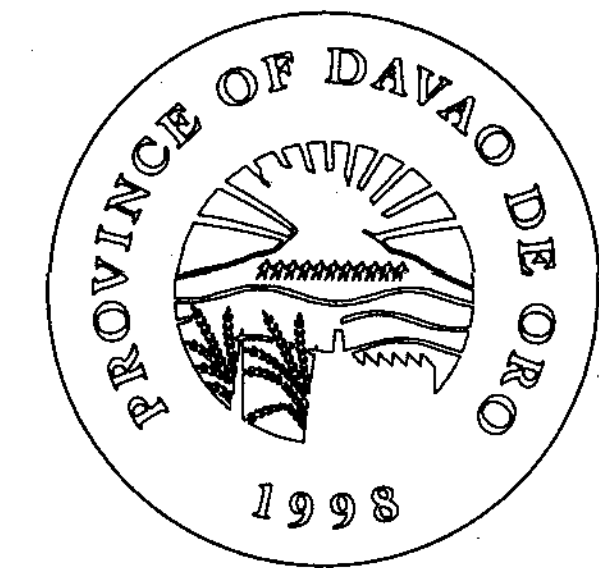


**Republic of the Philippines
PROVINCE OF DAVAO DE ORO**

**DEPARTMENT OF AGRICULTURE
REGION XI**



"PHILIPPINE RURAL DEVELOPMENT PROJECT SCALE UP"



**REHABILITATION OF NEW VISAYAS - BANAGBANAG,
MONTEVISTA TO MAGADING, NABUNTURAN ROAD WITH
EXPANSION OF EXISTING BRIDGE**

PROJECT NO.: PRDP-SU - IB - R011-DDO - 004-000-000-2023 - FMB

LOCATION: MONTEVISTA AND NABUNTURAN, DAVAO DE ORO PROVINCE

STA. LIMITS

STA. 0+000.00 - 8+331.80

NET LENGTH: 8.33212 KM.

PCCP WIDTH: 5.00 M.

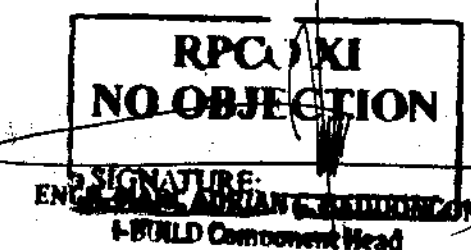



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RPC NO OBJECTION

 <p style="font-size: small;">REPUBLIC OF THE PHILIPPINES DEPARTMENT OF AGRICULTURE "PHILIPPINE RURAL DEVELOPMENT PROJECT SCALE UP" PROVINCE OF DAVAO DE ORO MUNICIPALITY OF MONTEVISTA & NABUNTURAN</p>	PROJECT NO.:	PRDP-SU-IB-R011-DDO-004-000-000-2023-FMB	PREPARED BY:		DESIGNED BY:		CHECKED & REVIEWED BY:		RECOMMENDING APPROVAL:		APPROVED:		SHEET CONTENTS:	SHEET NO.
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	LOCATION:	MONTEVISTA AND NABUNTURAN, DAVAO DE ORO		PLANNING & DESIGN DIVISION CHIEF	ENGINEER II	PROVINCIAL ENGINEER	CO - PPMIU	GOVERNOR			78			

R O A D W A Y

GENERAL NOTES

1. ALIGNMENT AND GRADES ARE SUBJECT TO ADJUSTMENT TO SUIT EXISTING FIELD CONDITIONS.
2. DISTANCES AND ELEVATIONS ARE IN METERS UNLESS OTHERWISE INDICATED.
3. GRADE SHOWN ARE TOP OF FINISHED PAVEMENT ELEVATION.
4. ALL WORKS SHALL COMPLY WITH THE " STANDARD SPECIFICATION FOR HIGHWAYS & BRIDGES " REVISED 2013.
5. WHERE NO DETOURS ARE AVAILABLE, TRAFFIC SHALL BE HANDLED IN ACCORDANCE WITH THE PROVISIONS OF CLAUSE 75 OF THE DPWH STANDARD SPECIFICATIONS, VOLUME ONE (1), REQUIREMENTS AND CONDITIONS OF CONTRACT (1988).
6. ALL EMBANKMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF ITEM 104 (EMBANKMENT) OF STANDARD SPECIFICATION FOR HIGHWAY AND BRIDGES REVISED 2013
7. CUT SLOPE, EXCEPT IN ROCK, AND FILL SLOPES SHALL BE ADJUSTED AND WARPED TO FLOW EACH OTHER OR NATURAL GROUND SURFACE WITHOUT NOTICEABLE BREAK.
8. APPROACHES AND ROAD CONNECTION SHALL BE CONSTRUCTED AS SHOWN IN PLANS OR AS DIRECTED BY THE ENGINEERS IN SUCH MANNER TO ENSURE PROPER CONNECTION TO THE RIDING SURFACES.
9. THE CONTRACTOR SHALL CONTINUOUSLY KEEP THE ROAD UNDER GOING IMPROVEMENT AND SECTION DETOURS IN SUCH CONDITION SATISFACTORY TO THE ENGINEER THAT TRAFFIC WILL BE ACCOMMODATED DURING THE ENTIRE CONTRACT PERIOD WITHOUT INCONVENIENCE TO THE TRAVELING PUBLIC IN ACCORDANCE WITH CLAUSE 38 OF THE DPWH STANDARD SPECIFICATION, VOLUME (1), REQUIREMENTS CONDITION OF CONTRACTS (1998). THE CONTRACTOR SHALL BEAR ALL EXPENSES FOR CONSTRUCTING, RECONSTRUCTING IF NECESSARY AND MAINTAIN SUCH ROAD DETOURS APPROACHED INCLUDING RUN, AROUND TEMPORARY BRIDGES WITHOUT COMPENSATION.
10. EXTENSION AND OTHER IMPROVEMENT ON EXISTING DRAINAGE STRUCTURES ARE SUBJECT TO CHANGE AND SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER IN-CHARGED.
11. DURING CONSTRUCTION, ANY EXISTING PIPE FOUND DAMAGED OR DEFECTIVE SHALL BE REMOVED AND REPLACED AS DIRECTED BY THE ENGINEER. THE REMOVAL OF EXISTING STRUCTURE SHALL BE PAID FOR UNDER ITEM 101(1) - REMOVAL OF EXISTING PIPE CULVERTS.
12. EXACT LOCATIONS, GRADIENTS, LENGTHS, TOP AND INVERT ELEVATION OF ALL DRAINAGE STRUCTURES THAT ARE REQUIRED SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
13. DESIGN WAS BASED ON SURVEY DATA SUBMITTED BY THE SURVEY AND INVESTIGATION SECTION OF THE PLANNING AND DESIGN SECTION, DAVAO DE ORO PROVINCIAL ENGINEERING OFFICE
14. BARRICADES, DANGER SIGNALS AND WARNING SIGNS: THE CONTRACTOR SHALL FURNISH, ERECT, AND MAINTAIN AT HIS OWN RISK ALL NECESSARY BARRICADES, SUITABLE AND SUFFICIENT LIGHTS, DANGER SIGNALS, SIGNS AND OTHER CONTROL DEVICES AND SHALL TAKE ALL NECESSARY PRECAUTION FOR THE PROTECTION OF THE WORK AND SAFETY OF THE PUBLIC THROUGHOUT THE DURATION OF THE PROJECT.
15. ANY MISCELLANEOUS REMOVAL NOT SHOWN ON THE PLANS INCLUDING REMOVAL OF HEADWALLS AND WINGWALLS OF EXISTING DRAINAGE STRUCTURES THAT ARE TO BE EXTENDED OR IMPROVED AND THE DISPOSAL OF RESULTING MATERIALS SHALL BE CONSIDERED SUBSIDIARY WORK PERTAINING TO OTHER CONTRACT ITEMS. THE COST OF PERFORMANCE THEREOF SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID FOR THOSE ITEMS.
16. BEFORE THE START OF THE CONSTRUCTION, THE "AS-STAKED" PLAN SHOULD BE SUBMITTED TO THE DIRECT OFFICE IN ORDER THAT IMMEDIATE STEPS MAY BE TAKEN TO CORRECT OR ADJUST WHATEVER APPRECIABLE DEVIATION THAT MAY BE FROM THE ORIGINAL PLAN.
17. WATERING AND COMPACTING OF ALL EMBANKMENTS SHALL BE CONSIDERED AS SUBSIDIARY WORK PERTAINING TO OTHER CONTRACT ITEMS, THE COST OF PERFORMANCE THEROF SHALL BE CONSIDERED TO BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR OTHER ITEMS.
18. ALL JOINTS SHALL BE SUFFICIENTLY SEALED WITH ASPHALT SEALANT PRIOR TO OPENING TO VEHICULAR TRAFFIC.
19. SPOILS FROM DEMOLISHED/EXCAVATED MATERIALS SHALL NOT BE ALLOWED TO BE STOCKPILED AT THE SHOULDER OR PART OF THE TRAVELLED ROADWAY AND SHALL BE REMOVED IMMEDIATELY TO PREVENT OBSTRUCTION. SPOILS REMOVED SHALL BE DISPOSED OFF IN DESIGNATED AREAS APPROVED BY THE ENGINEER.
20. THE IMPLEMENTING OFFICE SHALL IDENTIFY THE LOCATIONS OF AND PROVIDE ACCESSIBILITY FACILITIES FOR PERSONS WITH DISABILITY IN ACCORDANCE WITH D.O. SERIES OF 2009.
21. THE CONTRACTOR SHALL PROVIDE WITHIN CALENDAR DAYS AFTER NOTICE TO COMMENCE WORK THE VEHICLE FOR THE EXCLUSIVE USE OF THE ENGINEER. THE VEHICLE TO BE PROVIDED BY THE CONTRACTOR SHALL BE TO THE SATISFACTION OF THE ENGINEER, AND SHALL COMPLY IN ALL RESPECTS WITH ALL RELEVANT PHILIPPINE NATIONAL OR LOCAL LAWS STATUSES & REGULATIONS. THE VEHICLE SHALL CARRY OR BE FITTED WITH THE ACCESSORIES AS MAYBE PRESCRIBED BY LAWS & HAVE COMPREHENSIVE INSURANCE.
22. USE STEEL FORMS FOR ITEM 311 - PORTLAND CEMENT CONCRETE PAVEMENT.

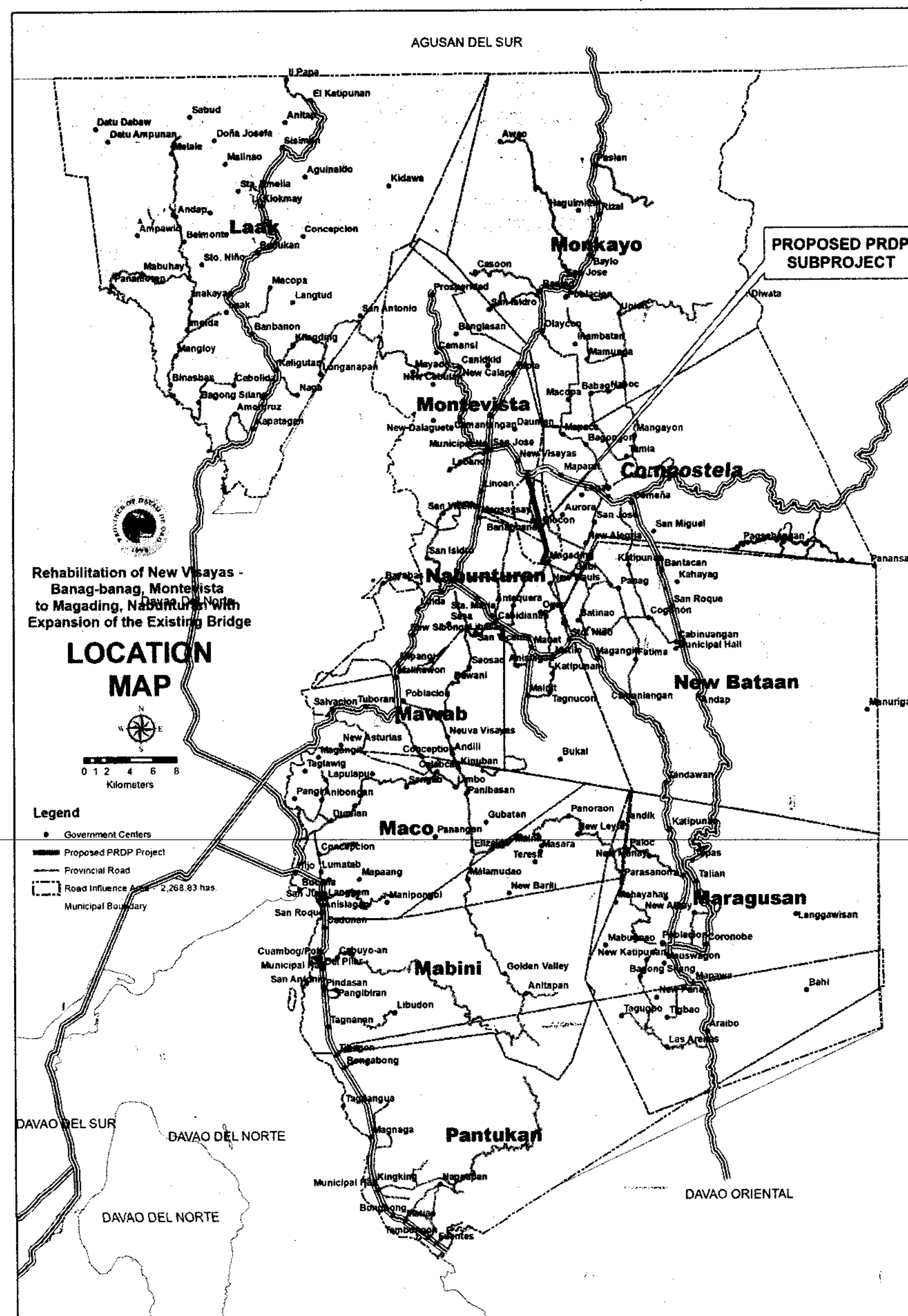


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		LOCATION:	MONTEVISTA AND NABUNTURAN, DAVAO DE ORO							78

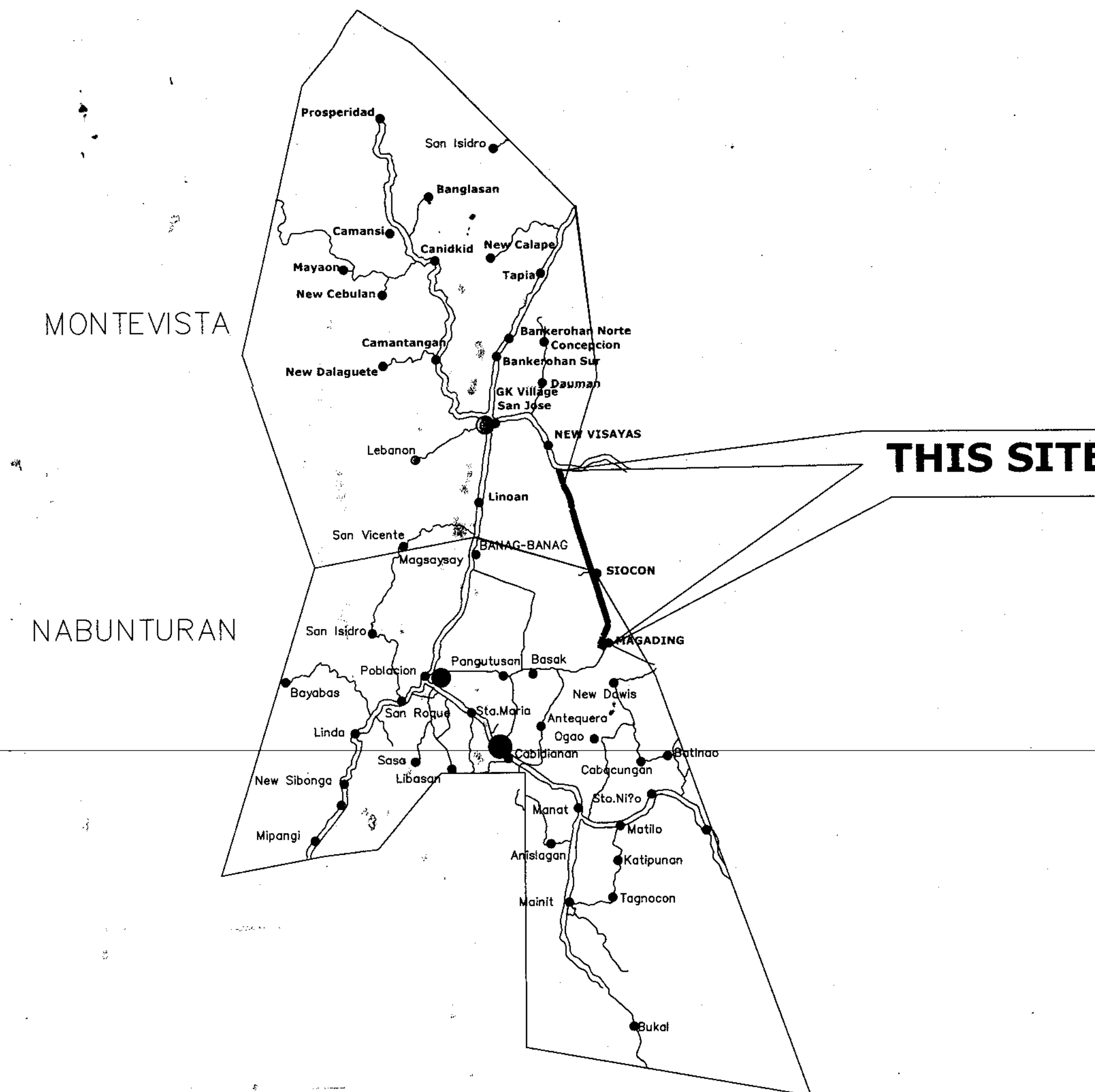


PHILIPPINE MAP
NOT TO SCALE

DAVAO DE ORO PROVINCE



LOCATION MAP
NOT TO SCALE



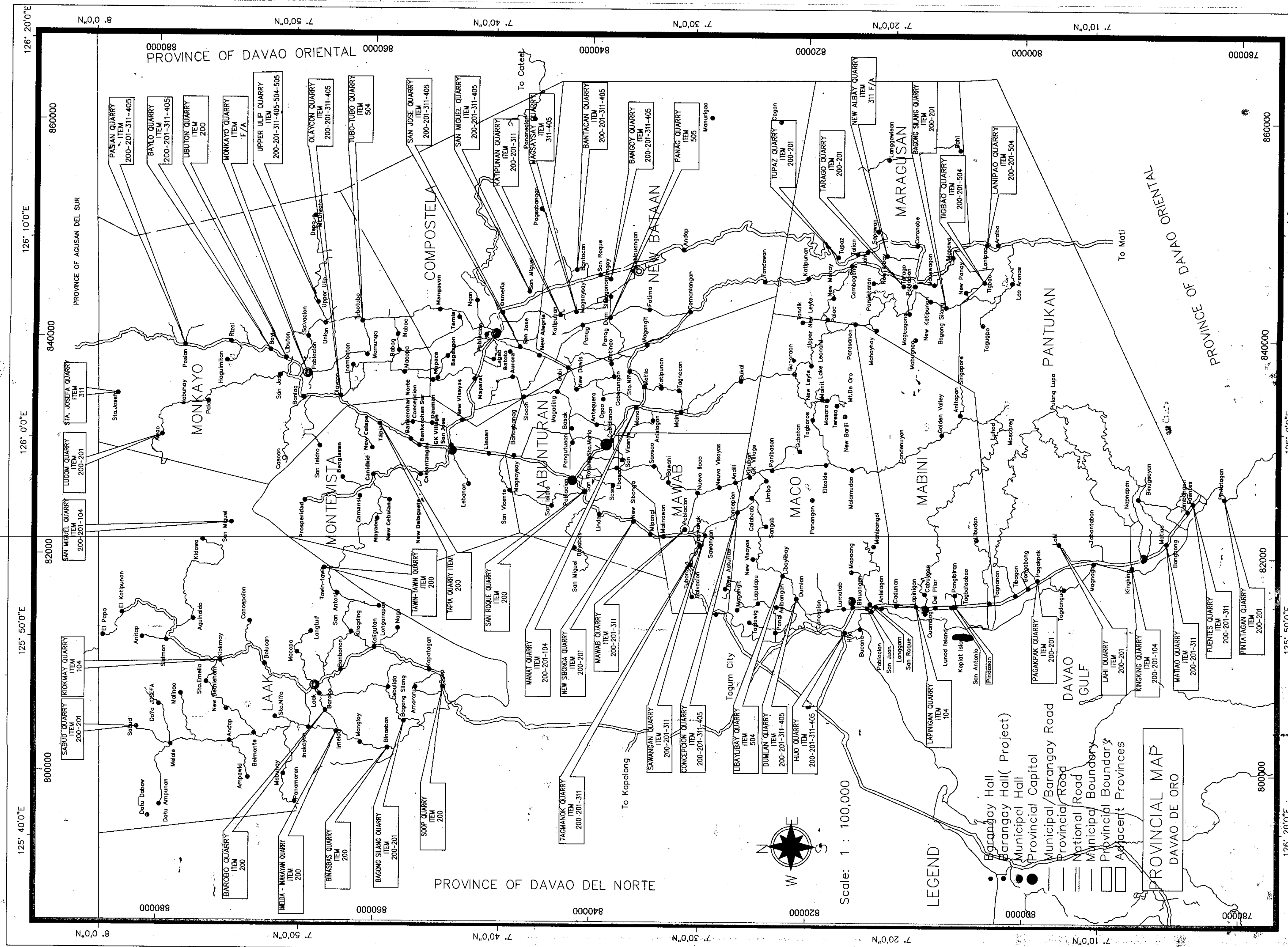
VICINITY MAP
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NO OBJECTION**

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P.M.U. D. Commissioner Head

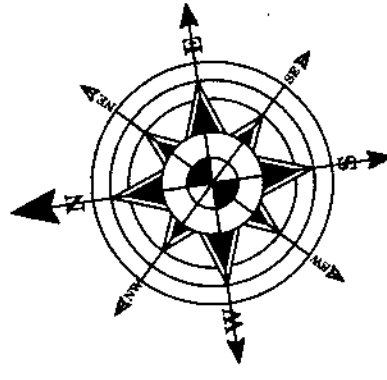
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	LOCATION:		MONTEVISTA AND NABUNTURAN, DAVAO DE ORO							

PROVINCIAL QUARRY MAP
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L.R.D. Computerized Map

<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF AGRICULTURE "PHILIPPINE RURAL DEVELOPMENT PROJECT SCALE UP" PROVINCE OF DAVAO DE ORO MUNICIPALITY OF MONTEVISTA & NABUNTURAN</p>	PROJECT NO.:	PRDP-SU-IB-R011-DDO-004-000-000-2023-FMB	PREPARED BY:	DESIGNED BY:	CHECKED & REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED:	SHEET CONTENTS: PROVIINCIAL QUARRY MAP	SHEET NO. 4 78	
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	LOCATION:	MONTEVISTA AND NABUNTURAN, DAVAO DE ORO								



GENERAL LAYOUT
SCALE: 1:10,000M

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Environmental Head

<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF AGRICULTURE "PHILIPPINE RURAL DEVELOPMENT PROJECT SCALE UP" PROVINCE OF DAVAO DE ORO MUNICIPALITY OF MONTEVISTA & NABUNTURAN</p>	PROJECT NO.:	PRDP-SU-IB-R011-DDO-004-000-000-2023-FMB	PREPARED BY:	DESIGNED BY:	CHECKED & REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED:	SHEET CONTENTS:	SHEET NO.
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	LOCATION:	MONTEVISTA AND NABUNTURAN, DAVAO DE ORO							78

**DAVAO DE ORO PROVINCIAL ENGINEER'S OFFICE
COMVAL PROVINCE, DAVAO DE ORO**

NAME/TYPE OF SOURCES		POTENTIAL USES
1	SABUD QUARRY	ITEM 200-201
2	KIOMAY QUARRY	ITEM 104
3	SAN MIGUEL QUARRY	ITEM 200-201-104
4	LUGOM QUARRY	ITEM 200-201
5	STA. JOSEFA QUARRY	ITEM 311-200
6	PASIAN QUARRY	ITEM 200-201-311-405
7	BAYLO QUARRY	ITEM 200-201-311-405
8	LIBUTON QUARRY	ITEM 200
9	MONKAYO QUARRY	FINE AGGREGATES
10	UPPER ULIP QUARRY	ITEM 200-201-311-405-504-505
11	OLAYCON QUARRY	ITEM 200-201-311-405
12	TUBO-TUBO QUARRY	ITEM 504
13	SAN JOSE QUARRY	ITEM 200-201-311-405
14	SAN MIGUEL QUARRY	ITEM 200-201-311-405
15	KATIPUNAN QUARRY	ITEM 200-201-311
16	MAGSAYSAY QUARRY	ITEM 311-405
17	BANTACAN QUARRY	ITEM 200-201-311-405
18	BANGOY QUARRY	ITEM 200-201-311-405
19	PANAG QUARRY	ITEM 505
20	TUPAZ QUARRY	ITEM 200-201
21	TARAGO QUARRY	ITEM 200-201
22	NEW ALBAY QUARRY	ITEM 311 - FINE AGGREGATES
23	BAGONG SILANG QUARRY	ITEM 200-201
24	TIGBAO QUARRY	ITEM 200-201-504
25	LANIPAO QUARRY	ITEM 200-201-504
26	PINTATAGAN QUARRY	ITEM 200-201
27	FUENTES QUARRY	ITEM 200-201-311
28	MATIAO QUARRY	ITEM 200-201-311
29	KINGKING QUARRY	ITEM 200-201-104
30	LAHI QUARRY	ITEM 200-201
31	PAGAKPAK QUARRY	ITEM 200-201
32	LAPINIGAN QUARRY	ITEM 104
33	HIJO QUARRY	ITEM 200-201-311-405
34	DUMLAN QUARRY	ITEM 200-201-311-405
35	LIBAYLIBAY QUARRY	ITEM 504
36	CONCEPCION QUARRY	ITEM 200-201-311-405
37	SAWANGAN QUARRY	ITEM 200-201-311
38	TAGMANOK QUARRY	ITEM 200-201-311
39	MAWAB QUARRY	ITEM 200-201-311
40	NEW SIBONGA QUARRY	ITEM 200-201
41	MANAT QUARRY	ITEM 200-201-104
42	SAN ROQUE QUARRY	ITEM 200
43	TAPIA QUARRY	ITEM 200
44	TAWIN-TAWIN QUARRY	ITEM 200
45	SOOP QUARRY	ITEM 200
46	BAGONG SILANG QUARRY	ITEM 200-201
47	BINASBAS QUARRY	ITEM 200
48	IMELDA-INAKAYAN QUARRY	ITEM 200
49	BAROBO QUARRY	ITEM 200

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF AGRICULTURE
"PHILIPPINE RURAL DEVELOPMENT
PROJECT SCALE UP"

PROVINCE OF DAVAO DE ORO
MUNICIPALITY OF MONTEVISTA & NABUNTURAN

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LOCATION:	MONTEVISTA AND NABUNTURAN, DAVAO DE ORO							

**RPGO XI
NO OBJECTION**


SIGNATURE:
ENGR. MARCELO M. GONZAGA
L. R. P. D. Consultant Firm

SUMMARY OF QUANTITIES

BILL OF QUANTITIES			
ITEM NO.	DESCRIPTION	QUANTITY	UNIT
I. General Requirement			
A.1.1 (3)	CONSTRUCTION OF FIELD OFFICE FOR THE ENGINEER	1.00	Lump Sum
B.4(1)	CONSTRUCTION SURVEY AND STAKING	8.33	Kilometer
B.5	PROJECT BILLBOARD / SIGNBOARD	2.00	Each
B.7(2)	OCCUPATIONAL SAFETY AND HEALTH PROGRAM	1.00	Lump Sum
B.8(2)	TRAFFIC MANAGEMENT	1.00	Lump Sum
B.9	MOBILIZATION / DEMOBILIZATION	1.00	Lump Sum
II. Rehabilitation of Farm to Market Road			
100(3)a2	INDIVIDUAL REMOVAL OF TREES (SMALL, 301 - 500 mm DIA.)	311.00	Each
101(1)	REMOVAL OF STRUCTURES AND OBSTRUCTION (OTHER THAN CONCRETE)	1.00	Lump Sum
101(3)b2	REMOVAL OF ACTUAL STRUCTURES/OBSTRUCTION (PCCP UNREINFORCED - 0.20m thick)	90.00	Square Meter
101(8)	REMOVAL OF EXISTING GUARDRAILS	266.00	Linear Meter
101(4)a3	REMOVAL OF ACTUAL STRUCTURE / OBSTRUCTION - 910mm dia RCPC	97.00	Linear Meter
102(1)	UNSUITABLE EXCAVATION	15,600.00	Cubic Meter
103(1)a	STRUCTURE EXCAVATION	9,152.68	Cubic Meter
103(3)	FOUNDATION FILL	53.71	Cubic Meter
104(1)a	EMBANKMENT FROM ROADWAY EXCAVATION	5,628.13	Cubic Meter
104(2)a	EMBANKMENT FROM BORROW	49,256.18	Cubic Meter
105(1)a	SUBGRADE PREPARATION (COMMON MATERIAL)	85,479.46	Square Meter
200(1)	AGGREGATE SUBBASE COURSE	30,740.79	Cubic Meter
311(1)c1	PORTLAND CEMENT CONCRETE PAVEMENT (Unreinforced), 230MM THICK	43,487.60	Square Meter
311(2)f1	PORTLAND CEMENT CONCRETE PAVEMENT (Reinforced), 300MM THICK	57.80	Square Meter
404(1)a	REINFORCING STEEL, GRADE 40	6,530.53	Kilogram
405(1)a3	STRUCTURAL CONCRETE, CLASS A	266.33	Cubic Meter
500(1)a1	PIPE CULVERTS 610mm DIAMETER, CLASS II	32.00	Linear Meter
500(1)a3	PIPE CULVERTS 910mm DIAMETER, CLASS II	180.00	Linear Meter
500(1)b7	PIPE CULVERTS 1830mm DIAMETER, CLASS IV	20.00	Linear Meter
505(2)a	GROUTED RIPRAP, CLASS A	13,884.62	Cubic Meter
508(1)	HAND-LAID ROCK EMBANKMENT	3,280.00	Cubic Meter
602(3)b	KILOMETER POSTS (PRECAST)	2.00	Each
603(3)a1	METAL GUARDRAIL (METAL BEAM) INCLUDING CONCRETE POST	13,875.00	Linear Meter
603(4)a	METAL BEAM END PIECE	126.00	Each
605(1)b1	WARNING SIGNS (W1 - 2A)	2.00	Each

605(1)c1	WARNING SIGNS (W1 - 3A)	4.00	Each
605(1)e1	WARNING SIGNS (W1 - 5A)	2.00	Each
605(1)g2	WARNING SIGNS (W2 - 1B)	18.00	Each
605(1)j2	WARNING SIGNS (W2 - 4B)	2.00	Each
605(1)l2	WARNING SIGNS (W2 - 6B)	22.00	Each
605(1)ai1	WARNING SIGNS (W6 - 1B)	2.00	Each
605(1)aj1	WARNING SIGNS (W6 - 2B)	2.00	Each
605(6)e1	HAZARD MARKERS (CHEVRON SIGNS - 450mm x 600mm)	10.00	Each
612(1)	REFLECTORIZED THERMOPLASTIC PAVEMENT MARKINGS (WHITE)	1,735.36	Square Meter
612(2)	REFLECTORIZED THERMOPLASTIC PAVEMENT MARKINGS (YELLOW)	1,247.52	Square Meter
III. Construction of Bridge			
101(1)	REMOVAL OF ACTUAL STRUCTURE AND OBSTRUCTION	1.00	Lump Sum
103(2)a	BRIDGE EXCAVATION	293.60	Cubic Meter
104(2)a	EMBANKMENT FROM BORROW	1,718.51	Cubic Meter
311(2)f1	PORTLAND CEMENT CONCRETE PAVEMENT (Reinforced), 300MM THICK	57.50	Square Meter
400(17)e	CONCRETE PILES CAST IN DRILLED HOLES, 1.20mØ, fc = 27.58 Mpa, 28	60.00	Meter
400(23)e2	PERMANENT CASING, 1.20mØ, 12mm thk.	12.00	Meter
400(26)a	PILE INTEGRITY TESTING, CROSSHOLE-SONIC	2.00	Each
400(27)	HIGH STRAIN DYNAMIC TEST (P.D.A)	2.00	Each
400(33)	STEEL CASING (TEMPORARY, 1.20 m. dia.)	48.00	Linear Meter
401(2)a	CONCRETE RAILING, STANDARD	14.00	Meter
404(1)a	REINFORCING STEEL, GRADE 40	5,055.00	Kilogram
404(1)b	REINFORCING STEEL, GRADE 60	5,526.00	Kilogram
405(1)b3	STRUCTURAL CONCRETE, 27.58MPa, CLASS A, 28 days	54.55	Cubic Meter
407(8)	LEAN CONCRETE, CLASS B (16.50 Mpa)	0.66	Cubic Meter
411(2)	PAINT	70.29	Square Meter
413(4)b	EXPANSION JOINT - STEEL FINGER TYPE	15.60	Linear Meter
505(2)a	GROUTED RIPRAP, CLASS A	426.00	Cubic Meter
507(1)	RUBBLE CONCRETE	65.28	Cubic Meter
517(1)a	DRAIN PIPE, GALVANIZED (150mm Ø)	1.20	Linear Meter
612(1)	REFLECTORIZED THERMOPLASTIC PAVEMENT MARKINGS (WHITE)	3.00	Square Meter
612(2)	REFLECTORIZED THERMOPLASTIC PAVEMENT MARKINGS (YELLOW)	2.25	Square Meter
IV. Retrofitting of Existing Bridge			
416(1)b	CARBON FIBER (2 LAYERS)	57.60	Square Meter
416(1)e	CARBON FIBER (PLATE)	60.16	Linear Meter
628(3)	EPOXY INJECTION ON CRACK	10.60	Linear Meter

RPCO XI
NO OBJECTION

	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF AGRICULTURE "PHILIPPINE RURAL DEVELOPMENT PROJECT SCALE UP" PROVINCE OF DAVAO DE ORO MUNICIPALITY OF MONTEVISTA & NABUNTURAN	PROJECT NO.:	PRDP-SU-IB-R011-DDO-004-000-000-2023-FMB	PREPARED BY:	DESIGNED BY:	CHECKED & REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED:	SHEET CONTENTS:	SHEET NO.		
	SUBPROJECT TITLE:	REHABILITATION OF NEW VISAYAS - BANAGBANAG, MONTEVISTA TO MAGADING, NABUNTURAN ROAD WITH EXPANSION OF EXISTING BRIDGE	EDWIN S. SALUDES PLANNING & DESIGN DIVISION CHIEF		RONNIE S. APARRI ENGINEER II		RODERICK M. DIGAMON PROVINCIAL ENGINEER		ALICIA M. GRACIADAS CD-PPMIU		DOROTHY P. MONTEJO GONZAGA GOVERNOR	
	LOCATION:	MONTEVISTA AND NABUNTURAN, DAVAO DE ORO	SUMMARY OF QUANTITIES									
										7	78	

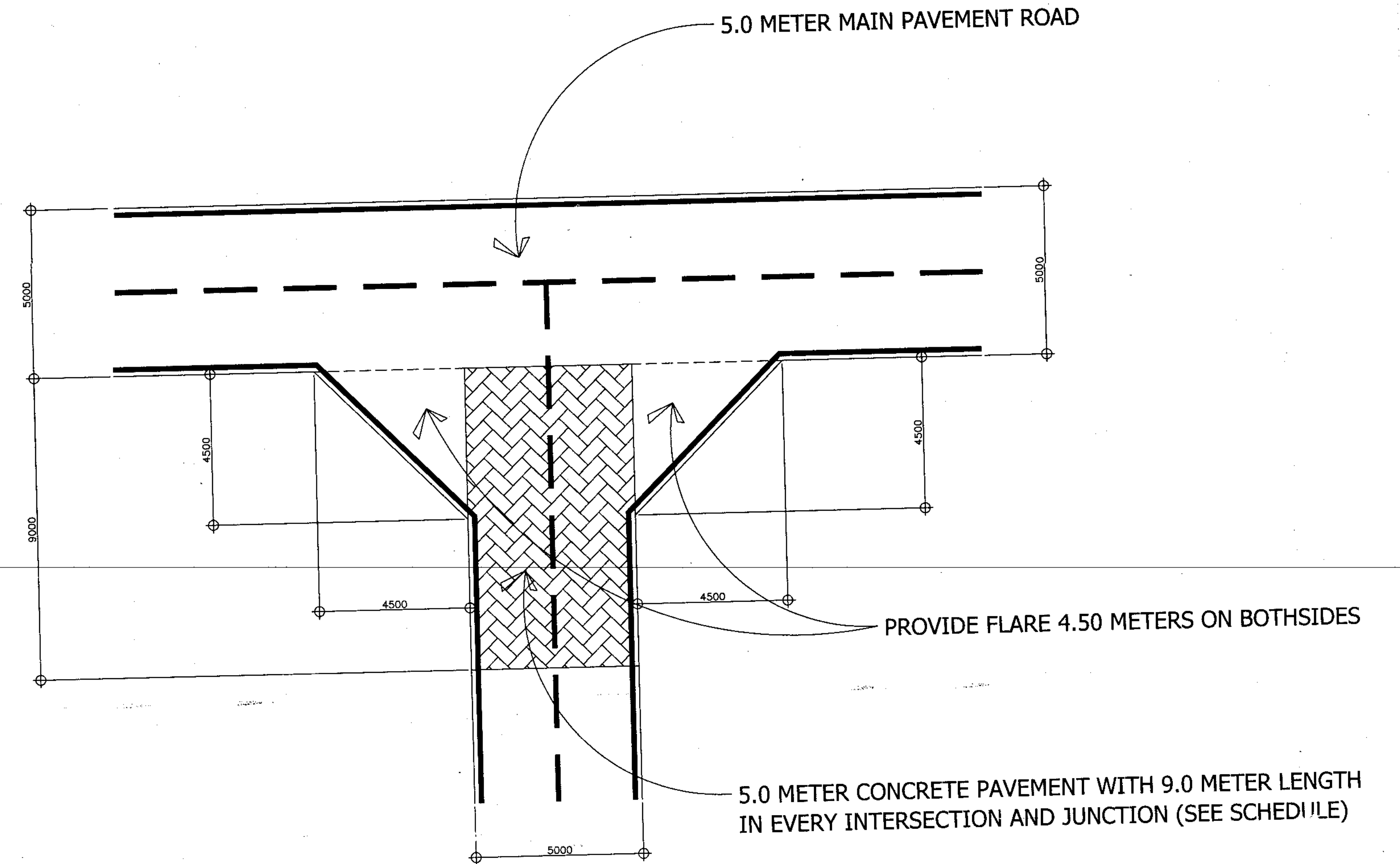
QUANTITY OF VOLUME OF CUT AND FILL

1+820.000	0.000	72.700	2+840.000	37.700	10.600	3+720.000	15.800	12.200	4+560.000	22.000	77.200	5+440.000	0.500	159.900	6+280.000	0.400	60.800	7+120.000	0.000	224.900	7+960.000	0.200	155.900
1+840.000	0.000	63.600	2+860.000	17.800	12.800	3+740.000	43.500	7.900	4+580.000	16.800	84.200	5+460.000	0.000	183.300	6+300.000	0.400	79.900	7+140.000	0.000	211.600	7+980.000	0.200	142.200
1+860.000	0.000	54.500	2+880.000	5.400	40.800	3+760.000	36.100	12.200	4+600.000	5.700	88.800	5+480.000	0.200	174.500	6+320.000	0.500	97.300	7+160.000	0.000	212.300	8+000.000	0.500	120.400
1+880.000	0.000	45.400	2+900.000	2.800	73.700	3+780.000	25.100	15.100	4+620.000	0.800	94.100	5+500.000	0.300	165.400	6+340.000	2.600	122.800	7+180.000	0.000	207.900	8+020.000	1.700	110.800
1+900.000	0.000	36.300	2+920.000	0.600	68.800	3+800.000	21.500	25.700	4+640.000	8.300	124.700	5+520.000	0.100	165.100	6+360.000	2.200	129.600	7+200.000	0.000	191.300	8+040.000	2.700	105.300
1+920.000	0.000	27.200	2+940.000	0.100	71.900	3+820.000	16.200	27.700	4+660.000	16.900	78.500	5+540.000	0.200	143.000	6+380.000	1.300	114.500	7+220.000	0.000	184.500	8+060.000	2.000	72.400
1+940.000	0.000	18.100	2+960.000	2.800	67.500	3+840.000	11.800	51.800	4+680.000	12.000	55.000	5+560.000	0.800	130.800	6+400.000	1.300	93.400	7+240.000	0.200	181.900	8+080.000	2.000	72.400
1+960.000	0.000	9.000	2+980.000	2.800	68.800	3+860.000	0.000	83.800	4+700.000	8.400	99.800	5+580.000	2.100	119.100	6+420.000	12.300	48.900	7+260.000	0.300	176.500	8+100.000	5.300	23.900
1+980.000	0.000	0.000	3+000.000	0.000	91.800	3+880.000	0.000	93.000	4+720.000	5.300	100.900	5+600.000	1.700	113.300	6+440.000	29.500	9.000	7+280.000	0.100	370.800	8+120.000	11.100	4.900
1+000.000	0.000	0.000	3+020.000	0.000	107.800	3+900.000	2.800	112.300	4+740.000	2.300	88.300	5+620.000	0.500	78.500	6+460.000	19.500	8.400	7+300.000	0.000	624.100	8+140.000	7.000	16.200
1+020.000	0.000	0.000	3+040.000	0.000	107.300	3+920.000	2.800	120.000	4+760.000	5.400	81.200	5+640.000	0.300	42.600	6+480.000	35.800	9.700	7+320.000	0.000	682.100	8+160.000	18.200	22.600
1+040.000	0.000	0.000	3+060.000	0.000	76.100	3+940.000	0.300	102.500	4+780.000	5.800	88.800	5+660.000	0.100	47.300	6+500.000	41.800	11.800	7+340.000	0.000	679.200	8+180.000	18.000	31.600
1+060.000	0.000	0.000	3+080.000	0.100	66.800	3+960.000	1.600	84.600	4+800.000	10.000	56.900	5+680.000	0.200	68.900	6+520.000	26.900	10.700	7+360.000	0.000	680.400	8+200.000	2.800	21.200
1+080.000	0.000	0.000	3+100.000	0.100	86.300	3+980.000	4.400	71.500	4+820.000	7.800	52.900	5+700.000	0.600	91.700	6+540.000	23.500	10.500	7+380.000	0.000	686.300	8+220.000	19.400	30.300
1+100.000	0.000	0.000	3+120.000	0.000	108.300	4+000.000	23.100	52.300	4+840.000	1.700	109.500	5+720.000	0.900	76.500	6+560.000	4.900	26.800	7+400.000	0.000	610.400	8+240.000	40.100	23.900
1+120.000	0.000	0.000	3+140.000	0.000	101.800	4+020.000	21.200	52.100	4+860.000	12.000	100.300	5+740.000	0.400	45.400	6+580.000	17.300	40.000	7+420.000	0.000	616.400	8+260.000	35.800	5.700
1+140.000	0.000	0.000	3+160.000	0.100	91.700	4+040.000	77.300	31.200	4+880.000	28.100	67.100	5+760.000	0.100	55.400	6+600.000	28.700	56.000	7+440.000	0.000	682.100	8+280.000	2.800	21.200
1+160.000	0.000	0.000	3+180.000	0.800	76.500	4+060.000	102.000	22.900	4+900.000	24.000	72.100	5+780.000	2.500	53.100	6+620.000	23.700	53.100	7+460.000	0.000	679.200	8+300.000	74.900	6.200
1+180.000	0.000	0.000	3+200.000	0.700	79.600	4+080.000	43.700	39.700	4+920.000	8.700	64.300	5+800.000	6.500	42.800	6+640.000	19.500	33.100	7+480.000	0.400	303.800	8+320.000	33.099	0.059
1+200.000	0.000	0.000	3+220.000	3.300	68.500	4+100.000	29.000	35.400	4+940.000	33.400	35.900	5+820.000	5.700	43.300	6+660.000	14.000	29.600	7+500.000	0.100	310.700	8+340.000	33.099	0.059
1+220.000	0.000	0.000	3+240.000	11.200	42.600	4+120.000	22.300	30.200	4+960.000	71.300	16.300	5+840.000	8.900	30.000	6+680.000	13.700	38.300	7+520.000	1.200	325.200	8+360.000	33.099	0.059
1+240.000	0.000	0.000	3+260.000	86.300	1520.000	4+140.000	22.300	30.200	4+980.000	83.000	7.900	5+860.000	8.900	30.000	6+700.000	13.700	38.300	7+540.000	1.200	325.200	8+380.000	33.099	0.059
1+260.000	0.000	0.000	PAGE TOTAL	86.300	1520.000	PAGE TOTAL	500.500	1084.100	5+000.000	71.600	18.000	5+880.000	8.900	30.000	PAGE TOTAL	319.800	1084.200	PAGE TOTAL	79.200	7361.900	8+400.000	33.099	0.059
1+280.000	0.000	0.000	TOTAL	2691.846	28265.498	TOTAL	3584.446	30285.398	5+020.000	71.600	18.000	5+900.000	8.900	30.000	TOTAL	5919.646	38265.498	TOTAL	6017.146	48524.998	8+420.000	33.099	0.059
1+300.000	0.000	0.000	3+280.000	15.100	39.600	4+160.000	20.800	27.700	5+040.000	81.700	23.200	5+920.000	26.000	64.600	6+720.000	7.100	29.400	7+560.000	6.400	224.900	8+440.000	33.099	0.059
1+320.000	0.000	0.000	3+300.000	23.300	36.600	4+180.000	20.600	32.600	5+060.000	109.600	7.100	5+940.000	26.000	64.600	6+740.000	1.700	89.200	7+580.000	60.800	90.700	8+460.000	33.099	0.059
1+340.000	0.000	0.000	3+320.000	5.700	64.300	4+200.000	13.400	43.600	5+080.000	101.000	4.300	5+960.000	26.000	64.600	6+760.000	0.700	106.900	7+600.000	7.100	124.900	8+480.000	33.099	0.059
1+360.000	0.000	0.000	3+340.000	4.900	51.800	4+220.000	2.500	65.800	5+100.000	89.400	8.400	5+980.000	26.000	64.600	6+780.000	0.100	101.500	7+620.000	4.500	266.300	8+500.000	33.099	0.059
1+380.000	0.000	0.000	3+360.000	9.200	35.800	4+240.000	0.000	78.000	5+120.000	65.000	16.400	6+000.000	26.000	64.600	6+800.000	0.100	93.000	7+640.000	0.200	323.200	8+520.000	33.099	0.059
1+400.000	0.000	0.000	3+380.000	20.200	22.500	4+260.000	0.200	72.800	5+140.000	36.800	25.500	6+020.000	26.000	64.600	6+820.000	0.500	80.700	7+660.000	0.600	268.400	8+540.000	33.099	0.059
1+420.000	0.000	0.000	3+400.000	26.500	35.800	4+280.000	0.200	74.100	5+160.000	32.600	21.700	6+040.000	26.000	64.600	6+840.000	0.900	62.100	7+680.000	0.400	232.100	8+560.000	33.099	0.059
1+440.000	0.000	0.000	3+420.000	20.100	43.000	4+300.000	0.400	66.000	5+180.000	31.400	31.500	6+060.000	26.000	64.600	6+860.000	0.400	70.800	7+700.000	0.100	221.300	8+580.000	33.099	0.059
1+460.000	0.000	0.000	3+440.000	48.600	17.700	4+320.000	14.300	35.900	5+200.000	39.800	26.500	6+080.000	26.000	64.600	6+880.000	0.300	92.700	7+720.000	1.300	228.400	8+600.000	33.099	0.059
1+480.000	0.000	0.000	3+460.000	78.700	0.200	4+340.000	24.000	23.300	5+220.000	43.500	10.800	6+100.000	26.000	64.600	6+900.000	2.000	97.000	7+740.000	2.300	195.800	8+620.000	33.099	0.059
1+500.000	0.000	0.000	3+480.000	63.700	0.100	4+360.000	19.100	27.400	5+240.000	39.900	16.800	6+120.000	26.000	64.600	6+920.000	2.000	97.000	7+760.000	2.300	195.800	8+640.000	33.099	0.059
1+520.000	0.000	0.000	3+500.000	39.800	0.200	4+380.000	17.400	38.000	5+260.000	42.800	29.400	6+140.000	26.000	64.600	6+940.000	1.800	119.500	7+780.000	2.400	171.300	8+660.000	33.099	0.059
1+540.000	0.000	0.000	3+520.000	14.700	8.400	4+400.000	12.800	47.500	5+280.000	74.000	19.900	6+160.000	26.000	64.600	6+960.000	0.200	153.200	7+800.000	2.000	267.100	8+680.000	33.099	0.059
1+560.000	0.000	0.000	3+540.000	1.600	32.000	4+420.000	5.500	45.500	5+300.000	52.000	29.300	6+180.000	26.000	64.600	6+980.000	0.400	195.500	7+820.000	0.700	341.800	8+700.000	33.099	0.059
1+580.000	0.000	0.000	3+560.000	0.000	69.900	4+440.000	5.400	50.800	5+320.000	40.000	66.800	6+200.000	26.000	64.600	7+000.000	0.200	207.900	7+840.000	0.200	130.000	8+720.000	33.099	0.059
1+600.000	0.000	0.000	3+580.000	0.																			

INTERSECTION SCHEDULE

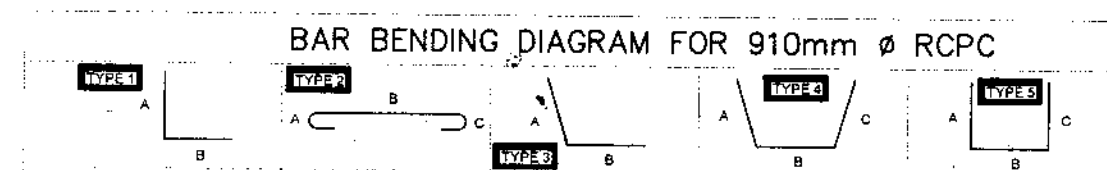
E. JUNCTION (2 BLOCKS - 9M WITH FLARE)					
STATION	Width	Distance	Flare Area (2 sides)	Area	Remarks
0 + 260.000	5.000	9.000	20.250	65.250	Left Side
0 + 500.000	5.000	9.000	20.250	65.250	Right Side
1 + 580.000	5.000	9.000	20.250	65.250	Left Side
1 + 580.000	5.000	9.000	20.250	65.250	Right Side
2 + 040.000	5.000	9.000	20.250	65.250	Left Side
2 + 190.000	5.000	9.000	20.250	65.250	Right Side
2 + 190.000	5.000	9.000	20.250	65.250	Left Side
2 + 820.000	5.000	9.000	20.250	65.250	Right Side
2 + 820.000	5.000	9.000	20.250	65.250	Left Side
3 + 435.000	5.000	9.000	20.250	65.250	Left Side
3 + 745.000	5.000	9.000	20.250	65.250	Left Side
4 + 065.000	5.000	9.000	20.250	65.250	Right Side
4 + 357.000	5.000	9.000	20.250	65.250	Left Side
4 + 665.000	5.000	9.000	20.250	65.250	Right Side
4 + 665.000	5.000	9.000	20.250	65.250	Left Side
4 + 845.000	5.000	9.000	20.250	65.250	Right Side
5 + 280.000	5.000	9.000	20.250	65.250	Left Side
5 + 900.000	5.000	9.000	20.250	65.250	Right Side
5 + 900.000	5.000	9.000	20.250	65.250	Left Side
6 + 510.000	5.000	9.000	20.250	65.250	Right Side
6 + 510.000	5.000	9.000	20.250	65.250	Right Side
6 + 520.000	5.000	9.000	20.250	65.250	Left Side
6 + 930.000	5.000	9.000	20.250	65.250	Left Side
7 + 290.000	5.000	9.000	20.250	65.250	Right Side
7 + 293.000	5.000	9.000	20.250	65.250	Right Side
7 + 920.000	5.000	9.000	20.250	65.250	Left Side
8 + 200.000	5.000	9.000	20.250	65.250	Left Side
8 + 270.000	5.000	9.000	20.250	65.250	Left Side

TYPICAL INTERSECTION FLARE DETAILS

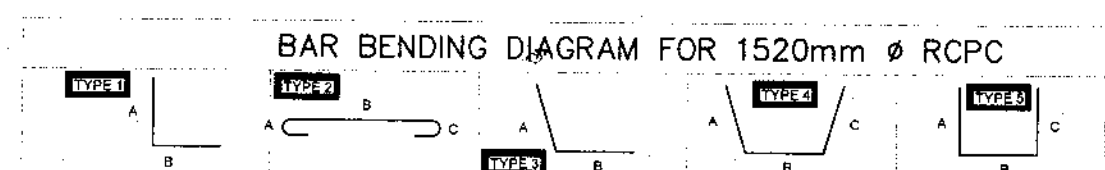


<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF AGRICULTURE "PHILIPPINE RURAL DEVELOPMENT PROJECT SCALE UP" PROVINCE OF DAVAO DE ORO MUNICIPALITY OF MONTEVISTA & NABUNTURAN</p>	PROJECT NO.:	PRDP-SU-IB-R011-DDO-004-000-000-2023-FMB	PREPARED BY:	DESIGNED BY:	CHECKED & REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED:	<p>SIGNATURE DATE CONTENTS</p>	SHEET NO. 9 78
	SUBPROJECT TITLE:	REHABILITATION OF NEW VISAYAS - BANAGBANAG, MONTEVISTA TO MAGADING, NABUNTURAN ROAD WITH EXPANSION OF EXISTING BRIDGE	EDWIN S. SALUDES PLANNING & DESIGN DIVISION CHIEF	RONNIE S. APARRI ENGINEER II	RODERICK M. DIGAMON PROVINCIAL ENGINEER	ALICIA M. GRACIADAS CO-PPMIU	DOROTHY P. MONTEJO GONZAGA GOVERNOR		
	LOCATION:	MONTEVISTA AND NABUNTURAN, DAVAO DE ORO							

DRAINAGE SCHEDULE



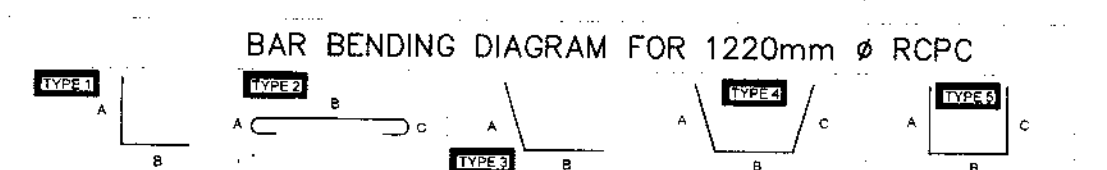
MARK	REINFORCING STEEL SIZE	No. PCS	LIGHT M	A	B	C	TYPE	LOCATION	REINF. STEEL (kg)
HW-401	10mm	4	2.40	1.60	0.40		4	HEADWALL	5.952
HW-402	10mm	8	0.65				3	HEADWALL	3.224
HW-403	10mm	4	1.60				3	HEADWALL	3.968
WW-401	10mm	4	1.60	0.20	1.40		3	WINGWALL	3.968
WW-402	10mm	4	1.30	0.20	1.10		3	WINGWALL	3.224
WW-403	10mm	4	1.10	0.20	0.90		3	WINGWALL	2.728
WW-404	10mm	4	2.20	0.40	1.80		3	WINGWALL	5.456
WW-405	10mm	4	1.30	0.40	1.50		3	WINGWALL	4.712
WW-406	10mm	4	1.50	0.40	1.10		3	WINGWALL	3.720
A-401	10mm	8	1.60	0.60	1.00		1	APRON	7.936
A-402	10mm	4	1.50	0.60	0.90		1	APRON	3.720
A-403	10mm	4	1.20	0.60	0.60		1	APRON	2.976
A-404	10mm	4	0.90	0.60	0.30		1	APRON	2.232
A-405	10mm	2	4.40	0.60	3.20	0.60	5	APRON	5.456
A-406	10mm	2	4.00	0.60	2.80	0.60	5	APRON	4.960
A-407	10mm	2	3.40	0.60	2.20	0.60	5	APRON	4.216
A-408	10mm	2	5.30	1.00	3.30	1.00	2	APRON	6.572
TOTAL:									75.020



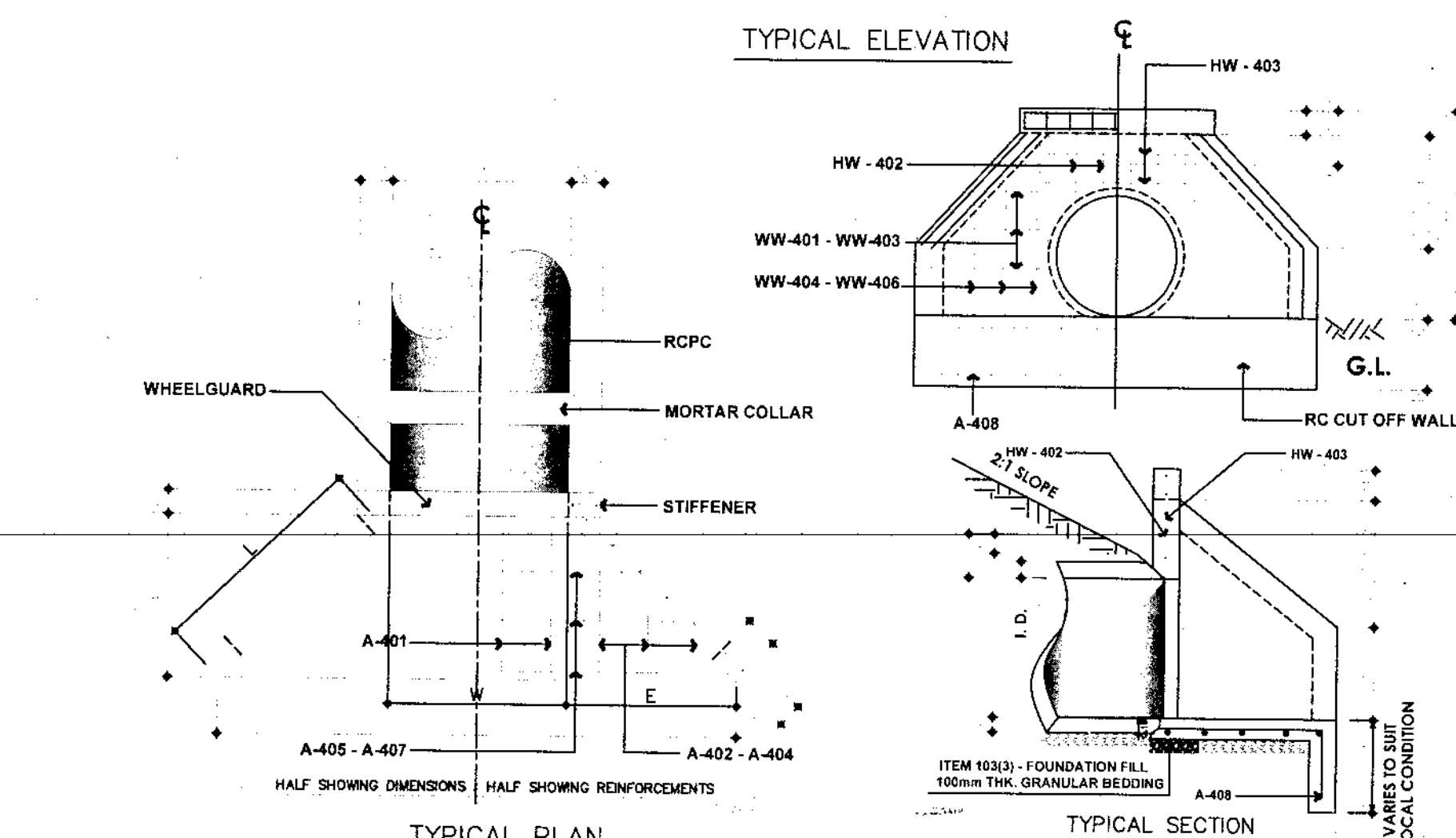
MARK	REINFORCING STEEL SIZE	No. PCS	LIGHT M	A	B	C	TYPE	LOCATION	REINF. STEEL (kg)
HW-401	10mm	4	3.20	0.40	2.40	0.40	4	HEADWALL	7.893
HW-402	10mm	10	1.00				3	HEADWALL	6.167
HW-403	10mm	6	2.20				3	HEADWALL	8.140
WW-401	10mm	12	2.20	0.20	2.00		3	WINGWALL	16.280
WW-402	10mm	4	1.60	0.20	1.40		3	WINGWALL	3.947
WW-403	10mm	4	0.86	0.20	0.66		3	WINGWALL	2.731
WW-404	10mm	4	2.80	0.20	2.60		3	WINGWALL	6.907
WW-405	10mm	4	2.70	0.20	2.50		3	WINGWALL	6.860
WW-406	10mm	4	2.50	0.20	2.30		3	WINGWALL	6.167
WW-407	10mm	4	2.30	0.20	2.10		3	WINGWALL	5.673
WW-408	10mm	4	2.10	0.20	1.90		3	WINGWALL	5.180
A-401	10mm	12	2.10	0.60	1.50	0.60	1	APRON	15.540
A-402	10mm	4	1.80	0.60	1.20		1	APRON	4.440
A-403	10mm	4	1.70	0.60	1.10		1	APRON	4.193
A-404	10mm	4	1.40	0.60	0.80		1	APRON	3.453
A-405	10mm	4	1.10	0.60	0.50		1	APRON	2.713
A-406	10mm	2	6.20	0.60	5.00	0.60	5	APRON	7.647
A-407	10mm	2	5.70	0.60	4.50	0.60	5	APRON	7.030
A-408	10mm	2	5.20	0.60	4.00	0.60	5	APRON	6.413
A-409	10mm	2	4.60	0.60	3.40	0.60	5	APRON	5.673
A-410	10mm	2	4.00	0.60	2.80	0.60	5	APRON	4.933
A-411	10mm	4	8.00	1.50	5.00	1.50	5	APRON	19.733
TOTAL:									156.903



MARK	REINFORCING STEEL SIZE	No. PCS	LIGHT M	A	B	C	TYPE	LOCATION	REINF. STEEL (kg)
HW-401	12mm	4	3.20	0.40	2.40	0.40	4	HEADWALL	11.366
HW-402	12mm	12	1.00				3	HEADWALL	10.656
HW-403	12mm	6	2.20				3	HEADWALL	11.722
WW-401	12mm	16	2.20	0.20	2.00		3	WINGWALL	31.258
WW-402	12mm	4	1.60	0.20	1.40		3	WINGWALL	5.683
WW-403	12mm	4	0.86	0.20	0.66		3	WINGWALL	3.065
WW-404	12mm	4	2.95	0.20	2.75		3	WINGWALL	10.479
WW-405	12mm	4	2.74	0.20	2.54		3	WINGWALL	9.732
WW-406	12mm	4	2.50	0.20	2.30		3	WINGWALL	8.880
WW-407	12mm	4	2.30	0.20	2.10		3	WINGWALL	8.170
WW-408	12mm	4	2.10	0.20	1.90		3	WINGWALL	7.460
A-401	12mm	14	2.10	0.60	1.50	0.60	1	APRON	28.108
A-402	12mm	4	2.00	0.60	1.40	0.60	1	APRON	7.104
A-403	12mm	4	1.70	0.60	1.10	0.60	1	APRON	6.039
A-404	12mm	4	1.40	0.60	0.80	0.60	1	APRON	4.973
A-405	12mm	4	1.10	0.60	0.50	0.60	1	APRON	3.908
A-406	12mm	2	6.40	0.60	5.20	0.60	5	APRON	11.388
A-407	12mm	2	5.80	0.60	4.60	0.60	5	APRON	10.300
A-408	12mm	2	5.20	0.60	4.00	0.60	5	APRON	9.235
A-409	12mm	2	4.60	0.60	3.40	0.60	5	APRON	8.170
A-410	12mm	2	4.00	0.60	2.80	0.60	5	APRON	7.104
A-411	12mm	4	8.00	1.50	5.00	1.50	5	APRON	28.416
TOTAL:									241.416



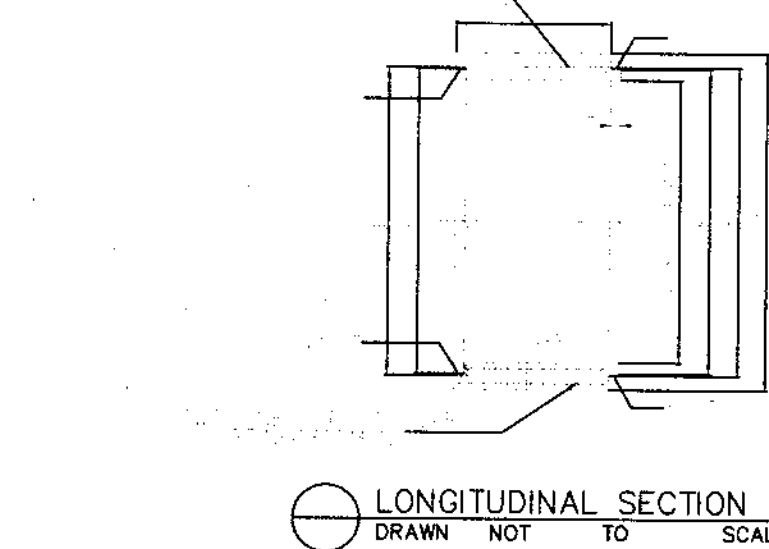
MARK	REINFORCING STEEL SIZE	No. PCS	LIGHT M	A	B	C	TYPE	LOCATION	REINF. STEEL (kg)
HW-401	10mm	4	2.8	0.40	2.00	0.40	4	HEADWALL	6.907
HW-402	10mm	10	0.83				3	HEADWALL	5.118
HW-403	10mm	5	1.90				3	HEADWALL	5.858
WW-401	10mm	10	1.60	0.20	1.40		3	WINGWALL	9.867
WW-402	10mm	4	1.30	0.20	1.10		3	WINGWALL	3.207
WW-403	10mm	4	0.92	0.20	0.90		3	WINGWALL	2.269
WW-404	10mm	4	2.20	0.40	1.80		3	WINGWALL	5.427
WW-405	10mm	4	1.90	0.40	1.50		3	WINGWALL	4.687
WW-406	10mm	4	1.50	0.40	1.10		3	WINGWALL	3.700
A-401	10mm	11	1.60	0.60	1.00	0.60	1	APRON	10.850
A-402	10mm	4	1.50	0.60	0.90	0.60	1	APRON	3.700
A-403	10mm	4	1.20	0.60	0.60	0.60	1	APRON	2.960
A-404	10mm	4	0.90	0.60	0.30	0.60	1	APRON	2.220
A-405	10mm	3	4.40	0.60	3.20	0.60	5	APRON	8.140
A-406	10mm	2	4.00	0.60	2.80	0.60	5	APRON	4.933
A-407	10mm	2	3.40	0.60	2.20	0.60	5	APRON	4.193
A-408	10mm	2	5.30	1.00	3.30	1.00	2	APRON	6.537
A-409	10mm	2	3.20	0.60	2.00	0.60	2	APRON	3.947
TOTAL:									94.520



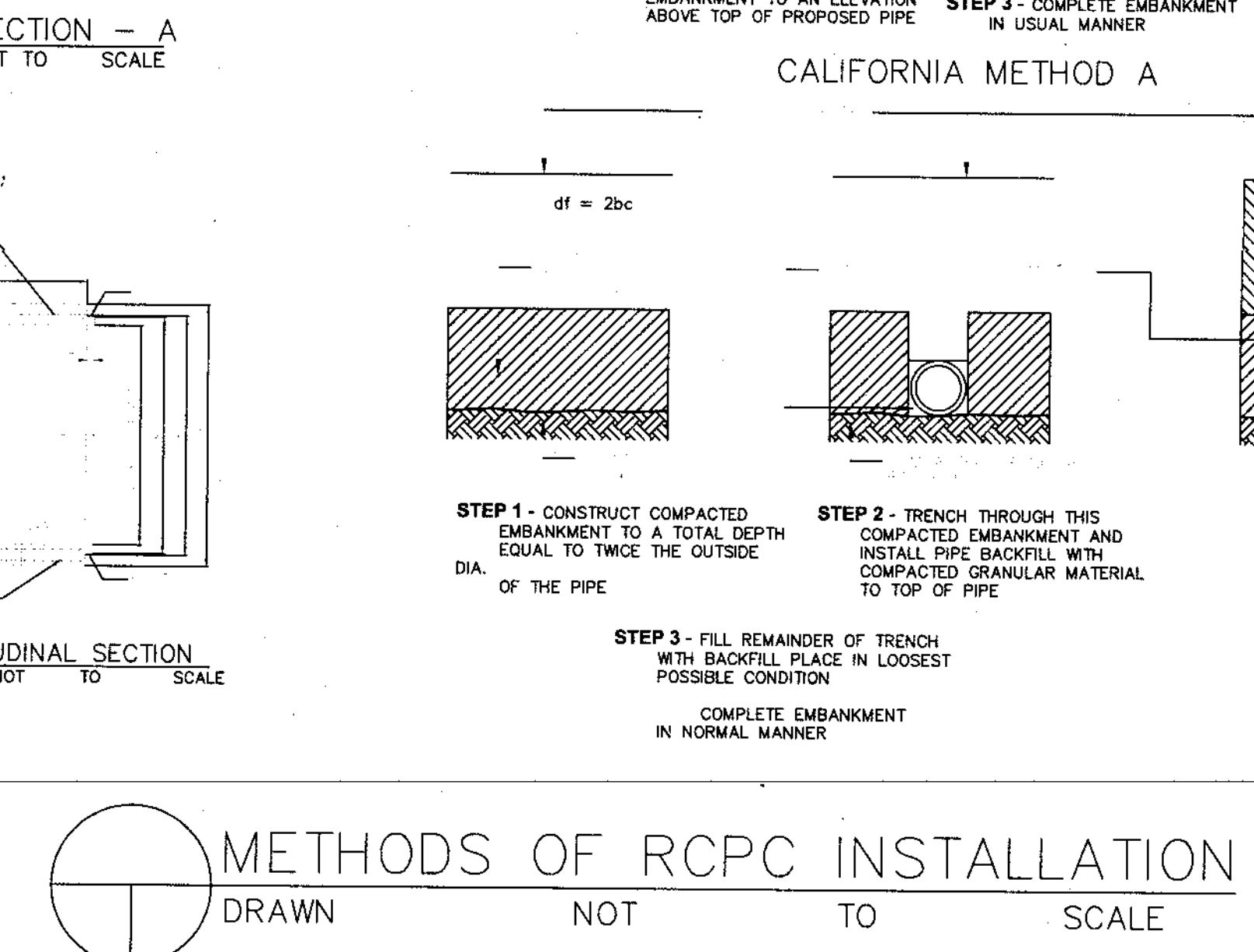
TYPICAL ELEVATION
TYPICAL PLAN
SHOP DRAWING FOR FLARED TYPE HEADWALL
SCALE
NTS

DIA. & THK. (mm)		DIMENSIONS (mm)							EST. OF QUANTITIES CONC. m ³
INTERNAL DIAMETER (I.D.)	MIN. THK. SHELL (t)	L	E	F	h	W	H		
910	102	1510	840	1260	600	1070	2600	1.55	
1220	127	2040	1130	1690	600	1370	2600	2.66	
1520	152	2540	1410	2110	600	1680	2540	3.93	
1830	177	3040	1690	2530	600	1990	3040	5.20	

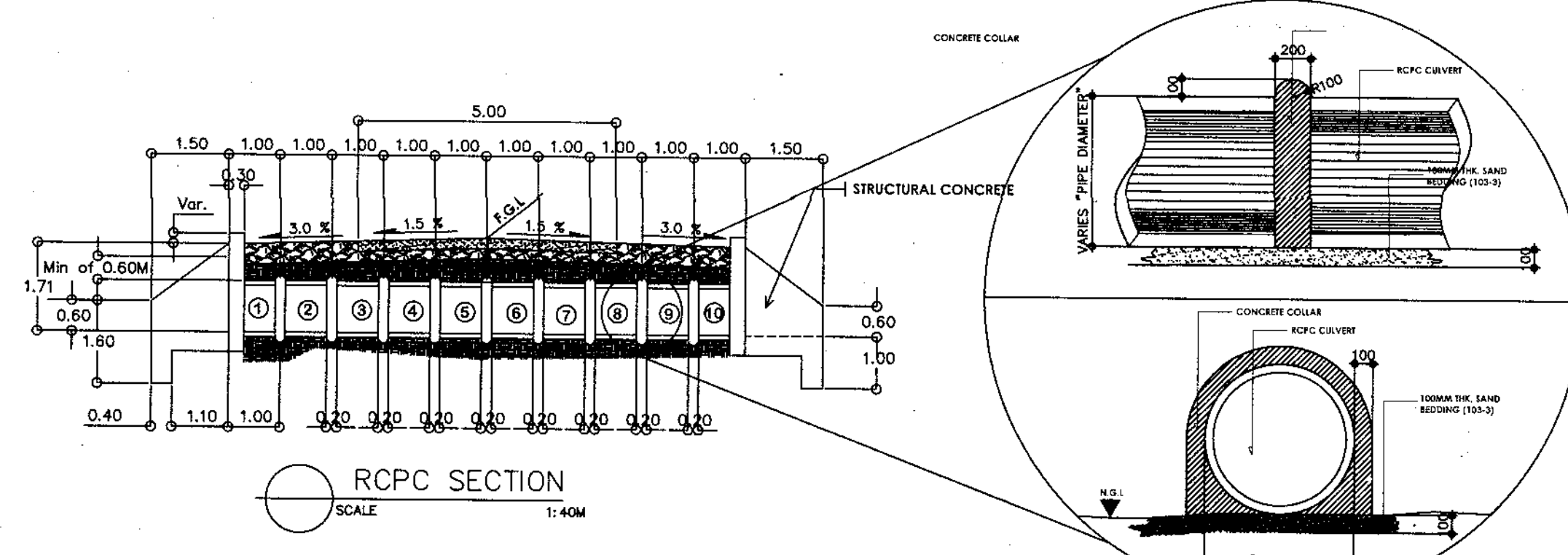
RCPC SIZE	910mmØ 36"Ø	1220mmØ 48"Ø	1520mmØ 60"Ø	1830mmØ 72"Ø
	a	a	a	a
	7 ROUNDS STEEL COIL. 8" DIA. VERTICAL BARS. SPACED AT 100mm O.C.	8-8" DIA. MAIN VERTICAL BARS. SPACED AT 300mm O.C.	9 ROUNDS STEEL COIL. 8" DIA. VERTICAL BARS. SPACED AT 75mm O.C.	16-8" DIA. MAIN VERTICAL BARS. SPACED AT 200mm O.C.
	18 ROUNDS STEEL COIL. 8" DIA. VERTICAL BARS. SPACED AT 75mm O.C.	24-8" DIA. MAIN VERTICAL BARS. SPACED AT 175mm O.C.	28 ROUNDS STEEL COIL. 8" DIA. VERTICAL BARS. SPACED AT 50mm O.C.	32-8" DIA. MAIN VERTICAL BARS. SPACED AT 150mm O.C.



SECTION - A
NOT TO SCALE
LONGITUDINAL SECTION
DRAWN TO SCALE



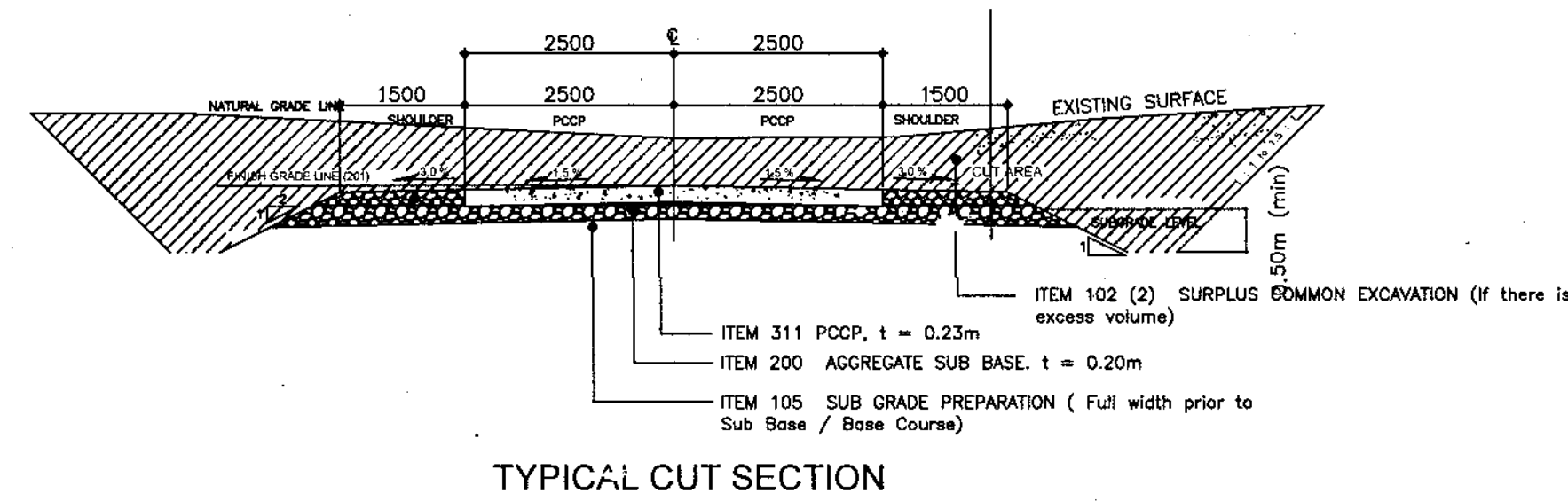
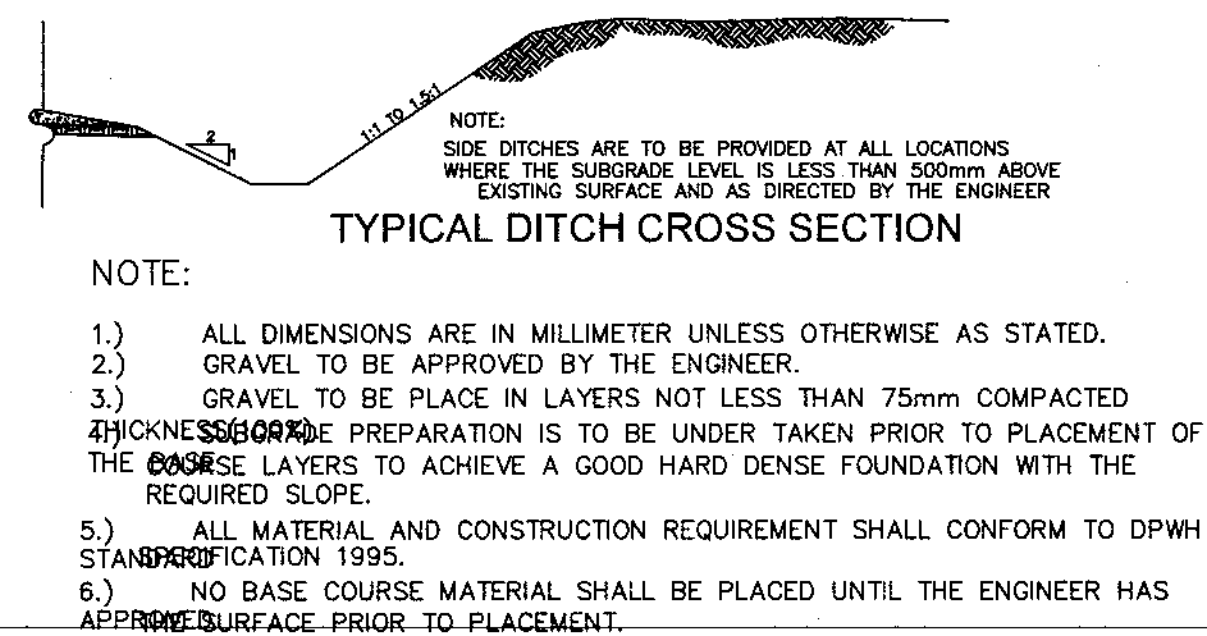
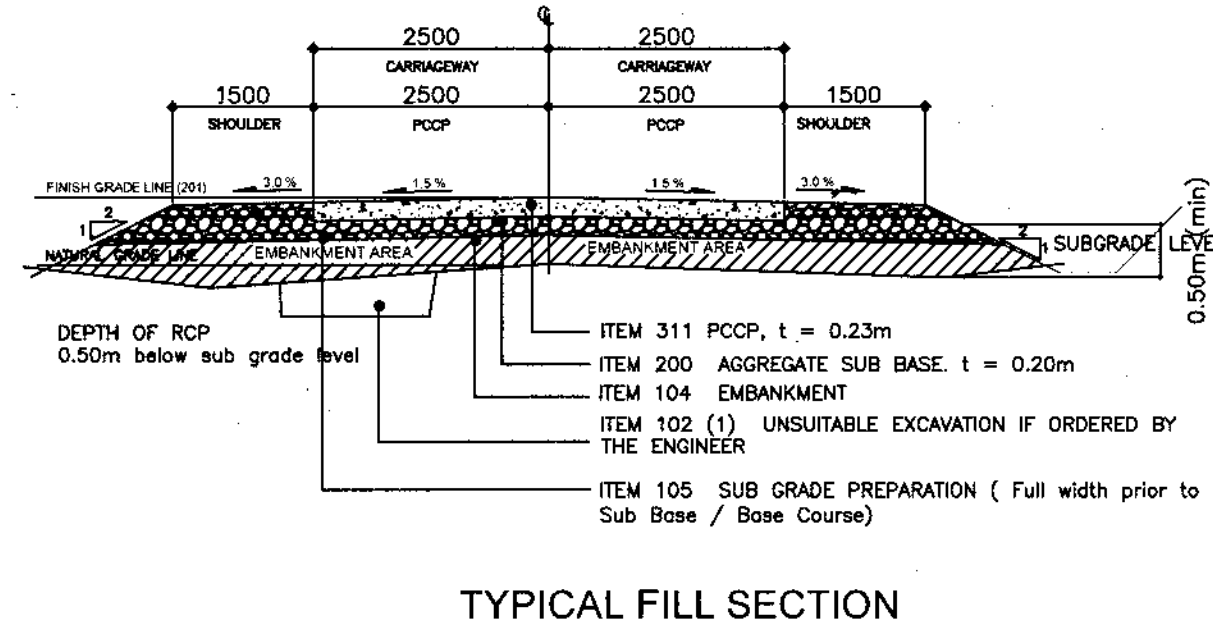
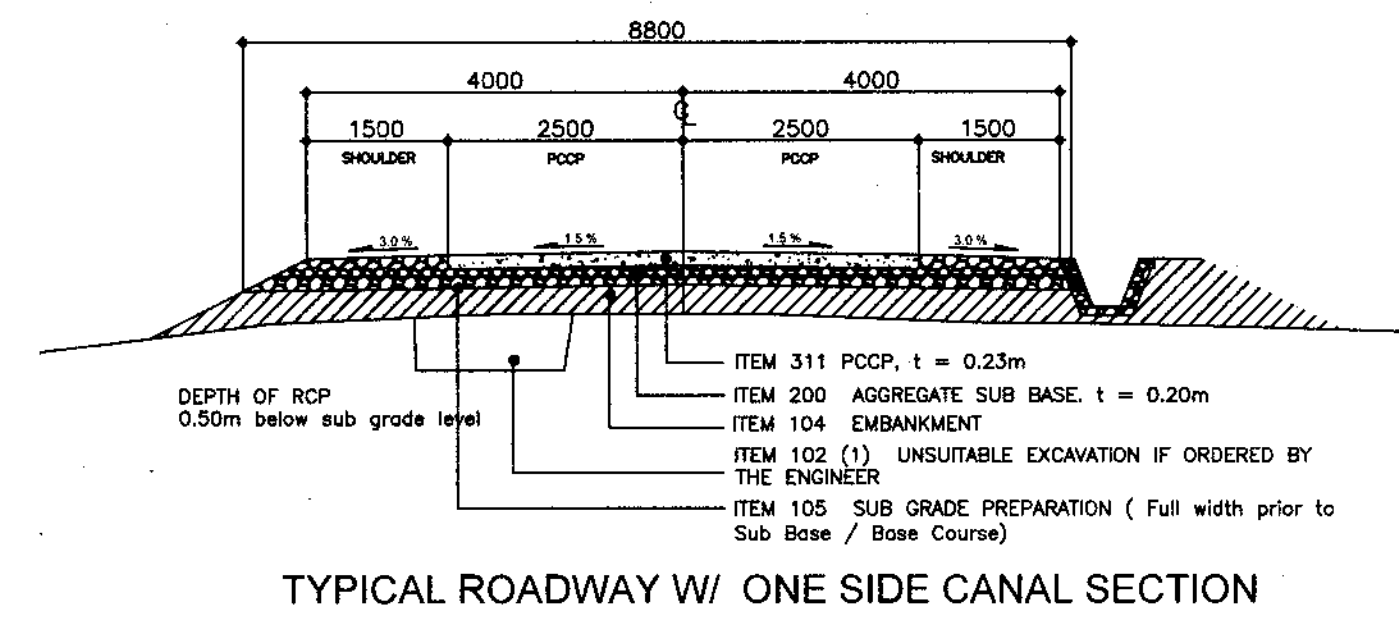
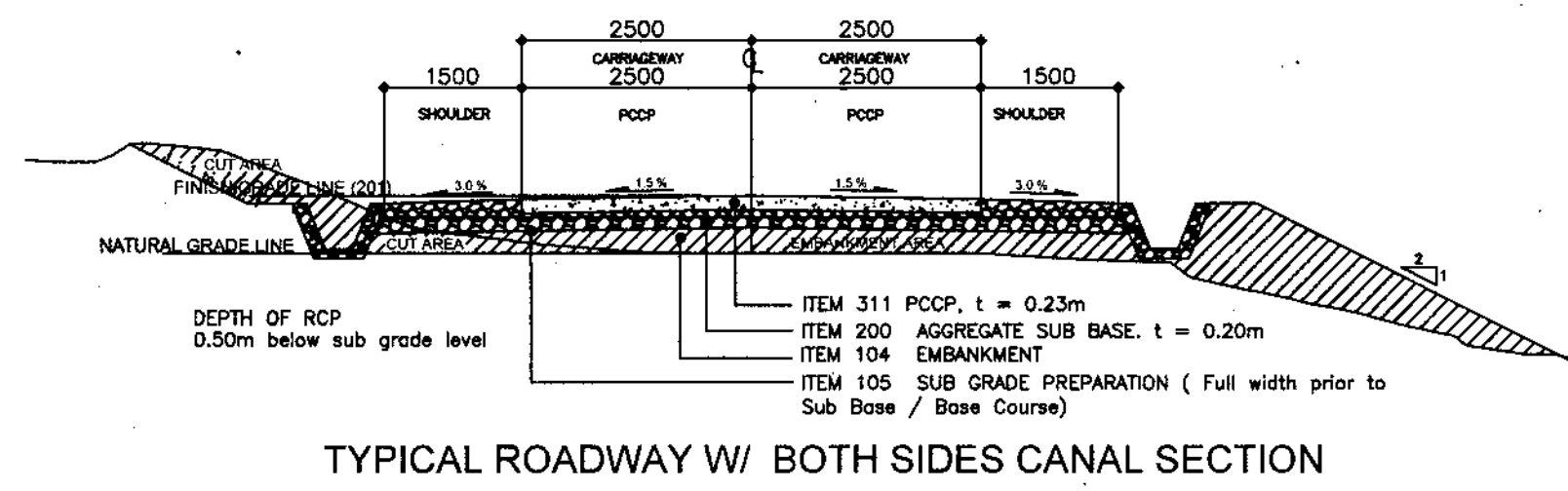
METHODS OF RCPC INSTALLATION
DRAWN NOT TO SCALE



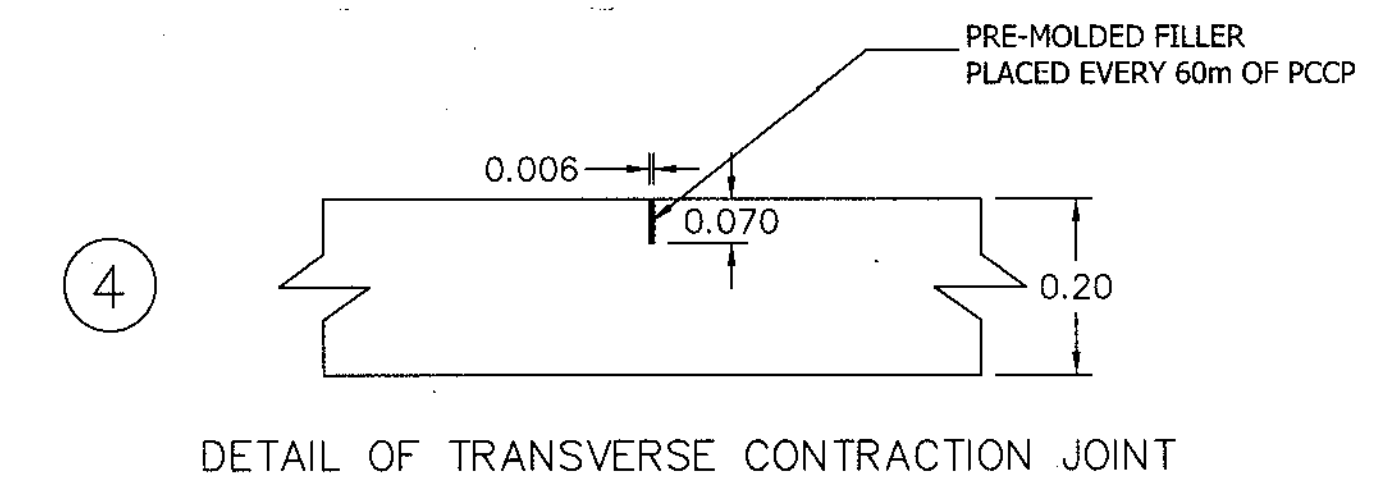
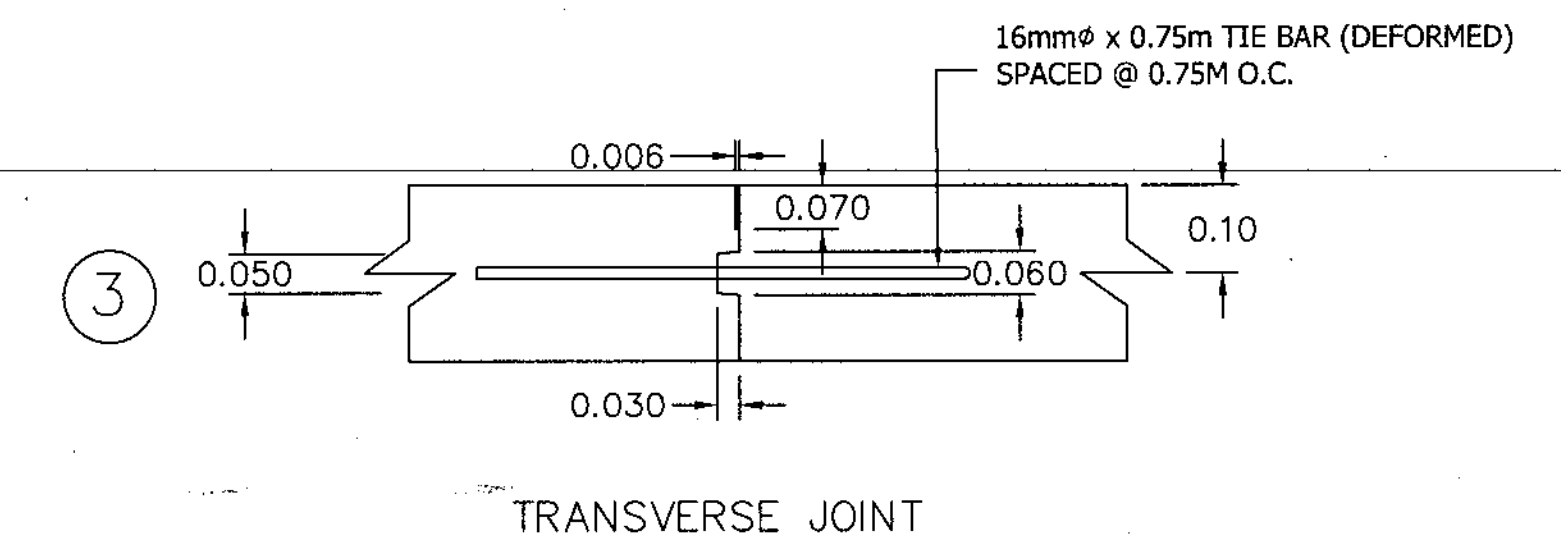
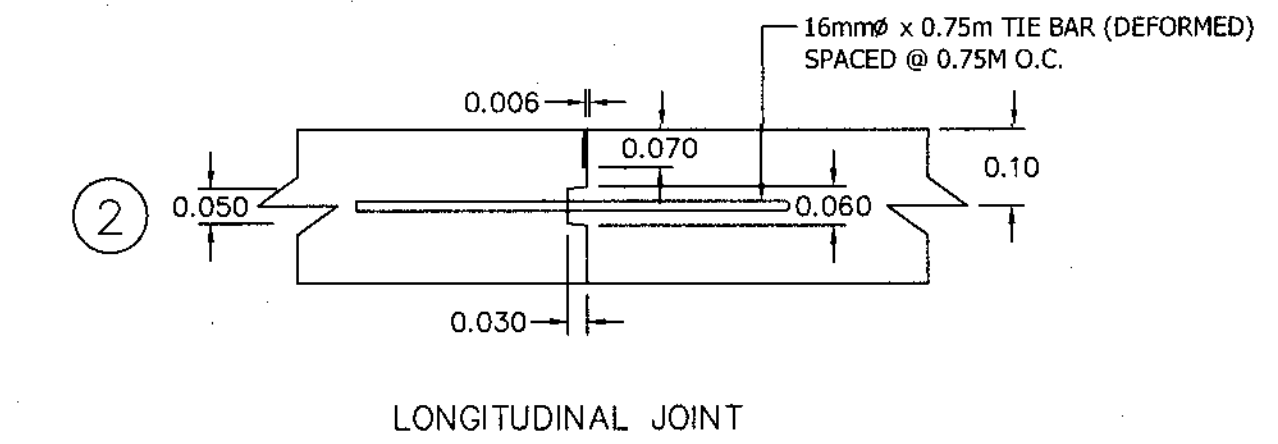
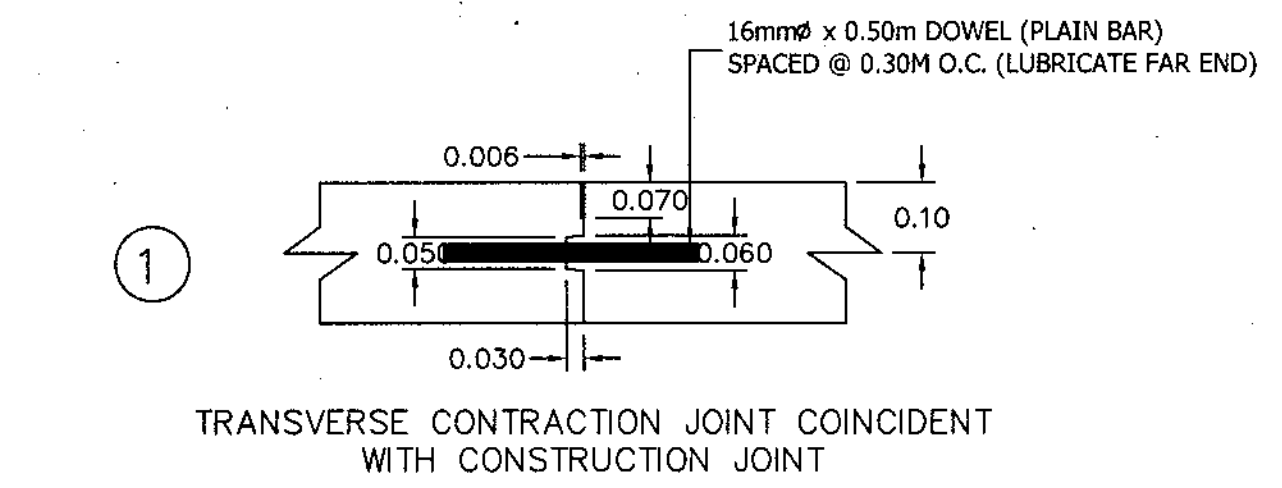
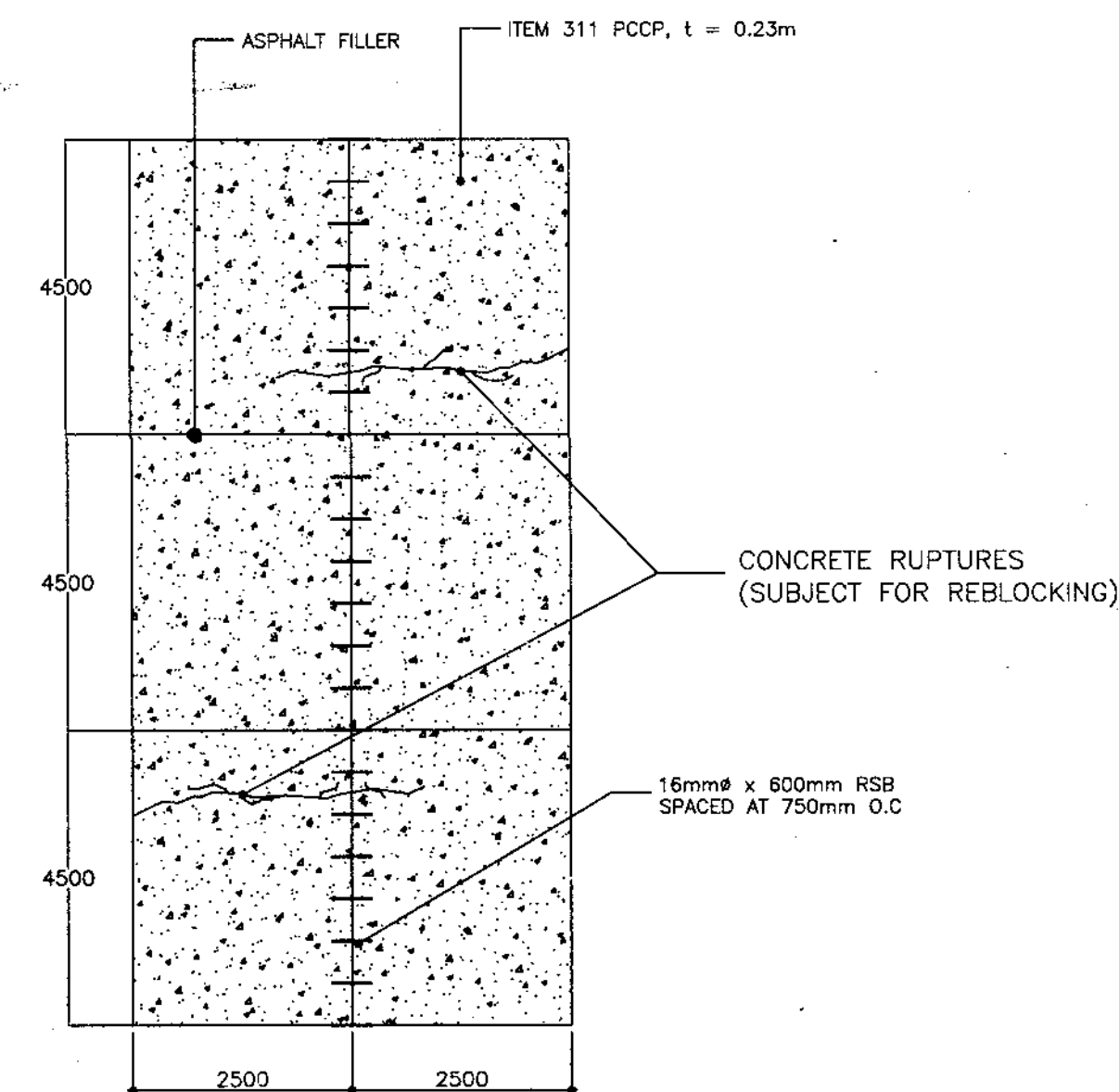
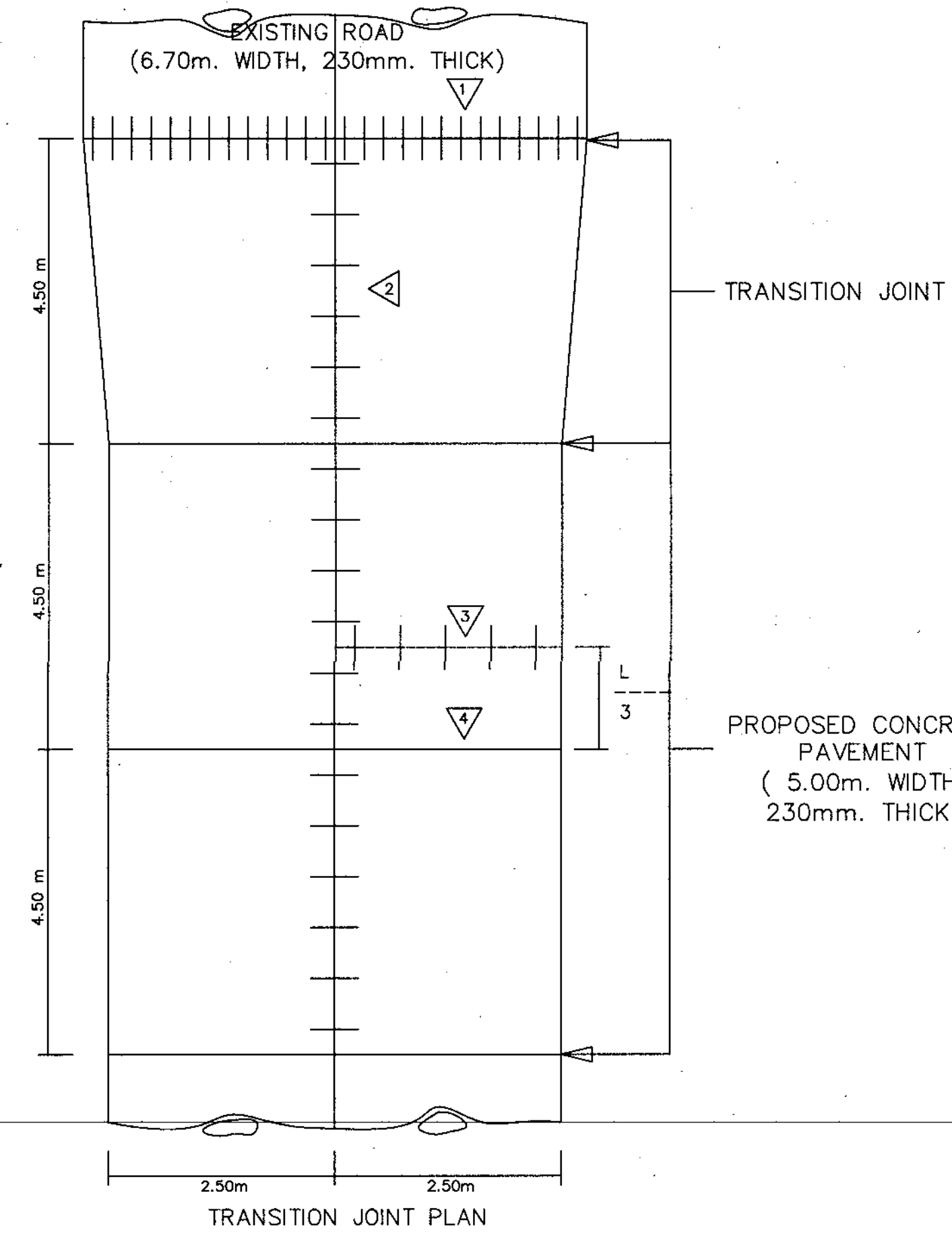
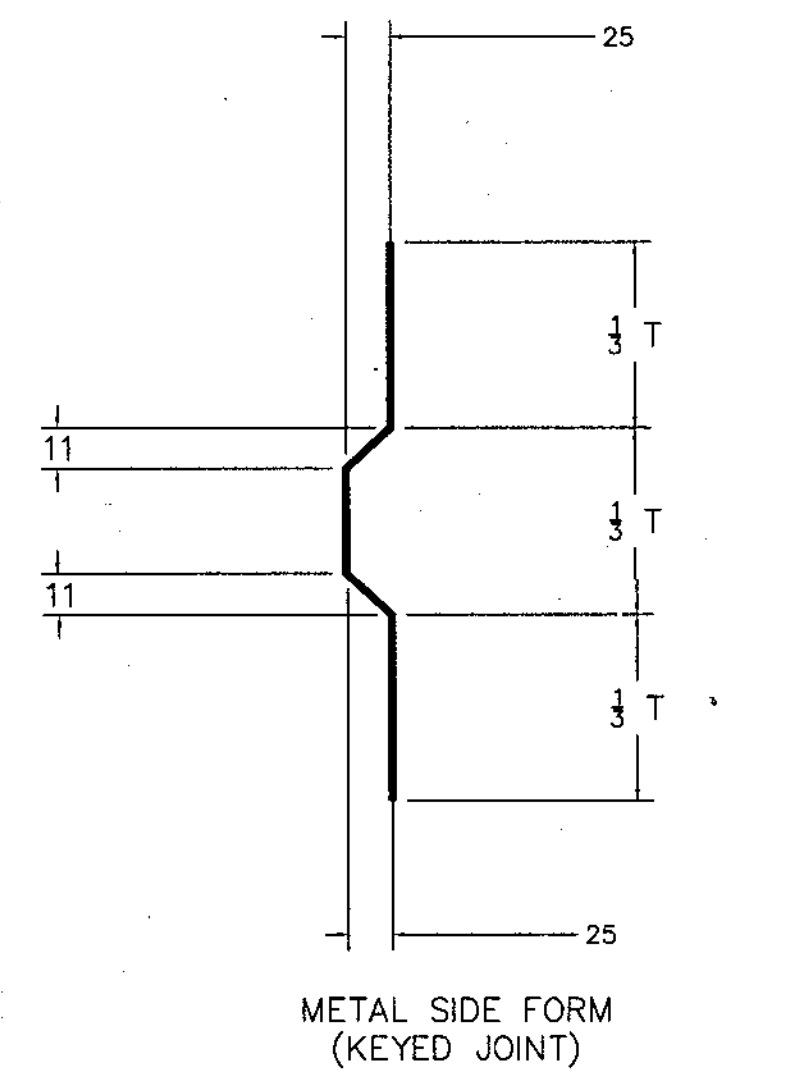
RCPC SECTION
SCALE 1:40M
TYPICAL RCPC JOINT COLLAR DETAIL

STATION	DESCRIPTION
	*** MAIN CULVERTS ***
0+050.050	REMOVE AND REPLACE EXISTING 1-610mmØ X 6 LN. M RCPC WITH 1-910mmØ X 10.00 LN. M RCPC; PROVIDE HEADWALL AT L/S AND WINGWALL AT R/S.
0+655.890	INSTALL 1-1830mmØ X 10 LN. M, PROVIDE HEADWALL AT L/S AND WINGWALL AT R/S.
1+195.080	REMOVE AND REPLACE EXISTING 1-910mmØ X 8 LN. M RCPC WITH 1-910mmØ X 10.00 LN. M RCPC; PROVIDE HEADWALL AT L/S AND WINGWALL AT R/S.
1+472.240	REMOVE AND REPLACE EXISTING 1-610mmØ X 6 LN. M RCPC WITH 1-910mmØ X 10.00 LN. M RCPC; PROVIDE HEADWALL AT L/S AND WINGWALL AT R/S.
1+575.500	EXISTING SIPHON NIA
1+821.540	EXISTING SIPHON NIA
2+220.000	REMOVE AND REPLACE EXISTING SIPHON W/ RCPC 10.00 LN. M. AND PROVIDE WINGWALL
2+668.100	REMOVE AND REPLACE EXISTING 1-910mmØ X 7 LN. M RCPC WITH 1-910mmØ X 10.00 LN. M RCPC; PROVIDE HEADWALL AT L/S AND WINGWALL AT R/S.
2+813.180	EXISTING SIPHON NIA
2+975.170	REMOVE AND REPLACE EXISTING 1-910mmØ X 10.00 LN. M RCPC WITH 1-910mmØ X 10.00 LN. M RCPC; PROVIDE HEADWALL AT L/S AND WINGWALL AT R/S.
3+440.000	REMOVE AND REPLACE EXISTING PVC HOSE NIA WITH 1-910mmØ X 10.00 LN. M RCPC; PROVIDE HEADWALL AT L/S AND WINGWALL AT R/S.
3+745.000	REMOVE AND REPLACE EXISTING 1-610mmØ X 5 LN. M WITH 1-610mmØ X 8.00 LN. M RCPC; PROVIDE HEADWALL AT R/S. (SIDE DRAIN)
4+059.370	EXISTING SIPHON NIA
4+357.000	REMOVE AND REPLACE EXISTING 1-610mmØ X 5 LN. M WITH 1-610mmØ X 8.00 LN. M RCPC; PROVIDE HEADWALL AT R/S. (SIDE DRAIN)
4+361.320	REMOVE AND REPLACE EXISTING PVC HOSE NIA WITH 1-910mmØ X 10.00 LN. M RCPC; PROVIDE HEADWALL AT L/S AND WINGWALL AT R/S.
4+655.630	EXISTING SIPHON NIA
4+722.000	REMOVE AND REPLACE EXISTING PVC HOSE NIA WITH 1-910mmØ X 10.00 LN. M RCPC; PROVIDE HEADWALL AT L/S AND WINGWALL AT R/S.
4+845.000	REMOVE AND REPLACE EXISTING 1-610mmØ X 5 LN. M WITH 1-610mmØ X 8.00 LN. M RCPC; PROVIDE HEADWALL AT R/S. (SIDE DRAIN)
5+275.410	REMOVE AND REPLACE EXISTING 1-1220mmØ X 6 LN. M RCPC WITH 1-1830mmØ X 10.00 LN. M RCPC; PROVIDE HEADWALL AT L/S AND WINGWALL AT R/S.
5+289.830	EXISTING SIPHON NIA
5+787.010	REMOVE AND REPLACE EXISTING PVC HOSE NIA WITH 1-910mmØ X 10.00 LN. M RCPC; PROVIDE HEADWALL AT L/S AND WINGWALL AT R/S.
5+900.000	REMOVE AND REPLACE EXISTING 1-610mmØ X 5 LN. M WITH 1-610mmØ X 8.00 LN. M RCPC; PROVIDE HEADWALL AT R/S. (SIDE DRAIN)
5+904.840	REMOVE AND REPLACE EXISTING 1-910mmØ X 5 LN. M RCPC WITH 1-910mmØ X 10.00 LN. M RCPC; PROVIDE HEADWALL AT L/S AND WINGWALL AT R/S.
6+154.720	REMOVE AND REPLACE EXISTING 1-460mmØ X 5 LN. M RCPC WITH 1-910mmØ X 10.00 LN. M RCPC; PROVIDE HEADWALL AT L/S AND WINGWALL AT R/S.
6+460.490	EXISTING SIPHON NIA
6+648.000	EXISTING SIPHON NIA
6+728.610	REMOVE AND REPLACE EXISTING PVC HOSE NIA WITH 1-910mmØ X 10.00 LN. M RCPC; PROVIDE HEADWALL AT L/S AND WINGWALL AT R/S.
6+971.000	REMOVE AND REPLACE EXISTING 1-910mmØ X 5 LN. M RCPC WITH 1-910mmØ X 10.00 LN. M RCPC; PROVIDE HEADWALL AT L/S AND WINGWALL AT R/S.
7+114.510	REMOVE AND REPLACE EXISTING 1-610mmØ X 5 LN. M RCPC WITH 1-910mmØ X 10.00 LN. M RCPC; PROVIDE HEADWALL AT L/S AND WINGWALL AT R/S.
7+187.460	REMOVE AND REPLACE EXISTING 1-610mmØ X 5 LN. M RCPC WITH 1-910mmØ X 10.00 LN. M RCPC; PROVIDE HEADWALL AT L/S AND WINGWALL AT R/S.
7+903.100	REMOVE AND REPLACE EXISTING 1-910mmØ X 5 LN. M RCPC WITH 1-910mmØ X 10.00 LN. M RCPC; PROVIDE HEADWALL AT L/S AND WINGWALL AT R/S.
8+133.300	REMOVE AND REPLACE EXISTING 1-610mmØ X 7 LN. M RCPC WITH 1-910mmØ X 10.00 LN. M RCPC; PROVIDE HEADWALL AT L/S AND WINGWALL AT R/S.

	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF AGRICULTURE "PHILIPPINE RURAL DEVELOPMENT PROJECT SCALE UP" PROVINCE OF DAVAO DE ORO MUNICIPALITY OF MONTEVISTA & NABUNTURAN	PROJECT NO.: PRDP-SU-IB-R011-DDO-004-000-000-2023-FMB	PREPARED BY: EDWIN S. SALUDES PLANNING & DESIGN DIVISION CHIEF	DESIGNED BY: RONNIE S. APARRI ENGINEER II	CHECKED & REVIEWED BY: RODERICK M. DIGAMON PROVINCIAL ENGINEER	RECOMMENDING APPROVAL: ALICIA M. GRACIADAS CO-PPMIU	APPROVED: DOROTHY P. MONTAJO-GONZAGA GOVERNOR	SHEET CONTENTS: BAR BENDING DIAGRAM, & METHODS OF RCPC INSTALLATION, DRAINAGE SCHEDULE	SHEET NO. 10 / 78
	SUBPROJECT TITLE: REHABILITATION OF NEW VISAYAS - BANAGBANAG, MONTEVISTA TO MAGADING, NABUNTURAN ROAD WITH EXPANSION OF EXISTING BRIDGE		LOCATION: MONTEVISTA AND NABUNTURAN, DAVAO DE ORO						
	<p style="text-align: center;">NO OBJECTION</p>								
	<p style="text-align: center;">SIGNATURE OF APPROVER AND DATE</p>								



TYPICAL ROADWAY SECTION
SCALE
1: 80M



TYPICAL JOINT DETAIL
SCALE: 1: 100M

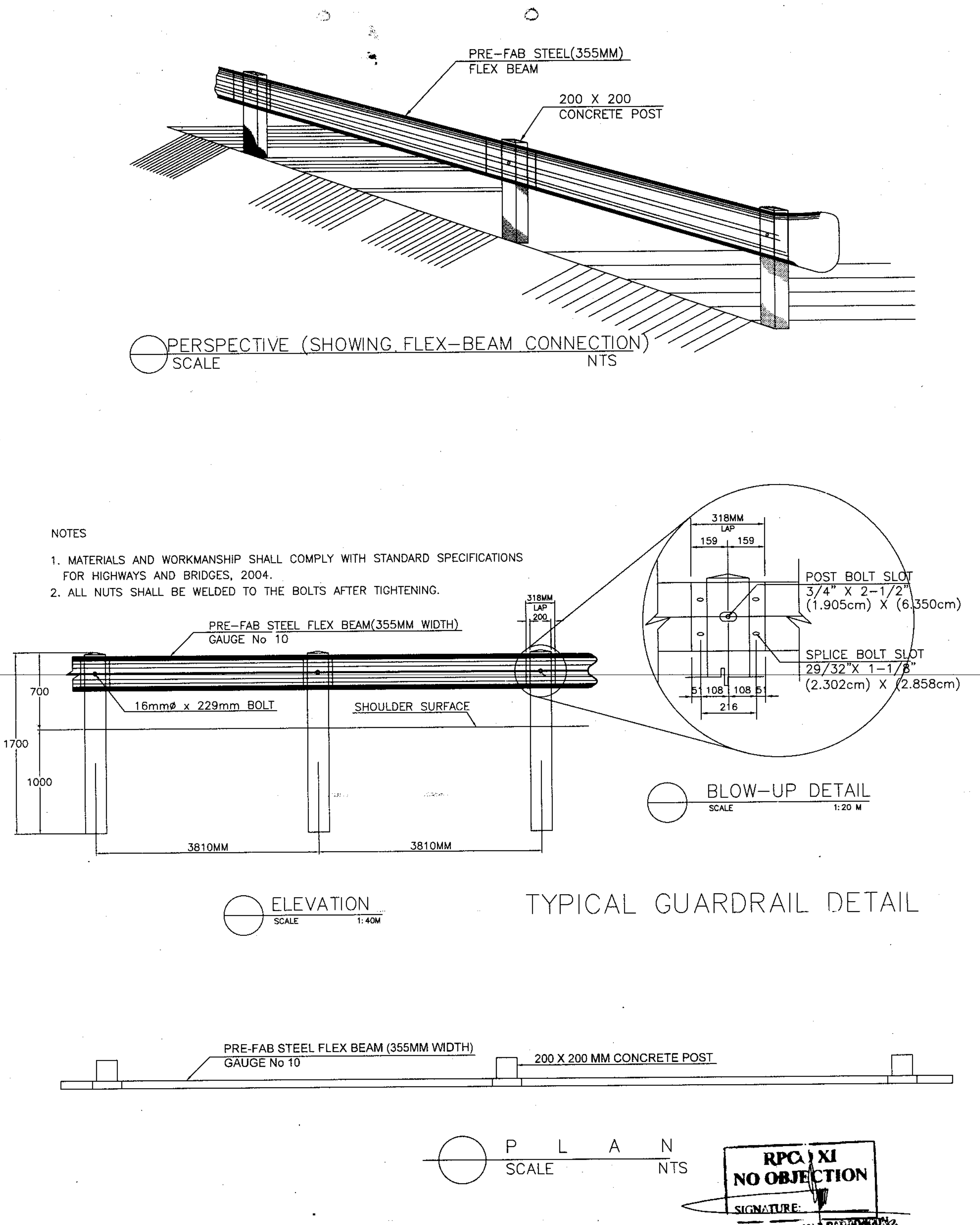
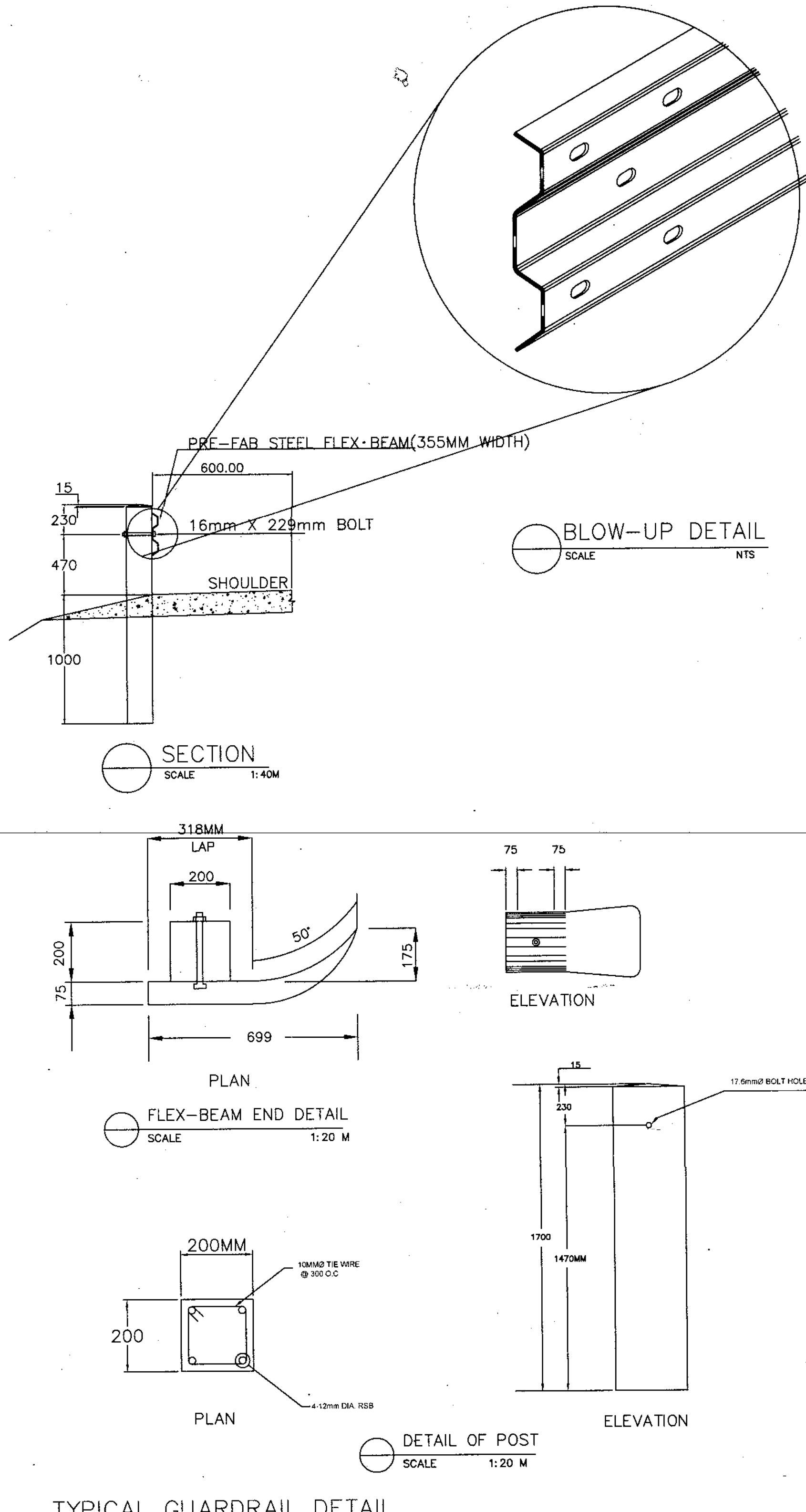
RPCU XI
NO OBJECTION
SIGNATURE: _____
ENCL. RECOMMENDATION
1-BUILD

	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF AGRICULTURE "PHILIPPINE RURAL DEVELOPMENT PROJECT SCALE UP" PROVINCE OF DAVAO DE ORO MUNICIPALITY OF MONTEVISTA & NABUNTURAN	PROJECT NO.: PRDP-SU-IB-R011-DDO-004-000-000-2023-FMB	PREPARED BY:	DESIGNED BY:	CHECKED & REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED:	SHEET CONTENTS:	SHEET NO.
		SUBPROJECT TITLE: REHABILITATION OF NEW VISAYAS - BANAGBANAG, MONTEVISTA TO MAGADING, NABUNTURAN ROAD WITH EXPANSION OF EXISTING BRIDGE	EDWIN S. SALUDES PLANNING & DESIGN DIVISION CHIEF	RONNIE S. APARRI ENGINEER II	RODERICK M. DIGAMON PROVINCIAL ENGINEER	ALICIA M. GRACIADAS CO-PPMIU	DOROTHY P. MONTEJO GONZAGA GOVERNOR	TYPICAL ROADWAY SECTION / TYPICAL JOINT DETAIL	11
		LOCATION: MONTEVISTA AND NABUNTURAN, DAVAO DE ORO							78

METAL GUARDRAIL SCHEDULE

STATION	LENGTH	REMARKS	NO. OF COLUMNS	NO. OF END PIECE
0+785.00				
0+815.00	30.00	BOTH SIDES	30.00	4.00
TOTAL	30.00		30.00	4.00
0+840.00				
0+850.00	10.00	BOTH SIDES	10.00	4.00
TOTAL	10.00		10.00	4.00
0+860.00				
0+870.00	10.00	RIGHT SIDE	10.00	2.00
TOTAL	10.00		10.00	2.00
0+880.00				
0+890.00	10.00	RIGHT SIDE	10.00	2.00
TOTAL	10.00		10.00	2.00
0+900.00				
0+910.00	10.00	BOTH SIDES	10.00	4.00
TOTAL	10.00		10.00	4.00
0+920.00				
0+930.00	10.00	BOTH SIDES	10.00	4.00
TOTAL	10.00		10.00	4.00
0+940.00				
0+950.00	10.00	BOTH SIDES	10.00	4.00
TOTAL	10.00		10.00	4.00
0+960.00				
0+970.00	10.00	BOTH SIDES	10.00	4.00
TOTAL	10.00		10.00	4.00
0+980.00				
0+990.00	10.00	BOTH SIDES	10.00	4.00
TOTAL	10.00		10.00	4.00
0+1000.00				
0+1010.00	10.00	BOTH SIDES	10.00	4.00
TOTAL	10.00		10.00	4.00
0+1020.00				
0+1030.00	10.00	BOTH SIDES	10.00	4.00
TOTAL	10.00		10.00	4.00
0+1040.00				
0+1050.00	10.00	BOTH SIDES	10.00	4.00
TOTAL	10.00		10.00	4.00
0+1060.00				
0+1070.00	10.00	BOTH SIDES	10.00	4.00
TOTAL	10.00		10.00	4.00
0+1080.00				
0+1090.00	10.00	BOTH SIDES	10.00	4.00
TOTAL	10.00		10.00	4.00

STATION	LENGTH	REMARKS	NO. OF COLUMNS	NO. OF END PIECE
4+810.00	220.00	BOTH SIDES	110.00	4.00
TOTAL	220.00		110.00	4.00
4+900.00				
4+910.00	8.00	RIGHT SIDE	8.00	2.00
TOTAL	8.00		8.00	2.00
4+985.00				
4+995.00	10.00	BOTH SIDES	10.00	4.00
TOTAL	10.00		10.00	4.00
4+985.00				
4+995.00	10.00	RIGHT SIDE	10.00	2.00
TOTAL	10.00		10.00	2.00
4+985.00				
4+995.00	10.00	RIGHT SIDE	10.00	2.00
TOTAL	10.00		10.00	2.00
4+985.00				
4+995.00	10.00	BOTH SIDES	10.00	4.00
TOTAL	10.00		10.00	4.00
5+221.00				
5+231.00	10.00	RIGHT SIDE	10.00	2.00
TOTAL	10.00		10.00	2.00
5+430.00				
5+440.00	10.00	BOTH SIDES	10.00	4.00
TOTAL	10.00		10.00	4.00
5+810.00				
5+820.00	10.00	BOTH SIDES	10.00	4.00
TOTAL	10.00		10.00	4.00
6+100.00				
6+110.00	10.00	BOTH SIDES	10.00	4.00
TOTAL	10.00		10.00	4.00
6+185.00				
6+195.00	10.00	BOTH SIDES	10.00	4.00
TOTAL	10.00		10.00	4.00
6+185.00				
6+195.00	10.00	RIGHT SIDE	10.00	2.00
TOTAL	10.00		10.00	2.00
6+185.00				
6+195.00	10.00	BOTH SIDES	10.00	4.00
TOTAL	10.00		10.00	4.00
7+020.00				
7+030.00	10.00	LEFT SIDE	10.00	2.00
TOTAL	10.00		10.00	2.00
7+020.00				
7+030.00	10.00	BOTH SIDES	10.00	4.00
TOTAL	10.00		10.00	4.00
7+470.00				
7+480.00	10.00	BOTH SIDES	10.00	4.00
TOTAL	10.00		10.00	4.00
7+950.00				
7+960.00	10.00	BOTH SIDES	10.00	4.00
TOTAL	10.00		10.00	4.00
8+110.00				
8+120.00	10.00	BOTH SIDES	10.00	4.00
TOTAL	10.00		10.00	4.00



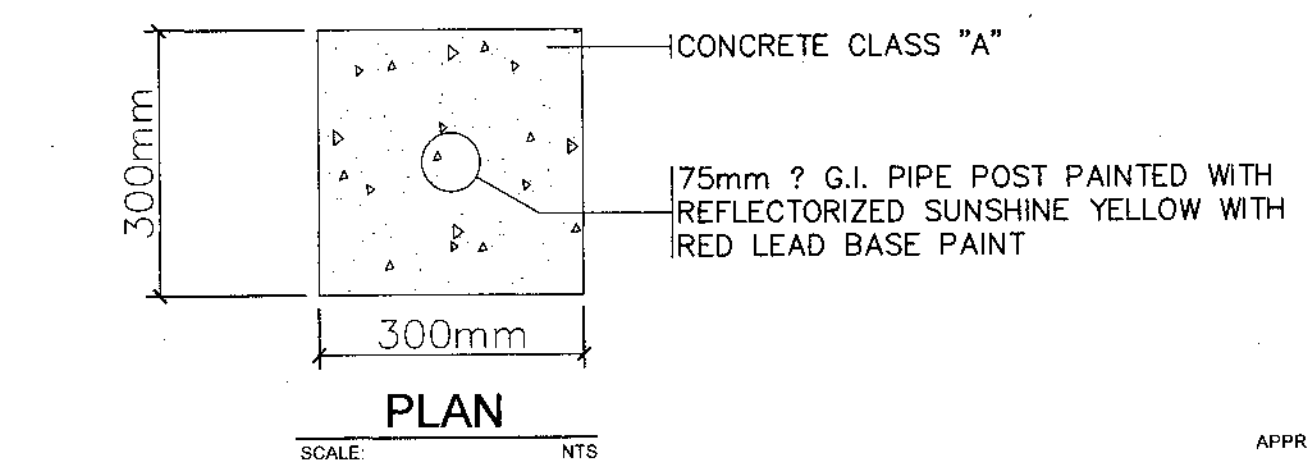
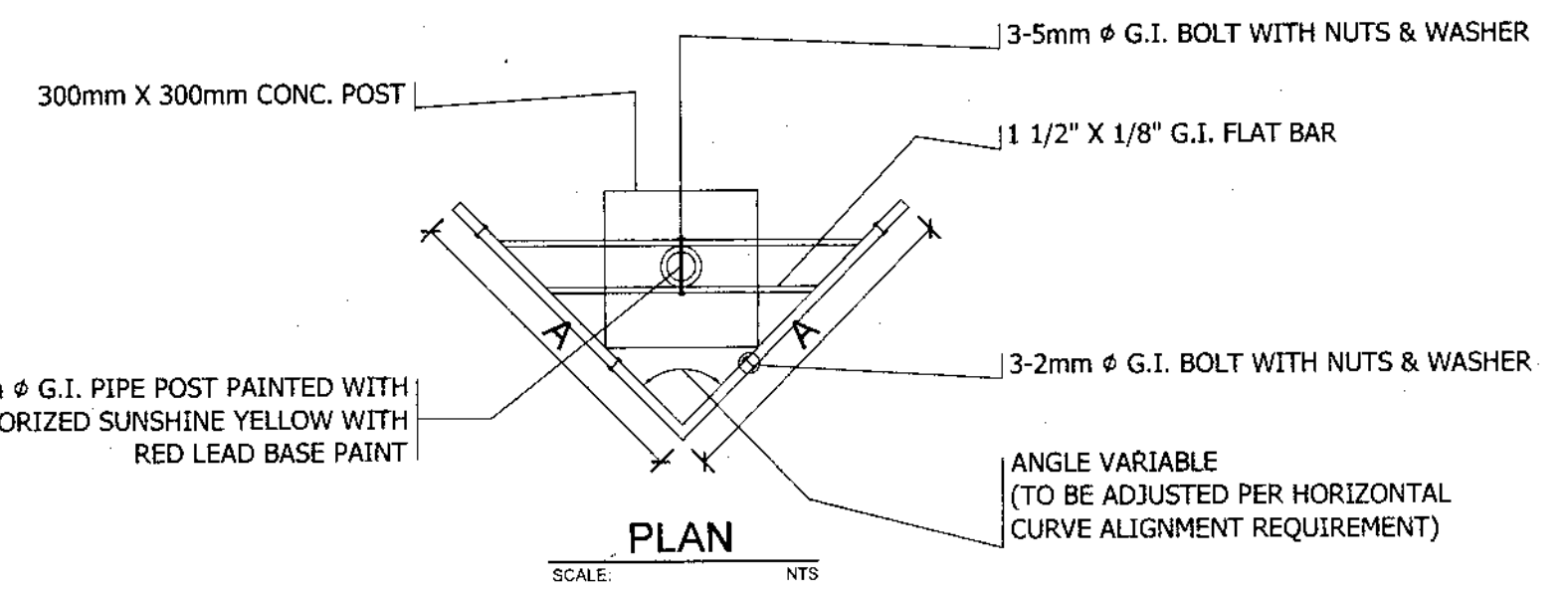
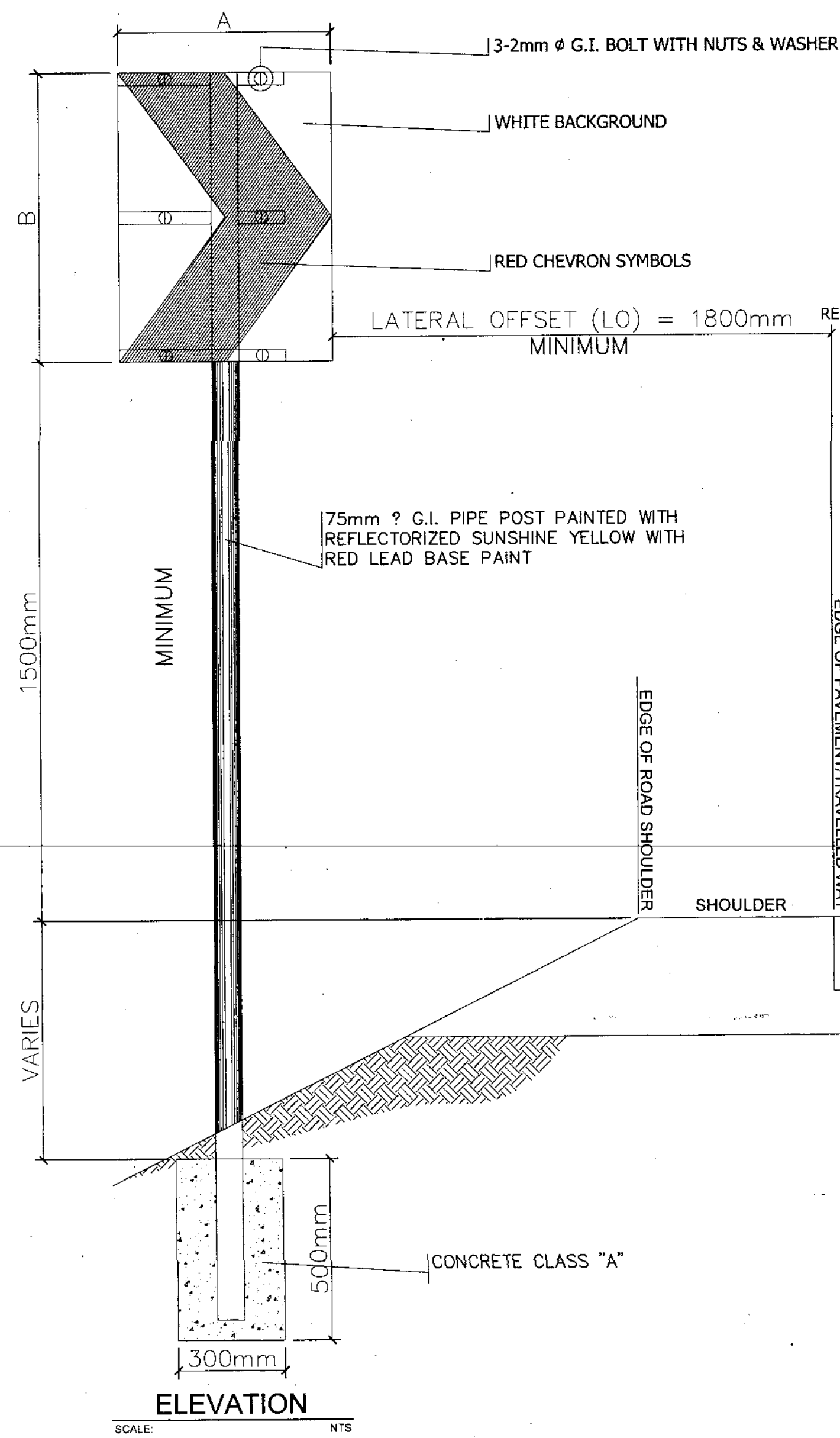
- NOTES**
1. MATERIALS AND WORKMANSHIP SHALL COMPLY WITH STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, 2004.
 2. ALL NUTS SHALL BE WELDED TO THE BOLTS AFTER TIGHTENING.

RPC XI
NO OBJECTION
SIGNATURE: _____

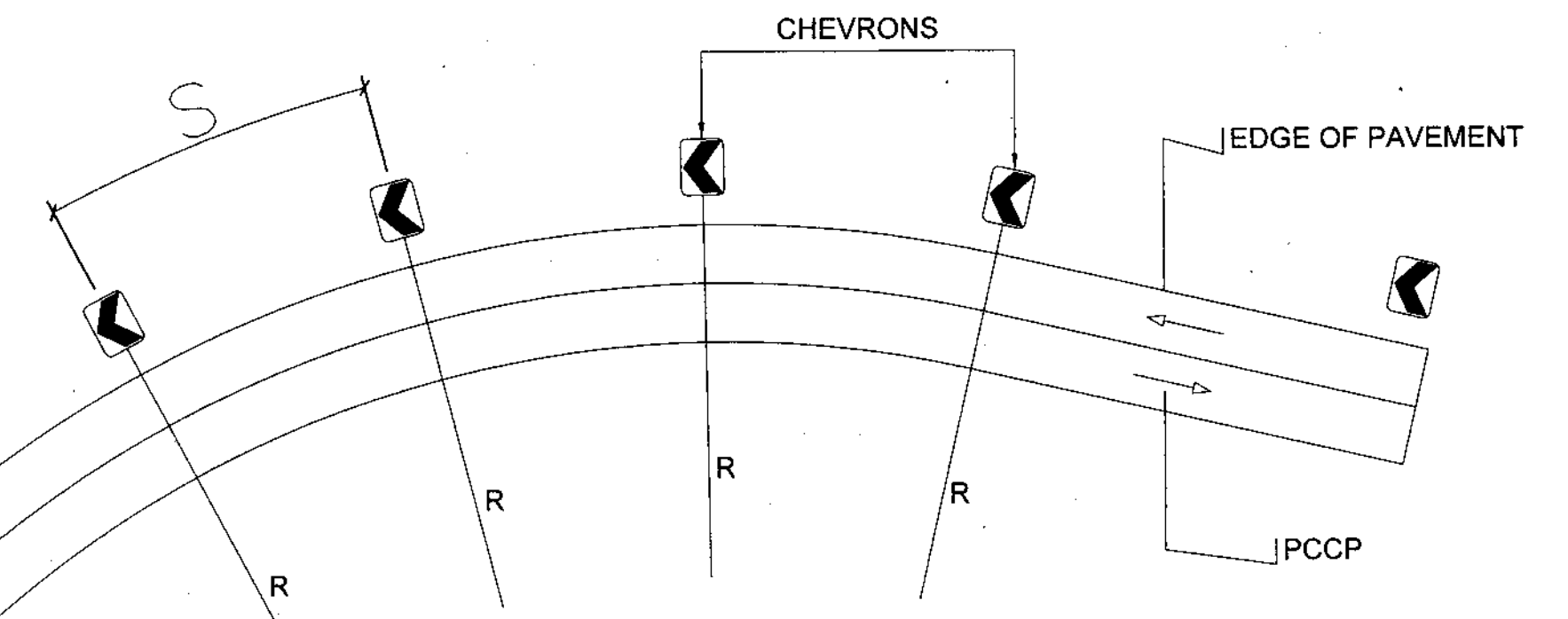
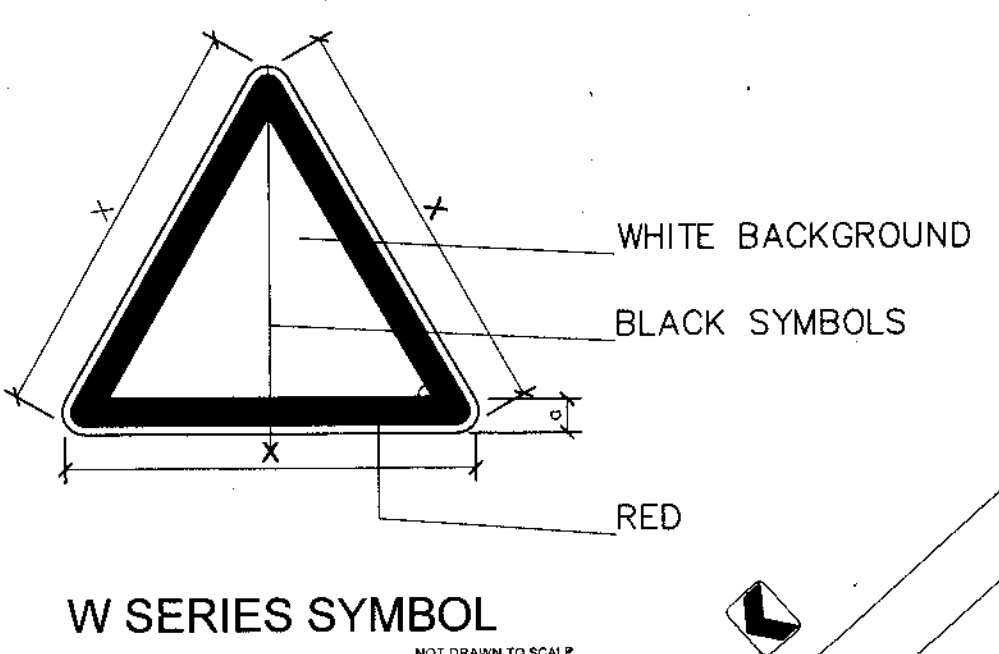
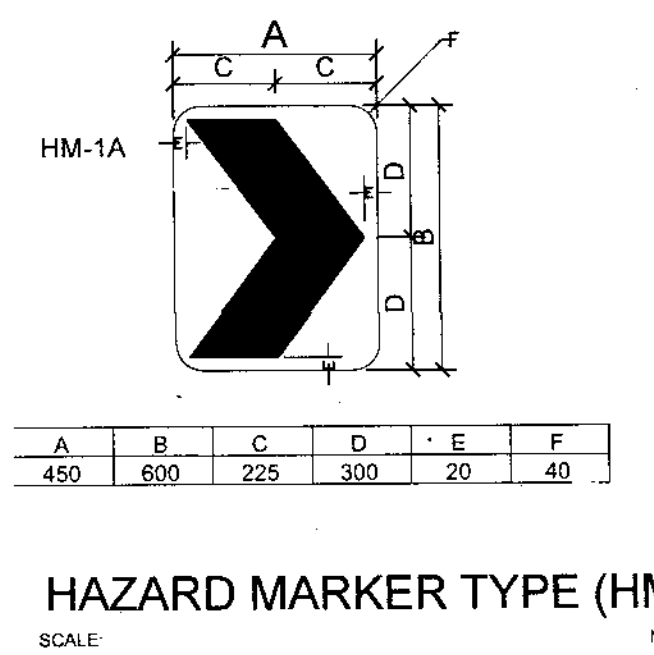
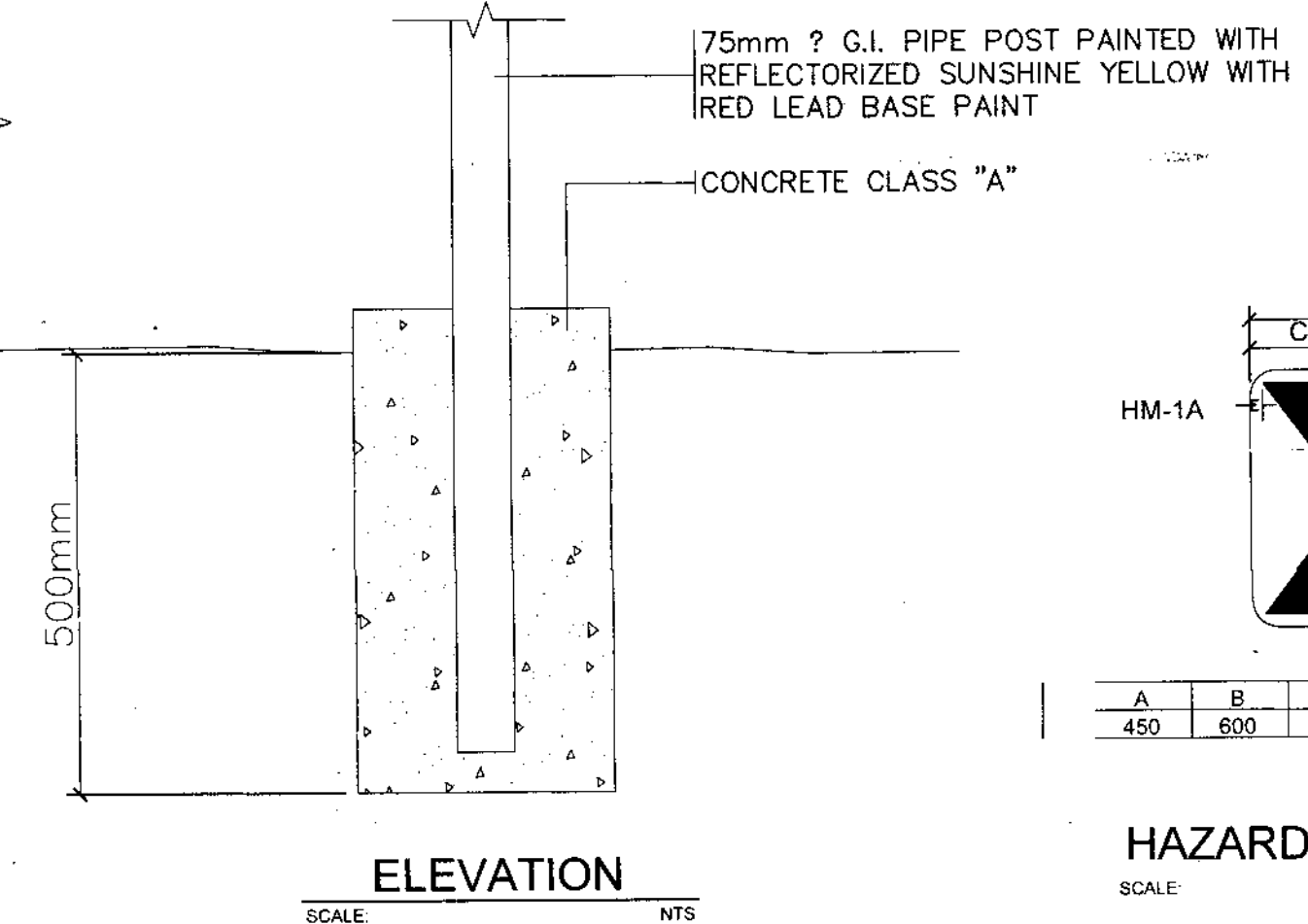
<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF AGRICULTURE "PHILIPPINE RURAL DEVELOPMENT PROJECT SCALE UP" PROVINCE OF DAVAO DE ORO MUNICIPALITY OF MONTEVISTA & NABUNTURAN</p>	PROJECT NO.: PRDP-SU-IB-R011-DDO-004-000-000-2023-FMB	PREPARED BY: EDWIN S. SALUDES	DESIGNED BY: RONNIE S. APARRI	CHECKED & REVIEWED BY: RODERICK M. DIGAMON	RECOMMENDING APPROVAL: ALICIA M. GRACIADAS	APPROVED: DOROTHY P. MONTEZO-GONZAGA	SHEET CONTENTS: TYPICAL GUARDRAIL DETAIL AND SCHEDULE	SHEET NO.: 12
	SUBPROJECT TITLE: REHABILITATION OF NEW VISAYAS - BANAGBANAG, MONTEVISTA TO MAGADING, NABUNTURAN ROAD WITH EXPANSION OF EXISTING BRIDGE	LOCATION: MONTEVISTA AND NABUNTURAN, DAVAO DE ORO	PLANNING & DESIGN DIVISION CHIEF	ENGINEER II	PROVINCIAL ENGINEER	CO-PPMIU	GOVERNOR	
								78

Station and/or Location	Curve Direction	Road Signs
Station 0 + 240.000		
Station 0 + 520.000		
Station 2 + 020.000		
Station 3 + 720.000		
Station 4 + 380.000		
Station 4 + 700.000	Left	Intersection Ahead
Station 4 + 840.000		
Station 4 + 940.000		
Station 6 + 920.000		
Station 7 + 940.000	Right	Intersection Ahead
Station 8 + 180.000		
Station 8 + 250.000		
Station 4 + 380.000		
Station 0 + 280.000		
Station 0 + 840.000		
Station 2 + 040.000		
Station 3 + 700.000		
Station 4 + 340.000		
Station 4 + 840.000		
Station 8 + 020.000		
Station 8 + 940.000		
Station 7 + 900.000		
Station 1 + 240.000		
Station 1 + 500.000		
Station 2 + 175.000		
Station 2 + 218.000		
Station 2 + 600.000		
Station 2 + 840.000		
Station 4 + 018.000		
Station 4 + 280.000		
Station 4 + 455.000		
Station 4 + 695.000		
Station 5 + 240.000		
Station 3 + 300.000		
Station 3 + 860.000		
Station 5 + 920.000		
Station 6 + 480.000		
Station 6 + 840.000		
Station 7 + 070.000		
Station 7 + 330.000		
Station 0 + 520.000		
Station 8 + 310.000		
Station 0 + 620.000	Left	T Junction
Station 0 + 700.000	Right	Winding Road
Station 6 + 920.000	Right	
Station 7 + 940.000	Right	
Station 6 + 940.000	Left	
Station 7 + 809.000	Left	Curve
Station 5 + 250.000		
Station 5 + 290.000		
Station 6 + 490.000		
Station 6 + 530.000		
Station 6 + 530.000		
Station 6 + 530.000		
Station 6 + 530.000		
Station 1 + 820.000	Left	Children Crossing
Station 1 + 820.000		
Station 1 + 720.000	Right	Reverse Turn

CHEVRON SIGN AND WARNING SIGN DETAIL



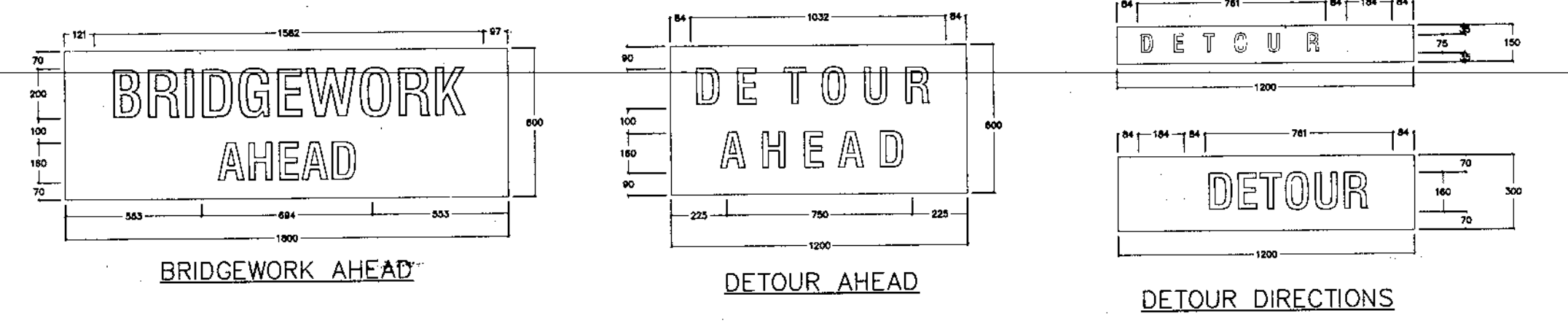
TRAFFIC SIGN POST FOOTING DETAIL
SCALE: NTS



SHOWING THE RECOMMENDED SPACING DISTANCES FOR THE CHEVRON SIGNS WITHIN AND APPROACH / DEPARTURE OF THE ROAD

TYPE	ADVISORY SPEED LIMIT (kph)	RADIUS, R (m)	CHEVRON SPACING, S (m)
	< 20	< 60	12
	30 - 50	60 - 120	24
	60 - 70	120 - 210	36
	80 - 90	210 - 300	48
	> 90	> 300	60

TYPICAL SIZE: 450 mm x 600 mm
APPLICATION: < 60 kph design speed with no visible problem



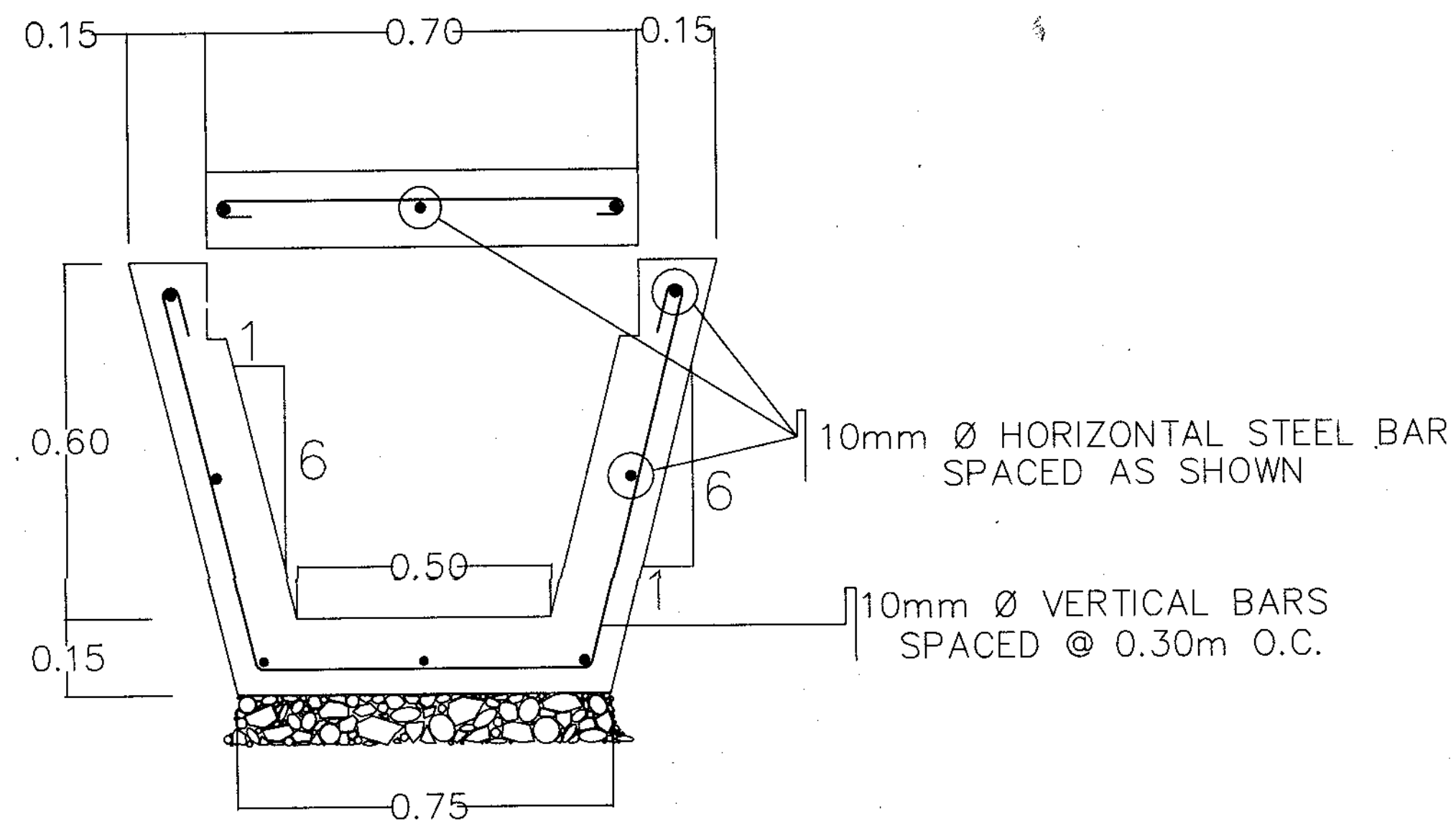
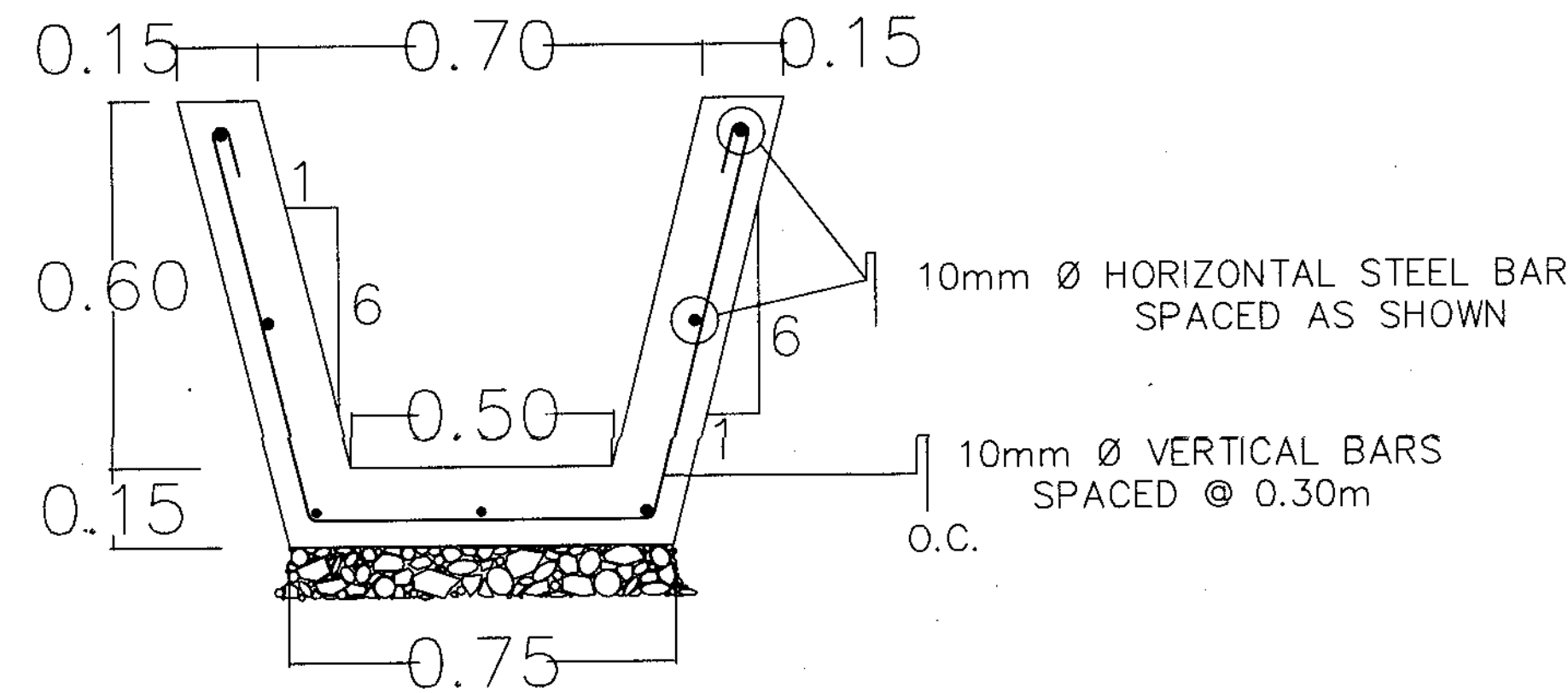
TYPICAL WARNING SIGN CONSTRUCTION NOTES :

- SIGN POST DIMENSION "A" AND "B" DEPENDS ON THE SIZE OF THE SIGN PLACED.
- THE MATERIALS, DIMENSIONS, SHAPES, COLOR, SIZE OF NUMERALS, LETTERS AND INSTALLATION SHALL CONFORM WITH THE PHILIPPINE ROAD SIGNS MANUAL OF 1997 AND ALL SPECIFICATIONS REGARDING ROAD SIGNS MUST BE IN ACCORDANCE TO DPWH HIGHWAY SAFETY DESIGN STANDARDS, PART 2: ROAD SIGNS AND PAVEMENT MARKINGS MANUAL OF 2004.
- WARNING SIGNS SHALL BE INSTALLED AT A DISTANCE NOT LESS THAN 0.6V m APART, WHERE V IS THE 85TH PERCENTILE SPEED IN KPH.
- FINAL LOCATIONS OF ROAD SIGNS SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.
- "NO PASSING ZONES" IN OPPOSITE DIRECTIONS MAY OR MAY NOT OVERLAP DEPENDING ON ALIGNMENT. "NO PASSING ZONE" WILL BE DEFINED BY THE ENGINEER.
- CONSTRUCTION AREA SIGNS SHALL BE INSTALLED AT THE LOCATION AS DIRECTED BY THE ENGINEER.
- USAGE OF THE STANDARD CONSTRUCTION SIGNS ARE :
 - BRIDGE UNDER REPAIR : THE " BRIDGE UNDER REPAIR " SIGN SHALL BE USED ON THE IMMEDIATE APPROACHES TO A BRIDGE UNDERGOING REPAIR. THE ADVANCE SIGN " BRIDGE WORK AHEAD " SHALL BE USED IN CONJUNCTION WITH THIS SIGN.
 - BRIDGE CLOSED : THE " BRIDGE CLOSED " SIGN SHALL BE PLACED ON THE ROAD PAVEMENT WHERE THE BRIDGE IS CLOSED TO THE TRAFFIC FACING THE SIGN, USUALLY THIS SIGN WILL NEED TO BE SUPPLEMENTED BY A DETOUR SIGN.
 - HALF LANE CLOSED : THE " HALF LANE CLOSED " SIGN SHALL BE USED WHERE AN OBSTRUCTION ENCROACHES ON TO A CARRIAGEWAY OF THE BRIDGE, BUT THE REMAINING WIDTH IS OPEN TO TWO-WAY TRAFFIC. IT SHALL BE ERRECTED ACROSS THE CLOSED PORTION OF CARRIAGEWAY.
 - DETOUR : THE " DETOUR " SIGN SHALL BE USED TO INDICATE THE DIRECTION AND POINT AT WHICH TRAFFIC SHOULD LEAVE THE THROUGH ROUTE TO DETOUR VIA EXISTING ROADS OR STREETS WHICH BY-PASS AN OBSTRUCTION IN THE MAIN ROUTE, ON ROADS CARRYING FAST OR HEAVY TRAFFIC, OR WHERE SIGN DISTANCE IS LIMITED. IT WILL USUALLY BE NECESSARY TO USE THE ADVANCE SIGN " DETOUR AHEAD " IN CONJUNCTION WITH THIS SIGN. THE CONFIRMARY " DETOUR " SIGN SHALL BE USED, IF NECESSARY, AS REASSURANCE GUIDE ALONG THE ROUTE OF THE DETOUR.

RPC/MI
NO OBJECTION
SIGNATURE: *[Signature]*
1.0111: P. Management Head

<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF AGRICULTURE "PHILIPPINE RURAL DEVELOPMENT PROJECT SCALE UP" PROVINCE OF DAVAO DE ORO MUNICIPALITY OF MONTEVISTA & NABUNTURAN</p>	PROJECT NO.:	PRDP-SU-IB-R011-DDO-004-000-000-2023-FMB	PREPARED BY:	DESIGNED BY:	CHECKED & REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED:	SHEET CONTENTS:	SHEET NO.
	SUBPROJECT TITLE:	REHABILITATION OF NEW VISAYAS - BANAGBANAG, MONTEVISTA TO MAGADING, NABUNTURAN ROAD WITH EXPANSION OF EXISTING BRIDGE	EDWIN S. SALUDES PLANNING & DESIGN DIVISION CHIEF	RONNIE S. APARRI ENGINEER II	RODERICK M. DIGAMON PROVINCIAL ENGINEER	ALICIA M. GRACIADAS CO-PPMIU	DOROTHY P. MONTEJO GONZAGA GOVERNOR	CHEVRON & WARNING SIGNS	13
	LOCATION:	MONTEVISTA AND NABUNTURAN, DAVAO DE ORO							78

CONCRETE CANAL LINING DETAIL
DRAWN NOT TO SCALE



CANAL DETAILS

SCALE NTS

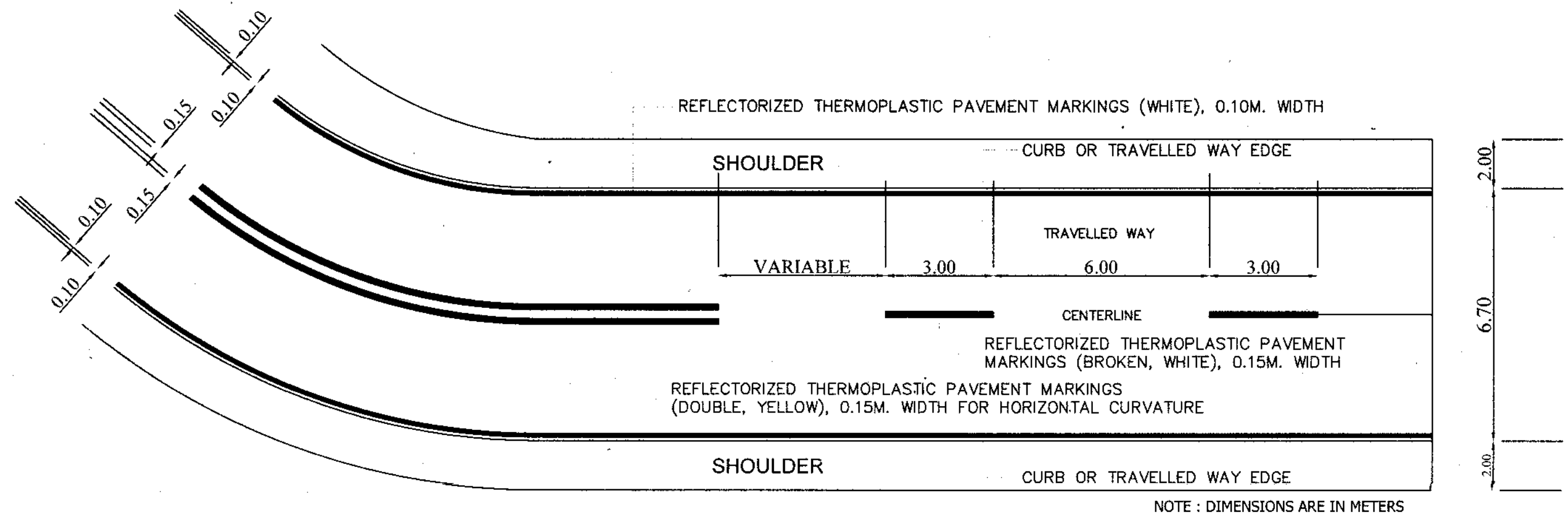
CANAL LINING SCHEDULE

****LINED CANAL****			
0+000.000	to	0+220.000	Concrete Lined Canal w/ Cover (L/S)
1+253.000	to	1+472.240	Concrete Lined Canal (R/S)
6+580.000	to	6+648.000	Concrete Lined Canal (L/S)

**RPC XI
NO OBJECTION**
SIGNATURE: _____
Engineering Division Head

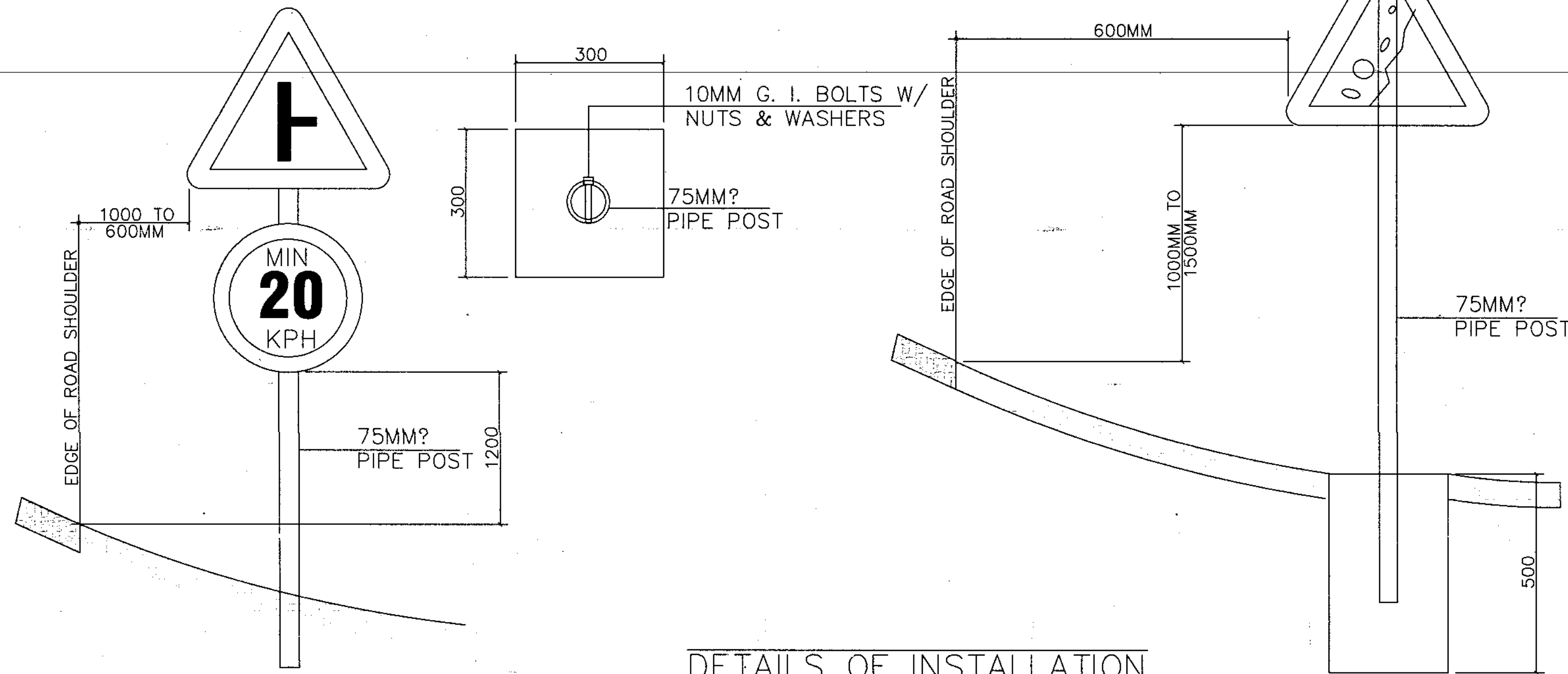
	PROJECT NO.: PRDP-SU-IB-R011-DDO-004-000-000-2023-FMB	PREPARED BY: EDWIN S. SALUDES PLANNING & DESIGN DIVISION CHIEF	DESIGNED BY: RONNIE S. APARRI ENGINEER II	CHECKED & REVIEWED BY: RODERICK M. DIGAMON PROVINCIAL ENGINEER	RECOMMENDING APPROVAL: ALICIA M. GRACIADAS CO-PPMIU	APPROVED: DOROTHY P. MONTEJO-GONZAGA GOVERNOR	SHEET CONTENTS: CANAL LINING DETAIL	SHEET NO. 14 / 78	
	SUBPROJECT TITLE: REHABILITATION OF NEW VISAYAS - BANAGBANAG, MONTEVISTA TO MAGADING, NABUNTURAN ROAD WITH EXPANSION OF EXISTING BRIDGE	LOCATION: MONTEVISTA AND NABUNTURAN, DAVAO DE ORO							
	PROVINCE OF DAVAO DE ORO MUNICIPALITY OF MONTEVISTA & NABUNTURAN								

PAVEMENT MARKINGS, AND REGULATORY SIGNS DETAILS



REFLECTORIZED CENTER AND EDGE LINE PAVEMENT MARKINGS DETAIL

LIMITS OF DOUBLE YELLOW PAVEMENT MARKINGS



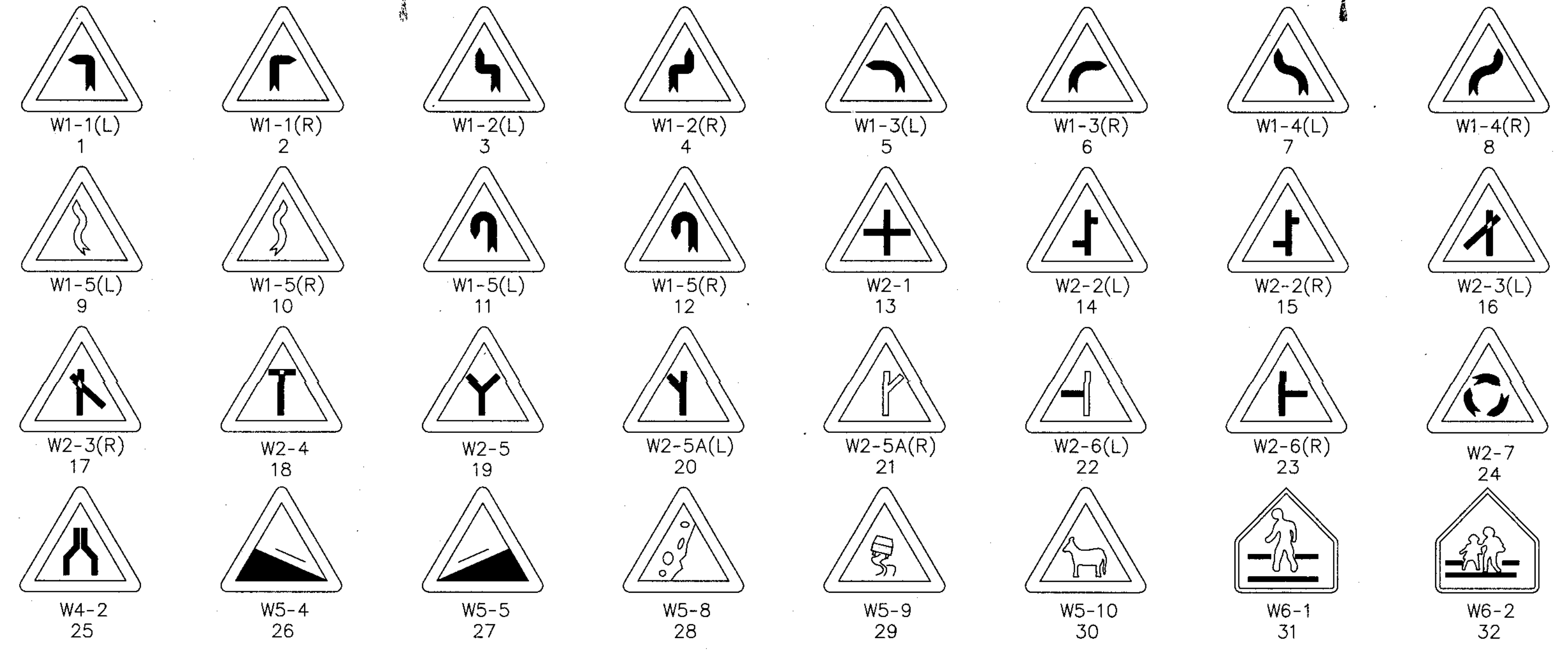
DETAILS OF INSTALLATION

LEGEND:

A. WARNING SIGNS

1. SHARP TURN (LEFT)
2. SHARP TURN (RIGHT)
3. REVERSE TURN (LEFT)
4. REVERSE TURN (RIGHT)
5. CURVE (LEFT)
6. CURVE (RIGHT)
7. REVERSE CURVE (LEFT)
8. REVERSE CURVE (RIGHT)
9. WINDING ROAD (LEFT)
10. WINDING ROAD (RIGHT)
11. HAIRPIN BEND (LEFT)
12. HAIRPIN BEND (RIGHT)
13. CROSS ROAD
14. OTHER CROSS ROAD (LEFT)
15. OTHER CROSS ROAD (RIGHT)
16. OTHER CROSS ROAD (LEFT)
17. OTHER CROSS ROAD (RIGHT)
18. T JUNCTION
19. Y JUNCTION
20. Y JUNCTION (LEFT)
21. Y JUNCTION (RIGHT)
22. SIDE ROAD JUNCTION (LEFT)
23. SIDE ROAD JUNCTION (RIGHT)
24. ROUNDABOUT (ROTONDA)
25. NARROW ROAD
26. STEP DESCENT
27. STEEP CLIMB
28. FALLING OR FALLEN ROCKS LEFT AND RIGHT
29. SLIPPERY WHEN WET
30. CATTLE CROSSING
31. PEDESTRIANS
32. CHILDREN
33. SUPPLEMENTARY SIGN (SCHOOL)
34. CHEVRON ALIGNMENT SIGN (LEFT)
35. CHEVRON ALIGNMENT SIGN (RIGHT)

- W1-1(L)
- W1-1(R)
- W1-2(L)
- W1-2(R)
- W1-3(L)
- W1-3(R)
- W1-4(L)
- W1-4(R)
- W1-5(L)
- W1-5(R)
- W1-6(L)
- W1-6(R)
- W2-1
- W2-2(L)
- W2-2(R)
- W2-3(L)
- W2-3(R)
- W2-4
- W2-5
- W2-5A(L)
- W2-5A(R)
- W2-6(L)
- W2-6(R)
- W2-7
- W4-2
- W5-4
- W5-5
- W5-8
- W5-9
- W5-10
- W6-1
- W6-2
- W8-9
- HM-1A (L)
- HM-1A (L)

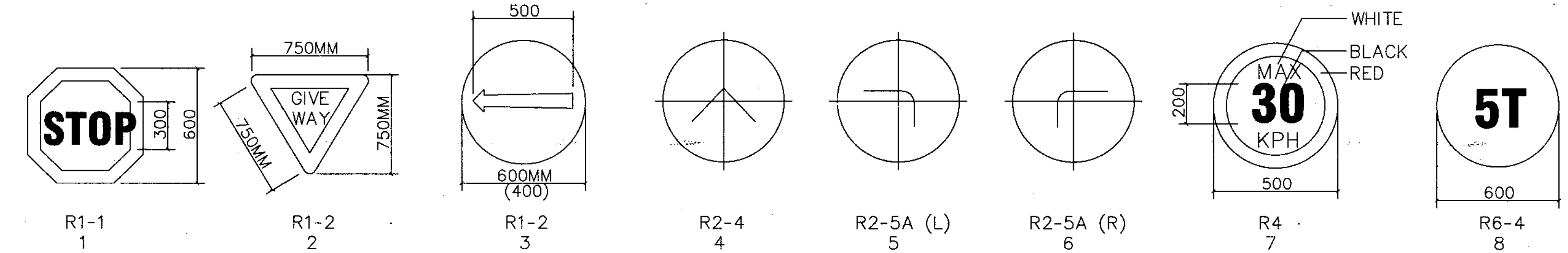


(A) WARNING SIGNS

B. REGULATORY SIGNS

1. STOP AT INTERSECTION
2. PRIORITY ROAD AHEAD
3. DIRECTION TO BE FOLLOWED
4. DIRECTION TO BE FOLLOWED
5. DIRECTION TO BE FOLLOWED
6. DIRECTION TO BE FOLLOWED
7. SPEED LIMIT
8. LOAD RESTRICTION SIGN

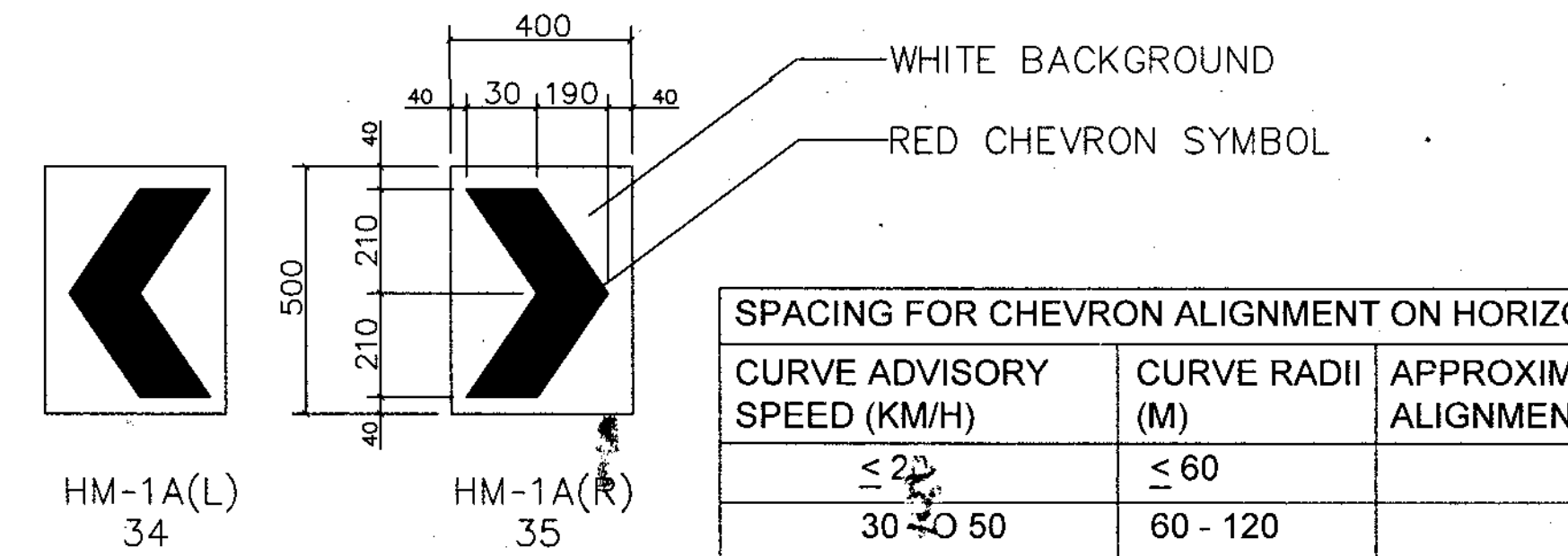
- R1-1
- R1-2
- R2-2
- R2-4
- R2-5 (L)
- R2-5 (R)
- R4
- R6-4



(B) REGULATORY SIGNS

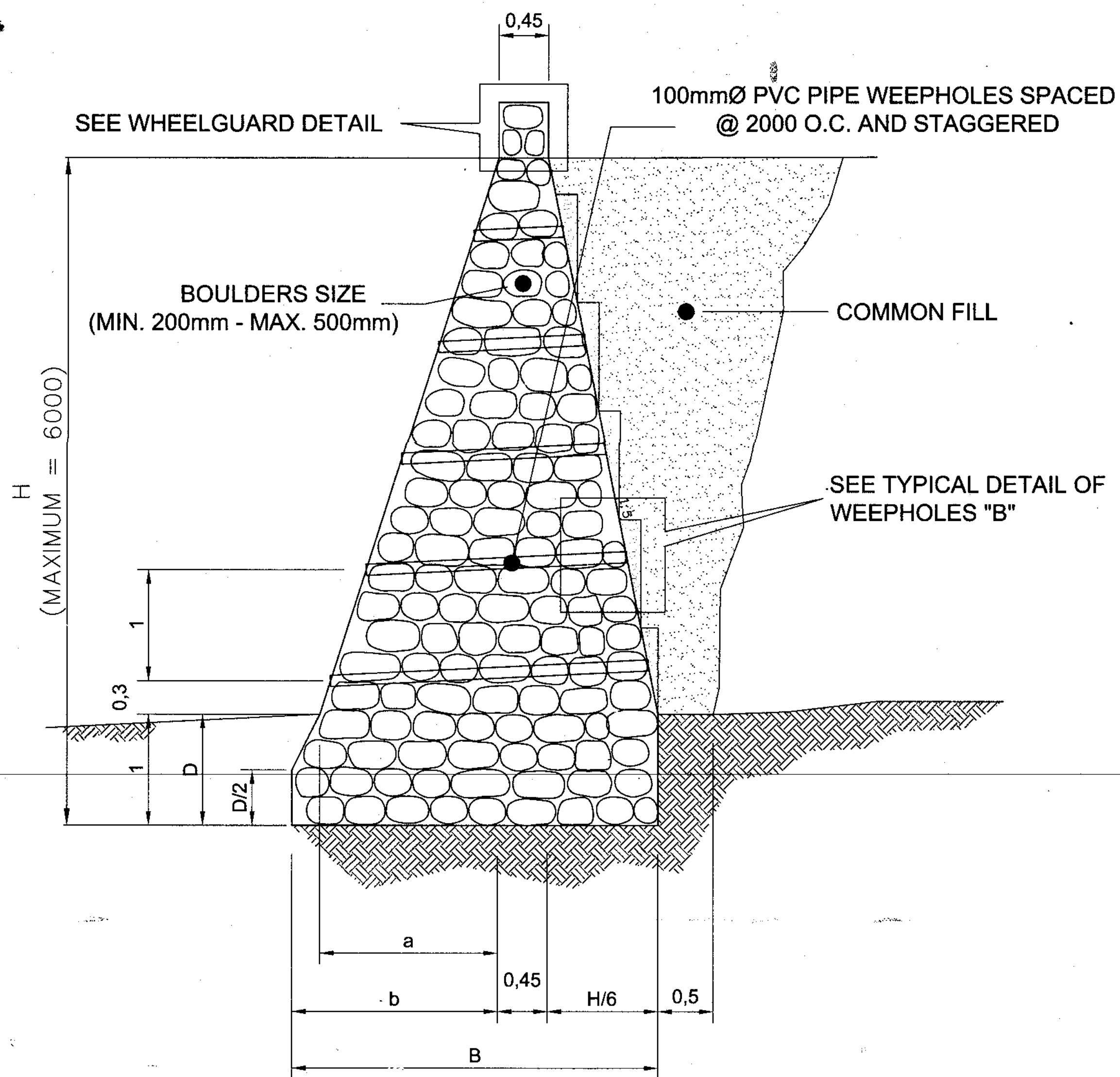
GENERAL NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE INDICATED.
2. EACH SIDE OF THE EQUILATERAL TRIANGLE SHALL BE 750MM FOR NO'S. 1 TO 12 AND 600MM FOR NO'S. 13 TO 30 EXCEPT FOR NO'S. 16 TO 17 WHICH IS 750MM.
3. THE SYMBOLS SHALL BE BLACK ON WHITE BACKGROUND AND RED BORDER (60MM WIDE) EXCEPT FOR NO'S. 31 TO 32 WHICH SHALL HAVE A FLUORESCENT YELLOW GREEN BACKGROUND.
4. NO'S 13 TO 24. THE DIAMETER SHALL BE 600MM OUTSIDE BUILT UP AREAS AND 450MM WITHIN BUILT UP AREAS. THE COLOR CODING OF SYMBOLS, BACKGROUND AND BORDER ARE AS SHOWN EXACT LOCATION OF ROAD SIGNS SHALL HAVE DETERMINED BY THE ENGINEER IN THE FIELD.
5. THE DIMENSIONS, SIZES OF LETTERS AND NUMERALS, SHAPE, COLOR AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS OF D.P.W.H. PHILIPPINES ROAD SIGNS MANUAL 2004.
6. ROAD SIGNS SHALL BE PLAIN CEMENT FINISH, SMOOTHENED AND TREATED WITH CONCRETE NEUTRALIZER AND PRIMER PRIOR TO APPLICATION OF RETRO REFLECTIVE MATERIALS/STICKERS ON LEGENDS, LETTERS, BORDERS AND BACKGROUND OF THE SIGN SLAB AS DIRECTED BY THE ENGINEER.



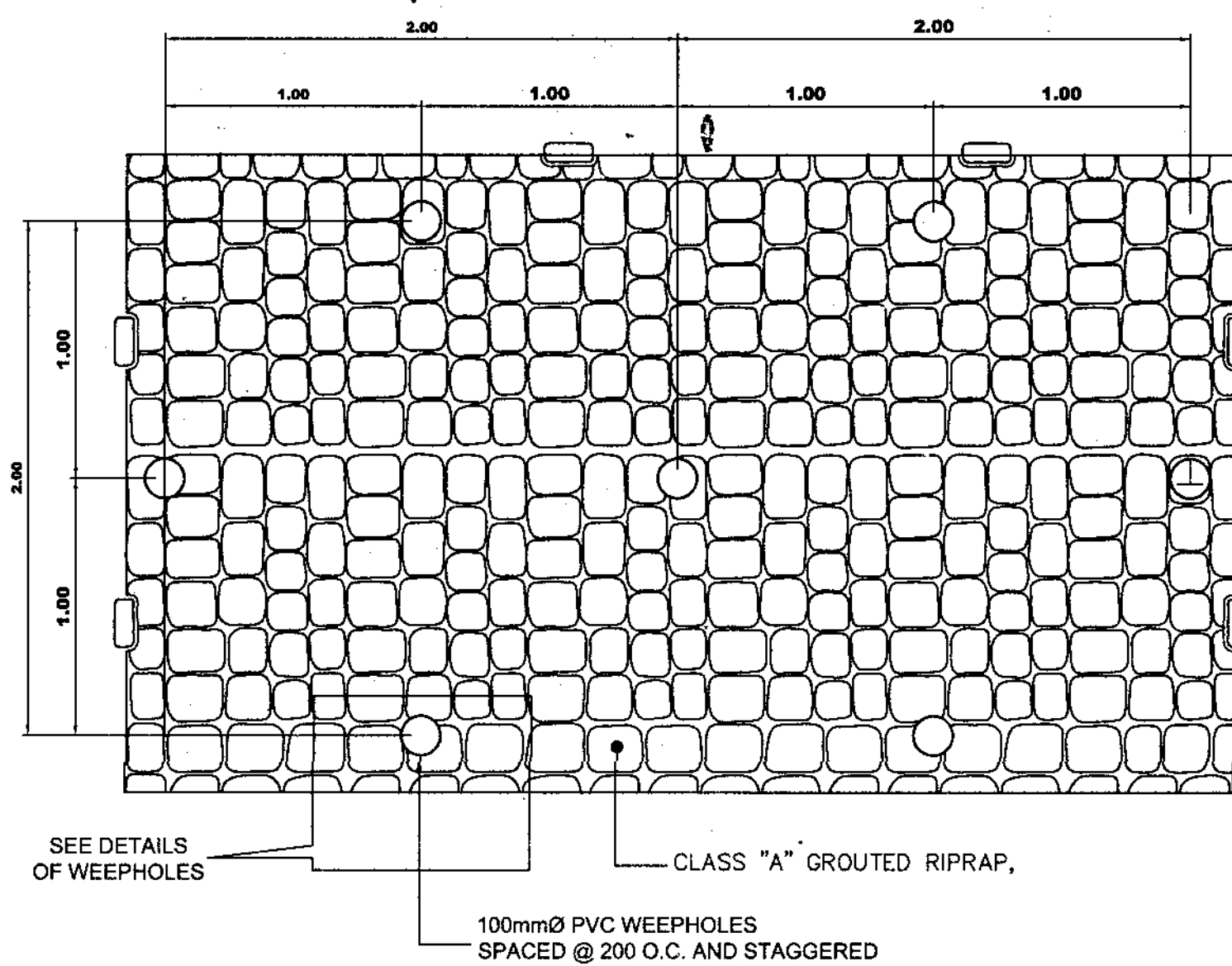
* EACH LOCATION HAS 2 PCS. OF CHEVRON ALIGNMENT SIGN.

	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF AGRICULTURE "PHILIPPINE RURAL DEVELOPMENT PROJECT SCALE UP" PROVINCE OF DAVAO DE ORO MUNICIPALITY OF MONTEVISTA & NABUNTURAN	PROJECT NO.: PRDP-SU-IB-R011-DDO-004-000-000-2023-FMB SUBPROJECT TITLE: REHABILITATION OF NEW VISAYAS - BANAGBANAG, MONTEVISTA TO MAGADING, NABUNTURAN ROAD WITH EXPANSION OF EXISTING BRIDGE LOCATION: MONTEVISTA AND NABUNTURAN, DAVAO DE ORO	PREPARED BY: EDWIN S. SALUDES PLANNING & DESIGN DIVISION CHIEF	DESIGNED BY: RONNIE S. APARTE ENGINEER II	CHECKED & REVIEWED BY: RODERICK M. DIGAMON PROVINCIAL ENGINEER	RECOMMENDING APPROVAL: ALICIA M. GRACIADAS CO-PPMIU	APPROVED: DOROTHY P. MONTEJO-GONZAGA GOVERNOR	SHEET CONTENTS: PAVEMENT MARKINGS AND REGULATORY SIGN	SHEET NO. 15 / 78
	RPO XI NO OBJECTION								
	SIGNATURES AND STAMPS OF APPROVAL								



RETAINING WALL DETAIL

SCALE: NTS



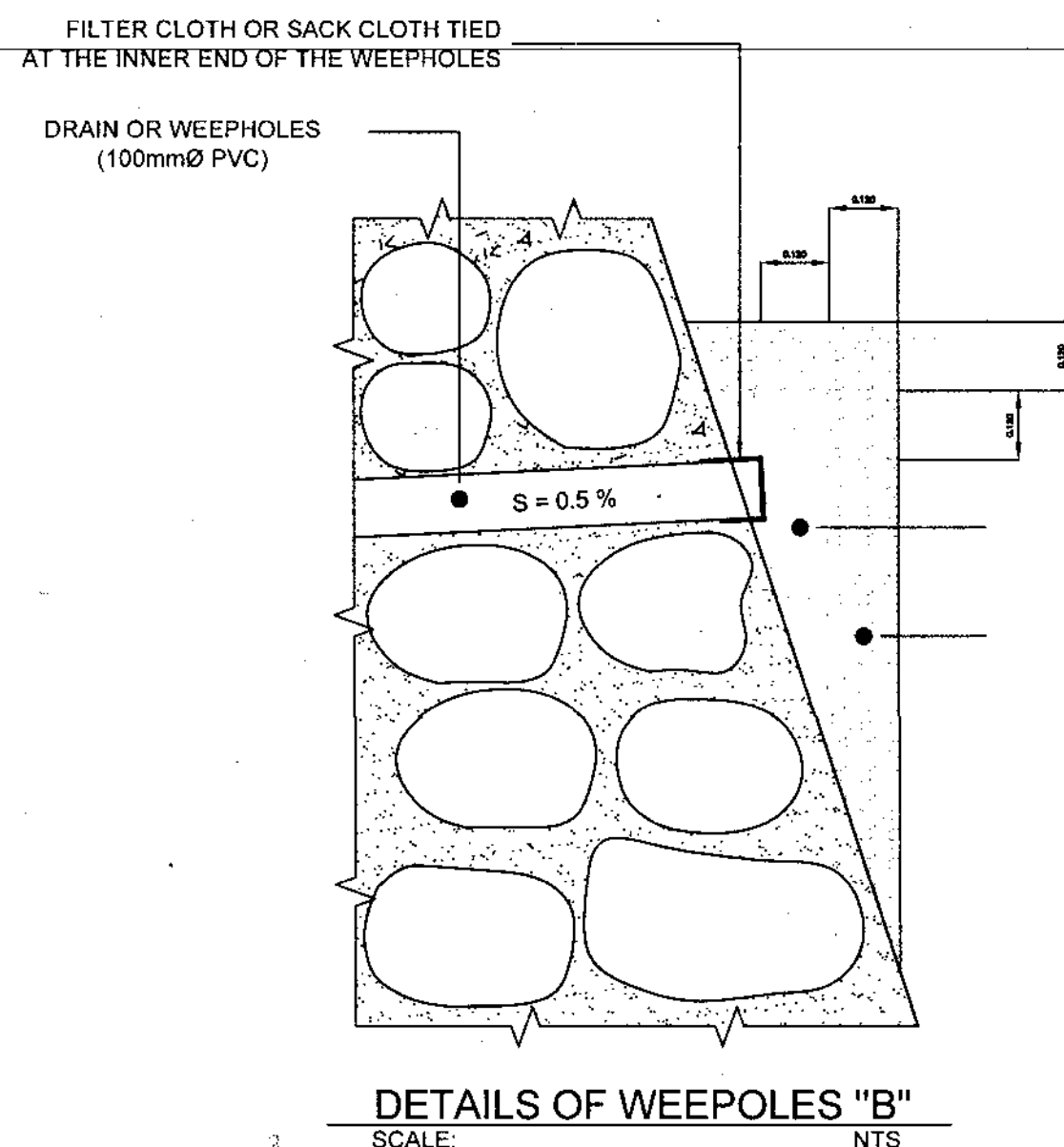
WEEPHOLES PARTIAL ELEVATION

SCALE: NTS

DESIGN DATA FOR RETAINING WALL							
WALL	DIMENSION (mm.)					AREA (m ²)	MINIMUM SOIL BEARING CAPACITY OF FOUNDATION, q (kPa)
	a	b	B = b + 450 + H/6	H/6	D		
2.00	448	598	1328	-	600(Min.)	1.91	89.00
3.00	768	918	1848	-	600(Min.)	3.66	133.00
4.00	1067	1233	2350	687	667	5.93	180.000
5.00	1333	1542	2825	833	833	8.70	228.00
6.00	1600	1850	3300	1000	1000	11.99	275.00

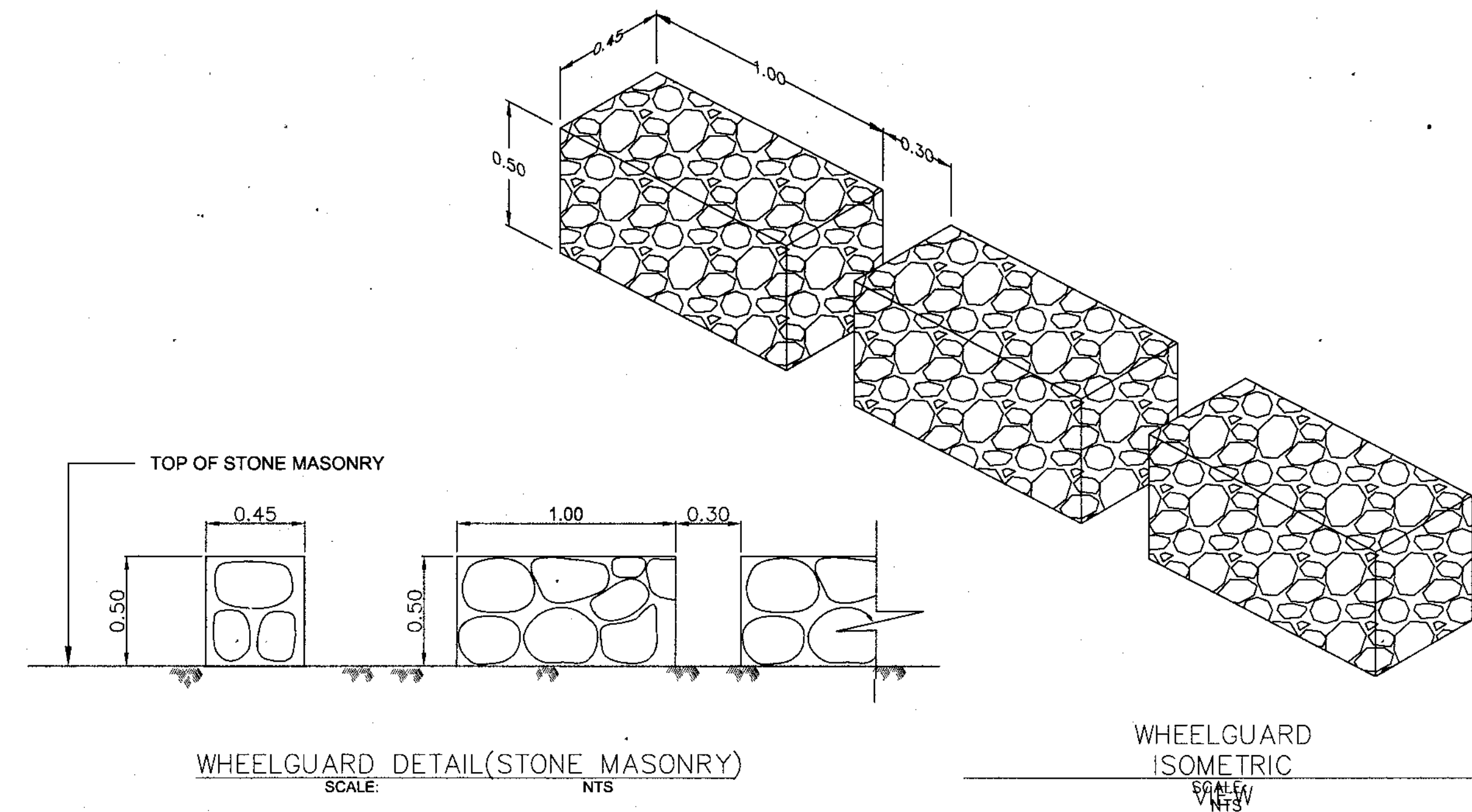
RIPRAP SCHEDULE

****RIPRAP****				
From	To	Material	Area (m ²)	Volume (m ³)
0+600.000	to 0+820.000	Riprap (B/S)	440.00	396.00
0+860.000	to 1+180.000	Riprap (B/S)	640.00	518.40
1+200.000	to 1+260.000	Riprap (L/S)	60.00	54.00
1+720.000	to 1+740.000	Riprap (L/S)	20.00	18.00
1+800.000	to 2+440.000	Riprap (B/S)	1,280.00	1,036.80
2+920.000	to 2+960.000	Riprap (R/S)	40.00	36.00
3+000.000	to 3+240.000	Riprap (R/S)	240.00	194.40
3+260.000	to 3+300.000	Riprap (L/S)	40.00	36.00
4+560.000	to 4+660.000	Riprap (R/S)	100.00	90.00
4+740.000	to 4+800.000	Riprap (B/S)	120.00	100.80
4+860.000	to 4+940.000	Riprap (R/S)	80.00	72.00
5+160.000	to 5+180.000	Riprap (R/S)	20.00	18.00
5+160.000	to 5+180.000	Riprap (R/S)	20.00	18.00
5+320.000	to 5+780.000	Riprap (L/S)	460.00	372.60
5+840.000	to 5+880.000	Riprap (L/S)	40.00	32.40
5+920.000	to 5+940.000	Riprap (L/S)	20.00	16.20
6+980.000	to 7+040.000	Riprap (R/S)	60.00	48.60
7+060.000	to 7+400.000	Riprap (B/S)	680.00	550.80
7+460.000	to 7+560.000	Riprap (B/S)	200.00	168.00
7+620.000	to 7+860.000	Riprap (B/S)	480.00	397.44
7+880.000	to 7+903.000	Riprap (R/S)	23.00	20.70
7+903.000	to 8+020.000	Riprap (B/S)	234.00	193.75
8+040.000	to 8+060.000	Riprap (L/S)	20.00	18.00



DETAILS OF WEEPOLES "B"

SCALE: NTS



WHEELGUARD DETAIL (STONE MASONRY)

SCALE: NTS

WHEELGUARD ISOMETRIC

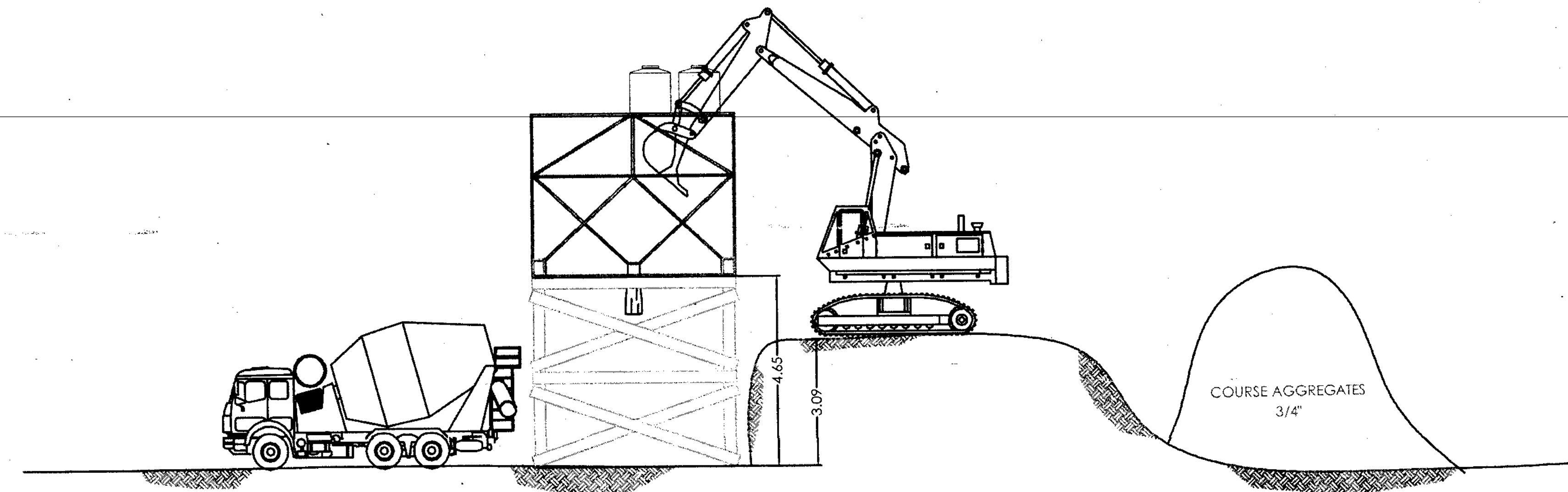
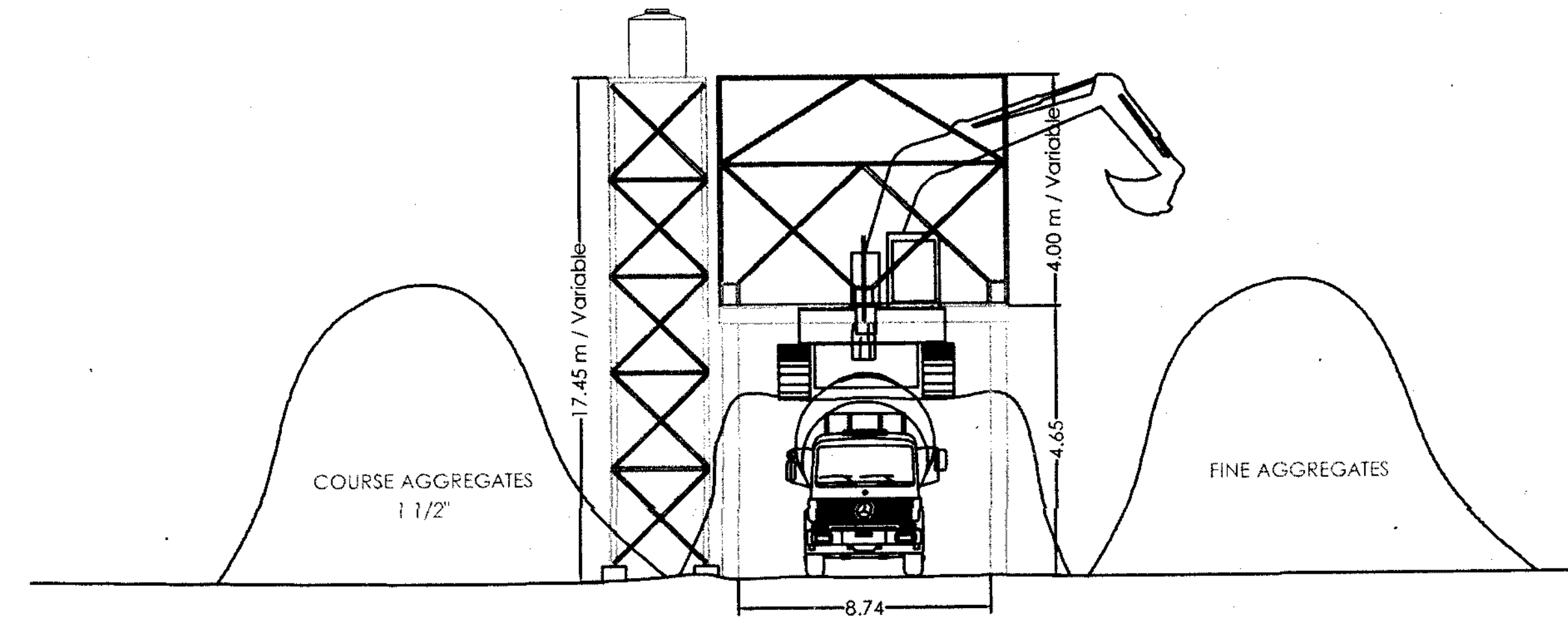
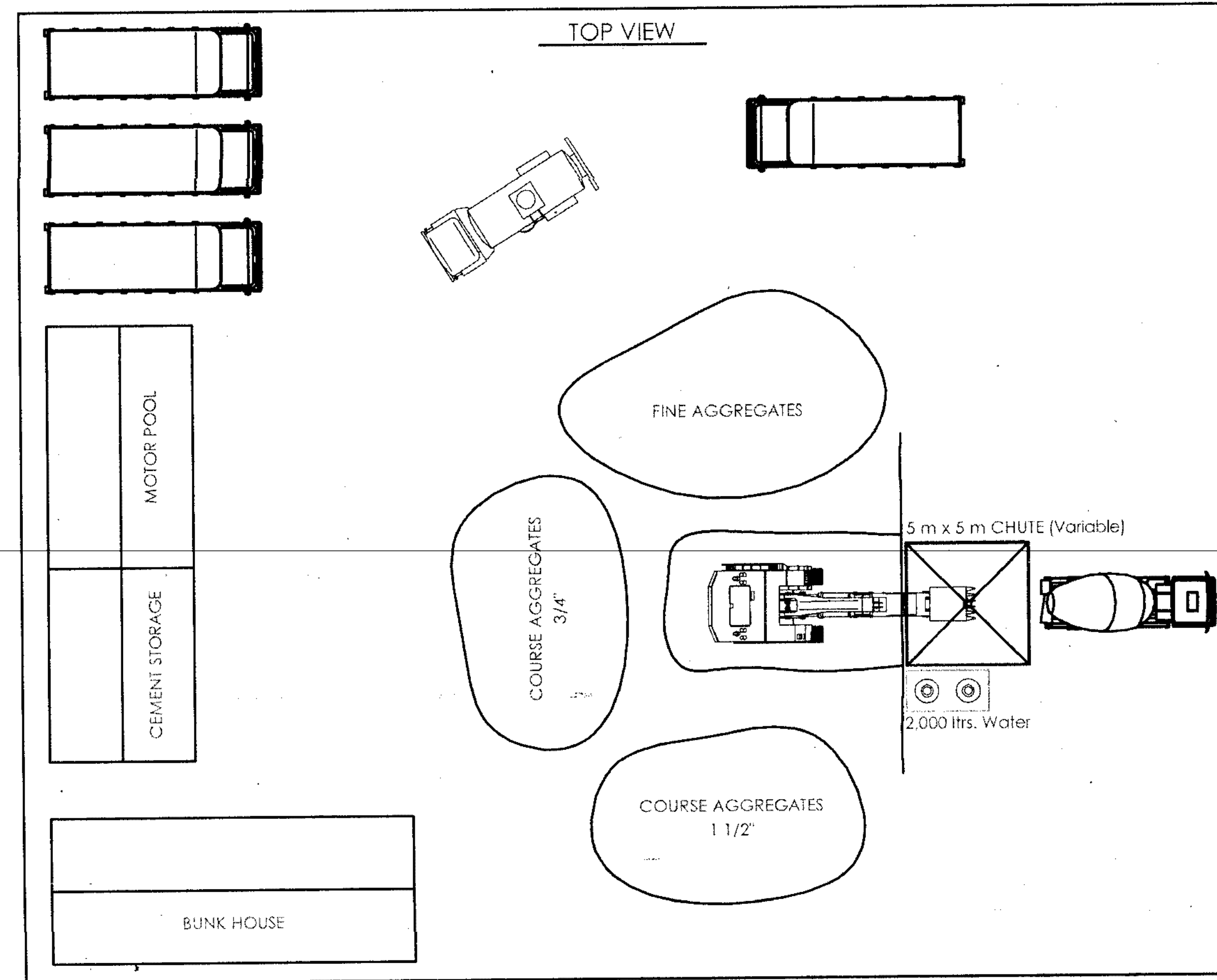
SCALE: NTS

GENERAL NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
2. STONES FOR STONE MASONRY SHALL HAVE A THICKNESS OF NOT LESS THAN 150mm, AND WIDTHS OF NOT LESS THAN ONE AND ONE-HALF TIMES THEIR RESPECTIVE THICKNESS, AND LENGTHS OF NOT LESS THAN ONE AND ONE-HALF TIMES THEIR RESPECTIVE WIDTHS.
3. FACE STONE SHALL BE DRESSED TO PROVIDE BED AND JOINT LINES THAT DO NOT VARY MORE THAN 20mm FROM THE TRUE LINES.
4. ALL STONES SHALL BE CLEANED THOROUGHLY AND WETTED IMMEDIATELY BEFORE BEING SET, AND THE BED WHICH IS TO RECEIVE THEM SHALL BE CLEANED AND MOISTENED BEFORE THE MORTAR IS SPREAD.
5. WEEPHOLES SHALL CONFORM TO THE REQUIREMENTS OF ITEM 505-RIPRAP AND GROUTED RIPRAP UNDER SUBSECTION 505.3.4, WEEPHOLES.
6. IN HOT OR DRY WEATHER, THE MASONRY SHALL BE KEPT WET FOR A PERIOD OF AT LEAST THREE DAYS AFTER COMPLETION.
7. IMMEDIATELY AFTER BEING LAID, AND WHILE THE MORTAR IS FRESH, ALL FACE STONES SHALL BE THOROUGHLY CLEANED OF MORTAR STAINS AND SHALL BE KEPT CLEAN UNTIL THE WORK IS COMPLETED.
8. COBBLE STONES SHALL BE ROUND OR CUSIFORM IN SHADE HAVING A SPECIFIC GRAVITY OF NOT LESS THAN 2.5, THE WEIGHT AND SIZE SHALL BE 15kg TO 20kg PER PIECE, AND APPROXIMATELY 100mm TO 150mm IN DIAMETER, RESPECTIVELY.
9. MATERIAL REQUIREMENTS SHALL CONFORM TO ITEMS 405-STRUCTURAL CONCRETE, 506-STONE MASONRY AND 516-WET STONE MASONRY (COBBLE STONE) OF THE DPWH STANDARD SPECIFICATIONS FOR HIGHWAYS, BRIDGES, AND AIRPORTS, 2013 EDITION.

NO OBJECTION

	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF AGRICULTURE "PHILIPPINE RURAL DEVELOPMENT PROJECT SCALE UP" PROVINCE OF DAVAO DE ORO MUNICIPALITY OF MONTEVISTA & NABUNTURAN	PROJECT NO.:	PRDP-SU-IB-R011-DDO-004-000-000-2023-FMB	PREPARED BY:	DESIGNED BY:	CHECKED & REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED:	SHEET NO.:	RETAINING WALL DETAIL, RIPRAP SCHEDULE, DETAILS OF WEEP HOLES 16 78
		SUBPROJECT TITLE:	REHABILITATION OF NEW VISAYAS - BANAGBANAG, MONTEVISTA TO MAGADIG, NABUNTURAN ROAD WITH EXPANSION OF EXISTING BRIDGE	EDWIN S. SALUDES PLANNING & DESIGN DIVISION CHIEF	RONNIE S. APARRI ENGINEER II	RODERICK M. DIGAMON PROVINCIAL ENGINEER	ALICIA M. GRACIADAS CO-PPMIU	DOROTHY P. MONTEJO-BONZAGA GOVERNOR		
		LOCATION:	MONTEVISTA AND NABUNTURAN, DAVAO DE ORO							



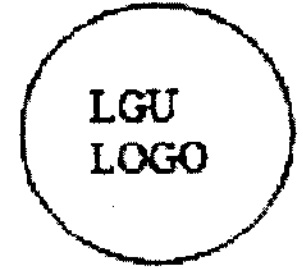
USING EXC AV ATOR FOR BATCHING
 LOT DIMENSION : 40 m X 50 m
 BUCKET OF THE EXC AVATOR MUST BE
 CALIBRATED.

RPC XI
NO OBJECTION
 SIGNATURE: _____
 1, 2011 P. Proclamation No. 1

	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF AGRICULTURE "PHILIPPINE RURAL DEVELOPMENT PROJECT SCALE UP" PROVINCE OF DAVAO DE ORO MUNICIPALITY OF MONTEVISTA & NABUNTURAN		PROJECT NO.: PRDP-SU-IB-R011-DDO-004-000-000-2023-FMB	PREPARED BY:	DESIGNED BY:	CHECKED & REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED:	SHEET CONTENTS:	SHEET NO.
	SUBPROJECT TITLE:		REHABILITATION OF NEW VISAYAS - BANAGBANAG, MONTEVISTA TO MAGADING, NABUNTURAN ROAD WITH EXPANSION OF EXISTING BRIDGE	EDWIN S. SALUDES PLANNING & DESIGN DIVISION CHIEF	RONNIE S. APARRI ENGINEER II	RODERICK M. DIGAMON, PROVINCIAL ENGINEER	ALICIA M. GRACIAS CO-PPMIU	DOROTHY P. MONTEJO-BONZAGA GOVERNOR	BATCHING PLANT	17
	LOCATION:		MONTEVISTA AND NABUNTURAN, DAVAO DE ORO							78



Name of Agency
Business Address



Subproject Name : _____
 Location : _____
 Implementing Proponent : _____
 Development Partner/s : _____
 Contractor/Supplier : _____
 Subproject Description : _____

Cost (EPC) : _____
 Fund Source/s:
 LP : _____
 GOP : _____
 LGU : _____

Project Details:

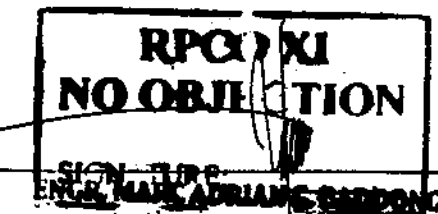
Duration	Project Date		Percentage of Completion	Project Status		Remarks
	Started	Target Date of Completion		As of (Date)	Cost Incurred to Date	

For particulars or complaints about this project, please contact the Regional Office or Cluster which has audit jurisdiction on this project:

COA Regional Office No./Cluster : _____
 Address : _____
 Contact No. : _____ or _____
 Text COA Citizen's Desk at : _____
 World Bank Anti-Corruption Hotline : _____

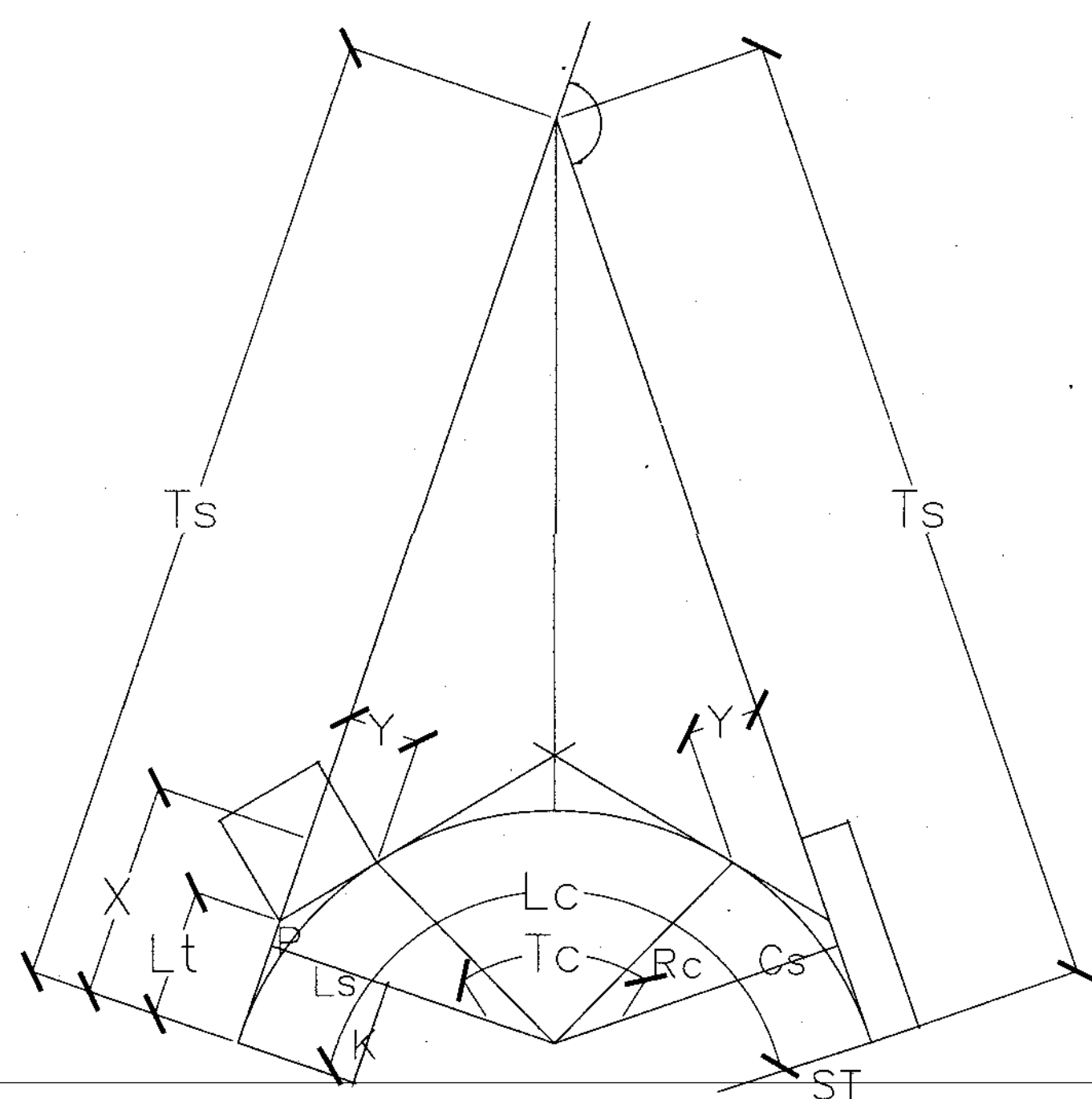
Specifications: reference COA circular No. 2013 – 004 issued on January 30
 Tarpaulin, white, 8 ft. x 8 ft.
 Resolution: 70 dpi
 Font: Helvetica
 Font Size: Main Information – 3”
 Sub – information – 1”
 Font Color: Black
 Suitable Frame: rigid wood or steel frame with post.
 Posting: Outdoor display at the project location after award has been made

BILLBOARD DETAIL

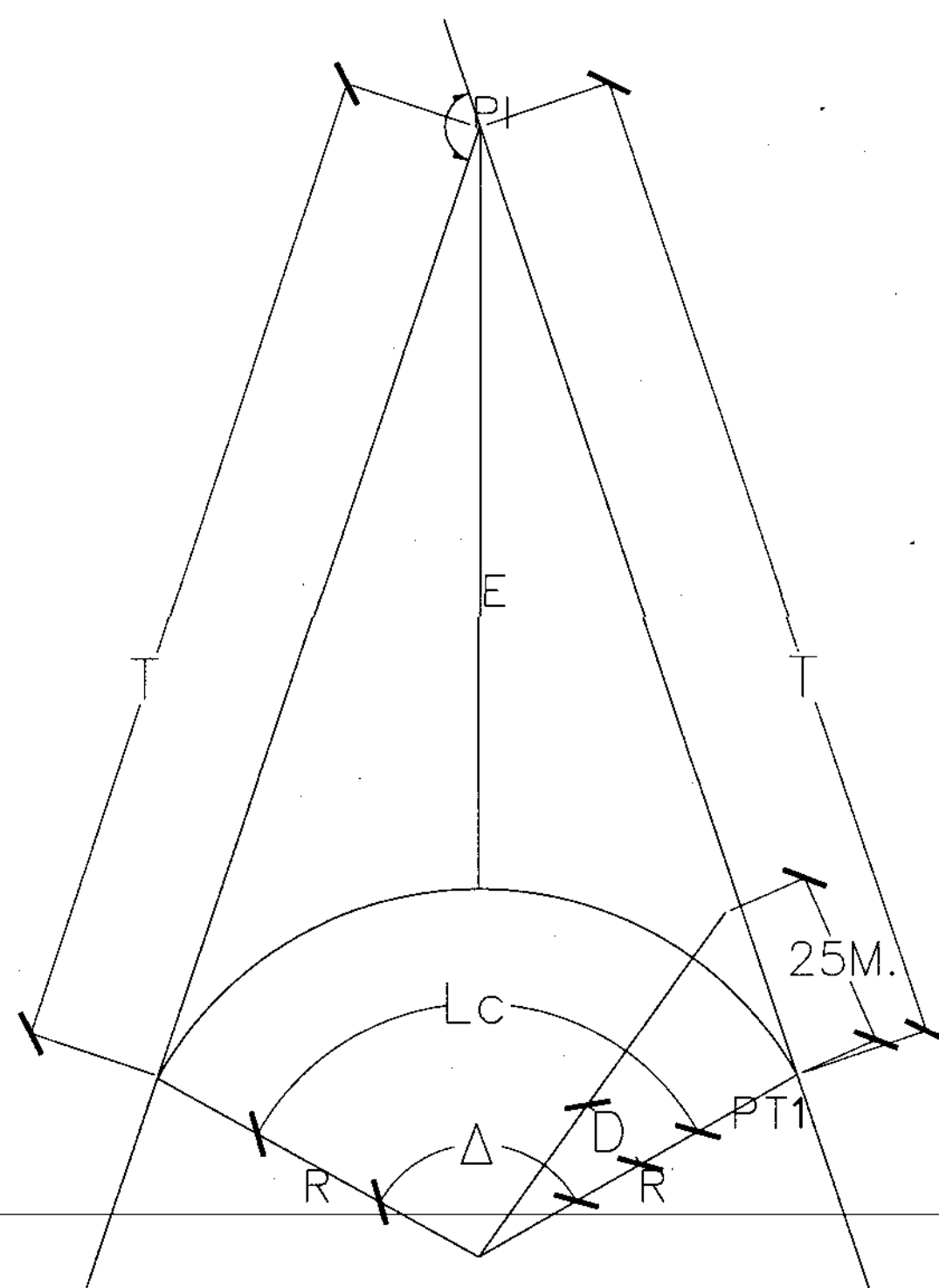


	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF AGRICULTURE "PHILIPPINE RURAL DEVELOPMENT PROJECT SCALE UP"	PROJECT NO.:	PRDP-SU-IB-R011-DDO-004-000-000-2023-FMB	PREPARED BY:	DESIGNED BY:	CHECKED & REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED:	SHEET CONTENTS:	SHEET NO.
	PROVINCE OF DAVAO DE ORO MUNICIPALITY OF MONTEVISTA & NABUNTURAN	SUBPROJECT TITLE:	REHABILITATION OF NEW VISAYAS - BANAGBANAG, MONTEVISTA TO MAGADING, NABUNTURAN ROAD WITH EXPANSION OF EXISTING BRIDGE	EDWIN S. SALUDES PLANNING & DESIGN DIVISION CHIEF	RONNIE S. APARRI ENGINEER II	RODERICK M. DIGAMON PROVINCIAL ENGINEER	ALICIA M. GRACIADAS CO-PPMIU	DOROTHY P. MONTEJO GONZAGA GOVERNOR	BILLBOARD DETAIL	18
	LOCATION:	MONTEVISTA AND NABUNTURAN, DAVAO DE ORO	78							

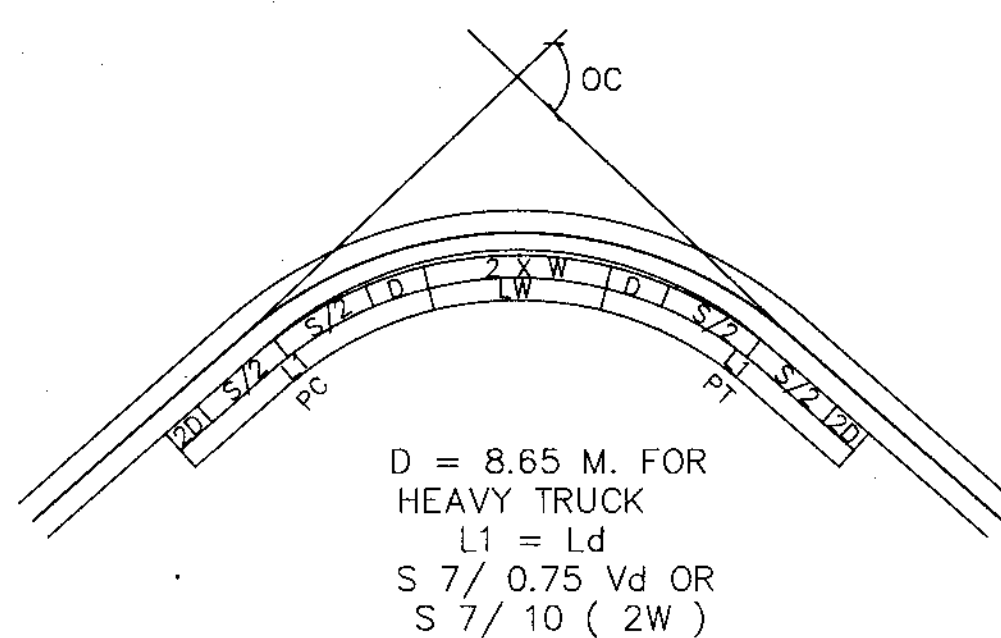
HORIZONTAL AND VERTICAL CURVE DETAIL



HORIZONTAL CURVE WITH TRANSITION
SCALE NDTs

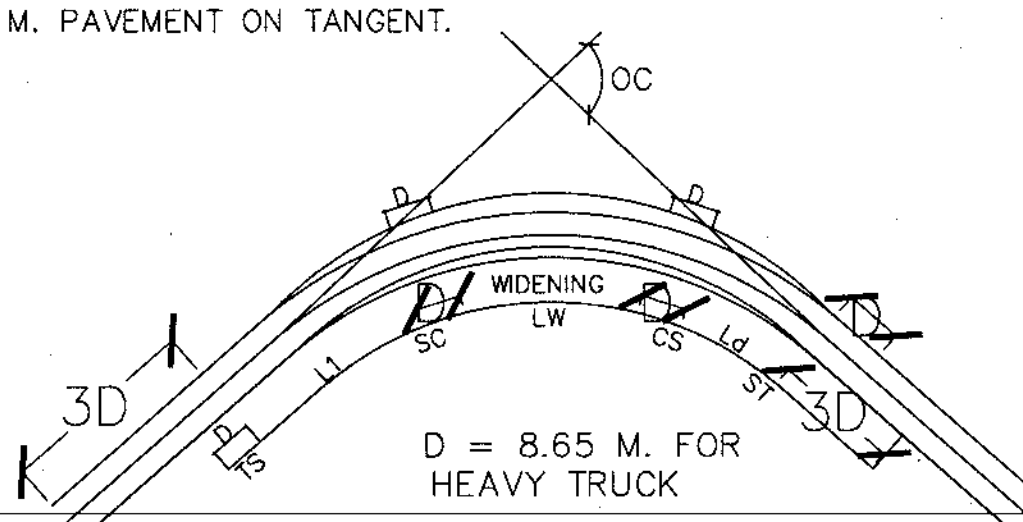


HORIZONTAL CURVE (CIRCULAR)
SCALE NDTs



WIDENING WHEN TRANSITIONS NOT USED
SCALE

NOTE:
VALUES LESS THAN 0.60 M. MAY BE DISREGARDED VALUES SHOWN BELOW FOR 2 LANE PAVEMENT N CURVES FOR A WIDTH OF 6.10 M. PAVEMENT ON TANGENT.



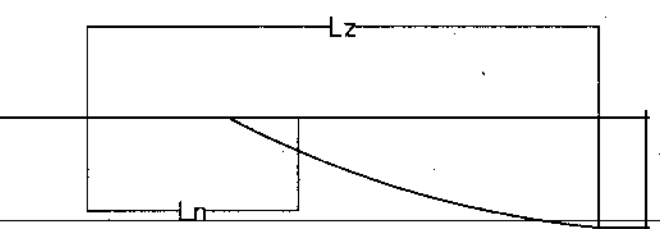
L1 = TRANSITION LENGTH OF WIDENING INCREASING SECTION
Ld = TRANSITION LENGTH OF WIDENING DECREASING SECTION
Lw = LENGTH WITH FULL WIDENING

WIDENING WHEN TRANSITIONS ARE USED
SCALE NDTs

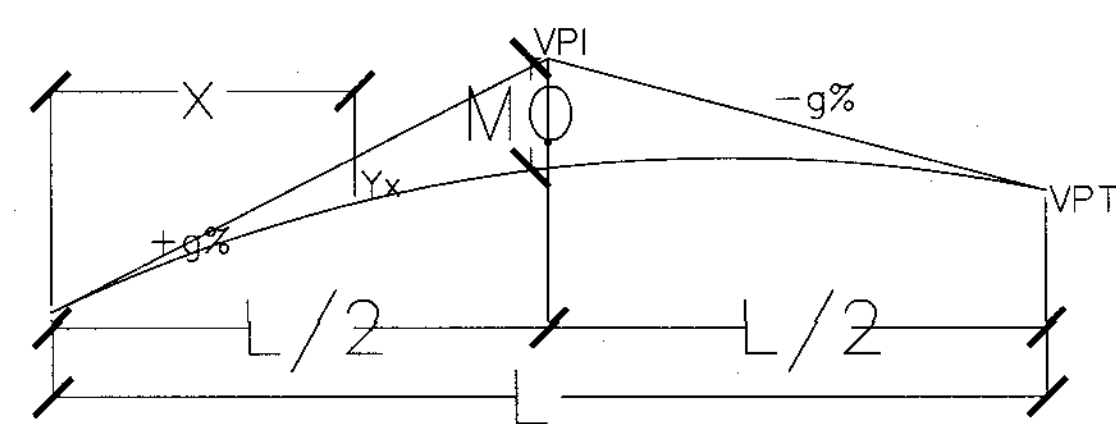
DESIGN VALUES

DEGREE OF CURVE	RADIUS IN METERS	DESIGN SPEED			
		30 KPH	40 KPH	50 KPH	60 KPH
1°00"	1432.390	0.00	0.00	0.00	0.00
2°00"	716.190	0.00	0.00	0.00	0.60
3°00"	477.460	0.00	0.00	0.60	0.60
4°00"	358.100	0.00	0.60	0.60	0.70
5°00"	286.480	0.60	0.60	0.70	0.80
6°00"	238.730	0.60	0.70	0.80	0.90
7°00"	204.630	0.70	0.80	0.90	1.10
8°00"	179.050	0.80	0.90	1.00	1.10
9°00"	159.150	0.90	0.90	1.00	1.10
10°00"	143.240	1.00	1.00	1.10	1.20
11°00"	130.220	1.10	1.10	1.20	1.30

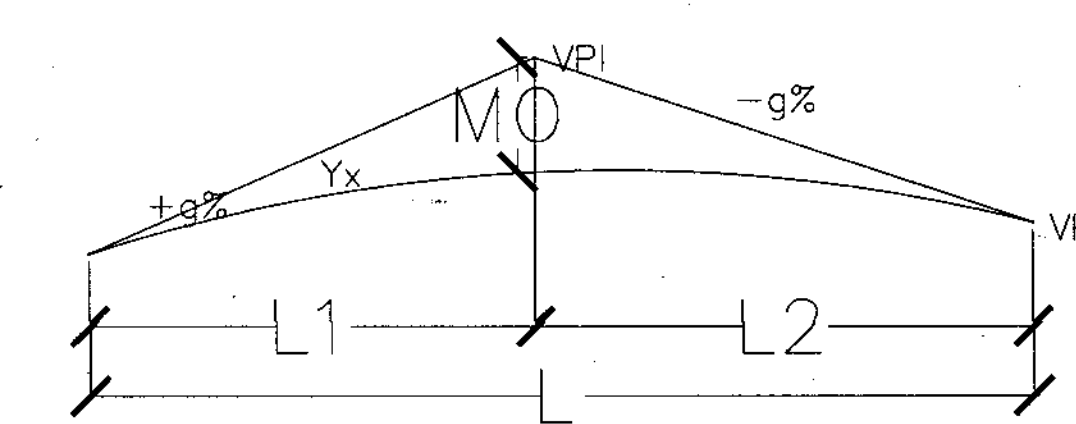
NOTE:
VALUES LESS THAN 0.60 M. MAY BE DISREGARDED VALUES SHOWN BELOW FOR 2 LANE PAVEMENT ON CURVES FOR A WIDTH OF 6.10 M. PAVEMENT ON TANGENT.



L = KW FOR
SEE TABLE OR "K"



SYMMETRICAL VERTICAL CURVE



UNSYMMETRICAL VERTICAL CURVE

VERTICAL PARABOLIC CURVE

SCALE NDTs

NOTE:

NO VERTICAL CURVE IS REQUIRED WHEN THE ALGEBRAIC DIFFERENCE IN GRADES IS LESS THAN 0.50% ANY VERTICAL PARABOLIC CURVE

$$MO = \frac{AL}{8.00} \quad Yx = \frac{x^2 - (MO)}{(L/2)^2}$$

$$MO = \frac{ALL_1}{8.00} \quad Yx = \frac{x^2 - (MO)}{(L/2)^2}$$

- PI = POINT OF INTERSECTION
- Δ = INTERSECTION ANGLE
- θ = SPIRAL ANGLE
- Ls = LENGTH OF SPIRAL
- XY = COORDINATES OF CS OR SC W/ RESPECT TO MAIN TANGENT
- K = LENGTHENING OF TANGENT DUE TO INTERSECTION OF SPIRAL
- F = OFFSET BETWEEN CIRCULAR CURVE AND MAIN TANGENT
- LT = LONG TANGENT OF SPIRAL
- ST = SHORT TANGENT OF SPIRAL
- Ts = TOTAL TANGENT DISTANCE
- TS = BEGINNING OF SPIRAL CURVE
- SC = POINT OF CHANGE FROM SPIRAL TO CIRCULAR CURVE
- CS = POINT OF CHANGE FROM CIRCULAR CURVE TO SPIRAL
- ST = END OF SPIRAL CURVE
- Ic = ANGLE OF THE CIRCULAR CURVE
- Rc = RADIUS OF THE CIRCULAR CURVE
- Lc = LENGTH OF THE CIRCULAR CURVE

- PI = POINT OF INTERSECTION
- Δ = INTERSECTION ANGLE (CENTRAL ANGLE)
- T = TOTAL TANGENT DISTANCE
- R = HORIZONTAL RADIUS
- Lc = LENGTH OF CIRCULAR CURVE
- E = TOTAL EXTERNAL DISTANCE
- D = DEGREE OF CURVE (ARC DEFINITION)
- PC = POINT OF CURVATURE
- PT = POINT OF TANGENCY

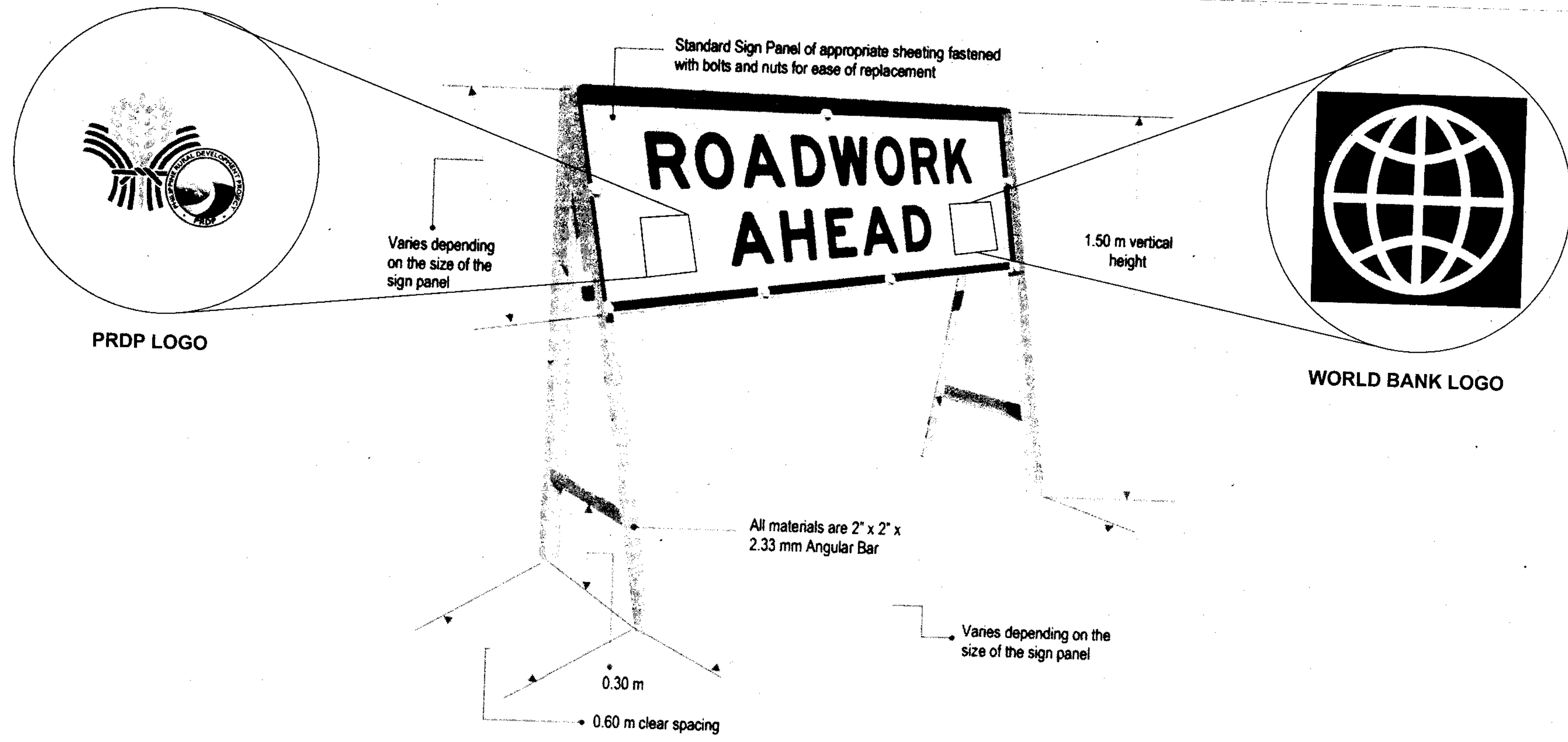
NO HORIZONTAL CURVE IS REQUIRED WHEN THE INTERSECTION (CENTRAL ANGLE) ANGLE Δ IS LESS THAN ONE DEGREE (1° - 00)

LEGEND :

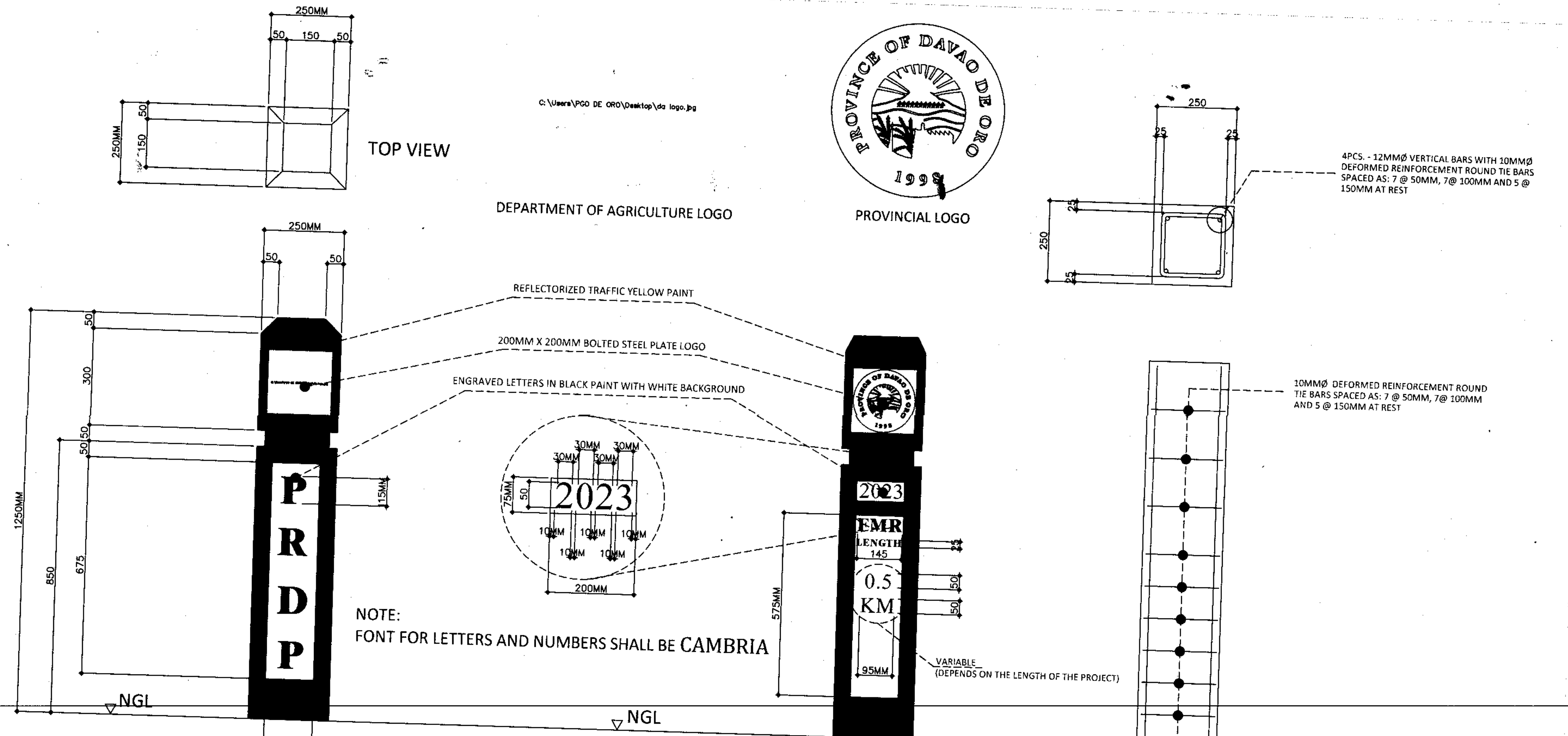
- VPI = VERTICAL POINT OF INTERSECTION
- VPC = VERTICAL POINT OF CURVATURE
- VPT = VERTICAL POINT OF TANGENCY
- L = LENGTH OF VERTICAL CURVES IN METERS
- G = GRADE IN PERCENT
- MO = MIDDLE ORDINATE
- X = DISTANCE FROM VPC OR VPT TO ANY POINT OF CURVE
- Yx = VERTICAL OFFSET IN METERS
- AL = ALGEBRAIC DIFFERENCE OF GRADES

INCREASING			DECREASING		
Ln/Lx	K		Ln/Lz	K	
0.000	0.0000	5.0	0.000	1.0000	18.0
0.020	0.0010		0.020	0.9964	29.5
0.040	0.0020	5.0	0.040	0.9905	47.5
0.060	0.0047	13.5	0.060	0.9810	75.0
0.080	0.0077	18.5	0.080	0.9660	111.0
0.100	0.0114	21.0	0.100	0.9438	119.0
0.120	0.0156	30.0	0.120	0.9200	140.0
0.140	0.0217	41.5	0.140	0.8920	159.0
0.160	0.0300	45.0	0.160	0.8602	182.0
0.180	0.3900	54.5	0.180	0.8238	221.0
0.200	0.0499	56.5	0.200	0.7816	246.0
0.220	0.0612	74.0	0.220	0.7374	251.0
0.240	0.0760	74.0	0.240	0.6822	241.0
0.260	0.0908	101.0	0.260	0.6340	246.0
0.280	0.1110	102.5	0.280	0.5848	241.5
0.300	0.1315	129.5	0.300	0.5365	226.5
0.320	0.1574	137.5	0.320	0.4912	217.0
0.340	0.1849	156.0	0.340	0.4478	193.0
0.360	0.2161	167.5	0.360	0.4092	172.0
0.380	0.2496	179.0	0.380	0.3748	152.5
0.400	0.2846	184.5	0.400	0.3443	149.5
0.420	0.3215	185.5	0.420	0.3144	138.0
0.440	0.3586	189.5	0.440	0.2888	129.0
0.460	0.3965	189.5	0.460	0.2610	118.5
0.480	0.4344	190.0	0.480	0.2373	105.0
0.500	0.4724	189.5	0.500	0.2163	98.0
0.520	0.5103	183.5	0.520	0.1967	91.5
0.540	0.5470	183.0	0.540	0.1784	85.5
0.560	0.5836	179.0	0.560	0.1613	80.0
0.580	0.6194	177.0	0.580	0.1453	74.5
0.600	0.6548	170.0	0.600	0.1304	71.0
0.620	0.6888	164.5	0.620	0.1162	64.0
0.640	0.7217	152.8	0.640	0.1034	59.0
0.660	0.7522	133.8	0.660	0.0916	54.5
0.680	0.7789	130.8	0.680	0.0807	49.5
0.700	0.8050	118.0	0.700	0.0708	43.0
0.720	0.8286	117.5	0.720	0.0622	39.5
0.740	0.8521	110.0	0.740	0.0543	35.0
0.760	0.8741	103.0	0.760	0.0473	33
0.780	0.8947	90.5	0.780	0.0411	29.5
0.800	0.9128	82.5	0.800	0.0348	30.0
0.820	0.9293	73.5	0.820	0.0288	26.0
0.840	0.9440	70.0	0.840	0.0236	23.0
0.860	0.9580	55.0	0.860	0.0190	20.0
0.880	0.9691	42.0	0.880	0.0150	17.0
0.900	0.9775	37.0	0.900	0.0116	17.0
0.920	0.9849	27.0	0.920	0.0082	15.0
0.940	0.9903	24.5	0.940	0.0052	12.0
0.960	0.9952	15.0	0.960	0.0028	8.0
0.980	0.9982	9.0	0.980	0.0012	6.0
1.000	1.0000		1.000	0.0000	

	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF AGRICULTURE "PHILIPPINE RURAL DEVELOPMENT PROJECT SCALE UP" PROVINCE OF DAVAO DE ORO MUNICIPALITY OF MONTEVISTA & NABUNTURAN	PROJECT NO.:	PRDP-SU-IB-R011-DDO-004-000-000-2023-FMB	PREPARED BY:	DESIGNED BY:	CHECKED & REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED:	SHEET CONTENTS:	SHEET NO.:	
		SUBPROJECT TITLE:	REHABILITATION OF NEW VISAYAS - BANAGBANAG, MONTEVISTA TO MAGADING, NABUNTURAN ROAD WITH EXPANSION OF EXISTING BRIDGE		EDWIN S. SALUDES PLANNING & DESIGN DIVISION CHIEF	RONNIE S. APARRI ENGINEER II	RODERICK M. DIGAMON PROVINCIAL ENGINEER	ALICIA M. GRACIADAS CO-PPMIU	DOROTHY P. MONTEVISTA-GONZAGA GOVERNOR	HORIZONTAL AND VERTICAL CURVED DETAIL	19
		LOCATION:	MONTEVISTA AND NABUNTURAN, DAVAO DE ORO								78

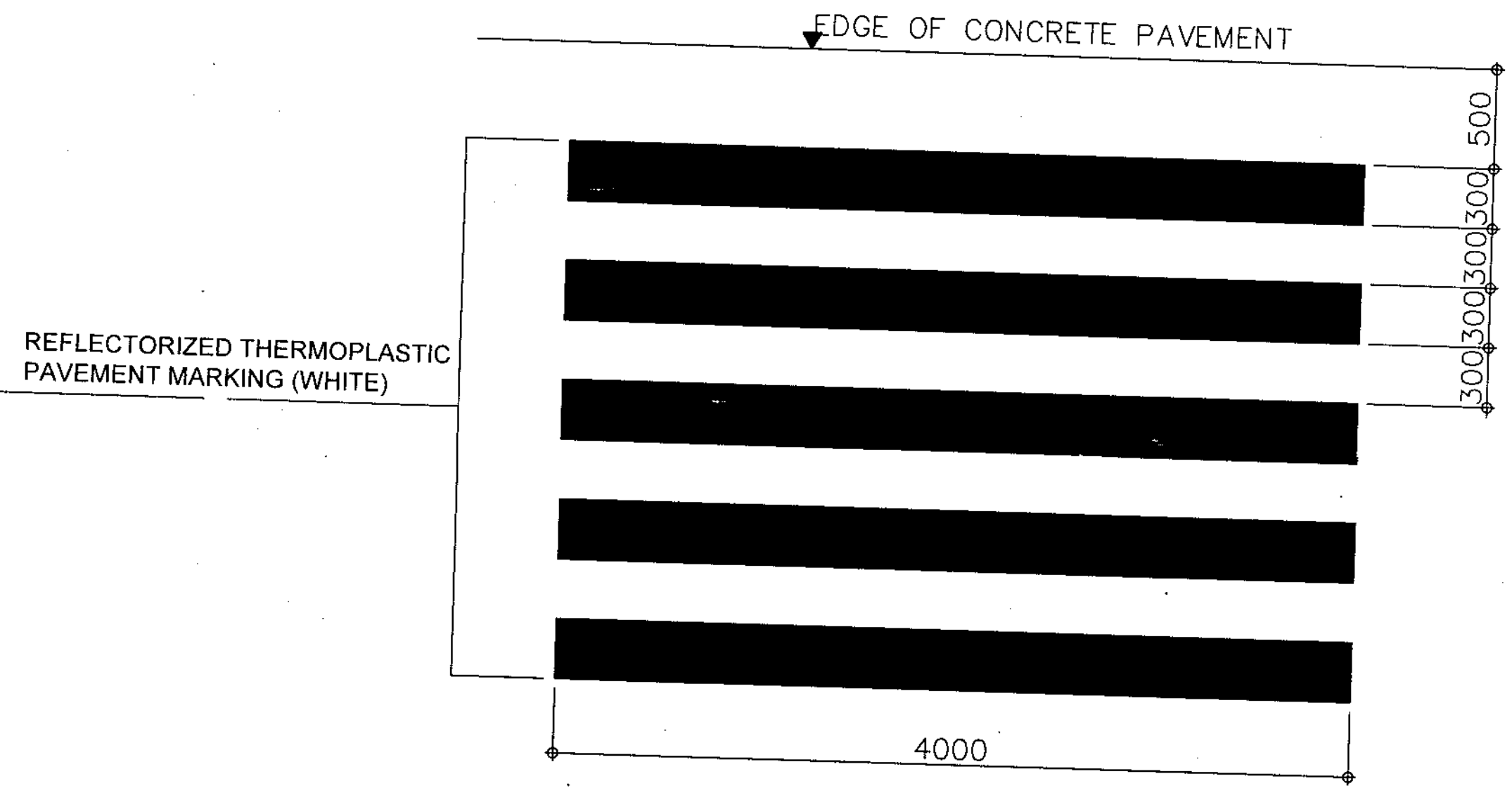


SIGNAGE DETAIL



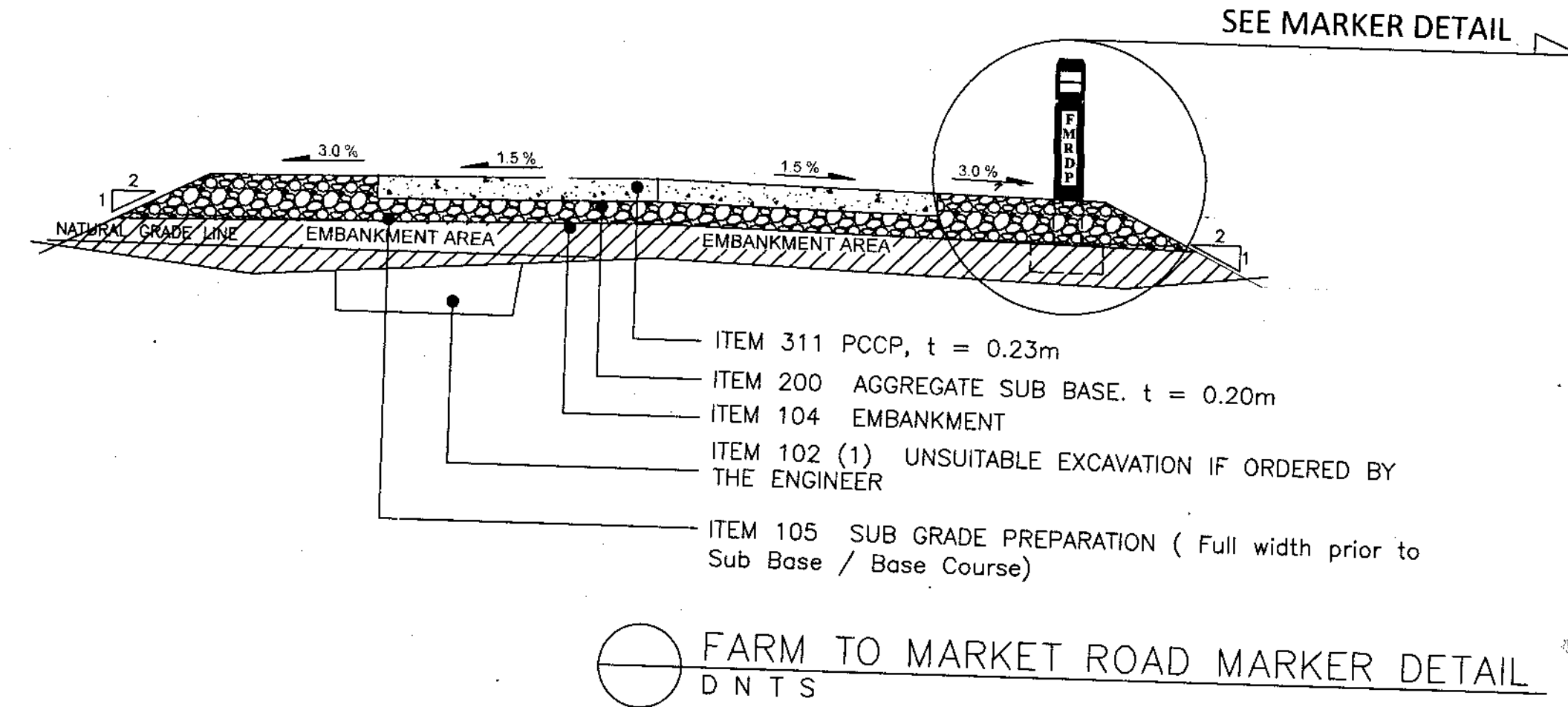
FRONT VIEW

REAR VIEW



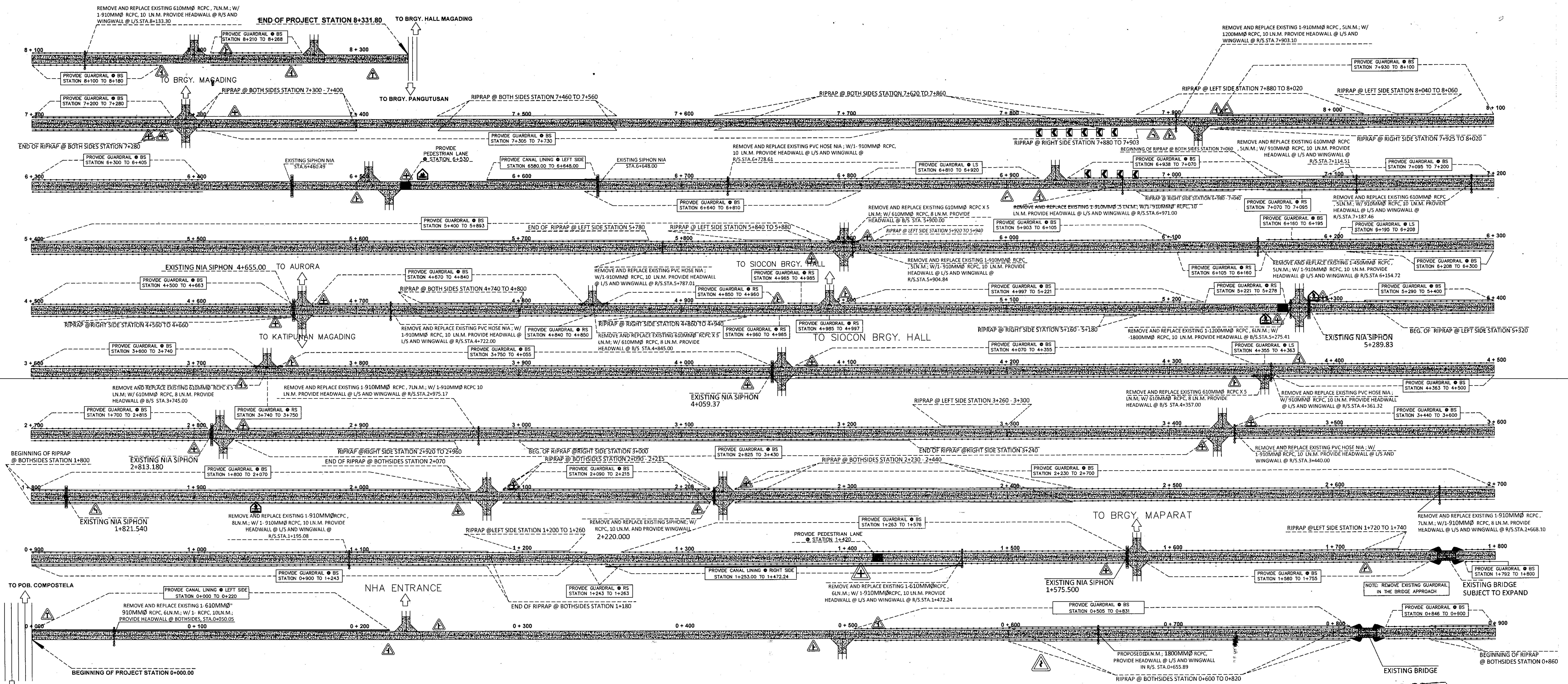
PEDESTRIAN CROSSING DETAIL
SCALE 1:40 M

PROVIDE PEDESTRIAN LANE
@ STATION 1+420 (CHURCH)
PROVIDE PEDESTRIAN LANE
@ STATION 5+270 (CEMETERY)
PROVIDE PEDESTRIAN LANE
@ STATION 6+530 (SCHOOL DAY CARE CENTER)

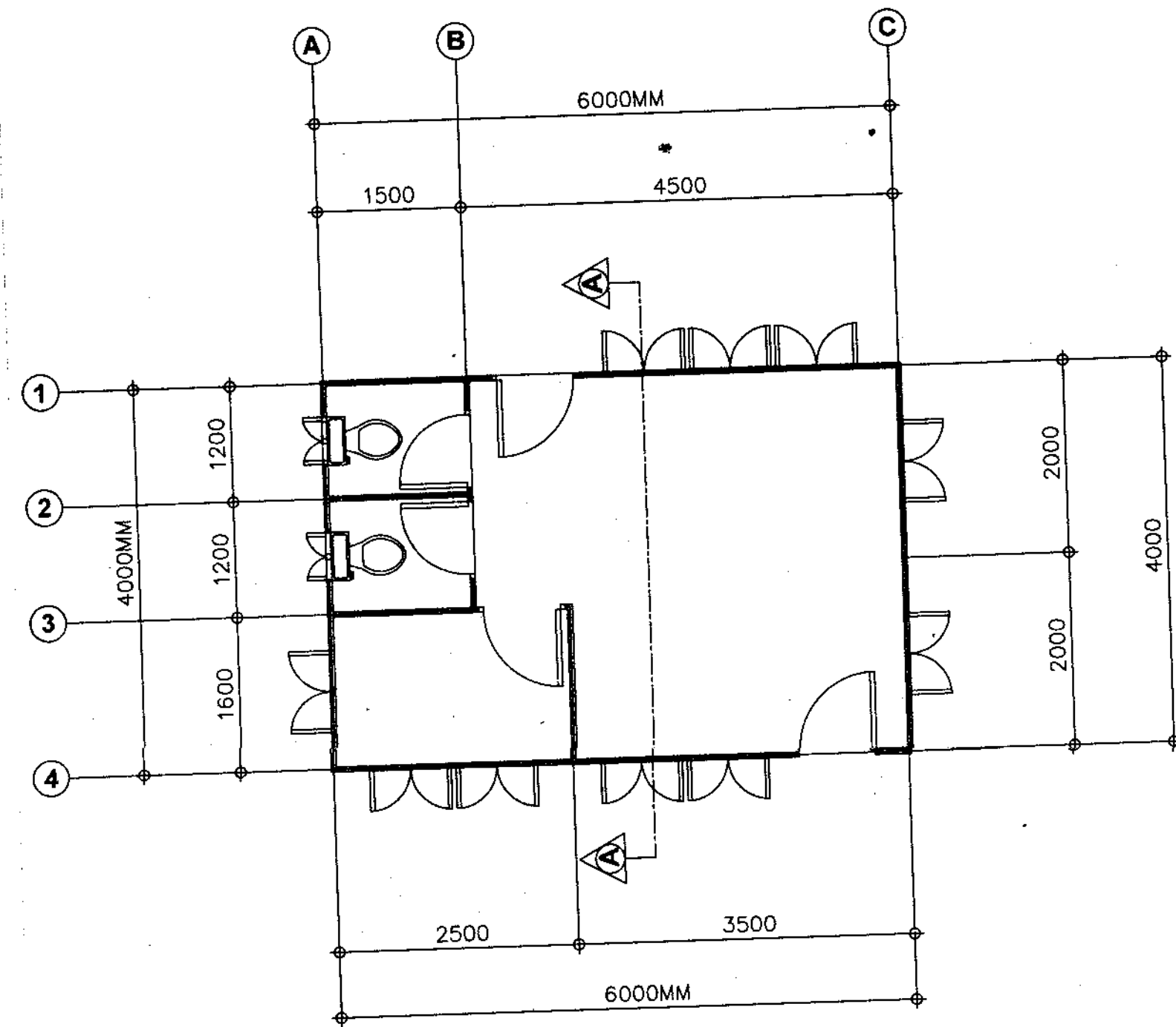


FARM TO MARKET ROAD MARKER DETAIL
D N T S

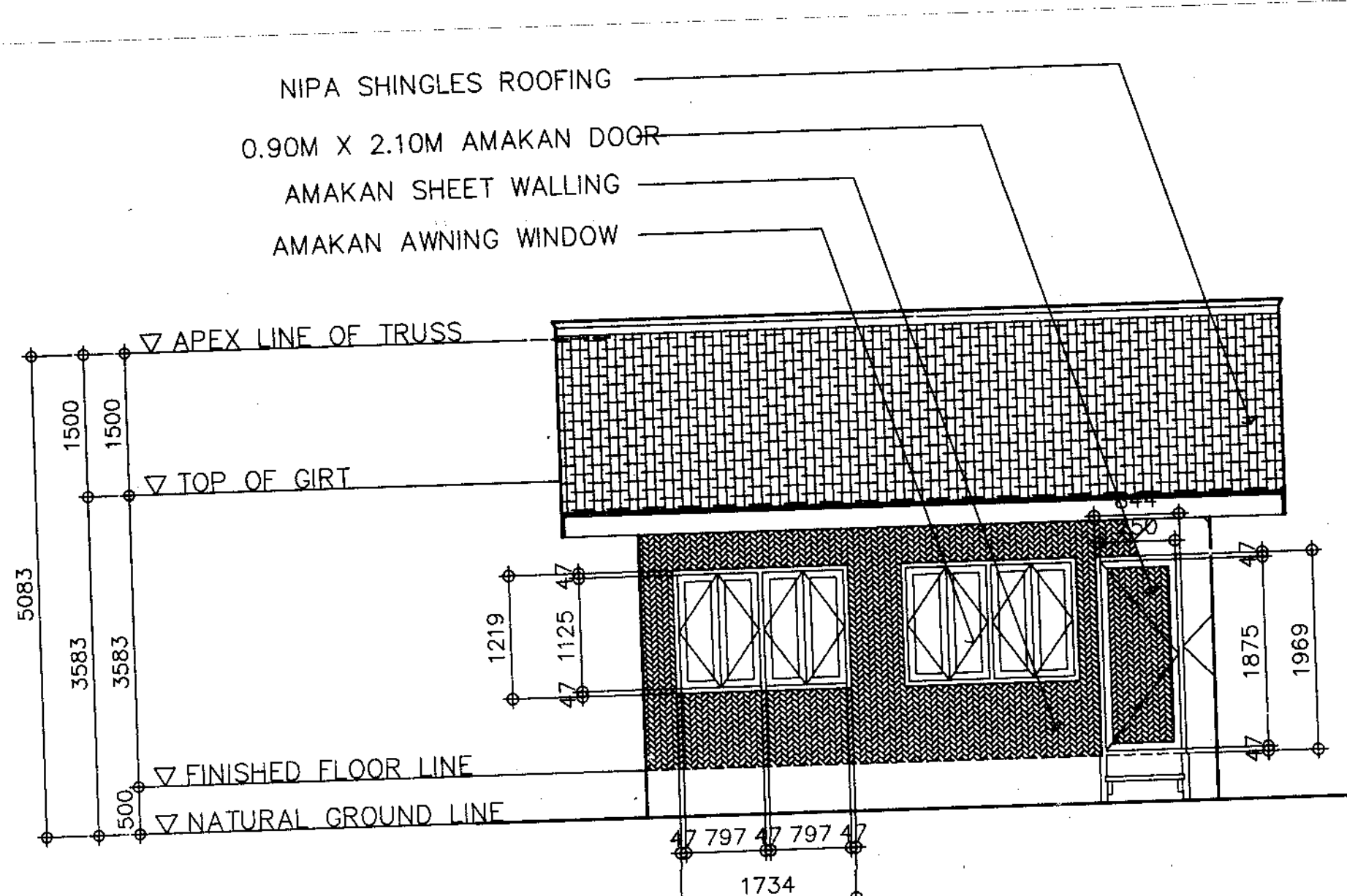
	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF AGRICULTURE "PHILIPPINE RURAL DEVELOPMENT PROJECT SCALE UP" PROVINCE OF DAVAO DE ORO MUNICIPALITY OF MONTEVISTA & NABUNTURAN	PROJECT NO.: PRDP-SU-IB-R011-DDO-004-000-000-2023-FMB SUBPROJECT TITLE: REHABILITATION OF NEW VISAYAS - BANAGBANAG, MONTEVISTA TO MAGADING, NABUNTURAN ROAD WITH EXPANSION OF EXISTING BRIDGE LOCATION: MONTEVISTA AND NABUNTURAN, DAVAO DE ORO	PREPARED BY: EDWIN S. SALUDES PLANNING & DESIGN DIVISION CHIEF	DESIGNED BY: RONNIE S. APARRI ENGINEER II	CHECKED & REVIEWED BY: RODERICK M. DIGAMON PROVINCIAL ENGINEER	RECOMMENDING APPROVAL: ALICIA M. GRACIADAS CO-PPMIU	APPROVED: DOROTHY P. MONTEJO-GONZAGA GOVERNOR	SHEET NO. 20 FARM TO MARKET ROAD MARKER, PEDESTRIAN & SIGNAGE DETAIL	SHEET NO. 78	
	SHEET CONTENTS:									
	SIGNATURE:									



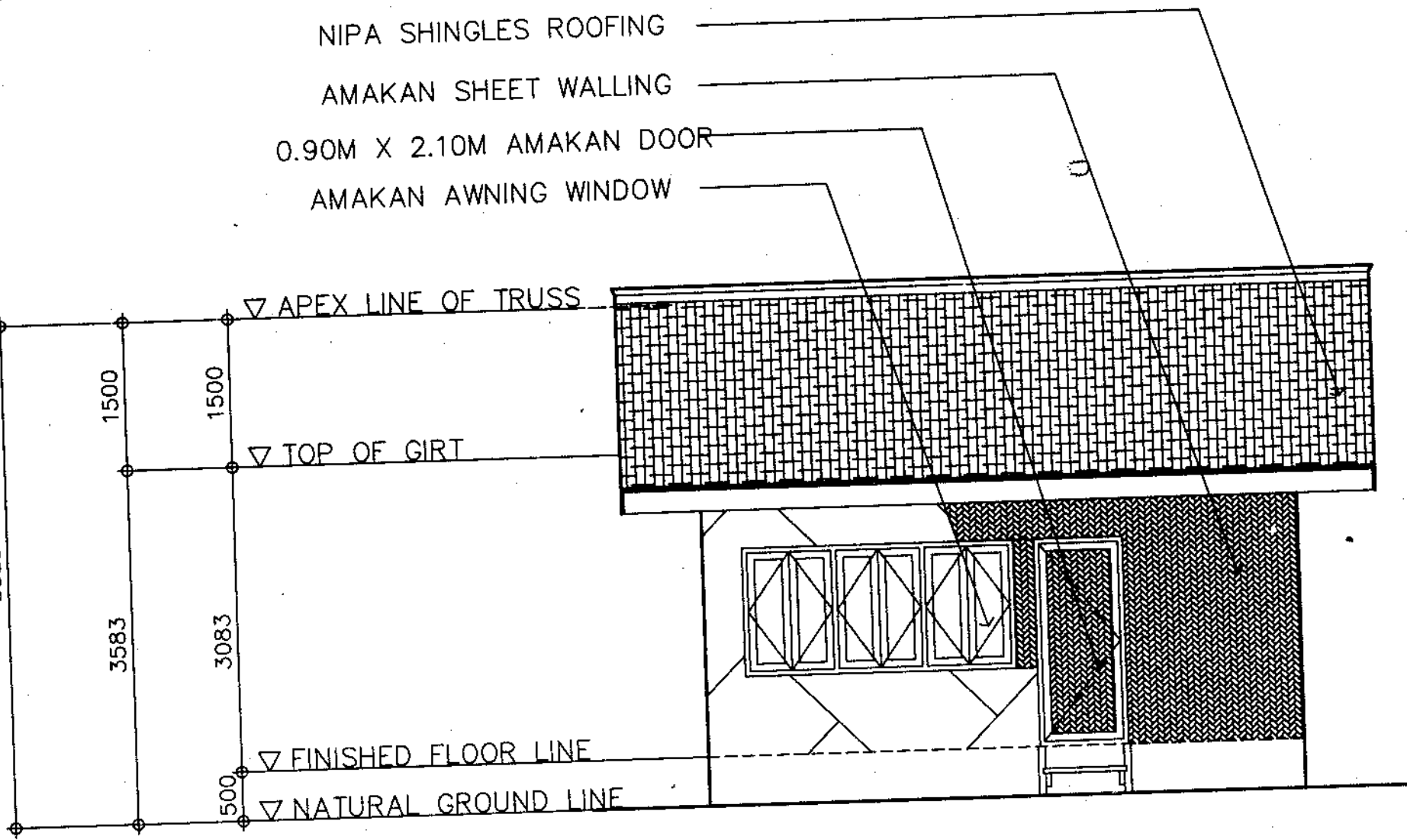
	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF AGRICULTURE "PHILIPPINE RURAL DEVELOPMENT PROJECT SCALE UP" PROVINCE OF DAVAO DE ORO MUNICIPALITY OF MONTEVISTA & NABUNTURAN	PROJECT NO.: PRDP-SU-IB-R011-DDO-004-000-000-2023-FMB SUBPROJECT TITLE: REHABILITATION OF NEW VISAYAS - BANAGBANAG, MONTEVISTA TO MAGADING, NABUNTURAN ROAD WITH EXPANSION OF EXISTING BRIDGE LOCATION: MONTEVISTA AND NABUNTURAN, DAVAO DE ORO	PREPARED BY: EDWIN S. SALUDEZ PLANNING & DESIGN DIVISION CHIEF	DESIGNED BY: RONNIE SHAPARRI ENGINEER II	CHECKED & REVIEWED BY: RODERICK M. DIGAMON PROVINCIAL ENGINEER	RECOMMENDING APPROVAL: ALICIA M. GRACIAS ICO - RPMU	APPROVED: DOROTHY P. MONTE-GONZAGA GOVERNOR	SHEET NO. 21 CONTENTS: NO OBJECTION STRAIGHT LINE DIAGRAM	SHEET NO. 78
	BEGINNING OF PROJECT STATION 0+000.00								
	TO POB. MONTEVISTA								
	TO POB. COMPOSTELA								



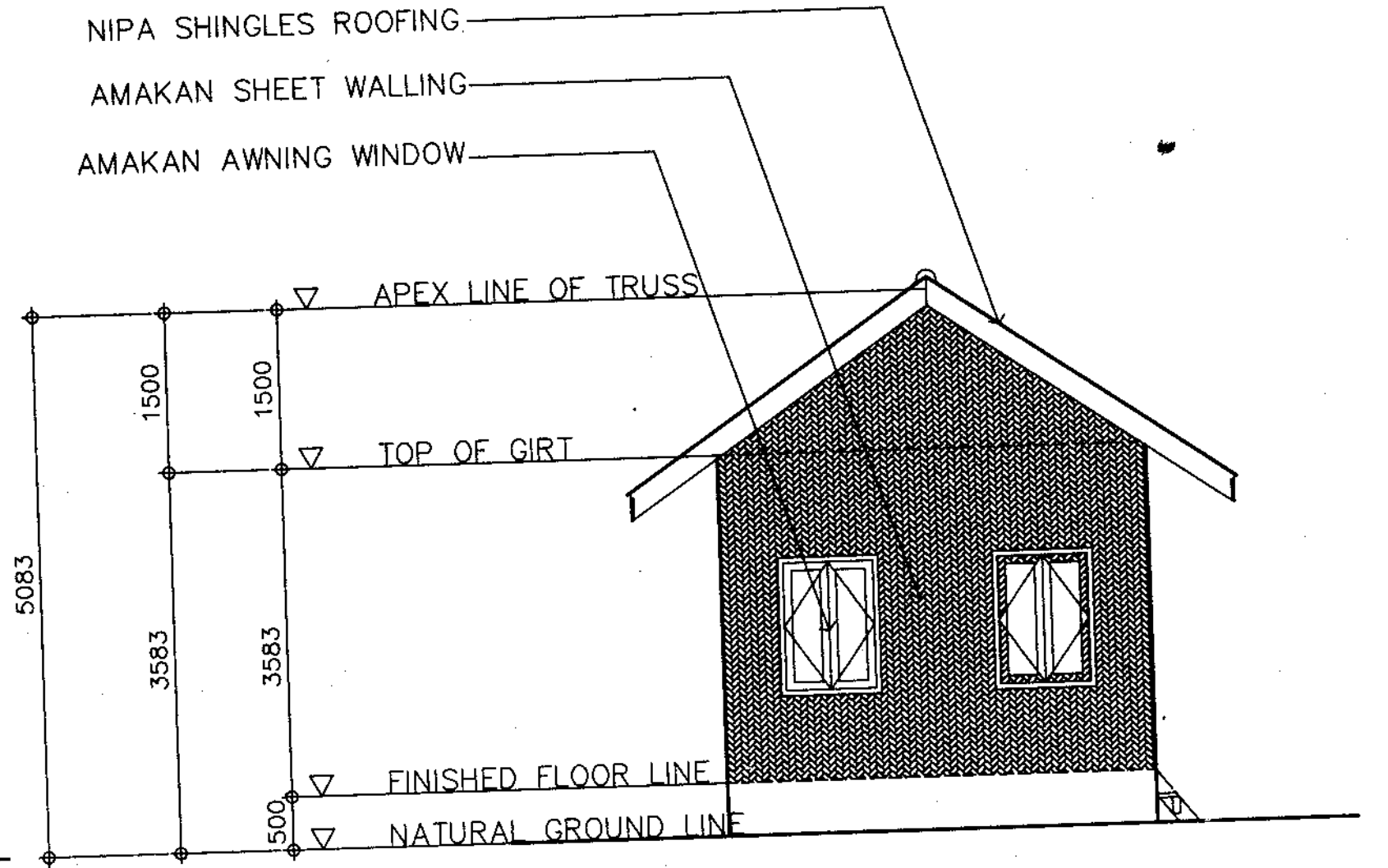
FLOOR PLAN
SCALE: 1:80M



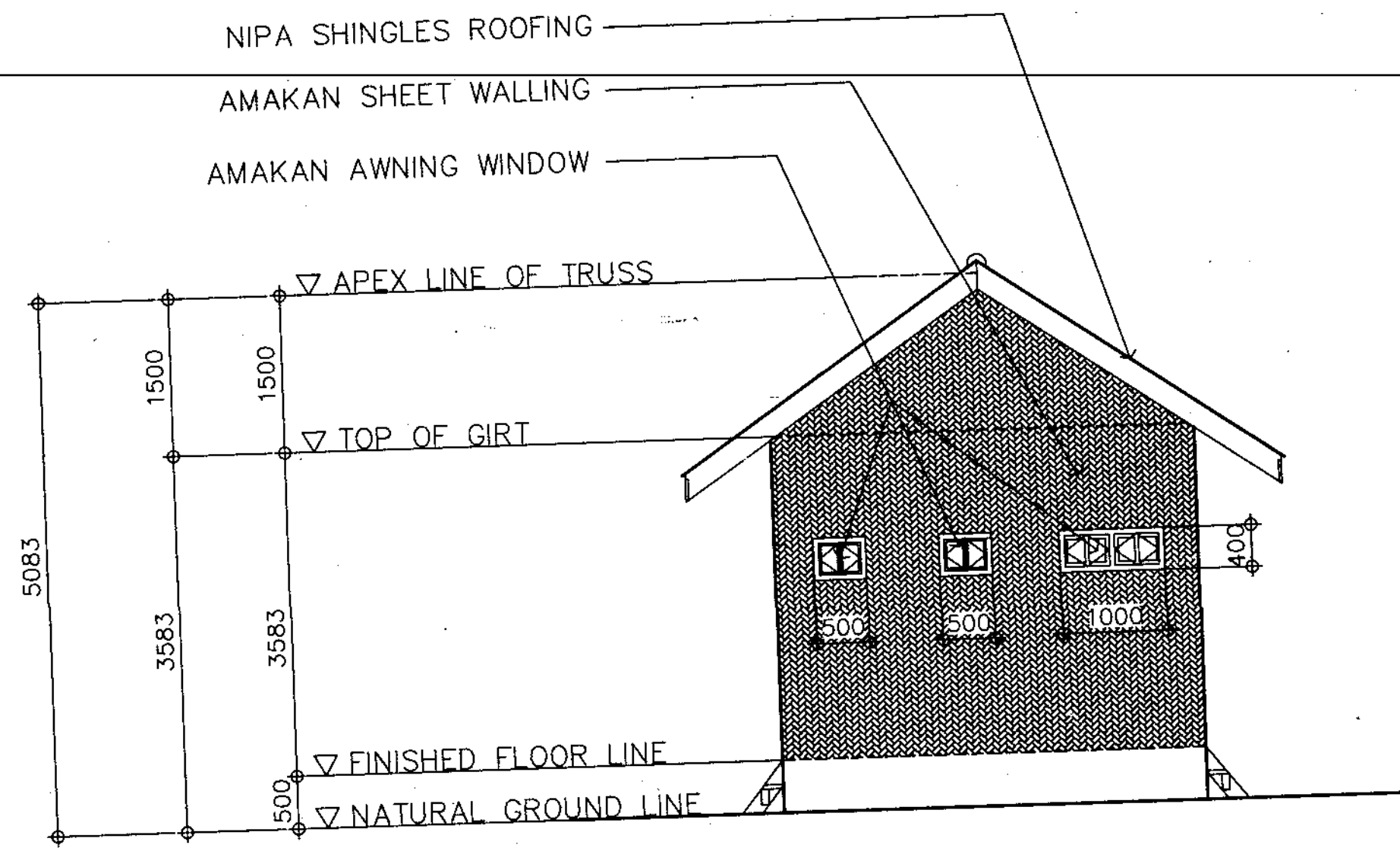
FRONT ELEVATION
SCALE: 1:75M



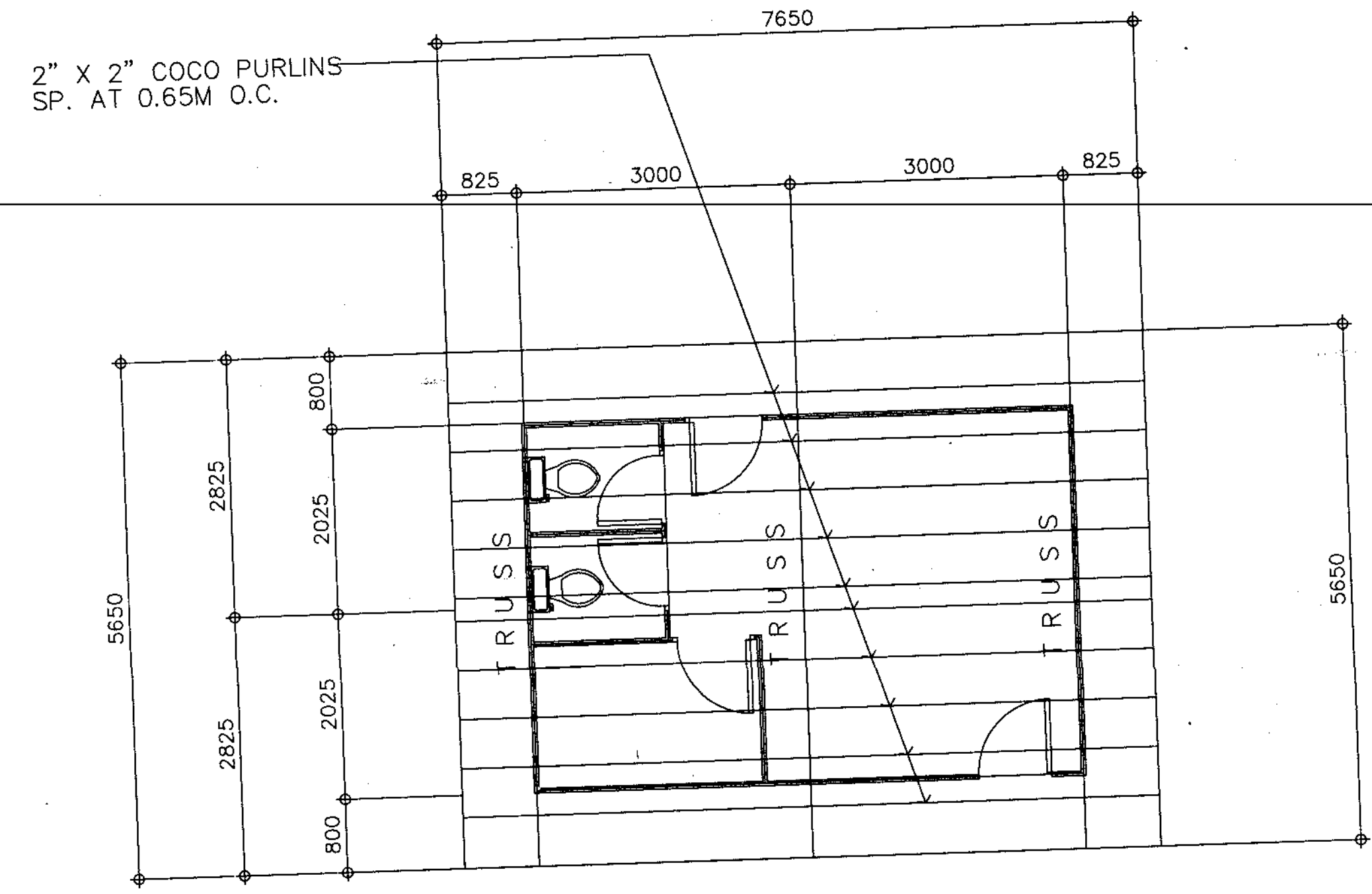
REAR ELEVATION
SCALE: 1:80M



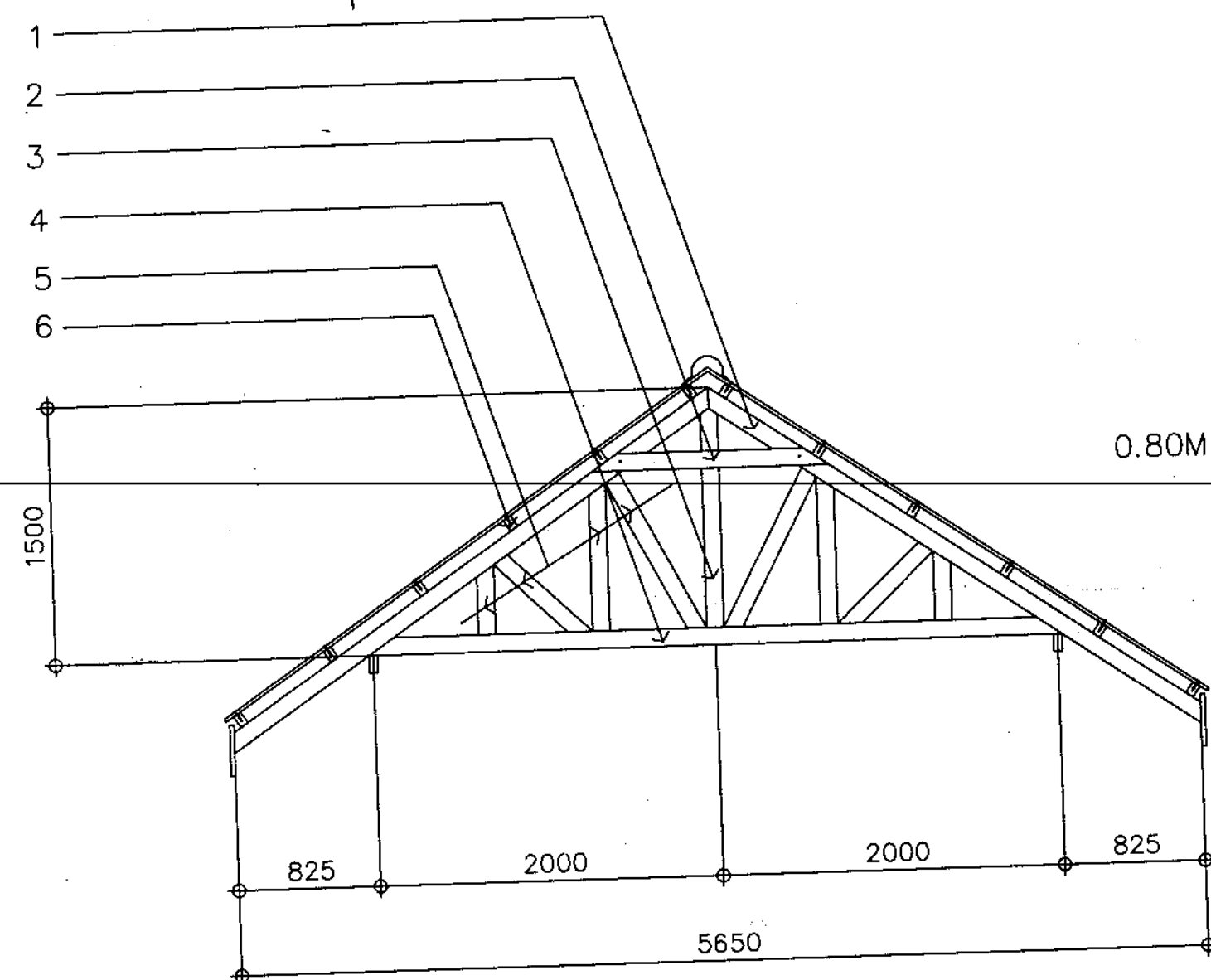
RIGHT ELEVATION
SCALE: 1:80M



LEFT ELEVATION
SCALE: 1:75M

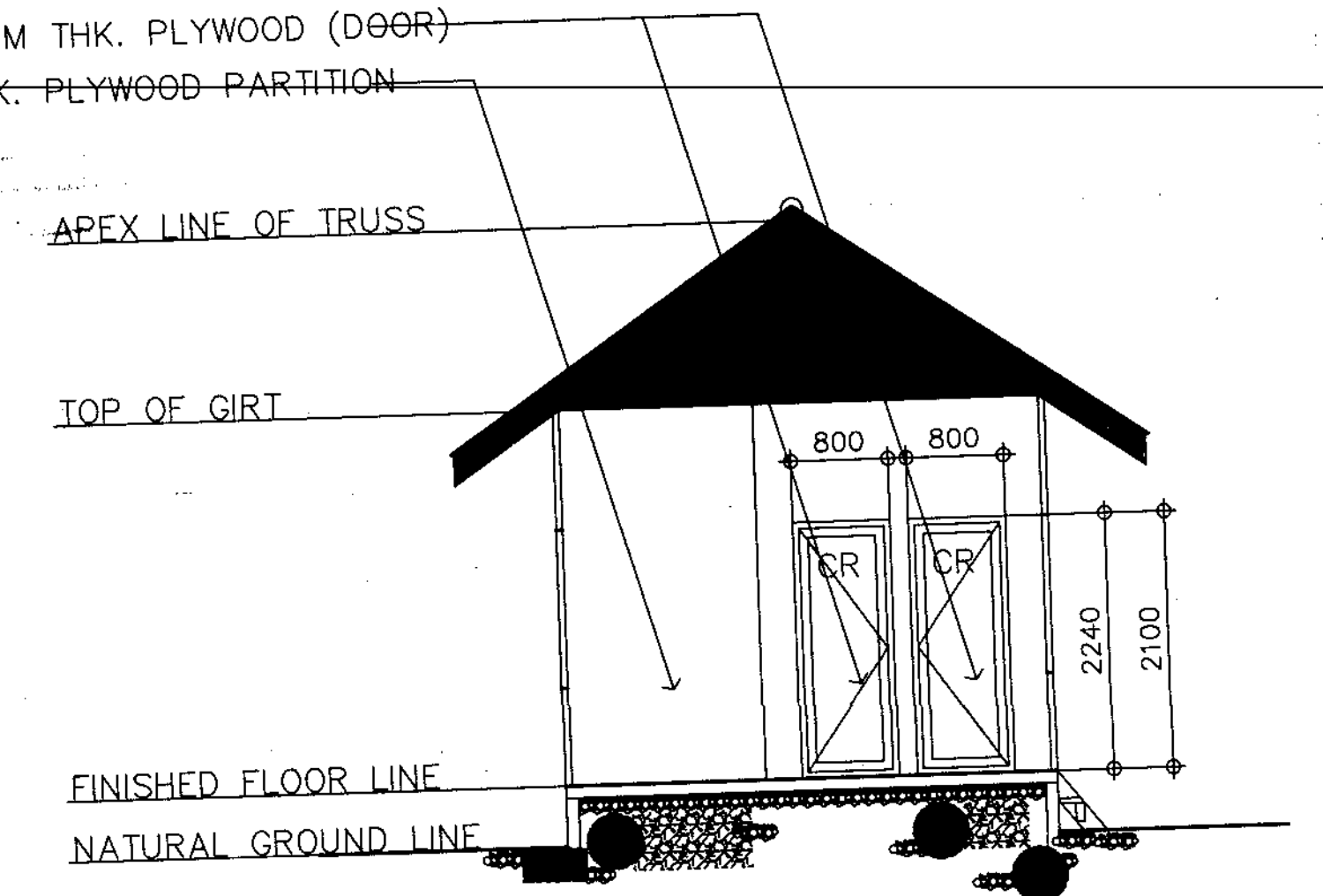


ROOF FRAMING PLAN
SCALE: 1:75M



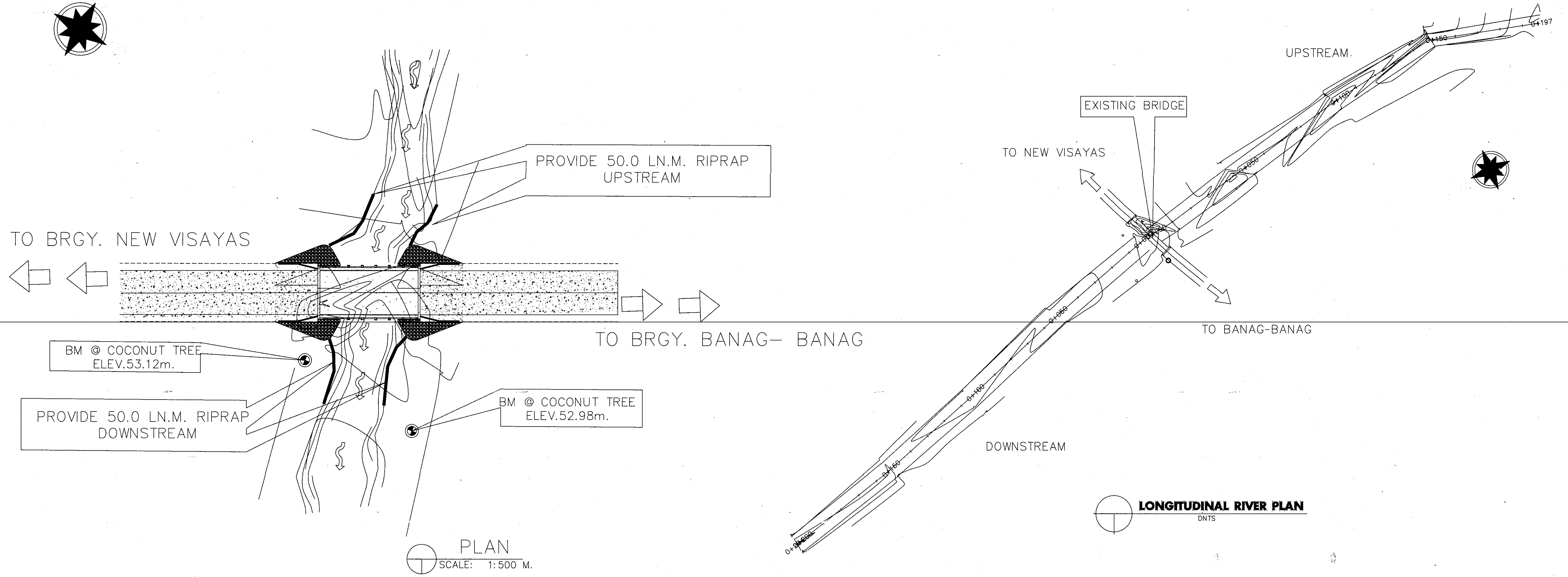
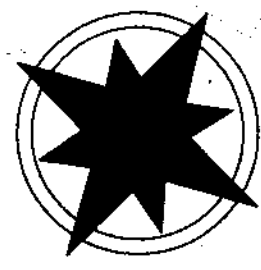
- LEGEND :
- 1 - 1 - 2" X 4" TOP CHORD COCO LUMBER
 - 2 - 2 - 2" X 3" COLLAR PLATE COCO LUMBER
 - 3 - 1 - 2" X 4" KING POST COCO LUMBER
 - 4 - 2" X 4" BOTTOM CHORD COCO LUMBER
 - 5 - 2" X 3" WEB MEMBER COCO LUMBER
 - 6 - 2" X 2" PURLINS SP. @ 0.65M O.C. COCO LUMBER

TRUSS DETAIL
SCALE: 1:50M

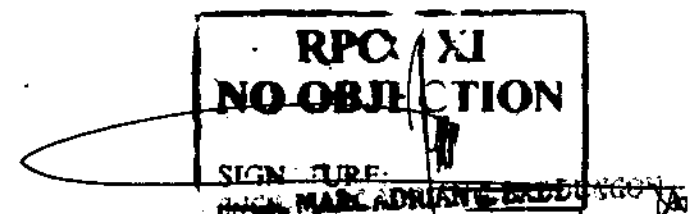


CROSS SECTION THRU A - A
SCALE: 1:75M

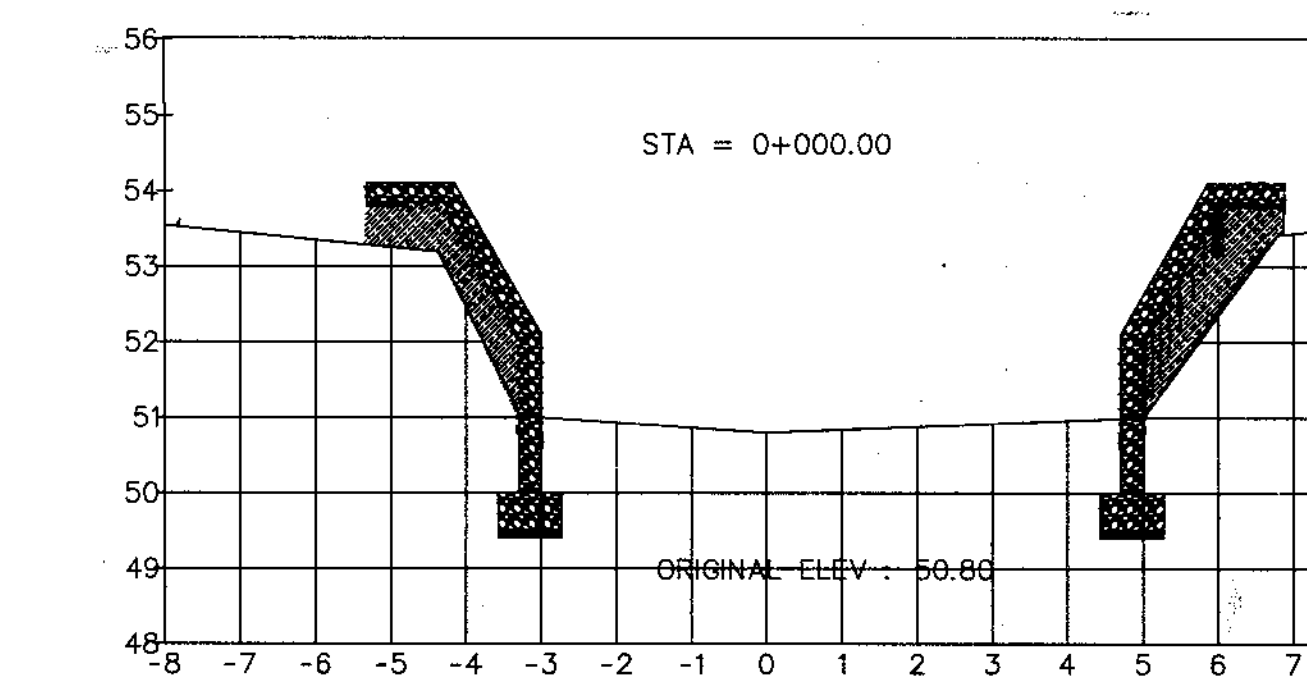
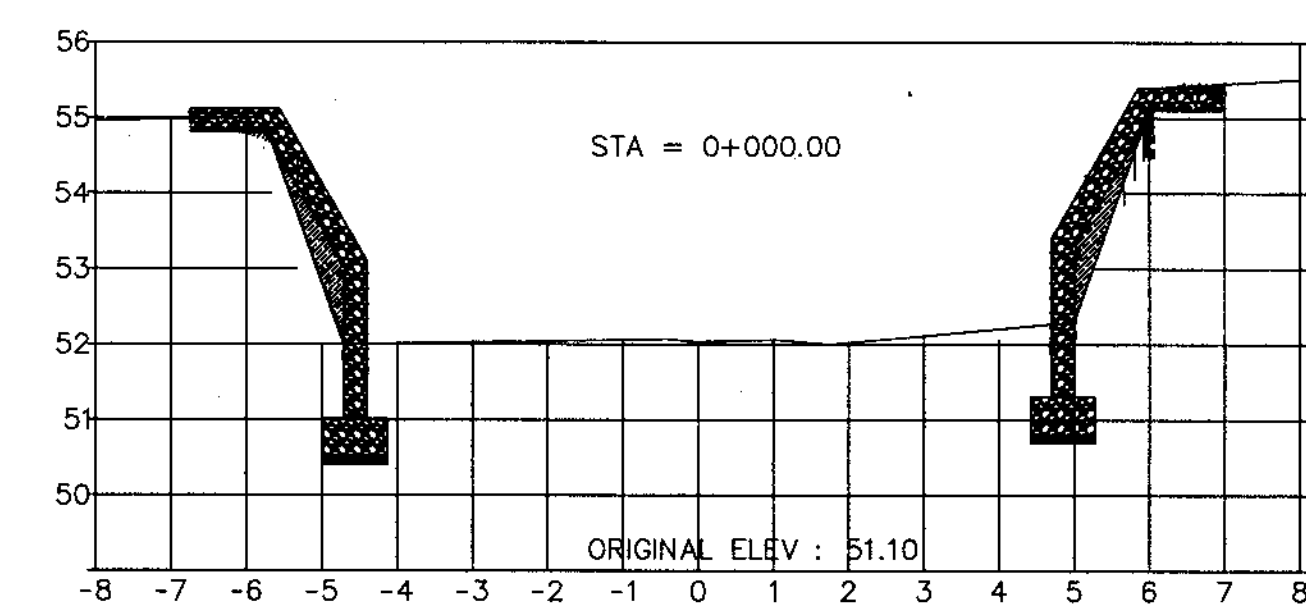
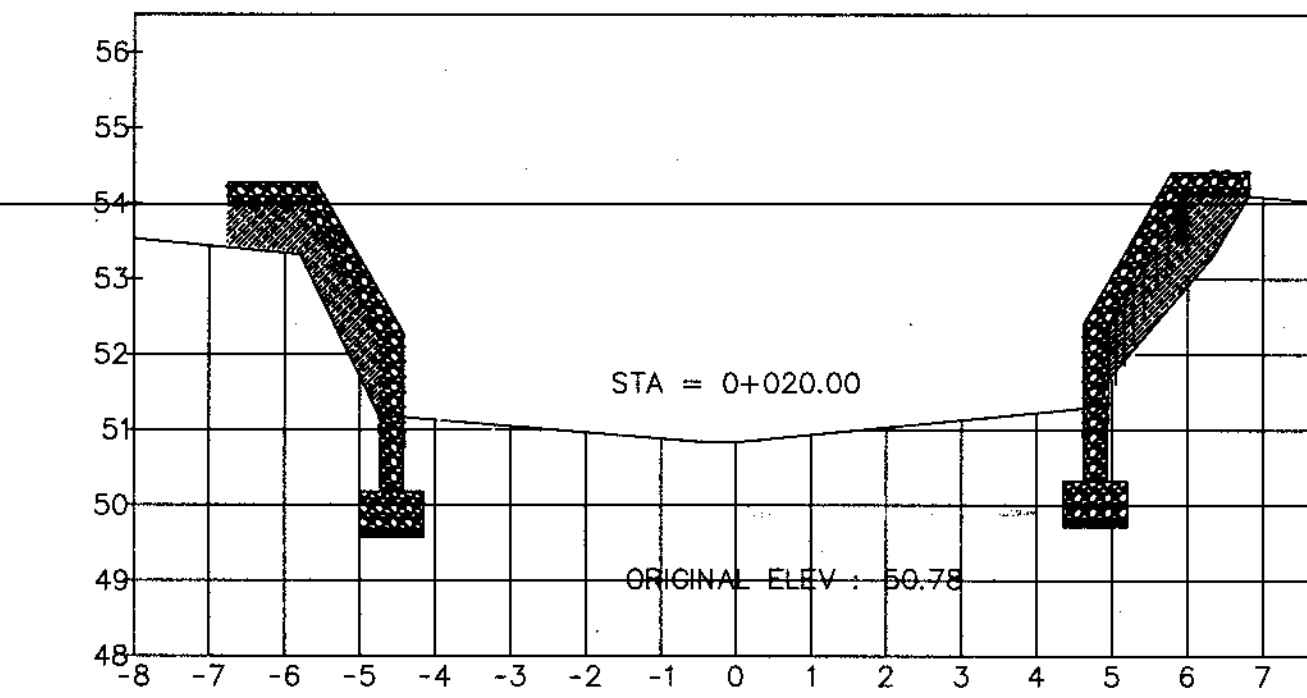
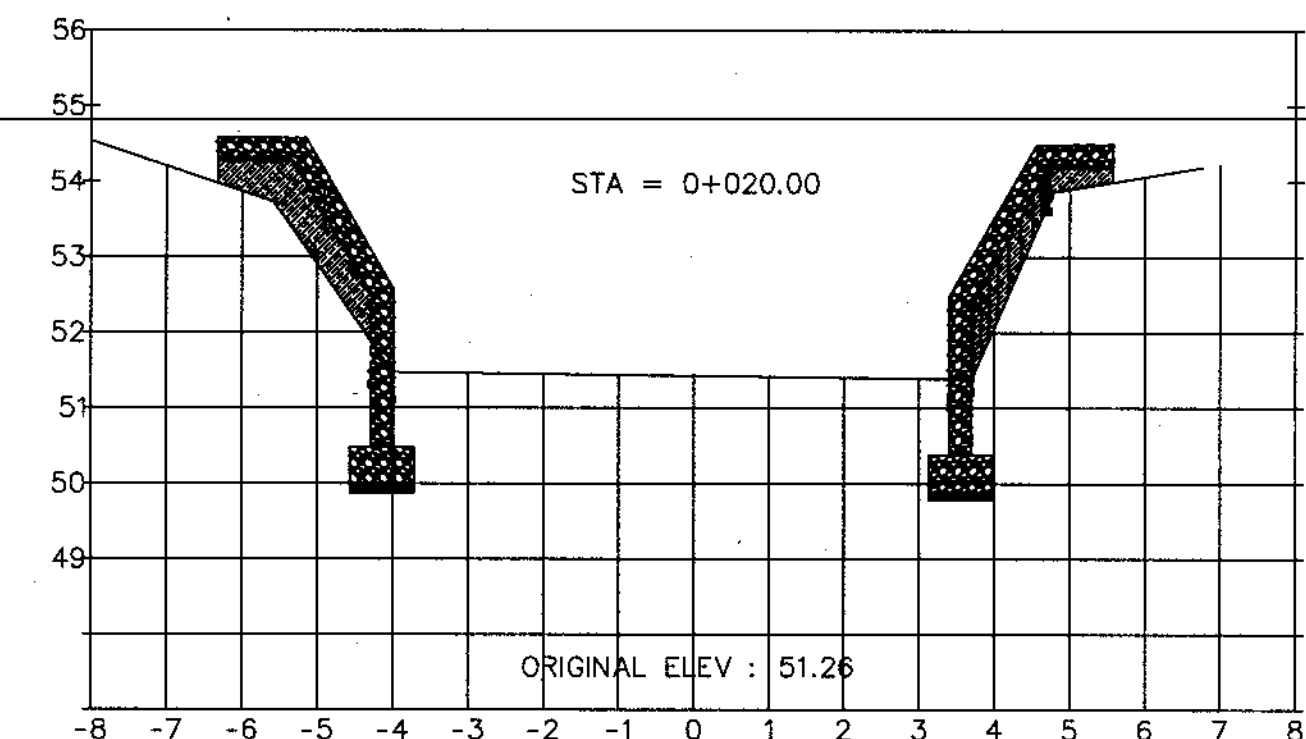
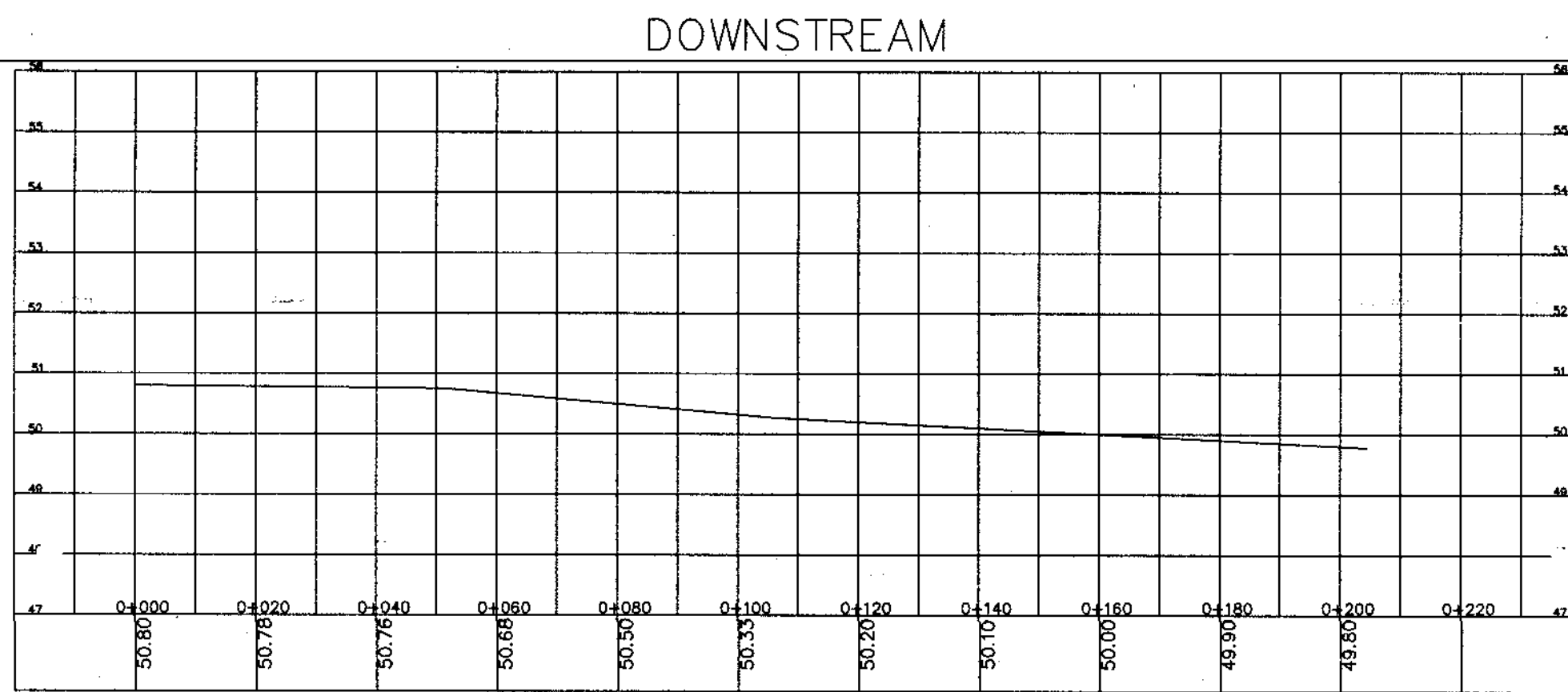
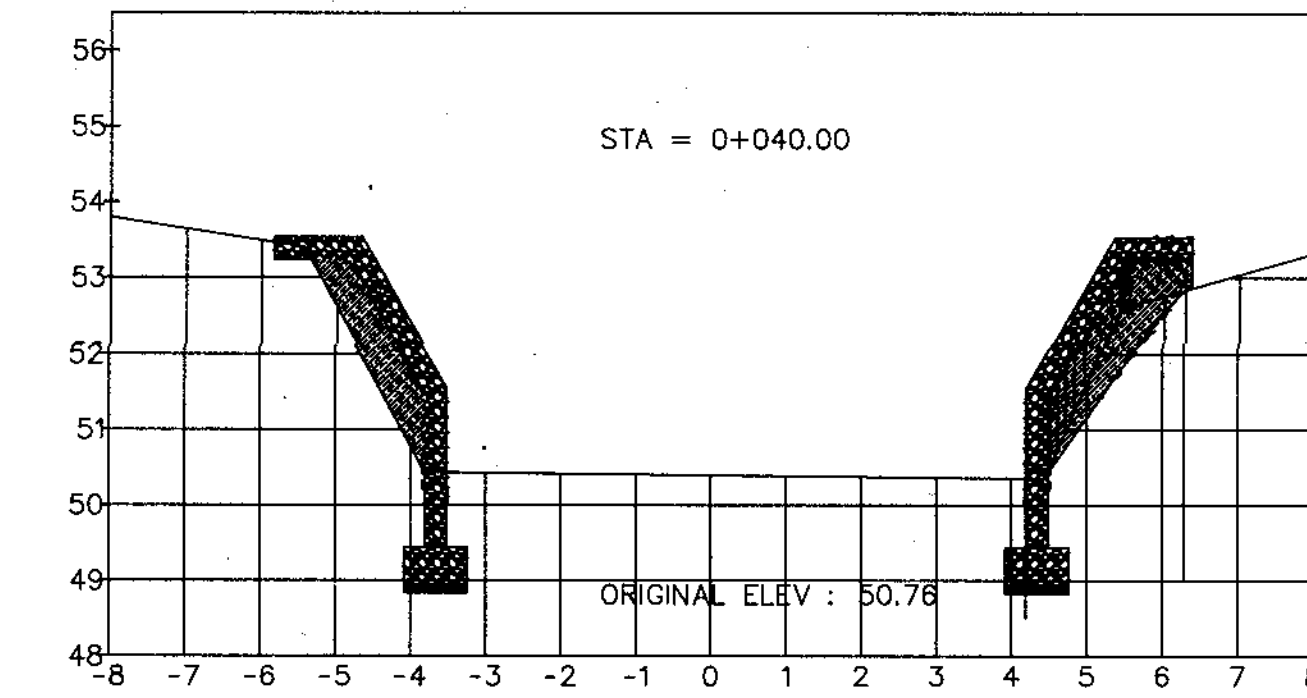
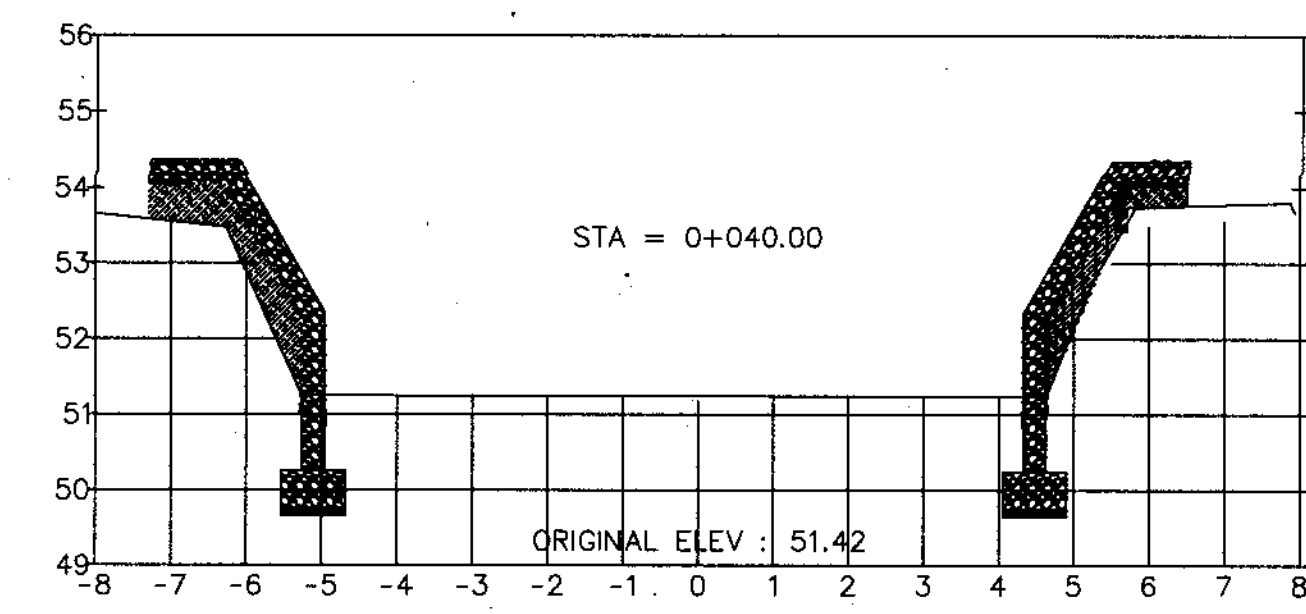
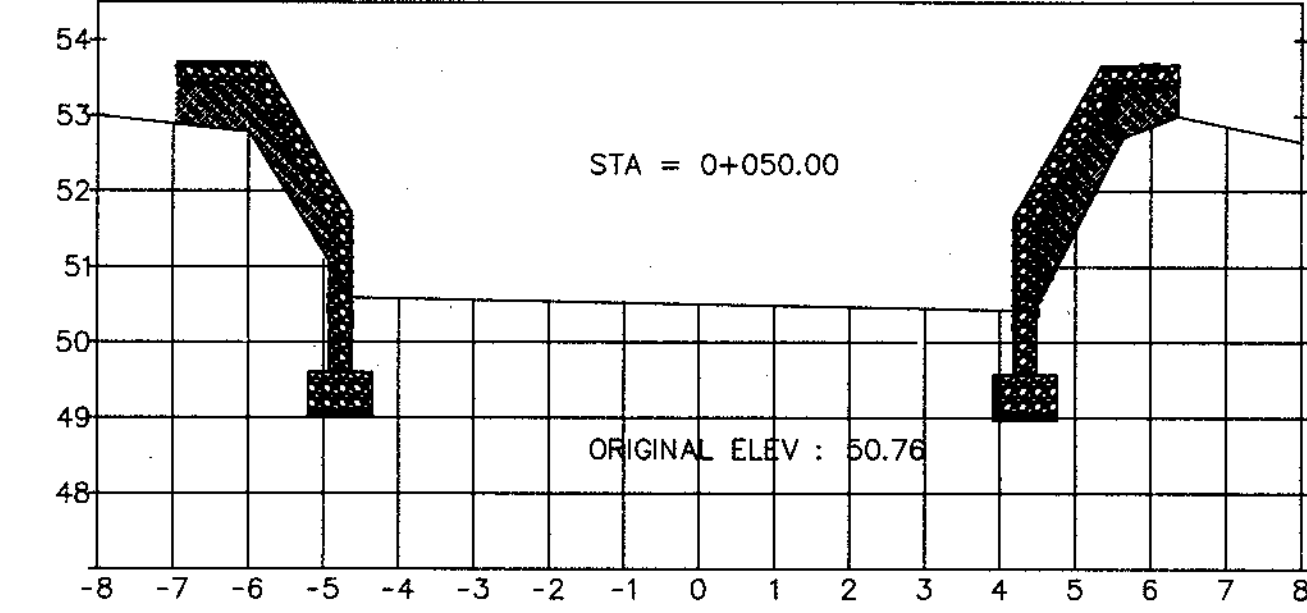
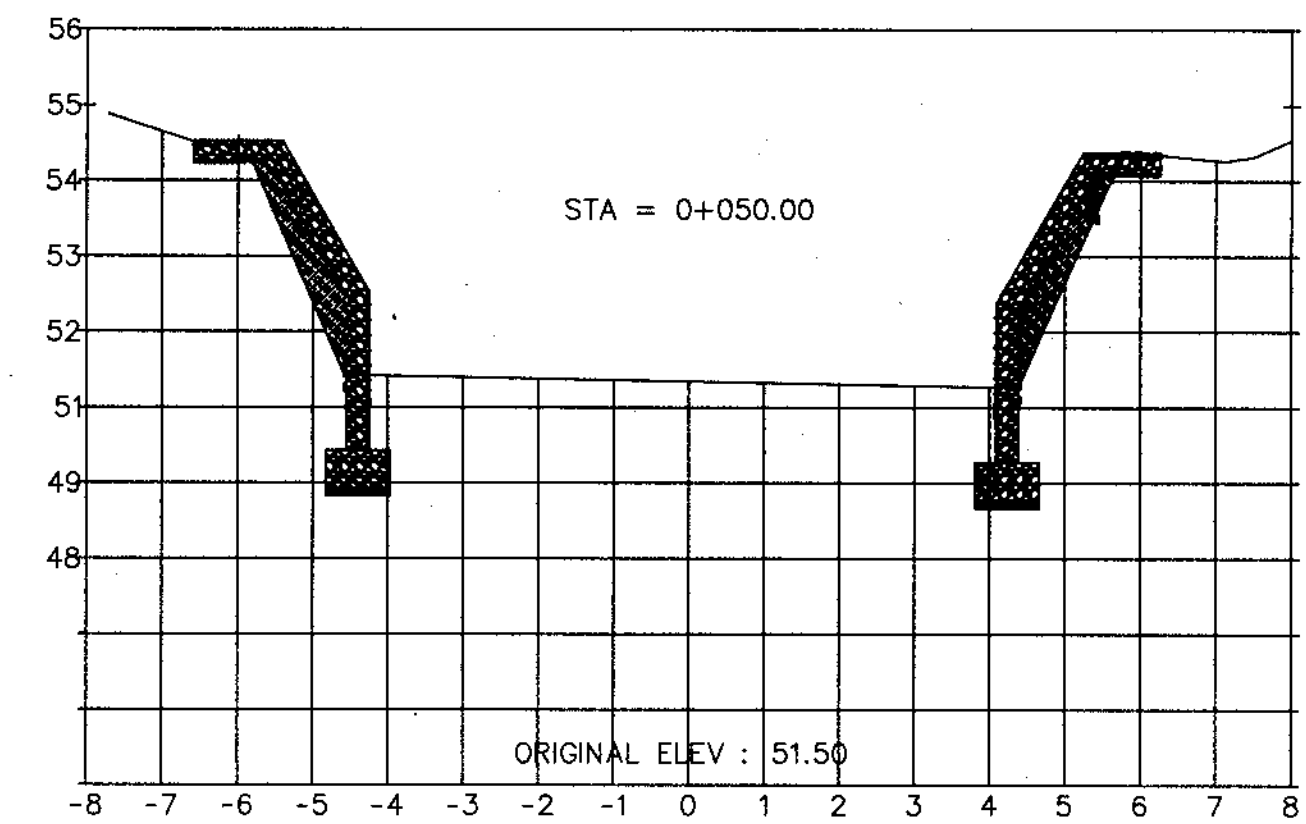
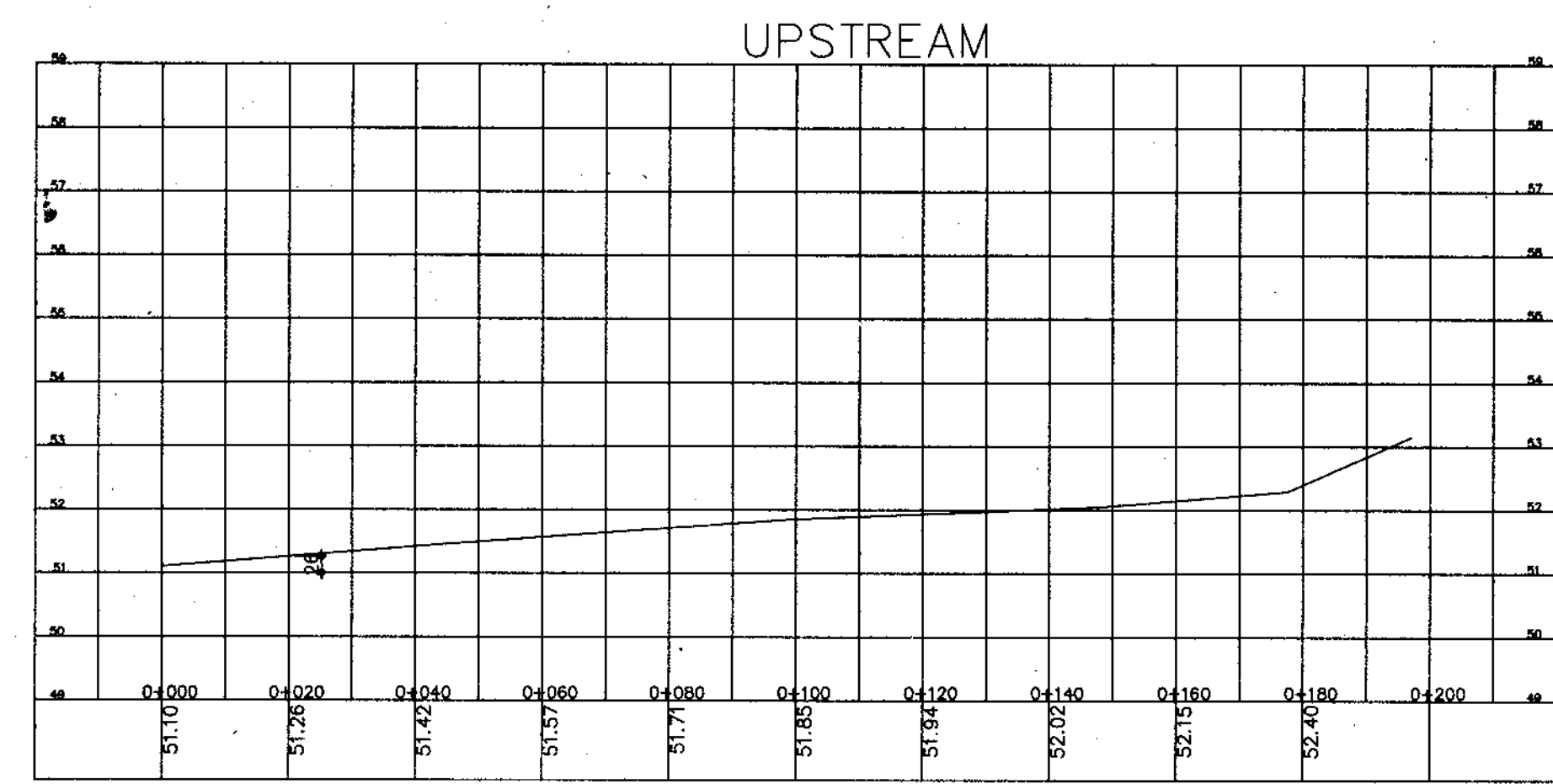
<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF AGRICULTURE "PHILIPPINE RURAL DEVELOPMENT PROJECT SCALE UP" PROVINCE OF DAVAO DE ORO MUNICIPALITY OF MONTEVISTA & NABUNTURAN</p>	PROJECT NO.:	PRDP-SU-IB-R011-DDO-004-000-000-2023-FMB	PREPARED BY:	DESIGNED BY:	CHECKED & REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED:		SHEET NO.
	SUBPROJECT TITLE:	REHABILITATION OF NEW VISAYAS - BANAGBANAG, MONTEVISTA TO MAGADING, NABUNTURAN ROAD WITH EXPANSION OF EXISTING BRIDGE	EDWIN S. SALUDES PLANNING & DESIGN DIVISION CHIEF	RONNIE SHAPARRI ENGINEER II	RODERICK M. DIGAMON PROVINCIAL ENGINEER	ALICIA M. GRACIADAS CO-PPMIU	DOROTHY P. MONTELO GONZAGA GOVERNOR		22
	LOCATION:	MONTEVISTA AND NABUNTURAN, DAVAO DE ORO							78



LONGITUDINAL RIVER PLAN
DNTS



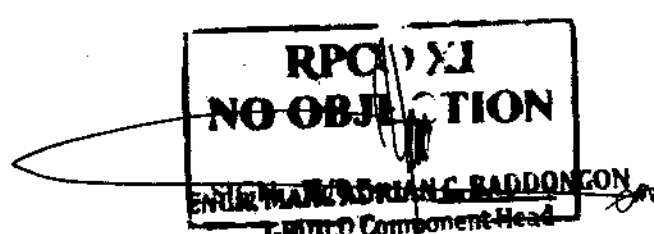
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	PROVINCE OF DAVAO DE ORO MUNICIPALITY OF MONTEVISTA & NABUNTURAN	SUBPROJECT TITLE:	REHABILITATION OF NEW VISAYAS - BANAGBANAG, MONTEVISTA TO MAGADING, NABUNTURAN ROAD WITH EXPANSION OF EXISTING BRIDGE	 EDWIN S. SALUDES PLANNING & DESIGN DIVISION CHIEF	 RONNIE S. APARRI ENGINEER I	 RODERICK M. DIGAMON PROVINCIAL ENGINEER	 ALICIA M. GRACIADAS CO-PPMIU	 DOROTHY P. MONJE-GONZAGA GOVERNOR	BRIDGE PLAN & LONGITUDINAL RIVER PLAN	23
		LOCATION:	MONTEVISTA AND NABUNTURAN, DAVAO DE ORO							78



LONGITUDINAL RIVER PROFILE
DNTS

RIVER UPSTREAM CROSS SECTION

RIVER DOWNSTREAM CROSS SECTION




	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF AGRICULTURE "PHILIPPINE RURAL DEVELOPMENT PROJECT SCALE UP" PROVINCE OF DAVAO DE ORO MUNICIPALITY OF MONTEVISTA & NABUNTURAN	PROJECT NO.: PRDP-SU-IB-R011-DDO-004-000-000-2023-FMB SUBPROJECT TITLE: REHABILITATION OF NEW VISAYAS - BANAGBANAG, MONTEVISTA TO MAGADING, NABUNTURAN ROAD WITH EXPANSION OF EXISTING BRIDGE LOCATION: MONTEVISTA AND NABUNTURAN, DAVAO DE ORO	PREPARED BY: EDWIN S. SALUDES PLANNING & DESIGN DIVISION CHIEF	DESIGNED BY: RONNIE S. APARRI ENGINEER II	CHECKED & REVIEWED BY: RODERICK M. DIGAMAN PROVINCIAL ENGINEER	RECOMMENDING APPROVAL: ALICIA M. GRACIADAS CO-PPMIU	APPROVED: DOROTHY P. MONTEJO-GONZAGA GOVERNOR	SHEET CONTENTS: LONGITUDINAL RIVER PROFILE & UPSTREAM AND DOWNSTREAM & CROSS SECTION	SHEET NO. 24 / 78
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BRIDGE SUMMARY OF QUANTITIES

III.	Construction of Bridge	
101(1)	REMOVAL OF ACTUAL STRUCTURE / OBSTRUCTION	1.00 Lump Sum
103(2)a	BRIDGE EXCAVATION	293.60 Cubic Meter
104(2)a	EMBANKMENT FROM BORROW	1,718.51 Cubic Meter
311(2)f1	PORTLAND CEMENT CONCRETE PAVEMENT (Reinforced), 300MM THICK	57.50 Square Meter
400(17)e	CONCRETE PILES CAST IN DRILLED HOLES, 1.20mØ, fc = 27.58 Mpa, 28 days	60.00 Meter
400(23)e2	PERMANENT CASING, 1.20mØ, 12mm thk.	12.00 Meter
400(26)a	PILE INTEGRITY TESTING, CROSSHOLE-SONIC	2.00 Each
400(27)	HIGH STRAIN DYNAMIC TEST (P.D.A)	2.00 Each
400(33)	STEEL CASING (TEMPORARY, 1.20 m. dia.)	48.00 Linear Meter
401(2)a	CONCRETE RAILING, STANDARD	14.00 Meter
404(1)a	REINFORCING STEEL, GRADE 40	5,055.00 Kilogram
404(1)b	REINFORCING STEEL, GRADE 60	5,526.00 Kilogram
405(1)b3	STRUCTURAL CONCRETE, 27.58MPa, CLASS A, 28 days	54.55 Cubic Meter
407(8)	LEAN CONCRETE, CLASS B (16.50 Mpa)	0.66 Cubic Meter
411(2)	PAINT	70.29 Square Meter
413(4)b	EXPANSION JOINT - STEEL FINGER TYPE	15.60 Linear Meter
505(2)a	GROUTED RIPRAP, CLASS A	426.00 Cubic Meter
507(1)	RUBBLE CONCRETE	65.28 Cubic Meter
517(1)a	DRAIN PIPE, GALVANIZED (150mm Ø)	1.20 Linear Meter
612(1)	REFLECTORIZED THERMOPLASTIC PAVEMENT MARKINGS (WHITE)	3.00 Square Meter
612(2)	REFLECTORIZED THERMOPLASTIC PAVEMENT MARKINGS (YELLOW)	2.25 Square Meter
IV.	Retrofitting of Existing Bridge	
416(1)a	CARBON FIBER (2 LAYERS)	57.60 Square Meter
416(1)e	CARBON FIBER (PLATE)	60.16 Linear Meter
628(3)	EPOXY INJECTION ON CRACK	10.60 Linear Meter

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 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF AGRICULTURE "PHILIPPINE RURAL DEVELOPMENT PROJECT SCALE UP" PROVINCE OF DAVAO DE ORO MUNICIPALITY OF MONTEVISTA & NABUNTURAN	PROJECT NO.:	PRDP-SU-IB-R011-DDO-004-000-000-2023-FMB	PREPARED BY:	DESIGNED BY:	CHECKED & REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED:	SHEET CONTENTS:	SHEET NO.
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	LOCATION:	MONTEVISTA AND NABUNTURAN, DAVAO DE ORO							78

GENERAL NOTES

- GENERAL
1. IN THE INTERPRETATION OF THESE DRAWINGS INDICATED DIMENSIONS SHALL GOVERN ALL DIMENSIONS, DISTANCES AND SIZES SHALL NOT BE SCALED FOR CONSTRUCTION PURPOSES.
 2. UNLESS OTHERWISE SPECIFIED ON PLANS, ALL DIMENSIONS ARE IN MILLIMETERS. ELEVATION ARE IN METERS AND STATIONINGS ARE IN KILOMETERS + METERS BASED ON THE DATA FURNISHED BY THE SURVEY TEAM REGIONAL OFFICE

- DESIGN CRITERIA
1. DESIGN SPECIFICATION
ALL DESIGN SHALL CONFORM TO THE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH) STANDARD SPECIFICATION FOR HIGHWAY BRIDGES, BDS 2013, WHICH INCLUDES SEISMIC DESIGN
 2. LOADINGS
 - a. INCLUDES AN ALLOWANCE FOR FUTURE 50mm BITUMINOUS WEARING COURSE OF ROADWAY = 1.10kPa.
 - b. LIVELOAD - HL - 93
 - c. SEISMIC LOAD - SHOULD BE IN ACCORDANCE WITH 2013 DPWH BRIDGE SEISMIC DESIGN SPECIFICATION FOR HIGHWAY BRIDGES.

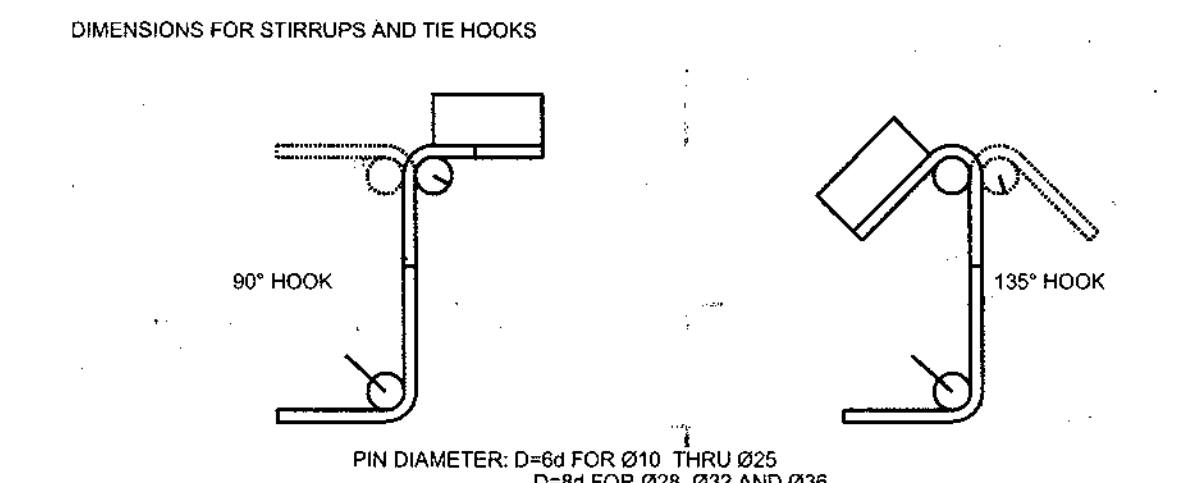
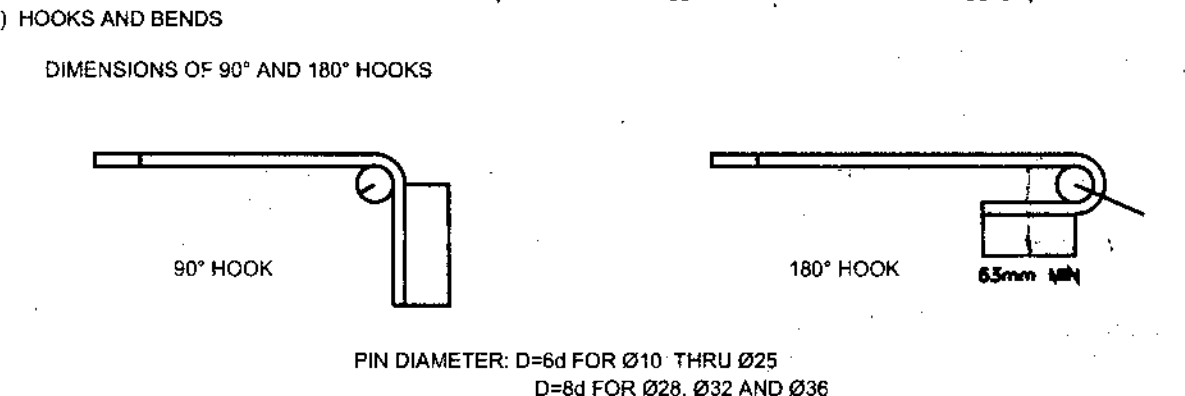
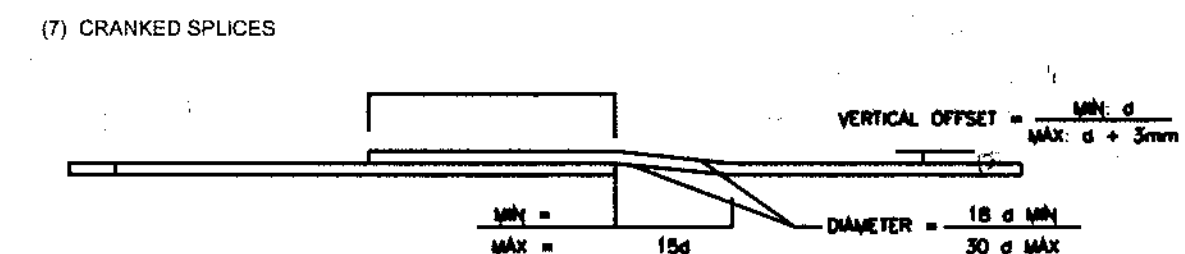
MATERIALS

1. CONCRETE
 - a. CONCRETE STRENGTH BY CLASS.

STRUCTURAL MEMBER	CLASS	14-DAY CYLINDER STRENGTH		MAX SIZE OF COARSE AGGREGATE, mm(in.)
		MPa	PSI	
CAST-IN-PLACE SLABS, PIERS, COLUMNS, DIAPHRAGMS, SIDEWALKS AND BACKWALLS	A	27.59	4000	20
ABUTMENTS	A	27.59	4000	20
BORED PILES	A	27.59	4000	20
THIN REINFORCED SECTIONS RAILINGS AND RAILPOST	C	21	3045	12
LEAN CONCRETE	B	16.5	2400	38

- b. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL THE PLACING SEQUENCES FOR ALL TYPES OF CONCRETING WORK.
 - c. DESIGN OF CONCRETE STRENGTH SHALL BE AS SET FORTH UNDER ITEM NO. 1 OF MATERIALS.
 - d. CONCRETE SHALL BE DEPOSITED, VIBRATED AND CURED IN ACCORDANCE WITH THE GENERAL SPECIFICATIONS.
2. REINFORCING STEEL
- (a) REINFORCING STEEL SHALL CONFORM TO AASHTO M31 (ASTM A615), GRADE 40, DEFORMED WITH MINIMUM YIELD STRENGTH, $f_y=276$ MPa (40,000 PSI) FOR BARS 16mm Ø OR SMALLER AND GRADE 60 WITH MINIMUM YIELD STRENGTH, $f_y=414$ MPa (60,000 PSI) FOR LARGER THAN 16mm Ø.
 - (b) FOR DRIVEN PILES, REINFORCING STEEL SHALL CONFORM TO AASHTO M31 (ASTM A615), GRADE 40, DEFORMED WITH MINIMUM YIELD STRENGTH, $f_y = 276$ MPa (40,000 PSI).
 - (c) REINFORCING STEEL SHALL BE FREE OF MILL SCALES, OIL OR ANY SUBSTANCES WHICH WILL WEAKEN THE BOND WITH CONCRETE.

- CONSTRUCTION
- CONSTRUCTION SPECIFICATION: 2004 DPWH STANDARD SPECIFICATIONS FOR HIGHWAYS, BRIDGES & AIRPORTS, VOL.11
1. SETTING OUT
THE SETTING OUT AND THE ELEVATIONS OF THE DIFFERENT COMPONENTS OF THE STRUCTURE SHALL BE APPROVED BY THE ENGINEER PRIOR TO THE START OF ANY CONSTRUCTION WORK.
 2. REINFORCED CONCRETE
 - a. CONCRETE MIX AND PLACING
 - (1) FOR CONCRETE DEPOSITED AGAINST THE GROUND, LEAN CONCRETE WITH A MINIMUM THICKNESS OF 50mm SHALL LAY FIRST BEFORE INSTALLING THE REINFORCEMENT. THIS LEAN CONCRETE SHALL NOT BE CONSIDERED IN MEASURING THE STRUCTURAL DEPTH OF CONCRETE SECTION.
 - b. BAR BENDING, SPLICING AND PLACING
 - (1) THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL OF SHOP DRAWINGS INDICATING THE BENDING, CUTTING, SPLICING AND INSTALLATION OF ALL REINFORCING BARS.
 - (2) BARS SHALL BE BENT COLD, BARS PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT UNLESS PERMITTED BY THE ENGINEER.
 - (3) BAR SPLICING NOT INDICATED ON DRAWINGS SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.
 - (4) WELDED SPLICES, IF APPROVED BY THE ENGINEER, SHALL DEVELOP IN TENSION AT LEAST 125% OF THE SPECIFIED YIELD STRENGTH OF BARS.
 - (5) NOT MORE THAN 50% OF THE BARS AT ANY ONE SECTION SHALL BE SPLICED.
 - (6) UNLESS OTHERWISE SHOWN ON DRAWINGS, THE CLEAR DISTANCE BETWEEN PARALLEL BARS IN A LAYER SHALL NOT BE LESS THAN 1.5 TIMES THE NOMINAL DIAMETER OF THE BAR NOR LESS THAN 1.5 TIMES THE MAXIMUM SIZE OF COARSE AGGREGATE. THE CLEAR DISTANCE BETWEEN LAYERS SHALL NOT BE LESS THAN 25mm NOR ONE BAR DIAMETER. THE BARS IN THE UPPER LAYER SHALL BE PLACED DIRECTLY ABOVE THOSE IN THE BOTTOM LAYER.



- c. CONCRETE COVER TO REINFORCEMENT
MINIMUM CONCRETE COVER TO REINFORCEMENT SHALL BE 75mm UNLESS SHOWN OTHERWISE ON DRAWINGS.
- d. CONSTRUCTION JOINT
(1) THE POSITION AND FORM OF ANY CONSTRUCTION JOINTS SHALL BE AS SHOWN ON DRAWINGS OR AS AGREED WITH THE ENGINEER.
(2) THE INTERFACE BETWEEN THE FIRST AND SECOND POUR OF CONCRETE SHALL BE ROUGHED WITH AN AMPLITUDE OF 6mm MINIMUM.

- e. FALSEWORK
ALL FALSEWORK SHALL BE DESIGNED BY THE CONTRACTOR SUBJECT TO THE APPROVAL BY THE ENGINEER. THE FALSEWORK SHALL BE REMOVED ONLY AS DIRECTED BY THE ENGINEER. FALSEWORK UNDER NEW-CONSTRUCTED BRIDGE SHALL BE SUFFICIENT TO SUPPORT 2.50 TONSM.

- f. FORMWORK
FORMWORKS SHALL BE CONSTRUCTED SUCH THAT IT WILL NOT YIELD UNDER THE LOAD AND SHALL BE SUCH AS TO AVOID THE FORMATION OF FINE CRACKS. ALL CORNERS OF CONCRETE MEMBERS SHALL BE CHAMFERED TO 20mm UNLESS NOTED OTHERWISE ON DRAWINGS. STRIPPING OF FORMS AND SHORES SHALL BE AS DESIGNATED BY THE ENGINEER. THE FOLLOWING MAY BE USED AS A GUIDE:
- | | MIN TIME |
|--|----------|
| SHORING UNDER GIRDER, BEAMS, FRAMES | 14 DAYS |
| DECK SLABS | 14 DAYS |
| ABUTMENTS | 7 DAYS |
| WALLS | 7 DAYS |
| COLUMNS | 7 DAYS |
| SIDES OF BEAMS AND ALL OTHER VERTICAL SURFACES | 2 DAYS |

- g. PROTECTION AND CURING OF CONCRETE
CONCRETE SURFACES SHALL BE PROTECTED FROM HARMFUL EFFECTS OF SUN, WIND AND RUNNING WATERS AND SHALL BE KEPT DAMP FOR AT LEAST 7 DAYS.
3. STRUCTURAL STEEL
THE CONTRACTOR SHALL PREPARE AND SUBMIT SHOP DRAWINGS FOR ALL STRUCTURAL STEEL WORK. THESE SHOP DRAWINGS SHALL BE APPROVED BY THE ENGINEER BEFORE ANY FABRICATION COMMENCES.
4. EXCAVATION
EXCAVATION FOR STRUCTURES SHALL BE NEAT LINES AS SHOWN ON THE PLANS AND THE GROUND UNDERNEATH STRUCTURE FOUNDATIONS SHALL NOT BE DISTURBED. IF THE REQUIRED BEARING CAPACITY OF SOIL UNDER FOOTING CANNOT BE ATTAINED, THE ENGINEER SHALL BE NOTIFIED FOR THE REDESIGN OF FOOTING.
5. EMBANKMENT CONSTRUCTION SEQUENCE
APPROACH EMBANKMENT SHALL BE CONSTRUCTED PRIOR TO DRIVING OF ABUTMENT PILES.
6. BACKFILLING
BACKFILLING TO STRUCTURE SHALL BE DONE WITH GRANULAR MATERIALS COMPACTED ACCORDING TO SPECIFICATIONS FOR BOX TYPE STRUCTURES, BACKFILLING SHALL BE DONE SIMULTANEOUSLY ON BOTH SIDES AND FOR PILE BENT OR WALL ABUTMENTS, BACKFILLING SHALL BE DONE AFTER ERECTION OF SUPERSTRUCTURE.
7. CONSTRUCTION LIMITS
THE CONTRACTOR SHALL VERIFY AND WORK WITHIN THE CONSTRUCTION LIMITS OR EASEMENTS OF THE BRIDGE STRUCTURE. HE SHALL HOWEVER PROVIDE FOR ALL OTHER AREAS HE MAY REQUIRE FOR HIS OWN USE. IT IS THE INTENT OF THE PLANS TO LEAVE UNDISTURBED EVERYTHING WHICH DOES NOT ADVERSELY AFFECT THE FINISHED WORK. ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE RESTORED TO ITS ORIGINAL CONDITION AS DIRECTED BY THE ENGINEER.

8. SITE PREPARATION
ALL EXISTING PERMANENT WORKS (SUCH AS PAVEMENT CURBS, GUTTERS, RIPRAP, SLOPE PROTECTION WORKS AND ALL OTHER SIMILAR WORKS) WHICH WILL INTERFERE WITH THE WORK SHALL BE COMPLETELY REMOVED AND DISPOSED OFF SITE BY THE CONTRACTOR. ALL SALVAGEABLE MATERIALS SHALL BE PROPERLY AND CAREFULLY DISMANTLED AND DEPOSITED ON A CONVENIENT SITE AS INSTRUCTED BY THE ENGINEER. HOWEVER, IF SUCH PERMANENT WORKS ARE DESIGNATED TO REMAIN BUT IT WILL DEMOLISHED BY THE CONTRACTOR FOR THE NECESSARY PROSECUTION OF THE WORKS, THESE DEMOLISHED PERMANENT WORKS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION.
9. RECONSTRUCTION
IF EXISTING PERMANENT WORKS OR PORTIONS THEREOF ARE DESIGNATED TO REMAIN, THE CONTRACTOR SHALL TAKE PRECAUTION NOT TO DAMAGE OR INJURE THESE WORKS. DAMAGE OR INJURY TO THESE WORKS CAUSED BY THE CONTRACTOR SHALL BE REPAIRED AT HIS OWN EXPENSE.

10. TRAFFIC MANAGEMENT
THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING AND MAINTAINING AN EFFECTIVE TRAFFIC CONTROL PLAN IN ACCORDANCE WITH THE SPECIAL PROVISIONS SUBJECT TO THE APPROVAL OF THE ENGINEER AND THE CORRESPONDING LOCAL AUTHORITIES.
11. WASTE DUMPING AREA
THE WASTE MOUNT AT THE DUMPING AREA SHALL BE TRIMMED TO THE SHAPE AS INDICATED IN THE PLANS AND THE EXCAVATED MATERIALS SHALL BE PROPERLY DISPOSED OF AS DIRECTED BY THE ENGINEER.

12. BORED PILE
THE REQUIRED ULTIMATE BEARING PER BORED PILE SHALL BE AS TABULATED BELOW:

LOCATION	DIAMETER	LENGTH	ULTIMATE BEARING CAPACITY, P _u (KN)
ABUT "A"	1,200	30,000	2,800
ABUT "B"	1,200	30,000	2,800

THE BOTTOM OF THE PILES SHALL BE EMBEDDED AT LEAST THREE (3) TIMES DIAMETER (3D) INTO HARD STRATA WITH AN N-VALUE OF AT LEAST 40 CAPABLE OF DEVELOPING THE REQUIRED ULTIMATE BEARING CAPACITY. IF THE ABOVE CONDITION CANNOT BE MET DURING CONSTRUCTION, THE DESIGNER SHALL BE NOTIFIED FOR ADJUSTMENT OF PILE LENGTH IF NECESSARY.

CROSS HOLE SONIC LOGGING TEST SHALL BE CONDUCTED ON 50% OF THE TOTAL NUMBER OF BORED PILES PER STRUCTURE (AT ABUTMENT) TO VERIFY AND CHECK THE CONCRETE INTEGRITY AND HOMOGENEITY AND TO LOCATE/EVALUATE ANY IRREGULARITY IN THE COMPLETED BORED PILES. THE TEST SHALL BE WITNESSED BY REPRESENTATIVE FROM THE PLANNING AND DESIGN DIVISION AND CONTRACTOR.

HIGH-STRAIN DYNAMIC TEST USING PILE DRIVING ANALYZER (PDA) SHALL BE CONDUCTED ONE (1) AT EACH ABUTMENT TO DETERMINE/CHECK THE ACTUAL BEARING CAPACITY OF THE COMPLETED BORED PILES PRIOR TO CONSTRUCTION OF SIMILAR PILES. THE TESTS SHALL BE WITNESSED BY REPRESENTATIVES FROM THE PLANNING AND DESIGN DIVISION AND CONTRACTOR. THE RESULTS SHALL BE SUBMITTED SUBJECT TO APPROVAL BY THE DESIGNER PRIOR TO CONSTRUCTION OF PILE CAP AND SUPERSTRUCTURE.

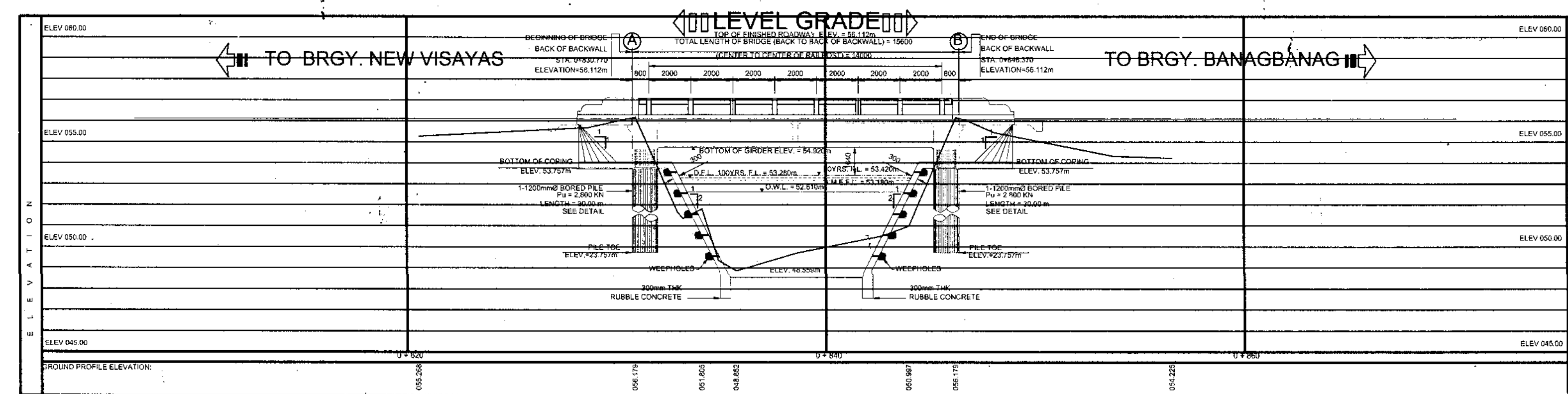
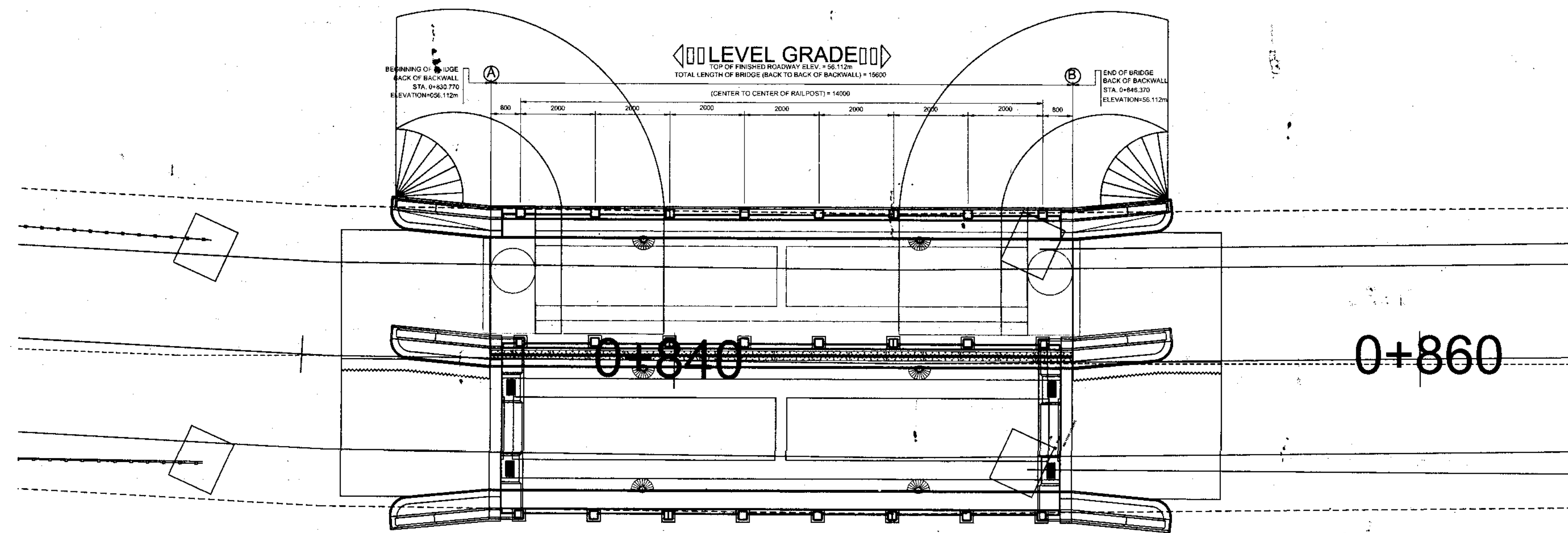
HIGH STRAIN DYNAMIC TEST SHALL BE DONE SUCH THAT THE REQUIRED ULTIMATE BEARING CAPACITY IS MOBILIZED AND/OR THE MAXIMUM PERMANENT PILE SET OF D120 IS REACHED. HAMMER WEIGHT OF ABOUT 1.5 TO 2.0 THE REQUIRED ULTIMATE CAPACITY OF BORED PILES SHALL BE USED AND DROPPED FROM GRADUAL HEIGHT INCREASE. COMPLETE PILE TESTS RESULTS INCLUDING TABULATED RESULT OF ALL BLOWS, CAPWAP ANALYSIS AND RECOMMENDATIONS SHALL BE SUBMITTED BY THE PILE TEST CONTRACTOR.

13. AS STAKED PLAN
BEFORE THE START OF ACTUAL CONSTRUCTION, THE "AS-STAKED" PLAN SHOULD BE SUBMITTED TO THE PROVINCIAL ENGINEERING OFFICE IN ORDER THAT IMMEDIATE STEPS MAY BE TAKEN TO CORRECT OR ADJUST WHATEVER APPRECIABLE DEVIATION THERE MAY BE FROM THE ORIGINAL PLAN.

JOAN ABRAM JR. T.
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NO OBJECTION

REPUBLIC OF THE PHILIPPINES DEPARTMENT OF AGRICULTURE "PHILIPPINE RURAL DEVELOPMENT PROJECT SCALE UP" PROVINCE OF DAVAO DE ORO MUNICIPALITY OF MONTEVISTA & NABUNTURAN	PROJECT NO.:	PRDP-SU-IB-R011-DDO-004-000-000-2023-FMB	PREPARED BY:	DESIGNED BY:	CHECKED & REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED:	SHEET CONTENTS:	SHEET NO.
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LOCATION:	MONTEVISTA AND NABUNTURAN, DAVAO DE ORO								



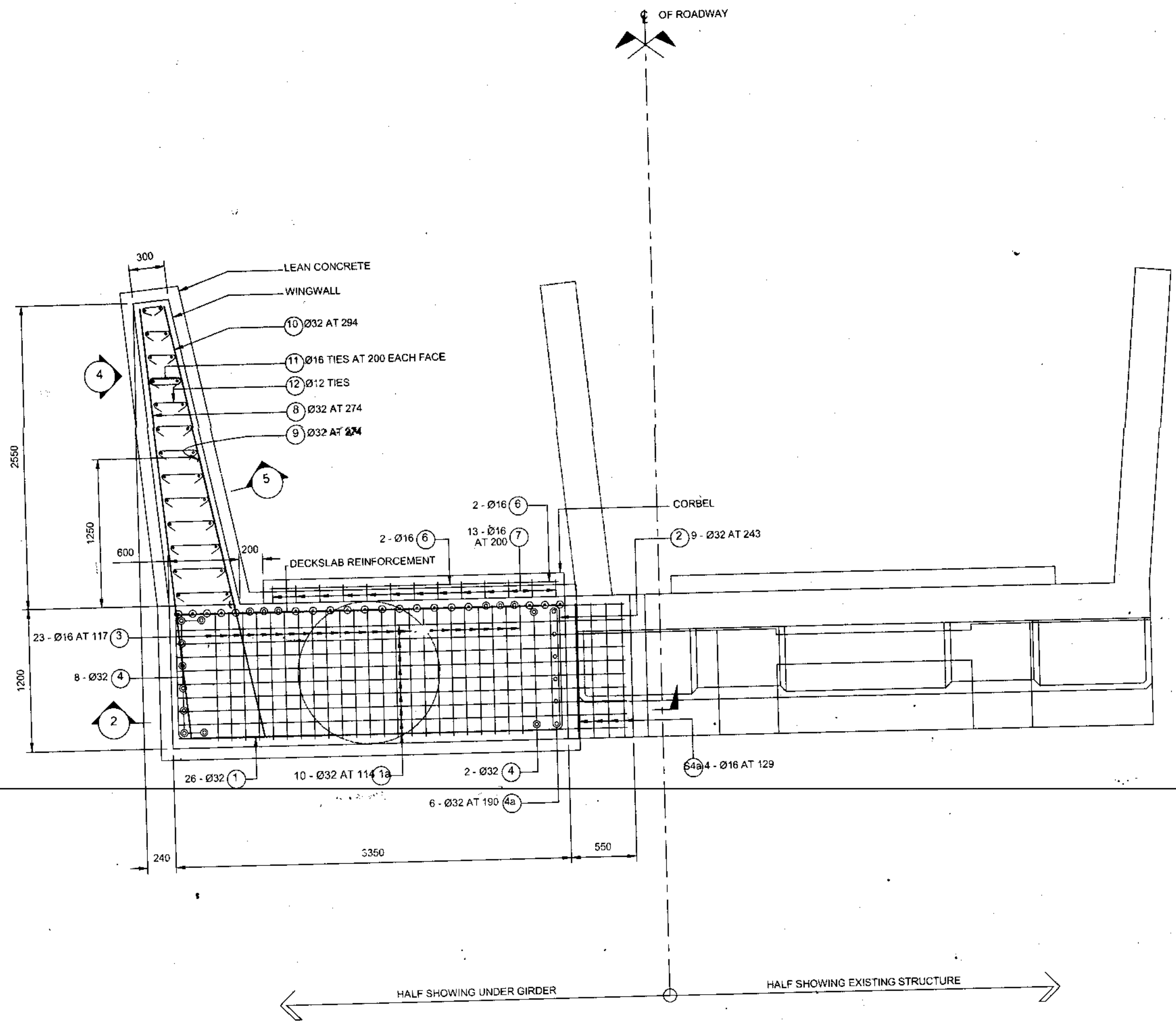
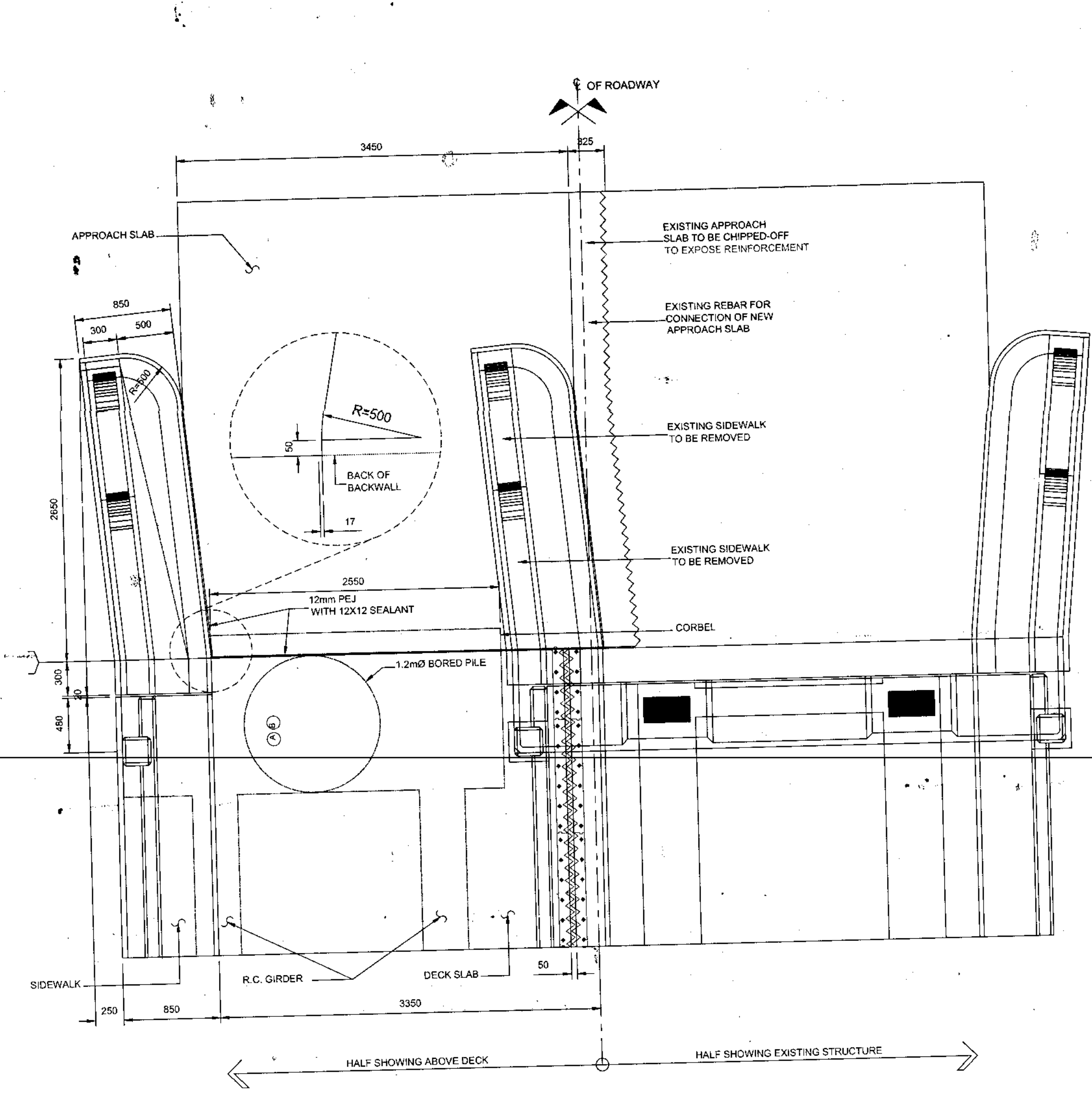
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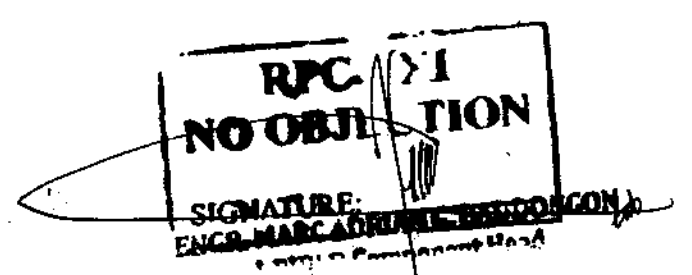
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ALICIA M. GRACIADAS

REPUBLIC OF THE PHILIPPINES DEPARTMENT OF AGRICULTURE "PHILIPPINE RURAL DEVELOPMENT PROJECT SCALE UP" PROVINCE OF DAVAO DE ORO MUNICIPALITY OF MONTEVISTA & NABUNTURAN	PROJECT NO.:	PRDP-SU-IB-R011-DDO-004-000-000-2023-FMB	PREPARED BY:	DESIGNED BY:	CHECKED & REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED:	SHEET CONTENTS:	SHEET NO.
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LOCATION:	MONTEVISTA AND NABUNTURAN, DAVAO DE ORO								

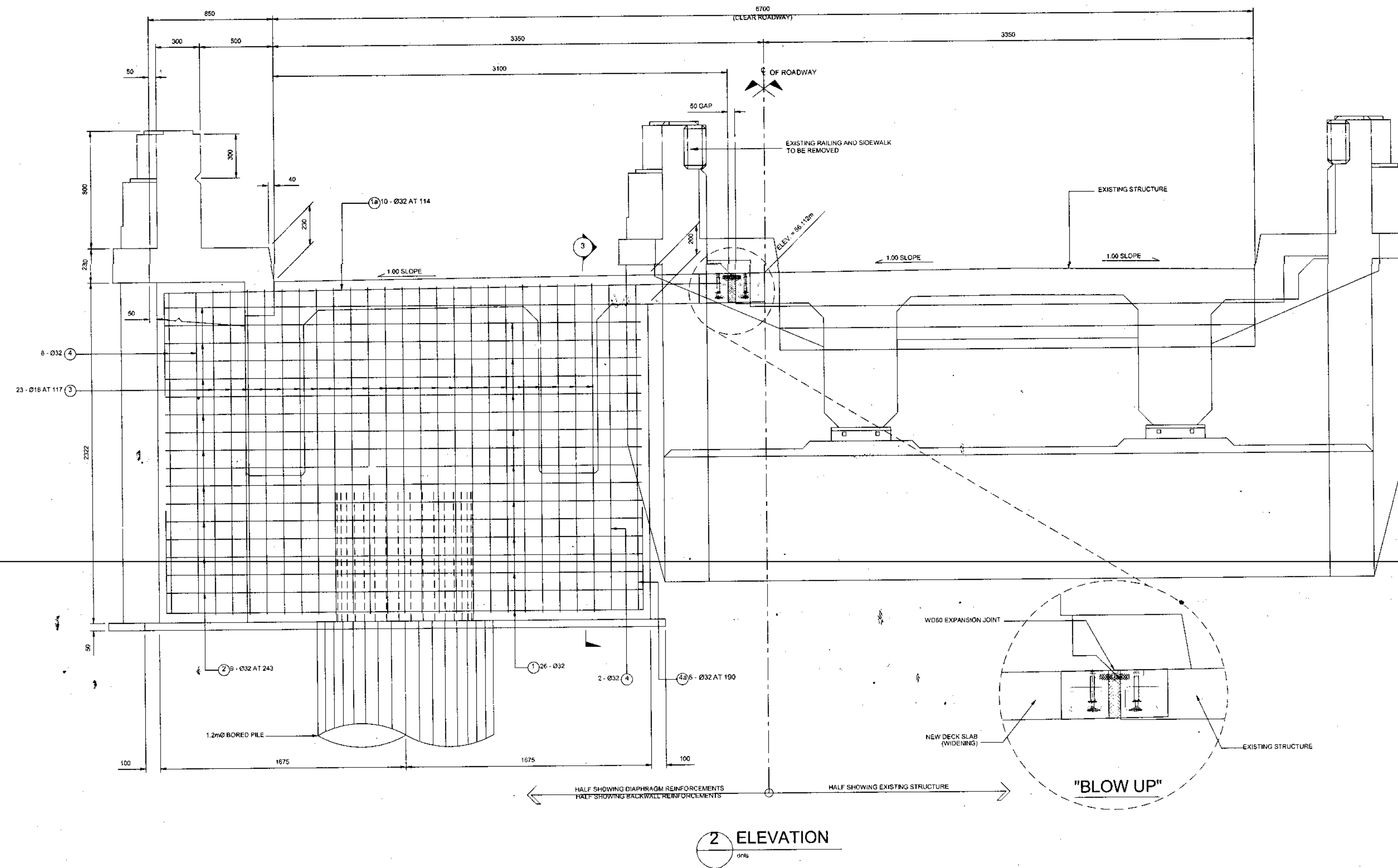


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	LOCATION:	MONTEVISTA AND NABUNTURAN, DAVAO DE ORO							78

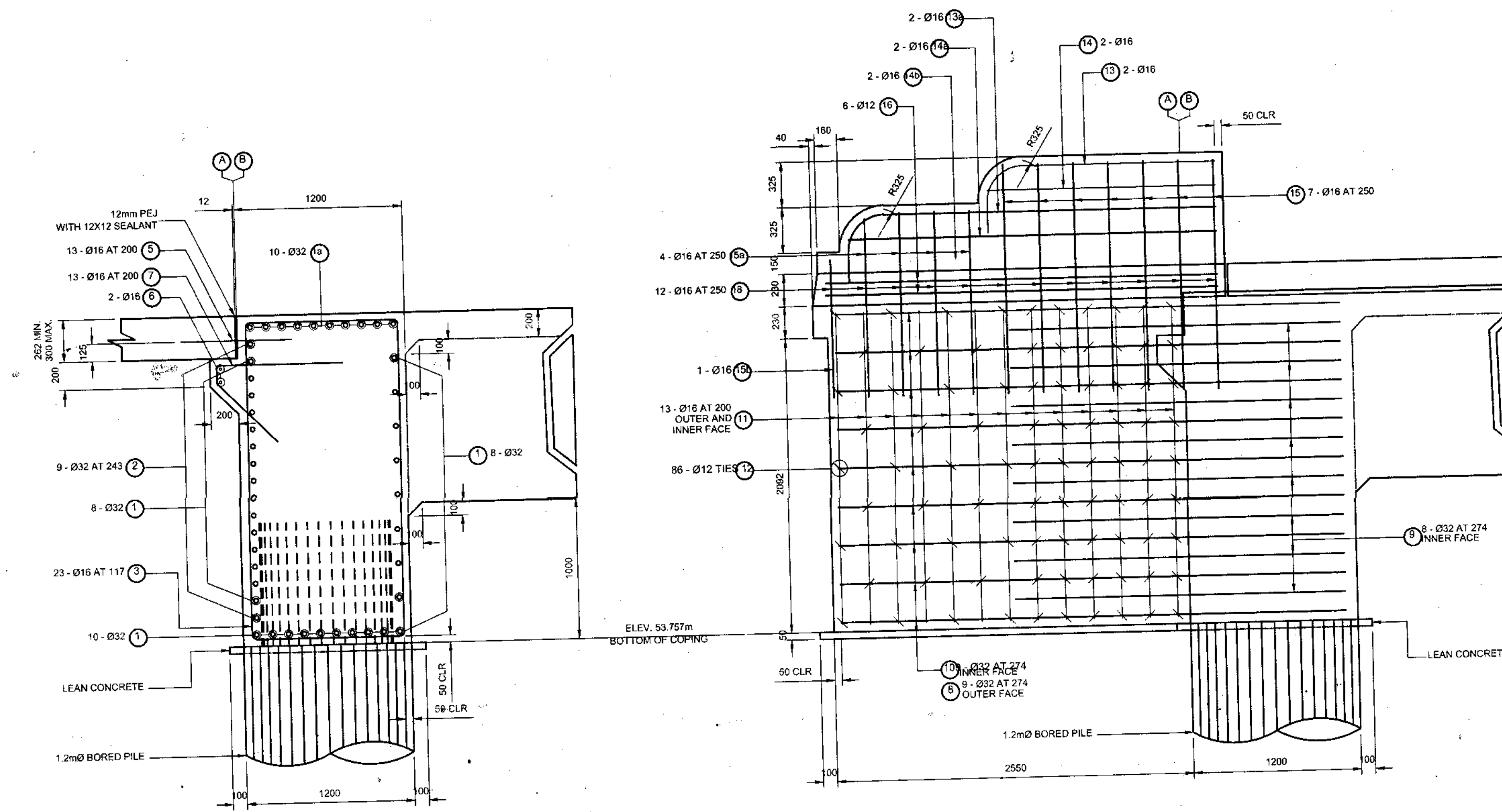


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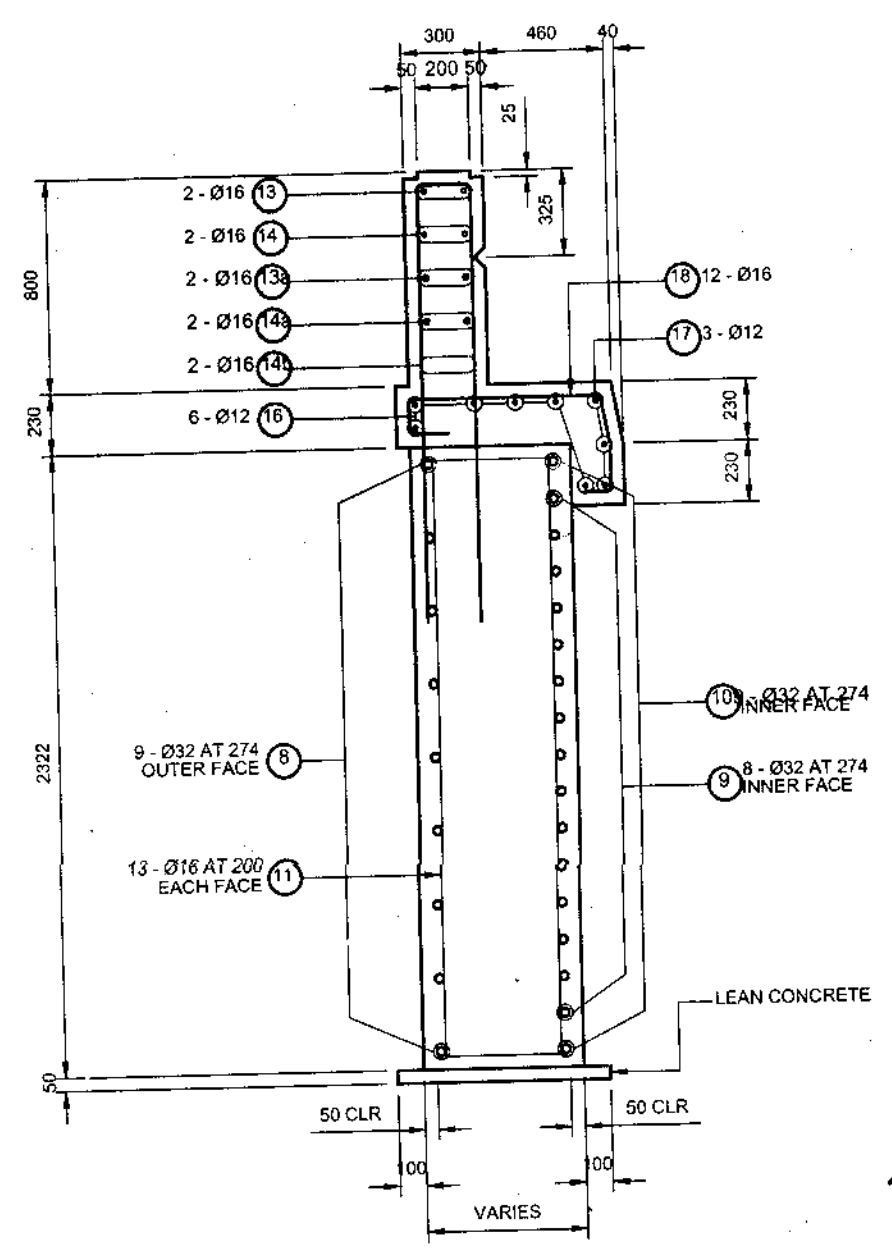
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REPUBLIC OF THE PHILIPPINES DEPARTMENT OF AGRICULTURE "PHILIPPINE RURAL DEVELOPMENT PROJECT SCALE UP" PROVINCE OF DAVAO DE ORO MUNICIPALITY OF MONTEVISTA & NABUNTURAN	PROJECT NO.:	PRDP-SU-IB-R011-DDO-004-000-000-2023-FMB	PREPARED BY:	DESIGNED BY:	CHECKED & REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED:	SHEET NO. <i>29</i>	SHEET NO.
	SUBPROJECT TITLE:	REHABILITATION OF NEW VISAYAS - BANAGBANAG, MONTEVISTA TO MAGADING, NABUNTURAN ROAD WITH EXPANSION OF EXISTING BRIDGE	<i>[Signature]</i> EDWIN S. SALUDES PLANNING & DESIGN DIVISION CHIEF	<i>[Signature]</i> RONNIE S. APARRI ENGINEER II	<i>[Signature]</i> RODERICK M. DIGAMON PROVINCIAL ENGINEER	<i>[Signature]</i> ALICIA M. GRACIADAS CO-PPMIU	<i>[Signature]</i> DOROTHY P. MONTEJO GONZAGA GOVERNOR	AS STATED	78
LOCATION:	MONTEVISTA AND NABUNTURAN, DAVAO DE ORO								

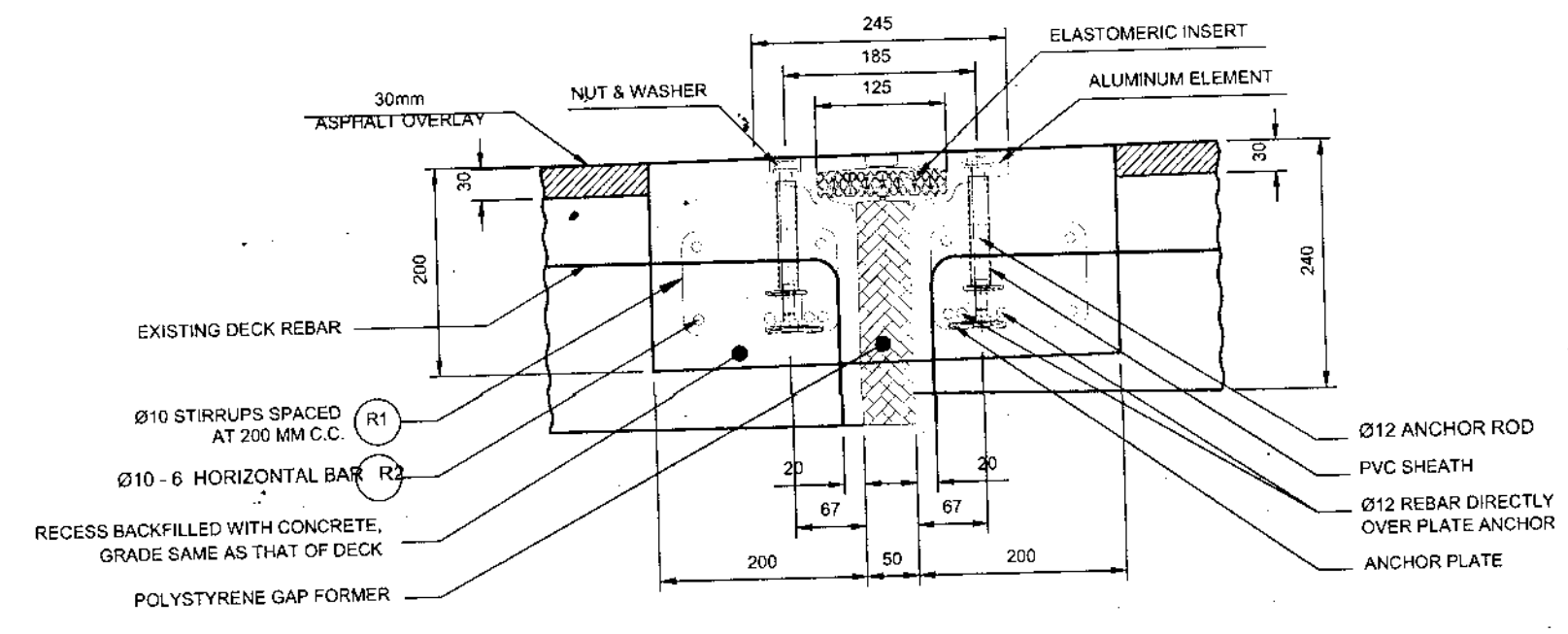


3 SECTION
SCALE NTS

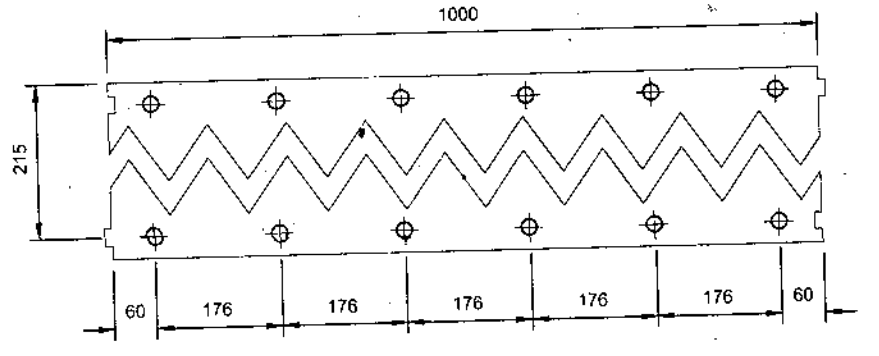
4 SECTION
SCALE NTS



5 ELEVATION OF WINGWALL
SCALE NTS



6 CIPEC Wd60 EXPANSION JOINT (LONGITUDINAL)
SCALE NTS



6a PLAN OF Wd 60 ELEMENT
SCALE NTS

EXPANSION JOINT SCHEDULE

LOCATION	LENGTH (LM)	TYPE
SPAN 1 (E1)	15.60	FINGER TYPE

RPC XI
NO OBJECTION

TUNA, ABRAHAM JR. T.
SEAD P-000-914-A

REPUBLIC OF THE PHILIPPINES DEPARTMENT OF AGRICULTURE "PHILIPPINE RURAL DEVELOPMENT PROJECT SCALE UP" PROVINCE OF DAVAO DE ORO MUNICIPALITY OF MONTEVISTA & NABUNTURAN	PROJECT NO.:	PRDP-SU-IB-R011-DDO-004-000-000-2023-FMB	PREPARED BY:	DESIGNED BY:	CHECKED & REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED:	SHEET CONTENTS	SHEET NO.
	SUBPROJECT TITLE:	REHABILITATION OF NEW VISAYAS - BANAGBANAG, MONTEVISTA TO MAGADING, NABUNTURAN ROAD WITH EXPANSION OF EXISTING BRIDGE	EDWIN S. SALUDES PLANNING & DESIGN DIVISION CHIEF	RONNIE S. APARRI ENGINEER II	RODERICK M. DIGAMON PROVINCIAL ENGINEER	ALICIA M. GRACIADAS CO-PPMIU	DOROTHY P. MONTEJO-GONZAGA GOVERNOR	AS STATED	30
	LOCATION:	MONTEVISTA AND NABUNTURAN, DAVAO DE ORO							78

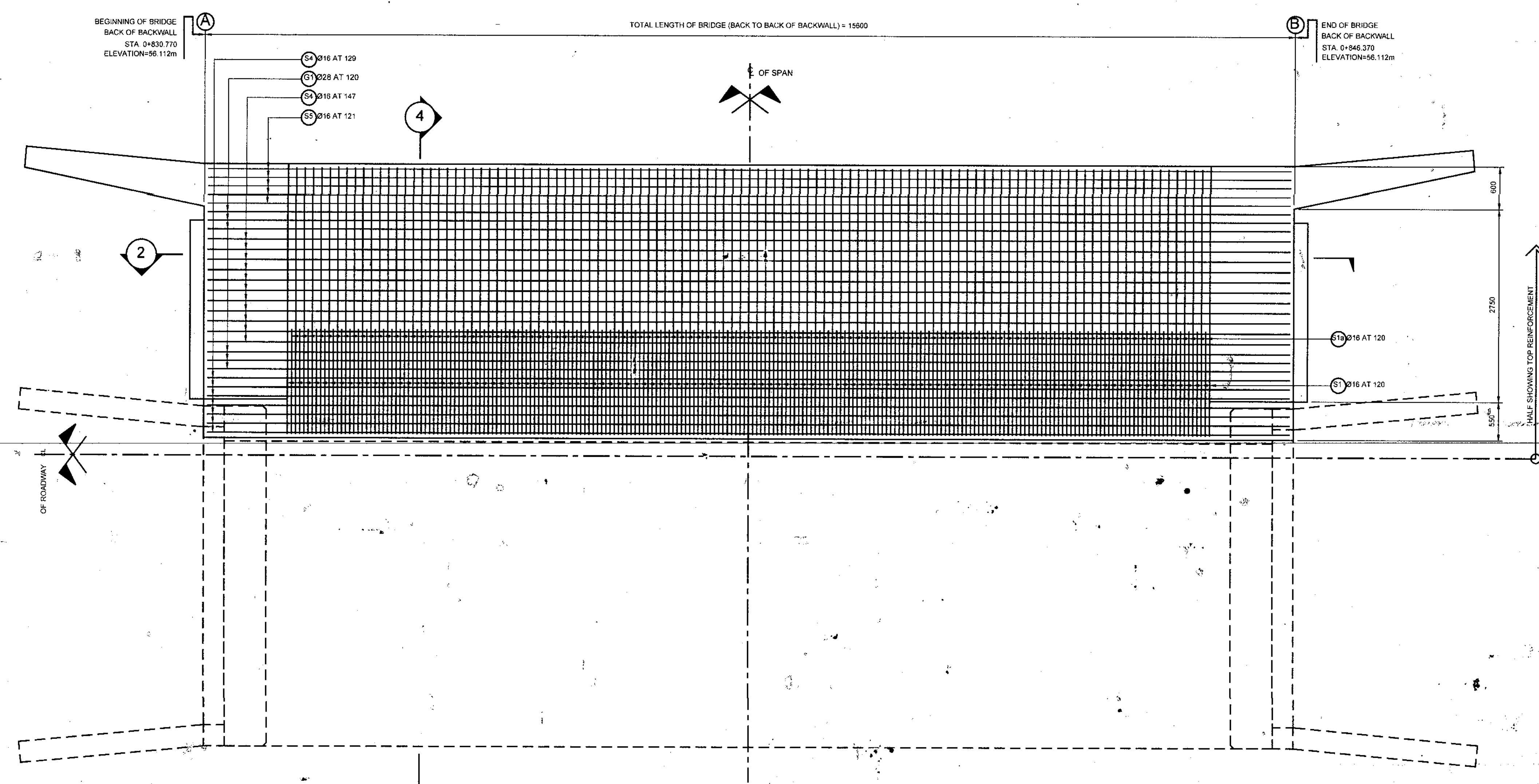
REINFORCEMENT SCHEDULE AND ESTIMATED QUANTITIES FOR ONE(1) ABUTMENT

BAR BENDING DIAGRAM	STRUCTURE COMPONENT	CONCRETE VOLUME (m ³)	LOCATION	MARK	SIZE (mm Ø)	QTY.	SPACING (mm)	SHAPE	REINFORCEMENT BAR DIMENSIONS (mm)						LENGTH PER BAR (m)	TOTAL LAP LENGTH (m)	TOTAL (L) PER BAR (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kgm)	TOTAL WEIGHT (kg)	REMARKS		
									a	b	c	d	e	f									
									<div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%; text-align: center;"> <p>A</p> </div> <div style="width: 50%; text-align: center;"> <p>E</p> </div> <div style="width: 50%; text-align: center;"> <p>B</p> </div> <div style="width: 50%; text-align: center;"> <p>F</p> </div> <div style="width: 50%; text-align: center;"> <p>C</p> </div> <div style="width: 50%; text-align: center;"> <p>G</p> </div> <div style="width: 50%; text-align: center;"> <p>D</p> </div> <div style="width: 50%; text-align: center;"> <p>H</p> </div> </div>														
ABUTMENT	9.52	COPING BACKWALL	1	32	20	AS SHOWN	⊙	700	3,250	-	-	-	-	-	-	4,650	-	4,650	120.90	6,313	763	LAP LENGTH IS COMPUTED BASED ON 12M COMMERCIAL LENGTH OF RSB	
			1a	32	10	114	⊙	700	3,800	-	-	-	-	-	-	4,500	-	4,500	45.00	6,313	284		
			2	32	9	243	⊙	700	3,250	-	-	-	-	-	-	4,650	-	4,650	41.85	6,313	284		
			3	16	23	117	⊙	2,253	1,088	195	-	-	-	-	-	7,072	-	7,072	182.66	1,579	257		
			4	32	10	AS SHOWN	⊙	2,197	AVE.	-	-	-	-	-	-	2,197	AVE.	2,200	21.97	6,313	139		
			4a	32	8	190	⊙	700	2,214	-	-	-	-	-	-	2,914	-	2,914	17.48	6,313	110		
			5	16	13	200	⊙	800	-	-	-	-	-	-	-	0,800	-	0,800	10.40	1,579	16		
			6	16	2	AS SHOWN	⊙	2,450	-	-	-	-	-	-	-	2,450	-	2,450	4.90	1,579	8		
			7	16	13	200	⊙	900	130	600	-	-	-	-	-	1,630	-	1,630	21.19	1,579	33		
																		SUB-TOTAL		1,874.00			
																		GRADE 40		314.00			
																		GRADE 60		1,560.00			
																		SUB-TOTAL		241			
		2.74	WINGWALL	8	32	9	274	⊙	600	3,639	-	-	-	-	-	4,239	-	4,24	38.15	6,313	241		
				9	32	8	274	⊙	600	2,420	-	-	-	-	-	3,020	-	3,02	24.16	6,313	153		
				10	32	9	294	⊙	600	3,722	-	-	-	-	-	4,322	-	4,32	38.90	6,313	246		
				11	16	13	200	⊙	284	AVE.	2,974	-	-	-	-	6,516	AVE.	6,52	84.71	1,579	134		
				12	12	86	AS SHOWN	⊙	170	335	AVE.	170	-	-	-	0,675	AVE.	0,68	58.05	0,888	52		
																		SUB-TOTAL		626.00			
																		GRADE 40		186.00			
																		GRADE 60		640.00			
																		SUB-TOTAL		6			
		0.42	RAILING	13	16	2	AS SHOWN	⊙	1,375	407	218	-	-	-	-	2,000	-	2,00	4.00	1,579	6		
				13a	16	2	AS SHOWN	⊙	2,375	407	218	-	-	-	-	3,000	-	3,00	6.00	1,579	9		
				14	16	2	AS SHOWN	⊙	1,835	-	-	-	-	-	-	1,835	-	1,84	3.27	1,579	5		
				14a	16	2	AS SHOWN	⊙	2,835	-	-	-	-	-	-	2,835	-	2,84	5.27	1,579	8		
				14b	16	2	AS SHOWN	⊙	2,810	-	-	-	-	-	-	2,810	-	2,81	5.62	1,579	9		
				15	16	7	250	⊙	2,484	672	-	-	-	-	-	5,640	-	5,64	39.48	1,579	62		
				15a	16	4	250	⊙	1,296	AVE.	200	-	-	-	-	2,791	AVE.	2,79	11.16	1,579	18		
				15b	16	4	250	⊙	990	200	-	-	-	-	-	2,180	-	2,18	2.18	1,579	3		
																		SUB-TOTAL		120.00			
																		GRADE 40		120.00			
																		GRADE 60		-			
		0.64	SIDEWALK	16	12	6	AS SHOWN	⊙	2,811	AVE.	-	-	-	-	-	2,811	AVE.	2,81	16.86	0,888	15		
				17	12	3	AS SHOWN	⊙	2,484	672	300	-	-	-	-	3,456	-	3,46	10.37	0,888	9		
				18	16	12	250	⊙	150	190	718	187	176	100	1,461	-	1,46	17.53	1,579	28			
																		SUB-TOTAL		52.00			
																		GRADE 40		52.00			
																		GRADE 60		-			
																		GRAND TOTAL		2,872.00			
																		GRADE 40		672.00			
																		GRADE 60		2,200.00			

TUNA, ABRAHAM JA. T.
SENO 17-0102-914-A

NO OBJECTION
SIGNATURE:

<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF AGRICULTURE "PHILIPPINE RURAL DEVELOPMENT PROJECT SCALE UP" PROVINCE OF DAVAO DE ORO MUNICIPALITY OF MONTEVISTA & NABUNTURAN</p>	PROJECT NO.:	PRDP-SU-IB-R011-DDO-004-000-000-2023-FMB	PREPARED BY:	DESIGNED BY:	CHECKED & REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED:	SHEET CONTENTS:	SHEET NO.:
	SUBPROJECT TITLE:	REHABILITATION OF NEW VISAYAS - BANAGBANAG, MONTEVISTA TO MAGADING, NABUNTURAN ROAD WITH EXPANSION OF EXISTING BRIDGE	EDWIN S. SALUDES PLANNING & DESIGN DIVISION CHIEF	RONNIE S. APARRI ENGINEER II	RODERICK M. DIGAMON PROVINCIAL ENGINEER	ALICIA M. GRACIADAS CO-PPMIU	DOROTHY P. MONTEJO GONZAGA GOVERNOR	AS STATED	31
	LOCATION:	MONTEVISTA AND NABUNTURAN, DAVAO DE ORO							78

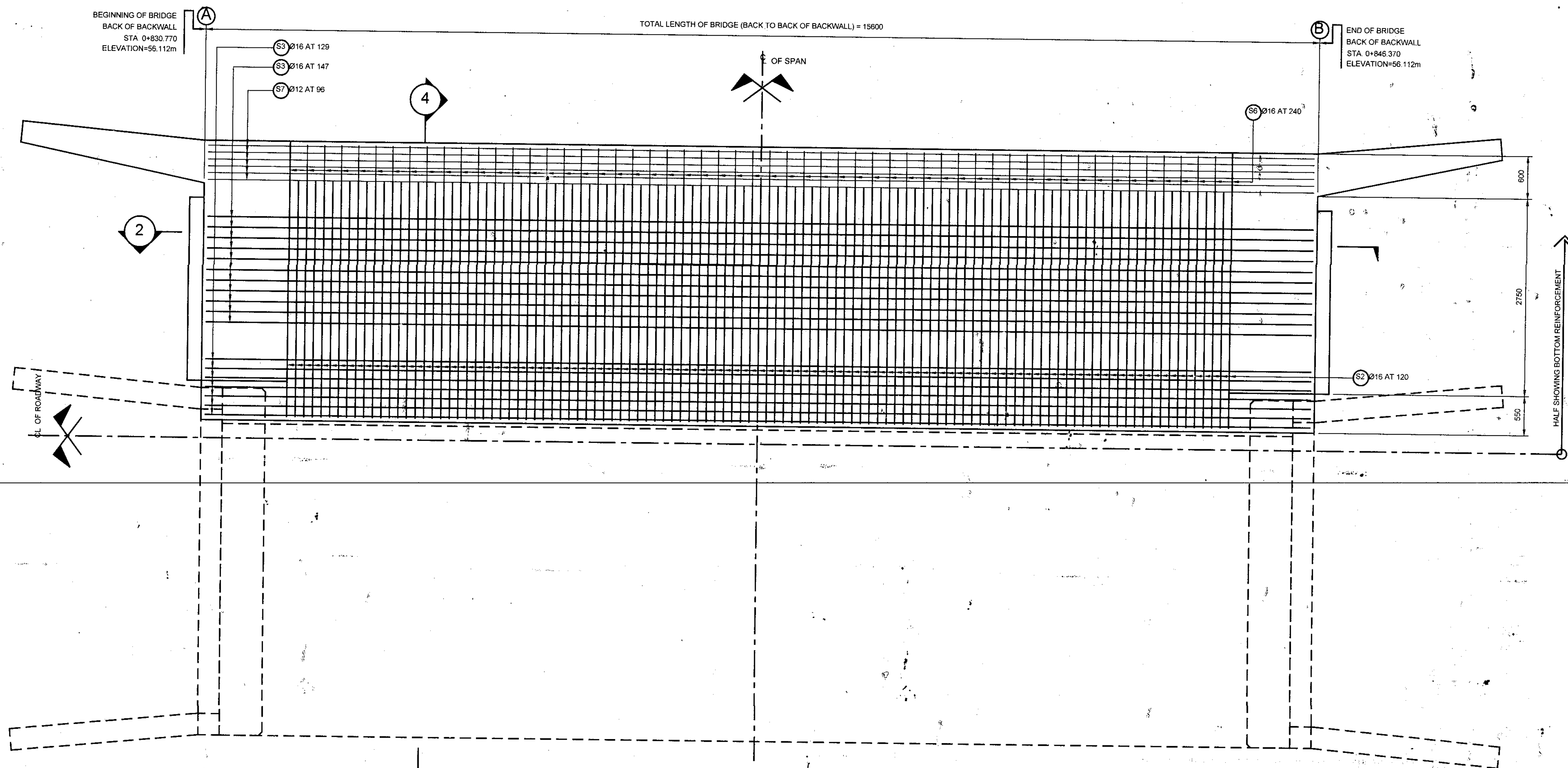


1 FRAMING PLAN (TOP REINFORCEMENT)
SCALE 1:35

TUNA, ABRAHAM JR. T
SEAD 12-0102-914 - A

RPC
NO OBJECTION
SIGNATURE: *[Signature]*

	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF AGRICULTURE "PHILIPPINE RURAL DEVELOPMENT PROJECT SCALE UP" PROVINCE OF DAVAO DE ORO MUNICIPALITY OF MONTEVISTA & NABUNTURAN	PROJECT NO.: PRDP-SU-IB-R011-DDO-004*000-000-2023-FMB	PREPARED BY: <i>[Signature]</i> EDWIN S. SALUDES PLANNING & DESIGN DIVISION CHIEF	DESIGNED BY: <i>[Signature]</i> RONNIE S. APARRI ENGINEER II	CHECKED & REVIEWED BY: <i>[Signature]</i> RODERICK M. DIGAMON PROVINCIAL ENGINEER	RECOMMENDING APPROVAL: <i>[Signature]</i> ALICIA M. GRACIADAS CO-PPMIU	APPROVED: <i>[Signature]</i> DOROTHY P. MONTE GONZAGA GOVERNOR	SHEET CONTENTS: AS STATED	SHEET NO. 32 / 78
	SUBPROJECT TITLE: REHABILITATION OF NEW VISAYAS - BANAGBANAG, MONTEVISTA TO MAGADING, NABUNTURAN ROAD WITH EXPANSION OF EXISTING BRIDGE	LOCATION: *MONTEVISTA AND NABUNTURAN, DAVAO DE ORO							



1 FRAMING PLAN (BOTTOM REINFORCEMENT)
SCALE 1:30

TUNAY, ABRAHAM JR., T.
SEAD 13-0102414-A

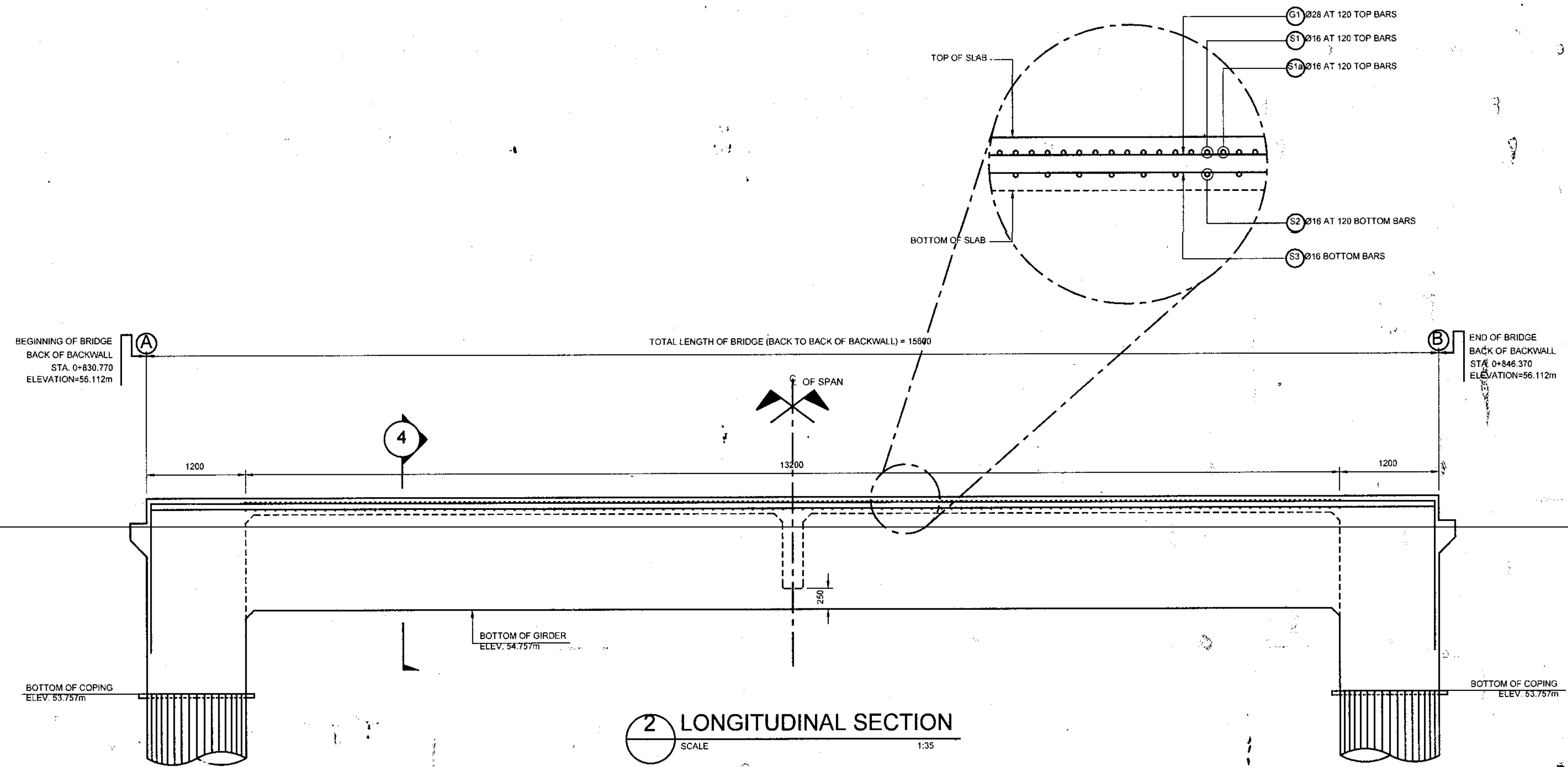
RPC
NO OBJECTION

SIGNATURE
MARICABLANCO, EDUARDO
Project Engineer Head

SHEET CONTENTS:

SHEET NO.

	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF AGRICULTURE "PHILIPPINE RURAL DEVELOPMENT PROJECT SCALE UP" PROVINCE OF DAVAO DE ORO MUNICIPALITY OF MONTEVISTA & NABUNTURAN	PROJECT NO.: PRDP-SU-IB-R011-DDO-004-000-000-2023-FMB	PREPARED BY: EDWIN S. SALUDES PLANNING & DESIGN DIVISION CHIEF	DESIGNED BY: RONNIE S. APARRI ENGINEER II	CHECKED & REVIEWED BY: RODERICK M. DIGAMON PROVINCIAL ENGINEER	RECOMMENDING APPROVAL: ALICIA M. GRACIADAS CO-PPMIU	APPROVED: DOROTHY P. MONTEJOGONZAGA GOVERNOR	AS STATED	SHEET NO. 33 / 78	
	SUBPROJECT TITLE: REHABILITATION OF NEW VISAYAS - BANAGBANAG, MONTEVISTA TO MAGADING, NABUNTURAN ROAD WITH EXPANSION OF EXISTING BRIDGE	LOCATION: MONTEVISTA AND NABUNTURAN, DAVAO DE ORO								
	SIGNATURE: _____ PROJECT ENGINEER HEAD									



TOWA, ASABAH JR. T.
SERVO 19-0102914-A

RPC
NO OBJECTION
SIGNATURE: *[Signature]*
ENGR. MANCABING BADDONCO

	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF AGRICULTURE "PHILIPPINE RURAL DEVELOPMENT PROJECT SCALE UP" PROVINCE OF DAVAO DE ORO MUNICIPALITY OF MONTEVISTA & NABUNTURAN	PROJECT NO.:	PRDP-SU-IB-R011-DDO-004-000-000-2023-FMB	PREPARED BY:	DESIGNED BY:	CHECKED & REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED:	SHEET CONTENTS:	SHEET NO.
		SUBPROJECT TITLE:	REHABILITATION OF NEW VISAYAS - BANAGBANAG, MONTEVISTA TO MAGADING, NABUNTURAN ROAD WITH EXPANSION OF EXISTING BRIDGE	 EDWIN S. SALUDES PLANNING & DESIGN DIVISION CHIEF	 RONNIE S. APARRI ENGINEER II	 RODERICK M. DIGAMON PROVINCIAL ENGINEER	 ALICIA M. GRACIADAS CO-PPMIU	 DOROTHY P. MONTEJO GONZAGA GOVERNOR	AS STATED	34
		LOCATION:	MONTEVISTA AND NABUNTURAN, DAVAO DE ORO							