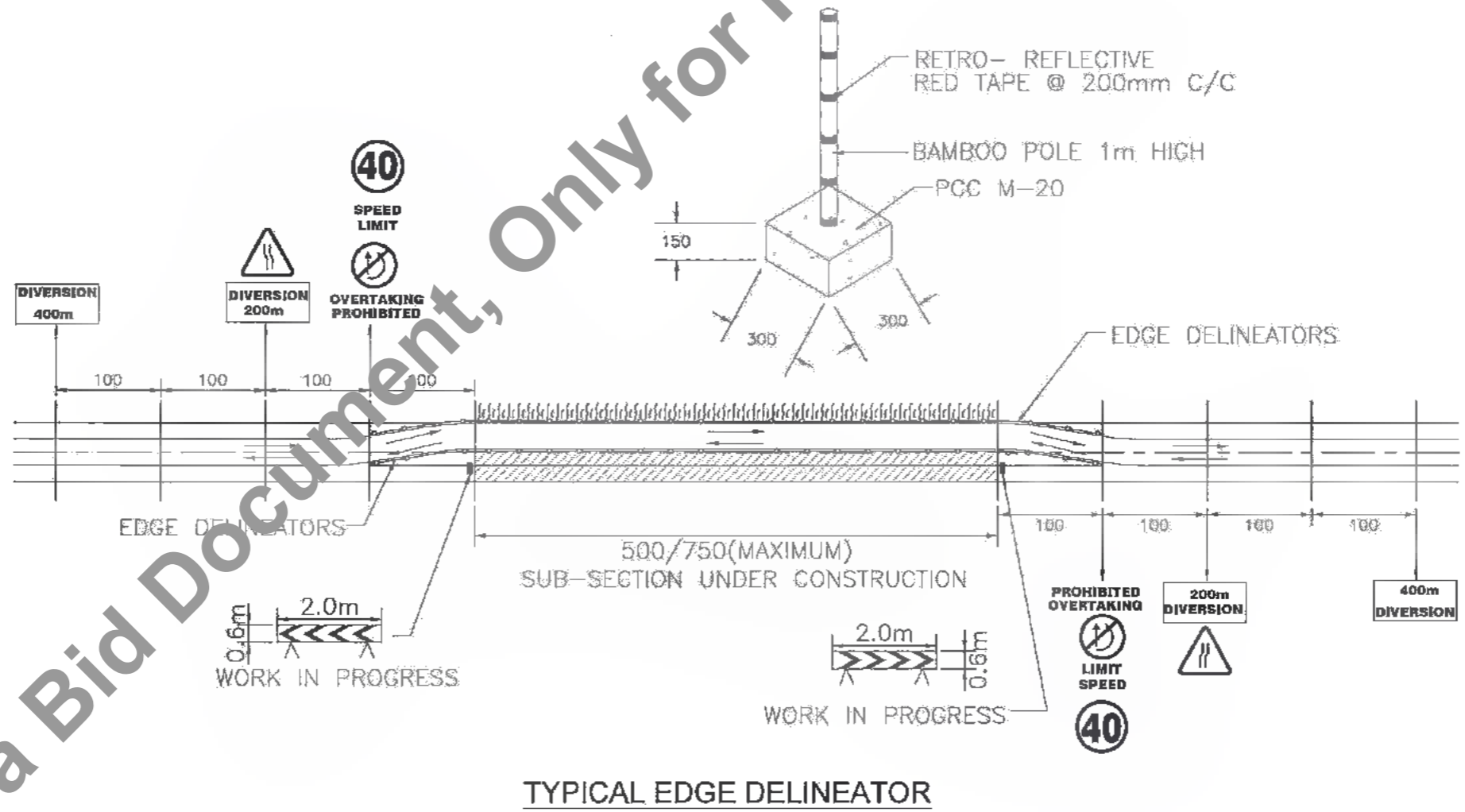
Block-A "SAI House" Satyam Corporate Square, 6th Floor, Bhubaneswar, Odisha-751005, India
Phone: +91-79-66112600/10, Fax: +91-79-66112800
Email: mail@saiindia.com

PE	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)		
PD	28/12/18	GOOD FOR CONSTRUCTION (DPR)		
PC	10/04/14	GOOD FOR CONSTRUCTION (DPR)		
PB	26/02/14	ISSUED WITH FINAL ORDER		
PA	13/11/13	ISSUED WITH DPR		

DRAWN BY : R.N.	TITLE : LRP CHOWK (BAHADURGANJ) - DIGHALBANK (PACKAGE-III) SCHEMATIC PLAN FOR TRAFFIC MANAGEMENT BETWEEN SUB-SECTION AT DIFFERENT STAGES
CHECKED BY : C.S.	
APPROVED BY : J.D.	
ISSUED BY : B.S.	
DRG. NO. :	SAI-213007/D/PR/MTYP/ TM-08
REVISION :	PE



DATE: 20/07/19 10:23am
 PATH: T:\CAD\20 213007_BHAR\REVISED_DPR\1\1\09-TYP_EDGE DELINEATOR.dwg



TYPICAL EDGE DELINEATOR

Not to be used as a Bid Document, Only for Reference



CLIENT:
Bihar State Road Development Corporation Limited (BSRDC)
 (A Government of Bihar Undertaking)

PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:
SAI Consulting Engineers Pvt. Ltd.
 An ISO 9001 Certified Company
 BSRDC House, Sakya Corporate Square, 8th Floor, Bhubaneswar, Odisha-751005
 Phone : +91-674-2598700, Fax : +91-74-2598700
 Email : sai@saiconsulting.com

PE	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)		DRAWN BY : R.N.
PD	28/12/18	GOOD FOR CONSTRUCTION (DPR)		CHECKED BY : C.S.
PC	10/04/14	GOOD FOR CONSTRUCTION (DPR)		APPROVED BY : J.D.
PA	13/11/13	ISSUED WITH DDPR		ISSUED BY : B.S.
REV.	DATE	DESCRIPTION	SIGN	

TITLE : LRP CHOWK (BAHADURGANJ) - DIGHALBANK (PACKAGE-III)
 TYPICAL ARRANGEMENT OF TRAFFIC CONTROL DEVICES FOR 800M SUB-SECTION
 DRG. NO. : SAI-213007/DPR/MTYP/TM-09
 REVISION : PE

SCALE : N.T.S.

LIST OF DRAWINGS (PACKAGE - I)

DRAWINGS TITLE	DRAWING NO.
01. IMPROVEMENT PROPOSAL FOR BRIDGES & CULVERTS	SAI-213007/DPR/C/B/JP - 01
02. GENERAL NOTES	SAI-213007/DPR/C/B/GEN
03. GAD FOR RECONSTRUCTION OF MAJOR BRIDGE AT EXL.CH. 13+178 PROP. CH. 13+178	SAI-213007/DPR/C/B/MAJ/GAD-01 (SHEET 1 OF 3, 2 OF 3 TO 3 OF 3)
04. GAD FOR SUPER STRUCTURE	SAI-213007/DPR/C/B/MAJ/13.178/SUP-01
05. REINFORCEMENT DETAILS FOR LONGITUDINAL GIRDER	SAI-213007/DPR/C/B/MAJ/13.178/SUP-02
06. REINFORCEMENT DETAILS FOR CROSS GIRDER	SAI-213007/DPR/C/B/MAJ/13.178/SUP-03
07. REINFORCEMENT DETAILS OF DECK SLAB	SAI-213007/DPR/C/B/MAJ/13.178/SUP-04
08. SCHEDULE OF REINFORCEMENT	SAI-213007/DPR/C/B/MAJ/13.178/SUP-05
09. DIMENSIONS & REINF. DETAILS FOR ABUTMENT & ABUTMENT CAP FOR MAJOR BRIDGE AT PROP. CH. 13+178	SAI-213007/DPR/C/B/MAJ/13.178/SUB-01
10. DIMENSIONS & REINF. DETAILS FOR PILE & PILE CAP OF ABUTMENT FOR MAJOR BRIDGE AT PROP. CH. 13+178	SAI-213007/DPR/C/B/MAJ/13.178/SUB-02
11. DIMENSIONS & REINF. DETAILS OF C.C. PIER WITH PILE FOUNDATION FOR MAJOR BRIDGE AT PROP. CH. 13+178	SAI-213007/DPR/C/B/MAJ/13.178/SUB-03
12. DIMENSIONS & REINF. DETAILS OF PIER GAP FOR PIER OF MAJOR BRIDGE AT CH. 13+178	SAI-213007/DPR/C/B/MAJ/13.178/SUB-04
13. GAD FOR WIDENING OF MINOR BRIDGE AT EXL.CH.0/280 PROP. CH. 0+258	SAI-213007/DPR/C/B/MIN/GAD-01 (SHEET 1 OF 2 TO 2 OF 2)
14. REINF. DETAILS OF R.C.C. SOLID SLAB SUPER STRU. FOR WIDENING OF MINOR BRIDGE AT EXL.CH.0/280 PROP. CH. 0+258	SAI-213007/DPR/C/B/MIN/SUP-01
15. TYPICAL GAD FOR RECONSTRUCTION/ NEW CONSTRUCTION OF BOX CULVERTS (SINGLE CELL)	SAI-213007/DPR/C/B/BOX/GA-01 (SHEET 1 OF 2 TO 2 OF 2)
16. TYPICAL REINFORCEMENT DETAILS OF SINGLE CELL R.C.C. BOX CULVERT	SAI-213007/DPR/C/B/BOX/STR-01 (SHEET 1 OF 2 TO 2 OF 2)
17. TYP. GAD FOR PIPE CULVERT (SINGLE ROW)	SAI-213007/DPR/C/B/PC/GAD-01
18. TYPICAL GAD FOR PIPE CULVERT HAVING MULTI ROW	SAI-213007/DPR/C/B/PC/GAD-02 (SHEET 1 OF 2 TO 2 OF 2)
19. TYPICAL GAD FOR WIDENING OF PIPE CULVERTS (MULTI ROW)	SAI-213007/DPR/C/B/PC/GAD-03
20. TYP. GAD FOR CROSS ROAD PIPE CULVERT (SINGLE ROW)	SAI-213007/DPR/C/B/PC/GAD-04 (SHEET 1 OF 2 TO 2 OF 2)
21. DETAILS OF FILLER TYPE EXPANSION JOINT	SAI-213007/DPR/C/B/TYP-01
22. DETAILS OF APPROACH SLAB & DRAINAGE SPOUT	SAI-213007/DPR/C/B/TYP-02
23. TYPICAL DRAWING FOR RCC CRASH BARRIER	SAI-213007/DPR/C/B/TYP-03
24. TYP. DETAILS OF WIDENING OF PCC SUB STRUCTURE	SAI-213007/DPR/C/B/TYP-04
25. TYPICAL DETAILS OF SEISMIC RESTRAINER	SAI-213007/DPR/C/B/TYP-05
26. SCHEMATIC ARRANGEMENT AND DESIGN FORCES OF POT PTFE BEARINGS & PEDESTAL	SAI-213007/DPR/C/B/TYP-06
27. TYPICAL REINFORCEMENT DETAILS OF RETURN WALL	SAI-213007/DPR/C/B/TYP-07
28. DIMENSIONS & REINFORCEMENT DETAILS OF RCC PARAPET WALL & RCC RAILING FOR BOX CULVERTS	SAI-213007/DPR/C/B/TYP-08


D. G. M. (Tech.)
BSRDCL
PIU-Katihar

Improvement Proposal for Bridges

Sr. No.	Existing Chainage km	Proposed Chainage km	Type of Bridge	Improvement Proposal in Existing	Improvement Proposal for Existing bridge	Proposal of Widening of existing bridge / New Bridge		
						Retained / Widening / Reconstruction	Total Proposed Width	No
STATE HIGHWAY-99								
1	0/260	0+256	Minor	Widening	12.90	3	9.00	27.00
2	13/197	13+178	Major	Reconstruction	12.90	4	20.50	82.00

Improvement Proposal for Culverts

Sr. No.	Existing Ch. km	Proposed Ch. km	Improvement proposal (Widening / Retained / Reconstruction / New)	Type of Structure (Pipe/ Slab/Box)	Span arrangement		Total Width of Culvert (m)
					No.	Vent width	
STATE HIGHWAY-99							
1	-	0+100	New	Pipe	1	1.20	12.00
2	-	0+500	New	Pipe	1	1.20	12.00
3	-	0+560	New	Pipe	2	1.20	12.00
4	-	0+900	New	Pipe	2	1.20	12.00
5	-	1+100	New	Pipe	1	1.20	12.00
6	-	1+175	New	Pipe	1	1.20	12.00
7	-	1+500	New	Pipe	2	1.20	12.00
8	-	2+050	New	Pipe	2	1.20	12.00
9	-	2+200	New	Pipe	2	1.20	12.00
10	-	2+500	New	Pipe	2	1.20	12.00
11	-	2+675	New	Pipe	2	1.20	12.00
12	-	3+025	New	Pipe	2	1.20	12.00
13	-	3+050	New	Pipe	2	1.20	12.00
14	-	3+150	New	Pipe	2	1.20	12.00
15	-	3+875	New	Pipe	2	1.20	12.00
16	-	4+275	New	Pipe	2	1.20	12.00
17	-	4+375	New	Pipe	2	1.20	12.00
18	-	4+750	New	Pipe	2	1.20	12.00
19	-	5+100	New	Pipe	2	1.20	12.00
20	-	5+140	New	Pipe	2	1.20	12.00
21	-	5+247	New	Pipe	2	1.20	12.00
22	-	5+675	New	Pipe	2	1.20	12.00
23	-	5+600	New	Pipe	2	1.20	12.00
24	-	5+675	New	Pipe	2	1.20	12.00
25	-	6+200	New	Pipe	2	1.20	12.00
26	-	6+250	New	Pipe	2	1.20	12.00
27	-	6+550	New	Pipe	2	1.20	12.16
28	-	6+725	New	Pipe	2	1.20	12.00
29	-	6+775	New	Pipe	2	1.20	12.34
30	-	6+950	New	Pipe	2	1.20	12.00
31	-	7+099	New	Pipe	2	1.20	12.00
32	-	7+189	New	Pipe	2	1.20	12.00
33	-	7+274	New	Pipe	2	1.20	12.00
34	-	7+699	New	Pipe	2	1.20	12.00
35	-	8+049	New	Pipe	2	1.20	12.00
36	-	8+549	New	Pipe	2	1.20	12.00
37	-	8+599	New	Pipe	2	1.20	12.00
38	-	9+052	New	Pipe	2	1.20	12.00
39	-	9+241	New	Pipe	2	1.20	12.00
40	-	9+328	New	Pipe	2	1.20	12.00
41	-	9+378	New	Pipe	2	1.20	12.00
42	-	9+452	New	Pipe	2	1.20	12.00
43	-	9+752	New	Pipe	2	1.20	12.00
44	-	9+990	New	Pipe	2	1.20	12.00
45	-	10+091	New	Pipe	2	1.20	12.00
46	-	10+191	New	Box	1	2.00	12.00

Improvement Proposal for Culverts

Sr. No.	Existing Ch. km	Proposed Ch. km	Improvement proposal (Widening / Retained / Reconstruction / New)	Type of Structure (Pipe/ Slab/Box)	Span		Total Width of Culvert (m)
					No.	width	
STATE HIGHWAY-99							
47	-	10+457	New	Pipe	2	1.20	12.00
48	-	10+927	New	Pipe	2	1.20	12.13
49	-	11+102	New	Pipe	2	1.20	12.00
50	-	11+202	New	Pipe	1	1.20	12.00
51	-	11+612	New	Pipe	2	1.20	12.00
52	-	11+677	New	Pipe	2	1.20	12.60
53	-	11+745	New	Pipe	2	1.20	12.61
54	-	11+795	New	Pipe	2	1.20	12.51
55	-	11+852	New	Pipe	2	1.20	12.00
56	-	12+045	New	Pipe	2	1.20	12.00
57	-	12+095	New	Pipe	2	1.20	12.00
58	-	12+377	New	Pipe	2	1.20	12.00
59	-	12+427	New	Pipe	1	1.20	12.00
60	-	12+595	New	Pipe	2	1.20	12.18
61	-	12+777	New	Pipe	2	1.20	12.37
62	12/045	12+836	Widening	Pipe	2	1.00	12.00
63	-	12+852	New	Pipe	2	1.20	12.56
64	-	13+027	New	Pipe	2	1.20	12.16
65	-	14+752	New	Pipe	2	1.20	12.00
66	-	14+884	New	Pipe	1	1.20	12.00
67	-	15+412	New	Pipe	2	1.20	12.00
68	-	15+777	New	Pipe	2	1.20	12.00
69	-	16+202	New	Pipe	1	1.20	12.60
70	-	16+477	New	Pipe	2	1.20	12.00
71	-	16+652	New	Pipe	2	1.20	12.00
72	-	16+777	New	Pipe	2	1.20	12.00
73	-	16+902	New	Pipe	2	1.20	12.00
74	-	17+077	New	Pipe	2	1.20	12.48
75	-	17+177	New	Pipe	1	1.20	12.00
76	-	17+852	New	Pipe	2	1.20	12.00
77	-	17+827	New	Pipe	2	1.20	12.39
78	-	18+052	New	Pipe	2	1.20	12.00
79	-	18+312	New	Pipe	2	1.20	12.40
80	-	18+437	New	Pipe	2	1.20	12.53
81	-	18+552	New	Pipe	2	1.20	12.12
82	-	18+852	New	Pipe	2	1.20	12.00
83	-	19+044	New	Pipe	2	1.20	12.00
84	-	19+177	New	Pipe	2	1.20	12.00
85	-	19+437	New	Pipe	2	1.20	12.60
86	-	19+852	New	Pipe	2	1.20	12.00
87	-	20+002	New	Pipe	2	1.20	12.60
88	-	20+277	New	Pipe	1	1.20	12.00
89	-	20+703	New	Pipe	2	1.20	12.00
90	-	20+753	New	Pipe	2	1.20	12.00
91	-	20+784	New	Pipe	1	1.20	12.00
92	-	20+878	New	Pipe	2	1.20	12.00
93	-	21+328	New	Pipe	1	1.20	12.00
94	-	21+543	New	Pipe	2	1.20	12.00

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CLIENT :

Bihar State Road Development Corporation Limited (BSTRDCL)
 (A Government of Bihar Undertaking)

PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS :

SAL Consulting Engineers, Pvt. Ltd.
 An ISO 9001 Certified Company
 Block-A, "Sai Plaza", Saiyam Corporate Square, 8th Phase, Old Baidyashahi, Ahmednagar-410015, Maharashtra
 Phone : +91-20-2656588/8791 Fax : 20-26443889 Email : mail@saiindia.com

DATE: 31/07/19
 PREPARED BY: S.M.G.
 CHECKED BY: H.K.S.
 APPROVED BY: B.K.V.
 ISSUED BY: S.S.
 SCALE: AS SHOWN

TITLE: **BAYSI - RAUTA (PACKAGE-I) IMPROVEMENT PROPOSAL FOR BRIDGES & CULVERTS**
 DRG. NO.: **SAI-213007DPRC(BI)P-01**
 REVISION: PE



Not to be used as a Bid Document, Only for Reference

(A) GENERAL

- All dimensions are in millimeters unless otherwise mentioned. Only written dimensions shall be followed. No drawing shall be scaled. Dimensions in bracket indicates skew dimensions.
- Design criteria :
 - The design is according to the following codes :
 - IRC : 5 - 2000
 - IRC : 8 - 2000
 - IRC : 112 - 2011
 - IRC : 22 - 1986
 - IRC : 78 - 2000
 - IRC : 83 - 1998 Part-I, 1997 Part-II & 2002 Part-III.
 - The following loads have been considered in the design:-
 - For two lane carriageway one lane of IRC class 70r or Two lanes of IRC class a plus footpath, whichever governs.
 - For three lane carriageway one lane of 70r plus one lane of class a or three lanes of class a which ever governs.
 - Wearing coat load of 2.00 KN/sq.m.
 - Temperature variation = ± 25° C
- The designs are applicable for 'NORMAL' conditions of exposures.
- Wearing coat shall consist of the following. For Major and Minor Bridges.
 - A coat of mastic asphalt 12mm thick with a prime coat over the top of deck is to be provided before the wearing coat is laid.
 - 50mm thick asphaltic concrete wearing coat as per Clause 512 of MORTH's Specifications for Roads and Bridge Works (Fourth Revision-2001). For Culvert and Underpass.
 - 40mm thick asphaltic concrete wearing coat as per Clause 512 of MORTH's Specifications for Roads and Bridge Works (Fourth Revision-2001).

(B) MATERIALS SPECIFICATIONS

(a) For Major bridge With Pile

(i) Superstructure

R.C.C. T-BEAM & DECK SLAB	=	M25
R.C.C. CRASH BARRIER	=	M40

(ii) Substructure and Foundations

RCC PILE CAP	=	M35
RCC PILE	=	M35
R.C.C. PIER & PIER CAP	=	M30
R.C.C. ABUTMENT & ABUTMENT CAP	=	M30
R.C.C. RETURN WALL	=	M30
P.C.C. LEAN CONCRETE	=	M15

(b) For Minor bridge With Pile

(i) Superstructure

R.C.C. T-BEAM & DECK SLAB	=	M25
R.C.C. CRASH BARRIER	=	M40

(ii) Substructure and Foundations

R.C.C. PILE CAP	=	M35
R.C.C. PILE	=	M35
R.C.C. PIER & PIER CAP	=	M30
R.C.C. ABUTMENT & ABUTMENT CAP	=	M30
R.C.C. RETURN WALL	=	M30
P.C.C. LEAN CONCRETE	=	M15
P.C.C. FOR ABUTMENT & RETURN WALL	=	M20

(c) CURBINGS

R.C.C. SOLID SLAB & R.C.C. BOX	=	M25
R.C.C. PIER CAP & ABUTMENT CAP	=	M20
P.C.C. PIER ABUTMENT & RETURN WALL	=	M20
P.C.C. LEAN CONCRETE	=	M15

- High strength ordinary portland cement conforming to IS : 8112 or ordinary portland cement conforming to IS : 269 capable of achieving the required design concrete strength shall only be used.
- To improve workability of concrete, admixtures conforming to IS : 6925 and IS : 9103 may be permitted subject to satisfactory proven use. Admixtures generating hydrogen nitrogen etc, should not be used.
- Cement content in concrete

Structural member	Cement content (Kg/cu.mt.)	
	minimum	maximum
P.C.C.	360	540
R.C.C.	380	540
P.S.C.	400	540

- Maximum water cement ratio shall be 0.50 for R.C.C. member.

Reinforcement :
 All reinforcing steel shall be of High Yield Strength Deformed TMT Bars (Grade designation S 500) conforming to IS:1786(except for mesh reinforcement which shall be MS bars Grade designation S 240 conforming to IS :432 part-I mild steel).

GENERAL NOTE FOR STRUCTURAL STEEL:

- All structural steel shall before fabrication comply with the requirements the Indian standards codes As prescribed in IS-24 unless specifically mentioned in the drawings.
- All types of steel castings forgings, welding consumables and fasteners shall comply with the Indian standard codes as specifically mentioned in IS-24.
- All structural steel plates shall be of a 250 (fe 410 w) grade b conforming to IS:2062(weldable quality).
- All the materials should have test certificate (tc) of the main properties & required all the structural steel shall be tested for mechanical & chemical properties as per various IS code as may be applicable and shall confirm to the requirements specified in IS-2062.
- Rolling and cutting tolerances shall be as per IS:1852 the thickness tolerance check measurements for the plates and rolled sections shall be taken at not less than 15mm from the edge.
- Lamination check in plates shall be carried out by ultrasonic testing or any other approved methods or should have the mill test certificate for the testing.

Water :
 Water to be used in concreting and curing shall conform to Clause 302.4 of IRC : 21 - 2000.

Bearings & Expansion joints

- Tar Paper Bearing / POT-PTFE Bearing shall be used.
- Expansion joint
 - Elastomeric Strip Seal type - for movement + 40mm and above
 - Filler type joint for R.C.C. solid slab & R.C.C. Box.
- Fabricated steel parts of expansion joints shall be positioned accurately before the concreting of that portion of the deck slab.
- Presence of manufacture's representative at the time of positioning of embedded parts & installation of expansion joint is mandatory.
- Marginal modifications in the structure details e.g. Pedestal etc, for compatibility with the Bearing & Expansion joint detail shall be permitted subject to approval of the Engineer.

Backfill Material behind Abutment/ Return wall

- Backfill Granular soil material behind abutment shall have the properties as $c = 0.2 \text{ kg/cm}^2$, $\phi \geq 30^\circ$, $r = 1800 \text{ Kg/m}^3$
- 600mm Thick Filter Material behind Abutment / Return wall shall be laid as per appendix 6 of IRC : 78-2000
- 100mm dia PVC pipe shall be provided in weep holes.

(C) EXCAVATION FOR OPEN FOUNDATION

- Excavation for open foundations shall be done after taking necessary safety precautions for which guidance may be taken from IS : 3764.
- Minimum embedment of the open foundation in rock shall be ensured as follows.
 - Soft Rock - 1500mm (B) Hard Rock - 600mm
- For footing in rock, the annular space around the footing shall be filled with m-15 grade concrete up to top of rock.

(D) WORKMANSHIP / DETAILING

- Minimum clear cover to all reinforcement including stirrups as follows

	Normal Exposure
Slab	40mm.
Web/Column	40mm.
Footing/raft slab	75mm.

- For Ensuring Proper Cover Of Concrete To Reinforcement Specially Made Concrete Cover Blocks Having Strength Not Less Than Corresponding Members Shall Only Be Used.
- Construction Joints :
 - Construction joints shall be provided only at locations shown on the drawings. Concreting operation shall be carried out continuously up to the construction joints.
 - The concrete surface at the joint shall be brushed with a stiff brush after casting while the concrete is still fresh and it has only slightly hardened.
 - Before new concrete is poured, the surface of old concrete shall be prepared as under :
 - For hardened concrete, the surface shall be thoroughly cleaned to remove debris and laitance and made rough so that 1/4 of the size of aggregate is exposed but without dislodging the aggregate or structurally damaging the concrete.
 - For partially hardened concrete, the surface shall be treated by wire brush followed by an air jet. The old surface shall be soaked with water, without leaving puddles, immediately before starting concreting to prevent absorption of water from new concrete.
 - New concrete shall be thoroughly compacted in the region of the joint.

- Welding of reinforcement bars shall not be permitted.
- Laps in reinforcement :
 - | Concrete Grade | Lap length |
|----------------|------------|
| M-40 | 63d |
| M-35 | 63d |
| M-30 | 72d |
| M-25 | 83d |
 - Not more than 50% & of reinforcement shall be lapped at any one location.
 - For closely spaced bars lapping may be avoided by providing suitable type of mechanical splices.

- Bending of reinforcement bars shall be as per IS : 2502.
- Supporting chairs of 12mm diameter shall be provided at suitable intervals at per IS : 2502.
- Proper compaction of concrete shall be ensured by use of form and/or needle vibrators. Use of full width screed vibrators for compaction of concrete in deck slab shall be ensured.
- Shuttering plates shall suitably be stiffened to enable the compaction by form vibrators.
- Sharp edges of concrete shall be chamfered.
- The location of jacks for lifting up the superstructure to replace bearings etc. is shown & thus this shall be distinctly etched on end cross girders and pier/abutment caps.

(E) SPECIFICATIONS

The work shall be executed in accordance with M O R T H specifications for Road & Bridge Works (4th revision,2001) except where-ever otherwise mentioned.

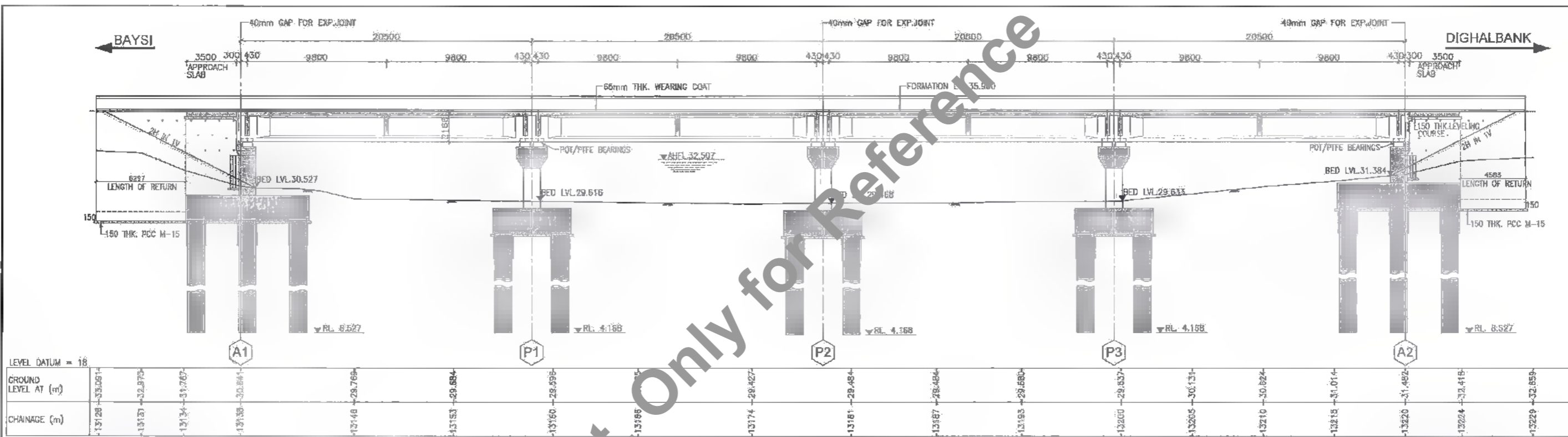
(F) SHOP DRAWINGS

- The contractor shall submit shop drawings for all segments, showing complete details of reinforcement, concrete dimensions, block cuts, recesses, openings, inserts, scaffolding, etc. for approval of the Engineer.
- These notes shall be read along with Specifications and Bid document. In case an argument takes place in the matter that is not specified in the above document, MORTH specifications for road and Bridge works, Indian standard, BS codes should be referred and shall subject to approval of the Engineer.

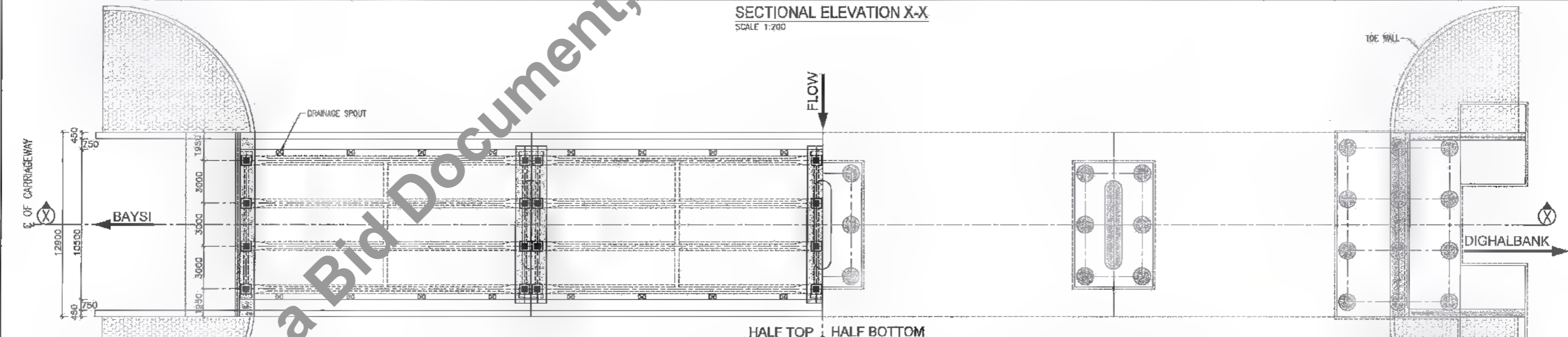


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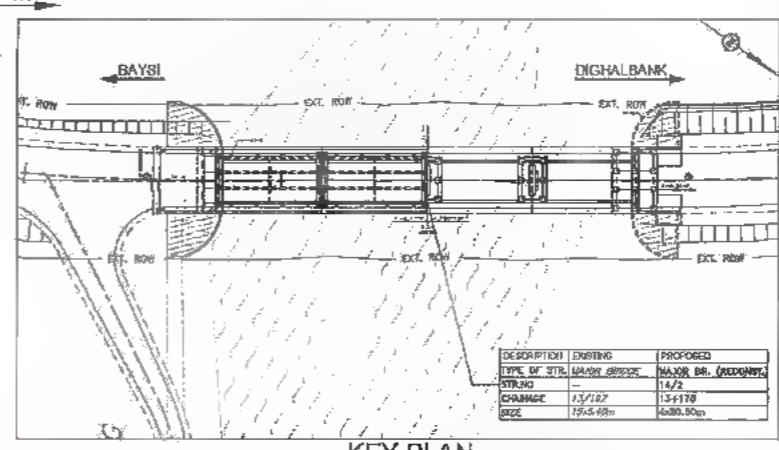
CLIENT : Bihar State Road Development Corporation Limited (BSRDCL) (A Government of Bihar Undertaking)	PROJECT : Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighaibank (SH-99)	CONSULTANTS : SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company	PE 31/07/18 PD 17/12/18 PC 10/04/14 PB 28/02/14 PA 13/11/13	GOOD FOR CONSTRUCTION (REVISED DPPP) GOOD FOR CONSTRUCTION (DPPP) GOOD FOR CONSTRUCTION (DPPP) ISSUED WITH FINAL DPPP ISSUED WITH DPPP	DRAWN BY : J.H.M. CHECKED BY : N.K.K. APPROVED BY : B.V.V.	TITLE : BAYSI - RAUTA (PACKAGE-I) GENERAL NOTES
			DRG. NO. : SA-21907/DPP/C/B/GEN REVISION : PE			



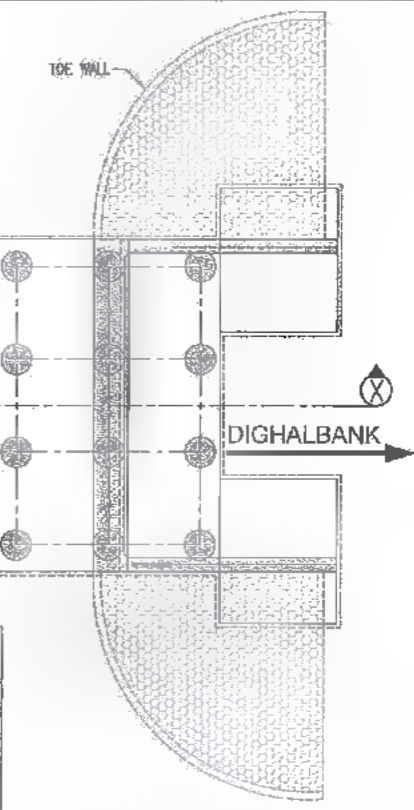
SECTIONAL ELEVATION X-X
SCALE 1:200



PLAN
SCALE 1:200



KEY PLAN



DETAIL OF TOE WALL
SCALE 1:50

5. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS.
- a. GENERAL NOTES DRG. NO. SA-213007/DPR/C/B/TYP/02N
 - b. GAD FOR SUPER STRUCTURE SA-213007/DPR/C/B/MAJ/13.178/SUB-01
 - c. REINFORCEMENT DETAILS FOR LONGITUDINAL GIRDER DRG. NO. SA-213007/DPR/C/B/MAJ/13.178/SUB-02
 - d. REINFORCEMENT DETAILS FOR CROSS GIRDER DRG. NO. SA-213007/DPR/C/B/MAJ/13.178/SUB-03
 - e. REINFORCEMENT DETAILS OF DECK SLAB DRG. NO. SA-213007/DPR/C/B/MAJ/13.178/SUB-04
 - f. SCHEDULE OF REINFORCEMENT DRG. NO. SA-213007/DPR/C/B/MAJ/13.178/SUB-05
 - g. DIMENSIONS & REINF. DETAILS FOR ABUTMENT & ABUTMENT CAP FOR MAJOR BRIDGE AT PROP. CH. 13+178 DRG. NO. SA-213007/DPR/C/B/MAJ/13.178/SUB-01
 - h. DIMENSIONS & REINF. DETAILS FOR PILE & PILE CAP OF ABUTMENT FOR MAJOR BRIDGE AT PROP. CH. 13+178 DRG. NO. SA-213007/DPR/C/B/MAJ/13.178/SUB-02
 - i. DIMENSIONS & REINF. DETAILS OF R.C.C. PIER WITH PILE FOUNDATION FOR MAJOR BRIDGE AT PROP. CH. 13+178 DRG. NO. SA-213007/DPR/C/B/MAJ/13.178/SUB-03
 - j. DIMENSIONS & REINF. DETAILS OF PIER CAP FOR MAJOR BRIDGE AT CH. 13+178 DRG. NO. SA-213007/DPR/C/B/MAJ/13.178/SUB-04
 - k. DETAILS OF APPROACH SLAB & DRAINAGE SPOUT DRG. NO. SA-213007/DPR/C/B/TYP-02
 - l. TYP. DETAILS OF R.C.C. CRASH BARRIER DRG. NO. SA-213007/DPR/C/B/TYP-03
 - m. TYPICAL DETAILS OF SEISMIC RESTRAINER DRG. NO. SA-213007/DPR/C/B/TYP-05
 - n. DETAILS OF SCHEMATIC ARRANGEMENT AND DESIGN FORCES OF POT PIPE BEARINGS OF R.C.C. T-BEAM SUP. STR. DRG. NO. SA-213007/DPR/C/B/TYP-06
 - o. DIMENSIONS & REINF. DETAILS OF RCC RETURN WALL DRG. NO. SA-213007/DPR/C/B/TYP-07

NOTES:-

- ALL DIMENSIONS ARE IN METERS (UNLESS OTHERWISE SPECIFIED) & CHAINAGES ARE IN METERS. ALL WRITTEN DIMENSIONS SHALL BE FOLLOWED. NO DIMENSIONS SHALL BE SCALED.
- THE FOLLOWING LOADS HAVE BEEN CONSIDERED IN THE DESIGN:-
 - a. FOR TWO LANE CARRIAGEWAY ONE LANE OF IRC CLASS 70R OR TWO LANES OF IRC CLASS A PLUS FOOTPATH, WHICHEVER GOVERNS.
 - b. FOR THREE LANE CARRIAGEWAY ONE LANE OF 70R PLUS ONE LANE OF CLASS A OR THREE LANES OF CLASS A WHICHEVER GOVERNS.
- ELECTRIC STRIP SEAL TYPE JOINT SHALL BE PROVIDED. DETAILS SHALL BE AS PER MANUFACTURERS DRAWING.
- BACKFILL MATERIAL BEHIND ABUTMENT SHALL BE SELECTED; SOIL HAVING PROPERTIES AS $\phi = 0.05$ KG/SQ.CM, $\mu = 30^\circ$, $c = 1750$ KG/CM²

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<p>Bihar State Road Development Corporation Limited (BSRDC) (A Government of Bihar Undertaking)</p>	<p>PROJECT: Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)</p>	<p>CONSULTANTS: SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company</p>	<p>PE 31/07/19 GOOD FOR CONSTRUCTION (REVISED SHP)</p> <p>PB 17/12/18 GOOD FOR CONSTRUCTION (DPR)</p> <p>PC 10/04/14 GOOD FOR CONSTRUCTION (DPR)</p> <p>PA 26/02/14 ISSUED WITH FINAL DOPR</p> <p>PA 13/11/13 ISSUED WITH DOPR</p>	<p>DESIGNED BY: G.M.S.</p> <p>CHECKED BY: H.K.S.</p> <p>APPROVED BY: B.R.V.</p> <p>ISSUED BY: H.S.</p>	<p>TITLE: BAYSI - RAUTA (PACKAGE-I) GAD FOR RECONSTRUCTION OF MAJOR BRIDGE AT EXI.CH.13/178 & PROP. CH. 13+178</p>								
			<table border="1"> <thead> <tr> <th>REV.</th> <th>DATE</th> <th>DESCRIPTION</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>13/11/13</td> <td>ISSUED WITH DOPR</td> <td>H.S.</td> </tr> <tr> <td>2</td> <td>13/11/13</td> <td>ISSUED WITH DOPR</td> <td>H.S.</td> </tr> </tbody> </table>	REV.	DATE	DESCRIPTION	BY	1	13/11/13	ISSUED WITH DOPR	H.S.	2	13/11/13
REV.	DATE	DESCRIPTION	BY										
1	13/11/13	ISSUED WITH DOPR	H.S.										
2	13/11/13	ISSUED WITH DOPR	H.S.										

RL.30.527
BORE HOLE NO. A-1

DEPTH m	NOTATION	SOIL DESCRIPTION	SPT N VALUE	CORE RECOVERY %	RQD %
30.527					
29.527		BROWNISH SANDY SOIL	N=8		
28.527			N=7		
27.527			N=9		
26.527			N=13		
25.527			N=14		
24.527			N=17		
23.527			N=19		
22.527			N=21		
21.527			N=25		
20.527			N=28		
19.527			N=32		
18.527			N=35		
17.527			N=42		
16.527			N=45		
15.527			N=49		
14.527			N=52		
13.527			N=57		
12.527			N=63		
11.527			N=68		
10.527			N=70		
09.527			N=85		
08.527			N=90		
07.527			N=89		
06.527			N=92		
05.527			N=92		
04.527			N=92		
03.527			N=92		
02.527			N=92		
01.527			N=92		
00.527			N=92		
00.000			N=92		

RL.29.616
BORE HOLE NO. P-1

DEPTH m	NOTATION	SOIL DESCRIPTION	SPT N VALUE	CORE RECOVERY %	RQD %
29.616		BROWNISH SANDY SOIL	N=4		
28.616			N=6		
27.616			N=9		
26.616			N=11		
25.616			N=13		
24.616			N=17		
23.616			N=20		
22.616			N=25		
21.616			N=28		
20.616			N=32		
19.616			N=35		
18.616			N=38		
17.616			N=42		
16.616			N=45		
15.616			N=49		
14.616			N=52		
13.616			N=57		
12.616			N=63		
11.616			N=68		
10.616			N=70		
09.616			N=85		
08.616			N=90		
07.616			N=92		
06.616			N=92		
05.616			N=92		
04.616			N=92		
03.616			N=92		
02.616			N=92		
01.616			N=92		
00.616			N=92		
00.000			N=92		

RL.29.468
BORE HOLE NO. P-2

DEPTH m	NOTATION	SOIL DESCRIPTION	SPT N VALUE	CORE RECOVERY %	RQD %
29.468		BROWNISH CLAYEY SOIL	N=6		
28.468			N=10		
27.468			N=13		
26.468			N=17		
25.468			N=22		
24.468			N=25		
23.468			N=30		
22.468			N=35		
21.468			N=40		
20.468			N=44		
19.468			N=47		
18.468			N=48		
17.468			N=54		
16.468			N=56		
15.468			N=60		
14.468			N=62		
13.468			N=65		
12.468			N=68		
11.468			N=71		
10.468			N=77		
09.468			N=82		
08.468			N=85		
07.468			N=90		
06.468			N=90		
05.468			N=90		
04.468			N=90		
03.468			N=90		
02.468			N=90		
01.468			N=90		
00.468			N=90		
00.000			N=90		

RL.29.633
BORE HOLE NO. P-3

DEPTH m	NOTATION	SOIL DESCRIPTION	SPT N VALUE	CORE RECOVERY %	RQD %
29.633		BROWNISH CLAYEY SOIL	N=8		
28.633			N=10		
27.633			N=13		
26.633			N=17		
25.633			N=21		
24.633			N=23		
23.633			N=27		
22.633			N=30		
21.633			N=33		
20.633			N=36		
19.633			N=42		
18.633			N=46		
17.633			N=48		
16.633			N=54		
15.633			N=56		
14.633			N=60		
13.633			N=62		
12.633			N=65		
11.633			N=68		
10.633			N=71		
09.633			N=77		
08.633			N=82		
07.633			N=85		
06.633			N=90		
05.633			N=90		
04.633			N=90		
03.633			N=90		
02.633			N=90		
01.633			N=90		
00.633			N=90		
00.000			N=90		

RL.31.384
BORE HOLE NO. A-2

DEPTH m	NOTATION	SOIL DESCRIPTION	SPT N VALUE	CORE RECOVERY %	RQD %
31.384		BROWNISH SANDY SOIL	N=8		
30.384		BROWNISH SANDY SOIL WITH SAND	N=8		
29.384			N=7		
28.384			N=8		
27.384			N=13		
26.384			N=14		
25.384			N=15		
24.384			N=17		
23.384			N=19		
22.384			N=21		
21.384			N=23		
20.384			N=23		
19.384			N=23		
18.384			N=23		
17.384			N=30		
16.384			N=34		
15.384			N=36		
14.384			N=43		
13.384			N=48		
12.384			N=58		
11.384			N=63		
10.384			N=68		
09.384			N=72		
08.384			N=76		
07.384			N=81		
06.384			N=87		
05.384			N=95		
04.384			N=95		
03.384			N=95		
02.384			N=95		
01.384			N=95		
00.384			N=95		
00.000			N=95		

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PROJECT: Bihar State Road Development Corporation Limited (BSRDCL) (A Government of Bihar Undertaking)

CONSULTANTS: SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company

SAI SYSTRA GROUP

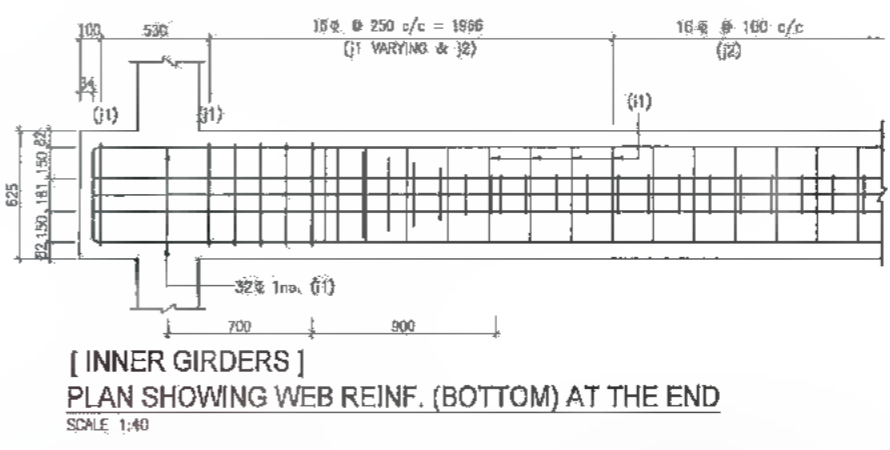
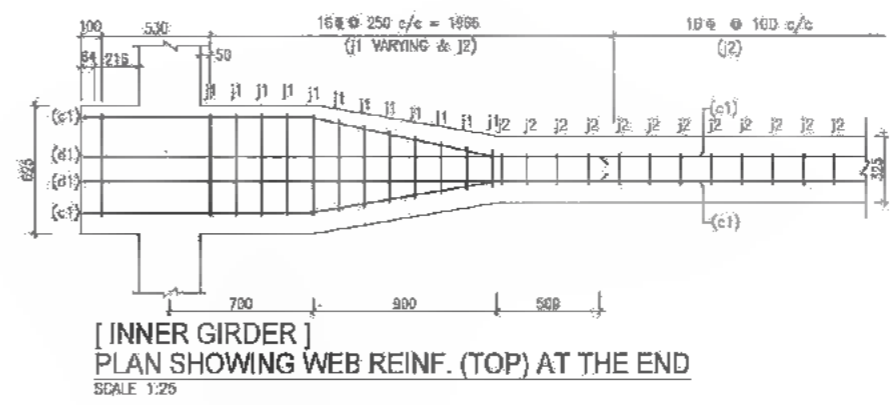
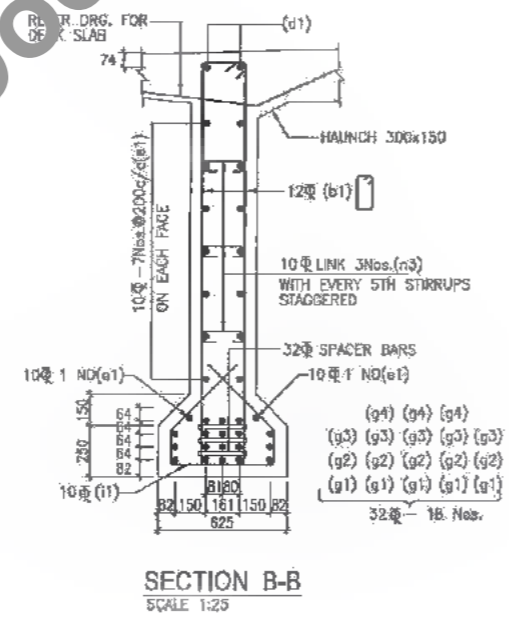
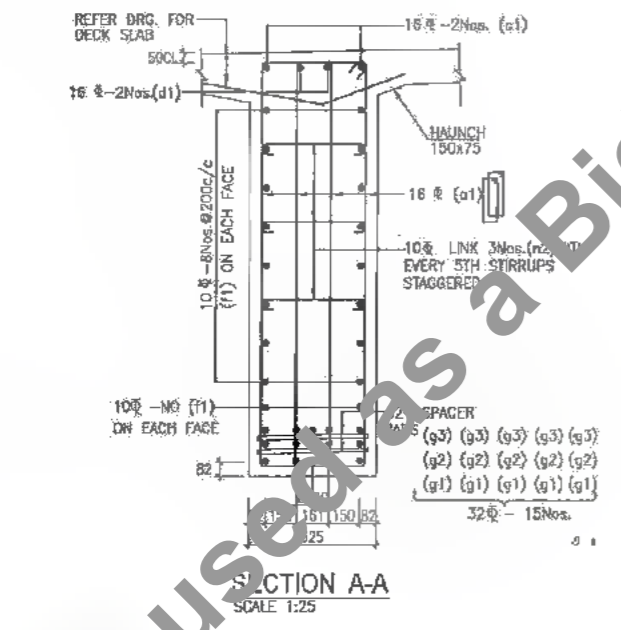
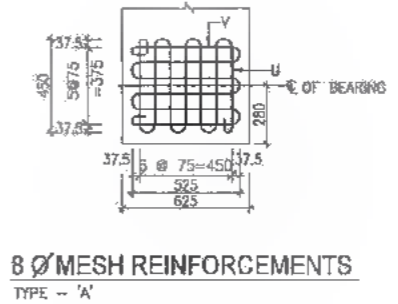
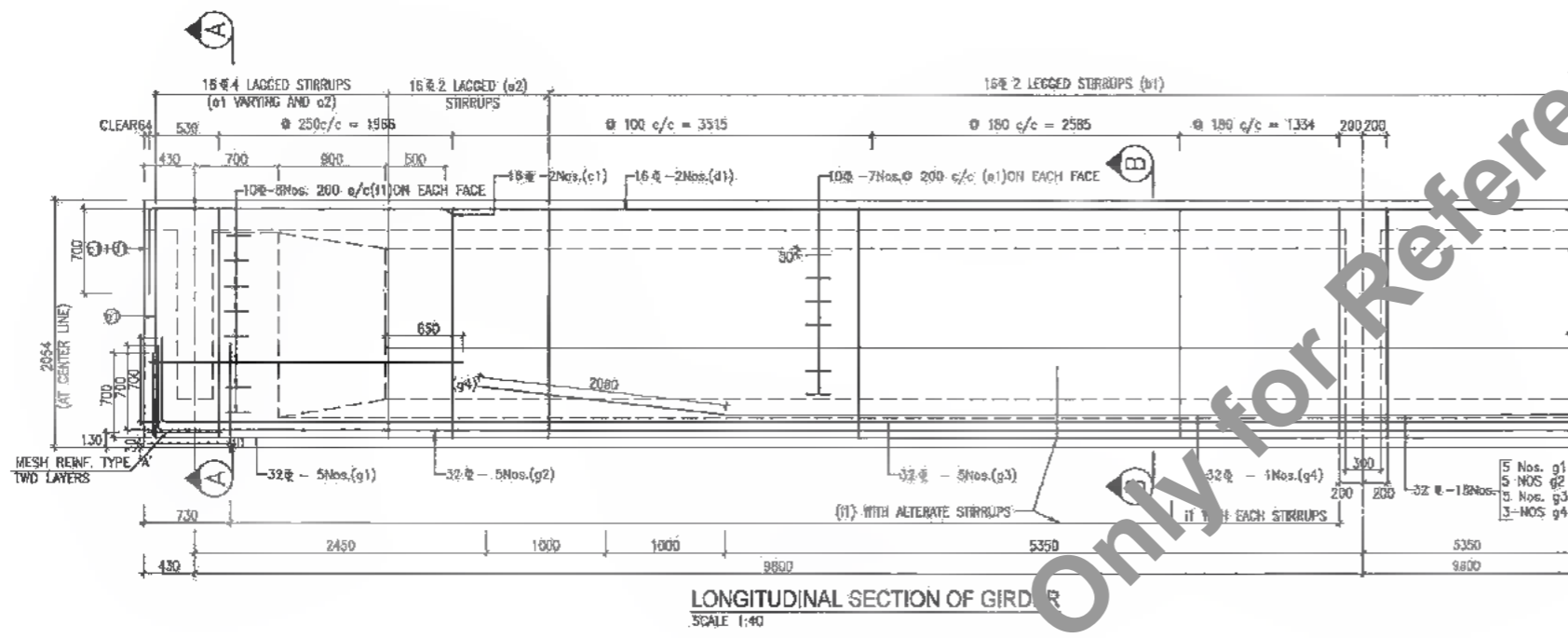
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TITLE: BAYSI - RAUTA (PACKAGE-4) GAD FOR RECONSTRUCTION OF MAJOR BRIDGE AT EX.LCH.13/197 & PROP. CH.13/178



Not to be used as a Bid Document Only for Reference

- NOTES :**
- ALL DIMENSIONS ARE IN MM. & LEVELS ARE IN MEYER.
 - 32 ϕ SPACER BARS SHALL BE PROVIDED @ 1.00m: c/c BETWEEN TWO TIERS OF LONGITUDINAL BARS OF GIRDERS.
 - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS.
 - GENERAL NOTES DRG. NO.SAI-213007/DPR/C/B/TYP/GEN
 - GENERAL ARRANGEMENT DRAWING FOR SUPERSTRUCTURE DRG. NO.SAI-213007/DPR/C/B/MAJ/13.178/SUP-01
 - REINFORCEMENT DETAILS FOR CROSS GIRDER DRG. NO.SAI-213007/DPR/C/B/MAJ/13.178/SUP-03
 - REINFORCEMENT DETAILS OF DECK SLAB DRG. NO.SAI-213007/DPR/C/B/MAJ/13.178/SUP-04
 - SCHEDULE OF REINFORCEMENT DRG. NO.SAI-213007/DPR/C/B/MAJ/13.178/SUP-05



DATE: 20/07/19 - 10:30 am
PATH: T:\CAD\TAD\2017 BHAR\REVISED DPR\C\B\PACKAGE-1\MAJOR BRIDGE\01 CH.13+178\SUPER STR.20.20.20m span\102 LONGITUDINAL GIR 20.5m.dwg

CLIENT :
Bihar State Road Development Corporation Limited (BSRDC) (A Government of Bihar Undertaking)

PROJECT :
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

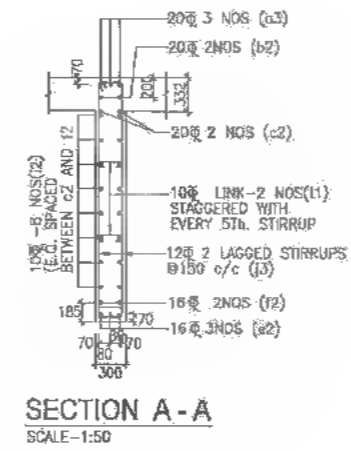
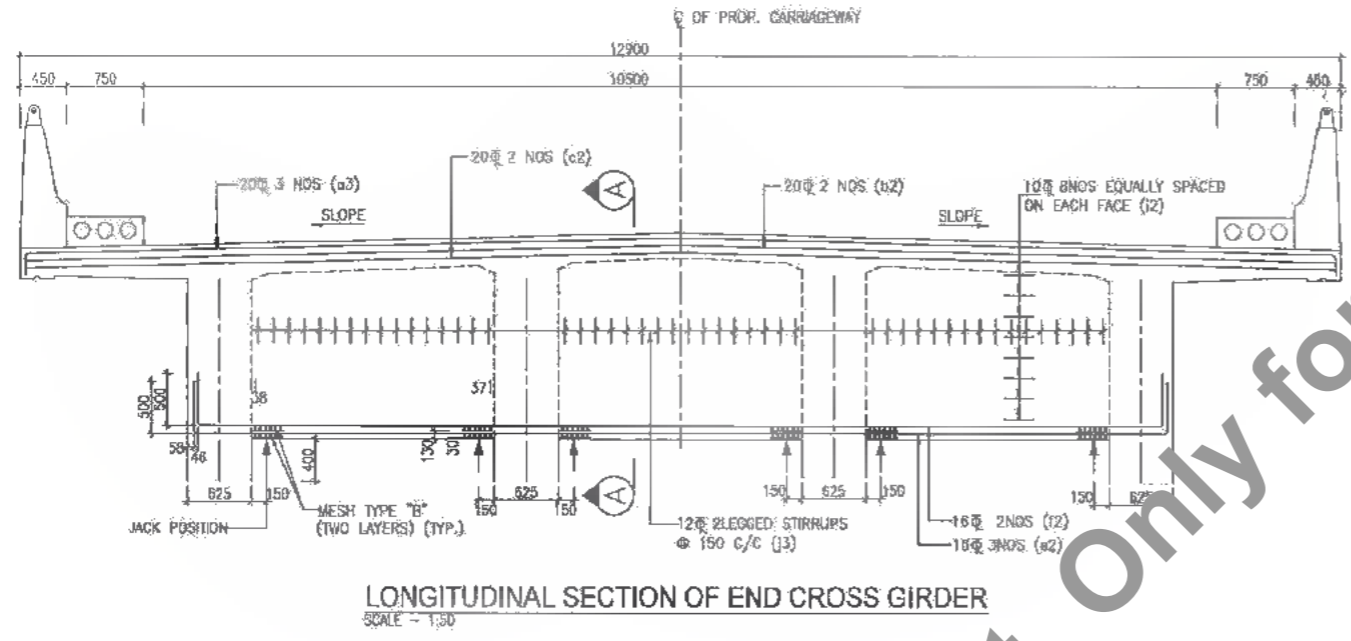
CONSULTANTS :
SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company

PC	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)	DRANK BY : G.M.C.
PD	17/12/19	GOOD FOR CONSTRUCTION (DPR)	CHECKED BY : M.K.S.
PO	10/04/14	GOOD FOR CONSTRUCTION (DPR)	APPROVED BY : B.S.
PP	26/02/14	ISSUED WITH FINAL DPR	
PA	13/11/13	ISSUED WITH DPR	

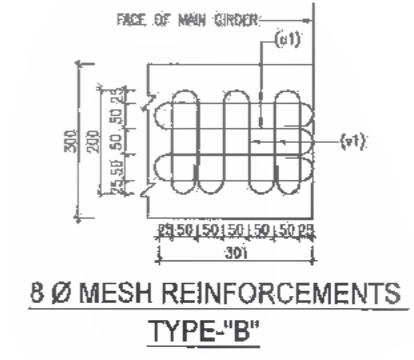
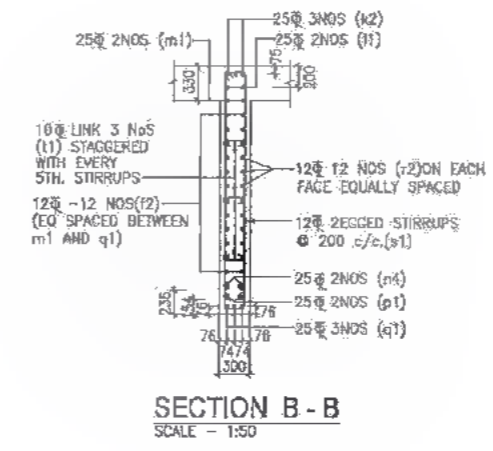
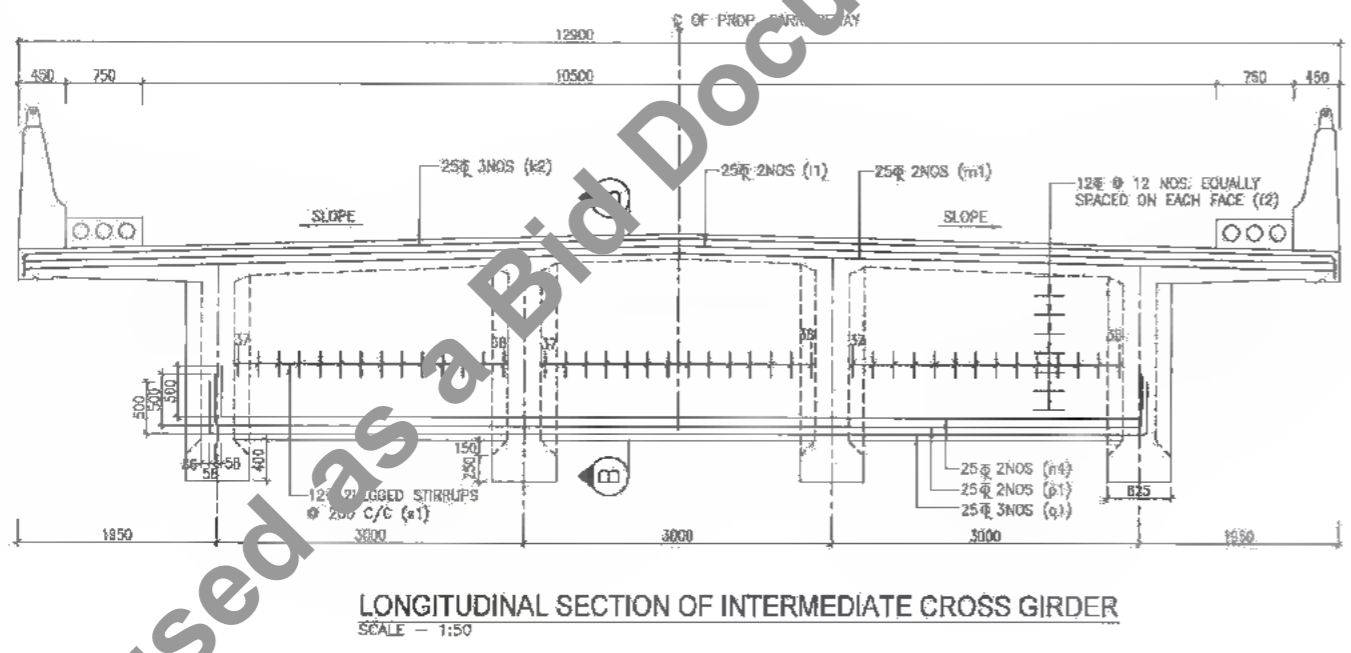
REF.	DATE	DESCRIPTION	SIGN	ISSUED BY : B.S.
SCALE : AS SHOWN				
TITLE :				BAYSI - RAUTA (PACKAGE-I)
REINFORCEMENT DETAILS OF LONGITUDINAL GIRDER FOR RCC T-BEAM SUPER STR. AT EXL.CH.13/197 & PROP. CH.13+178				
DRG. NO. :				SAI-213007/DPR/C/B/MAJ/13.178/SUP-02
REVISION : PE				



265
512




- NOTES:**
1. THE LOCATIONS OF THE JACK FOR LIFTING OF SUPERSTRUCTURE IS SHOWN IN THIS DRAWING. THIS SHALL BE DISTINCTLY ETCHED FOR EASY IDENTIFICATION ON THE END CROSS GIRDER AND PIERCAP / ABUTMENT CAPS.
 2. DURING THE LIFTING OPERATION ALL THE SIX JACKS PLACED UNDER THE END CROSS GIRDER IN THE LINE WITH THE BEARINGS SHALL BE OPERATED SIMULTANEOUSLY USING SINGLE OPERATION CONSOLE GROUPING. THE PUMP AND CONTROL SYSTEM SO AS TO ENSURE THAT THE REACTIONS ON ALL SIX JACKS ARE EQUAL AT ALL TIMES.
 3. CAPACITY OF EACH JACK SHALL NOT BE LESS THAN 50 TON.
 4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS.
 - a. GENERAL NOTES DRG. NO.SAI-213007/DPR/C/B/TYP/GEN
 - b. GENERAL ARRANGEMENT DRAWING FOR SUPERSTRUCTURE DRG. NO.SAI-213007/DPR/C/B/MAJ/13.17B/SUP-01
 - c. REINFORCEMENT DETAILS FOR LONGITUDINAL GIRDER DRG. NO.SAI-213007/DPR/C/B/MAJ/13.17B/SUP-02
 - d. REINFORCEMENT DETAILS OF DECK SLAB DRG. NO.SAI-213007/DPR/C/B/MAJ/13.17B/SUP-04
 - e. SCHEDULE OF REINFORCEMENT DRG. NO.SAI-213007/DPR/C/B/MAJ/13.17B/SUP-05



DATE: 20/07/29 - 12:38pm. PATH: F:\CAD\13-17B\SUP-STR-20.5m.apac\103 CROSS GIRDER 20.5m.dwg

Not to be used as a Bid Document, Only for Reference

CLIENT:
 Bihar State Road Development Corporation Limited (BSRD) (A Government of Bihar Undertaking)

PROJECT:
 Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
 Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:
 SAI Consulting Engineers Pvt. Ltd.
 An ISO 9001 Certified Company
 Block-A 'SAI House', Saiyan Corporate Square, 8th Rd, Path
 Link, Bodokpur, Alameda Road-800039, Patna, Bihar
 Phone: +91-91-46165961790, Fax: +91-91-4616599
 Email: mail@saiconsulting.com

PE	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)		
PR	17/12/18	GOOD FOR CONSTRUCTION (DPR)		
FC	10/04/14	GOOD FOR CONSTRUCTION (DPR)		
PA	26/02/14	ISSUED WITH FINAL DPR		
PA	13/11/13	ISSUED WITH DPR		
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SCALE: AS SHOWN				

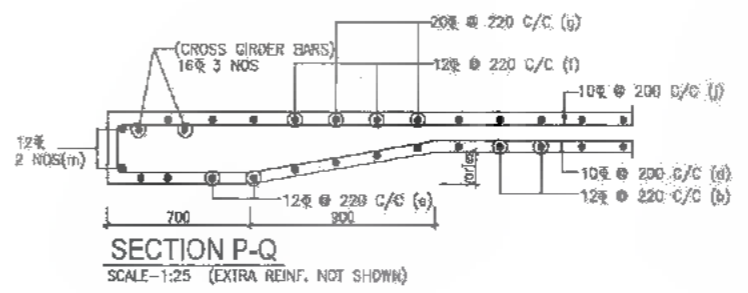
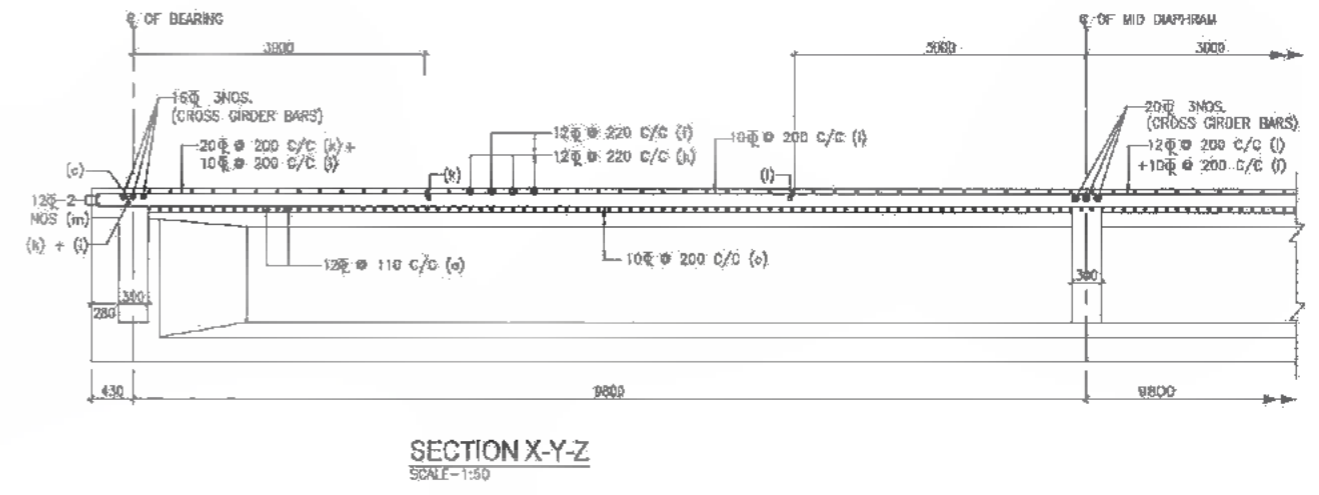
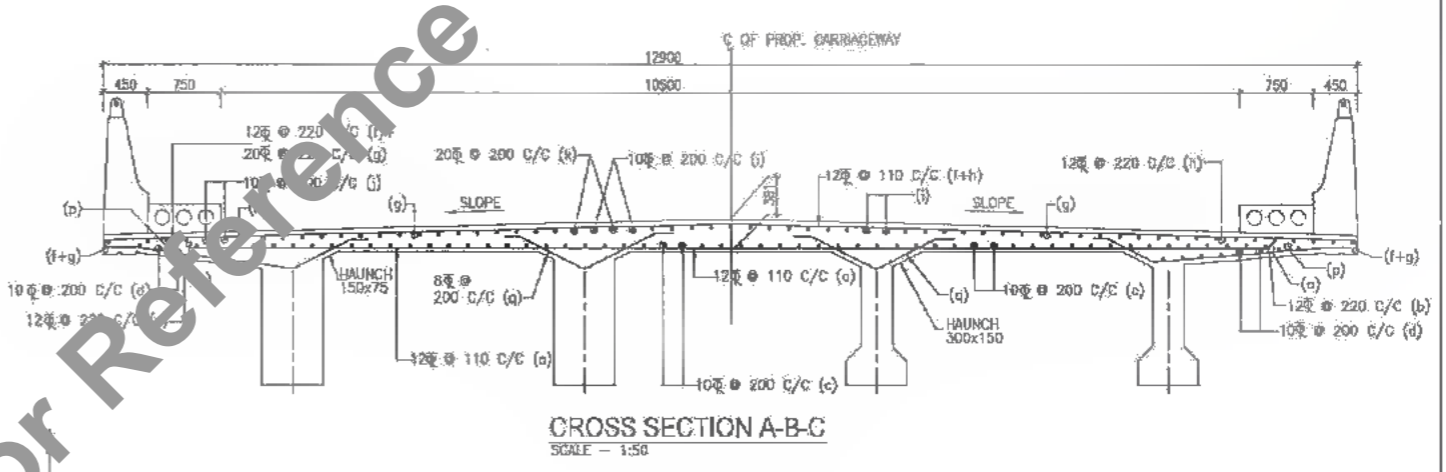
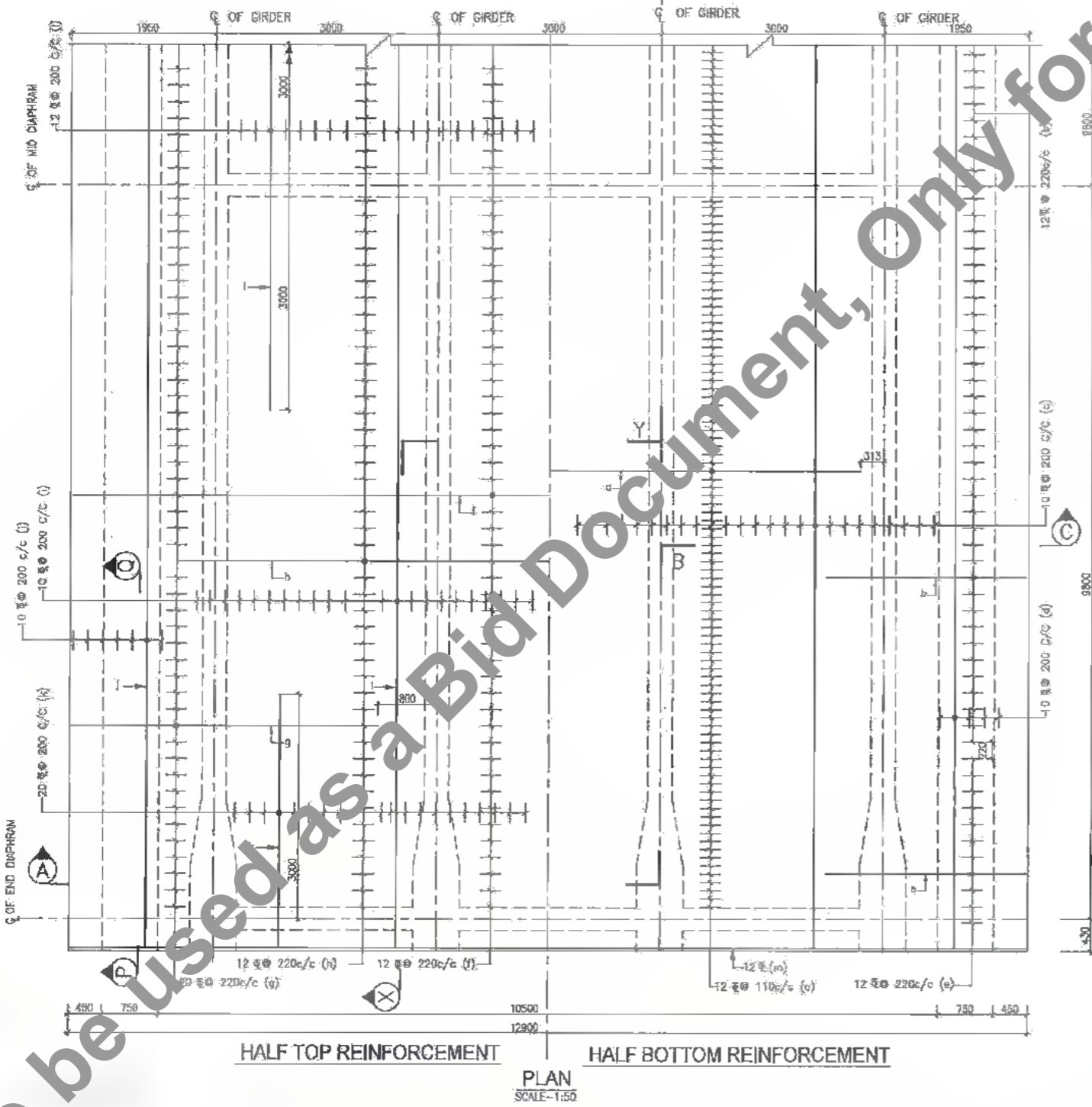
TITLE: BAYSI - RAJITA (PACKAGE-3)
 REINFORCEMENT DETAIL OF CROSS GIRDER FOR RCC T-BEAM SUPER STRU. AT EX.CH.13/197 & PROP. CH. 13+178

DRG. NO.: SAI-213007/DPR/C/B/MAJ/13.17B/SUP-03

REVISION: PE



DATE: 2019/07/24 - 12:43pm
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- NOTES :**
1. ALL DIMENSIONS ARE IN MM. & LEVELS ARE IN METER.
 2. THE REINFORCEMENT FOR CRASH BARRIER SHOULD BE PROPERLY ANCHORED IN THE DECK SLAB BEFORE CASTING THE SLAB.
 3. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS.
 - a. GENERAL NOTES DRG. NO.SAI-213007/DPR/C/B/TYP/GEN
 - b. GENERAL ARRANGEMENT DRAWING FOR SUPERSTRUCTURE DRG. NO.SAI-213007/DPR/C/B/MAJ/13.178/SUP-01
 - c. REINFORCEMENT DETAILS FOR LONGITUDINAL GIRDER DRG. NO.SAI-213007/DPR/C/B/MAJ/13.178/SUP-02
 - d. REINFORCEMENT DETAILS FOR CROSS GIRDER DRG. NO.SAI-213007/DPR/C/B/MAJ/13.178/SUP-03
 - e. SCHEDULE OF REINFORCEMENT DRG. NO.SAI-213007/DPR/C/B/MAJ/13.178/SUP-05



CLIENT :



Bihar State Road Development Corporation Limited (BSRDC)
(A Government of Bihar Undertaking)

PROJECT :

Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS :



SAL Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company
Block-A "SBI House", Sahjanu Corporate Square, 8th Sejpath, Durgam Cheruvu, Hyderabad-500059, India
Phone : +91-72-6615397/105/Fax : +91-72-66142808
Email : info@salindia.com

REV.	DATE	DESCRIPTION	SIGN
PE	31/07/18	GOOD FOR CONSTRUCTION (REVISED DPR)	
PD	17/12/18	GOOD FOR CONSTRUCTION (DPR)	
PO	10/04/14	GOOD FOR CONSTRUCTION (DPR)	
PR	26/02/14	ISSUED WITH FINAL DPR	
PA	15/11/13	ISSUED WITH DPR	

DESIGN BY : C.M.C. (S)

CHECKED BY : M.K.S. (S)

APPROVED BY : S.R.V. (S)

ISSUED BY : S.S. (S)

TITLE : **BAYSI - RAUTA (PACKAGE-4) REINFORCEMENT DETAILS OF DECK SLAB FOR RCC T-BEAM SUPER STRU. AT EXL.CH.13/187 & PROP. CH. 13+178**

DRG. NO. : **SAI-213007/DPR/C/B/MAJ/13.178/SUP-04**

REVISION : PE