

INFRA 1 – LOT 2  
DRAWING

3350.0m Access Road to Adit 3

DESIGN NOTE:

ROAD WORKS

- ALL DIMENSIONS, ELEVATIONS & DETAILS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
- NO DIMENSION SHALL BE MEASURED FROM THE DRAWINGS. ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.
- ALL DIMENSIONS/DETAILS SHALL BE CHECKED ALONG WITH THE RELEVANT DRAWINGS BEFORE STARTING EXECUTION OF WORKS. DISCREPANCY, IF ANY, SHALL BE IMMEDIATELY BROUGHT TO THE NOTICE OF PROJECT AUTHORITY/CONSULTANT FOR REVIEW.
- THE FORMATION CUTTING WIDTH OF THE ROAD SHALL BE 8 METERS.
- THE FORMATION WIDTH IS DIVIDED INTO THREE PARTS; 1 METER DRAIN, 6 METER PAVEMENT WIDTH AND 1 METER SHOULDER AS INDICATED IN TYPICAL SECTION IN THE DRAWING.
- THE GRADIENT OF THE ROAD SHALL NOT EXCEED 10%. IN CASE THE GRADIENT EXCEEDS 10%, SHALL BE IMMEDIATELY BROUGHT TO THE NOTICE OF PROJECT AUTHORITY/CONSULTANT FOR REVIEW.
- IN CASE OF CHANGE IN THE ALIGNMENT, CONTRACTOR AND PROJECT AUTHORITY SHALL IMMEDIATELY BRING TO THE NOTICE OF CONSULTANT FOR THE REVIEW AND POSSIBLE RE-ALIGNMENT.
- FOR THE NEW ALIGNMENT, THE TOPOGRAPHIC SURVEY SHALL BE CARRIED UPTO 20 METERS BOTH SIDE FROM THE CENTERLINE BEFORE EXCAVATION.
- THE CAMBER OF THE ROAD SHELL BE AS PER THE DESIGN AND DRAWINGS.
- THE CONSTRUCTION SHALL BE DONE AS PER THE DESIGN AND THE INSTRUCTION OF THE SITE ENGINEER.

HUME PIPE INSTALATION

- DO NOT MEASURE THE DIMENSIONS FROM THE DRAWING.
- THE PIPES SHALL BE LAID AFTER THE FOUNDATION IS WELL CURED AND APPROVED BY THE ENGINEER-IN-CHARGE.
- IN PLACES WHERE TWO OR MORE PIPES ARE TO BE LAID ADJACENT TO EACH OTHER, THE PIPES SHALL BE SEPARATED BY A DISTANCE OF A MINIMUM 450 MM OR EQUAL TO HALF THE DIAMETER OF THE PIPE.
- PROPER CARE SHALL BE TAKEN WHILE LIFTING, LOADING, UNLOADING, AND LOWERING OF CONCRETE PIPES AT A FACTORY OR SITE SO THAT THE PIPES DO NOT SUFFER ANY UNDUE STRUCTURAL STRAIN, ANY DAMAGE DUE TO FALL OR IMPACT.
- ANY PIPE FOUND DEFECTIVE OR DAMAGED DURING LAYING SHALL BE REMOVED AT THE COST OF THE CONTRACTOR.
- THE BACKFILLING OF THE TRENCHES SHALL BE CARRIED OUT IMMEDIATELY AFTER THE PIPES ARE PLACED, AND THE JOINTING MATERIAL HAS HARDENED.
- THE BACKFILLING UP TO 300 MM ABOVE THE TOP OF THE PIPE SHALL BE CARRIED OUT CAREFULLY, AND THE SOIL SHALL BE RAMMED, TAMPED, OR VIBRATED IN LAYERS NOT EXCEEDING 150 MM, PARTICULAR CARE BEING TAKEN TO CONSOLIDATE THE MATERIALS UNDER THE LAUNCHES OF THE PIPE THOROUGHLY.
- THE FILLING OF THE TRENCH ON BOTH SIDES OF THE PIPE SHALL BE CARRIED OUT SIMULTANEOUSLY SO THAT UNEQUAL PRESSURES DO NOT OCCUR.
- IN CASE OF THE HIGH EMBANKMENT, AFTER FILLING THE TRENCH UP TO THE TOP OF THE PIPE IN THE ABOVE-SAID MANNER, A LOOSE-FILL SHALL BE PLACED OVER THE PIPE TO A DEPTH EQUAL TO THE EXTERNAL DIAMETER OF THE PIPE AND COMPACTED.

CULVERT CONSTRUCTION:

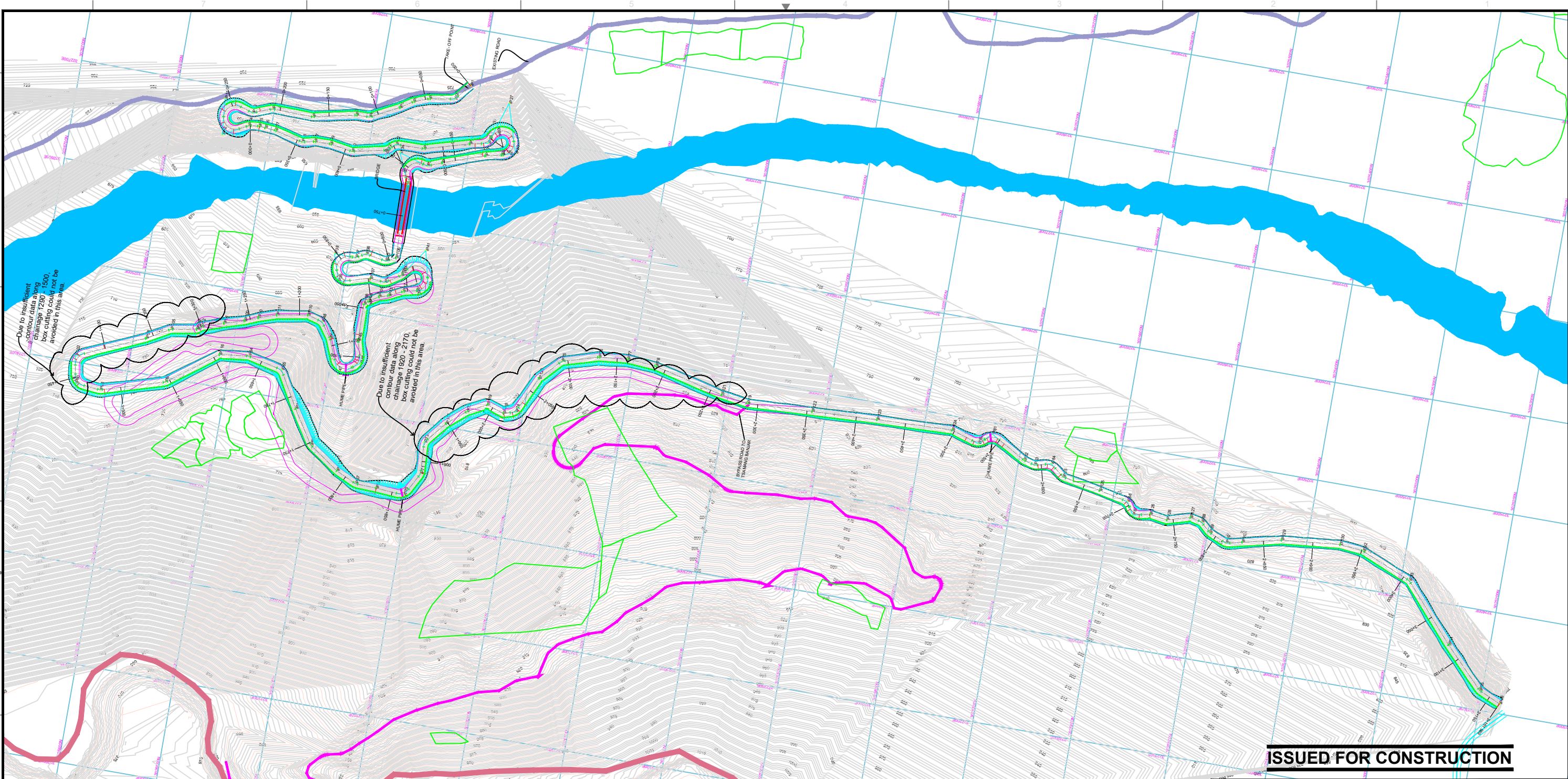
- ALL DIMENSIONS, ELEVATIONS & DETAILS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
- NO DIMENSION SHALL BE MEASURED FROM THE DRAWINGS. ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.
- THE FOUNDATION OF CULVERT TO LAID ON ORIGINAL SOIL MAINTAINING THE SLOPES AS SHOWN IN THE SECTION.
- USE M25 GRADE CONCRETE AND Fe500 STEEL FOR THE CONSTRUCTION OF CULVERT SLAB AND ABUTMENT.
- PROVIDE 30MM CLEAR COVER FOR SLAB AND 40MM FOR THE ABUTMENT.
- PROVIDE 100MM DIAMETER STEEL CHAIR @ 1METER CENTER TO CENTER FOR CULVERT SLAB AND FOOTING.
- THE HEIGHT OF ABUTMENT MAY CHANGE AS PER THE SITE CONDITION, ANY SUCH CHANGE SHALL BE IMMEDIATELY BROUGHT TO THE NOTICE OF PROJECT AUTHORITY/CONSULTANT FOR REVIEW.
- THE DRAINAGE HOLE SHALL BE PROVIDED BOTH IN DECK SLAB AND THE ABUTMENT AS DETAILS SHOWN IN THE SECTIONS.
- THE BACKFILLING OF SHALL BE DONE IN LAYER OF 300MM PROVIDING PROPER FILTER MATERIALS AT DRAINAGE HOLES.
- DEVELOPMENT LENGTH OF REINFORCEMENT SHALL BE PROVIDED 57Ø OF THE REINFORCEMENT.
- ALL DIMENSIONS/DETAILS SHALL BE CHECKED ALONG WITH THE RELEVANT DRAWINGS BEFORE STARTING EXECUTION OF WORKS. DISCREPANCY, IF ANY, SHALL BE IMMEDIATELY BROUGHT TO THE NOTICE OF PROJECT AUTHORITY/CONSULTANT FOR REVIEW.

RETAINING WALL CONSTRUCTION:

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- NO DIMENSION SHALL BE MEASURED FROM THE DRAWINGS. ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.
- THE HEIGHT OF THE RETAINING WALL SHALL NOT EXCEED (H= 0.4B + 0.3) AND IT IS TO BE DIVIDED INTO PANELS LENGTH NOT EXCEEDING 5M.
- THE FOUNDATION OF WALL TO LAID ON ORIGINAL SOIL MAINTAINING THE SLOPES AS SHOWN IN THE SECTION.
- THE BACKFILLING OF SHALL BE DONE IN LAYER OF 300MM PROVIDING PROPER FILTER MATERIALS AT WEEP HOLES.
- THE WEEP HOLE SHALL BE PROVIDED AT DISTANCE NOT EXCEEDING 1.5 METER C/C IN BOTH THE DIRECTION.
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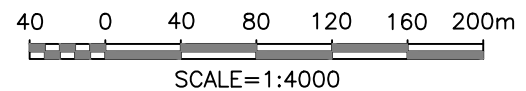
ISSUED FOR CONSTRUCTION


Rev	Modification	Drawn:	Checked:	Recommended:	Approved:
Client: DORJILUNG HYDROPOWER PROJECT					
Project: DORJILUNG HYDROPOWER PROJECT (1125 MW) MONGAR, BHUTAN					
Title: DORJILUNG ADIT 3 ROAD DESIGN NOTES SHEET 00 OF 38					
CONSULTANT: 		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-ADIT-3-ROAD-2024-00			REV NA

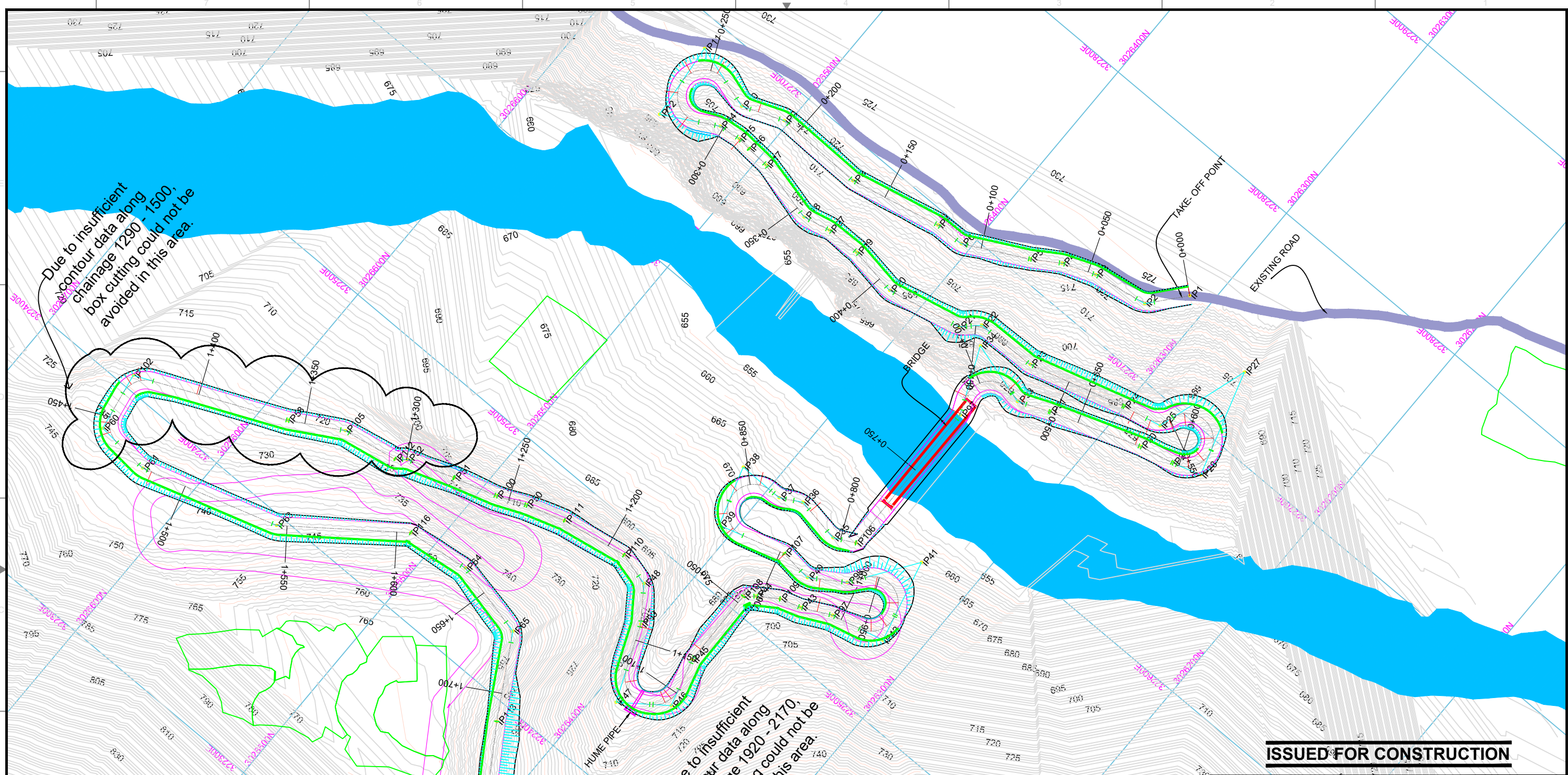


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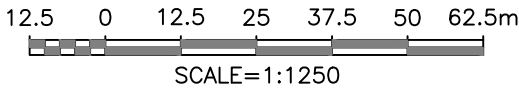


Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>DORJILUNG ADIT 3 ROAD</b> <b>GENERAL PLAN</b>  SHEET 1 OF 38					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-ADIT-3-ROAD-2024-01			REV NA



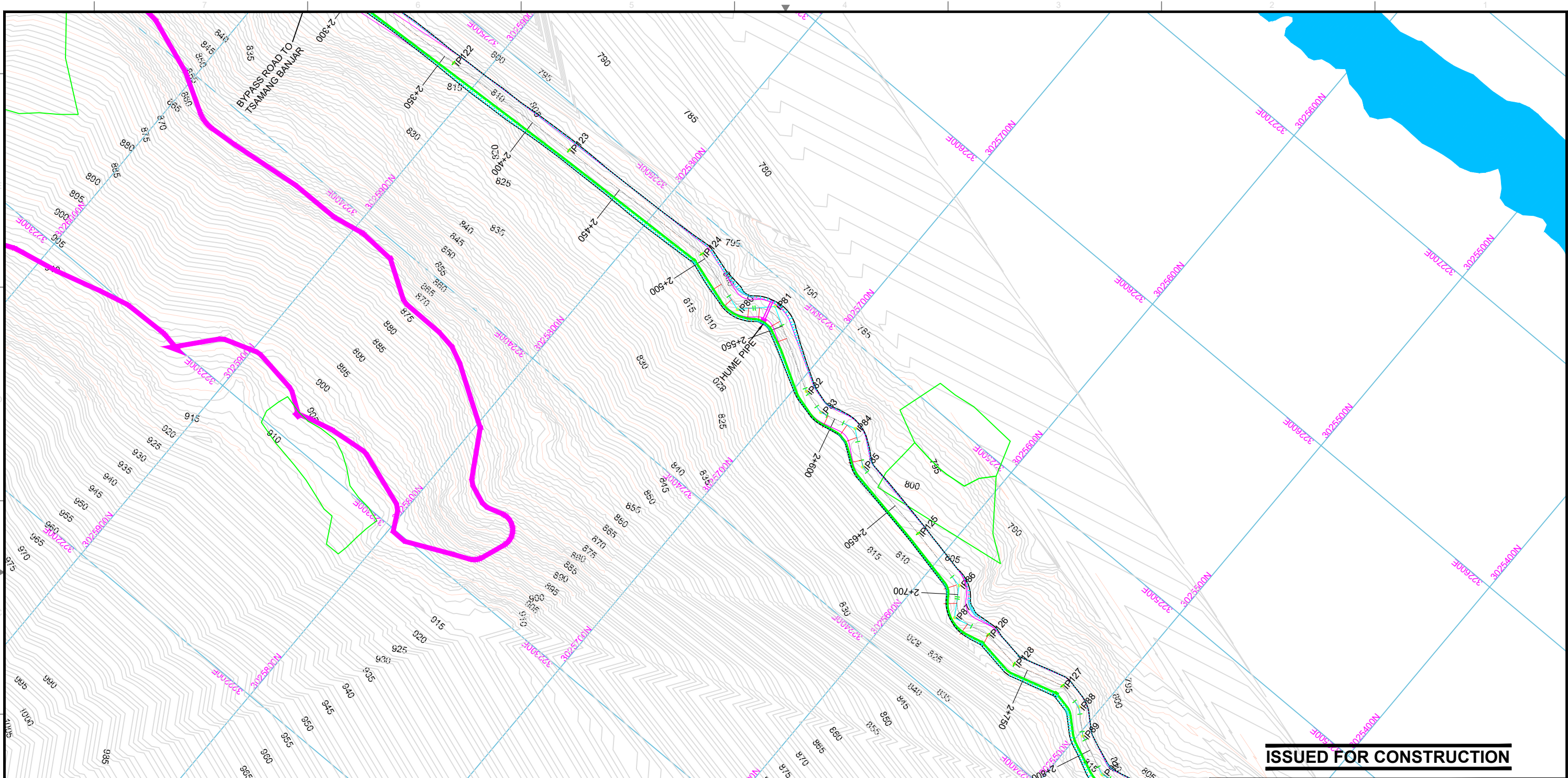
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Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>DORJILUNG ADIT 3 ROAD</b> <b>GENERAL PLAN</b>					
SHEET 2 OF 38					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	A3	Original Scale	AS SHOWN	DRAWING NO.	DHPP-ADIT-3-ROAD-2024-02
				REV	NA




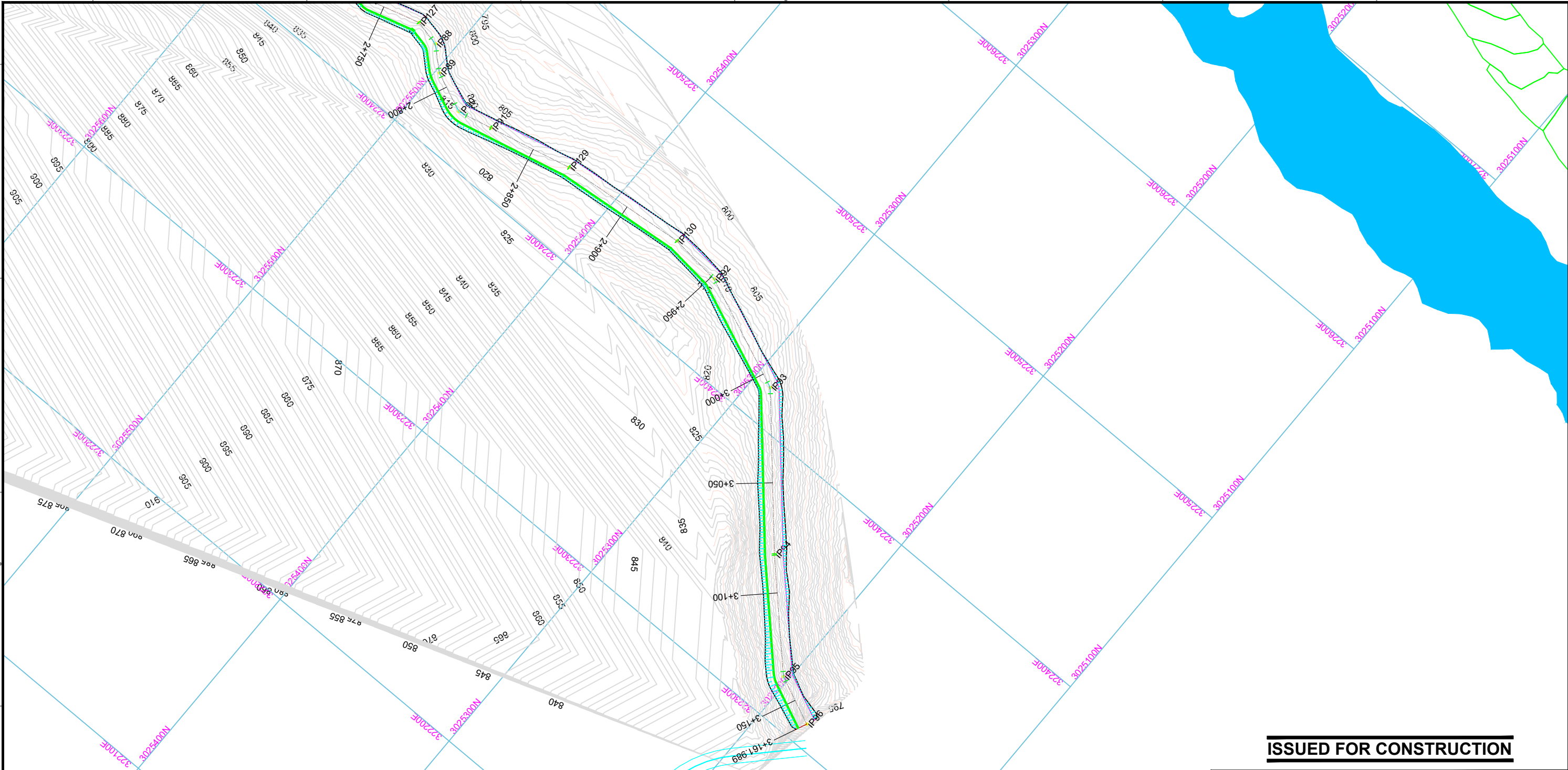


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Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>DORJILUNG ADIT 3 ROAD</b> <b>GENERAL PLAN</b>  SHEET 4 OF 38					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-ADIT-3-ROAD-2024-04			REV NA

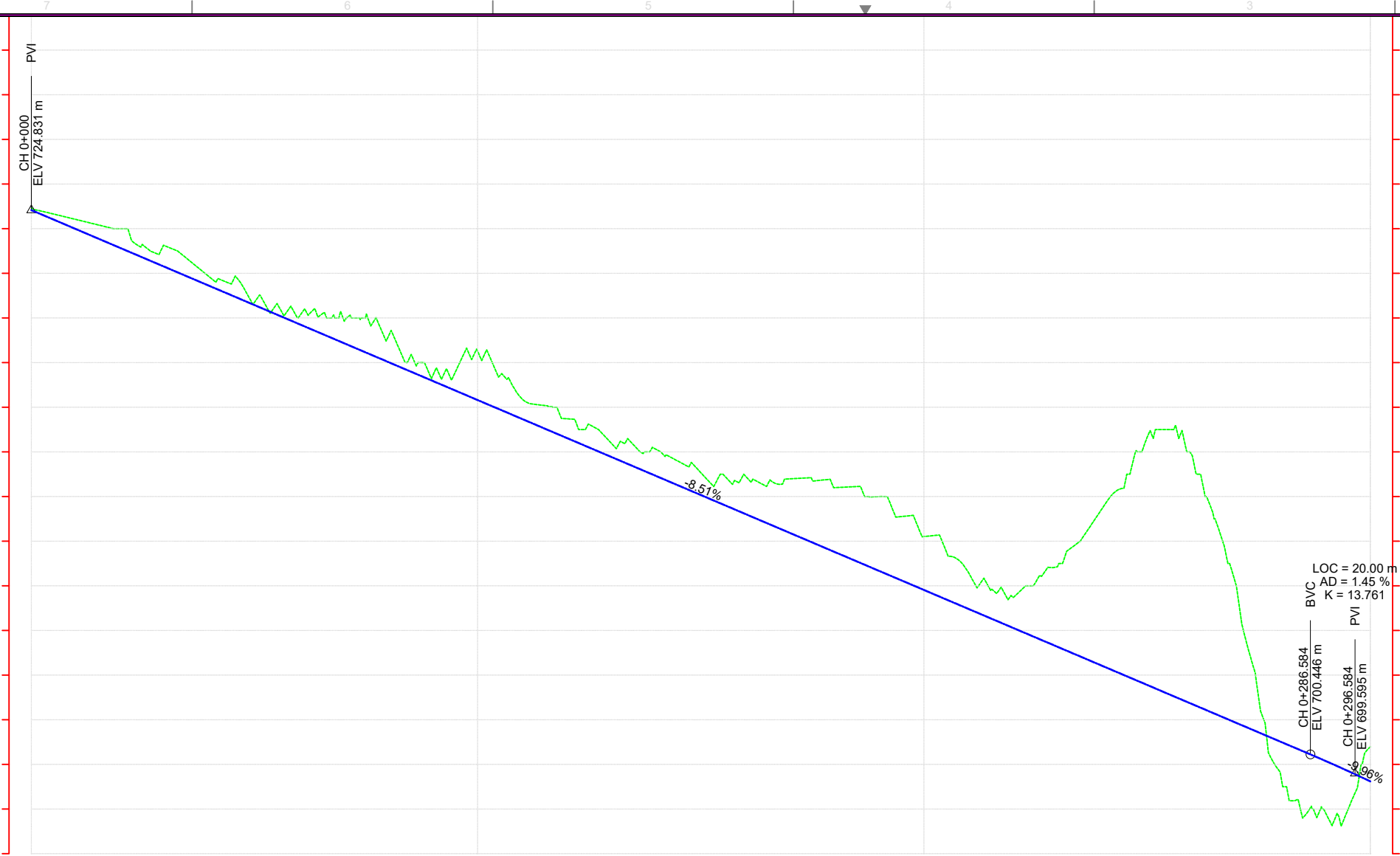


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Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>DORJILUNG ADIT 3 ROAD</b> <b>GENERAL PLAN</b>  SHEET 5 OF 38					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-ADIT-3-ROAD-2024-05			REV NA

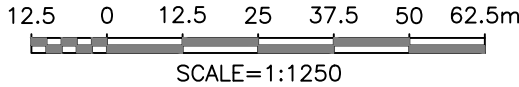


DESIGN LEVEL(m)	724.831 724.940 724.831 724.413 723.981 724.000 723.130 723.225 722.279 721.821 721.428 720.577 720.703 719.726 720.058 719.914 718.875 719.175 718.024 717.440 717.173 718.509 716.322 716.362 715.471 715.483 714.620 714.374 713.770 714.111 712.919 712.068 712.918 711.217 712.794 710.366 712.397 709.515 712.000 708.664 710.206 707.813 708.589 706.962 707.477 706.111 708.890 705.260 711.485 704.409 714.650 703.559 713.870 702.708 707.986 701.857 699.428 701.006 697.821 700.151 700.786 699.239																															
EXISTING LEVEL(m)																																
CHAINAGE(Km)	0+000 0+010 0+020 0+030 0+040 0+050 0+060 0+070 0+080 0+090 0+100 0+110 0+120 0+130 0+140 0+150 0+160 0+170 0+180 0+190 0+200 0+210 0+220 0+230 0+240 0+250 0+260 0+270 0+280 0+290 0+300																															
HORIZONTAL SCHEMATIC	<div><div>L=16.419 R=12</div><div>L=8.934 R=12</div><div>L=20.233 R=12</div><div>L=2.474 R=12</div><div>L=13.701 R=12</div><div>L=2.147 R=12</div><div>L=12.928 R=12</div><div>L=6.02 R=12</div><div>L=28.741 R=12</div><div>L=5.74 R=12</div><div>L=9.748 R=12</div><div>L=40.997 R=12</div><div>L=2.666 R=12</div><div>L=37.603 R=12</div><div>L=4.714 R=12</div><div>L=13.886 R=12</div><div>L=8.095 R=12</div><div>L=8.920 R=12</div><div>L=23.657 R=12</div><div>L=23.720 R=12</div><div>L=7.495 R=12</div><div>L=2.997 R=12</div></div>																															
SUPER ELEVATION SCHEMATIC	<div><div>0+000</div><div>SE:4%</div><div>0+220.35</div><div>SE:7%</div><div>0+220.95</div><div>SE:7%</div><div>0+239.55</div><div>SE:7%</div><div>0+246.75</div><div>SE:7%</div><div>0+259.203</div><div>SE:7%</div><div>0+270.74</div><div>SE:7%</div><div>0+282.94</div><div>SE:7%</div><div>0+290.74</div><div>SE:7%</div><div>0+300</div></div>																															


CHAINAGE : 0+000 - 0+300

IP No.	CO-ORDINATES(m)	
	EASTING	NORTHING
1	322743.004	3026309.606
2	322726.999	3026323.000
3	322722.776	3026348.579
4	322716.938	3026363.640
5	322708.999	3026376.000
6	322694.212	3026404.467
7	322693.898	3026418.165
8	322684.516	3026460.740
9	322685.369	3026502.154
10	322677.919	3026521.233
11	322687.221	3026551.059
12	322651.052	3026547.492
14	322664.611	3026522.917

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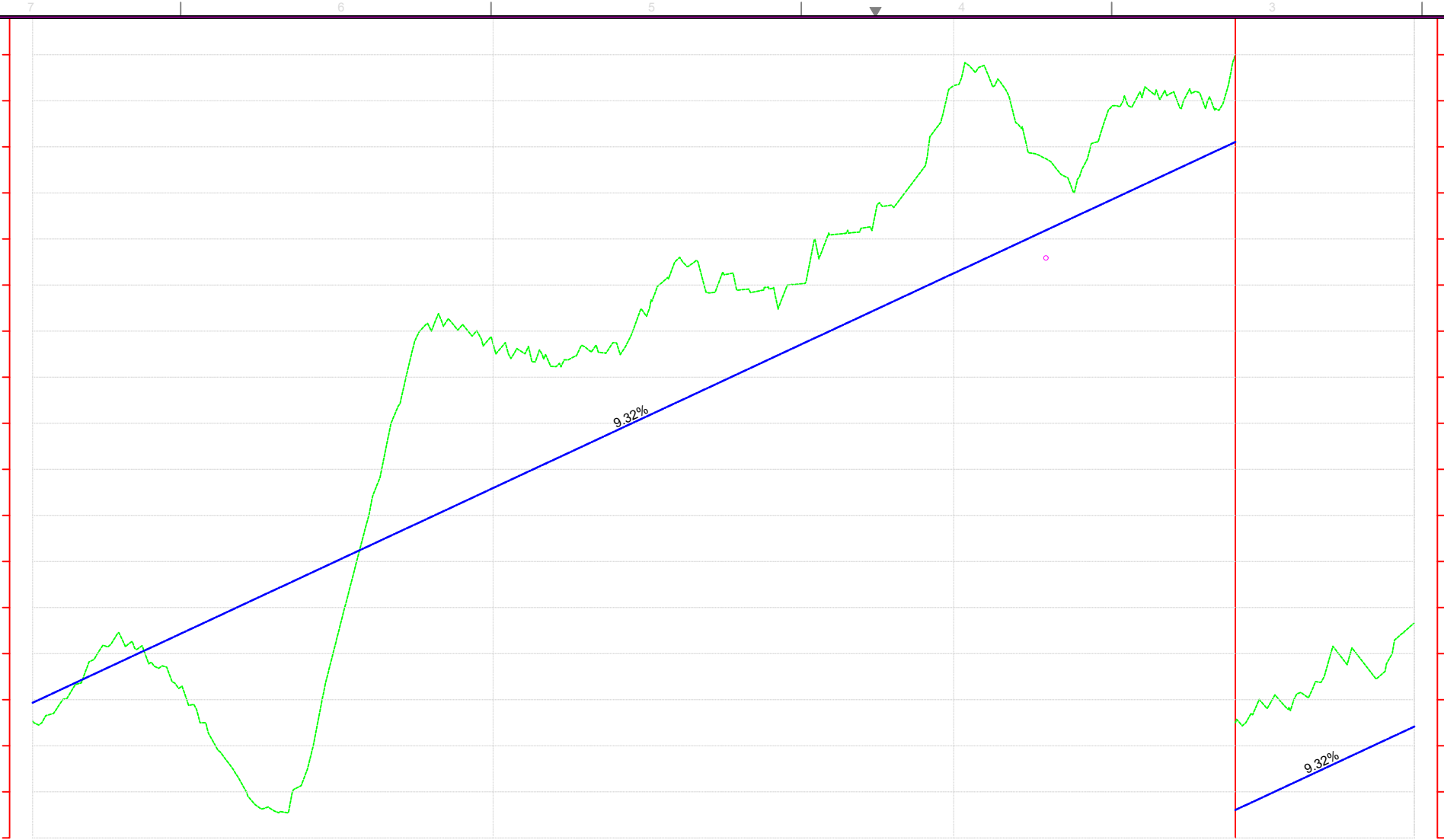
ISSUED FOR CONSTRUCTION

Rev	Modification	Drawn:	Checked:	Recommended:	Approved:
Client: <div>DORJILUNG HYDROPOWER PROJECT</div>					
Project: <div>DORJILUNG HYDROPOWER PROJECT (1125 MW) MONGAR, BHUTAN</div>					
Title: <div>DORJILUNG ADIT 3 ROAD PROFILE (Chainage 0.00-0300) SHEET 6 OF 38</div>					
CONSULTANT:			NAME	SIG.	
<div><div><div>འབྲུག་གསུང་པར་ལྟ་སྒྲུབ་ལྟ་ས</div></div></div>					



DESIGN LEVEL(m)	699.239	698.258	697.262	696.266	695.269	694.273	693.277	692.281	691.284	690.288	689.292	688.296	687.299	686.303	685.307	684.310	683.314	682.318	681.322	680.325	679.329	678.333	677.337	676.340	675.344	674.348	673.352	672.356	671.360	670.364	669.368	668.372	667.376	666.380	665.384	664.388	663.392	662.396	661.400	660.404	659.408	658.412	657.416	656.420	655.424	654.428	653.432	652.436	651.440	650.444	649.448	648.452	647.456	646.460	645.464	644.468	643.472	642.476	641.480	640.484	639.488	638.492	637.496	636.500	635.504	634.508	633.512	632.516	631.520	630.524	629.528	628.532	627.536	626.540	625.544	624.548	623.552	622.556	621.560	620.564	619.568	618.572	617.576	616.580	615.584	614.588	613.592	612.596	611.600	610.604	609.608	608.612	607.616	606.620	605.624	604.628	603.632	602.636	601.640	600.644	599.648	598.652	597.656	596.660	595.664	594.668	593.672	592.676	591.680	590.684	589.688	588.692	587.696	586.700	585.704	584.708	583.712	582.716	581.720	580.724	579.728	578.732	577.736	576.740	575.744	574.748	573.752	572.756	571.760	570.764	569.768	568.772	567.776	566.780	565.784	564.788	563.792	562.796	561.800	560.804	559.808	558.812	557.816	556.820	555.824	554.828	553.832	552.836	551.840	550.844	549.848	548.852	547.856	546.860	545.864	544.868	543.872	542.876	541.880	540.884	539.888	538.892	537.896	536.900	535.904	534.908	533.912	532.916	531.920	530.924	529.928	528.932	527.936	526.940	525.944	524.948	523.952	522.956	521.960	520.964	519.968	518.972	517.976	516.980	515.984	514.988	513.992	512.996	511.000	510.004	509.008	508.012	507.016	506.020	505.024	504.028	503.032	502.036	501.040	500.044	499.048	498.052	497.056	496.060	495.064	494.068	493.072	492.076	491.080	490.084	489.088	488.092	487.096	486.100	485.104	484.108	483.112	482.116	481.120	480.124	479.128	478.132	477.136	476.140	475.144	474.148	473.152	472.156	471.160	470.164	469.168	468.172	467.176	466.180	465.184	464.188	463.192	462.196	461.200	460.204	459.208	458.212	457.216	456.220	455.224	454.228	453.232	452.236	451.240	450.244	449.248	448.252	447.256	446.260	445.264	444.268	443.272	442.276	441.280	440.284	439.288	438.292	437.296	436.300	435.304	434.308	433.312	432.316	431.320	430.324	429.328	428.332	427.336	426.340	425.344	424.348	423.352	422.356	421.360	420.364	419.368	418.372	417.376	416.380	415.384	414.388	413.392	412.396	411.400	410.404	409.408	408.412	407.416	406.420	405.424	404.428	403.432	402.436	401.440	400.444	399.448	398.452	397.456	396.460	395.464	394.468	393.472	392.476	391.480	390.484	389.488	388.492	387.496	386.500	385.504	384.508	383.512	382.516	381.520	380.524	379.528	378.532	377.536	376.540	375.544	374.548	373.552	372.556	371.560	370.564	369.568	368.572	367.576	366.580	365.584	364.588	363.592	362.596	361.600	360.604	359.608	358.612	357.616	356.620	355.624	354.628	353.632	352.636	351.640	350.644	349.648	348.652	347.656	346.660	345.664	344.668	343.672	342.676	341.680	340.684	339.688	338.692	337.696	336.700	335.704	334.708	333.712	332.716	331.720	330.724	329.728	328.732	327.736	326.740	325.744	324.748	323.752	322.756	321.760	320.764	319.768	318.772	317.776	316.780	315.784	314.788	313.792	312.796	311.800	310.804	309.808	308.812	307.816	306.820	305.824	304.828	303.832	302.836	301.840	300.844	299.848	298.852	297.856	296.860	295.864	294.868	293.872	292.876	291.880	290.884	289.888	288.892	287.896	286.900	285.904	284.908	283.912	282.916	281.920	280.924	279.928	278.932	277.936	276.940	275.944	274.948	273.952	272.956	271.960	270.964	269.968	268.972	267.976	266.980	265.984	264.988	263.992	262.996	261.000	260.004	259.008	258.012	257.016	256.020	255.024	254.028	253.032	252.036	251.040	250.044	249.048	248.052	247.056	246.060	245.064	244.068	243.072	242.076	241.080	240.084	239.088	238.092	237.096	236.100	235.104	234.108	233.112	232.116	231.120	230.124	229.128	228.132	227.136	226.140	225.144	224.148	223.152	222.156	221.160	220.164	219.168	218.172	217.176	216.180	215.184	214.188	213.192	212.196	211.200	210.204	209.208	208.212	207.216	206.220	205.224	204.228	203.232	202.236	201.240	200.244	199.248	198.252	197.256	196.260	195.264	194.268	193.272	192.276	191.280	190.284	189.288	188.292	187.296	186.300	185.304	184.308	183.312	182.316	181.320	180.324	179.328	178.332	177.336	176.340	175.344	174.348	173.352	172.356	171.360	170.364	169.368	168.372	167.376	166.380	165.384	164.388	163.392	162.396	161.400	160.404	159.408	158.412	157.416	156.420	155.424	154.428	153.432	152.436	151.440	150.444	149.448	148.452	147.456	146.460	145.464	144.468	143.472	142.476	141.480	140.484	139.488	138.492	137.496	136.500	135.504	134.508	133.512	132.516	131.520	130.524	129.528	128.532	127.536	126.540	125.544	124.548	123.552	122.556	121.560	120.564	119.568	118.572	117.576	116.580	115.584	114.588	113.592	112.596	111.600	110.604	109.608	108.612	107.616	106.620	105.624	104.628	103.632	102.636	101.640	100.644	99.648	98.652	97.656	96.660	95.664	94.668	93.672	92.676	91.680	90.684	89.688	88.692	87.696	86.700	85.704	84.708	83.712	82.716	81.720	80.724	79.728	78.732	77.736	76.740	75.744	74.748	73.752	72.756	71.760	70.764	69.768	68.772	67.776	66.780	65.784	64.788	63.792	62.796	61.800	60.804	59.808	58.812	57.816	56.820	55.824	54.828	53.832	52.836	51.840	50.844	49.848	48.852	47.856	46.860	45.864	44.868	43.872	42.876	41.880	40.884	39.888	38.892	37.896	36.900	35.904	34.908	33.912	32.916	31.920	30.924	29.928	28.932	27.936	26.940	25.944	24.948	23.952	22.956	21.960	20.964	19.968	18.972	17.976	16.980	15.984	14.988	13.992	12.996	11.000	10.004	9.008	8.012	7.016	6.020	5.024	4.028	3.032	2.036	1.040	0.044	0.048	0.052	0.056	0.060	0.064	0.068	0.072	0.076	0.080	0.084	0.088	0.092	0.096	0.100	0.104	0.108	0.112	0.116	0.120	0.124	0.128	0.132	0.136	0.140	0.144	0.148	0.152	0.156	0.160	0.164	0.168	0.172	0.176	0.180	0.184	0.188	0.192	0.196	0.200	0.204	0.208	0.212	0.216	0.220	0.224	0.228	0.232	0.236	0.240	0.244	0.248	0.252	0.256	0.260	0.264	0.268	0.272	0.276	0.280	0.284	0.288	0.292	0.296	0.300	0.304	0.308	0.312	0.316	0.320	0.324	0.328	0.332	0.336	0.340	0.344	0.348	0.352	0.356	0.360	0.364	0.368	0.372	0.376	0.380	0.384	0.388	0.392	0.396	0.400	0.404	0.408	0.412	0.416	0.420	0.424	0.428	0.432	0.436	0.440	0.444	0.448	0.452	0.456	0.460	0.464	0.468	0.472	0.476	0.480	0.484	0.488	0.492	0.496	0.500	0.504	0.508	0.512	0.516	0.520	0.524	0.528	0.532	0.536	0.540	0.544	0.548	0.552	0.556	0.560	0.564	0.568	0.572	0.576	0.580	0.584	0.588	0.592	0.596	0.600	0.604	0.608	0.612	0.616	0.620	0.624	0.628	0.632	0.636	0.640	0.644	0.648	0.652	0.656	0.660	0.664	0.668	0.672	0.676	0.680	0.684	0.688	0.692	0.696	0.700	0.704	0.708	0.712	0.716	0.720	0.724	0.728	0.732	0.736	0.740	0.744	0.748	0.752	0.756	0.760	0.764	0.768	0.772	0.776	0.780	0.784	0.788	0.792	0.796	0.800	0.804	0.808	0.812	0.816	0.820	0.824	0.828	0.832	0.836	0.840	0.844	0.848	0.852	0.856	0.860	0.864	0.868	0.872	0.876	0.880	0.884	0.888	0.892	0.896	0.900	0.904	0.908	0.912	0.916	0.920	0.924	0.928	0.932	0.936	0.940	0.944	0.948	0.952	0.956	0.960	0.964	0.968	0.972	0.976	0.980	0.984	0.988	0.992	0.996	1.000	1.004	1.008	1.012	1.016	1.020	1.024	1.028	1.032	1.036	1.040	1.044	1.048	1.052	1.056	1.060	1.064	1.068	1.072	1.076	1.080	1.084	1.088	1.092	1.096	1.100	1.104	1.108	1.112	1.116	1.120	1.124	1.128	1.132	1.136	1.140	1.144	1.148	1.152	1.156	1.160	1.164	1.168	1.172	1.176	1.180	1.184	1.188	1.192	1.196	1.200	1.204	1.208	1.212	1.216	1.220	1.224	1.228	1.232	1.236	1.240	1.244	1.248	1.252	1.256	1.260	1.264	1.268	1.272	1.276	1.280	1.284	1.288	1.292	1.296	1.300	1.304	1.308	1.312	1.316	1.320	1.324	1.328	1.332	1.336	1.340	1.344	1.348	1.352	1.356	1.360	1.364	1.368	1.372	1.376	1.380	1.384	1.388	1.392	1.396	1.400	1.404	1.408	1.412	1.416	1.420	1.424	1.428	1.432	1.436	1.440	1.444	1.448	1.452	1.456	1.460	1.464	1.468	1.472	1.476	1.480	1.484	1.488	1.492	1.496	1.500	1.504	1.508	1.512	1.516	1.520	1.524	1.528	1.532	1.536	1.540	1.544	1.548	1.552	1.556	1.560	1.564	1.568	1.572
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DESIGN LEVEL(m)	670.866	671.799	672.731	673.663	674.595	675.528	676.460	677.392	678.324	679.257	680.189	681.121	682.053	682.986	683.918	684.850	685.782	686.715	687.647	688.579	689.511	690.444	691.376	692.308	693.240	694.173	695.105	696.037	696.969	697.902	698.834
EXISTING LEVEL(m)	670.075	671.696	673.377	671.932	668.897	666.264	668.243	676.718	684.048	687.463	686.432	686.152	686.304	686.830	690.109	689.507	688.834	690.862	691.470	693.165	697.654	697.847	694.487	695.150	697.230	697.046	698.063	699.152	700.845	701.334	703.333
CHAINAGE(Km)	0+900	0+910	0+920	0+930	0+940	0+950	0+960	0+970	0+980	0+990	1+000	1+010	1+020	1+030	1+040	1+050	1+060	1+070	1+080	1+090	1+100	1+110	1+120	1+130	1+140	1+150	1+160	1+170	1+180	1+190	1+200
HORIZONTAL SCHEMATIC	<div><div></div><div>L=10.882 R=12</div><div>L=11.536 R=12</div><div>L=27.510 R=12</div><div>L=18.811 R=12</div><div>L=12.456 R=12</div><div>L=12.725 R=12</div><div>L=9.172 R=12</div><div>L=10.196 R=12</div><div>L=4.882 R=12</div><div>L=35.503 R=12</div><div>L=13.248 R=12</div><div>L=14.443 R=12</div><div>L=21.777 R=12</div><div>L=20.536 R=12</div><div>L=12.801 R=12</div><div>L=8.270 R=12</div><div>L=11.592 R=12</div><div>L=8.295 R=12</div></div>																														
SUPER ELEVATION SCHEMATIC	<div><div>SE:4%</div><div>SE:4%</div><div>SE:-7%</div><div>SE:-7%</div><div>SE:-7%</div><div>SE:-7%</div><div>SE:-7%</div><div>SE:-7%</div><div>SE:-7%</div><div>SE:-7%</div><div>SE:-7%</div><div>SE:-7%</div><div>SE:-7%</div><div>SE:-7%</div><div>SE:-7%</div><div>SE:-7%</div><div>SE:-7%</div><div>SE:-7%</div><div>SE:-7%</div><div>SE:-7%</div><div>SE:-7%</div><div>SE:-7%</div><div>SE:-7%</div><div>SE:-7%</div><div>SE:-7%</div><div>SE:-7%</div><div>SE:-7%</div><div>SE:-7%</div><div>SE:-7%</div><div>SE:-7%</div><div>SE:-7%</div><div>SE:-7%</div></div>																														

CHAINAGE : 0+900 - 1+200

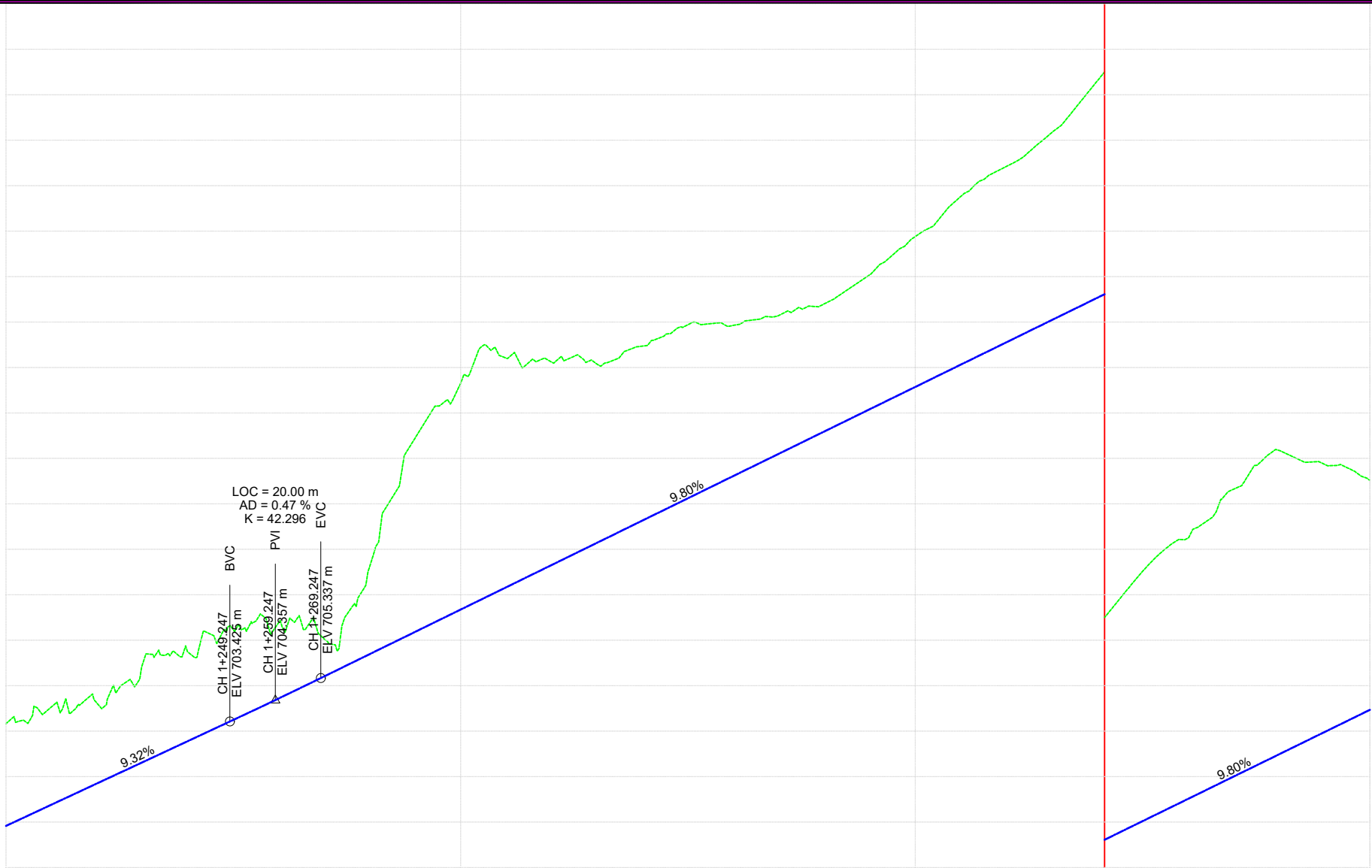
IP No.	CO-ORDINATES(m)	
	EASTING	NORTHING
IP107	322534.479	3026375.580
40	322532.830	3026360.476
IP98	322542.790	3026345.310
41	322571.549	3026325.147
42	322533.183	3026315.856
IP97	322527.052	3026340.822
43	322520.479	3026354.222
IP109	322517.445	3026363.829
44	322511.377	3026373.057
IP108	322507.589	3026377.355
45	322470.591	3026376.622
46	322448.425	3026370.529
47	322433.509	3026390.754
IP99	322467.956	3026404.975
48	322482.998	3026415.720
IP110	322487.107	3026431.079

- NOTE:
- ALL DIMENSIONS, ELEVATIONS & DETAILS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
  - NO DIMENSION SHALL BE MEASURED FROM THE DRAWINGS. ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.
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ISSUED FOR CONSTRUCTION

Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>DORJILUNG ADIT 3 ROAD</b> <b>PROFILE</b> (900-1200) SHEET 9 OF 38					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-ADIT-3-ROAD-2024-09			REV NA



DESIGN LEVEL(m)	698.834	699.766	700.698	701.631	702.563	703.495	704.441	705.410	706.390	707.369	708.349	709.328	710.308	711.288	712.267	713.247	714.226	715.206	716.185	717.165	718.144	719.124	720.103	721.083	722.062	723.042	724.021	725.001	725.980	726.960	727.940		
EXISTING LEVEL(m)	703.333	704.068	704.234	705.928	706.484	707.460	707.780	707.052	710.247	715.899	718.310	719.414	719.239	719.145	719.940	720.883	720.853	721.291	721.801	723.081	724.760	726.521	727.840	729.328	731.599	734.033	735.500	737.645	739.353	738.740	738.027		
CHAINAGE(Km)	1+200	1+210	1+220	1+230	1+240	1+250	1+260	1+270	1+280	1+290	1+300	1+310	1+320	1+330	1+340	1+350	1+360	1+370	1+380	1+390	1+400	1+410	1+420	1+430	1+440	1+450	1+460	1+470	1+480	1+490	1+500		
HORIZONTAL SCHEMATIC	L=23.025		L=18.254		L=13.107		L=20.049		L=20.571		L=24.024		L=23.810		L=63.214		L=15.950		L=9.126		L=15.693		L=14.114		L=18.783								
	R=12		R=12		R=12		R=12		R=12		R=12		R=12		R=12		R=12		R=12		R=12		R=12		R=12		R=12		R=12				
SUPER ELEVATION SCHEMATIC																																	

CHAINAGE : 1+200 - 1+500

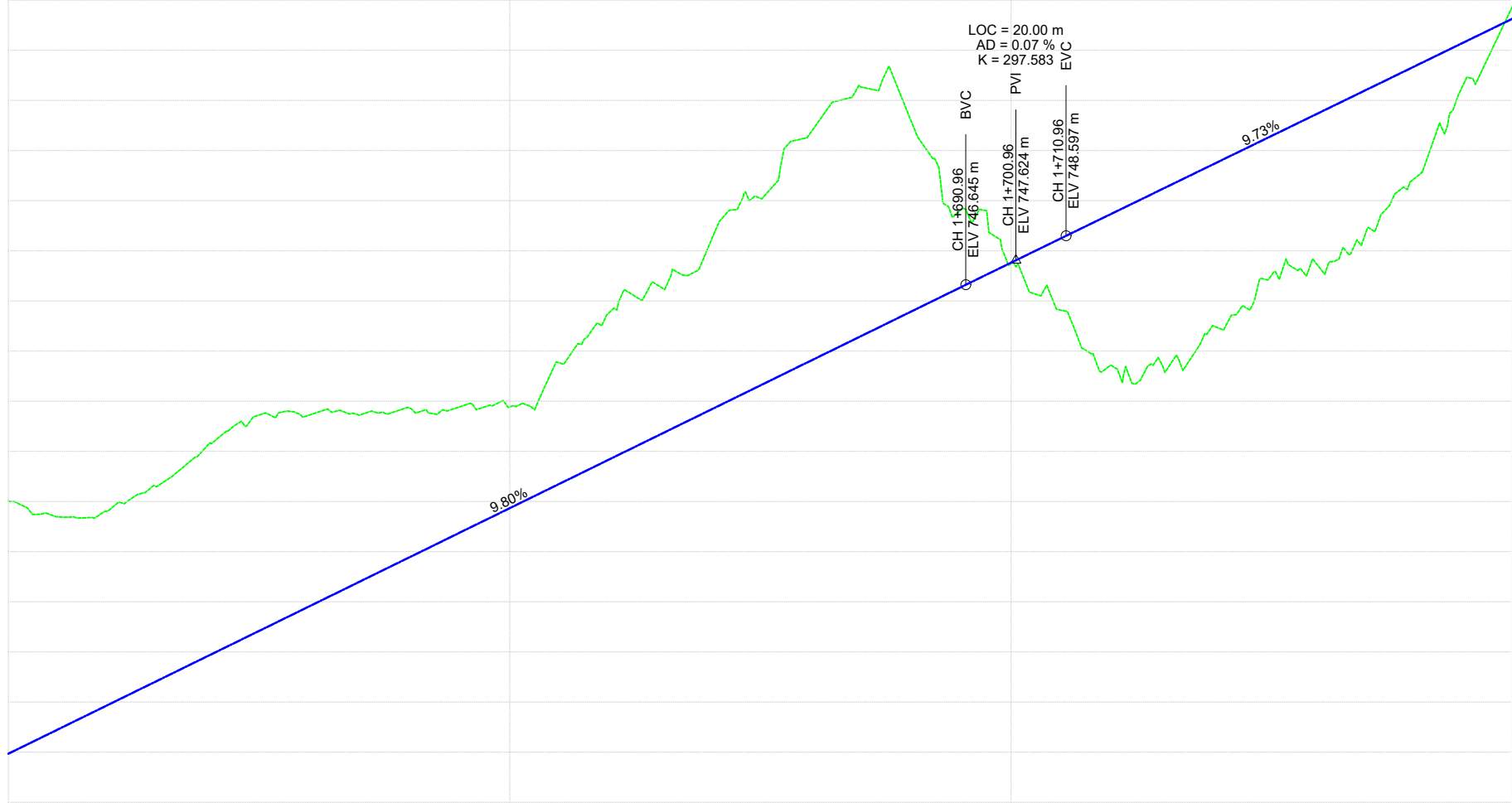
IP No.	CO-ORDINATES(m)	
	EASTING	NORTHING
IP110	322487.107	3026431.079
IP111	322481.671	3026461.923
50	322475.919	3026479.810
IP100	322470.357	3026492.957
51	322464.290	3026512.930
52	322456.958	3026534.546
IP112	322453.486	3026538.952
IP105	322448.868	3026564.632
58	322435.721	3026587.638
IP102	322406.141	3026654.636
60	322378.836	3026649.832
61	322376.561	3026624.297

- NOTE:
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ISSUED FOR CONSTRUCTION

Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>DORJILUNG ADIT 3 ROAD</b> <b>PROFILE</b> (Chainage 1200-1500) SHEET 10 OF 38					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	A3	Original Scale	AS SHOWN	DRAWING NO.	REV
				DHPP-ADIT-3-ROAD-2024-10	NA



DESIGN LEVEL(m)	738.940	727.940	737.386	728.919	737.643	729.899	738.649	730.878	740.306	731.858	741.451	732.837	741.449	733.817	741.447	734.796	741.728	735.776	741.776	736.755	741.774	737.735	743.523	738.714	745.567	739.694	746.566	740.673	748.338	741.653	750.094	742.633	752.715	743.612	754.536	744.592	753.205	745.571	749.649	746.551	747.499	747.529	745.632	748.504	743.422	749.476	743.496	750.449	744.962	751.422	746.898	752.395	747.608	753.368	748.297	754.340	750.815	755.313	754.546	756.286	757.751	757.259
EXISTING LEVEL(m)	738.027	727.940	737.386	728.919	737.643	729.899	738.649	730.878	740.306	731.858	741.451	732.837	741.449	733.817	741.447	734.796	741.728	735.776	741.776	736.755	741.774	737.735	743.523	738.714	745.567	739.694	746.566	740.673	748.338	741.653	750.094	742.633	752.715	743.612	754.536	744.592	753.205	745.571	749.649	746.551	747.499	747.529	745.632	748.504	743.422	749.476	743.496	750.449	744.962	751.422	746.898	752.395	747.608	753.368	748.297	754.340	750.815	755.313	754.546	756.286	757.751	757.259
CHAINAGE(Km)	1+500	1+510	1+520	1+530	1+540	1+550	1+560	1+570	1+580	1+590	1+600	1+610	1+620	1+630	1+640	1+650	1+660	1+670	1+680	1+690	1+700	1+710	1+720	1+730	1+740	1+750	1+760	1+770	1+780	1+790	1+800																															
HORIZONTAL SCHEMATIC	L=43.074		L=59.049		L=27.430		L=28.692		L=36.432		L=36.939		L=34.484		L=10.861																																															
SUPER ELEVATION SCHEMATIC	SE:4%																																																													

CHAINAGE : 1+500 - 1+800

NOTE:

IP No.	CO-ORDINATES(m)		WCB (D-M-S)	DIST. (m)	OTHERWISE SPECIFIED SIMPLE CURVE DATA				CHAINAGE			
	EASTING	NORTHING			DEF. ANG. (D-M-S)	TAN. LEN. (m)	CHORD BE. (m)	LC (m)	BC	MC	EC	IP
61	322376.561	3026624.297	163-09-15.38	25.636	21-56-16.23	2.326	12.000	0.223	4.595	1+476.623	1+478.920	1+481.217
63	322395.775	3026560.839	143-06-23.12	66.303	20-02-51.78	2.319	12.000	0.223	4.595	1+547.272	1+547.272	1+545.195
IP116	322432.497	3026511.918	172-52-29.94	61.170	29-46-08.04	0.000	0.000	0.000	0.000	1+606.321	1+606.321	1+606.321
64	322436.163	3026482.591	192-57-52.23	29.555	20-05-22.29	0.000	0.000	0.000	0.000	1+633.751	1+635.855	1+637.958
65	322428.073	3026447.449	240-10-8.02	36.061	47-12-15.79	5.243	12.000	1.095	9.886	1+666.651	1+671.594	1+676.537
IP113	322391.920	3026426.718	237-19-52.10	41.675	02-50-15.92	0.000	0.000	0.000	0.000	1+712.970	1+712.970	1+712.970
66	322358.800	3026405.481	214-40-13.14	39.343	22-39-38.96	2.404	12.000	0.239	4.746	1+749.909	1+752.282	1+754.655
IP114	322337.816	3026375.143	204-51-49.31	36.888	09-48-23.84	0.000	0.000	0.000	0.000	1+789.139	1+789.139	1+789.139
67	322328.209	3026354.411	182-02-43.47	22.849	22-49-5.84	2.422	12.000	0.242	4.779	1+809.566	1+811.956	1+814.345

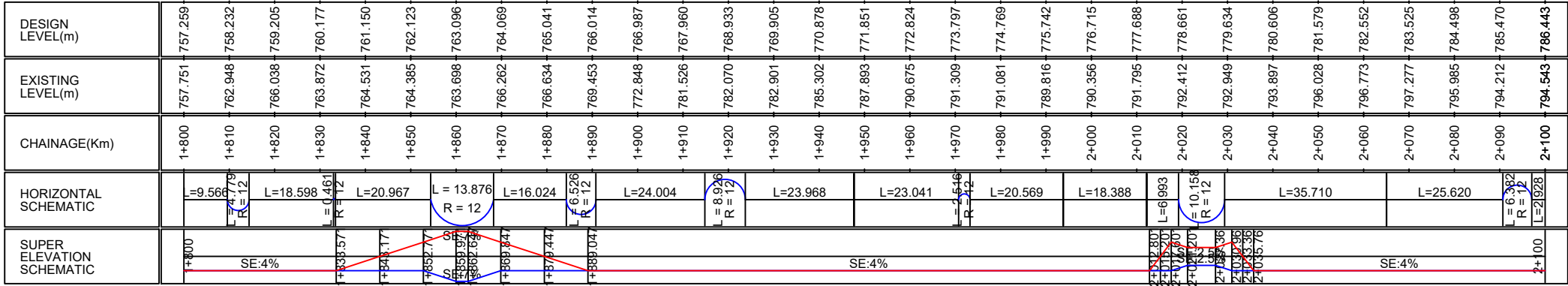


0 12.5 25 37.5 50 62.5m

SCALE=1:1250

ISSUED FOR CONSTRUCTION

Rev	Modification	Drawn:	Checked:	Recommended:	Approved:
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>DORJILUNG ADIT 3 ROAD</b> <b>PROFILE</b> (Chainage 1500-1800) SHEET 11 OF 38					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-ADIT-3-ROAD-2024-11			REV NA



CHAINAGE : 1+800 - 2+100

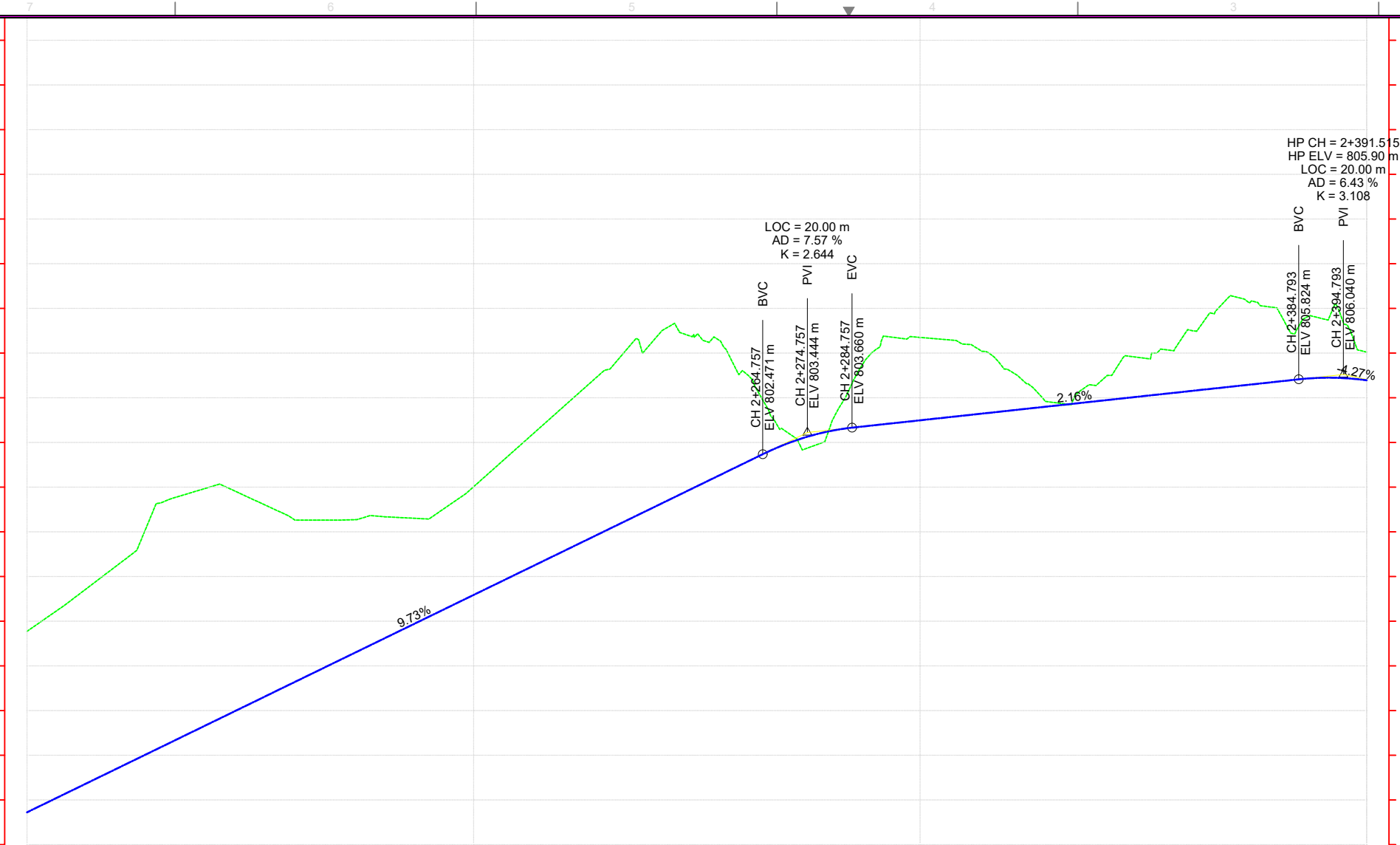
IP No.	CO-ORDINATES(m)	
	EASTING	NORTHING
67	322328.209	3026354.411
68	322327.451	3026333.175
70	322325.302	3026304.227
71	322349.320	3026291.459
72	322381.301	3026293.229
IP117	322403.423	3026275.026
73	322419.161	3026256.507
IP119	322429.527	3026237.292
IP118	322423.712	3026219.848
74	322427.251	3026207.963
IP120	322464.542	3026190.647
75	322485.653	3026170.927

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ISSUED FOR CONSTRUCTION

Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>DORJILUNG ADIT 3 ROAD</b> <b>PROFILE</b> (Chainage 1800-2100) SHEET 12 OF 38					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	A3	Original Scale	AS SHOWN	DRAWING NO.	DHPP-ADIT-3-ROAD-2024-12
				REV	NA

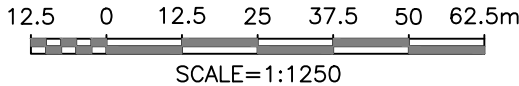


DESIGN LEVEL(m)	786.443																															
EXISTING LEVEL(m)	794.543																															
CHAINAGE(Km)	2+100																															
HORIZONTAL SCHEMATIC	L=30.142																															
SUPER ELEVATION SCHEMATIC	SE:4%																															


CHAINAGE : 2+100 - 2+400

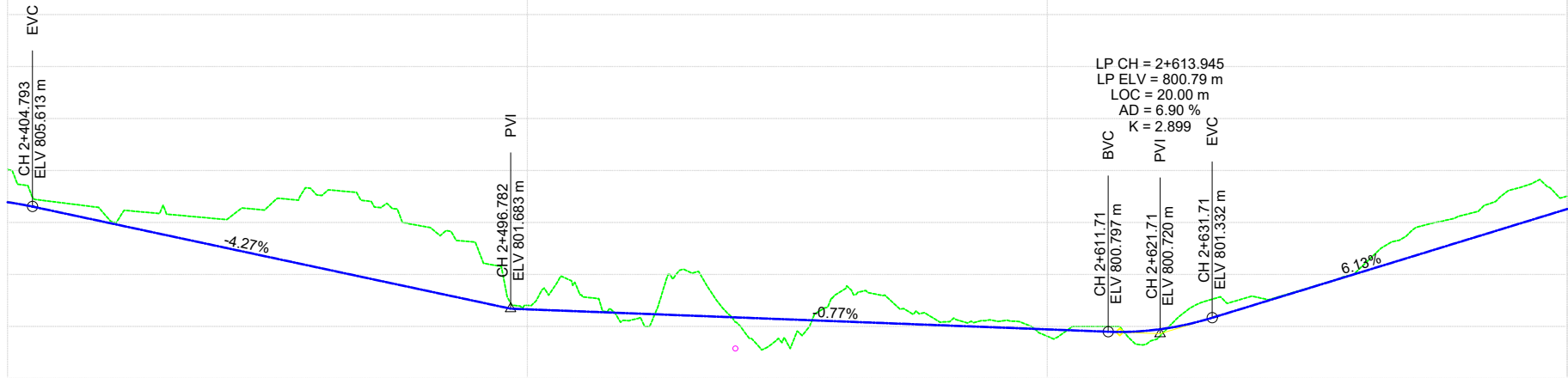
IP No.	CO-ORDINATES(m)	
	EASTING	NORTHING
75	322485.653	3026170.927
76	322496.271	3026135.027
77	322499.305	3026106.205
78	322497.283	3026076.878
IP121	322480.407	3026006.657
79	322476.362	3025979.352
IP122	322479.705	3025913.818
IP123	322483.004	3025848.106

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ISSUED FOR CONSTRUCTION

Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>DORJILUNG ADIT 3 ROAD</b> <b>PROFILE</b> (Chainage 2100-2400) SHEET 13 OF 38					
CONSULTANT: 	NAME	SIG.			
	Designed				
	Drawn				
	Checked				
	Approved				
Issued Date		NOV 2024			
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-ADIT-3-ROAD-2024-13			REV NA



DESIGN LEVEL(m)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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CHAINAGE : 2+400 - 2+700


IP No.	CO-ORDINATES(m)	
	EASTING	NORTHING
IP123	322483.004	3025848.106
IP124	322485.782	3025771.544
80	322476.867	3025743.021
81	322488.852	3025730.718
82	322468.398	3025695.051
83	322465.352	3025683.906
84	322469.761	3025667.149
85	322458.698	3025653.358
IP125	322451.710	3025614.686
86	322445.460	3025585.129

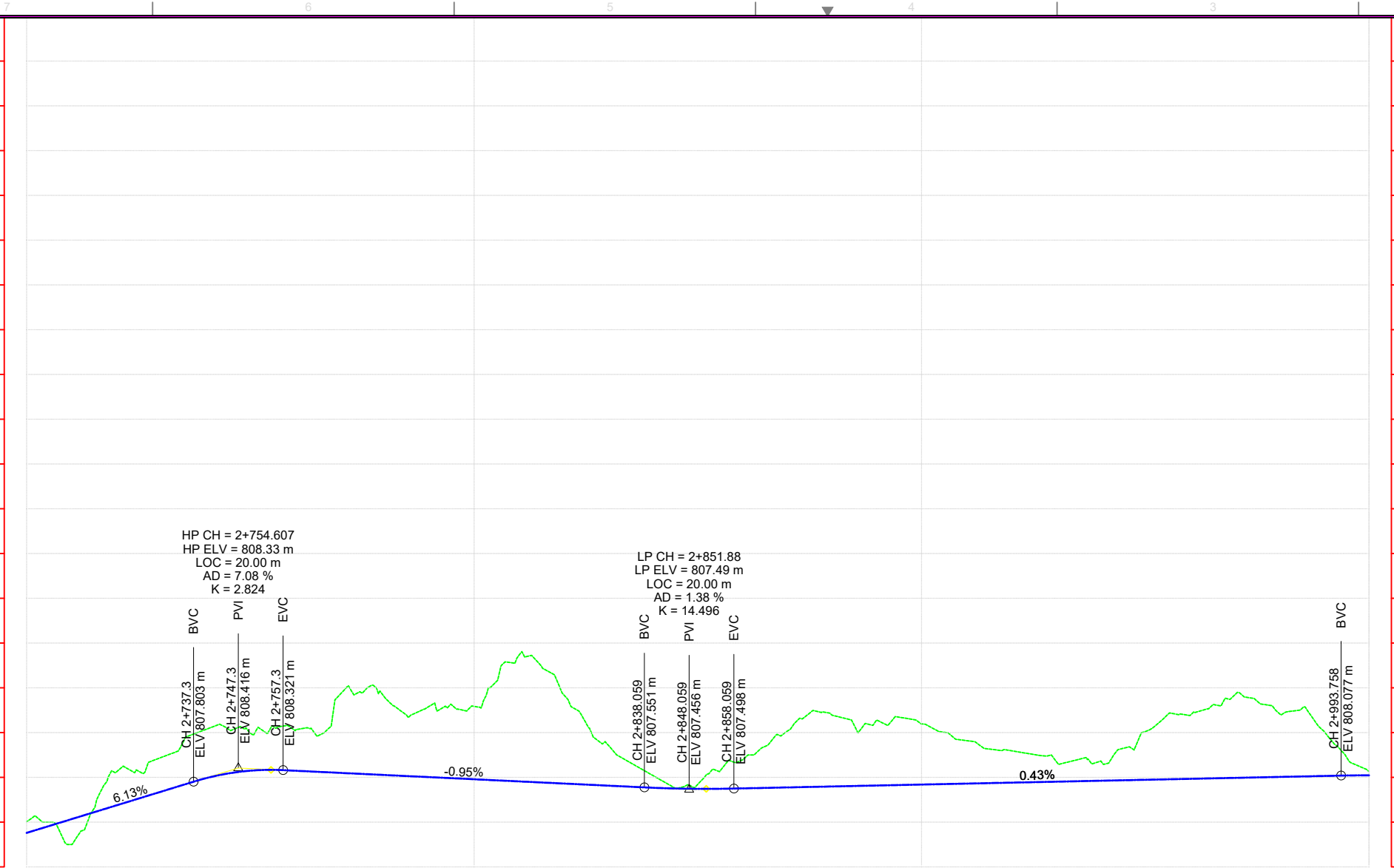
NOTE:

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- NO DIMENSION SHALL BE MEASURED FROM THE DRAWINGS. ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.
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ISSUED FOR CONSTRUCTION

Rev	Modification	Drawn:	Checked:	Recommended:	Approved:
Client: <div>DORJILUNG HYDROPOWER PROJECT</div>					
Project: <div>DORJILUNG HYDROPOWER PROJECT</div> <div>(1125 MW)</div> <div>MONGAR, BHUTAN</div>					
Title: <div>DORJILUNG ADIT 3 ROAD</div> <div>PROFILE</div> <div>(Chainage 2400-2700)</div> <div>SHEET 14 OF 38</div>					
CONSULTANT:			NAME	SIG.	
<div><div><div>འབྲུག་གསུང་ཁྲིམས་ལྟ་སྒྲུབ་ལྟེ་</div><div>DRUK GREEN CONSULTANCY</div></div></div>		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-ADIT-3-ROAD-2024-14			REV NA



DESIGN LEVEL(m)	805.518	806.130	806.743	807.356	807.956	808.296	808.295	808.200	808.105	808.009	807.914	807.818	807.723	807.628	807.534	807.486	807.507	807.549	807.592	807.634	807.677	807.720	807.762	807.805	807.847	807.890	807.933	807.975	808.018	808.061	808.090													
EXISTING LEVEL(m)	806.019	805.000	808.230	808.882	810.137	809.973	810.091	808.295	811.578	808.105	811.171	807.914	813.451	807.818	808.076	807.534	807.691	808.781	810.063	807.592	810.558	807.634	810.390	807.677	809.641	807.720	809.190	807.762	808.737	807.805	808.725	807.847	810.042	807.890	810.762	807.933	811.686	807.975	810.841	808.018	810.047	808.061	808.271	808.090
CHAINAGE(Km)	2+700	2+710	2+720	2+730	2+740	2+750	2+760	2+770	2+780	2+790	2+800	2+810	2+820	2+830	2+840	2+850	2+860	2+870	2+880	2+890	2+900	2+910	2+920	2+930	2+940	2+950	2+960	2+970	2+980	2+990	3+000													
HORIZONTAL SCHEMATIC	L=9.676 R=12		L=14.962 R=12		L=8.542		L=17.826		L=24.026		L=9.019 R=12		L=8.033 R=12		L=13.640 R=12		L=7.618 R=12		L=12.348 R=12		L=59.236		L=22.290 R=12		L=46.794																			
SUPER ELEVATION SCHEMATIC	SE:4%																																											

CHAINAGE : 2+700 - 3+000


IP No.	CO-ORDINATES(m)	
	EASTING	NORTHING
86	322445.460	3025585.129
87	322432.960	3025577.360
IP126	322436.910	3025560.650
IP128	322434.219	3025543.028
IP127	322440.860	3025519.938
88	322438.255	3025507.959
89	322429.271	3025498.150
90	322421.515	3025480.137
91	322425.203	3025464.262
IP129	322434.262	3025425.580
IP130	322440.165	3025366.639
92	322437.778	3025342.681
93	322416.424	3025291.466

NOTE:

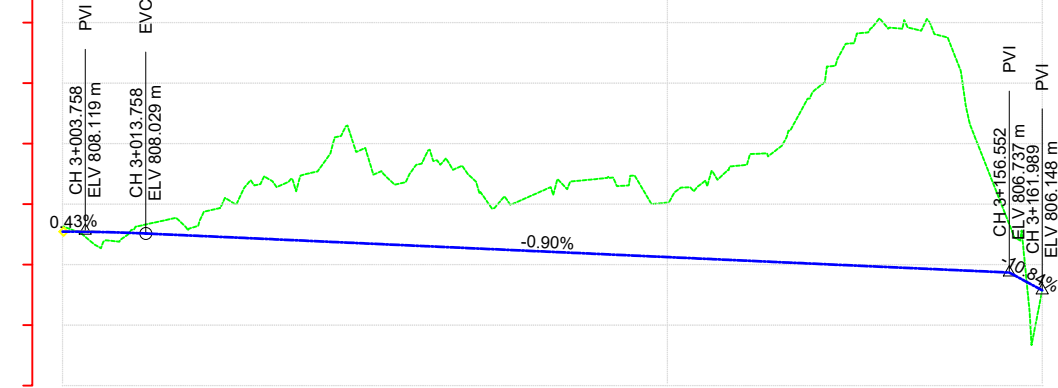
- ALL DIMENSIONS, ELEVATIONS & DETAILS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
- NO DIMENSION SHALL BE MEASURED FROM THE DRAWINGS. ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.
- ALL DIMENSIONS/DETAILS SHALL BE CHECKED ALONG WITH THE RELEVANT DRAWINGS BEFORE STARTING EXECUTION OF WORKS. DISCREPANCY, IF ANY, SHALL BE IMMEDIATELY BROUGHT TO THE NOTICE OF PROJECT AUTHORITY/CONSULTANT FOR REVIEW.



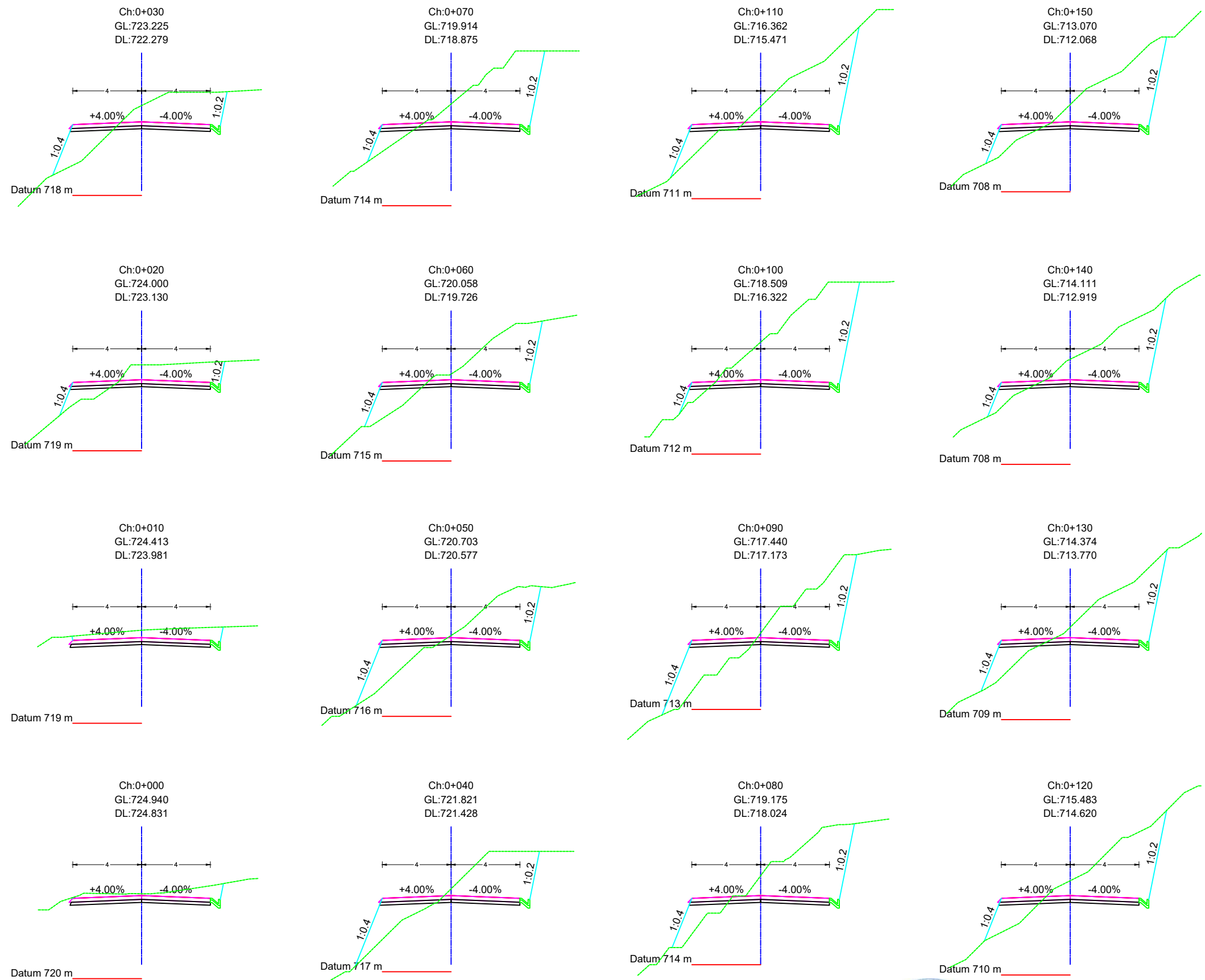
ISSUED FOR CONSTRUCTION

Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <div>DORJILUNG HYDROPOWER PROJECT</div>					
Project: <div>DORJILUNG HYDROPOWER PROJECT (1125 MW) MONGAR, BHUTAN</div>					
Title: <div>DORJILUNG ADIT 3 ROAD PROFILE (Chainage 2700-3000) SHEET 15 OF 38</div>					
CONSULTANT:			NAME	SIG.	
 <div>འབྲུག་གླིང་ཁྲིམས་ཁྲིའི་སྒྲིག་ཁོར་ Druk Green Consultancy</div>		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-ADIT-3-ROAD-2024-01			REV NA

HP CH = 3+000.165  
HP ELV = 808.09 m  
LOC = 20.00 m  
AD = 1.33 %  
K = 15.031

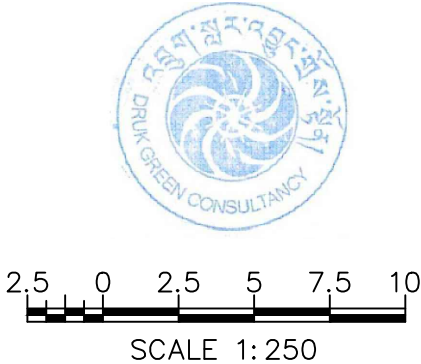


DESIGN LEVEL(m)	808.090		808.058	807.972	807.882	807.791	807.701	807.611	807.520	807.430	807.339	807.249	807.158	807.068	806.978	806.887	806.797	806.707	806.617	806.527	806.437	806.347	806.257	806.167	806.077	805.987	805.897	805.807	805.717	805.627	805.537	805.447	805.357	805.267	805.177	805.087	804.997	804.907	804.817	804.727	804.637	804.547	804.457	804.367	804.277	804.187	804.097	804.007	803.917	803.827	803.737	803.647	803.557	803.467	803.377	803.287	803.197	803.107	803.017	802.927	802.837	802.747	802.657	802.567	802.477	802.387	802.297	802.207	802.117	802.027	801.937	801.847	801.757	801.667	801.577	801.487	801.397	801.307	801.217	801.127	801.037	800.947	800.857	800.767	800.677	800.587	800.497	800.407	800.317	800.227	800.137	800.047	799.957	799.867	799.777	799.687	799.597	799.507	799.417	799.327	799.237	799.147	799.057	798.967	798.877	798.787	798.697	798.607	798.517	798.427	798.337	798.247	798.157	798.067	797.977	797.887	797.797	797.707	797.617	797.527	797.437	797.347	797.257	797.167	797.077	796.987	796.897	796.807	796.717	796.627	796.537	796.447	796.357	796.267	796.177	796.087	795.997	795.907	795.817	795.727	795.637	795.547	795.457	795.367	795.277	795.187	795.097	795.007	794.917	794.827	794.737	794.647	794.557	794.467	794.377	794.287	794.197	794.107	794.017	793.927	793.837	793.747	793.657	793.567	793.477	793.387	793.297	793.207	793.117	793.027	792.937	792.847	792.757	792.667	792.577	792.487	792.397	792.307	792.217	792.127	792.037	791.947	791.857	791.767	791.677	791.587	791.497	791.407	791.317	791.227	791.137	791.047	790.957	790.867	790.777	790.687	790.597	790.507	790.417	790.327	790.237	790.147	790.057	789.967	789.877	789.787	789.697	789.607	789.517	789.427	789.337	789.247	789.157	789.067	788.977	788.887	788.797	788.707	788.617	788.527	788.437	788.347	788.257	788.167	788.077	787.987	787.897	787.807	787.717	787.627	787.537	787.447	787.357	787.267	787.177	787.087	786.997	786.907	786.817	786.727	786.637	786.547	786.457	786.367	786.277	786.187	786.097	786.007	785.917	785.827	785.737	785.647	785.557	785.467	785.377	785.287	785.197	785.107	785.017	784.927	784.837	784.747	784.657	784.567	784.477	784.387	784.297	784.207	784.117	784.027	783.937	783.847	783.757	783.667	783.577	783.487	783.397	783.307	783.217	783.127	783.037	782.947	782.857	782.767	782.677	782.587	782.497	782.407	782.317	782.227	782.137	782.047	781.957	781.867	781.777	781.687	781.597	781.507	781.417	781.327	781.237	781.147	781.057	780.967	780.877	780.787	780.697	780.607	780.517	780.427	780.337	780.247	780.157	780.067	779.977	779.887	779.797	779.707	779.617	779.527	779.437	779.347	779.257	779.167	779.077	778.987	778.897	778.807	778.717	778.627	778.537	778.447	778.357	778.267	778.177	778.087	777.997	777.907	777.817	777.727	777.637	777.547	777.457	777.367	777.277	777.187	777.097	777.007	776.917	776.827	776.737	776.647	776.557	776.467	776.377	776.287	776.197	776.107	776.017	775.927	775.837	775.747	775.657	775.567	775.477	775.387	775.297	775.207	775.117	775.027	774.937	774.847	774.757	774.667	774.577	774.487	774.397	774.307	774.217	774.127	774.037	773.947	773.857	773.767	773.677	773.587	773.497	773.407	773.317	773.227	773.137	773.047	772.957	772.867	772.777	772.687	772.597	772.507	772.417	772.327	772.237	772.147	772.057	771.967	771.877	771.787	771.697	771.607	771.517	771.427	771.337	771.247	771.157	771.067	770.977	770.887	770.797	770.707	770.617	770.527	770.437	770.347	770.257	770.167	770.077	769.987	769.897	769.807	769.717	769.627	769.537	769.447	769.357	769.267	769.177	769.087	768.997	768.907	768.817	768.727	768.637	768.547	768.457	768.367	768.277	768.187	768.097	768.007	767.917	767.827	767.737	767.647	767.557	767.467	767.377	767.287	767.197	767.107	767.017	766.927	766.837	766.747	766.657	766.567	766.477	766.387	766.297	766.207	766.117	766.027	765.937	765.847	765.757	765.667	765.577	765.487	765.397	765.307	765.217	765.127	765.037	764.947	764.857	764.767	764.677	764.587	764.497	764.407	764.317	764.227	764.137	764.047	763.957	763.867	763.777	763.687	763.597	763.507	763.417	763.327	763.237	763.147	763.057	762.967	762.877	762.787	762.697	762.607	762.517	762.427	762.337	762.247	762.157	762.067	761.977	761.887	761.797	761.707	761.617	761.527	761.437	761.347	761.257	761.167	761.077	760.987	760.897	760.807	760.717	760.627	760.537	760.447	760.357	760.267	760.177	760.087	759.997	759.907	759.817	759.727	759.637	759.547	759.457	759.367	759.277	759.187	759.097	759.007	758.917	758.827	758.737	758.647	758.557	758.467	758.377	758.287	758.197	758.107	758.017	757.927	757.837	757.747	757.657	757.567	757.477	757.387	757.297	757.207	757.117	757.027	756.937	756.847	756.757	756.667	756.577	756.487	756.397	756.307	756.217	756.127	756.037	755.947	755.857	755.767	755.677	755.587	755.497	755.407	755.317	755.227	755.137	755.047	754.957	754.867	754.777	754.687	754.597	754.507	754.417	754.327	754.237	754.147	754.057	753.967	753.877	753.787	753.697	753.607	753.517	753.427	753.337	753.247	753.157	753.067	752.977	752.887	752.797	752.707	752.617	752.527	752.437	752.347	752.257	752.167	752.077	751.987	751.897	751.807	751.717	751.627	751.537	751.447	751.357	751.267	751.177	751.087	750.997	750.907	750.817	750.727	750.637	750.547	750.457	750.367	750.277	750.187	750.097	749.997	749.907	749.817	749.727	749.637	749.547	749.457	749.367	749.277	749.187	749.097	749.007	748.917	748.827	748.737	748.647	748.557	748.467	748.377	748.287	748.197	748.107	748.017	747.927	747.837	747.747	747.657	747.567	747.477	747.387	747.297	747.207	747.117	747.027	746.937	746.847	746.757	746.667	746.577	746.487	746.397	746.307	746.217	746.127	746.037	745.947	745.857	745.767	745.677	745.587	745.497	745.407	745.317	745.227	745.137	745.047	744.957	744.867	744.777	744.687	744.597	744.507	744.417	744.327	744.237	744.147	744.057	743.967	743.877	743.787	743.697	743.607	743.517	743.427	743.337	743.247	743.157	743.067	742.977	742.887	742.797	742.707	742.617	742.527	742.437	742.347	742.257	742.167	742.077	741.987	741.897	741.807	741.717	741.627	741.537	741.447	741.357	741.267	741.177	741.087	740.997	740.907	740.817	740.727	740.637	740.547	740.457	740.367	740.277	740.187	740.097	739.997	739.907	739.817	739.727	739.637	739.547	739.457	739.367	739.277	739.187	739.097	739.007	738.917	738.827	738.737	738.647	738.557	738.467	738.377	738.287	738.197	738.107	738.017	737.927	737.837	737.747	737.657	737.567	737.477	737.387	737.297	737.207	737.117	737.027	736.937	736.847	736.757	736.667	736.577	736.487	736.397	736.307	736.217	736.127	736.037	735.947	735.857	735.767	735.677	735.587	735.497	735.407	735.317	735.227	735.137	735.047	734.957	734.867	734.777	734.687	734.597	734.507	734.417	734.327	734.237	734.147	734.057	733.967	733.877	733.787	733.697	733.607	733.517	733.427	733.337	733.247	733.157	733.067	732.977	732.887	732.797	732.707	732.617	732.527	732.437	732.347	732.257	732.167	732.077	731.987	731.897	731.807	731.717	731.627	731.537	731.447	731.357	731.267	731.177	731.087	730.997	730.907	730.817	730.727	730.637	730.547	730.457	730.367	730.277	730.187	730.097	729.997	729.907	729.817	729.727	729.637	729.547	729.457	729.367	729.277	729.187	729.097	729.007	728.917	728.827	728.737	728.647	728.557	728.467	728.377	728.287	728.197	728.107	728.017	727.927	727.837	727.747	727.657	727.567	727.477	727.387	727.297	727.207	727.117	727.027	726.937	726.847	726.757	726.667	726.577	726.487	726.397	726.307	726.217	726.127	726.037	725.947	725.857	725.767	725.677	725.587	725.497	725.407	725.317	725.227	725.137	725.047	724.957	724.867	724.777	724.687	724.597	724.507	724.417	724.327	724.237	724.147	724.057	723.967	723.877	723.787	723.697	723.607	723.517	723.427	723.337	723.247	723.157	723.067	722.977	722.887	722.797	722.707	722.617	722.527	722.437	722.347	722.257	722.167	722.077	721.987	721.897	721.807	721.717	721.627	721.537	721.447	721.357	721.267	721.177	721.087	720.997	720.907	720.817	720.727	720.637	720.547	720.457	720.367	720.277	720.187	720.097	719.997	719.907	719.817	719.727	719.637	719.547	719.457	719.367	719.277	719.187	719.097	719.007	718.917	718.827	718.737	718.647	718.557	718.467	718.377	718.287	718.197	718.107	718.017	717.927	717.837	717.747	717.657	717.567	717.477	717.387	717.297	717.207
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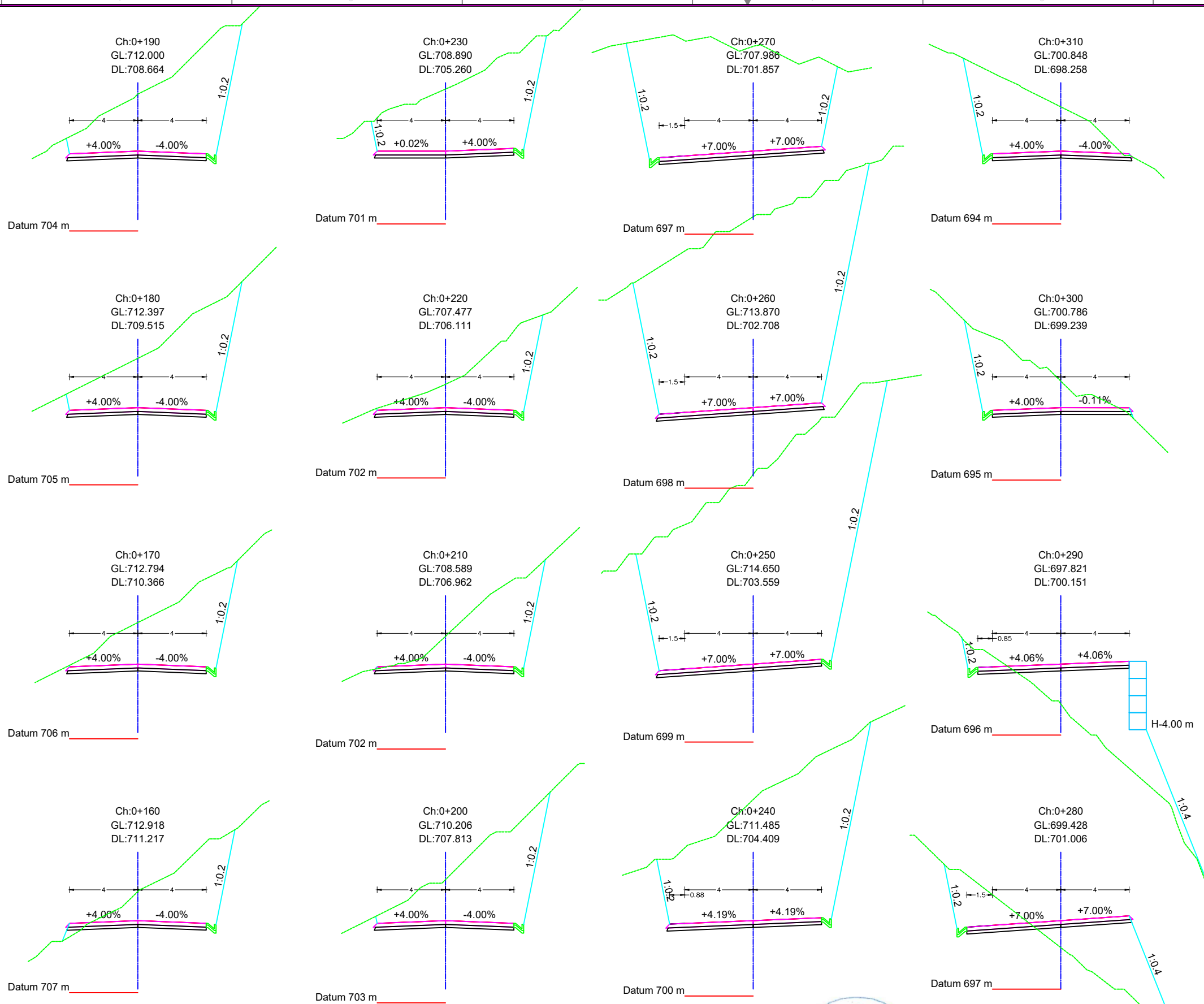
NOTE:

1. ALL DIMENSIONS, ELEVATIONS & DETAILS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
2. NO DIMENSION SHALL BE MEASURED FROM THE DRAWINGS. ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.
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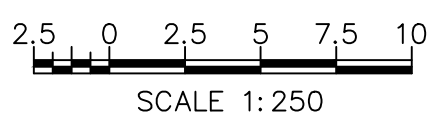
ISSUED FOR CONSTRUCTION

Rev	Modification	Drawn	Checked	Recommended	Approved
Client: DORJILUNG HYDROPOWER PROJECT					
Project: DORJILUNG HYDROPOWER PROJECT (1125 MW) MONGAR, BHUTAN					
Title: DORJILUNG ADIT 3 ROAD CROSS SECTION					
SHEET 17 OF 38					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	A3	Original Scale	AS SHOWN	DRAWING NO.	DHPP-ADIT-3-ROAD-2024-01
				REV	NA



NOTE:

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**ISSUED FOR CONSTRUCTION**

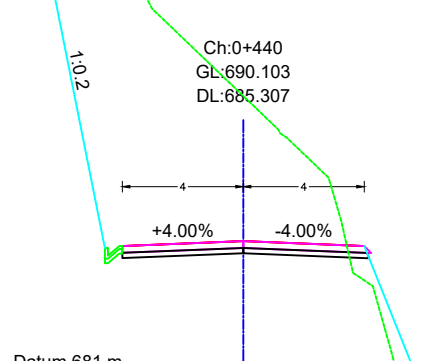
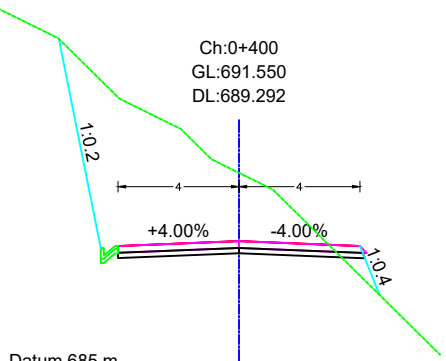
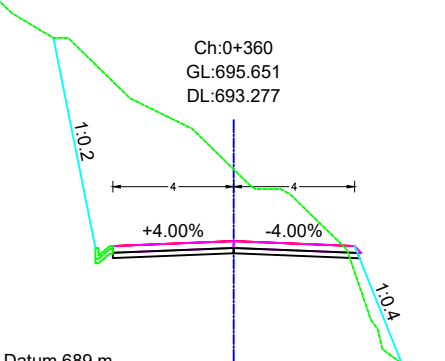
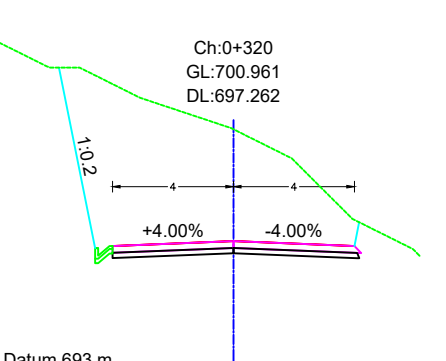
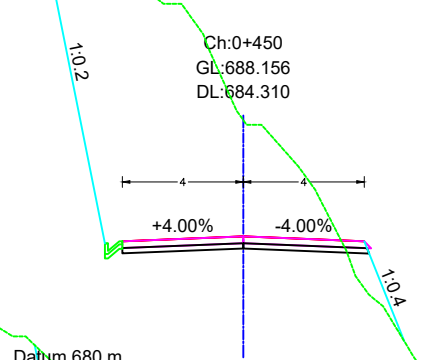
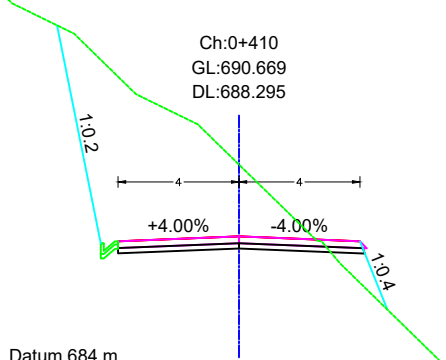
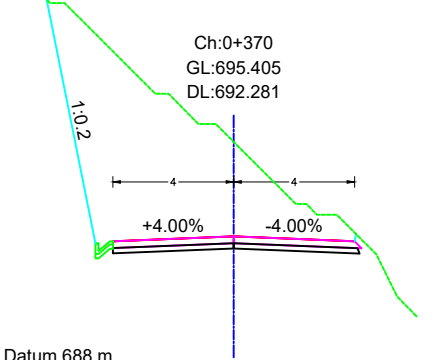
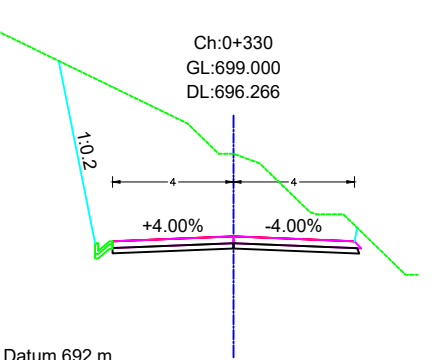
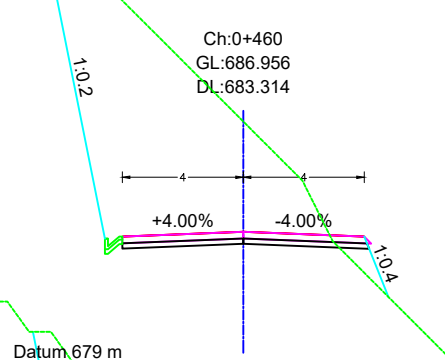
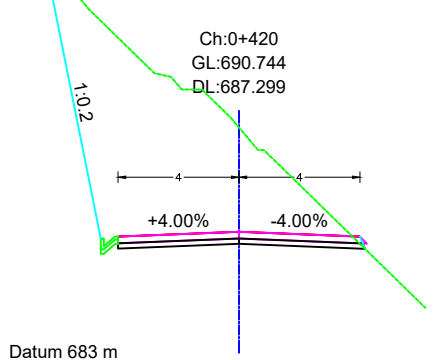
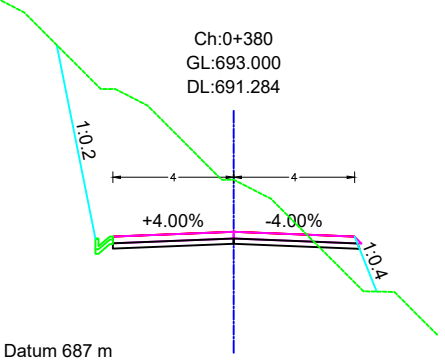
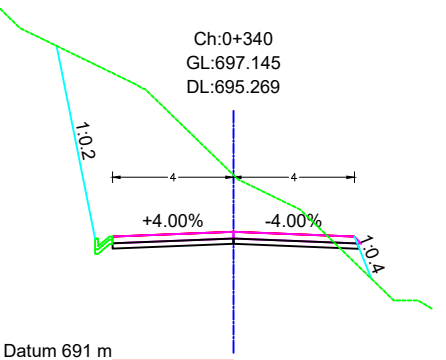
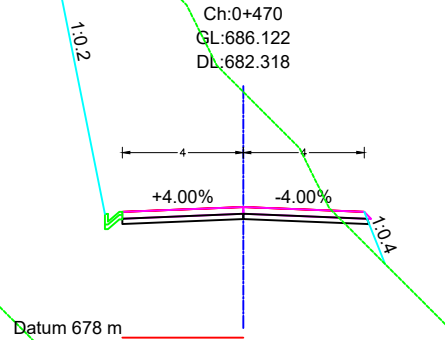
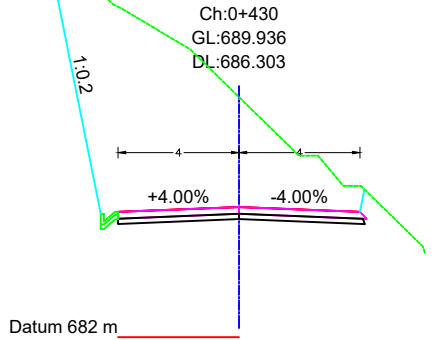
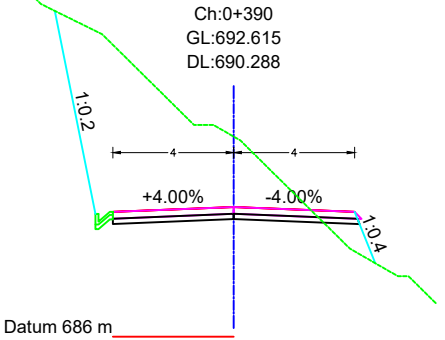
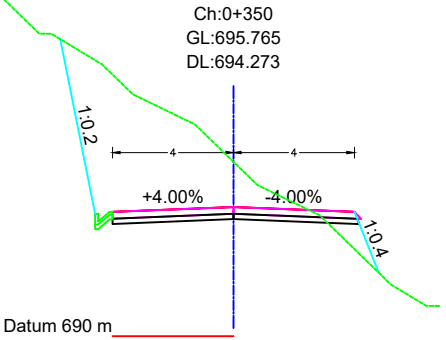
Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>DORJILUNG ADIT 3 ROAD CROSS SECTION</b>					
SHEET 18 OF 38					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	A3	Original Scale	AS SHOWN	DRAWING NO.	DHPP-ADIT-3-ROAD-2024-01
				REV	NA

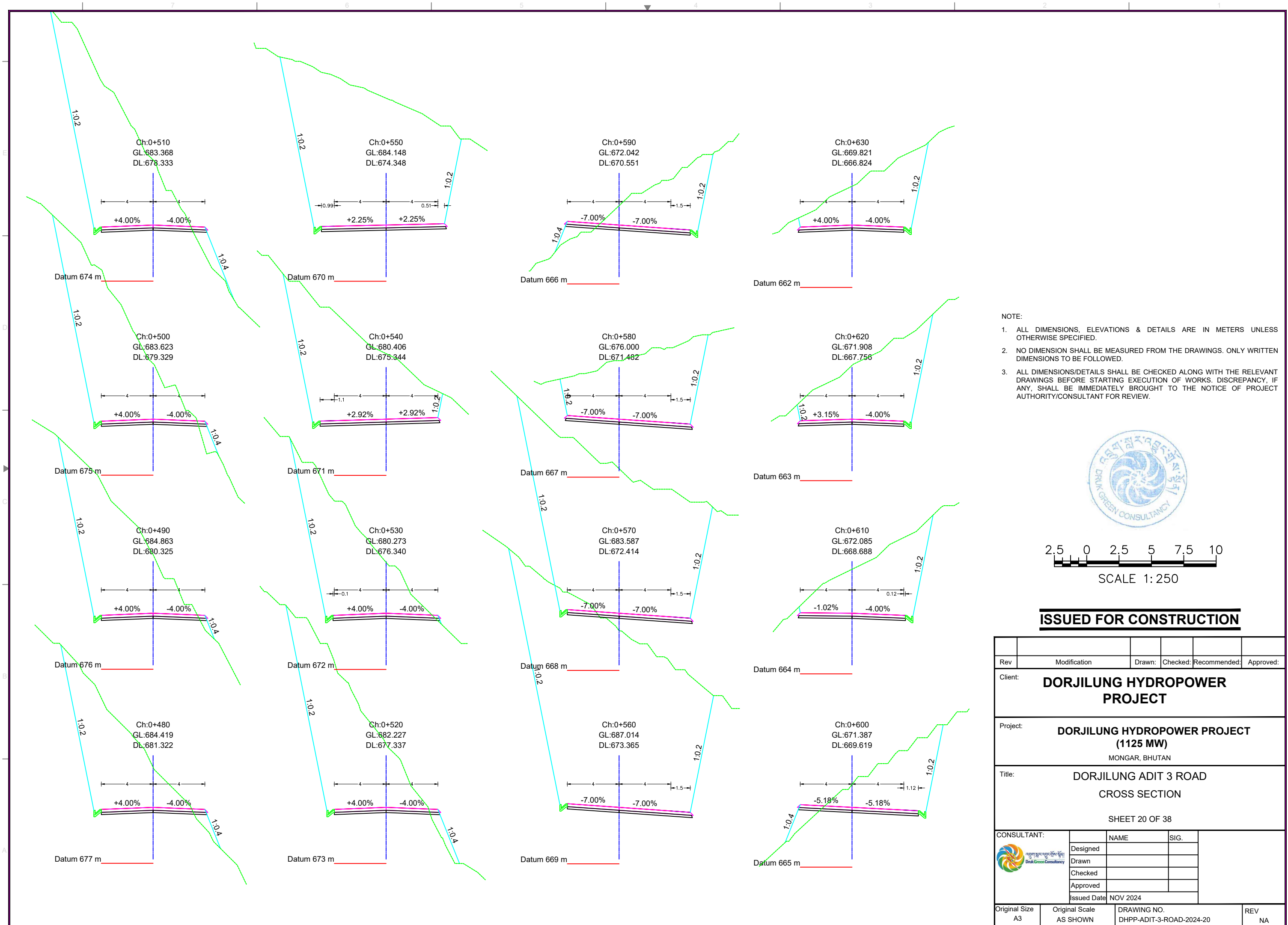
- NOTE:
1. ALL DIMENSIONS, ELEVATIONS & DETAILS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
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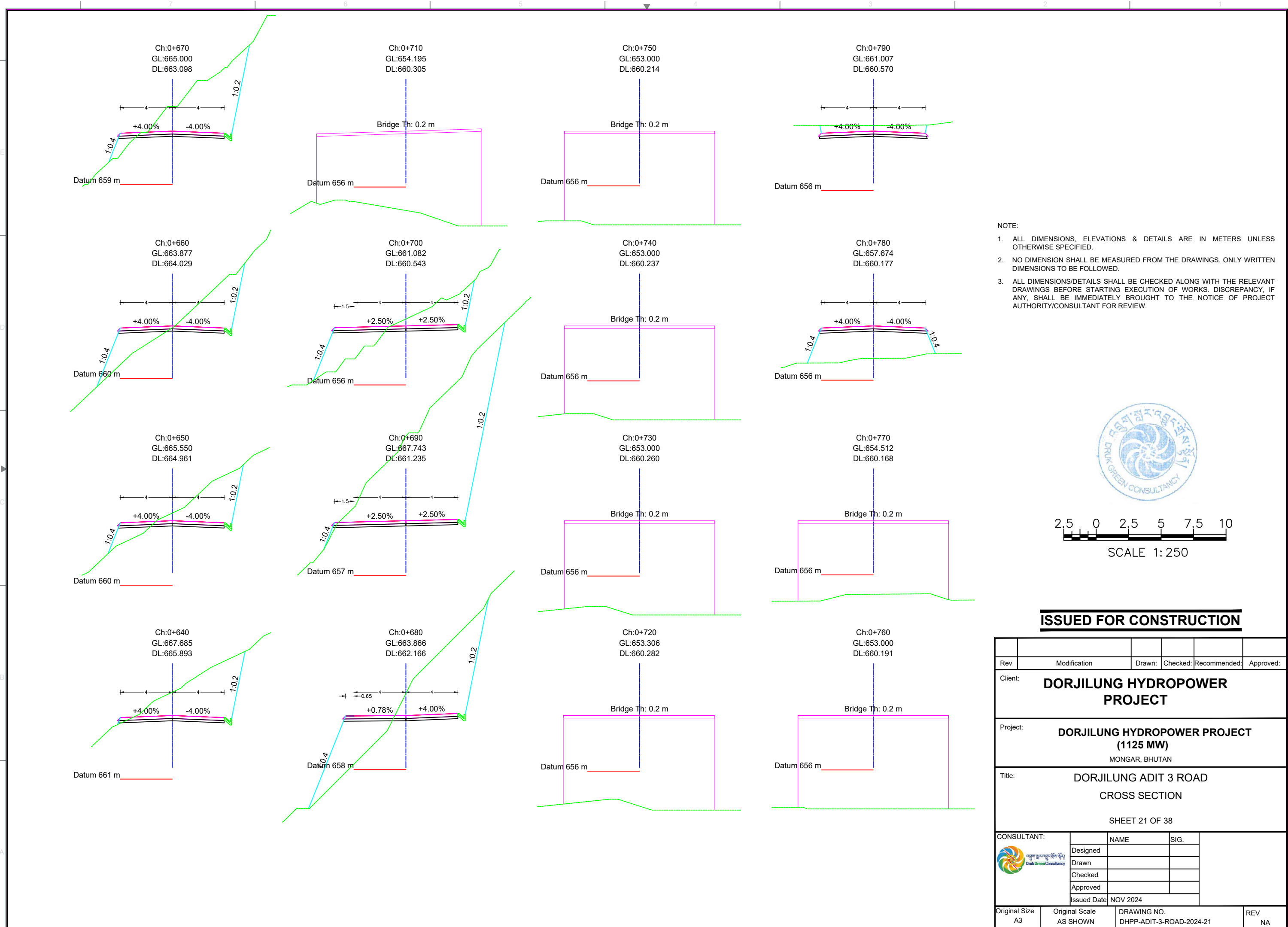


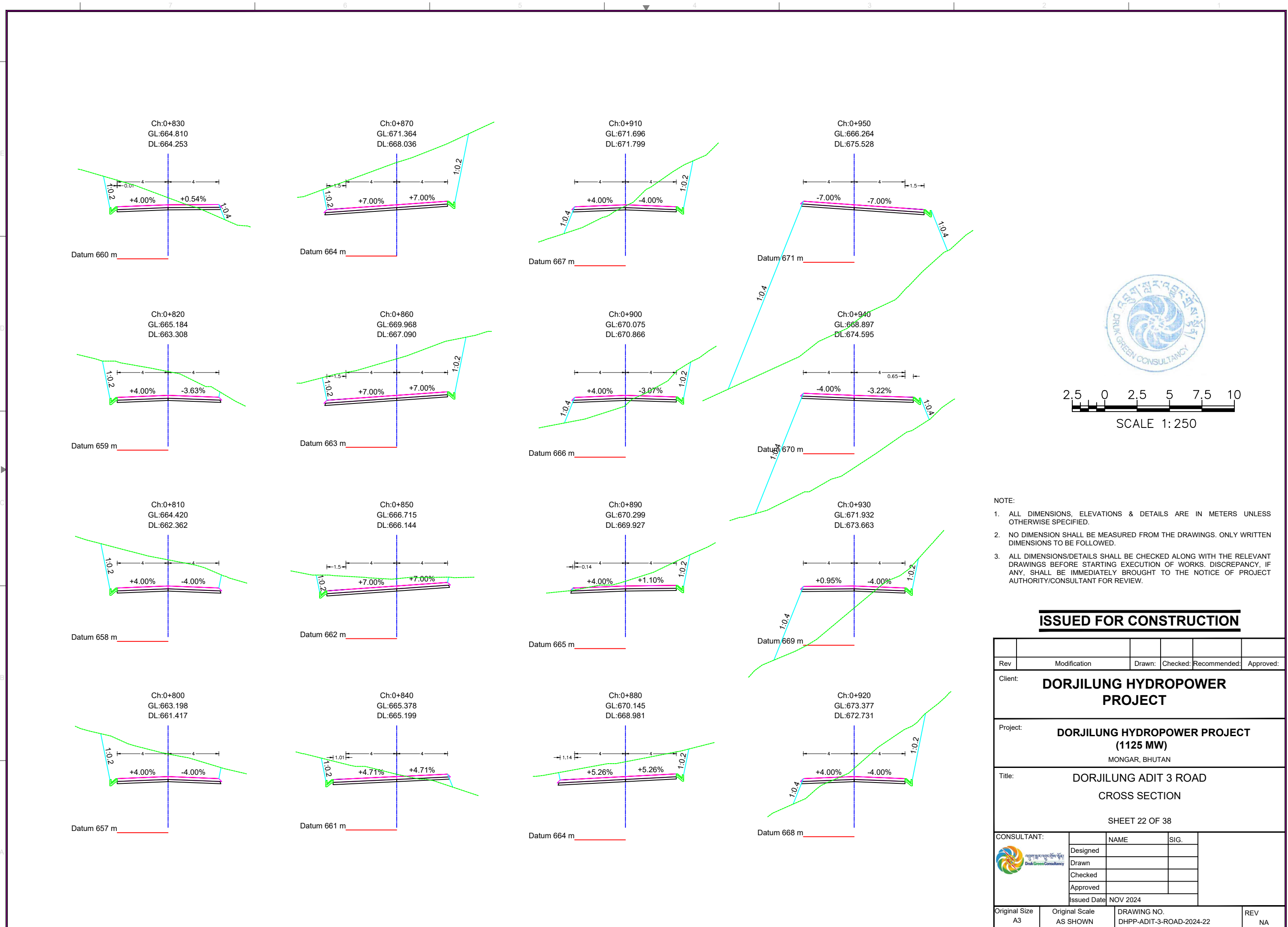
**ISSUED FOR CONSTRUCTION**

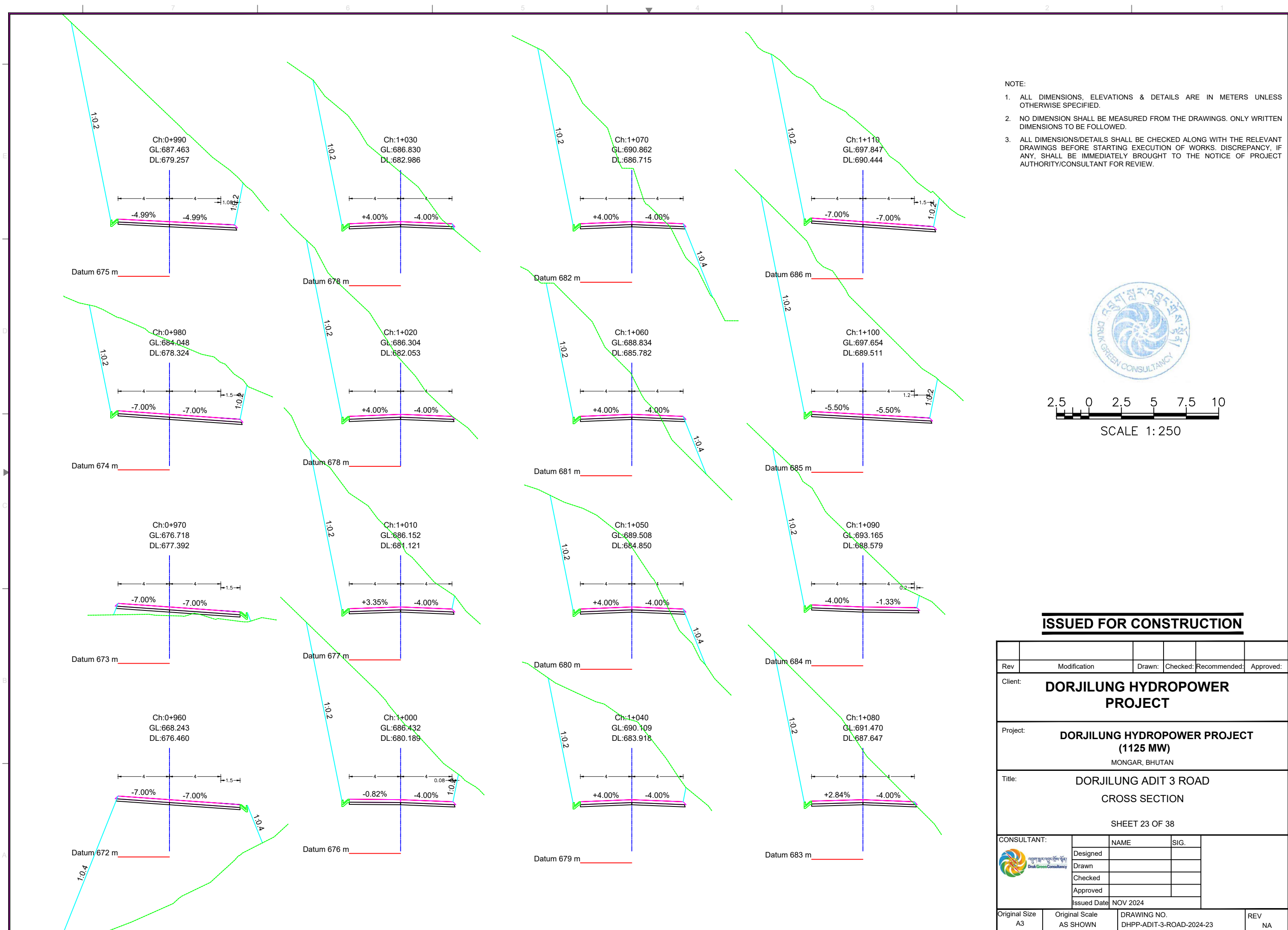
Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>DORJILUNG ADIT 3 ROAD CROSS SECTION</b>					
SHEET 19 OF 38					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	Original Scale	DRAWING NO.		REV	
A3	AS SHOWN	DHPP-ADIT-3-ROAD-2024-19		NA	



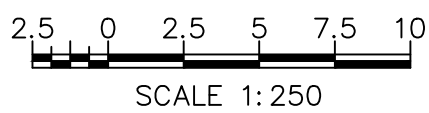








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**ISSUED FOR CONSTRUCTION**

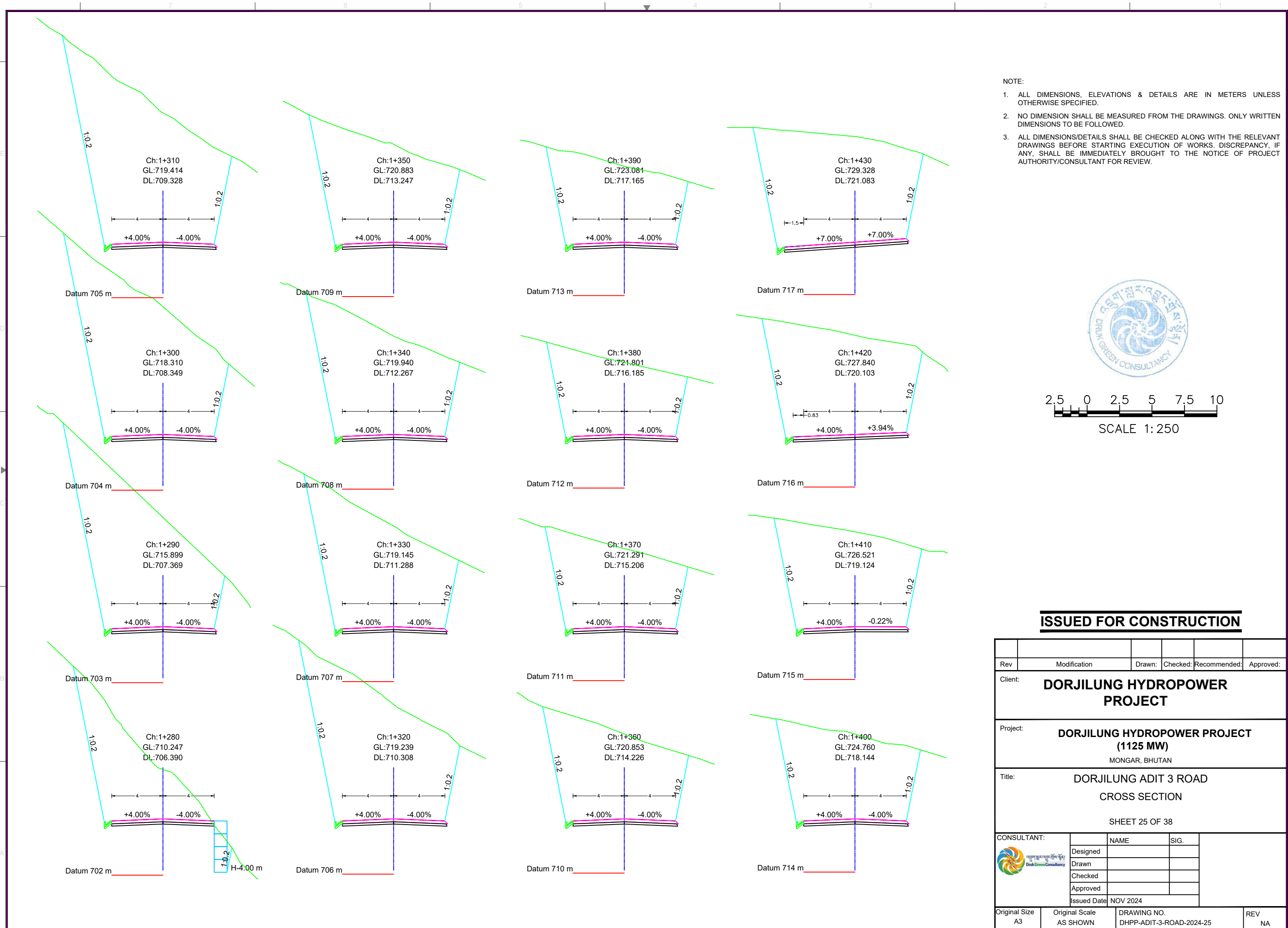
Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>DORJILUNG ADIT 3 ROAD CROSS SECTION</b>  SHEET 23 OF 38					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-ADIT-3-ROAD-2024-23			REV NA

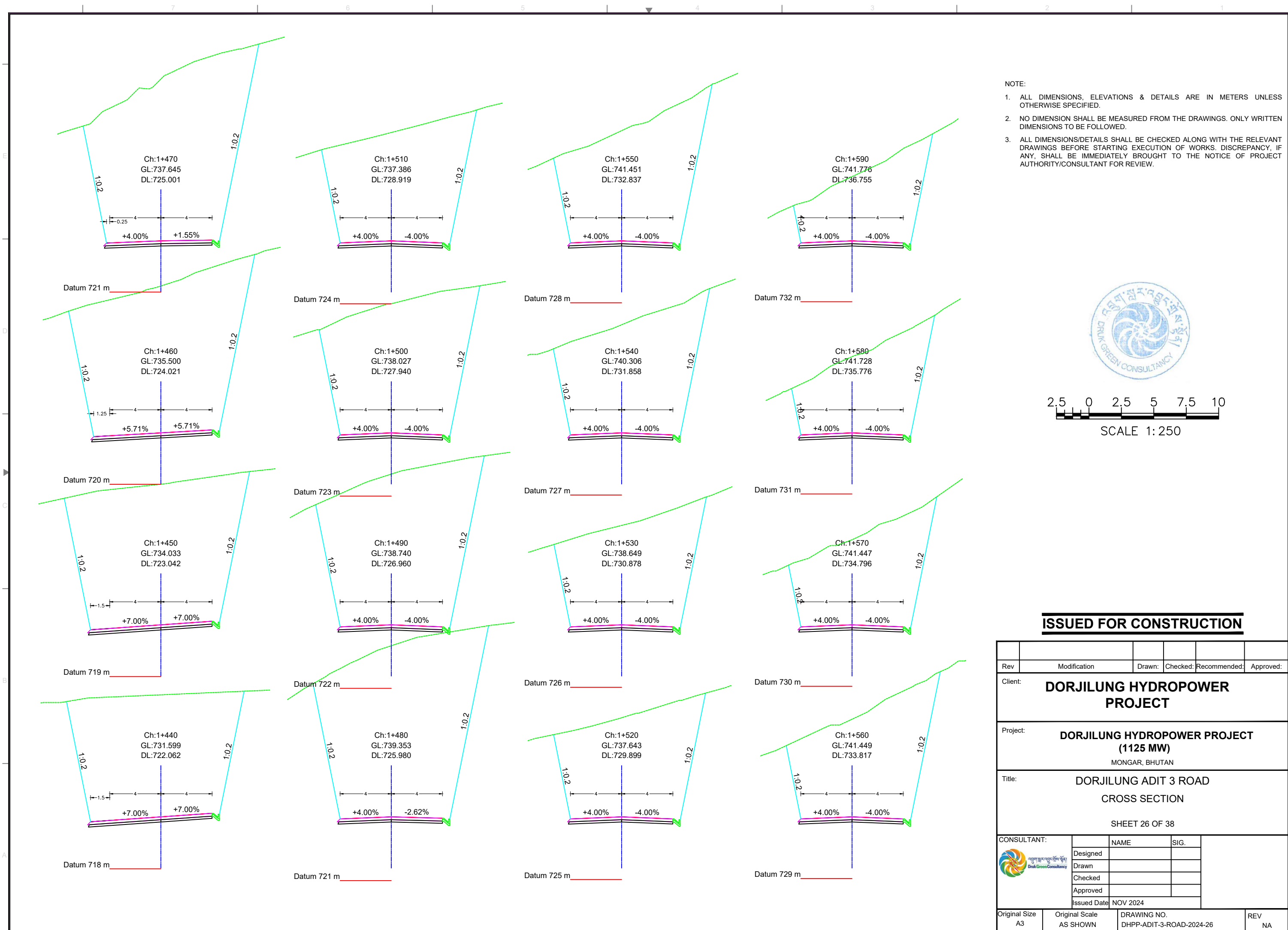
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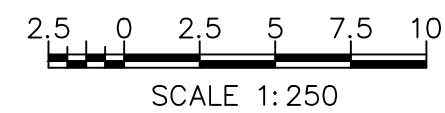
**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>DORJILUNG ADIT 3 ROAD CROSS SECTION</b>  SHEET 24 OF 38					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-ADIT-3-ROAD-2024-24			REV NA



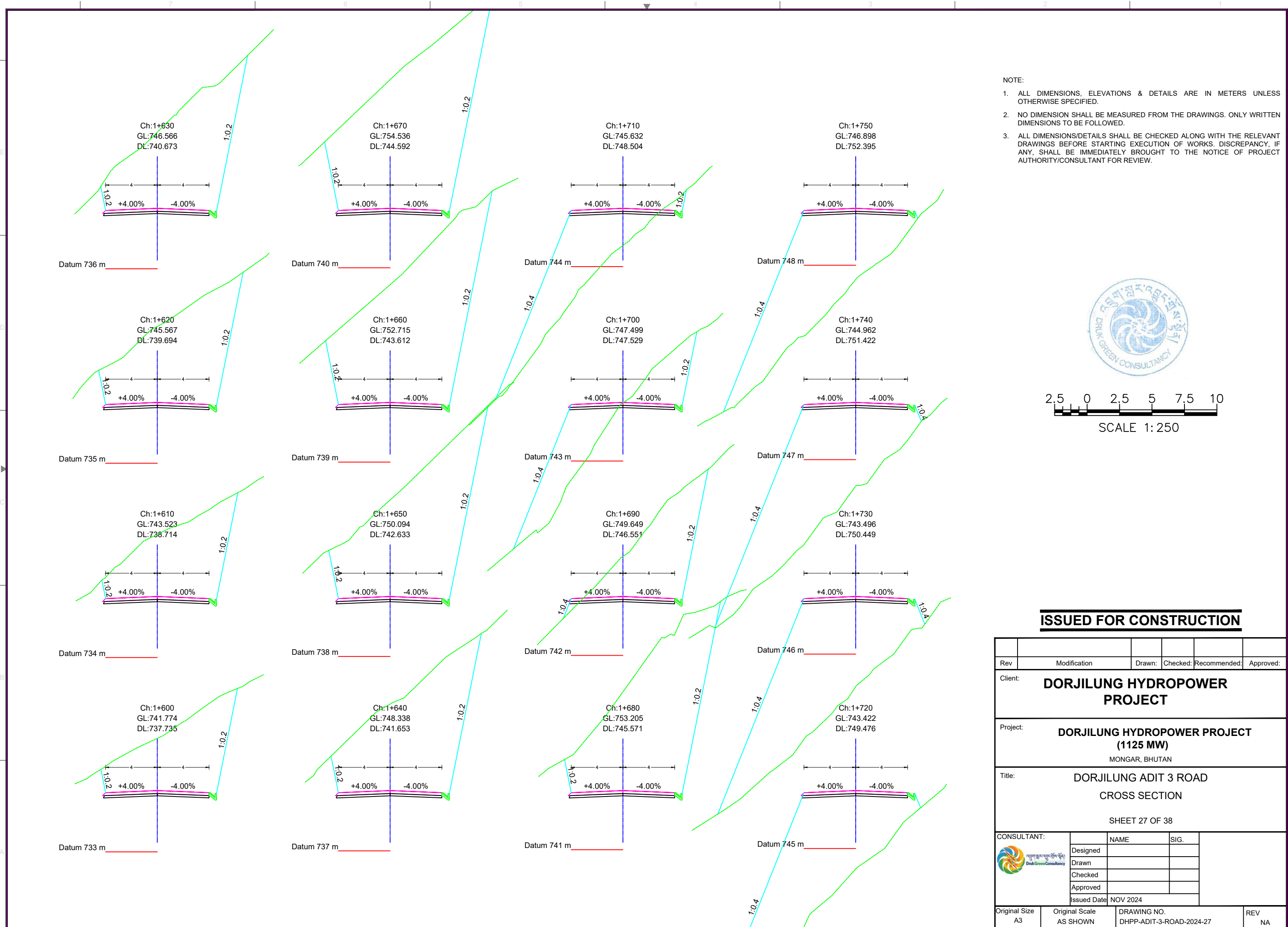


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**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>DORJILUNG ADIT 3 ROAD CROSS SECTION</b> SHEET 26 OF 38					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	A3	Original Scale	AS SHOWN	DRAWING NO.	DHPP-ADIT-3-ROAD-2024-26
				REV	NA

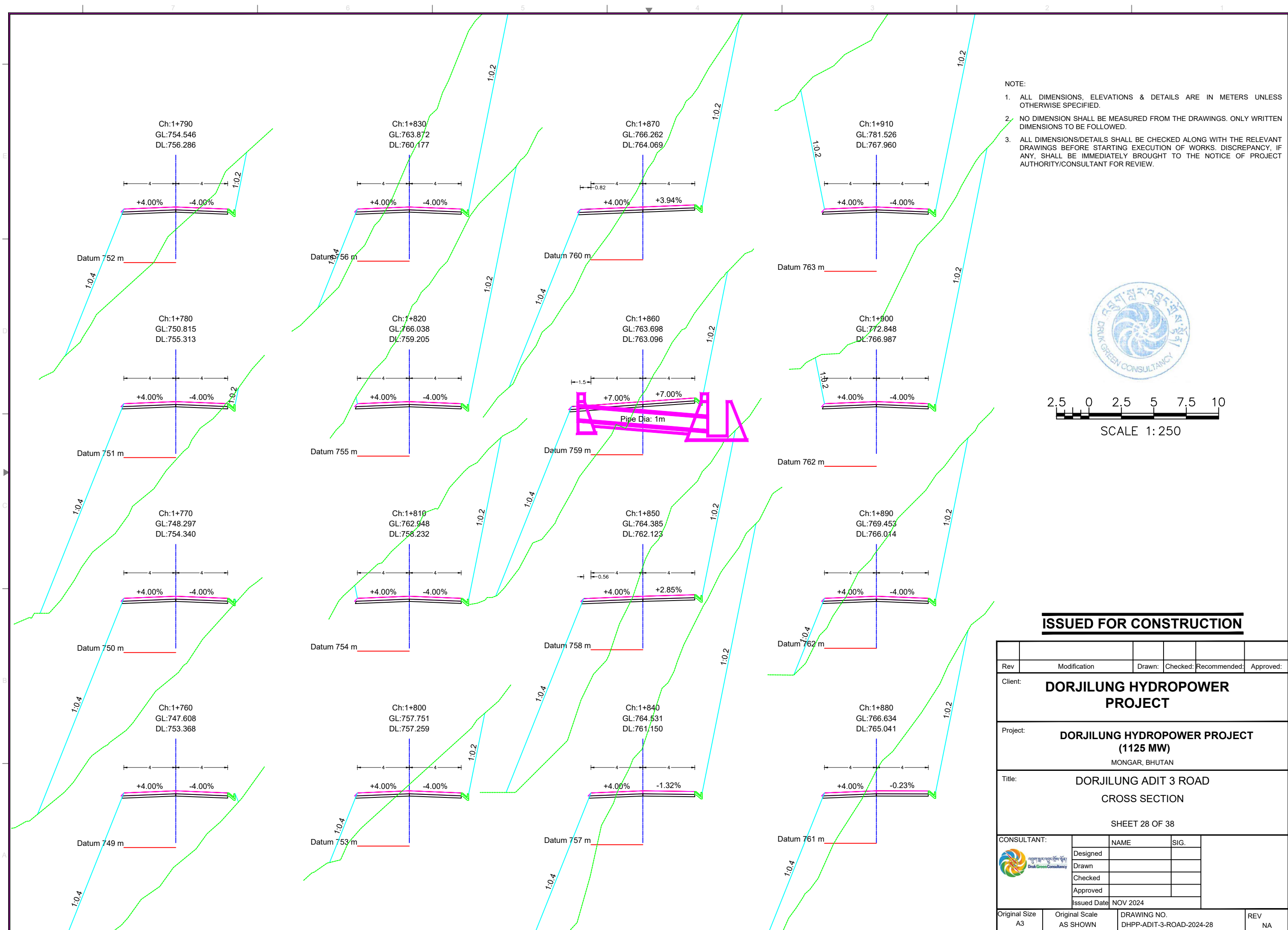


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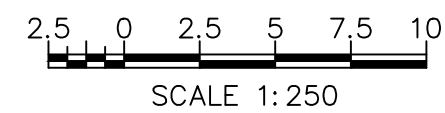


**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>DORJILUNG ADIT 3 ROAD CROSS SECTION</b> SHEET 27 OF 38					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	A3	Original Scale	AS SHOWN	DRAWING NO.	DHPP-ADIT-3-ROAD-2024-27
				REV	NA



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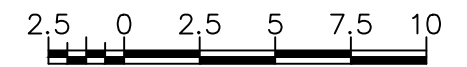


ISSUED FOR CONSTRUCTION

Rev	Modification	Drawn	Checked	Recommended	Approved
Client: DORJILUNG HYDROPOWER PROJECT					
Project: DORJILUNG HYDROPOWER PROJECT (1125 MW) MONGAR, BHUTAN					
Title: DORJILUNG ADIT 3 ROAD CROSS SECTION SHEET 28 OF 38					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-ADIT-3-ROAD-2024-28			REV NA

## NOTE:

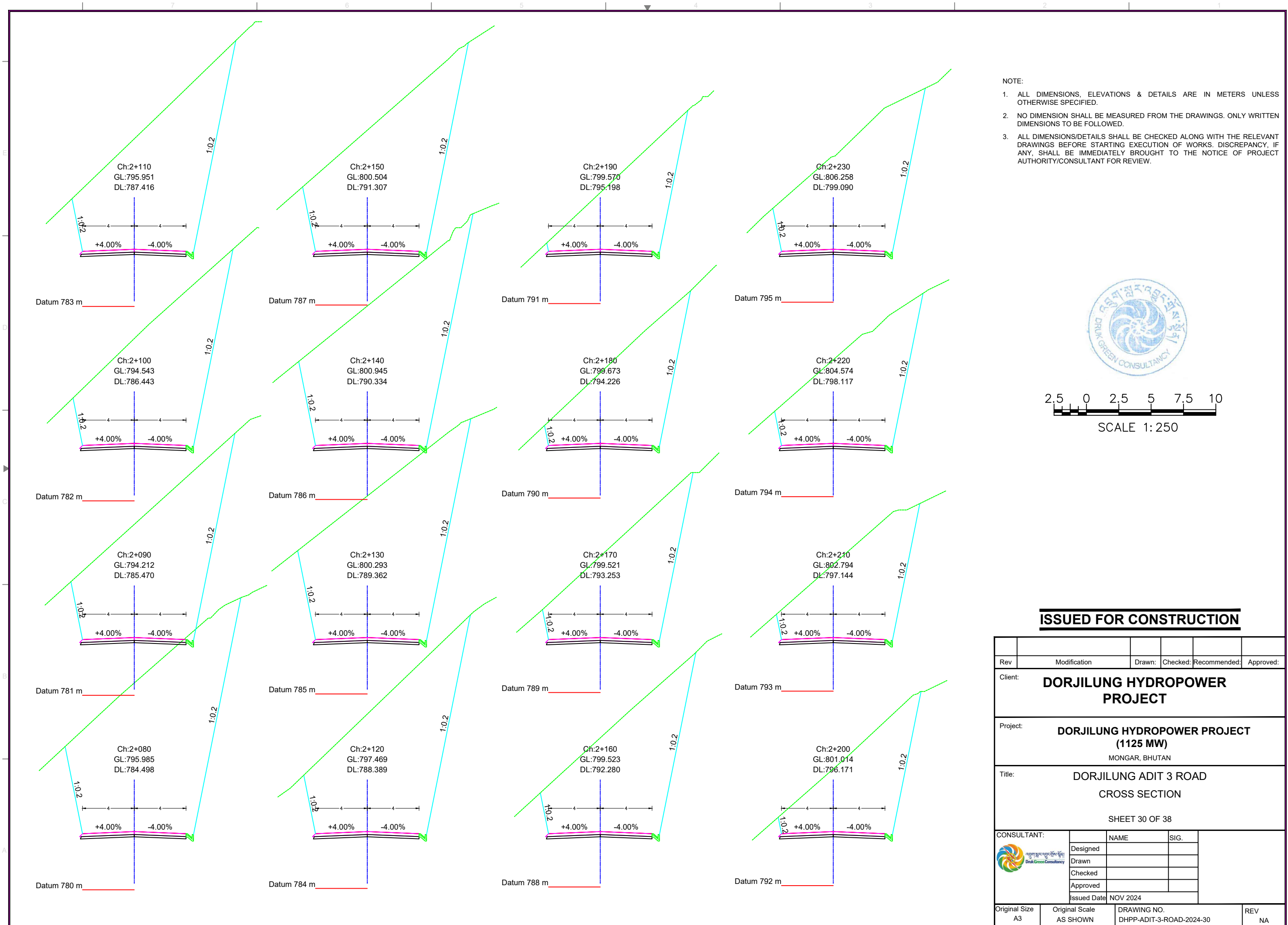
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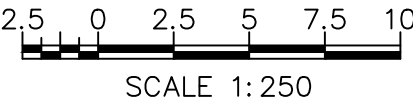
SCALE 1: 250

**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn:	Checked:	Recommended:	Approved:
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>DORJILUNG ADIT 3 ROAD CROSS SECTION</b>					
SHEET 29 OF 38					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-ADIT-3-ROAD-2024-29		REV	NA

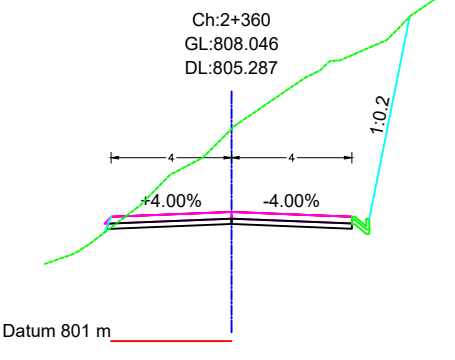
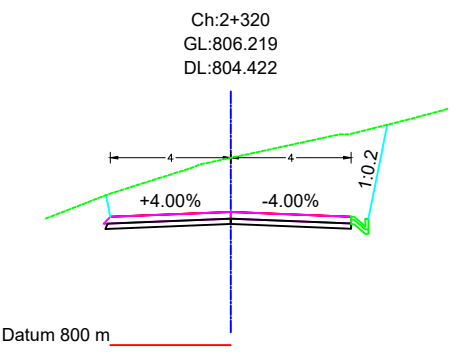
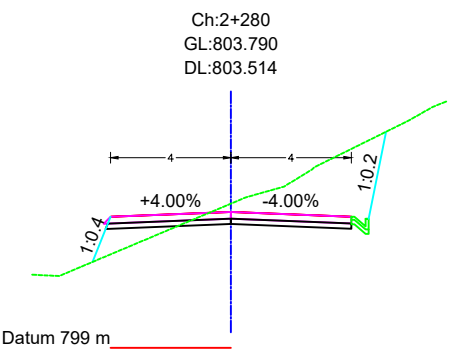
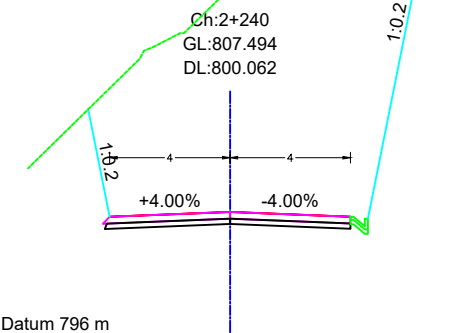
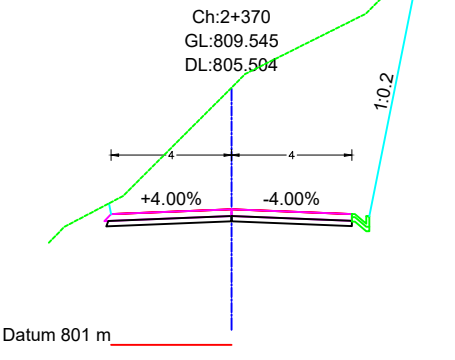
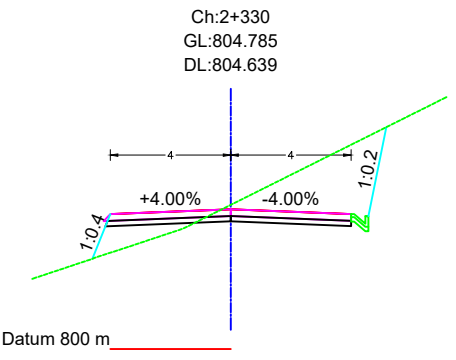
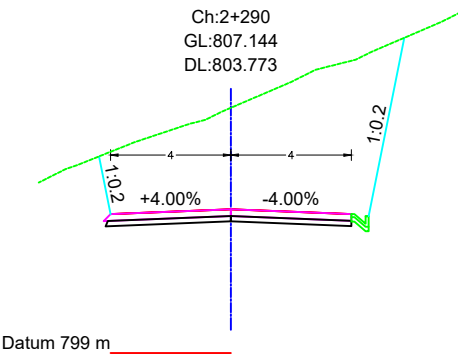
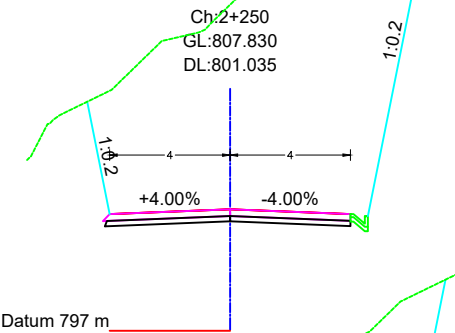
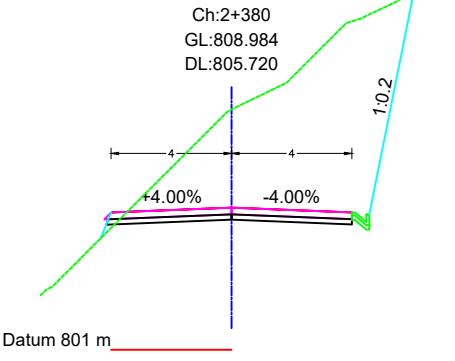
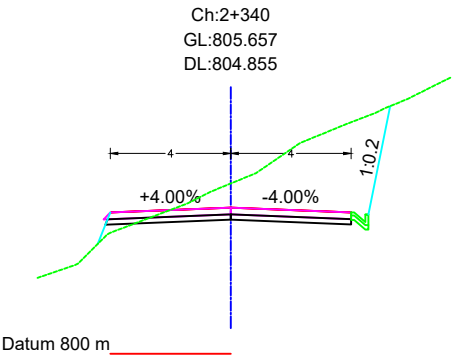
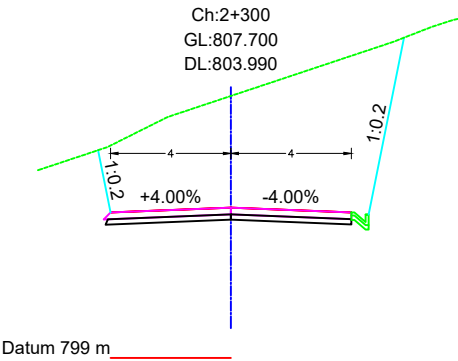
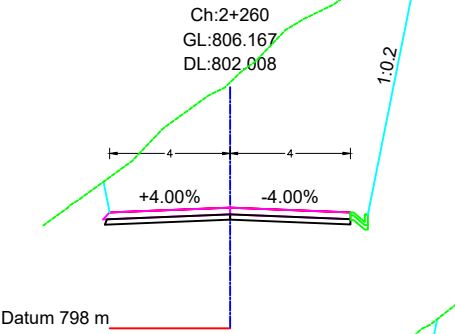
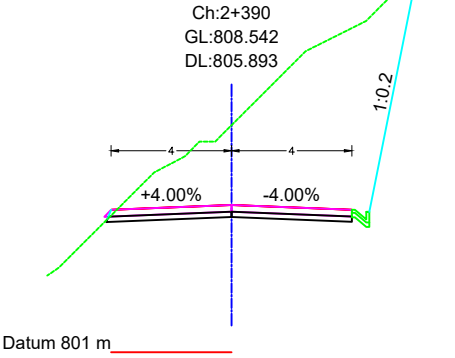
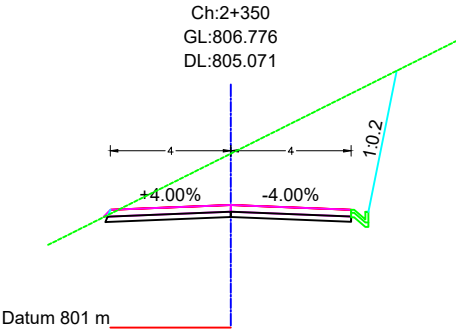
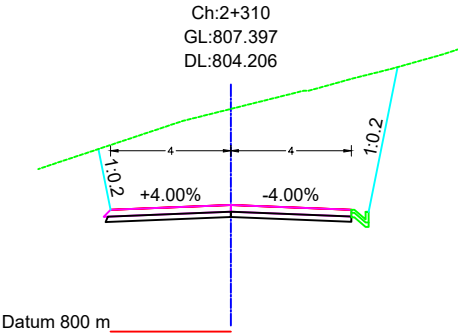
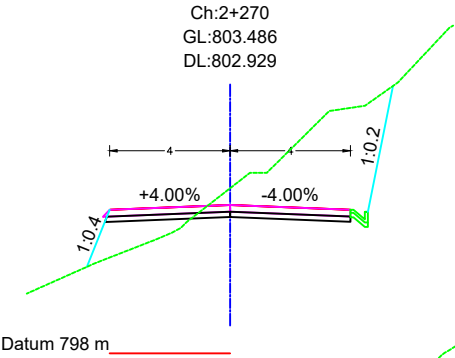


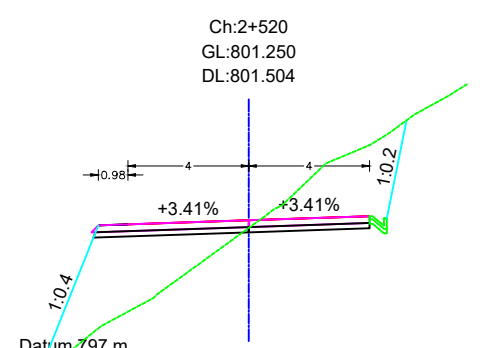
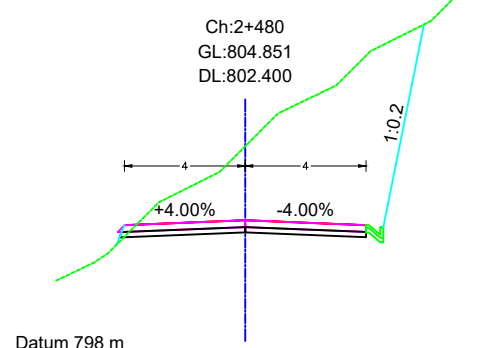
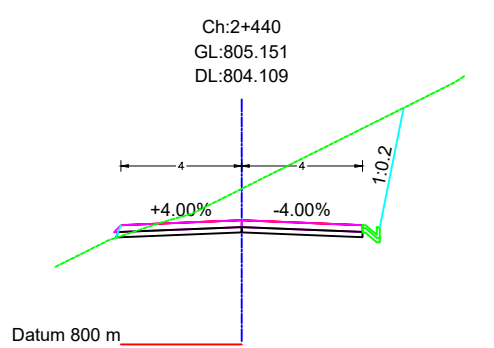
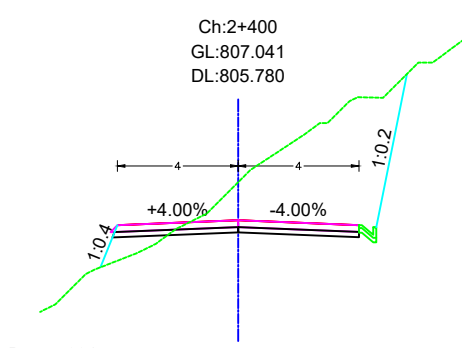
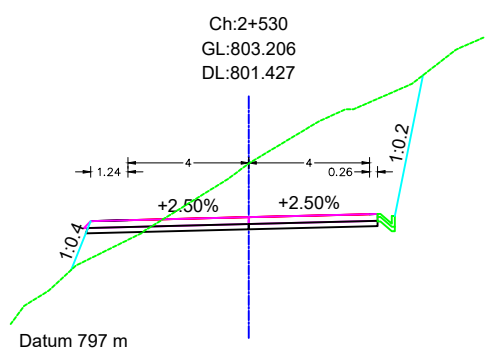
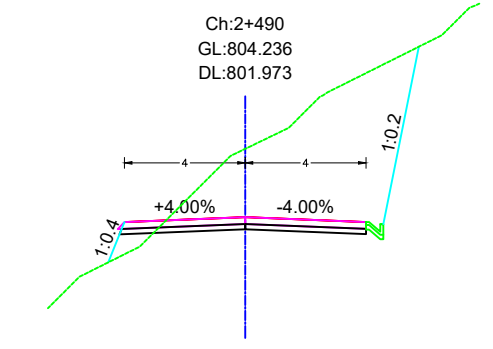
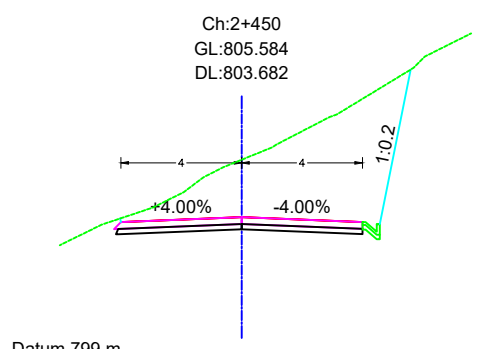
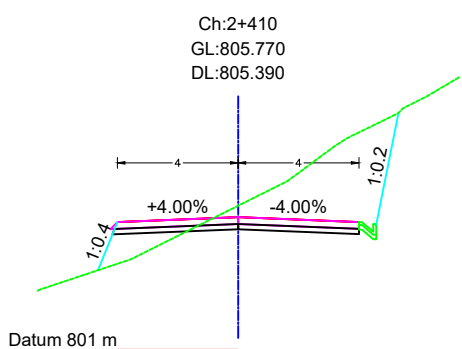
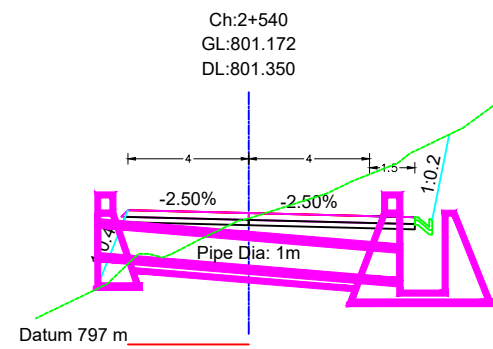
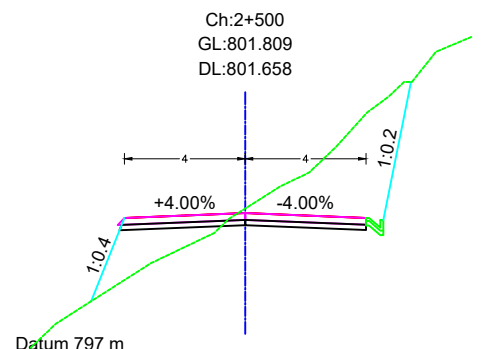
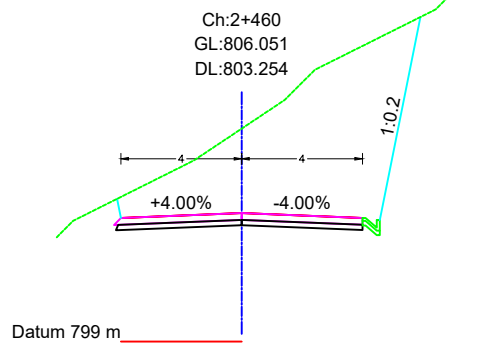
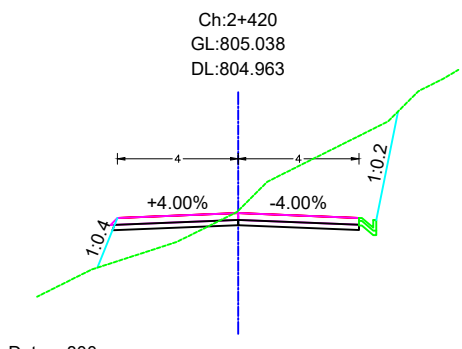
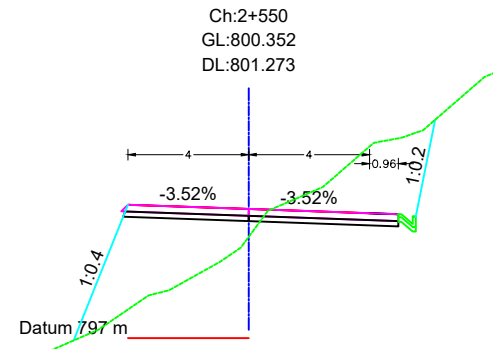
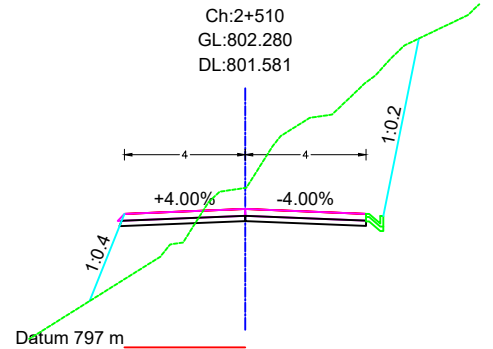
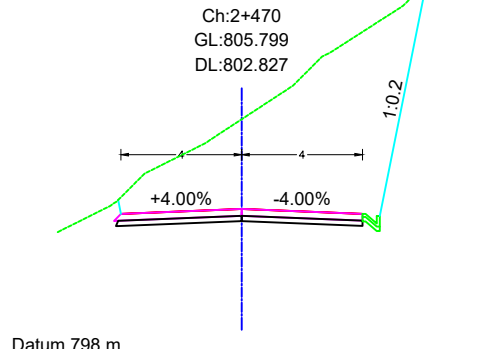
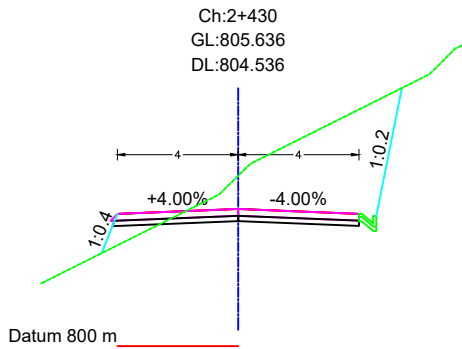
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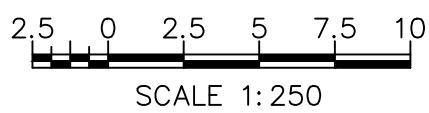
**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>DORJILUNG ADIT 3 ROAD CROSS SECTION</b>					
SHEET 31 OF 38					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	A3	Original Scale	AS SHOWN	DRAWING NO.	DHPP-ADIT-3-ROAD-2024-31
				REV	NA



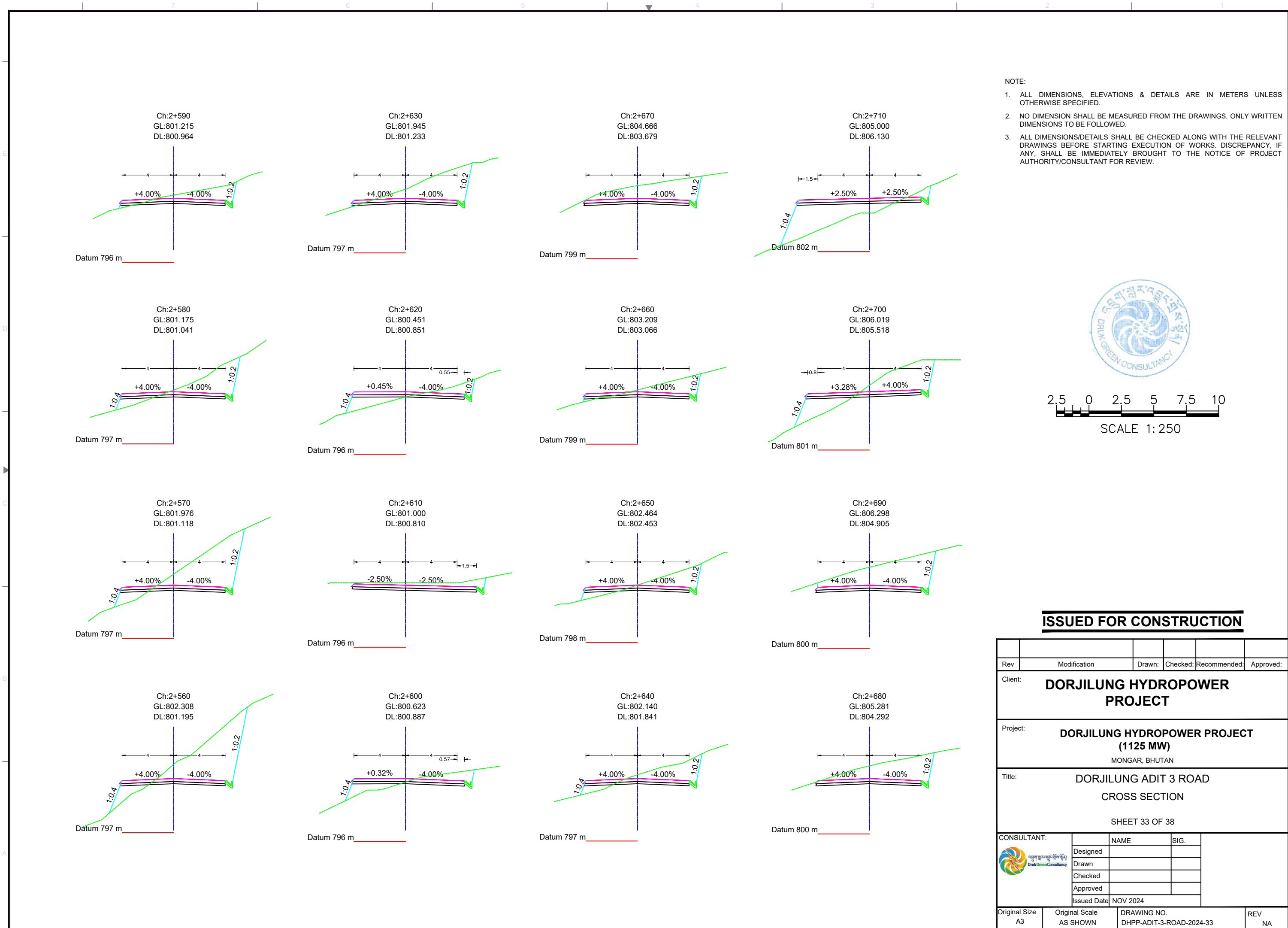


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**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn:	Checked:	Recommended:	Approved:
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>DORJILUNG ADIT 3 ROAD CROSS SECTION</b>  SHEET 32 OF 38					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-ADIT-3-ROAD-2024-32			REV NA

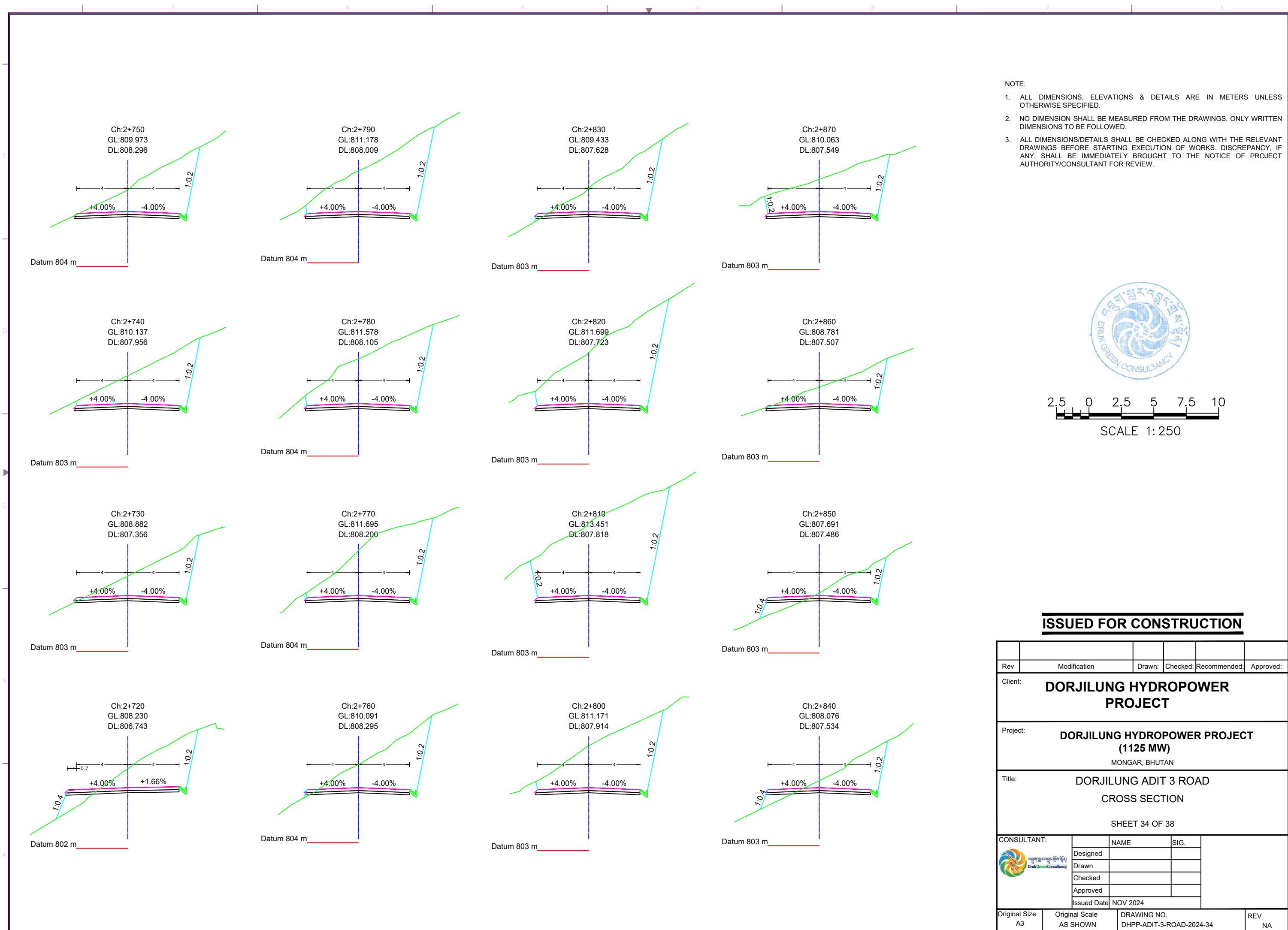


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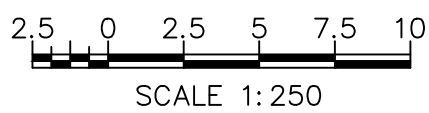


**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>DORJILUNG ADIT 3 ROAD CROSS SECTION</b>					
SHEET 33 OF 38					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	A3	Original Scale	AS SHOWN	DRAWING NO.	DHPP-ADIT-3-ROAD-2024-33
				REV	NA

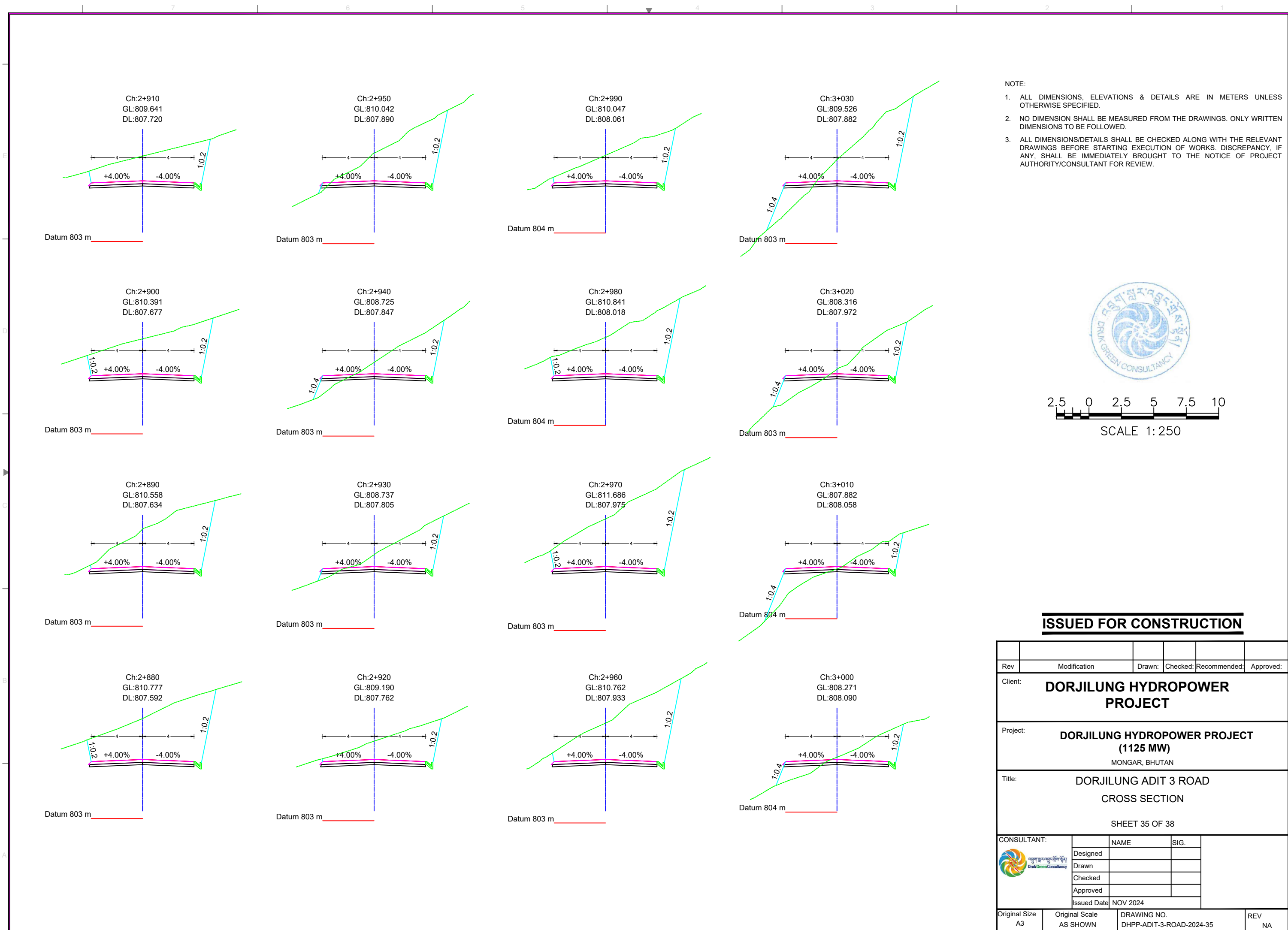


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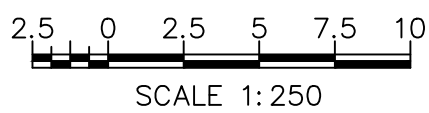


**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>DORJILUNG ADIT 3 ROAD CROSS SECTION</b>  SHEET 34 OF 38					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-ADIT-3-ROAD-2024-34			REV NA

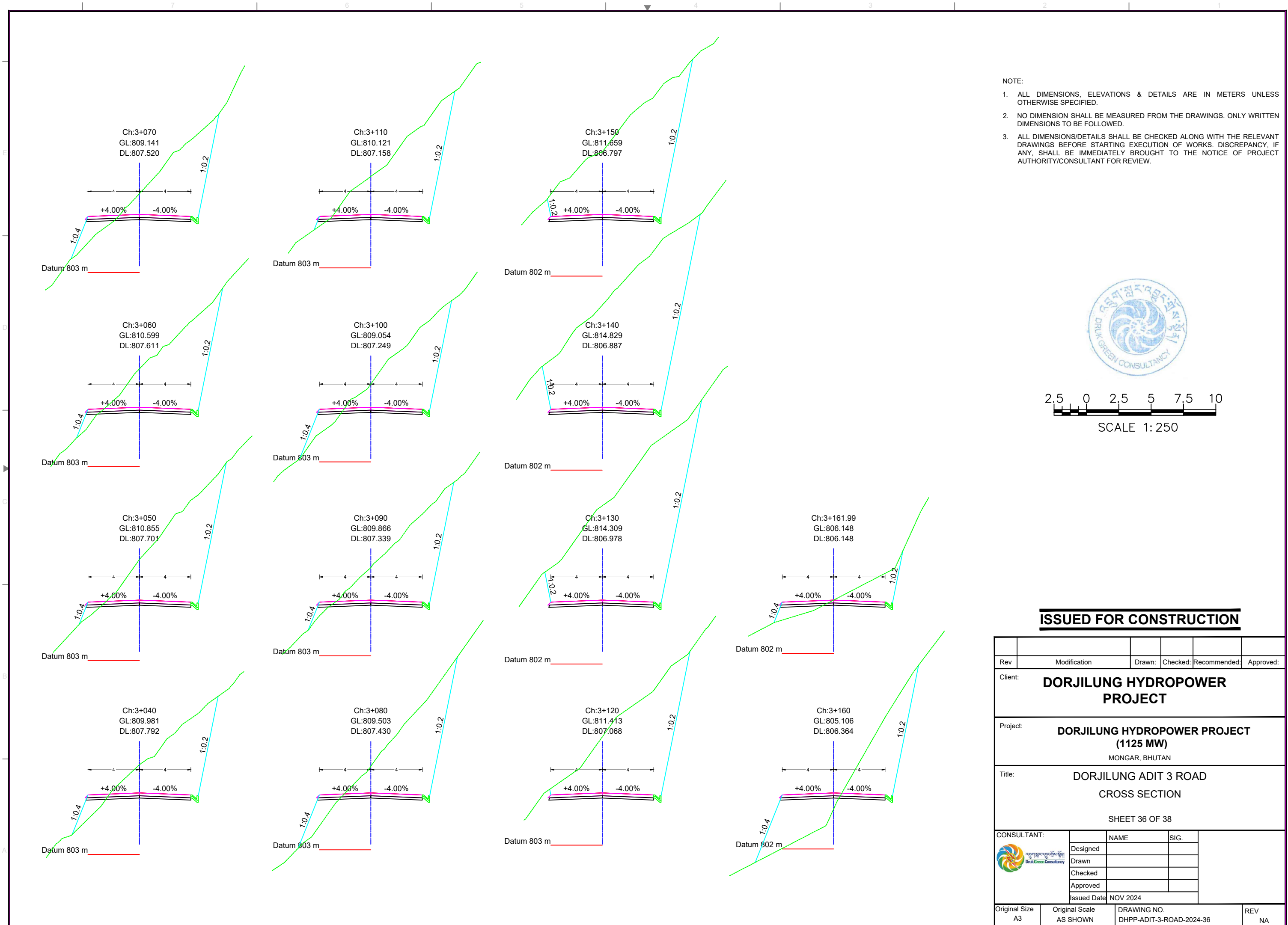


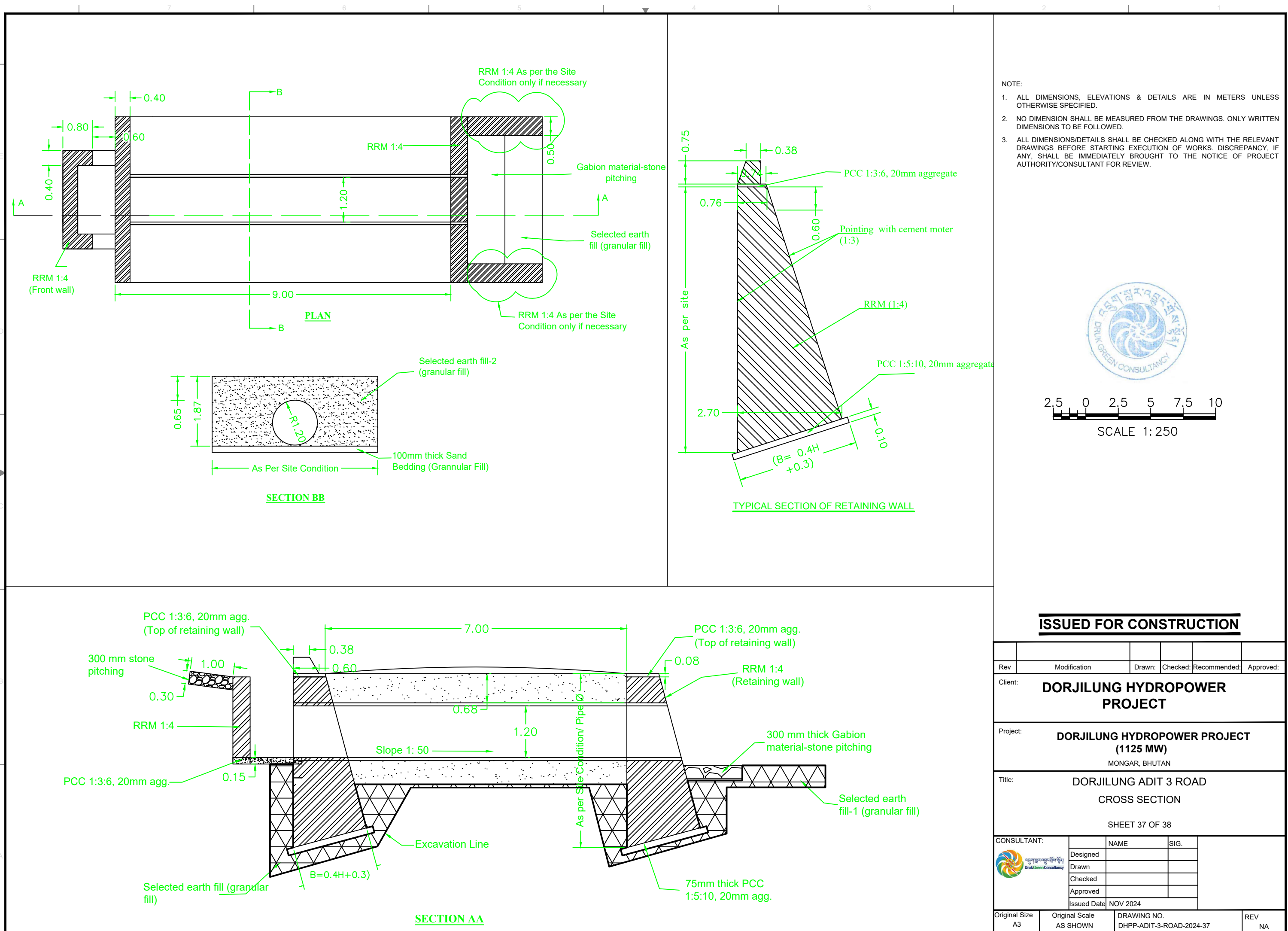
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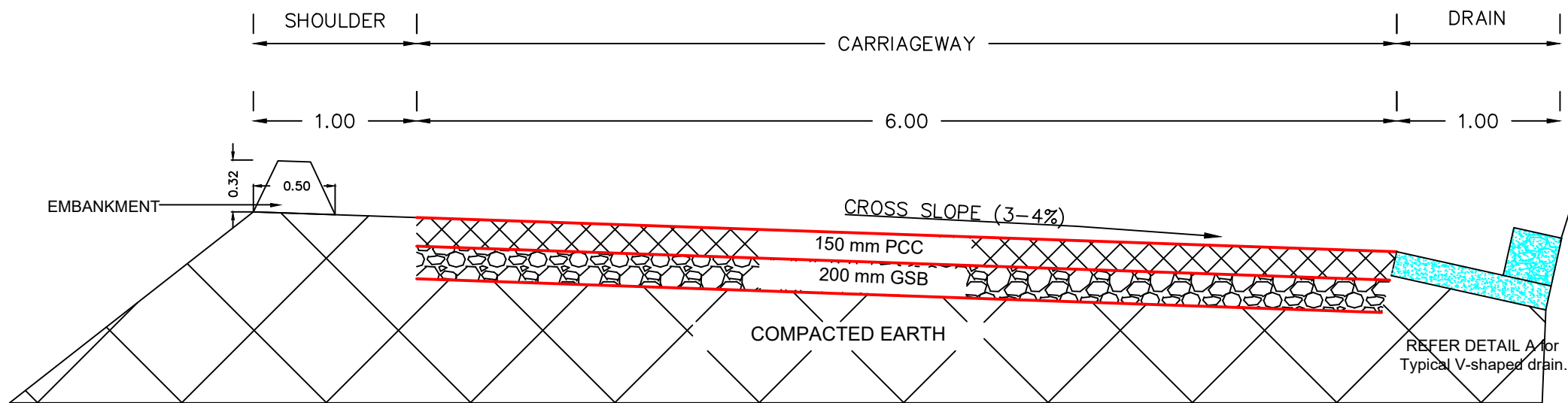


ISSUED FOR CONSTRUCTION

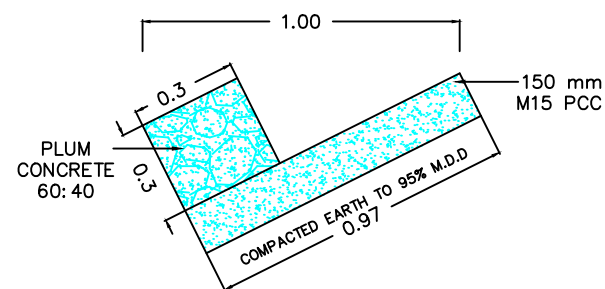
Rev	Modification	Drawn	Checked	Recommended	Approved
Client: DORJILUNG HYDROPOWER PROJECT					
Project: DORJILUNG HYDROPOWER PROJECT (1125 MW) MONGAR, BHUTAN					
Title: DORJILUNG ADIT 3 ROAD CROSS SECTION SHEET 35 OF 38					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	A3	Original Scale	AS SHOWN	DRAWING NO.	DHPP-ADIT-3-ROAD-2024-35
				REV	NA



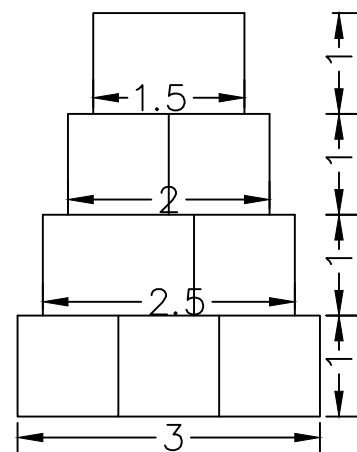




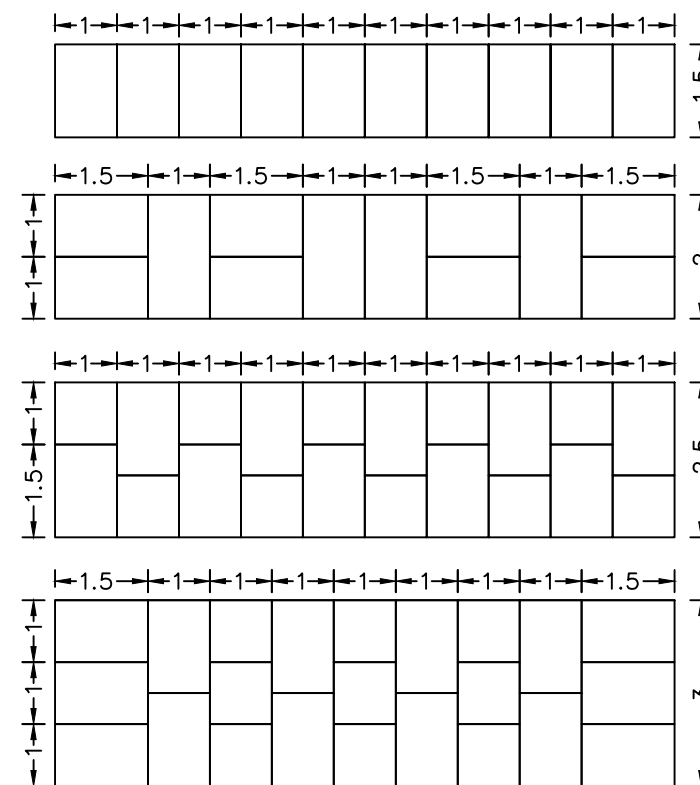
Typical One-way Camber Cross Slope in Super Elevated Sections for Double Lane.



DETAIL A: Typical V-shaped drain



Section of Gabion Wall.



Gabion Wall Plan.

FOURTH LAYER:  
1.5x1x1=10

THIRD LAYER:  
1.5x1x1=8  
2x1x1=4

SECOND LAYER:  
1x1x1=10  
1.5x1x1=10

FIRST LAYER:  
1x1x1=9  
1.5x1x1=14

NOTE:

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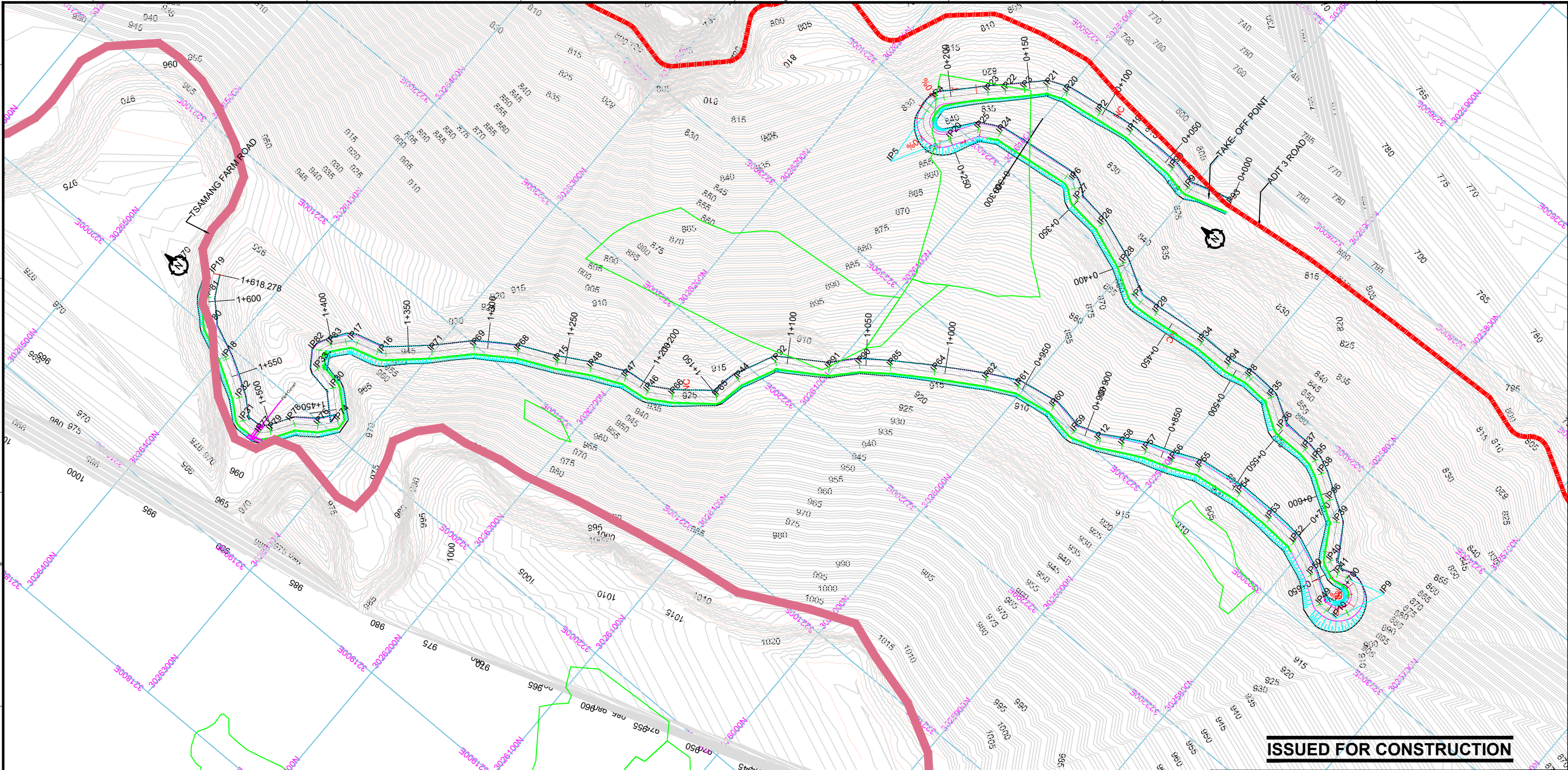


2.5 0 2.5 5 7.5 10  
SCALE 1:250

**ISSUED FOR CONSTRUCTION**

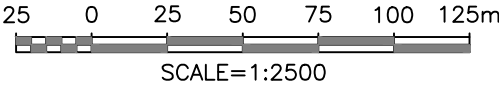
Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>DORJILUNG ADIT 3 ROAD</b> TYPICAL SECTION OF ROAD, DRAIN AND GABION WALL					
SHEET 38 OF 38					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-ADIT-3-ROAD-2024-38		REV	NA

1640.0m Access Road connecting  
Tsamang-Banjar Farm Road

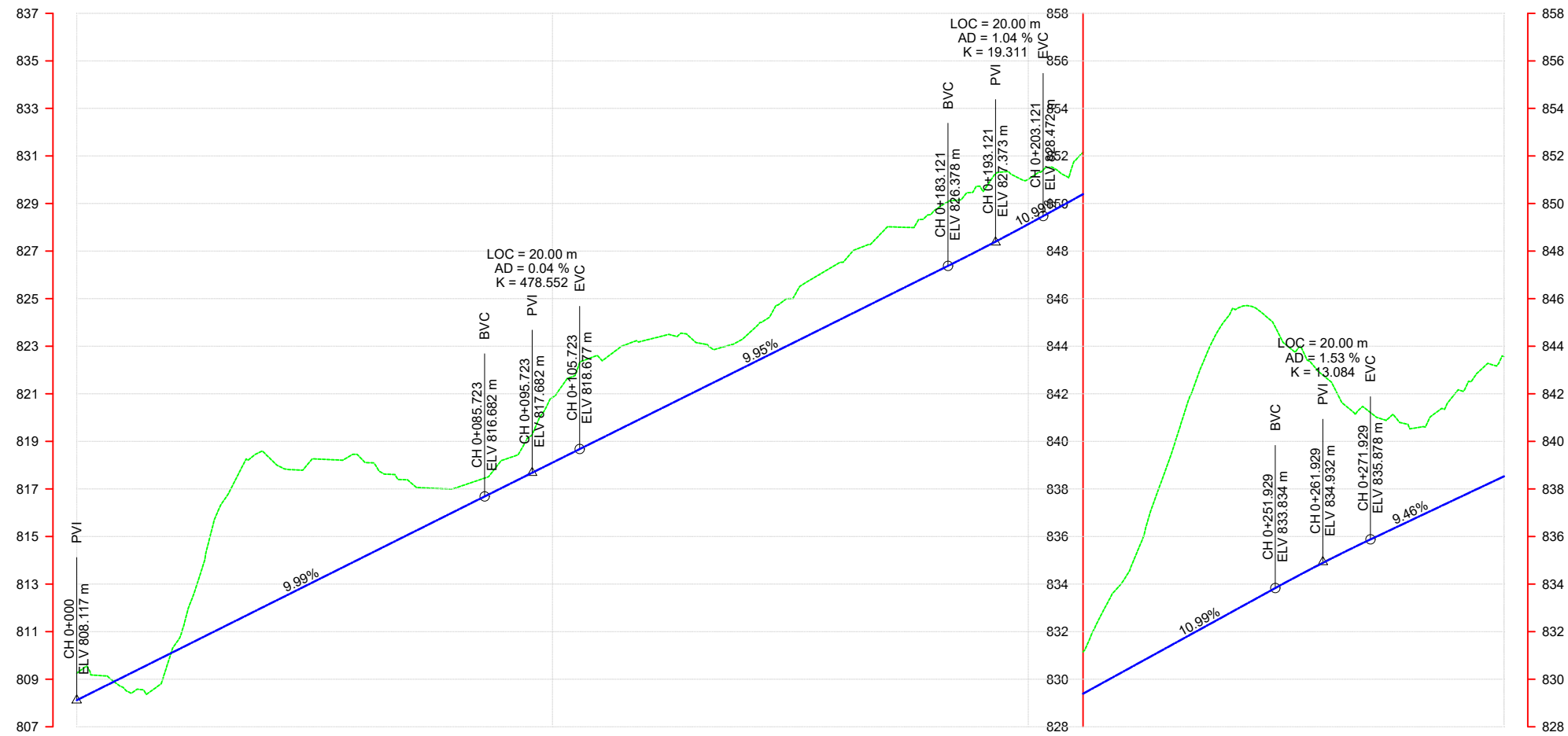


ISSUED FOR CONSTRUCTION

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Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>ADIT 3 TO TSAMANG BANJAR FARM ROAD</b> <b>GENERAL PLAN</b>  SHEET 1 OF 19					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-ADIT-3-B/S-ROAD-2024-01		REV NA	

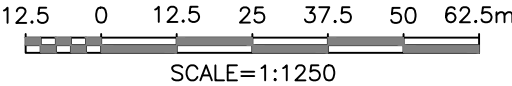


CHAINAGE : 0+000 - 0+300

IP No.	CO-ORDINATES(m)	
	EASTING	NORTHING
IP93	322472.487	3025974.988
IP91	322464.321	3026002.201
IP90	322467.355	3026017.370
IP19	322468.018	3026052.359
2	322464.891	3026075.209
IP20	322461.283	3026098.942
IP21	322456.392	3026110.968
3	322445.888	3026120.990
IP22	322437.310	3026129.569
IP23	322429.533	3026137.507
4	322405.480	3026160.277
5	322357.053	3026156.268
IP20	322391.930	3026136.625
IP25	322407.725	3026126.923
IP24	322414.700	3026114.817

DESIGN LEVEL(m)	808.117																																809.116																																810.115																																811.115																																812.114																																813.113																																814.112																																815.111																																816.111																																817.110																																818.107																																819.102																																820.097																																821.092																																822.087																																823.082																																824.077																																825.072																																826.067																																827.075																																828.131																																829.227																																830.326																																831.425																																832.523																																833.622																																834.695																																835.694																																836.641																																837.587																																838.533																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						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LEVEL(m)	809.256																																808.607																																810.203																																816.206																																818.406																																818.265																																818.239																																817.303																																817.067																																818.245																																820.846																																822.488																																823.275																																823.182																																823.305																																825.002																																826.478																																827.941																																828.653																																829.671																																830.020																																830.835																																834.145																																839.426																																844.692																																845.250																																843.175																																841.419																																840.623																																842.081																																843.568																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						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HORIZONTAL SCHEMATIC																																	L=28.412																																L=15.470																																L=34.995																																L=22.974																																L=23.916																																L=12.983																																L=14.375																																L=11.992																																L=11.113																																L=27.758																																L=10.087																																L=4.127																																L=30.553																																L=18.536																																L=13.972																																L=17.350																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														

- NOTE:
- ALL DIMENSIONS, ELEVATIONS & DETAILS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
  - NO DIMENSION SHALL BE MEASURED FROM THE DRAWINGS. ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.
  - ALL DIMENSIONS/DETAILS SHALL BE CHECKED ALONG WITH THE RELEVANT DRAWINGS BEFORE STARTING EXECUTION OF WORKS. DISCREPANCY, IF ANY, SHALL BE IMMEDIATELY BROUGHT TO THE NOTICE OF PROJECT AUTHORITY/CONSULTANT FOR REVIEW.



ISSUED FOR CONSTRUCTION

Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>ADIT 3 TO TSAMANG BANJAR FARM ROAD</b> PROFILE (Chainage 00 - 300M)					
SHEET 2 OF 19					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-ADIT-3-B/S-ROAD-2024-02		REV NA	



IP No.	CO-ORDINATES(m)	
	EASTING	NORTHING
IP24	322414.700	3026114.817
6	322421.515	3026060.617
IP27	322413.818	3026050.836
IP26	322411.493	3026029.108
IP28	322401.952	3026002.970
7	322390.086	3025982.443
IP29	322391.288	3025966.730
IP34	322395.057	3025932.815
IP94	322395.177	3025910.646
8	322397.963	3025895.814
IP35	322397.001	3025877.293
IP36	322386.017	3025859.975
IP37	322385.776	3025839.730
IP95	322384.373	3025830.430
IP38	322380.605	3025822.137
IP96	322371.144	3025807.335

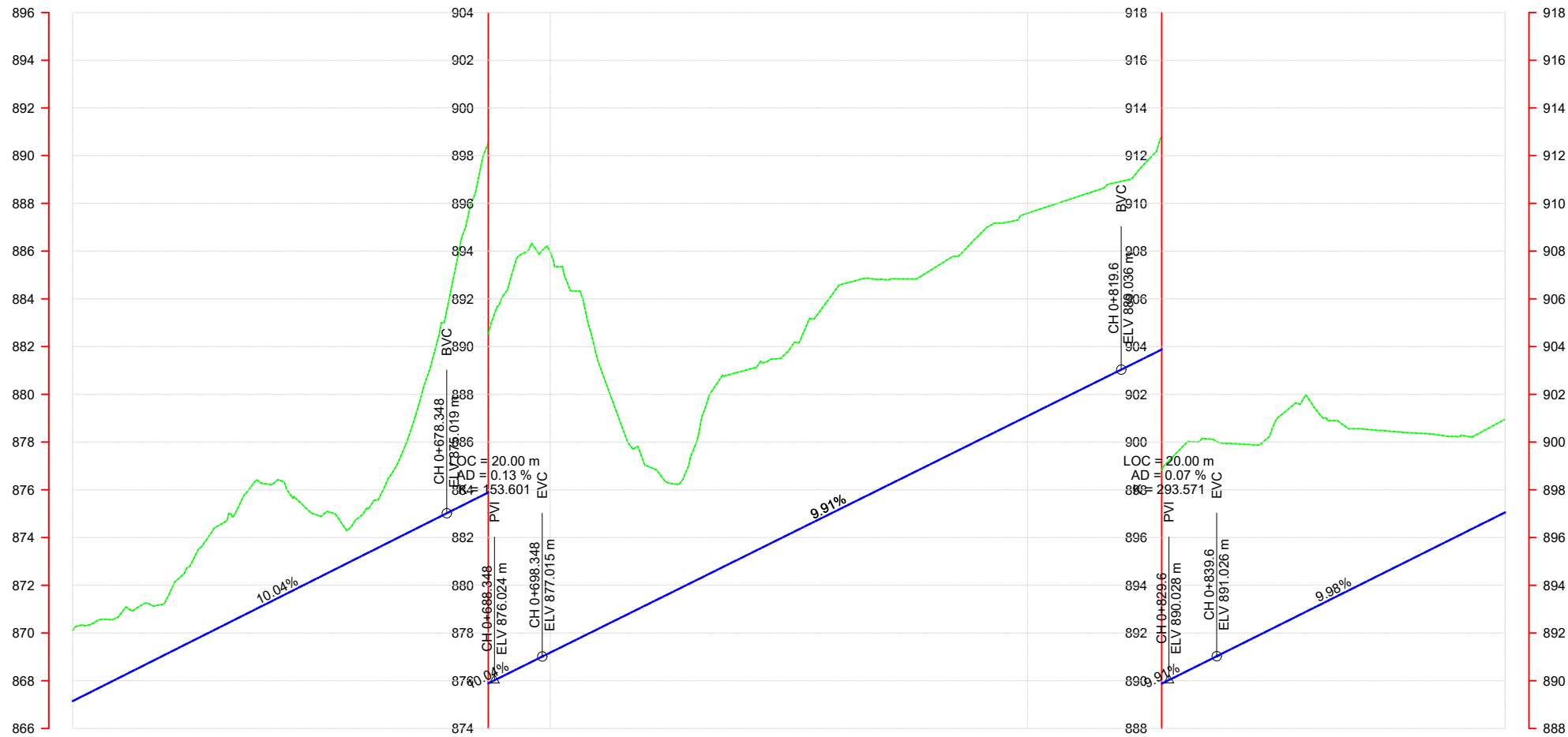
DESIGN LEVEL(m)		-838.533-
EXISTING LEVEL(m)		-843.568- -843.802 -844.820- -845.393 -845.602- -848.268 -848.332 -848.396 -849.578- -851.003 -851.958- -852.524 -854.615- -855.331 -855.050- -856.000 -857.158- -857.585 -858.901- -860.872 -861.806- -861.099 -862.287- -864.053 -866.798 -870.000 -869.119 -868.702 -868.375 -869.236 -870.118- -867.149-
CHAINAGE(Km)		0+300  0+310 0+320 0+330 0+340 0+350 0+360 0+370 0+380 0+390 0+400 0+410 0+420 0+430 0+440 0+450 0+460 0+470 0+480 0+490 0+500 0+510 0+520 0+530 0+540 0+550 0+560 0+570 0+580 0+590 0+600
HORIZONTAL SCHEMATIC		L=32.261 L=9.590 R=12 L=7.431 L=21.852 L=27.825 L=19.993 L=7.207 R=12 L=12.045 L=34.124 L=22.169 L=13.660 R=12 L=17.114 L=20.508 L=20.246 L=9.400 L=9.114 L=12.695
SUPER ELEVATION SCHEMATIC		SE:4%

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2. NO DIMENSION SHALL BE MEASURED FROM THE DRAWINGS. ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.
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**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn:	Checked:	Recommended:	Approved:
Client: <div>DORJILUNG HYDROPOWER PROJECT</div>					
Project: <div>DORJILUNG HYDROPOWER PROJECT (1125 MW) MONGAR, BHUTAN</div>					
Title: <div>ADIT 3 TO TSAMANG BANJAR FARM ROAD PROFILE (Chainage 300 - 600M)  SHEET 3 OF 19</div>					
<div>CONSULTANT:</div> <div><div>འབྲས་རྒྱུད་གླིང་མཚོན་སྟེན། Drak Green Consultancy</div></div>		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-ADIT-3-B/S-ROAD-2024-03			REV NA



CHAINAGE : 0+600 - 0+900

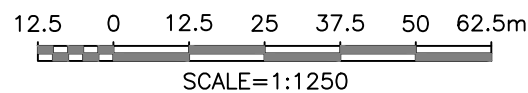
IP No.	CO-ORDINATES(m)	
	EASTING	NORTHING
IP96	322371.144	3025807.339
IP39	322363.447	3025795.032
IP40	322342.000	3025782.323
IP41	322338.632	3025773.544
9	322347.893	3025743.277
10	322316.611	3025756.586
IP49	322316.674	3025769.859
IP50	322327.293	3025786.166
IP52	322336.141	3025807.656
IP53	322337.405	3025828.766
IP54	322337.469	3025853.543
IP55	322333.550	3025882.996
IP56	322326.218	3025899.177
IP57	322320.277	3025916.116
IP58	322313.451	3025929.513
12	322306.119	3025942.913
IP59	322300.746	3025958.463

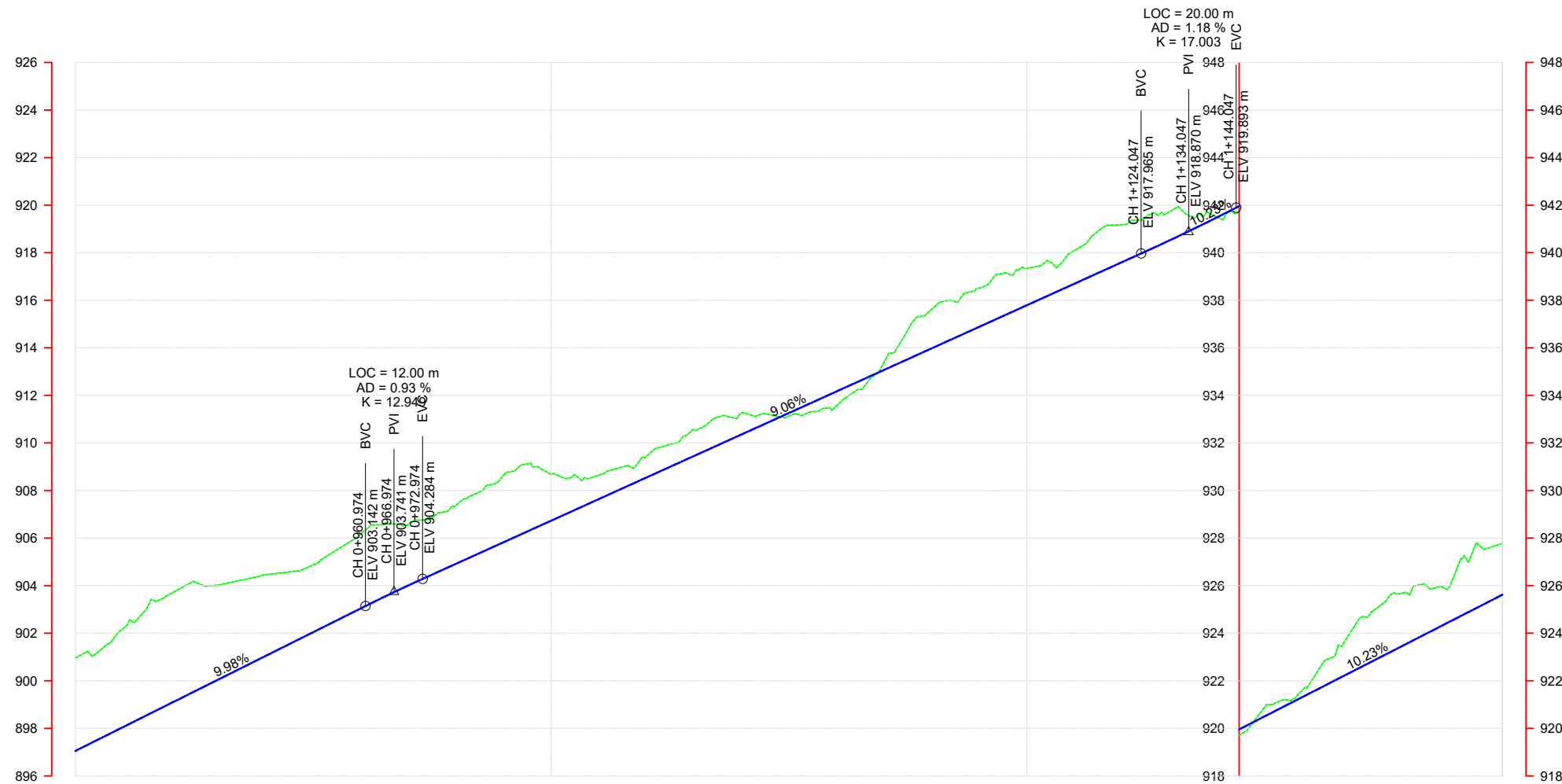
ISSUED FOR CONSTRUCTION

Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>ADIT 3 TO TSAMANG BANJAR FARM ROAD PROFILE (Chainage 600 - 900M)</b>					
SHEET 4 OF 19					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-ADIT-3-B/S-ROAD-2024-04		REV	NA

NOTE:

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CHAINAGE : 0+900 - 1+200

IP No.	CO-ORDINATES(m)	
	EASTING	NORTHING
IP59	322300.746	3025958.463
IP60	322304.033	3025978.436
IP61	322299.735	3026003.465
IP62	322290.128	3026021.921
IP64	322273.189	3026049.984
IP85	322257.767	3026073.244
IP90	322245.884	3026088.918
IP91	322231.727	3026102.065
IP92	322213.271	3026130.634
IP44	322189.758	3026141.758
IP65	322172.567	3026145.045
IP66	322155.375	3026166.787
IP46	322147.158	3026180.439


DESIGN LEVEL(m)	0+900		897.055	0+910		898.053	0+920		899.052	0+930		900.050	0+940		901.048	0+950		902.046	0+960		903.045	0+970		904.011	0+980		904.920	0+990		905.826	1+000		906.731	1+010		907.637	1+020		908.543	1+030		909.448	1+040		910.354	1+050		911.259	1+060		912.165	1+070		913.070	1+080		913.976	1+090		914.882	1+100		915.787	1+110		916.693	1+120		917.598	1+130		918.514	1+140		919.484	1+150		920.503	1+160		921.526	1+170		922.549	1+180		923.572	1+190		924.595	1+200		925.618																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
EXISTING LEVEL(m)	0+900		900.960	0+910		902.194	0+920		903.663	0+930		904.027	0+940		904.462	0+950		904.872	0+960		906.180	0+970		906.578	0+980		907.373	0+990		908.644	1+000		908.697	1+010		908.648	1+020		909.425	1+030		910.556	1+040		911.254	1+050		911.128	1+060		911.553	1+070		913.394	1+080		915.620	1+090		916.511	1+100		917.335	1+110		918.083	1+120		919.179	1+130		919.714	1+140		919.503	1+150		920.887	1+160		922.033	1+170		924.631	1+180		925.686	1+190		926.485	1+200		927.776																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
CHAINAGE(Km)	0+900			0+910			0+920			0+930			0+940			0+950			0+960			0+970			0+980			0+990			1+000			1+010			1+020			1+030			1+040			1+050			1+060			1+070			1+080			1+090			1+100			1+110			1+120			1+130			1+140			1+150			1+160			1+170			1+180			1+190			1+200																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
HORIZONTAL SCHEMATIC		L=7.271	L=20.241		L=25.396		L=20.807		L=32.779		L=27.908		L=19.670		L=19.321		L=34.012		L=26.011		L=17.503		L=27.718		L=15.934		L=5.430																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			

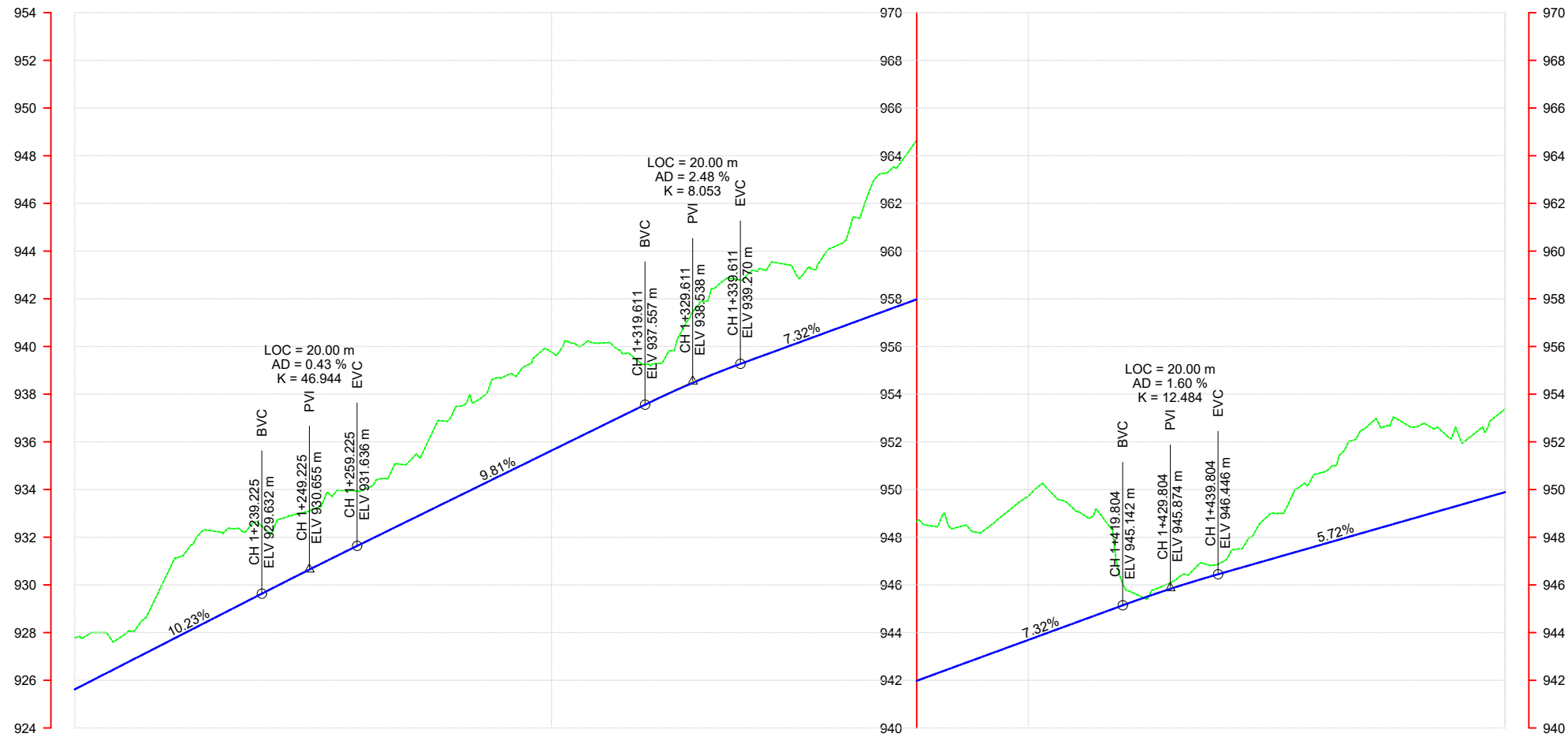
NOTE:

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ISSUED FOR CONSTRUCTION

Rev	Modification	Drawn:	Checked:	Recommended:	Approved:
Client: <div>DORJILUNG HYDROPOWER PROJECT</div>					
Project: <div>DORJILUNG HYDROPOWER PROJECT</div> <div>(1125 MW)</div> <div>MONGAR, BHUTAN</div>					
Title: <div>ADIT 3 TO TSAMANG BANJAR FARM ROAD</div> <div>PROFILE (Chainage 900 - 1200M)</div> <div>SHEET 5 OF 19</div>					
CONSULTANT:					
	Designed	NAME	SIG.		
	Drawn				
	Checked				
	Approved				
	Issued Date	NOV 2024			
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-ADIT-3-B/S-ROAD-2024-05			REV NA



CHAINAGE : 1+200 - 1+500

IP No.	CO-ORDINATES(m)	
	EASTING	NORTHING
IP46	322147.158	3026180.439
IP47	322145.009	3026196.746
IP48	322135.655	3026217.288
15	322124.910	3026236.186
IP68	322114.165	3026259.256
IP69	322098.490	3026282.263
IP71	322079.276	3026300.845
16	322058.039	3026324.357
17	322052.350	3026344.014
IP83	322041.606	3026352.610
IP82	322034.527	3026355.897
IP33	322024.540	3026349.071
IP30	322021.696	3026333.775
IP74	322007.538	3026317.974
IP76	321997.488	3026325.938
IP78	321988.893	3026338.073
IP79	321975.493	3026346.416

DESIGN LEVEL(m)	925.618		926.642		927.665		928.688		929.711		930.722		931.712		932.692		933.673		934.653		935.634		936.615		937.595		938.509		939.298		940.031		940.763		941.495		942.227		942.959		943.692		944.424		945.156		945.847		946.457		947.029		947.601		948.173		948.745		949.317		949.889	
EXISTING LEVEL(m)	927.776		927.858		930.713		932.231		932.326		933.179		933.942		935.142		937.487		938.726		939.758		940.140		939.258		941.545		942.772		943.413		944.244		947.279		948.468		948.179		949.713		949.089		945.966		946.113		946.891		948.843		950.627		952.502		952.646		952.436		953.374	
CHAINAGE(Km)	1+200		1+210		1+220		1+230		1+240		1+250		1+260		1+270		1+280		1+290		1+300		1+310		1+320		1+330		1+340		1+350		1+360		1+370		1+380		1+390		1+400		1+410		1+420		1+430		1+440		1+450		1+460		1+470		1+480		1+490		1+500	
HORIZONTAL SCHEMATIC	L=11.016		L=22.571		L=21.252		L=21.252		L=24.962		L=27.839		L=26.730		L=28.919		L=13.892		L=13.892		L=9.953		L=7.805		L=12.096		L=15.558		L=21.216		L=12.823		L=14.871		L=14.714																											
SUPER ELEVATION SCHEMATIC	1+200		1+210		1+220		1+230		1+240		1+250		1+260		1+270		1+280		1+290		1+300		1+310		1+320		1+330		1+340		1+350		1+360		1+370		1+380		1+390		1+400		1+410		1+420		1+430		1+440		1+450		1+460		1+470		1+480		1+490		1+500	

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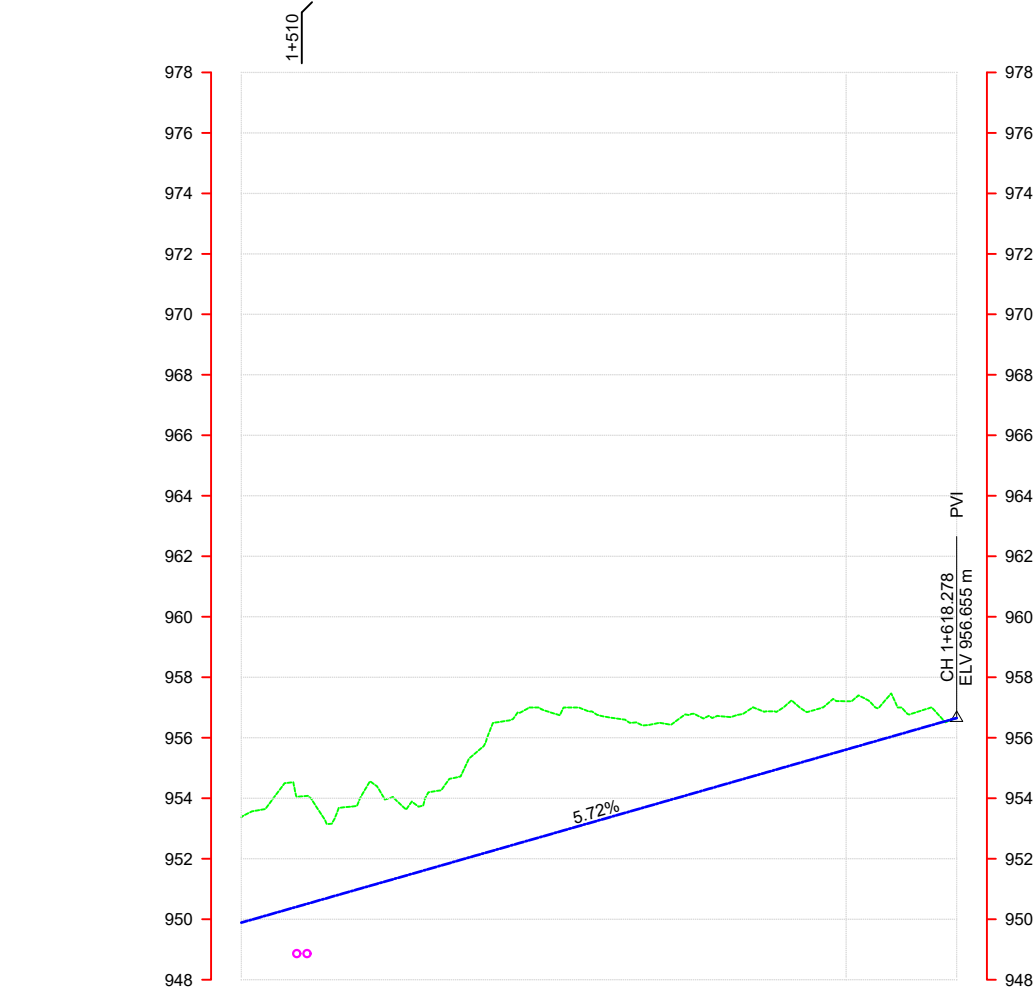


12.5 0 12.5 25 37.5 50 62.5m

SCALE=1:1250

ISSUED FOR CONSTRUCTION

Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>ADIT 3 TO TSAMANG BANJAR FARM ROAD PROFILE (Chainage 1200 - 1500M)</b>					
SHEET 6 OF 19					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	Original Scale	DRAWING NO.		REV	
A3	AS SHOWN	DHPP-ADIT-3-B/S-ROAD-2024-06		NA	



DESIGN LEVEL(m)	1+500	1+510	1+520	1+530	1+540	1+550	1+560	1+570	1+580	1+590	1+600	1+610	1+618.278
EXISTING LEVEL(m)	949.889	950.461	951.033	951.605	952.177	952.749	953.321	953.893	954.465	955.037	955.609	956.181	956.655
CHAINAGE(Km)	1+500	1+510	1+520	1+530	1+540	1+550	1+560	1+570	1+580	1+590	1+600	1+610	1+618.278
HORIZONTAL SCHEMATIC	L=7.517	L=12.651	L=14.781	L=25.384	L=21.084	L=18.951	L=15.319						
SUPER ELEVATION SCHEMATIC	SE:4%												

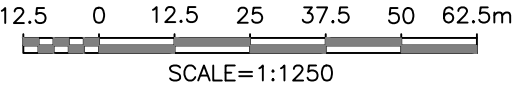
CHAINAGE : 1+500 - 1+618.278

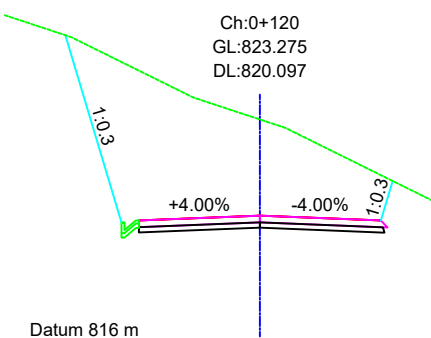
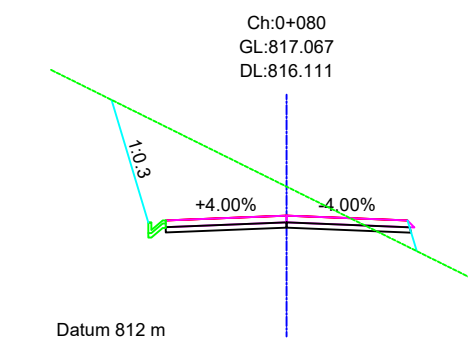
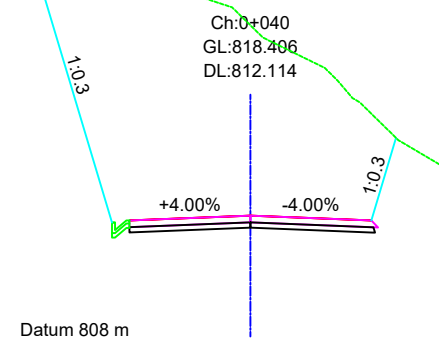
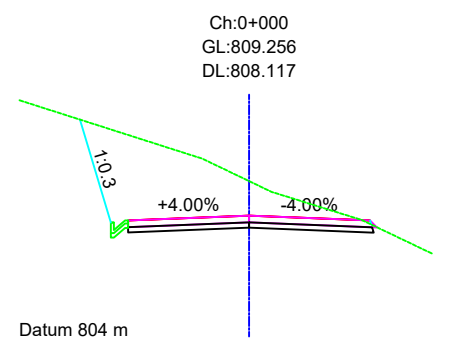
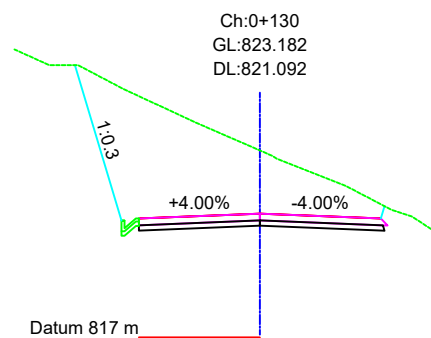
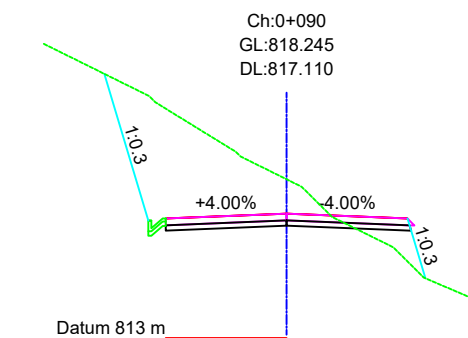
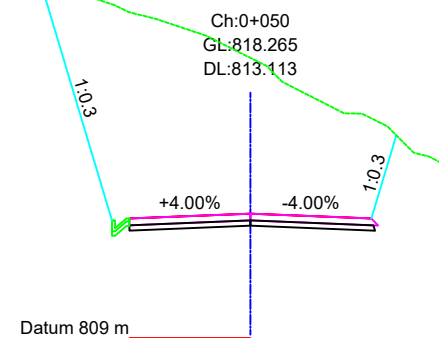
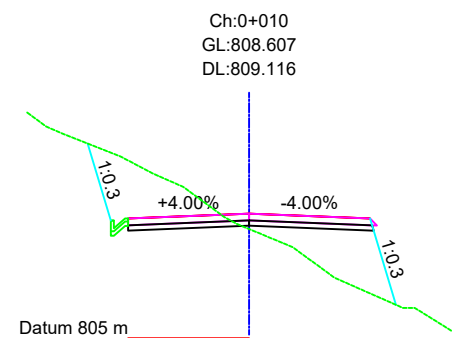
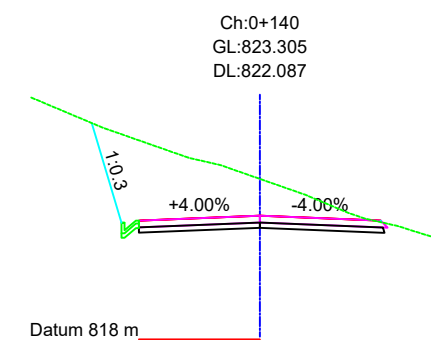
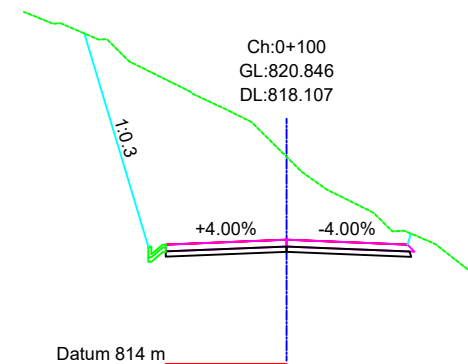
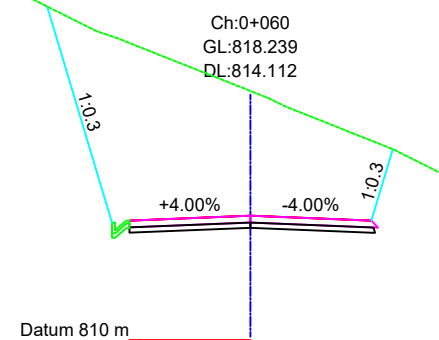
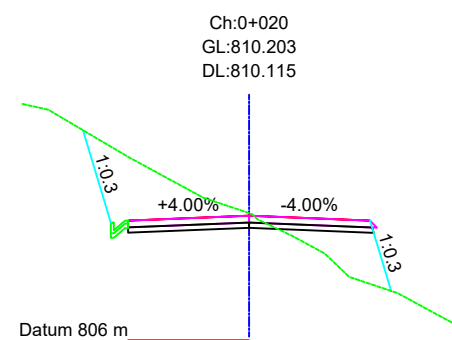
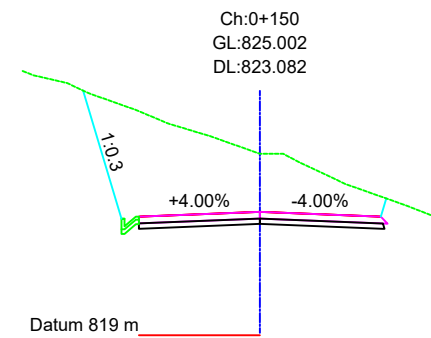
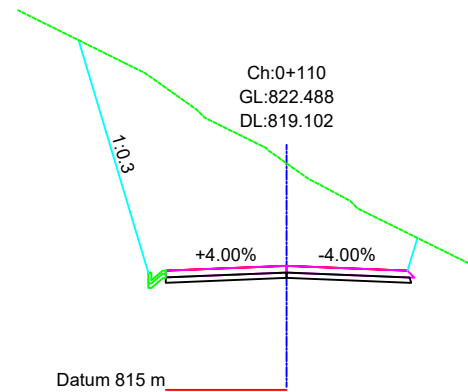
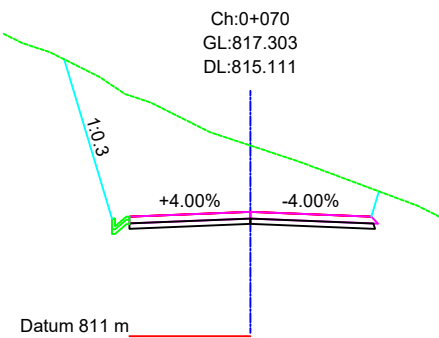
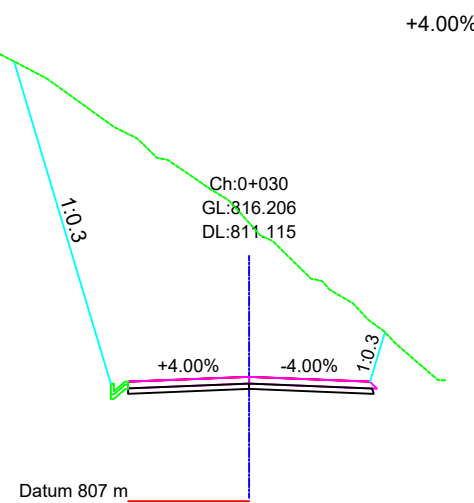
IP No.	CO-ORDINATES(m)	
	EASTING	NORTHING
IP79	321975.493	3026346.416
IP77	321969.931	3026351.472
IP31	321969.425	3026364.113
IP32	321979.159	3026375.237
18	321992.685	3026397.612
IP80	322001.534	3026417.589
IP81	322015.060	3026430.858

ISSUED FOR CONSTRUCTION

Rev	Modification	Drawn:	Checked:	Recommended:	Approved:		
Client: DORJILUNG HYDROPOWER PROJECT							
Project: DORJILUNG HYDROPOWER PROJECT (1125 MW) MONGAR, BHUTAN							
Title: ADIT 3 TO TSAMANG BANJAR FARM ROAD PROFILE (Chainage 1500 - 1660M)							
SHEET 7 OF 19							
CONSULTANT: 	NAME	SIG.					
	Designed						
	Drawn						
	Checked						
	Approved						
Issued Date		NOV 2024					
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-ADIT-3-B/S-ROAD-2024-07			REV NA		

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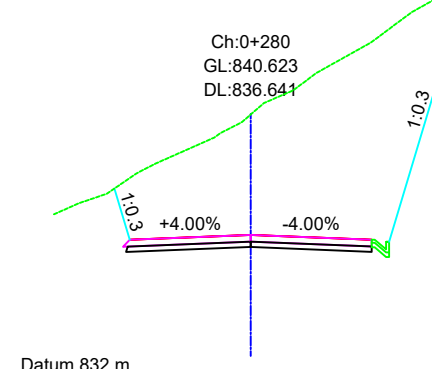
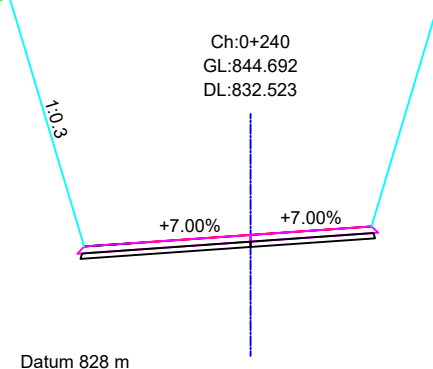
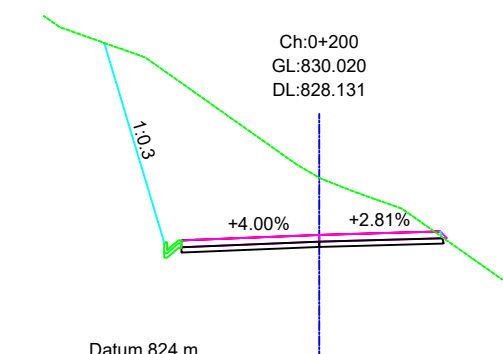
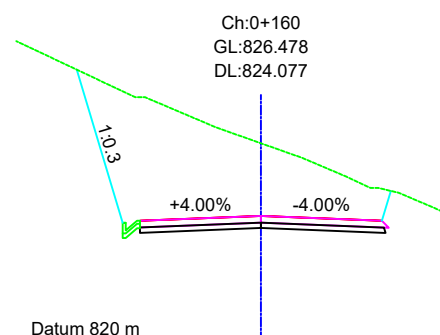
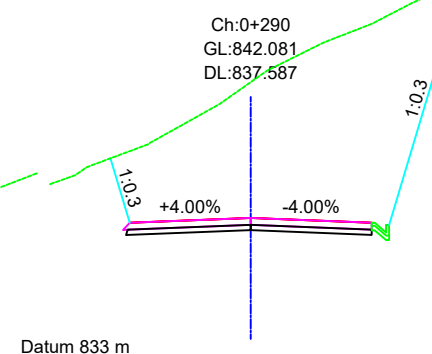
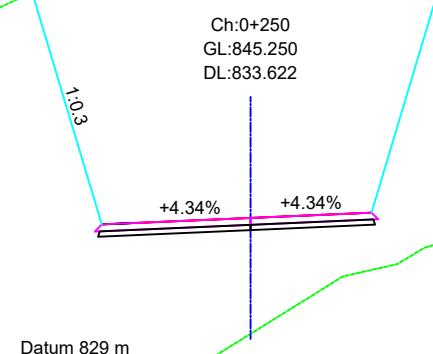
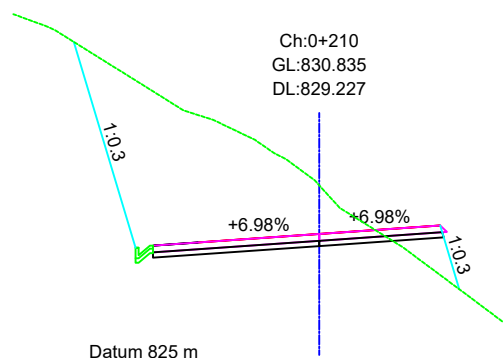
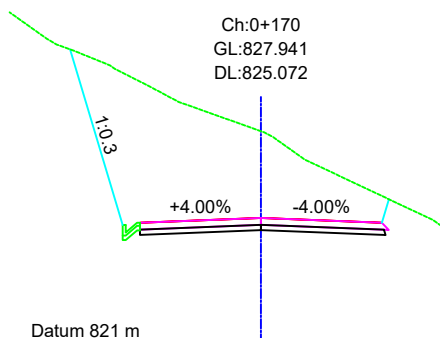
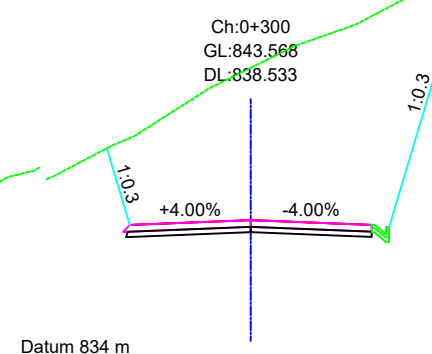
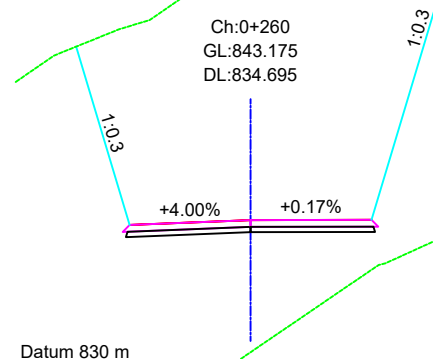
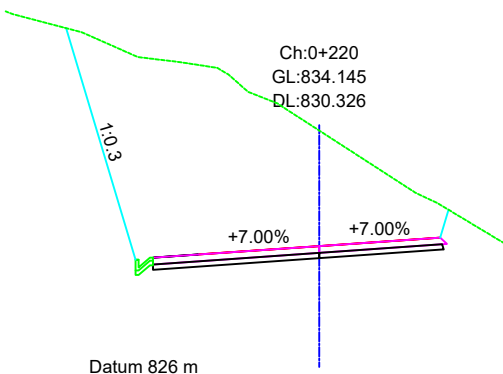
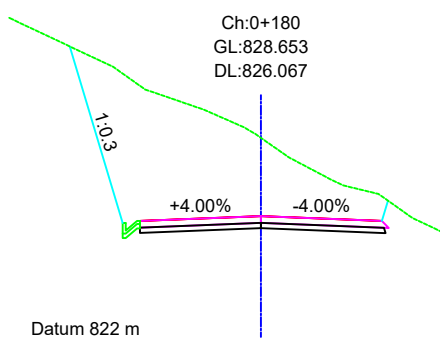
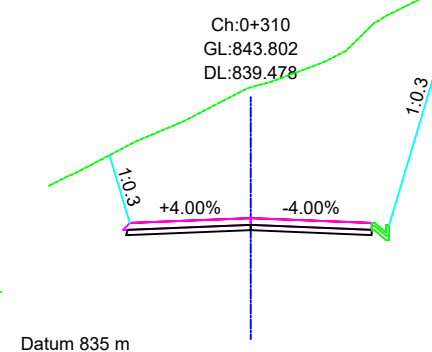
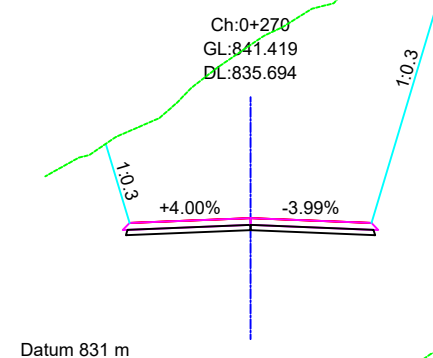
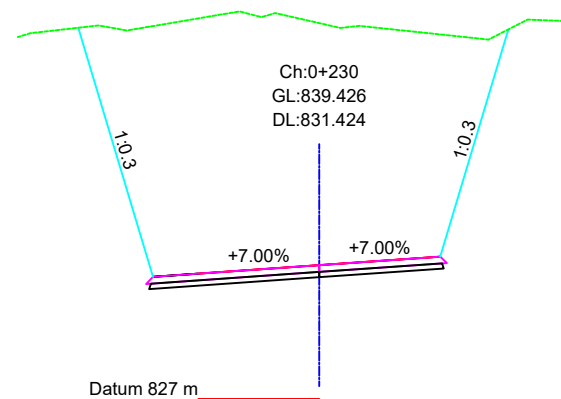
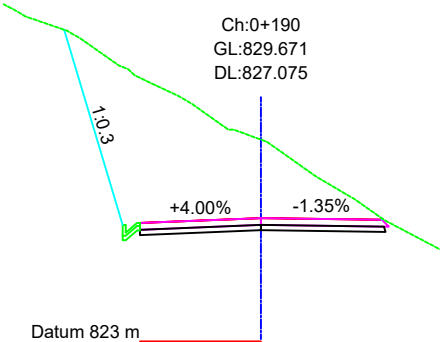
NOTE:

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**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn:	Checked:	Recommended:	Approved:
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>ADIT 3 TO TSAMANG BANJAR FARM ROAD CROSS SECTION</b>  SHEET 8 OF 19					
 Druk Green Consultancy		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-ADIT-3-B/S-ROAD-2024-08			REV NA




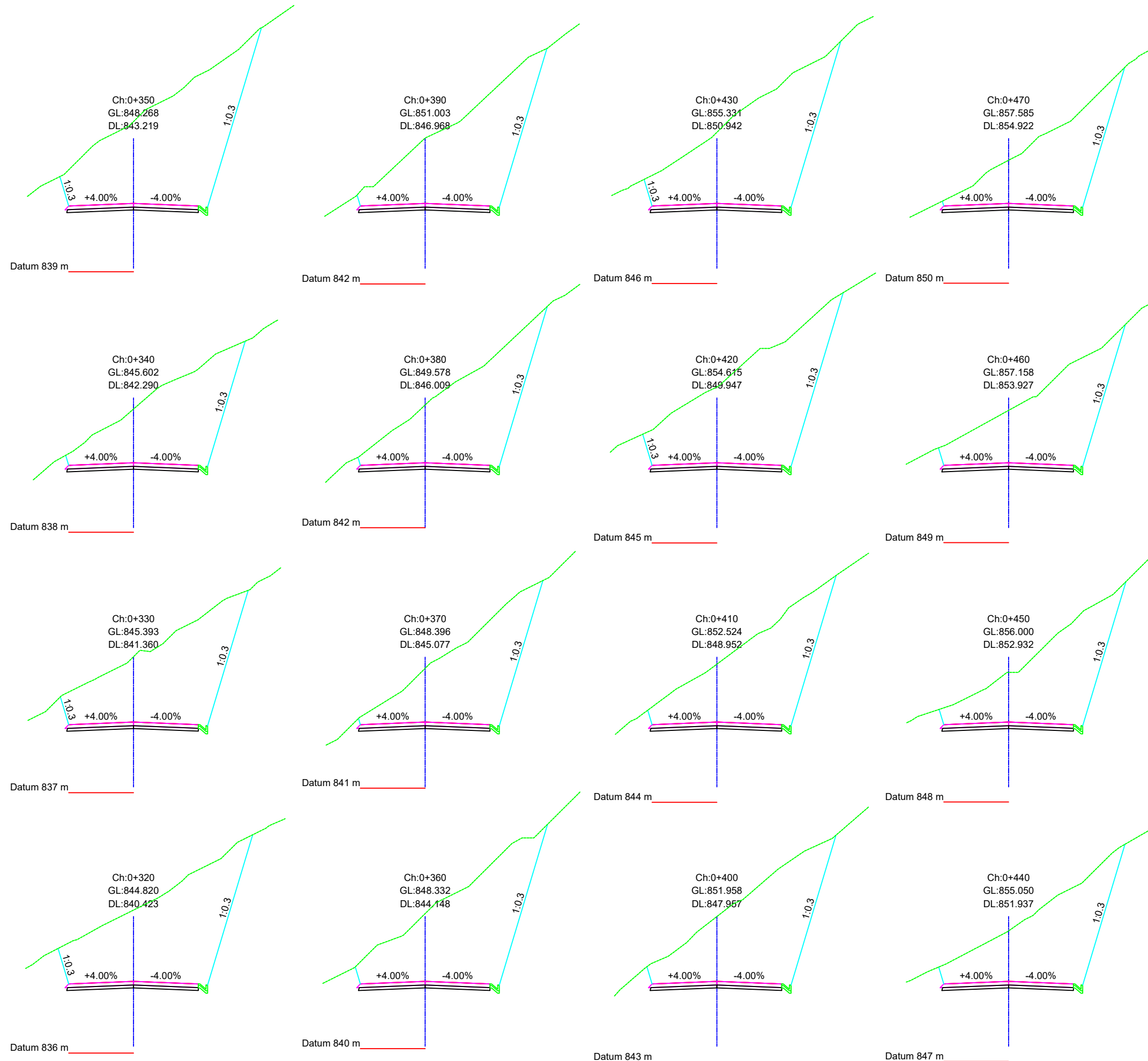
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**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn:	Checked:	Recommended:	Approved:
Client: <div>DORJILUNG HYDROPOWER PROJECT</div> <div>(1125 MW)</div> <div>MONGAR, BHUTAN</div>					
Title: <div>ADIT 3 TO TSAMANG BANJAR FARM ROAD</div> <div>CROSS SECTION</div> <div>SHEET 9 OF 19</div>					
<div>CONSULTANT:</div> <div></div> <div>འབྲུག་གླིང་ཁྲུང་གི་ཚོལ་སྒྲུབ་</div> <div>Druk Green Consultancy</div>		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-ADIT-3-B/S-ROAD-2024-09			REV NA

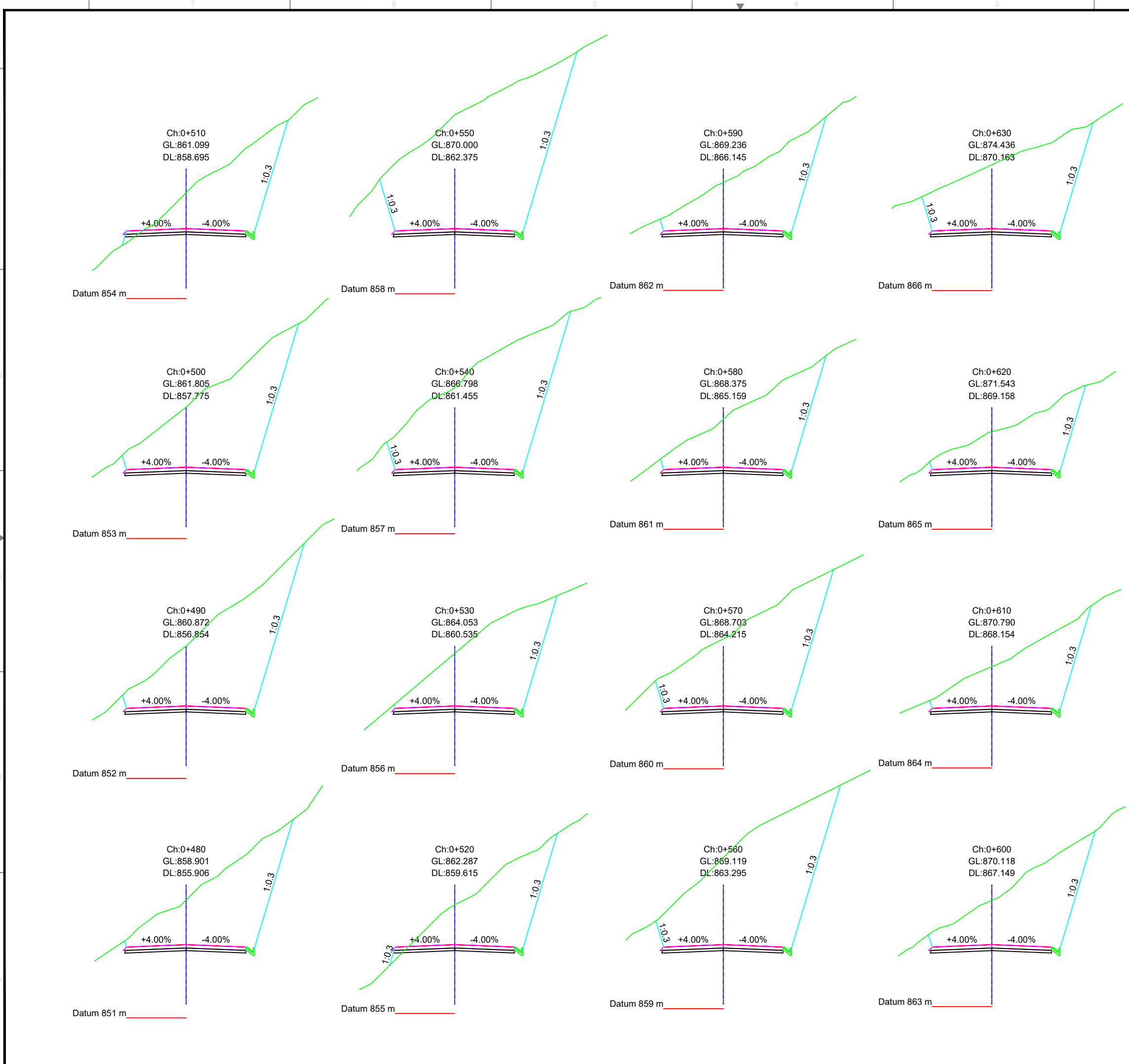


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**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>ADIT 3 TO TSAMANG BANJAR FARM ROAD CROSS SECTION</b>					
SHEET 10 OF 19					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	Original Scale	DRAWING NO.			REV
A3	AS SHOWN	DHPP-ADIT-3-B/S-ROAD-2024-10			NA

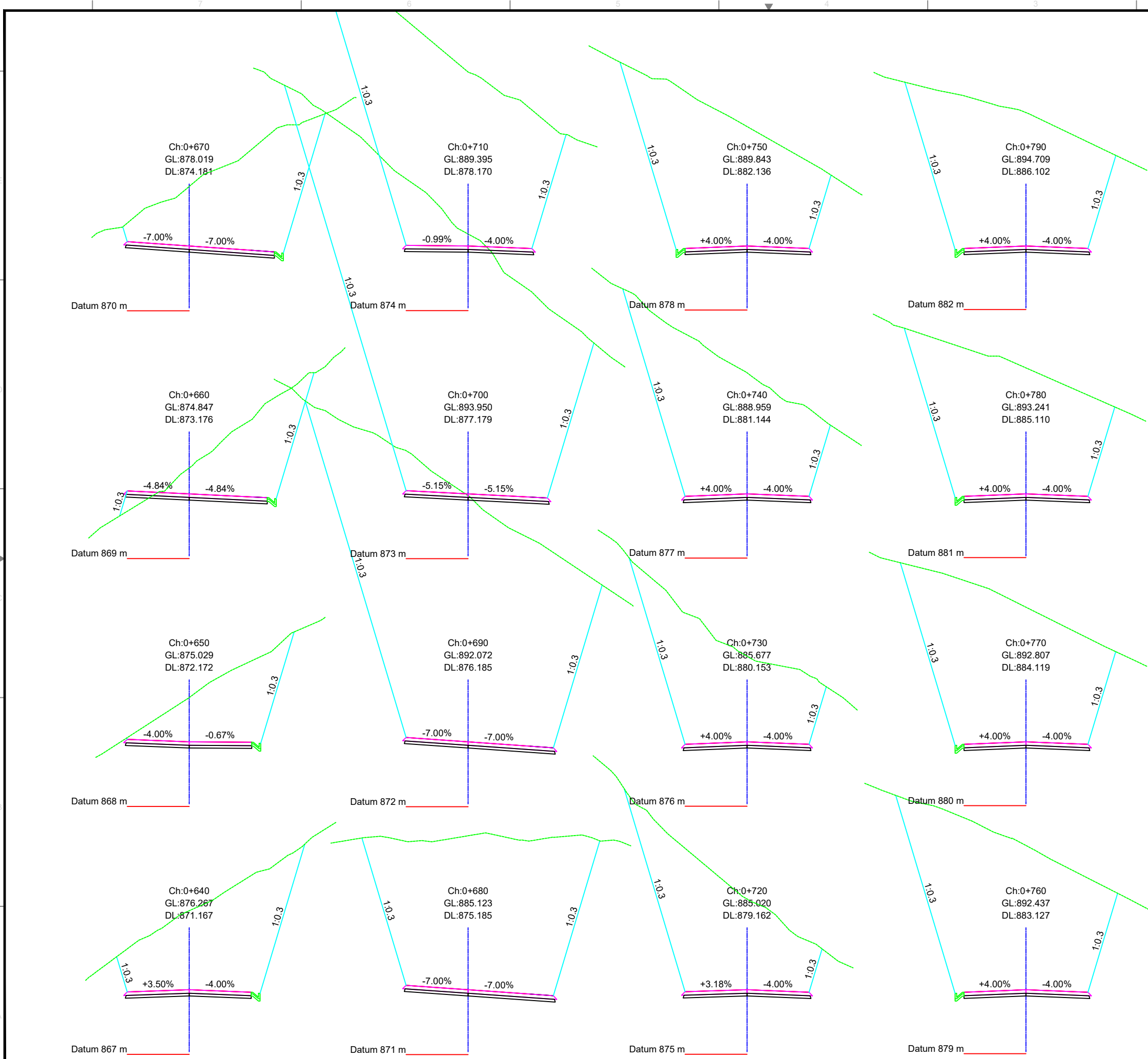


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**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn:	Checked:	Recommended:	Approved:
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>ADIT 3 TO TSAMANG BANJAR FARM ROAD</b> <b>CROSS SECTION</b>					
SHEET 11 OF 19					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	Original Scale	DRAWING NO.		REV	
A3	AS SHOWN	DHPP-ADIT-3-B/S-ROAD-2024-11		NA	



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ISSUED FOR CONSTRUCTION

Rev	Modification	Drawn	Checked	Recommended	Approved
Client: DORJILUNG HYDROPOWER PROJECT					
Project: DORJILUNG HYDROPOWER PROJECT (1125 MW) MONGAR, BHUTAN					
Title: ADIT 3 TO TSAMANG BANJAR FARM ROAD CROSS SECTION					
SHEET 12 OF 19					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	Original Scale	DRAWING NO.		REV	
A3	AS SHOWN	DHPP-ADIT-3-B/S-ROAD-2024-12		NA	

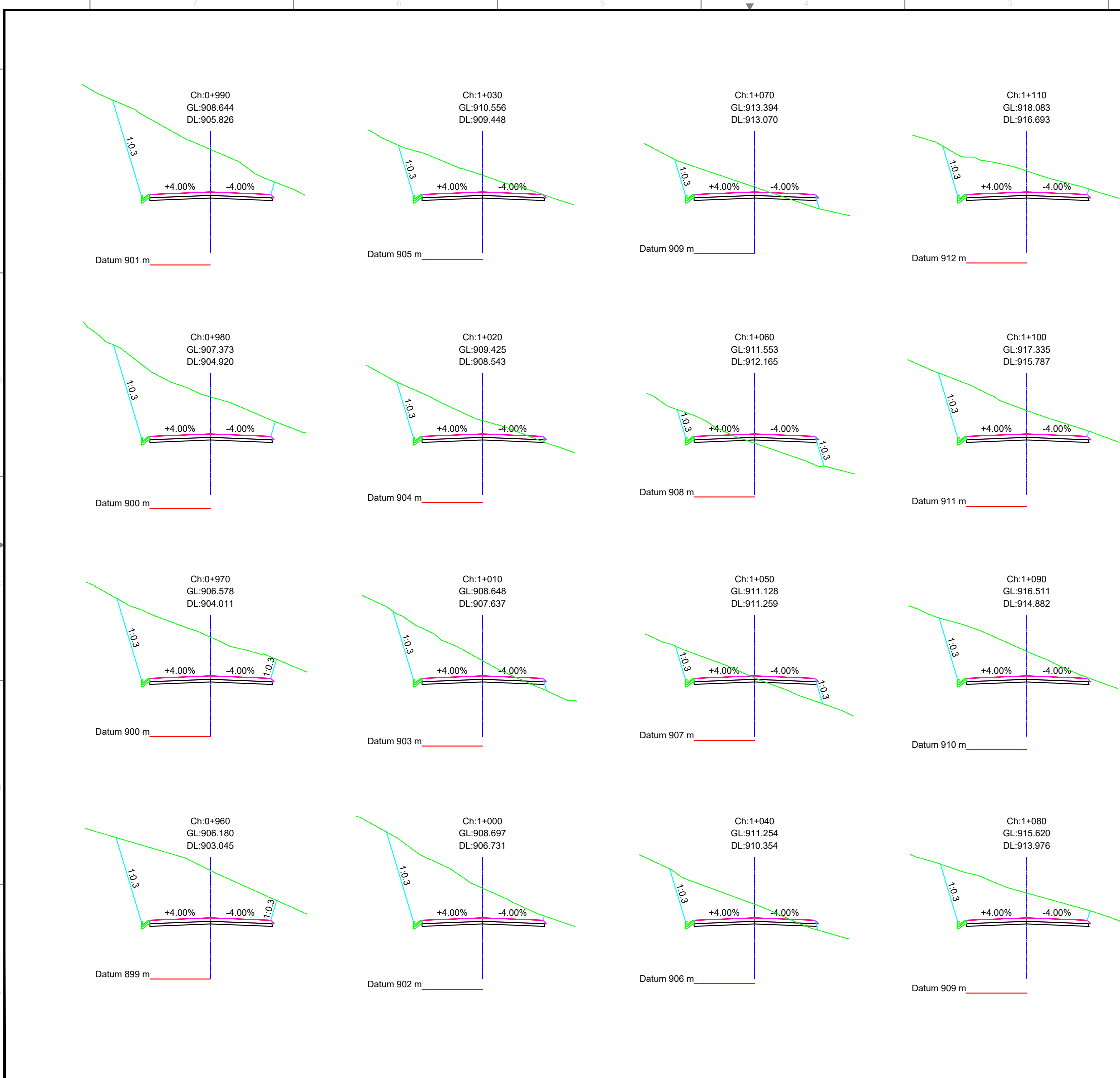


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**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>ADIT 3 TO TSAMANG BANJAR FARM ROAD</b> <b>CROSS SECTION</b> SHEET 13 OF 19					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-ADIT-3-B/S-ROAD-2024-13			REV NA

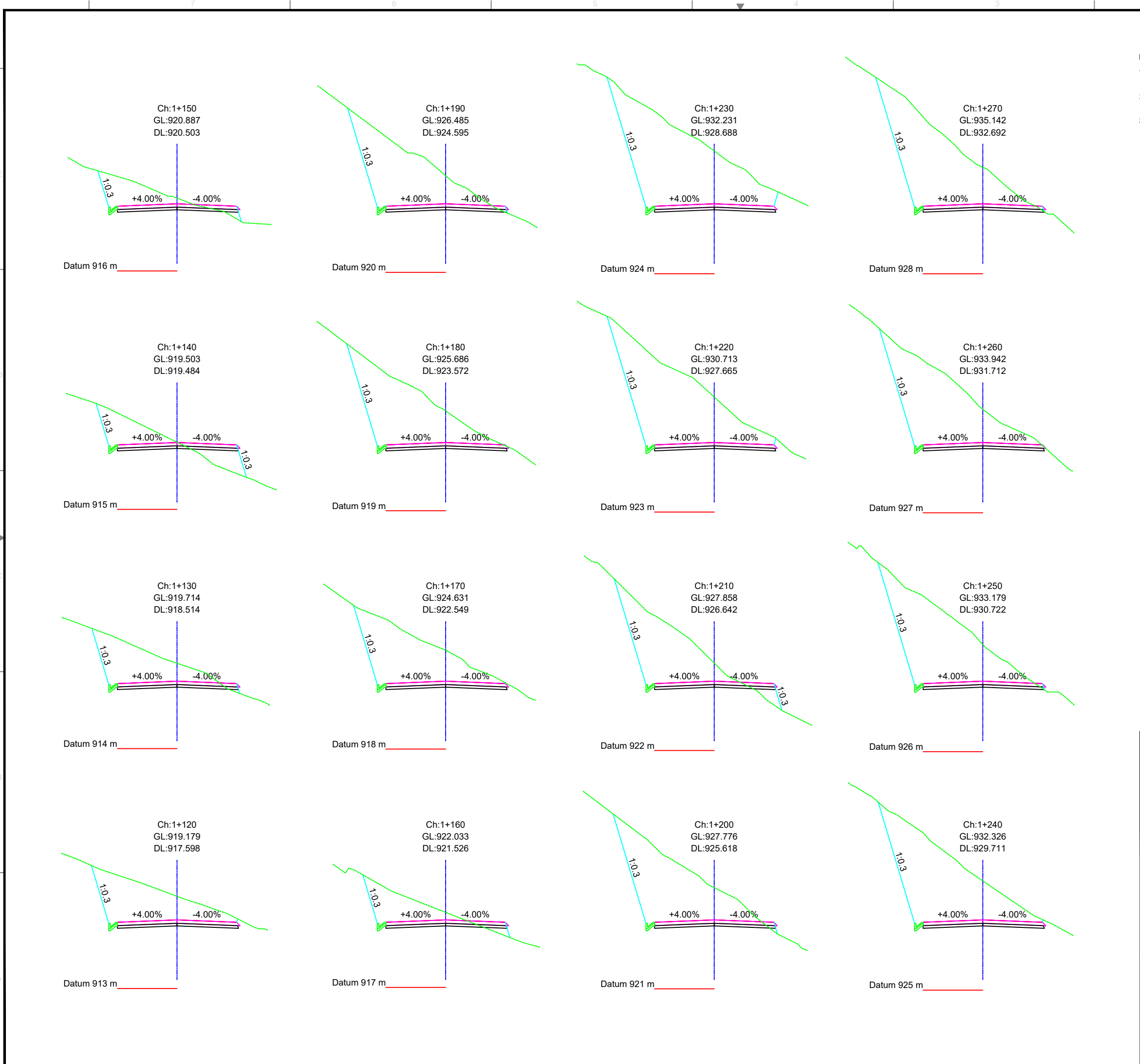


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**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn:	Checked:	Recommended:	Approved:
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>ADIT 3 TO TSAMANG BANJAR FARM ROAD CROSS SECTION</b>  SHEET 14 OF 19					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-ADIT-3-B/S-ROAD-2024-14			REV NA

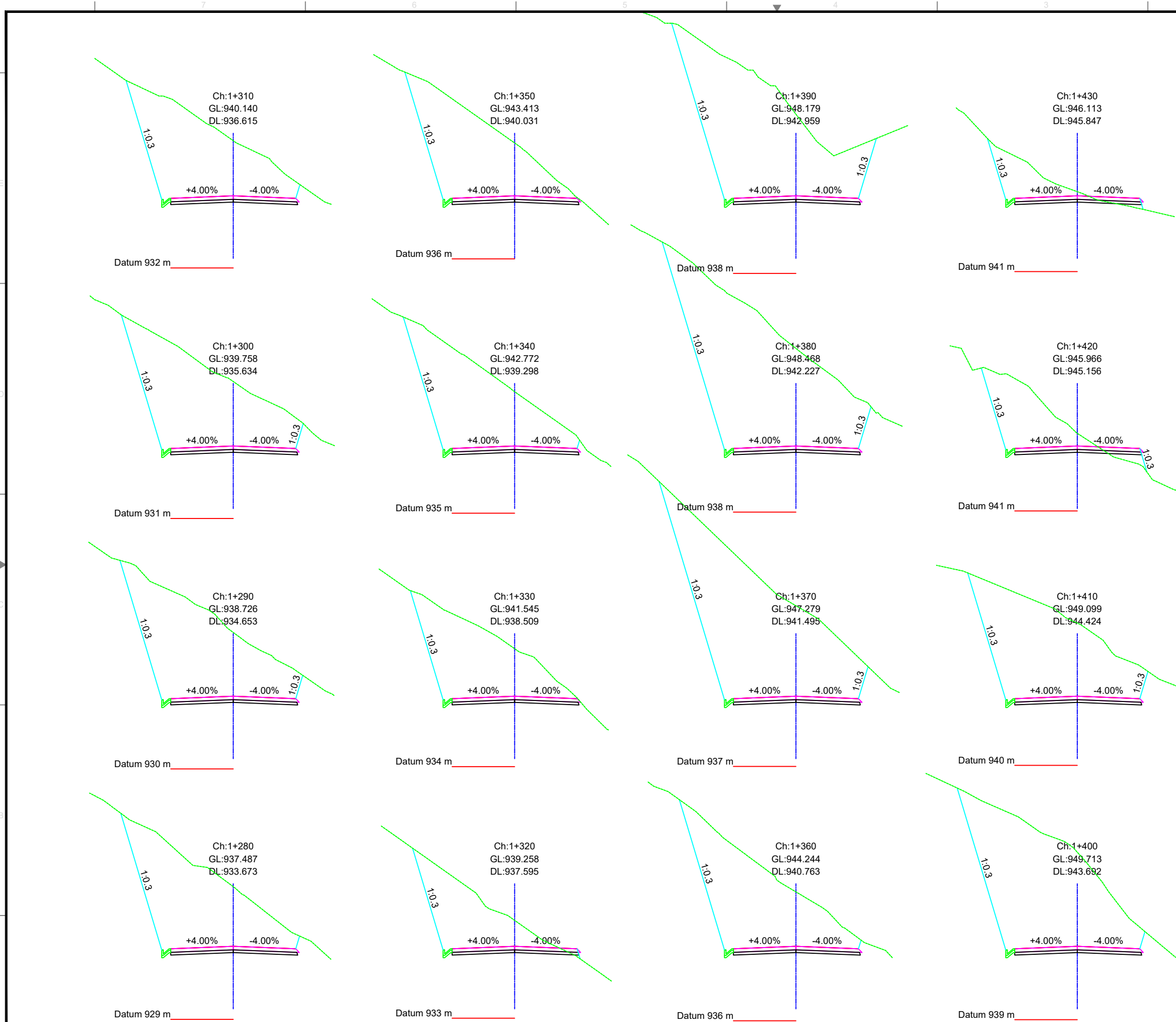


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ISSUED FOR CONSTRUCTION

Rev	Modification	Drawn:	Checked:	Recommended:	Approved:
Client: DORJILUNG HYDROPOWER PROJECT					
Project: DORJILUNG HYDROPOWER PROJECT (1125 MW) MONGAR, BHUTAN					
Title: ADIT 3 TO TSAMANG BANJAR FARM ROAD CROSS SECTION					
SHEET 15 OF 19					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-ADIT-3-B/S-ROAD-2024-15		REV	NA

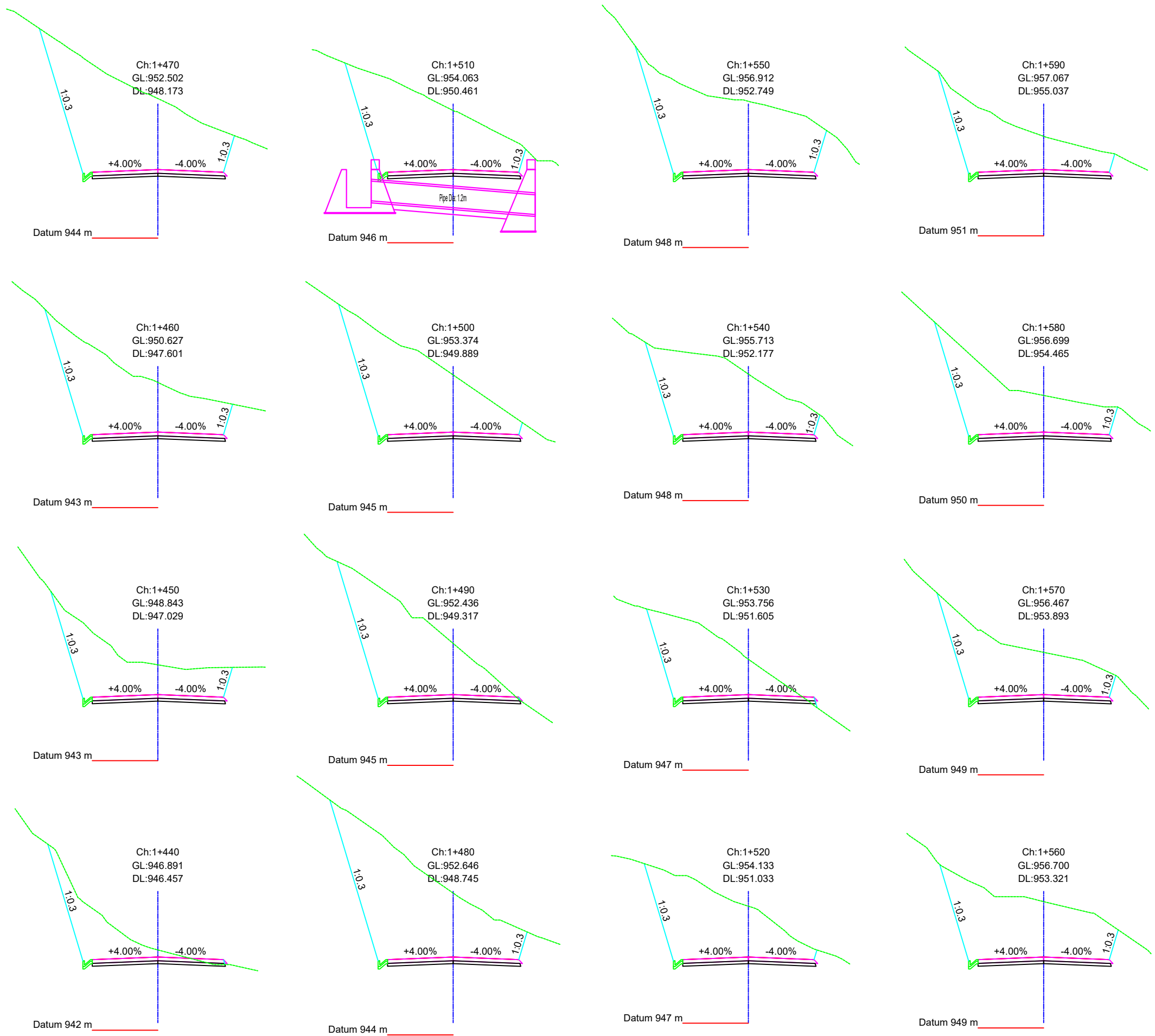


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Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>ADIT 3 TO TSAMANG BANJAR FARM ROAD CROSS SECTION</b>					
SHEET 16 OF 19					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-ADIT-3-B/S-ROAD-2024-16		REV	NA

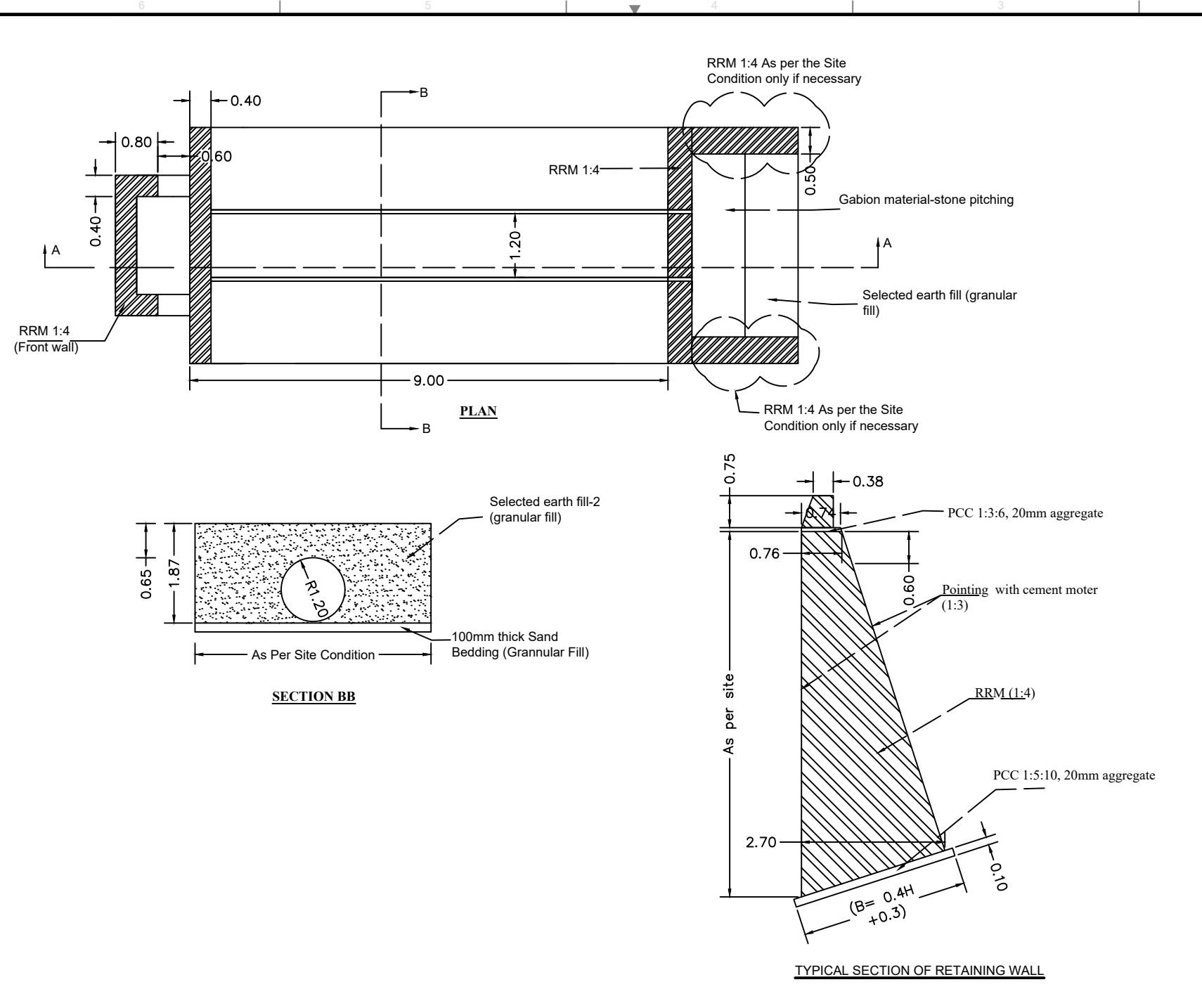
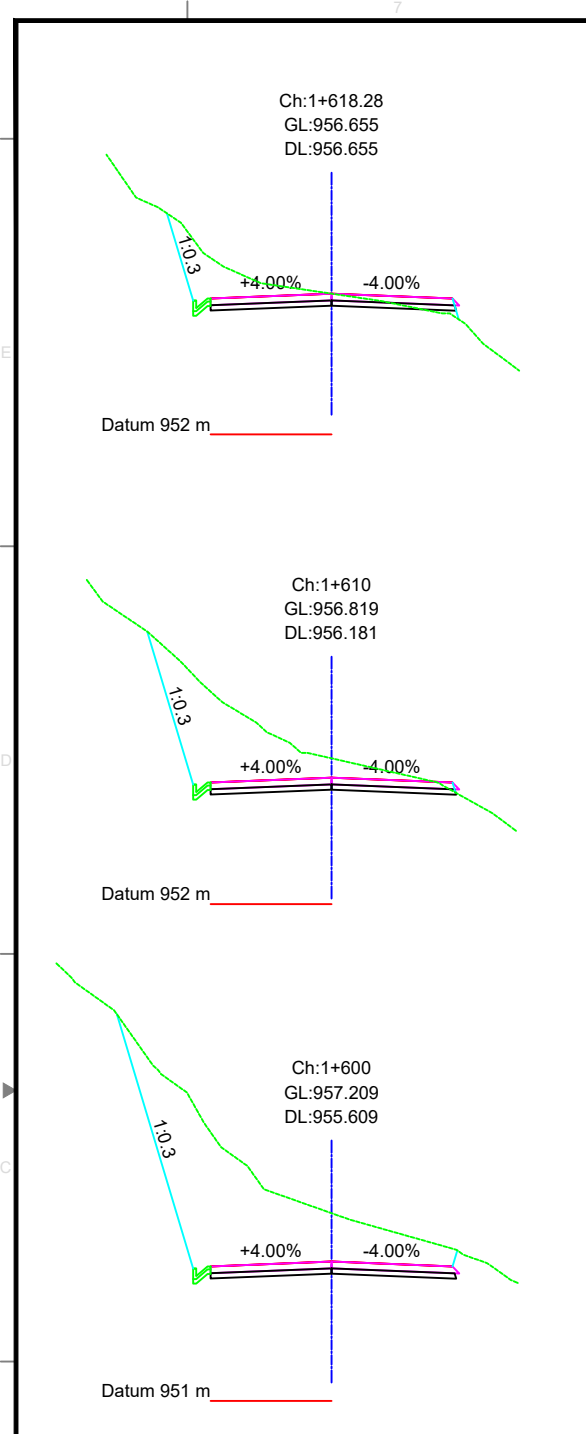


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Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>ADIT 3 TO TSAMANG BANJAR FARM ROAD</b> <b>CROSS SECTION</b>  SHEET 17 OF 19					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-ADIT-3-B/S-ROAD-2024-17		REV	NA

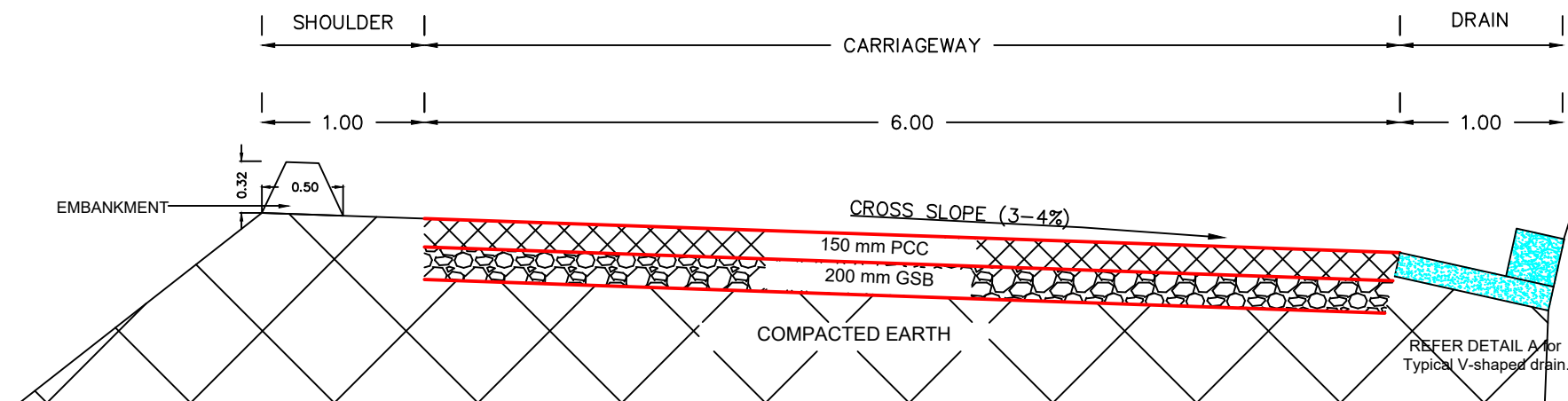


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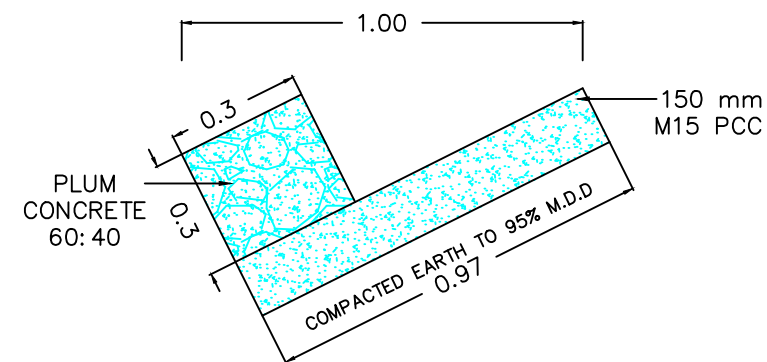


## ISSUED FOR CONSTRUCTION

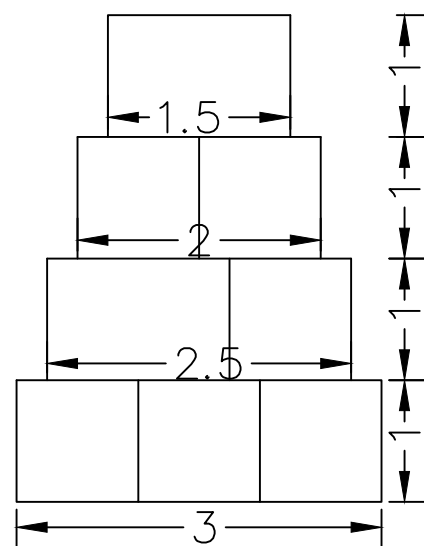
Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>ADIT 3 TO TSAMANG BANJAR FARM ROAD</b> <b>TYPICAL SECTION OF RETAINING WALL &amp; HUME PIPE</b>					
SHEET 18 OF 19					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	Original Scale	DRAWING NO.		REV	
A3	AS SHOWN	DHPP-ADIT-3-B/S-ROAD-2024-18		NA	



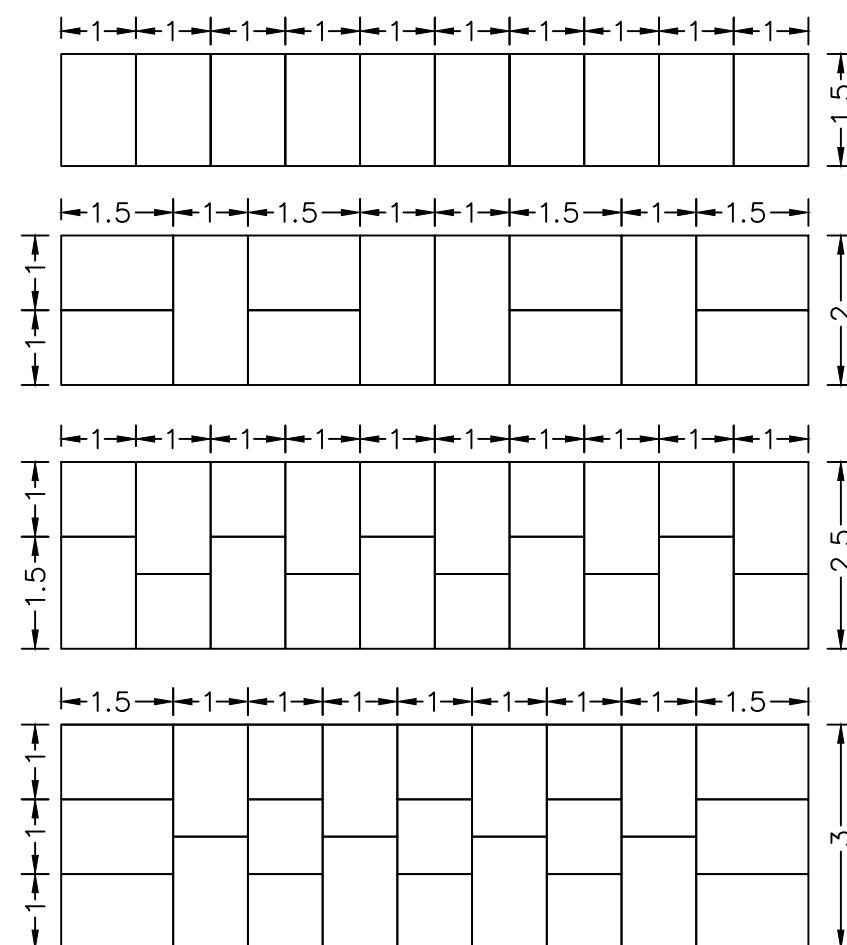
Typical One-way Camber Cross Slope in Super Elevated Sections for Double Lane.



DETAIL A: Typical V-shaped drain



Section of Gabion Wall.



Gabion Wall Plan.

FOURTH LAYER:  
 $1.5 \times 1 \times 1 = 10$

THIRD LAYER:  
 $1.5 \times 1 \times 1 = 8$   
 $2 \times 1 \times 1 = 4$

SECOND LAYER:  
 $1 \times 1 \times 1 = 10$   
 $1.5 \times 1 \times 1 = 10$

FIRST LAYER:  
 $1 \times 1 \times 1 = 9$   
 $1.5 \times 1 \times 1 = 14$

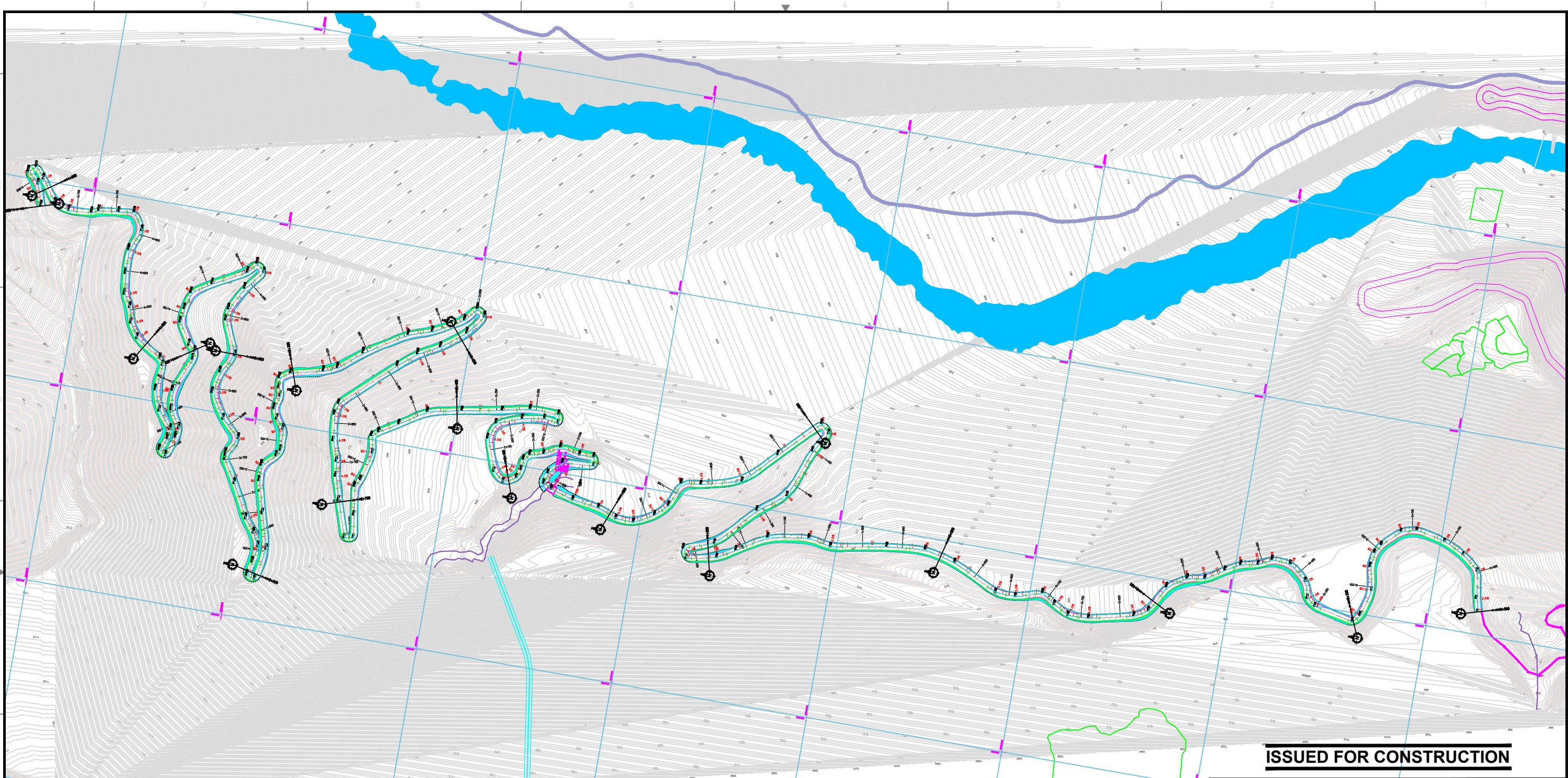
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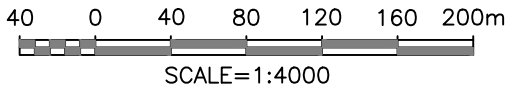
Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>ADIT 3 TO TSAMANG BANJAR FARM ROAD</b> <b>TYPICAL SECTION OF PAVEMENT LAYERS, DRAIN AND GABION WALL</b> SHEET 19 OF 19					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	Original Scale	DRAWING NO.		REV	
A3	AS SHOWN	DHPP-ADIT-3-B/S-ROAD-2024-19		NA	


# 4900.0m Improvement of Tsamang-Banjar Farm Road

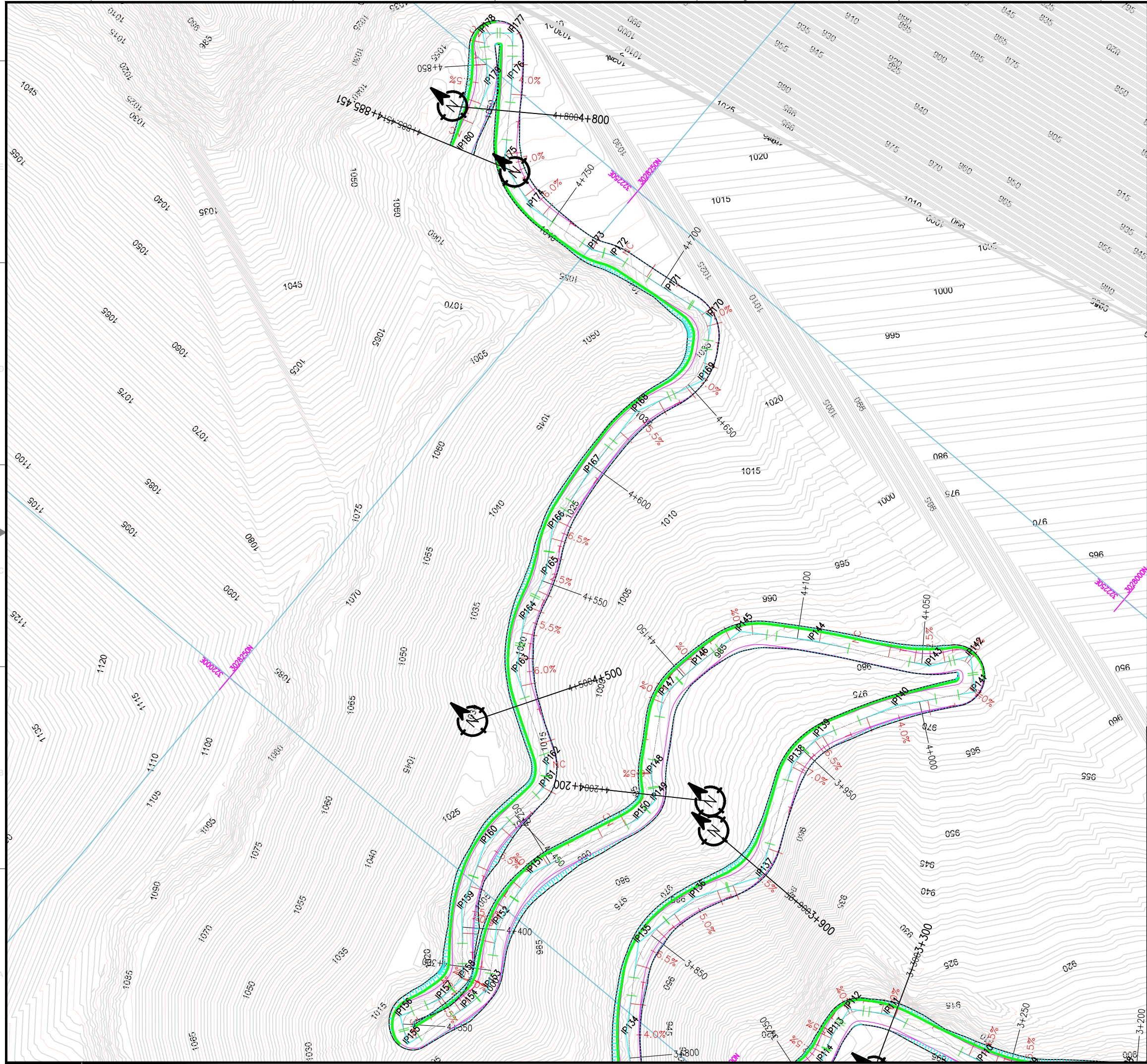


**ISSUED FOR CONSTRUCTION**

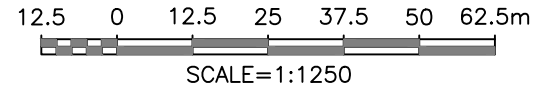
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Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD</b> <b>GENERAL PLAN</b>					
SHEET 01 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-TSAMANG-FARMROAD-2024-01		REV NA	

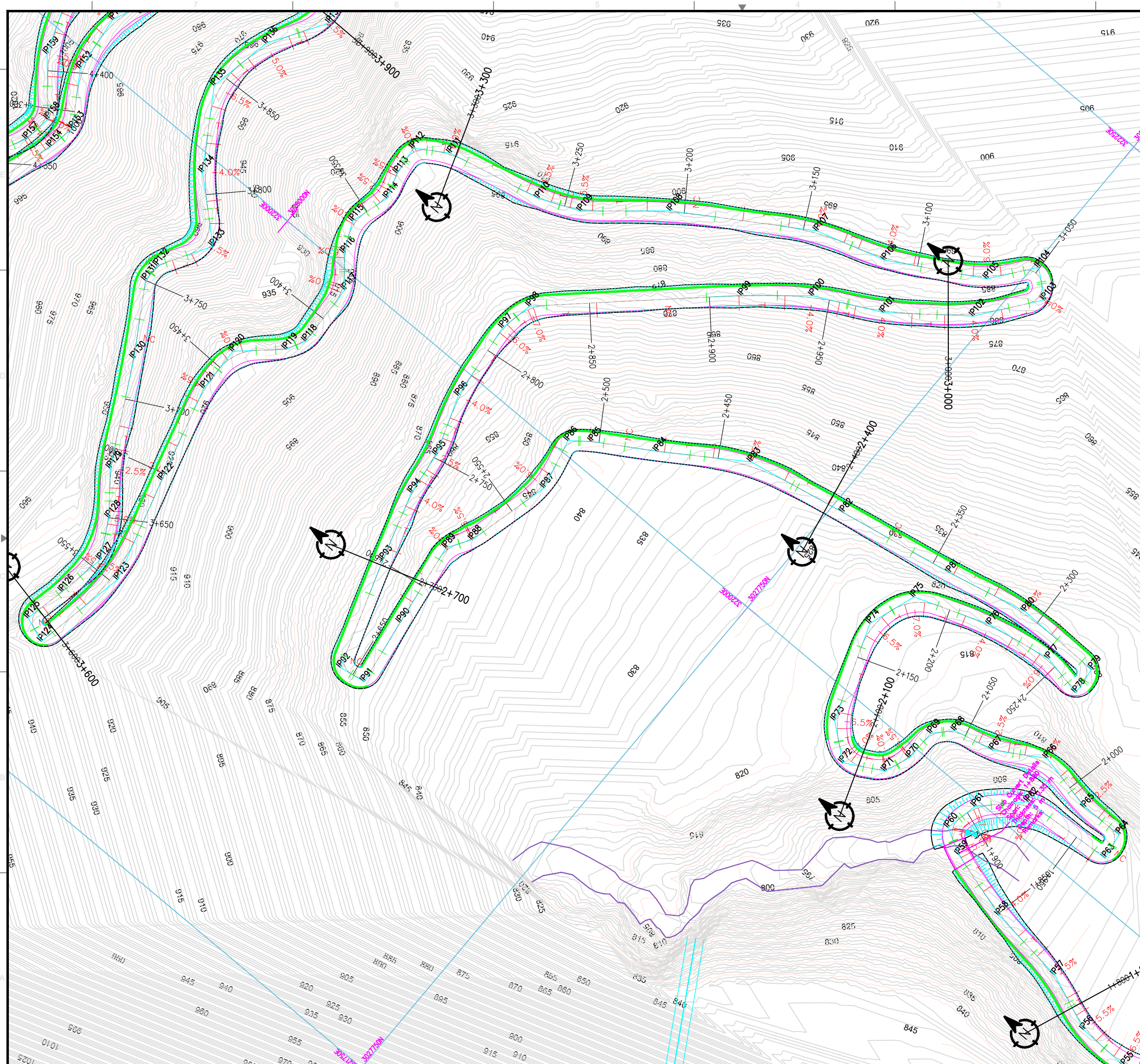


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**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD</b> <b>GENERAL PLAN</b>  SHEET 02 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	A3	Original Scale	AS SHOWN	DRAWING NO.	DHPP-TSAMANG-FARMROAD-2024-02
				REV	NA

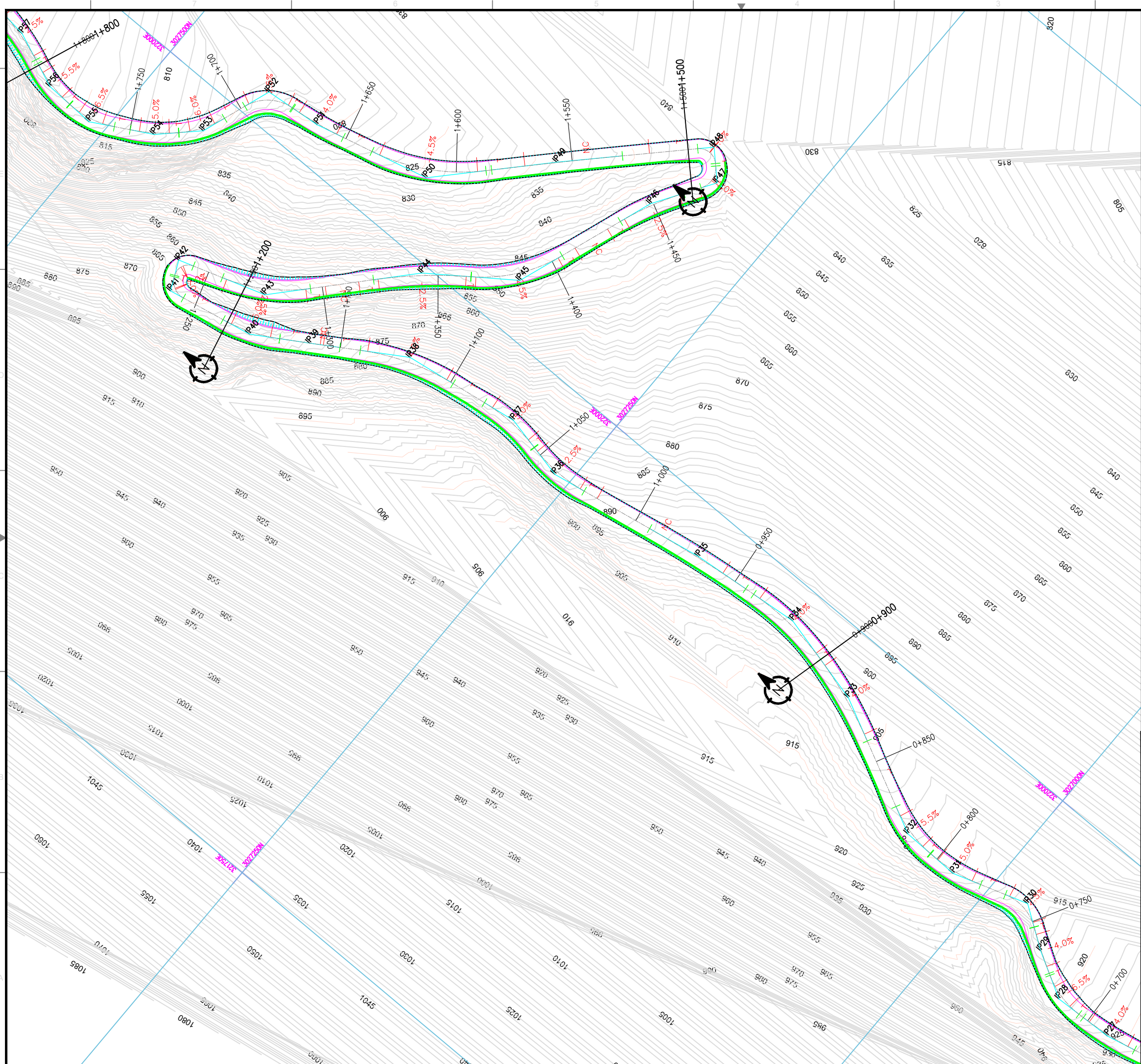


- NOTE:
1. ALL DIMENSIONS, ELEVATIONS & DETAILS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
  2. NO DIMENSION SHALL BE MEASURED FROM THE DRAWINGS. ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.
  3. ALL DIMENSIONS/DETAILS SHALL BE CHECKED ALONG WITH THE RELEVANT DRAWINGS BEFORE STARTING EXECUTION OF WORKS. DISCREPANCY, IF ANY, SHALL BE IMMEDIATELY BROUGHT TO THE NOTICE OF PROJECT AUTHORITY/CONSULTANT FOR REVIEW.

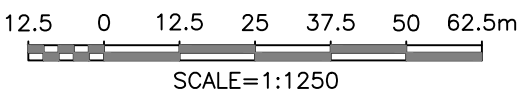


**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD</b> <b>GENERAL PLAN</b>					
SHEET 03 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	A3	Original Scale	AS SHOWN	DRAWING NO.	REV
				DHPP-TSAMANG-FARMROAD-2024-03	NA

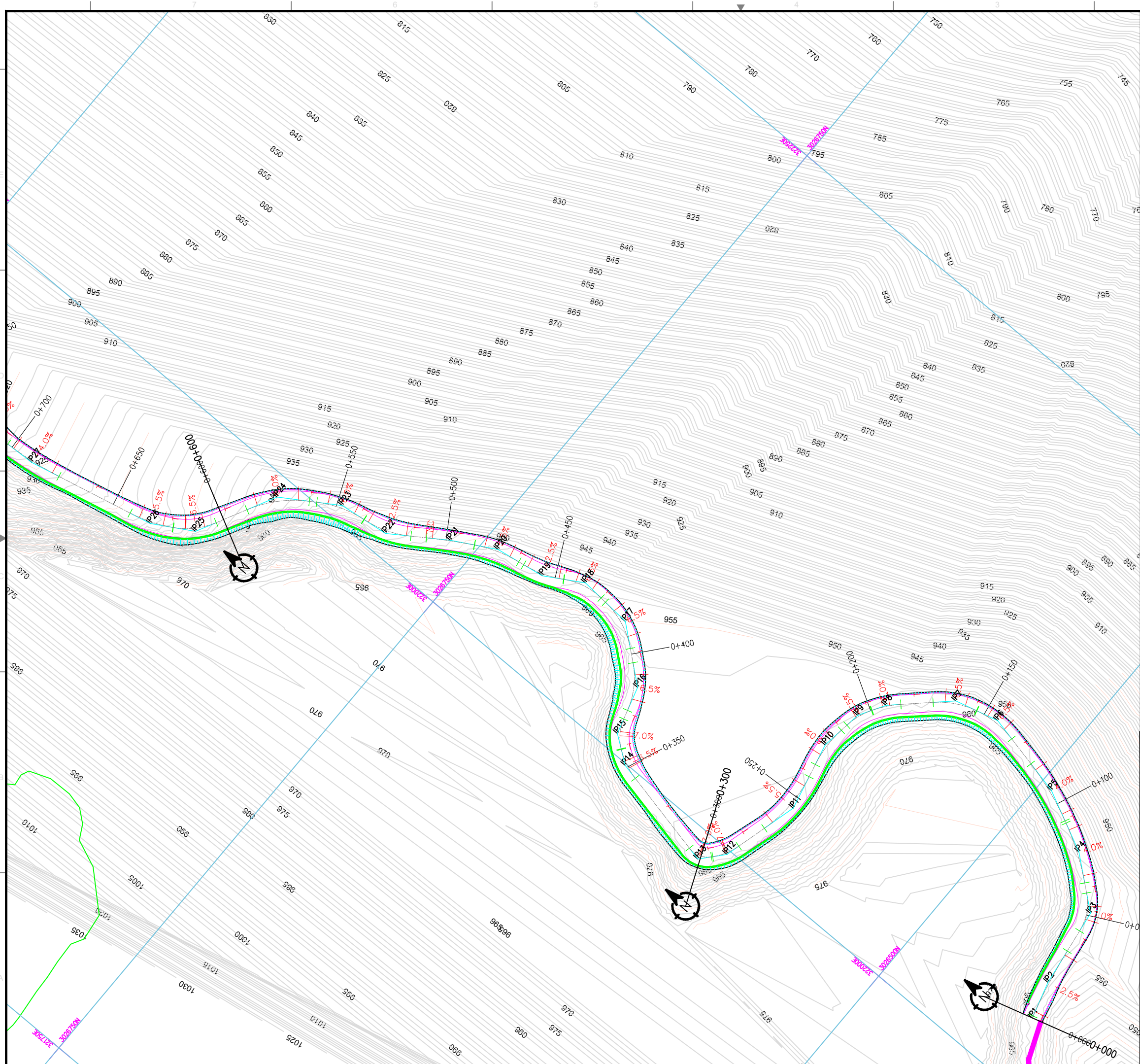


- NOTE:
1. ALL DIMENSIONS, ELEVATIONS & DETAILS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
  2. NO DIMENSION SHALL BE MEASURED FROM THE DRAWINGS. ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.
  3. ALL DIMENSIONS/DETAILS SHALL BE CHECKED ALONG WITH THE RELEVANT DRAWINGS BEFORE STARTING EXECUTION OF WORKS. DISCREPANCY, IF ANY, SHALL BE IMMEDIATELY BROUGHT TO THE NOTICE OF PROJECT AUTHORITY/CONSULTANT FOR REVIEW.

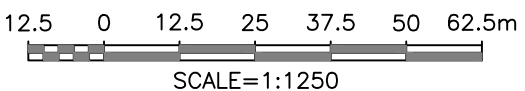


**ISSUED FOR CONSTRUCTION**


Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD</b> <b>GENERAL PLAN</b>  SHEET 04 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	A3	Original Scale	AS SHOWN	DRAWING NO.	REV
				DHPP-TSAMANG-FARMROAD-2024-04	NA

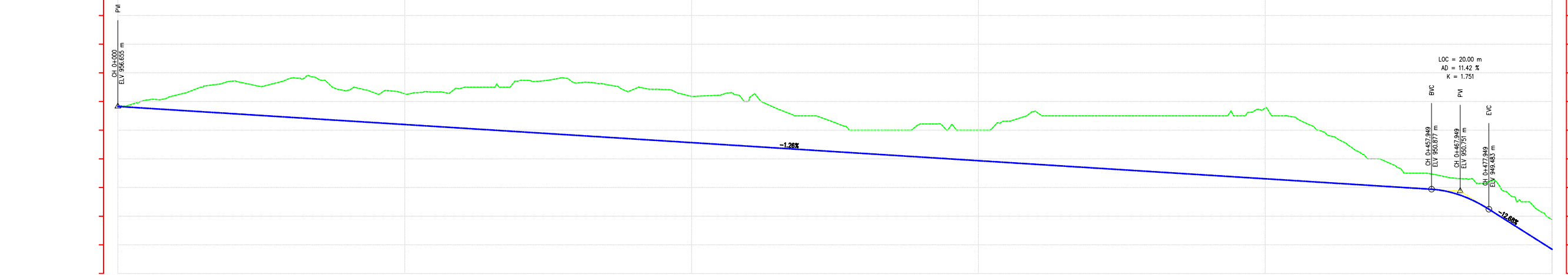


- NOTE:
1. ALL DIMENSIONS, ELEVATIONS & DETAILS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
  2. NO DIMENSION SHALL BE MEASURED FROM THE DRAWINGS. ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.
  3. ALL DIMENSIONS/DETAILS SHALL BE CHECKED ALONG WITH THE RELEVANT DRAWINGS BEFORE STARTING EXECUTION OF WORKS. DISCREPANCY, IF ANY, SHALL BE IMMEDIATELY BROUGHT TO THE NOTICE OF PROJECT AUTHORITY/CONSULTANT FOR REVIEW.

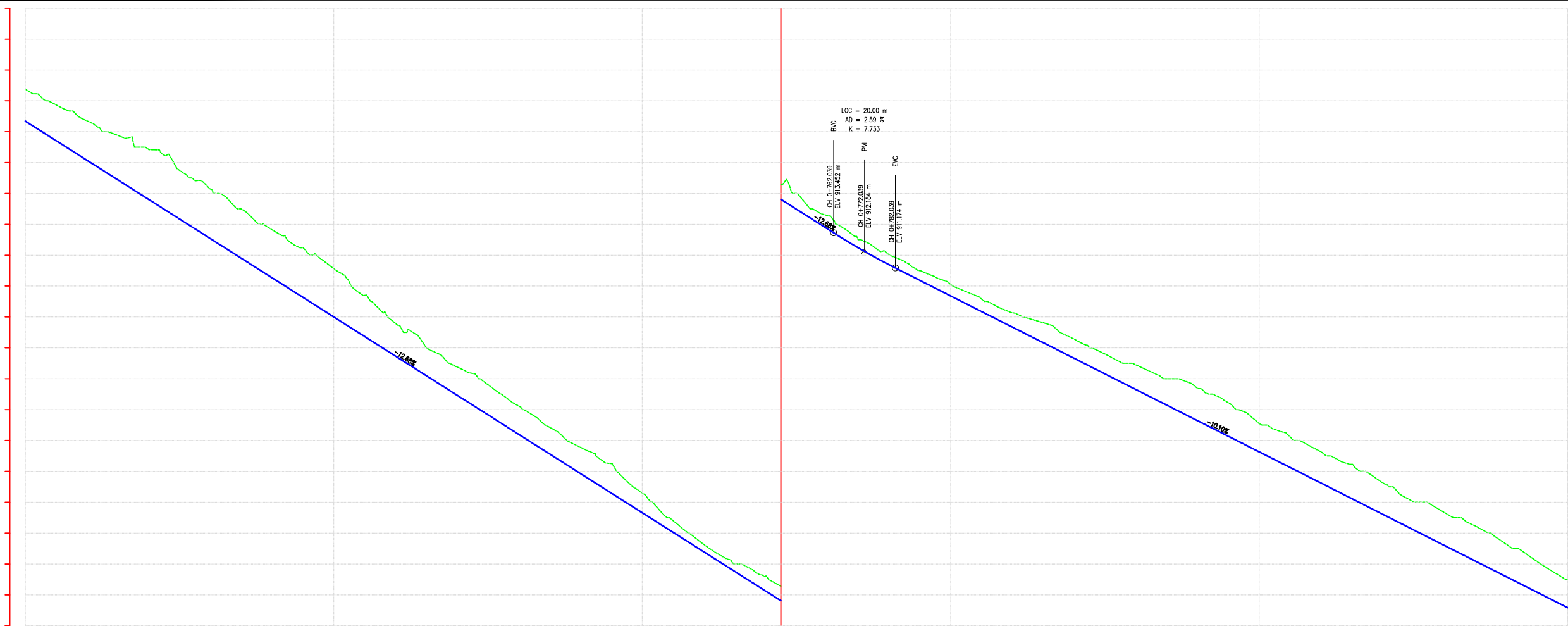


**ISSUED FOR CONSTRUCTION**

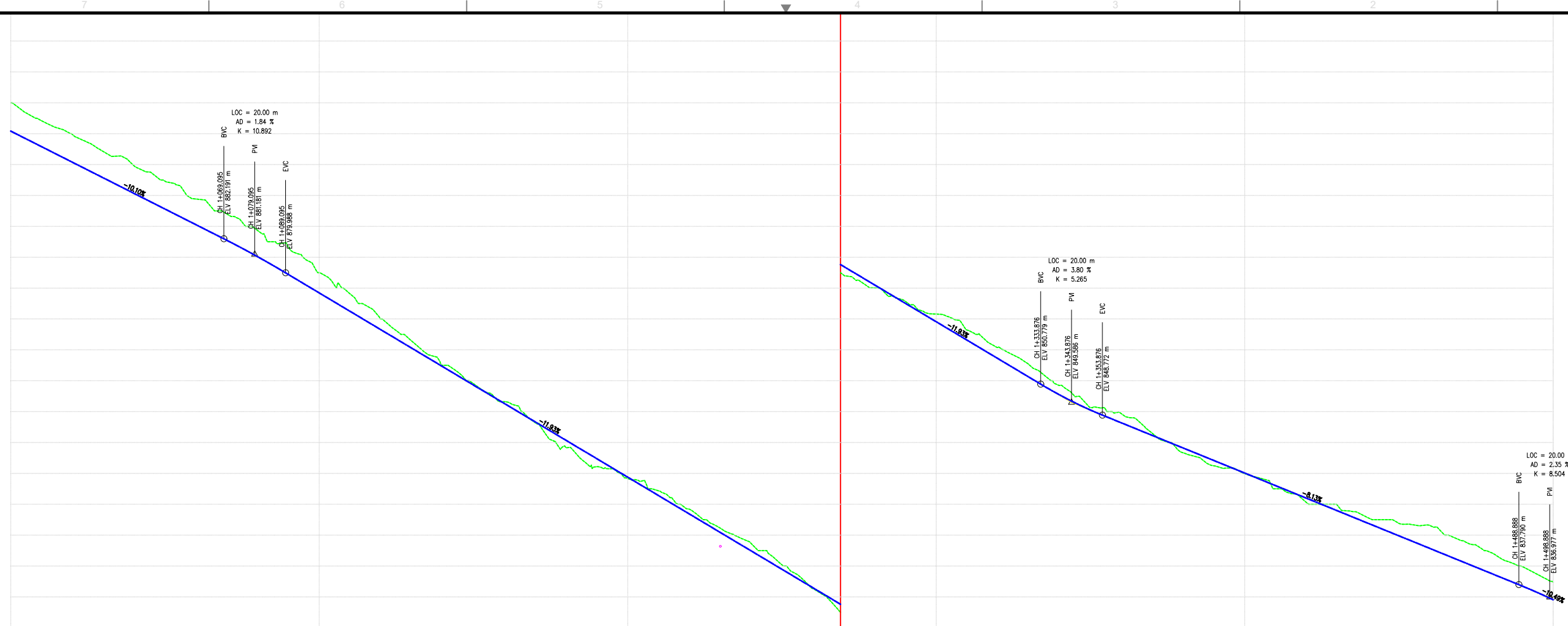
Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD</b> <b>GENERAL PLAN</b>					
SHEET 05 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	A3	Original Scale	AS SHOWN	DRAWING NO.	REV
				DHPP-TSAMANG-FARMROAD-2024-01	NA



DESIGN LEVEL(m)	0+000	0+010	0+020	0+030	0+040	0+050	0+060	0+070	0+080	0+090	0+100	0+110	0+120	0+130	0+140	0+150	0+160	0+170	0+180	0+190	0+200	0+210	0+220	0+230	0+240	0+250	0+260	0+270	0+280	0+290	0+300	0+310	0+320	0+330	0+340	0+350	0+360	0+370	0+380	0+390	0+400	0+410	0+420	0+430	0+440	0+450	0+460	0+470	0+480	0+490	0+500																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
EXISTING LEVEL(m)	956.655	956.529	956.403	956.276	956.150	956.024	955.898	955.772	955.646	955.519	955.393	955.267	955.141	955.015	954.889	954.762	954.636	954.510	954.384	954.258	954.132	954.005	953.879	953.753	953.627	953.501	953.375	953.248	953.122	952.996	952.870	952.744	952.618	952.492	952.365	952.239	952.113	951.987	951.861	951.735	951.608	951.482	951.356	951.230	951.104	950.978	950.852	950.726	950.600	950.474	950.348	950.222	950.096	949.970	949.844	949.718	949.592	949.466	949.340	949.214	949.088	948.962	948.836	948.710	948.584	948.458	948.332	948.206	948.080	947.954	947.828	947.702	947.576	947.450	947.324	947.198	947.072	946.946	946.820	946.694	946.568	946.442	946.316	946.190	946.064	945.938	945.812	945.686	945.560	945.434	945.308	945.182	945.056	944.930	944.804	944.678	944.552	944.426	944.300	944.174	944.048	943.922	943.796	943.670	943.544	943.418	943.292	943.166	943.040	942.914	942.788	942.662	942.536	942.410	942.284	942.158	942.032	941.906	941.780	941.654	941.528	941.402	941.276	941.150	941.024	940.898	940.772	940.646	940.520	940.394	940.268	940.142	940.016	939.890	939.764	939.638	939.512	939.386	939.260	939.134	939.008	938.882	938.756	938.630	938.504	938.378	938.252	938.126	938.000	937.874	937.748	937.622	937.496	937.370	937.244	937.118	936.992	936.866	936.740	936.614	936.488	936.362	936.236	936.110	935.984	935.858	935.732	935.606	935.480	935.354	935.228	935.102	934.976	934.850	934.724	934.598	934.472	934.346	934.220	934.094	933.968	933.842	933.716	933.590	933.464	933.338	933.212	933.086	932.960	932.834	932.708	932.582	932.456	932.330	932.204	932.078	931.952	931.826	931.700	931.574	931.448	931.322	931.196	931.070	930.944	930.818	930.692	930.566	930.440	930.314	930.188	930.062	929.936	929.810	929.684	929.558	929.432	929.306	929.180	929.054	928.928	928.802	928.676	928.550	928.424	928.298	928.172	928.046	927.920	927.794	927.668	927.542	927.416	927.290	927.164	927.038	926.912	926.786	926.660	926.534	926.408	926.282	926.156	926.030	925.904	925.778	925.652	925.526	925.400	925.274	925.148	925.022	924.896	924.770	924.644	924.518	924.392	924.266	924.140	924.014	923.888	923.762	923.636	923.510	923.384	923.258	923.132	923.006	922.880	922.754	922.628	922.502	922.376	922.250	922.124	921.998	921.872	921.746	921.620	921.494	921.368	921.242	921.116	920.990	920.864	920.738	920.612	920.486	920.360	920.234	920.108	919.982	919.856	919.730	919.604	919.478	919.352	919.226	919.100	918.974	918.848	918.722	918.596	918.470	918.344	918.218	918.092	917.966	917.840	917.714	917.588	917.462	917.336	917.210	917.084	916.958	916.832	916.706	916.580	916.454	916.328	916.202	916.076	915.950	915.824	915.698	915.572	915.446	915.320	915.194	915.068	914.942	914.816	914.690	914.564	914.438	914.312	914.186	914.060	913.934	913.808	913.682	913.556	913.430	913.304	913.178	913.052	912.926	912.800	912.674	912.548	912.422	912.296	912.170	912.044	911.918	911.792	911.666	911.540	911.414	911.288	911.162	911.036	910.910	910.784	910.658	910.532	910.406	910.280	910.154	910.028	909.902	909.776	909.650	909.524	909.398	909.272	909.146	909.020	908.894	908.768	908.642	908.516	908.390	908.264	908.138	908.012	907.886	907.760	907.634	907.508	907.382	907.256	907.130	907.004	906.878	906.752	906.626	906.500	906.374	906.248	906.122	905.996	905.870	905.744	905.618	905.492	905.366	905.240	905.114	904.988	904.862	904.736	904.610	904.484	904.358	904.232	904.106	903.980	903.854	903.728	903.602	903.476	903.350	903.224	903.098	902.972	902.846	902.720	902.594	902.468	902.342	902.216	902.090	901.964	901.838	901.712	901.586	901.460	901.334	901.208	901.082	900.956	900.830	900.704	900.578	900.452	900.326	900.200	900.074	999.948	999.822	999.696	999.570	999.444	999.318	999.192	999.066	998.940	998.814	998.688	998.562	998.436	998.310	998.184	998.058	997.932	997.806	997.680	997.554	997.428	997.302	997.176	997.050	996.924	996.798	996.672	996.546	996.420	996.294	996.168	996.042	995.916	995.790	995.664	995.538	995.412	995.286	995.160	995.034	994.908	994.782	994.656	994.530	994.404	994.278	994.152	994.026	993.900	993.774	993.648	993.522	993.396	993.270	993.144	993.018	992.892	992.766	992.640	992.514	992.388	992.262	992.136	992.010	991.884	991.758	991.632	991.506	991.380	991.254	991.128	991.002	990.876	990.750	990.624	990.498	990.372	990.246	990.120	990.000	989.874	989.748	989.622	989.496	989.370	989.244	989.118	989.000	988.874	988.748	988.622	988.496	988.370	988.244	988.118	987.992	987.866	987.740	987.614	987.488	987.362	987.236	987.110	986.984	986.858	986.732	986.606	986.480	986.354	986.228	986.102	985.976	985.850	985.724	985.598	985.472	985.346	985.220	985.094	984.968	984.842	984.716	984.590	984.464	984.338	984.212	984.086	983.960	983.834	983.708	983.582	983.456	983.330	983.204	983.078	982.952	982.826	982.700	982.574	982.448	982.322	982.196	982.070	981.944	981.818	981.692	981.566	981.440	981.314	981.188	981.062	980.936	980.810	980.684	980.558	980.432	980.306	980.180	980.054	979.928	979.802	979.676	979.550	979.424	979.298	979.172	979.046	978.920	978.794	978.668	978.542	978.416	978.290	978.164	978.038	977.912	977.786	977.660	977.534	977.408	977.282	977.156	977.030	976.904	976.778	976.652	976.526	976.400	976.274	976.148	976.022	975.896	975.770	975.644	975.518	975.392	975.266	975.140	975.014	974.888	974.762	974.636	974.510	974.384	974.258	974.132	974.006	973.880	973.754	973.628	973.502	973.376	973.250	973.124	973.000	972.874	972.748	972.622	972.496	972.370	972.244	972.118	972.000	971.874	971.748	971.622	971.496	971.370	971.244	971.118	971.000	970.874	970.748	970.622	970.496	970.370	970.244	970.118	970.000	969.874	969.748	969.622	969.496	969.370	969.244	969.118	969.000	968.874	968.748	968.622	968.496	968.370	968.244	968.118	968.000	967.874	967.748	967.622	967.496	967.370	967.244	967.118	967.000	966.874	966.748	966.622	966.496	966.370	966.244	966.118	966.000	965.874	965.748	965.622	965.496	965.370	965.244	965.118	965.000	964.874	964.748	964.622	964.496	964.370	964.244	964.118	964.000	963.874	963.748	963.622	963.496	963.370	963.244	963.118	963.000	962.874	962.748	962.622	962.496	962.370	962.244	962.118	962.000	961.874	961.748	961.622	961.496	961.370	961.244	961.118	961.000	960.874	960.748	960.622	960.496	960.370	960.244	960.118	960.000	959.874	959.748	959.622	959.496	959.370	959.244	959.118	959.000	958.874	958.748	958.622	958.496	958.370	958.244	958.118	958.000	957.874	957.748	957.622	957.496	957.370	957.244	957.118	957.000	956.874	956.748	956.622	956.496	956.370	956.244	956.118	956.000	955.874	955.748	955.622	955.496	955.370	955.244	955.118	955.000	954.874	954.748	954.622	954.496	954.370	954.244	954.118	954.000	953.874	953.748	953.622	953.496	953.370	953.244	953.118	953.000	952.874	952.748	952.622	952.496	952.370	952.244	952.118	952.000	951.874	951.748	951.622	951.496	951.370	951.244	951.118	951.000	950.874	950.748	950.622	950.496	950.370	950.244	950.118	950.000	949.874	949.748	949.622	949.496	949.370	949.244	949.118	949.000	948.874	948.748	948.622	948.496	948.370	948.244	948.118	948.000	947.874	947.748	947.622	947.496	947.370	947.244	947.118	947.000	946.874	946.748	946.622	946.496	946.370	946.244	946.118	946.000	945.874	945.748	945.622	945.496	945.370	945.244	945.118	945.000	944.874	944.748	944.622	944.496	944.370	944.244	944.118	944.000	943.874	943.748	943.622	943.496	943.370	943.244	943.118	943.000	942.874	942.748	942.622	942.496	942.370	942.244	942.118	942.000	941.874	941.748	941.622	941.496	941.370	941.244	941.118	941.000	940.874	940.748	940.622	940.496	940.370	940.244	940.118	940.000	939.874	939.748	939.622	939.496	939.370	939.244	939.118	939.000	938.874	938.748	938.622	938.496	938.370	938.244	938.118	938.000	937.874	937.748	937.622	937.496	937.370	937.244	937.118	937.000	936.874	936.748	936.622	936.496	936.370	936.244	936.118	936.000	935.874	935.748	935.622	935.496	935.370	935.244	935.118	935.000	934



DESIGN LEVEL(m)	946.686	945.418	944.149	942.881	941.613	940.345	939.076	937.808	936.540	935.271	934.003	932.735	931.467	930.198	928.930	927.662	926.393	925.125	923.857	922.589	921.320	920.052	918.784	917.515	916.247	914.979	913.710	912.443	911.174	909.906	908.638	907.370	906.102	904.834	903.566	902.298	901.030	900.762	900.494	900.226	900.958	901.690	902.422	903.154	903.886	904.618	905.350	906.082	906.814	907.546	908.278	909.010	909.742	910.474	911.206	911.938	912.670	913.402	914.134	914.866	915.598	916.330	917.062	917.794	918.526	919.258	919.990	920.722	921.454	922.186	922.918	923.650	924.382	925.114	925.846	926.578	927.310	928.042	928.774	929.506	930.238	930.970	931.702	932.434	933.166	933.898	934.630	935.362	936.094	936.826	937.558	938.290	939.022	939.754	940.486	941.218	941.950	942.682	943.414	944.146	944.878	945.610	946.342	947.074	947.806	948.538	949.270	950.002	950.734	951.466	952.198	952.930	953.662	954.394	955.126	955.858	956.590	957.322	958.054	958.786	959.518	960.250	960.982	961.714	962.446	963.178	963.910	964.642	965.374	966.106	966.838	967.570	968.302	969.034	969.766	970.498	971.230	971.962	972.694	973.426	974.158	974.890	975.622	976.354	977.086	977.818	978.550	979.282	980.014	980.746	981.478	982.210	982.942	983.674	984.406	985.138	985.870	986.602	987.334	988.066	988.798	989.530	990.262	990.994	991.726	992.458	993.190	993.922	994.654	995.386	996.118	996.850	997.582	998.314	999.046	999.778	1000.510	1001.242	1001.974	1002.706	1003.438	1004.170	1004.902	1005.634	1006.366	1007.098	1007.830	1008.562	1009.294	1010.026	1010.758	1011.490	1012.222	1012.954	1013.686	1014.418	1015.150	1015.882	1016.614	1017.346	1018.078	1018.810	1019.542	1020.274	1021.006	1021.738	1022.470	1023.202	1023.934	1024.666	1025.398	1026.130	1026.862	1027.594	1028.326	1029.058	1029.790	1030.522	1031.254	1031.986	1032.718	1033.450	1034.182	1034.914	1035.646	1036.378	1037.110	1037.842	1038.574	1039.306	1040.038	1040.770	1041.502	1042.234	1042.966	1043.698	1044.430	1045.162	1045.894	1046.626	1047.358	1048.090	1048.822	1049.554	1050.286	1051.018	1051.750	1052.482	1053.214	1053.946	1054.678	1055.410	1056.142	1056.874	1057.606	1058.338	1059.070	1059.802	1060.534	1061.266	1062.098	1062.830	1063.562	1064.294	1065.026	1065.758	1066.490	1067.222	1067.954	1068.686	1069.418	1070.150	1070.882	1071.614	1072.346	1073.078	1073.810	1074.542	1075.274	1076.006	1076.738	1077.470	1078.202	1078.934	1079.666	1080.398	1081.130	1081.862	1082.594	1083.326	1084.058	1084.790	1085.522	1086.254	1086.986	1087.718	1088.450	1089.182	1089.914	1090.646	1091.378	1092.110	1092.842	1093.574	1094.306	1095.038	1095.770	1096.502	1097.234	1097.966	1098.698	1099.430	1100.162	1100.894	1101.626	1102.358	1103.090	1103.822	1104.554	1105.286	1106.018	1106.750	1107.482	1108.214	1108.946	1109.678	1110.410	1111.142	1111.874	1112.606	1113.338	1114.070	1114.802	1115.534	1116.266	1117.098	1117.830	1118.562	1119.294	1120.026	1120.758	1121.490	1122.222	1122.954	1123.686	1124.418	1125.150	1125.882	1126.614	1127.346	1128.078	1128.810	1129.542	1130.274	1131.006	1131.738	1132.470	1133.202	1133.934	1134.666	1135.398	1136.130	1136.862	1137.594	1138.326	1139.058	1139.790	1140.522	1141.254	1141.986	1142.718	1143.450	1144.182	1144.914	1145.646	1146.378	1147.110	1147.842	1148.574	1149.306	1150.038	1150.770	1151.502	1152.234	1152.966	1153.698	1154.430	1155.162	1155.894	1156.626	1157.358	1158.090	1158.822	1159.554	1160.286	1161.018	1161.750	1162.482	1163.214	1163.946	1164.678	1165.410	1166.142	1166.874	1167.606	1168.338	1169.070	1169.802	1170.534	1171.266	1172.098	1172.830	1173.562	1174.294	1175.026	1175.758	1176.490	1177.222	1177.954	1178.686	1179.418	1180.150	1180.882	1181.614	1182.346	1183.078	1183.810	1184.542	1185.274	1186.006	1186.738	1187.470	1188.202	1188.934	1189.666	1190.398	1191.130	1191.862	1192.594	1193.326	1194.058	1194.790	1195.522	1196.254	1196.986	1197.718	1198.450	1199.182	1199.914	1200.646	1201.378	1202.110	1202.842	1203.574	1204.306	1205.038	1205.770	1206.502	1207.234	1207.966	1208.698	1209.430	1210.162	1210.894	1211.626	1212.358	1213.090	1213.822	1214.554	1215.286	1216.018	1216.750	1217.482	1218.214	1218.946	1219.678	1220.410	1221.142	1221.874	1222.606	1223.338	1224.070	1224.802	1225.534	1226.266	1227.098	1227.830	1228.562	1229.294	1230.026	1230.758	1231.490	1232.222	1232.954	1233.686	1234.418	1235.150	1235.882	1236.614	1237.346	1238.078	1238.810	1239.542	1240.274	1241.006	1241.738	1242.470	1243.202	1243.934	1244.666	1245.398	1246.130	1246.862	1247.594	1248.326	1249.058	1249.790	1250.522	1251.254	1251.986	1252.718	1253.450	1254.182	1254.914	1255.646	1256.378	1257.110	1257.842	1258.574	1259.306	1260.038	1260.770	1261.502	1262.234	1262.966	1263.698	1264.430	1265.162	1265.894	1266.626	1267.358	1268.090	1268.822	1269.554	1270.286	1271.018	1271.750	1272.482	1273.214	1273.946	1274.678	1275.410	1276.142	1276.874	1277.606	1278.338	1279.070	1279.802	1280.534	1281.266	1282.098	1282.830	1283.562	1284.294	1285.026	1285.758	1286.490	1287.222	1287.954	1288.686	1289.418	1290.150	1290.882	1291.614	1292.346	1293.078	1293.810	1294.542	1295.274	1296.006	1296.738	1297.470	1298.202	1298.934	1299.666	1300.398	1301.130	1301.862	1302.594	1303.326	1304.058	1304.790	1305.522	1306.254	1306.986	1307.718	1308.450	1309.182	1309.914	1310.646	1311.378	1312.110	1312.842	1313.574	1314.306	1315.038	1315.770	1316.502	1317.234	1317.966	1318.698	1319.430	1320.162	1320.894	1321.626	1322.358	1323.090	1323.822	1324.554	1325.286	1326.018	1326.750	1327.482	1328.214	1328.946	1329.678	1330.410	1331.142	1331.874	1332.606	1333.338	1334.070	1334.802	1335.534	1336.266	1337.098	1337.830	1338.562	1339.294	1340.026	1340.758	1341.490	1342.222	1342.954	1343.686	1344.418	1345.150	1345.882	1346.614	1347.346	1348.078	1348.810	1349.542	1350.274	1351.006	1351.738	1352.470	1353.202	1353.934	1354.666	1355.398	1356.130	1356.862	1357.594	1358.326	1359.058	1359.790	1360.522	1361.254	1361.986	1362.718	1363.450	1364.182	1364.914	1365.646	1366.378	1367.110	1367.842	1368.574	1369.306	1370.038	1370.770	1371.502	1372.234	1372.966	1373.698	1374.430	1375.162	1375.894	1376.626	1377.358	1378.090	1378.822	1379.554	1380.286	1381.018	1381.750	1382.482	1383.214	1383.946	1384.678	1385.410	1386.142	1386.874	1387.606	1388.338	1389.070	1389.802	1390.534	1391.266	1392.098	1392.830	1393.562	1394.294	1395.026	1395.758	1396.490	1397.222	1397.954	1398.686	1399.418	1400.150	1400.882	1401.614	1402.346	1403.078	1403.810	1404.542	1405.274	1406.006	1406.738	1407.470	1408.202	1408.934	1409.666	1410.398	1411.130	1411.862	1412.594	1413.326	1414.058	1414.790	1415.522	1416.254	1416.986	1417.718	1418.450	1419.182	1419.914	1420.646	1421.378	1422.110	1422.842	1423.574	1424.306	1425.038	1425.770	1426.502	1427.234	1427.966	1428.698	1429.430	1430.162	1430.894	1431.626	1432.358	1433.090	1433.822	1434.554	1435.286	1436.018	1436.750	1437.482	1438.214	1438.946	1439.678	1440.410	1441.142	1441.874	1442.606	1443.338	1444.070	1444.802	1445.534	1446.266	1447.098	1447.830	1448.562	1449.294	1450.026	1450.758	1451.490	1452.222	1452.954	1453.686	1454.418	1455.150	1455.882	1456.614	1457.346	1458.078	1458.810	1459.542	1460.274	1461.006	1461.738	1462.470	1463.202	1463.934	1464.666	1465.398	1466.130	1466.862	1467.594	1468.326	1469.058	1469.790	1470.522	1471.254	1471.986	1472.718	1473.450	1474.182	1474.914	1475.646	1476.378	1477.110	1477.842	1478.574	1479.306	1480.038	1480.770	1481.502	1482.234	1482.966	1483.698	1484.430	1485.162	1485.894	1486.626	1487.358	1488.090	1488.822	1489.554	1490.286	1491.018	1491.750	1492.482	1493.214	1493.946	1494.678	1495.410	1496.142	1496.874	1497.606	1498.338	1499.070	1499.802	1500.534	1501.266	1502.098	1502.830	1503.562	1504.294	1505.026	1505.758	1506.490	1507.222	1507.954	1508.686	1509.418	1510.150	1510.882	1511.614	1512.346	1513.078	1513.810	1514.542	1515.274	1516.006	1516.738	1517.470	1518.202	1518.934	1519.666	1520.398	1521.130	1521.862	1522.594	1523.326	1524.058	1524.790	1525.522	1526.254	1526.986	1527.718	1528.450	1529.182	1529.914	1530.646	1531.378	1532.110	1532.842	1533.574	1534.306	1535.038	1535.770	1536.502	1537.234	1537.966	1538.698	1539.430	1540.162	1540.894	1541.626	1542.358	1543.090	1543.822	1544.554	1545.286	1546.018	1546.750	1547.482	1548.214	1548.946	1549.678	1550.410	1551.142	1551.874	1552.606	1553.338	1554.070	1554.802	1555.534	1556.266	1557.098	1557.830	1558.562	1559.294	1560.026	1560.758	1561.490	1562.222	1562.954	1563.686	1564.418	1565.150	1565.882	1566.614</
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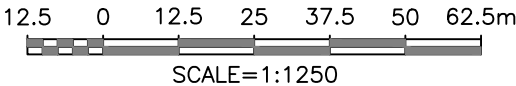


DESIGN LEVEL(m)	1+000 889.167	1+010 888.158	1+020 887.148	1+030 886.138	1+040 885.129	1+050 884.119	1+060 883.109	1+070 882.099	1+080 881.035	1+090 880.653	1+100 880.000	1+110 879.268	1+120 877.000	1+130 875.567	1+140 874.000	1+150 872.807	1+160 871.642	1+170 870.285	1+180 868.658	1+190 867.432	1+200 866.664	1+210 865.977	1+220 864.683	1+230 863.454	1+240 862.461	1+250 861.077	1+260 859.542	1+270 857.840	1+280 857.012	1+290 856.138	1+300 855.315	1+310 854.287	1+320 853.154	1+330 852.058	1+340 850.696	1+350 849.268	1+360 848.867	1+370 847.602	1+380 846.335	1+390 845.497	1+400 844.978	1+410 844.000	1+420 843.116	1+430 842.948	1+440 842.126	1+450 841.760	1+460 841.628	1+470 840.660	1+480 839.967	1+490 838.967	1+500 837.960		
EXISTING LEVEL(m)	891.000	889.834	888.945	888.138	886.919	885.925	884.119	883.806	882.734	881.035	880.653	879.880	877.000	875.567	874.000	872.807	871.527	870.285	868.658	867.947	866.664	865.977	864.683	863.454	862.461	861.078	859.542	857.840	857.208	856.138	855.315	854.821	853.628	852.435	851.241	850.084	848.849	848.274	847.461	846.647	845.834	845.020	844.207	843.394	842.580	841.767	840.953	839.327	838.513	837.699	836.814		
CHAINAGE(Km)	1+000	1+010	1+020	1+030	1+040	1+050	1+060	1+070	1+080	1+090	1+100	1+110	1+120	1+130	1+140	1+150	1+160	1+170	1+180	1+190	1+200	1+210	1+220	1+230	1+240	1+250	1+260	1+270	1+280	1+290	1+300	1+310	1+320	1+330	1+340	1+350	1+360	1+370	1+380	1+390	1+400	1+410	1+420	1+430	1+440	1+450	1+460	1+470	1+480	1+490	1+500		
HORIZONTAL SCHEMATIC																																																					
SUPER ELEVATION SCHEMATIC																																																					

CHAINAGE : 1+000 - 1+500

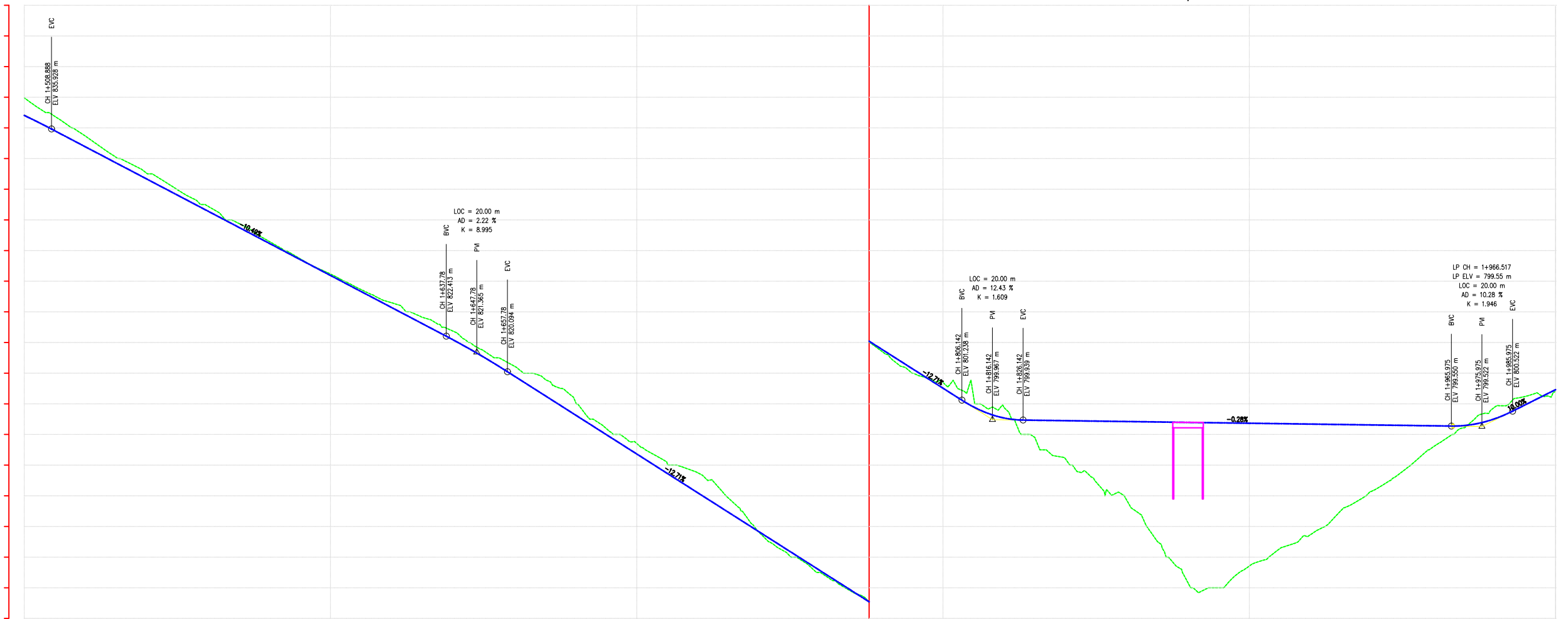
IP No.	CO-ORDINATES(m)		WCB (D-M-S)	DIST. (m)	DEF. ANG. (D-M-S)	TAN. LEN. (m)	SIMPLE CURVE DATA			CHAINAGE			
	EASTING	NORTHING					R (m)	E (m)	LC (m)	BC	MC	EC	IP
35	321979.823	3027186.917	349-46-4.73	48.779	04-34-49.89	24.356	609.000	0.487	48.687	0+944.441	0+968.784	0+993.128	0+968.797
36	321967.182	3027256.948	12-28-30.39	71.163	22-42-25.67	14.457	72.000	1.437	28.535	1+025.477	1+039.745	1+054.012	1+039.934
37	321973.502	3027285.517	351-19-2.91	29.260	21-09-27.48	14.567	78.000	1.349	28.803	1+054.247	1+068.649	1+083.050	1+068.814
38	321965.665	3027336.840	328-03-54.80	51.918	23-15-8.12	21.603	105.000	2.199	42.612	1+098.797	1+120.103	1+141.409	1+120.400
39	321942.658	3027373.751	328-27-54.75	43.495	00-23-58.95	13.051	3739.000	0.023	26.102	1+150.249	1+163.300	1+176.351	1+163.300
40	321929.006	3027396.000	348-41-24.24	26.103	20-13-29.49	13.020	73.000	1.152	25.768	1+176.383	1+189.268	1+202.152	1+189.403
41	321921.421	3027433.923	64-51-18.77	38.674	76-09-54.53	6.269	8.000	2.164	10.635	1+221.537	1+226.855	1+232.172	1+227.806
42	321933.809	3027439.737	161-54-34.24	13.685	97-03-15.47	6.788	6.000	3.060	10.164	1+232.800	1+237.882	1+242.963	1+239.588
43	321946.198	3027401.814	132-05-28.28	39.895	29-49-5.96	19.703	74.000	2.578	38.512	1+256.368	1+275.624	1+294.879	1+276.070
44	321996.689	3027356.206	144-20-32.57	68.040	12-15-4.29	21.035	196.000	1.126	41.909	1+322.182	1+343.137	1+364.092	1+343.217
45	322021.285	3027321.923	109-33-49.62	42.194	34-46-42.95	20.983	67.000	3.209	40.669	1+364.268	1+384.602	1+404.937	1+385.250
46	322082.468	3027300.181	122-37-9.28	64.931	13-03-19.65	14.990	131.000	0.855	29.850	1+433.895	1+448.820	1+463.745	1+448.885
47	322107.750	3027284.000	44-59-60.00	30.016	77-37-9.28	7.239	9.000	2.550	12.192	1+471.533	1+477.629	1+483.725	1+478.772
48	322118.621	3027294.871	314-32-47.33	15.374	90-27-12.67	7.056	7.000	2.939	11.051	1+484.805	1+490.331	1+495.856	1+491.861

- NOTE:
- ALL DIMENSIONS, ELEVATIONS & DETAILS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
  - NO DIMENSION SHALL BE MEASURED FROM THE DRAWINGS. ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.
  - ALL DIMENSIONS/DETAILS SHALL BE CHECKED ALONG WITH THE RELEVANT DRAWINGS BEFORE STARTING EXECUTION OF WORKS. DISCREPANCY, IF ANY, SHALL BE IMMEDIATELY BROUGHT TO THE NOTICE OF PROJECT AUTHORITY/CONSULTANT FOR REVIEW.

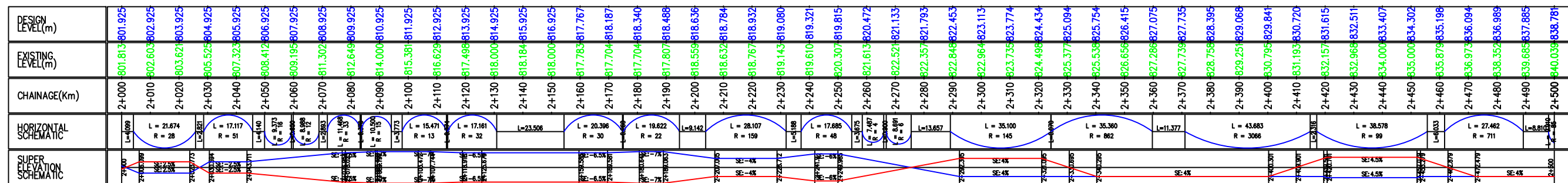


ISSUED FOR CONSTRUCTION

Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD</b> <b>GENERAL PLAN (CHAINAGE 1000-1500)</b> <b>SHEET 08 OF 51</b>					
CONSULTANT:	NAME	SIG.			
	Designed				
	Drawn				
	Checked				
	Approved				
	Issued Date	NOV 2024			
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DPPP-TSAMANG-FARMROAD-2024-01	REV NA		



DESIGN LEVEL(m)	1+500	1+510	1+520	1+530	1+540	1+550	1+560	1+570	1+580	1+590	1+600	1+610	1+620	1+630	1+640	1+650	1+660	1+670	1+680	1+690	1+700	1+710	1+720	1+730	1+740	1+750	1+760	1+770	1+780	1+790	1+800	1+810	1+820	1+830	1+840	1+850	1+860	1+870	1+880	1+890	1+900	1+910	1+920	1+930	1+940	1+950	1+960	1+970	1+980	1+990	2+000																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
EXISTING LEVEL(m)	837.96	836.75	835.81	834.76	833.71	832.66	831.61	830.56	829.51	828.46	827.41	826.36	825.31	824.26	823.21	822.16	821.11	820.06	819.01	817.96	816.91	815.86	814.81	813.76	812.71	811.66	810.61	809.56	808.51	807.46	806.41	805.36	804.31	803.26	802.21	801.16	800.11	799.06	789.99	799.92	799.85	799.78	799.71	799.64	799.57	799.50	799.43	799.36	799.29	799.22	799.15	799.08	799.01	798.94	798.87	798.80	798.73	798.66	798.59	798.52	798.45	798.38	798.31	798.24	798.17	798.10	798.03	797.96	797.89	797.82	797.75	797.68	797.61	797.54	797.47	797.40	797.33	797.26	797.19	797.12	797.05	796.98	796.91	796.84	796.77	796.70	796.63	796.56	796.49	796.42	796.35	796.28	796.21	796.14	796.07	796.00	795.93	795.86	795.79	795.72	795.65	795.58	795.51	795.44	795.37	795.30	795.23	795.16	795.09	795.02	794.95	794.88	794.81	794.74	794.67	794.60	794.53	794.46	794.39	794.32	794.25	794.18	794.11	794.04	793.97	793.90	793.83	793.76	793.69	793.62	793.55	793.48	793.41	793.34	793.27	793.20	793.13	793.06	792.99	792.92	792.85	792.78	792.71	792.64	792.57	792.50	792.43	792.36	792.29	792.22	792.15	792.08	792.01	791.94	791.87	791.80	791.73	791.66	791.59	791.52	791.45	791.38	791.31	791.24	791.17	791.10	791.03	790.96	790.89	790.82	790.75	790.68	790.61	790.54	790.47	790.40	790.33	790.26	790.19	790.12	790.05	789.98	789.91	789.84	789.77	789.70	789.63	789.56	789.49	789.42	789.35	789.28	789.21	789.14	789.07	789.00	788.93	788.86	788.79	788.72	788.65	788.58	788.51	788.44	788.37	788.30	788.23	788.16	788.09	788.02	787.95	787.88	787.81	787.74	787.67	787.60	787.53	787.46	787.39	787.32	787.25	787.18	787.11	787.04	786.97	786.90	786.83	786.76	786.69	786.62	786.55	786.48	786.41	786.34	786.27	786.20	786.13	786.06	785.99	785.92	785.85	785.78	785.71	785.64	785.57	785.50	785.43	785.36	785.29	785.22	785.15	785.08	785.01	784.94	784.87	784.80	784.73	784.66	784.59	784.52	784.45	784.38	784.31	784.24	784.17	784.10	784.03	783.96	783.89	783.82	783.75	783.68	783.61	783.54	783.47	783.40	783.33	783.26	783.19	783.12	783.05	782.98	782.91	782.84	782.77	782.70	782.63	782.56	782.49	782.42	782.35	782.28	782.21	782.14	782.07	782.00	781.93	781.86	781.79	781.72	781.65	781.58	781.51	781.44	781.37	781.30	781.23	781.16	781.09	781.02	780.95	780.88	780.81	780.74	780.67	780.60	780.53	780.46	780.39	780.32	780.25	780.18	780.11	780.04	779.97	779.90	779.83	779.76	779.69	779.62	779.55	779.48	779.41	779.34	779.27	779.20	779.13	779.06	778.99	778.92	778.85	778.78	778.71	778.64	778.57	778.50	778.43	778.36	778.29	778.22	778.15	778.08	778.01	777.94	777.87	777.80	777.73	777.66	777.59	777.52	777.45	777.38	777.31	777.24	777.17	777.10	777.03	776.96	776.89	776.82	776.75	776.68	776.61	776.54	776.47	776.40	776.33	776.26	776.19	776.12	776.05	775.98	775.91	775.84	775.77	775.70	775.63	775.56	775.49	775.42	775.35	775.28	775.21	775.14	775.07	775.00	774.93	774.86	774.79	774.72	774.65	774.58	774.51	774.44	774.37	774.30	774.23	774.16	774.09	774.02	773.95	773.88	773.81	773.74	773.67	773.60	773.53	773.46	773.39	773.32	773.25	773.18	773.11	773.04	772.97	772.90	772.83	772.76	772.69	772.62	772.55	772.48	772.41	772.34	772.27	772.20	772.13	772.06	771.99	771.92	771.85	771.78	771.71	771.64	771.57	771.50	771.43	771.36	771.29	771.22	771.15	771.08	771.01	770.94	770.87	770.80	770.73	770.66	770.59	770.52	770.45	770.38	770.31	770.24	770.17	770.10	770.03	769.96	769.89	769.82	769.75	769.68	769.61	769.54	769.47	769.40	769.33	769.26	769.19	769.12	769.05	768.98	768.91	768.84	768.77	768.70	768.63	768.56	768.49	768.42	768.35	768.28	768.21	768.14	768.07	768.00	767.93	767.86	767.79	767.72	767.65	767.58	767.51	767.44	767.37	767.30	767.23	767.16	767.09	767.02	766.95	766.88	766.81	766.74	766.67	766.60	766.53	766.46	766.39	766.32	766.25	766.18	766.11	766.04	765.97	765.90	765.83	765.76	765.69	765.62	765.55	765.48	765.41	765.34	765.27	765.20	765.13	765.06	764.99	764.92	764.85	764.78	764.71	764.64	764.57	764.50	764.43	764.36	764.29	764.22	764.15	764.08	764.01	763.94	763.87	763.80	763.73	763.66	763.59	763.52	763.45	763.38	763.31	763.24	763.17	763.10	763.03	762.96	762.89	762.82	762.75	762.68	762.61	762.54	762.47	762.40	762.33	762.26	762.19	762.12	762.05	761.98	761.91	761.84	761.77	761.70	761.63	761.56	761.49	761.42	761.35	761.28	761.21	761.14	761.07	761.00	760.93	760.86	760.79	760.72	760.65	760.58	760.51	760.44	760.37	760.30	760.23	760.16	760.09	760.02	759.95	759.88	759.81	759.74	759.67	759.60	759.53	759.46	759.39	759.32	759.25	759.18	759.11	759.04	758.97	758.90	758.83	758.76	758.69	758.62	758.55	758.48	758.41	758.34	758.27	758.20	758.13	758.06	757.99	757.92	757.85	757.78	757.71	757.64	757.57	757.50	757.43	757.36	757.29	757.22	757.15	757.08	757.01	756.94	756.87	756.80	756.73	756.66	756.59	756.52	756.45	756.38	756.31	756.24	756.17	756.10	756.03	755.96	755.89	755.82	755.75	755.68	755.61	755.54	755.47	755.40	755.33	755.26	755.19	755.12	755.05	754.98	754.91	754.84	754.77	754.70	754.63	754.56	754.49	754.42	754.35	754.28	754.21	754.14	754.07	754.00	753.93	753.86	753.79	753.72	753.65	753.58	753.51	753.44	753.37	753.30	753.23	753.16	753.09	753.02	752.95	752.88	752.81	752.74	752.67	752.60	752.53	752.46	752.39	752.32	752.25	752.18	752.11	752.04	751.97	751.90	751.83	751.76	751.69	751.62	751.55	751.48	751.41	751.34	751.27	751.20	751.13	751.06	750.99	750.92	750.85	750.78	750.71	750.64	750.57	750.50	750.43	750.36	750.29	750.22	750.15	750.08	750.01	749.94	749.87	749.80	749.73	749.66	749.59	749.52	749.45	749.38	749.31	749.24	749.17	749.10	749.03	748.96	748.89	748.82	748.75	748.68	748.61	748.54	748.47	748.40	748.33	748.26	748.19	748.12	748.05	747.98	747.91	747.84	747.77	747.70	747.63	747.56	747.49	747.42	747.35	747.28	747.21	747.14	747.07	747.00	746.93	746.86	746.79	746.72	746.65	746.58	746.51	746.44	746.37	746.30	746.23	746.16	746.09	746.02	745.95	745.88	745.81	745.74	745.67	745.60	745.53	745.46	745.39	745.32	745.25	745.18	745.11	745.04	744.97	744.90	744.83	744.76	744.69	744.62	744.55	744.48	744.41	744.34	744.27	744.20	744.13	744.06	743.99	743.92	743.85	743.78	743.71	743.64	743.57	743.50	743.43	743.36	743.29	743.22	743.15	743.08	743.01	742.94	742.87	742.80	742.73	742.66	742.59	742.52	742.45	742.38	742.31	742.24	742.17	742.10	742.03	741.96	741.89	741.82	741.75	741.68	741.61	741.54	741.47	741.40	741.33	741.26	741.19	741.12	741.05	740.98	740.91	740.84	740.77	740.70	740.63	740.56	740.49	740.42	740.35	740.28	740.21	740.14	740.07	739.99	739.92	739.85	739.78	739.71	739.64	739.57	739.50	739.43	739.36	739.29	739.22	739.15	739.08	739.01	738.94	738.87	738.80	738.73	738.66	738.59	738.52	738.45	738.38	738.31	738.24	738.17	738.10	738.03	737.96	737.89	737.82	737.75	737.68	737.61	737.54	737.47	737.40	737.33	737.26	737.19	737.12	737.05	736.98	736.91	736.84	736.77	736.70	736.63	736.56	736.49	736.42	736.35	736.28	736.21	736.14	736.07	736.00	735.93	735.86	735.79	735.72	735.65	735.58	735.51	735.44	735.37	735.30	735.23	735.16	735.09	735.02	734.95	734.88	734.81	734.74	734.67	734.60	734.53	734.46	734.39	734.32	734.25	734.18	734.11	734.04	733.97	733.90	733.83	733.76	733.69	733.62	733.55	733.48	733.41	733.34	733.27	733.20	733.13	733.06	732.99	732.92	732.85	732.78	732.71	732.64	732.57	732.50	732.43	732.36	732.29	732.22	732.15	732.08	732.01	731.94	731.87	731.80	731.73	731.66	731.59	731.52	731.45	731.38	731.31	731.24	731.17	731.10	731.03	730.96	730.89	730.82	730.75	730.68	730.61	730.54	730.47	730.40	730.33	730.26	730.19	730.12	730.05	729.98	729.91	729.84	729.77	729.70	729.63	729.56	729.49	729.42	729.35	729.28	729.21	729.14	729.07	729.00	728.93	728.86	728.79	728.72	728.65	72

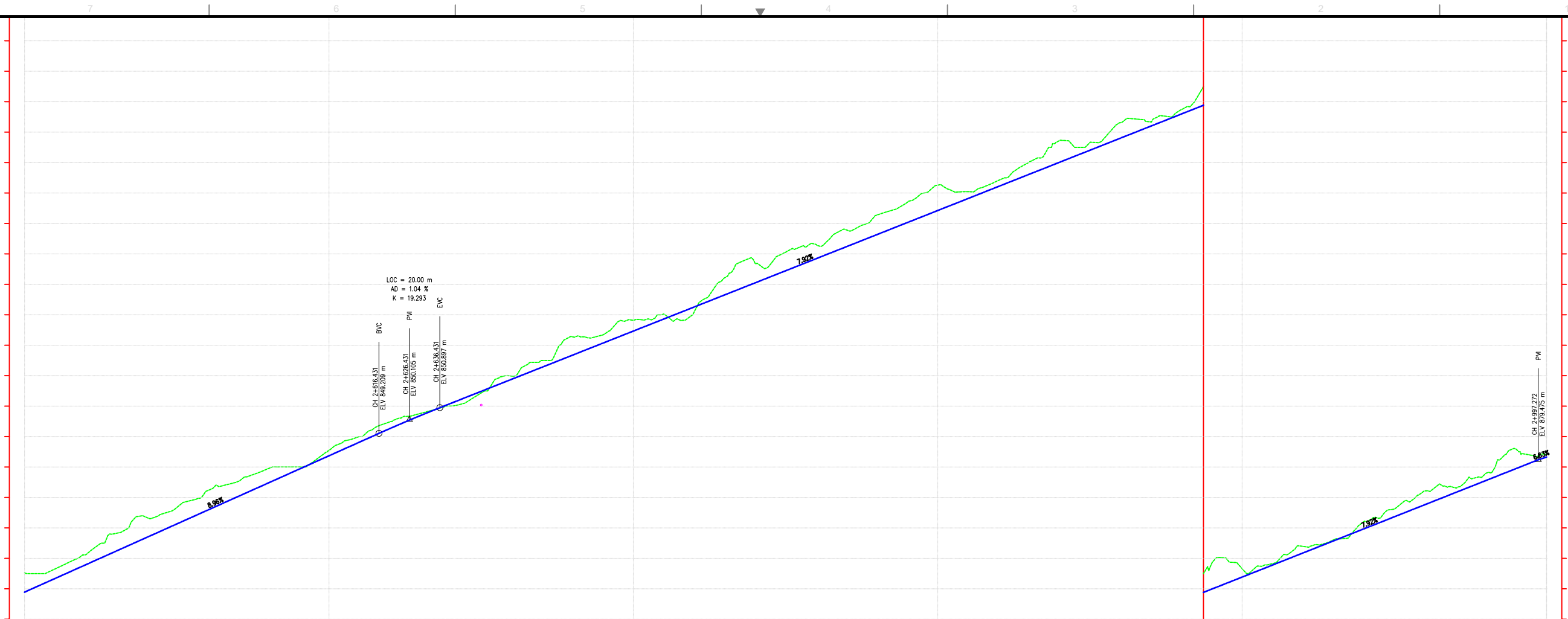


IP No.	CO-ORDINATES(m)		WCB (D-M-S)	DIST. (m)	DEF. ANG. (D-M-S)	TAN. LEN. (m)	SIMPLE CURVE DATA			CHAINAGE			
	EASTING	NORTHING					R (m)	E (m)	LC (m)	BC	MC	EC	IP
65	322026.342	3207588.901	12-40-49.38	18.088	14-40-58.50	9.019	70.000	0.579	17.939	1+980.678	1+989.647	1+989.696	
66	322032.030	3207614.184	328-19-48.95	25.914	44-21-04.13	11.412	28.000	2.236	21.674	2+004.098	2+014.936	2+015.512	
67	322020.021	3207633.651	347-33-37.58	22.873	19-13-48.62	8.640	51.000	0.727	17.117	2+028.594	2+037.152	2+045.721	
68	322016.229	3207650.842	313-59-41.69	17.605	33-33-55.89	8.825	16.000	0.712	9.373	2+049.851	2+054.537	2+054.676	
69	322008.897	3207657.921	271-04-51.33	10.192	42-54-50.36	4.717	12.000	0.894	8.988	2+059.874	2+064.368	2+064.590	
70	321995.498	3207658.174	290-59-34.27	13.402	19-54-42.94	5.793	33.000	0.505	11.468	2+071.754	2+077.488	2+083.223	
71	321984.626	3207662.346	331-06-46.69	11.644	40-06-30.42	5.476	15.000	0.968	10.500	2+083.598	2+088.849	2+089.074	
72	321975.904	3207678.147	39-17-21.86	18.049	68-11-17.18	8.800	13.000	0.698	15.471	2+097.872	2+105.608	2+113.344	
73	321987.281	3207692.052	70-01-08.42	17.966	30-43-38.95	8.792	32.000	1.186	17.161	2+113.718	2+122.299	2+130.679	
74	322027.606	3207706.716	108-58-13.47	42.908	38-57-12.65	10.610	30.000	1.821	20.396	2+154.385	2+164.583	2+174.781	
75	322047.631	3207699.763	160-04-18.83	21.387	51-06-53.36	10.517	22.000	2.385	19.622	2+175.041	2+184.852	2+194.663	
76	322059.335	3207668.034	170-12-05.54	33.750	10-07-41.71	14.090	159.000	0.263	28.107	2+203.805	2+217.858	2+231.912	
77	322064.138	3207640.224	191-18-35.76	28.222	21-06-35.21	8.944	48.000	0.826	17.685	2+237.100	2+245.942	2+254.785	
78	322060.599	3207622.527	84-04-16.13	18.048	107-14-19.63	5.429	4.000	2.744	7.487	2+258.460	2+262.203	2+265.946	
79	322072.174	3207623.729	01-04-27.70	11.638	82-59-48.43	5.308	6.000	2.011	8.691	2+266.841	2+271.192	2+272.155	
80	322072.861	3207660.323	347-12-30.70	36.601	13-52-10.40	17.636	145.000	1.069	35.100	2+289.195	2+306.745	2+324.295	
81	322065.023	3207694.833	349-33-18.57	35.389	02-21-1.28	17.683	862.000	0.181	35.360	2+324.365	2+342.045	2+359.725	
82	322055.795	3207744.892	348-44-19.79	50.902	00-48-58.79	21.842	3066.000	0.078	38.683	2+371.102	2+392.944	2+414.786	
83	322047.262	3207781.745	326-24-43.76	43.694	22-19-36.19	19.537	99.000	1.099	43.678	2+417.101	2+436.390	2+454.636	
84	322025.520	3207820.485	328-37-30.73	39.302	02-12-46.97	13.733	711.000	0.133	27.462	2+461.711	2+475.443	2+489.174	
85	322011.201	3207843.967	321-56-41.56	27.504	06-40-49.17	4.961	85.000	0.145	9.910	2+497.984	2+502.938	2+502.984	

12.5 0 12.5 25 37.5 50 62.5m

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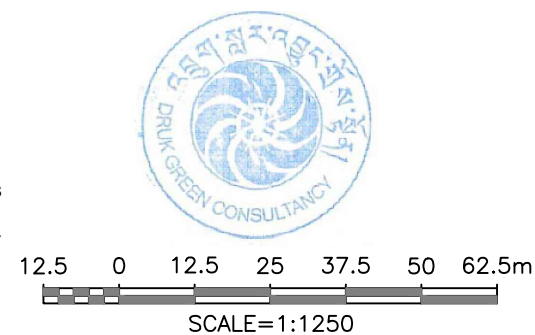
CHAINAGE(Km)	EXISTING LEVEL(m)	DESIGN LEVEL(m)
2+500	-840.039	-838.781
2+510	-840.302	-839.676
2+520	-841.234	-840.572
2+530	-842.637	-841.468
2+540	-843.697	-842.363
2+550	-844.339	-843.259
2+560	-845.440	-844.155
2+570	-846.044	-845.050
2+580	-846.894	-845.946
2+590	-847.000	-846.842
2+600	-848.093	-847.737
2+610	-849.000	-848.633
2+620	-849.967	-849.526
2+630	-850.519	-850.377
2+640	-851.000	-851.179
2+650	-851.867	-851.971
2+660	-852.976	-852.763
2+670	-854.000	-853.555
2+680	-855.555	-854.347
2+690	-855.682	-855.139
2+700	-856.640	-855.931
2+710	-857.052	-856.723
2+720	-857.195	-857.515
2+730	-859.432	-858.307
2+740	-860.380	-859.099
2+750	-861.112	-859.891
2+760	-861.622	-860.683
2+770	-862.579	-861.475
2+780	-863.554	-862.267
2+790	-864.388	-863.059
2+800	-865.517	-863.851
2+810	-865.089	-864.643
2+820	-865.835	-865.435
2+830	-867.032	-866.227
2+840	-868.446	-867.019
2+850	-868.317	-867.811
2+860	-869.619	-868.603
2+870	-869.672	-869.395
2+880	-870.475	-870.187
2+890	-872.667	-870.979
2+900	-872.324	-871.771
2+910	-872.657	-872.563
2+920	-873.786	-873.355
2+930	-874.217	-874.147
2+940	-875.416	-874.939
2+950	-876.234	-875.731
2+960	-877.436	-876.523
2+970	-877.634	-877.315
2+980	-878.576	-878.107
2+990	-880.176	-878.899
3+000	-879.824	-879.656

CHAINAGE : 2+500 - 3+000


IP No.	CO-ORDINATES(m)		WCB (D-M-S)	DIST. (m)	DEF. ANG. (D-M-S)	TAN. LEN. (m)	SIMPLE CURVE DATA			CHAINAGE			
	EASTING	NORTHING					R (m)	E (m)	LC (m)	BC	MC	EC	IP
85	322011.201	3027843.967	321=56-41.56	27.504	66=40-49.17	4.961	85.000	0.145	9.910	2+497.984	2+502.930	2+507.894	2+502.944
86	322005.041	3027851.835	256=41-21.10	9.992	65=15-39.46	4.482	7.000	1.312	7.973	2+508.443	2+512.436	2+516.416	2+512.925
87	321983.678	3027846.778	284=16-27.05	21.954	27=35-24.95	10.803	44.000	1.307	21.188	2+523.084	2+533.678	2+544.272	2+533.888
88	321947.904	3027855.880	302=48-40.92	36.914	18=32-13.87	5.712	35.000	0.463	11.324	2+564.671	2+570.332	2+575.994	2+570.382
89	321938.297	3027862.074	261=37-0.31	11.431	41=11-40.62	5.637	15.000	1.024	10.785	2+576.078	2+581.468	2+586.861	2+581.713
90	321902.270	3027856.765	361=11-48.10	36.416	00=25-12.21	14.454	3943.000	0.026	28.908	2+603.186	2+617.639	2+632.093	2+617.640
91	321873.701	3027852.340	281=09-29.47	28.909	89=57-41.37	4.997	5.000	2.069	7.851	2+641.552	2+645.477	2+649.403	2+646.544
92	321871.932	3027863.717	71=28-11.55	11.514	80=18-42.08	5.062	6.000	1.850	8.410	2+650.857	2+655.062	2+659.267	2+655.922
93	321917.566	3027879.013	73=04-20.95	48.129	01=36-9.40	15.189	1086.000	0.106	30.376	2+687.145	2+702.333	2+717.521	2+702.334
94	321946.640	3027887.862	83=25-31.54	30.391	10=21-10.59	9.331	103.000	0.422	16.611	2+723.392	2+732.696	2+742.004	2+732.723
95	321965.285	3027890.010	70=23-32.52	18.769	13=01-59.02	9.367	82.000	0.533	18.653	2+742.075	2+751.401	2+760.727	2+751.441
96	321990.125	3027898.859	83=05-19.58	26.369	12=41-47.06	13.128	118.000	0.728	26.148	2+764.601	2+777.675	2+790.750	2+777.728
97	322023.497	3027902.904	101=36-17.14	33.617	18=30-57.56	7.172	44.000	0.581	14.219	2+804.068	2+811.176	2+818.285	2+811.328
98	322037.655	3027899.997	137=05-12.40	14.453	35=28-55.25	7.038	22.000	1.098	13.624	2+818.528	2+825.340	2+832.152	2+825.567
99	322097.827	3027835.275	142=22-58.07	88.371	03=17-45.67	14.760	513.000	0.212	29.511	2+898.728	2+913.481	2+928.237	2+913.485
100	322116.662	3027812.521	153=13-16.17	29.538	10=2=18.10	14.738	131.000	0.826	29.353	2+928.277	2+942.954	2+957.630	2+943.015
101	322130.314	3027785.469	142=14-40.15	30.302	10=58-36.03	15.085	157.000	0.723	30.078	2+958.108	2+973.147	2+988.186	2+973.193
102	322153.215	3027755.899	127=05-51.17	37.401	15=08-48.98	15.157	114.000	1.003	30.137	2+995.343	2+1010.414	2+1025.483	2+1010.502

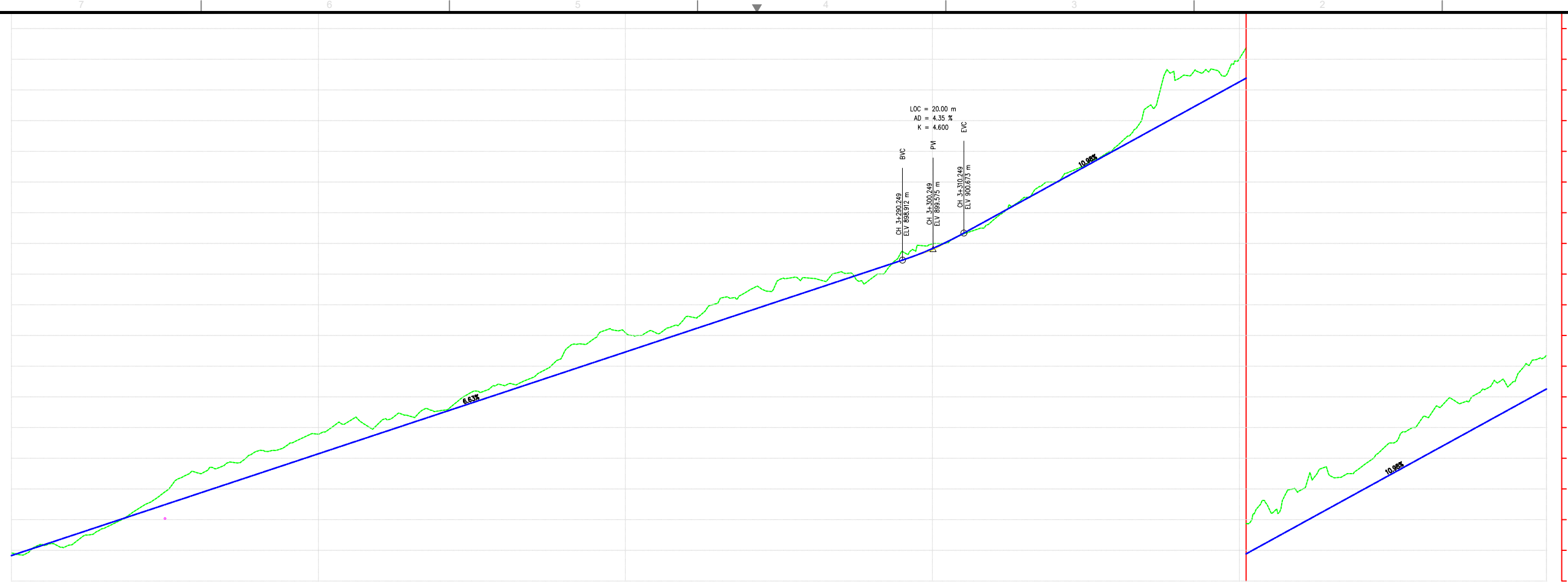
NOTE:

1. ALL DIMENSIONS, ELEVATIONS & DETAILS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
2. NO DIMENSION SHALL BE MEASURED FROM THE DRAWINGS. ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.
3. ALL DIMENSIONS/DETAILS SHALL BE CHECKED ALONG WITH THE RELEVANT DRAWINGS BEFORE STARTING EXECUTION OF WORKS. DISCREPANCY, IF ANY, SHALL BE IMMEDIATELY BROUGHT TO THE NOTICE OF PROJECT AUTHORITY/CONSULTANT FOR REVIEW.

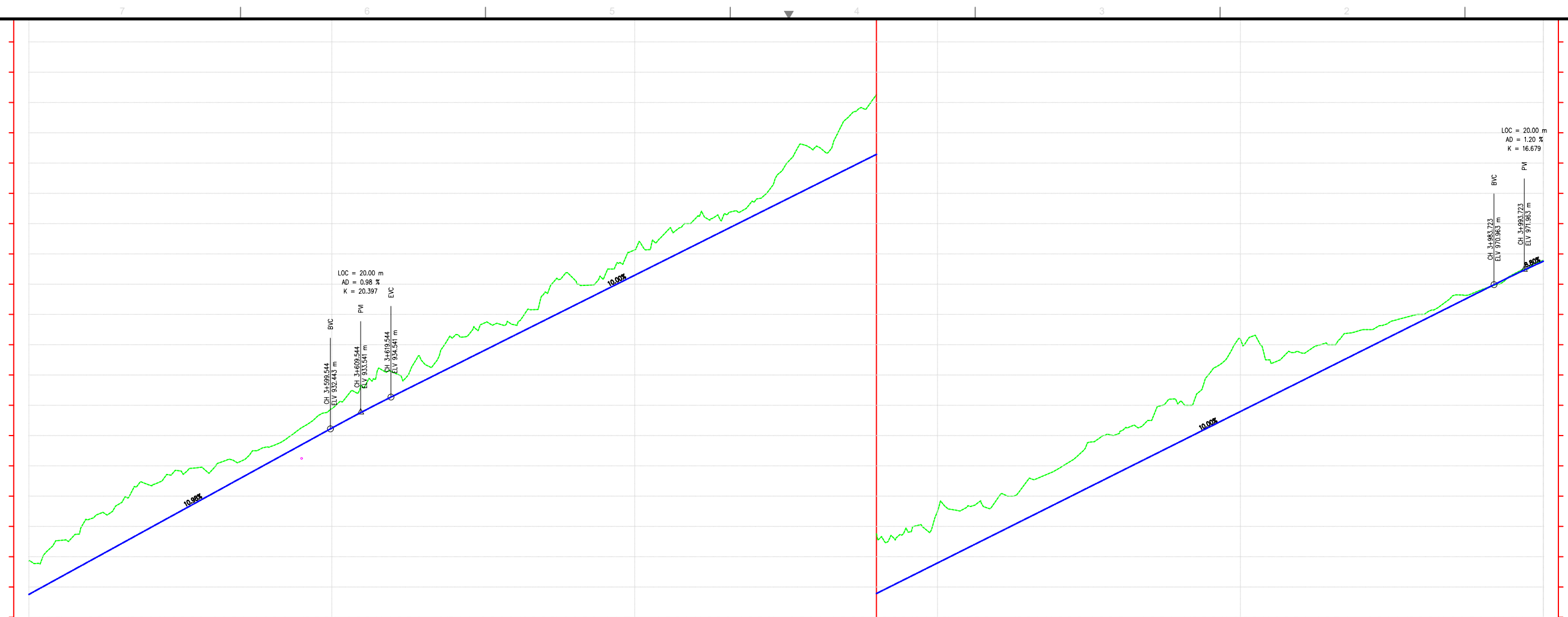


**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn:	Checked:	Recommended:	Approved:
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD</b> <b>GENERAL PLAN</b> (CHAINAGE 2500-3000) SHEET 10 OF 51					
 འབྲས་ཁྲིམས་འཕེལ་སྐྱོད་སྒྲིལ་ Drink Green Consultancy		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-TSAMANG-FARMROAD-2024-01		REV NA	



DESIGN LEVEL(m)	3+000 879.656	3+010 880.320	3+020 880.983	3+030 881.647	3+040 882.310	3+050 882.973	3+060 883.637	3+070 884.300	3+080 884.964	3+090 885.627	3+100 886.290	3+110 886.954	3+120 887.617	3+130 888.281	3+140 888.944	3+150 889.607	3+160 890.271	3+170 890.934	3+180 891.598	3+190 892.261	3+200 892.924	3+210 893.588	3+220 894.251	3+230 894.915	3+240 895.578	3+250 896.241	3+260 896.905	3+270 897.568	3+280 898.232	3+290 898.895	3+300 899.558	3+310 900.221	3+320 900.885	3+330 901.548	3+340 902.211	3+350 902.875	3+360 903.538	3+370 904.201	3+380 904.865	3+390 905.528	3+400 906.191	3+410 906.855	3+420 907.518	3+430 908.181	3+440 908.845	3+450 909.508	3+460 910.172	3+470 910.835	3+480 911.499	3+490 912.162	3+500 912.825																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
EXISTING LEVEL(m)	879.824	880.382	880.983	881.420	882.539	883.810	885.086	886.662	888.459	890.870	893.577	896.409	899.340	902.281	905.111	907.914	910.765	913.622	916.482	919.345	922.211	925.078	927.945	930.812	933.679	936.546	939.413	942.280	945.147	948.014	950.881	953.748	956.615	959.482	962.349	965.216	968.083	970.950	973.817	976.684	979.551	982.418	985.285	988.152	991.019	993.886	996.753	999.620	1002.487	1005.354	1008.221	1011.088	1013.955	1016.822	1019.689	1022.556	1025.423	1028.290	1031.157	1034.024	1036.891	1039.758	1042.625	1045.492	1048.359	1051.226	1054.093	1056.960	1059.827	1062.694	1065.561	1068.428	1071.295	1074.162	1077.029	1079.896	1082.763	1085.630	1088.497	1091.364	1094.231	1097.098	1099.965	1102.832	1105.699	1108.566	1111.433	1114.300	1117.167	1120.034	1122.901	1125.768	1128.635	1131.502	1134.369	1137.236	1140.103	1142.970	1145.837	1148.704	1151.571	1154.438	1157.305	1160.172	1163.039	1165.906	1168.773	1171.640	1174.507	1177.374	1180.241	1183.108	1185.975	1188.842	1191.709	1194.576	1197.443	1200.310	1203.177	1206.044	1208.911	1211.778	1214.645	1217.512	1220.379	1223.246	1226.113	1228.980	1231.847	1234.714	1237.581	1240.448	1243.315	1246.182	1249.049	1251.916	1254.783	1257.650	1260.517	1263.384	1266.251	1269.118	1271.985	1274.852	1277.719	1280.586	1283.453	1286.320	1289.187	1292.054	1294.921	1297.788	1300.655	1303.522	1306.389	1309.256	1312.123	1314.990	1317.857	1320.724	1323.591	1326.458	1329.325	1332.192	1335.059	1337.926	1340.793	1343.660	1346.527	1349.394	1352.261	1355.128	1357.995	1360.862	1363.729	1366.596	1369.463	1372.330	1375.197	1378.064	1380.931	1383.798	1386.665	1389.532	1392.399	1395.266	1398.133	1400.999	1403.866	1406.733	1409.600	1412.467	1415.334	1418.201	1421.068	1423.935	1426.802	1429.669	1432.536	1435.403	1438.270	1441.137	1444.004	1446.871	1449.738	1452.605	1455.472	1458.339	1461.206	1464.073	1466.940	1469.807	1472.674	1475.541	1478.408	1481.275	1484.142	1487.009	1489.876	1492.743	1495.610	1498.477	1501.344	1504.211	1507.078	1509.945	1512.812	1515.679	1518.546	1521.413	1524.280	1527.147	1530.014	1532.881	1535.748	1538.615	1541.482	1544.349	1547.216	1550.083	1552.950	1555.817	1558.684	1561.551	1564.418	1567.285	1570.152	1573.019	1575.886	1578.753	1581.620	1584.487	1587.354	1590.221	1593.088	1595.955	1598.822	1601.689	1604.556	1607.423	1610.290	1613.157	1616.024	1618.891	1621.758	1624.625	1627.492	1630.359	1633.226	1636.093	1638.960	1641.827	1644.694	1647.561	1650.428	1653.295	1656.162	1659.029	1661.896	1664.763	1667.630	1670.497	1673.364	1676.231	1679.098	1681.965	1684.832	1687.699	1690.566	1693.433	1696.300	1699.167	1702.034	1704.901	1707.768	1710.635	1713.502	1716.369	1719.236	1722.103	1724.970	1727.837	1730.704	1733.571	1736.438	1739.305	1742.172	1745.039	1747.906	1750.773	1753.640	1756.507	1759.374	1762.241	1765.108	1767.975	1770.842	1773.709	1776.576	1779.443	1782.310	1785.177	1788.044	1790.911	1793.778	1796.645	1799.512	1802.379	1805.246	1808.113	1810.980	1813.847	1816.714	1819.581	1822.448	1825.315	1828.182	1831.049	1833.916	1836.783	1839.650	1842.517	1845.384	1848.251	1851.118	1853.985	1856.852	1859.719	1862.586	1865.453	1868.320	1871.187	1874.054	1876.921	1879.788	1882.655	1885.522	1888.389	1891.256	1894.123	1896.990	1899.857	1902.724	1905.591	1908.458	1911.325	1914.192	1917.059	1919.926	1922.793	1925.660	1928.527	1931.394	1934.261	1937.128	1939.995	1942.862	1945.729	1948.596	1951.463	1954.330	1957.197	1960.064	1962.931	1965.798	1968.665	1971.532	1974.399	1977.266	1980.133	1982.999	1985.866	1988.733	1991.600	1994.467	1997.334	2000.201	2003.068	2005.935	2008.802	2011.669	2014.536	2017.403	2020.270	2023.137	2026.004	2028.871	2031.738	2034.605	2037.472	2040.339	2043.206	2046.073	2048.940	2051.807	2054.674	2057.541	2060.408	2063.275	2066.142	2069.009	2071.876	2074.743	2077.610	2080.477	2083.344	2086.211	2089.078	2091.945	2094.812	2097.679	2100.546	2103.413	2106.280	2109.147	2112.014	2114.881	2117.748	2120.615	2123.482	2126.349	2129.216	2132.083	2134.950	2137.817	2140.684	2143.551	2146.418	2149.285	2152.152	2155.019	2157.886	2160.753	2163.620	2166.487	2169.354	2172.221	2175.088	2177.955	2180.822	2183.689	2186.556	2189.423	2192.290	2195.157	2198.024	2200.891	2203.758	2206.625	2209.492	2212.359	2215.226	2218.093	2220.960	2223.827	2226.694	2229.561	2232.428	2235.295	2238.162	2241.029	2243.896	2246.763	2249.630	2252.497	2255.364	2258.231	2261.098	2263.965	2266.832	2269.699	2272.566	2275.433	2278.300	2281.167	2284.034	2286.901	2289.768	2292.635	2295.502	2298.369	2301.236	2304.103	2306.970	2309.837	2312.704	2315.571	2318.438	2321.305	2324.172	2327.039	2329.906	2332.773	2335.640	2338.507	2341.374	2344.241	2347.108	2349.975	2352.842	2355.709	2358.576	2361.443	2364.310	2367.177	2370.044	2372.911	2375.778	2378.645	2381.512	2384.379	2387.246	2390.113	2392.980	2395.847	2398.714	2401.581	2404.448	2407.315	2410.182	2413.049	2415.916	2418.783	2421.650	2424.517	2427.384	2430.251	2433.118	2435.985	2438.852	2441.719	2444.586	2447.453	2450.320	2453.187	2456.054	2458.921	2461.788	2464.655	2467.522	2470.389	2473.256	2476.123	2478.990	2481.857	2484.724	2487.591	2490.458	2493.325	2496.192	2499.059	2501.926	2504.793	2507.660	2510.527	2513.394	2516.261	2519.128	2521.995	2524.862	2527.729	2530.596	2533.463	2536.330	2539.197	2542.064	2544.931	2547.798	2550.665	2553.532	2556.400	2559.267	2562.134	2564.999	2567.866	2570.733	2573.600	2576.467	2579.334	2582.201	2585.068	2587.935	2590.802	2593.669	2596.536	2599.403	2602.270	2605.137	2608.004	2610.871	2613.738	2616.605	2619.472	2622.339	2625.206	2628.073	2630.940	2633.807	2636.674	2639.541	2642.408	2645.275	2648.142	2651.009	2653.876	2656.743	2659.610	2662.477	2665.344	2668.211	2671.078	2673.945	2676.812	2679.679	2682.546	2685.413	2688.280	2691.147	2694.014	2696.881	2699.748	2702.615	2705.482	2708.349	2711.216	2714.083	2716.950	2719.817	2722.684	2725.551	2728.418	2731.285	2734.152	2737.019	2739.886	2742.753	2745.620	2748.487	2751.354	2754.221	2757.088	2759.955	2762.822	2765.689	2768.556	2771.423	2774.290	2777.157	2780.024	2782.891	2785.758	2788.625	2791.492	2794.359	2797.226	2800.093	2802.960	2805.827	2808.694	2811.561	2814.428	2817.295	2820.162	2823.029	2825.896	2828.763	2831.630	2834.497	2837.364	2840.231	2843.098	2845.965	2848.832	2851.699	2854.566	2857.433	2860.300	2863.167	2866.034	2868.901	2871.768	2874.635	2877.502	2880.369	2883.236	2886.103	2888.970	2891.837	2894.704	2897.571	2900.438	2903.305	2906.172	2909.039	2911.906	2914.773	2917.640	2920.507	2923.374	2926.241	2929.108	2931.975	2934.842	2937.709	2940.576	2943.443	2946.310	2949.177	2952.044	2954.911	2957.778	2960.645	2963.512	2966.379	2969.246	2972.113	2974.980	2977.847	2980.714	2983.581	2986.448	2989.315	2992.182	2995.049	2997.916	3000.783	3003.650	3006.517	3009.384	3012.251	3015.118	3017.985	3020.852	3023.719	3026.586	3029.453	3032.320	3035.187	3038.054	3040.921	3043.788	3046.655	3049.522	3052.389	3055.256	3058.123	3060.990	3063.857	3066.724	3069.591	3072.458	3075.325	3078.192	3081.059	3083.926	3086.793	3089.660	3092.527	3095.394	3098.261	3101.128	3103.995	3106.862	3109.729	3112.596	3115.463	3118.330	3121.197	3124.064	3126.931	3129.798	3132.665	3135.532	3138.400	3141.267	3144.134	3146.999	3149.866	3152.733	3155.600	3158.467	3161.334	3164.201	3167.068	3169.935	3172.802	3175.669	3178.536	3181.403	3184.270	3187.137	3190.004	3192.871	3195.738	3198.605	3201.472	3204.339	3207.206	3210.073	3212.940	3215.807	3218.674	3221.541	3224.408	3227.275	3230.142	3233.009	3235.876	3238.743	3241.610	3244.477	3247.344	3250.211	3253.078	3255.945	3258.812	3261.679	3264.546	3267.413	3270.280	3273.147	3276.014	3278.881	3281.748	3284.615	3287.482	3290.349	3293.216	3296.083	3298.950	3301.817	3304.684	3307.551	3310.418	3313.285	3316.152	3319.019	3321.886	3324.753	3327.620	3330.487	3333.354	3336.221	3339.088	3341.955	3344.822	3347.689	3350.556	3353.423	3356.290	3359.157	3362.024	3364.891	3367.758



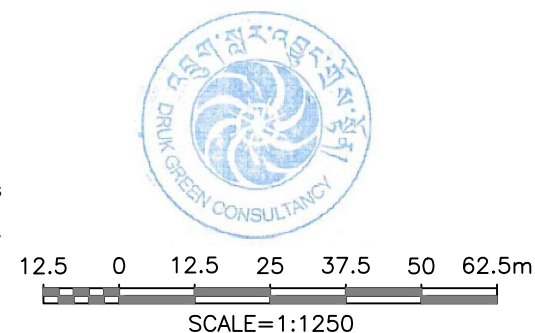
DESIGN LEVEL(m)	3+500	3+510	3+520	3+530	3+540	3+550	3+560	3+570	3+580	3+590	3+600	3+610	3+620	3+630	3+640	3+650	3+660	3+670	3+680	3+690	3+700	3+710	3+720	3+730	3+740	3+750	3+760	3+770	3+780	3+790	3+800	3+810	3+820	3+830	3+840	3+850	3+860	3+870	3+880	3+890	3+900	3+910	3+920	3+930	3+940	3+950	3+960	3+970	3+980	3+990	4+000	
EXISTING LEVEL(m)	923.703	925.073	926.479	927.507	928.719	929.669	929.623	930.308	931.292	932.527	933.779	935.257	936.199	936.877	938.477	939.399	939.330	941.354	942.329	942.487	944.259	945.362	946.322	946.627	947.557	949.929	951.106	952.929	954.357	954.736	955.999	956.377	956.899	958.117	958.822	960.560	961.144	962.000	963.237	965.150	967.357	965.839	966.469	967.000	967.979	968.564	969.000	970.225	970.664	971.642	972.579	
CHAINAGE(Km)	3+500	3+510	3+520	3+530	3+540	3+550	3+560	3+570	3+580	3+590	3+600	3+610	3+620	3+630	3+640	3+650	3+660	3+670	3+680	3+690	3+700	3+710	3+720	3+730	3+740	3+750	3+760	3+770	3+780	3+790	3+800	3+810	3+820	3+830	3+840	3+850	3+860	3+870	3+880	3+890	3+900	3+910	3+920	3+930	3+940	3+950	3+960	3+970	3+980	3+990	4+000	
HORIZONTAL SCHEMATIC																																																				
SUPER ELEVATION SCHEMATIC																																																				

CHAINAGE : 3+500 - 4+000


IP No.	CO-ORDINATES(m)		WCB (D-M-S)	DIST. (m)	DEF. ANG. (D-M-S)	TAN. LEN.	SIMPLE CURVE DATA			CHAINAGE			
	EASTING	NORTHING					R (m)	E (m)	LC (m)	BC	MC	EC	IP
122	321883.814	3027970.850	253-56-40.83	42.035	00-43-40.68	21.015	3308.000	0.067	42.029	3+481.834	3+502.846	3+523.863	3+502.849
123	321840.329	3027958.335	280-53-32.03	45.250	26-56-51.20	20.366	85.000	2.406	39.978	3+527.733	3+547.721	3+567.710	3+548.098
124	321800.257	3027966.046	20-10-43.36	40.807	99-17-11.33	5.884	5.000	2.721	8.664	3+582.268	3+586.600	3+590.932	3+588.152
125	321804.132	3027976.589	102-20-57.11	11.232	82-10-13.75	5.231	6.000	1.960	8.605	3+591.049	3+595.351	3+599.654	3+596.280
126	321821.714	3027972.739	100-11-34.18	17.999	02-09-22.93	1.976	105.000	0.019	3.952	3+610.445	3+612.421	3+614.397	3+610.445
127	321842.035	3027969.086	61-22-26.84	20.647	38-49-7.35	10.923	31.000	1.868	21.003	3+622.145	3+632.647	3+643.148	3+633.068
128	321857.774	3027977.676	51-30-20.26	17.930	09-52-56.68	6.820	79.000	0.294	13.607	3+643.336	3+650.139	3+656.943	3+650.156
129	321873.828	3027990.443	62-15-21.26	20.512	10-45-10.00	10.256	109.000	0.481	20.451	3+660.378	3+670.604	3+680.830	3+670.634
130	321915.164	302801.286	58-21-13.46	46.706	03-54-7.79	16.352	480.000	0.278	32.991	3+700.928	3+717.273	3+733.619	3+717.280
131	321943.060	3028029.379	88-10-4.26	32.768	29-48-50.80	3.727	14.000	0.488	7.285	3+746.308	3+749.951	3+753.593	3+750.035
132	321950.938	3028029.631	120-54-47.79	7.882	32-44-43.53	3.819	13.000	0.549	7.430	3+753.923	3+757.844	3+761.359	3+757.749
133	321972.048	3028016.989	41-51-57.23	24.606	79-02-56.56	11.550	14.000	1.415	19.315	3+770.595	3+780.252	3+789.910	3+782.145
134	321992.780	3028040.123	57-42-15.69	31.063	15-50-18.47	15.440	111.000	1.069	30.684	3+793.982	3+809.324	3+824.666	3+809.423
135	322023.603	3028059.605	101-01-36.40	36.465	43-19-20.70	13.901	35.000	2.659	26.464	3+831.790	3+845.022	3+858.254	3+845.690
136	322050.928	3028054.280	122-09-51.62	27.839	21-08-25.23	13.807	74.000	1.277	27.300	3+858.385	3+872.035	3+885.685	3+872.192
137	322074.388	3028039.528	65-44-28.66	27.713	56-25-22.97	13.411	25.000	3.370	24.619	3+886.179	3+898.489	3+910.799	3+898.599
138	322116.662	3028058.578	94-02-58.49	46.368	28-18-29.84	7.061	28.000	0.877	13.834	3+936.694	3+943.611	3+950.528	3+943.758
139	322130.946	3028057.567	118-07-25.45	14.320	24-04-26.95	5.037	33.000	0.742	13.866	3+950.750	3+957.683	3+964.616	3+957.787
140	322160.273	3028041.892	130-07-42.99	33.253	12-00-17.52	17.732	150.000	0.827	31.429	3+975.061	3+990.775	4+006.498	3+990.833

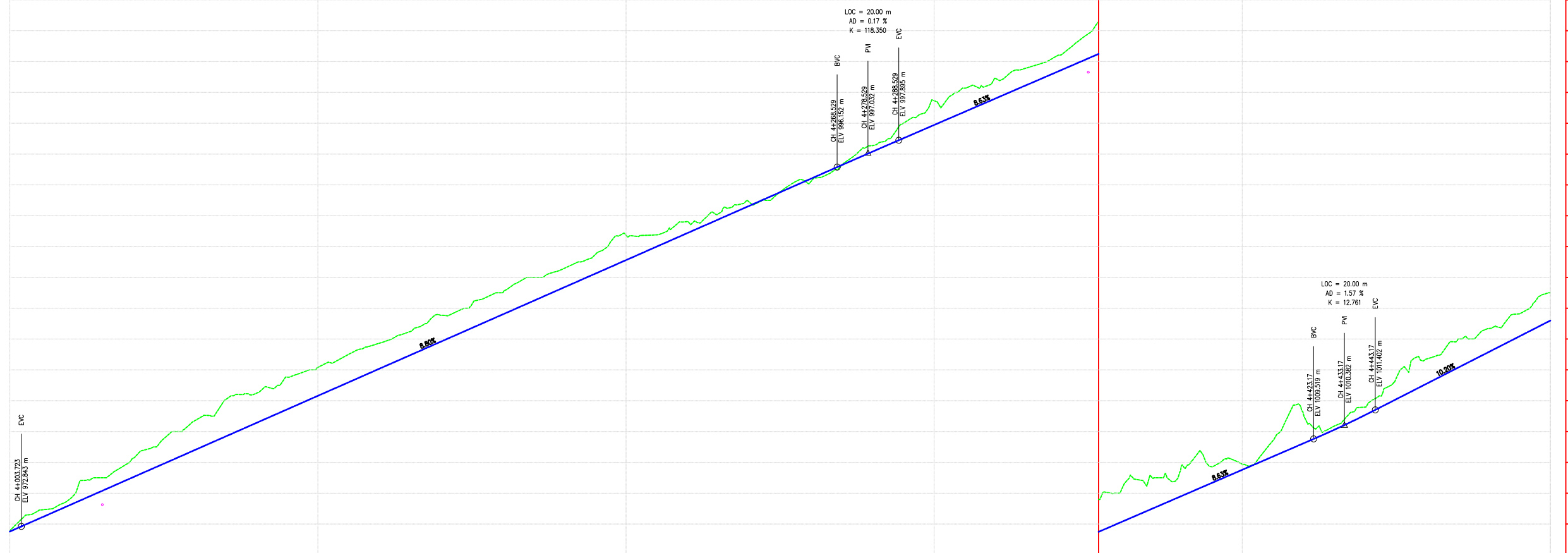
NOTE:

1. ALL DIMENSIONS, ELEVATIONS & DETAILS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
2. NO DIMENSION SHALL BE MEASURED FROM THE DRAWINGS. ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.
3. ALL DIMENSIONS/DETAILS SHALL BE CHECKED ALONG WITH THE RELEVANT DRAWINGS BEFORE STARTING EXECUTION OF WORKS. DISCREPANCY, IF ANY, SHALL BE IMMEDIATELY BROUGHT TO THE NOTICE OF PROJECT AUTHORITY/CONSULTANT FOR REVIEW.



**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn:	Checked:	Recommended:	Approved:
Client: <div>DORJILUNG HYDROPOWER PROJECT</div>					
Project: <div>DORJILUNG HYDROPOWER PROJECT</div> <div>(1125 MW)</div> <div>MONGAR, BHUTAN</div>					
Title: <div>IMPROVEMENT OF TSAMANG FARM ROAD</div> <div>GENERAL PLAN</div> <div>(CHAINAGE 3500-4000)</div> <div>SHEET 13 OF 51</div>					
CONSULTANT:		NAME	SIG.		
<div><div>འབྲུག་རྒྱུ་རྒྱུ་ལྟ་སྟེན་ལྟ་སྟེན་གྱི་ Druk Green Consultancy</div></div>		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-TSAMANG-FARMROAD-2024-01		REV NA	



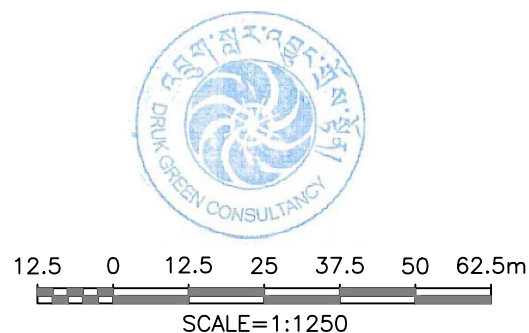
DESIGN LEVEL(m)	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512	972.512
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CHAINAGE : 4+000 - 4+500

IP No.	CO-ORDINATES(m)		WCB (D <sub>B</sub> -M-S)	DIST. (m)	DEF. ANG. (D-M-S)	TAN, LEN.	SIMPLE CURVE DATA			CHAINAGE			
	EASTING	NORTHING					R (m)	E (m)	LC (m)	BC	MC	EC	IP
140	322160.273	3202804.892	130-07-42.99	33.253	12-00-17.54	15.772	150.000	0.827	31.429	3+975.061	+390.775	+390.833	
141	322184.418	3202821.540	42-28-45.02	31.578	87-38-57.27	6.719	7.000	2.703	10.708	+4015.577	+4020.931	+4022.295	
142	322194.025	3202803.032	305-59-42.80	14.226	96-29-5.22	6.721	6.000	3.009	10.104	+4027.072	+4032.124	+4033.792	
143	322180.625	3202804.766	332-20-21.64	16.562	26-20-21.64	8.190	35.000	0.945	16.090	+4038.827	+4046.872	+4047.017	
144	322158.756	32028083.481	327-08-39.40	47.100	05-11-25.03	14.413	318.000	0.326	28.807	+4079.414	+4093.818	+4093.827	
145	322143.081	32028107.752	282-20-57.11	28.892	44-47-42.29	10.715	26.000	2.121	20.327	+4111.985	+4122.149	+4122.700	
146	322121.718	32028112.429	277-50-21.35	21.869	04-30-35.76	8.781	223.000	0.173	17.553	+4134.686	+4143.462	+4152.239	
147	322104.273	32028114.831	238-50-9.78	17.609	39-00-11.57	8.500	24.000	1.461	16.338	+4152.567	+4160.736	+4168.905	
148	322077.727	32028098.777	220-44-46.19	31.023	18-05-23.59	5.412	34.000	0.428	10.735	+4186.016	+4191.383	+4196.751	
149	322070.648	32028090.568	272-53-54.88	10.846	52-09-8.69	4.894	10.000	1.133	9.102	+4197.290	+4201.841	+4202.184	
150	322060.662	32028091.066	293-07-3.59	9.999	20-13-8.72	4.992	28.000	0.442	4.981	+4206.505	+4211.446	+4216.368	
151	322017.430	32028109.522	263-45-29.11	47.007	29-21-34.48	12.051	46.000	1.552	23.571	+4246.350	+4258.136	+4258.401	
152	321993.158	32028106.867	237-30-24.28	24.415	26-15-8.22	12.125	52.000	1.395	23.825	+4270.161	+4282.074	+4293.986	
153	321971.922	32028093.341	279-45-42.39	25.178	42-15-18.11	5.796	15.000	1.081	11.062	+4301.243	+4306.774	+4307.039	
154	321960.166	32028095.364	287-50-14.10	11.929	08-04-31.71	5.929	84.000	0.209	11.839	+4312.508	+4318.428	+4324.348	
155	321934.631	32028103.580	34-34-27.09	26.824	106-44-12.99	5.380	4.000	2.704	7.452	+4339.863	+4343.588	+4345.242	
156	321941.078	3202812.935	117-07-49.63	11.631	82-33-22.54	5.267	6.000	1.984	8.645	+4348.028	+4352.351	+4353.295	
157	321956.374	32028105.097	97-11-57.24	17.187	19-55-52.36	5.974	34.000	0.521	11.827	+4362.619	+4368.533	+4374.448	
158	321968.383	32028103.580	49-08-21.08	12.014	48-03-36.16	5.196	13.000	1.234	10.904	+4374.780	+4380.233	+4385.685	
159	322088.957	32028121.404	69-35-3.51	27.244	20-26-42.43	13.525	75.000	1.210	26.763	+4393.608	+4406.989	+4420.371	
160	322114.459	32028130.885	96-12-12.41	27.179	26-37-8.90	13.484	57.000	1.573	26.482	+4420.544	+4433.781	+4447.022	
161	322046.441	32028127.409	59-06-19.29	32.170	37-05-53.12	4.362	13.000	0.712	8.417	+4461.345	+4465.554	+4469.763	
162	322054.152	32028132.023	31-17-12.22	8.986	27-49-7.07	4.558	18.000	0.544	8.739	+4469.922	+4474.299	+4474.387	
163	322074.125	32028164.889	58-12-45.89	24.569	26-55-33.67	10.433	44.000	1.243	20.678	+4502.137	+4512.476	+4522.815	

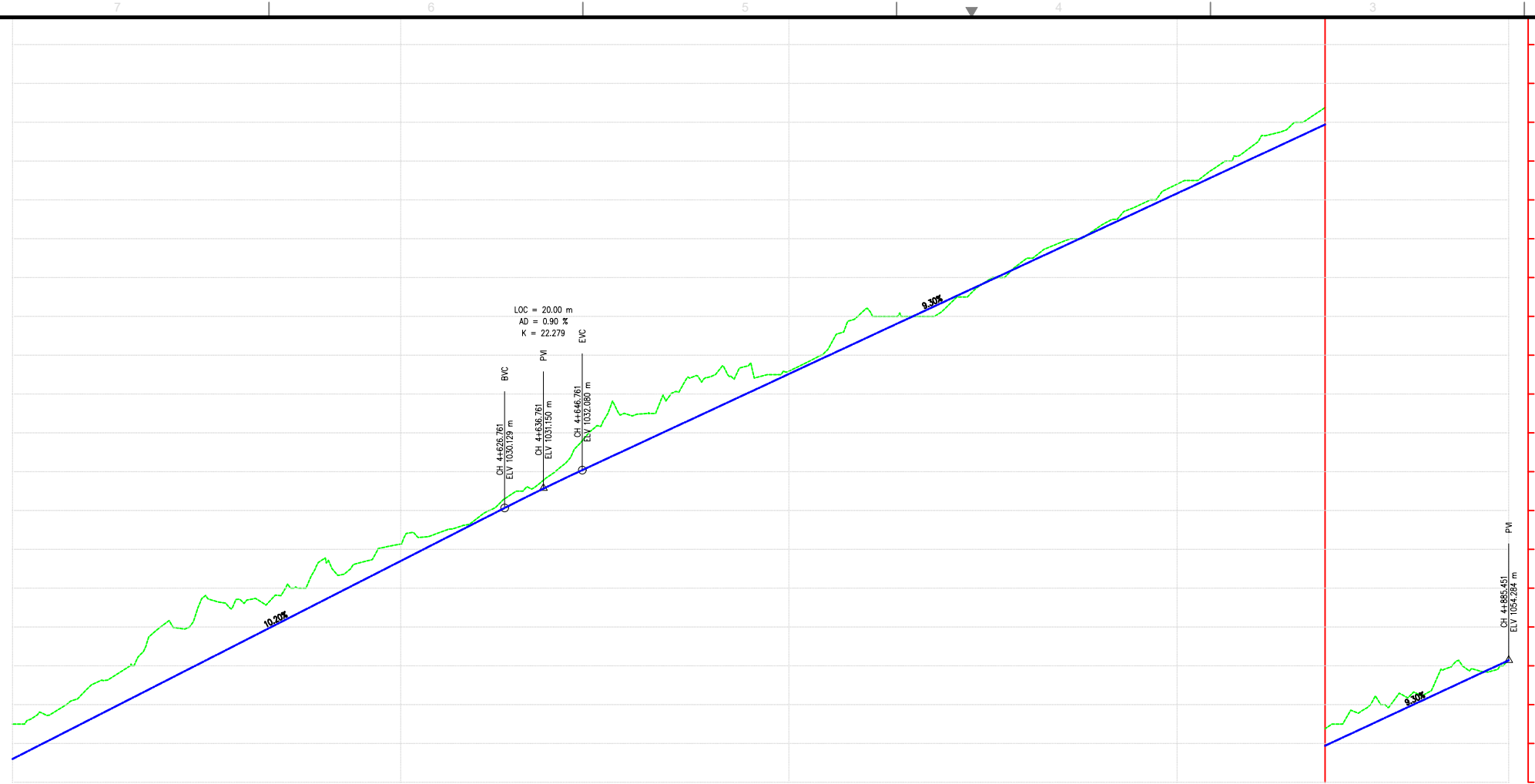
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**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn:	Checked:	Recommended:	Approved:
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD GENERAL PLAN (CHAINAGE 4000-4500) SHEET 14 OF 51</b>					
CONSULTANT:		NAME	SIG.		
 འབྲུག་རྒྱུ་རྩིས་འཕུལ་བའི་ལྟུང་། Druk Green Consultancy	Designed				
	Drawn				
	Checked				
	Approved				
	Issued Date	NOV 2024			
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-TSAMANG-FARMROAD-2024-01		REV NA	



DESIGN LEVEL(m)	017.195	018.215	019.235	020.255	021.275	022.300	023.320	024.340	025.366	026.388	027.408	028.428	029.448	030.457	031.447	032.387	033.311	034.242	035.172	036.102	037.032	037.963	038.893	039.823	040.753	041.684	042.614	043.544	044.475	045.405	046.335	047.265	048.196	049.126	050.056	050.986	051.917	052.847	053.777	054.708		
EXISTING LEVEL(m)	019.000	019.520	020.060	020.250	021.283	022.546	023.296	024.340	027.48	027.337	028.274	028.866	029.644	031.006	032.028	032.269	032.897	036.059	036.908	037.567	037.177	038.288	040.408	040.006	040.366	041.687	042.808	043.808	044.636	045.703	046.813	047.683	048.866	049.936	051.006	052.043	052.454	053.676	054.284			
CHAINAGE(Km)	4+500	4+510	4+520	4+530	4+540	4+550	4+560	4+570	4+580	4+590	4+600	4+610	4+620	4+630	4+640	4+650	4+660	4+670	4+680	4+690	4+700	4+710	4+720	4+730	4+740	4+750	4+760	4+770	4+780	4+790	4+800	4+810	4+820	4+830	4+840	4+850	4+860	4+870	4+880	+885.451		
HORIZONTAL SCHEMATIC	L = 20.678 R = 44		L = 19.137 R = 61		L = 17.952 R = 57		L = 17.624 R = 41		L=148		L = 26.027 R = 293		L = 28.311 R = 60		L = 22.940 R = 23		L = 16.213 R = 14		L = 19.424 R = 523		L=11.078		L = 14.230		L = 19.764 R = 50		L = 18.988 R = 29		L=14.805		L = 18.152 R = 230		L=7.885 R = 5		L = 8.445 R = 5		L = 19.772 R = 39		L=17.723			
SUPER ELEVATION SCHEMATIC	SE=0%		SE=0%		SE=0%		SE=0%		SE=0%		SE=0%		SE=0%		SE=0%		SE=0%		SE=0%		SE=0%		SE=0%		SE=0%		SE=0%		SE=0%		SE=0%		SE=0%		SE=0%		SE=0%		SE=0%		SE=0%	

CHAINAGE : 4+500 - 4+885.451

IP No.	CO-ORDINATES(m)		WCB (D-M-S)	DIST. (m)	DEF. ANG. (D-M-S)	TAN. LEN. (m)	SIMPLE CURVE DATA			CHAINAGE			
	EASTING	NORTHING					R (m)	E (m)	LC (m)	BC	MC	EC	IP
163	322074.125	3028164.889	58-12-45.89	38.459	26-55-33.67	10.533	44.000	1.243	20.678	4+502.137	4+512.476	4+522.815	4+512.670
164	322092.075	3028176.013	76-11-16.26	21.118	17-58-30.37	9.648	61.000	0.758	19.137	4+523.751	4+533.320	4+542.888	4+533.399
165	322111.037	3028180.675	58-08-32.83	19.526	18-02-43.44	9.051	57.000	0.714	17.952	4+543.716	4+552.692	4+561.668	4+552.767
166	322126.522	3028190.298	82-46-18.52	18.231	24-37-45.69	8.950	41.000	0.966	17.624	4+561.898	4+570.710	4+579.522	4+570.848
167	322152.436	3028193.584	87-51-40.74	26.122	05-05-22.23	13.022	293.000	0.289	26.027	4+583.671	4+596.685	4+609.698	4+596.693
168	322182.901	3028194.722	114-53-48.17	30.486	27-02-7.43	14.424	60.000	1.709	28.311	4+612.738	4+626.894	4+641.049	4+627.162
169	322209.320	3028182.460	57-45-00.09	29.127	57-08-48.08	12.526	23.000	3.190	22.940	4+643.225	4+654.695	4+666.166	4+655.752
170	322230.557	3028195.860	351-23-43.87	25.111	66-21-16.23	9.153	14.000	2.727	16.213	4+669.597	4+677.704	4+685.810	4+678.750
171	322227.650	3028215.074	353-31-24.56	19.433	02-07-40.69	9.713	523.000	0.090	19.424	4+686.377	4+696.089	4+705.801	4+696.090
172	322224.776	3028240.385	334-32-17.45	25.473	18-59-7.11	4.682	28.000	0.389	9.278	4+716.879	4+721.518	4+726.157	4+721.561
173	322220.697	3028248.952	354-59-12.79	9.489	20-26-55.34	4.690	26.000	0.420	9.279	4+726.274	4+730.914	4+735.554	4+730.964
174	322218.169	3028277.774	17-38-4.06	28.932	22-38-51.27	10.013	50.000	0.993	19.764	4+749.784	4+759.666	4+769.548	4+759.798
175	322224.237	3028296.862	55-08-55.29	20.029	37-30-51.23	9.848	29.000	1.627	18.988	4+769.716	4+779.210	4+788.704	4+779.564
176	322251.921	3028316.139	50-37-36.28	33.735	04-31-19.00	9.081	230.000	0.179	18.152	4+803.509	4+812.585	4+821.661	4+812.590
177	322266.015	3028327.708	320-16-26.03	18.233	90-21-10.26	5.031	5.000	2.093	7.885	4+825.783	4+829.725	4+833.667	4+830.814
178	322258.557	3028336.681	223-30-20.40	11.670	96-46-5.63	5.628	5.000	2.529	8.445	4+834.678	4+838.900	4+843.122	4+840.308
179	322244.399	3028321.764	252-33-10.12	20.566	29-02-49.72	10.103	39.000	1.287	19.772	4+847.958	4+857.842	4+867.726	4+858.058

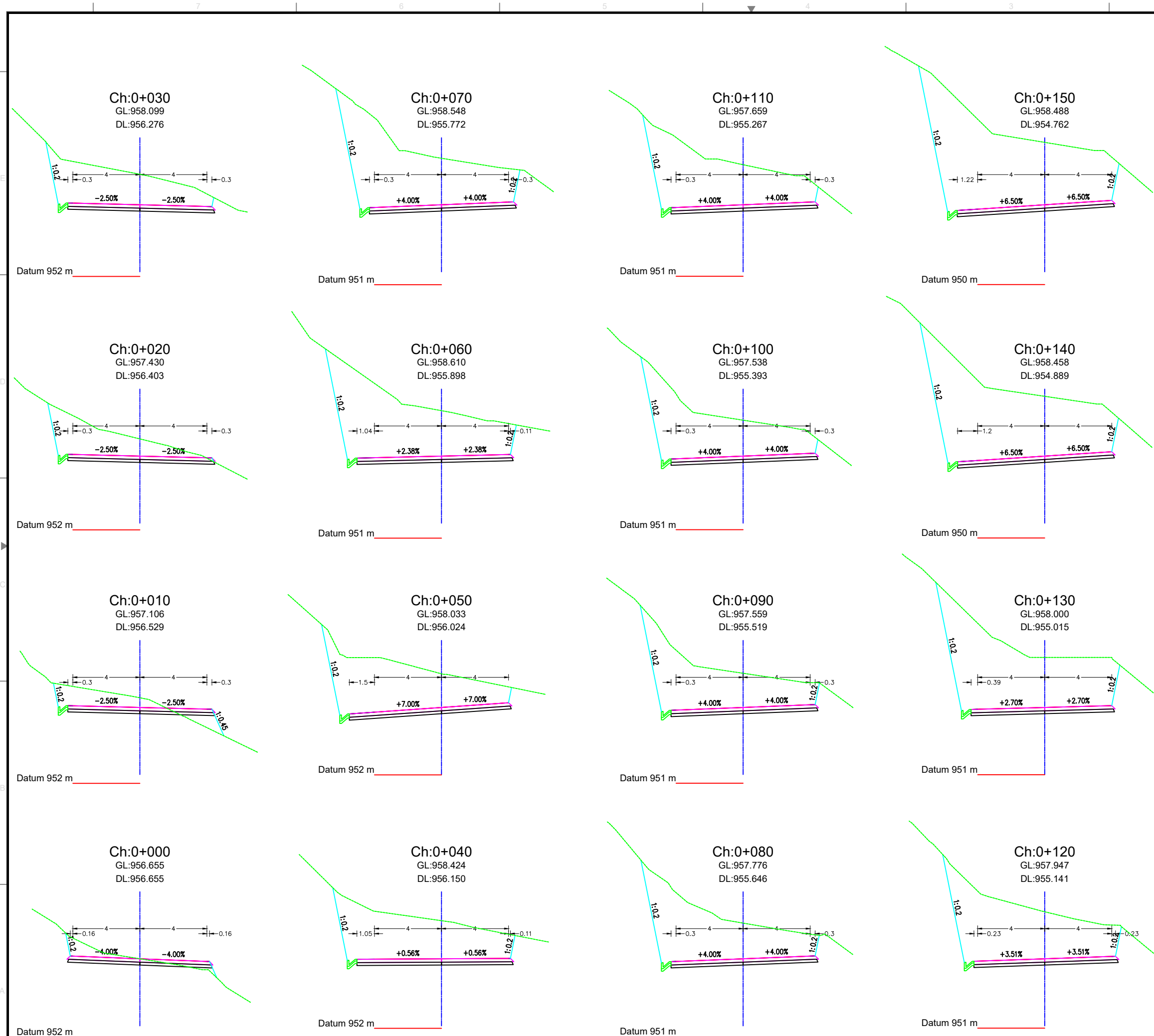
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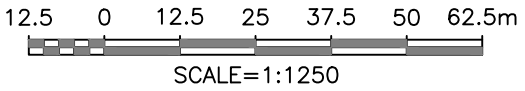


ISSUED FOR CONSTRUCTION

Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <div>DORJILUNG HYDROPOWER PROJECT</div>					
Project: <div>DORJILUNG HYDROPOWER PROJECT (1125 MW) MONGAR, BHUTAN</div>					
Title: <div>IMPROVEMENT OF TSAMANG FARM ROAD GENERAL PLAN (CHAINAGE 4500 - 4886) SHEET 15 OF 51</div>					
CONSULTANT:			NAME	SIG.	
 <div>འབྲུག་རྒྱུ་རྩལ་ཁྲིམས་འཛུགས། Druk Green Consultancy</div>		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-TSAMANG-FARMROAD-2024-01		REV NA	

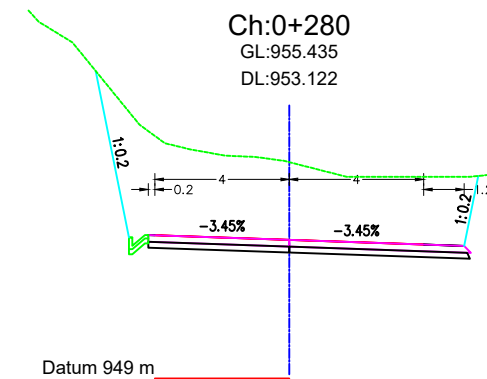


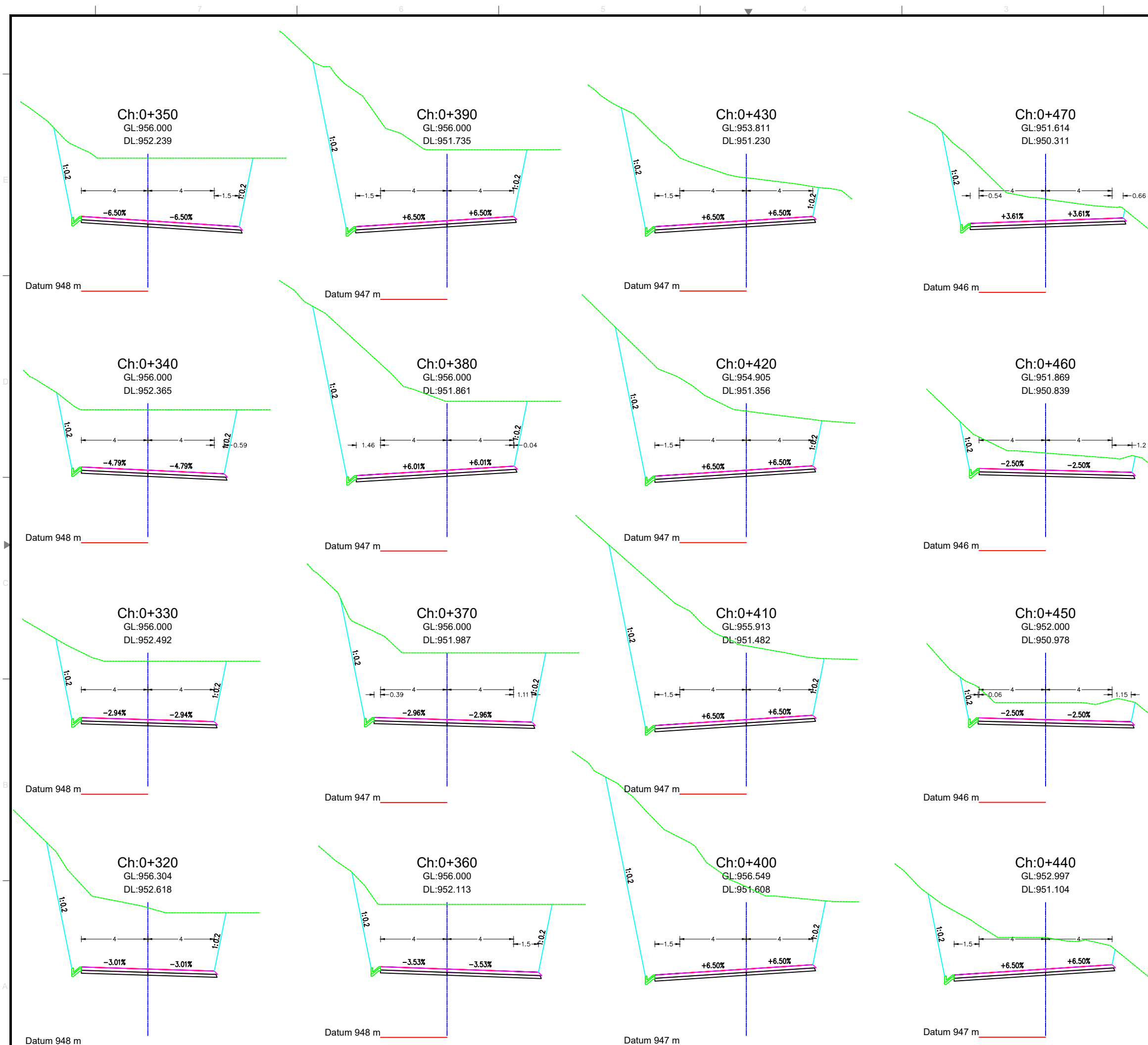
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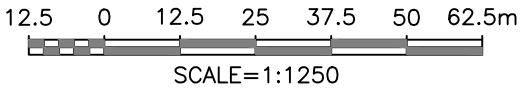
**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn:	Checked:	Recommended:	Approved:
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD CROSS SECTION</b>					
SHEET 16 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	A3	Original Scale	AS SHOWN	DRAWING NO.	DHPP-TSAMANG-FARMROAD-2024-01
				REV	NA



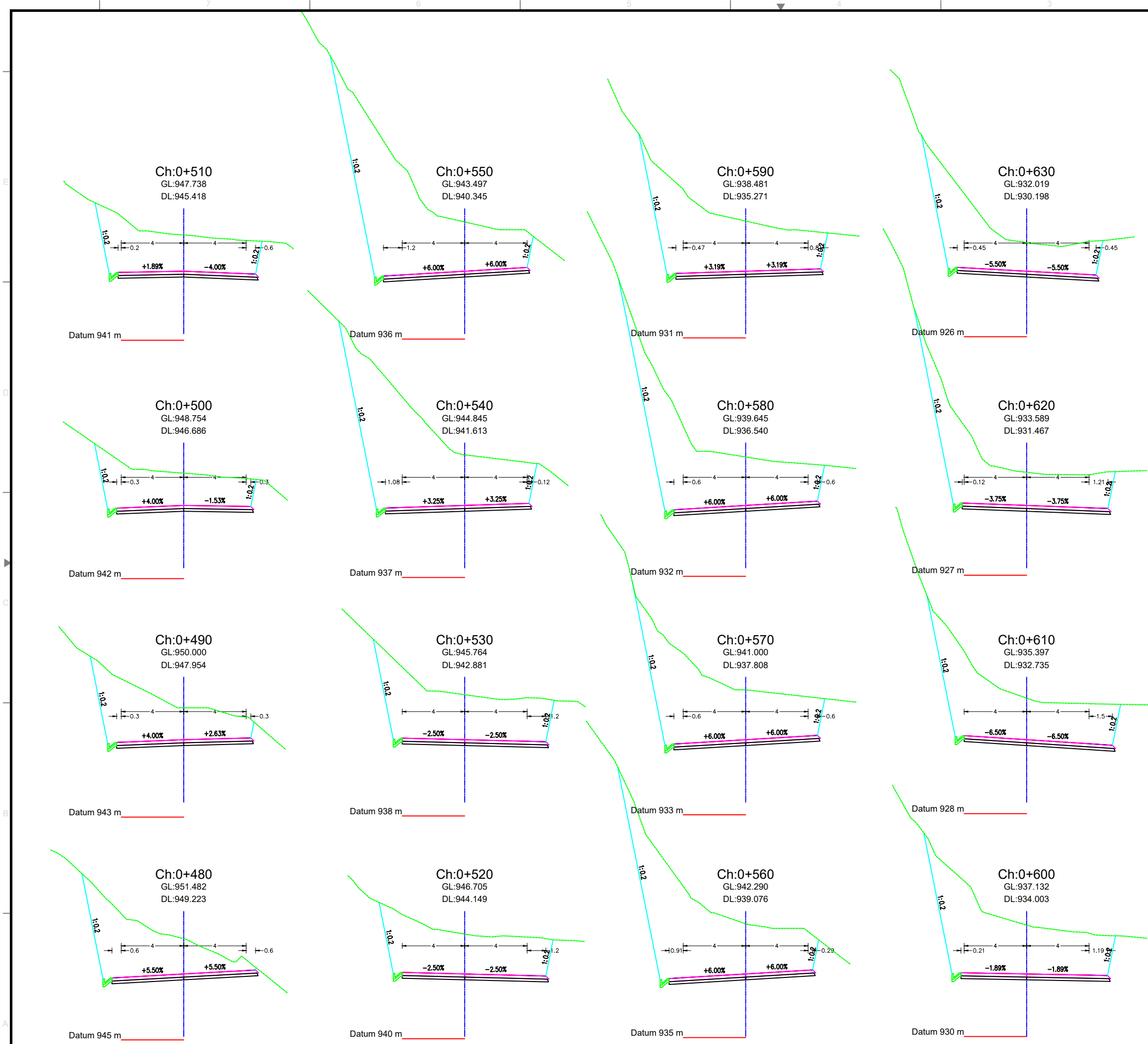


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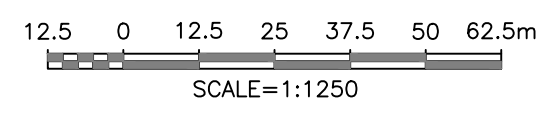


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Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD CROSS SECTION</b>					
SHEET 18 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	A3	Original Scale	AS SHOWN	DRAWING NO.	REV
				DHPP-TSAMANG-FARMROAD-2024-01	NA

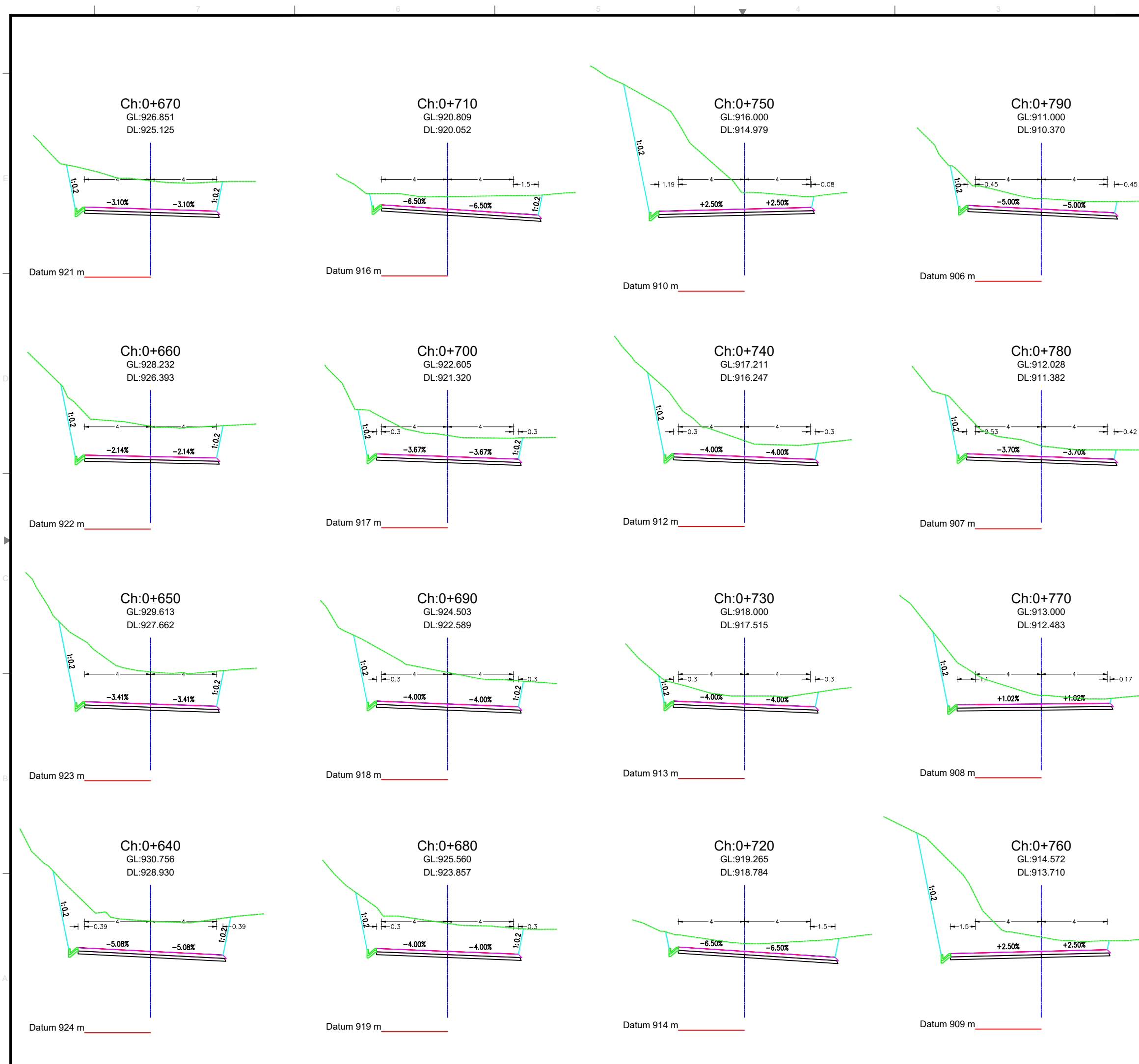


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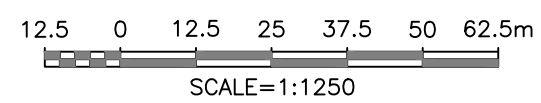


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Rev	Modification	Drawn	Checked	Recommended	Approved
Client: DORJILUNG HYDROPOWER PROJECT					
Project: DORJILUNG HYDROPOWER PROJECT (1125 MW) MONGAR, BHUTAN					
Title: IMPROVEMENT OF TSAMANG FARM ROAD CROSS SECTION					
SHEET 19 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	Original Scale	DRAWING NO.		REV	
A3	AS SHOWN	DHP-PP-TSAMANG-FARMROAD-2024-01		NA	

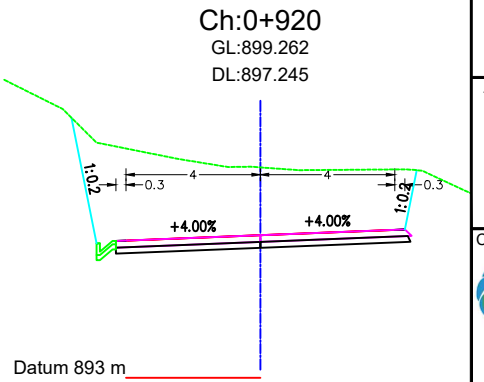
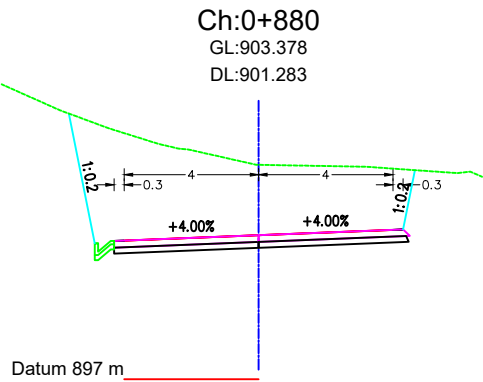
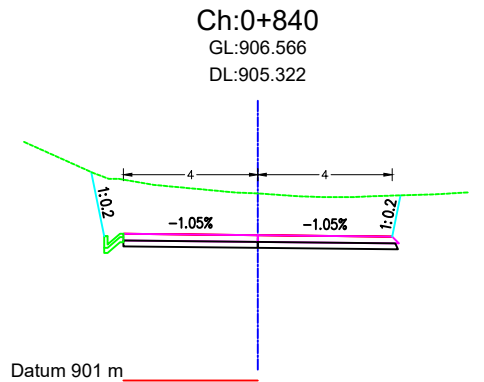
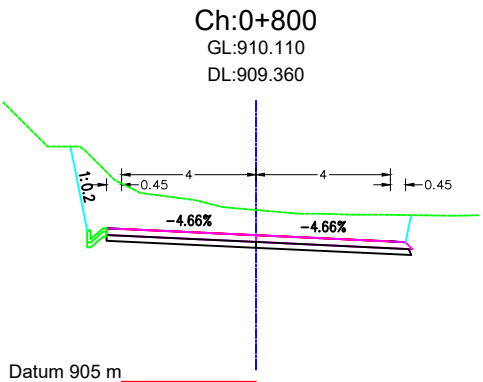
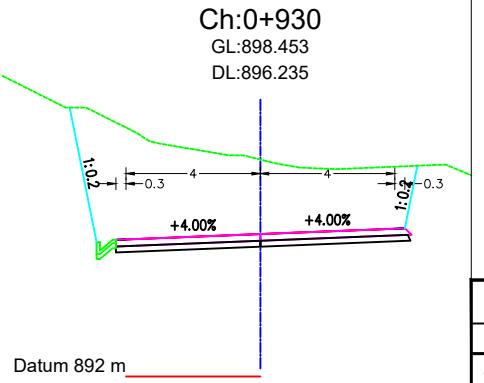
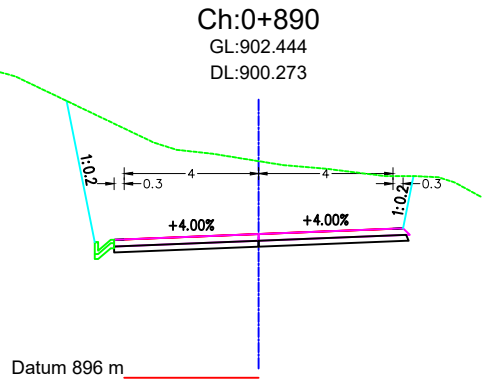
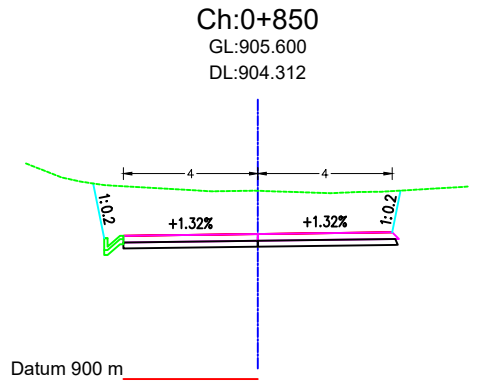
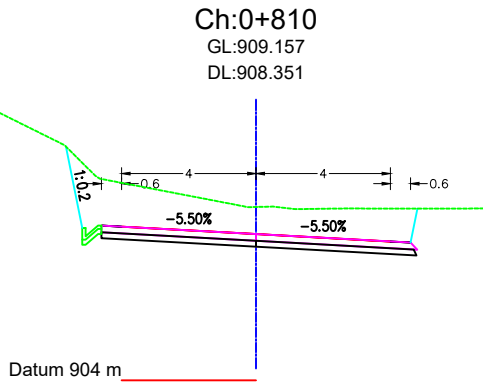
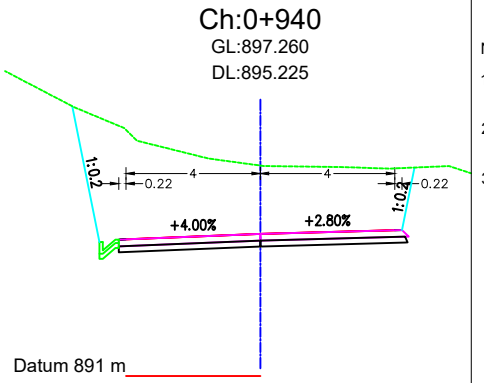
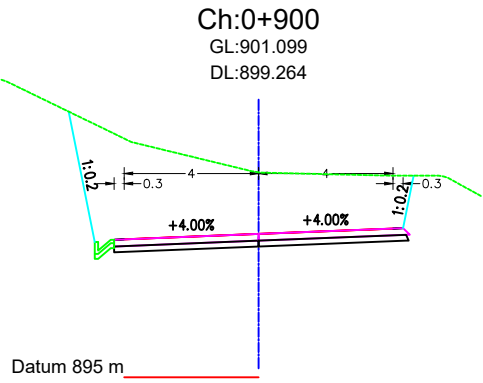
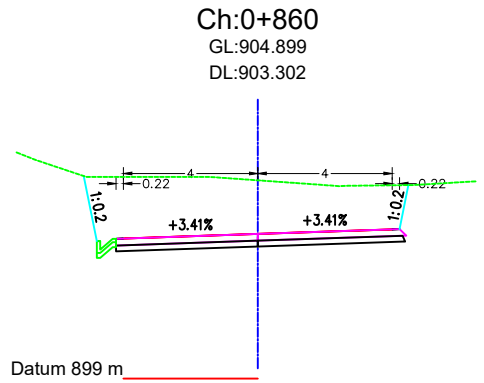
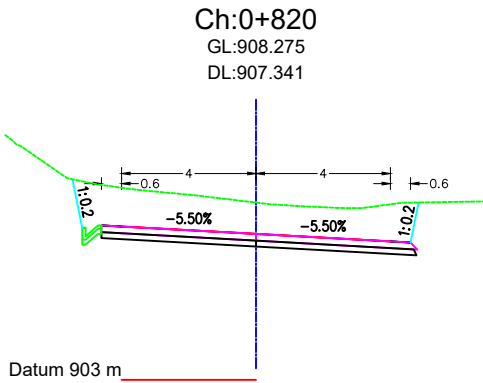
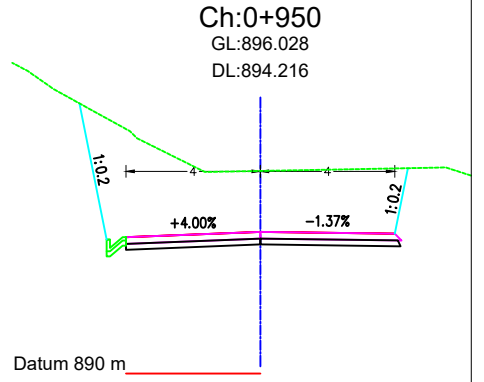
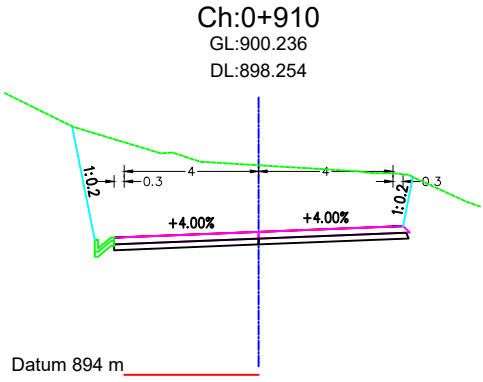
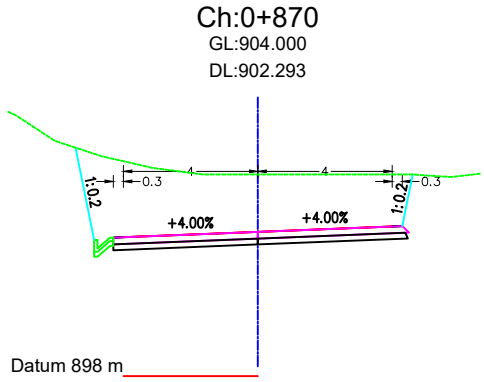
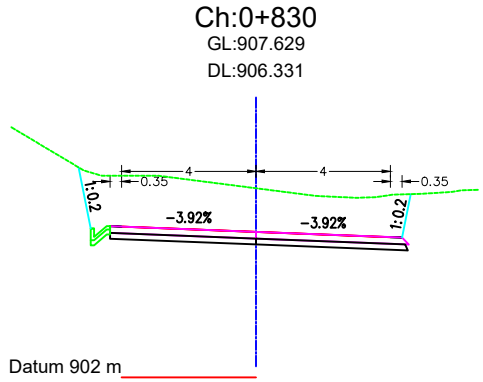


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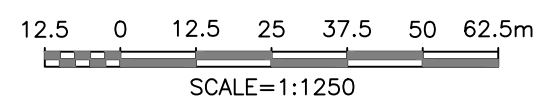


**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD CROSS SECTION</b>					
SHEET 20 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	A3	Original Scale	AS SHOWN	DRAWING NO.	DHPP-TSAMANG-FARMROAD-2024-01
				REV	NA

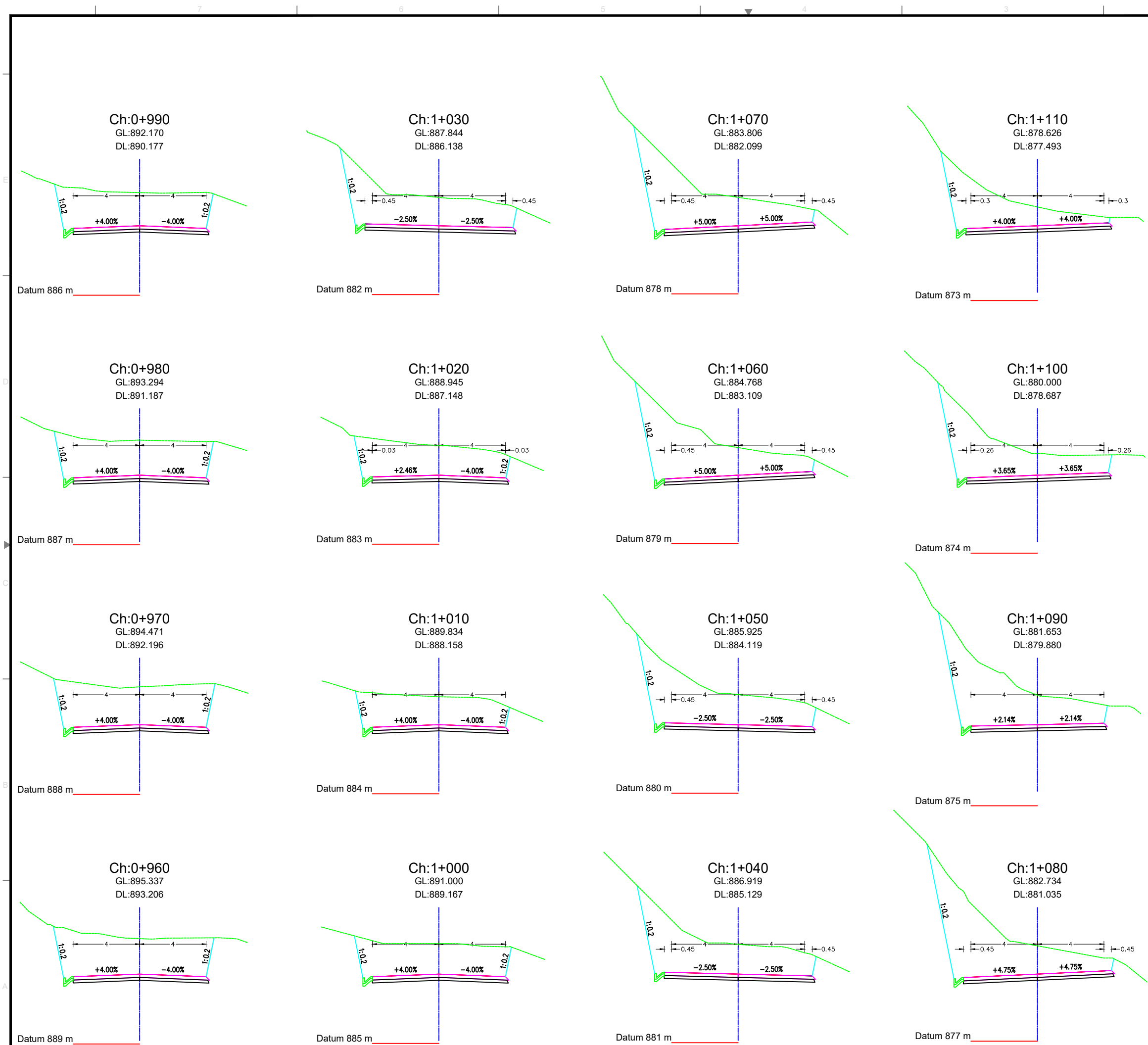


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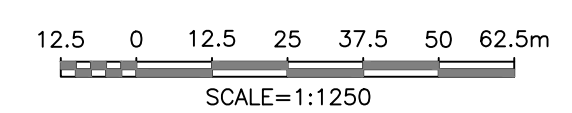


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Rev	Modification	Drawn:	Checked:	Recommended:	Approved:
Client: DORJILUNG HYDROPOWER PROJECT					
Project: DORJILUNG HYDROPOWER PROJECT (1125 MW) MONGAR, BHUTAN					
Title: IMPROVEMENT OF TSAMANG FARM ROAD CROSS SECTION					
SHEET 21 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	A3	Original Scale	AS SHOWN	DRAWING NO.	DHPP-TSAMANG-FARMROAD-2024-01
				REV	NA

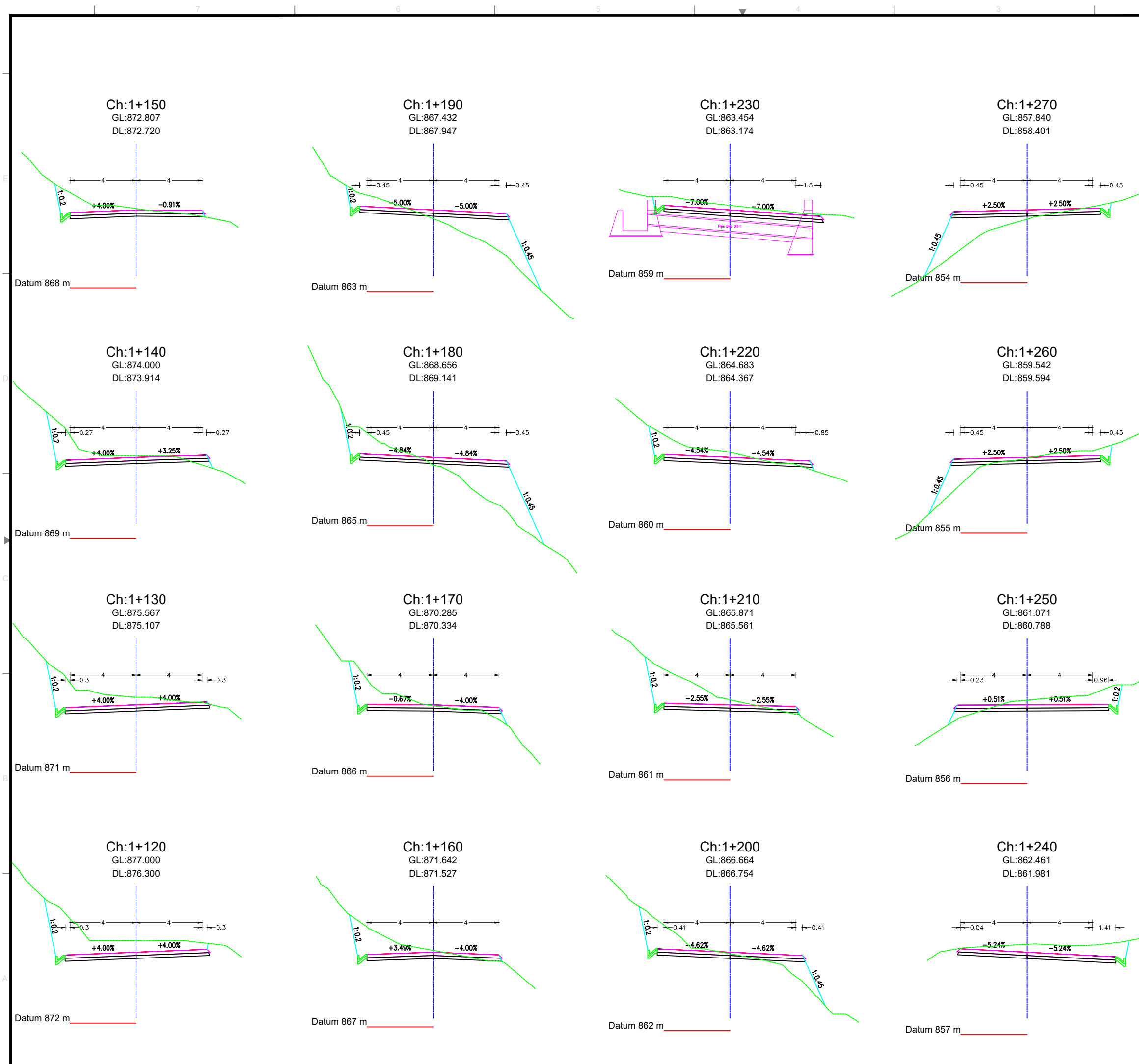


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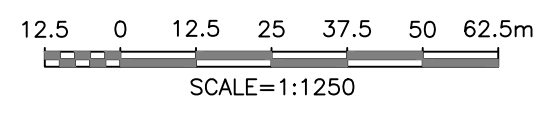


**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD CROSS SECTION</b>					
SHEET 22 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	A3	Original Scale	AS SHOWN	DRAWING NO.	REV
				DHPP-TSAMANG-FARMROAD-2024-01	NA

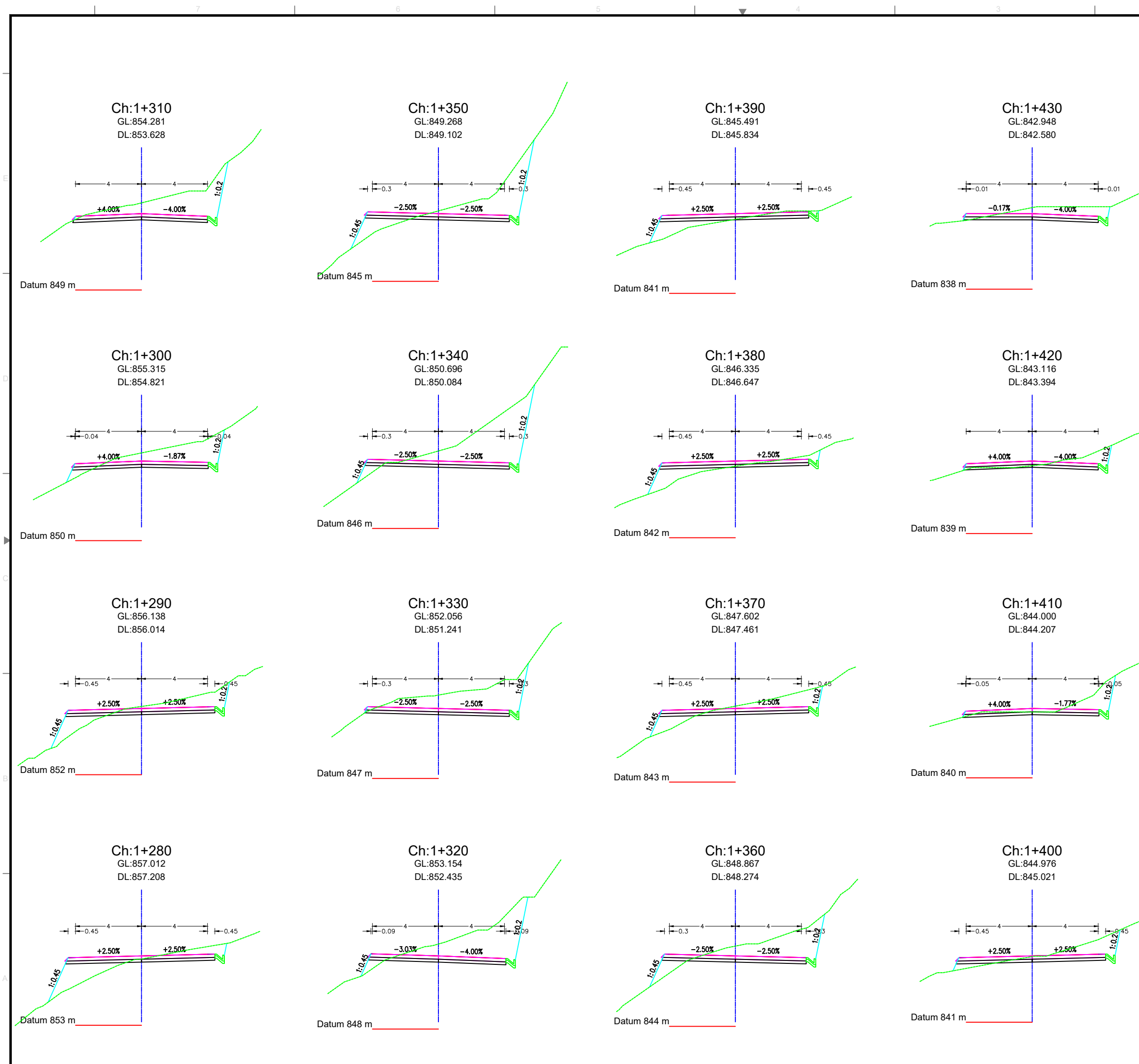


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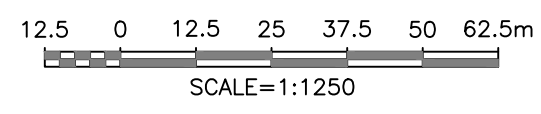


**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn:	Checked:	Recommended:	Approved:
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD CROSS SECTION</b>					
SHEET 23 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	A3	Original Scale	AS SHOWN	DRAWING NO.	DHPP-TSAMANG-FARMROAD-2024-01
				REV	NA

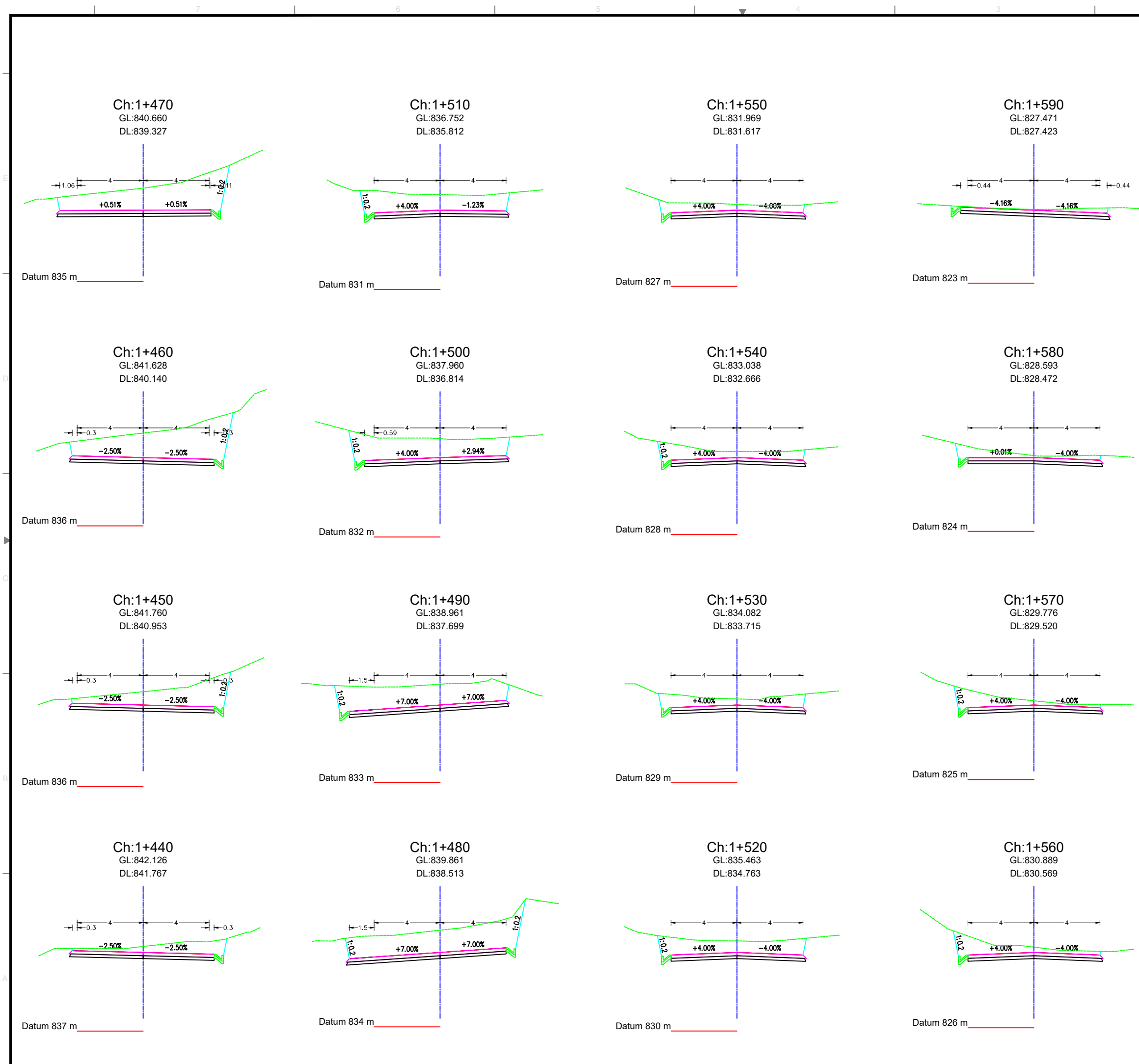


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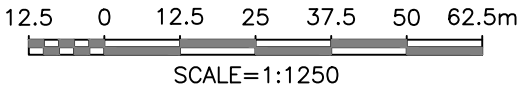


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Rev	Modification	Drawn:	Checked:	Recommended:	Approved:
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD CROSS SECTION</b>					
SHEET 24 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	A3	Original Scale	AS SHOWN	DRAWING NO.	DHPP-TSAMANG-FARMROAD-2024-01
				REV	NA

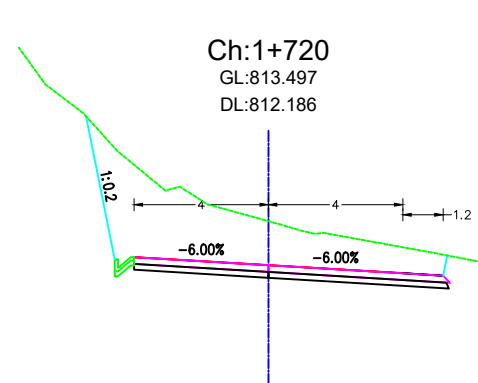
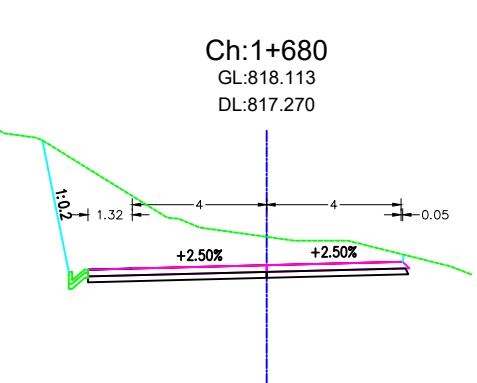
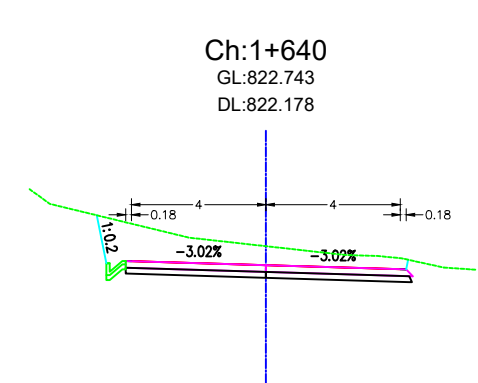
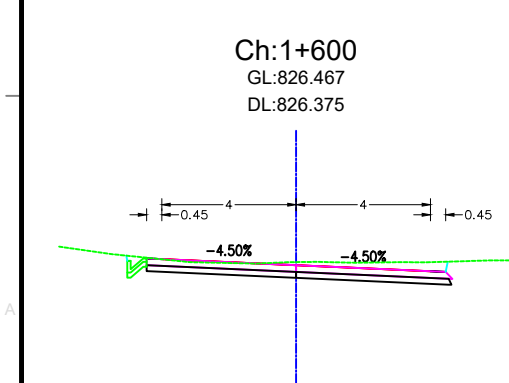
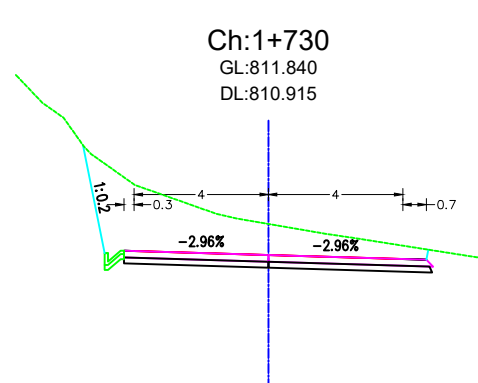
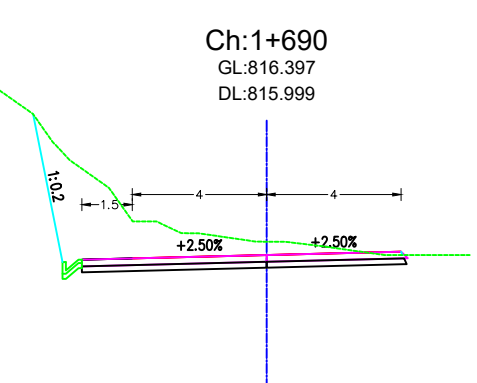
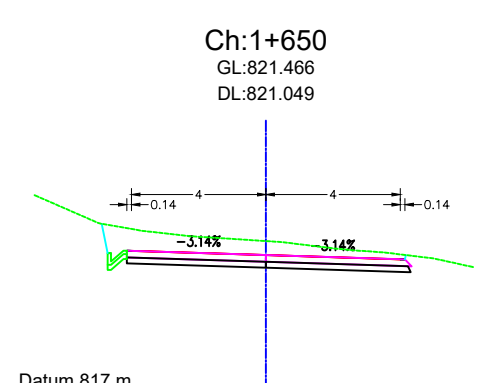
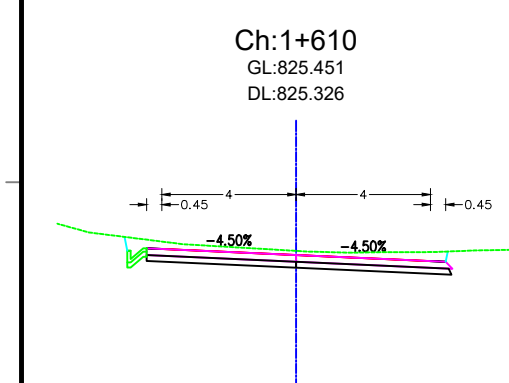
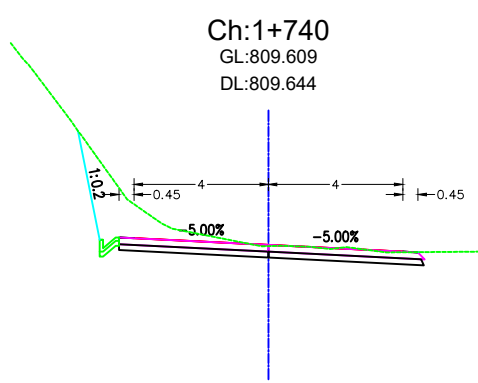
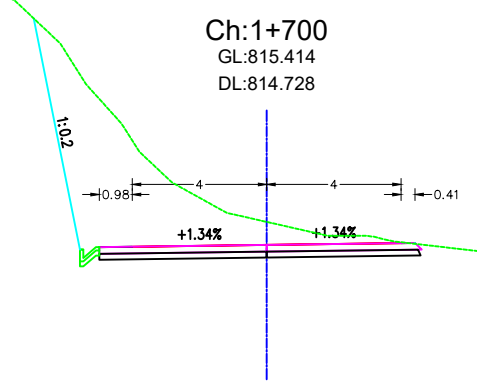
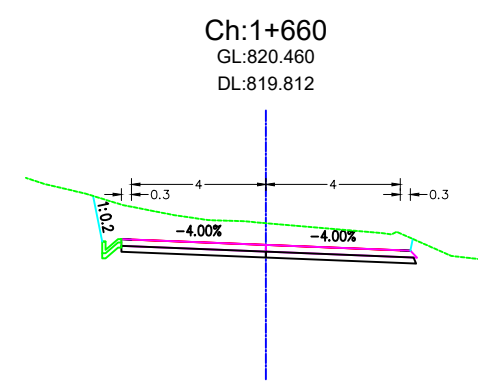
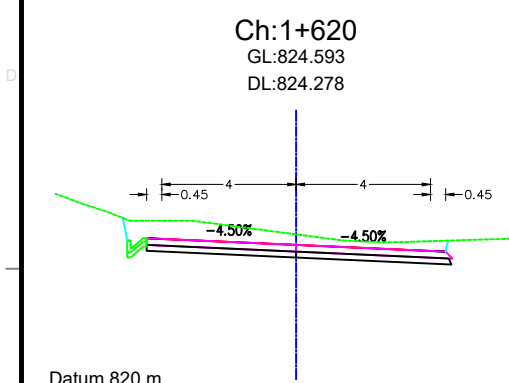
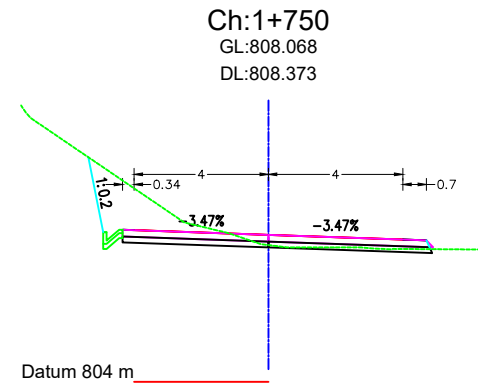
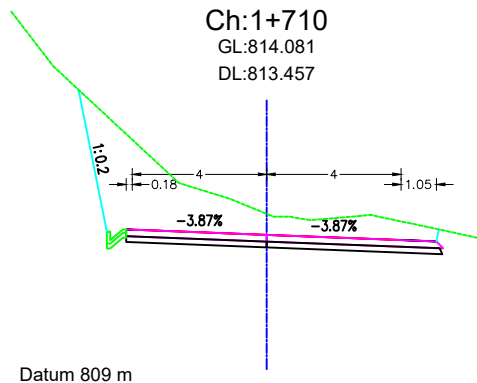
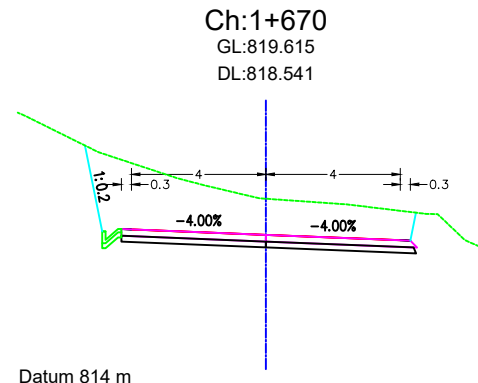
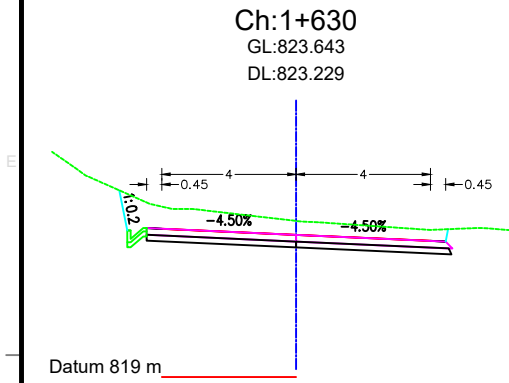


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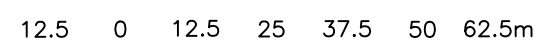


**ISSUED FOR CONSTRUCTION**

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Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD CROSS SECTION</b>					
SHEET 25 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	A3	Original Scale	AS SHOWN	DRAWING NO.	DHPP-TSAMANG-FARMROAD-2024-01
				REV	NA



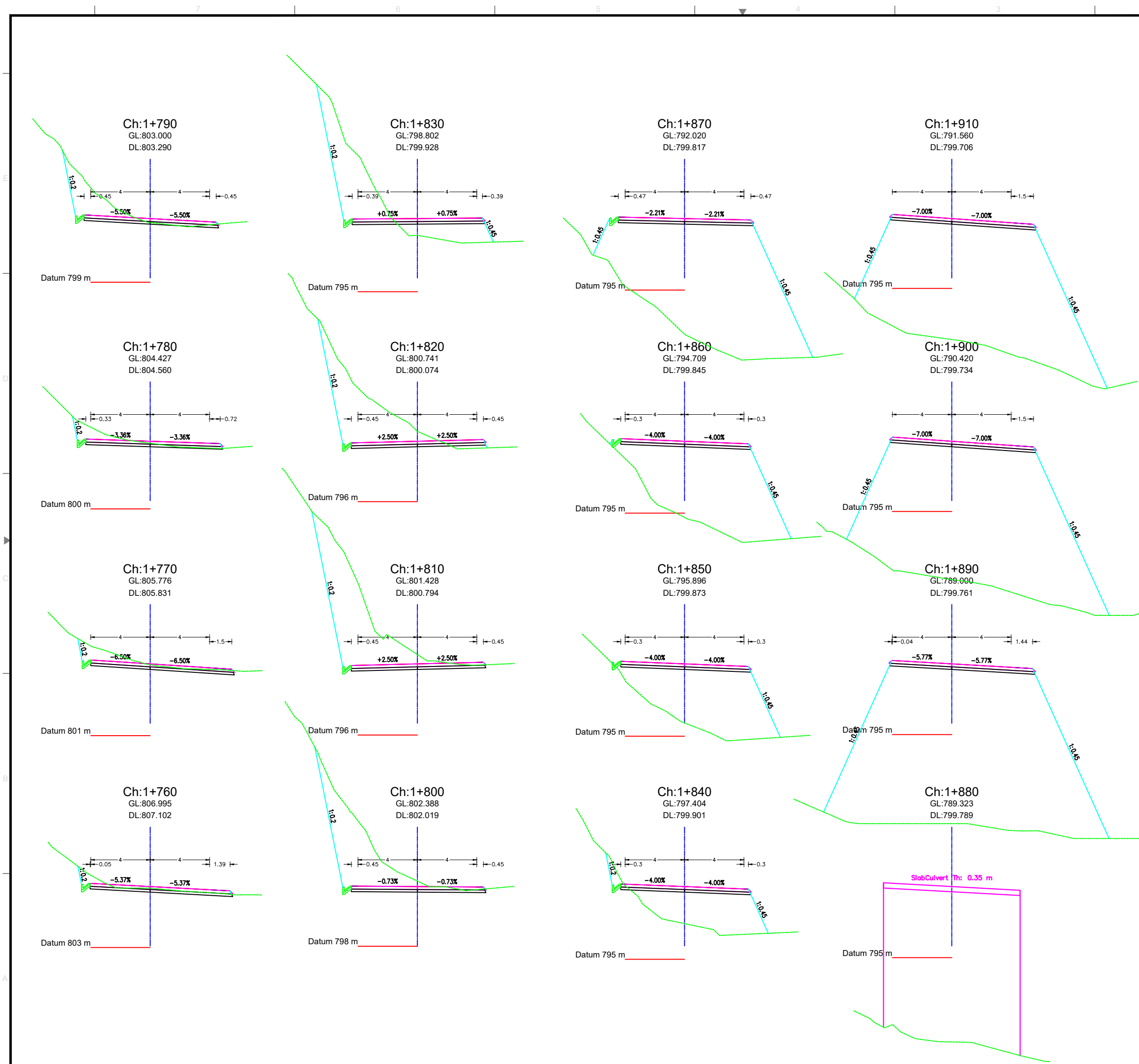
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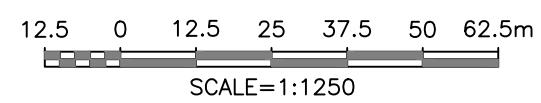
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**ISSUED FOR CONSTRUCTION**


Rev	Modification	Drawn:	Checked:	Recommended:	Approved:
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD CROSS SECTION</b>					
SHEET 26 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	A3	Original Scale	AS SHOWN	DRAWING NO.	DHPP-TSAMANG-FARMROAD-2024-01
				REV	NA

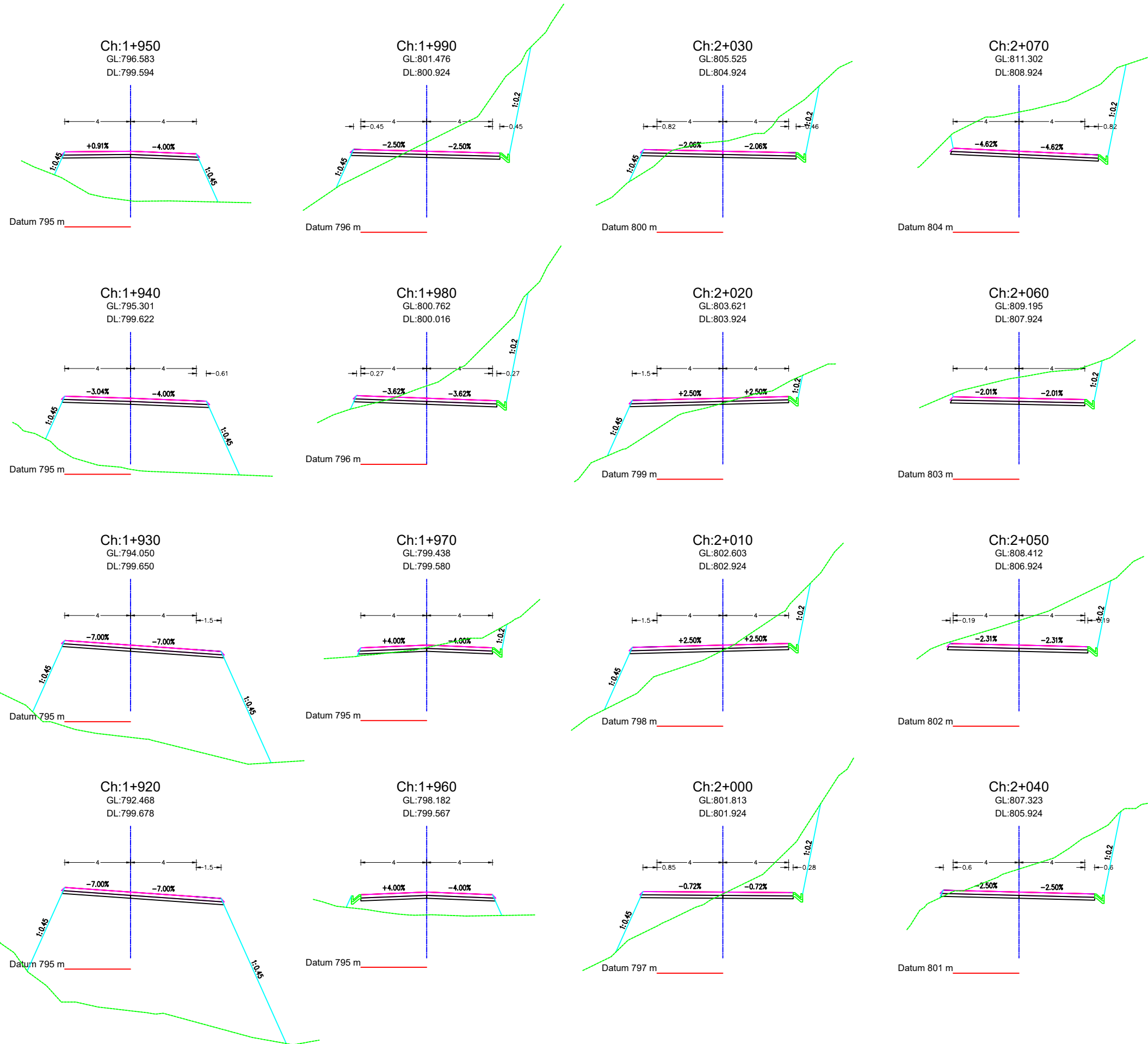


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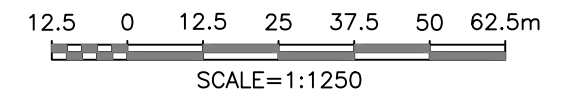


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Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD CROSS SECTION</b>					
SHEET 27 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHP-PP-TSAMANG-FARMROAD-2024-01		REV	NA

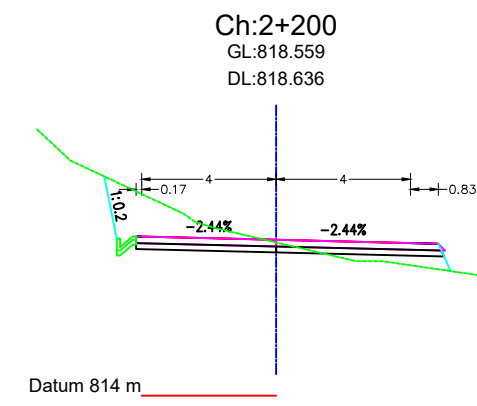
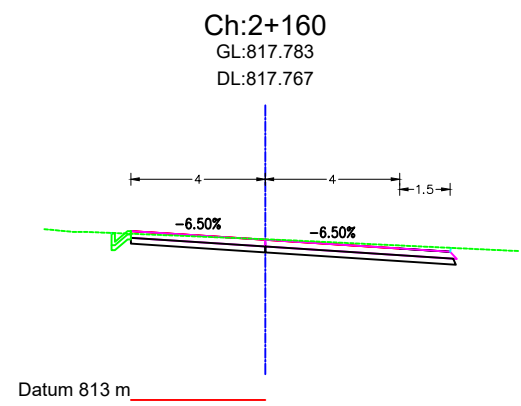
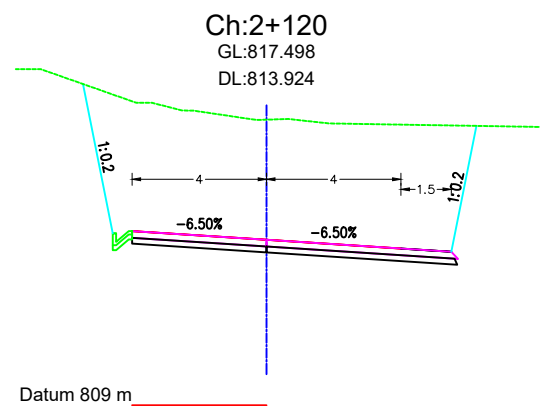
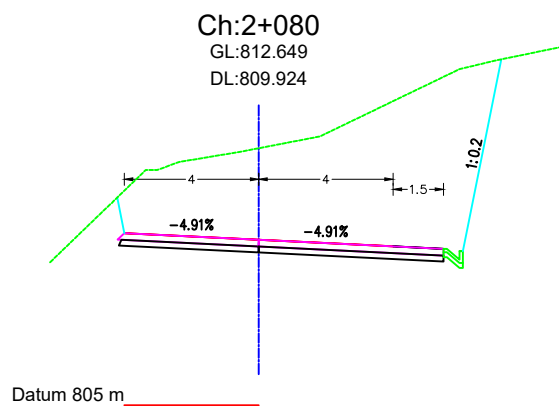
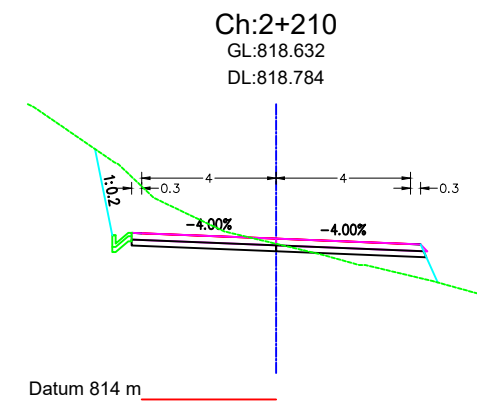
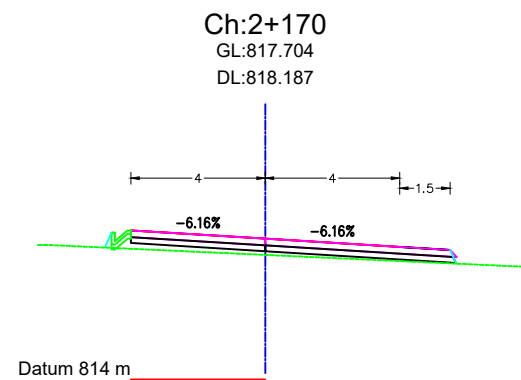
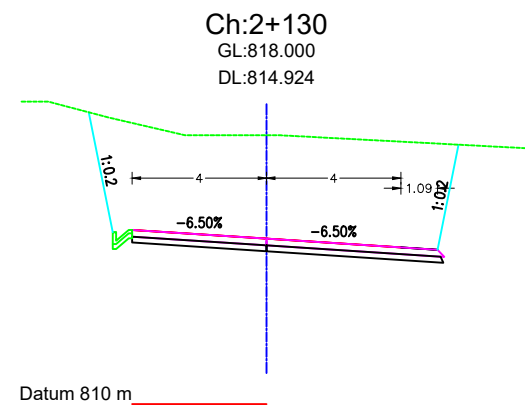
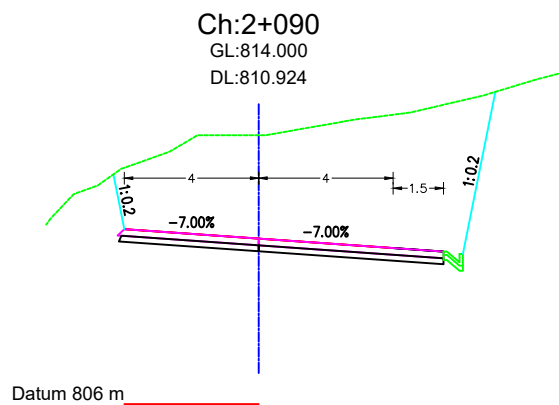
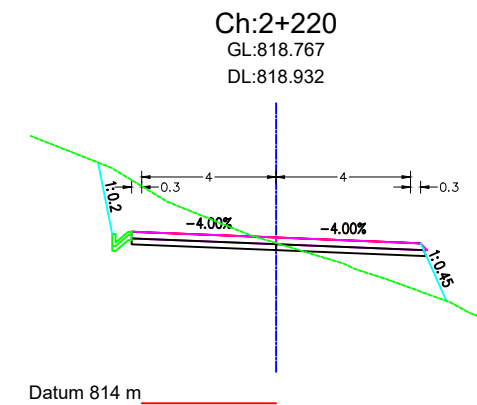
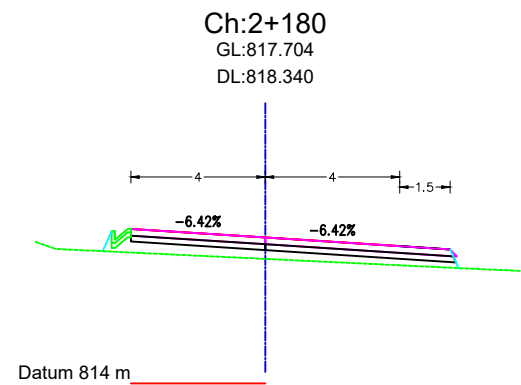
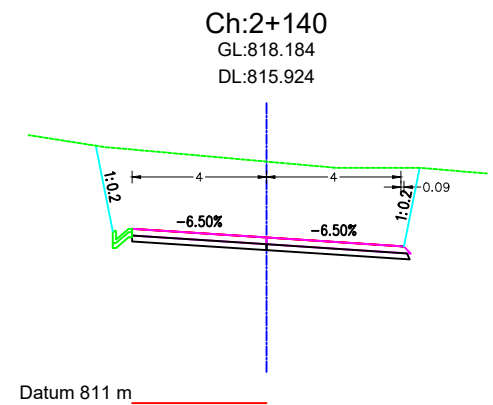
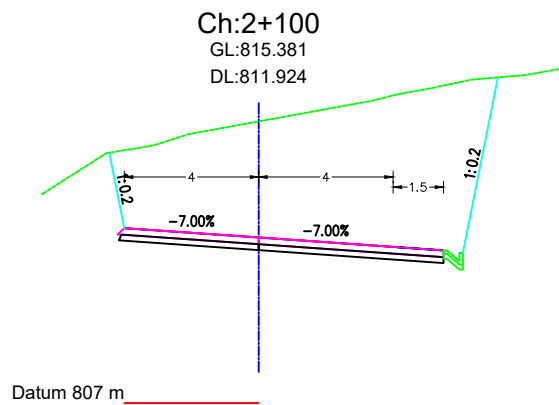
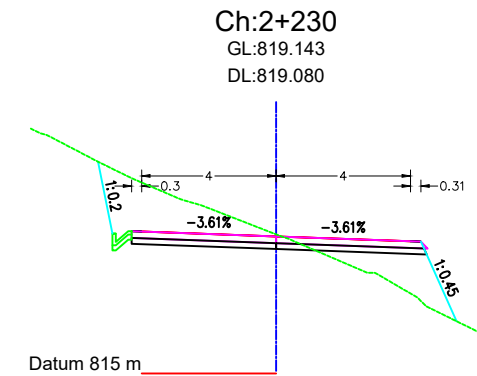
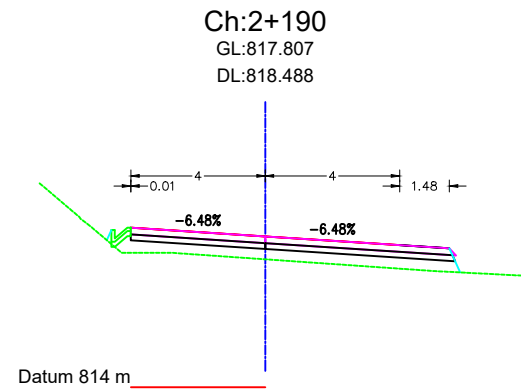
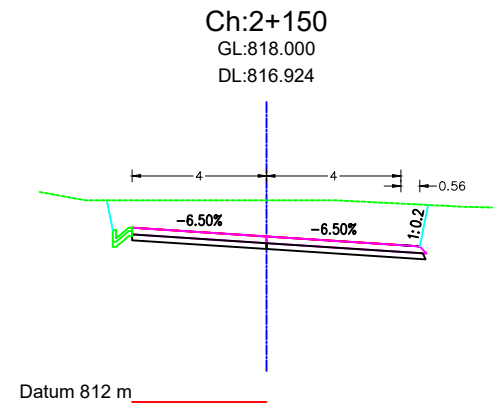
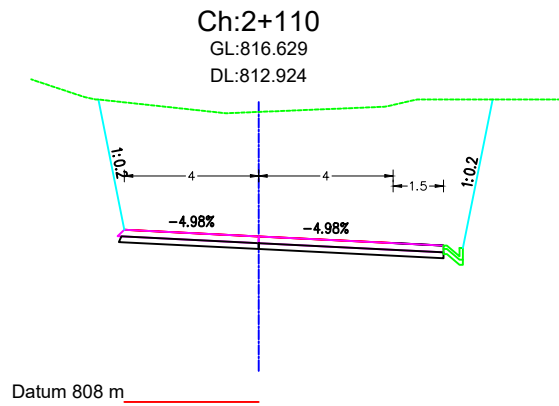


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Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD CROSS SECTION</b>					
SHEET 28 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	A3	Original Scale	AS SHOWN	DRAWING NO.	DHPP-TSAMANG-FARMROAD-2024-01
				REV	NA



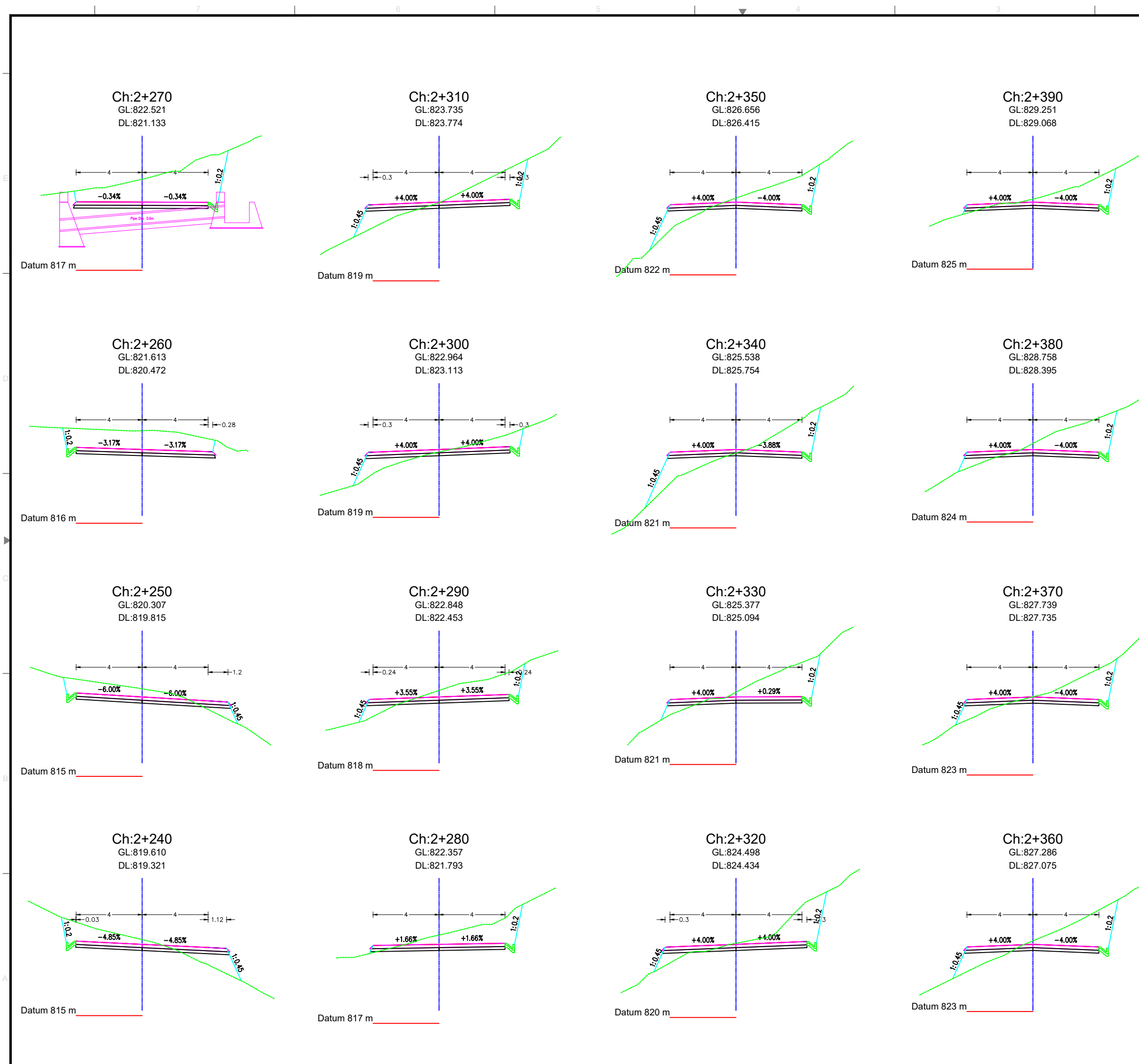
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12.5 0 12.5 25 37.5 50 62.5m  
SCALE=1:1250

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Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD CROSS SECTION</b>					
SHEET 29 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHP- <b>TSAMANG-FARMROAD-2024-01</b>		REV	NA

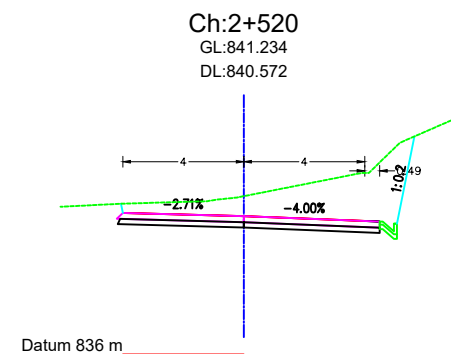
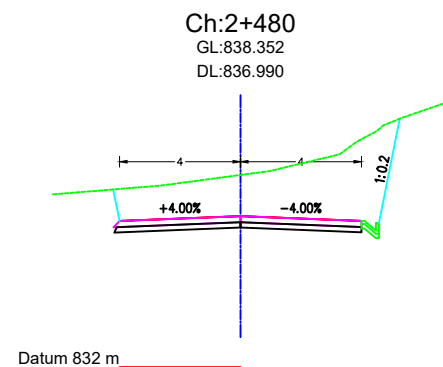
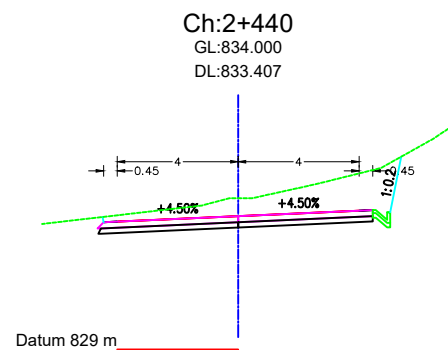
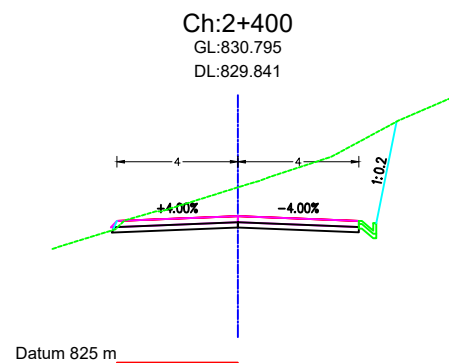
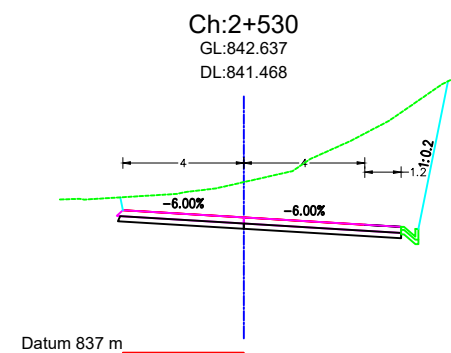
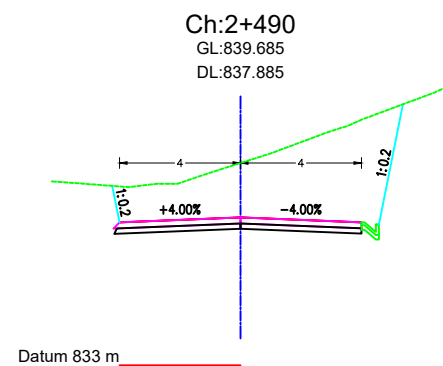
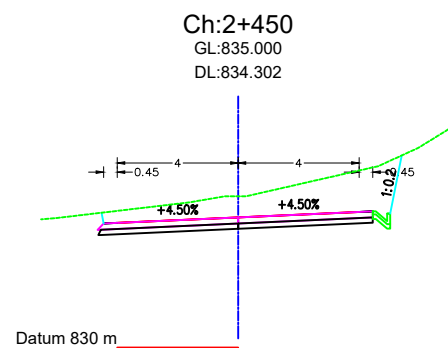
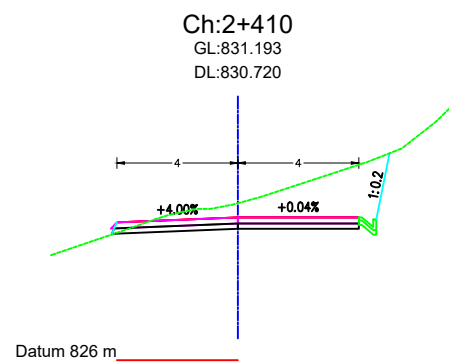
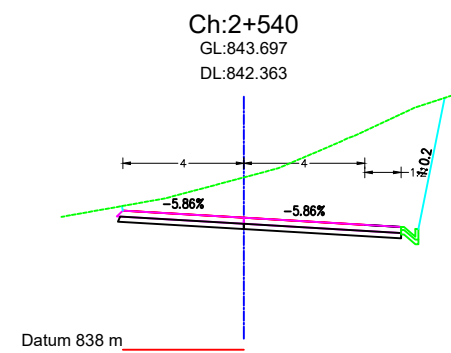
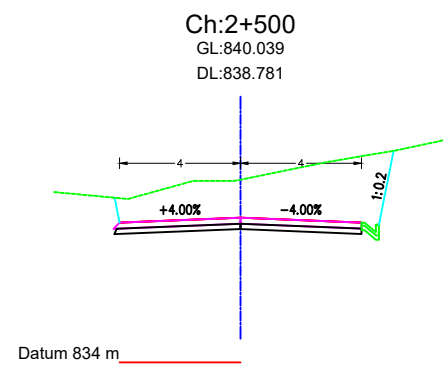
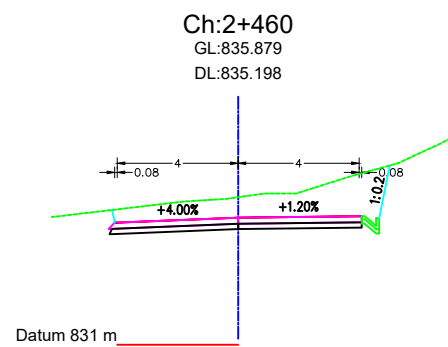
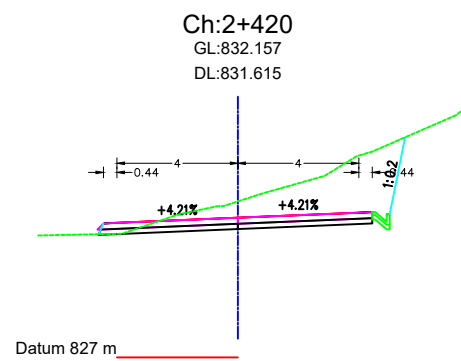
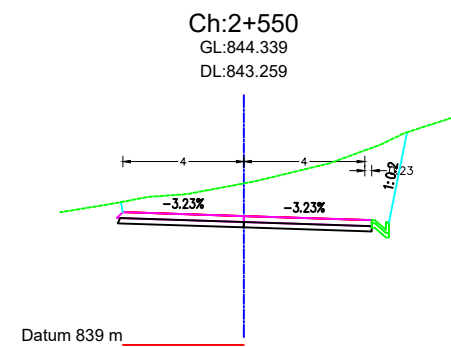
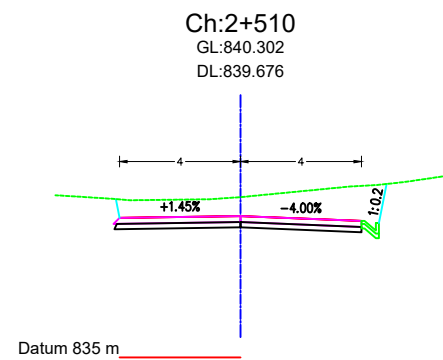
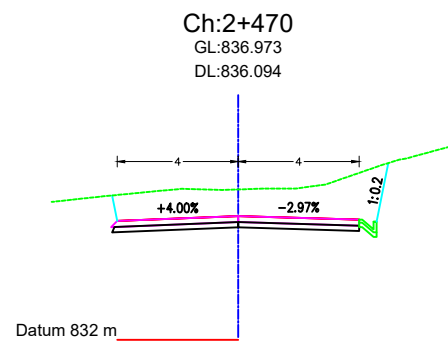
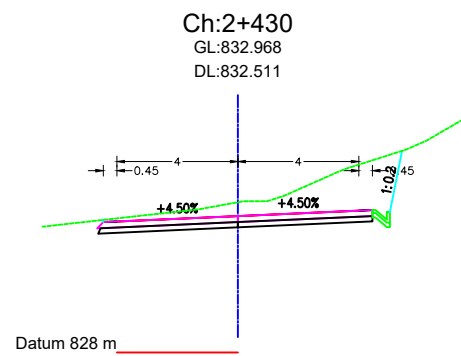


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**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn:	Checked:	Recommended:	Approved:
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD CROSS SECTION</b>					
SHEET 30 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	A3	Original Scale	AS SHOWN	DRAWING NO.	DHPP-TSAMANG-FARMROAD-2024-01
				REV	NA



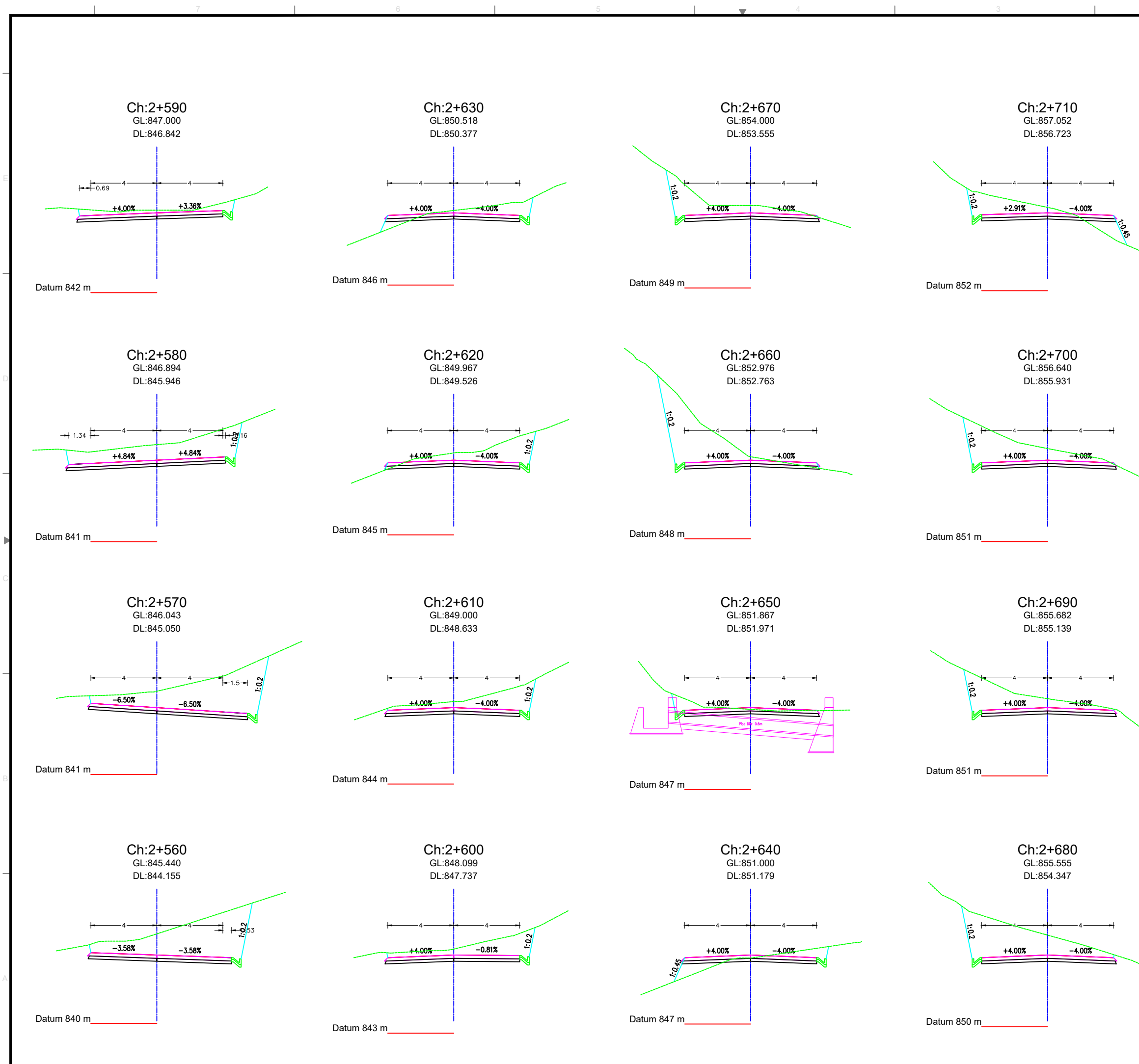
NOTE:

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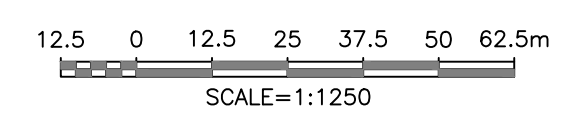


**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD CROSS SECTION</b>					
SHEET 44 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	Original Scale	DRAWING NO.		REV	
A3	AS SHOWN	DHPP-TSAMANG-FARMROAD-2024-01		NA	

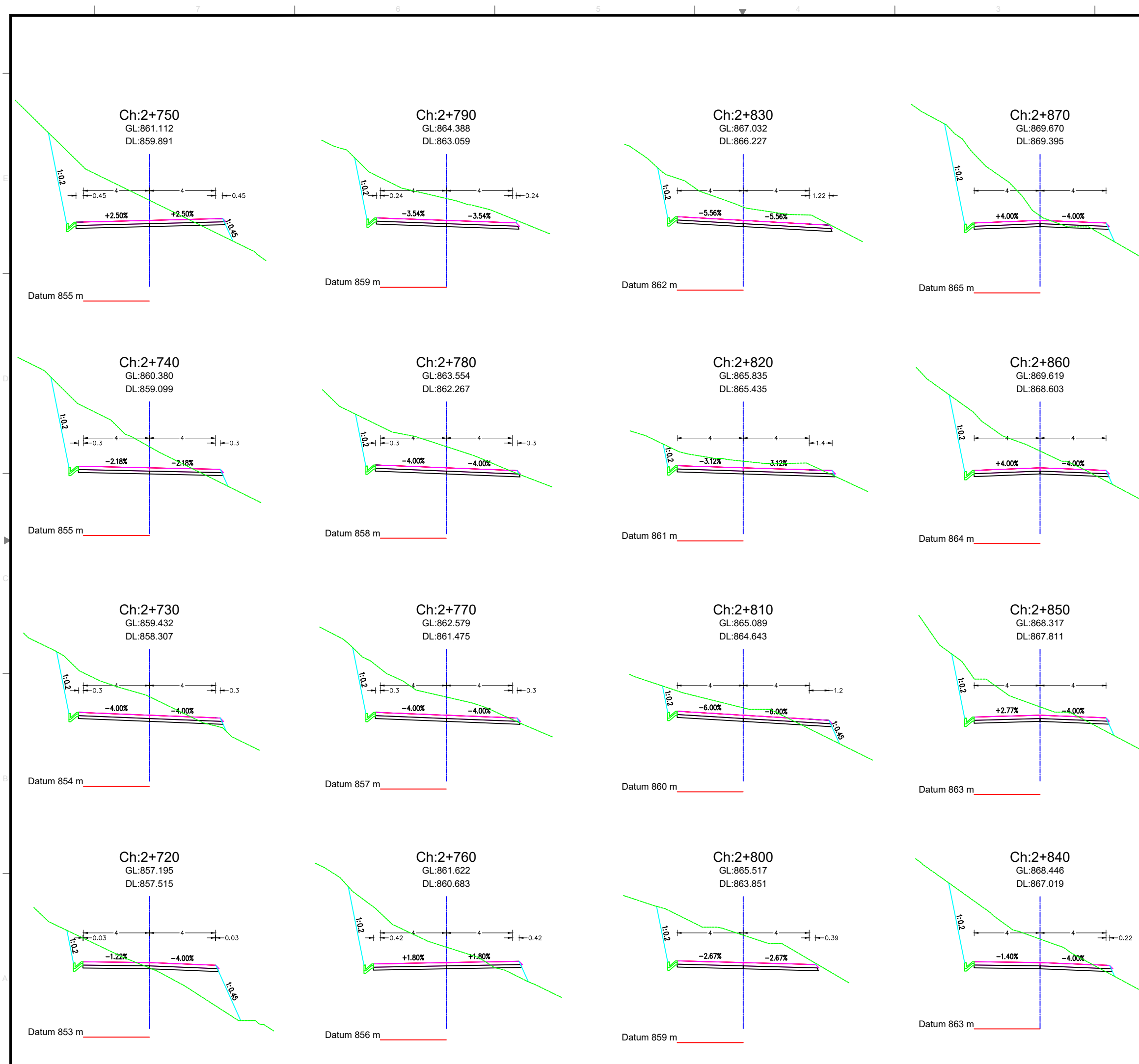


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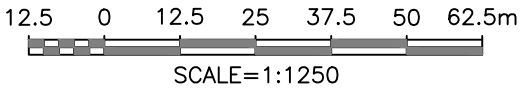


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Rev	Modification	Drawn:	Checked:	Recommended:	Approved:
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD CROSS SECTION</b>					
SHEET 44 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	A3	Original Scale	AS SHOWN	DRAWING NO.	REV
				DHPP-TSAMANG-FARMROAD-2024-01	NA

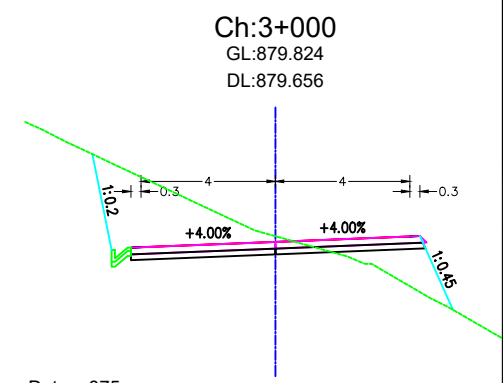
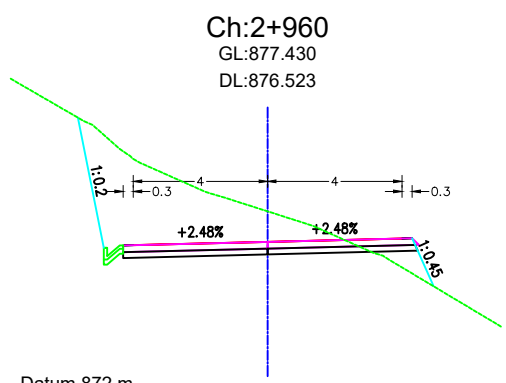
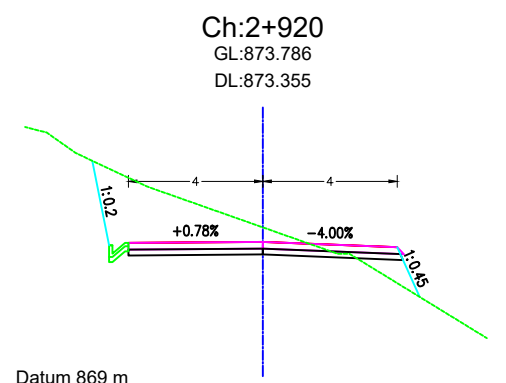
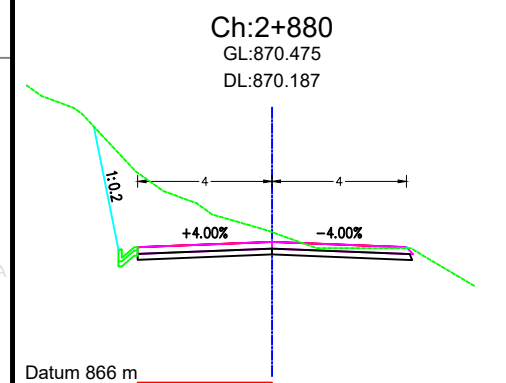
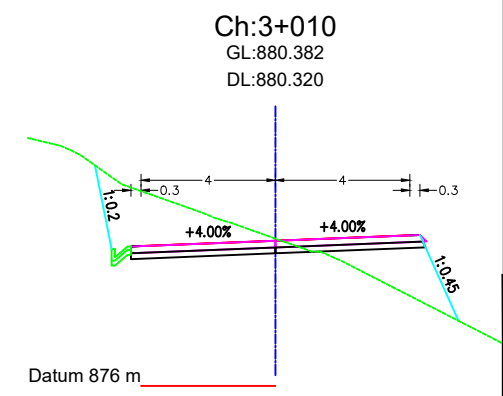
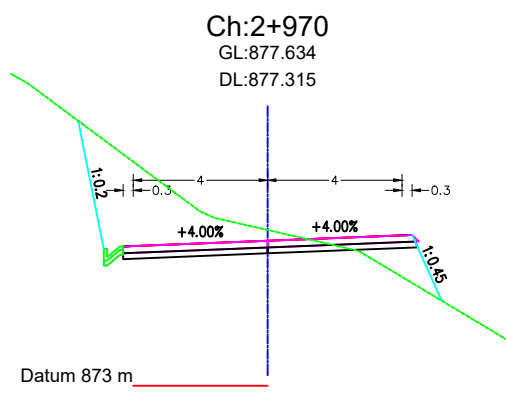
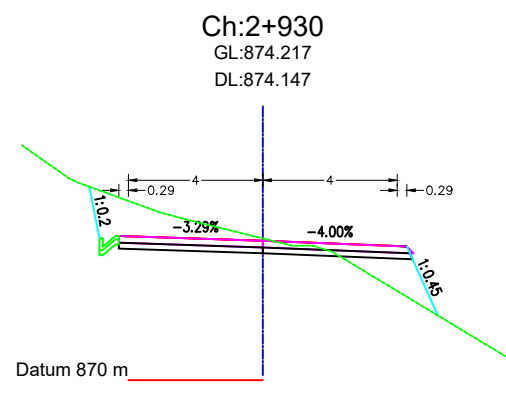
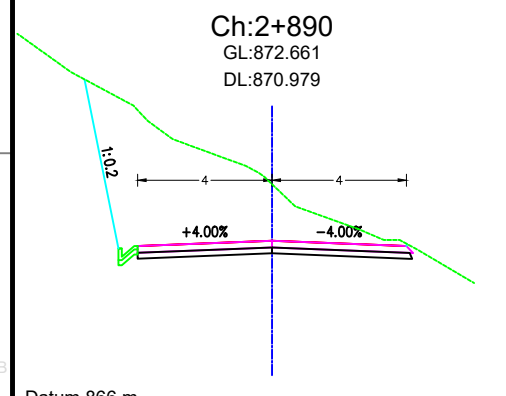
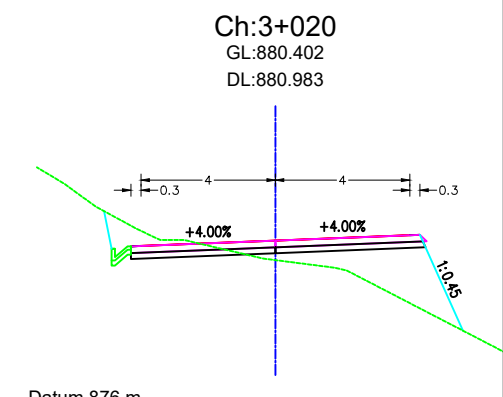
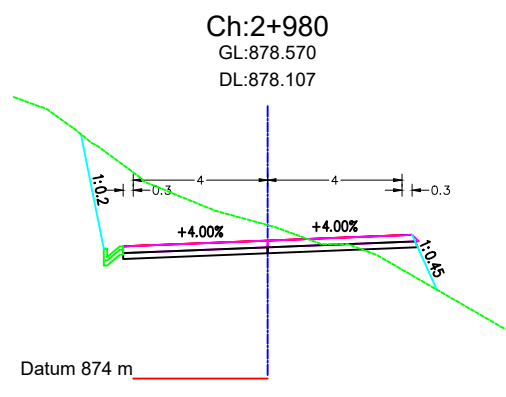
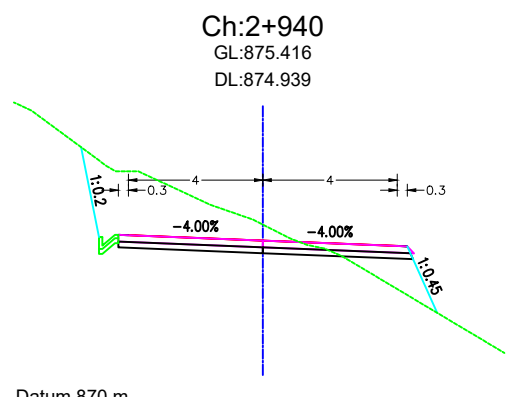
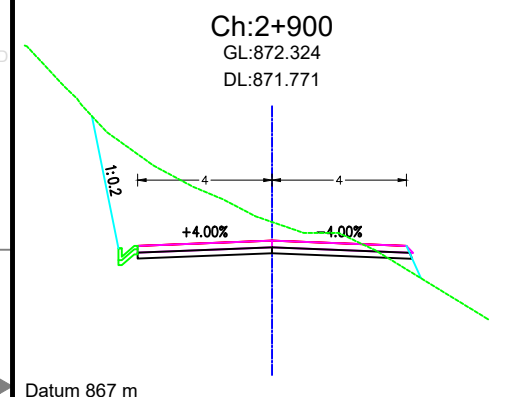
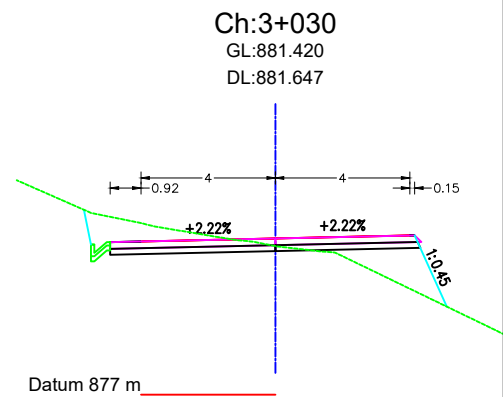
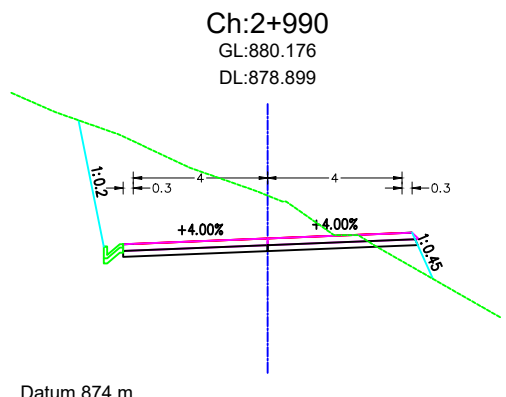
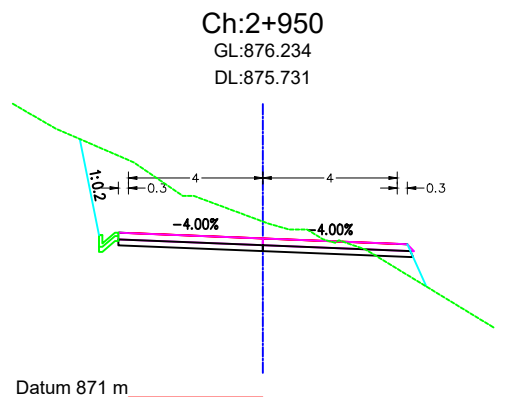
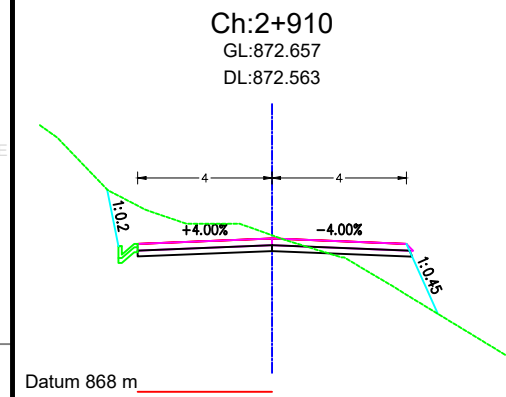


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**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn:	Checked:	Recommended:	Approved:
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD CROSS SECTION</b>					
SHEET 33 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	A3	Original Scale	AS SHOWN	DRAWING NO.	REV
				DHPP-TSAMANG-FARMROAD-2024-01	NA



NOTE:

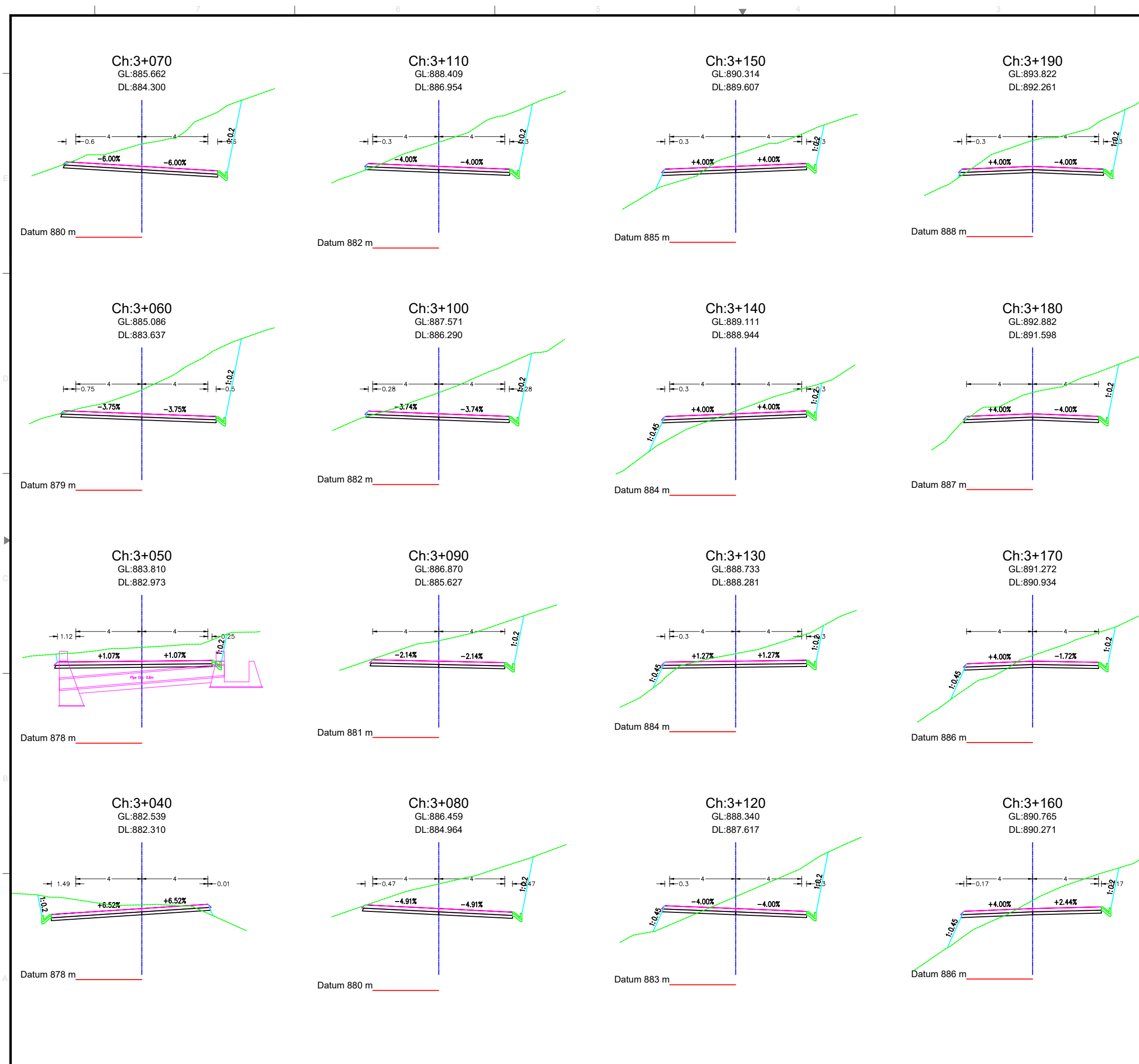
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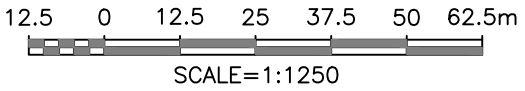
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**ISSUED FOR CONSTRUCTION**

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Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD CROSS SECTION</b>					
SHEET 34 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	Original Scale	DRAWING NO.		REV	
A3	AS SHOWN	DHP-PP-TSAMANG-FARMROAD-2024-01		NA	

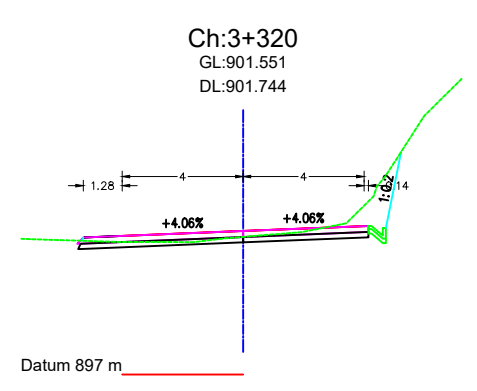
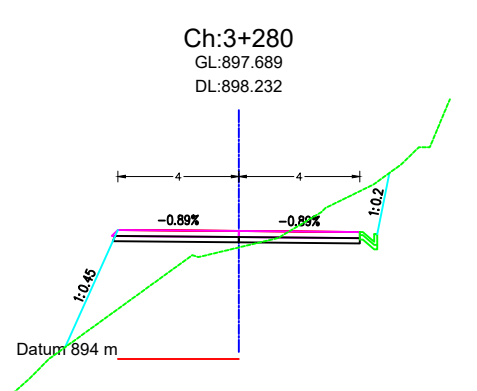
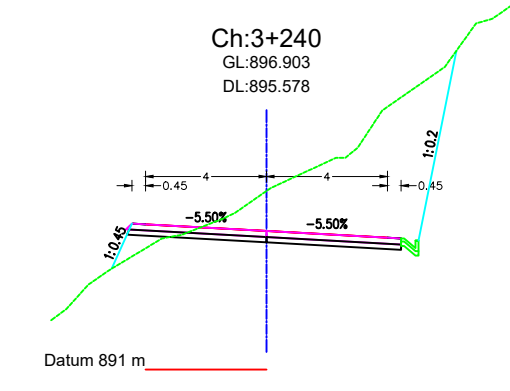
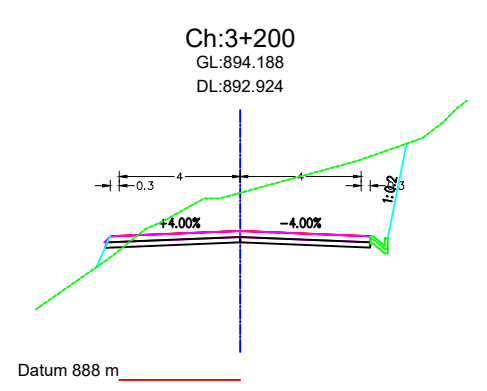
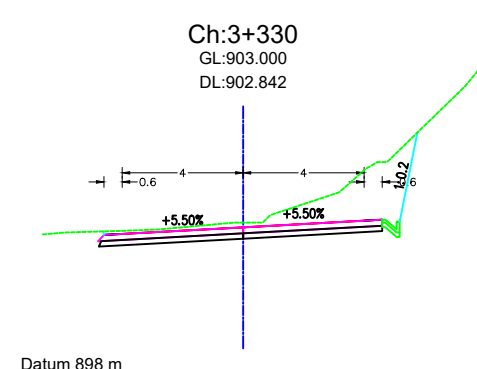
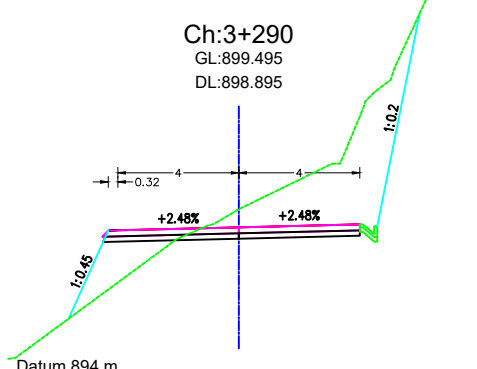
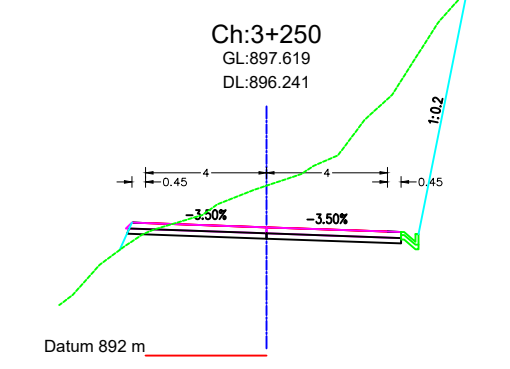
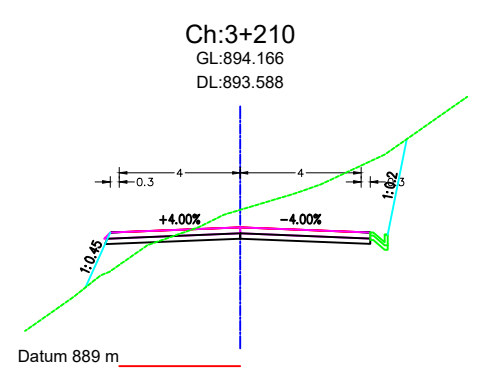
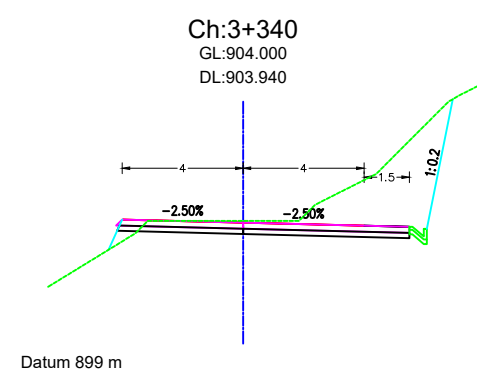
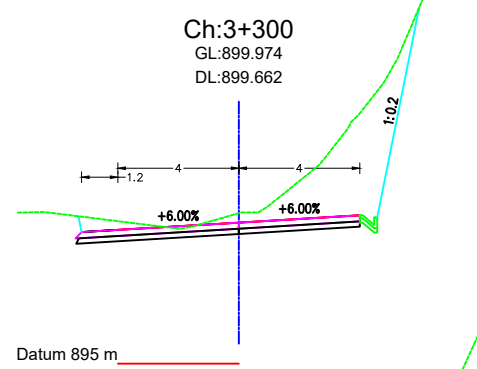
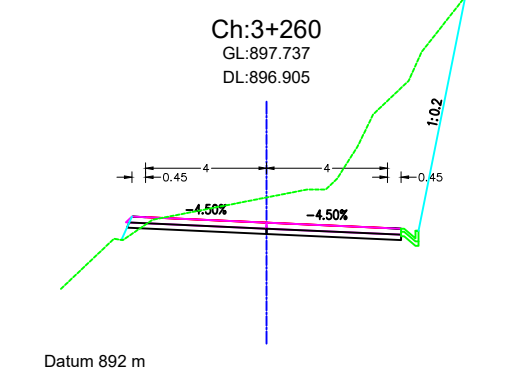
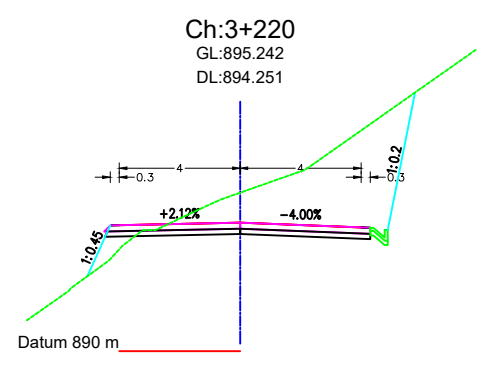
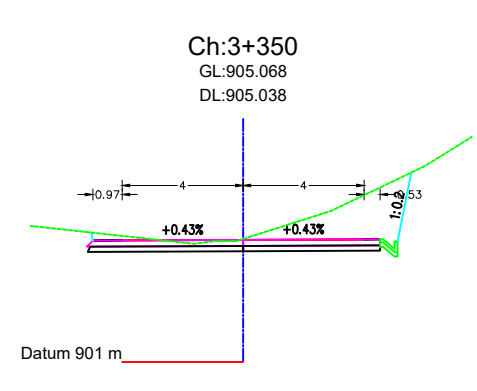
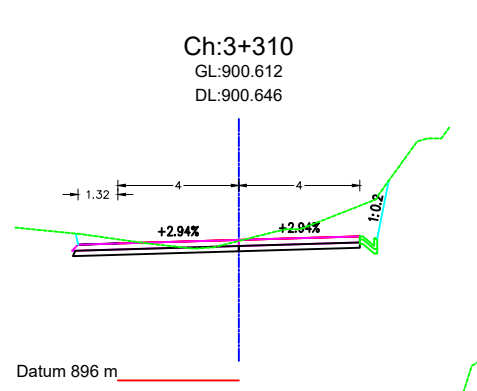
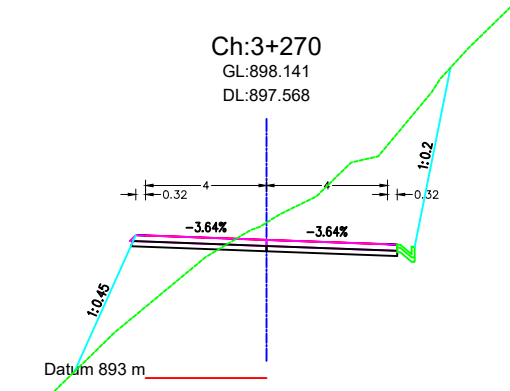
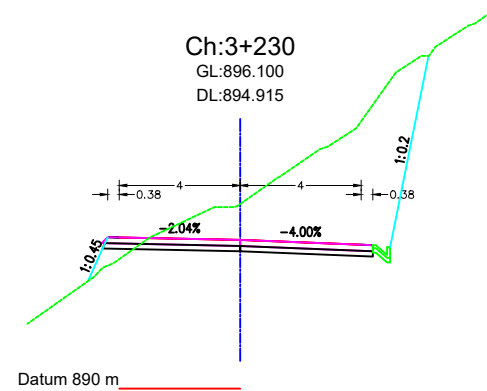


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Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD CROSS SECTION</b>					
SHEET 35 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHP-PSAMANG-FARMROAD-2024-01		REV	NA

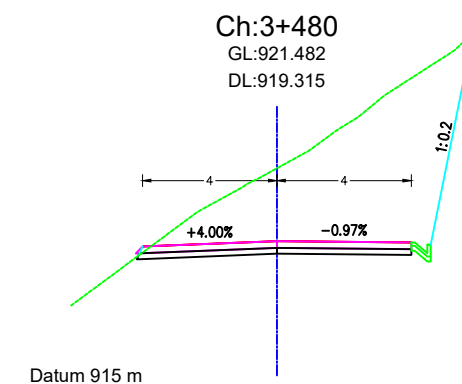
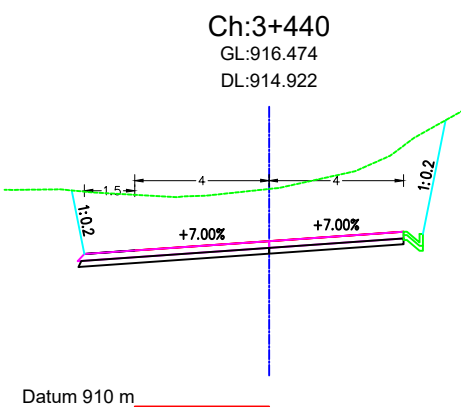
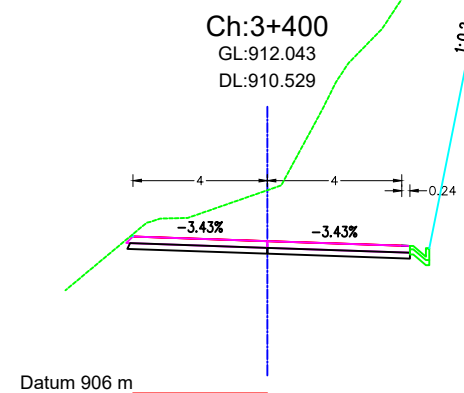
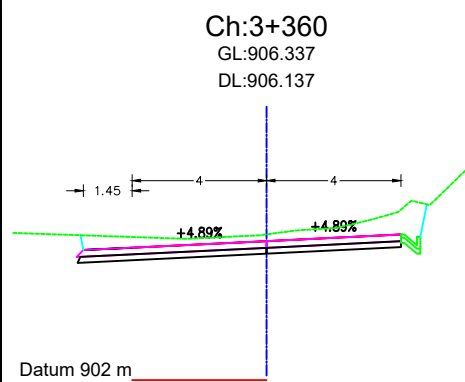
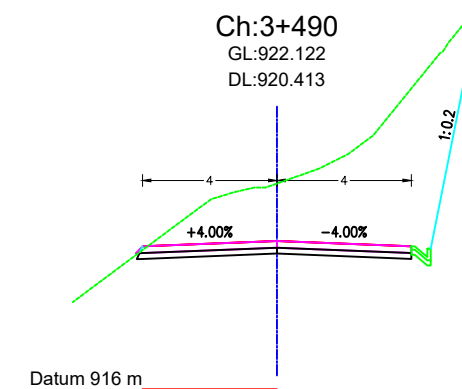
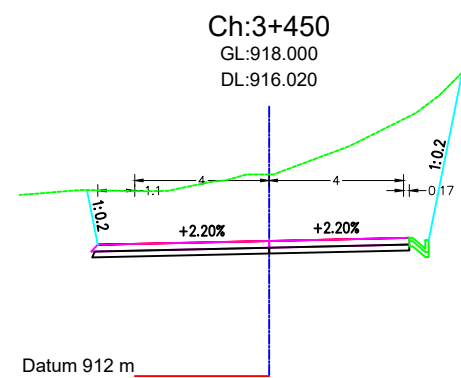
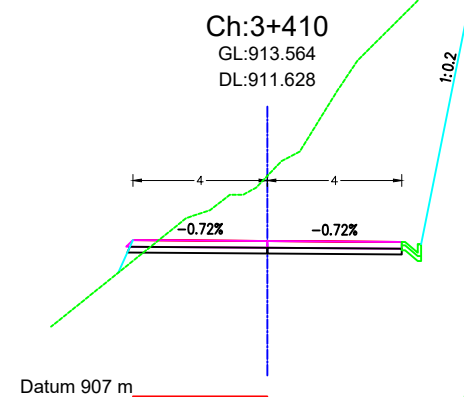
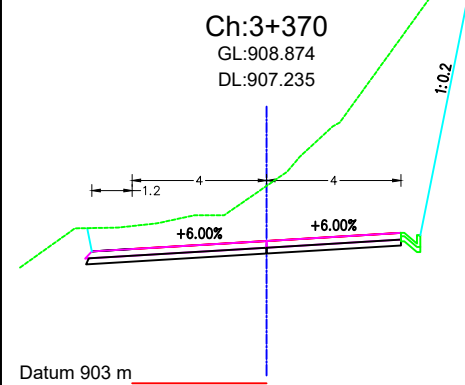
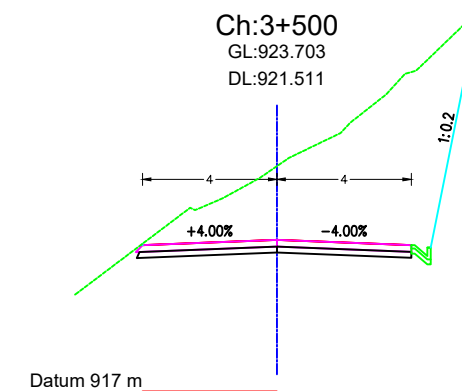
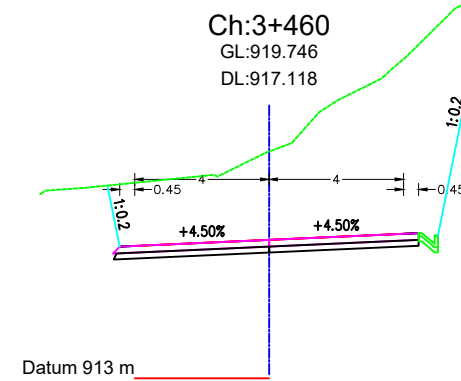
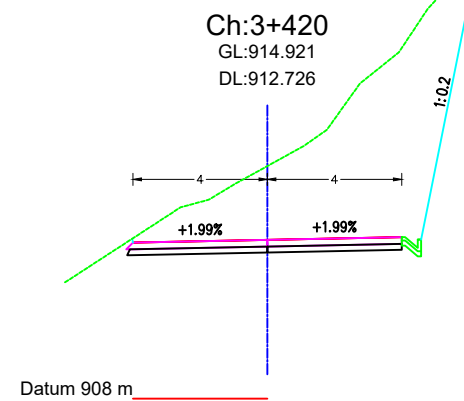
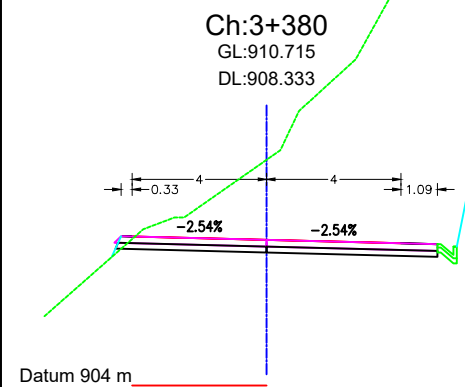
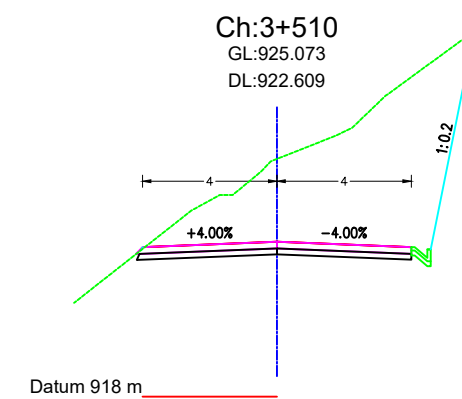
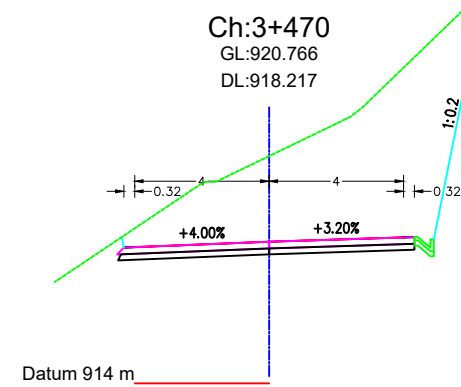
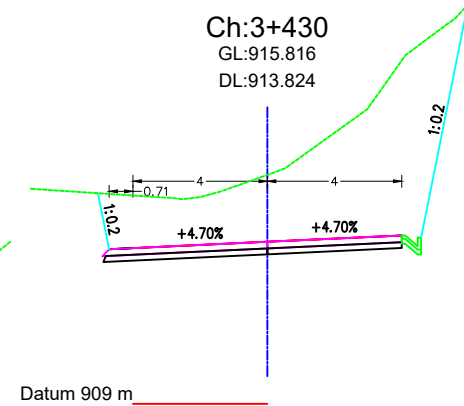
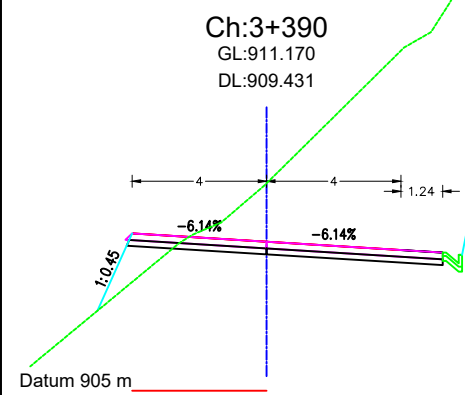


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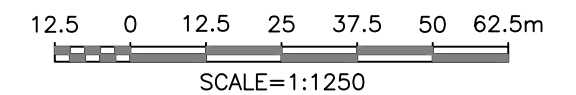
**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn:	Checked:	Recommended:	Approved:
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD CROSS SECTION</b>					
SHEET 36 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	A3	Original Scale	AS SHOWN	DRAWING NO.	DHPP-TSAMANG-FARMROAD-2024-01
				REV	NA




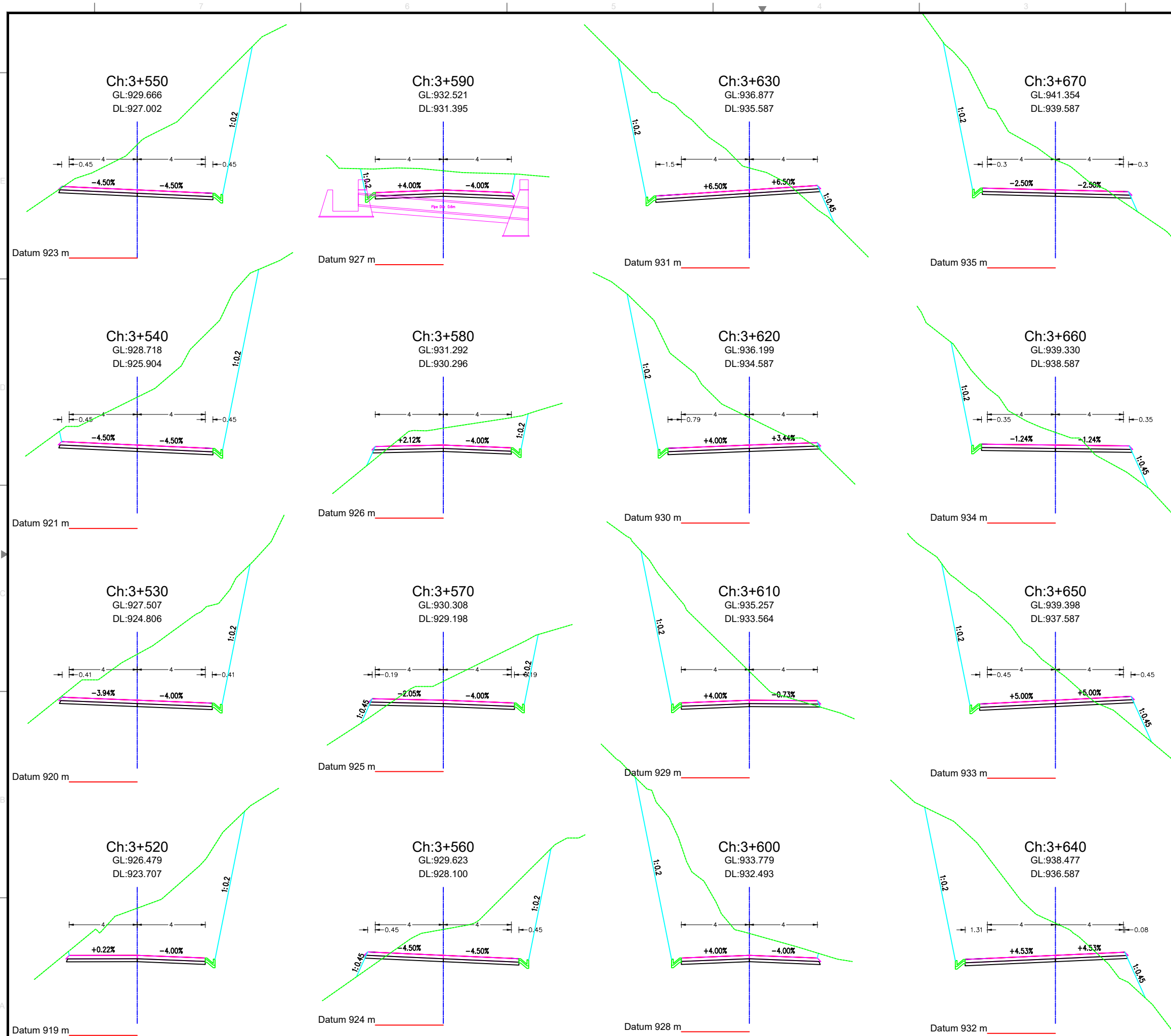
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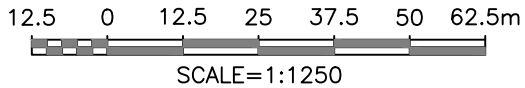


**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn:	Checked:	Recommended:	Approved:
Client: <div>DORJILUNG HYDROPOWER PROJECT</div>					
Project: <div>DORJILUNG HYDROPOWER PROJECT (1125 MW) MONGAR, BHUTAN</div>					
Title: <div>IMPROVEMENT OF TSAMANG FARM ROAD CROSS SECTION  SHEET 37 OF 51</div>					
CONSULTANT:		NAME	SIG.		
 Druk Green Consultancy	Designed				
	Drawn				
	Checked				
	Approved				
	Issued Date	NOV 2024			
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-TSAMANG-FARMROAD-2024-01		REV NA	

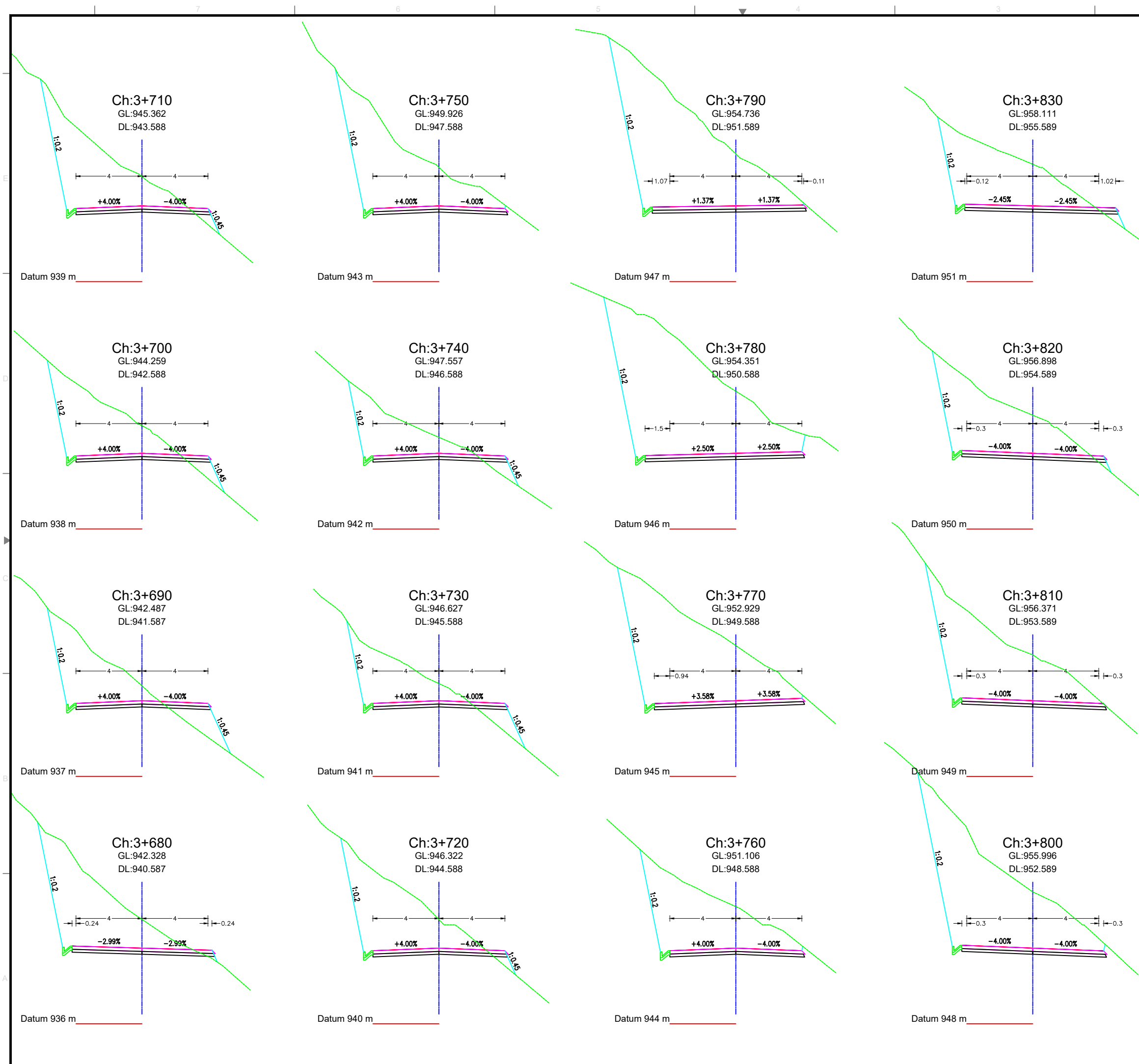


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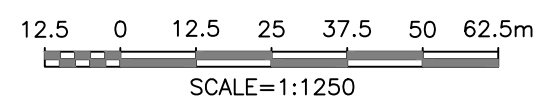


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Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD CROSS SECTION</b>					
SHEET 38 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	A3	Original Scale	AS SHOWN	DRAWING NO.	DHPP-TSAMANG-FARMROAD-2024-01
				REV	NA

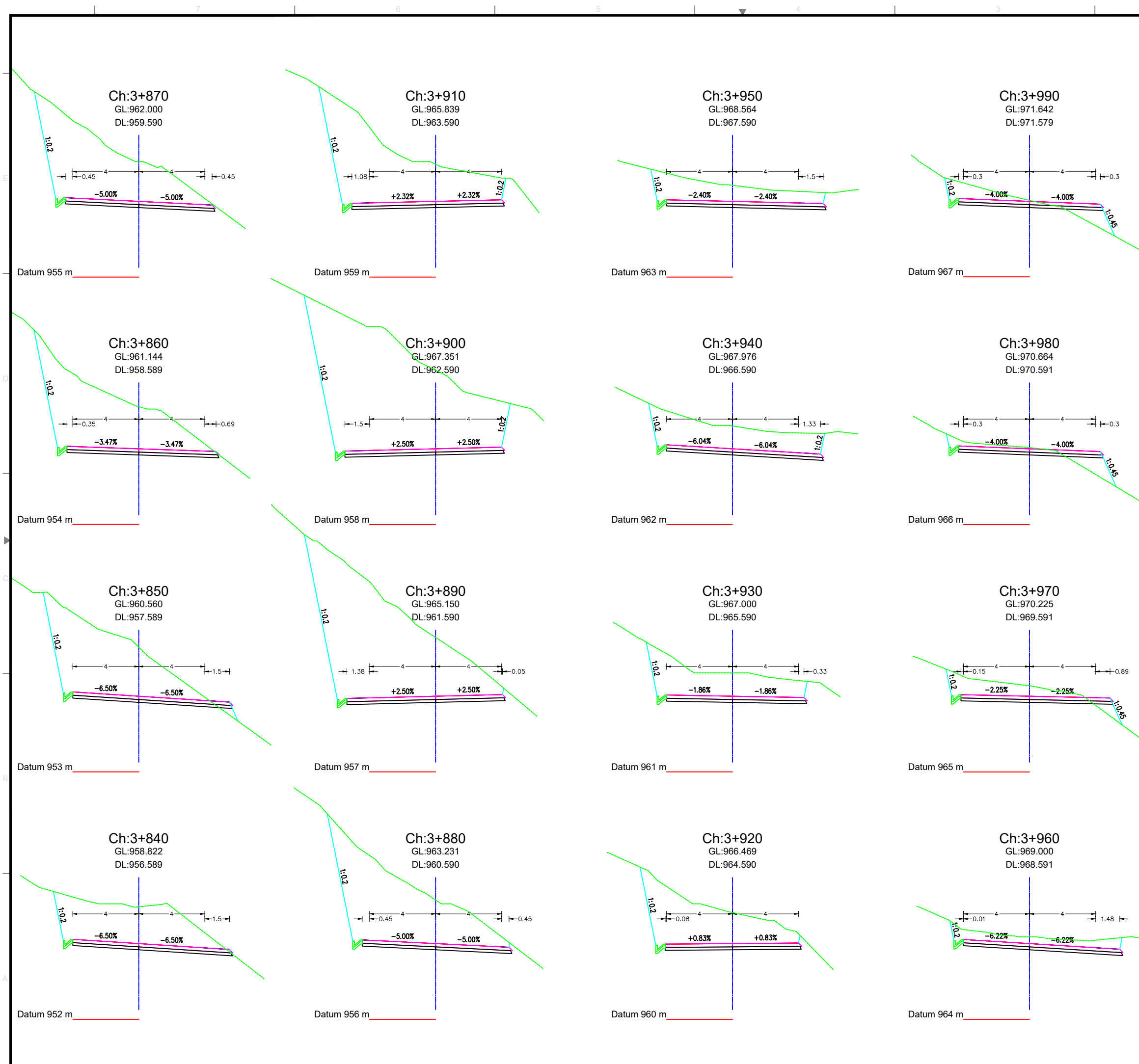


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**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD CROSS SECTION</b>					
SHEET 39 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	A3	Original Scale	AS SHOWN	DRAWING NO.	DHPP-TSAMANG-FARMROAD-2024-01
				REV	NA



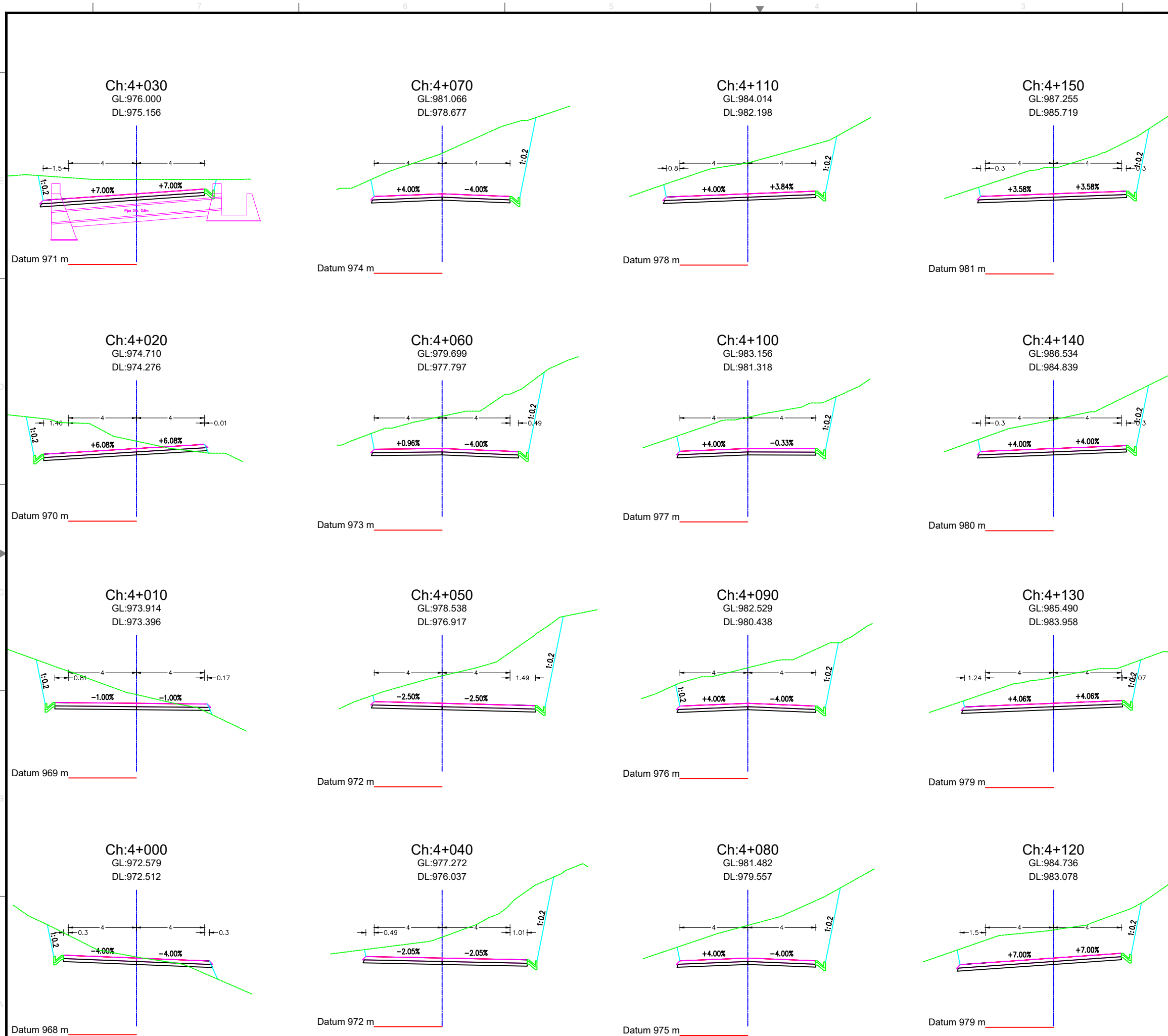
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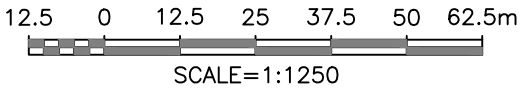
12.5 0 12.5 25 37.5 50 62.5m  
SCALE=1:1250

ISSUED FOR CONSTRUCTION

Rev	Modification	Drawn	Checked	Recommended	Approved
Client: DORJILUNG HYDROPOWER PROJECT					
Project: DORJILUNG HYDROPOWER PROJECT (1125 MW) MONGAR, BHUTAN					
Title: IMPROVEMENT OF TSAMANG FARM ROAD CROSS SECTION					
SHEET 40 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	Original Scale	DRAWING NO.			REV
A3	AS SHOWN	DHPP-TSAMANG-FARMROAD-2024-01			NA

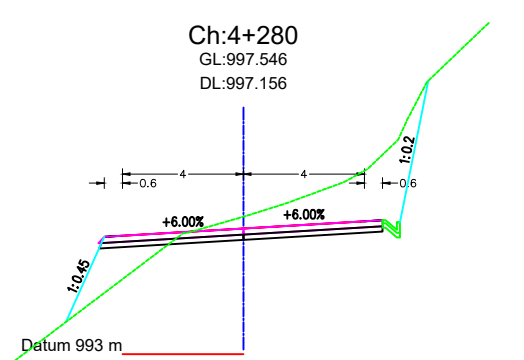
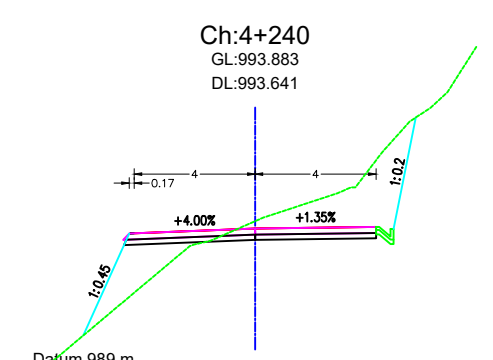
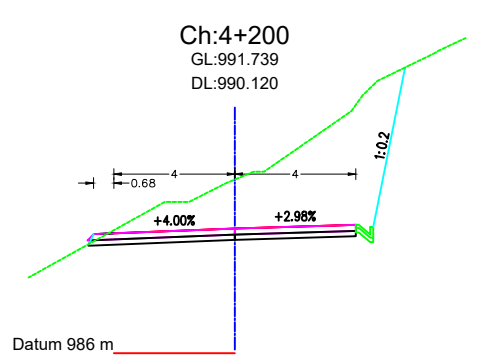
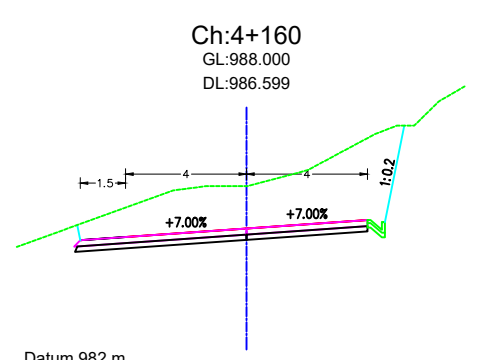
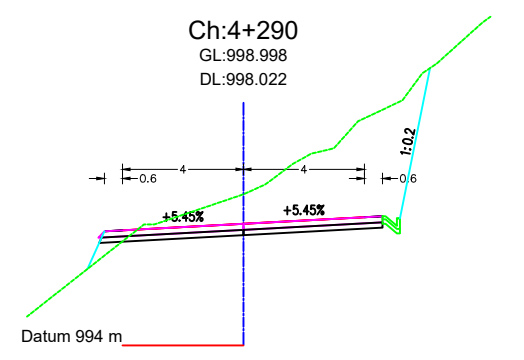
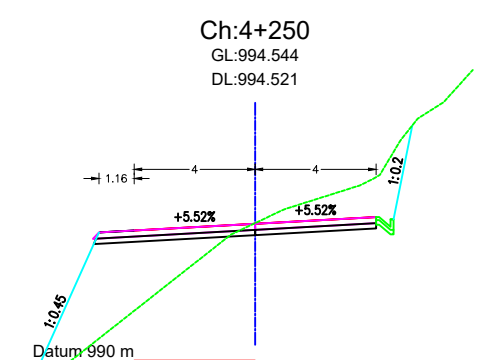
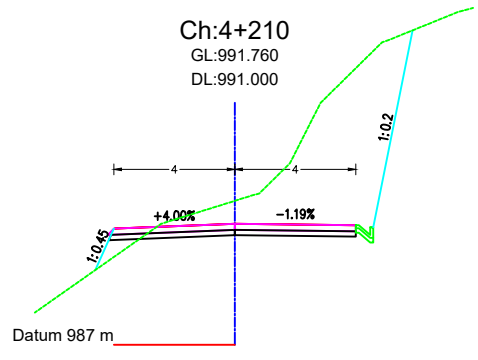
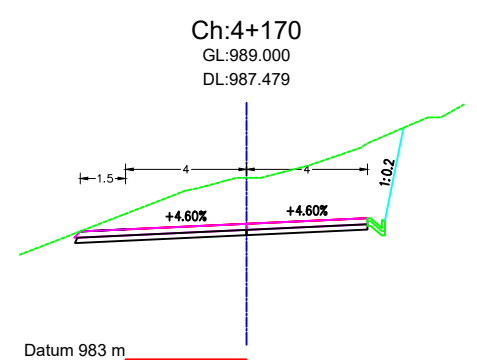
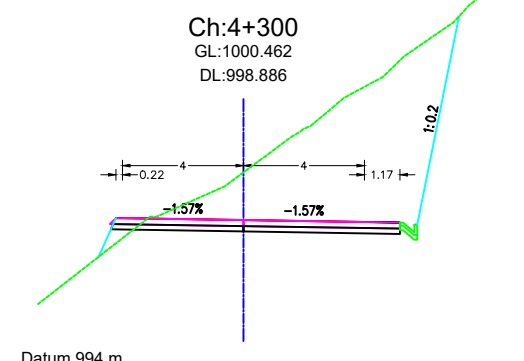
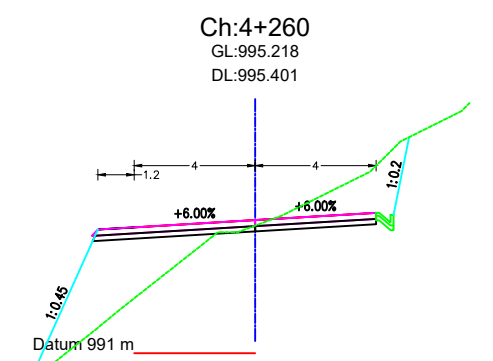
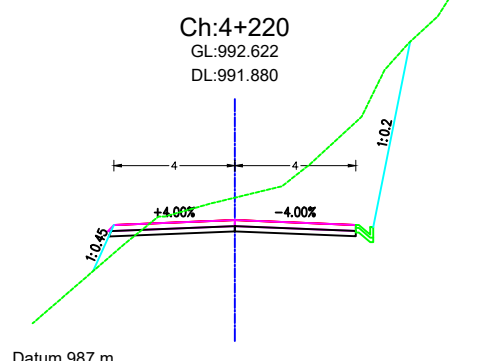
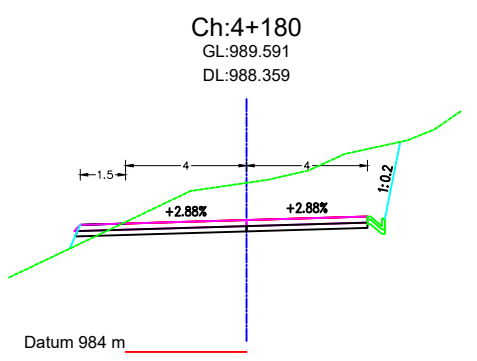
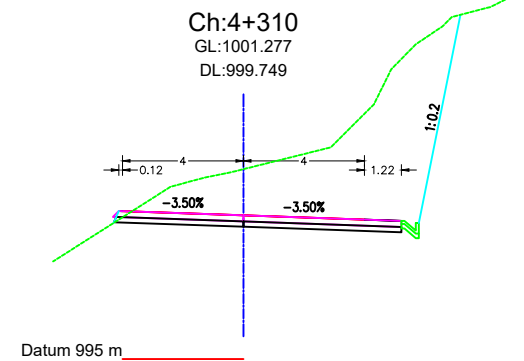
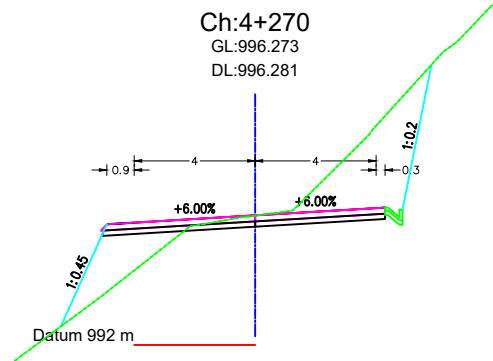
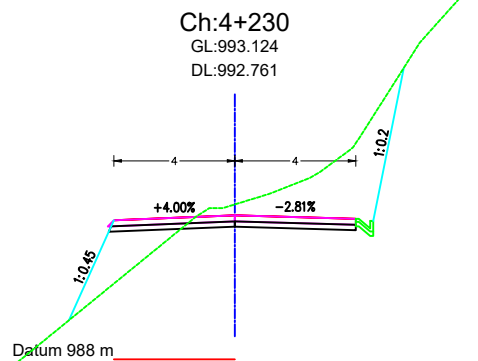
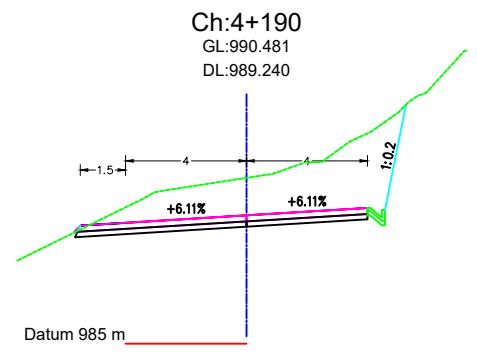


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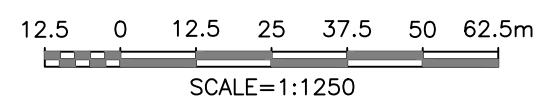


ISSUED FOR CONSTRUCTION

Rev	Modification	Drawn	Checked	Recommended	Approved
Client: DORJILUNG HYDROPOWER PROJECT					
Project: DORJILUNG HYDROPOWER PROJECT (1125 MW) MONGAR, BHUTAN					
Title: IMPROVEMENT OF TSAMANG FARM ROAD CROSS SECTION					
SHEET 41 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	A3	Original Scale	AS SHOWN	DRAWING NO.	DHPP-TSAMANG-FARMROAD-2024-01
				REV	NA

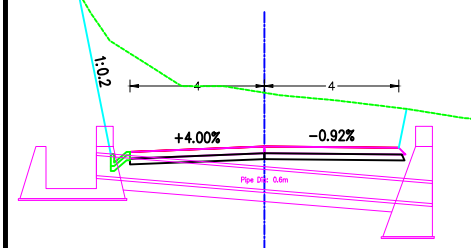


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Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD CROSS SECTION</b>					
SHEET 42 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	Original Scale	DRAWING NO.		REV	
A3	AS SHOWN	DHPP-TSAMANG-FARMROAD-2024-01		NA	



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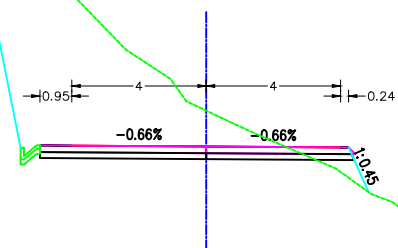
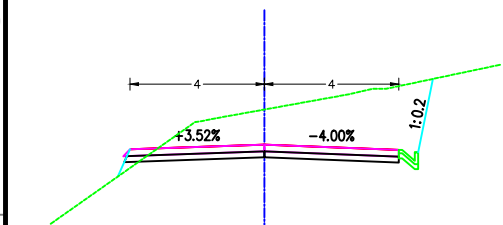
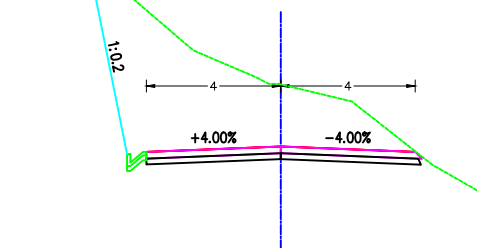
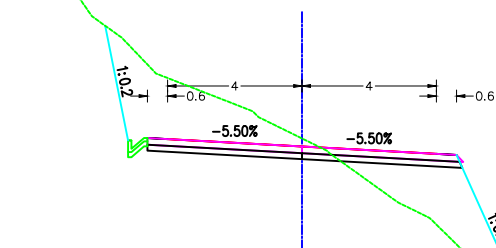
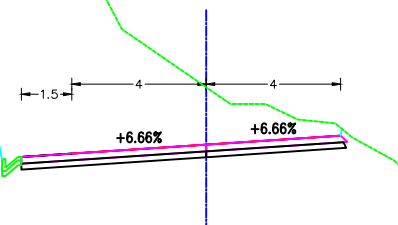


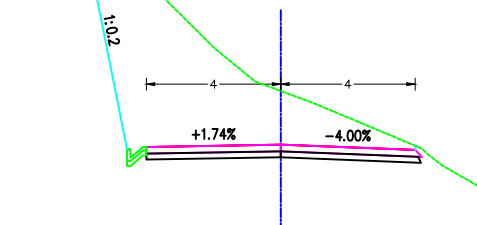
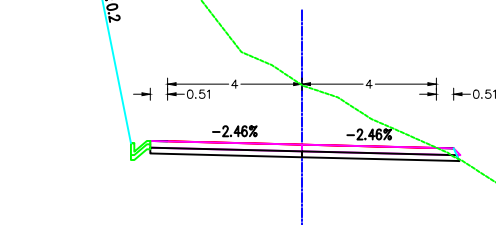
Figure 1. The effect of the number of trials on the number of correct responses.



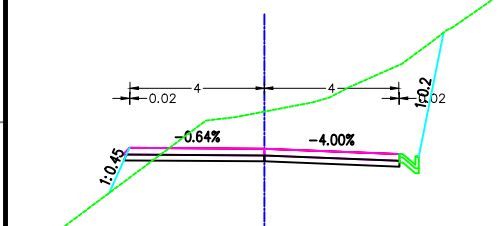
1. *Journal of the American Medical Association*, 2000; 283: 2689-2695.



100



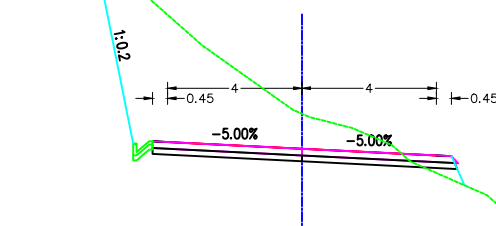
**Figure 1**



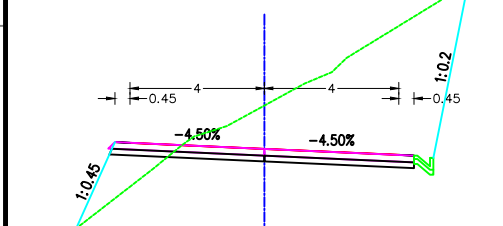
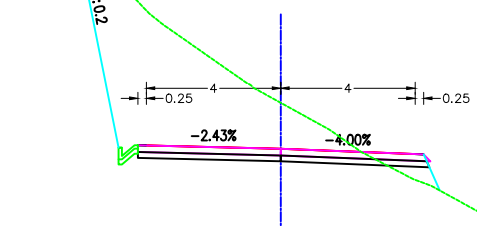
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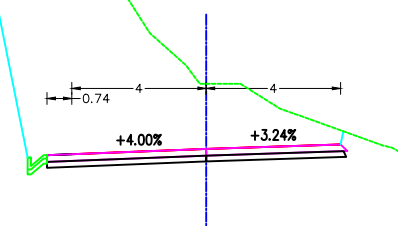
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1995	90
2000	88
2010	92



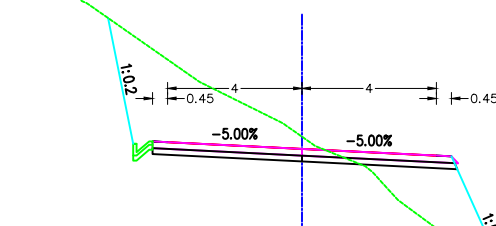
10. *Journal of the American Medical Association*, 2000; 283: 2689-2696.



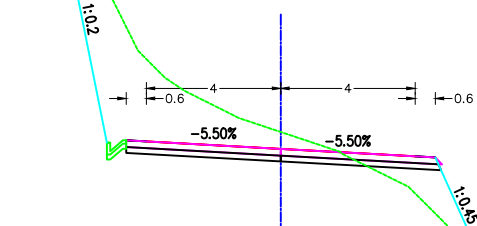
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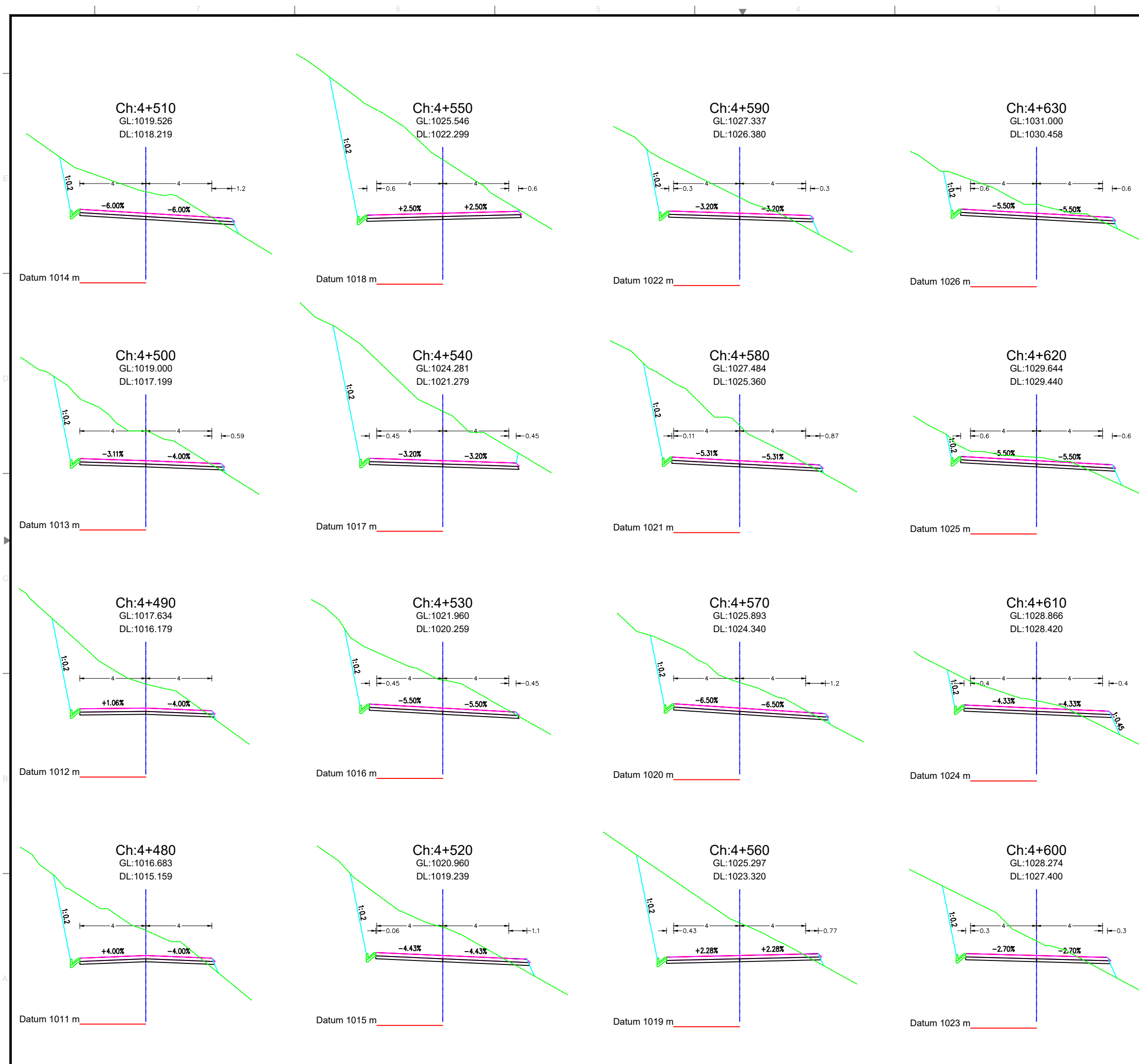
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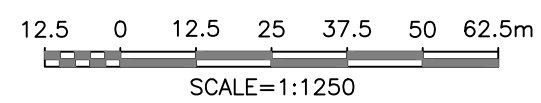
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Mar 19, 2025 - 10:58am

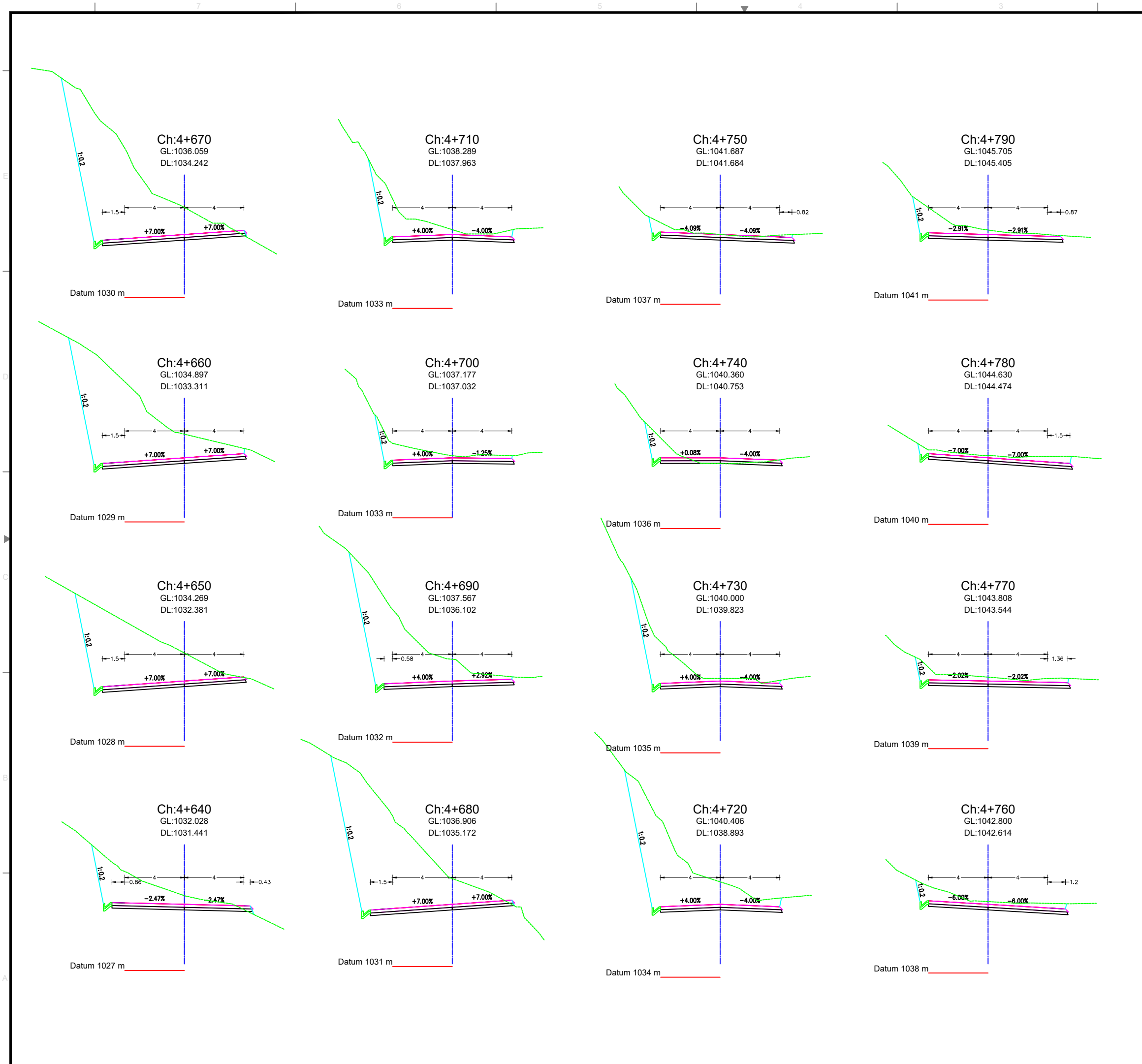


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Rev	Modification	Drawn:	Checked:	Recommended:	Approved:
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD CROSS SECTION</b>					
SHEET 44 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size	A3	Original Scale	AS SHOWN	DRAWING NO.	DHPP-TSAMANG-FARMROAD-2024-01
				REV	NA




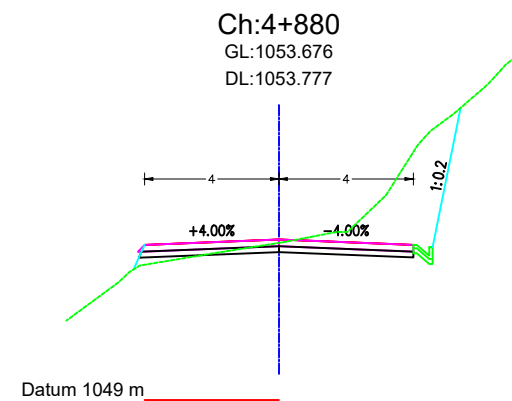
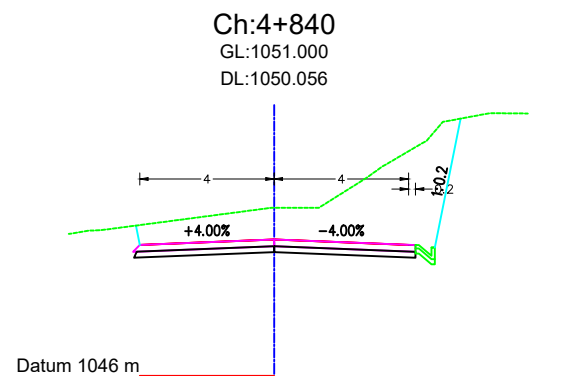
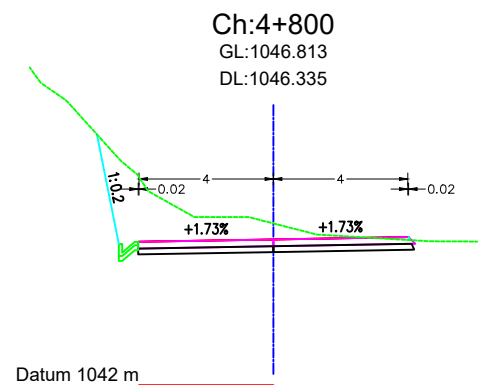
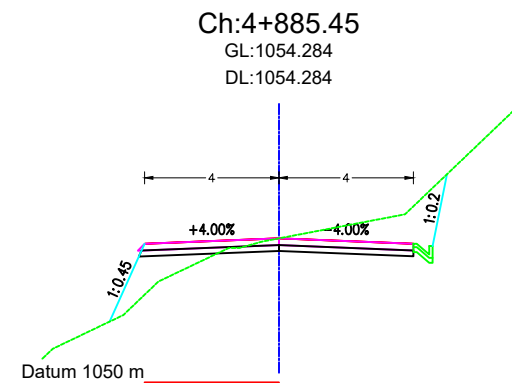
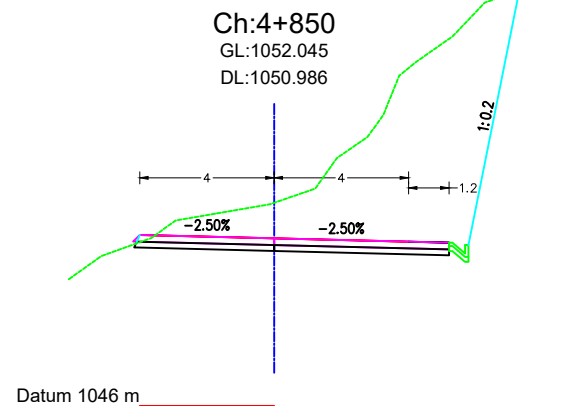
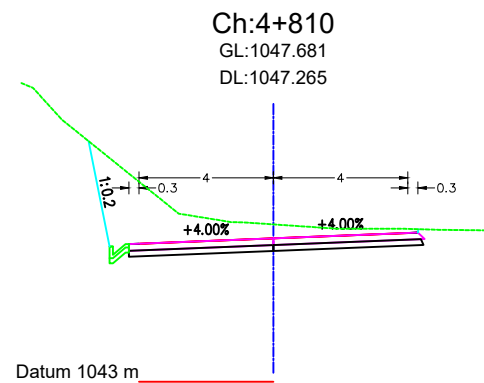
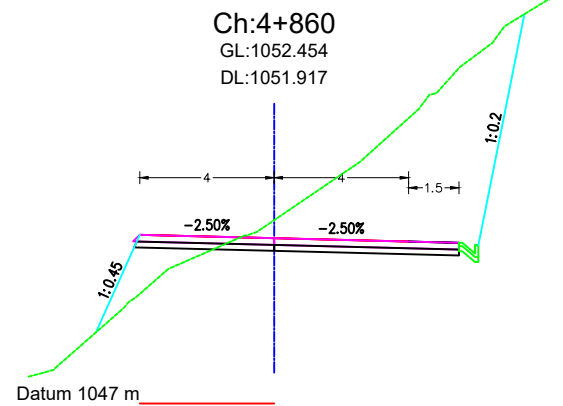
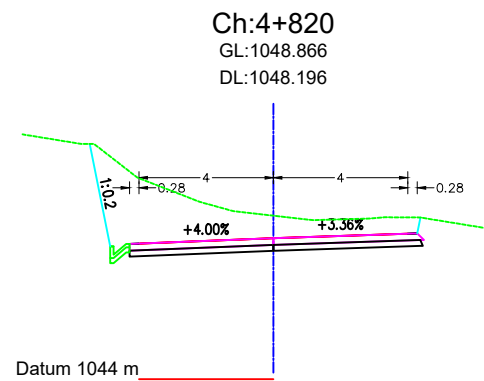
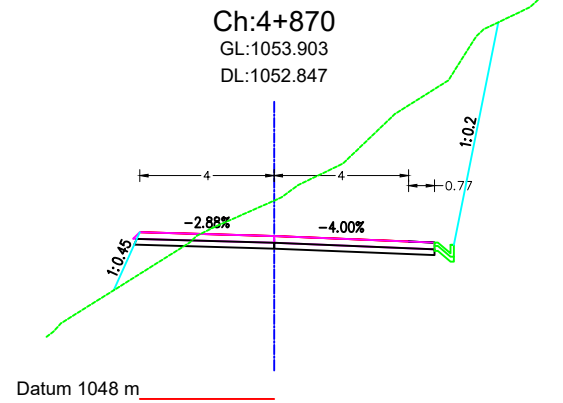
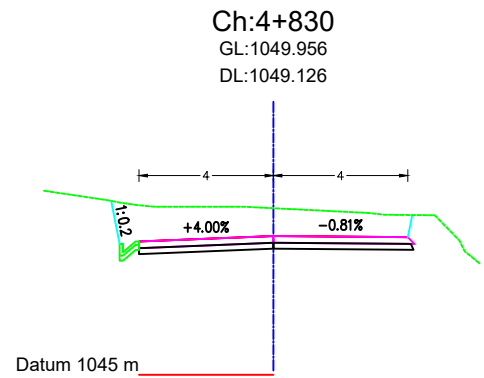
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12.5 0 12.5 25 37.5 50 62.5m  
SCALE=1:1250

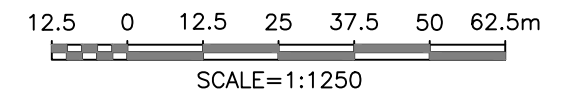
**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn:	Checked:	Recommended:	Approved:
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD CROSS SECTION</b>  SHEET 45 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-TSAMANG-FARMROAD-2024-01			REV NA




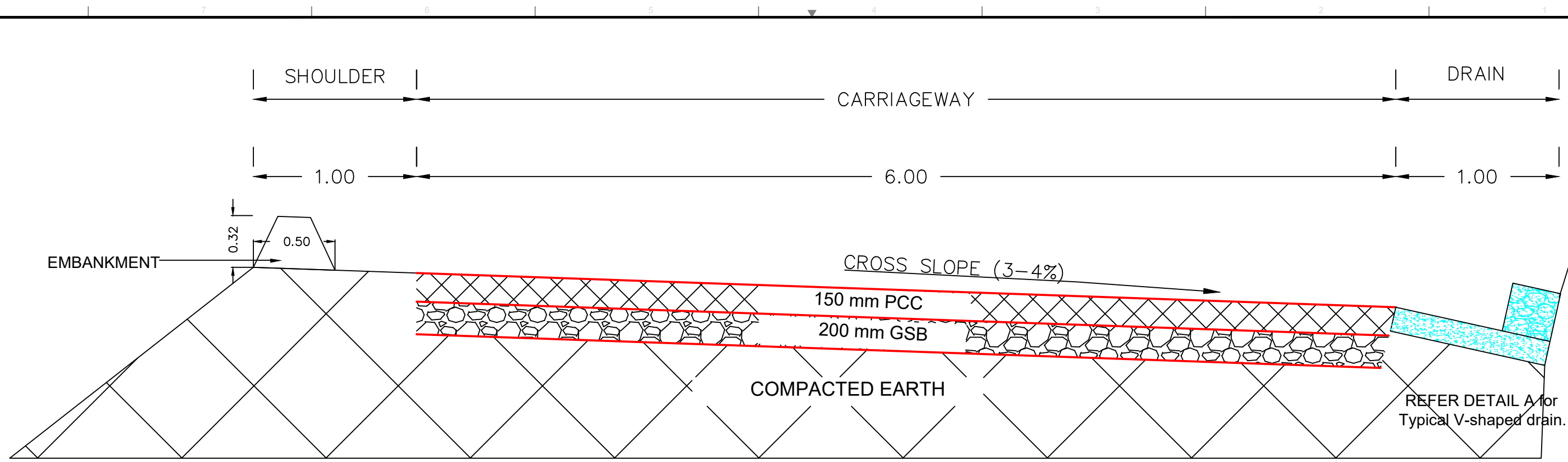
NOTE:

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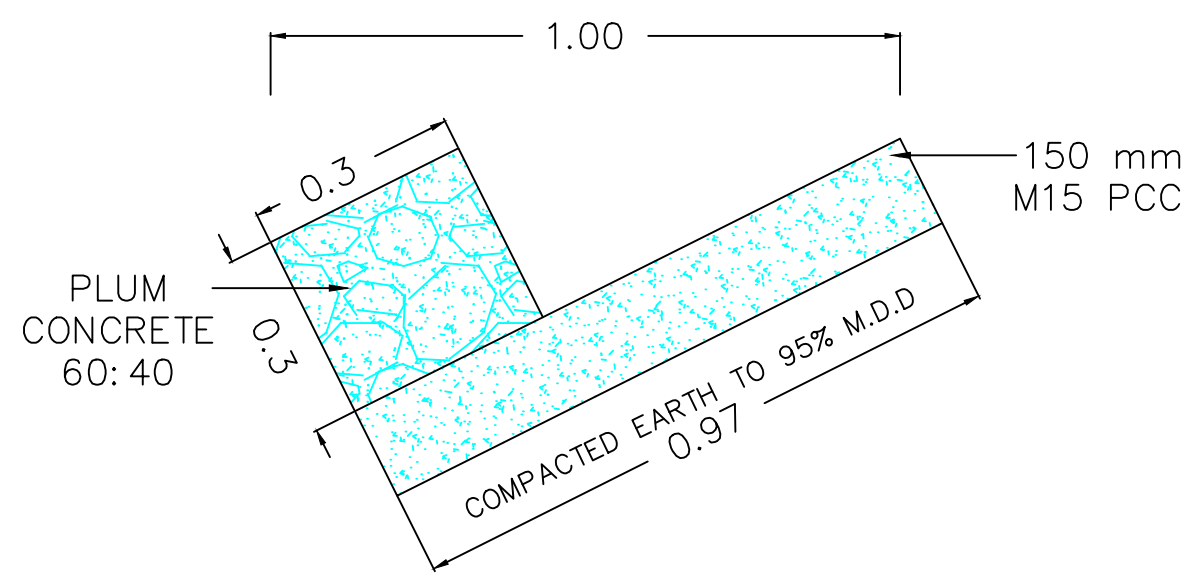
**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn:	Checked:	Recommended:	Approved:
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD CROSS SECTION</b>  SHEET 46 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2024		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-TSAMANG-FARMROAD-2024-01		REV	NA

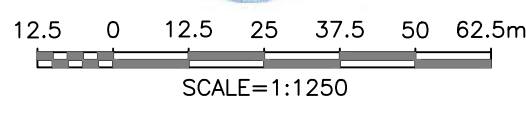


Typical One-way Camber Cross Slope in Super Elevated Sections for Double Lane.

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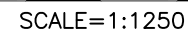


DETAIL A: Typical V-shaped drain



**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn	Checked	Recommended	Approved	
Client: <div>DORJILUNG HYDROPOWER PROJECT</div>						
Project: <div>DORJILUNG HYDROPOWER PROJECT (1125 MW) MONGAR, BHUTAN</div>						
Title: <div>IMPROVEMENT OF TSAMANG FARM ROAD TYPICAL ROAD AND DRAIN SECTION</div>						
SHEET 47 OF 51						
CONSULTANT:						
 <div>འབྲུག་རྒྱས་ཚོད་འཕྲོལ་སྒྲིག་འཛུགས་ Druk Green Consultancy</div>	NAME					SIG.
	Designed					
	Drawn					
	Checked					
	Approved					
Issued Date						NOV 2024
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-TSAMANG-FARMROAD-2024-01		REV NA		



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**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn:	Checked:	Recommended:	Approved:

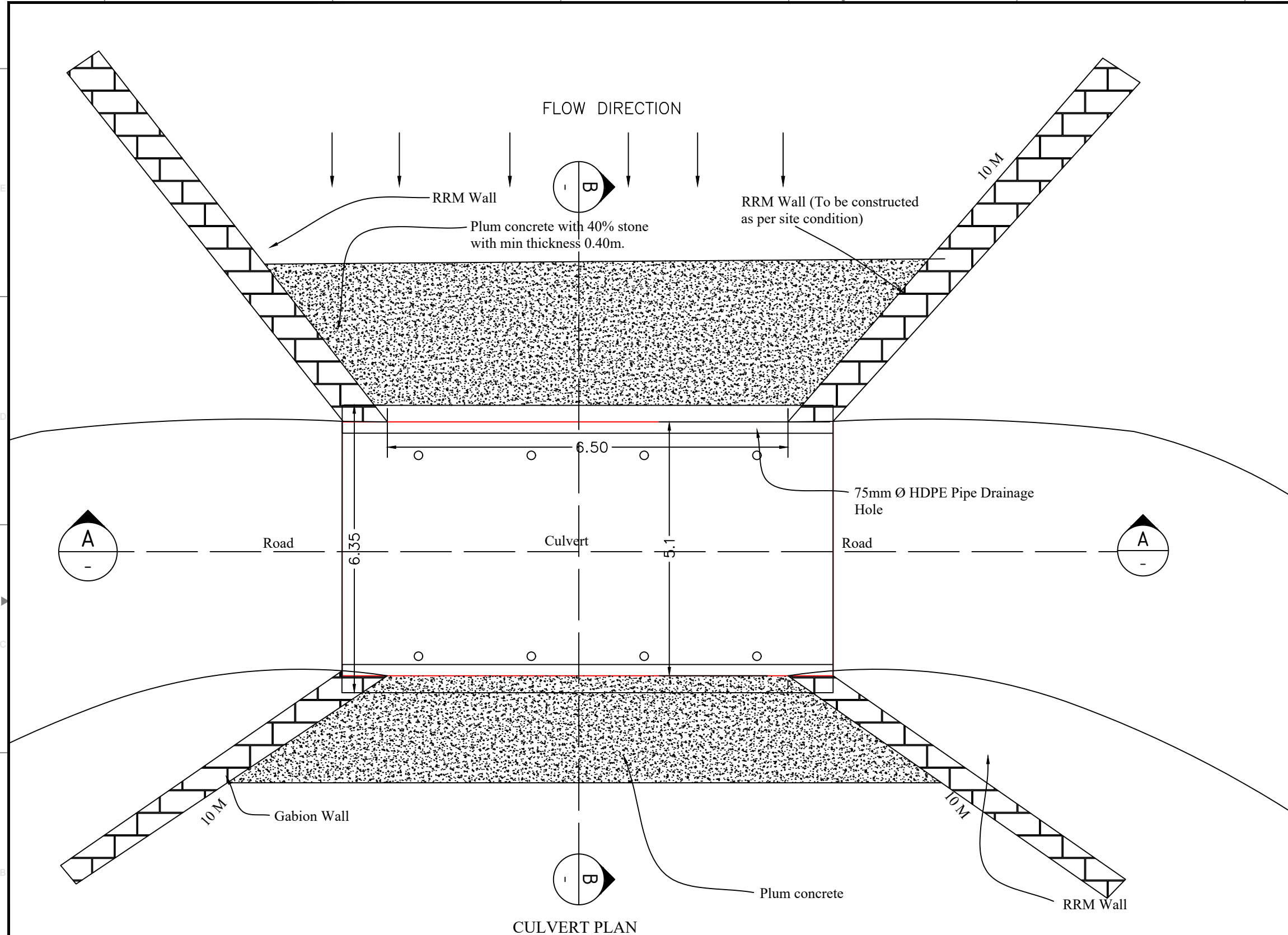
Client: **DORJILUNG HYDROPOWER PROJECT**

Project: **DORJILUNG HYDROPOWER PROJECT**  
**(1125 MW)**  
MONGAR, BHUTAN

Title: IMPROVEMENT OF TSAMANG FARM ROAD  
TYPICAL DETAILS OF HUME PIPE, RETAINING  
AND GABION WALLS.  
SHEET 48 OF 51

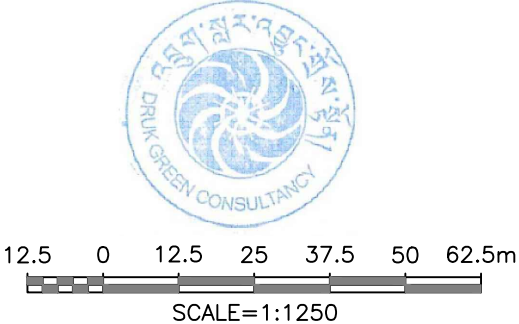
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	Designed				
	Drawn				
	Checked				
	Approved				
	Issued Date	NOV 2024			

Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-TSAMANG-FARMROAD-2024-01	REV NA
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CULVERT PLAN

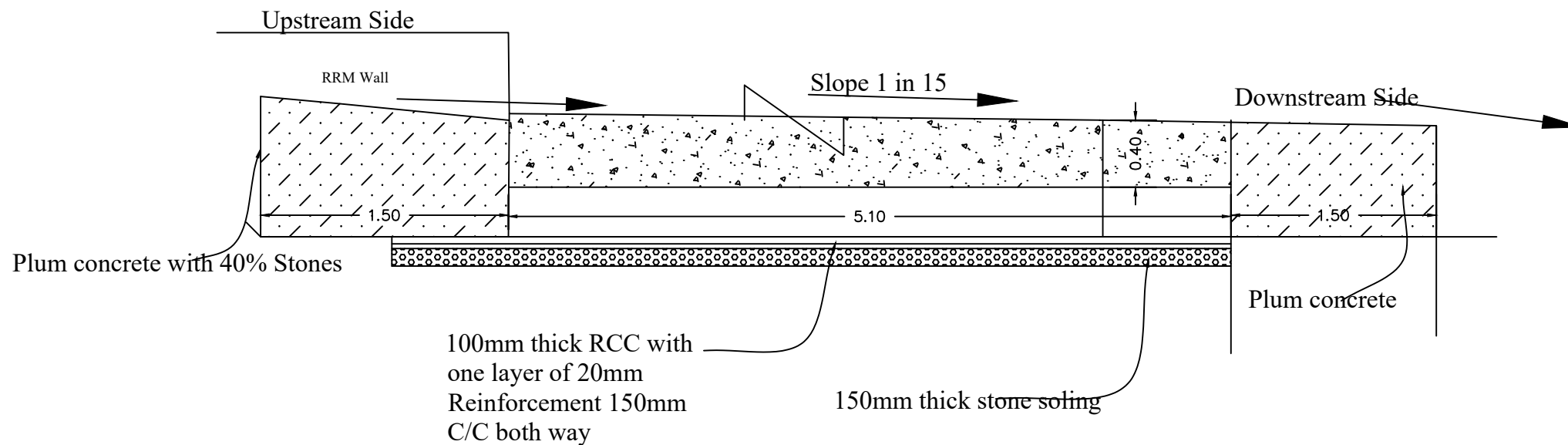
- NOTE:
1. ALL DIMENSIONS, ELEVATIONS & DETAILS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
  2. NO DIMENSION SHALL BE MEASURED FROM THE DRAWINGS. ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.
  3. ALL DIMENSIONS/DETAILS SHALL BE CHECKED ALONG WITH THE RELEVANT DRAWINGS BEFORE STARTING EXECUTION OF WORKS. DISCREPANCY, IF ANY, SHALL BE IMMEDIATELY BROUGHT TO THE NOTICE OF PROJECT AUTHORITY/CONSULTANT FOR REVIEW.



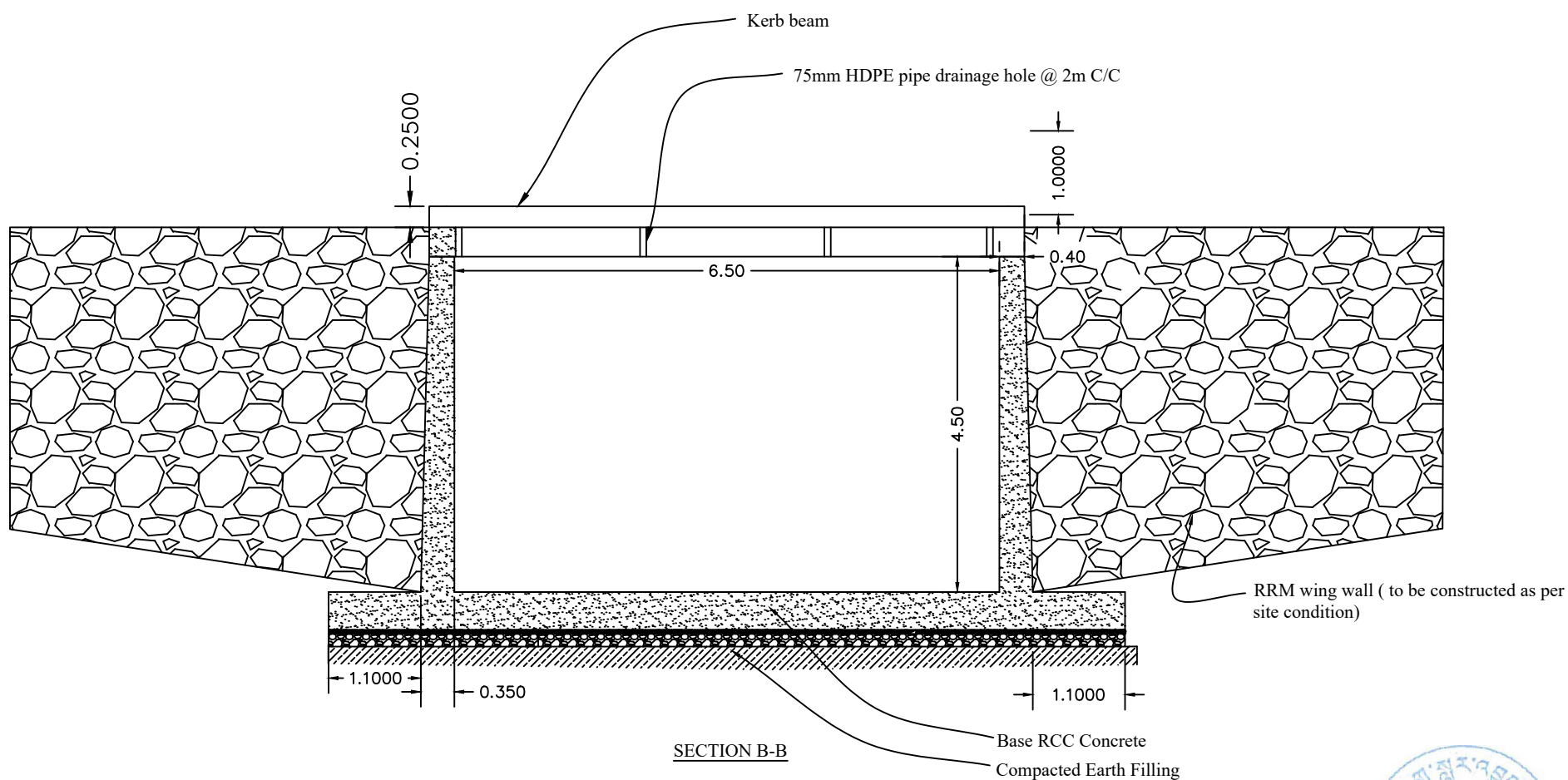
- NOTE:
1. ALL DIMENSIONS, ELEVATIONS & DETAILS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
  2. NO DIMENSION SHALL BE MEASURED FROM THE DRAWINGS. ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.
  3. THE PIPES SHALL BE LAID AFTER THE FOUNDATION IS WELL LEVELED MAINTAINING REQUIRED SLOPE AND APPROVED BY THE ENGINEER-IN-CHARGE.
  4. IN PLACES WHERE TWO OR MORE PIPES ARE TO BE LAID ADJACENT TO EACH OTHER, THE PIPES SHALL BE SEPARATED BY A DISTANCE OF A MINIMUM 450 MM OR EQUAL TO HALF THE DIAMETER OF THE PIPE.
  5. PROPER CARE SHALL BE TAKEN WHILE LIFTING, LOADING, UNLOADING, AND LOWERING OF CONCRETE PIPES AT A FACTORY OR SITE SO THAT THE PIPES DO NOT SUFFER ANY UNDUE STRUCTURAL STRAIN, ANY DAMAGE DUE TO FALL OR IMPACT.
  6. ANY PIPE FOUND DEFECTIVE OR DAMAGED DURING LAYING SHALL BE REMOVED AT THE COST OF THE CONTRACTOR.
  7. MAINTAIN A MINIMUM BACKFILL COVER OF 600MM FROM THE TOP OF THE PIPE TO THE ROAD LEVEL.
  8. THE BACKFILLING OF THE TRENCHES SHALL BE CARRIED OUT IMMEDIATELY AFTER THE PIPES ARE PLACED, AND THE JOINTING MATERIAL HAS HARDENED.
  9. THE BACKFILLING UP TO 300 MM ABOVE THE TOP OF THE PIPE SHALL BE CARRIED OUT CAREFULLY, AND THE SOIL SHALL BE RAMMED, TAMPED, OR VIBRATED IN LAYERS NOT EXCEEDING 150 MM, PARTICULAR CARE BEING TAKEN TO CONSOLIDATE THE MATERIALS UNDER THE LAUNCHES OF THE PIPE THOROUGHLY.
  10. THE FILLING OF THE TRENCH ON BOTH SIDES OF THE PIPE SHALL BE CARRIED OUT SIMULTANEOUSLY SO THAT UNEQUAL PRESSURES DO NOT OCCUR.
  11. IN CASE OF THE HIGH EMBANKMENT, AFTER FILLING THE TRENCH UP TO THE TOP OF THE PIPE IN THE ABOVE-SAID MANNER, A LOOSE-FILL SHALL BE PLACED OVER THE PIPE TO A DEPTH EQUAL TO THE EXTERNAL DIAMETER OF THE PIPE AND COMPACTED.

ISSUED FOR CONSTRUCTION

Rev	Modification	Drawn	Checked	Recommended	Approved
Client: DORJILUNG HYDROPOWER PROJECT					
Project: DORJILUNG HYDROPOWER PROJECT (1125 MW) MONGAR, BHUTAN					
Title: IMPROVEMENT OF TSAMANG FARM ROAD RCC BOX CULVERT PLAN					
SHEET 49 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2023		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-TSAMANG-FARMROAD-2024-01		REV	NA



SECTION A-A

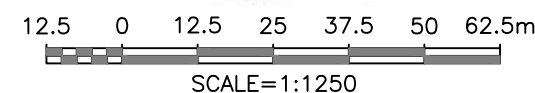


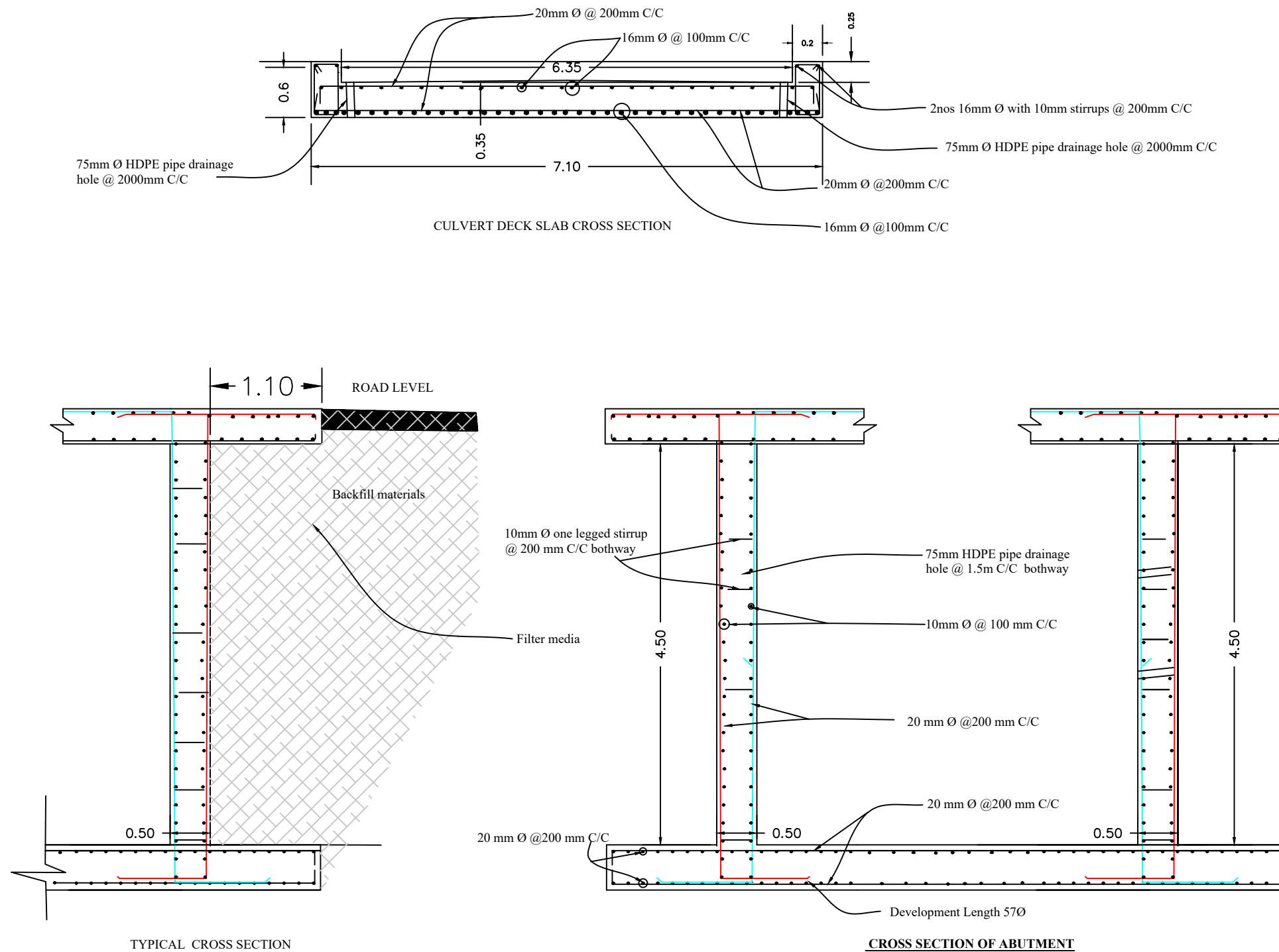
NOTE:

1. ALL DIMENSIONS, ELEVATIONS & DETAILS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
2. NO DIMENSION SHALL BE MEASURED FROM THE DRAWINGS. ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.
3. ALL DIMENSIONS/DETAILS SHALL BE CHECKED ALONG WITH THE RELEVANT DRAWINGS BEFORE STARTING EXECUTION OF WORKS. DISCREPANCY, IF ANY, SHALL BE IMMEDIATELY BROUGHT TO THE NOTICE OF PROJECT AUTHORITY/CONSULTANT FOR REVIEW.

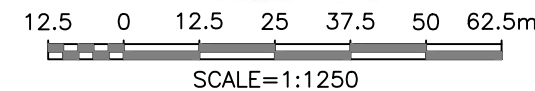
**ISSUED FOR CONSTRUCTION**

Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD</b> <b>RCC BOX CULVERT CROSS SECTION</b>					
SHEET 50 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2023		
Original Size	Original Scale	DRAWING NO.		REV	
A3	AS SHOWN	DHPP-TSAMANG-FARMROAD-2024-01		NA	






- NOTE:
1. ALL DIMENSIONS, ELEVATIONS & DETAILS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
  2. NO DIMENSION SHALL BE MEASURED FROM THE DRAWINGS. ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.
  3. ALL DIMENSIONS/DETAILS SHALL BE CHECKED ALONG WITH THE RELEVANT DRAWINGS BEFORE STARTING EXECUTION OF WORKS. DISCREPANCY, IF ANY, SHALL BE IMMEDIATELY BROUGHT TO THE NOTICE OF PROJECT AUTHORITY/CONSULTANT FOR REVIEW.

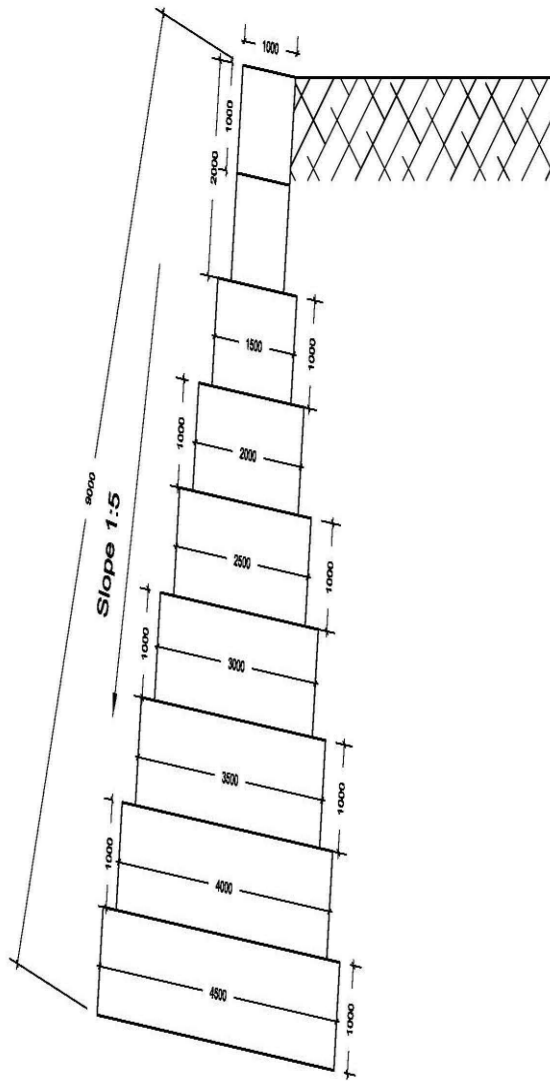


NOTE FOR CULVERT CONSTRUCTION:

1. ALL DIMENSIONS, ELEVATIONS & DETAILS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
2. NO DIMENSION SHALL BE MEASURED FROM THE DRAWINGS. ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.
3. THE FOUNDATION OF CULVERT TO LAID ON ORIGINAL SOIL MAINTAINING THE SLOPES AS SHOWN IN THE SECTION.
4. USE M25 GRADE CONCRETE AND Fe500 STEEL FOR THE CONSTRUCTION OF CULVERT SLAB AND ABUTMENT. USE M20 GRADE CONCRETE FOR PCC ALONG STREAM SECTION.
5. PROVIDE 30MM CLEAR COVER FOR SLAB AND 40MM FOR THE ABUTMENT.
6. PROVIDE 100MM DIAMETER STEEL CHAIR @ 1METER CENTER TO CENTER FOR CULVERT SLAB AND FOOTING.
7. THE HEIGHT OF ABUTMENT MAY CHANGE AS PER THE SITE CONDITION, ANY SUCH CHANGE SHALL BE IMMEDIATELY BROUGHT TO THE NOTICE OF PROJECT AUTHORITY/CONSULTANT FOR REVIEW.
8. THE DRAINAGE HOLE SHALL BE PROVIDED BOTH IN DECK SLAB AND THE ABUTMENT AS DETAILS SHOWN IN THE SECTIONS.
9. THE BACKFILLING OF SHALL BE DONE IN LAYER OF 300MM PROVIDING PROPER FILTER MATERIALS AT DRAINAGE HOLES.
10. DEVELOPMENT LENGTH OF REINFORCEMENT SHALL BE PROVIDED 57Ø OF THE REINFORCEMENT.
11. ALL DIMENSIONS/DETAILS SHALL BE CHECKED ALONG WITH THE RELEVANT DRAWINGS BEFORE STARTING EXECUTION OF WORKS. DISCREPANCY, IF ANY, SHALL BE IMMEDIATELY BROUGHT TO THE NOTICE OF PROJECT AUTHORITY/CONSULTANT FOR REVIEW.

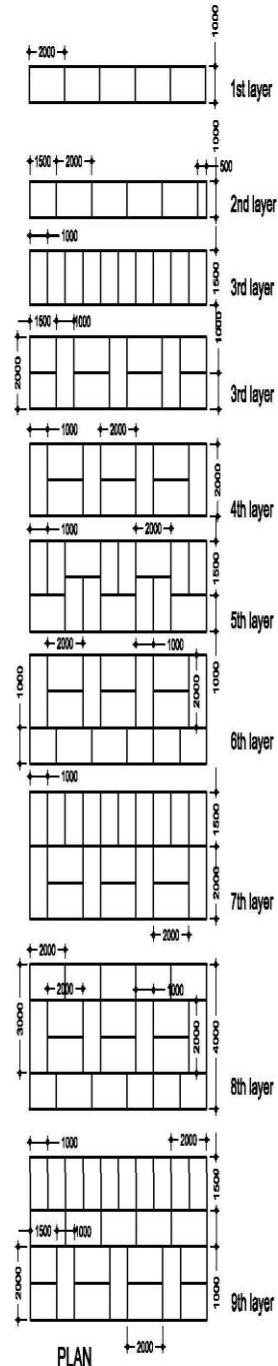
ISSUED FOR CONSTRUCTION

Rev	Modification	Drawn	Checked	Recommended	Approved
Client: <b>DORJILUNG HYDROPOWER PROJECT</b>					
Project: <b>DORJILUNG HYDROPOWER PROJECT (1125 MW)</b> MONGAR, BHUTAN					
Title: <b>IMPROVEMENT OF TSAMANG FARM ROAD</b> <b>DETAILS OF TOP SLAB REINFORCEMENT AND WALL</b> RCC BOX CULVERT SHEET 51 OF 51					
CONSULTANT:		NAME	SIG.		
		Designed			
		Drawn			
		Checked			
		Approved			
		Issued Date	NOV 2023		
Original Size A3	Original Scale AS SHOWN	DRAWING NO. DHPP-TSAMANG-FARMROAD-2024-01		REV	NA



SECTION

Note :  
Provide foundation drains @ 1500c/c



PLAN

## GABION WALL

57.9m Bailey Bridge 2

DRAWING LIST									
SL/NO.		DRAWING NO.		CONTENT					
1		GN-01		General Notes					
A.GENERAL ARRANGEMENT DRAWINGS									
2		BB-A-01		General Plan					
3		BB-A-02		Longitudinal Section					
4		BB-A-03		Details of Anchor Hooks					
B.SUB-STRUCTURE									
5		BB-B-01		Abutment A1 Plan Dimensions					
6		BB-B-02		Abutment A1 Elevation Dimensions					
7		BB-B-03		Abutment A1 Rebar Details-1					
8		BB-B-04		Abutment A1 Rebar Details-2					
9		BB-B-05		Abutment A1 Return wall Rebar and Footing Rebar Plan					
10		BB-B-06		Abutment A1 Rock Anchor					
11		BB-B-07		Abutment A1 BBS-1					
12		BB-B-08		Abutment A1 BBS-2					
13		BB-B-09		Abutment A1 BBS-3					
14		BB-B-10		Abutment A1 BBS-4					
15		BB-B-11		Abutment A2 Plan Dimension					
16		BB-B-12		Abutment A2 Elevation Dimension					
17		BB-B-13		Abutment A2 Rebar Details-1					
18		BB-B-14		Abutment A2 Rebar Details-2					
19		BB-B-15		Abutment A2 Return wall Rebar and Footing Rebar Plan					
20		BB-B-16		Abutment A2 BBS-1					
21		BB-B-17		Abutment A2 BBS-2					
22		BB-B-18		Abutment A2 BBS-3					
23		BB-B-19		Abutment A2 BBS-4					
24		BB-B-20		Abutment A2 BBS-5					

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				Issue	Date	Amendments/Issue descriptions	Design	J.Yeshi		DL-00	
				01	-	-	Drawing	NB Chhetri		Scale:	NTS
							Check	-		Date:	Jan 2025
							Approved	....		(as sheet A3 size)	

GENERAL NOTES

1.0 GENERAL

- 1.1 Design and detailing conforming to IS–456, IS–13920, IS–800.  
1.2 All notes and typical details apply to all drawings unless otherwise shown or specified  
1.3 Unless otherwise shown, all dimensions are in millimeters and all levels in metres.

2.0 FOUNDATION

- 2.1 On A1 side, the abutment footing mat shall be supported on solid rock strata.  
2.2 On A2 side, the foundation shall rest on dense sandy gravel soil strata.  
2.3 Over excavated areas under footings, if that happens, must be backfilled with blinding concrete of minimum M10 grade.  
2.4 The backfill material type, gradation and compaction shall be as per Specifications

3.0 CONCRETE

- 3.1 The concrete shall conform to IS–456 and grade shall be as follows:  
• M30 for abutments.  
• M10 for blinding concrete – leveling concrete for foundation mat.  
3.2 The aggregate used shall be:  
• 20 mm and down – grading shall be as per IS:383  
• The grading of sand shall conform to Zone I, II or III as per IS:383  
• The sand falling under Zone IV shall not used for structural concrete  
3.3 The manufacture, placing, compaction, curing and finishing of the concrete shall be as per IS–456  
3.4 The water used for concrete curing shall be same quality as the water fit for drinking  
3.5 The concrete sections shown are the minimum required for structural strength and doesn’t include finishes  
3.6 The sectional capacities of the structural members shall not be altered by way of leaving holes for conduits etc. without the engineer’s approval.  
3.7 The placement and removal of form work shall be as per IS–456  
3.8 The reinforcing steel dowels, anchor bolts and other inserts shall be secured in position prior to pouring concrete.

4.0 REINFORCEMENT

- 4.1 The reinforcement shall be grade Fe500 (thermo–mechanically treated) as per IS–1786 for all reinforced concrete components.  
4.2 Only the reinforcement brands approved by Bhutan Standards Bureau (BSB) shall be used.  
4.3 Following clear cover shall be provided to the reinforcement unless specified otherwise:–  
• Foundation Slab and abutment stem – 75 mm  
• Return Wall – 50 mm  
4.4 The concrete cover blocks and steel chairs shall be used where ever required to maintain proper position of the rebars. The cover blocks shall be of the same grade and strength as the structural member.  
4.5 The bar bending shall comply with the requirements of IS–456  
4.6 The minimum anchor length and splice length shall be maintained as specified.

5.0 MASONRY

- 5.1 The Mortar for masonry shall be CM 1:4 or richer  
5.2 The thickness of the mortar bed shall not exceed 10 mm or as specified in the drawing.

6.0 BAILEY BRIDGE - SUPERSTRUCTURE

- 6.1 The Bailey bridge shall be Compact200 type (minimum panel height 2.2m) of equivalent  
6.2 The bridge shall have clear carriage width of 4.25 m and the deck shall be in steel with anti–skid checkered surface.  
6.3 The truss configuration for the Bailey bridge shall be recommended by manufacturer based on the bridge span, width and the loading condition specified.

7.0 LOADS

- 7.1 DEAD LOAD (as per IS 875 Part I):  
• Plain Cement Concrete – 23.50 KN/m3  
• Reinforced Cement Concrete – 24.50 KN/m3  
• Stone Masonry – 22.50 KN/m3  
• Cement Mortar – 20.50 KN/m3  
• Steel – 77.00 KN/m3  
  
7.2 IMPOSED/LIVE LOADS  
• Live Load – Class 40R as per IRC:6  
  
7.3 LATERAL LOADS:  
7.3.1 SEISMIC LOAD ( as per IS 1893):  
• Seismic Zone – IV  
• Zone Factor, Z – 0.36  
• Importance Factor – 1.2  
• Response Reduction Factor– 1.0  
• % of imposed load to be considered for seismic wt. – 25%  
7.3.2 WIND LOAD (as per IS 875 Part III)  
• Basic Wind Speed, V<sub>B</sub> – 47 m/s  
• Terrain Category – II

8.0 DEVELOPMENT/SPLICE LENGTH FOR REBAR

Development Length (L <sub>d</sub> ) in Flexural Tension				
Bar Ø	M20	M25	M30	M35
8	450	390	360	320
10	570	490	450	400
12	680	590	550	480
16	910	780	730	640
20	1140	970	910	800
25	1420	1220	1140	1000

Development Length (L <sub>d</sub> ) in Compression				
Bar Ø	M20	M25	M30	M35
10	450	390	360	320
12	540	470	430	380
16	720	630	580	510
20	900	780	720	640
25	1125	980	900	800

- NOTE:  
• For bars in flexural tension, the Lap Length is equal to L<sub>d</sub>  
• For bars in direct tension, Lap length is 2\*L<sub>d</sub>.  
• Where hooks/bends are provided, the straight length of the bar shall not be less than 20Ø or 200.  
• For tension bars located at top of section as cast and the minimum cover is less than 2\*Ø of bars, the lap length shall be increase by a factor of 1.4.  
• The L<sub>d</sub> of bundled bars shall be that for individual bar increased by 10%, 20% and 33% for bundles of two bars, three bars and four bars respectively.  
• The anchorage value of bends shall be 4 times the bar Ø for each 45° bend subject to maximum of 16\*Ø. The anchorage value of standard U–type hook shall be 16\*Ø  
• The above values of splice and development length shall be used unless specified otherwise in the drawings.

9.0 LOAD COMBINATIONS

As per Annexure B, IRC 6:2016

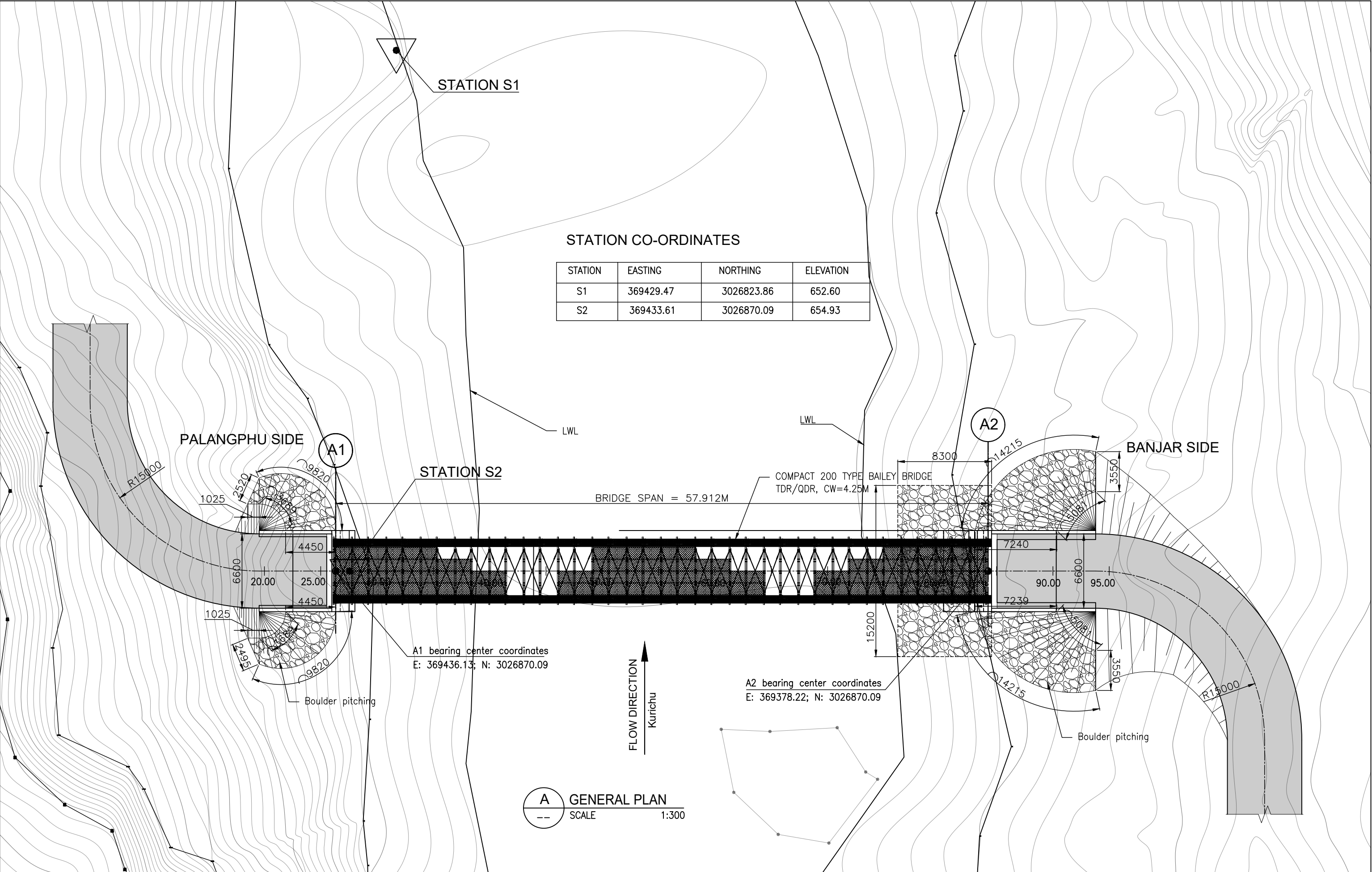
10.0 ABBREVIATIONS/ SYMBOLS

@	At
CL	Centreline
Ø OR DIA.	Diameter
#, NO	Number
B	Beam
BLDG	Building
CJ	Construction Joint
C, COL	Column
DIM	Dimension
DN	Down
DWG	Drawing
EF	Each face
EL	Elevation
EQ	Equal
EXP. JT.	Expansion Joint
EXT	Exterior
F, FTG	Footing
FDN	Foundation
FFL	Finish Floor Level
FGL	Finish Grade Level
GB	Grade Beam
HT	Height
HOR	Horizontal
INT	Interior
JT	Joint
L	Length
MJ	Mastic Joint
NTS	Not To Scale
PC	Precast
PL, RL	Plate
R	Radius
RC	Reinforced Concrete
REF	Reference
SEC	Section
SHT	Sheet
STD	Standard
STIFF	Stiffener
STIRR	Stirrups
SYM	Symmetry
t	Slab Thickness
TYP	Typical

CLIENT: Dorjilung Hydro Power Project  Project Ref. No.: -	CONSULTANT: JY Engineering Consultants (JYEC) Babesa, Thimphu Ph. +975 17634390 (M) email: jyengconsult2017@gmail.com	PROJECT TITLE: Construction of Bridge No.2(Near Adit 2 and 3)	SHEET CONTENT:  GENERAL NOTES	Revisions:			Name	Signature	Drawing No.	
				Issue	Date	Amendments/Issue descriptions	Design	J.Yeshi	GN-01	
				01	-	-	Drawing	NB Chhetri	Scale:	NTS
							Check	-	Date:	Jan 2025
							Approved	----	(as sheet A3 size)	

# A.GENERAL ARRANGEMENT DRAWINGS

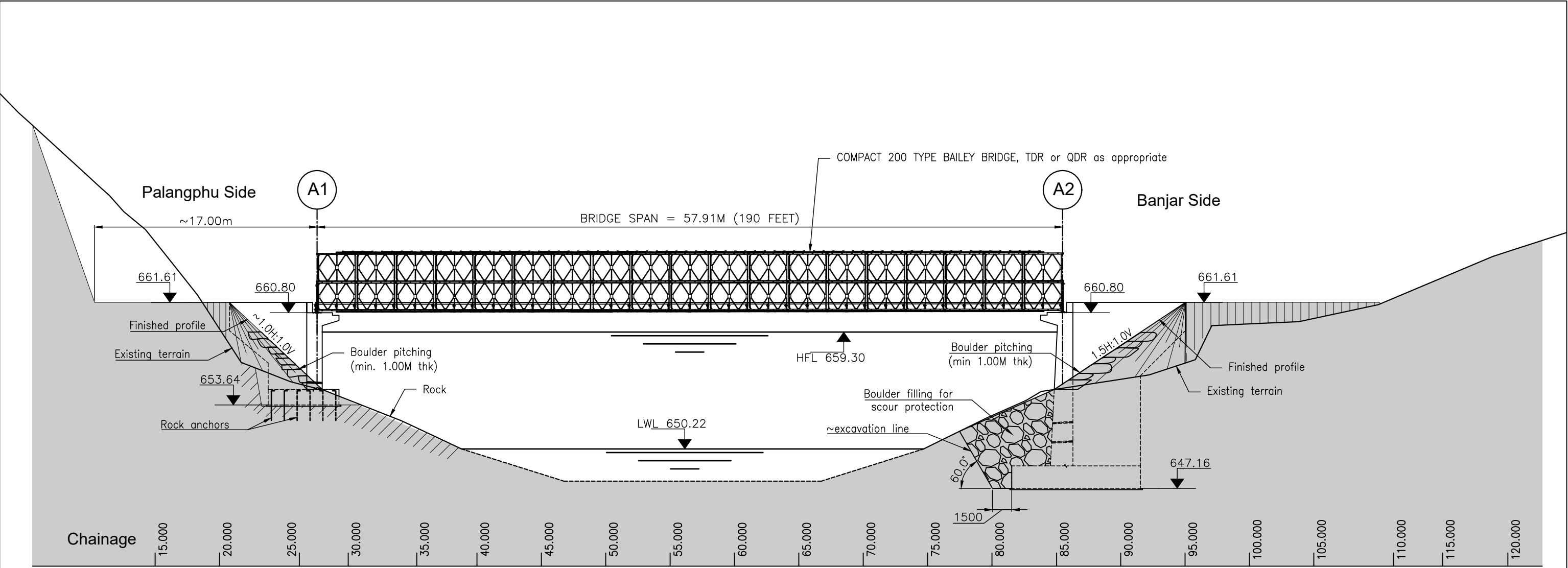
CLIENT: Dorjilung Hydro Power Project  Project Ref. No.: -	CONSULTANT: JY Engineering Consultants (JYEC) Babesa, Thimphu Ph. +975 17634390 (M) email: jyengconsult2017@gmail.com	PROJECT TITLE: Construction of Bridge No.2(Near Adit 2 and 3)	SHEET CONTENT:  COVER PAGE	Revisions:				Name	Signature	Drawing No.	
				Issue	Date	Amendments/Issue descriptions	Design	J.Yeshi		BB-A-00	
				01	-	-	Drawing	NB Chhetri		Scale:	-
							Check	-		Date:	Jan 2025
							Approved	....		(as sheet A3 size)	



STATION CO-ORDINATES

STATION	EASTING	NORTHING	ELEVATION
S1	369429.47	3026823.86	652.60
S2	369433.61	3026870.09	654.93

CLIENT: Dorjilung Hydro Power Project  Project Ref. No.: -	CONSULTANT: JY Engineering Consultants (JYEC) Babesa, Thimphu Ph. +975 17634390 (M) email: jyengconsult2017@gmail.com	PROJECT TITLE: Construction of Bridge No.2(Near Adit 2 and 3)	SHEET CONTENT:  GENERAL PLAN	Revisions:				Name	Signature	Drawing No.	
				Issue	Date	Amendments/Issue descriptions	Design	J.Yeshi		BB-A-01	
				01	-	-	Drawing	NB Chhetri		Scale:	1:300
							Check	-		Date:	Jan 2025
							Approved	....		(as sheet A3 size)	



IMPORTANT NOTES:

- A. BAILEY SUPERSTRUCTURE
- A.1 The Bailey bridge shall be Compact 200 type (Panel height = 2.2m plus) or equivalent
- A.2 The clear carriage width shall be 4.25 m
- A.3 The bridge shall be designed for Class 40R vehicle load as per IRC-6: 2016.
- A.4 The bridge span, width and the loading capacity given, the truss configuration for the Bailey bridge (TDR, QDR etc.) shall be recommended by the manufacturer/supplier. However, the manufacturer/supplier shall submit the design calculation sheet for the Bailey bridge superstructure that shows the bridge to safe under all applied loads.
- B. SUBSTRUCTURE
- B.1 The geometry of the abutment top including that of the back wall shall be treated as tentative. The geometry may change depending on the manufacture from where the bridge parts are sourced. The relevant drawings shall be updated once the manufacturer of the bridge parts is confirmed based on the manufacturer's recommendations.
- B.2 The foundation strata for the abutments were assumed based on the surface geology of the area.
- Abutment A1:  
Solid rock formation was observed at the location where the Abutment A1 is proposed. Hence it is assumed that the full foundation mat of A1 is resting on solid rock. The abutment is lightly anchored on the rock mainly to prevent it from sliding.
- Abutment A2:  
Dense sandy gravel type soil strata was assumed for the foundation of abutment A2.  
If the soil strata for the foundation(s) deviate considerably from the conditions assumed above, matter shall be referred to the design engineer for reassessment of the design conditions and revise the design, if necessary.
- B.3 For the stone pitching works around the bridge foundations, angular shaped boulders with definitive edges shall be used. In other words, rounded rebar boulders shall be avoided. Each boulder shall weigh not less than 50kg and they shall be so laid that the units interlock with each other to form a dense compact unit.

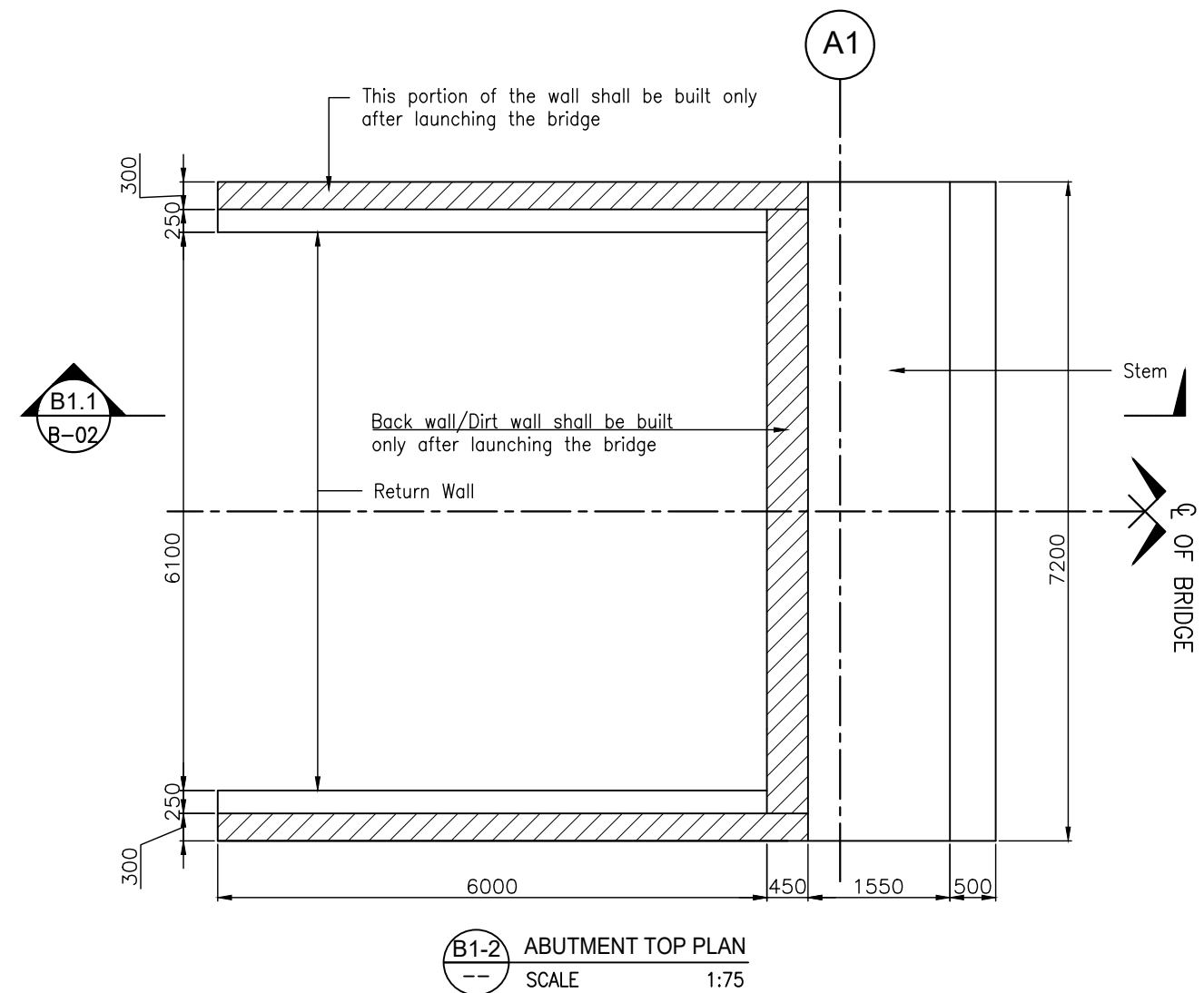
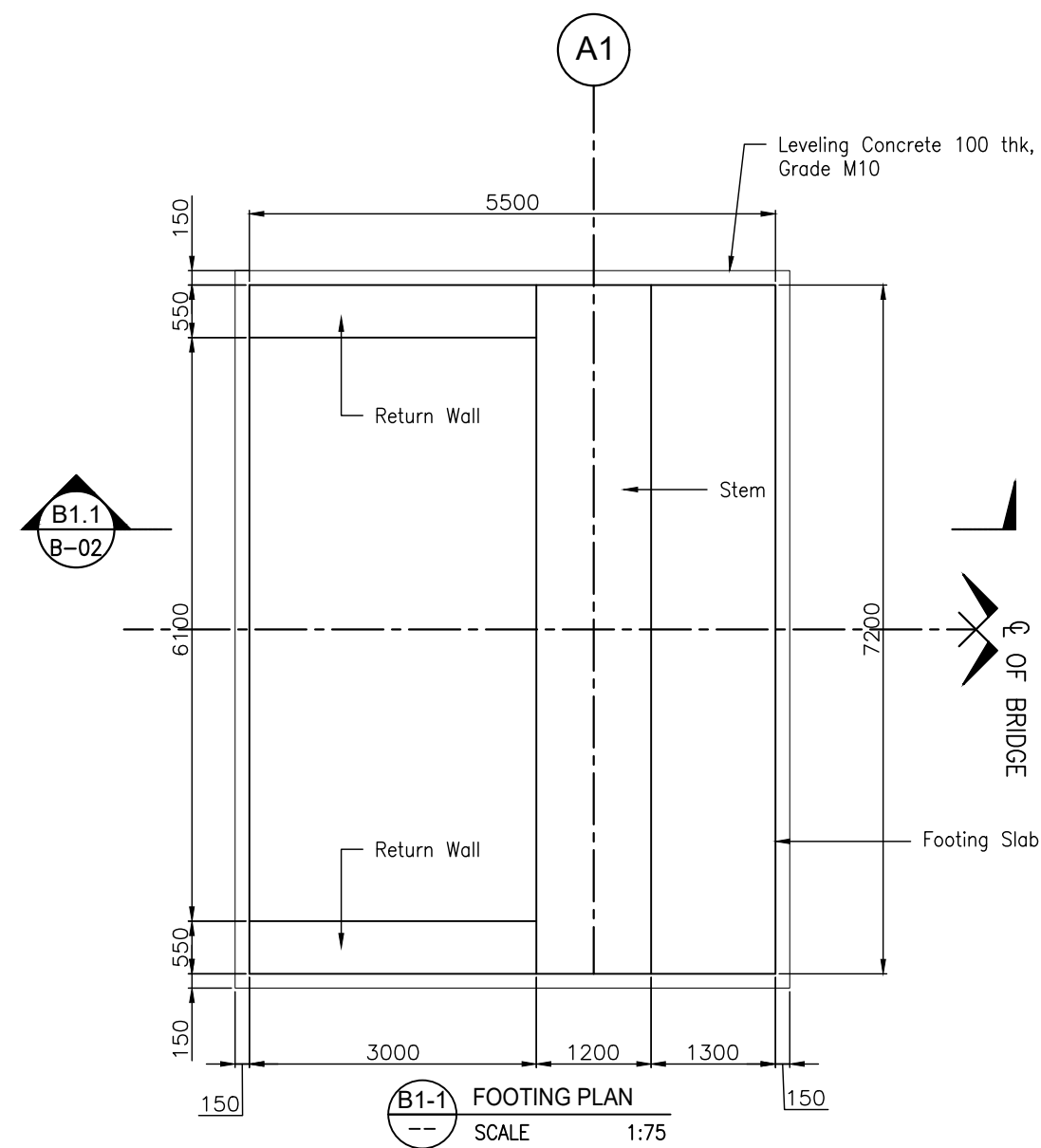
CLIENT: Dorjilung Hydro Power Project  Project Ref. No.: -	CONSULTANT: JY Engineering Consultants (JYEC) Babesa, Thimphu Ph. +975 17634390 (M) email: jyengconsult2017@gmail.com	PROJECT TITLE: Construction of Bridge No.2(Near Adit 2 and 3)	SHEET CONTENT:  LONGITUDINAL ELEVATION	Revisions:			Name	Signature	Drawing No.	
				Issue	Date	Amendments/Issue descriptions	Design	J.Yeshi	BB-A-02	
				01	-	-	Drawing	NB Chhetri	Scale:	1:300
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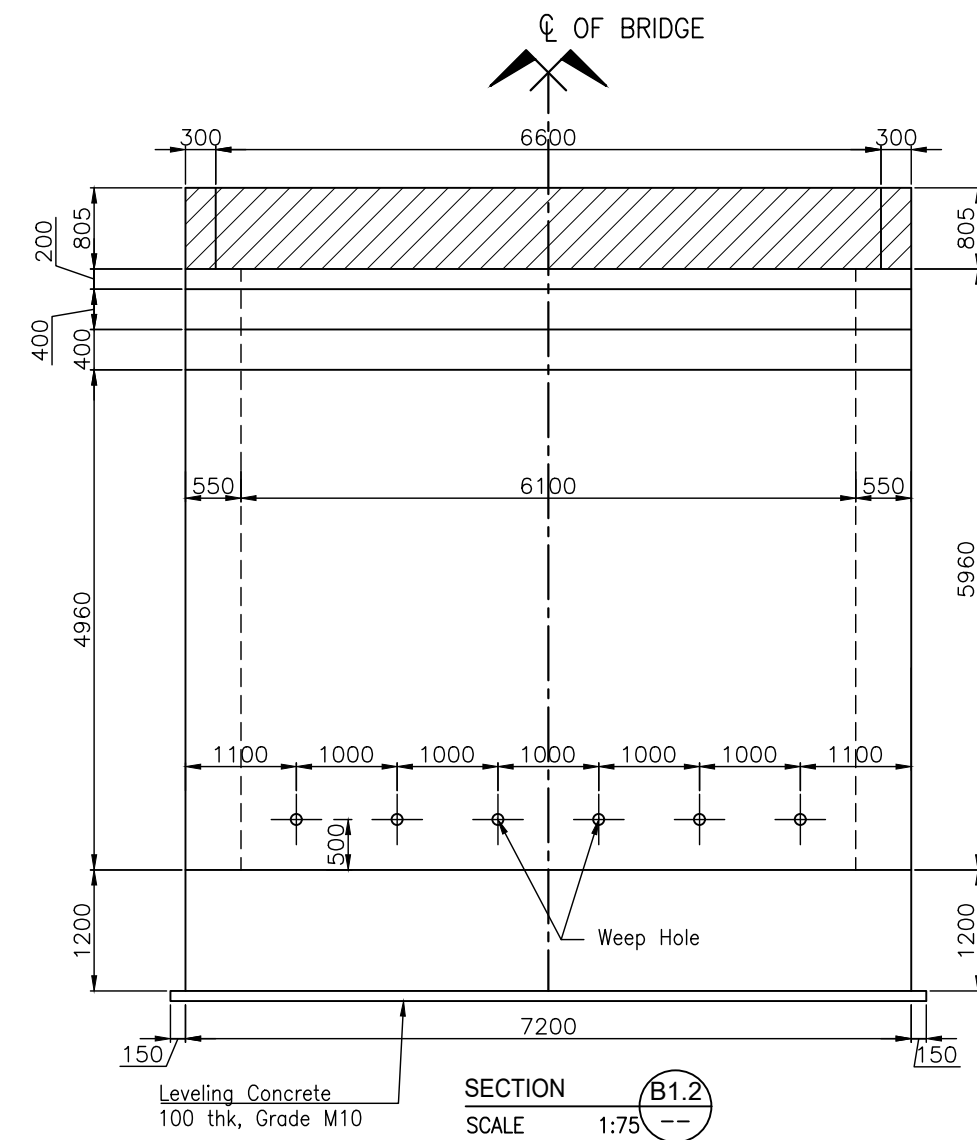
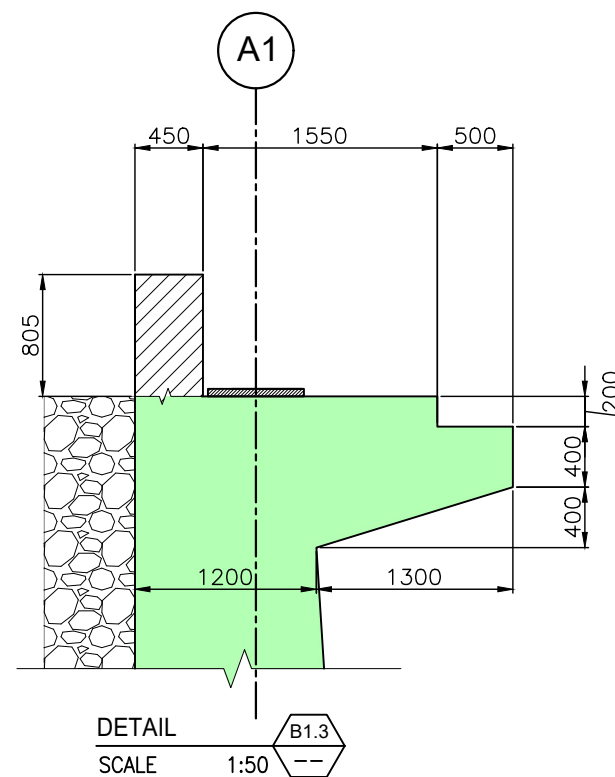
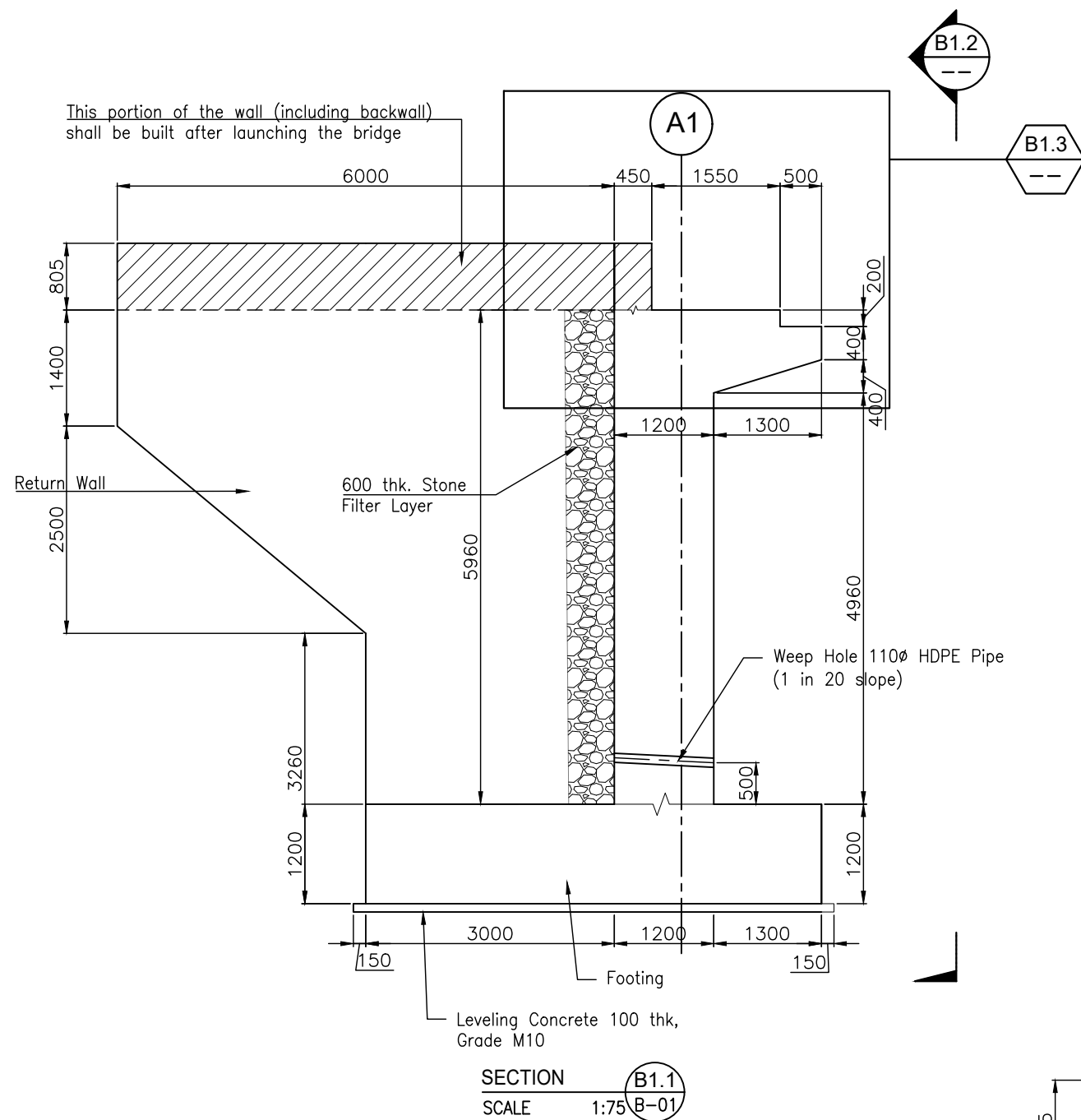
# B.SUBSTRUCTURE

<b>CLIENT:</b> Dorjilung Hydro Power Project  Project Ref. No.: -	<b>CONSULTANT:</b> JY Engineering Consultants (JYEC) Babesa, Thimphu Ph. +975 17634390 (M) email: jyengconsult2017@gmail.com	<b>PROJECT TITLE:</b> Construction of Bridge No.2(Near Adit 1 and 2)	<b>SHEET CONTENT:</b>  COVER PAGE	<b>Revisions:</b>				Name	Signature	Drawing No.	
				Issue	Date	Amendments/Issue descriptions	Design	J.Yeshi		BB-B-00	
				01	-	-	Drawing	NB Chhetri		Scale:	-
							Check	-		Date:	Jan 2025
							Approved	....		(as sheet A3 size)	

**B1** ABUTMENT A1 PLAN (FORM)  
-- SCALE 1:75



CLIENT: Dorjilung Hydro Power Project  Project Ref. No.: -	CONSULTANT: JY Engineering Consultants (JYEC) Babesa, Thimphu Ph. +975 17634390 (M) email: jyengconsult2017@gmail.com	PROJECT TITLE: Construction of Bridge No.2(Near Adit 1 and 2)	SHEET CONTENT:  ABUTMENT A1 PLAN DIMENSIONS	Revisions:				Name	Signature	Drawing No.	
				Issue	Date	Amendments/Issue descriptions	Design	J.Yeshi		BB-B-01	
				01	-	-	Drawing	NB Chhetri		Scale:	1:75
							Check	-		Date:	Jan 2025
							Approved	....		(as sheet A3 size)	



CLIENT:  
Dorjilung Hydro Power Project

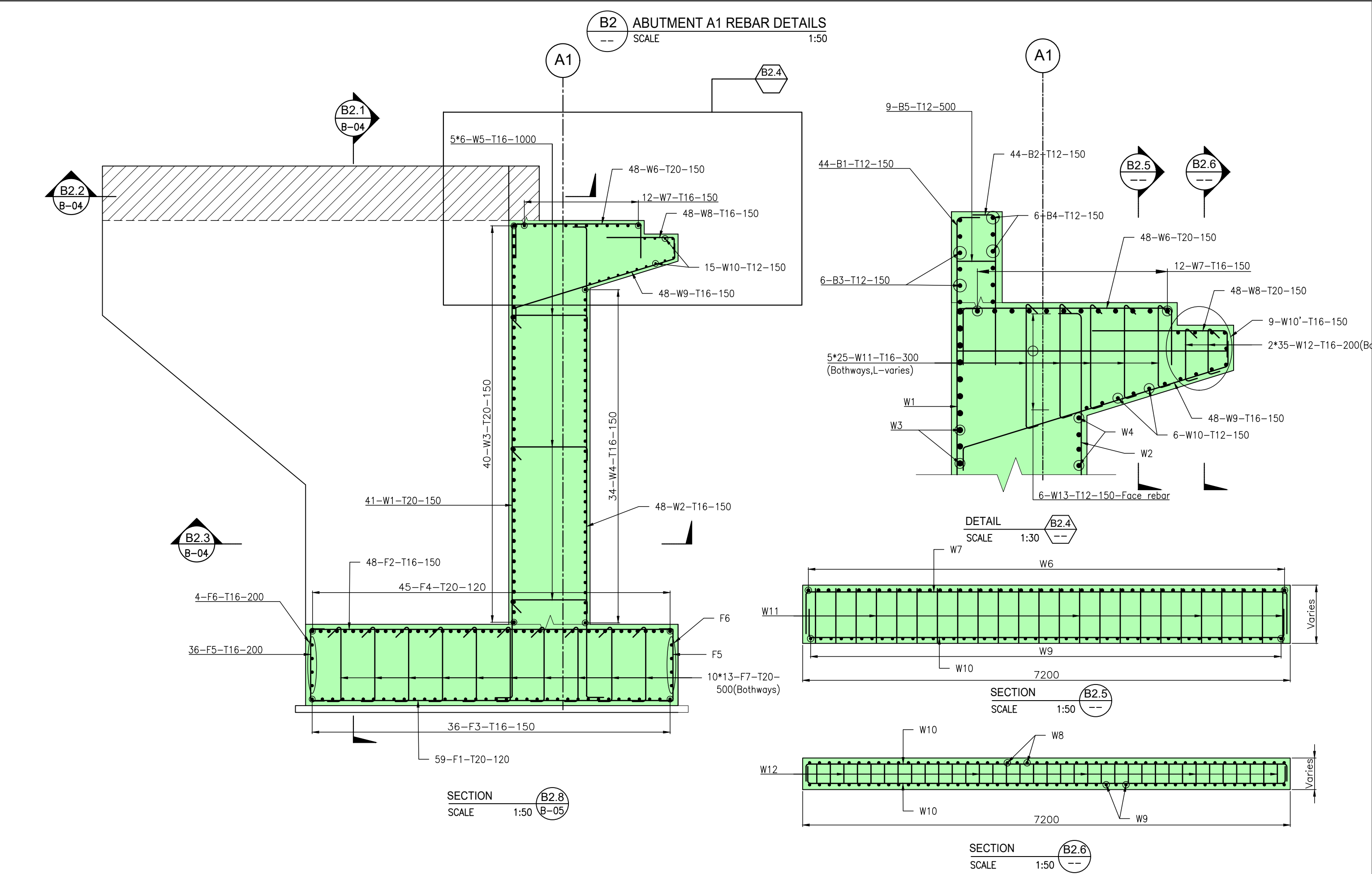
Project Ref. No.:

CONSULTANT:  
JY Engineering Consultants (JYEC)  
Babesa, Thimphu  
Ph. +975 17634390 (M)  
email: jyengconsult2017@gmail.com

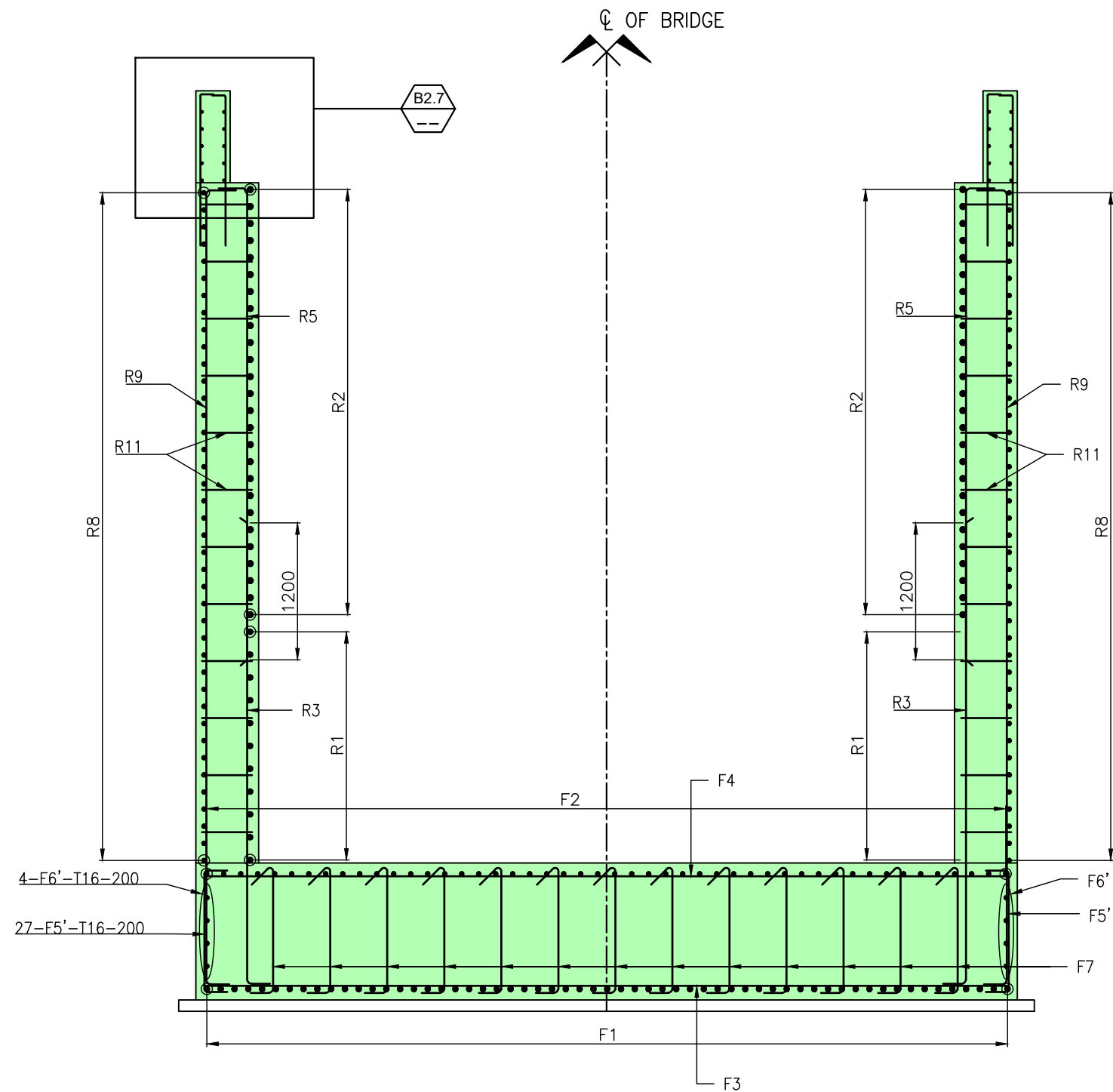
PROJECT TITLE:  
Construction of Bridge No.2(Near Adit 1 and 2)

SHEET CONTENT:  
ABUTMENT A1 ELEVATION  
DIMENSIONS

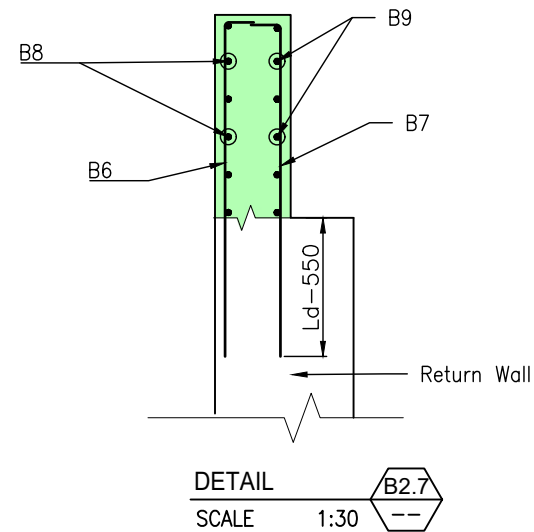
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Issue	Date	Amendments/Issue descriptions	Design	J.Yeshi	BB-B-02	
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			Check	-	Date:	Jan 2025
			Approved	....	(as sheet A3 size)	



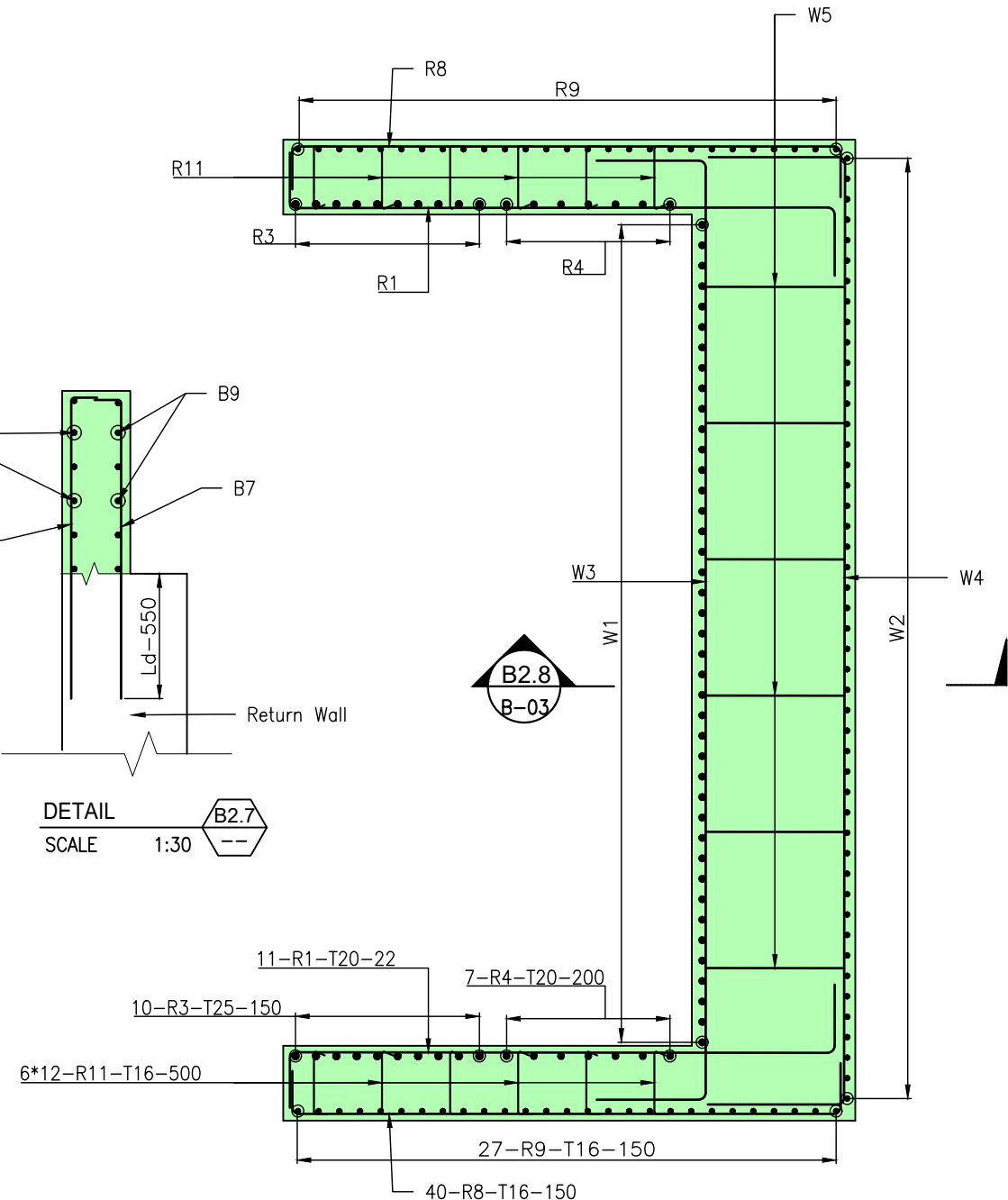
CLIENT:  Dorjilung Hydro Power Project    Project Ref. No.: -	CONSULTANT:  JY Engineering Consultants (JYEC) Babesa, Thimphu Ph. +975 17634390 (M) email: jyengconsult2017@gmail.com	PROJECT TITLE:  Construction of Bridge No.2(Near Adit 1 and 2)	SHEET CONTENT:  ABUTMENT A1 REBAR DETAILS-1	Revisions:			Name	Signature	Drawing No.		
				Issue	Date	Amendments/Issue descriptions	Design	J.Yeshi		BB-B-03	
				01	-	-	Drawing	NB Chhetri		Scale:	As Shown
							Check	-		Date:	Jan 2025
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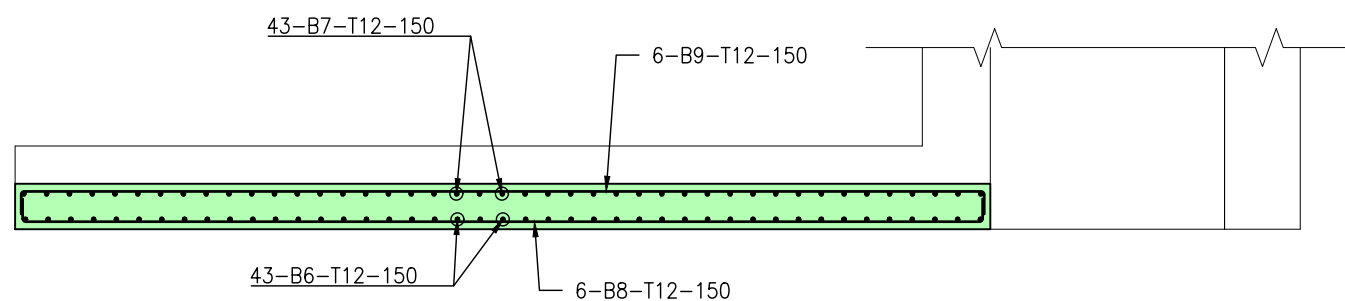
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DETAIL  
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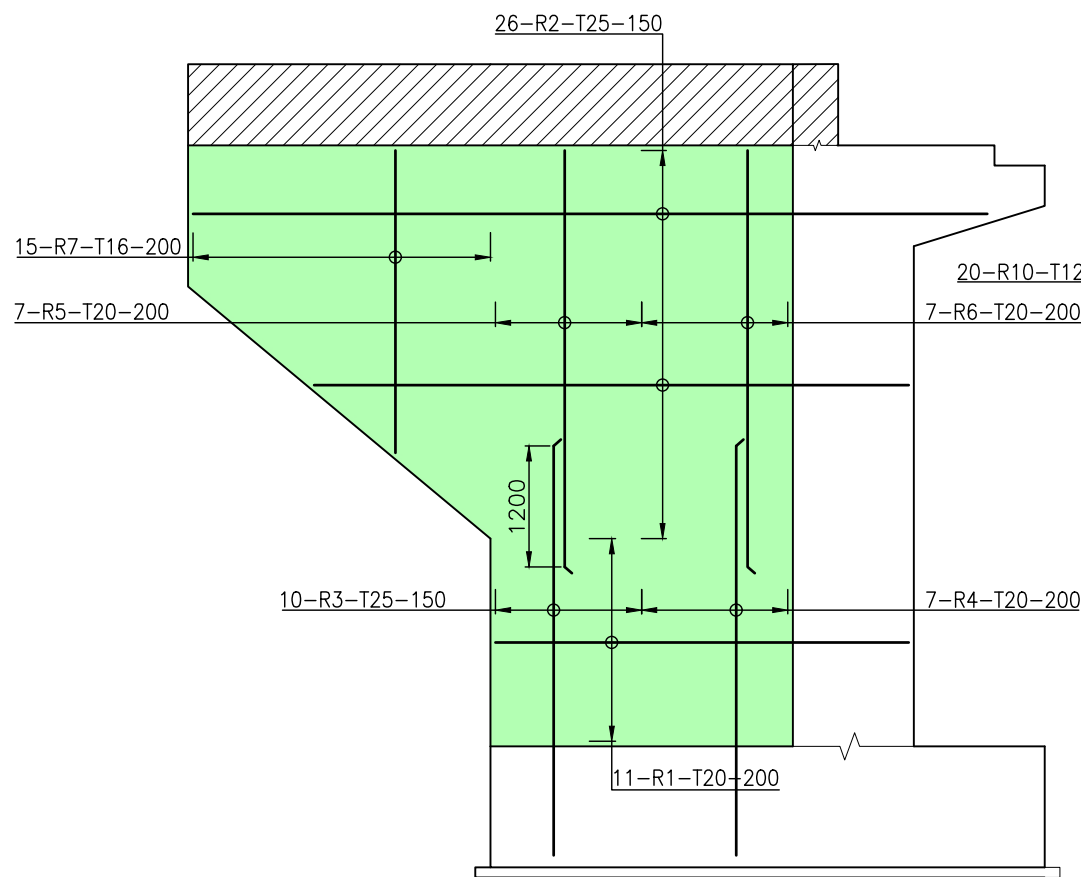


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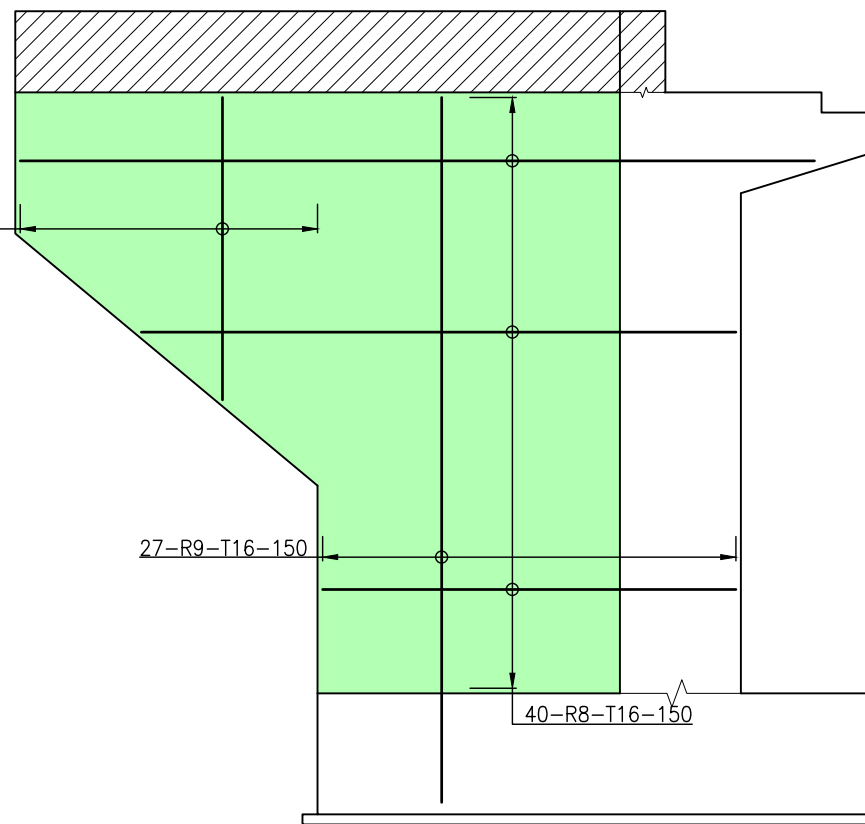


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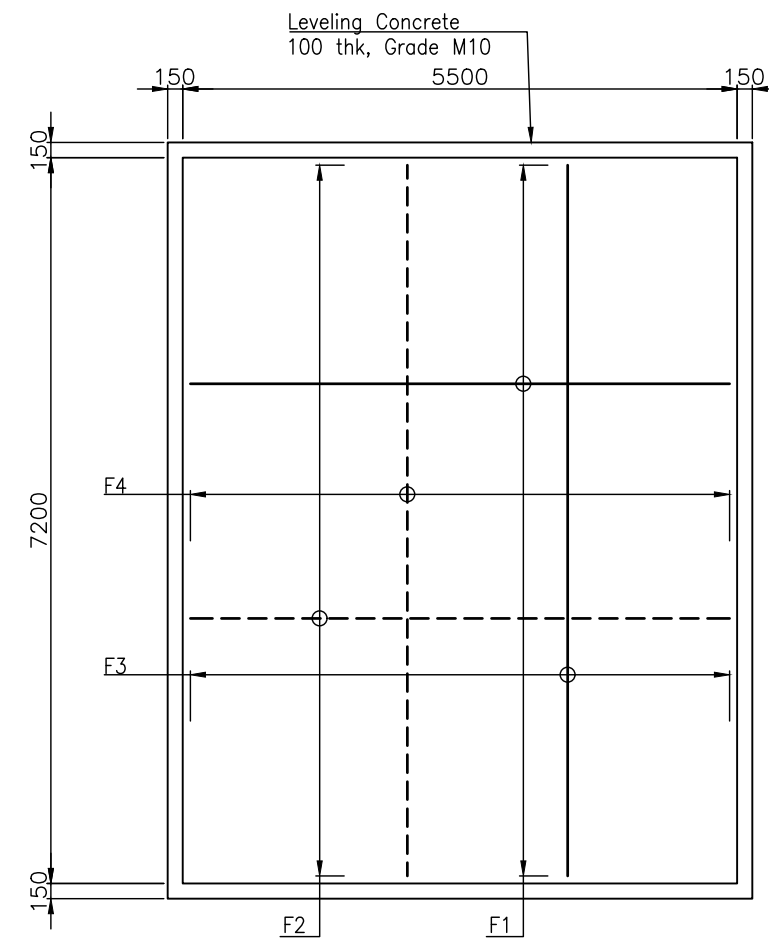
<b>CLIENT:</b> Dorjilung Hydro Power Project  Project Ref. No.: -	<b>CONSULTANT:</b> JY Engineering Consultants (JYEC) Babesa, Thimphu Ph. +975 17634390 (M) email: jyengconsult2017@gmail.com	<b>PROJECT TITLE:</b> Construction of Bridge No.2(Near Adit 1 and 2)	<b>SHEET CONTENT:</b>  ABUTMENT A1 REBAR DETAILS-2	<b>Revisions:</b>				Name	Signature	Drawing No.
				Issue	Date	Amendments/Issue descriptions	Design	J.Yeshi		BB-B-04
				01	-	-	Drawing	NB Chhetri		Scale: As Shown
							Check	-		Date: Jan 2025
							Approved	....		(as sheet A3 size)



**B2-1** RETURN WALL-INNER FACE(BACK FILL SIDE) REBAR DETAILS  
 -- SCALE 1:75



**B2-2** RETURN WALL-OUTER FACE REBAR DETAILS  
 -- SCALE 1:75



**B2-3** FOOTING REBAR PLAN  
 -- SCALE 1:75

<b>CLIENT:</b> Dorjilung Hydro Power Project  Project Ref. No.: -	<b>CONSULTANT:</b> JY Engineering Consultants (JYEC) Babesa, Thimphu Ph. +975 17634390 (M) email: jyengconsult2017@gmail.com	<b>PROJECT TITLE:</b> Construction of Bridge No.2(Near Adit 1 and 2)	<b>SHEET CONTENT:</b> ABUTMENT A1 RETURN WALL REBAR AND FOOTING REBAR PLAN	<b>Revisions:</b>			Name	Signature	Drawing No.	
				Issue	Date	Amendments/Issue descriptions	Design	J.Yeshi	BB-B-05	
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							Check	-	Date:	Jan 2025
							Approved	....	(as sheet A3 size)	

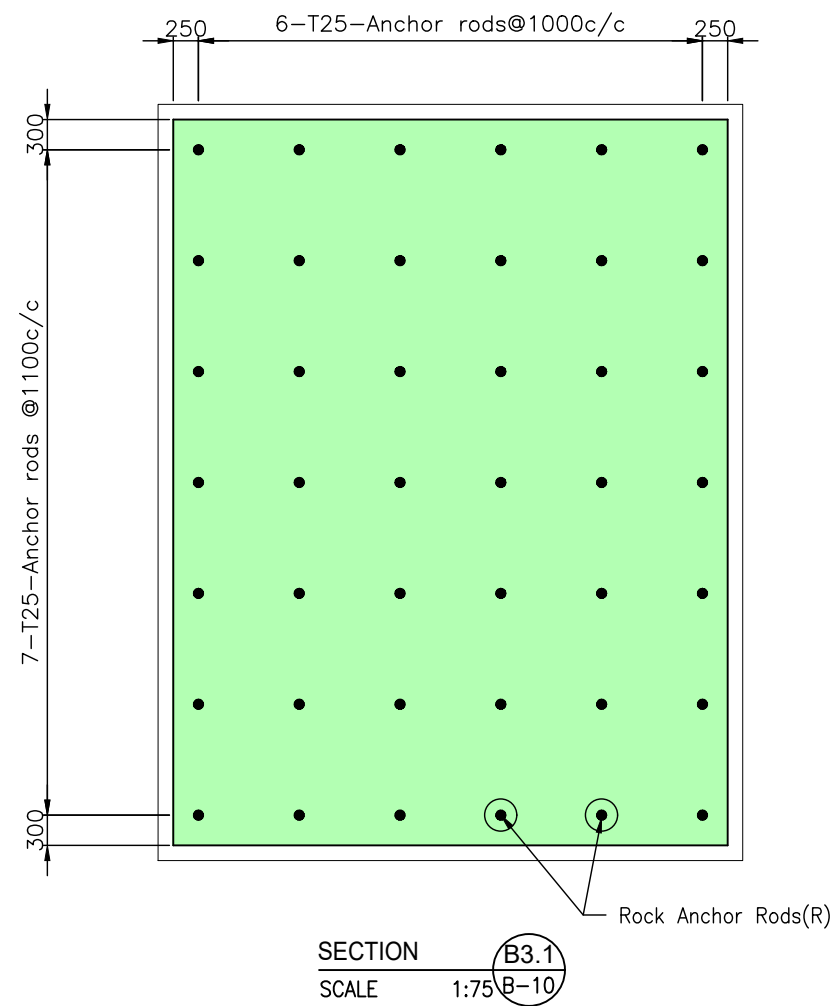
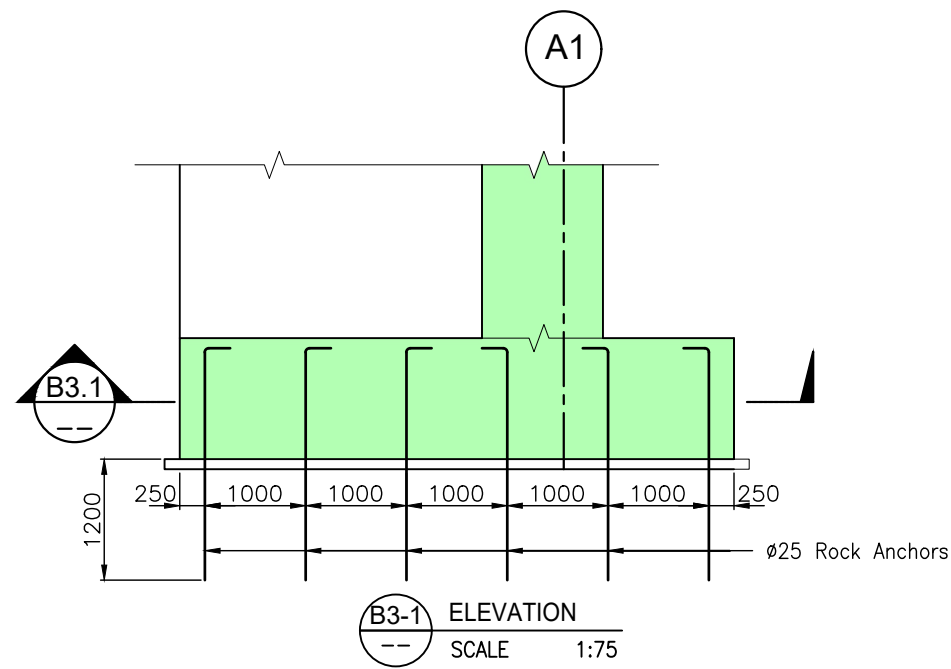
B3

ROCK ANCHORS

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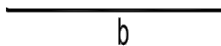
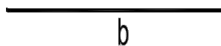
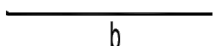
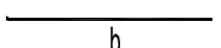
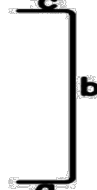

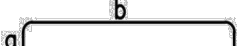
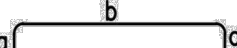
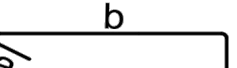

SCALE

1:75



- Notes:
- 1.The bench cutting of the rock shall be done with care to prevent weakening of the base strata supporting the bridge foundation.
  - 2.The anchor holes shall be drilled vertically.
  - 3.The diameter of the anchor holes shall be between 32mm to 45mm.
  - 4.The rebar shall be grouted inside the holes with non-shrink grout with 28 days compressive strength greater than 35 mpa. The grout material shall be approved by the Engineer.

CLIENT: Dorjilung Hydro Power Project  Project Ref. No.: -	CONSULTANT: JY Engineering Consultants (JYEC) Babesa, Thimphu Ph. +975 17634390 (M) email: jyengconsult2017@gmail.com	PROJECT TITLE: Construction of Bridge No.2(Near Adit 1 and 2)	SHEET CONTENT: ROCK ANCHOR	Revisions:				Name	Signature	Drawing No.	
				Issue	Date	Amendments/Issue descriptions		Design	J.Yeshi	BB-B-06	
				01	-			Drawing	NB Chhetri	Scale:	1:75
								Check	-	Date:	Jan 2025
								Approved	....	(as sheet A3 size)	

REBAR SCHEDULE FOR ABUTMENT A1 -BRIDGE 2(NEAR ADIT 2 AND 3)																
Member	Bar Mark	Bar dia	Length of each bar (L)	Number of member	Number of bar in each member	Total number	Total length (m)	BENDING DIMENSION					ADDITIONAL INFROMATION			
								a	b	c	d	e	HOOK		TOTAL WEIGHT (Kg)	REMARKS
													START	END		
Footing slab	F1	20	5350	1	59	59	315.65		5350					778.39	L=b	
Footing slab	F2	16	5350	1	48	48	256.8		5350					405.23	L=b	
Footing slab	F3	16	7050	1	36	36	253.8		7050					400.50	L=b	
Footing slab	F4	20	7050	1	45	45	317.25		7050					782.34	L=b	
Footing slab	F5	16	1418	1	72	72	102.096	200	1082	200				161.11	L=a+b+c-r-2ϕ	
Footing slab	F5'	16	1418	1	54	54	76.572	200	1082	200				120.83	L=a+b+c-r-2ϕ	
Footing slab	F6	16	7386	1	8	8	59.088	200	7050	200				93.24	L=a+b+c-r-2ϕ	
Footing slab	F6'	16	5686	1	8	8	45.488	200	5350	200				71.78	L=a+b+c-r-2ϕ	
Footing slab	F7	20	1345	1	130	130	174.85	200	1090	200				431.18	[L=a+b+c-1.5*r-2ϕ]	
Stem	W1	20	7290	1	41	41	298.89	200	7000	200				737.06	L=a+b+c-r-2ϕ	

CLIENT:

Dorjilung Hydro Power Project

Project Ref. No.: -

CONSULTANT:

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email: jyengconsult2017@gmail.com




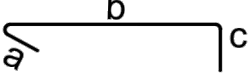
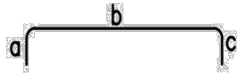
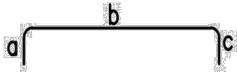
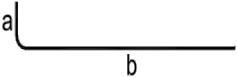
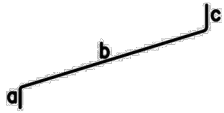
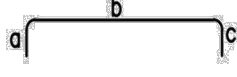
PROJECT TITLE:

Construction of Bridge No.2(Near Adit 1 and 2)

SHEET CONTENT:

ABUTMENT A1 BBS-1

Revisions:				Name	Signature	Drawing No.	
Issue	Date	Amendments/Issue descriptions	Design	J.Yeshi		BB-B-07	
01	-	-	Drawing	NB Chhetri		Scale:	NTS
			Check	-		Date:	Jan 2025
			Approved	----		(as sheet A3 size)	

Member	Bar Mark	Bar dia	Length of each bar (L)	Number of member	Number of bar in each member	Total number	Total length (m)	BENDING DIMENSION					ADDITIONAL INFROMATION			
								a	b	c	d	e	HOOK		TOTAL WEIGHT (Kg)	REMARKS
													START	END		
Stem	W2	16	7336	1	48	48	352.128	200	7000	200					555.66	$L=a+b+c-r-2\phi$
Stem	W3	20	7358	1	40	40	294.32	200	7068	200					725.79	$L=a+b+c-r-2\phi$
Stem	W4	16	1418	1	34	34	48.212	200	1082	200					76.08	$L=a+b+c-r-2\phi$
Stem	W5	16	1372	1	30	30	41.16	160	1132	160					64.95	tie [ $L=a+b+c-1.5*r-2\phi$ ]
Stem	W6	20	2750	1	48	48	132	500	1860	500					325.51	$L=a+b+c-r-2\phi$
Stem	W7	16	8136	1	12	12	97.632	550	7100	550					154.06	$L=a+b+c-r-2\phi$
Stem	W8	20	1545	1	48	48	74.16	200	1400						182.88	do
Stem	W9	16	2811	1	48	48	134.928	200	2475	200					212.92	$L=a+b+c-r-2\phi$
Stem	W10	12	8152	1	6	6	48.912	550	7100	550					43.43	$L=a+b+c-r-2\phi$

CLIENT:  
Dorjilung Hydro Power Project

Project Ref. No.:  
-

CONSULTANT:  
JY Engineering Consultants (JYEC)  
Babesa, Thimphu  
Ph. +975 17634390 (M)  
email: jyengconsult2017@gmail.com

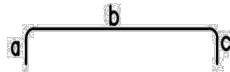
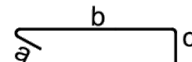
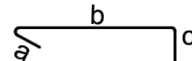
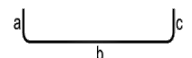

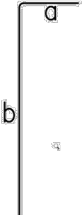
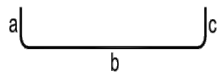
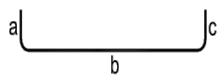
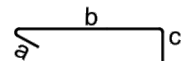
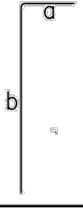

PROJECT TITLE:  
Construction of Bridge No.2(Near Adit 1 and 2)

SHEET CONTENT:  
ABUTMENT A1 BBS-2

Revisions:

Issue	Date	Amendments/Issue descriptions
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Name		Signature		Drawing No.	
Design		J.Yeshi		BB-B-08	
Drawing		NB Chhetri		Scale:	NTS
Check		-		Date:	Jan 2025
Approved		----		(as sheet A3 size)	

Member	Bar Mark	Bar dia	Length of each bar (L)	Number of member	Number of bar in each member	Total number	Total length (m)	BENDING DIMENSION					ADDITIONAL INFROMATION			
								a	b	c	d	e	HOOK		TOTAL WEIGHT (Kg)	REMARKS
													START	END		
Stem	W10'	12	7552	1	9	9	67.968	250	7100	250				60.36	L=a+b+c-r-2ϕ	
Stem	W11	16	1215	1	125	125	151.875	160	975	160				239.66	tie [L=a+b+c-1.5*r-2ϕ](Varies)	
Stem	W12	16	675	1	70	70	47.25	160	435	160				74.56	tie [L=a+b+c-1.5*r-2ϕ](Varies)	
Stem	W13	12	2752	1	12	12	33.024	200	2400	200				29.33	L=a+b+c-r-2ϕ(Varies)	
Back Wall	B1	12	1481	1	44	44	65.164	200	1305					57.87	L=a+b-0.5*r-ϕ	
Back Wall	B2	12	1481	1	44	44	65.164	200	1305					57.87	L=a+b-0.5*r-ϕ	
Back Wall	B3	12	7402	1	6	6	44.412	200	7050	200				39.44	L=a+b+c-r-2ϕ	
Back Wall	B4	12	7402	1	6	6	44.412	200	7050	200				39.44	L=a+b+c-r-2ϕ	
Back Wall	B5	12	635	1	9	9	5.715	160	375	160				5.07	tie [L=a+b+c-1.5*r-2ϕ]	
Back Wall	B6	12	1481	1	43	43	63.683	200	1305					56.55	L=a+b-0.5*r-ϕ	
Back Wall	B7	12	1481	1	43	43	63.683	200	1305					56.55	L=a+b-0.5*r-ϕ	

CLIENT: Dorjilung Hydro Power Project  Project Ref. No.: -		CONSULTANT: JY Engineering Consultants (JYEC) Babesa, Thimphu Ph. +975 17634390 (M) email: jyengconsult2017@gmail.com		PROJECT TITLE: Construction of Bridge No.2(Near Adit 1 and 2)		SHEET CONTENT:  ABUTMENT A1 BBS-3		Revisions:				Name	Signature	Drawing No.	
								Issue	Date	Amendments/Issue descriptions	Design	J.Yeshi		BB-B-09	
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											Check	-		Date:	Jan 2025
											Approved	....		(as sheet A3 size)	

Member	Bar Mark	Bar dia	Length of each bar (L)	Number of member	Number of bar in each member	Total number	Total length (m)	BENDING DIMENSION					ADDITIONAL INFROMATION			
								a	b	c	d	e	HOOK		TOTAL WEIGHT (Kg)	REMARKS
													START	END		
Back Wall	B8	12	6702	1	6	6	40.212	200	6350	200				35.71	L=a+b+c-r-2φ	
Back Wall	B9	12	6702	1	6	6	40.212	200	6350	200				35.71	L=a+b+c-r-2φ	
Return Wall	R1	20	4358	2	11	22	95.876	200	4068	200				236.43	L=a+b+c-r-2φ(Varies)	
Return Wall	R2	25	5853	2	26	52	304.356	250	5490	250				1090.51	L=a+b+c-r-2φ(Varies)	
Return Wall	R3	25	4250.5	2	10	20	85.01	250	4069					304.59	L=a+b-0.5*r-φ	
Return Wall	R4	20	4214	2	7	14	58.996	200	4069					145.48	L=a+b-0.5*r-φ	
Return Wall	R5	20	4325	2	7	14	60.55	250	4130					149.32	L=a+b-0.5*r-φ	
Return Wall	R6	20	4325	2	7	14	60.55	250	4130					149.32	L=a+b-0.5*r-φ	
Return Wall	R7	16	3007	2	15	30	90.21	250	2571	250				142.35	L=a+b+c-r-2φ(Varies)	
Return Wall	R8	16	6436	2	40	80	514.88	250	6000	250				812.48	L=a+b+c-r-2φ(Varies)	
Return Wall	R9	16	7436	2	27	54	401.544	250	7000	250				633.64	L=a+b+c-r-2φ	
Return Wall	R10	12	2923	2	20	40	116.92	200	2571	200				103.82	L=a+b+c-r-2φ(Varies)	
Return Wall	R11	16	722	2	72	144	103.968	160	482	160				164.06	tie [L=a+b+c-1.5*r-2φ]	
Anchor Hook	H	32	1834.3	1	2	2	3.6686	900	150	900				23.16	L=a+0.57b+c-1.6d	
Rock Anchor	R	25	2481.5	1	42	42	104.223	250	2300					373.43	L=a+b-0.5*r-φ	
QUANTITY FOR ABUTMENT A1=														11,440	Kgs	

CLIENT:  
Dorjilung Hydro Power Project

Project Ref. No.:  
-

CONSULTANT:  
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email: jyengconsult2017@gmail.com

PROJECT TITLE:  
Construction of Bridge No.2(Near Adit 1 and 2)

SHEET CONTENT:  
ABUTMENT A1 BBS-4

Revisions:

Issue	Date	Amendments/Issue descriptions
01	-	-

	Name	Signature	Drawing No.	
Design	J.Yeshi		BB-B-10	
Drawing	NB Chhetri		Scale:	NTS
Check	-		Date:	Jan 2025
Approved	....		(as sheet A3 size)	

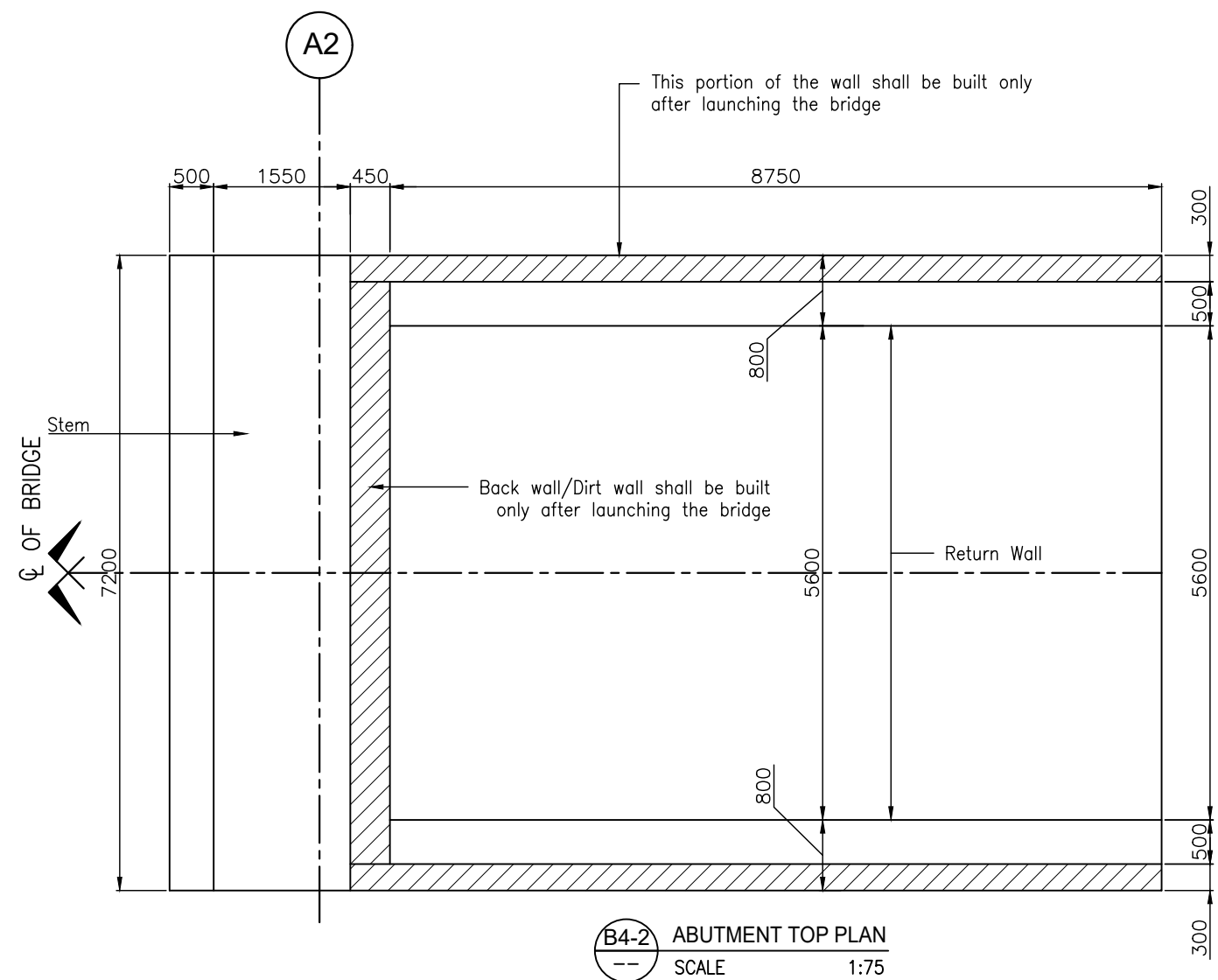
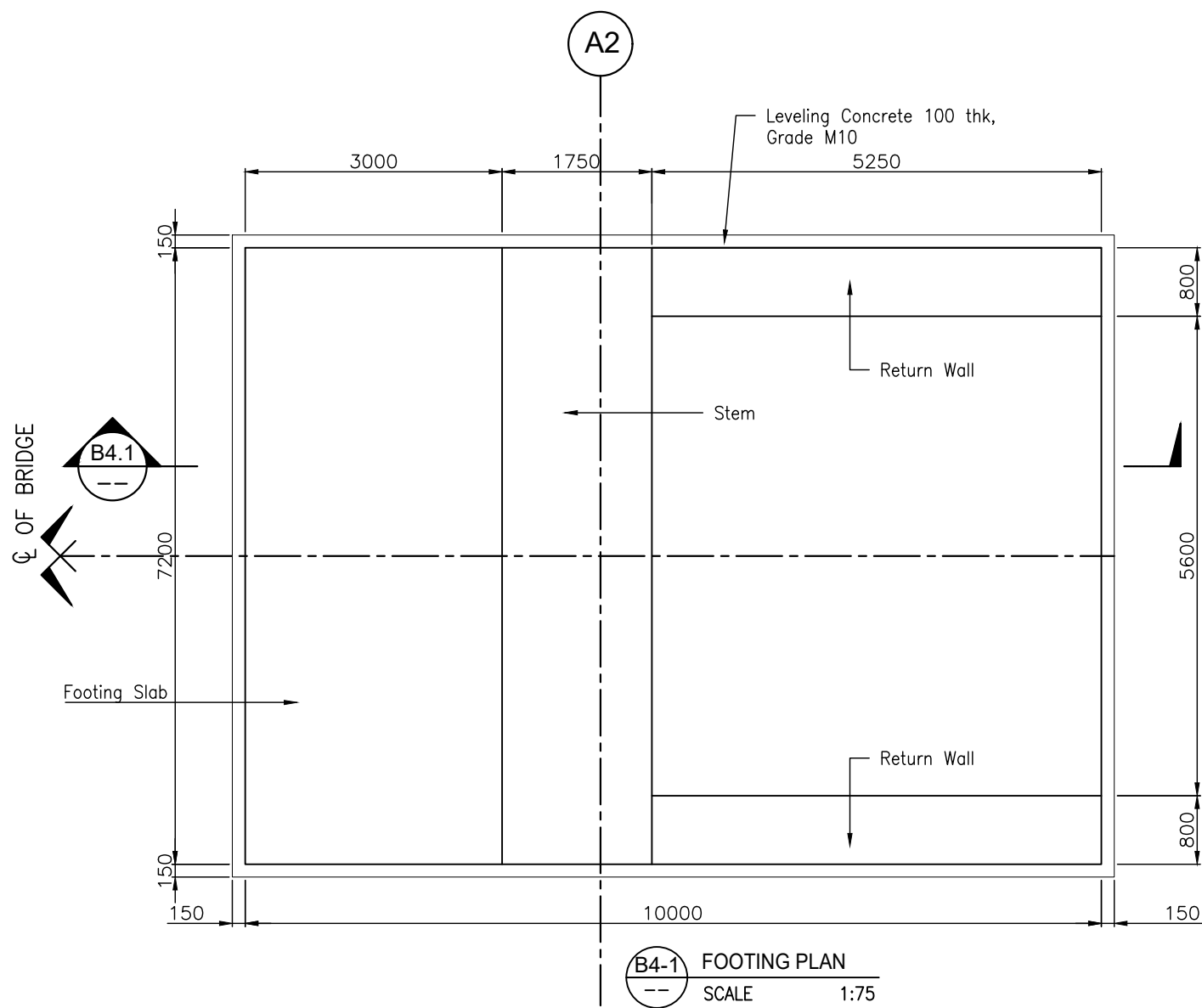
B4

ABUTMENT A2 PLAN (FORM)

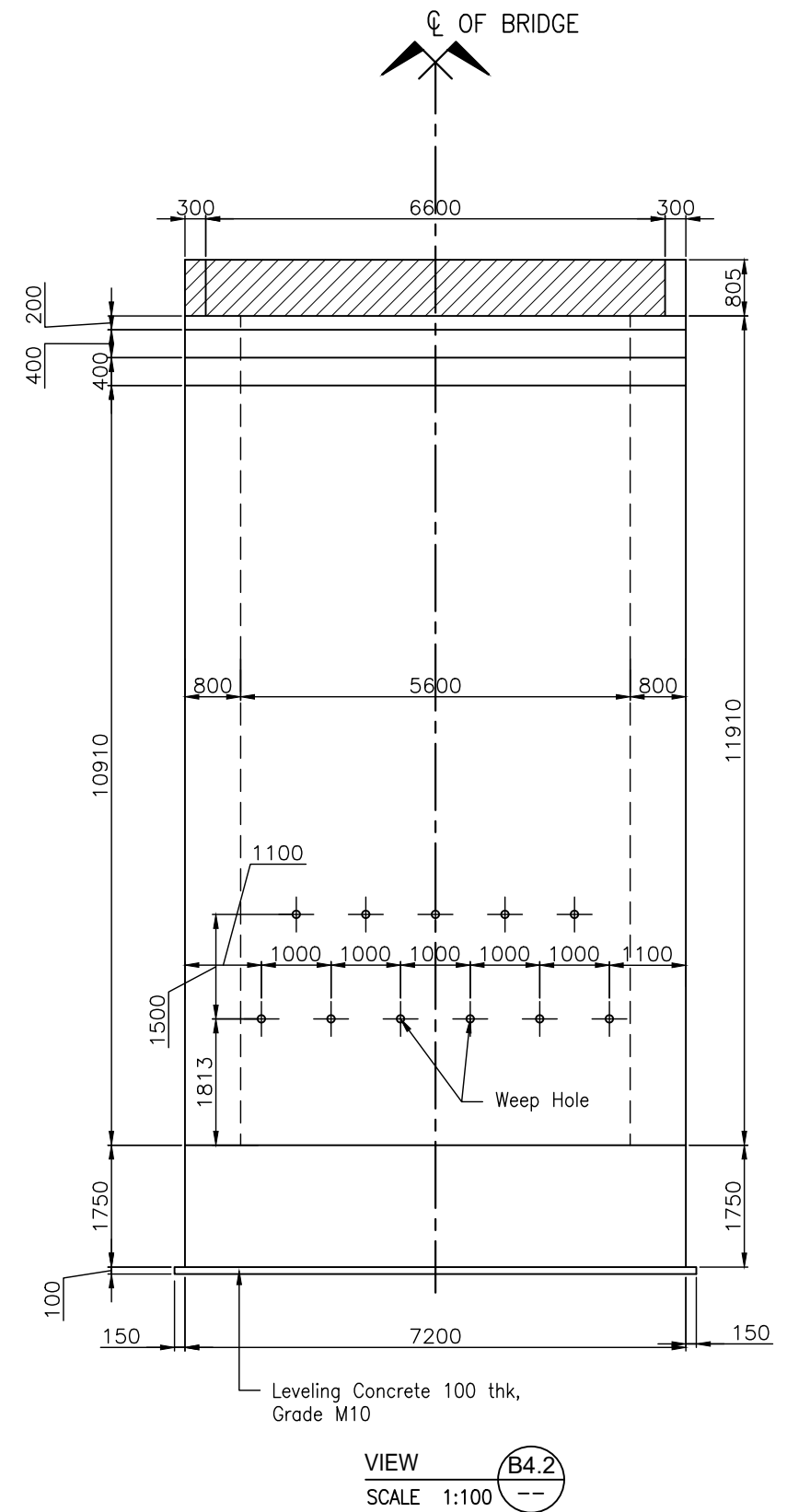
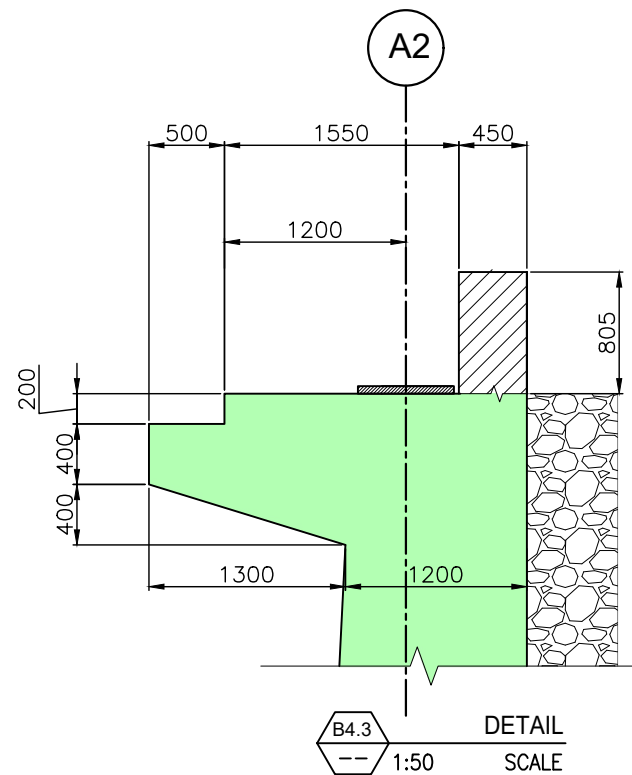
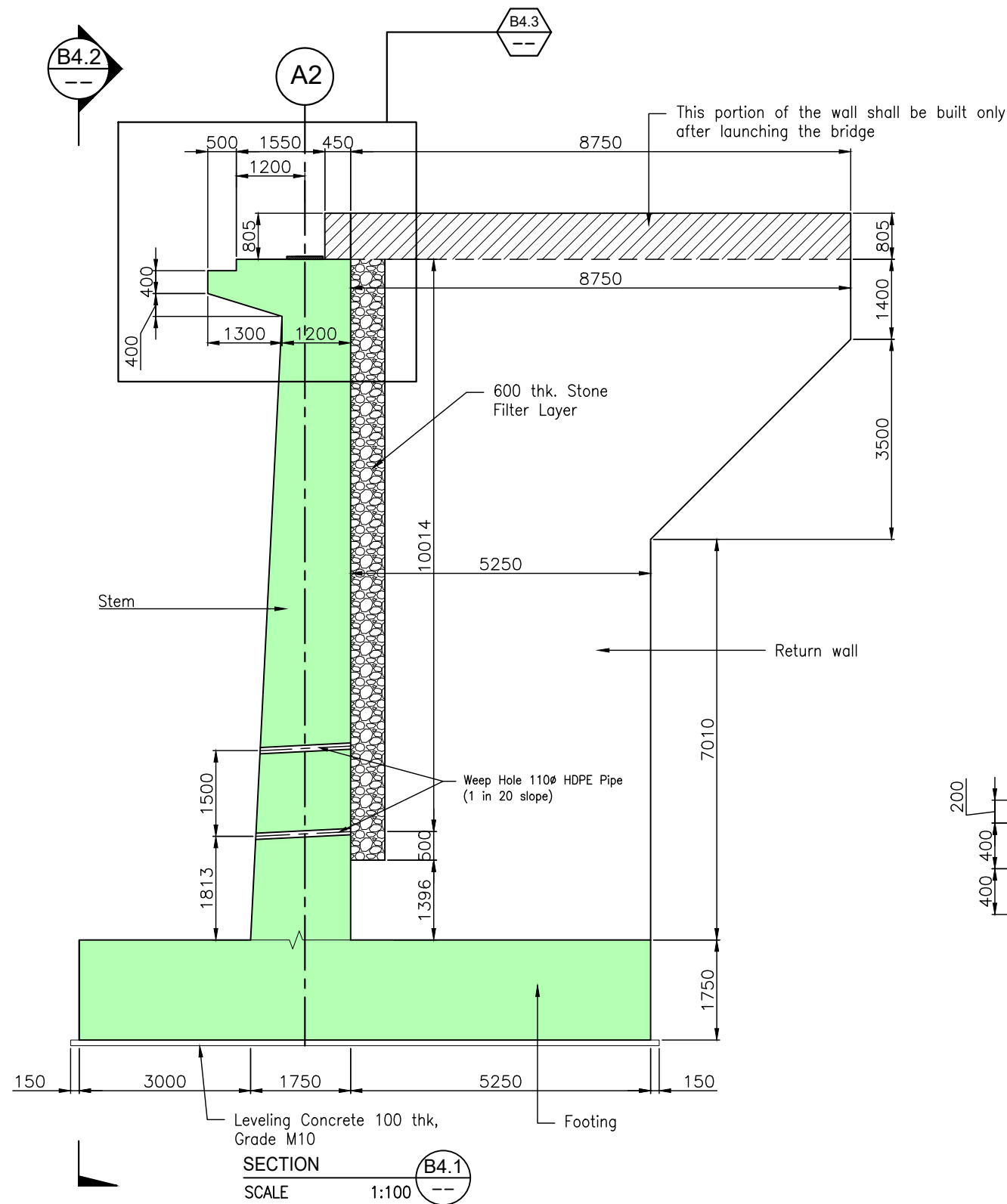
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SCALE

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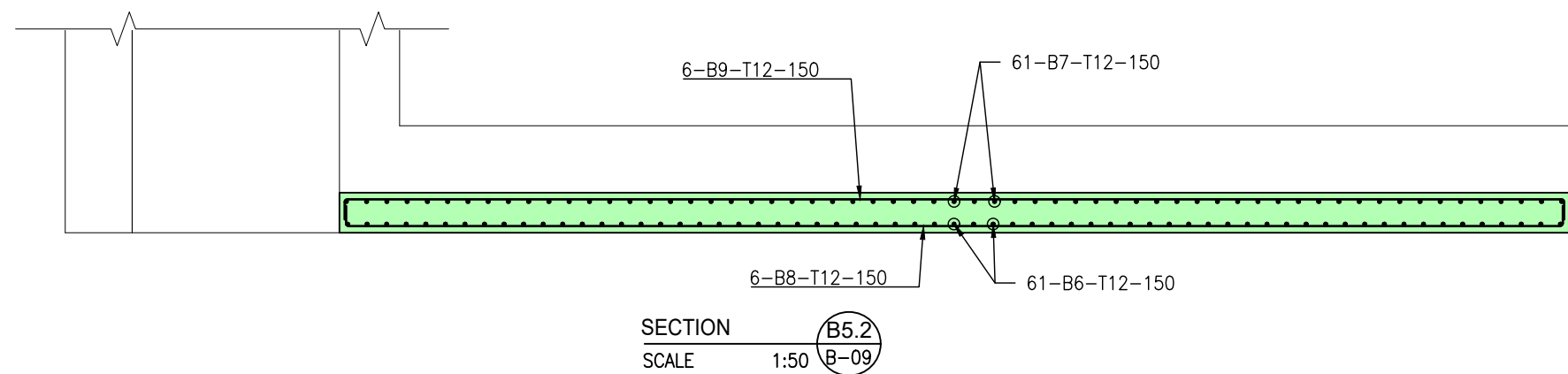
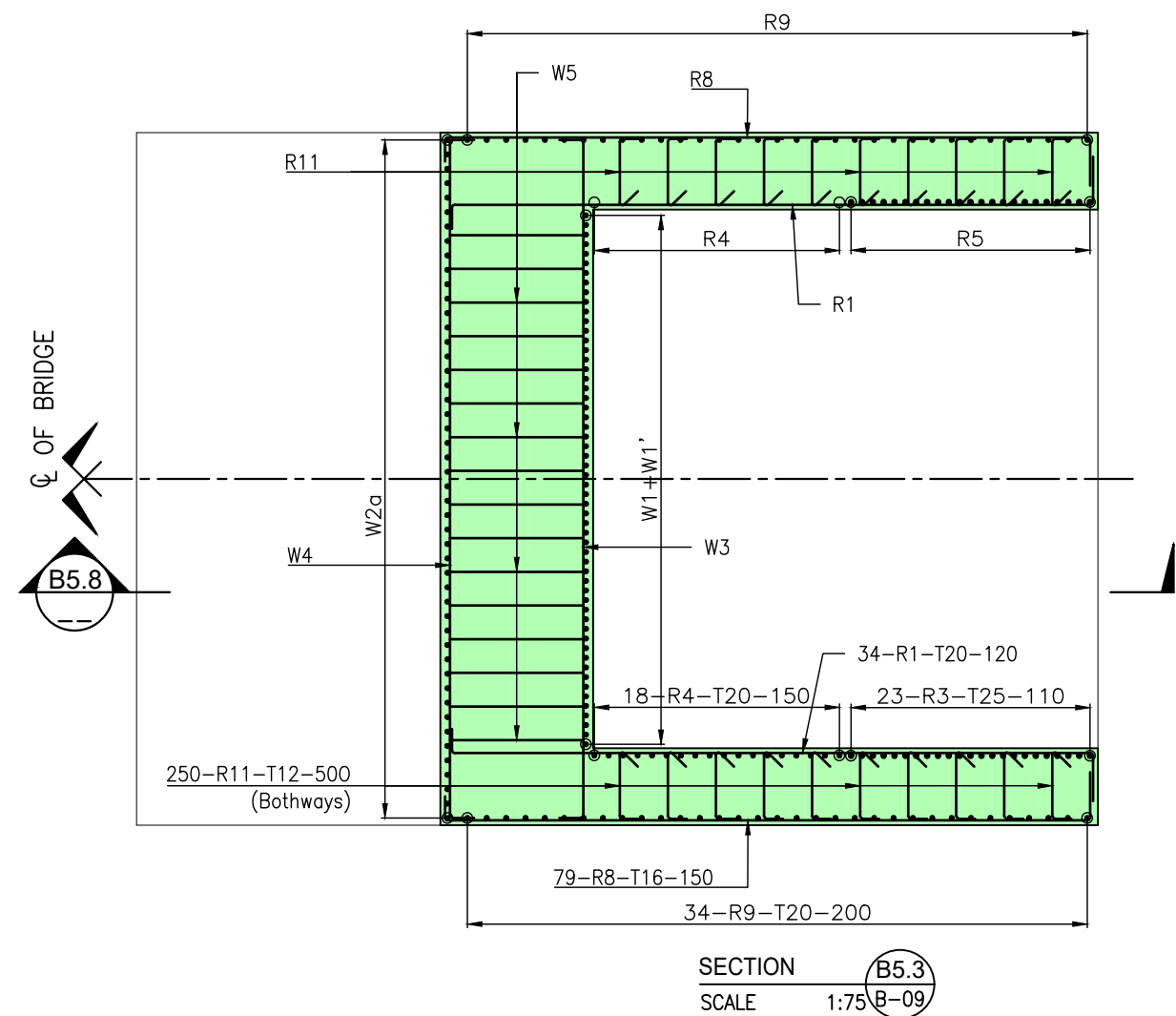
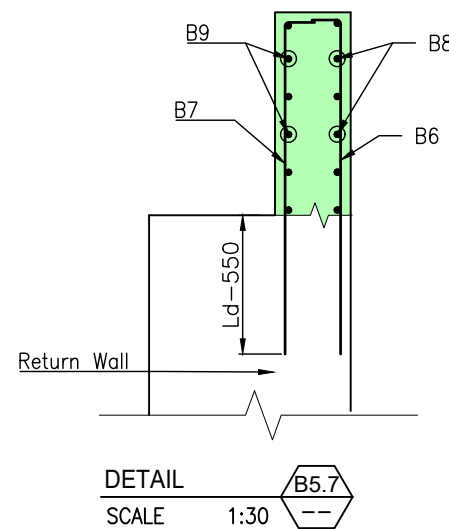
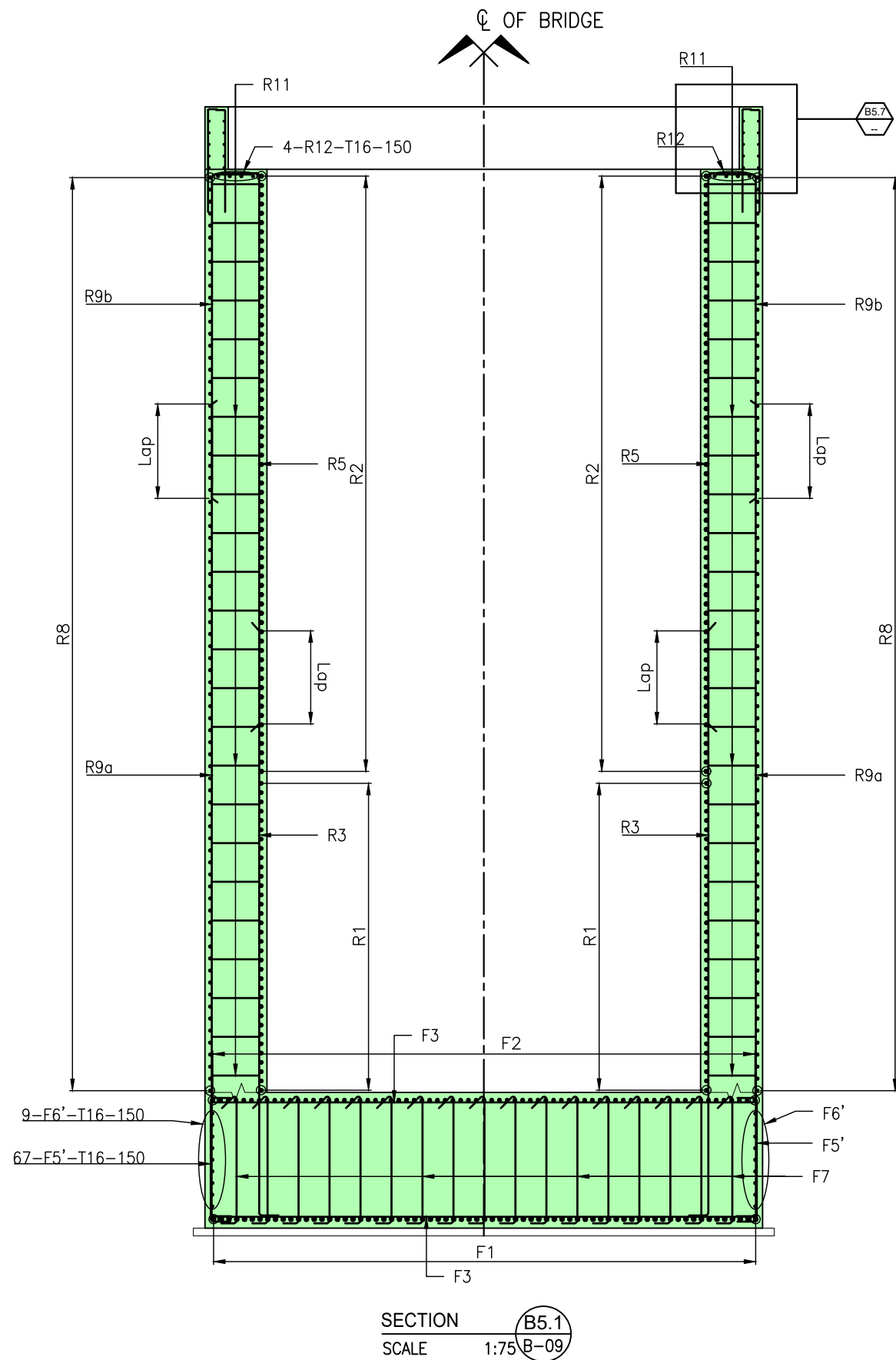


CLIENT: Dorjilung Hydro Power Project  Project Ref. No.: -	CONSULTANT: JY Engineering Consultants (JYEC) Babesa, Thimphu Ph. +975 17634390 (M) email: jyengconsult2017@gmail.com	PROJECT TITLE: Construction of Bridge No.2(Near Adit 1 and 2)	SHEET CONTENT: ABUTMENT A2 PLAN DIMENSIONS	Revisions:			Name	Signature	Drawing No.	
				Issue	Date	Amendments/Issue descriptions	Design	J.Yeshi	BB-B-11	
				01	-	-	Drawing	NB Chhetri	Scale:	1:75
							Check	-	Date:	Jan 2025
							Approved	....	(as sheet A3 size)	

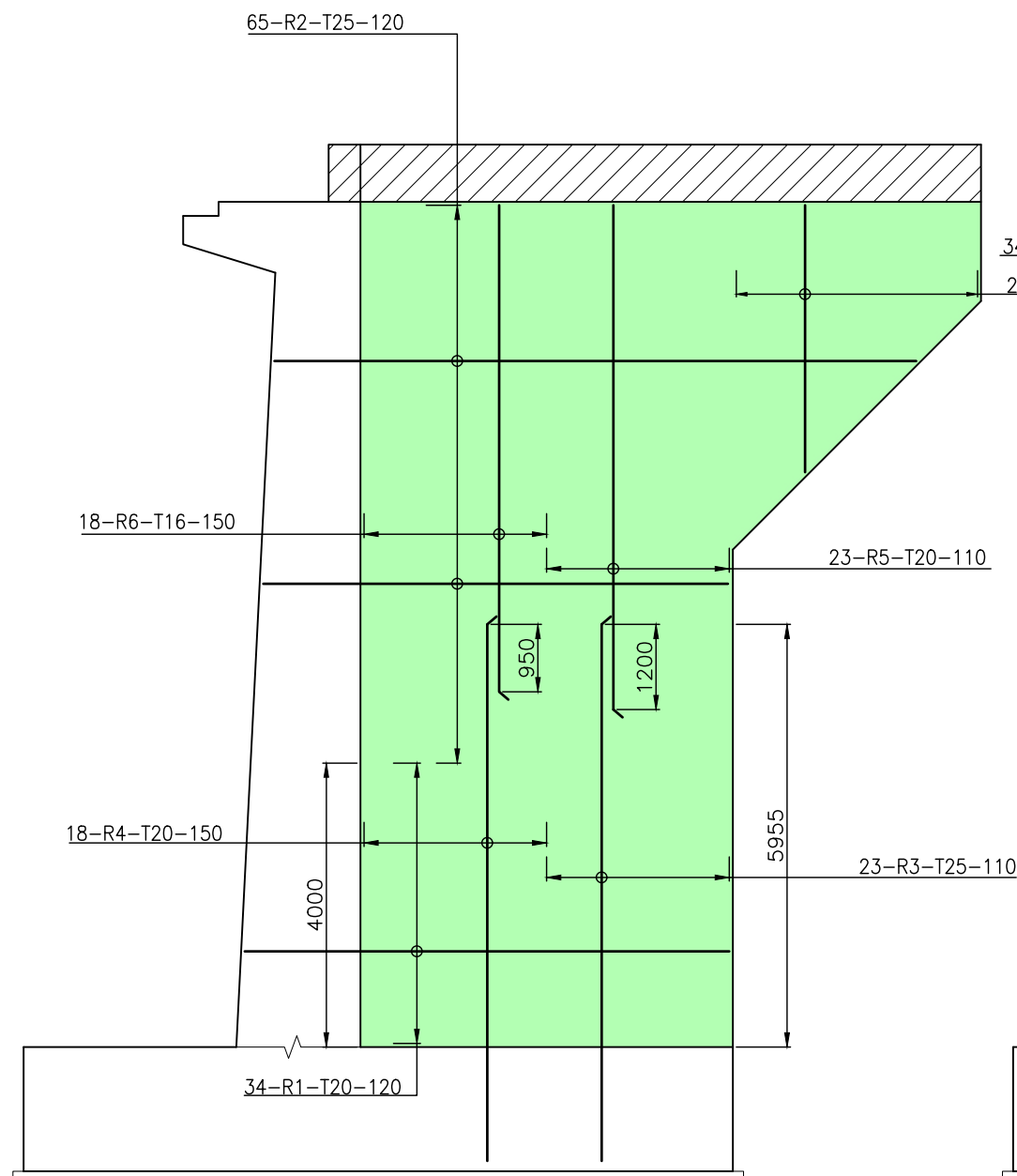


<b>CLIENT:</b> Dorjilung Hydro Power Project  Project Ref. No.: -	<b>CONSULTANT:</b> JY Engineering Consultants (JYEC) Babesa, Thimphu Ph. +975 17634390 (M) email: jyengconsult2017@gmail.com	<b>PROJECT TITLE:</b> Construction of Bridge No.2(Near Adit 1 and 2)	<b>SHEET CONTENT:</b> ABUTMENT A2 ELEVATION DIMENSIONS	<b>Revisions:</b>				Name		Signature	Drawing No.
				Issue	Date	Amendments/Issue descriptions		Design	J.Yeshi		BB-B-12
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								Check	-		Date: Jan 2025
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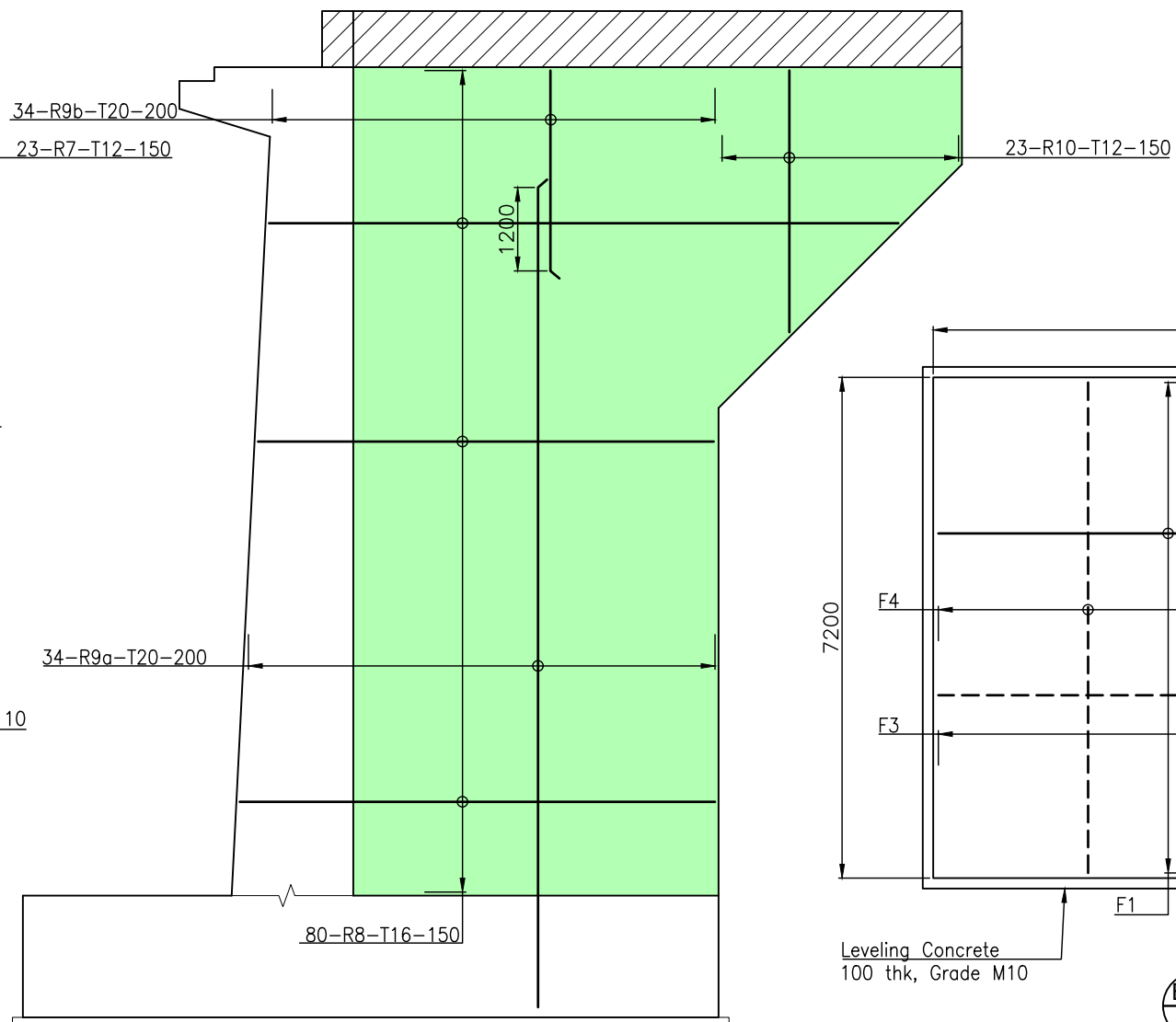




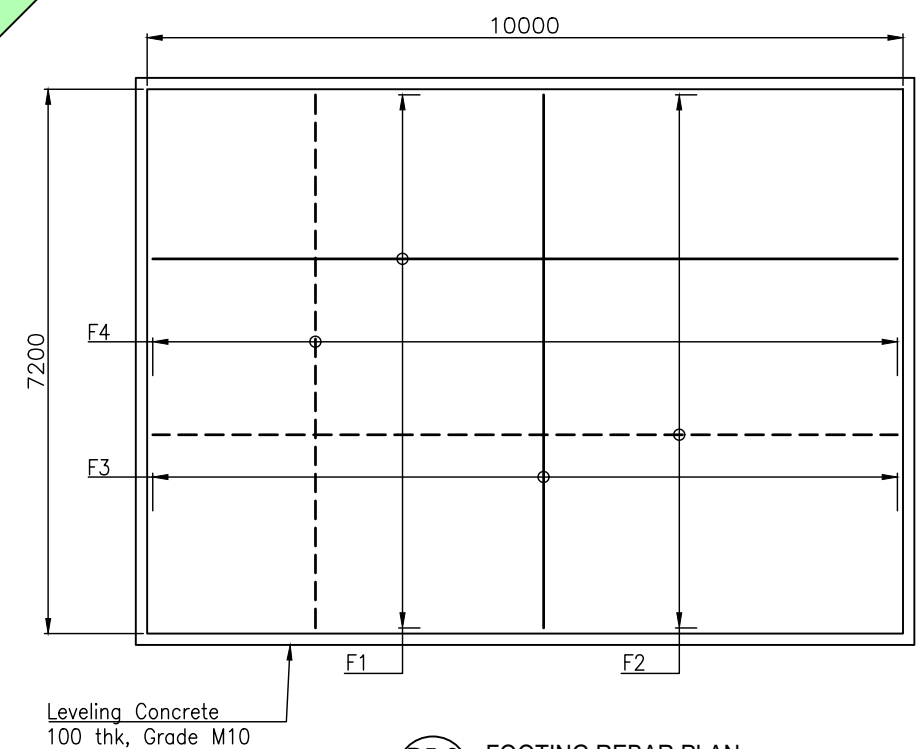
<b>CLIENT:</b> Dorjilung Hydro Power Project  Project Ref. No.:	<b>CONSULTANT:</b> JY Engineering Consultants (JYEC) Babesa, Thimphu Ph. +975 17634390 (M) email: jyengconsult2017@gmail.com	<b>PROJECT TITLE:</b> Construction of Bridge No.2(Near Adit 1 and 2)	<b>SHEET CONTENT:</b> ABUTMENT A2 REBAR DETAILS-2	<b>Revisions:</b>				Name		Signature	Drawing No.
				Issue	Date	Amendments/Issue descriptions		Design	J.Yeshi		BB-B-14
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								Check	-		Date: Jan 2025
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**B5-1** RETURN WALL- INNER FACE(BACK FILL SIDE) REBAR DETAILS  
 -- SCALE 1:100

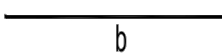
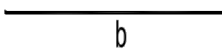
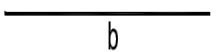
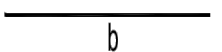
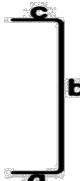
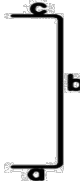
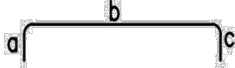
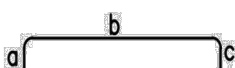
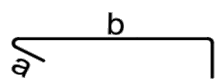
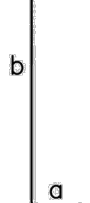


**B5-2** RETURN WALL- OUTER FACE REBAR DETAILS  
 -- SCALE 1:100



**B5-3** FOOTING REBAR PLAN  
 -- SCALE 1:100

<b>CLIENT:</b> Dorjilung Hydro Power Project  Project Ref. No.: -	<b>CONSULTANT:</b> JY Engineering Consultants (JYEC) Babesa, Thimphu Ph. +975 17634390 (M) email: jyengconsult2017@gmail.com	<b>PROJECT TITLE:</b> Construction of Bridge No.2(Near Adit 1 and 2)	<b>SHEET CONTENT:</b> ABUTMENT A2 RETURN WALL REBAR AND FOOTING REBAR PLAN	<b>Revisions:</b>				Name	Signature	Drawing No.
				Issue	Date	Amendments/Issue descriptions	Design	J.Yeshi		BB-B-15
				01	-	-	Drawing	NB Chhetri		Scale: 1:100
							Check	-		Date: Jan 2025
							Approved	....		(as sheet A3 size)

REBAR SCHEDULE FOR ABUTMENT A2-BRIDGE 2(NEAR ADIT 2 AND 3 )																
Member	Bar Mark	Bar dia	Length of each bar (L)	Number of member	Number of bar in each member	Total number	Total length (m)	BENDING DIMENSION					ADDITIONAL INFROMATION			
								a	b	c	d	e	HOOK		TOTAL WEIGHT (Kg)	REMARKS
													START	END		
Footing slab	F1	32	9850	1	71	71	699.35		9850					4415.00	L=b	
Footing slab	F2	20	9850	1	71	71	699.35		9850					1724.60	L=b	
Footing slab	F3	20	7050	1	50	50	352.5		7050					869.27	L=b	
Footing slab	F4	25	7050	1	83	83	585.15		7050					2096.59	L=b	
Footing slab	F5	16	1968	1	96	96	188.928	200	1632	200				298.13	L=a+b+c-r-2φ	
Footing slab	F5'	16	1968	1	134	134	263.712	200	1632	200				416.14	L=a+b+c-r-2φ	
Footing slab	F6	16	7386	1	18	18	132.948	200	7050	200				209.79	L=a+b+c-r-2φ	
Footing slab	F6'	16	10186	1	18	18	183.348	200	9850	200				289.32	L=a+b+c-r-2φ	
Footing slab	F7	20	1895	1	408	408	773.16	200	1640	200				1906.61	[L=a+b+c-1.5*r-2φ]	
Stem	W1	25	7754.5	1	28	28	217.126	250	7573					777.96	L=a+b-0.5*r-φ	

CLIENT:  
Dorjilung Hydro Power Project





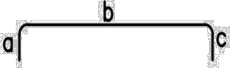
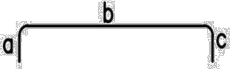
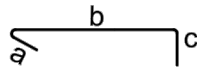

Project Ref. No.:  
-

CONSULTANT:  
JY Engineering Consultants (JYEC)  
Babesa, Thimphu  
Ph. +975 17634390 (M)  
email: jyengconsult2017@gmail.com

PROJECT TITLE:  
Construction of Bridge No.2(Near Adit 1 and 2)

SHEET CONTENT:  
ABUTMENT A2 BBS-1

Revisions:				Name	Signature	Drawing No.	
Issue	Date	Amendments/Issue descriptions	Design	J.Yeshi		BB-B-16	
01	-	-	Drawing	NB Chhetri		Scale:	NTS
			Check	-		Date:	Jan 2025
			Approved	----		(as sheet A3 size)	

Member	Bar Mark	Bar dia	Length of each bar (L)	Number of member	Number of bar in each member	Total number	Total length (m)	BENDING DIMENSION					ADDITIONAL INFROMATION			
								a	b	c	d	e	HOOK		TOTAL WEIGHT (Kg)	REMARKS
													START	END		
Stem	W1'a	25	11931.5	1	28	28	334.082	250	11750						1197.02	$L=a+b-0.5*r-\phi$
Stem	W1'b	25	3116.5	1	28	28	87.262	250	2935						312.66	$L=a+b-0.5*r-\phi$
Stem	W2a	20	11895	1	48	48	570.96	200	11750						1407.99	$L=a+b-0.5*r-\phi$
Stem	W2b	20	2805	1	48	48	134.64	200	2660						332.02	$L=a+b-0.5*r-\phi$
Stem	W3	20	7318	1	99	99	724.482	200	7028	200					1786.57	$L=a+b+c-r-2\phi$
Stem	W4	16	7364	1	72	72	530.208	200	7028	200					836.67	$L=a+b+c-r-2\phi$
Stem	W5	20	1680	1	480	480	806.4	200	1425	200					1988.58	$[L=a+b+c-1.5*r-2\phi](varies)$
Stem	W6	20	2745	1	48	48	131.76	500	1855	500					324.92	$L=a+b+c-r-2\phi$

CLIENT:  
Dorjilung Hydro Power Project

Project Ref. No.:  
-

CONSULTANT:  
JY Engineering Consultants (JYEC)  
Babesa, Thimphu  
Ph. +975 17634390 (M)  
email: jyengconsult2017@gmail.com

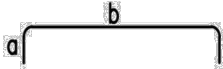
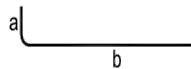
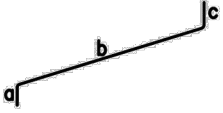
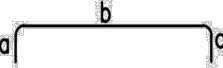
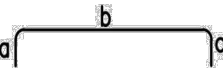
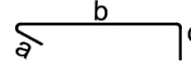
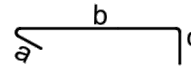
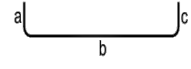
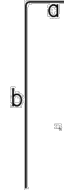

PROJECT TITLE:  
Construction of Bridge No.2(Near Adit 1 and 2)

SHEET CONTENT:  
ABUTMENT A2 BBS-2

Revisions:

Issue	Date	Amendments/Issue descriptions
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Name		Signature		Drawing No.	
Design		J.Yeshi		BB-B-17	
Drawing		NB Chhetri		Scale:	NTS
Check		-		Date:	Jan 2025
Approved		----		(as sheet A3 size)	

Member	Bar Mark	Bar dia	Length of each bar (L)	Number of member	Number of bar in each member	Total number	Total length (m)	BENDING DIMENSION					ADDITIONAL INFROMATION			
								a	b	c	d	e	HOOK		TOTAL WEIGHT (Kg)	REMARKS
													START	END		
Stem	W7	16	8086	1	13	13	105.118	550	7050	550					165.88	$L=a+b+c-r-2\phi$
Stem	W8	20	1595	1	48	48	76.56	250	1400						188.80	$L=a+b-0.5*r-\phi$
Stem	W9	16	2894	1	48	48	138.912	250	2458	250					219.20	$L=a+b+c-r-2\phi$
Stem	W10	12	7502	1	6	6	45.012	250	7050	250					39.97	$L=a+b+c-r-2\phi$
Stem	W10'	12	8102	1	8	8	64.816	550	7050	550					57.56	$L=a+b+c-r-2\phi$
Stem	W11	16	1040	1	75	75	78	160	800	160					123.08	tie [ $L=a+b+c-1.5*r-2\phi$ ](Varies)
Stem	W12	16	675	1	70	70	47.25	160	435	160					74.56	tie [ $L=a+b+c-1.5*r-2\phi$ ](Varies)
Stem	W13	12	2752	1	12	12	33.024	200	2400	200					29.33	$L=a+b+c-r-2\phi$ (Varies)
Back Wall	B1	12	1481	1	44	44	65.164	200	1305						57.87	$L=a+b-0.5*r-\phi$
Back Wall	B2	12	1481	1	44	44	65.164	200	1305						57.87	$L=a+b-0.5*r-\phi$

CLIENT:  
Dorjilung Hydro Power Project

Project Ref. No.:

-

CONSULTANT:  
JY Engineering Consultants (JYEC)  
Babesa, Thimphu  
Ph. +975 17634390 (M)  
email: jyengconsult2017@gmail.com

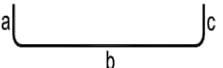
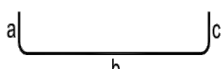
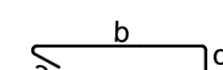




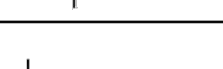
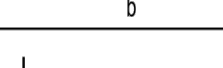


PROJECT TITLE:  
Construction of Bridge No.2(Near Adit 1 and 2)

SHEET CONTENT:  
ABUTMENT A2 BBS-3

Revisions:

Issue	Date	Amendments/Issue descriptions
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	Name	Signature	Drawing No.	
Design	J.Yeshi		BB-B-18	
Drawing	NB Chhetri		Scale:	NTS
Check	-		Date:	Jan 2025
Approved	----		(as sheet A3 size)	

Member	Bar Mark	Bar dia	Length of each bar (L)	Number of member	Number of bar in each member	Total number	Total length (m)	BENDING DIMENSION					ADDITIONAL INFOMATION			
								a	b	c	d	e	HOOK		TOTAL WEIGHT (Kg)	REMARKS
													START	END		
Back Wall	B3	12	7402	1	6	6	44.412	200	7050	200				39.44	L=a+b+c-r-2φ	
Back Wall	B4	12	7402	1	6	6	44.412	200	7050	200				39.44	L=a+b+c-r-2φ	
Back Wall	B5	12	635	1	9	9	5.715	160	375	160				5.07	tie [L=a+b+c-1.5*r-2φ]	
Back Wall	B6	12	1481	1	61	61	90.341	200	1305					80.22	L=a+b-0.5*r-φ	
Back Wall	B7	12	1481	1	61	61	90.341	200	1305					80.22	L=a+b-0.5*r-φ	
Back Wall	B8	12	9452	1	6	6	56.712	200	9100	200				50.36	L=a+b+c-r-2φ	
Back Wall	B9	12	9452	1	6	6	56.712	200	9100	200				50.36	L=a+b+c-r-2φ	
Return Wall	R1	20	7395	2	34	68	502.86	200	6805	500				1240.05	L=a+b+c-r-2φ(Varies)	
Return Wall	R2	25	9288	2	65	130	1207.44	250	8675	500				4326.26	L=a+b+c-r-2φ(Varies)	
Return Wall	R3	25	7759.5	2	23	46	356.937	250	7578					1278.91	L=a+b-0.5*r-φ	
Return Wall	R4	20	7723	2	18	36	278.028	200	7578					685.62	L=a+b-0.5*r-φ	

CLIENT:  
Dorjilung Hydro Power Project

Project Ref. No.:  
-


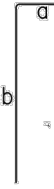
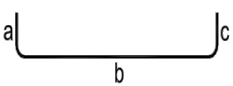
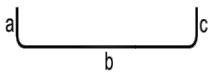

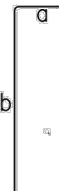
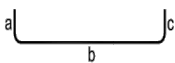
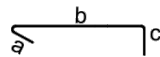
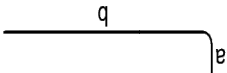

CONSULTANT:  
JY Engineering Consultants (JYEC)  
Babesa, Thimphu  
Ph. +975 17634390 (M)  
email: jyengconsult2017@gmail.com

PROJECT TITLE:  
Construction of Bridge No.2(Near Adit 1 and 2)

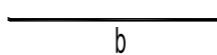
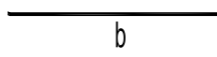
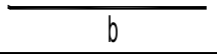
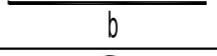
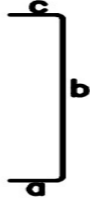
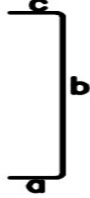
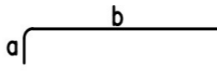
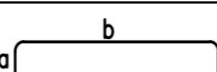
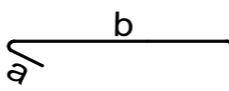
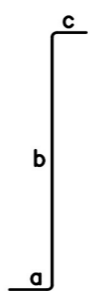
SHEET CONTENT:  
ABUTMENT A2 BBS-4


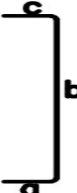
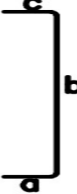
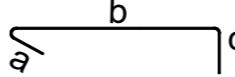
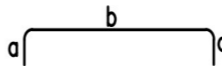
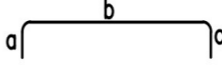
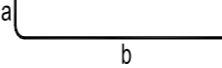
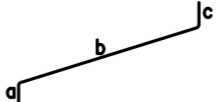
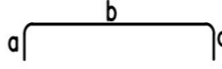
Revisions:

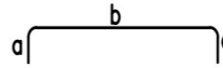
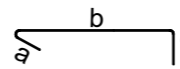
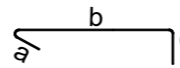
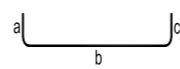

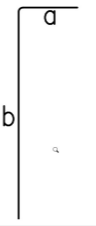
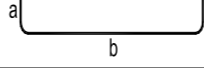
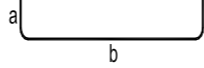
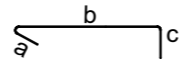


Issue	Date	Amendments/Issue descriptions	Design	Name	Signature	Drawing No.
01	-	-	Drawing	NB Chhetri		Scale: NTS
			Check	-		Date: Jan 2025
			Approved	----		(as sheet A3 size)

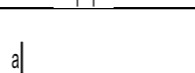
Member	Bar Mark	Bar dia	Length of each bar (L)	Number of member	Number of bar in each member	Total number	Total length (m)	BENDING DIMENSION					ADDITIONAL INFROMATION			
								a	b	c	d	e	HOOK		TOTAL WEIGHT (Kg)	REMARKS
													START	END		
Return Wall	R5	20	7550	2	23	46	347.3	500	7105					856.44	<b>L=a+b-0.5*r-φ</b>	
Return Wall	R6	16	7323	2	18	36	263.628	500	6855					416.00	<b>L=a+b-0.5*r-φ</b>	
Return Wall	R7	12	4002	2	23	46	184.092	500	3050	500				163.47	<b>L=a+b+c-r-2φ(Varies)</b>	
Return Wall	R8	16	9411	2	80	160	1505.76	200	8775	500				2376.09	<b>L=a+b+c-r-2φ(Varies)</b>	
Return Wall	R9a	20	11945	2	34	68	812.26	200	11800					2003.03	<b>L=a+b-0.5*r-φ</b>	
Return Wall	R9b	20	3325	2	34	68	226.1	500	2880					557.56	<b>L=a+b-0.5*r-φ</b>	
Return Wall	R10	12	4002	2	23	46	184.092	500	3050	500				163.47	<b>L=a+b+c-r-2φ(Varies)</b>	
Return Wall	R11	12	904	2	250	500	452	120	724	120				401.38	<b>tie [L=a+b+c-1.5*r-2φ]</b>	
Return Wall	R12	16	9648	2	4	8	77.184	250	9430					121.80	<b>L=a+b-0.5*r-φ</b>	
Anchor Hook	H	32	1834.3	1	2	2	3.6686	900	150	900				23.16	<b>L=a+0.57b+c-1.6d</b>	
QUANTITY FOR ABUTMENT A2=														37,162	Kgs	

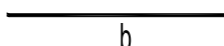
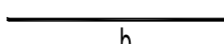


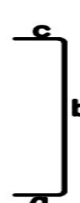
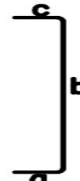
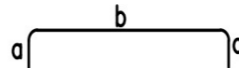
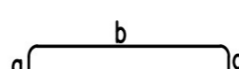
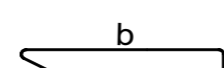
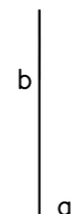
CLIENT: Dorjilung Hydro Power Project  Project Ref. No.: -		CONSULTANT: JY Engineering Consultants (JYEC) Babesa, Thimphu Ph. +975 17634390 (M) email: jyengconsult2017@gmail.com		PROJECT TITLE: Construction of Bridge No.2(Near Adit 1 and 2)		SHEET CONTENT:  ABUTMENT A2 BBS-5		Revisions:				Name	Signature	Drawing No.	
								Issue	Date	Amendments/Issue descriptions	Design	J.Yeshi		BB-B-20	
								01	-	-	Drawing	NB Chhetri		Scale:	NTS
											Check	-		Date:	Jan 2025
											Approved	....		(as sheet A3 size)	

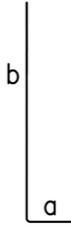


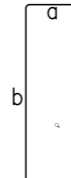
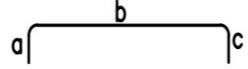
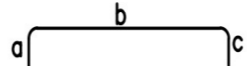
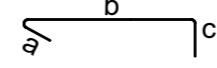
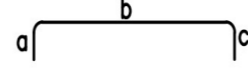
REBAR SCHEDULE FOR ABUTMENT A1 -BRIDGE 2(NEAR ADIT 2 AND 3)																
Member	Bar Mark	Bar dia	Length of each bar (L)	Number of member	Number of bar in each member	Total number	Total length (m)	BENDING DIMENSION					ADDITIONAL INFROMATION			
								a	b	c	d	e	HOOK		TOTAL WEIGHT (Kg)	REMARKS
													START	END		
Footing slab	F1	20	5350	1	59	59	315.65		5350					778.39	L=b	
Footing slab	F2	16	5350	1	48	48	256.8		5350					405.23	L=b	
Footing slab	F3	16	7050	1	36	36	253.8		7050					400.50	L=b	
Footing slab	F4	20	7050	1	45	45	317.25		7050					782.34	L=b	
Footing slab	F5	16	1418	1	72	72	102.096	200	1082	200				161.11	L=a+b+c-r-2φ	
Footing slab	F5'	16	1418	1	54	54	76.572	200	1082	200				120.83	L=a+b+c-r-2φ	
Footing slab	F6	16	7386	1	8	8	59.088	200	7050	200				93.24	L=a+b+c-r-2φ	
Footing slab	F6'	16	5686	1	8	8	45.488	200	5350	200				71.78	L=a+b+c-r-2φ	
Footing slab	F7	20	1345	1	130	130	174.85	200	1090	200				431.18	[L=a+b+c-1.5*r-2φ]	
Stem	W1	20	7290	1	41	41	298.89	200	7000	200				737.06	L=a+b+c-r-2φ	

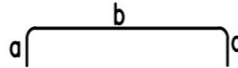
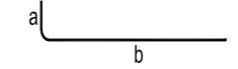
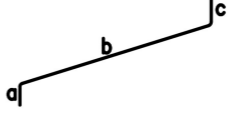
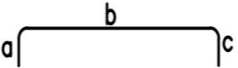
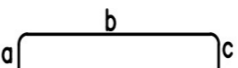
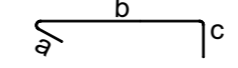
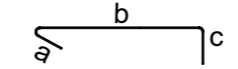
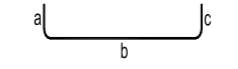
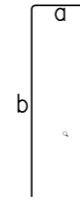

Member	Bar Mark	Bar dia	Length of each bar (L)	Number of member	Number of bar in each member	Total number	Total length (m)	BENDING DIMENSION					ADDITIONAL INFROMATION			
								a	b	c	d	e	HOOK		TOTAL WEIGHT (Kg)	REMARKS
													START	END		
Stem	W2	16	7336	1	48	48	352.128	200	7000	200				555.66	<b>L=a+b+c-r-2φ</b>	
Stem	W3	20	7358	1	40	40	294.32	200	7068	200				725.79	<b>L=a+b+c-r-2φ</b>	
Stem	W4	16	1418	1	34	34	48.212	200	1082	200				76.08	<b>L=a+b+c-r-2φ</b>	
Stem	W5	16	1372	1	30	30	41.16	160	1132	160				64.95	<b>tie [L=a+b+c-1.5*r-2φ]</b>	
Stem	W6	20	2750	1	48	48	132	500	1860	500				325.51	<b>L=a+b+c-r-2φ</b>	
Stem	W7	16	8136	1	12	12	97.632	550	7100	550				154.06	<b>L=a+b+c-r-2φ</b>	
Stem	W8	20	1545	1	48	48	74.16	200	1400					182.88	<b>do</b>	
Stem	W9	16	2811	1	48	48	134.928	200	2475	200				212.92	<b>L=a+b+c-r-2φ</b>	
Stem	W10	12	8152	1	6	6	48.912	550	7100	550				43.43	<b>L=a+b+c-r-2φ</b>	

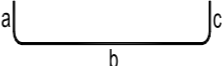
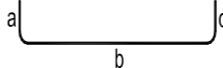
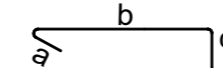
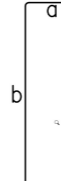
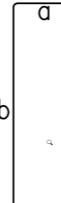
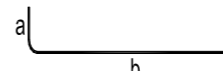
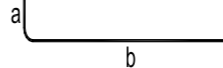
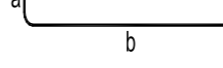
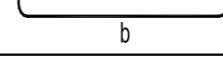


Member	Bar Mark	Bar dia	Length of each bar (L)	Number of member	Number of bar in each member	Total number	Total length (m)	BENDING DIMENSION					ADDITIONAL INFROMATION			
								a	b	c	d	e	HOOK		TOTAL WEIGHT (Kg)	REMARKS
													START	END		
Stem	W10'	12	7552	1	9	9	67.968	250	7100	250				60.36	<b>L=a+b+c-r-2φ</b>	
Stem	W11	16	1215	1	125	125	151.875	160	975	160				239.66	<b>tie [L=a+b+c-1.5*r-2φ](Varies)</b>	
Stem	W12	16	675	1	70	70	47.25	160	435	160				74.56	<b>tie [L=a+b+c-1.5*r-2φ](Varies)</b>	
Stem	W13	12	2752	1	12	12	33.024	200	2400	200				29.33	<b>L=a+b+c-r-2φ(Varies)</b>	
Back Wall	B1	12	1481	1	44	44	65.164	200	1305					57.87	<b>L=a+b-0.5*r-φ</b>	
Back Wall	B2	12	1481	1	44	44	65.164	200	1305					57.87	<b>L=a+b-0.5*r-φ</b>	
Back Wall	B3	12	7402	1	6	6	44.412	200	7050	200				39.44	<b>L=a+b+c-r-2φ</b>	
Back Wall	B4	12	7402	1	6	6	44.412	200	7050	200				39.44	<b>L=a+b+c-r-2φ</b>	
Back Wall	B5	12	635	1	9	9	5.715	160	375	160				5.07	<b>tie [L=a+b+c-1.5*r-2φ]</b>	
Back Wall	B6	12	1481	1	43	43	63.683	200	1305					56.55	<b>L=a+b-0.5*r-φ</b>	
Back Wall	B7	12	1481	1	43	43	63.683	200	1305					56.55	<b>L=a+b-0.5*r-φ</b>	

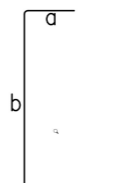
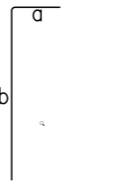
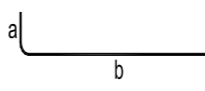
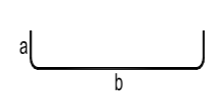
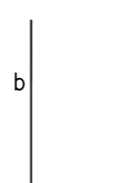
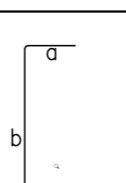
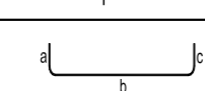
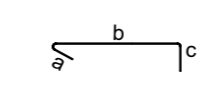
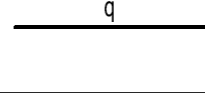
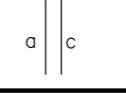
Member	Bar Mark	Bar dia	Length of each bar (L)	Number of member	Number of bar in each member	Total number	Total length (m)	BENDING DIMENSION					ADDITIONAL INFROMATION			
								a	b	c	d	e	HOOK		TOTAL WEIGHT (Kg)	REMARKS
													START	END		
Back Wall	B8	12	6702	1	6	6	40.212	200	6350	200				35.71	L=a+b+c-r-2φ	
Back Wall	B9	12	6702	1	6	6	40.212	200	6350	200				35.71	L=a+b+c-r-2φ	
Return Wall	R1	20	4358	2	11	22	95.876	200	4068	200				236.43	L=a+b+c-r-2φ(Varies)	
Return Wall	R2	25	5853	2	26	52	304.356	250	5490	250				1090.51	L=a+b+c-r-2φ(Varies)	
Return Wall	R3	25	4250.5	2	10	20	85.01	250	4069					304.59	L=a+b-0.5*r-φ	
Return Wall	R4	20	4214	2	7	14	58.996	200	4069					145.48	L=a+b-0.5*r-φ	
Return Wall	R5	20	4325	2	7	14	60.55	250	4130					149.32	L=a+b-0.5*r-φ	
Return Wall	R6	20	4325	2	7	14	60.55	250	4130					149.32	L=a+b-0.5*r-φ	
Return Wall	R7	16	3007	2	15	30	90.21	250	2571	250				142.35	L=a+b+c-r-2φ(Varies)	
Return Wall	R8	16	6436	2	40	80	514.88	250	6000	250				812.48	L=a+b+c-r-2φ(Varies)	
Return Wall	R9	16	7436	2	27	54	401.544	250	7000	250				633.64	L=a+b+c-r-2φ	
Return Wall	R10	12	2923	2	20	40	116.92	200	2571	200				103.82	L=a+b+c-r-2φ(Varies)	
Return Wall	R11	16	722	2	72	144	103.968	160	482	160				164.06	tie [L=a+b+c-1.5*r-2φ]	
Anchor Hook	H	32	1834.3	1	2	2	3.6686	900	150	900				23.16	L=a+0.57b+c-1.6d	
Rock Anchor	R	25	2481.5	1	42	42	104.223	250	2300					373.43	L=a+b-0.5*r-φ	
QUANTITY FOR ABUTMENT A1=														11,440	Kgs	

REBAR SCHEDULE FOR ABUTMENT A2-BRIDGE 2(NEAR ADIT 2 AND 3 )																
Member	Bar Mark	Bar dia	Length of each bar (L)	Number of member	Number of bar in each member	Total number	Total length (m)	BENDING DIMENSION					ADDITIONAL INFROMATION			
								a	b	c	d	e	HOOK		TOTAL WEIGHT (Kg)	REMARKS
													START	END		
Footing slab	F1	32	9850	1	71	71	699.35		9850					4415.00	L=b	
Footing slab	F2	20	9850	1	71	71	699.35		9850					1724.60	L=b	
Footing slab	F3	20	7050	1	50	50	352.5		7050					869.27	L=b	
Footing slab	F4	25	7050	1	83	83	585.15		7050					2096.59	L=b	
Footing slab	F5	16	1968	1	96	96	188.928	200	1632	200				298.13	L=a+b+c-r-2ϕ	
Footing slab	F5'	16	1968	1	134	134	263.712	200	1632	200				416.14	L=a+b+c-r-2ϕ	
Footing slab	F6	16	7386	1	18	18	132.948	200	7050	200				209.79	L=a+b+c-r-2ϕ	
Footing slab	F6'	16	10186	1	18	18	183.348	200	9850	200				289.32	L=a+b+c-r-2ϕ	
Footing slab	F7	20	1895	1	408	408	773.16	200	1640	200				1906.61	[L=a+b+c-1.5*r-2ϕ]	
Stem	W1	25	7754.5	1	28	28	217.126	250	7573					777.96	L=a+b-0.5*r-ϕ	

Member	Bar Mark	Bar dia	Length of each bar (L)	Number of member	Number of bar in each member	Total number	Total length (m)	BENDING DIMENSION					ADDITIONAL INFOMATION			
								a	b	c	d	e	HOOK		TOTAL WEIGHT (Kg)	REMARKS
													START	END		
Stem	W1'a	25	11931.5	1	28	28	334.082	250	11750					1197.02	<b>L=a+b-0.5*r-ϕ</b>	
Stem	W1'b	25	3116.5	1	28	28	87.262	250	2935					312.66	<b>L=a+b-0.5*r-ϕ</b>	
Stem	W2a	20	11895	1	48	48	570.96	200	11750					1407.99	<b>L=a+b-0.5*r-ϕ</b>	
Stem	W2b	20	2805	1	48	48	134.64	200	2660					332.02	<b>L=a+b-0.5*r-ϕ</b>	
Stem	W3	20	7318	1	99	99	724.482	200	7028	200				1786.57	<b>L=a+b+c-r-2ϕ</b>	
Stem	W4	16	7364	1	72	72	530.208	200	7028	200				836.67	<b>L=a+b+c-r-2ϕ</b>	
Stem	W5	20	1680	1	480	480	806.4	200	1425	200				1988.58	<b>[L=a+b+c-1.5*r-2ϕ](varies)</b>	
Stem	W6	20	2745	1	48	48	131.76	500	1855	500				324.92	<b>L=a+b+c-r-2ϕ</b>	

Member	Bar Mark	Bar dia	Length of each bar (L)	Number of member	Number of bar in each member	Total number	Total length (m)	BENDING DIMENSION					ADDITIONAL INFROMATION			
								a	b	c	d	e	HOOK		TOTAL WEIGHT (Kg)	REMARKS
													START	END		
Stem	W7	16	8086	1	13	13	105.118	550	7050	550					165.88	<b>L=a+b+c-r-2φ</b>
Stem	W8	20	1595	1	48	48	76.56	250	1400						188.80	<b>L=a+b-0.5*r-φ</b>
Stem	W9	16	2894	1	48	48	138.912	250	2458	250					219.20	<b>L=a+b+c-r-2φ</b>
Stem	W10	12	7502	1	6	6	45.012	250	7050	250					39.97	<b>L=a+b+c-r-2φ</b>
Stem	W10'	12	8102	1	8	8	64.816	550	7050	550					57.56	<b>L=a+b+c-r-2φ</b>
Stem	W11	16	1040	1	75	75	78	160	800	160					123.08	<b>tie [L=a+b+c-1.5*r-2φ](Varies)</b>
Stem	W12	16	675	1	70	70	47.25	160	435	160					74.56	<b>tie [L=a+b+c-1.5*r-2φ](Varies)</b>
Stem	W13	12	2752	1	12	12	33.024	200	2400	200					29.33	<b>L=a+b+c-r-2φ(Varies)</b>
Back Wall	B1	12	1481	1	44	44	65.164	200	1305						57.87	<b>L=a+b-0.5*r-φ</b>
Back Wall	B2	12	1481	1	44	44	65.164	200	1305						57.87	<b>L=a+b-0.5*r-φ</b>

Member	Bar Mark	Bar dia	Length of each bar (L)	Number of member	Number of bar in each member	Total number	Total length (m)	BENDING DIMENSION					ADDITIONAL INFROMATION			
								a	b	c	d	e	HOOK		TOTAL WEIGHT (Kg)	REMARKS
													START	END		
Back Wall	B3	12	7402	1	6	6	44.412	200	7050	200				39.44	<b>L=a+b+c-r-2φ</b>	
Back Wall	B4	12	7402	1	6	6	44.412	200	7050	200				39.44	<b>L=a+b+c-r-2φ</b>	
Back Wall	B5	12	635	1	9	9	5.715	160	375	160				5.07	<b>tie [L=a+b+c-1.5*r-2φ]</b>	
Back Wall	B6	12	1481	1	61	61	90.341	200	1305					80.22	<b>L=a+b-0.5*r-φ</b>	
Back Wall	B7	12	1481	1	61	61	90.341	200	1305					80.22	<b>L=a+b-0.5*r-φ</b>	
Back Wall	B8	12	9452	1	6	6	56.712	200	9100	200				50.36	<b>L=a+b+c-r-2φ</b>	
Back Wall	B9	12	9452	1	6	6	56.712	200	9100	200				50.36	<b>L=a+b+c-r-2φ</b>	
Return Wall	R1	20	7395	2	34	68	502.86	200	6805	500				1240.05	<b>L=a+b+c-r-2φ(Varies)</b>	
Return Wall	R2	25	9288	2	65	130	1207.44	250	8675	500				4326.26	<b>L=a+b+c-r-2φ(Varies)</b>	
Return Wall	R3	25	7759.5	2	23	46	356.937	250	7578					1278.91	<b>L=a+b-0.5*r-φ</b>	
Return Wall	R4	20	7723	2	18	36	278.028	200	7578					685.62	<b>L=a+b-0.5*r-φ</b>	

Member	Bar Mark	Bar dia	Length of each bar (L)	Number of member	Number of bar in each member	Total number	Total length (m)	BENDING DIMENSION					ADDITIONAL INFROMATION			
								a	b	c	d	e	HOOK		TOTAL WEIGHT (Kg)	REMARKS
													START	END		
Return Wall	R5	20	7550	2	23	46	347.3	500	7105					856.44	$L=a+b-0.5*r-\phi$	
Return Wall	R6	16	7323	2	18	36	263.628	500	6855					416.00	$L=a+b-0.5*r-\phi$	
Return Wall	R7	12	4002	2	23	46	184.092	500	3050	500				163.47	$L=a+b+c-r-2\phi$ (Varies)	
Return Wall	R8	16	9411	2	80	160	1505.76	200	8775	500				2376.09	$L=a+b+c-r-2\phi$ (Varies)	
Return Wall	R9a	20	11945	2	34	68	812.26	200	11800					2003.03	$L=a+b-0.5*r-\phi$	
Return Wall	R9b	20	3325	2	34	68	226.1	500	2880					557.56	$L=a+b-0.5*r-\phi$	
Return Wall	R10	12	4002	2	23	46	184.092	500	3050	500				163.47	$L=a+b+c-r-2\phi$ (Varies)	
Return Wall	R11	12	904	2	250	500	452	120	724	120				401.38	tie [ $L=a+b+c-1.5*r-2\phi$ ]	
Return Wall	R12	16	9648	2	4	8	77.184	250	9430					121.80	$L=a+b-0.5*r-\phi$	
Anchor Hook	H	32	1834.3	1	2	2	3.6686	900	150	900				23.16	$L=a+0.57b+c-1.6d$	
QUANTITY FOR ABUTMENT A2=														37,162	Kgs	