

Government of Jammu & Kashmir



JHELUM & TAWI FLOOD RECOVERY PROJECT

Jammu Province

**Consultancy Services for Preparing Detailed Project Report for the Road
works in Jammu and Kashmir**

Anji Panasa Road Phase I in Reasi District

(Length : 4.256 km)

(DRAWINGS)

(Detailed Project Report)

September 2019



ROAD DRAWINGS

≡ LIST OF DRAWINGS ≡

LIST OF DRAWINGS FOR ROAD


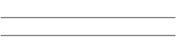








































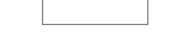

















Sl. No.	Descriptions	Drawing No.	No.of Sheet
(A)	ROAD WORKS		
1.	List of Drawings	EPTISA/JTFRP/DPR/J&K/LOD-01	01
2.	Legend, Abbreviations & General Notes	EPTISA/JTFRP/DPR/J&K/LEGEND-01	01
3.	Index Map	EPTISA/JTFRP/DPR/J&K/IM-01	01
4.	Typical Cross Section	EPTISA/JTFRP/DPR/J&K/TCS-01	01
5.	Strip Plan	EPTISA/JTFRP/DPR/J&K/SP-01	01
6.	Plan and Profile	EPTISA/JTFRP/DPR/J&K/PP-01 to 05	05
7.	Horizontal Alignment Report	EPTISA/JTFRP/DPR/J&K/HAR-01 to 03	03
8.	Vertical Alignment Report	EPTISA/JTFRP/DPR/J&K/VAR-01	01
9.	Signage Plan	EPTISA/JTFRP/DPR/J&K/SP-01 to 05	05
10.	Utility Relocation Plan-(For Electricity Department)	EPTISA/JTFRP/DPR/J&K/URP-01 to 05	05
11.	Utility Relocation Plan-(For Telephone Department)	EPTISA/JTFRP/DPR/J&K/URP-01 to 05	05
12.	Utility Relocation Plan-(For Water Department)	EPTISA/JTFRP/DPR/J&K/URP-01 to 05	05
13.	Tree Cutting	EPTISA/JTFRP/DPR/J&K/TC-01 to 05	05
14.	<i>Miscellaneous Drawings</i>		
i.)	Road Signs & Road Delineators – (3 Sheets)	EPTISA/JTFRP/DPR/J&K/MISC-01 to 03	03
ii.)	Typical Details of Distance Stone, Boundary Stone & Guard Post	EPTISA/JTFRP/DPR/J&K/MISC-02	01
iii.)	Typical Details of Metal Beam Crash Barrier	EPTISA/JTFRP/DPR/J&K/MISC-03	01
15.	<i>GIS Mapping</i>		01
16.	Details of PCC Retaining Wall	EPTISA/JTFRP/DPR/J&K/RW-01	01
17.	Dimension Detail of Breast Wall	EPTISA/JTFRP/DPR/J&K/BW/01	01
18.	<i>Culvert Drawings</i>		
i.)	Typical General Arrangement Drawing for Single Cell Box Culvert	EPTISA/JTFRP/DPR/J&K/BOX/GAD/01	01
ii.)	Typical General Arrangement Drawing for Single Cell Pipe Culvert	EPTISA/JTFRP/DPR/J&K/PIPE/GAD/01	01
iii.)	Typical General Arrangement Drawing for Double Cell Pipe Culvert	EPTISA/JTFRP/DPR/J&K/PIPE/GAD/02	01















<div>CLIENT :</div> <div></div> <div>Jhelum Tawi Flood Recovery Project 2nd Floor ERA Commercial Complex Rambagh Srinagar-190 009.</div>	<div>PROJECT :</div> <div>Consultancy Services for Preparing Detailed Project Report for the Road works in Jammu and Kashmir <u>(Anji Panasa Road)</u></div>	<div>DESIGN CONSULTANT:</div> <div>Eptisa Servicios de Ingenieria S.L. Unit 1203, 12th Floor, Tower 1, PS Srijan Corporate Park, Plot No. 2, Block EP & GP, Sector v, Salt Lake Kolkata - 700091, West Bengal Ph: 033-40347200 www.eptisa.com</div>	<table><tr><td></td><td></td><td></td><td>DRAWN BY : SD</td><td rowspan="4">TITLE : LIST OF DRAWING</td></tr><tr><td></td><td></td><td></td><td>DESIGNED BY : SCK/MM</td></tr><tr><td></td><td></td><td></td><td>APPROVED BY : KG</td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td>REV.</td><td>DATE</td><td>DESCRIPTION</td><td></td><td>DRG. NO. : EPTISA/JTFRP/DPR/J&K/LOD/01</td></tr><tr><td></td><td></td><td></td><td></td><td>REVISION : R-1</td></tr><tr><td></td><td></td><td></td><td></td><td>September 2019</td></tr></table>				DRAWN BY : SD	TITLE : LIST OF DRAWING				DESIGNED BY : SCK/MM				APPROVED BY : KG					REV.	DATE	DESCRIPTION		DRG. NO. : EPTISA/JTFRP/DPR/J&K/LOD/01					REVISION : R-1					September 2019
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				REVISION : R-1																															
				September 2019																															

LEGEND

A. PLAN

a) Existing

1	Security Room		31	Divider	
2	Pump house		32	Dusbin	
3	Solar		33	Earthen Road	
4	Rail trac		34	Bitumen Road	
5	Railing		35	Existing Center Line	
6	Telephone Pst tp.		36	Shed	
7	Under Construction Building		37	Sign Board	
8	Hoarding Post		38	Bedi	
9	Water Tank		39	Canal / River	
10	Wire Crossing Details		40	Drain	
11	P.c.c Road		41	Alart Post ap.	
12	Pucca House One Storied Commercial& Residential ph-i/c+r.		42	Compound wall	
13	Pucca House Two Storied Residential ph-ii-r.		43	Fencing	
14	Abandoned Building		44	Gate	
15	Damage Culvert		45	GPS Pillar gps.	
16	Damage Pipe Culvert		46	Reference Pillar	
17	Ep Box		47	Electric Post ep.	
18	Hotel		48	Guard Wall	
19	Retaining Wall		49	Temple / Mandir	
20	Ohe		50	Pond / Ditch / Water Logged	
21	Parking		51	Nala / Natural Stream	
22	Shoulder		52	Petrol Pump	
23	Pave Shoulder		53	Heigh Must Light hmt.	
24	Pavement		54	Water Tap tap.	
25	Pipe Culvert		55	Wildlife Sanctuary Sign Board	
26	Seating bench		56	H.F.L hfl.	
27	Showroom		57	Toilet	
28	Stair		58	Handpump/Tube well tw.	
29	Chamber		59	OFC	
30	Cover Drain		60	Kancha House Commercial kh-c.	

61	Kancha House Residential kh-r.	
62	Km Stone kmp.	
63	Lamp Post lp.	
64	Semi Pucca House Commercial sp-c.	
65	Semi Pucca House Residential sp-r.	
66	Survey Station stn.	
67	Pucca House One Storied Commercial ph-i-c.	
68	Pucca House One Storied Residential ph-i-r.	
69	Pucca House Two Storied Commercial ph-ii-c.	
70	Transformer tns.	
71	TREE 1 (Ã?300 TO Ã?600) t1	
72	TREE 2 (Ã?600 TO Ã?900) t2	
73	TREE 3 (Ã?900 TO Ã?1200) t3	
74	TREE 4 (Ã?1200 TO ABOVE) t4	

GENERAL NOTES

A) General

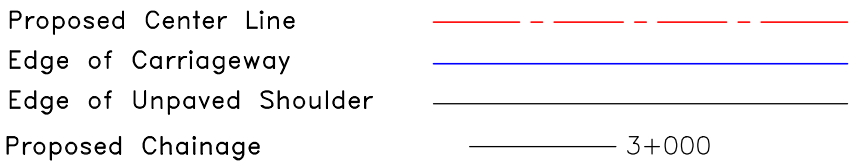
1. All angles are in degree (°) – minute (') – second (") format.
2. All chainages are in kilometres and all levels are in meters unless otherwise specified.
3. All the co-ordinates (X, Y) are with respect to GPS values (established for project road at 2 km interval).
4. Details shown in the plans are based on topographical survey carried out under the assignment,
5. The scale mentioned for all drawings is applicable for A2 sheet.

B) Geometric Design

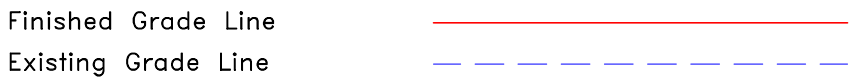
1. The pavements have been considered to be rotated about the Carriageway Center line to attain requisite amount of superelevation.

b) Proposed

A. PLAN



B. PROFILE



CLIENT :



Jhelum Tawi Flood Recovery Project
2nd Floor ERA Commercial Complex Rambagh
Srinagar-190 009.

PROJECT :

Consultancy Services for Preparing Detailed Project Report
for the Road works in Jammu and Kashmir
(Anji Panasa Road)

DESIGN CONSULTANT:



Eptisa Servicios de Ingenieria S.L.
Unit 1203, 12th Floor, Tower 1, PS Srijan
Corporate Park, Plot No. 2, Block EP & GP,
Sector v, Salt Lake Kolkata - 700091,
West Bengal
Ph: 033-40347200
www.eptisa.com

REV.	DATE	DESCRIPTION

DRAWN BY : SD

DESIGNED BY : SCK/MM

APPROVED BY : KG

SCALE : N.T.S

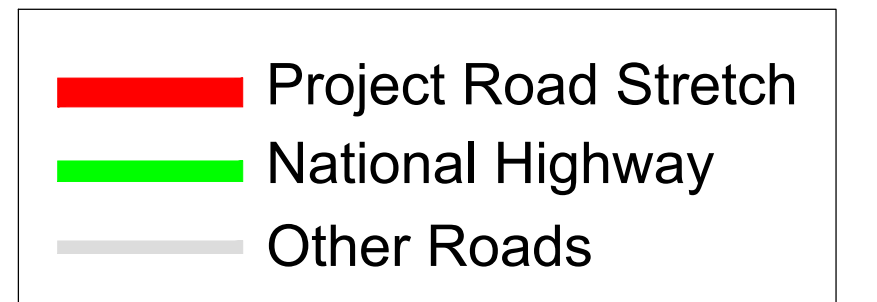
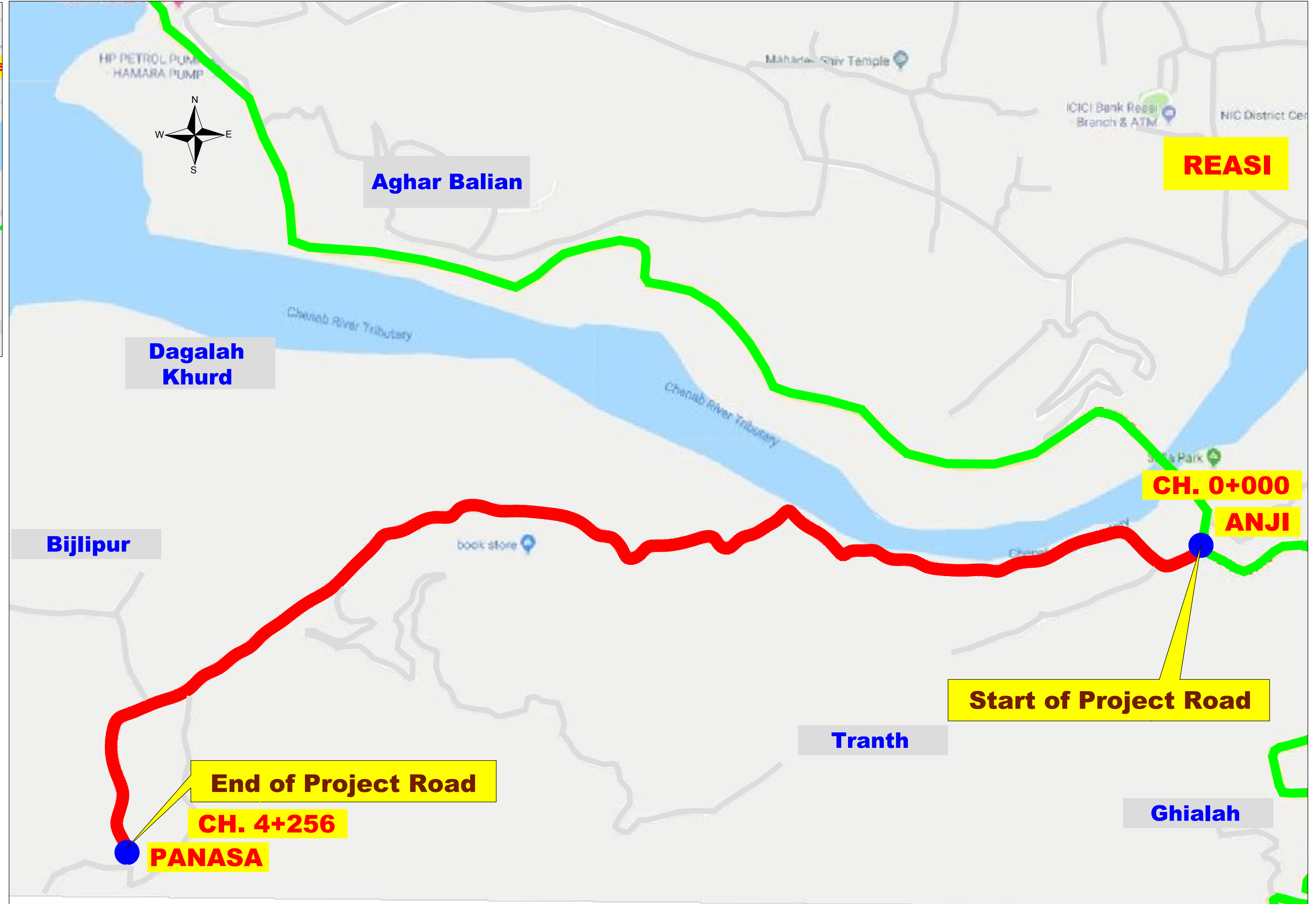
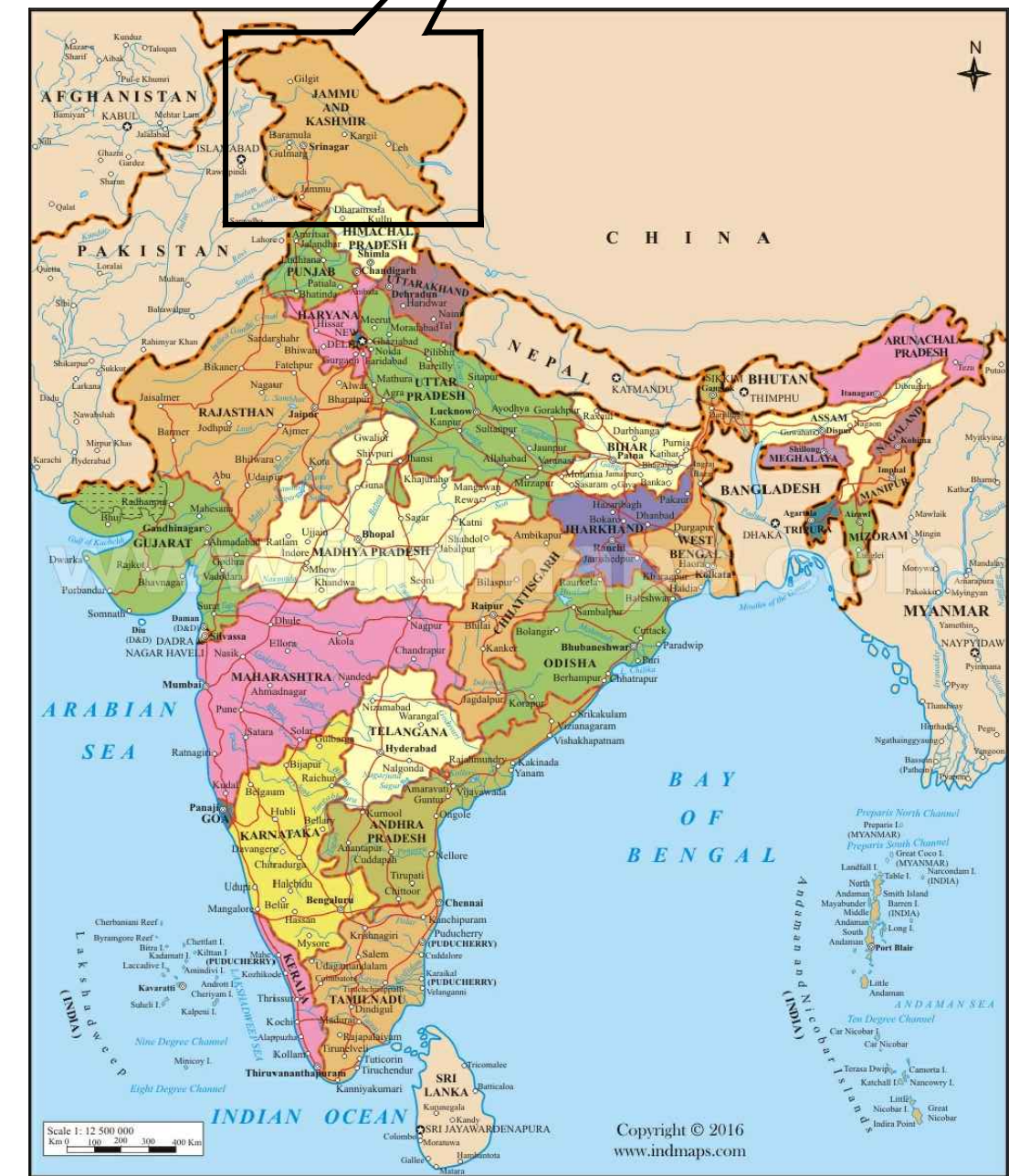
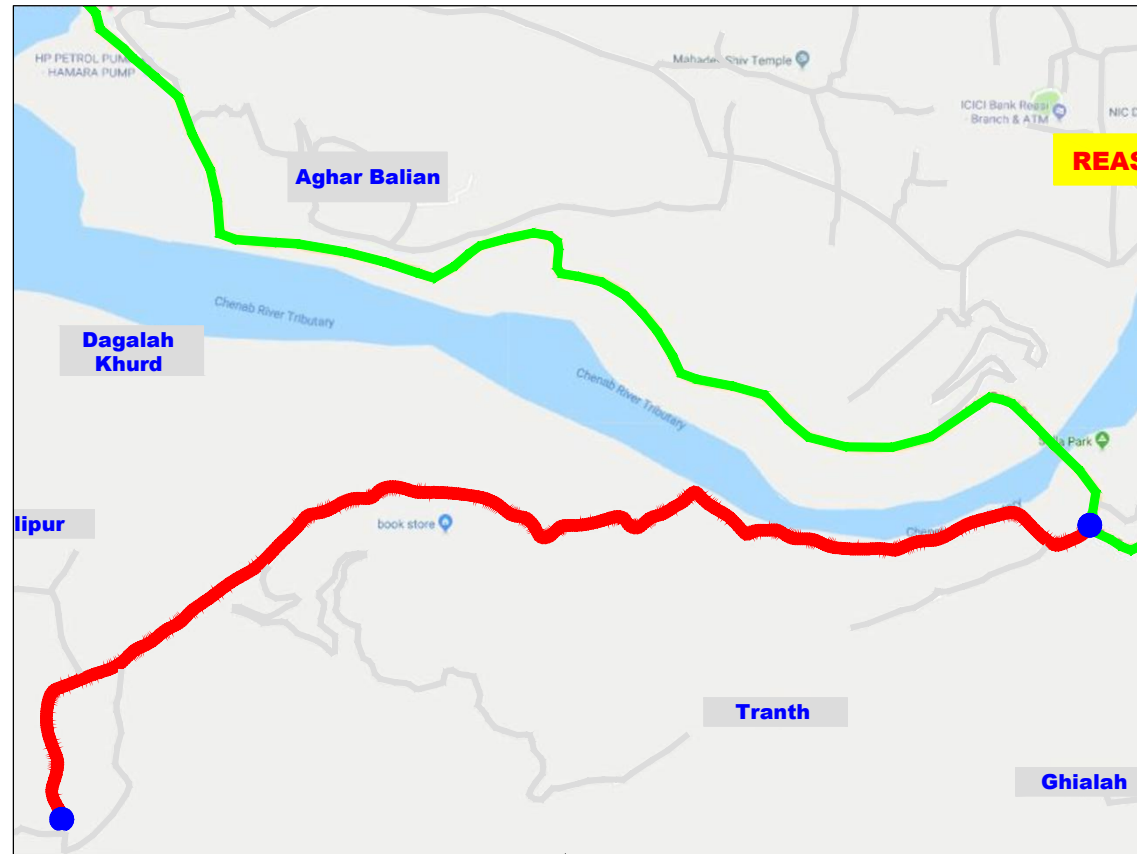
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LEGEND, ABBREVIATIONS & GENERAL NOTES

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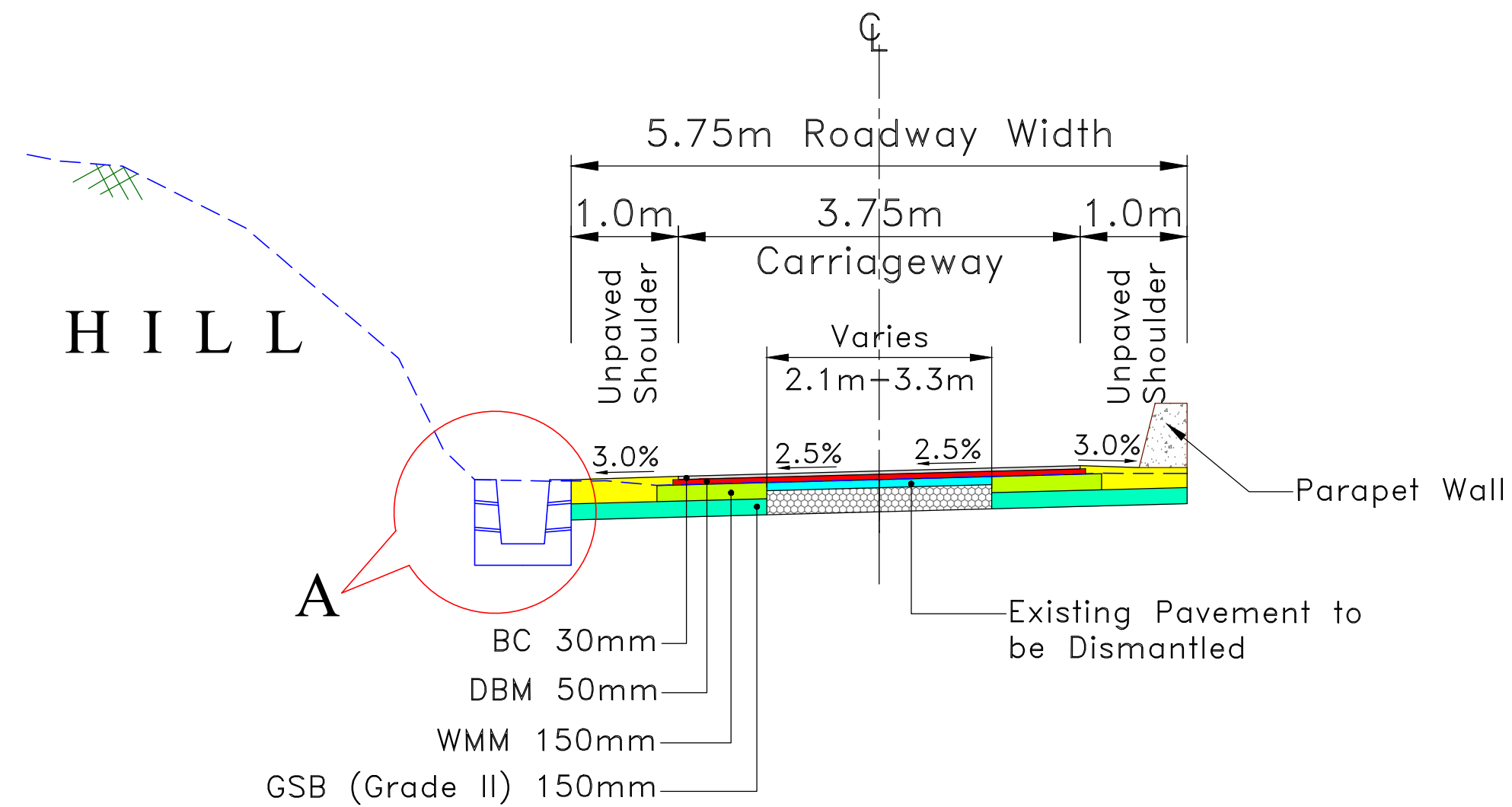
REVISION : R-1

September 2019

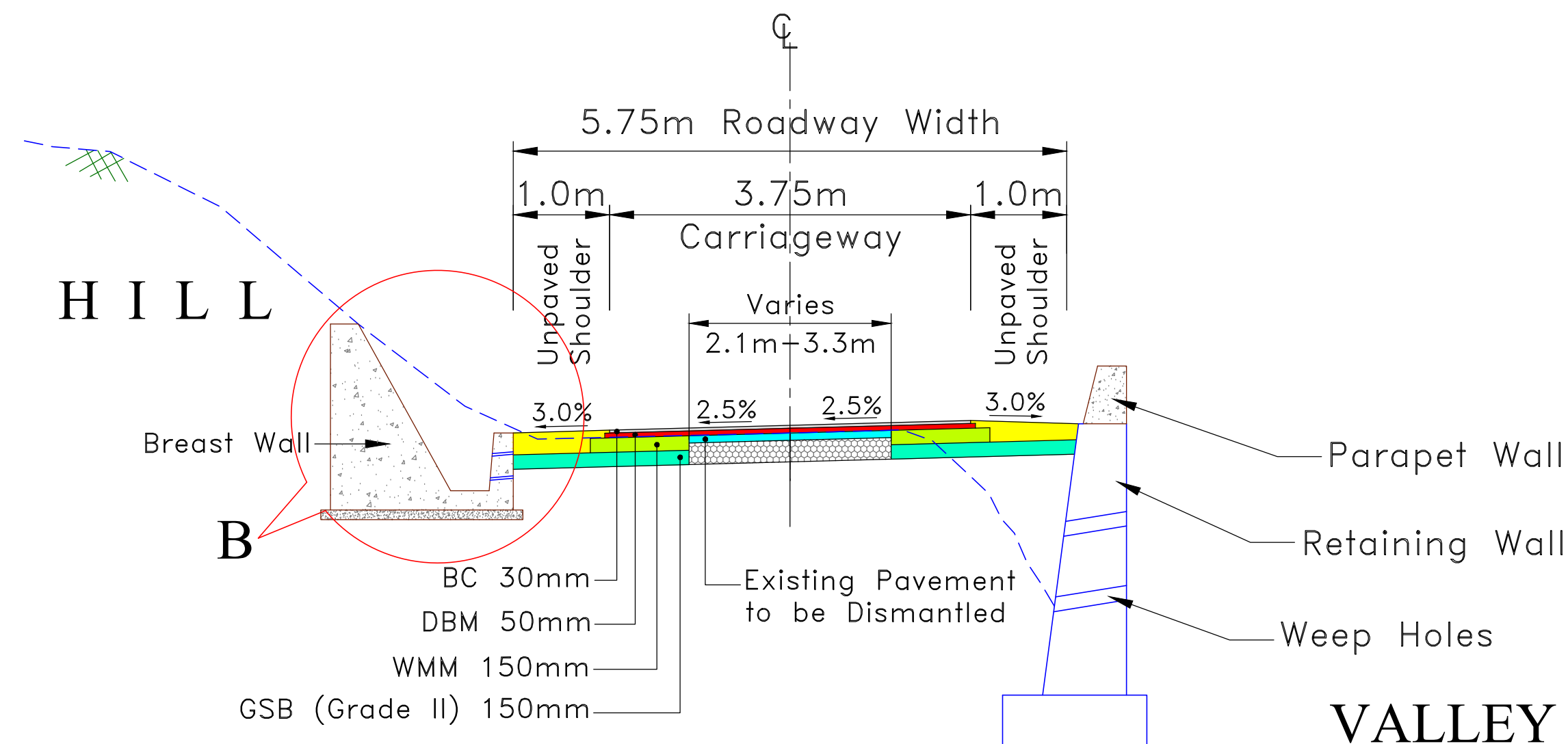


<div>CLIENT :</div> <div></div> <div>Jhelum Tawi Flood Recovery Project</div> <div>2nd Floor ERA Commercial Complex Rambagh</div> <div>Srinagar-190 009.</div>	<div>PROJECT :</div> <div>Consultancy Services for Preparing Detailed Project Report</div> <div>for the Road works in Jammu and Kashmir</div> <div><u>(Anji Panasa Road)</u></div>	<div>DESIGN CONSULTANT:</div> <div></div> <div>Eptisa Servicios de Ingenieria S.L.</div> <div>Unit 1203, 12th Floor, Tower 1, PS Srijan</div> <div>Corporate Park, Plot No. 2, Block EP & GP,</div> <div>Sector v, Salt Lake Kolkata - 700091,</div> <div>West Bengal</div> <div>Ph: 033-40347200</div> <div>www.eptisa.com</div>	<table><tr><td></td><td></td><td></td><td>DRAWN BY :</td><td>SD</td><td rowspan="3">TITLE :</td><td rowspan="3">Index Map</td></tr><tr><td></td><td></td><td></td><td>DESIGNED BY :</td><td>SCK/MM</td></tr><tr><td></td><td></td><td></td><td>APPROVED BY :</td><td>KG</td></tr><tr><td>REV.</td><td>DATE</td><td>DESCRIPTION</td><td>SCALE :</td><td>N.T.S</td><td>DRG. NO. :</td><td>EPTISA/JTRFP/DPR/J&K/IM/01</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td>REVISION : R-1</td><td>September 2019</td></tr></table>				DRAWN BY :	SD	TITLE :	Index Map				DESIGNED BY :	SCK/MM				APPROVED BY :	KG	REV.	DATE	DESCRIPTION	SCALE :	N.T.S	DRG. NO. :	EPTISA/JTRFP/DPR/J&K/IM/01						REVISION : R-1	September 2019
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					REVISION : R-1	September 2019																												

≡ TYPICAL CROSS SECTIONS ≡



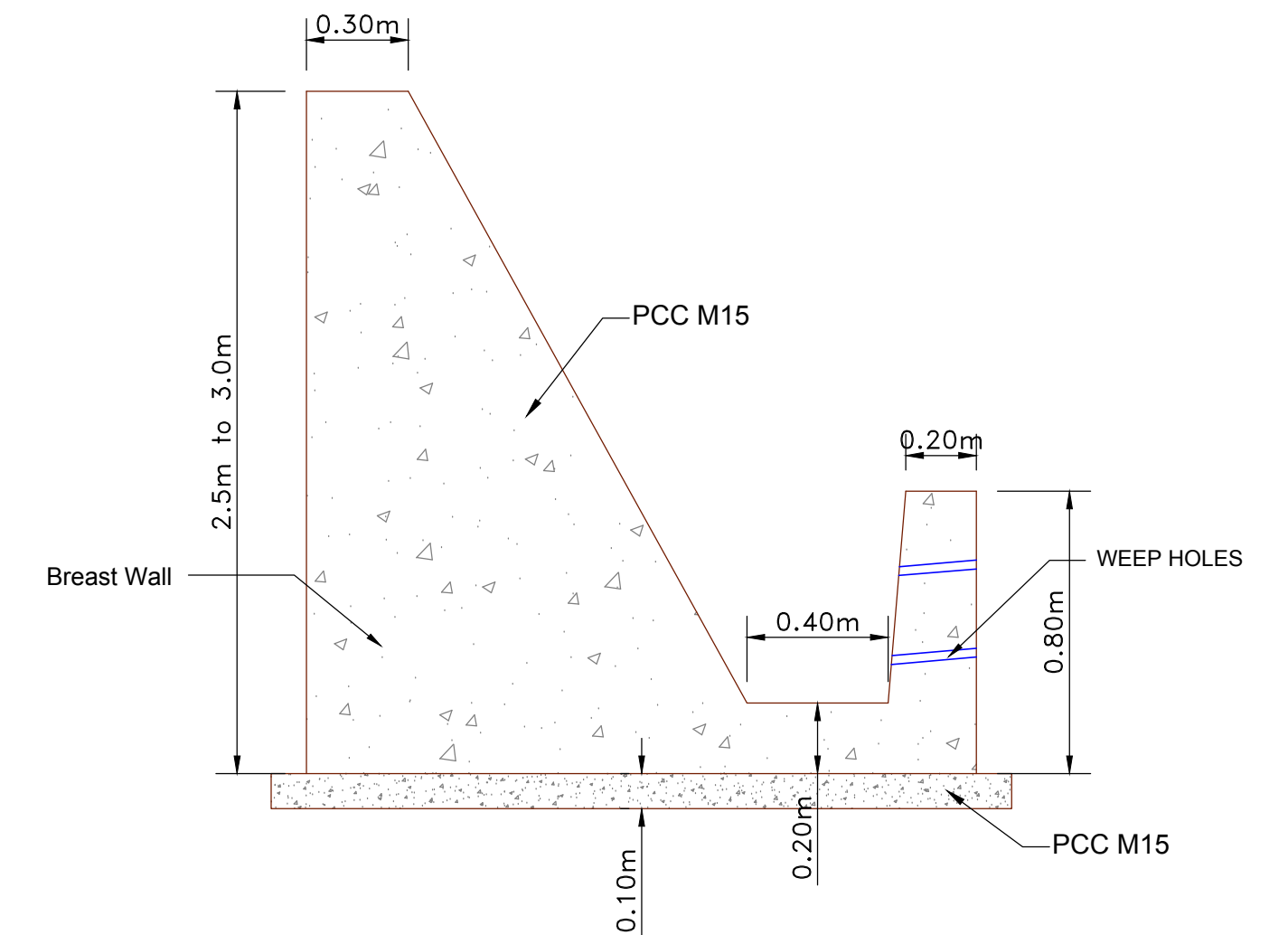
**TYPE - 1 : TYPICAL CROSS SECTION OF SINGLE LANE CARRIAGEWAY
AT NEW CONSTRUCTION WITH LEFT SIDE DRAIN**



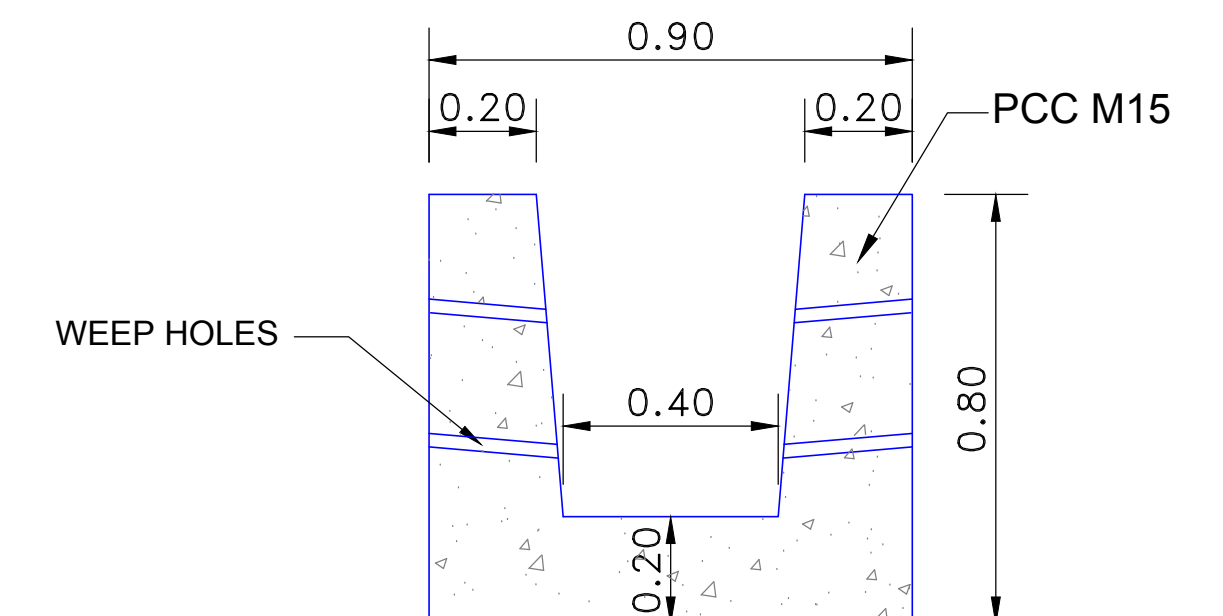
**TYPE - 2 : TYPICAL CROSS SECTION OF SINGLE LANE CARRIAGEWAY AT NEW CONSTRUCTION
WITH DRAIN & BREAST WALL AT LEFT SIDE & RETAINING WALL AT RIGHT SIDE**

Note:

1. PCC upto 75mm thick shall be done by DBM.
2. PCC from 75mm to 150mm thick shall be done by WMM after dismantling Existing Bituminous Surface.
3. PCC of thickness more than 150mm shall be done GSB after dismantling Existing Bituminous Surface.
4. PCC shall be decided based on difference in level of FRL and existing level and/or level after dismantling and recompaction of Existing Bituminous Surface.

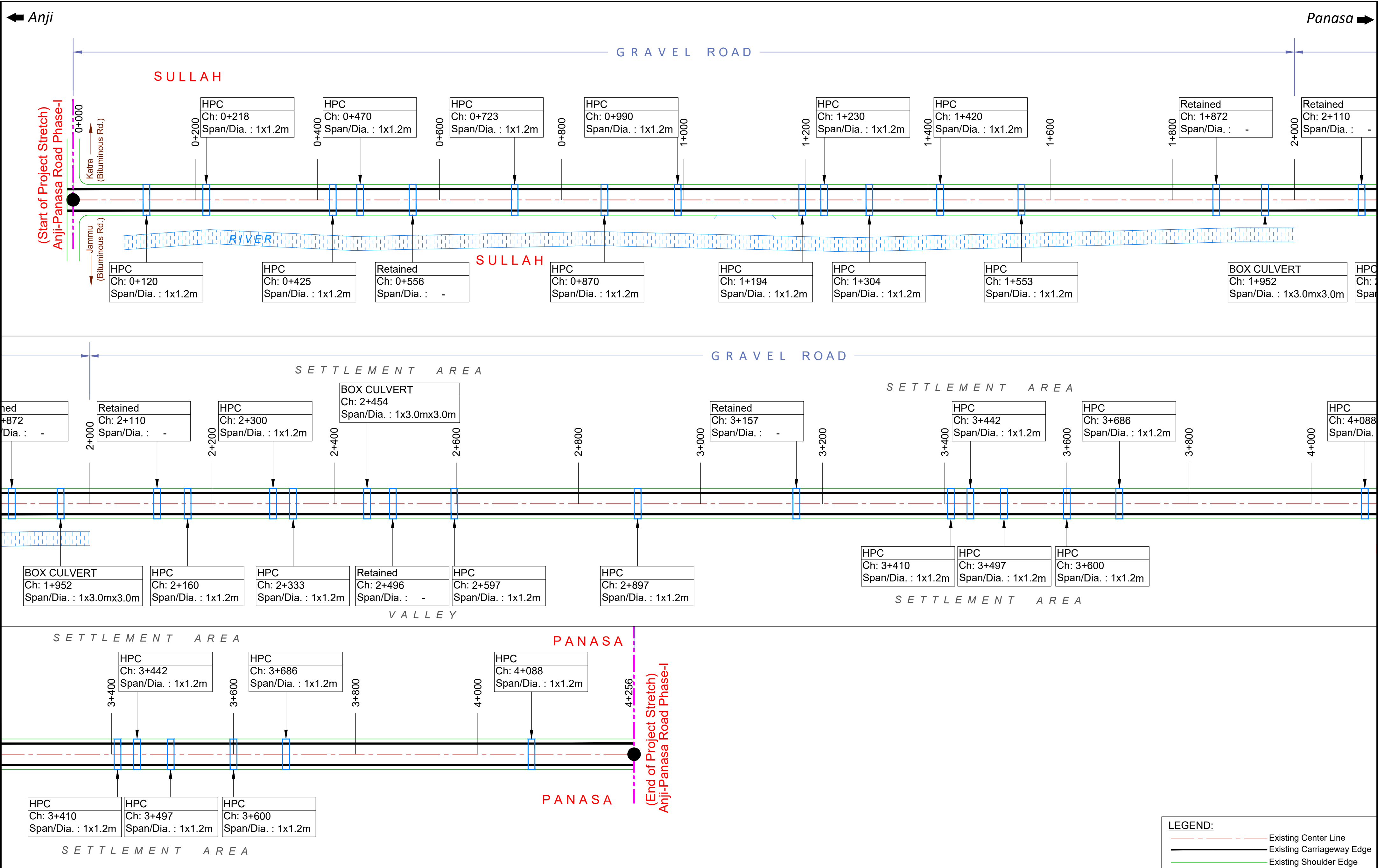


**Detail -B
Typical Drain with Breast Wall**

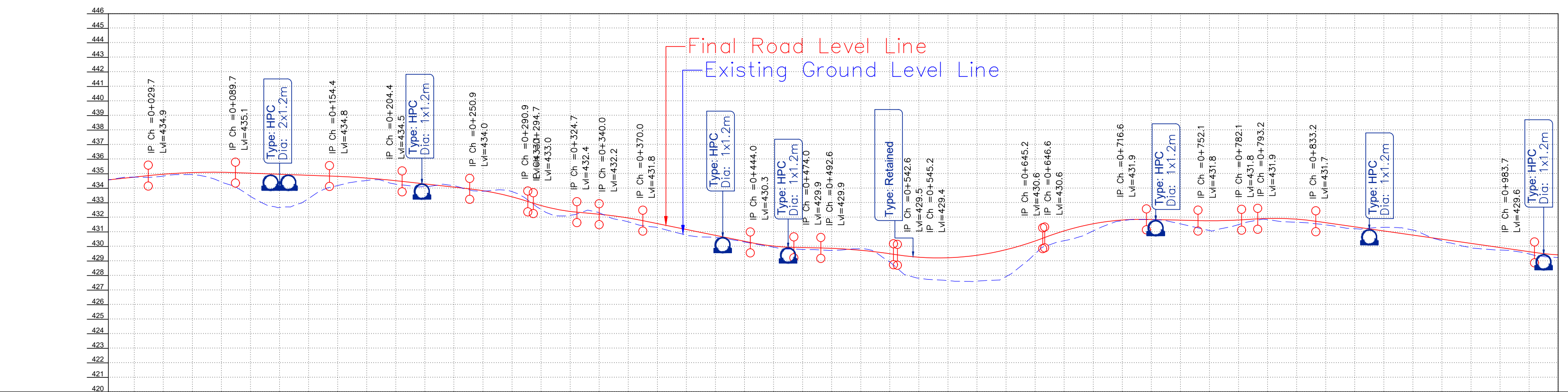


**Detail -A
Typical Lined Drain**

CLIENT : <div><p>Jhelum Tawi Flood Recovery Project 2nd Floor ERA Commercial Complex Rambagh Srinagar-190 009.</p></div>	PROJECT : Consultancy Services for Preparing Detailed Project Report for the Road works in Jammu and Kashmir <u>(Anji Panasa Road)</u>	DESIGN CONSULTANT: <div><p>Eptisa Servicios de Ingenieria S.L. Unit 1203, 12th Floor, Tower 1, PS Srijan Corporate Park, Plot No. 2, Block EP & GP, Sector v, Salt Lake Kolkata - 700091, West Bengal Ph: 033-40347200 www.eptisa.com</p></div>				DRAWN BY : SD	TITLE : TYPICAL CROSS SECTION	
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						APPROVED BY : KG		DRG. NO. : EPTISA/JTFRP/DPR/J&K/TCS/01
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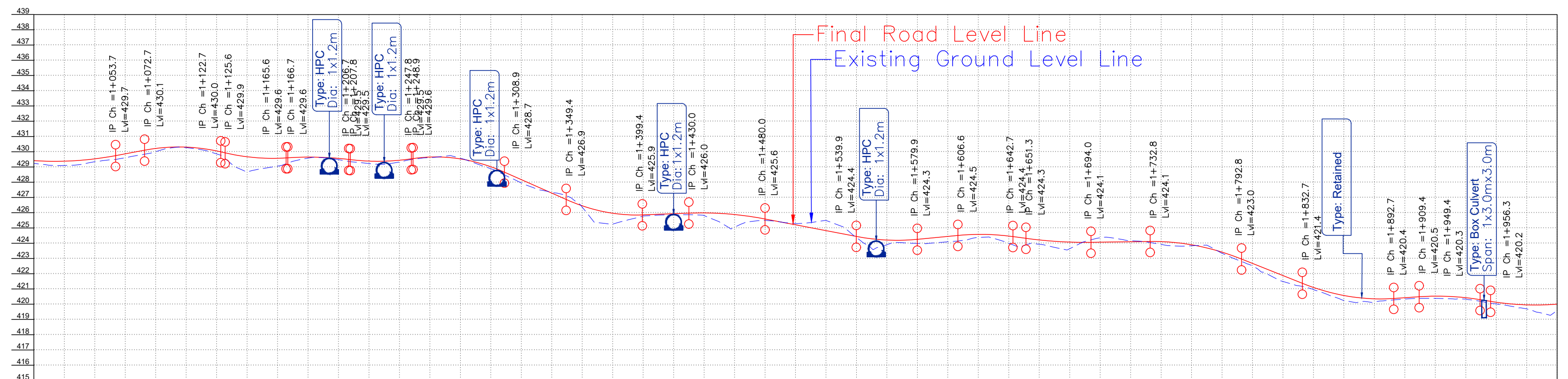


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						APPROVED BY : KG		DRG. NO. : EPTISA/JTFRP/DPR/J&K/SP/01
						LONG SCALE:  TRANS SCALE: 		
			REV.	DATE	DESCRIPTION	REVISION : R-1		



CHAINAGE (M)	EXISTING ROAD/GROUND LEVEL (M)	FINISHED ROAD LEVEL (M)
0+000	434.554	434.556
0+020	434.765	434.766
0+040	434.838	434.963
0+060	434.936	435.077
0+080	434.433	435.097
0+100	433.442	435.036
0+120	432.683	434.964
0+140	433.294	434.892
0+160	434.184	434.817
0+180	434.541	434.698
0+200	434.278	434.519
0+220	434.113	434.298
0+240	434.173	434.075
0+260	433.802	433.831
0+280	433.770	433.410
0+300	432.546	432.812
0+320	432.142	432.406
0+340	432.316	432.213
0+360	431.694	431.955
0+380	431.301	431.569
0+400	430.784	431.165
0+420	430.620	430.760
0+440	430.308	430.355
0+460	429.951	430.027
0+480	429.793	429.923
0+500	429.727	429.870
0+520	429.838	429.735
0+540	428.929	429.500
0+560	427.813	429.259
0+580	427.653	429.221
0+600	427.617	429.395
0+620	427.929	429.779
0+640	429.494	430.374
0+660	430.394	431.072
0+680	431.071	431.560
0+700	431.770	431.818
0+720	431.843	431.851
0+740	431.555	431.804
0+760	431.095	431.766
0+780	431.502	431.818
0+800	431.838	431.925
0+820	431.664	431.875
0+840	431.484	431.634
0+860	431.218	431.349
0+880	431.317	431.065
0+900	431.126	430.780
0+920	430.394	430.495
0+940	429.911	430.211
0+960	429.753	429.926
0+980	429.492	429.642
1+000	429.233	429.420

1. Horizontal Curve Details as referred in dwg no.EPTISA/JTFRP/DPR/J&K/HAR/01 to 03



Note:

CLIENT :

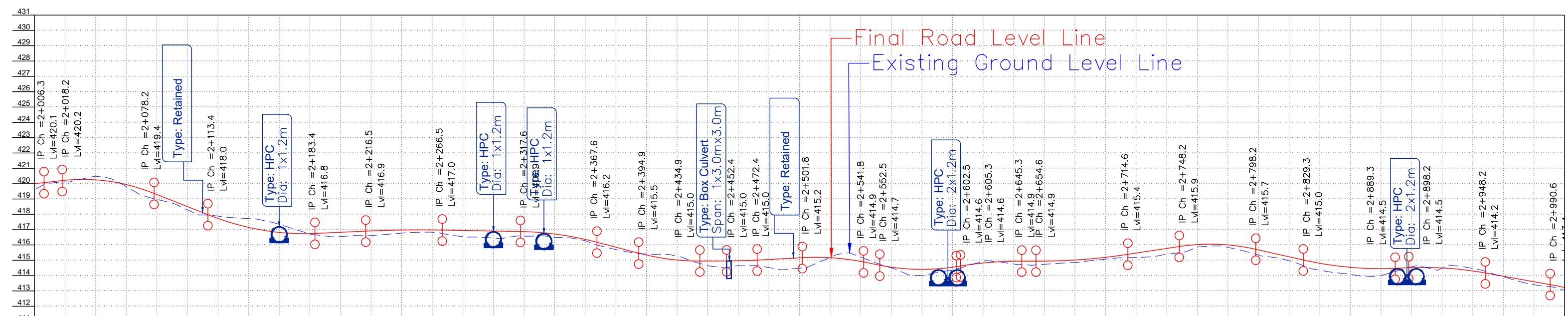
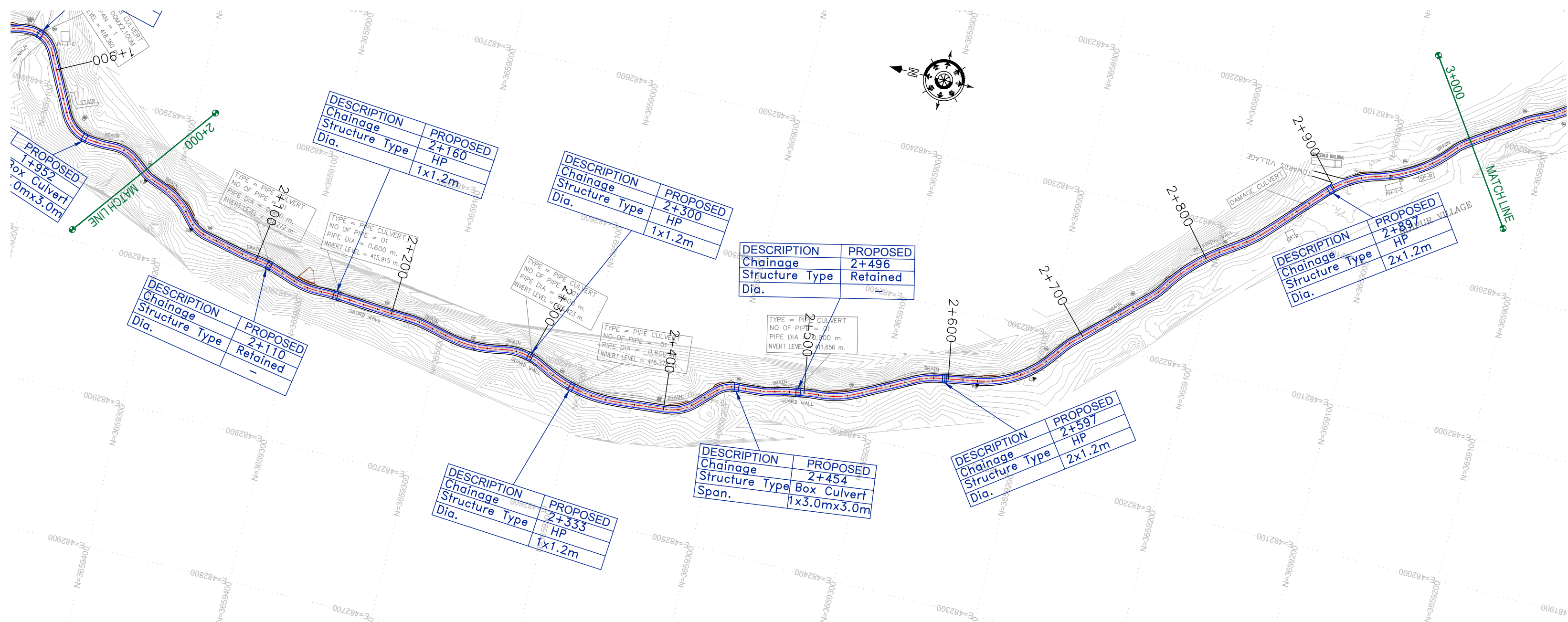


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DESIGN CONSULTANT:

eptisa **Eptisa Servicios de Ingenieria S.L.**
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Ph: 033-40347200
www.eptisa.com

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			APPROVED BY : KG		DRG. NO. : EPTISA/JTFRP/DPR/J&K/PP/02
			SCALE : HOR 1:2500 VER 1:250		REVISION : R-1
REV.	DATE	DESCRIPTION		September 2019	



FINISHED ROAD LEVEL (M)	420.007	420.224	420.252	419.942	419.293	418.504	417.729	417.150	416.821	416.743	416.829	416.918	416.974	416.979	416.946	416.910	416.873	416.717	416.365	415.857	415.342	415.019	414.952	414.553	414.408	414.548	414.820	414.939	414.944	415.019	415.197	415.473	415.776	416.026	416.002	415.678	415.230	414.807	414.543	414.456	414.522	414.502	414.305	413.962	413.603	413.225																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
EXISTING ROAD/GROUND LEVEL (M)	419.587	420.116	420.486	419.816	418.977	418.285	417.883	417.729	417.343	416.715	416.552	416.617	416.918	416.834	416.543	416.450	416.574	416.502	416.278	415.698	415.409	415.267	414.654	414.652	414.526	414.485	415.191	415.208	414.501	414.006	414.352	414.925	414.761	414.740	414.863	415.081	415.185	415.392	415.863	415.845	415.340	414.972	414.354	414.079	413.999	414.576	414.486	414.466	413.921	413.413	413.046																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													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1. Horizontal Curve Details as referred in dwg no.EPTISA/JTFRP/DPR/J&K/HAR/01 to 03



**JEHLUM & TAWI
FLOOD RECOVERY PROJECT**

Consultancy Services for Preparing Detailed Project Report
for the Road works in Jammu and Kashmir
(Anji Panasa Road)

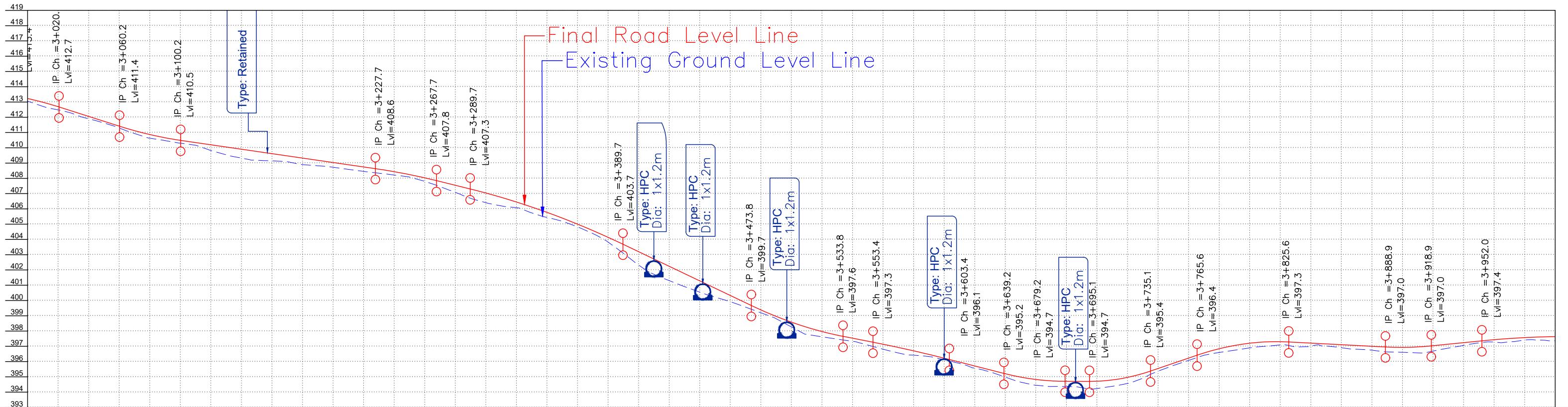
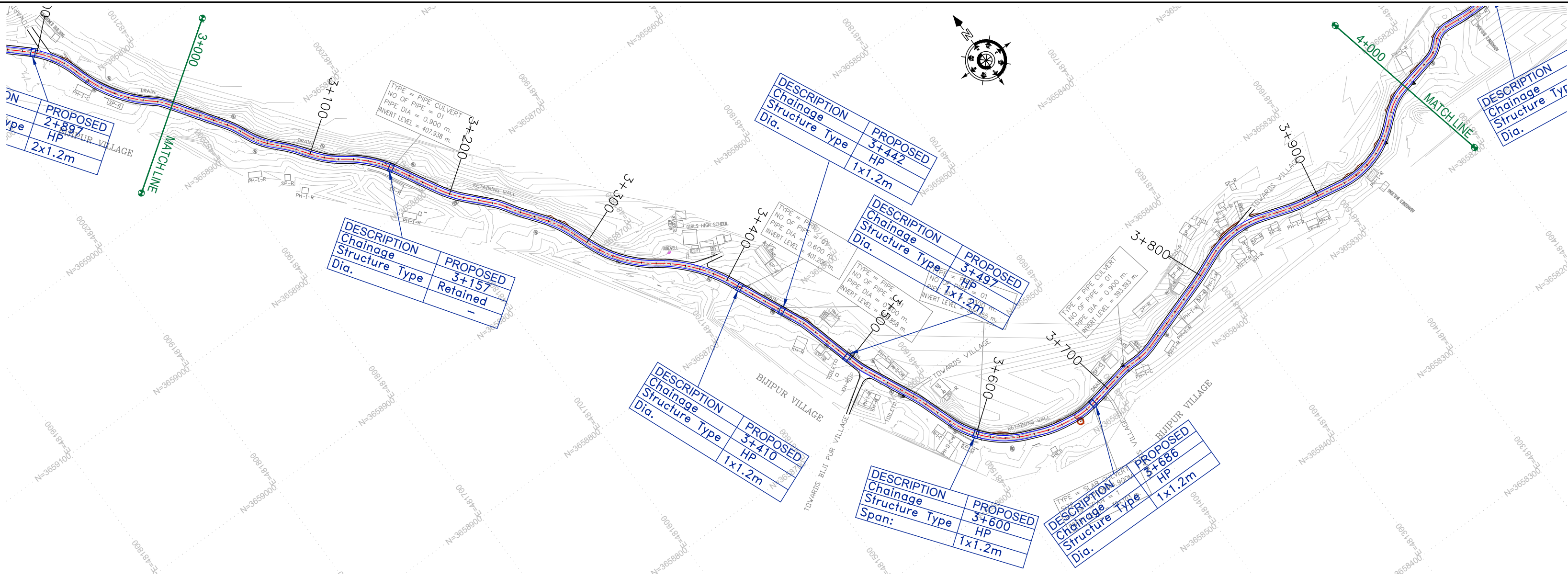
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REV.	DATE	DESCRIPTION

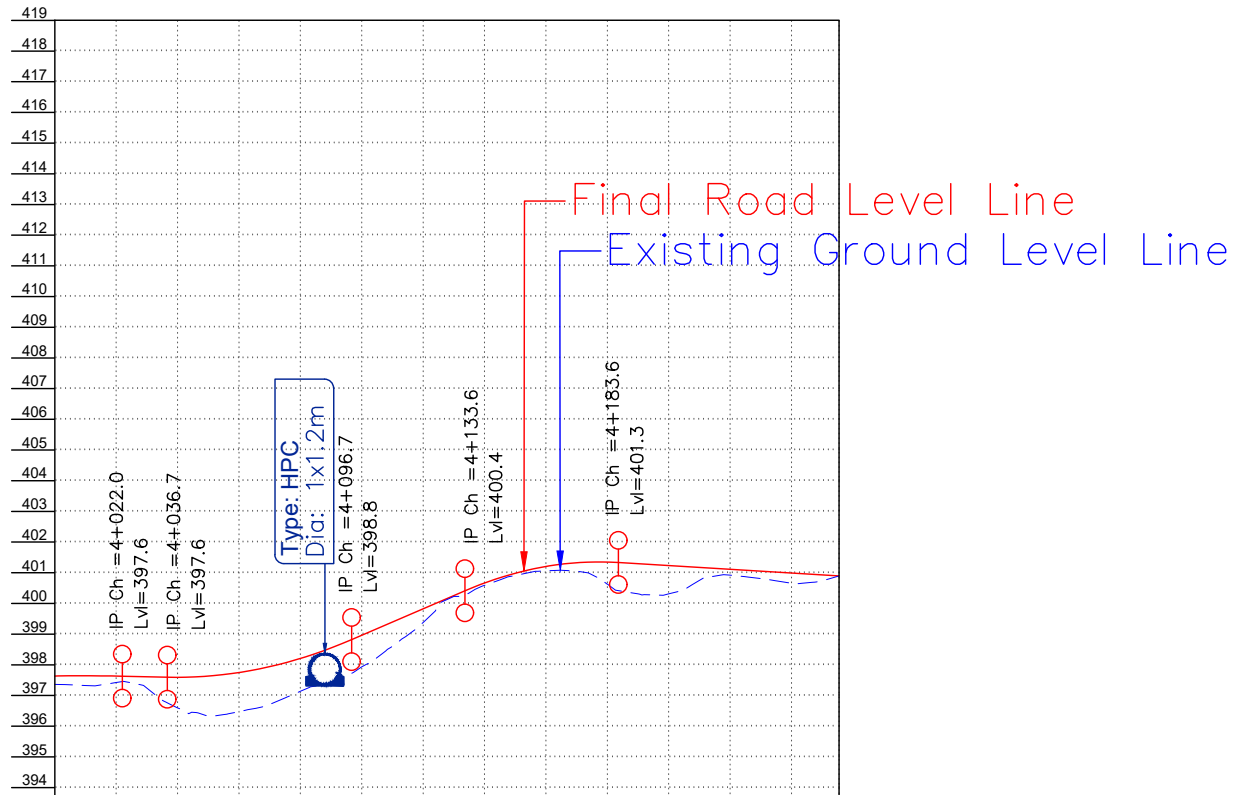
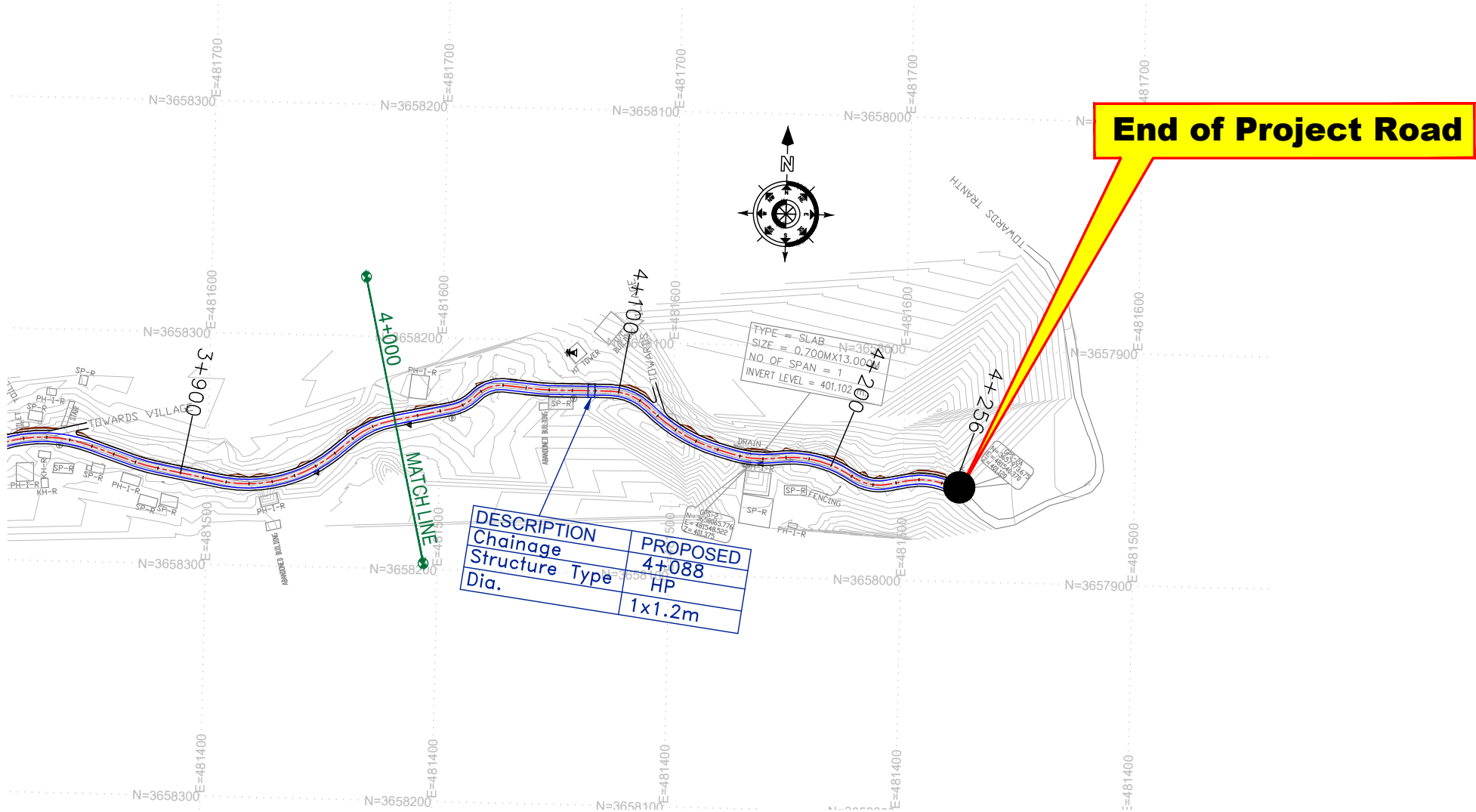
September 2019

← Anji

Panasa →



FINISHED ROAD LEVEL (M)	413.225	412.687	412.052	411.416	410.865	410.486	410.195	409.905	409.614	409.323	409.033	408.742	408.432	408.028	407.542	407.036	406.449	405.770	404.999	404.135	403.192	402.237	401.283	400.328	399.383	398.580	397.965	397.528	397.133	396.702	396.223	395.713	395.202	394.829	394.708	394.713	394.963	395.546	396.228	396.839	397.201	397.301	397.208	397.105	397.001	396.929	397.036	397.237	397.431	397.567	397.634
EXISTING ROAD/GROUND LEVEL (M)	413.046	412.481	411.896	411.294	410.627	410.298	409.818	409.328	409.141	408.898	408.722	408.450	408.214	407.999	407.076	406.404	406.077	405.439	404.818	403.824	402.324	401.300	400.547	399.920	399.195	398.269	397.621	397.325	396.811	396.417	396.129	395.568	394.983	394.365	394.564	395.372	396.075	396.595	396.893	397.091	397.011	396.907	396.745	396.608	396.689	397.058	397.275	397.412	397.358		
VERTICAL ALIGNMENT	+3.85% L=177.123 -2.96% L=296.44 -4.00% L=49.009 -1.453% L=127.458 G= -2.469% L=22.037 G= -4.772% L=84.922 +3.40% L=63.612 G= -2.554% L=153.67 +2.62% L=106.701 +1.954% L=102.201 G= -0.516% L=19.754 +1.936% L=30.477 G= -0.516% L=19.																																																		



FINISHED ROAD LEVEL (M)	397.634	397.631	397.591	397.748	398.206	398.962	399.823	400.664	401.202	401.348	401.232	401.110	400.988	400.893
EXISTING ROAD/GROUND LEVEL (M)	397.358	397.422	396.593	396.474	397.137	397.935	399.380	400.587	401.064	400.628	400.308	400.918	400.656	400.892
VERTICAL ALIGNMENT	-0.223% L= 70.000 -1.214% L= 70.000 -0.669% L= 70.000 -0.506% L= 36.907 G= -0.616% L= 71.916													
HORIZONTAL ALIGNMENT	R= 26.000 L= 18.000 R= 73.419 L= 226.187 R= 113.370 L= 139.493 R= 109.510 L= 109.270 R= 42.200 L= 14.563 D= 4.208													
CHAINAGE (M)	4+000	4+020	4+040	4+060	4+080	4+100	4+120	4+140	4+160	4+180	4+200	4+220	4+240	4+256

Note:
1. Horizontal Curve Details as referred in dwg no.EPTISA/JTFRP/DPR/J&K/HAR/01 to 03

CLIENT :	 Jhelum Tawi Flood Recovery Project 2nd Floor ERA Commercial Complex Rambagh Srinagar-190 009.	PROJECT :	Consultancy Services for Preparing Detailed Project Report for the Road works in Jammu and Kashmir <u>(Anji Panasa Road)</u>	DESIGN CONSULTANT:	 Eptisa Servicios de Ingenieria S.L. Unit 1203, 12th Floor, Tower 1, PS Srijan Corporate Park, Plot No. 2, Block EP & GP, Sector v, Salt Lake Kolkata - 700091, West Bengal Ph: 033-40347200 www.eptisa.com	<table><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td>REV.</td><td>DATE</td><td>DESCRIPTION</td></tr></table>													REV.	DATE	DESCRIPTION	<table><tr><td>DRAWN BY :</td><td>SD</td></tr><tr><td>DESIGNED BY :</td><td>SCK/MM</td></tr><tr><td>APPROVED BY :</td><td>KG</td></tr><tr><td>SCALE :</td><td>HOR 1:2500 VER 1:250</td></tr></table>	DRAWN BY :	SD	DESIGNED BY :	SCK/MM	APPROVED BY :	KG	SCALE :	HOR 1:2500 VER 1:250	<table><tr><td colspan="2">TITLE : Plan and Profile (km 4+000 to km 4+256)</td></tr><tr><td colspan="2">DRG. NO. : EPTISA/JTFRP/DPR/J&K/PP/05</td></tr><tr><td>REVISION : R-1</td><td>September 2019</td></tr></table>	TITLE : Plan and Profile (km 4+000 to km 4+256)		DRG. NO. : EPTISA/JTFRP/DPR/J&K/PP/05		REVISION : R-1	September 2019
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HORIZONTAL ALIGNMENT REPORT

Horizontal Alignment Report																										
HIP No.	Start of Transition (TS)	Start of Curve		HIP	End of Curve		End of Transition (ST)	HIP Coordinates		Radius	Design Speed (V kmpm)	Transition Start Length	Transition End Length	Circular Curve Length	Shift (s)		Tangent Length (Ts)		gs (°)		De (°)	D (°)	Apex Distance (Es)	Hand of Curve	e%	Extra Widening
		PC / SC			CS / PT			Easting	Northing						Leading	Trailing	Leading	Trailing	Leading	Trailing						
1	0+009.281	0+009.281	0+012.148	0+015.008	0+015.008	0+015.008	484674.974	3659095.146	50	30	0.00	0.00	0.00	5.73	0.000	0.000	2.87	2.87	0.00	0.00	6.56	6.56	0.082	Right	7.00	1.2
2	0+019.103	0+019.103	0+024.574	0+030.035	0+030.035	0+030.035	484663.623	3659090.074	100	40	0.00	0.00	0.00	10.93	0.000	0.000	5.47	5.47	0.00	0.00	6.26	6.26	0.150	Left	7.00	0.9
3	0+053.485	0+053.485	0+070.434	0+087.161	0+087.161	0+087.161	484624.034	3659066.904	120	40	0.00	0.00	0.00	33.68	0.000	0.000	16.95	16.95	0.00	0.00	16.08	16.08	1.191	Right	5.93	0.6
4	0+112.561	0+112.561	0+128.952	0+142.564	0+142.564	0+142.564	484567.103	3659052.435	30	20	0.00	0.00	0.00	30.00	0.000	0.000	16.39	16.39	0.00	0.00	57.30	57.30	4.186	Right	5.93	1.5
5	0+152.218	0+152.218	0+155.047	0+157.874	0+157.874	0+157.874	484546.000	3659072.142	80	35	0.00	0.00	0.00	5.66	0.000	0.000	2.83	2.83	0.00	0.00	4.05	4.05	0.050	Right	6.81	0.9
6	0+173.381	0+173.381	0+177.070	0+180.677	0+180.677	0+180.677	484531.005	3659088.275	20	20	0.00	0.00	0.00	7.30	0.000	0.000	3.69	3.69	0.00	0.00	20.90	20.90	0.337	Left	7.00	1.5
7	0+190.846	0+190.846	0+204.319	0+216.837	0+216.837	0+216.837	484506.480	3659100.337	40	25	0.00	0.00	0.00	25.99	0.000	0.000	13.47	13.47	0.00	0.00	37.23	37.23	2.208	Right	6.94	1.5
8	0+234.669	0+234.669	0+253.173	0+269.780	0+269.780	0+269.780	484484.192	3659144.881	45	25	0.00	0.00	0.00	35.11	0.000	0.000	18.50	18.50	0.00	0.00	44.70	44.70	3.656	Left	6.17	1.2
9	0+274.178	0+274.178	0+280.620	0+286.869	0+286.869	0+286.869	484456.400	3659154.296	30	20	0.00	0.00	0.00	12.69	0.000	0.000	6.44	6.44	0.00	0.00	24.24	24.24	0.684	Left	5.93	1.5
10	0+294.754	0+294.754	0+298.502	0+302.237	0+302.237	0+302.237	484438.408	3659152.556	50	30	0.00	0.00	0.00	7.48	0.000	0.000	3.75	3.75	0.00	0.00	8.57	8.57	0.140	Left	7.00	1.2
11	0+330.301	0+330.301	0+336.517	0+342.485	0+342.485	0+342.485	484401.526	3659143.293	25	20	0.00	0.00	0.00	12.18	0.000	0.000	6.22	6.22	0.00	0.00	27.92	27.92	0.761	Right	7.00	1.5
12	0+354.866	0+354.866	0+359.487	0+364.004	0+364.004	0+364.004	484378.981	3659148.840	25	20	0.00	0.00	0.00	9.14	0.000	0.000	4.62	4.62	0.00	0.00	20.94	20.94	0.423	Left	7.00	1.5
13	0+390.689	0+390.689	0+404.894	0+418.585	0+418.585	0+418.585	484333.821	3659143.199	60	30	0.00	0.00	0.00	27.90	0.000	0.000	14.20	14.20	0.00	0.00	26.64	26.64	1.659	Left	6.67	1.2
14	0+447.034	0+447.034	0+449.385	0+451.731	0+451.731	0+451.731	484296.405	3659118.190	40	25	0.00	0.00	0.00	4.70	0.000	0.000	2.35	2.35	0.00	0.00	6.73	6.73	0.069	Left	6.94	1.5
15	0+456.426	0+456.426	0+460.709	0+464.960	0+464.960	0+464.960	484287.788	3659110.834	40	25	0.00	0.00	0.00	8.53	0.000	0.000	4.28	4.28	0.00	0.00	12.22	12.22	0.229	Right	6.94	1.5
16	0+479.699	0+479.699	0+482.398	0+485.088	0+485.088	0+485.088	484268.657	3659100.549	40	25	0.00	0.00	0.00	5.39	0.000	0.000	2.70	2.70	0.00	0.00	7.72	7.72	0.091	Left	6.94	1.5
17	0+496.454	0+496.454	0+498.584	0+500.713	0+500.713	0+500.713	484255.552	3659091.034	60	30	0.00	0.00	0.00	4.26	0.000	0.000	2.13	2.13	0.00	0.00	4.07	4.07	0.038	Right	6.67	1.2
18	0+524.908	0+524.908	0+534.668	0+543.518	0+543.518	0+543.518	484224.922	3659071.957	25	20	0.00	0.00	0.00	18.61	0.000	0.000	9.76	9.76	0.00	0.00	42.65	42.65	1.838	Right	7.00	1.5
19	0+548.011	0+548.011	0+554.933	0+561.719	0+561.719	0+561.719	484204.118	3659075.901	40	25	0.00	0.00	0.00	13.71	0.000	0.000	6.92	6.92	0.00	0.00	19.64	19.64	0.594	Left	6.94	1.5
20	0+582.702	0+582.702	0+592.192	0+601.527	0+601.527	0+601.527	484167.172	3659070.116	60	30	0.00	0.00	0.00	18.83	0.000	0.000	9.49	9.49	0.00	0.00	17.98	17.98	0.746	Left	6.67	1.2
21	0+610.937	0+610.937	0+615.573	0+619.785	0+619.785	0+619.785	484146.356	3659059.567	50	30	0.00	0.00	0.00	8.85	0.000	0.000	4.44	4.44	0.00	0.00	10.14	10.14	0.196	Right	7.00	1.2
22	0+634.631	0+634.631	0+636.777	0+638.920	0+638.920	0+638.920	484125.837	3659053.397	50	30	0.00	0.00	0.00	4.29	0.000	0.000	2.15	2.15	0.00	0.00	4.91	4.91	0.046	Left	7.00	1.2
23	0+663.125	0+663.125	0+676.956	0+690.380	0+690.380	0+690.380	484088.491	3659038.572	65	30	0.00	0.00	0.00	27.26	0.000	0.000	13.83	13.83	0.00	0.00	24.02	24.02	1.455	Right	6.15	0.9
24	0+708.529	0+708.529	0+709.989	0+711.449	0+711.449	0+711.449	484055.079	3659039.958	50	30	0.00	0.00	0.00	2.92	0.000	0.000	1.46	1.46	0.00	0.00	3.35	3.35	0.021	Left	7.00	1.2
25	0+726.677	0+726.677	0+728.562	0+730.446	0+730.446	0+730.446	484036.507	3659039.643	50	30	0.00	0.00	0.00	3.77	0.000	0.000	1.89	1.89	0.00	0.00	4.32	4.32	0.036	Left	7.00	1.2
26	0+736.352	0+736.352	0+740.113	0+743.860	0+743.860	0+743.860	484025.004	3659038.577	50	30	0.00	0.00	0.00	7.51	0.000	0.000	3.76	3.76	0.00	0.00	8.60	8.60	0.141	Right	7.00	1.2
27	0+763.583	0+763.583	0+766.147	0+768.707	0+768.707	0+768.707	483999.000	3659040.083	50	30	0.00	0.00	0.00	5.12	0.000	0.000	2.56	2.56	0.00	0.00	5.87	5.87	0.066	Right	7.00	1.2
28	0+784.142	0+784.142	0+785.953	0+787.762	0+787.762	0+787.762	483979.444	3659043.246	45	25	0.00	0.00	0.00	3.62	0.000	0.000	1.81	1.81	0.00	0.00	4.61	4.61	0.036	Left	6.17	1.2
29	0+793.820	0+793.820	0+797.200	0+800.567	0+800.567	0+800.567	483968.230	3659044.143	45	25	0.00	0.00	0.00	6.75	0.000	0.000	3.38	3.38	0.00	0.00	8.59	8.59	0.139	Right	6.17	1.2
30	0+804.467	0+804.467	0+813.108	0+821.541	0+821.541	0+821.541	483952.728	3659047.770	45	25	0.00	0.00	0.00	17.07	0.000	0.000	8.64	8.64	0.00	0.00	21.74	21.74	0.822	Left	6.17	1.2
31	0+824.704	0+824.704	0+828.250																							

Horizontal Alignment Report																													
HHP No.	Start of Transition (TS)	Start of Curve		HHP	End of Curve		End of Transition (ST)	HHP Coordinates			Radius	Design Speed (V kmph)	Transition Start Length	Transition End Length	Circular Curve Length	Shift (s)			Tangent Length (Ts)			qs (°)		Dc (°)	D (°)	Apex Distance (fs)	Hand of Curve	e%	Extra Widening
		PC / SC			CS / PT			Easting	Northing	Leading						Trailing	Leading	Trailing	Leading	Trailing									
51	1+427.523	1+427.523	1+430.287	1+433.045	1+433.045	1+433.045	483406.620	3659155.079	50	30	0.00	0.00	0.00	5.52	0.000	0.000	0.000	2.76	2.76	0.00	0.00	6.33	6.33	0.076	Right	7.00	1.2		
52	1+436.152	1+436.152	1+438.953	1+441.748	1+441.748	1+441.748	483399.002	3659150.936	50	30	0.00	0.00	0.00	5.60	0.000	0.000	0.000	2.80	2.80	0.00	0.00	6.41	6.41	0.078	Left	7.00	1.2		
53	1+447.401	1+447.401	1+457.888	1+467.914	1+467.914	1+467.914	483383.477	3659140.085	40	25	0.00	0.00	0.00	20.51	0.000	0.000	0.000	10.49	10.49	0.00	0.00	29.38	29.38	1.352	Right	6.94	1.5		
54	1+475.516	1+475.516	1+483.456	1+491.131	1+491.131	1+491.131	483357.571	3659137.560	35	25	0.00	0.00	0.00	15.62	0.000	0.000	0.000	7.94	7.94	0.00	0.00	25.56	25.56	0.889	Left	7.00	1.5		
55	1+498.475	1+498.475	1+508.514	1+518.486	1+518.486	1+518.486	483335.895	3659124.468	100	40	0.00	0.00	0.00	20.01	0.000	0.000	0.000	10.04	10.04	0.00	0.00	11.47	11.47	0.503	Left	7.00	0.9		
56	1+538.881	1+538.881	1+561.817	1+573.028	1+573.028	1+573.028	483296.607	3659088.346	20	20	0.00	0.00	0.00	34.15	0.000	0.000	0.000	22.94	22.94	0.00	0.00	97.82	97.82	10.431	Right	7.00	1.5		
57	1+593.938	1+593.938	1+612.658	1+626.075	1+626.075	1+626.075	483260.925	3659139.740	25	20	0.00	0.00	0.00	32.14	0.000	0.000	0.000	18.72	18.72	0.00	0.00	73.65	73.65	6.232	Left	7.00	1.5		
58	1+660.991	1+660.991	1+669.101	1+677.155	1+677.155	1+677.155	483202.344	3659120.227	80	35	0.00	0.00	0.00	16.16	0.000	0.000	0.000	8.11	8.11	0.00	0.00	11.58	11.58	0.410	Right	6.81	0.9		
59	1+697.642	1+697.642	1+701.619	1+705.529	1+705.529	1+705.529	483170.003	3659116.343	25	20	0.00	0.00	0.00	7.89	0.000	0.000	0.000	3.98	3.98	0.00	0.00	18.08	18.08	0.314	Left	7.00	1.5		
60	1+711.486	1+711.486	1+714.726	1+717.930	1+717.930	1+717.930	483158.057	3659110.792	25	20	0.00	0.00	0.00	6.44	0.000	0.000	0.000	3.24	3.24	0.00	0.00	14.77	14.77	0.209	Right	7.00	1.5		
61	1+750.232	1+750.232	1+751.897	1+753.560	1+753.560	1+753.560	483121.432	3659104.233	40	25	0.00	0.00	0.00	3.33	0.000	0.000	0.000	1.66	1.66	0.00	0.00	4.77	4.77	0.035	Left	6.94	1.5		
62	1+758.208	1+758.208	1+767.126	1+775.858	1+775.858	1+775.858	483106.715	3659100.311	50	30	0.00	0.00	0.00	17.65	0.000	0.000	0.000	8.92	8.92	0.00	0.00	20.23	20.23	0.789	Right	7.00	1.2		
63	1+794.547	1+794.547	1+806.820	1+816.563	1+816.563	1+816.563	483067.006	3659103.997	20	20	0.00	0.00	0.00	22.02	0.000	0.000	0.000	12.27	12.27	0.00	0.00	63.07	63.07	3.465	Left	7.00	1.5		
64	1+826.859	1+826.859	1+836.248	1+845.205	1+845.205	1+845.205	483049.960	3659076.965	35	25	0.00	0.00	0.00	18.35	0.000	0.000	0.000	9.39	9.39	0.00	0.00	30.03	30.03	1.237	Right	7.00	1.5		
65	1+848.737	1+848.737	1+854.470	1+860.066	1+860.066	1+860.066	483033.449	3659068.285	30	20	0.00	0.00	0.00	11.33	0.000	0.000	0.000	5.73	5.73	0.00	0.00	21.64	21.64	0.543	Right	5.93	1.5		
66	1+863.150	1+863.150	1+876.807	1+887.115	1+887.115	1+887.115	483011.102	3659065.899	20	20	0.00	0.00	0.00	23.96	0.000	0.000	0.000	13.66	13.66	0.00	0.00	68.65	68.65	4.218	Right	7.00	1.5		
67	1+931.235	1+931.235	1+945.566	1+957.261	1+957.261	1+957.261	482977.873	3659129.894	25	20	0.00	0.00	0.00	26.03	0.000	0.000	0.000	14.33	14.33	0.00	0.00	59.65	59.65	3.816	Left	7.00	1.5		
68	1+964.004	1+964.004	1+965.790	1+967.572	1+967.572	1+967.572	482955.043	3659131.056	35	25	0.00	0.00	0.00	3.57	0.000	0.000	0.000	1.79	1.79	0.00	0.00	5.84	5.84	0.046	Left	7.00	1.5		
69	1+972.141	1+972.141	1+981.626	1+990.272	1+990.272	1+990.272	482939.224	3659130.247	25	20	0.00	0.00	0.00	18.13	0.000	0.000	0.000	9.48	9.48	0.00	0.00	41.55	41.55	1.739	Right	7.00	1.5		
70	1+999.308	1+999.308	2+003.929	2+008.477	2+008.477	2+008.477	482921.145	3659144.692	30	30	0.00	0.00	0.00	9.17	0.000	0.000	0.000	4.62	4.62	0.00	0.00	17.51	17.51	0.354	Left	5.93	1.5		
71	2+017.984	2+017.984	2+031.803	2+044.949	2+044.949	2+044.949	482895.074	3659154.758	50	30	0.00	0.00	0.00	26.97	0.000	0.000	0.000	13.82	13.82	0.00	0.00	30.90	30.90	1.875	Right	7.00	1.2		
72	2+045.015	2+045.015	2+053.963	2+062.200	2+062.200	2+062.200	482881.021	3659172.754	25	20	0.00	0.00	0.00	17.18	0.000	0.000	0.000	8.95	8.95	0.00	0.00	39.39	39.39	1.533	Left	7.00	1.5		
73	2+089.420	2+089.420	2+091.126	2+092.830	2+092.830	2+092.830	482844.063	3659181.034	40	25	0.00	0.00	0.00	3.41	0.000	0.000	0.000	1.71	1.71	0.00	0.00	4.88	4.88	0.036	Left	6.94	1.5		
74	2+104.849	2+104.849	2+108.544	2+112.219	2+112.219	2+112.219	482826.802	3659183.380	40	25	0.00	0.00	0.00	7.37	0.000	0.000	0.000	3.70	3.70	0.00	0.00	10.56	10.56	0.170	Right	6.94	1.5		
75	2+130.098	2+130.098	2+138.617	2+146.973	2+146.973	2+146.973	482798.230	3659192.829	50	30	0.00	0.00	0.00	16.88	0.000	0.000	0.000	8.52	8.52	0.00	0.00	19.34	19.34	0.720	Left	7.00	1.2		
76	2+154.263	2+154.263	2+156.499	2+158.733	2+158.733	2+158.733	482780.188	3659192.501	50	30	0.00	0.00	0.00	4.47	0.000	0.000	0.000	2.24	2.24	0.00	0.00	5.12	5.12	0.050	Right	7.00	1.2		
77	2+198.634	2+198.634	2+199.802	2+200.969	2+200.969	2+200.969	482736.993	3659195.585	50	30	0.00	0.00	0.00	2.34	0.000	0.000	0.000	1.17	1.17	0.00	0.00	2.68	2.68	0.014	Left	7.00	1.2		
78	2+210.523	2+210.523	2+218.385	2+226.189	2+226.189	2+226.189	482718.415	3659196.041	75	35	0.00	0.00	0.00	15.67	0.000	0.000	0.000	7.86	7.86	0.00	0.00	11.97	11.97	0.411	Right	7.00	0.9		
79	2+240.986	2+240.986	2+258.044	2+274.599	2+274.599	2+274.599	482679.775	3659205.229	80	35	0.00	0.00	0.00																

Horizontal Alignment Report																										
HIP No.	Start of Transition (TS)	Start of Curve		HIP	End of Curve		End of Transition (ST)	HIP Coordinates		Radius	Design Speed (V kmph)	Transition Start Length	Transition End Length	Circular Curve Length	Shift (s)		Tangent Length (Ts)		qs (°)		Dc (°)	D (°)	Apex Distance (Es)	Hand of Curve	e%	Extra Widening
		PC / SC			CS / PT			Easting	Northing						Leading	Trailing	Leading	Trailing	Leading	Trailing						
101	3+124.632	3+124.632		3+143.203	3+161.128		3+161.128	481940.386	3658814.821	80	35	0.00	0.00	36.50	0.000	0.000	18.57	18.57	0.00	0.00	26.14	26.14	2.127	Right	6.81	0.9
102	3+190.301	3+190.301		3+200.510	3+210.609		3+210.609	481889.467	3658787.147	80	35	0.00	0.00	20.31	0.000	0.000	10.21	10.21	0.00	0.00	14.54	14.54	0.649	Left	6.81	0.9
103	3+232.731	3+232.731		3+234.586	3+236.430		3+236.430	481864.494	3658763.802	20	20	0.00	0.00	3.70	0.000	0.000	1.85	1.85	0.00	0.00	10.60	10.60	0.086	Right	7.00	1.5
104	3+248.100	3+248.100		3+249.041	3+249.981		3+249.981	481852.289	3658756.036	25	20	0.00	0.00	1.88	0.000	0.000	0.94	0.94	0.00	0.00	4.31	4.31	0.018	Left	7.00	1.5
105	3+265.638	3+265.638		3+276.906	3+288.026		3+288.026	481829.971	3658739.351	80	35	0.00	0.00	22.39	0.000	0.000	11.27	11.27	0.00	0.00	16.03	16.03	0.790	Right	6.81	0.9
106	3+302.447	3+302.447		3+326.577	3+349.319		3+349.319	481783.383	3658721.703	80	35	0.00	0.00	46.87	0.000	0.000	24.13	24.13	0.00	0.00	33.57	33.57	3.560	Left	6.81	0.9
107	3+350.845	3+350.845		3+377.594	3+403.120		3+403.120	481752.814	3658679.136	100	40	0.00	0.00	52.28	0.000	0.000	26.75	26.75	0.00	0.00	29.95	29.95	3.516	Right	7.00	0.9
108	3+456.511	3+456.511		3+460.402	3+464.277		3+464.277	481676.267	3658644.469	50	30	0.00	0.00	7.77	0.000	0.000	3.89	3.89	0.00	0.00	8.90	8.90	0.151	Right	7.00	1.2
109	3+504.781	3+504.781		3+508.933	3+513.065		3+513.065	481629.479	3658631.523	50	30	0.00	0.00	8.28	0.000	0.000	4.15	4.15	0.00	0.00	9.49	9.49	0.172	Left	7.00	1.2
110	3+550.963	3+550.963		3+556.058	3+561.142		3+561.142	481586.737	3658611.631	90	40	0.00	0.00	10.18	0.000	0.000	5.09	5.09	0.00	0.00	6.48	6.48	0.144	Right	7.00	0.9
111	3+579.422	3+579.422		3+608.796	3+634.599		3+634.599	481536.707	3658594.912	65	30	0.00	0.00	55.18	0.000	0.000	29.37	29.37	0.00	0.00	48.64	48.64	6.329	Left	6.15	0.9
112	3+644.994	3+644.994		3+652.943	3+660.813		3+660.813	481518.151	3658550.951	65	30	0.00	0.00	15.82	0.000	0.000	7.95	7.95	0.00	0.00	13.94	13.94	0.484	Left	6.15	0.9
113	3+668.277	3+668.277		3+677.051	3+685.649		3+685.649	481514.392	3658527.057	50	30	0.00	0.00	17.37	0.000	0.000	8.77	8.77	0.00	0.00	19.91	19.91	0.764	Left	7.00	1.2
114	3+713.845	3+713.845		3+718.909	3+723.931		3+723.931	481522.390	3658485.790	45	25	0.00	0.00	10.09	0.000	0.000	5.06	5.06	0.00	0.00	12.84	12.84	0.284	Right	6.17	1.2
115	3+725.640	3+725.640		3+733.563	3+741.325		3+741.325	481521.909	3658471.102	45	25	0.00	0.00	15.68	0.000	0.000	7.92	7.92	0.00	0.00	19.97	19.97	0.692	Left	6.17	1.2
116	3+793.398	3+793.398		3+796.562	3+799.724		3+799.724	481541.527	3658411.066	90	40	0.00	0.00	6.33	0.000	0.000	3.16	3.16	0.00	0.00	4.03	4.03	0.056	Left	7.00	0.9
117	3+816.317	3+816.317		3+838.635	3+859.050		3+859.050	481557.373	3658372.088	60	30	0.00	0.00	42.73	0.000	0.000	22.32	22.32	0.00	0.00	40.81	40.81	4.016	Right	6.67	1.2
118	3+878.108	3+878.108		3+883.929	3+889.730		3+889.730	481542.254	3658327.379	80	35	0.00	0.00	11.62	0.000	0.000	5.82	5.82	0.00	0.00	8.32	8.32	0.212	Left	6.81	0.9
119	3+917.171	3+917.171		3+945.778	3+970.559		3+970.559	481531.127	3658266.518	60	30	0.00	0.00	53.39	0.000	0.000	28.61	28.61	0.00	0.00	50.98	50.98	6.471	Left	6.67	1.2
120	3+979.099	3+979.099		3+998.120	3+998.736		3+998.736	481561.835	3658230.717	40	25	0.00	0.00	19.64	0.000	0.000	10.02	10.02	0.00	0.00	28.13	28.13	1.236	Right	6.94	1.5
121	4+024.912	4+024.912		4+030.614	4+036.022		4+036.022	481570.900	3658189.810	20	20	0.00	0.00	11.11	0.000	0.000	5.70	5.70	0.00	0.00	31.83	31.83	0.797	Left	7.00	1.5
122	4+037.760	4+037.760		4+044.662	4+050.697		4+050.697	481580.920	3658179.549	15	15	0.00	0.00	12.94	0.000	0.000	6.90	6.90	0.00	0.00	49.42	49.42	1.512	Right	6.67	1.5
123	4+065.659	4+065.659		4+067.740	4+069.818		4+069.818	481578.795	3658155.699	45	25	0.00	0.00	4.16	0.000	0.000	2.08	2.08	0.00	0.00	5.30	5.30	0.048	Left	6.17	1.2
124	4+096.009	4+096.009		4+105.597	4+114.320		4+114.320	481578.929	3658117.839	25	20	0.00	0.00	18.31	0.000	0.000	9.59	9.59	0.00	0.00	41.97	41.97	1.776	Right	7.00	1.5
125	4+118.269	4+118.269		4+134.682	4+150.513		4+150.513	481558.982	3658095.498	70	35	0.00	0.00	32.24	0.000	0.000	16.41	16.41	0.00	0.00	26.39	26.39	1.899	Left	7.00	0.9
126	4+157.318	4+157.318		4+165.813	4+174.111		4+174.111	481550.578	3658064.918	45	25	0.00	0.00	16.79	0.000	0.000	8.50	8.50	0.00	0.00	21.38	21.38	0.795	Left	6.17	1.2
127	4+178.603	4+178.603		4+193.280	4+206.977		4+206.977	481553.476	3658037.407	45	25	0.00	0.00	28.37	0.000	0.000	14.68	14.68	0.00	0.00	36.13	36.13	2.333	Right	6.17	1.2
128	4+211.673	4+211.673		4+219.294	4+226.235		4+226.235	481539.932	3658014.057	20	20	0.00	0.00	14.56	0.000	0.000	7.62	7.62	0.00	0.00	41.72	41.72	1.403	Left	7.00	1.5
129	4+235.115	4+235.115		4+243.413	4+251.307		4+251.307	481544.921	3657989.765	30	20	0.00	0.00	16.19	0.000	0.000	8.30	8.30	0.00	0.00	30.92	30.92	1.127	Right	5.93	1.5

CLIENT :



Jhelum Tawi Flood Recovery Project
2nd Floor ERA Commercial Complex Rambagh
Srinagar-190 009.

PROJECT :

Consultancy Services for Preparing Detailed Project Report
for the Road works in Jammu and Kashmir
(Anji Panasa Road)

DESIGN CONSULTANT:



Eptisa Servicios de Ingenieria S.L.
Unit 1203, 12th Floor, Tower 1, PS Srijan
Corporate Park, Plot No. 2, Block EP & GP,
Sector V, Salt Lake Kolkata - 700091,
West Bengal
Ph: 033-40347200
www.eptisa.com

REV.	DATE	DESCRIPTION

SCALE :	N.T.S

DRAWN BY :	SD
DESIGNED BY :	SCKMM
APPROVED BY :	KG
DRG. NO. : EPTISA/JTRP/DPR/UK/HAR/03	

TITLE :	Horizontal Alignment Report
REVISION : R-1	September 2019

≡ VERTICAL ALIGNMENT REPORT ≡

Vertical Alignment Report

PVI No.	Start		PVI Details		End		Gradient (%)		Type of Curve	Curve Length (m)	K-Value
	Chainage (Km)	Level(m)	Chainage (Km)	Level(m)	Chainage (Km)	Level(m)	IN	OUT			
1	0+029.688	434.867	0+059.688	435.181	0+089.688	435.073	1.047	-0.361	Hog	60	42.62
2	0+154.393	434.840	0+179.393	434.749	0+204.393	434.471	-0.361	-1.112	Hog	50	66.54
3	0+250.865	433.954	0+270.865	433.732	0+290.865	433.093	-1.112	-3.193	Hog	40	19.22
4	0+294.662	432.972	0+309.662	432.493	0+324.662	432.355	-3.193	-0.922	Sag	30	13.21
5	0+339.995	432.213	0+354.995	432.075	0+369.995	431.772	-0.922	-2.023	Hog	30	27.25
6	0+443.995	430.274	0+458.995	429.971	0+473.995	429.937	-2.023	-0.230	Sag	30	16.73
7	0+492.552	429.894	0+517.552	429.837	0+542.552	429.463	-0.230	-1.496	Hog	50	39.49
8	0+545.230	429.422	0+595.230	428.674	0+645.230	430.565	-1.496	3.781	Sag	100	18.95
9	0+646.607	430.617	0+681.607	431.940	0+716.607	431.859	3.781	-0.233	Hog	70	17.44
10	0+752.115	431.776	0+767.115	431.741	0+782.115	431.830	-0.233	0.596	Sag	30	36.22
11	0+793.190	431.896	0+813.190	432.015	0+833.190	431.731	0.596	-1.423	Hog	40	19.82
12	0+983.688	429.589	1+018.688	429.091	1+053.688	429.747	-1.423	1.874	Sag	70	21.23
13	1+072.716	430.104	1+097.716	430.572	1+122.716	429.995	1.874	-2.308	Hog	50	11.96
14	1+125.590	429.929	1+145.590	429.467	1+165.590	429.597	-2.308	0.646	Sag	40	13.54
15	1+166.687	429.604	1+186.687	429.733	1+206.687	429.496	0.646	-1.184	Hog	40	21.85
16	1+207.765	429.483	1+227.765	429.246	1+247.765	429.536	-1.184	1.447	Sag	40	15.20
17	1+248.943	429.553	1+278.943	429.987	1+308.943	428.660	1.447	-4.422	Hog	60	10.23
18	1+349.428	426.870	1+374.428	425.765	1+399.428	425.859	-4.422	0.378	Sag	50	10.42
19	1+429.996	425.975	1+454.996	426.069	1+479.996	425.592	0.378	-1.908	Hog	50	21.87
20	1+539.933	424.448	1+559.933	424.066	1+579.933	424.257	-1.908	0.950	Sag	40	13.99
21	1+606.574	424.510	1+624.655	424.682	1+642.736	424.436	0.950	-1.356	Hog	36	15.68
22	1+651.261	424.321	1+672.618	424.031	1+693.975	424.061	-1.356	0.139	Sag	43	28.57
23	1+732.819	424.115	1+762.819	424.157	1+792.819	422.961	0.139	-3.985	Hog	60	14.55
24	1+832.735	421.370	1+862.735	420.175	1+892.735	420.378	-3.985	0.675	Sag	60	12.87
25	1+909.403	420.490	1+929.403	420.625	1+949.403	420.300	0.675	-1.627	Hog	40	17.37
26	1+956.261	420.188	1+981.261	419.781	2+006.261	420.068	-1.627	1.146	Sag	50	18.03
27	2+018.179	420.204	2+048.179	420.548	2+078.179	419.365	1.146	-3.943	Hog	60	11.79
28	2+113.360	417.977	2+148.360	416.597	2+183.360	416.754	-3.943	0.448	Sag	70	15.94
29	2+216.529	416.903	2+241.529	417.015	2+266.529	416.970	0.448	-0.179	Hog	50	79.69
30	2+317.624	416.879	2+342.624	416.834	2+367.624	416.180	-0.179	-2.614	Hog	50	20.53
31	2+394.898	415.467	2+414.898	414.944	2+434.898	414.950	-2.614	0.029	Sag	40	15.13
32	2+452.365	414.955	2+462.365	414.958	2+472.365	415.013	0.029	0.546	Sag	20	38.64
33	2+501.840	415.174	2+521.840	415.283	2+541.840	414.890	0.546	-1.966	Hog	40	15.92
34	2+552.493	414.680	2+577.493	414.189	2+602.493	414.586	-1.966	1.586	Sag	50	14.08
35	2+605.272	414.630	2+625.272	414.947	2+645.272	414.943	1.586	-0.019	Hog	40	24.92
36	2+654.561	414.941	2+684.561	414.936	2+714.561	415.390	-0.019	1.515	Sag	60	39.11
37	2+748.209	415.900	2+773.209	416.279	2+798.209	415.718	1.515	-2.242	Hog	50	13.31
38	2+829.283	415.022	2+859.283	414.349	2+889.283	414.477	-2.242	0.426	Sag	60	22.49
39	2+898.214	414.515	2+923.214	414.621	2+948.214	414.173	0.426	-1.792	Hog	50	22.55
40	2+990.599	413.413	3+005.599	413.145	3+020.599	412.668	-1.792	-3.177	Hog	30	21.66
41	3+060.243	411.408	3+080.243	410.773	3+100.243	410.482	-3.177	-1.453	Sag	40	23.20
42	3+227.701	408.630	3+247.701	408.340	3+267.701	407.846	-1.453	-2.469	Hog	40	39.38
43	3+289.737	407.302	3+339.737	406.068	3+389.737	403.681	-2.469	-4.772	Hog	100	43.41
44	3+473.800	399.670	3+503.800	398.238	3+533.800	397.650	-4.772	-1.961	Sag	60	21.34
45	3+553.415	397.265	3+578.415	396.775	3+603.415	396.137	-1.961	-2.554	Hog	50	84.29
46	3+639.150	395.224	3+659.150	394.713	3+679.150	394.708	-2.554	-0.025	Sag	40	15.82
47	3+695.109	394.704	3+715.109	394.699	3+735.109	395.380	-0.025	3.402	Sag	40	11.67
48	3+765.586	396.416	3+795.586	397.437	3+825.586	397.282	3.402	-0.516	Hog	60	15.31
49	3+888.890	396.955	3+903.890	396.878	3+918.890	397.027	-0.516	0.995	Sag	30	19.85
50	3+952.032	397.357	3+987.032	397.705	4+022.032	397.627	0.995	-0.223	Hog	70	57.48
51	4+036.692	397.595	4+066.692	397.528	4+096.692	398.819	-0.223	4.306	Sag	60	13.25
52	4+133.599	400.408	4+158.599	401.485	4+183.599	401.332	4.306	-0.610	Hog	50	10.17

CLIENT :



Jhelum & Tawi
Flood Recovery Project

PROJECT :

Consultancy Services for Preparing Detailed Project Report
for the Road works in Jammu and Kashmir
(Anji Panasa Road)

DESIGN CONSULTANT:



Eptisa Servicios de Ingenieria S.L.
Unit 1203, 12th Floor, Tower 1, PS Srijan
Corporate Park, Plot No. 2, Block EP & GP,
Sector V, Salt Lake Kolkata - 700091,
West Bengal
Ph: 033-40347200
www.eptisa.com

REV.

DATE

DESCRIPTION

DRAWN BY :

SD

DESIGNED BY :

SKMM

APPROVED BY :

KG

SCALE :

N.T.S

TITLE :

Vertical Alignment Report

DRG. NO. :

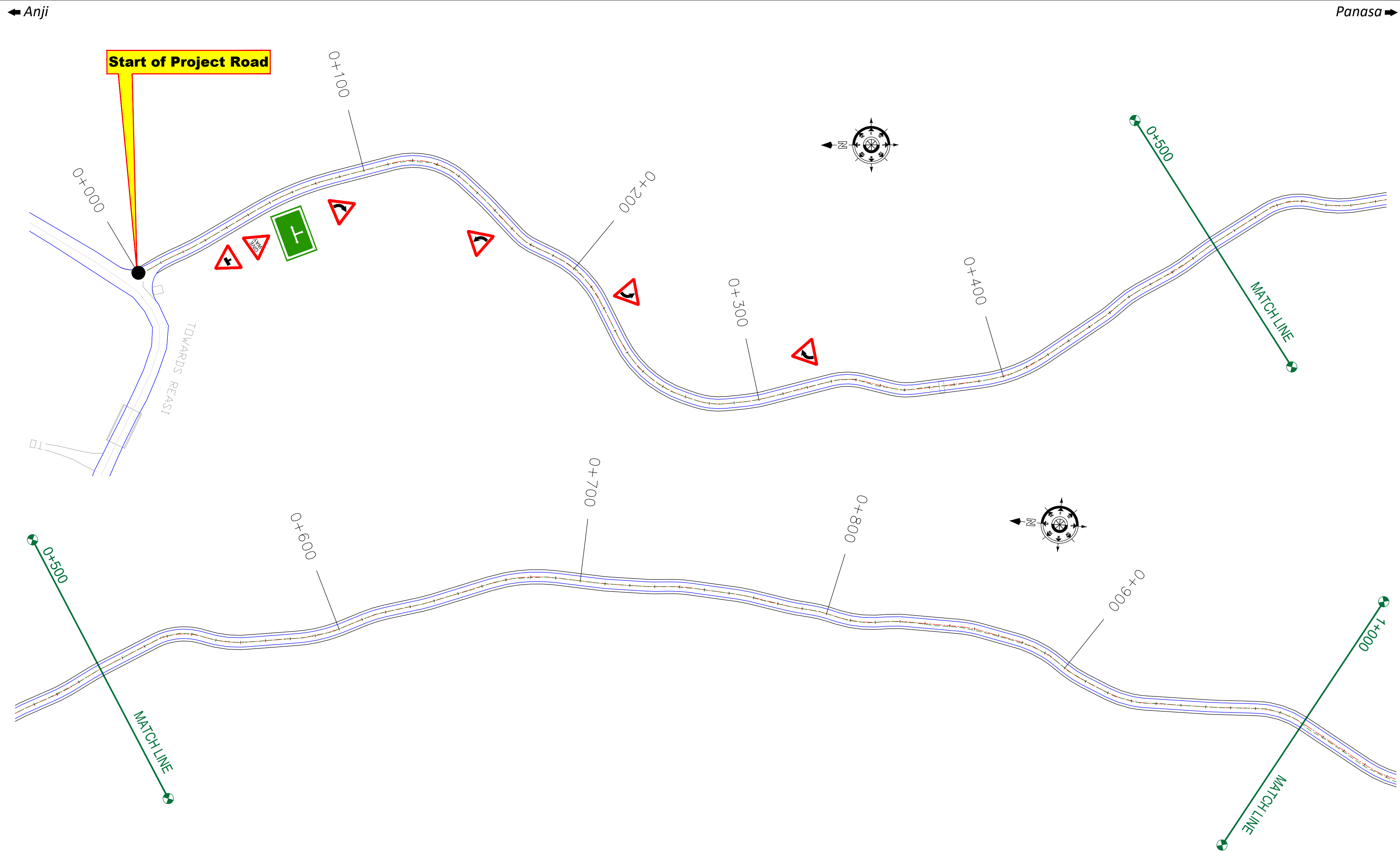
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REVISION :

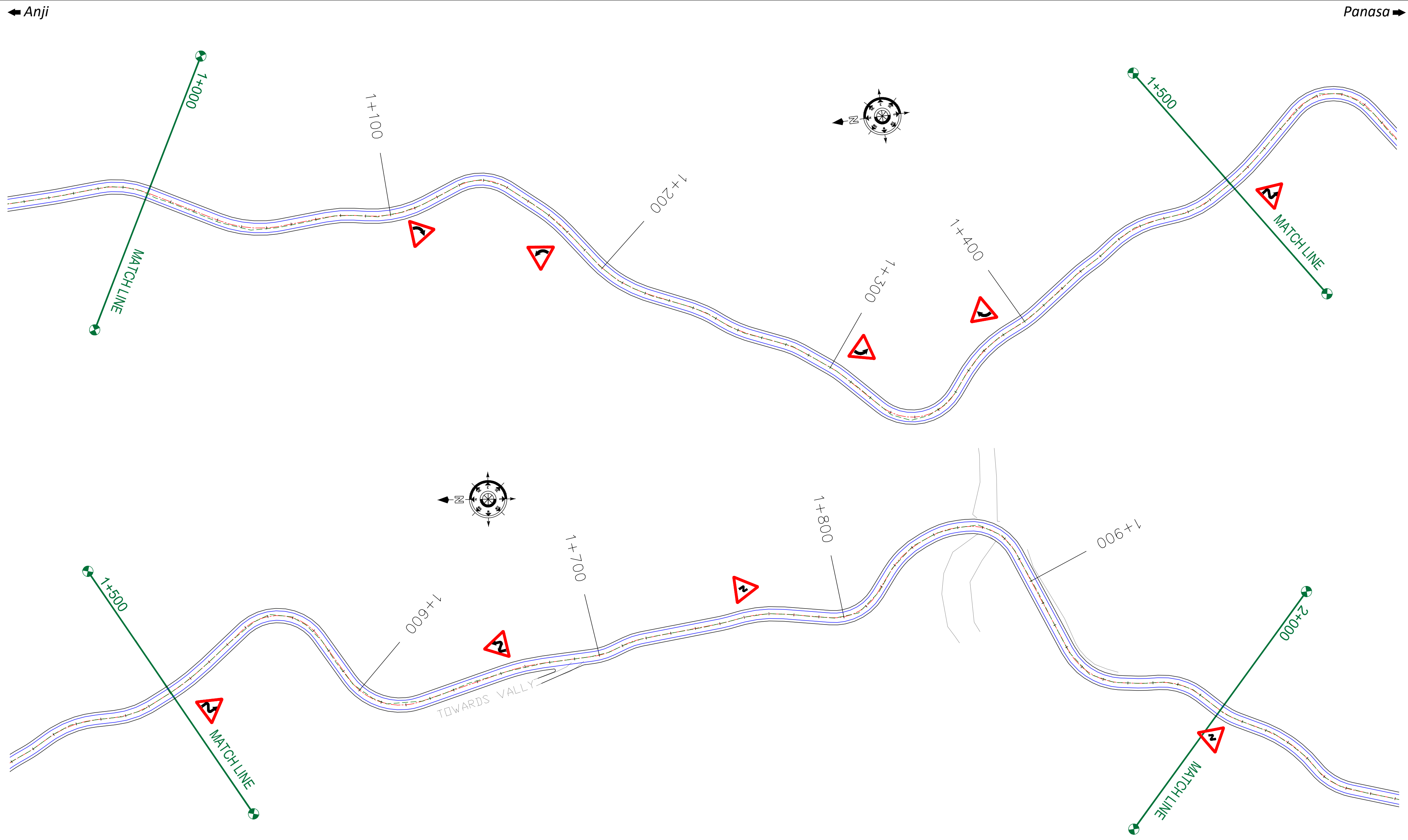
R-1

September 2019

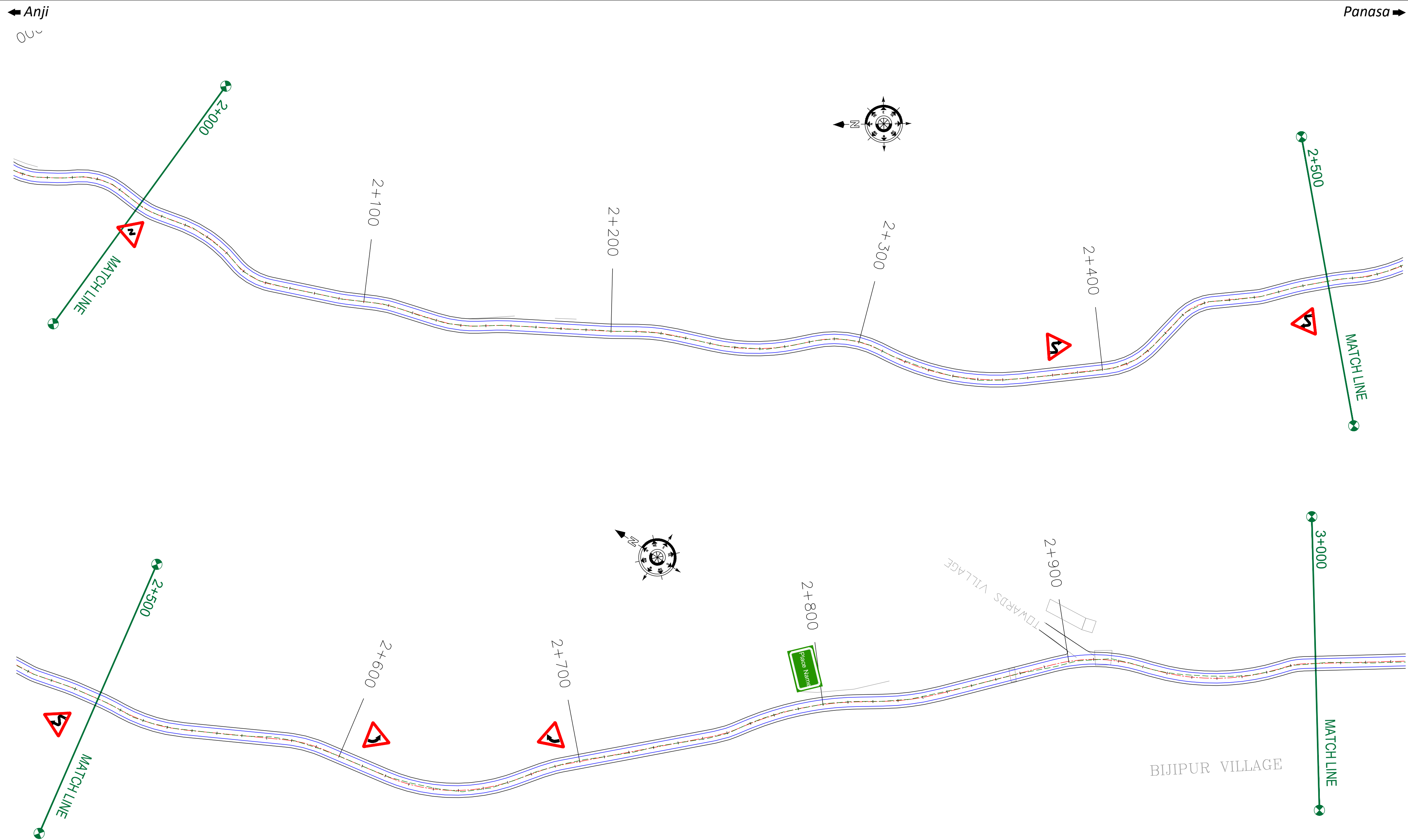
≡ SCHEDULE OF SIGNAGE ≡



CLIENT : <div> Jhelum Tawi Flood Recovery Project 2nd Floor ERA Commercial Complex Rambagh Srinagar-190 009.</div>	PROJECT : Consultancy Services for Preparing Detailed Project Report for the Road works in Jammu and Kashmir <u>(Anji Panasa Road)</u>	DESIGN CONSULTANT: <div>Servicios de Ingenieria S.L. Unit 1203, 12th Floor, Tower 1, PS Srijan Corporate Park, Plot No. 2, Block EP & GP, Sector v, Salt Lake Kolkata - 700091, West Bengal Ph: 033-40347200 www.eptisa.com</div>				DRAWN BY : SD	TITLE : Signage Plan (Ch. 0+000 to Ch. 1+000)
						DESIGNED BY : SCK/MM	
						APPROVED BY : KG	
						SCALE : 1:1000	
						REV.	



CLIENT : <div></div> <p>Jhelum Tawi Flood Recovery Project 2nd Floor ERA Commercial Complex Rambagh Srinagar-190 009.</p>	PROJECT : Consultancy Services for Preparing Detailed Project Report for the Road works in Jammu and Kashmir <u>(Anji Panasa Road)</u>	DESIGN CONSULTANT: eptisa Servicios de Ingenieria S.L. Unit 1203, 12th Floor, Tower 1, PS Srijan Corporate Park, Plot No. 2, Block EP & GP, Sector v, Salt Lake Kolkata - 700091, West Bengal Ph: 033-40347200 www.eptisa.com				DRAWN BY : SD	TITLE : Signage Plan (Ch. 1+000 to Ch. 2+000)	
						DESIGNED BY : SCK/MM	DRG. NO. : EPTISA/JTRFP/DPR/J&K/SP/02	
						APPROVED BY : KG	REVISION : R-1	
						SCALE : 1:1000	September 2019	
			REV.	DATE	DESCRIPTION			



CLIENT : 
Jhelum Tawi Flood Recovery Project
2nd Floor ERA Commercial Complex Rambagh
Srinagar-190 009.

PROJECT :

Consultancy Services for Preparing Detailed Project Report
for the Road works in Jammu and Kashmir
(Anji Panasa Road)

DESIGN CONSULTANT:
eptisa **Servicios de Ingenieria S.L.**
Unit 1203, 12th Floor, Tower 1, PS Srijan
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Sector v, Salt Lake Kolkata - 700091,
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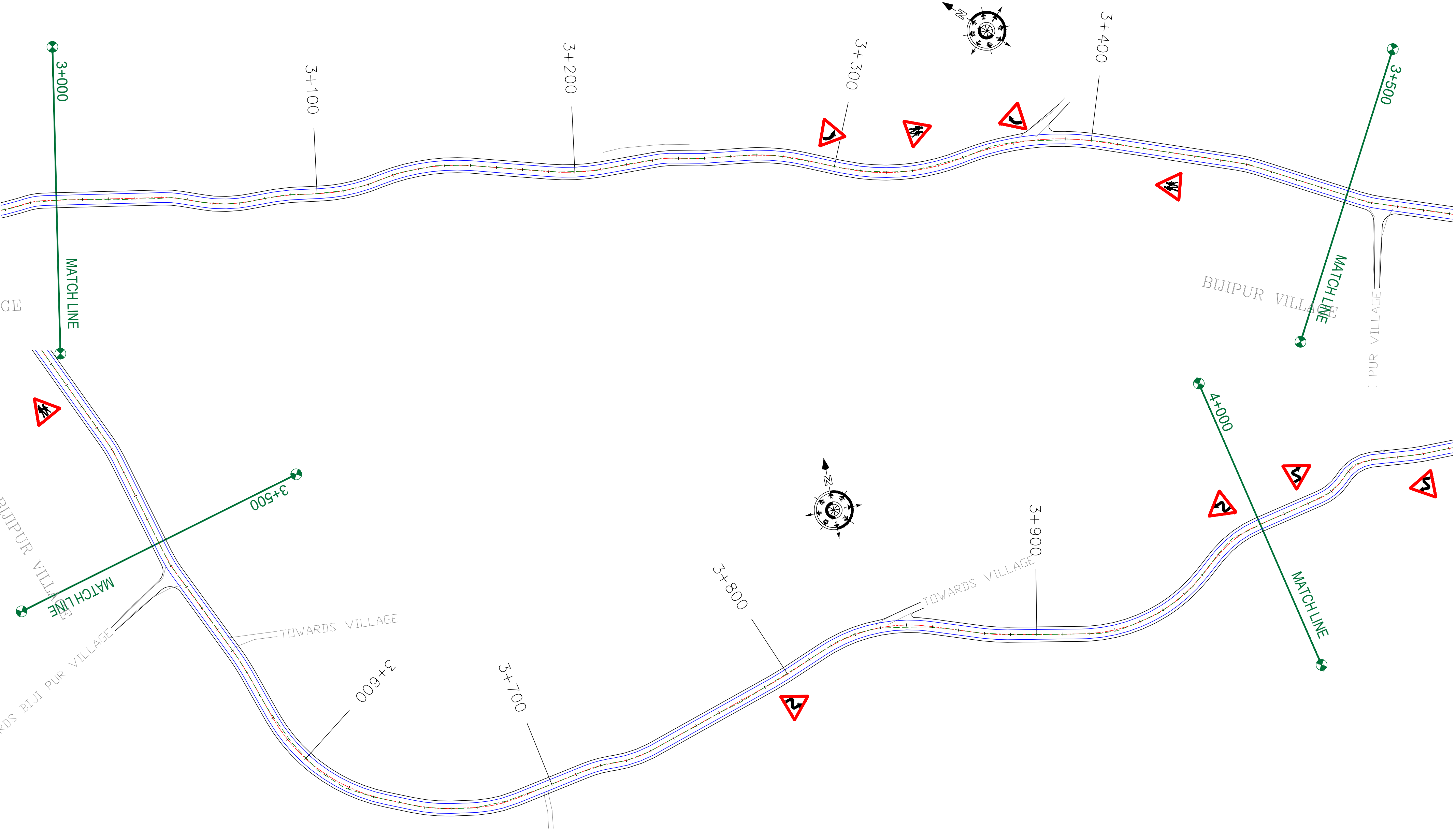
REV.	DATE	DESCRIPTION

DRAWN BY :	SD
DESIGNED BY :	SCK/MM
APPROVED BY :	KG
SCALE :	1:1000

TITLE : Signage Plan (Ch. 2+000 to Ch. 3+000)	
DRG. NO. : EPTISA/JTRFP/DPR/J&K/SP/03	
REVISION : R-1	September 2019

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CLIENT :



Jhelum Tawi Flood Recovery Project
2nd Floor ERA Commercial Complex Rambagh
Srinagar-190 009.

PROJECT :

Consultancy Services for Preparing Detailed Project Report
for the Road works in Jammu and Kashmir
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DESIGN CONSULTANT:



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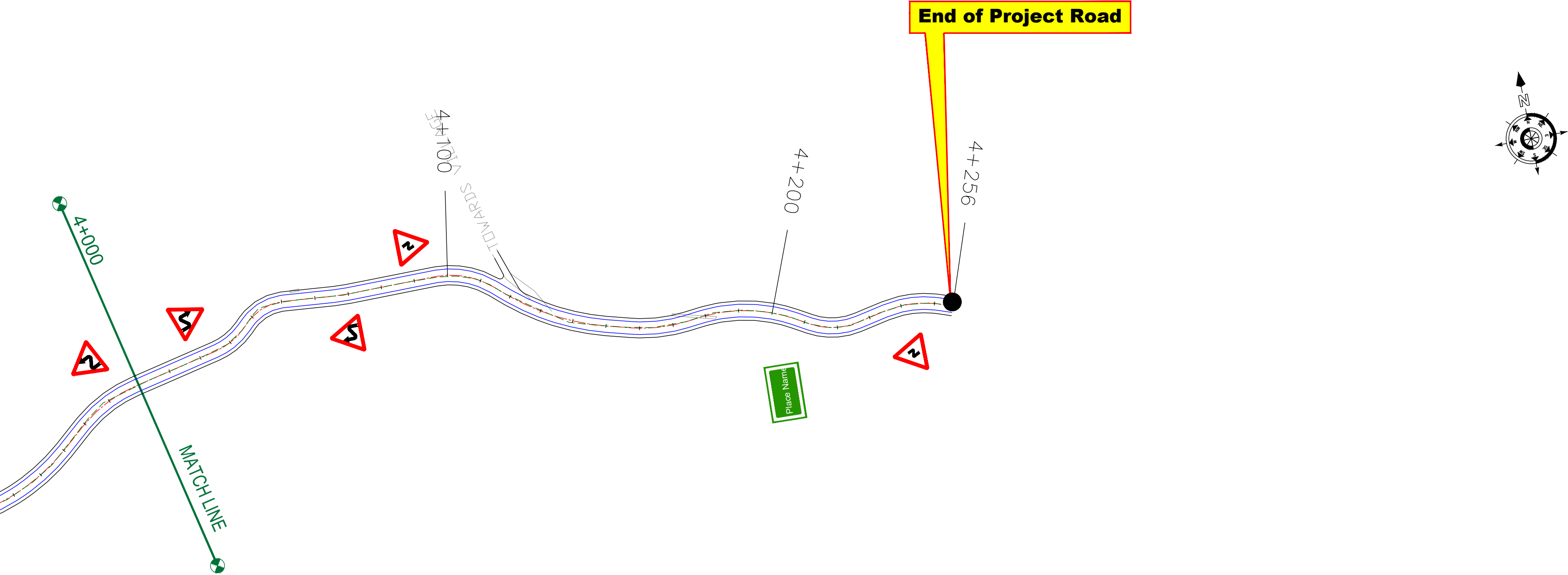
REV.	DATE	DESCRIPTION

DRAWN BY :	SD
DESIGNED BY :	SCK/MM
APPROVED BY :	KG
SCALE :	1:1000

TITLE : Signage Plan (Ch. 3+000 to Ch. 4+000)	
DRG. NO. : EPTISA/JTRFP/DPR/J&K/SP/04	
REVISION : R-1	September 2019

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CLIENT :



Jhelum Tawi Flood Recovery Project
2nd Floor ERA Commercial Complex Rambagh
Srinagar-190 009.

PROJECT :

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REV.	DATE	DESCRIPTION

DRAWN BY :	SD
DESIGNED BY :	SCK/MM
APPROVED BY :	KG
SCALE :	1:1000

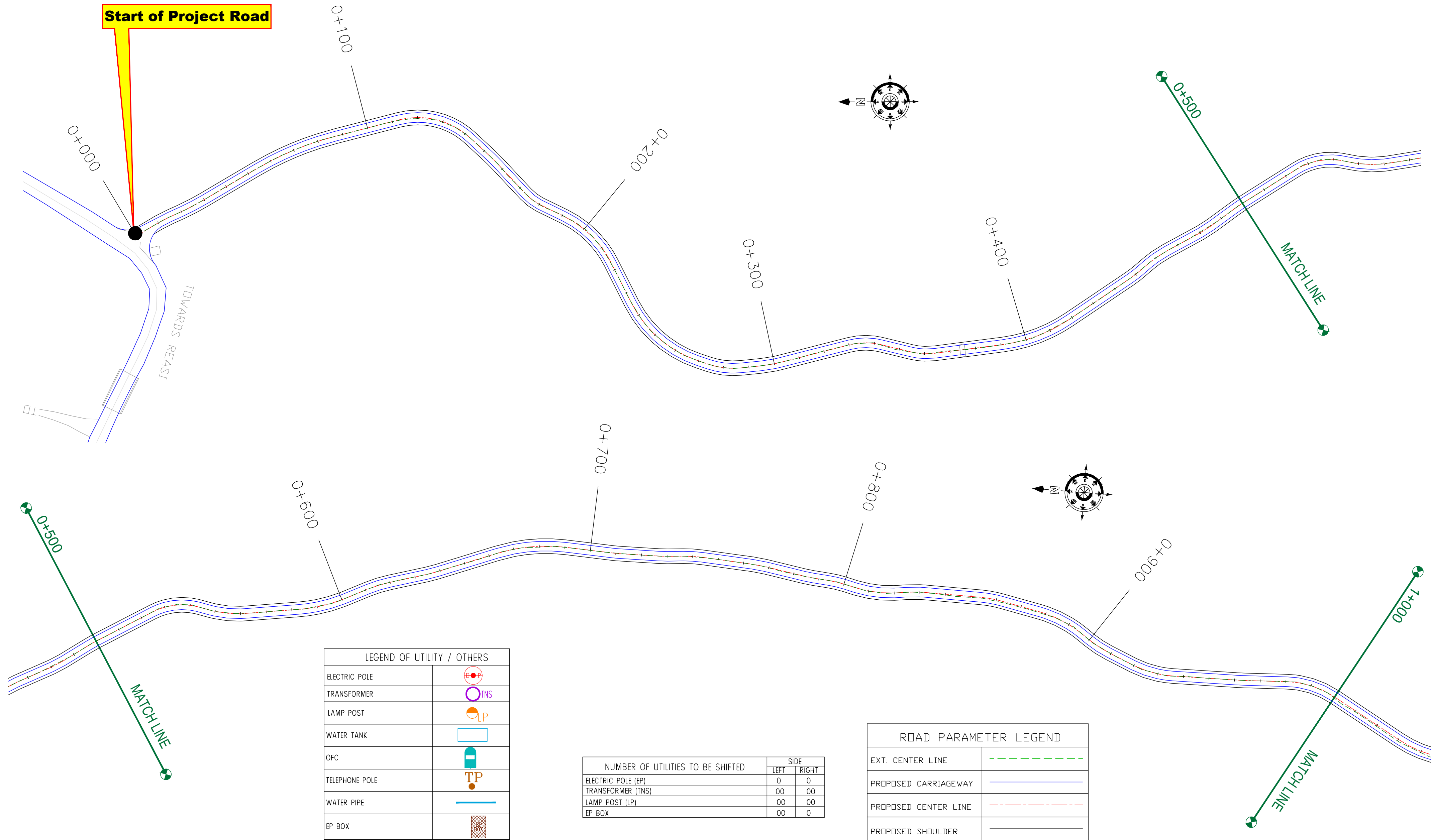
TITLE :	Signage Plan (Ch. 4+000 to Ch. 4+256)
DRG. NO. :	EPTISA/JTFRP/DPR/J&K/SP/05
REVISION : R-1	September 2019

≡ UTILITY RELOCATION PLAN FOR MAIN ROAD (ELECTRICITY DEPARTMENT) ≡

← Anji

Panasa →

Start of Project Road



LEGEND OF UTILITY / OTHERS	
ELECTRIC POLE	
TRANSFORMER	
LAMP POST	
WATER TANK	
OFC	
TELEPHONE POLE	
WATER PIPE	
EP BOX	

NUMBER OF UTILITIES TO BE SHIFTED	SIDE	
	LEFT	RIGHT
ELECTRIC POLE (EP)	0	0
TRANSFORMER (TNS)	00	00
LAMP POST (LP)	00	00
EP BOX	00	0

ROAD PARAMETER LEGEND	
EXT. CENTER LINE	
PROPOSED CARRIAGEWAY	
PROPOSED CENTER LINE	
PROPOSED SHOULDER	

CLIENT :



Jhelum Tawi Flood Recovery Project
2nd Floor ERA Commercial Complex Rambagh
Srinagar-190 009.

PROJECT :

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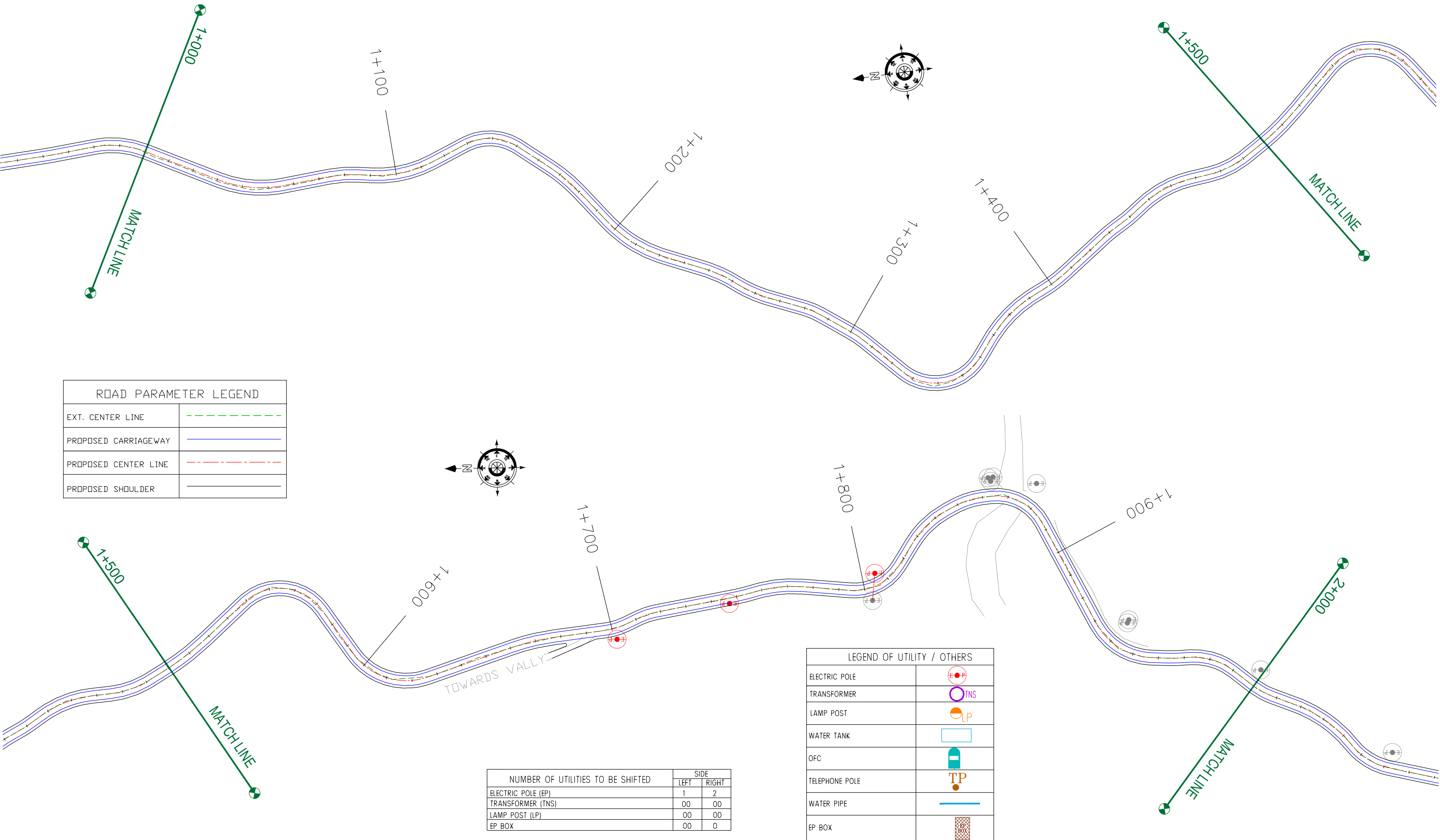
REV.	DATE	DESCRIPTION

DRAWN BY :	SD
DESIGNED BY :	SCK/MM
APPROVED BY :	KG
SCALE :	1:1000

TITLE :	Utility Relocation Plan (For Electricity Department) (Ch. 0+000 to Ch. 1+000)	
DRG. NO. :	EPTISA/JTRP/DPR/J&K/URP/01	
REVISION : R-1	September 2019	

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ROAD PARAMETER LEGEND	
EXT. CENTER LINE	
PROPOSED CARRIAGEWAY	
PROPOSED CENTER LINE	
PROPOSED SHOULDER	

NUMBER OF UTILITIES TO BE SHIFTED	SIDE	
	LEFT	RIGHT
ELECTRIC POLE (EP)	1	2
TRANSFORMER (TNS)	00	00
LAMP POST (LP)	00	00
EP BOX	00	0

LEGEND OF UTILITY / OTHERS	
ELECTRIC POLE	
TRANSFORMER	
LAMP POST	
WATER TANK	
OFC	
TELEPHONE POLE	
WATER PIPE	
EP BOX	

CLIENT :



Jhelum Tawi Flood Recovery Project
2nd Floor ERA Commercial Complex Rambagh
Srinagar-190 009.

PROJECT :

Consultancy Services for Preparing Detailed Project Report
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DESIGN CONSULTANT:



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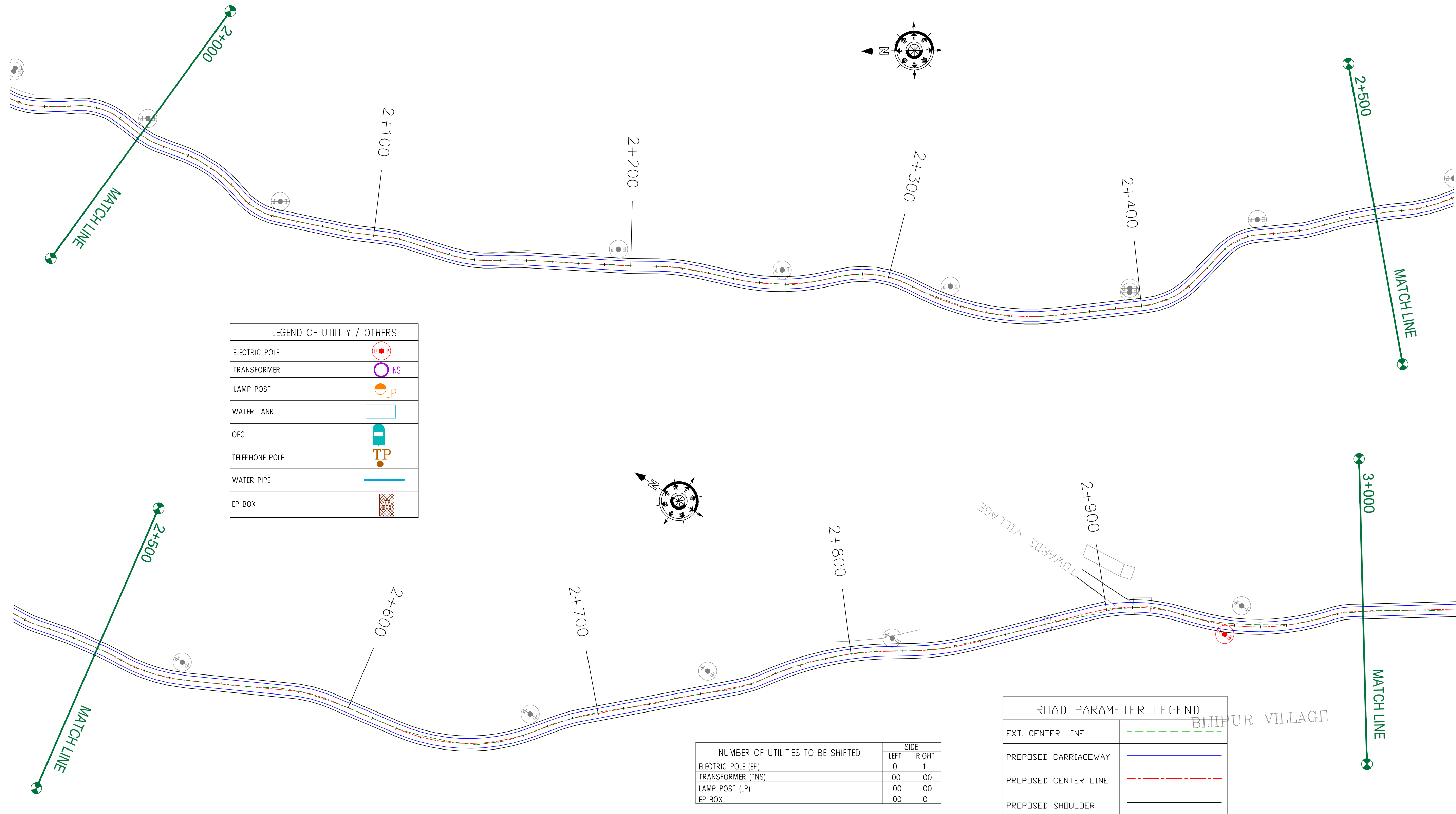
REV.	DATE	DESCRIPTION

DRAWN BY :	SD
DESIGNED BY :	SCK/MM
APPROVED BY :	KG
SCALE :	1:1000

TITLE : Utility Relocation Plan (For Electricity Department) (Ch. 1+000 to Ch. 2+000)	
DRG. NO. : EPTISA/JTRFP/DPR/J&K/URP/02	
REVISION : R-1	September 2019

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Panasa →



LEGEND OF UTILITY / OTHERS	
ELECTRIC POLE	
TRANSFORMER	
LAMP POST	
WATER TANK	
OFC	
TELEPHONE POLE	
WATER PIPE	
EP BOX	

NUMBER OF UTILITIES TO BE SHIFTED	SIDE	
	LEFT	RIGHT
ELECTRIC POLE (EP)	0	1
TRANSFORMER (TNS)	00	00
LAMP POST (LP)	00	00
EP BOX	00	0

ROAD PARAMETER LEGEND	
EXT. CENTER LINE	
PROPOSED CARRIAGEWAY	
PROPOSED CENTER LINE	
PROPOSED SHOULDER	

CLIENT :

Jhelum Tawi Flood Recovery Project
2nd Floor ERA Commercial Complex Rambagh
Srinagar-190 009.

PROJECT :

Consultancy Services for Preparing Detailed Project Report
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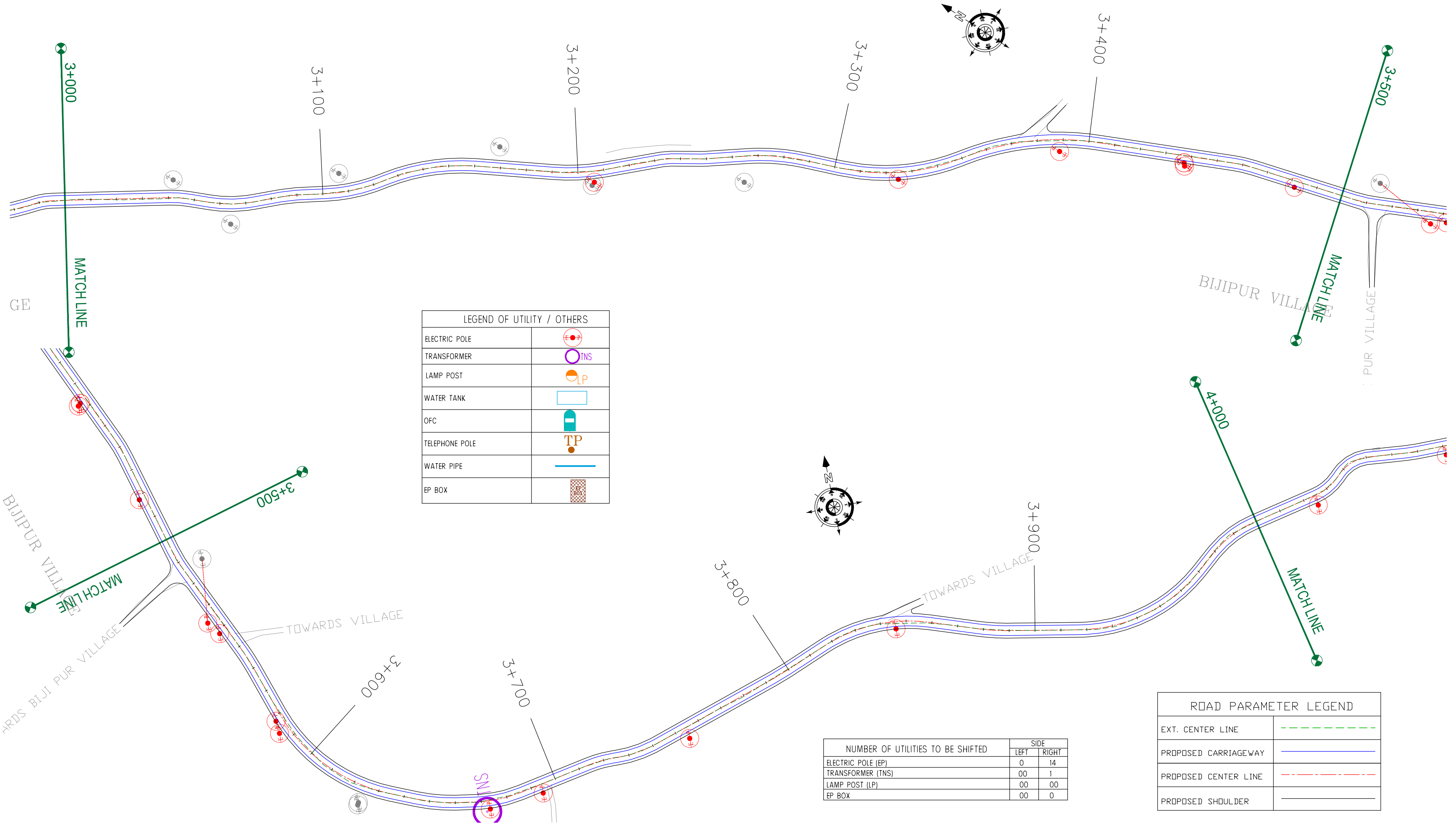
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DESIGNED BY :	SCK/MM
APPROVED BY :	KG
SCALE :	1:1000

TITLE : Utility Relocation Plan (For Electricity Department) (Ch. 2+000 to Ch. 3+000)	
DRG. NO. : EPTISA/JTRP/DPR/J&K/URP/03	
REVISION : R-1	September 2019

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Panasa →



LEGEND OF UTILITY / OTHERS	
ELECTRIC POLE	
TRANSFORMER	
LAMP POST	
WATER TANK	
OFC	
TELEPHONE POLE	
WATER PIPE	
EP BOX	

NUMBER OF UTILITIES TO BE SHIFTED	SIDE	
	LEFT	RIGHT
ELECTRIC POLE (EP)	0	14
TRANSFORMER (TNS)	00	1
LAMP POST (LP)	00	00
EP BOX	00	0

ROAD PARAMETER LEGEND	
EXT. CENTER LINE	
PROPOSED CARRIAGEWAY	
PROPOSED CENTER LINE	
PROPOSED SHOULDER	

CLIENT :



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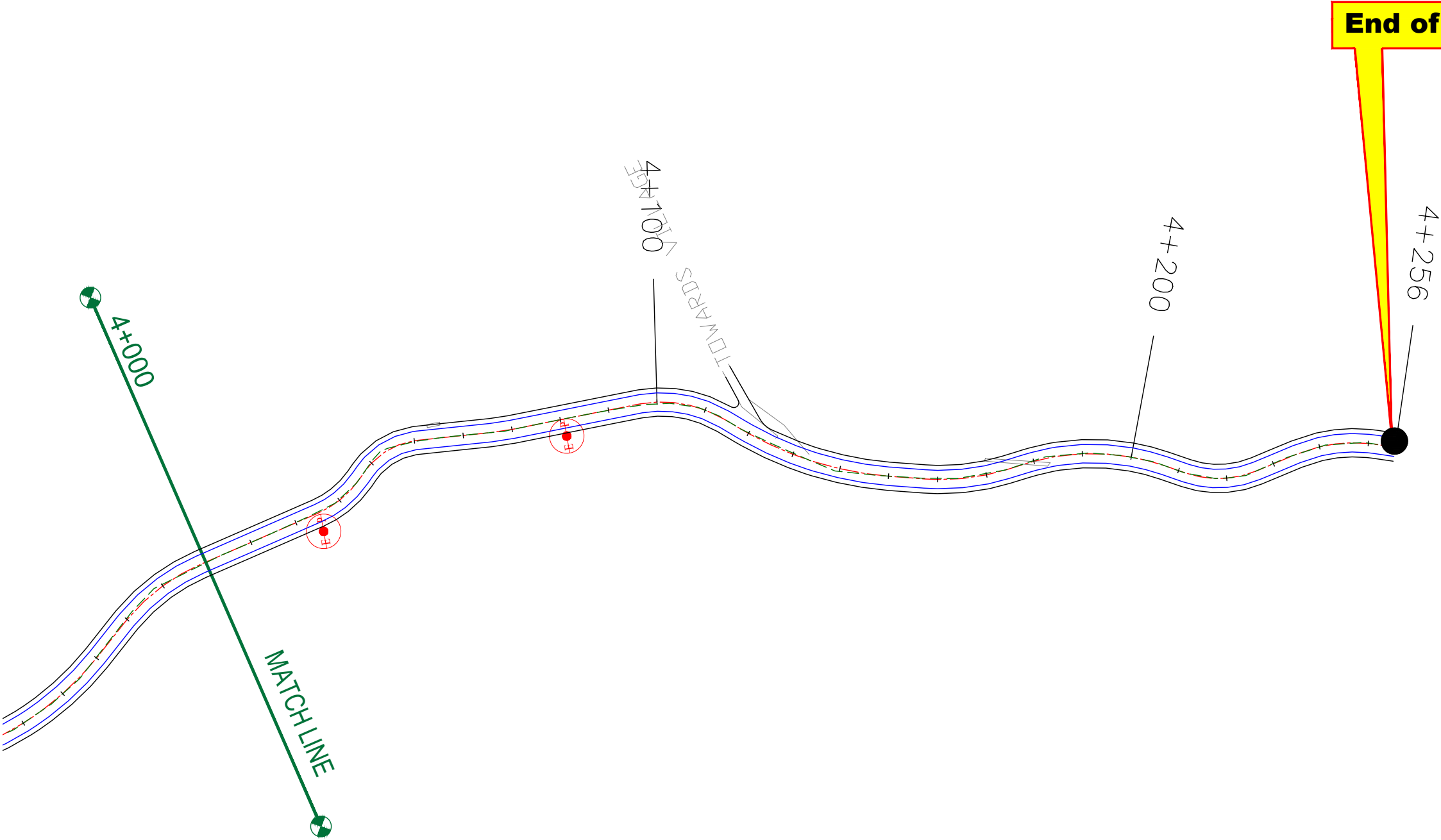
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DRAWN BY :	SD
DESIGNED BY :	SCK/MM
APPROVED BY :	KG
SCALE :	1:1000

TITLE :	Utility Relocation Plan (For Electricity Department) (Ch. 3+000 to Ch. 4+000)	
DRG. NO. :	EPTISA/JTRFP/DPR/J&K/URP/04	
REVISION : R-1	September 2019	

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Panasa →



LEGEND OF UTILITY / OTHERS	
ELECTRIC POLE	
TRANSFORMER	
LAMP POST	
WATER TANK	
OFC	
TELEPHONE POLE	
WATER PIPE	
EP BOX	

NUMBER OF UTILITIES TO BE SHIFTED	SIDE	
	LEFT	RIGHT
ELECTRIC POLE (EP)	0	2
TRANSFORMER (TNS)	00	00
LAMP POST (LP)	00	00
EP BOX	00	0

ROAD PARAMETER LEGEND	
EXT. CENTER LINE	
PROPOSED CARRIAGEWAY	
PROPOSED CENTER LINE	
PROPOSED SHOULDER	

CLIENT :



Jhelum Tawi Flood Recovery Project
2nd Floor ERA Commercial Complex Rambagh
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REV.	DATE	DESCRIPTION

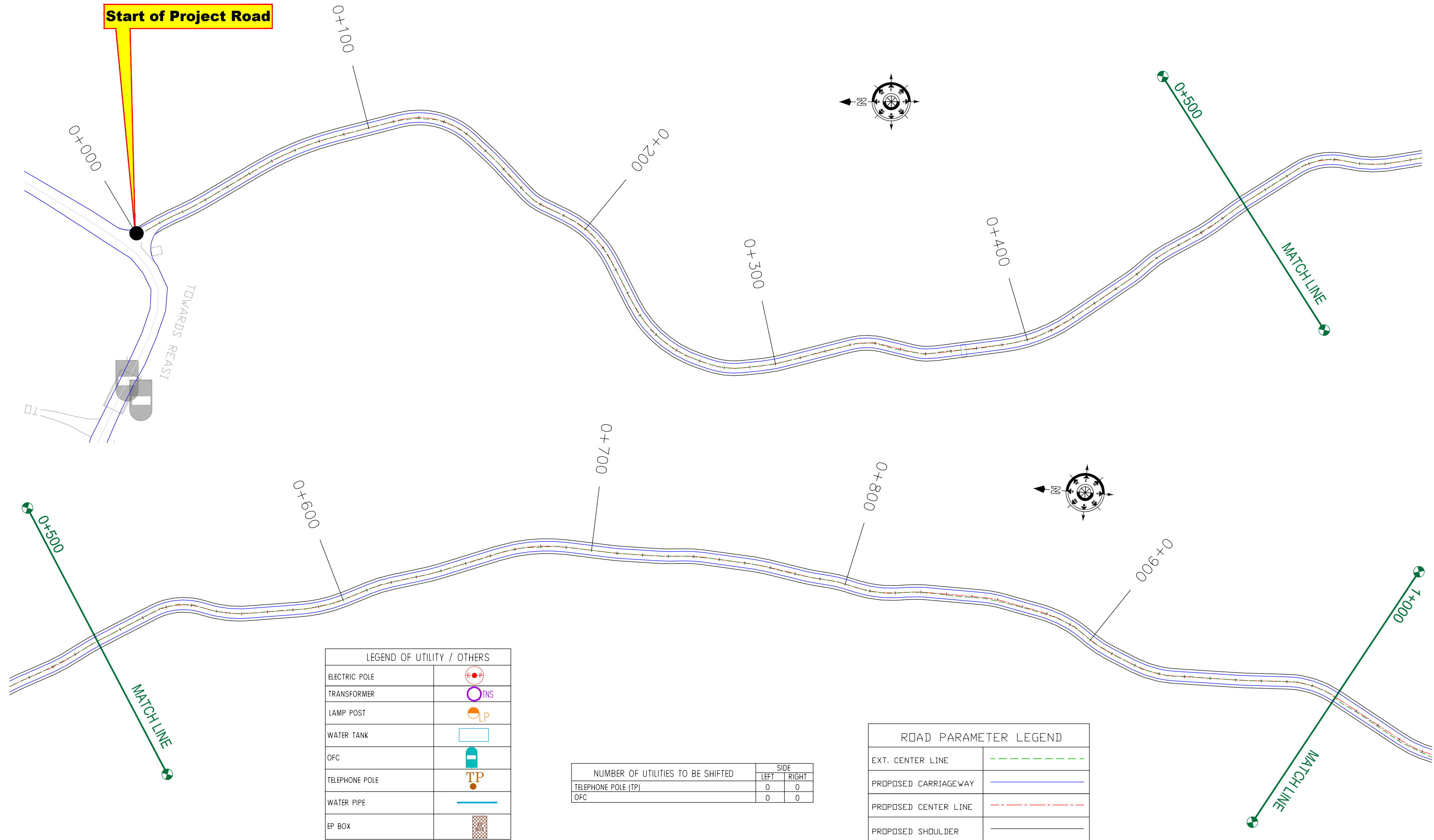
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DESIGNED BY :	SCK/MM
APPROVED BY :	KG
SCALE :	1:1000

TITLE :	Utility Relocation Plan (For Electricity Department) (Ch. 4+000 to Ch. 4+256)	
DRG. NO. :	EPTISA/JTRP/DPR/J&K/URP/05	
REVISION : R-1	September 2019	

≡ UTILITY RELOCATION PLAN FOR MAIN ROAD (TELEPHONE DEPARTMENT) ≡

← Anji

Panasa →



LEGEND OF UTILITY / OTHERS	
ELECTRIC POLE	
TRANSFORMER	
LAMP POST	
WATER TANK	
OFC	
TELEPHONE POLE	
WATER PIPE	
EP BOX	

NUMBER OF UTILITIES TO BE SHIFTED	SIDE	
	LEFT	RIGHT
TELEPHONE POLE (TP)	0	0
OFC	0	0

ROAD PARAMETER LEGEND	
EXT. CENTER LINE	
PROPOSED CARRIAGEWAY	
PROPOSED CENTER LINE	
PROPOSED SHOULDER	

CLIENT :



Jhelum Tawi Flood Recovery Project
2nd Floor ERA Commercial Complex Rambagh
Srinagar-190 009.

PROJECT :

Consultancy Services for Preparing Detailed Project Report
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REV.	DATE	DESCRIPTION

DRAWN BY : SD

DESIGNED BY : SCK/MM

APPROVED BY : KG

SCALE : 1:1000

TITLE :

Utility Relocation Plan
(For Telephone Department)
(Ch. 0+000 to Ch. 1+000)

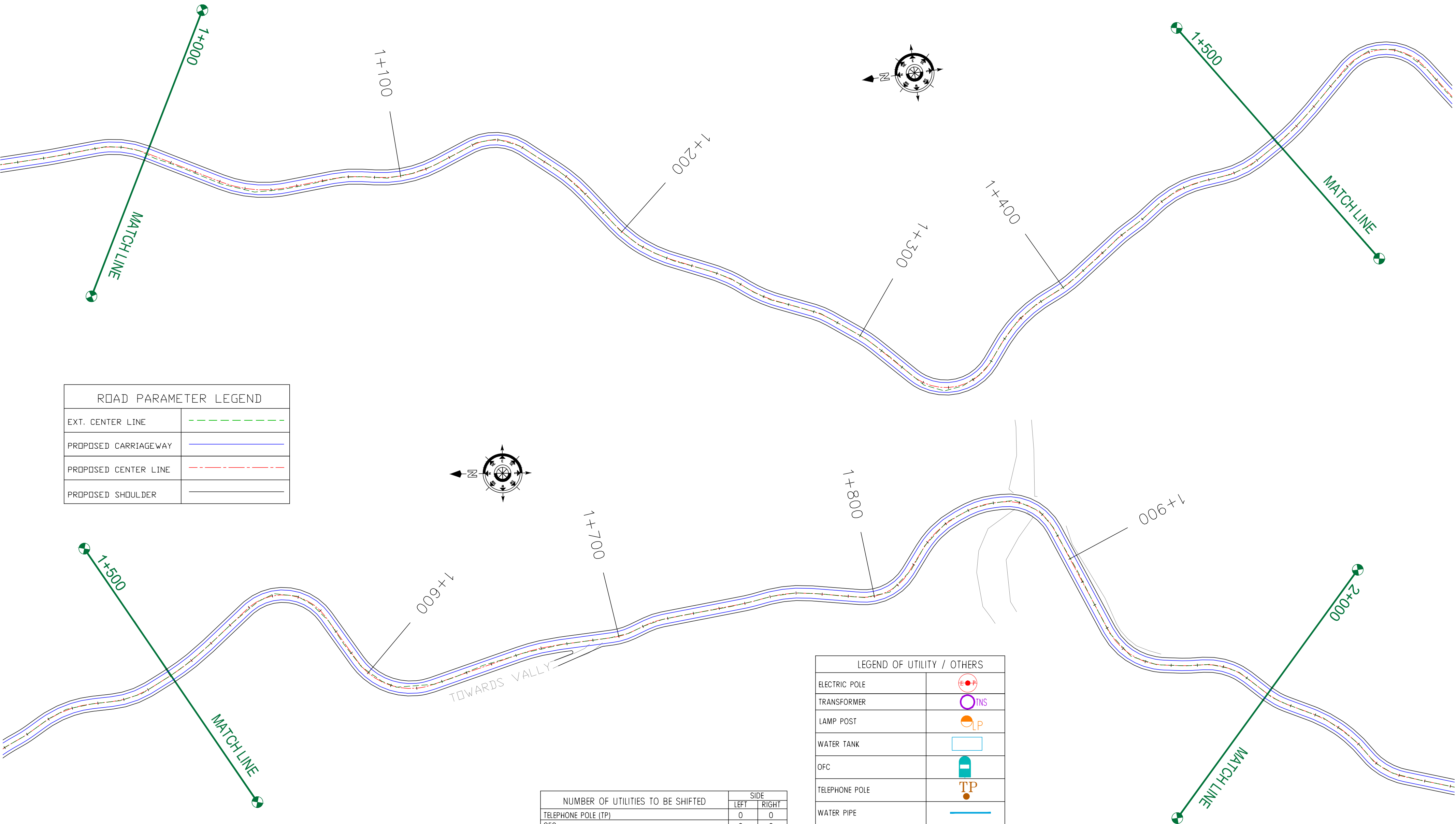
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REVISION : R-1

September 2019

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Panasa →



ROAD PARAMETER LEGEND	
EXT. CENTER LINE	
PROPOSED CARRIAGEWAY	
PROPOSED CENTER LINE	
PROPOSED SHOULDER	

LEGEND OF UTILITY / OTHERS	
ELECTRIC POLE	
TRANSFORMER	
LAMP POST	
WATER TANK	
OFC	
TELEPHONE POLE	
WATER PIPE	
EP BOX	

NUMBER OF UTILITIES TO BE SHIFTED	SIDE	
	LEFT	RIGHT
TELEPHONE POLE (TP)	0	0
OFC	0	0

CLIENT :



Jhelum Tawi Flood Recovery Project
2nd Floor ERA Commercial Complex Rambagh
Srinagar-190 009.

PROJECT :

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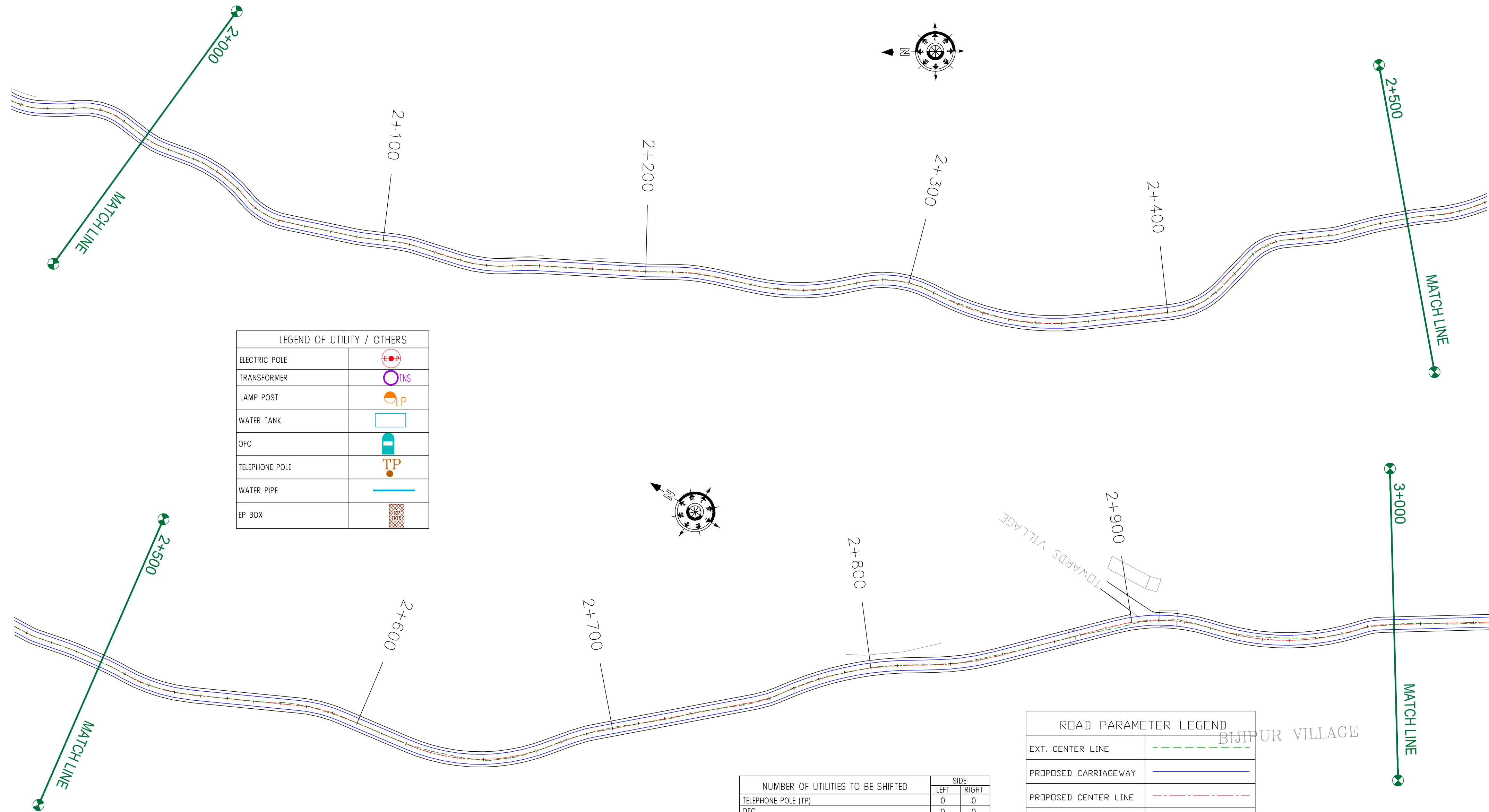
REV.	DATE	DESCRIPTION

DRAWN BY :	SD
DESIGNED BY :	SCK/MM
APPROVED BY :	KG
SCALE :	1:1000

TITLE : Utility Relocation Plan (For Telephone Department) (Ch. 1+000 to Ch. 2+000)	
DRG. NO. : EPTISA/JTRFP/DPR/J&K/URP/02	
REVISION : R-1	September 2019

← Anji

Panasa →



LEGEND OF UTILITY / OTHERS	
ELECTRIC POLE	
TRANSFORMER	
LAMP POST	
WATER TANK	
OFC	
TELEPHONE POLE	
WATER PIPE	
EP BOX	

ROAD PARAMETER LEGEND	
EXT. CENTER LINE	
PROPOSED CARRIAGEWAY	
PROPOSED CENTER LINE	
PROPOSED SHOULDER	

NUMBER OF UTILITIES TO BE SHIFTED	SIDE	
	LEFT	RIGHT
TELEPHONE POLE (TP)	0	0
OFC	0	0

CLIENT :

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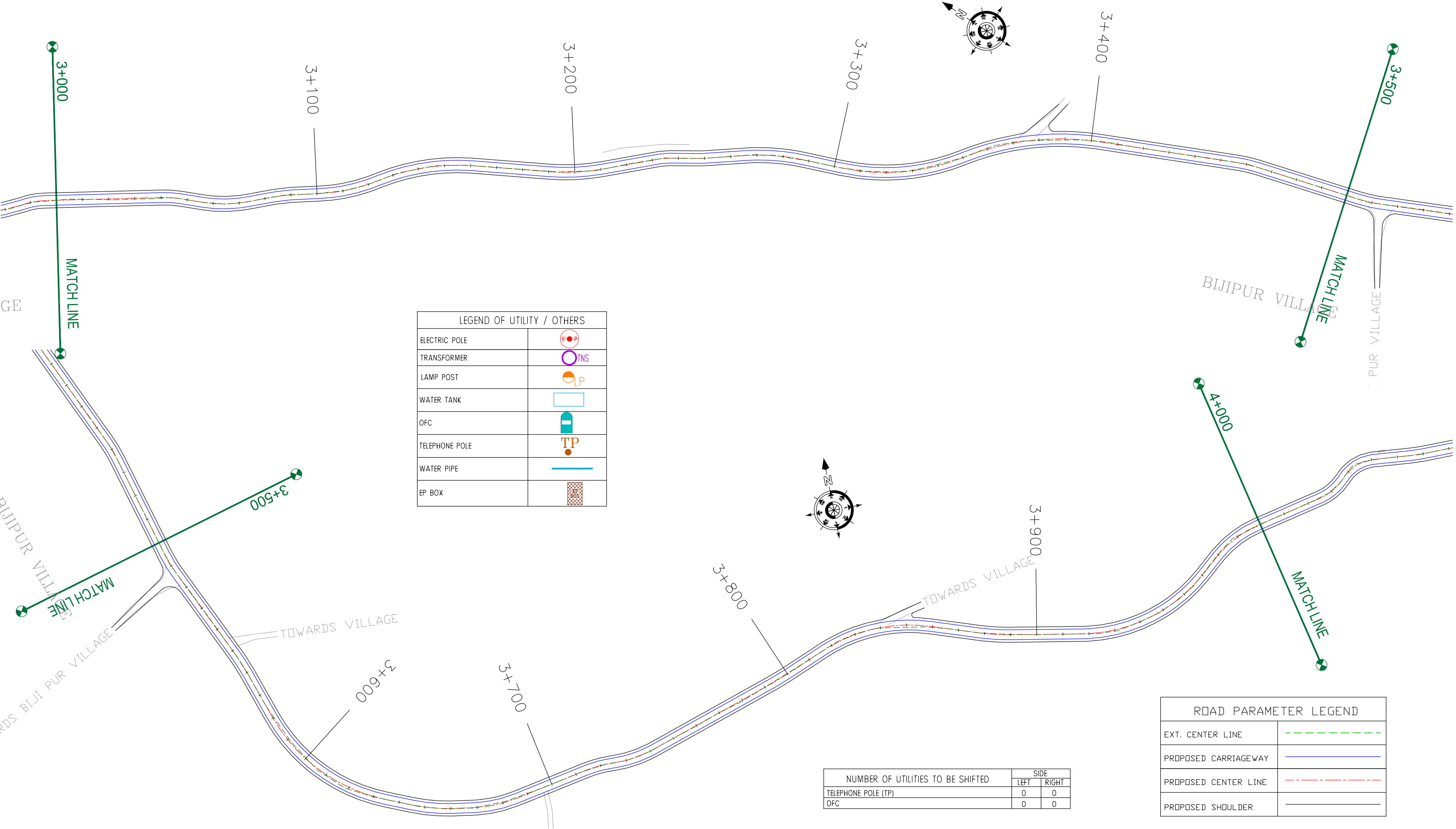
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DRAWN BY :	SD
DESIGNED BY :	SCK/MM
APPROVED BY :	KG
SCALE :	1:1000

TITLE : Utility Relocation Plan (For Telephone Department) (Ch. 2+000 to Ch. 3+000)	
DRG. NO. : EPTISA/JTRFP/DPR/J&K/URP/03	
REVISION : R-1	September 2019

← Anji

Panasa →



LEGEND OF UTILITY / OTHERS	
ELECTRIC POLE	
TRANSFORMER	
LAMP POST	
WATER TANK	
OFC	
TELEPHONE POLE	
WATER PIPE	
EP BOX	

NUMBER OF UTILITIES TO BE SHIFTED	SIDE	
	LEFT	RIGHT
TELEPHONE POLE (TP)	0	0
OFC	0	0

ROAD PARAMETER LEGEND	
EXT. CENTER LINE	
PROPOSED CARRIAGEWAY	
PROPOSED CENTER LINE	
PROPOSED SHOULDER	

CLIENT :



Jhelum Tawi Flood Recovery Project
2nd Floor ERA Commercial Complex Rambagh
Srinagar-190 009.

PROJECT :

Consultancy Services for Preparing Detailed Project Report
for the Road works in Jammu and Kashmir
(Anji Panasa Road)

DESIGN CONSULTANT:



Servicios de Ingenieria S.L.
Unit 1203, 12th Floor, Tower 1, PS Srijan
Corporate Park, Plot No. 2, Block EP & GP,
Sector v, Salt Lake Kolkata - 700091,
West Bengal
Ph: 033-40347200
www.eptisa.com

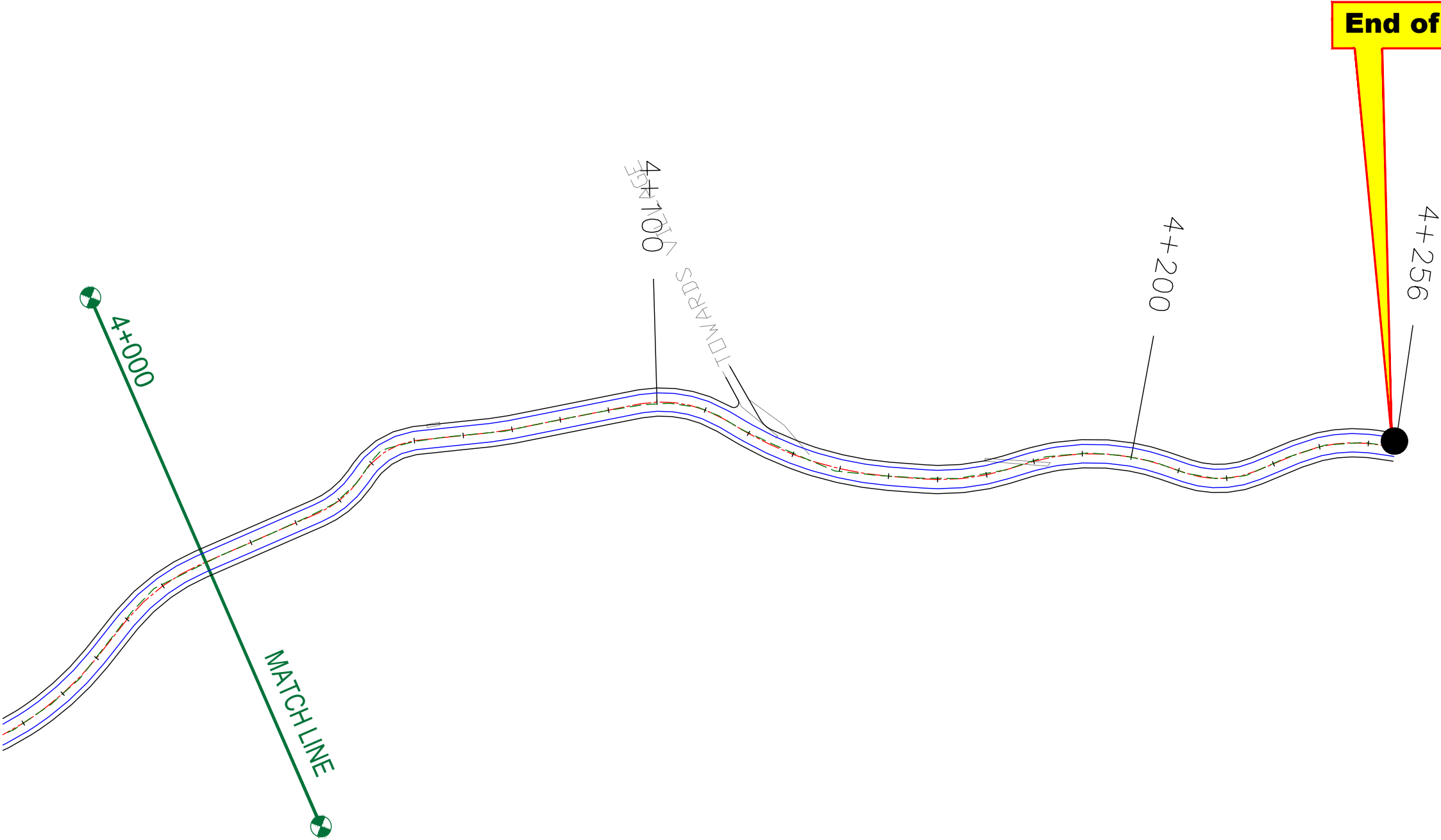
REV.	DATE	DESCRIPTION

DRAWN BY :	SD
DESIGNED BY :	SCK/MM
APPROVED BY :	KG
SCALE :	1:1000

TITLE : Utility Relocation Plan (For Telephone Department) (Ch. 3+000 to Ch. 4+000)	
DRG. NO. : EPTISA/JTRFP/DPR/J&K/URP/04	
REVISION : R-1	September 2019

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LEGEND OF UTILITY / OTHERS	
ELECTRIC POLE	
TRANSFORMER	
LAMP POST	
WATER TANK	
OFC	
TELEPHONE POLE	
WATER PIPE	
EP BOX	

NUMBER OF UTILITIES TO BE SHIFTED	SIDE	
	LEFT	RIGHT
TELEPHONE POLE (TP)	0	0
OFC	0	0

ROAD PARAMETER LEGEND	
EXT. CENTER LINE	
PROPOSED CARRIAGEWAY	
PROPOSED CENTER LINE	
PROPOSED SHOULDER	

CLIENT :



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REV.	DATE	DESCRIPTION

DRAWN BY : SD

DESIGNED BY : SCK/MM

APPROVED BY : KG

SCALE : 1:1000

TITLE :

Utility Relocation Plan
(For Telephone Department)
(Ch. 4+000 to Ch. 4+256)

DRG. NO. : EPTISA/JTFRP/DPR/J&K/URP/05

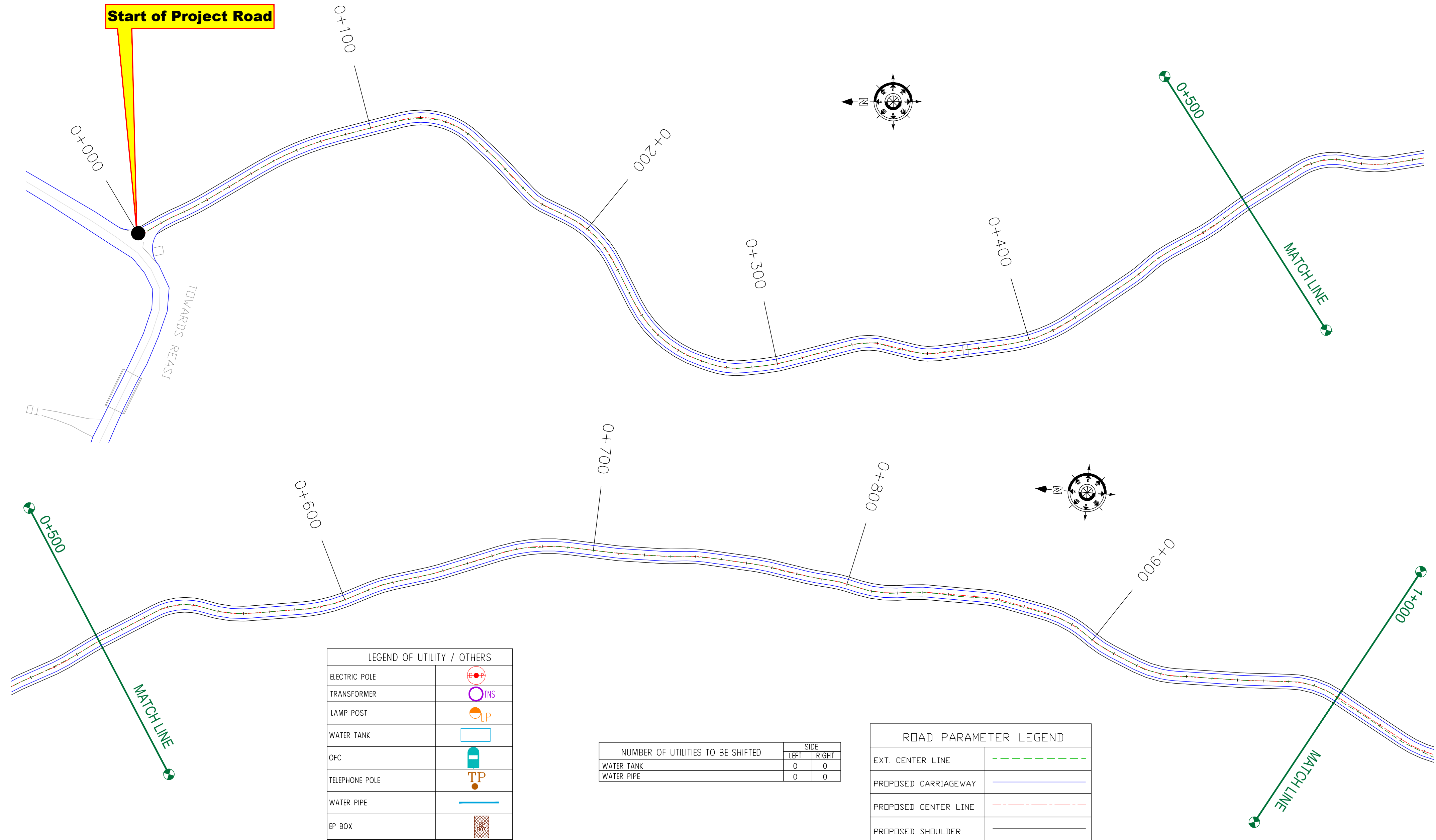
REVISION : R-1

September 2019

≡ UTILITY RELOCATION PLAN FOR MAIN ROAD (WATER DEPARTMENT) ≡

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CLIENT :



Jhelum Tawi Flood Recovery Project
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REV.	DATE	DESCRIPTION

DRAWN BY : SD

DESIGNED BY : SCK/MM

APPROVED BY : KG

SCALE : 1:1000

TITLE :

Utility Relocation Plan
(For Water Department)
(Ch. 0+000 to Ch. 1+000)

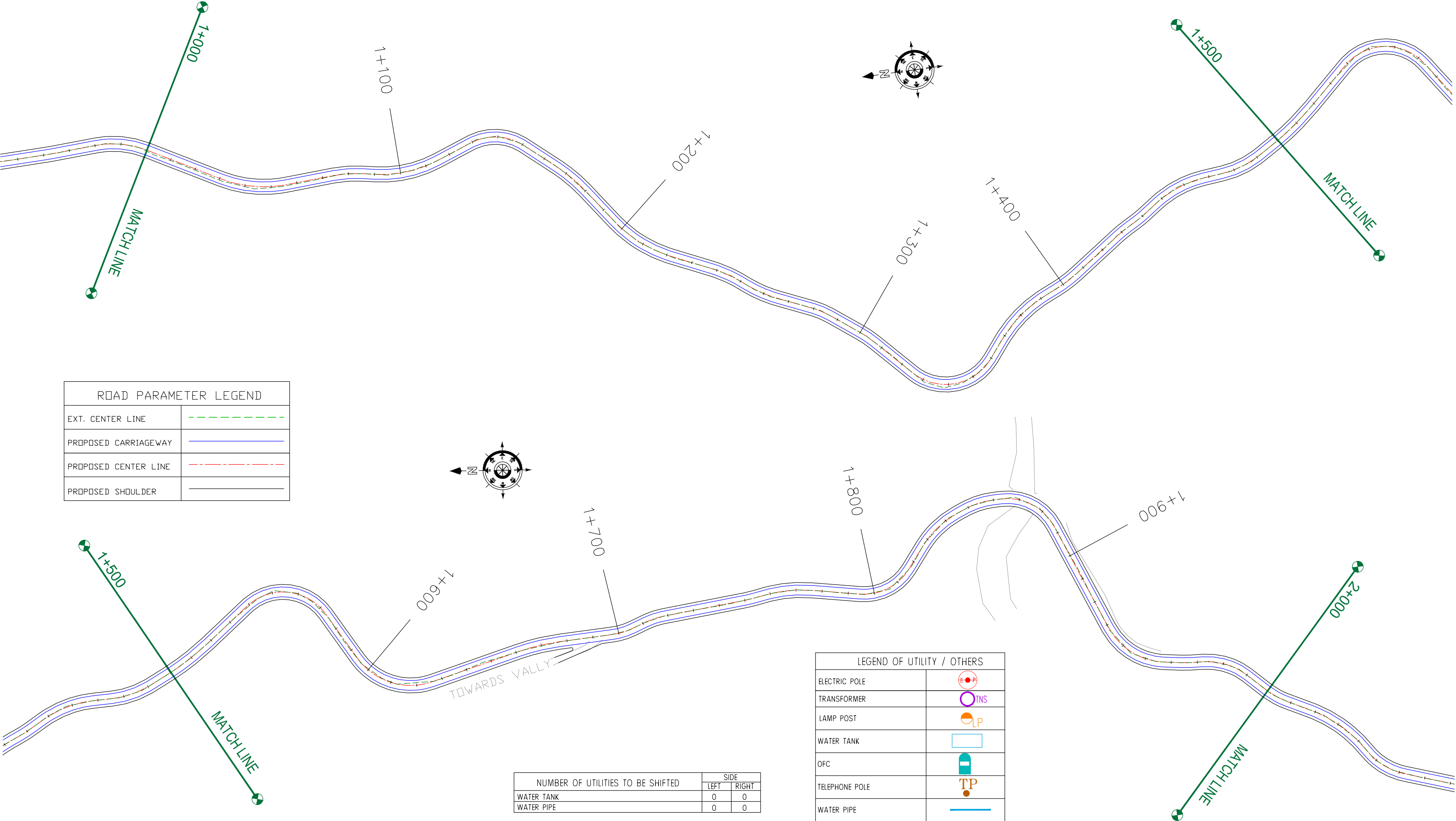
DRG. NO. : EPTISA/JTRFP/DPR/J&K/URP/01

REVISION : R-1

September 2019

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Panasa →



ROAD PARAMETER LEGEND	
EXT. CENTER LINE	
PROPOSED CARRIAGEWAY	
PROPOSED CENTER LINE	
PROPOSED SHOULDER	

NUMBER OF UTILITIES TO BE SHIFTED	SIDE	
	LEFT	RIGHT
WATER TANK	0	0
WATER PIPE	0	0

LEGEND OF UTILITY / OTHERS	
ELECTRIC POLE	
TRANSFORMER	
LAMP POST	
WATER TANK	
OFC	
TELEPHONE POLE	
WATER PIPE	
EP BOX	

CLIENT :



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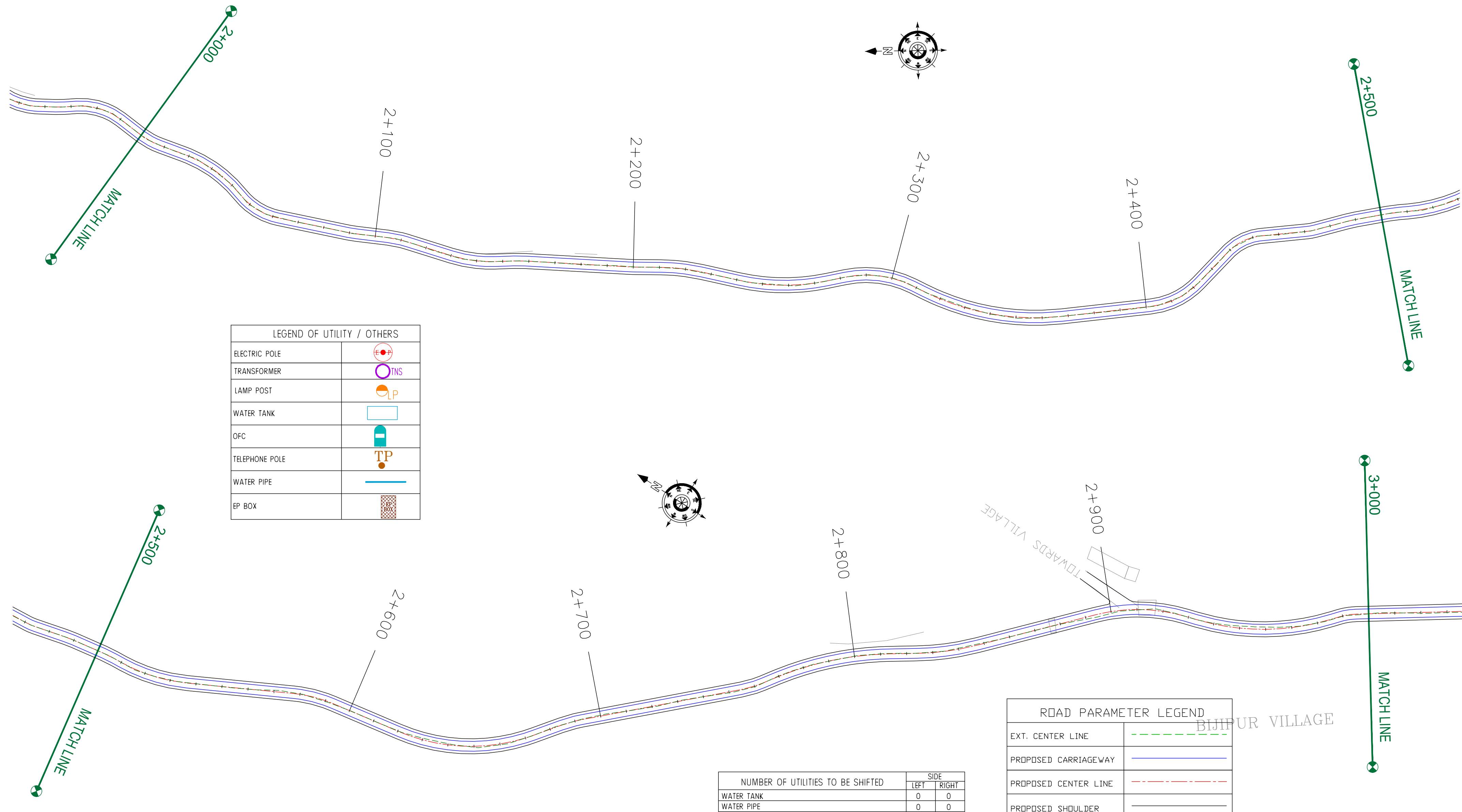
REV.	DATE	DESCRIPTION

DRAWN BY :	SD
DESIGNED BY :	SCK/MM
APPROVED BY :	KG
SCALE :	1:1000

TITLE :	Utility Relocation Plan (For Water Department) (Ch. 1+000 to Ch. 2+000)	
DRG. NO. :	EPTISA/JTFRP/DPR/J&K/URP/02	
REVISION : R-1	September 2019	

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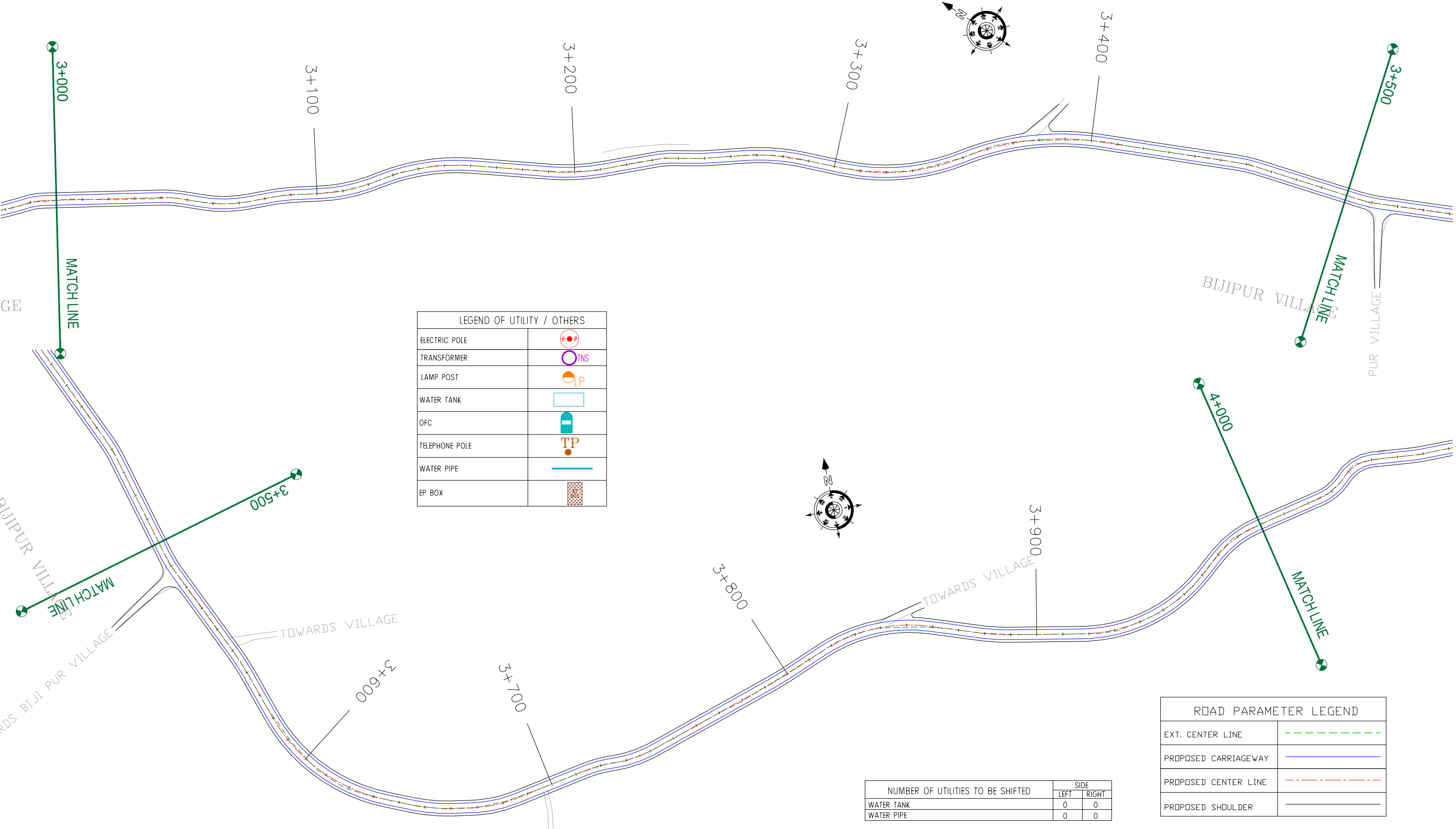
REV.	DATE	DESCRIPTION

DRAWN BY :	SD
DESIGNED BY :	SCK/MM
APPROVED BY :	KG
SCALE :	1:1000

TITLE : Utility Relocation Plan (For Water Department) (Ch. 2+000 to Ch. 3+000)	
DRG. NO. : EPTISA/JTRFP/DPR/J&K/URP/03	
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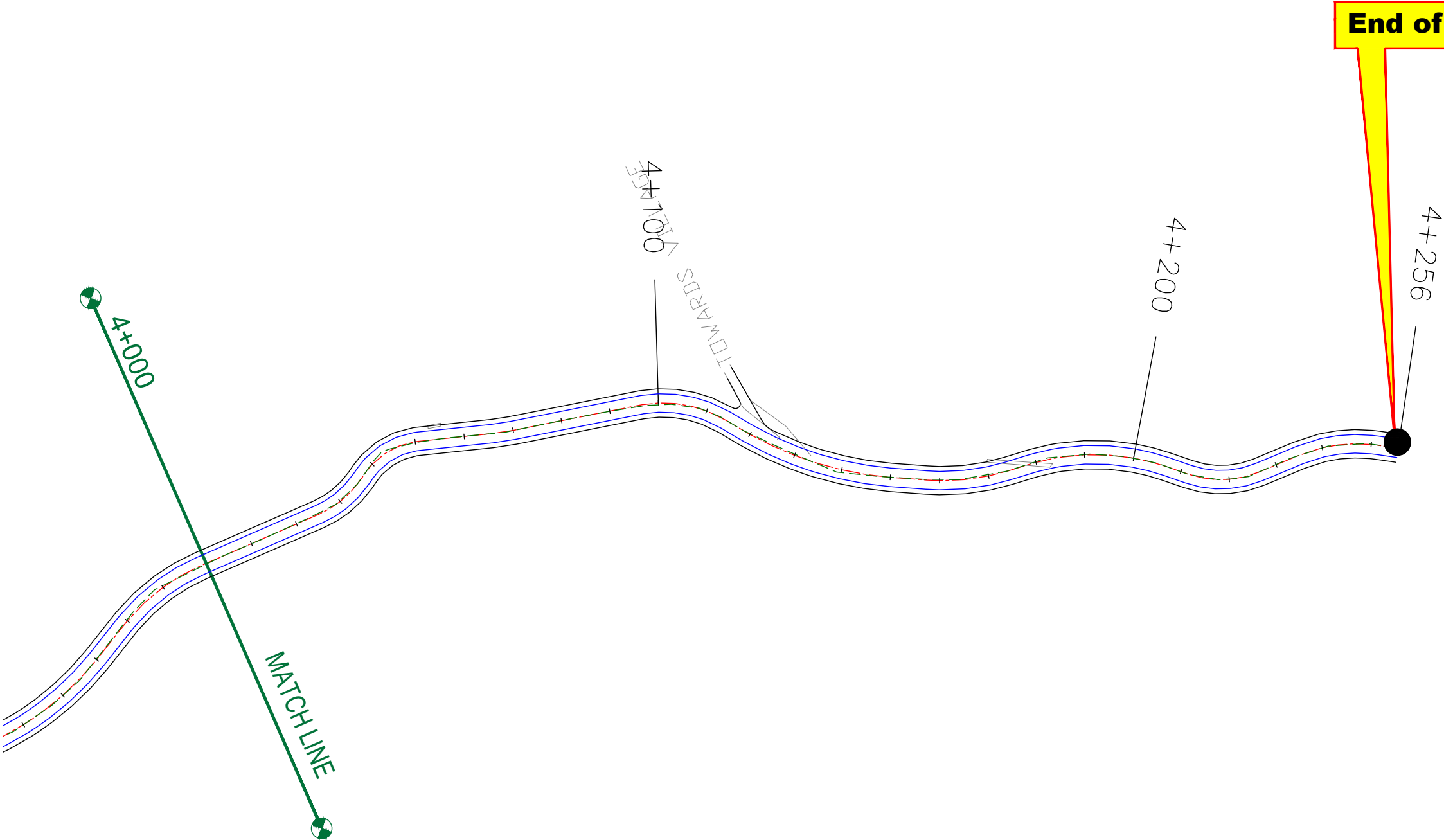
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DESIGNED BY :	SCK/MM
APPROVED BY :	KG
SCALE :	1:1000

TITLE :	Utility Relocation Plan (For Water Department) (Ch. 3+000 to Ch. 4+000)	
DRG. NO. :	EPTISA/JTRFP/DPR/J&K/URP/04	
REVISION : R-1	September 2019	

← Anji

Panasa →



LEGEND OF UTILITY / OTHERS	
ELECTRIC POLE	
TRANSFORMER	
LAMP POST	
WATER TANK	
OFC	
TELEPHONE POLE	
WATER PIPE	
EP BOX	

NUMBER OF UTILITIES TO BE SHIFTED	SIDE	
	LEFT	RIGHT
WATER TANK	0	0
WATER PIPE	0	0

ROAD PARAMETER LEGEND	
EXT. CENTER LINE	
PROPOSED CARRIAGEWAY	
PROPOSED CENTER LINE	
PROPOSED SHOULDER	

CLIENT :



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REV.	DATE	DESCRIPTION

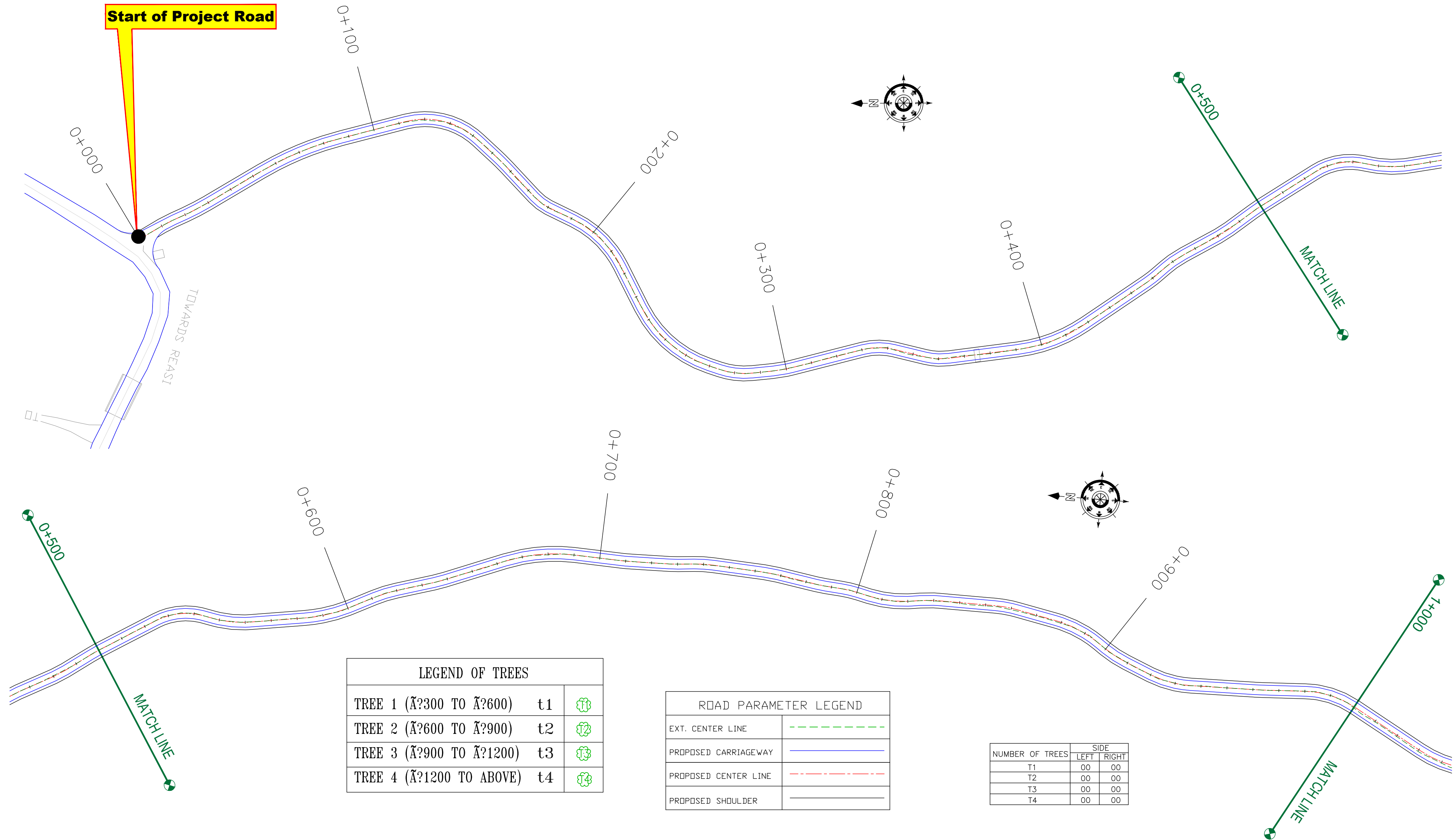
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DESIGNED BY :	SCK/MM
APPROVED BY :	KG
SCALE :	1:1000

TITLE :	Utility Relocation Plan (For Water Department) (Ch. 4+000 to Ch. 4+256)	
DRG. NO. :	EPTISA/JTFRP/DPR/J&K/URP/05	
REVISION : R-1	September 2019	

≡ TREE CUTTING (MAIN ROAD) ≡

← Anji

Panasa →



LEGEND OF TREES		
TREE 1 (¿300 TO ¿600)	t1	
TREE 2 (¿600 TO ¿900)	t2	
TREE 3 (¿900 TO ¿1200)	t3	
TREE 4 (¿1200 TO ABOVE)	t4	

ROAD PARAMETER LEGEND	
EXT. CENTER LINE	
PROPOSED CARRIAGEWAY	
PROPOSED CENTER LINE	
PROPOSED SHOULDER	

NUMBER OF TREES	SIDE	
	LEFT	RIGHT
T1	00	00
T2	00	00
T3	00	00
T4	00	00

CLIENT :



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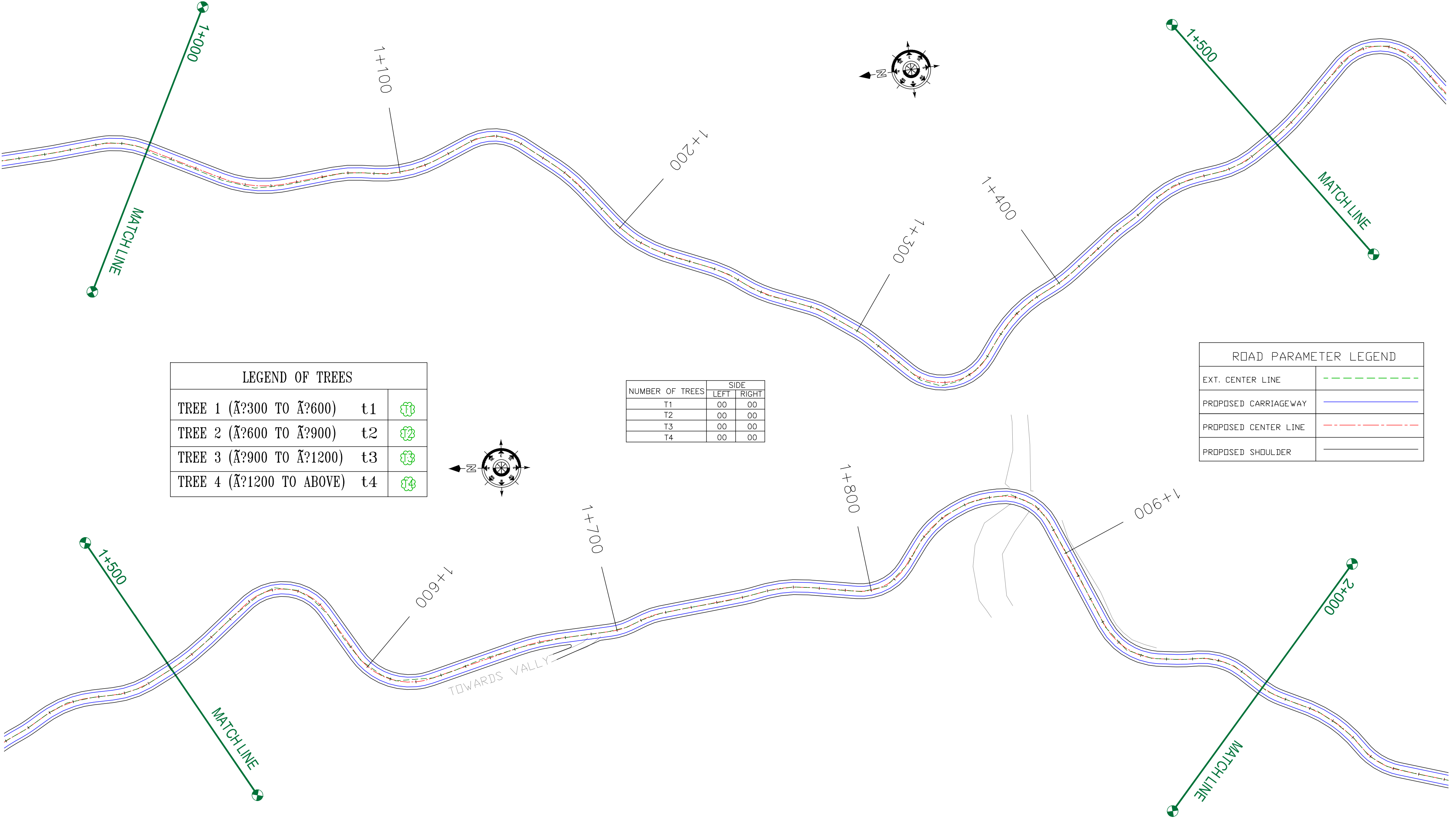
REV.	DATE	DESCRIPTION

DRAWN BY :	SD
DESIGNED BY :	SCK/MM
APPROVED BY :	KG
SCALE :	1:1000

TITLE : TREE CUTTING (Ch. 0+000 to Ch. 1+000)	
DRG. NO. : EPTISA/JTRP/DPR/J&K/TC/01	
REVISION : R-1	September 2019

← Anji

Panasa →



LEGEND OF TREES		
TREE 1 (Ų300 TO Ų600)	t1	
TREE 2 (Ų600 TO Ų900)	t2	
TREE 3 (Ų900 TO Ų1200)	t3	
TREE 4 (Ų1200 TO ABOVE)	t4	

NUMBER OF TREES	SIDE	
	LEFT	RIGHT
T1	00	00
T2	00	00
T3	00	00
T4	00	00

ROAD PARAMETER LEGEND	
EXT. CENTER LINE	
PROPOSED CARRIAGEWAY	
PROPOSED CENTER LINE	
PROPOSED SHOULDER	

CLIENT :



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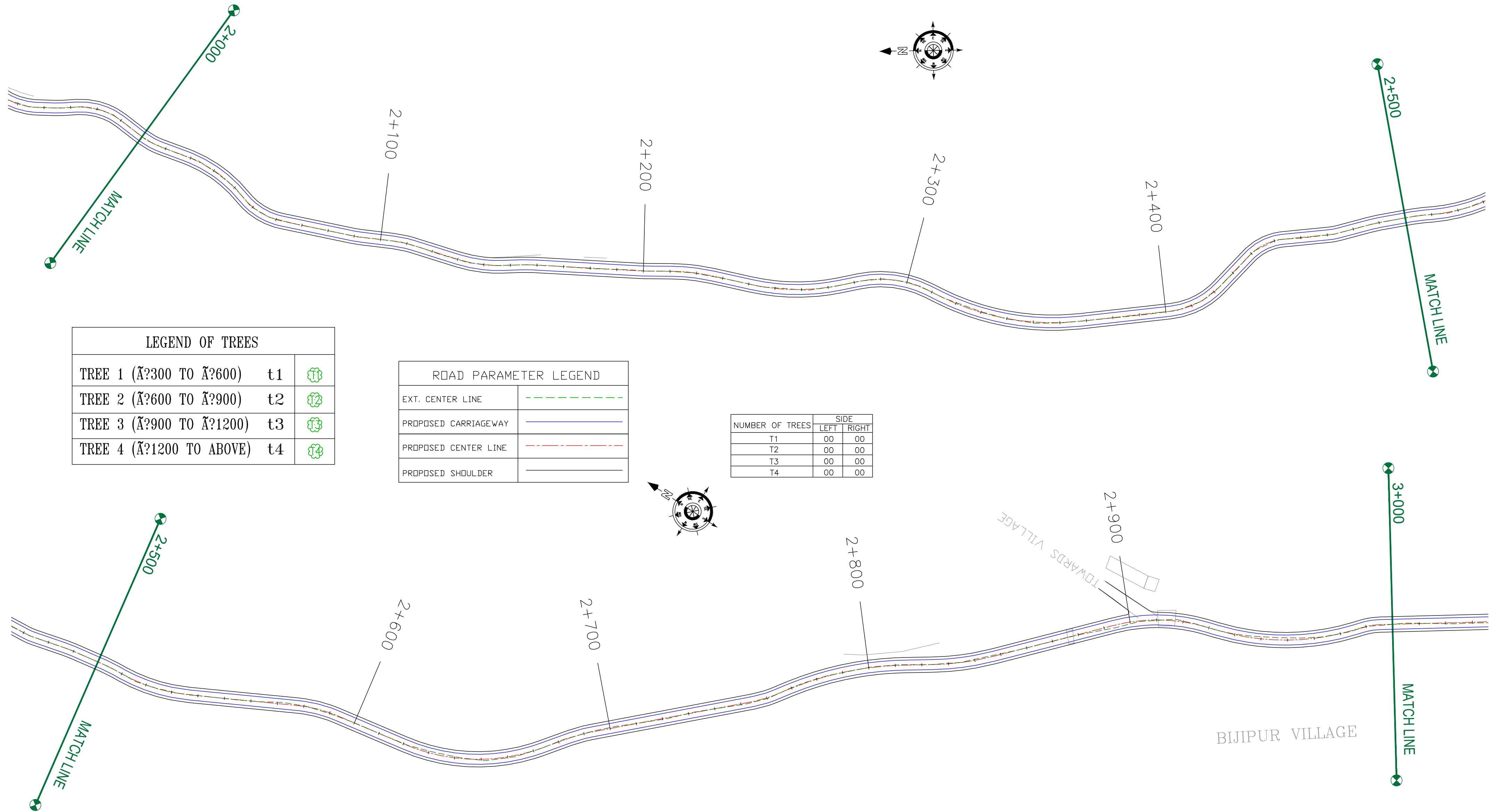
REV.	DATE	DESCRIPTION

DRAWN BY :	SD
DESIGNED BY :	SCK/MM
APPROVED BY :	KG
SCALE :	1:1000

TITLE : TREE CUTTING (Ch. 1+000 to Ch. 2+000)	
DRG. NO. : EPTISA/JTRFP/DPR/J&K/TC/02	
REVISION : R-1	September 2019

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LEGEND OF TREES

TREE 1 (Ã?300 TO Ã?600)	t1	
TREE 2 (Ã?600 TO Ã?900)	t2	
TREE 3 (Ã?900 TO Ã?1200)	t3	
TREE 4 (Ã?1200 TO ABOVE)	t4	

ROAD PARAMETER LEGEND

EXT. CENTER LINE	
PROPOSED CARRIAGEWAY	
PROPOSED CENTER LINE	
PROPOSED SHOULDER	

NUMBER OF TREES	SIDE	
	LEFT	RIGHT
T1	00	00
T2	00	00
T3	00	00
T4	00	00

CLIENT :



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Srinagar-190 009.

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REV.	DATE	DESCRIPTION

DRAWN BY : SD

DESIGNED BY : SCK/MM

APPROVED BY : KG

SCALE : 1:1000

TITLE :

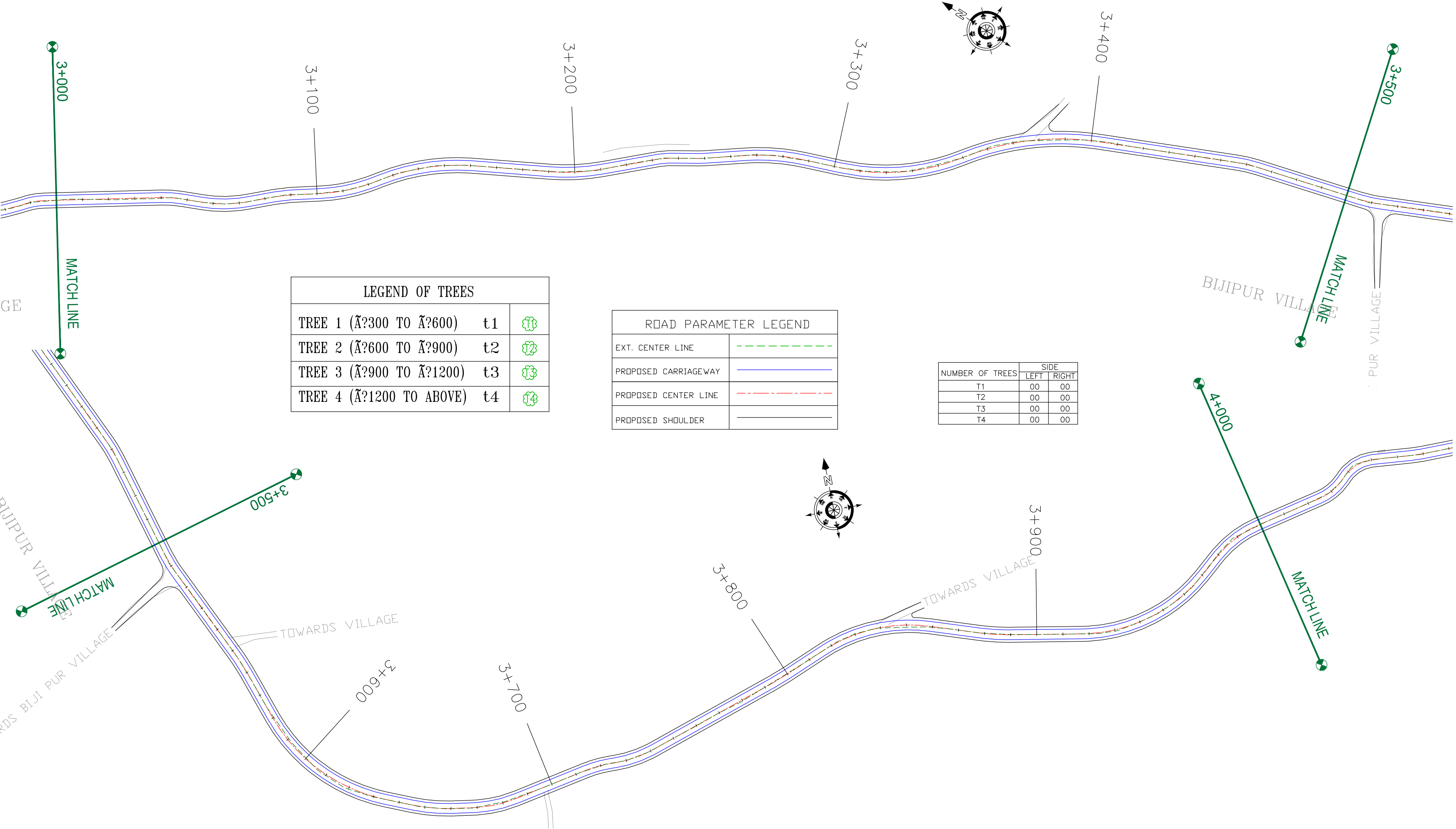
TREE CUTTING

(Ch. 2+000 to Ch. 3+000)

DRG. NO. : EPTISA/JTRFP/DPR/J&K/TC/03

REVISION : R-1

September 2019



LEGEND OF TREES		
TREE 1 (300 TO 600)	t1	
TREE 2 (600 TO 900)	t2	
TREE 3 (900 TO 1200)	t3	
TREE 4 (1200 TO ABOVE)	t4	

ROAD PARAMETER LEGEND	
EXT. CENTER LINE	
PROPOSED CARRIAGEWAY	
PROPOSED CENTER LINE	
PROPOSED SHOULDER	

NUMBER OF TREES	SIDE	
	LEFT	RIGHT
T1	00	00
T2	00	00
T3	00	00
T4	00	00

CLIENT :

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2nd Floor ERA Commercial Complex Rambagh
Srinagar-190 009.

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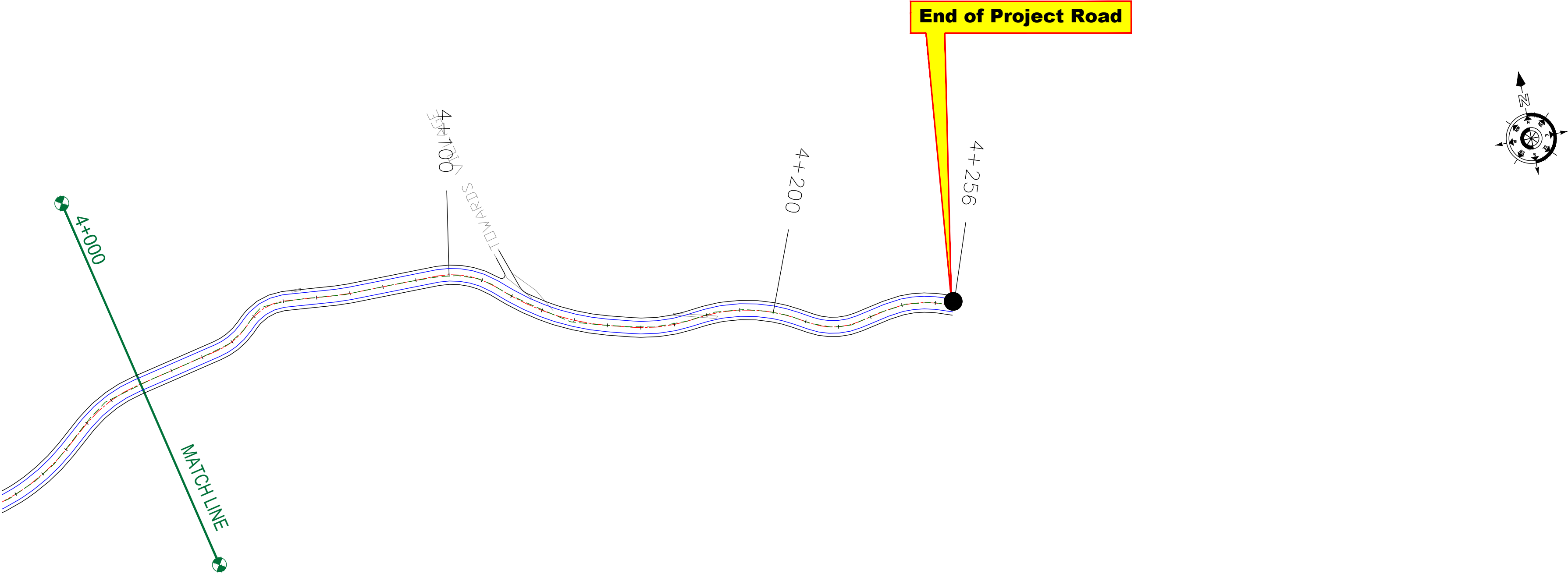
DESIGN CONSULTANT:

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REV.	DATE	DESCRIPTION

DRAWN BY :	SD
DESIGNED BY :	SCK/MM
APPROVED BY :	KG
SCALE :	1:1000

TITLE :	TREE CUTTING (Ch. 3+000 to Ch. 4+000)	
DRG. NO. :	EPTISA/JTRFP/DPR/J&K/TC/04	
REVISION : R-1	September 2019	

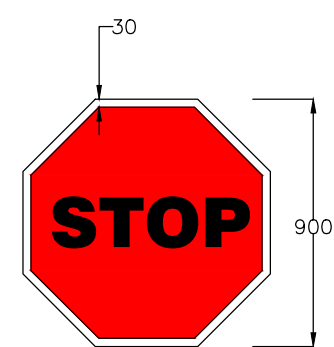


LEGEND OF TREES		
TREE 1 (300 TO 600)	t1	
TREE 2 (600 TO 900)	t2	
TREE 3 (900 TO 1200)	t3	
TREE 4 (1200 TO ABOVE)	t4	

ROAD PARAMETER LEGEND	
EXT. CENTER LINE	
PROPOSED CARRIAGEWAY	
PROPOSED CENTER LINE	
PROPOSED SHOULDER	

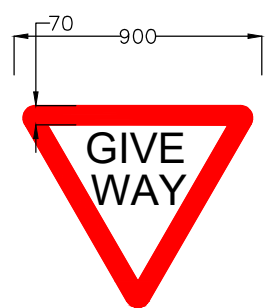
NUMBER OF TREES	SIDE	
	LEFT	RIGHT
T1	00	00
T2	00	00
T3	00	00
T4	00	00

≡ MISCELLANEOUS DRAWINGS ≡



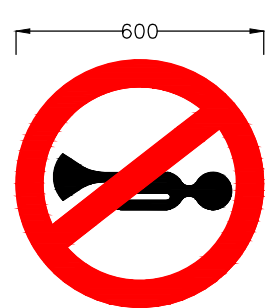
STOP SIGNS
Fig. 14.01

MS-1



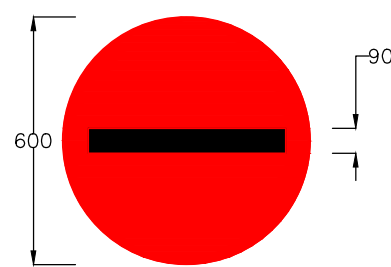
GIVE WAY
Fig. 14.02

MS-2



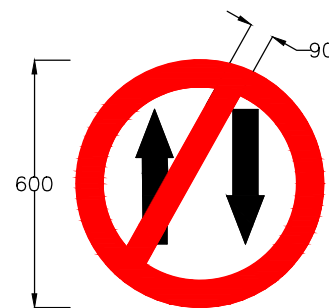
HORN PROHIBITED
Fig. 14.18

MS-3



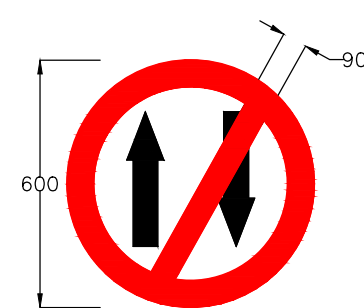
NO ENTRY
Fig. 14.19

MS-4



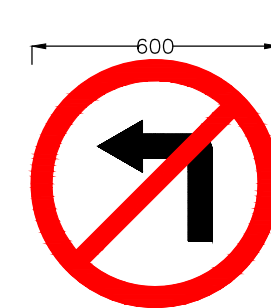
ONE WAY
Fig. 14.20

MS-5



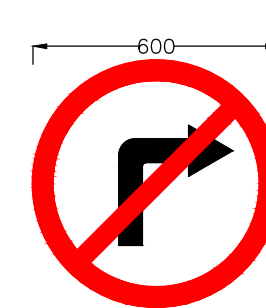
ONE WAY
Fig. 14.20

MS-6



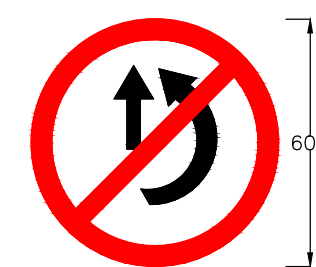
LEFT TURN PROHIBITED
Fig. 14.21

MS-7



RIGHT TURN PROHIBITED
Fig. 14.22

MS-8



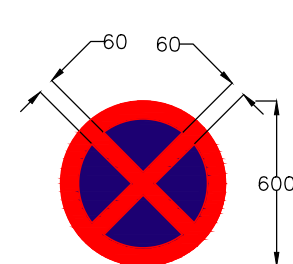
OVERTAKING PROHIBITED
Fig. 14.23

MS-9



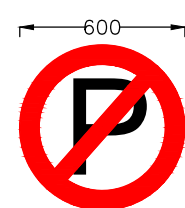
U- TURN PROHIBITED
Fig. 14.24

MS-10



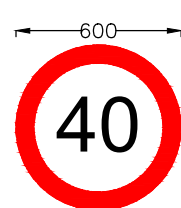
NO STOPPING AND NO STANDING
Fig. 14.28

MS-11



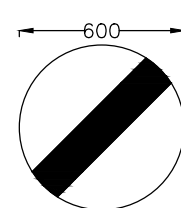
NO PARKING
Fig. 14.29

MS-12



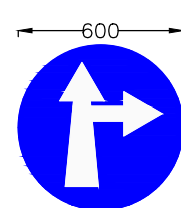
MAXIMUM SPEED LIMIT
Fig. 14.37

MS-13



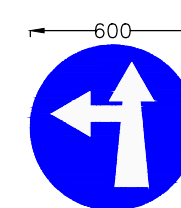
RESTRICTION ENDS
Fig. 14.40

MS-14



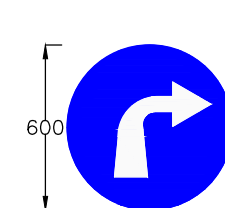
COMPULSORY AHEAD
OR RIGHT TURN
Fig. 14.42

MS-15



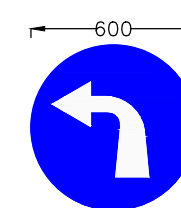
COMPULSORY AHEAD
OR LEFT TURN
Fig. 14.43

MS-16



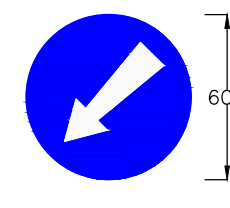
COMPULSORY
TURN RIGHT
Fig. 14.46

MS-17



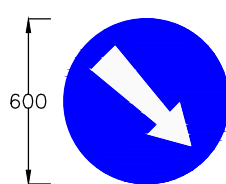
COMPULSORY
TURN LEFT
Fig. 14.47

MS-18



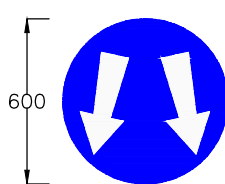
COMPULSORY KEEP LEFT
Fig. 14.48

MS-19



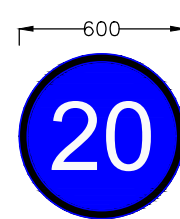
COMPULSORY KEEP RIGHT
Fig. 14.49

MS-20



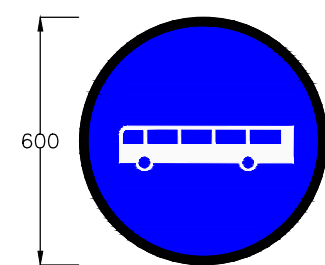
PASS EITHER SIDE
Fig. 14.50

MS-21



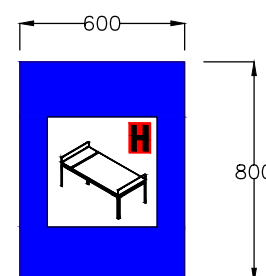
MINIMUM SPEED LIMIT
Fig. 14.51

MS-22



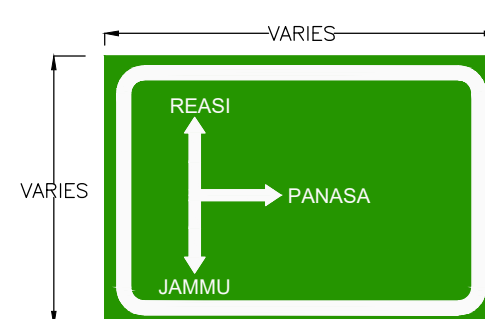
BUS WAY/BUSES ONLY
Fig. 14.56

MS-23



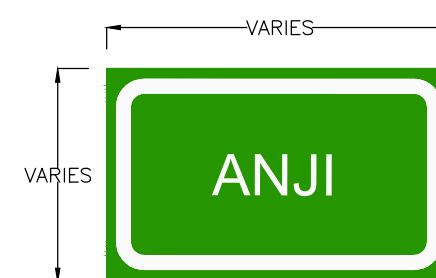
HOSPITAL
Fig. 17.07

IS-08



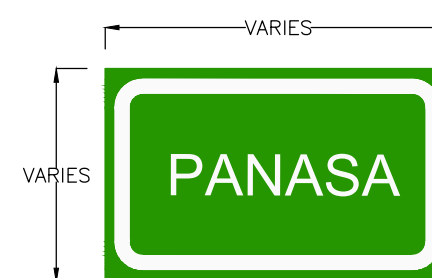
ADVANCE DIRECTION SIGN
Fig. 16.03

DS-01



PLACE IDENTIFICATION SIGN
Fig. 16.06

DS-02



PLACE IDENTIFICATION SIGN
Fig. 16.06

DS-03


Notes:

1. Road signs shall be erected as per IRC:67-2012.
2. Sizes of arrows, letters and numerals for road signs shall be as per IRC:67-2012
3. Route marker signs, letters and numerals shall be erected as per IRC:2-1968.
4. Spacing of TA2 on kerb face shall be 250mm C/C and that on metal beam crash barrier shall be 3000mm C/C. The number of reflector at island/median tips shall be as instructed by the Engineer, but in no case shall be less than five number at a tip.
5. All items indicated in this drawing may not be relevant for the subject project, these shall be used depending upon the requirement.
6. Besides the above, standards and specifications mentioned in IRC : SP : 73-2015 shall be followed strictly whenever applicable.
7. All dimensions are in millimetres unless otherwise mentioned.

CLIENT :

Jhelum Tawi Flood Recovery Project
2nd Floor ERA Commercial Complex Rambagh
Srinagar-190 009.

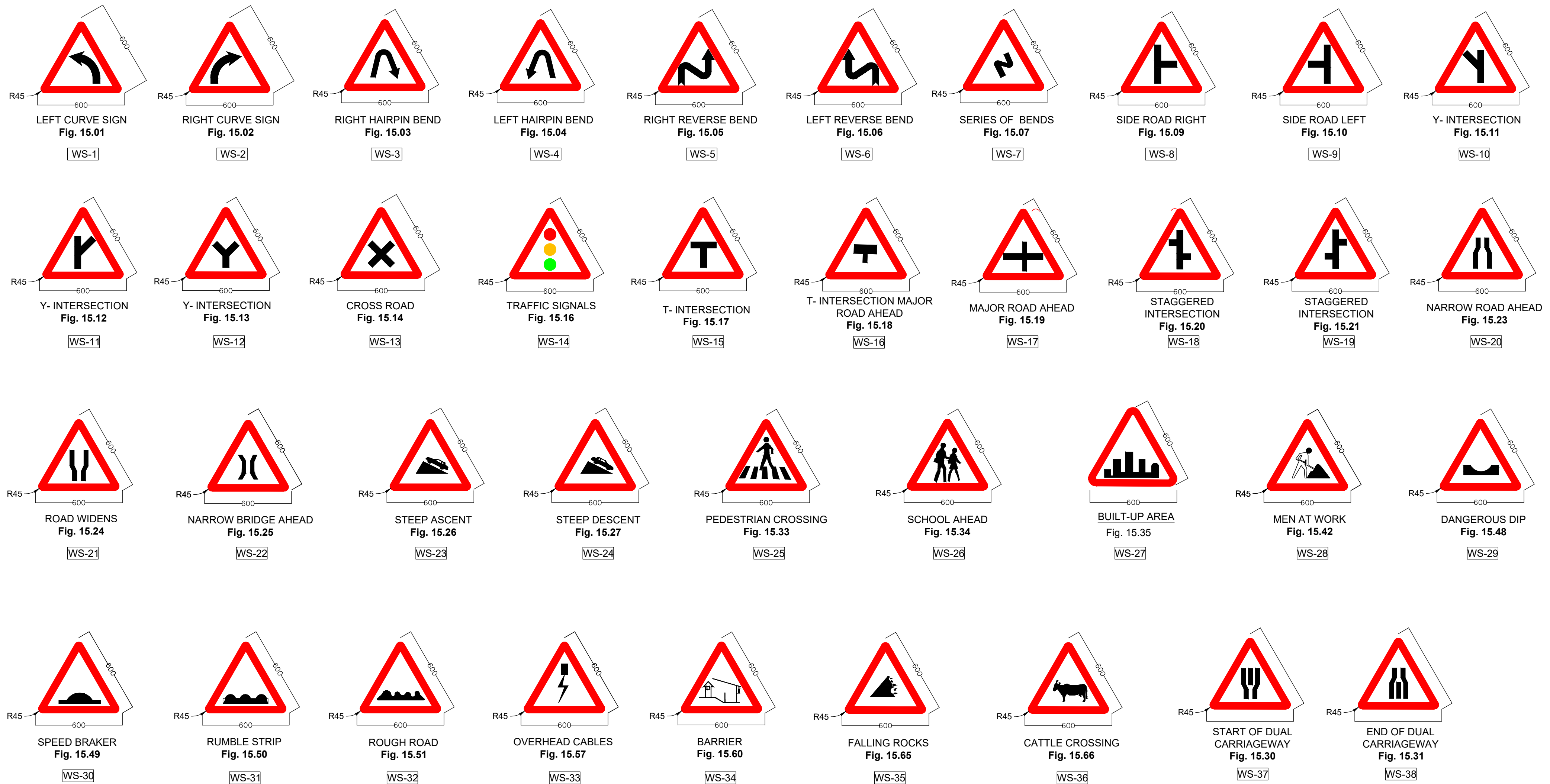
PROJECT :
Consultancy Services for Preparing Detailed Project Report
for the Road works in Jammu and Kashmir
(Anji Panasa Road)

DESIGN CONSULTANT:
 **Eptisa Servicios de Ingenieria S.L.**
Unit 1203, 12th Floor, Tower 1, PS Srijan
Corporate Park, Plot No. 2, Block EP & GP,
Sector v, Salt Lake Kolkata - 700091,
West Bengal
Ph: 033-40347200
www.eptisa.com

REV.	DATE	DESCRIPTION

DRAWN BY : SD
DESIGNED BY : SCK/MM
APPROVED BY : KG
SCALE : N.T.S

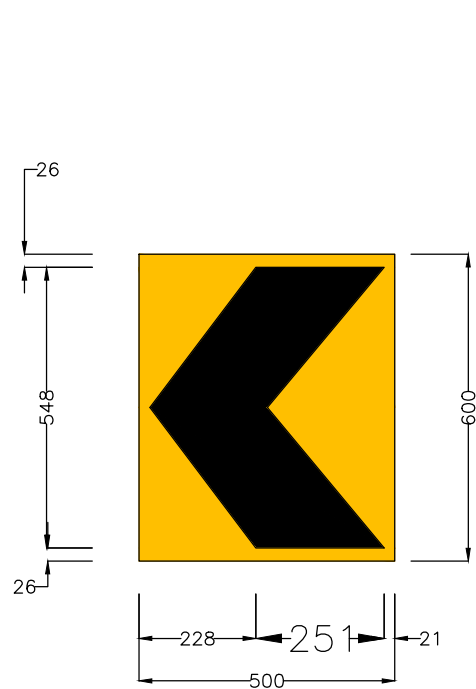
TITLE :
Road Signs & Road Delineators
DRG. NO. : EPTISA/JTRP/DPR/J&K/MISC/01
(Sheet 01 of 03)
REVISION : R-1
September 2019



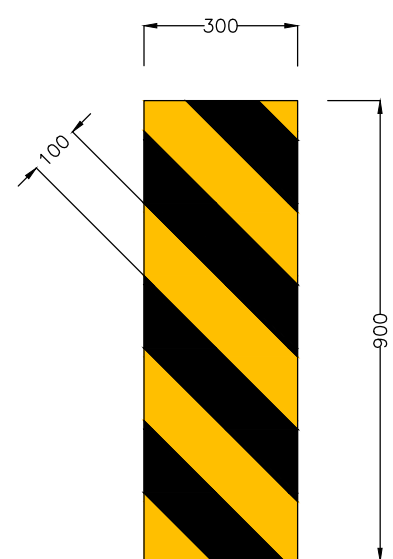
Notes:

- 1.Road signs shall be erected as per IRC:67–2012.
- 2.Sizes of arrows, letters and numerals for road signs shall be as per IRC:67–2012
- 3.All items indicated in this drawing may not be relevant for the subject project, these shall be used depending upon the requirement.
- 4.Besides the above, standards and specifications mentioned in IRC:SP:73–2015 shall be followed strictly whenever applicable.
- 5.All dimensions are in millimetres unless otherwise mentioned.

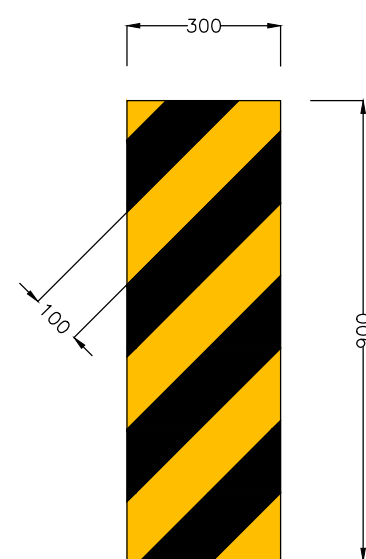
CLIENT : <div> Jhelum Tawi Flood Recovery Project 2nd Floor ERA Commercial Complex Rambagh Srinagar-190 009.</div>	PROJECT : Consultancy Services for Preparing Detailed Project Report for the Road works in Jammu and Kashmir <u>(Anji Panasa Road)</u>	DESIGN CONSULTANT: <div>Eptisa Servicios de Ingenieria S.L. Unit 1203, 12th Floor, Tower 1, PS Srijan Corporate Park, Plot No. 2, Block EP & GP, Sector v, Salt Lake Kolkata - 700091, West Bengal Ph: 033-40347200 www.eptisa.com</div>				DRAWN BY : SD	TITLE : Road Signs & Road Delineators	
						DESIGNED BY : SCK/MM		DRG. NO. : EPTISA/JTRFP/DPR/J&K/MISC/01 (Sheet 02 of 03)
						APPROVED BY : KG		
			REV.	DATE	DESCRIPTION	SCALE : N.T.S	REVISION : R-1	September 2019



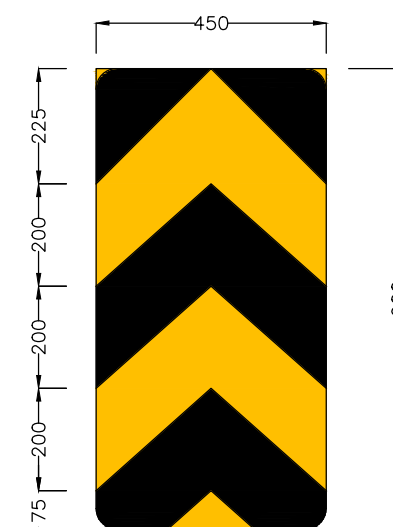
SINGLE CHEVRON
Fig. 15.72
TA-1
SCALE 1:15000



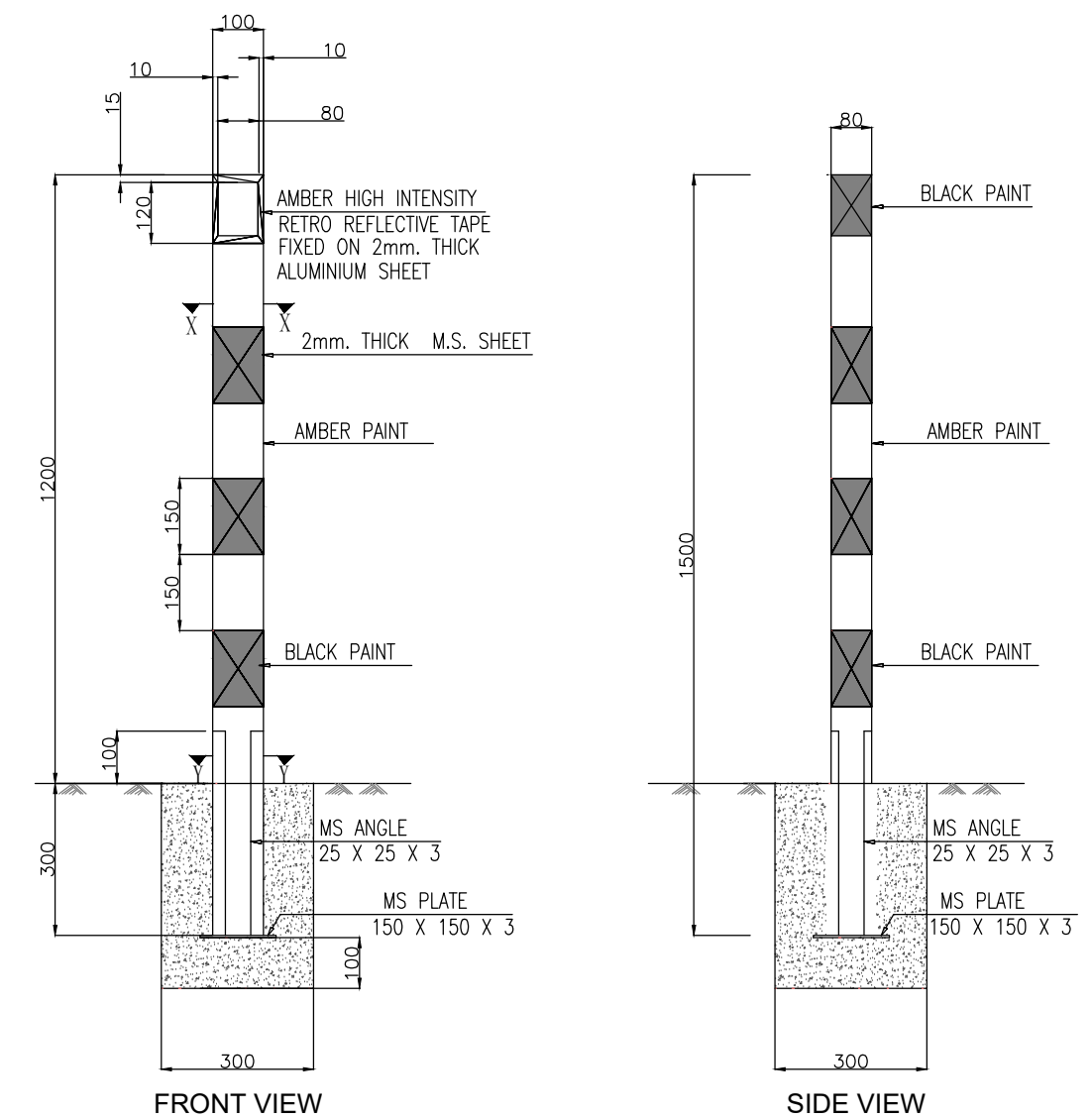
OBJECT HAZARD (LEFT)
Fig. 15.76
TA-2
SCALE 1:15000



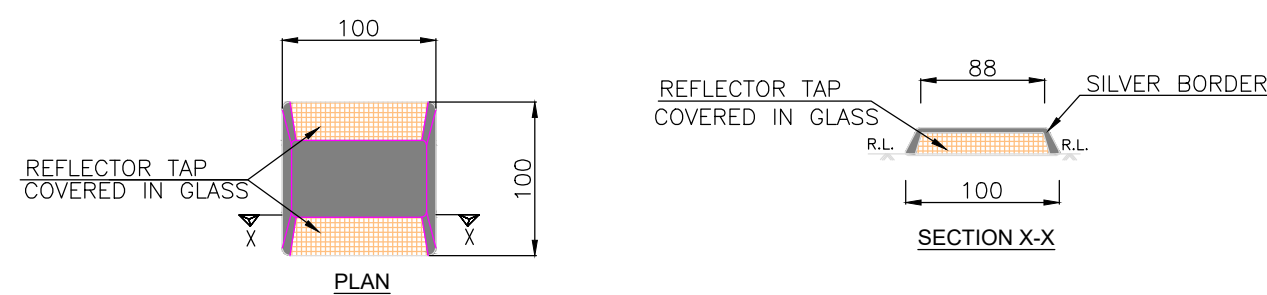
OBJECT HAZARD (RIGHT)
Fig. 15.77
TA-3
SCALE 1:15000



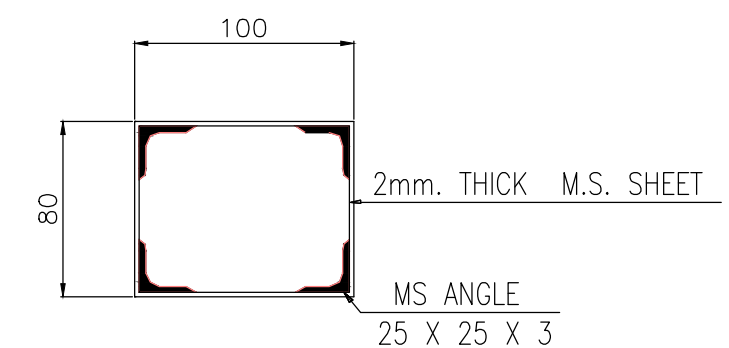
TWO WAY HAZARD MARKER
Fig. 15.78
TA-4
SCALE 1:15000



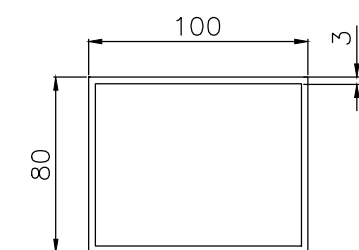
ROAD DELINEATORS
TA-6
SCALE 1:15000



ROAD STUDS (CATS'S EYE)
TA-7
SCALE 1:5000



SECTION Y-Y
SCALE 1:3500



SECTION X-X
SCALE 1:3500


Notes:

- 1.Road signs shall be erected as per IRC:67-2012.
- 2.Sizes of arrows, letters and numerals for road signs shall be as per IRC:67-2012
- 3.All items indicated in this drawing may not be relevant for the subject project, these shall be used depending upon the requirement.
- 4.Besides the above, standards and specifications mentioned in IRC:SP:73-2015 shall be followed strictly whenever applicable.
- 5.All dimensions are in millimetres unless otherwise mentioned.
- 6.The scale mentioned is applicable for A2 size sheet.

CLIENT :

Jhelum Tawi Flood Recovery Project
2nd Floor ERA Commercial Complex Rambagh
Srinagar-190 009.

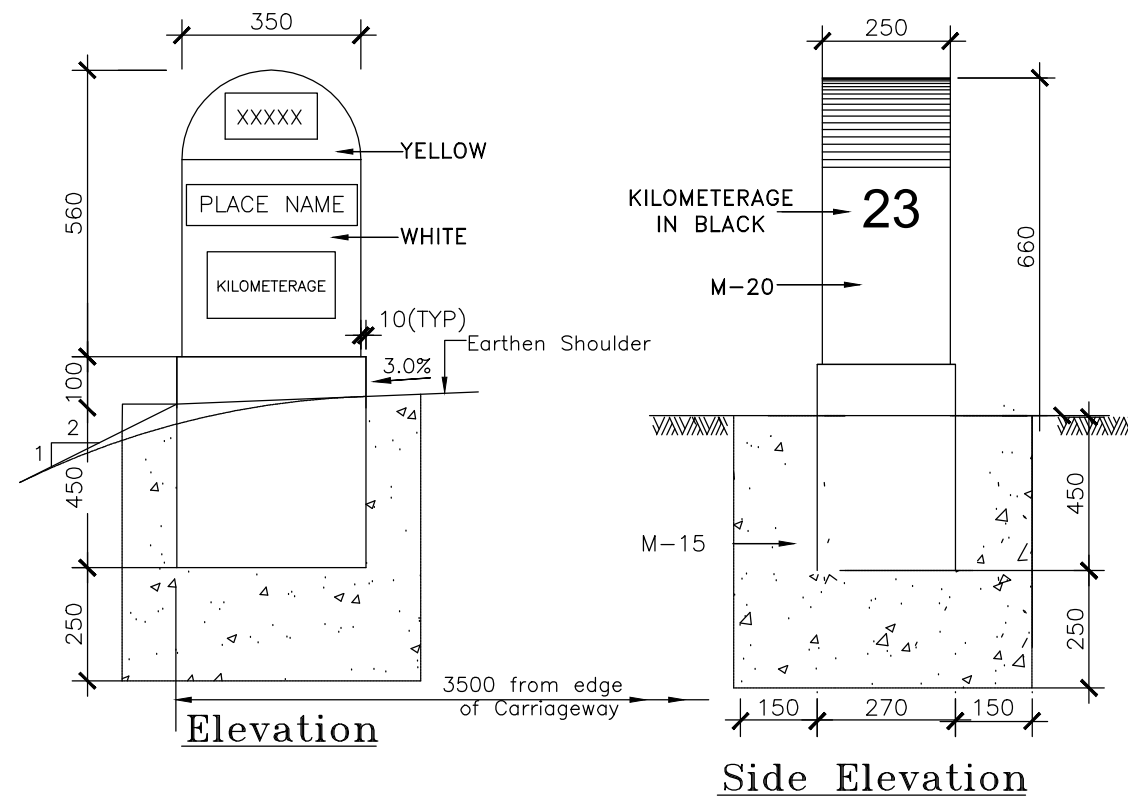
PROJECT :
Consultancy Services for Preparing Detailed Project Report
for the Road works in Jammu and Kashmir
(Anji Panasa Road)

DESIGN CONSULTANT:

Eptisa Servicios de Ingenieria S.L.
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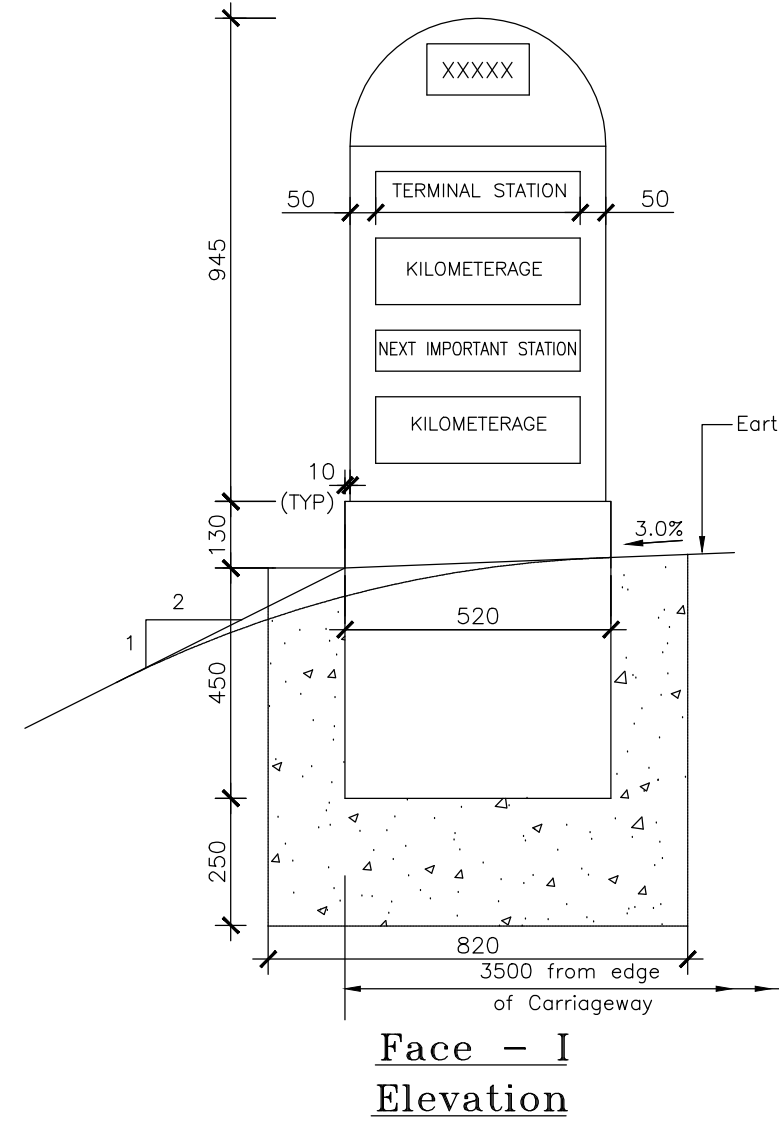
REV.	DATE	DESCRIPTION

DRAWN BY : SD
DESIGNED BY : SCK/MM
APPROVED BY : KG
SCALE : AS SHOWN

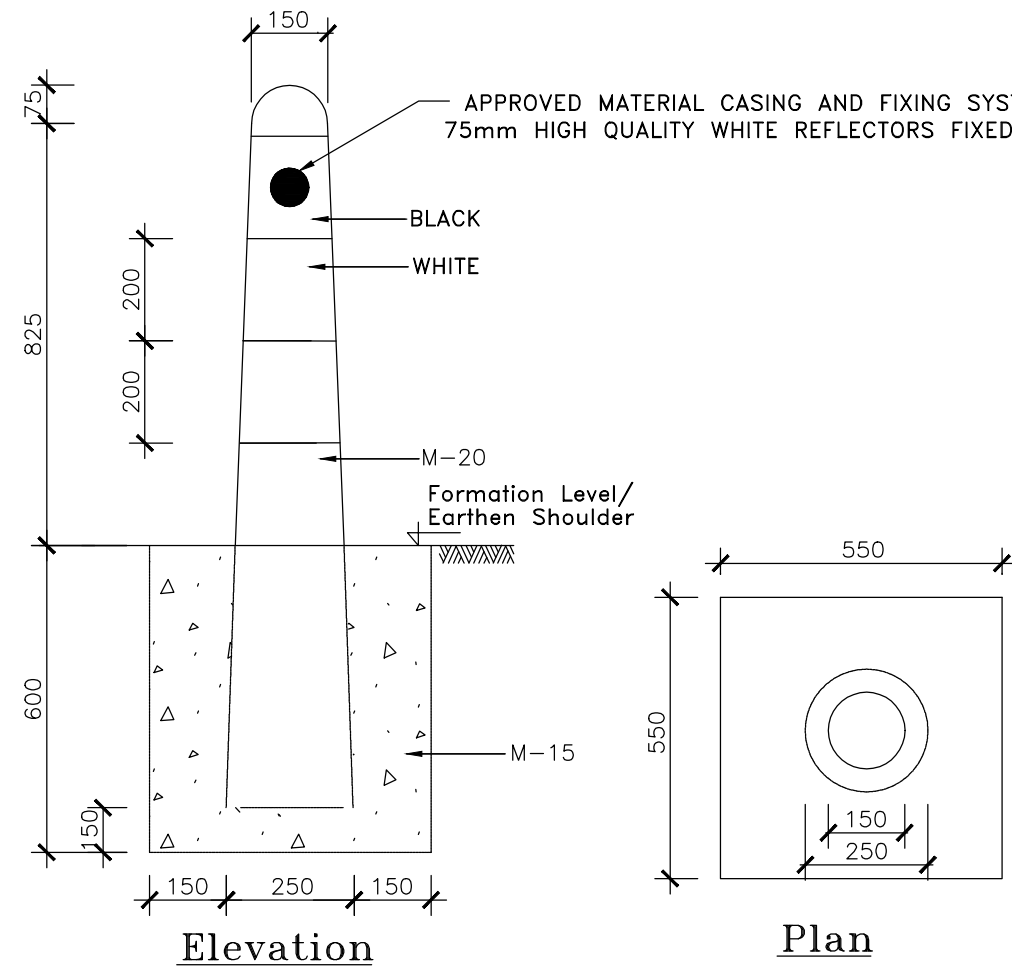
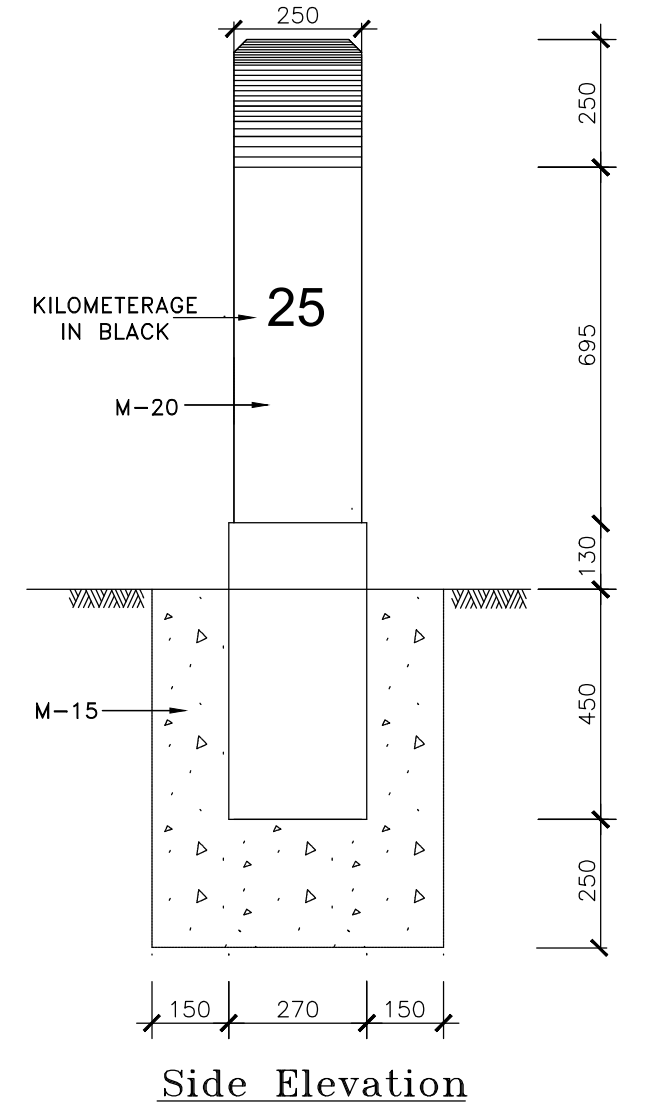
TITLE :
Road Signs & Road Delineators
DRG. NO. : EPTISA/JTRP/DPR/J&K/MISC/01
(Sheet 03 of 03)
REVISION : R-1
September 2019



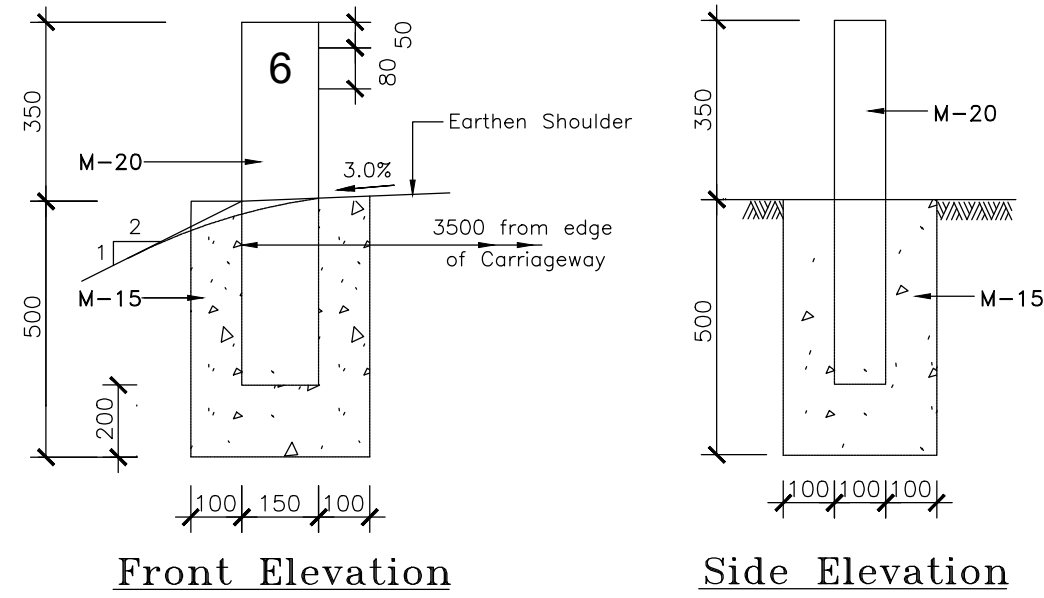
Kilometre Stone



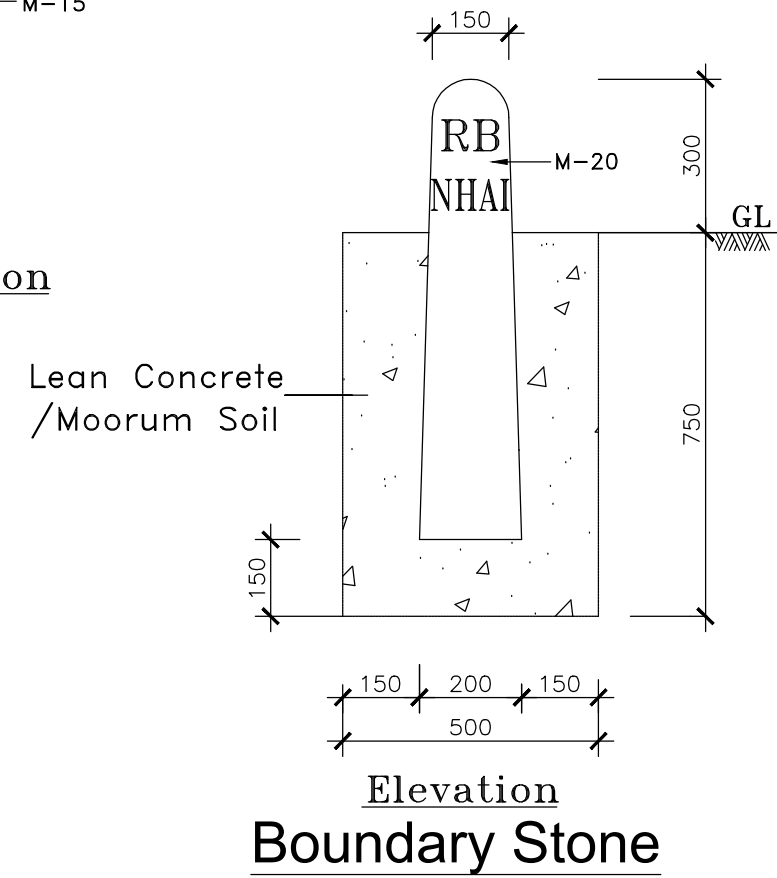
Fifth Kilometre Stone



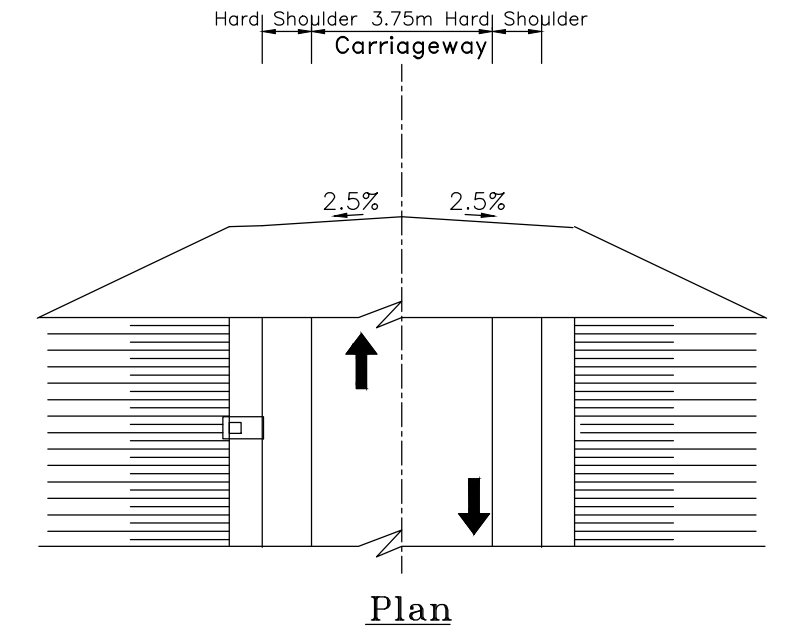
Guard Post



200 metre Stone



Boundary Stone



Location of Distance Stones

Notes:

1. Details of kilometre stone and 5th kilometre stone are generally based on IRC:8-1980
2. Details of 200m stones are generally based on IRC:26-1967.
3. The distance stones shall be provided on left side of the road as shown independently for each direction of traffic flow.
4. The letters and numerals on distance stones shall be as per IRC:8-1980.
5. Details of boundary stones are generally based on IRC:25-1967.
6. Besides the above, standards and specifications mentioned in IRC : SP : 73-2015 shall be followed strictly whenever applicable.
7. All dimensions are in millimetres unless otherwise mentioned.
8. Location of Distance Stones shall be as per applicable TCSs for the stretches where Depressed Median has been provided.

CLIENT :



Jhelum Tawi Flood Recovery Project
2nd Floor ERA Commercial Complex Rambagh
Srinagar-190 009.

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Consultancy Services for Preparing Detailed Project Report
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(Anji Panasa Road)

DESIGN CONSULTANT:

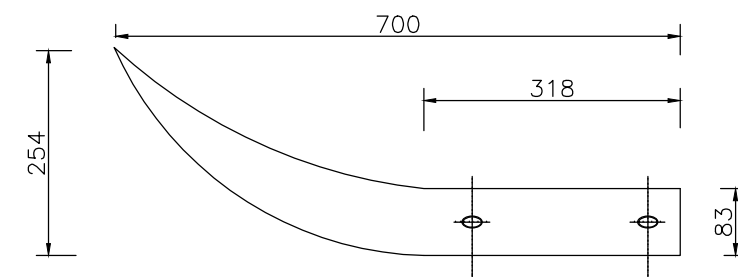


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REV.	DATE	DESCRIPTION

DRAWN BY :	SD
DESIGNED BY :	SCK/MM
APPROVED BY :	KG
SCALE :	N.T.S

TITLE :	Typical Details of Distance Stone, Boundary Stone & Guard Post
DRG. NO. :	EPTISA/JTRP/DPR/J&K/MISC/02
REVISION : R-1	September 2019



Technical drawing of a mechanical part showing a side view. The drawing includes dimensions 216 and 57, and a note indicating 'Slotted Holes 23 x 24 (4 Nos)'.

W Beam

Post (ISMC 150)

150 150

75

Spacer (ISMC 150)

VIEW B-B

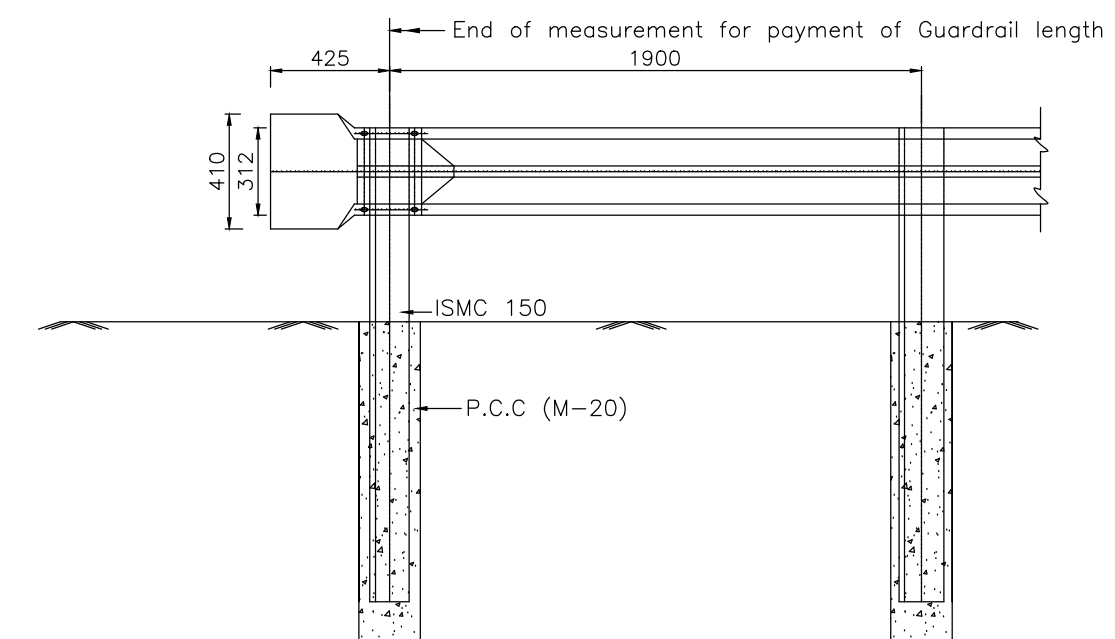
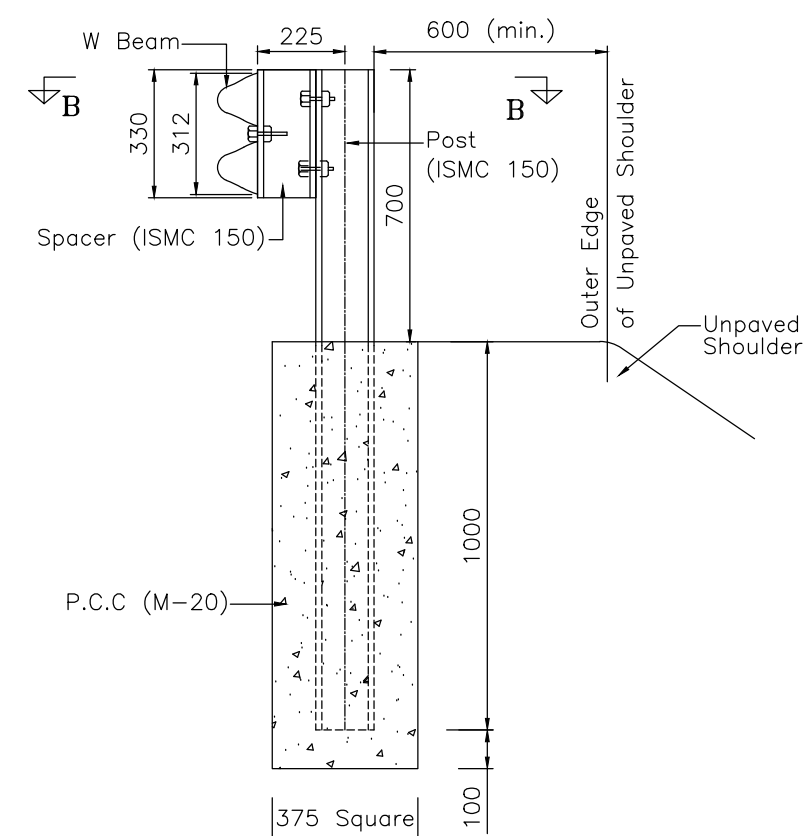


Diagram illustrating the cross-section of a road with dimensions and labels:

- High Fill (>3m) or Hazard:** Indicated at the top left.
- Dimensions:**
 - 1900 (multiple segments)
 - 1750 (final segment)
 - 1500 (vertical dimension)
 - 2 (small vertical dimension)
- Labels:**
 - Edge of Unpaved Shoulder
 - Edge of Carriageway
- Directional Indicators:**
 - APPROACH (left arrow)
 - DEPARTURE (right arrow)

[illegible]

Notes:

1. All dimensions are in millimetres unless otherwise mentioned
2. Suitable reflectors are to be provided on W-Beam at a spacing of 3 m c/c
3. All holes in posts and blocks shall be 21.50mm max
4. W-beam shall be as per IS : 5986 – 1992 and post, spacers etc. shall be as per IS : 2062 – 1992
5. W-beam, posts & spacers shall be hot dip galvanised as per specifications
6. Besides the above, standards and specifications mentioned in IRC : SP : 73–2015 shall be followed whenever applicable.
7. Metal Beam Crash Barrier (Providing and erecting a "W" metal beam crash barrier comprising of 3 mm thick corrugated sheet (Fe-510) metal beam rail, 70 cm above road/ground level, fixed on ISM (Fe-410 C) series channel vertical post, 150 x 75 x 5 mm channel section, 330 mm long complete as per clause 810) metal beam/ground/road level, all steel parts and fittings to be galvanised by hot dip process, all fittings to conform to IS:1367 and IS:1364, W-beam should confirm as per latest revision of IS-5986 and for post and spacer IS-2062, metal beam rail to be fixed on the vertical post with a spacer of channel section 150 x 75 x 5 mm, 330 mm long complete as per clause 810)

CLIENT :



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Srinagar-190 009.

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ep^tisa

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[illegible]

DRAWN BY :	SD
DESIGNED BY :	SCK/MM
APPROVED BY :	KG
SCALE :	N.T.S

TITLE :

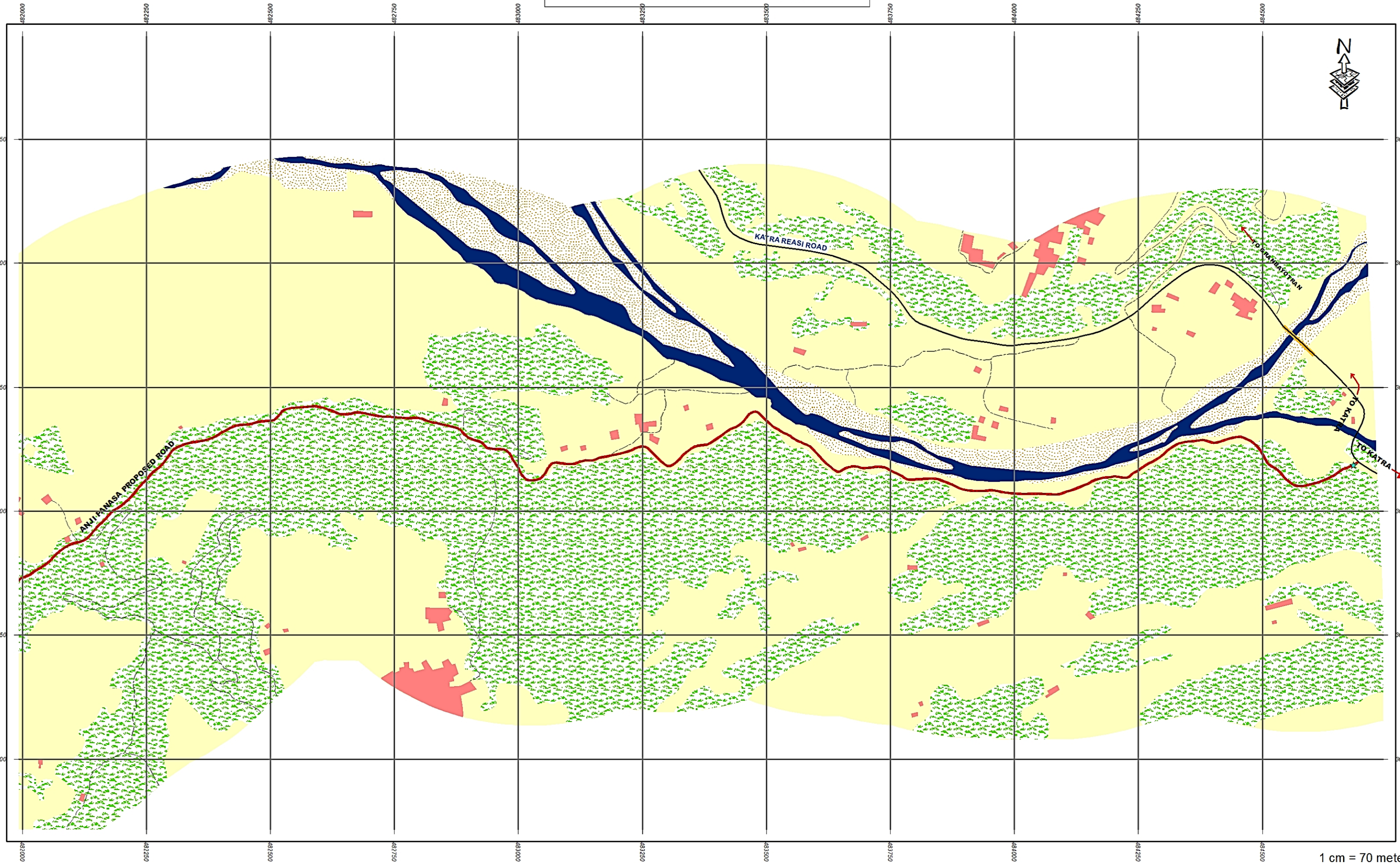
Details of Metal Beam Crash Barrier

DRG. NO. : EPTISA/JTFRP/DPR/J&K/MISC/03

REVISION : R-1

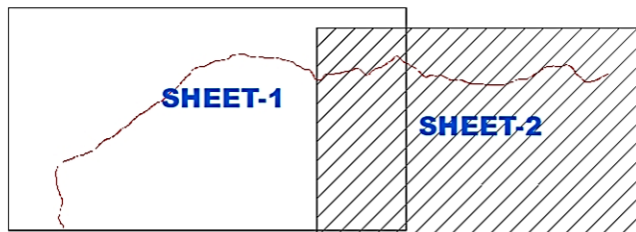
September 2019

ANJI-PANASA ROAD PHASE-I



1 cm = 70 meters

INDEX MAP



Legend

- | | | |
|-------------------|---------------------|--------------------|
| ★ Start_End_Point | --- Road_Centerline | ■ River |
| ● Village_Name | ■ Bridge | ■ River_Basin |
| — Major_Road | ■ Building | ■ Vegetation |
| --- Other_Road | ■ Proposed_Road | ■ Open_Barren_Land |



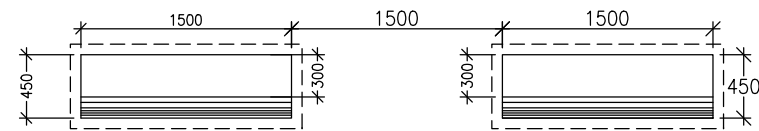
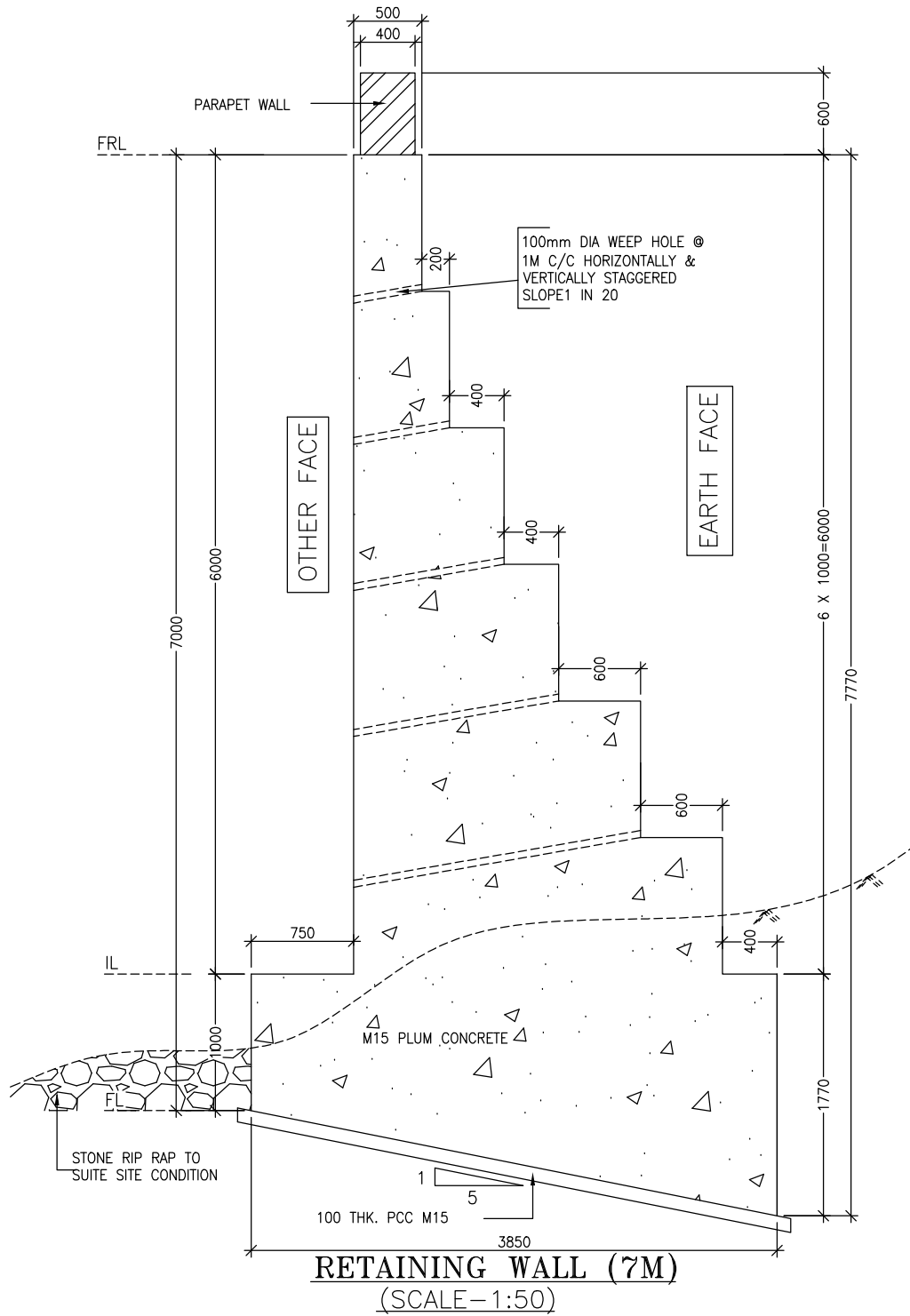
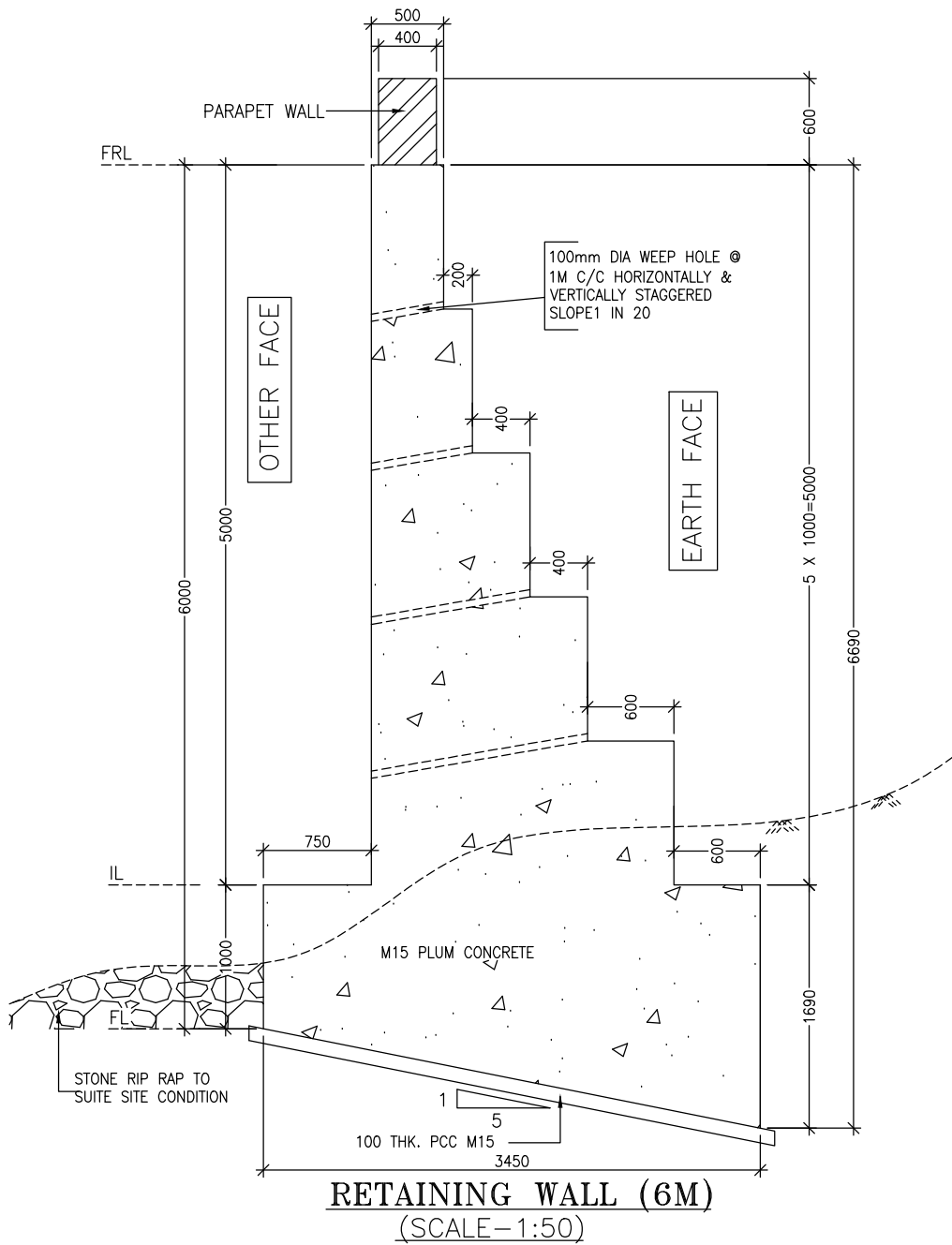
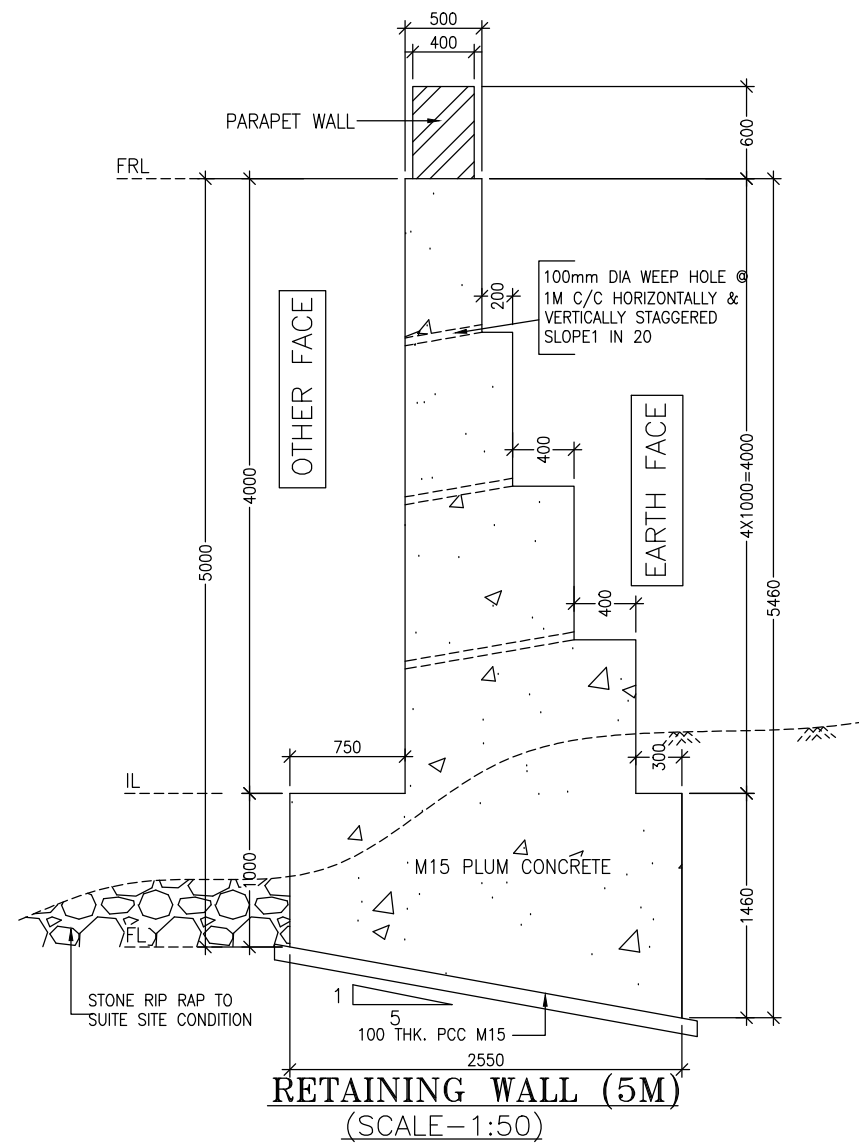
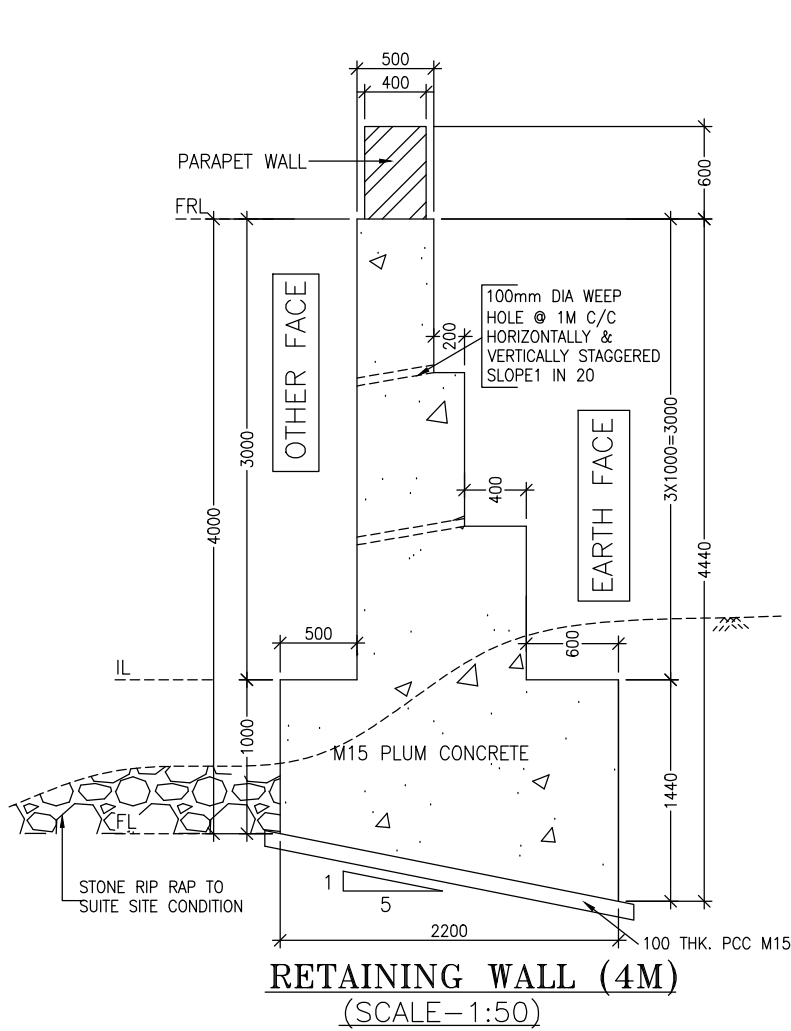
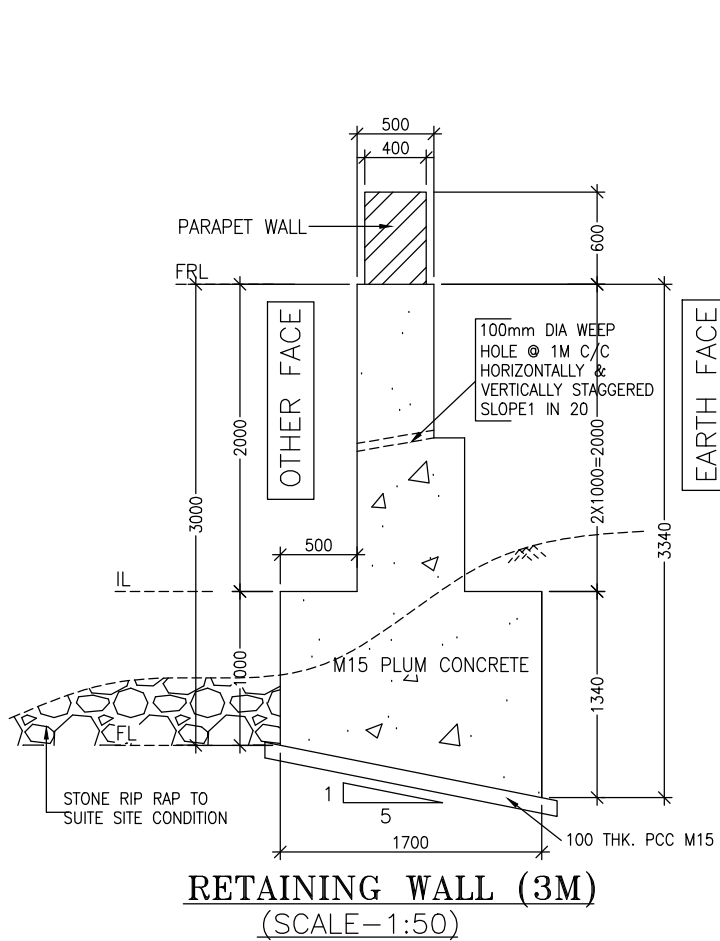
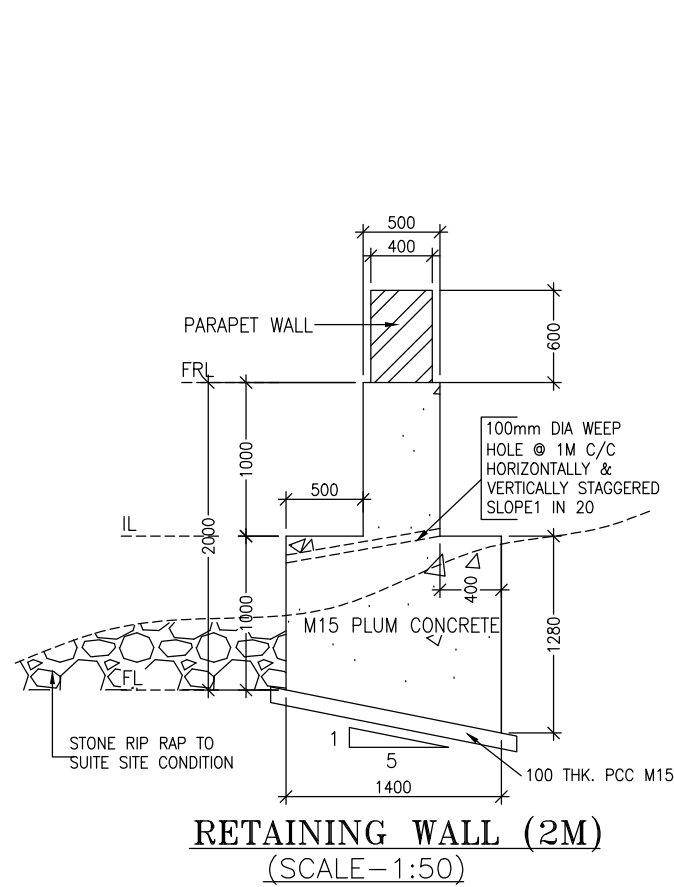
Project: JHELM TAWI FLOOD RECOVERY PROJECT

Sub-Project: FOR RECONSTRUCTION OF ANJI-PANASA ROAD PHASE-I UNDER JAMMU DIVISION

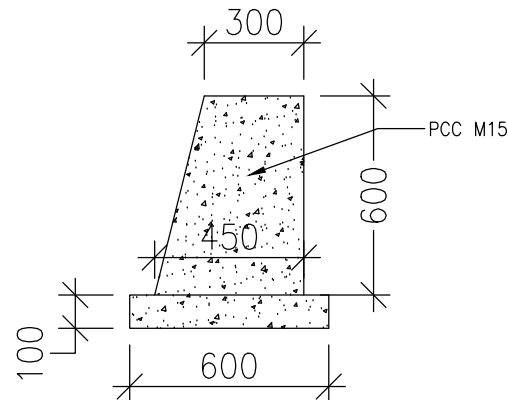
Agency: PROJECT MANAGEMENT UNIT JTFRP

eptisa

DETAILS OF PCC RETAINING WALL



PLAN OF PARAPET WALL



SECTION OF PARAPET WALL

- NOTES :**
1. ALL DIMENSIONS ARE IN MM. UNLESS OTHERWISE MENTIONED.
 2. DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
 3. 100 DIA WEEP HOLES WITH SLOPE 1 IN 20 SHALL BE PROVIDED AT SPACING OF 1000 C/C BOTH HORIZONTALLY & VERTICALLY (STAGGERED) IN FULL HEIGHT OF THE RETAINING WALL WITH BOTTOM MOST ROW 150mm ABOVE G.L.
 4. BACK FILLING AND FILTER MEDIA BEHIND THE RETAINING WALL SHALL BE PROVIDED WITH SELECTED EARTH CONFORMING TO APPENDIX 6 OF IRC:78-2000 HAVING PROPERTIES $\phi=35^\circ$, $C=0$, $\gamma=21/m^3$
 5. ALL FACE OF WALL SHALL BE PROVIDED WITH A MINIMUM STEEL OF 250mm² IN EACH DIRECTION. SPACING OF THESE BARS SHALL NOT EXCEED 300mm.
 6. THESE DRAWING ARE APPLICABLE FOR M15 PCC OR M15 GRADE CONCRETE WITH PLUM. REFER SPECIFICATIONS FOR PLUM CONCRETE GIVEN IN THIS DRAWING.

PLUM CONCRETE SPECIFICATIONS:

THE SIZE OF STONE PLUMS MAY BE FORM 150-300MM. THE MAXIMUM DIMENSION OF THESE STONES OR PLUMS SHALL NOT EXCEED $\frac{1}{3}$ RD THE LEAST DIMENSION OF THE MEMBERS.

MATERIAL:

ALL PLUMS SHALL BE HARD, DURABLE, CLEAN AND FREE FROM SOFT MATERIALS OR LOOSEPIECES OR DELETERIOUS SUBSTANCE IN THEM & SHALL NOT HAVE SHARP.

CONSTRUCTION OPERATIONS:

DURING CONCRETING THE FIRST LAYER OF CONCRETE OF THE SPECIFIED MIX SHALL BE LAID TO A THICKNESS OF THE MAXIMUM SIZE OF THE PLUMS TO BE USED. THE PLUMS SHALL THEN BE LAID WHILE THE TOP PORTION OF THIS CONCRETE IS STILL GREEN BUT SUFFICIENTLY STIFF TO PREVENT COMPLETE SUBMERGENCE OF THE PLUM UNDER THEIR OWN WEIGHT. THESE PLUMS SHALL BE ABOUT HALF EMBEDDED IN THE CONCRETE & THE REMAINING PART EXPOSED ISO AS TO FORM A KEY WITH THE NEXT LAYER OF THE CONCRETE. NO PLUM SHALL BE USED FOR CONCRETE LAID UNDER WATER.

WHILE PLACING THE PLUMS, CARE SHALL BE TAKEN TO SEE THAT THE CLEAR DISTANCE BETWEEN ANY TWO PLUMS IS NOT LESS THAN EITHER THE WIDTH OR THICKNESS OF EITHER OF THE PLUMS. THE DISTANCE FROM THE PLUMS TO THE OUTER SURFACE FROM ANY STEEL REINFORCEMENT SHALL BE EQUAL TO GREATEST WIDTH OF PLUMS. IF PLUMS OF STRATIFIED STONE ARE USED THEY SHALL BE LAID ON THEIR NATURAL BED. STONES WITH CONCAVE FACES SHALL BE LAID WITH THE CONCAVE UPWARD WITH THE THICKNESS OF THE NEXT AND SUCCESSIVE LAYERS OF CONCRETE SHALL BE AT LEAST TWICE THAT OF THE LARGEST PLUM.

QUALITY OF PLUM:

THE TOTAL VOLUME OF PLUMS SHALL NOT EXCEED 15% OF THE VOLUME OF THE FINISHED CONCRETE.

MIX OF CONCRETE:

PLUM CONCRETE 1:2:4 (1 CEMENT, 2 SAND, 4 GRADED STONE AGGREGATE 40 MM NORMAL SIZE) WITH 15% PLUMS.

CLIENT :



Jhelum Tawi Flood Recovery Project
2nd Floor ERA Commercial Complex Rambagh
Srinagar-190 009.

PROJECT :

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DESIGN CONSULTANT:



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REV.	DATE	DESCRIPTION

DRAWN BY : SD

DESIGNED BY : SCK/MM

APPROVED BY : KG

SCALE : N.T.S

TITLE :

DETAILS OF PCC RETAINING WALL

DRG. NO. :

EPTISA/JTRFP/DPR/J&K/RW-01

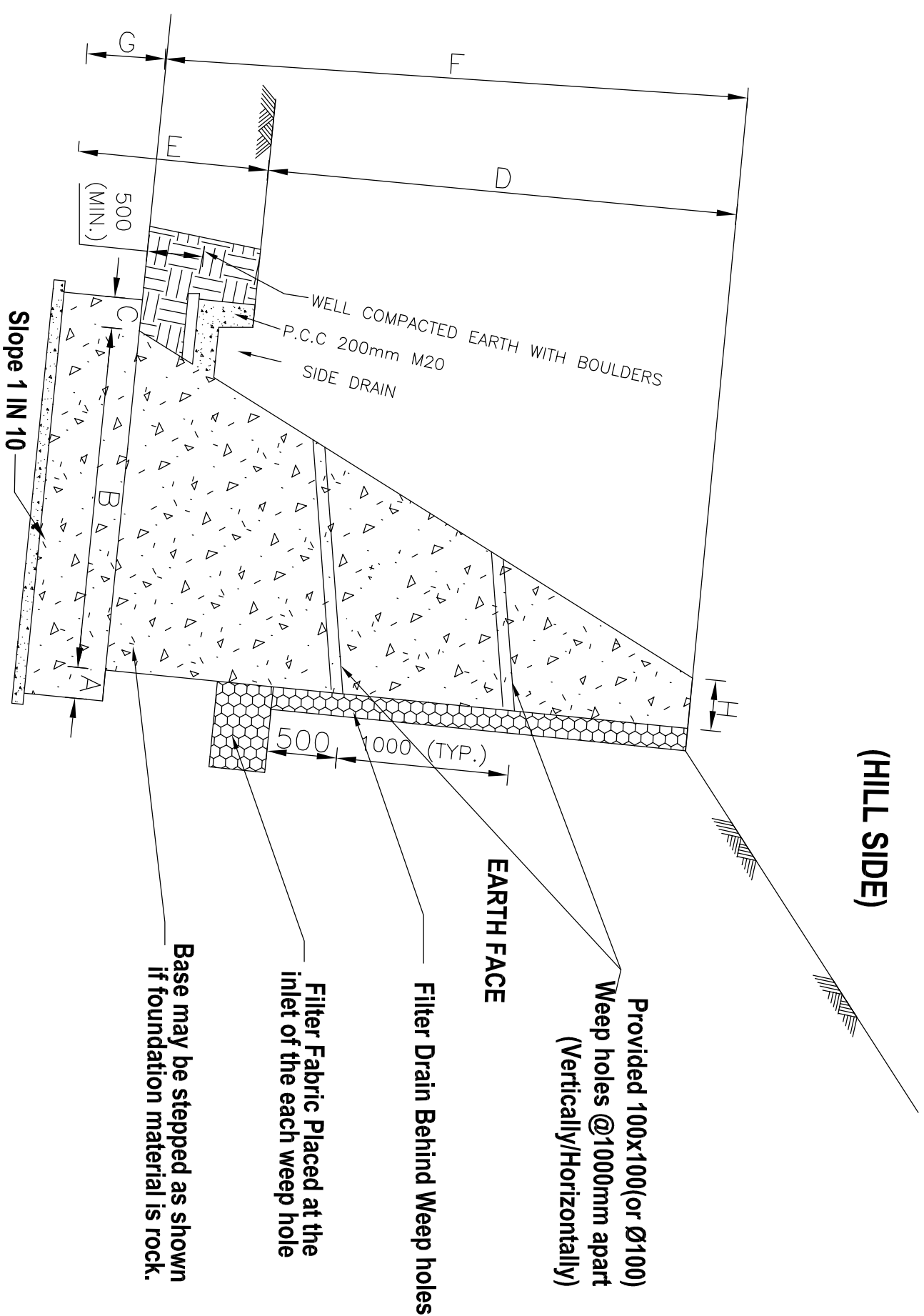
REVISION : R-1

September 2019

☰ DETAILS OF BREAST WALL ☰


NOTES:—

- 1) ALL DIMENSIONS IN MILLIMETERS AND LEVELS IN METERS UNLESS WRITTEN OTHERWISE.
- 2) NO DIMENSION SHALL BE SCALED FROM THIS DRAWING, ONLY WRITTEN DIMENSION SHALL BE FOLLOWED.
- 3) i) GRADE OF PCC M20 (1:1.5:3)
ii) STEEL-HYSD AS PER IS 1786.
- 4) SKIN/SURFACE REINFORCEMENT SHALL BE PROVIDED AS PER $8\phi @ 200\text{mm}$ C/C FOR WALL HEIGHT $\geq 3\text{M}$ WITH MINIMUM CLEAR COVER OF 40mm.
- 5) THE SECTIONS ARE FOR GUIDANCE AND FOR ESTIMATION, EXACT STABILITY CALCULATIONS TO BE DONE WITH SITE PARAMETER.
- 6) BACK FILLING SHALL BE DONE AS PER APPENDIX-6 OF IRC:78
- 7) WEEP HOLES SHALL BE PROVIDED AT 1.0m c/c HORIZONTALLY AND VERTICALLY IN A STAGGERED MANNER.
- 8) LEVELLING COURSE BELOW SHOULD BE PROVIDED WITH SUITABLE OFFSET (0.15m Min.) TO RESTRICT BASE PRESSURE ON SOIL WITH PERMISSIBLE LIMITS.
- 9) WIDTH OF BASE SHALL BE INCREASED/DECREASED AS PER SBC REQUIREMENT.
- 10) THE PROPERTIES OF THE RETAINED EARTH/BACK FILL HAVE BEEN ASSUMED AS FOLLOWS:
DRY DENSITY ---- 18 kN/m^3
ANGLE OF INTERNAL FRICTION --- 30°
ANGLE OF WALL FRICTION ---- 20°
COHESION (c) = 0
- 11) FACTOR OF SAFETY FOR OVERTURNING IS 2.0 FOR NON SEISMIC CONDITION AND 1.5 FOR SEISMIC CONDITION.
- 12) WEEP HOLES SHALL BE PROVIDED IN MASONRY WALLS AT A SPACING OF 900MM IN EITHER DIRECTION.
- 13) SIZE OF PVC SHALL BE 100MM TO 150MM PVC.
- 14) IMPERVIOUS SILTY SOIL LAYER OR BACK FILL OF ABOUT 300MM ON THE TOP TO PREVENT SEEPAGE OF RAIN WATER IN THE BACKFILL OR IN FOUNDATION.
- 15) NATURAL GULLIES SHALL BE DIVERTED AWAY FROM THE SILT. SO THAT FLOW OF RAIN WATER DOES NOT CAUSE EROSION OF BREAST WALL ON TOPMOST TERRACE.
- 16) GRASS TURFING SHALL BE LAID ON THE GROUND SLOPE TO PREVENT EROSION.
- 17) SIDE WATER DRAINS SHALL BE AVOIDED NEAR THE TOP OF THE BREAST WALLS AS THEY ALLOW SEEPAGE OF WATER IN UNMAINTAINED CONDITIONS INTO THE OUT & DESTABILISE
- 18) SIDE WATER DRAINS TO BE PROVIDED AT THE TOE OF THE RETAINING WALLS
- 19) FOUNDATION TO BE 500MM BELOW THE SIDE DRAIN WITHIN SOIL OR HIGHLY JOINTED ROCK SIDE DRAIN
- 20) INCASE SIDE DRAINS AT TOE OF THE RETAINING WALL ARE NOT PROVIDED THEN DRY STONE PITCHING OF SIZE 150MM, MAY BE LAID ON SLOPE FOR A DISTANCE OF 1MTS BELOW THE TOE OF THE RETAINING WALLS.
- 21) FOR ERODIBLE SOILS AND WEAK FOUNDATIONS (CLAY, WEAK SAND ETC.) GABION WALLS SHALL BE PREFERRED AS THEY WITH STAND HIGH DIFFERENTIAL SETTLEMENTS.



TYPICAL CROSS SECTION OF BREAST WALL (Embankment Section)

Sl no.	Total Height	1.75 m	2.25 m	2.75 m	3.25 m	3.75 m	4.25 m	4.75 m	5.25 m
	Dimensions								
1	A (in mm)	275	275	275	275	275	275	275	275
2	B (in mm)	990	1500	1740	1890	2250	2490	3018	3030
3	C (in mm)	275	275	275	275	275	275	275	275
4	D (in mm)	1000	1500	2000	2500	3000	3500	4000	4500
5	E (in mm)	750	750	750	750	750	750	750	750
6	F (in mm)	1250	1750	2150	2650	3150	3600	4100	4550
7	G (in mm)	500	500	600	600	600	650	650	700
8	H (in mm)	450	450	450	450	450	450	450	450
9	Base Pressure (in KN/m ²)	100	120	150	180	180	200	200	250

CLIENT :		 Jhelum Tawi Flood Recovery Project 2nd Floor ERA Commercial Complex Rambagh Srinagar-190 009.	
PROJECT :		CONSULTANCY SERVICES FOR PREPARING DETAILED PROJECT REPORT FOR THE ROAD WORKS IN JAMMU AND KASHMIR <u>(Anji Panasa Road)</u>	
DESIGN CONSULTANT:		 Eptisa Servicios de Ingenieria S.L. Unit 1203, 12th Floor, Tower 1, PS Srijan Corporate Park, Plot No. 2, Block EP & GP, Sector v, Salt Lake Kolkata - 700091, West Bengal Ph: 033-40347200 www.eptisa.com	
REV.	DATE	DESCRIPTION	
DRAWN BY :		SD	
DESIGNED BY :		SCK/MM	
APPROVED BY :		KG	
SCALE :		N.T.S	
TITLE :		DIMENSION DETAIL OF BREAST WALL	
DRG. NO. :		EPTISA/UTFRP/DPRJ&K/BW/01	
REVISION :		R-1	
		September 2019	

|| || CULVERT DRAWINGS || ||

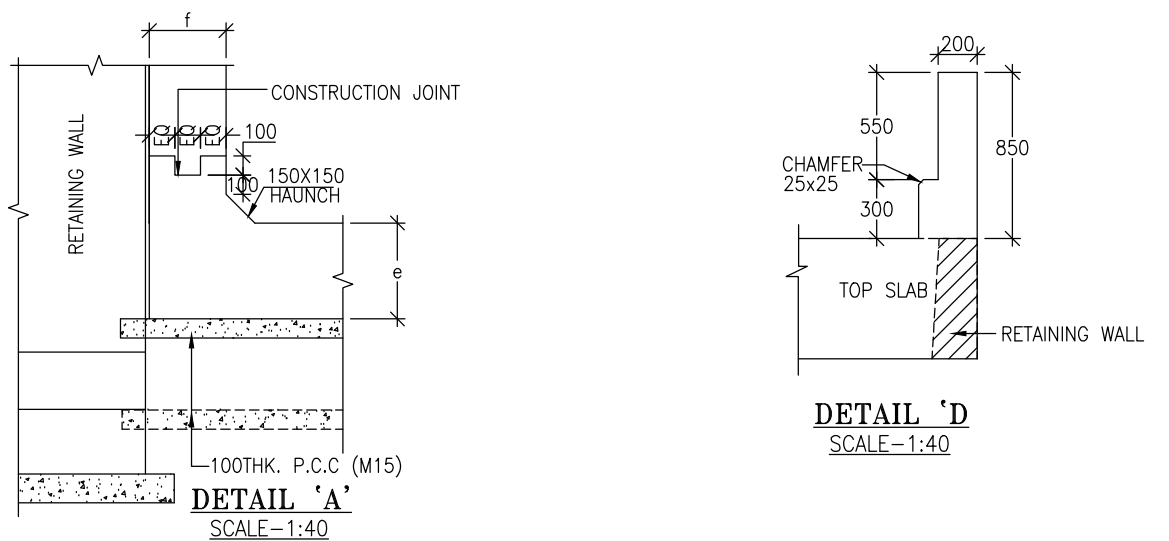
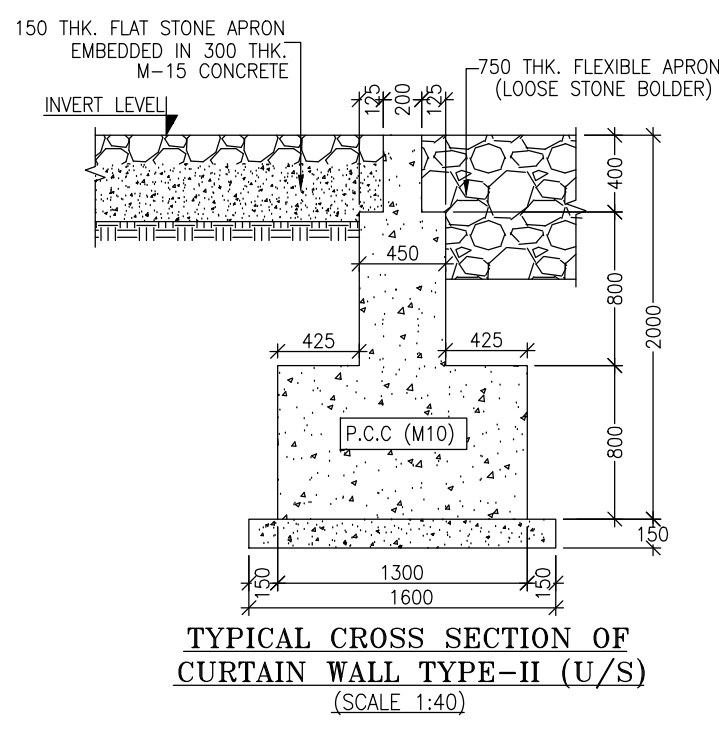
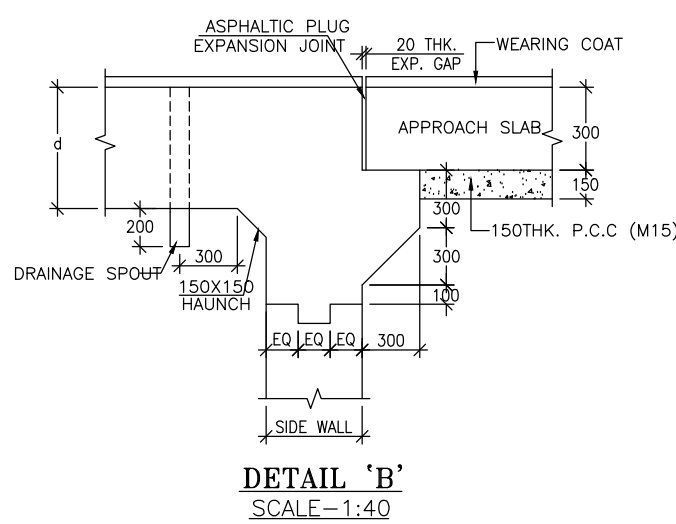
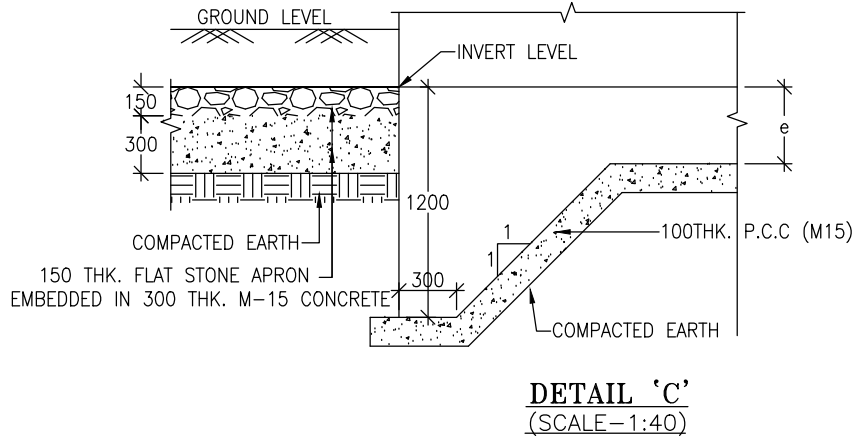
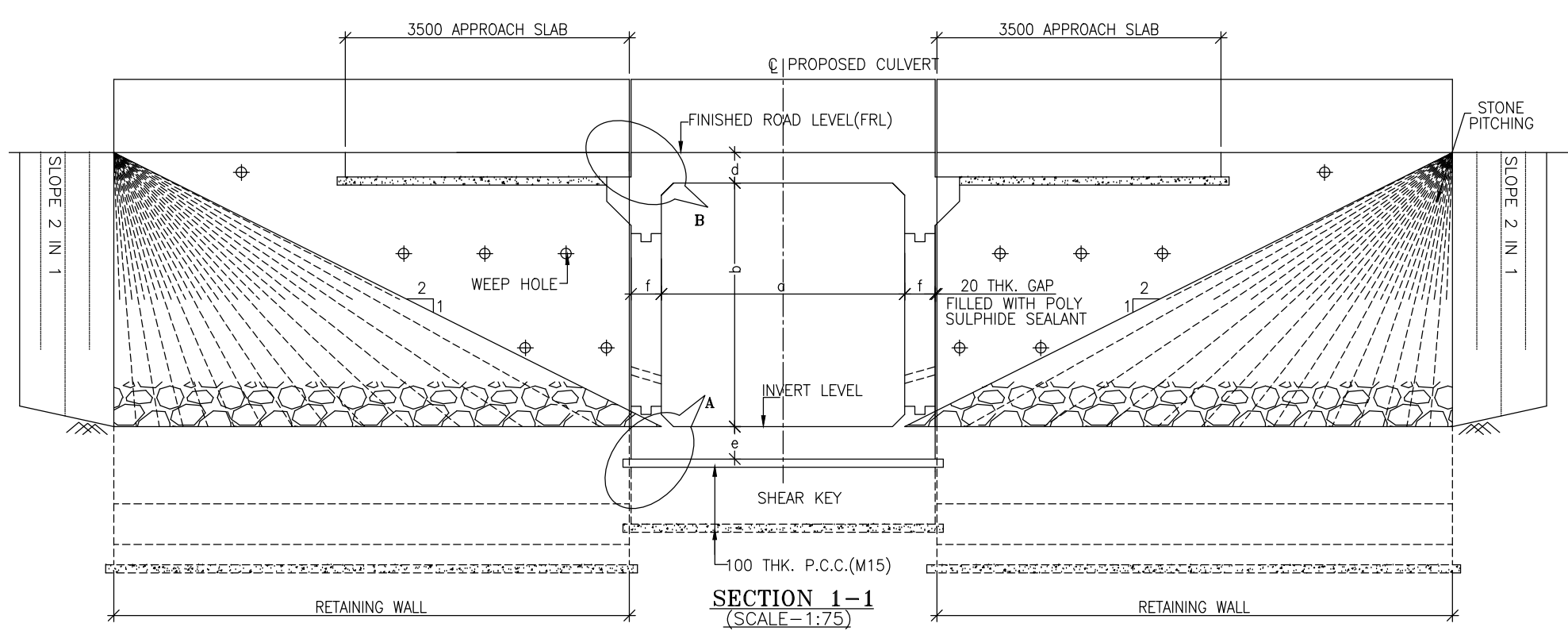
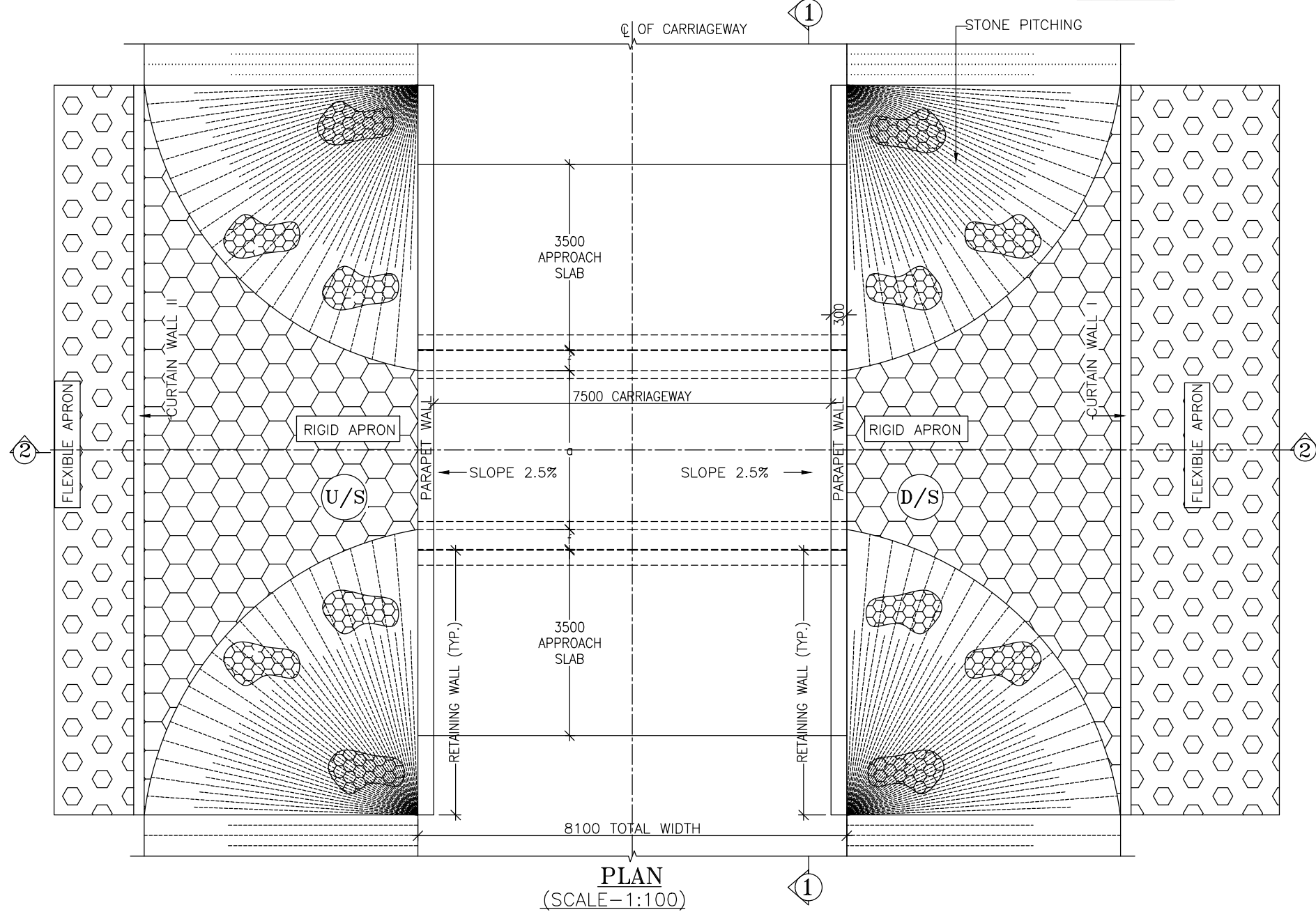
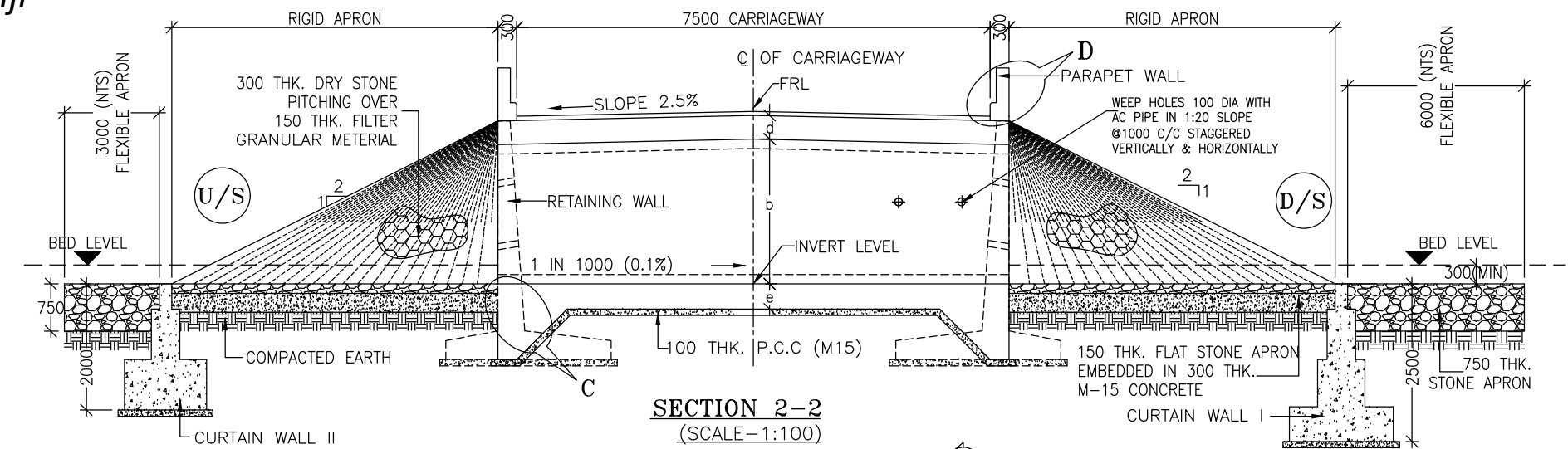
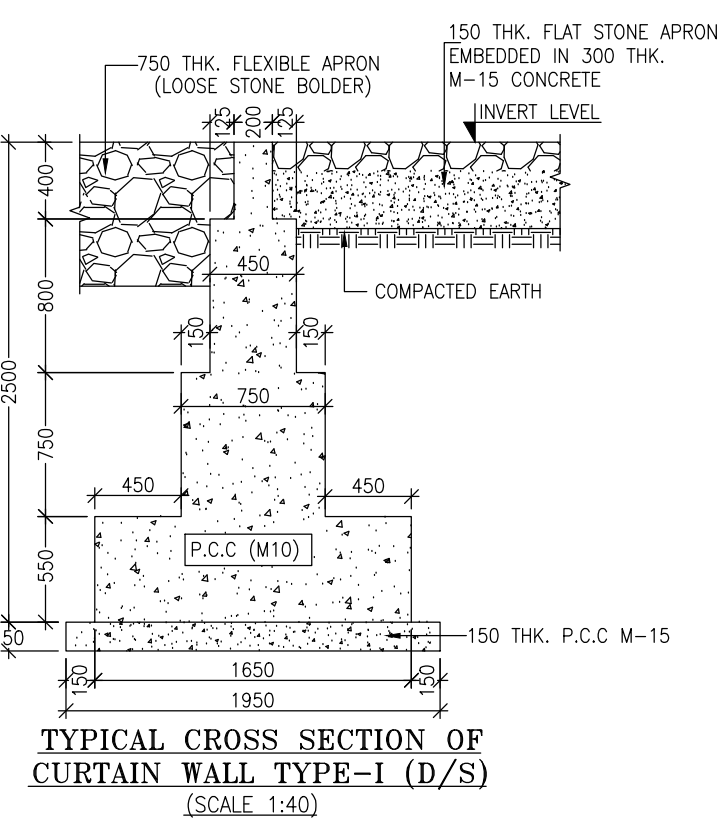


TABLE SHOWING SILENT DIMENSIONS

BOX CELL DESIGNATION	a (mm)	b (mm)	d (mm)	e (mm)	f (mm)
1/33/0	3000	3000	420	420	420

- NOTES:-**
- ALL DIMENSIONS ARE IN MILLIMETRES, LEVELS ARE IN METRES AND CHAINAGES ARE IN KILOMETRES, UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
 - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE RELEVANT ROAD PLAN AND PROFILE DRAWING.
 - THE STRUCTURE IS DESIGNED FOR LIVE LOAD COMBINATION OF 3 LANE CLASS A OR 1-LANE OF 70 R+1-LANE OF CLASS A, WHICHEVER PRODUCES SEVERE.
 - GRADE OF CONCRETE FOR VARIES ELEMENTS SHALL BE AS FOLLOWS:
a) RCC BOX.....M35
b) RCC RETAINING WALL.....M35
c) PCC LEVELLING COURSE.....M15
d) PCC CURTAIN WALL.....M20
e) PARAPET WALL.....M35
 - GRADE OF STEEL SHALL BE Fe-500 (H.Y.S.D. REBAR CONFORMING TO IS-1786)
 - BACK FILLING BEHIND THE STRUCTURE SHALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX 6 OF IRC:78-2014 HAVING PROPERTIES $\phi < 30^\circ$, $C=0$, $\gamma = 2.0T/M^3$
 - COMPRESSIBLE FILLER BOARD SHALL BE PROVIDED IN ALL EXPANSION GAPS AND SEALED WITH POLY-SULPHIDE SEALANT.
 - FOUNDATION OF BOX SHALL BE PLACED OVER A FIRM STRATA HAVING BEARING CAPACITY EQUAL TO 12T/M² IN GENERAL. IF THE MATERIAL ENCOUNTERED IS SOFT, SPONZY OR OTHER UNSUITABLE SOIL, SUCH UNSUITABLE MATERIAL SHALL BE TOTALLY REMOVED TO SUCH DEPTH, WIDTH & LENGTH, AS DIRECTED BY THE ENGINEER. THE EXCAVATED AREA SHALL BE BACKFILLED WITH APPROVED GRANULAR MATERIAL & THOROUGHLY COMPACTED UP TO THE SPECIFIED LEVEL.
 - 600MM THICK FILTER MEDIA SHALL BE PROVIDED BEHIND SIDE WALLS AND WING WALLS AS PER IR:78-2014.
 - ALL THE LEVELS AND CAMBERS TO BE VERIFIED WITH RESPECT TO PLAN & PROFILE DRAWINGS BEFORE EXCAVATION. ANY DISCREPANCY NOTED SHOULD BE REPORTED TO THE DESIGN ENGINEER IMMEDIATELY.
 - BACK FILLING BEHIND WALLS SHALL BE DONE SIMULTANEOUSLY ON EITHER SIDE OF THE STRUCTURE WITH HEIGHT DIFFERENCE NOT MORE THAN 1.0M. BACK FILLING SHALL BE DONE ONLY AFTER THE TOP SLAB IS CONCRETED AND CURED FOR 14 DAYS.
 - SPRADING & COMPACTED OF SAND WILL BE DONE IN ACCORDANCE WITH CLAUSE 401.3.2 OF SPECIFICATION FOR ROAD & BRIDGE WORKS BY MINISTRY OF ROAD TRANSPORT & HIGHWAY



CLIENT :

Jhelum Tawi Flood Recovery Project
2nd Floor ERA Commercial Complex Rambagh
Srinagar-190 009.

PROJECT :
Consultancy Services for Preparing Detailed Project Report
for the Road works in Jammu and Kashmir
(Anji Panasa Road)

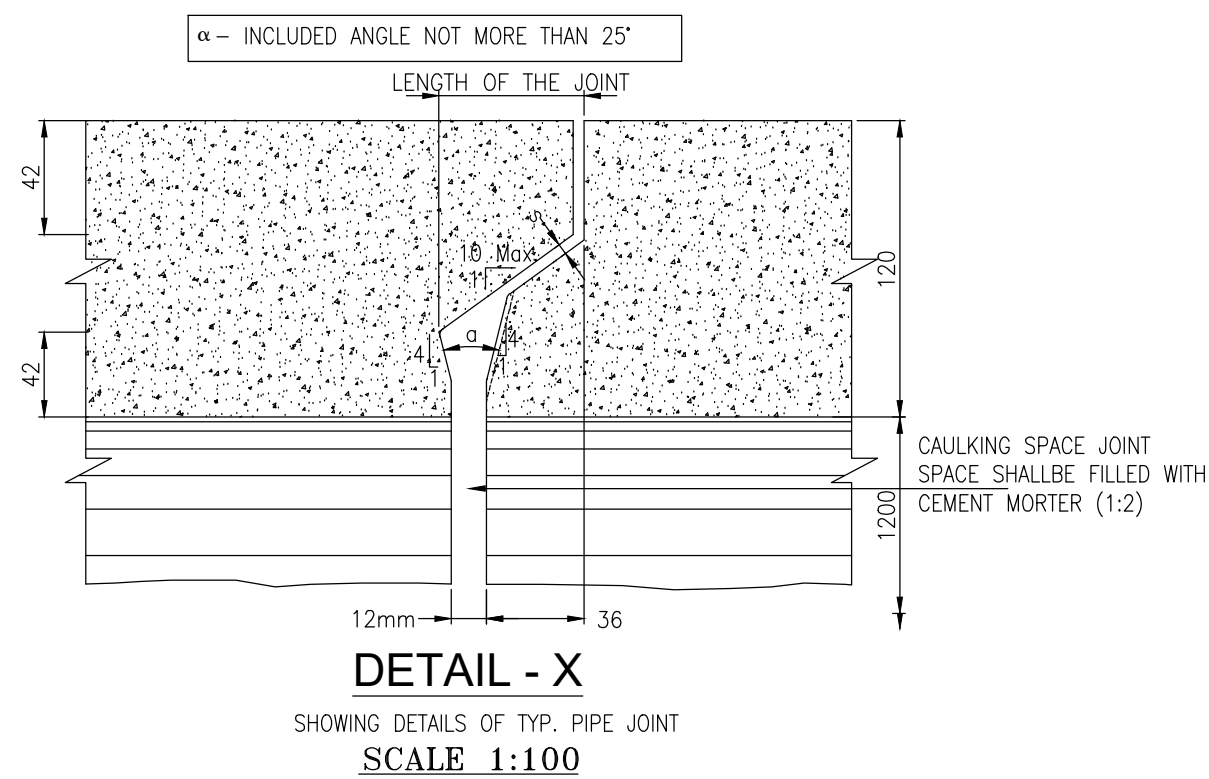
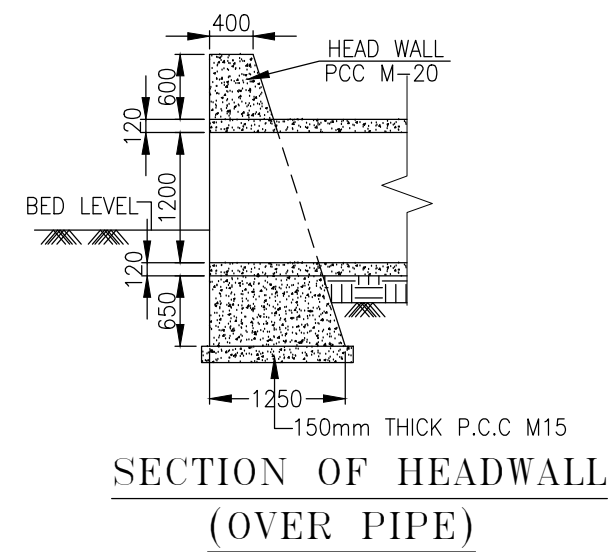
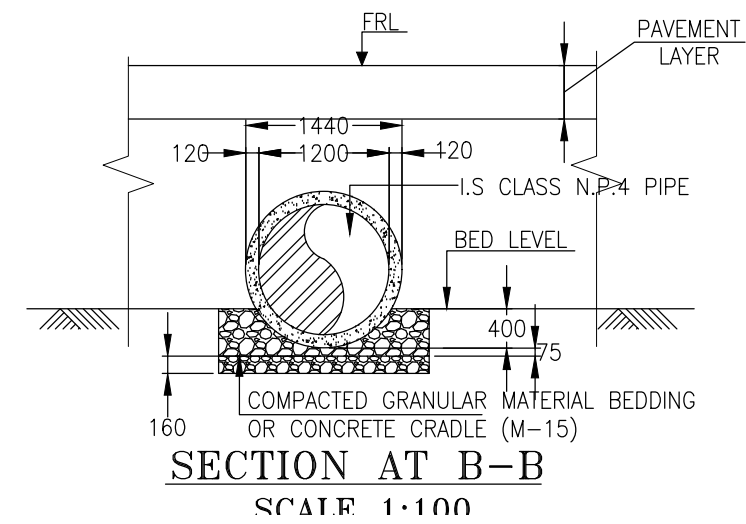
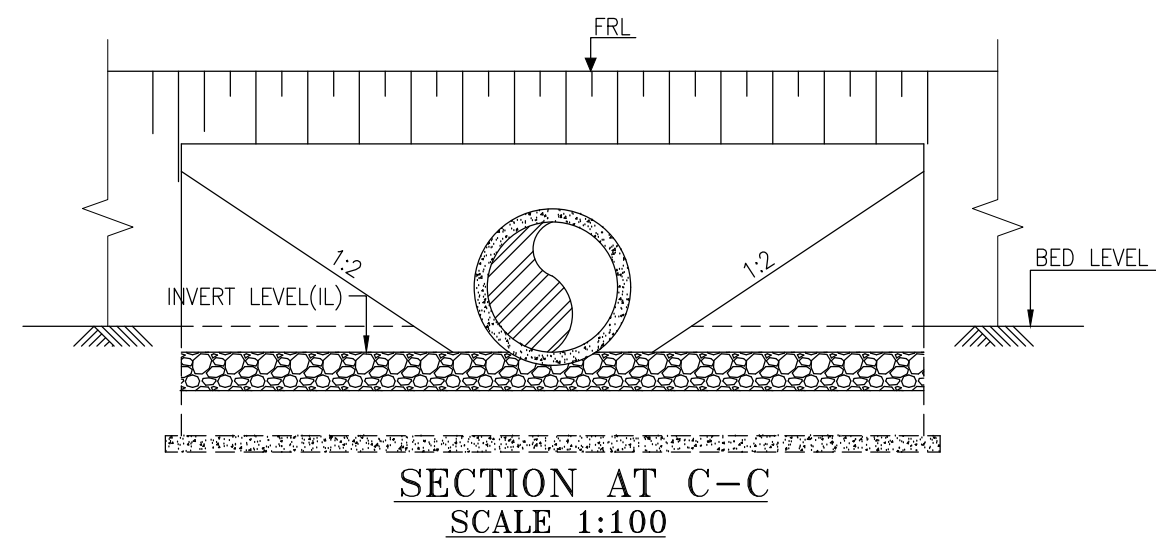
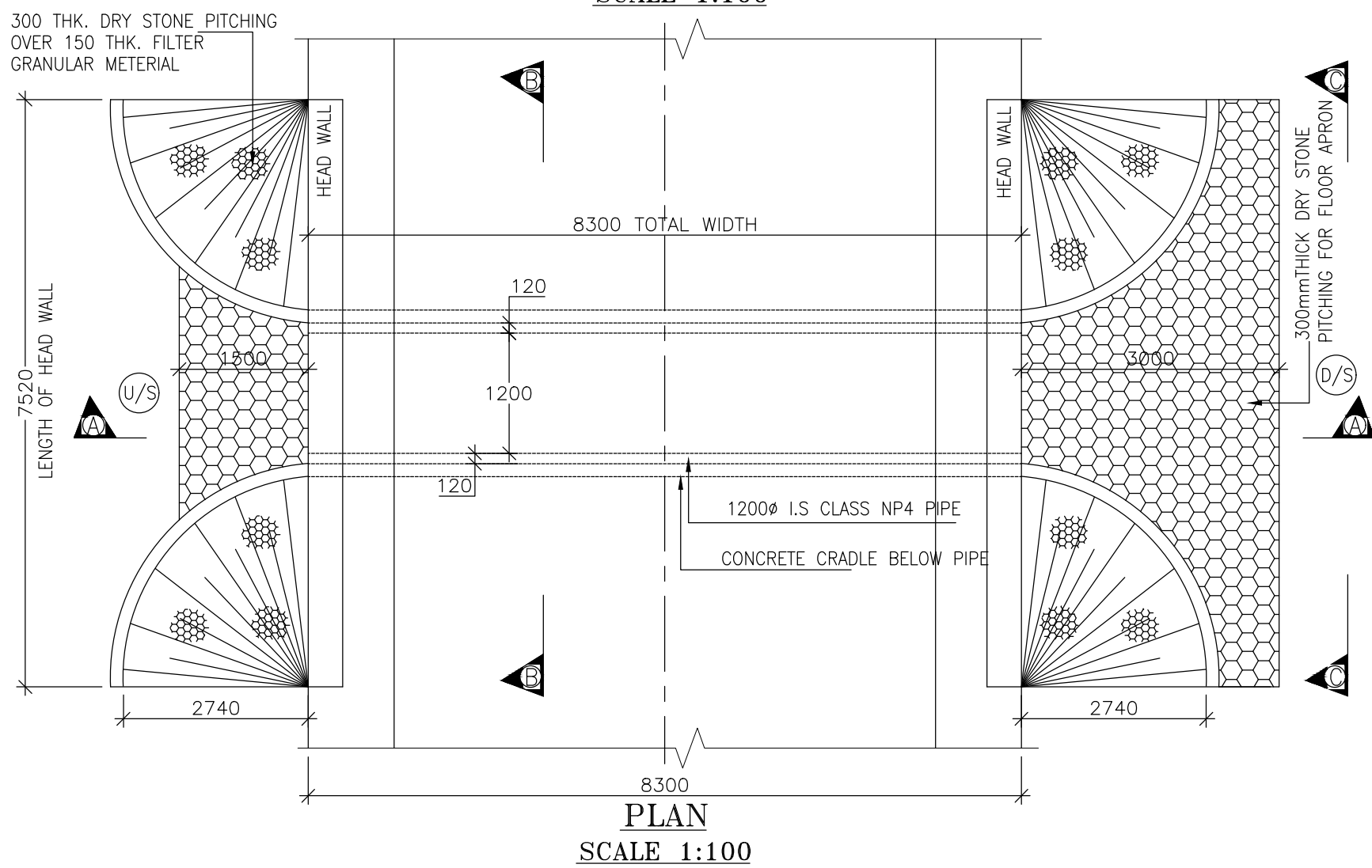
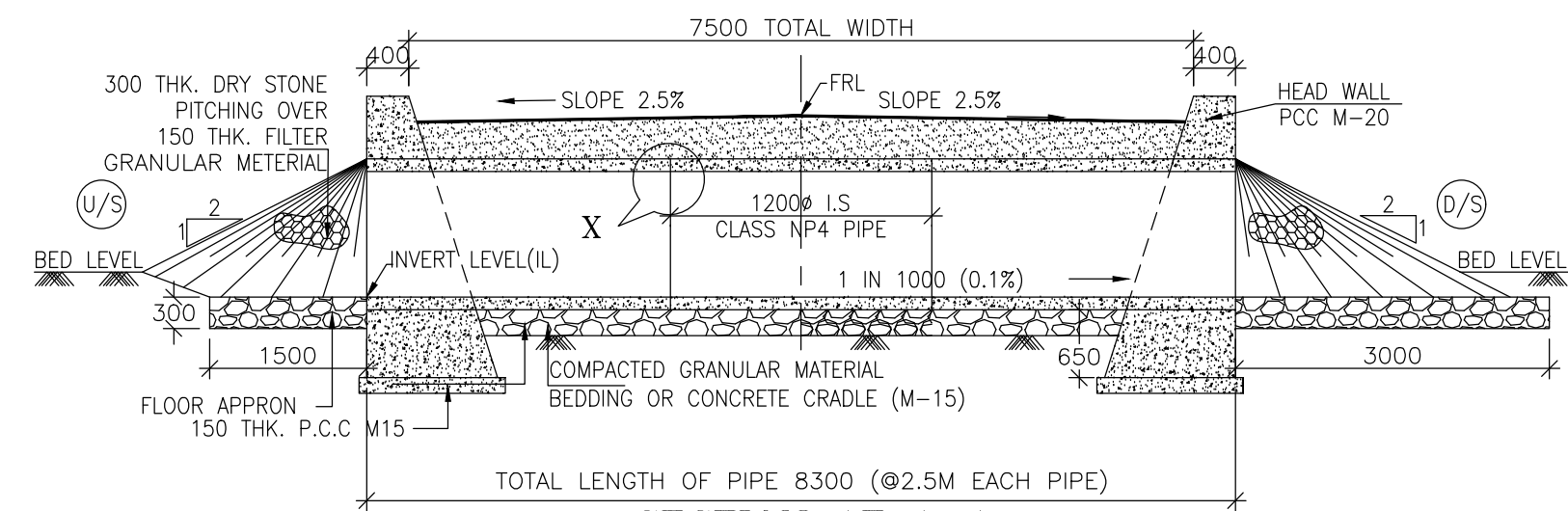
DESIGN CONSULTANT:

Eptisa Servicios de Ingenieria S.L.
Unit 1203, 12th Floor, Tower 1, PS Srijan
Corporate Park, Plot No. 2, Block EP & GP,
Sector v, Salt Lake Kolkata - 700091,
West Bengal
Ph: 033-40347200
www.eptisa.com

REV.	DATE	DESCRIPTION

DRAWN BY :	PD
DESIGNED BY :	SD
APPROVED BY :	KG
SCALE :	AS SHOWN

TITLE :	TYPICAL GENERAL ARRANGEMENT DRAWING FOR SINGLE BOX CULVERT
DRG. NO. :	EPTISA/JTRP/DPR/J&K/BOX/GAD/01
REVISION : R-1	September 2019



NOTES:-

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

CLIENT :



Jhelum Tawi Flood Recovery Project
2nd Floor ERA Commercial Complex Rambagh
Srinagar-190 009.

PROJECT :

Consultancy Services for Preparing Detailed Project Report
for the Road works in Jammu and Kashmir
(Anji Panasa Road)

DESIGN CONSULTANT:

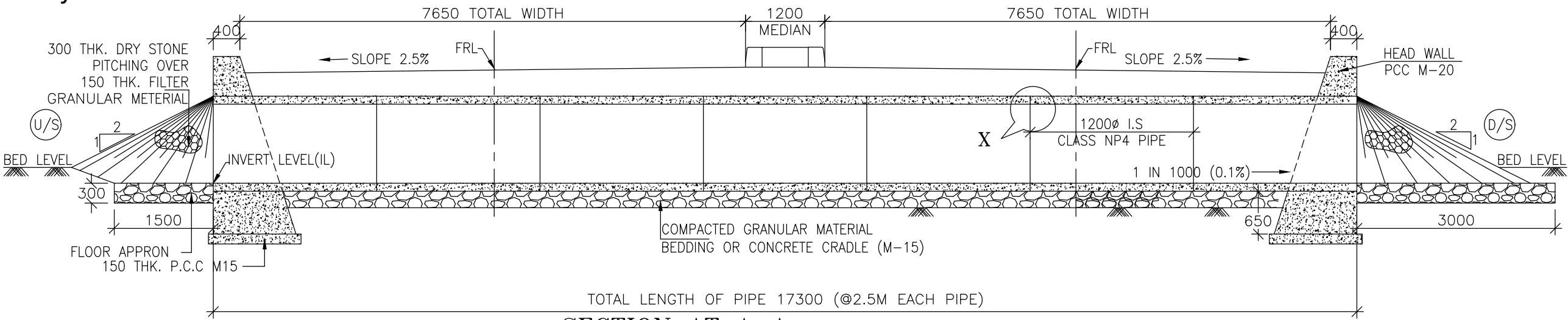


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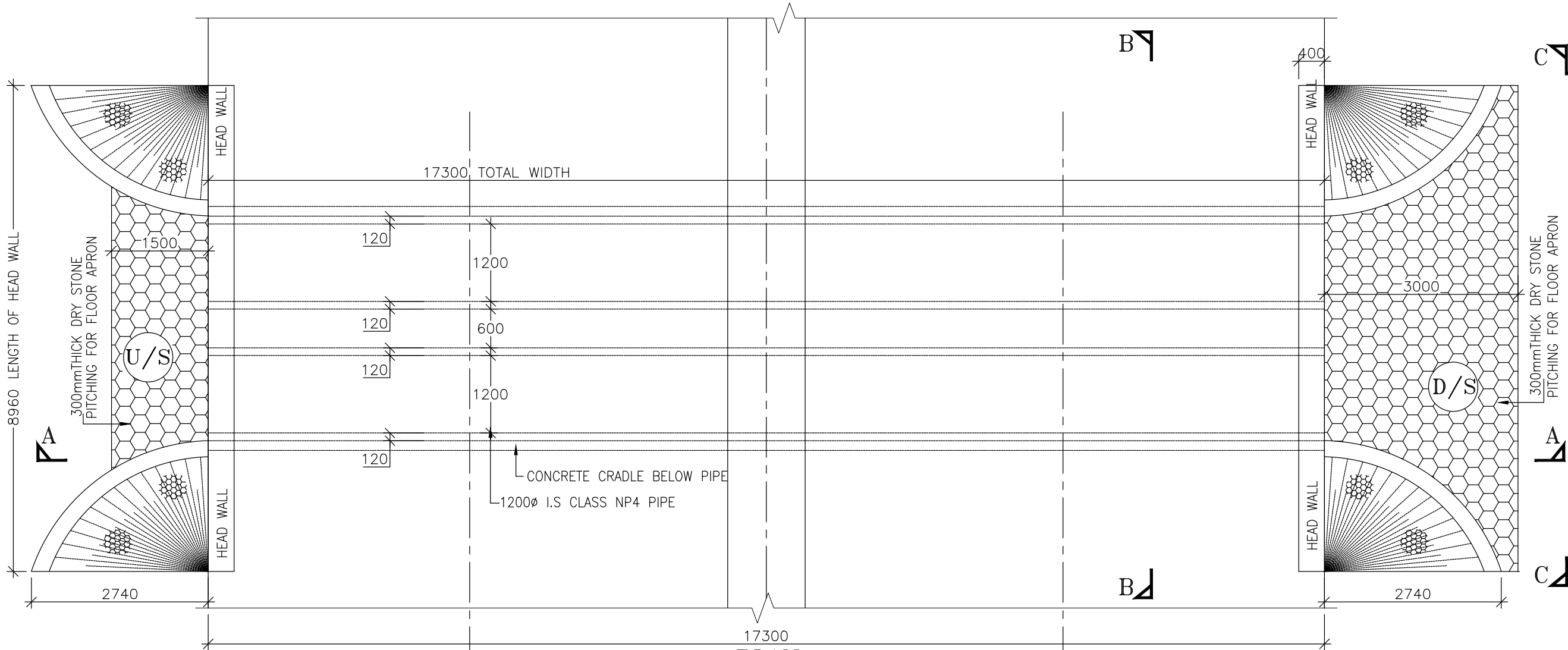
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DESIGNED BY :	SD
APPROVED BY :	KG
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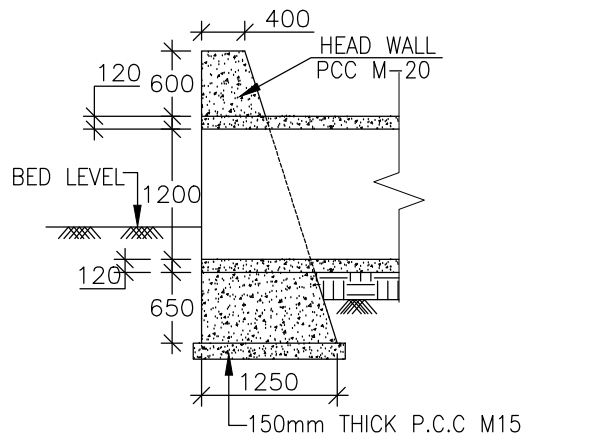
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DRG. NO. :	EPTISA/JTFRP/DPR/J&K/PIPE/GAD/01
REVISION : R-1	September 2019



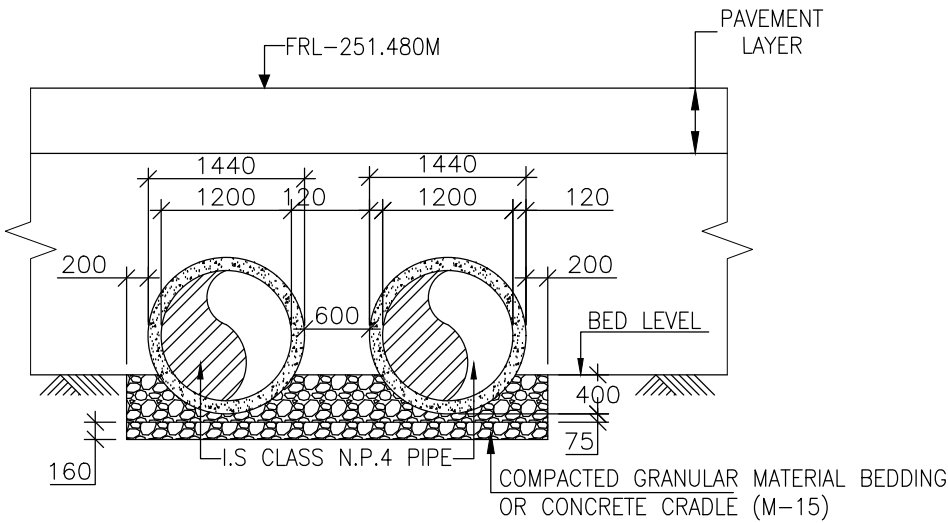
SECTION AT A-A
SCALE 1:100



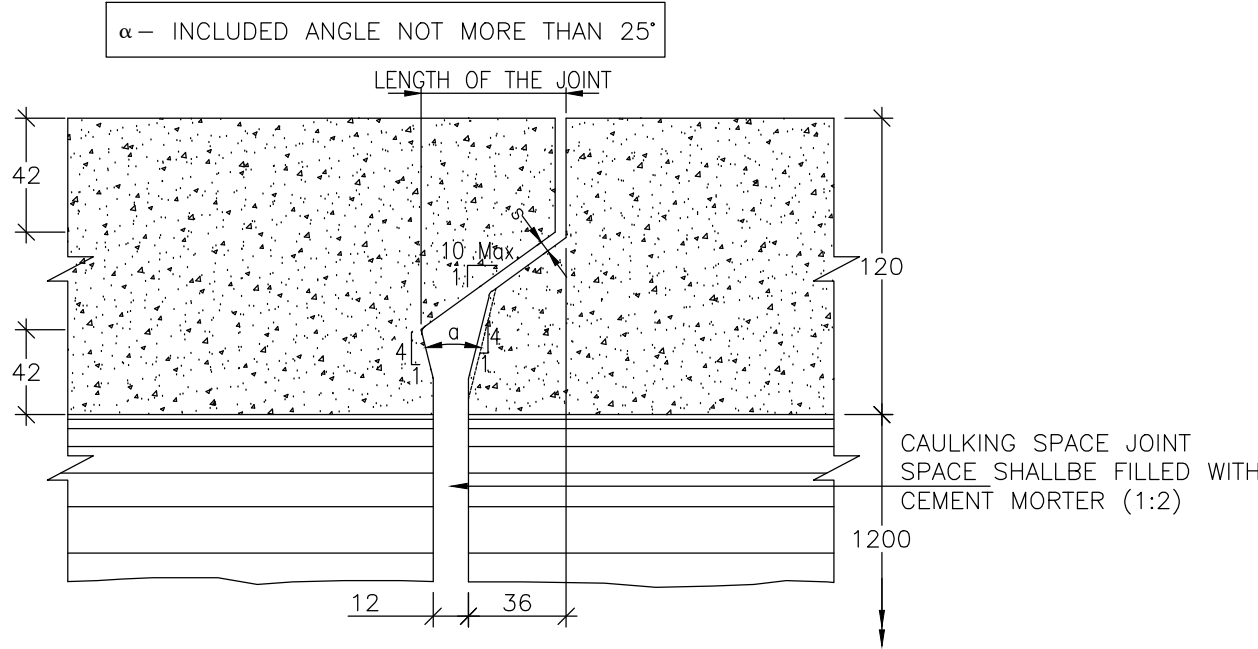
PLAN
SCALE 1:100



SECTION OF HEADWALL
(OVER PIPE)
SCALE 1:100

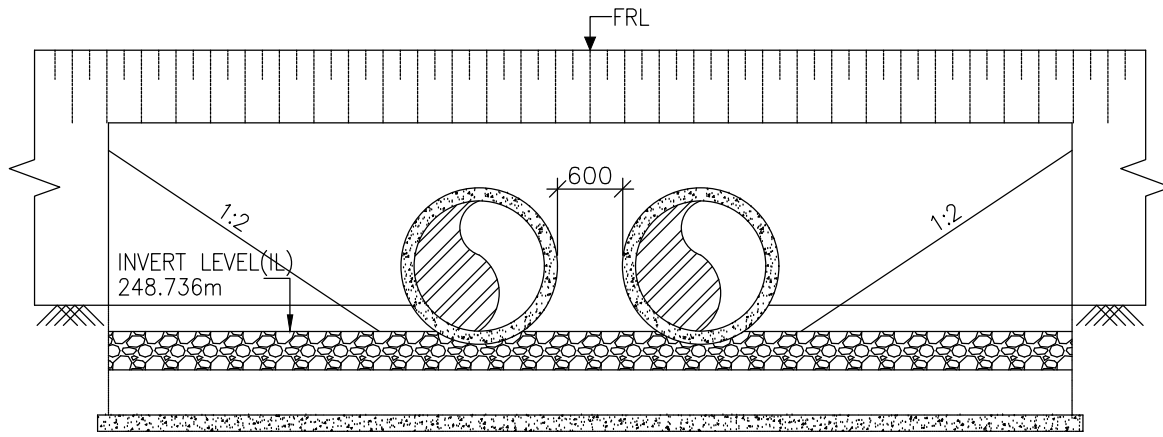


SECTION AT B-B
SCALE 1:100



DETAIL - X
SCALE 1:100

SHOWING DETAILS OF TYP. PIPE JOINT



SECTION AT C-C
SCALE 1:100

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REV.	DATE	DESCRIPTION

DRAWN BY :	PD
DESIGNED BY :	SD
APPROVED BY :	KG
SCALE :	AS SHOWN

TITLE :	TYPICAL GENERAL ARRANGEMENT DRAWING FOR DOUBLE CELL PIPE CULVERT
DRG. NO. :	EPTISA/JTRFP/DPR/J&K/PIPE/GAD/02
REVISION : R-1	September 2019