

G-1-22: Location and Type of Cross Drainage to be applied STA.262+50~STA.275+00

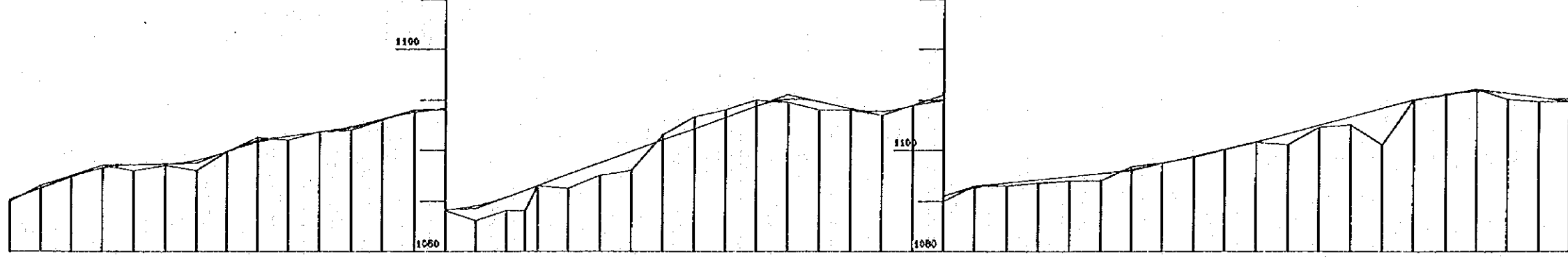


THE SECTION TO BE CONSTRUCTED BY 4M ROAD WIDTH



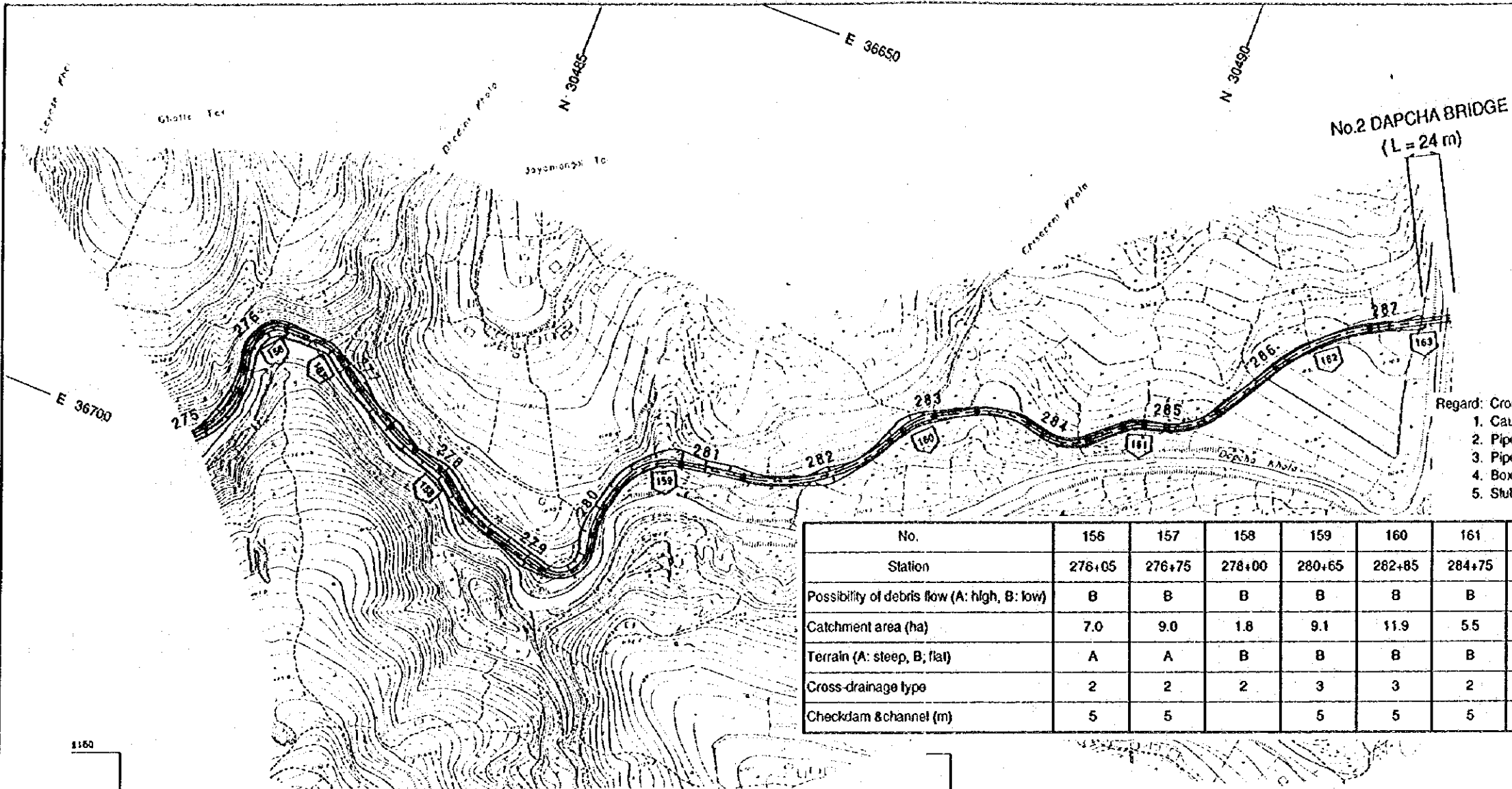
No.	145	146	147	148	149	150	151	152	153	154	155
Station	262+85	263+60	264+10	266+60	266+85	269+85	270+45	271+15	272+15	273+50	274+60
Possibility of debris flow (A: high, B: low)	B	B	B	B	B	B	B	B	B	B	B
Catchment area (ha)	1.4	2.0	10.8	13.1	1.4	9.6	6.2	3.3	5.1	8.1	1.5
Terrain (A: steep, B: flat)	A	A	A	A	A	A	A	A	A	A	A
Cross-drainage type	2	2	3	3	2	3	2	2	2	2	2
Checkdam & channel (m)			5	5		5	5	5	5	5	

- REGARD: Cross Drainage Type
1. Causeway with pipe (900)
 2. Pipe culvert (900 x 1)
 3. Pipe culvert (900 x 2)
 4. Box culvert (2m x 2m)
 5. Slab culvert (4m)



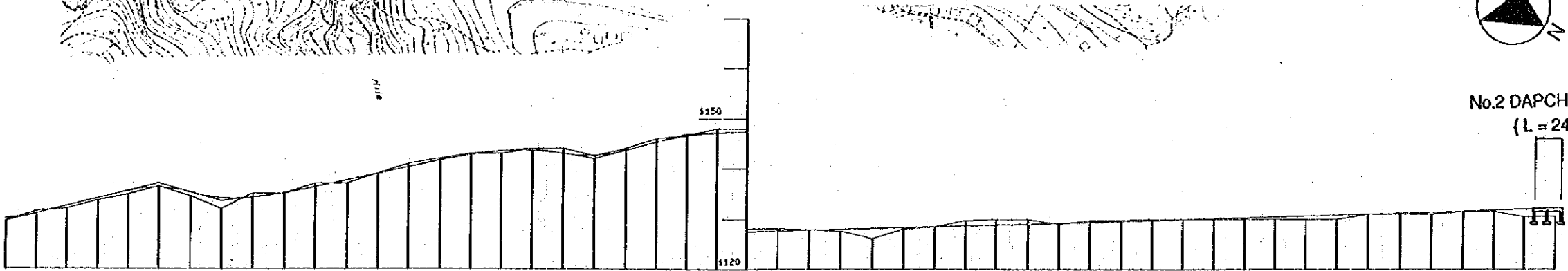
GRADE	+8.00% 100m											+8.57% 75m	+9.00% 50m	+13.33% 75m	+7.00% 50m	+1.00% 50m	+19.00% 250m	-3.33% 75m	+8.00% 75m	+12.00% 125m	+5.60% 100m	+5.80% 125m	+4.00% 82m	-3.33% 75m																																
PROPOSED HEIGHT	1050.23	1052.50	1054.75	1056.48	1057.17	1057.33	1058.02	1059.75	1061.05	1062.83	1064.73	1066.25	1067.62	1068.25	1069.00	1070.75	1072.10	1073.00	1073.25	1075.00	1077.90	1079.75	1081.00	1082.83	1084.25	1085.50	1086.75	1088.10	1089.10	1089.87	1090.33	1091.00	1092.63	1093.00	1093.90	1094.20	1094.80	1095.40	1095.10	1096.00	1097.35	1098.75	1099.13	1100.13	1101.55	1103.20	1104.90	1106.80	1108.30	1109.62	1110.00	1110.54	1111.17	1111.35	1110.08	1109.80
GROUND HEIGHT	1050.00	1053.00	1055.00	1057.00	1059.00	1061.00	1063.00	1065.00	1067.00	1069.00	1071.00	1073.00	1075.00	1077.00	1079.00	1081.00	1083.00	1084.00	1085.00	1086.00	1087.00	1088.00	1089.00	1090.00	1091.00	1092.00	1093.00	1094.00	1095.00	1096.00	1097.00	1098.00	1099.00	1100.00	1101.00	1102.00	1103.00	1104.00	1105.00	1106.00	1107.00	1108.00	1109.00	1110.00	1111.00	1112.00	1113.00	1114.00	1115.00	1116.00	1117.00	1118.00	1119.00	1120.00		
STATION	262+85	263+75	264	265+50	266+75	267	268+50	269+25	270+50	271+25	272+50	273+25	274+50	275+25	276	277+50	278+25	279+50	280	281+25	282+50	283+25	284+50	285	286+25	287+50	288+25	289+50	290+25	291+50	292+25	293+50	294+25	295+50	296+25	297+50	298+25	299+50	300+25	301+50	302+25	303+50	304+25	305+50	306+25	307+50	308+25	309+50	310+25	311+50	312+25	313+50	314+25	315+50		
CURVE ELEMENT	R=60.00		L=49.15	R=400.00	L=102.31		R=20.00	R=50.00	R=20.00	R=40.00	L=39.97	R=50.00	R=50.00	R=50.00		R=50.00	L=127.65		R=50.00	R=500.00				L=85.17		R=70.00																														

G-1-23: Location and Type of Cross Drainage to be applied STA.275+00~STA.287+50



- Regard: Cross Drainage Type
1. Causeway with pipe (900)
 2. Pipe culvert (900 x 1)
 3. Pipe culvert (900 x 2)
 4. Box culvert (2m x 2m)
 5. Slab culvert (4m)

No.	156	157	158	159	160	161	162	163
Station	276+05	276+75	278+00	280+65	282+85	284+75	286+45	287+25
Possibility of debris flow (A: high, B: low)	B	B	B	B	B	B	B	B
Catchment area (ha)	7.0	9.0	1.8	9.1	11.9	5.5	1.6	0.9
Terrain (A: steep, B: flat)	A	A	B	B	B	B	B	B
Cross-drainage type	2	2	2	3	3	2	2	2
Checkdam & channel (m)	5	5		5	5	5		5



No.2 DAPCHA BRIDGE (L = 24 m)

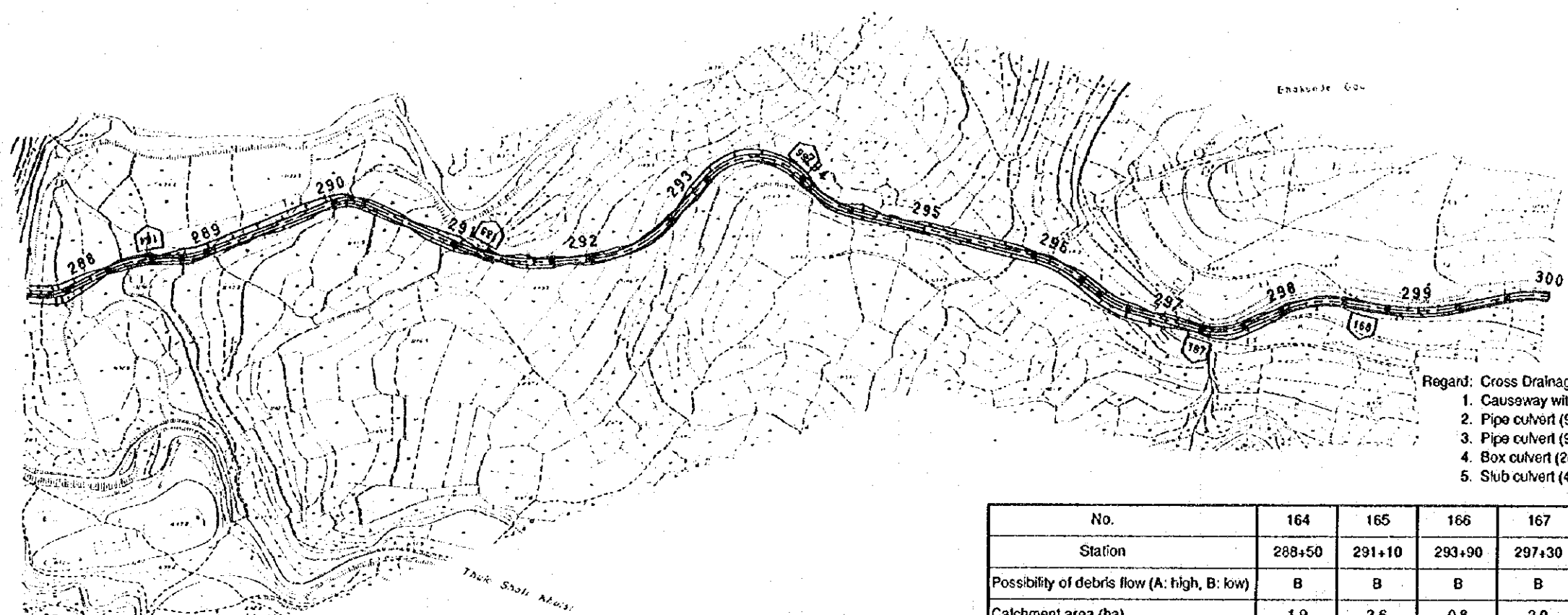
GRADE																																																			
PROPOSED HEIGHT	1109.90	1110.06	1110.90	1111.00	1112.30	1114.00	1115.90	1118.10	1119.90	1121.10	1122.00	1123.70	1123.90	1124.00	1124.00	1125.00	1125.30	1125.70	1126.63	1127.19	1127.38	1127.96	1127.75	1127.94	1128.13	1128.31	1128.50	1128.66	1128.86	1129.04	1129.21	1129.39	1129.57	1129.75	1129.83	1129.11	1129.29	1129.46	1129.64	1129.82	1129.62	1129.00	1129.10	1131.10	1131.38	1131.56	1131.75	1131.94	1132.13		
GROUND HEIGHT	1109.80	1110.06	1111.90	1111.00	1112.30	1113.64	1114.00	1115.90	1118.10	1119.90	1121.10	1122.00	1123.70	1123.90	1124.00	1124.00	1125.00	1125.30	1125.70	1126.63	1127.19	1127.38	1127.96	1127.75	1127.94	1128.13	1128.31	1128.50	1128.66	1128.86	1129.04	1129.21	1129.39	1129.57	1129.75	1129.83	1129.11	1129.29	1129.46	1129.64	1129.82	1129.62	1129.00	1129.10	1131.10	1131.38	1131.56	1131.75	1131.94	1132.13	
STATION	275	275+25	275+50	275+75	276	276+25	276+50	276+75	277	277+25	277+50	277+75	278	278+25	278+50	278+75	279	279+25	279+50	279+75	280	280+25	280+50	280+75	281	281+25	281+50	281+75	282	282+25	282+50	282+75	283	283+25	283+50	283+75	284	284+25	284+50	284+75	285	285+25	285+50	285+75	286	286+25	286+50	286+75	287	287+25	287+50
CURVE ELEMENT																																																			



N 30495 E 36600

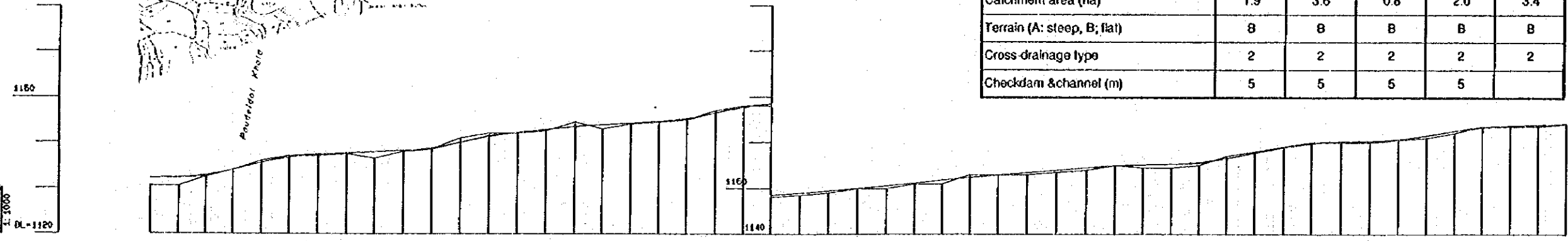
N 30500

G-1-24: Location and Type of Cross Drainage to be applied STA.287+50~STA.300+00

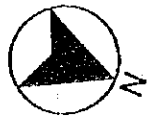


- Regard: Cross Drainage Type
1. Causeway with pipe (900)
 2. Pipe culvert (900 x 1)
 3. Pipe culvert (900 x 2)
 4. Box culvert (2m x 2m)
 5. Slub culvert (4m)

No.	164	165	166	167	168
Station	288+50	291+10	293+90	297+30	298+60
Possibility of debris flow (A: high, B: low)	B	B	B	B	B
Catchment area (ha)	1.9	3.6	0.8	2.0	3.4
Terrain (A: steep, B: flat)	B	B	B	B	B
Cross drainage type	2	2	2	2	2
Checkdam & channel (m)	5	5	5	5	



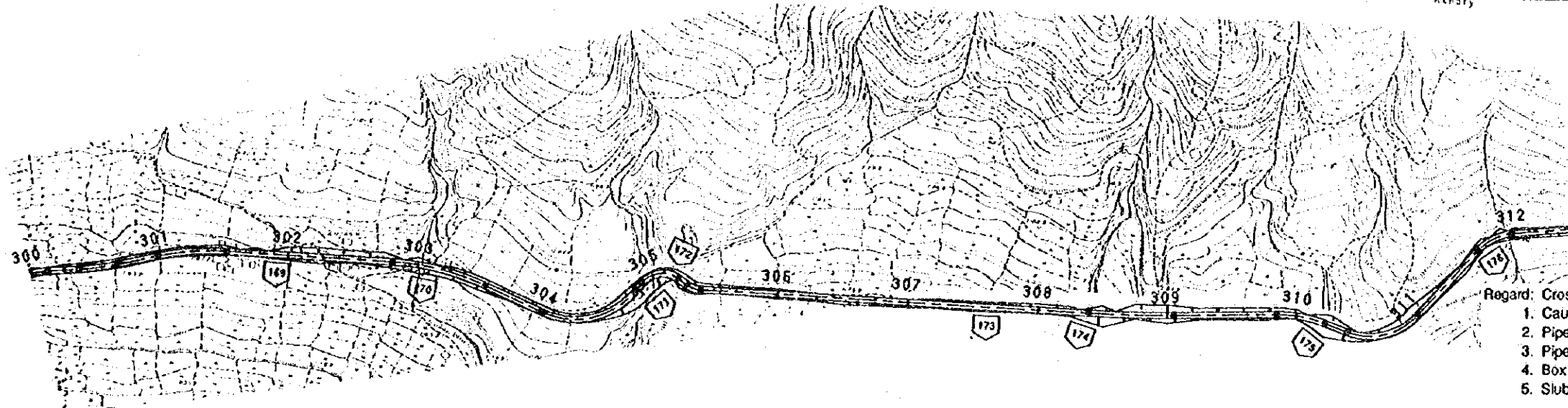
GRADE	$\frac{+0.76\%}{200m}$ $\frac{+5.00\%}{75m}$ $\frac{+1.20\%}{125m}$ $\frac{-6.00\%}{50m}$ $\frac{+2.67\%}{75m}$ $\frac{+1.60\%}{100m}$ $\frac{-5.00\%}{50m}$ $\frac{+2.00\%}{100m}$ $\frac{+2.50\%}{100m}$ $\frac{-2.00\%}{125m}$ $\frac{+0.67\%}{75m}$ $\frac{+4.60\%}{100m}$ $\frac{+0.67\%}{75m}$ $\frac{+4.00\%}{75m}$ $\frac{+0.67\%}{75m}$																																																		
PROPOSED HEIGHT	1130.13	1132.31	1132.83	1134.00	1135.50	1137.00	1137.50	1137.50	1137.50	1138.20	1138.80	1140.00	1141.20	1142.17	1142.83	1143.43	1144.25	1144.83	1145.28	1146.50	1147.75	1148.50	1149.00	1149.50	1150.03	1150.83	1151.23	1151.88	1152.47	1153.00	1153.50	1154.00	1154.92	1155.17	1155.33	1155.74	1156.83	1157.75	1158.88	1159.76	1160.00	1160.17	1160.33	1160.71	1161.50	1162.50	1163.20	1163.83	1164.13		
GROUND HEIGHT	1130.00	1130.50	1132.50	1134.00	1135.00	1137.00	1137.00	1137.50	1137.50	1138.00	1138.50	1140.00	1141.00	1142.00	1142.50	1143.00	1144.00	1144.50	1145.00	1146.00	1147.00	1148.00	1148.50	1149.00	1149.50	1150.00	1150.50	1151.00	1151.50	1152.00	1153.00	1153.50	1154.00	1155.00	1155.50	1156.00	1156.50	1157.00	1158.00	1158.50	1159.00	1160.00	1160.50	1161.00	1162.00	1163.00	1163.50	1164.00			
STATION	287+50	287+75	288	288+25	288+50	288+75	289	289+25	289+50	289+75	290	290+25	290+50	290+75	291	291+25	291+50	291+75	292	292+25	292+50	292+75	293	293+25	293+50	293+75	294	294+25	294+50	294+75	295	295+25	295+50	295+75	296	296+25	296+50	296+75	297	297+25	297+50	297+75	298	298+25	298+50	298+75	299	299+25	299+50	299+75	300
CURVE ELEMENT	R=30.00		R=90.00		R=60.00		L=104.11		R=30.00		L=75.59		R=150.00		R=90.00		L=40.87		R=50.00		R=60.00		L=145.03		R=90.00		L=58.13		R=50.00		R=90.00		R=150.00		R=90.00		R=150.00		R=90.00												



N 30505

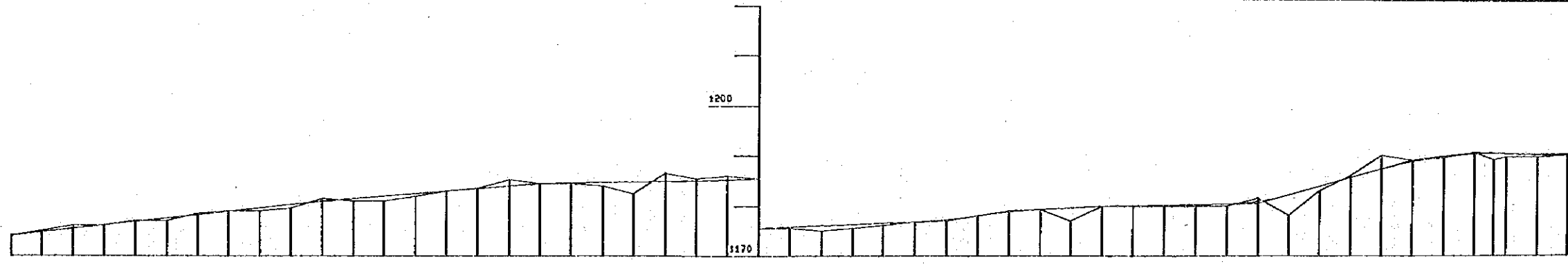
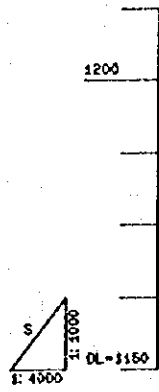
N 30510

G-1-25: Location and Type of Cross Drainage to be applied STA.300+00~STA.312+50



No.	169	170	171	172	173	174	175	176
Station	301+90	303+05	305+00	305+20	307+60	308+40	310+25	311+95
Possibility of debris flow (A: high, B: low)	B	B	B	B	B	B	B	B
Catchment area (ha)	8.5	10.3	8.7	13.8	3.7	9.5	12.9	2.1
Terrain (A: steep, B: flat)	B	B	A	B	B	B	A	A
Cross-drainage type	2	3	2	3	2	3	3	2
Checkdam & channel (m)	5	5	5	5	5	5	5	5

E 36600

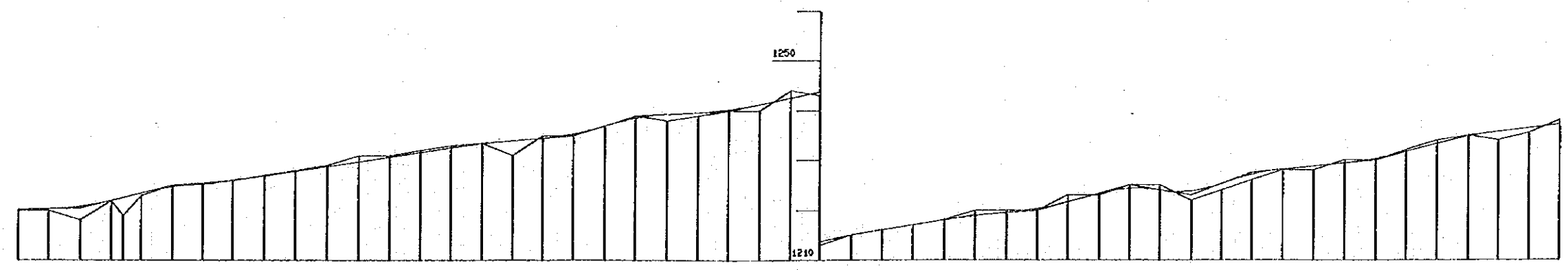
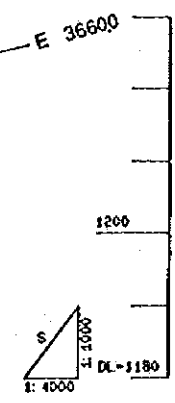
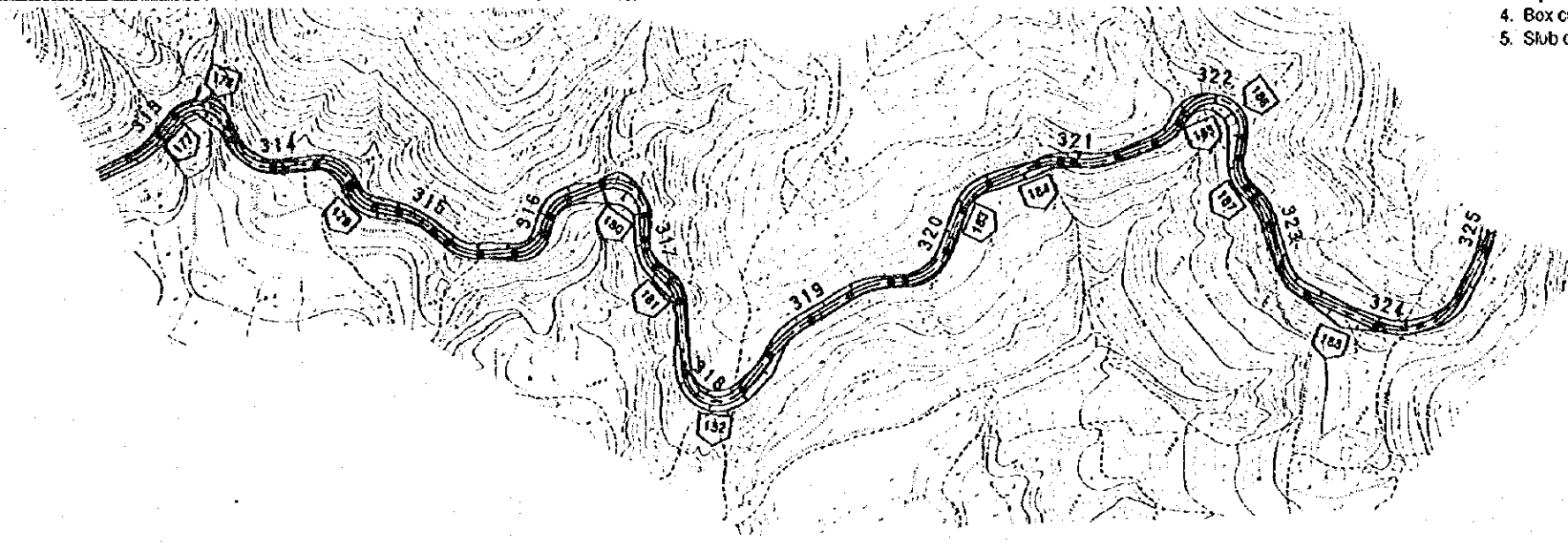


GRADE																																																																																																																					
PROPOSED HEIGHT	1184.13	1184.70	1185.40	1186.10	1187.50	1188.20	1188.90	1189.80	1190.05	1190.25	1190.40	1190.50	1190.60	1190.70	1190.80	1190.90	1191.00	1191.10	1191.20	1191.30	1191.40	1191.50	1191.60	1191.70	1191.80	1191.90	1192.00	1192.10	1192.20	1192.30	1192.40	1192.50	1192.60	1192.70	1192.80	1192.90	1193.00	1193.10	1193.20	1193.30	1193.40	1193.50	1193.60	1193.70	1193.80	1193.90	1194.00	1194.10	1194.20	1194.30	1194.40	1194.50	1194.60	1194.70	1194.80	1194.90	1195.00	1195.10	1195.20	1195.30	1195.40	1195.50	1195.60	1195.70	1195.80	1195.90	1196.00	1196.10	1196.20	1196.30	1196.40	1196.50	1196.60	1196.70	1196.80	1196.90	1197.00	1197.10	1197.20	1197.30	1197.40	1197.50	1197.60	1197.70	1197.80	1197.90	1198.00	1198.10	1198.20	1198.30	1198.40	1198.50	1198.60	1198.70	1198.80	1198.90	1199.00	1199.10	1199.20	1199.30	1199.40	1199.50	1199.60	1199.70	1199.80	1199.90	1200.00										
GROUND HEIGHT	1184.00	1185.00	1186.00	1187.00	1188.00	1189.00	1190.00	1191.00	1192.00	1193.00	1194.00	1195.00	1196.00	1197.00	1198.00	1199.00	1200.00	1201.00	1202.00	1203.00	1204.00	1205.00	1206.00	1207.00	1208.00	1209.00	1210.00	1211.00	1212.00	1213.00	1214.00	1215.00	1216.00	1217.00	1218.00	1219.00	1220.00	1221.00	1222.00	1223.00	1224.00	1225.00	1226.00	1227.00	1228.00	1229.00	1230.00	1231.00	1232.00	1233.00	1234.00	1235.00	1236.00	1237.00	1238.00	1239.00	1240.00	1241.00	1242.00	1243.00	1244.00	1245.00	1246.00	1247.00	1248.00	1249.00	1250.00	1251.00	1252.00	1253.00	1254.00	1255.00	1256.00	1257.00	1258.00	1259.00	1260.00	1261.00	1262.00	1263.00	1264.00	1265.00	1266.00	1267.00	1268.00	1269.00	1270.00	1271.00	1272.00	1273.00	1274.00	1275.00	1276.00	1277.00	1278.00	1279.00	1280.00	1281.00	1282.00	1283.00	1284.00	1285.00	1286.00	1287.00	1288.00	1289.00	1290.00	1291.00	1292.00	1293.00	1294.00	1295.00	1296.00	1297.00	1298.00	1299.00	1300.00
STATION	300	300+25	300+50	300+75	301	301+25	301+50	301+75	302	302+25	302+50	302+75	303	303+25	303+50	303+75	304	304+25	304+50	304+75	305	305+25	305+50	305+75	306	306+25	306+50	306+75	307	307+25	307+50	307+75	308	308+25	308+50	308+75	309	309+25	309+50	309+75	310	310+25	310+50	310+75	311	311+25	311+50	311+75	312	312+25	312+50																																																																		
CURVE ELEMENT	R=90.00		R=200.00		L=128.62		R=200.00		L=49.55		R=50.00		R=20.00		L=297.57		R=1000.00		L=79.42		R=100.00		L=67.73		L=71.78																																																																																												

G-1-26: Location and Type of Cross Drainage to be applied STA.312+50~STA.325+00

No.	177	178	179	180	181	182	183	184	185	186	187	188
Station	313+00	313+35	314+45	316+60	317+35	318+20	320+35	320+80	321+95	322+25	322+85	323+75
Possibility of debris flow (A: high, B: low)	B	B	B	B	B	B	B	B	B	B	B	B
Catchment area (ha)	5.6	13.0	4.4	11.6	0.6	0.8	1.0	1.0	12.7	2.0	0.5	0.5
Terrain (A: steep, B: flat)	A	A	A	A	B	B	B	B	A	A	A	A
Cross-drainage type	2	3	2	3	2	2	2	2	3	2	2	2
Checkdam & channel (m)	5	5	5	5	5	5	5	5	5	5		

- Regard: Cross Drainage Type
1. Causeway with pipe (900)
 2. Pipe culvert (900 x 1)
 3. Pipe culvert (900 x 2)
 4. Box culvert (2m x 2m)
 5. Slab culvert (4m)

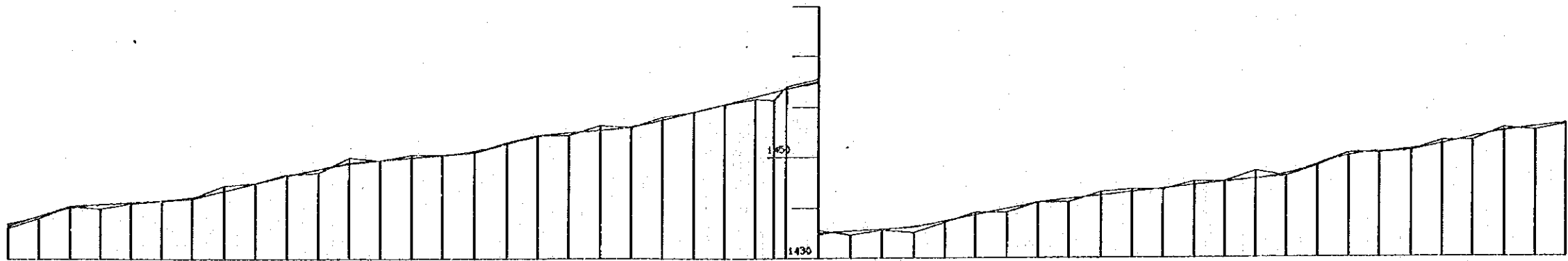
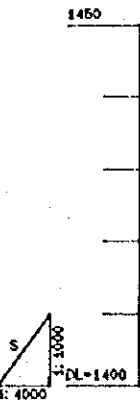
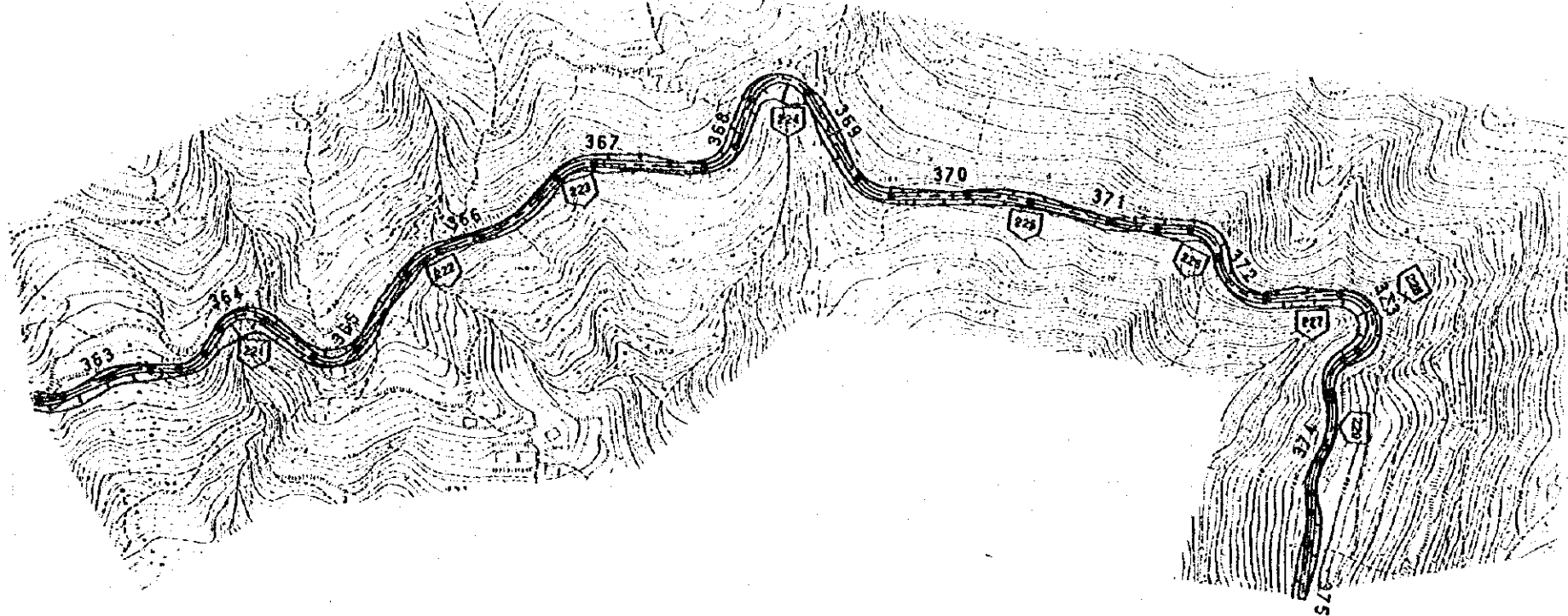


GRADE																																																				
PROPOSED HEIGHT	1189.17	1190.33	1190.80	1192.00	1192.80	1193.90	1194.75	1195.90	1196.11	1196.84	1197.86	1198.81	1199.00	1201.00	1200.89	1201.03	1202.96	1203.39	1204.00	1204.90	1205.36	1207.00	1208.33	1209.87	1210.23	1210.00	1211.25	1212.90	1213.75	1214.94	1215.00	1216.00	1216.67	1219.90	1220.29	1221.67	1223.33	1224.35	1224.00	1224.81	1225.25	1227.00	1228.13	1228.75	1229.36	1230.26	1231.87	1233.33	1234.77	1235.75	1236.50	1237.26
GROUND HEIGHT	1188.80	1190.00	1188.00	1192.00	1192.00	1193.90	1195.00	1195.20	1196.00	1197.00	1198.00	1199.00	1201.00	1201.00	1202.00	1203.00	1204.00	1205.00	1206.00	1207.00	1208.00	1209.00	1210.00	1211.00	1212.00	1213.00	1214.00	1215.00	1216.00	1217.00	1218.00	1219.00	1220.00	1221.00	1222.00	1223.00	1224.00	1225.00	1226.00	1227.00	1228.00	1229.00	1230.00	1231.00	1232.00	1233.00	1234.00	1235.00	1236.00	1237.00		
STATION	312+50	312+75	313	313+25	313+75	313+50	313+75	314	314+25	314+50	314+75	315	315+25	315+50	315+75	316	316+25	316+50	316+75	317	317+25	317+50	317+75	318	318+25	318+50	318+75	319	319+25	319+50	319+75	320	320+25	320+50	320+75	321	321+25	321+50	321+75	322	322+25	322+50	322+75	323	323+25	323+50	323+75	324	324+25	324+50	324+75	325
CURVE ELEMENT	R=50.00		R=25.00		R=20.00		R=20.00		R=50.00		R=20.00		R=20.00		R=20.00		R=20.00		R=20.00		L=44.81		R=20.00		R=20.00		R=30.00		R=50.00		R=30.00		R=30.00		R=20.00		R=20.00		R=40.00		L=48.16		R=20.00		R=30.00		R=40.00		R=50.00			

No.	221	222	223	224	225	226	227	228	229
Station	364+10	365+75	366+85	368+55	370+45	371+70	372+70	373+00	373+80
Possibility of debris flow (A: high, B: low)	B	B	B	B	B	B	B	B	B
Catchment area (ha)	6.9	6.0	5.5	19.1	7.6	4.7	15.1	5.1	3.2
Terrain (A: steep, B: flat)	A	A	A	A	A	A	A	A	A
Cross-drainage type	2	2	2	4	2	2	3	2	2
Checkdam & channel (m)	5	5	5	5		5	5	5	

G-1-30: Location and Type of Cross Drainage to be applied STA.362+50~STA.375+00

- Regard: Cross Drainage Type
1. Causeway with pipe (900)
 2. Pipe culvert (900 x 1)
 3. Pipe culvert (900 x 2)
 4. Box culvert (2m x 2m)
 5. Slab culvert (4m)



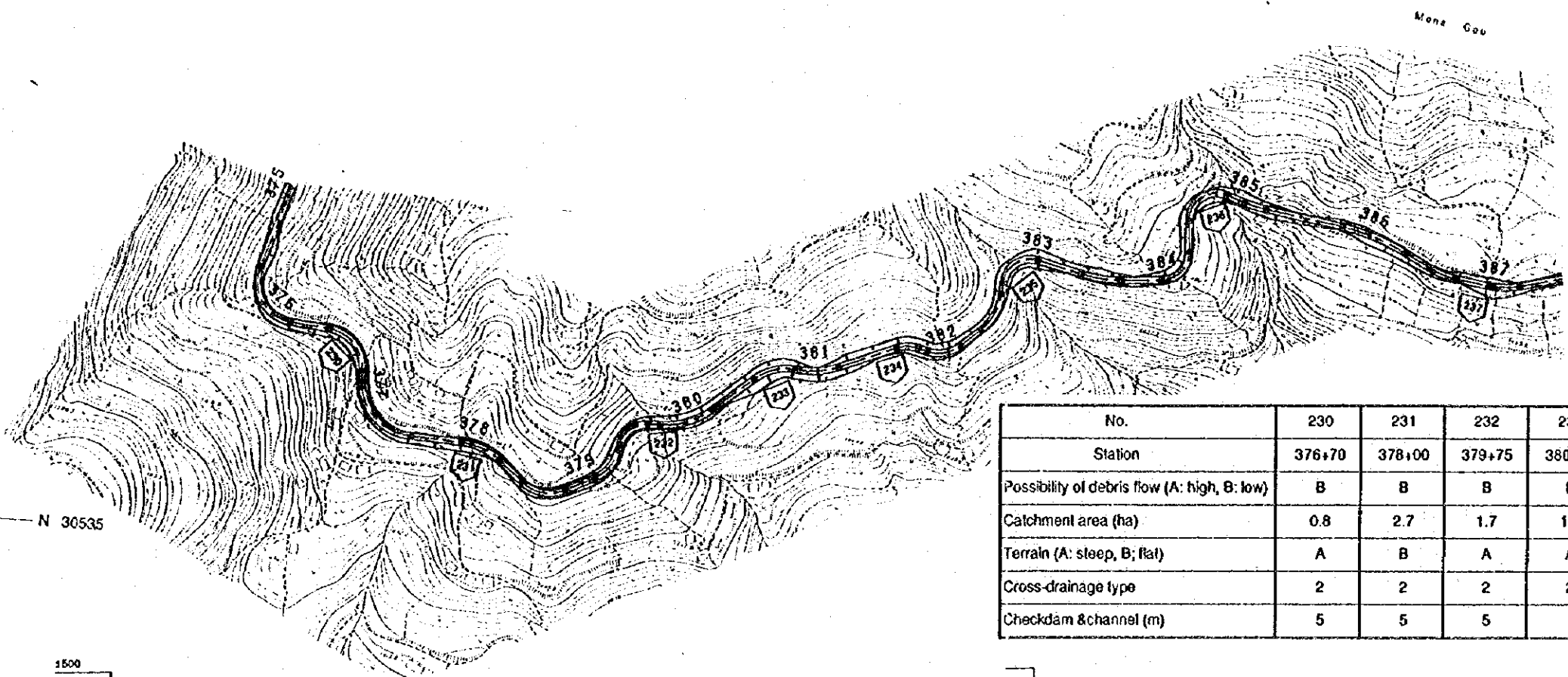
GRADE																					
PROPOSED HEIGHT	1406.94	1408.50	1410.06	1411.62	1413.18	1414.74	1416.30	1417.86	1419.42	1420.98	1422.54	1424.10	1425.66	1427.22	1428.78	1430.34	1431.90	1433.46	1435.02	1436.58	
GROUND HEIGHT	1406.00	1408.00	1410.00	1411.00	1412.00	1413.00	1414.00	1415.00	1416.00	1417.00	1418.00	1419.00	1420.00	1421.00	1422.00	1423.00	1424.00	1425.00	1426.00	1427.00	1428.00
STATION	362+00	362+75	363	363+25	363+50	363+75	364	364+25	364+50	364+75	365	365+25	365+50	365+75	366	366+25	366+50	366+75	367	367+25	
CURVE ELEMENT																					



E 36250

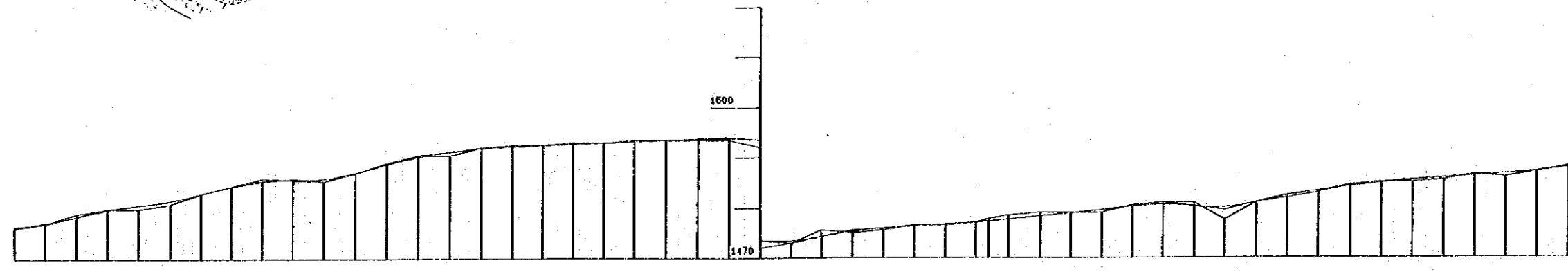
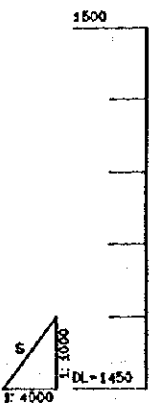
E 36200

G-1-31: Location and Type of
Cross Drainage to be applied
STA.375+00~STA.387+50

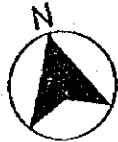


- Regard: Cross Drainage Type
1. Causeway with pipe (900)
 2. Pipe culvert (900 x 1)
 3. Pipe culvert (900 x 2)
 4. Box culvert (2m x 2m)
 5. Stub culvert (4m)

No.	230	231	232	233	234	235	236	237
Station	376+70	378+00	379+75	380+70	381+65	382+85	384+80	386+90
Possibility of debris flow (A: high, B: low)	B	B	B	B	B	B	B	B
Catchment area (ha)	0.8	2.7	1.7	1.1	1.5	5.4	17.7	3.4
Terrain (A: steep, B: flat)	A	B	A	A	A	A	A	B
Cross-drainage type	2	2	2	2	2	2	3	2
Checkdam & channel (m)	5	5	5			5	5	5



GRADE																																																	
PROPOSED HEIGHT	1476.33	1477.21	1478.30	1479.81	1480.75	1481.88	1483.00	1484.50	1485.56	1486.75	1487.98	1489.17	1490.85	1492.27	1493.25	1494.44	1495.88	1497.81	1499.53	1500.25	1501.06	1502.33	1503.33	1504.69	1505.40	1506.20	1507.10	1507.90																					
GROUND HEIGHT	1456.20	1457.00	1458.00	1459.81	1460.75	1461.88	1463.00	1464.50	1465.56	1466.75	1467.98	1469.17	1470.85	1472.27	1473.25	1474.44	1475.88	1477.81	1479.53	1480.25	1481.06	1482.33	1483.33	1484.69	1485.40	1486.20	1487.10	1487.90																					
STATION	375	375+25	375+50	375+75	376	376+25	377	377+25	377+50	377+75	378	378+25	378+50	378+75	379	379+25	379+50	379+75	380	380+25	380+50	380+75	381	381+25	381+50	381+75	382	382+25	382+50	382+75	383	383+25	383+50	383+75	384	384+25	384+50	384+75	385	385+25	385+50	385+75	386	386+25	386+50	386+75	387	387+25	387+50
CURVE ELEMENT	L=97.41		R=30.00		R=40.00		L=38.47		R=50.00		R=20.00		L=35.17		R=20.00		L=43.15		R=25.00		R=20.00		R=100.00		R=20.00		R=100.00		L=57.11		R=100.00		R=50.00		R=50.00														

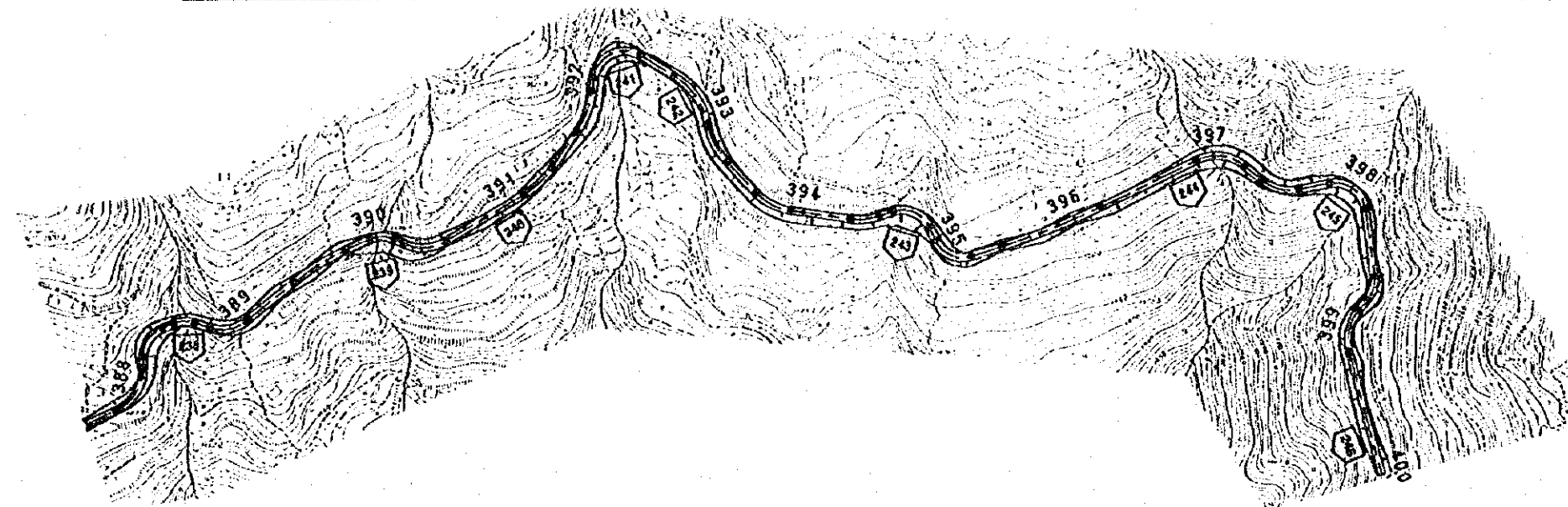


No.	238	239	240	241	242	243	244	245	246
Station	388+50	390+00	390+95	392+25	392+90	394+75	396+90	398+00	399+70
Possibility of debris flow (A: high, B: low)	B	B	B	B	B	B	B	B	B
Catchment area (ha)	14.2	6.8	1.0	21.0	1.4	12.0	14.0	12.2	4.3
Terrain (A: steep, B: flat)	A	A	A	A	A	A	A	A	A
Cross-drainage type	3	2	2	4	2	3	3	3	2
Checkdam & channel (m)	5	5	5	5	5	5	5	5	5

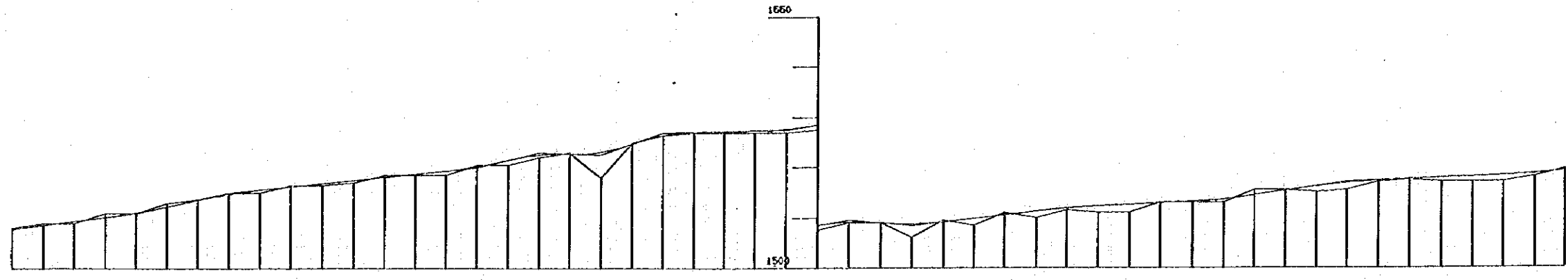
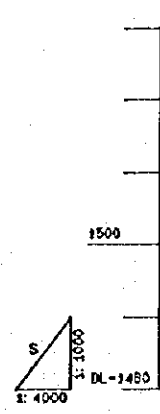
N 30535

G-1-32: Location and Type of Cross Drainage to be applied STA.387+50~STA.400+00

- Regard: Cross Drainage Type
1. Causeway with pipe (900)
 2. Pipe culvert (900 x 1)
 3. Pipe culvert (900 x 2)
 4. Box culvert (2m x 2m)
 5. Slub culvert (4m)

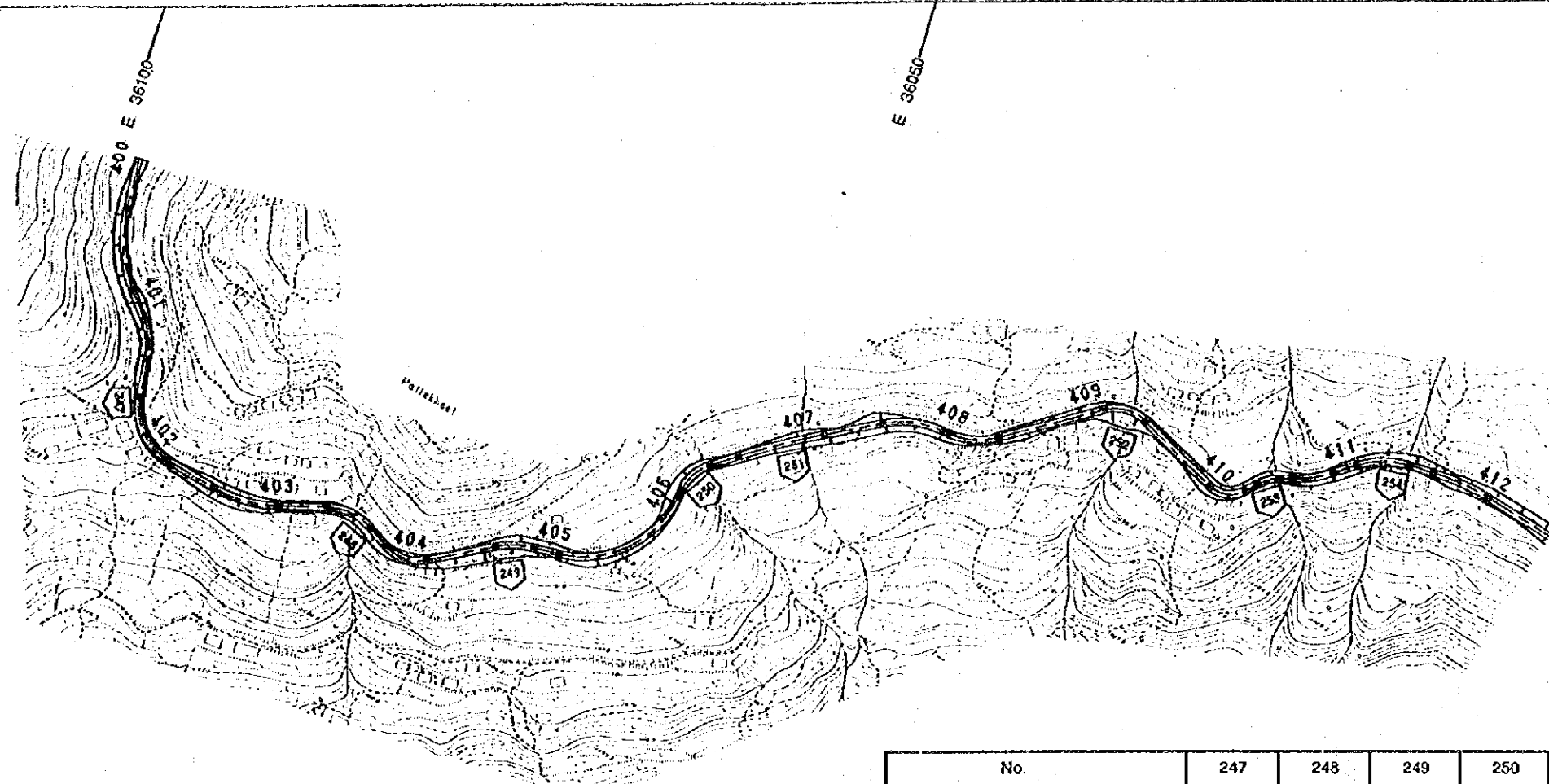


N 30530



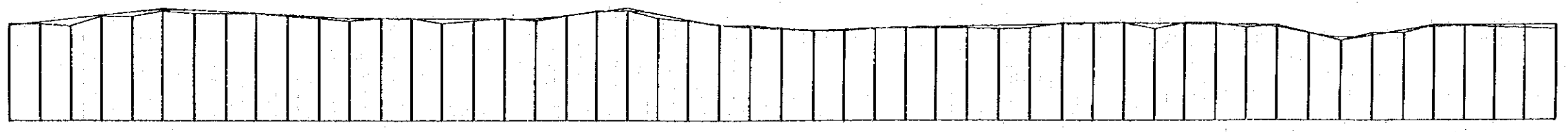
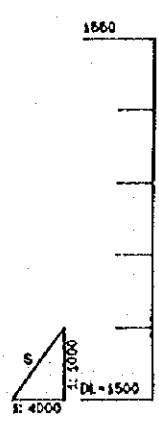
GRADE																																																					
PROPOSED HEIGHT	1488.00	1488.00	1489.40	1490.20	1491.13	1492.33	1493.67	1494.82	1495.83	1496.25	1496.88	1497.50	1498.13	1498.75	1499.36	1500.22	1501.50	1502.96	1502.75	1503.13	1504.75	1506.47	1507.13	1507.25	1507.36	1507.72	1508.50	1509.12	1509.20	1509.30	1509.80	1509.80	1510.00	1510.00	1511.30	1511.90	1512.30	1512.60	1512.90	1513.20	1513.64	1514.36	1515.25	1515.13	1516.64	1517.25	1517.50	1517.75	1518.00	1518.25	1518.60	1518.90	1519.17
GROUND HEIGHT	1488.00	1488.00	1489.40	1490.20	1491.13	1492.33	1493.67	1494.82	1495.83	1496.25	1496.88	1497.50	1498.13	1498.75	1499.36	1500.22	1501.50	1502.96	1502.75	1503.13	1504.75	1506.47	1507.13	1507.25	1507.36	1507.72	1508.50	1509.12	1509.20	1509.30	1509.80	1509.80	1510.00	1510.00	1511.30	1511.90	1512.30	1512.60	1512.90	1513.20	1513.64	1514.36	1515.25	1515.13	1516.64	1517.25	1517.50	1517.75	1518.00	1518.25	1518.60	1518.90	1519.17
STATION	387+50	387+75	388	388+25	388+90	389+75	389	389+25	389+50	389+75	390	390+25	390+50	390+75	391	391+25	391+50	391+75	392	392+25	392+50	392+75	393	393+25	393+50	393+75	394	394+25	394+50	394+75	395	395+25	395+50	395+75	396	396+25	396+50	396+75	397	397+25	397+50	397+75	398	398+25	398+50	398+75	399	399+25	399+50	399+75	400		
CURVE ELEMENT																																																					

G-1-33: Location and Type of Cross Drainage to be applied STA.400+00~STA.412+50



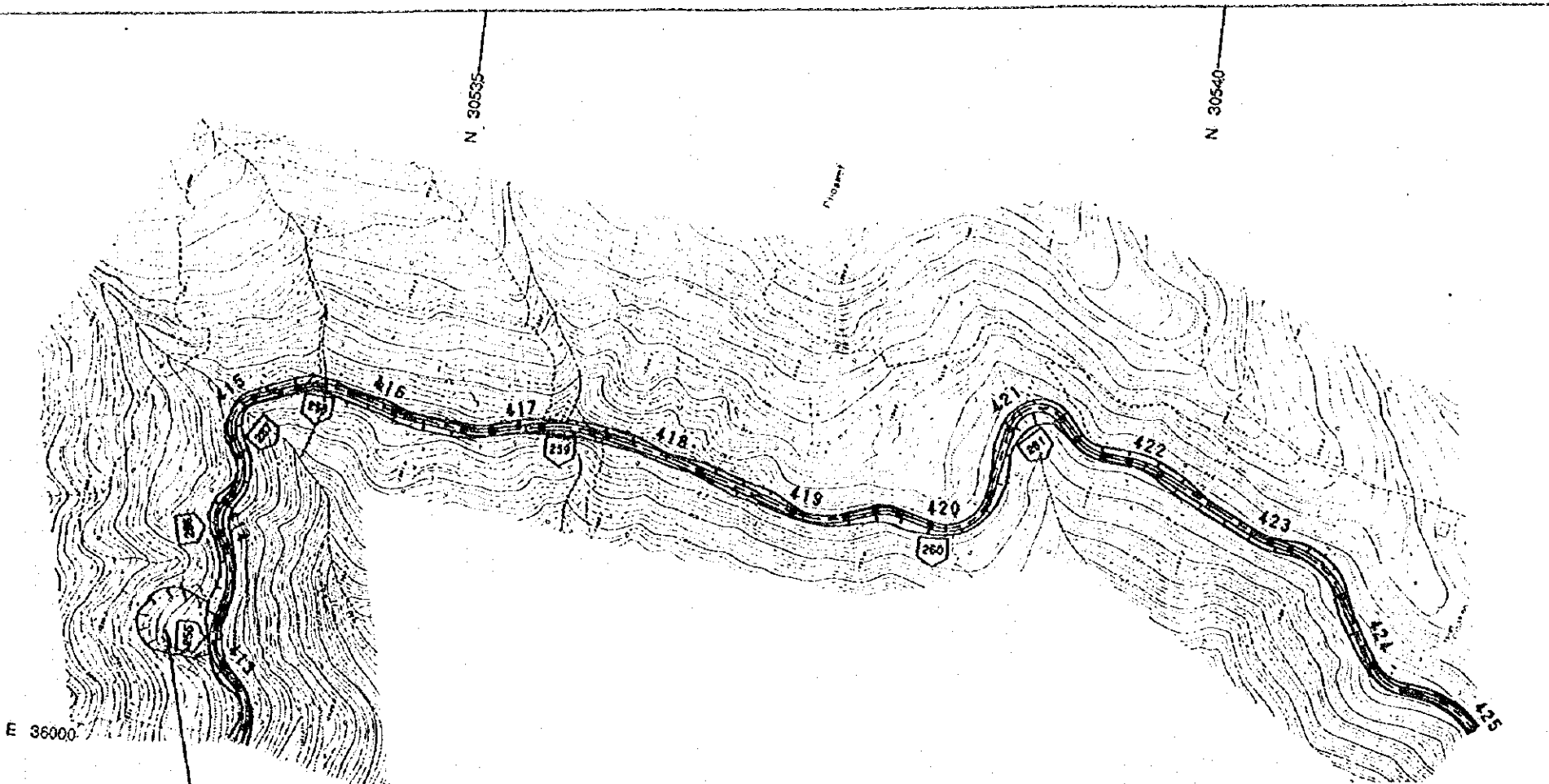
- Regard: Cross Drainage Type
1. Causeway with pipe (900)
 2. Pipe culvert (900 x 1)
 3. Pipe culvert (900 x 2)
 4. Box culvert (2m x 2m)
 5. Slub culvert (4m)

No.	247	248	249	250	251	252	253	254
Station	401+65	403+55	404+70	406+20	406+95	409+25	410+45	411+35
Possibility of debris flow (A: high, B: low)	B	B	B	B	B	B	B	B
Catchment area (ha)	1.5	4.2	2.0	2.5	9.9	7.8	8.7	10.5
Terrain (A: steep, B; flat)	B	B	B	B	B	B	A	A
Cross-drainage type	2	2	2	2	3	2	2	3
Checkdam & channel (m)	5	5		5	5	5	5	5



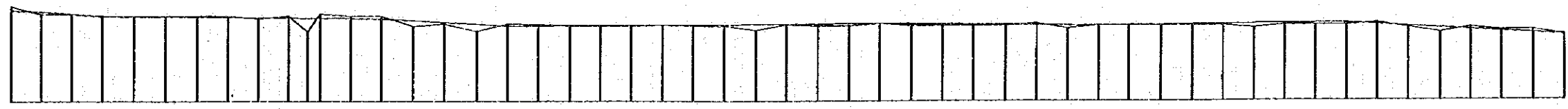
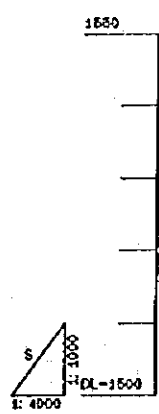
GRADE																																						
PROPOSED HEIGHT	1519.17	1519.85	1520.50	1521.17	1521.83	1522.50	1523.17	1523.83	1524.50	1525.17	1525.83	1526.50	1527.17	1527.83	1528.50	1529.17	1529.83	1530.50	1531.17	1531.83																		
GROUND HEIGHT	1519.90	1519.90	1519.90	1521.00	1521.00	1522.00	1522.00	1523.00	1523.00	1524.00	1524.00	1525.00	1525.00	1526.00	1526.00	1527.00	1527.00	1528.00	1528.00	1529.00																		
STATION	400	400+25	400+50	400+75	401	401+25	401+50	401+75	402	402+25	402+50	402+75	403	403+25	403+50	403+75	404	404+25	404+50	404+75																		
CURVE ELEMENT	R=20.00		R=40.00		L=38.04		R=90.00		R=40.00		L=47.86		R=70.00		R=30.00		R=500.00		L=41.69		R=70.00		L=73.04		L=53.00		R=30.00		R=20.00		R=90.00		R=50.00		R=150.00		L=58.69	

**G-1-34: Location and Type of
Cross Drainage to be applied
STA.412+50~STA.425+00**



- Regard: Cross Drainage Type
1. Causeway with pipe (900)
 2. Pipe culvert (900 x 1)
 3. Pipe culvert (900 x 2)
 4. Box culvert (2m x 2m)
 5. Slub culvert (4m)

No.	255	256	257	258	259	260	261
Station	413+20	414+10	414+95	415+55	417+30	419+55	421+00
Possibility of debris flow (A: high, B: low)	B	B	A	B	B	B	B
Catchment area (ha)	2.3	6.0	8.5	5.0	11.0	1.3	5.6
Terrain (A: steep, B: flat)	A	A	A	A	A	B	A
Cross-drainage type	2	2	1	2	3	2	2
Checkdam & channel (m)	5	5		5	5		5



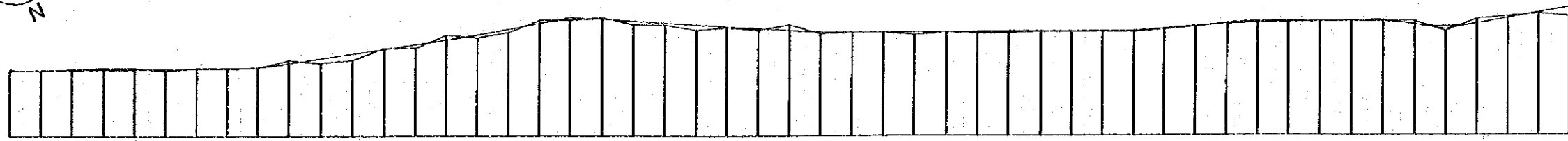
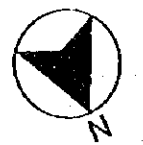
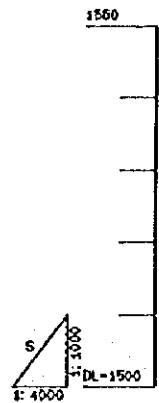
GRADE																																																				
PROPOSED HEIGHT	1518.20	1517.92	1517.90	1517.11	1516.94	1516.86	1516.83	1516.75	1516.72	1516.87	1516.83	1516.81	1516.98	1516.42	1516.13	1515.75	1515.98	1515.10	1515.04	1515.00	1515.13	1515.17	1515.21	1515.25	1515.20	1515.33	1515.47	1515.43	1515.39	1515.29	1515.21	1515.14	1515.07	1515.03	1515.06	1515.13	1515.19	1515.25	1515.31	1515.36	1515.44	1515.40	1515.14	1514.79	1514.43	1514.07	1513.71	1513.36	1513.10			
GROUND HEIGHT	1518.00	1517.50	1517.50	1517.00	1516.94	1516.86	1516.83	1516.75	1516.72	1516.87	1516.83	1516.81	1516.98	1516.42	1516.13	1515.75	1515.98	1515.10	1515.04	1515.00	1515.13	1515.17	1515.21	1515.25	1515.20	1515.33	1515.47	1515.43	1515.39	1515.29	1515.21	1515.14	1515.07	1515.03	1515.06	1515.13	1515.19	1515.25	1515.31	1515.36	1515.44	1515.40	1515.14	1514.79	1514.43	1514.07	1513.71	1513.36	1513.10			
STATION	412+50	412+75	413	413+25	413+50	413+75	414	414+25	414+50	414+75	414+90	415	415+25	415+50	415+75	416	416+25	416+50	416+75	417	417+25	417+50	417+75	418	418+25	418+50	418+75	419	419+25	419+50	419+75	420	420+25	420+50	420+75	421	421+25	421+50	421+75	422	422+25	422+50	422+75	423	423+25	423+50	423+75	424	424+25	424+50	424+75	425
CURVE ELEMENT	R=30.00		R=50.00		R=25.00		R=50.00		R=50.00		L=39.25		L=34.40		R=500.00		L=58.32		R=30.00		L=47.63		R=20.00		R=60.00		L=75.29		R=50.00		L=51.00		R=60.00																			

G-1-35: Location and Type of Cross Drainage to be applied STA.425+00~STA.437+50



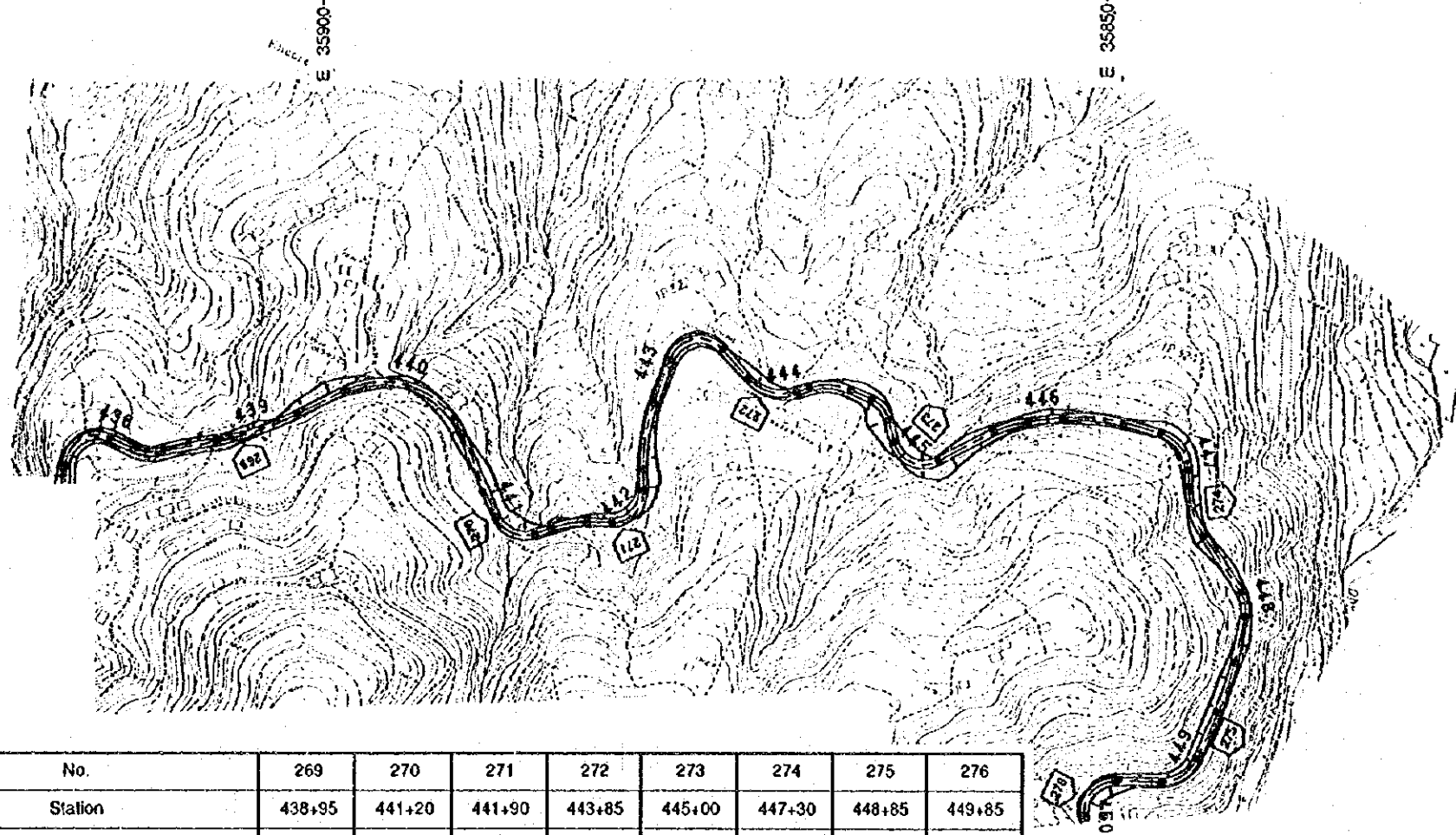
- Regard: Cross Drainage Type
1. Causeway with pipe (900)
 2. Pipe culvert (900 x 1)
 3. Pipe culvert (900 x 2)
 4. Box culvert (2m x 2m)
 5. Slub culvert (4m)

No.	262	263	264	265	266	267	268
Station	425+95	427+25	428+85	430+75	431+70	434+00	436+55
Possibility of debris flow (A: high, B: low)	B	B	B	B	B	B	B
Catchment area (ha)	0.7	4.9	2.0	4.0	2.0	0.6	43.0
Terrain (A: steep, B: flat)	B	B	B	B	B	B	A
Cross-drainage type	2	2	2	2	2	2	4
Checkdam & channel (m)	5	5	5	5	5	5	5



GRADE	+0.26% 200m		+3.71% 176m		+4.67% 75m		-1.60% 200m		+0.04% 250m		+2.00% 75m		+0.66% 125m		-3.60% 50m		+4.26% 276m		
PROPOSED HEIGHT	1513.10	1513.06	1513.13	1513.19	1513.25	1513.31	1513.35	1513.44	1513.50	1513.52	1513.54	1513.58	1513.60	1513.64	1513.66	1513.70	1513.74	1513.78	1513.82
GROUND HEIGHT	1513.00	1513.00	1513.30	1513.50	1513.70	1513.91	1514.00	1514.40	1514.50	1514.72	1514.83	1514.95	1515.06	1515.20	1515.29	1515.41	1515.54	1515.68	1515.82
STATION	425	425+25	425+50	425+75	426	426+25	426+50	426+75	427	427+25	427+50	427+75	428	428+25	428+50	428+75	429	429+25	429+50
CURVE ELEMENT	R=25.00	R=20.00	L=40.53	R=25.00	R=60.00	L=57.13	R=40.00	R=25.00	R=45.00	L=54.58	R=40.00	R=20.00	L=81.03	R=30.00	R=50.00	R=35.00	R=150.00	L=40.37	R=20.00

G-1-36: Location and Type of
Cross Drainage to be applied
STA.437+50~STA.450+00

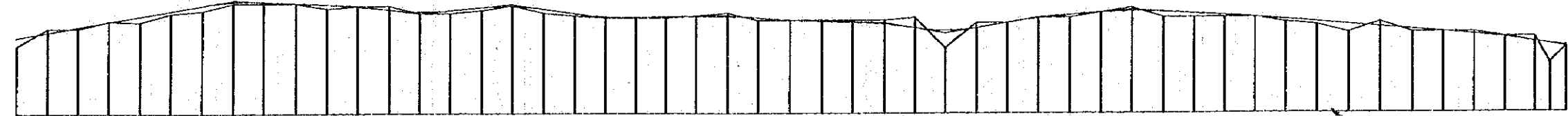


No.	269	270	271	272	273	274	275	276
Station	438+95	441+20	441+90	443+85	445+00	447+30	448+85	449+85
Possibility of debris flow (A: high, B: low)	B	B	B	B	B	B	B	B
Catchment area (ha)	2.0	11.9	1.8	0.7	4.0	1.2	8.0	2.5
Terrain (A: steep, B: flat)	B	A	B	B	A	B	B	B
Cross-drainage type	2	3	2	2	2	2	2	2
Checkdam & channel (m)	5	5	5	5	5			5

- Regard: Cross Drainage Type
1. Causeway with pipe (900)
 2. Pipe culvert (900 x 1)
 3. Pipe culvert (900 x 2)
 4. Box culvert (2m x 2m)
 5. Slub culvert (4m)

1550

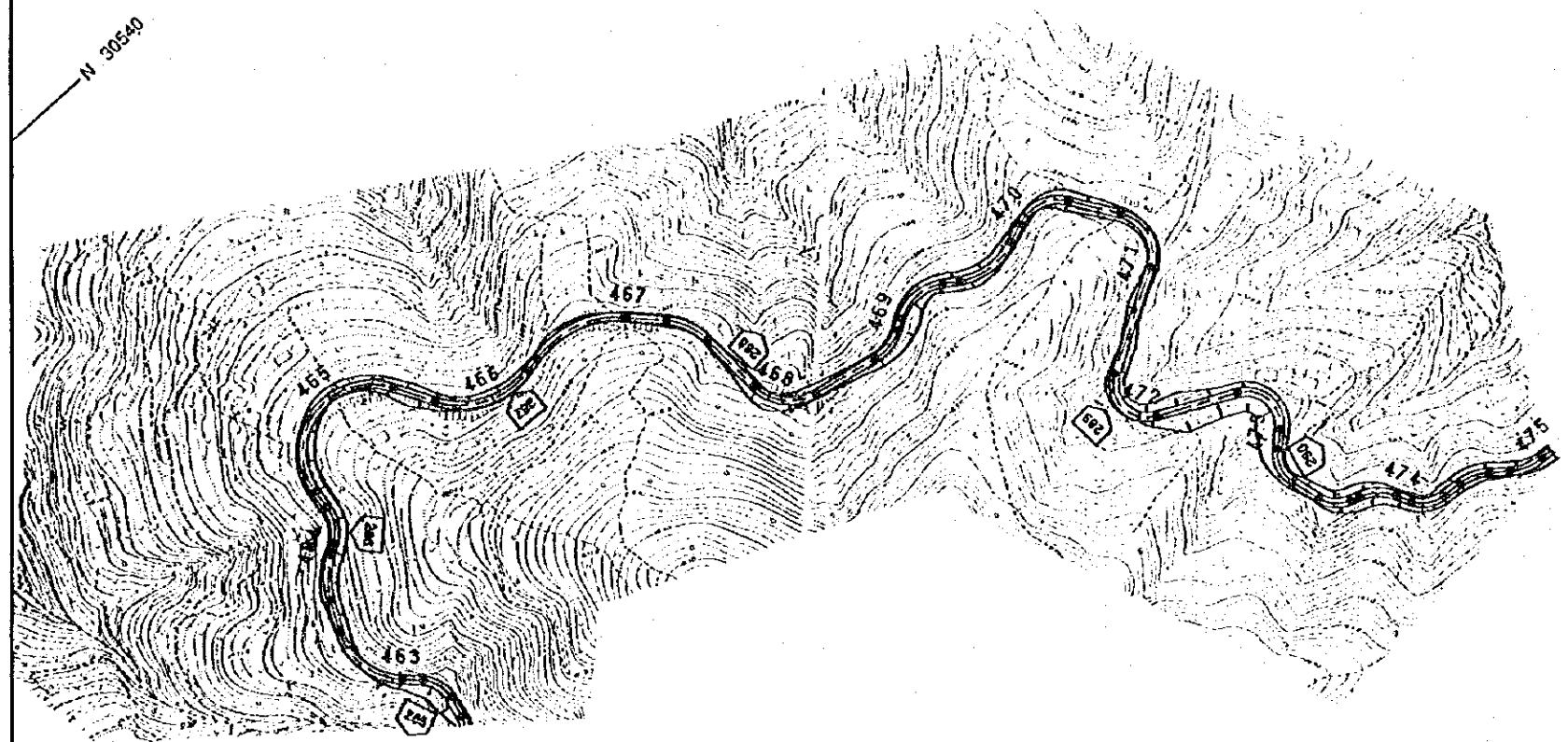
S
1:4000
DL-1510



GRADE																																			
PROPOSED HEIGHT	1525.25	1526.32	1527.38	1528.45	1529.51	1530.57	1531.64	1532.70	1533.76	1534.82	1535.88	1536.94	1538.00	1539.06	1540.12	1541.18	1542.24	1543.30	1544.36	1545.42															
GROUND HEIGHT	1523.90	1527.00	1527.90	1528.90	1529.90	1530.90	1531.90	1532.90	1533.90	1534.90	1535.90	1536.90	1537.90	1538.90	1539.90	1540.90	1541.90	1542.90	1543.90	1544.90															
STATION	437+50	437+75	438	438+25	439+50	439+75	440	440+25	440+50	440+75	441	441+25	441+50	441+75	442	442+25	442+50	442+75	443	443+25															
CURVE ELEMENT	R=20.00		L=35.45	R=200.00		L=34.38	R=55.00		L=57.21		R=50.00		R=120.00		R=20.00		R=40.00		R=20.00	L=39.72		R=60.00		R=100.00		R=25.00		L=43.45		R=20.00		R=150.00		R=25.00	

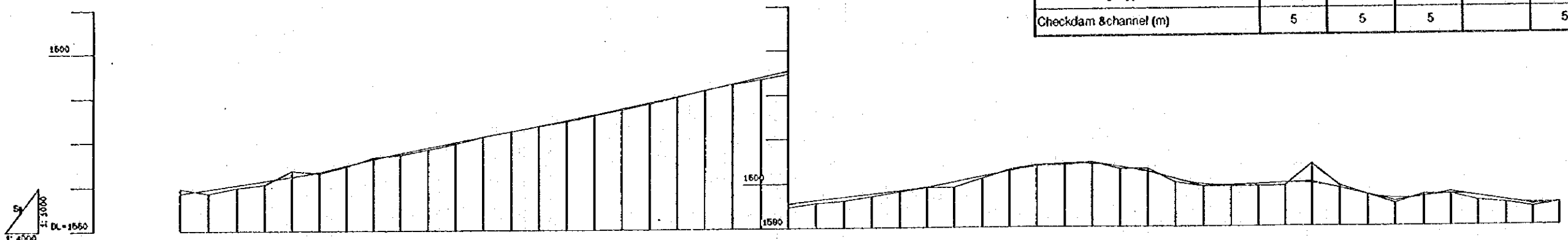


G-1-38: Location and Type of
Cross Drainage to be applied
STA.462+50~STA.475+00



- Regard: Cross Drainage Type
1. Causeway with pipe (900)
 2. Pipe culvert (900 x 1)
 3. Pipe culvert (900 x 2)
 4. Box culvert (2m x 2m)
 5. Slub culvert (4m)

No.	285	286	287	288	289	290
Station	462+75	464+15	466+25	467+70	471+80	473+15
Possibility of debris flow (A: high, B: low)	B	B	B	B	B	B
Catchment area (ha)	1.0	0.7	1.7	3.9	3.2	4.1
Terrain (A: steep, B: flat)	A	A	A	A	A	A
Cross-drainage type	2	2	2	2	2	2
Checkdam & channel (m)	5	5	5		5	5



GRADE																																																		
PROPOSED HEIGHT	1573.50	1576.40	1577.35	1577.34	1578.20	1578.13	1579.04	1579.83	1580.40	1581.08	1581.27	1584.70	1585.00	1587.30	1588.60	1589.90	1591.23	1592.63	1594.07	1595.32	1596.20	1596.90	1597.60	1598.30	1599.14	1600.20	1601.00	1602.75	1603.75	1604.25	1604.15	1603.50	1602.31	1600.75	1599.25	1599.50	1599.56	1598.50	1597.00	1596.13	1597.50	1598.50	1599.50	1598.50	1597.00	1595.00	1597.50	1594.80	1594.80	1596.00
GROUND HEIGHT	1573.50	1588.50	1570.35	1572.23	1574.70	1576.13	1577.41	1578.83	1580.40	1581.10	1582.27	1584.70	1585.80	1587.10	1588.40	1589.70	1591.30	1592.63	1594.07	1595.32	1596.20	1596.90	1597.60	1598.30	1599.14	1600.20	1601.00	1602.75	1603.75	1604.25	1604.15	1603.50	1602.31	1600.75	1599.25	1599.50	1599.56	1598.50	1597.00	1596.13	1597.50	1598.50	1599.50	1598.50	1597.00	1595.00	1597.50	1594.80	1594.80	1596.00
STATION	462+50	463+75	465	466+25	467+75	468+25	469+75	470+25	471	471+50	472	472+25	473+50	474	474+25	475																																		
CURVE ELEMENT	R=20.00	R=40.00	R=50.00	R=40.00	R=60.00	R=40.00	L=38.14	L=40.68	R=30.00	R=30.00	R=40.00	R=25.00	R=25.00	L=55.69	L=45.85	R=20.00	R=20.00	R=20.00	R=30.00	R=30.00																														

G-1-39: Location and Type of Cross Drainage to be applied STA.475+00~STA.487+50



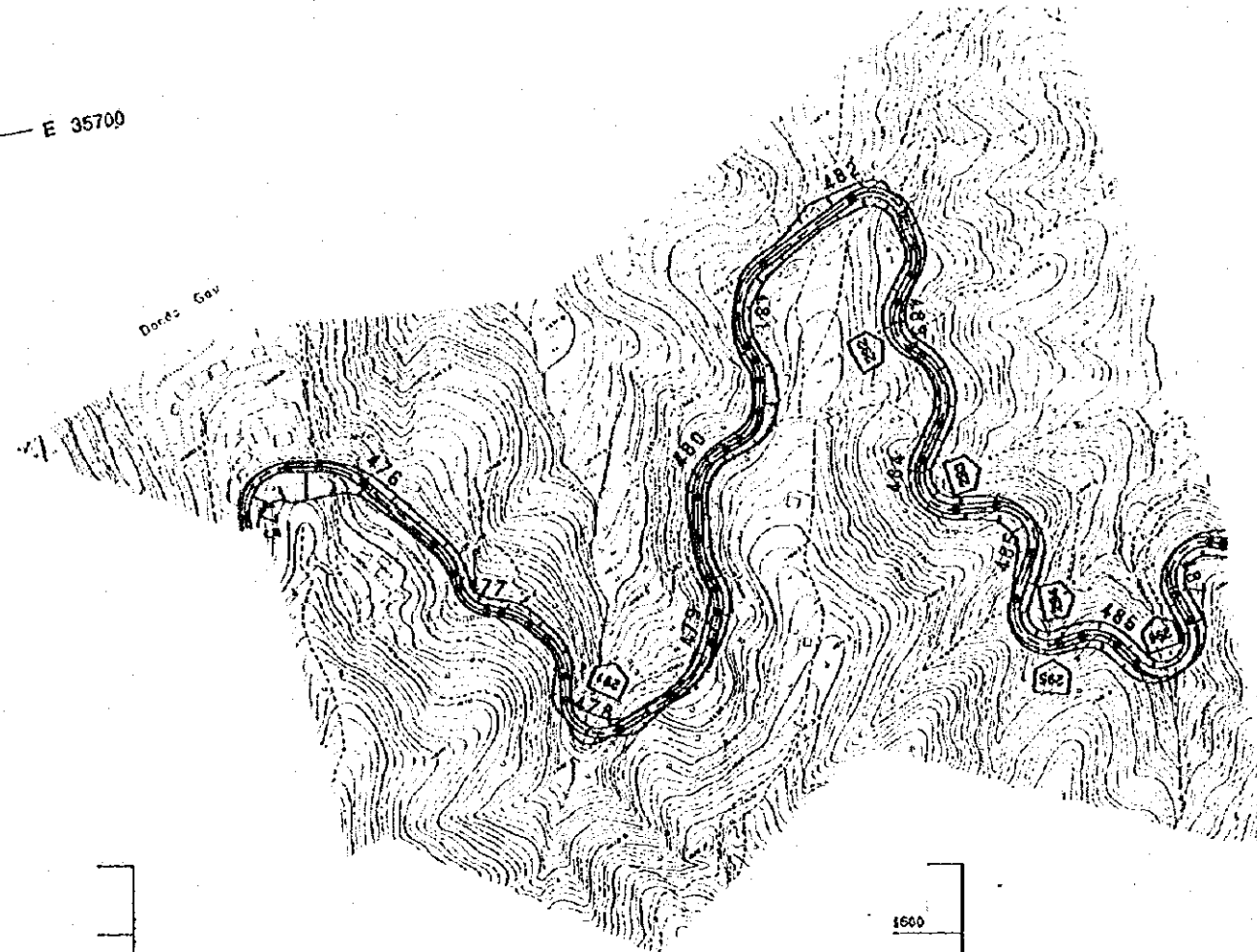
E 35700

N 30550

N 30555

E 35700

Doraz. Gew.

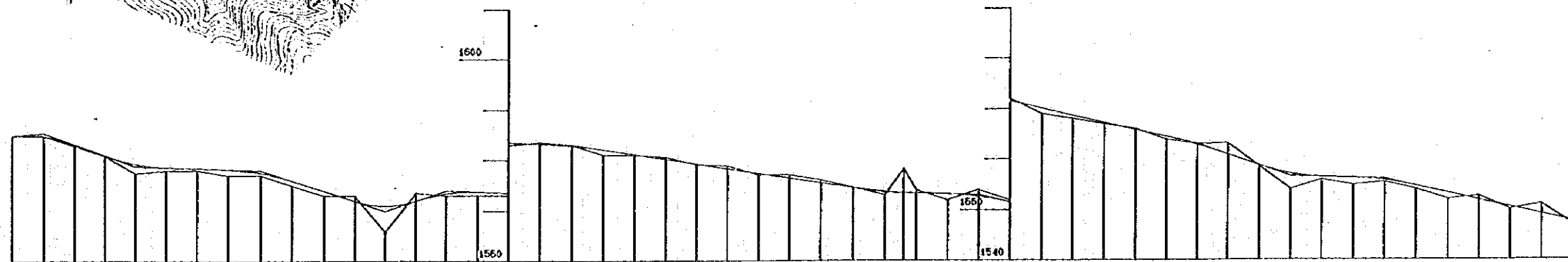
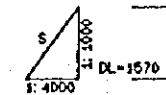


Regard: Cross Drainage Type
 1. Causeway with pipe (900)
 2. Pipe culvert (900 x 1)
 3. Pipe culvert (900 x 2)
 4. Box culvert (2m x 2m)
 5. Slab culvert (4m)

No.	291	292	293	294	295	296
Station	478+00	483+05	484+10	485+30	485+60	486+35
Possibility of debris flow (A: high, B: low)	B	B	B	B	B	B
Catchment area (ha)	11.5	0.5	1.1	1.5	7.2	8.3
Terrain (A: steep, B: flat)	A	A	A	A	A	A
Cross-drainage type	3	2	2	2	2	2
Checkdam & channel (m)		5	5	5	5	5

E 35750

E 35750



GRADE																																																			
PROPOSED HEIGHT	1595.00	1594.82	1593.27	1591.03	1589.31	1586.60	1585.40	1587.20	1587.15	1588.00	1584.00	1582.00	1581.00	1582.00	1583.00	1583.44	1583.75	1583.30	1581.10	1580.15	1579.20	1578.25	1577.30	1576.35	1575.40	1574.45	1573.50	1573.70	1573.43	1573.33	1572.00	1571.57	1570.14	1569.71	1567.29	1566.86	1565.43	1562.62	1560.93	1556.97	1557.00	1556.33	1554.90	1553.17	1551.80	1550.40	1549.00	1547.00			
GROUND HEIGHT	1595.00	1595.00	1593.00	1591.00	1589.50	1586.00	1586.00	1587.00	1587.00	1587.00	1584.00	1582.00	1581.00	1582.00	1583.00	1583.44	1583.75	1583.30	1581.10	1580.15	1579.20	1578.25	1577.30	1576.35	1575.40	1574.45	1573.50	1573.70	1573.43	1573.33	1572.00	1571.57	1570.14	1569.71	1567.29	1566.86	1565.43	1562.62	1560.93	1556.97	1557.00	1556.33	1554.90	1553.17	1551.80	1550.40	1549.00	1547.00			
STATION	475	475+25	475+50	475+75	476	476+25	476+50	476+75	477	477+25	477+50	477+75	478	478+25	478+50	478+75	479	479+25	479+50	479+75	480	480+25	480+50	480+75	481	481+25	481+50	481+75	482	482+15	482+25	482+50	483	483+25	483+50	483+75	484	484+25	484+50	484+75	485	485+25	485+50	485+75	486	486+25	486+50	486+75	487	487+25	487+50
CURVE ELEMENT																																																			

G-1-41: Location and Type of Cross Drainage to be applied STA.500+00~STA.511+00

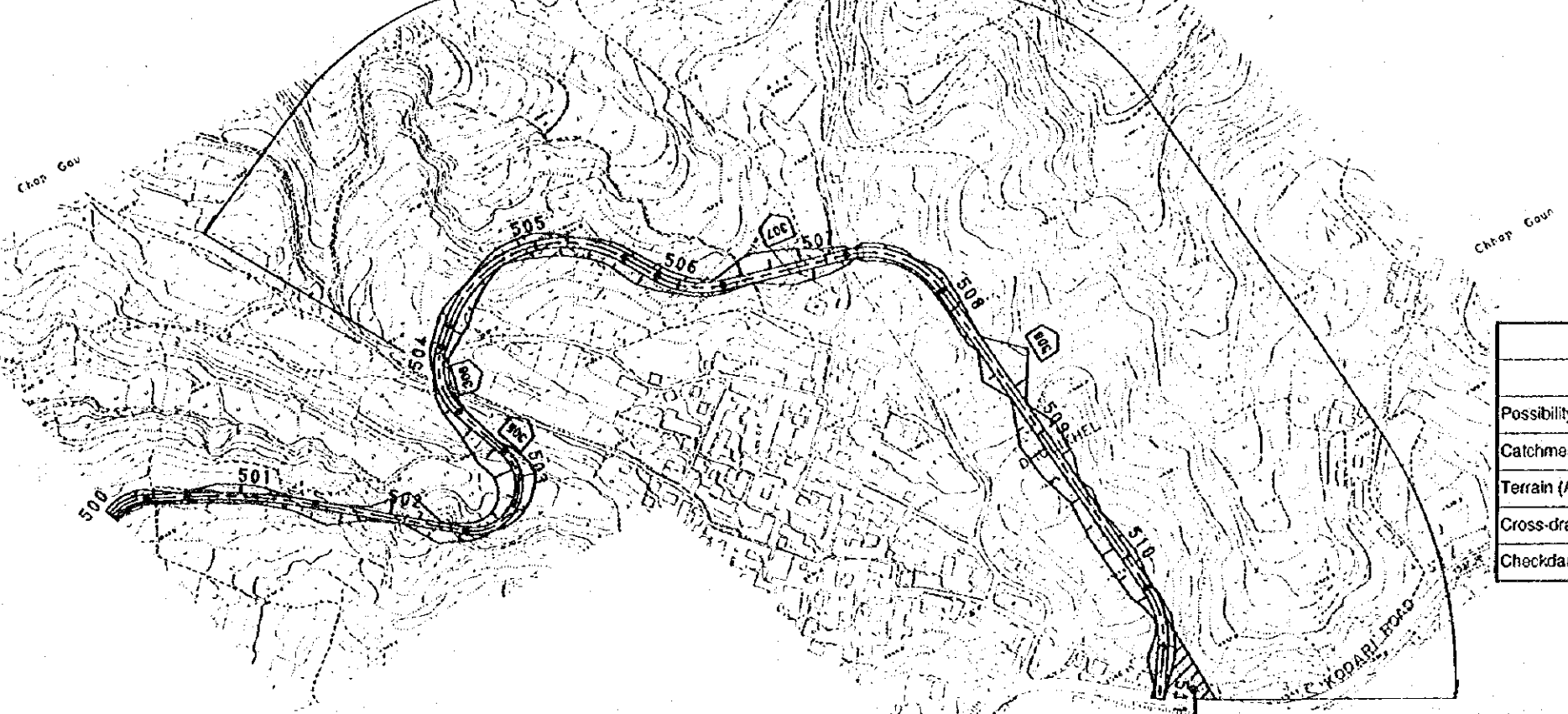


N 30560

N 30565

E 35700

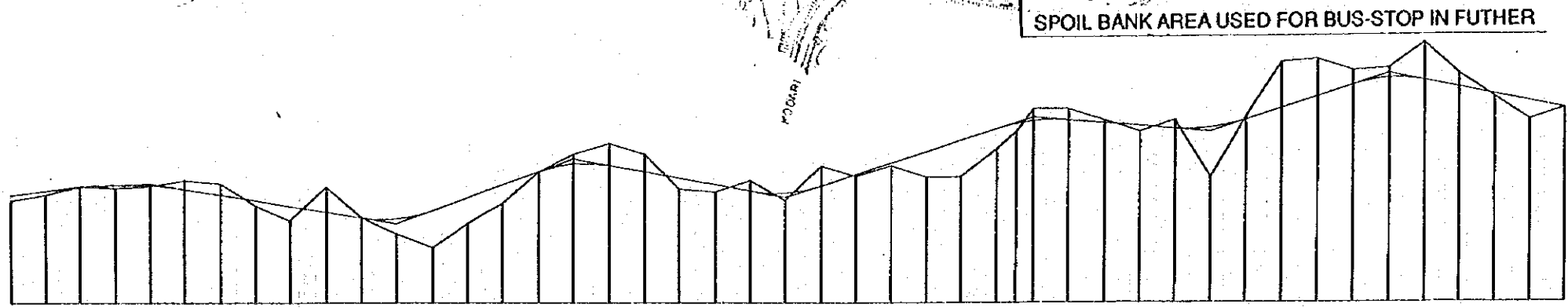
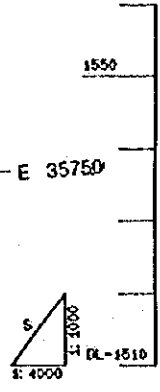
THE SECTION TO BE CONSTRUCTED BY DOUBLE LANE



- Regard: Cross Drainage Type
1. Causeway with pipe (900)
 2. Pipe culvert (900 x 1)
 3. Pipe culvert (900 x 2)
 4. Box culvert (2m x 2m)
 5. Slub culvert (4m)

No.	305	306	307	308
Station	503+15	503+75	506+75	508+50
Possibility of debris flow (A: high, B: low)	B	B	B	B
Catchment area (ha)	5.2	5.2	2.8	1.4
Terrain (A: steep, B: flat)	B	B	B	B
Cross-drainage type	2	2	2	2
Checkdam & channel (m)	5	5	5	5

E 35750



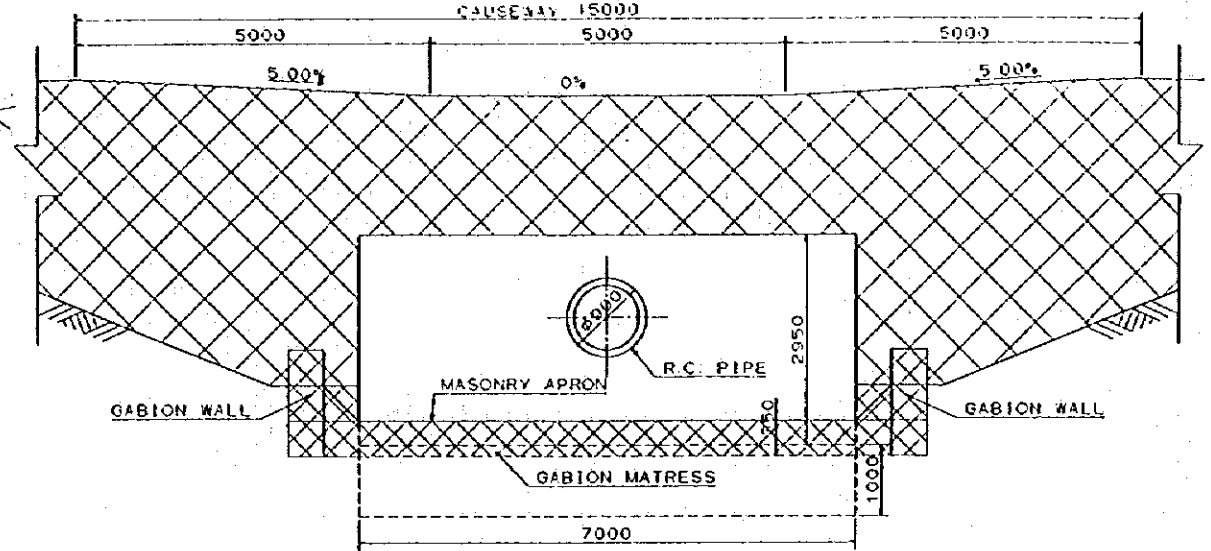
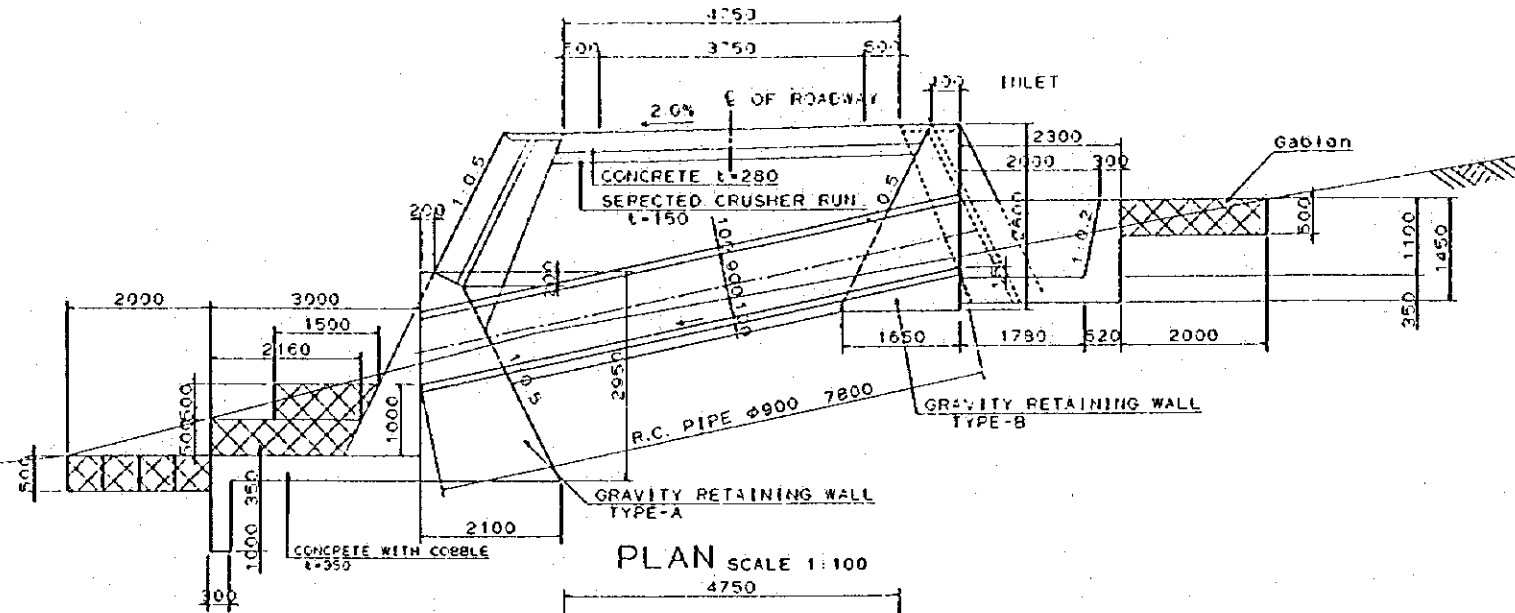
GRADE																																																																												
PROPOSED HEIGHT	1528.84	1528.72	1530.37	1536.75	1539.86	1539.00	1528.00	1527.00	1524.56	1527.00	1530.26	1528.00	1525.00	1522.20	1524.81	1518.70	1526.25	1524.00	1528.50	1527.50	1533.00	1536.20	1534.13	1530.00	1531.88	1529.75	1531.50	1529.63	1528.00	1526.28	1528.50	1534.00	1533.50	1532.00	1532.50	1534.00	1534.50	1536.50	1532.00	1538.50	1532.00	1538.50	1537.00	1540.50	1540.00	1541.37	1544.00	1541.87	1542.50	1544.00	1542.00	1542.00	1541.50	1540.00	1541.00	1540.00	1540.50	1542.00	1542.00	1542.00	1544.00	1544.00	1546.00	1546.00	1548.00	1548.00	1551.00	1548.20	1550.00	1547.00	1546.40	1546.00	1542.00	1545.20	1544.00	1544.00
GROUND HEIGHT	1528.00	1528.00	1530.50	1536.20	1539.86	1539.00	1527.00	1527.00	1524.56	1527.00	1530.26	1528.00	1525.00	1522.20	1524.81	1518.70	1526.25	1524.00	1528.50	1527.50	1533.00	1536.20	1534.13	1530.00	1531.88	1529.75	1531.50	1529.63	1528.00	1526.28	1528.50	1534.00	1533.50	1532.00	1532.50	1534.00	1534.50	1536.50	1532.00	1538.50	1532.00	1538.50	1537.00	1540.50	1540.00	1541.37	1544.00	1541.87	1542.50	1544.00	1542.00	1542.00	1541.50	1540.00	1541.00	1540.00	1540.50	1542.00	1542.00	1542.00	1544.00	1544.00	1546.00	1546.00	1548.00	1548.00	1551.00	1548.20	1550.00	1547.00	1546.40	1546.00	1542.00	1545.20	1544.00	1544.00
STATION	500	500+25	500+50	500+75	501	501+25	501+50	501+75	502	502+25	502+50	502+75	503	503+25	503+50	503+75	504	504+25	504+50	504+75	505	505+25	505+50	505+75	506	506+25	506+50	506+75	507	507+25	507+50	507+75	508	508+25	508+50	508+75	509	509+25	510	510+25	510+50	510+75	511																																	
CURVE ELEMENT	R=30.00		R=400.00		L=101.17		R=30.00		R=40.00		R=80.00		L=40.02		R=50.00		L=83.48		R=60.00		L=239.26		R=50.00		L=36.23																																																			

G-2 STANDARD PLAN OF CROSS DRAINAGES

PROFILE SCALE 1:100

TYPE-1 : CAUSEWAY WITH PIPE CULVERT (φ900 SINGLE)

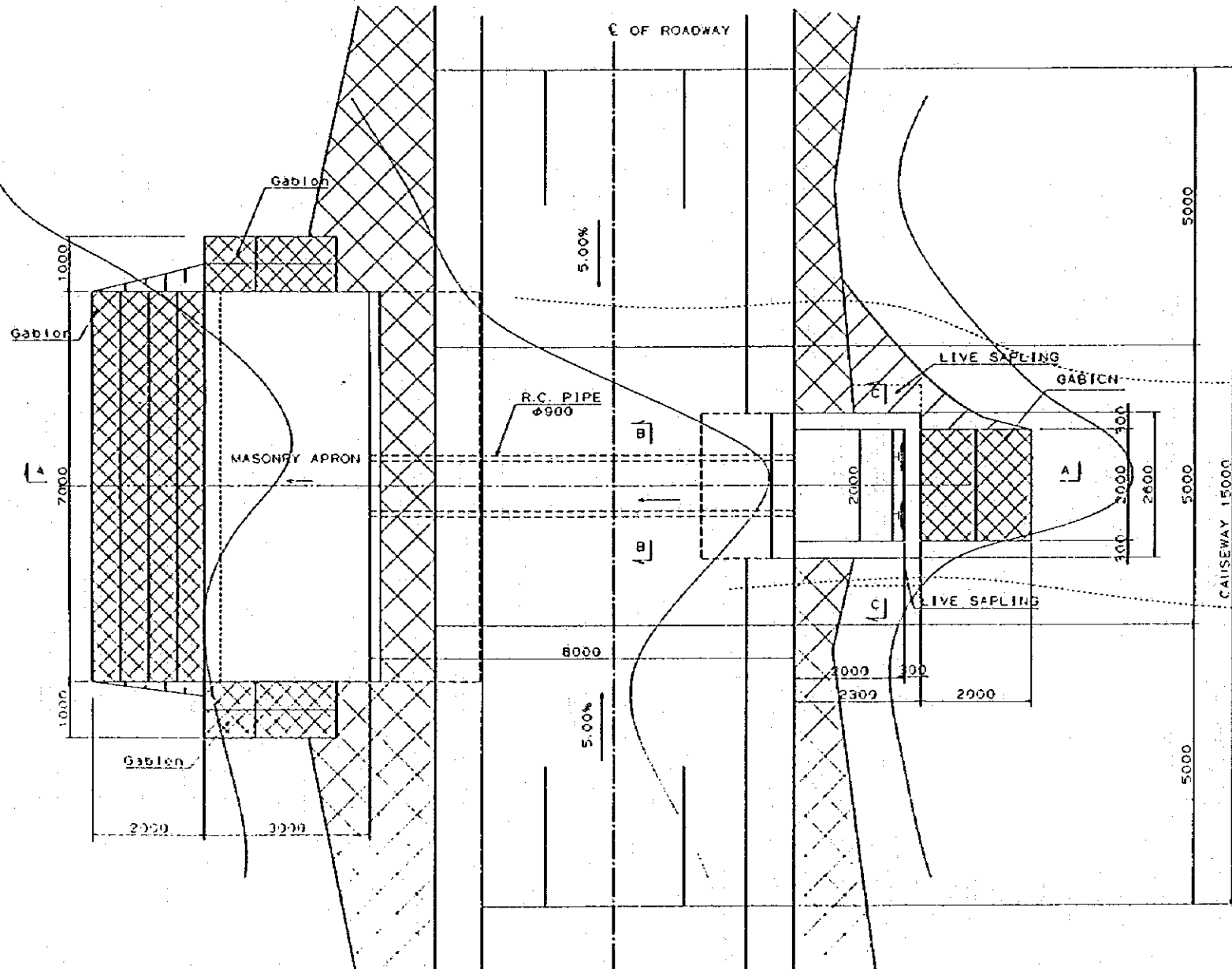
FRONT ELEVATION SCALE 1:100



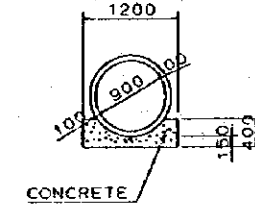
PLAN SCALE 1:100

SECTION B-B SCALE 1:100

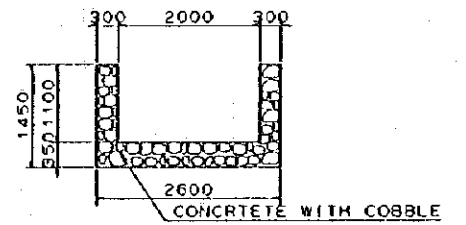
SECTION C-C SCALE 1:100



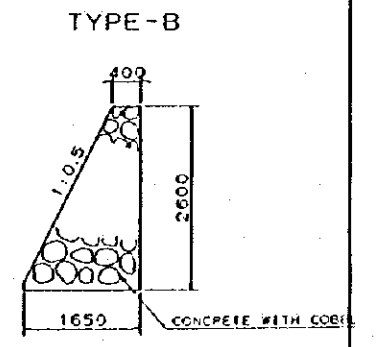
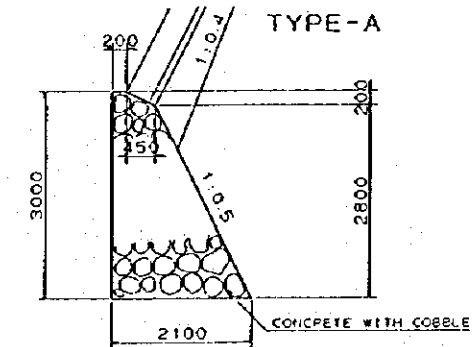
R.C. PIPE



CATCH BASIN (INLET SIDE)



GRAVITY RETAINING WALL SCALE 1:100

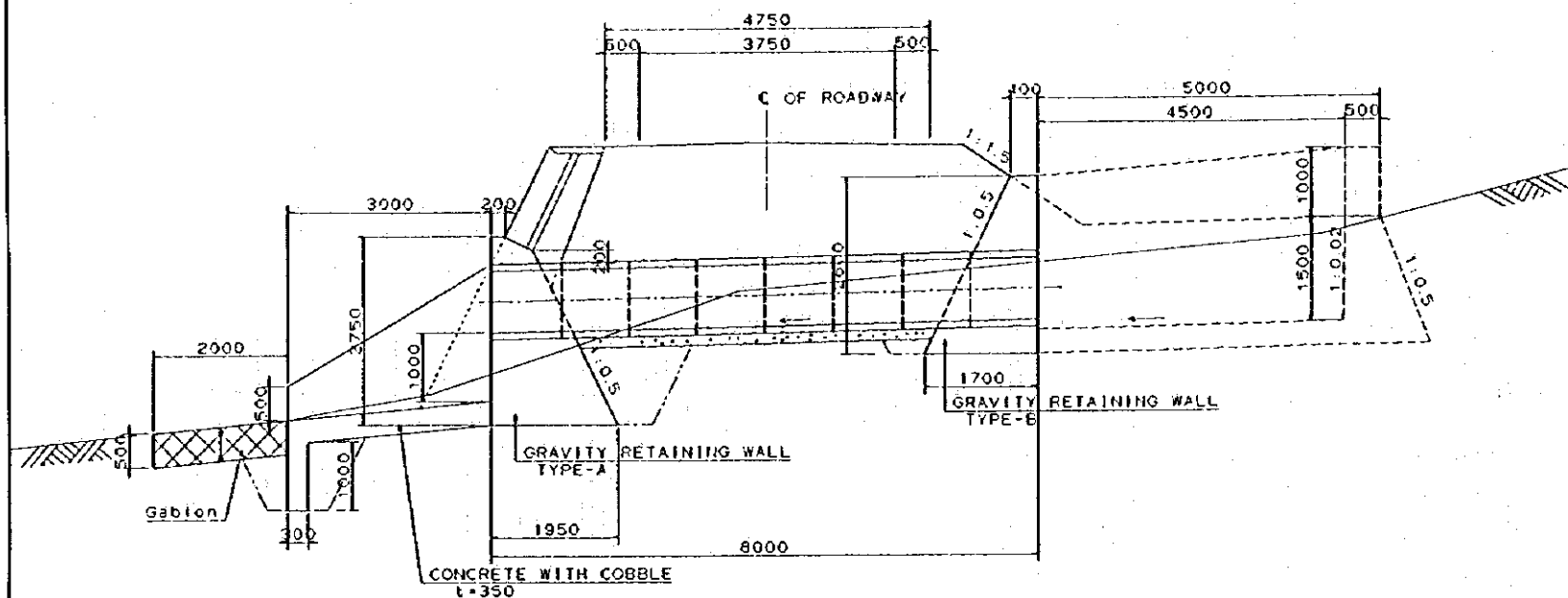


MATERIALS

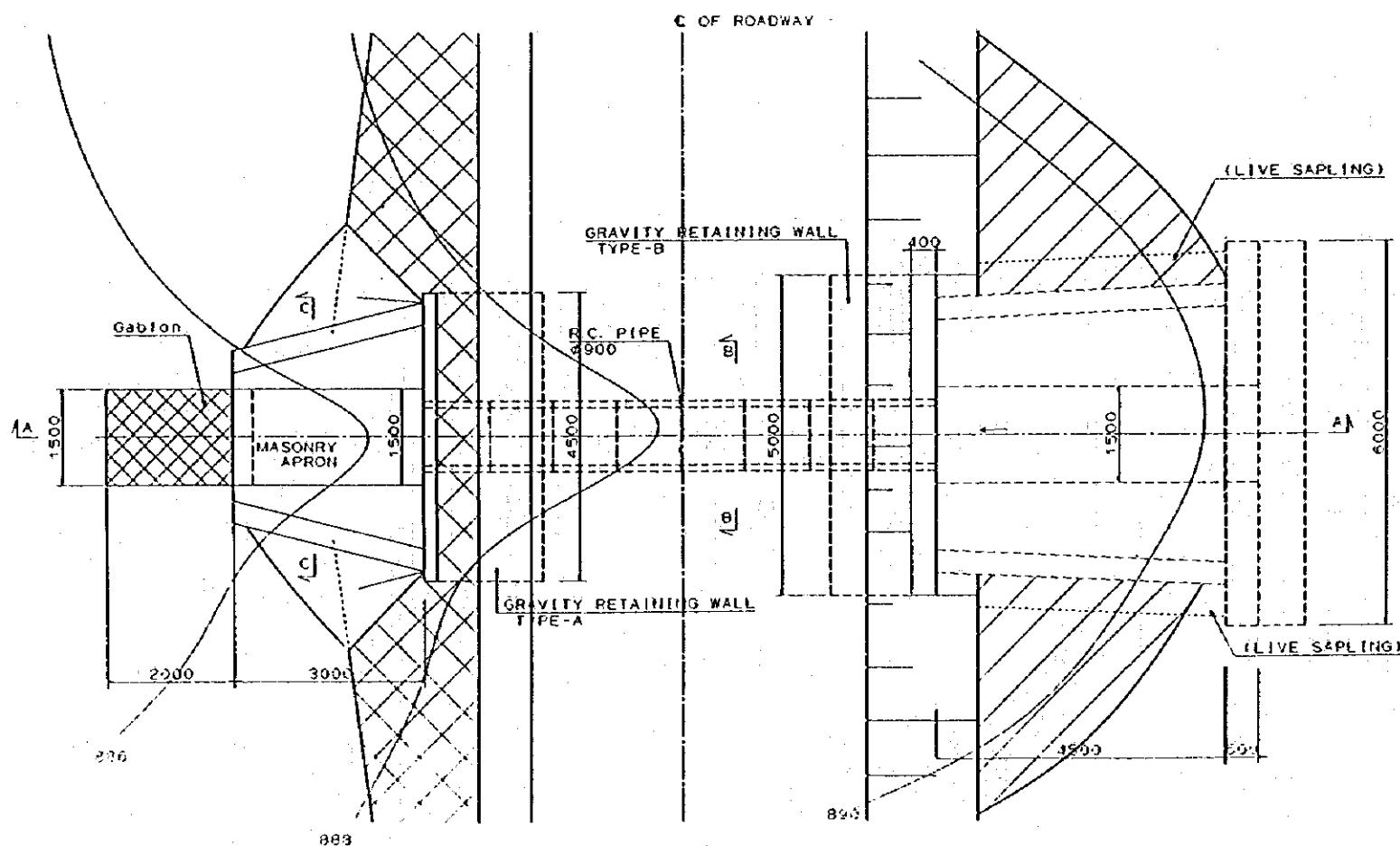
ITEM	CLASS	UNIT	QUANTITY	REMARKS
EXCAVATION		m ³	67.8	
BACKFILL		m ³	15.4	
R.C. PIPE	φ900	m	7.8	
G. RETAINING WALL		m ³	24.5	
CONCRETE	ack=180kg/m ²	m ³	2.3	
CONCRETE WITH COBBLE		m ³	22.6	
FORM WORK		m ²	3.9	
GABION		m ³	12.7	

TYPE-2 : R.C. PIPE CULVERT ($\phi 900$ SINGLE)

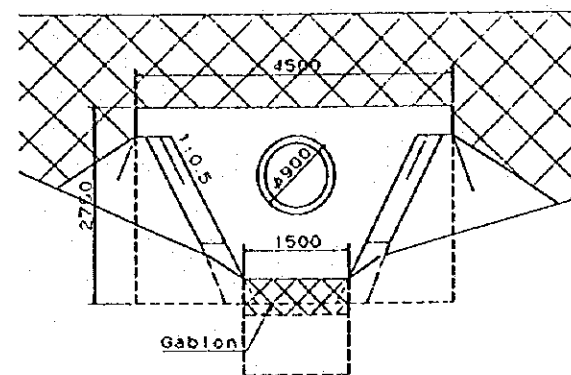
PROFILE A-A SCALE 1:100



PLAN SCALE 1:100



FRONT ELEVATION SCALE 1:100

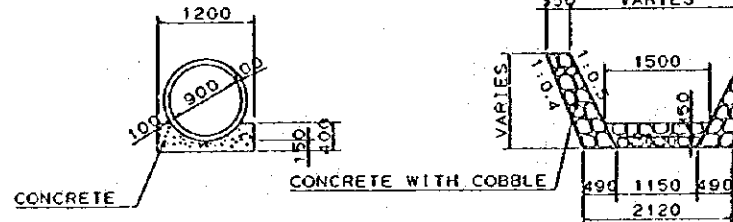


SECTION B-B SCALE 1:100

SECTION C-C SCALE 1:100

R.C. PIPE

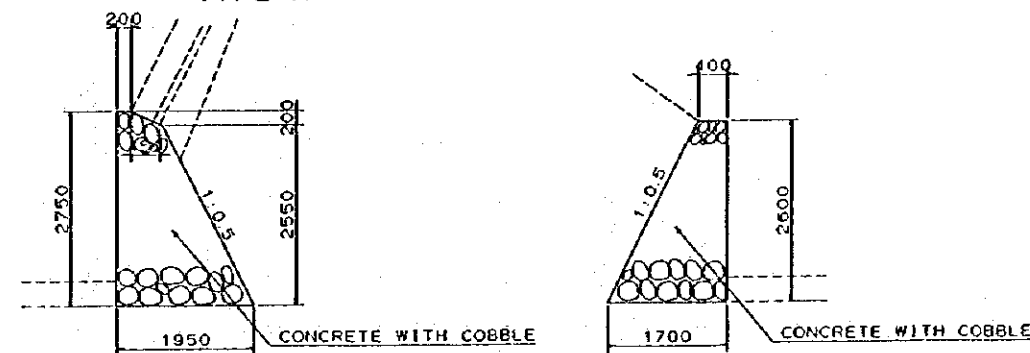
APPROACH WATERWAY



GRAVITY RETAINING WALL SCALE 1:100

TYPE-A

TYPE-B

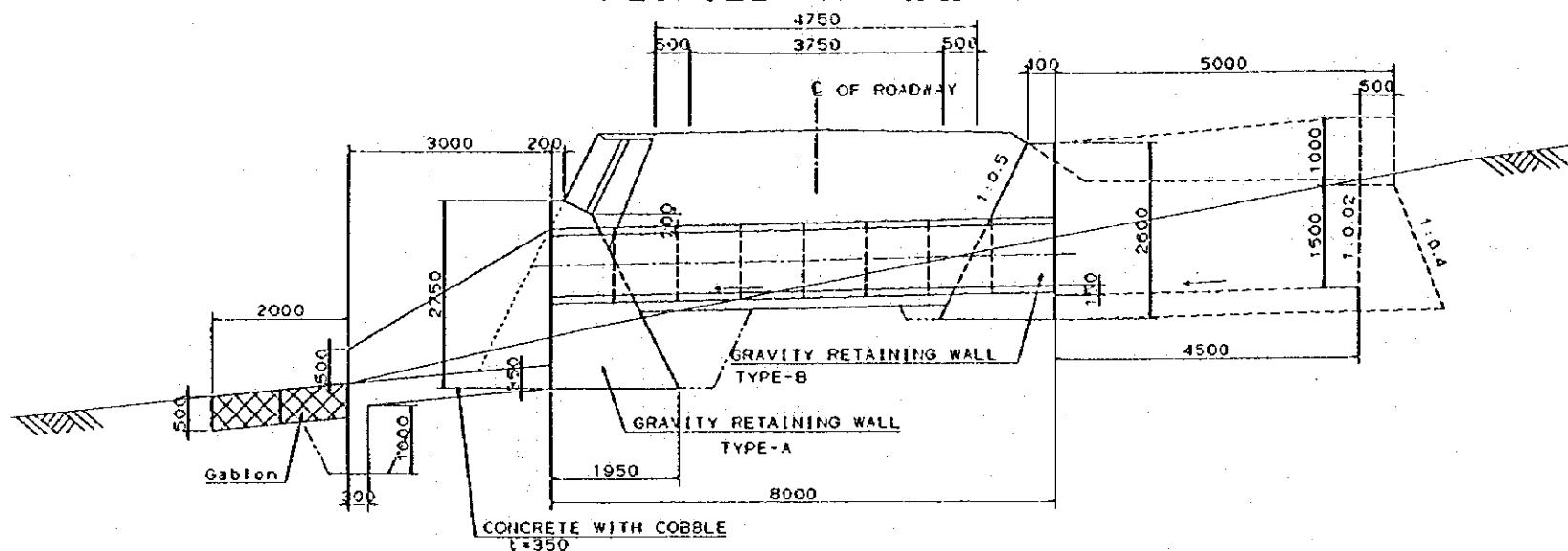


MATERIALS

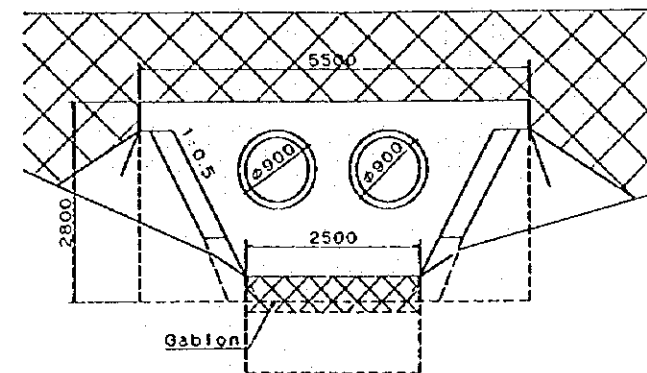
ITEM	CLASS	UNIT	QUANTITY	REMARKS
EXCAVATION		m ³	38.1	
BACKFILL		m ³	12.8	
R.C PIPE	$\phi 900$	m	8.0	
SUPPORTED WALL		m ²	8.4	
GRAVITY WALL		m ³	28.4	
CONCRETE	$\phi c k = 180 \text{ kg/m}^2$	m ³	2.5	
CONCRETE WITH COBBLE		m ³	1.8	
FORM WORK		m ²	4.2	
GABION		m ³	1.5	

TYPE-3 : R.C. PIPE CULVERT (φ900 DOUBLE)

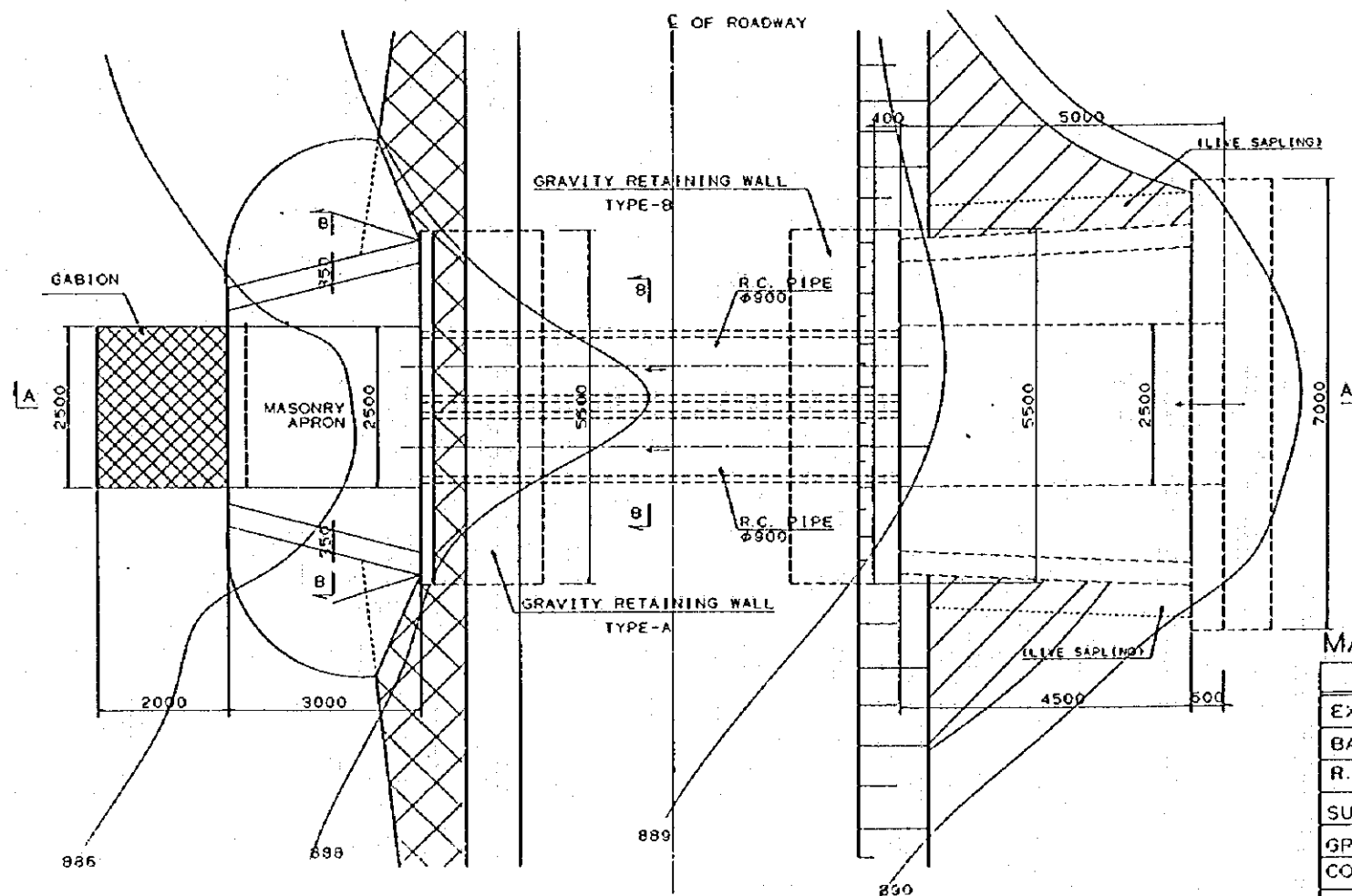
PROFILE A-A SCALE 1:100



FRONT ELEVATION SCALE 1:100

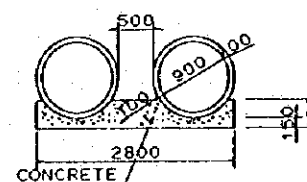


PLAN SCALE 1:100



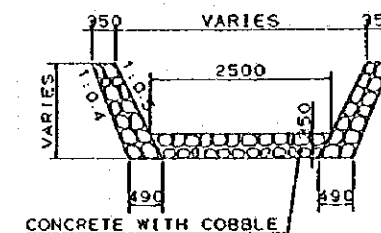
SECTION B-B SCALE 1:100

R.C. PIPE



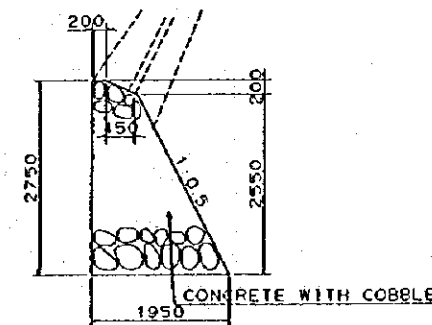
SECTION C-C SCALE 1:100

APPROACH WATERWAY

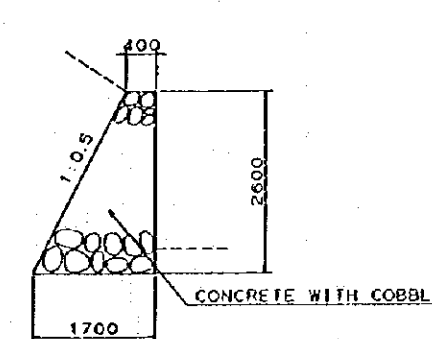


GRAVITY RETAINING WALL SCALE 1:100

TYPE-A



TYPE-B

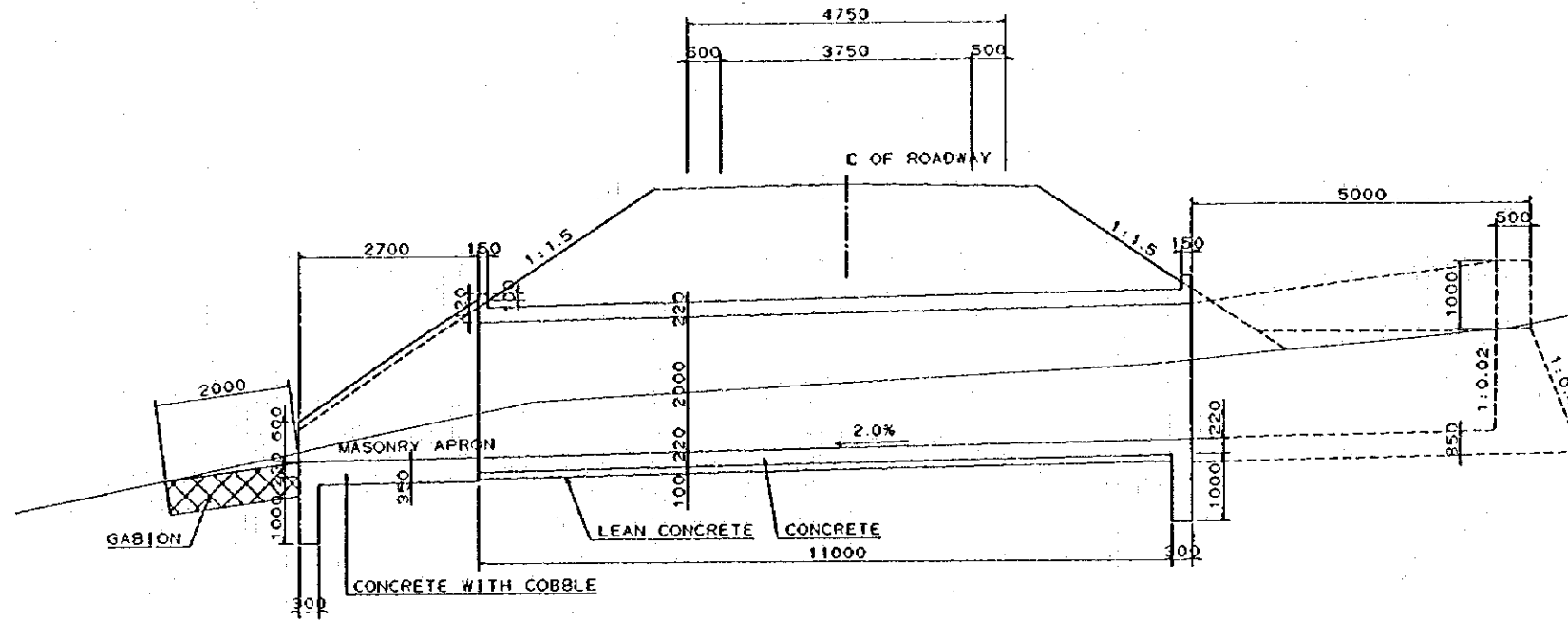


MATERIALS

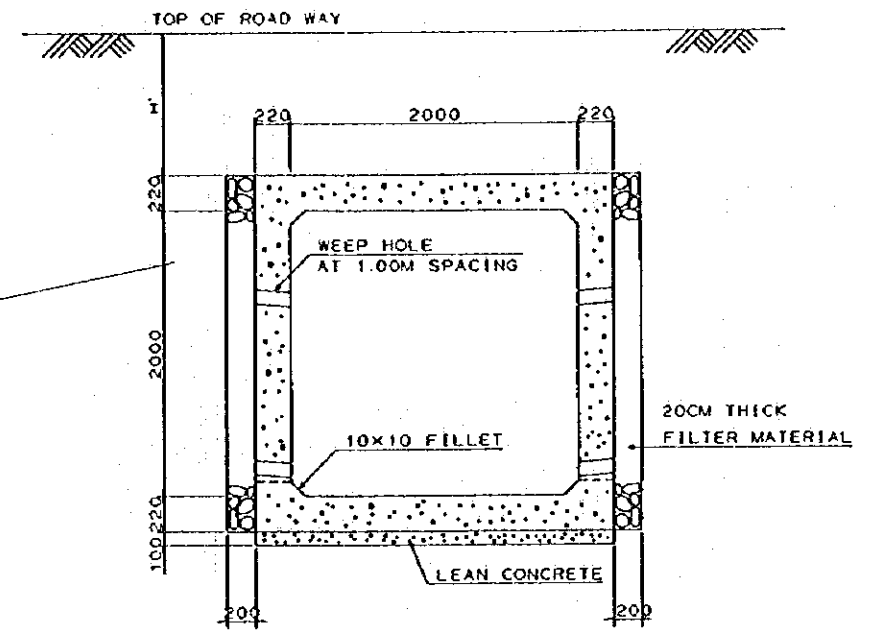
ITEM	CLASS	UNIT	QUANTITY	REMARKS
EXCAVATION		m ³	49.8	
BACKFILL		m ³	15.5	
R.C. PIPE	φ900	m	8.0	
SUPPORTED WALL		m ²	8.4	
GRAVITY WALL		m ³	33.7	
CONCRETE	ρ _{ck} = 1800 kg/m ³	m ³	4.8	
CONCRETE WITH COBBLE		m ³	3.2	
FORM WORK		m ²	6.4	
GABION		m ³	2.5	

TYPE-4 : BOX CULVERT (2.00m×2.00m)

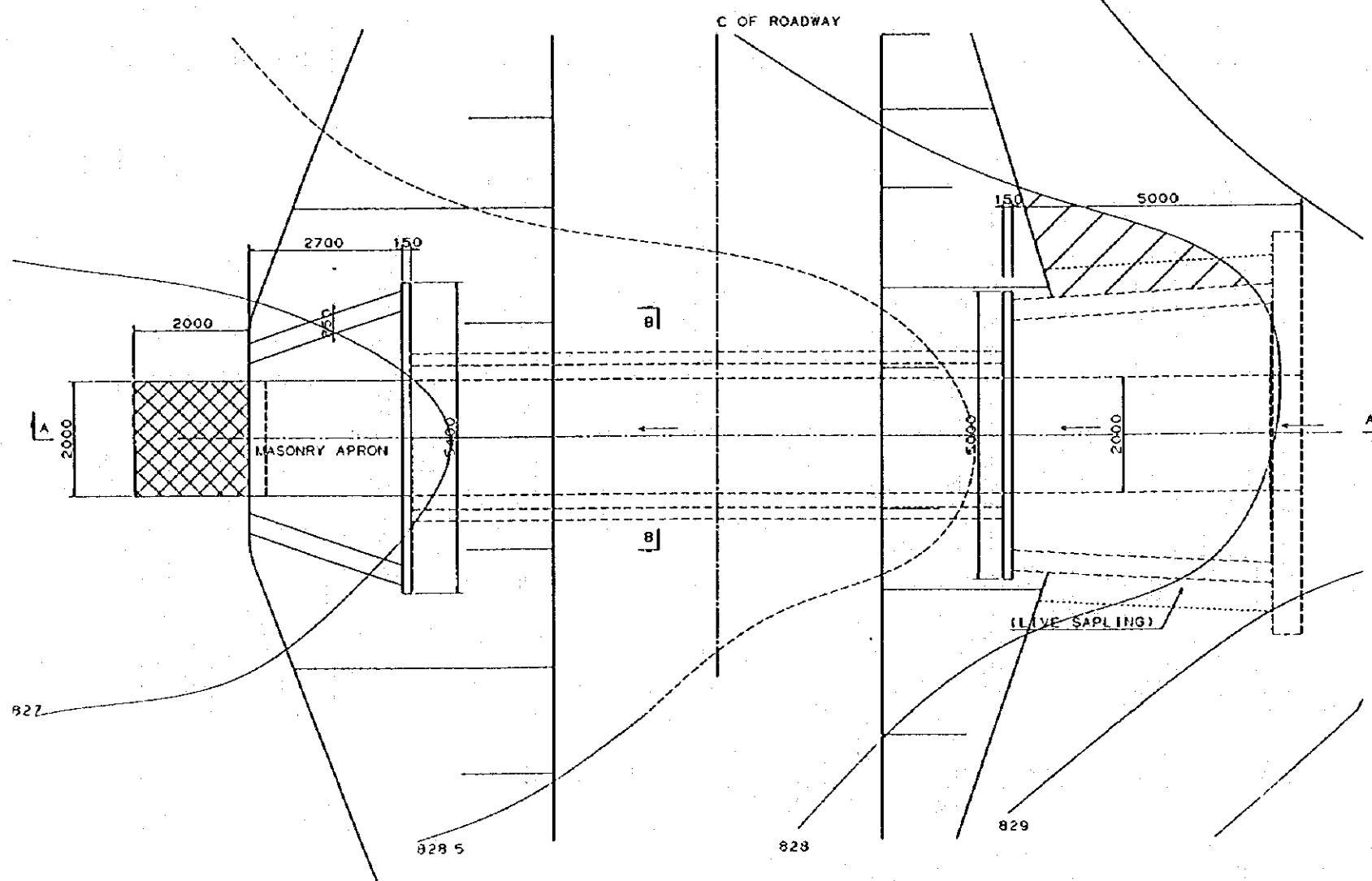
PROFILE A-A SCALE 1:100



SECTION B-B SCALE 1:50



PLAN SCALE 1:100

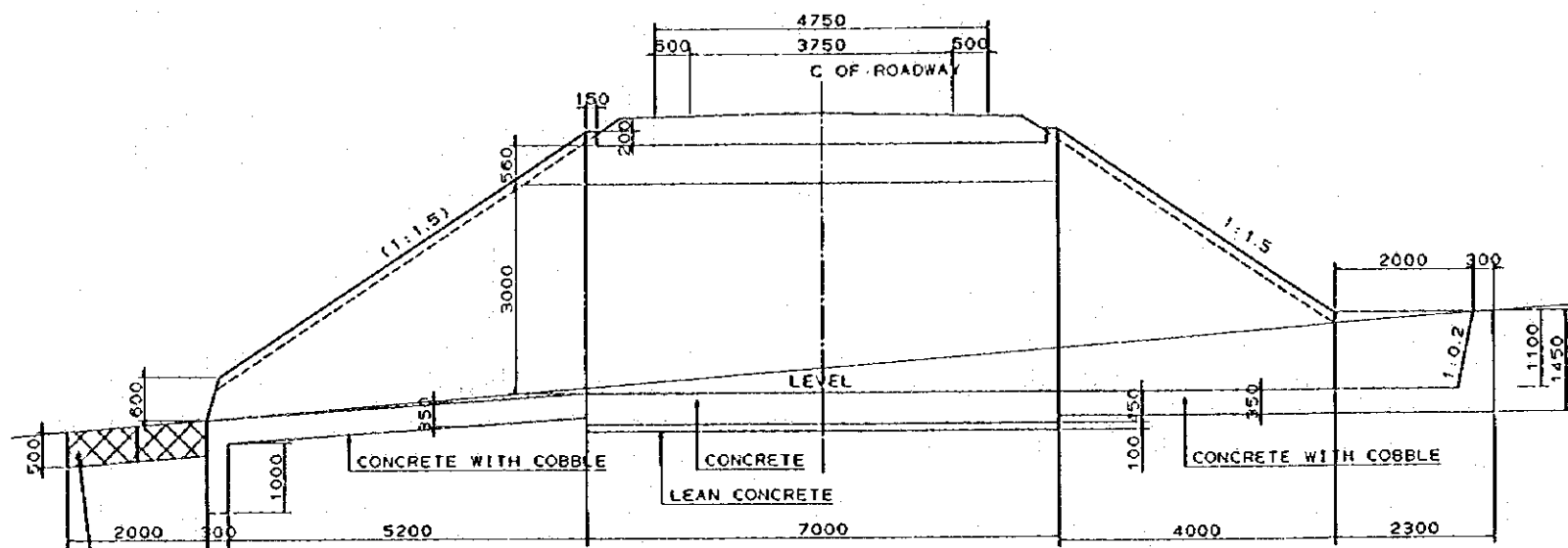


MATERIALS

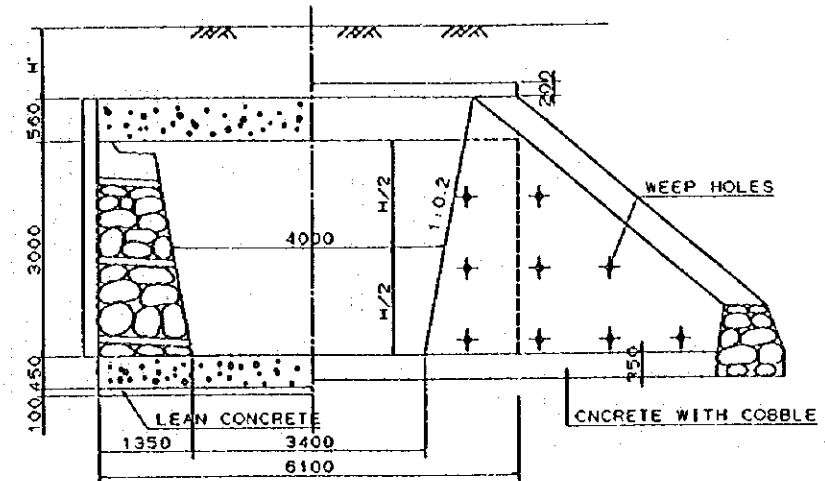
ITEM	CLASS	UNIT	QUANTITY	REMARKS
EXCAVATION		m ³	117.6	
BACKFILL		m ³	72.0	
SUPPORT WALL		m ²	9.1	
LEAN CONCRETE	σck=180kg/m ²	m ³	2.7	
CONCRETE WITH COBBLE		m ³	2.3	
CONCRETE	σck=240kg/m ²	m ³	29.1	
FORM WORK		m ²	180.1	
FORM WORK	LEAN CONCRETE	m ²	2.2	
REINFORCEMENT BAR	φ 10	t	3.8	
SUPPORT		m ³	45.2	
GABION		m ³	2.0	

TYPE-5 : SLAB CULVERT (4.00m SINGLE)

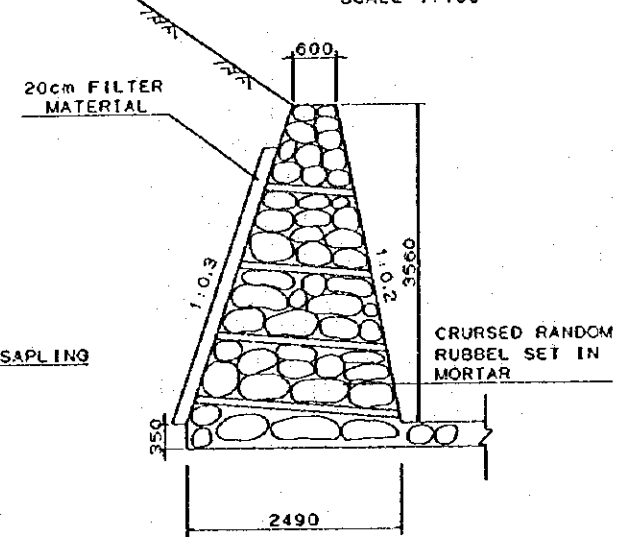
SECTION A-A SCALE 1:100



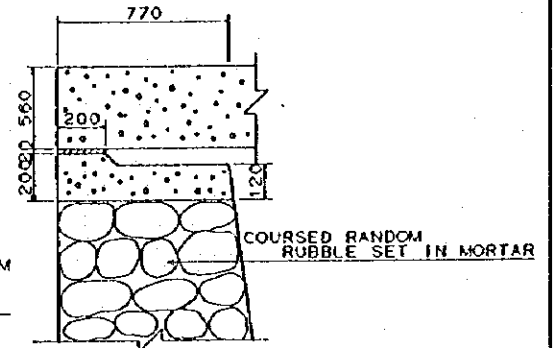
SECTION B-B SCALE 1:100



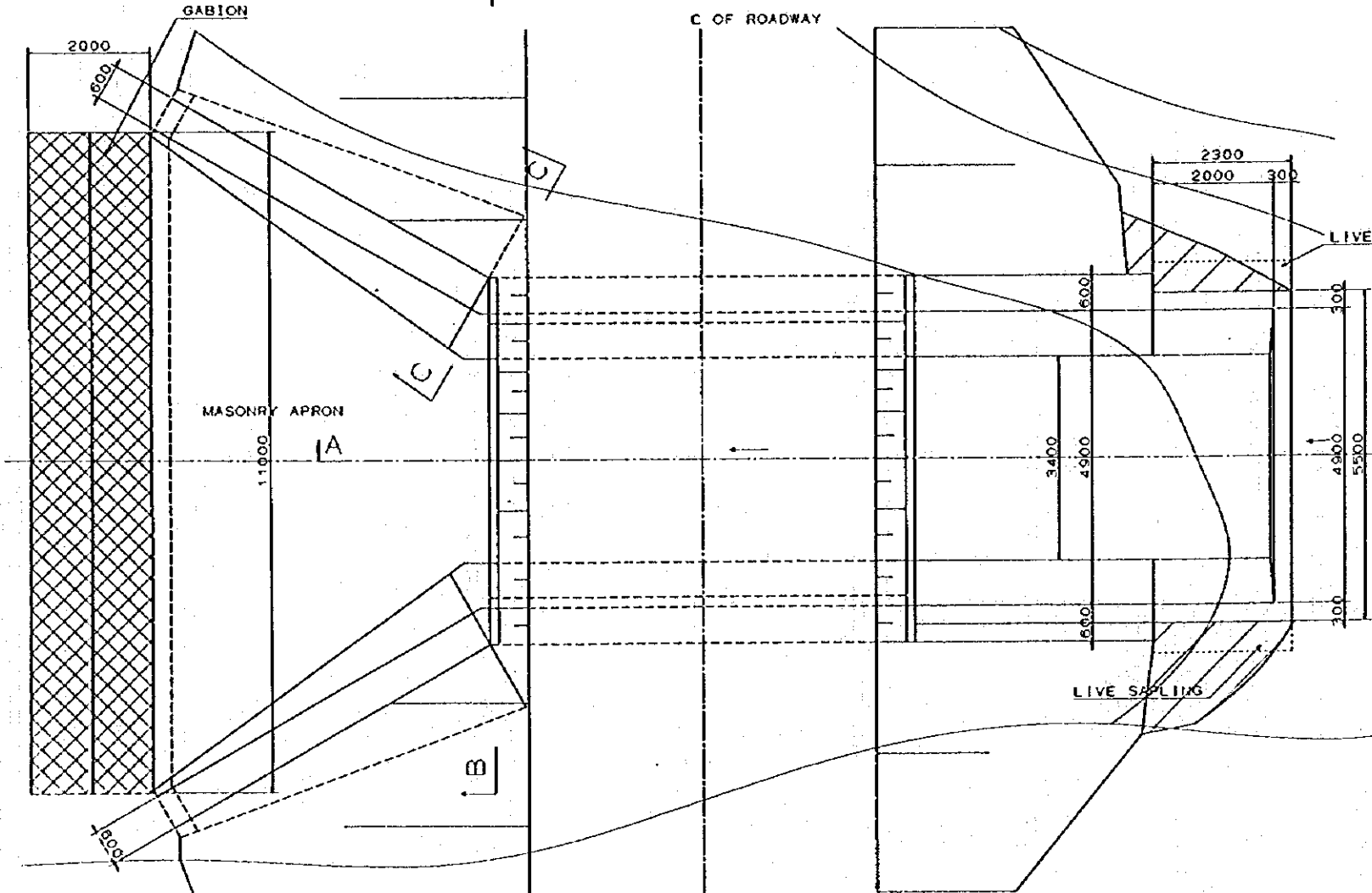
SECTION C-C SCALE 1:100



DETAIL AT R.C. SEAT SCALE 1:30



PLAN SCALE 1:100



A) MATERIALS

ITEM	CLASS	UNIT	QUANTITY	REMARKS
EXCAVATION		m ³	147.3	
BACKFILL		m ³	81.1	
GRAVITY WALL		m ³	95.1	
LEAN CONCRETE	ock-180kg/m ²	m ³	4.7	
CONCRETE WITH COBBLE		m ³	36.1	
CONCRETE	ock-240kg/m ²	m ³	45.3	
FORM WORK	LEAN CONC	m ²	1.4	
FORM WORK		m ²	51.1	
REINFORCEMENT BAR		t	4.5	
SUPPORT		m ³	84.0	
GABION		m ³	11.0	
LIVE SAPLING		m ²	4.1	

