

BIHAR STATE HIGHWAYS PROJECT
BID DOCUMENT
FOR
CIVIL WORKS

Improvement/Upgradation, Widening and Strengthening of Ch: 21.88 Km. to Govindpur of Manjhway - Govindpur Road (SH-103) under Civil work Contract Package No. BSHP-III (Phase-2)/Pkg-7/SH-103

Invitation No. – BSHP-III(Phase-2) Pkg-7/SH-103/ 2021-22, Patna, Dated 17.02.2022



BIHAR STATE ROAD DEVELOPMENT CORPORATION LTD.

(A Government of Bihar Undertaking)

RCD Central Mechanical Workshop Campus, (Near Patna Airport)

Sheikhpura, Patna-800 014, Bihar, India

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ASIAN DEVELOPMENT BANK

IFB No.- BSHP-III (Phase-2)/Pkg-7/SH-103/2021-22

Patna, Dated-17.02.2022



Bihar State Road Development Corporation Ltd.

(A Government of Bihar Undertaking)

Improvement/Upgradation, Widening and Strengthening of Ch: 21.88 Km. to Govindpur of Manjhay - Govindpur Road (SH-103) under Civil work Contract Package No. BSHP-III (Phase-2)/Pkg-7/SH-103

Volume – IV : DRAWINGS

BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED

RCD Mech. Workshop Campus, Sheikhpura,

Patna - 800 014, BIHAR

February, 2022

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Patna - 800 014, BIHAR

February, 2022

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Bihar State Road Development Corporation Ltd.

Consultancy Services for Preparation of Detailed Project Report (DPR) For SH -103 (Manjhway-Govindpur)



DETAILED PROJECT REPORT
Volume-IV: Drawings (Package-II)
DEC- 2021

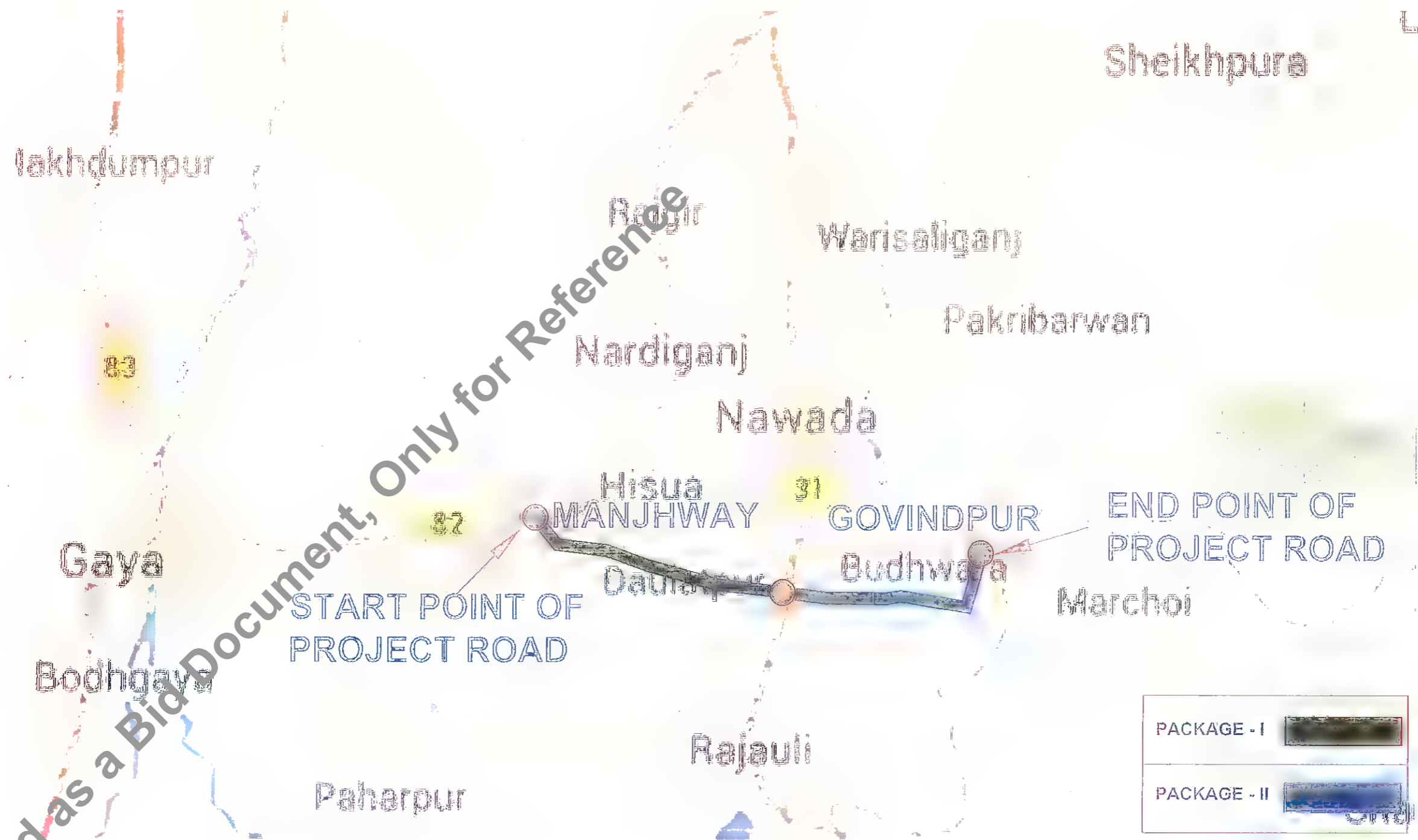


Holtec Consulting Private Limited,
Holtec Centre, A Block, Sushant Lok, Gurgaon, Haryana, India – 122001,
Tel.: 0124 2385095, 2385096, Fax: 0124, 3851114, www.holtecnet.com.

[Signature]
MANAGER (TECH)
Bihar State Road Devp. Corp. Ltd.
PIU, Nawada


[Signature]
DGM (Tech)
Bihar State Road Devp. Corp. Ltd.
PIU, Nawada

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Rev.	Date	Description	Drawn	Checked	Approved

Client:  Bihar State Road Development Corporation Ltd.

Project Title : CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT (DPR) FOR SH-103 (MANJHWAY- GOVINDPUR)

Consultant:  HOLTEC CONSULTING PRIVATE LIMITED

Designed	Checked	Tit	Approved
PS			JIG
Drawn	Scale	NTS	Date
SRD			FEB. 2017

Title : INDEX MAP

Drawing No.	Rev.	Sheet
HOL/BSRDC/DPR/13510/IM		01
Geo Ref. No.		
	A3	

MANGIWE

GOVINDPUR

3

RAJGIR
NH-82

NAWADA

SAKRI RIVER

GOVINDPUR
KM 42.069

TO BARTALLA

GAYA
37 KM

KM 32 of NH82

NH-82

HISWA

MANJHWAY
Km 0+000

DHANARJI
RIVER

KM 21.800

BOBEKI
RIVER

DHUSRI
RIVER

RAJAU LI

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Rev.	Date	Description	Drawn	Checked	Approved

Client: Bihar State Road Development Corporation, Nawada

DGM (Tech)

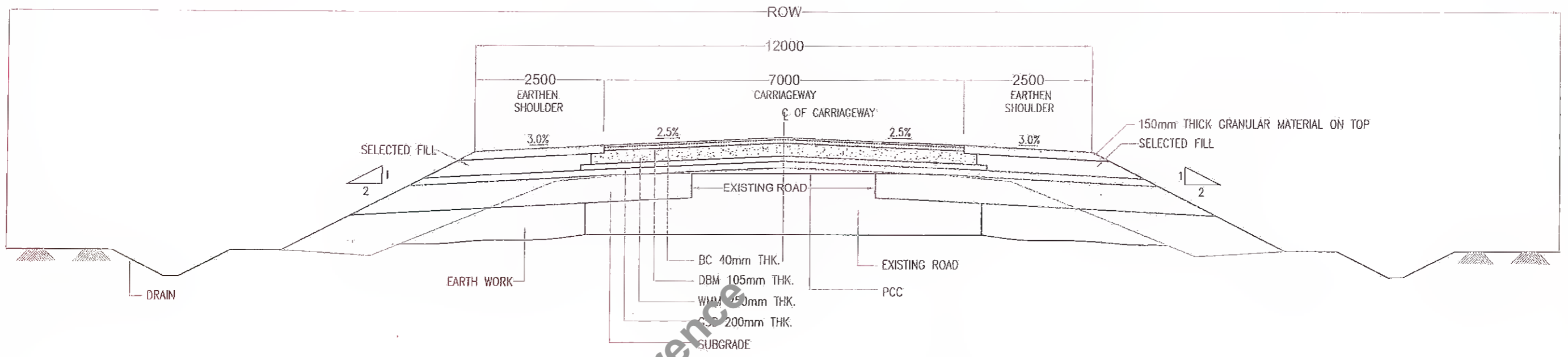
Project Title : CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT (DPR) FOR SH-103 (MANJHWAY- GOVINDPUR)

Consultant: HOLTEG CONSULTING PRIVATE LIMITED

Designed	AS	Checked	TA	Approved	JIG
Drawn	SRD	Scale	HTS	Date	FEB. - 2017

Title : KEY MAP

Drawing No.	HOU/BSRDCL/DPR/13510/KIA	Rev.	0	Sheet	01
Scale					



**TCS - I : TYPICAL CROSS SECTION FOR
2 LANE WITH EARTHEN SHOULDER FOR RECONSTRUCTION/WIDENING**

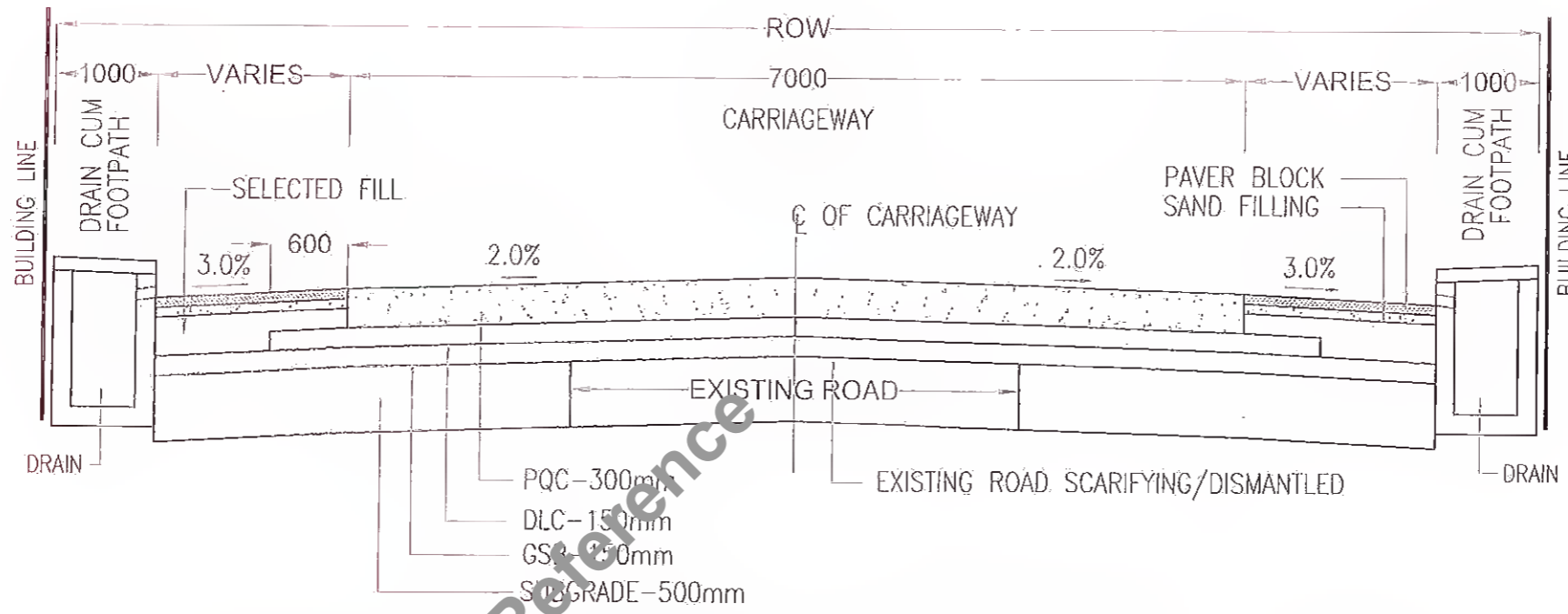
S. No.	From	To	Length (m)	TCS	Remarks
1	22+200	24+100	1+900	1	Widening
2	25+500	27+500	2+000	1	Widening
3	27+950	29+900	1+950	1	Widening
4	30+500	31+150	0+650	1	Widening
5	31+650	32+000	0+350	1	Widening
6	32+250	33+200	0+950	1	Widening
7	34+000	34+950	0+950	1	Widening
8	35+300	37+900	2+600	1	Widening
9	38+100	38+900	0+800	1	Widening
10	40+400	42+069	1+669	1	Widening

Notes :

- 1. ALL THE DIMENSIONS ARE IN MILLIMETER, UNLESS OTHERWISE MENTIONED.

Revision <table border="1"> <tr> <th>Rev.</th> <th>Date</th> <th>Description</th> <th>Drawn</th> <th>Checked</th> <th>Approved</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>					Rev.	Date	Description	Drawn	Checked	Approved							Client: <i>W</i> Bihar State Road Development Corporation, Patna		Project Title : CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT (DPR) FOR SH-103 (MANGHWE- GOVINDPUR)			Consultant: <i>W</i> ANSHUL CONSULTING PRIVATE LIMITED		Title : TYPICAL CROSS SECTION - I PACKAGE - II		
Rev.	Date	Description	Drawn	Checked	Approved																					
Drawing No. : HOL/BSRDCL/DPR/13510/TCS						Date : FEB-2017		Rev. : 04		Sheet : 04																

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**TCS - II : TYPICAL CROSS SECTION IN BUILT - UP AREA
(RIGID PAVEMENT)**

S. No.	From	To	Length (m)	TCS	Remarks
1	21+880	22+200	0+320	2	CC
2	24+100	25+500	1+400	2	CC
3	27+500	27+950	0+450	2	CC
4	29+900	30+500	0+600	2	CC
5	31+150	31+650	0+500	2	CC
6	32+000	32+250	0+250	2	CC
7	33+200	34+000	0+800	2	CC
8	34+950	35+300	0+350	2	CC
9	37+900	38+100	0+200	2	CC
10	38+900	40+400	1+500	2	CC

Notes :

- ALL THE DIMENSIONS ARE IN MILLIMETER, UNLESS OTHERWISE MENTIONED.

Rev.	Date	Description	Drawn	Checked	Approved

Client: **MANAGER (Urban Road Devp.)**
Bihar State Road Development Corporation Ltd.

Project Title : **CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT (DPR) FOR SH-103 (MANGHWE- GOVINDPUR)**

Consultant: **HOLTEC CONSULTING PRIVATE LIMITED**

Designed: **RS** Checked: **YH** Approved: **JIG.**
 Drawn: **SAD** Scale: **1:15** Date: **FEB. - 2017**

Title : **TYPICAL CROSS SECTION - II PACKAGE - II**

Drawing No. **HOL/BSRDCL/DPR/13510/TCS** Part: **05** Sheet: **05**

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LIST OF GPS COORDINATES

S.No	Code	Easting	Northing	ELEVATION
1	P81A	351171.126	2738292.14	N/A
2	P81	351147.8435	2738302.142	116.020
3	P82	351591.3688	2738245.959	115.999
4	P83	351861.2997	2738290.288	115.925
5	P84	352179.0553	2738328.948	115.438
6	P85	352488.058	2738385.424	N/A
7	P86	352740.6156	2738411.545	115.778
8	P87	353016.0041	2738372.854	114.988
9	P88	353353.5144	2738284.924	115.447
10	P88A	353583.117	2738226.356	N/A
11	P89	353608.7275	2738222.117	113.379
12	P90	353802.6356	2738174.926	113.452
13	P91	353998.8303	2738120.441	114.664
14	P91A	354268.4108	2738056.168	N/A
15	P92	354332.2334	2738043.046	114.692
16	P92A	354718.2566	2737990.036	N/A
17	GPS5	354944.4953	2737941.843	115.370
18	GPS6A	355156.3957	2737933.237	114.586
19	P94	355268.0173	2737982.292	114.994
20	P95	356176.444	2737925.599	114.800
21	P95A	355818.9346	2737959.375	N/A
22	GPS95	355577.6294	2737963.232	N/A
23	P97	356092.5113	2737947.896	114.607
24	P98	356392.6891	2737933.638	114.952
25	P98A	356586.4314	2737919.191	N/A
26	P98B	356721.2791	2737893.446	N/A
27	P99	356773.3263	2737885.677	114.406
28	P99A	357004.4106	2737851.021	N/A
29	P100	357114.5745	2737841.917	113.531
30	P101	357341.9084	2737822.71	113.057
31	P103	358047.3751	2737873.356	112.112
32	P104	358047.3608	2737873.352	112.364
33	P105	358747.6826	2737914.866	112.712
34	P106A	359152.7488	2737958.879	N/A

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MANAGER (TECH) *my* DGM (Tech)
 Bihar State Road Devp. Corp. Ltd. Bihar State Road Devp. Corp. Ltd.
 PIU, Nawada

LIST OF GPS COORDINATES

S.No	Code	Easting	Northing	ELEVATION
35	P106	358947.5123	2737925.521	112.891
36	P108	359455.7784	2737988.612	113.120
37	P109	359855.5172	2737970.019	114.783
38	P109D	360472.7496	2737925.759	N/A
39	P111	360382.9479	2737895.662	117.369
40	P112	360557.785	2737960.326	116.461
41	P113	360800.3318	2737943.698	117.262
42	P114	361087.1874	2737913.193	118.268
43	P115	361337.9628	2737898.457	119.177
44	GPS7	360601.7822	2738016.218	115.678
45	GPS7A	360784.7807	2738017.599	116.167
46	P116	361621.6742	2737858.812	119.795
47	P117	361917.4371	2737821.909	120.008
48	P118	362186.4956	2737703.713	121.059
49	P118A	362318.0302	2737624.647	N/A
50	P120	362516.0345	2737585.66	122.296
51	P121	362713.9485	2737592.764	122.700
52	P122	362863.743	2737563.844	121.664
53	P123	363004.1932	2737546.154	121.651
54	P124	363302.1327	2737518.698	123.118
55	P124A	363718.0276	2737437.901	N/A
56	P125	363633.1525	2737452.409	123.683
57	P126	364043.862	2737367.874	125.829
58	P127	364168.7464	2737350.536	125.953
59	P128	364443.6671	2737293.43	127.007
60	P129	364684.3877	2737215.227	128.779
61	P130	364971.8404	2737121.754	131.272
62	GPS8	365078.3188	2737062.958	131.361
63	GPS8A	365252.2854	2737132.36	131.119
64	P131	365385.6307	2737110.169	133.868
65	P132	365535.4439	2737064.051	134.736
66	P132A	365780.2942	2737033.652	N/A
67	P133	365762.8184	2737034.854	134.191
68	P134	365902.5058	2737083.989	132.667

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LIST OF GPS COORDINATES				
S.No	Code	Easting	Northing	ELEVATION
69	P135	366111.1266	2737487.987	131.151
70	P137	366190.7852	2737709.989	128.219
71	P138	366217.744	2737906.808	127.458
72	P138A	366240.4202	2738046.002	N/A
73	P139	366242.9038	2738114.931	126.278
74	P140	366247.4961	2738302.303	125.727
75	P141	366297.5511	2738601.923	124.688
76	P142	366351.6086	2738834.023	123.488
77	P143	366410.4168	2739153.496	121.937
78	P144	366463.4411	2739464.017	120.375
79	P145	366512.3787	2739518.676	119.715
80	P146	366631.0967	2739560.236	119.337
81	P147	366926.9668	2739622.27	118.079
82	P148	366951.543	2739740.548	117.847
83	P148A	367002.1747	2739957.798	N/A
84	P149	367017.6248	2740010.945	117.100
85	P150	367109.5225	2740313.92	116.981
86	P151	367192.5243	2740566.599	117.116
87	GPS9	367231.6702	2740595.152	117.182
88	GPS9A	367270.5264	2740729.338	117.640
89	P52	367289.1533	2740911.658	117.624
90	P153	367352.2249	2741127.171	118.071
91	P154	367411.6056	2741302.617	117.762


MANAGER (TECH)
Bihar State Road Devp. Corp. Ltd.
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DGM (Tech)
Bihar State Road Devp. Corp. Ltd.
PIU, Nawada

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Horizontal Curve Report for Manghwe Govindpur (SH 103) Road PACKAGE-II

Curve No.	Chainage	Easting	Northing	Radius	Hand of Curve	Transition Length	Transition Start Chainage	Curve Start Chainage	Curve End Chainage	Transition End Chainage	INCLUDED ANGLE			Design Speed (KMPH)	Superelevation (%)
											Degree	Min.	sec.		
86	21+916.628	350879.914	2738334.348	2000	Right	0		21+887.080	21+946.171	0	1	41	34.288	100	N.C.
87	22+343.007	351302.398	2738276.81	2000	Left	0		22+297.592	22+388.406	0	2	36	5.859	100	N.C.
88	22+675.693	351633.755	2738246.923	230	Left	0		22+644.267	22+706.733	0	15	33	40.109	80	7.0%
89	22+811.558	351767.765	2738271.537	2000	Right	0		22+776.965	22+846.144	0	1	58	54.555	100	N.C.
90	23+124.745	352077.578	2738317.427	2000	Left	0		23+116.373	23+133.117	0	0	28	46.827	100	N.C.
91	23+457.360	352406.184	2738368.916	2000	Left	0		23+442.473	23+472.247	0	0	51	10.734	100	N.C.
92	23+743.200	352687.888	2738417.363	360	Right	0		23+690.207	23+795.436	0	16	44	51	100	7.0%
93	23+892.501	352836.831	2738399.103	2000	Left	0		23+868.728	23+916.273	0	1	21	43.378	100	N.C.
94	23+995.392	352939.228	2738389.014	600	Right	0		23+948.510	24+042.085	0	8	56	8.766	100	7.0%
95	24+160.466	353099.182	2738347.459	2000	Left	0		24+150.259	24+170.673	0	0	35	5.323	100	N.C.
96	24+391.541	353323.414	2738291.641	2000	Right	0		24+391.381	24+391.701	0	0	0	32.91	100	N.C.
97	24+664.973	353588.739	2738225.55	2000	Left	0		24+658.085	24+671.862	0	0	23	40.925	100	N.C.
98	24+835.247	353754.243	2738185.532	2000	Right	0		24+824.706	24+845.787	0	0	36	14.13	100	N.C.
99	25+061.306	353973.398	2738130.091	2000	Right	0		25+030.268	25+092.338	0	1	46	41.479	100	N.C.
100	25+239.416	354144.636	2738081.071	500	Left	0		25+209.504	25+269.257	0	6	50	50.027	100	7.0%
101	25+313.992	354218.338	2738069.229	1200	Right	0		25+283.046	25+344.925	0	2	57	16.289	100	3.7%
102	25+653.411	354550.251	2737998.181	3000	Left	0		25+385.674	25+919.732	0	10	11	59.143	100	N.C.
103	26+161.996	355059.976	2737981.428	2000	Left	0		26+141.821	26+182.170	0	1	9	21.215	100	N.C.
104	26+500.052	355398.006	2737977.142	2000	Right	0		26+447.333	26+552.747	0	3	1	11.544	100	N.C.
105	26+597.863	355495.632	2737970.749	2000	Left	0		26+578.407	26+617.318	0	1	6	52.987	100	N.C.
106	26+789.338	355686.906	2737961.957	2000	Left	0		26+774.803	26+803.871	0	0	49	57.877	100	N.C.
107	27+074.241	355971.67	2737953.014	2000	Right	0		27+053.542	27+094.939	0	1	11	9.449	100	N.C.
108	27+641.950	356538.61	2737923.451	500	Right	0		27+614.801	27+669.046	0	6	12	57.57	100	7.0%
109	27+758.991	356654.197	2737904.706	2000	Left	0		27+741.654	27+776.327	0	0	59	35.947	100	N.C.
110	28+000.012	356892.751	2737870.32	2000	Right	0		27+980.450	28+019.573	0	1	7	14.808	100	N.C.
111	28+084.477	356976.1	2737856.629	2000	Left	0		28+058.580	28+110.370	0	1	29	1.199	100	N.C.
112	28+345.333	357234.517	2737821.025	1500	Left	0		28+208.554	28+481.357	0	10	25	13.015	100	3.0%
113	28+838.637	357728.077	2737843.226	2000	Left	0		28+784.995	28+892.253	0	3	4	21.816	100	N.C.
114	29+034.408	357922.953	2737862.497	3000	Left	0		28+998.463	29+070.348	0	1	22	22.473	100	N.C.
115	29+187.830	358075.98	2737881.252	2000	Left	0		29+177.956	29+197.704	0	0	33	57	100	N.C.
116	29+330.680	358216.798	2737900.112	2000	Right	0		29+308.922	29+352.436	0	1	14	47.687	100	N.C.
117	29+548.317	358333.259	2737922.492	700	Right	70	29+468.393	29+538.393	29+558.240	29+628.240	1	37	28.176	100	6.3%
118	29+975.326	358860.197	2737918.775	700	Left	70	29+885.145	29+955.145	29+995.495	30+065.495	3	18	9.481	100	6.3%
119	30+150.430	359033.862	2737941.043	2000	Right	0		30+130.978	30+169.882	0	1	6	52.276	100	N.C.
120	30+240.201	359123.479	2737951.894	2000	Left	0		30+197.755	30+283.633	0	2	27	36.767	100	N.C.
121	30+355.454	359197.249	2737964.06	2000	Right	0		30+291.966	30+338.939	0	1	20	44.491	100	N.C.
122	30+490.048	359370.449	2737985.782	650	Right	75	30+394.097	30+469.097	30+510.985	30+585.985	3	41	32.433	100	6.8%
123	31+040.201	359920.022	2737963.136	750	Right	70	30+921.342	30+991.342	31+088.922	31+158.922	7	27	16.684	100	5.9%
124	31+305.366	360176.991	2737897.351	600	Left	0		31+237.232	31+372.919	0	12	57	25.968	100	7.0%
125	31+482.807	360354.891	2737890.734	360	Left	0		31+414.858	31+549.176	0	21	22	38.801	100	7.0%
126	31+679.509	360542.09	2737956.098	155	Right	0		31+657.185	31+701.529	0	16	23	30.784	65	7.0%
127	31+849.346	360712.02	2737964.575	360	Right	0		31+807.145	31+891.163	0	13	22	18.398	100	7.0%
128	31+975.296	360836.232	2737941.517	1850	Left	0		31+923.954	32+026.612	0	3	10	45.833	100	N.C.
129	32+094.606	360954.591	2737926.278	1850	Left	0		32+041.786	32+147.398	0	3	16	15.147	100	N.C.
130	32+297.883	361157.385	2737911.863	2000	Right	0		32+273.911	32+321.853	0	1	22	24.381	100	N.C.
131	32+572.308	361430.576	2737885.85	2000	Right	0		32+541.038	32+603.572	0	1	47	29.267	100	N.C.

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Curve No.	Chainage	Easting	Northing	Radius	Hand of Curve	Transition Length	Transition Start Chainage	Curve Start Chainage	Curve End Chainage	Transition End Chainage	INCLUDED ANGLE			Design Speed (KMPH)	Superelevation (%)
											Degree	Min.	sec.		
132	33+084.578	361938.778	2737821.372	800	Right	0		32+952.242	33+214.540	0	18	47	8.62	100	5.6%
133	33+347.424	362177.123	2737705.038	600	Right	0		33+321.658	33+373.159	0	4	55	4.7	100	7.0%
134	33+472.755	362284.654	2737640.595	400	Left	0		33+419.401	33+525.482	0	15	11	41.971	100	7.0%
135	33+689.178	362493.565	2737581.717	600	Left	0		33+587.139	33+789.283	0	19	18	11.692	100	7.0%
136	33+892.214	362698.138	2737594.458	360	Right	0		33+848.500	33+935.501	0	13	50	47.875	100	7.0%
137	34+046.140	362850.011	2737566.905	2000	Left	0		33+987.048	34+105.198	0	3	23	5.154	100	N.C.
138	34+292.649	363094.77	2737537.294	2000	Left	0		34+271.544	34+313.752	0	1	12	33	100	N.C.
139	34+571.627	363372.376	2737509.64	1500	Right	0		34+488.151	34+654.931	0	6	22	13.994	100	3.0%
140	35+188.853	363976.149	2737380.649	2000	Left	0		35+140.424	35+237.264	0	2	46	27.342	100	N.C.
141	35+602.146	364383.786	2737312.454	1200	Right	40	35+483.669	35+523.669	35+680.400	35+720.400	7	29	0.101	100	3.7%
142	35+880.981	364648.626	2737224.537	360	Left	0		35+848.216	35+913.566	0	10	24	2.69	100	7.0%
143	35+997.881	364764.486	2737207.681	155	Right	0		35+969.532	36+025.611	0	20	43	46.607	65	7.0%
144	36+115.450	364867.849	2737150.369	360	Left	0		36+065.803	36+164.474	0	15	42	14.479	100	7.0%
145	36+295.244	365043.424	2737108.855	155	Left	0		36+227.979	36+354.906	0	46	55	6.616	65	7.0%
146	36+459.715	365186.722	2737204.117	60	Right	0		36+426.585	36+487.125	0	57	48	41.252	40	7.0%
147	36+764.488	365469.937	2737076.858	360	Left	0		36+714.570	36+813.773	0	15	47	19.652	100	7.0%
148	37+166.071	365867.83	2737018.05	140	Left	0		37+066.631	37+239.558	0	70	46	15.865	50	7.0%
149	37+613.636	366087.475	2737437.544	2000	Left	0		37+496.517	37+730.489	0	6	42	10.088	100	N.C.
150	37+904.473	366191.482	2737709.434	230	Left	0		37+875.224	37+933.410	0	14	29	41.251	80	7.0%
151	38+000.720	366202.311	2737805.384	600	Right	0		37+981.964	38+019.464	0	3	34	51.418	100	7.0%
152	38+183.147	366232.528	2737985.286	800	Left	60	38+101.965	38+161.965	38+204.318	38+264.318	3	1	59.881	100	5.6%
153	38+491.545	366249.765	2738293.184	800	Right	60	38+418.806	38+478.806	38+504.283	38+564.283	1	49	28.679	100	5.6%
154	38+721.681	366283.8	2738520.777	2000	Right	0		38+664.237	38+779.093	0	3	17	25.344	100	N.C.
155	38+994.629	366341.028	2738787.69	2000	Left	0		38+969.472	39+019.783	0	1	26	28.752	100	N.C.
156	39+470.078	366428.978	2739254.936	2000	Left	0		39+433.881	39+506.267	0	2	4	25.347	100	N.C.
157	39+747.046	366470.331	2739528.805	155	Right	0		39+638.137	39+828.011	0	70	11	12.903	65	7.0%
158	40+192.771	366934.937	2739621.028	60	Left	0		40+149.438	40+224.496	0	71	40	29.694	40	7.0%
159	40+345.625	366955.26	2739811.23	230	Right	0		40+326.589	40+364.575	0	9	27	46.461	80	7.0%
160	41+321.028	367233.314	2740719.252	2000	Right	0		41+320.756	41+321.300	0	0	0	56.089	100	N.C.
161	41+686.693	367337.638	2741069.719	2000	Right	0		41+675.230	41+698.156	0	0	39	24	100	N.C.
162	41+889.916	367397.847	2741263.818	2000	Left	0		41+865.379	41+914.449	0	1	24	20.695	100	N.C.

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MANAGER (TECH) *W* *Y*
 Bihar State Road Devp. Corp. Ltd. DGM (Tech)
 PIU, Nawada Bihar State Road Devp. Corp. Ltd.
 PIU, Nawada

VERTICAL ALIGNMENT REPORT PACKAGE-II

SI. NO.	CHAINAGE	LEVEL	LENGTH	TYPE	Grade	Grade	Grade	K	CHAINAGE	LEVEL	END OF CURVE	
		OF	OF	OF	IN	OUT	DIFFERENCE		ST. OF	ST. OF		
		PVI	CURVE	CURVE	(%)	(%)	(%)		CURVE	CURVE		
1	21+700	113.99	60	Sag	0.0%	0.1%	0.1%	527.834	21+670	21+730	113.989	114.025
2	22+103	114.462	60	Hog	0.1%	0.0%	-0.1%	454.447	22+073	22+133	114.427	114.457
3	22+419	114.414	60	Hog	0.0%	-0.1%	-0.1%	795.251	22+389	22+449	114.419	114.387
4	22+990	113.898	60	Hog	-0.1%	-0.1%	0.0%	1534.635	22+960	23+020	113.925	113.859
5	23+141	113.702	60	Sag	-0.1%	-0.1%	0.1%	987.109	23+111	23+171	113.741	113.682
6	23+500	113.455	60	Sag	-0.1%	0.3%	0.4%	148.046	23+470	23+530	113.476	113.556
7	23+745	114.279	60	Hog	0.3%	-0.4%	-0.7%	80.553	23+715	23+775	114.178	114.156
8	23+980	113.32	60	Sag	-0.4%	0.0%	0.4%	144.384	23+950	24+010	113.442	113.322
9	24+560	113.361	60	Sag	0.0%	0.4%	0.4%	167.444	24+530	24+590	113.359	113.471
10	24+680	113.8	60	Hog	0.4%	0.0%	-0.4%	164.162	24+650	24+710	113.69	113.8
11	24+899	113.8	60	Hog	0.0%	-0.1%	-0.1%	435.868	24+869	24+929	113.8	113.759
12	25+260	113.303	60	Sag	-0.1%	-0.1%	0.0%	5400.366	25+230	25+290	113.345	113.265
13	25+680	112.772	60	Sag	0.1%	0.1%	0.2%	324.967	25+650	25+710	112.81	112.789
14	26+100	113.016	60	Hog	0.1%	0.0%	0.0%	1410.341	26+070	26+130	112.998	113.021
15	26+440	113.069	60	Hog	0.0%	-0.1%	-0.1%	428.869	26+410	26+470	113.064	113.031
16	26+600	112.87	60	Sag	-0.1%	0.1%	0.3%	228.778	26+570	26+630	112.907	112.911
17	26+880	113.256	60	Hog	0.1%	-0.4%	-0.5%	115.393	26+850	26+910	113.215	113.142
18	27+080	112.492	60	Sag	-0.4%	0.2%	0.5%	111.582	27+050	27+110	112.607	112.539
19	27+380	112.959	60	Hog	0.2%	0.0%	-0.2%	326.169	27+350	27+410	112.912	112.951
20	27+740	112.857	60	Hog	0.0%	-0.1%	-0.1%	903.361	27+710	27+770	112.866	112.829
21	28+100	112.516	60	Hog	-0.1%	-0.6%	-0.5%	123.706	28+070	28+130	112.545	112.342
22	28+260	111.589	60	Sag	-0.6%	0.0%	0.6%	104.512	28+230	28+290	111.763	111.587
23	28+573	111.571	60	Hog	0.0%	-0.2%	-0.2%	252.684	28+543	28+603	111.573	111.498
24	29+040	110.436	60	Sag	-0.2%	0.0%	0.2%	273.366	29+010	29+070	110.509	110.429
25	29+400	110.351	60	Sag	0.0%	0.2%	0.3%	238.229	29+370	29+430	110.358	110.42
26	29+619	110.832	60	Hog	0.2%	0.1%	-0.1%	421.564	29+589	29+649	110.783	110.878
27	29+960	111.145	60	Hog	0.1%	0.0%	-0.1%	588.118	29+930	29+990	111.119	111.14
28	30+160	111.112	60	Sag	0.0%	0.9%	0.9%	65.698	30+130	30+190	111.117	111.382
29	30+283	112.221	60	Hog	0.9%	-0.5%	-1.4%	41.474	30+253	30+313	111.951	112.056
30	30+460	111.249	60	Sag	-0.5%	0.4%	1.0%	61.731	30+430	30+490	111.414	111.376
31	30+620	112.348	60	Hog	0.4%	0.1%	-0.3%	215.601	30+690	30+750	112.221	112.391
32	30+860	112.549	60	Sag	0.1%	0.5%	0.3%	181.308	30+830	30+890	112.506	112.692
33	31+433	115.271	60	Hog	0.5%	-0.3%	-0.8%	77.394	31+403	31+463	115.129	115.181
34	31+660	114.588	60	Sag	-0.3%	0.2%	0.5%	123.997	31+630	31+690	114.678	114.643
35	31+900	115.028	60	Sag	0.2%	0.5%	0.3%	206.268	31+870	31+930	114.973	115.17
36	32+400	117.401	60	Hog	0.5%	0.2%	-0.3%	211.101	32+370	32+430	117.259	117.458
37	33+380	119.267	60	Sag	0.2%	0.2%	0.0%	4930.212	33+350	33+410	119.209	119.327
38	33+673	119.86	60	Sag	0.2%	0.2%	0.0%	3064.787	33+643	33+703	119.8	119.927
39	33+941	120.456	60	Hog	0.2%	-0.3%	-0.5%	109.204	33+911	33+971	120.39	120.358
40	34+050	120.1	60	Sag	-0.3%	0.0%	0.3%	183.321	34+020	34+080	120.198	120.1
41	34+180	120.1	60	Sag	0.0%	0.3%	0.3%	214.534	34+150	34+210	120.1	120.184
42	34+260	120.322	80	Sag	0.3%	0.4%	0.1%	1119.018	34+219	34+300	120.209	120.464
43	34+480	121.097	60	Hog	0.4%	0.1%	-0.2%	253.697	34+450	34+510	120.991	121.131
44	34+867	121.544	60	Sag	0.1%	1.3%	1.1%	52.35	34+837	34+897	121.51	121.923
45	35+065	124.038	60	Hog	1.3%	0.2%	-1.1%	55.636	35+035	35+095	123.66	124.093
46	35+260	124.395	60	Hog	0.2%	-0.3%	-0.4%	134.447	35+230	35+290	124.34	124.316
47	35+380	124.079	60	Sag	-0.3%	0.2%	0.5%	121.965	35+350	35+410	124.158	124.148

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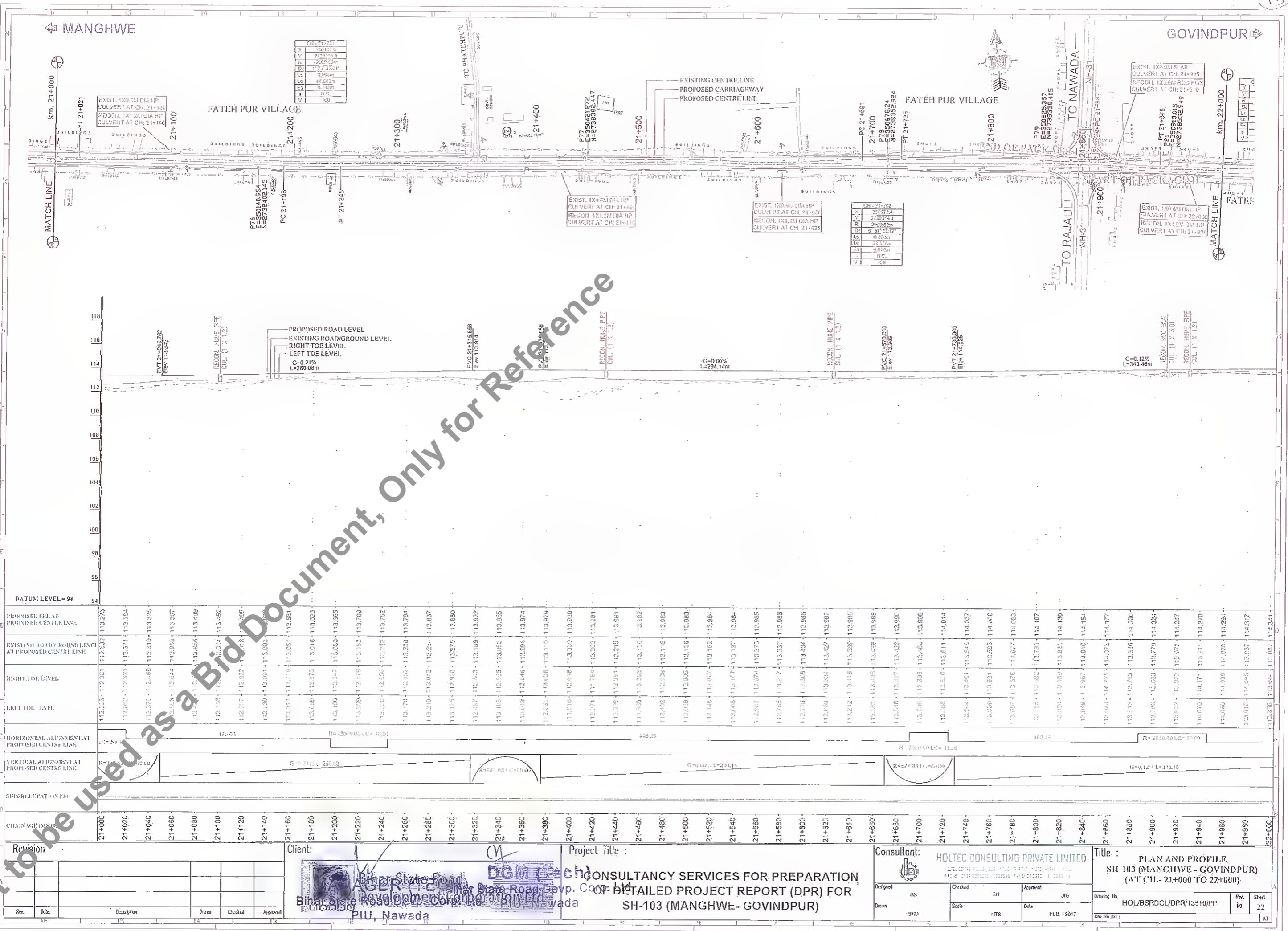
VERTICAL ALIGNMENT REPORT PACKAGE-II

SI. NO.	CHAINAGE	LEVEL	LENGTH	TYPE	Grade	Grade	Grade	K	CHAINAGE		LEVEL		
		OF	OF	OF	IN	OUT	DIFFERENCE		VALUE	ST. OF	END OF	ST. OF	END OF
		PVI	CURVE	CURVE	(%)	(%)	(%)			CURVE	CURVE	CURVE	CURVE
48	35+600	124.582	60	Sag	0.2%	0.7%	0.4%	134.485	35+570	35+630	124.514	124.785	
49	35+920	126.742	60	Sag	0.7%	1.3%	0.6%	100.947	35+890	35+950	126.539	127.123	
50	36+100	129.026	60	Hog	1.3%	0.4%	-0.8%	71.068	36+070	36+130	128.646	129.154	
51	36+591	131.113	60	Sag	0.4%	0.8%	0.4%	142.248	36+561	36+621	130.985	131.367	
52	36+781	132.72	60	Hog	0.8%	0.0%	-0.8%	71.295	36+751	36+811	132.466	132.721	
53	37+000	132.731	60	Hog	0.0%	-0.9%	-0.9%	68.526	36+970	37+030	132.729	132.47	
54	37+420	129.079	60	Sag	-0.9%	-0.3%	0.6%	99.184	37+390	37+450	129.34	128.999	
55	37+540	128.759	60	Hog	-0.26%	-0.8%	-0.5%	122.454	37+510	37+570	128.839	128.532	
56	37+840	126.496	60	Sag	-0.76%	-0.4%	0.4%	151.578	37+810	37+870	126.722	126.388	
57	38+160	125.345	60	Hog	-0.36%	-0.6%	-0.2%	291.226	38+130	38+190	125.453	125.175	
58	38+420	123.874	60	Sag	-0.57%	-0.2%	0.4%	149.456	38+390	38+450	124.044	123.825	
59	38+720	123.381	60	Hog	-0.10%	-0.7%	-0.5%	113.412	38+690	38+750	123.431	123.174	
60	38+960	121.718	60	Sag	-0.39%	-0.4%	0.2%	241.319	38+930	38+990	121.926	121.585	
61	39+682	118.507	60	Hog	-0.44%	-0.6%	-0.2%	356.411	39+652	39+712	118.641	118.323	
62	39+920	117.049	60	Sag	-0.61%	-0.2%	0.4%	159.676	39+890	39+950	117.233	116.978	
63	40+260	116.243	60	Hog	-0.24%	-0.7%	-0.5%	120.144	40+230	40+290	116.314	116.022	
64	40+380	115.359	60	Sag	-0.74%	-0.2%	0.6%	108.624	40+350	40+410	115.58	115.304	
65	40+660	114.843	60	Sag	-0.18%	0.1%	0.3%	190.82	40+630	40+690	114.898	114.882	
66	41+870	116.419	60	Hog	0.13%	-1.0%	-1.1%	52.658	41+840	41+900	116.38	116.116	


MANAGER (TECH)
 Bihar State Road Devp. Corp. Ltd.
 PIU, Nawada


DGM (Tech)
 Bihar State Road Devp. Corp. Ltd.
 PIU, Nawada

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Station	Proposed Final Proposed Centre Line	Existing Road/Ground Level at Proposed Centre Line	Right Toe Level	Left Toe Level	Horizontal Alignment at Proposed Centre Line	Vertical Alignment at Proposed Centre Line	Super Elevation (%)	Chainage (m)
21+000	113.275	112.892	112.283	112.223	R=50.00	K=3.00		21+000
21+020	113.294	112.871	112.321	112.092				21+020
21+040	113.325	112.810	112.369	112.370				21+040
21+060	113.367	112.869	112.644	112.605				21+060
21+080	113.409	112.856	112.856	112.472				21+080
21+100	113.452	112.804	112.804	112.116				21+100
21+120	113.495	112.768	112.822	112.817				21+120
21+140	113.538	112.702	112.801	112.800				21+140
21+160	113.581	112.635	112.819	112.811				21+160
21+180	113.623	112.568	112.873	112.808				21+180
21+200	113.665	112.501	112.847	112.800				21+200
21+220	113.708	112.434	112.879	112.804				21+220
21+240	113.752	112.367	112.866	112.820				21+240
21+260	113.794	112.300	112.862	112.874				21+260
21+280	113.837	112.233	112.864	112.810				21+280
21+300	113.880	112.166	112.920	112.815				21+300
21+320	113.922	112.099	112.843	112.867				21+320
21+340	113.965	112.032	112.853	112.816				21+340
21+360	113.974	111.965	112.853	112.812				21+360
21+380	113.979	111.898	112.853	112.812				21+380
21+400	113.980	111.831	112.853	112.812				21+400
21+420	113.981	111.764	112.853	112.812				21+420
21+440	113.981	111.697	112.853	112.812				21+440
21+460	113.982	111.630	112.853	112.812				21+460
21+480	113.983	111.563	112.853	112.812				21+480
21+500	113.983	111.496	112.853	112.812				21+500
21+520	113.984	111.429	112.853	112.812				21+520
21+540	113.984	111.362	112.853	112.812				21+540
21+560	113.985	111.295	112.853	112.812				21+560
21+580	113.985	111.228	112.853	112.812				21+580
21+600	113.986	111.161	112.853	112.812				21+600
21+620	113.987	111.094	112.853	112.812				21+620
21+640	113.988	111.027	112.853	112.812				21+640
21+660	113.988	110.960	112.853	112.812				21+660
21+680	113.989	110.893	112.853	112.812				21+680
21+700	113.990	110.826	112.853	112.812				21+700
21+720	113.990	110.759	112.853	112.812				21+720
21+740	113.991	110.692	112.853	112.812				21+740
21+760	113.991	110.625	112.853	112.812				21+760
21+780	113.992	110.558	112.853	112.812				21+780
21+800	113.992	110.491	112.853	112.812				21+800
21+820	113.993	110.424	112.853	112.812				21+820
21+840	113.993	110.357	112.853	112.812				21+840
21+860	113.994	110.290	112.853	112.812				21+860
21+880	113.994	110.223	112.853	112.812				21+880
21+900	113.995	110.156	112.853	112.812				21+900
21+920	113.995	110.089	112.853	112.812				21+920
21+940	113.996	110.022	112.853	112.812				21+940
21+960	113.996	109.955	112.853	112.812				21+960
21+980	113.997	109.888	112.853	112.812				21+980
22+000	113.997	109.821	112.853	112.812				22+000

Revision No. Date Description Drawn Checked Approved	Client:	Project Title: CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT (DPR) FOR SH-103 (MANGHWE - GOVINDPUR)	Consultant: HOLTEC CONSULTING PRIVATE LIMITED	Title: PLAN AND PROFILE SH-103 (MANGHWE - GOVINDPUR) (AT CH. - 21+000 TO 22+000)
Drawn: SRD Scale: 1/125 Date: FEB. - 2017	Checked: JIG Approved: JIG	Drawing No.: HOL/BSRDCL/DPR/13510/PP Rev. No.: 00 Sheet: 22 of 23		

MANGHWE

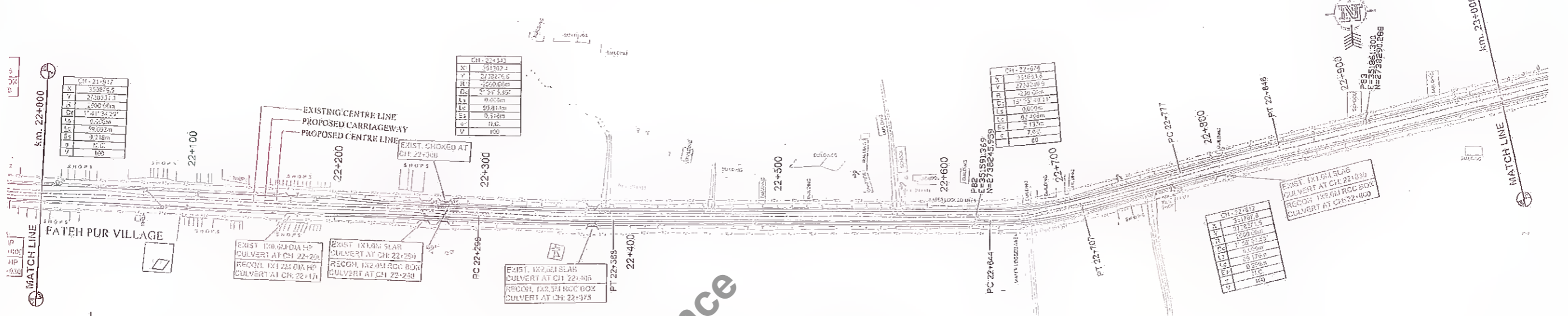
GOVINDPUR

CH-22+000
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CH-22+300
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CH-22+700
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CH-22+800
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DATUM LEVEL = 94	118	116	114	112	110	108	106	104	102	100	98	96	94																																						
PROPOSED FRL AT PROPOSED CENTRE LINE	114.341	114.341	114.341	114.341	114.341	114.341	114.341	114.341	114.341	114.341	114.341	114.341	114.341																																						
EXISTING ROAD/GROUND LEVEL AT PROPOSED CENTRE LINE	113.887	113.887	113.887	113.887	113.887	113.887	113.887	113.887	113.887	113.887	113.887	113.887	113.887																																						
RIGHT TOE LEVEL	113.844	113.844	113.844	113.844	113.844	113.844	113.844	113.844	113.844	113.844	113.844	113.844	113.844																																						
LEFT TOE LEVEL	113.856	113.856	113.856	113.856	113.856	113.856	113.856	113.856	113.856	113.856	113.856	113.856	113.856																																						
HORIZONTAL ALIGNMENT AT PROPOSED CENTRE LINE	351.42																																																		
VERTICAL ALIGNMENT AT PROPOSED CENTRE LINE																																																			
SUPERELEVATION (%)																																																			
CHAINAGE	22+000	22+020	22+040	22+060	22+080	22+100	22+120	22+140	22+160	22+180	22+200	22+220	22+240	22+260	22+280	22+300	22+320	22+340	22+360	22+380	22+400	22+420	22+440	22+460	22+480	22+500	22+520	22+540	22+560	22+580	22+600	22+620	22+640	22+660	22+680	22+700	22+720	22+740	22+760	22+780	22+800	22+820	22+840	22+860	22+880	22+900	22+920	22+940	22+960	22+980	23+000

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Client: **MANAGER (TECH)**
Bihar State Road Development Corporation Ltd.

Project Title : **CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT (DPR) FOR SH-103 (MANGHWE - GOVINDPUR)**

Consultant: **HOLTEC CONSULTING PRIVATE LIMITED**

Title : **PLAN AND PROFILE SH-103 (MANGHWE - GOVINDPUR) (AT CH. - 22+000 TO 23+000)**

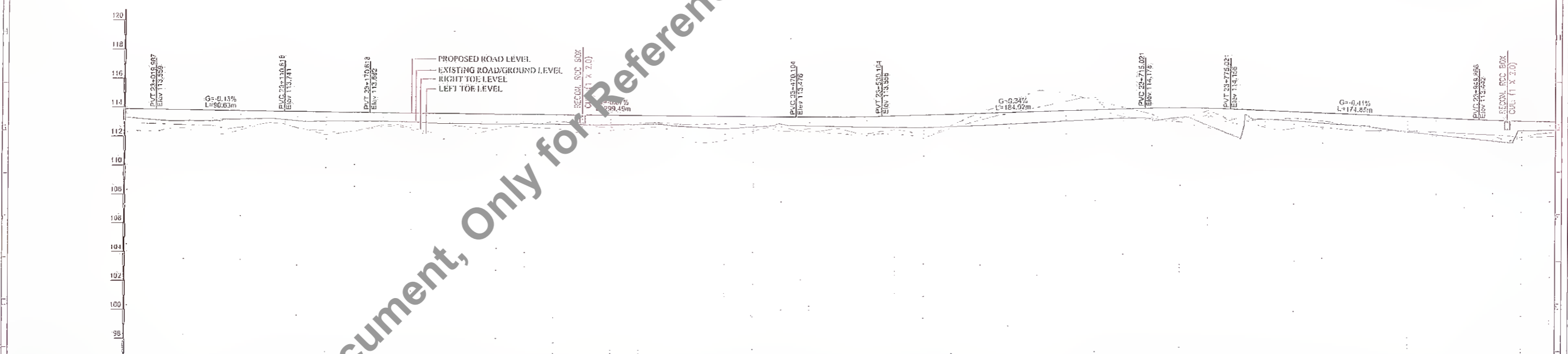
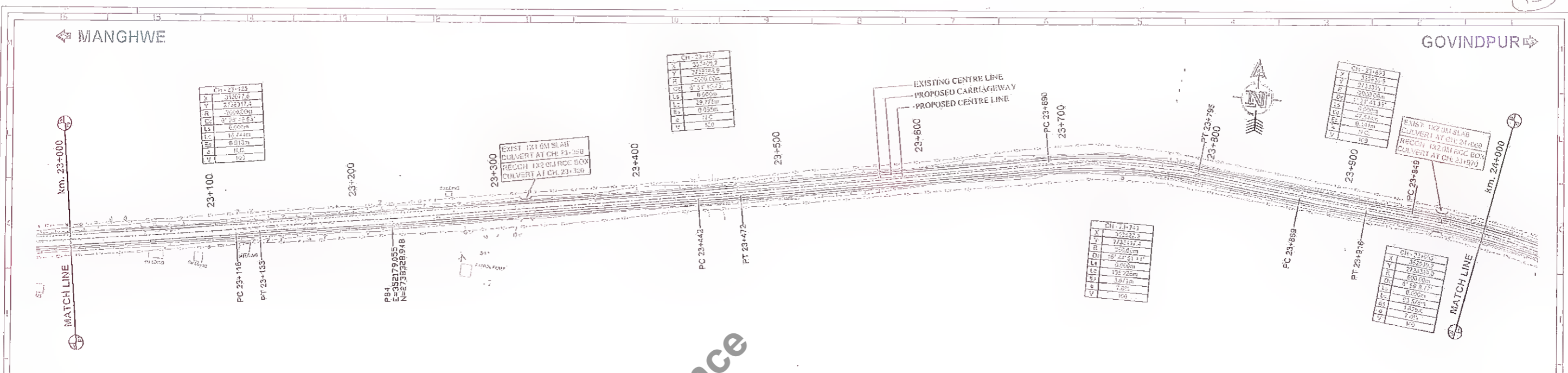
Rev.	Date	Description	Drawn	Checked	Approved

Designed	Checked	Approved
MS	TH	JIG
Drawn	Scale	Date
SHD	MIS	FEB. - 2017

Drawing No.	Rev.	Sheet
HOL/BSRDCL/DPR/13510/PP	01	23

MANGHWE

GOVINDPUR



Station	Proposed FRL at Proposed Centre Line	Existing Road/Ground Level at Proposed Centre Line	Right of Level	Left of Level	Horizontal Alignment at Proposed Centre Line	Vertical Alignment at Proposed Centre Line	Super Elevation (%)
23+000	112.883	112.961	112.961	112.878	R=2000.00 LC=10.71	G=0.11% L=90.63	-2.5
23+020	113.059	113.142	113.142	113.059			
23+040	113.233	113.317	113.317	113.233			
23+060	113.407	113.491	113.491	113.407			
23+080	113.581	113.665	113.665	113.581			
23+100	113.755	113.839	113.839	113.755			
23+120	113.929	114.013	114.013	113.929			
23+140	114.103	114.187	114.187	114.103			
23+160	114.277	114.361	114.361	114.277			
23+180	114.451	114.535	114.535	114.451			
23+200	114.625	114.709	114.709	114.625			
23+220	114.799	114.883	114.883	114.799			
23+240	114.973	115.057	115.057	114.973			
23+260	115.147	115.231	115.231	115.147			
23+280	115.321	115.405	115.405	115.321			
23+300	115.495	115.579	115.579	115.495			
23+320	115.669	115.753	115.753	115.669			
23+340	115.843	115.927	115.927	115.843			
23+360	116.017	116.101	116.101	116.017			
23+380	116.191	116.275	116.275	116.191			
23+400	116.365	116.449	116.449	116.365			
23+420	116.539	116.623	116.623	116.539			
23+440	116.713	116.797	116.797	116.713			
23+460	116.887	116.971	116.971	116.887			
23+480	117.061	117.145	117.145	117.061			
23+500	117.235	117.319	117.319	117.235			
23+520	117.409	117.493	117.493	117.409			
23+540	117.583	117.667	117.667	117.583			
23+560	117.757	117.841	117.841	117.757			
23+580	117.931	118.015	118.015	117.931			
23+600	118.105	118.189	118.189	118.105			
23+620	118.279	118.363	118.363	118.279			
23+640	118.453	118.537	118.537	118.453			
23+660	118.627	118.711	118.711	118.627			
23+680	118.801	118.885	118.885	118.801			
23+700	118.975	119.059	119.059	118.975			
23+720	119.149	119.233	119.233	119.149			
23+740	119.323	119.407	119.407	119.323			
23+760	119.497	119.581	119.581	119.497			
23+780	119.671	119.755	119.755	119.671			
23+800	119.845	119.929	119.929	119.845			
23+820	120.019	200.103	200.103	120.019			
23+840	120.193	120.277	120.277	120.193			
23+860	120.367	120.451	120.451	120.367			
23+880	120.541	120.625	120.625	120.541			
23+900	120.715	120.799	120.799	120.715			
23+920	120.889	120.973	120.973	120.889			
23+940	121.063	121.147	121.147	121.063			
23+960	121.237	121.321	121.321	121.237			
23+980	121.411	121.495	121.495	121.411			
24+000	121.585	121.669	121.669	121.585			7.0

Rev.	Date	Description	Drawn	Checked	Approved

Client: **Bina State Road Development Corp. Ltd.**
 Project Title: **CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT (DPR) FOR SH-103 (MANGHWE- GOVINDPUR)**
 Consultant: **HOLTEC CONSULTING PRIVATE LIMITED**
 Title: **PLAN AND PROFILE SH-103 (MANGHWE - GOVINDPUR) (AT CH.- 23+000 TO 24+000)**

Project Title: **CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT (DPR) FOR SH-103 (MANGHWE- GOVINDPUR)**
 Consultant: **HOLTEC CONSULTING PRIVATE LIMITED**
 Title: **PLAN AND PROFILE SH-103 (MANGHWE - GOVINDPUR) (AT CH.- 23+000 TO 24+000)**

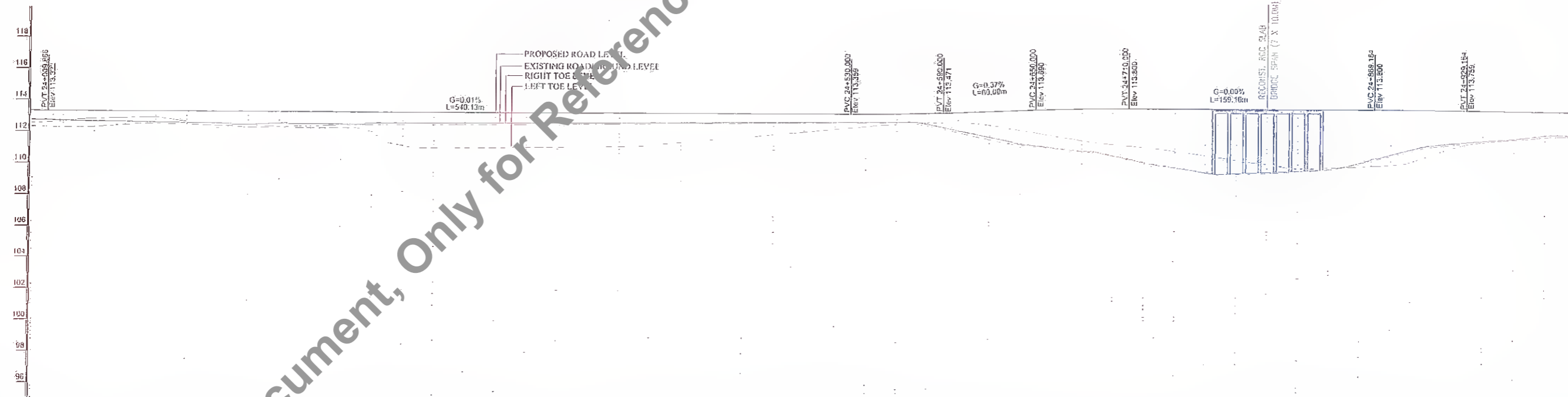
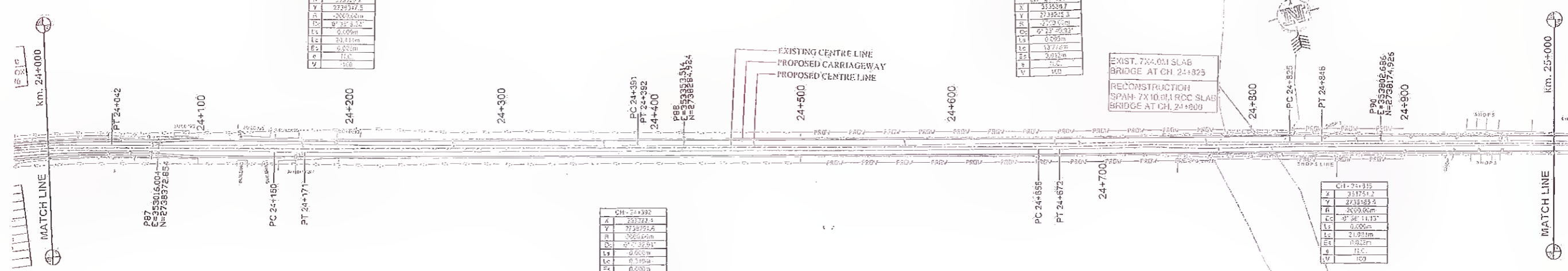
Consultant: **HOLTEC CONSULTING PRIVATE LIMITED**
 Title: **PLAN AND PROFILE SH-103 (MANGHWE - GOVINDPUR) (AT CH.- 23+000 TO 24+000)**

Project Title: **CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT (DPR) FOR SH-103 (MANGHWE- GOVINDPUR)**
 Consultant: **HOLTEC CONSULTING PRIVATE LIMITED**
 Title: **PLAN AND PROFILE SH-103 (MANGHWE - GOVINDPUR) (AT CH.- 23+000 TO 24+000)**

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

MANGHWE

GOVINDPUR



Station	Proposed H/L at Proposed Centre Line	Existing Road/Ground Level at Proposed Centre Line	Right Toe Level	Left Toe Level	Horizontal Alignment at Proposed Centre Line	Vertical Alignment at Proposed Centre Line	Superelevation (%)
24+000	112.322	112.744	112.565	112.312	R=900.00 LC=90.00	G=0.01% L=540.13	-2.5
24+020	113.323	112.716	112.317	112.317			
24+040	113.324	112.688	112.241	112.241			
24+060	113.325	112.658	112.211	112.211			
24+080	113.327	112.625	112.180	112.180			
24+100	113.328	112.589	112.148	112.148			
24+120	113.329	112.556	112.115	112.115			
24+140	113.331	112.517	112.077	112.077			
24+160	113.333	112.472	112.033	112.033			
24+180	113.334	112.421	111.983	111.983			
24+200	113.336	112.365	111.928	111.928			
24+220	113.337	112.304	111.868	111.868			
24+240	113.338	112.238	111.803	111.803			
24+260	113.340	112.168	111.733	111.733			
24+280	113.341	112.093	111.658	111.658			
24+300	113.343	112.014	111.578	111.578			
24+320	113.344	111.930	111.493	111.493			
24+340	113.346	111.841	111.404	111.404			
24+360	113.347	111.748	111.311	111.311			
24+380	113.349	111.651	111.214	111.214			
24+400	113.351	111.550	111.113	111.113			
24+420	113.352	111.445	111.008	111.008			
24+440	113.353	111.336	110.900	110.900			
24+460	113.354	111.223	110.789	110.789			
24+480	113.355	111.106	110.675	110.675			
24+500	113.357	110.985	110.558	110.558			
24+520	113.359	110.860	110.438	110.438			
24+540	113.361	110.731	110.315	110.315			
24+560	113.363	110.598	110.189	110.189			
24+580	113.365	110.462	110.060	110.060			
24+600	113.368	110.323	109.928	109.928			
24+620	113.371	110.181	109.793	109.793			
24+640	113.374	110.036	109.655	109.655			
24+660	113.377	109.888	109.514	109.514			
24+680	113.380	109.737	109.370	109.370			
24+700	113.383	109.583	109.223	109.223			
24+720	113.386	109.426	109.073	109.073			
24+740	113.389	109.266	108.920	108.920			
24+760	113.392	109.103	108.764	108.764			
24+780	113.395	108.937	108.605	108.605			
24+800	113.398	108.768	108.443	108.443			
24+820	113.401	108.596	108.278	108.278			
24+840	113.404	108.421	108.111	108.111			
24+860	113.407	108.243	107.942	107.942			
24+880	113.410	108.062	107.771	107.771			
24+900	113.413	107.878	107.598	107.598			
24+920	113.416	107.691	107.423	107.423			
24+940	113.419	107.501	107.245	107.245			
24+960	113.422	107.308	107.064	107.064			
24+980	113.425	107.113	106.880	106.880			
25+000	113.428	106.915	106.693	106.693			

Client: **M. S. Bhatnagar Road Development Corporation, Nawada**

Project Title: **SH-103 (MANGHWE - GOVINDPUR)**

Consultant: **HOLTEC CONSULTING PRIVATE LIMITED**

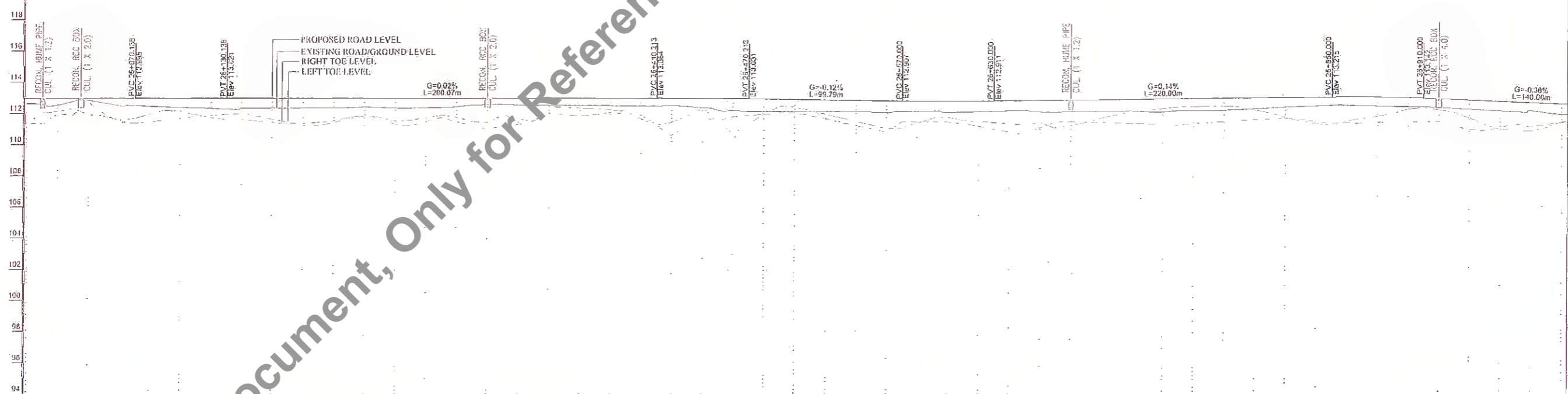
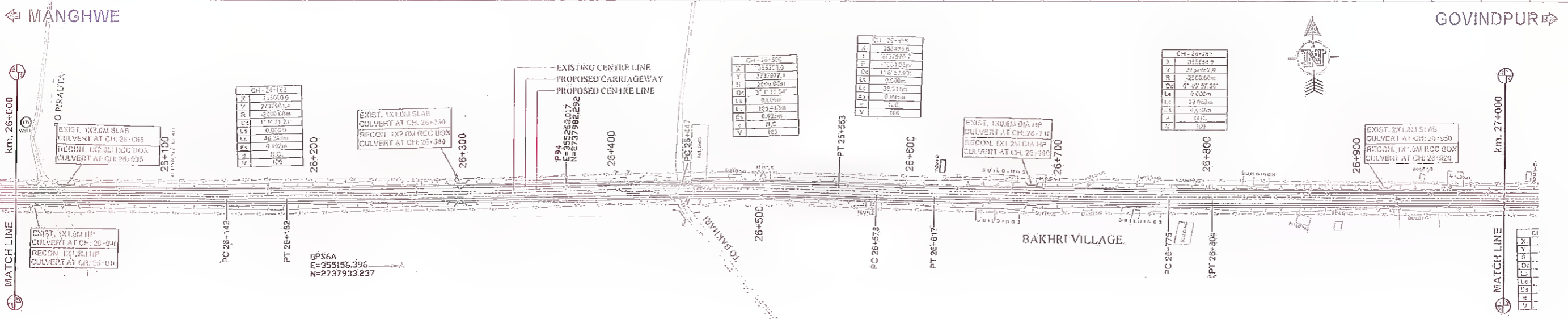
Title: **PLAN AND PROFILE SH-103 (MANGHWE - GOVINDPUR) (AT CH.- 24+000 TO 25+000)**

Designed: **RS** Checked: **THI** Approved: **JIG**

Drawn: **SHD** Scale: **1:15** Date: **FEB. 2017**

Drawing No: **HOL/BSRDCL/DPR/13510/PP** Rev: **00** Sheet: **25**

CO Jn Ed: **AJ**



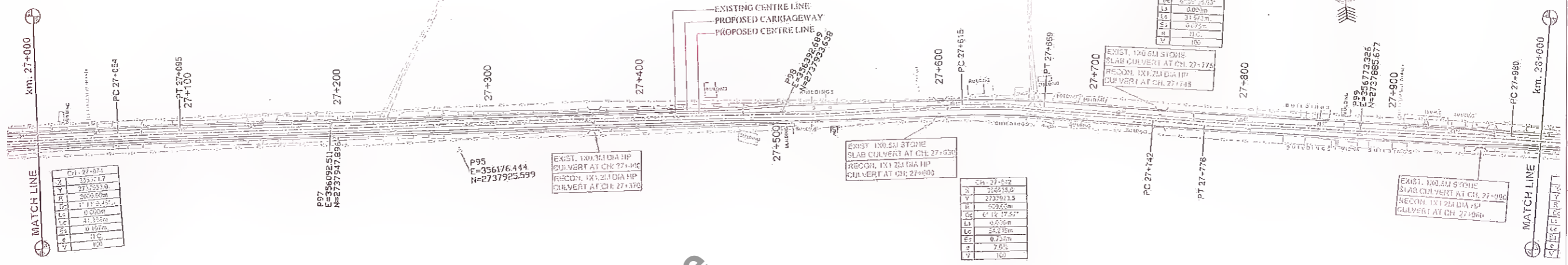
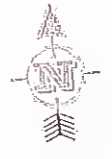
Station	PROPOSED P.L. AT PROPOSED CENTRE LINE	EXISTING ROAD/GROUND LEVEL AT PROPOSED CENTRE LINE	RIGHT TOE LEVEL	LEFT TOE LEVEL	HORIZONTAL ALIGNMENT AT PROPOSED CENTRE LINE	VERTICAL ALIGNMENT AT PROPOSED CENTRE LINE	SUPERELEVATION (%)
26+000	112.958	111.999	111.999	111.999	R=220.00 LC=90.35	G=0.02% L=200.07	
26+020	112.968	112.946	112.946	112.946			
26+040	112.981	112.960	112.960	112.960			
26+060	112.993	112.973	112.973	112.973			
26+080	113.004	112.993	112.993	112.993			
26+100	113.013	113.005	113.005	113.005			
26+120	113.023	113.017	113.017	113.017			
26+140	113.030	113.028	113.028	113.028			
26+160	113.038	113.034	113.034	113.034			
26+180	113.047	113.041	113.041	113.041			
26+200	113.055	113.037	113.037	113.037			
26+220	113.063	113.043	113.043	113.043			
26+240	113.071	113.049	113.049	113.049			
26+260	113.079	113.055	113.055	113.055			
26+280	113.087	113.061	113.061	113.061			
26+300	113.095	113.067	113.067	113.067			
26+320	113.103	113.073	113.073	113.073			
26+340	113.111	113.079	113.079	113.079			
26+360	113.119	113.085	113.085	113.085			
26+380	113.127	113.091	113.091	113.091			
26+400	113.135	113.097	113.097	113.097			
26+420	113.143	113.103	113.103	113.103			
26+440	113.151	113.109	113.109	113.109			
26+460	113.159	113.115	113.115	113.115			
26+480	113.167	113.121	113.121	113.121			
26+500	113.175	113.127	113.127	113.127			
26+520	113.183	113.133	113.133	113.133			
26+540	113.191	113.139	113.139	113.139			
26+560	113.199	113.145	113.145	113.145			
26+580	113.207	113.151	113.151	113.151			
26+600	113.215	113.157	113.157	113.157			
26+620	113.223	113.163	113.163	113.163			
26+640	113.231	113.169	113.169	113.169			
26+660	113.239	113.175	113.175	113.175			
26+680	113.247	113.181	113.181	113.181			
26+700	113.255	113.187	113.187	113.187			
26+720	113.263	113.193	113.193	113.193			
26+740	113.271	113.199	113.199	113.199			
26+760	113.279	113.205	113.205	113.205			
26+780	113.287	113.211	113.211	113.211			
26+800	113.295	113.217	113.217	113.217			
26+820	113.303	113.223	113.223	113.223			
26+840	113.311	113.229	113.229	113.229			
26+860	113.319	113.235	113.235	113.235			
26+880	113.327	113.241	113.241	113.241			
26+900	113.335	113.247	113.247	113.247			
26+920	113.343	113.253	113.253	113.253			
26+940	113.351	113.259	113.259	113.259			
26+960	113.359	113.265	113.265	113.265			
26+980	113.367	113.271	113.271	113.271			
27+000	113.375	113.277	113.277	113.277			

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<p>Client:</p> <p>Bihar State Road Development Corporation PIU, Nawada</p>	<p>Project Title:</p> <p style="text-align: center;">CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT (DPR) FOR SH-103 (MANGHWE - GOVINDPUR)</p>	<p>Consultant:</p> <p>HOLTEG CONSULTING PRIVATE LIMITED JRS</p>	<p>Title:</p> <p style="text-align: center;">PLAN AND PROFILE SH-103 (MANGHWE - GOVINDPUR) (AT CH.-26+000 TO 27+000)</p> <p>Drawing No. HOL/BSRDCL/DPR/13510/PP Rev. No. 27 of 27</p> <p>Date: FEB., 2017</p>
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MANGHWE

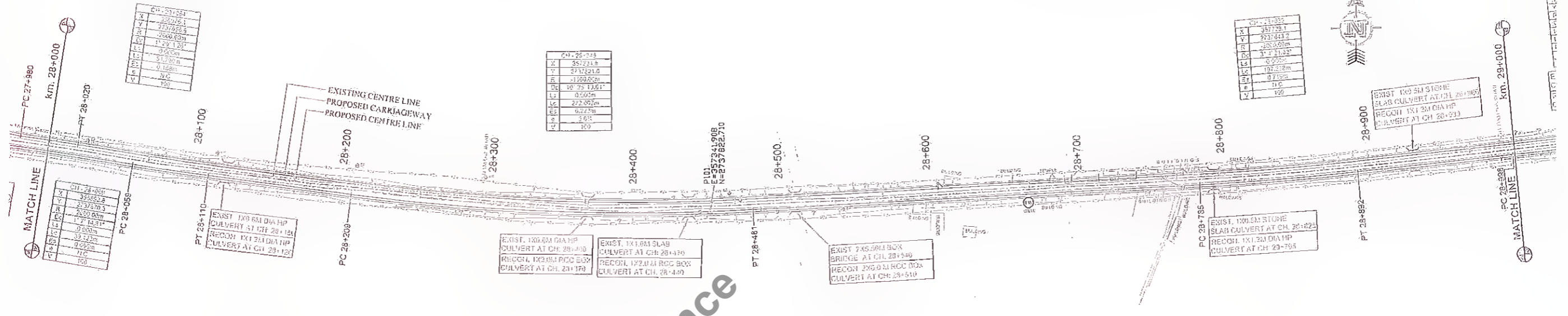
GOVINDPUR



Revision <table border="1"> <tr><th>Rev.</th><th>Date</th><th>Description</th><th>Drawn</th><th>Checked</th><th>Approved</th></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table>		Rev.	Date	Description	Drawn	Checked	Approved							Client: 		Project Title : ROAD DEVELOPMENT AUTHORITY, PUD, Nawada SH-103 (MANGHWE- GOVINDPUR)		Consultant: HOLTEC CONSULTING PRIVATE LIMITED		Title : PLAN AND PROFILE SH-103 (MANGHWE - GOVINDPUR) (AT CH.- 27+000 TO 28+000)	
Rev.	Date	Description	Drawn	Checked	Approved																
Design: SFD Draw: SFD		Checked: TH Scale: NTS		Approved: Jit Date: FEB. 2017		Drawing No.: -HOL/BSRDC/DPR/13510/PP Rev. No.: 01 Sheet: 28		Date: FEB. 2017													

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MANGHWE GOVINDPUR



DATUM LEVEL @ 94	94	96	98	100	102	104	106	108	110	112	114	116	118																																						
PROPOSED FB. AT PROPOSED CENTRELINE	112.611	112.611	112.611	112.611	112.611	112.611	112.611	112.611	112.611	112.611	112.611	112.611	112.611																																						
EXISTING ROAD/GROUND LEVEL AT PROPOSED CENTRELINE	111.874	111.874	111.874	111.874	111.874	111.874	111.874	111.874	111.874	111.874	111.874	111.874	111.874																																						
RIGHT TOE LEVEL	111.300	111.300	111.300	111.300	111.300	111.300	111.300	111.300	111.300	111.300	111.300	111.300	111.300																																						
LEFT TOE LEVEL	111.300	111.300	111.300	111.300	111.300	111.300	111.300	111.300	111.300	111.300	111.300	111.300	111.300																																						
HORIZONTAL ALIGNMENT AT PROPOSED CENTRELINE	R=2800.00 LC=51.76																																																		
VERTICAL ALIGNMENT AT PROPOSED CENTRELINE	G=0.50% L=405.06m																																																		
SUPERELEVATION (%)	-2.5																																																		
CHAINAGE (CH)	28+000	28+020	28+040	28+060	28+080	28+100	28+120	28+140	28+160	28+180	28+200	28+220	28+240	28+260	28+280	28+300	28+320	28+340	28+360	28+380	28+400	28+420	28+440	28+460	28+480	28+500	28+520	28+540	28+560	28+580	28+600	28+620	28+640	28+660	28+680	28+700	28+720	28+740	28+760	28+780	28+800	28+820	28+840	28+860	28+880	28+900	28+920	28+940	28+960	28+980	29+000

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Rev.	Date	Description	Prep.	Checked	Approved

Client: Binar State Road Development Corporation Ltd. Dev. Corp. Ltd. Newada

Project Title: CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT (DPR) FOR SH-103 (MANGHWE- GOVINDPUR)

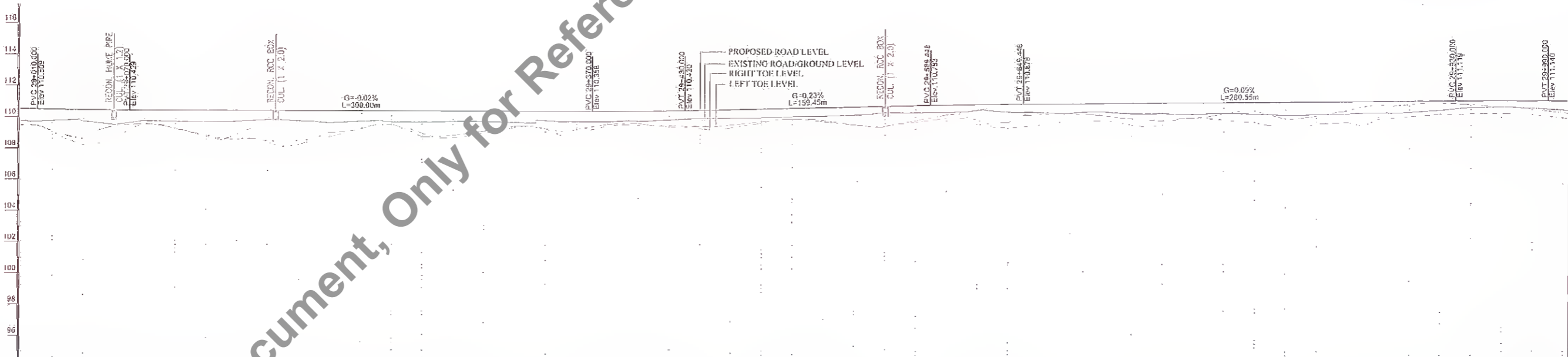
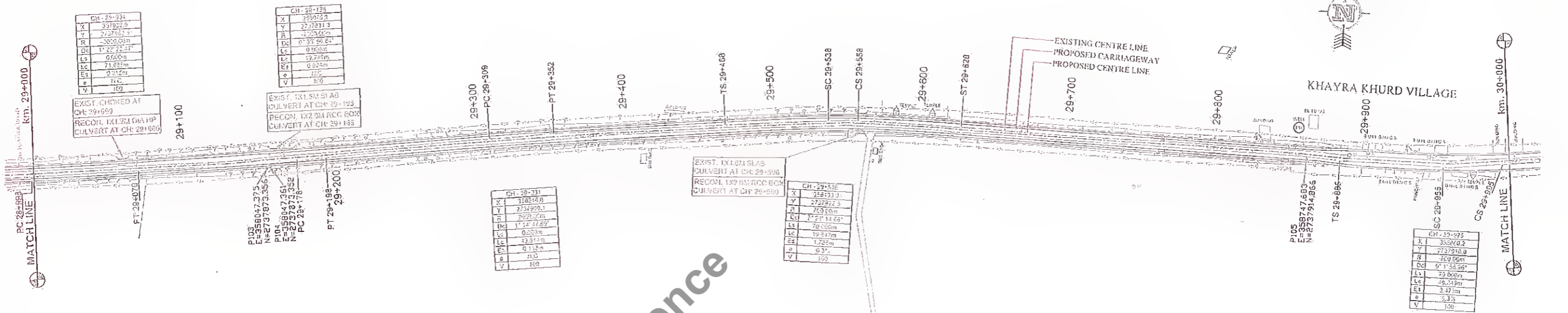
Consultant: HOLTEC CONSULTING PRIVATE LIMITED

Title: PLAN AND PROFILE SH-103 (MANGHWE - GOVINDPUR) (AT CH - 28+000 TO 29+000)

Rev. No: 01
Sheet: 29 of 29

MANGHWE

GOVINDPUR



Station	Proposed FRL at Proposed Centre Line	Existing Road-Ground Level at Proposed Centre Line	Right Toe Level	Left Toe Level	Horizontal Alignment at Proposed Centre Line	Vertical Alignment at Proposed Centre Line	Superelevation (%)
29+000	110.533	109.759	109.603	109.775	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+020	110.486	109.756	109.610	109.819	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+040	110.452	109.725	109.600	109.846	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+060	110.433	109.508	109.434	109.652	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+080	110.427	109.755	109.755	109.755	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+100	110.422	109.707	109.707	109.707	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+120	110.417	109.679	109.679	109.679	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+140	110.412	109.651	109.651	109.651	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+160	110.408	109.618	109.618	109.618	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+180	110.403	109.585	109.585	109.585	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+200	110.398	109.552	109.552	109.552	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+220	110.394	109.519	109.519	109.519	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+240	110.389	109.486	109.486	109.486	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+260	110.385	109.453	109.453	109.453	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+280	110.381	109.420	109.420	109.420	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+300	110.377	109.387	109.387	109.387	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+320	110.373	109.354	109.354	109.354	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+340	110.369	109.321	109.321	109.321	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+360	110.365	109.288	109.288	109.288	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+380	110.361	109.255	109.255	109.255	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+400	110.357	109.222	109.222	109.222	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+420	110.353	109.189	109.189	109.189	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+440	110.349	109.156	109.156	109.156	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+460	110.345	109.123	109.123	109.123	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+480	110.341	109.090	109.090	109.090	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+500	110.337	109.057	109.057	109.057	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+520	110.333	109.024	109.024	109.024	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+540	110.329	108.991	108.991	108.991	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+560	110.325	108.958	108.958	108.958	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+580	110.321	108.925	108.925	108.925	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+600	110.317	108.892	108.892	108.892	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+620	110.313	108.859	108.859	108.859	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+640	110.309	108.826	108.826	108.826	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+660	110.305	108.793	108.793	108.793	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+680	110.301	108.760	108.760	108.760	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+700	110.297	108.727	108.727	108.727	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+720	110.293	108.694	108.694	108.694	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+740	110.289	108.661	108.661	108.661	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+760	110.285	108.628	108.628	108.628	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+780	110.281	108.595	108.595	108.595	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+800	110.277	108.562	108.562	108.562	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+820	110.273	108.529	108.529	108.529	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+840	110.269	108.496	108.496	108.496	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+860	110.265	108.463	108.463	108.463	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+880	110.261	108.430	108.430	108.430	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+900	110.257	108.397	108.397	108.397	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+920	110.253	108.364	108.364	108.364	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+940	110.249	108.331	108.331	108.331	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+960	110.245	108.298	108.298	108.298	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
29+980	110.241	108.265	108.265	108.265	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5
30+000	110.237	108.232	108.232	108.232	R=1000.00 LC=71.69	G=0.23% L=159.45	-2.5

Revision

Rev.	Date	Description	Drawn	Checked	Approved

Client: **PIU, Nawada**

Project Title: **SH-103 (MANGHWE - GOVINDPUR)**

Consultant: **HOLTEC CONSULTING PRIVATE LIMITED**

Title: **PLAN AND PROFILE SH-103 (MANGHWE - GOVINDPUR) (AT CH- 29+000 TO 30+000)**

Designed: **HS**

Checked: **TR**

Approved: **JIG**

Date: **FEB. - 2017**

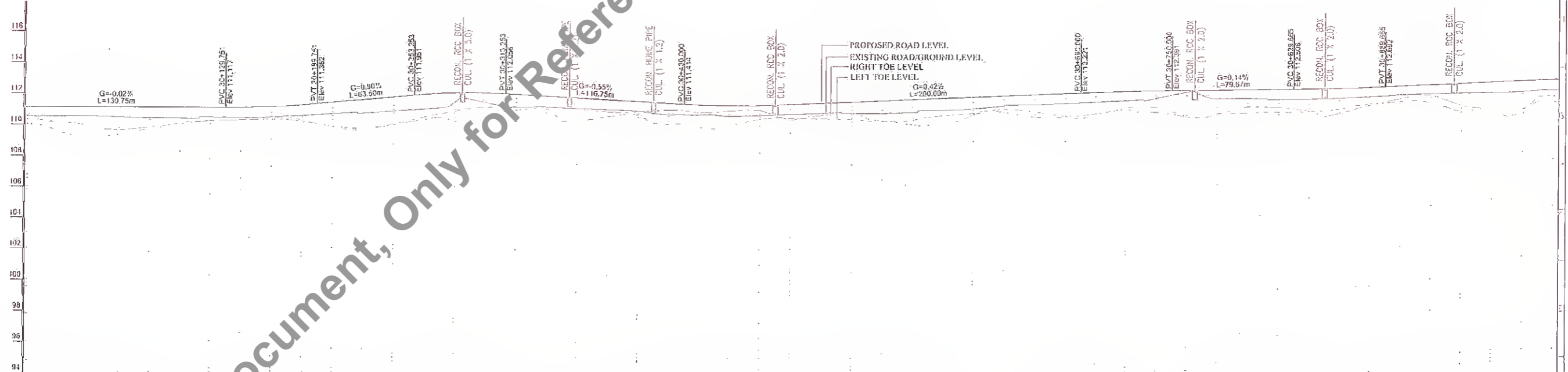
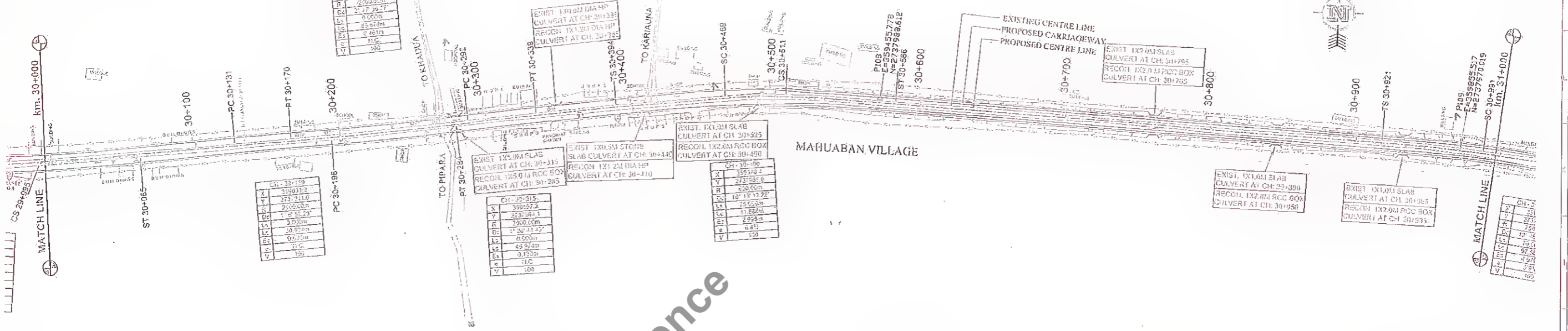
Drawing No. **HOL/BSRDL/DPR/13510/PP**

Rev. **01**

Sheet **30**

MANGHWE

GOVINDPUR



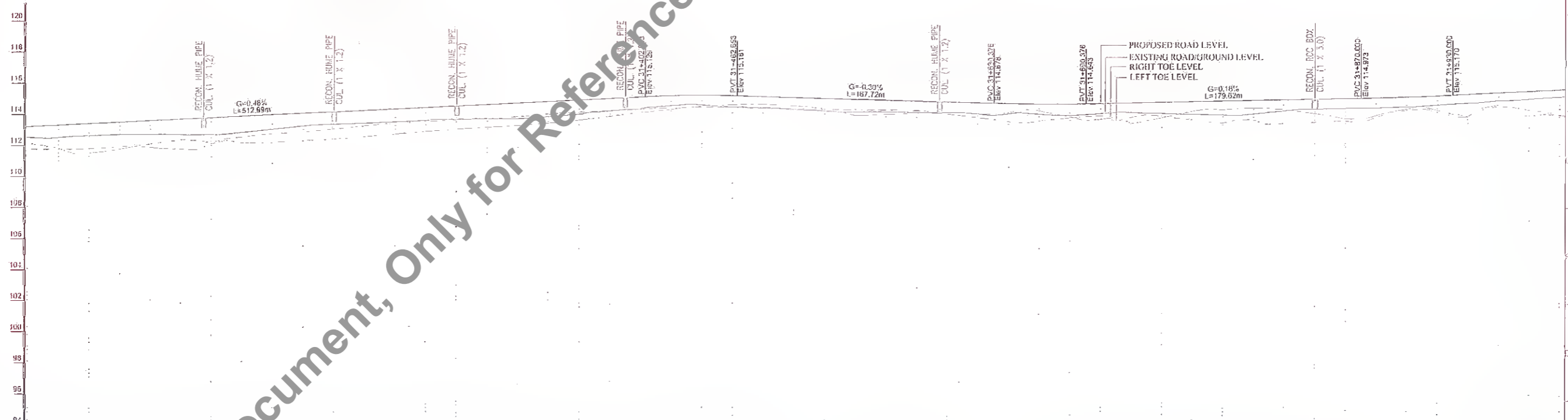
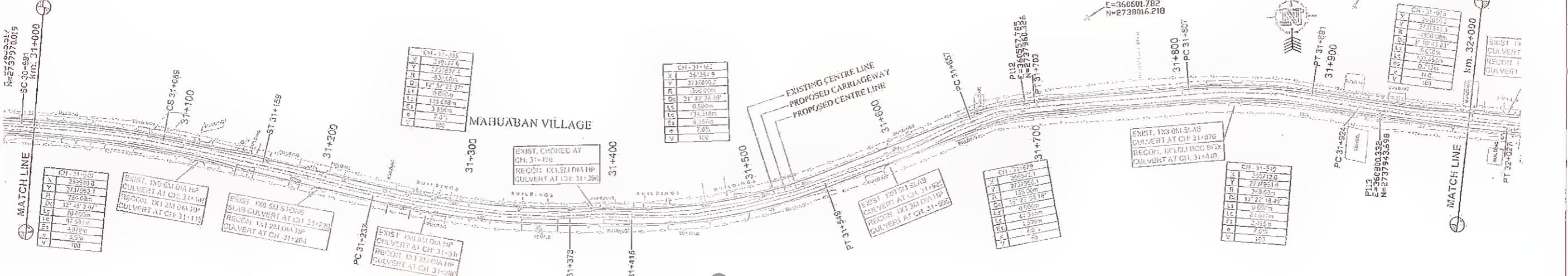
DATUM LEVEL = 94	116	114	112	110	108	106	104	102	100	98	96	94																																							
PROPOSED FRL AT PROPOSED CENTRE LINE	111.168	111.168	111.168	111.168	111.168	111.168	111.168	111.168	111.168	111.168	111.168	111.168																																							
EXISTING ROAD/GROUND LEVEL AT PROPOSED CENTRE LINE	110.597	110.597	110.597	110.597	110.597	110.597	110.597	110.597	110.597	110.597	110.597	110.597																																							
RIGHT TOE LEVEL	110.597	110.597	110.597	110.597	110.597	110.597	110.597	110.597	110.597	110.597	110.597	110.597																																							
LEFT TOE LEVEL	110.597	110.597	110.597	110.597	110.597	110.597	110.597	110.597	110.597	110.597	110.597	110.597																																							
HORIZONTAL ALIGNMENT AT PROPOSED CENTRE LINE	<p>Right Transition R=2500.00 LC=81.99 27.37 R=2000.00 LC=85.00 R=2000.00 LC=85.00 Right Transition R=650.00 LC=11.80 48750.60 LC=75.00 345.36 Right Transition R=650.00 LC=11.80 48750.60 LC=75.00</p>																																																		
VERTICAL ALIGNMENT AT PROPOSED CENTRE LINE	<p>G=0.02% L=130.75 K=65.70 LC=60.00 G=0.02% L=63.50 K=11.47 LC=60.00 G=0.02% L=114.74 K=61.73 LC=60.00 G=0.14% L=79.67 R=101.31 LC=20.00 52590.00 LC=70.00</p>																																																		
SUPERELEVATION (%)	-2.5																																																		
CHAINAGE (m)	30+000	30+020	30+040	30+060	30+080	30+100	30+120	30+140	30+160	30+180	30+200	30+220	30+240	30+260	30+280	30+300	30+320	30+340	30+360	30+380	30+400	30+420	30+440	30+460	30+480	30+500	30+520	30+540	30+560	30+580	30+600	30+620	30+640	30+660	30+680	30+700	30+720	30+740	30+760	30+780	30+800	30+820	30+840	30+860	30+880	30+900	30+920	30+940	30+960	30+980	31+000

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

Client: Bihar State Road Development Corporation Ltd., PIU, Nawada	Project Title: CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT (DPR) FOR SH-103 (MANGHWE - GOVINDPUR)	Consultant: HOLTEC CONSULTING PRIVATE LIMITED	Title: PLAN AND PROFILE SH-103 (MANGHWE - GOVINDPUR) (AT CH. - 30+000 TO 31+000)																																				
<table border="1"> <tr> <th>Rev.</th> <th>Date:</th> <th>Description:</th> <th>Drawn:</th> <th>Checked:</th> <th>Approved:</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	Rev.	Date:	Description:	Drawn:	Checked:	Approved:							<table border="1"> <tr> <th>Design</th> <th>Scale</th> <th>Date</th> <th>JIG</th> </tr> <tr> <td>NS</td> <td>Scale</td> <td>11/5</td> <td>FEB. - 2017</td> </tr> </table>	Design	Scale	Date	JIG	NS	Scale	11/5	FEB. - 2017	<table border="1"> <tr> <th>Design</th> <th>Scale</th> <th>Date</th> <th>JIG</th> </tr> <tr> <td>NS</td> <td>Scale</td> <td>11/5</td> <td>FEB. - 2017</td> </tr> </table>	Design	Scale	Date	JIG	NS	Scale	11/5	FEB. - 2017	<table border="1"> <tr> <th>Design</th> <th>Scale</th> <th>Date</th> <th>JIG</th> </tr> <tr> <td>NS</td> <td>Scale</td> <td>11/5</td> <td>FEB. - 2017</td> </tr> </table>	Design	Scale	Date	JIG	NS	Scale	11/5	FEB. - 2017
Rev.	Date:	Description:	Drawn:	Checked:	Approved:																																		
Design	Scale	Date	JIG																																				
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NS	Scale	11/5	FEB. - 2017																																				
Drawing No. HOL/BSRDCL/DPR/13510/PP		Rev. No. 01	Sheet No. 31																																				

MANGHWE

GOVINDPUR



Station	Proposed PRL at Proposed Centre Line	Existing Road/Ground Level at Proposed Centre Line	Right Toe Level	Left Toe Level	Horizontal Alignment at Proposed Centre Line	Vertical Alignment at Proposed Centre Line	Superelevation (%)
31+000	112.218	112.532	112.162	112.797	Right Transition	G=0.46% L=512.99m	5.9
31+020	112.311	112.521	111.621	112.792			5.9
31+040	112.405	112.635	111.532	112.808			-2.5
31+060	112.501	112.692	111.772	112.824			7.0
31+080	112.595	112.716	112.002	112.840			-2.5
31+100	112.691	112.802	111.785	112.856			7.0
31+120	112.787	112.877	112.077	112.872			-7.0
31+140	112.883	112.952	112.267	112.888			
31+160	112.979	113.027	112.457	112.904			
31+180	113.075	113.102	112.647	112.920			
31+200	113.171	113.177	112.837	112.936			
31+220	113.267	113.252	113.027	112.952			
31+240	113.363	113.327	113.217	112.968			
31+260	113.459	113.402	113.407	112.984			
31+280	113.555	113.477	113.597	113.000			
31+300	113.651	113.552	113.787	113.016			
31+320	113.747	113.627	113.977	113.032			
31+340	113.843	113.702	114.167	113.048			
31+360	113.939	113.777	114.357	113.064			
31+380	114.035	113.852	114.547	113.080			
31+400	114.131	113.927	114.737	113.096			
31+420	114.227	114.002	114.927	113.112			
31+440	114.323	114.077	115.117	113.128			
31+460	114.419	114.152	115.307	113.144			
31+480	114.515	114.227	115.497	113.160			
31+500	114.611	114.302	115.687	113.176			
31+520	114.707	114.377	115.877	113.192			
31+540	114.803	114.452	116.067	113.208			
31+560	114.899	114.527	116.257	113.224			
31+580	114.995	114.602	116.447	113.240			
31+600	115.091	114.677	116.637	113.256			
31+620	115.187	114.752	116.827	113.272			
31+640	115.283	114.827	117.017	113.288			
31+660	115.379	114.902	117.207	113.304			
31+680	115.475	114.977	117.397	113.320			
31+700	115.571	115.052	117.587	113.336			
31+720	115.667	115.127	117.777	113.352			
31+740	115.763	115.202	117.967	113.368			
31+760	115.859	115.277	118.157	113.384			
31+780	115.955	115.352	118.347	113.400			
31+800	116.051	115.427	118.537	113.416			
31+820	116.147	115.502	118.727	113.432			
31+840	116.243	115.577	118.917	113.448			
31+860	116.339	115.652	119.107	113.464			
31+880	116.435	115.727	119.297	113.480			
31+900	116.531	115.802	119.487	113.496			
31+920	116.627	115.877	119.677	113.512			
31+940	116.723	115.952	119.867	113.528			
31+960	116.819	116.027	120.057	113.544			
31+980	116.915	116.102	120.247	113.560			
32+000	117.011	116.177	120.437	113.576			

Client: **MAHARASHTRA STATE ROAD DEVELOPMENT CORPORATION, NAWA**

Project Title: **SH-103 (MANGHWE - GOVINDPUR)**

Consultant: **HOLTEC CONSULTING PRIVATE LIMITED**

Title: **PLAN AND PROFILE SH-103 (MANGHWE - GOVINDPUR) (AT CH. - 31+000 TO 32+000)**

Approved: **SRD** (Signature)

Checked: **NTS** (Signature)

Date: **FEB. - 2017**

Drawn: **SRD**

Scale: **NTS**

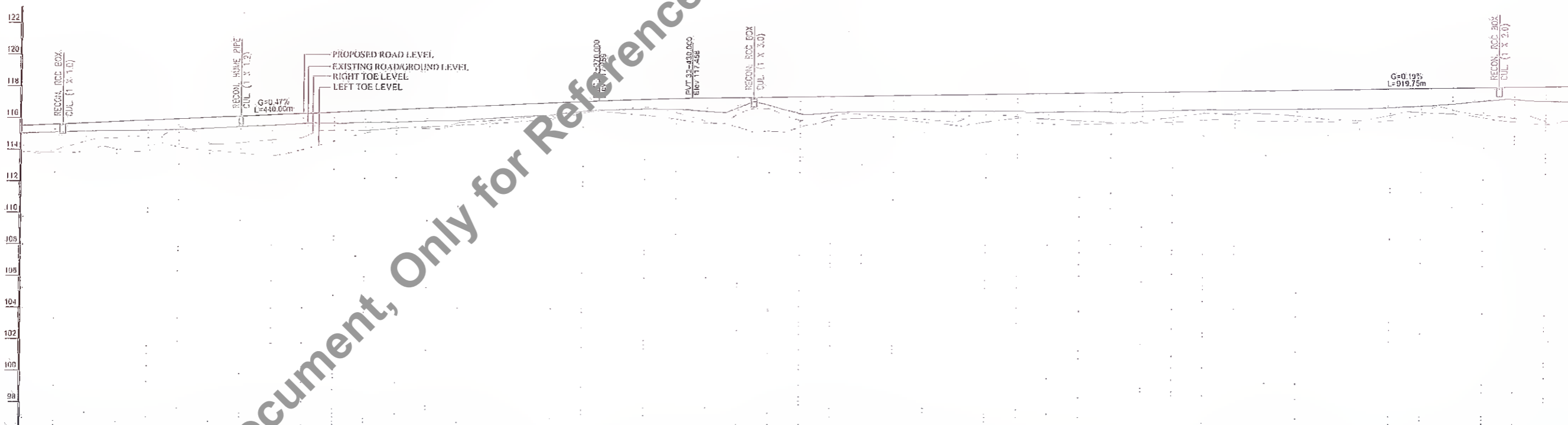
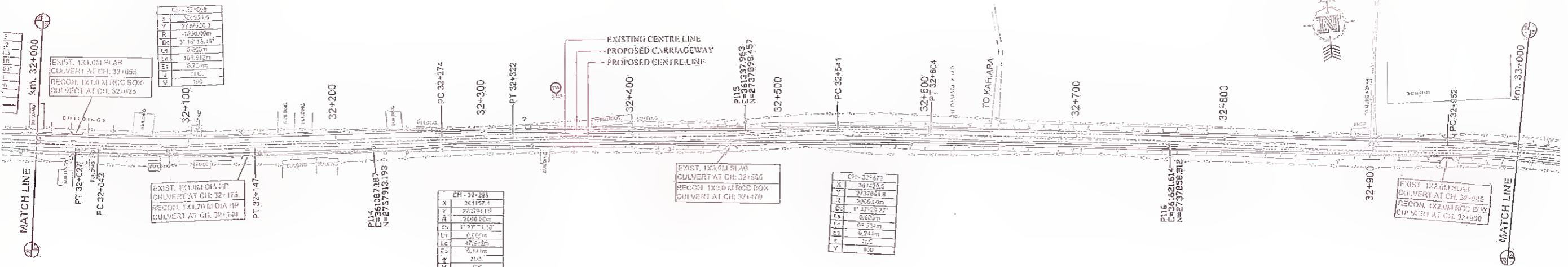
Sheet No: **32**

Rev. No: **00**

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MANGHWE

GOVINDPUR



Station	Proposed RL at Proposed Centre Line	Existing Road/Ground Level at Proposed Centre Line	Right Toe Level	Left Toe Level	Horizontal Alignment at Proposed Centre Line	Vertical Alignment at Proposed Centre Line	Superelevation (%)
32+000	113.605	112.055	112.055	113.605	15.17	G=0.47% L=440.00	
32+020	113.592	113.614	113.614	113.592			
32+040	114.350	113.029	113.029	114.350			
32+060	114.367	113.065	113.065	114.367			
32+080	114.381	113.098	113.098	114.381			
32+100	114.402	113.124	113.124	114.402			
32+120	114.423	113.152	113.152	114.423			
32+140	114.533	113.158	113.158	114.533			
32+160	114.594	113.170	113.170	114.594			
32+180	114.700	113.180	113.180	114.700			
32+200	114.857	113.183	113.183	114.857			
32+220	115.043	113.177	113.177	115.043			
32+240	115.262	113.163	113.163	115.262			
32+260	115.514	113.141	113.141	115.514			
32+280	115.794	113.111	113.111	115.794			
32+300	116.100	113.074	113.074	116.100			
32+320	116.433	113.030	113.030	116.433			
32+340	116.792	112.979	112.979	116.792			
32+360	117.176	112.922	112.922	117.176			
32+380	117.585	112.859	112.859	117.585			
32+400	118.019	112.791	112.791	118.019			
32+420	118.478	112.718	112.718	118.478			
32+440	118.962	112.641	112.641	118.962			
32+460	119.471	112.560	112.560	119.471			
32+480	120.005	112.475	112.475	120.005			
32+500	120.564	112.386	112.386	120.564			
32+520	121.148	112.293	112.293	121.148			
32+540	121.757	112.196	112.196	121.757			
32+560	122.391	112.095	112.095	122.391			
32+580	123.050	112.000	112.000	123.050			
32+600	123.734	111.911	111.911	123.734			
32+620	124.443	111.828	111.828	124.443			
32+640	125.177	111.751	111.751	125.177			
32+660	125.936	111.680	111.680	125.936			
32+680	126.720	111.625	111.625	126.720			
32+700	127.529	111.576	111.576	127.529			
32+720	128.364	111.533	111.533	128.364			
32+740	129.225	111.496	111.496	129.225			
32+760	130.113	111.465	111.465	130.113			
32+780	131.028	111.440	111.440	131.028			
32+800	131.970	111.421	111.421	131.970			
32+820	132.940	111.408	111.408	132.940			
32+840	133.938	111.401	111.401	133.938			
32+860	134.965	111.400	111.400	134.965			
32+880	136.021	111.405	111.405	136.021			
32+900	137.107	111.416	111.416	137.107			
32+920	138.224	111.433	111.433	138.224			
32+940	139.372	111.456	111.456	139.372			
32+960	140.551	111.485	111.485	140.551			
32+980	141.762	111.520	111.520	141.762			
33+000	143.005	111.561	111.561	143.005			

Rev.	Date	Description	Drawn	Checked	Approved

Client: **Bihar State Road Development Corporation Ltd.**
 Project Title: **CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT (DPR) FOR SH-103 (MANGHWE - GOVINDPUR)**

Consultant: **HOLTEC CONSULTING PRIVATE LIMITED**
 Designed: **RS** | Drawn: **SFL** | Scale: **1/15** | Date: **FEB - 2017**

Client Logo: **Bihar State Road Development Corporation Ltd.**
 Consultant Logo: **HOLTEC CONSULTING PRIVATE LIMITED**

Rev.	Date	Description	Drawn	Checked	Approved

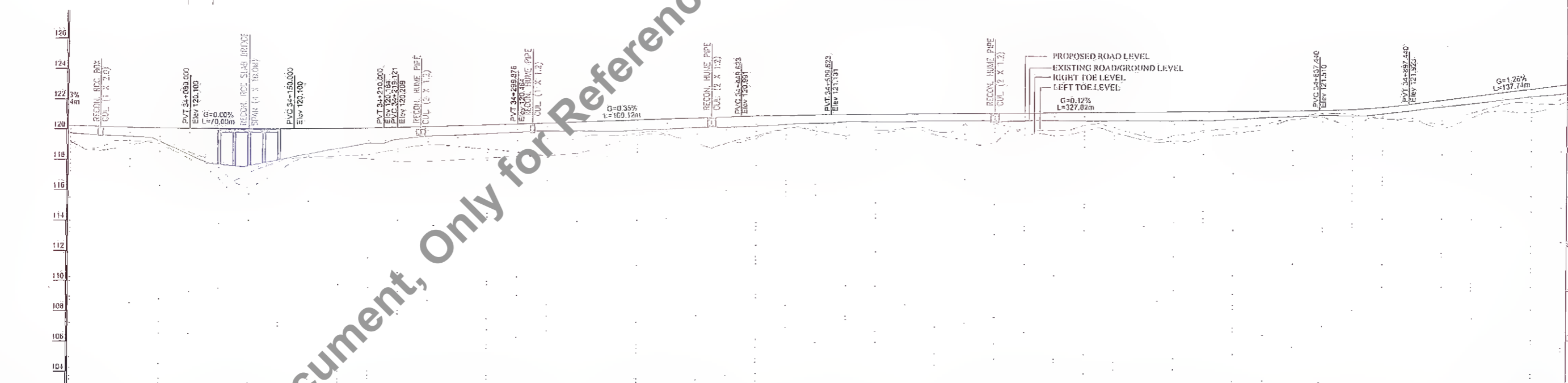
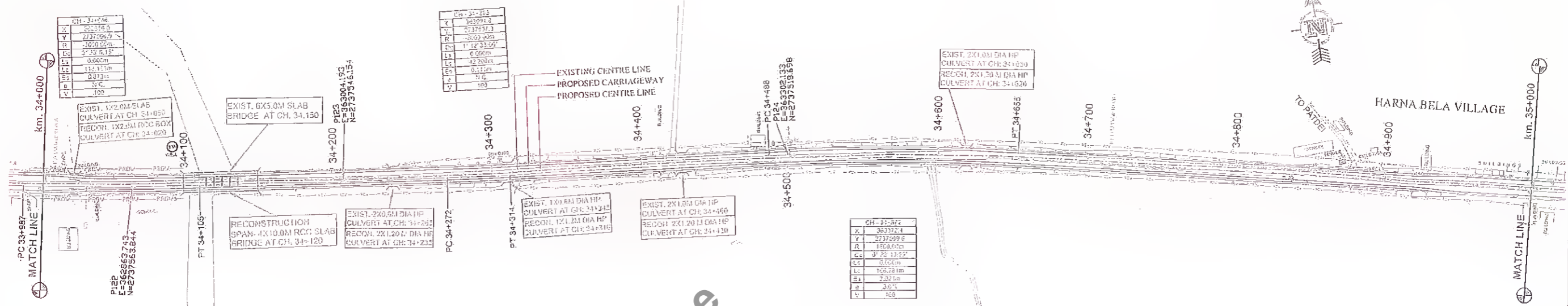
Project No: **HOL/BSRDCL/DPR/13510/PP**
 Rev: **03** | Sheet: **33** | Date: **FEB - 2017**

MANGHWE

GOVINDPUR



HARNA BELA VILLAGE



CHAINAGE (CH)	PROPOSED E.L. AT PROPOSED CENTRELINE	EXISTING ROAD/GROUND LEVEL AT PROPOSED CENTRELINE	RIGHT TOE LEVEL	LEFT TOE LEVEL	HORIZONTAL ALIGNMENT AT PROPOSED CENTRELINE	VERTICAL ALIGNMENT AT PROPOSED CENTRELINE	SUPERELEVATION (%)
34+000	120.264	119.752	119.779	119.822	269.000	R=163.32 LC=60.00	
34+020	120.198	119.825	119.852	119.907		R=250.00 LC=70.00	
34+040	120.144	119.918	119.958	120.026		R=250.00 LC=70.00	
34+060	120.111	119.999	120.028	120.100		R=250.00 LC=70.00	
34+080	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+100	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+120	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+140	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+160	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+180	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+200	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+220	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+240	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+260	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+280	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+300	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+320	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+340	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+360	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+380	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+400	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+420	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+440	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+460	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+480	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+500	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+520	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+540	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+560	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+580	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+600	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+620	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+640	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+660	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+680	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+700	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+720	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+740	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+760	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+780	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+800	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+820	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+840	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+860	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+880	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+900	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+920	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+940	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+960	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
34+980	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	
35+000	120.100	120.000	120.000	120.000		R=250.00 LC=70.00	

Rev.	Date	Description	Drawn	Checked	Approved

Client: **Bihar State Road Development Corporation, Patna**

Project Title: **CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT (DPR) FOR SH-103 (MANGHWE- GOVINDPUR)**

Consultant: **HOLTEC CONSULTING PRIVATE LIMITED**

Design: **RS** | Check: **TR** | Approved: **JIS**

Drawn: **SFD** | Scale: **H/S** | Date: **FEB. -2017**

Drawing No: **HOL/BSRDCL/DPR/13510/PP** | Rev: **03** | Sheet: **33**

Revision:

Client: **Bihar State Road Development Corporation, Patna**

Project Title: **CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT (DPR) FOR SH-103 (MANGHWE- GOVINDPUR)**

Consultant: **HOLTEC CONSULTING PRIVATE LIMITED**

Design: **RS** | Check: **TR** | Approved: **JIS**

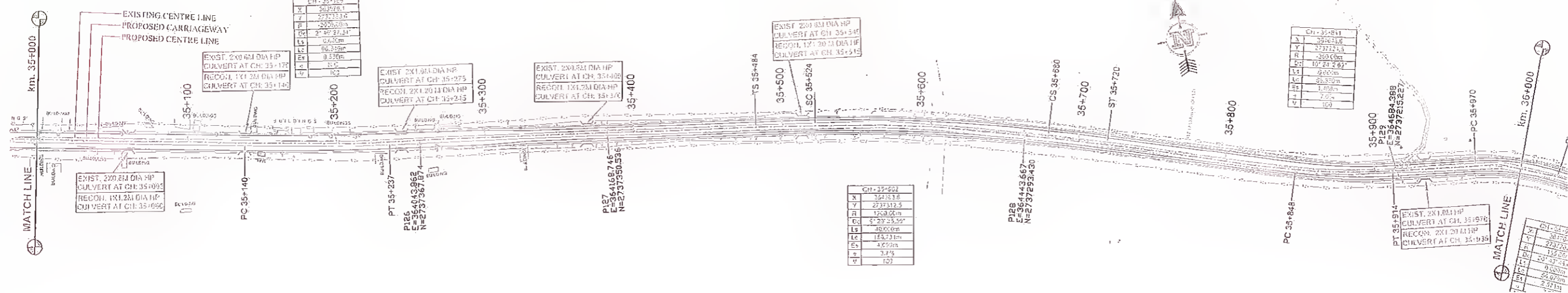
Drawn: **SFD** | Scale: **H/S** | Date: **FEB. -2017**

Drawing No: **HOL/BSRDCL/DPR/13510/PP** | Rev: **03** | Sheet: **33**

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

MANGHWE

GOVINDPUR



CHAINAGE	PROPOSED ERL AT PROPOSED CENTRE LINE	EXISTING ROAD/GROUND LEVEL AT PROPOSED CENTRE LINE	RIGHT TOE LEVEL	LEFT TOE LEVEL
35+00	123.216	122.891	122.344	122.077
35+02	123.469	123.036	122.518	122.469
35+04	123.719	123.558	122.984	122.477
35+06	123.918	124.045	123.478	122.432
35+08	124.102	124.515	123.943	122.652
35+10	124.285	124.970	124.386	122.817
35+12	124.458	125.414	124.810	122.947
35+14	124.622	125.843	125.224	123.175
35+16	124.777	126.250	125.600	123.452
35+18	124.922	126.635	125.959	123.630
35+20	125.058	126.999	126.299	123.811
35+22	125.185	127.351	126.621	123.992
35+24	125.305	127.691	126.926	124.166
35+26	125.418	128.019	127.214	124.332
35+28	125.524	128.336	127.485	124.492
35+30	125.622	128.642	127.739	124.646
35+32	125.713	128.937	127.976	124.794
35+34	125.797	129.221	128.197	124.936
35+36	125.874	129.494	128.402	125.072
35+38	125.944	129.756	128.592	125.202
35+40	126.007	130.007	128.767	125.326
35+42	126.063	130.247	128.927	125.444
35+44	126.112	130.476	129.072	125.556
35+46	126.154	130.694	129.202	125.662
35+48	126.190	130.901	129.317	125.762
35+50	126.220	131.097	129.417	125.856
35+52	126.244	131.282	129.502	125.944
35+54	126.262	131.456	129.572	126.026
35+56	126.274	131.619	129.627	126.102
35+58	126.280	131.771	129.667	126.172
35+60	126.280	131.912	129.692	126.236
35+62	126.274	132.042	129.702	126.294
35+64	126.262	132.161	129.697	126.346
35+66	126.244	132.269	129.677	126.392
35+68	126.220	132.366	129.642	126.432
35+70	126.190	132.451	129.592	126.466
35+72	126.154	132.524	129.527	126.494
35+74	126.112	132.585	129.446	126.516
35+76	126.063	132.634	129.350	126.532
35+78	126.007	132.671	129.239	126.542
35+80	125.944	132.696	129.114	126.546
35+82	125.874	132.709	128.976	126.544
35+84	125.797	132.710	128.826	126.536
35+86	125.713	132.700	128.664	126.522
35+88	125.622	132.679	128.491	126.502
35+90	125.524	132.647	128.307	126.476
35+92	125.418	132.604	128.112	126.444
35+94	125.305	132.550	127.906	126.406
35+96	125.185	132.485	127.689	126.362
35+98	125.058	132.409	127.461	126.312
36+00	124.922	132.322	127.222	126.256

Revision

Rev.	Date	Description	Drawn	Checked	Approved

Client: **NMGS Road Development Corporation Ltd., Nawada**

Project Title: **CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT (DPR) FOR SH-103 (MANGHWE - GOVINDPUR)**

Consultant: **HOLTEC CONSULTING PRIVATE LIMITED**

Title: **PLAN AND PROFILE SH-103 (MANGHWE - GOVINDPUR) (AT CH.- 35+000 TO 36+000)**

Drawn: **RS**

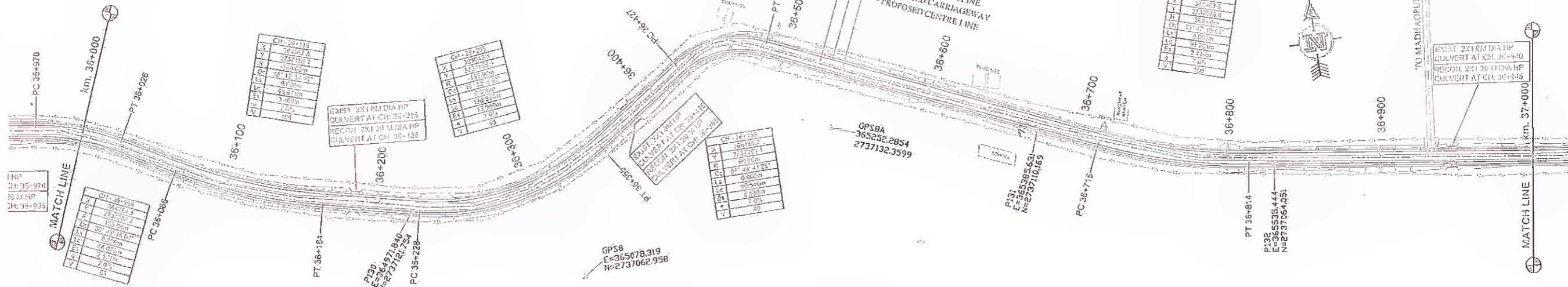
Scale: **NTS**

Approval: **JIG**

Date: **FEB. - 2017**

MANGHWE

GOVINDPUR



Station	PROPOSED PVI AT PROPOSED CENTRE LINE	EXISTING ROAD/GROUND LEVEL AT PROPOSED CENTRE LINE	RIGHT TOE LEVEL	LEFT TOE LEVEL	HORIZONTAL ALIGNMENT AT PROPOSED CENTRE LINE	VERTICAL ALIGNMENT AT PROPOSED CENTRE LINE	SUPERELEVATION (%)
36+000	127.512	127.512	127.512	127.512	LC=55.00	G=1.21%	-2.5
36+020	127.601	127.601	127.601	127.601	R=399.89 LC=58.87	G=1.21%	-2.5
36+040	127.690	127.690	127.690	127.690	R=399.89 LC=58.87	G=1.21%	-2.5
36+060	127.779	127.779	127.779	127.779	R=399.89 LC=58.87	G=1.21%	-2.5
36+080	127.868	127.868	127.868	127.868	R=399.89 LC=58.87	G=1.21%	-2.5
36+100	127.957	127.957	127.957	127.957	R=399.89 LC=58.87	G=1.21%	-2.5
36+120	128.046	128.046	128.046	128.046	R=399.89 LC=58.87	G=1.21%	-2.5
36+140	128.135	128.135	128.135	128.135	R=399.89 LC=58.87	G=1.21%	-2.5
36+160	128.224	128.224	128.224	128.224	R=399.89 LC=58.87	G=1.21%	-2.5
36+180	128.313	128.313	128.313	128.313	R=399.89 LC=58.87	G=1.21%	-2.5
36+200	128.402	128.402	128.402	128.402	R=399.89 LC=58.87	G=1.21%	-2.5
36+220	128.491	128.491	128.491	128.491	R=399.89 LC=58.87	G=1.21%	-2.5
36+240	128.580	128.580	128.580	128.580	R=399.89 LC=58.87	G=1.21%	-2.5
36+260	128.669	128.669	128.669	128.669	R=399.89 LC=58.87	G=1.21%	-2.5
36+280	128.758	128.758	128.758	128.758	R=399.89 LC=58.87	G=1.21%	-2.5
36+300	128.847	128.847	128.847	128.847	R=399.89 LC=58.87	G=1.21%	-2.5
36+320	128.936	128.936	128.936	128.936	R=399.89 LC=58.87	G=1.21%	-2.5
36+340	129.025	129.025	129.025	129.025	R=399.89 LC=58.87	G=1.21%	-2.5
36+360	129.114	129.114	129.114	129.114	R=399.89 LC=58.87	G=1.21%	-2.5
36+380	129.203	129.203	129.203	129.203	R=399.89 LC=58.87	G=1.21%	-2.5
36+400	129.292	129.292	129.292	129.292	R=399.89 LC=58.87	G=1.21%	-2.5
36+420	129.381	129.381	129.381	129.381	R=399.89 LC=58.87	G=1.21%	-2.5
36+440	129.470	129.470	129.470	129.470	R=399.89 LC=58.87	G=1.21%	-2.5
36+460	129.559	129.559	129.559	129.559	R=399.89 LC=58.87	G=1.21%	-2.5
36+480	129.648	129.648	129.648	129.648	R=399.89 LC=58.87	G=1.21%	-2.5
36+500	129.737	129.737	129.737	129.737	R=399.89 LC=58.87	G=1.21%	-2.5
36+520	129.826	129.826	129.826	129.826	R=399.89 LC=58.87	G=1.21%	-2.5
36+540	129.915	129.915	129.915	129.915	R=399.89 LC=58.87	G=1.21%	-2.5
36+560	130.004	130.004	130.004	130.004	R=399.89 LC=58.87	G=1.21%	-2.5
36+580	130.093	130.093	130.093	130.093	R=399.89 LC=58.87	G=1.21%	-2.5
36+600	130.182	130.182	130.182	130.182	R=399.89 LC=58.87	G=1.21%	-2.5
36+620	130.271	130.271	130.271	130.271	R=399.89 LC=58.87	G=1.21%	-2.5
36+640	130.360	130.360	130.360	130.360	R=399.89 LC=58.87	G=1.21%	-2.5
36+660	130.449	130.449	130.449	130.449	R=399.89 LC=58.87	G=1.21%	-2.5
36+680	130.538	130.538	130.538	130.538	R=399.89 LC=58.87	G=1.21%	-2.5
36+700	130.627	130.627	130.627	130.627	R=399.89 LC=58.87	G=1.21%	-2.5
36+720	130.716	130.716	130.716	130.716	R=399.89 LC=58.87	G=1.21%	-2.5
36+740	130.805	130.805	130.805	130.805	R=399.89 LC=58.87	G=1.21%	-2.5
36+760	130.894	130.894	130.894	130.894	R=399.89 LC=58.87	G=1.21%	-2.5
36+780	130.983	130.983	130.983	130.983	R=399.89 LC=58.87	G=1.21%	-2.5
36+800	131.072	131.072	131.072	131.072	R=399.89 LC=58.87	G=1.21%	-2.5
36+820	131.161	131.161	131.161	131.161	R=399.89 LC=58.87	G=1.21%	-2.5
36+840	131.250	131.250	131.250	131.250	R=399.89 LC=58.87	G=1.21%	-2.5
36+860	131.339	131.339	131.339	131.339	R=399.89 LC=58.87	G=1.21%	-2.5
36+880	131.428	131.428	131.428	131.428	R=399.89 LC=58.87	G=1.21%	-2.5
36+900	131.517	131.517	131.517	131.517	R=399.89 LC=58.87	G=1.21%	-2.5
36+920	131.606	131.606	131.606	131.606	R=399.89 LC=58.87	G=1.21%	-2.5
36+940	131.695	131.695	131.695	131.695	R=399.89 LC=58.87	G=1.21%	-2.5
36+960	131.784	131.784	131.784	131.784	R=399.89 LC=58.87	G=1.21%	-2.5
36+980	131.873	131.873	131.873	131.873	R=399.89 LC=58.87	G=1.21%	-2.5
37+000	131.962	131.962	131.962	131.962	R=399.89 LC=58.87	G=1.21%	-2.5

Rev.	Date	Description	Drawn	Checked	Approved

Client: **State Road Development Corporation Ltd., Maharashtra**

Project Title: **SH-103 (MANGHWE - GOVINDPUR)**

Consultant: **HOLTEC CONSULTING PRIVATE LIMITED**

Prepared by: **RS**, Checked by: **TJ**, Approved by: **JG**

Scale: **1:1**, Date: **Feb. 2017**

Drawing No: **HOL/BSR/CL/DPR/13510/PP**, Rev. No: **37**

Sheet: **37**

Revision:

Client: **State Road Development Corporation Ltd., Maharashtra**

Project Title: **SH-103 (MANGHWE - GOVINDPUR)**

Consultant: **HOLTEC CONSULTING PRIVATE LIMITED**

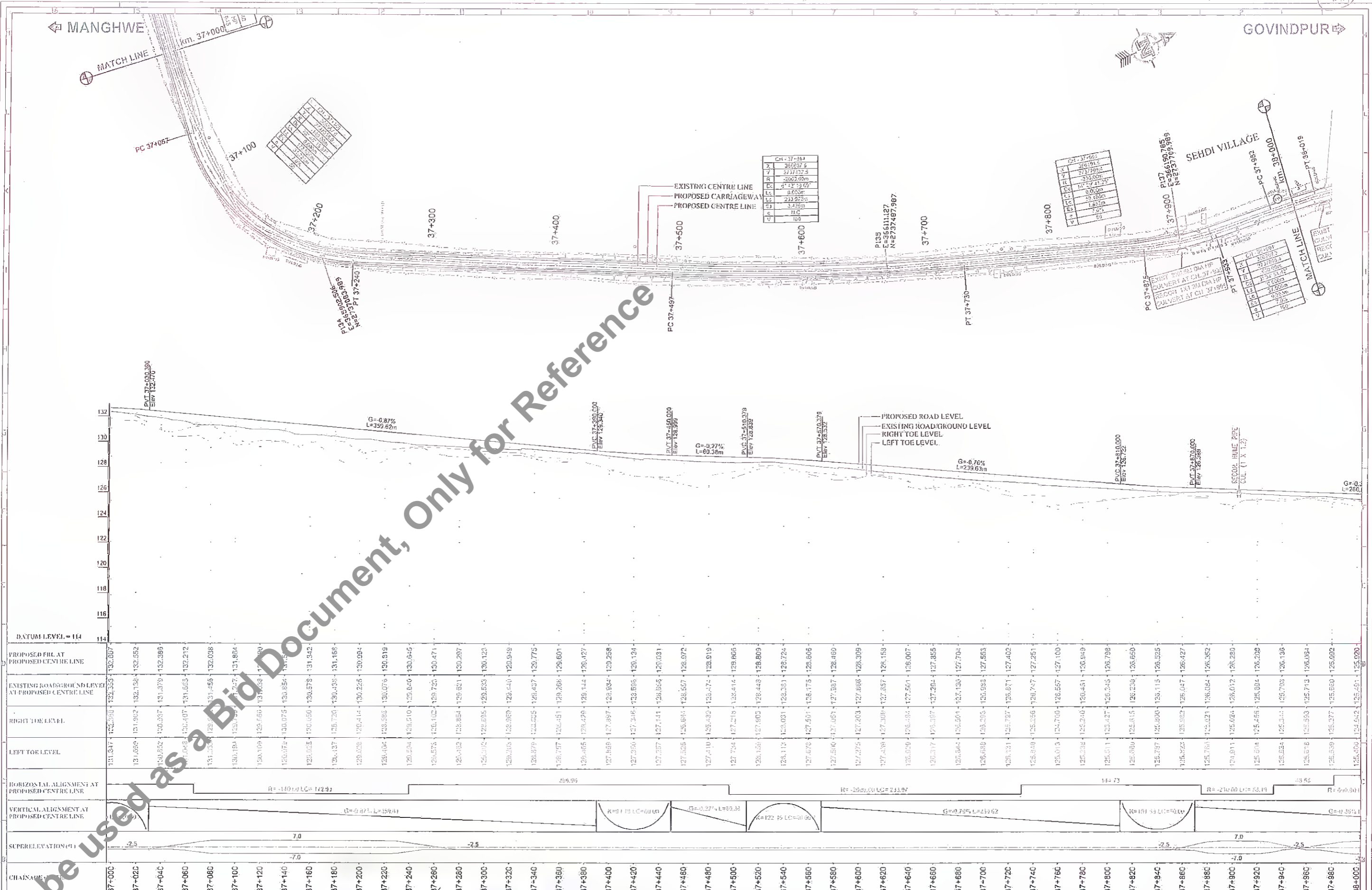
Prepared by: **RS**, Checked by: **TJ**, Approved by: **JG**

Scale: **1:1**, Date: **Feb. 2017**

Drawing No: **HOL/BSR/CL/DPR/13510/PP**, Rev. No: **37**

Sheet: **37**

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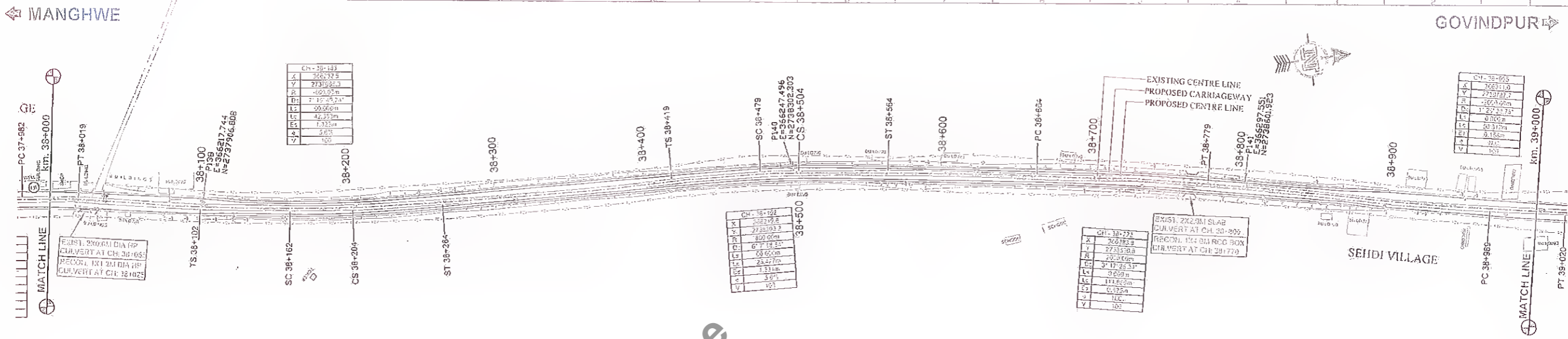
Rev.	Date	Description	Drawn	Cleared	Approved

Client:	Project Title:	Consultant:	Title:
Bihar State Road & Water Road Dev. Corp. Ltd.	CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT (DPR) FOR SH-103 (MANGHWE- GOVINDPUR)	HOLTEC CONSULTING PRIVATE LIMITED	PLAN AND PROFILE SH-103 (MANGHWE - GOVINDPUR) (AT CH- 37+000 TO 38+000)
PIU, Nawada			

Designed	Checked	Approved	Date
RS	TJJ	JIG	FEB.-2017
Drawn	Scale	Date	
SFD	HIS		

Drawing No.	Rev.	Sheet
HOL/BSRDC/DPR/13510/PP	01	38
Scale		

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Station	Proposed FRL at Proposed Centre Line	Existing Road/Ground Level at Proposed Centre Line	Right of Level	Left of Level	Horizontal Alignment at Proposed Centre Line	Vertical Alignment at Proposed Centre Line	Superelevation (%)
38+000	123.951	123.951	123.951	123.951	8 LC=37	1.00	0
38+020	125.648	125.608	124.606	125.023	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+040	125.776	125.286	124.753	124.533	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+060	125.704	124.922	124.627	124.409	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+080	125.633	124.562	124.174	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+100	125.561	124.202	123.726	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+120	125.489	123.842	123.278	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+140	125.417	123.482	122.830	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+160	125.345	123.122	122.382	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+180	125.273	122.762	121.934	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+200	125.201	122.402	121.486	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+220	125.129	122.042	121.038	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+240	125.057	121.682	120.590	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+260	124.985	121.322	120.142	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+280	124.913	120.962	119.694	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+300	124.841	120.602	119.246	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+320	124.769	120.242	118.798	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+340	124.697	119.882	118.350	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+360	124.625	119.522	117.902	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+380	124.553	119.162	117.454	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+400	124.481	118.802	117.006	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+420	124.409	118.442	116.558	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+440	124.337	118.082	116.110	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+460	124.265	117.722	115.662	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+480	124.193	117.362	115.214	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+500	124.121	117.002	114.766	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+520	124.049	116.642	114.318	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+540	123.977	116.282	113.870	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+560	123.905	115.922	113.422	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+580	123.833	115.562	112.974	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+600	123.761	115.202	112.526	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+620	123.689	114.842	112.078	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+640	123.617	114.482	111.630	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+660	123.545	114.122	111.182	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+680	123.473	113.762	110.734	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+700	123.401	113.402	110.286	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+720	123.329	113.042	109.838	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+740	123.257	112.682	109.390	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+760	123.185	112.322	108.942	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+780	123.113	111.962	108.494	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+800	123.041	111.602	108.046	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+820	122.969	111.242	107.598	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+840	122.897	110.882	107.150	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+860	122.825	110.522	106.702	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+880	122.753	110.162	106.254	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+900	122.681	109.802	105.806	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+920	122.609	109.442	105.358	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+940	122.537	109.082	104.910	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+960	122.465	108.722	104.462	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
38+980	122.393	108.362	104.014	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5
39+000	122.321	108.002	103.566	124.256	43000.00 LC=60.00	R=291.211 LC=60.00	-2.5

Rev.	Date	Description	Drawn	Checked	Approved

Client: **Bihar State Road Development Corporation, Nawada**

Project Title: **CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT (DPR) FOR SH-103 (MANGHWE - GOVINDPUR)**

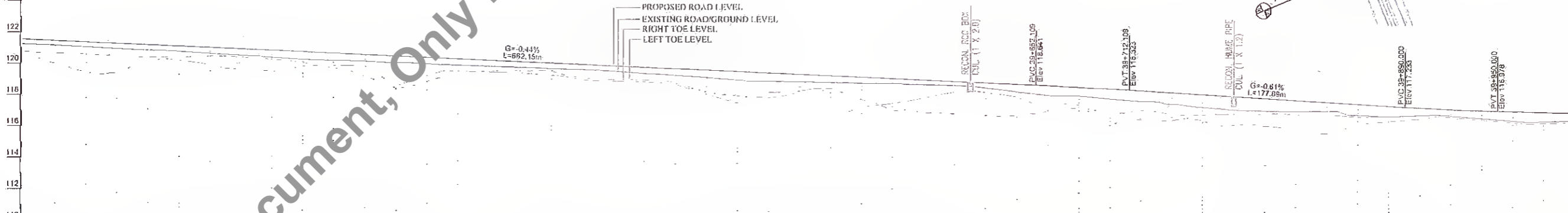
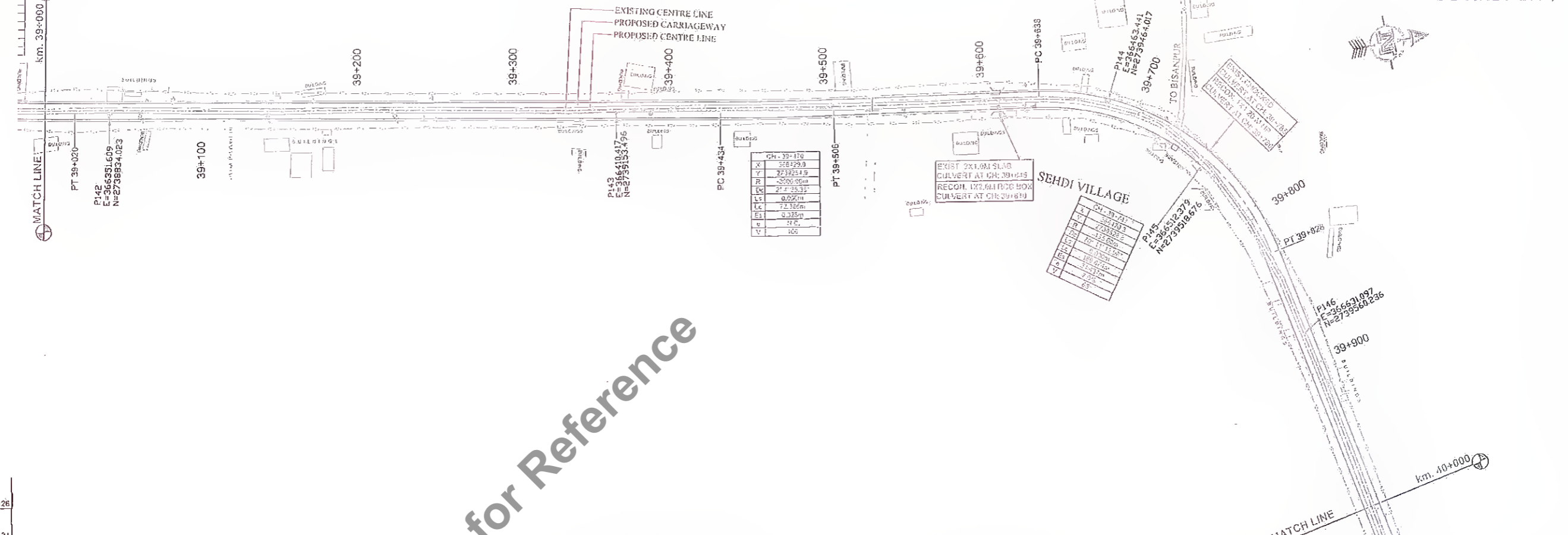
Consultant: **HOLTEC CONSULTING PRIVATE LIMITED**

Designed	NS	Checked	TH	Approved	JIG
Drawn	SHD	Scale	1/15	Date	FEB.-2017

Title: PLAN AND PROFILE SH-103 (MANGHWE - GOVINDPUR) (AT CH.- 38+000 TO 39+000)	
Drawing No: HOL/BSRDC/DPR/1351.0/PP	Rev: R0
Sheet No: 39	AI

MANGHWI

GOVINDPUR



Station	Proposed FRL at Proposed Centre Line	Existing Road/Ground Level at Proposed Centre Line	Right Toe Level	Left Toe Level	Horizontal Alignment at Proposed Centre Line	Vertical Alignment at Proposed Centre Line	Super Elevation (%)
39+000	121.550	121.252	120.558	120.779	LC=50.31		
39+020	121.451	121.151	120.416	120.678			
39+040	121.302	121.052	119.411	120.504			
39+060	121.273	120.951	119.421	120.418			
39+080	121.184	120.843	120.843	120.320			
39+100	121.085	120.741	120.741	120.217			
39+120	120.986	120.632	119.632	120.119			
39+140	120.887	120.524	119.524	120.021			
39+160	120.740	120.425	119.425	119.922			
39+180	120.641	120.326	119.326	119.823			
39+200	120.542	120.227	119.227	119.724			
39+220	120.443	120.128	119.128	119.625			
39+240	120.344	120.029	119.029	119.526			
39+260	120.245	119.930	118.930	119.427			
39+280	120.146	119.831	118.831	119.328			
39+300	120.047	119.732	118.732	119.229			
39+320	119.948	119.633	118.633	119.130			
39+340	119.849	119.534	118.534	119.031			
39+360	119.750	119.435	118.435	118.932			
39+380	119.651	119.336	118.336	118.833			
39+400	119.552	119.237	118.237	118.734			
39+420	119.453	119.138	118.138	118.635			
39+440	119.354	119.039	118.039	118.536			
39+460	119.255	118.940	117.940	118.437			
39+480	119.156	118.841	117.841	118.338			
39+500	119.057	118.742	117.742	118.239			
39+520	118.958	118.643	117.643	118.140			
39+540	118.859	118.544	117.544	118.041			
39+560	118.760	118.445	117.445	117.942			
39+580	118.661	118.346	117.346	117.843			
39+600	118.562	118.247	117.247	117.744			
39+620	118.463	118.148	117.148	117.645			
39+640	118.364	118.049	117.049	117.546			
39+660	118.265	117.950	116.950	117.447			
39+680	118.166	117.851	116.851	117.348			
39+700	118.067	117.752	116.752	117.249			
39+720	117.968	117.653	116.653	117.150			
39+740	117.869	117.554	116.554	117.051			
39+760	117.770	117.455	116.455	116.952			
39+780	117.671	117.356	116.356	116.853			
39+800	117.572	117.257	116.257	116.754			
39+820	117.473	117.158	116.158	116.655			
39+840	117.374	117.059	116.059	116.556			
39+860	117.275	116.960	115.960	116.457			
39+880	117.176	116.861	115.861	116.358			
39+900	117.077	116.762	115.762	116.259			
39+920	116.978	116.663	115.663	116.160			
39+940	116.879	116.564	115.564	116.061			
39+960	116.780	116.465	115.465	115.962			
39+980	116.681	116.366	115.366	115.863			
40+000	116.582	116.267	115.267	115.764			

Client: **WADER (TECH) DGM Tech CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT (DPR) FOR SH-103 (MANGHWE - GOVINDPUR)**

Project Title: **SH-103 (MANGHWE - GOVINDPUR)**

Consultant: **HOLTEC CONSULTING PRIVATE LIMITED**

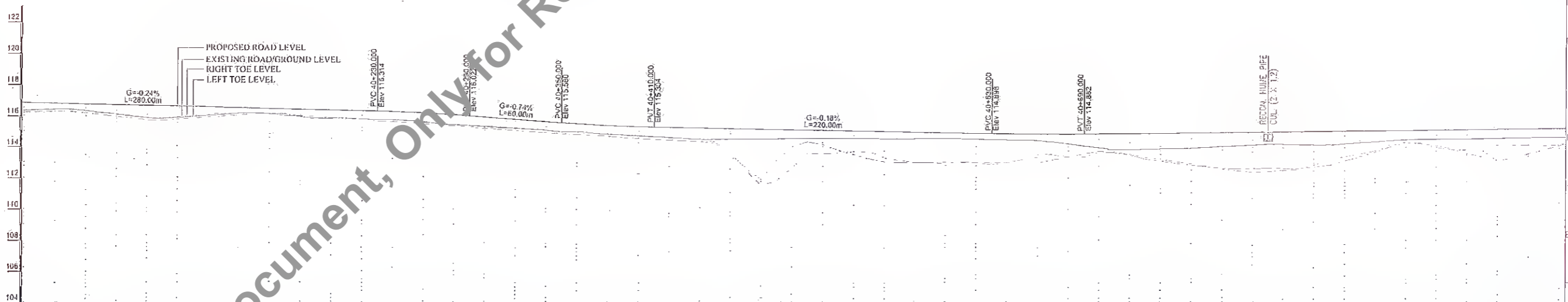
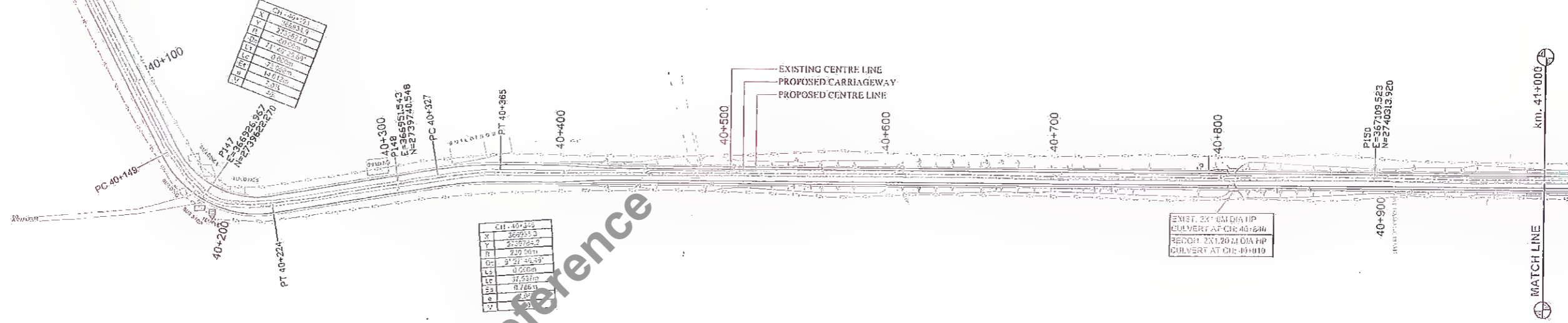
Design: **RS** Checked: **TU** Approval: **JRS**

Drawn: **SRD** Scale: **N/S** Date: **FEB - 2017**

Sheet No: **40**

MANGHWE

GOVINDPUR



CHAINAGE (S.M)	PROPOSED ROAD LEVEL	EXISTING ROAD/GROUND LEVEL	RIGHT TOE LEVEL	LEFT TOE LEVEL
40+000	116.890	116.849	116.849	116.849
40+020	116.842	116.725	116.725	116.725
40+040	116.765	116.529	116.529	116.529
40+060	116.717	116.305	116.305	116.305
40+080	116.670	116.081	116.081	116.081
40+100	116.622	115.865	115.865	115.865
40+120	116.574	115.657	115.657	115.657
40+140	116.527	115.457	115.457	115.457
40+160	116.479	115.265	115.265	115.265
40+180	116.433	115.081	115.081	115.081
40+200	116.385	114.905	114.905	114.905
40+220	116.338	114.736	114.736	114.736
40+240	116.290	114.574	114.574	114.574
40+260	116.243	114.419	114.419	114.419
40+280	116.195	114.271	114.271	114.271
40+300	116.148	114.129	114.129	114.129
40+320	116.101	113.993	113.993	113.993
40+340	116.054	113.863	113.863	113.863
40+360	116.007	113.739	113.739	113.739
40+380	115.960	113.621	113.621	113.621
40+400	115.913	113.509	113.509	113.509
40+420	115.866	113.402	113.402	113.402
40+440	115.819	113.300	113.300	113.300
40+460	115.772	113.203	113.203	113.203
40+480	115.725	113.111	113.111	113.111
40+500	115.678	113.024	113.024	113.024
40+520	115.631	112.941	112.941	112.941
40+540	115.584	112.863	112.863	112.863
40+560	115.537	112.790	112.790	112.790
40+580	115.490	112.721	112.721	112.721
40+600	115.443	112.657	112.657	112.657
40+620	115.396	112.598	112.598	112.598
40+640	115.349	112.544	112.544	112.544
40+660	115.302	112.495	112.495	112.495
40+680	115.255	112.451	112.451	112.451
40+700	115.208	112.411	112.411	112.411
40+720	115.161	112.374	112.374	112.374
40+740	115.114	112.341	112.341	112.341
40+760	115.067	112.311	112.311	112.311
40+780	115.020	112.284	112.284	112.284
40+800	114.973	112.261	112.261	112.261
40+820	114.926	112.241	112.241	112.241
40+840	114.879	112.224	112.224	112.224
40+860	114.832	112.211	112.211	112.211
40+880	114.785	112.201	112.201	112.201
40+900	114.738	112.194	112.194	112.194
40+920	114.691	112.191	112.191	112.191
40+940	114.644	112.191	112.191	112.191
40+960	114.597	112.193	112.193	112.193
40+980	114.550	112.197	112.197	112.197
41+000	114.503	112.203	112.203	112.203

Rev.	Date	Description	Drawn	Checked	Approved

Client: **Bihar State Road Development Corporation, Nawada**

Project Title: **CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT (DPR) FOR SH-103 (MANGHWE- GOVINDPUR)**

Consultant: **HOLTEC CONSULTING PRIVATE LIMITED**

Manager (Tech): **MANAGER (TECH)**

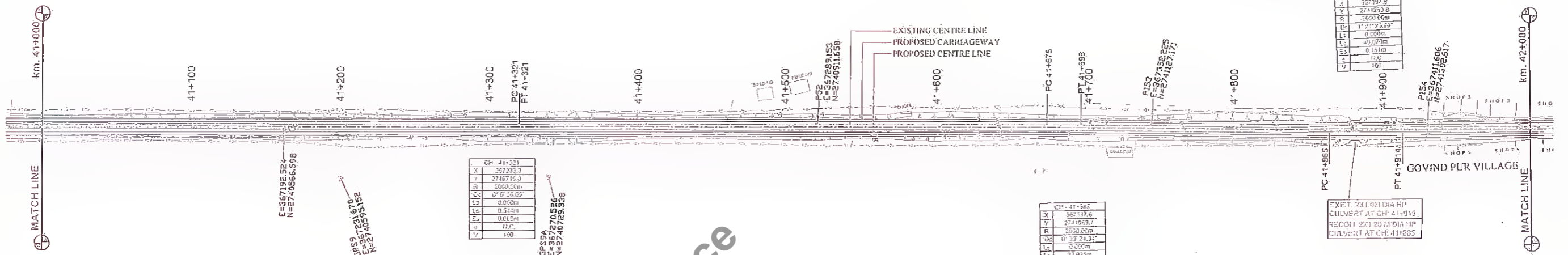
Design	Checked	Approved
HS	TH	JIG
SD	ITS	PER - 2017

Drawn	Rev.	Sheet
HOL/BSRDCL/DPR/13510/PP	01	41

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MANGHWE

GOVINDPUR



CH-41+321	
X	327.373
Y	2467.193
R	2620.20m
LC	0.02652°
LC	0.000m
LC	0.512m
LC	0.000m
LC	12.0m
LC	100

CH-41+587	
X	382.317
Y	2744.697
R	2020.00m
LC	0.222°
LC	22.923m
LC	0.033m
LC	14.0
LC	100

CH-41+820	
X	167.997
Y	2741.253
R	2620.00m
LC	0.000°
LC	0.070m
LC	0.191m
LC	14.0
LC	100



PROPOSED ROAD LEVEL
 EXISTING ROAD/GROUND LEVEL
 RIGHT TOE LEVEL
 LEFT TOE LEVEL

G=0.13%
L=1150.39m

G=1.01%
L=168.18m

DATUM LEVEL = 102	102	104	106	108	110	112	114	116	118	120																																									
PROPOSED ERL AT PROPOSED CENTRE LINE	113.202	114.204	114.713	115.208																																															
EXISTING ROAD/GROUND LEVEL AT PROPOSED CENTRE LINE	114.503	114.514	114.721	115.312																																															
RIGHT TOE LEVEL	114.006	114.127	114.725	115.338																																															
LEFT TOE LEVEL	113.701	114.005	114.729	115.364																																															
HORIZONTAL ALIGNMENT AT PROPOSED CENTRE LINE	R=2020.00																																																		
VERTICAL ALIGNMENT AT PROPOSED CENTRE LINE	G=0.13% L=1150.39																																																		
SUPERELEVATION (%)	0																																																		
CHAINAGE	41+000	41+020	41+040	41+060	41+080	41+100	41+120	41+140	41+160	41+180	41+200	41+220	41+240	41+260	41+280	41+300	41+320	41+340	41+360	41+380	41+400	41+420	41+440	41+460	41+480	41+500	41+520	41+540	41+560	41+580	41+600	41+620	41+640	41+660	41+680	41+700	41+720	41+740	41+760	41+780	41+800	41+820	41+840	41+860	41+880	41+900	41+920	41+940	41+960	41+980	42+000

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Rev	Date	Description	Drawn	Checked	Approved

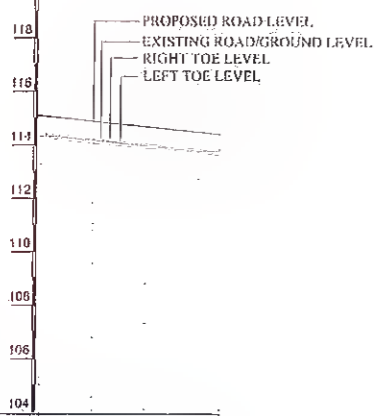
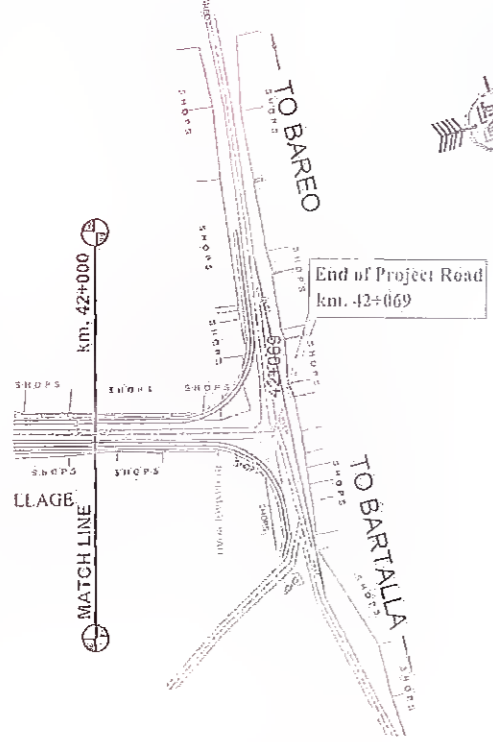
Client: **Bihar State Road Dev. Corp. Ltd.**
 Project Title: **CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT (DPR) FOR SH-103 (MANGHWE - GOVINDPUR)**
 Consultant: **HOLTEC CONSULTING PRIVATE LIMITED**

Designed: **RG** Drawn: **SRD**
 Checked: **TH** Scale: **1:1**
 Approved: **JIG** Date: **FEB - 2017**

Project Title: **PLAN AND PROFILE SH-103 (MANGHWE - GOVINDPUR) (AT CH. -41+000 TO 42+000)**
 Drawing No.: **HOL/BSRDC/DPR/13510/PP**
 Rev: **42**
 Sheet: **42**

MANGHWE

GOVINDPUR



PROPOSED FRL AT PROPOSED CENTRE LINE	114.293	114.450	114.558	115.111
EXISTING ROAD/GROUND LEVEL AT PROPOSED CENTRE LINE DATUM LEVEL = 104	114.293	114.450	114.558	115.111
RIGHT TOE LEVEL	114.293	114.450	114.558	115.111
LEFT TOE LEVEL	114.293	114.450	114.558	115.111
HORIZONTAL ALIGNMENT AT PROPOSED CENTRE LINE				
VERTICAL ALIGNMENT AT PROPOSED CENTRE LINE				
SUPERELEVATION (%)				
CHAINAGE	42+000	42+020	42+040	42+069

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Rev.	Date	Description	Drawn	Checked	Approved

Client: **Bihar State Road Development Corporation Ltd.**
MANAGER (TECH)
 Bihar State Road Devt. Corp. Ltd.
 PIU, Nawada

Project Title : **CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT (DPR) FOR SH-103 (MANGHWE- GOVINDPUR)**

Consultant: **HOLTEC CONSULTING PRIVATE LIMITED**

 Designed: **SRD** Checked: **TH** Approved: **JCS**
 Scale: **1:100** Date: **FEB. - 2017**

Title : **PLAN AND PROFILE SH-103 (MANGHWE - GOVINDPUR) (AT CH.- 42+000 TO 42+069)**

Drawing No.	HOL/BSRDCL/DPR/13510/PP	Rev.	43	Sheet	43
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CULVERTS

2

CULVERT LIST

BOX CULVERT								
S. No	Existing Chainage (m)	Existing Type	Existing Span Arrangement		Proposed Chainage (m)	Proposed Span Arrangement		Remarks
			No of Vent	Dia/ Span		No of Vent	Dia/ Span	
1	21+935	SLAB	1	2.000	21+910	1	3.00	Reconstruction
2	22+290	SLAB	1	1.000	22+260	1	2.00	Reconstruction
3	22+405	SLAB	1	2.500	22+375	1	2.50	Reconstruction
4	22+830	SLAB	1	1.000	22+800	1	2.00	Reconstruction
5	22+850	SLAB	1	1.000	23+320	1	2.00	Reconstruction
6	24+000	SLAB	1	2.000	23+970	1	2.00	Reconstruction
7	26+065	SLAB	1	2.000	26+035	1	2.00	Reconstruction
8	26+330	SLAB	1	1.000	26+300	1	2.00	Reconstruction
9	26+950	SLAB	2	1.800	26+920	1	4.00	Reconstruction
10	28+400	PIPE	1	0.600	28+370	1	2.00	Reconstruction
11	28+470	SLAB	1	1.000	28+440	1	2.00	Reconstruction
12	28+540				28+510	2	6.00	Reconstruction
13	29+195	SLAB	1	1.500	29+165	1	2.00	Reconstruction
14	29+590	SLAB	1	1.000	29+560	1	2.00	Reconstruction

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MANAGER (Tech) **DGM (Tech)**
 Bihar State Road Devp. Corp. Ltd. Bihar State Road Devp. Corp. Ltd.
 PIU, Nawada PIU, Nawada

BOX CULVERT								
S. No	Existing Chainage (m)	Existing Type	Existing Span Arrangement		Proposed Chainage (m)	Proposed Span Arrangement		Remarks
			No of Vent	Dia/ Span		No of Vent	Dia/ Span	
15	30+315	SLAB	1	5.000	30+285	1	5.00	Reconstruction
16	30+525	SLAB	1	1.000	30+490	1	2.00	Reconstruction
17	30+795	SLAB	1	2.000	30+765	1	2.0	Reconstruction
18	30+880	SLAB	1	1.000	30+850	1	2.00	Reconstruction
19	30+965	SLAB	1	1.000	30+935	1	2.00	Reconstruction
20	31+870	SLAB	1	3.000	31+840	1	3.00	Reconstruction
21	32+05	SLAB	1	1.000	32+025	1	1.00	Reconstruction
22	32+500	SLAB	1	3.000	32+470	1	3.00	Reconstruction
23	32+985	SLAB	1	2.000	32+950	1	2.00	Reconstruction
24	33+355	SLAB	1	1.500	33+325	1	2.00	Reconstruction
25	33+730	CHOKED			33+700	1	2.00	Reconstruction
26	34+050	SLAB	1	2.000	34+020	1	2.00	Reconstruction
27	38+800	SLAB	2	2.000	38+770	1	4.00	Reconstruction
28	39+645	SLAB	2	1.000	39+610	1	2.00	Reconstruction



 MANAGER (TECH) DGM (Tech)
 Bihar State Road Devp. Corp. Ltd. Bihar State Road Devp. Corp. Ltd.
 PIU, Nawada F. Nawada

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PIPE CULVERT

S. No	Existing Chainage (m)	Existing Type	Existing Span Arrangement		Proposed Chainage (m)	Proposed Span Arrangement		Remarks
			No of Vent	Dia/ Span		No of Vent	Dia/ Span	
1	22+000	PIPE	1	0.600	21+930	1	1.20	Reconstruction
2	22+200	PIPE		0.600	22+170	1	1.20	Reconstruction
3	25+330	Pipe	1	1.000	25+300	1	1.20	Reconstruction
4	26+040	PIPE	1	1.000	26+010	1	1.200	Reconstruction
5	26+710	PIPE	1	0.600	26+680	1	1.20	Reconstruction
6	27+400	PIPE	1	0.300	27+370	1	1.20	Reconstruction
7	27+630	DRAIN	1	0.500	27+600	1	1.20	Reconstruction
8	27+775	DRAIN	1	0.500	27+745	1	1.20	Reconstruction
9	27+990	DRAIN	1	0.500	27+960	1	1.20	Reconstruction
10	28+150	PIPE	1	0.600	28+120	1	1.20	Reconstruction
11	28+825	DRAIN	1	0.500	28+795	1	1.20	Reconstruction
12	28+960	DRAIN	1	0.500	28+930	1	1.20	Reconstruction
13	29+090	CHOKED			29+060	1	1.20	Reconstruction
14	30+385	PIPE	1	0.600	30+355	1	1.20	Reconstruction
15	30+440	DRAIN	1	0.500	30+410	1	1.20	Reconstruction
16	31+145	PIPE	1	0.600	31+115	1	1.20	Reconstruction



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MANAGER (TECH) Bihar State Road Devp. Corp. Ltd.
 PIU, Nawada
 DGM (Tech)
 Bihar State Road Devp. Corp. Ltd.
 PIU, Nawada

PIPE CULVERT

S. No	Existing Chainage (m)	Existing Type	Existing Span Arrangement		Proposed Chainage (m)	Proposed Span Arrangement		Remarks
			No of Vent	Dia/ Span		No of Vent	Dia/ Span	
17	31+230	DRAIN	1	0.500	31+200	1	1.20	Reconstruction
18	31+310	PIPE		0.600	31+280	1	1.20	Reconstruction
19	31+420	CHOKED			31+390	1	1.20	Reconstruction
20	31+625	SLAB	1	0.500	31+595	1	1.20	Reconstruction
21	32+175	PIPE	1	1.000	32+140	1	1.200	Reconstruction
22	33+305	PIPE	1.00	1.00	33+275	1	1.20	Reconstruction
23	33+470	PIPE	1	1.000	33+440	1	1.20	Reconstruction
24	33+485	PIPE	1	0.600	33+455	1	1.20	Reconstruction
25	33+555	PIPE	1	0.600	33+520	1	1.20	Reconstruction
26	34+265	PIPE	2	0.600	34+235	2	1.20	Reconstruction
27	34+345	PIPE	1	0.600	34+310	1	1.20	Reconstruction
28	34+460	PIPE	2	1.000	34+430	2	1.200	Reconstruction
29	34+650	PIPE	2	1.000	34+620	2	1.200	Reconstruction
30	35+093	PIPE	2	0.600	35+060	1	1.20	Reconstruction
31	35+170	PIPE	2	0.600	35+140	1	1.20	Reconstruction
32	35+275	PIPE	2	1.000	35+245	2	1.200	Reconstruction

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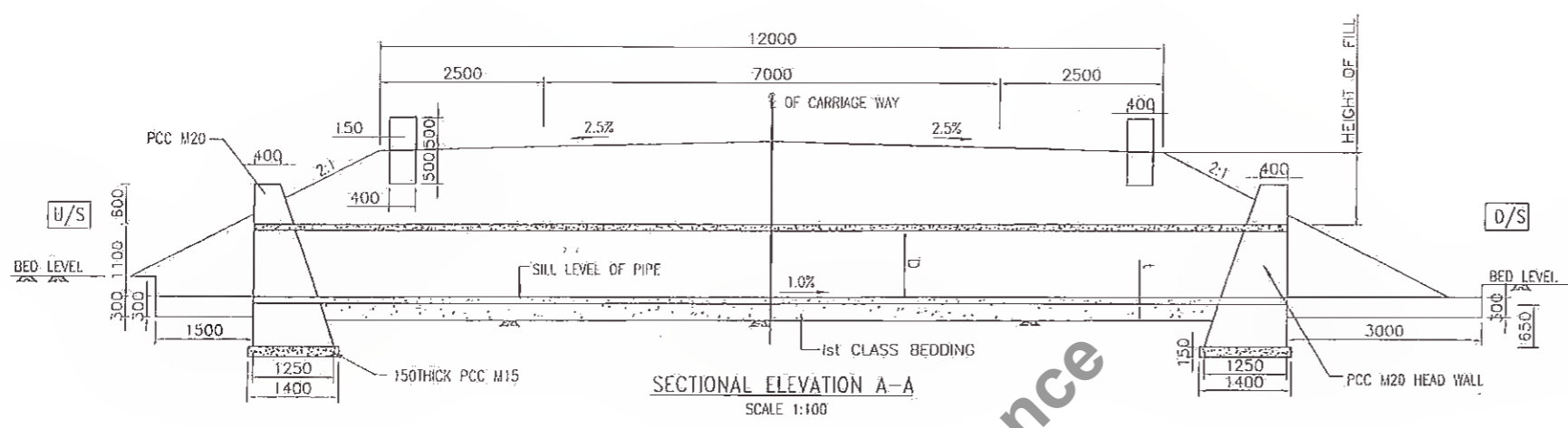


MANAGER (TECH), Bihar State Road Dev. Corp. Ltd.
 Bihar State Road Dev. Corp. Ltd. PIU, Nawada

DGM (Tech)
 Bihar State Road Dev. Corp. Ltd.
 PIU, Nawada

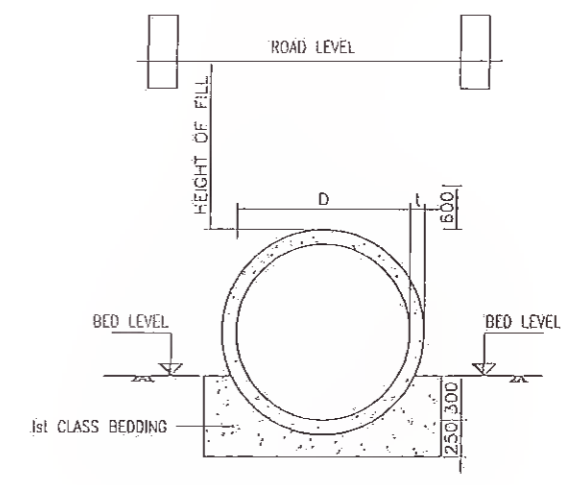
PIPE CULVERT								
S. No	Existing Chainage (m)	Existing Type	Existing Span Arrangement		Proposed Chainage (m)	Proposed Span Arrangement		Remarks
			No of Vent	Dia/ Span		No of Vent	Dia/ Span	
33	35+400	PIPE	2	0.600	35+370	1	1.20	Reconstruction
34	35+545	PIPE	1	0.600	35+515	1	1.20	Reconstruction
35	35+970	PIPE	2	1.000	35+935	2	1.200	Reconstruction
36	36+215	PIPE	2	1.000	36+185	2	1.200	Reconstruction
37	36+415	PIPE	2	1.000	36+385	2	1.200	Reconstruction
38	36+940	PIPE	2	1.000	36+945	2	1.200	Reconstruction
39	37+935	PIPE	2	0.600	37+905	1	1.20	Reconstruction
40	38+055	PIPE	2	0.600	38+025	1	1.20	Reconstruction
41	39+785	CHOKED			39+780	1	1.20	Reconstruction
42	40+840	PIPE	2	1.000	40+810	2	1.200	Reconstruction
43	41+915	PIPE	2	1.00	41+885	2	1.200	Reconstruction



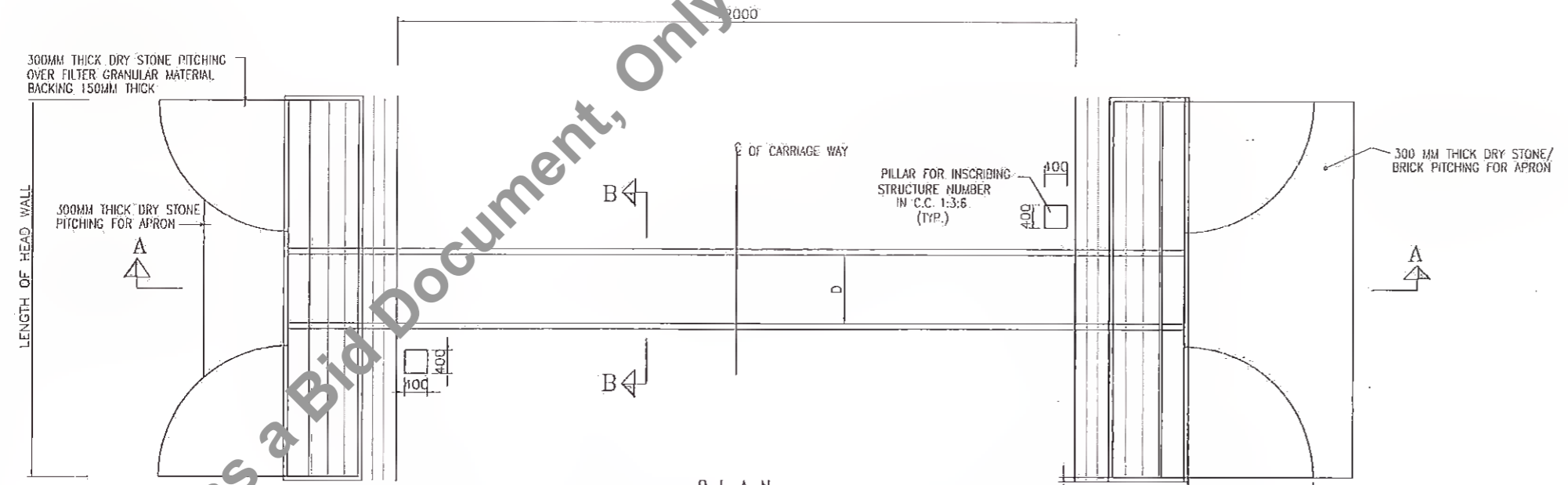
DGM (Tech)
 MANAGER (TECH), Bihar State Road Devp. Corp. Ltd.
 Bihar State Road Devp. Corp. Ltd. PIU, Nawada
 PIU, Nawada



SECTIONAL ELEVATION A-A
SCALE 1:100



SECTION B-B
SCALE 1:50



P L A N
SCALE 1:100

- NOTES:**
1. All dimensions are in mm.
 2. Dimensions are not to be scaled only figure dimensions shall be followed.
 3. Longitudinal slope of pipe should be minimum 1 in 1000.
 4. First class bedding can be used for maximum height of fill of 4 metres.
 5. D = Dia of Pipe
t = Thickness of Pipe

Rev.	Date:	Description	Drawn	Checked	Approved

Client: **Bihar State Road Development Corporation Ltd.**

 MANAGER (TECH)
 Bihar State Road Devp. Corp. Ltd.
 PIU, Nawada

Project Title : **CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT (DPR) FOR SH-103 (MANGHWE- GOVINDPUR)**

Consultant: **HOLTEC CONSULTING PRIVATE LIMITED**

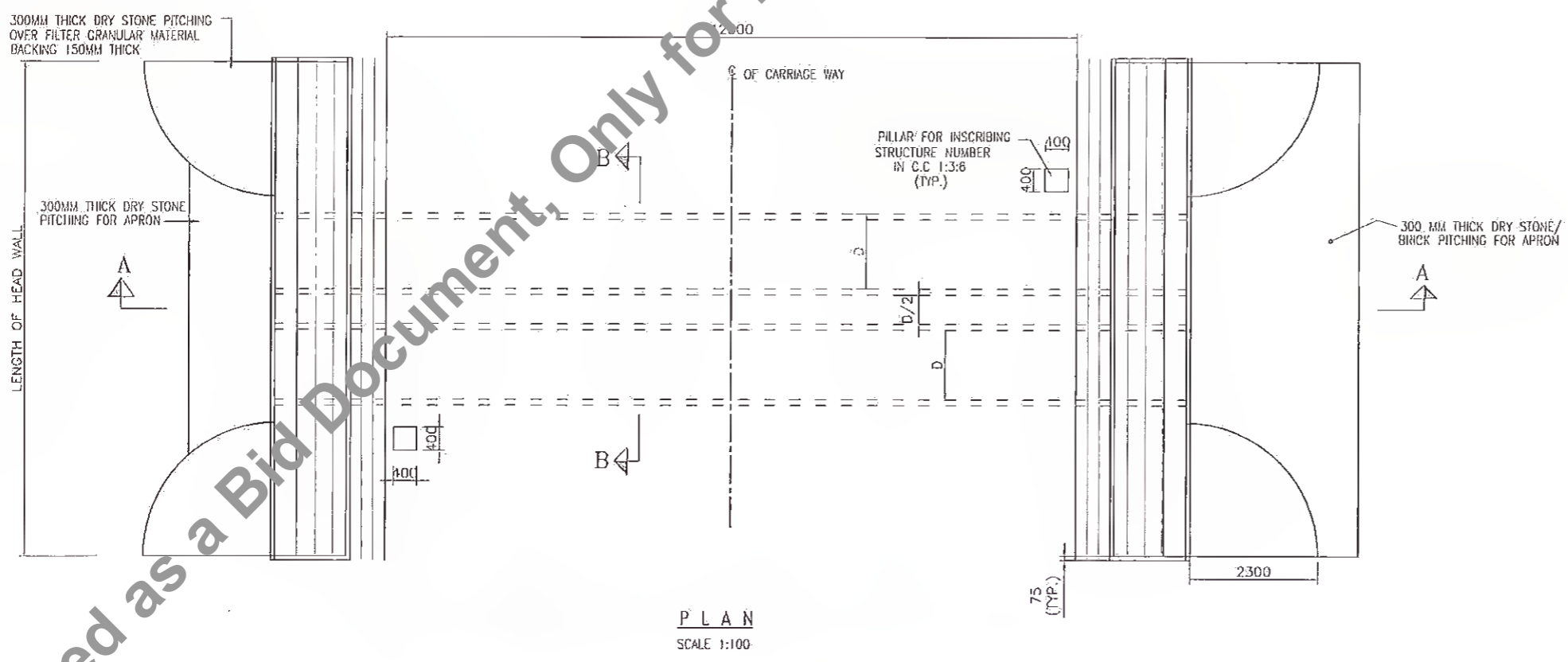
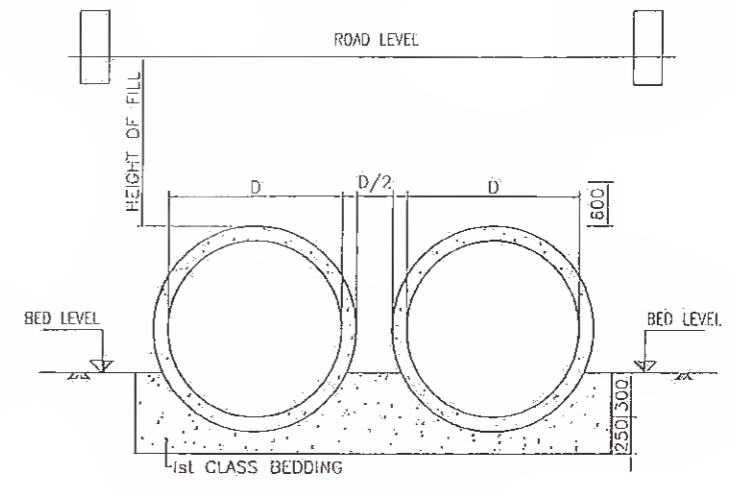
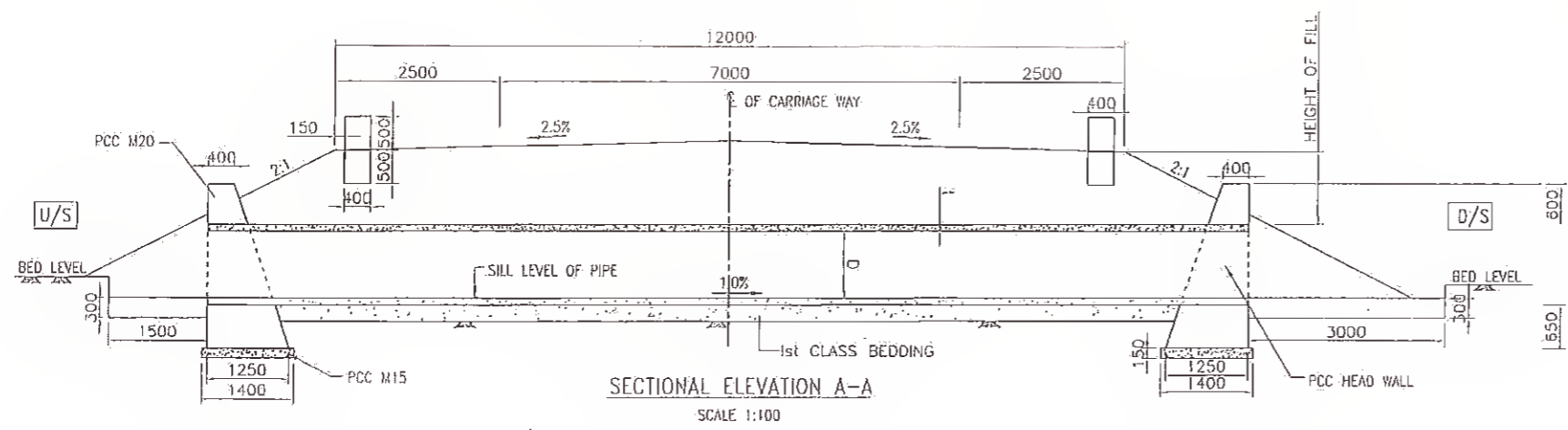
 HO/102 CENTRE, A BLOCK, BSEH W/100, PO-135101, BHARHAT, PIN-824101
 PHONE - 0174-2325939, 2325938, FAX 0174-2325914, 2325916

Designed	YJ	Checked	YJ	Approved	JIG
Drawn	SVR	Scale	NTS	Date	DECEMBER, 2021

Title : **GENERAL ARRANGEMENT DRAWING FOR SINGLE ROW RUMBLE PIPE CULVERT (NEW CONSTRUCTION)**

Drawing No.	Rev.	Sheet
HOL/BSRDCL/DPR/13510/CUL-06	0	01

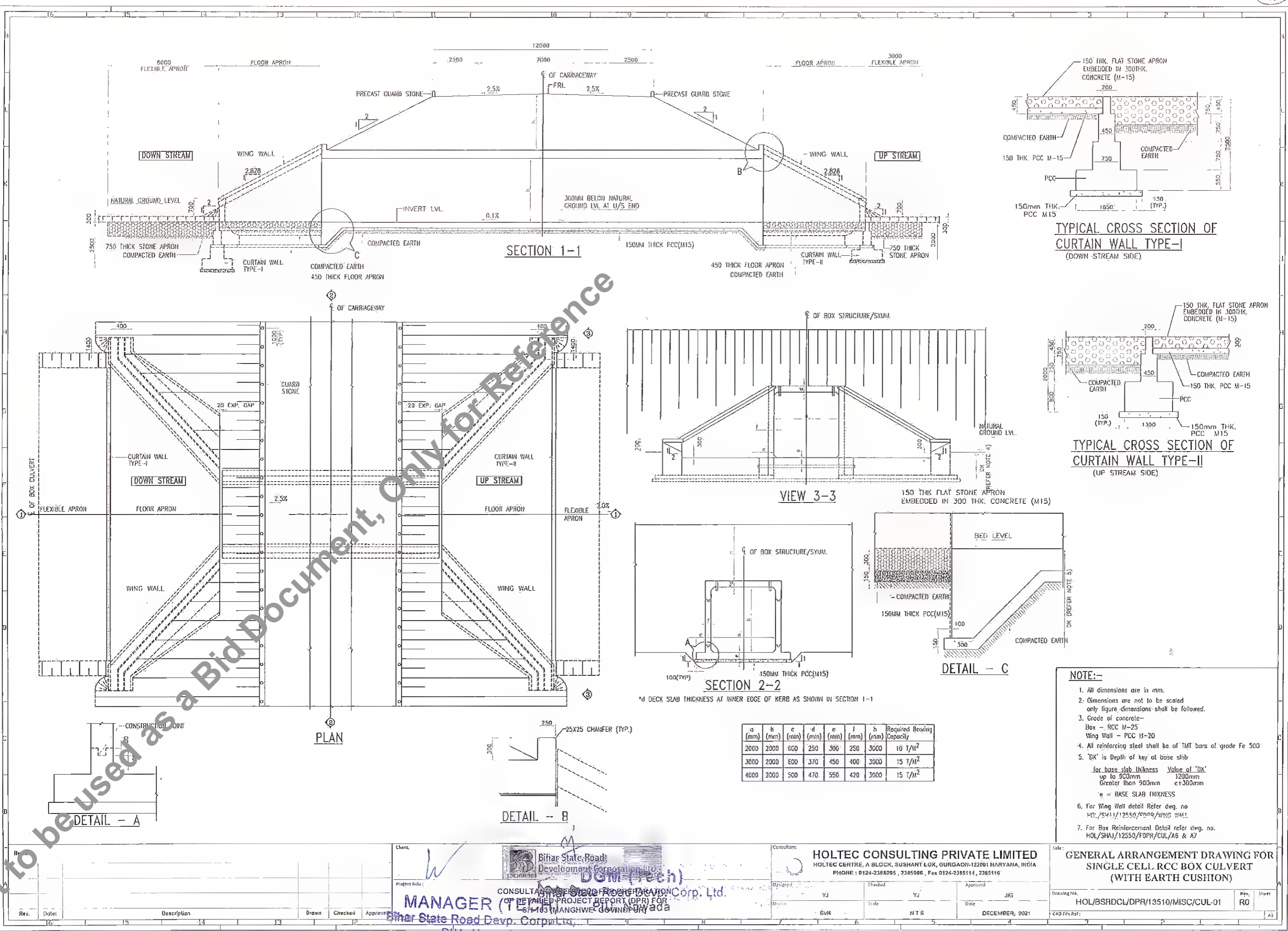
Not to be used as a Bid Document, Only for Reference



- NOTES:**
1. All dimensions are in mm.
 2. Dimensions are not to be scaled only figure dimensions shall be followed.
 3. Longitudinal slope of pipe should be minimum 1 in 1000.
 4. First class bedding can be used for maximum height of fill of 4 metres.
 5. D = Dia of Pipe
t = Thickness of Pipe

Client: Bihar State Road Development Corporation Ltd. MANAGER (TECH)					Project Title: CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT (DPR) FOR SH-103 (MANGHWE- GOVINDPUR)					Consultant: HOLTEC CONSULTING PRIVATE LIMITED NO. 22, SECTOR 1, BLOCK 2, SHYAMLI, D.D. CROSSING, 110021, NEW DELHI, INDIA PHONE: +91 11 26189325, 2359556. FAX: +91 11 26123511, 2335115					Title: GENERAL ARRANGEMENT DRAWING FOR DOUBLE ROW HOME PIPE CULVERT (NEW CONSTRUCTION)				
Revision:					Design: YJ					Checked: YJ					Approved: JIG				
Ref.					Drawn: SVR					Scale: HTS					Date: DECEMBER, 2021				
Date:					Description:					Drawn By:					Rev.				
16					15					14					13				
16					15					14					13				

PIU, Nawada



TYPICAL CROSS SECTION OF CURTAIN WALL TYPE-I (DOWN-STREAM SIDE)

TYPICAL CROSS SECTION OF CURTAIN WALL TYPE-II (UP-STREAM SIDE)

VIEW 3-3

SECTION 2-2

DETAIL - C

a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	h (mm)	Required Bearing Capacity
2000	2000	600	250	300	250	3000	10 T/m ²
3000	2000	600	370	450	400	3000	15 T/m ²
4000	2000	500	470	550	420	3000	15 T/m ²

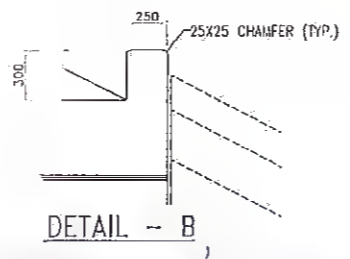
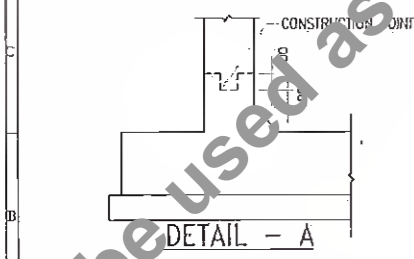
- NOTE:-**
- All dimensions are in mm.
 - Dimensions are not to be scaled only figure dimensions shall be followed.
 - Grade of concrete-
Box - RCC M-25
Wing Wall - PCC M-20
 - All reinforcing steel shall be of TMT bars of grade Fe 500
 - 'DK' is Depth of key of base slab
for base slab thickness Value of 'DK'
up to 900mm 1200mm
Greater than 900mm e+300mm
e = BASE SLAB THICKNESS
 - For Wing Wall detail Refer dwg. no. HOL/SHJ/12550/ENR/WING WALL
 - For Box Reinforcement Detail refer dwg. no. HOL/SHJ/12550/FOR/CUL/A5 & A7

TITLE: GENERAL ARRANGEMENT DRAWING FOR SINGLE CELL RCC BOX CULVERT (WITH EARTH CUSHION)

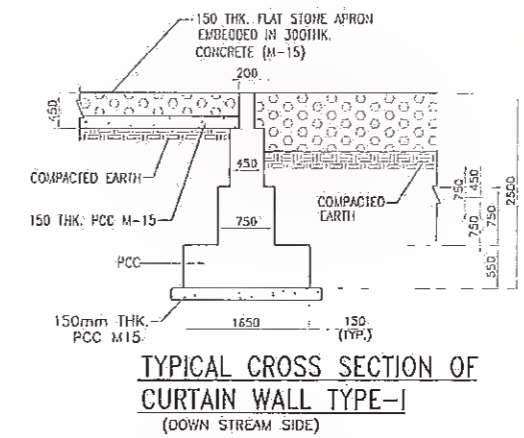
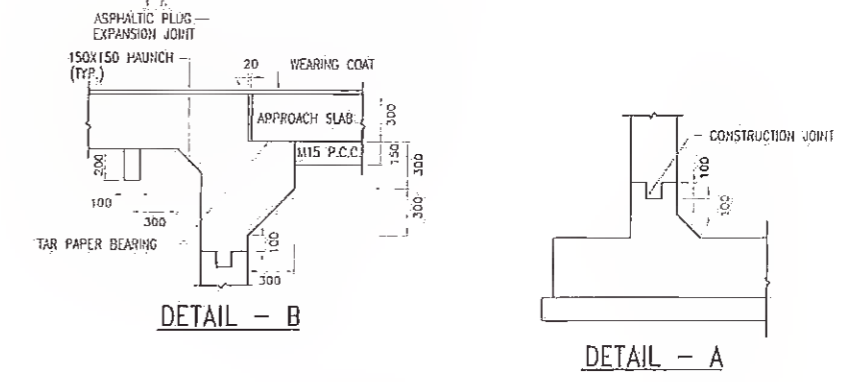
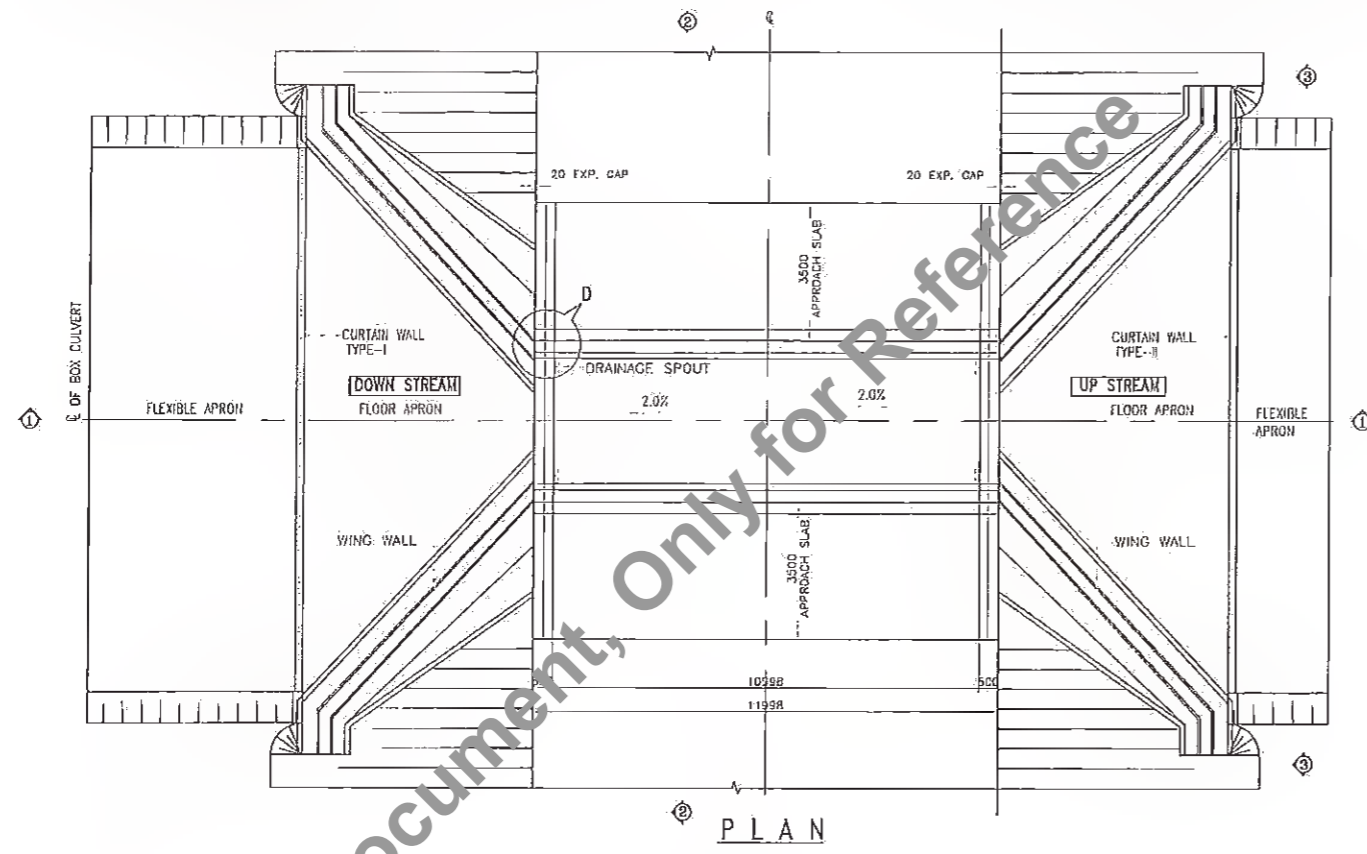
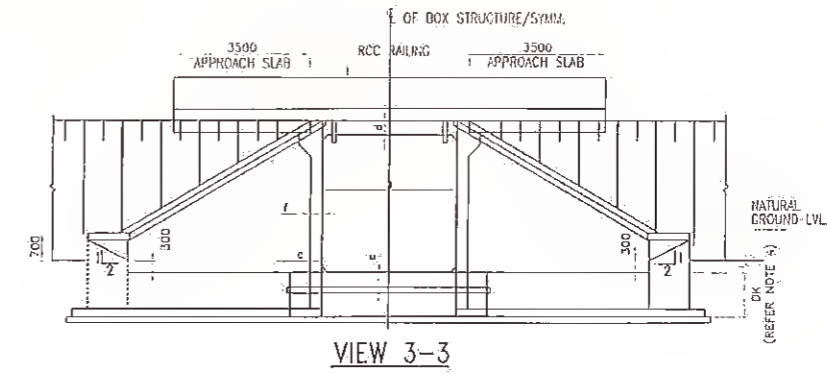
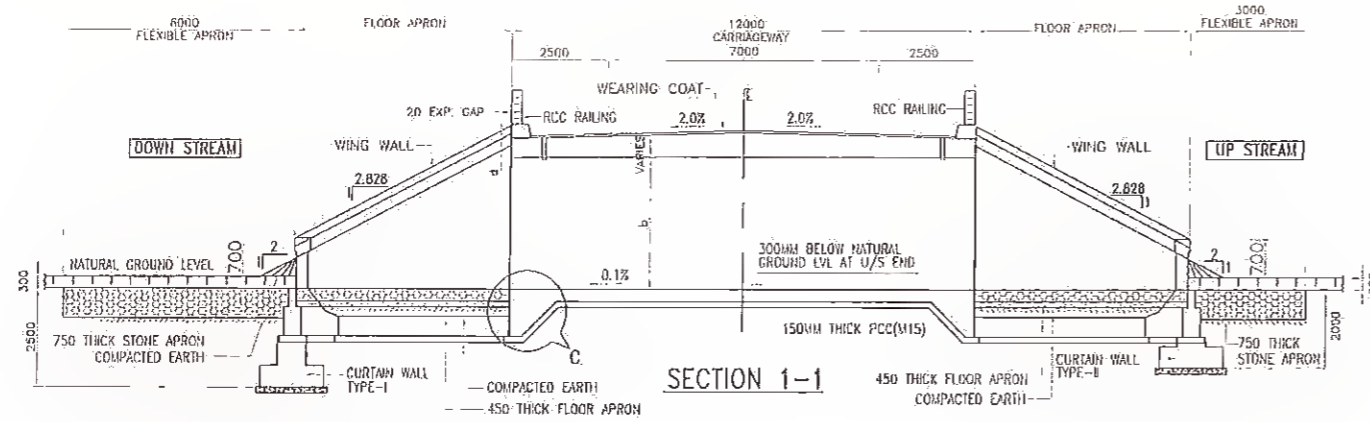
Drawing No. HOL/BSRDCL/DPR/13510/MISC/CUL-01 Rev. RO Sheet

MANAGER (TECHNICAL) Bilar State Road Development Corporation Ltd. PIU, Nawada

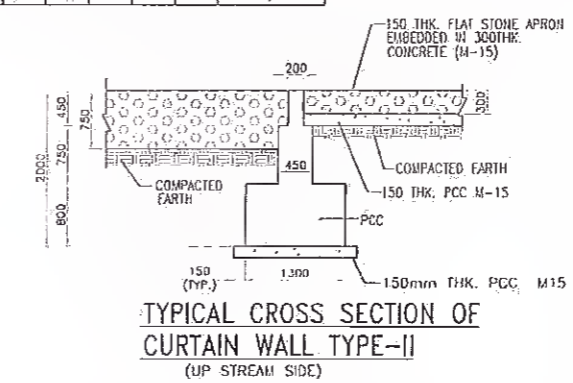
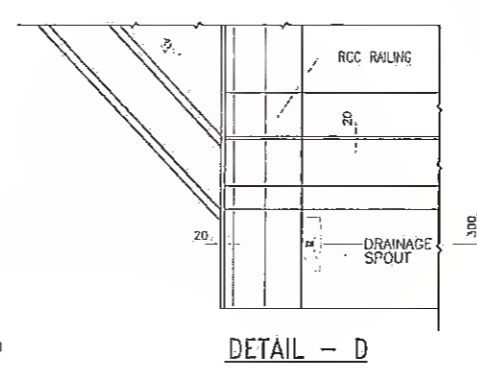
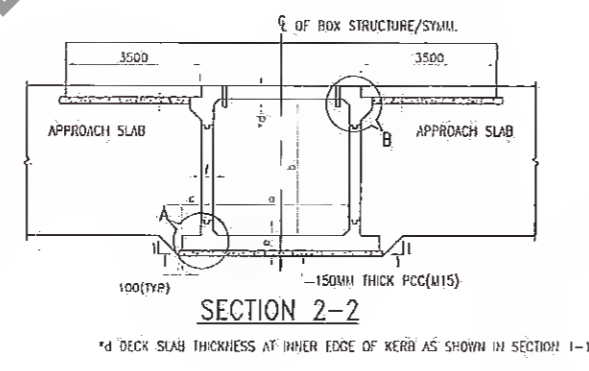
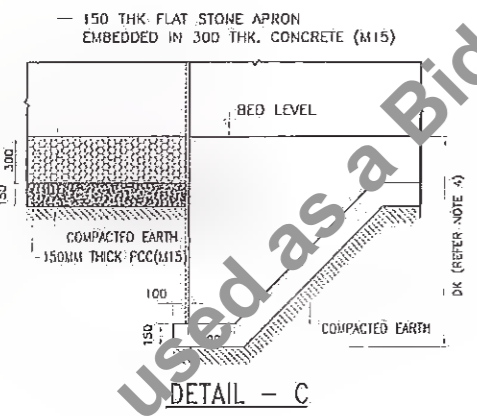
CONSULTANT: HOLTEC CONSULTING PRIVATE LIMITED
HOLTEC CENTRE, A BLOCK, SUSHANT LOK, GURGAON-122001 HARYANA, INDIA
PHONE: 0124-2385095, 2385096, Fax 0124-2385114, 2385116



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



a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	Required Bearing Capacity
2000	2060	500	350	380	300	15 T/m ²
3000	2000	900	420	420	420	15 T/m ²
4000	2000	400	450	500	500	15 T/m ²



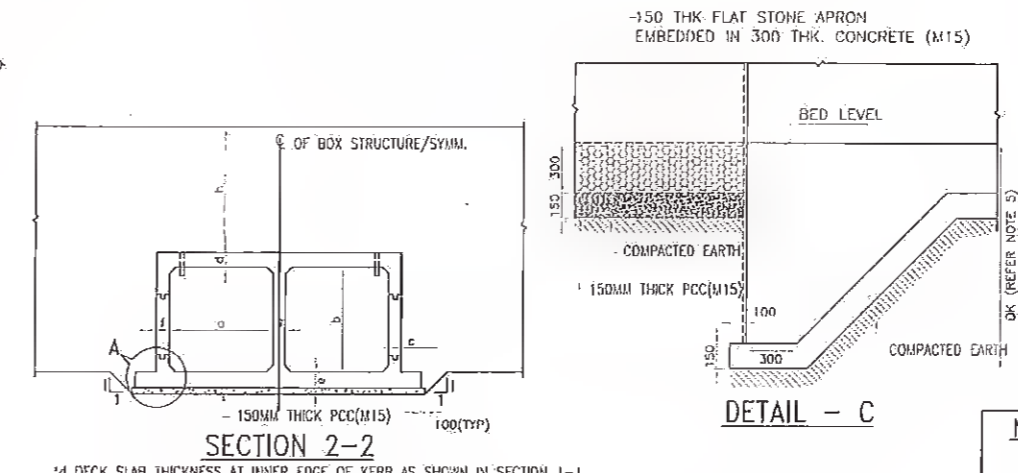
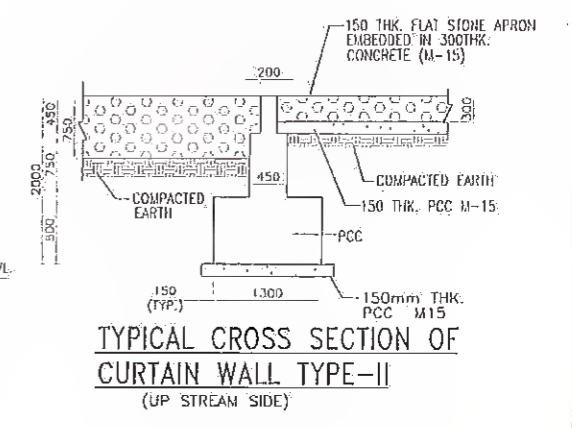
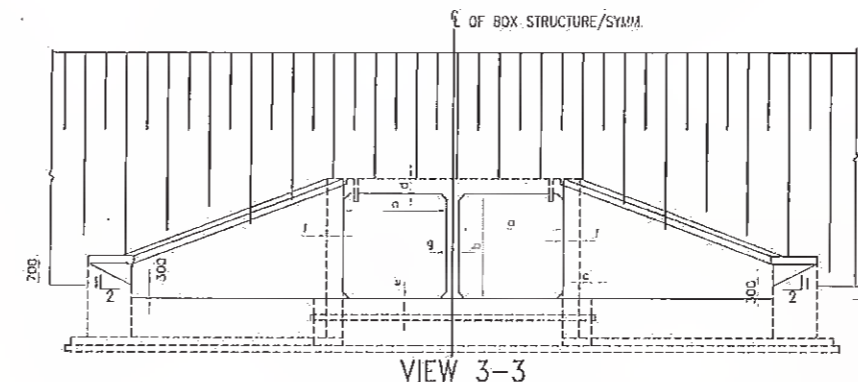
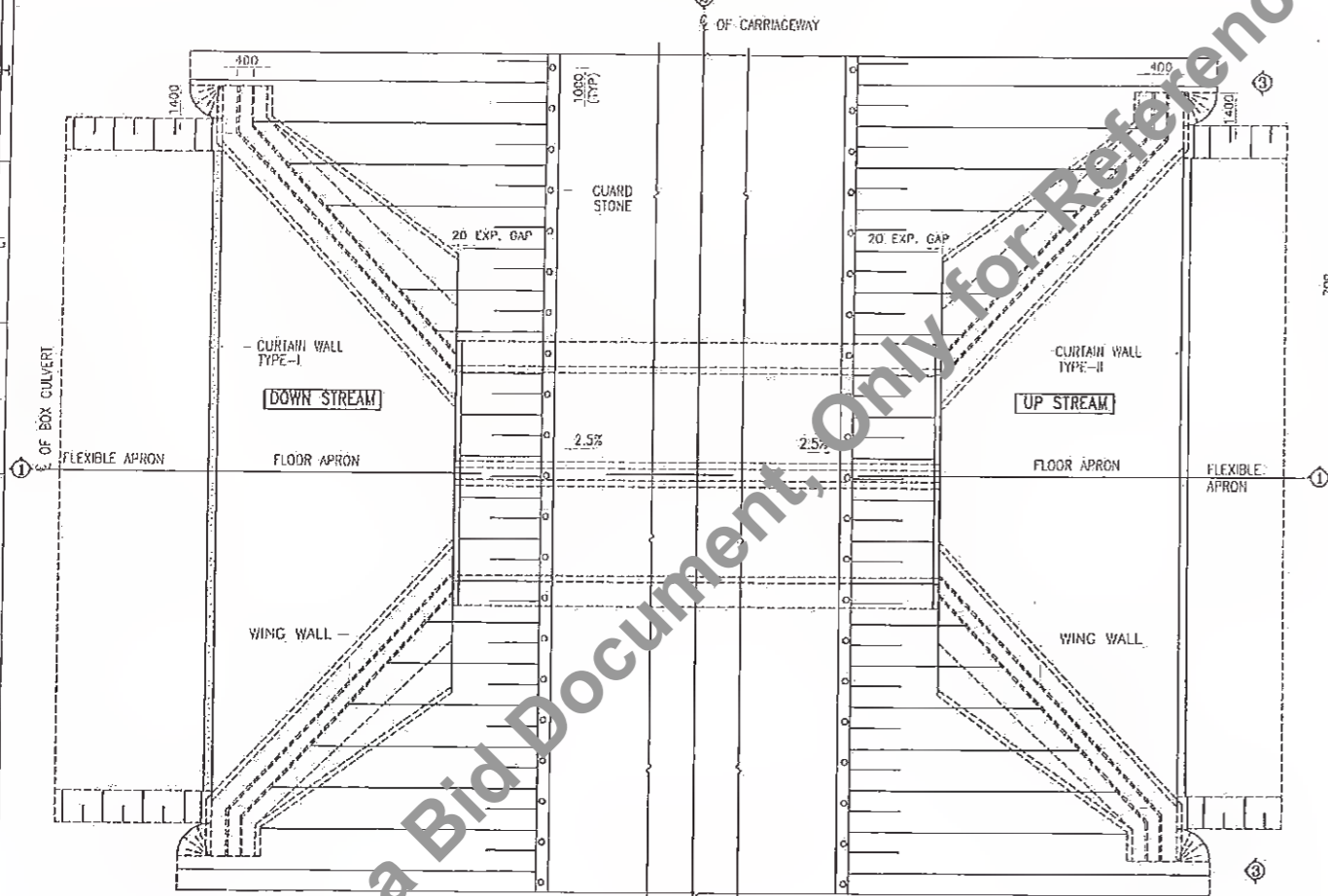
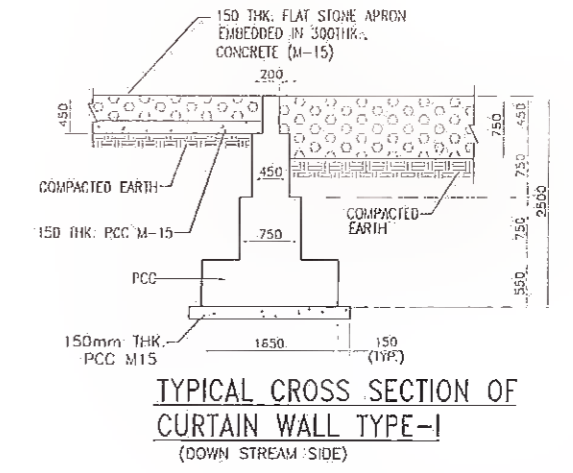
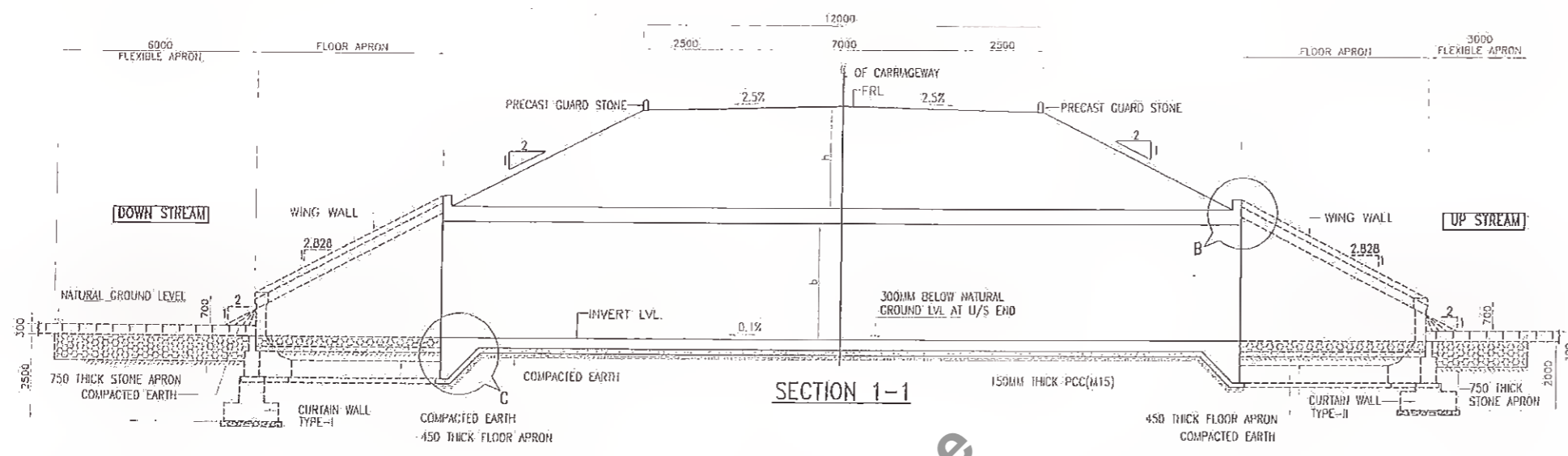
NOTES:

- All dimensions are in mm.
- Dimensions are not to be scaled only figure dimensions shall be followed.
- Grade of concrete-
Box - RCC M-25
Wing Wall - PCC M-20
- All reinforcing steel shall be of TMT bars of grade Fe 500
- 'DK' is Depth of key at base slab

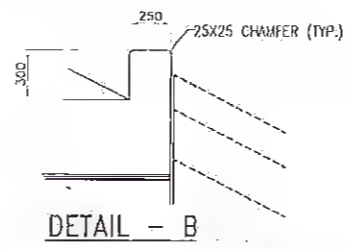
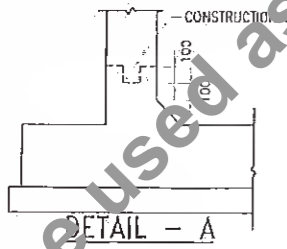
for base slab thickness Value of 'DK'
 up to 900mm 1200mm
 Greater than 900mm e+300mm

e = BASE SLAB THICKNESS

Revision Rev. Date: Description Drawn Checked Approved		CRNL MANAGER (TECHNICAL) Bihar State Road Dev. Corp. Ltd. PIU, Nawada		Consultant: HOLTEC CONSULTING PRIVATE LIMITED HOLTEC CENTRE, A BLOCK, SUSHANT LOK, GURGAON-122001 HARYANA, INDIA PHONE : 0124-2385095, 2385096, Fax 0124-2385114, 2385116		Title: GENERAL ARRANGEMENT DRAWING FOR SINGLE CELL RCC BOX CULVERT (WITHOUT EARTH CUSHION)	
Drawn: SVR Checked: YJ Scale: 1/15 Date: DECEMBER, 2021		Approved: JIG		Drawing No.: HOL/BSRDCL/DPR/13510/MISC/CUL-04 Rev: R0 Sheet: 1/3			



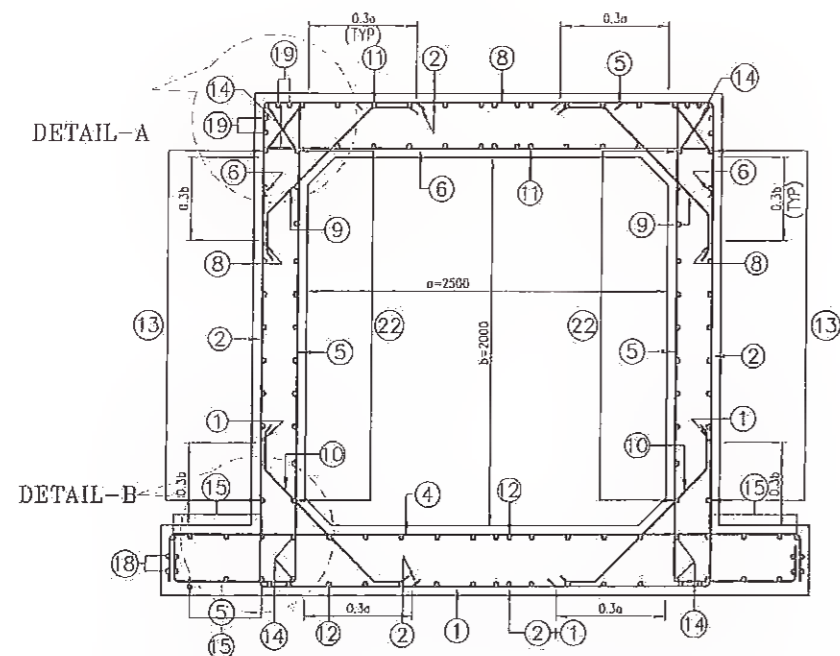
a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	h (mm)	Required Bearing Capacity
6000	2000	300	470	450	420	350	10.0 T/m ²



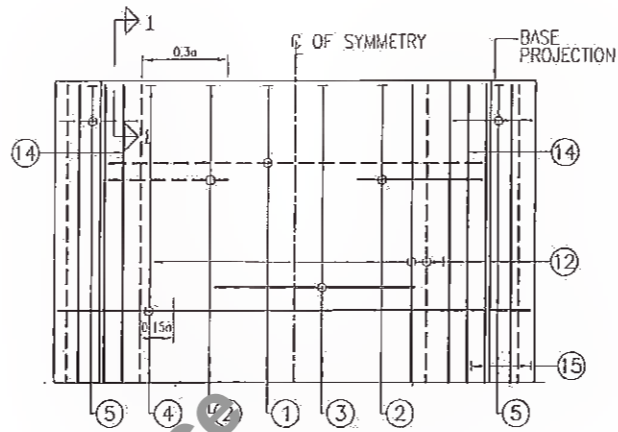
- NOTE:-**
- All dimensions are in mm.
 - Dimensions are not to be scaled only figure dimensions shall be followed.
 - Grade of concrete -
Box - RCC M-25
Wing Wall - PCC M-20
 - All reinforcing steel shall be of TMT bars of grade Fc 500
 - 'DK' is Depth of key at base slab
for base slab thickness Value of 'DK'
up to 900mm 1200mm
Greater than 900mm e+300mm
e = BASE SLAB THICKNESS
 - For Wing Wall detail Refer dwg. no. HOL/SHAJ/12550/FDPR/WING WALL
 - For Box Reinforcement Detail refer dwg. no. HOL/SHAJ/12550/FDPR/CUL/A6 & A7

Revision Rev. Date Description Drawn Checked Approved			Client: Bihar State Road Development Corp. Ltd. Project Title: CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT (DPR) FOR SH-102 (MANGHWE-GOVINDPUR) PIU, Nawada			Consultant: HOLTEC CONSULTING PRIVATE LIMITED HOLTEC CENTRE, A BLOCK, SUSHANT LOK, GURGAOH-122001 HARYANA, INDIA PHONE : 0124-2385895, 2385099, Fax 0124-2385114, 2385116			File: GENERAL ARRANGEMENT DRAWING FOR DOUBLE CELL RCC BOX CULVERT (WITH EARTH CUSHION) Drawing No. HOL/BSRDC/L/DPR/13510/MISC/CUL-02 Date: DECEMBER, 2021 Rev. RO Sheet AT		
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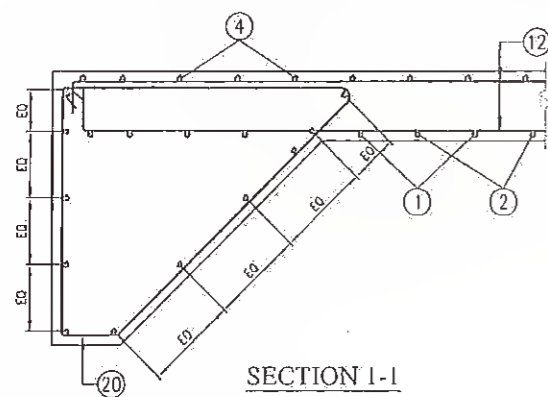
CAB



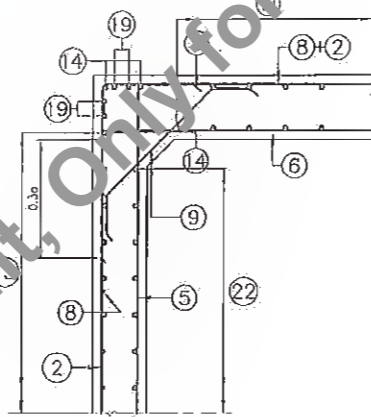
REINFORCEMENT DETAILS OF SINGLE CELL BOX CULVERT



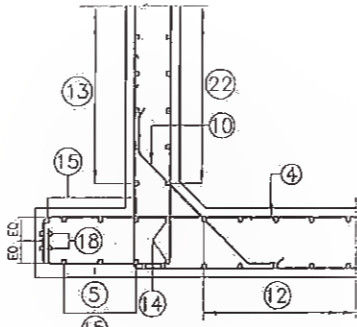
BOTTOM SLAB R/F PLAN
(LAUNCH LINES NOT SHOWN IN PLAN)



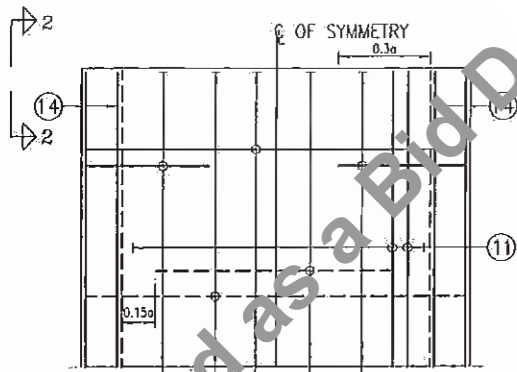
SECTION 1-1



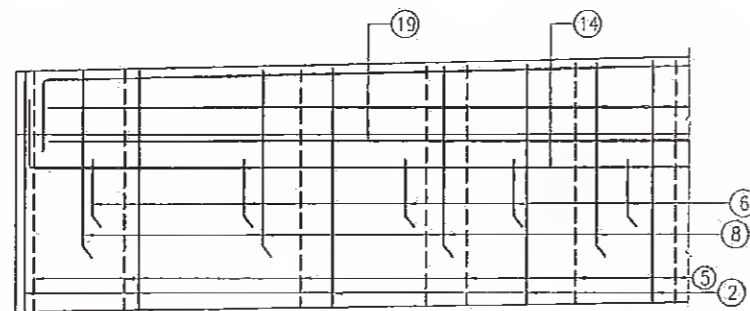
DETAIL-A



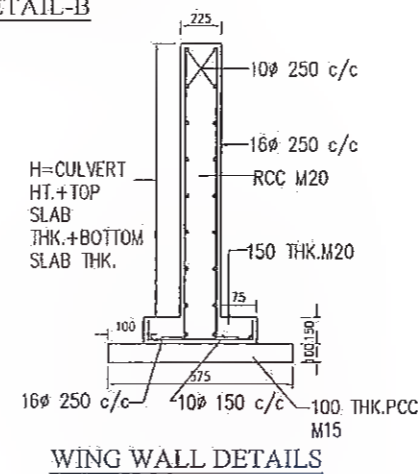
DETAIL-B



TOP SLAB R/F PLAN



VIEW 2-2
HAUNCH LINES NOT SHOWN



WING WALL DETAILS

SCHEDULE OF REINFORCEMENT					
BAR MARK	BOX-CELL DESIGNATION	1 x 2.50 x 2.0			
		BAR DIA.	SPACING IN MM	M1	M2
①	M1 M2 M1	10	250	930	2500
②	M2 M1	16	250	850	2630
③	M1				
④	M1 M2 M1	16	250	280	3500
⑤	M2 M1	16	250	2630	700
⑥	M1 M2 M1	16	250	260	2500
⑦	M1				
⑧	M1 M2 M1	10	250	900	2500
⑨	M2 M1	10	250	200	890
⑩	M1 M2 M1	12	250	200	932
⑪	M1 M2 M1	10	250	225	11900
⑫	M1 M2 M1	10	250	190	11900
⑬	M1 M2 M1	10	250	160	11900
⑭	M1 M2 M1	10	-	160	11900
⑮	M1 M2 M1	10	250	190	11900
⑯	M1	12	-	11900	-
⑰	M1 M2	12	250	1006	1266
⑱	M1 M2 M1	10	-	160	11900
⑲	M1 M2 M1	10	-	160	11900
⑳	M1 M2 M1	10	150	1100	1556
㉑	M1 M2 M1	10	-	160	3500
㉒	M1 M2 M1	10	250	160	11900

Rev.	Date	Description	Drawn	Checked	Approved

Client: **Bihar State Road Development Corporation**

Project Title: **CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT (DPR) FOR SH-103 (MANGHWE- GOVINDPUR)**

MANAGER (TECHNICAL) **PIU, Nawada**

CONSULTING PRIVATE LIMITED

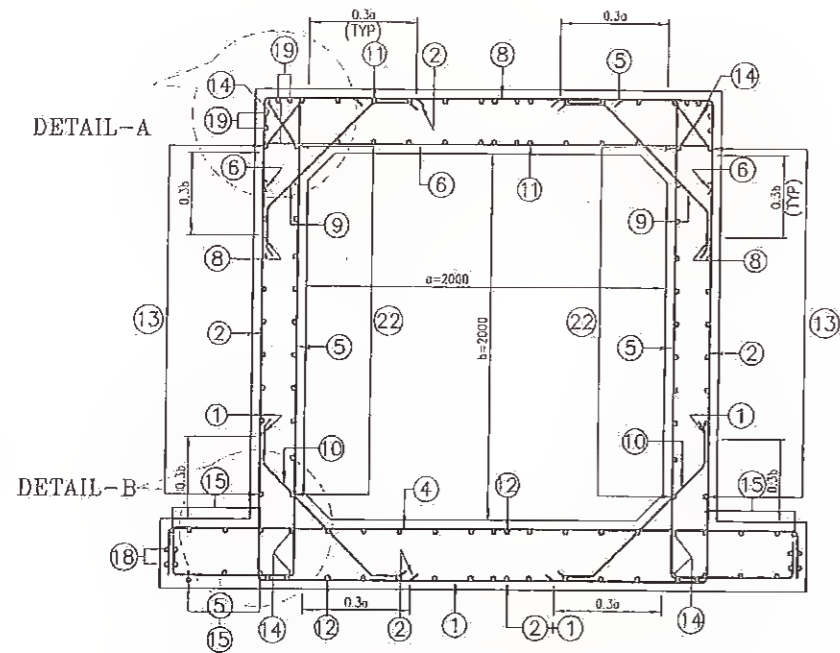
NO. 10, CENTRE, BLOK C, SUKHANTOLIK, GURGAON-122001 HARYANA, INDIA

PHONE: 0124-2381995, 2385030, Fax 0124-2385114, 2385116

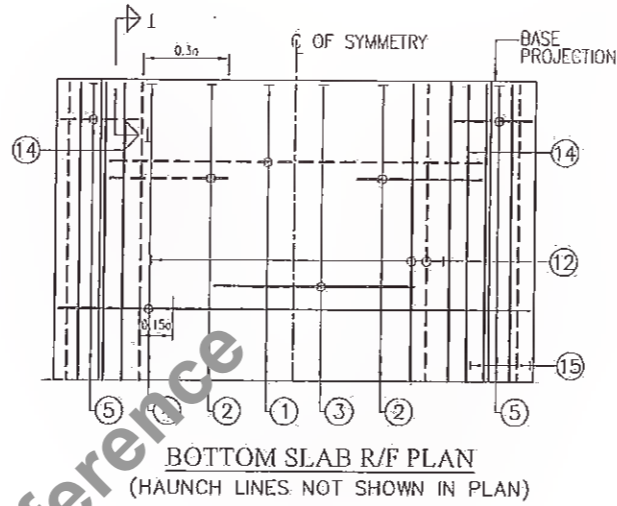
Designed: YJ, State: YJ, Approved: JIG

Drawn: SVH, State: NTS, Date: JANUARY, 2022

Title: TYPICAL DETAIL OF REINFORCEMENT FOR BOX CULVERT 1X2.50X2.0		Rev.	Sheet
Drawing No.: HCL/BSR/DCL/DPR/13510/MISC/CUL-02		01	01
Date: JANUARY, 2022		Scale: AS SHOWN	

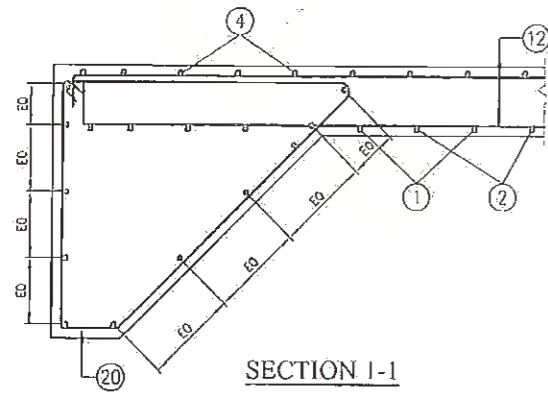


REINFORCEMENT DETAILS OF SINGLE CELL BOX CULVERT

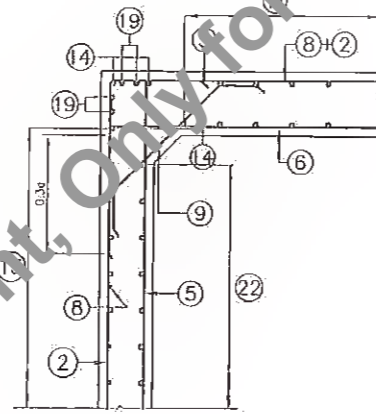


BOTTOM SLAB R/F PLAN
(HAUNCH LINES NOT SHOWN IN PLAN)

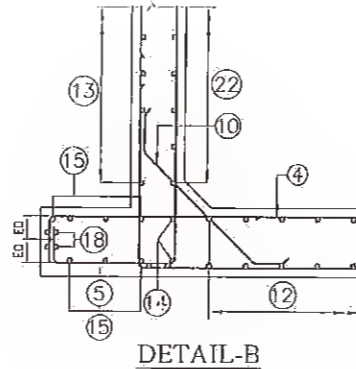
SCHEDULE OF REINFORCEMENT					
BAR MARK	BOX-CELL DESIGNATION	1 x 2.0 x 2.0			
		BAR DIA	SPACING IN MM	M1	M2
①	M1 M2 M1	10	250	930	2500
②	M2 M1	16	250	850	2630
③	M1				
④	M1 M2 M1	16	250	280	3500
⑤	M2 M1	16	250	2630	700
⑥	M1 M2 M1	16	250	260	2500
⑦	M1				
⑧	M1 M2 M1	10	250	900	2500
⑨	M2 M1	10	250	200	890
⑩	M1 M2 M1	12	250	200	932
⑪	M1 M2 M1	10	250	225	11900
⑫	M1 M2 M1	10	250	190	11900
⑬	M1 M2 M1	10	250	160	11900
⑭	M1 M2 M1	10	-	160	11900
⑮	M1 M2 M1	10	250	190	11900
⑯	M1	12	-	11900	-
⑰	M1 M2	12	250	1006	1266
⑱	M1 M2 M1	10	-	160	11900
⑲	M1 M2 M1	10	-	160	11900
⑳	M1 M2 M1	10	150	1100	1556
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㉒	M1 M2 M1	10	250	160	11900



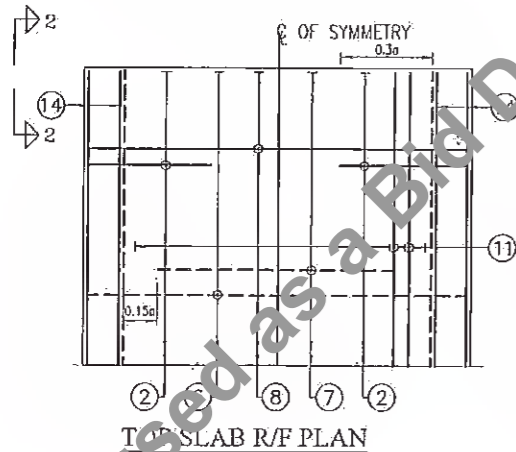
SECTION 1-1



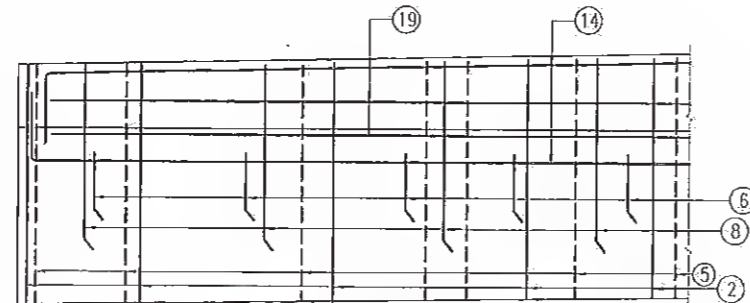
DETAIL-A



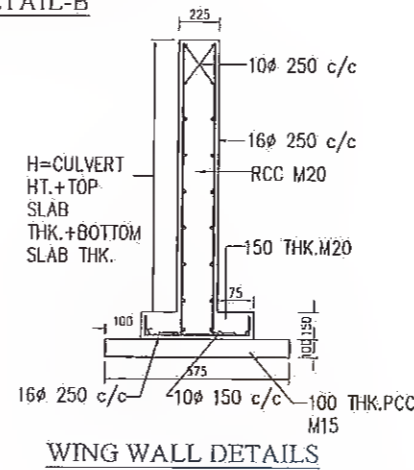
DETAIL-B



TOP SLAB R/F PLAN



VIEW 2-2
HAUNCH LINES NOT SHOWN



WING WALL DETAILS

Rev.	Date	Description	Drawn	Checked	Approved
16					

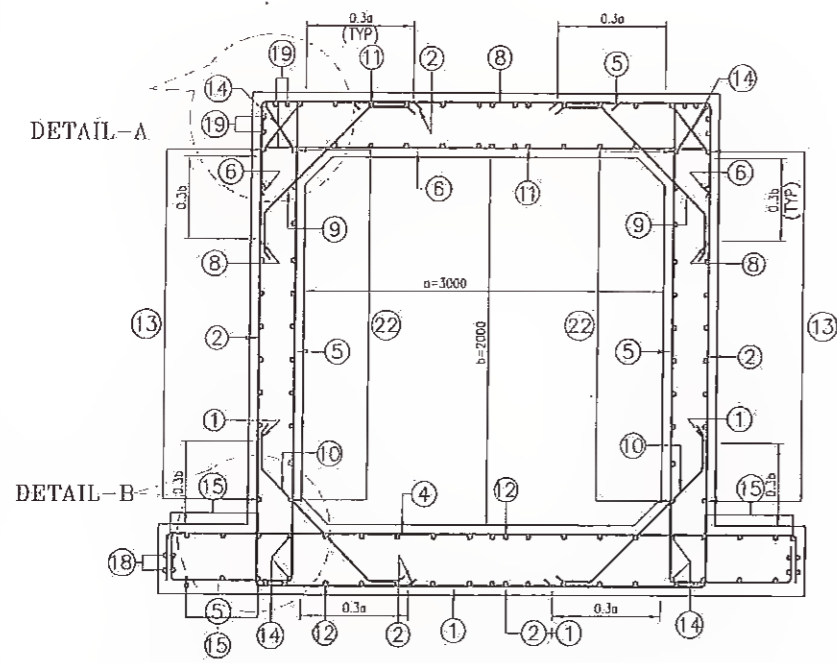
Client: Bihar State Road Development Corporation
MANAGER (TECHNICAL)
 State Road Dev. Corp.,
 PIU, Nawada

Consultancy Services for Preparation of Detailed Project Report (DPR) for SH-103 (MANGHWE- GOVINDPUR)

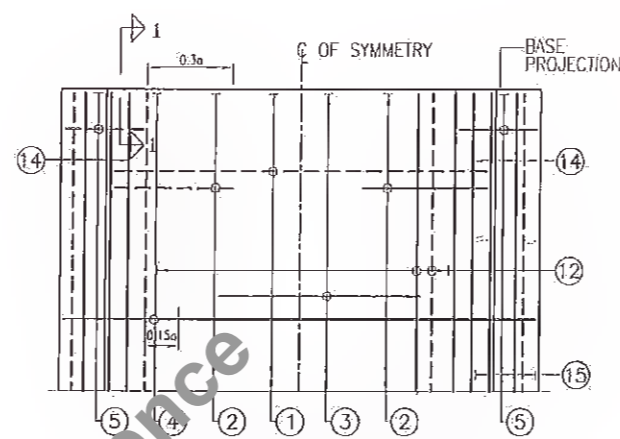
Consultant: **HOLTEC CONSULTING PRIVATE LIMITED**
 HOLTEC CENTRE BLOCK, SUSHANT LOK, GURUPURAM-122001 HARYANA, INDIA
 PHONE : 0124-2385095, 2385096, Fax 0124-2385114, 2385116

Designed: VJ, Checked: VJ, Approved: JIG
 Drawn: SVR, Scale: N T S, Date: JANUARY, 2022

TYPICAL DETAIL OF REINFORCEMENT FOR BOX CULVERT 1X2.0X2.0			
Project File:	HOL/BSRCL/DPR/13510/MISC/CUL-01	Rev:	01
Sheet No.:	00 of 01	Scale:	AS

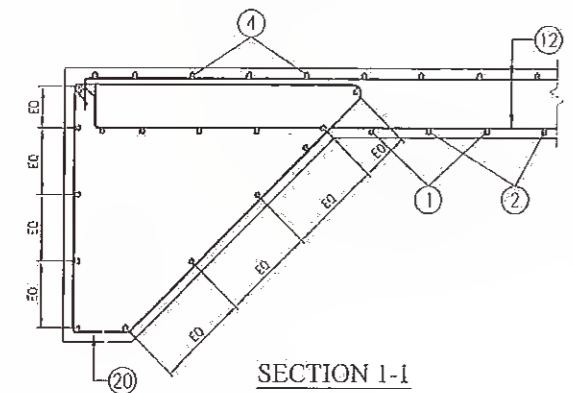


REINFORCEMENT DETAILS OF SINGLE CELL BOX CULVERT

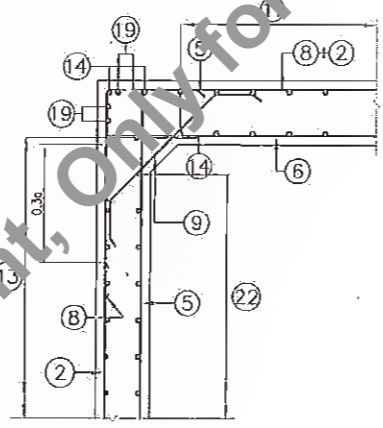


BOTTOM SLAB R/F PLAN
(HAUNCH LINES NOT SHOWN IN PLAN)

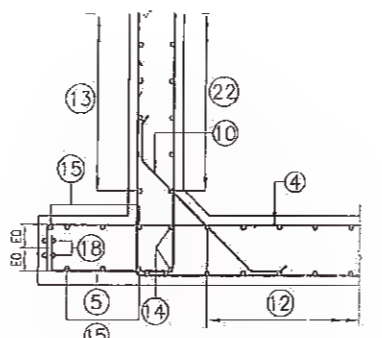
SCHEDULE OF REINFORCEMENT					
BAR MARK	BOX-CELL DESIGNATION	1 x 3.0 x 2.0			
		BAR DIA	SPACING @1 MM	M1	M2
①	M1 M2 M1	10	200	1270	3740
②	M2 M1 M1	16	250	850	2630
③	M1				
④	M1 M2 M1	16	200	320	5540
⑤	M1 M2 M1	16	250	2630	700
⑥	M1 M2 M1	16	200	260	3740
⑦	M1				
⑧	M1 M2 M1	10	200	1270	3740
⑨	M2/M1 M1	10	200	200	1156
⑩	M1 M2 M1	10	200	200	1156
⑪	M1 M2 M1	10	200	200	11900
⑫	M1 M2 M1	12	200	210	11900
⑬	M1 M2 M1	10	200	210	11900
⑭	M1 M2 M1	10	-	160	11900
⑮	M1 M2 M1	10	200	210	11900
⑯	M1	12	-	11900	-
⑰	M1 M2	12	200	1006	1266
⑱	M1 M2 M1	10	-	160	11900
⑳	M1 M2 M1	10	200	1100	1556
㉑	M1 M2 M1	10	-	160	5540
㉒	M1 M2 M1	10	250	160	11900



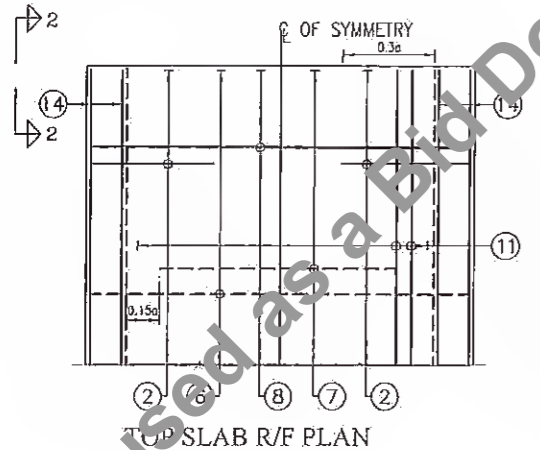
SECTION 1-1



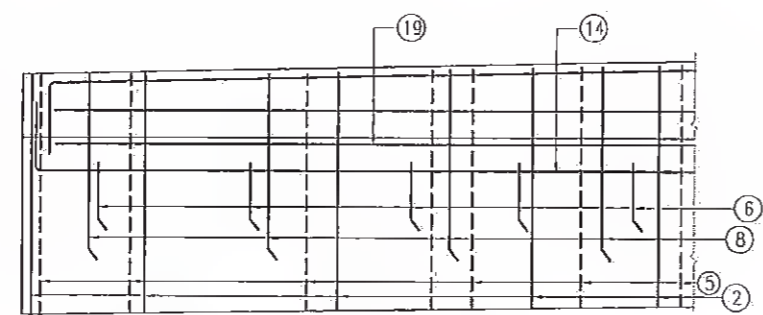
DETAIL-A



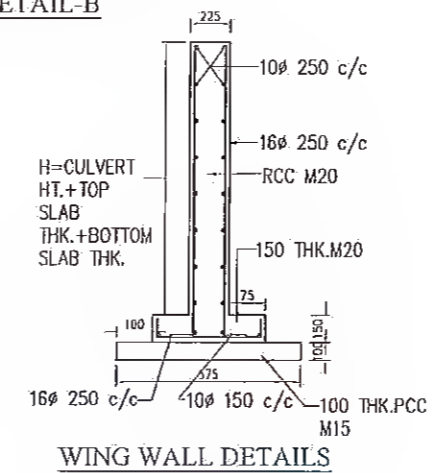
DETAIL-B



TOP SLAB R/F PLAN



VIEW 2-2
HAUNCH LINES NOT SHOWN



WING WALL DETAILS

Rev.	Date:	Description	Drawn	Checked	Approved

Project Title: **CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT (DPR) FOR SH-103 (MANGHWE- GOVINDPUR)**

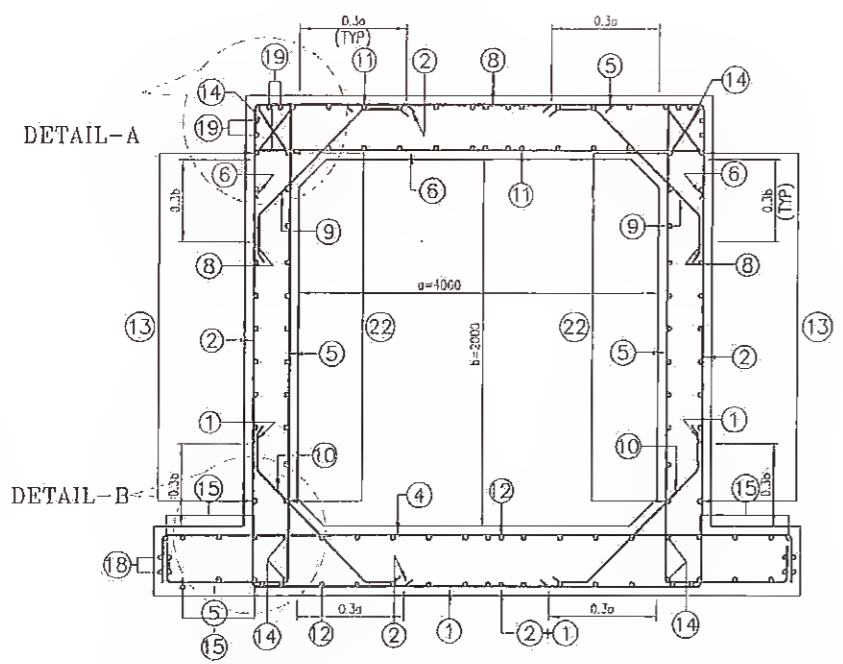
Client: **Bihar State Road Development Corporation, Bihar State Road Devp. Corp. Ltd, PIU, Nawada**

MANAGER (TECHNICAL) **HOLTEC CONSULTING PRIVATE LIMITED**
 HOLTEC CENTRE, A BLOCK, SUSHANT ENCLAVE, GURGAON-122001 HARYANA, INDIA
 Phone: 0124-2385095, 2385096, Fax: 0124-2385114, 2385116

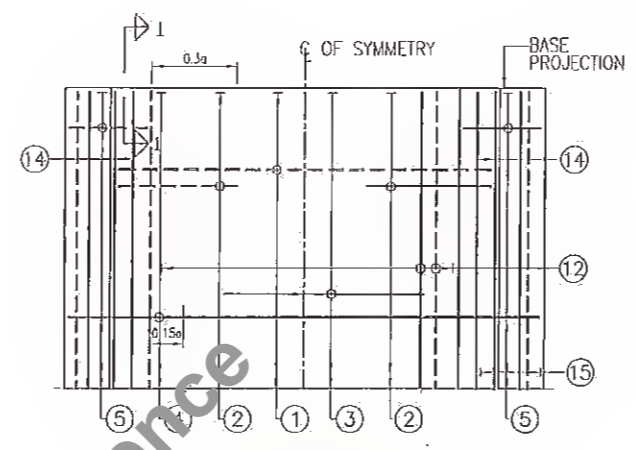
Designated: VJ, Checked: VJ, Approved: JIG
 Drawn: SVR, Scale: N T S, Date: JANUARY, 2022

Title:		Rev.	Sheet
TYPICAL DETAIL OF REINFORCEMENT FOR BOX CULVERT 1X3.0X2.0		01	01
Drawing No. HOL/BSRDC/DPR/13510/MISC/CUL-03			
Date: JANUARY, 2022			

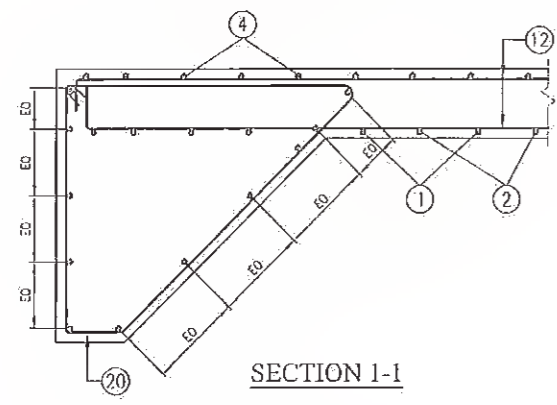
51



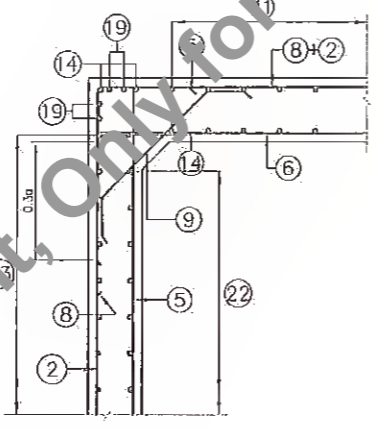
REINFORCEMENT DETAILS OF SINGLE CELL BOX CULVERT



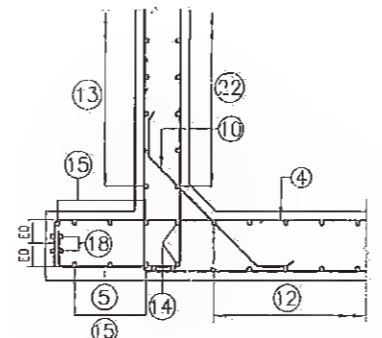
BOTTOM SLAB R/F PLAN
(HAUNCH LINES NOT SHOWN IN PLAN)



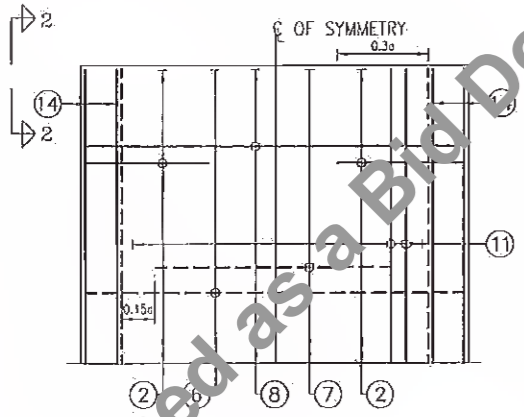
SECTION 1-1



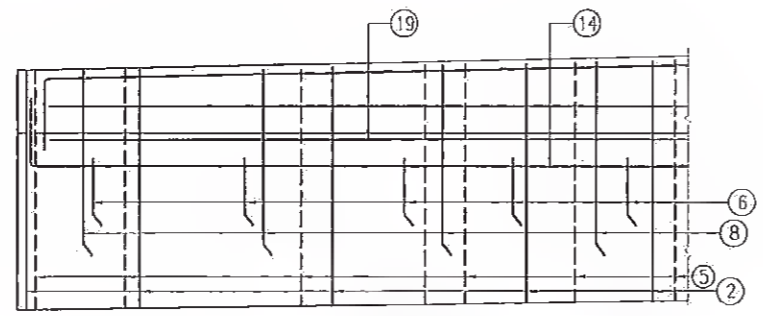
DETAIL-A



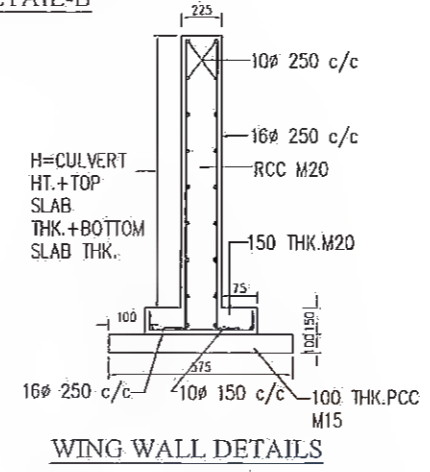
DETAIL-B



SLAB R/F PLAN



VIEW 2-2
HAUNCH LINES NOT SHOWN



WING WALL DETAILS

SCHEDULE OF REINFORCEMENT					
BAR MARK	BOX-CELL DESIGNATION	1 x 4.0 x 2.0			
		BAR DIA	SPACING IN MM	M1	M2
1	M1 M2 M1	10	200	1350	4900
2	M2 M1	16	250	850	2630
3	M1				
4	M1 M2 M1	16	200	400	5700
5	M2 M1	16	250	2630	700
6	M1 M2 M1	16	200	260	4900
7	M1				
8	M1 M2 M1	10	200	1300	4900
9	M2 M1	10	250	200	890
10	M1 M2 M1	12	250	200	932
11	M1 M2 M1	10	200	275	11900
12	M1 M2 M1	12	200	250	11900
13	M1 M2 M1	10	250	160	11900
14	M1 M2 M1	10	-	160	11900
15	M1 M2 M1	10	250	190	11900
16	M1	12	-	11900	-
17	M2	12	250	1006	1266
18	M1 M2 M1	10	-	160	11900
19	M1 M2 M1	10	-	160	11900
20	M1 M2 M1	10	150	1100	1556
21	M1 M2 M1	10	-	160	3500
22	M1 M2 M1	10	250	160	11900

Rev.	Date	Description	Drawn	Checked	Approved
16					

Client: **Bihar State Road Development Corporation**

Project: **MANAGER (TECHNICAL) CONSULTING PRIVATE LIMITED**

Address: **INDIA CENTRE, A BLOCK, SUSHANT LOK, GURGAON-122001 HARYANA, INDIA**

Phone: **0124-2385095, 2385098, Fax 0124-2385114, 2385116**

Project: **PIU, Nawada**

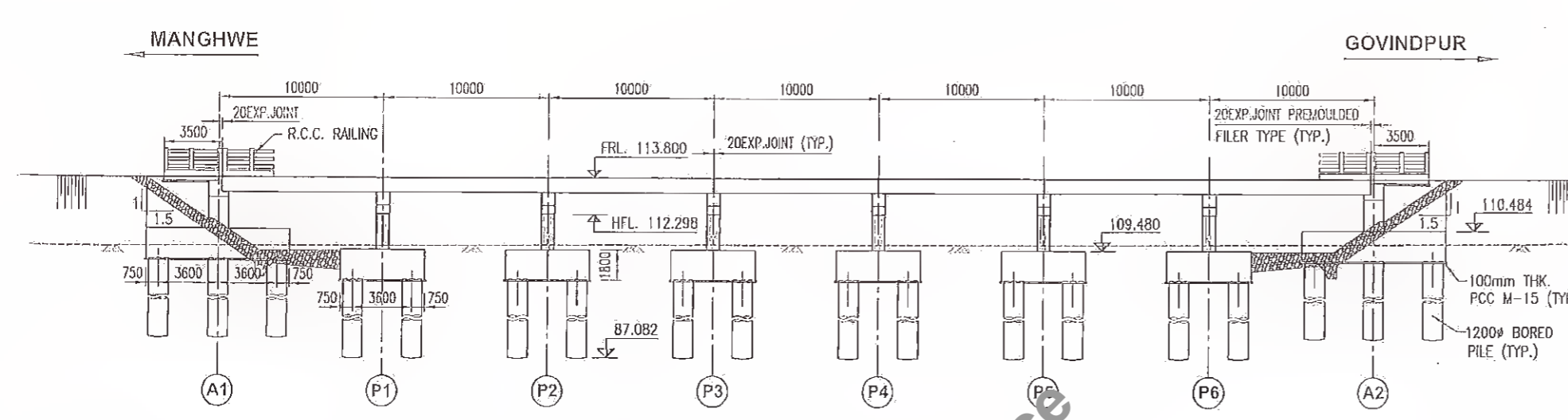
Design: **YJ**, Scale: **N.T.S.**, Date: **JANUARY, 2022**

Drawn: **SVR**, Checked: **YJ**, Approved: **JIG**

Consultancy Services for Preparation of Detailed Project Report (DPR) for SH-103 (MANGHE- GOVINDPUR)

Title:		Rev.	Sheet
TYPICAL DETAIL OF REINFORCEMENT FOR BOX CULVERT 1X4.0X2.0			01
Drawing No: HOL/BSRDCL/DPR/13510/MISC/CUL-04			
Date: JANUARY, 2022			

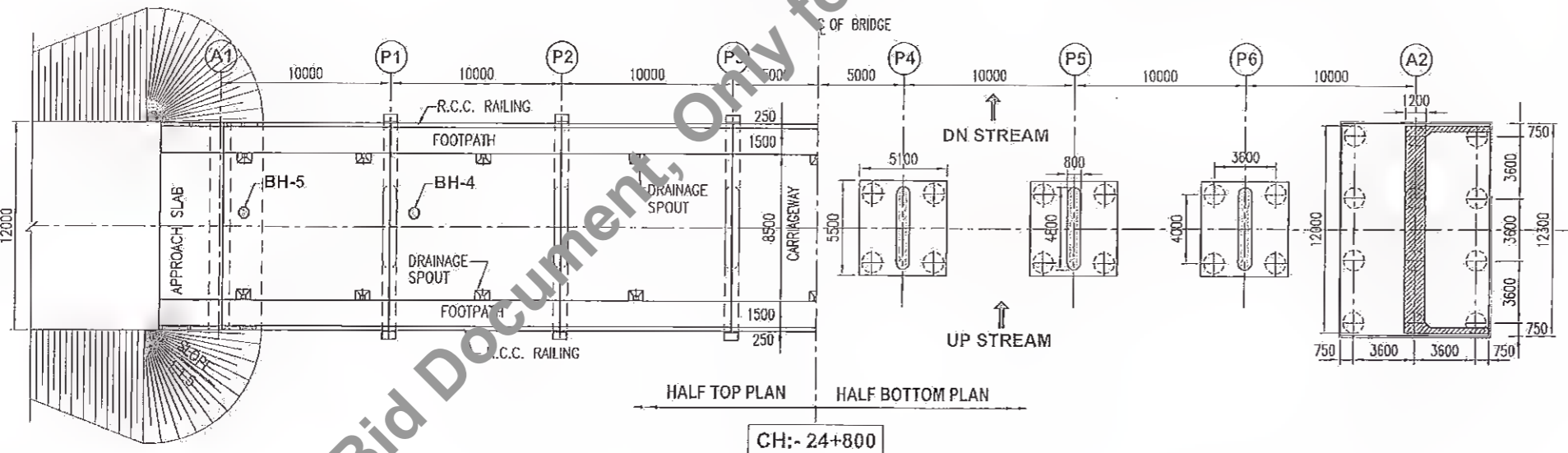
82



BED LEVEL	109.682	109.721	109.761	109.787	109.794	109.800	109.813	109.840	109.879
DISTANCE (M)	24+765	24+775	24+785	24+795	24+800	24+805	24+815	24+825	24+835

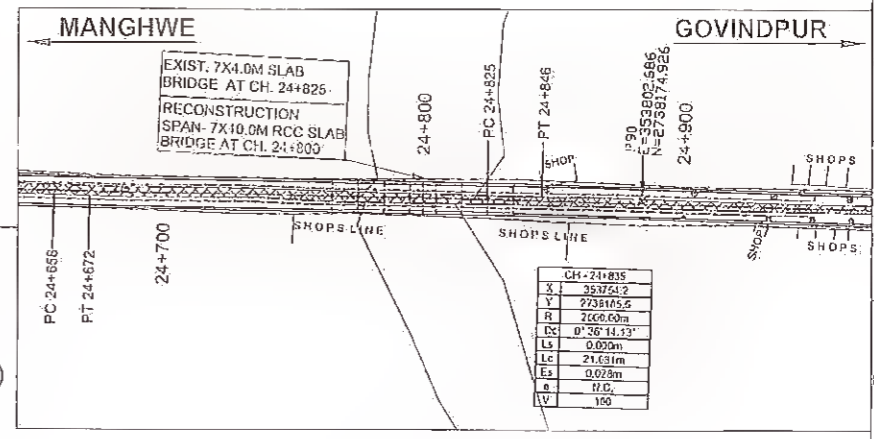
CH:- 24+800
SECTIONAL ELEVATION

MINIMUM SOCKETING OF 0.6M OF PILE IN ROCK SHALL BE ENSURED AT THE TIME OF EXECUTION.

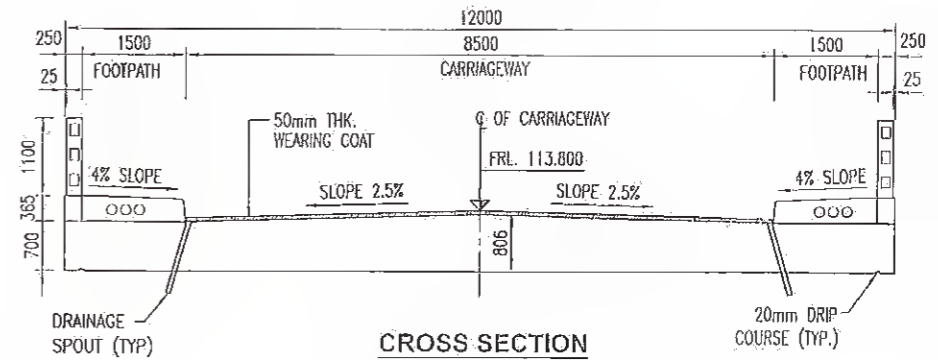


CH:- 24+800
PLAN
(SCALE 1:250)

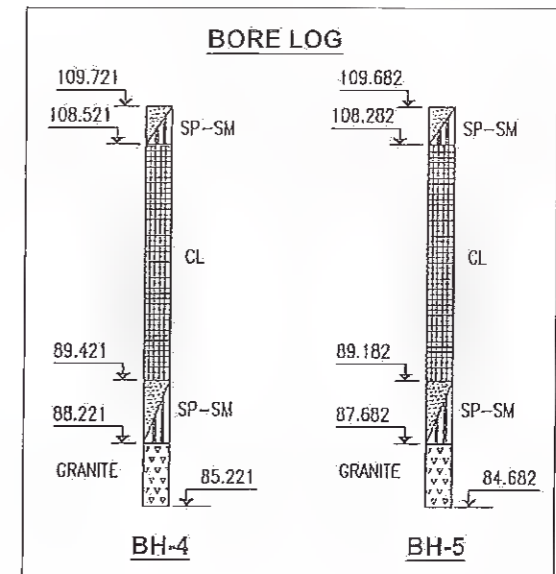
HYDROLOGICAL DATA	
CATCHMENT AREA	152.4 Km. ²
DISCHARGE	661.1 Cum/Sec.
VELOCITY	3.9 M/Sec.
SCOUR	ABUTMENT 104.855 PIER 101.153



SITE PLAN
SCALE 1:2000



CROSS SECTION
(SCALE 1:75)



BH-4 BH-5

NOTES:
 1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METRES UNLESS OTHERWISE SPECIFIED.
 2. DIMENSIONS ARE NOT TO BE SCALED ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.

REFERENCE DRAWINGS :
 a). GENERAL NOTES.....HOL/BSRDCL/13510/FDDPR/MISC/01.

Rev.	Dts.	Description	Drawn	Checked	Approved

Client: **Bihar State Road Development Corporation Ltd., Nawada**

MANAGER (TECH)

Project Title : **CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT (DPR) FOR SH-103 (MANGHWE- GOVINDPUR)**

Consultant: **HOLTEC CONSULTING PRIVATE LIMITED**

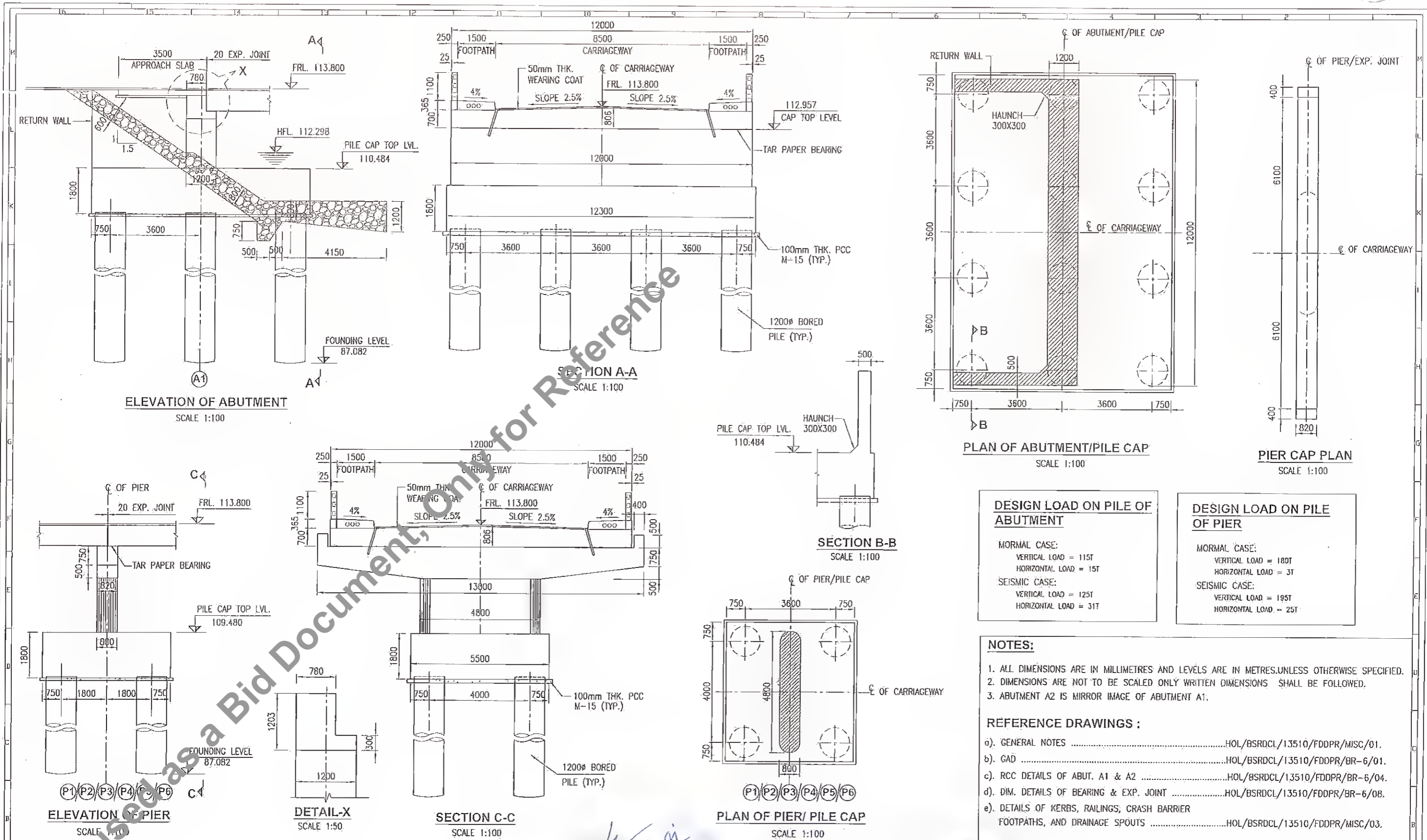
Designed: SUD, Checked: SUD, Approved: RKR, Drawn: SSH, Scale: AS SHOWN, Date: OCT. 2018

Title : **GENERAL ARRANGEMENT DRAWING 7X10.0 M SPAN BRIDGE AT CH: KM. 24+800**

Drawing No. **HOL/BSRDCL/13510/DPR/BR-6/01**

Sheet 1 of 0

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



DESIGN LOAD ON PILE OF ABUTMENT

NORMAL CASE:
 VERTICAL LOAD = 115T
 HORIZONTAL LOAD = 15T

SEISMIC CASE:
 VERTICAL LOAD = 125T
 HORIZONTAL LOAD = 31T

DESIGN LOAD ON PILE OF PIER

NORMAL CASE:
 VERTICAL LOAD = 180T
 HORIZONTAL LOAD = 3T

SEISMIC CASE:
 VERTICAL LOAD = 195T
 HORIZONTAL LOAD = 25T

NOTES:

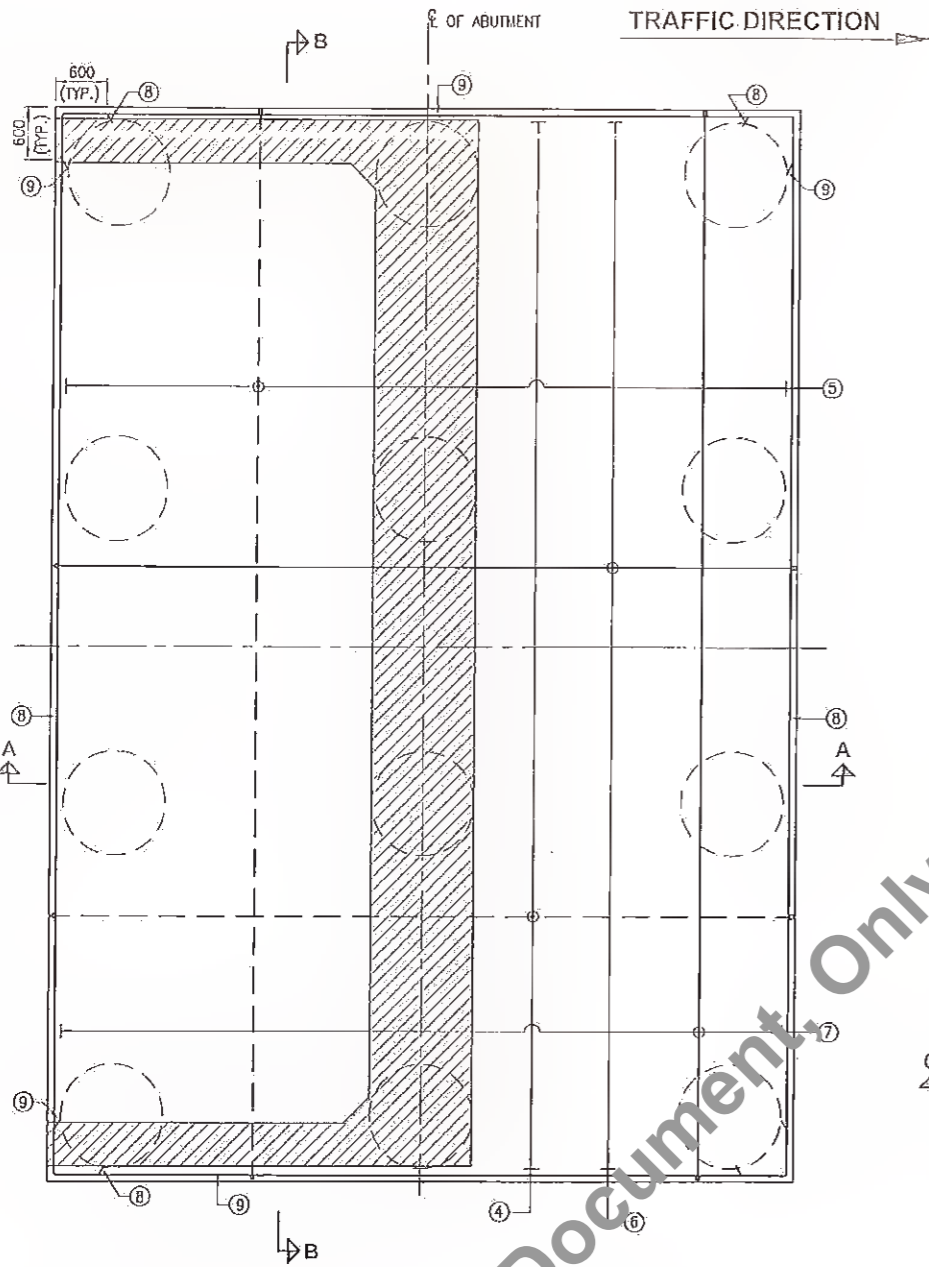
- ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METRES, UNLESS OTHERWISE SPECIFIED.
- DIMENSIONS ARE NOT TO BE SCALED ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- ABUTMENT A2 IS MIRROR IMAGE OF ABUTMENT A1.

REFERENCE DRAWINGS :

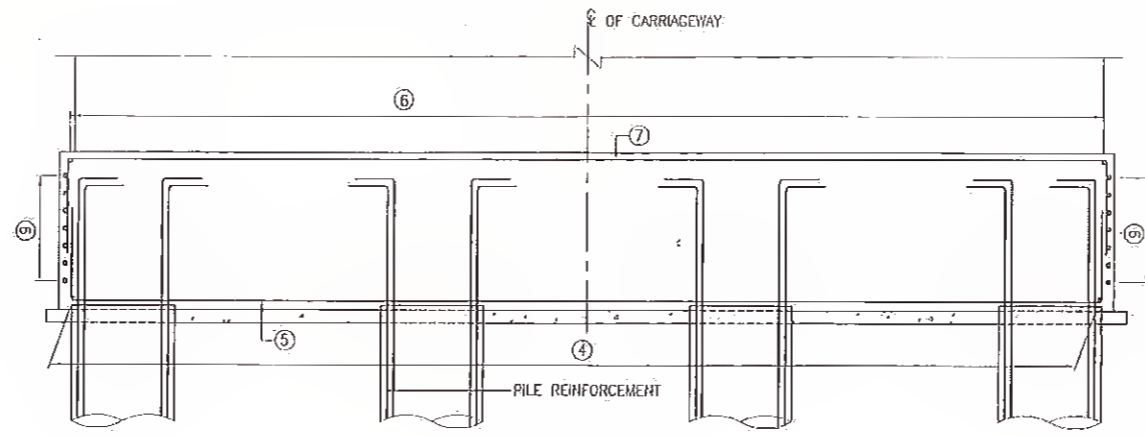
- GENERAL NOTESHOL/BSRDCL/13510/FDDPR/MISC/01.
- GADHOL/BSRDCL/13510/FDDPR/BR-6/01.
- RCC DETAILS OF ABUT. A1 & A2HOL/BSRDCL/13510/FDDPR/BR-6/04.
- DIM. DETAILS OF BEARING & EXP. JOINTHOL/BSRDCL/13510/FDDPR/BR-6/08.
- DETAILS OF KERBS, RAILINGS, CRASH BARRIER FOOTPATHS, AND DRAINAGE SPOUTSHOL/BSRDCL/13510/FDDPR/MISC/03.

Revisions No. Date Description Origin Checked Approved			Client: Bihar State Road Development Corporation Ltd. Project: Bihar State Road Development Project Report (DPR) FOR SH-103 (MANGHWE-GOVINDPUR) PIU, Nawada	Consultant: HOLTEC CONSULTING PRIVATE LIMITED HOLTEC CENTRE A/102A, PLOT NO. 102A, INDUSTRIAL AREA, PHASE II, GATEWAY INDUSTRIAL PARK, GATEWAY INDUSTRIAL AREA, PATNA-800 001, BIHAR, INDIA.	Title: DIMENSION DETAILS OF ABUTMENT & PIER 7X10.0 M SPAN BRIDGE AT CH: KM. 24+800 Drawing No.: HOL/BSRDCL/13510/DPR/BR-6/02 Sheet: 1 of 0 Rev: 0 CAD File Ref.: HOL/BSRDCL/13504/DPR/BR-6/02	
Designed	SUD	Checked	SUD	Approved	FKR	Date: OCT. 2018
Drawn	SSH	Scale	AS SHOWN	Date		

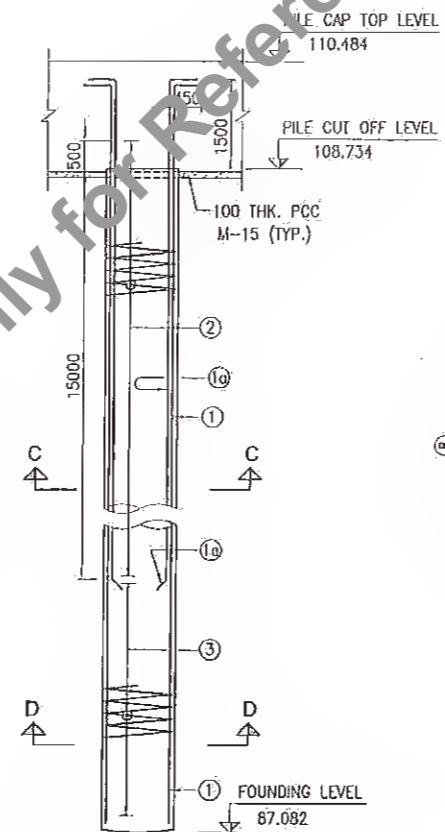
54



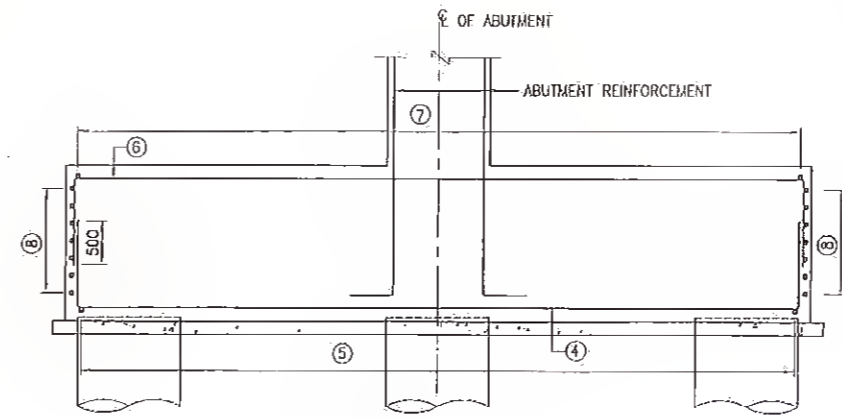
PLAN OF PILE CAP SHOWING REINFORCEMENT
(SCALE 1:50)



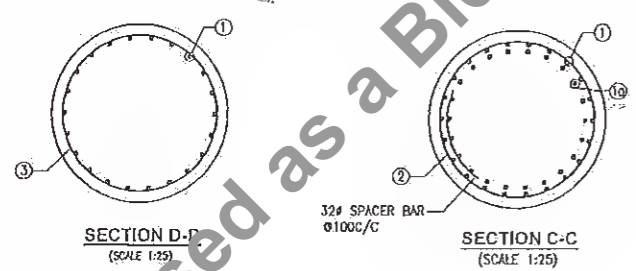
SECTION B-B
(SCALE 1:50)



SECTIONAL ELEVATION OF PILE
(SCALE 1:75)



SECTION A-A
(SCALE 1:50)



SECTION D-D
(SCALE 1:25)

SECTION C-C
(SCALE 1:25)

SCHEDULE OF REINFORCEMENT						
BAR MARK	SHAPE OF BARS (NOT TO SCALE)	BRIDGE DESIGNATION	BAR DIA	SPACING IN MM/HO. OF BARS	M1	
					M1	M2
①	M2 M1		25	22 NOS.	450	23150
⑩	M2 M1		20	22 NOS.	450	16500
②	○		16	120	-	-
③	○		12	150	-	-
④	M1 M2 M1		20	120	1000	8550
⑤	M1 M2 M1		16	150	1000	12150
⑥	M1 M2 M1		10	2 NOS.	1000	8550
⑦	M1 M2 M1		16	150	1000	12150
⑧	M2 M1 M1		12	200	600	12150
⑨	M1 M2 M1		12	200	600	8550

TOTAL QUANTITY OF STEEL FOR PILE & PILE CAP FOR EACH ABUTMENT = 53.64 TONS.

NOTES:
 1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METRES, UNLESS OTHERWISE SPECIFIED.
 2. DIMENSIONS ARE NOT TO BE SCALED ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
 3. ABUTMENT A2 IS MIRROR IMAGE OF ABUTMENT A1.

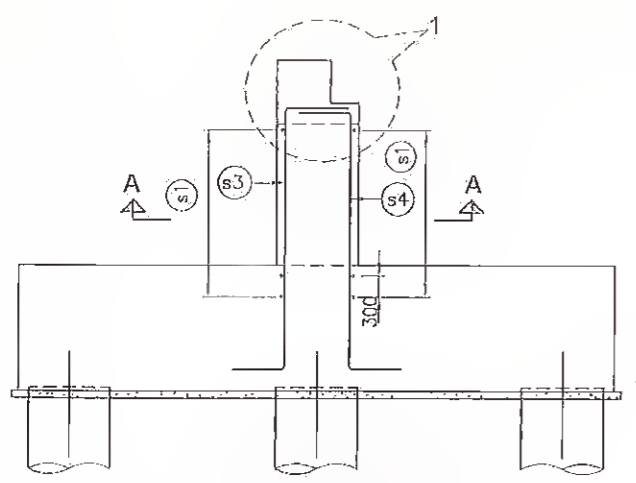
REFERENCE DRAWINGS :
 a). GENERAL NOTESHOL/BSRDCL/13510/FDDPR/MISC/01.
 b). GADHOL/BSRDCL/13510/FDDPR/BR-6/01.
 c). DIM. DETAILS OF ABUTMENTHOL/BSRDCL/13510/FDDPR/BR-6/02.

LEGEND	
—	TOP REINFORCEMENT
- - -	BOTTOM REINFORCEMENT

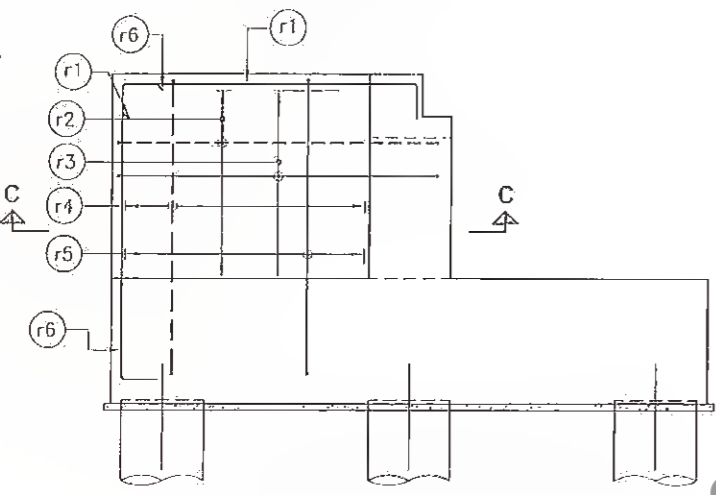
Revisions				Client: Bihar State Road Development Corporation Ltd.				Consultant: HOLTEC CONSULTING PRIVATE LIMITED				Title: PILE & PILE CAP REINFORCEMENT DETAILS OF ABUTMENT A1& A2 7X10.0 M SPAN BRIDGE AT CH: KM. 24+800			
Project Title: CONSULTANCY FOR PREPARATION OF DETAILED PROJECT REPORT (DPR) FOR SH-103 (MANGHWE-GOVINDPUR)				Designed: SUD				Checked: SUD				Approved: AKR			
Rev. Date: Description				Drawn: SSH				Scale: AS SHOWN				Date: OCT. 2018			
Drawn: _____				Checked: _____				Approved: _____				Drawing No.: HOL/BSRDCL/13510/DPR/BR-6/03			
Sheet: -1				Rev: 0				CAD File Ref.: HOL/BSRDCL/13504/DPR/BR-6/03				A3			

MANAGER (TECH)
 Bihar State Road Devp. Corp. Ltd.
 PIU, Nawada

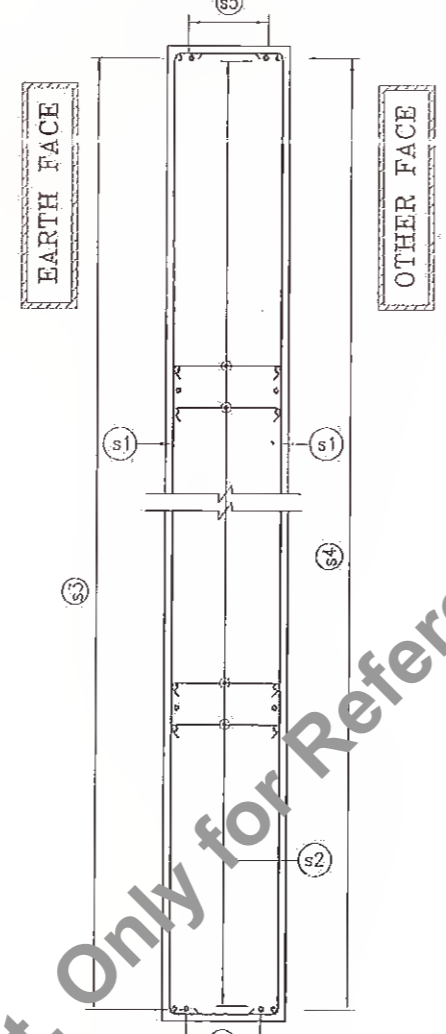
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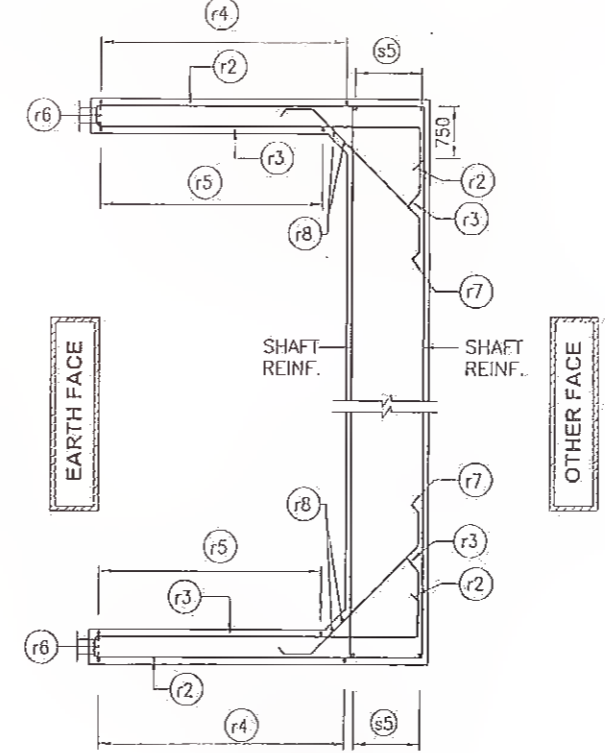
SECTIONAL ELEVATION OF ABUTMENT SHAFT (SCALE:-1:75)



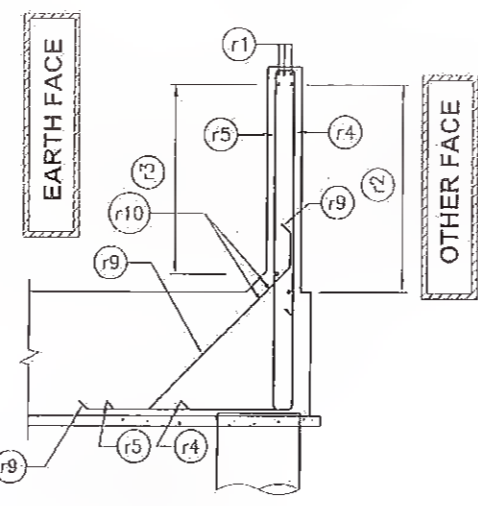
ELEVATION SHOWING REINF. DETAILS OF RETURN WALL (SCALE:-1:75)



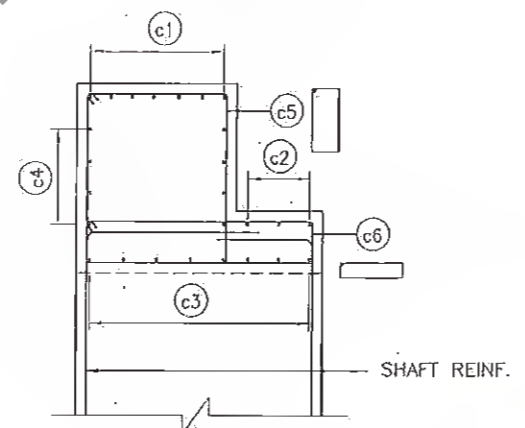
SECTION A-A (SCALE:-1:50)



SECTION C-C (JUNCTION DETAIL BETWEEN ABUT. SHAFT AND RETURN WALL) (SCALE:-1:75)



SECTION B-B (SCALE:-1:75)



DETAIL '1' SCALE 1:25

LEGENDS	
REINF. AT EARTH FACE, NEAR FACE AND TOP FACE	—————
REINF. AT OTHER FACE, FAR FACE AND BOTTOM FACE	-----
B/F	BOTH FACE

SCHEDULE OF REINFORCEMENT					
BAR MARK	SHAPE OF BARS (NOT TO SCALE)	BRIDGE DESIGNATION	BAR DIA	SPACING IN MM/NO. OF BARS	
				M1	M2
s1	M2 M1		12	150	750 11850
s2	M2		10	300	- 1075
s3	M2 M1		16	120	450 4200
s4	M1 M2 M1		16	120	450 4200
s5	M2 M1		16	18 NOS.	450 4200
r1	M1 M2 M1		16	3 NOS.	500 4300
r2	250 M2 M1		12	150	750 5280
r3	250 M2 M1		12	150	750 5280
r4	250 M2 M1		12	150	1500 4900
r5	250 M2 M1		12	150	2350 4900
r6	M2 M1 M1		16	6 NOS.	500 4900
r7	M1 M2 M1		10	300	300 2200
r8	M2 M1 M1		12	4 NOS.	300 5280
r9	M1 M2	300	10	300	900 2900
r10	M2		12	4 NOS.	- 4900
c1	M1 M2 M1		16	7 NOS.	250 11850
c2	M1 M2 M1		12	3 NOS.	250 11850
c3	M1 M2 M1		12	150	250 11850
c4	M1 M2 M1		12	150	250 11850
c5	M1 M2		12	200	680 800
c6	M1 M2		12	200	200 1100

TOTAL QUANTITY OF STEEL IN EACH ABUTMENT SHAFT, RETURN WALL & CAP = 5.554 TONS.

- NOTES:**
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.
 2. DIMENSIONS ARE NOT TO BE SCALED ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
 3. ABUTMENT A2 IS MIRROR IMAGE OF ABUTMENT A1.

- REFERENCE DRAWINGS :**
- a). GENERAL NOTES.....HOL/BSRDCL/13510/FDDPR/MISC/01.
 - b). CADHOL/BSRDCL/13510/FDDPR/BR-6/01.
 - c). DIM. DETAILS OF ABUT. A1.....HOL/BSRDCL/13510/FDDPR/BR-6/02.

Revisions	Date	Description	Drawn	Checked	Approved

Client: Bihar State Road Development Corporation Ltd. (BSRDCL)

Project Title: CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT (DPR) FOR BIHAR STATE ROAD DEVELOPMENT CORPORATION (BSRDCL) PIU, Nawada

Consultant: HOLTEC CONSULTING PRIVATE LIMITED

Designed: SUD, Checked: SUD, Approved: RKR

Drawn: SSH, Scale: AS SHOWN, Date: OCT. 2018

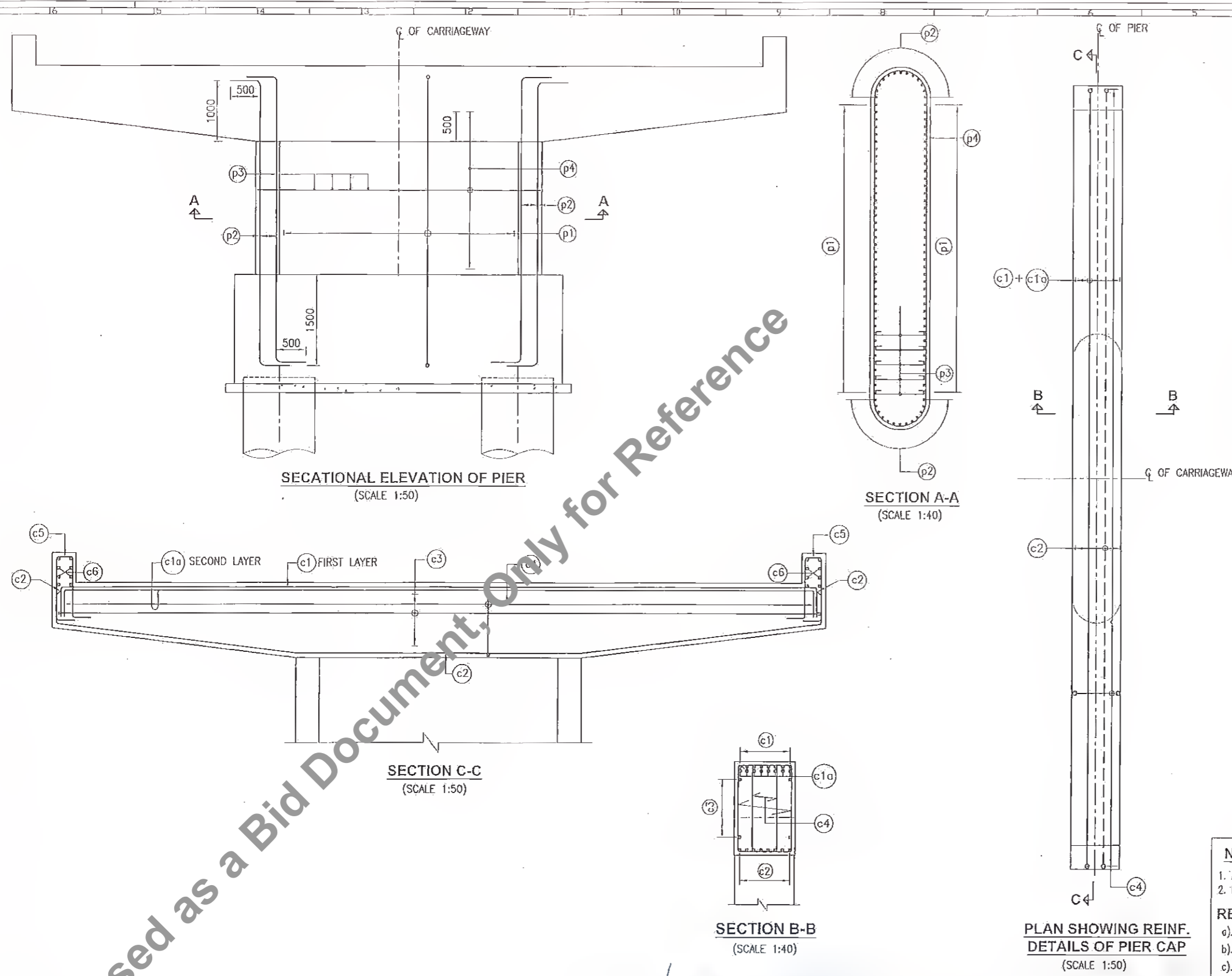
Title: REINFORCEMENT DETAILS OF ABUTMENT A1 7X10.0 M SPAN BRIDGE AT CH: KM. 24+800

Drawing No.: HOL/BSRDCL/13510/DPR/BR-6/04

Sheet: 1, Rev: 0

CAD File Ref.: HOL/BSRDCL/13504/DPR/BR-6/04

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SCHEDULE OF REINFORCEMENT					
BAR MARK	SHAPE OF BARS (HOT TO SCALE)	BRIDGE DESIGNATION			
		BAR DIA	SPACING IN MM/NO. OF BARS	M1	M2
p1	M1 M2	16	80 NOS.	500	5000
p2	M1 M2	16	26 NOS.	500	5000
p3	M2	10	300	-	700
p4	M2	16	200	700	4000
c1	M2	32	8 NOS.	-	12800
c1a	M2	25	8 NOS.	-	12800
c2	M2	16	8 NOS.	750	12800
c3	M2	16	150	750	12800
c4	M1 M2	16	150	700	1100
c5	275 M1 M2	20	150	300	1000
c6	M2	12	150	-	700

TOTAL QUANTITY OF STEEL IN EACH PIER SHAFT & PIER CAP = 3.14 TONS.

LEGEND	
	TOP REINFORCEMENT
	BOTTOM REINFORCEMENT

NOTES:
 1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METRES UNLESS OTHERWISE SPECIFIED.
 2. DIMENSIONS ARE NOT TO BE SCALED ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.

REFERENCE DRAWINGS :
 a). GENERAL NOTES.....HOL/BSRDCL/13510/FDDPR/MSC/01.
 b). GAD.....HOL/BSRDCL/13510/FDDPR/BR-6/01.
 c). DIM. DETAILS OF PIER.....HOL/BSRDCL/13510/FDDPR/BR-6/02.

Revisions			
Rev.	Date	Description	Drawn / Checked / Approved

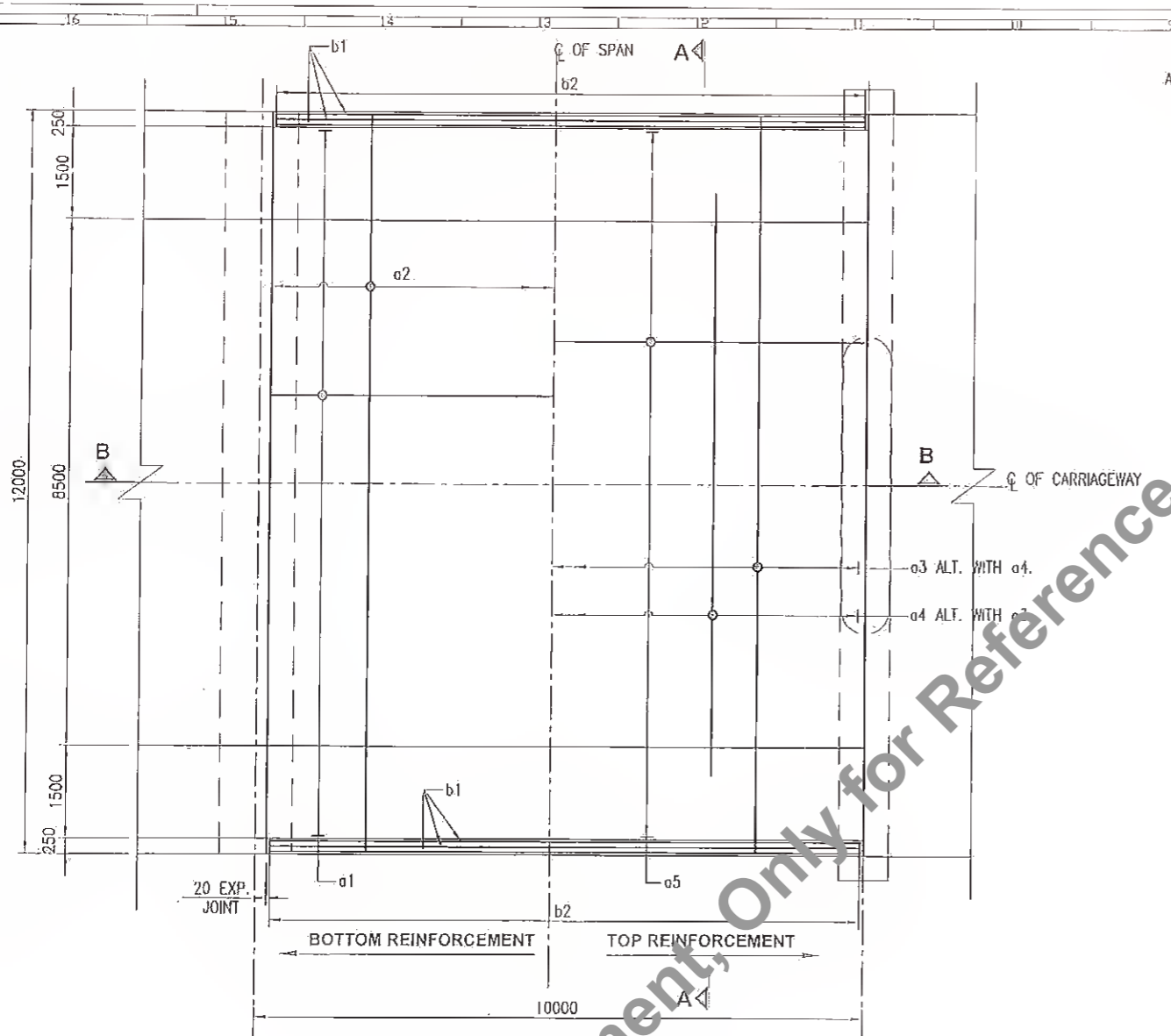
Client: **Bihar State Road Development Corporation Ltd.**
 Project Title: **CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT (DPR) FOR SH-103 (MANGHWE-GOVINDPUR)**

Consultant: **HOLTEC CONSULTING PRIVATE LIMITED**
 Designed: SUD, Checked: SUD, Approved: RKR
 Drawn: SSH, Scale: AS SHOWN, Date: OCT. 2018

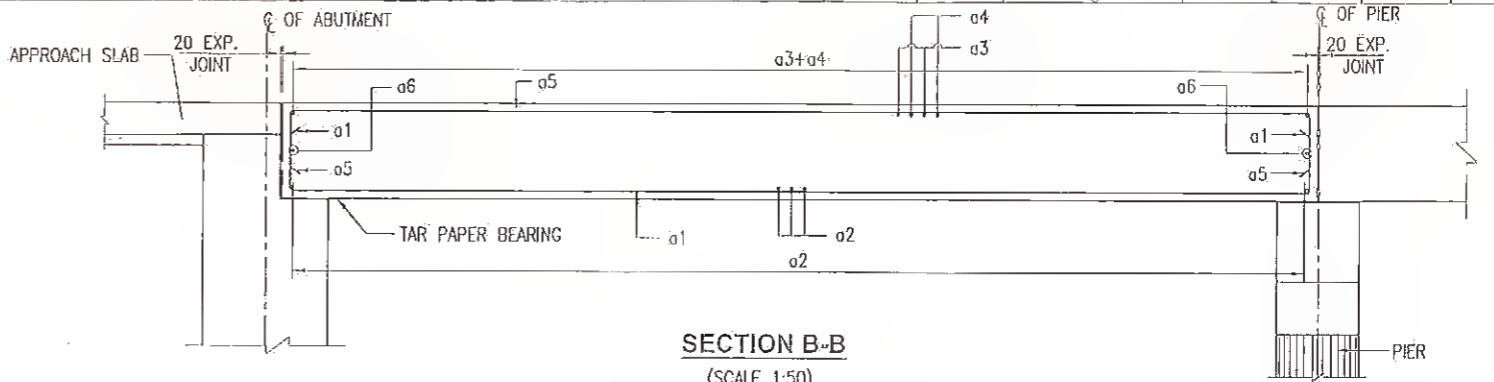
Title: **RCC DETAILS OF PIERS AND PIERS CAP 7X10.0 M SPAN BRIDGE AT CH: KM. 24+800**
 Drawing No.: **HOL/BSRDCL/13510/DPR/BR-6/06**
 Sheet: 1, Rev: 0
 CAD File Ref.: **HOL/BSRDCL/13504/DPR/BR-6/06**

MANAGER (TECH)
 Bihar State Road Devp. Corp. Ltd.
 PIU, Nawada

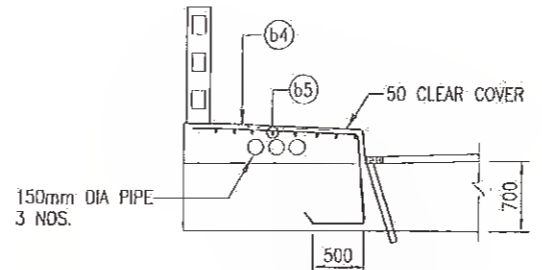
5A



**PLAN SHOWING REINFORCEMENT
DETAILS OF DECK SLAB**
(SCALE 1:75)



SECTION B-B
(SCALE 1:50)

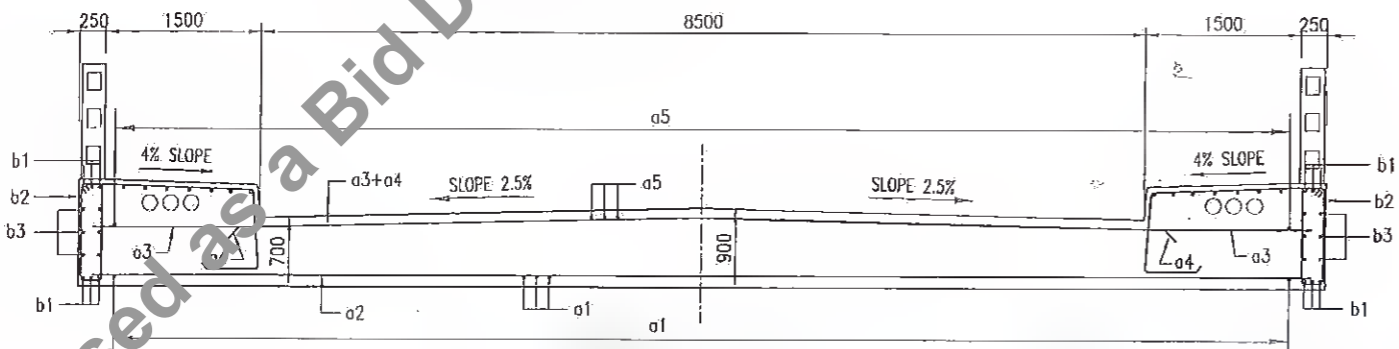


**DETAIL OF REINFORCEMENT
IN FOOTPATH**
(SCALE 1:50)

SCHEDULE OF REINFORCEMENT							
BAR MARK	BRIDGE DESIGNATION			BAR DIA	SPACING IN MM/NO. OF BARS	M1	M2
	SHAPE OF BARS (NOT TO SCALE)						
a1	M1	M2	M1	25	125	300	9900
a2	M2			12	125	-	11800
a3	M2			12	125	-	11800
a4	M2			12	125	-	9000
a5	M1	M2	M1	12	125	300	9900
a6	M2			25	12 NOS.	-	11800
b1	M2			10	2 NOS.	-	11900
b2	M2			10	250	200	900
b3	M2			10	12 NOS.	-	11900
b4	M2			10	200	850	1600
b5	M2			10	200	=	9900

TOTAL QUANTITY OF STEEL IN EACH DECK SLAB = 7.087 TONS.

- NOTES:**
- ALL DIMENSIONS ARE IN MILLIMETRES, UNLESS OTHERWISE SPECIFIED.
 - DIMENSIONS ARE NOT TO BE SCALED ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- REFERENCE DRAWINGS :**
- GENERAL NOTES.....HOL/BSRDCL/13510/FDDPR/MISC/01.
 - CADHOL/BSRDCL/13510/FDDPR/BR-6/01.
 - DIM. DETAILS OF ABUT. A1 & A2.....HOL/BSRDCL/13510/FDDPR/BR-6/02.
 - DETAILS OF BEARING AND EXPANSION JOINT..... HOL/BSRDCL/13510/FDDPR/BR-6/08



SECTION A-A
(SCALE 1:50)

Rev.	Date	Description	Drawn	Checked	Approved
16					

Client: **Bihar State Road Development Corporation Ltd.**

Project Title: **CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT (DPR) FOR SH-103 (MANGHWE- GOVINDPUR)**

Consultant: **HOLTEC CONSULTING PRIVATE LIMITED**

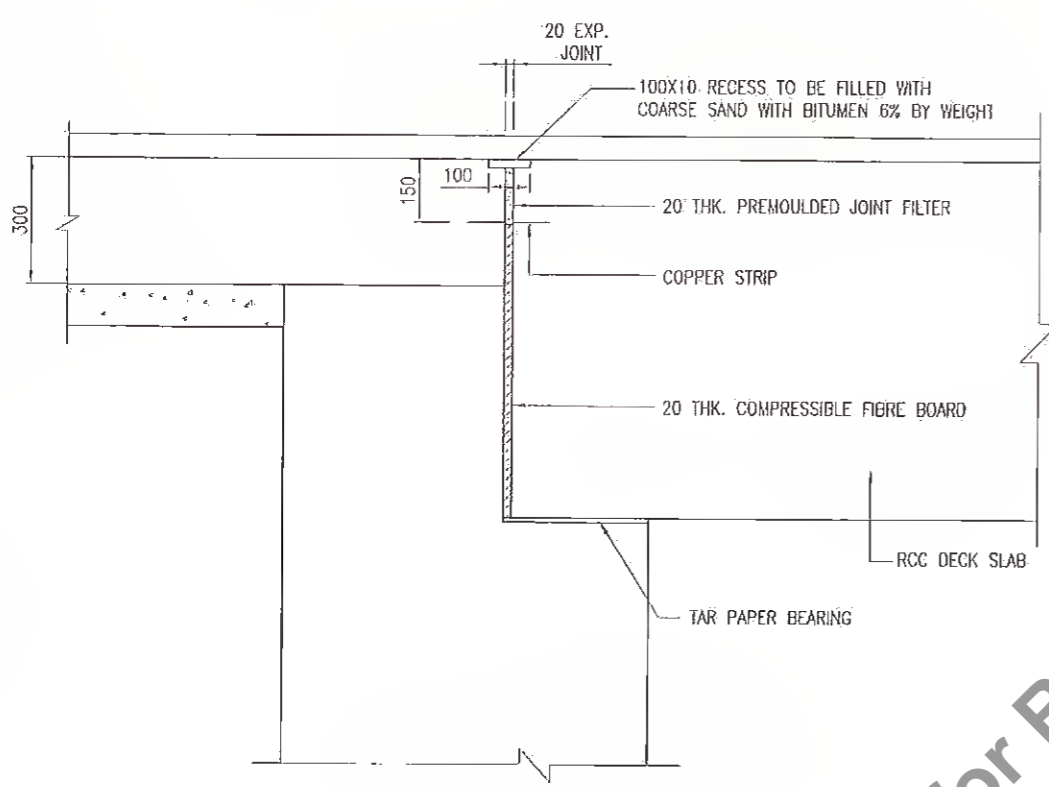
Designed: SUD, Checked: SUD, Approved: RKR, Drawn: SSH, Scale: AS SHOWN, Date: OCT. 2018

Title: **RCC DETAIL OF SUPER STRUCTURE 7X10.0 M SPAN BRIDGE AT CH: KM. 24+800**

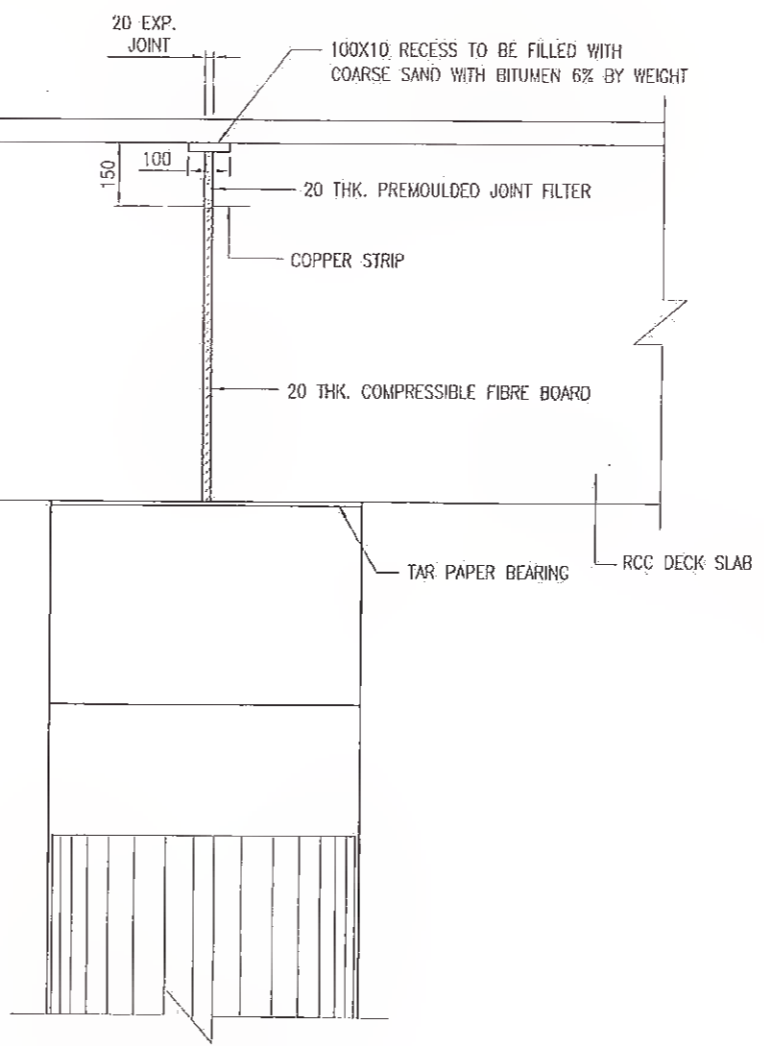
Drawing No.: HOL/BSRDCL/13510/DPR/BR-6/07, Sheet 1 of 0

MANAGER (TECH)
Bihar State Road Devp. Corp. Ltd.
PIU, Nawada

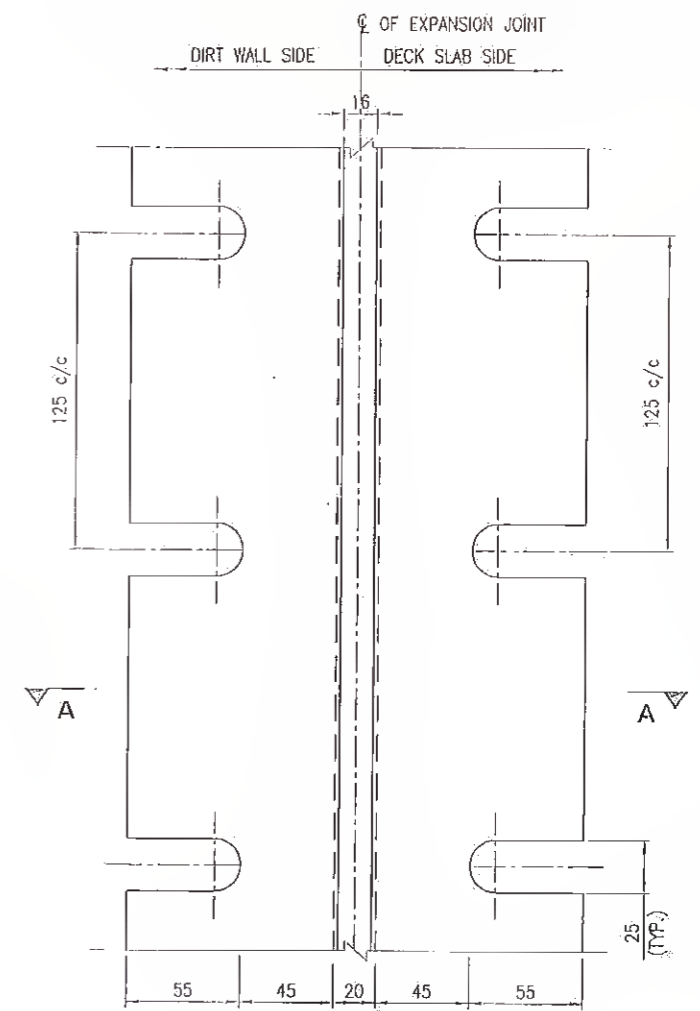
59



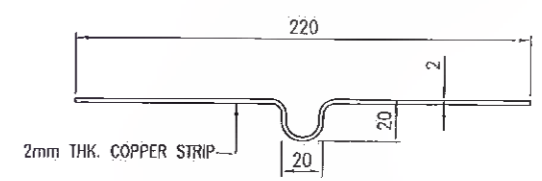
SECTION OF ABUTMENT SHOWING EXPANSION JOINT DETAIL



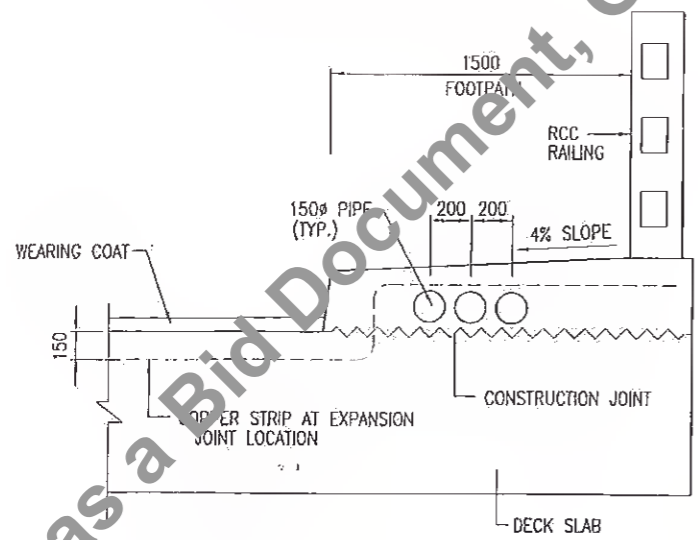
SECTION OF PIER SHOWING EXPANSION JOINT DETAIL



DETAIL OF COPPER STRIP



SECTION A-A



EXPANSION JOINT DETAIL AT FOOTPATH

NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METRES UNLESS OTHERWISE SPECIFIED.
2. DIMENSIONS ARE NOT TO BE SCALED ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. JOINT FILLER SHALL CONFORM TO IS: 1838. PRODUCTS WITH ISI CERTIFICATION MARK SHALL ONLY BE USED.

REFERENCE DRAWINGS :

a). GENERAL NOTES HOL/BSRDCL/13510/FDDPR/MISC/01.

b). GENERAL ARRANGEMENT DRAWING HOL/BSRDCL/13510/FDDPR/BR-6/01.

Revision	Date	Description	Drawn	Checked	Approved

Client: **Bihar State Road Development Corporation**, Patna, Bihar

Project Title: **SH-103 (MANGHWE- GOVINDPUR)**

Consultant: **DGM Tech** CONSULTANCY SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT (DPR) FOR SH-103 (MANGHWE- GOVINDPUR)

Location: **PJU, Nawada**

Consultant: **HOLTEC CONSULTING PRIVATE LIMITED**

Address: K31002 CENTRAL P. BLOCK, SUBHSYLVIA, BHARUA, DISTRICT NAWADA, BIHAR

Phone: 0122-2285355, 2285375, Fax: 0122-2285114, 2285113

Designed: SUD, Checked: SUD, Approved: RKR

Drawn: SSH, Scale: AS SHOWN, Date: OCT. 2018

Title: **DIM. DETAILS OF BEARING & EXP. JOINT 7X10.0 M SPAN BRIDGE AT CH: KM. 24+800**

Drawing No. **HOL/BSRDCL/13510/DPR/BR-6/08**

Sheet: **1** of **0**

Rev: **0**

Scale: **AS SHOWN**

Date: **OCT. 2018**