

DETAILS OF BENCH MARKS

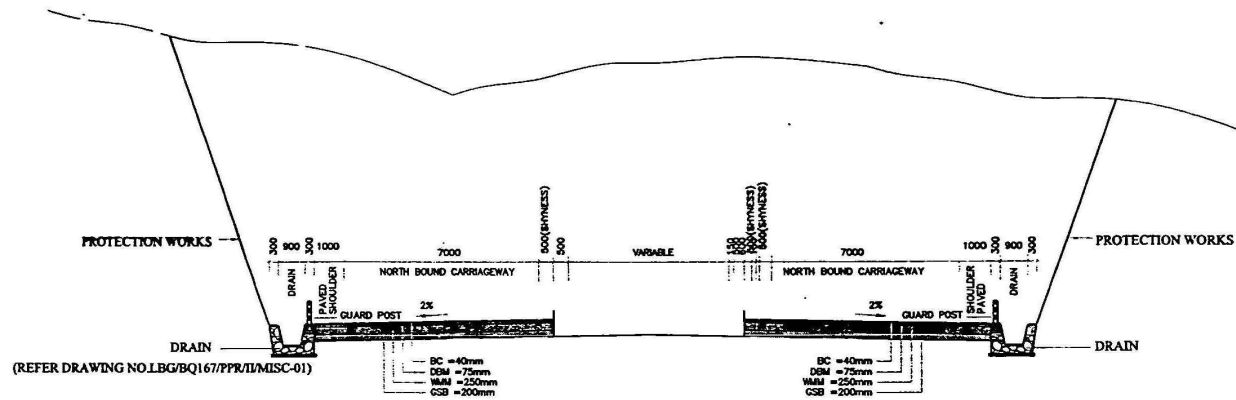
BM NO	EASTING	NORTHING	ELEVATION
BM88A	525378.362	3655287.378	1138.647
BM88B	525740.607	3655257.349	1153.254
BM88C	525871.088	3655325.965	1159.374
BM89A	525977.976	3655485.442	1165.146
BM89B	526072.113	3655650.716	1176.444
BM89C	526034.194	3655877.157	1185.993
BM 206	527497.789	3665690.522	1201.221
BM 207	527417.033	3665740.794	1198.336
BM 209	527677.324	3665911.999	1191.218
BM 210	527753.392	3666137.567	1184.719
BM 211	527846.563	3666241.672	1180.338
BM 212	527967.053	3666546.053	1172.334
BM 214	528350.307	3667090.219	1135.158
BM 215	528342.312	3667278.500	1133.058
BM 216	528446.186	3667474.801	1117.428
BM 217	528563.772	3667743.888	1101.153
BM 218	528439.414	3667863.191	1088.858
BM 219	528621.094	3668322.183	1059.153
BM 220	528651.523	3668561	1044.568
BM 221	528721.966	3668799.217	1029.658



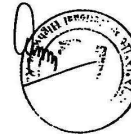
REV.	DATE	PREP.	CHK.	APPROVED	DESCRIPTION		

NATIONAL HIGHWAYS AUTHORITY OF INDIA G-5 & 6, Sector 10, Dwaraka, New Delhi.	DRAWN BY: <u>Debie Torvis</u> DESIGN BY: <u>R.K. Chopra</u> CHECKED BY: <u>M.S. Kumar</u> APPROVED BY: _____	NAME: _____ SKN: _____ TITLE: BENCH MARK DETAILS	PROJECT:- Four Lanes of NH-1A From Udhampur To Bahahal-Section Km.89 To Km.130 Package No. NS-99A/J&K DRAWING NO. LSG/08/07/FRM/01 DATE: February, 2007
			THE Louis Berger Group, Inc., USA Engineers • Planners • Scientists • Economists in Joint Venture with: LRP Consultants Consortium Pvt. Ltd.

and in Association with:
L & T Ramboll Consulting Engineers



TYPICAL CROSS SECTION (TYPE-I)
 (ALIGNMENT AWAY FROM EXISTING ROAD. HILL SLOPE PROTECTION ON BOTH SIDE OF CARRIAGEWAY)



NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETRES, UNLESS OTHERWISE SPECIFIED.

REV.	DATE	PREP.	CHK.	APPROVED	DESCRIPTION



NATIONAL HIGHWAYS AUTHORITY OF INDIA

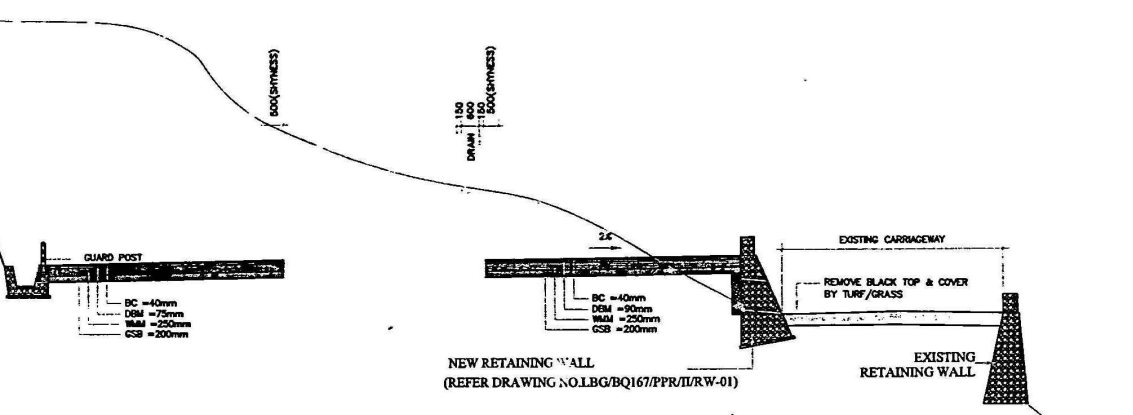
G-5 & 6, Sector 10, Dwarka, New Delhi.

NAME	SIGN	TITLE
DRAWN BY Oshy Tivari		TYPICAL CROSS SECTIONS
DESIGN BY J.K. Chopra		
CHECKED BY M.S. Rawat		
APPROVED BY		SCALE: HTS

PROJECT:-	DRAWING NO.	DATE:
Four laning of NH-1A From Udhampur To Barahal-Section Km.89 To 130 Package No. NS-99A/J&K	LBG/BQ167/PPR/IV/MISC-01	March, 2007

THE Louis Berger Group, Inc., USA
Engineers • Planners • Scientists • Economists
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and in Association with: L & T Ramboll Consulting Engineers

PROTECTION WORKS
GABION WALL
(REFER DRAWING NO.
LBG/BQ167/PPR/II/GB-01)



(EXISTING ROAD SHIFTED-EXISTING RETAINING WALL RETAINED-NEW RETAINING WALL CONSTRUCTED IN INTERVENING AREA TO BE LANDSCAPED)



NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETRES, UNLESS OTHERWISE SPECIFIED.

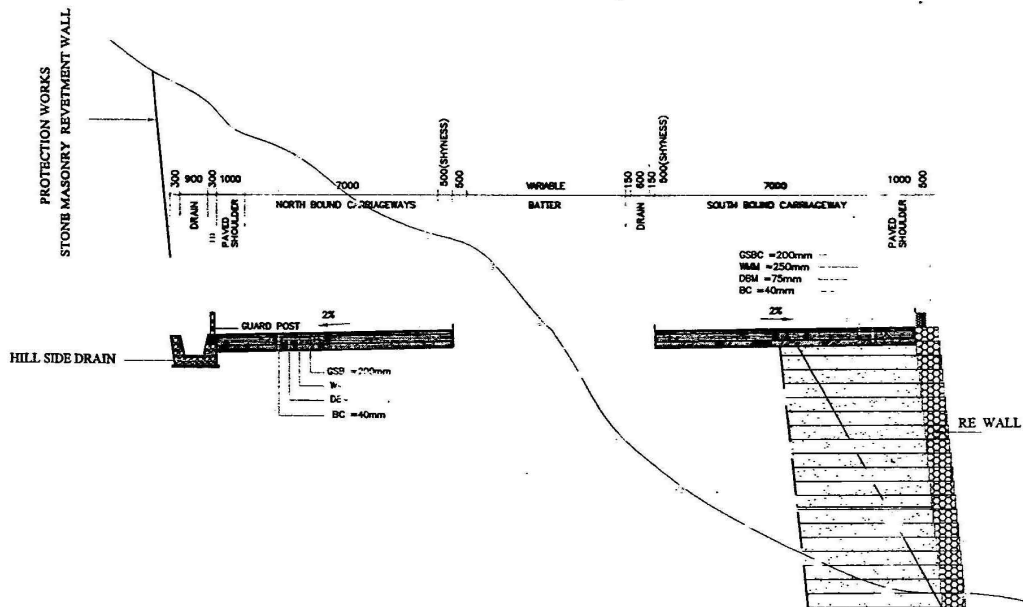


NHAI AUTHORITY
G-5 & 6, Sector 10, Dwaraka, New Delhi.

Chief Engineer
R.K. Chopra
M.S. Khanna

PROJECT:- Four Laning of NH-1A From
Udhampur To Sarhal-Section Km.89 To 130
Package No. NS-95A/LSJK
LBG/BQ167/DPR/DCS-02

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TYPICAL CROSS SECTION (TYPE-III)
 (NEW SOIL REINFORCED EARTH RETAINING WALL CONSTRUCTED FOR RE-ALIGNED CARRIAGEWAY)



NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETRES, UNLESS OTHERWISE SPECIFIED.

REV.	DATE	PREP.	CHEK.	APPROVED	DESCRIPTION



NATIONAL HIGHWAYS AUTHORITY OF INDIA
 G-5 & 6, Sector 10, Dwaraka, New Delhi.

NAME	SIGN	TITLE
DRAWN BY: Oshik Terada		TYPICAL CROSS SECTIONS
DESIGN BY: R.K. Chopra		
CHECKED BY: M.S. Rawat		
APPROVED BY:		SCALE: MTS

PROJECT: Four laning of NH-1A From Udhampur To Banihal-Section Km.89 To 130 Package No. NS-99A/J&K
 DRAWING NO. LRG/90/147/DPL/DCS-43
 DATE: March, 2007

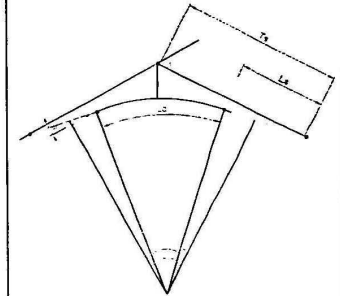
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 Consortium Pvt. Ltd. Consulting Engineers

HORIZONTAL TANGENT POINTS								
SL.No.	CHANGAGE	EASTING	NORTHING	LEVEL	BEARING	RADIUS	HAND OF CURVE	CODE
1	0.000	525972.043	3655552.992	1168.676	12°42'38"	∞		PBT
2	15.217	525975.391	3655567.836	1169.452	12°42'38"	∞		TS00
3	70.217	525992.985	3655619.688	1172.257	30°49'16.7"	87	RIGHT	SC00
4	98.313	526010.994	3655641.095	1173.690	49°19'29"	87	RIGHT	CS00
5	118.313	526027.106	3655652.924	1174.710	55°54'37.6"	∞		SS00
6	138.313	526043.177	3655664.806	1175.730	48°44'54.5"	-80	LEFT	SC00
7	211.703	526070.251	3655730.271	1179.658	356°11'13.3"	-80	LEFT	CS00
8	236.703	526066.008	3655754.881	1181.106	347°14'4.5"	∞		SS00
9	261.703	526061.765	3655779.491	1182.601	356°11'13.3"	80	RIGHT	SC00
10	262.295	526061.728	3655780.082	1182.636	356°36'40.3"	80	RIGHT	CS00
11	267.295	526061.536	3655785.078	1182.936	358°24'6"	∞		SS00
12	272.295	526061.304	3655790.072	1183.236	355°13'6.9"	-45	LEFT	SC00
13	308.491	526044.861	3655821.227	1185.408	309°7'56.3"	-45	LEFT	CS00
14	313.491	526040.869	3655824.237	1185.708	305°56'57.1"	∞		SS00
15	318.491	526036.863	3655827.228	1186.008	308°20'11.5"	60	RIGHT	SC00
16	364.394	526014.639	3655866.117	1188.762	352°10'13"	60	RIGHT	CS00
17	378.307	526014.165	3655880.000	1189.597	3°8'44.3"	92	RIGHT	SC00
18	424.528	526027.947	3655923.611	1192.730	31°55'53.2"	92	RIGHT	CS00
19	444.528	526039.720	3655939.766	1193.570	38°9'33.3"	∞		SS00
20	464.528	526051.705	3655955.772	1194.770	34°9'9.2"	-143	LEFT	SC00
21	551.943	526076.349	3656038.228	1200.015	359°7'40.9"	-143	LEFT	CS00
22	586.943	526072.968	3656073.041	1202.115	352°6'58.7"	∞		ST00
23	640.769	526065.586	3656126.358	1205.345	352°6'58.7"	-1000	LEFT	PC
24	789.761	526034.251	3656271.877	1214.284	343°34'46.8"	∞		PT
25	885.992	526007.048	3656364.183	1220.058	343°34'46.8"	∞		TS00
26	905.992	526001.716	3656383.457	1221.258	346°26'40"	200	RIGHT	SC00
27	1074.765	526031.903	3656544.461	1229.464	34°47'39.7"	200	RIGHT	CS00
28	1094.765	526043.855	3656560.494	1229.574	37°39'32.9"	∞		ST00
29	1229.240	526126.015	3656666.952	1230.246	37°39'32.9"	∞		TS00
30	1244.240	526135.080	3656678.903	1230.321	36°13'36.3"	-300	LEFT	SC00

HORIZONTAL TANGENT POINTS								
SL.No.	CHANGAGE	EASTING	NORTHING	LEVEL	BEARING	RADIUS	HAND OF CURVE	CODE
31	1393.503	526190.355	3656815.900	1231.068	7°43'10.7"	∞		PT
32	9842.142	527325.226	3665187.971	1211.161	7°43'10.7"	-550	LEFT	PC
33	10008.263	527322.531	3665353.439	1210.330	350°24'51"	∞		PT
34	10136.128	527301.238	3665479.518	1209.691	350°24'51"	∞		TS00
35	10151.128	527298.861	3665494.328	1209.616	351°48'50.1"	307	RIGHT	SC00
36	10382.379	527351.169	3665714.009	1205.934	34°58'21.5"	307	RIGHT	CS00
37	10397.379	527359.966	3665726.159	1205.172	36°22'20.5"	∞		ST00
38	10423.518	527375.467	3665747.205	1203.844	36°22'20.5"	532	RIGHT	PC
39	10598.661	527500.471	3665868.750	1194.947	55°14'6.3"	-298	LEFT	PRC
40	10623.709	527520.424	3665883.881	1193.674	50°25'8.8"	-298	LEFT	PAC

HORIZONTAL INTERSECTION POINTS					
HIP No.	EASTING	NORTHING	DEFLECTION ANGLE	RADIUS	HAND OF CURVE
1	525972.043	3655552.992	0°0'0"	INFINITY	
2	525988.724	3655626.947	43°11'59.6"	87	RIGHT
3	526080.864	3655689.307	291°19'26.8"	-80	LEFT
4	526061.869	3655773.149	11°10'1.6"	80	RIGHT
5	526060.848	3655809.748	307°32'51.1"	-45	LEFT
6	526083.677	3655995.707	313°57'25.4"	-143	LEFT
7	526055.348	3656200.287	351°27'48.1"	-1000	LEFT
8	525975.353	3656471.732	54°4'46.2"	200	RIGHT
9	526179.572	3656736.349	330°3'37.8"	-300	LEFT
10	527336.469	3665270.910	342°41'40.3"	-550	LEFT
11	527278.309	3665615.290	45°57'29.5"	307	RIGHT
12	527427.874	3665818.360	18°51'45.8"	532	RIGHT
13	527510.765	3665875.896	355°11'2.5"	-298	LEFT
14	527520.424	3665883.881	0°0'0"	INFINITY	

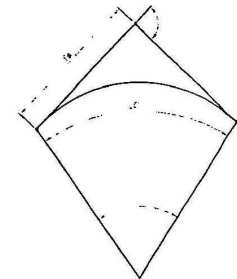
ELEMENTS OF HORIZONTAL CURVE



ABBREVIATIONS:-

- TS/SS START OF TRANSITION
- SC START OF CIRCULAR CURVE
- HIP HORIZONTAL INTERSECTION POINT
- CS END OF CIRCULAR CURVE
- ST END OF TRANSITION
- Δ DEFLECTION ANGLE

CIRCULAR CURVE WITH TRANSITION



- PC START OF CIRCULAR CURVE
- PI HORIZONTAL INTERSECTION POINT
- PT END OF CIRCULAR CURVE
- Δ DEFLECTION ANGLE

CIRCULAR CURVE

REV.	DATE	PREP.	CHKD.	APPROVED	DESCRIPTION



NATIONAL HIGHWAYS AUTHORITY OF INDIA

G-5 & 6, Sector 10, Dwarka, New Delhi.

NAME	SIGN	TITLE
DESIGN BY	Ombi Terani	HORIZONTAL CURVE DETAILS (SOUTH BOUND), PACKAGE - II
DESIGN BY	R.K. Chopra	
CHECKED BY	M.S. Karvi	
APPROVED BY		

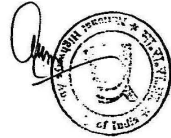
NAME	SIGN	TITLE



Four lanes of NH-1A From Uthampur To Banihal-Section Km.89 To Km.130 Package No. NS-99AJ&K	
DRAWING NO. LB/02/07/DP/05/NS/HC-II (SHEET 1 OF 1)	DATE: April, 2007

THE Louis Berger Group, Inc., USA
 Engineers • Planners • Scientists • Economists
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 LRP Consultants
 Consortium Pvt. Ltd. Consulting Engineers

SOUTHBOUND (MC91)													
S.No.	Vertical Intersection Points			Element	Vertical Tangent Points					Radius	M Value	K Value	Length of Element
	Chainage	Level	%Grade Diff.		Start Chainage	Level	End Chainage	Level	Grade (%)				
1				Grade	0.000	1168.676	147.469	1176.197	5.100				147.469
2	197.469	1178.747	0.900	Sag Curve	147.469	1176.197	247.469	1181.747		11111	0.900	111.111	100.000
3				Grade	247.469	1181.747	1000.024	1226.900	6.000				752.555
4	1040.024	1229.300	-5.500	Hog Curve	1000.024	1226.900	1080.024	1229.500		-1455	-6.875	14.545	80.000
5				Grade	1080.024	1229.500	3527.162	1241.736	0.500				2447.138
6	3627.162	1242.236	-1.000	Hog Curve	3527.162	1241.736	3727.162	1241.736		-20000	-0.500	200.000	200.000
7				Grade	3727.162	1241.736	10274.726	1208.998	-0.500				6547.564
8	10327.226	1208.736	-4.580	Hog Curve	10274.726	1208.998	10379.726	1208.069		-2293	-4.362	22.926	105.000
9				Grade	10379.726	1206.069	10623.709	1193.674	-5.080				243.983



REV.	DATE	PREP.	CHK.	APPROVED	DESCRIPTION



NATIONAL HIGHWAYS AUTHORITY OF INDIA
G-5 & 6, Sector 10, Dwarka, New Delhi.

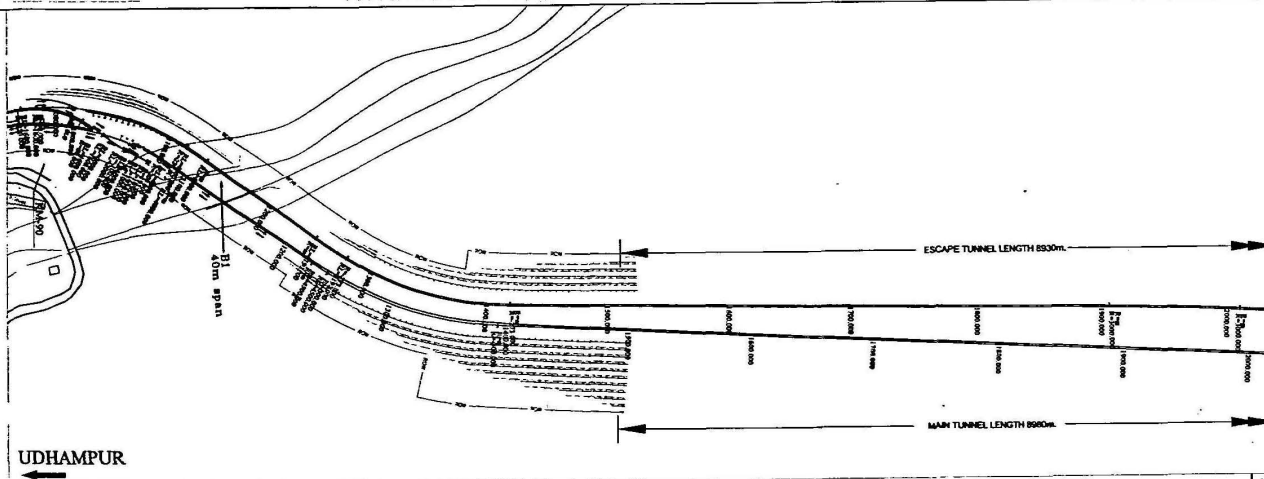
NAME	SIGN
DRAWN BY: Ombir Trevisi	
DESIGN BY: R.K. Chugh	
CHECKED BY: M.S. Rawat	
APPROVED BY:	

TITLE:- VERTICAL CURVE DETAILS (SOUTH BOUND), PACKAGE - II
SCALE: N.T.S.

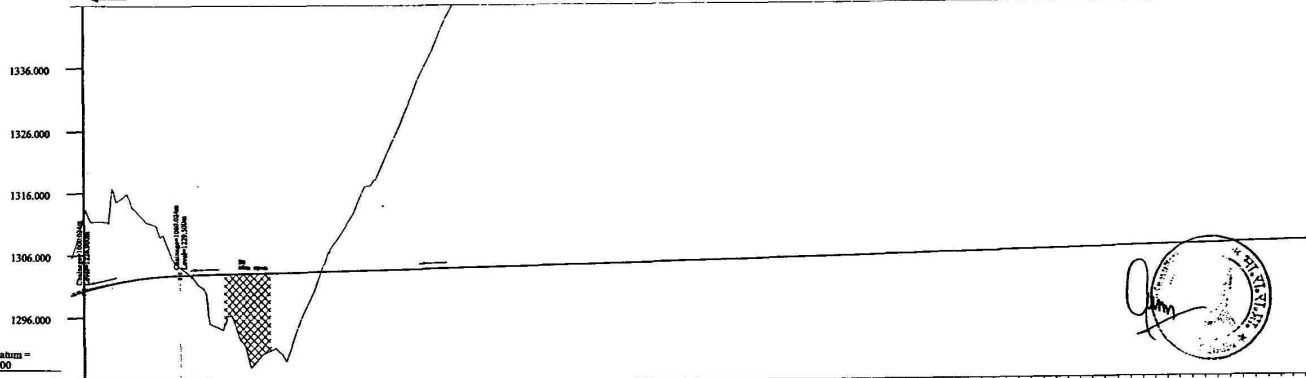
PROJECT:- Four Lanes of NH-1A From Udhampur To Banihal-Section Km.89 To Km.130 Package No. NS-99AJ&K
DRAWING NO. L90/90147/DRP/ISS/VC-01 (SHEET 1 OF 1)
DATE:- April, 2007

THE LOUIS BERGER GROUP, Inc., USA
Engineers • Planners • Scientists • Economists
in Joint Venture with: LRP Consultants and in Association with: L & T Ramboll
Consortium Pvt. Ltd. Consulting Engineers

PLAN



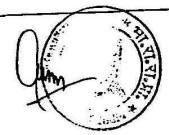
PROFILE



Level Datum = 1285.000

SOUTH BOUND CARRIAGEWAY	FINISHED ROAD LEVEL	EXISTING GROUND ROAD LEVEL	HORIZONTAL ALIGNMENT	VERTICAL ALIGNMENT	SUPERELEVATION	DESIGN CHAINAGE
	1336.000	1336.000	1336.000	0+000	Q=4.000	1336+000
1335.000	1335.000	1335.000	0+000	Q=4.000	1335+000	
1334.000	1334.000	1334.000	0+000	Q=4.000	1334+000	
1333.000	1333.000	1333.000	0+000	Q=4.000	1333+000	
1332.000	1332.000	1332.000	0+000	Q=4.000	1332+000	
1331.000	1331.000	1331.000	0+000	Q=4.000	1331+000	
1330.000	1330.000	1330.000	0+000	Q=4.000	1330+000	
1329.000	1329.000	1329.000	0+000	Q=4.000	1329+000	
1328.000	1328.000	1328.000	0+000	Q=4.000	1328+000	
1327.000	1327.000	1327.000	0+000	Q=4.000	1327+000	
1326.000	1326.000	1326.000	0+000	Q=4.000	1326+000	
1325.000	1325.000	1325.000	0+000	Q=4.000	1325+000	
1324.000	1324.000	1324.000	0+000	Q=4.000	1324+000	
1323.000	1323.000	1323.000	0+000	Q=4.000	1323+000	
1322.000	1322.000	1322.000	0+000	Q=4.000	1322+000	
1321.000	1321.000	1321.000	0+000	Q=4.000	1321+000	
1320.000	1320.000	1320.000	0+000	Q=4.000	1320+000	
1319.000	1319.000	1319.000	0+000	Q=4.000	1319+000	
1318.000	1318.000	1318.000	0+000	Q=4.000	1318+000	
1317.000	1317.000	1317.000	0+000	Q=4.000	1317+000	
1316.000	1316.000	1316.000	0+000	Q=4.000	1316+000	
1315.000	1315.000	1315.000	0+000	Q=4.000	1315+000	
1314.000	1314.000	1314.000	0+000	Q=4.000	1314+000	
1313.000	1313.000	1313.000	0+000	Q=4.000	1313+000	
1312.000	1312.000	1312.000	0+000	Q=4.000	1312+000	
1311.000	1311.000	1311.000	0+000	Q=4.000	1311+000	
1310.000	1310.000	1310.000	0+000	Q=4.000	1310+000	
1309.000	1309.000	1309.000	0+000	Q=4.000	1309+000	
1308.000	1308.000	1308.000	0+000	Q=4.000	1308+000	
1307.000	1307.000	1307.000	0+000	Q=4.000	1307+000	
1306.000	1306.000	1306.000	0+000	Q=4.000	1306+000	
1305.000	1305.000	1305.000	0+000	Q=4.000	1305+000	
1304.000	1304.000	1304.000	0+000	Q=4.000	1304+000	
1303.000	1303.000	1303.000	0+000	Q=4.000	1303+000	
1302.000	1302.000	1302.000	0+000	Q=4.000	1302+000	
1301.000	1301.000	1301.000	0+000	Q=4.000	1301+000	
1300.000	1300.000	1300.000	0+000	Q=4.000	1300+000	
1299.000	1299.000	1299.000	0+000	Q=4.000	1299+000	
1298.000	1298.000	1298.000	0+000	Q=4.000	1298+000	
1297.000	1297.000	1297.000	0+000	Q=4.000	1297+000	
1296.000	1296.000	1296.000	0+000	Q=4.000	1296+000	

- NOTES / LEGENDS:-
1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE SPECIFIED
 2. BENCH MARK DETAILS REFER DRAWING NO. LBG/BQ167/1/EM-01
- PROPOSED CARRIAGEWAY
 - PROPOSED SHOULDER
 - EXISTING CARRIAGEWAY
 - PROPOSED ROW
 - SOUTH BOUND CW PROFILE
 - NORTH BOUND CW PROFILE
 - EXISTING GROUND/ROAD PROFILE



NATIONAL HIGHWAYS AUTHORITY OF INDIA
G-5 & 6, Sector 10, Dwarka, New Delhi.

DRAWN BY	NAME	SIGN
DESIGN BY	NAME	SIGN
CHECKED BY	NAME	SIGN
APPROVED BY	NAME	SIGN

TITLE: PLAN & PROFILE
km.1.000 To km.2.000
SOUTH BOUND (Package-II)
SCALE: HOR=1:2500 VER=1:500

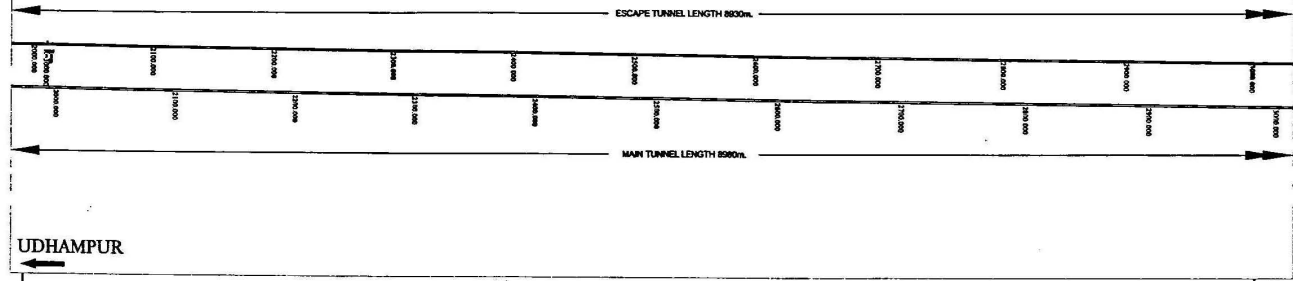
PROJECT: Four Lining of NH-1A From Udhampur To Banihal-Section Km.89 To Km.130
Package No. NS-99A/JAK
DRAWING NO. LBG/BQ167/DPL/15/5B/062
DATE: February, 2007

THE LOUIS BERGER GROUP, INC. USA
Engineers Planners Scientists Economists
in Joint Venture with: LRP Consultants and in Association with: L & T Ramboll
Consortium Pvt. Ltd. Consulting Engineers

KEY	DATE	PREP.	CHK.	APPROVED	DESCRIPTION

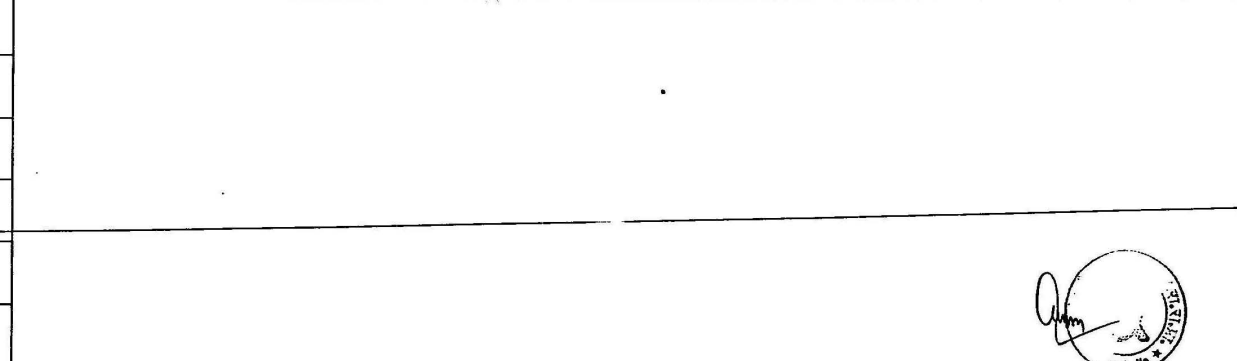


PLAN



PROFILE

1336.000
1326.000
1316.000
1306.000
1296.000

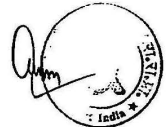


Level Datum = 1286.000

DESIGN CHAINAGE	FINISHED ROAD LEVEL	EXISTING GROUND ROAD LEVEL	HORIZONTAL ALIGNMENT	VERTICAL ALIGNMENT	SUPERELEVATION
2400.000	1298.435	1298.435			
2405.000	1298.435	1298.435			
2410.000	1298.435	1298.435			
2415.000	1298.435	1298.435			
2420.000	1298.435	1298.435			
2425.000	1298.435	1298.435			
2430.000	1298.435	1298.435			
2435.000	1298.435	1298.435			
2440.000	1298.435	1298.435			
2445.000	1298.435	1298.435			
2450.000	1298.435	1298.435			
2455.000	1298.435	1298.435			
2460.000	1298.435	1298.435			
2465.000	1298.435	1298.435			
2470.000	1298.435	1298.435			
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2990.000	1298.435	1298.435			
2995.000	1298.435	1298.435			
3000.000	1298.435	1298.435			

NOTES / LEGENDS:-

- 1. ALL DIMENSIONS ARE IN METRES, UNLESS OTHERWISE SPECIFIED
 - 2. BENCH MARK DETAILS REFER DRAWING NO. LBC/BQ167/1/EM-01
- PROPOSED CARRIAGEWAY
 PROPOSED SHOULDER
 EXISTING CARRIAGEWAY
 PROPOSED ROW
 SOUTH BOUND CW PROFILE
 NORTH BOUND CW PROFILE
 EXISTING GROUND/ROAD PROFILE



REV	DATE	PREP.	CHK.	APPROVED	DESCRIPTION

NATIONAL HIGHWAYS AUTHORITY OF INDIA
 G-5 & 6, Sector 10, Dwarka, New Delhi.

DRAWN BY	NAME	SKN
DESIGN BY	Double Terra	
CHECKED BY	R.K. Chugh	
APPROVED BY	M.S. Karm	
	Dig Vazir	

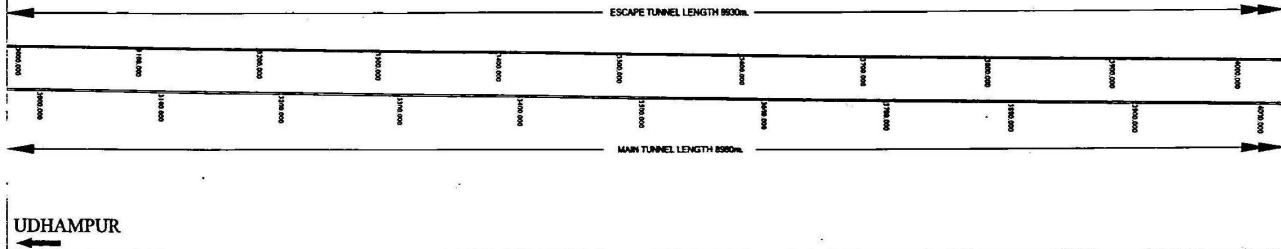
TITLE- **PLAN & PROFILE**
 km.2.000 To km.3.000
SOUTH BOUND (Package-II)
 SCALE:- HOR=1:2500 VER=1:500

PROJECT:- Four Lanes of NH-1A From Udhampur To Banihal Section Km.09 To Km. 130
 Package No. NS-85A/J&K
 DRAWING NO. LBC/BQ167/DP/R/S/53/003
 DATE:- February, 2007

THE Louis Berger Group , Inc., USA
 Engineers • Planners • Scientists • Economists
 in Joint Venture with : LRP Consultants and in Association with : T & Ramboll
 Consortium Pvt. Ltd. Consulting Engineers

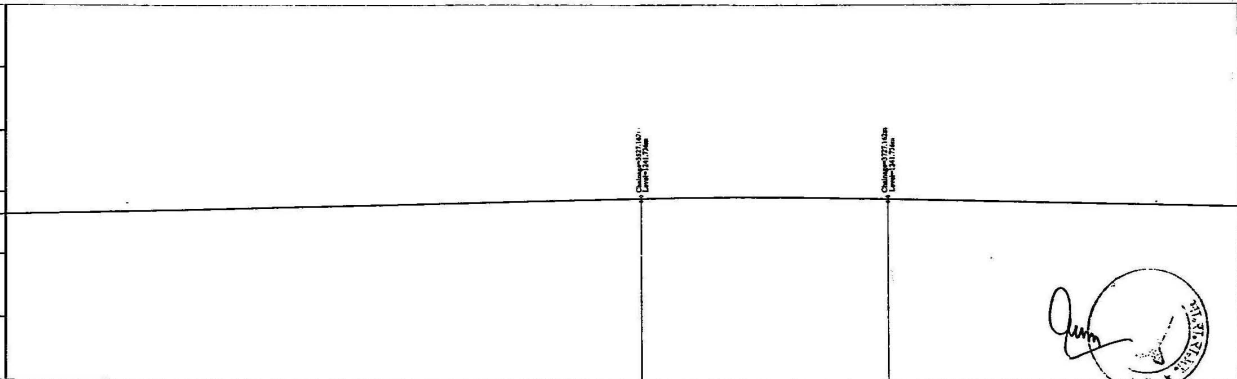


PLAN



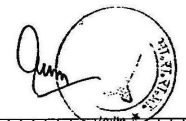
PROFILE

1336.000
1326.000
1316.000
1306.000
1296.000



NOTES / LEGENDS:-
1. ALL DIMENSIONS ARE IN METRES, UNLESS OTHERWISE SPECIFIED
2. BENCH MARK DETAILS REFER DRAWING NO. LBG/BO167/1/EM-0

PROPOSED CARRIAGEWAY
PROPOSED SHOULDER
EXISTING CARRIAGEWAY
PROPOSED ROW
SOUTH BOUND CW PROFILE
NORTH BOUND CW PROFILE
EXISTING GROUND/ROAD PROFILE



FINISHED ROAD LEVEL	EXISTING GROUND ROAD LEVEL	HORIZONTAL ALIGNMENT	VERTICAL ALIGNMENT	SUPERELEVATION	DESIGN CHAINAGE
1337.000	1337.000				500.000
1336.500	1336.500				505.000
1336.000	1336.000				510.000
1335.500	1335.500				515.000
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1333.500	1333.500				535.000
1333.000	1333.000				540.000
1332.500	1332.500				545.000
1332.000	1332.000				550.000
1331.500	1331.500				555.000
1331.000	1331.000				560.000
1330.500	1330.500				565.000
1330.000	1330.000				570.000
1329.500	1329.500				575.000
1329.000	1329.000				580.000
1328.500	1328.500				585.000
1328.000	1328.000				590.000
1327.500	1327.500				595.000
1327.000	1327.000				600.000
1326.500	1326.500				605.000
1326.000	1326.000				610.000
1325.500	1325.500				615.000
1325.000	1325.000				620.000
1324.500	1324.500				625.000
1324.000	1324.000				630.000
1323.500	1323.500				635.000
1323.000	1323.000				640.000
1322.500	1322.500				645.000
1322.000	1322.000				650.000
1321.500	1321.500				655.000
1321.000	1321.000				660.000
1320.500	1320.500				665.000
1320.000	1320.000				670.000
1319.500	1319.500				675.000
1319.000	1319.000				680.000
1318.500	1318.500				685.000
1318.000	1318.000				690.000
1317.500	1317.500				695.000
1317.000	1317.000				700.000
1316.500	1316.500				705.000
1316.000	1316.000				710.000
1315.500	1315.500				715.000
1315.000	1315.000				720.000
1314.500	1314.500				725.000
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1313.500	1313.500				735.000
1313.000	1313.000				740.000
1312.500	1312.500				745.000
1312.000	1312.000				750.000
1311.500	1311.500				755.000
1311.000	1311.000				760.000
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1310.000	1310.000				770.000
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1309.000	1309.000				780.000
1308.500	1308.500				785.000
1308.000	1308.000				790.000
1307.500	1307.500				795.000
1307.000	1307.000				800.000
1306.500	1306.500				805.000
1306.000	1306.000				810.000
1305.500	1305.500				815.000
1305.000	1305.000				820.000
1304.500	1304.500				825.000
1304.000	1304.000				830.000
1303.500	1303.500				835.000
1303.000	1303.000				840.000
1302.500	1302.500				845.000
1302.000	1302.000				850.000
1301.500	1301.500				855.000
1301.000	1301.000				860.000
1300.500	1300.500				865.000
1300.000	1300.000				870.000
1299.500	1299.500				875.000
1299.000	1299.000				880.000
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1298.000	1298.000				890.000
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1297.000	1297.000				900.000
1296.500	1296.500				905.000
1296.000	1296.000				910.000
1295.500	1295.500				915.000
1295.000	1295.000				920.000
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1291.000	1291.000				960.000
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1290.000	1290.000				970.000
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1289.000	1289.000				980.000
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1288.000	1288.000				990.000
1287.500	1287.500				995.000
1287.000	1287.000				1000.000

REV.	DATE	PREP.	CHK.	APPROVED	DESCRIPTION



NATIONAL HIGHWAYS AUTHORITY OF INDIA
G-5 & 6, Sector 10, Dwarka, New Delhi.

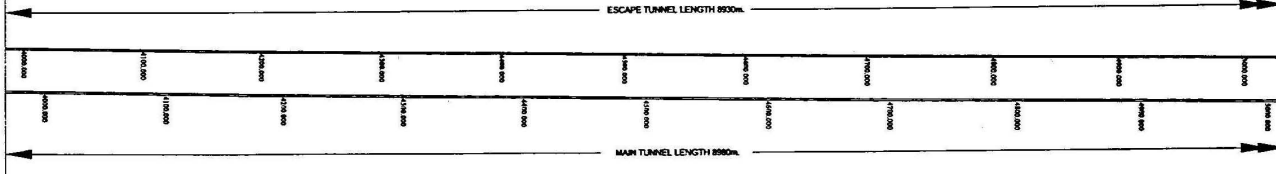
NAME	SKM
DRAWN BY	Chaitani Mashri
DESIGN BY	R.E. Chopra
CHECKED BY	M.S. Rawat
APPROVED BY	Dug Vejar

TITLE: PLAN & PROFILE
km.3.000 To km.4.000
SOUTH BOUND (Package-II)

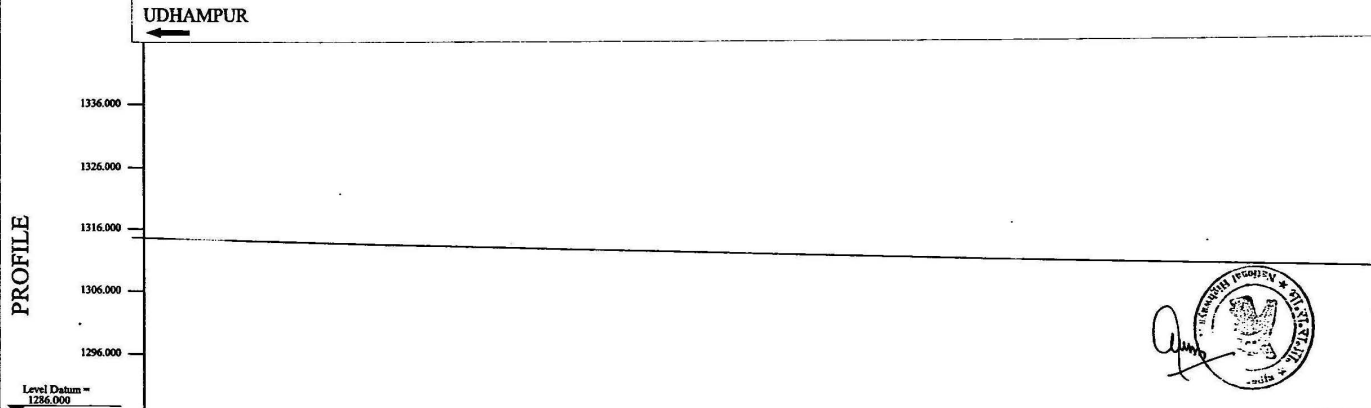
PROJECT:- Four Lanes of NH-1A From Udhampur To Banihal-Section Km.89 To Km.130
Package No. NS-98A/JSK
DRAWING NO. LBG/BO167/1/BSB/004
DATE:- February, 2007

THE LOUIS BERGER GROUP, INC., USA
Engineers Planners Scientists Economists
in Joint Venture with: and in Association with:
LRP Consultants L & T Ramboll
Consortium Pvt. Ltd. Consulting Engineers

PLAN



PROFILE



NOTES / LEGENDS-

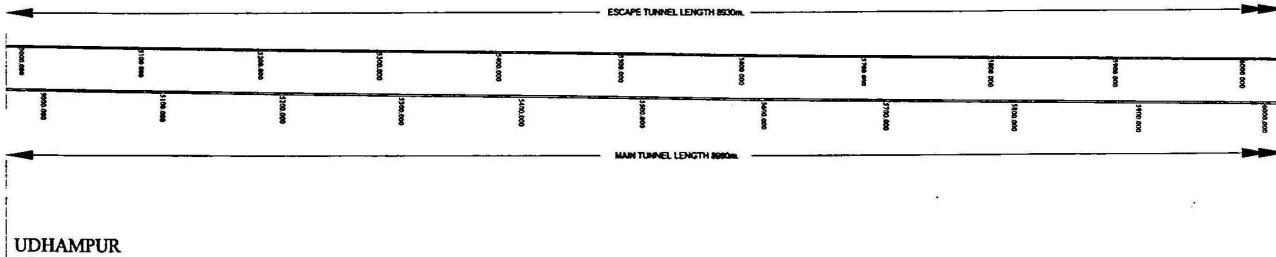
- 1. ALL DIMENSIONS ARE IN METRES, UNLESS OTHERWISE SPECIFIED
 - 2. BENCH MARK DETAILS REFER DRAWING NO. LG/BQ167/1/BM-01
- PROPOSED CARRIAGEWAY
 PROPOSED SHOULDER
 EXISTING CARRIAGEWAY
 PROPOSED ROW
 SOUTH BOUND CW PROFILE
 NORTH BOUND CW PROFILE
 EXISTING GROUND/ROAD PROFILE



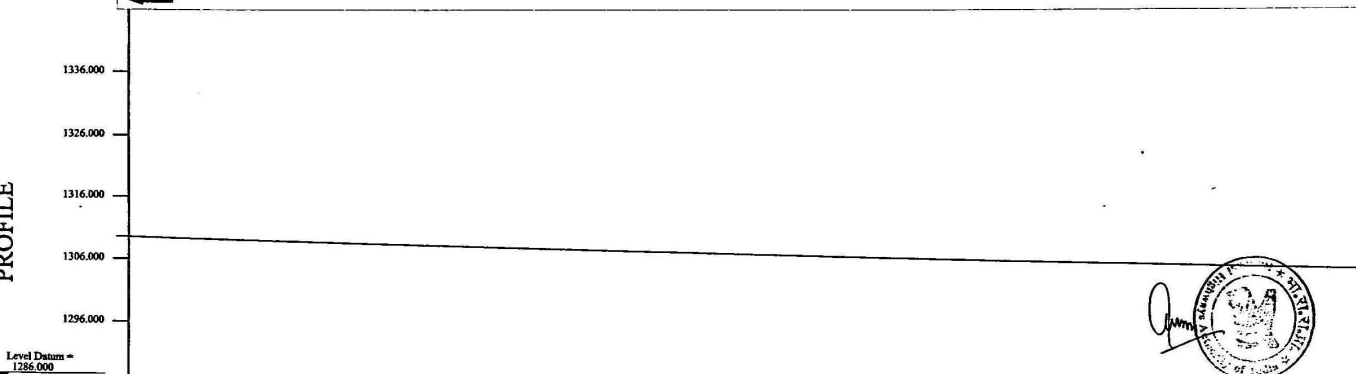
SOUTH BOUND CARRIAGEWAY	FINISHED ROAD LEVEL	1346.375 1345.325 1344.275 1343.225 1342.175 1341.125 1340.075 1339.025 1337.975 1336.925 1335.875 1334.825 1333.775 1332.725 1331.675 1330.625 1329.575 1328.525 1327.475 1326.425 1325.375 1324.325 1323.275 1322.225 1321.175 1320.125 1319.075 1318.025 1316.975 1315.925 1314.875 1313.825 1312.775 1311.725 1310.675 1309.625 1308.575 1307.525 1306.475 1305.425 1304.375 1303.325 1302.275 1301.225 1300.175 1299.125 1298.075 1297.025 1295.975 1294.925 1293.875 1292.825 1291.775 1290.725 1289.675 1288.625 1287.575 1286.525 1285.475 1284.425 1283.375 1282.325 1281.275 1280.225 1279.175 1278.125 1277.075 1276.025 1274.975 1273.925 1272.875 1271.825 1270.775 1269.725 1268.675 1267.625 1266.575 1265.525 1264.475 1263.425 1262.375 1261.325 1260.275 1259.225 1258.175 1257.125 1256.075 1255.025 1253.975 1252.925 1251.875 1250.825 1249.775 1248.725 1247.675 1246.625 1245.575 1244.525 1243.475 1242.425 1241.375 1240.325 1239.275 1238.225 1237.175 1236.125 1235.075 1234.025 1232.975 1231.925 1230.875 1229.825 1228.775 1227.725 1226.675 1225.625 1224.575 1223.525 1222.475 1221.425 1220.375 1219.325 1218.275 1217.225 1216.175 1215.125 1214.075 1213.025 1211.975 1210.925 1209.875 1208.825 1207.775 1206.725 1205.675 1204.625 1203.575 1202.525 1201.475 1200.425 1199.375 1198.325 1197.275 1196.225 1195.175 1194.125 1193.075 1192.025 1190.975 1189.925 1188.875 1187.825 1186.775 1185.725 1184.675 1183.625 1182.575 1181.525 1180.475 1179.425 1178.375 1177.325 1176.275 1175.225 1174.175 1173.125 1172.075 1171.025 1169.975 1168.925 1167.875 1166.825 1165.775 1164.725 1163.675 1162.625 1161.575 1160.525 1159.475 1158.425 1157.375 1156.325 1155.275 1154.225 1153.175 1152.125 1151.075 1150.025 1148.975 1147.925 1146.875 1145.825 1144.775 1143.725 1142.675 1141.625 1140.575 1139.525 1138.475 1137.425 1136.375 1135.325 1134.275 1133.225 1132.175 1131.125 1130.075 1129.025 1127.975 1126.925 1125.875 1124.825 1123.775 1122.725 1121.675 1120.625 1119.575 1118.525 1117.475 1116.425 1115.375 1114.325 1113.275 1112.225 1111.175 1110.125 1109.075 1108.025 1106.975 1105.925 1104.875 1103.825 1102.775 1101.725 1100.675 1099.625 1098.575 1097.525 1096.475 1095.425 1094.375 1093.325 1092.275 1091.225 1090.175 1089.125 1088.075 1087.025 1085.975 1084.925 1083.875 1082.825 1081.775 1080.725 1079.675 1078.625 1077.575 1076.525 1075.475 1074.425 1073.375 1072.325 1071.275 1070.225 1069.175 1068.125 1067.075 1066.025 1064.975 1063.925 1062.875 1061.825 1060.775 1059.725 1058.675 1057.625 1056.575 1055.525 1054.475 1053.425 1052.375 1051.325 1050.275 1049.225 1048.175 1047.125 1046.075 1045.025 1043.975 1042.925 1041.875 1040.825 1039.775 1038.725 1037.675 1036.625 1035.575 1034.525 1033.475 1032.425 1031.375 1030.325 1029.275 1028.225 1027.175 1026.125 1025.075 1024.025 1022.975 1021.925 1020.875 1019.825 1018.775 1017.725 1016.675 1015.625 1014.575 1013.525 1012.475 1011.425 1010.375 1009.325 1008.275 1007.225 1006.175 1005.125 1004.075 1003.025 1001.975 1000.925 999.875 998.825 997.775 996.725 995.675 994.625 993.575 992.525 991.475 990.425 989.375 988.325 987.275 986.225 985.175 984.125 983.075 982.025 980.975 979.925 978.875 977.825 976.775 975.725 974.675 973.625 972.575 971.525 970.475 969.425 968.375 967.325 966.275 965.225 964.175 963.125 962.075 961.025 959.975 958.925 957.875 956.825 955.775 954.725 953.675 952.625 951.575 950.525 949.475 948.425 947.375 946.325 945.275 944.225 943.175 942.125 941.075 940.025 938.975 937.925 936.875 935.825 934.775 933.725 932.675 931.625 930.575 929.525 928.475 927.425 926.375 925.325 924.275 923.225 922.175 921.125 920.075 919.025 917.975 916.925 915.875 914.825 913.775 912.725 911.675 910.625 909.575 908.525 907.475 906.425 905.375 904.325 903.275 902.225 901.175 900.125 899.075 898.025 896.975 895.925 894.875 893.825 892.775 891.725 890.675 889.625 888.575 887.525 886.475 885.425 884.375 883.325 882.275 881.225 880.175 879.125 878.075 877.025 875.975 874.925 873.875 872.825 871.775 870.725 869.675 868.625 867.575 866.525 865.475 864.425 863.375 862.325 861.275 860.225 859.175 858.125 857.075 856.025 854.975 853.925 852.875 851.825 850.775 849.725 848.675 847.625 846.575 845.525 844.475 843.425 842.375 841.325 840.275 839.225 838.175 837.125 836.075 835.025 833.975 832.925 831.875 830.825 829.775 828.725 827.675 826.625 825.575 824.525 823.475 822.425 821.375 820.325 819.275 818.225 817.175 816.125 815.075 814.025 812.975 811.925 810.875 809.825 808.775 807.725 806.675 805.625 804.575 803.525 802.475 801.425 800.375 799.325 798.275 797.225 796.175 795.125 794.075 793.025 791.975 790.925 789.875 788.825 787.775 786.725 785.675 784.625 783.575 782.525 781.475 780.425 779.375 778.325 777.275 776.225 775.175 774.125 773.075 772.025 770.975 769.925 768.875 767.825 766.775 765.725 764.675 763.625 762.575 761.525 760.475 759.425 758.375 757.325 756.275 755.225 754.175 753.125 752.075 751.025 749.975 748.925 747.875 746.825 745.775 744.725 743.675 742.625 741.575 740.525 739.475 738.425 737.375 736.325 735.275 734.225 733.175 732.125 731.075 730.025 728.975 727.925 726.875 725.825 724.775 723.725 722.675 721.625 720.575 719.525 718.475 717.425 716.375 715.325 714.275 713.225 712.175 711.125 710.075 709.025 707.975 706.925 705.875 704.825 703.775 702.725 701.675 700.625 699.575 698.525 697.475 696.425 695.375 694.325 693.275 692.225 691.175 690.125 689.075 688.025 686.975 685.925 684.875 683.825 682.775 681.725 680.675 679.625 678.575 677.525 676.475 675.425 674.375 673.325 672.275 671.225 670.175 669.125 668.075 667.025 665.975 664.925 663.875 662.825 661.775 660.725 659.675 658.625 657.575 656.525 655.475 654.425 653.375 652.325 651.275 650.225 649.175 648.125 647.075 646.025 644.975 643.925 642.875 641.825 640.775 639.725 638.675 637.625 636.575 635.525 634.475 633.425 632.375 631.325 630.275 629.225 628.175 627.125 626.075 625.025 623.975 622.925 621.875 620.825 619.775 618.725 617.675 616.625 615.575 614.525 613.475 612.425 611.375 610.325 609.275 608.225 607.175 606.125 605.075 604.025 602.975 601.925 600.875 599.825 598.775 597.725 596.675 595.625 594.575 593.525 592.475 591.425 590.375 589.325 588.275 587.225 586.175 585.125 584.075 583.025 581.975 580.925 579.875 578.825 577.775 576.725 575.675 574.625 573.575 572.525 571.475 570.425 569.375 568.325 567.275 566.225 565.175 564.125 563.075 562.025 560.975 559.925 558.875 557.825 556.775 555.725 554.675 553.625 552.575 551.525 550.475 549.425 548.375 547.325 546.275 545.225 544.175 543.125 542.075 541.025 539.975 538.925 537.875 536.825 535.775 534.725 533.675 532.625 531.575 530.525 529.475 528.425 527.375 526.325 525.275 524.225 523.175 522.125 521.075 520.025 518.975 517.925 516.875 515.825 514.775 513.725 512.675 511.625 510.575 509.525 508.475 507.425 506.375 505.325 504.275 503.225 502.175 501.125 500.075 499.025 497.975 496.925 495.875 494.825 493.775 492.725 491.675 490.625 489.575 488.525 487.475 486.425 485.375 484.325 483.275 482.225 481.175 480.125 479.075 478.025 476.975 475.925 474.875 473.825 472.775 471.725 470.675 469.625 468.575 467.525 466.475 465.425 464.375 463.325 462.275 461.225 460.175 459.125 458.075 457.025 455.975 454.925 453.875 452.825 451.775 450.725 449.675 448.625 447.575 446.525 445.475 444.425 443.375 442.325 441.275 440.225 439.175 438.125 437.075 436.025 434.975 433.925 432.875 431.825 430.775 429.725 428.675 427.625 426.575 425.525 424.475 423.425 422.375 421.325 420.275 419.225 418.175 417.125 416.075 415.025 413.975 412.925 411.875 410.825 409.775 408.725 407.675 406.625 405.575 404.525 403.475 402.425 401.375 400.325 399.275 398.225 397.175 396.125 395.075 394.025 392.975 391.925 390.875 389.825 388.775 387.725 386.675 385.625 384.575 383.525 382.475 381.425 380.375 379.325 378.275 377.225 376.175 375.125 374.075 373.025 371.975 370.925 369.875 368.825 367.775 366.725 365.675 364.625 363.575 362.525 361.475 360.425 359.375 358.325 357.275 356.225 355.175 354.125 353.075 352.025 350.975 349.925 348.875 347.825 346.775 345.725 344.675 343.625 342.575 341.525 340.475 339.425 338.375 337.325 336.275 335.225 334.175 333.125 332.075 331.025 329.975 328.925 327.875 326.825 325.775 324.725 323.675 322.625 321.575 320.525 319.475 318.425 317.375 316.325 315.275 314.225 313.175 312.125 311.075 310.025 308.975 307.925 306.875 305.825 304.775 303.725 302.675 301.625 300.575 299.525 298.475 297.425 296.375 295.325 294.275 293.225 292.175 291.125 290.075 289.025 287.975 286.925 285.875 284.825 283.775 282.725 281.675 280.625 279.575 278.525 277.475 276.425 275.375 274.325 273.275 272.225 271.175 270.125 269.075 268.025 266.975 265.925 264.875 263.825 262.775 261.725 260.675 259.625 258.575 257.525 256.475 255.425 254.375 253.325 252.275 251.225 250.175 249.125 248.075 247.025 245.975 244.925 243.875 242.825 241.775 240.725 239.675 238.625 237.575 236.525 235.475 234.425 233.375 232.325 231.275 230.225 229.175 228.125 227.075 226.025 224.975 223.925 222.875 221.825 220.775 219.725 218.675 217.625 216.575 215.525 214.475 213.425 212.375 211.325 210.275 209.225 208.175 207.125 206.075 205.025 203.975 202.925 201.875 200.825 199.775 198.725 197.675 196.625 195.575 194.525 193.475 192.425 191.375 190.325 189.275 188.225 187.175 186.125 185.075 184.025 182.975 181.925 180.875 179.825 178.775 177.725 176.675 175.625 174.575 173.525 172.475 171.425 170.375 169.325 168.275 167.225 166.175 165.125 164.075 163.025 161.975 160.925 159.875 158.825 157.775 156.725 155.675 154.625 153.575 152.525 151.475 150.425 149.375 148.325 147.275 146.225 145.175 144.125 143.075 142.025 140.975 139.925 138.875 137.825 136.775 135.725 134.675 133.625 132.575 131.525 130.475 129.425 128.375 127.325 126.275 125.225 124.175 123.125 122.075 121.025 119.975 118.925 117.875 116.825 115.775 114.725 113.675 112.625 111.575 110.525 109.475 108.425 107.375 106.325 105.275 104.225 103.175 102.125 101.075 100.025 98.975 97.925 96.875 95.825 94.775 93.725 92.675 91.625 90.575 89.525 88.475 87.425 86.375 85.325 84.275 83.225 82.175 81.125 80.075 79.025 77.975 76.925 75.875 74.825 73.775 72.725 71.675 70.625 69.575 68.525 67.475 66.425 65.375 64.325 63.275 62.225 61.175 60.125 59.075 58.025 56.975 55.925 54.875
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PLAN



PROFILE



NOTES / LEGENDS:-

1. ALL DIMENSIONS ARE IN METRES, UNLESS OTHERWISE SPECIFIED

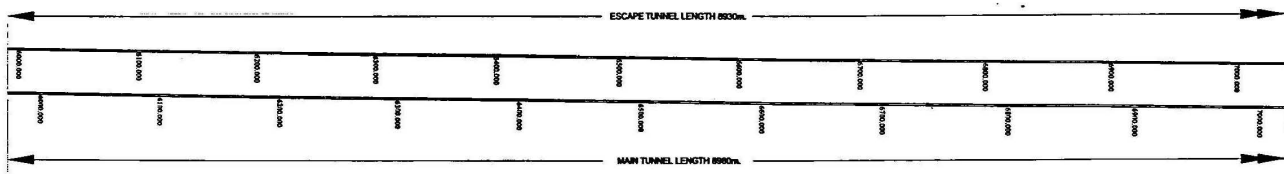
2. BENCH MARK DETAILS REFER DRAWING NO. LBG/BO167/1/BM-01

- PROPOSED CARRIAGEWAY
- PROPOSED SHOULDER
- EXISTING CARRIAGEWAY
- PROPOSED ROW
- SOUTH BOUND CW PROFILE
- NORTH BOUND CW PROFILE
- EXISTING GROUND/ROAD PROFILE

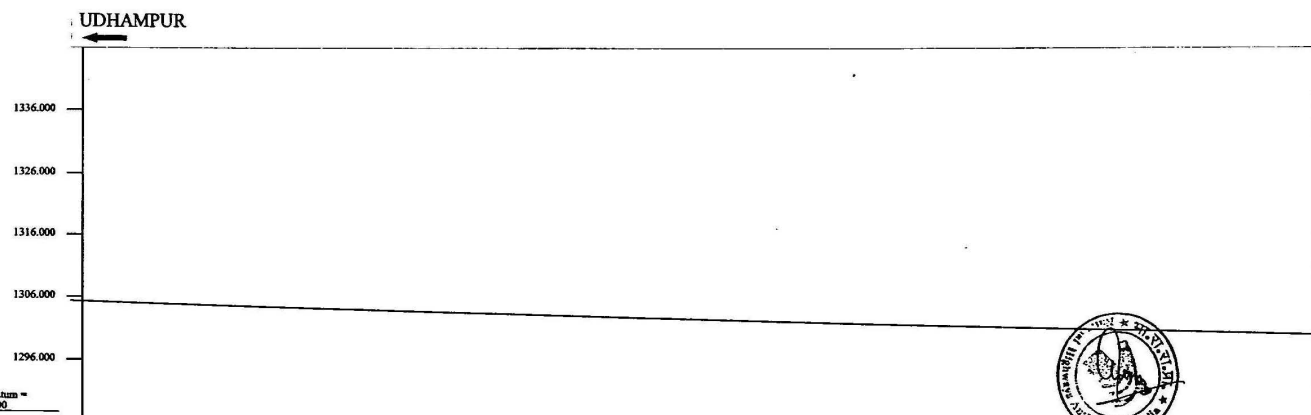
SOUTH BOUND CARRIAGEWAY	FINISHED ROAD LEVEL	EXISTING GROUND ROAD LEVEL	HORIZONTAL ALIGNMENT	VERTICAL ALIGNMENT	SUPERELEVATION	DESIGN CHAINAGE
	1874.29	1332.93	1318.91			
1874.61	1332.32	1318.61				910.00
1874.71	1332.32	1318.32				920.00
1875.28	1332.32	1318.32				930.00
1875.31	1332.32	1318.32				940.00
1875.39	1332.32	1318.32				950.00
1875.42	1332.32	1318.32				960.00
1875.48	1332.32	1318.32				970.00
1875.54	1332.32	1318.32				980.00
1875.64	1332.32	1318.32				990.00
1875.68	1332.32	1318.32				1000.00
1875.72	1332.32	1318.32				1010.00
1875.78	1332.32	1318.32				1020.00
1875.84	1332.32	1318.32				1030.00
1875.90	1332.32	1318.32				1040.00
1875.96	1332.32	1318.32				1050.00
1876.00	1332.32	1318.32				1060.00
1876.04	1332.32	1318.32				1070.00
1876.08	1332.32	1318.32				1080.00
1876.12	1332.32	1318.32				1090.00
1876.16	1332.32	1318.32				1100.00
1876.20	1332.32	1318.32				1110.00
1876.24	1332.32	1318.32				1120.00
1876.28	1332.32	1318.32				1130.00
1876.32	1332.32	1318.32				1140.00
1876.36	1332.32	1318.32				1150.00
1876.40	1332.32	1318.32				1160.00
1876.44	1332.32	1318.32				1170.00
1876.48	1332.32	1318.32				1180.00
1876.52	1332.32	1318.32				1190.00
1876.56	1332.32	1318.32				1200.00
1876.60	1332.32	1318.32				1210.00
1876.64	1332.32	1318.32				1220.00
1876.68	1332.32	1318.32				1230.00
1876.72	1332.32	1318.32				1240.00
1876.76	1332.32	1318.32				1250.00
1876.80	1332.32	1318.32				1260.00
1876.84	1332.32	1318.32				1270.00
1876.88	1332.32	1318.32				1280.00
1876.92	1332.32	1318.32				1290.00
1876.96	1332.32	1318.32				1300.00
1877.00	1332.32	1318.32				1310.00
1877.04	1332.32	1318.32				1320.00
1877.08	1332.32	1318.32				1330.00
1877.12	1332.32	1318.32				1340.00
1877.16	1332.32	1318.32				1350.00
1877.20	1332.32	1318.32				1360.00
1877.24	1332.32	1318.32				1370.00
1877.28	1332.32	1318.32				1380.00
1877.32	1332.32	1318.32				1390.00
1877.36	1332.32	1318.32				1400.00
1877.40	1332.32	1318.32				1410.00
1877.44	1332.32	1318.32				1420.00
1877.48	1332.32	1318.32				1430.00
1877.52	1332.32	1318.32				1440.00
1877.56	1332.32	1318.32				1450.00
1877.60	1332.32	1318.32				1460.00
1877.64	1332.32	1318.32				1470.00
1877.68	1332.32	1318.32				1480.00
1877.72	1332.32	1318.32				1490.00
1877.76	1332.32	1318.32				1500.00
1877.80	1332.32	1318.32				1510.00
1877.84	1332.32	1318.32				1520.00
1877.88	1332.32	1318.32				1530.00
1877.92	1332.32	1318.32				1540.00
1877.96	1332.32	1318.32				1550.00
1878.00	1332.32	1318.32				1560.00
1878.04	1332.32	1318.32				1570.00
1878.08	1332.32	1318.32				1580.00
1878.12	1332.32	1318.32				1590.00
1878.16	1332.32	1318.32				1600.00
1878.20	1332.32	1318.32				1610.00
1878.24	1332.32	1318.32				1620.00
1878.28	1332.32	1318.32				1630.00
1878.32	1332.32	1318.32				1640.00
1878.36	1332.32	1318.32				1650.00
1878.40	1332.32	1318.32				1660.00
1878.44	1332.32	1318.32				1670.00
1878.48	1332.32	1318.32				1680.00
1878.52	1332.32	1318.32				1690.00
1878.56	1332.32	1318.32				1700.00
1878.60	1332.32	1318.32				1710.00
1878.64	1332.32	1318.32				1720.00
1878.68	1332.32	1318.32				1730.00
1878.72	1332.32	1318.32				1740.00
1878.76	1332.32	1318.32				1750.00
1878.80	1332.32	1318.32				1760.00
1878.84	1332.32	1318.32				1770.00
1878.88	1332.32	1318.32				1780.00
1878.92	1332.32	1318.32				1790.00
1878.96	1332.32	1318.32				1800.00
1879.00	1332.32	1318.32				1810.00
1879.04	1332.32	1318.32				1820.00
1879.08	1332.32	1318.32				1830.00
1879.12	1332.32	1318.32				1840.00
1879.16	1332.32	1318.32				1850.00
1879.20	1332.32	1318.32				1860.00
1879.24	1332.32	1318.32				1870.00
1879.28	1332.32	1318.32				1880.00
1879.32	1332.32	1318.32				1890.00
1879.36	1332.32	1318.32				1900.00
1879.40	1332.32	1318.32				1910.00
1879.44	1332.32	1318.32				1920.00
1879.48	1332.32	1318.32				1930.00
1879.52	1332.32	1318.32				1940.00
1879.56	1332.32	1318.32				1950.00
1879.60	1332.32	1318.32				1960.00
1879.64	1332.32	1318.32				1970.00
1879.68	1332.32	1318.32				1980.00
1879.72	1332.32	1318.32				1990.00
1879.76	1332.32	1318.32				2000.00
1879.80	1332.32	1318.32				2010.00
1879.84	1332.32	1318.32				2020.00
1879.88	1332.32	1318.32				2030.00
1879.92	1332.32	1318.32				2040.00
1879.96	1332.32	1318.32				2050.00
1880.00	1332.32	1318.32				2060.00
1880.04	1332.32	1318.32				2070.00
1880.08	1332.32	1318.32				2080.00
1880.12	1332.32	1318.32				2090.00
1880.16	1332.32	1318.32				2100.00
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1880.28	1332.32	1318.32				2130.00
1880.32	1332.32	1318.32				2140.00
1880.36	1332.32	1318.32				2150.00
1880.40	1332.32	1318.32				2160.00
1880.44	1332.32	1318.32				2170.00
1880.48	1332.32	1318.32				2180.00
1880.52	1332.32	1318.32				2190.00
1880.56	1332.32	1318.32				2200.00
1880.60	1332.32	1318.32				2210.00
1880.64	1332.32	1318.32				2220.00
1880.68	1332.32	1318.32				2230.00
1880.72	1332.32	1318.32				2240.00
1880.76	1332.32	1318.32				2250.00
1880.80	1332.32	1318.32				2260.00
1880.84	1332.32	1318.32				2270.00
1880.88	1332.32	1318.32				2280.00
1880.92	1332.32	1318.32				2290.00
1880.96	1332.32	1318.32				2300.00
1881.00	1332.32	1318.32				2310.00
1881.04	1332.32	1318.32				2320.00
1881.08	1332.32	1318.32				2330.00
1881.12	1332.32	1318.32				2340.00
1881.16	1332.32	1318.32				2350.00
1881.20	1332.32	1318.32				2360.00
1881.24	1332.32	1318.32				2370.00
1881.28	1332.32	1318.32				2380.00
1881.32	1332.32	1318.32				2390.00
1881.36	1332.32	1318.32				2400.00
1881.40	1332.32	1318.32				2410.00
1881.44	1332.32	1318.32				2420.00
1881.48	1332.32	1318.32				2430.00
1881.52	1332.32	1318.32				2440.00
1881.56	1332.32	1318.32				2450.00
1881.60	1332.32	1318.32				2460.00



PLAN



PROFILE



- NOTES / LEGENDS:-
1. ALL DIMENSIONS ARE IN METRES, UNLESS OTHERWISE SPECIFIED
 2. BENCH MARK DETAILS REFER DRAWING NOLBG/BQ167/1/BM-01
- PROPOSED CARRIAGEWAY
 PROPOSED SHOULDER
 EXISTING CARRIAGEWAY
 PROPOSED ROW
 SOUTH BOUND CW PROFILE
 NORTH BOUND CW PROFILE
 EXISTING GROUND/ROAD PROFILE



DESIGN CHAINAGE	SUPERELEVATION	VERTICAL ALIGNMENT	HORIZONTAL ALIGNMENT	EXISTING GROUND ROAD LEVEL	FINISHED ROAD LEVEL
6400.000				1316.69	1297.375
6410.000				1317.740	1298.325
6420.000				1318.815	1299.275
6430.000				1319.910	1300.225
6440.000				1321.025	1301.175
6450.000				1322.160	1302.125
6460.000				1323.315	1303.075
6470.000				1324.490	1304.025
6480.000				1325.685	1304.975
6490.000				1326.900	1305.925
6500.000				1328.135	1306.875
6510.000				1329.390	1307.825
6520.000				1330.665	1308.775
6530.000				1331.960	1309.725
6540.000				1333.275	1310.675
6550.000				1334.610	1311.625
6560.000				1335.965	1312.575
6570.000				1337.340	1313.525
6580.000				1338.735	1314.475
6590.000				1340.150	1315.425
6600.000				1341.585	1316.375
6610.000				1343.040	1317.325
6620.000				1344.515	1318.275
6630.000				1346.010	1319.225
6640.000				1347.525	1320.175
6650.000				1349.060	1321.125
6660.000				1350.615	1322.075
6670.000				1352.190	1323.025
6680.000				1353.785	1323.975
6690.000				1355.400	1324.925
6700.000				1357.035	1325.875
6710.000				1358.690	1326.825
6720.000				1360.365	1327.775
6730.000				1362.060	1328.725
6740.000				1363.775	1329.675
6750.000				1365.510	1330.625
6760.000				1367.265	1331.575
6770.000				1369.040	1332.525
6780.000				1370.835	1333.475
6790.000				1372.650	1334.425
6800.000				1374.485	1335.375
6810.000				1376.340	1336.325
6820.000				1378.215	1337.275
6830.000				1380.110	1338.225
6840.000				1382.025	1339.175
6850.000				1383.960	1340.125
6860.000				1385.915	1341.075
6870.000				1387.890	1342.025
6880.000				1389.885	1342.975
6890.000				1391.900	1343.925
6900.000				1393.935	1344.875
6910.000				1395.990	1345.825
6920.000				1398.065	1346.775
6930.000				1400.160	1347.725
6940.000				1402.275	1348.675
6950.000				1404.410	1349.625
6960.000				1406.565	1350.575
6970.000				1408.740	1351.525
6980.000				1410.935	1352.475
6990.000				1413.150	1353.425
7000.000				1415.385	1354.375

REV.	DATE	PREP.	CHK.	APPROVED	DESCRIPTION



NATIONAL HIGHWAYS AUTHORITY OF INDIA
G-5 & 6, Sector 10, Dwarka, New Delhi.

DRAWN BY	NAME	SIGN
DESIGN BY	NAME	SIGN
CHECKED BY	NAME	SIGN
APPROVED BY	NAME	SIGN

TITLE: PLAN & PROFILE
km.6.000 To km.7.000
SOUTH BOUND (Package-II)

SCALE: BOM-1:2500 VER:1:500

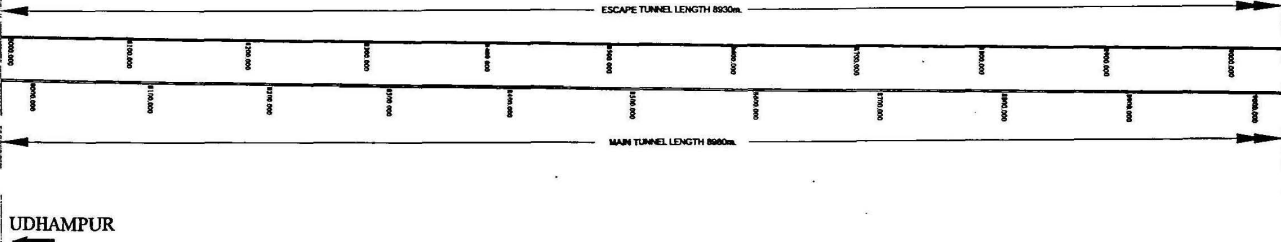
PROJECT:	Four Lanes of NH-1A From Udhampur To Banihal-Section Km.89 To Km.130
PACKAGE NO.	NS-99AJAK
DRAWING NO.	LBG/BQ147/DP/18/SB/007
DATE:	February, 2007

THE Louis Berger Group, Inc., USA
Engineers • Planners • Scientists • Economists

In Joint Venture with:
LRP Consultants and in Association with:
L & T Ramboll Consortium Pvt. Ltd.



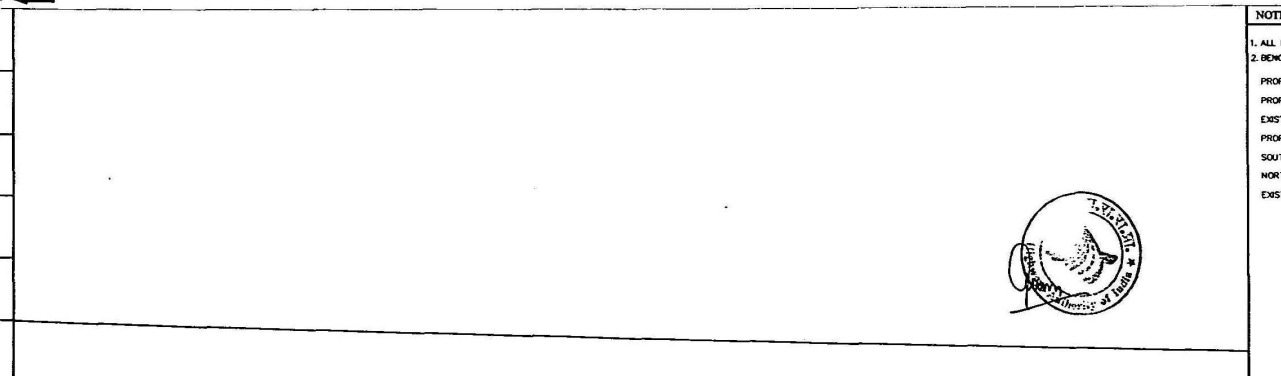
PLAN



PROFILE

1336.000
1324.000
1316.000
1306.000
1296.000

Level Datum = 1286.000



- NOTES / LEGENDS:-**
1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE SPECIFIED
 2. BENCH MARK DETAILS REFER DRAWING NO.LBG/BQ167/1/DW-0
- PROPOSED CARRIAGEWAY
 PROPOSED SHOULDER
 EXISTING CARRIAGEWAY
 PROPOSED ROW
 SOUTH BOUND CW PROFILE
 NORTH BOUND CW PROFILE
 EXISTING GROUND/ROAD PROFILE

DESIGN CHAINAGE	SOUTH BOUND CARRIAGEWAY	
	FINISHED ROAD LEVEL	EXISTING GROUND ROAD LEVEL
8000.000	1325.22	1325.22
8010.000	1325.22	1325.22
8020.000	1325.22	1325.22
8030.000	1325.22	1325.22
8040.000	1325.22	1325.22
8050.000	1325.22	1325.22
8060.000	1325.22	1325.22
8070.000	1325.22	1325.22
8080.000	1325.22	1325.22
8090.000	1325.22	1325.22
8100.000	1325.22	1325.22
8110.000	1325.22	1325.22
8120.000	1325.22	1325.22
8130.000	1325.22	1325.22
8140.000	1325.22	1325.22
8150.000	1325.22	1325.22
8160.000	1325.22	1325.22
8170.000	1325.22	1325.22
8180.000	1325.22	1325.22
8190.000	1325.22	1325.22
8200.000	1325.22	1325.22
8210.000	1325.22	1325.22
8220.000	1325.22	1325.22
8230.000	1325.22	1325.22
8240.000	1325.22	1325.22
8250.000	1325.22	1325.22
8260.000	1325.22	1325.22
8270.000	1325.22	1325.22
8280.000	1325.22	1325.22
8290.000	1325.22	1325.22
8300.000	1325.22	1325.22
8310.000	1325.22	1325.22
8320.000	1325.22	1325.22
8330.000	1325.22	1325.22
8340.000	1325.22	1325.22
8350.000	1325.22	1325.22
8360.000	1325.22	1325.22
8370.000	1325.22	1325.22
8380.000	1325.22	1325.22
8390.000	1325.22	1325.22
8400.000	1325.22	1325.22
8410.000	1325.22	1325.22
8420.000	1325.22	1325.22
8430.000	1325.22	1325.22
8440.000	1325.22	1325.22
8450.000	1325.22	1325.22
8460.000	1325.22	1325.22
8470.000	1325.22	1325.22
8480.000	1325.22	1325.22
8490.000	1325.22	1325.22
8500.000	1325.22	1325.22
8510.000	1325.22	1325.22
8520.000	1325.22	1325.22
8530.000	1325.22	1325.22
8540.000	1325.22	1325.22
8550.000	1325.22	1325.22
8560.000	1325.22	1325.22
8570.000	1325.22	1325.22
8580.000	1325.22	1325.22
8590.000	1325.22	1325.22
8600.000	1325.22	1325.22
8610.000	1325.22	1325.22
8620.000	1325.22	1325.22
8630.000	1325.22	1325.22
8640.000	1325.22	1325.22
8650.000	1325.22	1325.22
8660.000	1325.22	1325.22
8670.000	1325.22	1325.22
8680.000	1325.22	1325.22
8690.000	1325.22	1325.22
8700.000	1325.22	1325.22
8710.000	1325.22	1325.22
8720.000	1325.22	1325.22
8730.000	1325.22	1325.22
8740.000	1325.22	1325.22
8750.000	1325.22	1325.22
8760.000	1325.22	1325.22
8770.000	1325.22	1325.22
8780.000	1325.22	1325.22
8790.000	1325.22	1325.22
8800.000	1325.22	1325.22
8810.000	1325.22	1325.22
8820.000	1325.22	1325.22
8830.000	1325.22	1325.22
8840.000	1325.22	1325.22
8850.000	1325.22	1325.22
8860.000	1325.22	1325.22
8870.000	1325.22	1325.22
8880.000	1325.22	1325.22
8890.000	1325.22	1325.22
8900.000	1325.22	1325.22
8910.000	1325.22	1325.22
8920.000	1325.22	1325.22
8930.000	1325.22	1325.22
8940.000	1325.22	1325.22
8950.000	1325.22	1325.22
8960.000	1325.22	1325.22
8970.000	1325.22	1325.22
8980.000	1325.22	1325.22
8990.000	1325.22	1325.22
9000.000	1325.22	1325.22

REV.	DATE	PREP.	CHK.	APPROVED	DESCRIPTION

NATIONAL HIGHWAYS AUTHORITY OF INDIA
G-5 & 6, Sector 10, Dwarka, New Delhi.

DRAWN BY	NAME	SIGN
DESIGN BY		
CHECKED BY		
APPROVED BY		

TITLE: PLAN & PROFILE
km.8.000 To km.9.000
SOUTH BOUND (Package-II)

SCALE:- HOR=1:2500 VER=1:300

PROJECT:- Four Lanes of NH-1A From Udhampur To Banihal-Section Km.89 To Km.130 Package No. NS-99A/J&K

DRAWING NO. LBG/BQ167/DP/NS/8/69

DATE:- February, 2007

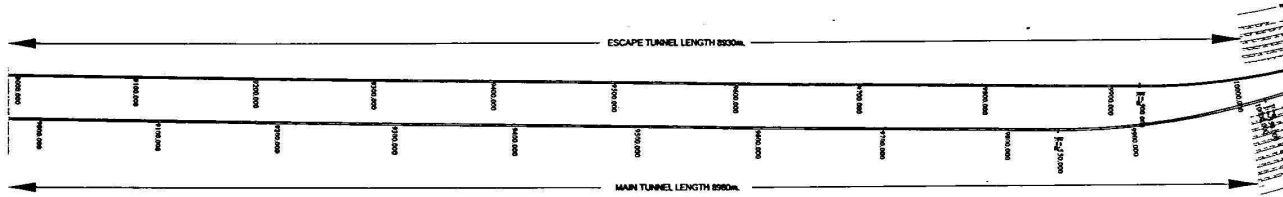
THE Louis Berger Group, Inc., USA
Engineers Planners Scientists Economists

In Joint Venture with:
LRP Consultants and Association with:
L & T Ramboll Consulting Engineers





PLAN



PROFILE

UDHAMPUR

1218.000
1208.000
1198.000
1188.000
1178.000

Level Datum = 1168.000

NOTES / LEGENDS:-

- 1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE SPECIFIED
- 2. BENCH MARK DETAILS REFER DRAWING NO.LBG/Q0167/1/5M-0

- PROPOSED CARRIAGEWAY
- PROPOSED SHOULDER
- EXISTING CARRIAGEWAY
- PROPOSED ROW
- SOUTH BOUND CW PROFILE
- NORTH BOUND CW PROFILE
- EXISTING GROUND/ROAD PROFILE



DESIGN CHAINAGE	SUPERELEVATION	VERTICAL ALIGNMENT	HORIZONTAL ALIGNMENT	EXISTING GROUND ROAD LEVEL	FINISHED ROAD LEVEL
900+00				1218.32	1218.32
900+10				1218.32	1218.32
900+20				1218.32	1218.32
900+30				1218.32	1218.32
900+40				1218.32	1218.32
900+50				1218.32	1218.32
900+60				1218.32	1218.32
900+70				1218.32	1218.32
900+80				1218.32	1218.32
900+90				1218.32	1218.32
901+00				1218.32	1218.32
901+10				1218.32	1218.32
901+20				1218.32	1218.32
901+30				1218.32	1218.32
901+40				1218.32	1218.32
901+50				1218.32	1218.32
901+60				1218.32	1218.32
901+70				1218.32	1218.32
901+80				1218.32	1218.32
901+90				1218.32	1218.32
902+00				1218.32	1218.32
902+10				1218.32	1218.32
902+20				1218.32	1218.32
902+30				1218.32	1218.32
902+40				1218.32	1218.32
902+50				1218.32	1218.32
902+60				1218.32	1218.32
902+70				1218.32	1218.32
902+80				1218.32	1218.32
902+90				1218.32	1218.32
903+00				1218.32	1218.32
903+10				1218.32	1218.32
903+20				1218.32	1218.32
903+30				1218.32	1218.32
903+40				1218.32	1218.32
903+50				1218.32	1218.32
903+60				1218.32	1218.32
903+70				1218.32	1218.32
903+80				1218.32	1218.32
903+90				1218.32	1218.32
904+00				1218.32	1218.32
904+10				1218.32	1218.32
904+20				1218.32	1218.32
904+30				1218.32	1218.32
904+40				1218.32	1218.32
904+50				1218.32	1218.32
904+60				1218.32	1218.32
904+70				1218.32	1218.32
904+80				1218.32	1218.32
904+90				1218.32	1218.32
905+00				1218.32	1218.32
905+10				1218.32	1218.32
905+20				1218.32	1218.32
905+30				1218.32	1218.32
905+40				1218.32	1218.32
905+50				1218.32	1218.32
905+60				1218.32	1218.32
905+70				1218.32	1218.32
905+80				1218.32	1218.32
905+90				1218.32	1218.32
906+00				1218.32	1218.32
906+10				1218.32	1218.32
906+20				1218.32	1218.32
906+30				1218.32	1218.32
906+40				1218.32	1218.32
906+50				1218.32	1218.32
906+60				1218.32	1218.32
906+70				1218.32	1218.32
906+80				1218.32	1218.32
906+90				1218.32	1218.32
907+00				1218.32	1218.32
907+10				1218.32	1218.32
907+20				1218.32	1218.32
907+30				1218.32	1218.32
907+40				1218.32	1218.32
907+50				1218.32	1218.32
907+60				1218.32	1218.32
907+70				1218.32	1218.32
907+80				1218.32	1218.32
907+90				1218.32	1218.32
908+00				1218.32	1218.32
908+10				1218.32	1218.32
908+20				1218.32	1218.32
908+30				1218.32	1218.32
908+40				1218.32	1218.32
908+50				1218.32	1218.32
908+60				1218.32	1218.32
908+70				1218.32	1218.32
908+80				1218.32	1218.32
908+90				1218.32	1218.32
909+00				1218.32	1218.32
909+10				1218.32	1218.32
909+20				1218.32	1218.32
909+30				1218.32	1218.32
909+40				1218.32	1218.32
909+50				1218.32	1218.32
909+60				1218.32	1218.32
909+70				1218.32	1218.32
909+80				1218.32	1218.32
909+90				1218.32	1218.32
910+00				1218.32	1218.32

REV.	DATE	PREP.	CHK.	APPROVED	DESCRIPTION

NATIONAL HIGHWAYS AUTHORITY OF INDIA
G-5 & 6, Sector 10, Dwarka, New Delhi.

DRAWN BY	NAME	SIGN
DESIGN BY	NAME	SIGN
CHECKED BY	NAME	SIGN
APPROVED BY	NAME	SIGN

TITLE: PLAN & PROFILE
km.9.000 To km.10.000
SOUTH BOUND (Package-II)

PROJECT: Four Lanes of NH-1A From Udhampur To Banihal-Section Km.99 To Km.130
Package No. NS-99A/JAK
DRAWING NO. LBG/Q0167/D/PL/1/5B/0/0
SCALE: HOR=1:2500 VER=1:500
DATE: February, 2007

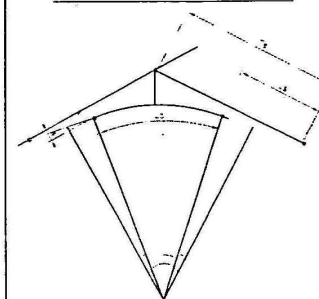
THE Louis Berger Group, Inc., USA
Engineers Planners Scientists Economists
in Joint Venture with: L & T Ramboll
LRP Consultants Consortium Pvt. Ltd.

HORIZONTAL TANGENT POINTS								
SLNo.	CHAMAGE	EASTING	NORTHING	LEVEL	BEARING	RADIUS	HAND OF CURVE	CODE
1	0.000	525965.737	3655533.511	1167.767	14°33'49.6"	-41.999	LEFT	PBC
2	2.886	525966.367	3655536.327	1167.833	10°37'35.6"	-41.999	LEFT	CS00
3	12.886	525967.425	3655546.265	1168.224	3°48'19.7"	∞		SS00
4	22.886	525968.172	3655556.236	1168.704	5°14'16.3"	200	RIGHT	SC00
5	52.988	525973.161	3655585.894	1170.149	13°51'41.5"	200	RIGHT	CS00
6	80.488	525982.149	3655611.831	1171.474	25°40'43.6"	100	RIGHT	SC00
7	110.725	525999.142	3655636.703	1173.015	43°0'11.5"	100	RIGHT	CS00
8	140.725	526021.668	3655656.470	1174.653	51°35'51.2"	∞		SS00
9	170.725	526043.934	3655676.505	1176.398	40°51'16.6"	-80	LEFT	SC00
10	234.976	526063.100	3655736.034	1180.253	354°50'17.9"	-80	LEFT	CS00
11	248.976	526060.816	3655749.836	1181.093	347°9'4"	-150	LEFT	SC00
12	289.760	526046.486	3655787.885	1183.540	331°34'22.1"	-150	LEFT	CS00
13	319.760	526030.486	3655813.248	1185.340	325°50'35.6"	∞		SS00
14	349.760	526015.065	3655838.937	1187.140	335°23'33.1"	90	RIGHT	SC00
15	438.968	526020.721	3655924.351	1192.493	32°11'3.7"	90	RIGHT	CS00
16	458.968	526032.591	3655940.434	1193.693	38°33'2"	∞		SS00
17	478.968	526044.702	3655956.345	1194.993	34°43'51"	-150	LEFT	SC00
18	582.213	526070.921	3656054.109	1201.088	355°17'39.4"	-150	LEFT	CS00
19	602.213	526068.396	3656073.945	1202.288	351°28'28.4"	∞		ST00
20	651.236	526061.129	3656122.426	1205.229	351°28'28.4"	-1000	LEFT	PC
21	818.968	526022.500	3656285.448	1215.293	341°51'51.1"	∞		PT
22	900.529	525997.113	3656362.956	1220.186	341°51'51.1"	∞		TS00
23	920.529	525991.177	3656382.053	1221.386	344°28'6.7"	220	RIGHT	SC00
24	1118.985	526025.507	3656570.751	1229.607	36°9'13"	220	RIGHT	CS00
25	1138.985	526037.788	3656586.534	1229.707	38°45'28.7"	∞		ST00
26	1249.041	526106.687	3656672.355	1230.258	38°45'28.7"	∞		TS00
27	1279.041	526125.034	3656696.086	1230.408	35°36'35.5"	-273	LEFT	SC00
28	1421.433	526174.723	3656827.809	1231.120	5°43'31.4"	∞		PT
29	1908.233	526223.286	3657312.181	1233.554	5°43'31.4"	3000	RIGHT	PC
30	2012.596	526235.502	3657415.821	1234.076	7°43'6.8"	∞		PT

HORIZONTAL TANGENT POINTS								
SLNo.	CHAMAGE	EASTING	NORTHING	LEVEL	BEARING	RADIUS	HAND OF CURVE	CODE
31	9925.454	527298.256	3665258.986	1210.825	7°43'6.8"	-500	LEFT	PC
32	10062.311	527297.963	3665393.416	1210.141	352°29'3"	∞		PT
33	10169.992	527283.044	3665500.059	1209.602	352°29'3"	∞		TS00
34	10184.992	527281.089	3665514.931	1209.527	353°28'5.9"	300	RIGHT	SC00
35	10465.407	527374.633	3665768.547	1206.069	47°1'25"	300	RIGHT	CS00
36	10495.407	527397.249	3665788.253	1204.588	49°53'18.3"	∞		ST00
37	10685.205	527542.405	3665910.536	1195.098	49°53'18.3"	30	RIGHT	PC
38	10716.591	527571.910	3665915.813	1193.663	109°49'48.7"	30	RIGHT	PAC

HORIZONTAL INTERSECTION POINTS					
HIP No.	EASTING	NORTHING	DEFLECTION ANGLE	RADIUS	HAND OF CURVE
1	525965.737	3655533.511	0°0'0"	INFINITY	
2	525966.865	3655537.853	349°14'30.1"	-41.999	LEFT
3	525984.844	3655880.516	72°42'26.4"	90	RIGHT
4	526079.572	3655999.391	312°55'26.4"	-150	LEFT
5	526048.667	3656205.560	350°23'22.7"	-1000	LEFT
6	525966.888	3656485.763	56°53'37.6"	220	RIGHT
7	526166.622	3656747.012	326°58'2.7"	-273	LEFT
8	526228.493	3657364.107	1°59'35.4"	3000	RIGHT
9	527307.504	3665325.221	344°19'2.5"	-500	LEFT
10	527259.017	3665671.802	57°51'9"	300	RIGHT
11	527555.636	3665921.682	59°56'30.4"	30	RIGHT
12	527571.910	3665915.813	0°0'0"	INFINITY	

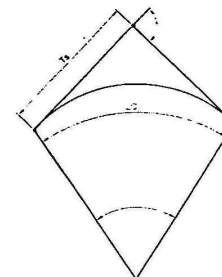
ELEMENTS OF HORIZONTAL CURVE



ABBREVIATIONS:-

- TS/SS START OF TRANSITION
- SC START OF CIRCULAR CURVE
- HIP HORIZONTAL INTERSECTION POINT
- CS END OF CIRCULAR CURVE
- ST END OF TRANSITION
- Δ DEFLECTION ANGLE

CIRCULAR CURVE WITH TRANSITION



- PC START OF CIRCULAR CURVE
- PI HORIZONTAL INTERSECTION POINT
- PT END OF CIRCULAR CURVE
- Δ DEFLECTION ANGLE

CIRCULAR CURVE



REV.	DATE	PREP.	CHK.	APPROVED	DESCRIPTION



NATIONAL HIGHWAYS AUTHORITY OF INDIA

G-5 & 6, Sector 10, Dwarka, New Delhi.

NAME	SKN
DRAWN BY: Oshib Terishi	
DESIGN BY: J.K. Chopra	
CHECKED BY: M.S. Rawat	
APPROVED BY:	

HORIZONTAL CURVE DETAILS (NORTH BOUND), PACKAGE - II

SCALE: N.T.S

PROJECT:- Four Lining of NH-1A From Udhampur To Bawal-Section Km.151 To Km.172 Package No. NS-99A/J&K
DRAWING NO. LNB/0167DPR/07B/IC-01(SHEET 1 OF 1)
DATE:-April, 2007

THE Louis Berger Group, Inc., USA
Engineers * Planners * Scientists * Economists
In Joint Venture with: LRP Consultants and in Association with: L & T Ramboll Consortium Pvt. Ltd. Consulting Engineers

NORTHBOUND (MC2)													
S.No.	Vertical Intersection Points			Element	Vertical Tangent Points					Radius	M Value	K Value	Length of Element
	Chainage	Level	%Grade Diff.		Start Chainage	Level	End Chainage	Level	Grade (%)				
1				Grade	0.000	1167.767	1.105	1167.791	2.150				1.105
2	6.106	1167.898	2.650	Sag Curve	1.105	1167.791	11.106	1168.138		377	26.500	3.774	10.001
3				Grade	11.106	1168.138	70.889	1171.008	4.800				59.783
4	120.889	1173.408	1.200	Sag Curve	70.889	1171.008	170.888	1176.408		8333	1.200	83.333	99.999
5				Grade	170.888	1176.408	991.960	1225.672	6.000				821.072
6	1051.961	1229.272	-5.500	Hog Curve	991.960	1225.672	1111.961	1229.572		-2182	-4.583	21.818	120.001
7				Grade	1111.961	1229.572	3543.966	1241.732	0.500				2432.005
8	3643.966	1242.232	-1.000	Curve	3543.966	1241.732	3743.966	1241.732		-20000	-0.500	200.000	200.000
9				Grade	3743.966	1241.732	10365.139	1208.627	-0.500				6621.173
10	10420.139	1208.352	-4.500	Hog Curve	10365.139	1208.627	10475.140	1205.602		-2444	-4.091	24.444	110.001
11				Grade	10475.140	1205.602	10700.361	1194.340	-5.000				225.221



REV.	DATE	PREP.	CHK.	APPROVED	DESCRIPTION



NATIONAL HIGHWAYS AUTHORITY
OF INDIA

G-5 & 6, Sector 10, Dwarka, New Delhi.

NAME	SIGN
DRAWN BY Oshid Terishi	
DESIGN BY R.K. Chohan	
CHECKED BY M.S. Rawat	
APPROVED BY	

TITLE-
VERTICAL CURVE DETAILS
(NORTH BOUND), PACKAGE - II

SCALE- N.T.S

PROJECT- Four Lanes of NH-1A From
Udhampur To Banhal-Section Km.89 To Km.130
Package No. NS-99A/J&K

DRAWING NO. LBG/01/07/DR./TNS/VVC-01 (SHEET 1 OF 1)

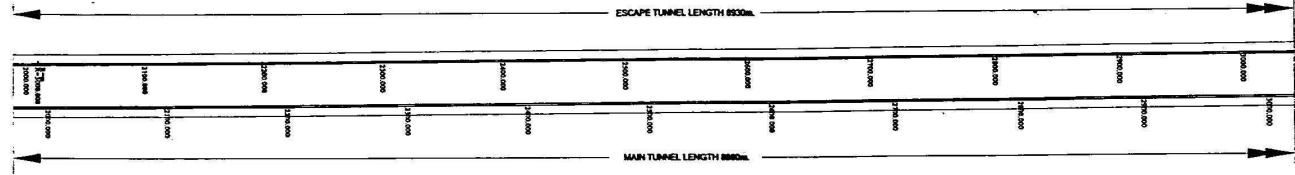
DATE- April, 2007

THE Louis Berger Group, Inc., USA
Engineers Planners Scientists Economists

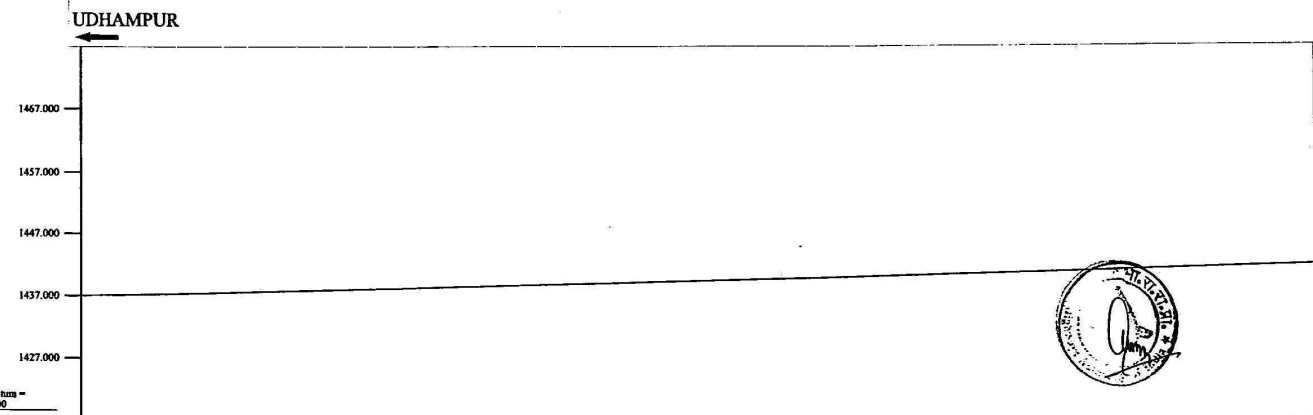
In Joint Venture with:
LRP Consultants and in Association with:
L & T Ramboll
Consortium Pvt. Ltd. Consulting Engineers



PLAN



PROFILE



- NOTES / LEGENDS:-
1. ALL DIMENSIONS ARE IN METRES, UNLESS OTHERWISE SPECIFIED
 2. BENCH MARK DETAILS REFER DRAWING NO. LBG/BO167/1/BM-04
- PROPOSED CARRIAGEWAY
 - PROPOSED SHOULDER
 - EXISTING CARRIAGEWAY
 - PROPOSED ROW
 - SOUTH BOUND CW PROFILE
 - NORTH BOUND CW PROFILE
 - EXISTING GROUND/ROAD PROFILE

DESIGN CHAINAGE	SUPERELEVATION	VERTICAL ALIGNMENT	HORIZONTAL ALIGNMENT	EXISTING GROUND ROAD LEVEL	FINISHED ROAD LEVEL
2060.000				1528.012	1524.615
2070.000				1529.321	1526.060
2080.000				1530.630	1527.511
2090.000				1531.939	1528.962
2100.000				1533.248	1530.413
2110.000				1534.557	1531.864
2120.000				1535.866	1533.315
2130.000				1537.175	1534.766
2140.000				1538.484	1536.217
2150.000				1539.793	1537.668
2160.000				1541.102	1539.119
2170.000				1542.411	1540.570
2180.000				1543.720	1542.021
2190.000				1545.029	1543.472
2200.000				1546.338	1544.923
2210.000				1547.647	1546.374
2220.000				1548.956	1547.825
2230.000				1550.265	1549.276
2240.000				1551.574	1550.727
2250.000				1552.883	1552.178
2260.000				1554.192	1553.629
2270.000				1555.501	1555.080
2280.000				1556.810	1556.531
2290.000				1558.119	1557.982
2300.000				1559.428	1559.433
2310.000				1560.737	1560.884
2320.000				1562.046	1562.335
2330.000				1563.355	1563.786
2340.000				1564.664	1565.237
2350.000				1565.973	1566.688
2360.000				1567.282	1568.139
2370.000				1568.591	1569.590
2380.000				1569.900	1571.041
2390.000				1571.209	1572.492
2400.000				1572.518	1573.943
2410.000				1573.827	1575.394
2420.000				1575.136	1576.845
2430.000				1576.445	1578.296
2440.000				1577.754	1579.747
2450.000				1579.063	1581.198
2460.000				1580.372	1582.649
2470.000				1581.681	1584.100
2480.000				1582.990	1585.551
2490.000				1584.300	1587.002
2500.000				1585.609	1588.453
2510.000				1586.918	1589.904
2520.000				1588.227	1591.355
2530.000				1589.536	1592.806
2540.000				1590.845	1594.257
2550.000				1592.154	1595.708
2560.000				1593.463	1597.159
2570.000				1594.772	1598.610
2580.000				1596.081	1600.061
2590.000				1597.390	1601.512
2600.000				1598.700	1602.963
2610.000				1599.999	1604.414
2620.000				1601.298	1605.865
2630.000				1602.597	1607.316
2640.000				1603.896	1608.767
2650.000				1605.195	1610.218
2660.000				1606.494	1611.669
2670.000				1607.793	1613.120
2680.000				1609.092	1614.571
2690.000				1610.391	1616.022
2700.000				1611.690	1617.473
2710.000				1612.989	1618.924
2720.000				1614.288	1620.375
2730.000				1615.587	1621.826
2740.000				1616.886	1623.277
2750.000				1618.185	1624.728
2760.000				1619.484	1626.179
2770.000				1620.783	1627.630
2780.000				1622.082	1629.081
2790.000				1623.381	1630.532
2800.000				1624.680	1631.983
2810.000				1625.979	1633.434
2820.000				1627.278	1634.885
2830.000				1628.577	1636.336
2840.000				1629.876	1637.787
2850.000				1631.175	1639.238
2860.000				1632.474	1640.689
2870.000				1633.773	1642.140
2880.000				1635.072	1643.591
2890.000				1636.371	1645.042
2900.000				1637.670	1646.493
2910.000				1638.969	1647.944
2920.000				1640.268	1649.395
2930.000				1641.567	1650.846
2940.000				1642.866	1652.297
2950.000				1644.165	1653.748
2960.000				1645.464	1655.199
2970.000				1646.763	1656.650
2980.000				1648.062	1658.101
2990.000				1649.361	1659.552
3000.000				1650.660	1661.003

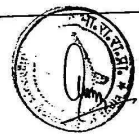
REV.	DATE	PREP.	CHK.	APPROVED	DESCRIPTION

NATIONAL HIGHWAYS AUTHORITY OF INDIA
 G-5 & 6, Sector 10, Dwarka, New Delhi.

DRAWN BY Omshree Terasta	NAME	SIGN	TITLE PLAN & PROFILE km.2.000 To km.3.000 NORTH BOUND (Package-II)
DESIGN BY S.S. Chopra			
CHECKED BY M.S. Ramet			
APPROVED BY Dag Vegger			

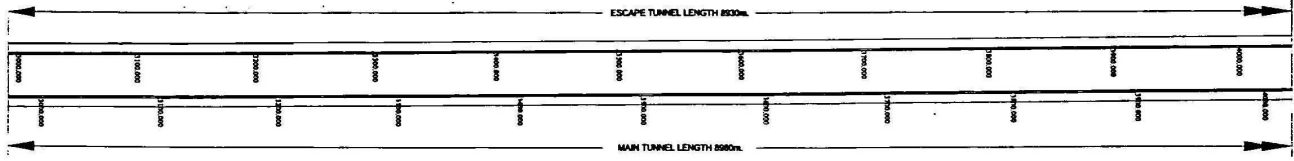
PROJECT: Four laning of NH-1A From Udhampur To Banihal-Section Km.89 To Km.130 Package No. NS-99AJ&K	DRAWING NO. LBG/BO167/DP/12/13/03
SCALE: HOR=1:2500 VER=1:500	DATE: February, 2007

THE LOUIS BERGER GROUP, Inc., USA
 Engineers Planners Scientists Economists
 in Joint Venture with: L & T Ramboll
 LRP Consultants Consortium Pvt. Ltd.





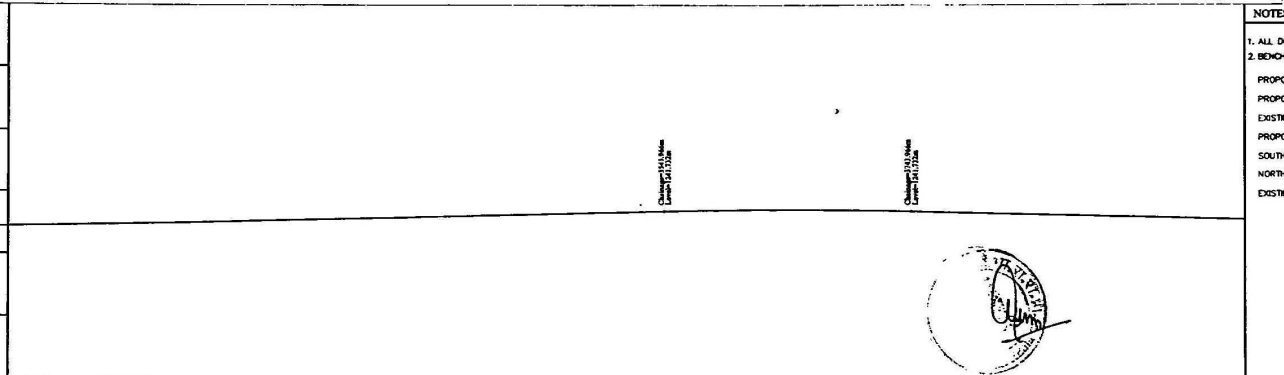
PLAN



UDHAMPUR

PROFILE

1467.000
1457.000
1447.000
1437.000
1427.000



Level Datum = 1417.000

DESIGN CHADNAGE	SOUTH BOUND CARRIAGEWAY	
	FINISHED ROAD LEVEL	EXISTING GROUND ROAD LEVEL
300.000	1774.99	1774.94
305.000	1775.04	1774.99
310.000	1775.09	1775.04
315.000	1775.14	1775.09
320.000	1775.19	1775.14
325.000	1775.24	1775.19
330.000	1775.29	1775.24
335.000	1775.34	1775.29
340.000	1775.39	1775.34
345.000	1775.44	1775.39
350.000	1775.49	1775.44
355.000	1775.54	1775.49
360.000	1775.59	1775.54
365.000	1775.64	1775.59
370.000	1775.69	1775.64
375.000	1775.74	1775.69
380.000	1775.79	1775.74
385.000	1775.84	1775.79
390.000	1775.89	1775.84
395.000	1775.94	1775.89
400.000	1775.99	1775.94
405.000	1776.04	1775.99
410.000	1776.09	1776.04
415.000	1776.14	1776.09
420.000	1776.19	1776.14
425.000	1776.24	1776.19
430.000	1776.29	1776.24
435.000	1776.34	1776.29
440.000	1776.39	1776.34
445.000	1776.44	1776.39
450.000	1776.49	1776.44
455.000	1776.54	1776.49
460.000	1776.59	1776.54
465.000	1776.64	1776.59
470.000	1776.69	1776.64
475.000	1776.74	1776.69
480.000	1776.79	1776.74
485.000	1776.84	1776.79
490.000	1776.89	1776.84
495.000	1776.94	1776.89
500.000	1776.99	1776.94
505.000	1777.04	1776.99
510.000	1777.09	1777.04
515.000	1777.14	1777.09
520.000	1777.19	1777.14
525.000	1777.24	1777.19
530.000	1777.29	1777.24
535.000	1777.34	1777.29
540.000	1777.39	1777.34
545.000	1777.44	1777.39
550.000	1777.49	1777.44
555.000	1777.54	1777.49
560.000	1777.59	1777.54
565.000	1777.64	1777.59
570.000	1777.69	1777.64
575.000	1777.74	1777.69
580.000	1777.79	1777.74
585.000	1777.84	1777.79
590.000	1777.89	1777.84
595.000	1777.94	1777.89
600.000	1777.99	1777.94
605.000	1778.04	1777.99
610.000	1778.09	1778.04
615.000	1778.14	1778.09
620.000	1778.19	1778.14
625.000	1778.24	1778.19
630.000	1778.29	1778.24
635.000	1778.34	1778.29
640.000	1778.39	1778.34
645.000	1778.44	1778.39
650.000	1778.49	1778.44
655.000	1778.54	1778.49
660.000	1778.59	1778.54
665.000	1778.64	1778.59
670.000	1778.69	1778.64
675.000	1778.74	1778.69
680.000	1778.79	1778.74
685.000	1778.84	1778.79
690.000	1778.89	1778.84
695.000	1778.94	1778.89
700.000	1778.99	1778.94
705.000	1779.04	1778.99
710.000	1779.09	1779.04
715.000	1779.14	1779.09
720.000	1779.19	1779.14
725.000	1779.24	1779.19
730.000	1779.29	1779.24
735.000	1779.34	1779.29
740.000	1779.39	1779.34
745.000	1779.44	1779.39
750.000	1779.49	1779.44
755.000	1779.54	1779.49
760.000	1779.59	1779.54
765.000	1779.64	1779.59
770.000	1779.69	1779.64
775.000	1779.74	1779.69
780.000	1779.79	1779.74
785.000	1779.84	1779.79
790.000	1779.89	1779.84
795.000	1779.94	1779.89
800.000	1779.99	1779.94
805.000	1780.04	1779.99
810.000	1780.09	1780.04
815.000	1780.14	1780.09
820.000	1780.19	1780.14
825.000	1780.24	1780.19
830.000	1780.29	1780.24
835.000	1780.34	1780.29
840.000	1780.39	1780.34
845.000	1780.44	1780.39
850.000	1780.49	1780.44
855.000	1780.54	1780.49
860.000	1780.59	1780.54
865.000	1780.64	1780.59
870.000	1780.69	1780.64
875.000	1780.74	1780.69
880.000	1780.79	1780.74
885.000	1780.84	1780.79
890.000	1780.89	1780.84
895.000	1780.94	1780.89
900.000	1780.99	1780.94
905.000	1781.04	1780.99
910.000	1781.09	1781.04
915.000	1781.14	1781.09
920.000	1781.19	1781.14
925.000	1781.24	1781.19
930.000	1781.29	1781.24
935.000	1781.34	1781.29
940.000	1781.39	1781.34
945.000	1781.44	1781.39
950.000	1781.49	1781.44
955.000	1781.54	1781.49
960.000	1781.59	1781.54
965.000	1781.64	1781.59
970.000	1781.69	1781.64
975.000	1781.74	1781.69
980.000	1781.79	1781.74
985.000	1781.84	1781.79
990.000	1781.89	1781.84
995.000	1781.94	1781.89
1000.000	1781.99	1781.94

REV.	DATE	PREP.	CHK.	APPROVED	DESCRIPTION



NATIONAL HIGHWAYS AUTHORITY OF INDIA
G-5 & 6, Sector 10, Dwarka, New Delhi.

NAME	SKIN
DESIGNED BY	Oshar Teresia
DESIGN BY	R.K.Chugh
CHECKED BY	M.S. Ramet
APPROVED BY	Dag Vegger

PLAN & PROFILE
km.3.000 To km.4.000
NORTH BOUND (Package-II)

PROJECT: Four Lining of NH-1A From Udhampur To Banihal-Section Km.89 To Km.130 Package No. NS-99A/J&K
DRAWING NO. LRG/80167/DPL/12/9/04
DATE: February, 2007

THE Louis Berger Group, Inc., USA
Engineers • Planners • Scientists • Economists
In Joint Venture with: LRP Consultants and in Association with: L & T Ramboll Consulting Engineers

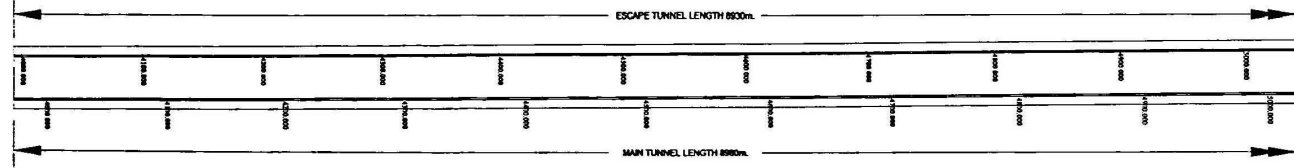


NOTES / LEGENDS:-
1. ALL DIMENSIONS ARE IN METRES, UNLESS OTHERWISE SPECIFIED
2. BENCH MARK DETAILS REFER DRAWING NO. LRG/80167/1/DM-01

PROPOSED CARRIAGEWAY
PROPOSED SHOULDER
EXISTING CARRIAGEWAY
PROPOSED ROW
SOUTH BOUND CW PROFILE
NORTH BOUND CW PROFILE
EXISTING GROUND/ROAD PROFILE

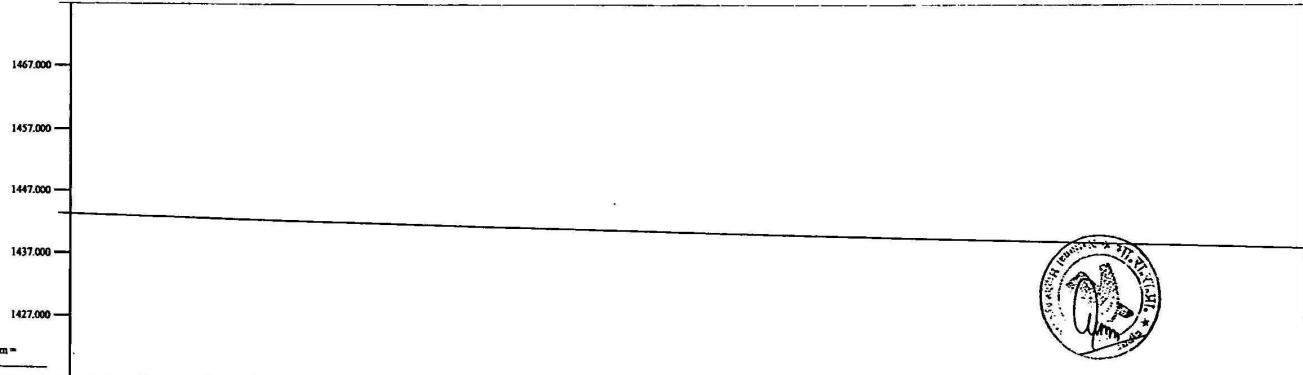


PLAN



UDHAMPUR

PROFILE



- NOTES / LEGENDS:-
1. ALL DIMENSIONS ARE IN METRES, UNLESS OTHERWISE SPECIFIED
 2. BENCH MARK DETAILS REFER DRAWING NO. LBG/90187/1/DM-0
- PROPOSED CARRIAGEWAY
 - PROPOSED SHOULDER
 - EXISTING CARRIAGEWAY
 - PROPOSED ROW
 - SOUTH BOUND CW PROFILE
 - NORTH BOUND CW PROFILE
 - EXISTING GROUND/ROAD PROFILE

DESIGN CHAINAGE	FINISHED ROAD LEVEL	EXISTING GROUND ROAD LEVEL	HORIZONTAL ALIGNMENT	VERTICAL ALIGNMENT	SUPERELEVATION
4002.000	1501.605	1506.452			
4010.000	1501.605	1506.452			
4020.000	1503.594	1508.255			
4030.000	1504.574	1509.255			
4040.000	1504.544	1509.255			
4050.000	1507.465	1509.255			
4060.000	1507.475	1509.255			
4070.000	1508.451	1509.255			
4080.000	1508.451	1509.255			
4090.000	1508.451	1509.255			
4100.000	1508.451	1509.255			
4110.000	1508.451	1509.255			
4120.000	1508.451	1509.255			
4130.000	1508.451	1509.255			
4140.000	1508.451	1509.255			
4150.000	1508.451	1509.255			
4160.000	1508.451	1509.255			
4170.000	1508.451	1509.255			
4180.000	1508.451	1509.255			
4190.000	1508.451	1509.255			
4200.000	1508.451	1509.255			
4210.000	1508.451	1509.255			
4220.000	1508.451	1509.255			
4230.000	1508.451	1509.255			
4240.000	1508.451	1509.255			
4250.000	1508.451	1509.255			
4260.000	1508.451	1509.255			
4270.000	1508.451	1509.255			
4280.000	1508.451	1509.255			
4290.000	1508.451	1509.255			
4300.000	1508.451	1509.255			
4310.000	1508.451	1509.255			
4320.000	1508.451	1509.255			
4330.000	1508.451	1509.255			
4340.000	1508.451	1509.255			
4350.000	1508.451	1509.255			
4360.000	1508.451	1509.255			
4370.000	1508.451	1509.255			
4380.000	1508.451	1509.255			
4390.000	1508.451	1509.255			
4400.000	1508.451	1509.255			
4410.000	1508.451	1509.255			
4420.000	1508.451	1509.255			
4430.000	1508.451	1509.255			
4440.000	1508.451	1509.255			
4450.000	1508.451	1509.255			
4460.000	1508.451	1509.255			
4470.000	1508.451	1509.255			
4480.000	1508.451	1509.255			
4490.000	1508.451	1509.255			
4500.000	1508.451	1509.255			
4510.000	1508.451	1509.255			
4520.000	1508.451	1509.255			
4530.000	1508.451	1509.255			
4540.000	1508.451	1509.255			
4550.000	1508.451	1509.255			
4560.000	1508.451	1509.255			
4570.000	1508.451	1509.255			
4580.000	1508.451	1509.255			
4590.000	1508.451	1509.255			
4600.000	1508.451	1509.255			
4610.000	1508.451	1509.255			
4620.000	1508.451	1509.255			
4630.000	1508.451	1509.255			
4640.000	1508.451	1509.255			
4650.000	1508.451	1509.255			
4660.000	1508.451	1509.255			
4670.000	1508.451	1509.255			
4680.000	1508.451	1509.255			
4690.000	1508.451	1509.255			
4700.000	1508.451	1509.255			
4710.000	1508.451	1509.255			
4720.000	1508.451	1509.255			
4730.000	1508.451	1509.255			
4740.000	1508.451	1509.255			
4750.000	1508.451	1509.255			
4760.000	1508.451	1509.255			
4770.000	1508.451	1509.255			
4780.000	1508.451	1509.255			
4790.000	1508.451	1509.255			
4800.000	1508.451	1509.255			
4810.000	1508.451	1509.255			
4820.000	1508.451	1509.255			
4830.000	1508.451	1509.255			
4840.000	1508.451	1509.255			
4850.000	1508.451	1509.255			
4860.000	1508.451	1509.255			
4870.000	1508.451	1509.255			
4880.000	1508.451	1509.255			
4890.000	1508.451	1509.255			
4900.000	1508.451	1509.255			
4910.000	1508.451	1509.255			
4920.000	1508.451	1509.255			
4930.000	1508.451	1509.255			
4940.000	1508.451	1509.255			
4950.000	1508.451	1509.255			
4960.000	1508.451	1509.255			
4970.000	1508.451	1509.255			
4980.000	1508.451	1509.255			
4990.000	1508.451	1509.255			
5000.000	1508.451	1509.255			

REV.	DATE	PREP.	CHK.	APPROVED	DESCRIPTION

NATIONAL HIGHWAYS AUTHORITY OF INDIA
 G-5 & 6, Sector 10, Dwarka, New Delhi.

DRAWN BY	NAME	SIGN
DESIGN BY		
CHECKED BY		
APPROVED BY		

PLAN & PROFILE
 km.4.000 To km.5.000
NORTH BOUND (Package-II)

PROJECT:- Four Lining of NH-1A From Udhampur To Banihal-Section Km.89 To Km.130 Package No. NS-99AJ&K
 DRAWING NO. LBG/90187/01/DM/005
 DATE:- February, 2007

THE Louis Berger Group , inc., USA
 Engineers Planners Scientists Economists
 is Joint Venture with LRP Consultants and in Association with L & T Ramboll Consortium Pvt. Ltd. Consulting Engineers





PLAN

PROFILE

UDHAMPUR

1467.000
1457.000
1447.000
1437.000
1427.000

Level Datum = 1417.000

ESCAPE TUNNEL LENGTH 800m

MAIN TUNNEL LENGTH 898m

NOTES / LEGENDS:-

- 1. ALL DIMENSIONS ARE IN METRES, UNLESS OTHERWISE SPECIFIED
- 2. BENCH MARK DETAILS REFER DRAWING NO. LRG/BO167/1/BM-01

- PROPOSED CARRIAGEWAY
- PROPOSED SHOULDER
- EXISTING CARRIAGEWAY
- PROPOSED ROW
- SOUTH BOUND CV PROFILE
- NORTH BOUND CV PROFILE
- EXISTING GROUND/ROAD PROFILE

SOUTH BOUND CARRIAGEWAY	FINISHED ROAD LEVEL	EXISTING GROUND ROAD LEVEL	HORIZONTAL ALIGNMENT	VERTICAL ALIGNMENT	SUPERELEVATION	DESIGN CHAINAGE
	1427.000	1427.000	1427.000			
1428.000	1428.000	1428.000				1428.000
1429.000	1429.000	1429.000				1429.000
1430.000	1430.000	1430.000				1430.000
1431.000	1431.000	1431.000				1431.000
1432.000	1432.000	1432.000				1432.000
1433.000	1433.000	1433.000				1433.000
1434.000	1434.000	1434.000				1434.000
1435.000	1435.000	1435.000				1435.000
1436.000	1436.000	1436.000				1436.000
1437.000	1437.000	1437.000				1437.000
1438.000	1438.000	1438.000				1438.000
1439.000	1439.000	1439.000				1439.000
1440.000	1440.000	1440.000				1440.000
1441.000	1441.000	1441.000				1441.000
1442.000	1442.000	1442.000				1442.000
1443.000	1443.000	1443.000				1443.000
1444.000	1444.000	1444.000				1444.000
1445.000	1445.000	1445.000				1445.000
1446.000	1446.000	1446.000				1446.000
1447.000	1447.000	1447.000				1447.000
1448.000	1448.000	1448.000				1448.000
1449.000	1449.000	1449.000				1449.000
1450.000	1450.000	1450.000				1450.000
1451.000	1451.000	1451.000				1451.000
1452.000	1452.000	1452.000				1452.000
1453.000	1453.000	1453.000				1453.000
1454.000	1454.000	1454.000				1454.000
1455.000	1455.000	1455.000				1455.000
1456.000	1456.000	1456.000				1456.000
1457.000	1457.000	1457.000				1457.000
1458.000	1458.000	1458.000				1458.000
1459.000	1459.000	1459.000				1459.000
1460.000	1460.000	1460.000				1460.000
1461.000	1461.000	1461.000				1461.000
1462.000	1462.000	1462.000				1462.000
1463.000	1463.000	1463.000				1463.000
1464.000	1464.000	1464.000				1464.000
1465.000	1465.000	1465.000				1465.000
1466.000	1466.000	1466.000				1466.000
1467.000	1467.000	1467.000				1467.000

REV.	DATE	PREP.	CHK.	APPROVED	DESCRIPTION



NATIONAL HIGHWAYS AUTHORITY OF INDIA
G-5 & 6, Sector 10, Dwaraka, New Delhi.

DRAWN BY	NAME	SKN
DESIGN BY	NAME	SKN
CHECKED BY	NAME	SKN
APPROVED BY	NAME	SKN

PLAN & PROFILE
km.5.000 To km 5.000
NORTH BOUND (Package-II)
SCALE:- HOR=1:2500 VEB=1:500

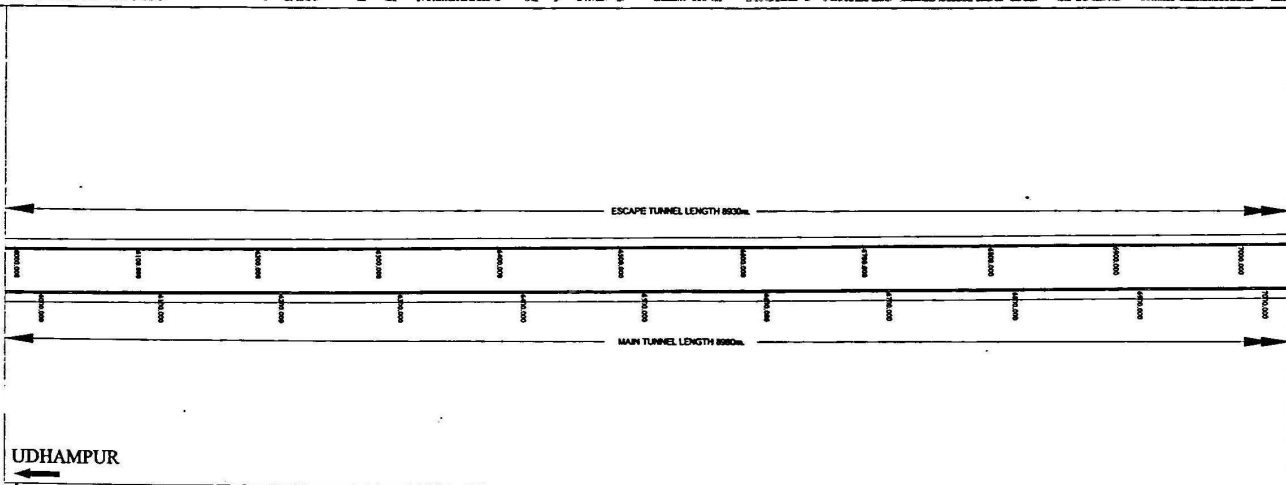
PROJECT-	Four Lanes of NH-1A From Udhampur To Banihal-Section Km.69 To Km.130
PACKAGE NO.	MS-99A/J&K
DRAWING NO.	LRG/BO167/CP/2/1/MS/99
DATE	February, 2007



THE Louis Berger Group, Inc. USA
Engineers - Planners - Scientists - Economists
in Joint Venture with:
LRP Consultants and in Association with:
L & T Ramboll Consulting Engineers
Consortium Pvt. Ltd.



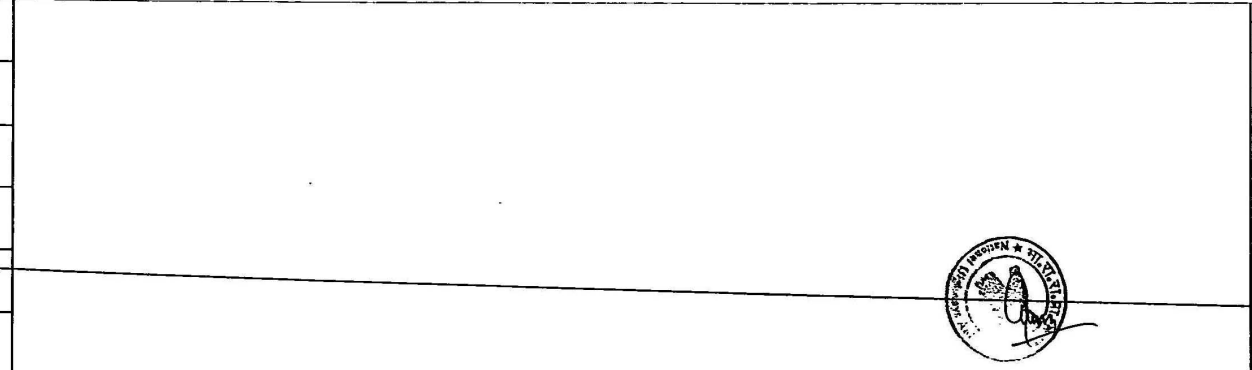
PLAN



UDHAMPUR

PROFILE

1467.000
1457.000
1447.000
1437.000
1427.000

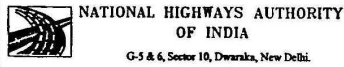


- NOTES / LEGENDS:-
1. ALL DIMENSIONS ARE IN METRES, UNLESS OTHERWISE SPECIFIED
 2. BENCH MARK DETAILS REFER DRAWING NO. LG/BO/167/1/BN-0
- PROPOSED CARRIAGEWAY
 PROPOSED SHOULDER
 EXISTING CARRIAGEWAY
 PROPOSED ROW
 SOUTH BOUND CW PROFILE
 NORTH BOUND CW PROFILE
 EXISTING GROUND/ROAD PROFILE



SOUTH BOUND CARRIAGEWAY	FINISHED ROAD LEVEL	EXISTING GROUND ROAD LEVEL	HORIZONTAL ALIGNMENT	VERTICAL ALIGNMENT	SUPERELEVATION	DESIGN CHAINAGE
	1234.65	1234.65				0+000.00
	1234.65	1234.65				0+050.00
	1234.65	1234.65				0+100.00
	1234.65	1234.65				0+150.00
	1234.65	1234.65				0+200.00
	1234.65	1234.65				0+250.00
	1234.65	1234.65				0+300.00
	1234.65	1234.65				0+350.00
	1234.65	1234.65				0+400.00
	1234.65	1234.65				0+450.00
	1234.65	1234.65				0+500.00
	1234.65	1234.65				0+550.00
	1234.65	1234.65				0+600.00
	1234.65	1234.65				0+650.00
	1234.65	1234.65				0+700.00
	1234.65	1234.65				0+750.00
	1234.65	1234.65				0+800.00
	1234.65	1234.65				0+850.00
	1234.65	1234.65				0+900.00
	1234.65	1234.65				0+950.00
	1234.65	1234.65				1+000.00
	1234.65	1234.65				1+050.00
	1234.65	1234.65				1+100.00
	1234.65	1234.65				1+150.00
	1234.65	1234.65				1+200.00
	1234.65	1234.65				1+250.00
	1234.65	1234.65				1+300.00
	1234.65	1234.65				1+350.00
	1234.65	1234.65				1+400.00
	1234.65	1234.65				1+450.00
	1234.65	1234.65				1+500.00
	1234.65	1234.65				1+550.00
	1234.65	1234.65				1+600.00
	1234.65	1234.65				1+650.00
	1234.65	1234.65				1+700.00
	1234.65	1234.65				1+750.00
	1234.65	1234.65				1+800.00
	1234.65	1234.65				1+850.00
	1234.65	1234.65				1+900.00
	1234.65	1234.65				1+950.00
	1234.65	1234.65				2+000.00
	1234.65	1234.65				2+050.00
	1234.65	1234.65				2+100.00
	1234.65	1234.65				2+150.00
	1234.65	1234.65				2+200.00
	1234.65	1234.65				2+250.00
	1234.65	1234.65				2+300.00
	1234.65	1234.65				2+350.00
	1234.65	1234.65				2+400.00
	1234.65	1234.65				2+450.00
	1234.65	1234.65				2+500.00
	1234.65	1234.65				2+550.00
	1234.65	1234.65				2+600.00
	1234.65	1234.65				2+650.00
	1234.65	1234.65				2+700.00
	1234.65	1234.65				2+750.00
	1234.65	1234.65				2+800.00
	1234.65	1234.65				2+850.00
	1234.65	1234.65				2+900.00
	1234.65	1234.65				2+950.00
	1234.65	1234.65				3+000.00
	1234.65	1234.65				3+050.00
	1234.65	1234.65				3+100.00
	1234.65	1234.65				3+150.00
	1234.65	1234.65				3+200.00
	1234.65	1234.65				3+250.00
	1234.65	1234.65				3+300.00
	1234.65	1234.65				3+350.00
	1234.65	1234.65				3+400.00
	1234.65	1234.65				3+450.00
	1234.65	1234.65				3+500.00
	1234.65	1234.65				3+550.00
	1234.65	1234.65				3+600.00
	1234.65	1234.65				3+650.00
	1234.65	1234.65				3+700.00
	1234.65	1234.65				3+750.00
	1234.65	1234.65				3+800.00
	1234.65	1234.65				3+850.00
	1234.65	1234.65				3+900.00
	1234.65	1234.65				3+950.00
	1234.65	1234.65				4+000.00

REV.	DATE	PREP.	CHK.	APPROVED	DESCRIPTION



NATIONAL HIGHWAYS AUTHORITY OF INDIA
G-5 & 6, Sector 10, Dwarka, New Delhi.

DRAWN BY	NAME	SIGN
DESIGN BY	Ombh Terzia	
CHECKED BY	M.S. Revant	
APPROVED BY	Dng Veger	

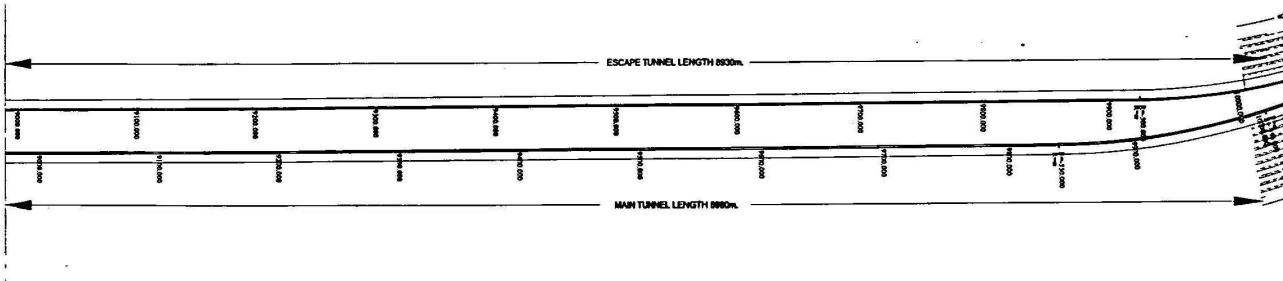
TITLE: **PLAN & PROFILE**
km.6.000 To km.7.000
NORTH BOUND (Package-II)

PROJECT: Four Lining of NH-1A From Udhampur To Banihal-Section Km.89 To Km.130 Package No. NS-99A/J&K
DRAWING NO. LNCGRQ161DPRZ/NS-99/07
SCALE: HOR=1:2500 VER=1:500
DATE: February, 2007

THE Louis Berger Group, Inc., USA
Engineers Planners Scientists Economists
In Association with:
LRP Consultants L & T Farnbott
Consortium Pvt. Ltd. Consulting Engineers



PLAN



PROFILE

UDHAMPUR

1217.000
1207.000
1197.000
1187.000
1177.000

Level Datum = 1167.000

SOUTH BOUND CARRIAGEWAY	FINISHED ROAD LEVEL	EXISTING GROUND ROAD LEVEL	HORIZONTAL ALIGNMENT	VERTICAL ALIGNMENT	SUPERELEVATION	DESIGN CHAINAGE
	900+00	1215.432	1194.712			
905+00	1215.496	1194.712				905+00
910+00	1215.559	1194.712				910+00
915+00	1215.622	1194.712				915+00
920+00	1215.685	1194.712				920+00
925+00	1215.748	1194.712				925+00
930+00	1215.811	1194.712				930+00
935+00	1215.874	1194.712				935+00
940+00	1215.937	1194.712				940+00
945+00	1216.000	1194.712				945+00
950+00	1216.063	1194.712				950+00
955+00	1216.126	1194.712				955+00
960+00	1216.189	1194.712				960+00
965+00	1216.252	1194.712				965+00
970+00	1216.315	1194.712				970+00
975+00	1216.378	1194.712				975+00
980+00	1216.441	1194.712				980+00
985+00	1216.504	1194.712				985+00
990+00	1216.567	1194.712				990+00
995+00	1216.630	1194.712				995+00
1000+00	1216.693	1194.712				1000+00

NOTES / LEGENDS:-
 1. ALL DIMENSIONS ARE IN METRES, UNLESS OTHERWISE SPECIFIED.
 2. BENCH MARK DETAILS REFER DRAWING NO. LBG/20167/1/DM-01

PROPOSED CARRIAGEWAY
 PROPOSED SHOULDER
 EXISTING CARRIAGEWAY
 PROPOSED ROW
 SOUTH BOUND CW PROFILE
 NORTH BOUND CW PROFILE
 EXISTING GROUND/ROAD PROFILE



REV.	DATE	PREP.	CHK.	APPROVED	DESCRIPTION



NATIONAL HIGHWAYS AUTHORITY OF INDIA
 G-5 & 6, Sector 10, Dwarka, New Delhi.

NAME	SGN
DESIGN BY	Chhbir Tewaria
CHECKED BY	M.S. Ramet
APPROVED BY	Das Vejjar

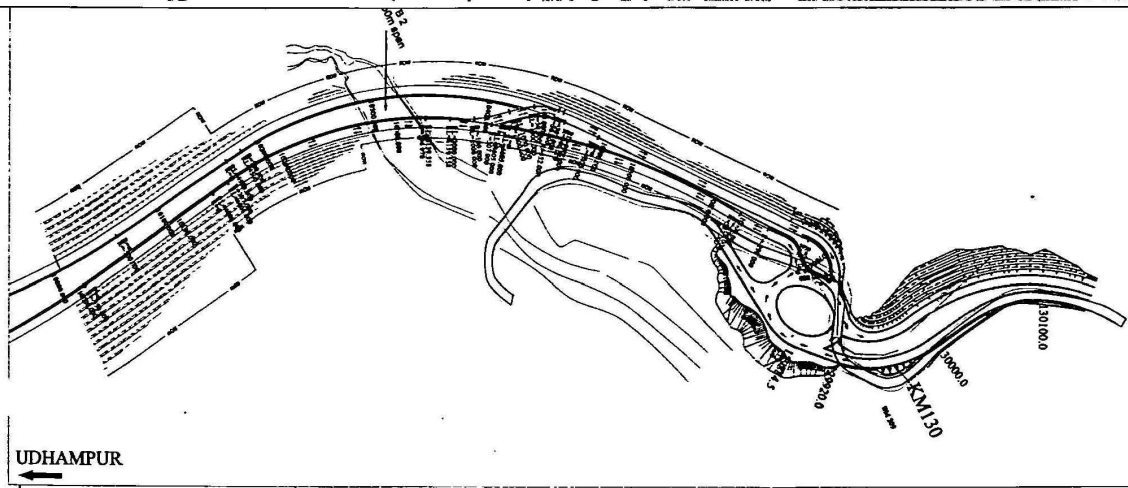
PLAN & PROFILE
 km.9.000 To km.10.000
NORTH BOUND (Package-II)
 SCALE:- HOR=1:2500 VER=1:500

PROJECT:- Four Laning of NH-1A From Udhampur To Banihal-Section Km.89 To Km.130 Package No. NS-99A/J&K
 DRAWING NO. LBG/20167/DM/1/2/19/019
 DATE:- February, 2007

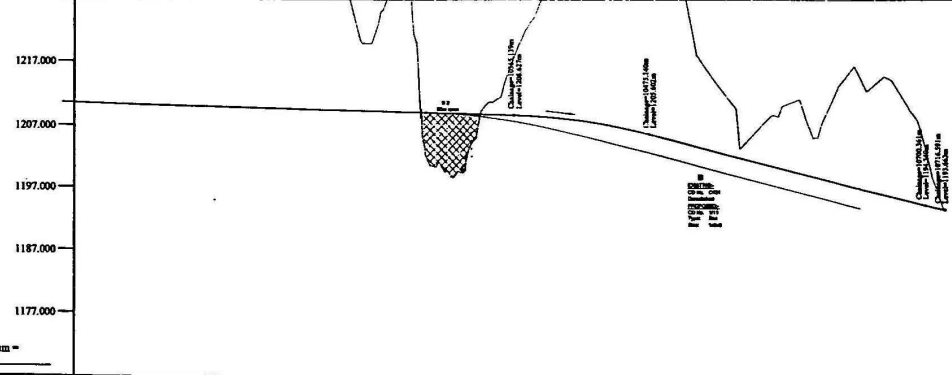
THE Louis Berger Group, Inc., USA
 Engineers Planners Scientists Economists
 in Joint Venture with:
 LRP Consultants and in Association with:
 L & T Ramboll Consulting Engineers
 Consortium Pvt. Ltd.



PLAN



PROFILE



NOTES / LEGENDS:-

- 1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE SPECIFIED
 - 2. BENCH MARK DETAILS REFER DRAWING NO. LBG/0167/1/2/4-D
- PROPOSED CARRIAGEWAY
 PROPOSED SHOULDER
 EXISTING CARRIAGEWAY
 PROPOSED ROW
 SOUTH BOUND CW PROFILE
 NORTH BOUND CW PROFILE
 EXISTING GROUND/ROAD PROFILE



DESIGN CHAINAGE	SOUTH BOUND CARRIAGEWAY	
	FINISHED ROAD LEVEL	EXISTING GROUND ROAD LEVEL
1166.000	1216.400	1216.300
1167.000	1216.400	1216.300
1168.000	1216.400	1216.300
1169.000	1216.400	1216.300
1170.000	1216.400	1216.300
1171.000	1216.400	1216.300
1172.000	1216.400	1216.300
1173.000	1216.400	1216.300
1174.000	1216.400	1216.300
1175.000	1216.400	1216.300
1176.000	1216.400	1216.300
1177.000	1216.400	1216.300
1178.000	1216.400	1216.300
1179.000	1216.400	1216.300
1180.000	1216.400	1216.300
1181.000	1216.400	1216.300
1182.000	1216.400	1216.300
1183.000	1216.400	1216.300
1184.000	1216.400	1216.300
1185.000	1216.400	1216.300
1186.000	1216.400	1216.300
1187.000	1216.400	1216.300
1188.000	1216.400	1216.300
1189.000	1216.400	1216.300
1190.000	1216.400	1216.300
1191.000	1216.400	1216.300
1192.000	1216.400	1216.300
1193.000	1216.400	1216.300
1194.000	1216.400	1216.300
1195.000	1216.400	1216.300
1196.000	1216.400	1216.300
1197.000	1216.400	1216.300
1198.000	1216.400	1216.300
1199.000	1216.400	1216.300
1200.000	1216.400	1216.300
1201.000	1216.400	1216.300
1202.000	1216.400	1216.300
1203.000	1216.400	1216.300
1204.000	1216.400	1216.300
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1216.000	1216.400	1216.300
1217.000	1216.400	1216.300
1218.000	1216.400	1216.300
1219.000	1216.400	1216.300
1220.000	1216.400	1216.300
1221.000	1216.400	1216.300
1222.000	1216.400	1216.300
1223.000	1216.400	1216.300
1224.000	1216.400	1216.300
1225.000	1216.400	1216.300
1226.000	1216.400	1216.300
1227.000	1216.400	1216.300
1228.000	1216.400	1216.300
1229.000	1216.400	1216.300
1230.000	1216.400	1216.300
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1233.000	1216.400	1216.300
1234.000	1216.400	1216.300
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1249.000	1216.400	1216.300
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1251.000	1216.400	1216.300
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1253.000	1216.400	1216.300
1254.000	1216.400	1216.300
1255.000	1216.400	1216.300
1256.000	1216.400	1216.300
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1262.000	1216.400	1216.300
1263.000	1216.400	1216.300
1264.000	1216.400	1216.300
1265.000	1216.400	1216.300
1266.000	1216.400	1216.300
1267.000	1216.400	1216.300
1268.000	1216.400	1216.300
1269.000	1216.400	1216.300
1270.000	1216.400	1216.300
1271.000	1216.400	1216.300
1272.000	1216.400	1216.300
1273.000	1216.400	1216.300
1274.000	1216.400	1216.300
1275.000	1216.400	1216.300
1276.000	1216.400	1216.300
1277.000	1216.400	1216.300
1278.000	1216.400	1216.300
1279.000	1216.400	1216.300
1280.000	1216.400	1216.300
1281.000	1216.400	1216.300
1282.000	1216.400	1216.300
1283.000	1216.400	1216.300
1284.000	1216.400	1216.300
1285.000	1216.400	1216.300
1286.000	1216.400	1216.300
1287.000	1216.400	1216.300
1288.000	1216.400	1216.300
1289.000	1216.400	1216.300
1290.000	1216.400	1216.300
1291.000	1216.400	1216.300
1292.000	1216.400	1216.300
1293.000	1216.400	1216.300
1294.000	1216.400	1216.300
1295.000	1216.400	1216.300
1296.000	1216.400	1216.300
1297.000	1216.400	1216.300
1298.000	1216.400	1216.300
1299.000	1216.400	1216.300
1300.000	1216.400	1216.300

REV	DATE	PREP	CHK	APPROVED	DESCRIPTION

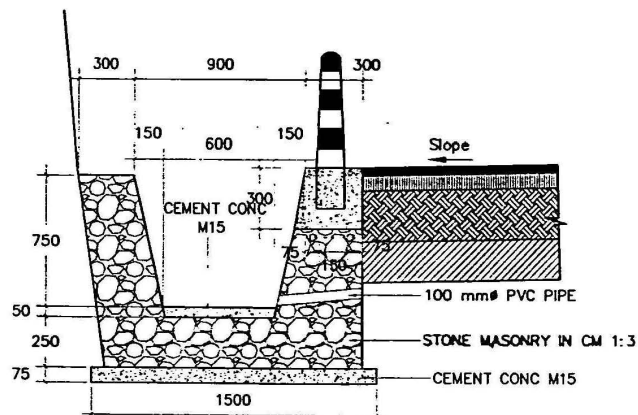
NATIONAL HIGHWAYS AUTHORITY OF INDIA
 G-5 & 6, Sector 10, Dwarka, New Delhi.

DRAWN BY	Omish Terelia
CHECKED BY	M.S. Rawat
APPROVED BY	Dag Vegar

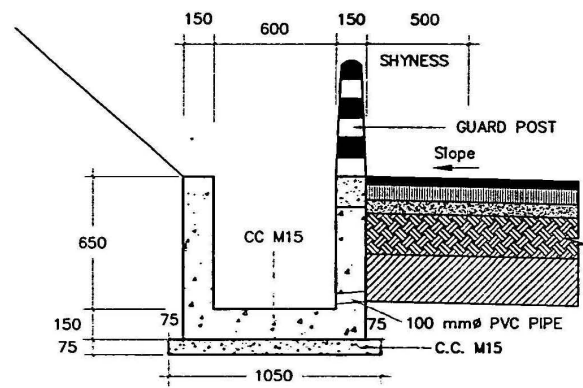
NAME	SRKR
TITLE	PLAN & PROFILE km.10.000 To km.10.700 NORTH BOUND (Package-II)
SCALE	HOR=1:2500 VER=1:500

PROJECT:- Four Laning of NH-1A From
 Udhampur To Banihal-Section Km.89 To Km.130
 Package No. NS-99A/J&K
 DRAWING NO. LBG/0167/02/02/04/011
 DATE:- February, 2007

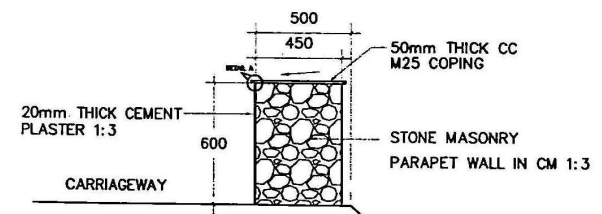
THE Louis Berger Group, Inc., USA
 Engineers * Planners * Scientists * Economists
 & Joint Ventures with:
 LRP Consultants and in Association with:
 L & T Ramboll Consortium Pvt. Ltd.



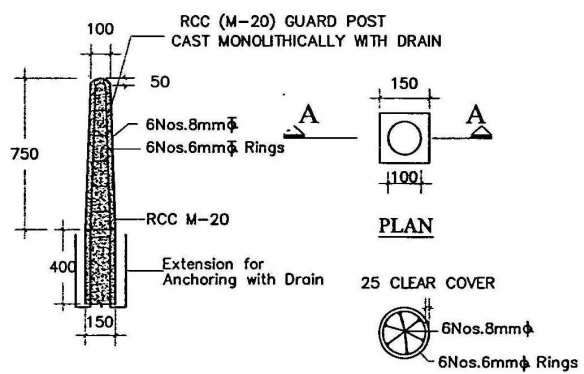
HILL SIDE DRAIN



MEDIAN SIDE DRAIN



PARAPET WALL



SECTIONAL ELEVATION

SECTION A-A

TYPICAL DETAILS OF GUARD POST



REV.	DATE	PREP.	CHK.	APPROVED	DESCRIPTION

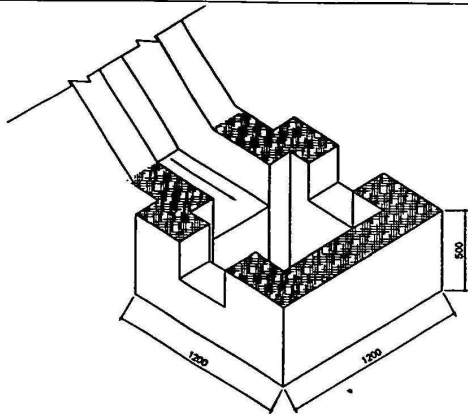
NATIONAL HIGHWAYS AUTHORITY OF INDIA
 G-5 & 6, Sector 10, Dwarka, New Delhi.

NAME	SIGN
DRAWN BY: Oshir Trivita	
DESIGN BY: R.K. Chappra	
CHECKED BY: M.S. Rawat	
APPROVED BY:	

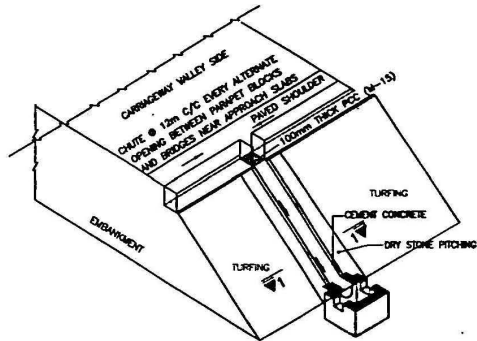
TITLE:-
DETAILS OF DRAINS & GUARD POST
SCALE:- NTS

PROJECT:- Four Lining of NH-1A From Uthampur To Barahal-Section Km.89 To Km.131 Package No. NS-09A/JJK
DRAWING NO. LDG/30167/DRP/DMSC-01
DATE:- March, 2007

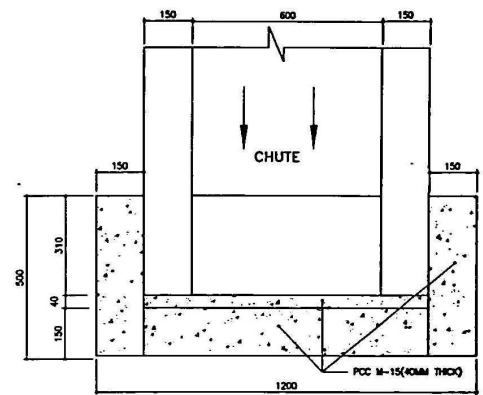
THE Louis Berger Group, Inc. USA
 Engineers Planners Scientists Economists
 in Joint Venture with: and in Association with:
 LRP Consultants L & T Ramboll
 Consortium Pvt. Ltd. Consulting Engineers



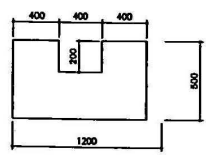
DISSIPATION BASIN AT TOE TO CHUTE CHUTE AND BASIN WHERE HEIGHT OF EMBANKMENT IS MORE THAN 3.0M



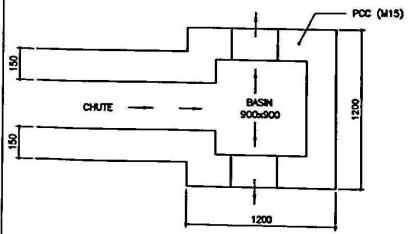
AERIAL VIEW OF CHUTE AND BASIN



CROSS SECTION OF DISSIPATION BASIN

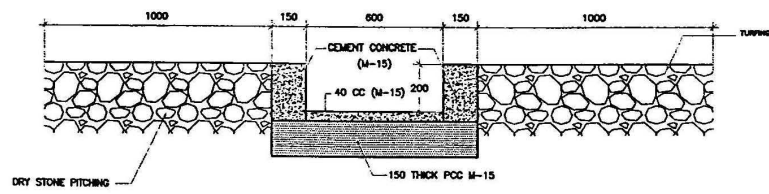


SIDE VIEW OF BASIN

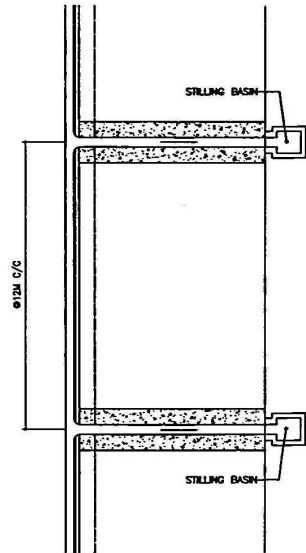


PLAN OF DISSIPATION BASIN

NOTE:
1. ALL DIMENSIONS ARE IN mm. UNLESS MENTIONED OTHERWISE.



CHUTE CROSS SECTION 1-1



PLAN



REV.	DATE	PREP.	CHK.	APPROVED	DESCRIPTION

NATIONAL HIGHWAYS AUTHORITY OF INDIA
G-5 & 6, Sector 10, Dwarka, New Delhi.

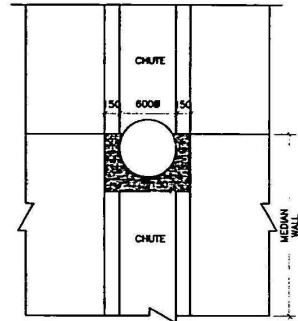
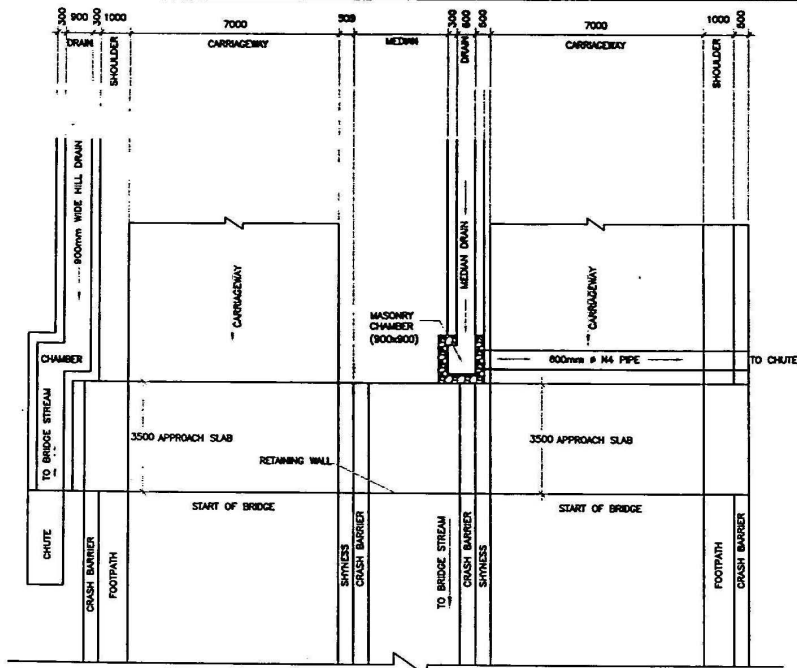
NAME	SIGN	TITLE
DRAWN BY: Oshir Trivis		
DESIGN BY: R.K. Chagn		
CHECKED BY: M.S. Rana		
APPROVED BY:		

CHUTE DETAILS
SCALE: NTS

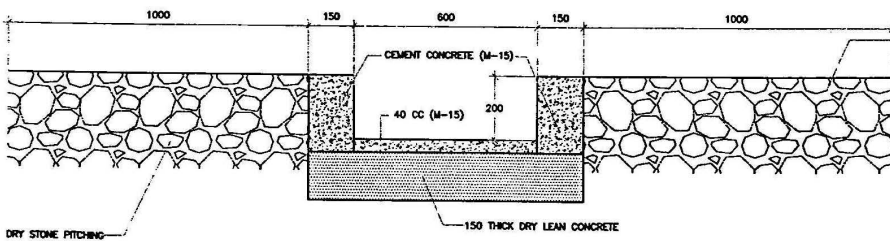
PROJECT: Four Lining of NH-1A From Udhampur To Banihal-Section Km.89 To Km.130 Package No. NS-99A/JSK
DRAWING NO. LRG/0167/DP/MS/CD-01
DATE: February, 2007

THE Louis Berger Group, Inc., USA
Engineers • Planners • Scientists • Economists
in Joint Venture with: LRP Consultants Consortium Pvt. Ltd.
in Association with: L & T Ramboll Consulting Engineers

DRAINAGE ARRANGEMENT AT BRIDGES FOR AREA IN BETWEEN BRIDGE AND AT ADJOINING CULVERT



VALLEY SIDE VIEW OF PIPE & CHUTE



CROSS SECTION OF CHUTE



NOTE:-
STORM WATER FROM RCC PIPE CONNECTED TO CHUTE TO BE FINALLY DISCHARGED IN TO BRIDGE STREAM THROUGH DRAIN AT THE FOOT OF THE EMBANKMENT.

REV.	DATE	PREP.	CHK.	APPROVED	DESCRIPTION

<p>NATIONAL HIGHWAYS AUTHORITY OF INDIA G-5 & 6, Sector 10, Dwaraka, New Delhi.</p>	NAME SGN	TITLE:	PROJECT:- Four Lining of NH-1A From Udhampur To Banhal-Section Km.89 To Km.130 Package No. NS-99A/J&K DRAWING NO. LBG/RQ167/DW/5/DB-41 DATE: February, 2007	<p>THE Louis Berger Group, Inc., USA Engineers * Planners * Scientists * Economists In Joint Venture with: LRP Consultants Consortium Pvt. Ltd. and in Association with: L & T Ramboll Consulting Engineers</p>
	DRAWN BY DESIGN BY	DRAINAGE AT BRIDGES APPROACH		
	CHECKED BY APPROVED BY	SCALE:- NTS		
	NATIONAL HIGHWAYS AUTHORITY OF INDIA	DRAINAGE AT BRIDGES APPROACH		

TYPE -A

(DEFERENCE IN LEVEL OF INVERT-2 AND INVERT-3 < 300mm)

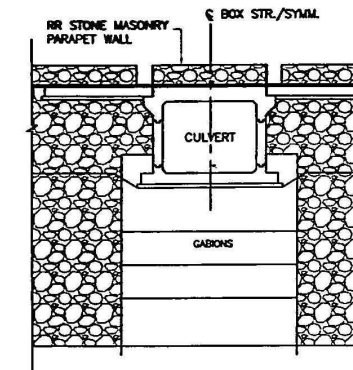
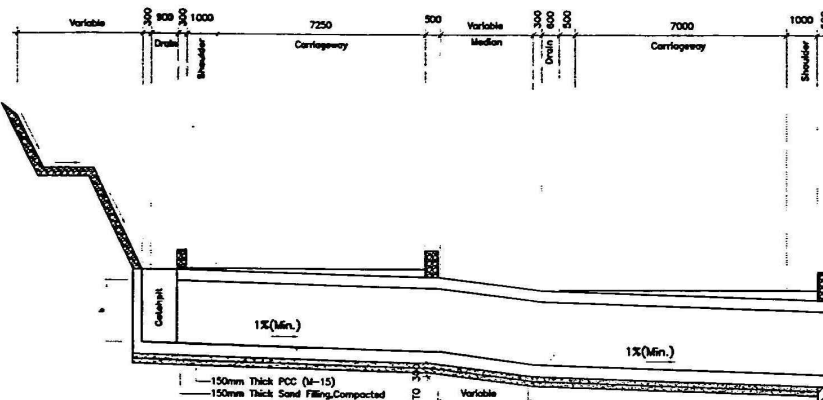


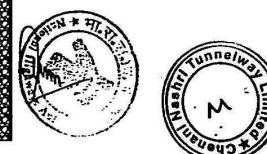
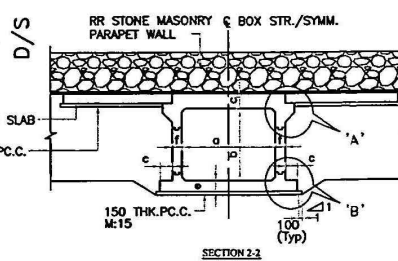
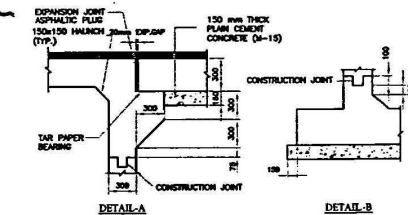
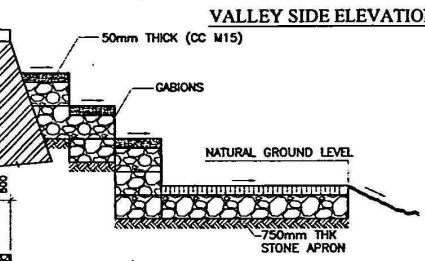
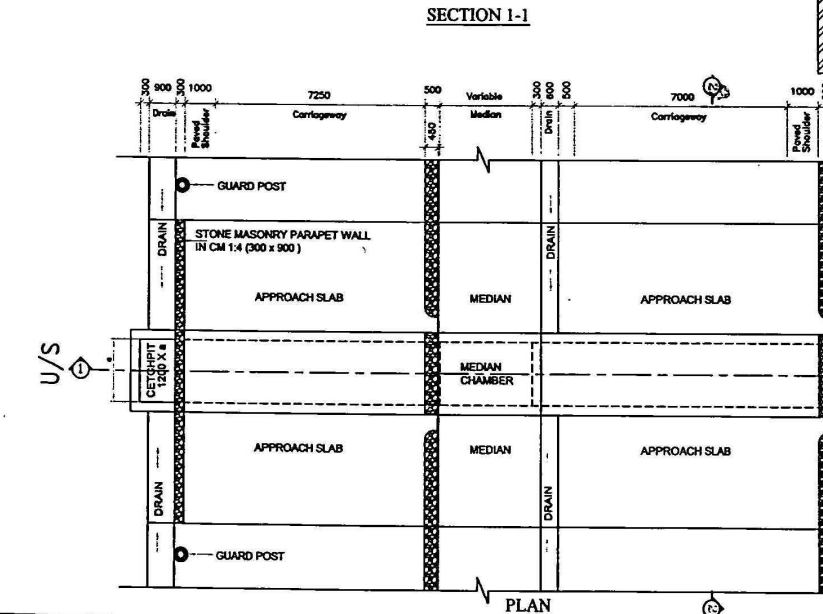
TABLE SHOWING REFERED DIMENSIONS

BOX CELL NO./ab/Ec	a (mm.)	b (mm.)	c (mm.)	d (mm.)	e (mm.)	f (mm.)
1/22/0	2000	2000	500	350	380	300
1/23/0	2000	3000	1300	370	420	300
1/33/0	3000	3000	900	420	420	420
1/43/0	4000	3000	400	450	500	500
1/54/0	5000	4000	800	320	800	620
1/66/0	6000	6000	1800	700	800	850

- NOTES:-
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
 2. FOR GENERAL NOTES AND REFERENCE DRAWINGS REFER DRG. NO. SD/101.
 3. FOR REINFORCEMENT DETAILS REFER DRG. NO. SD/106.
 4. FOR DETAILS OF BRICK WALL REFER DRG. NO. SD/113.
 5. SOIL DENSITY ON THE BACKFILL SHOULD CONFORM TO CLAUSE 305.2.1.5 OF MOST SPECIFICATION.
 6. NET BEARING CAPACITY REQUIRED FOR SOIL IS DIVIDED IN FOUR CATEGORIES AS SHOWN BELOW.

CATEGORY	NET BEARING CAPACITY REQUIRED FOR SOIL
A	5 T/M ²
B	10 T/M ²
C	15 T/M ²
D	20 T/M ²

7. SOFT AND LOOSE PATCHES IN THE BEARING AREA ARE TO BE REPLACED BY COMPACTED GRANULAR FILLS WITH LAYERS NOT EXCEEDING 300mm.
8. DESIGNS ARE GIVEN FOR THE BOX CELL CULVERTS ONLY. THESE HAVE NO BEARING WITH DESIGN OF EMBANKMENT WHICH WILL BE TAKEN UP BY ENGINEER-IN-CHARGE SEPARATELY.



REV	DATE	PREP.	CHK.	APPROVED	DESCRIPTION

NATIONAL HIGHWAYS AUTHORITY OF INDIA
G-5 & 6, Sector 10, Dwaraka, New Delhi.

NAME	SIGN	TITLE
DRAWN BY: Quabir Tyrewala		
DESIGN BY: R.K. Chopra		
CHECKED BY: M.S.Ramesh		
APPROVED BY:		

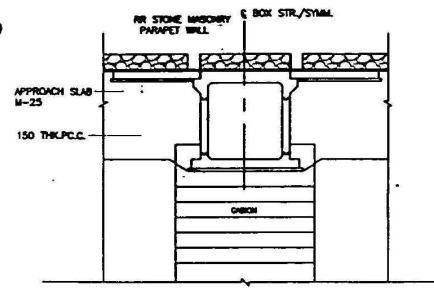
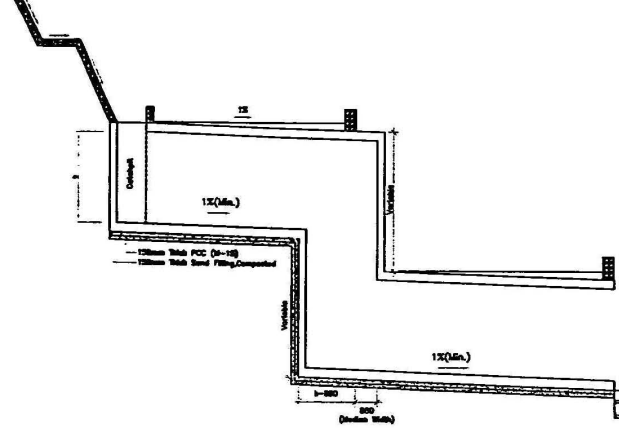
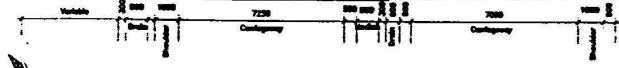
BOX CULVERT (TYPE-A)
SCALE:- NTS

PROJECT:- Four Lining of NH-1A From Udhampur To Banihal-Section Km.89 To Km.130 Package No. NS-99A/J&K
DRAWING NO. LRG/BO/167/DRP/1/CD-01
DATE:- February, 2007

THE Louis Berger Group, Inc., USA
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in Joint Venture with:
LRP Consultants and Association with:
L & T Ramboll Consortium Pvt. Ltd. Consulting Engineers

TYPE - C

(DIFFERENCE IN LEVEL OF INVERT-2 AND INVERT-3 > 300mm & MEDIAN HEIGHT < HEIGHT OF CULVERT(b) - 500mm)



VALLEY SIDE ELEVATION

TABLE SHOWING SALIENT DIMENSIONS

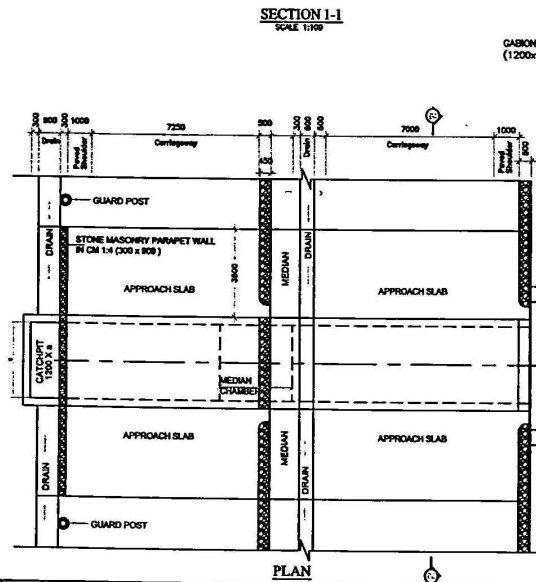
BOX CELL NO./ab/Ec	a (mm.)	b (mm.)	c (mm.)	d (mm.)	e (mm.)	f (mm.)
1/22/0	2000	2000	500	350	380	300
1/23/0	2000	3000	1300	370	420	300
1/33/0	3000	3000	900	420	420	420
1/43/0	4000	3000	400	450	500	500
1/54/0	5000	4000	800	320	800	620
1/66/0	6000	6000	1800	700	800	850

NOTES:-

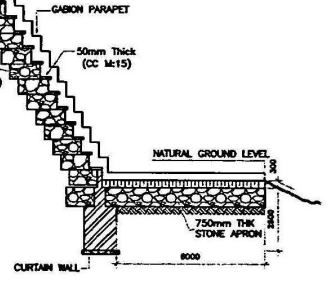
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
- FOR GENERAL NOTES AND REFERENCE DRAWINGS REFER DRG. NO. SD/101.
- FOR REINFORCEMENT DETAILS REFER DRG. NO. SD/108.
- FOR DETAILS OF WING WALL REFER DRG. NO. SD/113.
- SOIL DENSITY ON THE BACKFILL SHOULD CONFORM TO CLAUSE 305.2.1.5 OF MOST SPECIFICATION.
- NET BEARING CAPACITY REQUIRED FOR SOIL IS DIVIDED IN FOUR CATEGORIES AS SHOWN BELOW.

CATEGORY	NET BEARING CAPACITY REQUIRED FOR SOIL
A	5 T/m ²
B	10 T/m ²
C	15 T/m ²
D	20 T/m ²

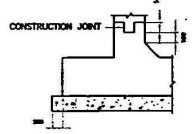
- SOFT AND LOOSE PATCHES IN THE BEARING AREA ARE TO BE REPLACED BY COMPACTED GRANULAR FILLS WITH LAYERS NOT EXCEEDING 300mm.
- DESIGNS ARE GIVEN FOR THE BOX CELL CULVERTS ONLY. THESE HAVE NO BEARING WITH DESIGN OF EMBANKMENT WHICH WILL BE TAKEN UP BY ENGINEER-IN-CHARGE SEPARATELY.



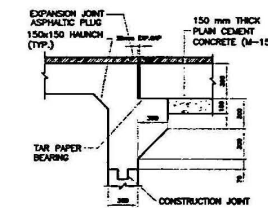
SECTION 1-1 SCALE 1:100



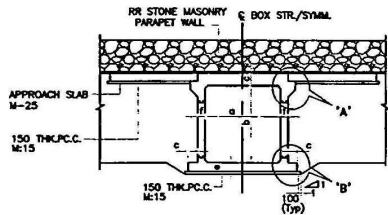
DETAIL-A



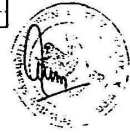
DETAIL-B



DETAIL-A



SECTION 2-2



REV.	DATE	PREP.	CHK.	APPROVED	DESCRIPTION



NATIONAL HIGHWAYS AUTHORITY OF INDIA
G-5 & 6, Sector 10, Dwarka, New Delhi.

NAME	SIGN	TITLE
DRAWN BY: Neeraj Vashist		
DESIGN BY: P.M. Aggarwal		
CHECKED BY: R.K. Mehta		
APPROVED BY:		

BOX CULVERT (TYPE-C)

PROJECT:- Four laning of NH-1A From Udhampur To Banahat-Section Km.89 To Km.130 Package No. NS-99A/J&K
DRAWING NO. LR/G/0167/DW/R/C/D-03
DATE:- February, 2007

THE Louis Berger Group, Inc. USA
Engineers Planners Scientists Economists
In Joint Venture with: L & T Ramboll
Consortium Pvt. Ltd. Consulting Engineers

TYPE-D

(DEFERENCE IN LEVEL OF INVERT-2 AND INVERT-3 > 300mm & MEDIAN WIDTH > HEIGHT OF CULVERT(b) +500mm)

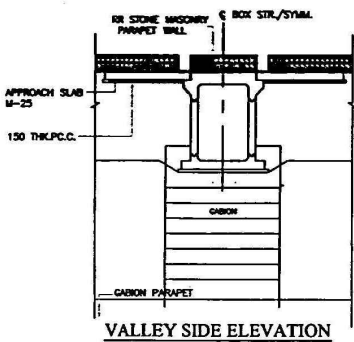
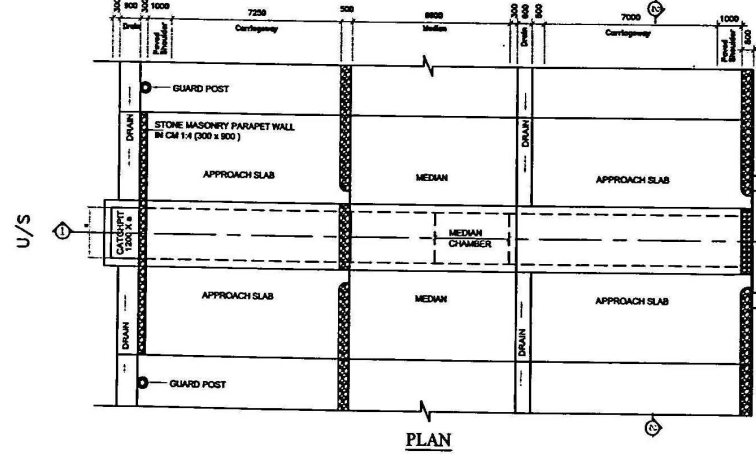
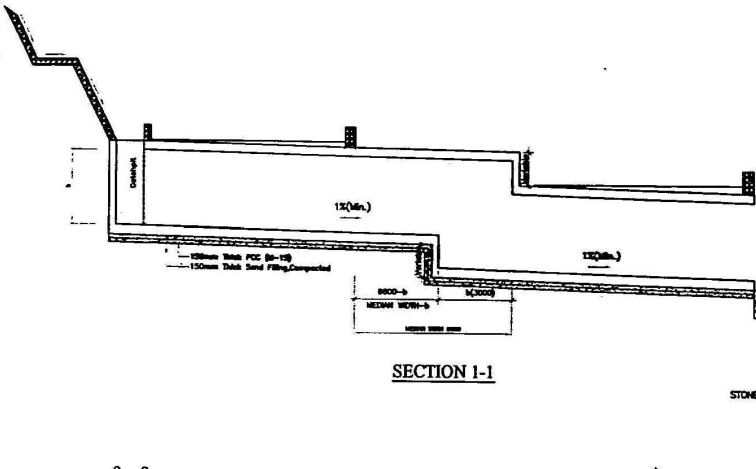
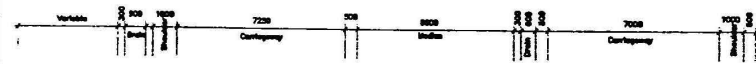


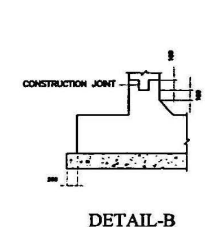
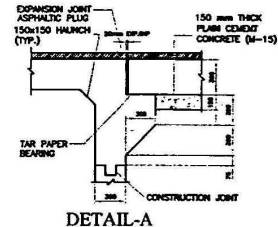
TABLE SHOWING SALIENT DIMENSIONS

BOX CELL NO./cb/Ec	a (mm.)	b (mm.)	c (mm.)	d (mm.)	e (mm.)	f (mm.)
1/22/0	2000	2000	500	350	380	300
1/23/0	2000	3000	1300	370	420	300
1/33/0	3000	3000	900	420	420	420
1/43/0	4000	3000	400	450	500	500
1/54/0	5000	4000	800	320	800	620
1/66/0	6000	6000	1800	700	800	850

- NOTES:-**
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
 - FOR GENERAL NOTES AND REFERENCE DRAWINGS REFER DNG. NO. SD/101.
 - FOR REINFORCEMENT DETAILS REFER DNG. NO. SD/108.
 - FOR DETAILS OF WING WALL REFER DNG. NO. SD/113.
 - SOIL DENSITY ON THE BACKFILL SHOULD CONFORM TO CLAUSE 305.2.1.3 OF MOST SPECIFICATION.
 - NET BEARING CAPACITY REQUIRED FOR SOIL IS DIVIDED IN FOUR CATEGORIES AS SHOWN BELOW.

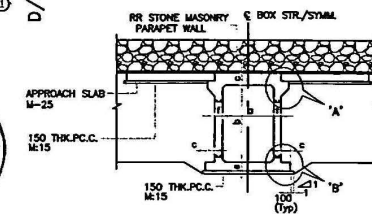
CATEGORY	NET BEARING CAPACITY PERMITTED FOR SIZE
A	5 T/M ²
B	10 T/M ²
C	15 T/M ²
D	20 T/M ²

- SOFT AND LOOSE PATCHES IN THE BEARING AREA ARE TO BE REPLACED BY COMPACTED GRANULAR FILLS WITH LAYERS NOT EXCEEDING 300mm.
- DESIGNS ARE GIVEN FOR THE BOX CELL CULVERTS ONLY. THESE HAVE NO BEARING WITH DESIGN OF SUBSEQUENT WHICH WILL BE TAKEN UP BY DESIGNER-IN-CHARGE SEPARATELY.

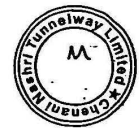


DETAIL-A

DETAIL-B



SECTION 2-2



REV.	DATE	PREP.	CHK.	APPROVED	DESCRIPTION

NATIONAL HIGHWAYS AUTHORITY OF INDIA
G-5 & 6, Sector 10, Dwarka, New Delhi.

NAME: SIGN: TITLE:
DRAWN BY:
DESIGN BY:
CHECKED BY:
APPROVED BY:

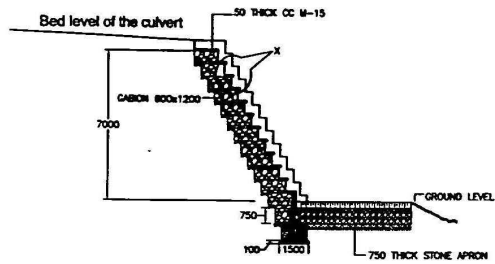
BOX CULVERT (TYPE-D)

SCALE: NTS

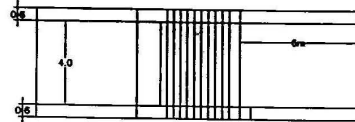
PROJECT: Four Lanes of NH-1A From Udhampur To Barhal Section Km.89 To Km.130 Package No. NS-99A/J&K
DRAWING NO. LRG/90167/DP/1/CD-09
DATE: February, 2007

THE Louis Berger Group, Inc. USA
and in Association with:
LRP Consultants Consortium Pvt. Ltd. and T Ramboil Consulting Engineers

TYPE - A

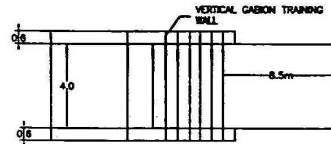
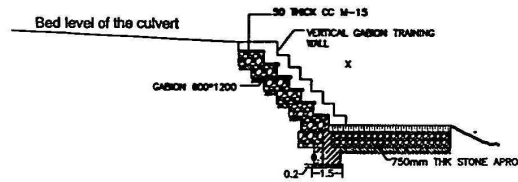


SECTION



PLAN

TYPE - B

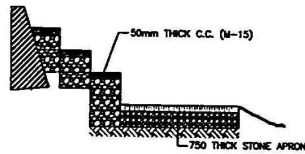


PLAN

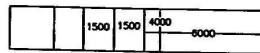
NOTES:-

1. THE MAXIMUM DROP FOR A TYPE A GABION CASCADE IS 7m.
2. THE DROP/NO OF STAPES FOR A TYPE B GABION CASCADE MAY BE VALID TO SUITE THE STREAM AND GROUND SLOP
3. CONCRETE TO CASCADE IN M-15
4. GABION SIZE 600 x 1200mm
5. FOUNDATION BEARING SURFACE SHALL BE HORIZONTAL UNSUITABLE MATERIAL SHALL BE REPLACED WITH SUITABLE MATERIAL
6. FOR TYPICAL DETAILS OF FLOOR PROTECTION WORKS, REFER MORTH STANDARD DRAWING NO.SD/111

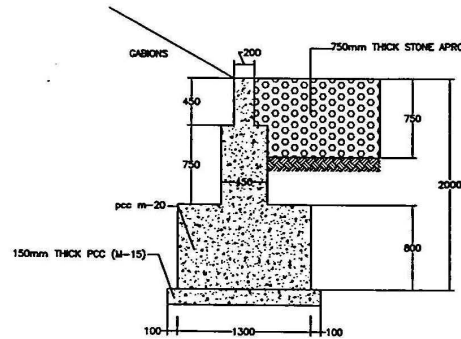
TYPE - C



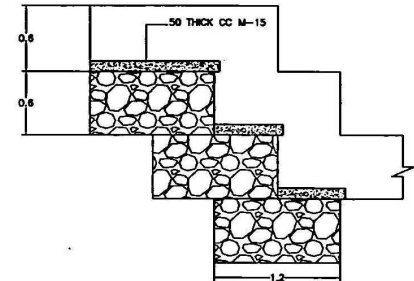
SECTION



PLAN



TYPICAL CROSS SECTION OF CURTAIN WALL



GABIONS DETAIL AT-X

REV.	DATE	PREP.	CHK.	APPROVED	DESCRIPTION



NATIONAL HIGHWAYS AUTHORITY OF INDIA
G-5 & 6, Sector 10, Dwarka, New Delhi.

NAME	SKIN	TITLE
DRAWN BY Oshir Terzia		CULVERT OUT FALL DETAILS
DESIGN BY R.K. Chugh		
CHECKED BY M.S. Rawat		
APPROVED BY		



Contracting of NH-1A From Udhampur To Banihal Section km. 89 to 130 Package No. NS-99A/J&K
DRAWING NO. LBS/RQ/147/DPR/20/07-01
DATE: February, 2007

THE Louis Berger Group, Inc., USA
Engineers • Planners • Scientists • Economists
in Joint Venture with:
LRP Consultants and Association with:
Consortium Pvt. Ltd. & T.Ramboll Consulting Engineers



REV	DATE	PREP	CHK	APPROVED	DESCRIPTION

**NATIONAL HIGHWAYS AUTHORITY
OF INDIA**

G-5 & 6, Sector 10, Dwaraka, New Delhi.

	NAME	SIGN
DRAWN BY	Chabi Tewari	
DESIGN BY	A.N. Aggarwal	
CHECKED BY	M. S. Rawat	
APPROVED BY		

TITLE-
**SET OUT DETAILS OF
INDIVIDUAL CULVERT**

SCALE- NTS

PROJECT- Four laning of NH-1A From
Udhampur To Barahal-Section Km.89 To Km.130
Package No. NS-99AJ&K

DRAWING NO. LBG/0167/DPR/1/C-01

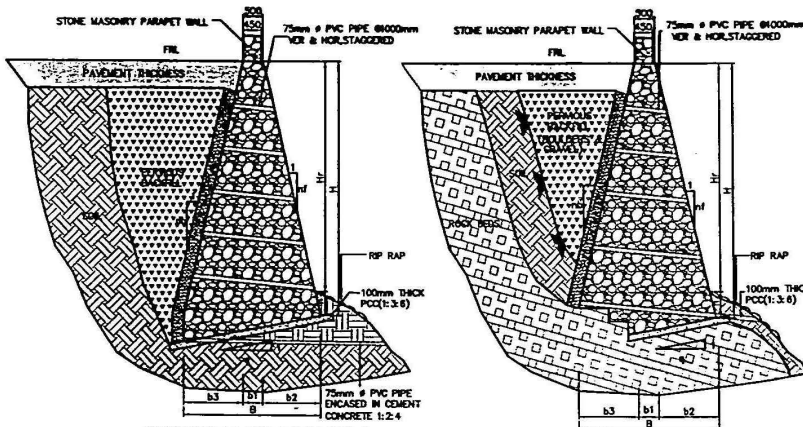
DATE- February, 2007

THE Louis Berger Group, Inc., USA

Engineers * Planners * Scientists * Economists

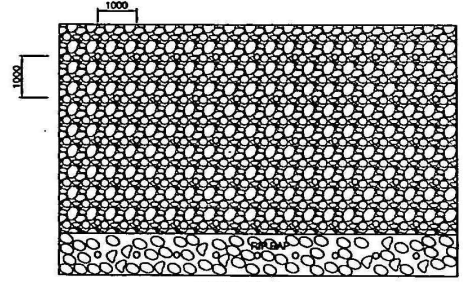
in Joint Venture with: and in Association with:

LFP Consultants L & T Ramboll
Consortium Pvt. Ltd. Consulting Engineers



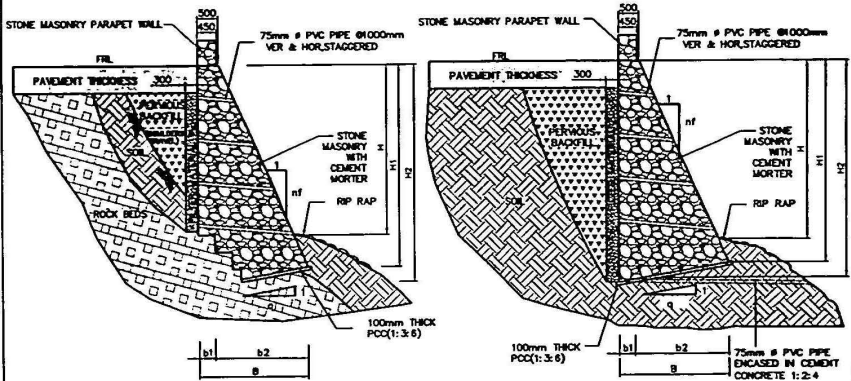
RETAINING WALL TYPE SM-1 (FOR SOIL FOUNDATION)

RETAINING WALL TYPE SM-1 (FOR ROCK FOUNDATION)



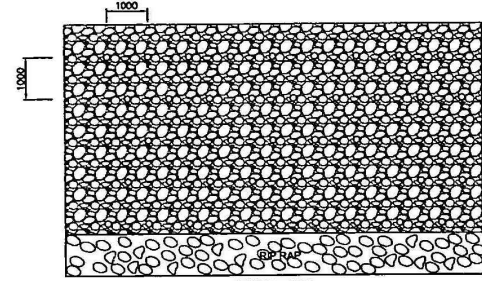
ELEVATION

Stone Masonry Cement Mortar Wall - Type SM-1 (Downhill Retaining wall (Width of wall top = 0.5m))												
S. No.	Height of Retain Wall above Ground	Depth of Foundation d (m)	Height Of Wall H1 (m)	Maximum Height of Retaining Wall H2 (m)	Batter				Bottom Width B (m)	Foundation Slope 1/tang	Quantity Cu.m/m	
					Top Width b1 (m)	nb	nf	b2				b3
1	1.00	0.5	1.50	1.77	0.5	1.75	10	0.15	0.86	1.51	5.67	1.71
2	2.00	0.6	2.60	2.96	0.5	2.00	10	0.26	1.30	2.06	5.67	3.70
3	3.00	0.6	3.60	4.03	0.5	2.25	10	0.36	1.60	2.46	5.67	5.86
4	4.00	0.6	4.60	5.09	0.5	2.50	10	0.46	1.84	2.90	5.67	8.28
5	5.00	0.75	5.75	6.35	0.5	2.50	10	0.58	2.30	3.38	5.67	12.14
6	6.00	0.75	6.75	7.43	0.5	2.50	10	0.68	2.70	3.88	5.67	16.09
7	7.00	1	8.00	8.79	0.5	2.50	10	0.80	3.20	4.50	5.67	21.79
8	8.00	1	9.00	9.88	0.5	2.50	10	0.90	3.60	5.00	5.67	28.95
9	9.00	1	10.00	11.01	0.5	2.50	8	1.25	4.00	5.75	5.67	34.16
10	10.00	1	11.00	12.11	0.5	2.50	8	1.38	4.40	6.28	5.67	40.73
11	11.00	1	12.00	13.29	0.5	2.50	6	2.00	4.80	7.30	5.67	51.50
12	12.00	1.2	13.20	14.61	0.5	2.50	6	2.20	5.28	7.98	5.67	61.58



RETAINING WALL TYPE SM-2 (FOR ROCK FOUNDATION)

RETAINING WALL TYPE SM-2 (FOR SOIL FOUNDATION)



ELEVATION

Stone Masonry Cement mortar Wall - Type SM-2 (Downhill Retaining wall (Width of wall top = 0.5m))											
S. No.	Height of Retain Wall above	Depth of Foundation n d (m)	Height Of Wall H1 (m)	Maximum Height of Retaining Wall H2	Top Width b1 (m)	Batter			Bottom Width B (m)	Foundation Slope 1/tang	Quantity Cu.m/m
						nf	b2	b3			
1	1.00	0.5	1.50	1.80	0.5	1.25	1.20	1.70	5.67	1.91	
2	1.50	0.6	2.10	2.48	0.5	1.25	1.68	2.18	5.67	3.24	
3	3.00	0.75	3.75	4.28	0.5	1.5	2.50	3.00	5.67	7.36	
4	4.00	0.75	4.75	5.40	0.5	1.5	3.17	3.67	5.67	11.10	
5	5.00	1	6.00	6.79	0.5	1.5	4.00	4.51	5.67	16.81	
6	6.00	1	7.00	7.91	0.5	1.5	4.67	5.17	5.67	22.22	
7	7.00	1	8.00	9.03	0.5	1.5	5.33	5.84	5.67	28.37	
8	8.00	1	9.00	10.15	0.5	1.5	6.00	6.51	5.67	35.24	
9	9.00	1	10.00	11.27	0.5	1.5	6.67	7.18	5.67	42.87	
10	10.00	1.2	11.20	12.61	0.5	1.5	7.47	7.98	5.67	51.29	
11	11.00	1.2	12.20	13.72	0.5	1.5	8.13	8.65	5.67	60.51	
12	12.00	1.2	13.20	14.84	0.5	1.5	8.80	9.31	5.67	70.51	

REV.	DATE	PREP.	CHK.	APPROVED	DESCRIPTION

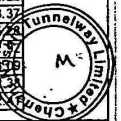
NATIONAL HIGHWAYS AUTHORITY OF INDIA
G-5 & 6, Sector 10, Dwarka, New Delhi.

NAME: _____ SIGN: _____
DRAWN BY: Omvir Tivale
DESIGN BY: R.K. Chopra
CHECKED BY: M.S. Rawat
APPROVED BY: _____

TITLE: **RETAINING WALL**
STONE MASONRY (SM-1 & SM-2)
SCALE: NTS

PROJECT: Four Lanes of NH-1A From Udhampur To Banihal-Section Km.89 To Km.130 Package No. NS-99A/J&K
DRAWING NO. LBG/90/147/DPL/1/1/1/01
DATE: February, 2007

The Louis Berger Group, Inc., USA
Engineers Planners Scientists Economists
in Joint Venture with:
LFP Consultants L & T Ramboll
Consortium Pvt. Ltd. Consulting Engineers



REV	DATE	PREP	CHK	APPROVED	DESCRIPTION

NATIONAL HIGHWAYS AUTHORITY
OF INDIA

C-5 & 6, Sector 10, Dwarka, New Delhi.

DESIGNED BY
CHECKED BY
APPROVED BY

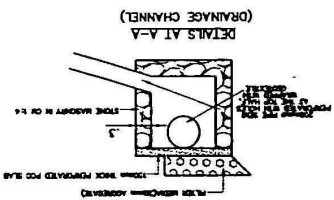
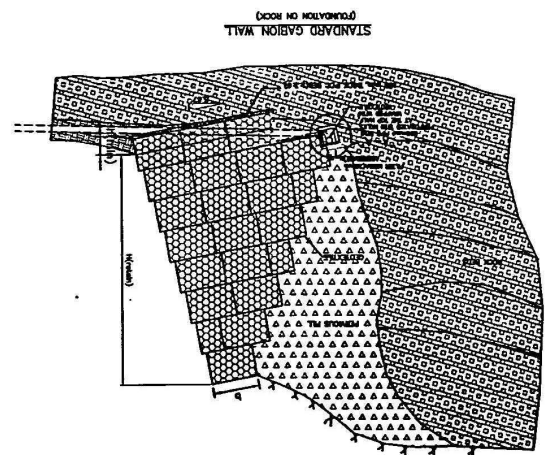
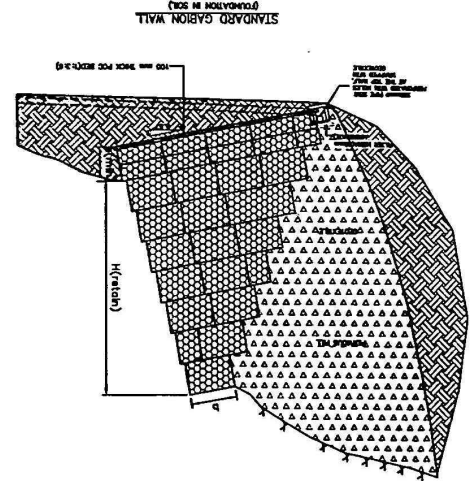
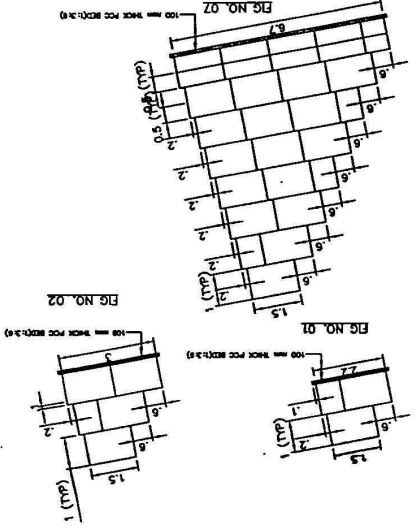
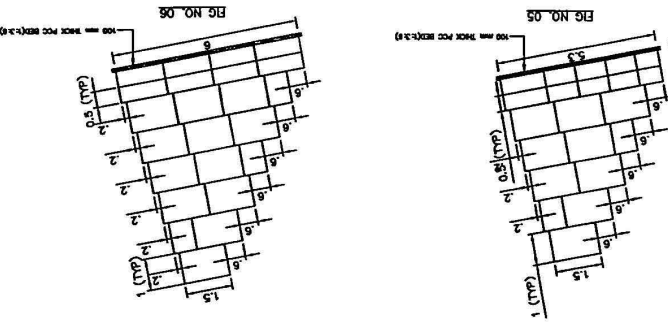
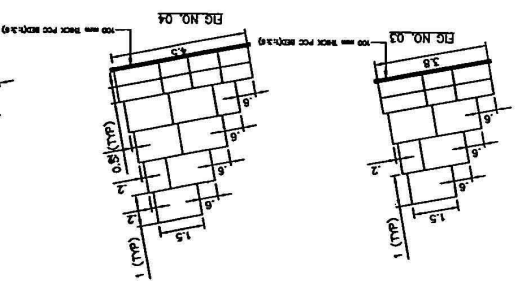
DATE: February, 2007
DRAWING NO. LHR0910/07/MS/03/04

GABION WALL

PROJECT: Four bays of NH-1A Form
Luthmupur To Barahal Section Km.89 to 130
Package No. NS-99A/18K

THE Louis Berger Group, Inc. USA
CONSULTANTS
L & T Ranch
14100 Woodloch Forest
Houston, Texas 77057
In India, in association with:
LSP Consultants
LSP Consultants Pvt. Ltd.
100, Park Road, New Delhi
CONSULTING ENGINEERS

S.No.	Height of Retaining H	Depth h	Foundation Geometry	Top Widthm	Bottom Widthm	Per m	Remark
1	1	0.5	1.5	2.25	3.75	Fig.1	
2	2	0.5	1.5	3	6.75	Fig.2	
3	3	1	1.5	3.75	10.5	Fig.3	
4	4	1	1.5	4.5	15	Fig.4	
5	5	1	1.5	5.25	20.25	Fig.5	
6	6	1	1.5	6	26.25	Fig.6	
7	7	1	1.5	6.75	33	Fig.7	



REV	DATE	BY	CHK	APPROVED	DESCRIPTION

NATIONAL HIGHWAYS AUTHORITY
OF INDIA
G-5 & Sector 10, Dwarka, New Delhi.



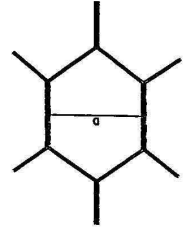
NAME	
DESIGN BY	
CHECKED BY	
APPROVED BY	
TITLE	GABION WIRE MESH SYSTEM

PROJECT: Four Bins of NH-1A Form
Udumputur To Bantel Section Km.89 to 130
Package No. NS-99A/LK
DRAWING NO. LK0916/09/07/03/02

DATE: February, 2007
SCALE: N.T.S.
L & T Ramboll
Consulting Engineers
and its Association with:
LJP Consultants
Consortium Pvt. Ltd.

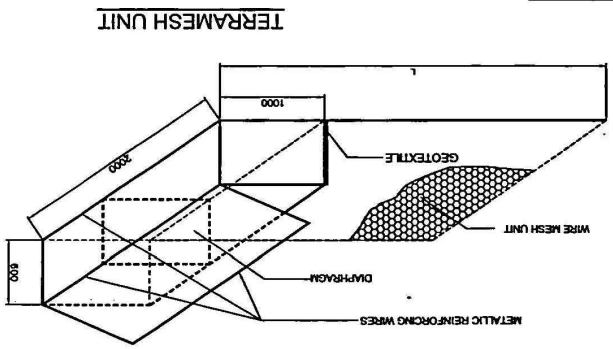
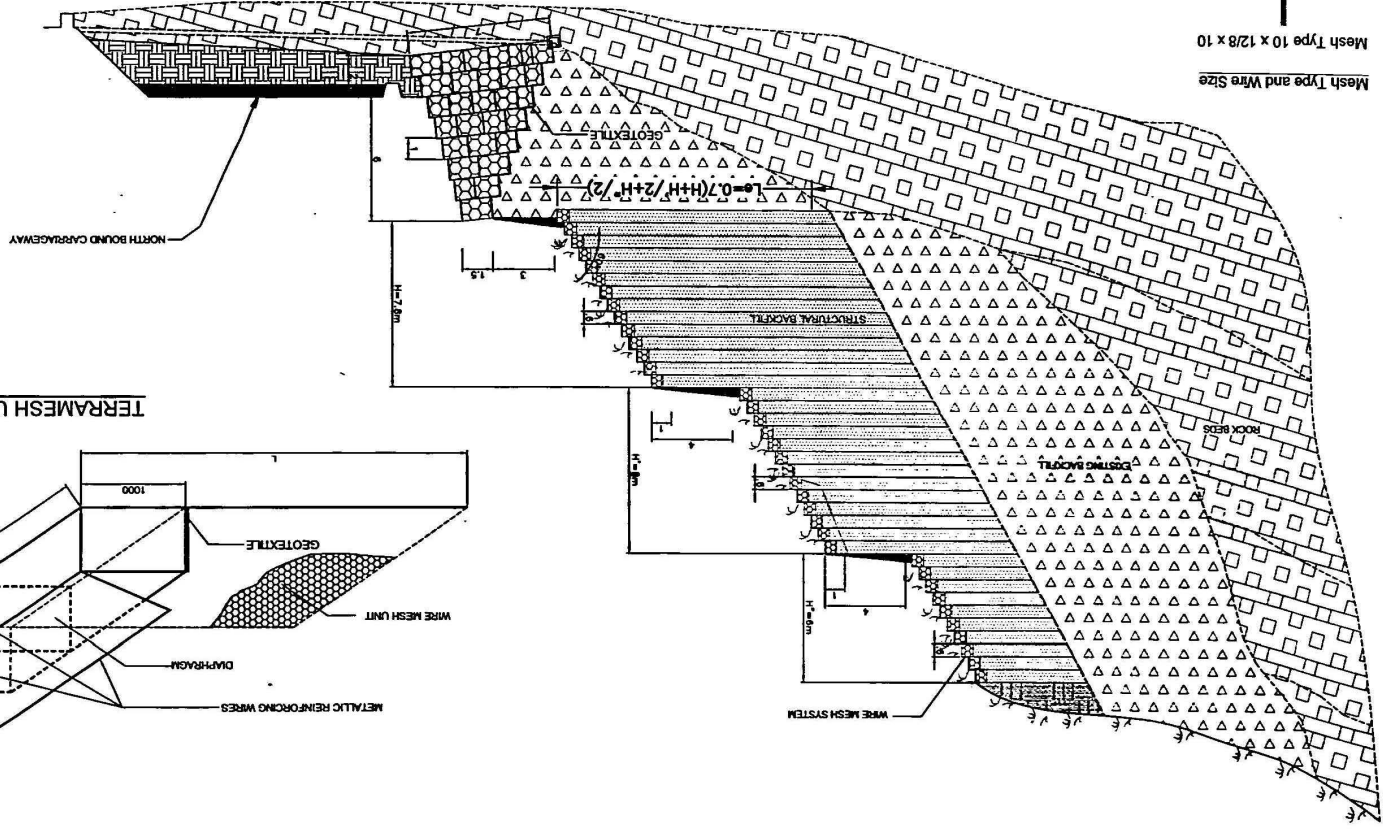
Mesh Type	"D" (mm)	Zinc+PVC Coated
8 x 10	80	2.70 / 3.70
10 x 12	100	3.40 / 4.40
Mesh Wire		2.70 / 3.70
Salvage/Edge Wire		3.40 / 4.40
Locking Wire		2.20 / 3.20

..D" (mm) 100/80 (EN 10223-3)

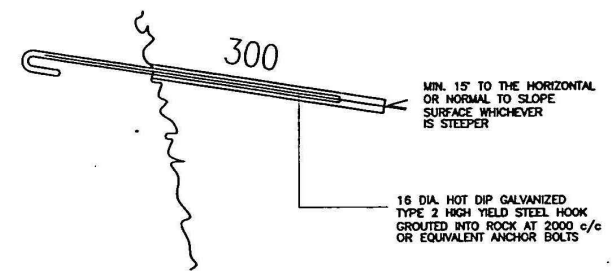
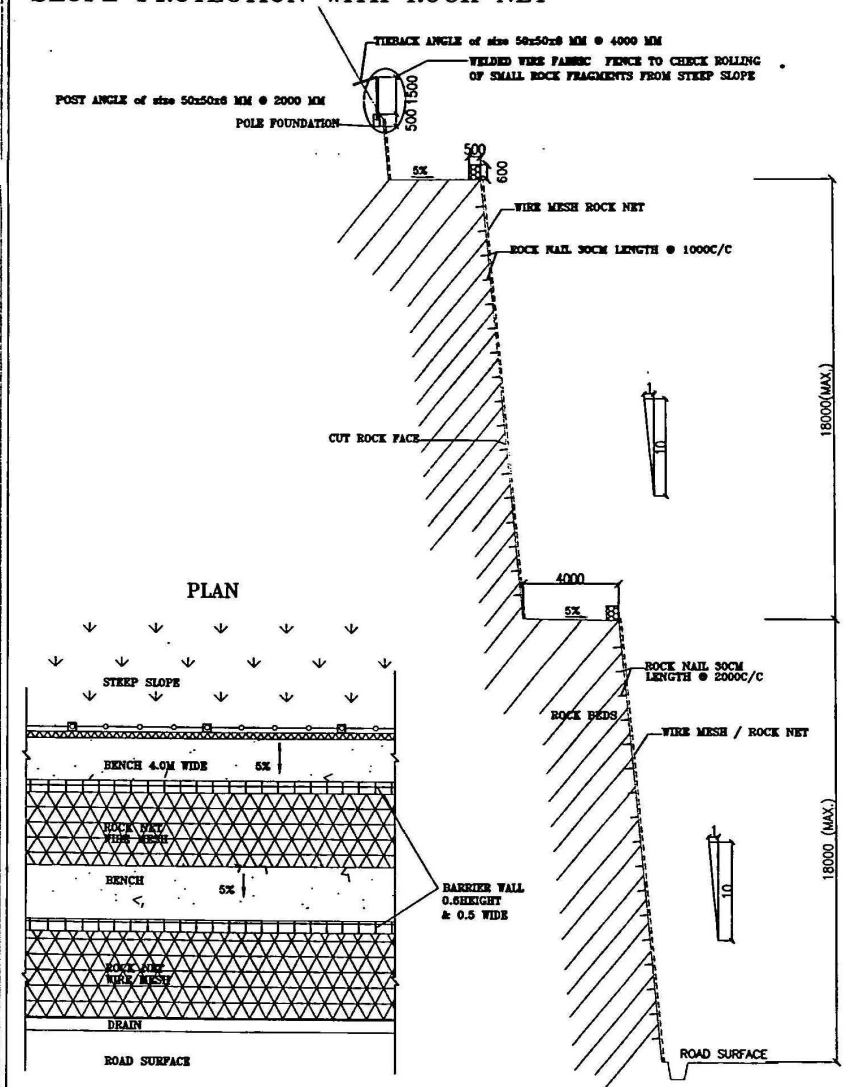


Mesh Type and Wire Size
Mesh Type 10 x 12/8 x 10

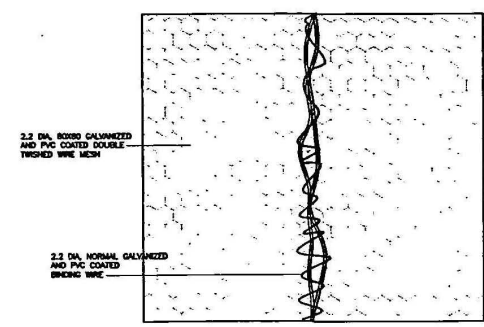
GABION AND GABION WIRE MESH SYSTEM (FOR SLIDE AREA AND SLIDE PRONE AREA)



SLOPE PROTECTION WITH ROCK NET




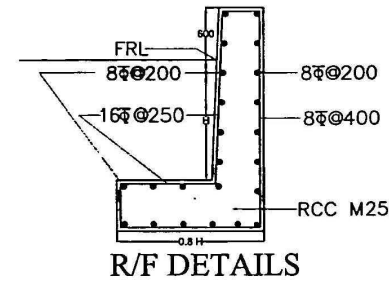
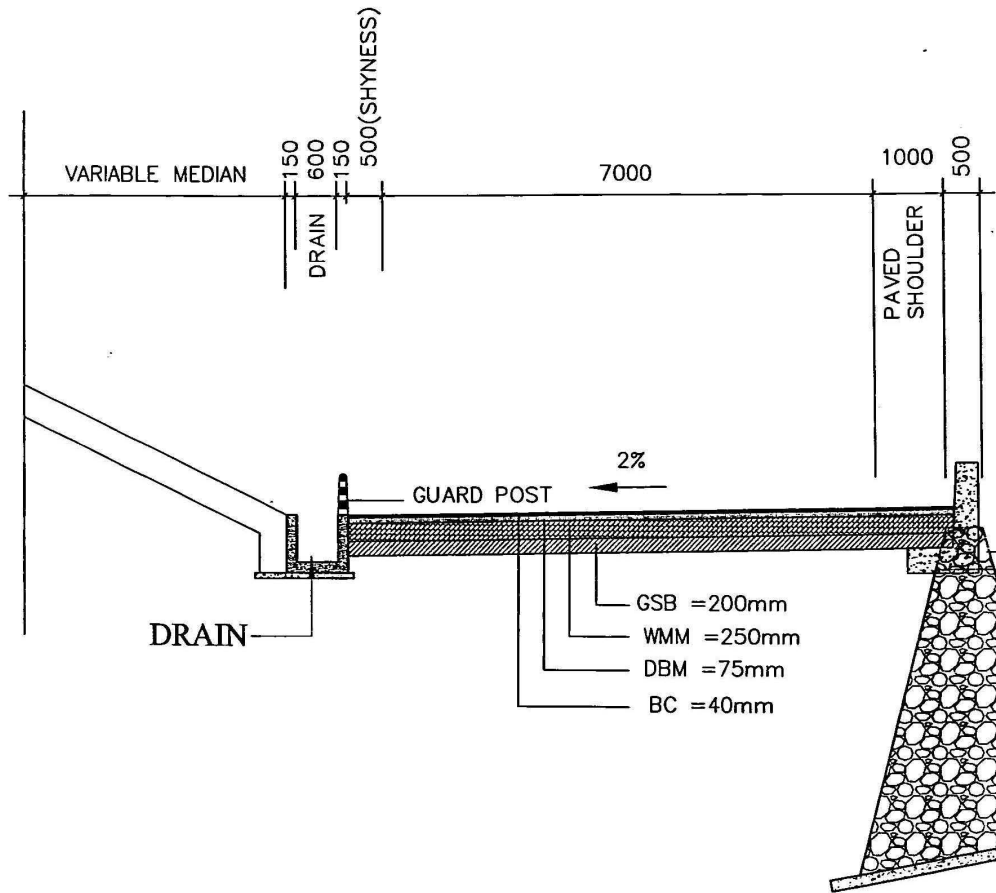
FIXING MESH TO FACE



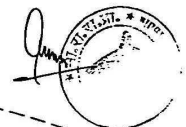
LACING OF ADJACENT MESH SHEETS



REV. DATE		PREP. CISE. APPROVED		DESCRIPTION	 NATIONAL HIGHWAYS AUTHORITY OF INDIA G-5 & 6, Sector 10, Dwarka, New Delhi.	NAME: _____ SKIN: _____ TITLE: _____	ROCK NET	PROJECT: Four laning of NH-1A From Udhampur To Banihal-Section Km. 89 To Km.130 Package No. NS-99A/J&K DRAWING NO. LBG/RQ/167/DP/R/DRN-01 DATE: February, 2007	THE Louis Berger Group, Inc., USA Engineers Planners Scientists Economists In Joint Venture with: LRP Consultants and in Association with: L & T Ramboll Consortium Pvt. Ltd. Consulting Engineers
DRAWN BY: Chaiti Terelia DESIGN BY: M.L.H.Paul CHECKED BY: M.S.Rawal APPROVED BY: _____	SCALE: NTS								



EXISTING WALL IN POOR CONDITION TO BE DISMANTLED



REV	DATE	PREP	CHK	APPROVED	DESCRIPTION



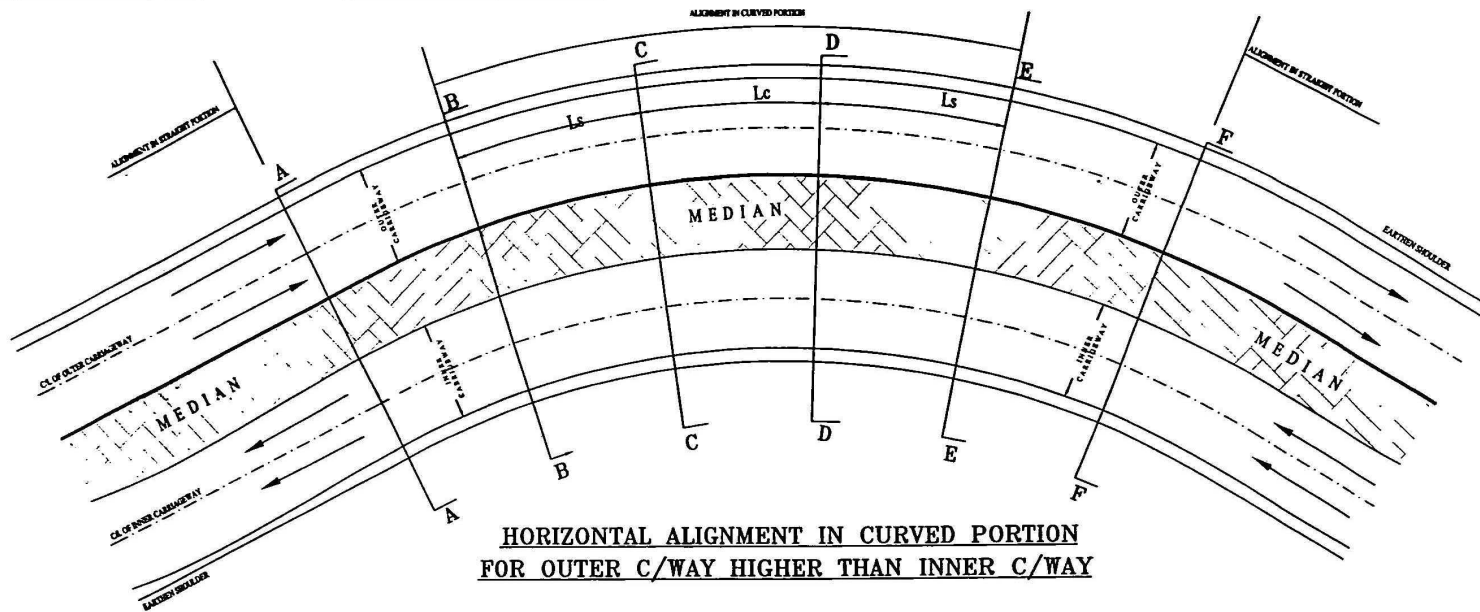
NATIONAL HIGHWAYS AUTHORITY OF INDIA
G-5 & 6, Sector 10, Dwaraka, New Delhi.

NAME	SKN	TITLE
DRAWN BY: <i>Chabi Terada</i>		RCC RETAINING WALL
DESIGN BY: <i>M.H.Patel</i>		
CHECKED BY: <i>M.S.Ram</i>		
APPROVED BY: <i>M.S.Ram</i>		

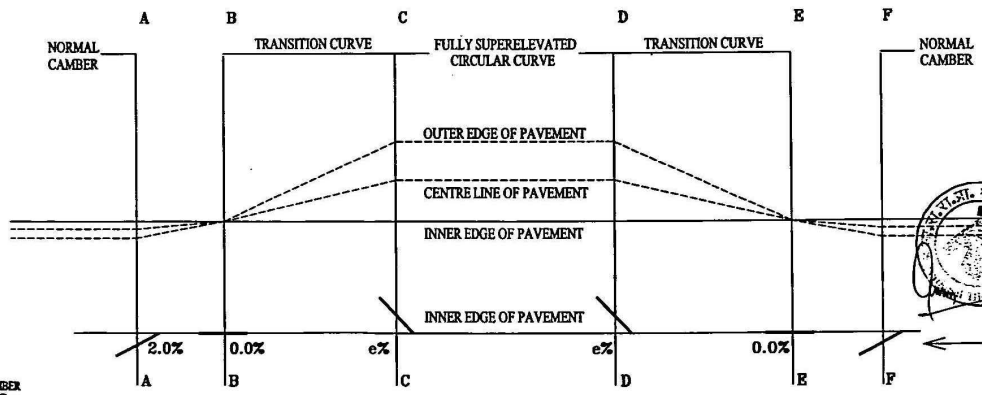
SCALE	NTS

PROJECT: Four Laning of NH-1A From Udhampur To Banhal-Section Km.89 To Km.130 Package No. NS-99A/JSK
DRAWING NO. LBG/041/09/10/RCC-01
DATE: February, 2007

THE Louis Berger Group, Inc., USA
Engineers Planners Scientists Economists
in Joint Venture with: LRP Consultants and in Association with: L & T Ramboll
Consortium Pvt. Ltd. Consulting Engineers



**HORIZONTAL ALIGNMENT IN CURVED PORTION
FOR OUTER C/WAY HIGHER THAN INNER C/WAY**




**SCHEMATIC DIAGRAM SHOWING SUPERELEVATION OF RIGHT
HAND CURVE FOR OUTER CARRIAGEWAY**

LEGEND:-
 CROSS SECTION AT AA & FF - NORMAL CAMBER
 CROSS SECTION AT BB & EE - SUPERELEVATION EQUAL TO CAMBER
 CROSS SECTION AT CC & DD - FULL SUPERELEVATION ACHIEVED

NOTE:-
 THE RATE OF CHANGE OF SUPERELEVATION (LONGITUDINAL SLOPE OF EDGE COMPARED TO CENTRE LINE) SHOULD BE 1 IN 200.
 DIMENSIONS SHOWN ARE IN METRES.

REV	DATE	PREP	CHK	APPROVED	DESCRIPTION



**NATIONAL HIGHWAYS AUTHORITY
OF INDIA**
 G-5 & 6, Sector 10, Dwaraka, New Delhi.

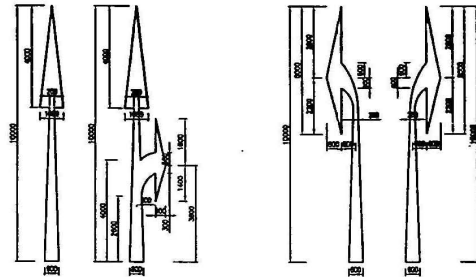
NAME	SIGN
DRAWN BY: <i>Shashi Terevani</i>	
DESIGN BY: <i>S.K.Chopra</i>	
CHECKED BY: <i>M.S.Ravuri</i>	
APPROVED BY: <i>[Signature]</i>	

TITLE:	SCALE:
DETAILS OF SUPER ELEVATION	NTS

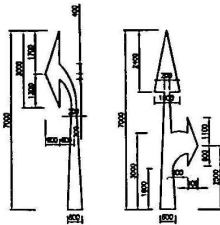
PROJECT: Four Lanes of NH-1A From Udhampur To Bawal-Section Km.89 To Km.130 Package No. NS-99A/J&K
DRAWING NO. LSC/NH/SE/PR/05E-01
DATE: February, 2007

THE Louis Berger Group, Inc., USA
 Engineers * Planners * Scientists * Economists

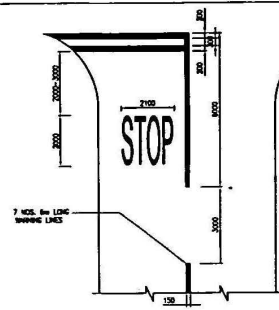
in Joint Venture with:
**LRP Consultants and in Association with:
 L & T Ramboll
 Consortium Pvt. Ltd.** Consulting Engineers



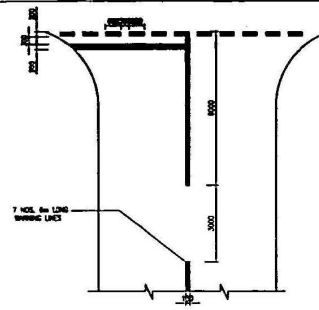
ARROW MARKING FOR ROUTE DIRECTION FOR DESIGN SPEED MORE THAN 50 KM/HOUR



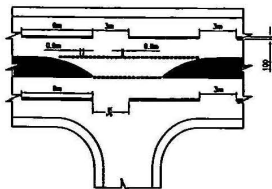
ARROW MARKING FOR ROUTE DIRECTION FOR DESIGN SPEED UP TO 50 KM/HOUR



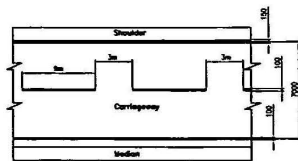
STOP LINES



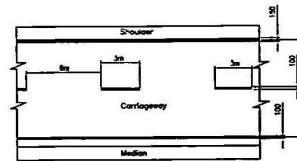
GIVE WAY LINES



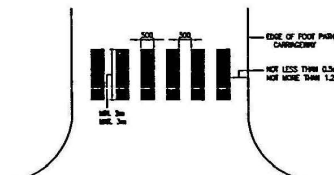
WARNING LINES



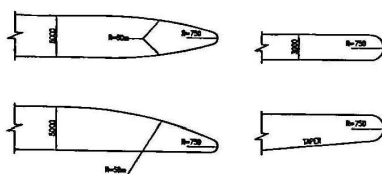
CENTRE LINE MARKING FOR 4-LANE ROAD (AT INTERSECTIONS)



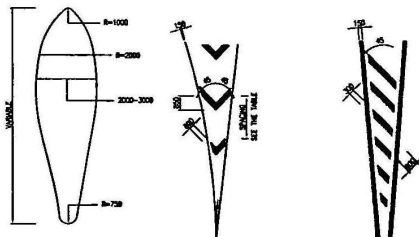
CENTRE LINE MARKING FOR 4-LANE ROAD (BEYOND INTERSECTIONS)



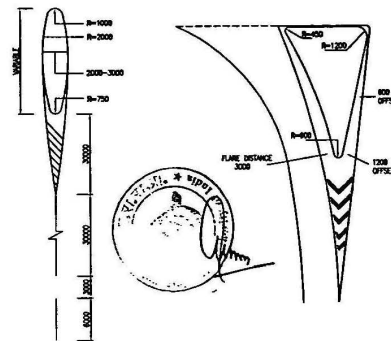
DETAILS OF PEDESTRIAN CROSSING MARKING



TYPICAL ISLAND DETAILS



DETAILS OF CHEVRON MARKING



DIAGONAL MARKING IN ADVANCE OF DIRECTIONAL ISLAND

LARGE SIZE ISLAND

ISLAND LENGTH OF MARKING (m)	SPACING BETWEEN BARS OR CHEVRONS (m)	
	LOW SPEED (75 km/h)	HIGH SPEED (75 km/h)
< 5.7	2100	-
5.7 to 22.5	3000	-
> 22.5	5000	-
< 10.5	-	4000
> 10.5	-	8000

NOTES:-

1. ALL LENGTHS AND SPACINGS IN THE TABLE ARE TO BE PARALLEL TO ROAD CENTRE LINE.
2. FIRST BAR OR CHEVRON TO BE SO LOCATED THAT ITS OVERALL AVERAGE TRANSVERSE WIDTH IS AT LEAST EQUAL TO ITS LONGITUDINAL WIDTH.
3. WIDTH OF ALL BARS AND CHEVRONS MEASURED AT RIGHT ANGLES TO BAR OR CHEVRON IS 600 mm.



REV.	DATE	PREP.	CHK.	APPROVED	DESCRIPTION

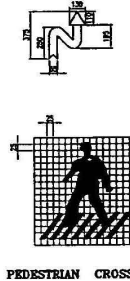
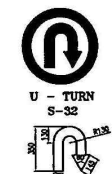
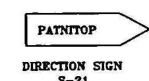
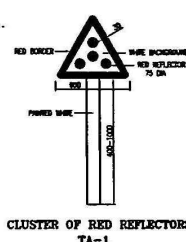
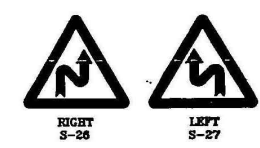
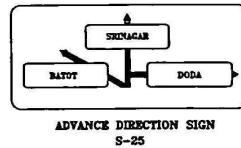
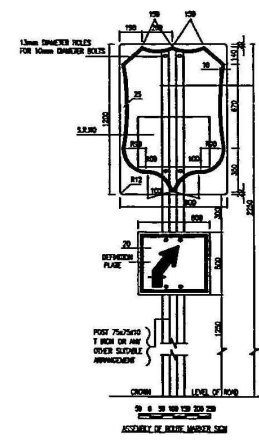
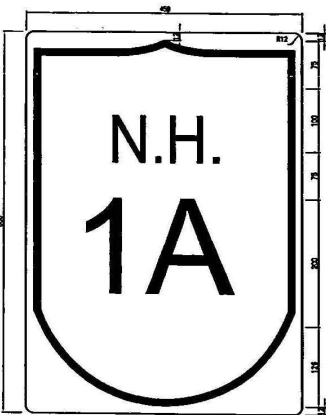
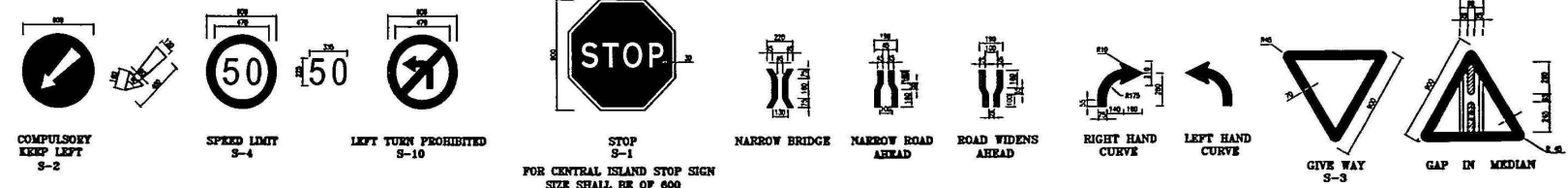
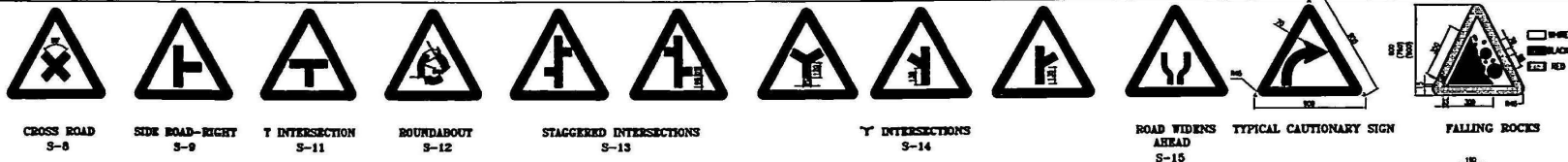
NATIONAL HIGHWAYS AUTHORITY OF INDIA
G-5 & 6, Sector 10, Dwarka, New Delhi.

NAME	SIGN.
Drawn by: Omkar Tevatia	
Design by: M.L.Paati	
Checked by: M.S.Ravul	
Approved by:	

DETAILS OF PAVEMENT MARKING
SCALE: N.T.S.

PROJECT:- Four Lanes of NH-1A From Udhampur To Banihal-Section Km.89 To Km.130 Package No. NS-99A/J&K
DRAWING NO. LBG/90/167/DPS/DTM-01
DATE: January, 2007

THE LOUIS BERGER GROUP, INC., USA
Engineers • Planners • Scientists • Economists
in Joint Venture with: LRP Consultants
and in Association with: L & T Ramboll
Consortium Pvt. Ltd. Consulting Engineers



NH ROUTE MARKER SIGN
S-16
S-23

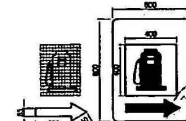
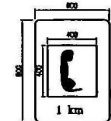
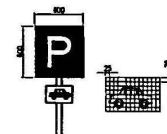
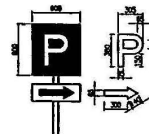
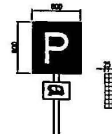
ARRANGEMENT FOR ERECTION OF
STATE ROUTE MARKER SIGN
S-16
S-23

CLUSTER OF RED REFLECTORS
TA-1

DIRECTION SIGN
S-21

U - TURN
S-32

PEDESTRIAN CROSSING



AUTO RICKSHAW
STAND

PARK THIS SIDE

TAXI STAND

PUBLIC TELEPHONE

RATING PLACE

SCHOOL

NOTE: ALL DIMENSIONS ARE IN METERS

NATIONAL HIGHWAYS AUTHORITY OF INDIA G-5 & 6, Sector 10, Dwaraka, New Delhi.				DETAILS OF TRAFFIC SIGNS SCALE: N.T.S.		PROJECT: Four Lining of NH-1A From Uchamapur To Banhal-Section Km.89 To Km.130 Package No. NS-99A/J&K DRAWING NO. LBG/01/07/DP/NTS-01 DATE: March, 2007		THE Louis Berger Group, Inc., USA Engineers Planners Scientists Economists in Joint Venture with: L & T Ramboll Consortium Pvt. Ltd. Consulting Engineers			
REV.	DATE	PREP.	CHEK.	APPROVED	DESCRIPTION	DRAWN BY Cubic Tereza	NAME SIGN	TITLE	DESIGN BY R.K. Chopra	CHECKED BY M.S. Rawat	APPROVED BY



REV	DATE	BY	CHK.	APPROVED	DESCRIPTION



NATIONAL HIGHWAYS AUTHORITY
OF INDIA
G-5 & Sector 10, Dwarka, New Delhi.

APPROVED BY	
CHECKED BY	
DESIGN BY	
DRAWN BY	
NAME	
SIGN	

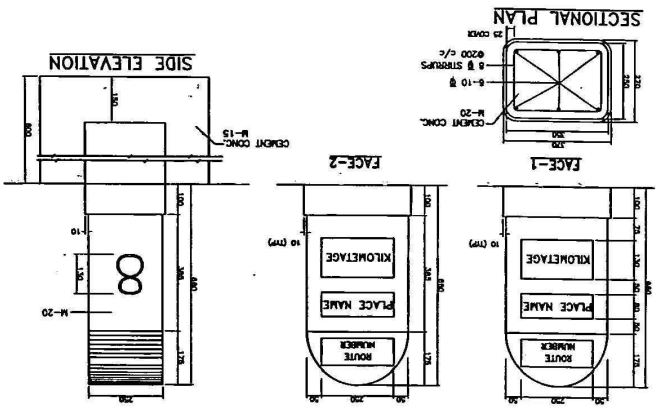
TITLE:
5th KM/200M STONES,
DELINATOR BOUNDRY
STONE ETC.

DATE: February, 2007
DRAWING NO. 1.80001/07/2003/81
PROJECT: Four Km/200m Stones From
Udampur To Baramulla Km.89 To Km.120
Package No. NS-99/MSK

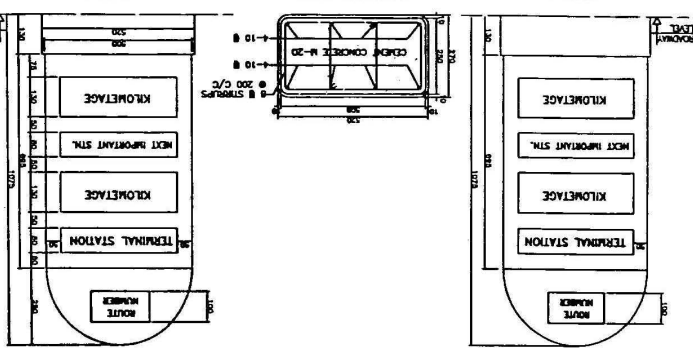
THE Louis Berger Group, Inc. USA
CONSULTANTS
L & T Ramchand
Consulting Engineers
and its Associates with:
RPF Consultants
Consorbun Pvt. Ltd.

- NOTES :-
1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
 2. FOR SIGN & PAVEMENT MARKINGS, REFER SEPARATE DRAWINGS.
 3. REFERENCE BE MADE TO:
 0. INCE-1800 IN RESPECT OF NATIONAL HIGHWAY KILOMETRE STONES.
 1. INCE-1800 IN RESPECT OF BOUNDARY STONES.
 2. INCE-1807 IN RESPECT OF 200M STONES.

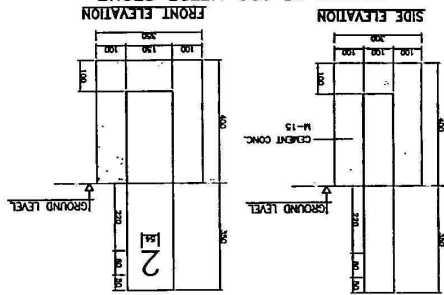
TYPE DESIGN OF KILOMETRE STONE



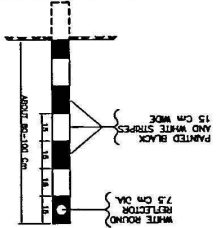
TYPE DESIGN 5th KILOMETRE STONE



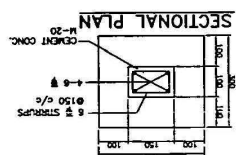
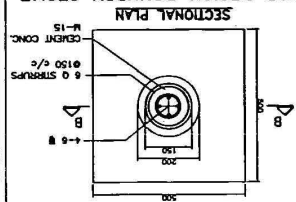
DETAILS OF 200 METRE STONE



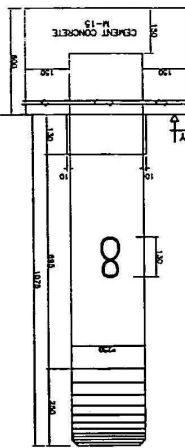
DELINATOR WITH
CIRCULAR REFLECTOR



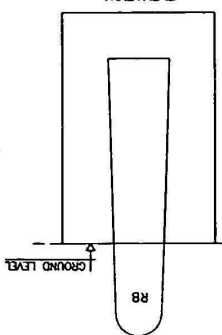
TYPE DESIGN BOUNDRY STONE



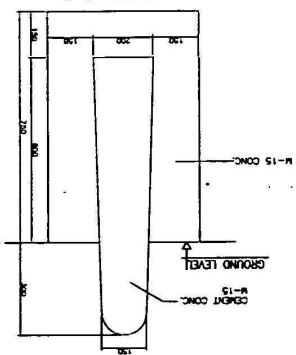
SIDE ELEVATION



ELEVATION



SECTION B-B



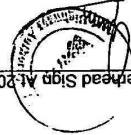
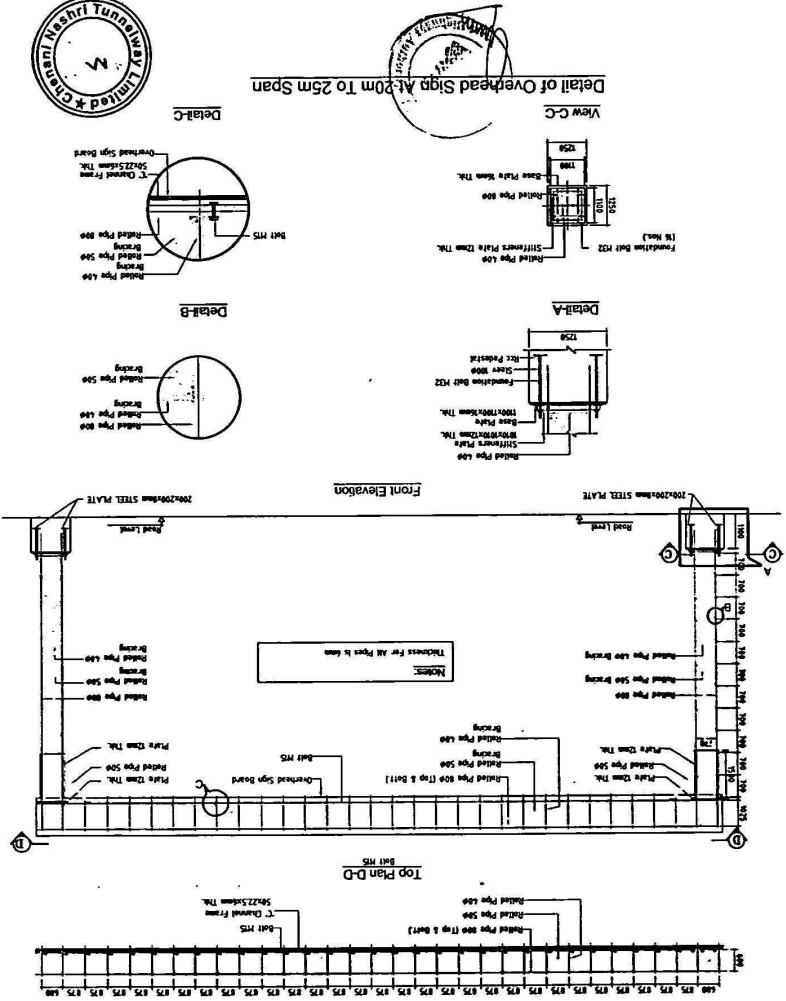
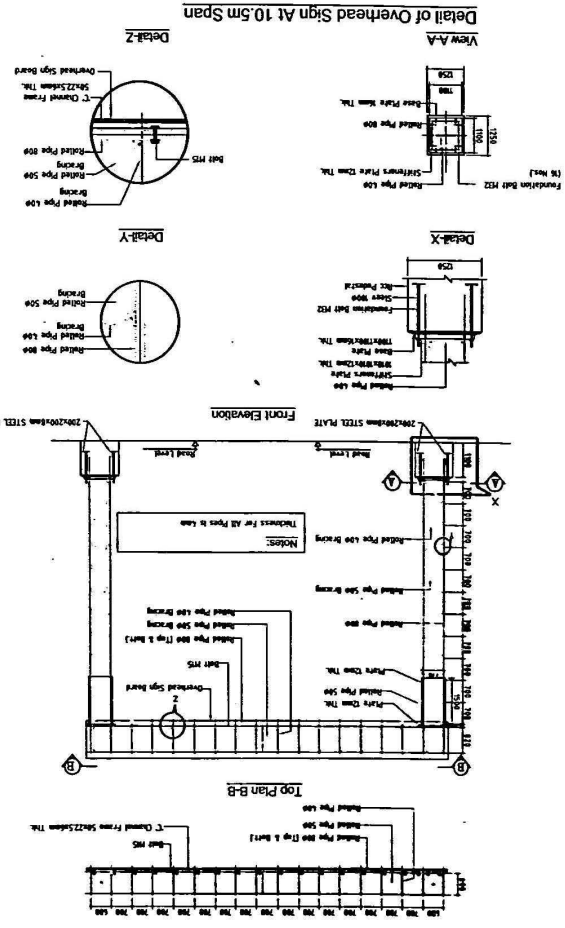
REV	DATE	PREP	CHK	APPROVED	DESCRIPTION

NATIONAL HIGHWAYS AUTHORITY
OF INDIA
G-5 & 6, Sector 10, Dwarka, New Delhi.

APPROVED BY	
CHECKED BY	
DESIGN BY	
DRAWN BY	
NAME	
SKETCH	

SCALE:	NIS
TITLE:	OVERHEAD SIGN
PROJECT:	Uthampur To Barhal Section Km.89 To Km.130
DRAWING NO. (LOCAL):	6/2002/2000
DATE:	February, 2007

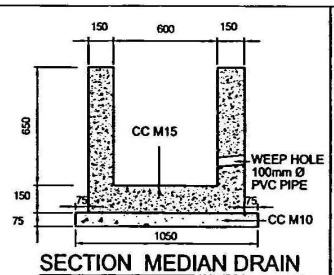
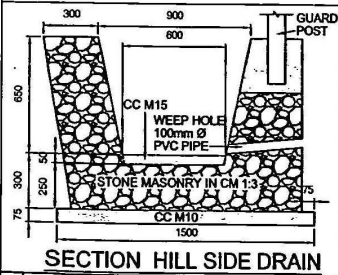
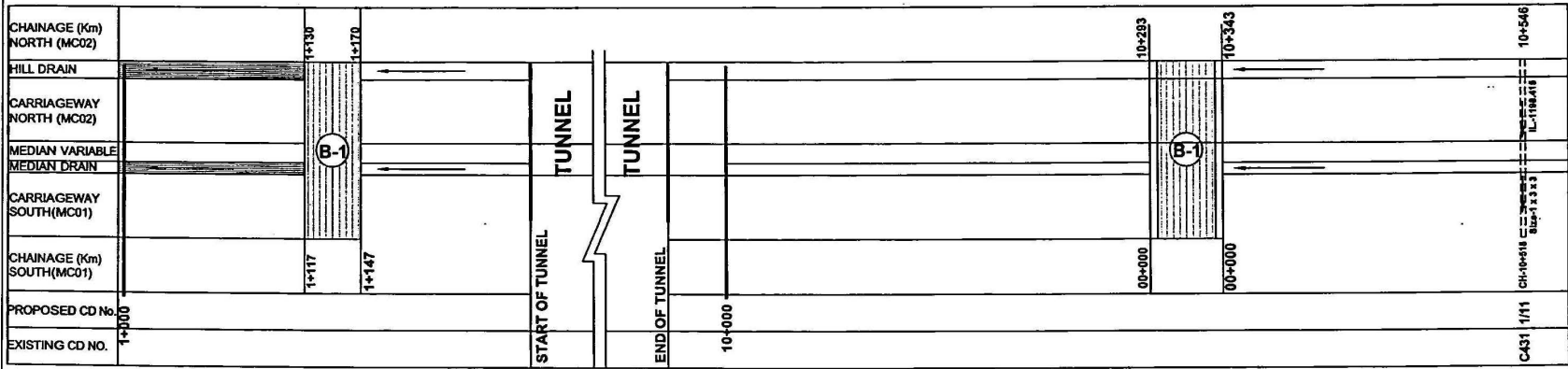
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CHAINAGE (Km) NORTH (MC02)		00+188	00+332	00+457	00+783	00+823	00+905
HILL DRAIN							
CARRIAGEWAY NORTH (MC02)		L-1174.048	L-1183.048	L-1191.448	L-1206.134	L-1211.048	L-1216.048
MEDIAN VARIABLE MEDIAN DRAIN							
CARRIAGEWAY SOUTH(MC01)		Size-1 x 3 x 2	Size-1 x 3 x 2	Size-1 x 3 x 2	Size-1 x 3 x 2	Size-1 x 3 x 2	Size-1 x 4 x 4
CHAINAGE (Km) SOUTH(MC01)	00+000	00+188	CH-00+337	CH-00+448	CH-00+748	CH-00+817	CH-00+887
PROPOSED CD No.		C183 1/1	C184 2/1	N1 3/1	C188 4/1	C186 5/1	C187 6/1
EXISTING CD NO.		C183	C184	N1	C188	C186	C187

UDHAMPUR ←

→ BANIHAL



Legends Abbreviations :-

C1,C2 etc.	=	Culvert Numbers
V1,V2 etc.	=	Viaduct Number
B1,B2 etc.	=	Bridge Numbers
N1,N2 etc.	=	New Culverts
IL	=	Invert Level
HL	=	High Level
CH	=	Chainage
EXISTING CULVERT LOCATIONS		
NEW CULVERT LOCATIONS		

Notes.

1. INVERT LEVEL OF CULVERT PERTAINS TO START OF CULVERT ON HILL SIDE ROAD (MC02)
2. THE EXACT LOCATION OF CULVERT TO BE DECIDED SO AS TO ACCOMMODATE STREAM ON UP STEAM AND THE STEAM ON DOWN STREAM SIDE.
3. WIDTH OF THE CATCHPIT IS 1.2M MINIMUM, IT SHALL BE INCREASED AS PER AVAILABLE SPACE, ENSURING COLLECTION OF STORM WATER FROM UPSTREAM.



REV.	DATE	PREP.	CHK.	APPROVED	DESCRIPTION

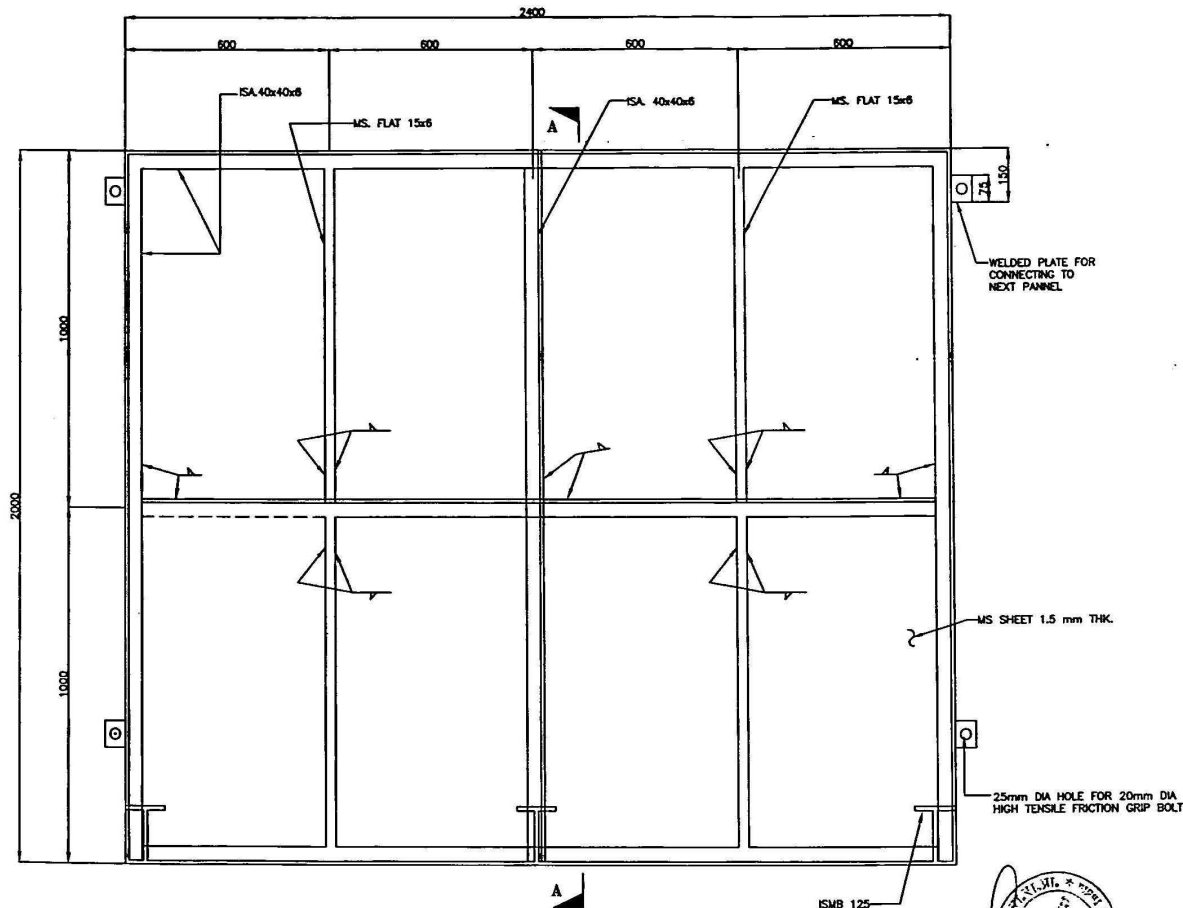
NATIONAL HIGHWAYS AUTHORITY OF INDIA
G-5 & 6, Sector 10, Dwarka, New Delhi.

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CHECKED BY	F.M. Aggarwal		
APPROVED BY	M.S. Kaur		
	Dr. Veggar		

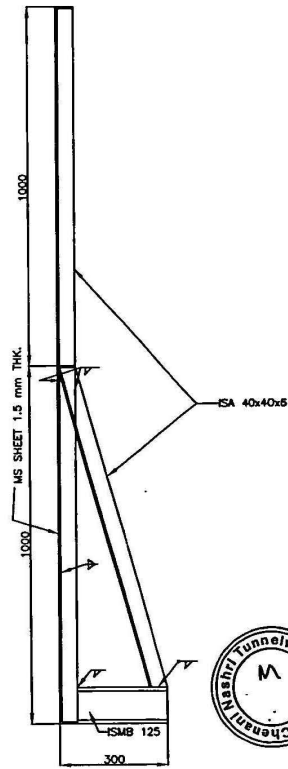
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PROJECT:- Four Laning of NH-1A From Udhampur To Banihal-Section Km.89 To Km.130 Package No. NS-99AJ/8K
DRAWING NO. LRG/0161/DPR/MDR-01
DATE:- January, 2007

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FRONT VIEW



SECTION AA

- NOTES :-**
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE
 2. DIMENSIONS ARE NOT TO BE SCALED, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
 3. SYNTHATIC ENAMEL PAINT TWO COAT OVER ONE COAT OF PRIMER TO BE PAINTED ON ALL METALLIC SURFACES.
 4. ISMB 125 SHALL BE FIXED WITH GROUND TO PREVENT MOVEMENT



REV.	DATE	PREP.	CHK.	APPROVED	DESCRIPTION



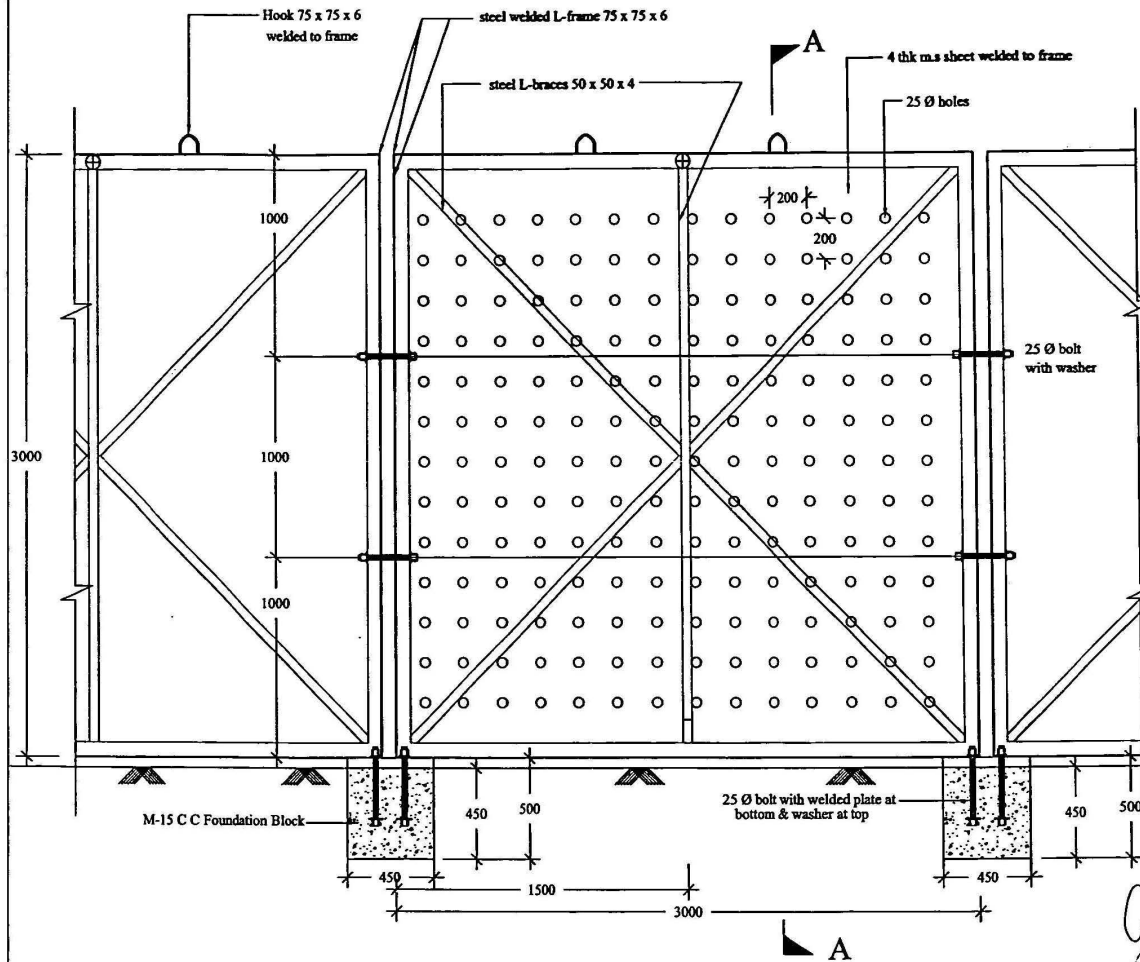
NATIONAL HIGHWAYS AUTHORITY OF INDIA
G-5 & 6, Sector 10, Dwarka, New Delhi.

NAME	SIGN
DRAWN BY: Ombir Teratia	
DESIGN BY: M.H.Paill	
CHECKED BY: M.S.Kawar	
APPROVED BY: Dig Vaggar	

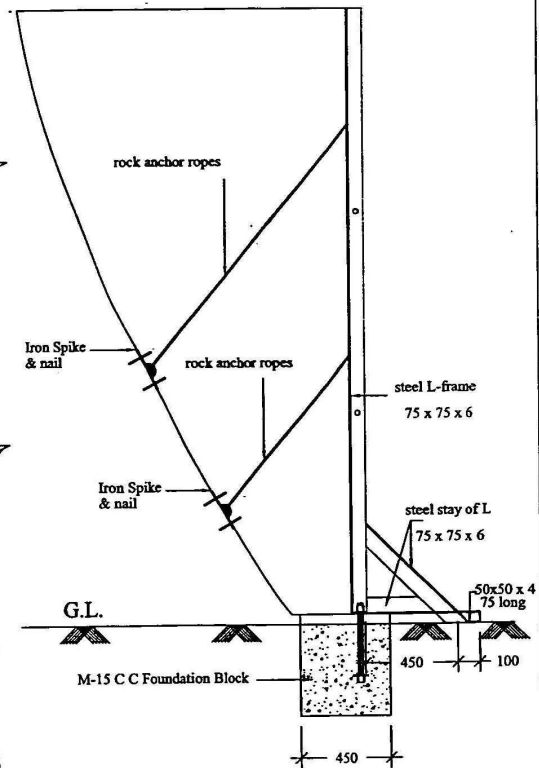
TITLE:-
TRAFFIC BARRICADE
SCALE:- NTS

PROJECT:- Four laning of NH-1A From Udhampur To Banihal-Section Km.89 To Km.130 Package No. NS-99A/J&K
DRAWING NO.: LBG/BQ167/DP/13/MISC/TB/02
DATE:- February, 2007

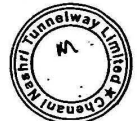
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LRP Consultants and in Association with:
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Consortium Pvt. Ltd.



FRONT ELEVATION



SECTION AT A-A



REV.	DATE	PREP.	CHK.	APPROVED	DESCRIPTION

<p>NATIONAL HIGHWAYS AUTHORITY OF INDIA G-5 & 6, Sector 10, Dwarka, New Delhi.</p>		NAME	SIGN	TITLE
		DRAWN BY		ROCK FALL BARRICADE
		DESIGN BY		
		CHECKED BY		
		APPROVED BY		SCALE: NTS

PROJECT-	Four laning of NH-1A From Udhampur To Barahal-Section Km.89 To Km.130 Package No. NS-99AJ&K
DRAWING NO.	LBG/BQ167/DP/13/MS/CFB/01
DATE-	February, 2007

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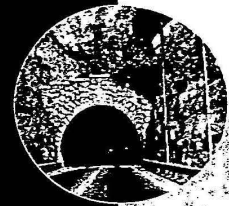
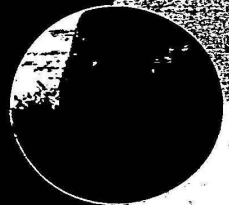
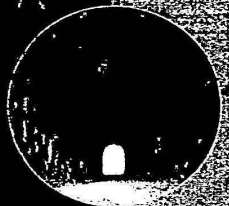
*Consultancy Services for Preparation of Feasibility Study and
Detail Project Report for Four Laning of the Section from
Udhampur to Banihal (km 66 to km 188
of NHETA (C-III/25/23)*

Detailed Project Report

Volume - IX : Drawings

Part-A : Road Works

Package No. - NS-99A/I&K (Km 89 - 130)



Submitted to:

General Manager (N-1)
National Highways Authority of India
G-5 & 6, Sector 10, Dwarka, New Delhi
Ph: 91-11-25074100
Fax: 91-11-25093507

Submitted by:



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and its Associates



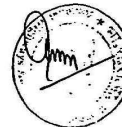
L&T Ramboll Consulting Engineers




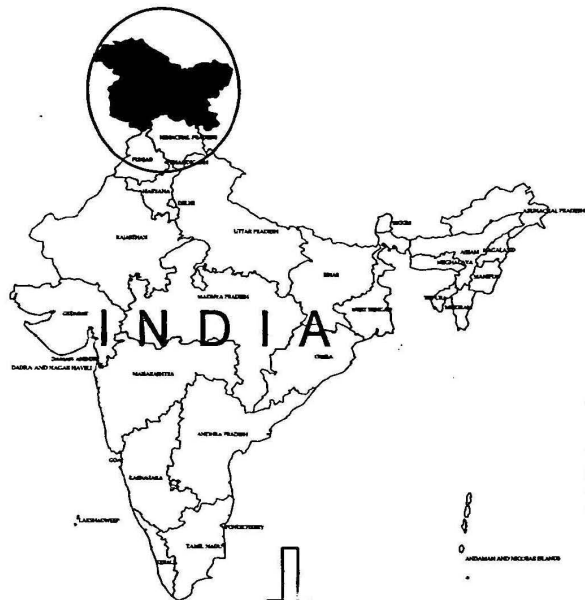
CONTENTS

SL. No.	DRAWING DESCRIPTION	No. OF SHEETS	DRAWING No.
1	INDEX MAP	1	LBG/BQ167/DPR/II/M-01
2	PROJECT LOCATION MAP	1	LBG/BQ167/DPR/II/LOC-01
3	BENCH MARK DETAILS	1	LBG/BQ167/DPR/II/BM-01
4	TYPICAL CROSS SECTIONS	7	LBG/BQ167/DPR/II/CS-01 TO 03
5	HORIZONTAL CURVE DETAILS (SOUTHBOUND)	1	LBG/BQ167/DPR/II/SB/HC-01
6	VERTICAL CURVE DETAILS (SOUTHBOUND)	1	LBG/BQ167/DPR/II/SB/VC-01
7	PLAN & PROFILE (SOUTHBOUND)	11	LBG/BQ167/DPR/II/SB/PP-001 TO 011
8	HORIZONTAL CURVE DETAILS (NORTH BOUND)	1	LBG/BQ167/DPR/II/NB/HC-01 (1 OF 4)
9	VERTICAL CURVE DETAILS (NORTH BOUND)	1	LBG/BQ167/DPR/II/NB/VC-01 (1 OF 1)
10	PLAN & PROFILE (NORTH BOUND)	11	LBG/BQ167/DPR/II/NB/PP-001 TO 011
11	DETAILS OF DRAINS & GUARD POST	1	LBG/BQ167/DPR/II/MISC-01
12	CHUTE DETAILS	1	LBG/BQ167/DPR/II/CD-01
13	DRAINAGE AT BRIDGES ADPROACH	1	LBG/BQ167/DPR/II/DB-01
14	BOX CULVERT (TYPE-A)	1	LBG/BQ167/DPR/II/CD-01
15	BOX CULVERT (TYPE-B)	1	LBG/BQ167/DPR/II/CD-02
16	BOX CULVERT (TYPE-C)	1	LBG/BQ167/DPR/II/CD-03
17	BOX CULVERT (TYPE-D)	1	LBG/BQ167/DPR/II/CD-04
18	CULVERT OUT FALL DETAILS	1	LBG/BQ167/DPR/II/OFD-01
19	DETAILS OF INDIVIDUAL CULVERTS	1	LBG/BQ167/DPR/II/DIC-01

SL. No.	DRAWING DESCRIPTION	No. OF SHEETS	DRAWING No.
20	RETAINING WALL STONE MASONRY(SM-1 &SM-2)	1	LBG/BQ167/DPR/II/RW-01
21	GABION WALL	1	LBG/BQ167/DPR/II/GB-01
22	GABION WIRE MESH SYSTEM	1	LBG/BQ167/DPR/II/GB-02
23	ROCK NET	1	LBG/BQ167/DPR/II/RN-01
24	ROCK SLOP PROTECTION WORKS	1	LBG/BQ167/DPR/II/SP-01
25	RCC RETAINING WALL	1	LBG/BQ167/DPR/II/RCC-01
26	DETAILS OF SUPERELEVATION	1	LBG/BQ167/DPR/II/SE-01
27	DETAILS OF PAVEMENT MARKING	1	LBG/BQ167/DPR/II/PM-01
28	DETAIL OF TRAFFIC SIGNS	1	LBG/BQ167/DPR/II/TS-01
29	KILOMETER STONE	1	LBG/BQ167/DPR/II/KS-01
30	OVERHEAD SIGN	1	LBG/BQ167/DPR/II/OH-01
31	DRAINAGE SCHEMATIC PLAN	1	LBG/BQ167/DPR/II/DR-01
32	TRAFFIC BARRICADE	1	LBG/BQ167/DPR/II/MISC/TB-02
33	ROCK FALL BARRICADE	1	LBG/BQ167/DPR/II/MISC/RFB/01



				 NATIONAL HIGHWAYS AUTHORITY OF INDIA G-5 & 6, Sector 10, Dwaraka, New Delhi.		<table border="1"> <tr><td>NAME</td><td>SRIN</td></tr> <tr><td>DRAWN BY</td><td>Shubh Tereja</td></tr> <tr><td>DESIGN BY</td><td>R.K.Chopra</td></tr> <tr><td>CHECKED BY</td><td>M.S.Ramesh</td></tr> <tr><td>APPROVED BY</td><td></td></tr> </table>		NAME	SRIN	DRAWN BY	Shubh Tereja	DESIGN BY	R.K.Chopra	CHECKED BY	M.S.Ramesh	APPROVED BY		TABLE OF CONTENTS SCALE:- NTS		PROJECT:- Four Lanes of NH-1A From Udhampur To Banihal-Section Km.89 To 130 Package No. NS-99A/J&K DRAWING NO. LBG/BQ167/DPR/II/CH-01 DATE:- February, 2007		THE Louis Berger Group , Inc., USA Engineers • Planners • Scientists • Economists In Joint Venture with: LRP Consultants and in Association with: L & T Ramboll Consulting Engineers	
NAME	SRIN																						
DRAWN BY	Shubh Tereja																						
DESIGN BY	R.K.Chopra																						
CHECKED BY	M.S.Ramesh																						
APPROVED BY																							
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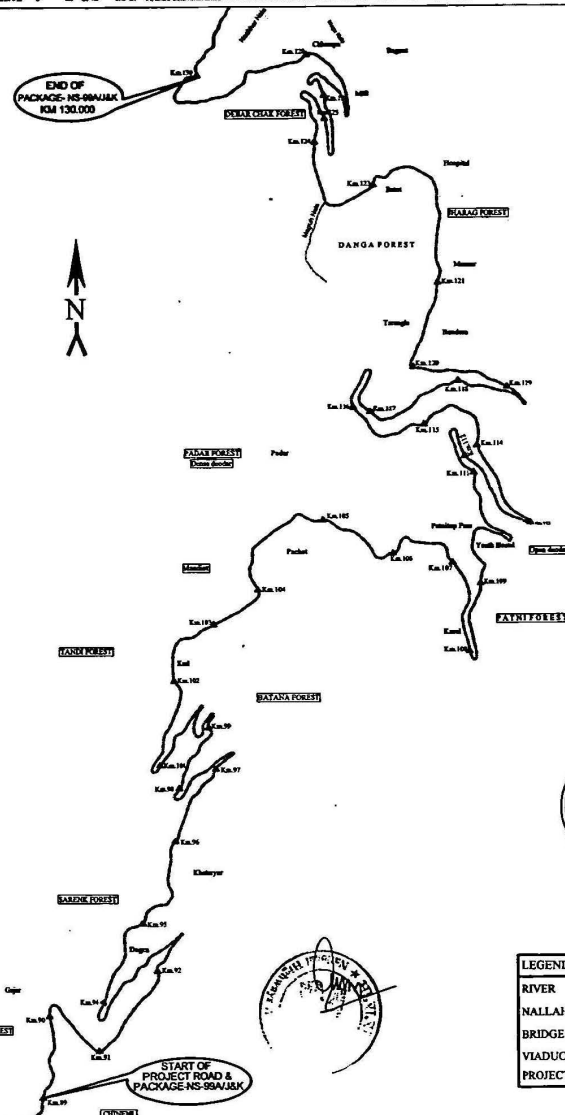
G-5 & 6, Sector 10, Dwarka, New Delhi.

NAME	SIGN	TITLE
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CHECKED BY M.S. Ramet		
APPROVED BY Dig Vaggar		

SCALE	TITLE
NTS	

PROJECT:-	Four lining of NH-1A From Udhampur To Banihal-Section Km.89 To Km.130 Package No. NS-99A/J&K
DRAWING NO.	LB/99/167/DR/0/04-01
DATE:-	March, 2007

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LEGENDS:-

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NALLAH/STREAMS	
BRIDGE	
VIADUCT	
PROJECT ROAD	