

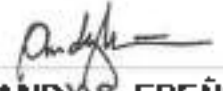


REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGIONAL OFFICE No. VIII
NORTHERN SAMAR FIRST DISTRICT ENGINEERING OFFICE
CATARMAN, NORTHERN SAMAR

C.Y 2025 PROJECT
DETAILED ENGINEERING DESIGN FOR
CONSTRUCTION / IMPROVEMENT OF CAPUL CIRCUMFERENTIAL ROAD
AGUIN - LANDUSAN - SAWANG - SAGAOSAWAN - JUBANG - OSON - POBLACION SECTION
CAPUL, NORTHERN SAMAR

CAPUL CIRCUMFERENTIAL ROAD
CAPUL, NORTHERN SAMAR
PCCP TARGET LENGTH: 0.25 km (0.500 lane km)
BEGINNING OF PROJECT = 1372698.15 ; 412125.61
END OF PROJECT = 1372449.21 ; 412144.13

SUBMITTED:


ANDY S. EREÑO
CHIEF, PLANNING AND DESIGN SECTION

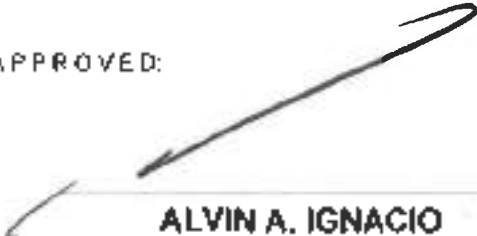
Date:

RECOMMENDED:

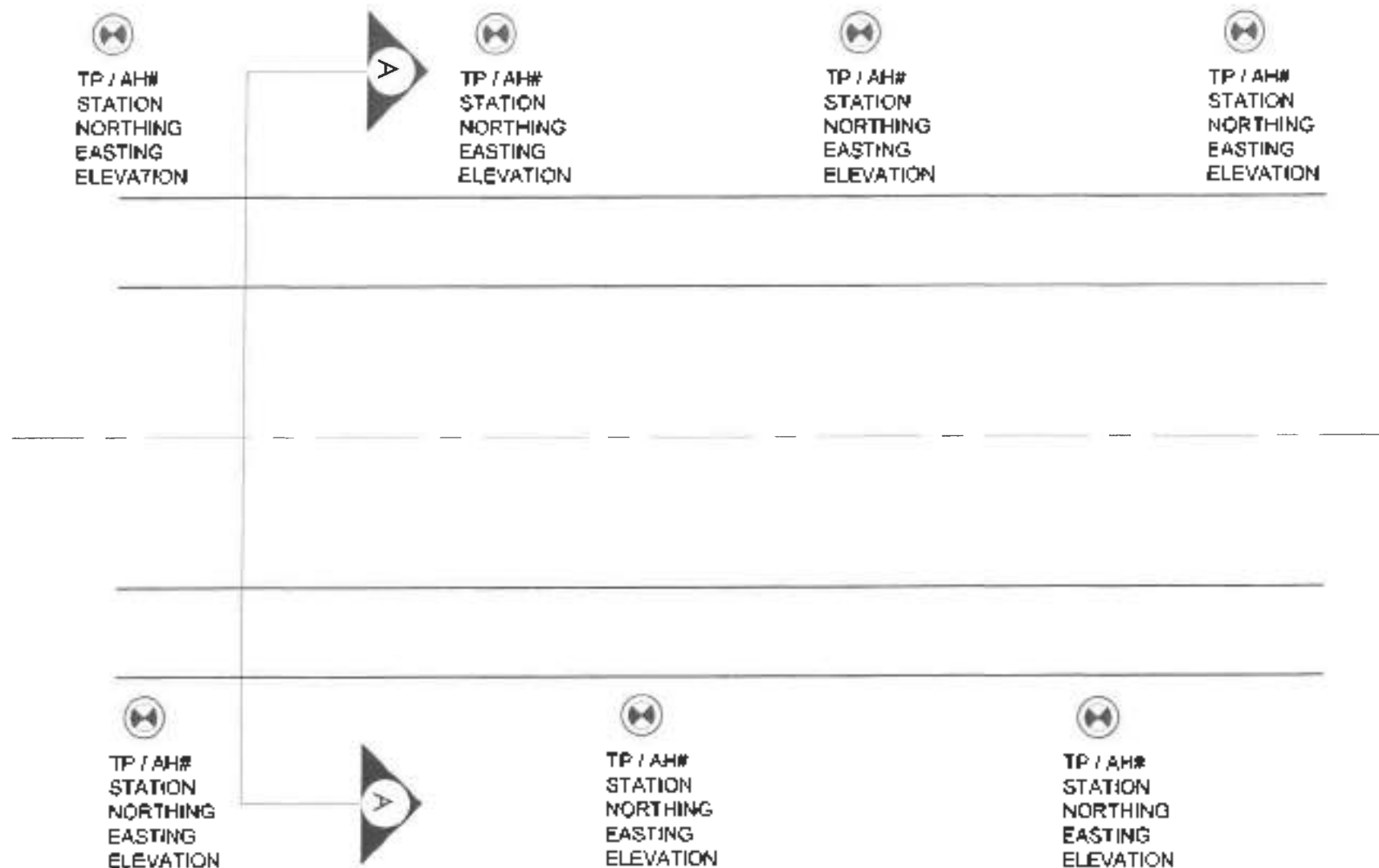

VIVIAN G. BIACO
ASST. DISTRICT ENGINEER

Date:

APPROVED:

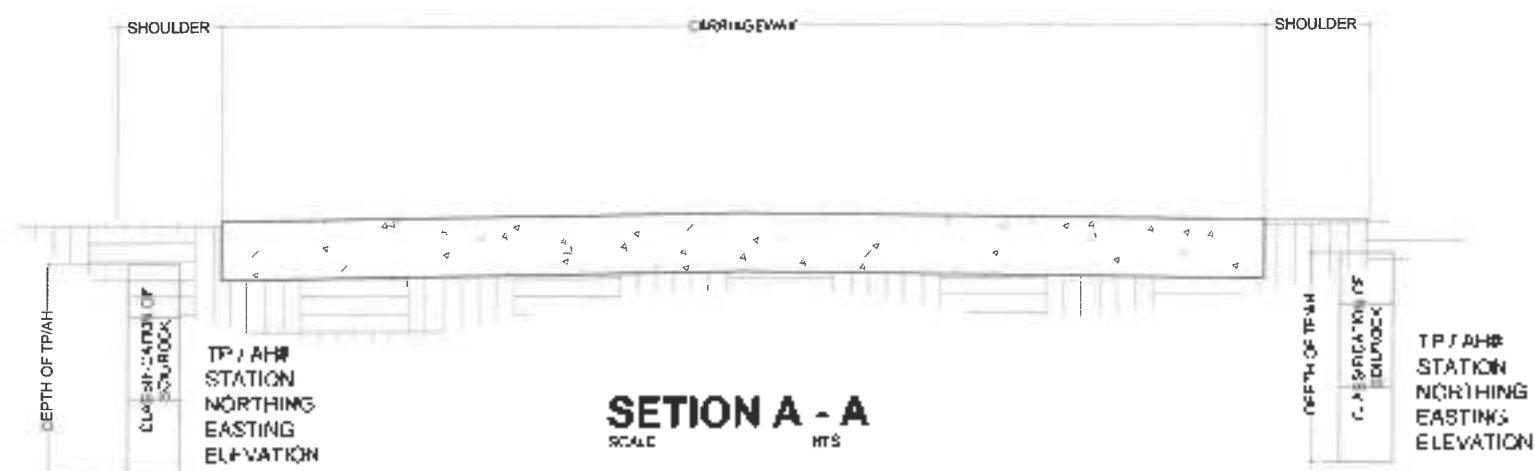

ALVIN A. IGNACIO
DISTRICT ENGINEER

Date:



TEST PITS / AUGER HOLES LOCATION PLAN

SCALE: NTS



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGIONAL OFFICE No. 10
NORTHERN SAMAR DIVISION
DISTRICT ENGINEERING OFFICE
Caramoran, Northern Samar

PROJECT NAME AND LOCATION

CONSTRUCTION IMPROVEMENT OF CARILL
CIRCUMFERENTIAL ROAD
AGUIN - JANDULAN - SAWANG - SAGORAWAN
JUBANG - OSON - POBLACION SECTION,
CARILL NORTHERN SAMAR

SHEET CONTENTS

TEST PITS / AUGER HOLES
LOCATION PLAN
SECTION A-A

DESIGNED BY

PETRONIO B. CADACAN, JR.

TRANSFORMED

REVIEWED BY

MAN DONALD N. ELMAN
Civil Engineer
Date: 11/5/24

SUBMITTED BY

ANDY S. SERRANO
Civil Planning Officer
Date:

RECOMMENDED BY

VIVIAN B. BIADO
Civil Engineer
Date:

APPROVED BY

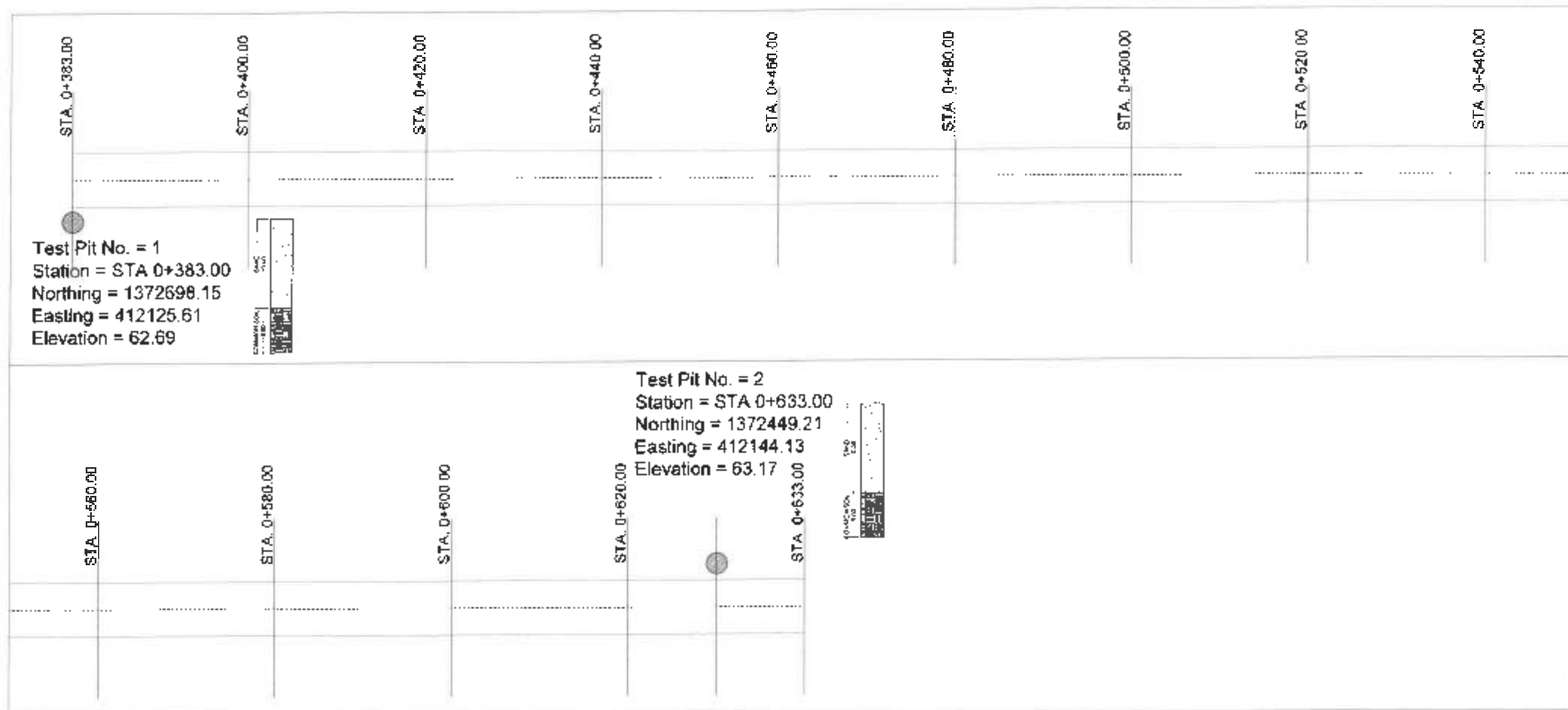
ALVIN A. IGNACIO
Civil Engineer
Date:

SHEET No.

01 OF 02

SHEET No.

02 OF 25



REPUBLIC OF THE PHILIPPINES
 DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
 REGIONAL OFFICE No. 4B
 NORTHERN SAMAR FIRST
 DISTRICT ENGINEERING OFFICE
 COMMUNITY DEVELOPMENT SECTION

PROJECT NAME AND LOCATION
 CONSTRUCTION AND IMPROVEMENT OF CAROL
 CIRCUMFERENTIAL ROAD
 AGUIN - LANDQUEAN - SANWANG - BAGAOSANMAN
 - JULBANG - OSON - POPULACION SECTION
 CAROL NORTHERN SAMAR

SHEET DESCRIPTION
 DETAILED SOIL PROFILE

DRAWN BY
 PEERFIELD B. CABANGS JR.
 DESIGNED BY

REVIEWED
 MA. EDNALD H. LIMAN
 Civil, Planning & Design Section
 Date

SUBMITTED
 ANDY S. ENENC
 Civil Planning & Design Section
 Date

RECOMMENDED
 JIMMY B. BIACO
 Civil Planning & Design Section
 Date

APPROVED
 ALVIN A. IGNACIO
 Project Engineer
 Date

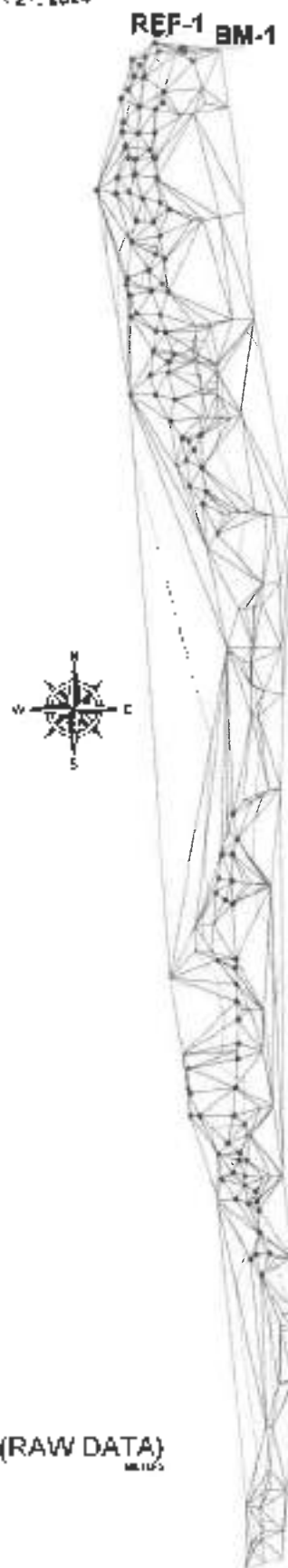
SHEET No.
 GP
 02 of 03

SHEET No.
 03
 25

DATE OF SURVEY: OCTOBER 10, 2024
EQUIPMENT USED (GEOMAX): BASE: Z35180101058 ROVER 1: Z35171102091
CALIBRATION EXPIRY DATE: DECEMBER 21, 2024

BM No./ REF No	COORDINATES		ELEVATION	REMARKS
	NORTHING	EASTING		
BMA1	1372700.87	412129.53	82.52	NAILD ON COCONUT TREE
R1	1372704.10	412126.70	62.89	EDGE OF EXISTING PAVEMENT, CENTER LINE

COORDINATE REFERENCE SYSTEM:	PHSR7 / PHILIPPINE ZONE V
PROJECTION:	TRANSVERSE MERCATOR (110° ZONE OF 2° NETWID)
DATUM:	PHILIPPINE REFERENCE SYSTEM 1967
EPSG CODE:	3125

DIGITAL TERRAIN MODEL (RAW DATA) METERS
SCALE 1:500

DIGITAL TERRAIN MODEL (CORRECTED DATA)



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGIONAL OFFICE NO. 1
NORTHERN SAMAR FIRST
DISTRICT ENGINEERING OFFICE
Calbayog, Morong, Samar

PROJECT NAME AND LOCATION:

CONSTRUCTION IMPROVEMENT OF CAPUL
CINQUYFERTH RIVER
ADJACENT LANDS, SAMPAN, SAGURAYAN
JUBANG, Cebu. PUBLIC WORKS SECTION,
CAPUL, NORTHERN SAMAR

54221 COMPTON

DIGITAL TERRAIN MODEL

OTM4 BY

PETROFLORE CADALANES IN

DE JONGH ET AL.

POWERED

WALTER DONALD N. EIMON

Box 2a

2. DATED

ANDY S. EREÑO

Chief Planning & Control Systems

RECOMMEND:

✓ Value: 13.5

☐ None

Abstract

ALVIN A. GIBSON

Day	1
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SET 40

5

5455 4a.

04
25

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REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGIONAL OFFICE NO. IV
NORTHERN SAMAR FIRST
DISTRICT ENGINEERING OFFICE
Chief Engineer: Nathan Serrano

PROJECT NAME AND LOCATION
CONSTRUCTION/IMPROVEMENT OF CAPUL
CIRCUMFERENTIAL ROAD
AGUIN - LANDUSAN - SAKANG - SAGAGSAGAN
- JUBANG - OSMUN - POMBALON SECTION
CAPUL, NORTHERN SAMAR

SHEET CONTENTS
INDEX OF SHEETS

DRAWN BY
PETRONILLO B. CABACANDOR
CHECKED BY
JEFF R. FIDROLA
Supervisor

REVIEWED
MARCKONALYN EIMAN
Asst. Chief Planning & Design Division
Date

SUBMITTED
ANDY S. ENERO
Chief Planning & Design Sector
Date

RECOMMENDED
ALVIN A. IGNACIO
Asst. District Engineer
Date

APPROVED
ALVIN A. IGNACIO
Chief Engineer
Date

SET NO.
01 of 01
SHEET NO.
06 of 25

SUMMARY OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	REMARKS
VOLUME II	HIGHWAYS, BRIDGES AND AIRPORTS			
PART B	OTHER GENERAL REQUIREMENTS			
B.3	Permits and Clearances	l.s.	1.00	
B.5	Project Billboard/Signboard (DPWH)	each	2.00	
B.5	Project Billboard/Signboard (COA)	each	1.00	
B.7(2)	Occupational Safety and Health Program	l.s.	1.00	
B.8(2)	Traffic Management	l.s.	1.00	
B.9	Mobilization/Demobilization	l.s.	1.00	
PART C	EARTHWORKS			
100(1)	Clearing and Grubbing	ha.	0.13	
100(3)a1	Individual Removal of Trees, 150-300mm, Small	each	15.00	
102(2)	Surplus Common Excavation	cu.m	543.61	
103(1)a	Structure Excavation (common soil)	cu.m	22.49	
103(1)b	Structure Excavation (soft rock)	cu.m	793.06	
104(1)a	Embankment from Roadway Excavation (common soil)	cu.m	202.75	
105(1)a	Subgrade Preparation (Common Material)	sq.m.	1,525.00	
PART D	SUBBASE AND BASE COURSES			
200(1)	Aggregate Subbase Course	cu.m.	305.00	
PART E	SURFACE COURSES			
311(1)e1	Portland Cement Concrete Pavement (Unreinforced), 0.28m thk. 14 days	sq.m.	1,525.00	
PART F	BRIDGE CONSTRUCTION			
404(1)a	Reinforcing Steel, Grade 40	kg.	6,434.41	
405(1)a3	Structural Concrete (Class A, 28 days), 20.68 Mpa	cu.m.	98.70	
407(8)	Lean Concrete, Class B, 16.5 Mpa	cu.m	0.72	
PART G	DRAINAGE AND SLOPE PROTECTION			
505(1)a	Riprap, Class A	cu.m.	38.19	
505(2)a	Grouted Riprap, Class A	cu.m.	25.79	
517(1)b	Drain Pipe, PVC	ln.m	23.20	



APPROVED BY THE PRESIDENT
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGIONAL OFFICE VII
NORTHERN SAMAR FIRST
DISTRICT ENGINEERING OFFICE
Camar, Northern Samar

PROJECT NAME AND LOCATION

CONSTRUCTION IMPROVEMENT OF CANAL
ENCLOSUREMENT, RORO
PORT, LAJUAN, BARANGAY SAN ANTONIO
LUBANG - CSON - POLIQUION SECTION (CARNI
NORTHERN SAMAR

SHEET CONTENTS

SUMMARY OF QUANTITIES

DRAWN BY:

PETER MIC B. CARRASCO JR.

CHECKED BY:

JET P. PURILA

REVIEWED:

MAR RICHARD N. EIMAN

Asst. Chief, Planning & Design Section

Date:

SUBMITTED:

ANDY'S EREDO

Chief, Planning & Design Section

Date:

RECOMMENDED:

VIVIAN A. IGNACIO

Asst. Chief, Planning & Design Section

Date:

APPROVED:

VIVIAN A. IGNACIO

Chief, Planning & Design Section

Date:

SHEET NO.

06

02/13

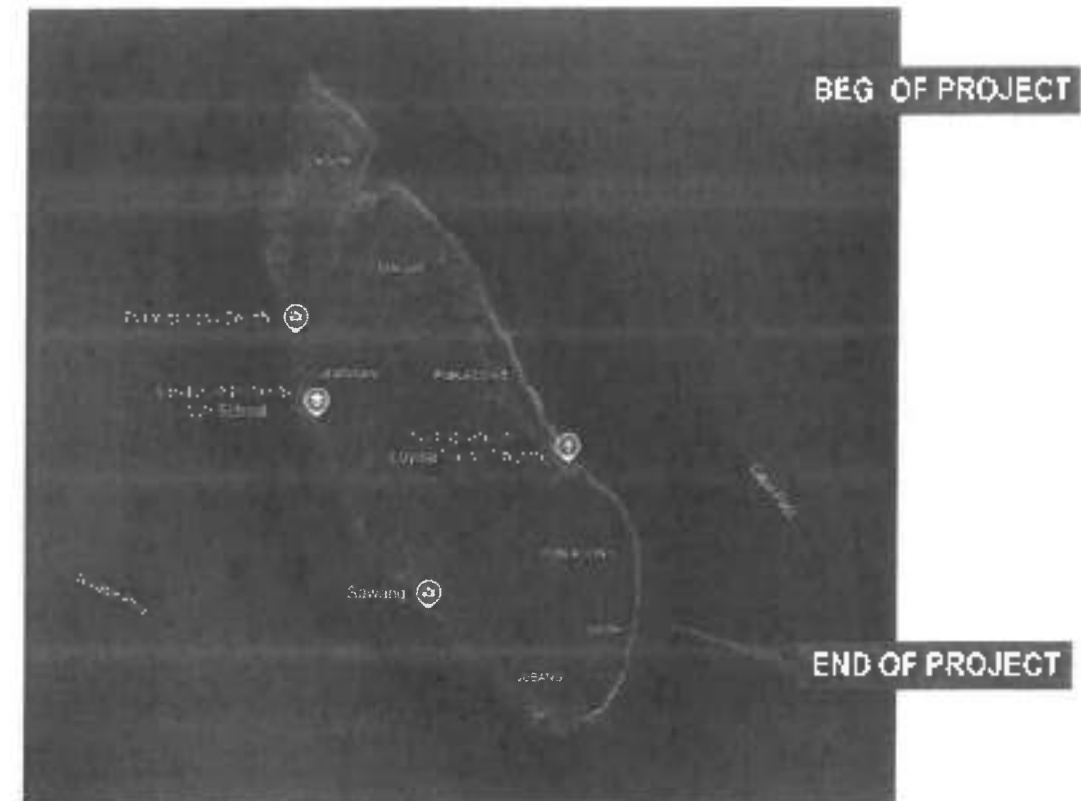
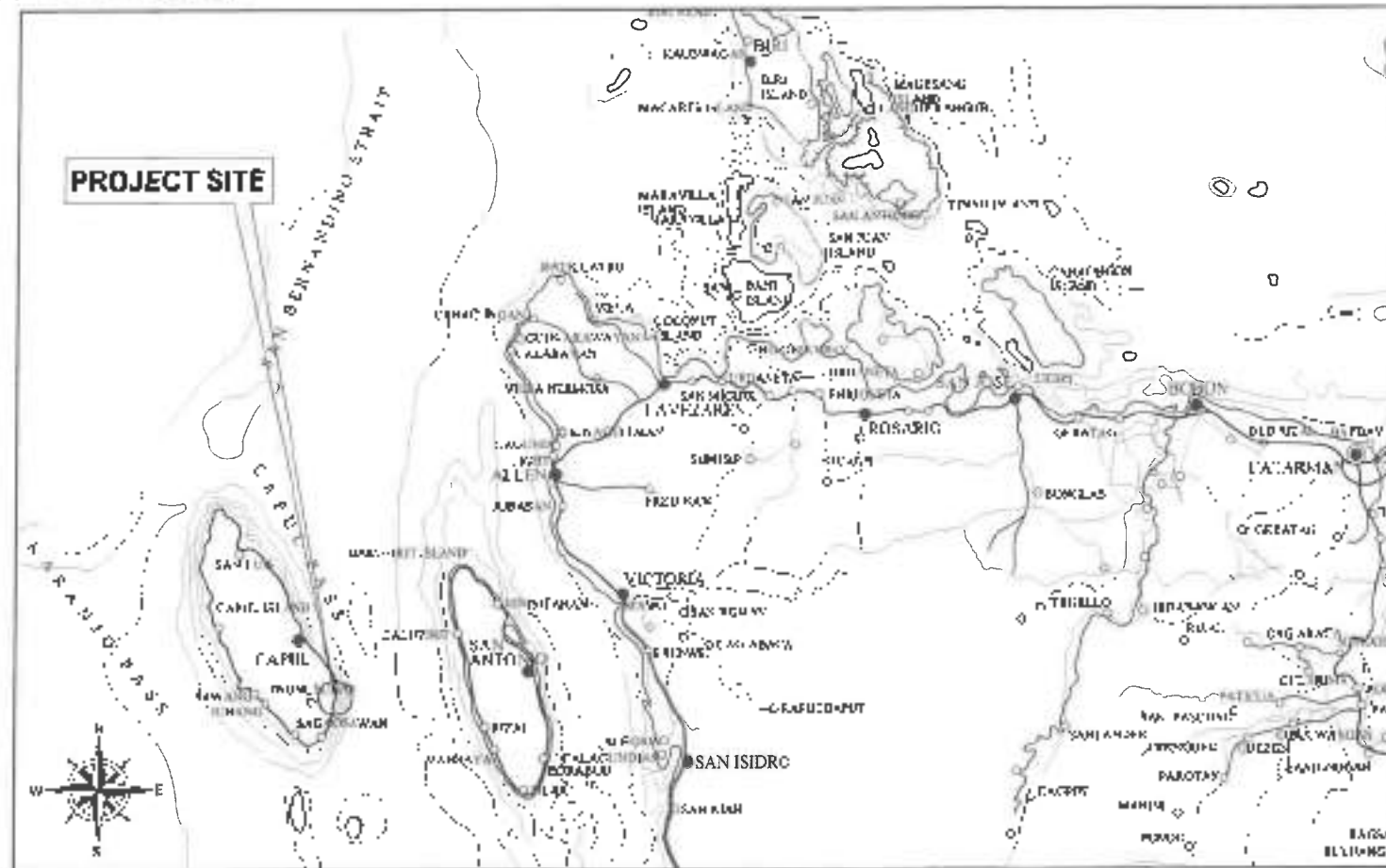
SHEET NO.

06

25

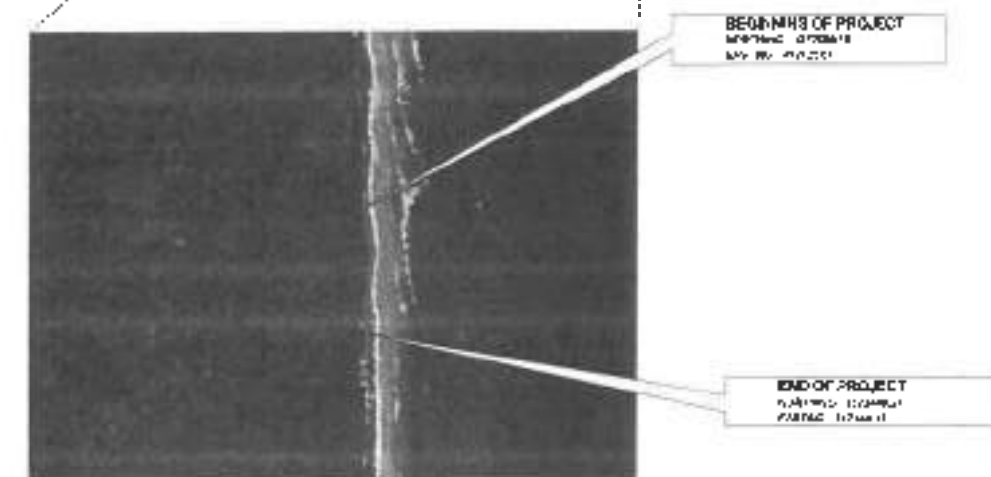
LOCATION MAP

N.T.S



VICINITY MAP

N.T.S



 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS REGIONAL OFFICE No. VIII NORTHERN SAMAR FIRST DISTRICT ENGINEERING OFFICE Calbayog, Northern Samar	PROJECT NAME AND LOCATION CONSTRUCTION/IMPROVEMENT OF CAROL CERILMERBUTAL ROAD ARAWAN, LAKUSAR - BAYANG - SAGUISAWAN - JUBANG - GSON - POBLACION SECTION, CAROL, NORTHERN SAMAR	SHEET CONTENTS LOCATION MAP VICINITY MAP	OWNED BY PEYRONIL D. CABA - JR DESIGNED BY JEFF P. BOLA Civil Engineer II	REVIEWED MARCO DONALD N. ELMAN Asst. Chief Planning & Design Section Date: _____	SUBMITTED ANDY S. BRENDO Civil Planning Design Section Date: _____	RECOMMENDED VINCENTE BIAGO Asst. Chief Planning & Design Section Date: _____	APPROVED ALVIN A. IGNACIO District Engineer Date: _____	SHEET NO. 07 SHEET TOTAL 25
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GENERAL NOTES:

SURVEY DATA:

DATE OF SURVEY: OCTOBER 10, 2024
EQUIPMENT USED: (GHC/MAX): DATE: 235180101059 ROVER 1: 235171102091
CALIBRATION EXPIRY DATE: DECEMBER 27, 2024

BM No./ REF No.	COORDINATES		ELEVATION	REMARKS
	NORTHING	EASTING		
BM#1	1372700.87	412129.53	62.52	NAILED ON COCONUT TREE
R1	1372704.10	412126.73	62.59	EDGE OF EXISTING PAVEMENT, CENTERLINE

COORDINATE REFERENCE SYSTEM:	PRS92 / PHILIPPINE ZONE V
PROJECTION:	TRANSVERSE MERCATOR (TM) ZONE OF 2° NETWIDE
DATUM	PHILIPPINE REFERENCE SYSTEM 1982
EPSG CODE	3125

REFERENCE BENCHMARK DETAILS

- 1.) THE POSITION OF PROJECT CONTROL POINTS SHALL BE DEFINED AND MARKED ON THE BY MONUMENTS OF PERMANENT NATURE.
- 2.) CRITERIA FOR LOCATION OF MONUMENTS:
 - ACCESSIBILITY
 - GROUND STABILITY
 - SECURITY FROM POSSIBLE ACTS OF DISTURBANCE
- 3.) INTERVAL OF MONUMENTS
 - PRIMARY GPS CONTROL (GPS): 3 KM INTERVAL
 - PRIMARY PROJECT CONTROL (BM): 300 M INTERVAL
 - INTERMEDIATE CONTROL (TBM): EVERY 250 M INTERVAL IN BETWEEN BMS

STANDARDS AND REFERENCES:

- DPMH DESIGN, GUIDELINES, CRITERIA, AND STANDARDS (JGCS), VOLUME 4, 2015 EDITION
- AASHTO GUIDE ON PAVEMENT DESIGN, 1993 EDITION
- AASHTO A POLICY ON GEOMETRIC DESIGN STANDARD OF HIGHWAY AND STREETS, 2011, 8TH EDITION
- HIGHWAY SAFETY DESIGN STANDARDS: PART 1 - ROAD SAFETY DESIGN, AND PART 2 - ROAD SIGNS AND PAVEMENT MARKINGS, 2012 EDITION
- DPMH STANDARD SPECIFICATIONS FOR HIGHWAYS, BRIDGES & AIRPORTS, 2014 EDITION
- DEPARTMENT ORDER NO. 13 SERIES OF 2018 - GUIDELINES FOR THE PREPARATION OF COST ESTIMATES FOR TRAFFIC MANAGEMENT AND SAFETY AND HEALTH REQUIREMENTS FOR THE CONSTRUCTION AND MAINTENANCE OF ROADS, BRIDGES, AND SAFETY & HEALTH REQUIREMENTS FOR SCHOOL BUILDINGS.

DESIGN SPECIFICATION:

1.0 RIGID PAVEMENT DESIGN PARAMETERS	
PERFORMANCE PERIOD	- 20 YEARS (FOR PCCP)
DESIGN TRAFFIC: ESAL	- 0.438×10^6
DESIGN RELIABILITY: R	- 0.85
STANDARD DEVIATION: S _d	- 0.35
DESIGN SERVICEABILITY LOSS: ΔPSI	- 2.00
PCCP MODULUS OF RUPTURE: S _c	- 638.00
PCCP MODULUS OF ELASTICITY: E _c	- 3.370×10^6
SUBGRADE DESIGN CBR	- 7.49
EFFECTIVE ROADBED RESILIENT MODULUS: M _R	- 11227.70
SUBBASE ELASTIC MODULUS: E _{SB}	- 20300.00
SURFACE THICKNESS	- 200 mm
EFFECTIVE MODULUS AT SUBGRADE INTERFACE: K (psi)	- 400.00
DRAINAGE COEFFICIENT: C _d	- 0.80
LOAD TRANSFER COEFFICIENT: J	- 3.20
LOSS OF SUPPORT: L _s	- 1.00
K, CORRECTED	- 170.00

DESIGN SPECIFICATION:

HYDROLOGIC ANALYSIS AND HYDRAULIC PARAMETERS

DESIGN STORM FREQUENCY	= 2yrs
COEFFICIENT OF RUN-OFF, C	= 1
RAINFALL INTENSITY, I	= 33.87mm/hr
CATCHMENT AREA, A	= 0.002616 sq.km
RUN-OFF DISCHARGE, QR	= 0.0025m ³ /s @ 600
HEIGHT, H	= 0.70m
WIDTH, W	= 0.30m
FREE BOARD	= 0.10m
DEPTH, D	= 0.80m
SLOPE, S	= 0.0023
ROUGHNESS COEFFICIENT, n	= 0.18
WETTED PERIMETER, P	= 1.50
HYDRAULIC RADIUS, R	= 0.12
100 FT VELOCITY, V	= 0.20m/s
DESIGN DISCHARGE, Qd	= 0.037m ³ /s @ 600



OFFICE OF THE DISTRICT ENGINEER
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGIONAL OFFICE - NS
NORTHERN SAMAR FIRST
DISTRICT ENGINEERING OFFICE
Camarines Norte, Samar

PROJECT NAME AND LOCATION
CONSTRUCTION/IMPROVEMENT OF CARPA
CIRCUMFERENTIAL ROAD
AGUIN - LAKELGAN - SAKUNG - SAGASAGAN
JUSAGAN - LAGUN - TUBUDON SECTION,
CAPUL NORTHERN SAMAR

SHEET NO. 1
GENERAL NOTES

DRWN BY:
PETRILLO N. CALABRANG JR.
DESIGNED BY:
JEFF F. PETROLA

REVIEWED:
MARICRISTAL N. EIMAN
Chief, Planning & Design Section

SUBMITTAL:
ANIE S. ENERO
Chief, Planning & Design Section

AS CHECKED:
VICTOR M. BRACO
Chief, Planning & Design Section

APPROVED:
ALVIN A. IGNACIO
District Engineer

SCALE: 1:1
SHEET NO.
01 OF 01
DB
23

CONSTRUCTION REQUIREMENTS:

DIMENSIONS

- a. STATIONS ARE GIVEN IN KILOMETERS WITH OR WITHOUT DECIMALS
- b. RADII, ELEVATIONS, FLOOD LEVELS, ETC., ARE GIVEN IN METERS WITH OR WITHOUT DECIMALS
- c. UNLESS OTHERWISE SHOWN, ALL DISTANCES ARE IN MILLIMETERS

STATIONINGS

- a. THE ROAD STATIONS AND ELEMENTS OF CURVES ARE RELATIVE TO THE CENTERLINE OF THE ROAD
- b. ALL STATIONS ALONG ROAD CENTERLINE ARE RECKONED FROM NATIONAL ROAD

ELEVATIONS AND GRADES

- a. ELEVATIONS GIVEN IN THE COLUMN "FINISHED GRADE ELEVATION" REFER TO THE GRADE AS SHOWN IN THE TYPICAL ROADWAY SECTION.
- b. GROUND LEVEL AND FINISHED ROAD LEVEL OF THE ROAD REFER TO THE GROUND PROFILE FOR THE ROAD CENTERLINE

100(2) CLEARING AND GRUBBING

ALL SURFACE OBJECTS AND ALL TREES, STUMPS, ROOTS AND OTHER PROTRUDING OBSTRUCTIONS NOT DESIGNATED TO REMAIN, SHALL BE CLEARED AND/OR GRUBBED, INCLUDING MOWING AS REQUIRED

100(3) INDIVIDUAL REMOVAL OF TREES OR STUMPS

INDIVIDUAL TREES OR STUMPS DESIGNATED BY THE ENGINEER FOR REMOVAL AND LOCATED IN AREAS OTHER THAN THOSE ESTABLISHED FOR CLEARING AND GRUBBING AND ROADSIDE CLEANUP SHALL BE REMOVED AND DISPOSED OFF AS SPECIFIED UNDER SUBSECTION 100.2.2 EXCEPT TREES REMOVED SHALL BE CUT AS NEARLY FLUSH WITH THE GROUND AS PRACTICABLE WITHOUT REMOVING STUMPS.

101(1) REMOVAL OF STRUCTURES AND OBSTRUCTIONS

THE CONTRACTOR SHALL PERFORM THE WORK DESCRIBED ABOVE, WITHIN AND ADJACENT TO THE ROADWAY, ON GOVERNMENT LAND OR EASEMENT, AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. ALL DESIGNATED SALVABLE MATERIAL SHALL BE REMOVED, WITHOUT UNNECESSARY DAMAGE, IN SECTIONS OR PIECES WHICH MAY BE READILY TRANSPORTED, AND SHALL BE STORED BY THE CONTRACTOR AT SPECIFIED PLACES ON THE PROJECT OR AS OTHERWISE SHOWN IN THE SPECIAL PROVISIONS. PERISHABLE MATERIAL SHALL BE HANDLED AS DESIGNATED IN SUBSECTION 100.2.2. NONPERISHABLE MATERIAL MAY BE DISPOSED OFF OUTSIDE THE LIMITS OF VIEW FROM THE PROJECT WITH WRITTEN PERMISSION OF THE PROPERTY OWNER ON WHOSE PROPERTY THE MATERIAL IS PLACED. COPIES OF ALL AGREEMENTS WITH PROPERTY OWNERS ARE TO BE FURNISHED TO THE ENGINEER. BASEMENTS OR CAVITIES LEFT BY THE STRUCTURE REMOVAL SHALL BE FILLED WITH ACCEPTABLE MATERIAL TO THE LEVEL OF THE SURROUNDING GROUND AND, IF WITHIN THE PRISM OF CONSTRUCTION, SHALL BE COMPACTED TO THE REQUIRED DENSITY.

102 EXCAVATION

THIS ITEM SHALL CONSIST OF ROADWAY AND DRAINAGE AND BORROW EXCAVATION AND THE DISPOSAL OF MATERIAL IN ACCORDANCE WITH THIS SPECIFICATION AND IN CONFORMITY WITH THE LINES, GRADES AND DIMENSIONS SHOWN ON THE PLANS OR ESTABLISHED BY THE ENGINEER.

102(1) UNCLASSIFIED EXCAVATION

UNCLASSIFIED EXCAVATION SHALL CONSIST OF THE EXCAVATION AND DISPOSAL OF ALL MATERIALS REGARDLESS OF ITS NATURE, NOT CLASSIFIED AND INCLUDED IN THE BILL OF QUANTITIES UNDER OTHER PAY ITEMS.

102(2) COMMON EXCAVATION

COMMON EXCAVATIONS SHALL CONSIST OF ALL EXCAVATION NOT INCLUDED IN THE BILL OF QUANTITIES UNDER "ROCK EXCAVATION" OR OTHER PAY ITEMS.

103 STRUCTURE EXCAVATION

GENERAL: ALL STRUCTURES THE CONTRACTOR SHALL NOTIFY THE ENGINEER SUFFICIENTLY IN ADVANCE OF THE BEGINNING OF ANY EXCAVATION SO THAT CROSS-SECTIONAL ELEVATIONS AND MEASUREMENTS MAY BE TAKEN ON THE UNDISTURBED GROUND. THE NATURAL GROUND ADJACENT TO THE STRUCTURE SHALL NOT BE DISTURBED WITHOUT PERMISSION OF THE ENGINEER.

104 EMBANKMENT

PRIOR TO CONSTRUCTION OF EMBANKMENT, ALL NECESSARY CLEARING AND GRUBBING IN THAT AREA SHALL HAVE BEEN PERFORMED IN CONFORMITY WITH ITEM 100. CLEARING AND GRUBBING, EMBANKMENT CONSTRUCTION SHALL CONSIST OF CONSTRUCTING ROADWAY EMBANKMENTS, INCLUDING PREPARATION OF THE AREAS UPON WHICH THEY ARE TO BE PLACED, THE CONSTRUCTION OF DIKES WITHIN OR ADJACENT TO THE ROADWAY; THE PLACING AND COMPACTING OF APPROVED MATERIAL WITHIN ROADWAY AREAS WHERE UNSUITABLE MATERIAL HAS BEEN REMOVED; AND THE PLACING AND COMPACTING OF EMBANKMENT MATERIAL IN HOLES, PITS, AND OTHER DEPRESSIONS WITHIN THE ROADWAY AREA.

105 SUBGRADE PREPARATION

THIS ITEM SHALL CONSIST OF THE PREPARATION OF THE SUBGRADE FOR THE SUPPORT OF OVERLYING STRUCTURAL LAYERS. IT SHALL EXTEND TO FULL WIDTH OF THE ROADWAY, UNLESS AUTHORIZED BY THE ENGINEER. SUBGRADE PREPARATION SHALL NOT BE DONE UNLESS THE CONTRACTOR IS ABLE TO START IMMEDIATELY THE CONSTRUCTION OF THE PAVEMENT STRUCTURE.

200 AGGREGATE SUBBASE COURSE

THE EXISTING SURFACE SHALL BE GRADED AND FINISHED AS PROVIDED UNDER ITEM 105. SUBGRADE PREPARATION, BEFORE PLACING THE SUBBASE MATERIAL.

THE AGGREGATE SUBBASE MATERIAL SHALL BE PLACED AT A UNIFORM MIXTURE ON A PREPARED SUBGRADE IN A QUANTITY WHICH WILL PROVIDE THE REQUIRED COMPACTED THICKNESS. WHEN MORE THAN ONE LAYER IS REQUIRED, EACH LAYER SHALL BE SHAPED AND COMPACTED BEFORE THE SUCCEEDING LAYER IS PLACED.

WHEN UNIFORMLY MIXED, THE MIXTURE SHALL BE SPREAD TO THE PLAN THICKNESS, FOR COMPACTION.

BEFORE SUBBASE CONSTRUCTION IS STARTED, THE CONTRACTOR SHALL SPREAD AND COMPACT TRIAL SECTIONS AS DIRECTED BY THE ENGINEER. THE PURPOSE OF THE TRIAL SECTIONS IS TO CHECK THE SUITABILITY OF THE MATERIALS AND THE EFFICIENCY OF THE EQUIPMENT AND CONSTRUCTION METHOD WHICH IS PROPOSED TO BE USED BY THE CONTRACTOR.

AGGREGATE SUBBASE SHALL BE SPREAD WITH EQUIPMENT THAT WILL PROVIDE A UNIFORM LAYER WHICH WHEN COMPACTED WILL CONFORM TO THE DESIGNED LEVEL AND TRANSVERSE SLOPES AS SHOWN ON THE PLANS.

311 PORTLAND CEMENT CONCRETE PAVEMENT

THIS ITEM SHALL CONSIST OF PAVEMENT OF PORTLAND CEMENT CONCRETE, WITH OR WITHOUT REINFORCEMENT, CONSTRUCTED ON THE PREPARED BASE IN ACCORDANCE WITH THIS SPECIFICATION AND IN CONFORMITY WITH LINES, GRADES, THICKNESS AND TYPICAL CROSS-SECTION SHOWN ON THE PLANS.

404 REINFORCING STEEL

THIS ITEM SHALL CONSIST OF FURNISHING, BENDING, FABRICATING AND PLACING OF STEEL REINFORCEMENT OF THE TYPE, SIZE, SHAPE AND GRADE REQUIRED IN ACCORDANCE WITH THIS SPECIFICATION AND IN CONFORMITY WITH THE REQUIREMENTS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

BEFORE MATERIALS ARE ORDERED, ALL ORDER LISTS AND BENDING DIAGRAM SHALL BE FURNISHED BY THE CONTRACTOR, FOR APPROVAL OF THE ENGINEER. STEEL REINFORCEMENT SHALL BE STORED ABOVE THE SURFACE OF THE GROUND UPON PLATFORMS, SKIDS, OR OTHER SUPPORTS AND SHALL BE PROTECTED AS FAR AS PRACTICABLE FROM MECHANICAL INJURY AND SURFACE DETERIORATION CAUSED BY EXPOSURE TO CONDITIONS PRODUCING RUST.

ALL REINFORCING BARS REQUIRING BENDING SHALL BE COLD-BENT TO THE SHAPES SHOWN ON THE PLANS OR REQUIRED BY THE ENGINEER. BARS SHALL BE BENT AROUND A CIRCULAR PIN HAVING THE FOLLOWING DIAMETERS (D) IN RELATION TO THE DIAMETER OF THE BAR (d):

LOWEST DIAMETER, d, mm	PIN DIAMETER (D)
13 to 20	8d
25 to 28	9d
32 and greater	10d

	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS DISTRICT ENGINEERING OFFICE NORTHERN SAMAR General, Marikina Road	PROJECT NAME AND LOCATION CONSTRUCTION / IMPROVEMENT OF LUPA CIRCUFERENTIAL ROAD AGUIN - LANDUBAY - SAKANO - BACORAYAN JUBANG - OSON - PROBUKON SECTION TAP. 4 NORTHERN SAMAR	DRAWN BY PETERLO B. LACANAL JR. JEFF L. TEROUA	REVIEWED MER DONALD N. EIMAN Asst. Chief, Planning & Design Section	DESIGNED JOY S. EMO Chief Planning & Design Section	APPROVED V. V. EMO Asst. Chief Engineer	APPROVED ALVIN A. IGNACIO District Engineer	DATE 05/17/25	SCALE 0.5
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ALL STEEL REINFORCEMENT SHALL BE ACCURATELY PLACED IN THE POSITION SHOWN ON THE PLANS OR REQUIRED BY THE ENGINEER AND FIRMLY HELD THERE DURING THE PLACING AND SETTING OF THE CONCRETE. BARS SHALL BE TIED AT ALL INTERSECTIONS EXCEPT WHERE SPACING IS LESS THAN 300MM IN EACH DIRECTIONS, IN WHICH CASE, ALTERNATE INTERSECTIONS SHALL BE TIED. TIES SHALL BE FASTENED ON THE INSIDE.

ALL REINFORCEMENT SHALL BE FURNISHED IN THE FULL LENGTHS INDICATED ON THE PLANS. SPACING OF BARS, EXCEPT WHERE SHOWN ON THE PLANS, WILL NOT BE PERMITTED WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER. SPLICES SHALL BE STAGGERED AS FAR AS POSSIBLE AND WITH A MINIMUM SEPARATION OF NOT LESS THAN 40 BAR DIAMETERS. NOT MORE THAN ONE-THIRD OF THE BARS MAY BE SPICED IN THE SAME CROSS-SECTION, EXCEPT WHERE SHOWN ON THE PLANS.

UNLESS OTHERWISE SHOWN ON THE PLANS, BARS SHALL BE LAPPED A MINIMUM DISTANCE OF

SP. JO TYPE	GRADE 40 MIN. LAP	GRADE 60 MIN. LAP	BUT NOT LESS THAN
TENSION	24 BAR DIAMETER	36 BAR DIAMETER	300 MM
COMPRESSION	20 BAR DIAMETER	24 BAR DIAMETER	300 MM

405 STRUCTURAL CONCRETE

THIS ITEM SHALL CONSIST OF FURNISHING, BENDING, PLACING AND FINISHING CONCRETE IN ALL STRUCTURES EXCEPT PAVEMENTS IN ACCORDANCE WITH THIS SPECIFICATION AND CONFORMING TO THE LINES, GRADES, AND DIMENSIONS SHOWN ON THE PLANS. CONCRETE SHALL CONSIST OF A MIXTURE OF PORTLAND CEMENT, FINE AGGREGATE, COARSE AGGREGATE, ADMIXTURE WHEN SPECIFIED, AND WATER MIXED IN THE PROPORTIONS SPECIFIED OR APPROVED BY THE ENGINEER.

FIVE CLASSES OF CONCRETE ARE PROVIDED FOR IN THIS ITEM, NAMELY: A, B, C, P AND SEAL. EACH CLASS SHALL BE USED IN THAT PART OF THE STRUCTURE AS CALLED FOR ON THE PLANS.

THE CLASSES OF CONCRETE WILL GENERALLY BE USED AS FOLLOWS:

CLASS A - ALL SUPERSTRUCTURES AND HEAVILY REINFORCED SUBSTRUCTURES. THE IMPORTANT PARTS OF THE STRUCTURE INCLUDED ARE SLABS, BEAMS, GIRDERS, COLUMNS, ARCH RIBS, BOX CULVERTS, REINFORCED ABUTMENTS, RETAINING WALLS, AND REINFORCED FOOTINGS.

CLASS B - FOOTINGS, PEDESTALS, MASSIVE PIER SHAFTS, PIPE BEDDING, AND GRAVITY WALLS, UNREINFORCED OR WITH ONLY A SMALL AMOUNT OF REINFORCEMENT.

CLASS C - THIN REINFORCED SECTIONS, RAILINGS, PRECAST R.C. PILES AND CRIBBING AND FILLER IN STEEL GRID FLOORS.

CLASS P - PRESTRESSED CONCRETE STRUCTURES AND MEMBERS.

SEAL - CONCRETE DEPOSITED IN WATER

506 STONE MASONRY

THE STONE SHALL BE CLEAN, HARD AND DURABLE AND SHALL BE SUBJECT TO THE ENGINEER'S APPROVAL. ADOBE STONE SHALL NOT BE USED UNLESS OTHERWISE SPECIFIED.

SIZES AND SHAPES - UNLESS OTHER SIZES ARE SHOWN ON THE PLANS, STONES HAVE A THICKNESS OF NOT LESS THAN 150 MM, 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. EACH STONE SHALL BE OF GOOD SHAPE AND BE FREE OF DEPRESSIONS AND PROJECTIONS THAT MIGHT WEAKEN OR PREVENT IT FROM BEING PROPERLY BEDDED.

DRESSING - THE STONE SHALL BE DRESSED TO REMOVE ANY THIN OR WEAK PORTIONS. FACE STONES SHALL BE DRESSED TO PROVIDE BED AND JOINT LINES THAT DO NOT VARY MORE THAN 20 MM FROM THE TRUE LINES AND TO ENSURE THE MEETING OF BED AND JOINT LINES WITHOUT THE ROUNDING OF CORNERS OF THE STONES IN EXCESS OF 30 MM IN RADIUS. BED SURFACES OF THE FACE STONES SHALL BE APPROXIMATELY NORMAL TO THE FACE OF THE STONES FOR ABOUT 60 MM AND FROM THIS POINT MAY DEPART FROM A NORMAL PLANE NOT TO EXCEED 50 MM IN 300 MM.

FINISH FOR EXPOSED FACES - FACE STONES SHALL BE PITCHED TO THE LINE ALONG THE BEDS AND JOINTS. THE MAXIMUM PROJECTION OF ROCK FACES BEYOND THE PITCH LINES SHALL NOT BE MORE THAN 50 MM.

505 RIPRAP AND GROUTED RIPRAP

STONES FOR RIPRAP SHALL CONSIST OF ROCK AS NEARLY AS RECTANGULAR IN SECTION AS IS PRACTICAL EXCEPT THAT RIPRAP OF CLASS A MAY CONSIST OF ROUND NATURAL STONES. THE STONES SHALL BE SOUND, TOUGH, DURABLE, DENSE, RESISTANT TO THE ACTION OF AIR AND WATER, AND SUITABLE IN ALL RESPECTS FOR THE PURPOSE INTENDED.

STONES FOR RIPRAP SHALL BE ONE OF THE FOLLOWING CLASSES AS SHOWN ON THE PLANS OR DETERMINED BY THE ENGINEER.

CLASS A - STONES RANGING FROM A MINIMUM OF 15KG TO A MAXIMUM OF 25KG WITH AT LEAST 50 PERCENT OF THE STONES WEIGHING MORE THAN 20KG.

CLASS B - STONES RANGING FROM MINIMUM OF 30KG TO A MAXIMUM OF 70KG WITH AT LEAST 50 PERCENT OF THE STONES WEIGHING MORE THAN 50KG.

CLASS C - STONES RANGING FROM MINIMUM OF 60KG TO A MAXIMUM OF 100KG WITH AT LEAST 50 PERCENT OF THE STONES WEIGHING MORE THAN 80KG.

CLASS D - STONES RANGING FROM MINIMUM OF 100KG TO A MAXIMUM OF 200KG WITH AT LEAST 50

PERCENT OF THE STONES WEIGHING MORE THAN 150KG.

SOUND PIECES OF BROKEN CONCRETE OBTAINED FROM THE REMOVAL OF BRIDGES, CULVERTS AND OTHER STRUCTURES MAY BE SUBSTITUTED FOR STONE WITH THE APPROVAL OF THE ENGINEER.

DESIGN OF PAVEMENT

NOTE:

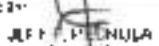
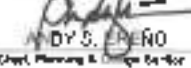
TRANSVERSE CONSTRUCTION (CONTACT) JOINT SHALL BE PROVIDED AT THE END OF ANY RUN WHERE LAYING OF CONCRETE HAS BEEN STOPPED FOR THIRTY (30) MINUTES OR LONGER.

TRANSVERSE CONSTRUCTION JOINTS WHICH OCCUR AT LOCATION OF WEAKENED PLANE JOINTS SHOULD BE BUTT JOINTS WITH DOWELS. IF JOINT OCCURS IN THE MIDDLE THIRD OF THE WEAKENED JOINT INTERVAL (1500 - 3000mm) IT SHOULD BE KEVED JOINTS WITH TIE BARS.

GENERAL NOTES

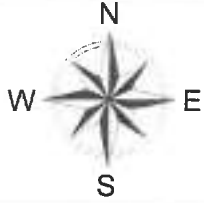
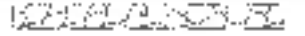
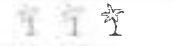
1. MATERIALS AND WORKMANSHIP SHALL CONFORM WITH THE "DPWH STANDARD SPECIFICATIONS FOR HIGHWAYS, BRIDGES AND AIRPORT", 2014 EDITION.
2. CONSTRUCTION (CONTACT) JOINTS ARE FORMED WHEN CONCRETE ON ONE SIDE OF THE JOINT IS POURED AHEAD AND ALLOWED TO SET BEFORE POURING ON THE OTHER SIDE.
3. AT THE CONSTRUCTION JOINTS (LONGITUDINAL OR TRANSVERSE) CARE SHOULD BE TAKEN THAT NO CONCRETE FROM THE LAST SLAB PLACED OVERHANGS ANY PORTION OF THE FIRST SLAB.
4. THE BARS SHOULD BE DEFORMED STEEL BAR. ALL DOWEL BARS SHALL BE SMOOTH ROUND STEEL BAR FREE FROM RUST AND OTHER DEFECTS WHICH MIGHT RESTRICT THEIR MOVEMENT.
5. TYPE OF WEAKENED PLANE JOINT TO BE USED SHALL BE AS SPECIFIED IN THE PLANS AND ONLY ONE TYPE SHALL BE USED FOR THE WHOLE PROJECT.
6. MATERIALS FOR METAL SIDE FORM SHALL BE BRAND NEW SHEET METAL GAUGE NO. 18 OF BLACK IRON FREE FROM DUST, RUST AND LIPS.
7. AT LEAST SIX (6) SUCCESSIVE DOWELLED BUTT JOINTS AT NORMAL JOINT SPACING SHALL BE PROVIDED BEFORE OR AFTER AN EXPANSION JOINT.
8. THE GROOVE OR CRACK ABOVE JOINTS (LONGITUDINAL OR TRANSVERSE) SHALL BE SEALED WITH 30:50 PENETRATION ASPHALT OR COLD APPLIED LIQUID RUBBER COMPOUND AFTER THE CONCRETE HAD BEEN CURED AND BEFORE OPENING PAVEMENT TO TRAFFIC. PENETRATION ASPHALT SEAL ON CONCRETE JOINT SHOULD BE POURED IN SUCH A MANNER THAT SPILLING WILL BE ELIMINATED. THUS, PROVIDE A SMOOTH RIDING SURFACE.
9. ALL TRANSVERSE JOINT, EXCEPT CONSTRUCTION JOINT, SHALL BE CONTINUOUS FROM EDGE TO EDGE.
10. ALL LONGITUDINAL JOINT SHALL MEET AT INTERSECTIONS WITH NO GAPS OR OFFSET.
11. ALL DIMENSION ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
12. AVOID STOPPAGE OF FORMWORKS ALONG CURVES.
13. DRILLING OF HOLES ON EXISTING PCOP OR OTHER STRUCTURES SHALL BE PERFORMED USING POWER TOOLS. THE HOLES SHALL BE PROPERLY CLEANED BEFORE GROUT/EPOXY INJECTION AND INSTALLATION OF DOWELS OR TIE BARS.
14. APPLICABLE PROVISIONS OF D.O. NO. 29, SERIES OF 1999, IS HEREBY ENFORCED.

THIS PLAN WILL SERVE ONLY AS A GUIDE IN THE IMPLEMENTATION PARTICULARLY IN THE CONSTRUCTION STAGE. IT MUST ALSO BE SUBJECTED TO AN AS-STAKED SURVEY TO BE CONDUCTED JOINTLY BY THE DIRECT IMPLEMENTING OFFICE AND THE CONTRACTOR AND SUBSEQUENT PLANS WILL BE PREPARED AND SUBMITTED FOR APPROVAL.

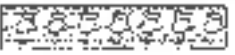
 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS Regional Office No. 10 NORTHERN SAMAR FIRST DISTRICT ENGINEERING OFFICE Calbayog, Northern Samar	PROJECT NAME AND LOCATION	MEET COMMENTS	DESIGNED BY	REVIEWED	SUBMITTED	RECOMMENDED	APPROVED	SHEET NO.	TOTAL SHEETS
	CONSTRUCTION/IMPROVEMENT OF CARLA CONCESSIONS/REPAIRING ROAD ALVIN LAMOLAN, BAWANG, BAWANG - JUBANG - PUNAN - PORTADON SECTION, CAPUL NORTHERN SAMAR	GENERAL NOTES	 PETRO WILFREDO C. CABANGAS JR. Designated by:  JEFF P. PENULA Engineer	 MARJORIE N. EMANO Asst. Chief, Planning & Design Section Date:	 ANDY S. EMANO Chief, Planning & Design Section Date:	 ALVIN A. G. MACIAO Chief Engineer Date:	 ALVIN A. G. MACIAO Chief Engineer Date:		

SYMBOLS AND ABBREVIATIONS

EXISTING TOPOGRAPHICAL FEATURES

NORTH ARROW	
EXISTING ROAD	
EXISTING ROAD WIDENED	
EXISTING CONTOUR	
ELECTRIC POST	
EXISTING PIPE CULVERT	
EXISTING BOX CULVERT	
EXISTING CON. PAILINGS	
EXISTING RIPRAI	
EXISTING CANAL	
EXISTING FENCE	
HOUSES	
DIRECTION OF WATER FLOW	
COCONUT TREES	
RICE FIELD	
SWAMP	

DESIGN FEATURES ON PLAN

PROPOSED ROAD WIDENING	
CENTER LINE	
EDGE OF PAVEMENT	
BENCH MARK	
REFERENCE POINT	
CONTROL STATION	
POINT OF CURVATURE	
POINT OF TANGENCY	
POINT OF INTERSECTION	
REINFORCED CONCRETE BOX CULVERT (RCBC)	
REINFORCED CONCRETE PIPE CULVERT (RCPC)	
GRAVELLY GRADE W/ HEAD WALL (ARMY FIELD)	
STONE MASONRY LINED CANAL	
STONE MASONRY SLOPE PROTECTION	
ELECTRICAL POST	
LIGHTING FIXTURES	
CHEVRON SIGNS	

ABBREVIATIONS

AZIM	=	AZIMUTH
DIS	=	DISTANCE
I	=	INTERSECTION ANGLE
T	=	TANGENT
R	=	RADIUS
D	=	DEGREE OF CURVE
Lc	=	LENGTH OF CURVE
PC	=	POINT OF CURVATURE
PT	=	POINT OF TANGENCY
E	=	EXTERNAL DISTANCE
M	=	MIDDLE ORDINATE
e	=	ELEVATION
V	=	VELOCITY
W	=	WIDENING
BM	=	BENCH MARK
RP	=	REFERENCE POINT
ELEV	=	ELEVATION
PVI	=	POINT OF VERTICAL INTERSECTION
STA	=	STATION
g	=	GRADE IN %
CL	=	CENTERLINE

DESIGN FEATURES ON PROFILE

CURVE ELEVATION (M.I.)	
SUPER ELEVATION (OUTER)	
POINT OF VERTICAL INTERSECTION (PVI) AND ELEVATION	
REINFORCED CONCRETE BOX CULVERT (RCBC)	
REINFORCED CONCRETE PIPE CULVERT (RCPC)	



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGIONAL OFFICE NO. VII
NORTHERN SAMAR FIRST
DISTRICT ENGINEERING OFFICE
Davao, Samar Island

PROJECT NAME AND LOCATION
CONSTRUCTION & IMPROVEMENT OF CAPITAL
CIRCUMFERENTIAL ROAD
FROM LANDUSAN, SAMAR, BAGASBAGAN
JILANG, OSON, FOLAGON SECTION
CAPITAL NORTHERN SAMAR

SHEET CONTENTS
SHEETS 11 & 12 (SECTION 11)

DESIGNED BY
FELIX S. CABACAB JR.
CHECKED BY
JOHN P. BERNARDO
ENGINEER

REVIEWED
MA. THERESA ENMAN
Chief, Planning & Design Section
Date:

APPROVED
ANDY S. EBERO
Chief, Planning & Design Section
Date:

RECOMMENDED
VINCENT BIAZO
Civil Engineer
Date:

APPROVED
ALVIN A. ISINACIO
District Engineer
Date:

SHEET NO.
5
OF 07
PROJECT NO.
11
25

SYMBOLS AND ABBREVIATIONS

EXISTING TOPOGRAPHICAL FEATURES

NORTH ARROW	
EXISTING ROAD	
EXISTING ROAD WIDENED	
EXISTING CONTOUR	
ELECTRIC POST	
EXISTING PIPE CULVERT	
EXISTING BOX CULVERT	
EXISTING CON. RAILINGS	
EXISTING RIPRAP	
EXISTING CANAL	
RIVER/CREEK	
HOUSES	
DIRECTION OF WATER FLOW	
COCONUT TREES	
RICE FIELD	
SWAMP	

DESIGN FEATURES ON PLAN

PROPOSED ROAD WIDENING	
CENTER LINE	
EDGE OF PAVEMENT	
BENCH MARK	
REFERENCE POINT	
CONTROL STATION	
POINT OF CURVATURE	
POINT OF TANGENCY	
POINT OF INTERSECTION	
REINFORCED CONCRETE BOX CULVERT (RCBC)	
REINFORCED CONCRETE PIPE CULVERT (RPCP)	
GRAVEL PAVEMENT WITH GRAVEL WALL (20% FILL)	
STONE MASS CONCRETE LINED CANAL	
STONE MASS SLOPE PROTECTION	
ELECTRICAL POST	
LIGHTING FIXTURES	
CHEVRON SIGNS	

ABBREVIATIONS

AZM	=	AZMUTH
DIST	=	DISTANCE
I	=	INTERSECTION ANGLE
L	=	TANGENT
R	=	RADIUS
D	=	DEGREE OF CURVE
LC	=	LENGTH OF CURVE
PC	=	POINT OF CURVATURE
PT	=	POINT OF TANGENCY
E	=	EXTERNAL DISTANCE
M	=	MIDDLE ORDINATE
e	=	ELEVATION
V	=	VELOCITY
W	=	WIDENING
BV	=	BENCH MARK
RP	=	REFERENCE POINT
ELEV	=	ELEVATION
PVI	=	POINT OF VERTICAL INTERSECTION
STA	=	STATION
G	=	GRADE IN %
C	=	CENTERLINE

DESIGN FEATURES ON PROFILE

SUPER ELEVATION INNER	
SUPER ELEVATION OUTER	
POINT OF VERTICAL INTERSECTION, STATION AND ELEVATION	
REINFORCED CONCRETE BOX CULVERT (RCBC)	
REINFORCED CONCRETE PIPE CULVERT (RPCP)	



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGIONAL OFFICE NO. 1
NORTHERN SAMAR FIRST
DISTRICT ENGINEERING OFFICE
Calbayog, Marikina, Samar

PROJECT NAME AND LOCATION
CONSTRUCTION, IMPROVEMENT OF CANAL
CIRCUMLAPPING ROAD
AGUN - LANDUSAN - SAWANG - SAGAGAWAN
JUBANG - OSON - POSLACION SECTION
CAP. 1 NORTHERN SAMAR

SHEET NO. 1111
2" X 36" (1:12,500) SCALE

DESIGNED BY
PETRONIO B. CABACANG JR.
Checked by
JEFF P. PIOROLA

APPROVED
MA. DONALD N. E. MAN
Asst. Chief Planning & Design Section

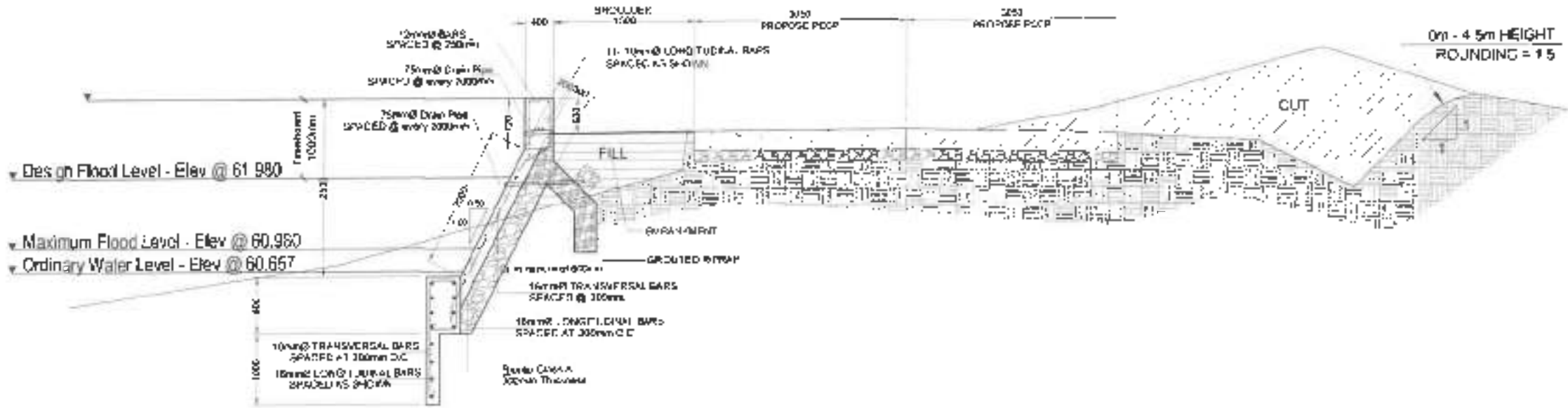
REVIEWED
ANDY S. PERERO
Chief Planning & Design Section

RECOMMENDED
VIVIAN M. BIACO
Chief Engineer

APPROVED
ALVIN A. GARCIA
Chief Engineer

BY:
DATE: 07/10/25

SCHEDULE OF PCCP		
STATION	LENGTH (Ln M)	WIDTH
0+383.00 - 0+633.00	500	8.10m



TYPICAL SECTION OF ROADWAY / SHORE PROTECTION
SCALE nts

SCHEDULE OF RCBC

STATION	STRUCTURES	REMARKS
SECTION PCBC S.K. 0+450.00	1.00m x 12.50m x 5.20m PCBC	UNDER CONSTRUCT

SCHEDULE OF STONE MASONRY

STATION	STRUCTURES	REMARKS
STA 0+540.00 - STA 0+597.00	SHORE PROTECTION	LEFT SIDE

QUANTITIES FOR STANDARD BOX CULVERTS							
CLEAR SPAN S	HEIGHT H	QUANTITY PER METER OF RABBIT					
		SINGLE		DOUBLE		TRIPLE	
		CONCRETE (m ³)	REINFORCEMENT (kg)	CONCRETE (m ³)	REINFORCEMENT (kg)	CONCRETE (m ³)	REINFORCEMENT (kg)
1.00	1.00	0.85	84.20	1.00	101.30	2.00	209.60
	1.20	1.00	101.30	1.20	121.56	2.40	249.72
	1.50	1.25	126.63	1.50	151.95	2.60	269.50
	1.80	1.50	151.95	1.80	182.37	2.80	289.28
1.50	1.00	1.00	101.30	1.50	151.95	2.00	209.60
	1.20	1.25	126.63	1.80	182.37	2.40	249.72
	1.50	1.50	151.95	2.00	209.60	2.60	269.50
	1.80	1.75	177.22	2.25	229.88	2.80	289.28
2.00	1.00	1.25	126.63	2.00	209.60	2.40	249.72
	1.20	1.50	151.95	2.25	229.88	2.60	269.50
	1.50	1.75	177.22	2.50	250.00	2.80	289.28
	1.80	2.00	209.60	2.75	280.31	3.00	309.00
2.50	1.00	1.50	151.95	2.50	250.00	2.40	249.72
	1.20	1.75	177.22	2.75	280.31	2.60	269.50
	1.50	2.00	209.60	3.00	309.00	2.80	289.28
	1.80	2.25	229.88	3.25	329.12	3.00	309.00
3.00	1.00	2.00	209.60	3.00	309.00	2.40	249.72
	1.20	2.25	229.88	3.25	329.12	2.60	269.50
	1.50	2.50	250.00	3.50	359.24	2.80	289.28
	1.80	2.75	280.31	3.75	389.36	3.00	309.00

QUANTITIES FOR STANDARD WINGWALLS							
H (m)	P+1 (m)	L (m)	QUANTITY PER STANDARD L AND R ABUTMENT				TOTAL
			SINGLE		DOUBLE		
			CONCRETE (m ³)	REINFORCEMENT (kg)	CONCRETE (m ³)	REINFORCEMENT (kg)	
1.0	1.0	1.0	0.85	84.20	1.00	101.30	1.85
1.2	1.2	1.2	1.00	101.30	1.20	121.56	2.20
1.5	1.5	1.5	1.25	126.63	1.50	151.95	2.75
1.8	1.8	1.8	1.50	151.95	1.80	182.37	3.30
2.0	2.0	2.0	1.75	177.22	2.00	209.60	3.75
2.2	2.2	2.2	2.00	209.60	2.20	229.88	4.20
2.4	2.4	2.4	2.25	229.88	2.40	249.72	4.65
2.6	2.6	2.6	2.50	250.00	2.60	269.50	5.10
2.8	2.8	2.8	2.75	280.31	2.80	289.28	5.55
3.0	3.0	3.0	3.00	309.00	3.00	309.00	6.00
3.2	3.2	3.2	3.25	329.12	3.20	329.12	6.45
3.4	3.4	3.4	3.50	359.24	3.40	359.24	6.90
3.6	3.6	3.6	3.75	389.36	3.60	389.36	7.35
3.8	3.8	3.8	4.00	419.48	3.80	419.48	7.80
4.0	4.0	4.0	4.25	449.60	4.00	449.60	8.25
4.2	4.2	4.2	4.50	479.72	4.20	479.72	8.70
4.4	4.4	4.4	4.75	509.84	4.40	509.84	9.15
4.6	4.6	4.6	5.00	539.96	4.60	539.96	9.60
4.8	4.8	4.8	5.25	570.08	4.80	570.08	10.05
5.0	5.0	5.0	5.50	600.20	5.00	600.20	10.50

GENERAL NOTES

SPECIFICATION

USE STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES AND STRUCTURES

DESIGN LOAD

LIVE LOAD HS-20 (10.0M SPAN)

CONCRETE

ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH WITH DAYS OF 28 DAYS OF 20 MPa (2900 PSI).
ALL PORTLAND CEMENTS TO BE GRIND 100% TO 200 MICRONS. ALL AGGREGATES TO BE MADE
IN ACCORDANCE WITH SECTION 704. ALL AGGREGATES SHALL BE SUBMITTED TO A QUALITY CONTROL
LABORATORY FOR ANALYSIS.

STEEL REINFORCEMENT

ALL REINFORCING STEEL TO BE AFTER TENSILE STRENGTH OF 420 MPa (60,000 PSI) WITH YIELD STRENGTH OF 350 MPa (50,000 PSI).

GENERAL

IN STATISTICS WHERE THE WALL IS NOT SHOWN BY HEIGHT OF 1.0M, THE HEIGHT OF WALL IS 1.0M.
TOP OF WALLS ON THE UPPER SLAB SHALL FOLLOW THE CROWN OF THE BRIDGE. THE WALLS ON THE LOWER
SLAB SHALL FOLLOW THE CROWN OF THE BRIDGE. THE WALLS ON THE LOWER SLAB SHALL FOLLOW THE CROWN OF THE BRIDGE.

LIVE LOAD DISTRIBUTION REINFORCEMENT

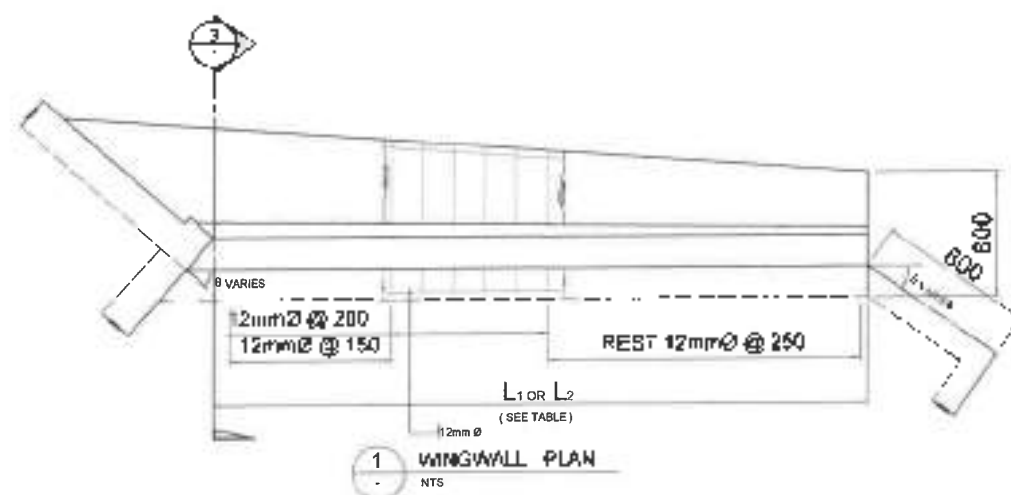
WHERE THERE IS LESS THAN THREE (3) LANE TOY SLAB, THE LIVE LOAD DISTRIBUTION REINFORCEMENT
SHALL BE TO THE MAXIMUM PERMITTED BY THE DESIGNER. THE BOTTOM OF THE TOP SLAB SHALL BE
IN ACCORDANCE WITH SECTION 704.

HEIGHT OFF RAIL

WHERE THE HEIGHT OF WALL IS 1.0M, THE HEIGHT OF WALL SHALL BE 1.0M. THE HEIGHT OF WALL SHALL BE 1.0M.
SPECIAL DESIGN OF EACH CULVERT SHALL BE DONE.

SCHEDULE OF RCBC

STATION	STRUCTURES	REMARKS
SECTION RCBC STA. 0+460.00	1.80m x 1.25m x 9.20m RCBC	CONSTRUCT



HORIZONTAL SKW ANGLE α	LENGTH OF WINGWALL S
90°	L1 = L2 = 1.414s
60°	L1 = 1.414s L2 = 1.035s
45°	L1 = 2.000s L2 = s

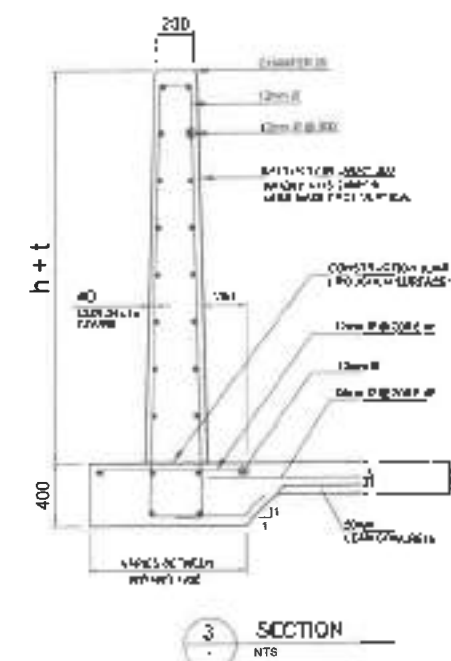
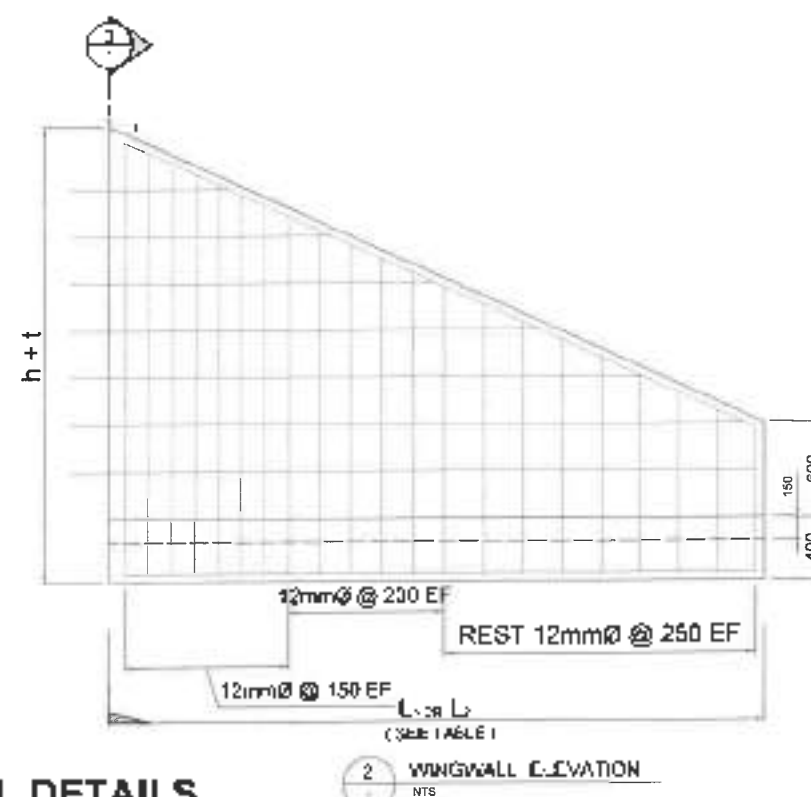
WHERE

s = 1.5 (h + 1.800) FOR SLOPE 1:1

s = 2.0 (h + 1.800) FOR SLOPE 2:1

RCBC WINGWALL DETAILS

SCALE AS SHOWN



DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGIONAL OFFICE NO. 10
NORTHERN SAMAR FIRST
DISTRICT ENGINEERING OFFICE
TAMAYAN, NORTHERN SAMAR

PROJECT NAME AND ADDRESS
CONSTRUCTION AND MAINTENANCE OF CAPITAL
IMPROVEMENT ALONG
ASIN - LINDANGAN - SANANG - SACROSMAN
JUNCTION, OSMO, PORTALAN SECTION
NORTHERN SAMAR

SHEET CONTENTS
DETAIL OF WING

DRWN BY: *[Signature]*
PETRONILLO C. CACANG JR.
CHECKED BY: *[Signature]*
JEFF P. PETEROLA
DATE: 10/10/2020

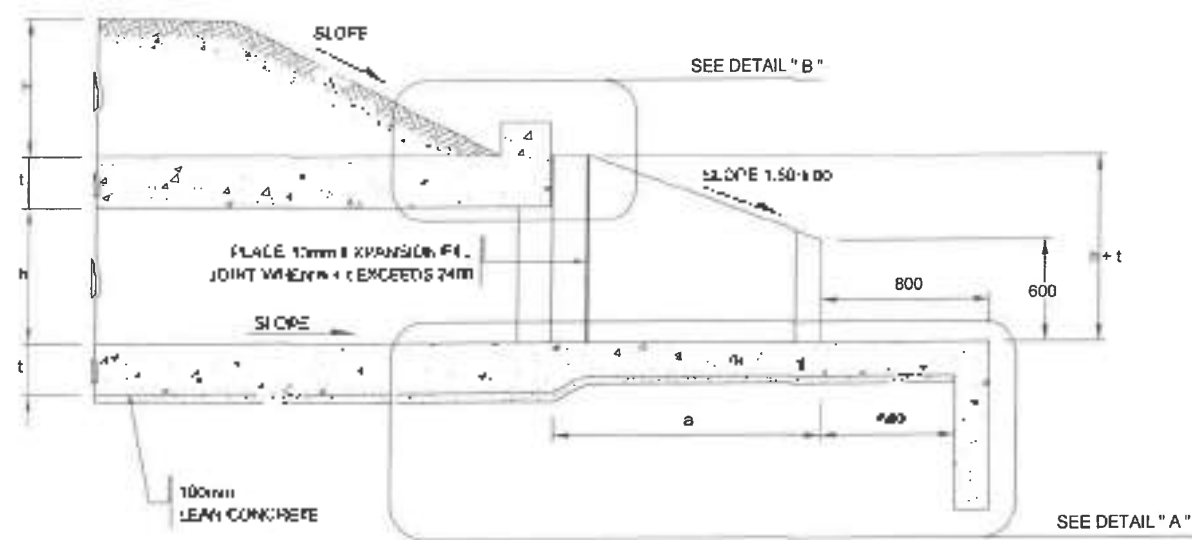
REVIEWED: *[Signature]*
MARCIONAL A. EIMAN
DATE: 10/10/2020

DESIGNED BY: *[Signature]*
JOY S. EBERO
DATE: 10/10/2020

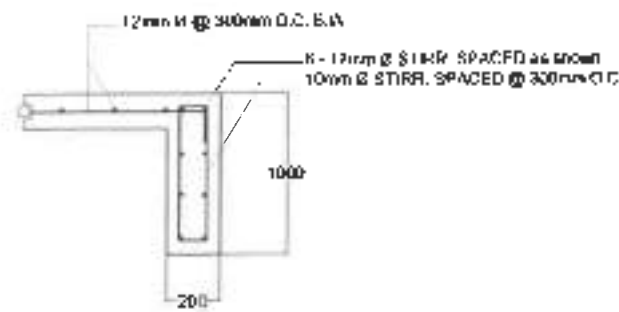
RECOMMENDED: *[Signature]*
VIVIAN B. BACAO
DATE: 10/10/2020

APPROVED: *[Signature]*
ALVIN A. IGNACIO
DATE: 10/10/2020

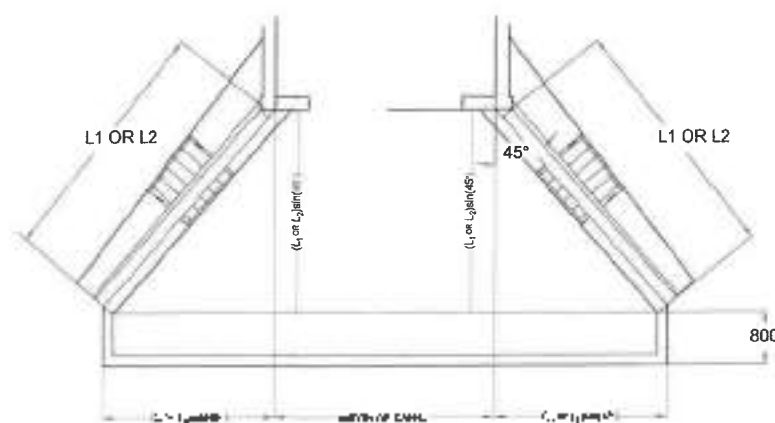
SHEET NO. 13
OF 25



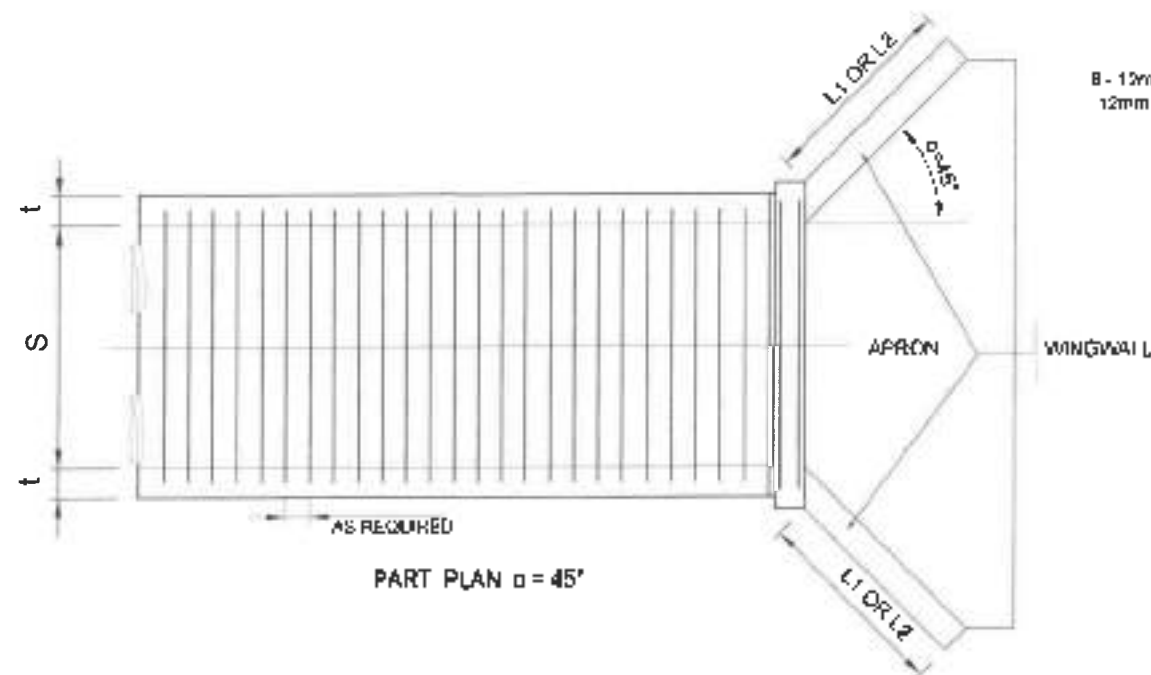
PART SECTION ALONG CENTERLINE OF CULVERT



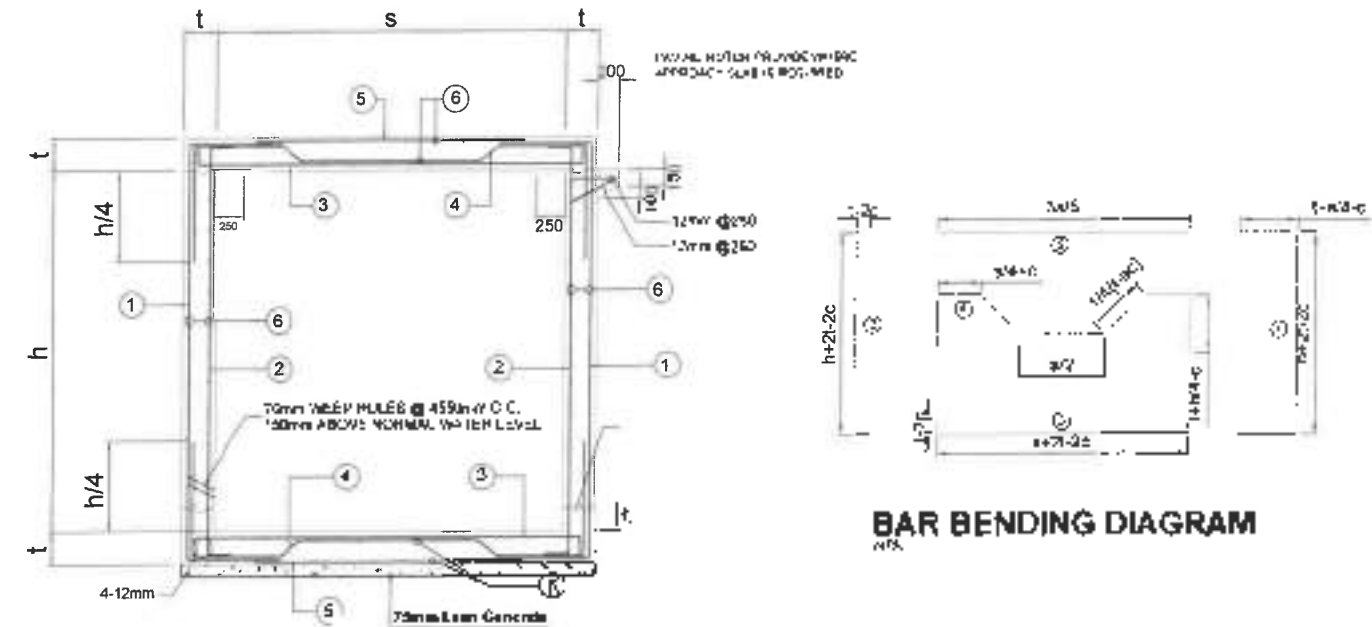
SECTION 3C (CUT-OFF WALL)



APRON PLAN



PART PLAN $\alpha = 45^\circ$



SECTION - SINGLE BARREL

BAR BENDING DIAGRAM

CLEAR		SINGLE BARREL BOX CULVERT												
SPAN (s)	HEIGHT (h)	(1)	BAR 1		BAR 2		BAR 3		BAR 4		BAR 5		BAR 6	
			Ø	SPACING	Ø	SPACING	Ø	SPACING	Ø	SPACING	Ø	SPACING	Ø	SPACING
1800	1250	200	16	280	16	320	16	260	16	200	12	280	12	250
	1500	200	16	280	16	300	16	280	16	260	12	280	12	250
	1800	200	16	260	16	280	16	220	16	260	12	260	12	250
	2100	200	16	260	16	280	16	220	16	260	12	260	12	250

BAR SCHEDULE

B-12mm Ø STIRR. SPACED @ 200mm O.C.
12mm Ø Continuous spaced as SHOWN

SECTION (HEADWALL)
DETAIL "B"



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAY
NORTHERN SAMAR FIRST
DISTRICT ENGINEERING OFFICE
Tuguegarao, Marikina, Marikina

DESIGN: NORTHERN SAMAR FIRST
CONSTRUCTION: IMPROVEMENT OF CANAL
CIRCUMFERENTIAL ROAD
400 M. LANDUSAN - SANANAY - SANANAY
- LUBANG - OSON - POBACON SECTION
(C.A.P.) NORTHERN SAMAR

SHEET: 1 OF 1
- 14 -

DRWN BY: *[Signature]*
PERMITTEE: B. CABADANG, JR.
DESIGNED BY: *[Signature]*
JEFF P. MORALES

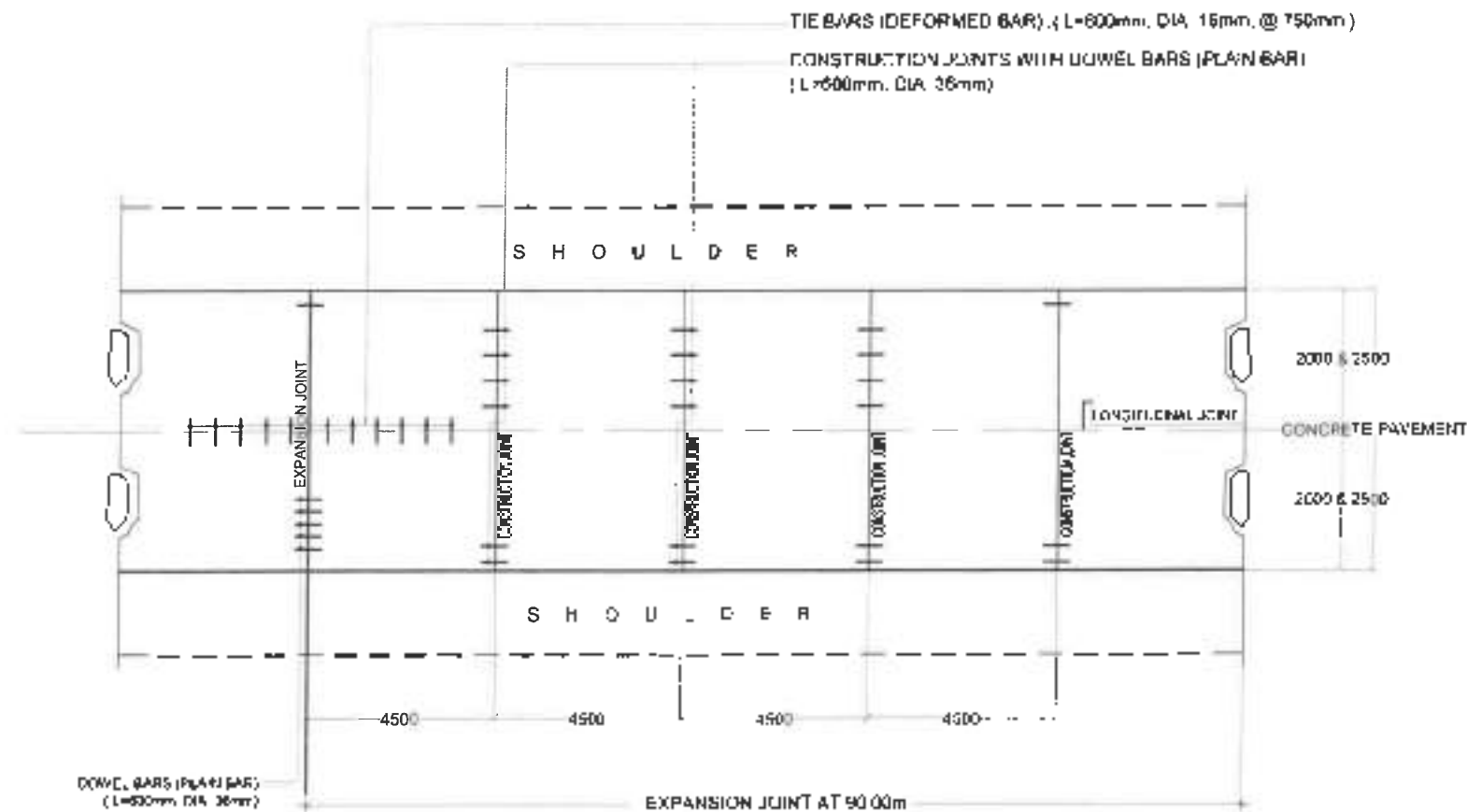
REVIEWED: *[Signature]*
MR. DONALD N. EIMAN
Chief Planning & Design Section
Date: _____

SUBMITTED: *[Signature]*
WILY S. ENEO
Chief Planning & Design Section
Date: _____

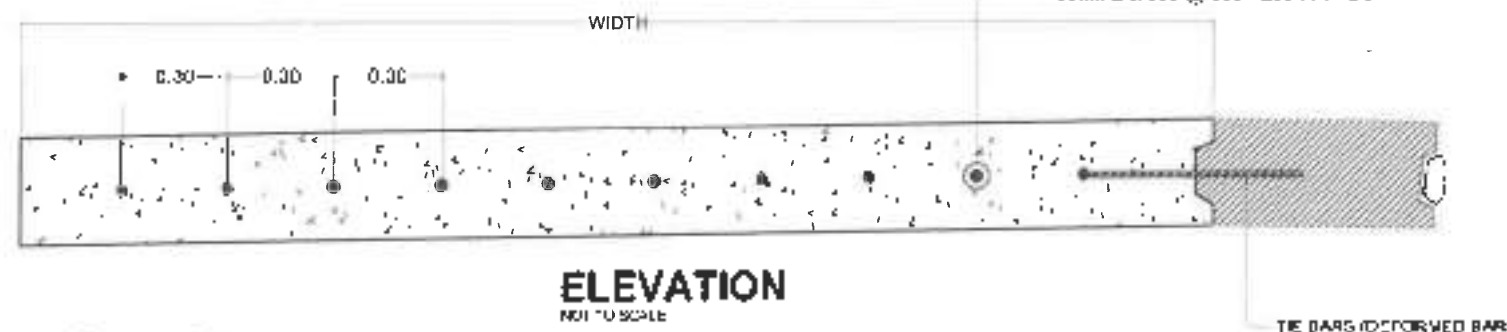
RECOMMENDED: *[Signature]*
VIVIAN E. EACO
Chief Planning & Design Section
Date: _____

APPROVED: *[Signature]*
ALVIN A. IGNACIO
District Engineer
Date: _____

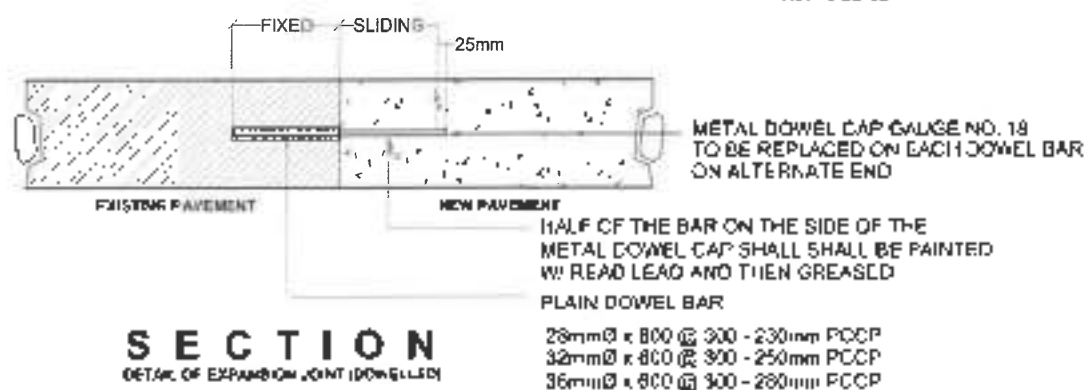
14
25



PAVEMENT LAYOUT PLAN
SCALE 1:10M



ELEVATION
NOT TO SCALE



SECTION
DETAIL OF EXPANSION JOINT (DOWELLED)

SPACING OF DOWEL BAR	
SLAB DEPTH (T) (mm)	SPACING (mm)
200	300
290	295
300	274
310	255
320	238
330	223
340	209

DESIGN OF PAVEMENT

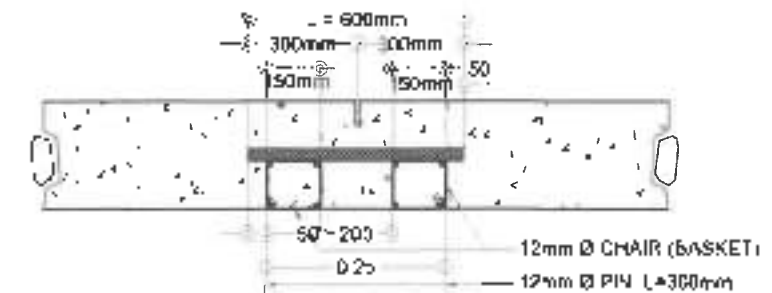
NOTE:

TRANSVERSE CONSTRUCTION (CONTACT) JOINT SHALL BE PROVIDED AT THE END OF ANY RUN WHERE LAYING OF CONCRETE HAS BEEN STOPPED FOR THIRTY (30) MINUTES OR LONGER.

TRANSVERSE CONSTRUCTION JOINTS WHICH OCCUR AT LOCATION OF WEAKENED PLANE JOINTS SHOULD BE BUTT JOINTS WITH DOWELS IF JOINT OCCURS IN THE MIDDLE THIRD OF THE WEAKENED JOINT INTERVAL (1500-3000mm); IT SHOULD BE KEYED JOINTS WITH TIE BARS

GENERAL NOTES

1. MATERIALS AND WORKMANSHIP SHALL CONFORM WITH THE "DPWH STANDARD SPECIFICATIONS FOR HIGHWAYS, BRIDGES AND AIRPORTS", 2014 EDITION
2. CONSTRUCTION (CONTACT) JOINTS ARE FORMED WHEN CONCRETE ON ONE SIDE OF THE JOINT IS POURED AND ALLOWED TO SET BEFORE POURING ON THE OTHER SIDE
3. AT THE CONSTRUCTION JOINTS (LONGITUDINAL OR TRANSVERSE) CARE SHOULD BE TAKEN THAT NO CONCRETE FROM THE LAST SLAB PLACED OVERHANGS ANY PORTION OF THE FIRST SLAB.
4. THE BARS SHOULD BE DEFORMED STEEL BAR. ALL DOWEL BARS SHALL BE SMOOTH ROUND STEEL BAR FREE FROM RUST AND OTHER DEFECTS WHICH MIGHT RESTRICT THEIR MOVEMENT
5. TYPE OF WEAKENED PLANE JOINT TO BE USED SHALL BE AS SPECIFIED IN THE PLANS AND ONLY ONE TYPE SHALL BE USED FOR THE WHOLE PROJECT
6. MATERIALS FOR METAL SIDE FORM SHALL BE BRAND NEW SHEET METAL GAUGE NO. 18 OF BLACK IRON FREE FROM DUST RUST AND LINKS.
7. AT LEAST SIX (6) SUCCESSIVE DOWELLED BUTT JOINTS AT NORMAL JOINT SPACING SHALL BE PROVIDED BEFORE OR AFTER AN EXPANSION JOINT.
8. THE GROOVE OR CRACK ABOVE JOINTS (LONGITUDINAL OR TRANSVERSE) SHALL BE SEALED WITH 30-50 PENE TRATION ASPHALT OR GOLF APPLIED LIQUID RUBBER COMPOUND AFTER THE CONCRETE HAD BEEN CURED AND BEFORE OPENING PAVEMENT TO TRAFFIC. PENETRATION ASPHALT SEAL ON CONCRETE JOINT SHOULD BE POURED IN SUCH A MANNER THAT SPILLING WILL BE ELIMINATED. THUS, PROVIDE A SMOOTH RIGID SURFACE.
9. ALL TRANSVERSE JOINT EXCEPT CONSTRUCTION JOINT, SHALL BE CONTINUOUS FROM EDGE TO EDGE.
10. ALL LONGITUDINAL JOINT SHALL MEET AT INTERSECTIONS WITH NO GAPS OR OFFSET
11. ALL DIMENSION ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED
12. AVOID STOPPAGE OF FORMWORKS ALONG CURVES.
13. DRILLING OF HOLES ON EXISTING PCP OR OTHER STRUCTURES SHALL BE PERFORMED USING POWER TOOLS. THE HOLES SHALL BE PROPERLY CLEANED BEFORE GROUT/POXY INJECTION AND INSTALLATION OF DOWELS OR TIE BARS.
14. APPLICABLE PROVISIONS OF D.C. NO. 24, SERIES OF 1984 IS HEREBY ENFORCED.



CONSTRUCTION JOINT SECTION



NORTHERN SAMAR DISTRICT ENGINEERING OFFICE
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
NORTHERN SAMAR DISTRICT ENGINEERING OFFICE
Cebu City, Northern Samar

PROJECT NAME AND LOCATION
CONSTRUCTION IMPROVEMENT OF CARAN CIRCUMFERENTIAL ROAD
ALONG TAWANAN - KAWAN - JAGADANAN
JAGANAN - USUN - POGADANAN
CARAN, NORTHERN SAMAR

DESIGN CONTRACT
DESIGN OF PAVEMENT

DESIGNED BY
JEFF P. TOROLA
Licensure

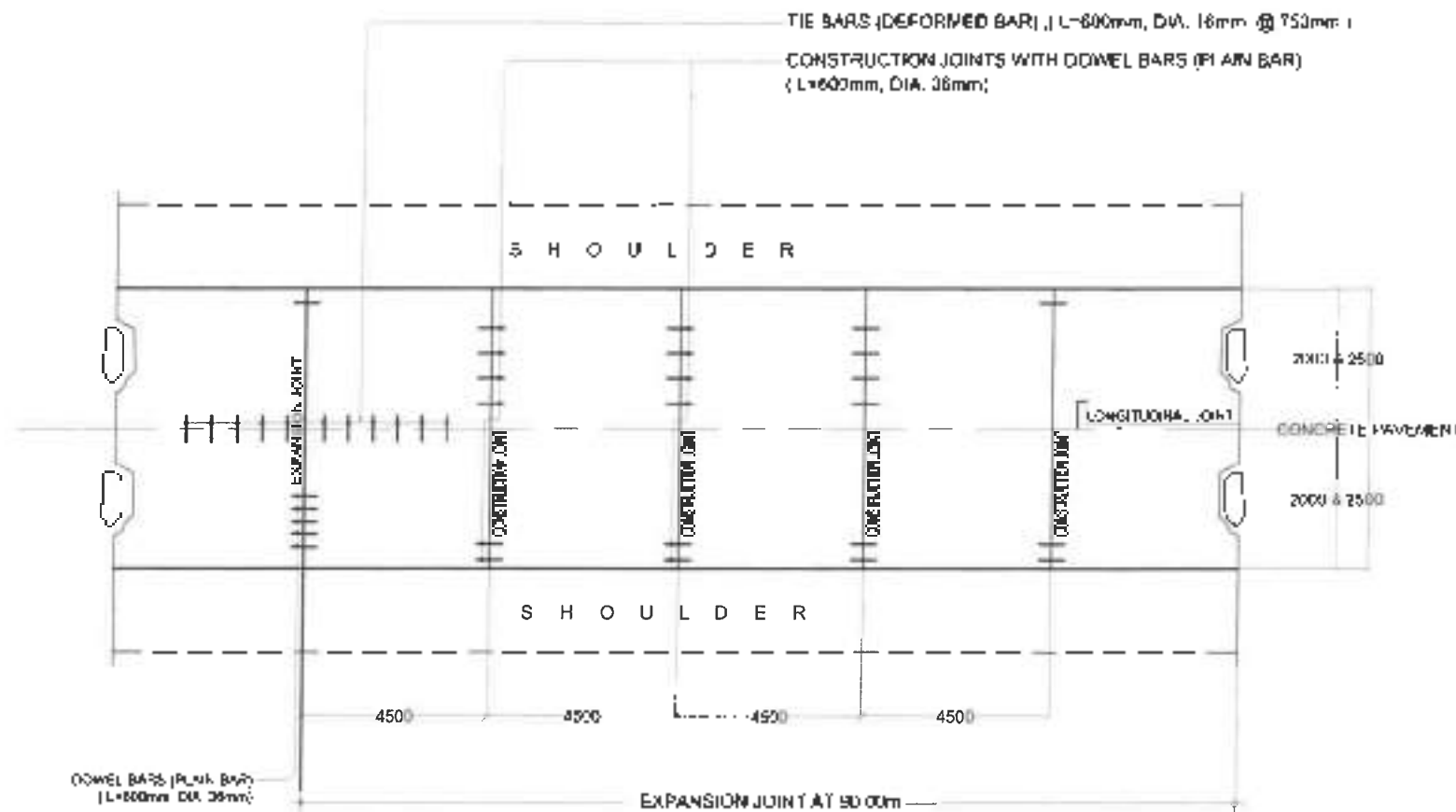
APPROVED BY
MARICORALYN RIMAN
Civil Engineer & Design Section
Date

SUBMITTED BY
ANDY S. SERRA
Civil Engineering Section
Date

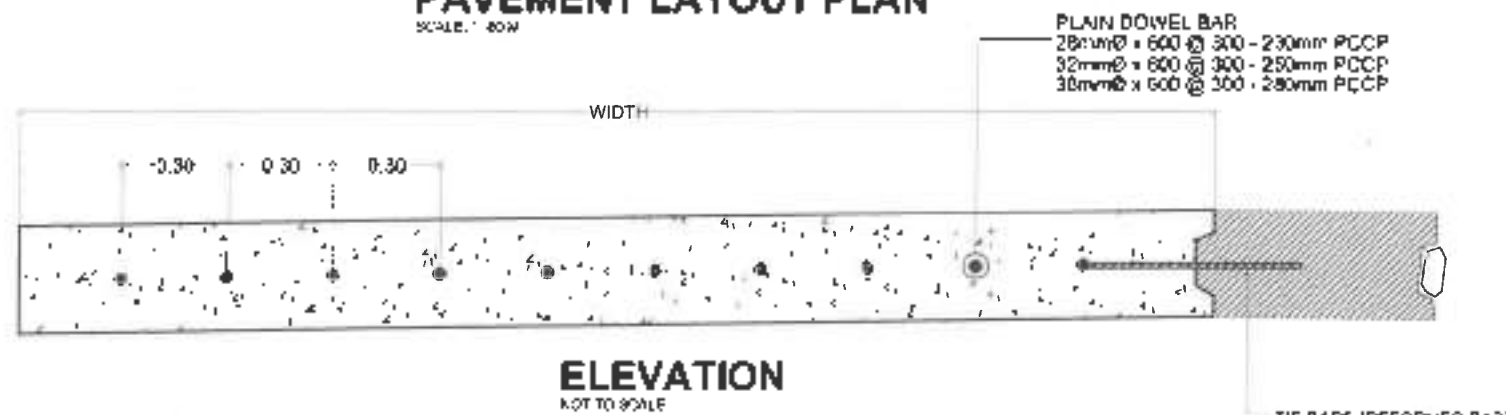
RECOMMENDED BY
VIGOR D. LACRO
Civil Engineering Section
Date

APPROVED BY
ALVIN A. AGNADO
Civil Engineering
Date

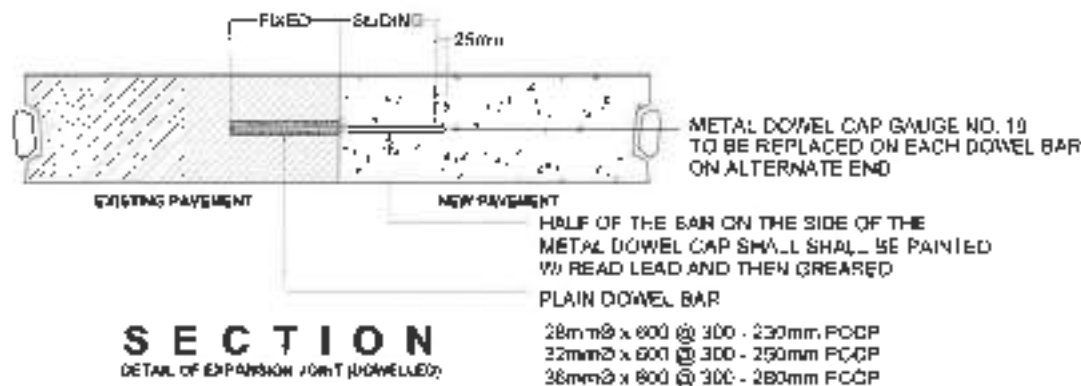
SHEET NO.
15
25



PAVEMENT LAYOUT PLAN
SCALE: 1" = 80M



ELEVATION
NOT TO SCALE



SECTION
DETAIL OF EXPANSION JOINT (DOWELLED)

SPACING OF DOWEL BAR	
SLAB DEPTH (T) (mm)	SPACING (mm)
280	300
290	295
300	274
310	255
320	238
330	223
340	209

DESIGN OF PAVEMENT

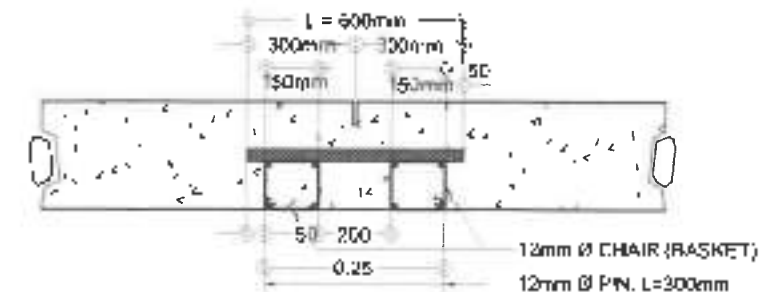
NOTE

TRANSVERSE CONSTRUCTION (CONTACT) JOINT SHALL BE PROVIDED AT THE END OF ANY RUN WHERE LAYING OF CONCRETE HAS BEEN STOPPED FOR THIRTY (30) MINUTES OR LONGER.

TRANSVERSE CONSTRUCTION JOINTS WHICH OCCUR AT LOCATION OF WEAKENED PLANE JOINTS SHOULD BE BUTT JOINTS WITH DOWELS. IF JOINT OCCURS IN THE MIDDLE THIRD OF THE WEAKENED JOINT INTERVAL (1500-3000mm) IT SHOULD BE KEYED JOINTS WITH TIE BARS.

GENERAL NOTES

1. MATERIALS AND WORKMANSHIP SHALL CONFORM WITH THE TYPICAL STANDARD SPECIFICATIONS FOR HIGHWAYS, BRIDGES AND AIRPORTS, 2014 EDITION.
2. CONSTRUCTION (CONTACT) JOINTS ARE FORMED WHEN CONCRETE ON ONE SIDE OF THE JOINT IS POURED AHEAD AND ALLOWED TO SET BEFORE POURING ON THE OTHER SIDE.
3. AT THE CONSTRUCTION JOINTS (LONGITUDINAL OR TRANSVERSE) CARE SHOULD BE TAKEN THAT NO CONCRETE FROM THE LAST SLAB PLACED OVERHANGS ANY PORTION OF THE FINAL SLAB.
4. THE BARS SHOULD BE DEFORMED STEEL BAR. ALL DOWEL BARS SHALL BE SMOOTH ROUND STEEL BAR FREE FROM RUST AND OTHER DEFECTS WHICH MIGHT RESTRICT THEIR MOVEMENT.
5. TYPE OF WEAKENED PLANE JOINT TO BE USED SHALL BE AS SPECIFIED IN THE PLANS AND ONLY ONE TYPE SHALL BE USED FOR THE WHOLE PROJECT.
6. MATERIALS FOR METAL SIDE FORM SHALL BE BRAND NEW SHEET METAL GAUGE NO. 12 OF BLACK IRON FREE FROM DUST, RUST AND LIPS.
7. AT LEAST SIX (6) SUCCESSIVE DOWELLED BUTT JOINTS AT NORMAL JOINT SPACING SHALL BE PROVIDED BEFORE OR AFTER AN EXPANSION JOINT.
8. THE GROOVE OR CRACK ABOVE JOINTS (LONGITUDINAL OR TRANSVERSE) SHALL BE SEALED WITH 100-50 PENETRATION ASPHALT OR COLD APPLIED LIQUID RUBBER COMPOUND AFTER THE CONCRETE HAS BEEN CURED AND BEFORE OPENING PAVEMENT TO TRAFFIC. PENETRATION ASPHALT, IF APPLIED ON CONCRETE JOINT SHOULD BE MIXED IN SUCH A MANNER THAT SPILLING WILL BE ELIMINATED. THIS PROVIDE A SMOOTH RIDING SURFACE.
9. ALL TRANSVERSE JOINT, EXCEPT CONSTRUCTION JOINT SHALL BE CONTINUOUS FROM EDGE TO EDGE.
10. ALL LONGITUDINAL JOINT SHALL MEET AT INTERSECTIONS WITH (M) COPS OR OFFSET.
11. ALL DIMENSION ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
12. AVOID STOPPAGE OF FORMWORKS ALONG CURVES.
13. DRILLING OF HOLES ON EXISTING PC/P OR OTHER STRUCTURES SHALL BE PERFORMED USING POWER TOOLS. THE HOLES SHALL BE PROPERLY CLEANED BEFORE GROUT/POXY INJECTION AND INSTALLATION OF DOWELS OR TIE BARS.
14. APPLICABLE PROVISIONS OF D.D. NO. 29 SERIES OF 1995 IS HEREBY ENFORCED.



CONSTRUCTION JOINT SECTION

OFFICE OF THE DISTRICT ENGINEER DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS NORTHERN SAMAR FIRST DISTRICT ENGINEERING OFFICE Cebu, Northern Samar	PROJECT NAME AND LOCATION	ENGINEER	DESIGNED BY	REVIEWED	CHECKED	RECOMMENDED	APPROVED	APP. No.	SHEET No.
	CONSTRUCTION AND IMPROVEMENT OF CAPITAL CIRCUMFERENTIAL ROAD ALONG LARUNSA, SARANAY, SANAGAYAN, JUANING, GISON, *OBOLACION SECTION, CAPITAL NORTHERN SAMAR	DESIGN OF PAVEMENT	PETRONILO E. CARRASCO JR.	JEFF P. FERROJA	MARIONALDO N. EMBAN Asst. District Engineer & Highway Section	JOY'S VILLOJO Field, Planning & Design Section	VIVIAN A. ESCOBAR Asst. District Engineer	ALVIN A. IGNACIO City Engineer	16

PLAN

SCALE: 1:1000

LEGEND

-  TEST PIT
-  COCONUT TREE
-  RCBC

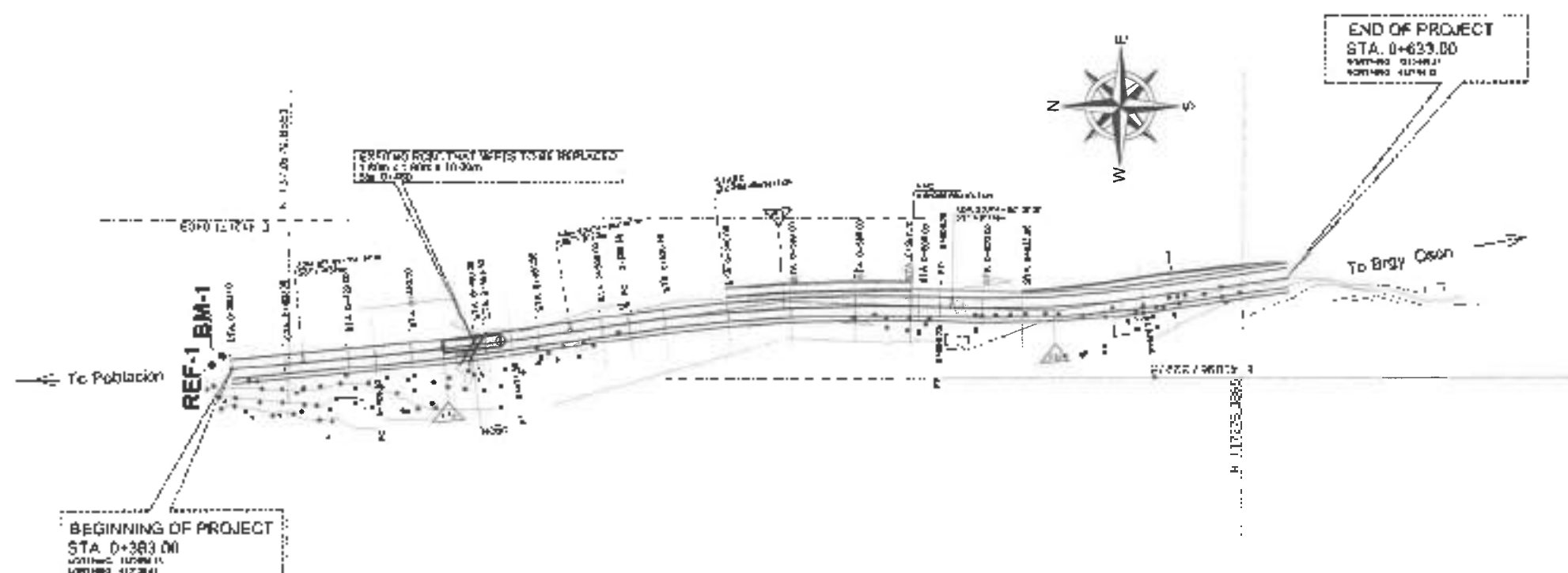
SCHEDULE OF RCCP		
STATION	LENGTH (m)	WIDTH
0+383.00 - 0+633.00	250	6.0m

SCHEDULE OF RCBC

STATION	STRUCTURES	REMARKS
0+383.00 - 0+633.00	1 RCBC 12m x 1.5m x 0.3m	Complete

SCHEDULE OF STONE MASONRY

STATION	STRUCTURES	REMARKS
0+383.00 - 0+633.00	Stone Masonry	Complete



ALIGNMENT PROPERTIES

STATION	ATA	NORTHING	EASTING	L	K	P	D	JC	PC	PT	S	OFF	Station (South)
L1												45.574	35+51.25
L1	0+444.41	131521.915	412126.209	41.485	88+524	2.8673	88+524	42.163	0+444.41	3+471.76	0+444.41	0+444.41	
L2												21.174	3531.14.00
L2	0+451.76	131524.502	412128.717	45.233	553653	8.3634	553653	89.717	3+471.76	3+471.76	3+471.76	3+471.76	
L3												12.36	2705.14
L3	0+462.44	131529.610	412126.142	26.447	527.322	8.3155	527.322	90.181	3+471.76	3+471.76	3+471.76	3+471.76	
L4												48.721	3607.10.17

BM No / REF No	COORDINATES		ELEVATION	REMARKS
	NORTHING	EASTING		
BM1	1372700.87	412129.53	62.52	NAILED ON COCONUT TREE
R1	1372704.10	412126.73	62.89	EDGE OF EXIST. ASP. PAVEMENT, 12.5" ON LINE



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGIONAL OFFICE NO. 101
NORTHERN SAMAR FIRST
DISTRICT ENGINEERING OFFICE
Cebu, Northern Samar

PROJECT NAME AND LOCATION
CONSTRUCTION/IMPROVEMENT OF CAPITAL RECONSTRUCTION ROAD
ALONG LANTARAN, SAMANG, SAGADAWAN
JURANG, OSON, POBLACION SECTION,
CAPUL, NORTHERN SAMAR

SHEET CONTAINS
PLAN

DESIGNED BY
JEFFREY A. SORIANO

REVISED BY
MAURICIO B. CABATING JR.
ANDY S. FRENC
ANDY S. FRENC
ANDY S. FRENC

APPROVED BY
ALVIN A. IONADO
Civil Engineer

DATE
10/02/2023

DATE
10/02/2023

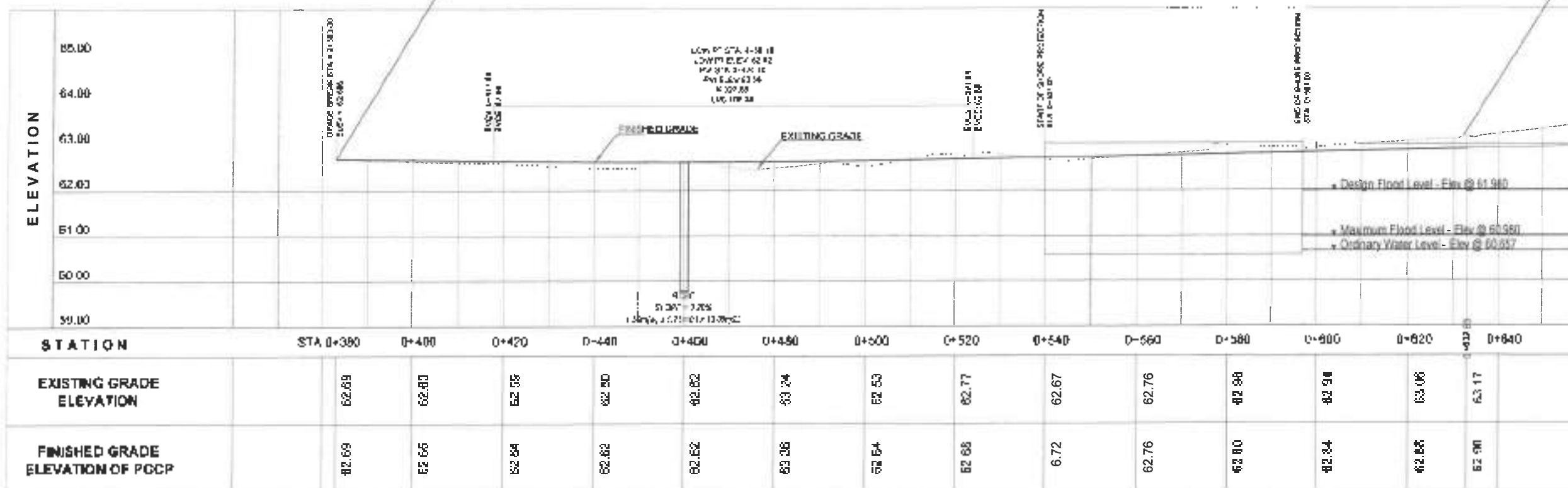
DATE
10/02/2023

PROFILE

REF-1 BM-1

BEGINNING OF PROJECT
Sta. 0+383.00

END OF PROJECT
Sta. 0+633.00



REPUBLIC OF THE PHILIPPINES
Department of Public Works and Highways
ALCANTARA DISTRICT NO. 11
NORTHERN SAMAR FIRST
DISTRICT ENGINEERING OFFICE
Calbayog, Northern Samar

PROJECT NAME AND LOCATION
CONSTRUCTION/IMPROVEMENT OF CARLA
CIRCUMFERENTIAL ROAD
ALCANTARA DISTRICT NO. 11
NORTHERN SAMAR FIRST
DISTRICT ENGINEERING OFFICE
CALBAYOG, NORTHERN SAMAR

PROFILE

DRWN BY:
PEP/ENRILLO B. CABACANG JR.
DESIGNED BY:
JENI P. PATEROLA

REVIEWED:
MARCO DONALD N. EIMAN
Civil Engineering & Design Section

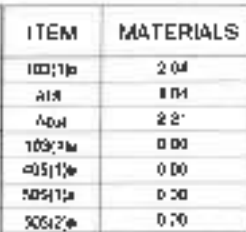
INCHARGE:
ANDY S. ENERO
Civil Engineering & Design Section

RECOMMENDED:
VIVIAN D. LACIDO
Civil Engineering

APPROVED:
ALVIN A. ISAACIO
Civil Engineering

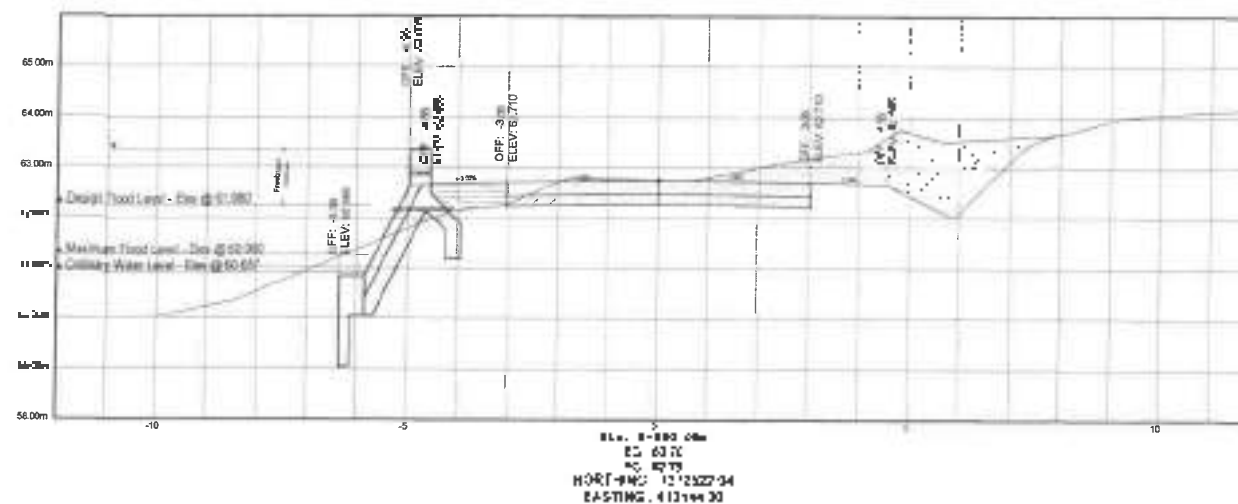
DATE: 02/02/25

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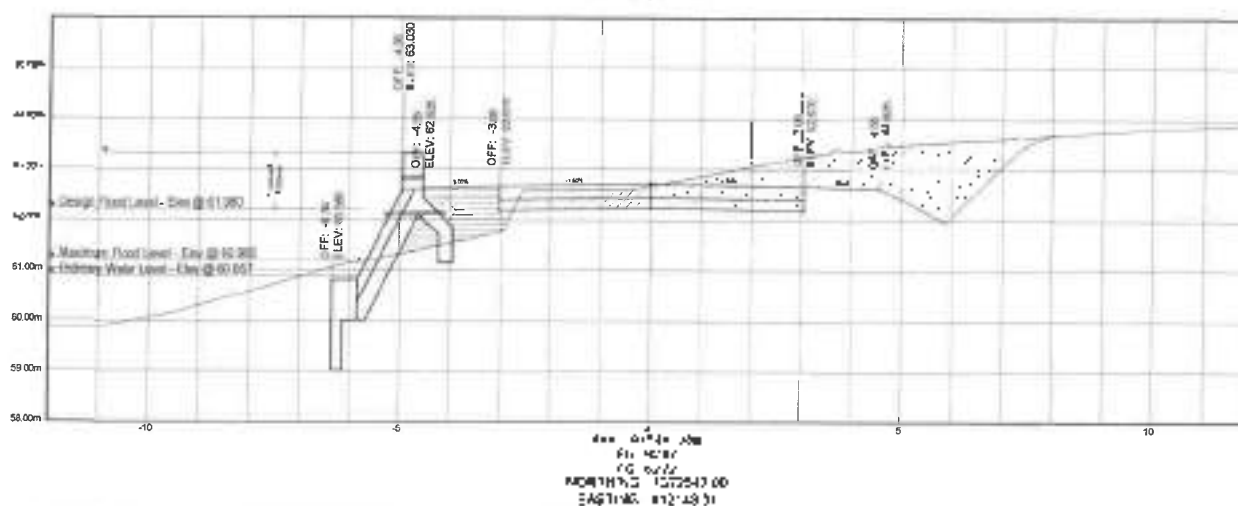


CROSS SECTIONS

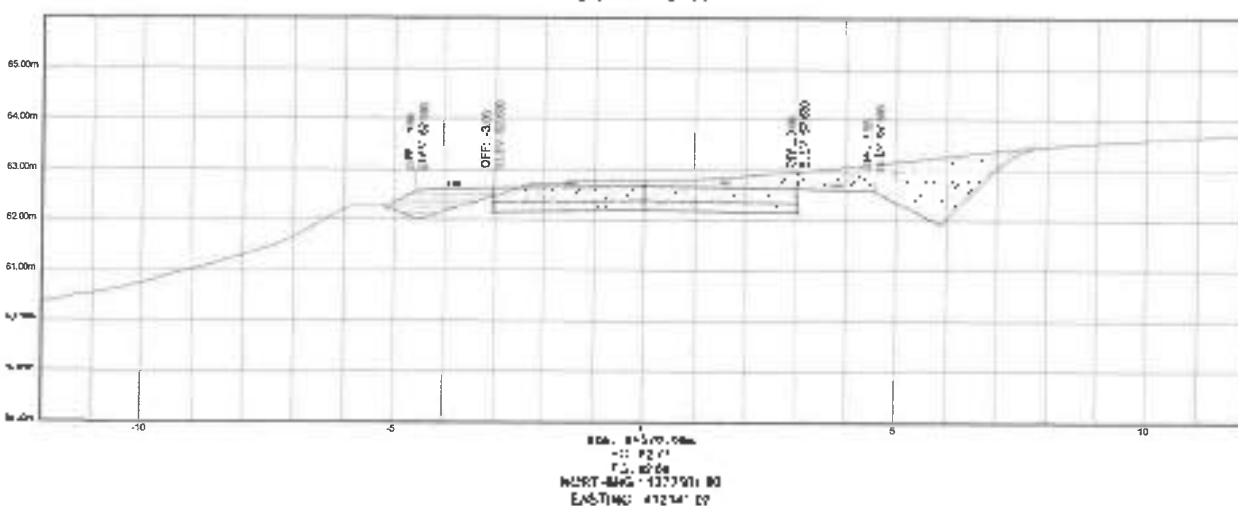
SCALE: 1:100m



ITEM	MATERIALS
100/10	3.75
AM	0.75
ACB	3.10
100/10	0.30
400/10	0.70
500/10	0.60
500/20	0.40



ITEM	MATERIALS
100/10	3.60
AM	1.20
ACB	3.10
100/10	0.07
400/10	0.70
500/10	0.07
500/20	0.40



ITEM	MATERIALS
100/10	3.15
AM	0.45
ACB	3.15
100/10	0.00
400/10	0.00
500/10	0.00
500/20	0.00



DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
NORTHERN SAMAR FIRST
DISTRICT ENGINEERING OFFICE
Engineering Division

PROJECT NAME AND LOCATION
CONSTRUCTION IMPROVEMENT OF CAPUL
CIRCUMFERENTIAL ROAD
400M - 1.000M - 1.000M - 1.000M
JURISDICTION - NORTHERN SAMAR
CAPUL NORTHERN SAMAR

SECTION TITLE
CROSS SECTION A-B

DRAWN BY:
PETRILLO B. CABACANG JR.
CHECKED BY:
JULI P. PETEROLA

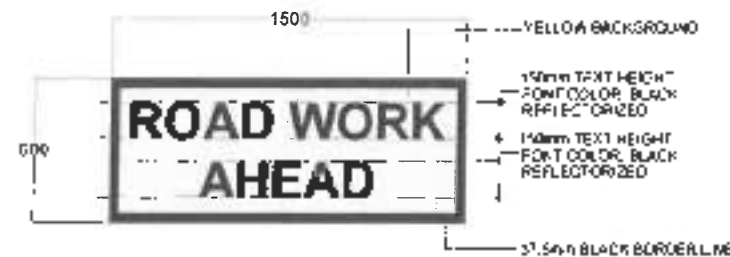
REVIEWED:
WALDONALD N. EIMAN
Chief Engineer

SUBMITTED:
ANDY S. EIMAN
Chief Engineer

RECOMMENDED:
VIVIAN E. EIMAN
Chief Engineer

APPROVED:
ALVIN A. IGNACIO
District Engineer

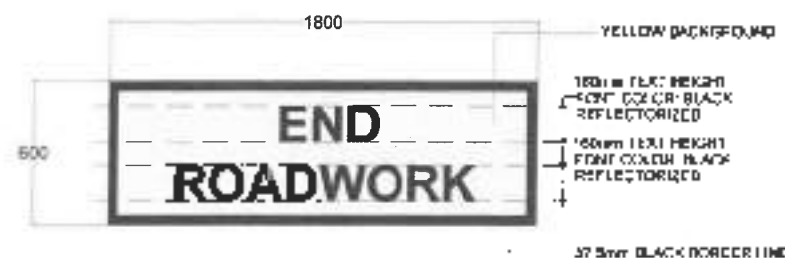
DATE: 05/05/2025
SHEET NO: 25



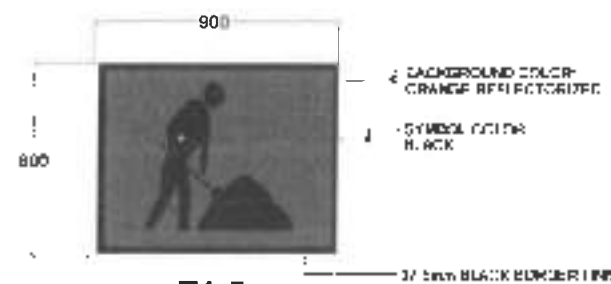
T1-1



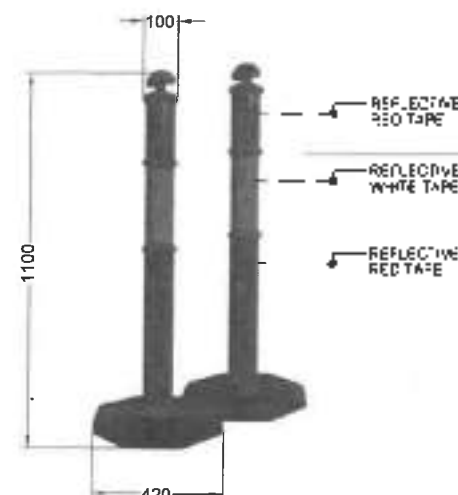
T1-3



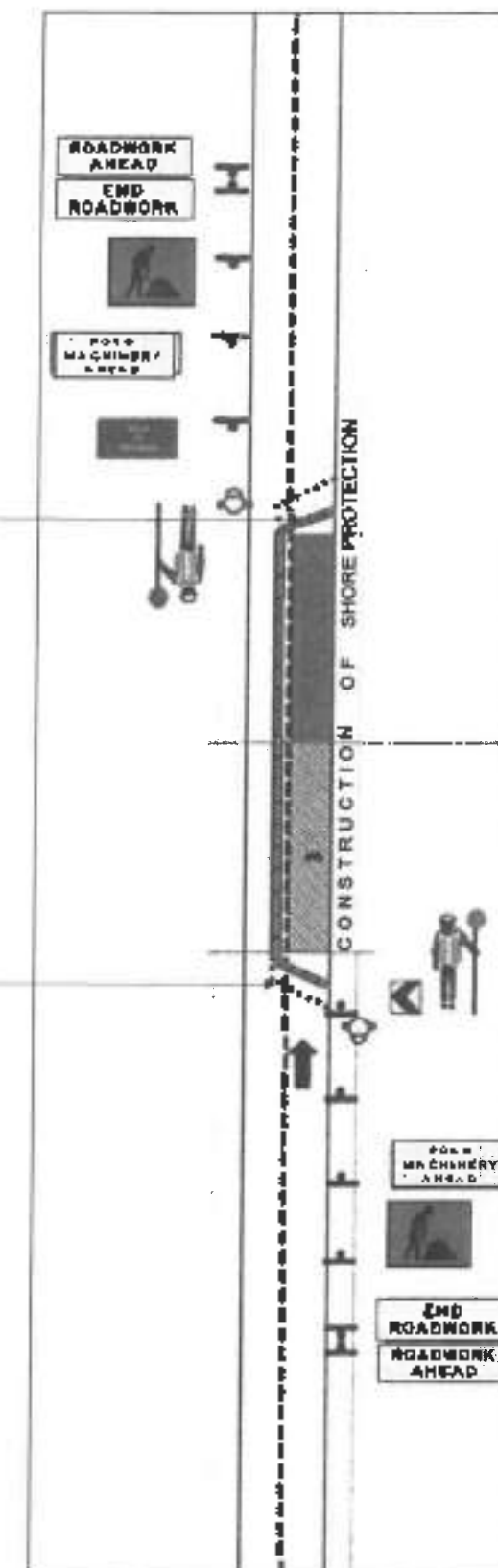
T2-16



T1-5



TRAFFIC BOLLARD DETAILS



TRAFFIC MANAGEMENT PLAN
NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS REGIONAL OFFICE 10-NS NORTHERN SAMAR FIRST DISTRICT ENGINEERING OFFICE Calbayog, Northern Samar	PROJECT NAME/LOC. LOCATION CONSTRUCTION/IMPROVEMENT OF CANAL CIRCUMFERENTIAL ROAD AGUA LINDAYAN, SAKAYAN, SAGADIPAN - ALWANG, 1200M - POSTALION SECTION, CAPUL, NORTHERN SAMAR	SHEET CONTENTS TRAFFIC MANAGEMENT LAYOUT TRAFFIC SIGN DETAILS	DRAWN BY: PETRONILLO, CARACANG, JR. Engineer II DESIGNED BY: JEFF P. VENTURA Engineer II	REVISED BY: MARK DONALD N. ESMAN Asst. Chief Planning & Design Section	CHECKED BY: ANDY S. BUCAYO Chief Planning & Design Section	RECOMMENDED BY: ALVIN A. BUCAYO Asst. Chief Planning & Design Section	APPROVED BY: ALVINA K. KINACIO Urban Engineer	REF NO. TMP-0101	SHEET NO. 23 25
--	--	---	--	--	--	---	---	--------------------------------	-----------------------------------

ALL MATERIALS ARE 2" x 2" x
2.33 mm ANGULAR BAR

STANDARD SIGN PANEL OF
APPROPRIATE SHEETING FASTENED
WITH BOLTS AND NUTS
FOR EASE OF REPLACEMENT



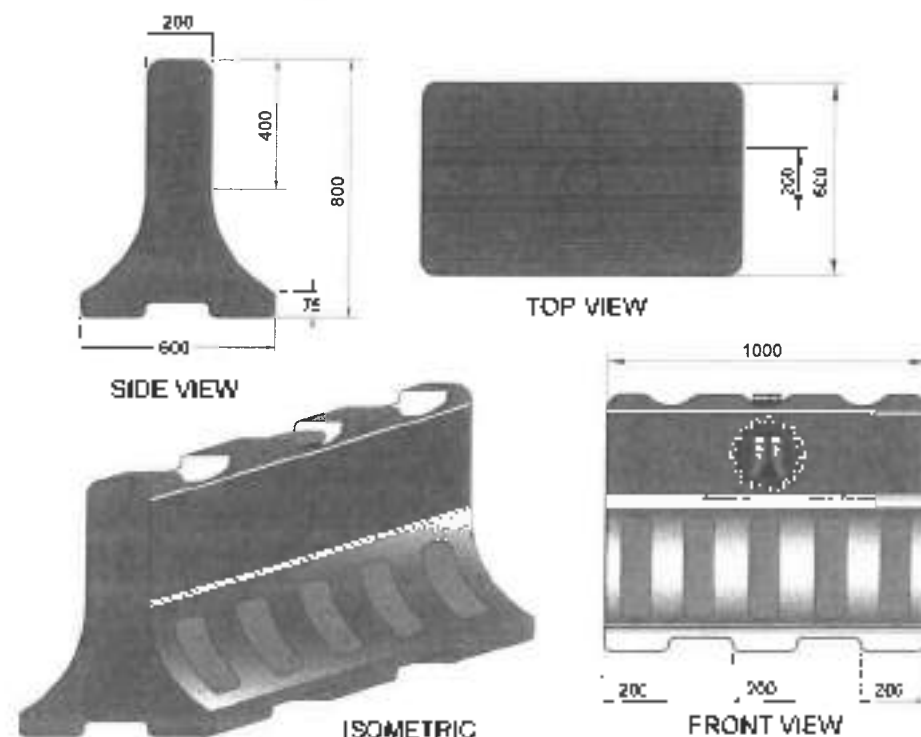
210 50 210 50 210

THIS IS WHERE YOUR TAXES GO

NAME OF PROJECT:
LOCATION:
NAME OF CONTRACTOR:
DATE STARTED:
CONTRACT COMPLETION DATE:
CONTRACT COST:
IMPLEMENTING OFFICE:
SOURCES OF FUND:

Department of Public Works and Highways
Post 2020 is not for any contract on all projects
www.dpw.gov.ph

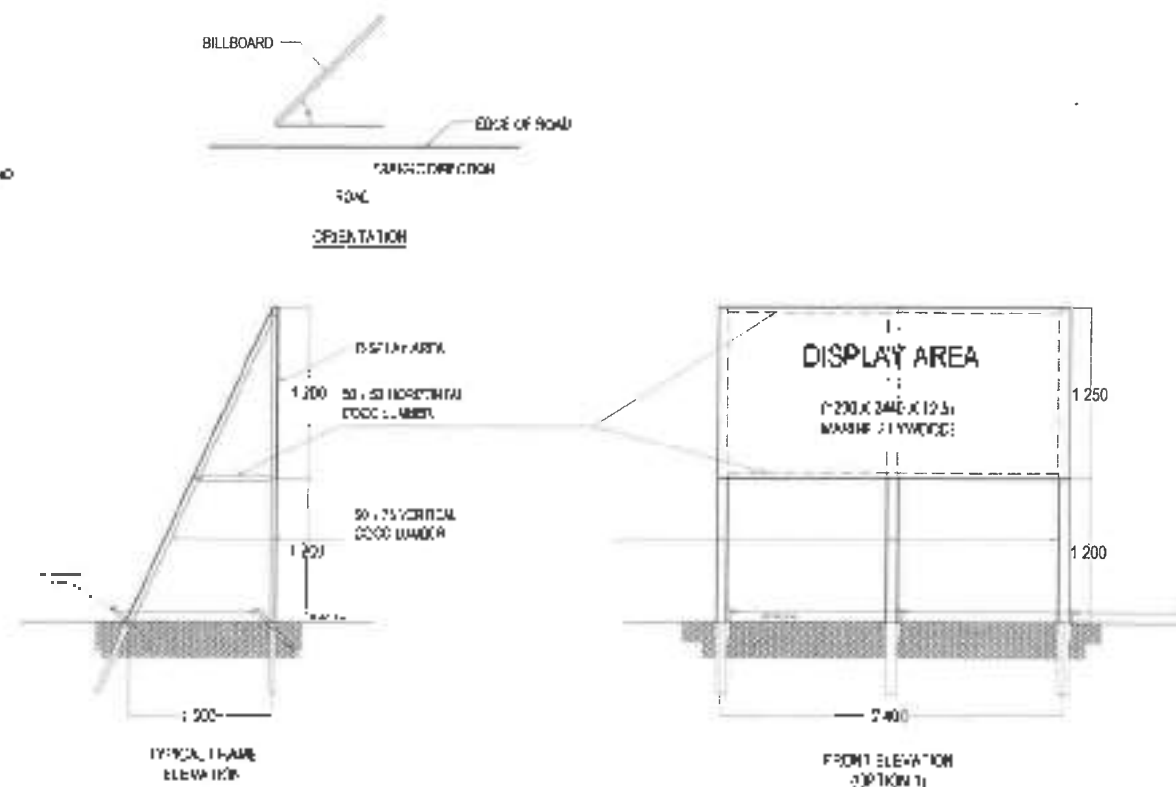
INSTALLING OR ATTACHING OF BARRICADE LIGHT ON TRAFFIC DEVICES NOT DRAWN TO SCALE



IN THE DETERMINATION OF THE ONLY RENTAL COST OF THE DEVICES AND
SIGNAGE, THE FOLLOWING LIST OF MATERIALS ARE COMPLETED:

- ROAD WORKS STANDARD RETROREFLECTIVE SIGNS - 2 ITEMS
- PLASTIC SAFETY BARRIERS
- TRAFFIC CONES
- TEMPORARY ROAD MARKS
- CONSTRUCTION SIGNS IN RETROREFLECTIVE
- CONCRETE SAFETY BARRIERS

DPWH STANDARD PROJECT BILLBOARD



BILLBOARD FRAME

(NOT TO SCALE - ALL DIMENSIONS ARE IN MILLIMETERS)

DETAILS OF PLASTIC BARRIER NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS REGIONAL OFFICE NO. 18 NORTHERN SAMAR FIRST DISTRICT ENGINEERING OFFICE Lalawan, Ormoc, Samar	PROJECT NAME AND LOCATION CONSTRUCTION IMPROVEMENT OF CAROL CIRCUMFERENTIAL ROAD AGLAWAN, LALAWAN, SAMAR ALBAY - LALAWAN - CONSTRUCTION SECTION CAROL NORTHERN SAMAR	SHEET CONTENTS DETAILS OF BARRICADE PROJECT BILLBOARD DETAILS	DESIGNED BY PERDILLO B. CABACANG JR. CHECKED BY JEFF T. PETEROLA	REVIEWED MANUEL D. N. EMBAN Chief Engineer, Planning & Design Section Date:	APPROVED ANDY S. EMBAN Chief Engineer, Planning & Design Section Date:	APPROVED ALVIN A. ISMACIO Chief Engineer, Planning & Design Section Date:	APPROVED ALVIN A. ISMACIO Chief Engineer, Planning & Design Section Date:	SHEET NO. 24 OF 25
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Department of Public Works and Highways
Region Office No. 1
Northern Samar

Project: _____ Date: _____
 Location: _____ Date Submitted: _____

Implementing Agency: _____
 Consultant/Partner: _____
 Contractor/Supplier: _____
 Budget/Developer of Project: _____

Project Details

Project Date		Project Status					
Design	Survey	Final Design	Permitting	Construction	Operation	Maintenance	Other

For particular requirements and design, please refer to the Regional Office and the Local Government Unit. The design is for reference only.

Local Government Unit: _____
 Address: _____
 Contact: _____ or Tel: 066-244-1111 or 066-244-1112

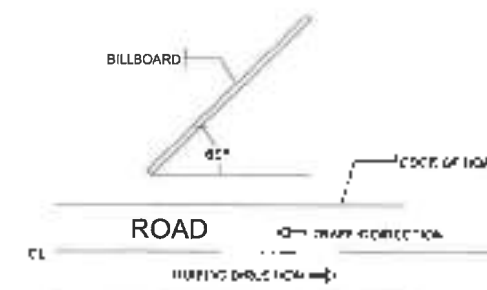
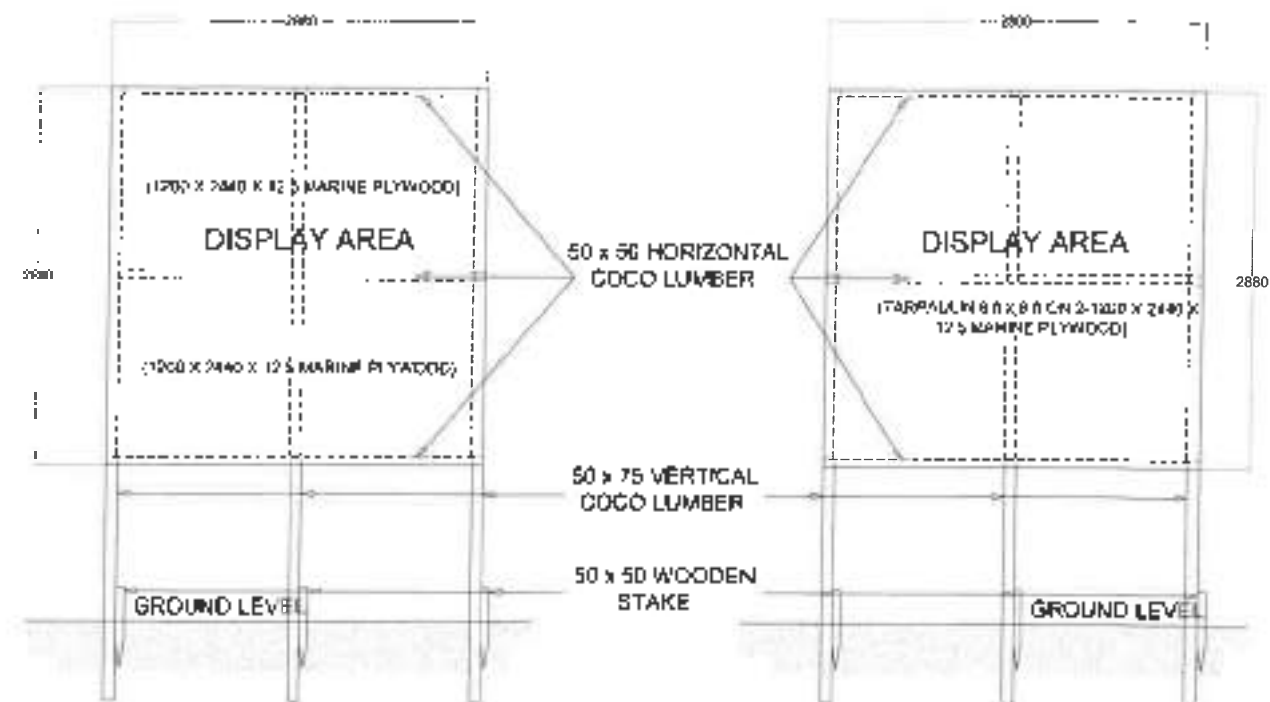
COA STANDARD PROJECT BILLBOARD

SPECIFICATIONS:

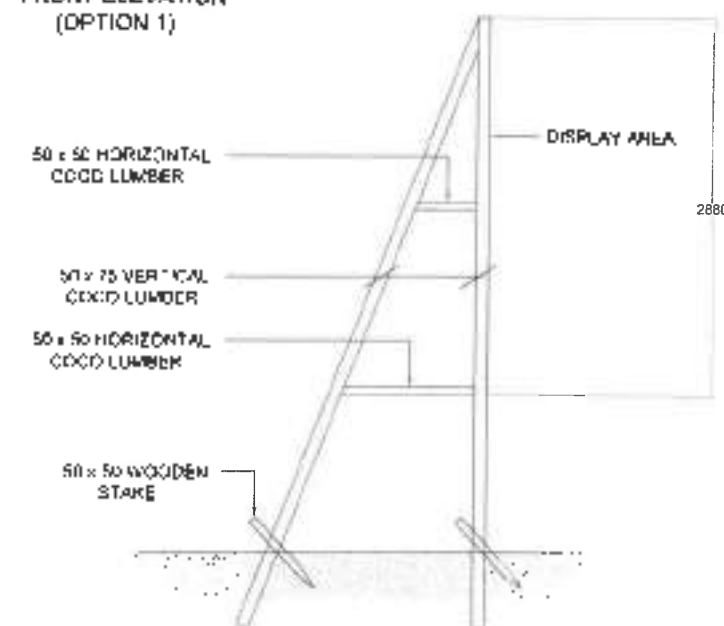
1. TARPULIN, WHITE, 8 FT X 8 FT
2. RESOLUTION : 70 DPI
3. FONT : HELVETICA
4. FONT SIZE : MAIN INFORMATION - 3"
SUB-Information - 1"
5. FONT COLOR: BLACK
6. BACKGROUND COLOR: WHITE

COA BILLBOARD FRAME

(NOT TO SCALE, ALL DIMENSIONS ARE IN METERS)



FRONT ELEVATION (OPTION 1)



DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGION OFFICE NO. 1
NORTHERN SAMAR FIRST
DISTRICT ENGINEERING OFFICE
Calbayog, Samar Center

PROJECT NAME AND LOCATION
CONSTRUCTION OF BAYBAYAN CIRCUMFERENTIAL ROAD
AGUAH - LANTHAN - SAKUN - SAKUNSAWANG
JABANG - GSON - POSLAC ON SECTION
CAPIL NORTHERN SAMAR

SHEET DESCRIPTION
BILLBOARD DETAILS

DESIGNED BY
PERFECTO B. CABACENO JR.
CHECKED BY
JEFFREY P. TORRES
DATE

REVIEWED BY
MARICRISTAL N. EIMAN
ASST. CHIEF, Planning & Design Section
DATE

SUBMITTED BY
ANDY S. ERASO
CHIEF, Planning & Design Section
DATE

PROJECT NUMBER
DATE

APPROVED BY
ALVIN A. IGNACIO
District Engineer
DATE

SHEET No.
25
OF
25