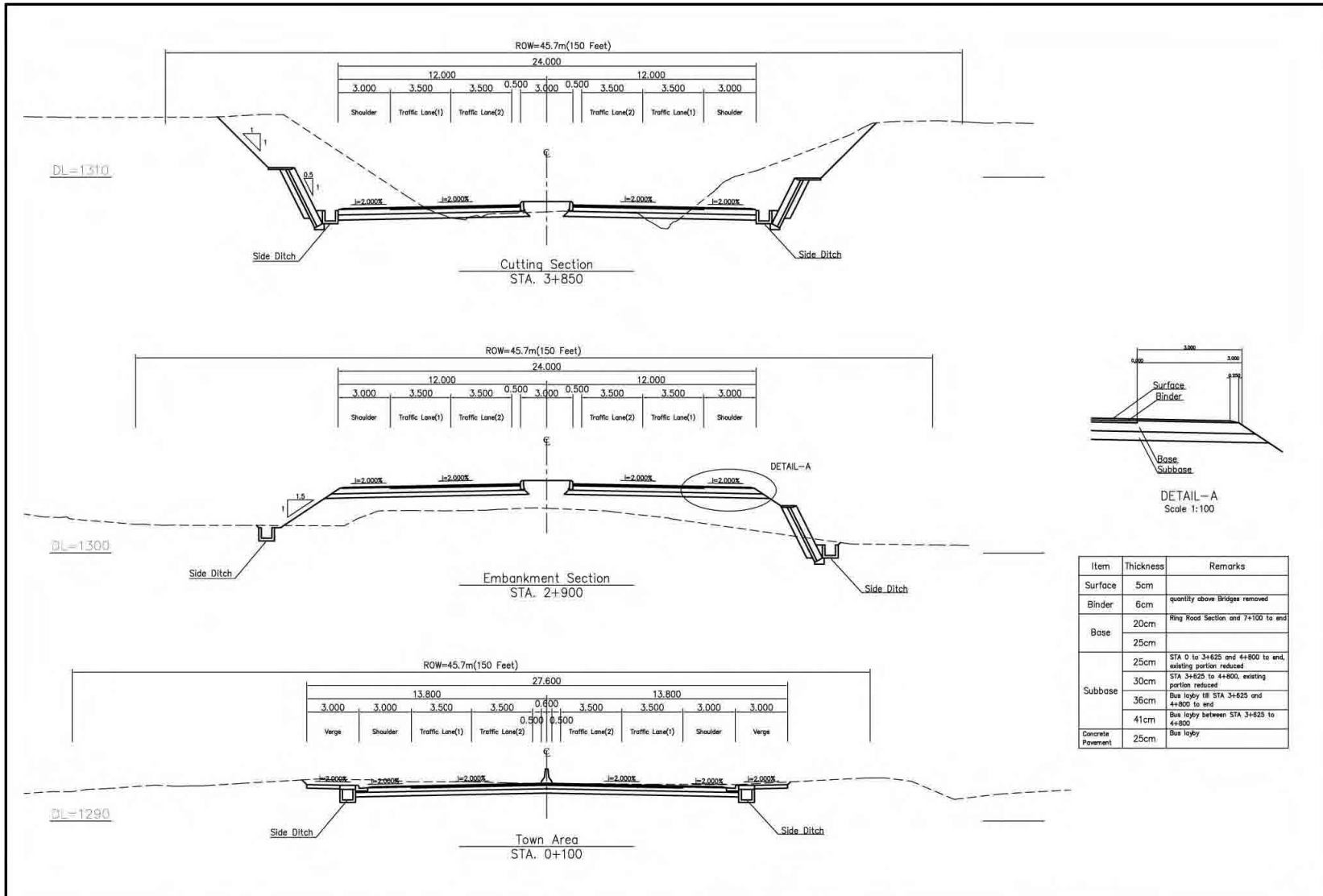


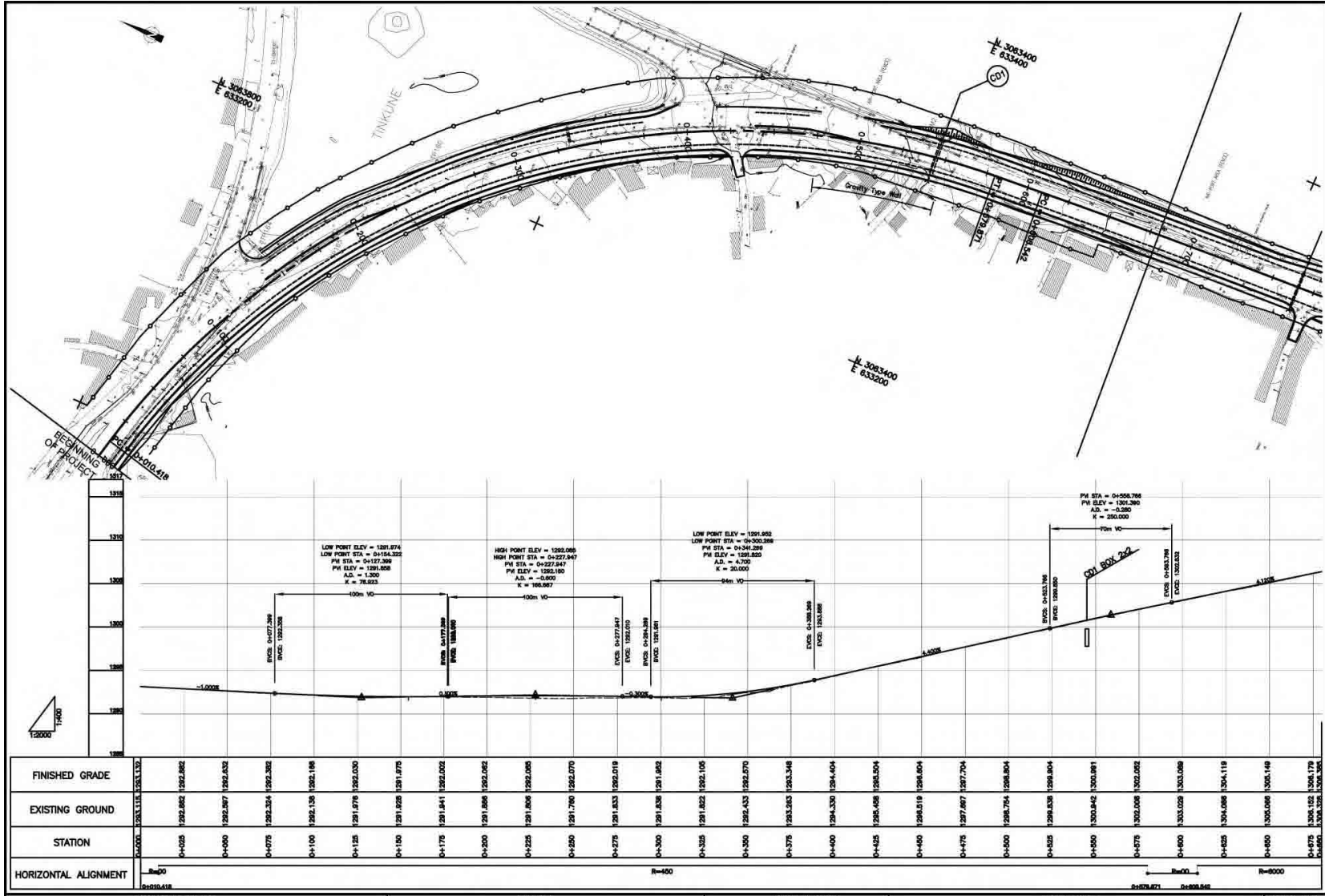
5. *Basic Design Drawings*



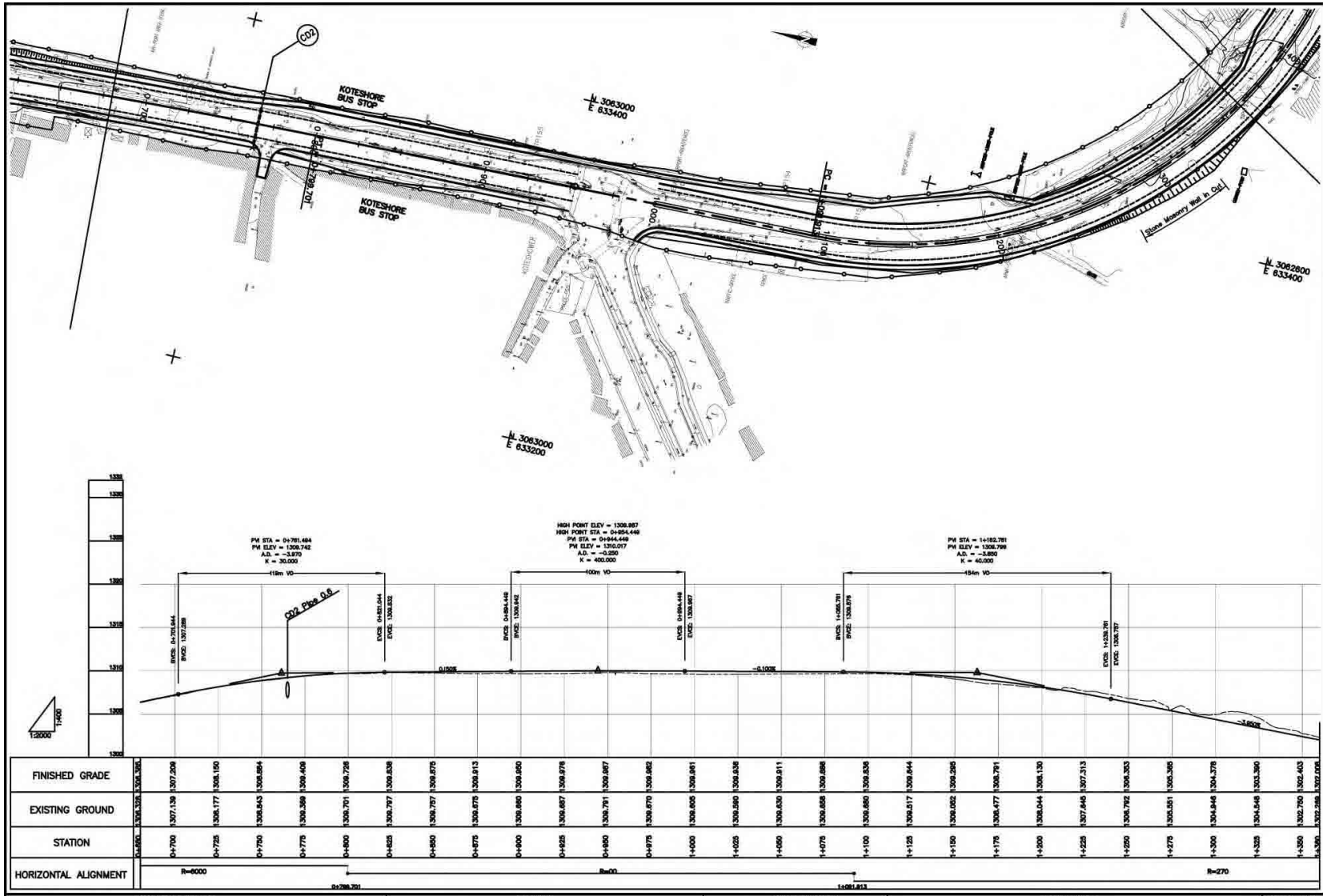
Item	Thickness	Remarks
Surface	5cm	
Binder	6cm	quantity above Bridges removed
Base	20cm	Ring Road Section and 7+100 to end
	25cm	
Subbase	25cm	STA 0 to 3+625 and 4+800 to end, existing portion reduced.
	30cm	STA 3+625 to 4+800, existing portion reduced
	36cm	Bus layby @ STA 3+625 and 4+800 to end
	41cm	Bus layby between STA 3+625 to 4+800
Concrete Pavement	25cm	Bus layby

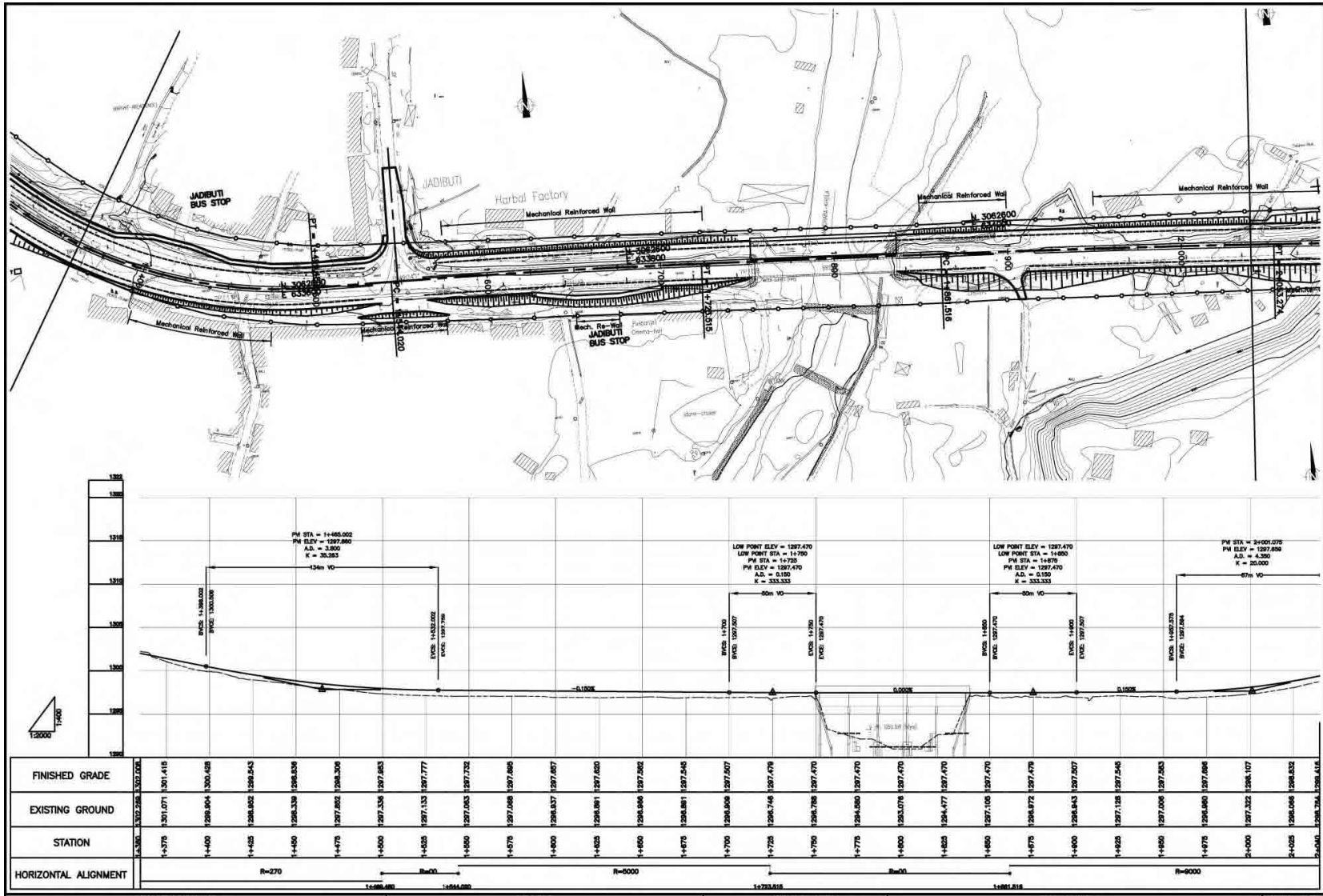
PROJECT NAME	CLIENT	CONSULTANT	DWG TITLE	DWG NO.
BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT OF KATHMANDU-BHAKTAPUR ROAD IN NEPAL	JAPAN INTERNATIONAL COOPERATION AGENCY GOVERNMENT OF NEPAL MINISTRY OF PHYSICAL PLANNING AND WORKS	NIPPON KOEI CO., LTD. Consulting Engineers Tokyo, JAPAN	TYPICAL CROSS SECTION Scale 1:200	TP-01

AS-1

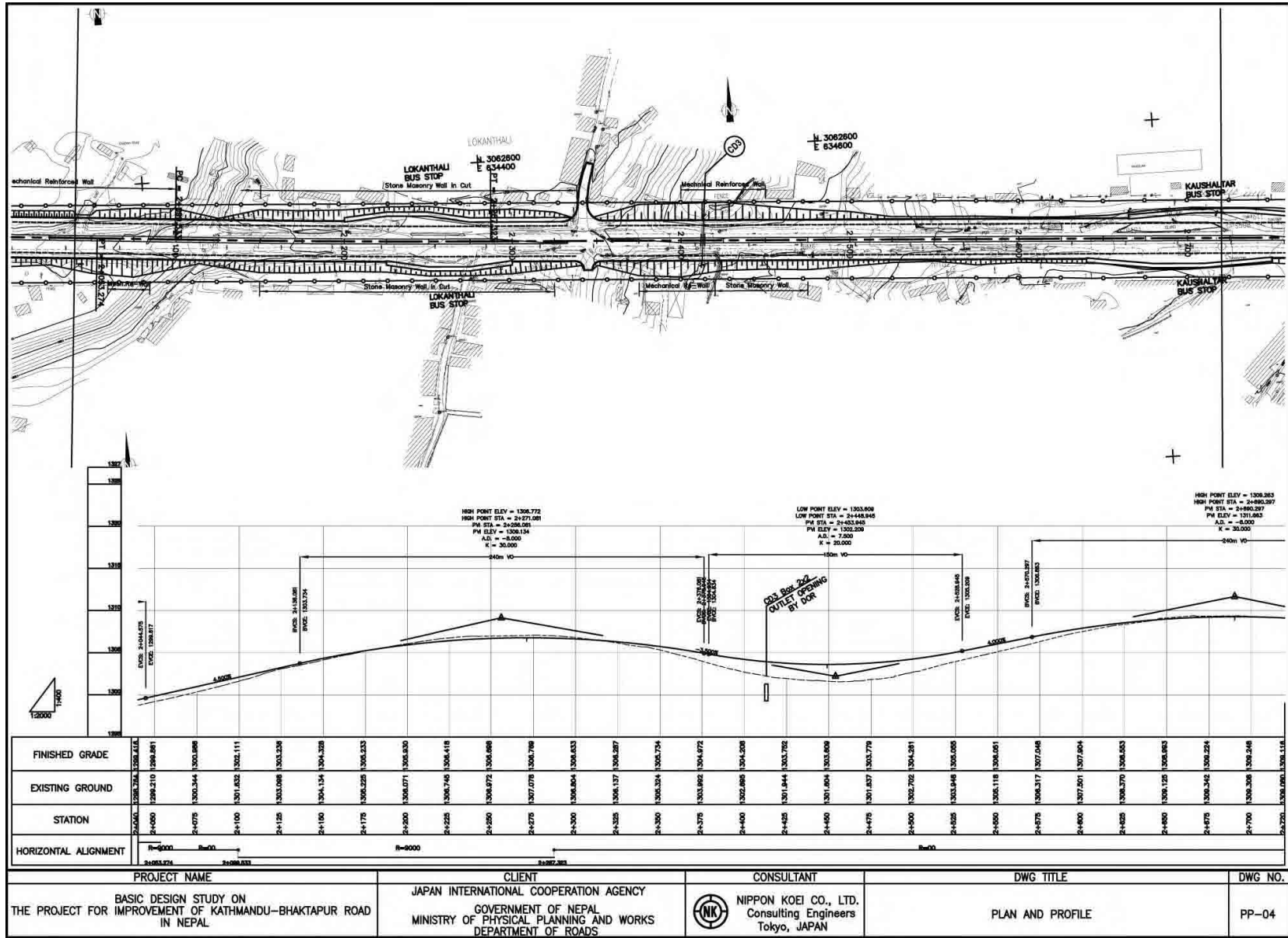


FINISHED GRADE	1292.862	1292.862	1292.832	1292.386	1292.186	1292.030	1291.876	1291.720	1291.564	1291.408	1291.252	1291.096	1290.940	1290.784	1290.628	1290.472	1290.316	1290.160	1290.004	1289.848	1289.692	1289.536	1289.380	1289.224	1289.068	1288.912	1288.756	1288.600	1288.444	1288.288	1288.132	1287.976	1287.820	1287.664	1287.508	1287.352	1287.196	1287.040	1286.884	1286.728	1286.572	1286.416	1286.260	1286.104	1285.948	1285.792	1285.636	1285.480	1285.324	1285.168	1285.012	1284.856	1284.700	1284.544	1284.388	1284.232	1284.076	1283.920	1283.764	1283.608	1283.452	1283.296	1283.140	1282.984	1282.828	1282.672	1282.516	1282.360	1282.204	1282.048	1281.892	1281.736	1281.580	1281.424	1281.268	1281.112	1280.956	1280.800	1280.644	1280.488	1280.332	1280.176	1280.020	1279.864	1279.708	1279.552	1279.396	1279.240	1279.084	1278.928	1278.772	1278.616	1278.460	1278.304	1278.148	1277.992	1277.836	1277.680	1277.524	1277.368	1277.212	1277.056	1276.900	1276.744	1276.588	1276.432	1276.276	1276.120	1275.964	1275.808	1275.652	1275.496	1275.340	1275.184	1275.028	1274.872	1274.716	1274.560	1274.404	1274.248	1274.092	1273.936	1273.780	1273.624	1273.468	1273.312	1273.156	1273.000	1272.844	1272.688	1272.532	1272.376	1272.220	1272.064	1271.908	1271.752	1271.596	1271.440	1271.284	1271.128	1270.972	1270.816	1270.660	1270.504	1270.348	1270.192	1270.036	1269.880	1269.724	1269.568	1269.412	1269.256	1269.100	1268.944	1268.788	1268.632	1268.476	1268.320	1268.164	1268.008	1267.852	1267.696	1267.540	1267.384	1267.228	1267.072	1266.916	1266.760	1266.604	1266.448	1266.292	1266.136	1265.980	1265.824	1265.668	1265.512	1265.356	1265.200	1265.044	1264.888	1264.732	1264.576	1264.420	1264.264	1264.108	1263.952	1263.796	1263.640	1263.484	1263.328	1263.172	1263.016	1262.860	1262.704	1262.548	1262.392	1262.236	1262.080	1261.924	1261.768	1261.612	1261.456	1261.300	1261.144	1260.988	1260.832	1260.676	1260.520	1260.364	1260.208	1260.052	1259.896	1259.740	1259.584	1259.428	1259.272	1259.116	1258.960	1258.804	1258.648	1258.492	1258.336	1258.180	1258.024	1257.868	1257.712	1257.556	1257.400	1257.244	1257.088	1256.932	1256.776	1256.620	1256.464	1256.308	1256.152	1255.996	1255.840	1255.684	1255.528	1255.372	1255.216	1255.060	1254.904	1254.748	1254.592	1254.436	1254.280	1254.124	1253.968	1253.812	1253.656	1253.500	1253.344	1253.188	1253.032	1252.876	1252.720	1252.564	1252.408	1252.252	1252.096	1251.940	1251.784	1251.628	1251.472	1251.316	1251.160	1251.004	1250.848	1250.692	1250.536	1250.380	1250.224	1250.068	1249.912	1249.756	1249.600	1249.444	1249.288	1249.132	1248.976	1248.820	1248.664	1248.508	1248.352	1248.196	1248.040	1247.884	1247.728	1247.572	1247.416	1247.260	1247.104	1246.948	1246.792	1246.636	1246.480	1246.324	1246.168	1246.012	1245.856	1245.700	1245.544	1245.388	1245.232	1245.076	1244.920	1244.764	1244.608	1244.452	1244.296	1244.140	1243.984	1243.828	1243.672	1243.516	1243.360	1243.204	1243.048	1242.892	1242.736	1242.580	1242.424	1242.268	1242.112	1241.956	1241.800	1241.644	1241.488	1241.332	1241.176	1241.020	1240.864	1240.708	1240.552	1240.396	1240.240	1240.084	1239.928	1239.772	1239.616	1239.460	1239.304	1239.148	1238.992	1238.836	1238.680	1238.524	1238.368	1238.212	1238.056	1237.900	1237.744	1237.588	1237.432	1237.276	1237.120	1236.964	1236.808	1236.652	1236.496	1236.340	1236.184	1236.028	1235.872	1235.716	1235.560	1235.404	1235.248	1235.092	1234.936	1234.780	1234.624	1234.468	1234.312	1234.156	1234.000	1233.844	1233.688	1233.532	1233.376	1233.220	1233.064	1232.908	1232.752	1232.596	1232.440	1232.284	1232.128	1231.972	1231.816	1231.660	1231.504	1231.348	1231.192	1231.036	1230.880	1230.724	1230.568	1230.412	1230.256	1230.100	1229.944	1229.788	1229.632	1229.476	1229.320	1229.164	1229.008	1228.852	1228.696	1228.540	1228.384	1228.228	1228.072	1227.916	1227.760	1227.604	1227.448	1227.292	1227.136	1226.980	1226.824	1226.668	1226.512	1226.356	1226.200	1226.044	1225.888	1225.732	1225.576	1225.420	1225.264	1225.108	1224.952	1224.796	1224.640	1224.484	1224.328	1224.172	1224.016	1223.860	1223.704	1223.548	1223.392	1223.236	1223.080	1222.924	1222.768	1222.612	1222.456	1222.300	1222.144	1221.988	1221.832	1221.676	1221.520	1221.364	1221.208	1221.052	1220.896	1220.740	1220.584	1220.428	1220.272	1220.116	1219.960	1219.804	1219.648	1219.492	1219.336	1219.180	1219.024	1218.868	1218.712	1218.556	1218.400	1218.244	1218.088	1217.932	1217.776	1217.620	1217.464	1217.308	1217.152	1216.996	1216.840	1216.684	1216.528	1216.372	1216.216	1216.060	1215.904	1215.748	1215.592	1215.436	1215.280	1215.124	1214.968	1214.812	1214.656	1214.500	1214.344	1214.188	1214.032	1213.876	1213.720	1213.564	1213.408	1213.252	1213.096	1212.940	1212.784	1212.628	1212.472	1212.316	1212.160	1212.004	1211.848	1211.692	1211.536	1211.380	1211.224	1211.068	1210.912	1210.756	1210.600	1210.444	1210.288	1210.132	1209.976	1209.820	1209.664	1209.508	1209.352	1209.196	1209.040	1208.884	1208.728	1208.572	1208.416	1208.260	1208.104	1207.948	1207.792	1207.636	1207.480	1207.324	1207.168	1207.012	1206.856	1206.700	1206.544	1206.388	1206.232	1206.076	1205.920	1205.764	1205.608	1205.452	1205.296	1205.140	1204.984	1204.828	1204.672	1204.516	1204.360	1204.204	1204.048	1203.892	1203.736	1203.580	1203.424	1203.268	1203.112	1202.956	1202.800	1202.644	1202.488	1202.332	1202.176	1202.020	1201.864	1201.708	1201.552	1201.396	1201.240	1201.084	1200.928	1200.772	1200.616	1200.460	1200.304	1200.148	1199.992	1199.836	1199.680	1199.524	1199.368	1199.212	1199.056	1198.900	1198.744	1198.588	1198.432	1198.276	1198.120	1197.964	1197.808	1197.652	1197.496	1197.340	1197.184	1197.028	1196.872	1196.716	1196.560	1196.404	1196.248	1196.092	1195.936	1195.780	1195.624	1195.468	1195.312	1195.156	1195.000	1194.844	1194.688	1194.532	1194.376	1194.220	1194.064	1193.908	1193.752	1193.596	1193.440	1193.284	1193.128	1192.972	1192.816	1192.660	1192.504	1192.348	1192.192	1192.036	1191.880	1191.724	1191.568	1191.412	1191.256	1191.100	1190.944	1190.788	1190.632	1190.476	1190.320	1190.164	1190.008	1189.852	1189.696	1189.540	1189.384	1189.228	1189.072	1188.916	1188.760	1188.604	1188.448	1188.292	1188.136	1187.980	1187.824	1187.668	1187.512	1187.356	1187.200	1187.044	1186.888	1186.732	1186.576	1186.420	1186.264	1186.108	1185.952	1185.796	1185.640	1185.484	1185.328	1185.172	1185.016	1184.860	1184.704	1184.548	1184.392	1184.236	1184.080	1183.924	1183.768	1183.612	1183.456	1183.300	1183.144	1182.988	1182.832	1182.676	1182.520	1182.364	1182.208	1182.052	1181.896	1181.740	1181.584	1181.428	1181.272	1181.116	1180.960	1180.804	1180.648	1180.492	1180.336	1180.180	1180.024	1179.868	1179.712	1179.556	1179.400	1179.244	1179.088	1178.932	1178.776	1178.620	1178.464	1178.308	1178.152	1177.996	1177.840	1177.684	1177.528	1177.372	1177.216	1177.060	1176.904	1176.748	1176.592	1176.436	1176.280	1176.124	1175.968	1175.812	1175.656	1175.500	1175.344	1175.188	1175.032	1174.876	1174.720	1174.564	1174.408	1174.252	1174.096	1173.940	1173.784	1173.628	1173.472	1173.316	1173.160	1173.004	1172.848	1172.692	1172.536	1172.380	1172.224	1172.068	1171.912	1171.756	1171.600	1171.444	1171.288	1171.132	1170.976	1170.820	1170.664	1170.508	1170.352	1170.196	1170.040	1169.884	1169.728	1169.572	1169.416	1169.260	1169.104	1168.948	1168.792	1168.636	1168.480	1168.324	1168.168	1168.012	1167.856	1167.700	1167.544	1167.388	1167.232	1167.076	1166.920	1166.764	1166.608	1166.452	1166.296	1166.140	1165.984	1165.828	1165.672	1165.516	1165.360	1165.204	1165.048	1164.892	1164.736	1164.580	1164.424	1164.268	1164.112	1163.956	1163.800	1163.644	1163.488	1163.332	1163.176	1163.020	1162.864	1162.708	1162.552	1162.396	1162.240	1162.084	1161.928	1161.772	1161.616	1161.460	1161.304	1161.148	1160.992	1160.836	1160.680	1160.524	1160.368	1160.212	1160.056	1159.900	1159.744	1159.588	1159.432	1159.276	1159.120	1158.964	1158.808	1158.652	1158.496	1158.340	1158.184	1158.028	1157.8
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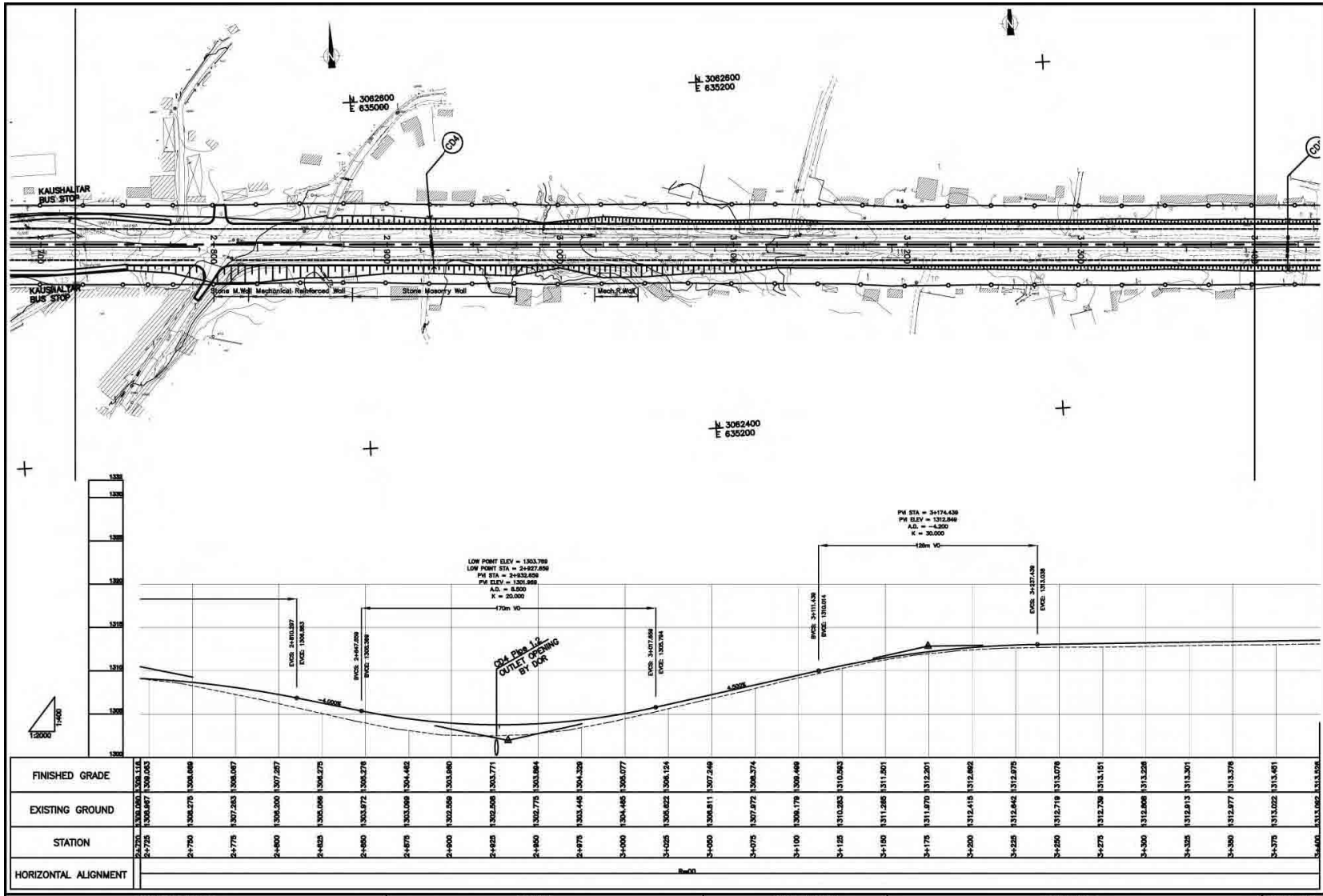




PROJECT NAME	CLIENT	CONSULTANT	DWG TITLE	DWG NO.
BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT OF KATHMANDU-BHAKTAPUR ROAD IN NEPAL	JAPAN INTERNATIONAL COOPERATION AGENCY GOVERNMENT OF NEPAL MINISTRY OF PHYSICAL PLANNING AND WORKS DEPARTMENT OF ROADS	NIPPON KOEI CO., LTD. Consulting Engineers Tokyo, JAPAN	PLAN AND PROFILE	PP-03

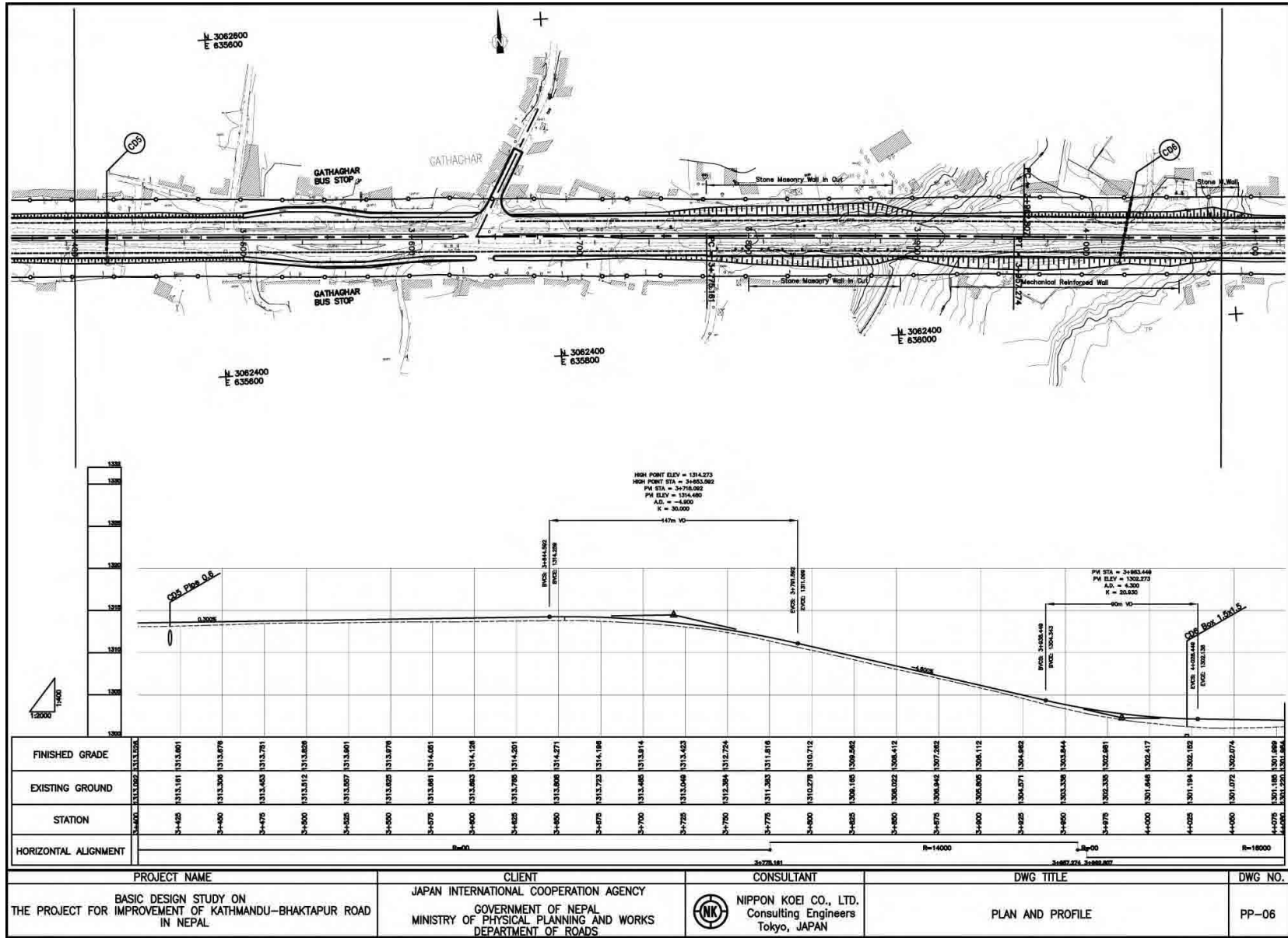


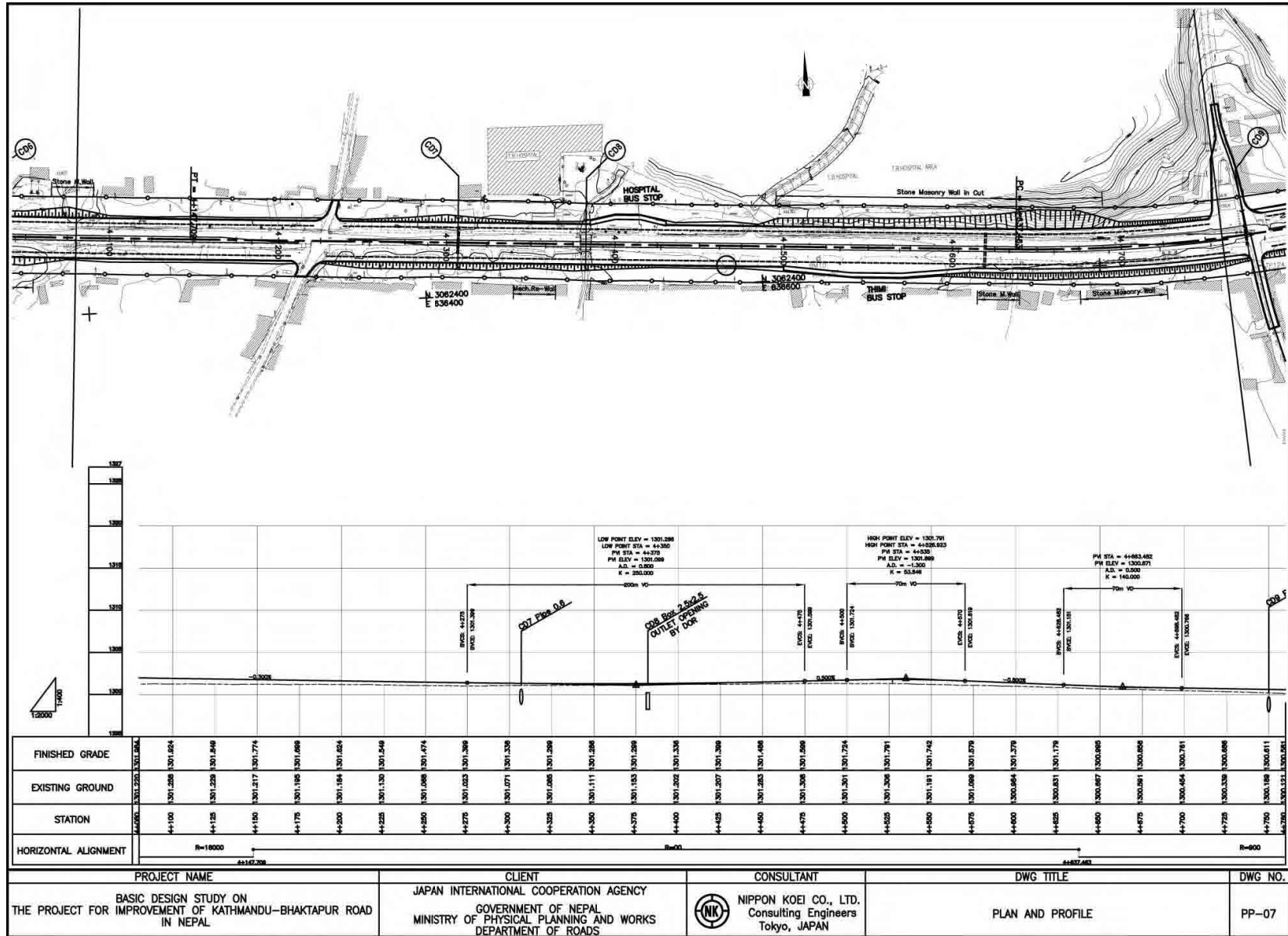
PROJECT NAME	CLIENT	CONSULTANT	DWG TITLE	DWG NO.
BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT OF KATHMANDU-BHAKTAPUR ROAD IN NEPAL	JAPAN INTERNATIONAL COOPERATION AGENCY GOVERNMENT OF NEPAL MINISTRY OF PHYSICAL PLANNING AND WORKS DEPARTMENT OF ROADS	NIPPON KOEI CO., LTD. Consulting Engineers Tokyo, JAPAN	PLAN AND PROFILE	PP-04



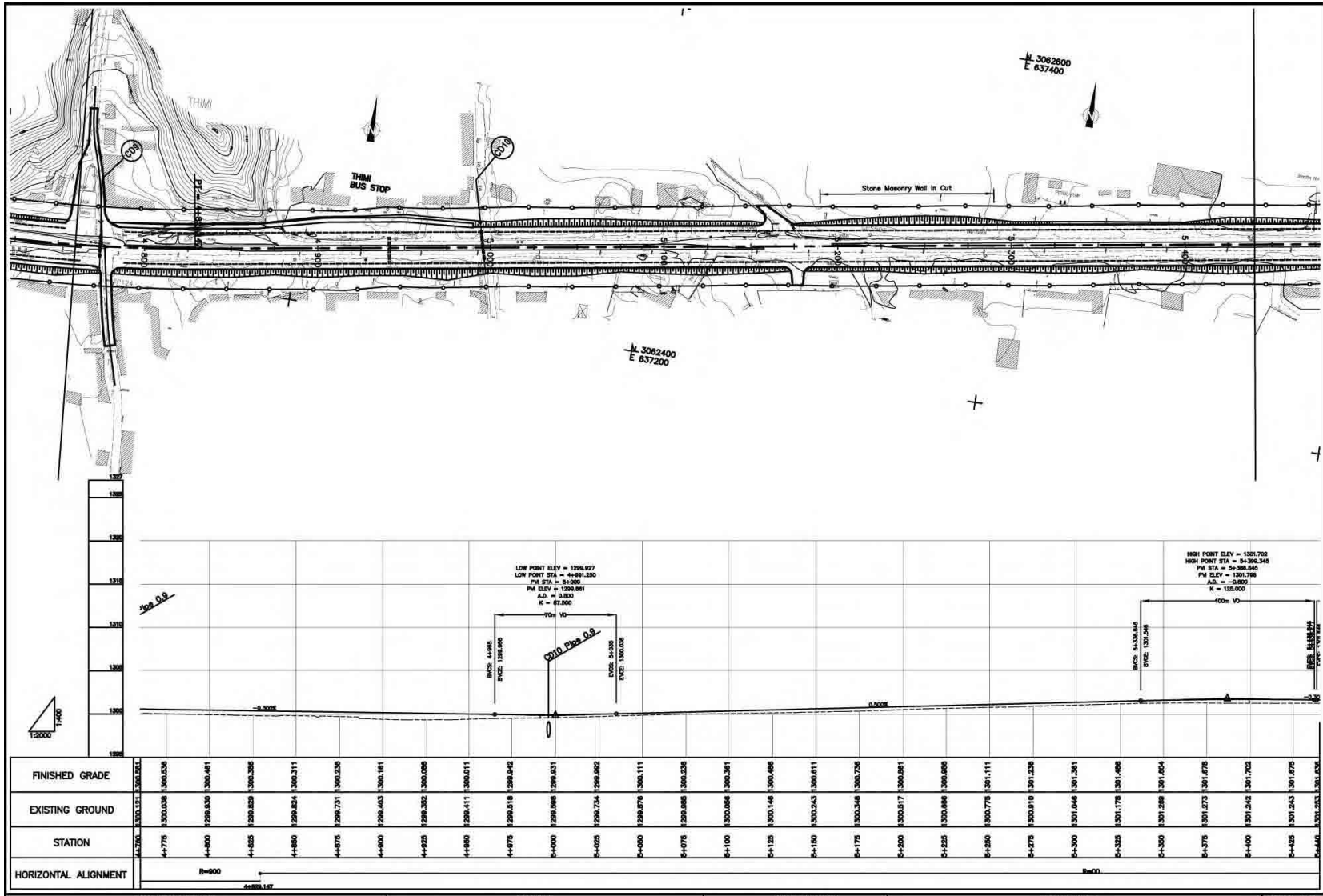
PROJECT NAME	CLIENT	CONSULTANT	DWG TITLE	DWG NO.
BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT OF KATHMANDU-BHAKTAPUR ROAD IN NEPAL	JAPAN INTERNATIONAL COOPERATION AGENCY GOVERNMENT OF NEPAL MINISTRY OF PHYSICAL PLANNING AND WORKS DEPARTMENT OF ROADS	NIPPON KOEI CO., LTD. Consulting Engineers Tokyo, JAPAN	PLAN AND PROFILE	PP-05

AS-7





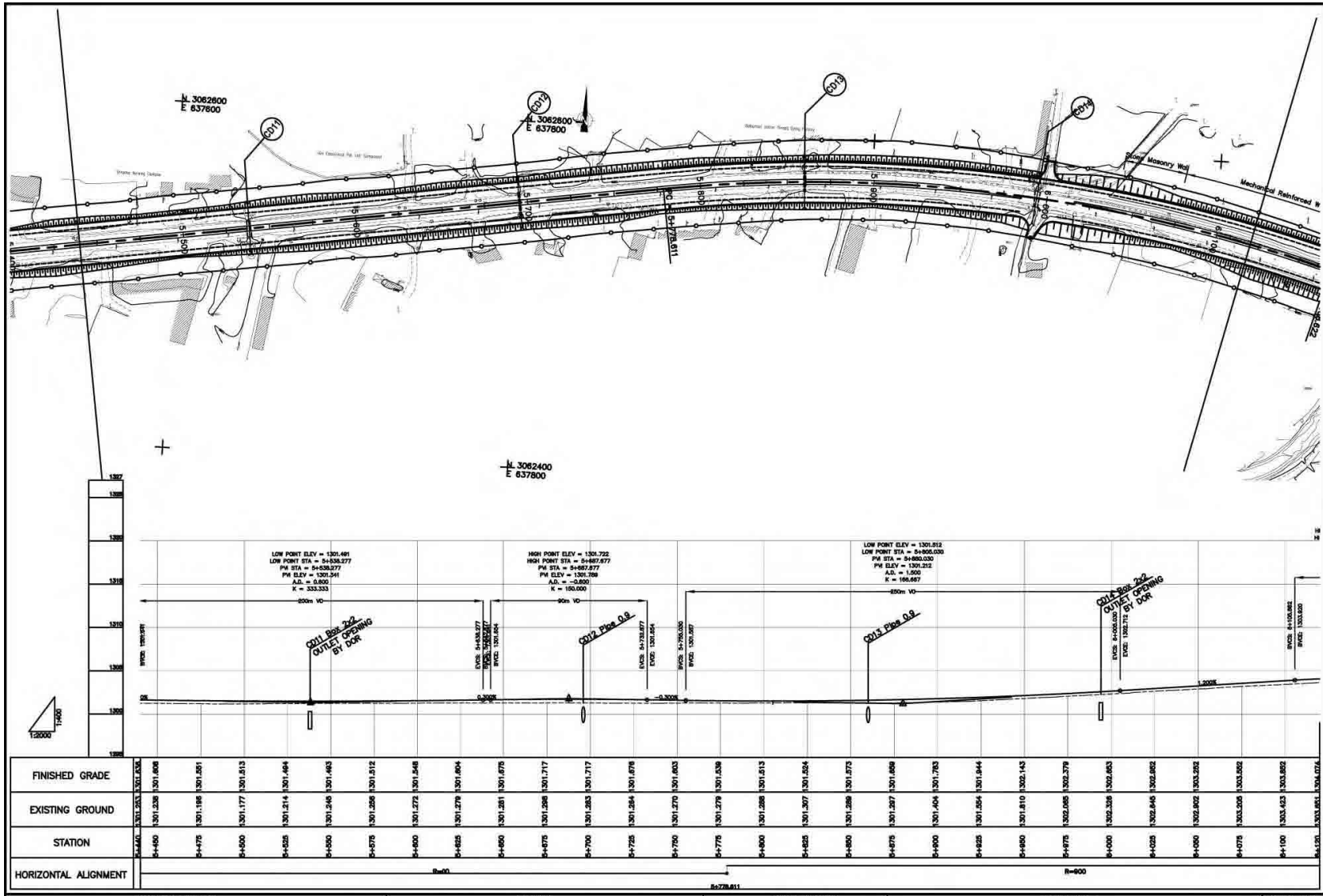
PROJECT NAME	CLIENT	CONSULTANT	DWG TITLE	DWG NO.
BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT OF KATHMANDU-BHAKTAPUR ROAD IN NEPAL	JAPAN INTERNATIONAL COOPERATION AGENCY GOVERNMENT OF NEPAL MINISTRY OF PHYSICAL PLANNING AND WORKS DEPARTMENT OF ROADS	NIPPON KOEI CO., LTD. Consulting Engineers Tokyo, JAPAN	PLAN AND PROFILE	PP-07



FINISHED GRADE	44+760	44+770	44+800	44+825	44+850	44+875	44+900	44+925	44+950	44+975	50+000	50+025	50+050	50+075	50+100	50+125	50+150	50+175	50+200	50+225	50+250	50+275	50+300	50+325	50+350	50+375	50+400	50+425	50+450
EXISTING GROUND	1300.581	1300.038	1296.830	1296.820	1296.824	1296.731	1296.403	1296.352	1296.411	1296.516	1296.598	1296.724	1296.876	1296.895	1300.058	1300.146	1300.243	1300.346	1300.517	1300.688	1300.875	1300.910	1301.046	1301.178	1301.289	1301.473	1301.242	1301.243	1301.203
STATION																													
HORIZONTAL ALIGNMENT	R=900																R=100												

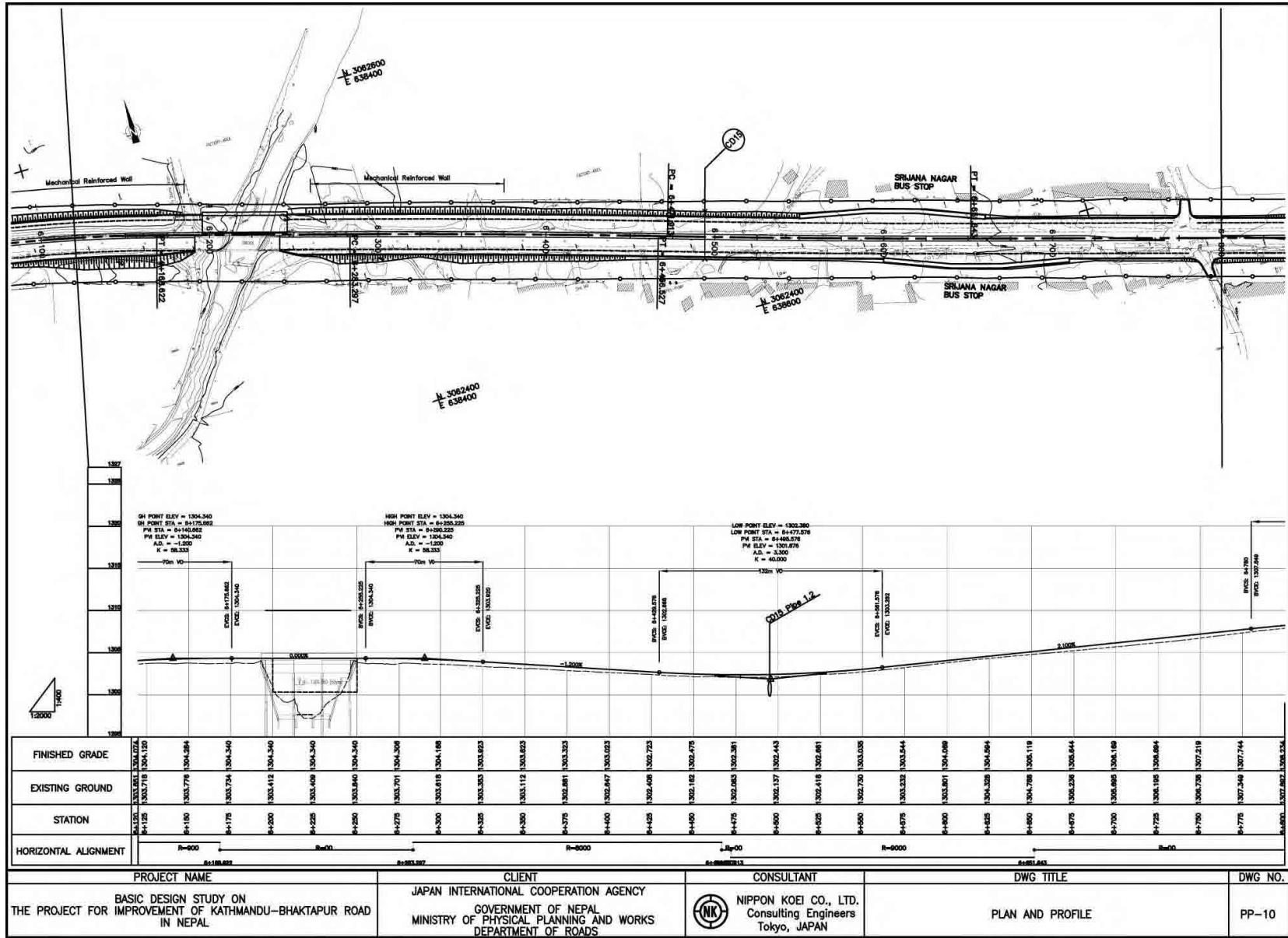
PROJECT NAME	CLIENT	CONSULTANT	DWG TITLE	DWG NO.
BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT OF KATHMANDU-BHAKTAPUR ROAD IN NEPAL	JAPAN INTERNATIONAL COOPERATION AGENCY GOVERNMENT OF NEPAL MINISTRY OF PHYSICAL PLANNING AND WORKS DEPARTMENT OF ROADS	NIPPON KOEI CO., LTD. Consulting Engineers Tokyo, JAPAN	PLAN AND PROFILE	PP-08

AS-10

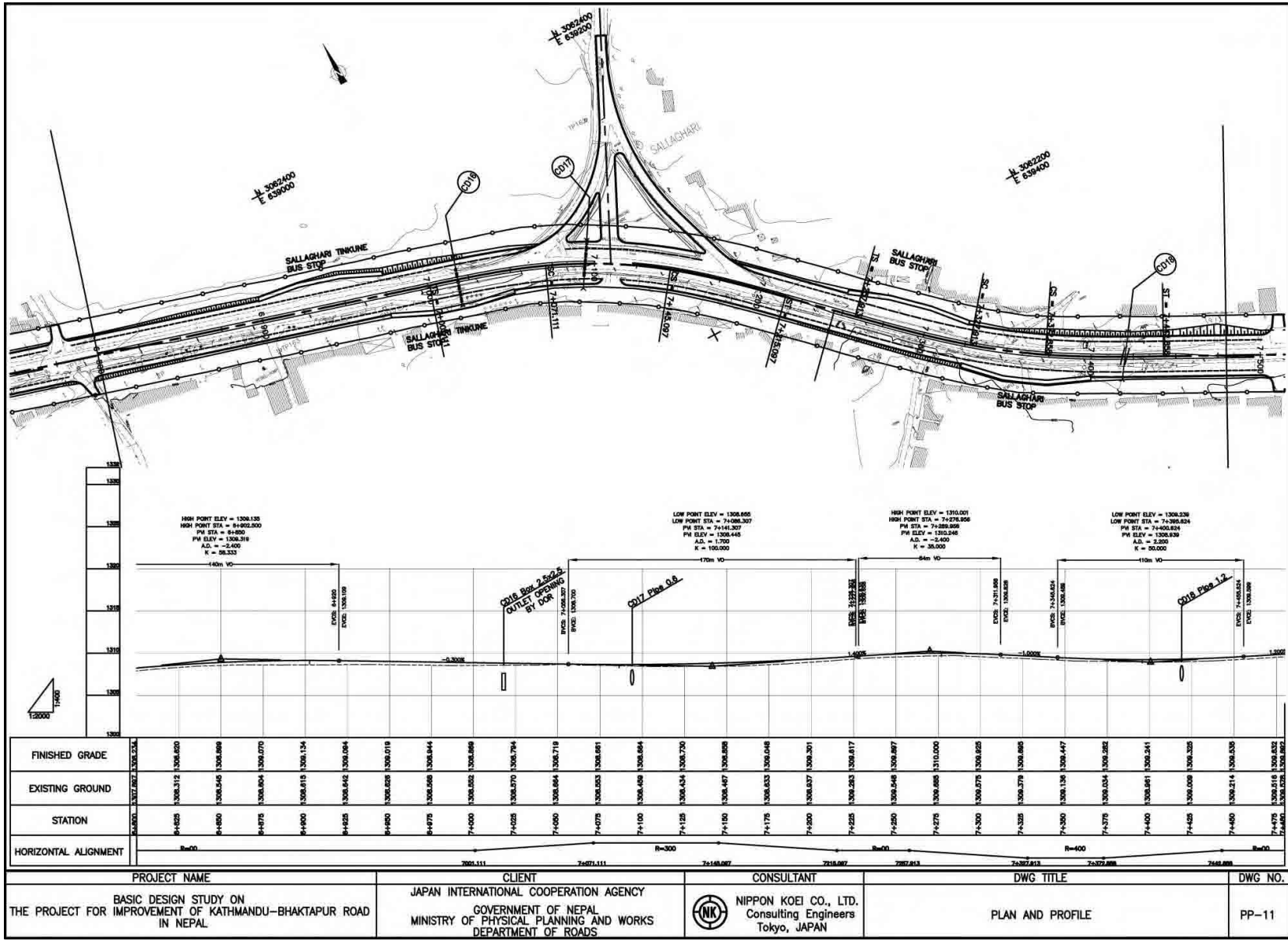


STATION	EXISTING GROUND	FINISHED GRADE
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5+425	1301.198	1301.051
5+450	1301.177	1301.013
5+475	1301.214	1301.064
5+500	1301.240	1301.083
5+525	1301.258	1301.012
5+550	1301.272	1301.048
5+575	1301.279	1301.094
5+600	1301.281	1301.076
5+625	1301.288	1301.717
5+650	1301.283	1301.717
5+675	1301.284	1301.076
5+700	1301.270	1301.003
5+725	1301.278	1301.038
5+750	1301.288	1301.013
5+775	1301.307	1301.054
5+800	1301.288	1301.072
5+825	1301.287	1301.059
5+850	1301.404	1301.705
5+875	1301.054	1301.044
5+900	1301.810	1302.143
5+925	1302.095	1302.379
5+950	1302.398	1302.653
5+975	1302.646	1302.652
5+1000	1302.892	1303.292
5+1025	1303.095	1303.052
5+1050	1303.403	1303.052
5+1075	1303.651	1304.074

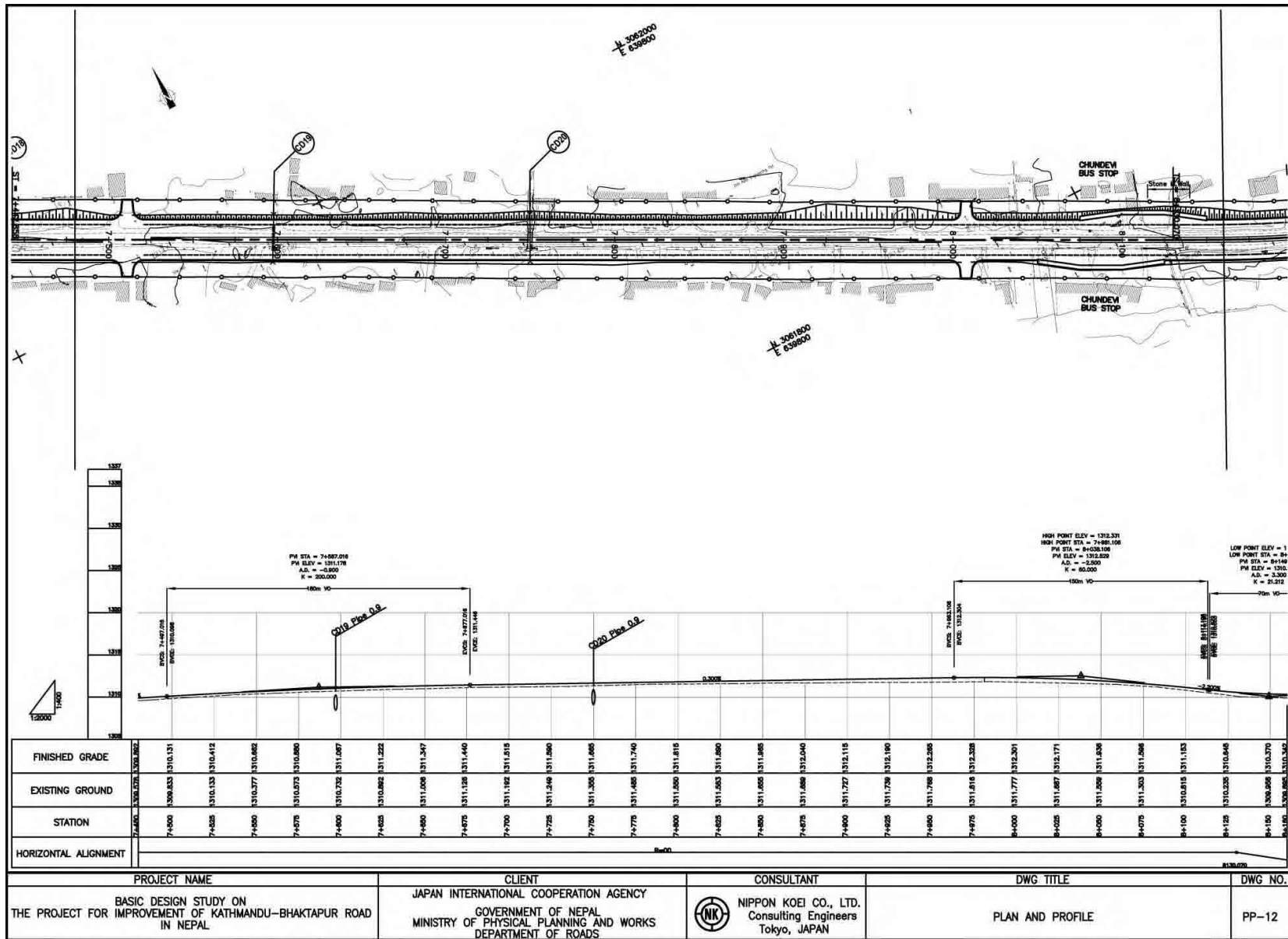
PROJECT NAME	CLIENT	CONSULTANT	DWG TITLE	DWG NO.
BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT OF KATHMANDU-BHAKTAPUR ROAD IN NEPAL	JAPAN INTERNATIONAL COOPERATION AGENCY GOVERNMENT OF NEPAL MINISTRY OF PHYSICAL PLANNING AND WORKS DEPARTMENT OF ROADS	NIPPON KOEI CO., LTD. Consulting Engineers Tokyo, JAPAN	PLAN AND PROFILE	PP-09



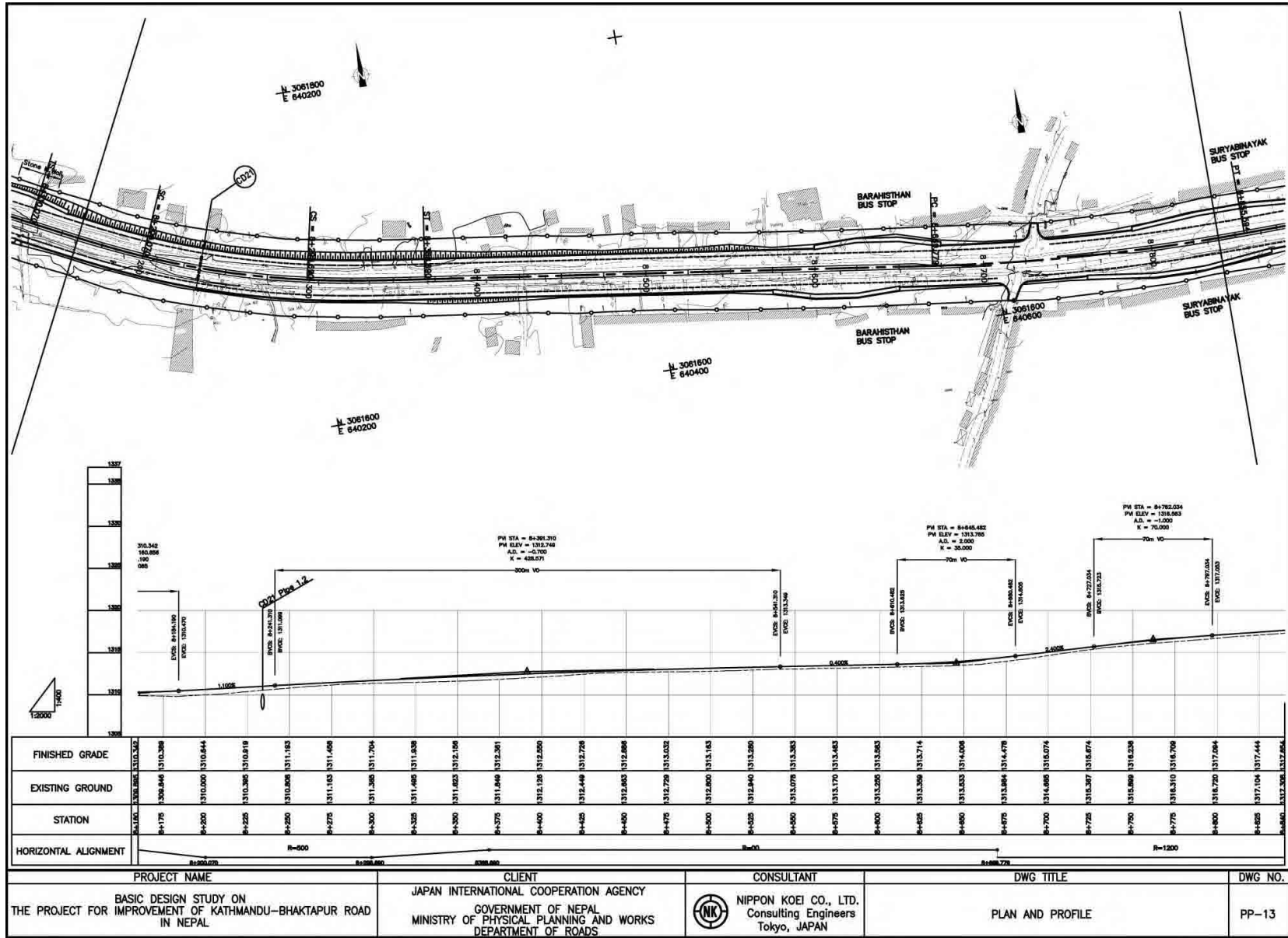
PROJECT NAME	CLIENT	CONSULTANT	DWG TITLE	DWG NO.
BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT OF KATHMANDU-BHAKTAPUR ROAD IN NEPAL	JAPAN INTERNATIONAL COOPERATION AGENCY GOVERNMENT OF NEPAL MINISTRY OF PHYSICAL PLANNING AND WORKS DEPARTMENT OF ROADS	NIPPON KOEI CO., LTD. Consulting Engineers Tokyo, JAPAN	PLAN AND PROFILE	PP-10

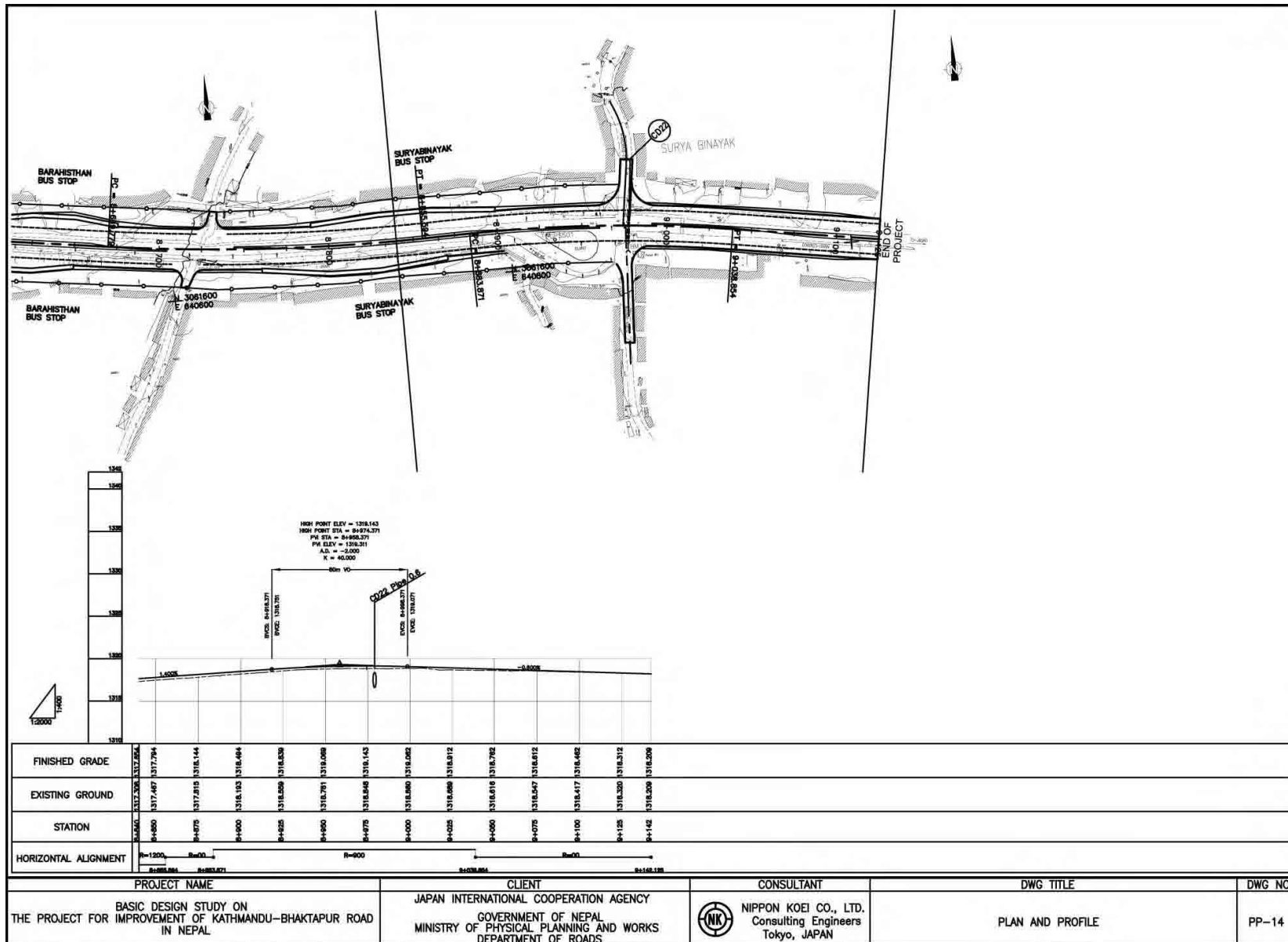


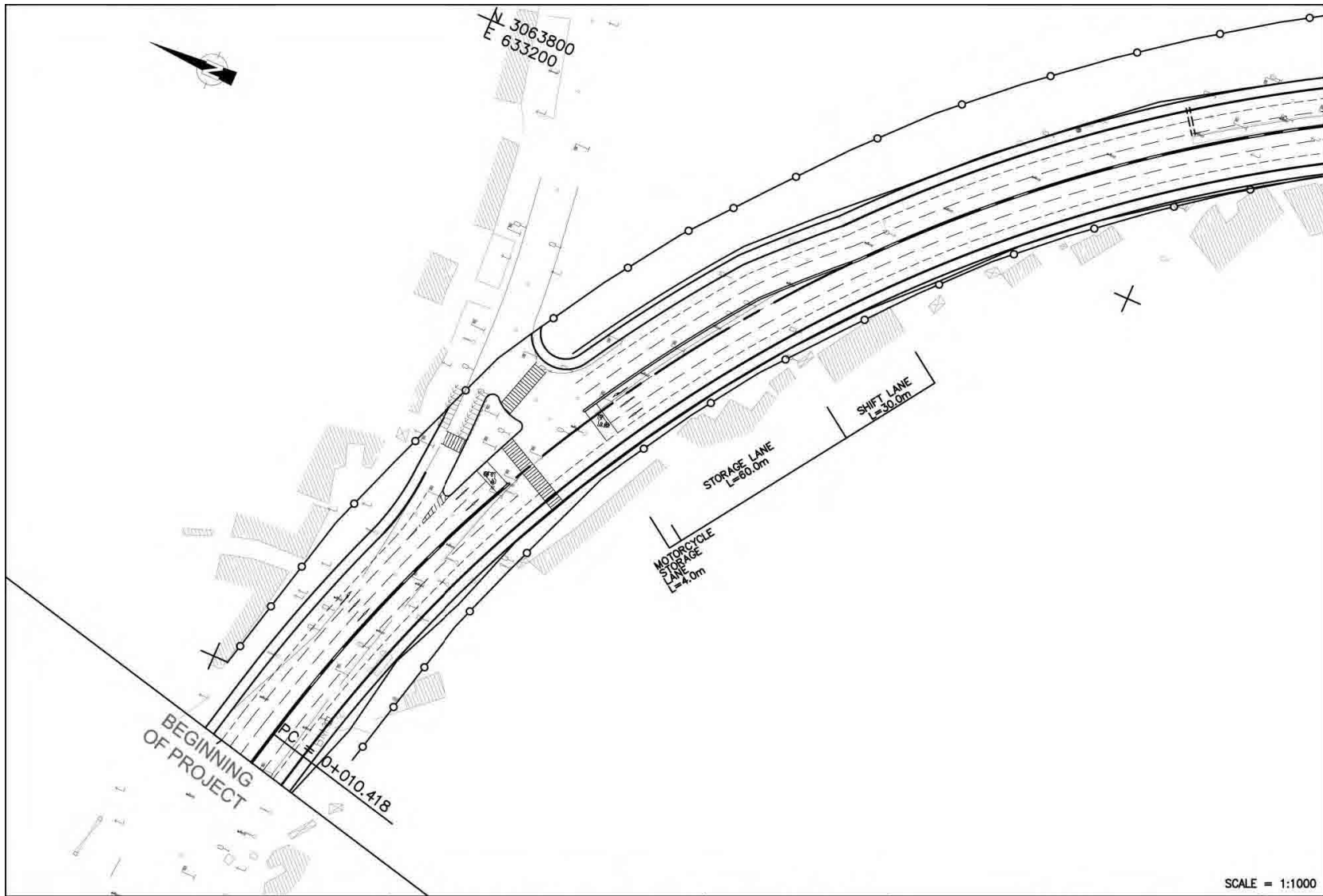
PROJECT NAME	CLIENT	CONSULTANT	DWG TITLE	DWG NO.
BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT OF KATHMANDU-BHAKTAPUR ROAD IN NEPAL	JAPAN INTERNATIONAL COOPERATION AGENCY GOVERNMENT OF NEPAL MINISTRY OF PHYSICAL PLANNING AND WORKS DEPARTMENT OF ROADS	NIPPON KOEI CO., LTD. Consulting Engineers Tokyo, JAPAN	PLAN AND PROFILE	PP-11




PROJECT NAME	CLIENT	CONSULTANT	DWG TITLE	DWG NO.
BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT OF KATHMANDU-BHAKTAPUR ROAD IN NEPAL	JAPAN INTERNATIONAL COOPERATION AGENCY GOVERNMENT OF NEPAL MINISTRY OF PHYSICAL PLANNING AND WORKS DEPARTMENT OF ROADS	NIPPON KOEI CO., LTD. Consulting Engineers Tokyo, JAPAN	PLAN AND PROFILE	PP-12



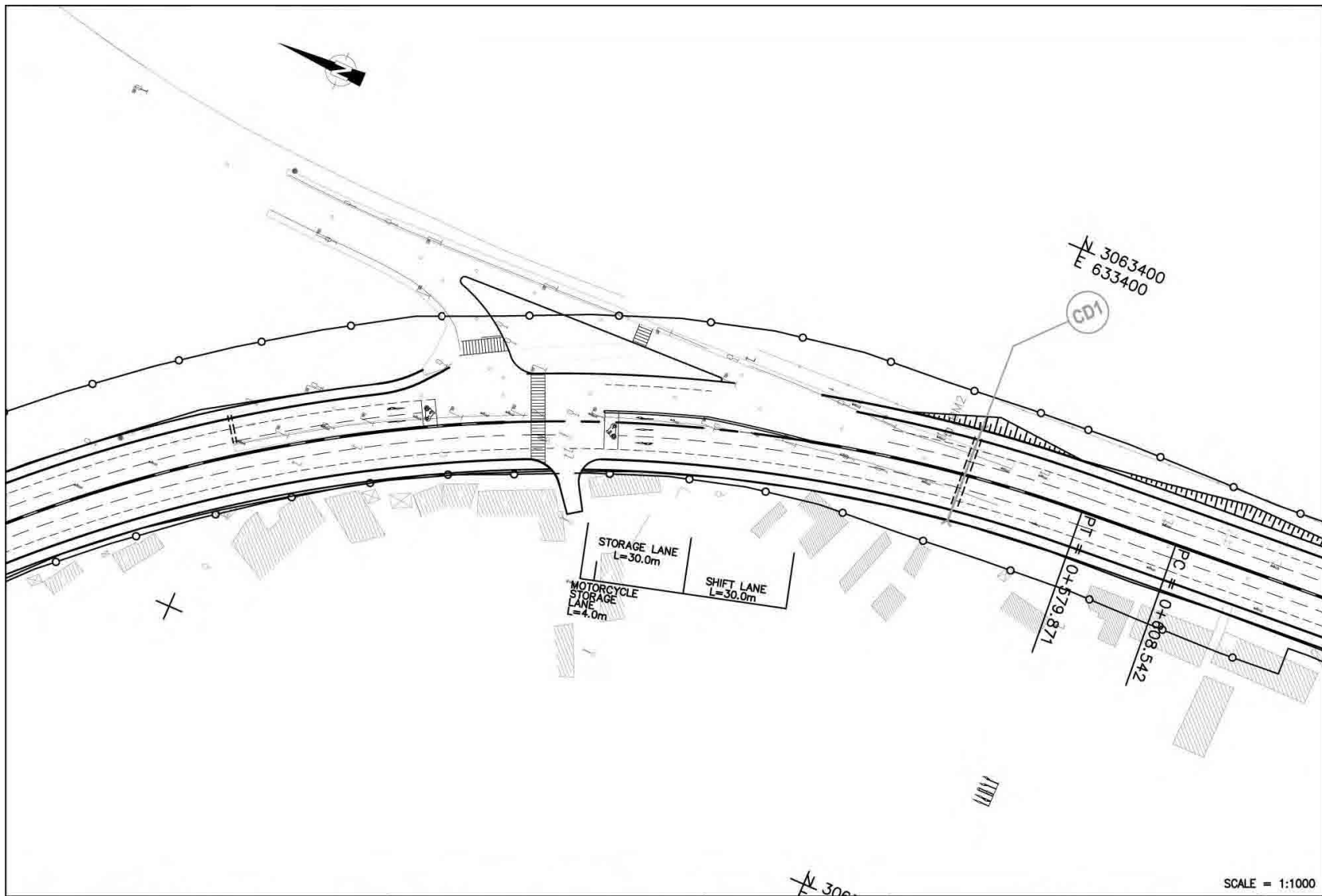





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PROJECT NAME	CLIENT	CONSULTANT	DWG TITLE	DWG NO.
BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT OF KATHMANDU-BHAKTAPUR ROAD IN NEPAL	JAPAN INTERNATIONAL COOPERATION AGENCY GOVERNMENT OF NEPAL MINISTRY OF PHYSICAL PLANNING AND WORKS DEPARTMENT OF ROADS	 NIPPON KOEI CO., LTD. Consulting Engineers Tokyo, JAPAN	TINKUNE INTERSECTION (1)	IS-01

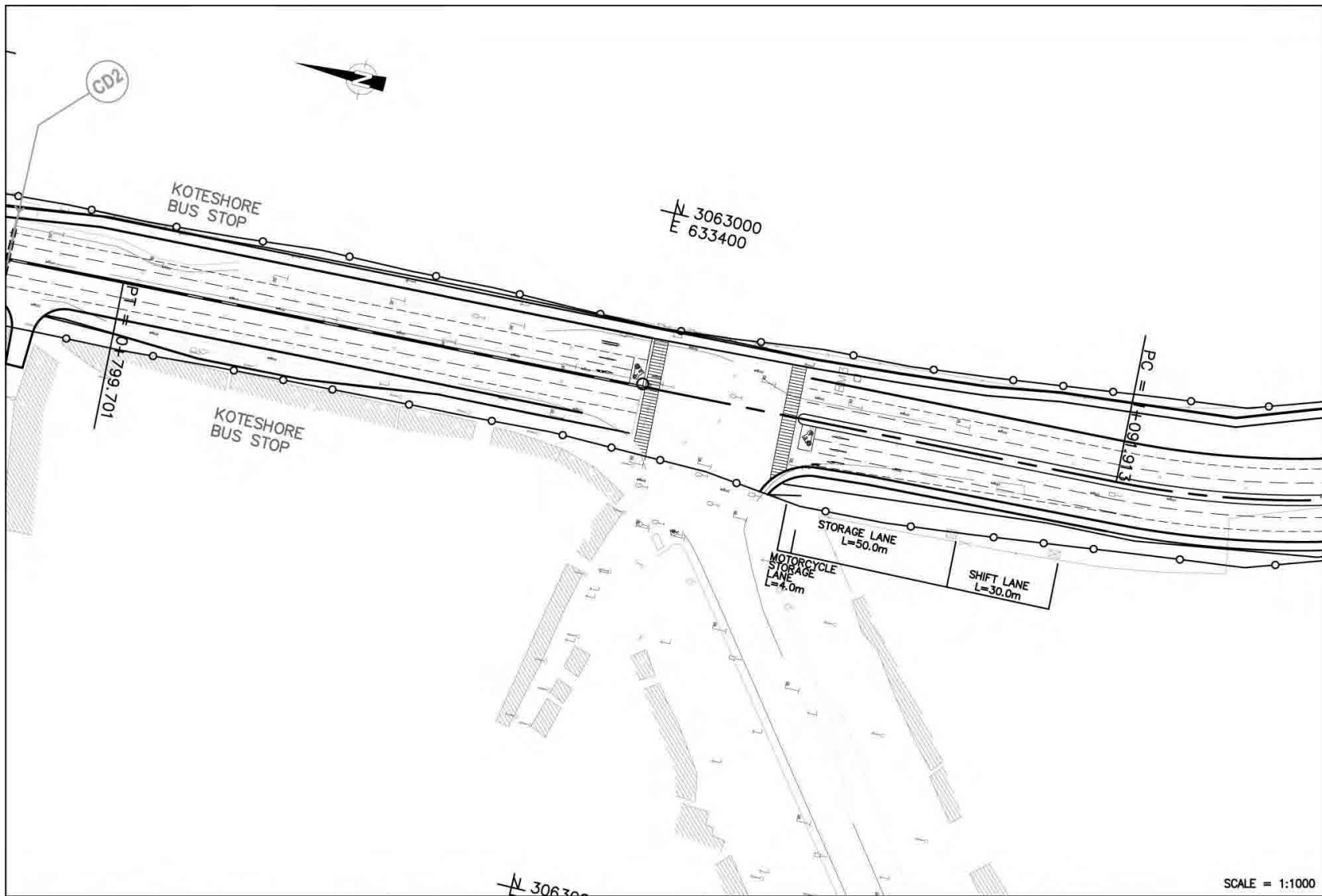
AS-17




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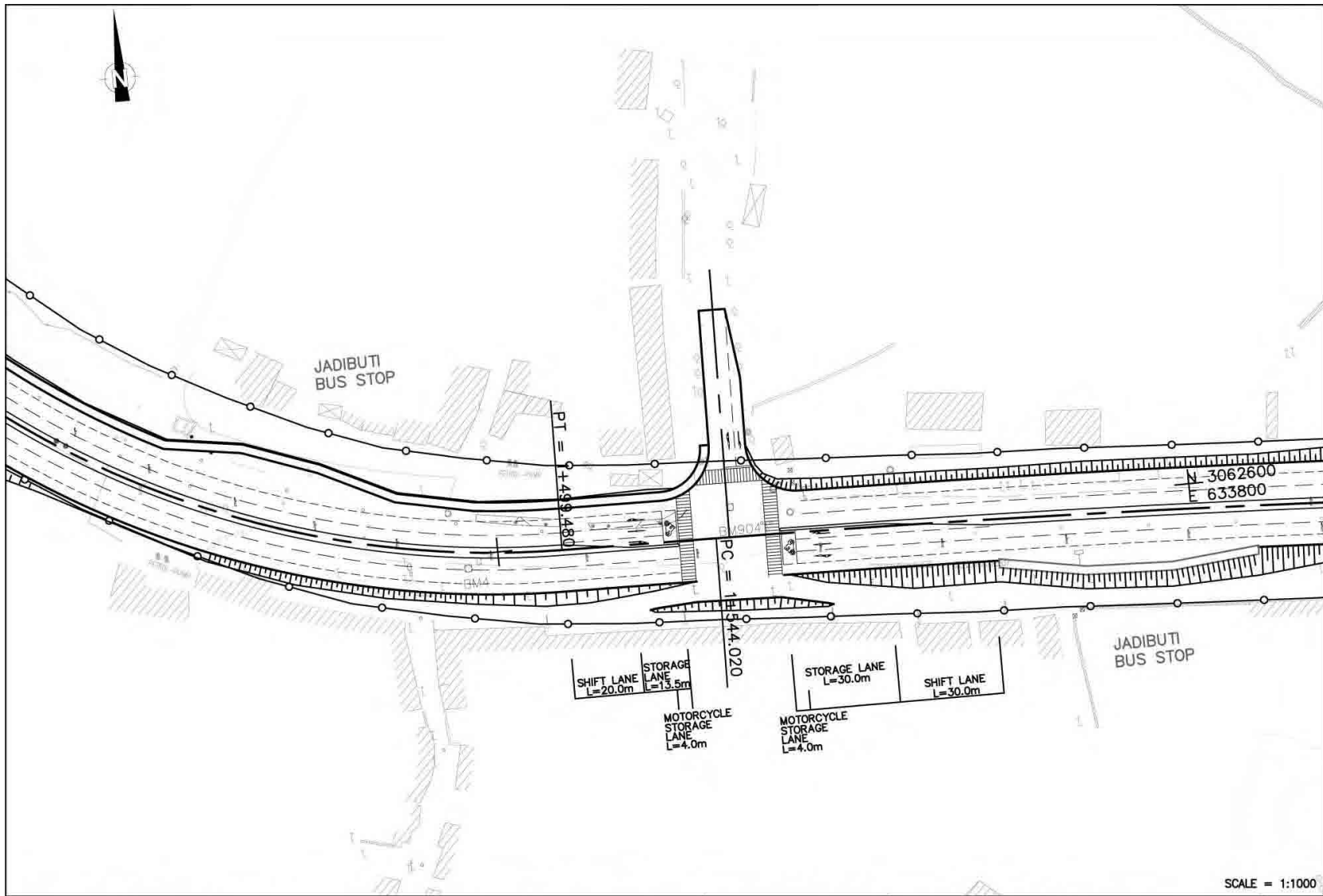
PROJECT NAME	CLIENT	CONSULTANT	DWG TITLE	DWG NO.
BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT OF KATHMANDU-BHAKTAPUR ROAD IN NEPAL	JAPAN INTERNATIONAL COOPERATION AGENCY GOVERNMENT OF NEPAL MINISTRY OF PHYSICAL PLANNING AND WORKS DEPARTMENT OF ROADS	 NIPPON KOEI CO., LTD. Consulting Engineers Tokyo, JAPAN	TINKUNE INTERSECTION (2)	IS-02

AS-18




PROJECT NAME	CLIENT	CONSULTANT	DWG TITLE	DWG NO.
BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT OF KATHMANDU-BHAKTAPUR ROAD IN NEPAL	JAPAN INTERNATIONAL COOPERATION AGENCY GOVERNMENT OF NEPAL MINISTRY OF PHYSICAL PLANNING AND WORKS DEPARTMENT OF ROADS	 NIPPON KOEI CO., LTD. Consulting Engineers Tokyo, JAPAN	KOTESWOR INTERSECTION	IS-03

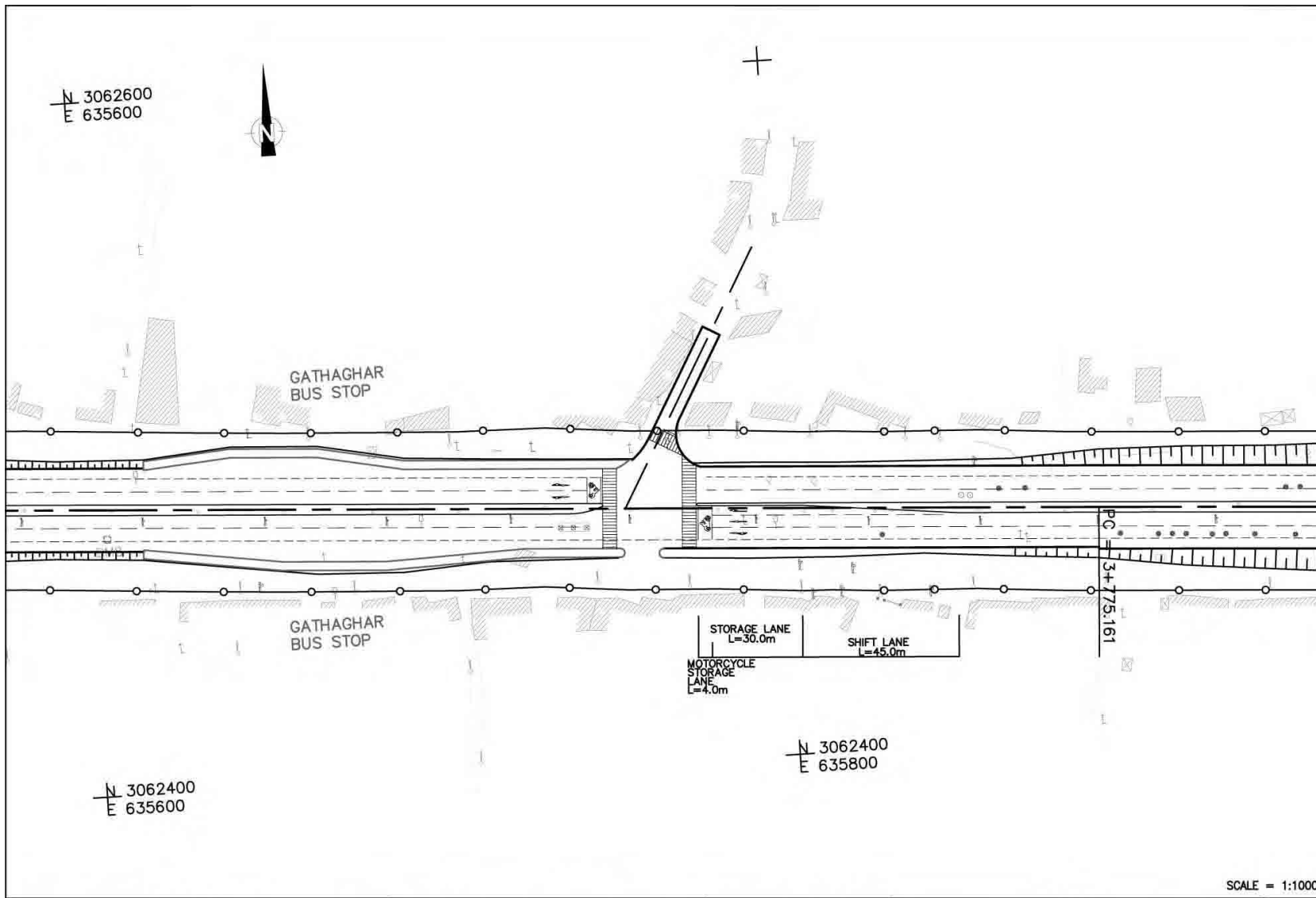
AS-19




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PROJECT NAME	CLIENT	CONSULTANT	DWG TITLE	DWG NO.
BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT OF KATHMANDU-BHAKTAPUR ROAD IN NEPAL	JAPAN INTERNATIONAL COOPERATION AGENCY GOVERNMENT OF NEPAL MINISTRY OF PHYSICAL PLANNING AND WORKS DEPARTMENT OF ROADS	 NIPPON KOEI CO., LTD. Consulting Engineers Tokyo, JAPAN	JADIBUTI INTERSECTION	IS-04

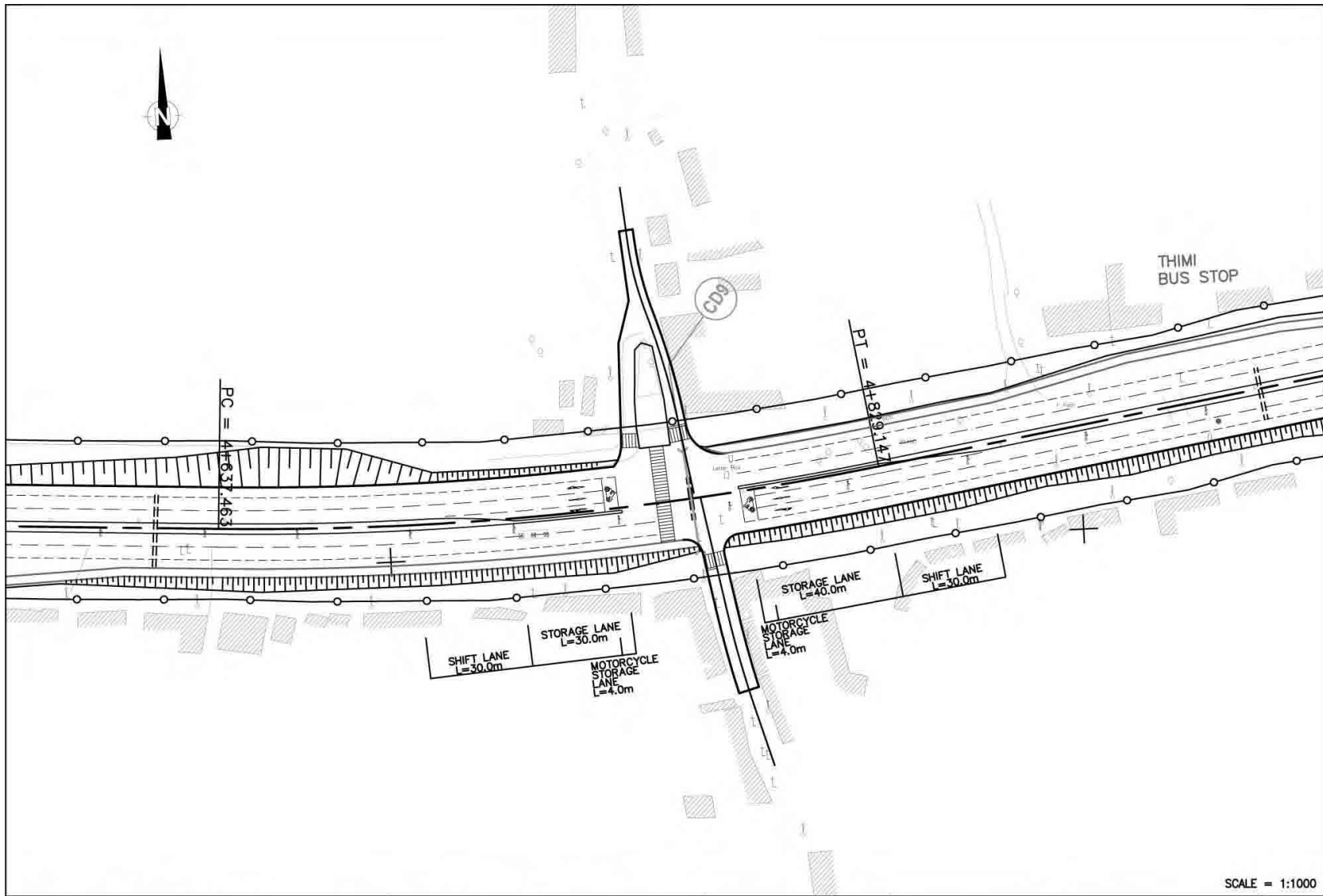
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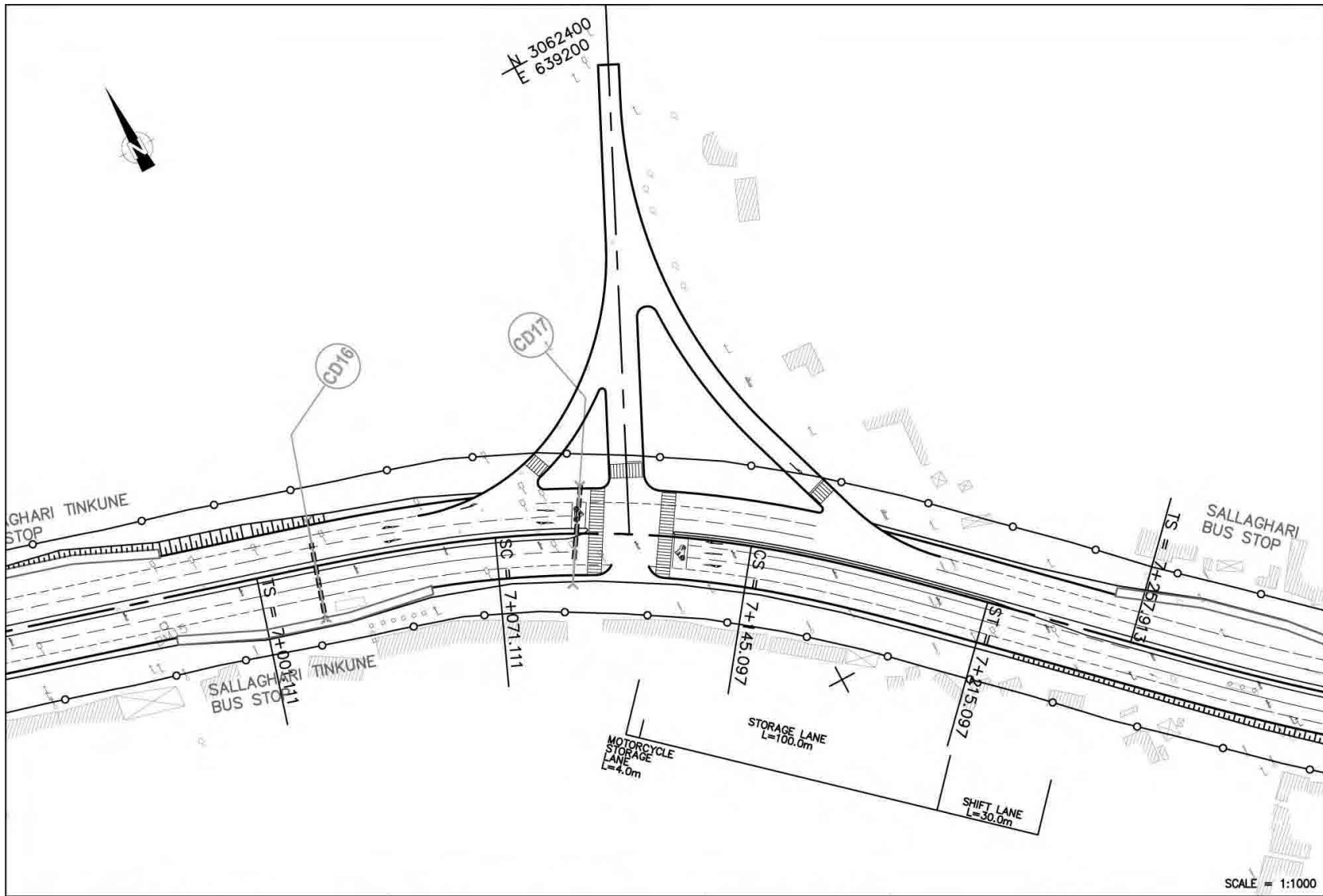
PROJECT NAME	CLIENT	CONSULTANT	DWG TITLE	DWG NO.
BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT OF KATHMANDU-BHAKTAPUR ROAD IN NEPAL	JAPAN INTERNATIONAL COOPERATION AGENCY GOVERNMENT OF NEPAL MINISTRY OF PHYSICAL PLANNING AND WORKS DEPARTMENT OF ROADS	 NIPPON KOEI CO., LTD. Consulting Engineers Tokyo, JAPAN	GATHAGHAR INTERSECTION	IS-05


AS-21

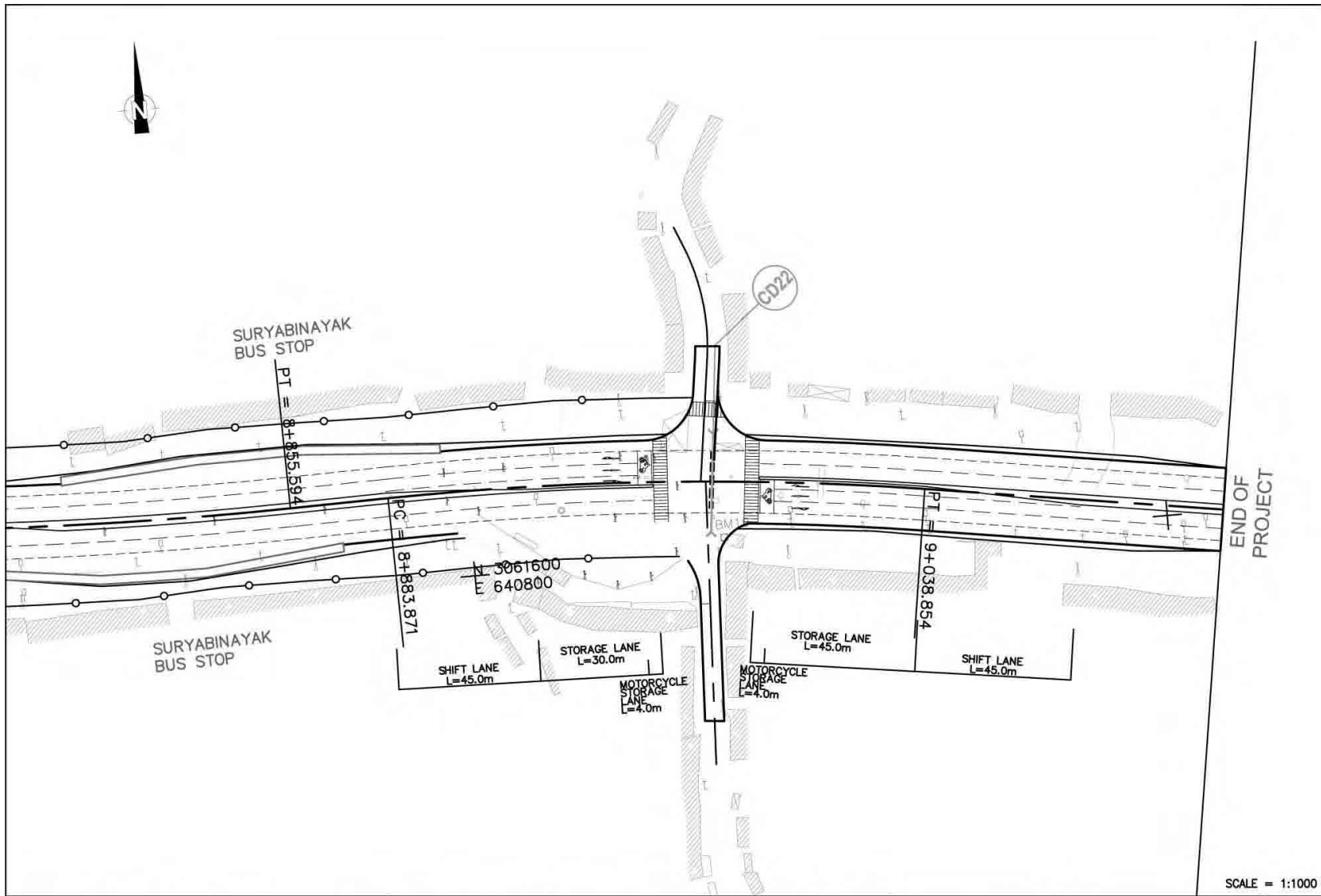



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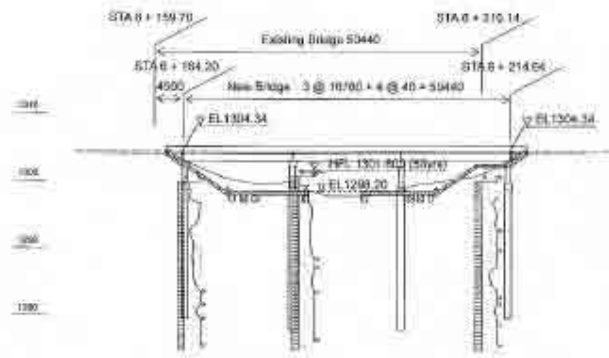
PROJECT NAME	CLIENT	CONSULTANT	DWG TITLE	DWG NO.
BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT OF KATHMANDU-BHAKTAPUR ROAD IN NEPAL	JAPAN INTERNATIONAL COOPERATION AGENCY GOVERNMENT OF NEPAL MINISTRY OF PHYSICAL PLANNING AND WORKS DEPARTMENT OF ROADS	 NIPPON KOEI CO., LTD. Consulting Engineers Tokyo, JAPAN	THIMI INTERSECTION	IS-06



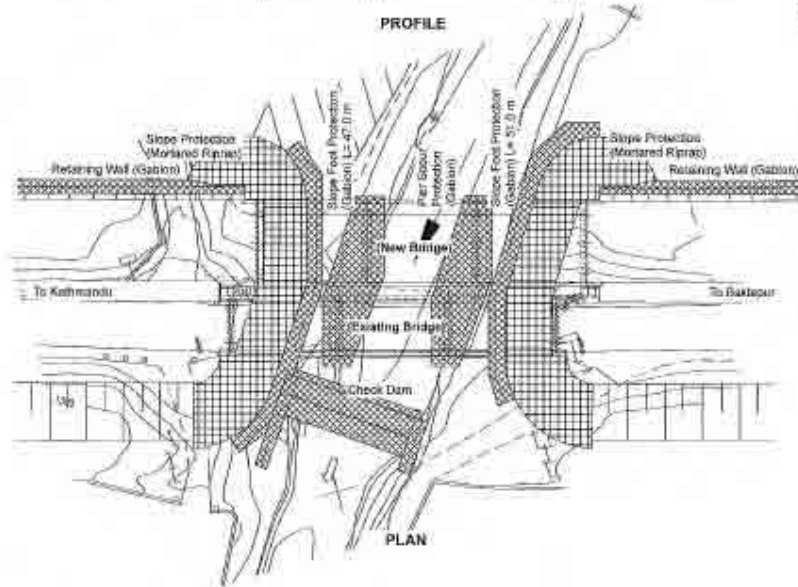
PROJECT NAME	CLIENT	CONSULTANT	DWG TITLE	DWG NO.
BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT OF KATHMANDU-BHAKTAPUR ROAD IN NEPAL	JAPAN INTERNATIONAL COOPERATION AGENCY GOVERNMENT OF NEPAL MINISTRY OF PHYSICAL PLANNING AND WORKS DEPARTMENT OF ROADS	 NIPPON KOEI CO., LTD. Consulting Engineers Tokyo, JAPAN	SALLAGHALI INTERSECTION	IS-07



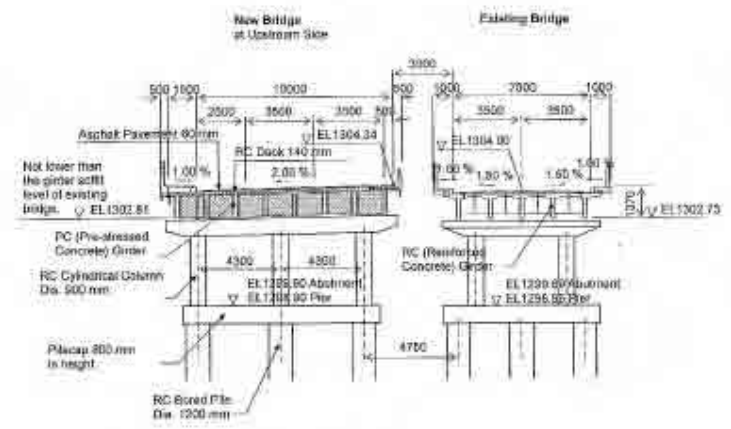
PROJECT NAME	CLIENT	CONSULTANT	DWG TITLE	DWG NO.
BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT OF KATHMANDU-BHAKTAPUR ROAD IN NEPAL	JAPAN INTERNATIONAL COOPERATION AGENCY GOVERNMENT OF NEPAL MINISTRY OF PHYSICAL PLANNING AND WORKS DEPARTMENT OF ROADS	 NIPPON KOEI CO., LTD. Consulting Engineers Tokyo, JAPAN	SURYABINAYAK INTERSECTION	IS-08



PROFILE



PLAN



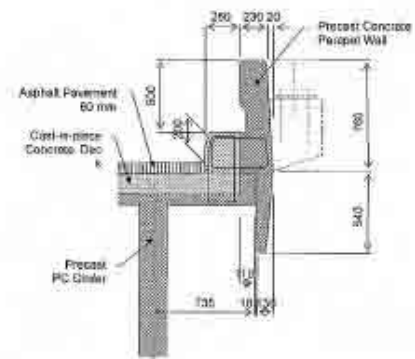
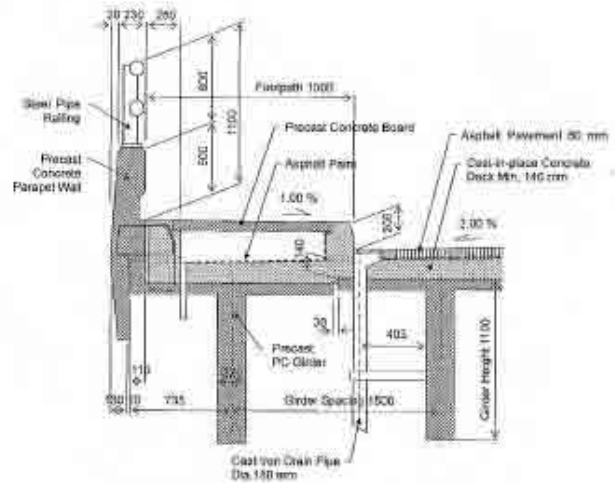
CROSS-SECTION

Notes:

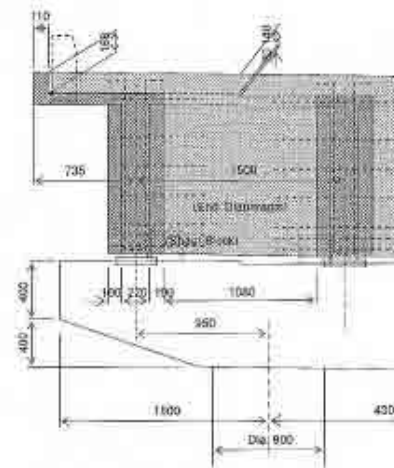
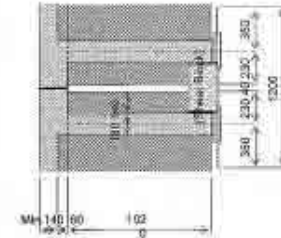
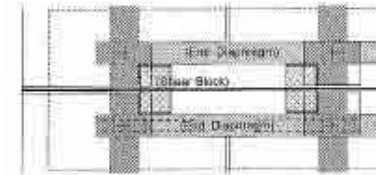
- Design Conditions
Design Standard: AASHTO LRFD Bridge Design Specifications 2004 and IRC (Indian Roads Congress) Standard Specifications and Code of Practice for Road Bridges
Design Traffic Live Load: 100 % of AASHTO's HL 93 Loading
Design Seismic Coefficient: $\alpha = 0.08$ from Zone V as per IS: 1906
- Design Weather Condition
Wind Velocity: hourly maximum 10.1 m/sec
Temperature Change: -2 to +35 °C
Humidity: annual average 71 %
- Design Flood Condition
Flood Return Period: 50 years
Flood Flow Velocity: 1.94 m/sec
High Flood Level: EL. 1307.88 m
Pier Sinking Depth: 4.2 m
- Bridge Location
The kilometer station shown on the profile is a preliminary information, it shall be determined by cadastral survey.

BRIDGE PRELIMINARY DESIGN
BRIDGE LAYOUT PLAN
HANUMANTE BRIDGE

PROJECT NAME	CLIENT	CONSULTANT	DWG TITLE	DWG NO.
BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT OF KATHMANDU BHAKTAPUR ROAD IN NEPAL	JAPAN INTERNATIONAL COOPERATION AGENCY / GOVERNMENT OF NEPAL, MINISTRY OF PHYSICAL PLANNING AND WORKS DEPARTMENT OF ROADS	NIPPON KOEI CO., LTD. Consulting Engineers Tokyo, JAPAN	GENERAL PLAN OF HANUMANTE BRIDGE	B0-02




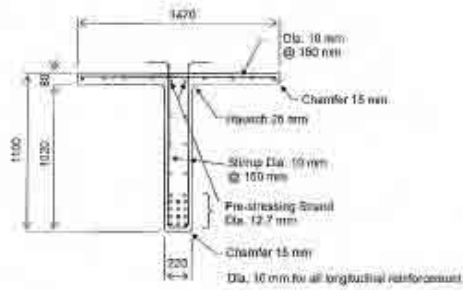
Girder, Deck Slab, Footpath and Parapet Wall



End Diaphragm and Shear Block

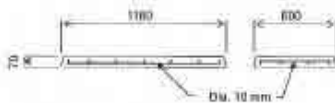
BRIDGE PRELIMINARY DESIGN
NEW BRIDGE DETAILS (1/3)

PROJECT NAME	CLIENT	CONSULTANT	DWG TITLE	DWG NO.
BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT OF KATHMANDU BHAKTAPUR ROAD IN NEPAL	JAPAN INTERNATIONAL COOPERATION AGENCY GOVERNMENT OF NEPAL MINISTRY OF PHYSICAL PLANNING AND WORKS DEPARTMENT OF ROADS	 NIPPON KOEI CO., LTD. Consulting Engineers Tokyo, JAPAN	NEW BRIDGE DETAIL (1/3)	BQ-03



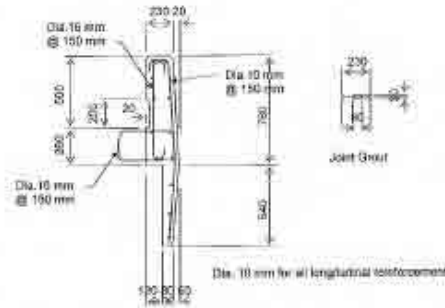
Pre-tensioned PC (Pre-stressed Concrete) Girder

- Girder Length: 15700 mm
- Weight: 13,600 kg / girder
- Number of Production Girders: 44 pcs
- Design Concrete Strength: 35 MPa
- Max. Aggregate Size: 20 mm
- Pre-stressing Steel: ASSHTO M 203M Grade 1860
Nominal Dia. 12.7 mm, 18 strands / girder
- Reinforcing Steel: ASSHTO M 31M Grade 420



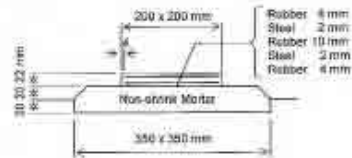
Pre-cast RC (Reinforced Concrete) Footpath Board

- Panel Length: 1180 mm Width: 400 mm
- Weight: 119 kg / panel
- Number of Production Panels: 234 pcs
- Design Concrete Strength: 30 MPa
- Max. Aggregate Size: 20 mm
- Reinforcing Steel: ASSHTO M 31M Grade 420



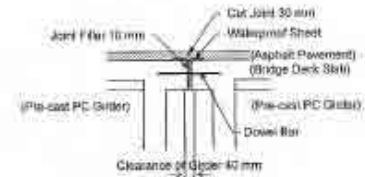
Pre-cast Reinforced Concrete Parapet Wall

- Panel Length: 1200 mm
- Weight: 877 kg / panel
- Number of Production Panels: 240 pcs
- Design Concrete Strength: 30 MPa
- Max. Aggregate Size: 20 mm
- Reinforcing Steel: ASSHTO M 31M Grade 420

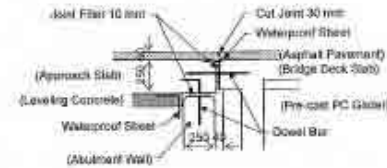


Elastomeric Bearing Shoe

- Elastomer Shear Modulus: between 0.60 and 1.30 MPa
- Nominal Hardness: between 50 and 60
- Non-shrink Mortar Design Strength: 30 MPa




Filler Joint on Deck Slab

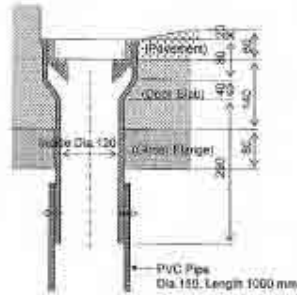
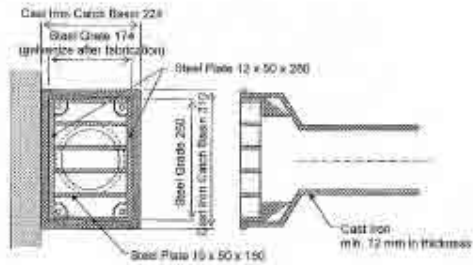


Deck Joint on Abutment and Approach Slab

- Approach Slab Thickness: 250 mm
- Length: 4,000 mm
- Width: 1,100 mm

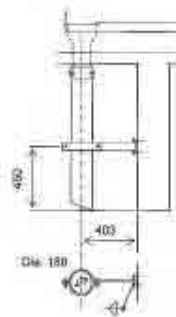
BRIDGE PRELIMINARY DESIGN
NEW BRIDGE DETAILS (2/3)

PROJECT NAME	CLIENT	CONSULTANT	DWG TITLE	DWG NO.
BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT OF KATHMANDU-BHAKTAPUR ROAD IN NEPW	JAPAN INTERNATIONAL COOPERATION AGENCY GOVERNMENT OF NEPAL MINISTRY OF PHYSICAL PLANNING AND WORKS DEPARTMENT OF ROADS	 NIPPON KOEI CO., LTD. Consulting Engineers Tokyo, JAPAN	NEW BRIDGE DETAIL (2/3)	BC-04



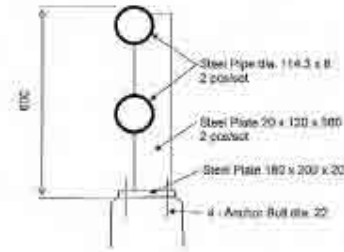
Deck Drain Catch Basin

Weight: Steel Grate 6.8 kg / grate
Cast Iron Catch Basin 33.5 kg / basin



Drain Pipe Support

- 1 - Steel Plate 50 x 8 x 450
- 1 - Steel Plate 50 x 5 x 400
- 3 - Steel Plate 100 x 100 x 8
- 2 - Embedded Anchor Bolt M10 x 60
- 2 - Set Bolt M10 x 40
- 4 - Set Bolt M10 x 40



Pedestrian Railing

Post Spacing: 1680 mm

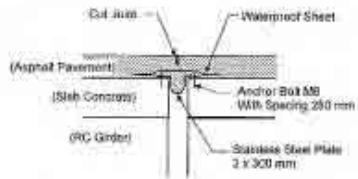
Weight: 55.0 kgs including posts, rails, base plates and anchor bolts.

Painting in Red Pipe: Corrosion Protection Coating and Color Painting

BRIDGE PRELIMINARY DESIGN

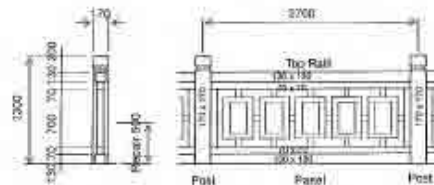
NEW BRIDGE DETAILS (3/3)

PROJECT NAME	CLIENT	CONSULTANT	DWG TITLE	DWG NO.
BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT OF KATHMANDU BHAKTAPUR ROAD IN NEPAL	JAPAN INTERNATIONAL COOPERATION AGENCY GOVERNMENT OF NEPAL MINISTRY OF PHYSICAL PLANNING AND WORKS DEPARTMENT OF ROADS	 NIPPON KOKAI CO., LTD. Consulting Engineers Tokyo, JAPAN	NEW BRIDGE DETAIL (3/3)	BG-05



Repair of Deck Joint

- Asphalt pavement is proposed to be replaced.
- All joint gaps are proposed to be covered up with the method.




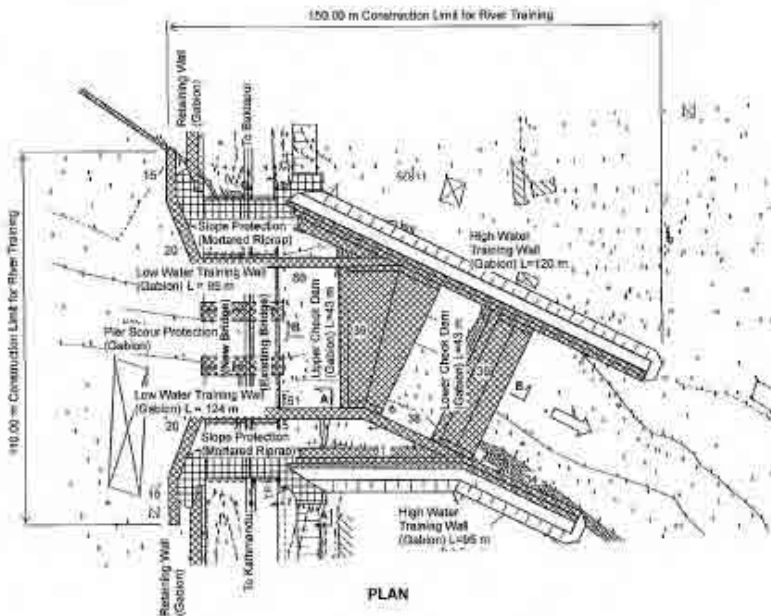
Repair of RC Railing

- Replacement of a missing top rail 100x150x250 mm on Hanuwantha Bridge.
- Repair of post by plastering on about 600 mm from base.
- Repair of railing panel by plastering on about 5 % of surface area estimated.
- Repaint with color paint on entire railing post and panel surfaces.

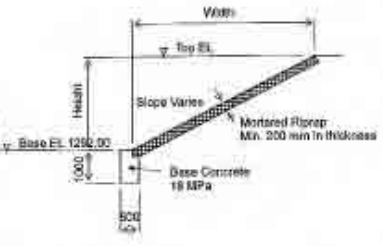
BRIDGE PRELIMINARY DESIGN

REPAIR OF EXISTING BRIDGE

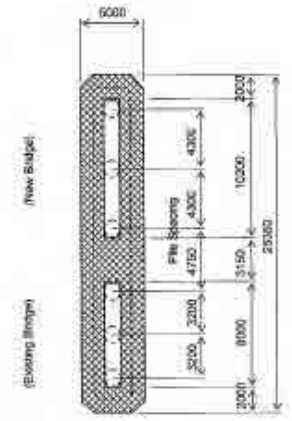
PROJECT NAME	CLIENT	CONSULTANT	DWG TITLE	DWG NO.
BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT OF KATHMANDU-BHAKTAPUR ROAD IN NEPAL	JAPAN INTERNATIONAL COOPERATION AGENCY GOVERNMENT OF NEPAL MINISTRY OF PHYSICAL PLANNING AND WORKS DEPARTMENT OF ROADS	 NIPPON KOEI CO., LTD. Consulting Engineers Tokyo, JAPAN	REPAIR PLAN OF EXISTING BRIDGE	BC-06



PLAN



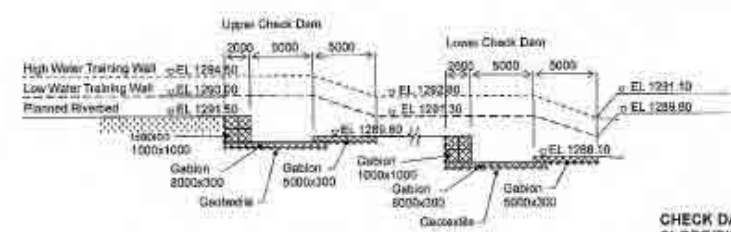
CROSS-SECTION of Slope Protection (Mortared Riprap)



PLAN and CROSS-SECTION of Pier Scour Protection (Gabion)



A - A

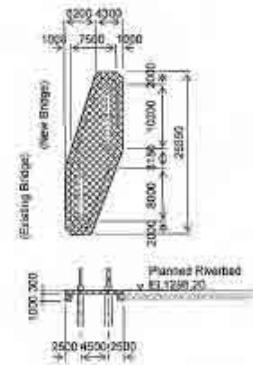
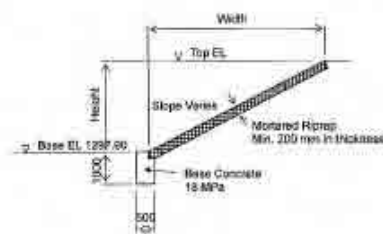
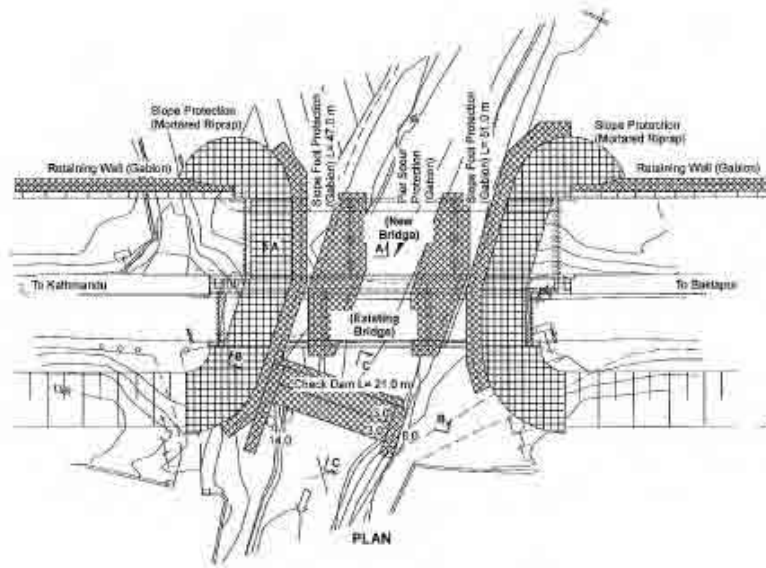


B - B

CROSS-SECTIONS of Check Dams and Training Walls (Gabion)

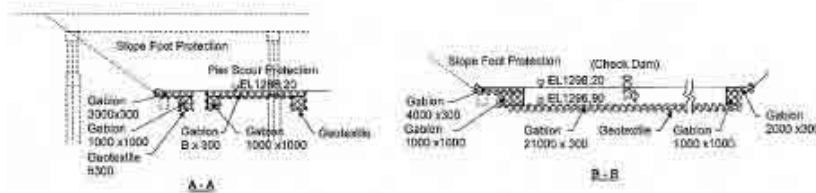
CHECK DAMS, TRAINING WALLS AND SLOPE/PIER PROTECTIONS
PRELIMINARY DESIGN
MANOHARA BRIDGE

PROJECT NAME	CLIENT	CONSULTANT	DWG TITLE	DWG NO.
BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT OF KATHMANDU-BHARTAPUR ROAD IN NIPAN	JAPAN INTERNATIONAL COOPERATION AGENCY GOVERNMENT OF NEPAL MINISTRY OF PHYSICAL PLANNING AND WORKS DEPARTMENT OF ROADS	NIPPON KOGI CO., LTD. Consulting Engineers Tokyo, JAPAN	CHECK DAMS, TRAINING WALLS AND SLOPE/PIER PROTECTIONS OF MANOHARA BRIDGE	BC-07

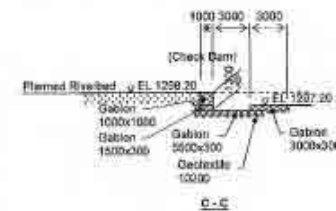


PLAN and CROSS-SECTION of Pier Scour Protection (Gabion)

CROSS-SECTION of Slope Protection (Mortared Riprap)




CROSS-SECTIONS of Check Dams and Slope Foot Protections (Gabion)



CHECK DAMS and SLOPE/PIER PROTECTIONS

PRELIMINARY DESIGN HANUMANTE BRIDGE

PROJECT NAME	CLIENT	CONSULTANT	DWG TITLE	DWG NO.
BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT OF KATHMANDU-BHAKTAPUR ROAD IN NEPAL	JAPAN INTERNATIONAL COOPERATION AGENCY GOVERNMENT OF NEPAL MINISTRY OF PHYSICAL PLANNING AND WORKS DEPARTMENT OF ROADS	 NIPPON KOGI CO., LTD. Consulting Engineers Tokyo, JAPAN	CHECK DAMS and SLOPE/PIER PROTECTIONS OF HANUMANTE BRIDGE	80-09