

JAPAN INTERNATIONAL COOPERATION AGENCY(JICA)

DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS  
REPUBLIC OF THE PHILIPPINES

**THE STUDY ON ROAD NETWORK IMPROVEMENT  
FOR DEVELOPMENT OF REGIONAL GROWTH CENTERS  
IN THE REPUBLIC OF THE PHILIPPINES**

**VOLUME-5**

**PRELIMINARY DESIGN DRAWINGS**

**METRO BACOLOD**

**NEW AIRPORT ACCESS ROAD  
SUGAR ROAD (NORTH)**



**October 2004**

**KATAHIRA & ENGINEERS INTERNATIONAL  
ALMEC CORPORATION**

<b>SD</b>
<b>JR</b>
<b>04-33</b>

**JAPAN INTERNATIONAL COOPERATION AGENCY(JICA)**

**DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS  
REPUBLIC OF THE PHILIPPINES**

**THE STUDY ON ROAD NETWORK IMPROVEMENT  
FOR DEVELOPMENT OF REGIONAL GROWTH CENTERS  
IN THE REPUBLIC OF THE PHILIPPINES**

**VOLUME-5**

**PRELIMINARY DESIGN DRAWINGS**

**METRO BACOLOD**

**NEW AIRPORT ACCESS ROAD  
SUGAR ROAD (NORTH)**

**October 2004**

**KATAHIRA & ENGINEERS INTERNATIONAL  
ALMEC CORPORATION**



1177857【8】



DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS  
REPUBLIC OF THE PHILIPPINES

**THE STUDY ON ROAD NETWORK IMPROVEMENT  
FOR DEVELOPMENT OF REGIONAL GROWTH CENTERS  
IN THE REPUBLIC OF THE PHILIPPINES**

**VOLUME - 5**

**PRELIMINARY DESIGN DRAWINGS  
METRO BACOLOD ROAD NETWORK**

**NEW AIRPORT ACCESS ROAD  
SUGAR ROAD (NORTH)**

**KATAHIRA & ENGINEERS INTERNATIONAL**

*in association with*

**ALMEC CORPORATION**

# INDEX OF DRAWINGS

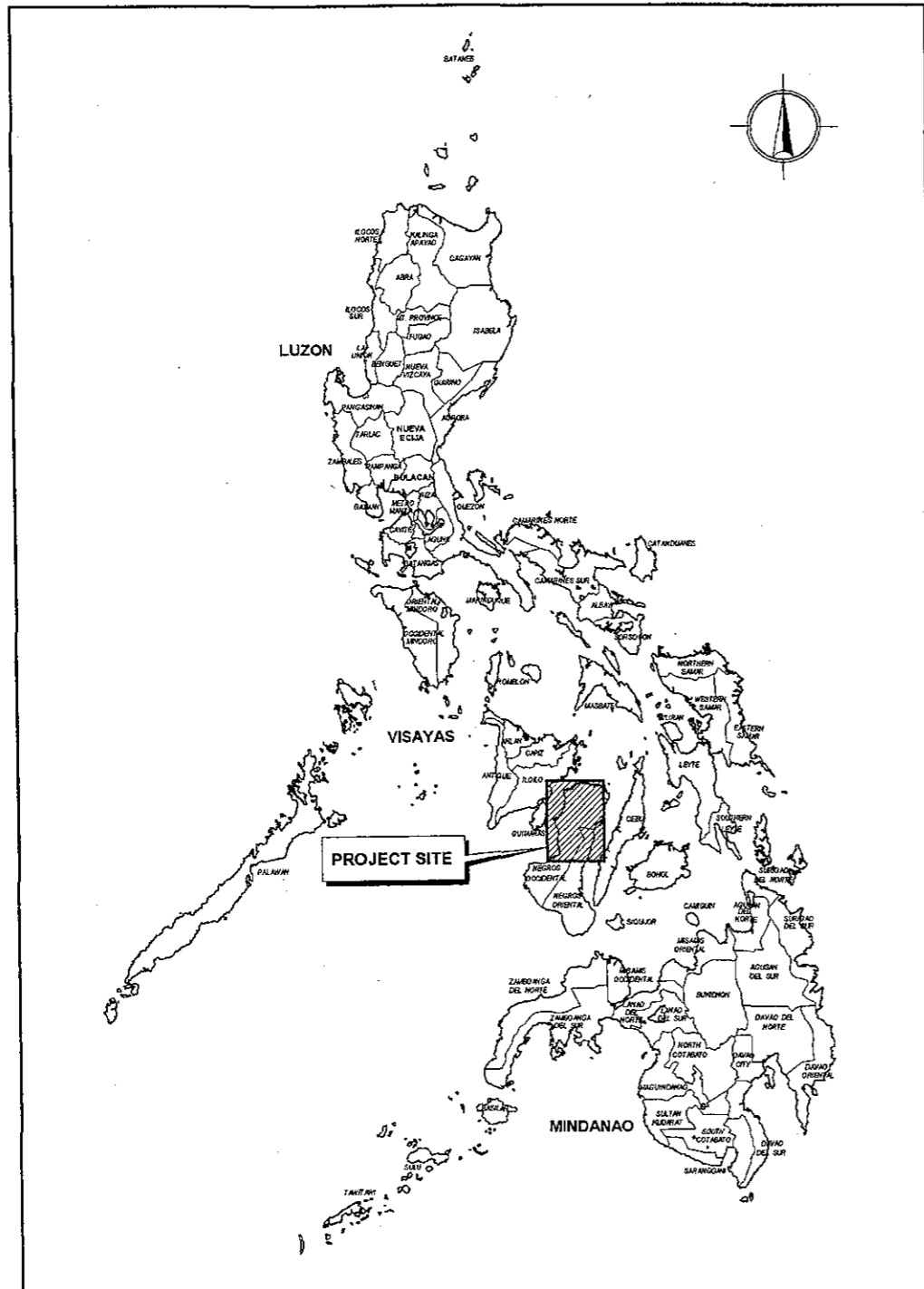
NO.	SHEET CONTENTS	DWG. NO.	NO.	SHEET CONTENTS	DWG. NO.	NO.	SHEET CONTENTS	DWG. NO.
	<b>GENERAL</b>		30	BRIDGE NO. A3, GENERAL PLAN ELEVATION AND SECTIONS	B-5	62	PLAN AND PROFILE STA. 23+900 TO STA. 24+700	R-31
1	INDEX OF DRAWINGS	G-1	31	BRIDGE NO. A5, GENERAL PLAN ELEVATION AND SECTIONS	B-6	64	PLAN AND PROFILE STA. 24+700 TO STA. 25+500	R-32
2	KEY MAP AND VICINITY MAP	G-2				65	PLAN AND PROFILE STA. 25+500 TO STA. 26+300	R-33
3	LEGEND, SYMBOLS AND ABBREVIATIONS	G-3				66	PLAN AND PROFILE STA. 26+300 TO STA. 27+100	R-34
4	SUMMARY OF QUANTITIES, AIRPORT ACCESS ROAD	G-4 (1)				67	PLAN AND PROFILE STA. 27+100 TO STA. 27+900	R-35
5	SUMMARY OF QUANTITIES, SUGAR ROAD (TOTAL)	G-4 (2a)		<b>BACOLOD SUGAR ROAD (NORTH)</b> HIGHWAY DRAWINGS		68	PLAN AND PROFILE STA. 27+900 TO STA. 28+700	R-36
6	SUMMARY OF QUANTITIES, SUGAR ROAD (PACKAGE 1)	G-4 (2b)				69	PLAN AND PROFILE STA. 28+700 TO STA. 29+500	R-37
7	SUMMARY OF QUANTITIES, SUGAR ROAD (PACKAGE 2)	G-4 (2c)	32	PLAN AND PROFILE STA. 0+000 TO STA. 0+700	R-1	70	PLAN AND PROFILE STA. 29+500 TO STA. 30+300	R-38
	<b>AIRPORT ACCESS ROAD</b> HIGHWAY DRAWINGS		33	PLAN AND PROFILE STA. 0+700 TO STA. 1+500	R-2	71	PLAN AND PROFILE STA. 30+300 TO STA. 31+100	R-39
8	PLAN AND PROFILE STA. 0+000 TO 0+700	R-1	34	PLAN AND PROFILE STA. 1+500 TO STA. 2+300	R-3	72	PLAN AND PROFILE STA. 31+100 TO STA. 31+900	R-40
9	PLAN AND PROFILE STA. 0+700 TO 1+500	R-2	35	PLAN AND PROFILE STA. 2+300 TO STA. 3+100	R-4	73	PLAN AND PROFILE STA. 31+900 TO STA. 32+700	R-41
10	PLAN AND PROFILE STA. 1+500 TO 2+300	R-3	36	PLAN AND PROFILE STA. 3+100 TO STA. 3+900	R-5	74	PLAN AND PROFILE STA. 32+700 TO STA. 33+500	R-42
11	PLAN AND PROFILE STA. 2+300 TO 3+100	R-4	37	PLAN AND PROFILE STA. 3+900 TO STA. 4+700	R-6	75	PLAN AND PROFILE STA. 33+500 TO STA. 34+043.64	R-43
12	PLAN AND PROFILE STA. 3+100 TO 3+900	R-5	38	PLAN AND PROFILE STA. 4+700 TO STA. 5+500	R-7	76	TYPICAL ROAD SECTIONS (1 OF 2)	R-44
13	PLAN AND PROFILE STA. 3+900 TO 4+700	R-6	39	PLAN AND PROFILE STA. 5+500 TO STA. 6+300	R-8	77	TYPICAL ROAD SECTIONS (2 OF 2)	R-45
14	PLAN AND PROFILE STA. 4+700 TO 5+500	R-7	40	PLAN AND PROFILE STA. 6+300 TO STA. 7+100	R-9	78	INT. DETAILS WITH BACOLOD CITY-MURCIA ROAD	R-46
15	PLAN AND PROFILE STA. 5+500 TO 6+300	R-8	41	PLAN AND PROFILE STA. 7+100 TO STA. 7+900	R-10	79	INT. DETAILS WITH BACOLOD CITY-GRANADA ROAD	R-47
16	PLAN AND PROFILE STA. 6+300 TO 7+100	R-9	42	PLAN AND PROFILE STA. 7+900 TO STA. 8+700	R-11	80	INT. DETAILS WITH BACOLOD COASTAL ROAD	R-48
17	PLAN AND PROFILE STA. 7+100 TO 7+900	R-10	43	PLAN AND PROFILE STA. 8+700 TO STA. 9+500	R-12	81	INTERSECTION DETAILS WITH MINOR ROADS, TYPE P	R-49
18	PLAN AND PROFILE STA. 7+900 TO 8+700	R-11	44	PLAN AND PROFILE STA. 9+500 TO STA. 10+300	R-13		INTERSECTION DETAILS WITH MINOR ROADS, TYPE Q	R-50
19	PLAN AND PROFILE STA. 8+700 TO 9+500	R-12	45	PLAN AND PROFILE STA. 10+300 TO STA. 11+100	R-14		<b>BRIDGE DRAWINGS</b>	
20	PLAN AND PROFILE STA. 9+500 TO 10+117.285	R-13	46	PLAN AND PROFILE STA. 11+100 TO STA. 11+900	R-15			
21	TYPICAL ROAD SECTIONS (1 OF 2)	R-14	47	PLAN AND PROFILE STA. 11+900 TO STA. 12+700	R-16	82	LOCATION PLAN AND BRIDGE LIST	B-1
22	TYPICAL ROAD SECTIONS (2 OF 2)	R-15	48	PLAN AND PROFILE STA. 12+700 TO STA. 13+500	R-17	83	BRIDGE ELEVATIONS, S1 TO S4	B-2
23	INT. DETAILS WITH BACOLOD CIRCUMFERENTIAL ROAD	R-16	49	PLAN AND PROFILE STA. 13+500 TO STA. 14+300	R-18	84	BRIDGE ELEVATIONS, S5 TO S8	B-3
24	INT. DETAILS WITH SILAY-GUIMBALAON ROAD	R-17	50	PLAN AND PROFILE STA. 14+300 TO STA. 15+100	R-19	85	BRIDGE ELEVATIONS, S9 TO S12	B-4
25	INTERSECTION DETAILS WITH MINOR ROADS	R-18	51	PLAN AND PROFILE STA. 15+100 TO STA. 15+900	R-20	86	BRIDGE ELEVATIONS, S13 TO S15	B-5
	<b>BRIDGE DRAWINGS</b>		52	PLAN AND PROFILE STA. 15+900 TO STA. 16+700	R-21	87	BRIDGE ELEVATIONS, S16 TO S18	B-6
26	LOCATION PLAN AND BRIDGE LIST	B-1	53	PLAN AND PROFILE STA. 16+700 TO STA. 17+500	R-22	88	BRIDGE ELEVATION, S19	B-7
27	BRIDGE ELEVATIONS, A1 TO A4	B-2	54	PLAN AND PROFILE STA. 17+500 TO STA. 18+300	R-23	89	BRIDGE NO. S1, GENERAL PLAN ELEVATION AND SECTIONS	B-8
28	BRIDGE ELEVATIONS, A5 & A6	B-3	55	PLAN AND PROFILE STA. 18+300 TO STA. 19+100	R-24			
29	BRIDGE NO. A1, GENERAL PLAN ELEVATION AND SECTIONS	B-4	56	PLAN AND PROFILE STA. 19+100 TO STA. 19+900	R-25	90	BRIDGE NO. S4, GENERAL PLAN ELEVATION AND SECTIONS	B-9
			57	PLAN AND PROFILE STA. 19+900 TO STA. 20+700	R-26			
			58	PLAN AND PROFILE STA. 20+700 TO STA. 21+500	R-27	91	BRIDGE NO. S15, GENERAL PLAN ELEVATION AND SECTIONS	B-10
			59	PLAN AND PROFILE STA. 21+500 TO STA. 22+300	R-28			
			60	PLAN AND PROFILE STA. 22+300 TO STA. 23+100	R-29	92	BRIDGE NO. S17, GENERAL PLAN ELEVATION AND SECTIONS	B-11
			61	PLAN AND PROFILE STA. 23+100 TO STA. 23+900	R-30			

THE STUDY ON ROAD NETWORK IMPROVEMENT  
FOR DEVELOPMENT OF REGIONAL GROWTH CENTERS

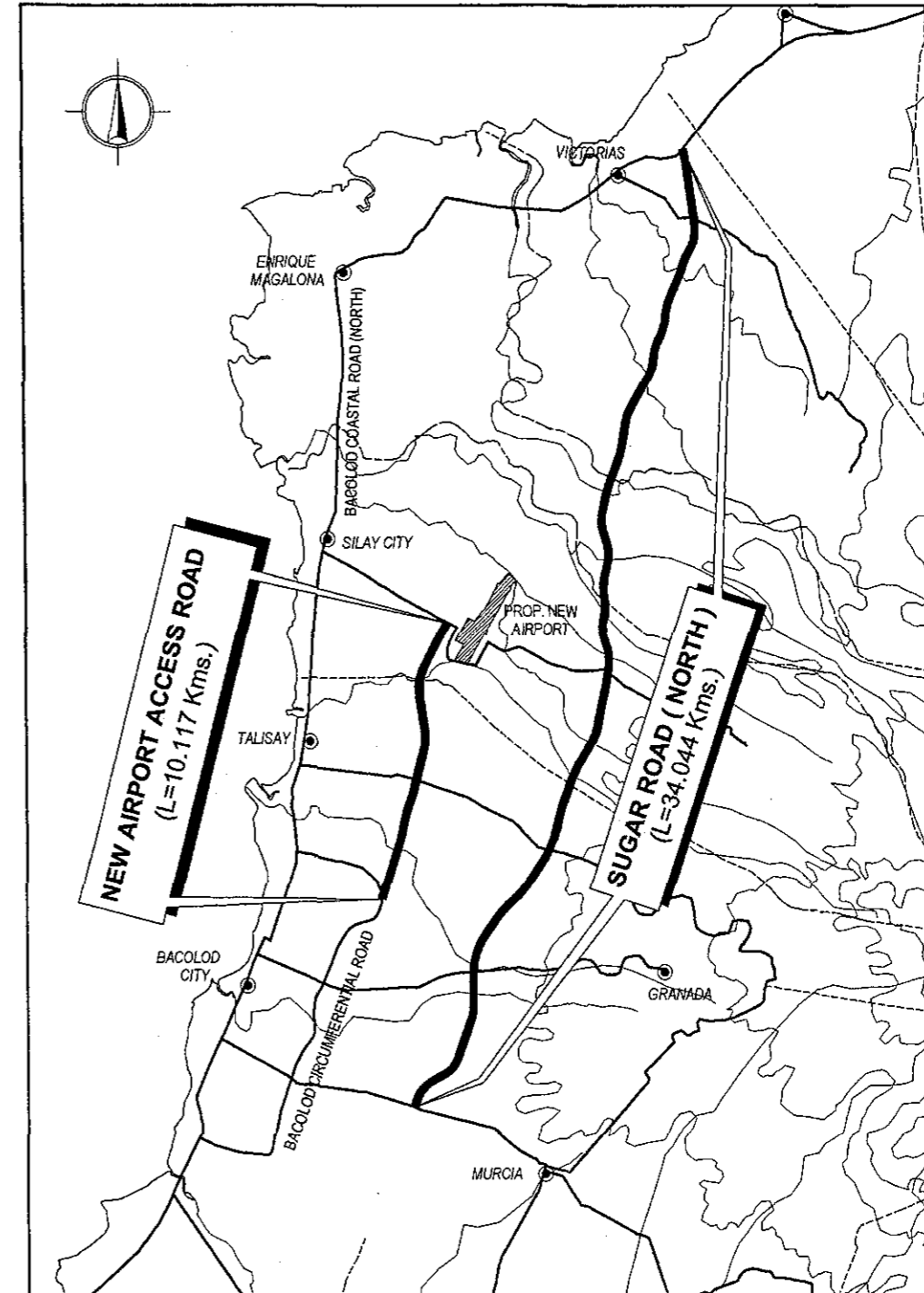
SCALE :  
NOT TO SCALE

METRO BACOLOD  
KEY MAP & VICINITY MAP

DRAWING NO.  
G-2



1 KEY MAP  
G-2 NOT TO SCALE



2 VICINITY MAP  
G-2 NOT TO SCALE

**LEGEND & SYMBOLS**

PROJECT ROAD		EXCAVATION	
SERVICE OR FRONTAGE ROAD ALONG BYPASS		SECTION IN WATER	
CONTOUR		SECTION IN EARTH	
RIGHT-OF-WAY LIMIT		SECTION IN CONCRETE	
POINT OF INTERSECTION		SECTION IN GRAVEL	
POINT OF INTERSECTION NO.		SOFT BED MATERIALS TO BE EXCAVATED	
℄ OF PROJECT ROAD		NORTH SIGN	
FINISHED GRADE ON PROFILE		LINE SYMMETRY	
ORIGINAL GROUND		SECTION TARGET	
BRIDGE		ELEVATION TARGET	
SINGLE RC PIPE CULVERT		TITLE TARGET	
DOUBLE RC PIPE CULVERT		SUB-TITLE TARGET	
BOX CULVERT		DETAIL REF TARGET	
DIRECTION OF FLOW		STATION GRID	
EMBANKMENT			

**ABBREVIATIONS**

PCCP	PORTLAND CEMENT CONCRETE PAVEMENT	MO	MIDDLE ORDINATE
AC	ASPHALT CONCRETE PAVEMENT	g	GRADE IN PERCENT
GRA	GRAVEL	BM	BENCH MARK
PI	POINT OF HORIZONTAL INTERSECTION	TBM	TEMPORARY BENCH MARK
I	EXTERNAL ANGLE	MFL	MAXIMUM FLOOD LEVEL
D	DEGREE OF CURVE	OWL	ORDINARY WATER LEVEL
R	RADIUS OF CIRCULAR CURVE	DFL	DESIGN FLOW LEVEL
T	LENGTH OF TANGENCY	AZIM	AZIMUTH
Lc	LENGTH OF CIRCULAR CURVE	DIST	DISTANCE
E	EXTERNAL DISTANCE	e	SUPERELEVATION RATE IN %
PC	BEGINNING OF CIRCULAR CURVE	V	DESIGN SPEED IN KPH
PT	END OF CIRCULAR CURVE	EQ	EQUATION
PVI	POINT OF VERTICAL INTERSECTION	BK	BACK STATION
PVC	POINT OF VERTICAL CURVATURE	AH	AHEAD STATION
PVT	POINT OF VERTICAL TANGENCY	VERT	VERTICAL
LVC	LENGTH OF VERTICAL CURVE	HOR	HORIZONTAL
∅	DIAMETER	ELEV	ELEVATION
		℄	CENTER LINE

# SUMMARY OF QUANTITIES

AIRPORT ACCESS ROAD

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	ITEM NO.	DESCRIPTION	UNIT	QUANTITY
<b>PART C - EARTHWORK</b>				<b>PART G - DRAINAGE AND SLOPE PROTECTION STRUCTURES</b>			
100(1)	CLEARING AND GRUBBING	ha.	22.8	500(1)b	REINFORCED CONCRETE PIPE CULVERT, 910MMΦ (EXTRA. STR.)	m	291.0
102(2)a	SURPLUS COMMON EXCAVATION	m <sup>3</sup>	2 495.5	500(1)c	REINFORCED CONCRETE PIPE CULVERT, 1070MMΦ (EXTRA. STR.)	m	165.0
103(2)a	BRIDGE EXCAVATION, COMMON (AWL)	m <sup>3</sup>	5 551.2	500(1)d	REINFORCED CONCRETE PIPE CULVERT, 1220MMΦ (EXTRA. STR.)	m	137.0
103(2)b	BRIDGE EXCAVATION, COMMON (BWL)	m <sup>3</sup>	1 452.0	500(3)a3	REINFORCED CONCRETE BOX CULVERT 3-1.5M X 1.5M	m	32.0
104(1)a	EMBANKMENT FROM EXCAVATION	m <sup>3</sup>	1 366.3	500(3)b1	REINFORCED CONCRETE BOX CULVERT 1-2.4M X 2.4M	m	32.0
104(1)b	EMBANKMENT FROM BORROW	m <sup>3</sup>	253 380.1	500(3)b2	REINFORCED CONCRETE BOX CULVERT 2-2.4M X 2.4M	m	37.0
104(1)c	SELECTED BORROW FOR BACKFILLING	m <sup>3</sup>	1 840.0	502(2)b1	REINFORCED CONCRETE HEADWALL, 1-910MMΦ RCPC	ea.	16.0
105(1)	SUBGRADE PREPARATION (COMMON MATERIAL)	m <sup>2</sup>	29 100.0	502(2)b2	REINFORCED CONCRETE HEADWALL, 2-910MMΦ RCPC	ea.	10.0
<b>PART D - SUBBASE AND BASE COURSE</b>				502(2)c1	REINFORCED CONCRETE HEADWALL, 1-1070MMΦ RCPC	ea.	14.0
200	AGGREGATE SUBBASE COURSE	m <sup>3</sup>	37 591.1	502(2)c2	REINFORCED CONCRETE HEADWALL, 2-1070MMΦ RCPC	ea.	2.0
<b>PART E - SURFACE COURSE</b>				502(2)d1	REINFORCED CONCRETE HEADWALL, 1-1220MMΦ RCPC	ea.	2.0
311(1)c	PCC PAVEMENT(PLAIN) (T=0.23M)	m <sup>2</sup>	75 281.4	502(2)d2	REINFORCED CONCRETE HEADWALL, 2-1220MMΦ RCPC	ea.	6.0
311(2)	PCC PAVEMENT(REINFORCED) FOR APPROACH SLAB, T=300MM	m <sup>2</sup>	540.0	502(10)a3	REINFORCED CONCRETE HEADWALL, BOX CULVERT 3-1.5M X 1.5M	ea.	4.0
<b>PART F - BRIDGE CONSTRUCTION</b>				502(10)b1	REINFORCED CONCRETE HEADWALL, BOX CULVERT 1-2.4M X 2.4M	ea.	4.0
400(16)a	CAST-IN-PLACE CONCRETE BORED PILES, Φ1000MM	m	1 152.0	502(10)b2	REINFORCED CONCRETE HEADWALL, BOX CULVERT 2-2.4M X 2.4M	ea.	4.0
400(16)b	CAST-IN-PLACE CONCRETE BORED PILES, Φ1200MM	m	132.0	504(5)	GROUTED RIPRAP, CLASS "A"	m <sup>3</sup>	1 776.0
401	CONCRETE RAILINGS	m	568.0	510	RUBBLE CONCRETE SLOPE PROTECTION, T = 350MM	m <sup>3</sup>	1 608.0
404(2)	REINFORCING STEEL, GRADE 60 (FY=415MPA)	kg	641 589.0	511(a)	CONCRETE SIDE DITCH (0.5 X 0.5)	m	1 314.0
405(1)	STRUCTURAL CONCRETE CLASS"A1" FOR SUBSTRUCTURE (F'C=24MPA)	m <sup>3</sup>	2 162.3	<b>PART H - MISCELLANEOUS STRUCTURES</b>			
405(2)	STRUCTURAL CONCRETE CLASS"A2" FOR SUPERSTRUCTURE (F'C=24MPA)	m <sup>3</sup>	1 836.3	600(1)a	CONCRETE CURB, TYPE A (200X450MM)	m	1 142.0
405(6)	STRUCTURAL CONCRETE "LEAN CONCRETE" (F'C=17 MPA)	m <sup>3</sup>	200.7	600(3)a	COMBINATION CONC. CURB & GUTTER/SIDE STRIP, TYPE A (675X364MM)	m	120.0
406(1)a	PRESTRESSED CONCRETE GIRDER, AASHTO TYPE IV -B, L=20M	ea	10.0	603(3)a	METAL GUARDRAIL	m	2 432.0
406(1)b	PRESTRESSED CONCRETE GIRDER, AASHTO TYPE IV -B, L=22M	ea	10.0	610	SODDING	m <sup>2</sup>	70 201.1
406(1)c	PRESTRESSED CONCRETE GIRDER, AASHTO TYPE IV -B, L=25M	ea	10.0	SPL620(1)	TRAFFIC SIGNAL (3-LEG INTERSECTION)	ea.	2.0
406(1)g	PRESTRESSED CONCRETE GIRDER, AASHTO TYPE V, L=30M	ea	10.0	SPL620(3)	OTHER MISCELLANEOUS (ROAD SIGNS,PAVEMENT STUD,ETC)	km	10.1
406(1)k	PRESTRESSED CONCRETE GIRDER, AASHTO TYPE VI, L=40M	ea	5.0				
407(1)a	ELASTOMERIC BEARING PAD, 400×350×60 (DURO 60)	ea	20.0				
407(1)b	ELASTOMERIC BEARING PAD, 500×350×60 (DURO 60)	ea	40.0				
407(2)	EXPANSION JOINT, 50MM GAP	m	90.0				
407(4)	METAL DRAIN (Φ150MM G.I. DRAIN PIPE)	m	96.0				



BACOLOD SUGAR ROAD (NORTH) TOTAL

# SUMMARY OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	ITEM NO.	DESCRIPTION	UNIT	QUANTITY
<b>PART C - EARTHWORK</b>				<b>PART G - DRAINAGE AND SLOPE PROTECTION STRUCTURES</b>			
100(1)	CLEARING AND GRUBBING	ha.	78.40	500(1)b	REINFORCED CONCRETE PIPE CULVERT, 910MMØ (EXTRA. STR.)	m	496.00
102(2)a	SURPLUS COMMON EXCAVATION	m3	215,862.50	500(1)c	REINFORCED CONCRETE PIPE CULVERT, 1070MMØ (EXTRA. STR.)	m	405.00
103(2)a	BRIDGE EXCAVATION, COMMON (AWL)	m3	18,178.00	500(1)d	REINFORCED CONCRETE PIPE CULVERT, 1220MMØ (EXTRA. STR.)	m	703.00
103(2)b	BRIDGE EXCAVATION, COMMON (BWL)	m3	11,852.00	500(1)e	REINFORCED CONCRETE PIPE CULVERT, 1520MMØ (EXTRA. STR.)	m	220.00
104(1)a	EMBANKMENT FROM EXCAVATION	m3	438,926.30	500(3)a2	REINFORCED CONCRETE BOX CULVERT 2-1.5M X 1.5M	m	57.00
104(1)b	EMBANKMENT FROM BORROW	m3	224,359.60	500(3)a3	REINFORCED CONCRETE BOX CULVERT 3-1.5M X 1.5M	m	48.00
104(1)c	SELECTED BORROW FOR BACKFILLING	m3	7,876.00	500(3)b1	REINFORCED CONCRETE BOX CULVERT 1-2.4M X 2.4M	m	145.00
105(1)	SUBGRADE PREPARATION (COMMON MATERIAL)	m2	204,707.90	500(3)b2	REINFORCED CONCRETE BOX CULVERT 2-2.4M X 2.4M	m	245.00
<b>PART D - SUBBASE AND BASE COURSE</b>				500(3)b3	REINFORCED CONCRETE BOX CULVERT 3-2.4M X 2.4M	m	47.00
200	AGGREGATE SUBBASE COURSE	m3	152,930.10	500(3)c1	REINFORCED CONCRETE BOX CULVERT 1-3.0M X 3.0M	m	20.0
<b>PART E - SURFACE COURSE</b>				500(3)c2	REINFORCED CONCRETE BOX CULVERT 2-3.0M X 3.0M	m	149.00
311(1)d	PCC PAVEMENT (PLAIN) (T=0.25M)	m2	52,074.50	500(3)c3	REINFORCED CONCRETE BOX CULVERT 3-3.0M X 3.0M	m	55.00
311(1)e	PCC PAVEMENT (PLAIN) (T=0.28M)	m2	171,945.20	502(2)b1	REINFORCED CONCRETE HEADWALL, 1-910MMØ RCPC	ea.	53.00
311(2)	PCC PAVEMENT (REINFORCED) FOR APPROACH SLAB, T=300MM	m2	1,710.00	502(2)b2	REINFORCED CONCRETE HEADWALL, 2-910MMØ RCPC	ea.	2.00
<b>PART F - BRIDGE CONSTRUCTION</b>				502(2)c1	REINFORCED CONCRETE HEADWALL, 1-1070MMØ RCPC	ea.	29.00
400(16)a	CAST-IN-PLACE CONCRETE BORED PILES, Ø1000MM	m	2,298.00	502(2)c2	REINFORCED CONCRETE HEADWALL, 2-1070MMØ RCPC	ea.	6.00
400(16)b	CAST-IN-PLACE CONCRETE BORED PILES, Ø1200MM	m	2,779.00	502(2)d1	REINFORCED CONCRETE HEADWALL, 1-1220MMØ RCPC	ea.	6.00
401	CONCRETE RAILINGS	m	2,626.00	502(2)d2	REINFORCED CONCRETE HEADWALL, 2-1220MMØ RCPC	ea.	35.00
404(2)	REINFORCING STEEL, GRADE 60 (FY=415MPA)	kg	2,556,952.50	502(2)f2	REINFORCED CONCRETE HEADWALL, 2-1520MMØ RCPC	ea.	10.00
405(1)	STRUCTURAL CONC. CLASS "A1" FOR SUBSTRUCTURE (FC=24MPA)	m3	7,636.20	502(10)a2	REINFORCED CONCRETE HEADWALL, BOX CULVERT 2-1.5M X 1.5M	ea.	6.00
405(2)	STRUCTURAL CONC. CLASS "A2" FOR SUPERSTRUCTURE (FC=24MPA)	m3	8,805.00	502(10)a3	REINFORCED CONCRETE HEADWALL, BOX CULVERT 3-1.5M X 1.5M	ea.	6.00
405(6)	STRUCTURAL CONCRETE "LEAN CONCRETE" (FC=17 MPA)	m3	698.00	502(10)b1	REINFORCED CONCRETE HEADWALL, BOX CULVERT 1-2.4M X 2.4M	ea.	12.00
406(1)a	PRESTRESSED CONCRETE GIRDER, AASHTO TYPE IV-B, L=20M	ea	35.00	502(10)b2	REINFORCED CONCRETE HEADWALL, BOX CULVERT 2-2.4M X 2.4M	ea.	22.00
406(1)b	PRESTRESSED CONCRETE GIRDER, AASHTO TYPE IV-B, L=22M	ea	10.00	502(10)b3	REINFORCED CONCRETE HEADWALL, BOX CULVERT 3-2.4M X 2.4M	ea.	4.00
406(1)c	PRESTRESSED CONCRETE GIRDER, AASHTO TYPE IV-B, L=25M	ea	20.00	502(10)c1	REINFORCED CONCRETE HEADWALL, BOX CULVERT 1-3.0M X 3.0M	ea.	2.00
406(1)e	PRESTRESSED CONCRETE GIRDER, AASHTO TYPE IV-B, L=27M	ea	5.00	502(10)c2	REINFORCED CONCRETE HEADWALL, BOX CULVERT 2-3.0M X 3.0M	ea.	12.00
406(1)f	PRESTRESSED CONCRETE GIRDER, AASHTO TYPE IV-B, L=28M	ea	5.00	502(10)c3	REINFORCED CONCRETE HEADWALL, BOX CULVERT 3-3.0M X 3.0M	ea.	6.00
406(1)g	PRESTRESSED CONCRETE GIRDER, AASHTO TYPE V, L=30M	ea	50.00	502(3)b1	CATCH BASIN FOR RCPC 1-Ø910	ea.	1.00
406(1)i	PRESTRESSED CONCRETE GIRDER, AASHTO TYPE V, L=35M	ea	25.00	502(3)c1	CATCH BASIN FOR RCPC 1-Ø1070	ea.	1.00
406(1)j	PRESTRESSED CONCRETE GIRDER, AASHTO TYPE VI, L=36M	ea	45.00	502(3)d2	CATCH BASIN FOR RCPC 2-Ø1220	ea.	1.00
406(1)k	PRESTRESSED CONCRETE GIRDER, AASHTO TYPE VI, L=40M	ea	15.00	504(5)	GROUTED RIPRAP, CLASS "A"	m3	3,407.00
407(1)a	ELASTOMERIC BEARING PAD, 400x350x60 (DURO 60)	ea	40.00	505(1)	STONE MASONRY	m3	904.00
407(1)b	ELASTOMERIC BEARING PAD, 500x350x60 (DURO 60)	ea	170.00	509	GABIONS	m3	2,709.00
407(2)	EXPANSION JOINT, 50MM GAP	m	360.00	510	RUBBLE CONCRETE SLOPE PROTECTION, T = 350MM	m3	4,676.00
407(4)	METAL DRAIN (Ø150MM G.I. DRAIN PIPE)	m	358.00	511(a)	CONCRETE SIDE DITCH (0.5 X 0.5)	m	30,041.00
				<b>PART H - MISCELLANEOUS STRUCTURES</b>			
				600(1)a	CONCRETE CURB, TYPE A (200X450MM)	m	2,756.00
				600(3)a	COMBINATION CONCRETE CURB & GUTTER/SIDE STRIP, TYPE A (675X364MM)	m	240.00
				603(3)a	METAL GUARDRAIL	m	22,376.00
				610	SODDING	m2	163,471.8
				SPL620(1)	TRAFFIC SIGNAL (3-LEG INTERSECTION)	ea.	1.00
				SPL620(2)	TRAFFIC SIGNAL (4-LEG INTERSECTION)	ea.	2.00
				OTHER MISCELLANEOUS (ROAD SIGNS, PAVEMENT STUD, ETC)		km	34.00

BACOLOD SUGAR ROAD (NORTH) PACKAGE-1

# SUMMARY OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	ITEM NO.	DESCRIPTION	UNIT	QUANTITY
<b>PART C - EARTHWORK</b>				<b>PART G - DRAINAGE AND SLOPE PROTECTION STRUCTURES</b>			
100(1)	CLEARING AND GRUBBING	ha.	31.36	500(1)b	REINFORCED CONCRETE PIPE CULVERT, 910MMØ (EXTRA. STR.)	m	68.00
102(2)a	SURPLUS COMMON EXCAVATION	m3	86,345.00	500(1)c	REINFORCED CONCRETE PIPE CULVERT, 1070MMØ (EXTRA. STR.)	m	184.00
103(2)a	BRIDGE EXCAVATION, COMMON (AWL)	m3	7,165.00	500(1)d	REINFORCED CONCRETE PIPE CULVERT, 1220MMØ (EXTRA. STR.)	m	203.00
103(2)b	BRIDGE EXCAVATION, COMMON (BWL)	m3	2,957.00	500(1)e	REINFORCED CONCRETE PIPE CULVERT, 1520MMØ (EXTRA. STR.)	m	22.00
104(1)a	EMBANKMENT FROM EXCAVATION	m3	175,570.50	500(3)a3	REINFORCED CONCRETE BOX CULVERT 3-1.5M X 1.5M	m	16.00
104(1)b	EMBANKMENT FROM BORROW	m3	89,743.90	500(3)b1	REINFORCED CONCRETE BOX CULVERT 1-2.4M X 2.4M	m	48.00
104(1)c	SELECTED BORROW FOR BACKFILLING	m3	3,981.00	500(3)b2	REINFORCED CONCRETE BOX CULVERT 2-2.4M X 2.4M	m	44.00
105(1)	SUBGRADE PREPARATION (COMMON MATERIAL)	m2	81,883.20	500(3)b3	REINFORCED CONCRETE BOX CULVERT 3-2.4M X 2.4M	m	23.00
<b>PART D - SUBBASE AND BASE COURSE</b>				500(3)c2	REINFORCED CONCRETE BOX CULVERT 2-3.0M X 3.0M	m	50.00
200	AGGREGATE SUBBASE COURSE	m3	45,879.00	502(2)b1	REINFORCED CONCRETE HEADWALL, 1-910MMØ RCPC	ea.	8.00
<b>PART E - SURFACE COURSE</b>				502(2)c1	REINFORCED CONCRETE HEADWALL, 1-1070MMØ RCPC	ea.	12.00
311(1)d	PCC PAVEMENT (PLAIN) (T=0.25M)	m2	15,622.40	502(2)c2	REINFORCED CONCRETE HEADWALL, 2-1070MMØ RCPC	ea.	4.00
311(2)e	PCC PAVEMENT (PLAIN) (T = 0.28 m)	m2	51,583.00	502(2)d2	REINFORCED CONCRETE HEADWALL, 2-1220MMØ RCPC	ea.	10.00
311(2)	PCC PAVEMENT (REINFORCED) FOR APPROACH SLAB, T=300MM	m2	720.00	502(10)a2	REINFORCED CONCRETE HEADWALL, 2-1520 mmØ RCPC	ea.	2.00
<b>PART F - BRIDGE CONSTRUCTION</b>				502(10)a3	REINFORCED CONCRETE HEADWALL, BOX CULVERT 3-1.5M X 1.5M	ea.	2.00
400(16)a	CAST-IN-PLACE CONCRETE BORED PILES, Ø1000MM	m	976.00	502(10)b1	REINFORCED CONCRETE HEADWALL, BOX CULVERT 1-2.4M X 2.4M	ea.	4.00
400(16)b	CAST-IN-PLACE CONCRETE BORED PILES, Ø1200MM	m	594.00	502(10)b2	REINFORCED CONCRETE HEADWALL, BOX CULVERT 2-2.4M X 2.4M	ea.	4.00
401	CONCRETE RAILINGS	m	714.00	502(10)b3	REINFORCED CONCRETE HEADWALL, BOX CULVERT 3-2.4M X 2.4M	ea.	2.00
404(2)	REINFORCING STEEL, GRADE 60 (FY=415MPA)	kg	688,585.50	502(10)c2	REINFORCED CONCRETE HEADWALL, BOX CULVERT 2-3.0M X 3.0M	ea.	4.00
405(1)	STRUCTURAL CONC. CLASS"A1" FOR SUBSTRUCTURE (FC=24MPA)	m3	2,287.20	504(5)	GROUTED RIPRAP, CLASS "A"	m3	1,056.70
405(2)	STRUCTURAL CONC. CLASS"A2" FOR SUPERSTRUCTURE (FC=24MPA)	m3	2,272.00	505(1)	STONE MASONRY	m3	271.20
405(6)	STRUCTURAL CONCRETE "LEAN CONCRETE" (FC=17 MPA)	m3	230.00	510	RUBBLE CONCRETE SLOPE PROTECTION, T = 350MM	m3	2,414.00
406(1)a	PRESTRESSED CONCRETE GIRDER, AASHTO TYPE IV-B, L=20M	ea	15.00	511(a)	CONCRETE SIDE DITCH (0.5 X 0.5)	m	9,012.30
406(1)b	PRESTRESSED CONCRETE GIRDER, AASHTO TYPE IV-B, L=22M	ea	10.00	<b>PART H - MISCELLANEOUS STRUCTURES</b>			
406(1)c	PRESTRESSED CONCRETE GIRDER, AASHTO TYPE IV-B, L=25M	ea	10.00	600(1)a	CONCRETE CURB, TYPE A (200X450MM)	m	826.80
406(1)f	PRESTRESSED CONCRETE GIRDER, AASHTO TYPE IV-B, L=28M	ea	5.00	600(3)a	COMBINATION CONCRETE CURB & GUTTER/SIDE STRIP, TYPE A (675X364MM)	m	72.00
406(1)g	PRESTRESSED CONCRETE GIRDER, AASHTO TYPE V, L=30M	ea	5.00	603(3)a	METAL GUARDRAIL	m	6,712.80
406(1)i	PRESTRESSED CONCRETE GIRDER, AASHTO TYPE V, L=35M	ea	15.00	610	SODDING	m2	49,041.50
406(1)k	PRESTRESSED CONCRETE GIRDER, AASHTO TYPE VI, L=40M	ea	5.00	SPL620(1)	TRAFFIC SIGNAL (3-LEG INTERSECTION)	ea.	1.00
407(1)a	ELASTOMERIC BEARING PAD, 400x350x60 (DURO 60)	ea	10.00	SPL620(2)	TRAFFIC SIGNAL (4-LEG INTERSECTION)	ea.	1.00
407(1)b	ELASTOMERIC BEARING PAD, 500x350x60 (DURO 60)	ea	50.00	OTHER MISCELLANEOUS (ROAD SIGNS, PAVEMENT STUD, ETC)			
407(2)	EXPANSION JOINT, 50MM GAP	m	144.00			km	10.20
407(4)	METAL DRAIN (Ø150MM G.I. DRAIN PIPE)	m	104.00				

**SUMMARY OF QUANTITIES**

SCALE :

METRO BACOLOD  
**SUMMARY OF QUANTITIES**  
BACOLOD SUGAR ROAD (NORTH) PACKAGE-2

DRAWING NO.

G-4(2c)

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	ITEM NO.	DESCRIPTION	UNIT	QUANTITY
<b>PART C - EARTHWORK</b>				<b>PART G - DRAINAGE AND SLOPE PROTECTION STRUCTURES</b>			
100(1)	CLEARING AND GRUBBING	ha.	47.04	500(1)b	REINFORCED CONCRETE PIPE CULVERT, 910MMØ (EXTRA. STR.)	m	428.00
102(2)a	SURPLUS COMMON EXCAVATION	m3	129,517.50	500(1)c	REINFORCED CONCRETE PIPE CULVERT, 1070MMØ (EXTRA. STR.)	m	221.00
103(2)a	BRIDGE EXCAVATION, COMMON (AWL)	m3	11,013.00	500(1)d	REINFORCED CONCRETE PIPE CULVERT, 1220MMØ (EXTRA. STR.)	m	590.00
103(2)b	BRIDGE EXCAVATION, COMMON (BWL)	m3	8,895.00	500(1)e	REINFORCED CONCRETE PIPE CULVERT, 1520MMØ (EXTRA. STR.)	m	198.00
104(1)a	EMBANKMENT FROM EXCAVATION	m3	263,355.80	500(3)a2	REINFORCED CONCRETE BOX CULVERT 2-1.5M X 1.5M	m	57.00
104(1)b	EMBANKMENT FROM BORROW	m3	134,615.80	500(3)a3	REINFORCED CONCRETE BOX CULVERT 3-1.5M X 1.5M	m	32.00
104(1)c	SELECTED BORROW FOR BACKFILLING	m3	3,895.00	500(3)b1	REINFORCED CONCRETE BOX CULVERT 1-2.4M X 2.4M	m	97.00
105(1)	SUBGRADE PREPARATION (COMMON MATERIAL)	m2	122,824.80	500(3)b2	REINFORCED CONCRETE BOX CULVERT 2-2.4M X 2.4M	m	201.00
<b>PART D - SUBBASE AND BASE COURSE</b>				500(3)b3	REINFORCED CONCRETE BOX CULVERT 3-2.4M X 2.4M	m	24.00
200	AGGREGATE SUBBASE COURSE	m3	107,051.10	500(3)c1	REINFORCED CONCRETE BOX CULVERT 1-3.0M X 3.0M	m	20.00
<b>PART E - SURFACE COURSE</b>				500(3)c2	REINFORCED CONCRETE BOX CULVERT 2-3.0M X 3.0M	m	99.00
311(1)d	PCC PAVEMENT (PLAIN) (T=0.25M)	m2	36,452.20	500(3)c3	REINFORCED CONCRETE BOX CULVERT 3-3.0M X 3.0M	m	55.00
311(1)e	PCC PAVEMENT (PLAIN) (T=0.28M)	m2	120,361.60	502(2)b1	REINFORCED CONCRETE HEADWALL, 1-910MMØ RCPC	ea.	45.00
311(2)	PCC PAVEMENT (REINFORCED) FOR APPROACH SLAB, T=300MM	m2	990.00	502(2)b2	REINFORCED CONCRETE HEADWALL, 2-910MMØ RCPC	ea.	2.00
<b>PART F - BRIDGE CONSTRUCTION</b>				502(2)c1	REINFORCED CONCRETE HEADWALL, 1-1070MMØ RCPC	ea.	17.00
400(16)a	CAST-IN-PLACE CONCRETE BORED PILES, Ø1000MM	m	1,322.00	502(2)c2	REINFORCED CONCRETE HEADWALL, 2-1070MMØ RCPC	ea.	2.00
400(16)b	CAST-IN-PLACE CONCRETE BORED PILES, Ø1200MM	m	2,185.00	502(2)d1	REINFORCED CONCRETE HEADWALL, 1-1220MMØ RCPC	ea.	6.00
401	CONCRETE RAILINGS	m	1,912.00	502(2)d2	REINFORCED CONCRETE HEADWALL, 2-1220MMØ RCPC	ea.	25.00
404(2)	REINFORCING STEEL, GRADE 60 (FY=415MPA)	kg	1,868,367.00	502(2)f2	REINFORCED CONCRETE HEADWALL, 2-1520MMØ RCPC	ea.	8.00
405(1)	STRUCTURAL CONC. CLASS "A1" FOR SUBSTRUCTURE (FC=24MPA)	m3	5,349.00	502(10)a2	REINFORCED CONCRETE HEADWALL, BOX CULVERT 2-1.5M X 1.5M	ea.	6.00
405(2)	STRUCTURAL CONC. CLASS "A2" FOR SUPERSTRUCTURE (FC=24MPA)	m3	6,533.00	502(10)a3	REINFORCED CONCRETE HEADWALL, BOX CULVERT 3-1.5M X 1.5M	ea.	4.00
405(6)	STRUCTURAL CONCRETE "LEAN CONCRETE" (FC=17 MPA)	m3	468.00	502(10)b1	REINFORCED CONCRETE HEADWALL, BOX CULVERT 1-2.4M X 2.4M	ea.	8.00
406(1)a	PRESTRESSED CONCRETE GIRDER, AASHTO TYPE IV-B, L=20M	ea	20.00	502(10)b2	REINFORCED CONCRETE HEADWALL, BOX CULVERT 2-2.4M X 2.4M	ea.	18.00
406(1)c	PRESTRESSED CONCRETE GIRDER, AASHTO TYPE IV-B, L=25M	ea	10.00	502(10)b3	REINFORCED CONCRETE HEADWALL, BOX CULVERT 3-2.4M X 2.4M	ea.	2.00
406(1)e	PRESTRESSED CONCRETE GIRDER, AASHTO TYPE IV-B, L=27M	ea	5.00	502(10)c1	REINFORCED CONCRETE HEADWALL, BOX CULVERT 1-3.0M X 3.0M	ea.	2.00
406(1)g	PRESTRESSED CONCRETE GIRDER, AASHTO TYPE V, L=30M	ea	45.00	502(10)c2	REINFORCED CONCRETE HEADWALL, BOX CULVERT 2-3.0M X 3.0M	ea.	8.00
406(1)i	PRESTRESSED CONCRETE GIRDER, AASHTO TYPE V, L=35M	ea	10.00	502(10)c3	REINFORCED CONCRETE HEADWALL, BOX CULVERT 3-3.0M X 3.0M	ea.	6.00
406(1)j	PRESTRESSED CONCRETE GIRDER, AASHTO TYPE VI, L=36M	ea	45.00	502(3)b1	CATCH BASIN FOR RCPC 1-Ø1070	ea.	1.00
406(1)k	PRESTRESSED CONCRETE GIRDER, AASHTO TYPE VI, L=40M	ea	10.00	502(3)c1	CATCH BASIN FOR RCPC 1-Ø1070	ea.	1.00
407(1)a	ELASTOMERIC BEARING PAD, 400x350x60 (DURO 60)	ea	30.00	502(3)d2	CATCH BASIN FOR RCPC 2-Ø1220	ea.	1.00
407(1)b	ELASTOMERIC BEARING PAD, 500x350x60 (DURO 60)	ea	120.00	504(5)	GROUTED RIPRAP, CLASS "A"	m3	2,350.30
407(2)	EXPANSION JOINT, 50MM GAP	m	216.00	505(1)	STONE MASONRY	m3	632.80
407(4)	METAL DRAIN (Ø150MM G.I. DRAIN PIPE)	m	254.00	509	GABIONS	m3	2,709.00
				510	RUBBLE CONCRETE SLOPE PROTECTION, T = 350MM	m3	2,262.00
				511(a)	CONCRETE SIDE DITCH (0.5 X 0.5)	m	21,028.70
				<b>PART H - MISCELLANEOUS STRUCTURES</b>			
				600(1)a	CONCRETE CURB, TYPE A (200X450MM)	m	1,929.20
				600(3)a	COMBINATION CONCRETE CURB & GUTTER/SIDE STRIP, TYPE A (675X364MM)	m	168.00
				603(3)a	METAL GUARDRAIL	m	15,663.20
				610	SODDING	m2	114,430.20
				SPL620(2)	TRAFFIC SIGNAL (4-LEG INTERSECTION)	ea.	1.00
					OTHER MISCELLANEOUS (ROAD SIGNS, PAVEMENT STUD, ETC)	km	23.80