Regional

Republic of the Philippines
Department of Environment and Natural Resources
MIMAROPA REGION
Provincial Environment and Natural Resources Office

DENR MIMAROPA
RECORDS SECTION
RECEIVED
BY:
DATE: FEB 03 2023
TIME:

January 23, 2023

MEMORANDUM

FOR : The Regional Executive Director
MIMAROPA Region

THRU : The Assistant Director for Technical Services

FROM : The OIC, PENR Officer
PENRO, Oriental Mindoro

SUBJECT : **REQUEST OF THE MUNICIPAL LGU OF BONGABONG TO INCREASE THE COVERAGE OF THEIR GSUP PERMIT SITUATED AT BARANGAY HAGAN, BONGABONG, ORIENTAL MINDORO**

Forwarded is the request of Municipal Local Government Unit of Bongabong, Oriental Mindoro to increase the area coverage of their Gratuitous Special Use Permit (GSUP) from 2.061 hectares to 4.12 hectares situated at Barangay Hagan, Bongabong, Oriental Mindoro.

Attached herewith are GIS maps, inspection report with geotaggep photos of CENRO Roxas and other pertinent documents relative to the request for your reference.

For consideration.

ALAN I. VALLE

Tracking Nos: ***2301000168***

TSD/RPS

Republic of the Philippines
Department of Environment and Natural Resources
MIMAROPA Region
Community Environment and Natural Resources Office
Camia St., San Mariano, Roxas, Oriental Mindoro
Contact No.: 0917 876 9985 / 0917 169 0232
VOIP: (043) 289-7118
Email: cenroroxasormindoro@denr.gov.ph

January 11, 2023

MEMORANDUM

DENR-MIMAROPA REGION
PROVINCIAL ENVIRONMENT AND NATURAL RESOURCES OFFICE
ORIENTAL MINDORO
PENRO TRACKING NO.
RECEIVED BY:
DATE: JAN 19 2023
TIME:

FOR : The OIC, PENR Officer
Suqui, Calapan City

FROM : The CENR Officer
San Mariano, Roxas, Oriental Mindoro

SUBJEC : **REQUEST FROM THE MUNICIPAL LGU TO INCREASE THE COVERAGE OF THEIR GSUP PERMIT UNDER THE PHILIPPINE RURAL DEVELOPMENT PROJECT (PRDP) SITUATED IN BRGY. HAGAN, BONGABONG, ORIENTAL MINDORO**

We are respectfully forwarding the request from the Municipal LGU of Bongabong to increase the coverage of their Gratuitous Special Use Permit (GSUP) for the portion of forestland from 2.061 hectares to 4.12 hectares under the Philippine Rural Development Project (PRDP) situated at Brgy. Hagan, Bongabong, Oriental Mindoro.

Attached herewith is the GIS map, inspection report and copy of their endorsement letter received by your office dated November 21, 2022 including their GSUP documents for your reference.

For information and record.

ENGR. CAESAR E. QUEBEC

Tracking No. 2301000168

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January 10, 2023

MEMORANDUM

FOR : **The CENR Officer**
San Mariano, Roxas, Oriental Mindoro

FROM : **The Inspection Team**
San Mariano, Roxas, Oriental Mindoro

SUBJECT : **REPORT ON THE ADDITIONAL COVERAGE OF GRATUITOUS SPECIAL USE PERMIT (GSUP) FOR THE SPECIAL USE OF SOME PORTION OF FORESTLAND ON THE CONCRETING OF FARM TO MARKET ROAD (FMR) AND CONSTRUCTION OF BRIDGE TO BE FUNDED BY THE DEPARTMENT OF AGRICULTURE-PHILIPPINE RURAL DEVELOPMENT PROJECT (DA-PRDP) AT SO. CENTRO-PANLUAN-BALITE, BRGY. HAGAN, BONGABONG, ORIENTAL MINDORO**

I. REFERENCE

This is in connection with the application of Mayor Eligio A. Malaluan to increase the coverage of their previously issued Gratuitous Special Use Permit (GSUP) for the special use of some portion of forestland for the concreting of Farm to Market Road and construction of bridge that will be funded through the Department of Agriculture-Philippine Rural Development Project (DA-PRDP) situated at So. Centro-Panluan-Balite, Brgy. Hagan, Bongabong, Oriental Mindoro.

II. ACTION UNDERTAKEN

1. Sometime in CY 2022, the team from the Municipality of Bongabong, Oriental Mindoro coordinated to this office regarding the additional coverage of their issued GSUP (DENR-MIMAROPA-GSUP-2022-04) approved on July 15, 2022. They want to increase the 10 meters width to 20 meters for their proposed concreting of Farm to Market Road (FMR) located at So. Centro-Panluan-Balite, Brgy. Hagan, Bongabong, Oriental Mindoro.

CDS-RPS/cbn

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Accordingly, the said project will be funded by the Department of Agriculture-Philippine Rural Development Project (DA-PRDP) with counterpart from the Municipality of Bongabong.

During the said coordination meeting, it was agreed that the office will conduct joint inspection together with the representative from the Municipality of Bongabong to determine the exact location on the ground of the proposed FMR, determine the classification of the land and conduct inventory of trees to be affected.

2. A team from CENRO Roxas, Oriental Mindoro together with the representative from the LGU of Bongabong conducted inventory and assessment of the area with information gathered below:

   a. The width of the said FMR project is 20 meters.
   b. It has an approximate length of 9.98 kilometers equivalent to an approximate area of 9.98 hectares. Upon overlaying the land classification map, it was found out that some portion of it with an approximate length of 2.061 kilometers falls within the forestland area while the biggest portion of it with an approximate length of 7.919 kilometers falls within the alienable & disposable area.
   c. There are four hundred forty one (441) affected trees inventoried with a total volume of 77.78 cubic meters. Two hundred twenty one (221) trees with a volume of 24.74 cubic meters is within forestland while two hundred twenty (220) trees with a volume of 53.04 cubic meters falls within alienable & disposable area.
   d. The affected landowners of the said FMR were agreed to be acted separately by the LGU of Bongabong when it comes to the cost of damages.

3. The result of the said tree inventory and assessment of the project site were presented to the LGU of Bongabong. Wherein it was agreed that the documents shall be prepared /secured for the application and issuance of Tree Cutting Permit (TCP) by the CENRO regarding the affected inventoried trees and Gratuitous Special Use Permit (GSUP) for special use of forestlands affected by the FMR project by the DENR Regional Office.

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III. RECOMMENDATION

1. Considering that the proponent submitted the required documents for the application for Gratuitous Special Use Permit (GSUP), therefore issuance of the said permit is hereby respectfully recommended for approval by the Regional Executive Director since the project site did not traverse two or more regions as stipulated in Section 7.7 of the DENR Administrative Order No. 2022-01.

2. The application of Tree Cutting Permit (TCP) by the proponent will be process by this office after the submission of required necessary documents.

Attached are the geotagged photos and GIS maps.

For your information and record.

CHUCKLEE B. NGABIT
Forester II/Team Leader

AQUINO D. BAUTISTA
Forester I/Member

LARRY E. HERILLA
Forest Technician I/Member

ACE C. GLORIA
Forest Technician I/Member

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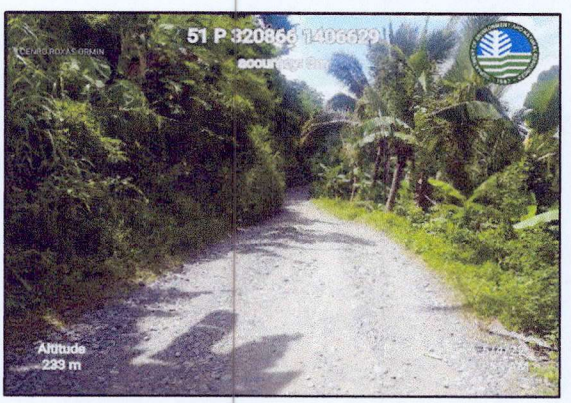
Geotagged photos showing the undertaken inspection on the proposed concreting of farm to market road situated at Sitio Centro-Panluan-Balite, Hagan, Bongabong, Oriental Mindoro.



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San Mariano, Roxas, Oriental Mindoro

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San Mariano, Roxas, Oriental Mindoro

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Attached are the geotagged photos and GIS maps.

For your information and record.

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Forester I/Member

LARRY E. HERILLA
Forest Technician I/Member

ACE C. GLORIA
Forest Technician I/Member

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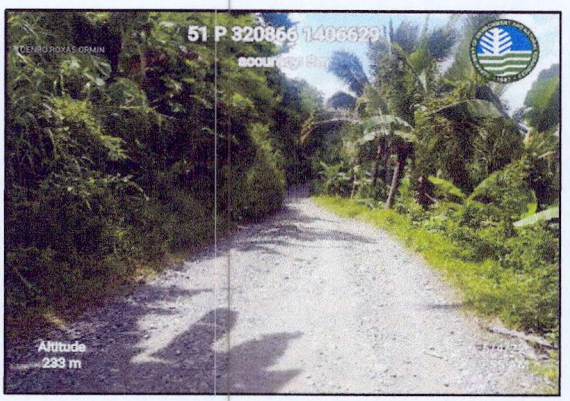

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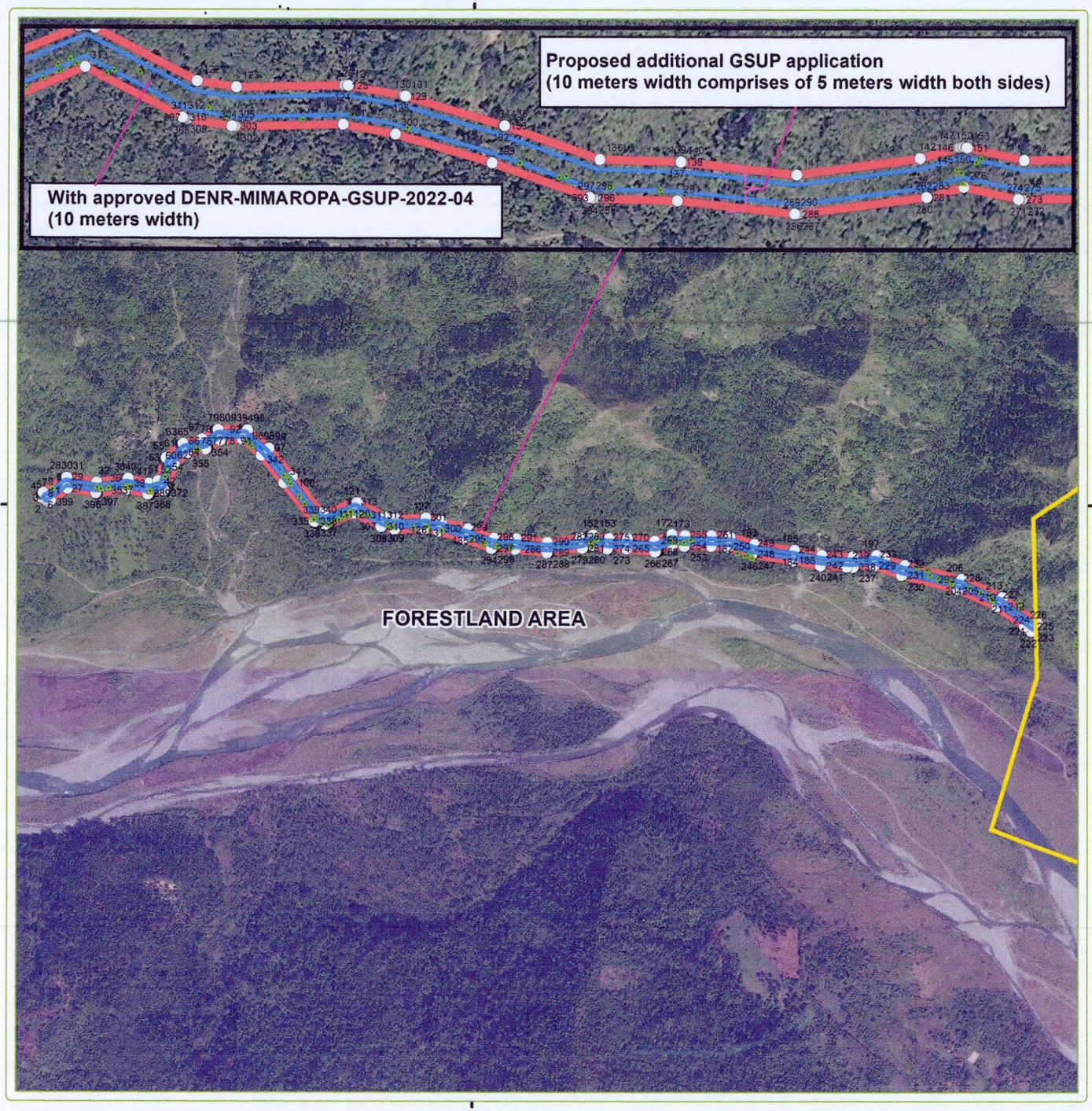

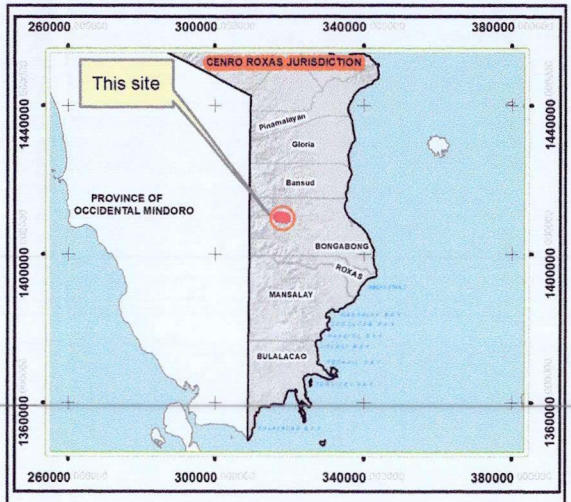

N
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SCALE 1:11,000

0 60 120 240 360 480
Meters

Spheroid.....Clarke 1866
Projection.....Universal Transverse Mercator (UTM)
Horizontal Datum.....WGS 1984

SOURCES OF INFORMATION:

MAP OF THE PROPOSED CONCRETING OF CENTRO-PANLUAN-BALITE, HAGAN FARM TO MARKET ROAD WITH BRIDGE FUNDED UNDER THE DA-PRDP APPLIED FOR GRATUITOUS SPECIAL USE PERMIT (GSUP)

Located at : Brgy. Hagan, Bongabong, Oriental Mindoro
Proposed Area : 4.12 Hectares

LEGEND:

- Proposed FMR boundary corner
- Geoatag photos of affected trees
- Road length: 2,061 meters
  Road width: 20 meters
- Municipal Boundary
- Provincial Boundary
- Forestland boundary
- Approved GSUP boundary (10m width)

PERSONNEL IN-CHARGE:

Republic of the Philippines
Department of Environment and Natural Resources
MIMAROPA Region
Community Environment and Natural Resources Office
San Mariano, Roxas, Oriental Mindoro

This is to certify that this is the true and correct map of the proposed farm to market road project funded by DA-PRDP as described hereon. This map was prepared based on actual survey using GPS instrument.

Prepared by:

CHUCKLEE B. NGABIT
For. II/Team Leader

AQUINO D. BAUTISTA
For. I/Member

LARRY E. HERILLA
FT/Member

ACE O. GLORIA
FT/Member

Attested by:

ENGR. CAESAR E. QUEBEC
CENR Officer

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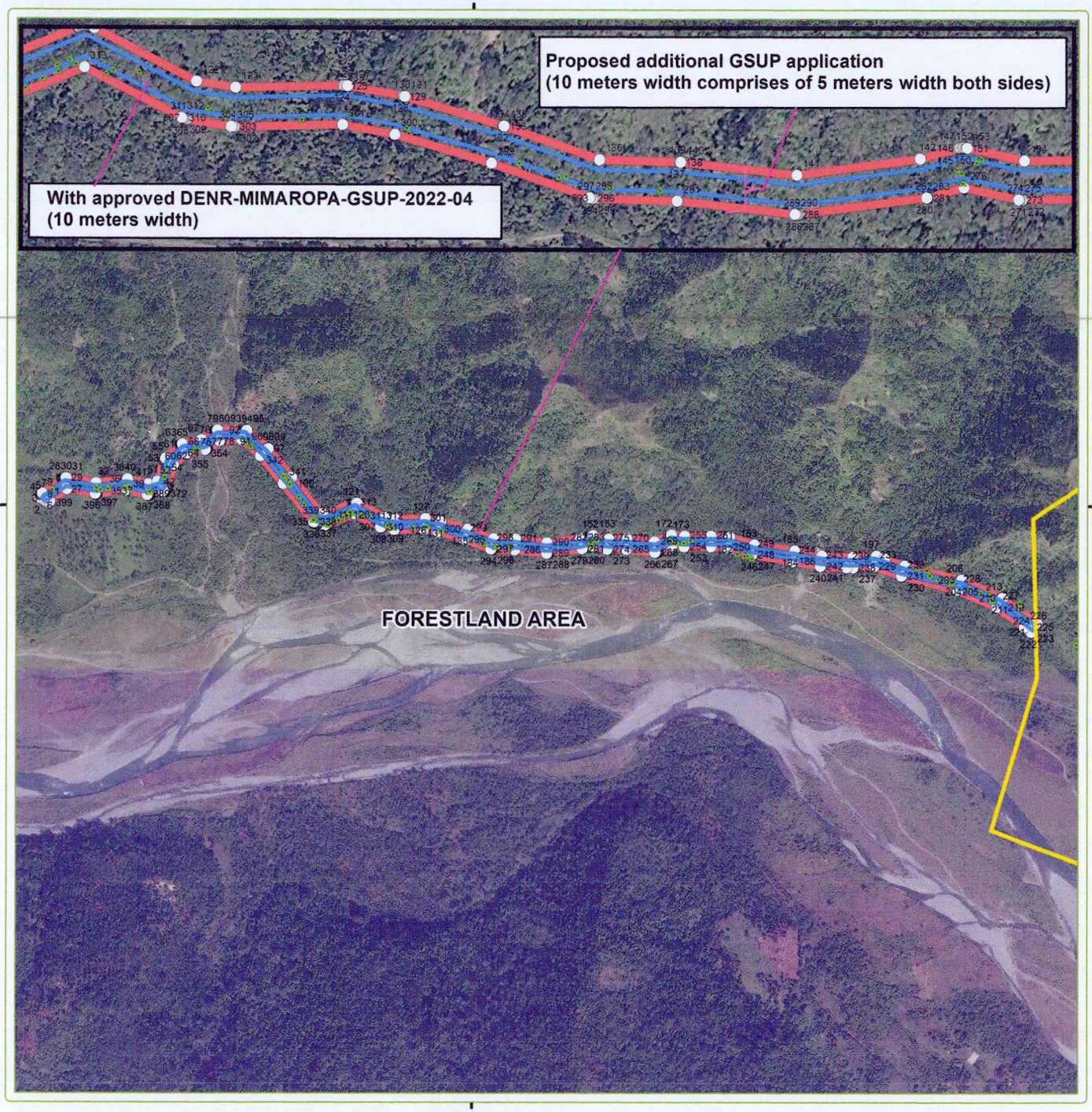

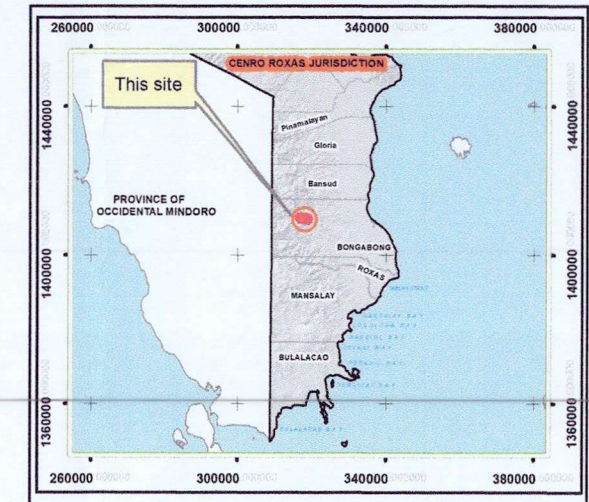

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For. II/Team Leader

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ACE O. GLORIA
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Attested by:

ENGR. CAESAR E. QUEBEC
CENR Officer

Copyright 2023

TECHNICAL DESCRIPTION OF THE PROPOSED CENTRO-PANLUAN-BALITE, HAGAN FARM TO MARKET ROAD (WITHIN FORESTLAND)

CORNER	NORTHING	EASTING
1	1410004.069	317198.6801
2	1410006.667	317194.4078
3	1410009.264	317190.1356
4	1410011.862	317185.8633
5	1410014.459	317181.591
6	1410019.157	317184.4474
7	1410019.474	317184.6567
8	1410020.09	317185.0987
9	1410020.39	317185.3315
10	1410020.711	317185.6261
11	1410021.328	317186.2424
12	1410021.622	317186.564
13	1410021.726	317186.6921
14	1410021.93	317186.9517
15	1410022.03	317187.0831
16	1410049.05	317223.9758
17	1410049.204	317224.199
18	1410049.501	317224.6533
19	1410049.643	317224.8846
20	1410049.844	317225.2715
21	1410050.212	317226.0614
22	1410050.379	317226.4644
23	1410050.51	317226.8804
24	1410050.736	317227.7222
25	1410050.83	317228.1481
26	1410050.887	317228.5805
27	1410050.963	317229.4488
28	1410050.982	317229.8846
29	1410050.967	317230.2808
30	1410050.904	317231.0707
31	1410050.857	317231.4645
32	1410041.831	317287.8748
33	1410048.886	317344.3851
34	1410048.915	317344.6942
35	1410048.954	317345.3136
36	1410048.963	317345.624
37	1410048.944	317346.0597
38	1410048.868	317346.928

39	1410048.802	317347.4117
40	1410048.741	317347.7183
41	1410040.106	317387.0336
42	1410044.853	317404.8562
43	1410083.803	317416.6018
44	1410083.937	317416.6442
45	1410084.203	317416.7329
46	1410084.336	317416.779
47	1410084.739	317416.946
48	1410085.529	317417.3143
49	1410085.915	317417.5157
50	1410086.283	317417.7501
51	1410086.997	317418.25
52	1410087.343	317418.5155
53	1410087.612	317418.7579
54	1410088.131	317419.2614
55	1410088.381	317419.5226
56	1410112.951	317447.092
57	1410113.097	317447.2611
58	1410113.387	317447.6355
59	1410113.887	317448.3495
60	1410114.121	317448.7174
61	1410114.323	317449.1043
62	1410114.691	317449.8942
63	1410114.858	317450.2972
64	1410114.948	317450.5674
65	1410115.112	317451.1125
66	1410115.186	317451.3874
67	1410124.047	317488.3714
68	1410140.067	317513.1847
69	1410140.133	317513.2899
70	1410140.263	317513.502
71	1410140.326	317513.6088
72	1410140.528	317513.9958
73	1410140.896	317514.7857
74	1410141.063	317515.1886
75	1410141.194	317515.6047
76	1410141.42	317516.4465
77	1410141.514	317516.8724
78	1410141.563	317517.2235
79	1410141.637	317517.9284
80	1410141.661	317518.2821
81	1410143.249	317566.8744
82	1410143.253	317567.1194

83	1410143.234	317567.5961
84	1410143.158	317568.4643
85	1410143.101	317568.8968
86	1410143.007	317569.3226
87	1410142.781	317570.1645
88	1410142.65	317570.5805
89	1410142.483	317570.9835
90	1410142.115	317571.7734
91	1410141.914	317572.1603
92	1410141.674	317572.536
93	1410141.41	317572.8942
94	1410141.152	317573.2577
95	1410140.894	317573.612
96	1410107.647	317612.6364
97	1410107.359	317612.9468
98	1410106.758	317613.5419
99	1410106.445	317613.8266
100	1410053.605	317657.7493
101	1409984.491	317712.8534
102	1409983.166	317720.5213
103	1410005.132	317772.7386
104	1410005.178	317772.8524
105	1410005.268	317773.0811
106	1410005.312	317773.196
107	1410005.443	317773.612
108	1410005.668	317774.4539
109	1410005.763	317774.8797
110	1410005.82	317775.3122
111	1410005.896	317776.1804
112	1410005.915	317776.6162
113	1410005.896	317777.052
114	1410005.82	317777.9202
115	1410005.763	317778.3527
116	1410005.668	317778.7785
117	1410005.443	317779.6204
118	1410005.312	317780.0364
119	1410005.197	317780.3239
120	1410004.949	317780.8911
121	1410004.817	317781.1709
122	1409977.928	317833.7266
123	1409974.723	317853.6862
124	1409975.895	317908.8709
125	1409975.878	317909.342
126	1409975.8	317910.283

127	1409975.738	317910.7529
128	1409970.524	317939.0054
129	1409970.47	317939.2589
130	1409970.35	317939.7628
131	1409970.283	317940.0132
132	1409955.515	317990.2039
133	1409955.477	317990.3273
134	1409955.398	317990.5731
135	1409955.357	317990.6955
136	1409938.25	318039.391
137	1409937.16	318079.9261
138	1409937.151	318080.1327
139	1409937.122	318080.5454
140	1409937.104	318080.7514
141	1409930.573	318140.0871
142	1409938.781	318202.9616
143	1409944.166	318222.2235
144	1409944.226	318222.461
145	1409944.334	318222.9389
146	1409944.383	318223.1791
147	1409944.44	318223.6115
148	1409944.516	318224.4798
149	1409944.535	318224.9156
150	1409944.516	318225.3513
151	1409944.44	318226.2196
152	1409944.375	318226.6974
153	1409944.321	318226.969
154	1409938.011	318256.3704
155	1409938.407	318290.1615
156	1409938.401	318290.4509
157	1409938.371	318291.0304
158	1409938.347	318291.3205
159	1409932.588	318343.3436
160	1409944.601	318370.1957
161	1409944.671	318370.3604
162	1409944.805	318370.6922
163	1409944.87	318370.8593
164	1409945.001	318371.2753
165	1409945.226	318372.1172
166	1409945.321	318372.543
167	1409945.378	318372.9755
168	1409945.454	318373.8437
169	1409945.473	318374.2795
170	1409945.469	318374.4862

171	1409945.451	318374.8992
172	1409945.439	318375.1056
173	1409943.408	318399.6051
174	1409943.088	318449.0558
175	1409943.081	318449.3457
176	1409941.6	318482.1602
177	1409941.575	318482.4827
178	1409941.504	318483.1255
179	1409941.458	318483.4457
180	1409941.398	318483.7362
181	1409941.261	318484.313
182	1409941.183	318484.5994
183	1409927.142	318531.111
184	1409915.76	318607.1118
185	1409915.722	318607.3447
186	1409906.204	318658.927
187	1409903.758	318717.7732
188	1409906.832	318757.8624
189	1409906.843	318758.0534
190	1409906.857	318758.4357
191	1409906.861	318758.627
192	1409906.842	318759.0628
193	1409906.766	318759.931
194	1409906.709	318760.3635
195	1409906.622	318760.7637
196	1409906.414	318761.5556
197	1409906.294	318761.9473
198	1409901.069	318776.7916
199	1409887.514	318815.2992
200	1409861.59	318920.8671
201	1409861.519	318921.1281
202	1409861.362	318921.6458
203	1409861.276	318921.9025
204	1409861.226	318922.0325
205	1409861.124	318922.2911
206	1409861.071	318922.4197
207	1409828.462	318998.5486
208	1409828.337	318998.8182
209	1409828.071	318999.3494
210	1409827.93	318999.6111
211	1409827.796	318999.8292
212	1409827.518	319000.2582
213	1409827.374	319000.4692
214	1409780.786	319064.923

215	1409780.076	319065.9061
216	1409775.793	319063.2958
217	1409771.51	319060.6855
218	1409767.05	319058.4262
219	1409762.597	319056.1705
220	1409762.653	319056.0456
221	1409762.783	319055.805
222	1409762.85	319055.6855
223	1409762.983	319055.4675
224	1409763.261	319055.0385
225	1409763.406	319054.8275
226	1409772.682	319041.9944
227	1409810.515	318989.653
228	1409842.363	318915.2999
229	1409868.207	318810.055
230	1409868.271	318809.8195
231	1409868.411	318809.3517
232	1409868.486	318809.1195
233	1409886.729	318757.2925
234	1409883.771	318718.7129
235	1409883.76	318718.5219
236	1409883.746	318718.1397
237	1409883.742	318717.8965
238	1409883.749	318717.5849
239	1409884.266	318705.1286
240	1409886.251	318657.3911
241	1409886.277	318657.0495
242	1409886.352	318656.3694
243	1409886.401	318656.031
244	1409896.012	318603.9451
245	1409907.474	318527.4011
246	1409907.506	318527.2094
247	1409907.571	318526.887
248	1409907.709	318526.3102
249	1409907.786	318526.0238
250	1409921.677	318480.0127
251	1409923.091	318448.6852
252	1409923.411	318399.0947
253	1409923.416	318398.9041
254	1409923.433	318398.5233
255	1409923.445	318398.3331
256	1409925.295	318376.0161
257	1409913.221	318349.0294
258	1409913.151	318348.8647

259	1409913.016	318348.5329
260	1409912.952	318348.3658
261	1409912.821	318347.9498
262	1409912.595	318347.1079
263	1409912.501	318346.6821
264	1409912.444	318346.2496
265	1409912.368	318345.3814
266	1409912.349	318344.9456
267	1409912.357	318344.6701
268	1409912.387	318344.1199
269	1409912.41	318343.8452
270	1409918.401	318289.7267
271	1409917.999	318255.4259
272	1409918.017	318254.9759
273	1409918.092	318254.0784
274	1409918.159	318253.5855
275	1409918.212	318253.3139
276	1409924.24	318225.2304
277	1409919.327	318207.6573
278	1409919.267	318207.4197
279	1409919.159	318206.9419
280	1409919.11	318206.7016
281	1409919.092	318206.5914
282	1409919.058	318206.3704
283	1409919.042	318206.2597
284	1409910.585	318141.4833
285	1409910.554	318141.1604
286	1409910.512	318140.5131
287	1409910.501	318140.1887
288	1409910.509	318139.9148
289	1409910.539	318139.3677
290	1409910.561	318139.0946
291	1409917.179	318078.9746
292	1409918.3	318037.2866
293	1409918.323	318036.9183
294	1409918.398	318036.1845
295	1409918.448	318035.8189
296	1409918.535	318035.4202
297	1409918.742	318034.6313
298	1409918.861	318034.2411
299	1409936.401	317984.3106
300	1409950.95	317934.8655
301	1409955.877	317908.1676
302	1409954.708	317853.1004

303	1409954.721	317852.6778
304	1409954.783	317851.832
305	1409954.833	317851.4087
306	1409958.445	317828.9188
307	1409958.54	317828.4745
308	1409958.772	317827.5949
309	1409958.909	317827.1596
310	1409959.023	317826.8721
311	1409959.271	317826.3049
312	1409959.403	317826.0251
313	1409984.893	317776.2043
314	1409963.596	317725.5796
315	1409963.55	317725.4658
316	1409963.46	317725.2371
317	1409963.417	317725.1223
318	1409963.286	317724.7062
319	1409963.06	317723.8644
320	1409962.966	317723.4385
321	1409962.909	317723.0061
322	1409962.833	317722.1378
323	1409962.814	317721.702
324	1409962.832	317721.2749
325	1409962.905	317720.4238
326	1409962.96	317719.9998
327	1409965.433	317705.6852
328	1409965.528	317705.255
329	1409965.755	317704.4046
330	1409965.887	317703.9844
331	1409966.054	317703.5814
332	1409966.422	317702.7915
333	1409966.624	317702.4046
334	1409966.858	317702.0367
335	1409967.358	317701.3227
336	1409967.623	317700.9767
337	1409967.918	317700.6551
338	1409968.534	317700.0388
339	1409968.88	317699.7241
340	1409969.026	317699.6051
341	1410040.978	317642.2393
342	1410092.981	317599.0113
343	1410123.132	317563.6202
344	1410121.762	317521.7051
345	1410106.319	317497.7856
346	1410106.252	317497.6803

347	1410106.123	317497.4683
348	1410106.059	317497.3614
349	1410105.858	317496.9745
350	1410105.49	317496.1846
351	1410105.323	317495.7816
352	1410105.233	317495.5114
353	1410105.069	317494.9663
354	1410104.995	317494.6914
355	1410096.322	317458.4931
356	1410075.327	317434.9355
357	1410033.738	317422.394
358	1410033.605	317422.3516
359	1410033.338	317422.263
360	1410033.205	317422.2168
361	1410032.802	317422.0499
362	1410032.012	317421.6816
363	1410031.626	317421.4802
364	1410031.258	317421.2458
365	1410030.544	317420.7459
366	1410030.198	317420.4803
367	1410029.876	317420.1857
368	1410029.26	317419.5694
369	1410028.965	317419.2478
370	1410028.7	317418.9017
371	1410028.2	317418.1878
372	1410027.965	317417.8199
373	1410027.764	317417.433
374	1410027.396	317416.6431
375	1410027.229	317416.2401
376	1410027.157	317416.03
377	1410027.024	317415.6067
378	1410026.962	317415.3936
379	1410020.155	317389.8342
380	1410020.104	317389.6258
381	1410020.012	317389.2072
382	1410019.97	317388.9969
383	1410019.913	317388.5644
384	1410019.837	317387.6962
385	1410019.818	317387.2604
386	1410019.837	317386.8246
387	1410019.913	317385.9564
388	1410019.979	317385.4727
389	1410020.04	317385.1661
390	1410028.827	317345.1573

391	1410021.809	317288.9396
392	1410021.78	317288.6305
393	1410021.741	317288.0111
394	1410021.732	317287.7008
395	1410021.747	317287.3046
396	1410021.81	317286.5146
397	1410021.857	317286.1209
398	1410030.449	317232.426
399	1410007.069	317200.504

Prepared by:

CHUCKLEE B. NGABIT
For. II/GIS Team Leader

TECHNICAL DESCRIPTION OF THE PROPOSED CENTRO-PANLUAN-BALITE, HAGAN FARM TO MARKET ROAD (WITHIN FORESTLAND)		
CORNER	**NORTHING**	**EASTING**
1	1410004.069	317198.6801
2	1410006.667	317194.4078
3	1410009.264	317190.1356
4	1410011.862	317185.8633
5	1410014.459	317181.591
6	1410019.157	317184.4474
7	1410019.474	317184.6567
8	1410020.09	317185.0987
9	1410020.39	317185.3315
10	1410020.711	317185.6261
11	1410021.328	317186.2424
12	1410021.622	317186.564
13	1410021.726	317186.6921
14	1410021.93	317186.9517
15	1410022.03	317187.0831
16	1410049.05	317223.9758
17	1410049.204	317224.199
18	1410049.501	317224.6533
19	1410049.643	317224.8846
20	1410049.844	317225.2715
21	1410050.212	317226.0614
22	1410050.379	317226.4644
23	1410050.51	317226.8804
24	1410050.736	317227.7222
25	1410050.83	317228.1481
26	1410050.887	317228.5805
27	1410050.963	317229.4488
28	1410050.982	317229.8846
29	1410050.967	317230.2808
30	1410050.904	317231.0707
31	1410050.857	317231.4645
32	1410041.831	317287.8748
33	1410048.886	317344.3851
34	1410048.915	317344.6942
35	1410048.954	317345.3136
36	1410048.963	317345.624
37	1410048.944	317346.0597
38	1410048.868	317346.928

39	1410048.802	317347.4117
40	1410048.741	317347.7183
41	1410040.106	317387.0336
42	1410044.853	317404.8562
43	1410083.803	317416.6018
44	1410083.937	317416.6442
45	1410084.203	317416.7329
46	1410084.336	317416.779
47	1410084.739	317416.946
48	1410085.529	317417.3143
49	1410085.915	317417.5157
50	1410086.283	317417.7501
51	1410086.997	317418.25
52	1410087.343	317418.5155
53	1410087.612	317418.7579
54	1410088.131	317419.2614
55	1410088.381	317419.5226
56	1410112.951	317447.092
57	1410113.097	317447.2611
58	1410113.387	317447.6355
59	1410113.887	317448.3495
60	1410114.121	317448.7174
61	1410114.323	317449.1043
62	1410114.691	317449.8942
63	1410114.858	317450.2972
64	1410114.948	317450.5674
65	1410115.112	317451.1125
66	1410115.186	317451.3874
67	1410124.047	317488.3714
68	1410140.067	317513.1847
69	1410140.133	317513.2899
70	1410140.263	317513.502
71	1410140.326	317513.6088
72	1410140.528	317513.9958
73	1410140.896	317514.7857
74	1410141.063	317515.1886
75	1410141.194	317515.6047
76	1410141.42	317516.4465
77	1410141.514	317516.8724
78	1410141.563	317517.2235
79	1410141.637	317517.9284
80	1410141.661	317518.2821
81	1410143.249	317566.8744
82	1410143.253	317567.1194

83	1410143.234	317567.5961
84	1410143.158	317568.4643
85	1410143.101	317568.8968
86	1410143.007	317569.3226
87	1410142.781	317570.1645
88	1410142.65	317570.5805
89	1410142.483	317570.9835
90	1410142.115	317571.7734
91	1410141.914	317572.1603
92	1410141.674	317572.536
93	1410141.41	317572.8942
94	1410141.152	317573.2577
95	1410140.894	317573.612
96	1410107.647	317612.6364
97	1410107.359	317612.9468
98	1410106.758	317613.5419
99	1410106.445	317613.8266
100	1410053.605	317657.7493
101	1409984.491	317712.8534
102	1409983.166	317720.5213
103	1410005.132	317772.7386
104	1410005.178	317772.8524
105	1410005.268	317773.0811
106	1410005.312	317773.196
107	1410005.443	317773.612
108	1410005.668	317774.4539
109	1410005.763	317774.8797
110	1410005.82	317775.3122
111	1410005.896	317776.1804
112	1410005.915	317776.6162
113	1410005.896	317777.052
114	1410005.82	317777.9202
115	1410005.763	317778.3527
116	1410005.668	317778.7785
117	1410005.443	317779.6204
118	1410005.312	317780.0364
119	1410005.197	317780.3239
120	1410004.949	317780.8911
121	1410004.817	317781.1709
122	1409977.928	317833.7266
123	1409974.723	317853.6862
124	1409975.895	317908.8709
125	1409975.878	317909.342
126	1409975.8	317910.283

127	1409975.738	317910.7529
128	1409970.524	317939.0054
129	1409970.47	317939.2589
130	1409970.35	317939.7628
131	1409970.283	317940.0132
132	1409955.515	317990.2039
133	1409955.477	317990.3273
134	1409955.398	317990.5731
135	1409955.357	317990.6955
136	1409938.25	318039.391
137	1409937.16	318079.9261
138	1409937.151	318080.1327
139	1409937.122	318080.5454
140	1409937.104	318080.7514
141	1409930.573	318140.0871
142	1409938.781	318202.9616
143	1409944.166	318222.2235
144	1409944.226	318222.461
145	1409944.334	318222.9389
146	1409944.383	318223.1791
147	1409944.44	318223.6115
148	1409944.516	318224.4798
149	1409944.535	318224.9156
150	1409944.516	318225.3513
151	1409944.44	318226.2196
152	1409944.375	318226.6974
153	1409944.321	318226.969
154	1409938.011	318256.3704
155	1409938.407	318290.1615
156	1409938.401	318290.4509
157	1409938.371	318291.0304
158	1409938.347	318291.3205
159	1409932.588	318343.3436
160	1409944.601	318370.1957
161	1409944.671	318370.3604
162	1409944.805	318370.6922
163	1409944.87	318370.8593
164	1409945.001	318371.2753
165	1409945.226	318372.1172
166	1409945.321	318372.543
167	1409945.378	318372.9755
168	1409945.454	318373.8437
169	1409945.473	318374.2795
170	1409945.469	318374.4862

171	1409945.451	318374.8992
172	1409945.439	318375.1056
173	1409943.408	318399.6051
174	1409943.088	318449.0558
175	1409943.081	318449.3457
176	1409941.6	318482.1602
177	1409941.575	318482.4827
178	1409941.504	318483.1255
179	1409941.458	318483.4457
180	1409941.398	318483.7362
181	1409941.261	318484.313
182	1409941.183	318484.5994
183	1409927.142	318531.111
184	1409915.76	318607.1118
185	1409915.722	318607.3447
186	1409906.204	318658.927
187	1409903.758	318717.7732
188	1409906.832	318757.8624
189	1409906.843	318758.0534
190	1409906.857	318758.4357
191	1409906.861	318758.627
192	1409906.842	318759.0628
193	1409906.766	318759.931
194	1409906.709	318760.3635
195	1409906.622	318760.7637
196	1409906.414	318761.5556
197	1409906.294	318761.9473
198	1409901.069	318776.7916
199	1409887.514	318815.2992
200	1409861.59	318920.8671
201	1409861.519	318921.1281
202	1409861.362	318921.6458
203	1409861.276	318921.9025
204	1409861.226	318922.0325
205	1409861.124	318922.2911
206	1409861.071	318922.4197
207	1409828.462	318998.5486
208	1409828.337	318998.8182
209	1409828.071	318999.3494
210	1409827.93	318999.6111
211	1409827.796	318999.8292
212	1409827.518	319000.2582
213	1409827.374	319000.4692
214	1409780.786	319064.923

215	1409780.076	319065.9061
216	1409775.793	319063.2958
217	1409771.51	319060.6855
218	1409767.05	319058.4262
219	1409762.597	319056.1705
220	1409762.653	319056.0456
221	1409762.783	319055.805
222	1409762.85	319055.6855
223	1409762.983	319055.4675
224	1409763.261	319055.0385
225	1409763.406	319054.8275
226	1409772.682	319041.9944
227	1409810.515	318989.653
228	1409842.363	318915.2999
229	1409868.207	318810.055
230	1409868.271	318809.8195
231	1409868.411	318809.3517
232	1409868.486	318809.1195
233	1409886.729	318757.2925
234	1409883.771	318718.7129
235	1409883.76	318718.5219
236	1409883.746	318718.1397
237	1409883.742	318717.8965
238	1409883.749	318717.5849
239	1409884.266	318705.1286
240	1409886.251	318657.3911
241	1409886.277	318657.0495
242	1409886.352	318656.3694
243	1409886.401	318656.031
244	1409896.012	318603.9451
245	1409907.474	318527.4011
246	1409907.506	318527.2094
247	1409907.571	318526.887
248	1409907.709	318526.3102
249	1409907.786	318526.0238
250	1409921.677	318480.0127
251	1409923.091	318448.6852
252	1409923.411	318399.0947
253	1409923.416	318398.9041
254	1409923.433	318398.5233
255	1409923.445	318398.3331
256	1409925.295	318376.0161
257	1409913.221	318349.0294
258	1409913.151	318348.8647

259	1409913.016	318348.5329
260	1409912.952	318348.3658
261	1409912.821	318347.9498
262	1409912.595	318347.1079
263	1409912.501	318346.6821
264	1409912.444	318346.2496
265	1409912.368	318345.3814
266	1409912.349	318344.9456
267	1409912.357	318344.6701
268	1409912.387	318344.1199
269	1409912.41	318343.8452
270	1409918.401	318289.7267
271	1409917.999	318255.4259
272	1409918.017	318254.9759
273	1409918.092	318254.0784
274	1409918.159	318253.5855
275	1409918.212	318253.3139
276	1409924.24	318225.2304
277	1409919.327	318207.6573
278	1409919.267	318207.4197
279	1409919.159	318206.9419
280	1409919.11	318206.7016
281	1409919.092	318206.5914
282	1409919.058	318206.3704
283	1409919.042	318206.2597
284	1409910.585	318141.4833
285	1409910.554	318141.1604
286	1409910.512	318140.5131
287	1409910.501	318140.1887
288	1409910.509	318139.9148
289	1409910.539	318139.3677
290	1409910.561	318139.0946
291	1409917.179	318078.9746
292	1409918.3	318037.2866
293	1409918.323	318036.9183
294	1409918.398	318036.1845
295	1409918.448	318035.8189
296	1409918.535	318035.4202
297	1409918.742	318034.6313
298	1409918.861	318034.2411
299	1409936.401	317984.3106
300	1409950.95	317934.8655
301	1409955.877	317908.1676
302	1409954.708	317853.1004

303	1409954.721	317852.6778
304	1409954.783	317851.832
305	1409954.833	317851.4087
306	1409958.445	317828.9188
307	1409958.54	317828.4745
308	1409958.772	317827.5949
309	1409958.909	317827.1596
310	1409959.023	317826.8721
311	1409959.271	317826.3049
312	1409959.403	317826.0251
313	1409984.893	317776.2043
314	1409963.596	317725.5796
315	1409963.55	317725.4658
316	1409963.46	317725.2371
317	1409963.417	317725.1223
318	1409963.286	317724.7062
319	1409963.06	317723.8644
320	1409962.966	317723.4385
321	1409962.909	317723.0061
322	1409962.833	317722.1378
323	1409962.814	317721.702
324	1409962.832	317721.2749
325	1409962.905	317720.4238
326	1409962.96	317719.9998
327	1409965.433	317705.6852
328	1409965.528	317705.255
329	1409965.755	317704.4046
330	1409965.887	317703.9844
331	1409966.054	317703.5814
332	1409966.422	317702.7915
333	1409966.624	317702.4046
334	1409966.858	317702.0367
335	1409967.358	317701.3227
336	1409967.623	317700.9767
337	1409967.918	317700.6551
338	1409968.534	317700.0388
339	1409968.88	317699.7241
340	1409969.026	317699.6051
341	1410040.978	317642.2393
342	1410092.981	317599.0113
343	1410123.132	317563.6202
344	1410121.762	317521.7051
345	1410106.319	317497.7856
346	1410106.252	317497.6803

347	1410106.123	317497.4683
348	1410106.059	317497.3614
349	1410105.858	317496.9745
350	1410105.49	317496.1846
351	1410105.323	317495.7816
352	1410105.233	317495.5114
353	1410105.069	317494.9663
354	1410104.995	317494.6914
355	1410096.322	317458.4931
356	1410075.327	317434.9355
357	1410033.738	317422.394
358	1410033.605	317422.3516
359	1410033.338	317422.263
360	1410033.205	317422.2168
361	1410032.802	317422.0499
362	1410032.012	317421.6816
363	1410031.626	317421.4802
364	1410031.258	317421.2458
365	1410030.544	317420.7459
366	1410030.198	317420.4803
367	1410029.876	317420.1857
368	1410029.26	317419.5694
369	1410028.965	317419.2478
370	1410028.7	317418.9017
371	1410028.2	317418.1878
372	1410027.965	317417.8199
373	1410027.764	317417.433
374	1410027.396	317416.6431
375	1410027.229	317416.2401
376	1410027.157	317416.03
377	1410027.024	317415.6067
378	1410026.962	317415.3936
379	1410020.155	317389.8342
380	1410020.104	317389.6258
381	1410020.012	317389.2072
382	1410019.97	317388.9969
383	1410019.913	317388.5644
384	1410019.837	317387.6962
385	1410019.818	317387.2604
386	1410019.837	317386.8246
387	1410019.913	317385.9564
388	1410019.979	317385.4727
389	1410020.04	317385.1661
390	1410028.827	317345.1573

391	1410021.809	317288.9396
392	1410021.78	317288.6305
393	1410021.741	317288.0111
394	1410021.732	317287.7008
395	1410021.747	317287.3046
396	1410021.81	317286.5146
397	1410021.857	317286.1209
398	1410030.449	317232.426
399	1410007.069	317200.504

Prepared by:

CHUCKLEE B. NGABIT
For. II/GIS Team Leader

Republic of the Philippines
Department of Environment and Natural Resources
MIMAROPA Region

GSUP Code: DENR-MIMAROPA-GSUP-2022-04
Date of Approval: JUL 15 2022

ADDITIONAL TERMS, CONDITIONS AND INSTRUCTIONS UNDER THE GRATUITOUS SPECIAL USE PERMIT

1. The area granted in this Permit: (a) is a public forest land based on existing records; (b) shall not be involved in any private transaction.

2. The annual government share or user's fee is waived in favor of the **Permittee.**

3. The **Permittee** shall: (a) comply with the laws, rules and regulations and instructions now or hereinafter enforced for the proper use of the land; (b) respect any legal or prior claims; (c) conserve the corners and boundary lines of the area; (d) protect any wetlands such as spring, waterfalls, peatlands, swamps, lake and marshes or natural/historical/archaeological sites in the area; (e) report to the nearest local forest officer(s) all forest violations in the area and adjacent lands; and (f) submit a year-end report, not later than March 30 of the succeeding year, to the concerned Regional Executive Director thru the CENRO/PENRO the kind, number and value of improvement(s) introduced in the area, among others.

4. The **Permittee** shall: (a) not appropriate for himself/herself the exclusive use of public trails traversing or adjoining the area or impede the use thereof by the public; (b) not sublease the area or any portion thereof; and (c) protect and conserve threatened, unique, rare and endangered trees/plants/wildlife identified under existing rules and regulations.

5. A separate permit shall be secured by the Permittee should tree cutting be necessary. However, no tree, regardless of species, shall be cut in the permitted area if found within forty (40) meters from banks of rivers, creeks or streams and buffer strips. In case the said 40-meter strip is bereft of trees, the same shall be rehabilitated by the **Permittee**.

6. The **Permittee** shall strictly observe the terms and conditions of the ECC. In case the Permittee will conduct periodic rehabilitation of the infrastructures or introduce new appurtenances within the GSUP area, the same shall secure an appropriate clearance from the EMB for the purpose and submit the clearance to the concerned DENR Regional Office prior to such undertakings therein.

7. The **Permittee** shall strictly observe sanitary measures within the permit area to ensure protection of watershed values.

8. The **Permittee** shall protect the permitted area from forest fires and other forms of forest destruction.

FOREST LAND 35 - FOREST LAND START STA. 7+180
45 END STA. 9+980

Republic of the Philippines
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
MIMAROPA REGION
1515 L&S Building, Roxas Boulevard, Ermita, Manila

GRATUITIOUS SPECIAL USE PERMIT
(Farm to Market Road)
NO. DENR-MIMAROPA-GSUP-2022-04

Municipal Local Government Unit of Bongabong, Oriental Mindoro
(Proponent)

Barangay Hagan, Bongabong, Oriental Mindoro
(Location of the Project Area)

Farm to Market Road
(Type of Special Use)

This **PERMIT** is hereby granted to the **Municipal Local Government Unit of Bongabong, Oriental Mindoro** with business/postal address at **Bongabong, Oriental Mindoro** to occupy **2.061** hectare/s of public forest lands situated in **Barangay Hagan, Bongabong, Oriental Mindoro** and the same is depicted on the attached map which forms part of this permit.

The Permittee's occupational and utilization of the areas as **Farm to Market Road** shall be free of charge.

The privilege granted under this **PERMIT** for the use of the area solely by the above-named Permittee is for **Farm to Market Road** only.

This **PERMIT** is subject to existing forestry laws, policies, rules and regulations as well as those that may hereinafter be promulgated and to the additional terms and conditions and instructions stipulated in the attached sheet which forms part of this **PERMIT**.

This **PERMIT** is NON-TRANSFERRABLE and NON-NEGOTIABLE and EXPIRES on July 16, 2027.

Issued this JUL 15 2022 at Manila, Philippines.

Approved by:

LORMELYN E. CALUDIO, *CESO IV*
Regional Executive Director

Doc ID: 90320

Republic of the Philippines
Department of Environment and Natural Resources
MIMAROPA Region

GRATUITIOUS SPECIAL USE PERMIT
(Farm to Market Road)
DENR-MIMAROPA-GSUP-2022-04

of

Municipal Local Government Unit of Bongabong, Oriental Mindoro
(Proponent)

Barangay Hagan, Bongabong, Oriental Mindoro
(Location of the Project Area)

Farm to Market Road
(Type of Special Use of Project)

Date of Approval: JUL 15 2022

In accordance with DENR Administrative Order No. 2022-01 dated January 11, 2022 this **PERMIT** is hereby granted to the **Municipal Local Government Unit of Bongabong, Oriental Mindoro** with business/postal address at **Bongabong, Oriental Mindoro** to occupy 2.061 hectare/s (approximately 2,061 meters long and 10 meters wide) of public forest lands situated in **Barangay Hagan, Bongabong, Oriental Mindoro** and the same is depicted on the attached map which forms part of this permit.

The Permittee's occupational and utilization of the area as **Farm to Market Road** shall be free of charge.

The privilege granted under this **PERMIT** for the use of the area solely by the above-named Permittee is for **Farm to Market Road** only.

This **PERMIT** is subject to existing forestry laws, policies, rules and regulations as well as those that may hereinafter be promulgated and to the additional terms and conditions and instructions stipulated in the attached sheet which forms part of this **PERMIT**.

This **PERMIT** is NON-TRANSFERRABLE and NON-NEGOTIABLE and EXPIRES on July 16, 2027.

Approved by:

LORMELYN E. CLAUDIO, *CESO IV*
Regional Executive Director

DENR By the Bay Bldg., 1515 Roxas Boulevard, Ermita, Manila
DENR VOIP (02) 8248-3367/8249-3367 loc 2701
Website: http://mimaropa.denr.gov.ph/
Email: mimaroparegion@denr.gov.ph

Department of Environment and Natural Resources
MIMAROPA Region
Doc ID: 90320

9. Non-use of the area within six (6) months after it is granted will result in the cancellation of the Permit except in cases of force majeure or fortuitous events.

10. In case the area no longer serves the purpose as warranted under the said Permit, the Permit shall be cancelled and the subsequent management and administration of the affected area shall be assumed by the DENR.

11. Violations or non-compliance of any of the terms and conditions of the Permit or any environment and natural resources management laws, policies, rules and regulations shall be sufficient grounds for the cancellation thereof without prejudice to whatever legal action that may be taken.

12. The GSUP for the construction of roads and bridges shall have a maximum non-renewable term of five (5) years and similarly, the GSUP for the construction and operation of schools, hospitals, health centers, flood control facilities, water reservoir or impounding dam and its related facilities, air strip, landing site, harbor, public market, public plazas and evacuations site shall have a maximum non-renewable term of five (5) years. The GSUP and its additional terms and conditions shall be approved by the RED.

13. Except the agencies permitted to construct roads and bridges, the other agencies permitted to construct and operate infrastructure projects or facilities for public service and use shall apply for the issuance of Presidential Proclamation starting on the second year from the issuance of the GSUP to ensure effective management and sustainability of the infrastructure and facilities and its long-term use of the area where the infrastructure exists.

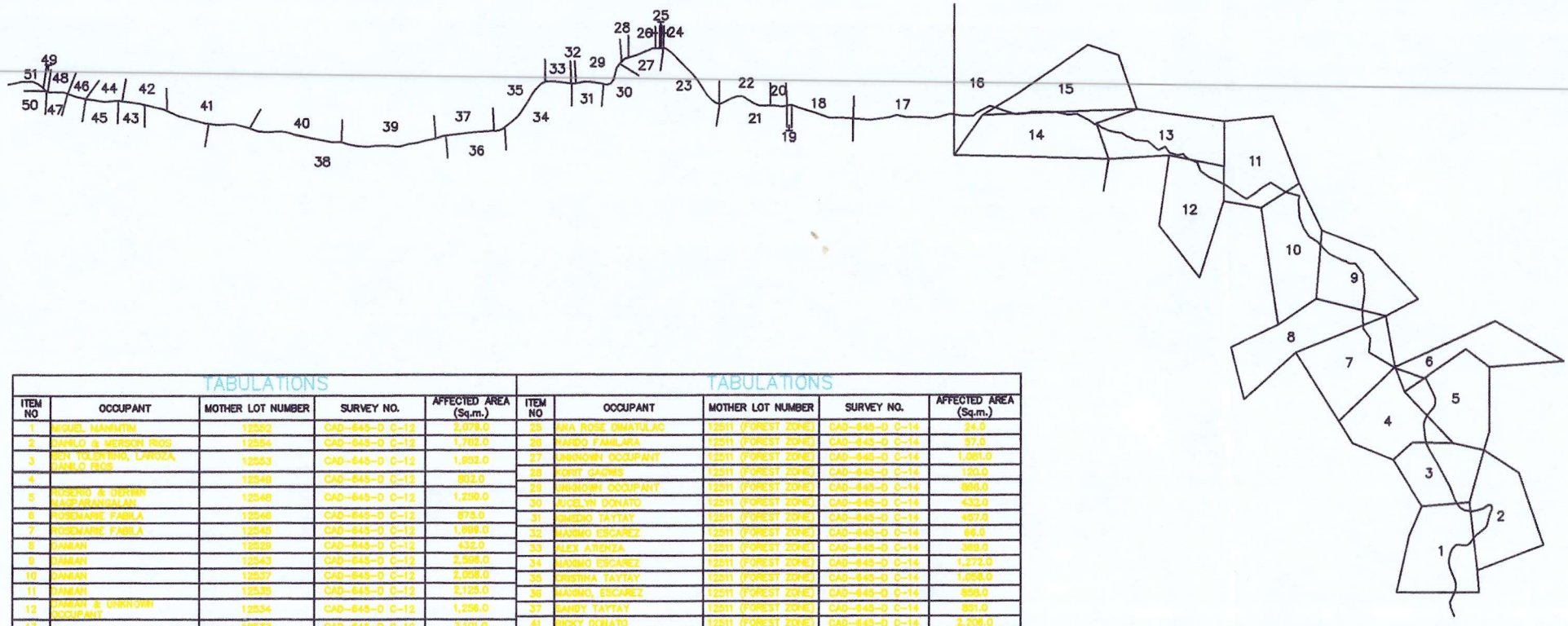
14. Failure to secure a Presidential Proclamation within the allowable period starting from the second (2nd) year to the fifth (5th) year of the GSUP, the Permittee shall apply for Forest Land Use Agreement (FLAg) pursuant to DENR Administrative Order No. 2004-59 dated 31 August 2004 and other related policies on special uses of forest lands.

Approved by:

LORMELYN E. CLAUDIO, *CESO IV*
Regional Executive Director

MIMAROPA Region

Doc ID: 90320



PARCELLARY MAP

TABULATIONS

ITEM NO	OCCUPANT	MOTHER LOT NUMBER	SURVEY NO.	AFFECTED AREA (Sq.m.)
1	MIGUEL MANHUTIN	12552	CAD-645-D C-12	2,078.0
2	DANILO & MERSON RIOS	12554	CAD-645-D C-12	1,782.0
3	RON TOLENTINO, LARIZA, DANILO RIOS	12553	CAD-645-D C-12	1,892.0
4		12549	CAD-645-D C-12	802.0
5	ROSENO & DERWIN MAGPARANGALAN	12548	CAD-645-D C-12	1,250.0
6	ROSEMARIE FABILA	12546	CAD-645-D C-12	875.0
7	ROSEMARIE FABILA	12545	CAD-645-D C-12	1,668.0
8	DAMIAN	12529	CAD-645-D C-12	432.0
9	DAMIAN	12543	CAD-645-D C-12	2,598.0
10	DAMIAN	12537	CAD-645-D C-12	2,058.0
11	DAMIAN	12535	CAD-645-D C-12	2,125.0
12	DAMIAN & UNKNOWN OCCUPANT	12534	CAD-645-D C-12	1,256.0
13		12533	CAD-645-D C-12	3,101.0
14	EDREANO & MATRON SULIGAN	12517	CAD-645-D C-12	1,625.0
15	MATRON SULIGAN & EDREANO	12402	CAD-645-D C-12	1,414.0
16	MATRON SULIGAN	12510 (FOREST ZONE)	CAD-645-D C-12	1,269.0
17	MATRON SULIGAN	12511 (FOREST ZONE)	CAD-645-D C-14	2,804.0
18	UNKNOWN OCCUPANT	12511 (FOREST ZONE)	CAD-645-D C-14	1,871.0
19	EDONG MAGPARANGALAN	12511 (FOREST ZONE)	CAD-645-D C-14	70.0
20	ERSON MAGPARANGALAN	12511 (FOREST ZONE)	CAD-645-D C-14	237.0
21	JUNIL MAGPARANGALAN	12511 (FOREST ZONE)	CAD-645-D C-14	1,038.0
22	UNKNOWN OCCUPANT	12511 (FOREST ZONE)	CAD-645-D C-14	799.0

TABULATIONS

ITEM NO	OCCUPANT	MOTHER LOT NUMBER	SURVEY NO.	AFFECTED AREA (Sq.m.)
25	NINA ROSE DIMATULAC	12511 (FOREST ZONE)	CAD-645-D C-14	24.0
26	MARDO FAMILARA	12511 (FOREST ZONE)	CAD-645-D C-14	57.0
27	UNKNOWN OCCUPANT	12511 (FOREST ZONE)	CAD-645-D C-14	1,081.0
28	KORIT GAGMIS	12511 (FOREST ZONE)	CAD-645-D C-14	120.0
29	UNKNOWN OCCUPANT	12511 (FOREST ZONE)	CAD-645-D C-14	868.0
30	JUCELYN DONATO	12511 (FOREST ZONE)	CAD-645-D C-14	432.0
31	ROMEDIO TAYTAY	12511 (FOREST ZONE)	CAD-645-D C-14	457.0
32	MAXIMO ESCAREZ	12511 (FOREST ZONE)	CAD-645-D C-14	66.0
33	ALEX ATIENZA	12511 (FOREST ZONE)	CAD-645-D C-14	389.0
34	MAXIMO ESCAREZ	12511 (FOREST ZONE)	CAD-645-D C-14	1,272.0
35	CRISTINA TAYTAY	12511 (FOREST ZONE)	CAD-645-D C-14	1,058.0
36	MAXIMO, ESCAREZ	12511 (FOREST ZONE)	CAD-645-D C-14	856.0
37	SANDY TAYTAY	12511 (FOREST ZONE)	CAD-645-D C-14	891.0
41	RICKY DONATO	12511 (FOREST ZONE)	CAD-645-D C-14	2,208.0
42	JUCELYN DONATO	12511 (FOREST ZONE)	CAD-645-D C-14	655.0
43	ELMER RAMIREZ	12511 (FOREST ZONE)	CAD-645-D C-14	375.0
44	REY TAYTAY	12511 (FOREST ZONE)	CAD-645-D C-14	520.0
45	ROMEO LINGACALLO	12511 (FOREST ZONE)	CAD-645-D C-14	489.0
46	NERLITA MAGALLON	12511 (FOREST ZONE)	CAD-645-D C-14	272.0
47	NAPOLEON PALGANAS	12511 (FOREST ZONE)	CAD-645-D C-14	306.0
48	UNKNOWN OCCUPANT	12511 (FOREST ZONE)	CAD-645-D C-14	291.0
49	MELETO GREGORIO	12511 (FOREST ZONE)	CAD-645-D C-14	63.0
50	BALDY TAYTAY	12511 (FOREST ZONE)	CAD-645-D C-14	53.0
51	BRGY SITE	12511 (FOREST ZONE)	CAD-645-D C-14	182.0

MUNICIPALITY OF BONGABONG
BONGABONG, ORIENTAL MINDORO

PREPARED BY:
ENGR. RODOLFO P. DAYANGHIRANG II
GEODETIC ENGINEER
DAYANGHIRANG SURVEYING AND DEVELOPMENT OFFICE

RECOMMENDING APPROVAL:

PROJECT TITLE:
PARCELLARY SURVEY
PROPOSED CONSTRUCTION OF SITIO CENTRO TO SITIO BALITE - HAGAN ROAD

PROJECT LOCATION:
BRGY.HAGAN, BONGABONG, ORIENTAL MINDORO

APPROVED BY:
HON. ELEGIO A. MALALUAN, OD
MUNICIPAL MAYOR

SHEET CONTENTS: AS SHOWN

SCALE:

SHT.No. 1/1

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF AGRICULTURE
PHILIPPINE RURAL DEVELOPMENT PROJECT
PROVINCE OF ORIENTAL MINDORO
MUNICIPALITY OF BONGABONG

CONCRETING OF CENTRO - PANLUAN - BALETE, HAGAN FMR WITH BRIDGE

PRDP-IB-R04B-ORM-007-BON-007-2019

TOTAL NET LENGTH OF ROAD =	9.98KILOMETERS
TYPE OF ROAD =	CONCRETE ROAD
WIDTH OF CONCRETE ROADWAY =	5.00 METERS
WIDTH OF ROAD SHOULDER =	1.50 METERS
TOTAL WIDTH OF ROAD =	10.00 METERS
PCCP THICKNESS =	200.00 MILLIMETERS
REINFORCE CONCRETE PIPE CULVERT =	280.00 METERS
REINFORCE CONCRETE BOX CULVERT =	3 UNITS
REINFORCE CONCRETE DECK GIRDER =	30.00 METERS

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Sta. 8+000 - 9+000	15
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Sta. 0+000 - 0+300	17
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Sta. 0+680 - 1+060	19
Sta. 1+080 - 1+440	20
Sta. 1+460 - 1+840	21
Sta. 1+860 - 2+180	22
Sta. 2+200 - 2+535	23
Sta. 2+540 - 2+920	24
Sta. 2+940 - 3+260	25
Sta. 3+280 - 3+660	26
Sta. 3+680 - 4+040	27
Sta. 4+060 - 4+440	28
Sta. 4+460 - 4+840	29
Sta. 4+860 - 5+240	30
Sta. 5+260 - 5+640	31
Sta. 5+660 - 6+040	32
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SUMMARY OF QUANTITIES

ITEM NO.	SCOPE OF WORK	UNIT	QUANTITY
A.	**TEMPORARY FACILITY FOR ENGINEERS**		
A1.1(2)	Construction of Combined Field Office and Laboratory Building for the Engineers	mos.	13.00
B.	**OTHER GENERAL REQUIREMENTS**		
B.5	Project Billboard/Signboard	ea.	2.00
B.7(1)	Occupational Safety and Health Program	mos.	13.00
B.9	Mobilization / Demobilization	Lumpsum	1.00
C.	**EARTHWORKS**		
101(3)b1	Removal Actual Structure/Obstruction(PCCP Unreinforce, 200mm thick)	Sq.m	6,129.80
102(2)	Surpuls Common Excavation	cu.m	2,538.83
103(6)a	Pipe Culvert and Drain Excavation	cu.m	5,805.50
104(1)a	Embankment from Roadway Excavation	cu.m	44,007.15
105(1)a	Subgrade Preparation, Common Materials	sq.m	62,964.50
D.	**SUB SURFACE COURSE**		
200(1)	Aggregates Subbase Course	cu.m	22,255.40
E.	**SURFACE COURSE**		
311(1)b1	Portland Cement Concrete Pavement (Unreinforced, 200mm thick.)	cu.m	49,796.50
F.	**OTHER CONCRETE STRUCTURE**		
404(1)a	Reinforcing Steel, Grade 40	kgs.	76,761.60
405(1)a3	Structural Concrete, Class A	cu.m	1,329.15
G.	**DRAINAGE & SLOPE PROTECTION**		
500(1)a3	Pipe Culvert, 910mm dia.	l.m	199.00
500(1)a5	Pipe Culvert, 1220mm dia.	l.m	104.00
506(1)	Stone Masonry	cu.m	13,815.90
H.	**CONSTRUCTION OF PRESTRESSED DECK GIRDER BRIDGE**		
400(4)a2	Precast Concrete Piles, Furnished, 450mm x 450mm	m	360.00
400(14)b	Precast Concrete Piles, Driven	m	350.40
400(16)b	Test Piles, Furnished and Driven, 450mm x 450mm	m	50.00
400(20)	Pile Shoes	ea.	14.00
400(25)	Splicing of RC Piles w/ Epoxy	ea.	28.00
401(2)a	Concrete Railing, Standard	m	38.40
404(1)a	Reinforcing Steel, Grade 40	kgs.	14,453.10
404(1)b	Reinforcing Steel, Grade 60	kgs.	10,688.70
405(1)a3	Structural Concrete, 20.68 Mpa, Class A, 28 days	cu.m	45.60
405(1)b3	Structural Concrete, 27.58Mpa, Class A, 28 days	cu.m	95.30
406(1)d2	Prestressed Structural Concrete Members, 20.00m, Type IV, I-Girders	ea.	4.00
I.	**MISCELLANEOUS**		
603(3)a1	Metal Guardrails (Metal Beam) including Post	l.m	2,516.00
605(1)	Warning Signs	ea.	39.00
612(1)	Reflectorized Thermoplastic Pavement Markings, White	sq.m	773.49

SPECIFICATION : DPWH STANDARD SPECIFICATIONS FOR HIGHWAY & BRIDGES VOL. II, REVISED 2012

Republic of the Philippines
Department of Agriculture
Philippine Rural Development Project
Province of Oriental Mindoro
Municipality of Bongabong

SP ID Number: PRDP-IR-R04B-ORM-007-BON-007-2019
Project Title: Concreting of Centro - Panluan - Balite, Hagan Farm to Market Road
Location: Hagan, Bongabong Oriental Mindoro

Prepared by:	Checked by:	Recommending Approval:	Approved by:
JOSE VINCENT C. GALIGA, C.E. Draftsman III	OLIVIA C. CORONEL, C.E.,EnP. Assistant Municipal Engineer / OIC MEO Municipality of Bongabong	GREGORIO S. REYES, EnP. Municipal Planning and Development Coordinator Municipality of Bongabong	ELEGIO A. MALALUAN, O.D. Municipal Mayor Municipality of Bongabong

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- SUMMARY OF QUANTITIES

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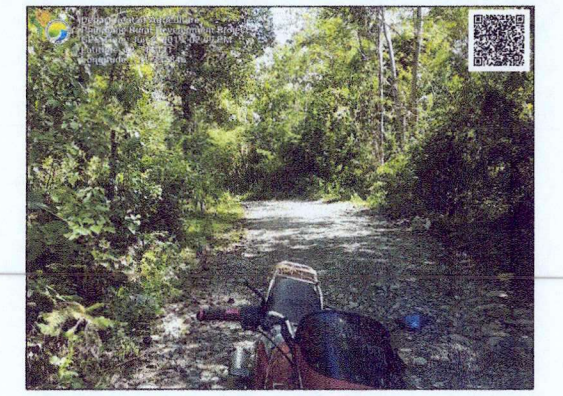
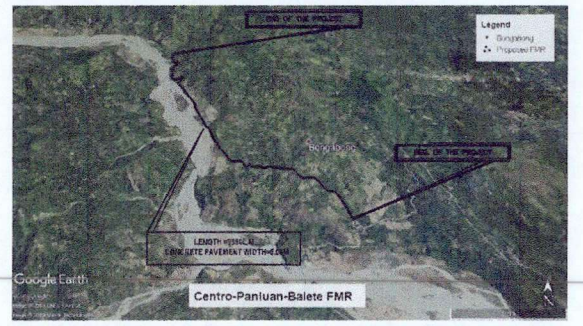
MAP OF THE PHILIPPINES
SCALE: NTS

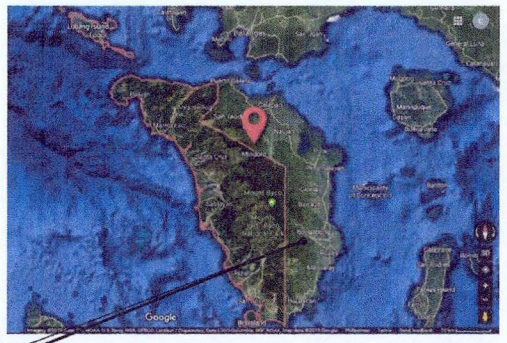
STA.00+000
(BEG. OF THE PROJECT)



STA.09+980
(END OF THE PROJECT)

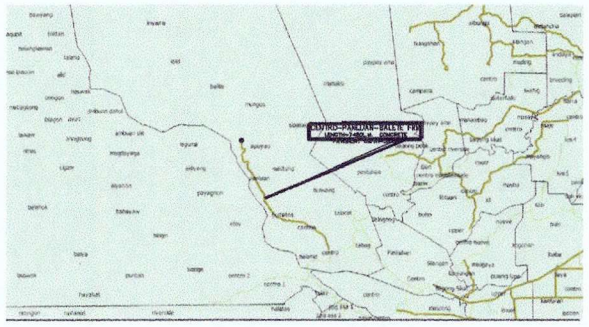


GEO - TAGGED LOCATION MAP
N T S



LOCATION MAP
SCALE: NTS

SITE DEVELOPMENT PLAN
SCALE: NTS



VICINITY MAP
SCALE: NTS

Republic of the Philippines
Department of Agriculture
Philippine Rural Development Project
Province of Oriental Mindoro
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Draftsman III	Assistant Municipal Engineer / OIC MEO, Municipality of Bongabong	Municipal Planning and Development Coordinator, Municipality of Bongabong	Municipal Mayor, Municipality of Bongabong

Sheet Content:
- LOCATIONAL PLAN
- SITE DEVELOPMENT PLAN
- VICINITY MAP

Sheet No.: A 2 55

GENERAL NOTES

1. Alignments and grades are subject to adjustment to suit actual field condition.
2. Distances and elevations are in meters unless indicated otherwise.
3. Grade shown are top of finished pavement.
4. All works shall comply with the standard specifications for highway and Bridges. Revise 2004.
5. Where no detours are available, traffic shall be handled in accordance with the provision of article 7.7 of the general requirements and covenants.
6. When directed by the engineer or shown on the plans, unsuitable subgrade materials shall be excavated below ground surface to the required width and depth. The area excavated shall be backfilled with approved materials. No embankment materials shall be placed until foundation be paid for under "Item 102 - Excavation" and bandill material be paid for under "Item 104 - Embankment" (Selected Borrow).
7. Cut slopes except in rocks and all fill slopes shall be rounded at the top and bottom at intersections of cut and fill, slope shall be adjusted and warp to blur into each other, into natural surface without noticeable break.
8. Watering and compacting of all embankment shall be considered as subsidiary works pertaining to other contract. The cost of performance thereof shall be included in the contract unit price bid other items.
9. The contractor shall continually keep the road undergoing improvement and section detours in such period condition satisfactory to the Engineer that the traffic will be accommodated during the entire contract period without any inconvenience to the traveling public in accordance with Article 36 Part 7 of the requirements and condition of the contract shall bear all expenses of constructing if necessary and maintaining such road detour, approach, intersection and any accessory features including non-wood temporary bridges without direct compensation.
10. Cut in earth shall be rolled as designated by "Item 100 - Subgrade Preparation" of the Standard Specification considered subsidiary work pertaining to other contract items.
11. All embankment shall be constructed in accordance with the requirement of "Item 104 - Embankment" of the Standard Specification for highways and bridges, revised 2004.
12. Watering and compacting of all embankments shall be considered as subsidiary work pertaining to other contract items. The cost of the performance thereof shall be considered to be included in the contract units price bid for those items.
13. Approaches and road connections shall be constructed by the contractor as shown in the plans or as directed by the engineers such a manner as to ensure proper connections of the riding surfaces.
14. The necessary drainage contained are the DPWH Standard Drawings for Roads and Bridges shall be utilized
    - Cut/Fill slopes stake will depend upon the stability of material.
    - The thickness of the pavement structure was based on their design of the existing pavement.
15. Cut sections are subject to rainvegitation during implementation.
16. Miscellaneous removal not shown in the plans including removal of headwall and wing walls of existing drainage structures that are to be extended or improved and the disposal of resulting materials shall be considered to be included in the unit price bid for those items as subsidiary works pertaining to other contract items.
17. Extensions and other improvements of existing drainage structures are subject to change and shall be determined in the field by the Project engineer.
18. During constructions, any existing pipes found damaged / defective shall be removed by the contractor and replaced by the direction of the Engineer. Removal of Existing structure shall be paid for under
    "Item 103 - Structure Excavation", the pipes to be installed shall be paid for under
    "Item 500 - Pipe Culvert and Storm Drainage".
19. Exact locations, gradients, lengths, top and invert elevations, of all drainage structures that required and additional cross drainage structures abandoned necessary to suit actual field conditions shall be determined in the field by the Engineer.
20. Widening should be applied on the inner side of the curve and attained linearly along the acute taper elevation runoff or along spiral transition.
21. All existing cross drainage including those for extension shall be thoroughly checked for its strength/stability during implementation such that correction can be made prior to the paving item 311.
22. Use of steel form is mandatory.
23. Weathervane plans for the item 311 - shall be done using concrete cutter at the right age.
24. Longitudinal grooving shall be provided at the outside/external edge of concrete or slab for future widening of pavement.
25. Barricade, warning signals and warning signs in addition to traffic services road signs and bollards) provide in the contractor furnish, erect and maintain at his own risk all necessary barricade, safety devices, flagmen, signals, signals signs and other traffic works and safety of the public throughout the duration of the project.

MATERIALS SPECIFICATION

Aggregates for base course shall consist of hard, durable particles natural gravel and filler or natural sand or other mineral matter. The complete material shall be free of vegetable matter, lumps or balls of clay and shall be of such nature that it can be compacted readily to form a firm, stable base.

Grading Requirements:

1. Sieve designation:

Standard (mm)	US Standard (inch)	Mass % of Passing
50	2"	100
37.50	1½"	-
25	1"	60-95
19	¾"	-
12.50	½"	35-65
4.75	No.4	20-50
0.425	No. 40	5-20
0.075	No.200	-

The fraction passing of the No. 200 sieve shall not be greater than ⅔ of the fraction passing the No. 40 sieve. The fraction passing No. 40 sieve shall have a liquid limit not greater than 25 and plasticity index not greater than 5 as determined by AASHTO T-89 and T-90. The material passing the 2" sieve shall have a soaked CBR value of not less than 80% as determined by AASHTO T-180. The CBR value shall be obtained at the maximum dry density as determined by AASHTO T-180, Method

2. Fine aggregate passing No. 10 shall consist of natural sand stone screening or other inert materials with similar characteristics having hard strong and durable particles approved by the Engineer. The use of beach sand will not be allowed unless washed thoroughly of its salinity and with prior approval of the Project Engineer.
3. All concrete shall have a minimum Compressive Strength at 14 days where days fc' = 24.1 MPa (3000 psi).
4. All exposed corners shall be chamfered 0.20 m. No construction joints are to be made except where shown. When bottom slab is subject to Abrasion, add 0.005 m to bottom slab to increase coverage on steel.
5. All reinforcing steel to be intermediate Grade 40, with deformation conforming to ASTM A - 305 where fy = 275.80 MPa (40,000 psi).
6. Concrete protection for reinforcement shall not be less than the following:
   a. Concrete in contact with ground 75 mm
   b. Concrete surface exposed to water flow
      for bars greater than #6 - 50 mm
      for #6 bars and smaller - 40 mm
7. Lapping of bars or splices shall be 40 bar diameter, splices shall be staggered.

1.1 DIMENSIONS

a. Stations are given in kilometers with or without decimals.
b. Pipe culverts diameters and dimensions are given in meters.
c. Radii, elevations, etc, are given in meters with or without decimals.
d. Unless otherwise shown, all distances are in meters.

1.2 STATIONING

a. The road stations and elements of curves are relative to the centerline of the road.
b. All stations along the road centerline are reckoned from Puerto Princesa North Road.

1.3 ELEVATIONS AND GRADES

a. Elevations given in the column "Finished Grade Elevation" refer to the grade as shown in the typical roadway section.
b. Ground level and finished road level of the road refer to the ground profile for the road centerline.

1.4 VERTICAL CONTROLS

a. All elevations are reckoned from the elevation of Junction Puerto Princesa North road (see plan) with assumed elevation of 23.00 in meters.

1.5 EMBANKMENT PROTECTION

a. Embankment protection is generally provided at the right side of Sta. 1+800 to Sta. 2+460 and other locations shown in the plan.

1.6 CULVERTS

a. Drainage schedule for culverts are shown on the plans.
b. Location of existing drainage structures., invert elevations, side slitches shall be verified and adjusted to suit actual field conditions. Conditions of drainage structures to be extended must be checked for defects. All defects shall be repaired before extensions are made.
c. Culverts shall be provided with gravel bedding.

DESIGN STANDARDS FOR FARM - TO - MARKET ROADS

DPWH - DO No. 11, S-2014

2.1 PAVEMENT TYPE
a. Portland Cement Concrete Pavement

2.2 PAVEMENT WIDTH
a. Minimum of 5.00 m for two-lanes
b. Average daily traffic count between 200-400.

2.3 PAVEMENT THICKNESS
a. Minimum of 200 mm (8 inches)
b. Higher thickness of pavement may be adopted but shall be verified from pavement design analysis using AASHTO method as contained in the DPWH Design Guidelines Criteria and Standards considering the latest Annual Average Daily Traffic and Axle Loading.

2.4 SHOULDER
a. Width - minimum of 1.05 m.
b. Material - minimum of gravel surfacing.

2.5 ROADWAY CROSS SLOPE
a. 1.50% for PCCP

2.6 SHOULDER CROSS SLOPE
a. 3.00% gravel surfacing

2.7 LENGTH OF TANGENT BETWEEN REVERSE CURVES
a. Minimum length of 30.00 meters.

2.8 LENGTH OF VERTICAL CURVE
a. Minimum length of 60.00 meters

2.9 DESIGN SPEED
a. 30 KPH for all terrain type.

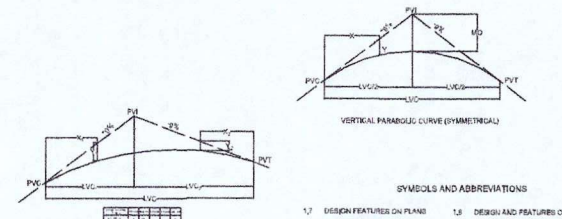
2.10 LONGITUDINAL GRADE
a. Minimum of 0.50% on cut section and maximum of 12% on cut/fill section.

2.11 SIDE SLOPE RATIO (H/V)
a. Cut Slope of 1.5:1 to 1:1 for common materials
b. Cut Slope of 0.5:1 to 1:1 for ripparis rock.
c. Cut Slope of 0.25:1 to 0.5:1 for hard/solid rock.
d. Minimum fill slope of 1.5:1.

2.12 ROAD DRAINAGE
a. Box Culverts: 25 - year flood with sufficient freeboard to contain the 50 - year flood.
b. Pipe Culverts: 20 - year flood with sufficient freeboard to contain the 25 - year flood.
c. Minimum size of 910 mm diameter.

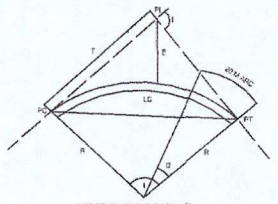
2.13 SLOPE PROTECTION
a. as needed

2.14 ROAD SAFETY DEVICES INCLUDING PAVEMENT MARKINGS
a. Refer to DPWH Highway Safety Design Standards

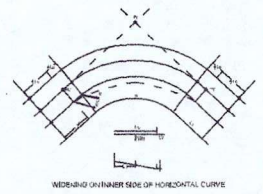


VERTICAL PARABOLIC CURVE (SYMMETRICAL)

VERTICAL PARABOLIC CURVE (UNSYMMETRICAL)



HORIZONTAL CURVE (CIRCULAR)


WIDENING ON INNER SIDE OF HORIZONTAL CURVE

SYMBOLS AND ABBREVIATIONS

1.7 DESIGN FEATURES ON PLANS

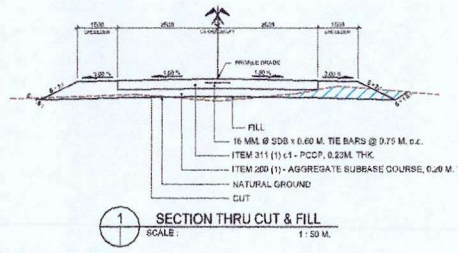
PC	
PT	

1.8 DESIGN AND FEATURES ON PROFILE

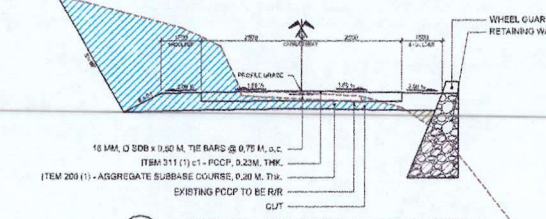
BVC	
EVC	

1.9 ABBREVIATIONS

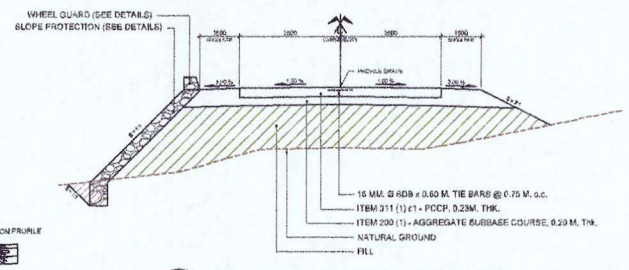
PC = Point of Curvature	BM = Bench Mark
PT = Point of Tangency	Elev = Elevation
I = Intered Angle	PI = Point Of Vertical Intersection
R = Radius of Curvature	STA = Station
T = Tangent	g = Grade in %
LC = Length of Curve	E = External Distance
	VC = Length of Vertical Curve



1 SECTION THRU CUT & FILL
SCALE : 1 : 50 M.



2 SECTION W/ RETAINING WALL @ RIGHT SIDE
SCALE : 1 : 50 M.



3 SECTION W/ SLOPE PROTECTION @ LEFT SIDE
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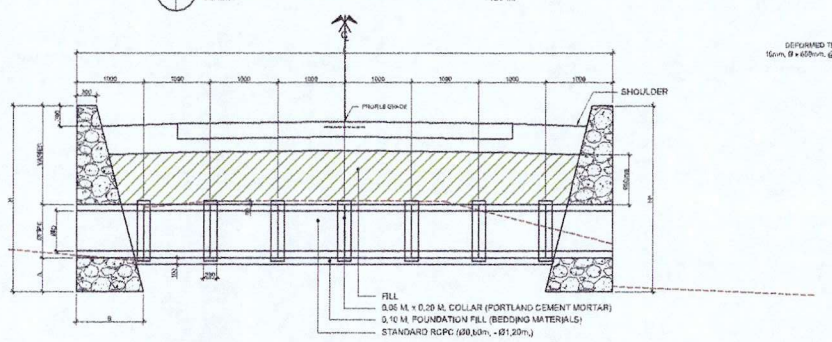

4 SECTION W/ REINFORCE CONCRETE PIPE CULVERT
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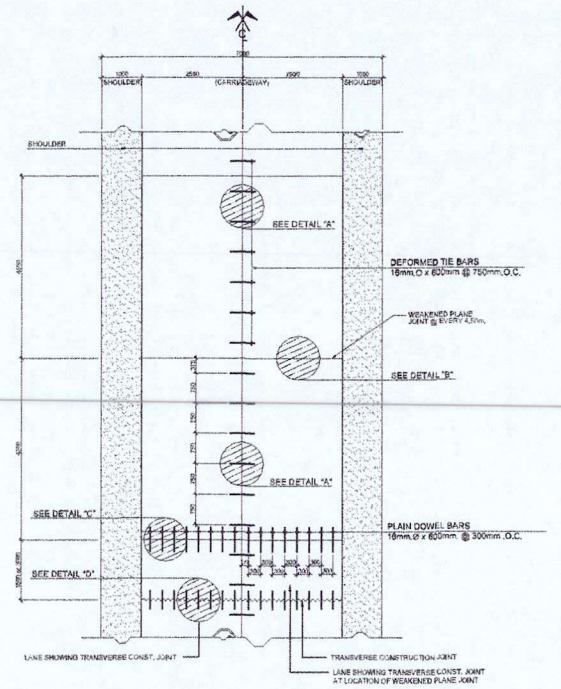
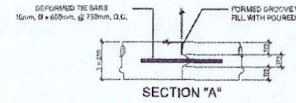


1 TYPICAL PLAN OF TWO LANE PAVEMENT
SCALE : 1 : 50

GENERAL NOTES :

1. MATERIALS AND WORKMANSHIP SHALL CONFORM WITH THE "DPWH STANDARD SPECIFICATIONS FOR HIGHWAYS, BRIDGES AND AIRPORTS, 2004".
2. CONSTRUCTION (CONTACT) JOINTS ARE FORMED WHEN CONCRETE ON ONE SIDE OF THE JOINT IS POURED AHEAD AND ALLOWED TO SET BEFORE POURING ON THE OTHER SIDE.
3. AT CONSTRUCTION JOINTS (LONGITUDINAL OR TRANSVERSE) CARE SHOULD BE TAKEN THAT NO CONCRETE FROM THE LAST SLAB PLACED OVERHANGS ANY PORTION OF THE FIRST SLAB.
4. TIE BARS SHOULD BE DEFORMED STEEL BARS, ALL DOWEL BARS SHALL BE SMOOTH ROUND STEEL BAR FREE FROM RUST AND OTHER DEFECTS WHICH MIGHT RESTRICT THEIR MOVEMENT.
5. TYPE OF WEAKENED PLANE JOINT TO BE USED SHALL BE AS SPECIFIED IN THE PLANS AND ONLY ONE TYPE SHALL BE USED FOR THE WHOLE PROJECT.
6. MATERIAL FOR THE METAL SIDE FORM SHALL BE BRAND NEW SHEET METAL GAUGE NO. 16 OF BLACK IRON FREE FROM RUST AND LINKS.
7. AT LEAST SIX (6) SUCCESSIVE DOWELED BUTT JOINTS AT NORMAL JOINT SPACING SHALL BE PROVIDED BEFORE OR AFTER AN EXPANSION JOINT EXPANSION JOINT SHALL BE PLACED AT EVERY 48.00m. MINIMUM INTERVAL, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
8. THE GROOVE FOR CRACK ABOVE JOINTS (LONGITUDINAL OR TRANSVERSE) SHALL BE SEALED WITH 30-50 PENETRATION ASPHALT SEAL OR COLD APPLIED LIQUID RUBBER COMPOUND AFTER THE CONCRETE HAD BEEN CURED IN SUCH OPENING PAVEMENT TO TRAFFIC. PENETRATION ASPHALT SEAL ON CONCRETE JOINT SHOULD BE POURED IN SUCH MANNER THAT SPILLING WILL BE ELIMINATED. THUS PROVIDE A SMOOTH RIDING SURFACE.
9. ALL TRANSVERSE JOINTS, EXCEPT CONSTRUCTION JOINT SHALL BE CONTINUOUS FROM EDGE TO EDGE.
10. ALL LONGITUDINAL JOINTS SHALL MEET AT INTERSECTIONS WITH NO GAPS OR OFFSET.
11. ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE SPECIFIED.
12. AVOID STOPPAGE OF FORMWORKS ALONG CURVES.
13. DRILLING OF HOLES ON EXISTING PCCP AND OTHER STRUCTURES SHALL BE PERFORMED USING POWER TOOLS. THE HOLES SHALL BE PROPERLY CLEANED BEFORE GROUT/ EPOXY INJECTION AND INSTALLATION OF DOWELS OR TIE BARS.



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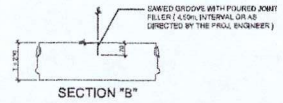

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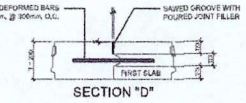

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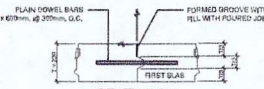

SECTION "C"

2 DETAIL SECTION
SCALE: NTS

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Draftsman III	Assistant Municipal Engineer / OIC MEO	Municipal Planning and Development Coordinator	Municipal Mayor
	Municipality of Bongabong	Municipality of Bongabong	Municipality of Bongabong

Sheet Content:
- GENERAL NOTES
- TYPICAL ROAD PLAN

Sheet No.: A 3 55

ELEMENTS OF CURVE

HORIZONTAL CURVE

PI	AZIMUTH	Distance	I	E	T	R	D	LC	STA. OF PC	STA. OF PI	STA. OF PT
0	338°51'2"	642.76								0+000.00	
1	272°39'56"	243.02	66°11'60"	11.88	40.00	61.38	18.68	70.90	0+602.76	0+642.76	0+673.66
2	346°30'47"	356.34	73°50'51"	26.71	80.00	106.46	10.76	137.21	0+796.68	0+876.68	0+933.89
3	256°47'17"	287.47	89°43'30"	28.90	70.00	70.34	16.29	110.15	1+140.23	1+210.23	1+250.38
4	332°24'37"	282.84	75°37'20"	20.55	60.00	77.32	14.82	102.05	1+407.85	1+467.85	1+509.90
5	261°25'32"	245.06	70°59'05"	16.00	50.00	70.12	16.34	86.87	1+682.74	1+732.74	1+769.61
6	294°45'02"	210.95	33°19'30"	10.25	70.00	233.88	4.90	136.03	1+894.68	1+964.68	2+030.71
7	236°18'41"	132.84	58°26'21"	13.03	50.00	89.39	12.82	91.18	2+121.85	2+171.85	2+212.83
8	314°40'47"	130.27	78°22'06"	21.36	60.00	73.61	15.57	100.68	2+235.67	2+295.67	2+336.35
9	224°18'07"	98.20	90°24'40"	20.82	50.00	49.64	23.08	78.33	2+356.62	2+406.62	2+434.95
10	316°16'3.41"	125.03	90°59'56.41"	16.63	39.66	38.98	29.40	61.90	2+443.49	2+483.15	2+505.39
11	209°43'40.83"	133.09	105°32'22.78"	19.84	40.00	30.39	37.71	55.99	2+550.76	2+590.76	2+606.75
12	337°27'41.82"	234.41	127°44'1.19"	24.93	40.00	19.62	58.41	43.75	2+659.84	2+699.84	2+703.59
13	245°31'46.21"	200.72	91°55'55.61"	21.21	50.00	48.34	23.71	77.57	2+848.00	2+898.00	2+925.57
14	331°52'39.13"	287.08	86°20'52.92"	19.78	50.00	53.29	21.50	80.32	3+026.29	3+076.29	3+106.61
15	326°19'48.06"	404.19	05°32'51.07"	0.73	30.00	619.21	1.85	59.95	3+313.69	3+343.69	3+373.64
16	337°49'51.98"	308.14	11°30'3.92"	1.51	30.00	297.90	3.85	59.8	3+717.83	3+747.83	3+777.63
17	313°00'29.46"	157.11	24°49'22.52"	5.44	50.00	227.20	5.04	98.43	4+005.77	4+055.77	4+104.20
18	340°30'57.57"	234.06	27°30'28.11"	6.03	50.00	204.27	5.61	98.07	4+161.31	4+211.31	4+259.38
19	329°17'50.18"	378.75	11°13'7.39"	1.96	40.00	407.27	2.81	79.74	4+403.44	4+443.44	4+483.18
20	15°54'25.27"	95.40	46°36'35.09"	10.31	50.00	116.07	9.87	94.42	4+771.93	4+821.93	4+866.35
21	308°00'52.29"	91.96	67°53'32.98"	6.10	20.00	29.71	38.57	35.21	4+891.75	4+911.75	4+926.96
22	339°45'10.90"	127.44	31°44'18.61"	5.56	40.00	140.71	8.14	77.94	4+958.92	4+998.92	5+036.86
23	293°46'51.57"	78.03	45°58'19.33"	6.10	30.00	70.72	16.20	56.75	5+094.30	5+124.30	5+151.05
24	331°53'2.46"	352.04	38°06'10.89"	6.71	40.00	115.83	9.89	77.03	5+159.08	5+199.08	5+236.11
25	308°53'41.12"	181.48	22°59'21.34"	4.03	40.00	196.70	5.82	78.92	5+508.15	5+548.15	5+587.07
26	33°49'37.18"	230.26	84°55'56.06"	15.54	40.00	43.70	26.22	64.76	5+688.55	5+728.55	5+753.33
27	245°24'34.80"	242.56	148°25'2.38"	37.82	50.00	14.14	81.04	36.63	5+893.59	5+943.59	5+930.22
28	336°09'15.17"	151.04	90°44'40.37"	20.90	50.00	49.35	23.22	78.17	6+072.78	6+122.78	6+150.95
29	12°52'16.01"	103.00	36°43'0.84"	8.08	50.00	150.67	7.61	96.55	6+201.99	6+251.99	6+298.54
30	324°00'27.31"	68.80	48°51'48.70"	6.49	30.00	66.04	17.35	56.32	6+321.54	6+351.54	6+377.86
31	43°07'20"	46.36	79°06'52.69"	7.19	20.00	24.21	47.33	33.43	6+396.66	6+416.66	6+430.09
32	338°21'12.66"	130.35	64°46'7.34"	5.81	20.00	31.53	36.34	35.65	6+436.46	6+456.46	6+472.11
33	83°53'13.47"	75.78	105°32'0.81"	14.88	30.00	22.80	50.26	41.99	6+552.45	6+582.45	6+594.44
34	263°53'13.47"	162.26	47°03'51.11"	6.25	30.00	68.89	16.63	56.59	6+610.23	6+640.23	6+666.82
35	252°02'55.86"	127.50	144°46'26.50"	36.59	50.00	15.87	72.21	40.11	6+749.07	6+799.07	6+789.18
36	334°49'49.42"	259.81	82°46'53.56"	11.33	30.00	34.04	33.66	49.18	6+836.68	6+866.68	6+885.86
37	23°17'21.07"	146.35	48°27'31.65"	6.44	30.00	66.66	17.19	56.38	7+085.67	7+115.67	7+142.05
38	255°08'7.20"	283.72	128°09'13.87"	31.29	50.00	24.30	47.16	54.36	7+208.40	7+258.40	7+262.76
39	01°14'0.32"	103.15	106°05'53.12"	9.98	20.00	15.04	76.19	27.86	7+476.49	7+496.49	7+504.35
40	275°23'12.31"	106.54	85°50'48.90"	7.86	20.00	21.50	53.30	32.22	7+567.49	7+587.49	7+599.71
41	350°18'43.43"	158.11	74°55'31.12"	6.76	20.00	26.10	43.90	34.13	7+666.26	7+686.26	7+700.39
42	332°06'10.96"	163.60	18°12'32.47"	1.59	20.00	124.80	9.18	39.66	7+818.50	7+838.50	7+858.16
43	305°41'41.71"	172.85	26°24'29.25"	3.47	30.00	127.86	8.96	58.93	7+971.76	8+001.76	8+030.69
44	301°17'52.07"	108.97	4°23'49.64"	0.38	20.00	520.96	2.20	39.98	8+153.55	8+173.55	8+193.53
45	296°27'52.55"	182.81	4°49'59.52"	0.42	20.00	473.90	2.42	39.98	8+262.50	8+282.50	8+302.48
46	304°16'3.73"	138.15	7°48'11.18"	0.68	20.00	293.25	3.91	39.94	8+445.28	8+465.28	8+485.22
47	281°13'36.77"	224.96	23°02'26.96"	2.02	20.00	96.12	11.68	39.46	8+583.37	8+603.37	8+622.83
48	288°20'45.19"	131.82	7°7'8.42"	0.62	20.00	321.52	3.56	39.95	8+807.79	8+827.79	8+847.74
49	271°23'0.31"	124.76	16°57'44.88"	1.48	20.00	134.12	8.54	39.71	8+939.56	8+959.56	8+979.27
50	263°31'14.41"	164.8	7°51'45.90"	0.69	20.00	291.02	3.94	39.94	9+064.03	9+084.03	9+103.97
51	291°31'51.28"	127.40	28°0'36.87"	2.46	20.00	80.19	14.29	39.20	9+228.76	9+248.76	9+267.96
52	271°23'0.31"	86.27	20°08'50.97"	1.76	20.00	112.58	10.18	39.59	9+355.36	9+375.36	9+394.95
53	304°16'2.54"	53.74	32°53'2.23"	2.69	20.00	67.77	16.91	38.90	9+441.22	9+461.22	9+480.12
54	250°08'55.24"	76.90	54°07'7.30"	4.81	20.00	39.15	29.27	36.98	9+493.86	9+513.86	9+530.84
55	323°27'43.08"	235.60	73°18'47.84"	6.63	20.00	26.67	42.65	34.39	9+567.74	9+587.74	9+602.13
56	230°53'27.93"	153.22	92°34'15.15"	4.27	10.00	9.56	119.87	15.45	9+807.73	9+817.73	9+823.18

VERTICAL CURVE (PROFILE)

NO	STATION	ELEVATION	GRADE LINE (%)	MVC		MO
				A	B	
-	0+000	20.000				
PVI-1	0+030	20.000	2.83330	30	30	0.213
PVI-2	0+090	21.700	-6.55000	30	30	-0.700
PVI-3	0+190	15.150	0.51790	30	40	0.606
PVI-4	0+470	16.600	-2.38890	40	45	-0.308
PVI-5	0+560	14.450	1.03570	45	40	0.363
PVI-6	0+700	15.900	2.75000	40	40	0.171
PVI-7	0+900	21.400	10.85710	40	30	0.695
PVI-8	0+970	29.000	-4.18180	30	30	-1.128
PVI-9	1+080	24.400	-0.95000	50	50	0.404
PVI-10	1+280	22.500	-1.95000	40	40	-0.100
PVI-11	1+480	18.600	8.26670	30	30	0.766
PVI-12	1+630	31.000	-6.25000	30	30	-1.089
PVI-13	1+750	23.500	2.75000	40	40	0.900
PVI-14	1+910	27.900	-3.45450	40	40	-0.620
PVI-15	2+020	24.100	9.87500	40	40	1.333
PVI-16	2+100	32.000	-6.30000	40	50	-1.797
PVI-17	2+200	25.700	1.80000	50	50	1.013
PVI-18	2+300	27.500	-2.60000	50	50	-0.550
PVI-19	2+400	24.900	6.40909	50	40	1.001
PVI-20	2+620	39.000	11.67860	30	30	0.395
PVI-21	2+760	55.350	10.45830	30	30	-0.092
PVI-22	2+880	67.900	-4.90000	40	50	-1.706
PVI-23	2+980	63.000	-0.62500	50	40	0.475

VERTICAL CURVE (PROFILE)

NO	STATION	ELEVATION	GRADE LINE (%)	MVC		MO
				A	B	
PVI-24	3+060	62.500	-7.50000	40	40	-0.687
PVI-25	3+140	56.500	0.00000	40	40	0.750
PVI-26	3+380	56.500	3.96770	40	30	0.340
PVI-27	3+690	68.800	-4.66670	30	30	-0.648
PVI-28	3+900	59.000	1.05880	40	40	0.573
PVI-29	5+440	75.300	2.57100	40	40	0.150
PVI-30	5+650	80.700	8.68290	50	50	0.764
PVI-31	6+060	116.300	-1.62220	40	40	-1.031
PVI-32	6+510	109.000	1.41680	40	40	0.304
PVI-33	6+630	110.700	8.68290	50	50	0.908
PVI-34	7+040	146.300	-1.16350	50	50	-1.177
PVI-35	7+280	143.508	-12.41130	50	50	-1.220
PVI-36	7+350	134.800	-1.00570	40	60	-1.767
PVI-37	8+550	146.766	7.72360	40	30	0.708
PVI-38	8+660	156.029	-1.85290	40	50	-1.117
PVI-39	8+756	154.242	14.48290	40	23	1.381
PVI-40	8+878	171.909	1.45510	20	40	1.010
PVI-41	8+962	173.121	-15.95410	40	20	-1.310
PVI-42	9+100	152.111	1.48070	20	40	1.312
PVI-43	9+440	157.148	3.78920	30	30	0.173
PVI-44	9+700	167.000	0.00000	30	20	0.227
PVI-45	9+800	167.000	-2.72730	20	30	-0.164
PVI-46	9+910	164.000	0.00000	30	30	-0.221

Republic of the Philippines
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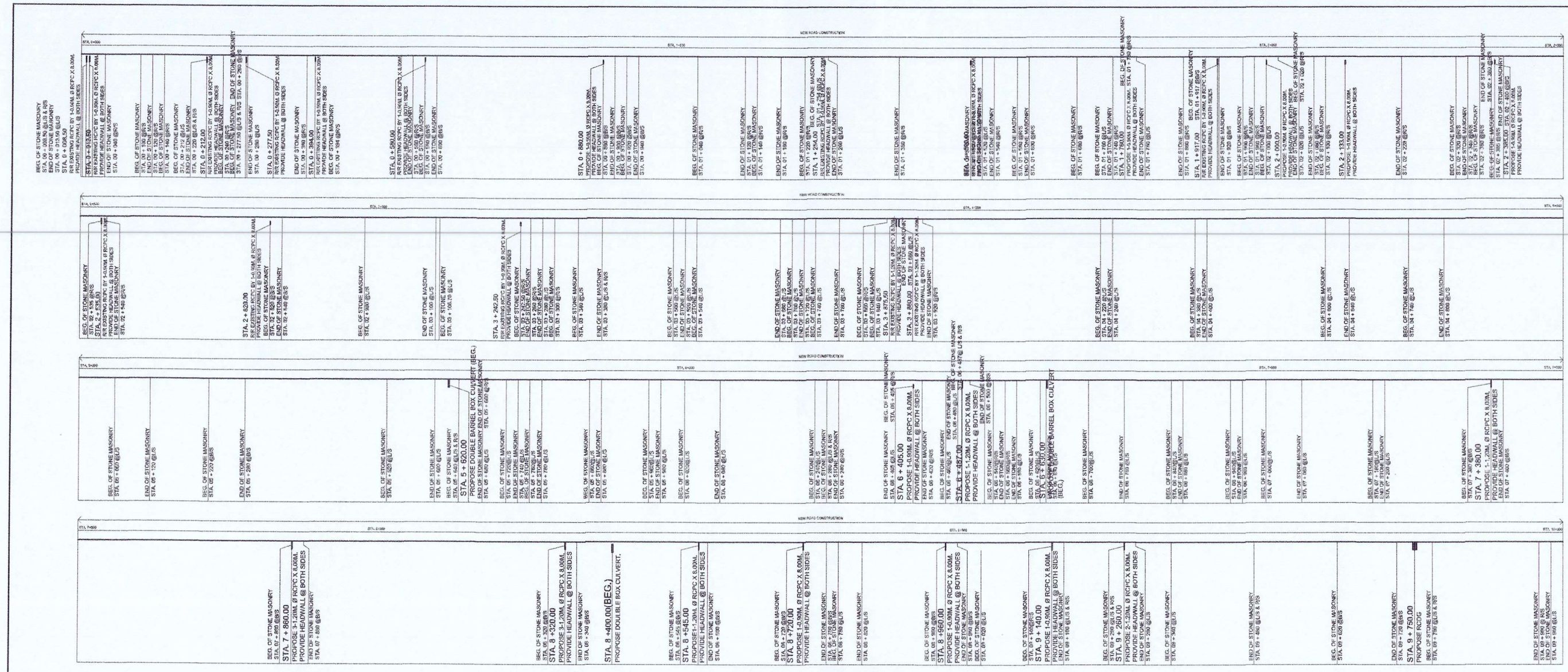
Province of Oriental Mindoro
Municipality of Bongabong

SP ID Number: PRDP-IR-R04B-ORM-007-BON-007-2019

Project Title: Concreting of Centro - Panluan - Balite, Hagan Farm to Market Road

Location: Hagan, Bongabong Oriental Mindoro

Prepared by:	Checked by:	Recommending Approval:	Approved by:	Sheet Content:	Sheet No.
JOSE VINCENT C. GALIGA, C.E. Draftsman III	OLIVIA C. CORONEL, C.E.,EnP. Assistant Municipal Engineer / OIC MEO Municipality of Bongabong	GREGORIO S. REYES, EnP. Municipal Planning and Development Coordinator Municipality of Bongabong	EFREGIO A. MALALUAN, O.D. Municipal Mayor Municipality of Bongabong	• ELEMENTS OF CURVE	A 4 | 55



STRAIGHT LINE DIAGRAM

(STA. 00+000 - STA. 9+980)

SCALE: NTS

Republic of the Philippines
Department of Agriculture
Philippine Rural Development Project
Province of Oriental Mindoro
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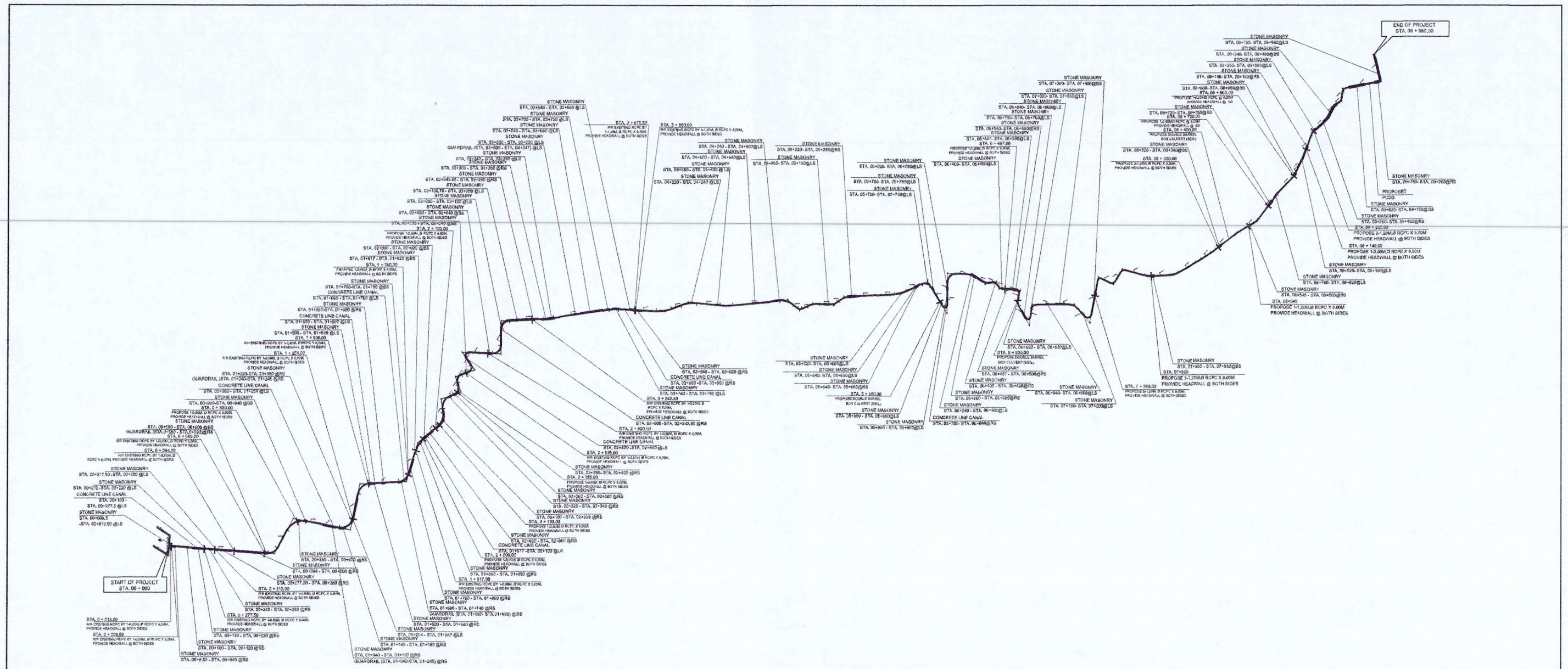
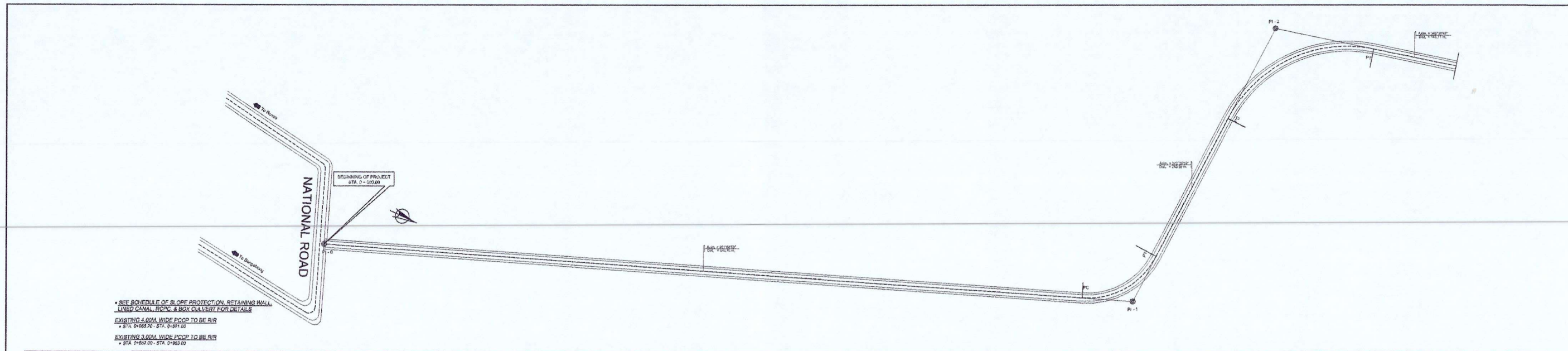


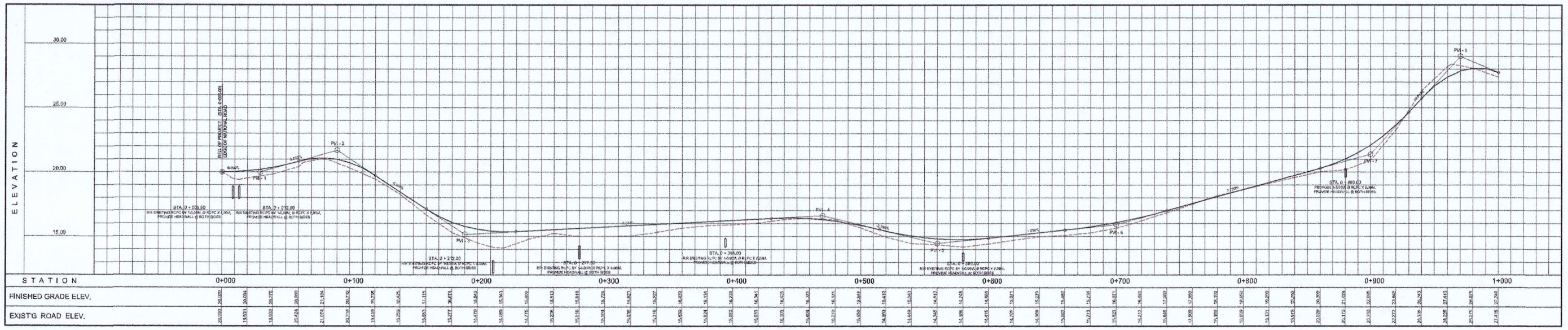
Republic of the Philippines Department of Agriculture Philippine Rural Development Project Province of Oriental Mindoro Municipality of Bongabong	SP ID Number: PRDP-IR-R04B-ORM-007-BON-007-2019 Project Title: Concreting of Centro - Panluan - Balite, Hagan Farm to Market Road Location: Hagan, Bongabong Oriental Mindoro	Prepared by: JOSE VINCENT C. CALIGA, C.E. Draftsman III	Checked by: OLIVIA C. CORONEL, C.E., EnP. Assistant Municipal Engineer / OIC MEO Municipality of Bongabong	Recommending Approval: GREGORIO S. REYES, EnP. Municipal Planning and Development Coordinator Municipality of Bongabong	Approved by: ELEGIO A. MALALUAN, O.D. Municipal Mayor Municipality of Bongabong	Sheet Content: ROAD LAYOUT PLAN	Sheet No. A 6 | 55



- SEE SCHEDULE OF SLOPE PROTECTION, RETAINING WALL, LINED CANAL, RCPC, & BOX CULVERT FOR DETAILS

EXISTING 4.00M. WIDE PCCP TO BE R/R
- STA. 0+663.70 - STA. 0+691.00

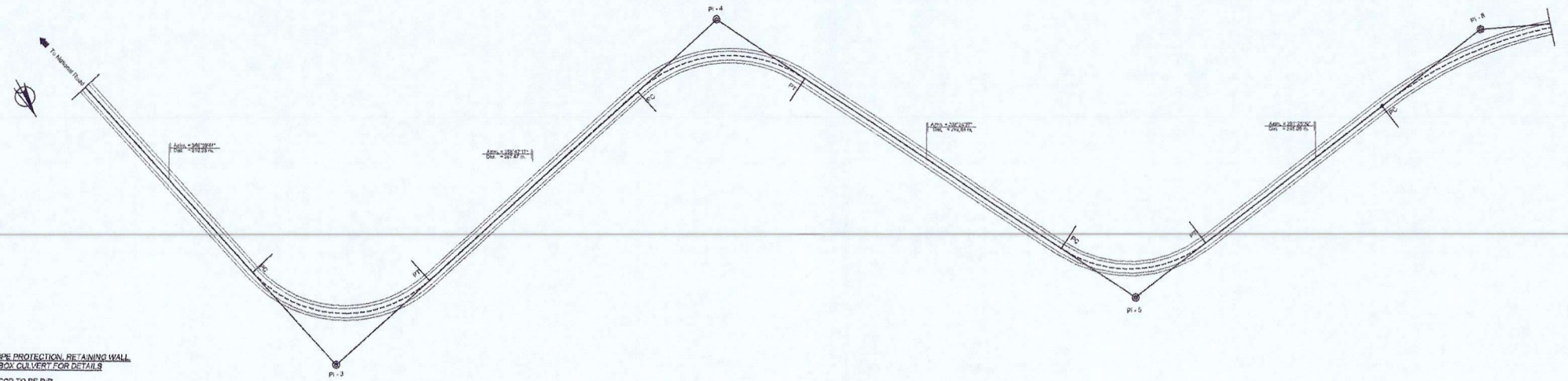
EXISTING 3.00M. WIDE PCCP TO BE R/R
- STA. 0+852.00 - STA. 0+863.00



STATION	0+000	0+100	0+200	0+300	0+400	0+500	0+600	0+700	0+800	0+900	1+000
FINISHED GRADE ELEV.	20.000	19.930	19.930	20.421	21.074	20.736	19.648	19.259	18.759	18.651	18.277
EXISTG ROAD ELEV.	20.000	20.094	20.372	20.890	21.455	20.736	19.728	19.259	17.425	17.155	16.074

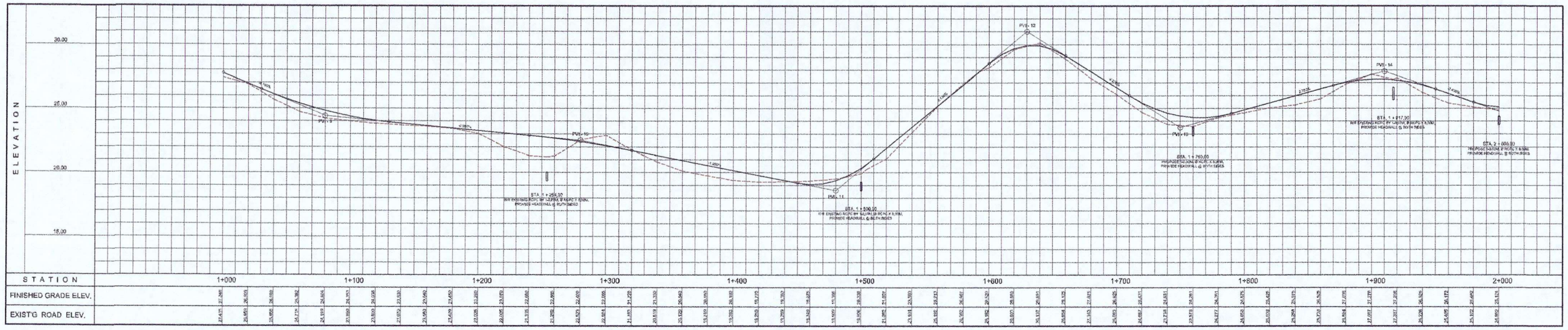
STATION	0+000	0+100	0+200	0+300	0+400	0+500	0+600	0+700	0+800	0+900	1+000
FINISHED GRADE ELEV.	18.479	18.479	18.479	18.479	18.479	18.479	18.479	18.479	18.479	18.479	18.479
EXISTG ROAD ELEV.	16.479	16.479	16.479	16.479	16.479	16.479	16.479	16.479	16.479	16.479	16.479

Republic of the Philippines Department of Agriculture Philippine Rural Development Project Province of Oriental Mindoro Municipality of Bongabong	SP ID Number: PRDP-IR-R04B-ORM-007-BON-007-2019 Project Title: Concreting of Centro - Panluan - Balite, Hagan Farm to Market Road Location: Hagan, Bongabong Oriental Mindoro	Prepared by: JOSE VINCENT C. GALIGA C.E. Draftsman III	Checked by: OLIVIA C. CORONEL, C.E.,EnP. Assistant Municipal Engineer / OIC MEO Municipality of Bongabong	Recommending Approval: GREGORIO S. REYES, EnP. Municipal Planning and Development Coordinator Municipality of Bongabong	Approved by: ELEGIO A. MALALUAN, O.D. Municipal Mayor Municipality of Bongabong	Sheet Content: • ROAD PROFILE DIAGRAM @ STA. 0+000 - STA. 1+000	Sheet No. B 7 | 55



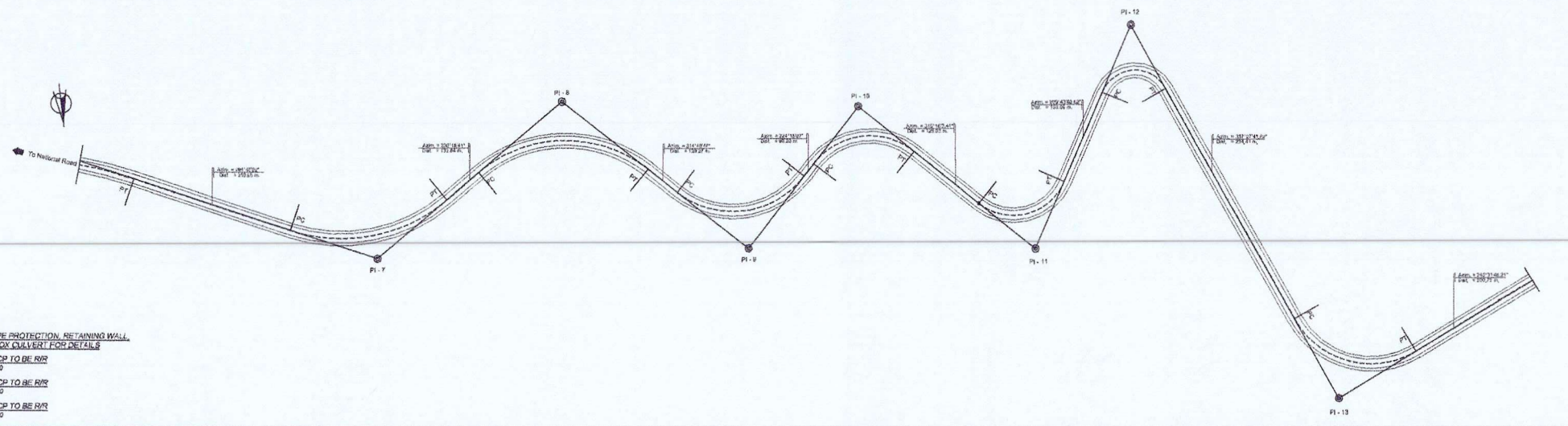
* SEE SCHEDULE OF SLOPE PROTECTION, RETAINING WALL, LINED CANAL, RCPC, & BOX CULVERT FOR DETAILS

EXISTING 3.00M. WIDE PCCP TO BE R/R
* STA. 1+500.00 - STA. 1+595.00
* STA. 1+700.00 - STA. 1+760.00



Republic of the Philippines Department of Agriculture Philippine Rural Development Project Province of Oriental Mindoro Municipality of Bongabong	SP ID Number: PRDP-IR-R04B-ORM-007-BON-007-2019 Project Title: Concreting of Centro - Panluan - Balite, Hagan Farm to Market Road Location: Hagan, Bongabong Oriental Mindoro	Prepared by: JOSE VINCENT C. GALIGA, C.E. Draftsman III	Checked by: OLIVIA C. CORONEL, C.E., EnP. Assistant Municipal Engineer / OIC MEO Municipality of Bongabong	Recommending Approval: GREGORIO S. REYES, EnP. Municipal Planning and Development Coordinator Municipality of Bongabong	Approved by: ELEGIO A. MALALUAN, O.D. Municipal Mayor Municipality of Bongabong	Sheet Content: ROAD PROFILE DIAGRAM @ STA. 1+000 - STA. 2+000

Sheet No.: B 8 55

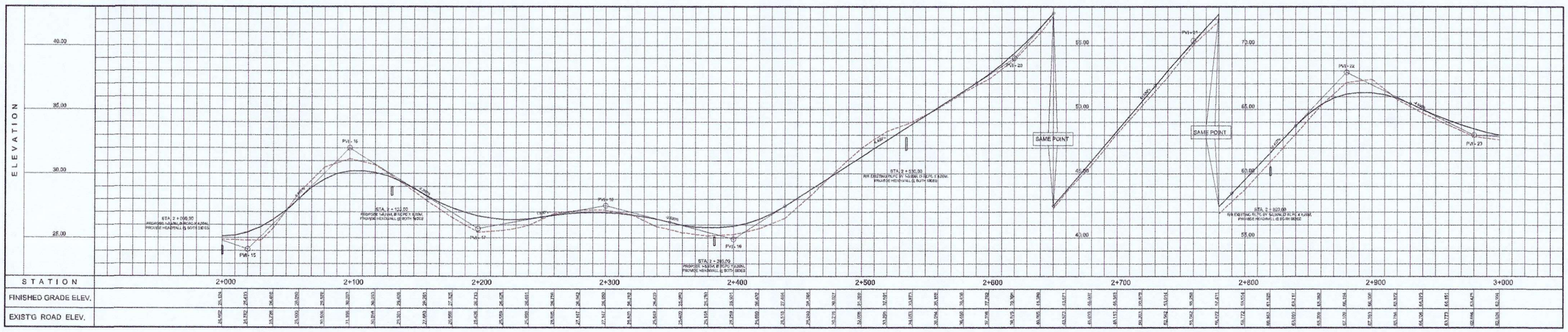


- SEE SCHEDULE OF SLOPE PROTECTION, RETAINING WALL, LINED CANAL, RCPC & BOX CULVERT FOR DETAILS

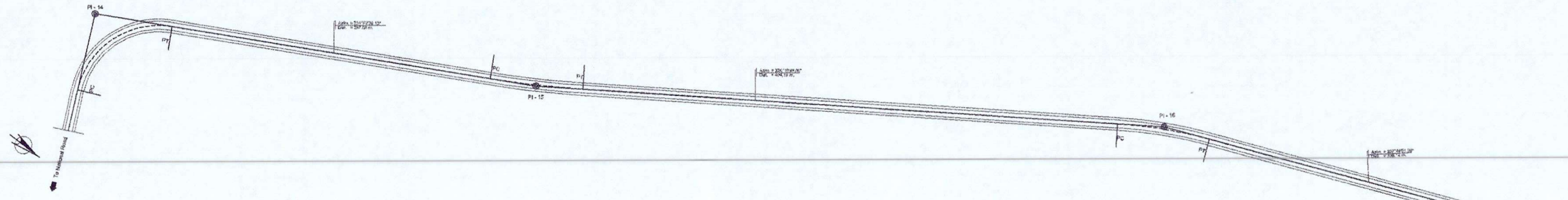
EXISTING 4.00M. WIDE PCCP TO BE R/R
- STA. 2+458.60 - STA. 2+520.00

EXISTING 3.00M. WIDE PCCP TO BE R/R
- STA. 1+030.00 - STA. 2+778.00

EXISTING 3.00M. WIDE PCCP TO BE R/R
- STA. 1+480.00 - STA. 3+207.00



Republic of the Philippines Department of Agriculture Philippine Rural Development Project Province of Oriental Mindoro Municipality of Bongabong	SP ID Number: PRDP-IR-R04B-ORM-007-BON-007-2019 Project Title: Concreting of Centro - Panluan - Balite, Hagan Farm to Market Road Location: Hagan, Bongabong Oriental Mindoro	Prepared by: JOSE VINCENT C. GALIGA, C.E. Draftsman III	Checked by: OLIVIA Q. CORONEL, C.E.,EnP. Assistant Municipal Engineer / OIC MEO Municipality of Bongabong	Recommending Approval: GREGORIO S. REYES, EnP. Municipal Planning and Development Coordinator Municipality of Bongabong	Approved by: ELEGIO A. MALALUAN, O.D. Municipal Mayor Municipality of Bongabong	Sheet Content: • ROAD PROFILE DIAGRAM @ STA. 2+000 - STA. 3+000	Sheet No. B 9 | 55



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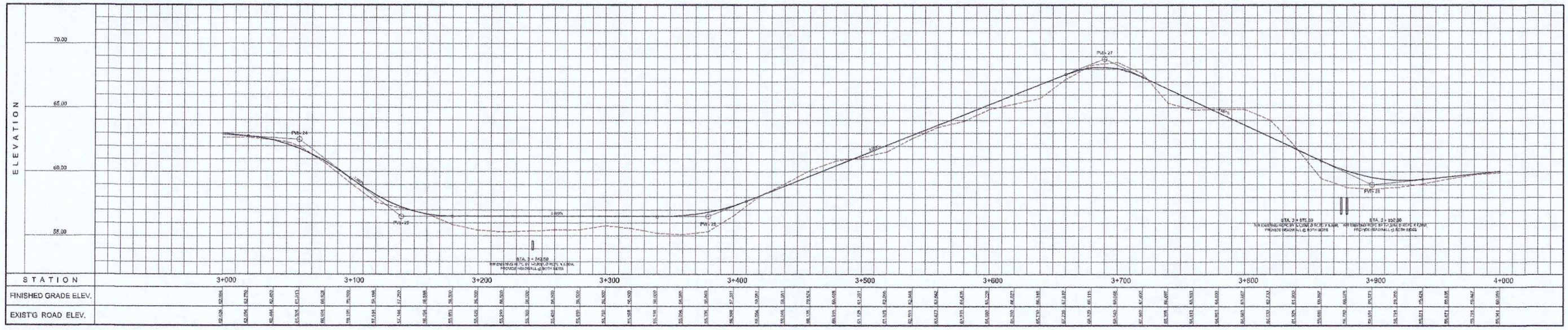
EXISTING 3.00M. WIDE PCCP TO BE R/R
* STA. 3+670.00 - STA. 3+737.50
* STA. 3+057.60 - STA. 3+156.70



Republic of the Philippines
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SP ID Number: PRDP-IR-R04B-ORM-007-BON-007-2019

Project Title: Concreting of Centro - Panluan - Balite, Hagan Farm to Market Road

Location: Hagan, Bongabong Oriental Mindoro

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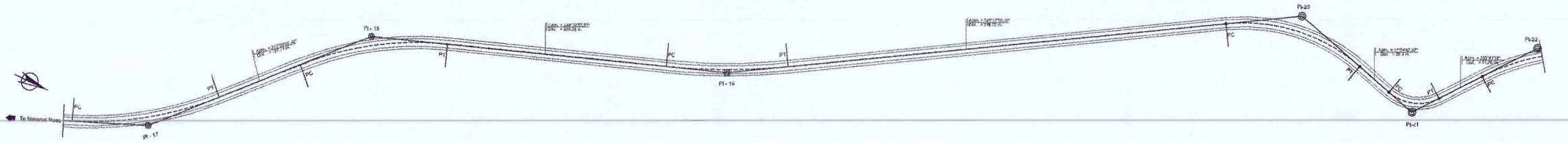
JOSE VINCENT C. GALIGA, C.E. Draftsman III	OLIVIA C. CORONEL, C.E.,EnP. Assistant Municipal Engineer / OIC MEO Municipality of Bongabong	GREGORIO S. REYES, EnP. Municipal Planning and Development Coordinator Municipality of Bongabong	ELEGIO A. MALALUAN, O.D. Municipal Mayor Municipality of Bongabong	• ROAD PROFILE DIAGRAM @ STA. 3+000 - STA. 4+000	B 10 55



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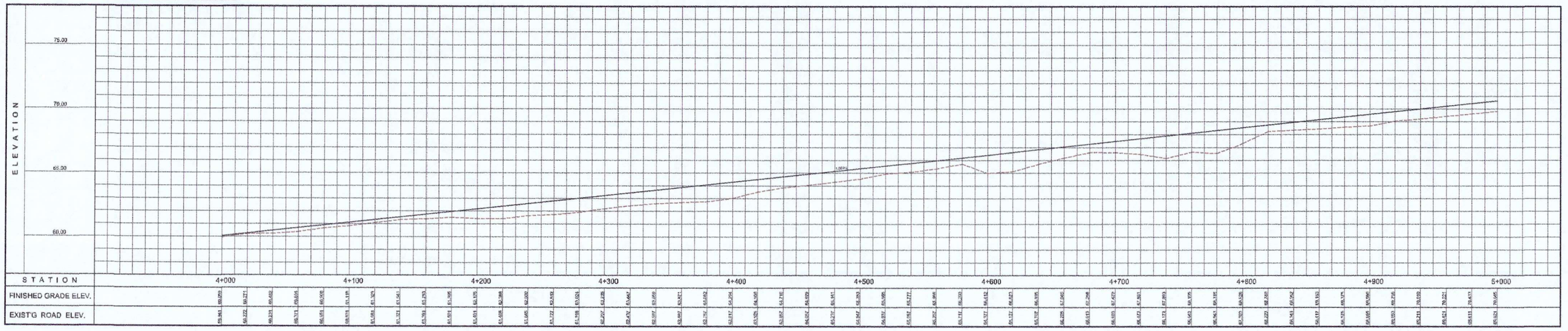

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Location: Hagan, Bongabong Oriental Mindoro

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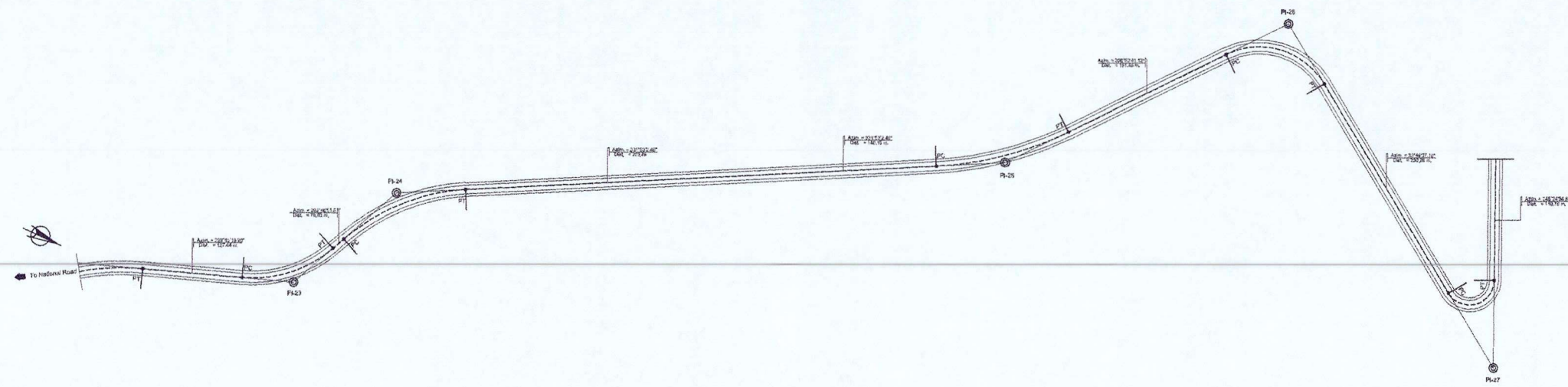
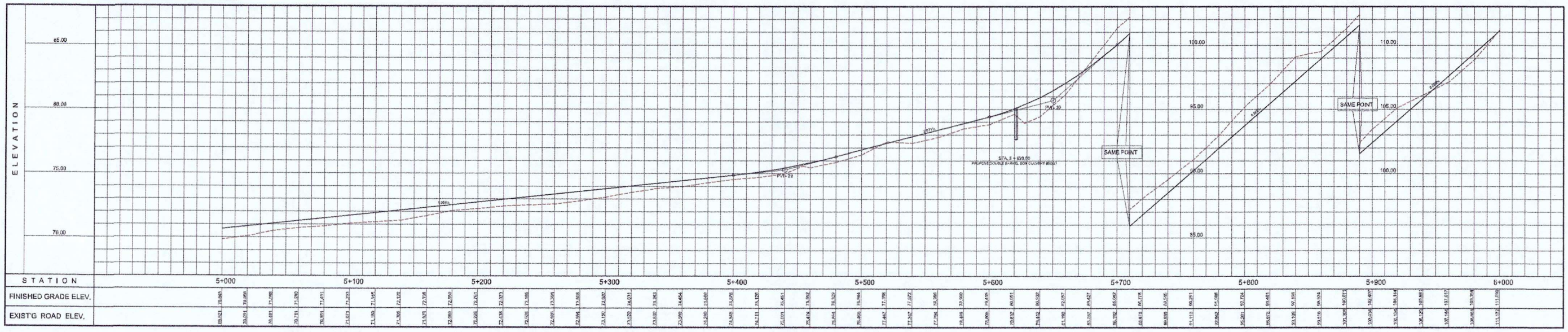
JOSE VINCENT C. GALIGA, C.E. Draftsman III	OLIVIA D. CORONEL, C.E., EnP. Assistant Municipal Engineer / OIC-MEO Municipality of Bongabong	GREGORIO S. REYES, EnP. Municipal Planning and Development Coordinator Municipality of Bongabong	ELECIO A. MALALUAN, O.D. Municipal Mayor Municipality of Bongabong	ROAD PROFILE DIAGRAM @ STA. 4+000 - STA. 5+000	B 11 55



* SEE SCHEDULE OF SLOPE PROTECTION, RETAINING WALL, LINED CANAL, RCPC, & BOX CULVERT FOR DETAILS



Republic of the Philippines
Department of Agriculture
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Province of Oriental Mindoro
Municipality of Bongabong

SP ID Number: PRDP-IR-R04B-ORM-007-BON-007-2019

Project Title: Concreting of Centro - Panluan - Balite, Hagan Farm to Market Road

Location: Hagan, Bongabong Oriental Mindoro

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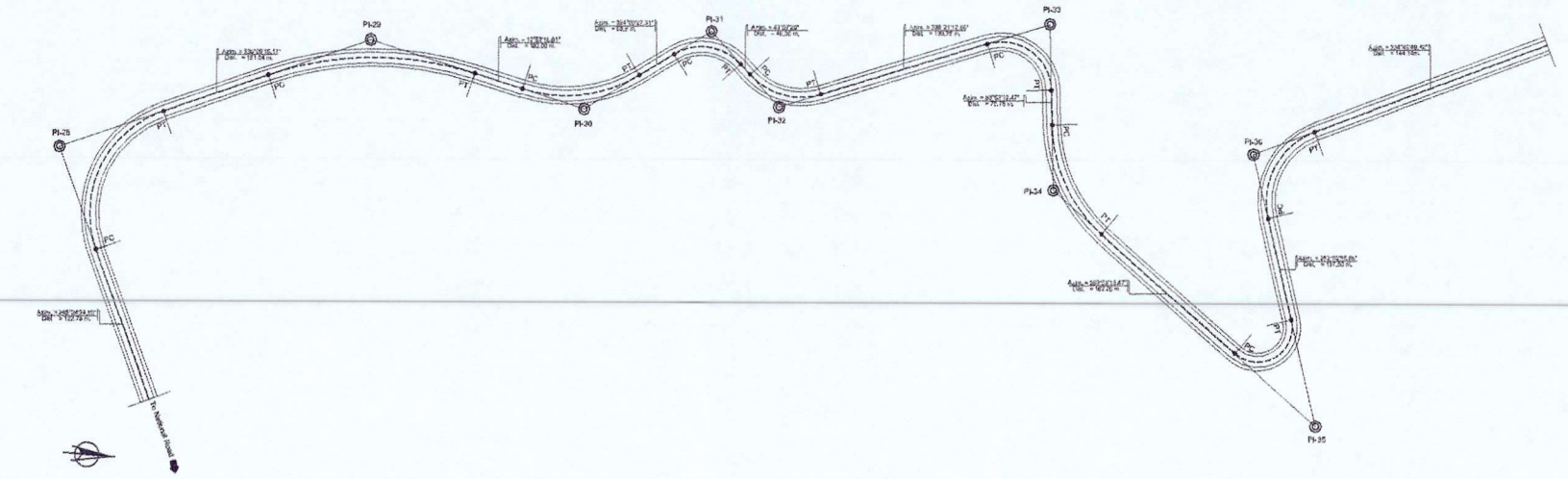
JOSE VINCENT C. BALIGA, C.E. Draftsman II	OLIVIA C. CORONEL, C.E., EnP. Assistant Municipal Engineer / OIC MEO Municipality of Bongabong	GREGORIO S. REYES, EnP. Municipal Planning and Development Coordinator Municipality of Bongabong	ELEGIO A. MALALUAN, O.D. Municipal Mayor Municipality of Bongabong	ROAD PROFILE DIAGRAM @ STA. 5+000 - STA. 6+000	B 12 55



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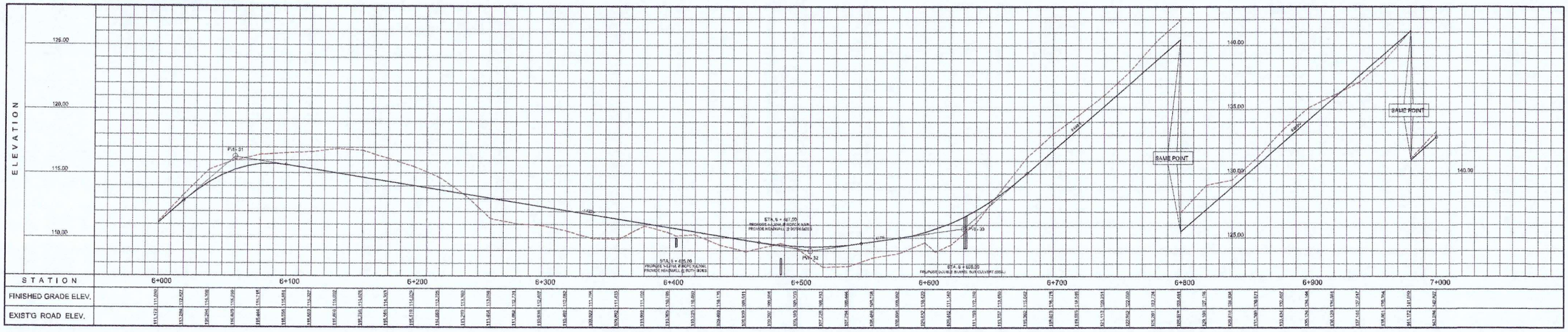

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SP ID Number: PRDP-IR-R04B-ORM-007-BON-007-2019

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Location: Hagan, Bongabong Oriental Mindoro

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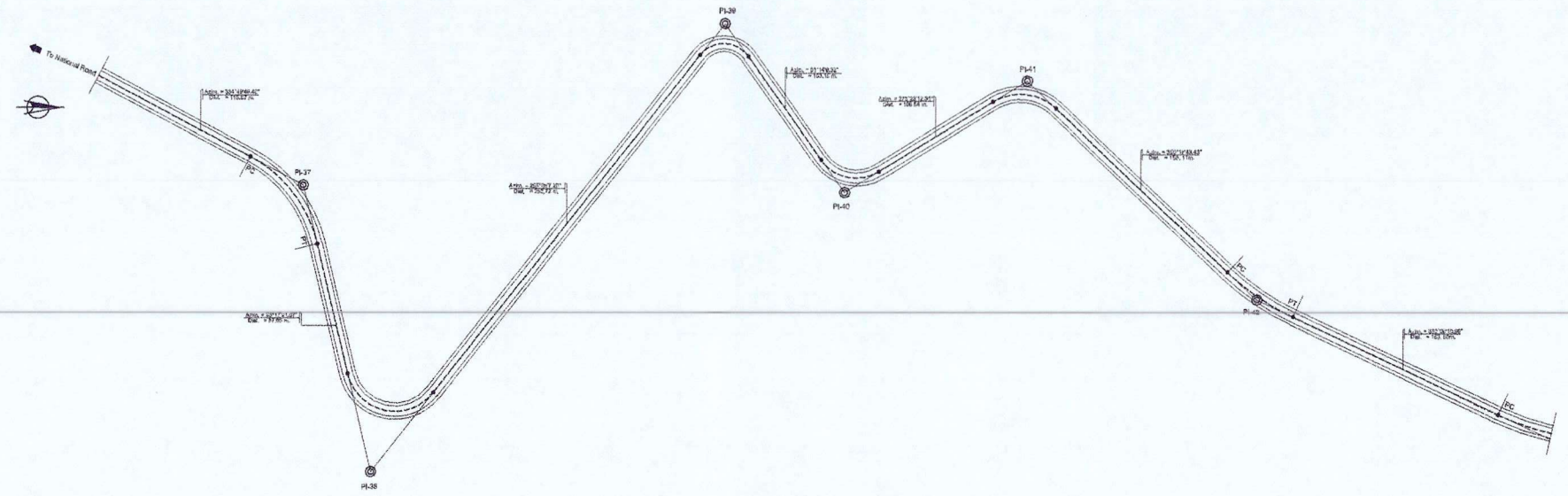

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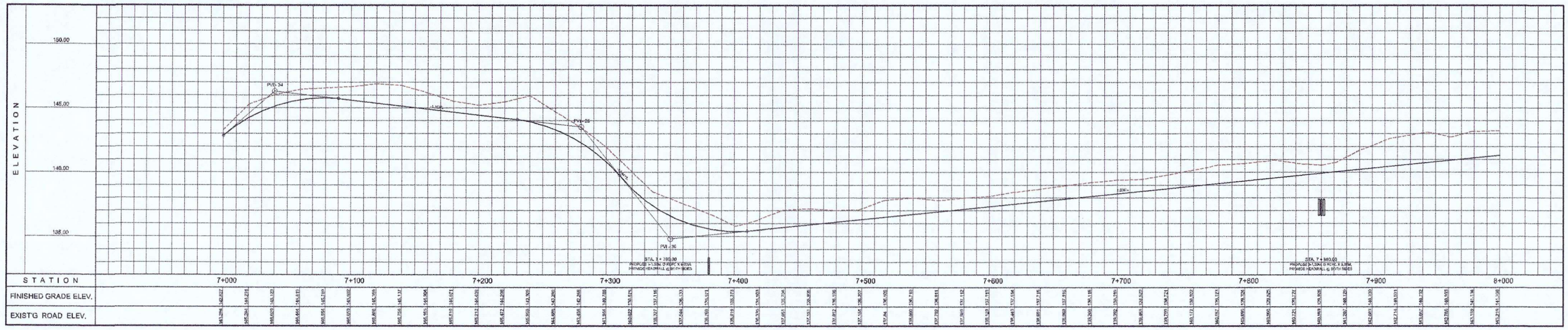

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SP ID Number: PRDP-IR-R04B-ORM-007-BON-007-2019

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Location: Hagan, Bongabong Oriental Mindoro

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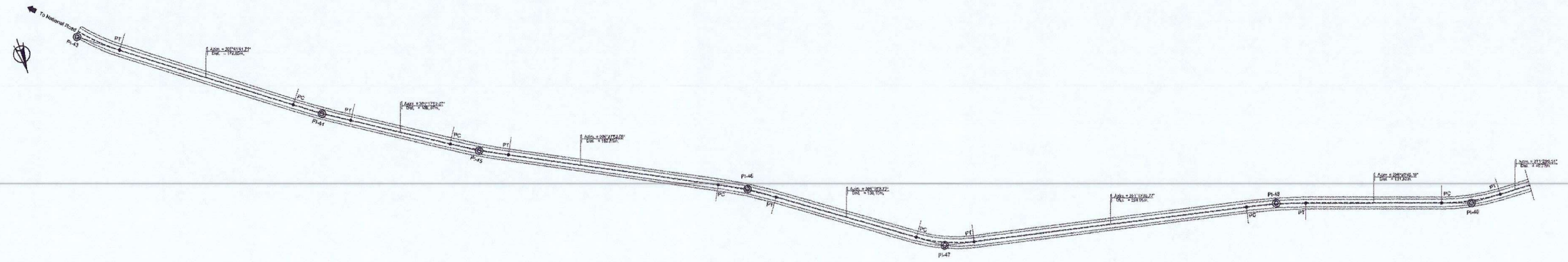

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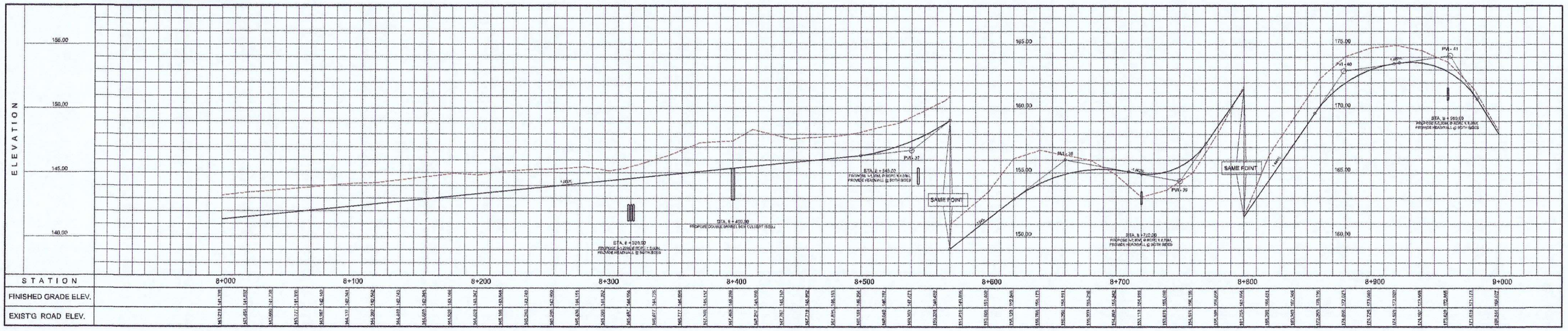

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SP ID Number:	PRDP-IR-R04B-ORM-007-BON-007-2019
Project Title:	Concreting of Centro - Panluan - Balite, Hagan Farm to Market Road
Location:	Hagan, Bongabong Oriental Mindoro

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JOSE VINCENT C. GALIGA, C.E.	OLIVIA P. CORONEL, C.E.,EnP.	GREGORIO S. REYES, EnP.	ELEGIO A. MALALUAN, O.D.
Draftsman III	Assistant Municipal Engineer / OIC-MEO Municipality of Bongabong	Municipal Planning and Development Coordinator Municipality of Bongabong	Municipal Mayor Municipality of Bongabong

Sheet Content:
* ROAD PROFILE DIAGRAM @ STA. 8+000 - STA. 9+000

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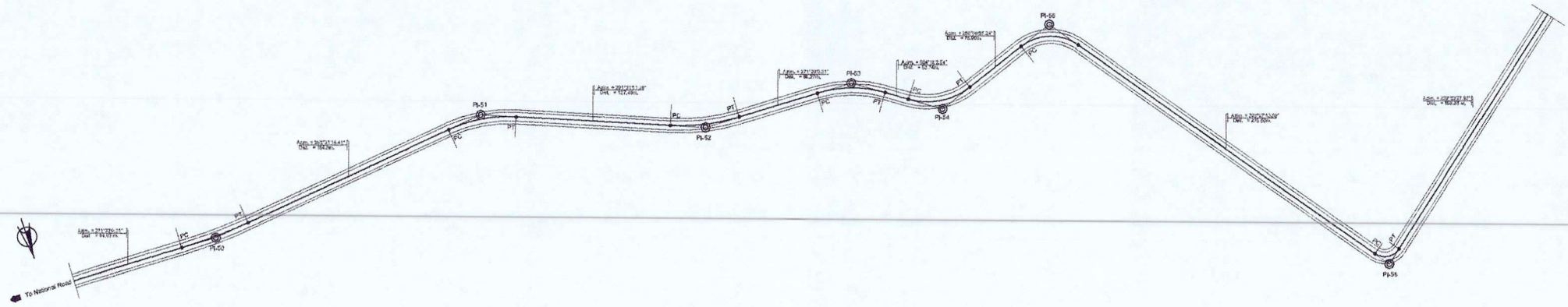

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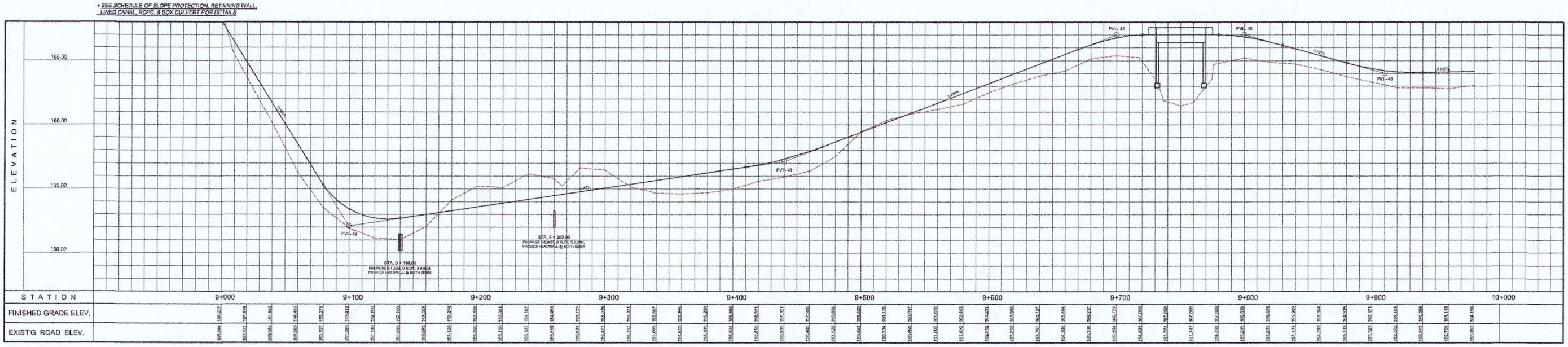

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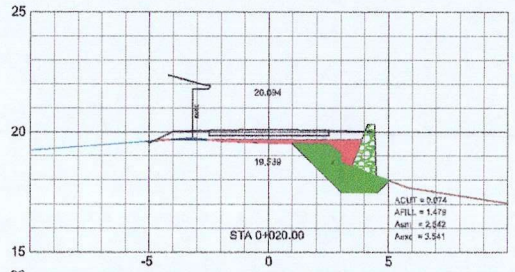

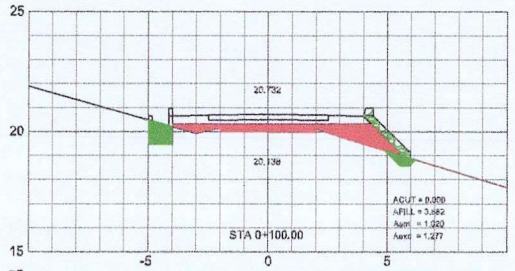

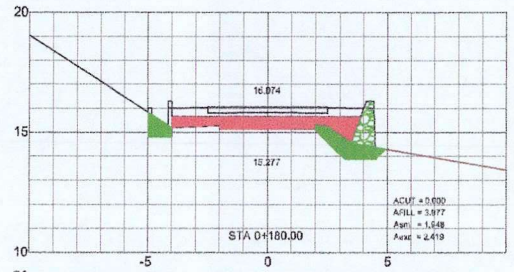

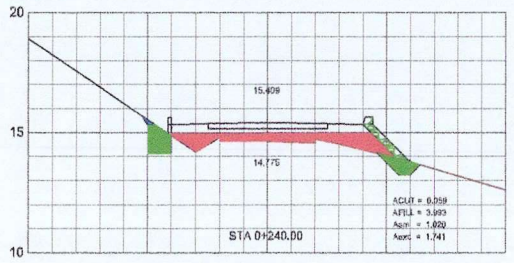

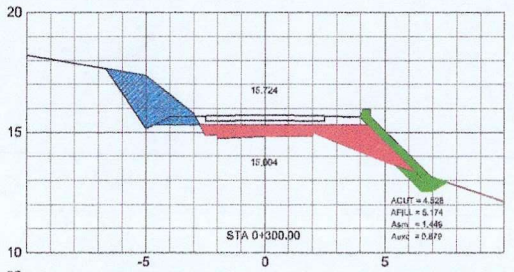

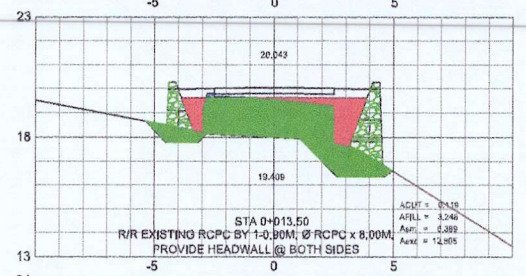

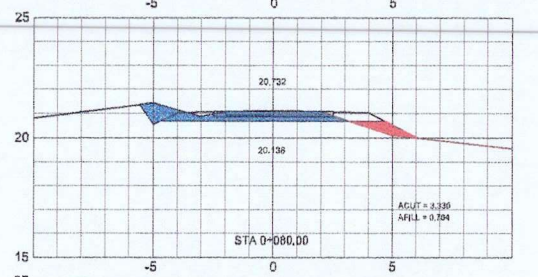

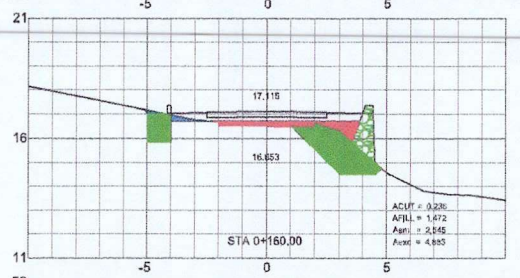

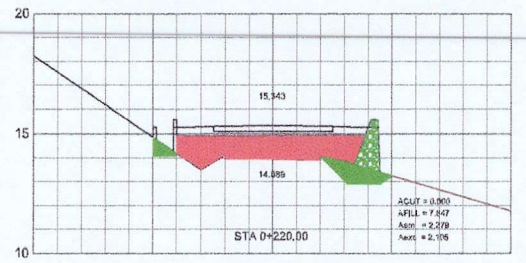

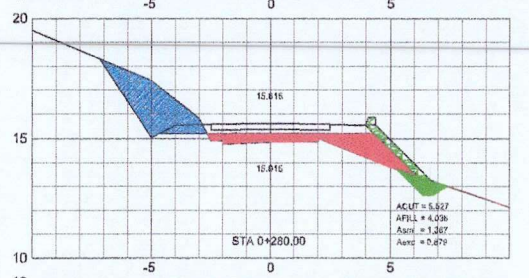

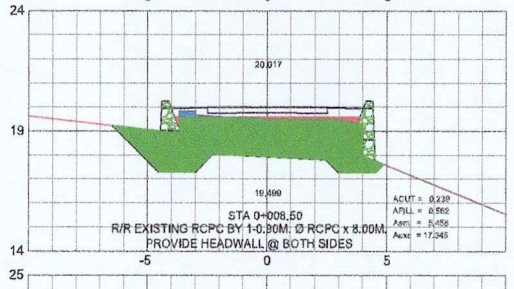

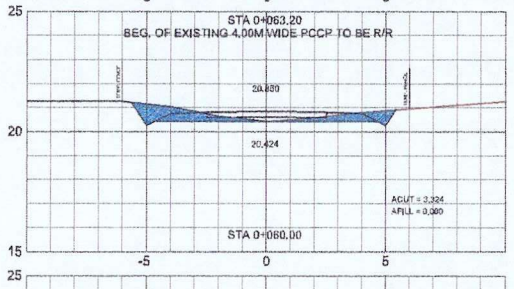

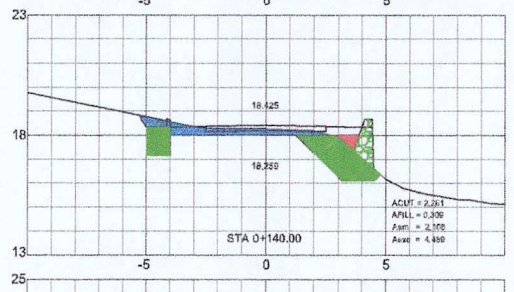

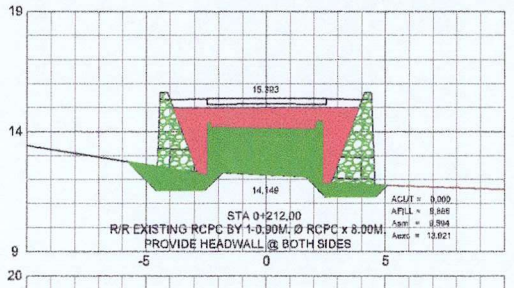

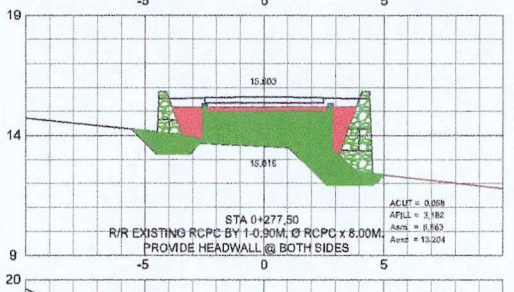

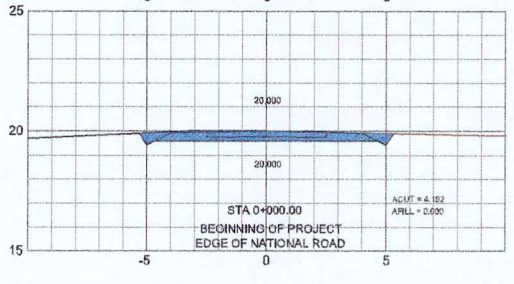

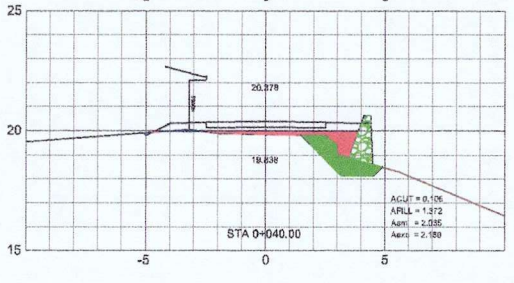

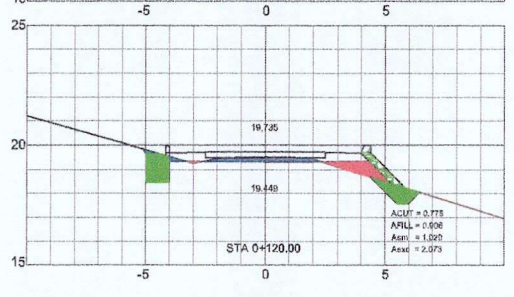

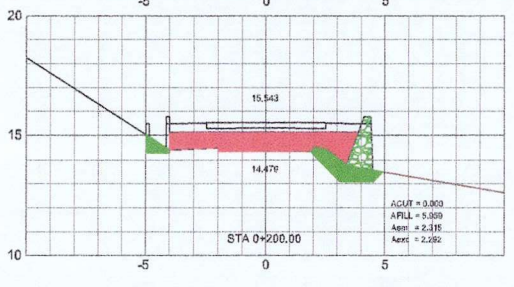

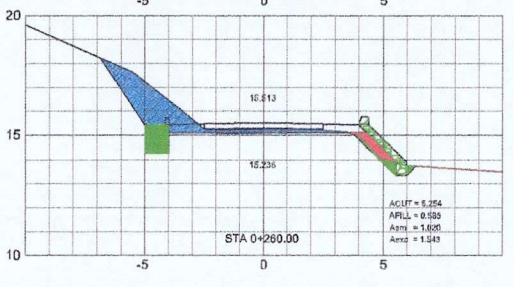

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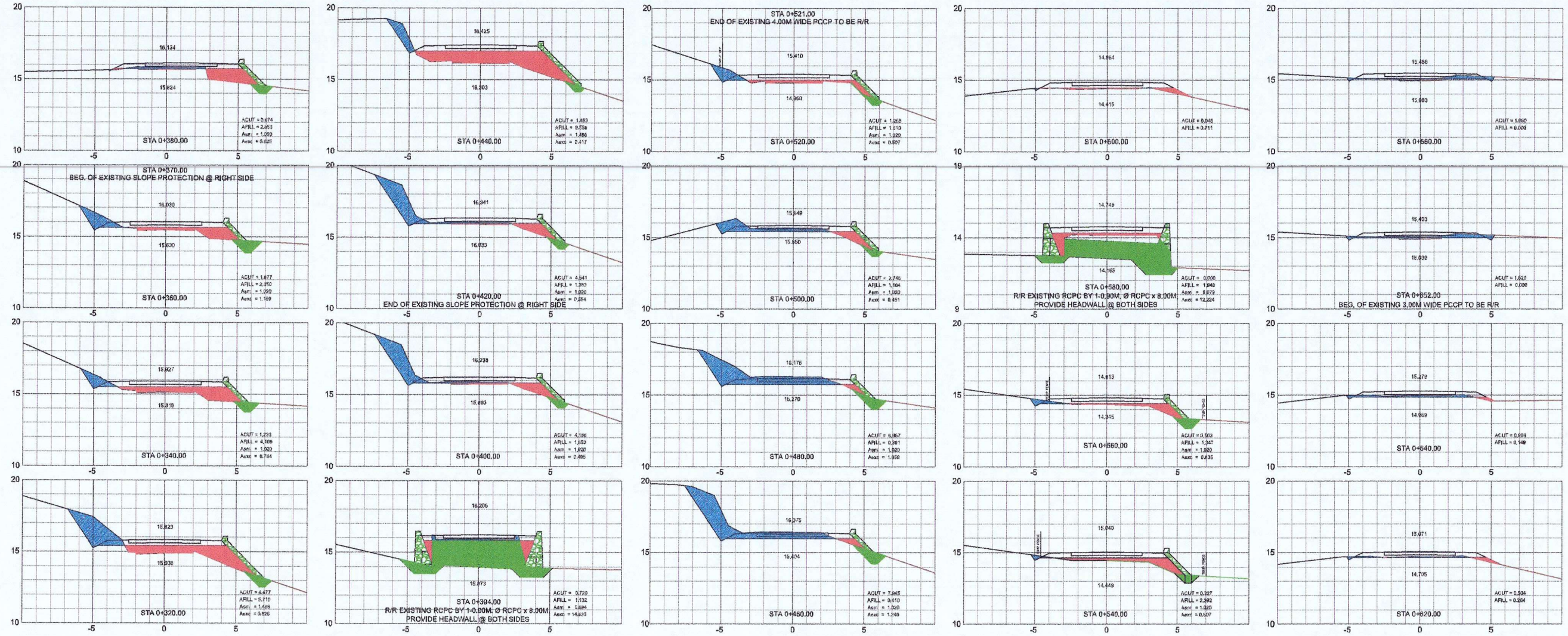

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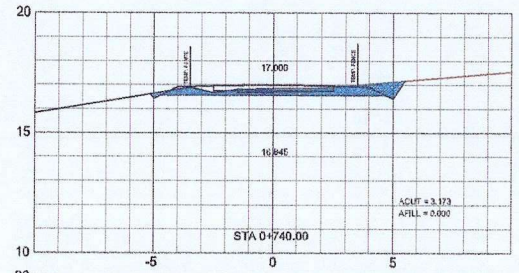

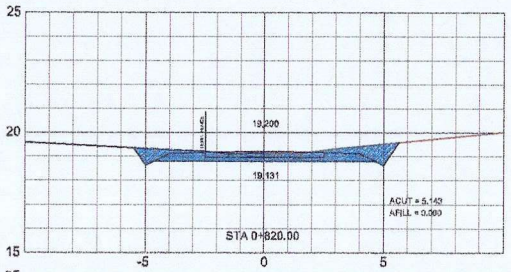

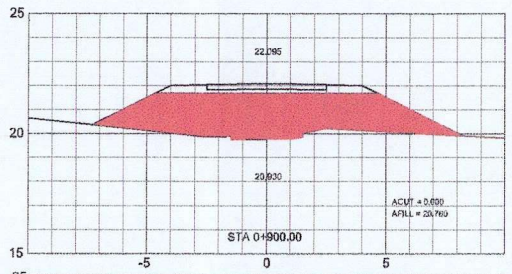

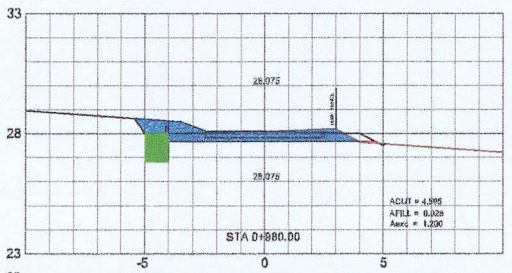

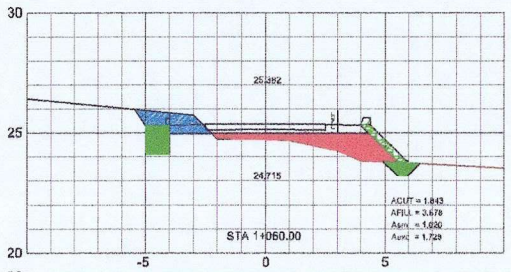

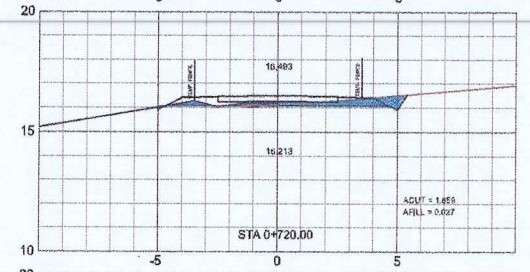

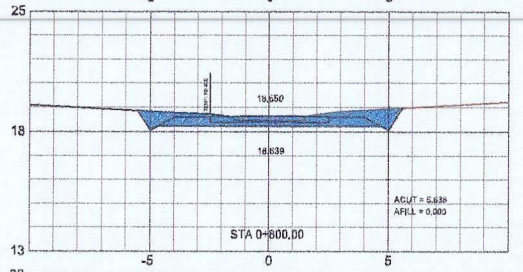

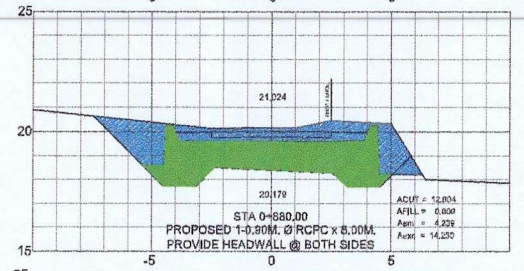

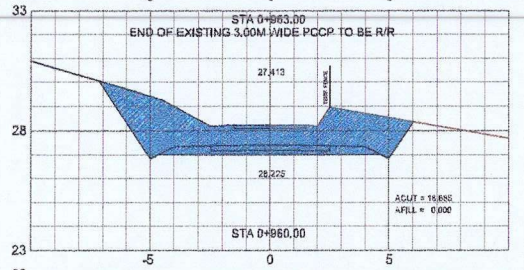

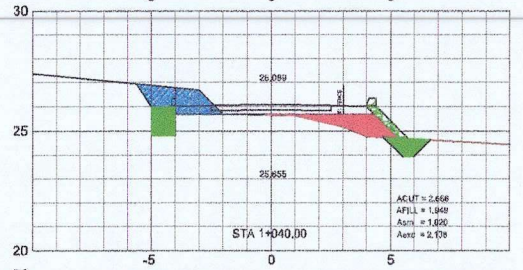

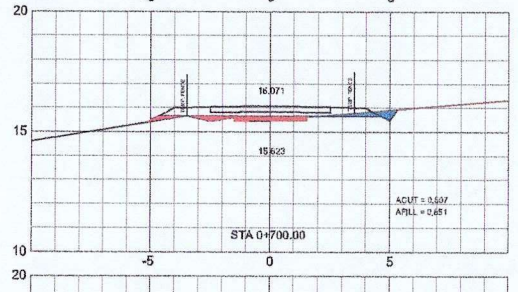

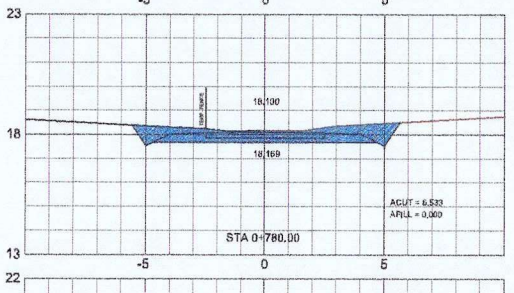

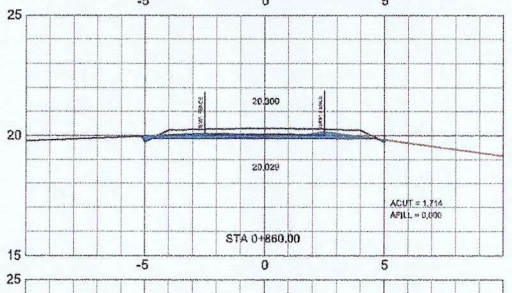

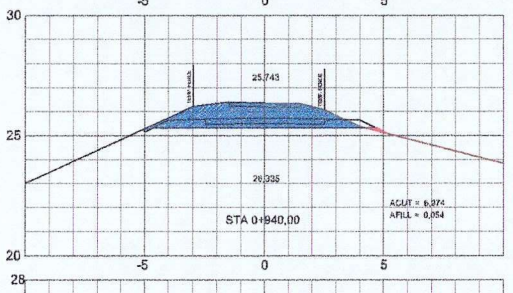

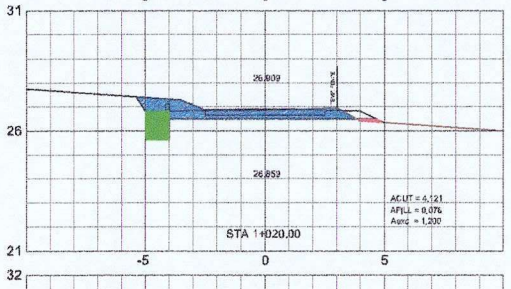

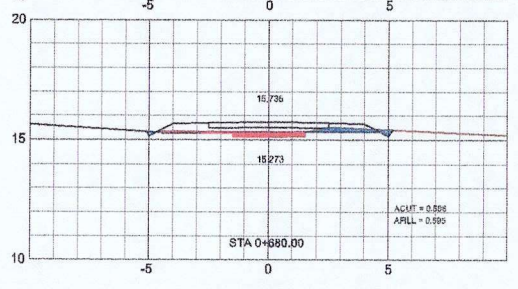

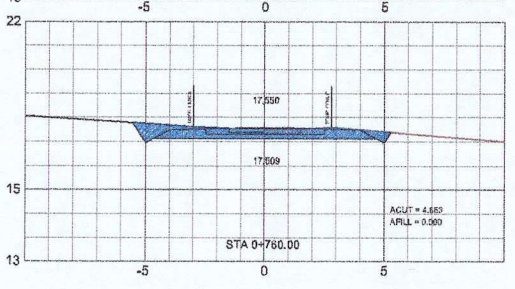

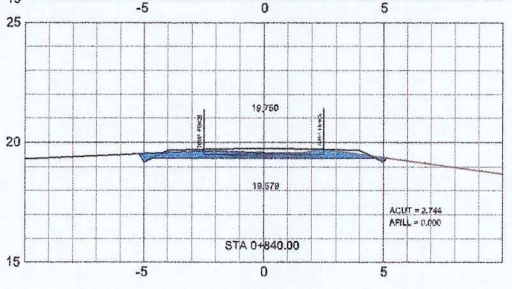

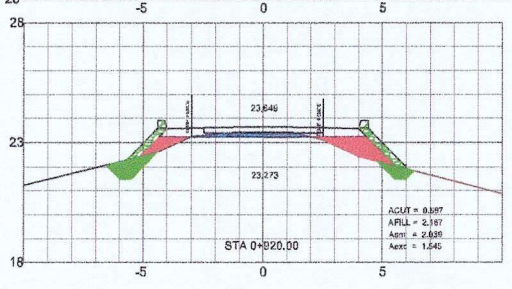

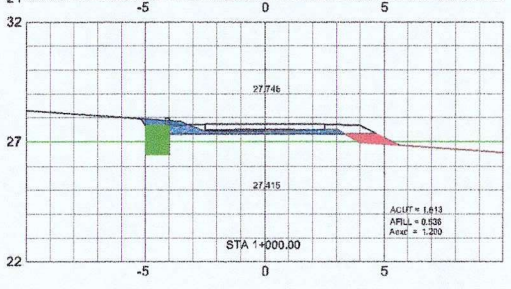

Republic of the Philippines
Department of Agriculture
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Province of Oriental Mindoro
Municipality of Bongabong

SP ID Number: PRDP-IR-R04B-ORM-007-BON-007-2019

Project Title: Concreting of Centro - Panluan - Balite, Hagan Farm to Market Road

Location: Hagan, Bongabong Oriental Mindoro

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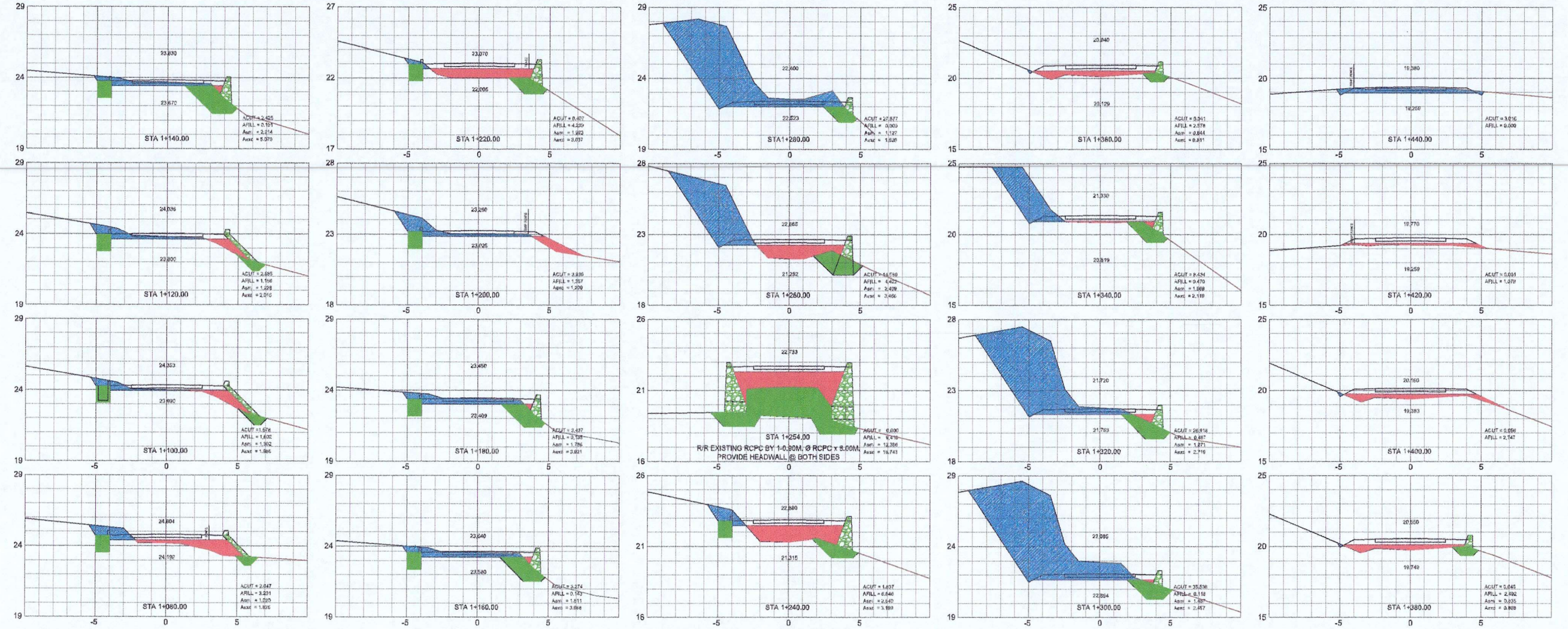
JOSE VINCENT C. GALIGA, C.E. Draftsman III	OLIVIA C. CORONEL, C.E., EnP. Assistant Municipal Engineer / OIC MEO Municipality of Bongabong	GREGORIO S. REYES, EnP. Municipal Planning and Development Coordinator Municipality of Bongabong	ELEGIO A. MALALUAN, O.D. Municipal Mayor Municipality of Bongabong	• CROSS SECTION @ STA. 0+680 - STA. 1+060	C 19/55



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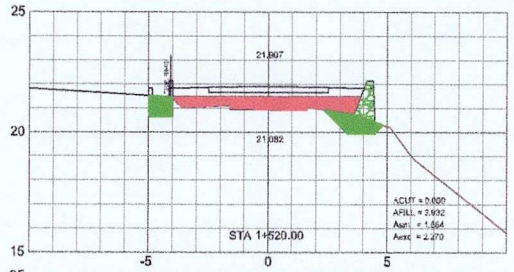

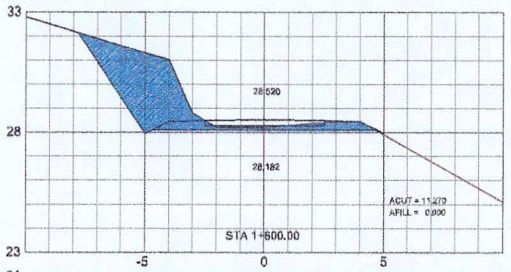

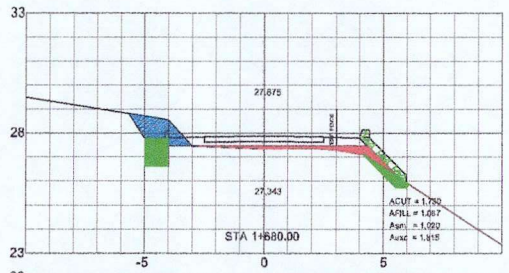

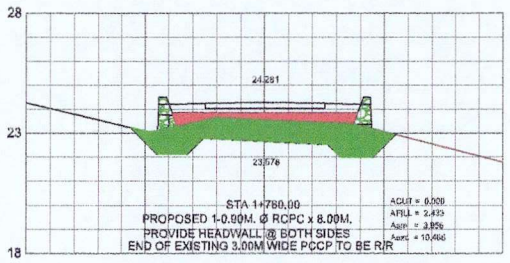

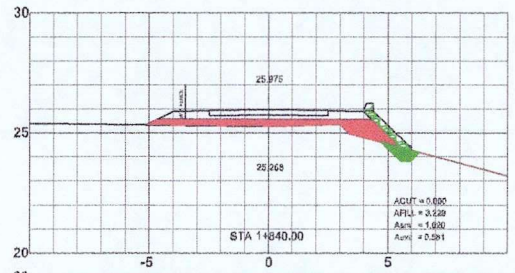

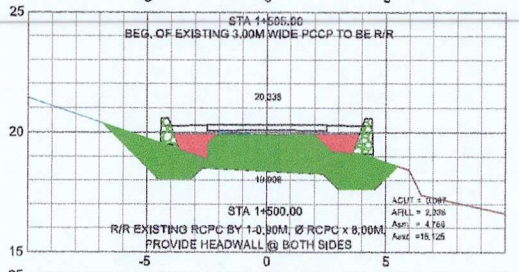

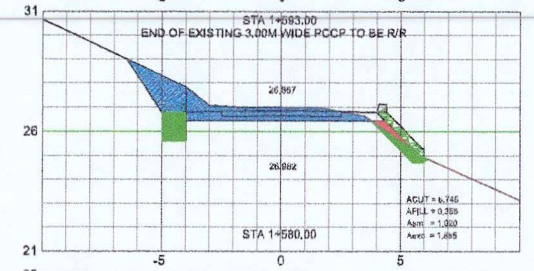

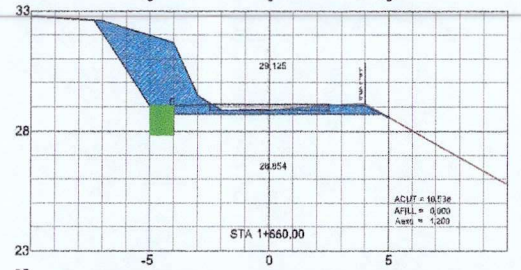

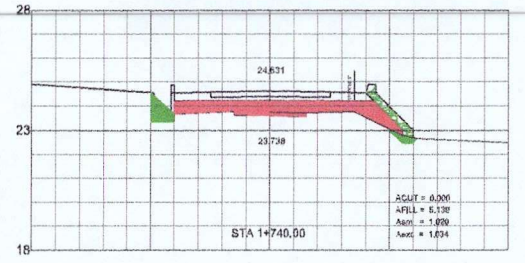

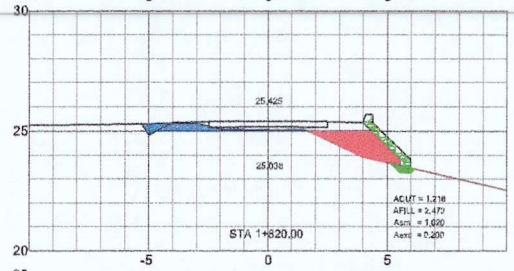

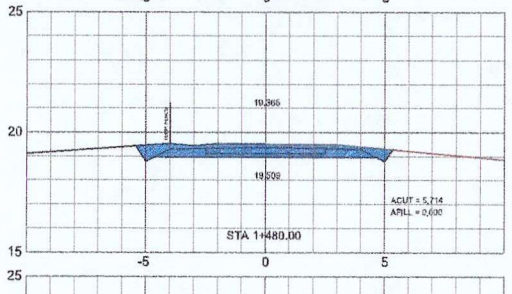

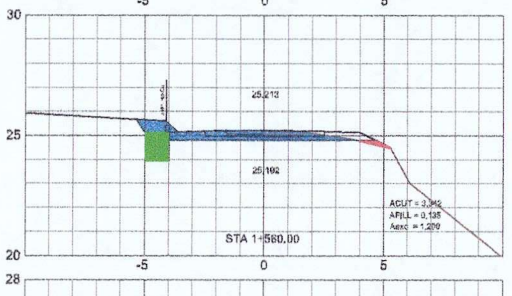

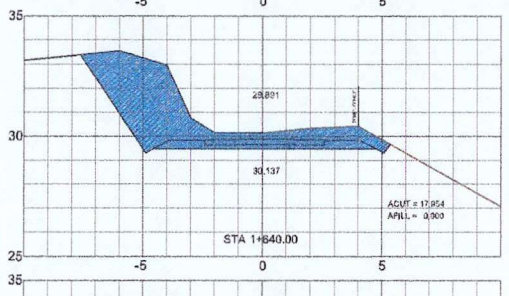

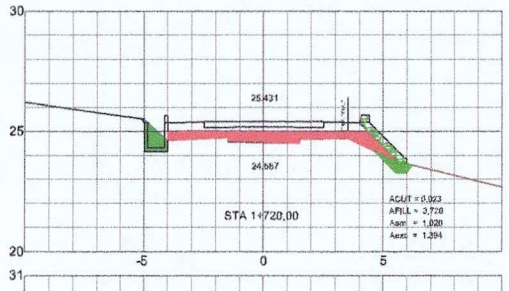

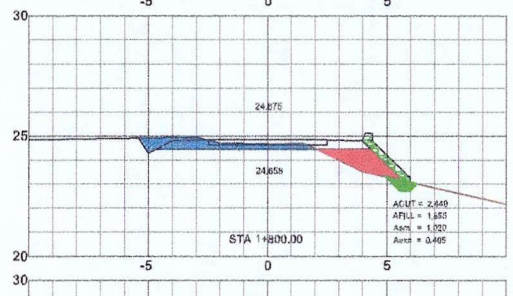

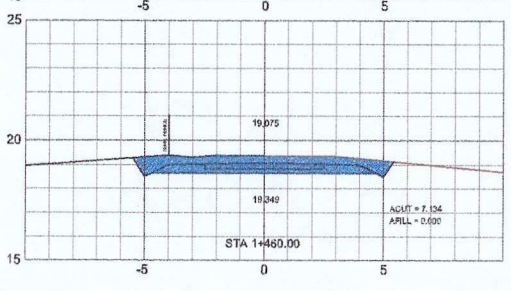

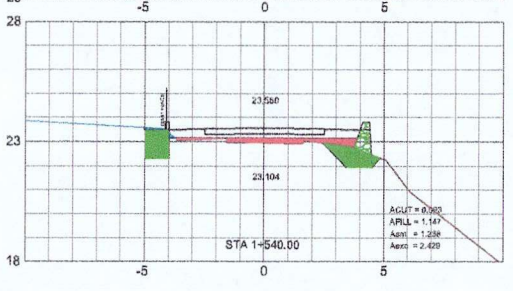

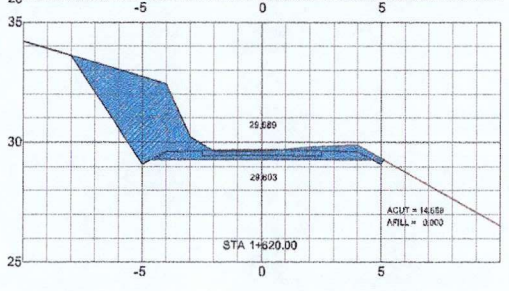

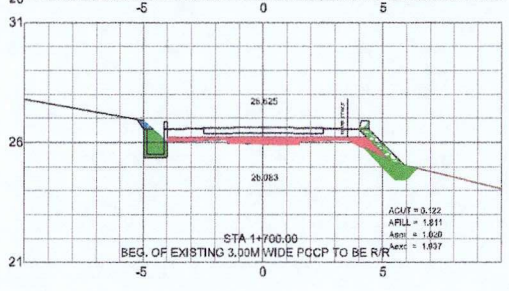

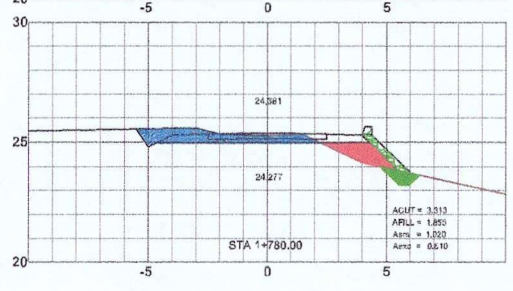

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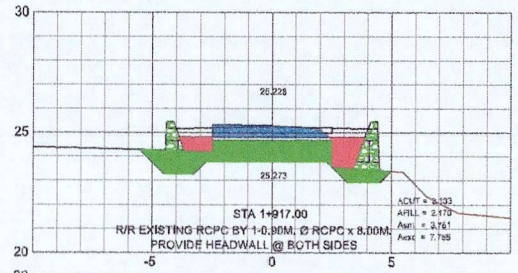

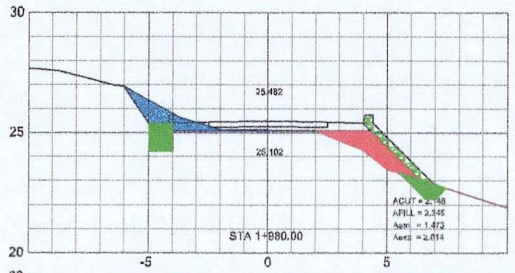

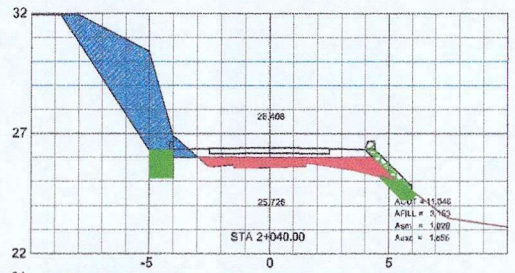

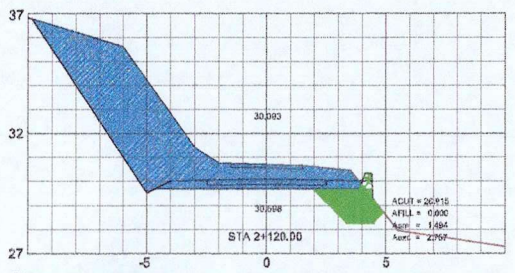

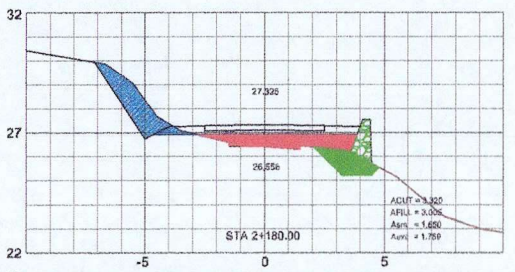

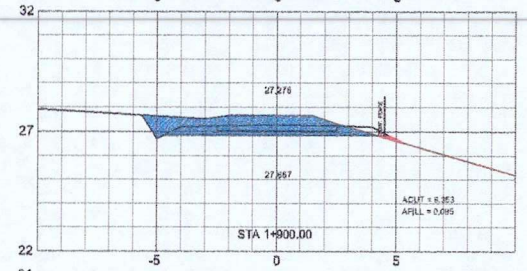

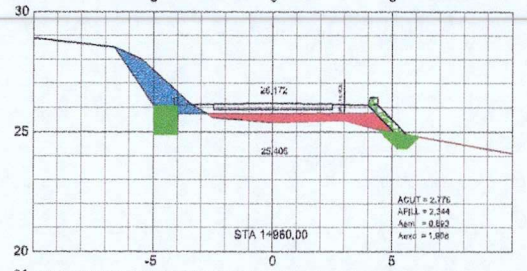

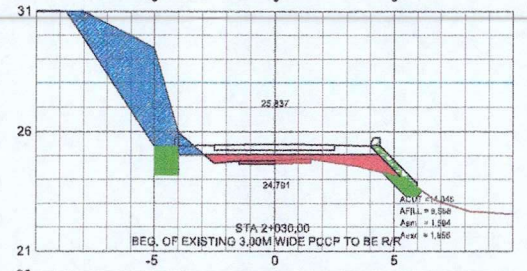

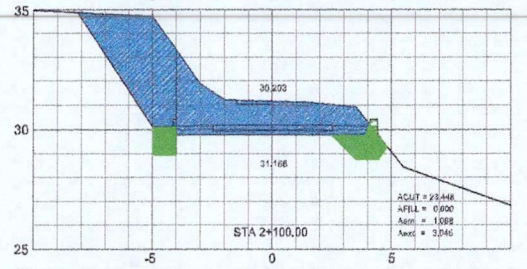

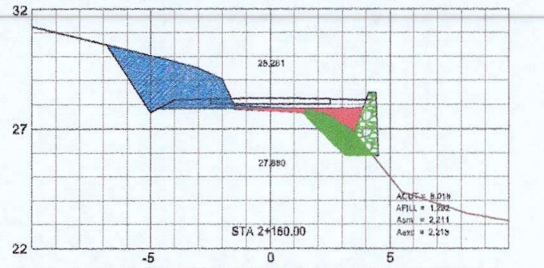

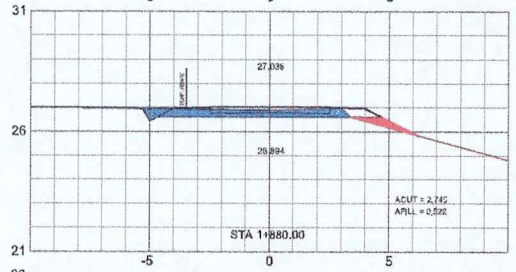

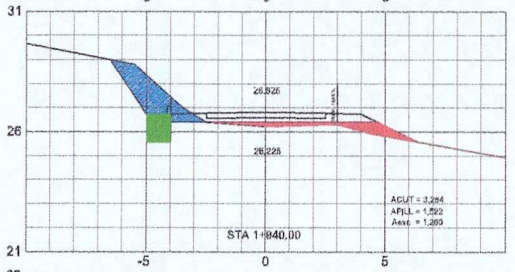

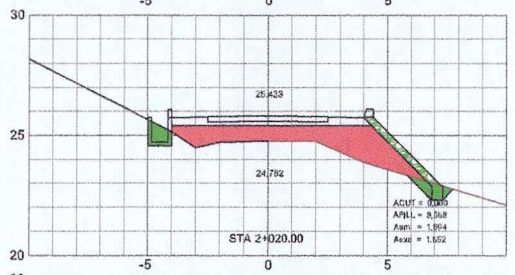

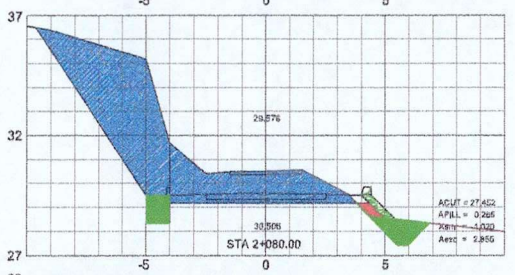

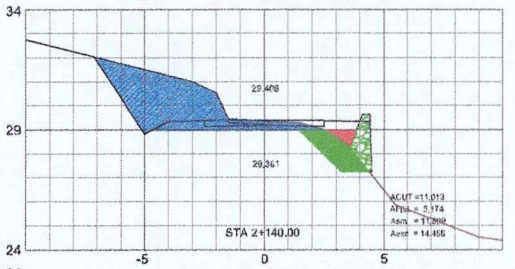

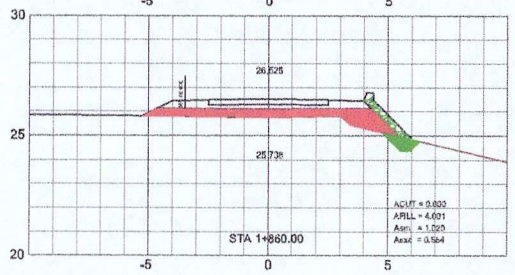

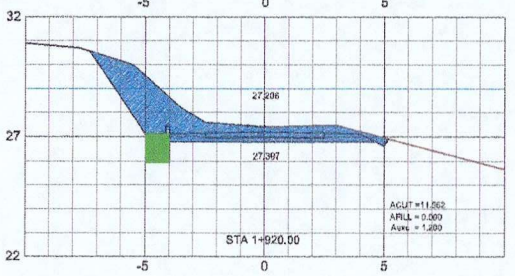

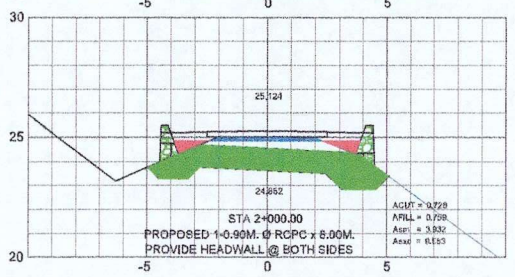

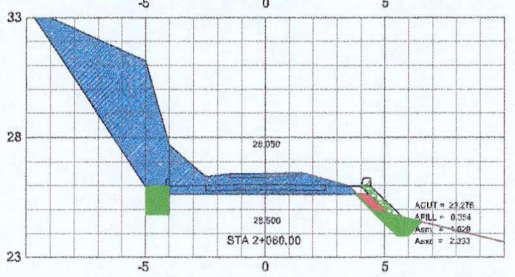

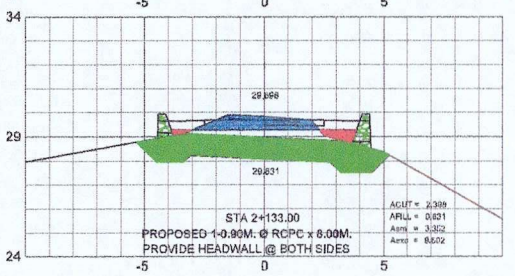

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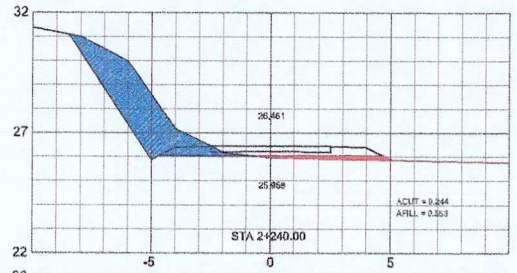
Philippine Rural Development Project
Province of Oriental Mindoro
Municipality of Bongabong

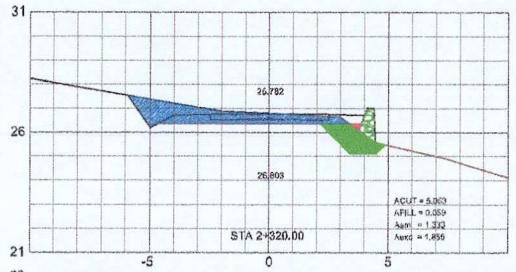
SP ID Number: PRDP-IR-R04B-ORM-007-BON-007-2019

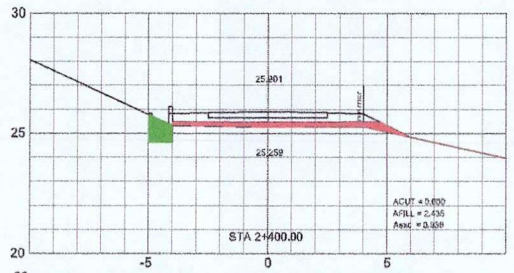
Project Title: Concreting of Centro - Panluan - Balite, Hagan Farm to Market Road

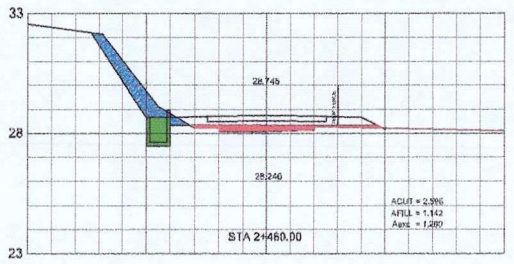
Location: Hagan, Bongabong Oriental Mindoro

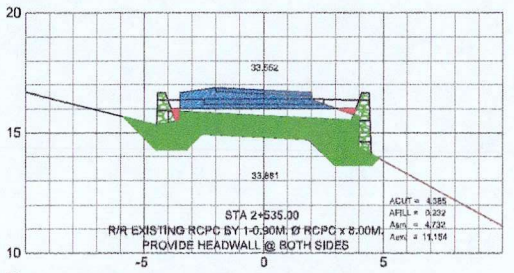
Prepared by:	Checked by:	Recommending Approval:	Approved by:	Sheet Content:	Sheet No.
JOSE VINCENT C. GALIGA, C.E. Draftsman III	OLIVIA C. CORONEL, C.E.,EnP. Assistant Municipal Engineer / OIC-MEO Municipality of Bongabong	GREGORIO S. REYES, EnP. Municipal Planning and Development Coordinator Municipality of Bongabong	ELEGIO A. MALALUAN, O.D. Municipal Mayor Municipality of Bongabong	CROSS SECTION @ STA. 1+860 - STA. 2+180	C 22 55

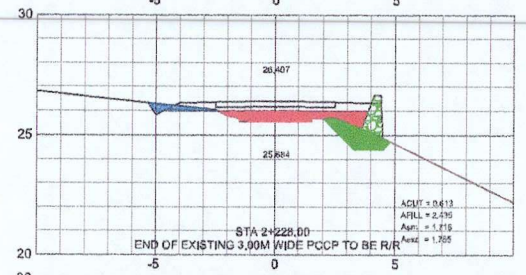


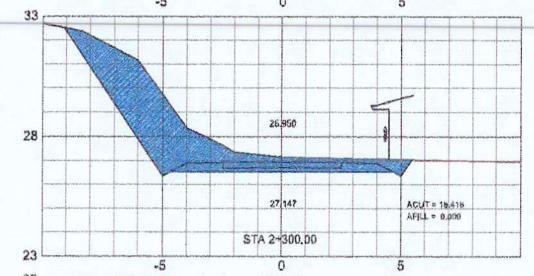


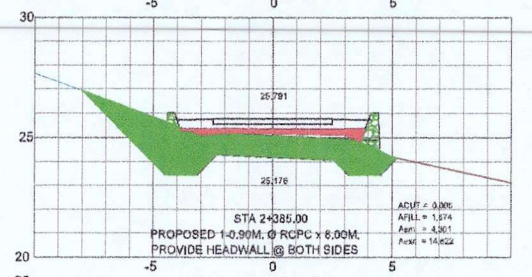


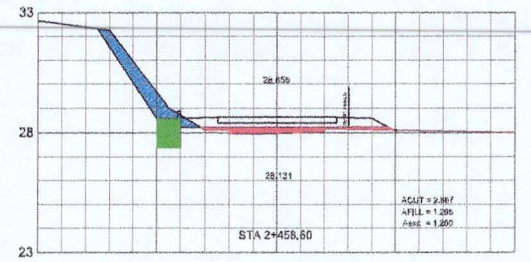


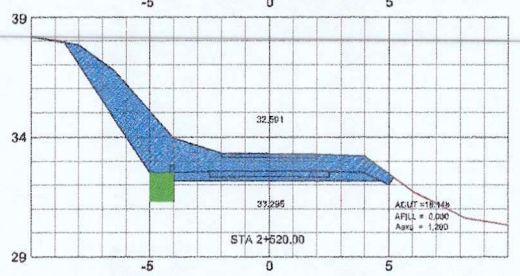


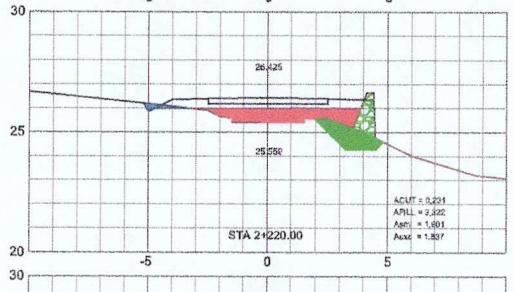


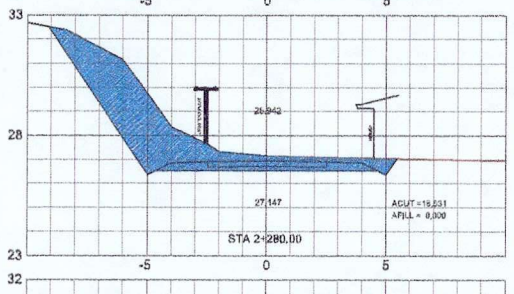


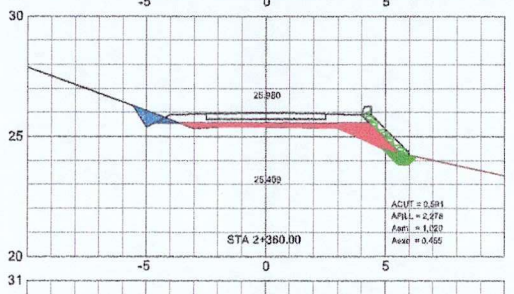


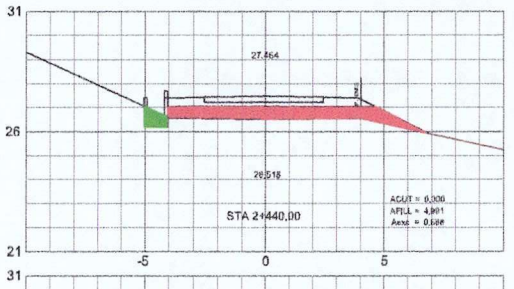


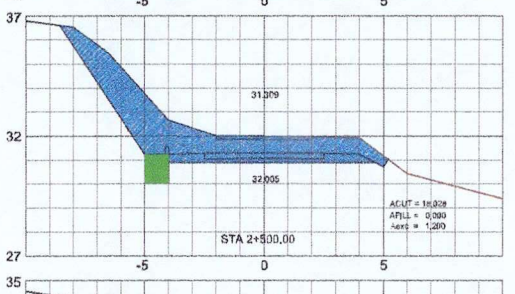


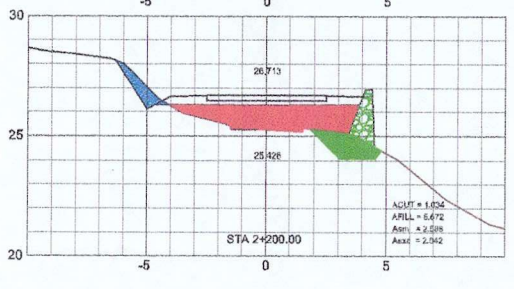


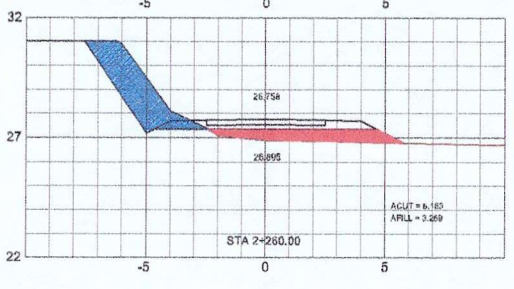


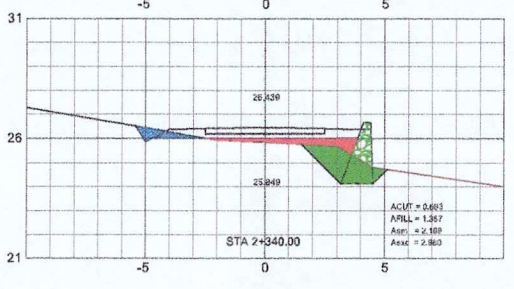


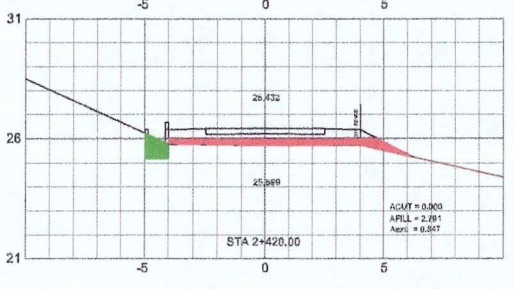


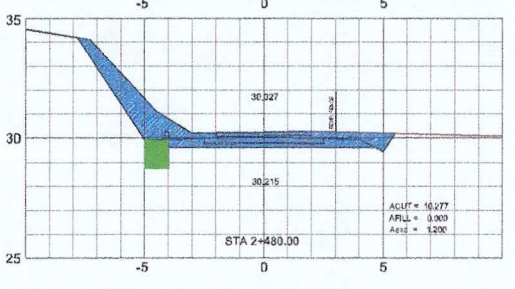












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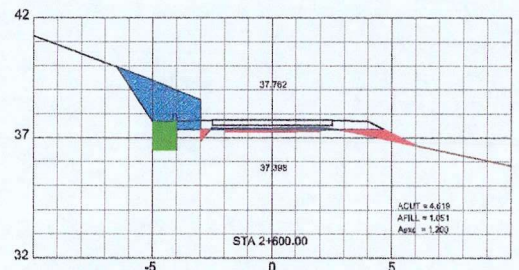

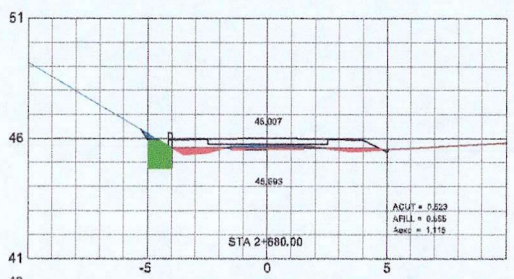

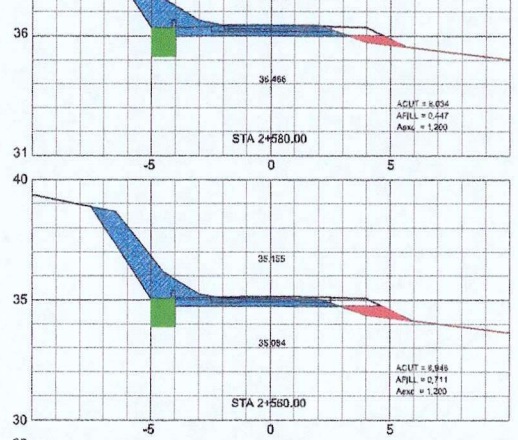

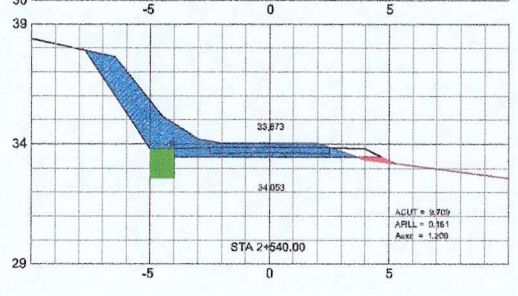

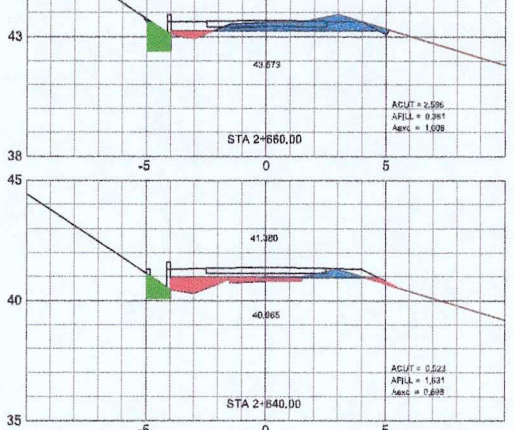

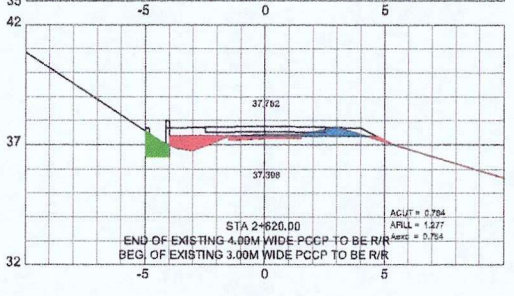

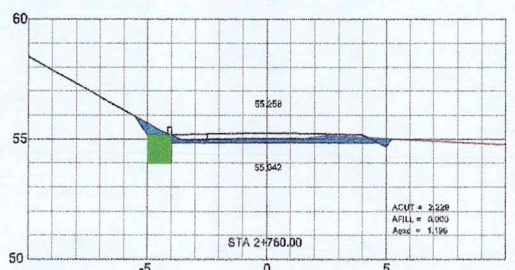

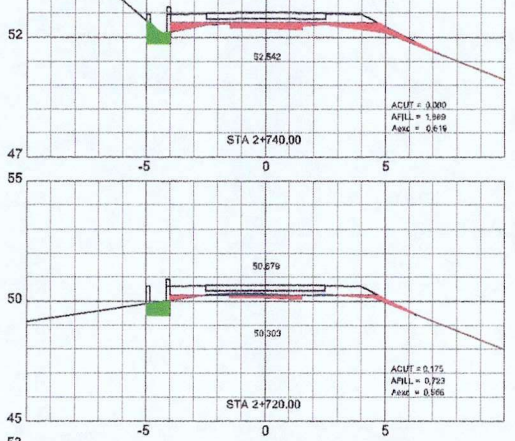

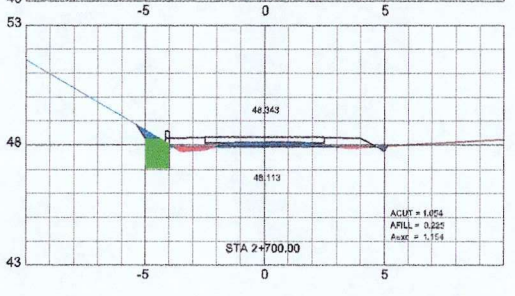

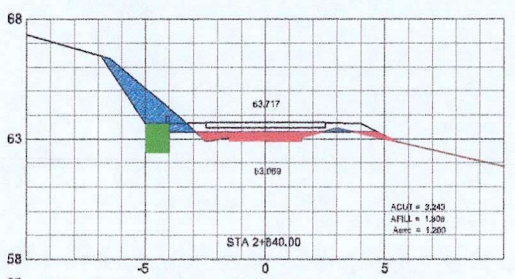

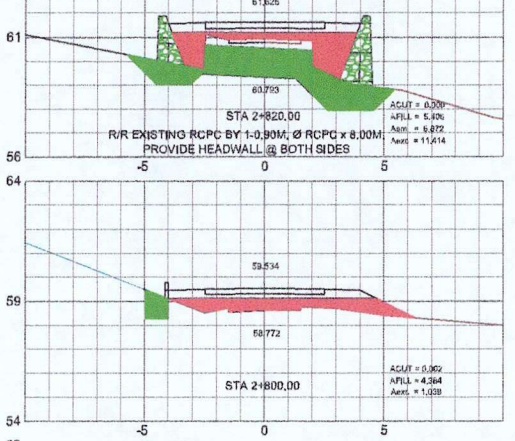

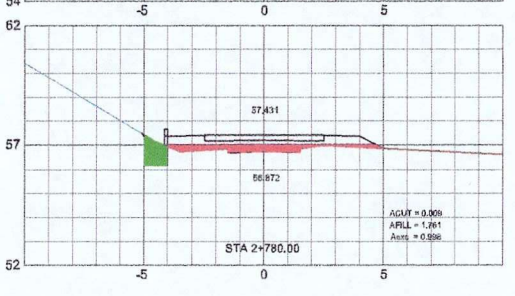

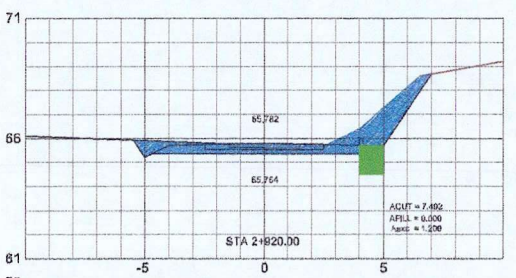

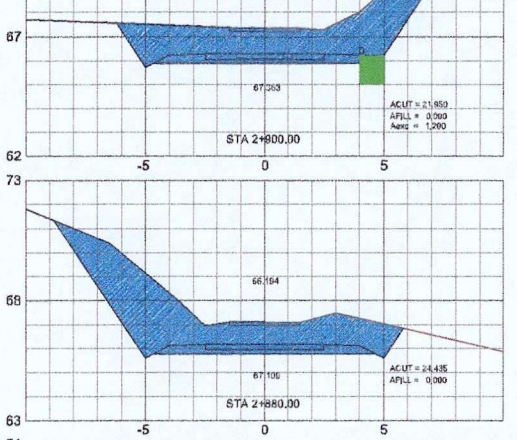

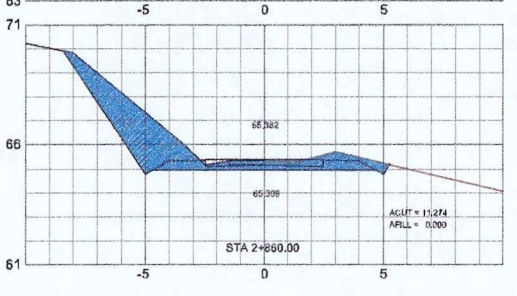

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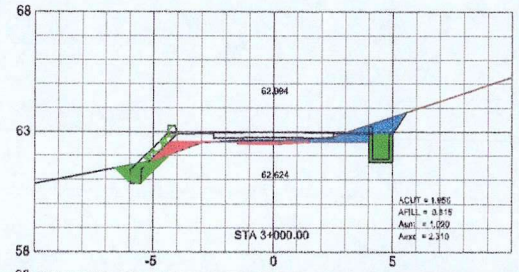

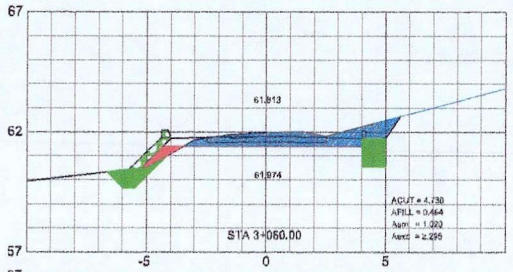

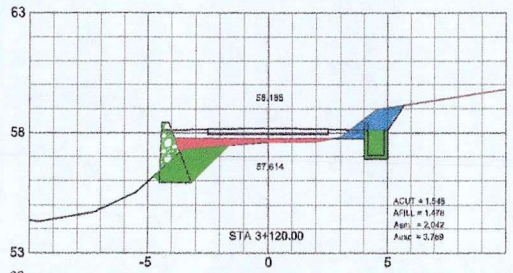

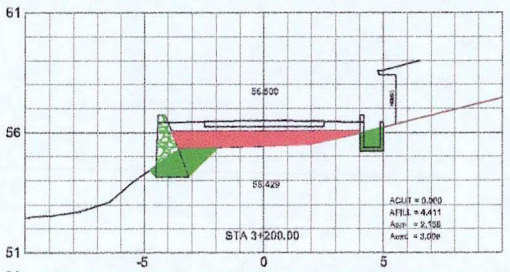

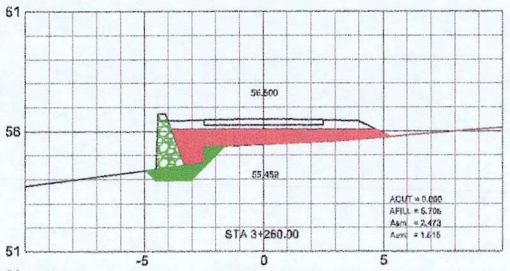

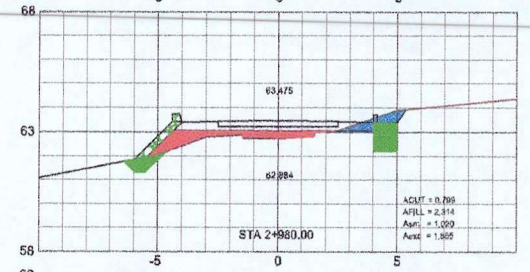

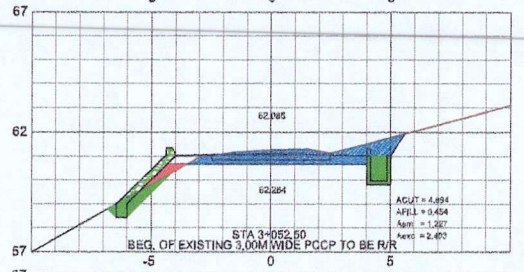

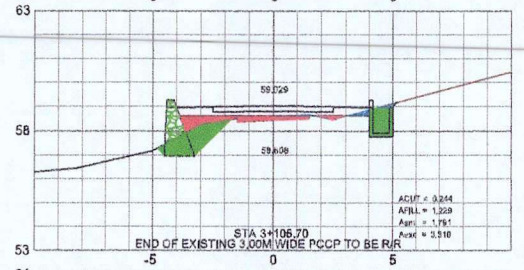

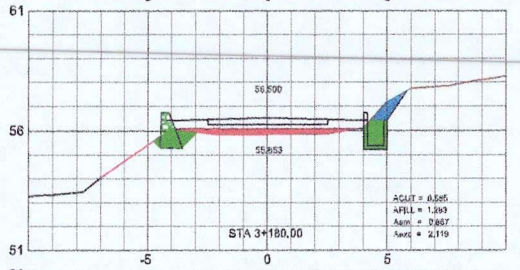

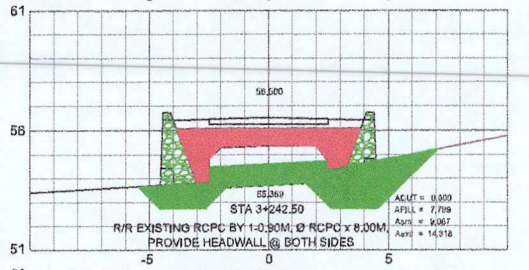

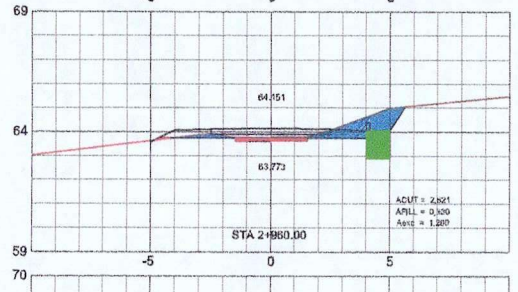

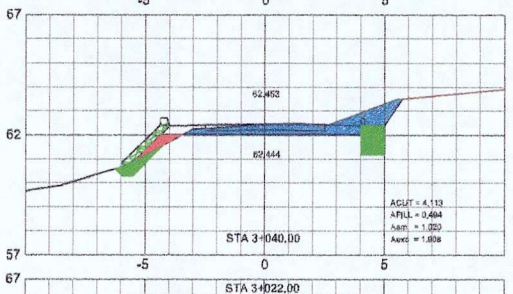

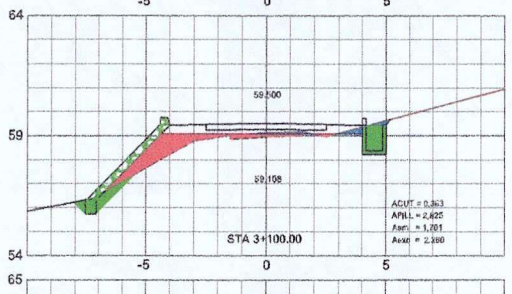

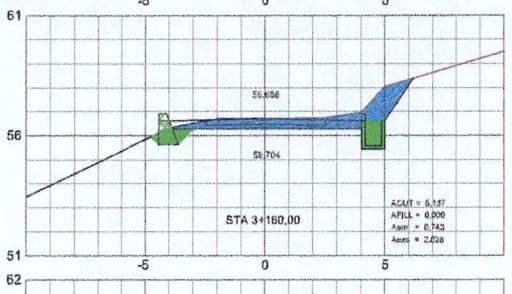

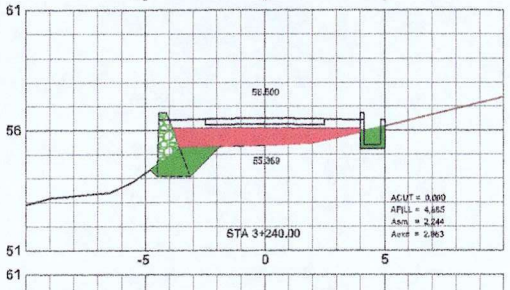

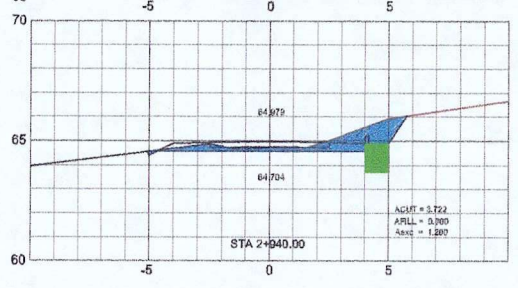

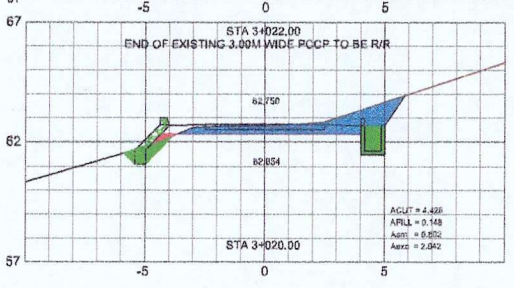

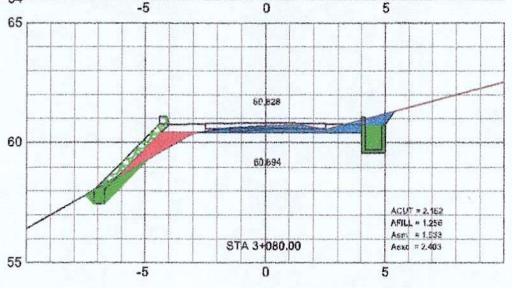

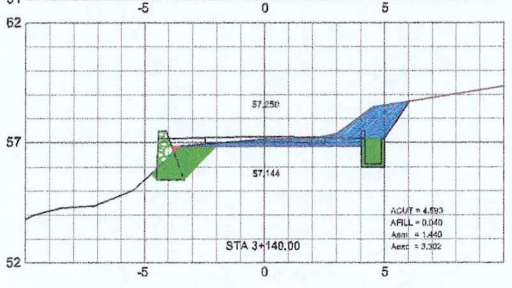

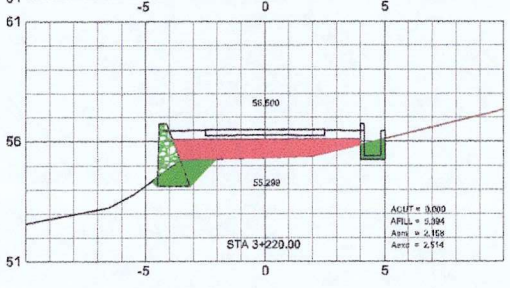

Republic of the Philippines
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Municipality of Bongabong

SP ID Number: PRDP-IR-R04B-ORM-007-BON-007-2019

Project Title: Concreting of Centro - Panluan - Balite, Hagan Farm to Market Road

Location: Hagan, Bongabong Oriental Mindoro

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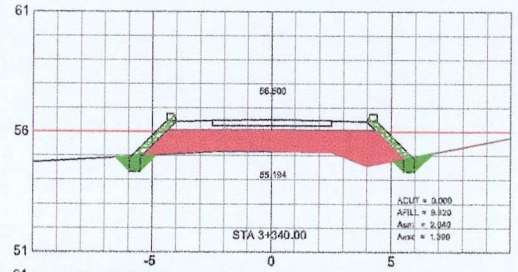

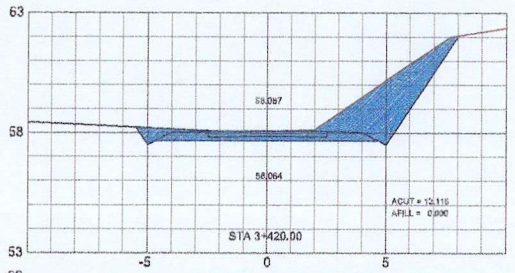

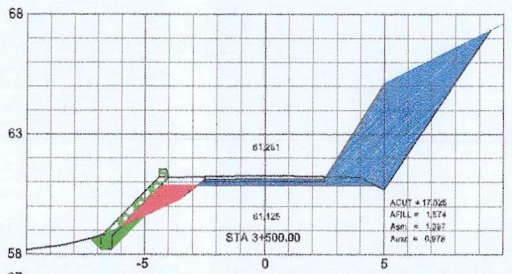

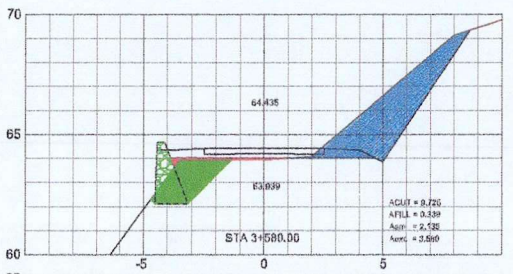

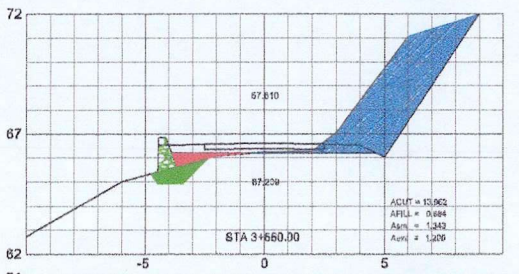

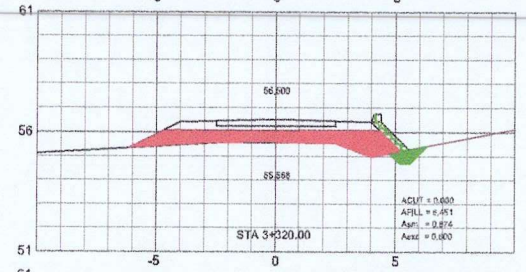

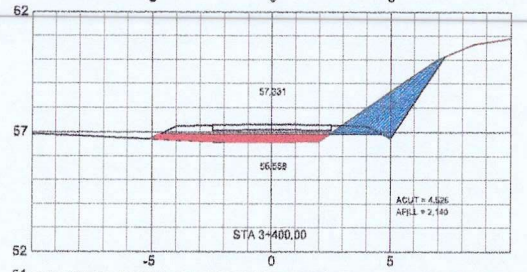

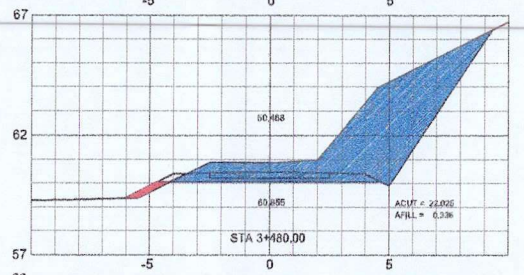

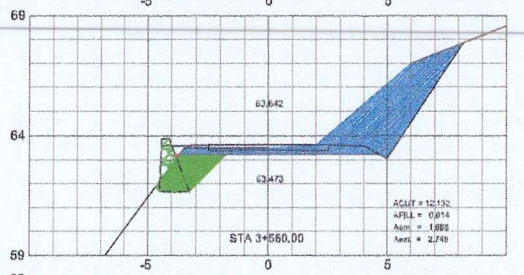

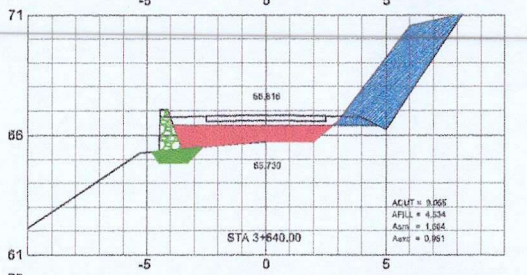

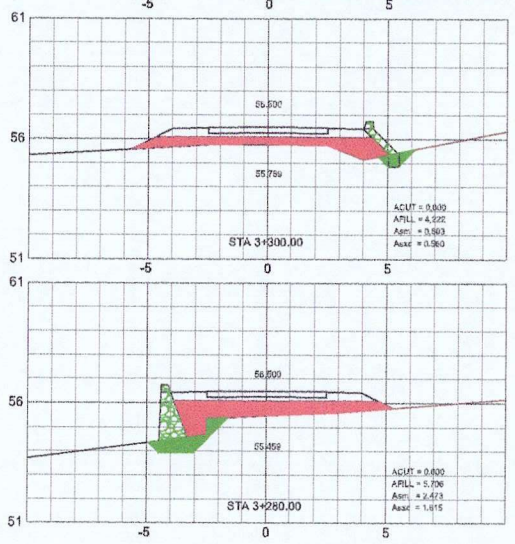

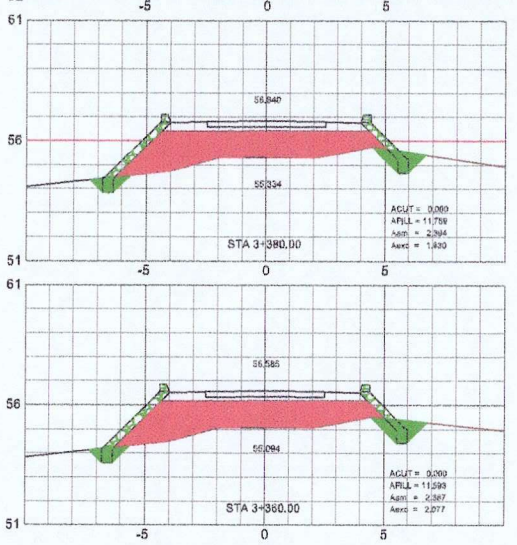

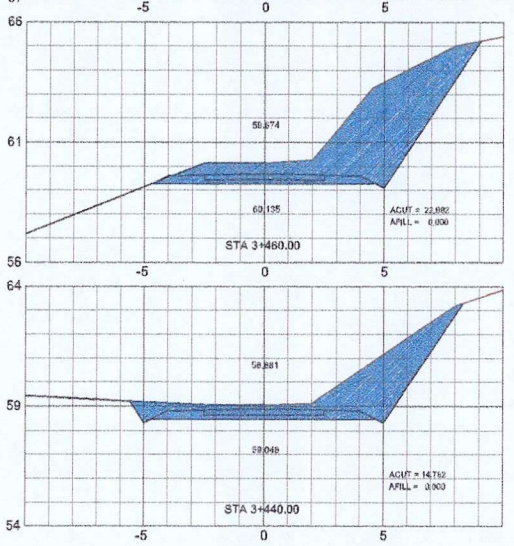

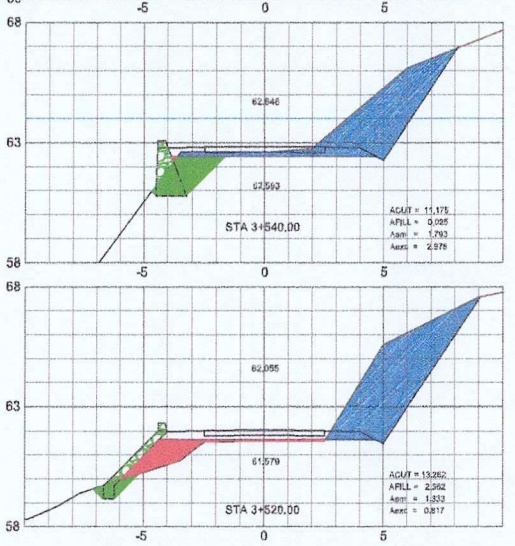

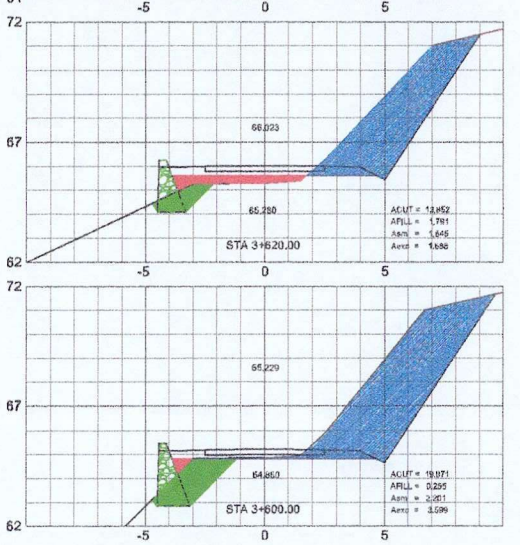

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Municipality of Bongabong

SP ID Number: PRDP-IR-R04B-ORM-007-BON-007-2019

Project Title: Concreting of Centro - Panluan - Balite, Hagan Farm to Market Road

Location: Hagan, Bongabong Oriental Mindoro

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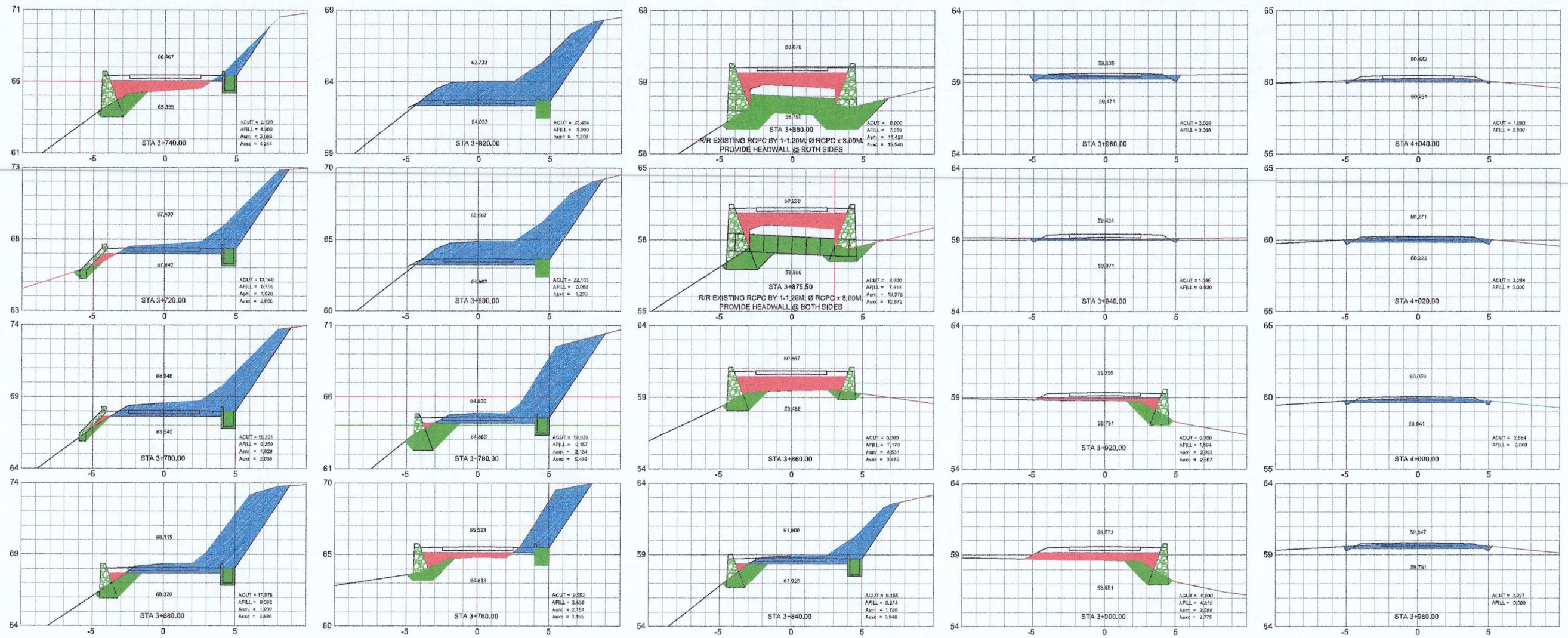

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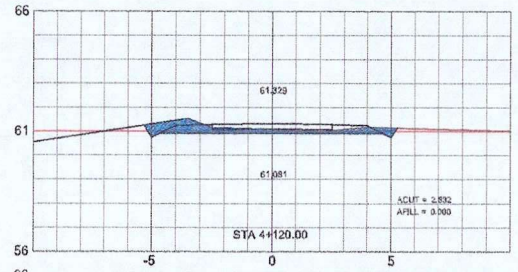

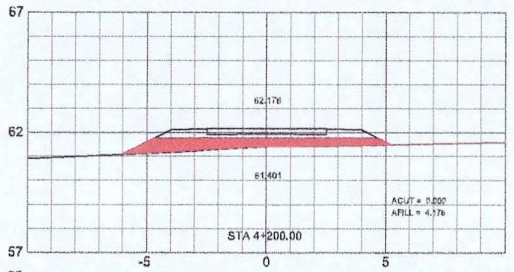

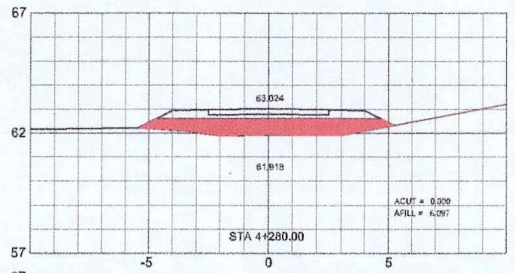

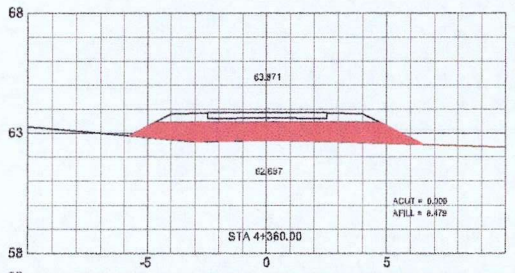

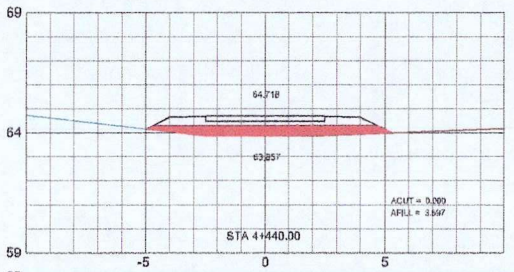

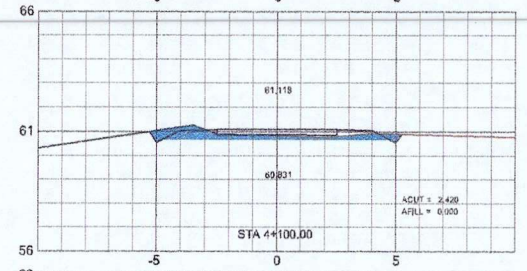

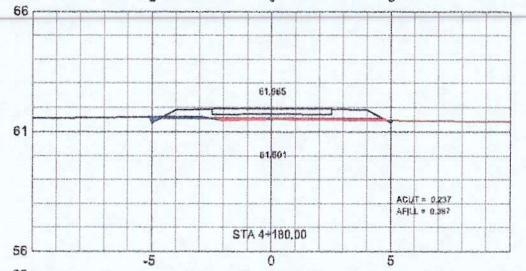

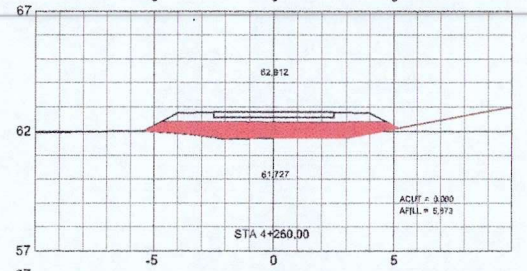

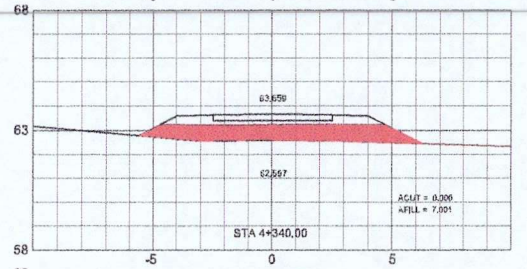

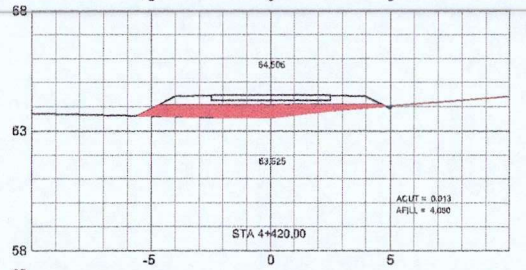

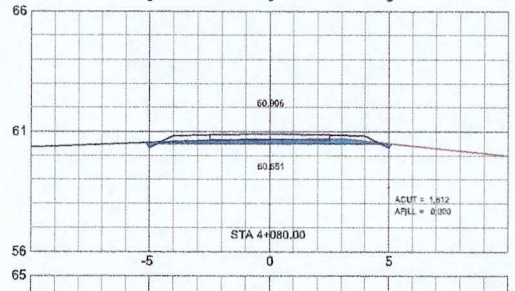

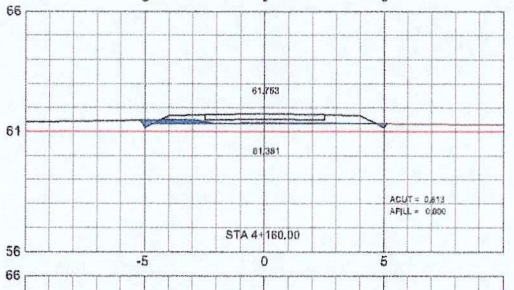

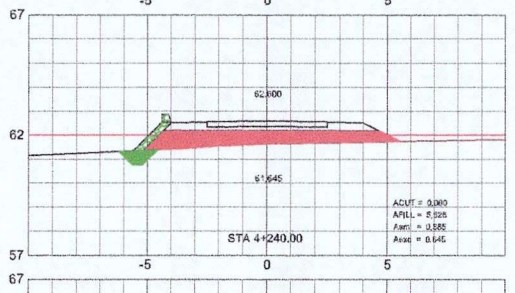

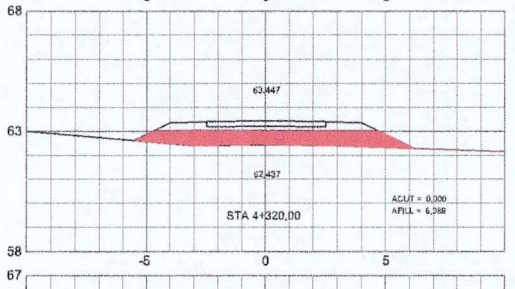

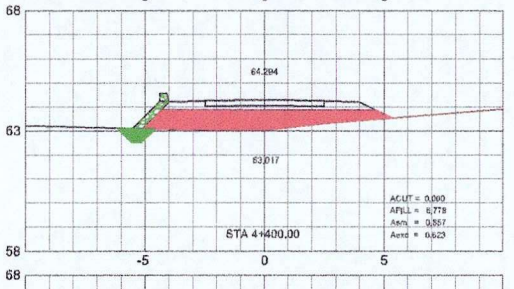

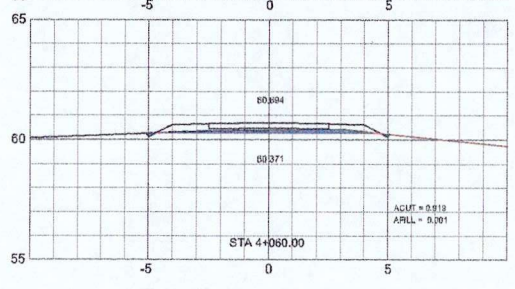

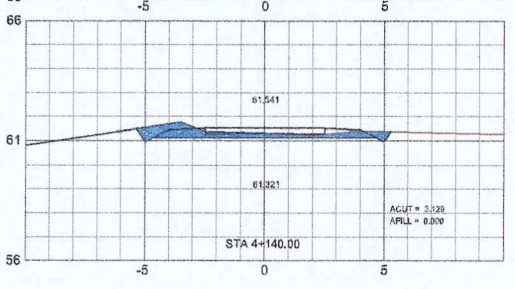

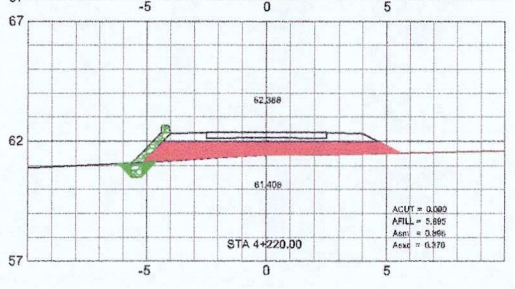

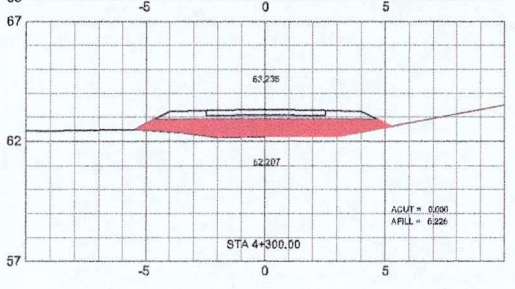

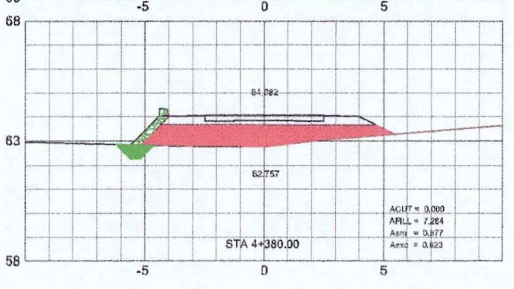

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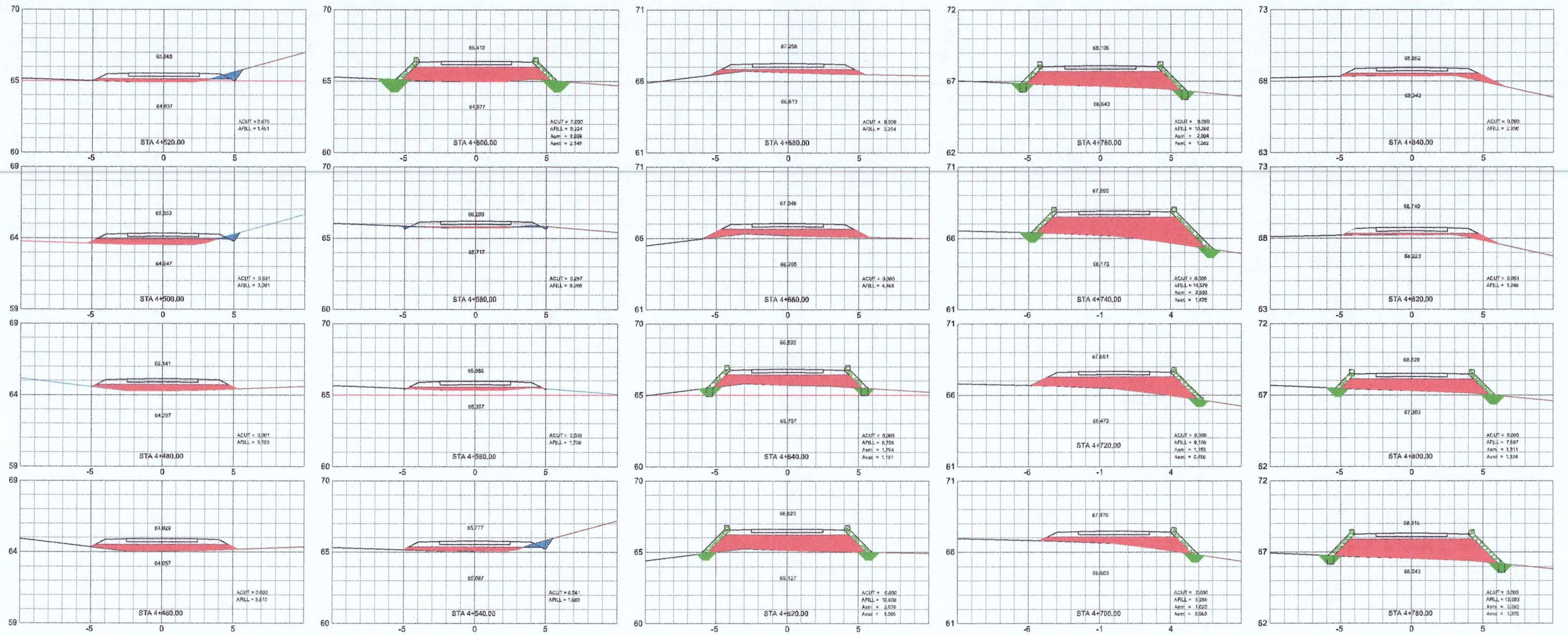

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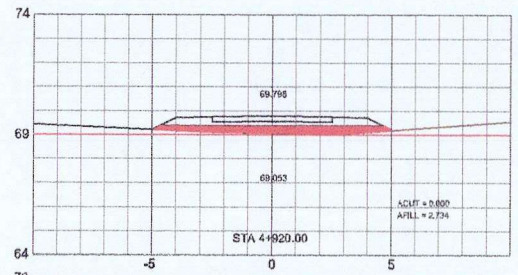

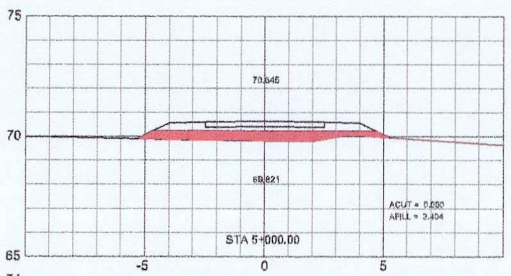

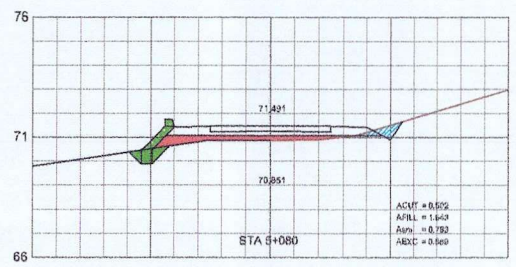

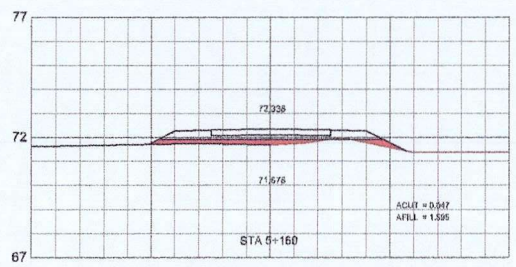

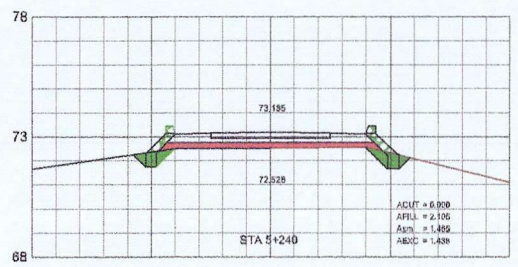

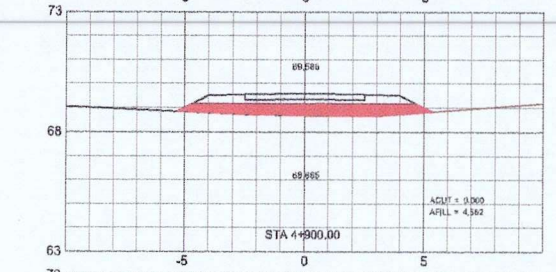

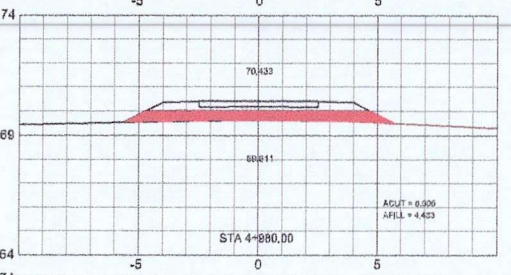

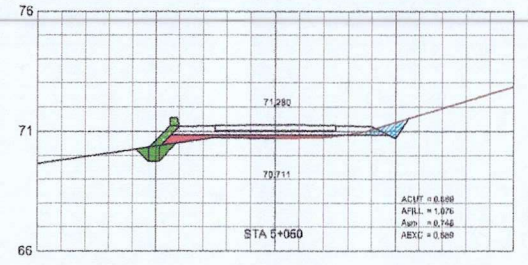

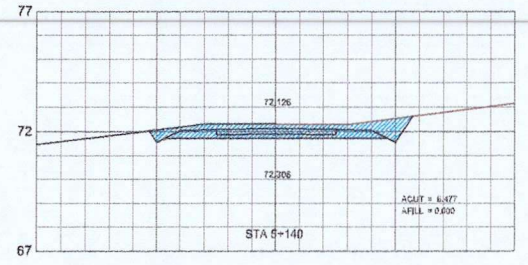

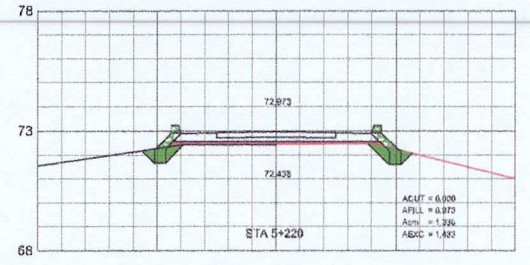

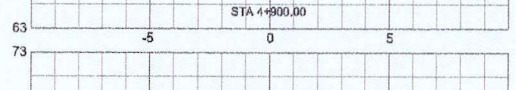

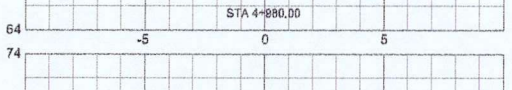

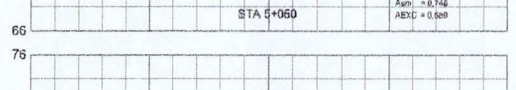

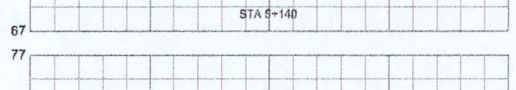

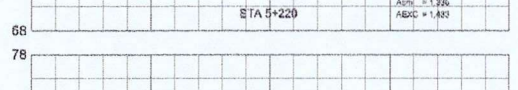

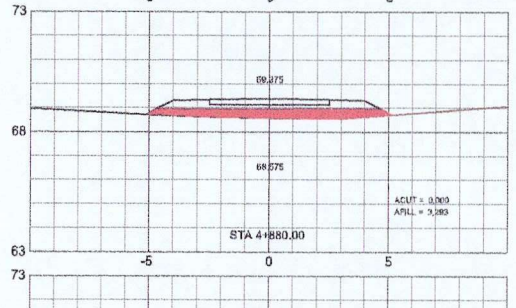

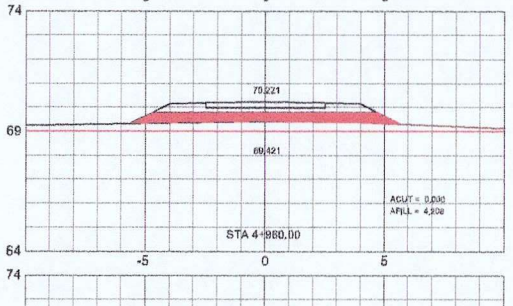

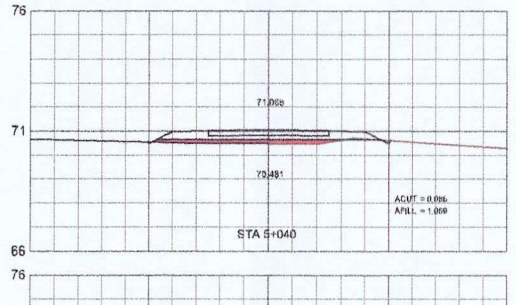

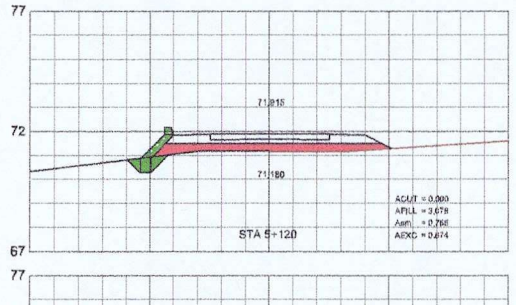

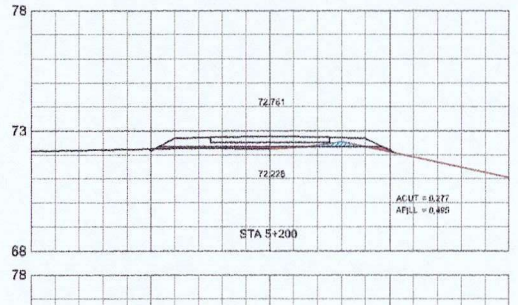

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Province of Oriental Mindoro
Municipality of Bongabong

SP ID Number: PRDP-IR-R04B-ORM-007-BON-007-2019

Project Title: Concreting of Centro - Panluan - Balite, Hagan Farm to Market Road

Location: Hagan, Bongabong Oriental Mindoro

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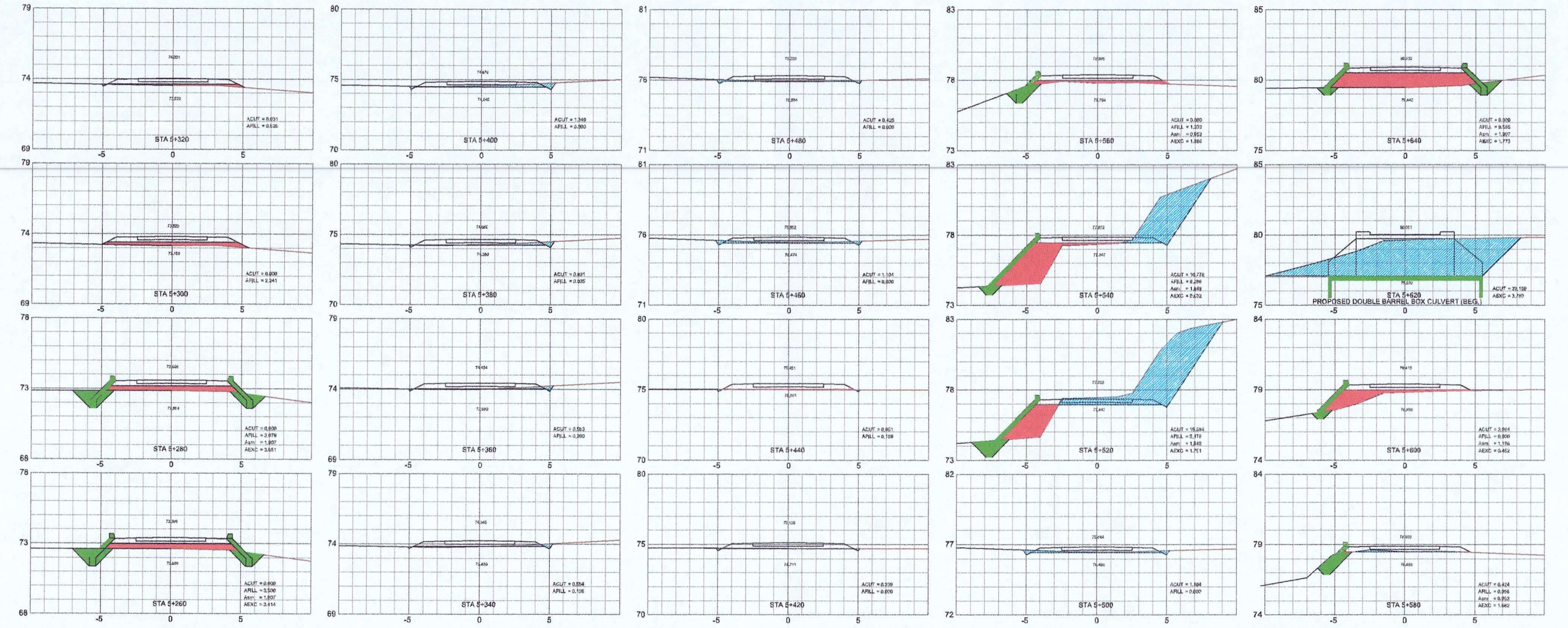
JOSE VINCENT C. GALICA, C.E. Draftsman III	OLIVIA C. CORONEL, C.E., EnP. Assistant Municipal Engineer / OIC MEO Municipality of Bongabong	GREGORIO S. REYES, EnP. Municipal Planning and Development Coordinator Municipality of Bongabong	ELEGIO A. MALALUAN, O.D. Municipal Mayor Municipality of Bongabong	• CROSS SECTION @ STA. 4+860 - STA. 5+240	C 30 55



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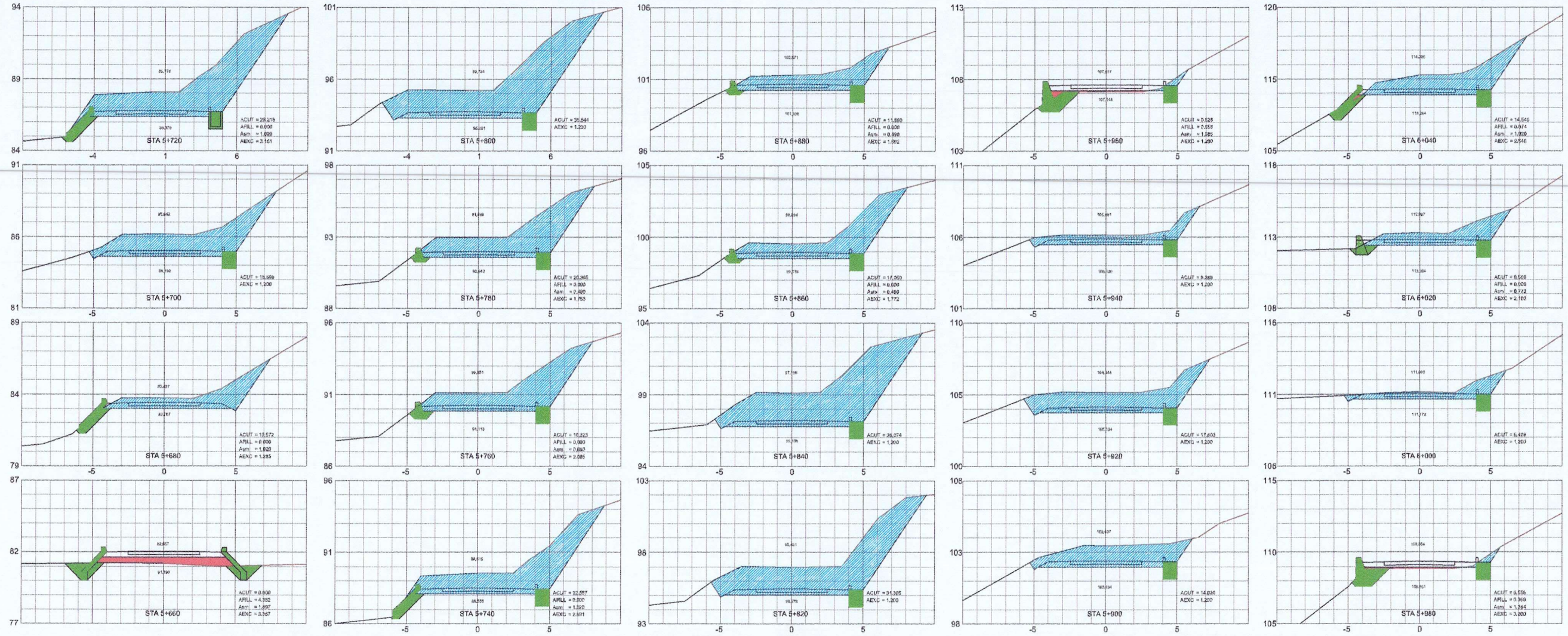

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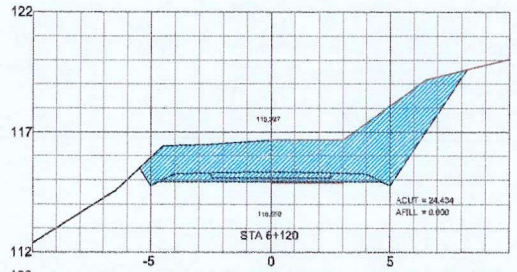

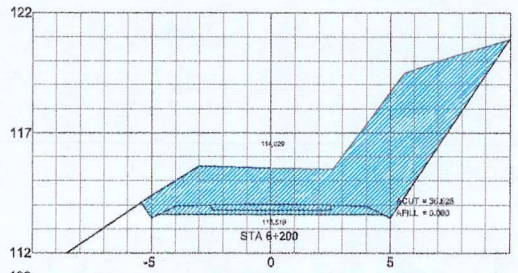

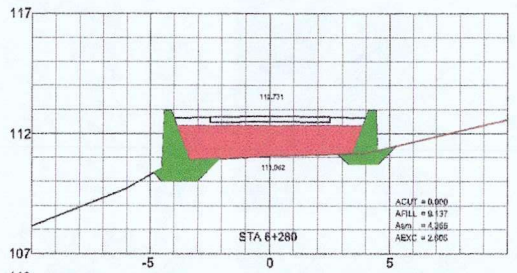

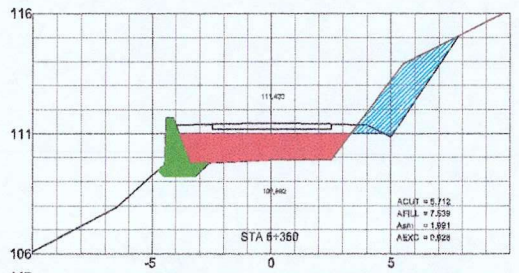

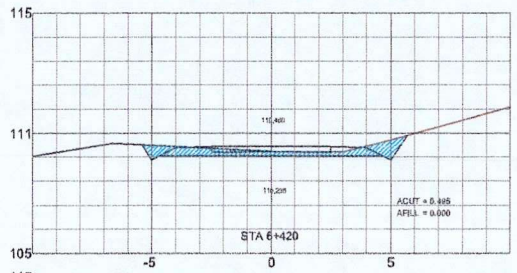

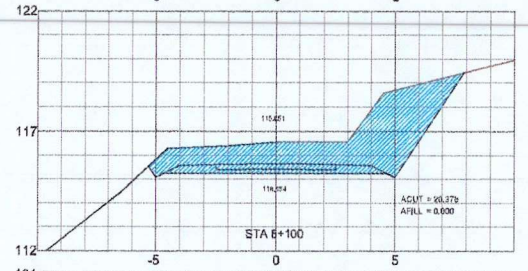

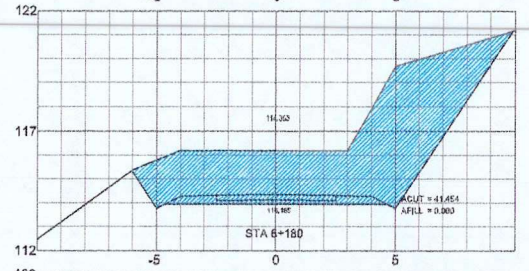

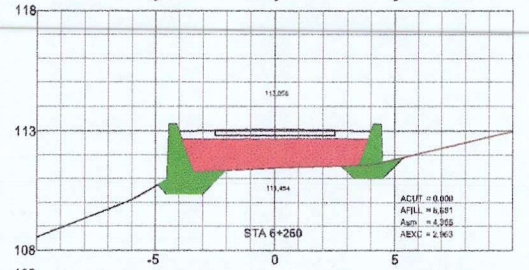

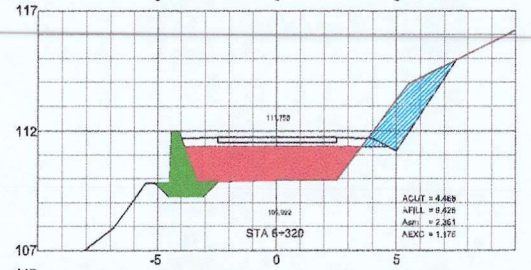

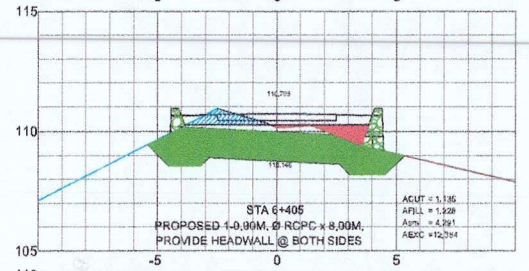

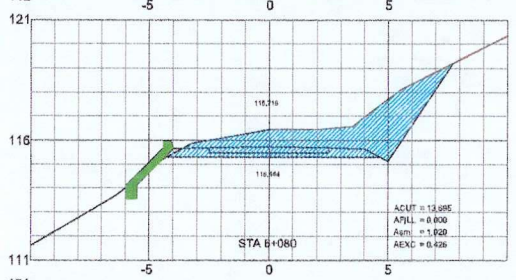

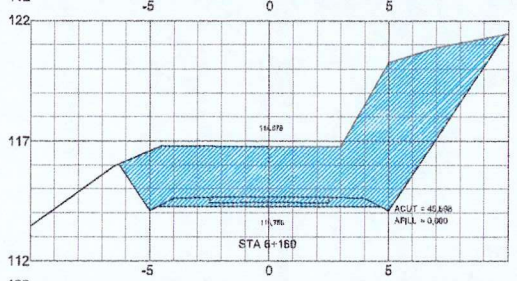

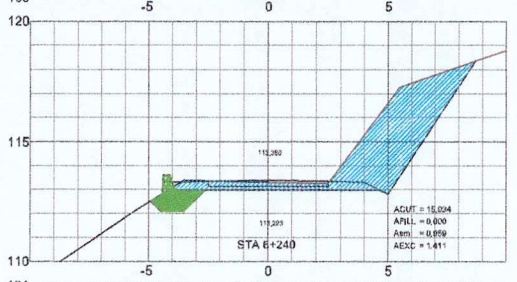

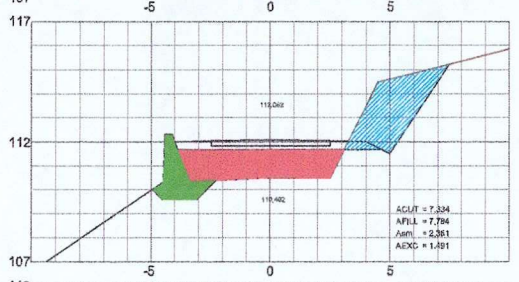

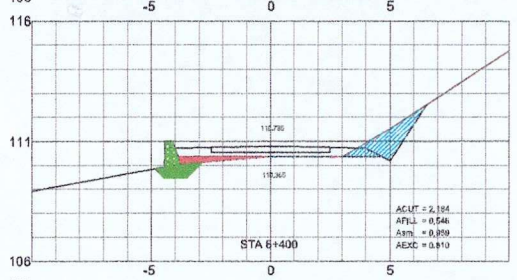

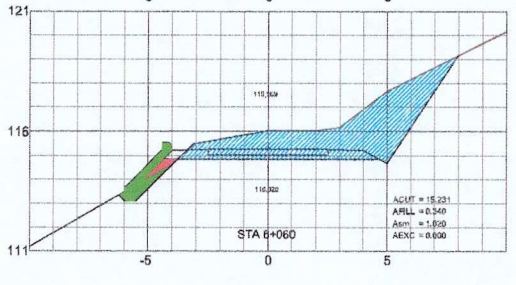

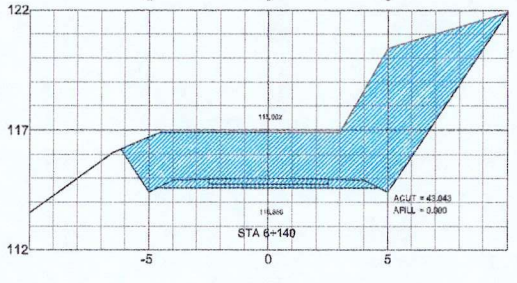

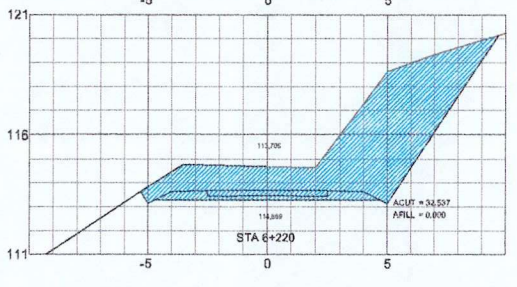

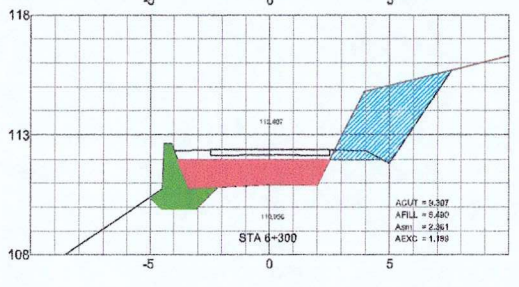

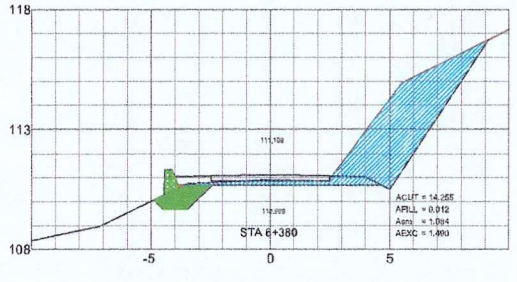

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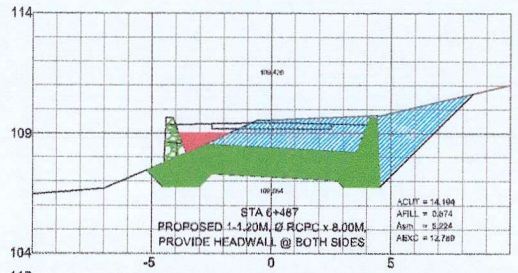

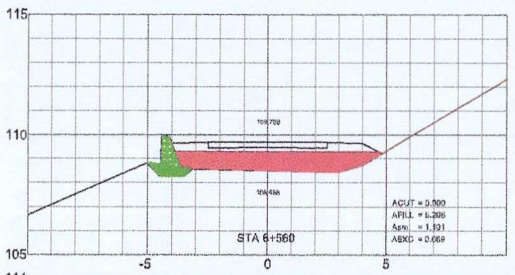

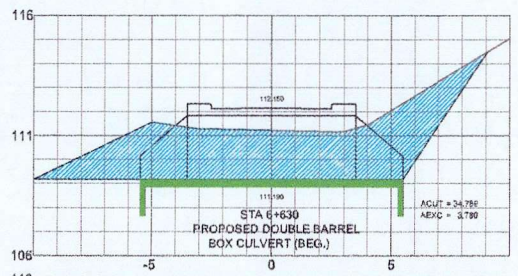

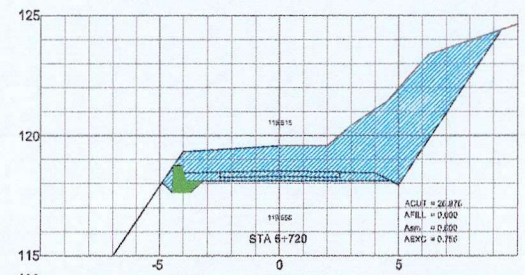

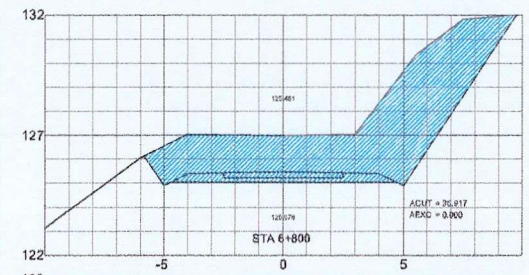

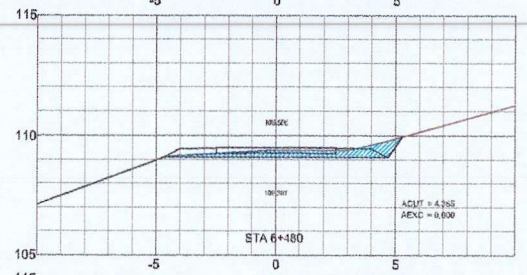

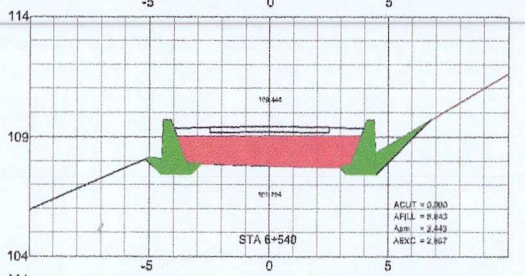

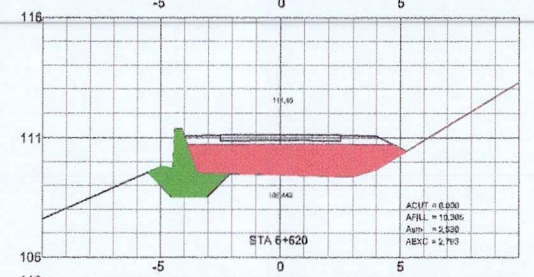

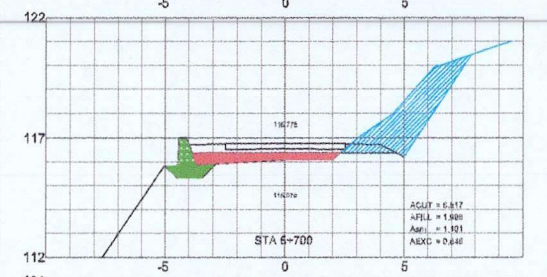

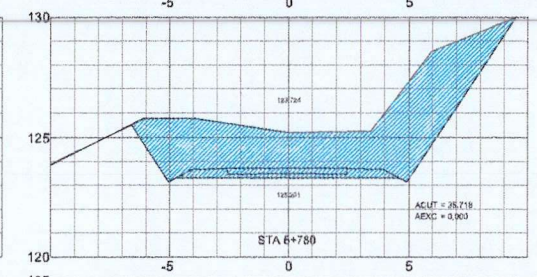

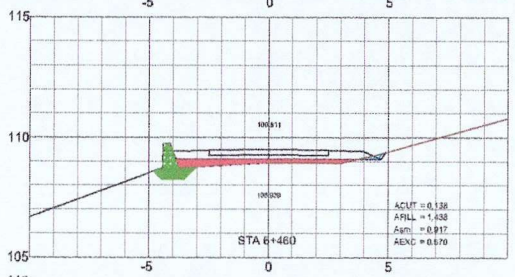

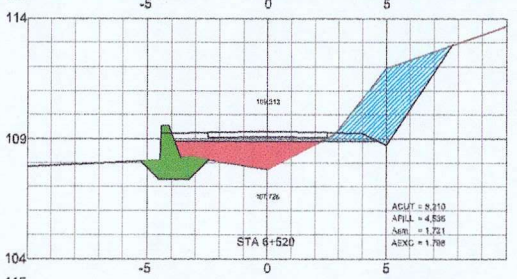

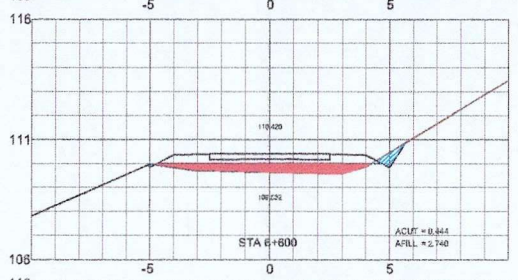

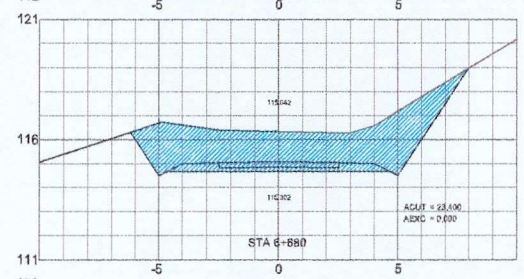

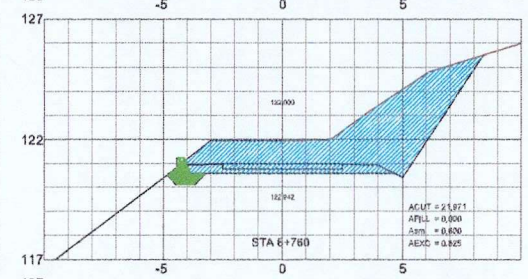

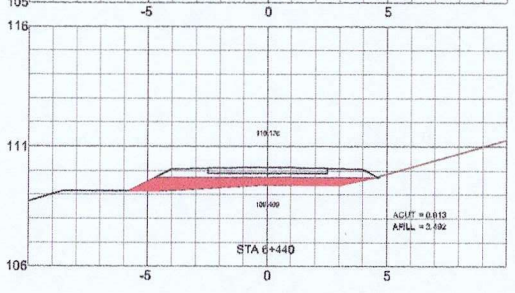

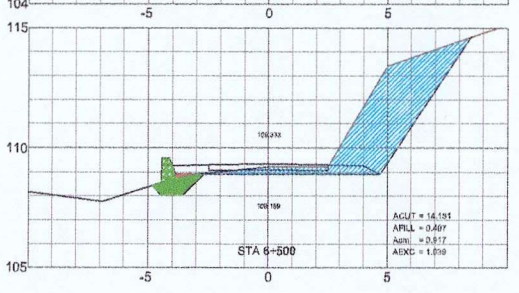

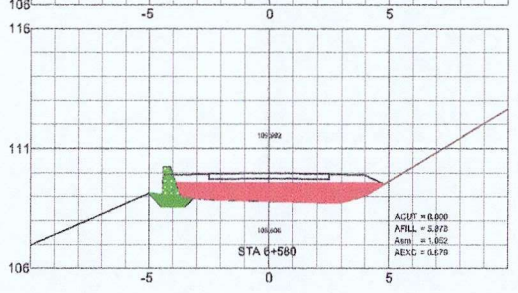

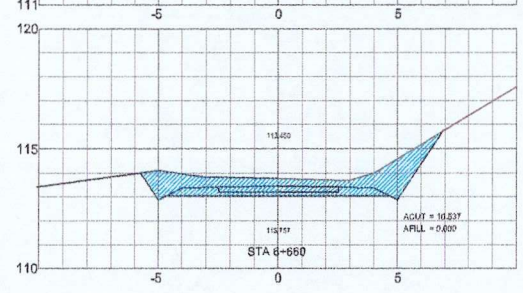

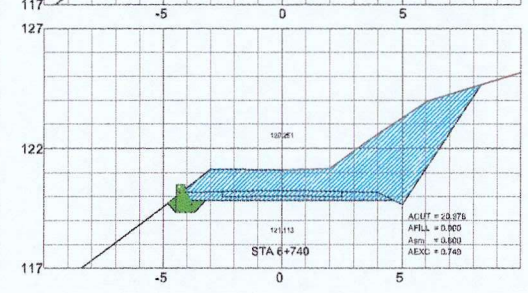

Republic of the Philippines
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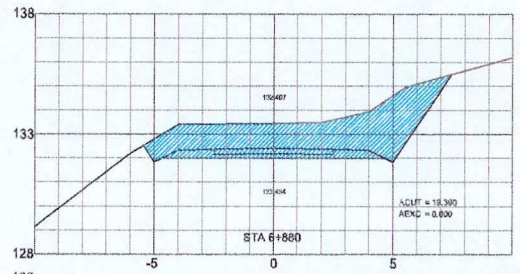
Philippine Rural Development Project
Province of Oriental Mindoro
Municipality of Bongabong

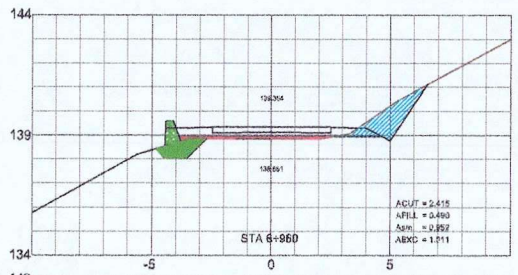
SP ID Number: PRDP-IR-R04B-ORM-007-BON-007-2019

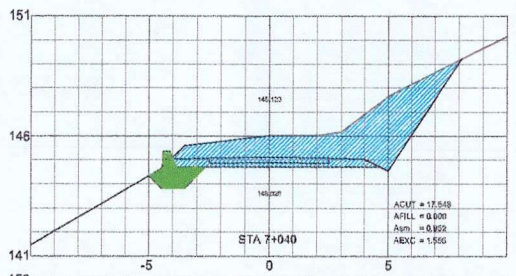
Project Title: Concreting of Centro - Panluan - Balite, Hagan Farm to Market Road

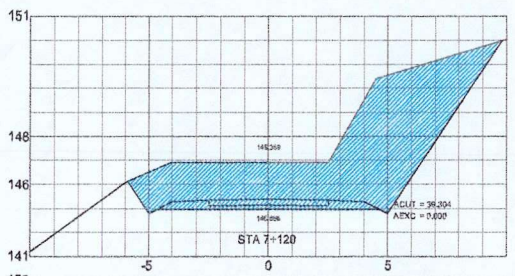
Location: Hagan, Bongabong Oriental Mindoro

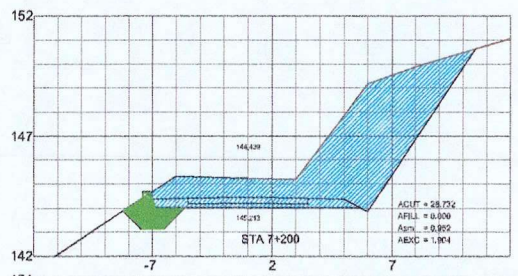
Prepared by:	Checked by:	Recommending Approval:	Approved by:	Sheet Content:	Sheet No.
JOSE VINCENT C. GALIGA, C.E. Draftsman III	OLIVIA C. CORONEL, C.E., EnP. Assistant Municipal Engineer / OIC MEO Municipality of Bongabong	GREGORIO S. REYES, EnP. Municipal Planning and Development Coordinator Municipality of Bongabong	ELEGIO A. MALALUAN, O.D. Municipal Mayor Municipality of Bongabong	CROSS SECTION @ STA. 6+440 - STA. 6+800	C 34 55

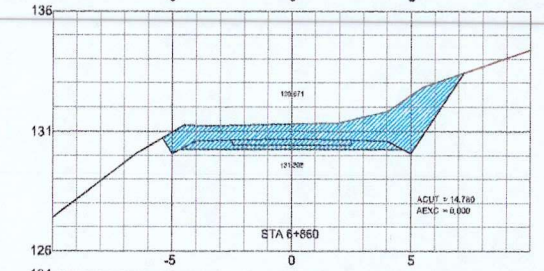


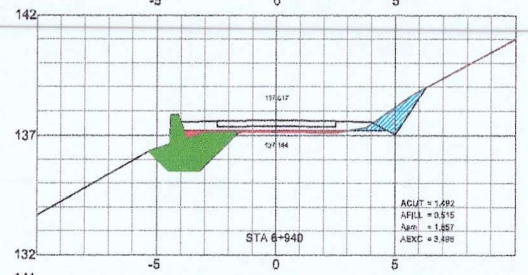


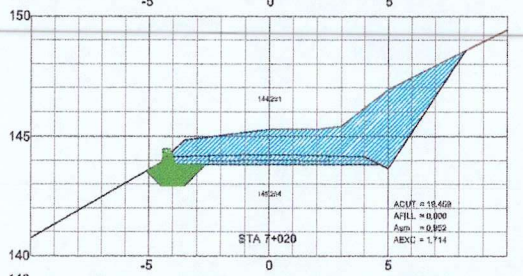


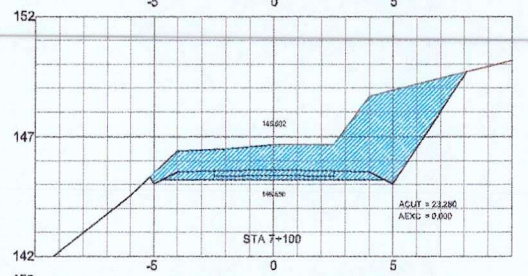


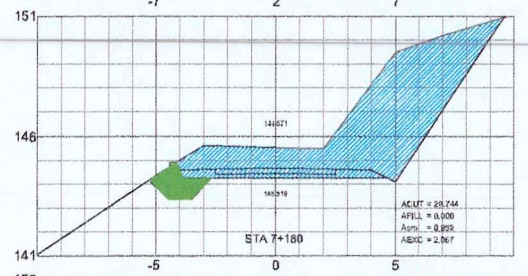


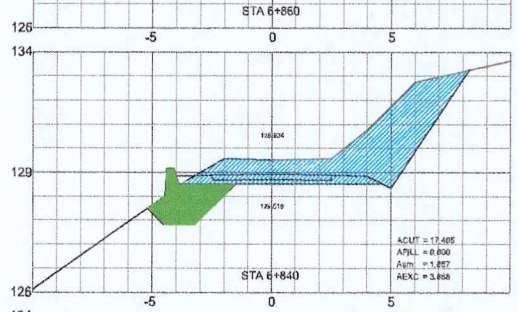


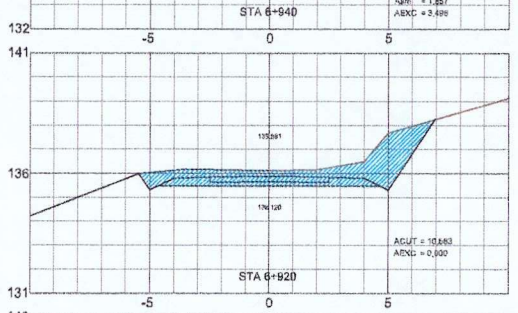


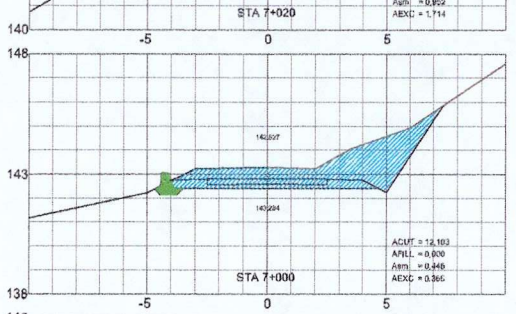


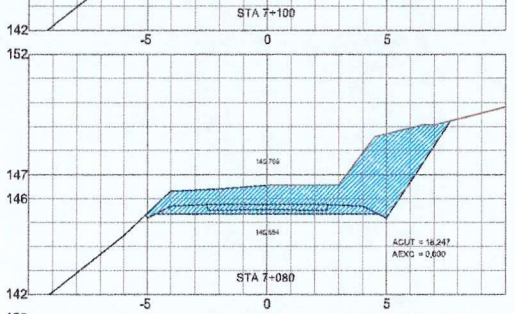


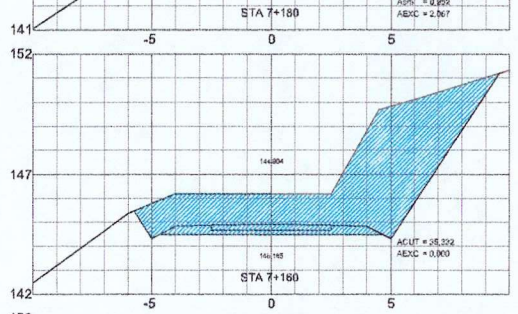


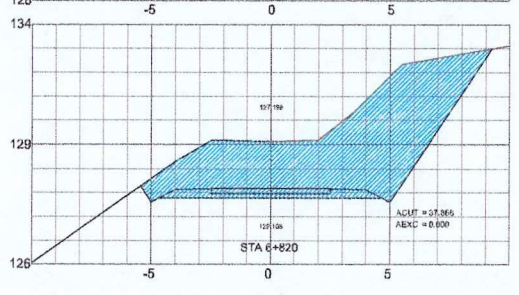


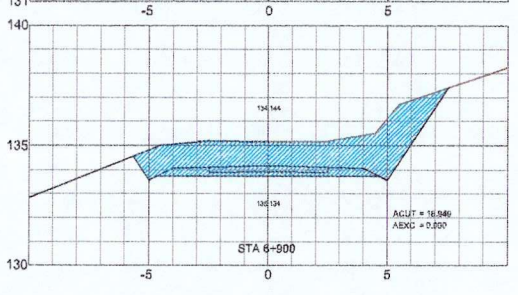


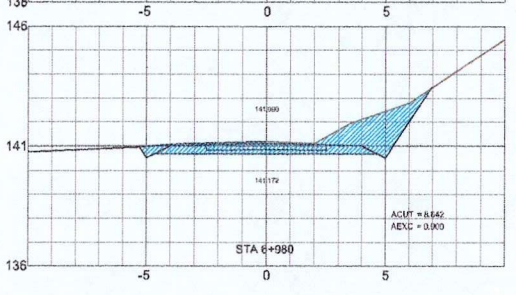


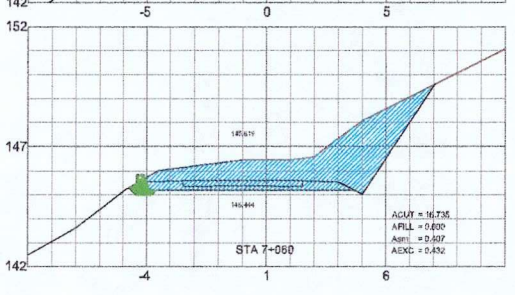


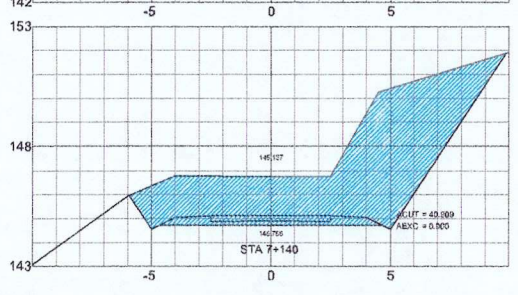












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Municipality of Bongabong

SP ID Number: PRDP-IR-R04B-ORM-007-BON-007-2019

Project Title: Concreting of Centro - Panluan - Balite, Hagan Farm to Market Road

Location: Hagan, Bongabong Oriental Mindoro

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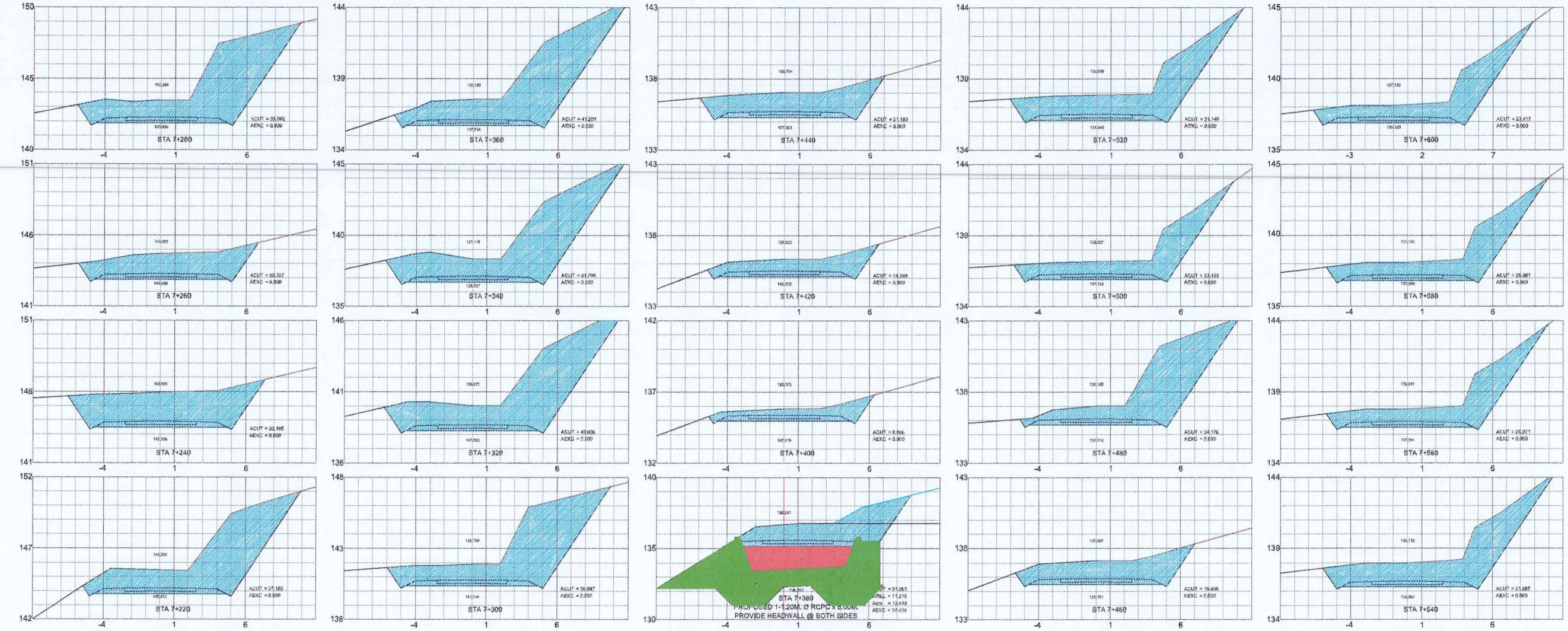

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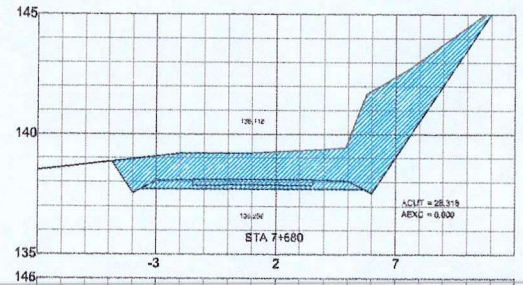

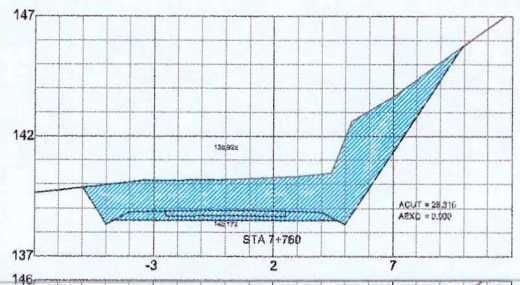

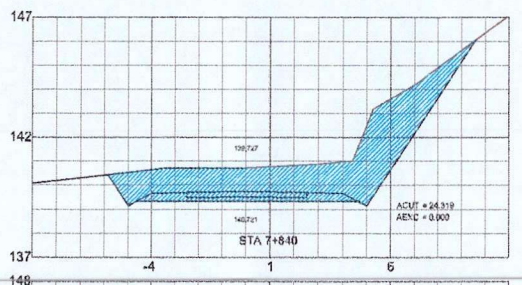

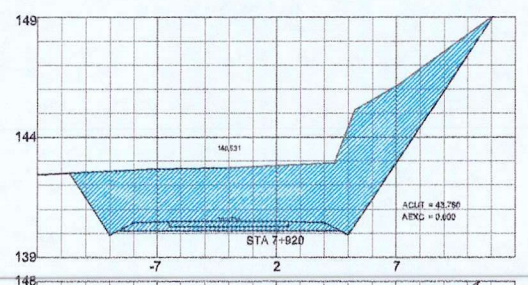

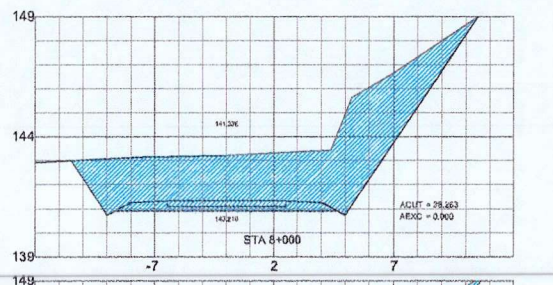

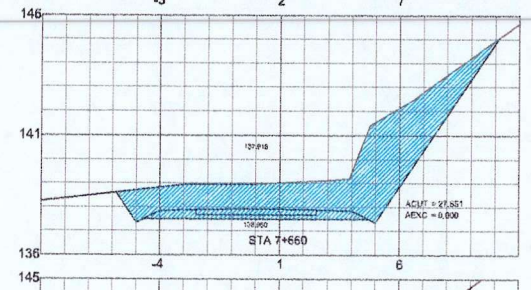

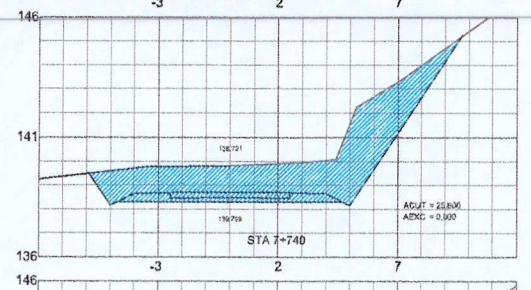

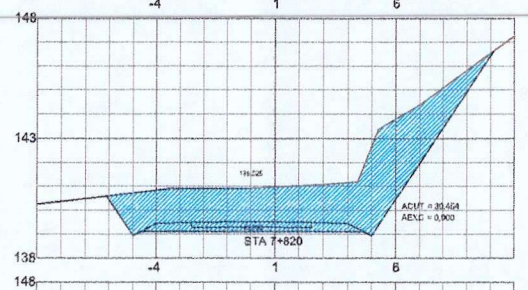

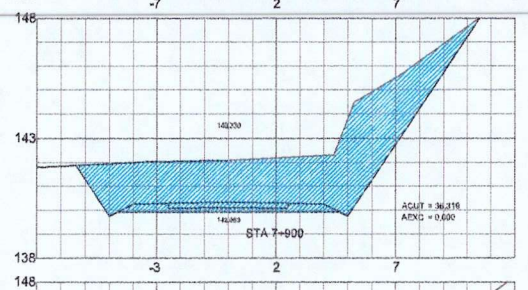

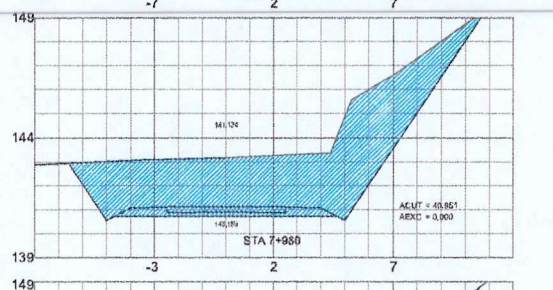

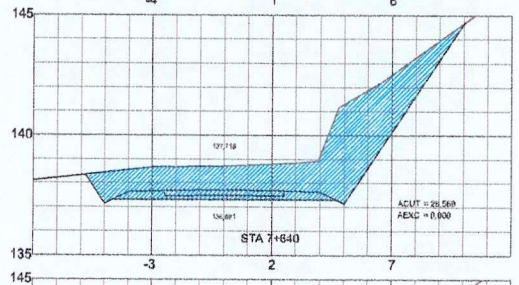

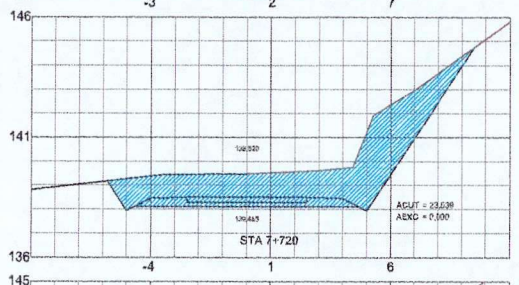

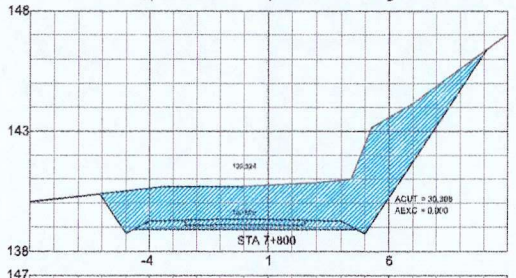

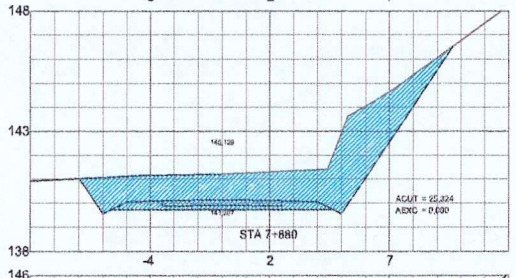

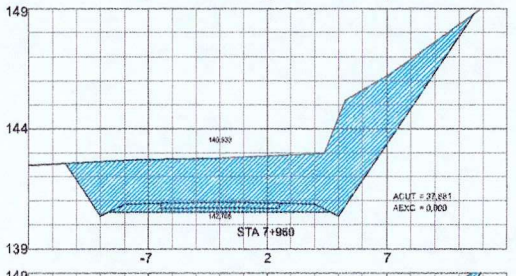

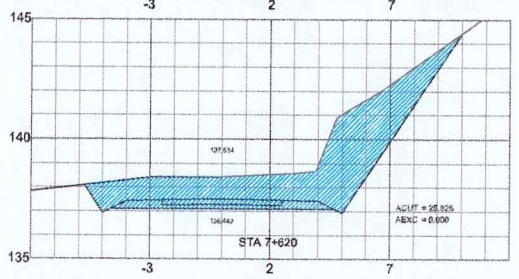

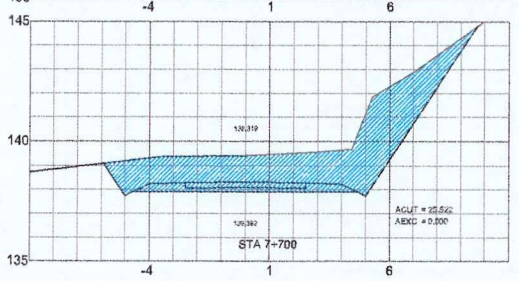

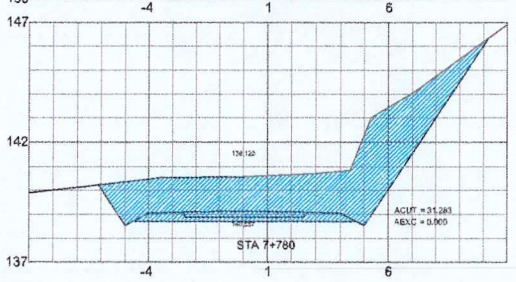

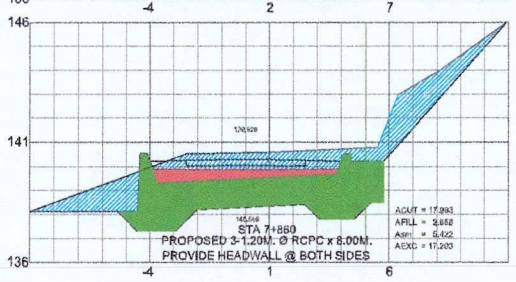

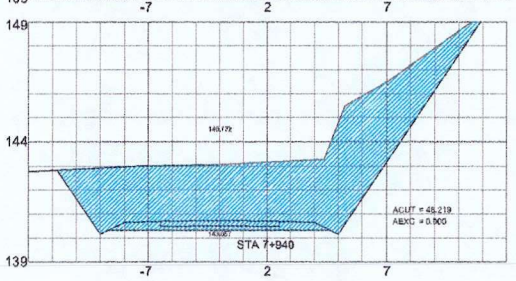

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Location: Hagan, Bongabong Oriental Mindoro

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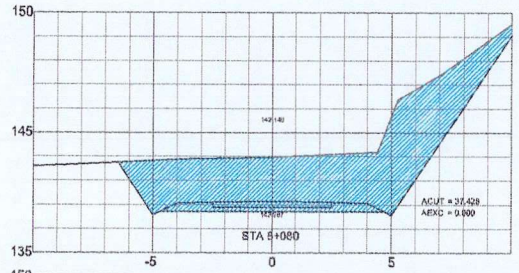
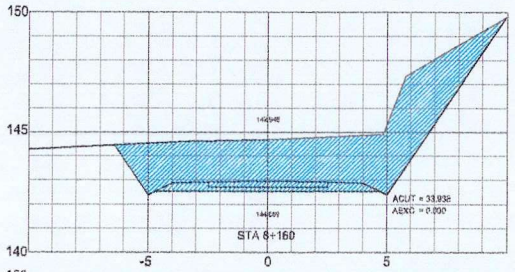
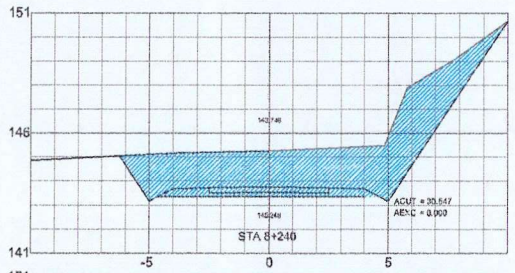
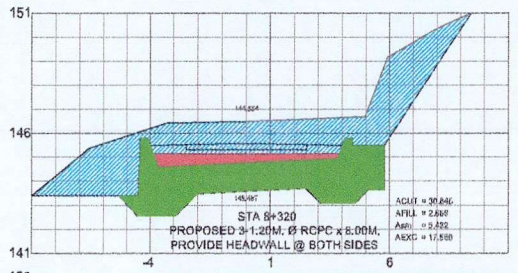
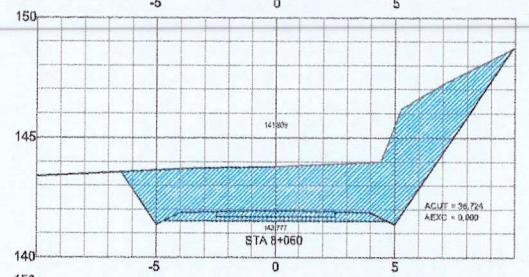
JOSE VINCENT C. GALIGA, C.E. Draftsman III	OLIVIA S. CORONEL, C.E.,EnP. Assistant Municipal Engineer / OIC MEO Municipality of Bongabong	GREGORIO S. REYES, EnP. Municipal Planning and Development Coordinator Municipality of Bongabong	ELEGIO A. MALALUAN, O.D. Municipal Mayor Municipality of Bongabong	• CROSS SECTION @ STA. 7+620 - STA. 8+000	C 37/55

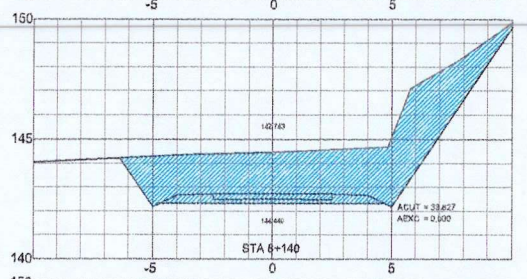


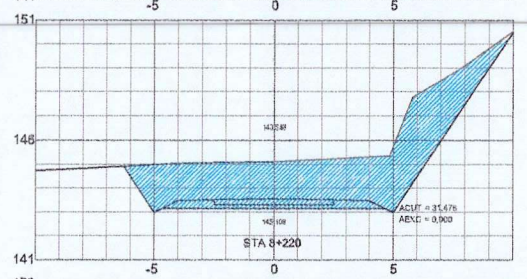


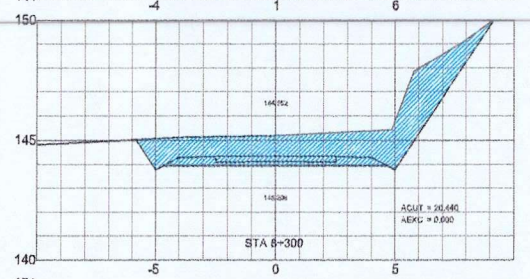


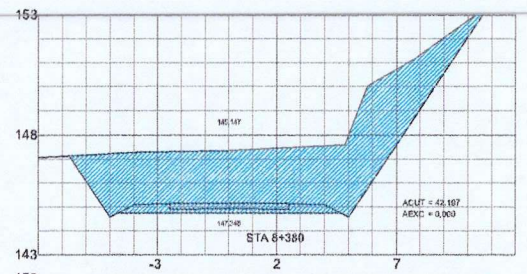


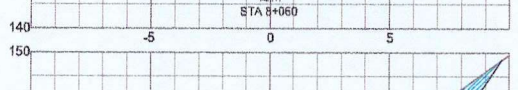


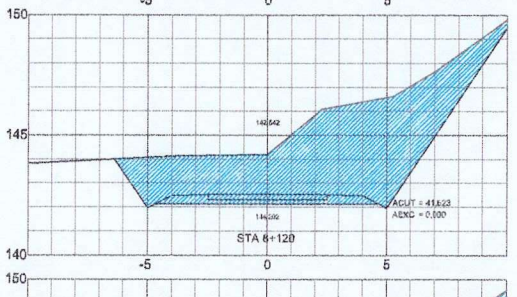


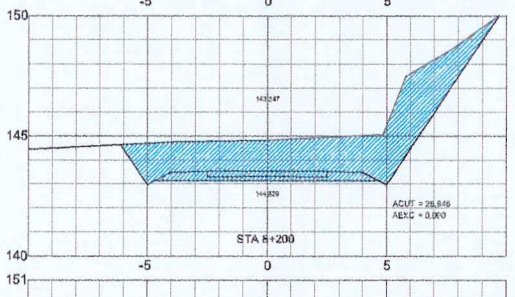


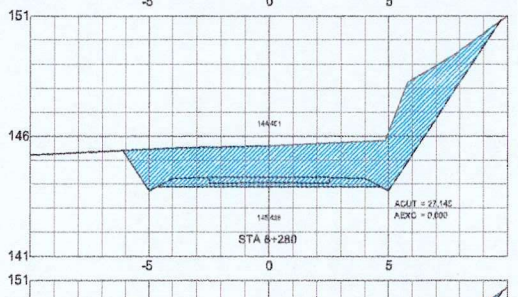


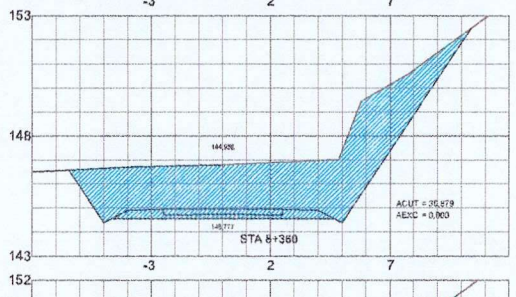


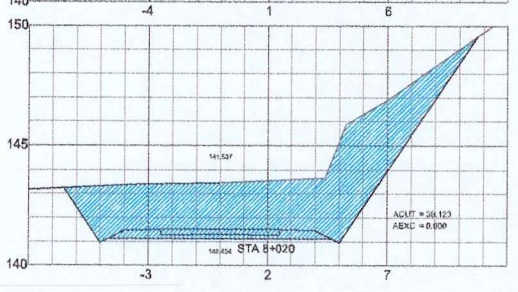


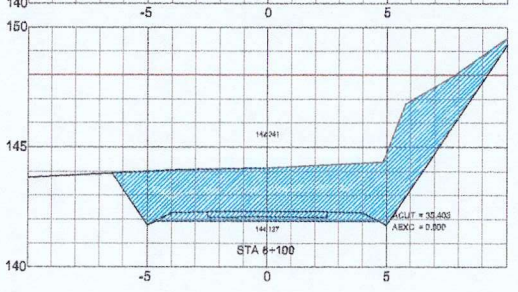


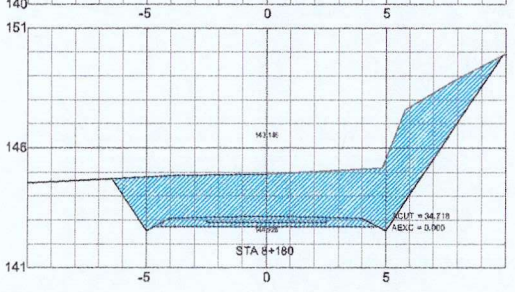


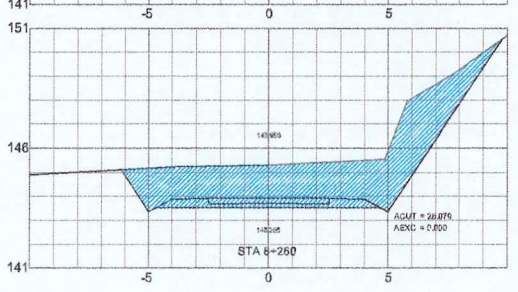


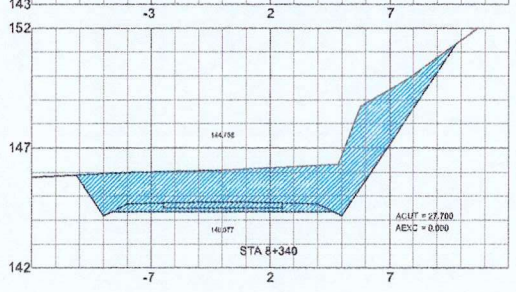












Republic of the Philippines
Department of Agriculture
Philippine Rural Development Project
Province of Oriental Mindoro
Municipality of Bongabong

SP ID Number: PRDP-IR-R04B-ORM-007-BON-007-2019

Project Title: Concreting of Centro - Panluan - Balite, Hagan Farm to Market Road

Location: Hagan, Bongabong Oriental Mindoro

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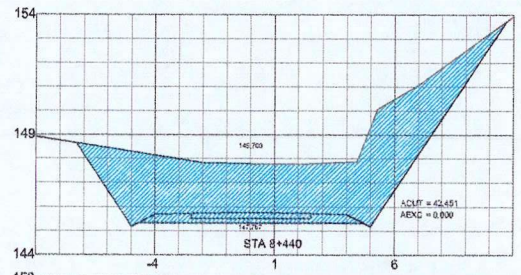

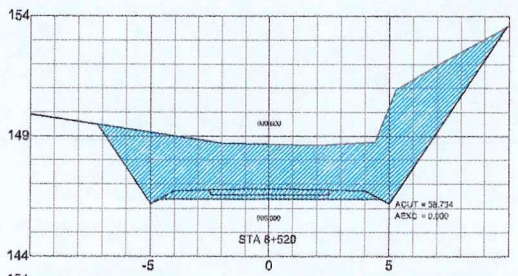

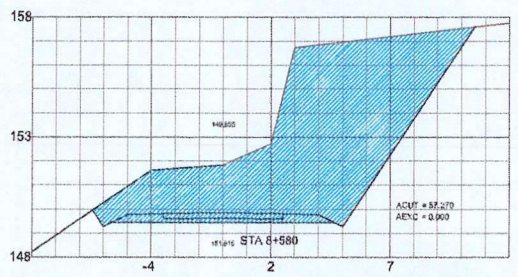

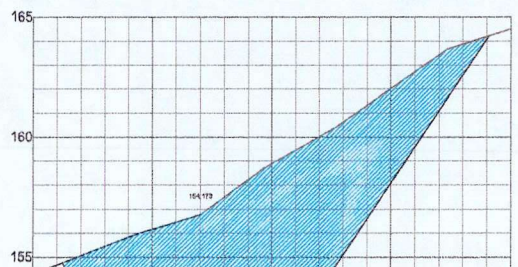

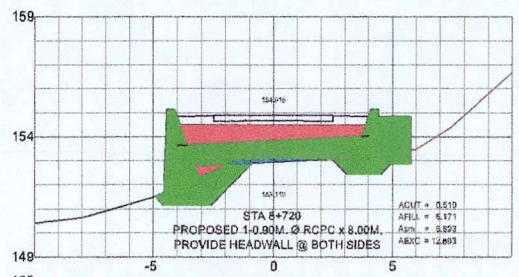

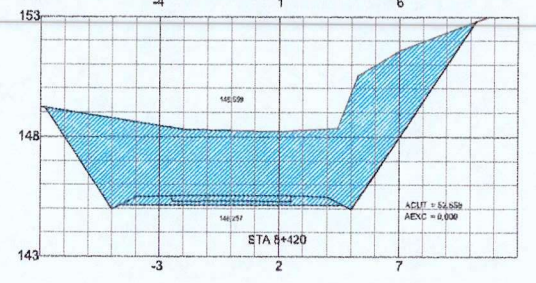

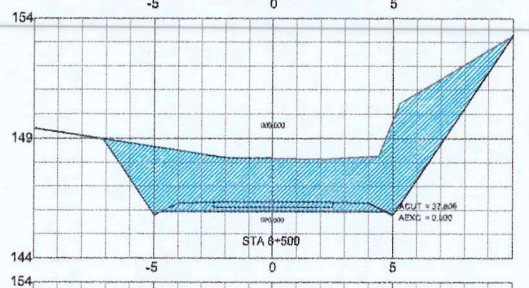

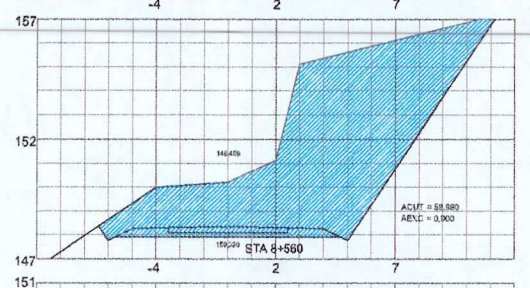

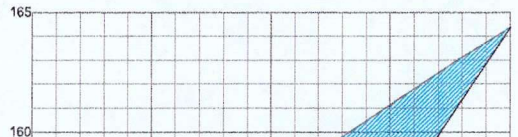

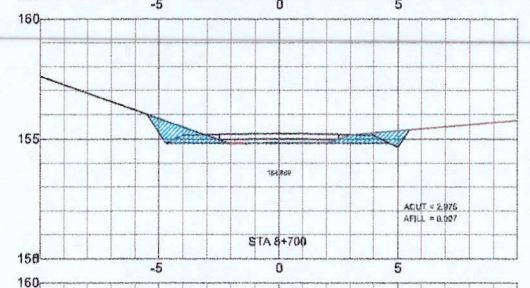

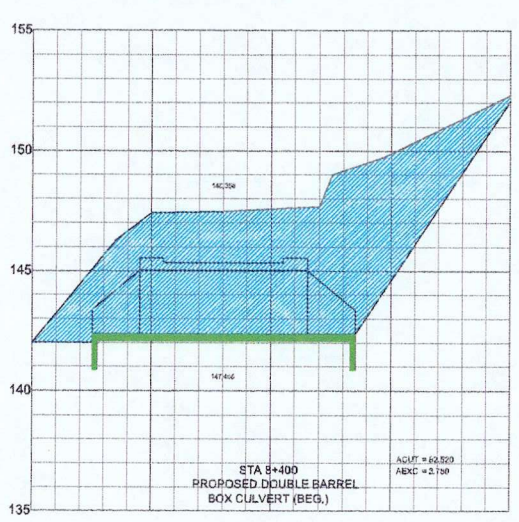

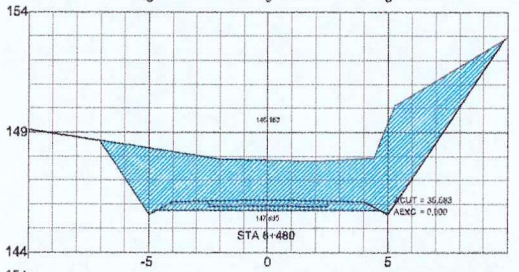

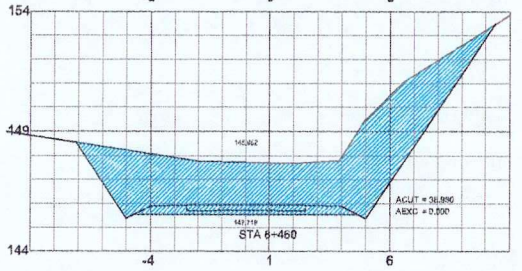

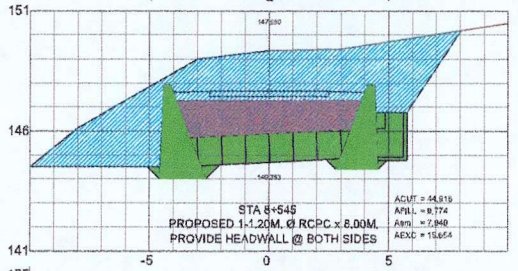

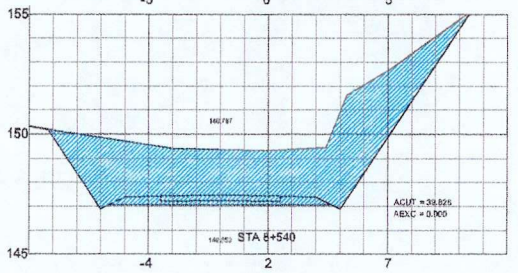

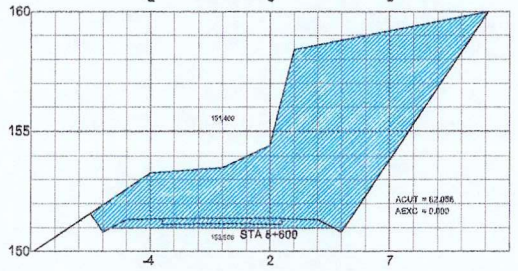

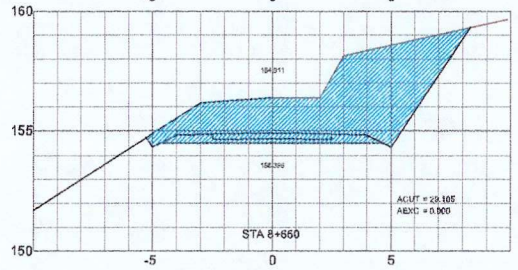

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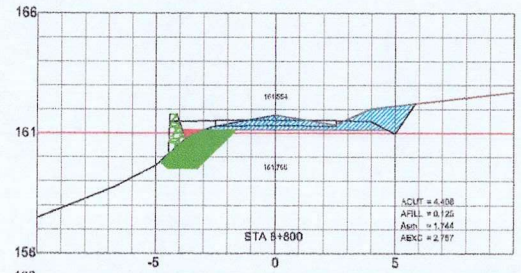

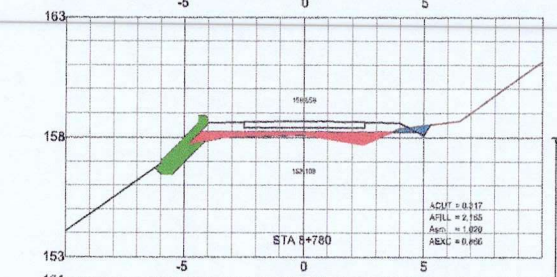

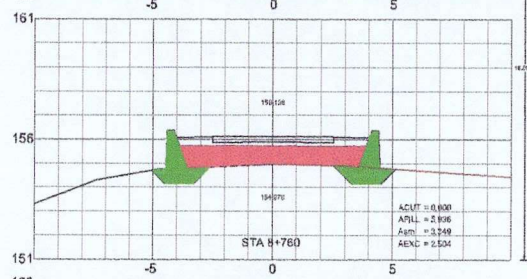

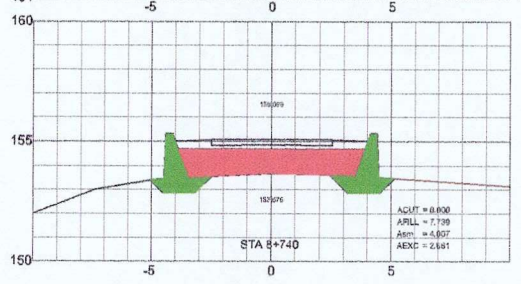

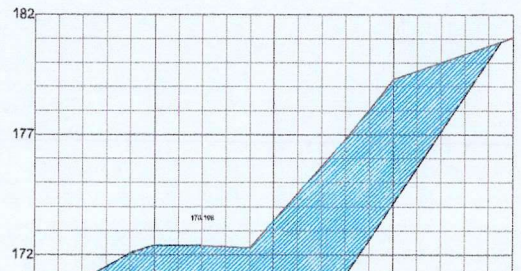

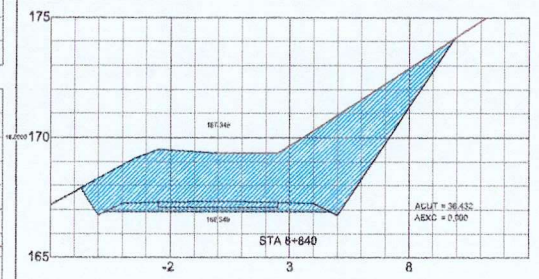

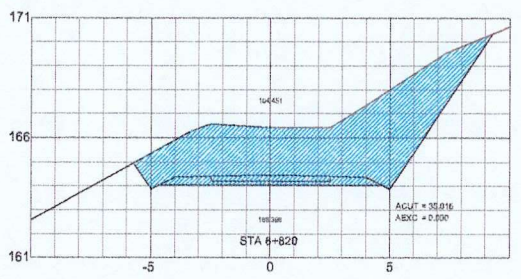

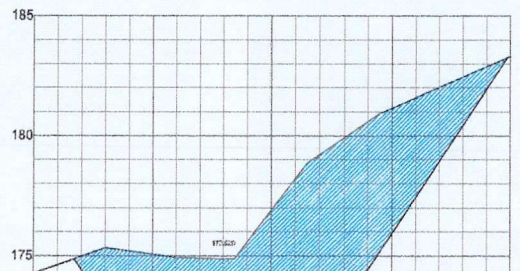

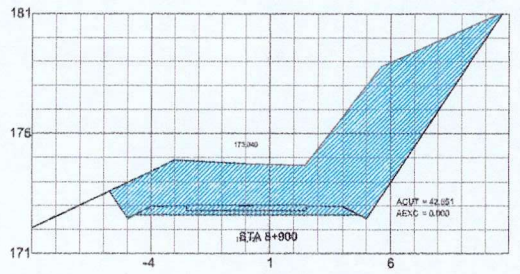

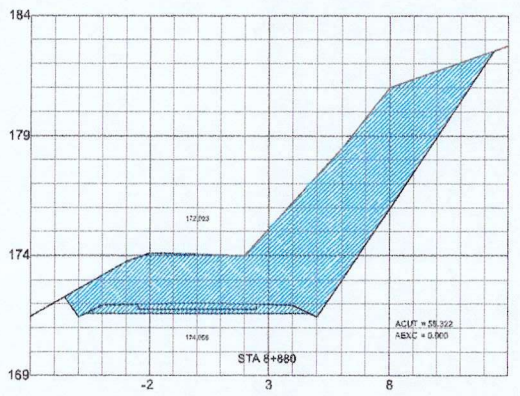

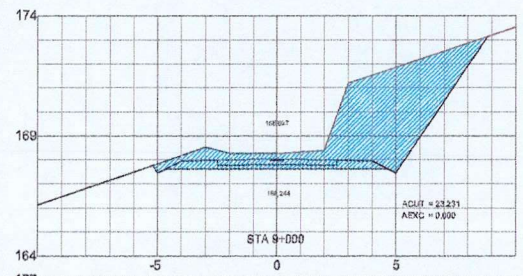

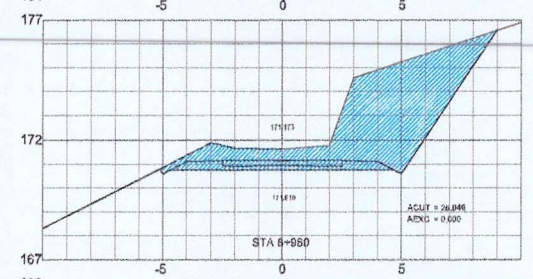

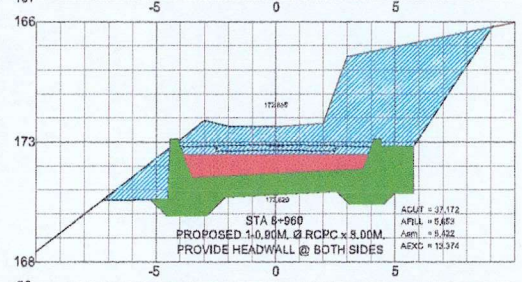

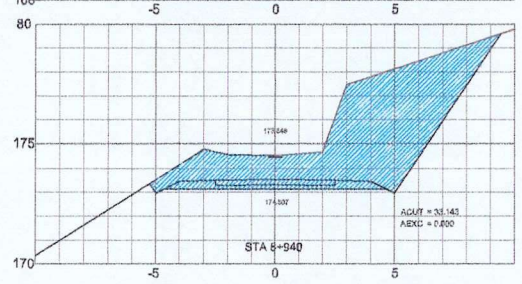

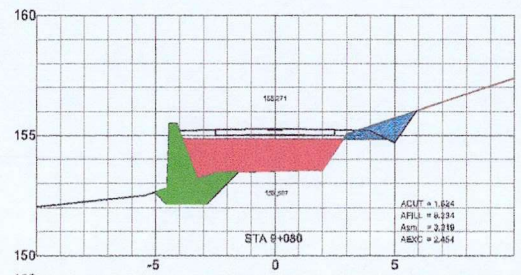

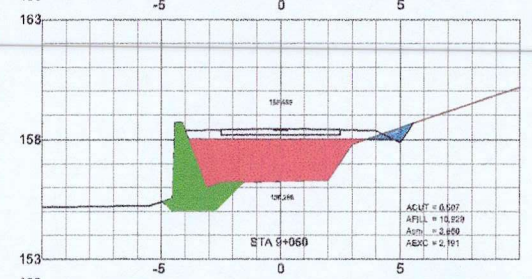

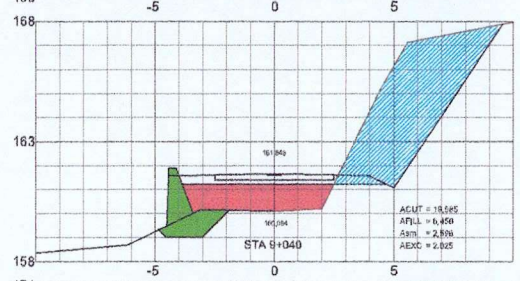

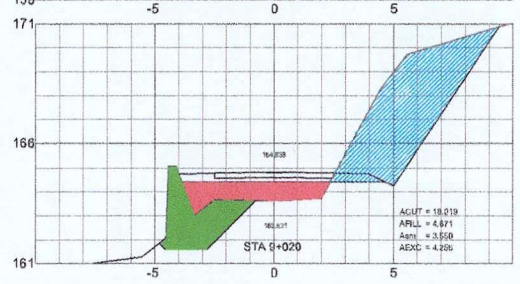

Republic of the Philippines
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Municipality of Bongabong

SP ID Number: PRDP-IR-R04B-ORM-007-BON-007-2019

Project Title: Concreting of Centro - Panluan - Balite, Hagan Farm to Market Road

Location: Hagan, Bongabong Oriental Mindoro

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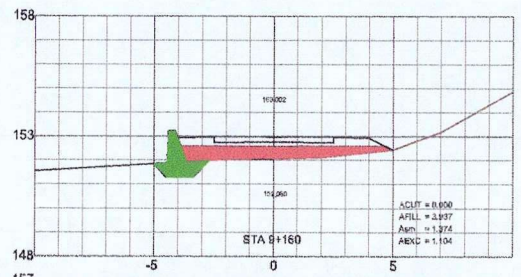

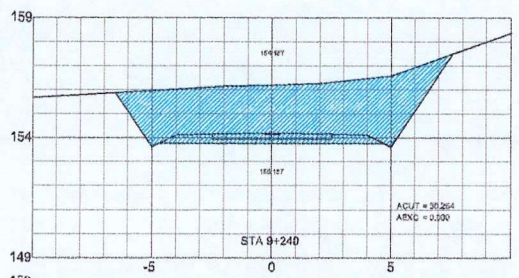

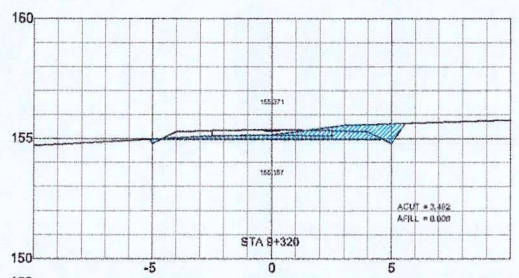

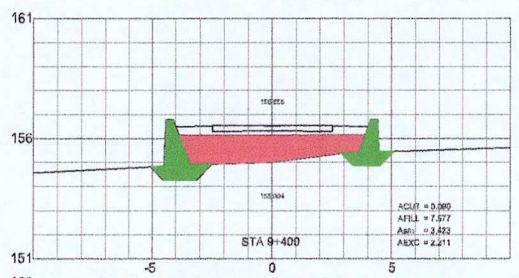

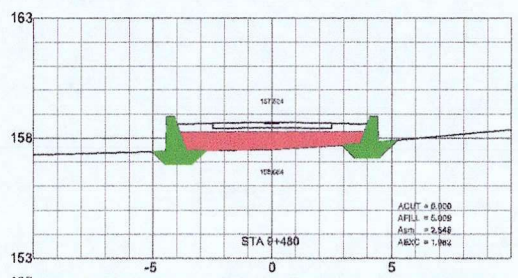

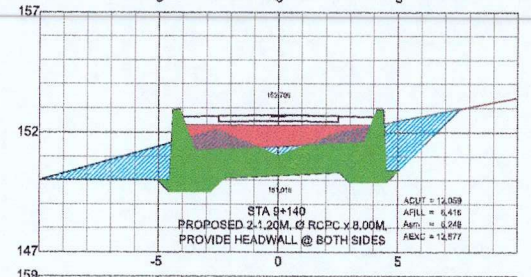

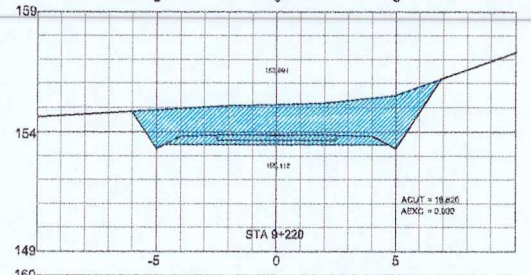

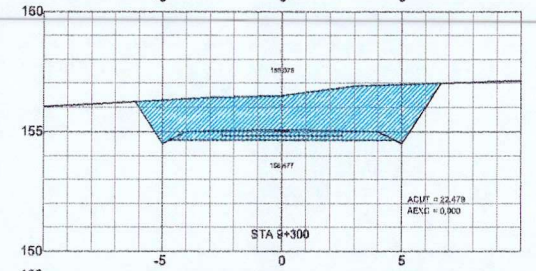

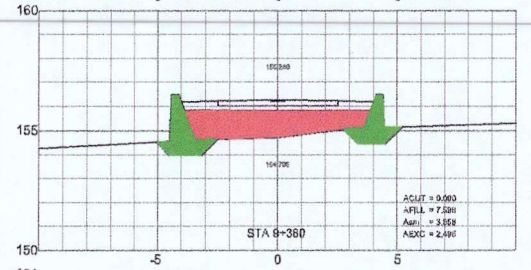

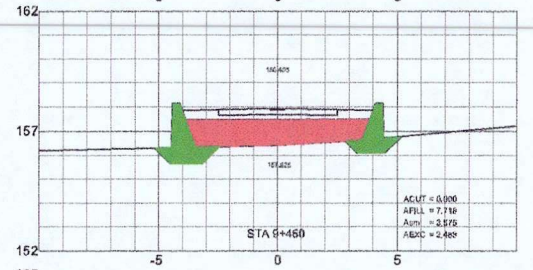

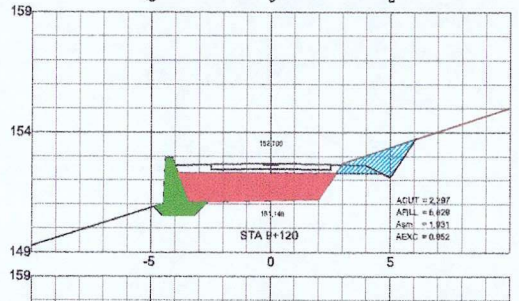

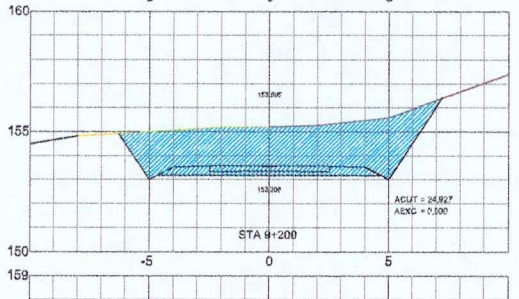

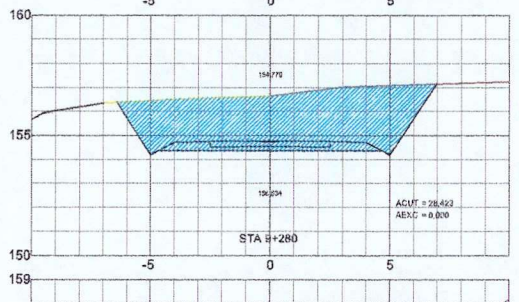

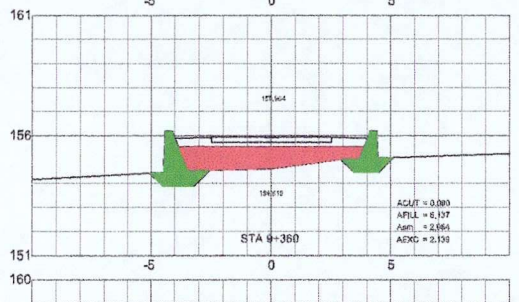

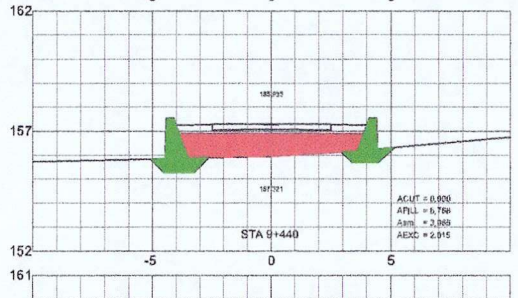

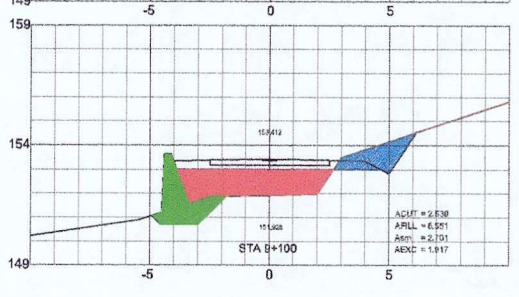

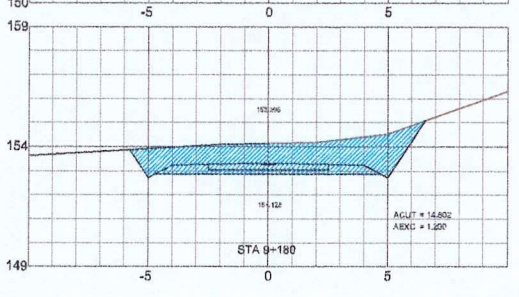

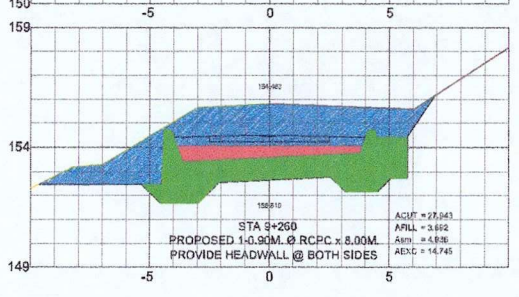

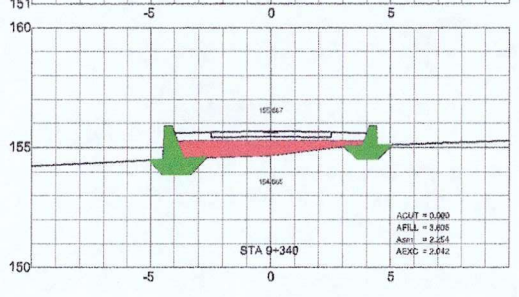

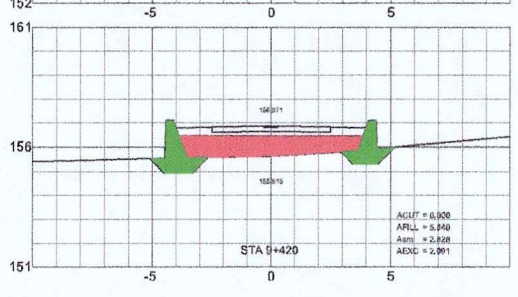

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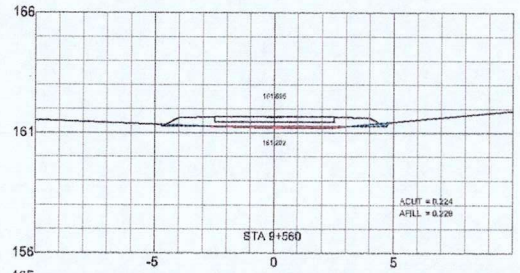

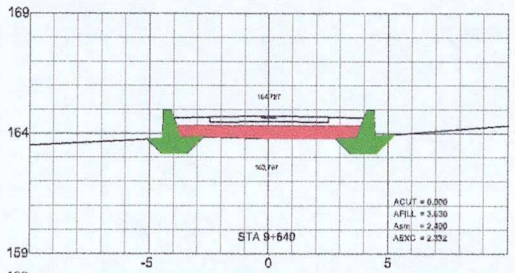

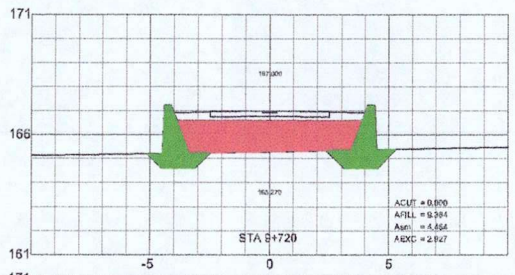

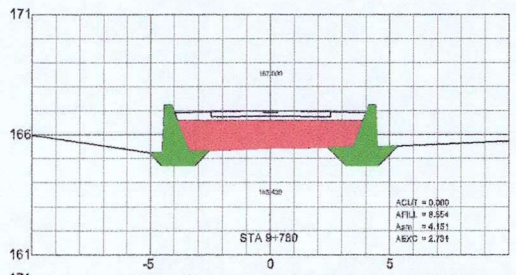

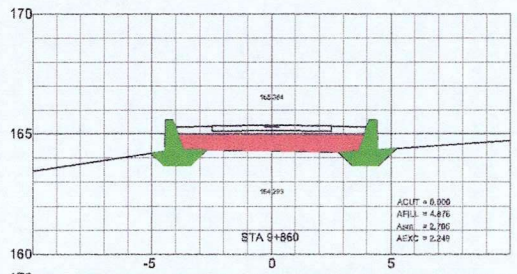

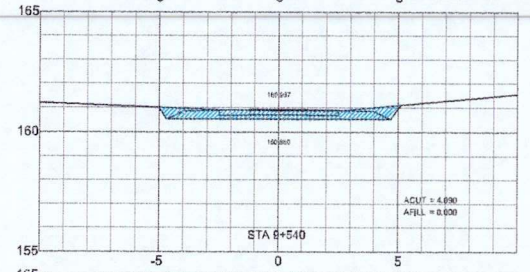

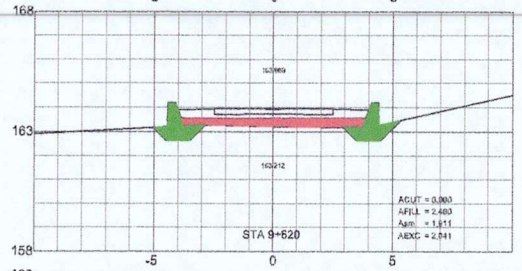

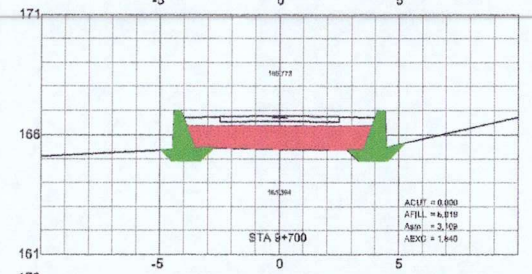

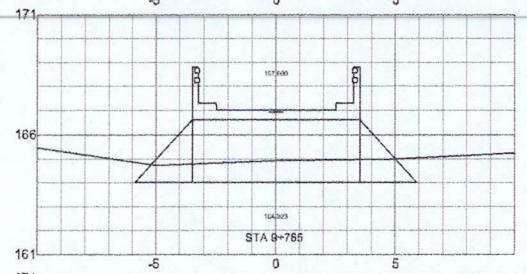

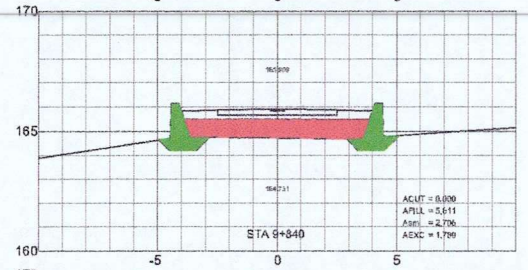

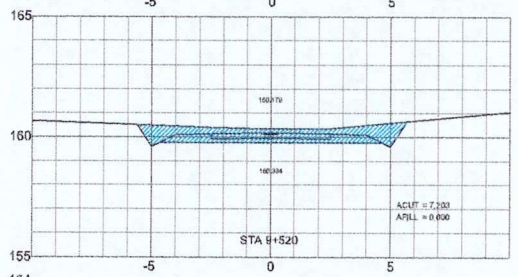

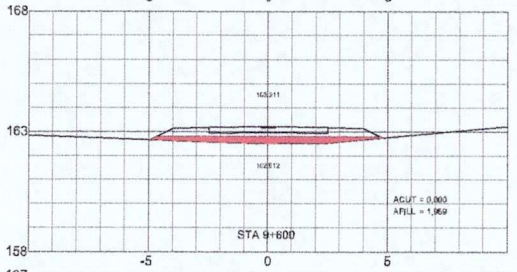

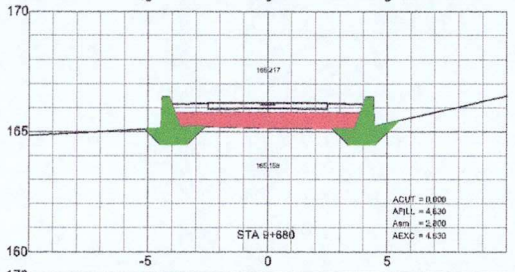

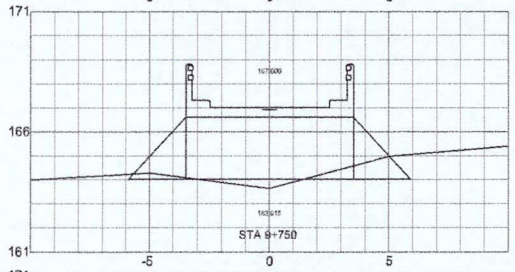

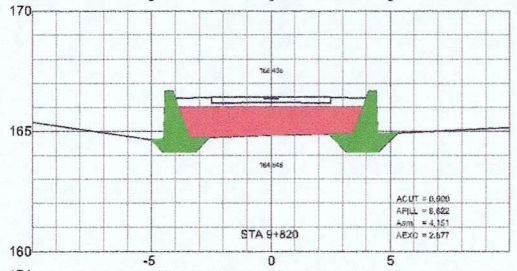

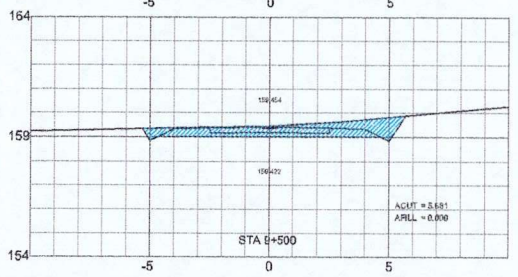

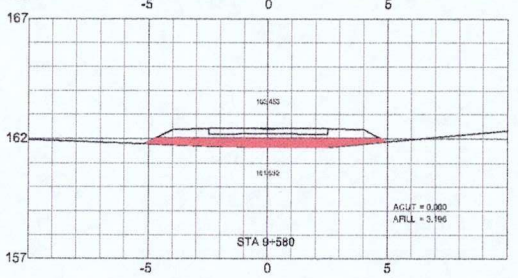

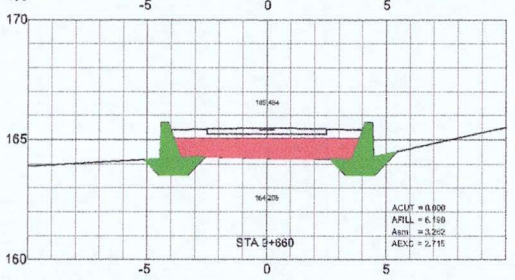

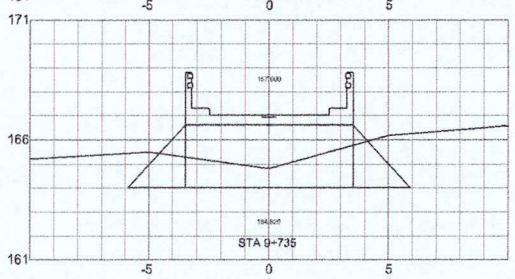

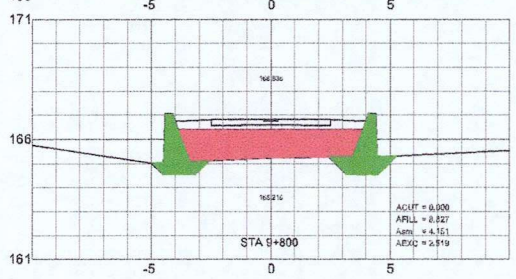

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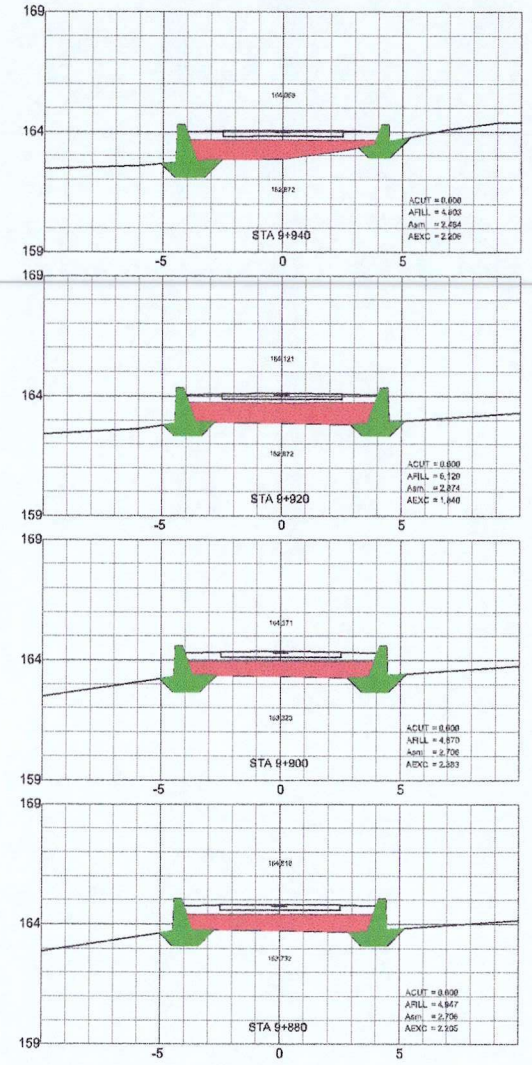

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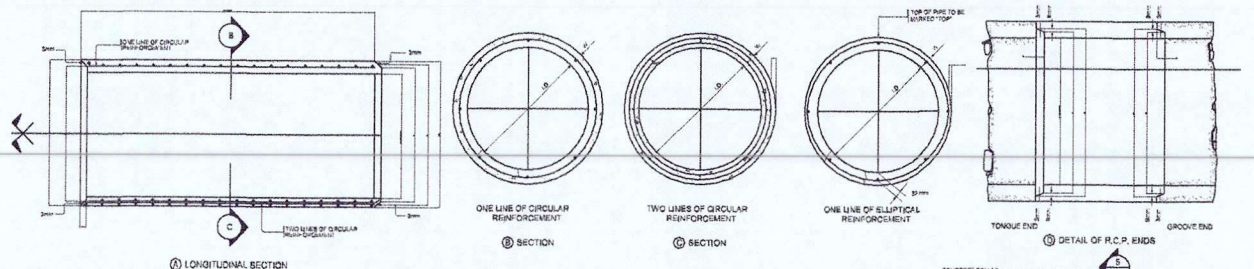
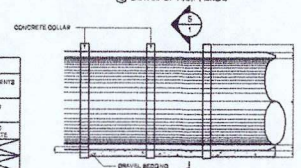


(A) LONGITUDINAL SECTION (B) SECTION (C) SECTION (D) DETAIL OF R.C.P. ENDS



(E) DETAIL OF R.C.P. JOINT

I.D.	MINIMUM WIDTH	HUNCH HEIGHT	S
610	64	89	150
760	76	102	150
910	89	114	150
1140	114	-	150
1520	177	-	150

STANDARD STRENGTH REINFORCED CONCRETE PIPE CULVERTS

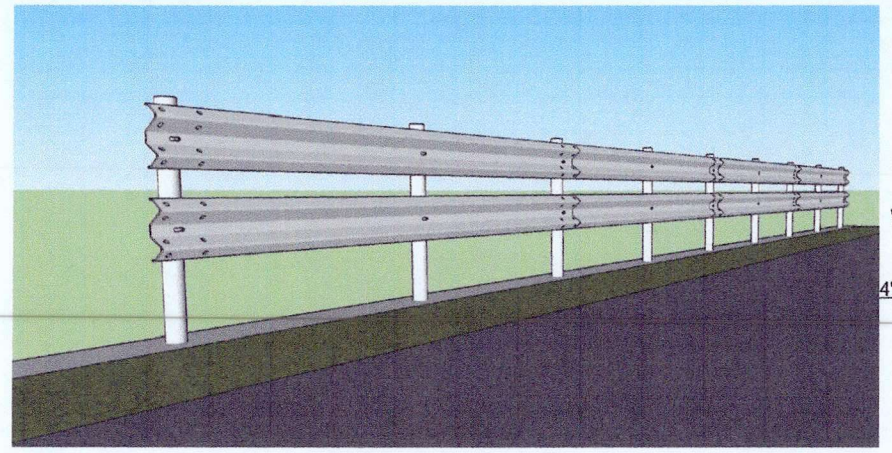
BSD OF PIPE (INTERNAL DIAMETER)	CONCRETE 24.7 kg/cm² (3,500 lb/in²)							CONCRETE 31.7 kg/cm² (4,500 lb/in²)							STRENGTH TEST REQUIREMENTS kg/m OF PIPE	
							MINIMUM REINFORCEMENT sq.mm OF STEEL						MINIMUM REINFORCEMENT sq.mm OF STEEL		THREE-EDGE BEARING METHOD	
	TONGUE (mm)	GROOVE (mm)		DEPTH (mm)	CIRCULAR REINFORCEMENT	ELLIPTICAL REINFORCEMENT	TONGUE (mm)	GROOVE (mm)		DEPTH (mm)	CIRCULAR REINFORCEMENT	ELLIPTICAL REINFORCEMENT	0.3mm CRACK	ULTIMATE
	A	B	C	E	A		A	B	C	E	A			
150	51	184	114	102	51	1 LINE 1.89								
230	57	244	203	191	51	1 LINE 1.89							5.854	9.716
305	57	344	305	292	51	1 LINE 2.53							7.814	9.582
380	64	429	381	368	51	1 LINE 3.01							-	-
455	70	511	457	445	51	1 LINE 3.77							-	-
530	76	587	533	521	51	1 LINE 4.39							-	-
610	76	673	610	597	51	1 LINE 5.02	1 LINE 3.77	64	686	622	597	165	44	1 LINE 5.02	1 LINE 4.39	9.884
760	89	826	762	749	51	1 LINE 6.27	1 LINE 4.39	76	826	762	749	165	44	1 LINE 6.27	1 LINE 5.02	7.454
910	102	978	914	895	51	1 LINE 7.51	1 LINE 5.02	89	978	914	895	165	44	1 LINE 7.51	1 LINE 6.27	11.187
1065	114	1130	1067	1048	51	1 LINE 8.76	1 LINE 6.27	102	1130	1067	1048	165	44	1 LINE 8.76	1 LINE 7.51	13.119
1220	127	1283	1219	1200	51	1 LINE 10.01	1 LINE 7.51	114	1283	1219	1200	165	44	1 LINE 10.01	1 LINE 8.76	15.052
1370	140	1435	1372	1353	51	1 LINE 11.27	1 LINE 8.76	127	1435	1372	1353	165	44	1 LINE 11.27	1 LINE 10.01	16.984
1525	152	1588	1524	1505	51	1 LINE 12.52	1 LINE 10.01	140	1588	1524	1505	165	44	1 LINE 12.52	1 LINE 11.27	18.917
1675	165	1740	1676	1657	51	1 LINE 13.78	1 LINE 11.27	152	1740	1676	1657	165	44	1 LINE 13.78	1 LINE 12.52	20.849
1830	178	1892	1829	1810	51	1 LINE 15.03	1 LINE 12.52	165	1892	1829	1810	165	44	1 LINE 15.03	1 LINE 13.78	22.782
1980	191	2045	1981	1962	51	1 LINE 16.28	1 LINE 13.78	178	2045	1981	1962	165	44	1 LINE 16.28	1 LINE 15.03	24.714
2135	203	2197	2134	2115	51	1 LINE 17.54	1 LINE 15.03	191	2197	2134	2115	165	44	1 LINE 17.54	1 LINE 16.28	26.647
2285	216	2350	2286	2267	51	1 LINE 18.79	1 LINE 16.28	203	2350	2286	2267	165	44	1 LINE 18.79	1 LINE 17.54	28.579
2440	229	2502	2438	2419	51	1 LINE 20.04	1 LINE 17.54	216	2502	2438	2419	165	44	1 LINE 20.04	1 LINE 18.79	30.512
2590	241	2654	2591	2572	51	1 LINE 21.30	1 LINE 18.79	229	2654	2591	2572	165	44	1 LINE 21.30	1 LINE 20.04	32.444
2745	254	2807	2743	2724	51	1 LINE 22.55	1 LINE 20.04	241	2807	2743	2724	165	44	1 LINE 22.55	1 LINE 21.30	34.377
2895	267	2959	2896	2877	51	1 LINE 23.80	1 LINE 21.30	254	2959	2896	2877	165	44	1 LINE 23.80	1 LINE 22.55	36.309
3050	279	3112	3048	3029	51	1 LINE 25.06	1 LINE 22.55	267	3112	3048	3029	165	44	1 LINE 25.06	1 LINE 23.80	38.242
3200	292	3264	3200	3181	51	1 LINE 26.31	1 LINE 23.80	279	3264	3200	3181	165	44	1 LINE 26.31	1 LINE 25.06	40.174
3350	305	3416	3353	3334	51	1 LINE 27.56	1 LINE 25.06	292	3416	3353	3334	165	44	1 LINE 27.56	1 LINE 26.31	42.107
3505	318	3569	3505	3486	51	1 LINE 28.82	1 LINE 26.31	305	3569	3505	3486	165	44	1 LINE 28.82	1 LINE 27.56	44.039
3655	330	3721	3658	3639	51	1 LINE 30.07	1 LINE 27.56	318	3721	3658	3639	165	44	1 LINE 30.07	1 LINE 28.82	45.972
3810	343	3874	3810	3791	51	1 LINE 31.33	1 LINE 28.82	330	3874	3810	3791	165	44	1 LINE 31.33	1 LINE 30.07	47.904
3960	356	4026	3962	3943	51	1 LINE 32.58	1 LINE 30.07	343	4026	3962	3943	165	44	1 LINE 32.58	1 LINE 31.33	49.837
4115	368	4178	4115	4096	51	1 LINE 33.83	1 LINE 31.33	356	4178	4115	4096	165	44	1 LINE 33.83	1 LINE 32.58	51.769
4265	381	4331	4267	4248	51	1 LINE 35.09	1 LINE 32.58	368	4331	4267	4248	165	44	1 LINE 35.09	1 LINE 33.83	53.702
4420	394	4483	4420	4401	51	1 LINE 36.34	1 LINE 33.83	381	4483	4420	4401	165	44	1 LINE 36.34	1 LINE 35.09	55.634
4570	406	4635	4572	4553	51	1 LINE 37.59	1 LINE 35.09	394	4635	4572	4553	165	44	1 LINE 37.59	1 LINE 36.34	57.567
4725	419	4788	4724	4705	51	1 LINE 38.85	1 LINE 36.34	406	4788	4724	4705	165	44	1 LINE 38.85	1 LINE 37.59	59.499
4875	432	4940	4877	4858	51	1 LINE 40.10	1 LINE 37.59	419	4940	4877	4858	165	44	1 LINE 40.10	1 LINE 38.85	61.432
5030	445	5093	5029	5010	51	1 LINE 41.35	1 LINE 38.85	432	5093	5029	5010	165	44	1 LINE 41.35	1 LINE 40.10	63.364
5180	457	5245	5182	5163	51	1 LINE 42.61	1 LINE 40.10	445	5245	5182	5163	165	44	1 LINE 42.61	1 LINE 41.35	65.297
5335	470	5398	5334	5315	51	1 LINE 43.86	1 LINE 41.35	457	5398	5334	5315	165	44	1 LINE 43.86	1 LINE 42.61	67.229
5485	483	5550	5487	5468	51	1 LINE 45.11	1 LINE 42.61	470	5550	5487	5468	165	44	1 LINE 45.11	1 LINE 43.86	69.162
5640	495	5702	5639	5620	51	1 LINE 46.36	1 LINE 43.86	483	5702	5639	5620	165	44	1 LINE 46.36	1 LINE 45.11	71.094
5790	508	5855	5792	5773	51	1 LINE 47.62	1 LINE 45.11	495	5855	5792	5773	165	44	1 LINE 47.62	1 LINE 46.36	73.027
5945	521	6007	5944	5925	51	1 LINE 48.87	1 LINE 46.36	508	6007	5944	5925	165	44	1 LINE 48.87	1 LINE 47.62	74.959
6095	533	6160	6096	6077	51	1 LINE 50.12	1 LINE 47.62	521	6160	6096	6077	165	44	1 LINE 50.12	1 LINE 48.87	76.892
6250	546	6312	6249	6230	51	1 LINE 51.38	1 LINE 48.87	533	6312	6249	6230	165	44	1 LINE 51.38	1 LINE 50.12	78.824
6400	559	6465	6401	6382	51	1 LINE 52.63	1 LINE 50.12	546	6465	6401	6382	165	44	1 LINE 52.63	1 LINE 51.38	80.757
6555	572	6617	6554	6535	51	1 LINE 53.88	1 LINE 51.38	559	6617	6554	6535	165	44	1 LINE 53.88	1 LINE 52.63	82.689
6705	584	6770	6706	6687	51	1 LINE 55.13	1 LINE 52.63	572	6770	6706	6687	165	44	1 LINE 55.13	1 LINE 53.88	84.622
6860	597	6922	6858	6839	51	1 LINE 56.39	1 LINE 53.88	584	6922	6858	6839	165	44	1 LINE 56.39	1 LINE 55.13	86.554
7010	610	7075	7011	6992	51	1 LINE 57.64	1 LINE 55.13	597	7075	7011	6992	165	44	1 LINE 57.64	1 LINE 56.39	88.487
7165	622	7227	7163	7144	51	1 LINE 58.89	1 LINE 56.39	610	7227	7163	7144	165	44	1 LINE 58.89	1 LINE 57.64	90.419
7315	635	7380	7316	7297	51	1 LINE 60.14	1 LINE 57.64	622	7380	7316	7297	165	44	1 LINE 60.14	1 LINE 58.89	92.352
7470	648	7532	7468	7449	51	1 LINE 61.40	1 LINE 58.89	635	7532	7468	7449	165	44	1 LINE 61.40	1 LINE 60.14	94.284
7620	660	7685	7621	7602	51	1 LINE 62.65	1 LINE 60.14	648	7685	7621	7602	165	44	1 LINE 62.65	1 LINE 61.40	96.217
7775	673	7737	7773	7754	51	1 LINE 63.90	1 LINE 61.40	660	7737	7773	7754	165	44	1 LINE 63.90	1 LINE 62.65	98.149
7925	686	7990	7926	7907	51	1 LINE 65.15	1 LINE 62.65	673	7990	7926	7907	165	44	1 LINE 65.15	1 LINE 63.90	100.082
8080	699	8142	8078	8059	51	1 LINE 66.41	1 LINE 63.90	686	8142	8078	8059	165	44	1 LINE 66.41	1 LINE 65.15	102.014
8230	711	8295	8231	8212	51	1 LINE 67.66	1 LINE 65.15	699	8295	8231	8212	165	44	1 LINE 67.66	1 LINE 66.41	103.947
8385	724	8447	8383	8364	51	1 LINE 68.91	1 LINE 66.41	711	8447	8383	8364	165	44	1 LINE 68.91	1 LINE 67.66	105.879
8535	737	8600	8536	8517	51	1 LINE 70.16	1 LINE 67.66	724	8600	8536	8517	165	44	1 LINE 70.16	1 LINE 68.91	107.812
8690	749	8752	8688	8669	51	1 LINE 71.42	1 LINE 68.91	737	8752	8688	8669	165	44	1 LINE 71.42	1 LINE 70.16	109.744
8840	762	8905	8841	8822	51	1 LINE 72.67	1 LINE 70.16	749	8905	8841	8822	165	44	1 LINE 72.67	1 LINE 71.42	111.677
8995	775	9057	8993	8974	51	1 LINE 73.92	1 LINE 71.42	762	9057	8993	8974	165	44	1 LINE 73.92	1 LINE 72.67	113.609
9145	787	9210	9146	9127	51	1 LINE 75.17	1 LINE 72.67	775	9210	9146	9127	165	44	1 LINE 75.17	1 LINE 73.92	115.542
9300	800	9362	9298	9279	51	1 LINE 76.43	1 LINE 73.92	787	9362	9298	9279	165	44	1 LINE 76.43	1 LINE 75.17	117.474
9450	813	9515	9451	9432	51	1 LINE 77.68	1 LINE 75.17	800	9515	9451	9432	165	44	1 LINE 77.68	1 LINE 76.43	119.407
9605	825	9667	9603	9584	51	1 LINE 78.93	1 LINE 76.43	813	9667	9603	9584	165	44	1 LINE 78.93	1 LINE 77.68	121.339
9755	838	9820	9756	9737	51	1 LINE 80.18	1 LINE 77.68	825	9820	9756	9737	165	44	1 LINE 80.18	1 LINE 78.93	123.272
9910	851	9972	9908	9889	51	1 LINE 81.44	1 LINE 78.93	838	9972	9908	9889	165	44	1 LINE 81.44	1 LINE 80.18	125.204
10060	864	10125	10061	10042	51	1 LINE 82.69	1 LINE 80.18	851	10125	10061	10042	165	44	1 LINE 82.69	1 LINE 81.44	127.137
10215	876	10277	10213	10194	51	1 LINE 83.94	1 LINE 81.44	864	10277	10213	10194	165	44	1 LINE 83.94	1 LINE 82.69	129.069
10365	889	10430	10366	10347	51	1 LINE 85.19	1 LINE 82.69	876	10430	10366	10347	165	44	1 LINE 85.19	1 LINE 83.94	131.002
10520	902	10582	10518	10499	51	1 LINE 86.45	1 LINE 83.94	889	10582	10518	10499	165	44	1 LINE 86.45	1 LINE 85.19	132.934
10670	914	10735	10671	10652	51	1 LINE 87.70	1 LINE 85.19	902	10735	10671	10652	165	44	1 LINE 87.70	1 LINE 86.45	134.867
10825	927	10887	10823	10804	51	1 LINE 88.95	1 LINE 86.45	914	10887	10823	10804	165	44	1 LINE 88.95	1 LINE 87.70	136.799
10975	940	11040	10976	10957	51	1 LINE 90.20	1 LINE 87.70	927	11040	10976	10957	165	44	1 LINE 90.20	1 LINE 88.95	138.732
11130	952	11192	11128	11109	51	1 LINE 91.46	1 LINE 88.95	940	11192	11128	11109	165	44	1 LINE 91.46	1 LINE 90.20	140.664
11280	965	11345	11281	11262	51	1 LINE 92.71	1 LINE 90.20	952	11345	11281	11262	165	44	1 LINE 92.71	1 LINE 91.46	142.597
11435	978	11497	11433	11414	51	1 LINE 93.96	1 LINE 91.46	965	11497	11433	11414	165	44	1 LINE 93.96	1 LINE 92.71	144.529
11585	990	11650	11586	11567	51	1 LINE 95.21	1 LINE 92.71	978	11650	11586	11567	165	44	1 LINE 95.21	1 LINE 93.96	146.462
11740	1003	11802	11738	11719	51	1 LINE 96.47	1 LINE 93.96	990	11802	11738	11719	165	44	1 LINE 96.47	1 LINE 95.21	148.394
11890	1016	11955	11891	11872	51	1 LINE 97.72	1 LINE 95.21	1003	11955	11891	11872	165	44	1 LINE 97.72	1 LINE 96.47	150.327
12045	1029	12107	12043	12024	51	1 LINE 98.97	1 LINE 96.47	1016	12107	12043	12024	165	44	1 LINE 98.97	1 LINE 97.72	152.259
12195	1041	12260	12196	12177	51	1 LINE 100.22	1 LINE 97.72	1029	12260	12196	12177	165	44	1 LINE 100.22	1 LINE 98.97	154.192
12350	1054	12412	12348	12329	51	1 LINE 101.48	1 LINE 98.97	1041	12412	12348	12329	165	44	1 LINE 101.48	1 LINE 100.22	156.124
12500	1067	12565	12501	12482	51	1 LINE 102.73	1 LINE 100.22	1054	12565	12501	12482	165	44	1 LINE 102.73	1 LINE 101.48	158.057
12655	1079	12717	12653	12634	51	1 LINE 103.98	1 LINE 101.48	1067	12717	12653	12634	165	44	1 LINE 103.98	1 LINE 102.73	159.989
12805	1092	12870	12806	12787	51	1 LINE 105.23	1 LINE 102.73	1079	12870	12806	12787	165	44	1 LINE 105.23	1 LINE 103.98	161.922
12960	1105	13022	12958	12939	51	1 LINE 106.49	1 LINE 103.98	1092	13022	12958	12939	165	44	1 LINE 106.49	1 LINE 105.23	163.854
13110	1117	13175	13111	13092	51	1 LINE 107.74	1 LINE 105.23	1105	13175	13111	13092	165	44	1 LINE 107.74	1 LINE 106.49	165.787
13265	1130	13327	13263	13244	51	1 LINE 108.99	1 LINE 106.49	1117	13327	13263	13244	165	44	1 LINE 108.99	1 LINE 107.74	167.719
13415	1143	13480	13416	13397	51	1 LINE 110.24	1 LINE 107.74	1130	13480	13416	13397	165	44	1 LINE 110.24	1 LINE 108.99	169.652
13570	1156	13632	13568	13549	51	1 LINE 111.50	1 LINE 108.99	1143	13632	13568	13549	165	44	1 LINE 111.50	1 LINE 110.24	171.584
13720	1168	13785	13721	13702	51	1 LINE 112.75	1 LINE 110.24	1156	13785	13721	13702	165	44	1 LINE 112.75	1 LINE 111.50	173.517
13875	1181	13937	13873	13854	51	1 LINE 114.00	1 LINE 111.50	1168	13937	13873	13854	165	44	1 LINE 114.00	1 LINE 112.75	175.449
14025	1194	14090	14026	14007	51	1 LINE 115.25	1 LINE 112.75	1181	14090	14026	14007	165	44	1 LINE 115.25	1 LINE 114.00	177.382
14180	1207	14242	14178	14159	51	1 LINE 116.51	1 LINE 114.00	1194	14242	14178	14159	165	44	1 LINE 116.51	1 LINE 115.25	179.314
14330	1219	14395	14331	14312	51	1 LINE 117.76	1 LINE 115.25	1207	14395	14331	14312	165	44	1 LINE 117.76	1 LINE 116.51	181.247
14485	1232	14547	14483	14464	51	1 LINE 119.01	1 LINE 116.51	1219	14547	14483	14464	165	44	1 LINE 119.01	1 LINE 117.76	183.179
14635	1245	14700	14636	14617	51	1 LINE 120.26	1 LINE 117.76	1232	14700	14636	14617	165	44	1 LINE 120.26	1 LINE 119.01	185.112
14790	1258	14852	14788	14769	51	1 LINE 121.52	1 LINE 119.01	1245	14852	14788	14769	165	44	1 LINE 121.52	1 LINE 120.26	187.044
14940	1270	15005	14941	14922	51	1 LINE 122.77	1 LINE 120.26	1258	15005	14941	14922	165	44	1 LINE 122.77	1 LINE 121.52	188.977
15095	1283	15157	15093	15074	51	1 LINE 124.02	1 LINE 121.52	1270	15157	15093	15074	165	44	1 LINE 124.02	1 LINE 122.77	190.909
15245	1296	15310	15246	15227	51	1 LINE 125.27	1 LINE 122.77	1283	15310	15246	15227	165	44	1 LINE 125.27	1 LINE 124.02	192.842
15400	1309	15462	15398	15379	51	1 LINE 126.53	1 LINE 124.02	1296	15462	15398	15379	165	44	1 LINE 126.53	1 LINE 125.27	194.774
15550	1321	15615	15551	15532	51	1 LINE 127.78	1 LINE 125.27	1309	15615	15551	15532	165	44	1 LINE 127.78	1 LINE 126.53	196.707
15705	1334	15767	15703	15684	51	1 LINE 129.03	1 LINE 126.53	1321	15767	15703	15684	165	44	1 LINE 129.03	1 LINE 127.78	198.639
15855	1347	15920	15856	15837	51	1 LINE 130.28	1 LINE 127.78	1334	15920	15856	15837	165	44	1 LINE 130.28	1 LINE 129.03	200.572
16010	1360	16072	16008	15989	51	1 LINE 131.54	1 LINE 129.03	1347	16072	16008	15989	165	44	1 LINE 131.54	1 LINE 130.28	202.504
16160	1372	16225	16161	16142	51	1 LINE 132.79	1 LINE 130.28	1360	16225	16161	16142	165	44	1 LINE 132.79	1 LINE 131.54	204.437
16315	1385	16377	16313	16294	51	1 LINE 134.04	1 LINE 131.54	1372	16377	16313	16294	165	44	1 LINE 134.04	1 LINE 132.79	206.369
16465	1398	16530	16466	16447	51	1 LINE 135.29	1 LINE 132.79	1385	16530	16466	16447	165	44	1 LINE 135.29	1 LINE 134.04	208.302
16620	1411	16682	16618	16599	51	1 LINE 136.55	1 LINE 134.04	1398	16682	16618	16599	165	44	1 LINE 136.55	1 LINE 135.29	210.234
16770	1423	16835	16771	16752	51	1 LINE 137.80	1 LINE 135.29	1411	16835	16771	16752	165	44	1 LINE 137.80	1 LINE 136.55	212.167
16925	1436	16987	16923	16904	51	1 LINE 139.05	1 LINE 136.55	1423	16987	16923	16904	165	44	1 LINE 139.05	1 LINE 137.80	214.099
17075	1449	17140	17076	17057	51	1 LINE 140.30	1 LINE 137.80	1436	17140	17076	17057	165	44	1 LINE 140.30	1 LINE 139.05	216.032
17230	1462	17292	17228	17209	51	1 LINE 141.56	1 LINE 139.05	1449	17292	17228	17209	165	44	1 LINE 141.56	1 LINE 140.30	217.964
17380	1474	17445	17381	17362	51	1 LINE 142.81	1 LINE 140.30	1462	17445	17381	17362	165	44	1 LINE 142.81	1 LINE 141.56	219.897
17535	1487	17597	17533	17514	51	1 LINE 144.06	1 LINE 141.56	1474	17597	17533	17514	165	44	1 LINE 144.06	1 LINE 142.81	221.829
17685	1500	17750	17686	17667	51	1 LINE 145.31	1 LINE 142.81	1487	17750	17686	17667	165	44	1 LINE 145.31	1 LINE 144.06	223.762
17840	1513	17902	17838	17819	51	1 LINE 146.57	1 LINE 144.06	1500	17902	17838	17819	165	44	1 LINE 146.57	1 LINE 145.31	225.694
17990	1525	18055	17991	17972	51	1 LINE 147.82	1 LINE 145.31	1513	18055	17991	17972	165	44	1 LINE 147.82	1 LINE 146.57	227.627
18145	1538	18207	18143	18124	51	1 LINE 149.07	1 LINE 146.57	1525	18207	18143	18124	165	44	1 LINE 149.07	1 LINE 147.82	229.559
18295	1551	18360	18296	18277	51	1 LINE 150.32	1 LINE 147.82	1538	18360	18296	18277	165	44	1 LINE 150.32	1 LINE 149.07	231.492
18450	1564	18512	18448	18429	51	1 LINE 151.58	1 LINE 149.07	1551	18512	18448	18429	165	44	1 LINE 151.58	1 LINE 150.32	233.424
18600	1576	18665	18601	18582	51	1 LINE 152.83	1 LINE 150.32	1564	18665	18601	18582	165	44	1 LINE 152.83	1 LINE 151.58	235.357
18755	1589	18817	18753	18734	51	1 LINE 154.08	1 LINE 151.58	1576	18817	18753	18734	165	44	1 LINE 154.08	1 LINE 152.83	237.289
18905	1602	18970	18906	18887	51	1 LINE 155.33	1 LINE 152.83	1589	18970	18906	18887	165	44	1 LINE 155.33	1 LINE 154.08	239.222
19060	1615	19122	19058	19039	51	1 LINE 156.59	1 LINE 154.08	1602	19122	19058	19039	165	44	1 LINE 156.59	1 LINE 155.33	241.154
19210	1627	19275	19211	19192	51	1 LINE 157.84	1 LINE 155.33	1615	19275	19211	19192	165	44	1 LINE 157.84	1 LINE 156.59	243.087
19365	1640	19427	19363	19344	51	1 LINE 159.09	1 LINE 156.59	1627	19427	19363	19344	165	44	1 LINE 159.09	1 LINE 157.84	245.019
19515	1653	19580	19516	19497	51	1 LINE 160.34	1 LINE 157.84	1640	19580	19516	19497	165	44	1 LINE 160.34	1 LINE 159.09	246.952
19670	1666	19732	19668	19649	51	1 LINE 161.60	1 LINE 159.09	1653	19732	19668	19649	165	44	1 LINE 161.60	1 LINE 160.34	248.884
19820	1678	19885	19821	19802	51	1 LINE 162.85	1 LINE 160.34	1666	19885	19821	19802	165	44	1 LINE 162.85	1 LINE 161.60	250.817
19975	1691	20037	19973	19954	51	1 LINE 164.10	1 LINE 161.60	1678	20037	19973	19954	165	44	1 LINE 164.10	1 LINE 162.85	252.749
20125	1704	20190	20126	20107	51	1 LINE 165.35	1 LINE 162.85	1691	20190	20126	20107	165	44	1 LINE 165.35	1 LINE 164.10	254.682
20280	1717	20342	20278	20259	51	1 LINE 166.61	1 LINE 164.10	1704	20342	20278	20259	165	44	1 LINE 166.61	1 LINE 165.35	256.614
20430	1729	20495	20431	20412	51	1 LINE 167.86	1 LINE 165.35	1717	20495	20431	20412	165	44	1 LINE 167.86	1 LINE 166.61	258.547
20585	1742	20647	20583	20564	51	1 LINE 169.11	1 LINE 166.61	1729	20647	20583	20564	165	44	1 LINE 169.11	1 LINE 167.86	260.479
20735	1755	20800	20736	20717	51	1 LINE 170.36	1 LINE 167.86	1742

SCHEDULE OF GUARDRAIL

STATION (FROM)	STATION (TO)	Ht	L	REMARKS
STA. 0 + 680	STA. 0 + 793	1.20m	113m	@ RS
STA. 1 + 040	STA. 1 + 245	1.20m	205m	@ RS
STA. 1 + 680	STA. 1 + 996	1.20m	316m	@ RS
STA. 2 + 320	STA. 2 + 602	1.20m	282m	@ RS
STA. 2 + 980	STA. 3 + 218	1.20m	238m	@ LS
STA. 3 + 500	STA. 4 + 347	1.20m	847m	@ LS
STA. 5 + 960	STA. 6 + 338	1.20m	378m	@ LS
STA. 6 + 920	STA. 7 + 180	1.20m	260m	@ LS

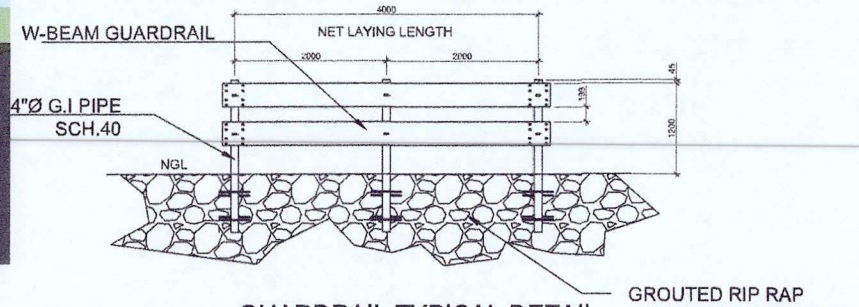
SCHEDULE OF RCPC & RCPC HEADWALL

STATION	Ø I.D.	PIPE Ø	BARREL	A	B	H_L	H_R	W	L	REMARKS
STA. 0+008.50	900	1100	1	940	1530	2960	2988	1830	8000	PROVIDE HEADWALL @ BS.
STA. 0+013.50	900	1100	1	710	1330	2479	3919	1830	8000	PROVIDE HEADWALL @ BS.
STA. 0+212.00	900	1100	1	1000	2000	4075	4341	1830	8000	PROVIDE HEADWALL @ BS.
STA. 0+277.50	900	1100	1	1000	1360	2605	3920	1830	8000	PROVIDE HEADWALL @ BS.
STA. 0+394.00	900	1100	1	850	1520	2923	3164	1830	8000	PROVIDE HEADWALL @ BS.
STA. 0+580.00	900	1100	1	600	1440	2733	3564	1830	8000	PROVIDE HEADWALL @ BS.
STA. 0+880.00	900	1100	1	970	1360	2538	2566	1830	8000	PROVIDE HEADWALL @ BS.
STA. 1+254.00	900	1100	1	1000	2170	4502	5051	1830	8000	PROVIDE HEADWALL @ BS.
STA. 1+500.00	900	1100	1	1000	1350	2524	2943	1830	8000	PROVIDE HEADWALL @ BS.
STA. 1+760.00	900	1100	1	1000	1290	2372	2519	1830	8000	PROVIDE HEADWALL @ BS.
STA. 1+917.00	900	1100	1	1000	1210	2197	2538	1830	8000	PROVIDE HEADWALL @ BS.
STA. 2+000.00	900	1100	1	780	1210	2203	2655	1830	8000	PROVIDE HEADWALL @ BS.
STA. 2+133.00	900	1100	1	1000	1125	1982	2419	1830	8000	PROVIDE HEADWALL @ BS.
STA. 2+385.00	900	1100	1	1000	1370	2575	2575	1830	8000	PROVIDE HEADWALL @ BS.
STA. 2+535.00	900	1100	1	1000	1290	2382	3044	1830	8000	PROVIDE HEADWALL @ BS.
STA. 2+820.00	900	1100	1	1000	1470	2813	3927	1830	8000	PROVIDE HEADWALL @ BS.
STA. 3+242.50	900	1100	1	1000	1970	4004	4004	1830	8000	PROVIDE HEADWALL @ BS.
STA. 3+875.50	1200	1400	1	600	2190	4551	3969	2120	8000	PROVIDE HEADWALL @ BS.
STA. 3+880.00	1200	1400	1	600	2205	4576	4576	2120	8000	PROVIDE HEADWALL @ BS.
STA. 6+405.00	900	1100	1	1000	1290	2387	2745	1830	8000	PROVIDE HEADWALL @ BS.
STA. 6+487.00	1200	1400	1	1000	1505	2896	2863	2120	8000	PROVIDE HEADWALL @ BS.
STA. 7+380.00	1200	1100	1	1000	2300	4797	4797	2120	8000	PROVIDE HEADWALL @ BS.
STA. 7+860.00	1200	1100	3	1000	1630	3203	2815	6360	8000	PROVIDE HEADWALL @ BS.
STA. 8+320.00	1200	1400	3	1000	1630	3203	2702	6360	8000	PROVIDE HEADWALL @ BS.
STA. 8+545.00	1200	1400	1	1000	1920	3903	2503	2120	8000	PROVIDE HEADWALL @ BS.
STA. 8+720.00	900	1400	1	600	1950	3984	2702	1830	8000	PROVIDE HEADWALL @ BS.
STA. 8+960.00	900	1400	1	1000	1630	3203	2702	1830	8000	PROVIDE HEADWALL @ BS.
STA. 9+140.00	1200	1100	2	1000	1720	3416	3017	4240	8000	PROVIDE HEADWALL @ BS.
STA. 9+260.00	900	1100	1	1000	1565	3040	2540	1830	8000	PROVIDE HEADWALL @ BS.

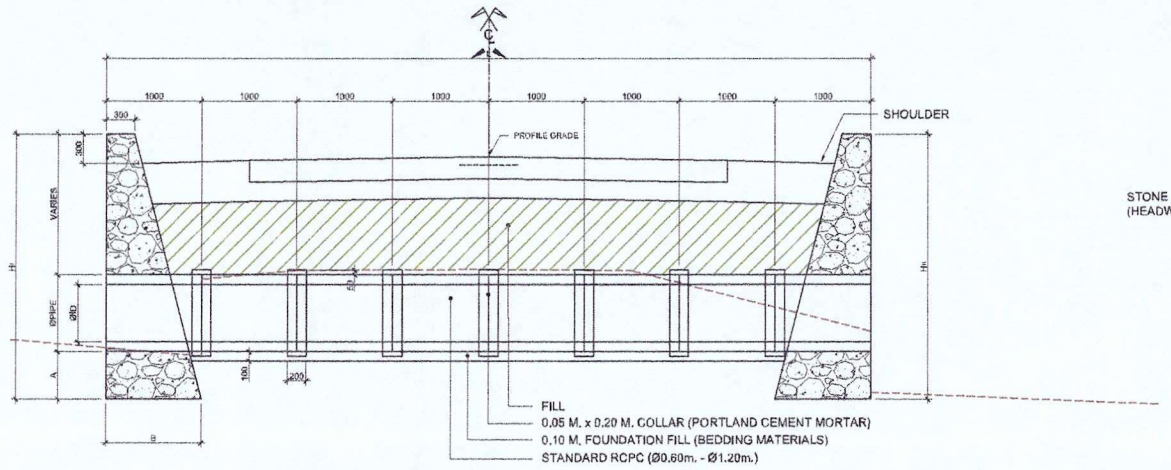


PERSPECTIVE

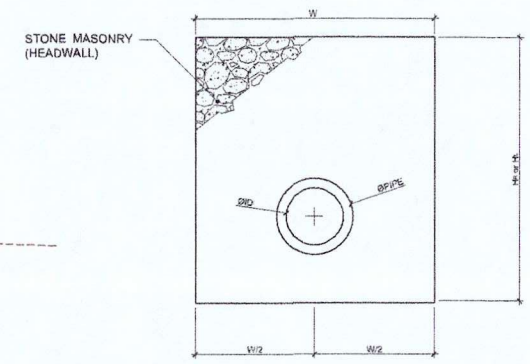
NOTES ON RCPC:
ALIGNMENT, LOCATION & INVERT ELEVATIONS OF DRAINAGE STRUCTURE MAYBE ADJUSTED TO SUIT EXISTING/ACTUAL FIELD CONDITIONS.



GUARDRAIL TYPICAL DETAIL



1 DETAILS OF RCPC
SCALE : 1 : 30 M.



2 DETAILS OF RCPC HEADWALLS
SCALE : 1 : 30 M.

Republic of the Philippines
Department of Agriculture
Philippine Rural Development Project
Province of Oriental Mindoro
Municipality of Bongabong

SP ID Number: PRDP-IR-R04B-ORM-007-BON-007-2019
Project Title: Concreting of Centro - Panluan - Balite, Hagan Farm to Market Road
Location: Hagan, Bongabong Oriental Mindoro

Prepared by:	Checked by:	Recommending Approval:	Approved by:	Sheet Content:	Sheet No.
JOSE VINCENT C. GALIGA, C.E. Draftsman III	OLIVIA G. CORONEL C.E.,EnP. Assistant Municipal Engineer / OIC MEO Municipality of Bongabong	GREGORIO S. REYES, EnP. Municipal Planning and Development Coordinator Municipality of Bongabong	ELECIO A. MALALUAN, O.D. Municipal Mayor Municipality of Bongabong	• SCHEDULE OF RCPC W/ HEADWALL • W-BEAM GUARDRAIL TYPICAL DETAIL	D 45 | 55

Republic of the Philippines
Department of Agriculture
Philippine Rural Development Project
Province of Oriental Mindoro
Municipality of Bongabong

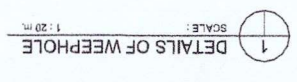
SP ID Number: PRDP-IR-R04B-ORM-067-BON-007-2019

Project Title: Concreting of Centro - Parkuan - Balite, Hagan

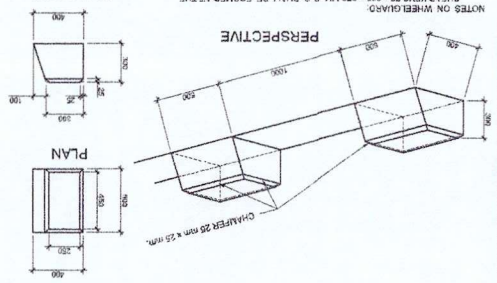
Location: Farm to Market Road
Hagan, Bongabong Oriental Mindoro

Prepared by:	Checked by:	Recommending Approval:	Approved by:	Sheet Content:	Sheet No.
JOSE VINCENT C. GALICIA, C.E. Draftsman III	OLIVIA C. GONZALEZ, C.E., ENP. Assistant Municipal Engineer / OIC MEO Municipality of Bongabong	GREGORIO S. REYES, ENP. Municipal Planning and Development Coordinator Municipality of Bongabong	ELISEO A. MALALUAN, O.D. Municipal Mayor Municipality of Bongabong	▪ SLOPE PROTECTION ▪ RETAINING WALL DETAIL	D 46 55

1 DETAILS OF WEEPHOLE
SCALE: 1 : 20 m.



2 DETAILS OF WHEEL GUARD
SCALE: 1 : 20 M.



STATION	
(From)	(To)
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STA. 0+110.00	STA. 0+220.00
STA. 0+234.00	STA. 0+420.00
STA. 0+277.20	STA. 0+298.00
STA. 0+580.00	STA. 0+668.00
STA. 0+753.00	STA. 0+820.00
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STA. 3+680.00	STA. 3+700.00
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STA. 9+920.00	STA. 9+940.00
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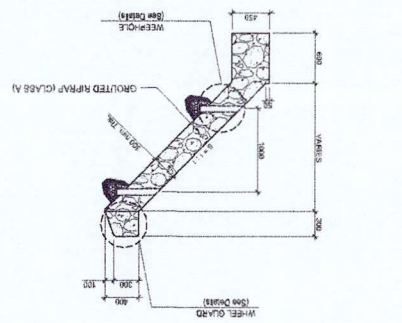
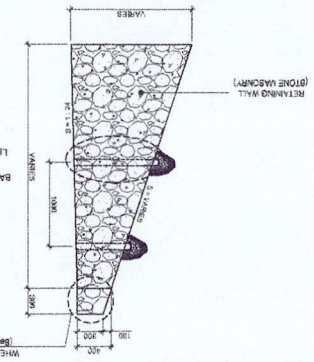
SCHEDULE OF SLOPE PROTECTION @ L/S

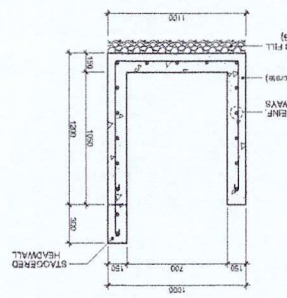
3 DETAILS OF SLOPE PROTECTION
SCALE: 1 : 20 M.



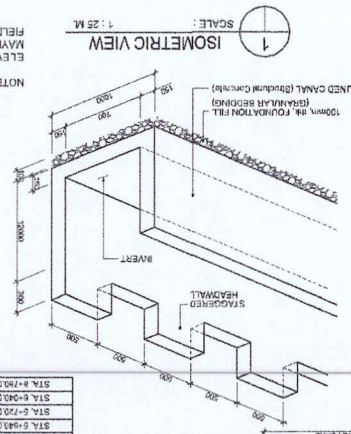
4 DETAILS OF RETAINING WALL
SCALE: 1 : 20 m.



2 SECTION DETAILS
SCALE: 1 : 20 M



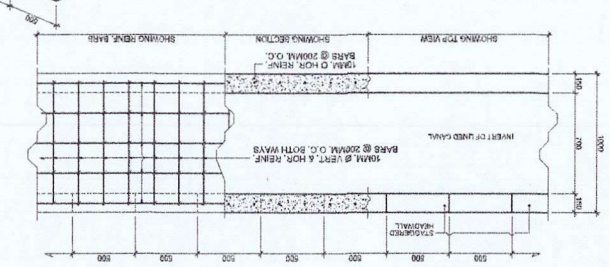
1 ISOMETRIC VIEW
SCALE: 1 : 25 M



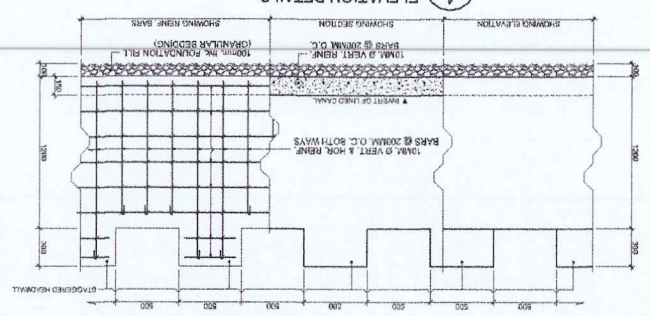
NOTES ON LINED CANAL:
ALIGNMENT, LOCATION & INVERT ELEVATIONS OF DRAINAGE STRUCTURE MAYBE ADJUSTED TO SUIT EXISTING/ACTUAL FIELD CONDITIONS.

SCHEDULE OF LINED CANAL		
STATION		REMARKS
(From)	(To)	
STA. 0+106.00	STA. 0+127.16	LEFT SIDE
STA. 0+586.00	STA. 1+254.00	LEFT SIDE
STA. 1+000.00	STA. 1+580.00	LEFT SIDE
STA. 1+617.20	STA. 2+100.00	LEFT SIDE
STA. 2+406.00	STA. 2+640.00	LEFT SIDE
STA. 2+866.00	STA. 3+452.50	RIGHT SIDE
STA. 3+460.00	STA. 3+840.00	RIGHT SIDE
STA. 5+700.00	STA. 5+940.00	RIGHT SIDE

3 PLAN DETAILS
SCALE: 1 : 20 M.



4 ELEVATION DETAILS
SCALE: 1 : 20 M



SCHEDULE OF SLOPE PROTECTION @ R/S	
STATION	
(From)	(To)
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STA. 0+240.00	STA. 0+442.00
STA. 0+460.00	STA. 0+780.00
STA. 1+020.00	STA. 1+040.00
STA. 1+060.00	STA. 1+220.00
STA. 1+260.00	STA. 1+320.00
STA. 1+460.00	STA. 1+760.00
STA. 1+780.00	STA. 1+940.00
STA. 2+000.00	STA. 2+220.00
STA. 2+240.00	STA. 2+320.00
STA. 2+360.00	STA. 2+520.00
STA. 2+540.00	STA. 2+640.00
STA. 2+680.00	STA. 2+740.00
STA. 2+760.00	STA. 2+880.00
STA. 2+900.00	STA. 3+000.00
STA. 3+020.00	STA. 3+120.00
STA. 3+140.00	STA. 3+420.00
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STA. 3+660.00	STA. 3+680.00
STA. 3+700.00	STA. 3+720.00
STA. 3+740.00	STA. 3+760.00
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STA. 3+820.00	STA. 3+840.00
STA. 3+860.00	STA. 3+880.00
STA. 3+900.00	STA. 3+920.00
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STA. 4+180.00	STA. 4+200.00
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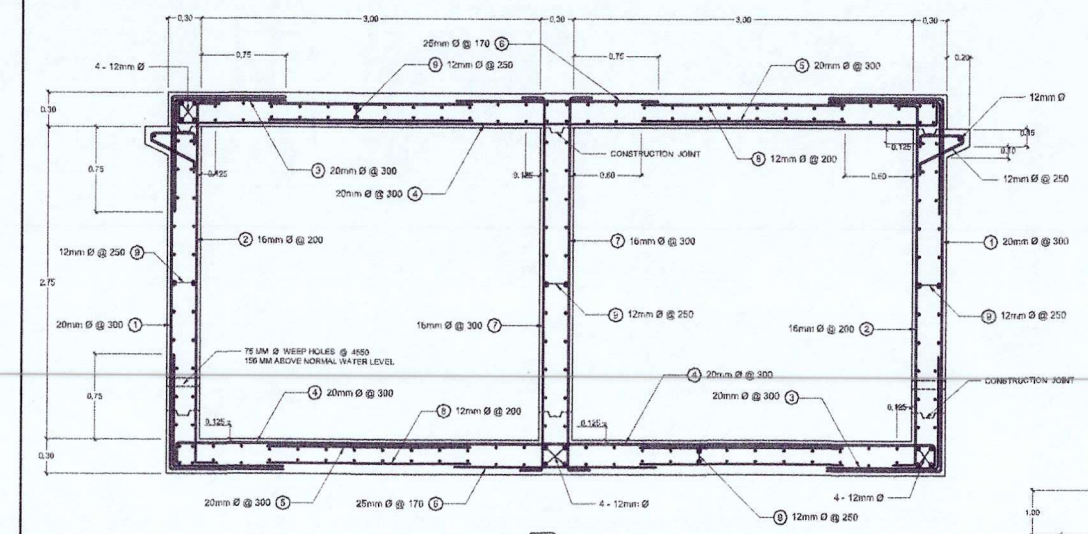
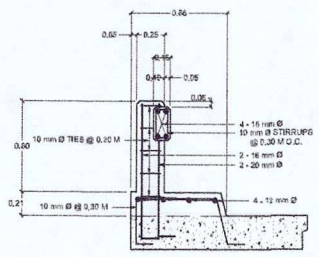
STA. 4+340.00	STA. 4+360.00
STA. 4+380.00	STA. 4+400.00
STA. 4+420.00	STA. 4+440.00
STA. 4+460.00	STA. 4+480.00
STA. 4+500.00	STA. 4+520.00
STA. 4+540.00	STA. 4+560.00
STA. 4+580.00	STA. 4+600.00
STA. 4+620.00	STA. 4+640.00
STA. 4+660.00	STA. 4+680.00
STA. 4+700.00	STA. 4+720.00
STA. 4+740.00	STA. 4+760.00
STA. 4+780.00	STA. 4+800.00
STA. 4+820.00	STA. 4+840.00
STA. 4+860.00	STA. 4+880.00
STA. 4+900.00	STA. 4+920.00
STA. 4+940.00	STA. 4+960.00
STA. 4+980.00	STA. 5+000.00
STA. 5+020.00	STA. 5+040.00
STA. 5+060.00	STA. 5+080.00
STA. 5+100.00	STA. 5+120.00
STA. 5+140.00	STA. 5+160.00
STA. 5+180.00	STA. 5+200.00
STA. 5+220.00	STA. 5+240.00
STA. 5+260.00	STA. 5+280.00
STA. 5+300.00	STA. 5+320.00
STA. 5+340.00	STA. 5+360.00
STA. 5+380.00	STA. 5+400.00
STA. 5+420.00	STA. 5+440.00
STA. 5+460.00	STA. 5+480.00
STA. 5+500.00	STA. 5+520.00
STA. 5+540.00	STA. 5+560.00
STA. 5+580.00	STA. 5+600.00
STA. 5+620.00	STA. 5+640.00

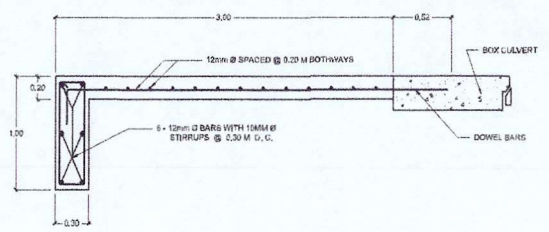
SCHEDULE OF SLOPE PROTECTION @ R/S



4 DETAILS OF BOX CULVERT REINFORCEMENT
SCALE : 1 : 20 M.

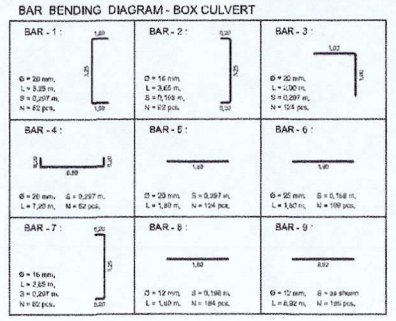


5 DETAILS OF SIDEWALK, POST & RAILING
SCALE : 1 : 20 M.

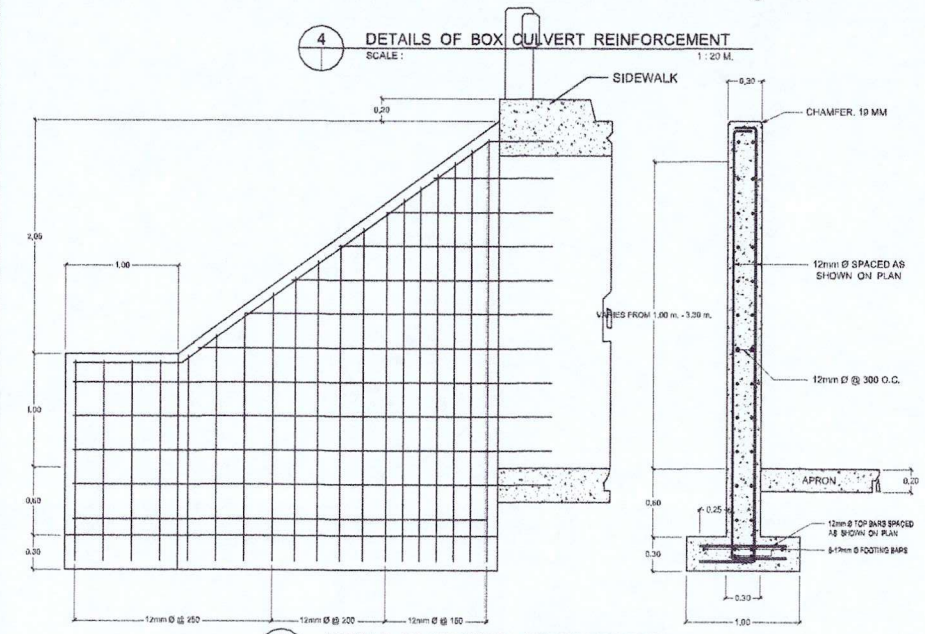


6 DETAILS OF APRON REINFORCEMENT
SCALE : 1 : 20 M.

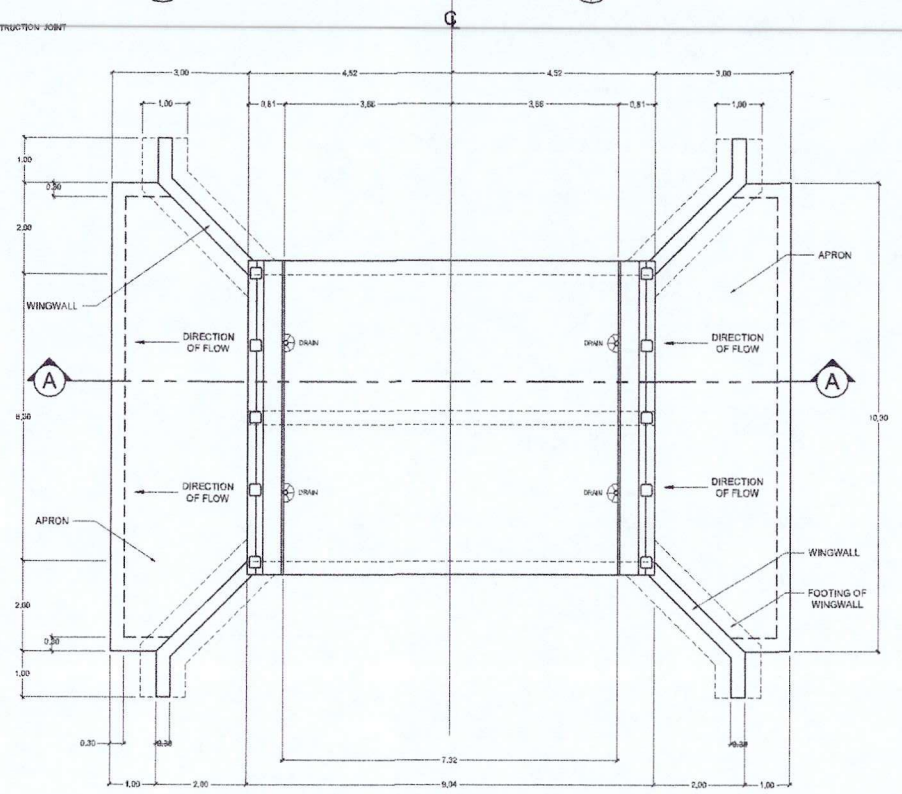
BAR BENDING DIAGRAM - BOX CULVERT



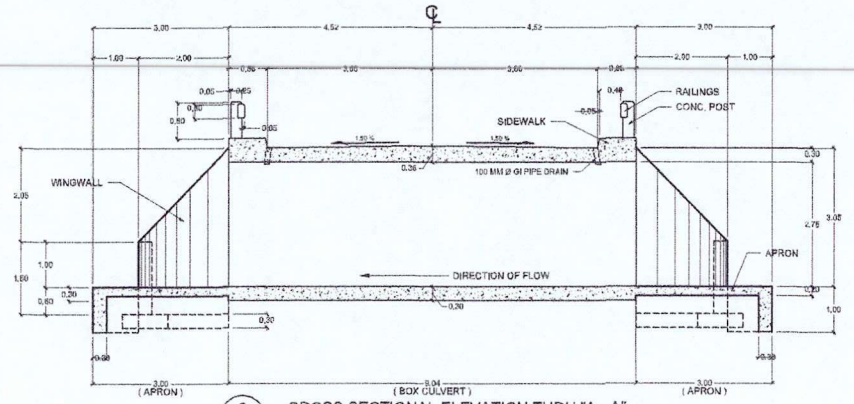
SCHEDULE OF DOUBLE BARREL BOX CULVERT
STATION
STA. 5+620.00
STA. 6+630.00
STA. 8+400.00



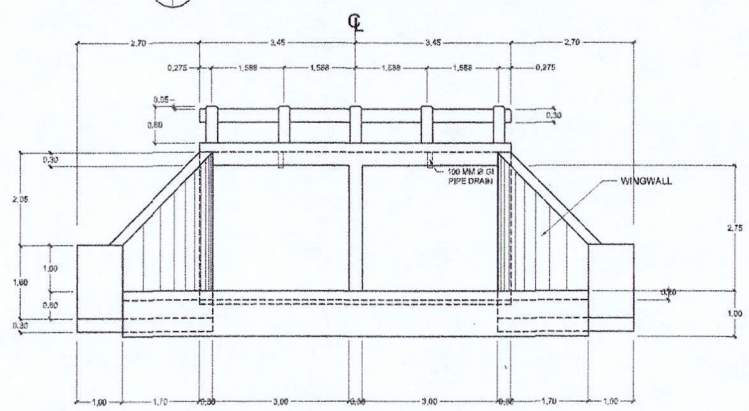
7 DETAILS OF WINGWALL REINFORCEMENT
SCALE : 1 : 20 M.



1 PLAN OF DOUBLE BARREL BOX CULVERT
SCALE : 1 : 50 M.



2 CROSS SECTIONAL ELEVATION THRU "A - A"
SCALE : 1 : 50 M.



3 RIGHT SIDE ELEVATION
SCALE : 1 : 50 M.

Republic of the Philippines
Department of Agriculture
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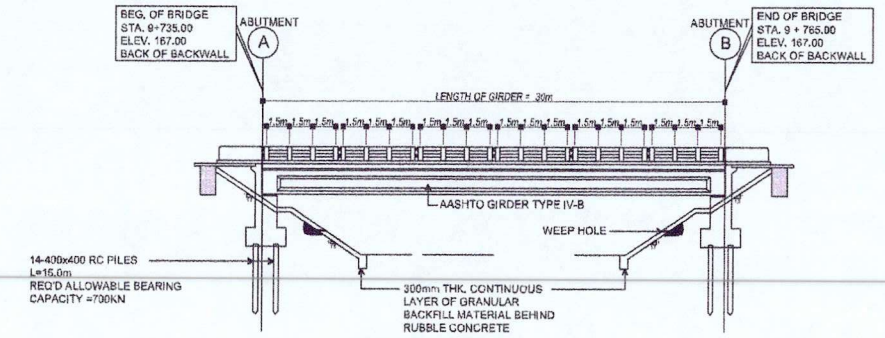
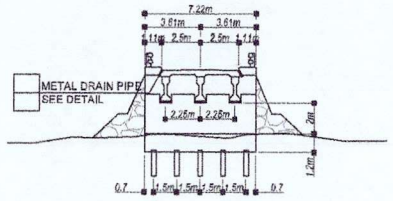
Municipality of Bongabong

SP ID Number: PRDP-IR-R04B-ORM-007-BON-007-2019
Project Title: Concreting of Centro - Panluan - Balite, Hagan Farm to Market Road
Location: Hagan, Bongabong Oriental Mindoro

Prepared by:	Checked by:	Recommending Approval:	Approved by:	Sheet Content:	Sheet No.
JOSE VINCENT C. GALIGA, C.E. Draftsman III	OLIVIA C. CORONEL, C.E.,EnP. Assistant Municipal Engineer / OIC-MEO Municipality of Bongabong	GREGORIO S. REYES, EnP. Municipal Planning and Development Coordinator Municipality of Bongabong	ELEGIO A. MALALUAN, O.D. Municipal Mayor Municipality of Bongabong	• GENERAL PLANS FOR DOUBLE BARREL RCBC • DOUBLE RCBC & RCBC WINGWALL BAR BENDING SCHEDULE	E 47/55



ELEVATION

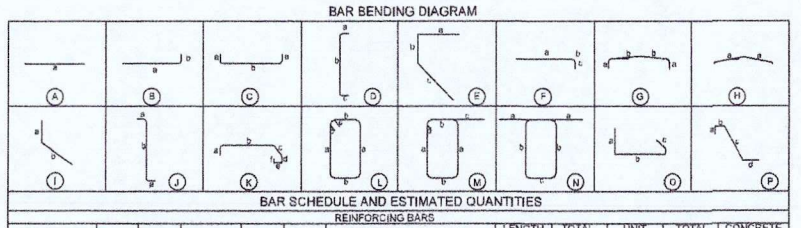


CROSS SECTION

PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184 APPROVAL BY THE AUTHORIZED DPWH OFFICIAL OF DETAILED ENGINEERING SURVEYS AND DESIGN UNDERTAKEN BY THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGN NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

THE DESIGN CONSULTANT SHALL BE HELD FULLY RESPONSIBLE FOR THE FAILURE OF THE FACILITIES / STRUCTURE DUE TO FAULTY DESIGN EXCEPT FOR THE CHANGES MADE WITHOUT CONFORMITY OF THE CONSULTANTS.

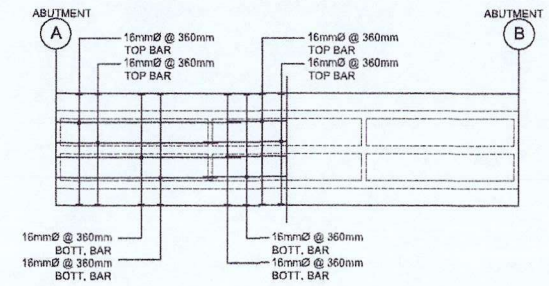
BAR BENDING DIAGRAM



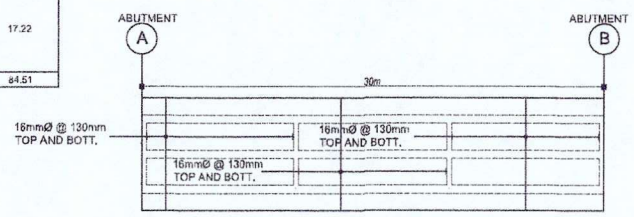
BAR SCHEDULE AND ESTIMATED QUANTITIES

STRUCTURE COMPONENT	MARK	SIZE (mm)	SPACING (mm)	QTY.	BAR SHAPE	DIMENSIONS (OUT TO OUT) a	b	c	d	LENGTH PER BAR (mm)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)	CONCRETE VOLUME (m³)
						REINFORCING BARS								
SLAB	S1	16	130	234	G	110	4,620	-	-	9,460	2,213.64	1.579	3,495.34	
	S2	16	130	234	G	110	4,620	-	-	9,460	2,213.64	1.579	3,495.34	
	S3a	16	360	54	B	11,900	110	-	-	12,010	648.54	1.579	1,024.04	
	S3b	16	360	52	B	10,400	110	-	-	10,510	546.52	1.579	862.95	
	S4a	16	360	27	A	9,000	-	-	-	9,000	243	1.579	383.70	
	S4b	16	360	26	A	10,500	-	-	-	10,500	273	1.579	431.07	67.20
	S5a	16	360	54	B	11,900	110	-	-	12,010	648.54	1.579	1,024.04	
	S5b	16	360	52	B	10,400	110	-	-	10,510	546.52	1.579	862.95	
	S6a	16	360	27	A	900	-	-	-	9,000	243	1.579	383.70	
	S6b	16	360	26	A	10,500	-	-	-	10,500	273	1.579	431.07	
											SUB-TOTAL =		12,194.22	
SIDEWALK	SW1	16	250	124	P	178	1,010	380	250	1,815	225.06	1.579	355.37	
	SW2	12	250	124	J	150	400	-	-	700	86.80	0.888	77.08	
	SW3	12	250	124	B	1,010	175	-	-	1,185	146.94	0.888	130.48	17.22
	SW4	16	AS SHOWN	10	A	30,700	-	-	-	30,700	307.00	1.579	484.75	
						TOTAL QUANTITY FOR 1 SIDE WALK							SUB-TOTAL =	1,047.68	
						TOTAL QUANTITY FOR 2 SIDE WALK							SUB-TOTAL =	2,095.35
													GRAND TOTAL =	14,469.58	84.51

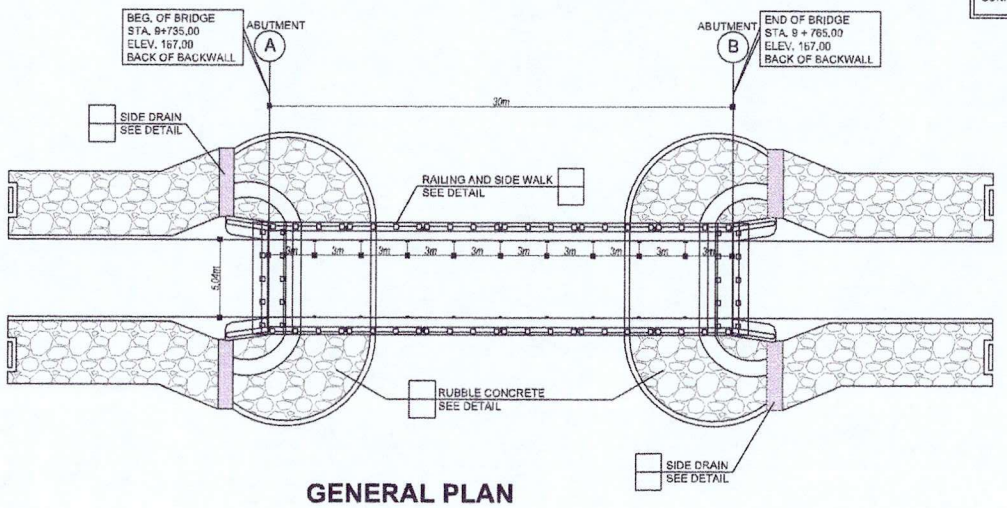
NOTE: ALL QUANTITIES SHALL BE VERIFIED DURING CONSTRUCTION.



LONGITUDINAL REBAR PLAN



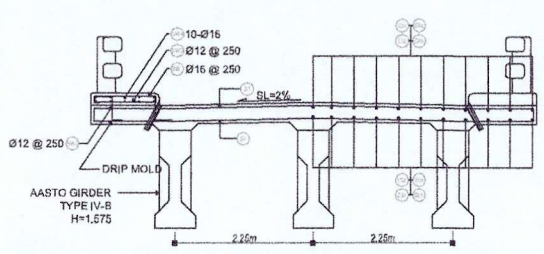
TRANSVERSE REBAR PLAN



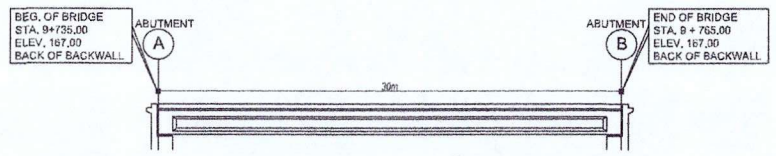
GENERAL PLAN

NOTES:

1. ALL QUANTITIES SHOULD BE VERIFIED DURING CONSTRUCTION.
2. ALL DIMENSIONS, STATIONING & ELEVATIONS SHALL BE VERIFIED BEFORE CONSTRUCTION BEGINS.



SECTION



LONGITUDINAL SECTION

NOTES:

1. ALL ELEVATION AND DIMENSIONS SHALL BE VERIFIED PRIOR TO CONSTRUCTION.
2. EXISTING BRIDGE AND OTHER OBSTRUCTIONS SHALL BE REMOVED IN ACCORDANCE TO ITEM 101(a). SUBSTRUCTURE OF EXISTING BRIDGE SHALL BE DEMOLISHED AND CUT TO 600mm BELOW THE FINISHED GRADE SURFACE IF FINISHED GRADE IS NOT GIVEN.
3. ALL QUANTITIES SHOULD BE VERIFIED BEFORE CONSTRUCTION BEGINS.
4. HYDRAULIC DESIGN DATA:
   - DRAINAGE AREA = 8.47 km²
   - DESIGN DISCHARGE = 178.48cms
   - DESIGN VELOCITY = 4.27 m/sec
   - DPL = 2.50 m
   - MFWL = 2.30 m
5. SUBSIDIARY TO PAY ITEM 607
   a. 75mmØ PVC DRAIN OR WEEPHOLES
   b. PERFORATED CAPS
6. BORROW MATERIALS UNDER APPROACH SLAB IS INCLUDED IN THE HIGHWAY QUANTITY.

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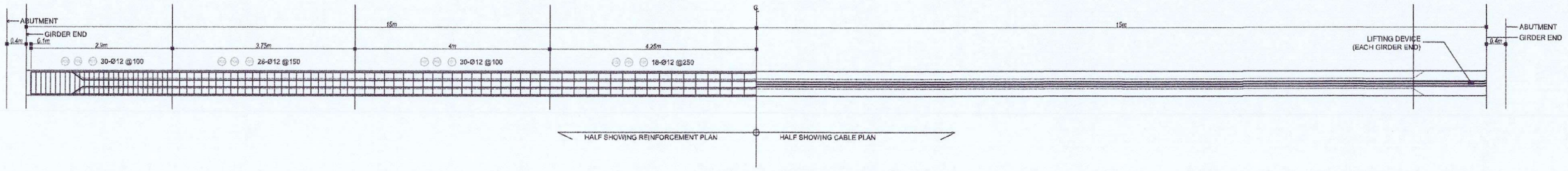
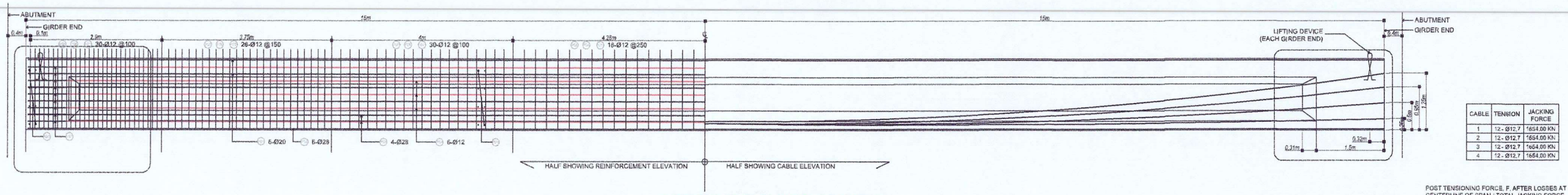
Location: Hagan, Bongabong Oriental Mindoro

CAD by:	Prepared by:	Checked by:	Recommending Approval:		Sheet Content:	Sheet No.
JOSE VINCENT C. GALIGA, C.E. Draftsman III	PRC No.: PTR No.: ASEP Recognition:	OLIVIA B. CORONEL, C.E.,EnP. Assistant Municipal Engineer / OIC-MEO Municipality of Bongabong	GREGORIO S. REYES, EnP. Municipal Planning and Development Coordinator Municipality of Bongabong	ELEGIO A. MALALUAN, O.D. Municipal Mayor Municipality of Bongabong	• GENERAL PLAN • ELEVATION • CROSS SECTION • LONGITUDINAL SECTION • LONGITUDINAL REBAR PLAN	F 48 | 55



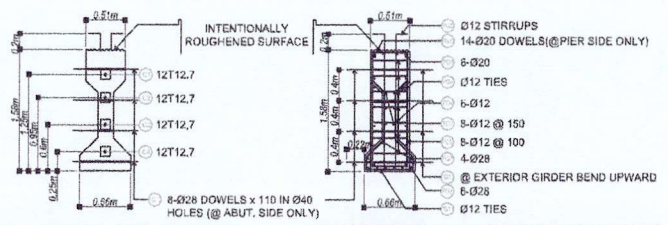
GIRDER ELEVATION PLAN



GIRDER ELEVATION DETAILS

CABLE	TENSION	JACKING FORCE
1	12 - Ø12.7	1654.00 KN
2	12 - Ø12.7	1654.00 KN
3	12 - Ø12.7	1654.00 KN
4	12 - Ø12.7	1654.00 KN

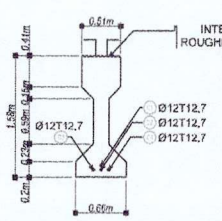
POST TENSIONING FORCE, F, AFTER LOSSES AT CENTERLINE OF SPAN / TOTAL JACKING FORCE PER GIRDER.



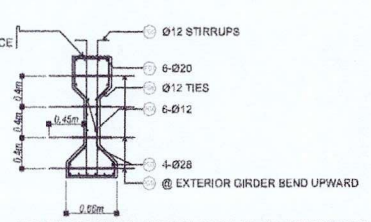
SHOWING TENDONS

SHOWING REINFORCEMENT

SECTION @ END

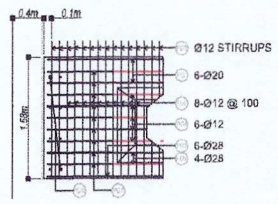


SHOWING TENDONS



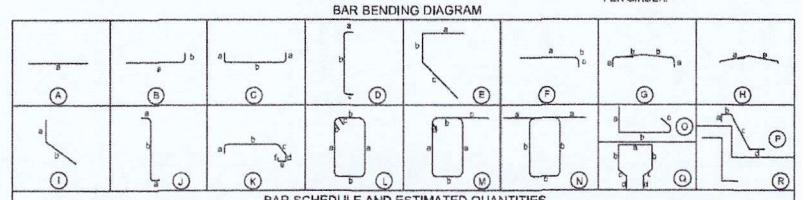
SHOWING REINFORCEMENT

SECTION @ MIDSPAN



END BLOCK REINFORCEMENT DETAIL @ ABUT.

BAR BENDING DIAGRAM



BAR SCHEDULE AND ESTIMATED QUANTITIES

STRUCTURE COMPONENT	MARK	SIZE (mm)	SPACING (mm)	QTY.	BAR SHAPE	REINFORCING BARS DIMENSIONS (OUT TO OUT) a	b	c	d	LENGTH PER BAR (mm)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)	CONCRETE VOLUME (m^3)
GIRDER	PG1	20	AS SHOWN	6	A	29,920	-	-	-	29,920	179.52	2.466	442.70	19.18
	PG2	25	AS SHOWN	6	A	29,920	-	-	-	29,920	179.52	3.853	691.69	
	PG3	28	AS SHOWN	4	A	29,920	-	-	-	29,920	119.68	4.834	578.53	
	PG4	12	AS SHOWN	6	A	29,920	-	-	-	29,920	179.52	0.888	159.41	
	PG5	12	AS SHOWN	190	R	150	1,600	150	-	3,930	727.70	0.888	646.26	
	PG6	12	AS SHOWN	190	Q	430	370	220	150	1,910	352.60	0.888	322.25	
	PG7	12	AS SHOWN	16	R	430	1,500	380	-	4,130	66.08	0.888	58.58	
	PG8	12	AS SHOWN	16	C	1,440	430	-	-	3,310	52.96	0.888	47.03	
	PG9	28	AS SHOWN	12	A	1,000	-	-	-	2,000	24.00	4.834	116.02	
	PG10	28	AS SHOWN	16	A	950	-	-	-	950	15.20	4.834	73.48	
	PG11	12	AS SHOWN	190	Q	580	176	330	150	1,896	360.24	0.888	319.89	
											TOTAL = 3,509.83			19.18

1. QUANTITIES ARE FOR 1 GIRDER ONLY
2. REQUIRED SPLICES FOR CONTINUOUS BARS ARE NOT INCLUDED IN THE ESTIMATES

NOTE: ALL QUANTITIES SHALL BE VERIFIED DURING CONSTRUCTION.

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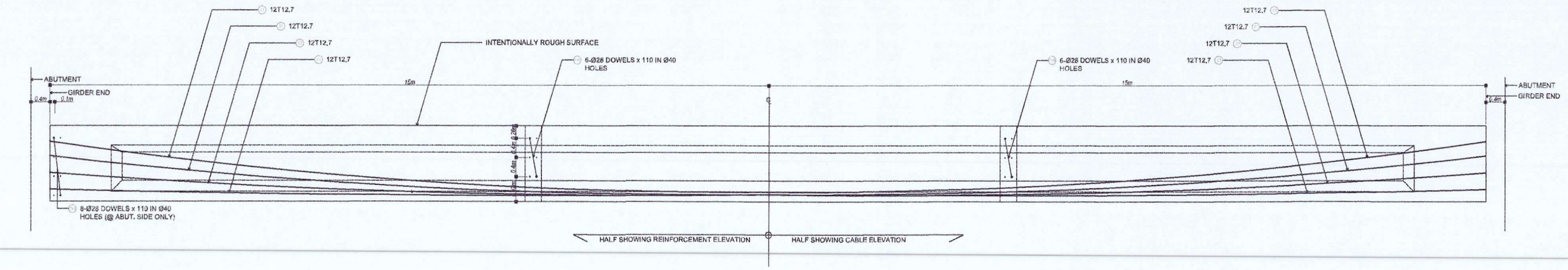
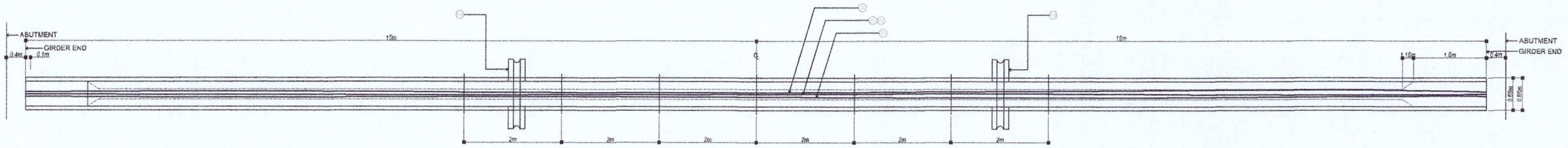




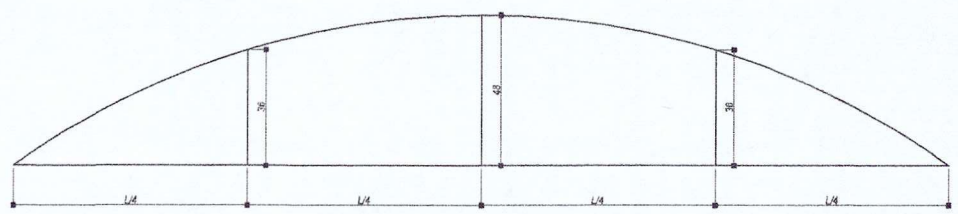
PLAN SHOWING CABLE LAY-OUT

CABLE ①	1250	989	765	578	429	317	242	205	200	205	242	317	429	578	765	989	1250
CABLE ②	950	738	557	406	285	194	134	104	100	104	134	194	285	406	557	738	950
CABLE ③	600	476	369	280	209	156	120	102	100	102	120	156	209	280	369	476	600
CABLE ④	250	213	181	154	133	117	106	100	100	100	106	117	133	154	181	213	250

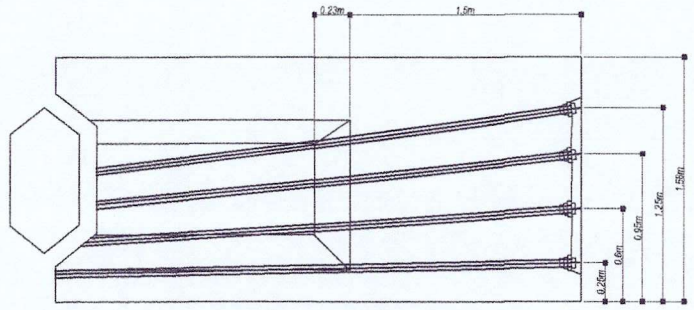
2m 2m 2m 2m 2m 2m 2m 2m 1m 1m 2m 2m 2m 2m 2m 2m 2m 2m

15m 15m

ELEVATION SHOWING DIMENSIONS AND CABLE PROFILE



CAMBER DIAGRAM



DETAIL AT END BLOCK

PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184 APPROVAL BY THE AUTHORIZED DPWH OFFICIAL OF DETAILED ENGINEERING SURVEYS AND DESIGN UNDERTAKEN BY THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGN NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

THE DESIGN CONSULTANT SHALL BE HELD FULLY RESPONSIBLE FOR THE FAILURE OF THE FACILITIES / STRUCTURE DUE TO FAULTY DESIGN EXCEPT FOR THE CHANGES MADE WITHOUT CONFORMITY OF THE CONSULTANTS.

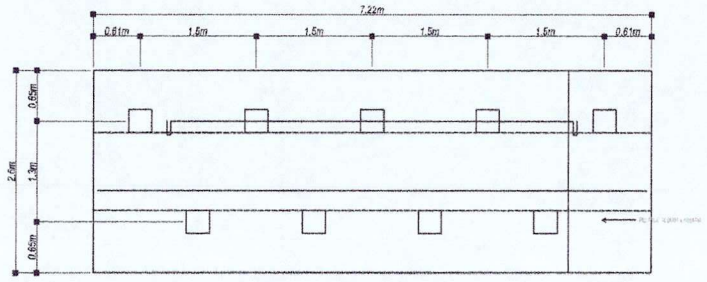
Republic of the Philippines
Department of Agriculture
Philippine Rural Development Project
Province of Oriental Mindoro
Municipality of Bongabong

SP ID Number: PRDP-IR-R04B-ORM-007-BON-007-2019

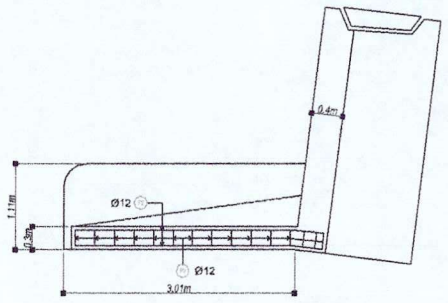
Project Title: Concreting of Centro - Panluan - Balite, Hagan Farm to Market Road

Location: Hagan, Bongabong Oriental Mindoro

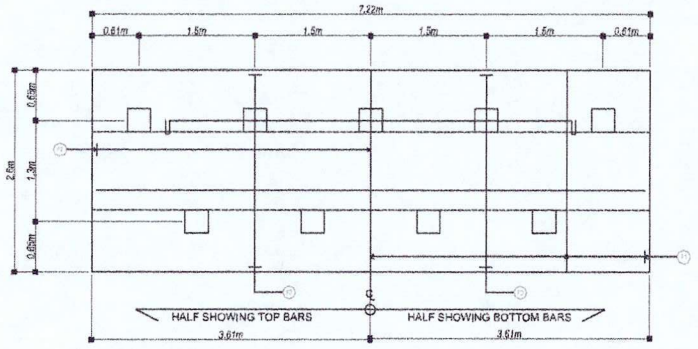
CAD by:	Prepared by:	Checked by:	Recommending Approval:	Approved by:	Sheet Content:	Sheet No.
JOSE VINCENT C. GALIGA, C.E. Draftsman III	PRC No. : PTR No. : ASEP Recognition:	OLIVIA C. CORONEL, C.E., EnP. Assistant Municipal Engineer / OIC MEO Municipality of Bongabong	GREGORIO S. REYES, EnP. Municipal Planning and Development Coordinator Municipality of Bongabong	ELECIO A. MALALUAN, O.D. Municipal Mayor Municipality of Bongabong	• GIRDER DETAIL ELEVATION SHOWING DIMENSION AND CABLE PROFILE, PLAN SHOWING CABLE LAYOUT, DETAIL AT END BLOCK AND CAMBER DIAGRAM	F 50 | 55



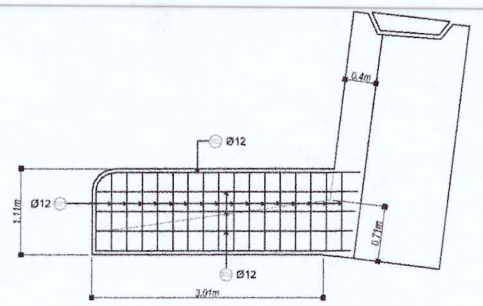
PILE LAY-OUT PLAN



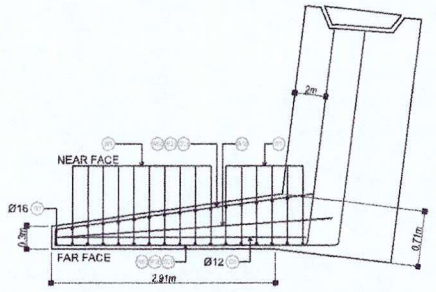
SECTION DETAILS



PILE REINFORCEMENT LAY-OUT PLAN



SECTION DETAILS



SECTION DETAILS

PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184 APPROVAL BY THE AUTHORIZED DPWH OFFICIAL OF DETAILED ENGINEERING SURVEYS AND DESIGN UNDERTAKEN BY THE CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGN NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

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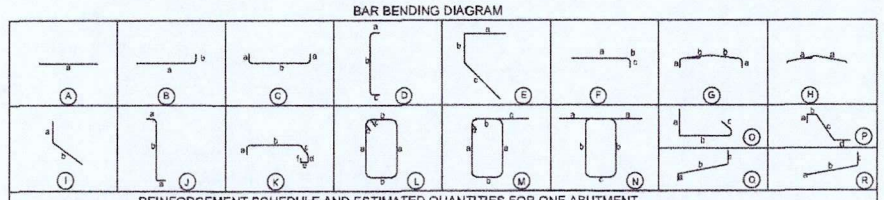
BAR BENDING DIAGRAM



REINFORCEMENT SCHEDULE AND ESTIMATED QUANTITIES FOR ONE ABUTMENT

REINFORCING BARS

STRUCTURE COMPONENT	MARK	SIZE (mm)	SPACING (mm)	QTY.	BAR SHAPE	DIMENSIONS (CUT TO OUT) a	b	c	d	e	f	LENGTH PER BAR (mm)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)	CONCRETE VOLUME (m³)
WINGWALL	W1a	16	150	6	Q	160	3,200	920	-	-	-	4,300	25.80	1.579	40.74	
	W1b	12	150	6	R	160	3,200	920	-	-	-	4,300	25.80	0.888	22.91	
	W1c	16	A.S	2	A	335	-	-	-	-	-	3,350	6.70	1.579	10.58	
	W2a	16	150	18	Q	160	3,200	920	-	-	-	4,300	77.40	1.579	122.21	
	W2b	12	150	18	R	160	3,200	920	-	-	-	4,300	77.00	0.888	68.73	
	W3a	16	150	26	Q	160	2,370	1,000	-	-	-	3,550	92.30	1.579	145.74	5.383
	W3b	12	150	26	R	160	2,630	1,200	-	-	-	4,010	104.26	0.888	92.58	
	W4	12	300	18	D	200	2,852	350	-	-	-	3,402	61.24	0.888	54.38	
	W5	16	150	14	D	300	4,950	350	-	-	-	5,600	78.40	1.579	123.79	
	W6a	16	150	12	Q	160	1,400	920	-	-	-	2,500	30.00	1.579	47.37	
	W6b	12	150	12	R	200	1,730	920	-	-	-	2,850	34.20	0.888	30.37	
	W7	16	4	2	I	2,200	2,700	-	-	-	-	4,900	9.80	1.579	15.47	
	W8	12	A.S	175	O	150	500	250	-	-	-	900	160.20	0.888	142.26	
														SUB-TOTAL =	917.12	
														TOTAL FOR 2 WING WALL =	1,834.26	10.766
PARAPET	P1	12	A.S	4	F	3,050	392	250	-	-	-	3,692	14.77	0.888	13.11	
	P2	12	A.S	12	C	200	3,200	-	-	-	-	3,600	43.20	0.888	38.36	0.816
	P3	12	150	42	C	200	1,600	-	-	-	-	3,400	142.80	0.888	126.81	
														SUB-TOTAL =	178.28	
														TOTAL FOR 2 PARAPET =	356.56	1.632
SIDEWALK	SW1	12	150	42	L	410	1,015	50	-	-	-	2,862	123.98	0.888	110.10	
	SW2	12	A.S	6	F	3,150	470	660	-	-	-	4,270	25.62	0.888	22.75	1.924
	SW3	12	A.S	18	C	380	3,400	-	-	-	-	4,160	74.88	0.888	66.49	
														SUB-TOTAL =	199.34	
														TOTAL FOR 2 SIDEWALK =	398.68	3.848
BREASTWALL	C1	32	150	64	B	3,600	1,250	-	-	-	-	4,850	310.40	6.313	1,959.56	
	C1a	25	150	64	B	3,737	500	-	-	-	-	4,237	271.17	3.854	1,045.00	
	C2	16	150	42	C	800	9,390	-	-	-	-	10,990	461.58	1.579	728.93	37.223
	C3	16	A.S	5	C	500	9,390	-	-	-	-	10,390	51.95	1.579	82.03	
	C4	12	300	340	O	200	1,250	250	-	-	-	1,700	578.00	0.888	513.26	
	C5	16	150	64	C	150	1,300	-	-	-	-	1,600	102.40	1.579	161.69	
														SUB-TOTAL =	4,490.46	
																37.223
BACKWALL	B1	16	150	64	C	2,600	300	-	-	-	-	5,500	352.00	1.579	555.81	
	B2	12	A.S	16	C	200	9,490	-	-	-	-	10,090	161.44	0.888	143.36	7.682
	B3	12	300	128	O	150	300	250	-	-	-	700	89.60	0.888	79.56	
														SUB-TOTAL =	778.73	
																7.682
CORBEL	CB1	12	A.S	4	A	7,300	-	-	-	-	-	7,300	29.20	0.888	25.93	
	CB2	16	150	64	B	500	150	750	-	-	-	1,430	91.52	1.579	144.51	0.674
														SUB-TOTAL =	170.44	
																0.674
FOOTING	F1	32	150	87	C	900	3,350	-	-	-	-	5,150	345.05	6.313	2,178.30	
	F2	25	150	87	C	900	3,350	-	-	-	-	5,150	345.05	3.854	1,329.82	
	F3	25	150	44	C	700	9,950	-	-	-	-	11,350	499.40	3.854	1,924.69	
	F4	16	A.S	204	O	300	1,060	300	-	-	-	1,660	338.60	1.579	531.49	42.42
	F5	16	A.S	6	C	500	9,950	-	-	-	-	10,950	65.70	1.579	103.74	
	F6	12	A.S	75	L	350	350	100	-	-	-	1,800	120.00	0.888	106.56	
														SUB-TOTAL =	6,174.60	
																42.42
SHEAR KEY	K1	16	A.S	16	C	275	1,425	-	-	-	-	1,975	15.80	1.579	24.95	
	K2	16	A.S	24	C	275	275	-	-	-	-	1,825	12.64	1.579	19.95	0.333
														SUB-TOTAL =	4,490.00	
														TOTAL FOR 3 SHEAR KEYS =	134.70	0.999
END BLOCK	K1	16	A.S	16	C	275	1,250	-	-	-	-	1,800	12.60	1.579	19.90	
	K2	16	A.S	16	C	275	1,250	-	-	-	-	1,800	9.00	1.579	14.21	0.24
														SUB-TOTAL =	34.11	
														TOTAL FOR 2 END BLOCKS =	68.22	0.48
RISER	R1	12	A.S	10	C	250	780	-	-	-	-	1,250	6.40	0.888	5.68	
	R2	12	A.S	12	C	250	780	-	-	-	-	1,250	7.88	0.888	6.82	0.03
														SUB-TOTAL =	12.50	
														TOTAL FOR 4 RISERS =	50.00	0.12
														GRAND TOTAL =	14,460.56	105.84

Republic of the Philippines
Department of Agriculture
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SP ID Number: PRDP-IR-R04B-ORM-007-BON-007-2019
Project Title: Concreting of Centro - Panluan - Balite, Hagan Farm to Market Road
Location: Hagan, Bongabong Oriental Mindoro

CAD by:
JOSE VINCENT C. GALIGA, C.E
Draftsman III

Prepared by:
PRC No.:
PTR No.:
ASEP Recognition:

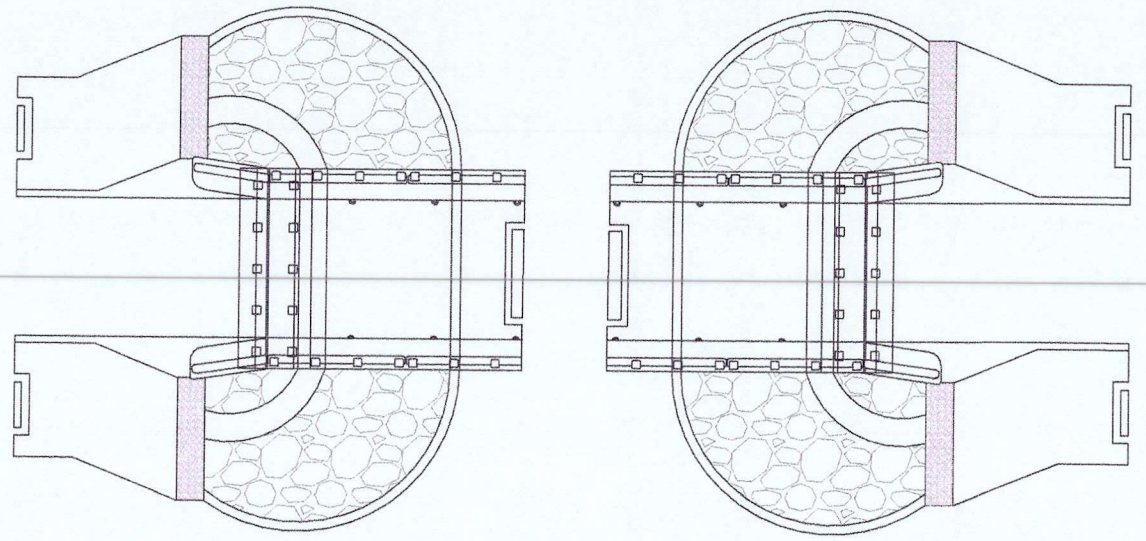
Checked by:
OLIVIA C. CORONEL, C.E.,EnP.
Assistant Municipal Engineer / OIC-MEO
Municipality of Bongabong

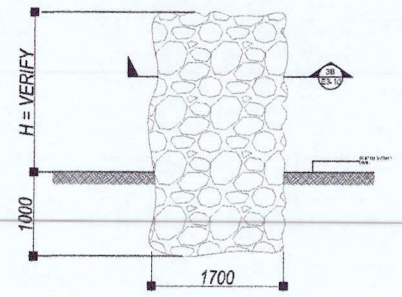
Recommending Approval:
GREGORIO S. REYES, EnP.
Municipal Planning and Development Coordinator
Municipality of Bongabong

Approved by:
ELEGIO A. MALALUAN, O.D.
Municipal Mayor
Municipality of Bongabong

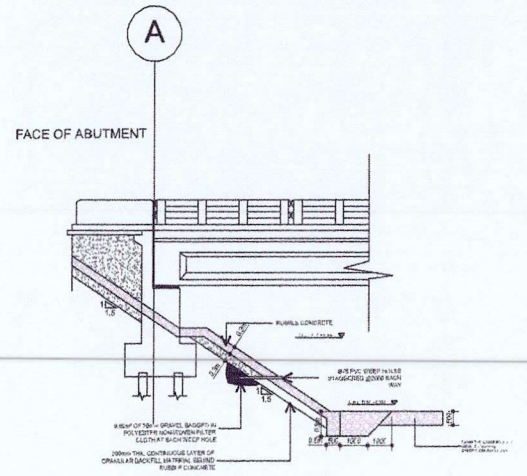
Sheet Content:
- ABUTMENT DETAIL PLAN
- ELEVATION, SECTION DETAIL AND BAR BENDING DIAGRAM

Sheet No.
F
51 | 55

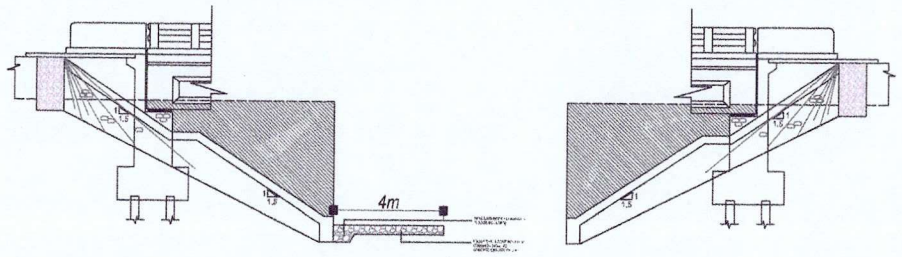




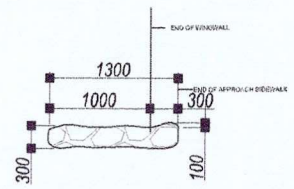
3A
E3-10
ELEVATION
SCALE: NTS



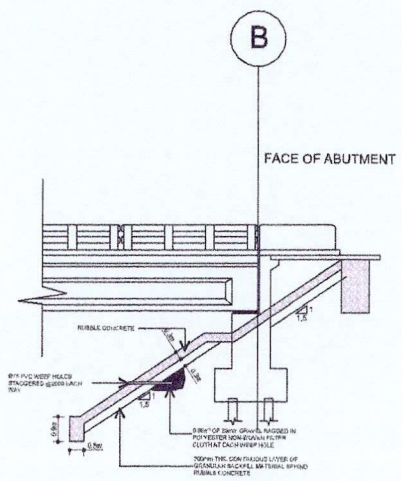
SECTION C



ELEVATION



SECTION
SIDE DRAIN DETAILS



SECTION D

RUBBLE CONCRETE AND DRAIN DETAILS

RUBBLE CONCRETE:

1. RUBBLE CONCRETE SHALL BE CLASS B (1:2.5:5) MIX CONCRETE WITH BOULDERS EMBEDDED THEREIN. BOULDERS 200-250mm Ø SHALL BE CAREFULLY HAND-LAID WITHIN THE CONCRETE SECTION. THE BOULDERS SHALL BE THOROUGHLY INCORPORATED INTO THE CONCRETE MASS WITH A COVER OF 30mm AND NOT LESS THAN 30mm APART WITH CONCRETE BED OF NOT LESS THAN 50mm.
2. FOR THE LOOSE BOULDER APRON, BOULDER 250mm-300mm Ø SHALL BE HAND-LAID, CLOSE TOGETHER AND SHALL BE FIRMLY BEDDED. ALL VOIDS BETWEEN BOULDERS SHALL BE FILLED WITH GRAVEL AND THE JOINTS FILLED WITH TIGHTLY DRIVEN SPALLS.

NOTES:

1. STONES SHALL BE CLEAN, HARD, AND DURABLE AND SHALL BE SUBJECT TO THE ENGINEER'S APPROVAL. ADOBE STONES SHALL NOT BE USED UNLESS OTHERWISE SPECIFIED. THE MIN. SIZE OF STONES TO BE USED SHALL BE 0.05m IN VOLUME AND NOT LESS THAN 75 PERCENT OF THE TOTAL VOLUME OF ROCK EMBANKMENT SHALL CONSISTS OF STONES 0.10m³ IN VOLUME. STONES OBTAINED FROM EXCAVATION PERFORMED UNDER THIS CONTRACT MAY BE USED IF QUALIFIED.
2. CONCRETE SHALL BE CLASS "B" IN ACCORDANCE WITH ITEM 405-STRUCTURAL CONCRETE OF THE SPECIFIED SPECIAL PROVISIONS.
3. THE FOUNDATION BED SHALL BE EXCAVATED TO THE LINES AND GRADES AS SHOWN IN THE PLANS AS DIRECTED BY THE ENGINEER, AND SHALL BE THOROUGHLY COMPACTED.
4. FALSEWORK/FORMWORK IF USED SHALL BE CONSTRUCTED SO AS TO WITHSTAND THE STRESSES IMPOSED. FORMWORK USED SHALL BE CONSTRUCTED WITH SUFFICIENT STRENGTH, RIGIDITY AND SHAPE AS TO LEAVE THE FINISHED WORKS TRUE TO THE DIMENSIONS SHOWN ON THE PLANS AND WITH THE SURFACE FINISHED AS SPECIFIED.
5. CONSTRUCTION:

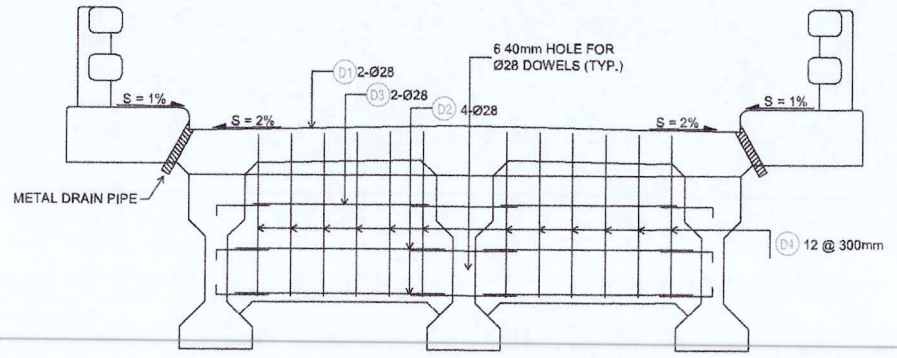
   ONE LAYER OF THE CONCRETE CLASS "B" SHALL BE PLACED AT THE PREPARED BED PRIOR TO PLACING OF STONES. CLEARANCE BETWEEN STONES SHALL NOT BE MORE THAN 65mm OR THE MAXIMUM SIZE OF CONCRETE AGGREGATE FOR CLASS "B".

   CONCRETE CLASS "B" SHALL BE PLACED AFTER EACH PLAYER OF STONE AND SHALL BE THOROUGHLY COMPOLIDATED BY MEANS OF A VIBRATOR INSERTED IN EACH LAYER OF CONCRETE. IN NO CASE SHALL THE VIBRATOR BE OPERATED LONGER THAN 10 SECONDS IN ANY LOCATION.

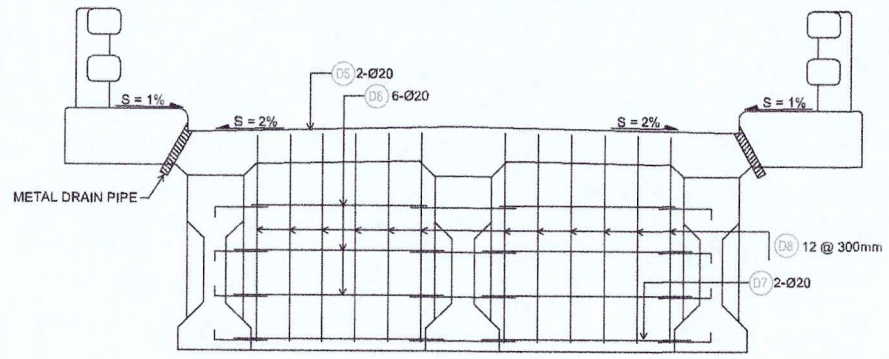
   AFTER REMOVAL OF FORMS, ANY CAVITIES, VOIDS AND HONEYCOMB SPOTS SHALL BE FILLED UP WITH MORTAR COMPOSED OF ONE PART CEMENT AND TWO PARTS SAND.

   ALL DEBRIS AND REFUSE RESULTING FROM WORK SHALL BE REMOVED AND THE SITE LEFT IN A NEAT AND PRESENTABLE CONDITION.

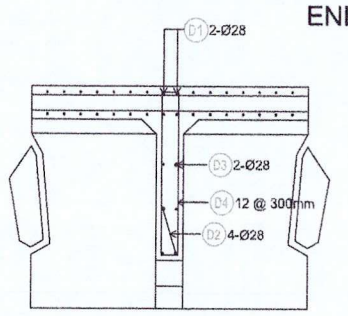
Republic of the Philippines Department of Agriculture Philippine Rural Development Project Province of Oriental Mindoro Municipality of Bongabong	SP ID Number: PRDP-IR-R04B-ORM-007-BON-007-2019 Project Title: Concreting of Centro - Panluan - Balite, Hagan Farm to Market Road Location: Hagan, Bongabong Oriental Mindoro	CAD by: JOSE VINCENT C. GALIGA, C.E. Draftsman III	Prepared by: PRC No. : PTR No. : ASEP Recognition:	Checked by: OLIVIA C. CORONEL, C.E.,EnP. Assistant Municipal Engineer / OIC MEO Municipality of Bongabong	Recommending Approval: GREGORIO S. REYES, EnP. Municipal Planning and Development Coordinator Municipality of Bongabong	Approved by: ELEGIO A. MALALUAN, O.D. Municipal Mayor Municipality of Bongabong	Sheet Content: • SLOPE PROTECTION WORKS	Sheet No. F 52 55



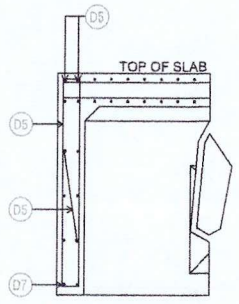
INTERMEDIATE DIAPHRAGM



END DIAPHRAGM

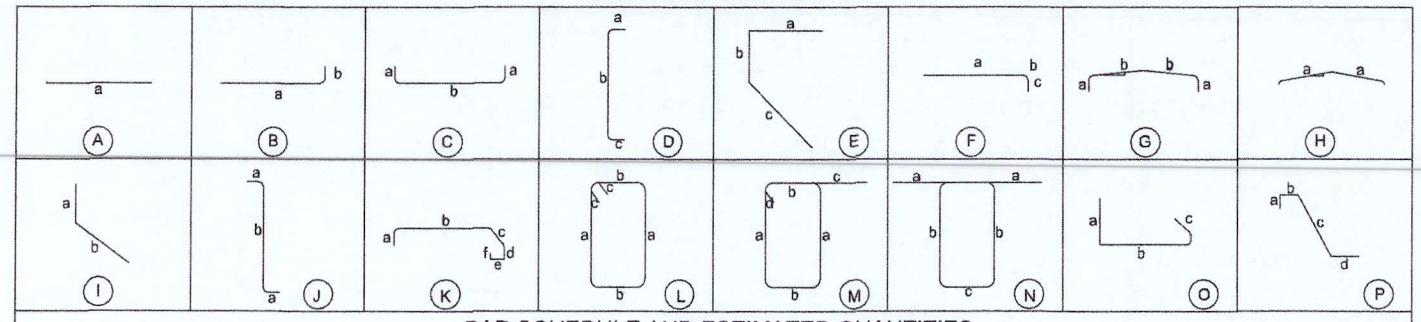


SECTION



SECTION

BAR BENDING DIAGRAM



BAR SCHEDULE AND ESTIMATED QUANTITIES

REINFORCING BARS

STRUCTURE COMPONENT	MARK	SIZE (mm)	SPACING (mm)	QTY.	BAR SHAPE	DIMENSIONS (OUT TO OUT) a	b	c	d	LENGTH PER BAR (mm)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)	CONCRETE VOLUME (m³)
INTERMEDIATE DIAPHRAGM	D1	28	AS SHOWN	2	H	3,660	-	-	-	7,320	14.64	4.633	70.76	4.22
	D2	28	AS SHOWN	12	A	1,947	-	-	-	1,947	23.36	4.633	112.92	
	D3	28	AS SHOWN	6	A	1,642	-	-	-	1,642	9.85	4.633	47.61	
	D4	12	AS SHOWN	18	L	1,685	150	100	-	3,870	69.66	0.888	61.88	
	TOTAL QUANTITY FOR 1 INTERNAL DIAPHRAGM											SUB-TOTAL =	293.15	
	TOTAL QUANTITY FOR 2 INTERNAL DIAPHRAGM											SUB-TOTAL =	586.30	
END DIAPHRAGM	D5	20	AS SHOWN	2	H	3,660	-	-	-	3,660	7.32	2.466	18.05	5.12
	D6	20	AS SHOWN	18	A	1,642	-	-	-	1,642	29.56	2.466	72.89	
	D7	20	AS SHOWN	6	A	1,490	-	-	-	1,490	8.94	2.466	22.05	
	D8	12	300	18	M	1,685	200	100	1,450	5,320	95.76	0.888	85.03	
	TOTAL QUANTITY FOR 1 END DIAPHRAGM											SUB-TOTAL =	198.02	
	TOTAL QUANTITY FOR 2 END DIAPHRAGM											SUB-TOTAL =	396.04	
												GRAND TOTAL =	952.34	9.34

NOTE: ALL QUANTITIES SHALL BE VERIFIED DURING CONSTRUCTION.

Republic of the Philippines
Department of Agriculture
Philippine Rural Development Project
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Municipality of Bongabong

SP ID Number: PRDP-IR-R04B-ORM-007-BON-007-2019
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CAD by: JOSE VINCENT C. GALIGA, C.E. — Draftsman III

Prepared by: Checked by:
PRC No. :
PTR No. :
ASEP Recognition:

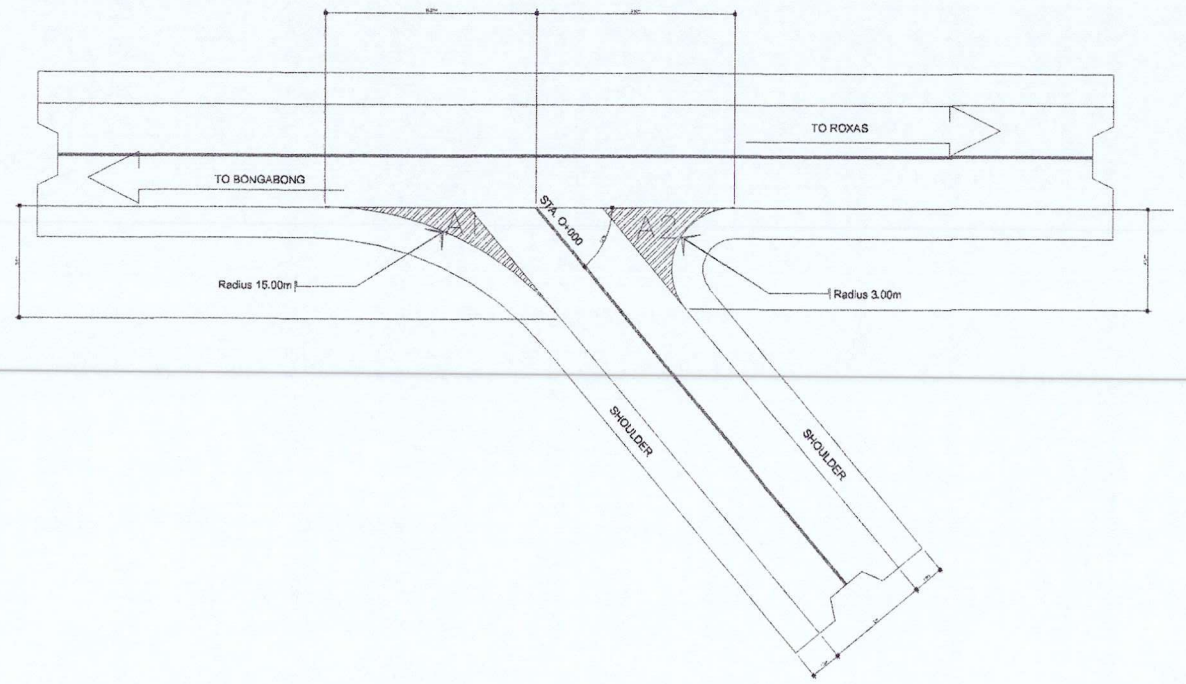
Checked by: OLIVIA C. CORONEL, C.E., EnP. — Assistant Municipal Engineer / OIC MEO, Municipality of Bongabong

Recommending Approval: GREGORIO S. REYES, EnP. — Municipal Planning and Development Coordinator, Municipality of Bongabong

Approved by: REGIO A. MALALUAN, O.D. — Municipal Mayor, Municipality of Bongabong

Sheet Content:
- INTERMEDIATE DIAPHRAGM DETAILS

Sheet No. F 53 | 55



CENTER (SEPARATION) LINES

PAVEMENT MARKINGS

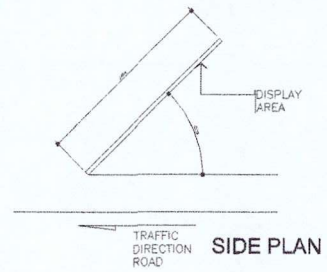
SCALE 1:20MTS.

SCHEDULE OF REFLECTORIZED THERMOPLASTIC PAVEMENT MARKINGS (WHITE)

STATION FROM	STATION TO	LENGTH (m)	AREA (sq.m.)
Brgy.Hagan(Sitio Centro) to Brgy.Hagan(Sitio Batete)			
Sta. 0+00	Sta. 7+480	3,870.00	258.04
TOTAL =			691.33

SCHEDULE OF ROAD SIGNS

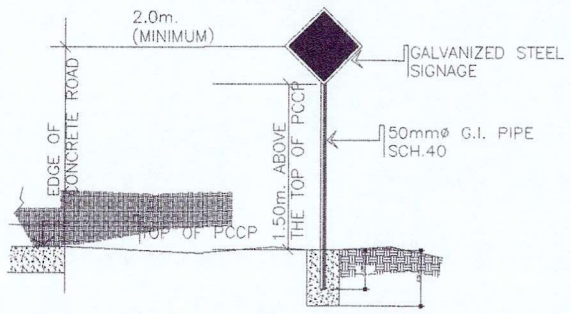
STATION	DESCRIPTION	QUANTITY (ea)
Sta.0+030,RS	G1-4(a)	1
Sta.10+150,LS	W6-1P	1
Sta.10+350,RS	W6-1P	1
Sta.10+350,LS	G1-4(b)	1
TOTAL		4



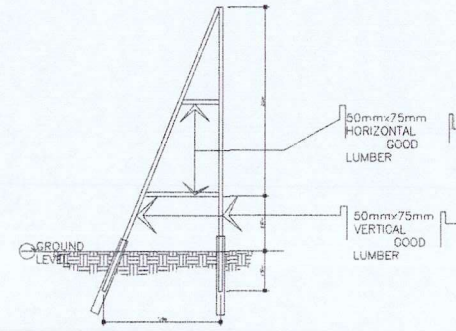
SIDE PLAN

SCHEDULE OF INTERSECTION

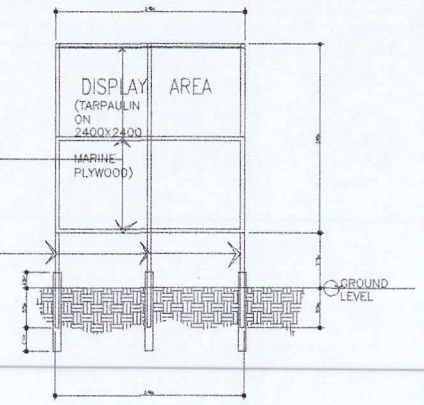
STATION	LOCATION	AREA (sq.m)
Sta.0+000	A1	8.69
Sta.10+150,LS	A2	8.14
SUB-TOTAL		15.83
Sta.10+350,RS	A1	35.69
SUB-TOTAL		35.69
Sta.10+400	A1	5.37
	A2	5.37
SUB-TOTAL		10.74
TOTAL AREA		82.26



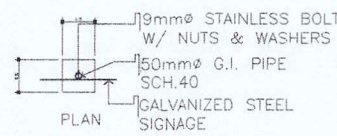
ELEVATION



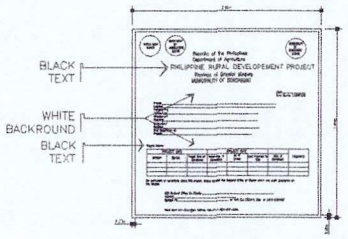
SIDE ELEVATION



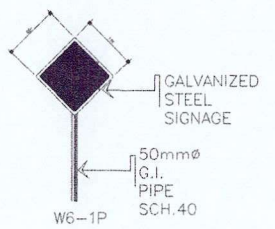
FRONT ELEVATION

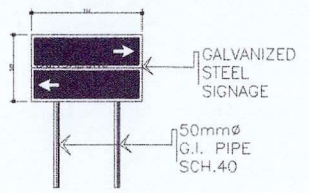


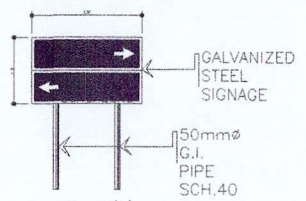
PLAN



TARPAULIN DETAILS (DISPLAY)







PROJECT BILLBOARD DETAILS

SCALE 1:20 MTS

Republic of the Philippines
Department of Agriculture
Philippine Rural Development Project
Province of Oriental Mindoro
Municipality of Bongabong

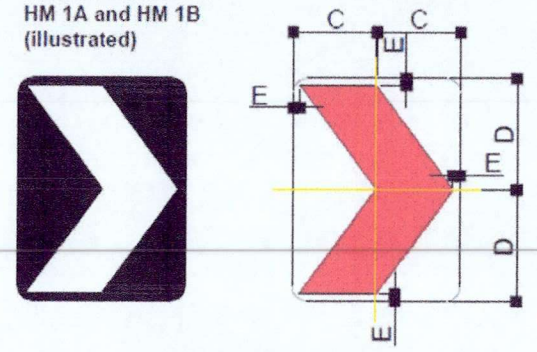
SP ID Number: PRDP-IR-R04B-ORM-007-BON-007-2019

Project Title: Concreting of Centro - Panluan - Balite, Hagan Farm to Market Road

Location: Hagan, Bongabong Oriental Mindoro

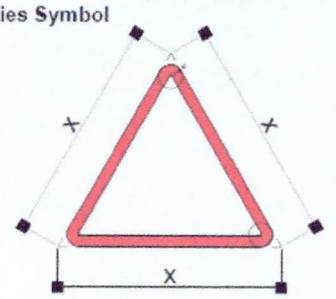
Prepared by:	Checked by:	Recommending Approval:	Approved by:	Sheet Content:	Sheet No.
JOSE VINCENT C. GALIGA, C.E. Draftsman III	OLIVIA C. CORONEL, C.E.,EnP. Assistant Municipal Engineer - OIC MEO Municipality of Bongabong	GREGORIO S. REYES, EnP. Municipal Planning and Development Coordinator Municipality of Bongabong	ELEGIO A. MALALUAN, O.D. Municipal Mayor Municipality of Bongabong	• PROJECT BILLBOARD AND PAVEMENT MARKINGS	F 54 55

HAZARD MARKER
HM 1A and HM 1B
(illustrated)



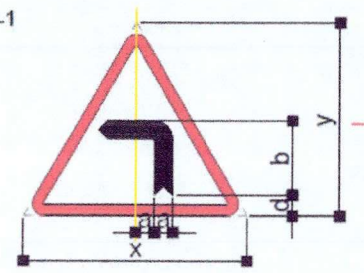
A	B	C	D	E	F
450	600	225	300	20	40
600	800	300	400	26	53

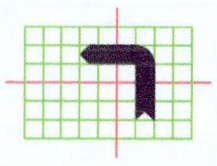
W Series Symbol



size	B	C	D
X	600	750	900
a	28	35	42
r1	4	5	6
r2	32	40	48

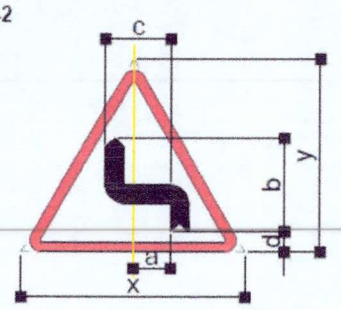
W1-1

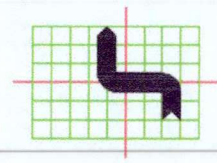




X	600	750
Y	520	650
a	50	60
b	200	240
c	100	120
d	56	70
z	50	62

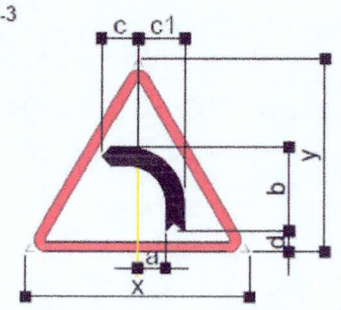
W1-2

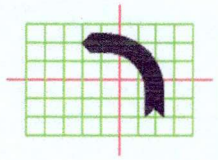




X	600	750
Y	520	650
a	100	120
b	250	310
c	175	220
d	56	70
z	50	62

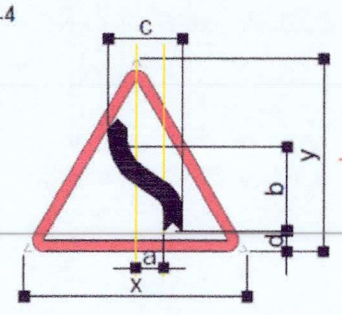
W1-3





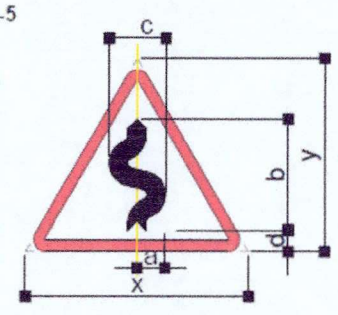
X	600	750
Y	520	650
a	70	88
a1	50	62
b	225	280
c	100	125
c1	120	150
d	56	70
z	50	62

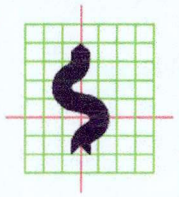
W1-4



X	600	750
Y	520	650
a	75	94
b	300	375
c	200	250
d	50	62
z	50	62

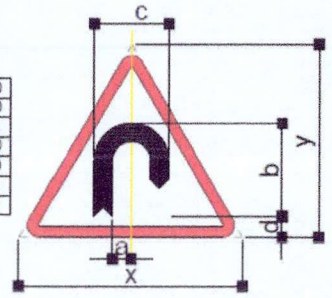
W1-5

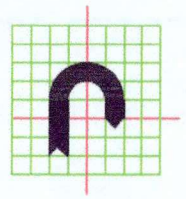




X	600	750
Y	520	650
a	50	62
b	350	437
c	153	190
d	50	62
z	50	62

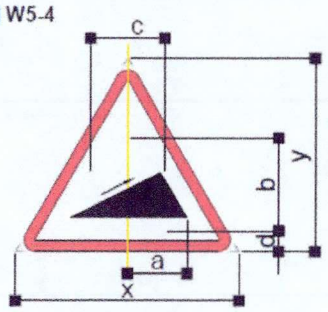
W1-6

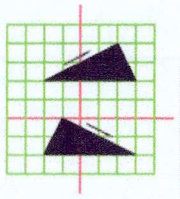




X	600	750
Y	520	650
a	90	112
b	250	312
c	180	225
d	50	62
z	50	62

W5-4 and W5-4





X	600	750
Y	520	650
a	175	219
b	150	188
c	-	-
d	75	94
z	50	62

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