

APPENDIX-1

PRELIMINARY DESIGN DRAWINGS

ADDITIONAL STUDY
OF
THE SURYABINAYAK-DHULIKHEL ROAD
IMPROVEMENT PROJECT

AUGUST 2018

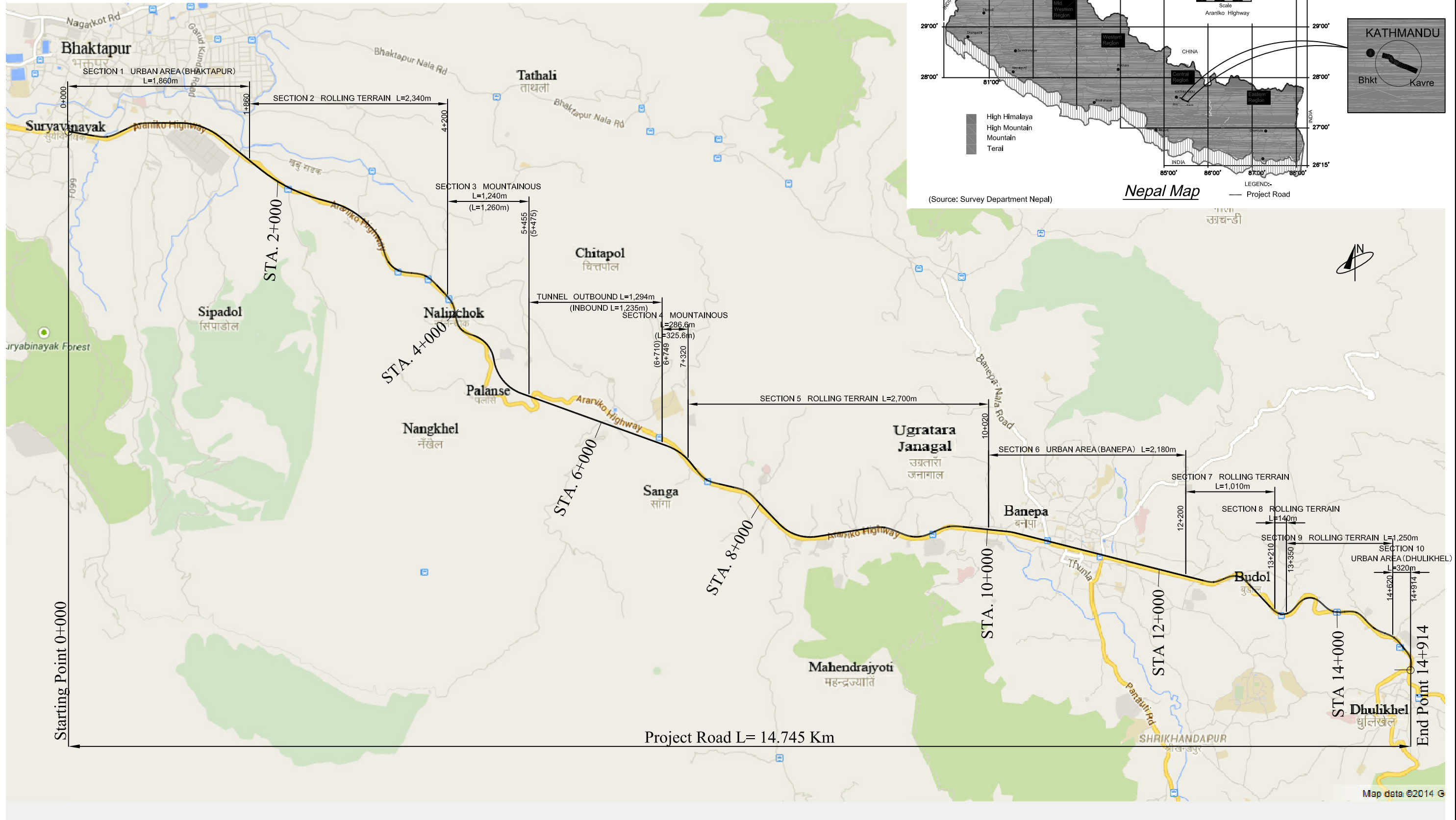
JAPAN INTERNATIONAL COOPERATION AGENCY

CTI ENGINEERING INTERNATIONAL CO.,LTD.

CTI ENGINEERING CO.,LTD.





DRAWING LIST

No.	DRAWING TITLE	SHEET NO.	No. of Sheets	No.	DRAWING TITLE	SHEET NO.	No. of Sheets
1.	GENERAL	GN - 01	1	11.	OUTLINE OF PEDESTRIAN BRIDGES	PB - 01 ~ 12	12
	PROJECT LOCATION MAP	GN - 01	1		OUTLINE OF PEDESTRIAN BRIDGE AT SURYABINAYAK (0+100)	PB - 01 ~ 02	2
2.	TYPICAL CROSS SECTIONS	TP - 01 ~ 06	6		OUTLINE OF PEDESTRIAN BRIDGE AT JAGATI (0+960)	PB - 03 ~ 04	2
3.	PLAN	PL - 01 ~ 12	12		OUTLINE OF PEDESTRIAN BRIDGE AT BANEPA (11+000)	PB - 05 ~ 06	2
4.	PROFILE	PF - 01 ~ 09	9		OUTLINE OF PEDESTRIAN BRIDGE AT BANEPA (11+340)	PB - 07 ~ 08	2
5.	INTERSECTION PLAN	IP - 01 ~ 09	9		OUTLINE OF PEDESTRIAN BRIDGE AT BANEPA (11+820)	PB - 09 ~ 10	2
	LOCATION OF INTERSECTIONS	IP - 01	1		OUTLINE OF PEDESTRIAN BRIDGE AT KATHMANDU UNIVERSITY (13+270)	PB - 11 ~ 12	2
	PLAN OF INTERSECTIONS	IP - 02 ~ 09	8	12.	TOLL PLAZA	TG - 01 ~ 02	2
6.	TUNNEL OUTLINE DRAWINGS (5+455-6+749)	TU - 01 ~ 05	5	13.	OUTLINE OF CANTILEVER AND GRAVITY RETAINING WALLS	RW - 01	1
	PLAN OF TUNNEL	TU - 01	1	14.	OUTLINE OF PAVEMENT STRUCTURE	PS - 01	1
	GEOLOGIC PROFILE	TU - 02	1	15.	OUTLINE OF DRAINAGE STRUCTURES	DR - 01 ~ 10	10
	TYPICAL CROSS SECTION OF TUNNEL	TU - 03 ~ 05	3		SIDE DITCH	DR - 01	1
7.	SANGA PASS IMPROVEMENT (6+937)	BC - 01 ~ 03	3		CATCH BASIN	DR - 02 ~ 03	2
	OUTLINE OF BOX CULVERT	BC - 01 ~ 03	3		CROSS DRAINAGE	DR - 04 ~ 06	3
8.	SLOPE PROTECTION AT SANGA	SP - 01 ~ 02	2		INLET AND OUTLET OF CROSS DRAINAGE	DR - 07 ~ 08	2
	REINFORCED EARTH WALL	SP - 01	1		PRESSURIZED PIPE	DR - 09	1
	DETAIL OF STONE MASONRY	SP - 02	1		MANHOLES AND HEIGHT ADJUSTMENT OF EXISTING MANHOLES	DR - 10	1
9.	SLOPE PROTECTION BEYOND SANGA	SB - 01	1	16.	OUTLINE OF CROSSROAD TREATMENT	CT - 01 ~ 03	3
10.	CROSS DRAINAGE (BOX CULVERTS)	CD - 01 ~ 13	13	17.	BUS LAYBYS	BL - 01	1
	GENERAL VIEW OF CULVERT AT JAGATI (1+714.3)	CD - 01 ~ 03	3	18.	OUTLINE OF ROAD ANCILLARIES	RA - 01 ~ 08	8
	GENERAL VIEW OF CULVERT BEYOND SANGA (7+857)	CD - 04 ~ 06	3		OUTLINE OF MEDIAN	RA - 01	1
	GENERAL VIEW OF CULVERT AT WEST BANEPA (10+534.7)	CD - 07 ~ 10	4		MEDIAN BLOCK, KERB AND EDGE BLOCK (FLUSH KERB)	RA - 02	1
	GENERAL VIEW OF CULVERT AT EAST BANEPA (12+94.7)	CD - 11 ~ 13	3		TOP BARRIER BLOCK	RA - 03 ~ 04	2
					GUARDRAIL, GUARD PIPE AND CROSS PREVENTION FENCE	RA - 05	1
					TRAFFIC SIGNS	RA - 06	1
					CONDUITS FOR FUTURE INSTALLATION OF TRAFFIC SIGNALS	RA - 07	1
					PAVEMENT MARKINGS	RA - 08	1



Project Area Map

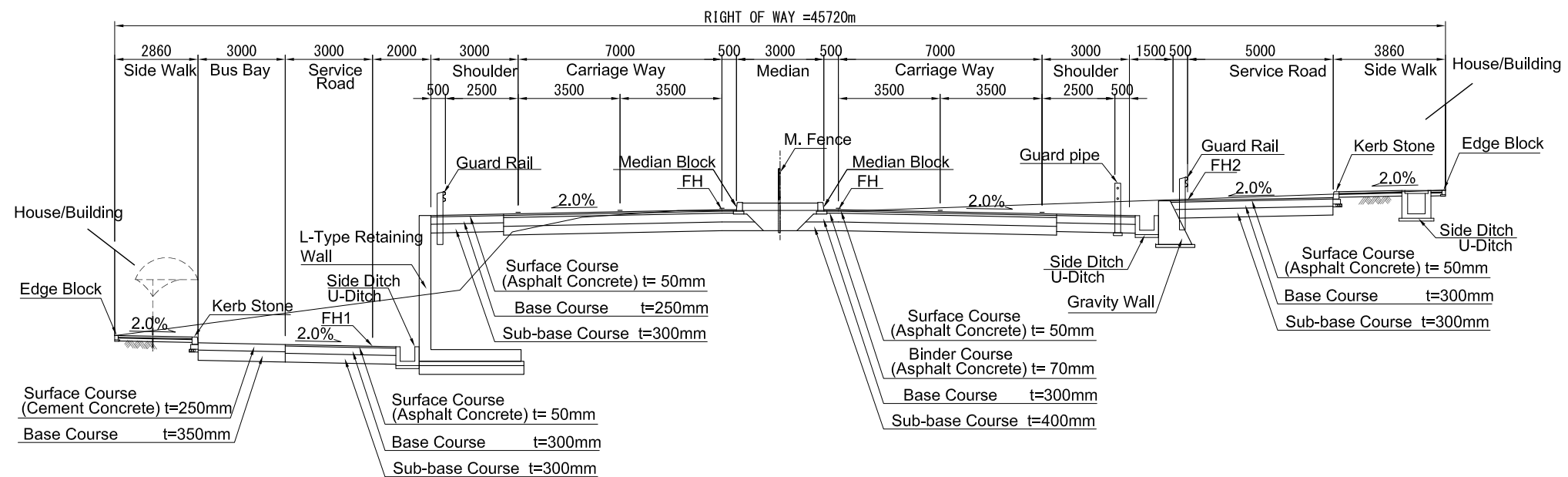
(Source: Google)





Clients:  Japan International Cooperation Agency	 Department of Roads Ministry of Physical Infrastructure and Transport Federal Democratic Republic of Nepal	Consultants:  CTI Engineering International Co., Ltd.  CTI Engineering Co., Ltd.	Project Title: Additional Study of the Suryabinayak-Dhulikhel Road Improvement Project	Sheet Contents: PROJECT LOCATION MAP	Scale: (A1size) 1:2000 Submission Date March, 2018	SHT. NO. GN-01
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Left Side
0+000~1+860

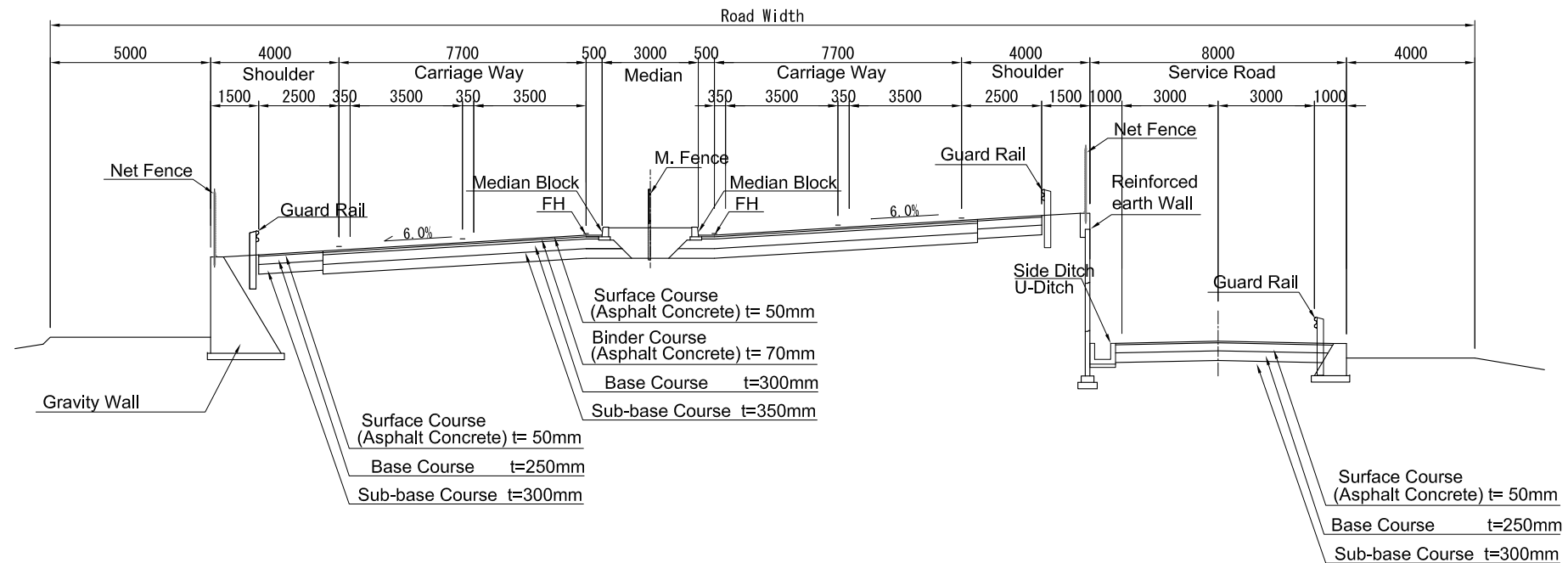
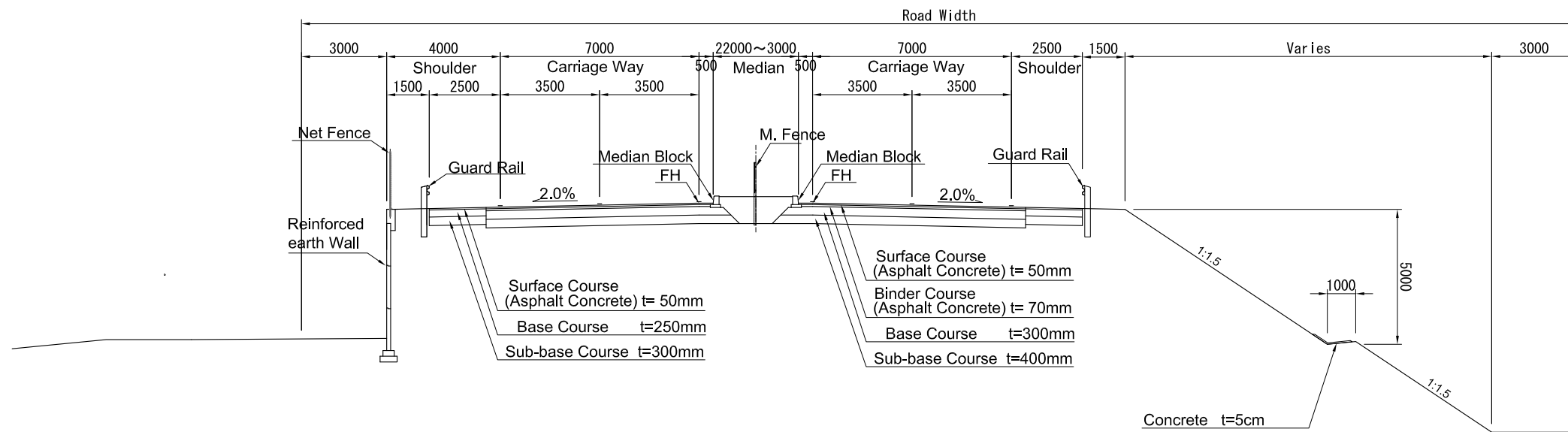
JAGATI SECTION 1 (0+000~1+860)





Right Side
0+000~1+860



<p>Clients:</p>  Japan International Cooperation Agency	 Department of Roads Ministry of Physical Infrastructure and Transport Federal Democratic Republic of Nepal	<p>Consultants:</p>  CTI Engineering International Co., Ltd.  CTI Engineering Co., Ltd.	<p>Project Title:</p> Additional Study of the Suryabinayak-Dhulikhel Road Improvement Project	<p>Sheet Contents:</p> TYPICAL CROSS SECTION	<p>Scale: (A1size)</p> 1:100 Submission Date March, 2018	<p>SHT. NO.</p> TP-01
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BYPASS SECTION 3 (4+200~5+455(+475)) SECTION 4 (6+745(+710)~7+320)

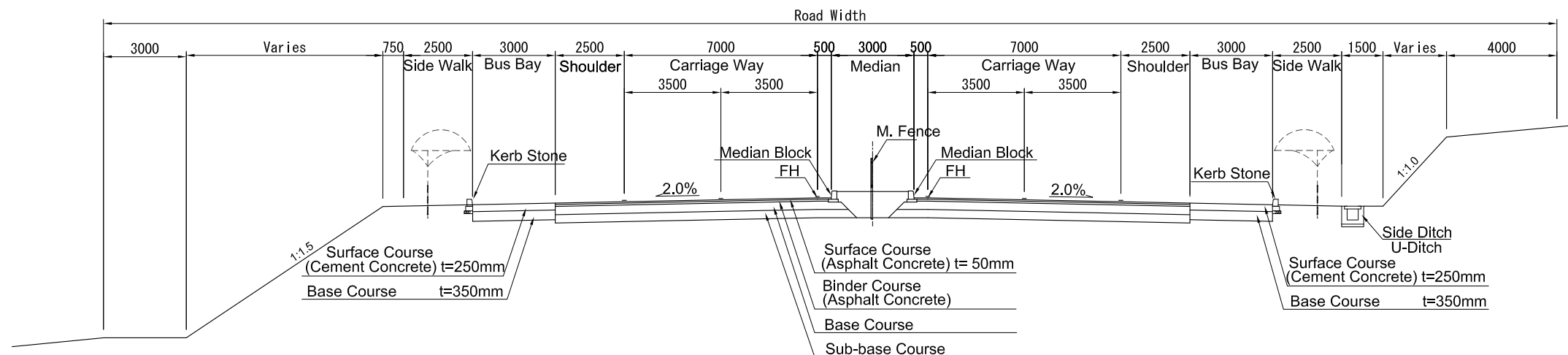
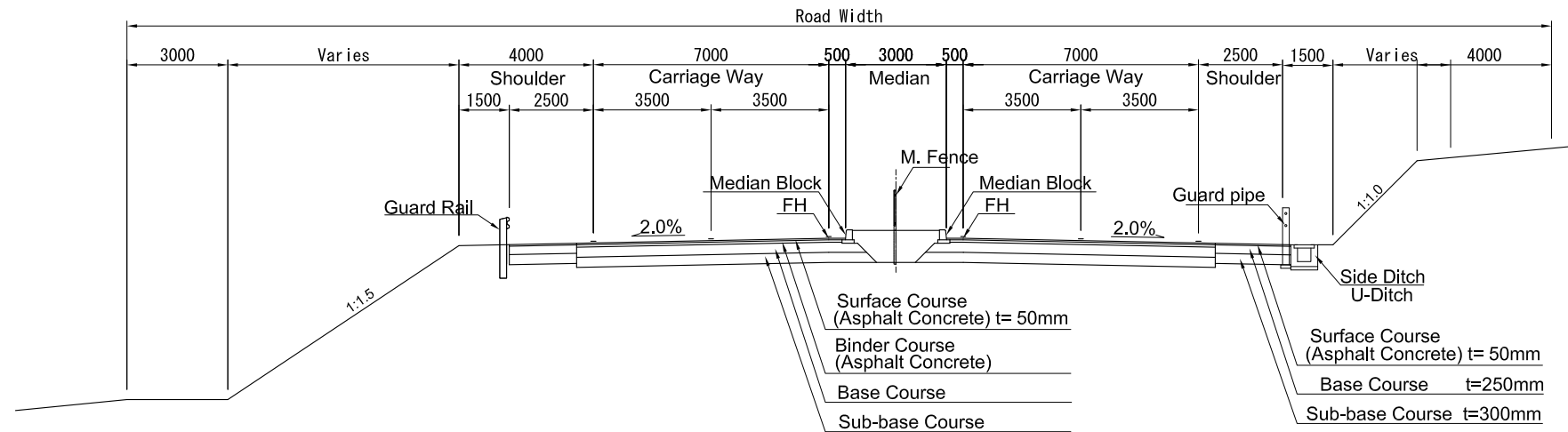


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					Submission Date	
					March, 2018	

WITHOUT SERVICE ROAD

(SECTION 1, SECTION 2, SECTION 5, SECTION 7, SECTION 9)

	Binder Course	Base Course	Sub-base Course
STA. 0+00~STA. 8+150	7cm	30cm	35cm
STA. 8+150~STA. 11+200	9cm	35cm	45cm
STA. 11+200~STA. 14+000	9cm	30cm	40cm
STA. 14+00~STA. 14+914	7cm	25cm	35cm



NOTE:
 1) ALL DIMENSIONS ARE IN MM WHEN OTHERWISE INDICATED
 2) FOR DETAIL OF STRUCTURES: REFER TO STRUCTURAL DRAWINGS.
 3) PAVEMENT SHOWN ARE OF STANDARD SECTION. FOR EXACT PAVEMENT FOR DIFFERENT SECTION REFER TO DRAWING NO.
 4) 50CM FROM THE END OF CARRIAGEWAY AT SHOULDER WILL HAVE CARRIAGEWAY PAVEMENT. OTHER PART, EXCEPT AT BUSLAYS WILL HAVE PAVEMENT WITHOUT THE BINDER COURSE.

Clients:	Department of Roads Ministry of Physical Infrastructure and Transport Federal Democratic Republic of Nepal	Consultants:	CTI Engineering International Co., Ltd. CTI Engineering Co., Ltd.	Project Title:	Additional Study of the Suryabinayak-Dhulikhel Road Improvement Project	Sheet Contents:	TYPICAL CROSS SECTION	Scale: (A1size)	SHT. NO.
								1:100	TP-03
								Submission Date	
								March, 2018	

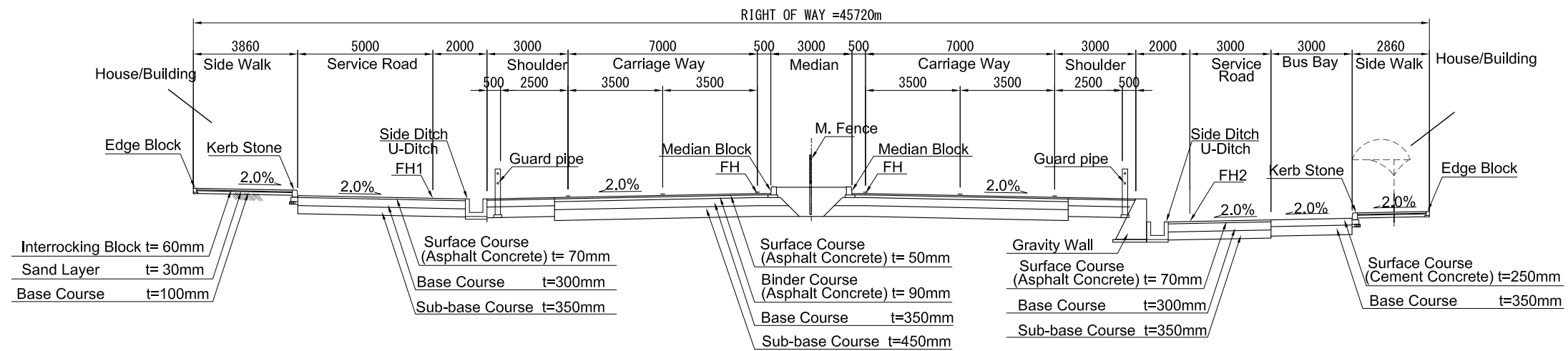
BANEPA

SECTION 6

(10+020~11+200)

Left Side
10+020~11+200

Right Side
10+160~11+200



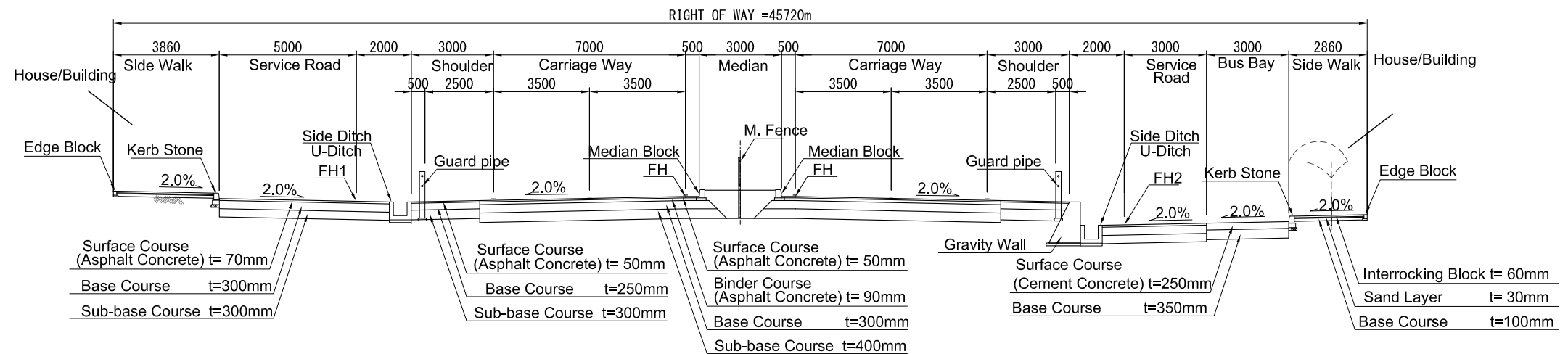
BANEPA

SECTION 6

(11+200~12+200)

Left Side
11+200~12+200

Right Side
11+200~12+200



- NOTE:
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 - 4) 50CM FROM THE END OF CARRIAGEWAY AT SHOULDER WILL HAVE CARRIAGEWAY PAVEMENT. OTHER PART, EXCEPT AT BUSLAYS BYS WILL HAVE PAVEMENT WITHOUT THE BINDER COURSE.

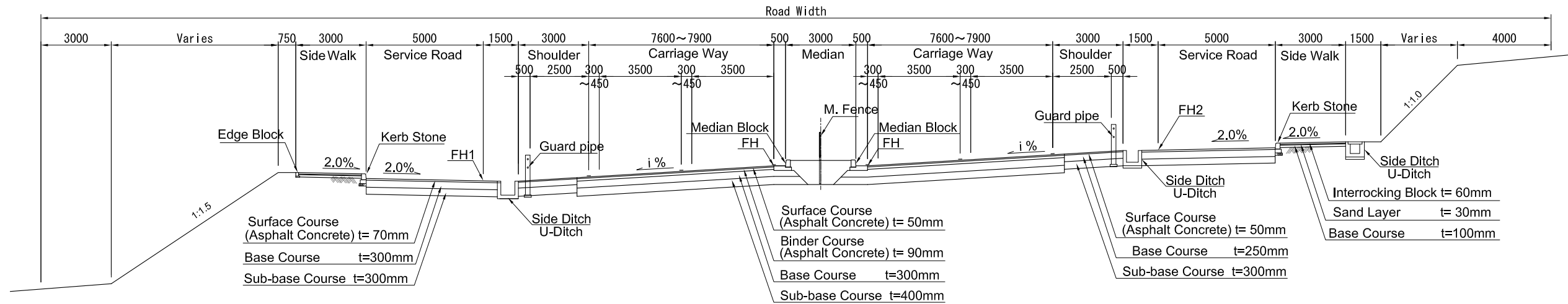
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Department of Roads Ministry of Physical Infrastructure and Transport Federal Democratic Republic of Nepal				Submission Date	
				March, 2018	

KATHMANDU UNIVERSITY

Left Side
13+240~13+340

SECTION 8 (13+210~13+350)

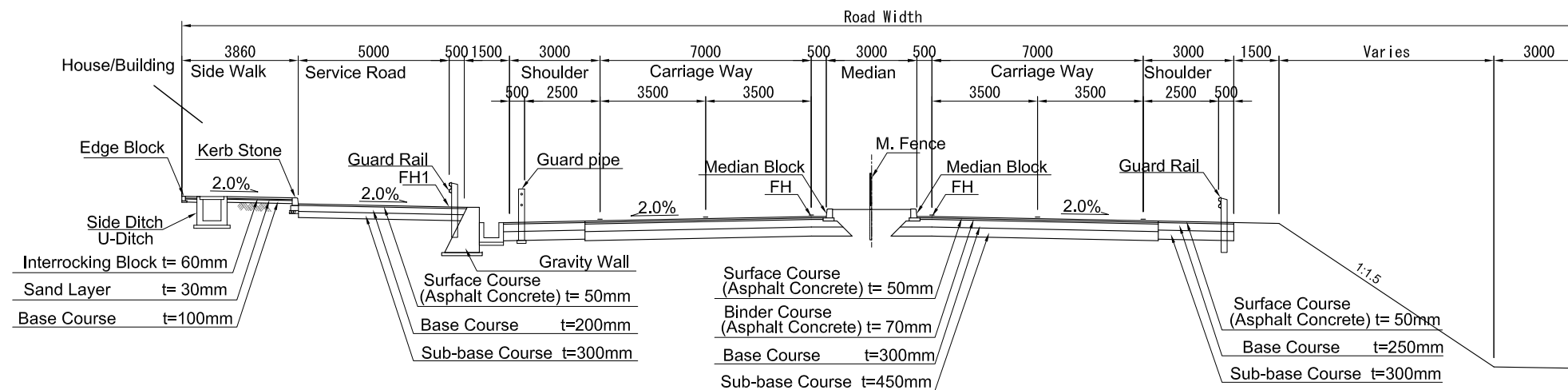
Right Side
13+220~13+340



Left Side
14+600~14+920

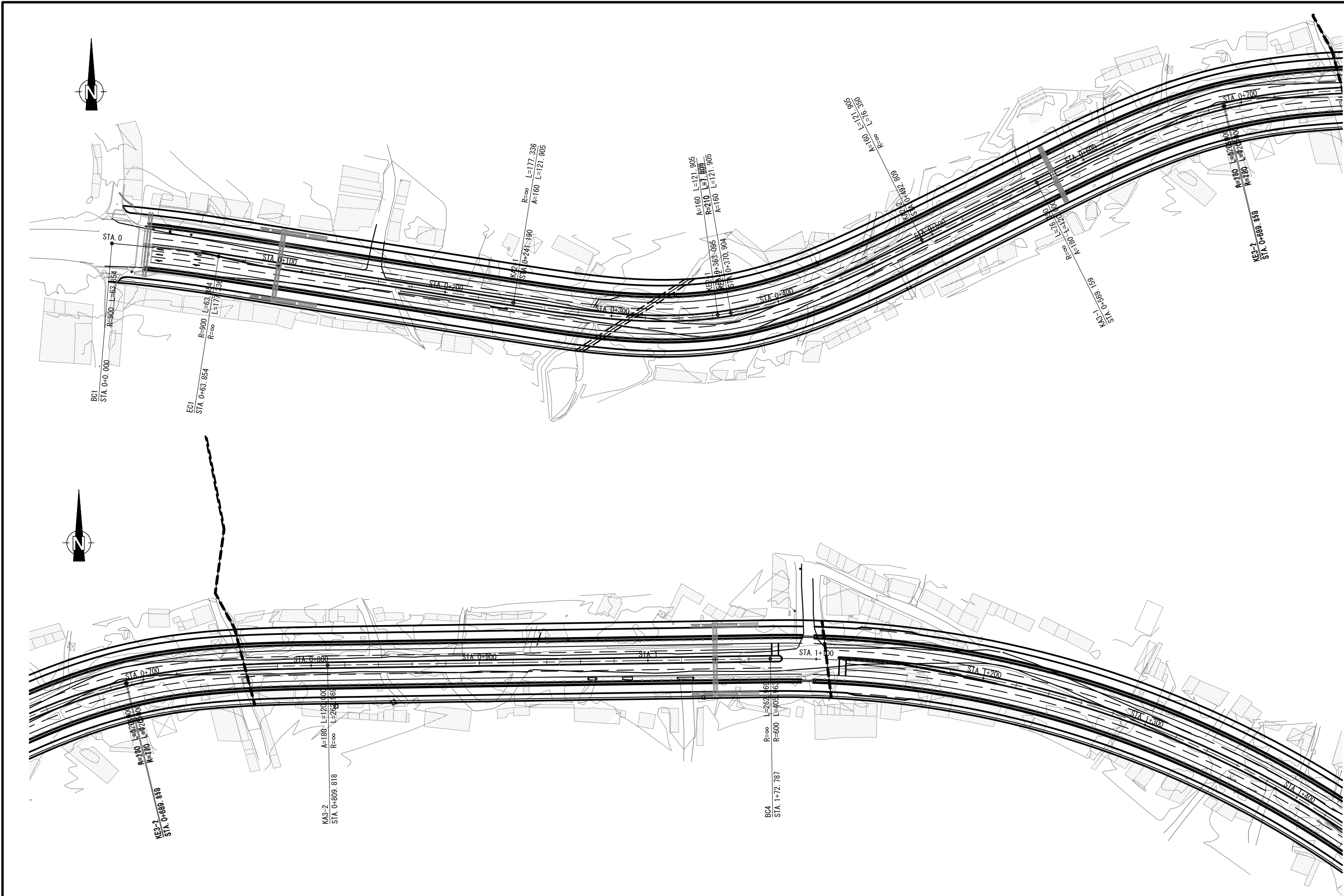
DHULIKHEL





SECTION 10 (14+620~14+914)

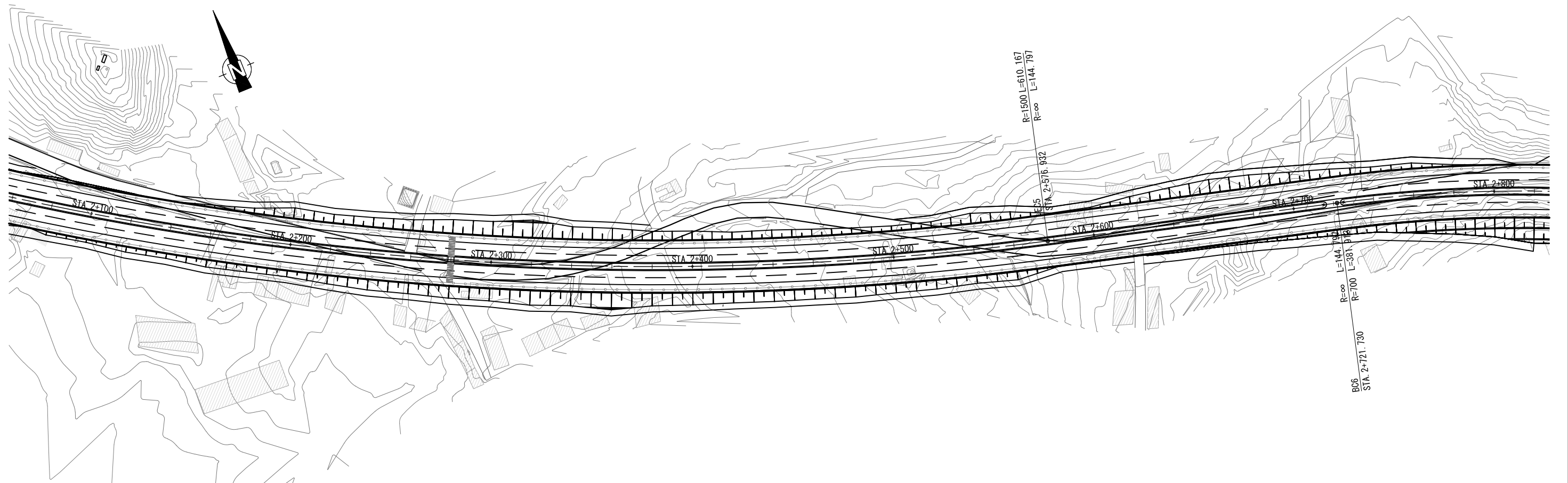
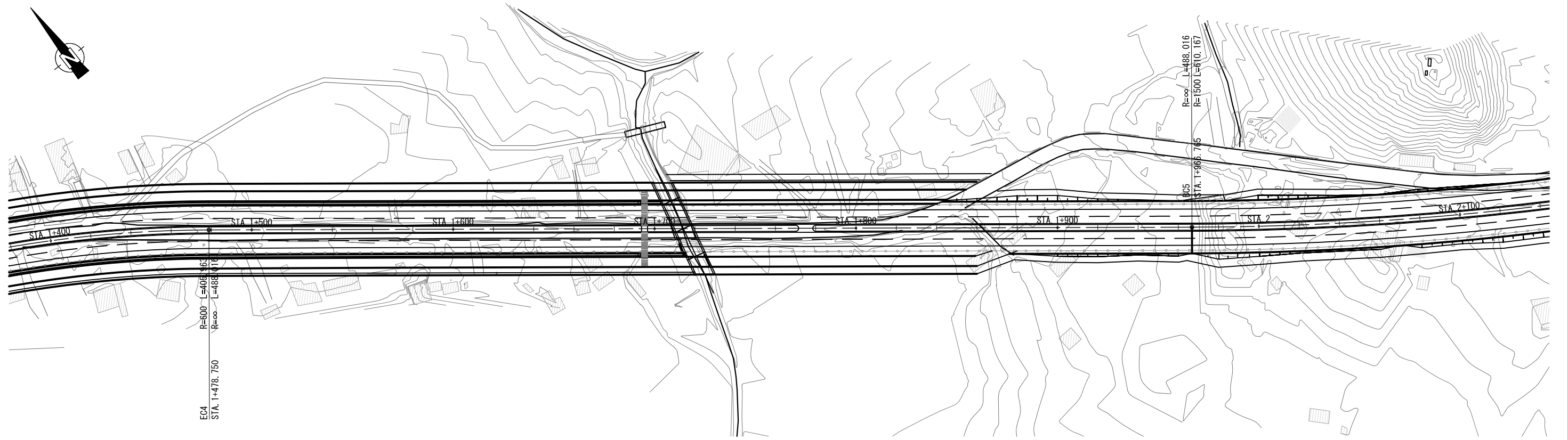






NOTE:
 1) ALL DIMENSIONS ARE IN MM WHEN OTHERWISE INDICATED
 2) FOR DETAIL OF STRUCTURES: REFER TO STRUCTURAL DRAWINGS.
 3) PAVEMENT SHOWN ARE OF STANDARD SECTION. FOR EXACT PAVEMENT FOR DIFFERENT SECTION REFER TO DRAWING NO.
 4) 50CM FROM THE END OF CARRIAGEWAY AT SHOULDER WILL HAVE CARRIAGEWAY PAVEMENT. OTHER PART, EXCEPT AT BUSLAYS WILL HAVE PAVEMENT WITHOUT THE BINDER COURSE.

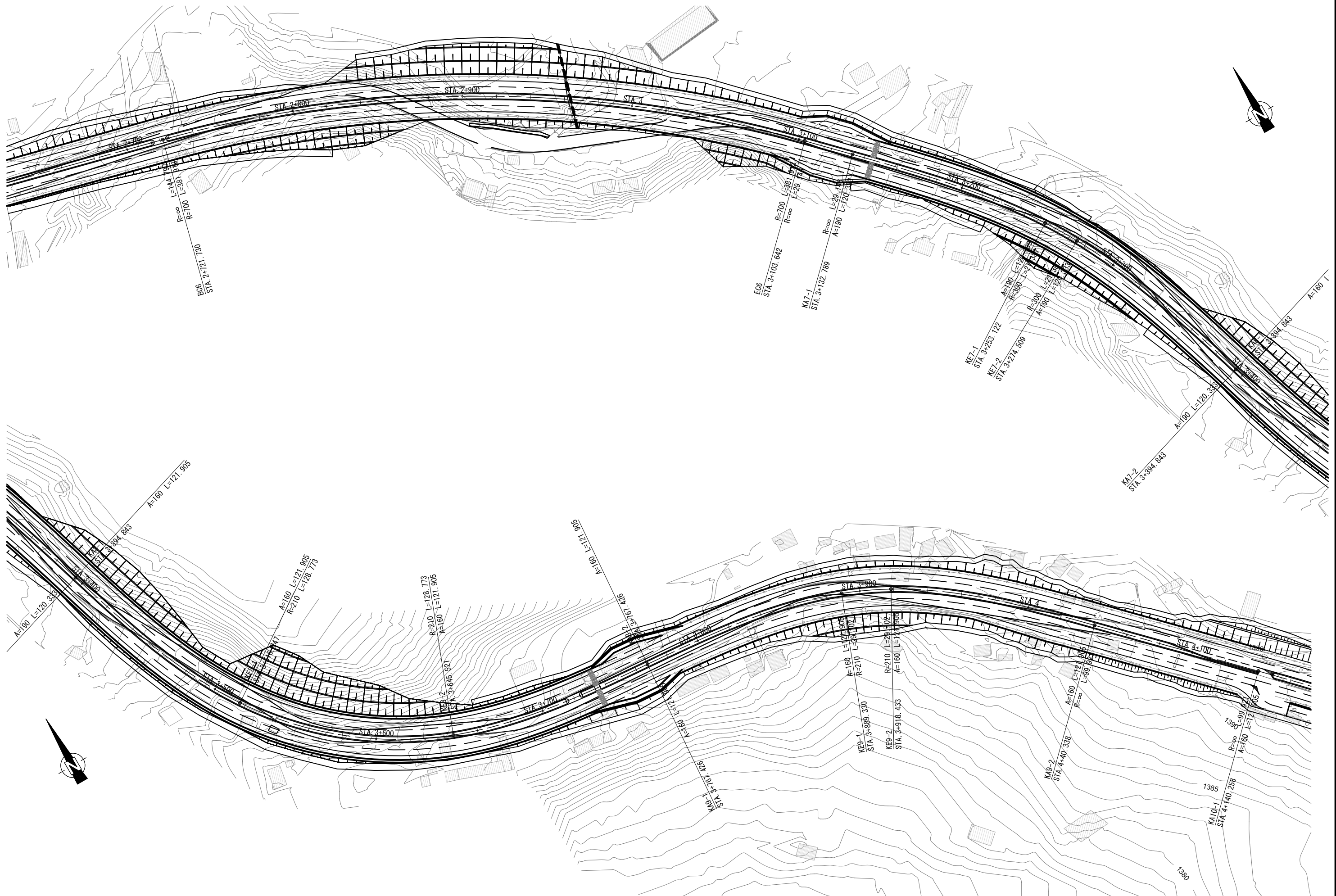
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Department of Roads Ministry of Physical Infrastructure and Transport Federal Democratic Republic of Nepal				Submission Date March, 2018	







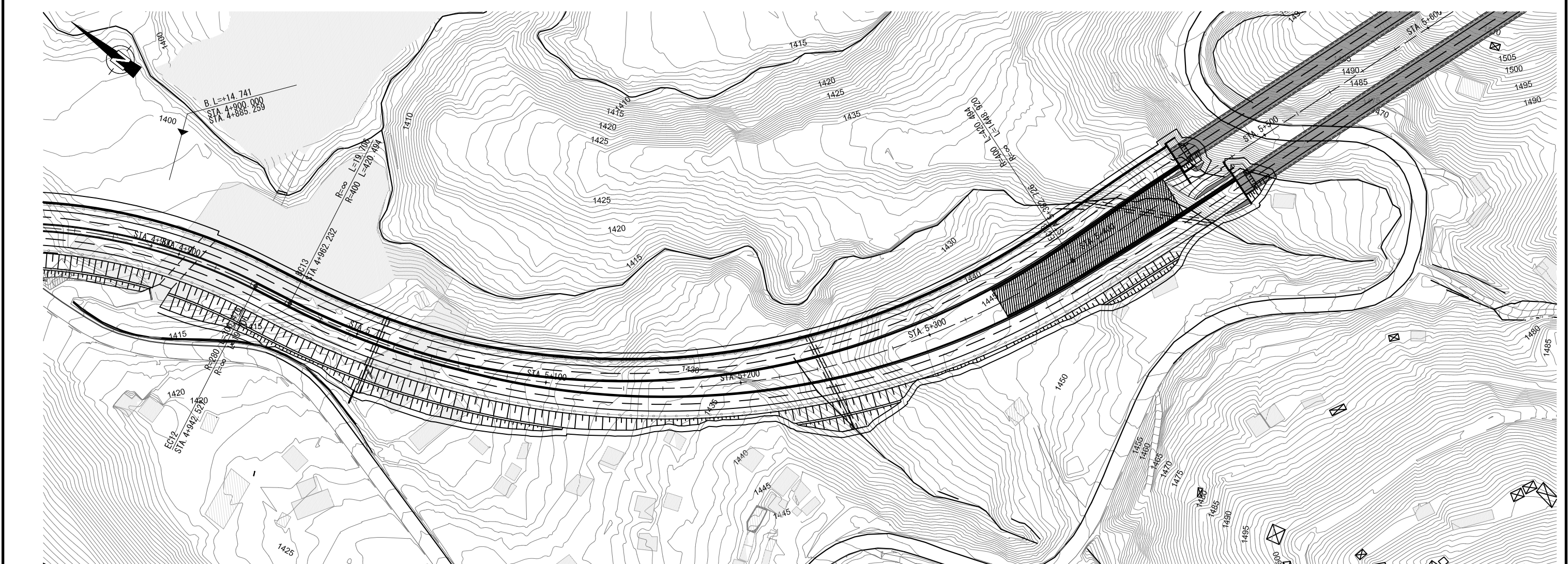
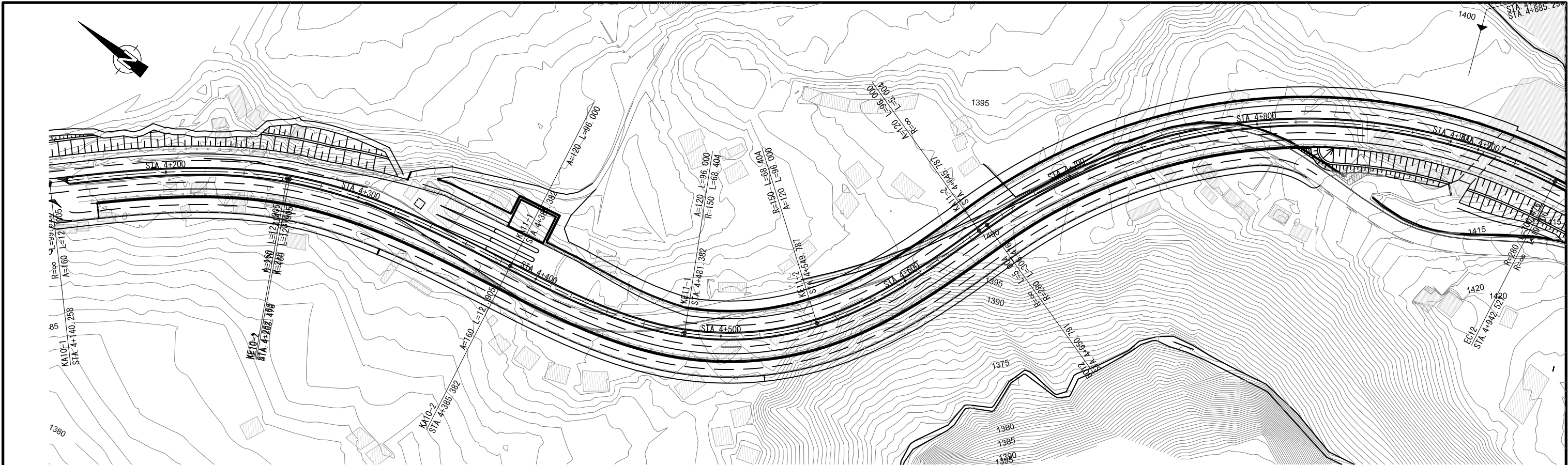
Clients:  Japan International Cooperation Agency	 Department of Roads Ministry of Physical Infrastructure and Transport Federal Democratic Republic of Nepal	Consultants:  CTI Engineering International Co., Ltd.  CTI Engineering Co., Ltd.	Project Title: Additional Study of the Suryabinayak-Dhulikhel Road Improvement Project	Sheet Contents: PLAN	Scale: (A1size) 1:1000 Submission Date March, 2018 SHT. NO. PL-01
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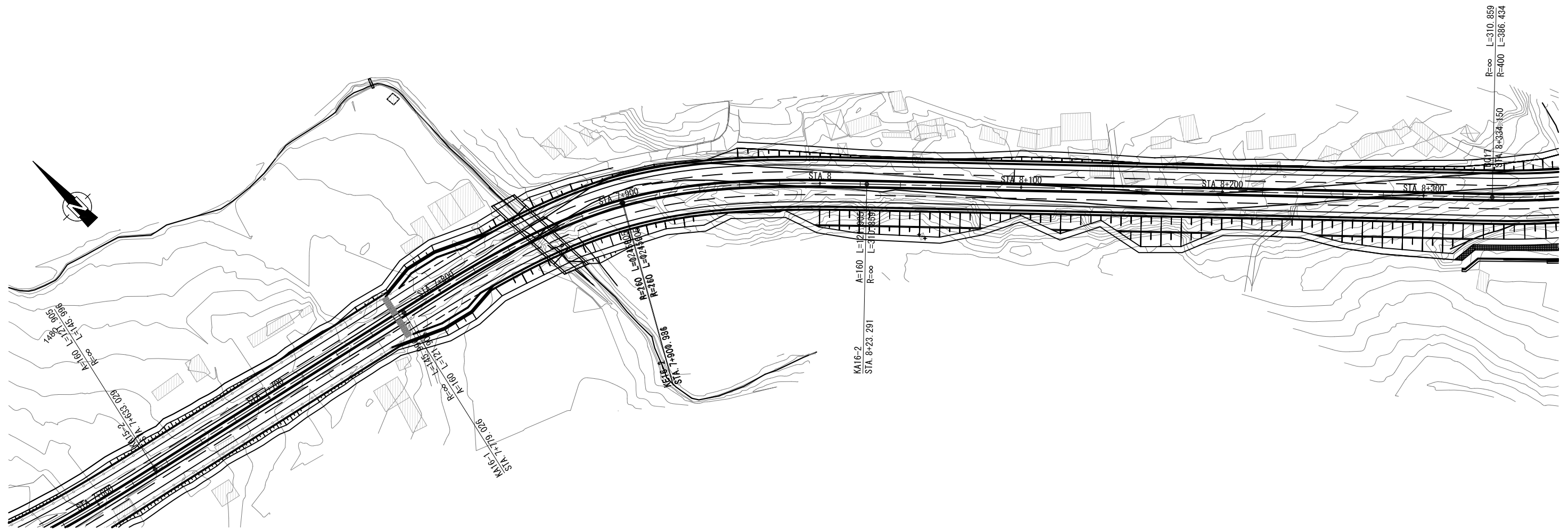
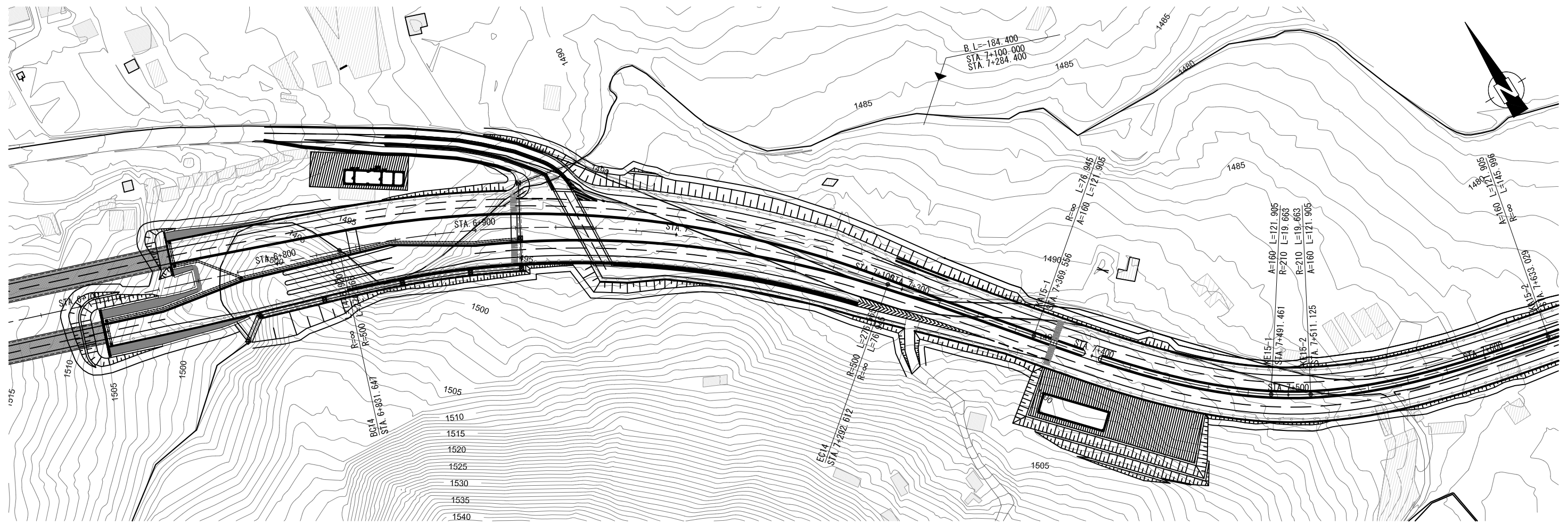
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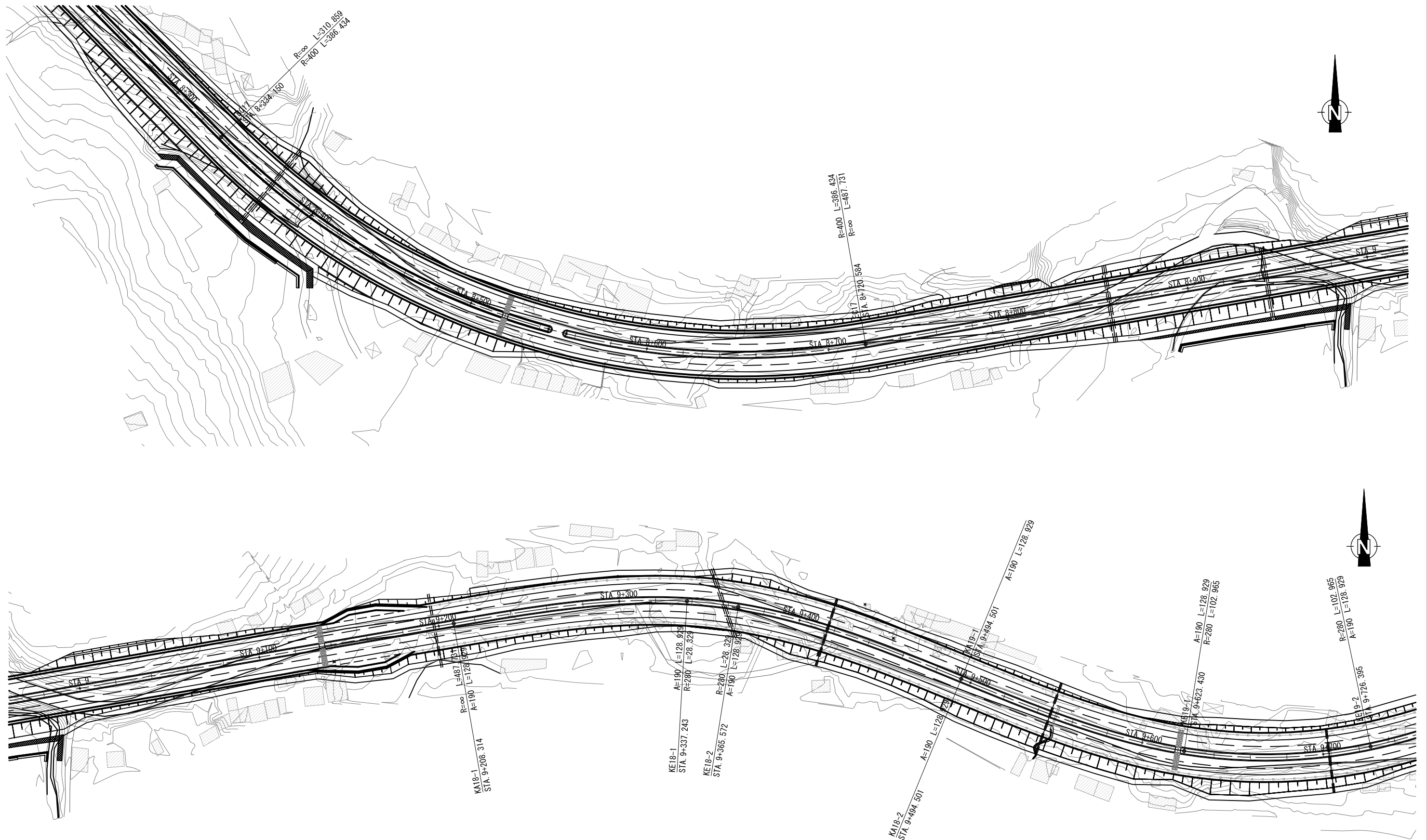
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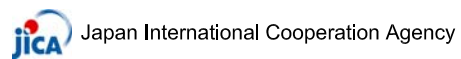
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Clients:



Department of Roads
Ministry of Physical Infrastructure and Transport
Federal Democratic Republic of Nepal

Consultants:



Project Title:

Additional Study of the Suryabinayak-Dhulikhel Road
Improvement Project

Sheet Contents:

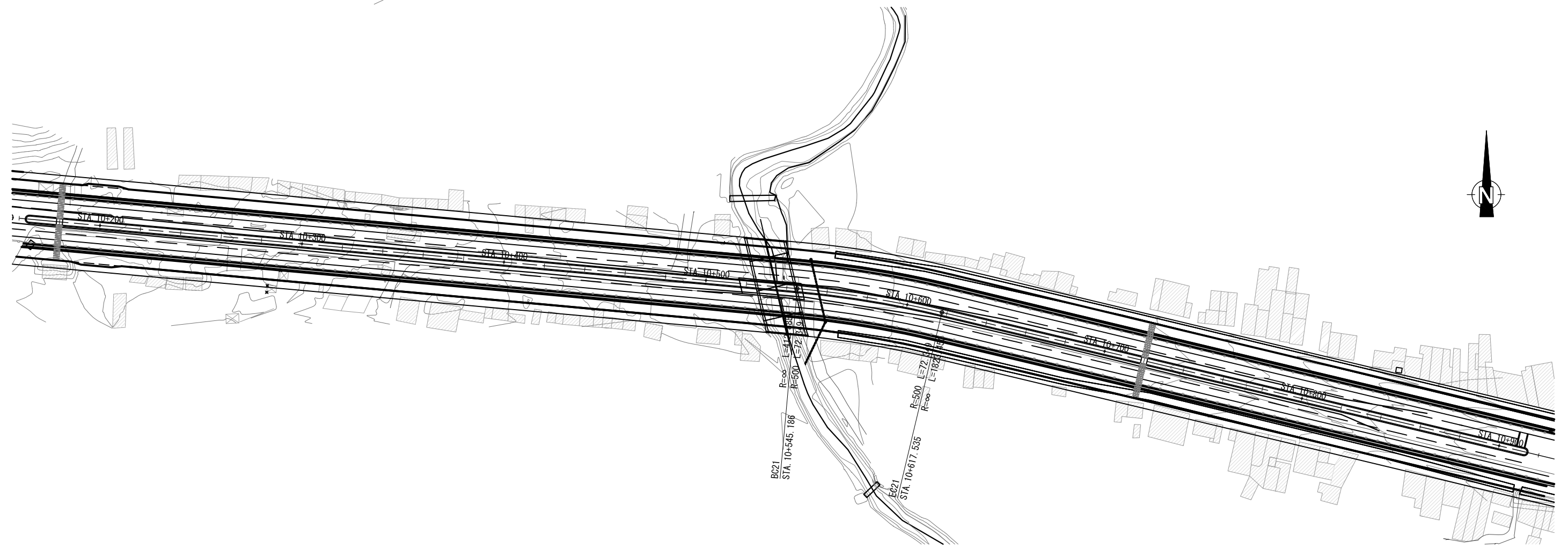
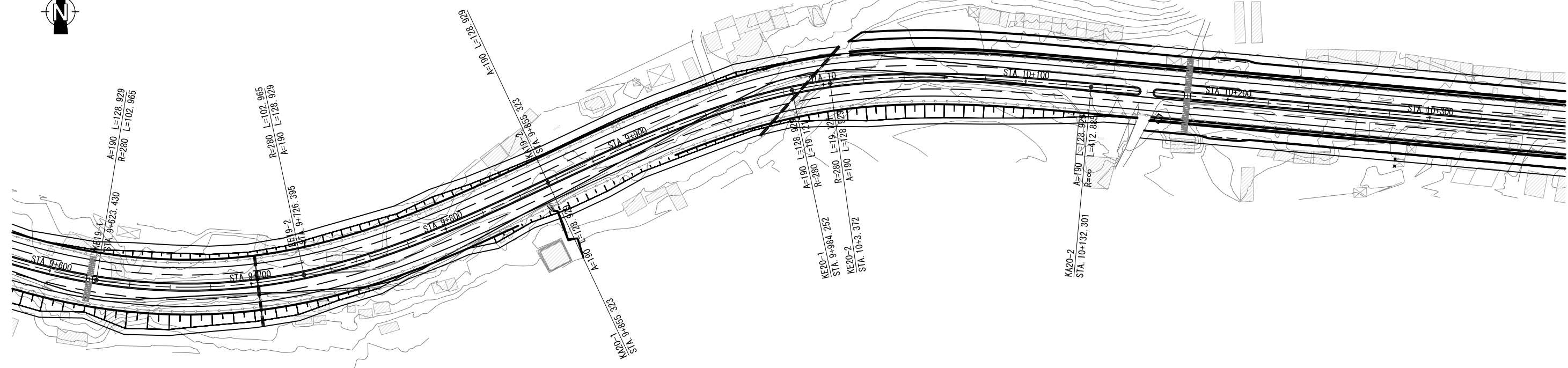
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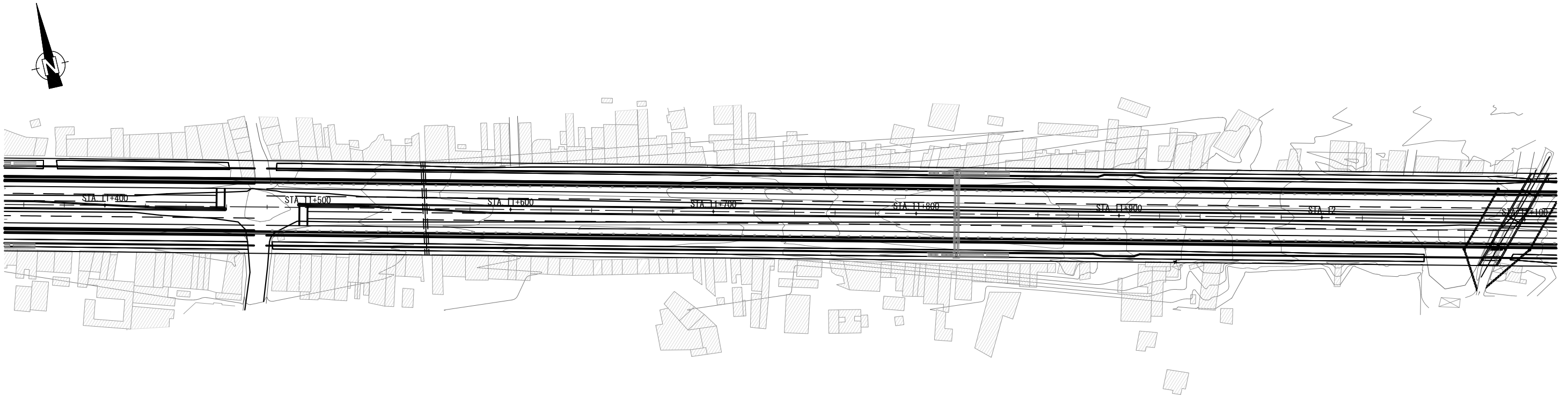
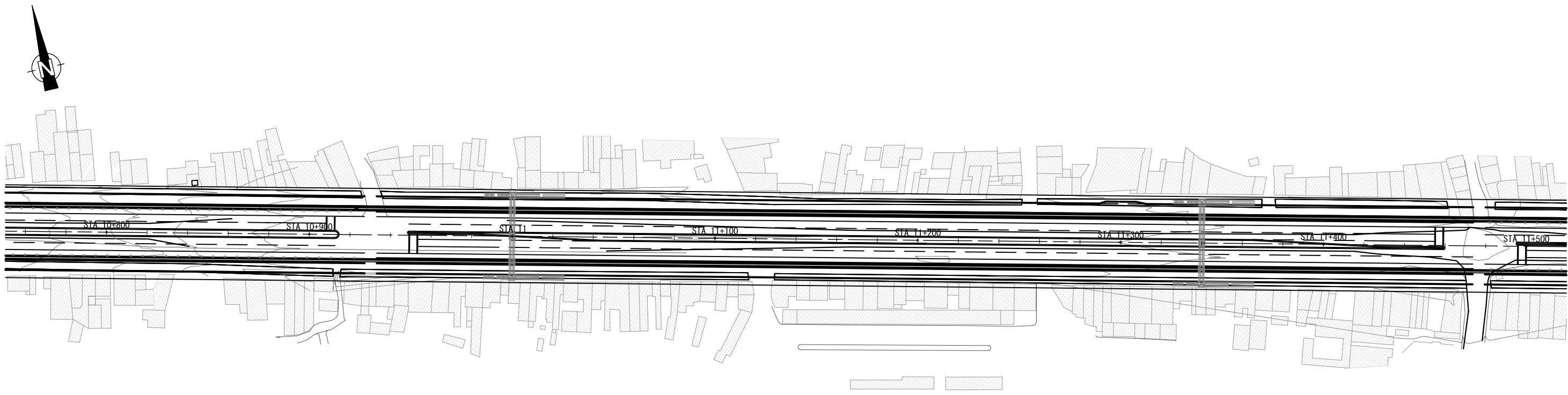
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Submission Date
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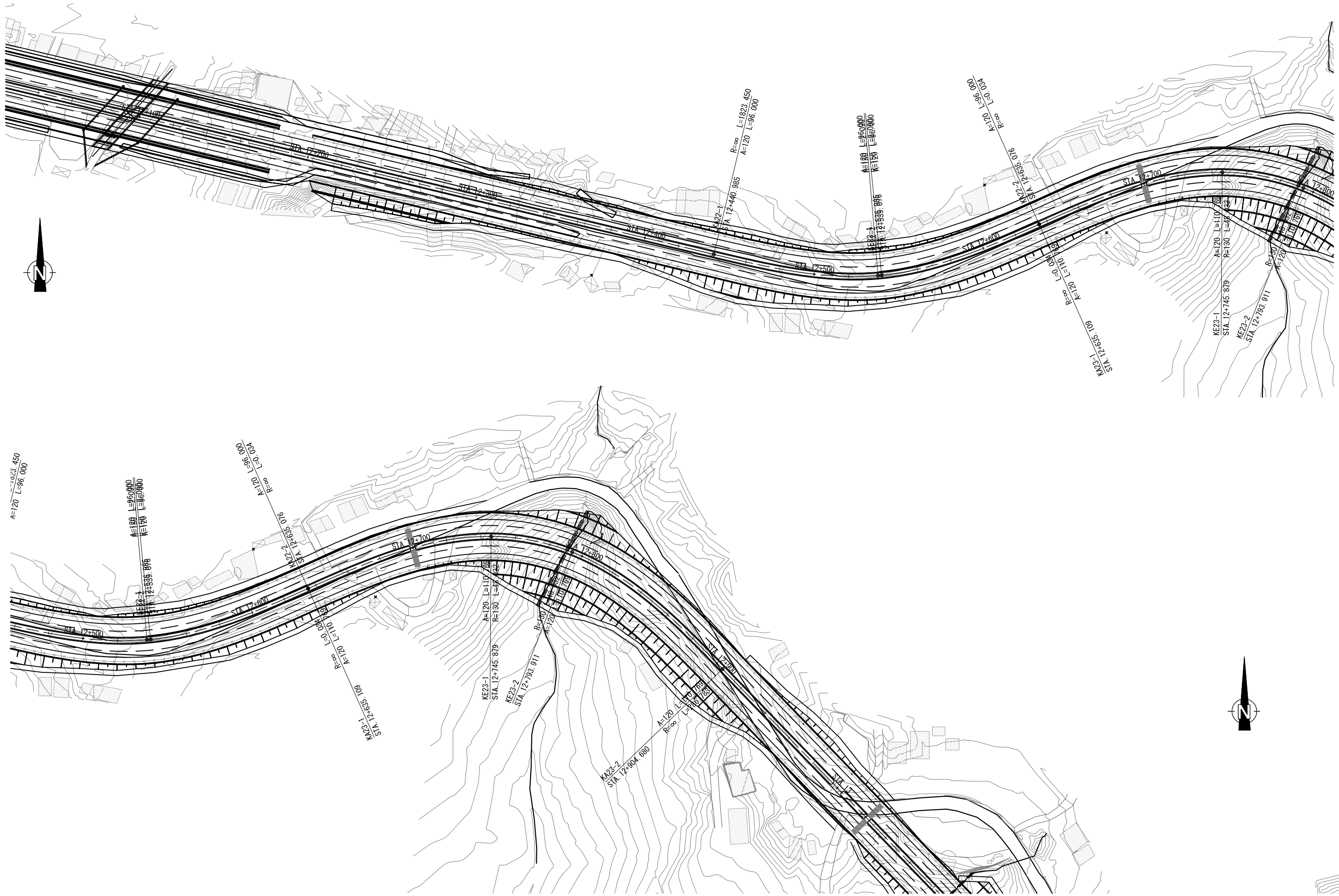
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Clients:  Japan International Cooperation Agency	 Department of Roads Ministry of Physical Infrastructure and Transport Federal Democratic Republic of Nepal	Consultants:  CTI Engineering International Co., Ltd.  CTI Engineering Co., Ltd.	Project Title: Additional Study of the Suryabinayak-Dhulikhel Road Improvement Project	Sheet Contents: PLAN	Scale: (A1size) 1:1000 Submission Date March, 2018 SHT. NO. PL-09
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Clients:
 Japan International Cooperation Agency

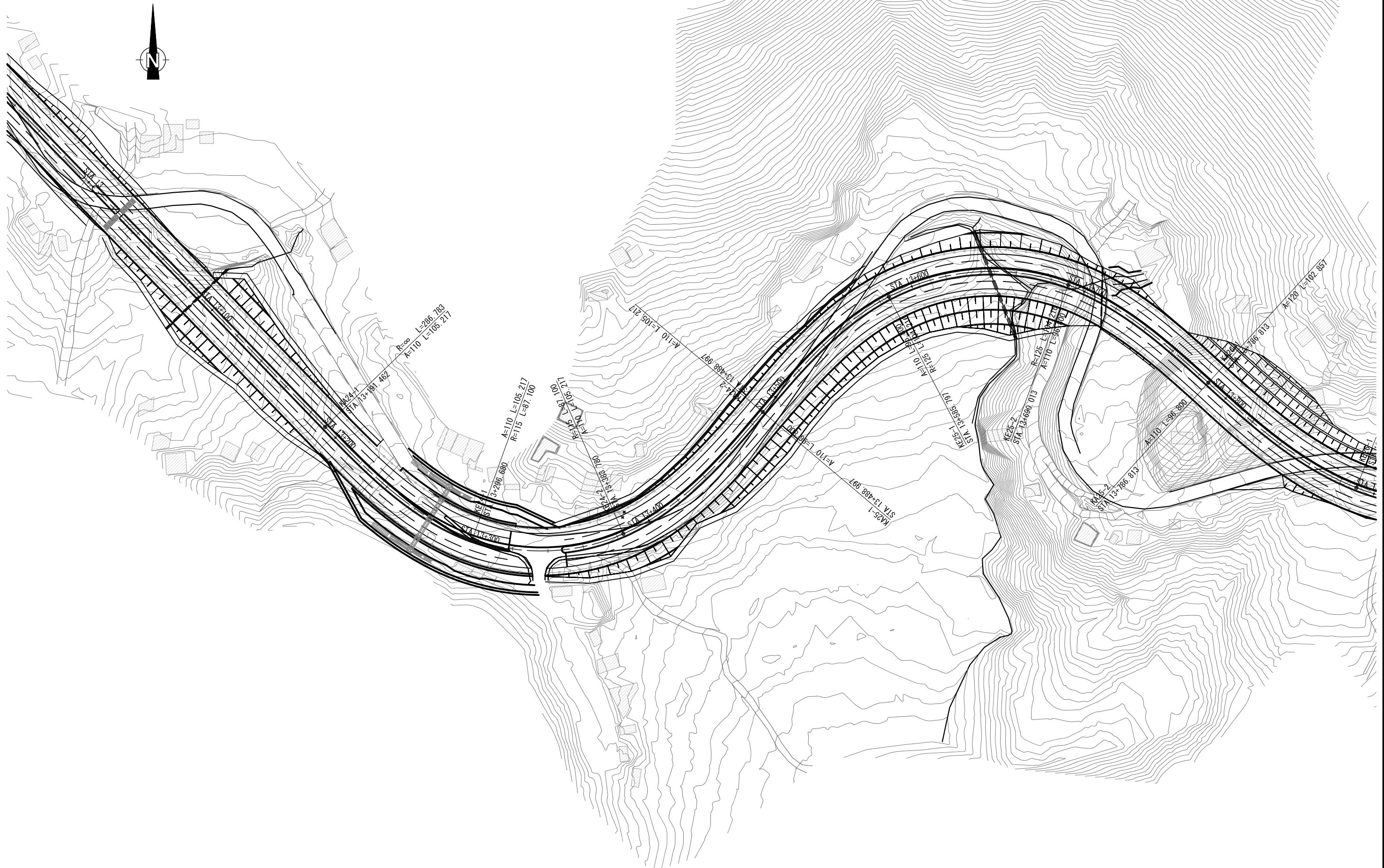
 Department of Roads
 Ministry of Physical Infrastructure and Transport
 Federal Democratic Republic of Nepal





Consultants:
 CTI Engineering International Co., Ltd.
 CTI Engineering Co., Ltd.

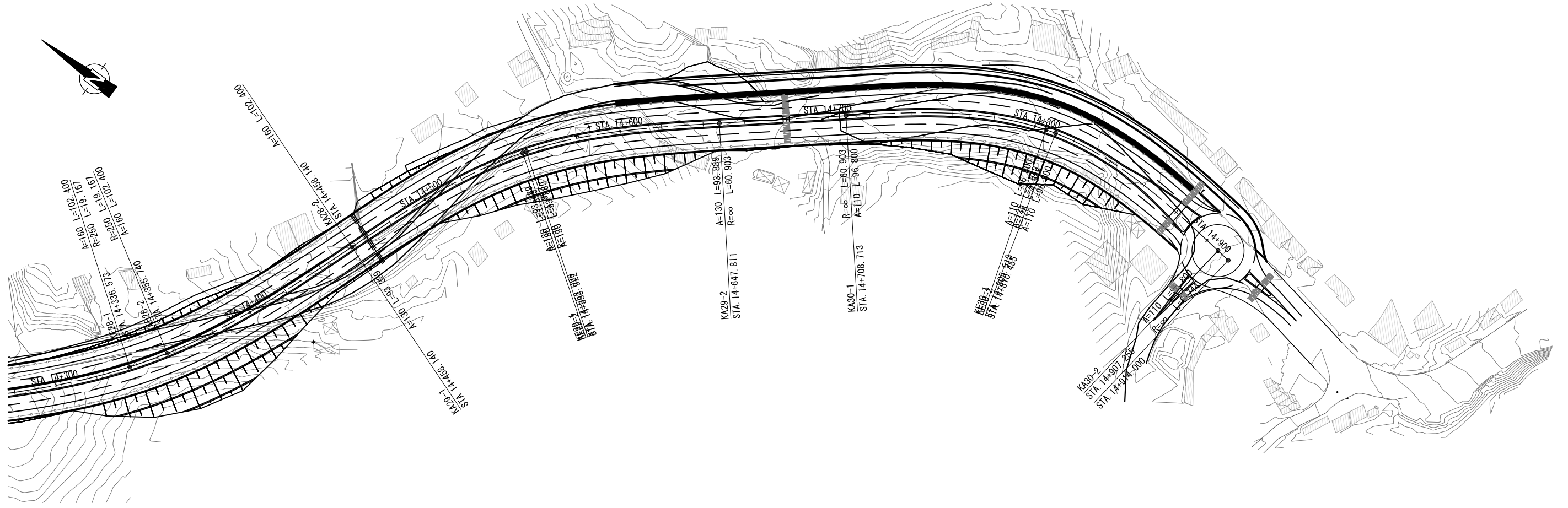
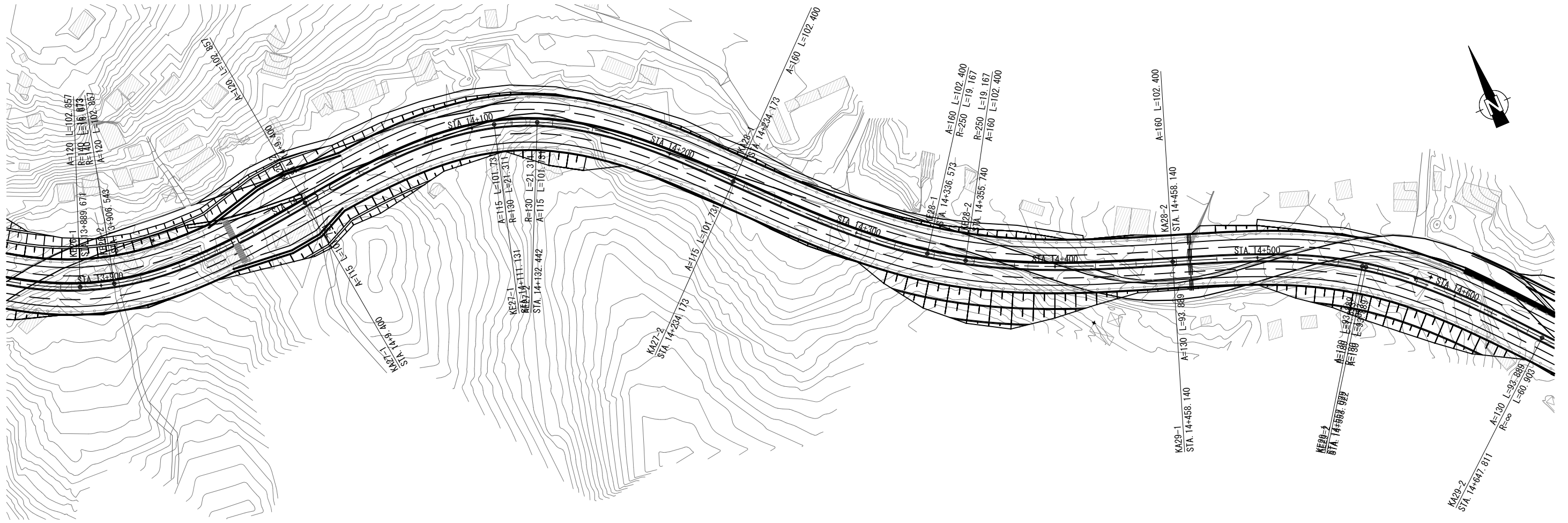
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 Additional Study of the Suryabinayak-Dhulikhel Road
 Improvement Project





Sheet Contents:
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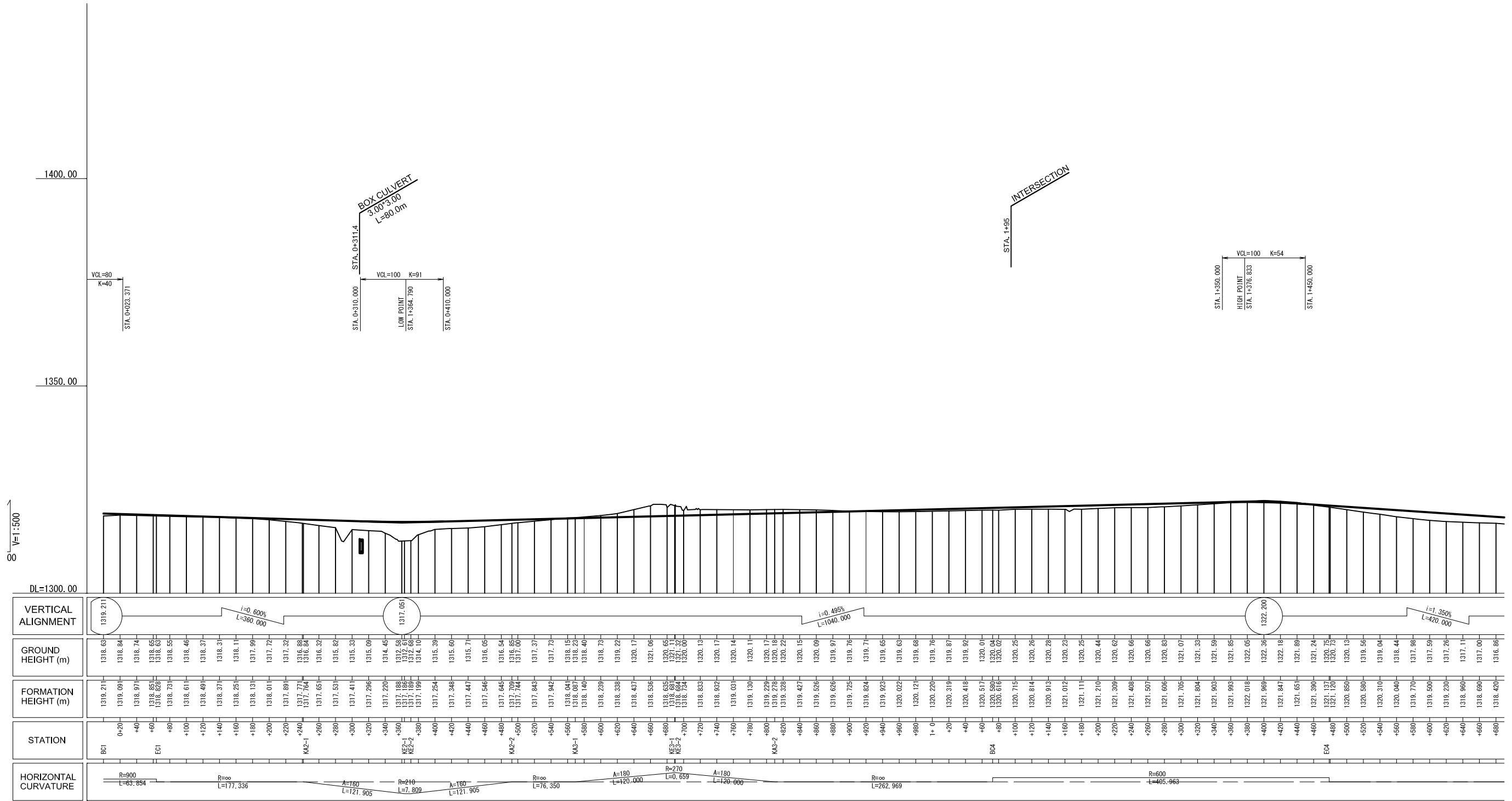
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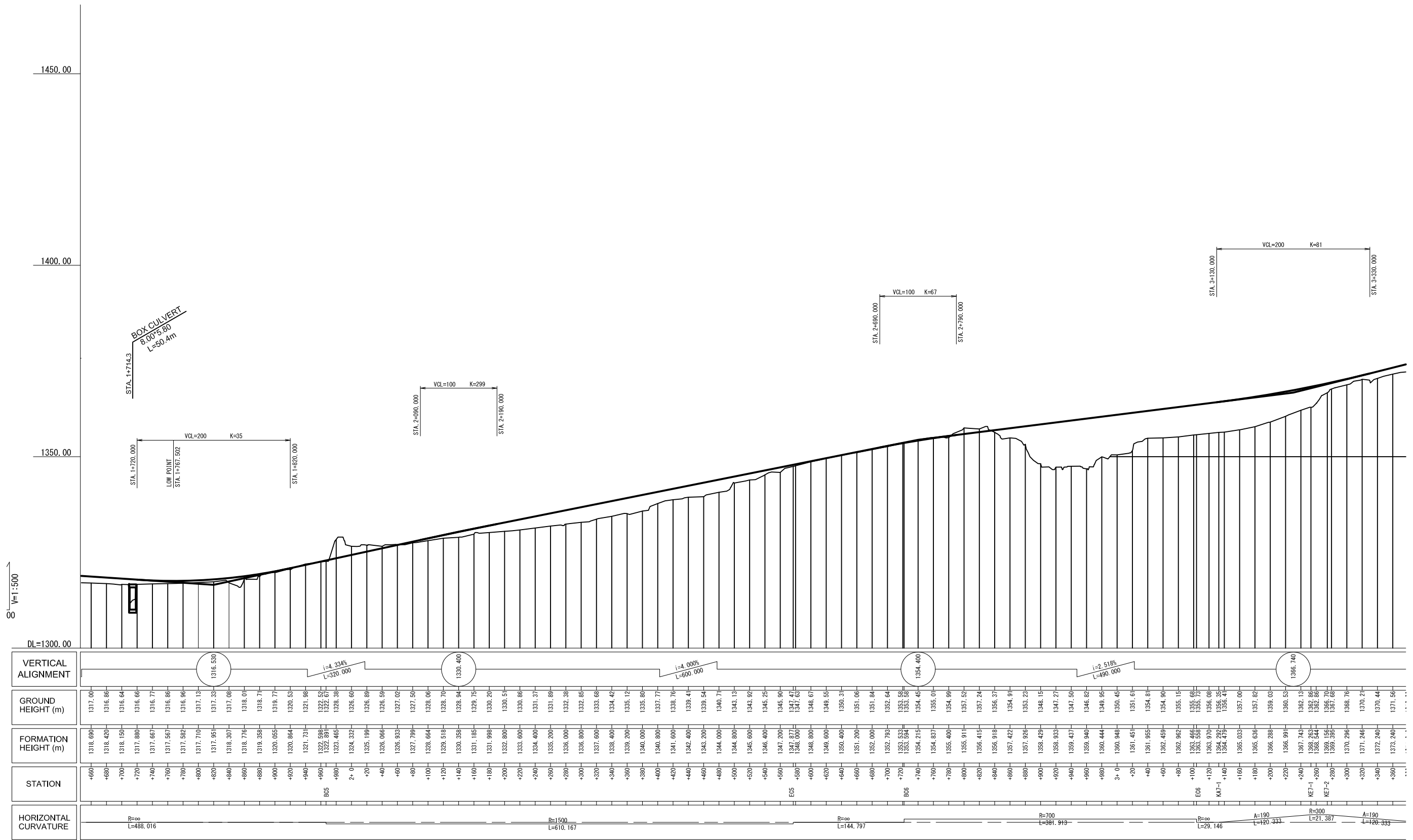


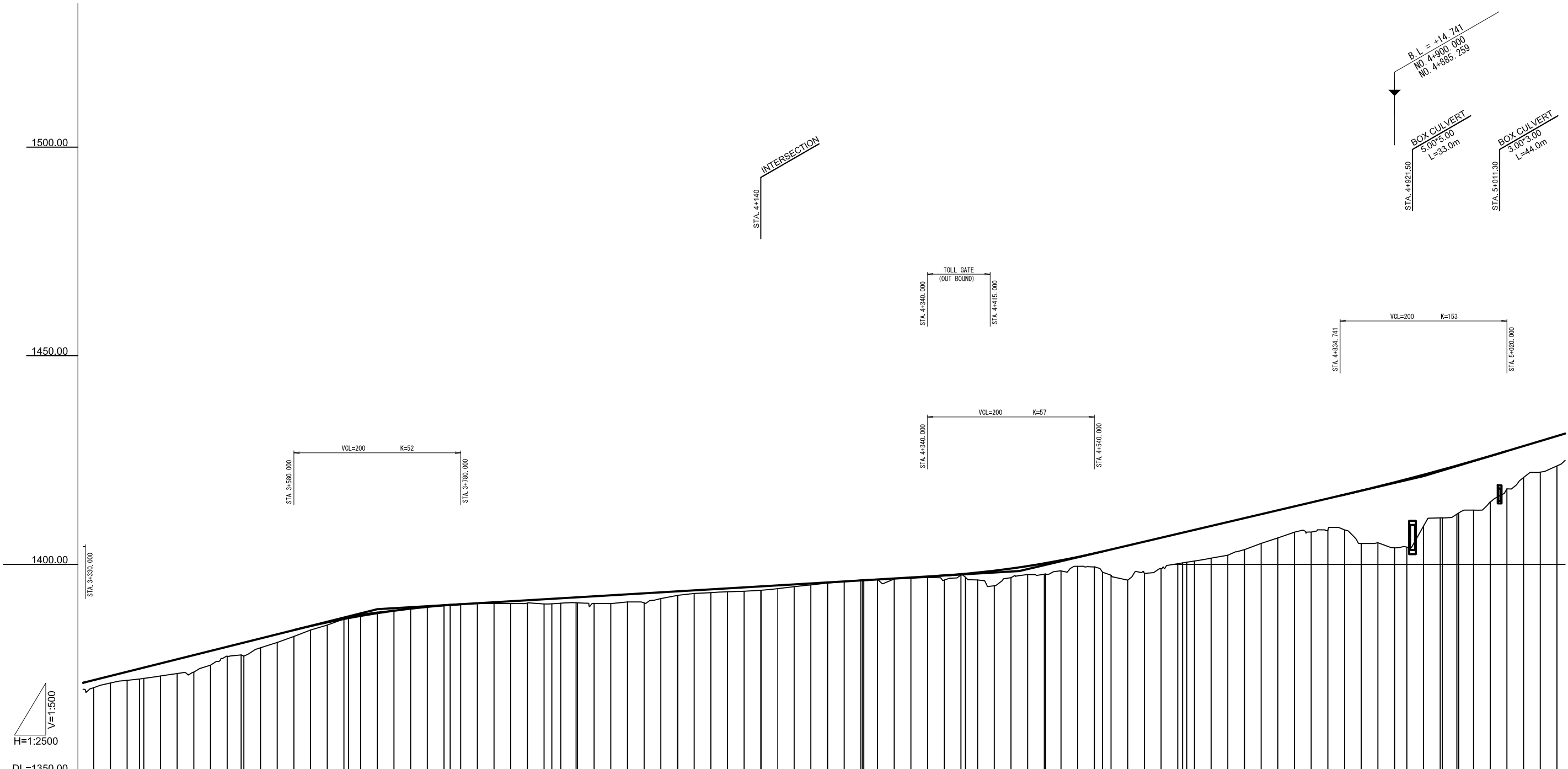
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<p>Clients:</p>  Japan International Cooperation Agency	 Department of Roads Ministry of Physical Infrastructure and Transport Federal Democratic Republic of Nepal	<p>Consultants:</p>  CTI Engineering International Co., Ltd.  CTI Engineering Co., Ltd.	<p>Project Title:</p> Additional Study of the Suryabinayak-Dhulikhel Road Improvement Project	<p>Sheet Contents:</p> PLAN	<p>Scale: (A1size) S=1:1000 Submission Date March, 2018</p> <p>SHT. NO. PL-12</p>
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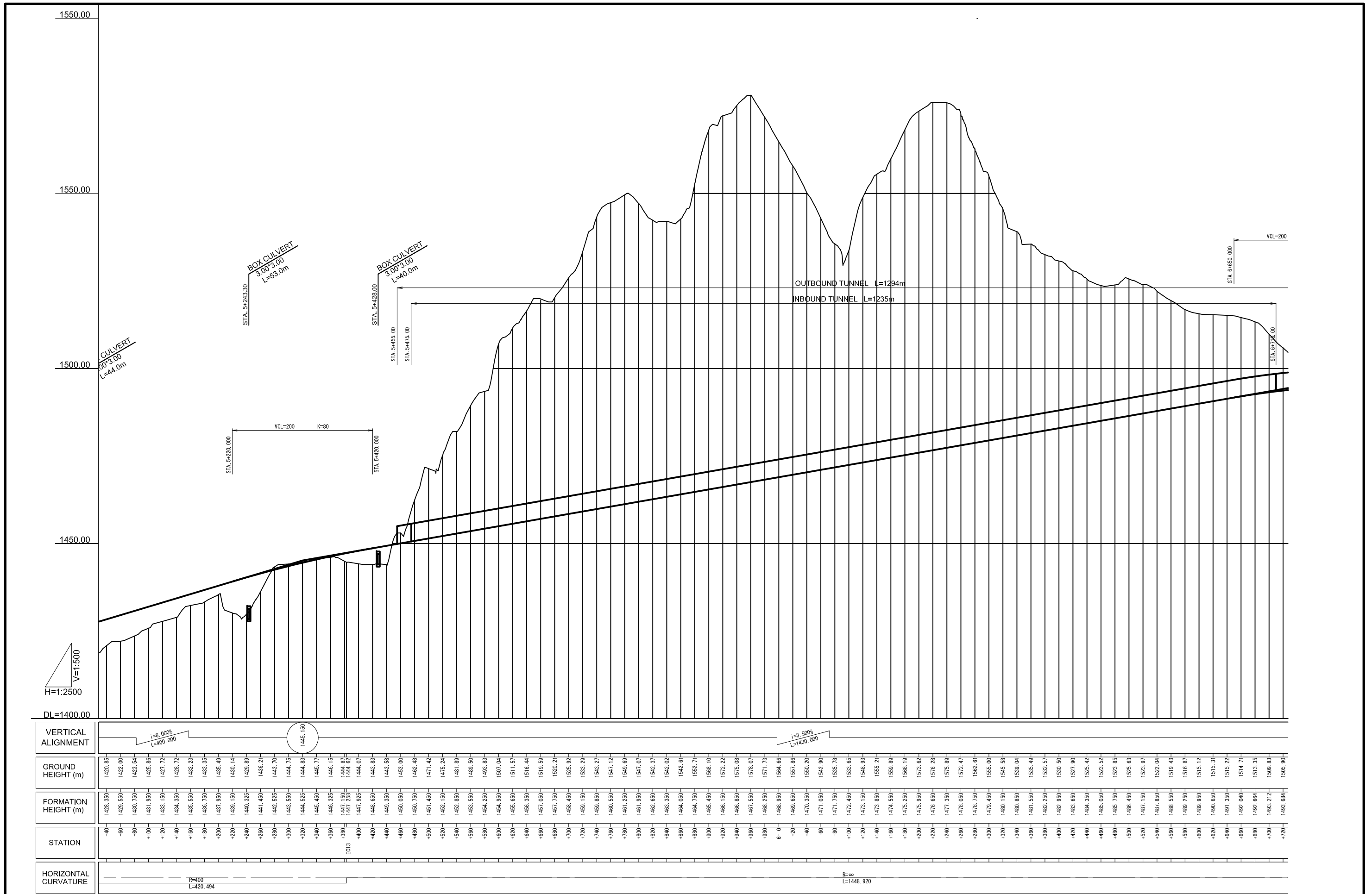


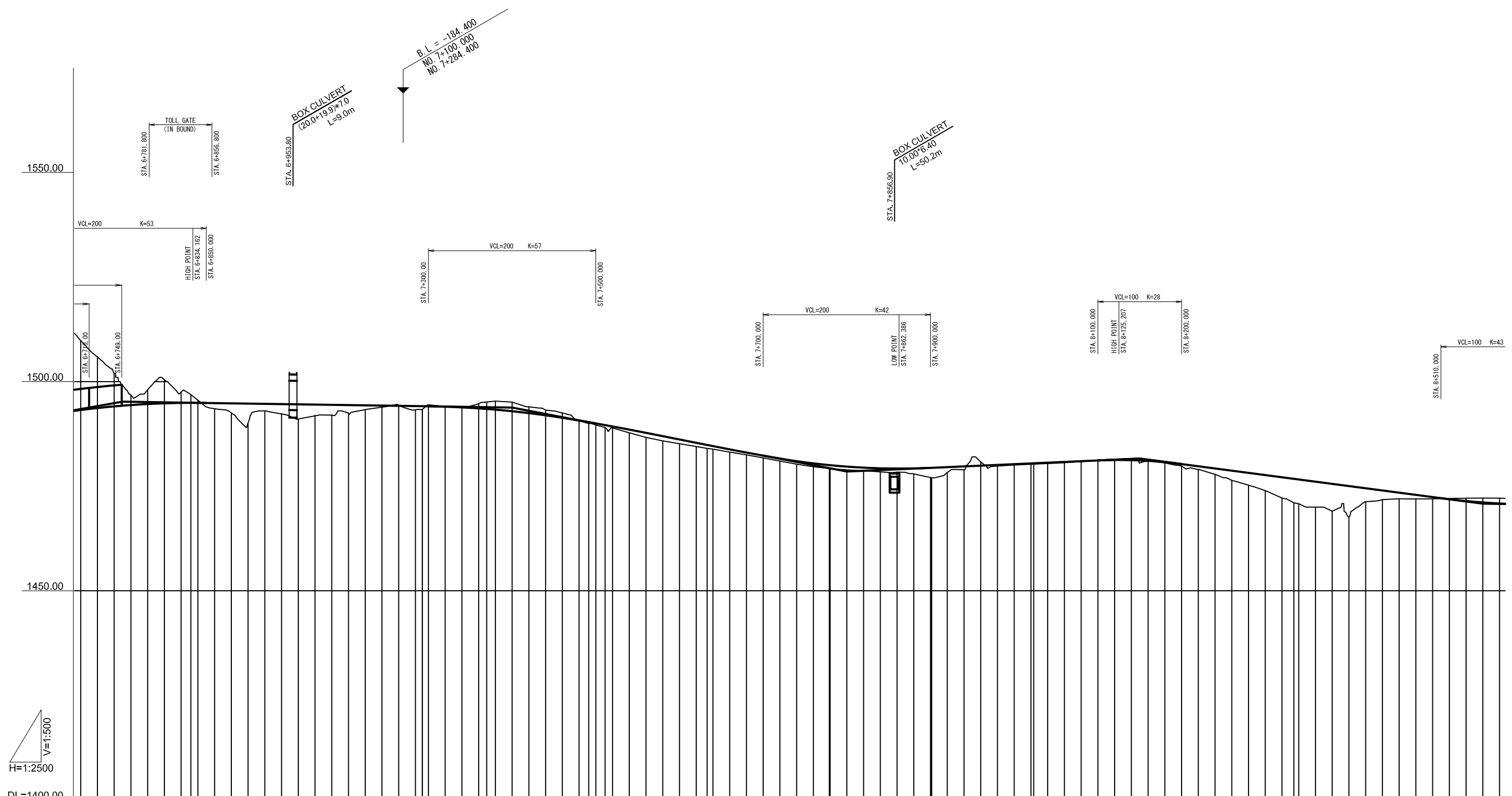




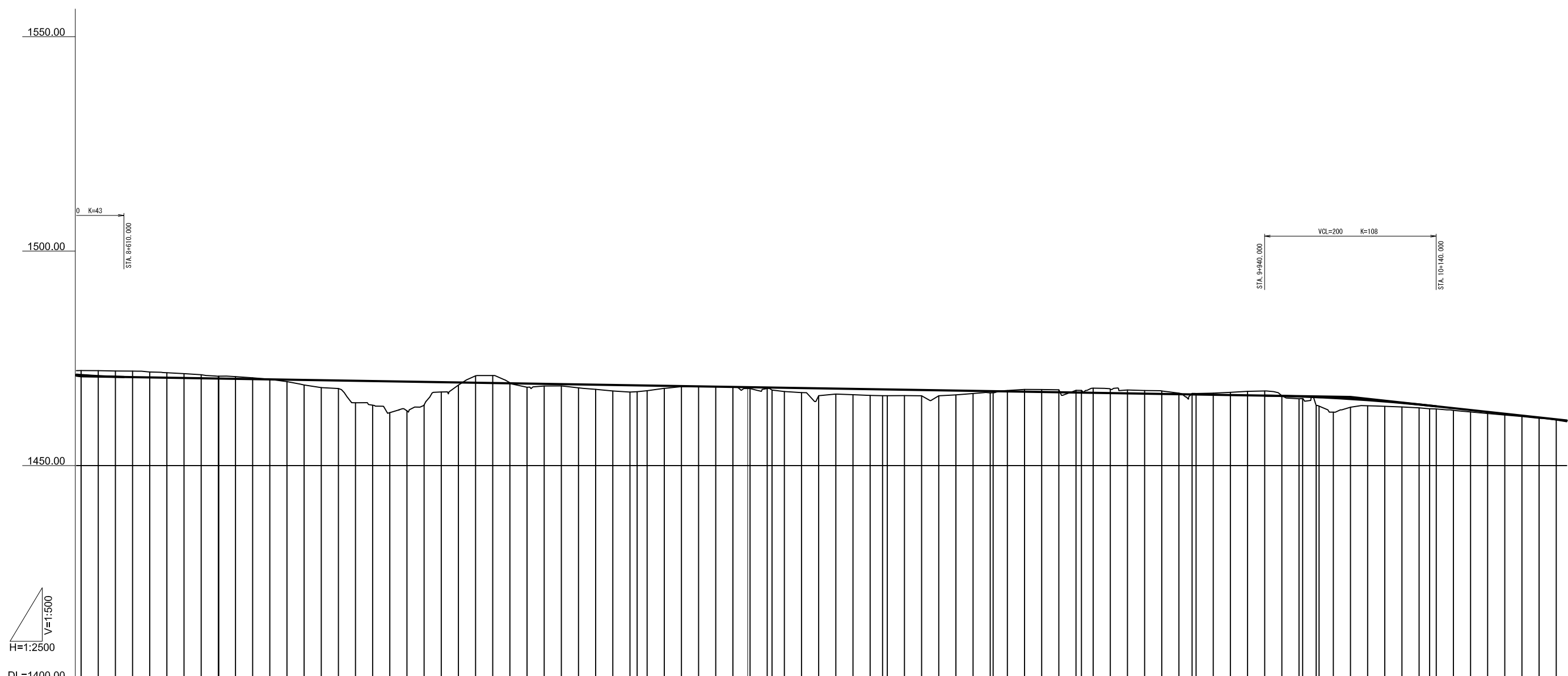
STATION	FORMATION HEIGHT (m)	GROUND HEIGHT (m)	VERTICAL ALIGNMENT
+340	1372.240	1370.44	
+360	1373.240	1371.56	
+380	1374.240	1372.20	
KAI-2	1374.982	1372.50	
KAI-1	1375.240	1372.86	
+400	1376.240	1373.24	
+420	1377.240	1373.82	
+440	1378.240	1374.16	
+460	1379.240	1375.82	
+480	1380.240	1377.96	
+500	1381.077	1378.28	
+520	1381.240	1378.00	
+540	1382.240	1380.01	
+560	1383.240	1381.27	
+580	1384.240	1382.72	
+600	1385.202	1384.25	
+620	1386.088	1385.43	
+640	1386.897	1386.89	
KEB-2	1387.107	1387.24	
+660	1387.630	1387.98	
+680	1388.287	1388.54	
+700	1388.868	1389.07	
+720	1389.373	1389.45	
+740	1389.802	1389.88	
+760	1390.154	1390.21	
KAI-2	1390.268	1390.31	
KAI-1	1390.430	1390.43	
+800	1390.668	1390.61	
+820	1390.905	1390.63	
+840	1391.143	1390.59	
+860	1391.381	1390.70	
+880	1391.619	1390.50	
KEP-1	1391.739	1390.51	
+900	1391.857	1390.67	
+920	1392.035	1390.76	
+940	1392.333	1390.63	
+960	1392.571	1390.56	
+980	1392.809	1390.98	
+0	1393.047	1390.76	
+20	1393.285	1391.78	
+40	1393.523	1392.55	
+60	1393.761	1393.01	
+80	1393.998	1393.21	
+100	1394.236	1393.42	
+120	1394.474	1393.54	
+140	1394.712	1393.78	
KAI-1	1394.715	1393.78	
+160	1394.950	1394.16	
+180	1395.188	1394.65	
+200	1395.426	1395.05	
+220	1395.664	1395.51	
+240	1395.902	1395.80	
KEI-2	1396.140	1396.25	
KEI-1	1396.181	1396.20	
+280	1396.378	1396.40	
+300	1396.616	1396.48	
+320	1396.854	1396.64	
+340	1397.091	1396.85	
+360	1397.328	1396.25	
+380	1397.565	1397.15	
KAI-2	1397.741	1396.92	
KAI-1	1398.024	1396.26	
+420	1398.472	1394.86	
+440	1398.990	1396.79	
+460	1399.578	1397.55	
+480	1400.237	1397.64	
KEI-1	1400.285	1397.69	
+500	1400.966	1398.41	
+520	1401.764	1399.53	
+540	1402.633	1399.41	
+560	1403.083	1398.12	
+580	1403.563	1397.40	
+600	1404.501	1396.22	
+620	1405.440	1397.82	
+640	1406.378	1398.97	
KAI-2	1407.317	1400.14	
KAI-1	1407.589	1400.35	
BO12	1407.824	1400.50	
+680	1408.258	1400.76	
+700	1409.194	1401.40	
+720	1410.133	1402.18	
+740	1411.071	1403.53	
+760	1412.010	1405.01	
+780	1412.949	1406.33	
+800	1413.888	1407.70	
+820	1414.826	1407.73	
+840	1415.765	1408.22	
+860	1416.705	1408.26	
+880	1417.663	1405.00	
+900	1418.648	1405.19	
+920	1419.659	1403.94	
+940	1420.420	1404.13	
+960	1421.477	1410.93	
ECI2	1422.559	1411.15	
+980	1422.688	1411.14	
BO13	1423.668	1411.98	
+990	1423.793	1412.31	
+0	1424.802	1412.95	
+20	1425.963	1415.00	
+40	1427.150	1418.11	
+60	1428.350	1420.85	
+80	1429.550	1422.00	
+90	1430.750	1423.54	

Clients: Japan International Cooperation Agency	Consultants: CTI Engineering International Co., Ltd. CTI Engineering Co., Ltd.	Project Title: Additional Study of the Suryabinayak-Dhulikhel Road Improvement Project	Sheet Contents: PROFILE	Scale: (A1size) AS SHOWN Submission Date March, 2018	SHT. NO. PF-03
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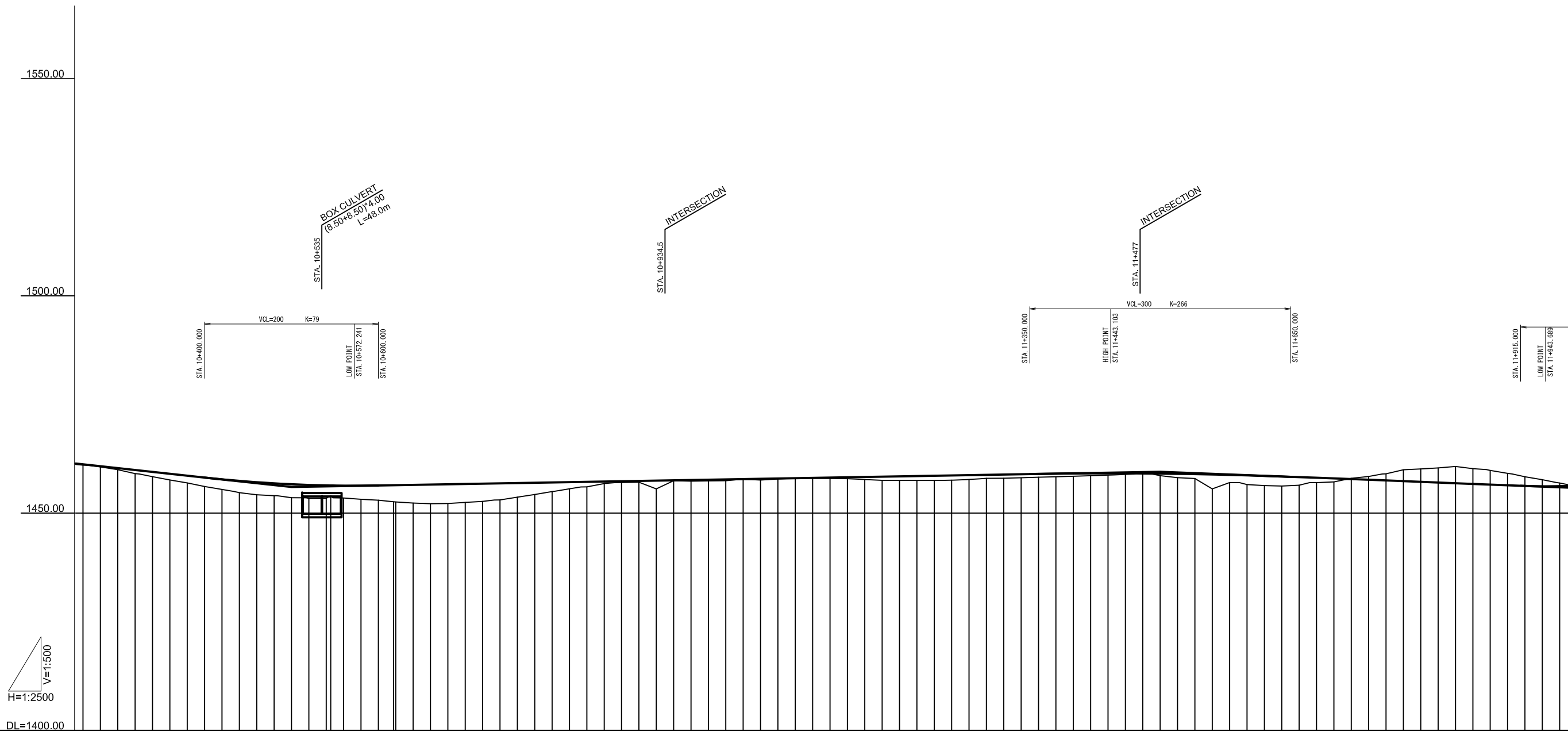




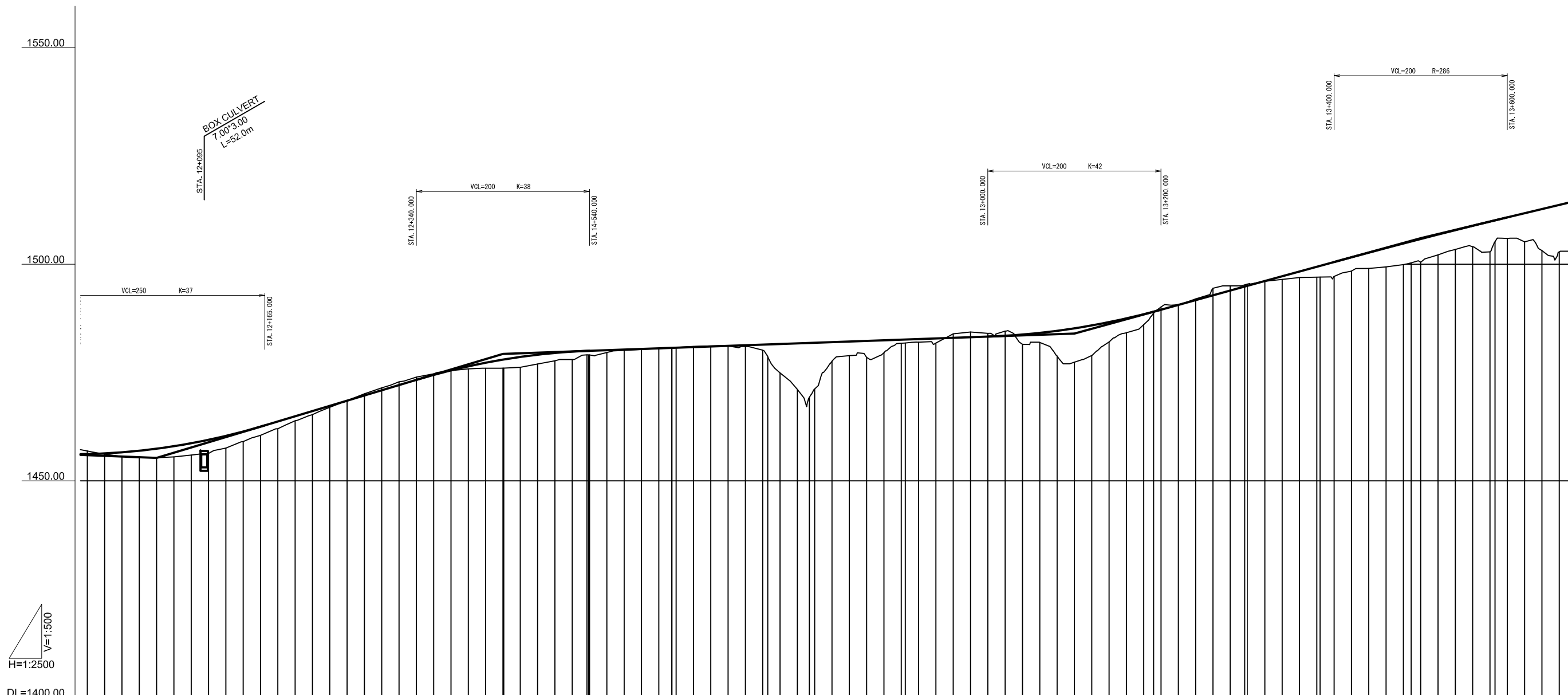
VERTICAL ALIGNMENT	GROUND HEIGHT (m)	FORMATION HEIGHT (m)	STATION	HORIZONTAL CURVATURE
1495.200	1509.83	1493.212	+700	R=500
	1505.90	1493.684	+720	L=276.566
	1502.00	1494.080	+740	
	1496.70	1494.400	+760	
	1498.05	1494.644	+780	
	1500.44	1494.812	+800	
	1497.46	1494.904	+820	
	1495.88	1494.922	+840	
	1495.57	1494.919	+860	
	1493.52	1494.869	+880	
	1492.58	1494.809	+900	
	1490.10	1494.749	+920	
	1493.00	1494.689	+940	
	1492.36	1494.629	+960	
	1491.06	1494.569	+980	
	1491.95	1494.508	+1000	
	1492.01	1494.448	+1020	
	1492.40	1494.388	+1040	
	1493.50	1494.328	+1060	
	1493.91	1494.268	+1080	
	1494.61	1494.208	+1100	
	1493.27	1494.148	+1120	
	1494.45	1494.123	+1140	
	1494.45	1494.101	+1160	
	1494.14	1494.000	+1180	
	1493.91	1493.839	+1200	
	1494.70	1493.603	+1220	
	1495.13	1493.466	+1240	
	1495.33	1493.296	+1260	
	1495.11	1493.019	+1280	
	1493.97	1492.471	+1300	
	1493.19	1491.853	+1320	
	1492.50	1491.364	+1340	
	1490.65	1490.705	+1360	
	1489.97	1490.296	+1380	
	1488.62	1489.975	+1400	
	1488.03	1489.549	+1420	
	1488.32	1489.219	+1440	
	1487.77	1488.445	+1460	
	1486.67	1487.680	+1480	
	1485.83	1486.915	+1500	
	1485.15	1486.150	+1520	
	1484.48	1485.385	+1540	
	1484.04	1484.687	+1560	
	1483.86	1484.620	+1580	
	1483.15	1483.855	+1600	
	1482.49	1483.090	+1620	
	1481.76	1482.325	+1640	
	1481.00	1481.607	+1660	
	1480.28	1480.893	+1680	
	1479.65	1480.454	+1700	
	1479.23	1480.037	+1720	
	1479.21	1480.019	+1740	
	1478.90	1479.678	+1760	
	1478.67	1479.431	+1780	
	1478.42	1479.278	+1800	
	1478.35	1479.219	+1820	
	1477.94	1479.256	+1840	
	1477.07	1479.382	+1860	
	1477.01	1479.386	+1880	
	1478.29	1479.563	+1900	
	1478.03	1479.740	+1920	
	1480.78	1479.917	+1940	
	1479.82	1480.084	+1960	
	1480.05	1480.271	+1980	
	1480.27	1480.478	+2000	
	1480.42	1480.656	+2020	
	1480.60	1480.803	+2040	
	1480.87	1480.980	+2060	
	1481.09	1481.157	+2080	
	1481.34	1481.264	+2100	
	1481.28	1481.230	+2120	
	1481.00	1481.056	+2140	
	1480.57	1480.742	+2160	
	1479.84	1480.286	+2180	
	1479.00	1479.760	+2200	
	1477.83	1479.235	+2220	
	1476.39	1478.709	+2240	
	1475.22	1478.184	+2260	
	1473.95	1477.659	+2280	
	1472.18	1477.132	+2300	
	1471.01	1476.607	+2320	
	1470.80	1476.607	+2340	
	1470.01	1476.081	+2360	
	1469.03	1475.555	+2380	
	1467.59	1475.030	+2400	
	1467.29	1474.504	+2420	
	1471.78	1473.979	+2440	
	1472.00	1473.453	+2460	
	1471.94	1472.927	+2480	
	1471.99	1472.402	+2500	
	1472.06	1471.888	+2520	
	1472.11	1471.455	+2540	
	1472.15	1471.113	+2560	
	1472.13	1470.864	+2580	



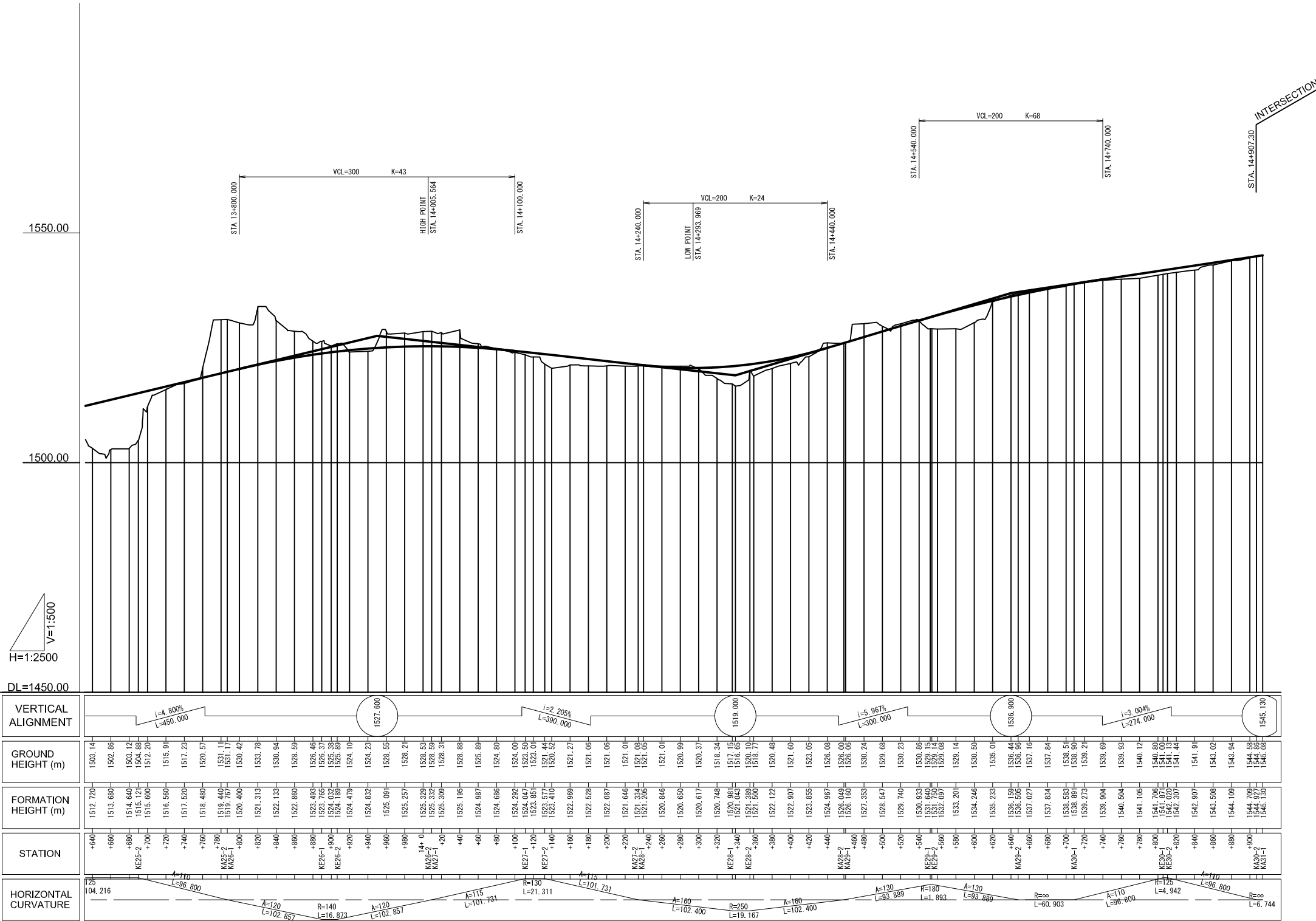
STATION	FORMATION HEIGHT (m)	GROUND HEIGHT (m)	VERTICAL ALIGNMENT
+580	1471.13	1472.15	1470.895
+580	1470.864	1472.13	
+600	1470.706	1472.05	
+620	1470.629	1472.04	
+640	1470.564	1471.92	
+660	1470.498	1471.65	
+680	1470.433	1471.45	
+700	1470.368	1471.18	
+720	1470.302	1470.81	
+740	1470.237	1470.73	
+760	1470.172	1470.46	
+780	1470.106	1470.12	
+800	1470.041	1469.57	
+820	1469.976	1468.78	
+840	1469.910	1468.17	
+860	1469.845	1467.97	
+880	1469.780	1468.05	
+900	1469.714	1468.07	
+920	1469.649	1468.34	
+940	1469.584	1468.78	
+960	1469.518	1468.13	
+980	1469.453	1467.15	
+1000	1469.388	1468.77	
+1020	1469.322	1470.93	
+1040	1469.257	1471.00	
+1060	1469.192	1469.33	
+1080	1469.126	1468.76	
+1100	1469.061	1468.56	
+1120	1468.995	1468.57	
+1140	1468.930	1468.12	
+1160	1468.865	1467.77	
+1180	1468.800	1467.39	
+1200	1468.734	1467.14	
+1220	1468.669	1467.22	
+1240	1468.604	1467.46	
+1260	1468.538	1468.00	
+1280	1468.473	1468.41	
+1300	1468.408	1468.45	
+1320	1468.342	1468.44	
+1340	1468.277	1468.31	
+1360	1468.211	1468.05	
+1380	1468.146	1467.97	
+1400	1468.081	1467.28	
+1420	1468.015	1467.00	
+1440	1467.950	1466.30	
+1460	1467.885	1466.68	
+1480	1467.819	1466.53	
+1500	1467.754	1466.36	
+1520	1467.689	1466.30	
+1540	1467.623	1466.32	
+1560	1467.558	1466.27	
+1580	1467.493	1466.28	
+1600	1467.427	1466.48	
+1620	1467.362	1466.80	
+1640	1467.297	1467.05	
+1660	1467.231	1467.35	
+1680	1467.166	1467.75	
+1700	1467.101	1467.73	
+1720	1467.035	1467.67	
+1740	1466.970	1467.52	
+1760	1466.905	1468.04	
+1780	1466.839	1468.81	
+1800	1466.774	1467.92	
+1820	1466.709	1467.51	
+1840	1466.643	1467.40	
+1860	1466.578	1466.90	
+1880	1466.513	1466.63	
+1900	1466.447	1466.33	
+1920	1466.382	1465.55	
+1940	1466.317	1465.82	
+1960	1466.251	1465.65	
+1980	1466.186	1465.82	
+2000	1466.121	1465.65	
+2020	1466.055	1465.82	
+2040	1465.990	1465.65	
+2060	1465.925	1465.82	
+2080	1465.860	1465.65	
+2100	1465.795	1465.82	
+2120	1465.730	1465.65	
+2140	1465.665	1465.82	
+2160	1465.600	1465.65	
+2180	1465.535	1465.82	
+2200	1465.470	1465.65	
+2220	1465.405	1465.82	
+2240	1465.340	1465.65	
+2260	1465.275	1465.82	
+2280	1465.210	1465.65	
+2300	1465.145	1465.82	
+2320	1465.080	1465.65	
+2340	1465.015	1465.82	
+2360	1464.950	1465.65	
+2380	1464.885	1465.82	
+2400	1464.820	1465.65	
+2420	1464.755	1465.82	
+2440	1464.690	1465.65	
+2460	1464.625	1465.82	
+2480	1464.560	1465.65	
+2500	1464.495	1465.82	
+2520	1464.430	1465.65	
+2540	1464.365	1465.82	
+2560	1464.300	1465.65	
+2580	1464.235	1465.82	
+2600	1464.170	1465.65	
+2620	1464.105	1465.82	
+2640	1464.040	1465.65	
+2660	1463.975	1465.82	
+2680	1463.910	1465.65	
+2700	1463.845	1465.82	
+2720	1463.780	1465.65	
+2740	1463.715	1465.82	
+2760	1463.650	1465.65	
+2780	1463.585	1465.82	
+2800	1463.520	1465.65	
+2820	1463.455	1465.82	
+2840	1463.390	1465.65	
+2860	1463.325	1465.82	
+2880	1463.260	1465.65	
+2900	1463.195	1465.82	



STATION	FORMATION HEIGHT (m)	GROUND HEIGHT (m)	VERTICAL ALIGNMENT
+260	1461.212	1461.022	i=2.172% L=460.000
+280	1460.778	1460.632	
+300	1460.343	1459.982	1456.000
+320	1459.908	1459.092	
+340	1459.475	1458.372	i=0.350% L=1000.000
+360	1459.040	1457.612	
+380	1458.606	1456.952	1459.500
+400	1458.172	1456.112	
+420	1457.762	1455.452	i=0.778% L=540.000
+440	1457.404	1454.692	
+460	1457.096	1454.212	1456.000
+480	1456.837	1454.002	
+500	1456.630	1453.532	1456.000
+520	1456.473	1453.382	
+540	1456.377	1453.402	1456.000
+560	1456.347	1453.972	
+580	1456.305	1453.172	1456.000
+600	1456.350	1452.972	
+620	1456.420	1452.892	1456.000
+640	1456.490	1452.302	
+660	1456.560	1452.152	1456.000
+680	1456.630	1452.202	
+700	1456.700	1452.462	1456.000
+720	1456.770	1452.692	
+740	1456.840	1453.022	1456.000
+760	1456.910	1453.052	
+780	1456.980	1454.272	1456.000
+800	1457.050	1454.952	
+820	1457.120	1455.592	1456.000
+840	1457.190	1456.032	
+860	1457.260	1456.792	1456.000
+880	1457.330	1457.012	
+900	1457.400	1457.112	1456.000
+920	1457.470	1455.572	
+940	1457.540	1457.452	1456.000
+960	1457.610	1457.342	
+980	1457.680	1457.402	1456.000
+1000	1457.750	1457.462	
+1020	1457.820	1457.802	1456.000
+1040	1457.890	1457.582	
+1060	1457.960	1457.842	1456.000
+1080	1458.030	1458.012	
+1100	1458.100	1458.002	1456.000
+1120	1458.170	1457.962	
+1140	1458.240	1457.912	1456.000
+1160	1458.310	1457.722	
+1180	1458.380	1457.532	1456.000
+1200	1458.450	1457.522	
+1220	1458.520	1457.512	1456.000
+1240	1458.590	1457.512	
+1260	1458.660	1457.572	1456.000
+1280	1458.730	1457.722	
+1300	1458.800	1458.002	1456.000
+1320	1458.870	1458.012	
+1340	1458.940	1458.132	1456.000
+1360	1459.008	1458.252	
+1380	1459.063	1458.362	1456.000
+1400	1459.103	1458.482	
+1420	1459.128	1458.592	1456.000
+1440	1459.138	1458.722	
+1460	1459.133	1458.942	1456.000
+1480	1459.112	1459.212	
+1500	1459.077	1458.612	1456.000
+1520	1459.026	1458.142	
+1540	1458.963	1457.952	1456.000
+1560	1458.883	1455.562	
+1580	1458.786	1457.022	1456.000
+1600	1458.675	1456.562	
+1620	1458.550	1456.332	1456.000
+1640	1458.409	1456.222	
+1660	1458.256	1456.402	1456.000
+1680	1458.100	1457.012	
+1700	1457.944	1457.162	1456.000
+1720	1457.789	1457.892	
+1740	1457.633	1458.412	1456.000
+1760	1457.478	1459.032	
+1780	1457.322	1459.972	1456.000
+1800	1457.167	1460.152	
+1820	1457.011	1460.392	1456.000
+1840	1456.856	1460.722	
+1860	1456.700	1460.232	1456.000
+1880	1456.544	1459.812	
+1900	1456.389	1459.142	1456.000
+1920	1456.239	1458.352	
+1940	1456.163	1457.672	1456.000
+1960	1456.197	1456.922	



VERTICAL ALIGNMENT	GROUND HEIGHT (m)	FORMATION HEIGHT (m)	STATION	HORIZONTAL CURVATURE
1455.300	1456.92	1456.197	+960	
	1456.11	1456.340	+980	
	1455.63	1456.590	12+0	
	1455.37	1456.95	+20	
	1455.34	1457.418	+40	
	1455.52	1457.995	+60	
	1455.94	1458.679	+80	
	1456.32	1459.473	+100	
	1457.56	1460.375	+120	
	1459.07	1461.385	+140	
	1460.50	1462.503	+160	
	1462.00	1463.700	+180	
	1463.87	1464.900	+200	
	1465.28	1466.100	+220	
	1466.88	1467.300	+240	
	1468.37	1468.500	+260	
	1470.09	1469.700	+280	
	1471.47	1470.900	+300	
	1472.86	1472.100	+320	
	1473.94	1473.300	+340	
	1474.71	1474.447	+360	
	1475.44	1475.488	+380	
	1475.84	1476.424	+400	
	1476.00	1477.254	+420	
	1476.02	1477.978	+440	
	1476.02	1478.011	+440	
	1476.20	1478.596	+460	
	1476.97	1479.100	+480	
	1477.71	1479.515	+500	
	1478.00	1479.817	+520	
	1478.07	1479.996	+520	
	1478.06	1480.017	+540	
	1478.63	1480.015	+560	
	1480.12	1480.155	+580	
	1480.32	1480.297	+600	
	1480.52	1480.439	+620	
	1480.67	1480.582	+640	
	1480.79	1480.724	+660	
	1481.01	1480.867	+680	
	1481.14	1481.009	+700	
	1481.16	1481.152	+720	
	1481.00	1481.294	+740	
	1480.17	1481.436	+760	
	1478.64	1481.578	+780	
	1474.91	1481.721	+800	
	1471.09	1481.862	+820	
	1469.29	1482.006	+840	
	1471.21	1482.148	+860	
	1478.89	1482.291	+880	
	1478.50	1482.433	+900	
	1479.54	1482.576	+920	
	1481.76	1482.718	+940	
	1481.82	1482.861	+960	
	1482.01	1483.003	+980	
	1481.80	1483.145	+1000	
	1483.95	1483.288	+1020	
	1484.34	1483.431	+1040	
	1484.04	1483.573	+1060	
	1484.56	1483.715	+1080	
	1481.53	1483.858	+1100	
	1481.94	1484.000	+1120	
	1478.80	1484.142	+1140	
	1477.38	1484.284	+1160	
	1478.93	1484.426	+1180	
	1482.05	1484.568	+1200	
	1484.18	1484.710	+1220	
	1486.05	1484.852	+1240	
	1488.70	1485.000	+1260	
	1490.13	1485.142	+1280	
	1490.66	1485.284	+1300	
	1490.66	1485.426	+1320	
	1492.00	1485.568	+1340	
	1494.45	1485.710	+1360	
	1496.50	1485.852	+1380	
	1496.93	1486.000	+1400	
	1497.00	1486.142	+1420	
	1497.00	1486.284	+1440	
	1497.17	1486.426	+1460	
	1498.41	1486.568	+1480	
	1499.02	1486.710	+1500	
	1499.37	1486.852	+1520	
	1499.90	1487.000	+1540	
	1500.30	1487.142	+1560	
	1500.46	1487.284	+1580	
	1502.16	1487.426	+1600	
	1503.40	1487.568	+1620	
	1504.03	1487.710	+1640	
	1505.20	1487.852	+1660	
	1505.95	1488.000	+1680	
	1505.16	1488.142	+1700	
	1503.14	1488.284	+1720	
	1502.96	1488.426	+1740	



INTERSECTION
STA. 14+907.30

VERTICAL ALIGNMENT	GROUND HEIGHT (m)	FORMATION HEIGHT (m)	STATION	HORIZONTAL CURVATURE
$i=4.800\%$ $L=450.000$	1503.14	1512.720	+640	$A=110$ $L=96.800$
	1502.86	1513.680	+660	
	1503.12	1514.640	+680	
	1504.88	1515.120	+700	
	1512.20	1516.000	+720	
	1515.91	1516.560	+740	
	1517.23	1517.520	+760	
	1520.57	1518.480	+780	
	1531.15	1519.440	+800	
	1531.17	1519.767	+820	
	1530.42	1520.400	+840	
	1533.78	1521.313	+860	
	1530.94	1522.133	+880	
	1528.09	1522.960	+900	
	1526.46	1523.403	+920	
	1526.37	1523.765	+940	
	1525.38	1524.022	+960	
	1525.89	1524.189	+980	
	1524.10	1524.479	+1000	
	1524.23	1524.832	+1020	
	1528.55	1525.091	+1040	
	1528.21	1525.257	+1060	
	1528.53	1525.329	+1080	
	1528.59	1525.332	+1100	
	1528.31	1525.309	+1120	
	1528.08	1525.195	+1140	
	1525.89	1524.987	+1160	
	1524.80	1524.686	+1180	
	1524.00	1524.292	+1200	
	1523.00	1523.851	+1220	
	1521.05	1523.326	+1240	
	1521.05	1523.206	+1260	
	1521.01	1520.846	+1280	
	1520.99	1520.650	+1300	
	1520.67	1520.617	+1320	
	1518.24	1520.748	+1340	
	1517.65	1520.614	+1360	
	1517.65	1520.643	+1380	
	1521.389	1521.389	+1400	
	1518.77	1521.500	+1420	
	1520.48	1522.122	+1440	
	1521.60	1522.807	+1460	
	1523.05	1523.655	+1480	
	1526.08	1524.967	+1500	
	1526.00	1526.049	+1520	
	1526.06	1526.160	+1540	
	1530.24	1527.353	+1560	
	1529.68	1528.547	+1580	
	1530.23	1529.740	+1600	
	1530.86	1530.833	+1620	
	1529.12	1531.940	+1640	
	1529.08	1532.097	+1660	
	1529.14	1533.201	+1680	
	1530.50	1534.246	+1700	
	1535.01	1535.233	+1720	
	1536.46	1536.156	+1740	
	1536.46	1536.156	+1760	
	1537.16	1537.027	+1780	
	1537.84	1537.834	+1800	
	1538.51	1538.633	+1820	
	1538.90	1538.891	+1840	
	1539.21	1539.273	+1860	
	1539.09	1539.904	+1880	
	1539.93	1540.504	+1900	
	1540.12	1541.105	+1920	
	1540.00	1541.706	+1940	
	1541.00	1542.307	+1960	
	1541.13	1542.909	+1980	
	1541.44	1543.510	+2000	
	1541.91	1544.111	+2020	
	1543.02	1544.712	+2040	
	1543.94	1545.313	+2060	
	1544.99	1545.914	+2080	
	1545.08	1546.515	+2100	